

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 1 | 105 |

2 HECTOR, ISABELL & ALEWINE CREEKS STRS. & APPRS. (S)

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

HECTOR, ISABELL & ALEWINE
CREEKS STRS. & APPRS. (S)

POPE COUNTY
ROUTE 105 SECTION 1

JOB 080529

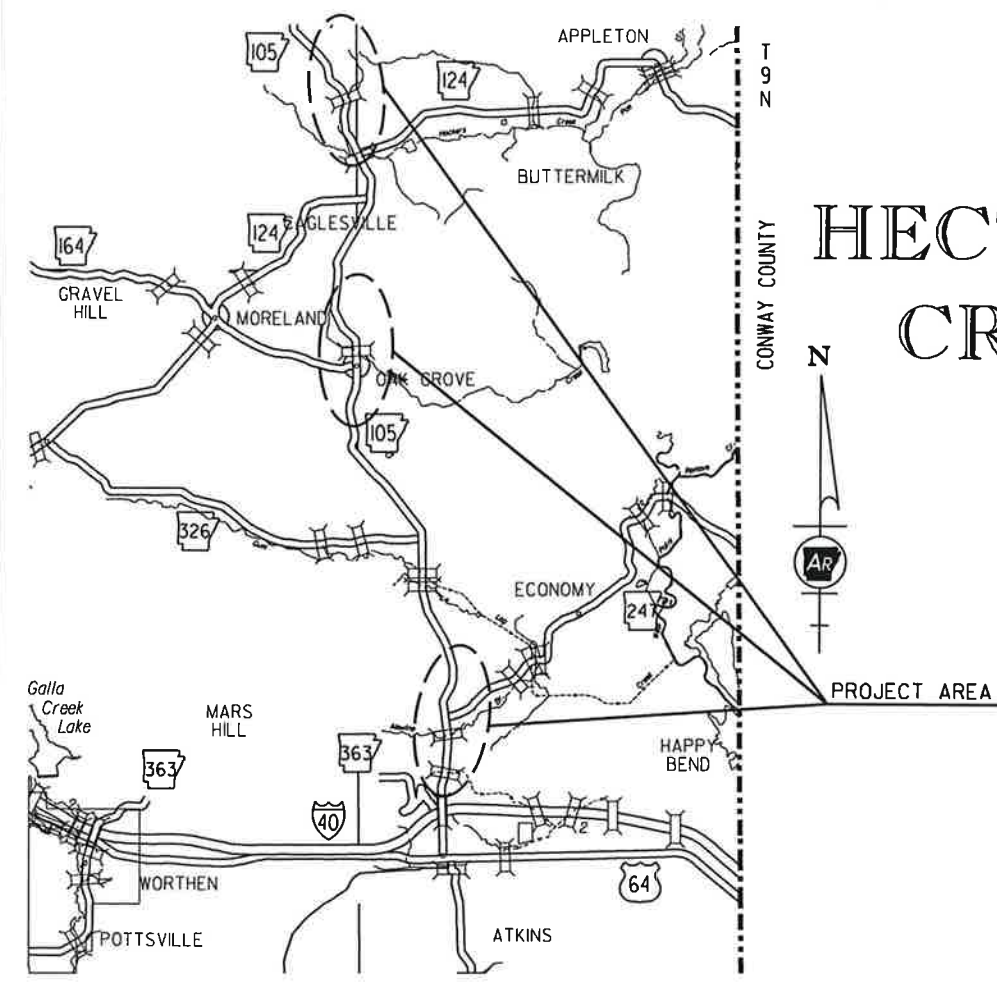
FED. AID PROJ. NHPP-0058(44)



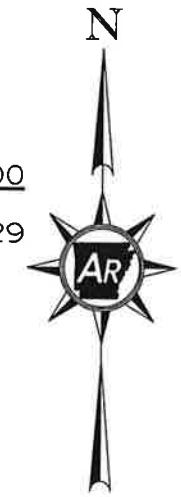
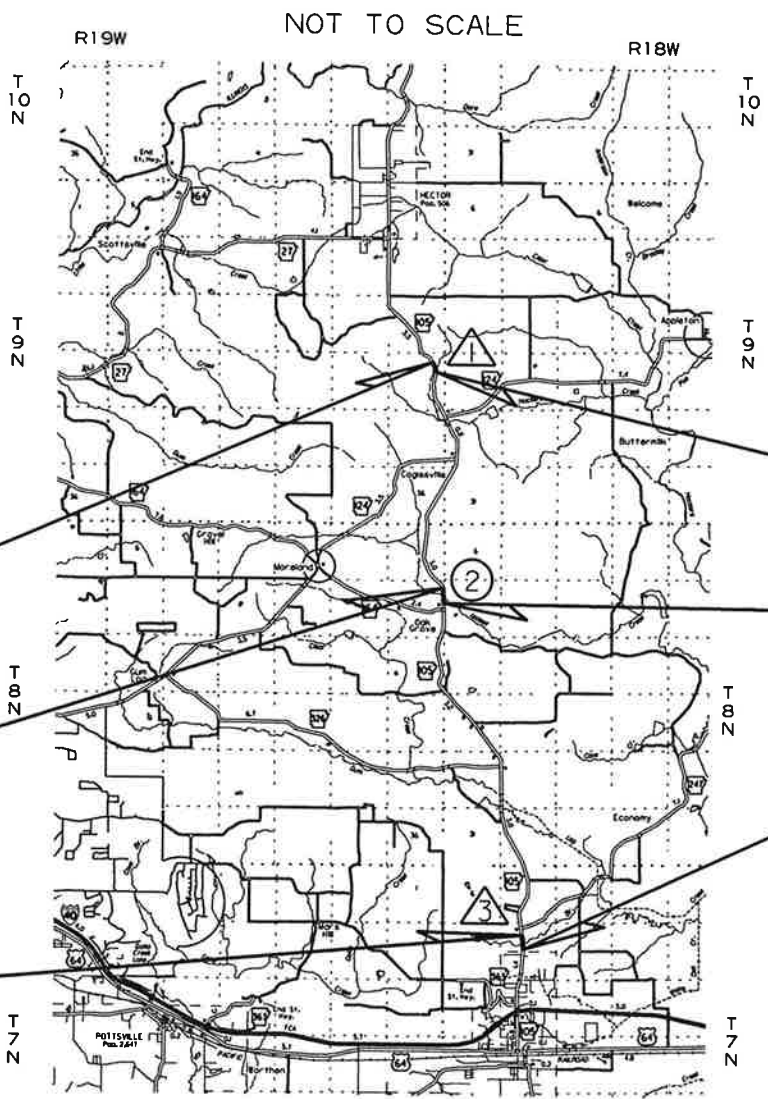
ARK. HWY. DIST. NO. 8

DESIGN TRAFFIC DATA

| | |
|--------------------------|--------|
| DESIGN YEAR | 2040 |
| 2020 ADT | 2500 |
| 2040 ADT | 3000 |
| 2040 DHV | 330 |
| DIRECTIONAL DISTRIBUTION | 0.60 |
| TRUCKS | 5% |
| DESIGN SPEED | 55 MPH |



VICINITY MAP



STRUCTURES OVER 20' -0" SPAN

- 1 STA. 104+70.00 CONSTRUCT TRI. 10' x 6' x 86' R.C BOX CULVERT ON 15° RT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q25= 490 CFS D.A.= 0.55 SQ. MI. SPAN = 32.50
- 3 STA. 305+15 CONSTRUCT TRI. 10' x 8' x 89' R.C BOX CULVERT ON 15° RT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q25= 730 CFS D.A.= 0.67 SQ. MI. SPAN = 32.92

BRIDGE DATA

- 2 STA. 203+94.45 - BRIDGE END BRIDGE NO. 07474 210'-0" CONTINUOUS INTEGRAL W-BEAM UNIT (45'-60'-60'-45') 40' CLEAR ROADWAY 211'-1/4" BRIDGE LENGTH STA. 206+05.55 - BRIDGE END

STA. 104+00.00
BEGIN JOB 080529
BEGIN SITE 1
L.M. 2.58

STA. 203+00.00
BEGIN SITE 2
L.M. 6.93

STA. 296+00.00
BEGIN SITE 3
L.M. 13.45

STA. 106+00.00
END SITE 1

STA. 207+00.00
END SITE 2

STA. 306+50.00
END SITE 3
END JOB 080529

| SITE 1 | BEGIN PROJECT | MID-POINT OF PROJECT | END PROJECT |
|-----------|---------------|----------------------|-------------|
| LATITUDE | N 35°25'01" | N 35°25'00" | N 35°24'59" |
| LONGITUDE | W 92°57'40" | W 94°11'44" | W 92°57'40" |

| SITE 2 | BEGIN PROJECT | MID-POINT OF PROJECT | END PROJECT |
|-----------|---------------|----------------------|-------------|
| LATITUDE | N 35°21'33" | N 35°21'31" | N 35°21'29" |
| LONGITUDE | W 92°57'34" | W 92°57'34" | W 92°57'34" |

| SITE 3 | BEGIN PROJECT | MID-POINT OF PROJECT | END PROJECT |
|-----------|---------------|----------------------|-------------|
| LATITUDE | N 35°16'14" | N 35°16'13" | N 35°16'12" |
| LONGITUDE | W 92°56'08" | W 92°56'08" | W 92°56'08" |

LENGTH OF PROJECT CALCULATED ALONG C.L.

| | | | | |
|-------------------------|---------|---------|-------|-------|
| GROSS LENGTH OF PROJECT | 1650.00 | FEET OR | 0.313 | MILES |
| NET ROADWAY | 1373.48 | | 0.260 | MILES |
| NET BRIDGES | 276.52 | | 0.053 | MILES |
| NET PROJECT | 1650.00 | | 0.313 | MILES |

APPROVED



3-5-2020
DEPUTY DIRECTOR
AND CHIEF ENGINEER

6/26/2017

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|----------------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. 080529 | 2 105 |

2 INDEX OF SHEETS



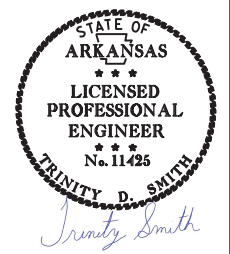
INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRWG. NO. |
|-----------|--|------------|-----------|
| 1 | TITLE SHEET | | |
| 2 | INDEX OF SHEETS | | |
| 3 | STANDARD DRAWINGS | | |
| 4 | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | |
| 5 - 10 | TYPICAL SECTIONS OF IMPROVEMENT | | |
| 11 - 21 | SPECIAL DETAILS | | |
| 22 - 35 | TEMPORARY EROSION CONTROL DETAILS | | |
| 36 - 47 | MAINTENANCE OF TRAFFIC DETAILS | | |
| 48 | PERMANENT PAVEMENT MARKING DETAILS | | |
| 49 - 55 | QUANTITIES | | |
| 56 | SCHEDULE OF BRIDGE QUANTITIES | 07474 | 61408 |
| 57 | SUMMARY OF QUANTITIES AND REVISIONS | | |
| 58 - 63 | SURVEY CONTROL DETAILS | | |
| 64 - 70 | PLAN AND PROFILE SHEETS | | |
| 71 | LAYOUT OF BRIDGE HIGHWAY 105 OVER ISABELL CREEK (SHEET 1 OF 2) | 07474 | 61409 |
| 72 | LAYOUT OF BRIDGE HIGHWAY 105 OVER ISABELL CREEK (SHEET 2 OF 2) | 07474 | 61410 |
| 73 | DETAILS OF END BENTS (SHEET 1 OF 3) | 07474 | 61411 |
| 74 | DETAILS OF END BENTS (SHEET 2 OF 3) | 07474 | 61412 |
| 75 | DETAILS OF END BENTS (SHEET 3 OF 3) | 07474 | 61413 |
| 76 | DETAILS OF INTERMEDIATE BENTS (SHEET 1 OF 2) | 07474 | 61414 |
| 77 | DETAILS OF INTERMEDIATE BENTS (SHEET 2 OF 2) | 07474 | 61415 |
| 78 | DETAILS OF ELASTOMERIC BEARINGS | 07474 | 61416 |
| 79 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 1 OF 6) | 07474 | 61417 |
| 80 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 2 OF 6) | 07474 | 61418 |
| 81 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 3 OF 6) | 07474 | 61419 |
| 82 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 4 OF 6) | 07474 | 61420 |
| 83 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 5 OF 6) | 07474 | 61421 |
| 84 | DETAILS OF 210' CONTINUOUS INTEGRAL W-BEAM UNIT (SHEET 6 OF 6) | 07474 | 61422 |
| 85 - 105 | CROSS SECTIONS | | |

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

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| 4/16/2020 | | | | | | | | |
| | | | | JOB NO. | | 080529 | 3 | 105 |

② INDEX OF SHEETS AND STANDARD DRAWINGS



Apr 17 2020 8:09 AM

DocuSign

BRIDGE STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|----------|---|----------|
| 55000 | STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS | 02-27-14 |
| 55001 | STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES | 02-27-14 |
| 55005 | STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS | 03-24-16 |
| 55006 | STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES | 09-02-15 |
| 55007 | STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES | 02-11-16 |
| 55010 | STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE | 03-24-20 |
| 55020 | STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS | 03-24-16 |
| 55030C | STANDARD DETAILS FOR TYPE C APPROACH GUTTERS | 02-27-14 |
| 55040C1 | STANDARD DETAILS FOR TYPE C1 APPROACH SLAB | 02-27-14 |

ROADWAY STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|----------|---|----------|
| CDP-1 | CONCRETE DITCH PAVING | 12-08-16 |
| FES-1 | FLARED END SECTION | 10-18-96 |
| FES-2 | FLARED END SECTION | 10-18-96 |
| GR-6 | GUARD RAIL DETAILS | 11-07-19 |
| GR-7 | GUARD RAIL DETAILS | 11-07-19 |
| GR-8 | GUARD RAIL DETAILS | 11-07-19 |
| GR-9 | GUARD RAIL DETAILS | 11-07-19 |
| GR-10 | GUARD RAIL DETAILS | 11-07-19 |
| GR-11 | GUARD RAIL DETAILS | 11-07-19 |
| GR-12 | GUARD RAIL DETAILS | 11-07-19 |
| 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 |
| PCP-1 | PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | 02-27-14 |
| PCP-2 | PLASTIC PIPE CULVERT (PVC F949) | 02-27-14 |
| PCP-3 | PLASTIC PIPE CULVERT (POLYPROPYLENE) | 02-27-20 |
| PM-1 | PAVEMENT MARKING DETAILS | 02-27-20 |
| 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 | 11-07-19 |
| TC-3 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 02-27-20 |
| 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-2 | WIRE FENCE WATER GAPS | 04-20-79 |
| WF-4 | WIRE FENCE TYPE C AND D | 08-22-02 |

2/14/2020

R080529.DGN

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 |
| 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 |
| 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 |
| 600-2 | INCIDENTAL CONSTRUCTION |
| 603-1 | LANE CLOSURE NOTIFICATION |
| 604-1 | RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES |
| 604-3 | TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH) |
| 605-1 | CONCRETE DITCH PAVING |
| 606-1 | PIPE CULVERTS FOR SIDE DRAINS |
| 617-1 | GUARDRAIL TERMINAL (TYPE 2) |
| 620-1 | MULCH COVER |
| 734-1 | BRIDGE END TERMINAL |
| 800-1 | STRUCTURES |
| 802-3 | CONCRETE FOR STRUCTURES |
| 804-2 | REINFORCING STEEL FOR STRUCTURES |
| 807-2 | STEEL STRUCTURES |
| 808-1 | INSTALLATION OF ELASTOMERIC BEARINGS |
| 808-2 | ELASTOMERIC BEARINGS |
| JOB 080529 | AIRPORT CLEARANCE REQUIREMENTS |
| JOB 080529 | ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC |
| JOB 080529 | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 080529 | BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT |
| JOB 080529 | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB 080529 | CARGO PREFERENCE ACT REQUIREMENTS |
| JOB 080529 | CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE |
| JOB 080529 | CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS |
| JOB 080529 | DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES |
| JOB 080529 | DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES |
| JOB 080529 | DRILLED SHAFT FOUNDATIONS |
| JOB 080529 | ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT |
| JOB 080529 | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION |
| JOB 080529 | MAINTENANCE OF TRAFFIC |
| JOB 080529 | MANDATORY ELECTRONIC CONTRACT |
| JOB 080529 | MANDATORY ELECTRONIC DOCUMENT SUBMITTAL |
| JOB 080529 | NONDESTRUCTIVE TESTING OF DRILLED SHAFTS |
| JOB 080529 | NESTING SITES OF MIGRATORY BIRDS |
| JOB 080529 | OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS |
| JOB 080529 | PARTNERING REQUIREMENTS |
| JOB 080529 | PLASTIC PIPE |
| JOB 080529 | PRECAST SUBSTRUCTURE |
| JOB 080529 | PRICE ADJUSTMENT FOR ASPHALT BINDER |
| JOB 080529 | RUMBLE STRIPS |
| JOB 080529 | SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS |
| JOB 080529 | SHORING FOR CULVERTS |
| JOB 080529 | SOIL STABILIZATION |
| JOB 080529 | STORM WATER POLLUTION PREVENTION PLAN |
| JOB 080529 | SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB 080529 | UTILITY ADJUSTMENTS |
| JOB 080529 | VALUE ENGINEERING |
| JOB 080529 | WARM MIX ASPHALT |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 4 | 105 |

2 GOVERNING SPECS. AND GENERAL NOTES



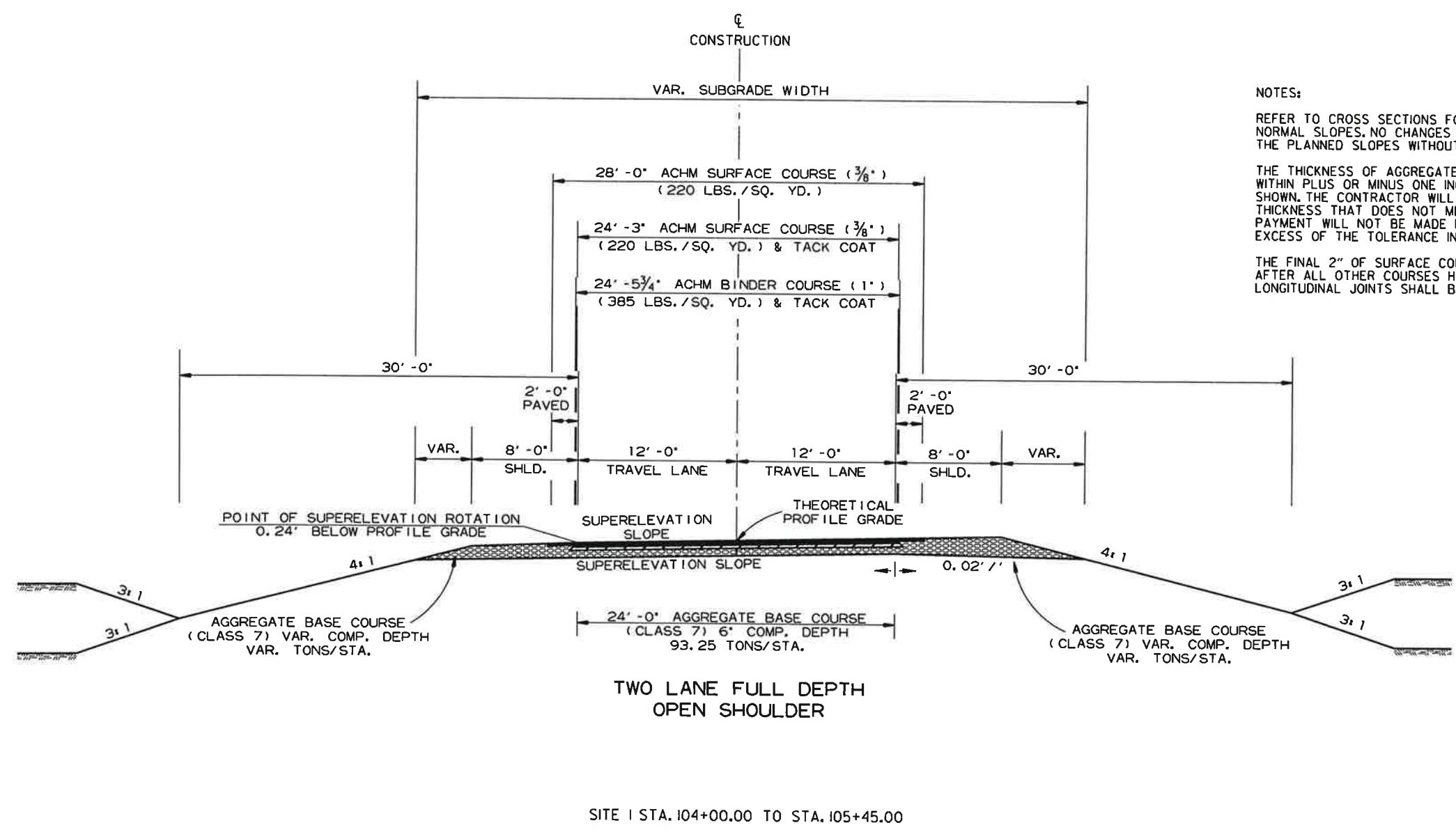
GENERAL NOTES

- 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.

R080529.DGN 2/14/2020

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 5 | 105 |
| | | | | JOB NO. | 080529 | | | |

2 TYPICAL SECTIONS OF IMPROVEMENT



NOTES:

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

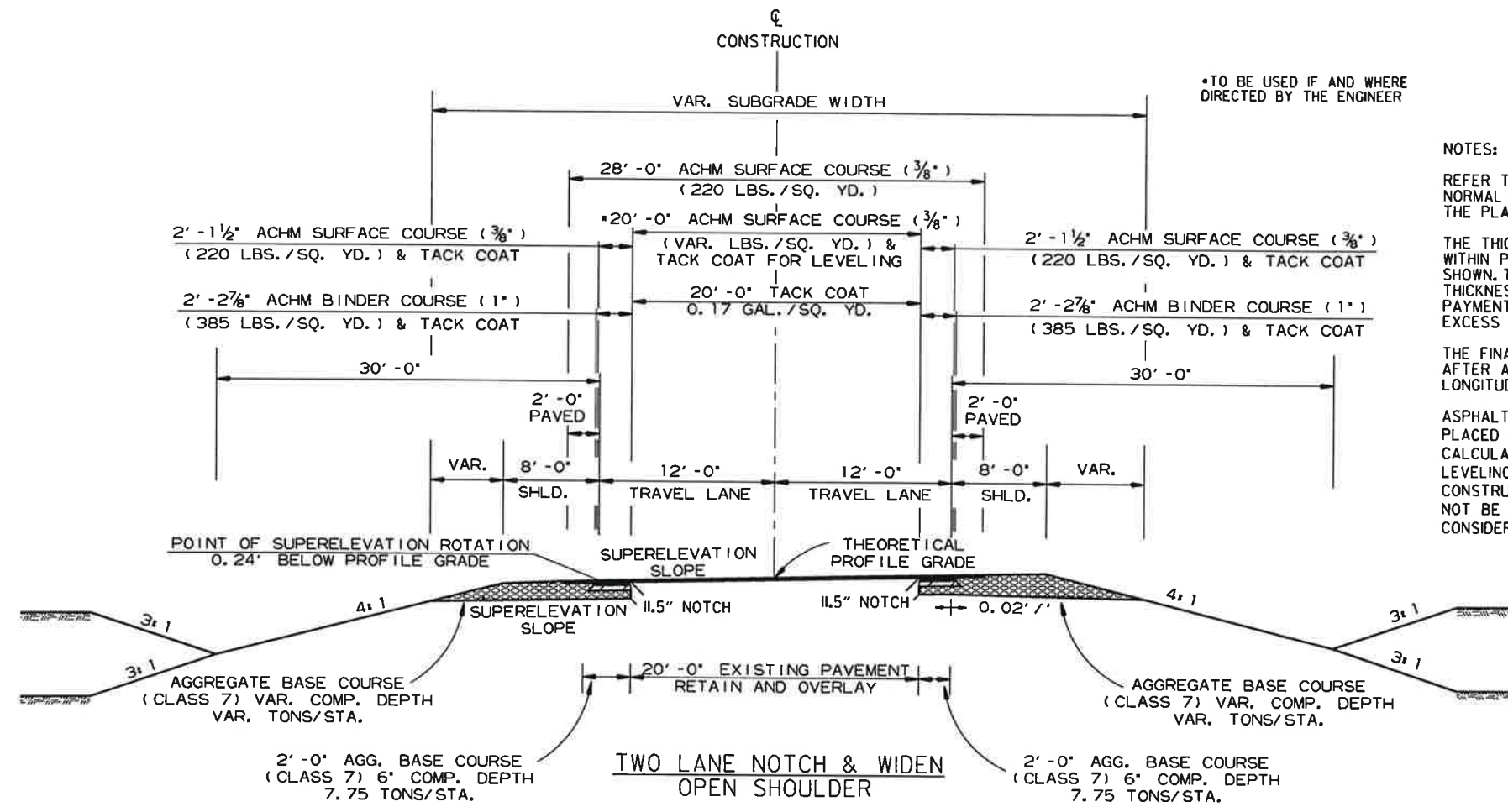
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

4/23/2019 R080529.DGN

| DATE REVISED | DATE PREPARED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|---------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 6 | 105 |
| | | | | JOB NO. | | 080529 | 6 | 105 |

2 TYPICAL SECTIONS OF IMPROVEMENT



NOTES:

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

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

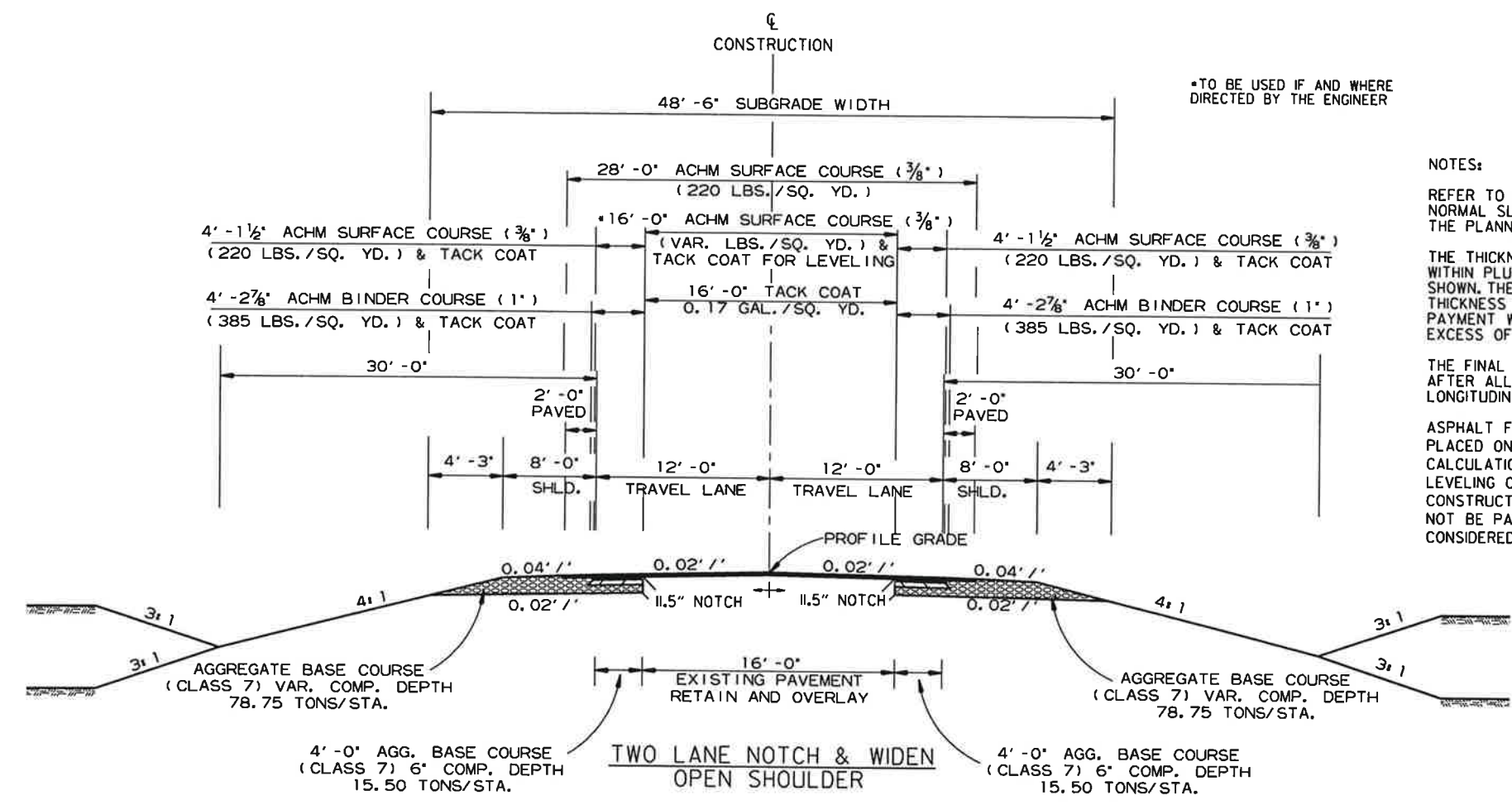
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

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.

SITE | STA. 105+45.00 TO STA. 106+00.00

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|--------------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. | 080529 |
| | | | | | | | SHEET NO. | 7 |
| | | | | | | | TOTAL SHEETS | 105 |

2 TYPICAL SECTIONS OF IMPROVEMENT



*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

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.

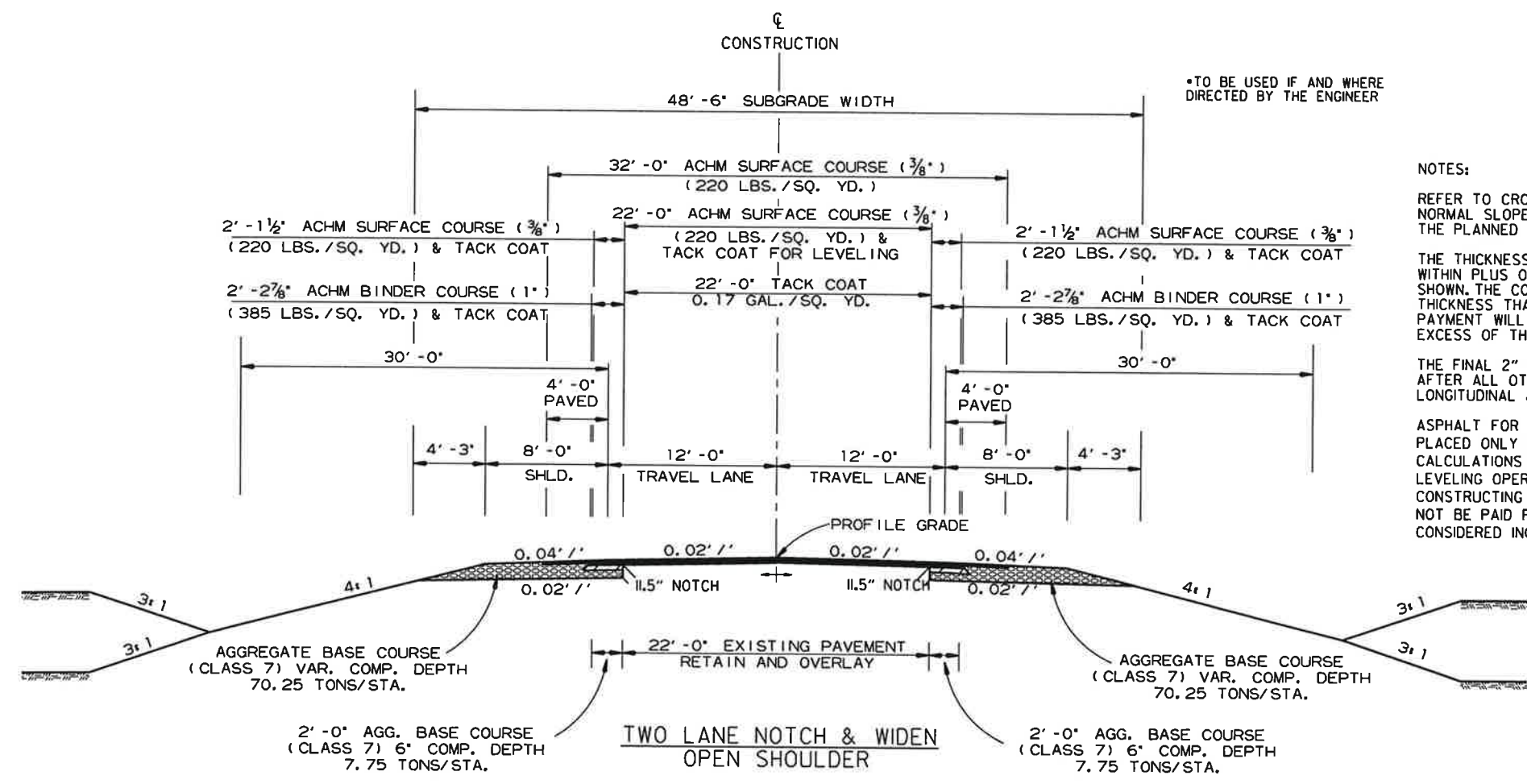
THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

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.

SITE 2 STA. 203+00.00 TO STA. 203+94.95
STA. 206+05.55 TO STA. 207+00.00

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 8 | 105 |
| | | | | JOB NO. | 080529 | | | |

2 TYPICAL SECTIONS OF IMPROVEMENT



NOTES:

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

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

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

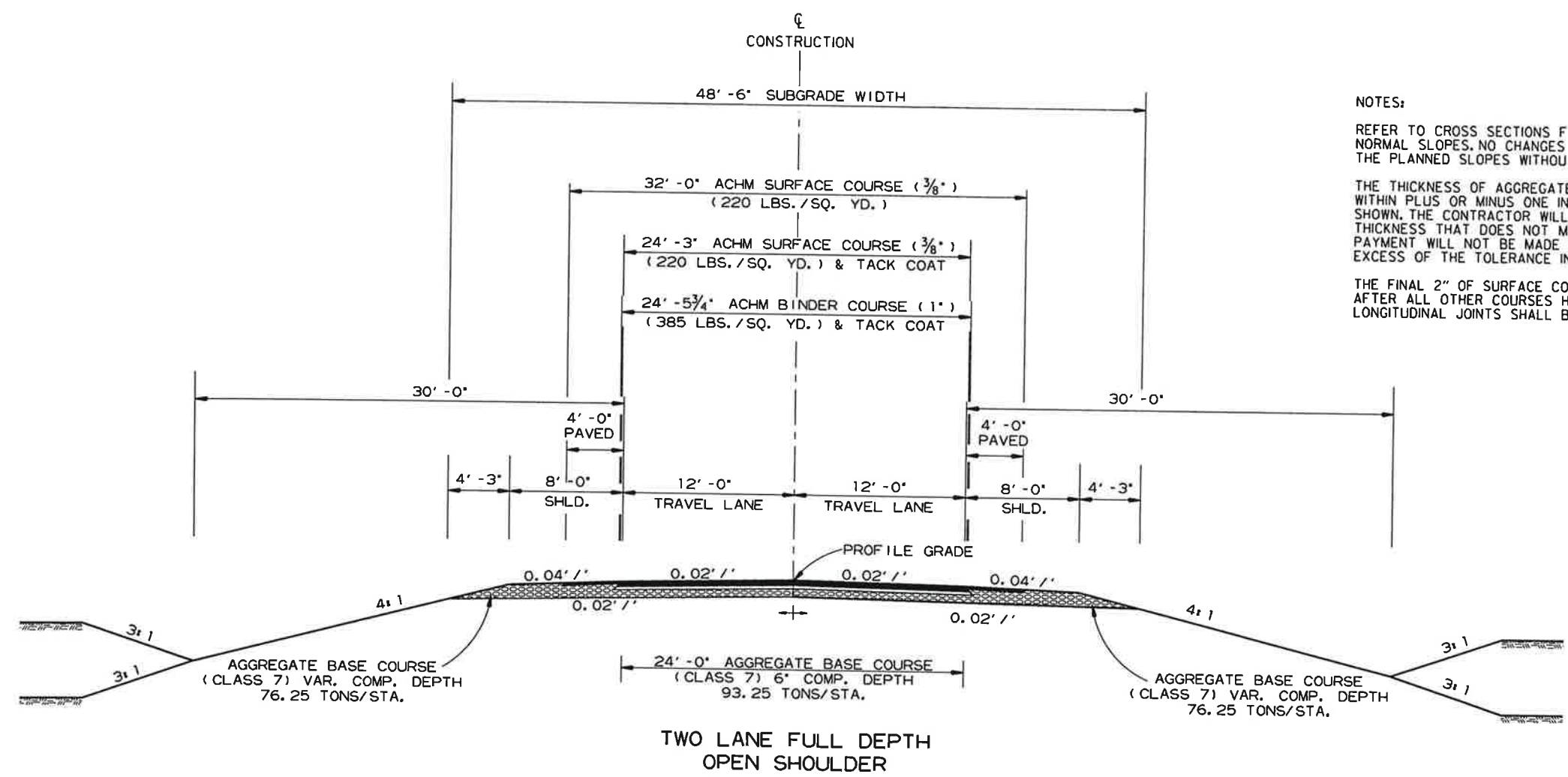
ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED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

SITE 3 STA. 296+00.00 TO STA. 304+30.00
STA. 306+00.00 TO STA. 306+50.00

4/23/2019
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 9 | 105 |
| | | | | JOB NO. | 080529 | | | |

② TYPICAL SECTIONS OF IMPROVEMENT



NOTES:

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

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

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

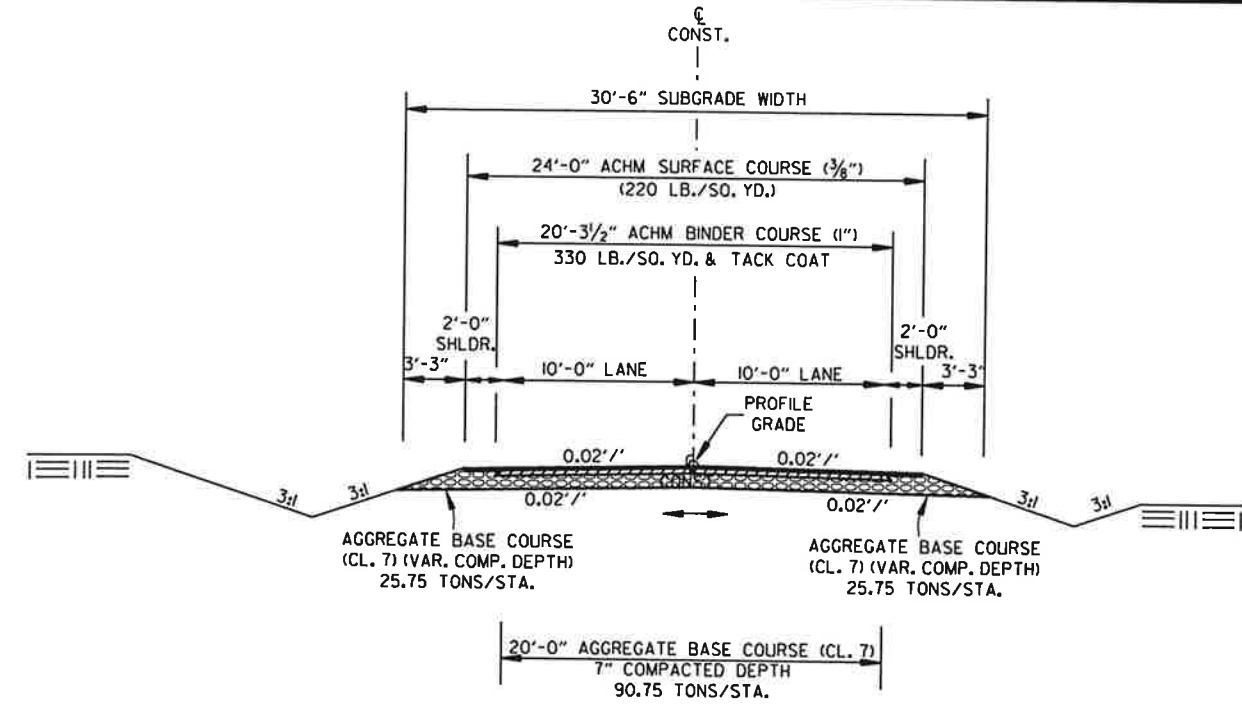
SITE 3 STA. 297+50.00 TO STA. 298+00.00
 SITE 3 STA. 304+30.00 TO STA. 306+00.00

4/23/2019

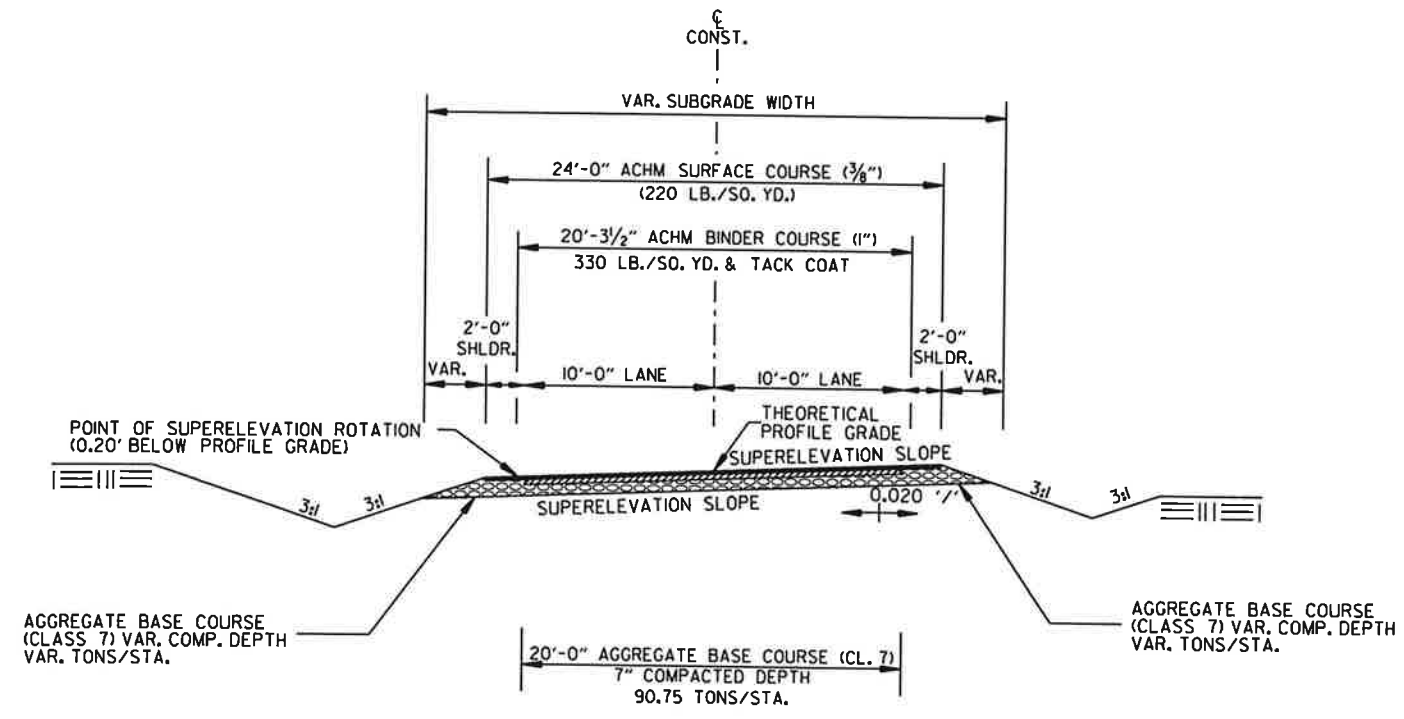
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 10 | 105 |
| | | | | JOB NO. | 080529 | | | |

② TYPICAL SECTIONS OF IMPROVEMENT



DETOUR TANGENT SECTION



DETOUR SUPERELEVATED SECTION

NOTES:

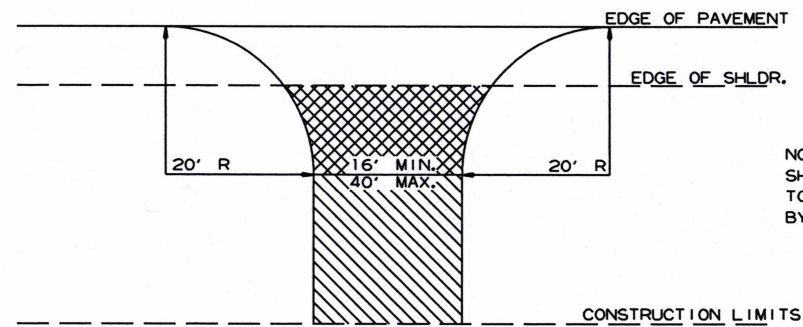
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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.

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

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 11 | 105 |

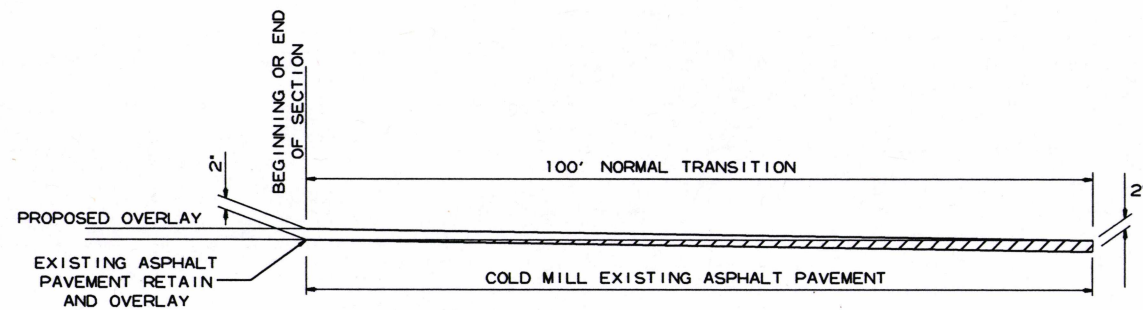
2 SPECIAL DETAILS



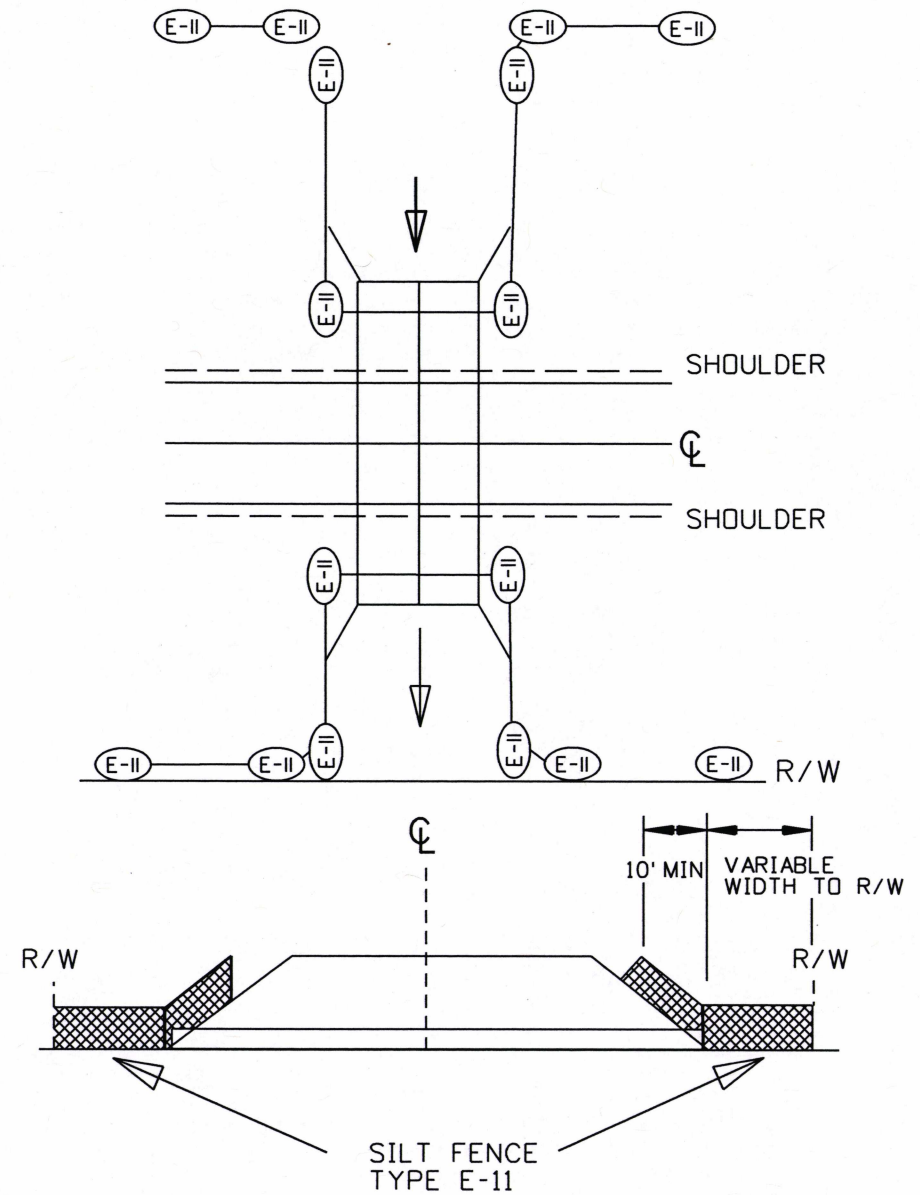
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

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

DETAIL FOR DRIVEWAY TURNOUTS
(COLLECTORS)



DETAIL FOR TRANSITIONS



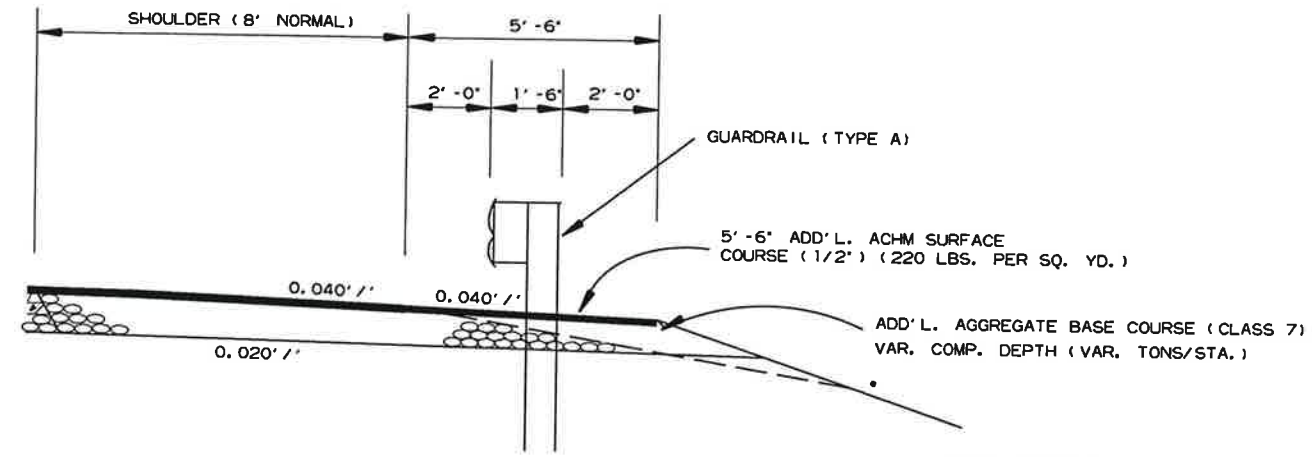
DETAIL OF SILT FENCE
AT R.C. BOX

2/14/2020

R080529.DGN

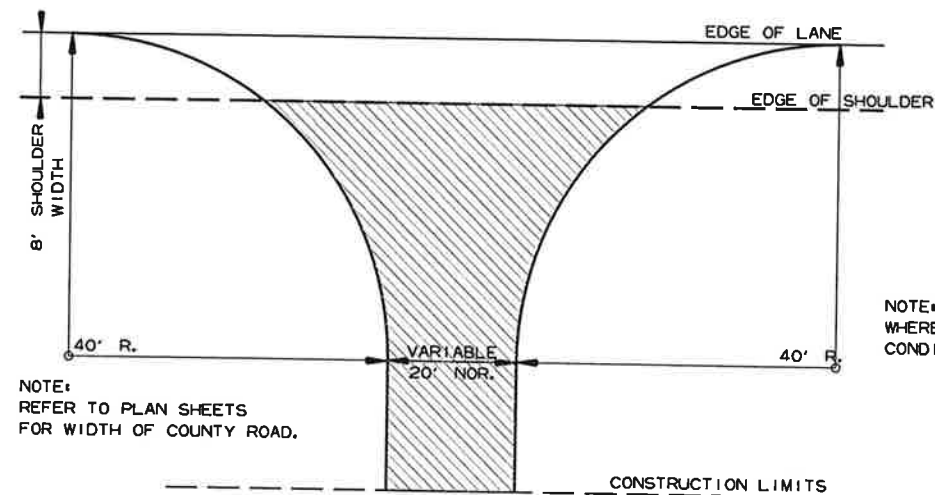
| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|------------|--------------|------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 12 | 105 |

2 SPECIAL DETAILS



WIDENING FOR GUARDRAIL

NOTE: REFER TO STD. DWG. GR-9 AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.



DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION

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

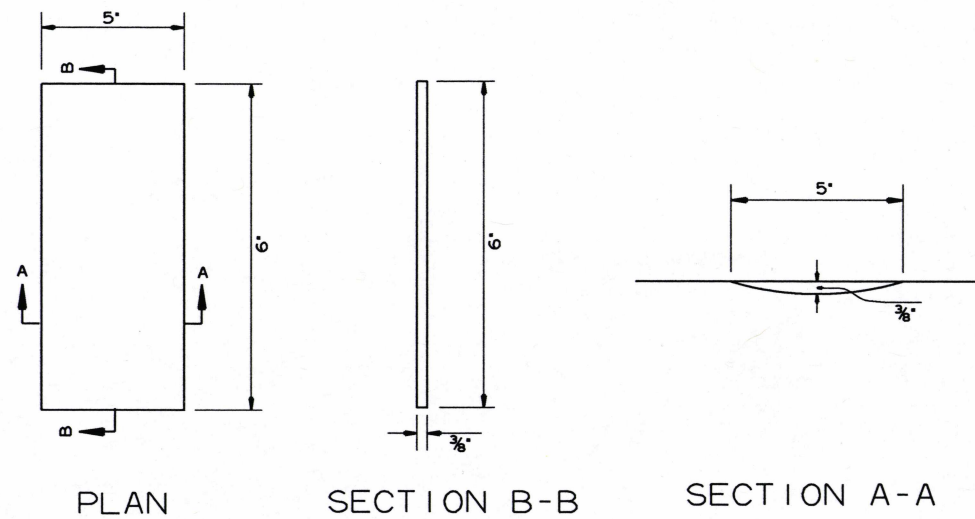
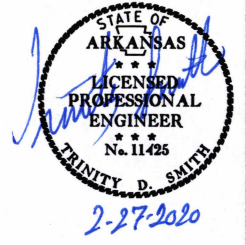
ACHM SURFACE COURSE (1/2') (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7' COMP. DEPTH

2/14/2020

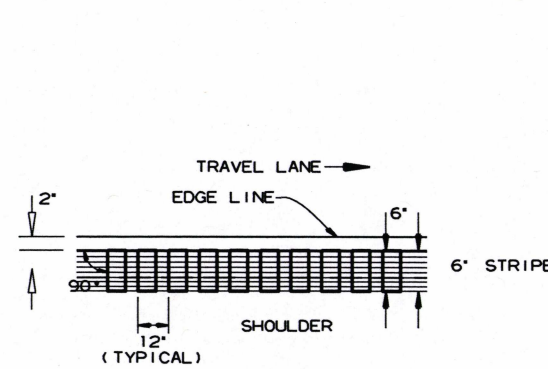
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 13 | 105 |

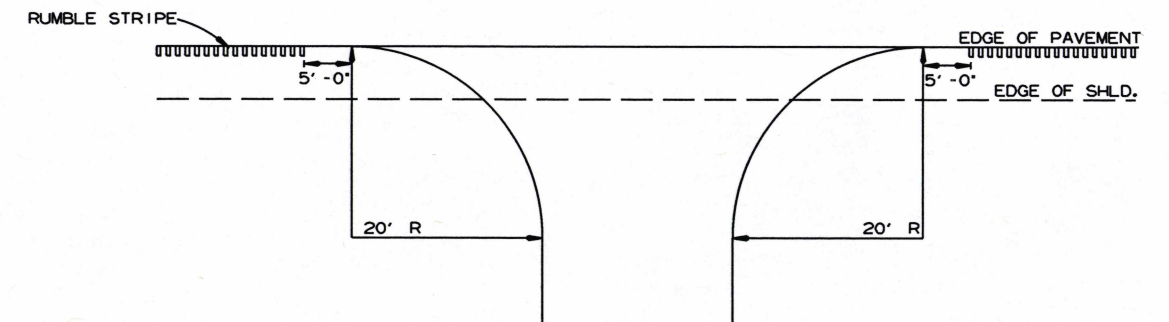
② SPECIAL DETAILS



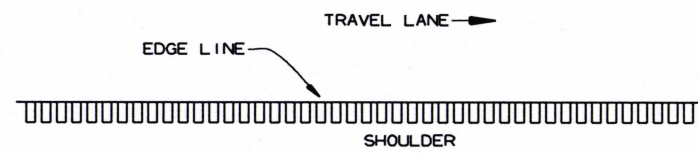
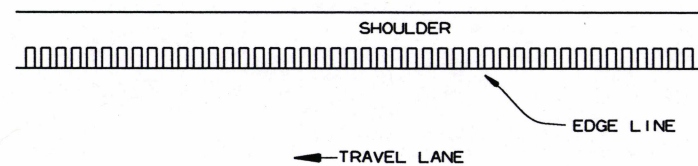
DETAILS OF RUMBLE STRIPE



LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



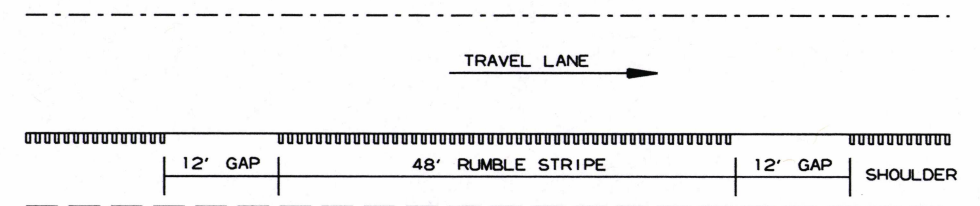
DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS



PLAN VIEW

GENERAL NOTES

1. RUMBLE STRIPES SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, INTERSECTING STREETS OR ROADWAYS, RESIDENTIAL OR COMMERCIAL DRIVEWAYS OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
2. RUMBLE STRIPES SHALL NOT BE INSTALLED ON A PAVED SHOULDER THAT IS USED AS A DECELERATION LANE FOR THE LENGTH DEEMED APPROPRIATE BY THE ENGINEER.
3. RUMBLE STRIPES SHALL BE MEASURED BY THE LINEAR FOOT LONGITUDINALLY ALONG THE SHOULDER. PAYMENT SHALL ONLY INCLUDE THAT PORTION OF THE SHOULDER ON WHICH RUMBLE STRIPES HAVE BEEN CONSTRUCTED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR GAPS, DRIVEWAYS, TURNOUTS, OR OTHER PUBLIC ROAD INTERSECTIONS WHERE RUMBLE STRIPES HAVE NOT BEEN CONSTRUCTED.
4. THE 3/8" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 6' LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.



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

DETAIL FOR GAP PATTERN RUMBLE STRIPE

2/14/2020

R080529.DGN

MID-SECTION

Table with columns for R.C. BOX SECTION, 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, CLASS 'S' CONCRETE, and REINFORCING STEEL (GR. 60).

Table with columns for CLASS 'S' CONCRETE (CU. YDS.) and REINFORCING STEEL (GR. 60) (LBS.).

INLET SLOPE SECTION(S)

Table with columns for R.C. BOX SECTION, 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, CLASS 'S' CONCRETE, and REINFORCING STEEL (GR. 60).

Table with columns for CLASS 'S' CONCRETE (CU. YDS.) and REINFORCING STEEL (GR. 60) (LBS.).

Table with columns for Design Fill Depth and Range of Actual Fill Depth.

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

Table with columns for SKEW (DEGREE), DESIGN FILL DEPTH (FT.), CLEAR SPAN (FT.), CLEAR HEIGHT (FT.), SECTION LENGTH, TOP SLAB THK., HDWL DEPTH, BOTTOM SLAB THK., SIDE WALL THK., INTERIOR WALL THK., OVER ALL WIDTH, OVER ALL HEIGHT, TOP SLAB REINFORCING STEEL, 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, CLASS 'S' CONCRETE, and REINFORCING STEEL (GR. 60).

Table with columns for CLASS 'S' CONCRETE (CU. YDS.) and REINFORCING STEEL (GR. 60) (LBS.).

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

INLET WINGWALL TABLE

Large table with columns for 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, and REINFORCING STEEL.

MID-SECTION BAR LAP TABLE

Table with columns for # of Long Laps Req'd and SL = Section Length.

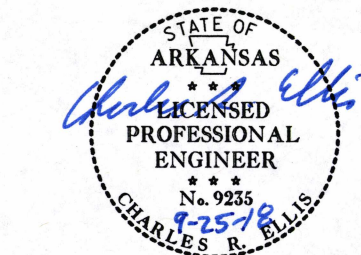
Table with columns for Min. Bar Lap Length and bar sizes #4 through #8.

Table with columns for Bar Pin Dia. Table and bar sizes #4 through #8.

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.

Table with columns for DATE REVISED, DATE FILMED, DATE REVISED, DATE FILMED, FED. ROAD DIST. NO., STATE, FED. AID PROJ. NO., SHEET NO., and TOTAL SHEETS.



TABULAR DATA BY: JSO DATE: 08/22/2018 CHECKED BY: DKS DATE: 9/23/2018

SHEET 1 OF 2 DETAILS OF R.C. BOX CULVERT TRIPLE BARREL BOX CULVERT Sta. 104+70 SPECIAL DETAILS

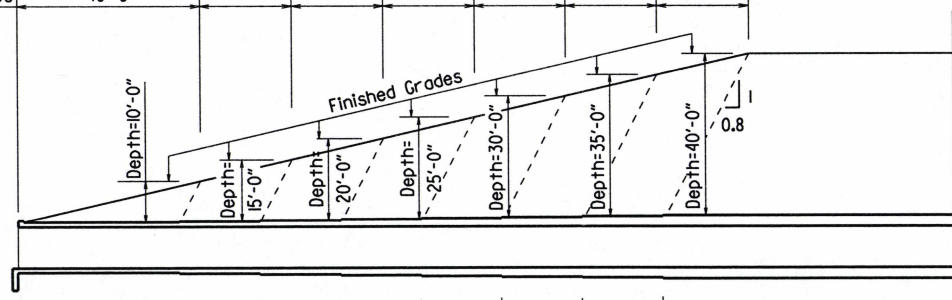


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------------|--------------|
| | | | | 6 | ARK. | | 18 | 105 |
| | | | | JOB NO. | 080529 | | SPECIAL DETAILS | |

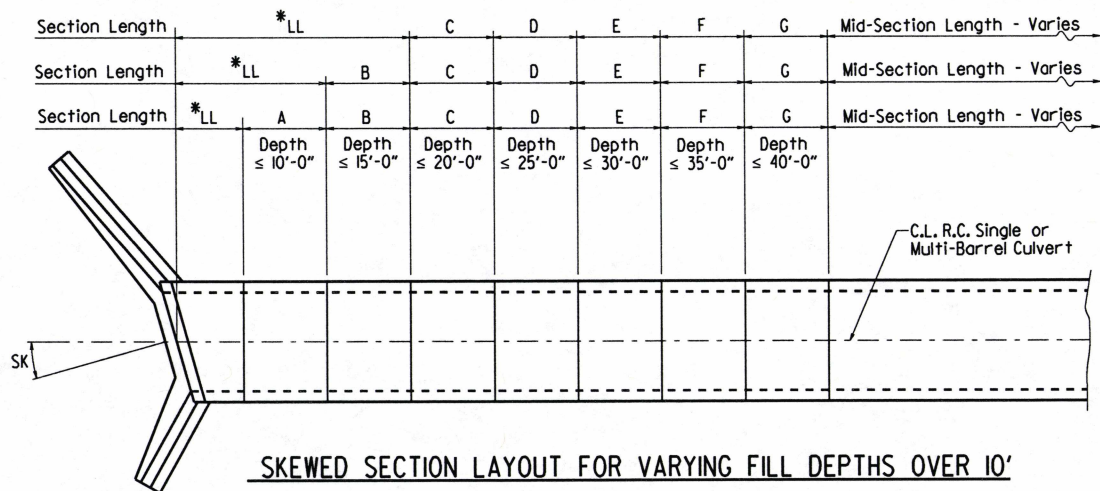
| | | | | | | | |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| 2:1 Slope | 20'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" |
| 3:1 Slope | 30'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" | 15'-0" |
| 4:1 Slope | 40'-0" | 20'-0" | 20'-0" | 20'-0" | 20'-0"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

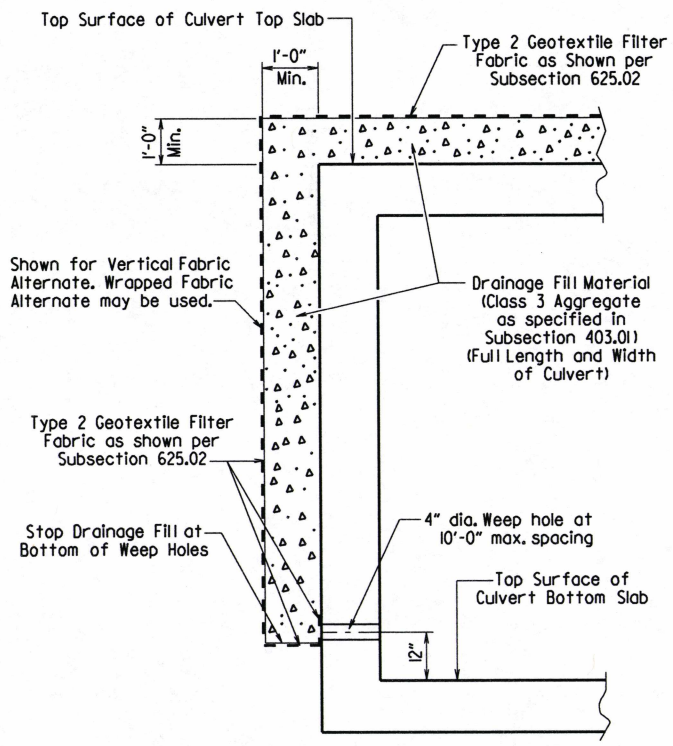


| | | | | | | | | |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|-----------------------------|
| Slope Section Length @ 2:1 Slope | A=12'-0" | B=6'-0" | C=6'-0" | D=6'-0" | E=6'-0" | F=6'-0" | G=6'-0" | Mid-Section Length - Varies |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

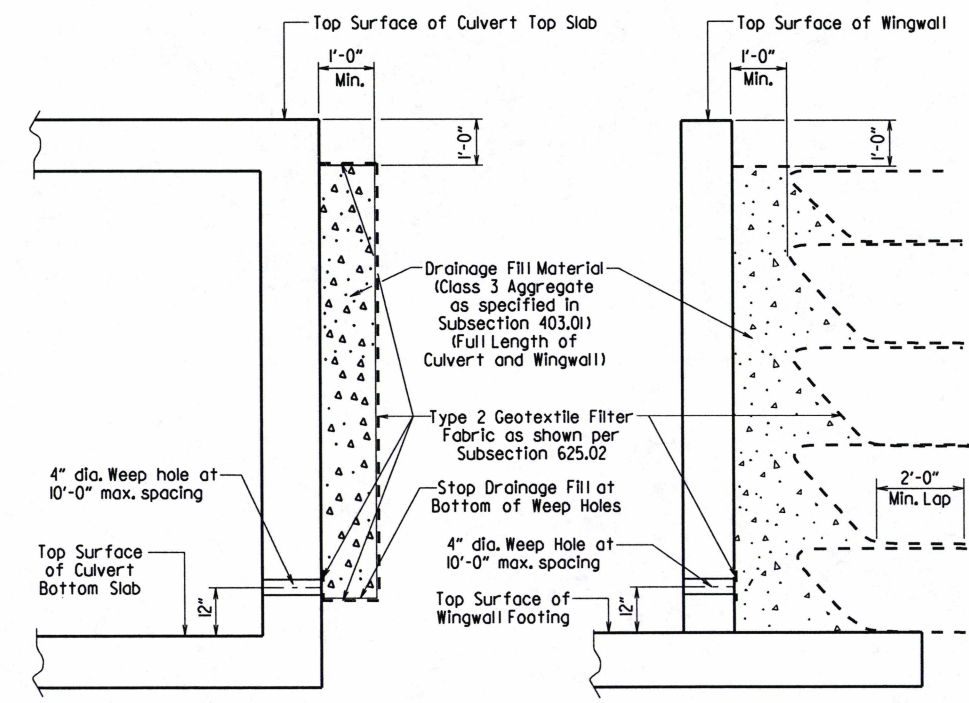


LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'
Lengths for Non-Skewed Boxes

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.



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

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

WINGWALL & CULVERT DRAINAGE DETAIL

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 1/4" 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 normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. 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 trowel 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.

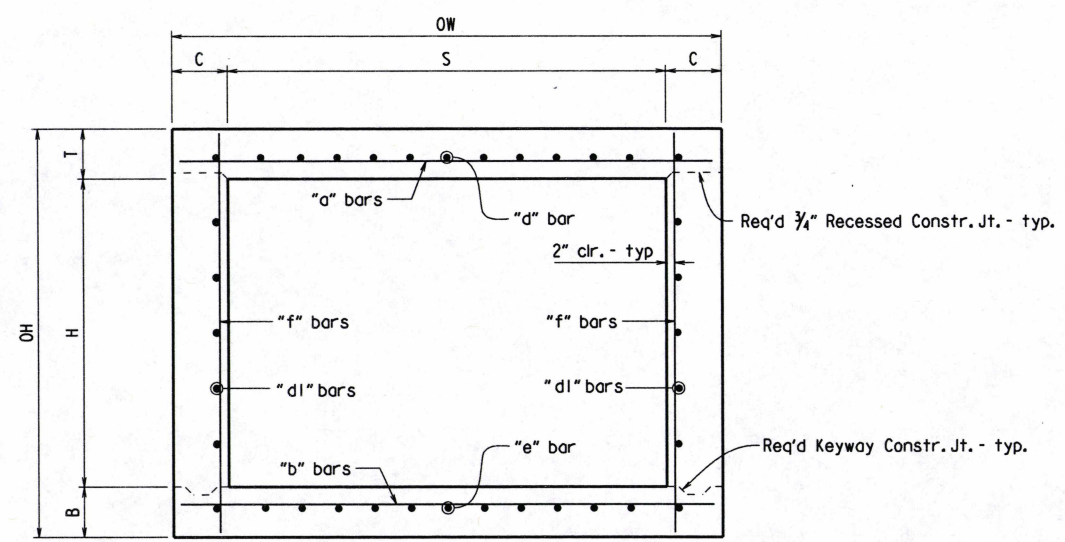
V. 1.14 080529_culvert

| 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. | | 080529 | 19 | 105 |

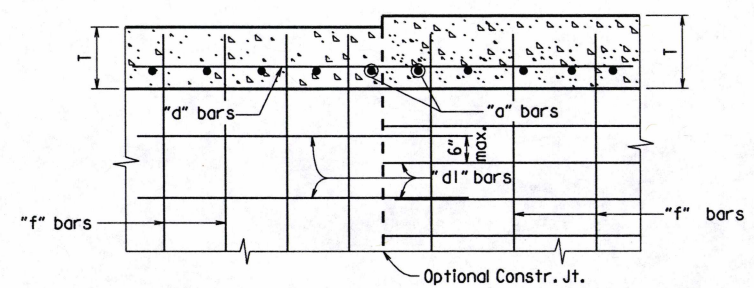
1 SPECIAL DETAILS



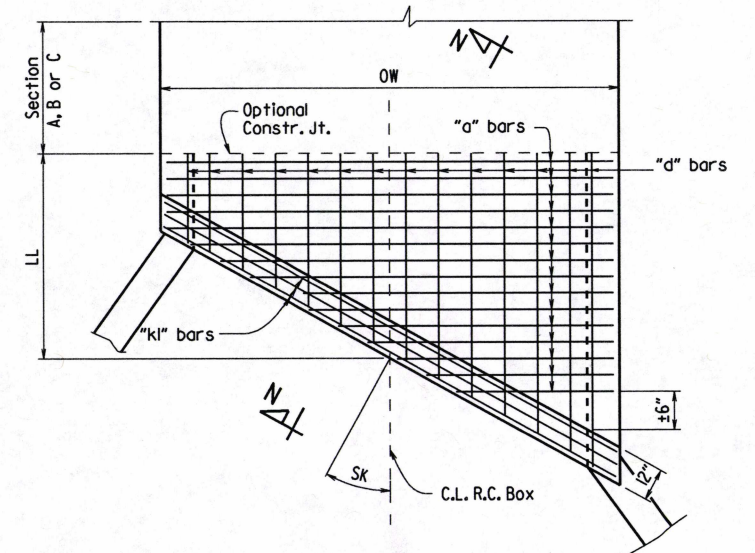
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



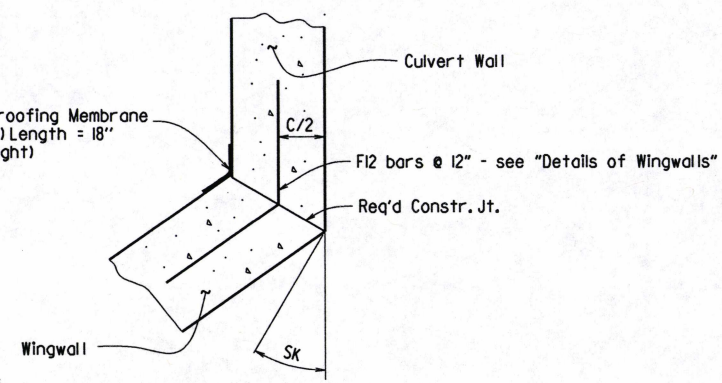
TYPICAL SECTION M-M



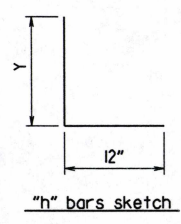
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



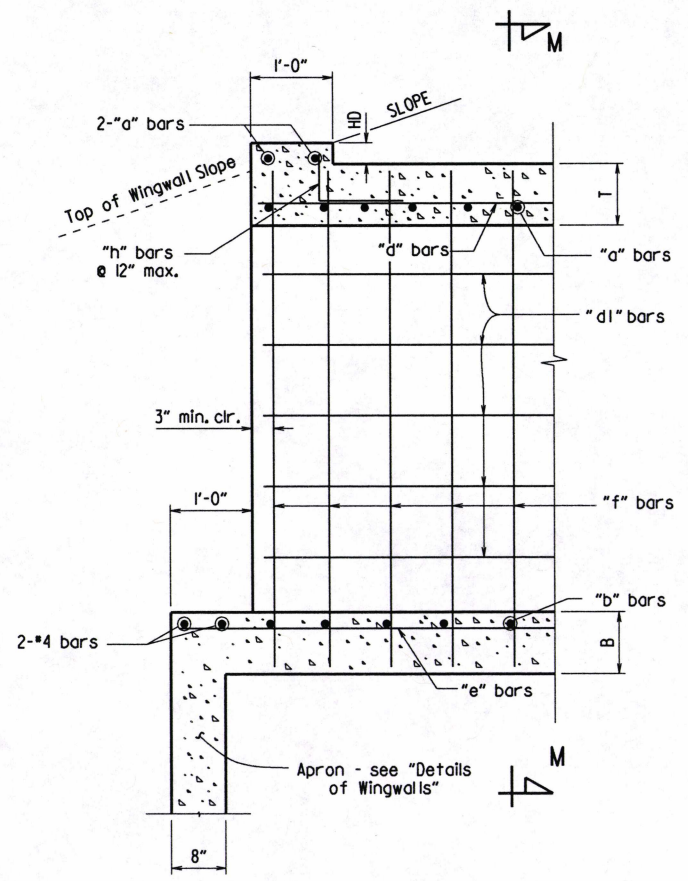
TOP SLAB REINFORCEMENT



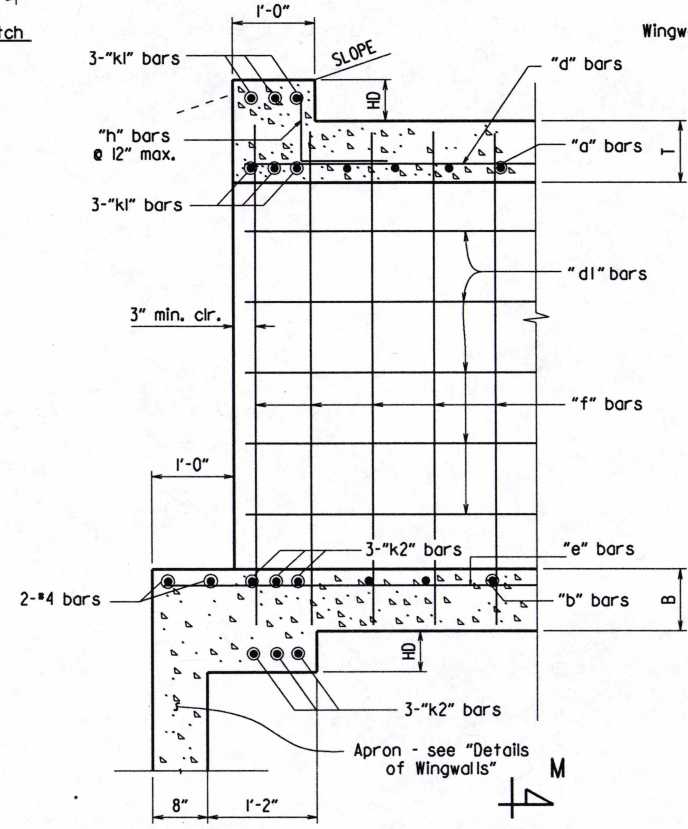
WINGWALL ATTACHMENT
See "Details of Wingwalls" for additional information and wingwall details.



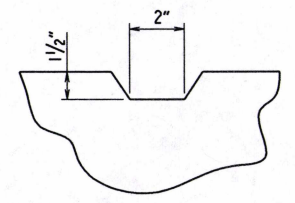
"h" bars sketch



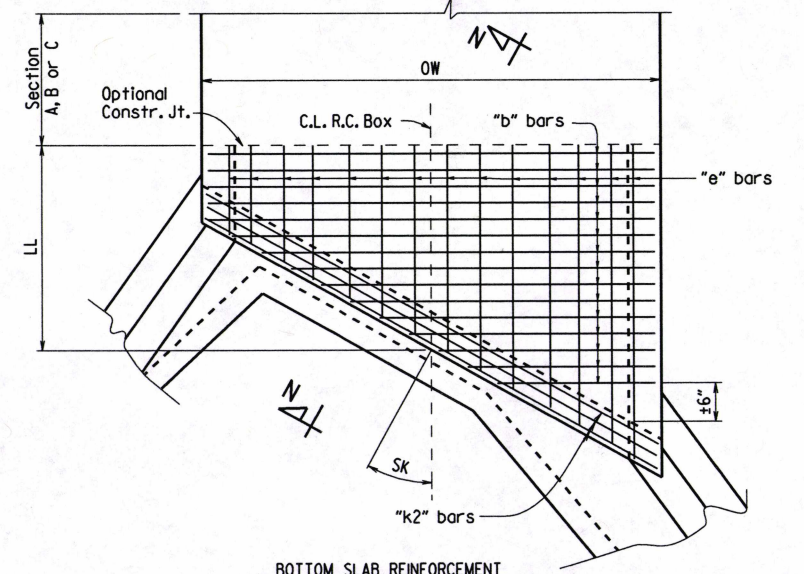
PART LONGITUDINAL SECTION
(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N
(Skewed Ends)



TYPICAL KEYWAY DETAIL
(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

SKewed END SECTION DETAILS

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

b080529_culvert-1

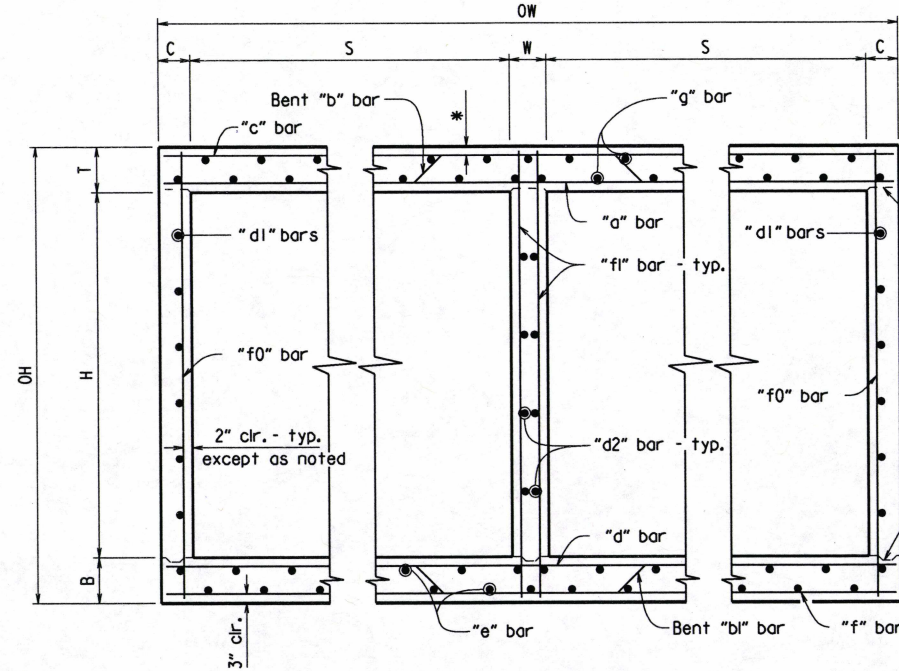


*2" clr. for fill depth (D) greater than 2 ft.
 2 1/2" clr. for fill depth (D) equal to or less than 2 ft.

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

| DATE REVISED | DATE FILMED | REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|---------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | 20 | 105 | |

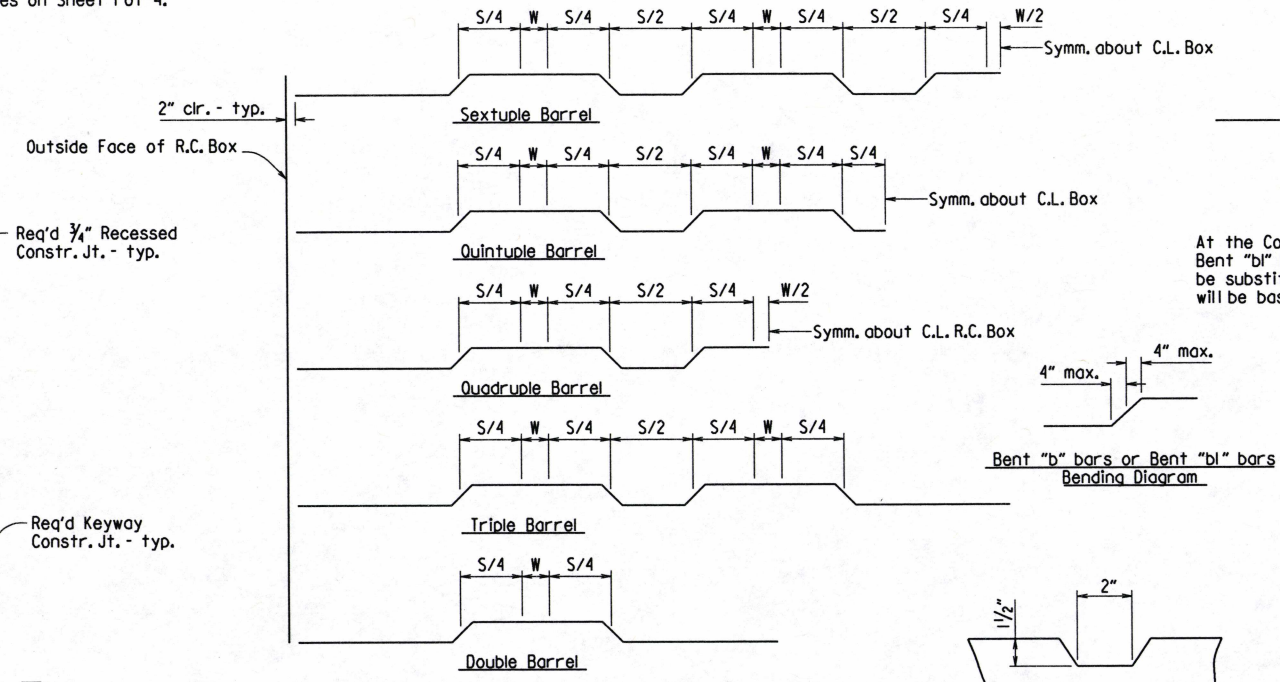
SPECIAL DETAILS



TYPICAL SECTION M-M

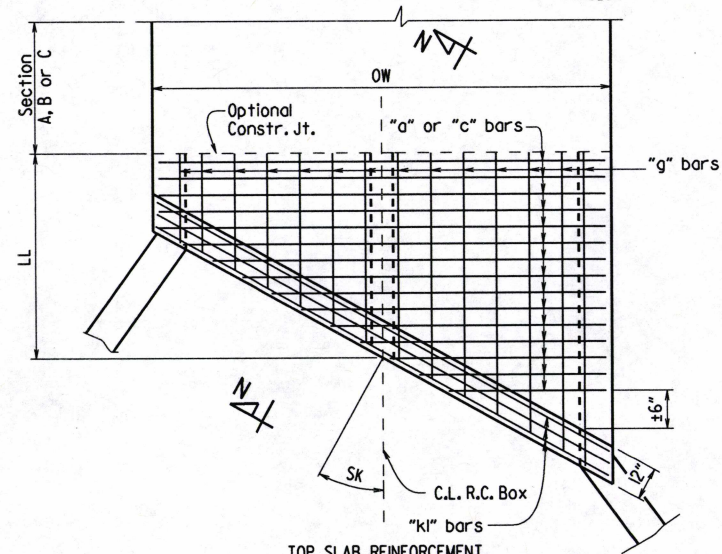
Top Slab
 Straight "c" bars shall alternate with Bent "b" bars in top.
 Straight "a" bars shall alternate with Bent "b" bars in bottom.

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

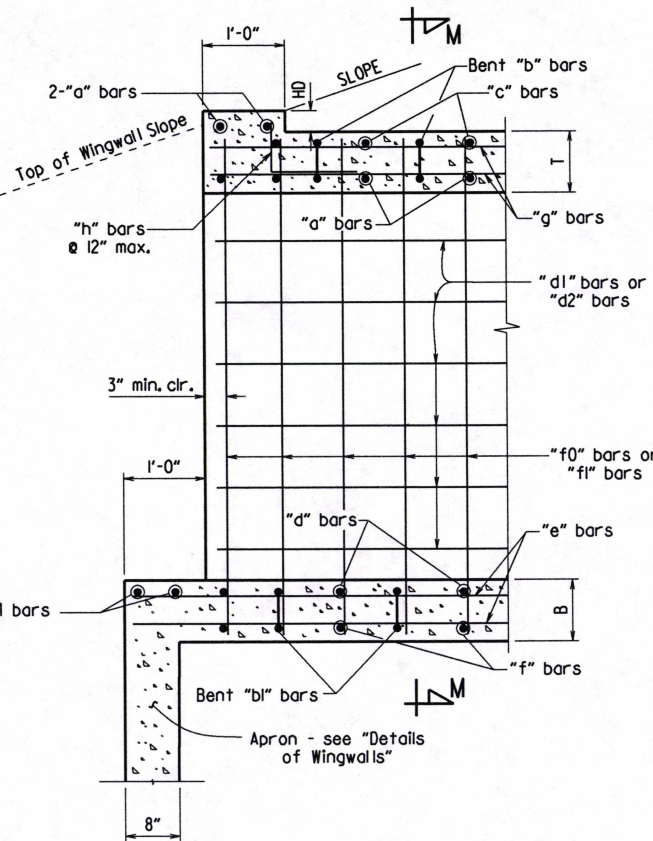


Bent "b" bars or Bent "bl" bars sketch

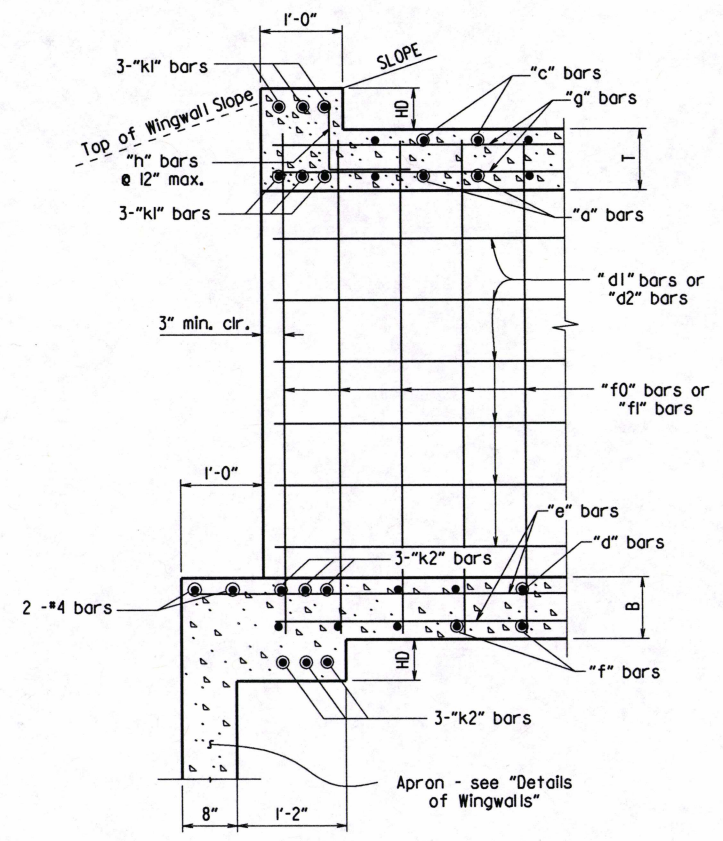
TYPICAL KEYWAY DETAIL
 (All Construction Joints)



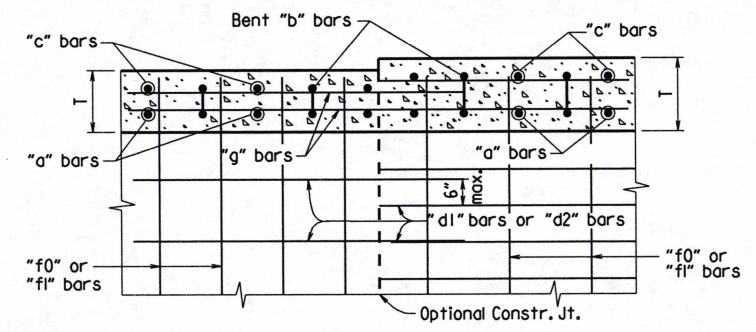
TOP SLAB REINFORCEMENT
 Straight "c" bars in top.
 Straight "a" bars in bottom.



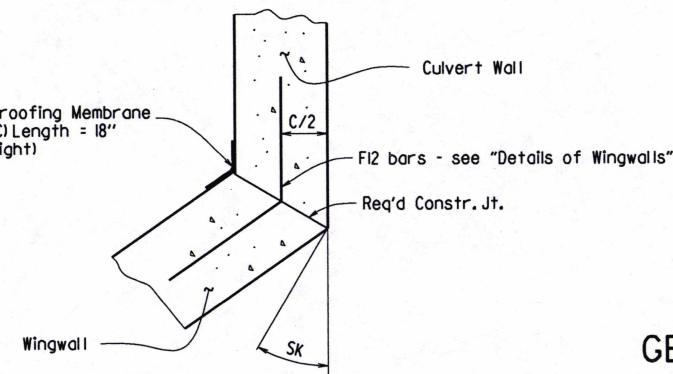
PART LONGITUDINAL SECTION
 (Non-Skewed Ends)



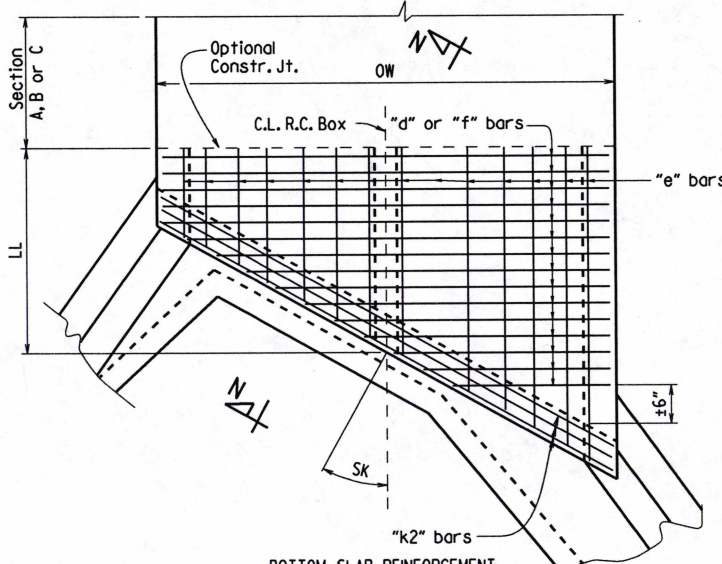
PART LONGITUDINAL SECTION N-N
 (Skewed Ends)



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



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



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

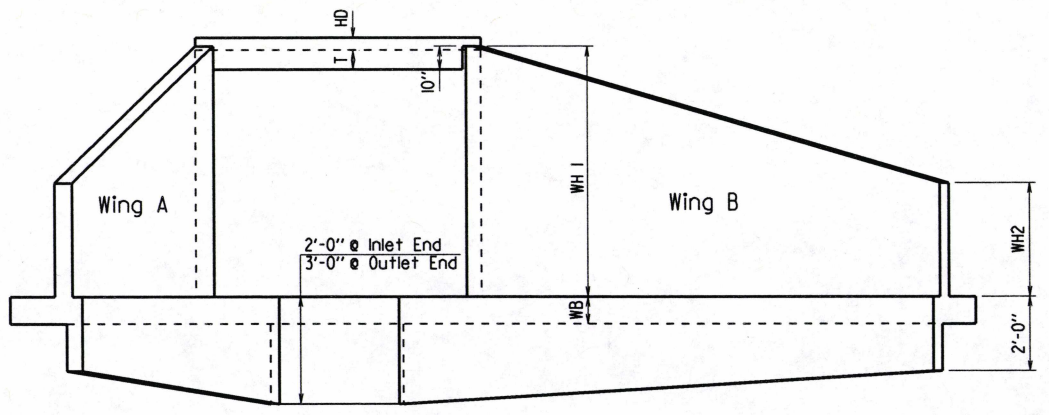
SKewed END SECTION DETAILS

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

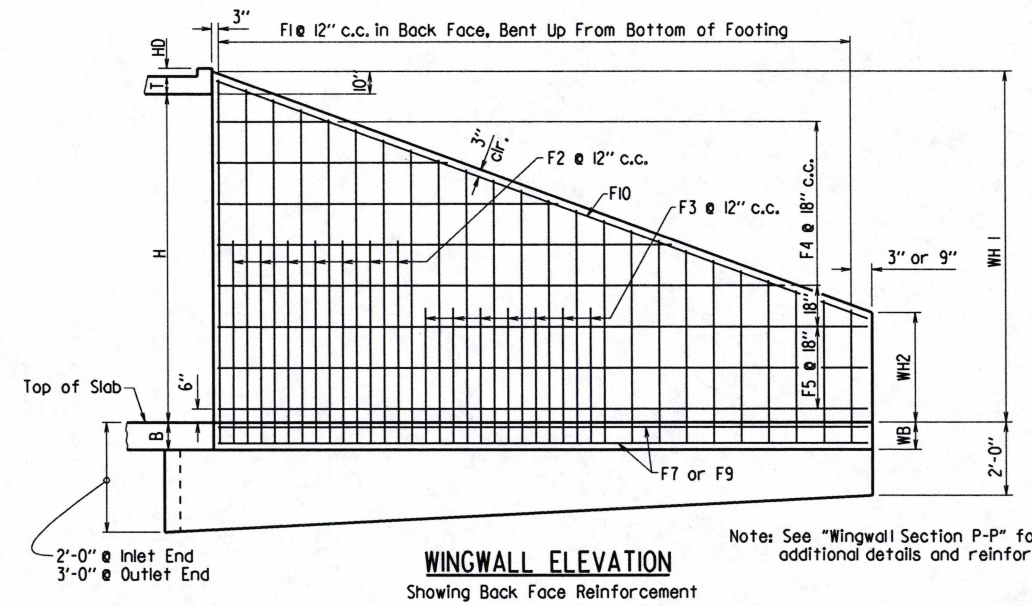
B080529_culvert

| 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. | 080529 | 21 | 105 | |

1 SPECIAL DETAILS

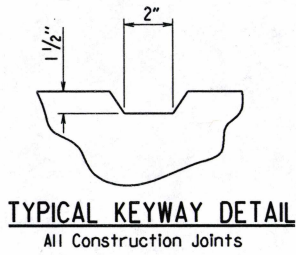


END ELEVATION
Flared Wingwalls Shown

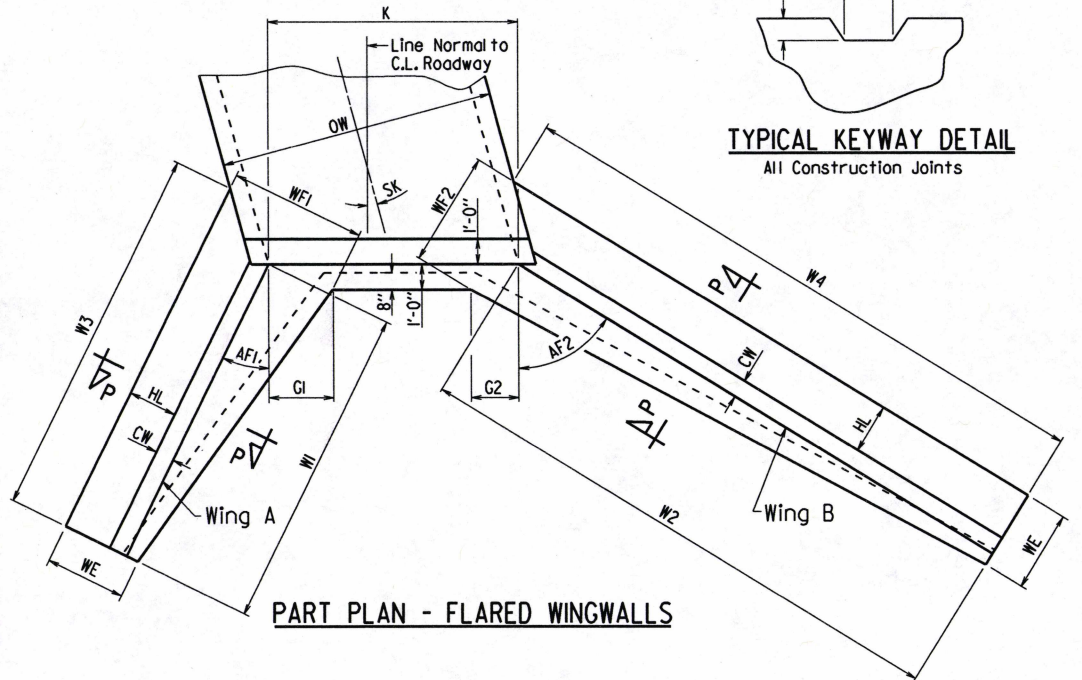


WINGWALL ELEVATION
Showing Back Face Reinforcement

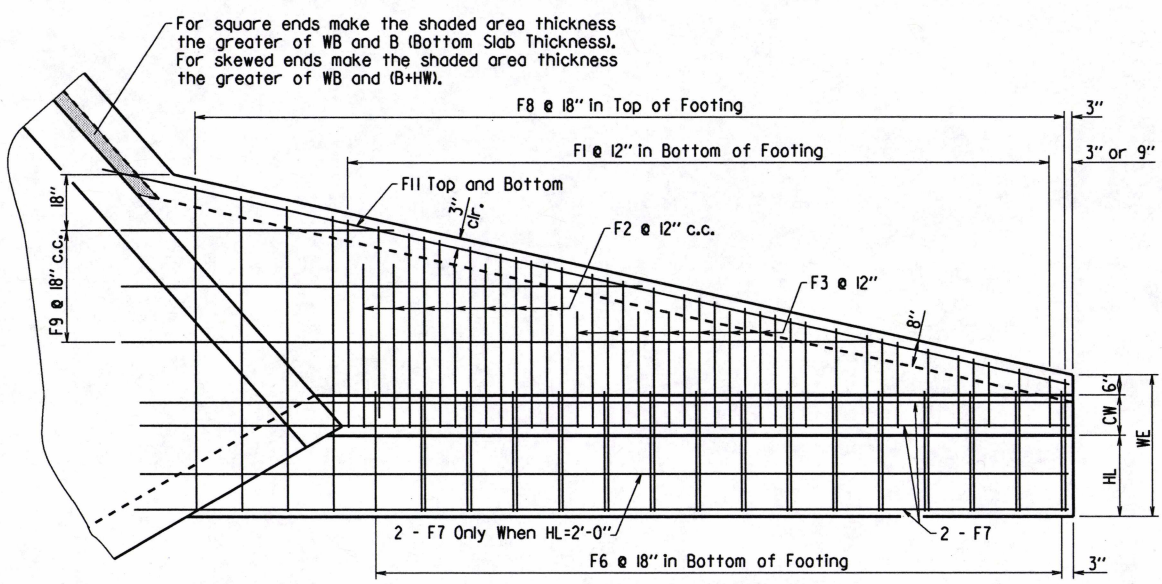
Note: See "Wingwall Section P-P" for additional details and reinforcing.



TYPICAL KEYWAY DETAIL
All Construction Joints

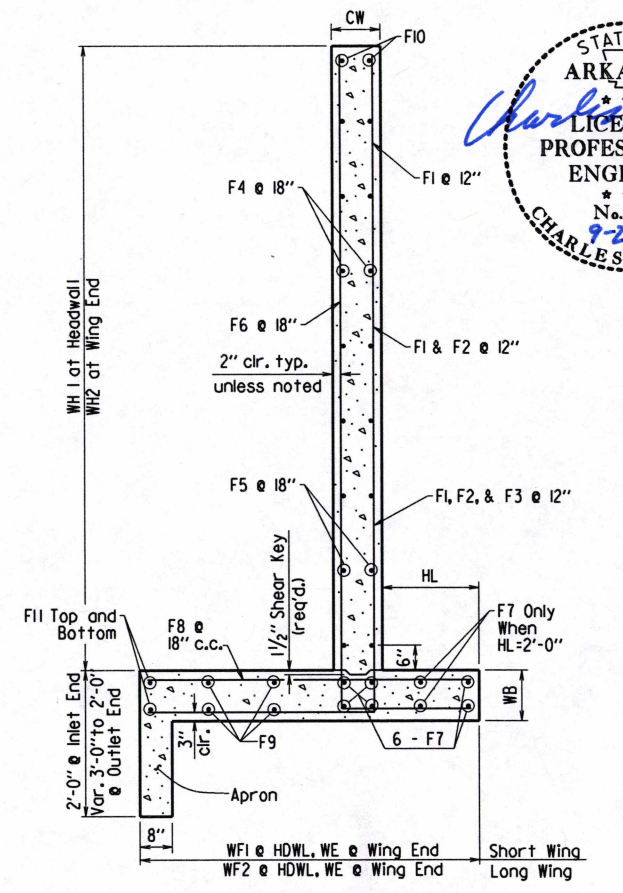


PART PLAN - FLARED WINGWALLS



PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HW).

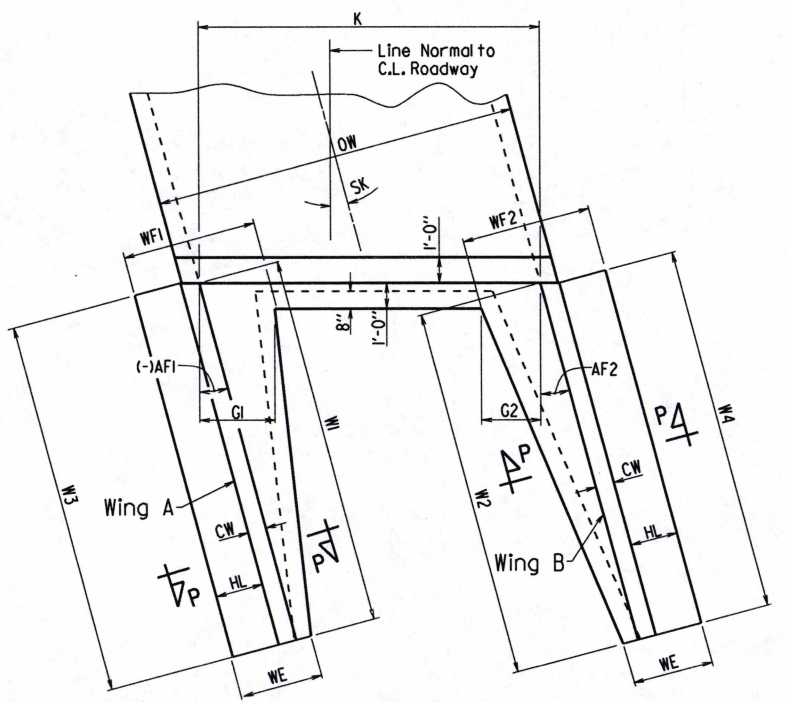


WINGWALL SECTION P-P

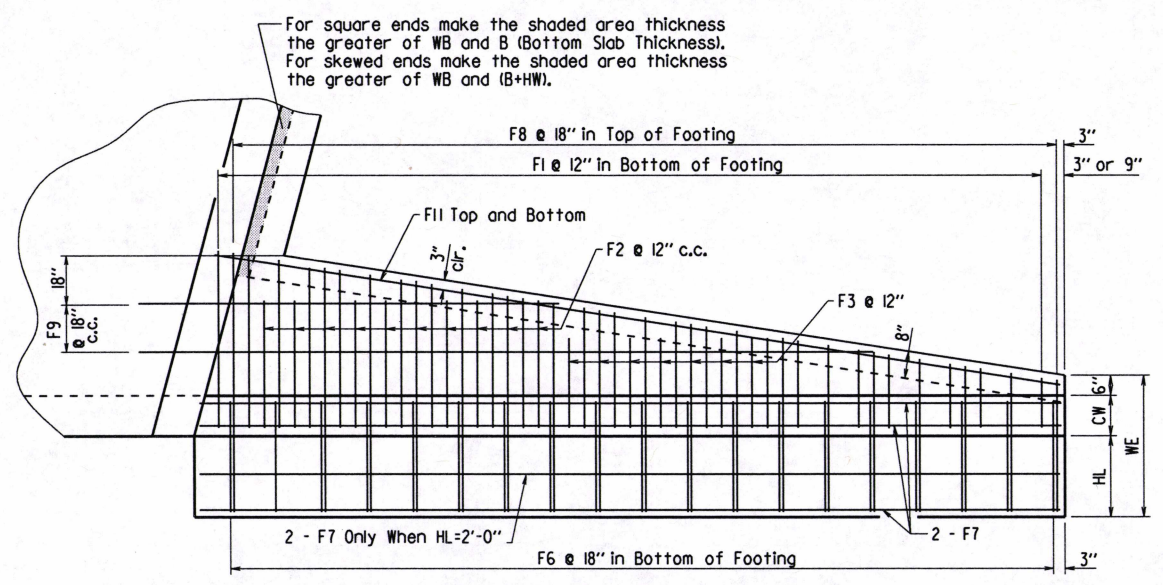
Short Wing = (AF1+SK)
Long Wing = (AF2-SK)

F1, F2, F3, & F6 BARS *F12 BAR

*F12 is a straight bar for parallel wingwalls

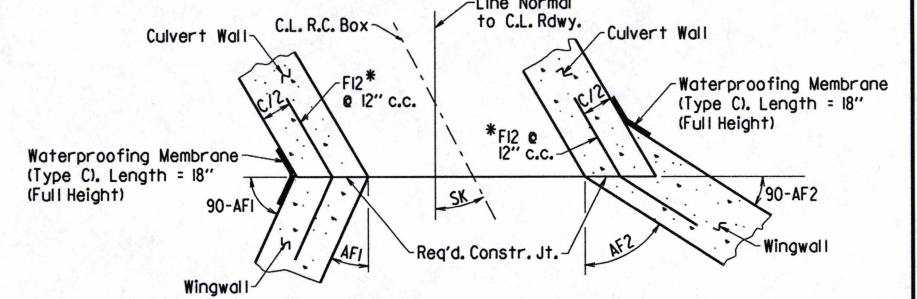


PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

For square ends make the shaded area thickness the greater of WB and B (Bottom Slab Thickness). For skewed ends make the shaded area thickness the greater of WB and (B+HW).



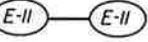


CONSTRUCTION JOINTS
Flared Wingwalls Shown

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

b080529_culvert

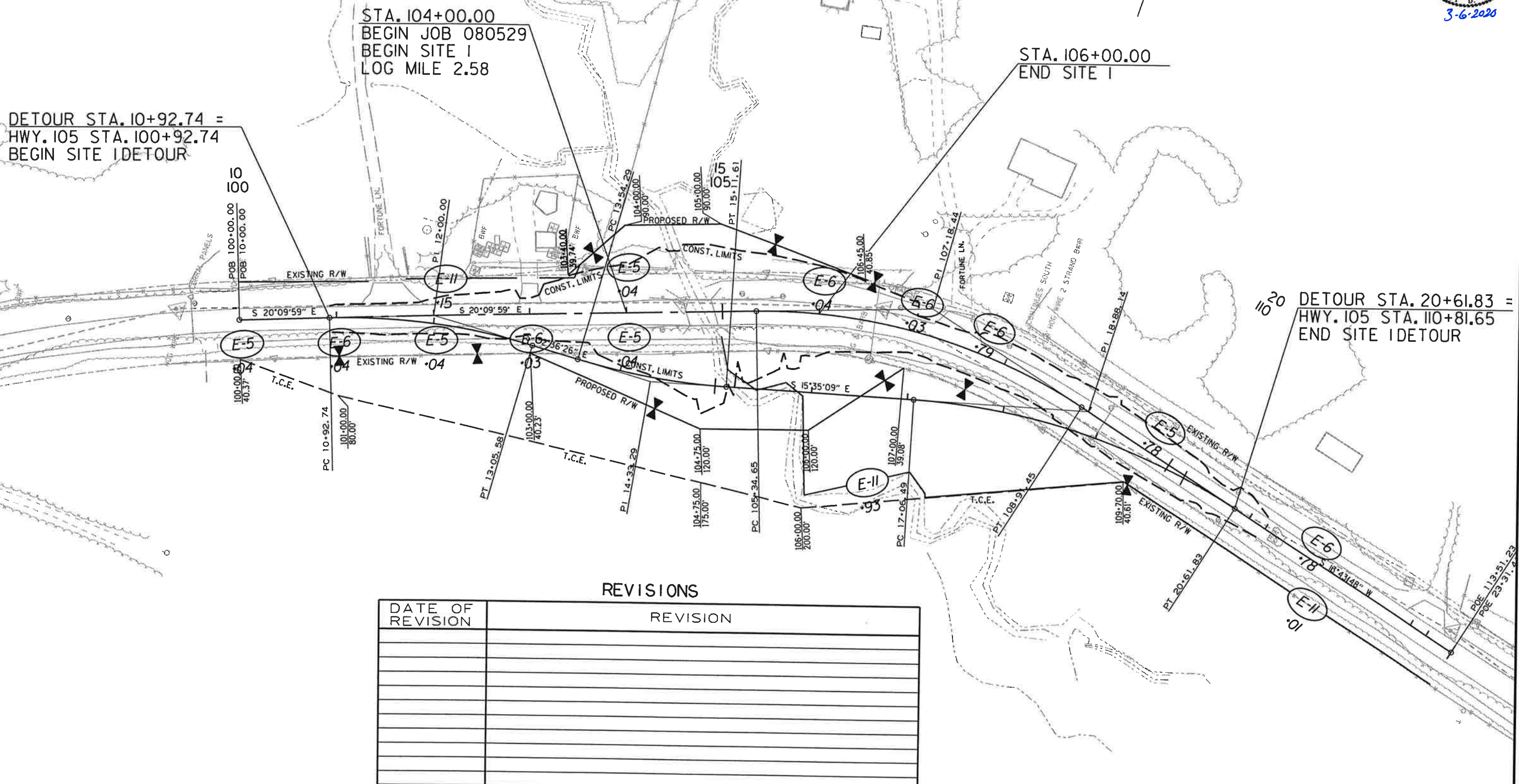
LEGEND

-  SAND BAG DITCH CHECKS
-  ROCK DITCH CHECKS
-  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.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 22 | 105 |

② TEMPORARY EROSION CONTROL DETAILS



CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

LEGEND

-  SAND BAG DITCH CHECKS
-  ROCK DITCH CHECKS
-   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.

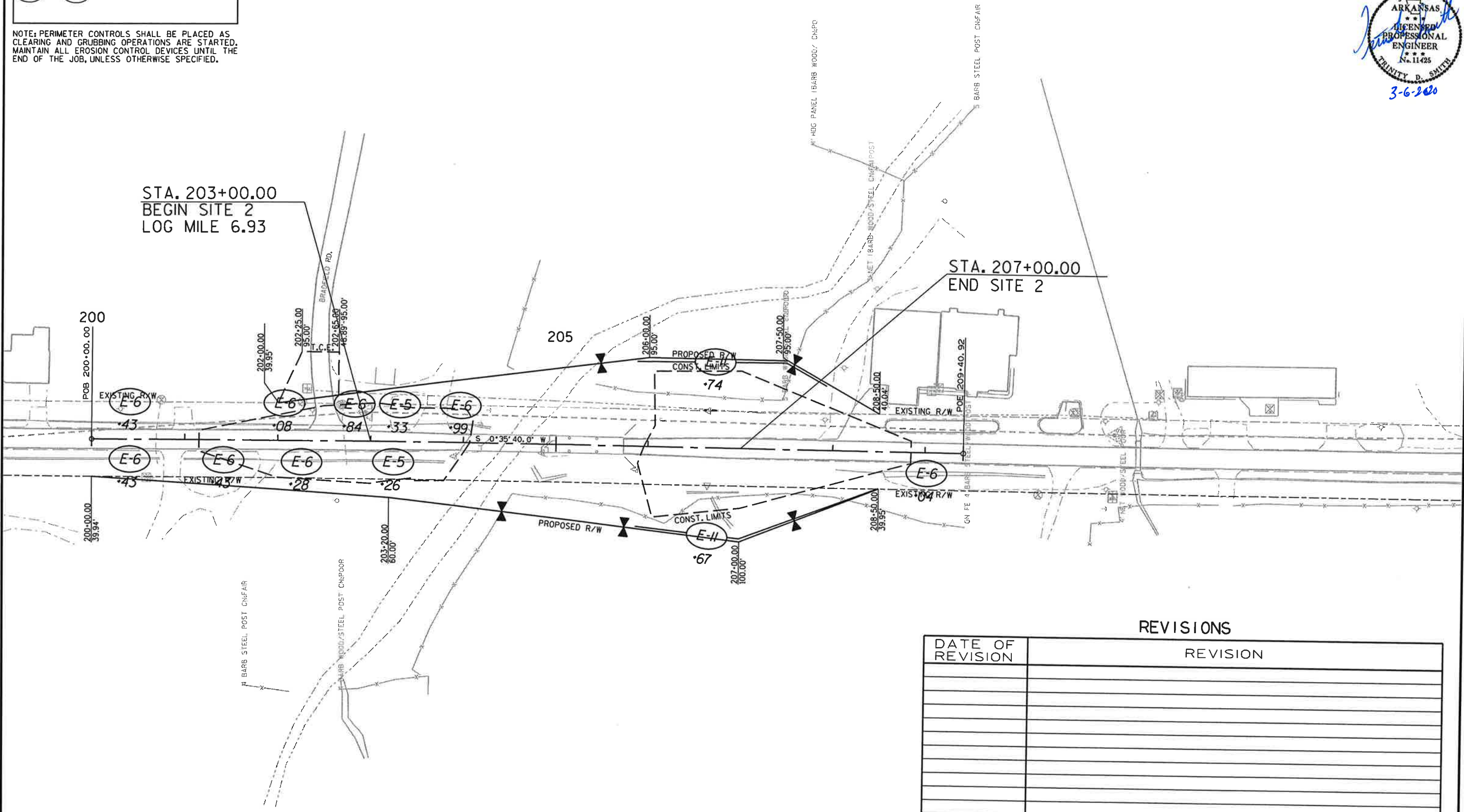
| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | | |
| | | | | | | | | |

② TEMPORARY EROSION CONTROL DETAILS



STA. 203+00.00
BEGIN SITE 2
LOG MILE 6.93

STA. 207+00.00
END SITE 2



REVISIONS

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

CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

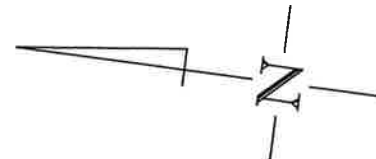
LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS

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.

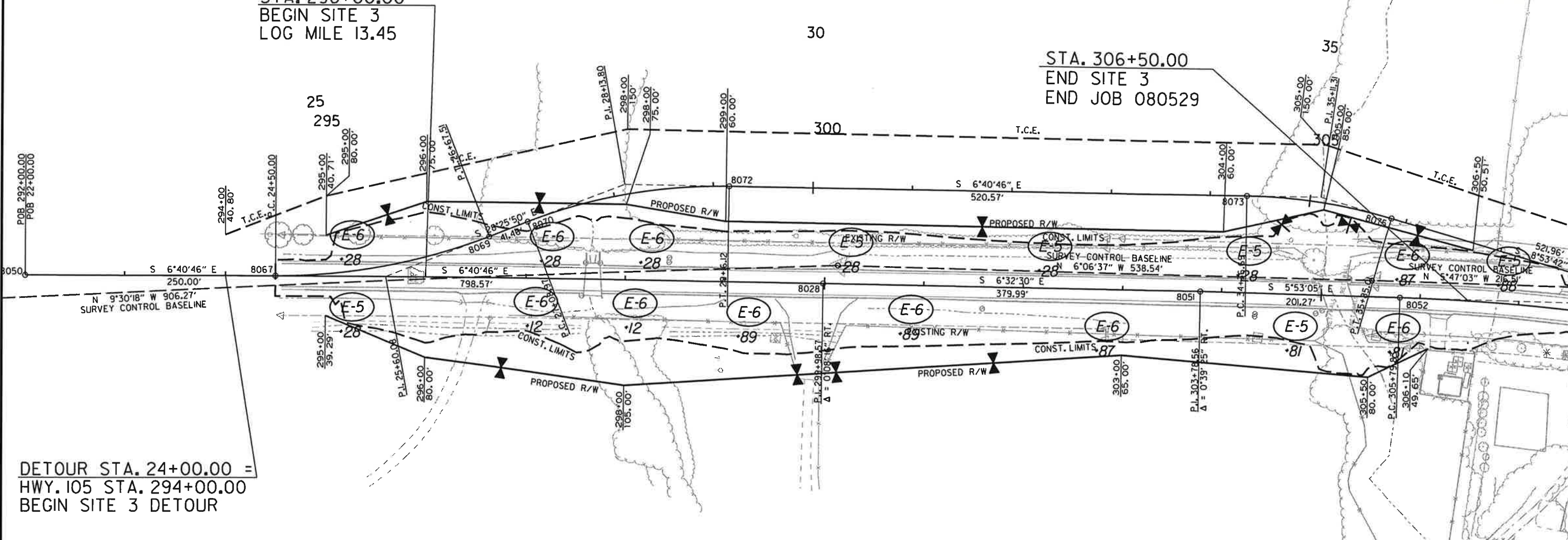
| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 24 | 105 |
| | | | | JOB NO. | | 080529 | | |

② TEMPORARY EROSION CONTROL DETAILS



STA. 296+00.00
BEGIN SITE 3
LOG MILE 13.45

STA. 306+50.00
END SITE 3
END JOB 080529



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR

REVISIONS

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

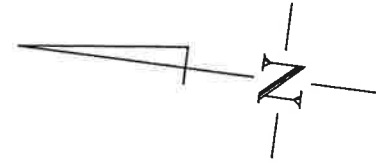
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

12/19/2019
R080529.DGN

LEGEND

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS

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.

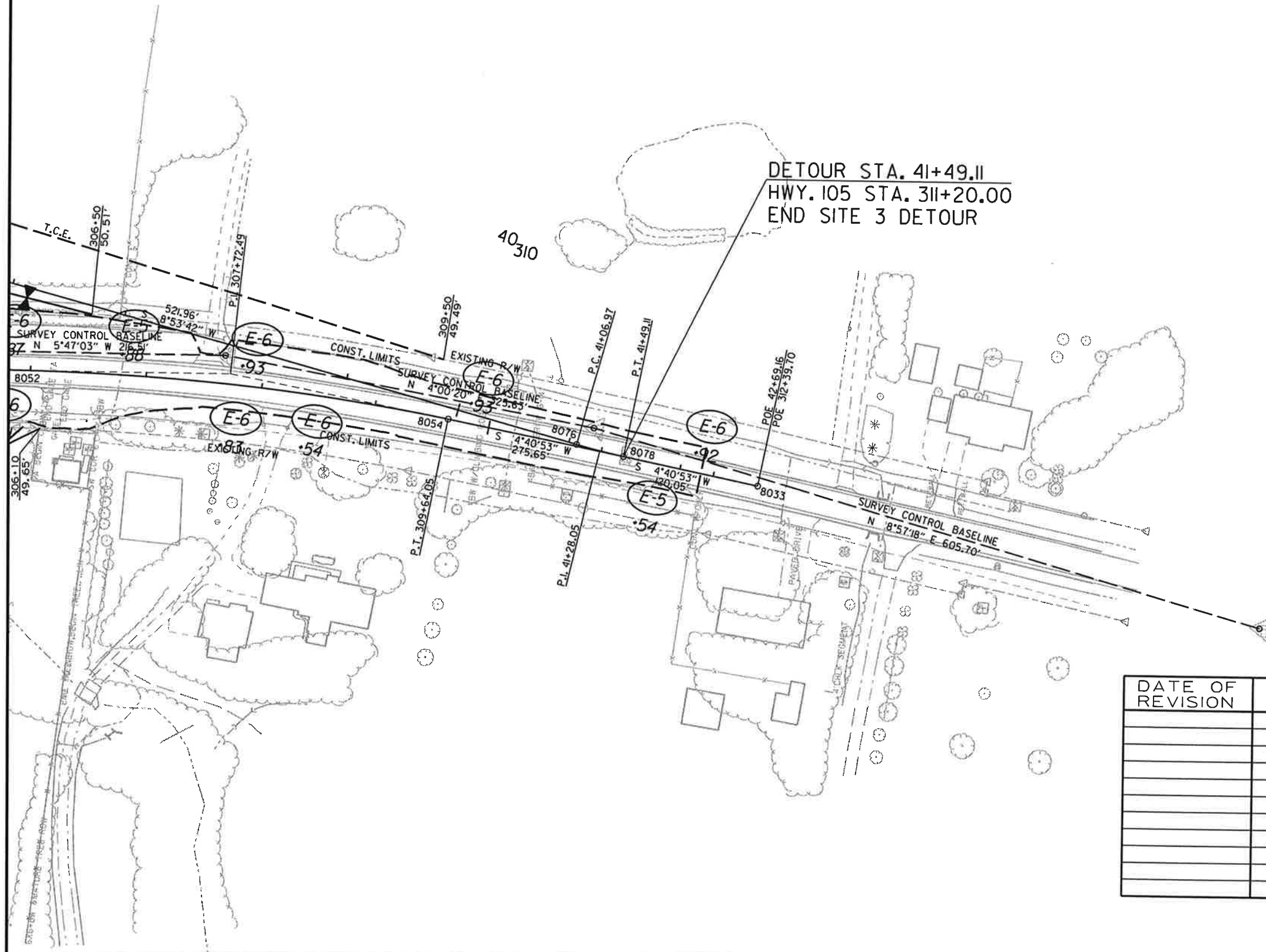


| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 25 | 105 |

② TEMPORARY EROSION CONTROL DETAILS



3-6-2020



DETOUR STA. 41+49.11
 HWY. 105 STA. 311+20.00
 END SITE 3 DETOUR

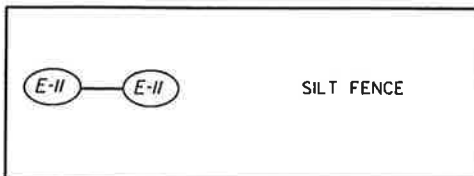
REVISIONS

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

CLEARING AND GRUBBING
 TEMPORARY EROSION CONTROL DETAILS

12/19/2019
 R080529.DGN

LEGEND



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.

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |

JOB NO. 080529 SHEET NO. 26 TOTAL SHEETS 105



STA. 106+00.00
END SITE I

DETOUR STA. 10+92.74 =
HWY. 105 STA. 100+92.74
BEGIN SITE I DETOUR

DETOUR STA. 20+61.83 =
HWY. 105 STA. 110+81.65
END SITE I DETOUR

STA. 104+00.00
BEGIN JOB 080529
BEGIN SITE I
LOG MILE 2.58

REVISIONS

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

SITE I - STAGE I
TEMPORARY EROSION CONTROL DETAILS

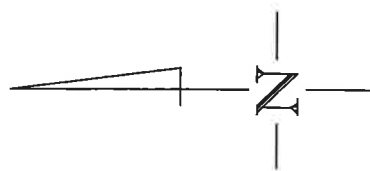
12/19/2019

R080529.DGN

LEGEND

-  SAND BAG DITCH CHECKS
-  ROCK DITCH CHECKS
-   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.



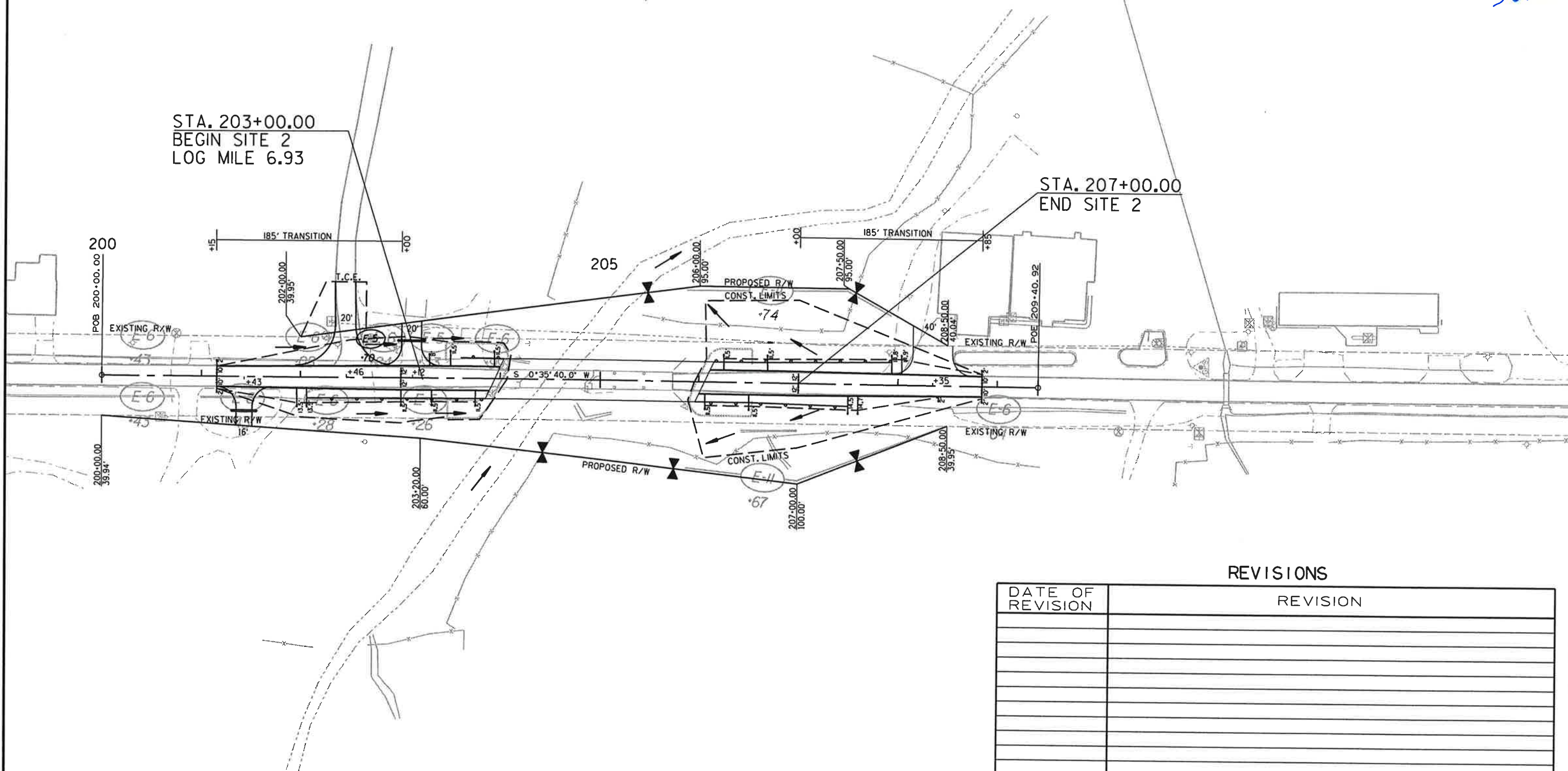
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AD PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|----------------|-------|-------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 27 | 105 |

2 TEMPORARY EROSION CONTROL DETAILS



STA. 203+00.00
BEGIN SITE 2
LOG MILE 6.93

STA. 207+00.00
END SITE 2



REVISIONS

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

SITE 2 - STAGE 1
TEMPORARY EROSION CONTROL DETAILS

12/19/2019
R080529.DGN

LEGEND

SILT FENCE

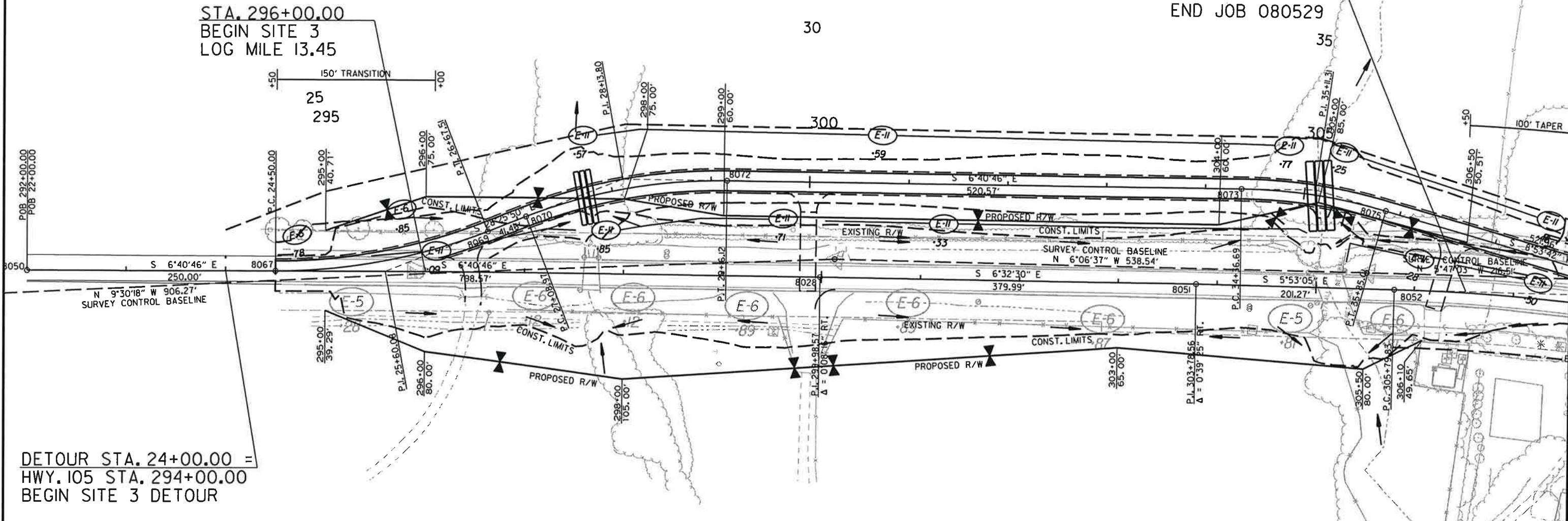
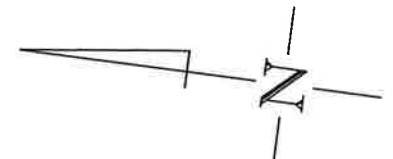
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL THE END OF THE JOB, UNLESS OTHERWISE SPECIFIED.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 28 | 105 |

2 TEMPORARY EROSION CONTROL DETAILS



STA. 306+50.00
END SITE 3
END JOB 080529



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR

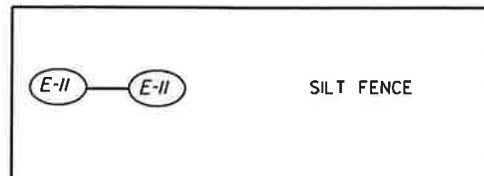
REVISIONS

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

SITE 3 - STAGE I
TEMPORARY EROSION CONTROL DETAILS

12/19/2019
R080529.DGN

LEGEND



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.



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 29 | 105 |

2 TEMPORARY EROSION CONTROL DETAILS



3-6-2020







REVISIONS

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

12/19/2019
R080529.DGN

LEGEND

-  SAND BAG DITCH CHECKS
-  ROCK DITCH CHECKS
-   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.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 30 | 105 |

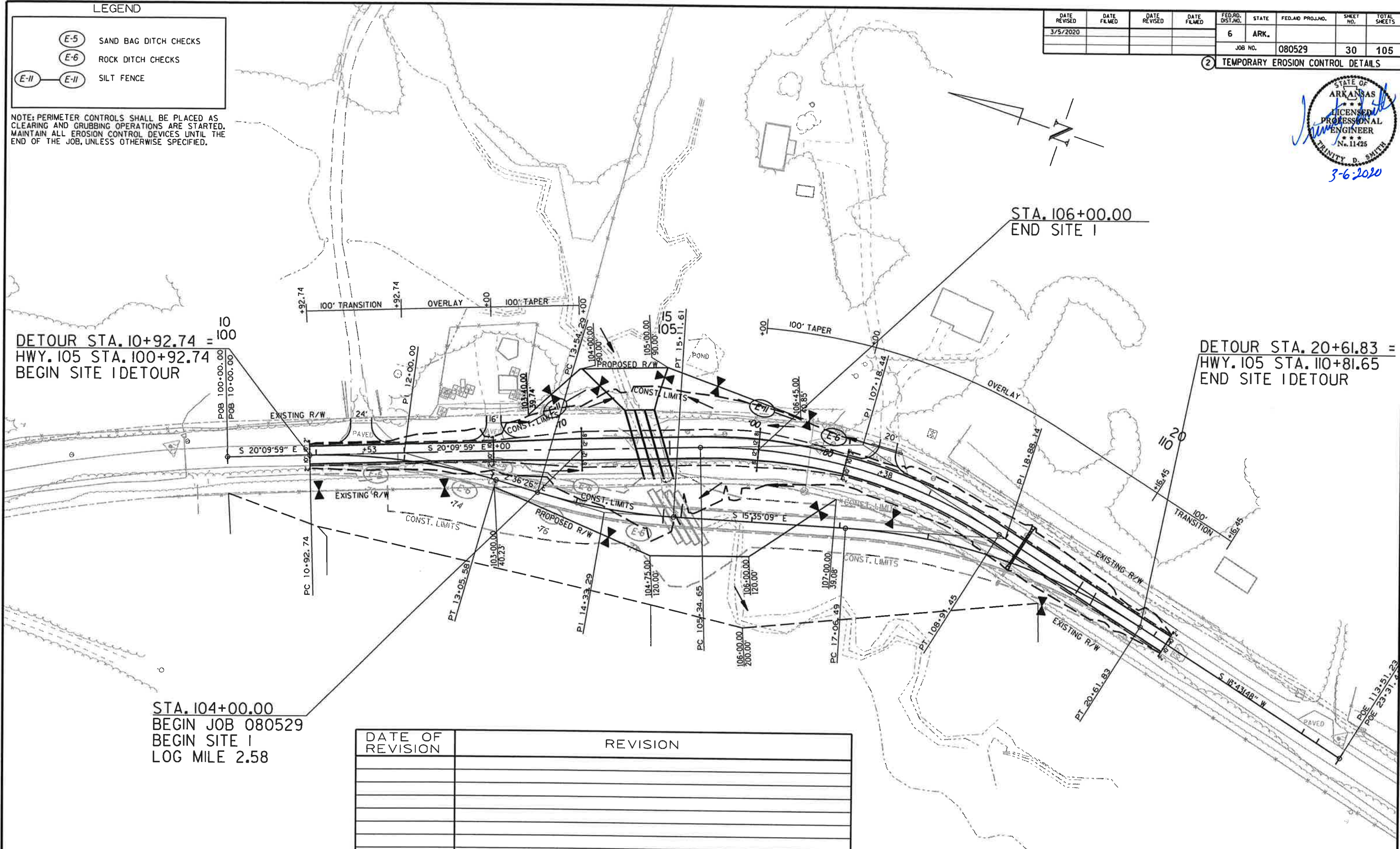
② TEMPORARY EROSION CONTROL DETAILS



STA. 106+00.00
END SITE 1

DETOUR STA. 10+92.74 = 100
HWY. 105 STA. 100+92.74
BEGIN SITE 1 DETOUR

DETOUR STA. 20+61.83 =
HWY. 105 STA. 110+81.65
END SITE 1 DETOUR



STA. 104+00.00
BEGIN JOB 080529
BEGIN SITE 1
LOG MILE 2.58

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

SITE 1- STAGE 2
TEMPORARY EROSION CONTROL DETAILS

12/19/2019
R080529.DGN

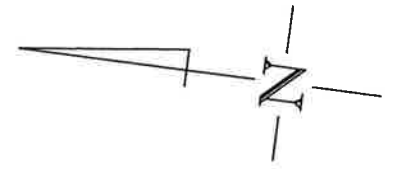
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 31 | 105 |

② TEMPORARY EROSION CONTROL DETAILS

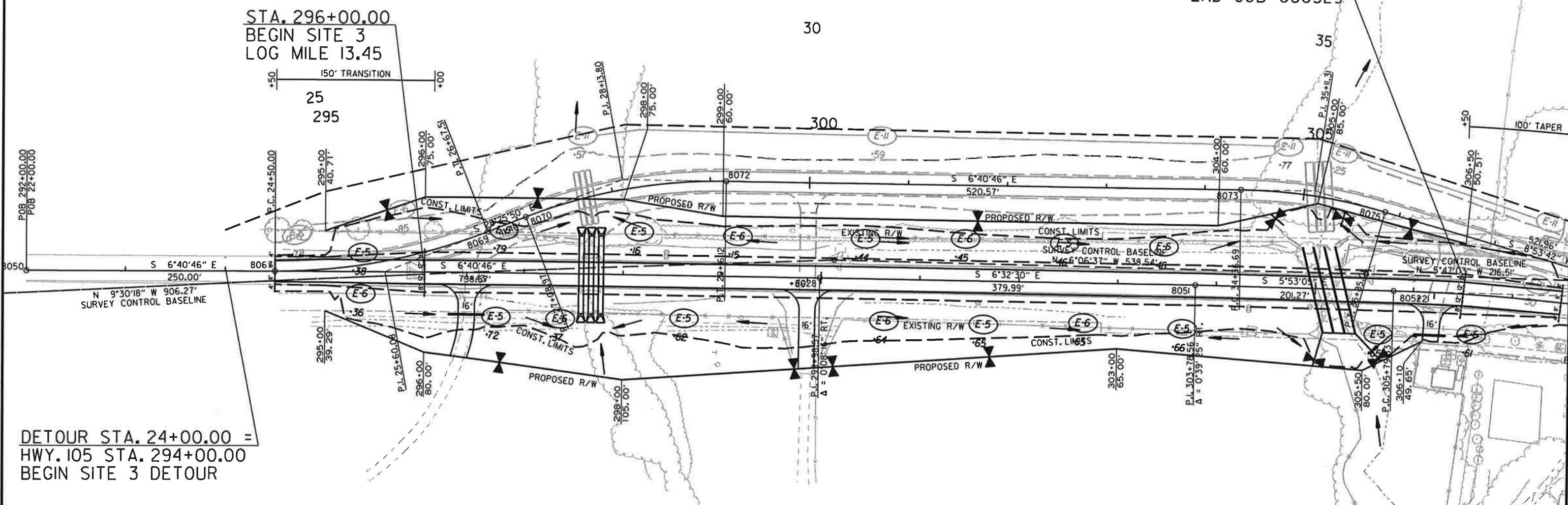


- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SILT FENCE

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.



STA. 306+50.00
END SITE 3
END JOB 080529



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR

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

SITE 3 - STAGE 2
TEMPORARY EROSION CONTROL DETAILS

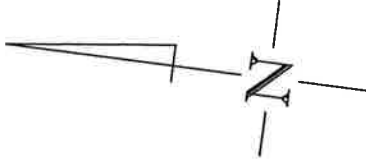
| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 32 | 105 |

② TEMPORARY EROSION CONTROL DETAILS

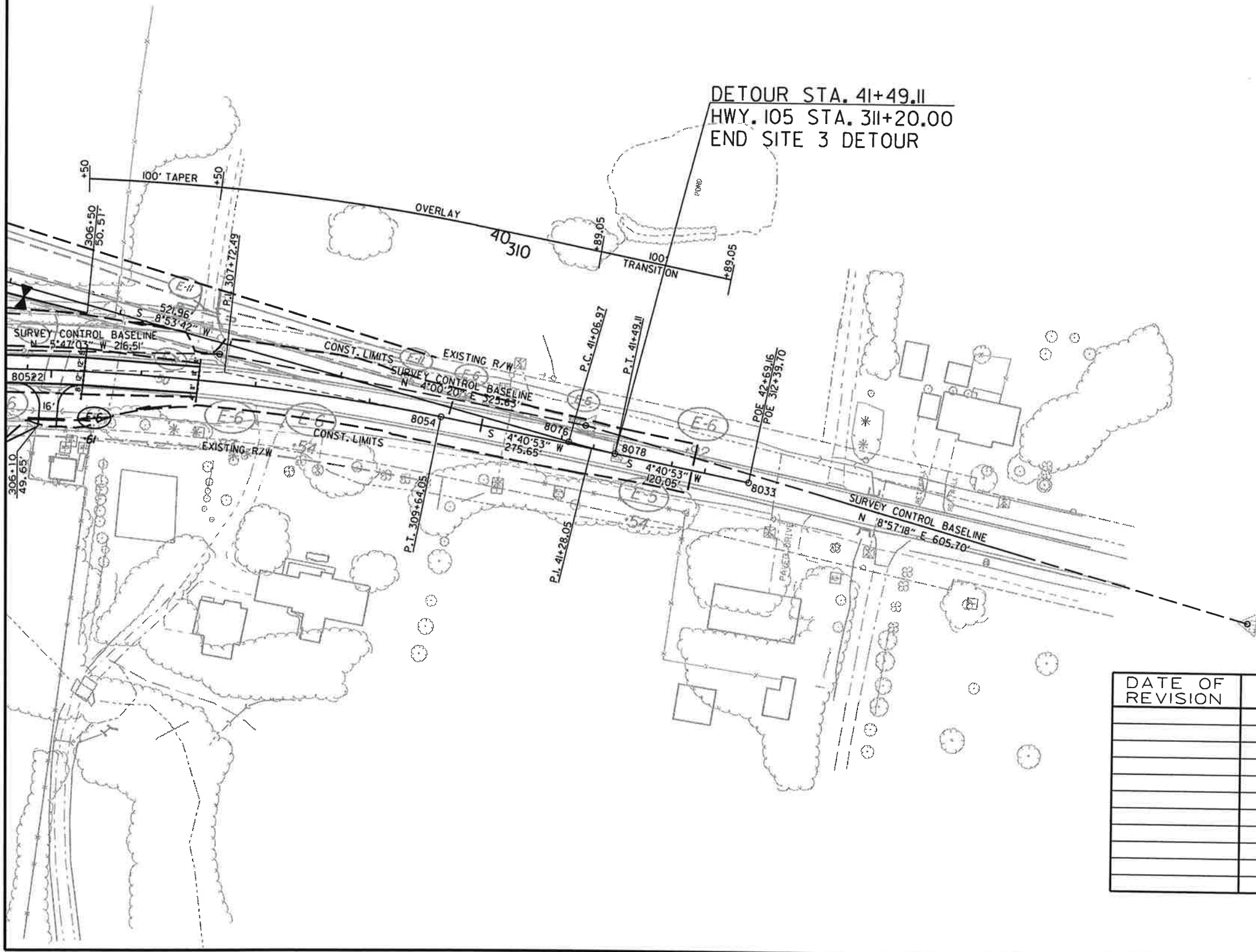


- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 SILT FENCE

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.



DETOUR STA. 41+49.11
 HWY. 105 STA. 311+20.00
 END SITE 3 DETOUR



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

SITE 3 - STAGE 2
 TEMPORARY EROSION CONTROL DETAILS

12/19/2019 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 33 | 105 |

② TEMPORARY EROSION CONTROL DETAILS



- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 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.

DETOUR STA. 10+92.74 =
HWY. 105 STA. 100+92.74
BEGIN SITE 1 DETOUR

DETOUR STA. 20+61.83 =
HWY. 105 STA. 110+81.65
END SITE 1 DETOUR

STA. 104+00.00
BEGIN JOB 080529
BEGIN SITE 1
LOG MILE 2.58

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

SITE 1 - STAGE 3
TEMPORARY EROSION CONTROL DETAILS

12/19/2019

R080529.DGN

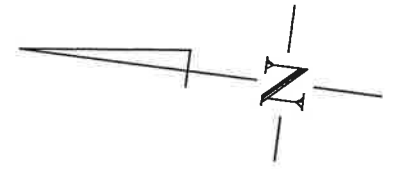
| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 34 | 105 |

② TEMPORARY EROSION CONTROL DETAILS



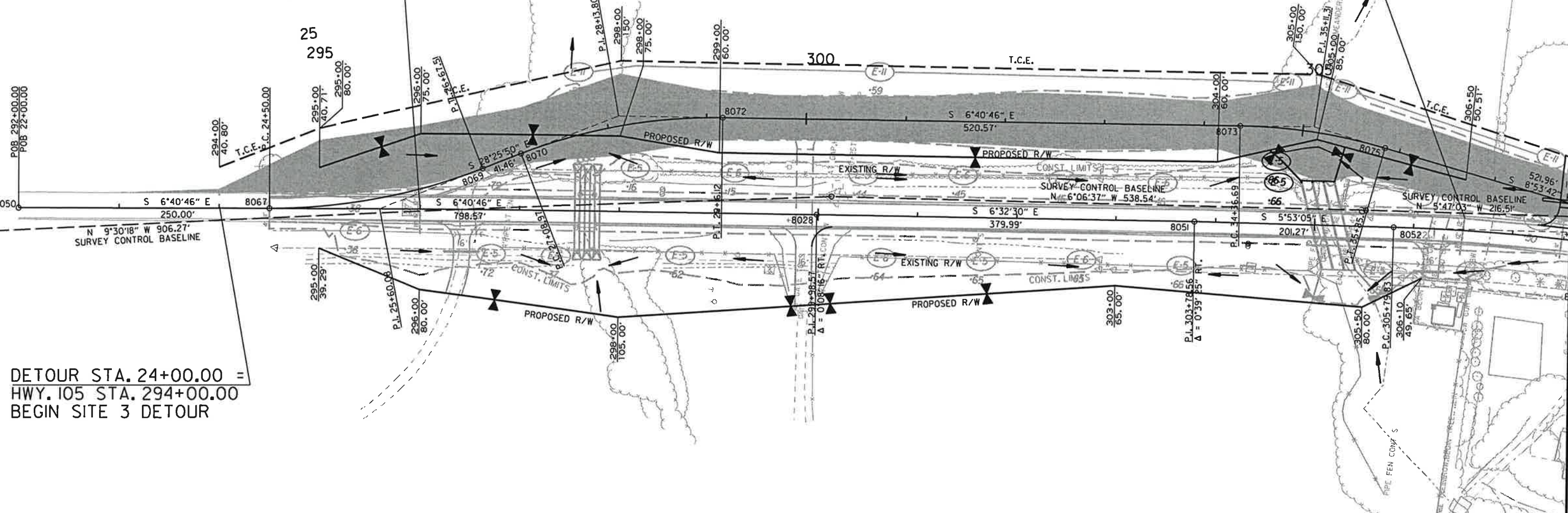
- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SILT FENCE

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.



STA. 306+50.00
END SITE 3
END JOB 080529

STA. 296+00.00
BEGIN SITE 3
LOG MILE 13.45



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR

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

SITE 3- STAGE 3
TEMPORARY EROSION CONTROL DETAILS

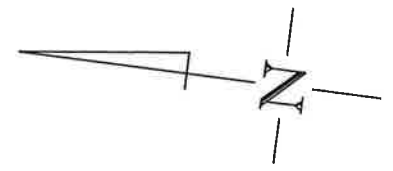
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 35 | 105 |

② TEMPORARY EROSION CONTROL DETAILS

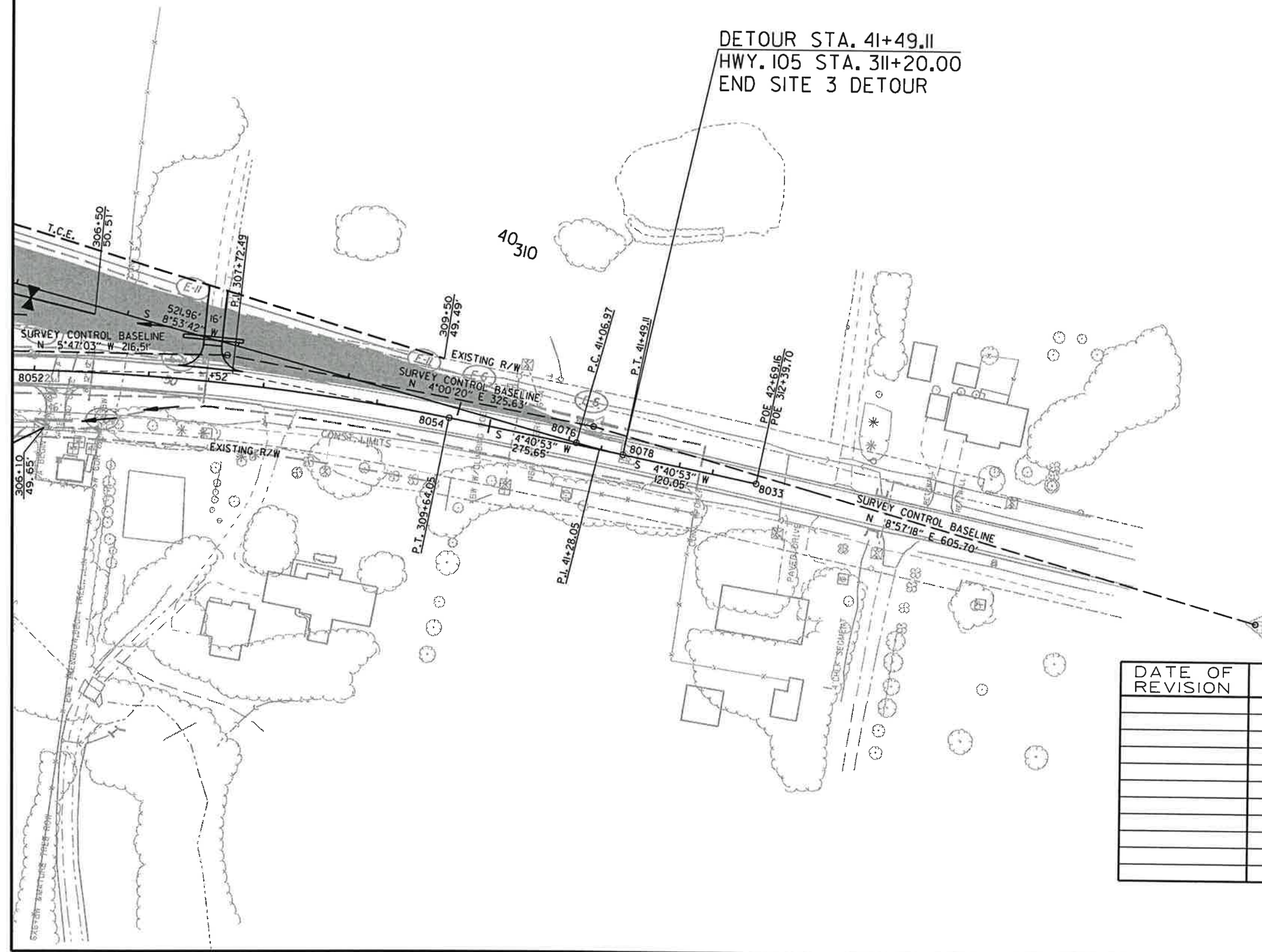


- E-5 SAND BAG DITCH CHECKS
- E-6 ROCK DITCH CHECKS
- E-11 SILT FENCE

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.



DETOUR STA. 41+49.11
 HWY. 105 STA. 311+20.00
 END SITE 3 DETOUR



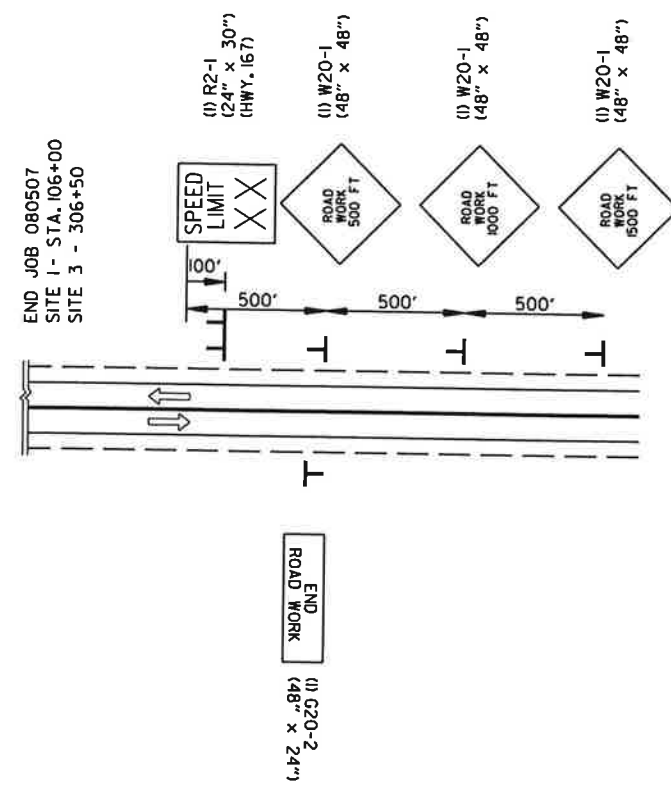
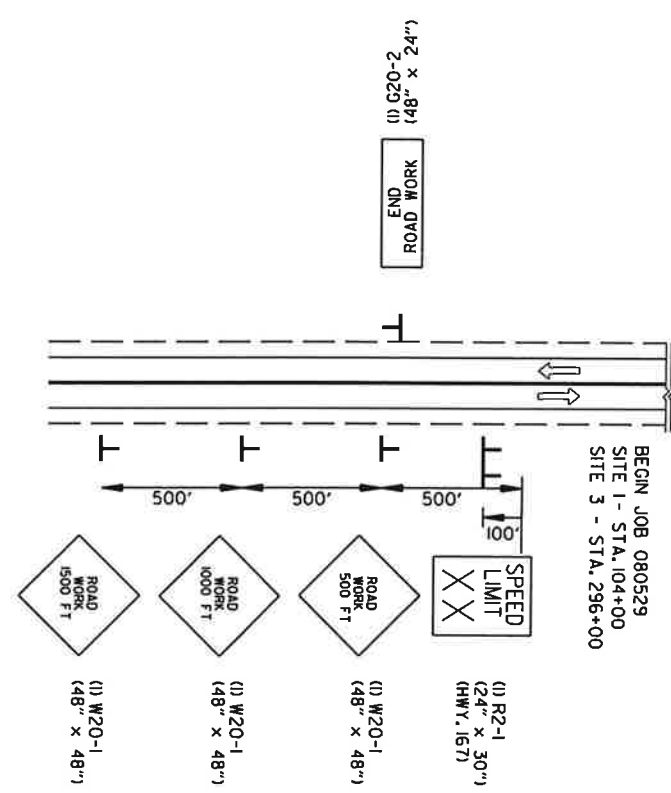
| DATE OF REVISION | REVISION |
|------------------|----------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |



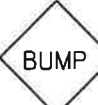
SITE 3 - STAGE 3
 TEMPORARY EROSION CONTROL DETAILS

12/19/2019
 R080529.DGN

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 36 | 105 |

ADVANCE WARNING (ALL STAGES)



-  (2) W21-5a (36" x 36") ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
-  (2) R4-1 (24" x 30") ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
-  (2) W8-1 (30" x 30") ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

- STAGE 1 QUANTITIES**
 SIGNS = 182.5 SQ. FT.
 TRAFFIC DRUMS = 11 EACH
 VERTICAL PANELS = 10 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
 TYPE III BARRICADE-RT. = 32 LIN. FT.
 TYPE III BARRICADE-LT. = 32 LIN. FT.
- STAGE 3 QUANTITIES**
 SIGNS = 182.5 SQ. FT.
 TRAFFIC DRUMS = 24 EACH
 VERTICAL PANELS = 9 EACH
 TYPE III BARRICADE-RT. = 32 LIN. FT.
 TYPE III BARRICADE-LT. = 32 LIN. FT.

STAGE 1 CONSTRUCTION SEQUENCE

FOR SITES 1 & 3:
 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 SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.
 CONSTRUCT DETOUR FOR SITES 1 & 3 AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

FOR SITE 2
 INSTALL SIGNS FOR APPROVED DETOUR AS SHOWN IN THE DETOUR MAINTENANCE OF TRAFFIC DETAILS.
 DETOUR TRAFFIC ONTO APPROVED DETOUR ROUTE.
 CONSTRUCT EMBANKMENT AND STRUCTURES LT. & RT.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

STAGE 2 CONSTRUCTION SEQUENCE

FOR SITES 1 & 3
 MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE DETOURS 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 ON SITE 3, AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

FOR SITE 2
 OPEN SITE 2 TO TRAFFIC.

STAGE 3 CONSTRUCTION SEQUENCE

FOR SITES 1 & 3
 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 FOR SITE 1 & 3.

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.

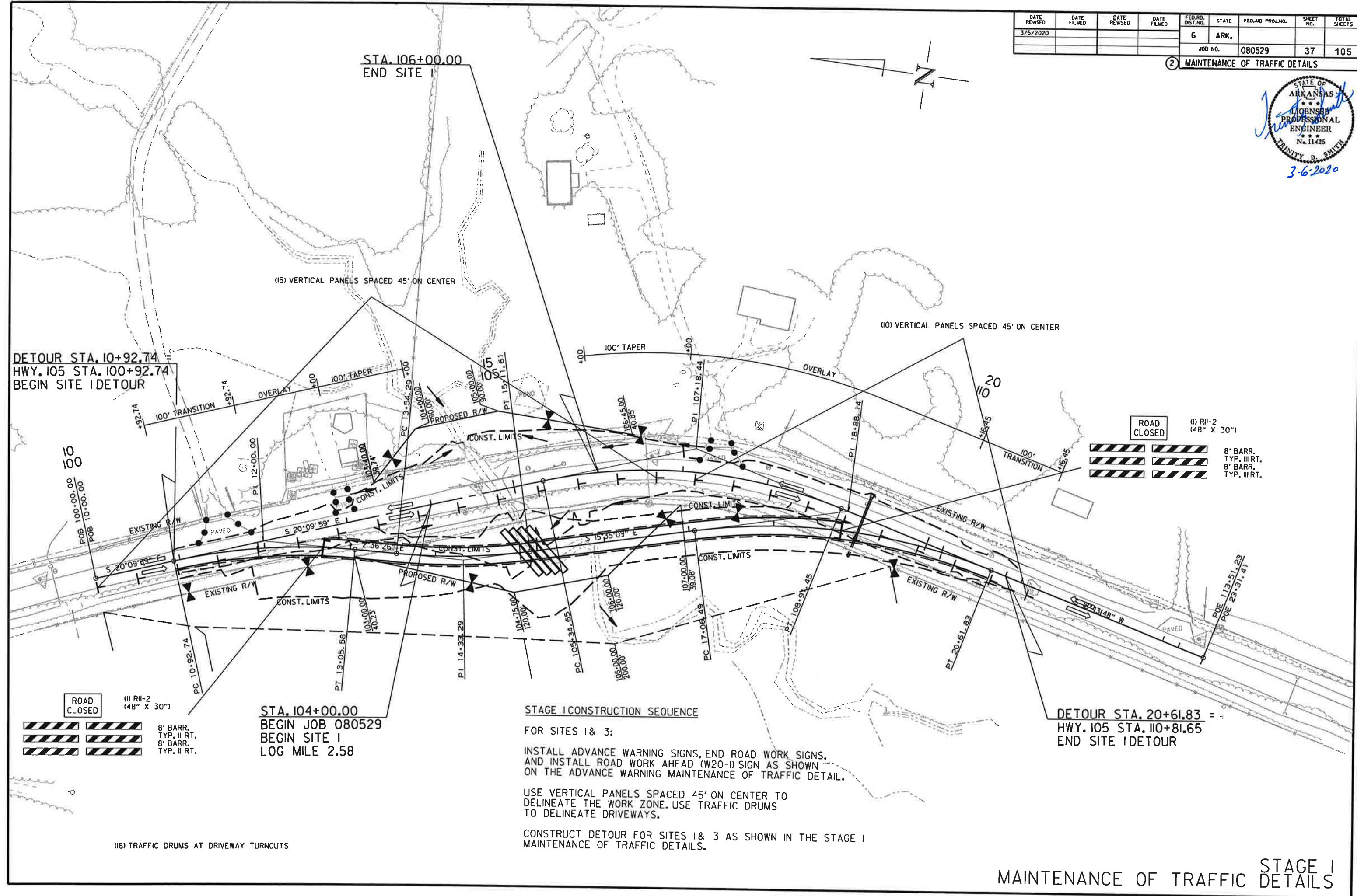
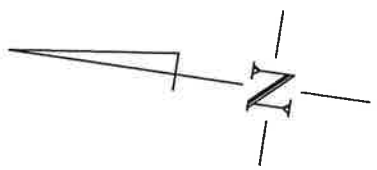
PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

MAINTENANCE OF TRAFFIC DETAILS



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 37 | 105 |

② MAINTENANCE OF TRAFFIC DETAILS



DETOUR STA. 10+92.74
HWY. 105 STA. 100+92.74
BEGIN SITE 1 DETOUR

STA. 106+00.00
END SITE 1

STA. 104+00.00
BEGIN JOB 080529
BEGIN SITE 1
LOG MILE 2.58

DETOUR STA. 20+61.83 =
HWY. 105 STA. 110+81.65
END SITE 1 DETOUR

STAGE I CONSTRUCTION SEQUENCE

FOR SITES 1 & 3:

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

CONSTRUCT DETOUR FOR SITES 1 & 3 AS SHOWN IN THE STAGE I
MAINTENANCE OF TRAFFIC DETAILS.

ROAD CLOSED (1) R11-2 (48" X 30")

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

ROAD CLOSED (1) R11-2 (48" X 30")

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

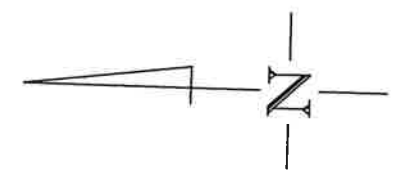
(18) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

MAINTENANCE OF TRAFFIC STAGE I DETAILS

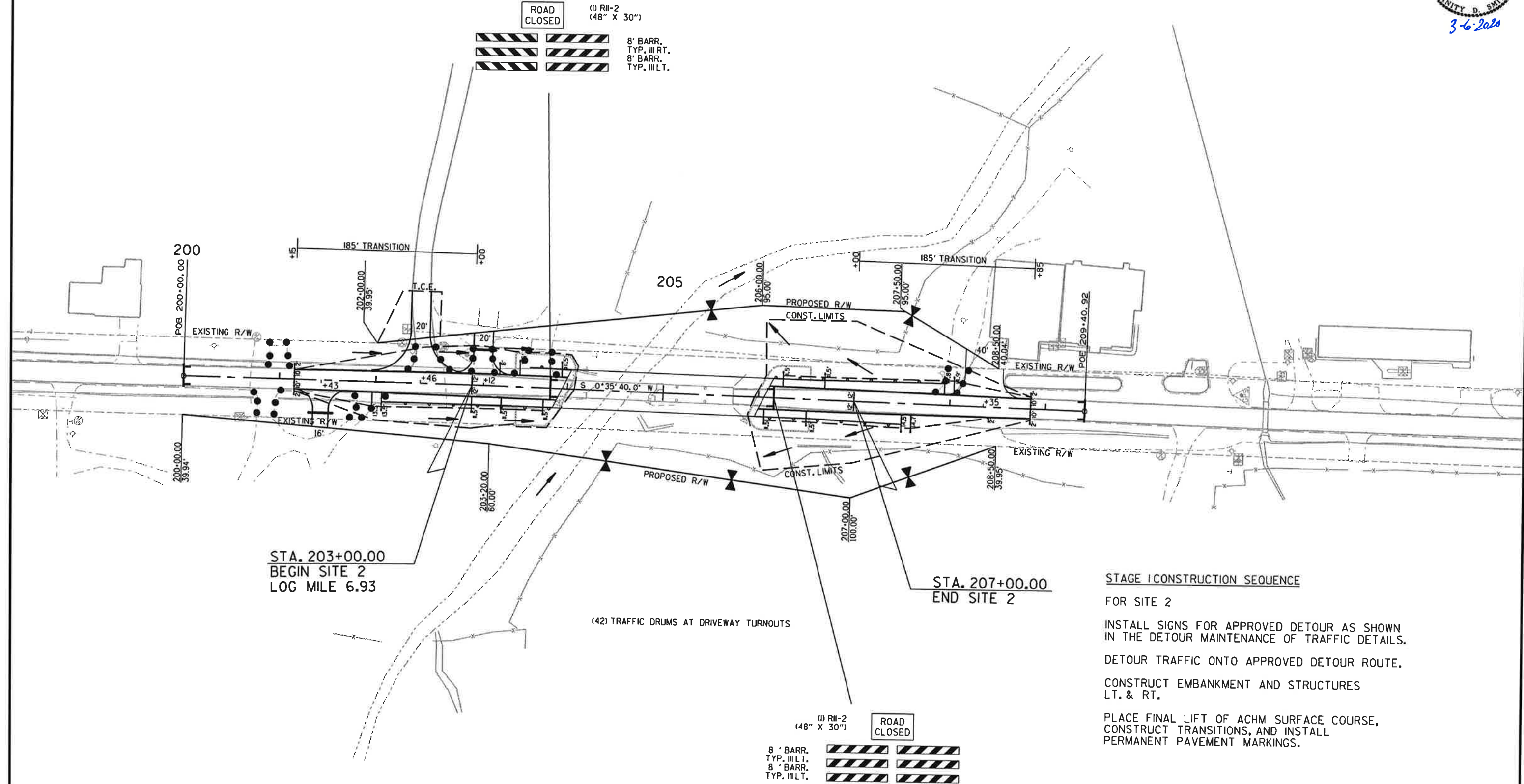
12/19/2019 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 38 | 105 |

② MAINTENANCE OF TRAFFIC DETAILS



ROAD CLOSED
 (1) RII-2 (48" X 30")
 8' BARR. TYP. III RT.
 8' BARR. TYP. III LT.



STA. 203+00.00
 BEGIN SITE 2
 LOG MILE 6.93

STA. 207+00.00
 END SITE 2

(42) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

STAGE I CONSTRUCTION SEQUENCE
 FOR SITE 2
 INSTALL SIGNS FOR APPROVED DETOUR AS SHOWN IN THE DETOUR MAINTENANCE OF TRAFFIC DETAILS.
 DETOUR TRAFFIC ONTO APPROVED DETOUR ROUTE.
 CONSTRUCT EMBANKMENT AND STRUCTURES LT. & RT.
 PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

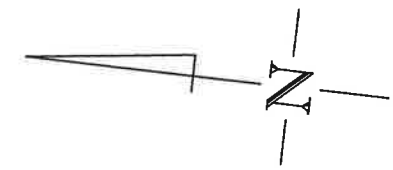
(1) RII-2 (48" X 30")
 ROAD CLOSED
 8' BARR. TYP. III LT.
 8' BARR. TYP. III LT.

MAINTENANCE OF TRAFFIC STAGE I DETAILS

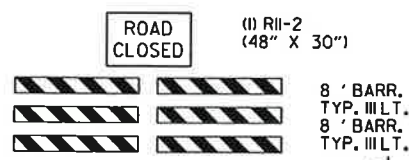
12/19/2019
 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 39 | 105 |

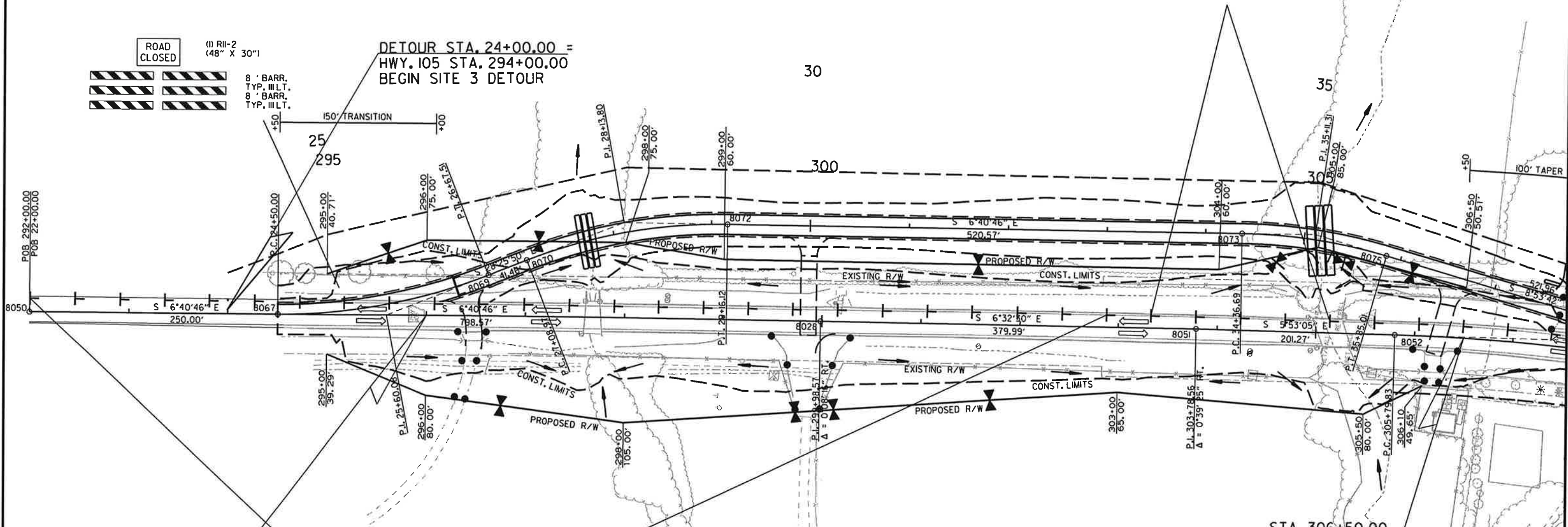
② MAINTENANCE OF TRAFFIC DETAILS



(5) VERTICAL PANELS SPACED 45' ON CENTER



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR



STA. 296+00.00 =
BEGIN SITE 3
LOG MILE 13.45

STAGE I CONSTRUCTION SEQUENCE

FOR SITES 1 & 3:

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

CONSTRUCT DETOUR FOR SITES 1 & 3 AS SHOWN IN THE STAGE I
MAINTENANCE OF TRAFFIC DETAILS.

STA. 306+50.00
END SITE 3
END JOB 080529

(30) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

(25) VERTICAL PANELS SPACED 45' ON CENTER

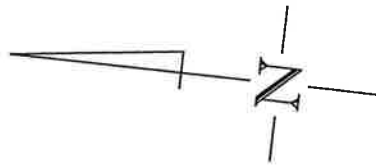
**STAGE I
MAINTENANCE OF TRAFFIC DETAILS**

12/19/2019

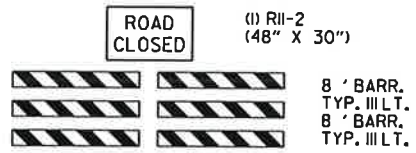
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 40 | 105 |

② MAINTENANCE OF TRAFFIC DETAILS



(B) VERTICAL PANELS SPACED 45' ON CENTER



DETOUR STA. 41+49.11 =
HWY. 105 STA. 311+20.00
END SITE 3 DETOUR

STAGE I CONSTRUCTION SEQUENCE

FOR SITES 1 & 3:

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.

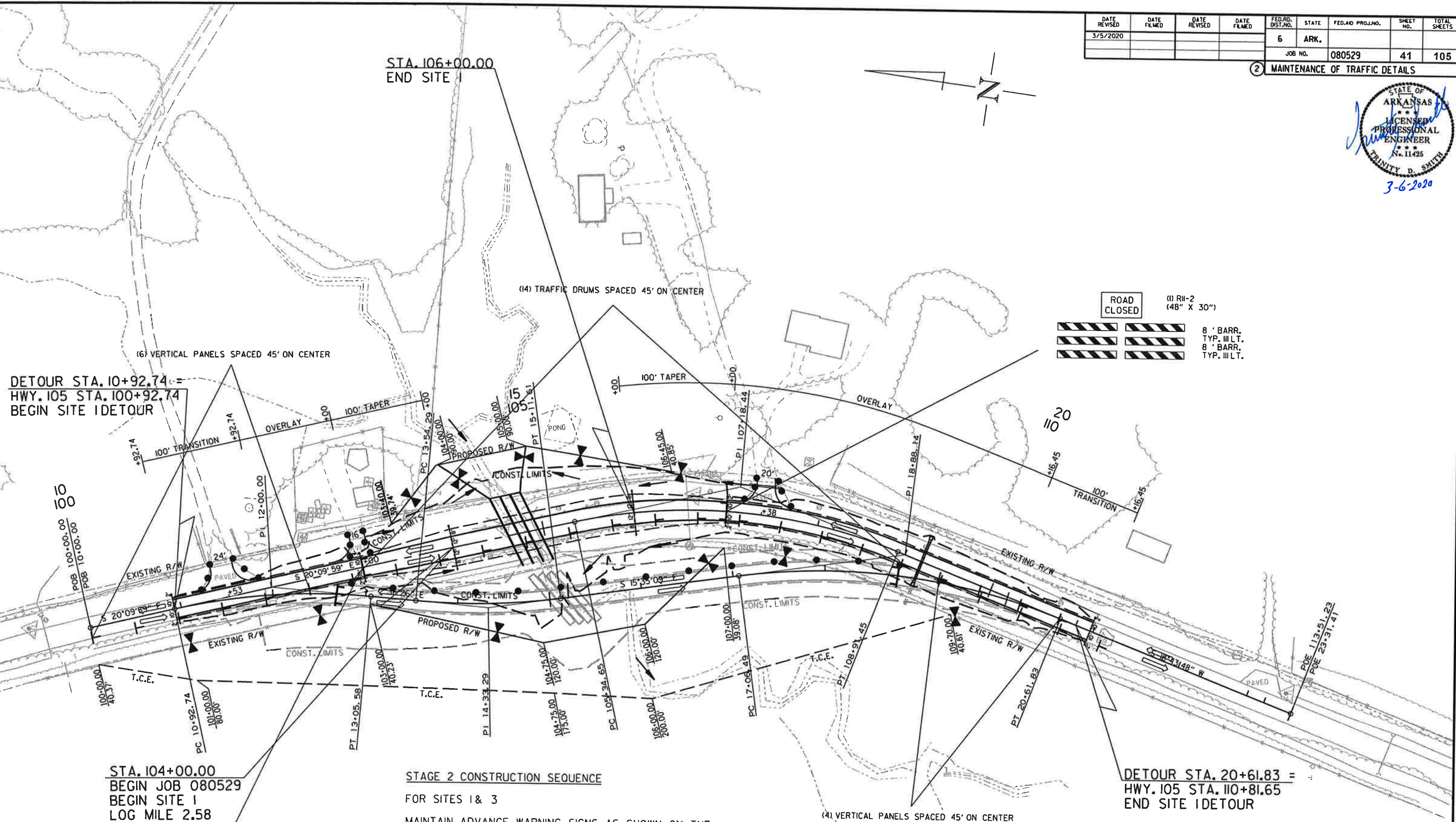
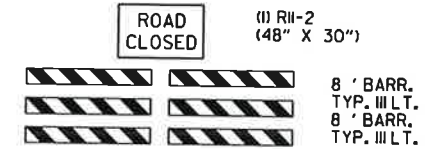
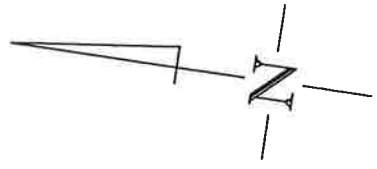
USE VERTICAL PANELS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

CONSTRUCT DETOUR FOR SITES 1 & 3 AS SHOWN IN THE STAGE I MAINTENANCE OF TRAFFIC DETAILS.

12/19/2019
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 41 | 105 |

② MAINTENANCE OF TRAFFIC DETAILS



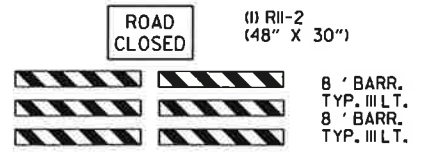
STAGE 2 CONSTRUCTION SEQUENCE FOR SITES 1 & 3

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

SHIFT TRAFFIC ONTO THE DETOURS 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 ON SITE 3, AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.



STAGE 2 MAINTENANCE OF TRAFFIC DETAILS

12/19/2019
R080529.DGN

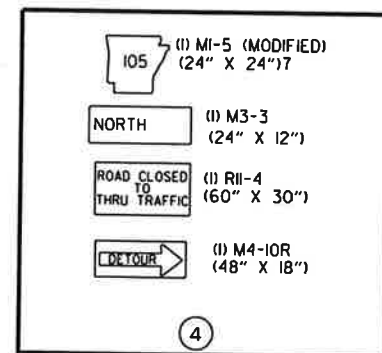
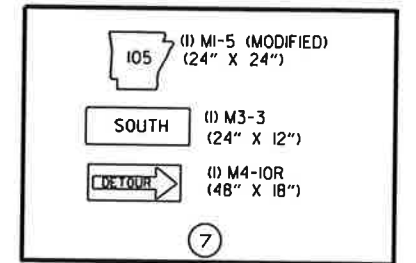
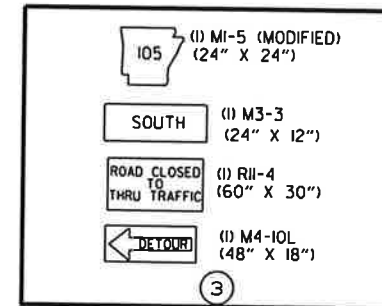
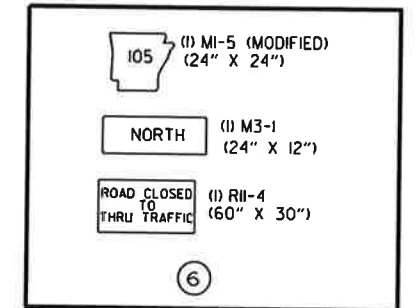
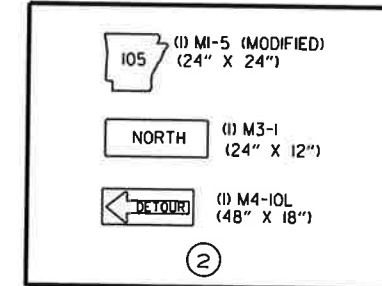
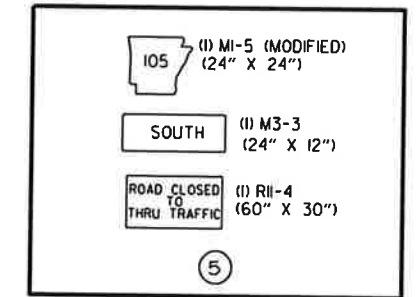
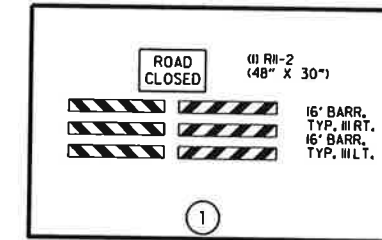
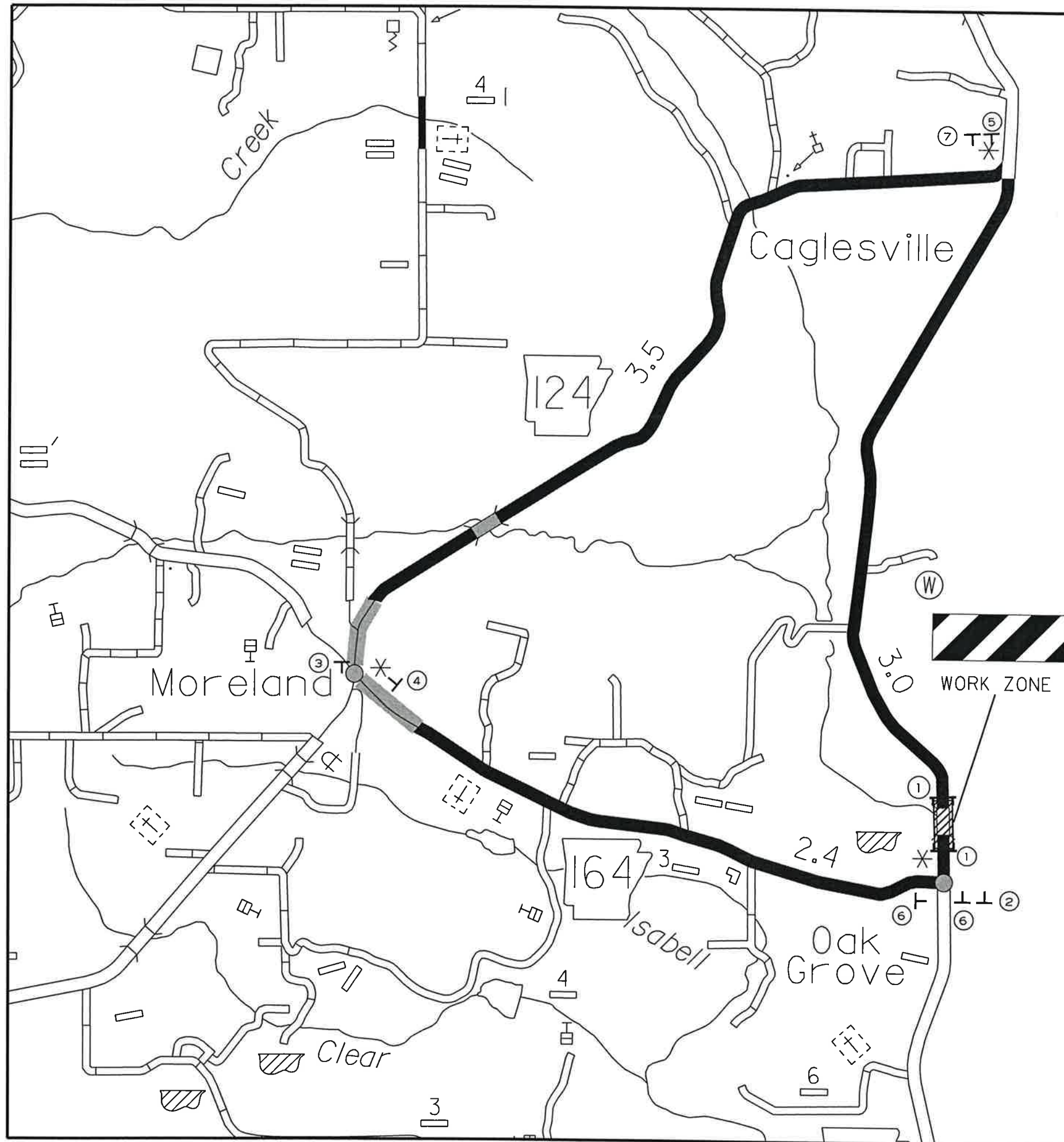
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. RD. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|----------------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. 080529 | 42 105 |

2 MAINTENANCE OF TRAFFIC DETAILS



ROAD CLOSED
X MILES AHEAD
LOCAL TRAFFIC ONLY (2) RII-4
(60" X 30")

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

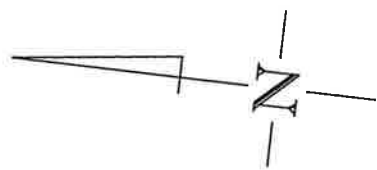


12/19/2019

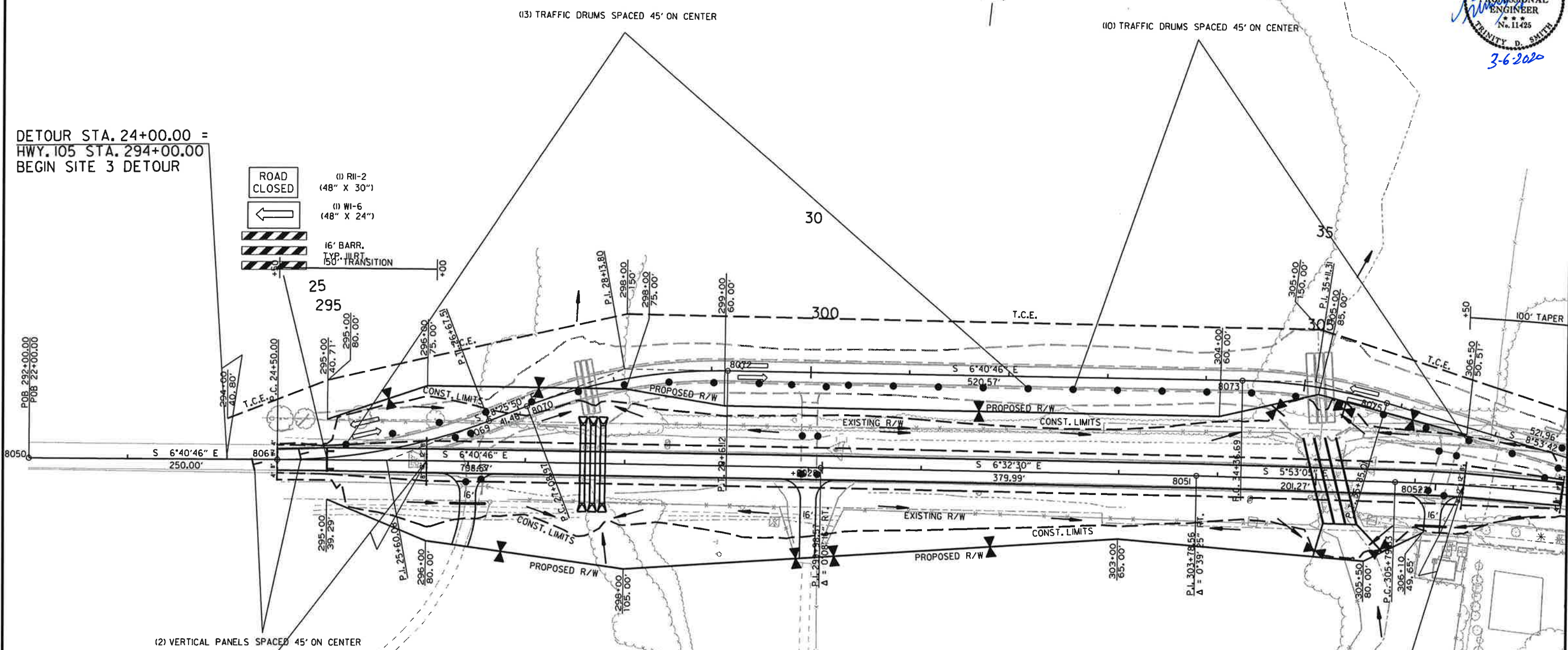
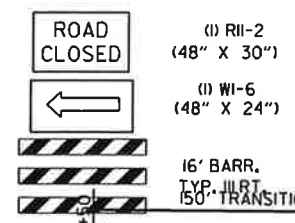
R080529.DGN

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. PROJ. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|----------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 43 | 105 |
| | | | | | | JOB NO. 080529 | | |

② MAINTENANCE OF TRAFFIC DETAILS



DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR



STA. 296+00.00 =
BEGIN SITE 3
LOG MILE 13.45

STAGE 2 CONSTRUCTION SEQUENCE

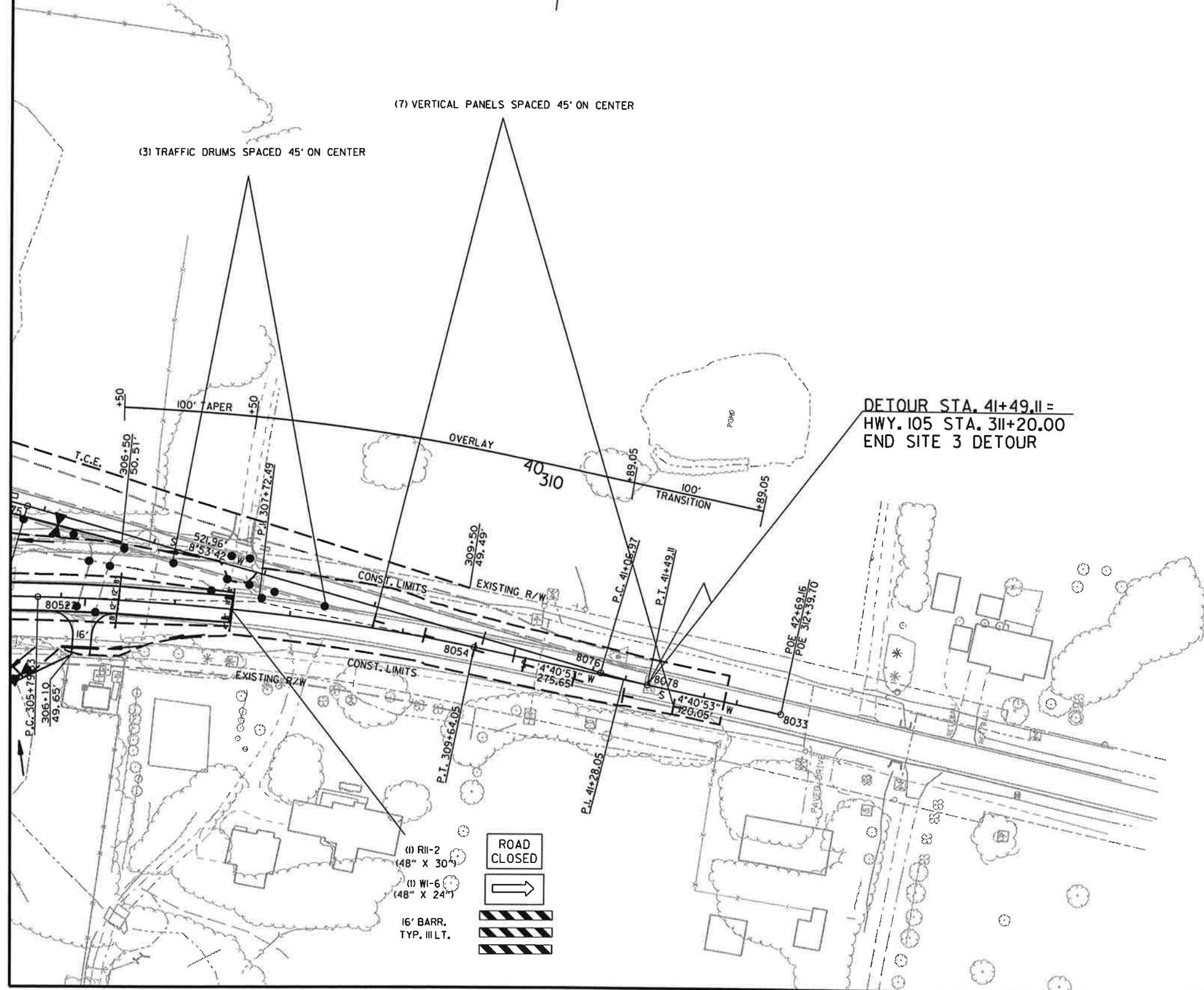
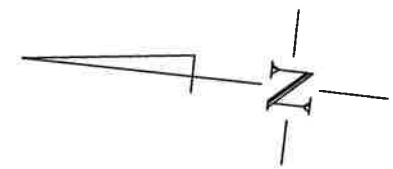
- FOR SITES 1 & 3
- MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.
- SHIFT TRAFFIC ONTO THE DETOURS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.
- USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 45' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.
- CONSTRUCT STRUCTURES AND EMBANKMENT ON SITE 3, AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

STA. 306+50.00
END SITE 3
END JOB 080529

STAGE 2 MAINTENANCE OF TRAFFIC DETAILS

12/19/2019
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|----------------------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. | 080529 | 44 |
| | | | | | | ② MAINTENANCE OF TRAFFIC DETAILS | | |



STAGE 2 CONSTRUCTION SEQUENCE

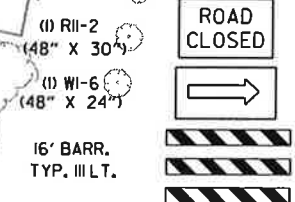
FOR SITES 1 & 3

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

SHIFT TRAFFIC ONTO THE DETOURS 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 ON SITE 3, AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.



12/19/2019
R080529.DGN

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | 45 | 105 | |

② MAINTENANCE OF TRAFFIC DETAILS



STAGE 3 CONSTRUCTION SEQUENCE

SITES 1 & 3

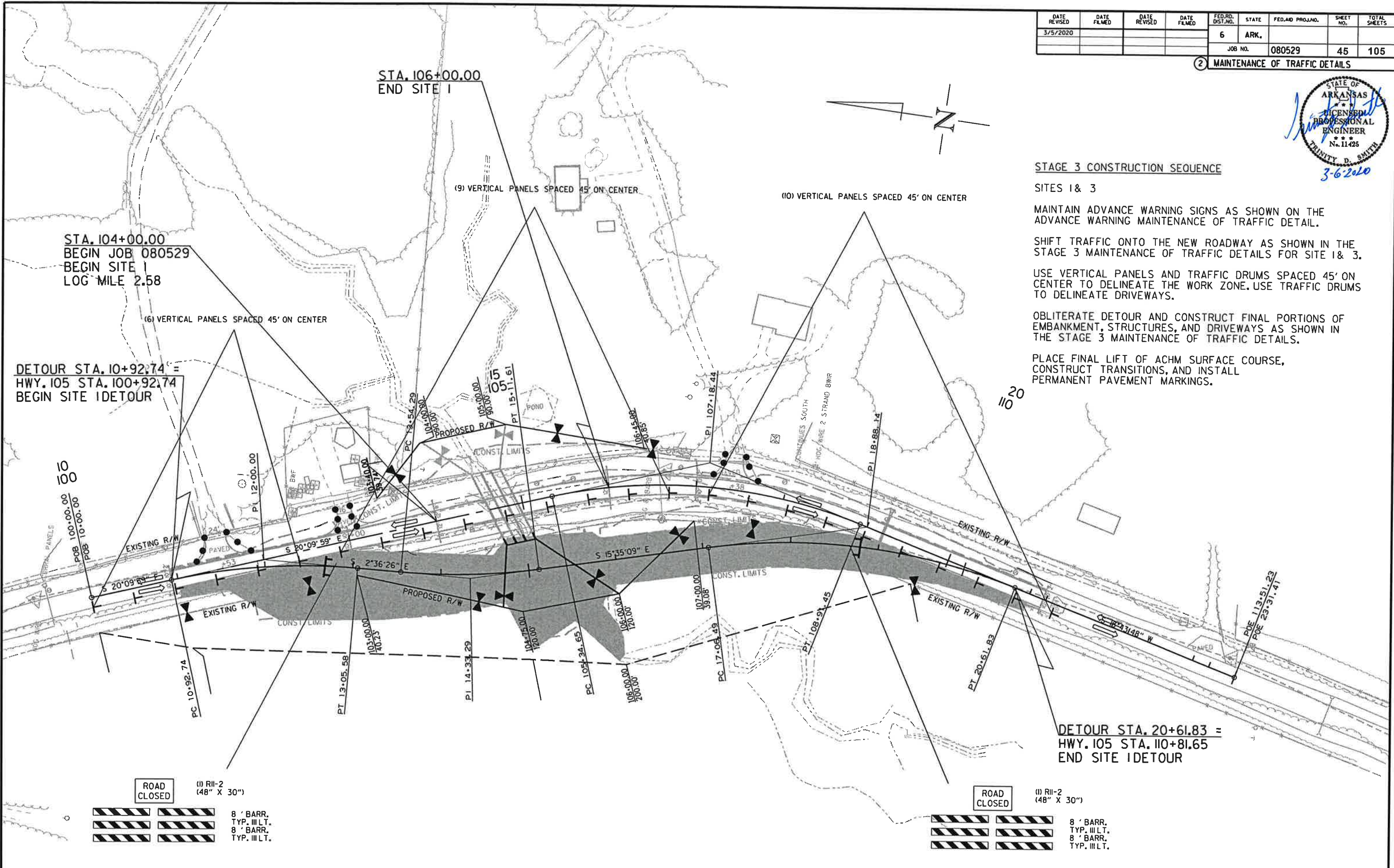
MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE NEW ROADWAY AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS FOR SITE 1 & 3.

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

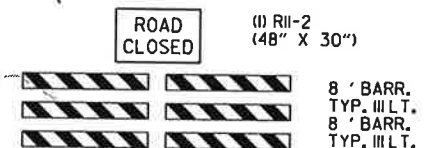
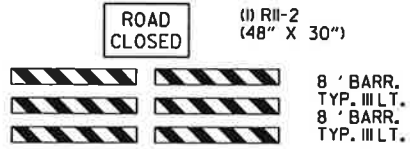
OBLITERATE DETOUR AND CONSTRUCT FINAL PORTIONS OF EMBANKMENT, STRUCTURES, AND DRIVEWAYS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.



DETOUR STA. 10+92.74 = HWY. 105 STA. 100+92.74 BEGIN SITE 1 DETOUR

DETOUR STA. 20+61.83 = HWY. 105 STA. 110+81.65 END SITE 1 DETOUR



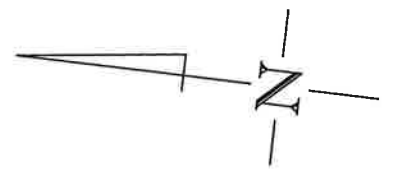
(30) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

STAGE 3 MAINTENANCE OF TRAFFIC DETAILS

12/19/2019 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 46 | 105 |

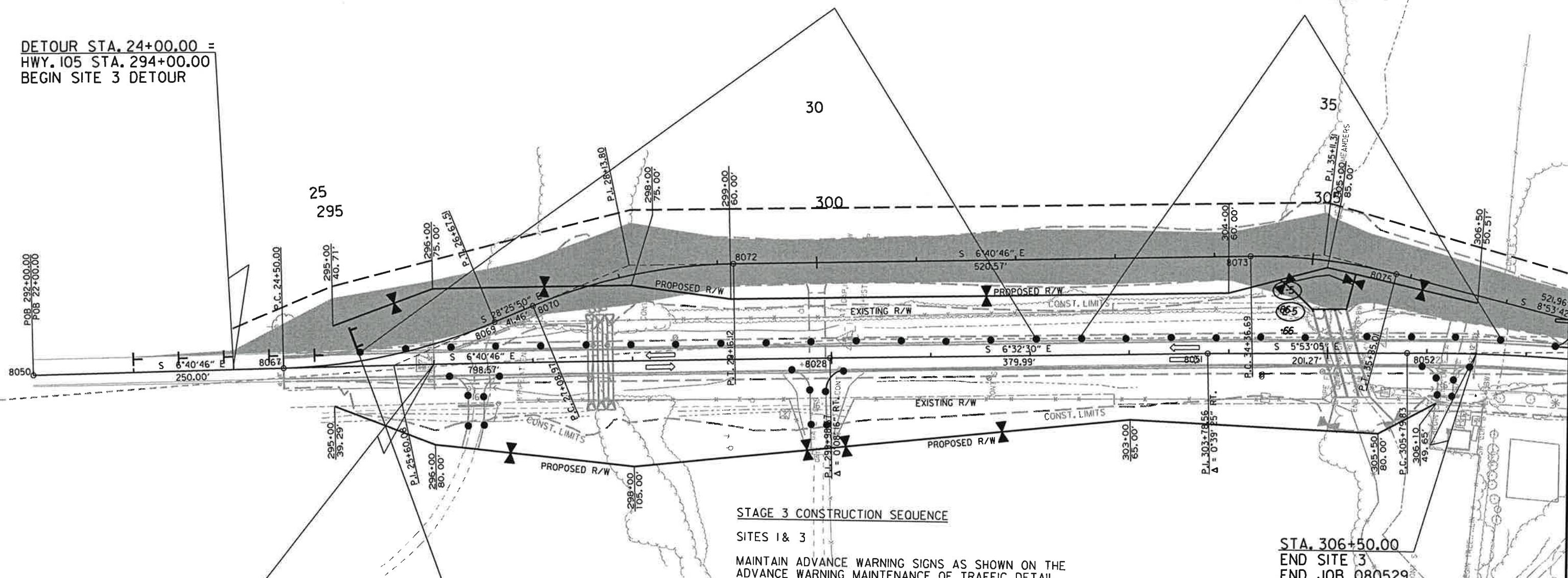
② MAINTENANCE OF TRAFFIC DETAILS



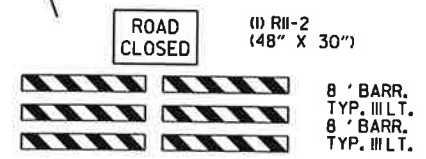
(16) TRAFFIC DRUMS SPACED 45' ON CENTER

(10) TRAFFIC DRUMS SPACED 45' ON CENTER

DETOUR STA. 24+00.00 =
HWY. 105 STA. 294+00.00
BEGIN SITE 3 DETOUR



STA. 296+00.00 =
BEGIN SITE 3
LOG MILE 13.45



STAGE 3 CONSTRUCTION SEQUENCE

SITES 1 & 3

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 FOR SITE 1 & 3.

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.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

STA. 306+50.00
END SITE 3
END JOB 080529

(30) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

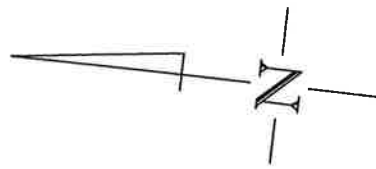
STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

12/19/2019

R080529.DGN

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 47 | 105 |

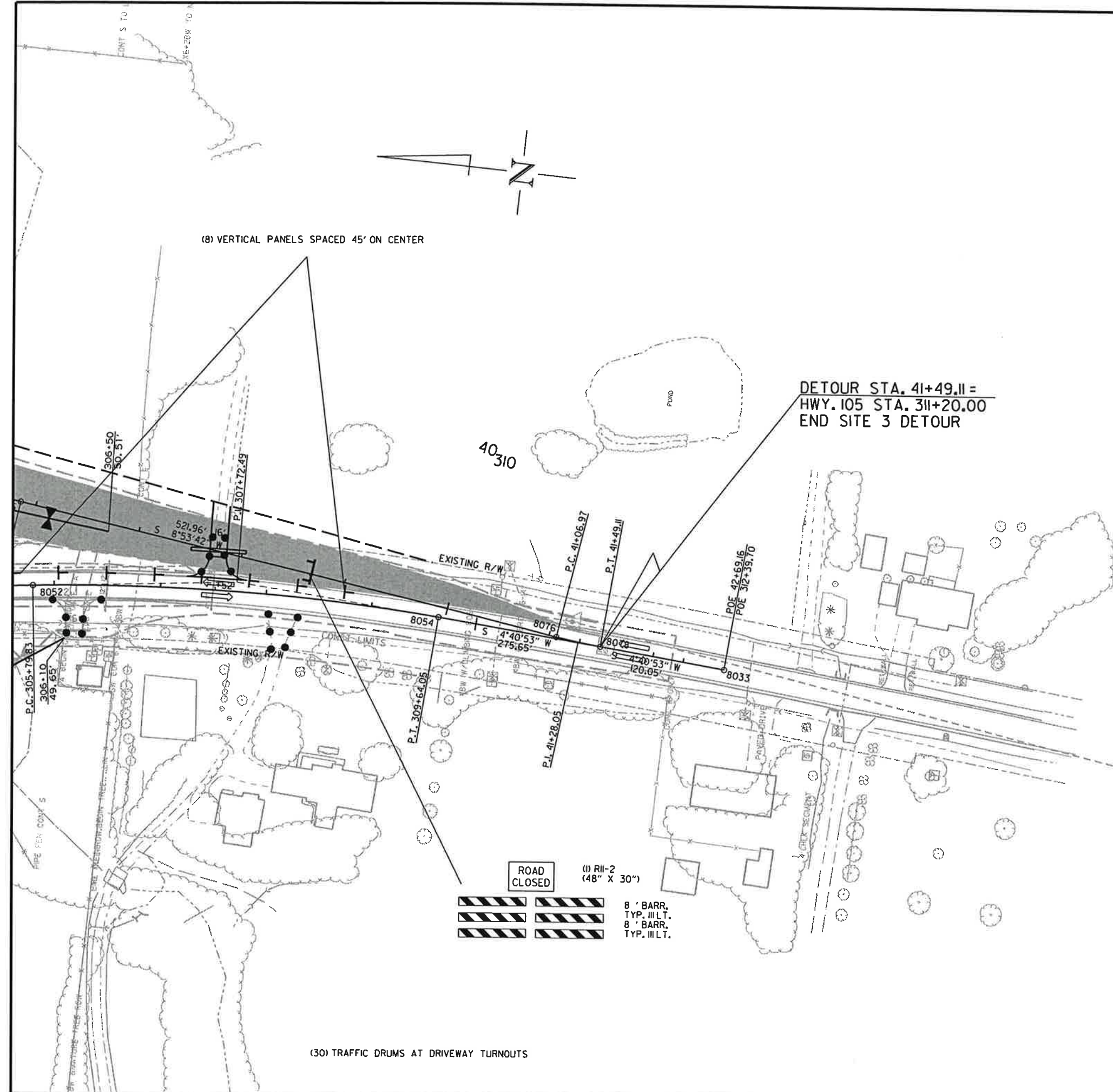
② MAINTENANCE OF TRAFFIC DETAILS



(B) VERTICAL PANELS SPACED 45' ON CENTER

DETOUR STA. 41+49.11 =
HWY. 105 STA. 311+20.00
END SITE 3 DETOUR

40
310



STAGE 3 CONSTRUCTION SEQUENCE

SITES 1 & 3

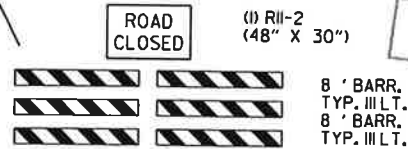
MAINTAIN ADVANCE WARNING SIGNS AS SHOWN ON THE ADVANCE WARNING MAINTENANCE OF TRAFFIC DETAIL.

SHIFT TRAFFIC ONTO THE NEW ROADWAY AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS FOR SITE 1 & 3.

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.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.



(30) TRAFFIC DRUMS AT DRIVEWAY TURNOUTS

STAGE 3
MAINTENANCE OF TRAFFIC DETAILS

12/19/2019

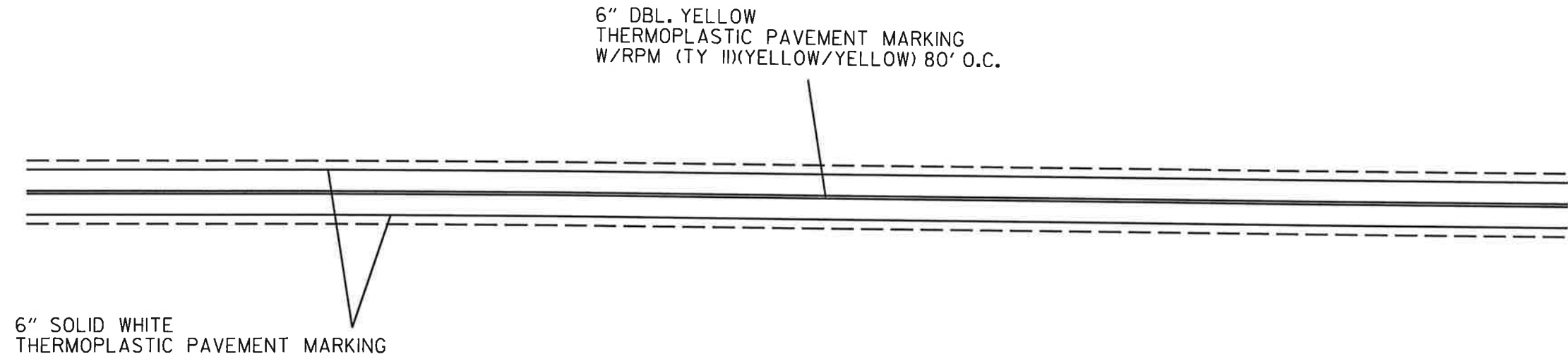
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 48 | 105 |

2 PERMANENT PAVEMENT MARKING DETAILS



TYPICAL STRIPING DETAIL



6" DBL. YELLOW
THERMOPLASTIC PAVEMENT MARKING
W/RPM (TY II)(YELLOW/YELLOW) 80' O.C.

6" SOLID WHITE
THERMOPLASTIC PAVEMENT MARKING

PERMANENT PAVEMENT MARKINGS - SITE 1

THERMOPLASTIC PAVEMENT MARKING (6") YELLOW - 2047 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (6") WHITE - 2047 LIN. FT.

80' SPACING
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) - 13 EACH

PERMANENT PAVEMENT MARKINGS - SITE 2

THERMOPLASTIC PAVEMENT MARKING (6") YELLOW - 1540 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (6") WHITE - 1540 LIN. FT.

80' SPACING
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) - 10 EACH

PERMANENT PAVEMENT MARKINGS - SITE 3

THERMOPLASTIC PAVEMENT MARKING (6") YELLOW - 3478 LIN. FT.
THERMOPLASTIC PAVEMENT MARKING (6") WHITE - 3478 LIN. FT.

80' SPACING
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) - 22 EACH

NOTE: REFER TO STD. DWG. PM-1

PERMANENT PAVEMENT MARKING DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. RD. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 49 | 105 |

2 QUANTITIES

ADVANCE WARNING SIGNS AND DEVICES

| SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1 | STAGE 2 | STAGE 3 | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | | VERTICAL PANELS | TRAFFIC DRUMS | BARRICADES (TYPE III) | |
|------------------------------|--|-----------|-----------------|---------|---------|-------------------------|----------------------|---------|-----------------|---------------|-----------------------|------|
| | | | | | | | NO. | SQ. FT. | | | RIGHT | LEFT |
| | | | LIN. FT. - EACH | | | | | EACH | | LIN. FT. | | |
| W20-1 | ROAD WORK 1500 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | |
| W20-1 | ROAD WORK 1000 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | |
| W20-1 | ROAD WORK 500 FT. | 48"x48" | 2 | 2 | 2 | 2 | 2 | 32.0 | | | | |
| G20-2 | END ROAD WORK | 48"x24" | 2 | 2 | 2 | 2 | 2 | 16.0 | | | | |
| R11-2 | ROAD CLOSED | 48"x30" | 6 | 2 | 4 | 6 | 6 | 60.0 | | | | |
| R11-4 | ROAD CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY | 60"x30" | | 2 | | 2 | 2 | 25.0 | | | | |
| M3-1 | NORTH | 24"x12" | | 3 | | 3 | 3 | 24.0 | | | | |
| M3-3 | SOUTH | 24"x12" | | 3 | | 3 | 3 | 24.0 | | | | |
| M1-5 | STATE HIGHWAY 105 (MODIFIED) | 24"x24" | | 7 | | 7 | 7 | 112.0 | | | | |
| M4-10L | DETOUR WITH ARROW LEFT | 48"x18" | | 1 | | 1 | 1 | 12.5 | | | | |
| M4-10R | DETOUR WITH ARROW RIGHT | 48"x18" | | 2 | | 2 | 2 | 25.0 | | | | |
| R4-1 | DO NOT PASS | 24"x30" | 2 | 2 | 2 | 2 | 2 | 10.0 | | | | |
| D3-1 | HIGHWAY NAME | 36"x12" | | 5 | | 5 | 5 | 15.0 | | | | |
| W21-5a | RIGHT SHOULDER CLOSED | 36"x36" | 2 | 2 | 2 | 2 | 2 | 18.0 | | | | |
| W8-1 | BUMP | 30"x30" | 2 | 2 | 2 | 2 | 2 | 12.5 | | | | |
| VERTICAL PANELS | | | 63 | 13 | 75 | 75 | | | 75 | | | |
| TRAFFIC DRUMS | | | 90 | 62 | 26 | 90 | | | | 90 | | |
| TYPE III BARRICADE-RT. (8') | | | 5 | 2 | | 5 | | | | | 40 | |
| TYPE III BARRICADE-LT. (8') | | | 7 | 6 | 8 | 8 | | | | | | 64 |
| TYPE III BARRICADE-RT. (16') | | | | 1 | | 1 | | | | | 16 | |
| TYPE III BARRICADE-LT. (16') | | | | 1 | | 1 | | | | | | 16 |
| TOTALS: | | | | | | | | | | | | |
| | | | | | | | 450.0 | | 75 | 90 | 56 | 80 |

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



CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | STAGE 2 | STAGE 3 | END OF JOB | CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | THERMOPLASTIC PAVEMENT MARKING | |
|---|---------|---------|-----------------|--------------------------------|-------------------------|--------------------------------|--------|
| | | | | | TYPE II (YELLOW/YELLOW) | WHITE | YELLOW |
| | | | LIN. FT. - EACH | | 6" LIN. FT. | | |
| CONSTRUCTION PAVEMENT MARKINGS | 10660 | 13992 | | 24652 | | | |
| RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW) | | | 45 | | 45 | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (6") | | | 7065 | | | 7065 | |
| THERMOPLASTIC PAVEMENT MARKING YELLOW (6") | | | 7065 | | | | 7065 |
| TOTALS: | | | | 24652 | 45 | 7065 | 7065 |

NOTE: THIS IS A HIGH 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.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|--------------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. | 080529 |
| | | | | | | | SHEET NO. | 50 |
| | | | | | | | TOTAL SHEETS | 105 |

2 QUANTITIES



REMOVAL AND DISPOSAL OF ITEMS

| STATION | STATION | LOCATION | GUARDRAIL |
|---------------|---------|-------------------------|------------|
| | | | LIN. FT. |
| 104+17 | 104+66 | HWY. 105 - SITE 1 - RT. | 49 |
| 104+27 | 104+59 | HWY. 105 - SITE 1 - LT. | 32 |
| 104+95 | 105+31 | HWY. 105 - SITE 1 - RT. | 36 |
| 104+88 | 105+60 | HWY. 105 - SITE 1 - LT. | 72 |
| TOTAL: | | | 189 |

CLEARING AND GRUBBING

| STATION | STATION | LOCATION | CLEARING | GRUBBING |
|----------------|---------|-------------------------------|-----------|-----------|
| | | | STATION | |
| 100+93 | 111+16 | HWY. 105 - SITE 1 - LT. & RT. | 11 | 11 |
| 201+15 | 208+85 | HWY. 105 - SITE 2 - LT. & RT. | 8 | 8 |
| 294+50 | 311+89 | HWY. 105 - SITE 3 - LT. & RT. | 18 | 18 |
| TOTALS: | | | 37 | 37 |

REMOVAL AND DISPOSAL OF FENCE

| STATION | STATION | LOCATION | FENCE |
|---------------|---------|-------------------------|-------------|
| | | | LIN. FT. |
| 101+00 | 109+70 | HWY. 105 - SITE 1 - RT. | 853 |
| 103+40 | 106+77 | HWY. 105 - SITE 1 - LT. | 335 |
| 204+42 | 208+18 | HWY. 105 - SITE 2 - RT. | 399 |
| 205+47 | 207+57 | HWY. 105 - SITE 2 - LT. | 245 |
| 294+50 | 304+84 | HWY. 105 - SITE 3 - LT. | 1039 |
| 305+26 | 306+77 | HWY. 105 - SITE 3 - LT. | 96 |
| TOTAL: | | | 2967 |

EARTHWORK

| STATION | STATION | LOCATION / DESCRIPTION | UNCLASSIFIED EXCAVATION | COMPACTED EMBANKMENT | * SOIL STABILIZATION |
|----------------|-----------|--|-------------------------|----------------------|----------------------|
| | | | CU. YD. | | TON |
| 101+53.00 | 110+00.00 | HWY. 105 - SITE 1 - STAGE 1 | 1945 | 3286 | |
| 101+53.00 | 110+00.00 | HWY. 105 - SITE 1 - STAGE 2 | 93 | 2530 | |
| 101+53.00 | 110+00.00 | HWY. 105 - SITE 1 - STAGE 3 | 4448 | 1804 | |
| 202+49.00 | 207+00.00 | HWY. 105 - SITE 2 - STAGE 1 | 256 | 4695 | |
| 295+00.00 | 310+00.00 | HWY. 105 - SITE 3 - STAGE 1 | 571 | 10279 | |
| 295+00.00 | 310+00.00 | HWY. 105 - SITE 3 - STAGE 2 | 3853 | 3702 | |
| 295+00.00 | 310+00.00 | HWY. 105 - SITE 3 - STAGE 3 | 13581 | 226 | |
| ENTIRE | PROJECT | APPROACHES | 175 | 505 | |
| ENTIRE | PROJECT | SITE 1 - CHANNEL CHANGE | 2049 | | |
| | | BRIDGE EXCAVATION - SITE 2 | 430 | | |
| ENTIRE | PROJECT | TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | 500 |
| TOTALS: | | | 27401 | 27027 | 500 |

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

REMOVAL AND DISPOSAL OF CULVERTS

| STATION | DESCRIPTION | PIPE CULVERTS | BOX CULVERTS |
|----------------|--|---------------|--------------|
| | | EACH | EACH |
| 109+20 | HWY. 105 - SITE 1 - CROSS DRAIN | 1 | |
| 201+91 | HWY. 105 - SITE 2 - SIDE DRAIN ON RT. | 1 | |
| 202+46 | HWY. 105 - SITE 2 - SIDE DRAIN ON LT. | 1 | |
| 203+12 | HWY. 105 - SITE 2 - SIDE DRAIN ON LT. | 1 | |
| 296+43 | HWY. 105 - SITE 3 - SIDE DRAIN ON RT. | 1 | |
| 297+69 | HWY. 105 - SITE 3 - 12' X 5' R.C. BOX (MODIFIED) | | 1 |
| 307+52 | HWY. 105 - SITE 3 - SIDE DRAIN ON LT. | 1 | |
| TOTALS: | | 6 | 1 |

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

BENCH MARKS

| STATION | LOCATION | BENCH MARKS |
|---------------|-------------------------|-------------|
| | | EACH |
| 104+49 | HWY. 105 - SITE 1 - LT. | 1 |
| 204+04 | HWY. 105 - SITE 2 - LT. | 1 |
| 304+88 | HWY. 105 - SITE 3 - LT. | 1 |
| TOTAL: | | 3 |

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

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 51 | 105 |

2 QUANTITIES



SOIL LOG

| STATION | LATITUDE | | | LONGITUDE | | | LOCATION | DEPTH FEET | LIQUID LIMIT | PLASTICITY INDEX | AASHTO CLASSIFICATION | COLOR |
|---------|----------|-----|-------|-----------|-----|-------|----------|------------|--------------|------------------|-----------------------|-------|
| | DEG | MIN | SEC | DEG | MIN | SEC | | | | | | |
| 102+00 | 35 | 25 | 2.70 | 92 | 57 | 40.10 | 06' RT | 0-5' | 37 | 21 | A-6(6) | BROWN |
| 102+00 | 35 | 25 | 2.70 | 92 | 57 | 40.20 | 18' RT | 0-5 | ND | NP | A-4-0 | BROWN |
| 102+10 | 35 | 25 | 2.70 | 92 | 57 | 40.30 | 18' RT | 0-5 | 36 | 16 | A-6(6) | BROWN |
| 108+00 | 35 | 24 | 58.50 | 92 | 57 | 38.20 | 06' LT | 0-5 | 35 | 17 | A-6(9) | BROWN |
| 108+00 | 35 | 24 | 58.50 | 92 | 57 | 38.20 | 18' LT | 0-5 | 28 | 13 | A-6(5) | BROWN |
| 108+00 | 35 | 24 | 58.50 | 92 | 57 | 38.20 | 18' LT | 0-5 | 28 | 13 | A-6(5) | BROWN |
| 202+00 | 35 | 21 | 34.30 | 92 | 57 | 33.00 | 06' RT | 0-0.7Z | ND | NP | A-4-0 | BROWN |
| 202+00 | 35 | 21 | 34.20 | 92 | 57 | 33.00 | 18' RT | 0-5 | ND | NP | A-4-0 | BROWN |
| 208+00 | 35 | 21 | 28.80 | 92 | 57 | 32.70 | 06' LT | 0-0.8Z | ND | NP | A-2-4(0) | BROWN |
| 208+00 | 35 | 21 | 28.70 | 92 | 57 | 32.60 | 18' LT | 0-5 | ND | NP | A-2-4(0) | BROWN |
| 208+00 | 35 | 21 | 28.70 | 92 | 57 | 32.60 | 18' LT | 0-5 | ND | NP | A-4-0 | BROWN |
| 301+00 | 35 | 16 | 15.70 | 92 | 56 | 7.90 | 06' RT | 0-5 | 25 | 10 | A-4(4) | BROWN |
| 301+00 | 35 | 16 | 15.70 | 92 | 56 | 7.90 | 18' RT | 0-5 | 27 | 6 | A-4(3) | BROWN |
| 301+10 | 35 | 16 | 15.70 | 92 | 56 | 7.90 | 18' RT | 0-5 | ND | NP | A-4-0 | BROWN |
| 306+00 | 35 | 16 | 10.80 | 92 | 56 | 7.00 | 06' LT | 0-5 | 24 | 10 | A-4(3) | BROWN |
| 306+00 | 35 | 16 | 10.80 | 92 | 56 | 6.90 | 24' LT | 0-5 | 21 | 5 | A-4(1) | 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.
 Z- AUGER REFUSAL
 NP - NON-PLASTIC
 ND - NOT DETERMINABLE

CONCRETE DITCH PAVING

| STATION | STATION | LOCATION | LENGTH LIN. FT. | "W" FEET | CONC. DITCH PAVING (TYPE B) | SOLID SODDING | WATER |
|----------------|-----------|-------------------------|-----------------|----------|-----------------------------|---------------|---------|
| | | | | | SQ. YD. | SQ. YD. | M. GAL. |
| 105+18.97 | 105+83.00 | HWY. 105 - SITE 1 - RT. | 64 | 6.00 | 42.67 | 28.44 | 0.36 |
| TOTALS: | | | | | 42.67 | 28.44 | 0.36 |

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

EROSION CONTROL MATTING

| STATION | STATION | LOCATION | LENGTH | CLASS 3 |
|---------------|---------|-------------------------|----------|---------|
| | | | LIN. FT. | SQ. YD. |
| 200+00 | 203+95 | HWY. 105 - SITE 2 - LT. | 395.00 | 351.11 |
| 200+00 | 203+95 | HWY. 105 - SITE 2 - RT. | 395.00 | 351.11 |
| 206+06 | 207+00 | HWY. 105 - SITE 2 - LT. | 94.00 | 83.56 |
| 206+06 | 207+42 | HWY. 105 - SITE 2 - RT. | 136.00 | 120.89 |
| 207+70 | 209+41 | HWY. 105 - SITE 2 - LT. | 171.00 | 152.00 |
| 207+70 | 209+41 | HWY. 105 - SITE 2 - RT. | 171.00 | 152.00 |
| TOTAL: | | | | 1210.67 |

NOTE: AVERAGE WIDTH = 8'-0"

EROSION CONTROL

| STATION | STATION | LOCATION | PERMANENT EROSION CONTROL | | | | | TEMPORARY EROSION CONTROL | | | | | | | | |
|---|---------|-----------------------|---------------------------|-------|-------------|--------|----------------------------|---------------------------|-------------|--------|-----------------------------|-------------------------|-------------------|-----------------------|--------------------------------|------------------------------|
| | | | SEEDING | LIME | MULCH COVER | WATER | SECOND SEEDING APPLICATION | TEMPORARY SEEDING | MULCH COVER | WATER | SAND BAG DITCH CHECKS (E-5) | ROCK DITCH CHECKS (E-6) | SILT FENCE (E-11) | SEDIMENT BASIN (E-14) | OBLITERATION OF SEDIMENT BASIN | *SEDIMENT REMOVAL & DISPOSAL |
| | | | ACRE | TON | ACRE | M.GAL. | ACRE | ACRE | ACRE | M.GAL. | BAG | CU.YD. | LIN. FT. | CU.YD. | CU.YD. | CU. YD. |
| ENTIRE PROJECT | | CLEARING AND GRUBBING | | | | | | | | | | | | | | |
| ENTIRE PROJECT | | STAGE 1 | 4.34 | 8.68 | 4.34 | 442.7 | 4.34 | 8.35 | 8.35 | 170.3 | 308 | 87 | 1743 | | 108 | |
| ENTIRE PROJECT | | STAGE 2 | 1.19 | 2.38 | 1.19 | 121.4 | 1.19 | 6.61 | 6.61 | 134.8 | 110 | 27 | 2843 | | 119 | |
| ENTIRE PROJECT | | STAGE 3 | 0.65 | 1.30 | 0.65 | 66.3 | 0.65 | 2.19 | 2.19 | 44.7 | 264 | 51 | 1933 | | 101 | |
| *ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | | 1.55 | 3.10 | 1.55 | 158.1 | 1.55 | 4.01 | 4.01 | 81.8 | 264 | 42 | 1953 | | 98 | |
| TOTALS: | | | 7.73 | 15.46 | 7.73 | 788.5 | 7.73 | 26.45 | 26.45 | 539.5 | 1166 | 267 | 9472 | 450 | 943 | |

BASIS OF ESTIMATE:
 LIME 2 TONS / ACRE OF SEEDING
 WATER..... 102.0 M.G. / ACRE OF SEEDING
 WATER..... 20.4 M.G. / ACRE OF TEMPORARY SEEDING
 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.

1/23/2020 R080529.DGN

QUANTITIES

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 52 | 105 |

② QUANTITIES



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 | | | 600 | 6 |
| TOTALS: | | | 600 | 6 |

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

MAILBOXES

| LOCATION | MAILBOXES | MAILBOX SUPPORTS |
|----------------|-----------|------------------|
| | | (SINGLE) |
| EACH | | |
| ENTIRE PROJECT | 1 | 1 |
| TOTALS: | 1 | 1 |

FENCING

| STATION | STATION | LOCATION | WIRE FENCE (TYPE D) LIN. FT. |
|---------------|---------|-------------------------|------------------------------|
| 101+00 | 104+69 | HWY. 105 - SITE 1 - RT. | 432 |
| 103+40 | 104+37 | HWY. 105 - SITE 1 - LT. | 129 |
| 104+87 | 106+77 | HWY. 105 - SITE 1 - LT. | 234 |
| 105+19 | 109+70 | HWY. 105 - SITE 1 - RT. | 472 |
| 204+42 | 208+18 | HWY. 105 - SITE 2 - RT. | 386 |
| 205+47 | 207+57 | HWY. 105 - SITE 2 - LT. | 211 |
| 294+50 | 304+70 | HWY. 105 - SITE 3 - LT. | 1032 |
| 305+21 | 306+77 | HWY. 105 - SITE 3 - LT. | 220 |
| TOTAL: | | | 3116 |

GUARDRAIL

| STATION | STATION | LOCATION | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) | BRIDGE END TERMINAL |
|----------------|-----------|-------------------------|--------------------|-------------------------------|-----------------------------|---------------------|
| | | | LIN. FT. | EACH | | |
| 202+06.21 | 203+85.12 | HWY. 105 - SITE 2 - RT. | 150 | 1 | 1 | |
| 203+60.07 | 204+03.77 | HWY. 105 - SITE 2 - LT. | | | | 1 |
| 205+96.17 | 207+49.96 | HWY. 105 - SITE 2 - RT. | 75 | 1 | 1 | |
| 206+14.88 | 207+92.22 | HWY. 105 - SITE 2 - LT. | 150 | 1 | 1 | |
| TOTALS: | | | 375 | 3 | 3 | 1 |

APPROACH GUTTERS AND SLABS

| STATION | STATION | LOCATION | APPROACH GUTTER (TYPE C) | APPROACH SLABS (TYPE C1) | REINFORCING STEEL-RDWY. (GR. 60) |
|----------------|-----------|-------------------------|--------------------------|--------------------------|----------------------------------|
| | | | CU. YD. | CU. YD. | POUND |
| 203+52.41 | 203+94.45 | HWY. 105 - SITE 2 - LT. | 14.80 | | 810 |
| 203+52.41 | 203+94.45 | HWY. 105 - SITE 2 | | 56.68 | 6660 |
| 203+52.41 | 203+94.45 | HWY. 105 - SITE 2 - RT. | 14.80 | | 810 |
| 206+05.55 | 206+47.59 | HWY. 105 - SITE 2 - LT. | 14.80 | | 810 |
| 206+05.55 | 206+47.59 | HWY. 105 - SITE 2 | | 56.68 | 6660 |
| 206+05.55 | 206+47.59 | HWY. 105 - SITE 2 - RT. | 14.80 | | 810 |
| TOTALS: | | | 59.20 | 113.36 | 16560 |

NOTE: USE T =13.5" FOR 8" SHOULDER.

1/23/2020

RO80529.DGN

QUANTITIES

2 QUANTITIES

BASE AND SURFACING

| STATION | STATION | LOCATION | LENGTH FEET | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | | | ACHM BINDER COURSE (1") | | | | ACHM SURFACE COURSE (3/8") | | | | | | | | | | |
|---|-----------|--|----------------|---------------------------------|---------|-------------------------|---------|--------|-------------------------|--------|---------|-------------------------|----------------|--------|----------------|----------------------------|----------------|--------|----------------|--------------|----------------|--------|----------------|--------------|--------------------|--------|
| | | | | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SITE 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100+92.74 | 103+00.00 | HWY. 105 - SITE 1 TRANSITION/OVERLAY | 207.26 | 1.00 | 2.07 | | | | | 24.00 | 552.69 | 93.96 | 93.96 | | | | | | | | | | | | | |
| 103+00.00 | 104+00.00 | HWY. 105 - SITE 1 TAPER | 100.00 | 125.38 | 125.38 | 24.37 | 270.78 | 13.54 | | | | | 13.54 | 2.24 | 24.89 | 385.00 | 4.79 | 2.13 | 23.87 | 220.00 | 2.60 | 24.00 | 552.69 | 220.00 | 60.80 | 60.80 |
| 104+00.00 | 105+45.00 | HWY. 105 - SITE 1 FULL DEPTH | 145.00 | 250.75 | 363.59 | 48.73 | 785.09 | 39.25 | | | | | 39.25 | 24.48 | 394.40 | 385.00 | 75.92 | 24.25 | 390.69 | 220.00 | 42.98 | 28.00 | 288.89 | 220.00 | 31.78 | 34.38 |
| 105+45.00 | 106+00.00 | HWY. 105 - SITE 1 NOTCH & WIDEN | 55.00 | 173.00 | 95.15 | 28.73 | 175.57 | 8.78 | | | | | 8.78 | 4.48 | 27.38 | 385.00 | 5.27 | 4.25 | 25.97 | 220.00 | 2.86 | 28.00 | 451.11 | 220.00 | 49.62 | 92.60 |
| 106+00.00 | 107+00.00 | HWY. 105 - SITE 1 TAPER | 100.00 | 86.50 | 86.50 | 24.37 | 270.78 | 13.54 | | | | | 13.54 | 2.24 | 24.89 | 385.00 | 4.79 | 2.13 | 23.87 | 220.00 | 2.60 | 26.00 | 288.89 | 220.00 | 18.82 | 21.68 |
| 107+00.00 | 110+81.65 | HWY. 105 - SITE 1 TRANSITION/OVERLAY | 381.65 | 1.00 | 3.82 | | | | | 24.00 | 1017.73 | 173.01 | 173.01 | | | | | | | | | 24.00 | 1017.73 | 220.00 | 31.78 | 34.38 |
| SITE 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 201+15.00 | 203+00.00 | HWY. 105 - SITE 2 TRANSITION | 185.00 | 94.25 | 174.36 | | | | | 20.00 | 411.11 | 69.89 | 69.89 | 4.24 | 87.16 | 385.00 | 16.78 | 4.13 | 84.89 | 220.00 | 9.34 | 26.00 | 534.44 | 220.00 | 58.79 | 68.13 |
| 203+00.00 | 203+52.41 | HWY. 105 - SITE 2 NOTCH & WIDEN | 52.41 | 188.50 | 98.79 | 32.73 | 190.60 | 9.53 | | | | | 9.53 | 8.48 | 49.38 | 385.00 | 9.51 | 8.25 | 48.04 | 220.00 | 5.28 | 28.00 | 183.05 | 220.00 | 17.94 | 23.22 |
| 206+47.59 | 207+00.00 | HWY. 105 - SITE 2 NOTCH & WIDEN | 52.41 | 188.50 | 98.79 | 32.73 | 190.60 | 9.53 | | | | | 9.53 | 8.48 | 49.38 | 385.00 | 9.51 | 8.25 | 48.04 | 220.00 | 5.28 | 28.00 | 183.05 | 220.00 | 17.94 | 23.22 |
| 207+00.00 | 208+85.00 | HWY. 105 - SITE 2 TRANSITION | 185.00 | 94.25 | 174.36 | | | | | 20.00 | 411.11 | 69.89 | 69.89 | 4.24 | 87.16 | 385.00 | 16.78 | 4.13 | 84.89 | 220.00 | 9.34 | 26.00 | 534.44 | 220.00 | 58.79 | 68.13 |
| SITE 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 294+50.00 | 296+00.00 | HWY. 105 - SITE 3 TRANSITION | 150.00 | 78.00 | 117.00 | | | | | 22.00 | 366.67 | 62.33 | 62.33 | 2.24 | 37.33 | 385.00 | 7.19 | 2.13 | 35.50 | 220.00 | 3.91 | 31.00 | 516.87 | 220.00 | 56.83 | 60.74 |
| 296+00.00 | 297+50.00 | HWY. 105 - SITE 3 NOTCH & WIDEN | 150.00 | 156.00 | 234.00 | 30.73 | 512.17 | 25.61 | | | | | 25.61 | 4.48 | 74.67 | 385.00 | 14.37 | 4.25 | 70.83 | 220.00 | 7.79 | 32.00 | 533.33 | 220.00 | 58.67 | 66.46 |
| 297+50.00 | 298+00.00 | HWY. 105 - SITE 3 FULL DEPTH | 50.00 | 245.75 | 122.88 | 48.73 | 270.72 | 13.54 | | | | | 13.54 | 24.48 | 136.00 | 385.00 | 26.18 | 24.25 | 134.72 | 221.00 | 14.89 | 32.00 | 177.78 | 220.00 | 19.56 | 34.45 |
| 298+00.00 | 304+30.00 | HWY. 105 - SITE 3 NOTCH & WIDEN | 630.00 | 156.00 | 982.80 | 30.73 | 2151.10 | 107.66 | | | | | 107.66 | 4.48 | 313.60 | 385.00 | 60.37 | 4.25 | 297.50 | 222.00 | 33.02 | 32.00 | 2240.00 | 220.00 | 246.40 | 279.42 |
| 304+30.00 | 306+00.00 | HWY. 105 - SITE 3 FULL DEPTH | 170.00 | 245.75 | 122.88 | 48.73 | 270.72 | 13.54 | | | | | 13.54 | 24.48 | 136.00 | 385.00 | 26.18 | 24.25 | 134.72 | 221.00 | 14.89 | 32.00 | 177.78 | 220.00 | 19.56 | 34.45 |
| 306+00.00 | 306+50.00 | HWY. 105 - SITE 3 NOTCH & WIDEN | 50.00 | 156.00 | 78.00 | 30.73 | 170.72 | 8.54 | | | | | 8.54 | 4.48 | 24.89 | 385.00 | 4.79 | 4.25 | 23.61 | 220.00 | 2.60 | 32.00 | 177.78 | 220.00 | 19.56 | 22.16 |
| 306+50.00 | 307+50.00 | HWY. 105 - SITE 3 TAPER | 100.00 | 78.00 | 78.00 | 26.37 | 293.00 | 14.65 | | | | | 14.65 | 2.24 | 24.89 | 385.00 | 4.79 | 2.13 | 23.67 | 220.00 | 2.60 | 31.00 | 344.44 | 220.00 | 37.89 | 40.49 |
| 307+50.00 | 311+89.05 | HWY. 105 - SITE 3 TRANSITION/OVERLAY | 439.05 | 78.00 | 342.46 | | | | | 22.00 | 1073.23 | 182.45 | 182.45 | | | | | | | | | 22.00 | 1195.46 | 220.00 | 37.89 | 40.49 |
| ADDITIONAL FOR LEVELING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SITE 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 101+92.74 | 104+00.00 | HWY. 105 | 207.26 | | | | | | | 20.00 | 460.58 | 78.30 | 78.30 | | | | | | | | | 20.00 | 460.58 | VAR. | 50.66 | 50.66 |
| 105+45.00 | 109+81.65 | HWY. 105 | 436.65 | | | | | | | 20.00 | 970.33 | 164.96 | 164.96 | | | | | | | | | 20.00 | 970.33 | VAR. | 106.74 | 106.74 |
| SITE 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 203+00.00 | 203+52.41 | HWY. 105 | 52.41 | | | | | | | 16.00 | 93.17 | 15.84 | 15.84 | | | | | | | | | 16.00 | 93.17 | VAR. | 10.25 | 10.25 |
| 206+47.59 | 207+00.00 | HWY. 105 | 52.41 | | | | | | | 16.00 | 93.17 | 15.84 | 15.84 | | | | | | | | | 16.00 | 93.17 | VAR. | 10.25 | 10.25 |
| SITE 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 296+00.00 | 297+50.00 | HWY. 105 | 150.00 | | | | | | | 22.00 | 366.67 | 62.33 | 62.33 | | | | | | | | | 22.00 | 366.67 | VAR. | 223.18 | 223.18 |
| 298+00.00 | 304+30.00 | HWY. 105 | 630.00 | | | | | | | 22.00 | 1540.00 | 261.80 | 261.80 | | | | | | | | | 22.00 | 1540.00 | VAR. | 169.40 | 169.40 |
| 306+00.00 | 310+89.05 | HWY. 105 | 489.05 | | | | | | | 22.00 | 1195.46 | 203.23 | 203.23 | | | | | | | | | 22.00 | 1195.46 | VAR. | 131.50 | 131.50 |
| DETOUR | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+92.74 | 12+73.75 | HWY. 105 - SITE 1 DETOUR NOTCH & WIDEN | 181.01 | VAR. | 77.31 | VAR. | 129.85 | 6.49 | | | | | 6.49 | VAR. | 129.85 | 330.00 | 21.43 | | | | | VAR. | 126.41 | 220.00 | 13.91 | 13.91 |
| 12+73.75 | 18+78.36 | HWY. 105 - SITE 1 DETOUR FULL DEPTH | 604.61 | 142.25 | 860.06 | 20.29 | 1363.06 | 88.15 | | | | | 88.15 | 20.29 | 1363.06 | 330.00 | 224.90 | | | | | 24.00 | 1612.29 | 220.00 | 177.35 | 177.35 |
| 18+78.36 | 20+61.83 | HWY. 105 - SITE 1 DETOUR NOTCH & WIDEN | 183.47 | VAR. | 80.01 | VAR. | 135.75 | 6.79 | | | | | 6.79 | VAR. | 135.75 | 330.00 | 22.40 | | | | | VAR. | 130.58 | 220.00 | 14.36 | 14.36 |
| 24+50.00 | 26+20.89 | HWY. 105 - SITE 3 DETOUR NOTCH & WIDEN | 170.89 | VAR. | 62.46 | VAR. | 105.38 | 5.27 | | | | | 5.27 | VAR. | 105.38 | 330.00 | 17.39 | | | | | VAR. | 101.50 | 220.00 | 11.17 | 11.17 |
| 26+20.89 | 38+70.96 | HWY. 105 - SITE 1 DETOUR FULL DEPTH | 1250.07 | 142.25 | 1778.22 | 20.29 | 2818.21 | 140.91 | | | | | 140.91 | 20.29 | 2818.21 | 330.00 | 465.00 | | | | | 24.00 | 3333.52 | 220.00 | 366.69 | 366.69 |
| 38+70.96 | 41+46.00 | HWY. 105 - SITE 1 DETOUR NOTCH & WIDEN | 275.04 | VAR. | 123.08 | VAR. | 212.04 | 10.60 | | | | | 10.60 | VAR. | 212.04 | 330.00 | 34.99 | | | | | VAR. | 205.43 | 220.00 | 22.60 | 22.60 |
| ADDITIONAL FOR GUARDRAIL WIDENING - SITE 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 201+15.37 | 201+96.37 | GUARDRAIL TAPER RT. | 81.00 | 10.38 | 8.41 | | | | | | | | | | | | | | | | | 2.75 | 24.75 | 220.00 | 2.72 | 2.72 |
| 201+96.37 | 202+06.37 | GUARDRAIL WIDENING RT. | 10.00 | 20.75 | 2.08 | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220.00 | 0.67 | 0.67 |
| 202+06.37 | 203+31.37 | GUARDRAIL WIDENING TAPER RT. | 125.00 | 15.25 | 19.06 | | | | | | | | | | | | | | | | | 4.50 | 62.50 | 220.00 | 6.88 | 6.88 |
| 203+31.37 | 203+75.12 | GUARDRAIL WIDENING TO BRIDGE END RT. | 43.75 | 9.75 | 4.27 | | | | | | | | | | | | | | | | | 3.50 | 17.01 | 220.00 | 1.87 | 1.87 |
| 203+29.02 | 203+50.02 | GUARDRAIL TAPER LT. | 21.00 | 5.50 | 1.16 | | | | | | | | | | | | | | | | | 1.75 | 4.08 | 220.00 | 0.45 | 0.45 |
| 203+50.02 | 203+93.77 | GUARDRAIL WIDENING TO BRIDGE END LT. | 43.75 | 11.00 | 4.81 | | | | | | | | | | | | | | | | | 3.50 | 17.01 | 220.00 | 1.87 | 1.87 |
| 206+24.88 | 206+68.63 | GUARDRAIL WIDENING TO BRIDGE END LT. | 43.75 | 9.75 | 4.27 | | | | | | | | | | | | | | | | | 3.50 | 17.01 | 220.00 | 1.87 | 1.87 |
| 206+68.63 | 207+93.63 | GUARDRAIL WIDENING LT. TAPER | 125.00 | 15.25 | 19.06 | | | | | | | | | | | | | | | | | 4.50 | 62.50 | 220.00 | 6.88 | 6.88 |
| 207+93.63 | 208+03.63 | GUARDRAIL WIDENING LT. | 10.00 | 20.70 | 2.07 | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220.00 | 0.67 | 0.67 |
| 208+03.63 | 208+84.63 | GUARDRAIL TAPER LT. | 81.00 | 10.38 | 8.41 | | | | | | | | | | | | | | | | | 2.75 | 24.75 | 220.00 | 2.72 | 2.72 |
| 206+06.23 | 208+49.98 | GUARDRAIL WIDENING TO BRIDGE END RT. | 43.75 | 11.00 | 4.81 | | | | | | | | | | | | | | | | | 3.50 | 17.01 | 220.00 | 1.87 | 1.87 |
| 206+49.98 | 207+49.98 | GUARDRAIL WIDENING RT. TAPER | 100.00 | 7.38 | 7.38 | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220.00 | 5.50 | 5.50 |
| 207+49.98 | 207+59.98 | GUARDRAIL WIDENING RT. | 10.00 | 20.70 | 2.07 | | | | | | | | | | | | | | | | | | | | | |

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 54 | 105 |
| | | | | | | JOB NO. | 080529 | |

② QUANTITIES



RUMBLE STRIPES IN ASPHALT SHOULDERS

| STATION | STATION | LOCATION | * RUMBLE STRIPES IN ASPHALT SHOULDERS |
|---------------|-----------|-------------------|---------------------------------------|
| | | | LIN. FT. |
| 100+00.00 | 111+00.00 | HWY. 105 - SITE 1 | 2200 |
| 203+00.00 | 203+52.41 | HWY. 105 - SITE 2 | 105 |
| 206+47.59 | 207+00.00 | HWY. 105 - SITE 2 | 105 |
| 200+00.00 | 209+40.92 | HWY. 105 - SITE 3 | 1882 |
| TOTAL: | | | 4292 |

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

COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH | COLD MILLING ASPHALT PAVEMENT |
|---------------|-----------|------------------------------|------------|-------------------------------|
| | | | FEET | SQ. YD. |
| 100+92.74 | 101+92.74 | HWY. 105 - SITE 1 MAIN LANES | 20.00 | 222.22 |
| 110+16.45 | 111+16.45 | HWY. 105 - SITE 1 MAIN LANES | 20.00 | 222.22 |
| 201+15.00 | 203+00.00 | HWY. 105 - SITE 2 MAIN LANES | 16.00 | 328.89 |
| 207+00.00 | 208+85.00 | HWY. 105 - SITE 2 MAIN LANES | 16.00 | 328.89 |
| 294+50.00 | 296+00.00 | HWY. 105 - SITE 3 MAIN LANES | 30.00 | 500.00 |
| 310+89.05 | 311+89.05 | HWY. 105 - SITE 3 MAIN LANES | 30.00 | 333.33 |
| TOTAL: | | | | 1935.55 |

NOTE: AVERAGE MILLING DEPTH 1".

ACHM PATCHING OF EXISTING ROADWAY

| DESCRIPTION | TON |
|---|-----------|
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 30 |
| TOTAL: | 30 |

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 | 50 |
| TOTAL: | 50 |

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

DRIVEWAYS & TURNOUTS

| STATION | SIDE | LOCATION | WIDTH | ACHM SURFACE COURSE (3/8") 220 LBS. PER SQ. YD. (PG 64-22) | | AGGREGATE BASE COURSE (CLASS 7) | SIDE DRAINS | | | STANDARD DRAWINGS |
|-----------------------------------|------|-----------------------------------|-------|--|---------------|---------------------------------|-------------|-----------|-----------|-----------------------------------|
| | | | | FEET | SQ. YD. | | TON | 18" | 24" | |
| 101+53 | LT. | HWY. 105 - SITE 1 - FORTUNE RD. | 24 | 35.40 | 3.89 | 14.46 | | | | |
| 103+00 | LT. | HWY. 105 - SITE 1 - DRIVE | 16 | 24.73 | 2.72 | 10.10 | | | | |
| 107+38 | LT. | HWY. 105 - SITE 1 - FORTUNE LN. | 20 | 154.51 | 17.00 | 63.09 | 36 | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 201+43 | RT. | HWY. 105 - SITE 2 - DRIVE | 16 | 24.73 | 2.72 | 10.10 | 28 | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 202+46 | LT. | HWY. 105 - SITE 2 - BRADFIELD RD. | 20 | 200.93 | 22.10 | 82.05 | | 54 | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 203+12 | LT. | HWY. 105 - SITE 2 - DRIVE | 20 | 85.63 | 9.42 | 34.97 | | 28 | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 208+35 | LT. | HWY. 105 - SITE 2 - DRIVE | 40 | 145.62 | 16.02 | 59.46 | | | | |
| 296+43 | RT. | HWY. 105 - SITE 3 - DRIVE | 16 | 117.17 | 12.89 | 47.84 | 36 | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 299+86 | RT. | HWY. 105 - SITE 3 - DRIVE | 16 | 126.06 | 13.87 | 51.47 | | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 306+21 | RT. | HWY. 105 - SITE 3 - DRIVE | 16 | 24.73 | 2.72 | 10.10 | 32 | | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| 307+52 | LT. | HWY. 105 - SITE 3 - DRIVE | 16 | 47.84 | 5.26 | 19.53 | | 52 | | PCC-1, PCM-1, PCP-1, PCP-2, PCP-3 |
| * ENTIRE PROJECT TEMPORARY DRIVES | | | | | | 100.00 | | | | |
| TOTALS: | | | | 987.35 | 108.61 | 503.17 | 132 | 82 | 52 | |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.2% MIN. AGGR.....5.8% 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.

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

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS | |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|----------------|--------------|-----|
| 3/5/2020 | | | | 6 | ARK. | | | | |
| | | | | | | | JOB NO. 080529 | 55 | 105 |

② QUANTITIES



STRUCTURES

| STATION | DESCRIPTION | REINFORCED CONCRETE PIPE CULVERT (CLASS III) | | FLARED END SECTIONS FOR R.C. PIPE CULVERTS | | 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. | |
|--------------------------------------|--|--|------------|--|----------|--------------------|-----------|------------|------------|------------|------|--------|--------|--------------------------|---------------------------------|-----------------------------|---------------|-------------|----------------|-------------------------------|
| | | 24" | 60" | 24" | 60" | 24" | 36" | 60" | 84" | 96" | | | | | | | | | | |
| | | LIN. FT. | | EACH | | LIN. FT. | | | | | | | | | | | | | | CU. YD. |
| 15+25 | QUAD. 84" x 80' TEMP. CULVERT ON A 35° RT. FWD. SKEW | | | | | | | 360 | | | | | | | | | | | | PCC-1, PCM-1 |
| 18+98 | EXTEND 24" x 40' PIPE CULVERT | | | | | 28 | | | | | | | | | | | | | | PCC-1, PCM-1 |
| 27+70 | TRI. 60" x 54' TEMP. CULVERT | | | | | | | 162 | | | | | | | | | | | | PCC-1, PCM-1 |
| 35+12 | TRI. 96" x 68' TEMP. CULVERT ON 15° RT. FWD. SKEW | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1 |
| 37+75 | TEMP. 36" x 36' | | | | | | | 36 | | | | | | | | | | | | PCC-1, PCM-1 |
| 109+20 | 24" x 44' R.C. PIPE CULVERT | 44 | | 2 | | | | | | | | | | | | | | | | FES-1, FES-2, PCC-0 |
| 297+69 | TRI. 60" X 78' R.C. PIPE CULVERT | | 234 | | 6 | | | | | | | | | | | | | | | FES-1, FES-2, PCC-1 |
| SUBTOTALS: | | 44 | 234 | 2 | 6 | 28 | 36 | 162 | 360 | 204 | | | | | | | | | | |
| STRUCTURES OVER 20' - 0" SPAN | | | | | | | | | | | | | | | | | | | | |
| 104+70 | TRI. 10' x 6' x 86' R.C. BOX CULVERT ON 15° R.F.S. | | | | | | | | | | 10 | 6 | 86 | 243.45 | 36520 | 112 | 28 | 0.35 | | RCB-1, RCB-2, SPECIAL DETAILS |
| 305+15 | TRI. 10' x 8' x 89' R.C. BOX CULVERT ON 15° R.F.S. | | | | | | | | | | 10 | 8 | 89 | 289.15 | 41604 | 123 | 32 | 0.40 | | RCB-1, RCB-2, SPECIAL DETAILS |
| SUBTOTALS: | | | | | | | | | | | | | | | | | | | | |
| TOTALS: | | 44 | 234 | 2 | 6 | 28 | 36 | 162 | 360 | 204 | | | | 532.60 | 78124 | 235 | 60 | 0.75 | | |
| 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.

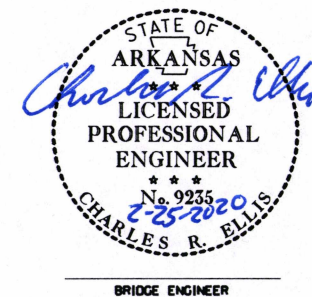
| | | | | | | | | |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 56 | 105 |
| | | | | 07474 - QUANTITIES | | - 61408 | | |

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 080529

| BRIDGE NO. | NAME PLATE TITLE | UNIT OF STRUCTURE | ITEM NO. | 205 | 801 | SP, SS, & 802 | SP, SS, & 802 | SS & 802 | SP, SS, & 802 | 803 | SS & 804 | SS & 804 | SS & 805 | SS & 805 | SP, SS, & 807 | SS & 808 | 812 | 816 | 816 | SP JOB 080529 | SP JOB 080529 | SP JOB 080529 | SP JOB 080529 | |
|---------------------------|--------------------------------|--|----------|---|---|----------------------------|----------------------------|---------------------------|-------------------------------|--------------------------------------|---|---------------------------------------|---------------------------|-----------|--|----------------------|----------------------------|----------------|---------------|--------------------------|-----------------------------------|------------------------------------|----------------------|----|
| | | | ITEM | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _) | UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE | PRECAST CONCRETE ABUTMENTS | PRECAST CONCRETE BENT CAPS | CLASS S CONCRETE - BRIDGE | CLASS S(AE) CONCRETE - BRIDGE | CLASS 1 PROTECTIVE SURFACE TREATMENT | EPOXY COATED REINFORCING STEEL (GRADE 60) | REINFORCING STEEL - BRIDGE (GRADE 60) | ② STEEL PILING (HP 10x42) | PREBORING | STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W) | ELASTOMERIC BEARINGS | BRIDGE NAME PLATE (TYPE D) | FILTER BLANKET | DUMPED RIPRAP | DRILLED SHAFT (60" DIA.) | PERMANENT STEEL CASING (72" DIA.) | CROSSHOLE SONIC LOGGING (60" DIA.) | CORING DRILLED SHAFT | |
| | | | UNIT | LUMP SUM | CU. YD. | EACH | EACH | CU. YD. | CU. YD. | GAL. | LB. | LB. | LIN. FT. | LIN. FT. | LB. | CU. IN. | EACH | SQ. YD. | CU. YD. | LIN. FT. | LIN. FT. | EACH | LIN. FT. | |
| 07474 | HIGHWAY 105 OVER ISABELL CREEK | BENT 1 | | 44 | 1 | | | | | | | | 90 | 75 | | | | 60 | 37 | | | | | |
| | | BENT 2 | | | | 1 | | 7.56 | | | | 1,836 | | | | 1,631 | | | | 42 | 22 | 2 | 21 | |
| | | BENT 3 | | | | | 1 | | 6.89 | | | 1,755 | | | | 1,631 | | | | 42 | 22 | 2 | 21 | |
| | | BENT 4 | | | | | 1 | | 5.45 | | | 1,539 | | | | 1,631 | | | | 45 | 25 | 2 | 23 | |
| | | BENT 5 | | | 38 | 1 | | | | | | | | 95 | 50 | | | | 42 | 26 | | | | |
| | | 210'-0" CONT. INTEGRAL W-BEAM UNIT | | | | | | | 314.40 | 22.4 | 67,870 | | | | | 172,040 | | 1 | | | | | | |
| | | SITE NO. 2 (EXISTING BR. NO. 00811) | | 1 | | | | | | | | | | | | | | | | | | | | |
| | | TOTALS FOR BRIDGE NO. 07474 | | | | 82 | 2 | 3 | 19.90 | 314.40 | 22.4 | 67,870 | 5,130 | 185 | 125 | 172,040 | 4,893 | 1 | 102 | 63 | 129 | 69 | 6 | 65 |
| | | SITE NO. 1 (EXISTING BR. NO. 00813) ④ | 1 | | | | | | | | | | | | | | | | | | | | | |
| | | SITE NO. 3 (EXISTING BR. NO. M3810) ⑤ | 1 | | | | | | | | | | | | | | | | | | | | | |
| TOTALS FOR JOB NO. 080529 | | | | ① 82 | 2 | 3 | 19.90 | 314.40 | 22.4 | 67,870 | 5,130 | 185 | 125 | 172,040 | 4,893 | 1 | 102 | 63 | 129 | 69 | 6 | ③ 65 | | |

- ① Includes approx. 44 Cu. Yd. of rock excavation.
- ② All steel piling shall be Grade 50 and are required to have QPL approved driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 10x42)". All piles shall conform to Standard Drawing No. 55020.
- ③ Quantity shown is for estimating and bidding purposes only. Actual quantities, if any, will be determined in the field.
- ④ Existing Bridge No. 00813 (Logmile 2.61) is 28.5' wide (26.2' roadway) and 24.0' long. The structure consists of an R.C. Slab span which has been widened with steel beams and is supported by concrete abutments on spread footings.
- ⑤ Existing Bridge No. M3810 (Logmile 13.63) is 29.2' wide (27.6' roadway) and 29.0' long. The structure consists of an R.C. Slab span which has been widened with steel beams and is supported by concrete abutments on spread footings.

JIM POOL
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES
HECTOR, ISABELL & ALEWINE CREEKS
STRS. & APPRS. (S)
POPE COUNTY

ROUTE 105 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: BHS DATE: 12/6/19 FILENAME: b080529_q1.dgn
 CHECKED BY: JYP DATE: 2/27/2020 SCALE: —
 DESIGNED BY: — DATE: —
 BRIDGE NO. 07474 DRAWING NO. 61408

SUMMARY OF QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---------------------------------|---|----------|----------|
| 201 | CLEARING | 37 | STATION |
| 201 | GRUBBING | 37 | STATION |
| 202 | REMOVAL AND DISPOSAL OF FENCE | 2967 | LN. FT. |
| 202 | REMOVAL AND DISPOSAL OF PIPE CULVERTS | 6 | EACH |
| 202 | REMOVAL AND DISPOSAL OF BOX CULVERTS | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF GUARDRAIL | 189 | LN. FT. |
| SS & 210 | UNCLASSIFIED EXCAVATION | 27401 | CU. YD. |
| 210 | COMPACTED EMBANKMENT | 27027 | CU. YD. |
| SP & 210 | SOIL STABILIZATION | 500 | TON |
| SS & 303 | AGGREGATE BASE COURSE (CLASS 7) | 7467 | TON |
| SS & 401 | TACK COAT | 2022 | GAL. |
| SP, SS, & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | 1086 | TON |
| SP, SS, & 406 | ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1") | 50 | TON |
| SP, SS, & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8") | 2460 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8") | 151 | TON |
| 412 | COLD MILLING ASPHALT PAVEMENT | 1936 | SQ. YD. |
| SP, SS, & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | 10 | TON |
| SP, SS, & 415 | ACHM PATCHING OF EXISTING ROADWAY | 30 | TON |
| 504 | APPROACH SLABS | 113.36 | CU. YD. |
| 504 | APPROACH GUTTERS | 59.20 | CU. YD. |
| 601 | MOBILIZATION | 1.00 | LUMP SUM |
| SP & 602 | FURNISHING FIELD OFFICE | 1 | EACH |
| SP, SS, & 603 | MAINTENANCE OF TRAFFIC | 1.00 | LUMP SUM |
| 603 | 24" TEMPORARY CULVERT | 28 | LN. FT. |
| 603 | 36" TEMPORARY CULVERT | 36 | LN. FT. |
| 603 | 60" TEMPORARY CULVERT | 162 | LN. FT. |
| 603 | 84" TEMPORARY CULVERT | 360 | LN. FT. |
| 603 | 96" TEMPORARY CULVERT | 204 | LN. FT. |
| SS & 604 | SIGNS | 450 | SQ. FT. |
| SS & 604 | BARRICADES | 136 | LN. FT. |
| SS & 604 | TRAFFIC DRUMS | 90 | EACH |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | 24652 | LN. FT. |
| SS & 604 | VERTICAL PANELS | 75 | EACH |
| SS & 605 | CONCRETE DITCH PAVING (TYPE B) | 43 | SQ. YD. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | 44 | LN. FT. |
| 606 | 60" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | 234 | LN. FT. |
| SP, SS, & 606 | 18" SIDE DRAIN | 132 | LN. FT. |
| SP, SS, & 606 | 24" SIDE DRAIN | 82 | LN. FT. |
| 606 | 36" SIDE DRAIN | 52 | LN. FT. |
| 606 | 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | 2 | EACH |
| 606 | 60" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | 6 | EACH |
| 606 | SELECTED PIPE BEDDING | 50 | CU. YD. |
| SS & 611 | 4" PIPE UNDERDRAINS | 600 | LN. FT. |
| SS & 611 | UNDERDRAIN OUTLET PROTECTORS | 6 | EACH |
| SS & 617 | GUARDRAIL (TYPE A) | 375 | LN. FT. |
| SS & 617 | GUARDRAIL TERMINAL (TYPE 2) | 3 | EACH |
| SS & 617 | THREE BEAM GUARDRAIL TERMINAL | 3 | EACH |
| 619 | WIRE FENCE (TYPE D) | 3116 | LN. FT. |
| 620 | LIME | 15 | TON |
| 620 | SEEDING | 7.73 | ACRE |
| SS & 620 | MULCH COVER | 34.18 | ACRE |
| 620 | WATER | 1329.1 | M. GAL. |
| 621 | TEMPORARY SEEDING | 26.45 | ACRE |
| 621 | SILT FENCE | 9472 | LN. FT. |
| 621 | SAND BAG DITCH CHECKS | 1166 | BAG |
| 621 | SEDIMENT BASIN | 450 | CU. YD. |
| 621 | OBLITERATION OF SEDIMENT BASIN | 450 | CU. YD. |
| 621 | SEDIMENT REMOVAL AND DISPOSAL | 943 | CU. YD. |
| 621 | ROCK DITCH CHECKS | 267 | CU. YD. |
| 623 | SECOND SEEDING APPLICATION | 7.73 | ACRE |
| 624 | SOLID SODDING | 88 | SQ. YD. |
| 626 | EROSION CONTROL MATTING (CLASS 3) | 1211 | SQ. YD. |
| 635 | ROADWAY CONSTRUCTION CONTROL | 1.00 | LUMP SUM |
| 637 | MAILBOXES | 1 | EACH |
| 637 | MAILBOX SUPPORTS (SINGLE) | 1 | EACH |
| SP & 642 | RUMBLE STRIPES IN ASPHALT SHOULDERS | 4292 | LN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (6") | 7065 | LN. FT. |
| 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (6") | 7065 | LN. FT. |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 45 | EACH |
| SS & 734 | BRIDGE END TERMINAL | 1 | EACH |
| SS & 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | 16560 | POUND |
| STRUCTURES OVER 20' SPAN | | | |
| 205 | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1) | 1.00 | LUMP SUM |
| 205 | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2) | 1.00 | LUMP SUM |
| 205 | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3) | 1.00 | LUMP SUM |
| 636 | BRIDGE CONSTRUCTION CONTROL | 1.00 | LUMP SUM |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE | 82 | CU. YD. |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY | 235 | CU. YD. |
| SS & 802 | CLASS S CONCRETE-ROADWAY | 532.60 | CU. YD. |
| SS & 802 | CLASS S CONCRETE-BRIDGE | 19.90 | CU. YD. |
| SP, SS, & 802 | CLASS S(AE) CONCRETE-BRIDGE | 314.40 | CU. YD. |
| SP, SS, & 802 | PRECAST CONCRETE ABUTMENTS | 2 | EACH |
| SP, SS, & 802 | PRECAST CONCRETE BENT CAPS | 3 | EACH |
| 803 | CLASS 1 PROTECTIVE SURFACE TREATMENT | 22.4 | GAL. |
| SS & 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | 78124 | POUND |
| SS & 804 | REINFORCING STEEL-BRIDGE (GRADE 60) | 5130 | POUND |
| SS & 804 | EPOXY COATED REINFORCING STEEL (GRADE 60) | 67870 | POUND |
| SS & 805 | STEEL PILING (HP 10X42) | 185 | LN. FT. |
| SP | CORING DRILLED SHAFT | 65 | LN. FT. |
| SP | DRILLED SHAFT (60" DIAMETER) | 129 | LN. FT. |
| SP | PERMANENT STEEL CASING (72" DIAMETER) | 69 | LN. FT. |
| SS & 805 | PREBORING | 125 | LN. FT. |
| SP | CROSSHOLE SONIC LOGGING (60" DIAMETER) | 6 | EACH |
| SP, SS, & 807 | STRUCTURAL STEEL IN BEAM SPANS (A709, GR 50W) | 172040 | POUND |
| SS & 808 | ELASTOMERIC BEARINGS | 4893 | CU. IN. |
| 812 | BRIDGE NAME PLATE (TYPE D) | 1 | EACH |
| 816 | FILTER BLANKET | 102 | SQ. YD. |
| 816 | DUMPED RIPRAP | 63 | CU. YD. |

REVISIONS

| DATE | REVISION | SHEET NUMBER |
|-----------|--|---|
| 3/5/2020 | REV. BRIDGE NOTE ON TITLE SHEET; REV. RDWY. STD. DWGS. PCP-3, PM-1, & TC-3; ADDED RDWY. STD. DWGS. PBC-1 & WF-2; REV. TYPICAL SECTIONS, SPECIAL DETAILS, TEC DETAILS, MOT DETAILS, PPM DETAILS, SURVEY CONTROL DETAILS, PLAN AND PROFILE SHEETS, AND CROSS SECTIONS; ADDED SPECIAL DETAIL FOR CO. RD. TURNOUT; REV. "MOT" & "SWPPP" SPECIAL PROVISIONS; ADDED "AIRPORT CLEARANCE REQUIREMENTS" SP; REV. QUANTITIES | 1, 3-10, 12, 22-55, 57, 58, 60-70, 85-105 |
| 4/16/2020 | REVISED "UTILITY ADJUSTMENT" SPECIAL PROVISION; REVISED BRIDGE STANDARD DRAWING " STANDARD DRAWING DETAILS FOR TYPE D BRIDGE NAME PLATE". | 3 & 57 |

| | | | | | | | | |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| 3/5/2020 | | | | 6 | ARK. | | | |
| 4/16/2020 | | | | | | 080529 | 57 | 105 |

SUMMARY OF QUANTITIES & REVISIONS



Trinity Smith

Apr 17 2020 8:09 AM

DocuSign

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. | 080529 |
| | | | | | | | | 58 |
| | | | | | | | | 105 |

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: a080529
 Date: 11/10/2016
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL,
 GRID FEET
 Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|------------|-------------|--------------|--------|---------|-------------------------------|
| 1 | 341229.0794 | 1033052.2655 | 399.02 | CTL | AHTD STD. MON. STAMPED PN# 1 |
| 2 | 341827.3981 | 1033146.5473 | 396.92 | CTL | AHTD STD. MON. STAMPED PN# 2 |
| 3 | 342367.6441 | 1033147.4743 | 398.16 | CTL | AHTD STD. MON. STAMPED PN# 3 |
| 4 | 342903.1207 | 1033090.1523 | 397.63 | CTL | AHTD STD. MON. STAMPED PN# 4 |
| 5 | 394434.4834 | 1025843.9069 | 631.72 | CTL | AHTD STD. MON. STAMPED PN# 5 |
| 6 | 394932.5327 | 1025998.0174 | 639.99 | CTL | AHTD STD. MON. STAMPED PN# 6 |
| 7 | 395599.9003 | 1026113.8884 | 632.40 | CTL | AHTD STD. MON. STAMPED PN# 7 |
| 8 | 396289.2858 | 1025872.3501 | 654.88 | CTL | AHTD STD. MON. STAMPED PN# 8 |
| 9 | 396835.1299 | 1025531.4385 | 678.13 | CTL | AHTD STD. MON. STAMPED PN# 9 |
| 10 | 397077.2786 | 1025133.5711 | 706.98 | CTL | AHTD STD. MON. STAMPED PN# 10 |
| 100 | 342152.2370 | 1033169.2945 | 395.74 | GPS | AHTD GPS # 580032 |
| 101 | 343796.9463 | 1032940.4987 | 410.23 | GPS | AHTD GPS # 580032A |
| 102 | 393544.2310 | 1025849.0028 | 621.08 | GPS | AHTD GPS # 580033 |
| 103 | 394543.8392 | 1024757.1710 | 629.79 | GPS | AHTD GPS # 580033A |
| 900 | 395799.2690 | 1026048.9630 | 639.98 | TBM | 15.5' EAST OF C/L |
| 999 | 397063.2030 | 1025112.7980 | 711.59 | BM | NGS 2ND ORDER BM H 66 |

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
 (Standard markings common to all caps), or as indicated
 (Other markings indicated in the point description of the individual point).
 ALL DISTANCES ARE GROUND.
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
 *****THIS PROJECT IS IN GRID FEET*****
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GRID COORDINATES ARE STORED UNDER FILE NAME a080529gi.cti
 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: 80033 - 580033A
 CONVERGENCE ANGLE: 00 33 32.34 LEFT AT LAT N 35-24-58.93 LON W092-57-38.22 (HECTOR SITE)
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

SITE 1

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|-----------|-------------|--------------|
| 8000 | POB | 100+00.00 | 396224.0079 | 1025882.3264 |
| 8001 | PC | 105+34.65 | 395722.1368 | 1026066.6457 |
| 8003 | PT | 108+91.45 | 395371.0672 | 1026086.3858 |
| 8004 | POE | 113+51.23 | 394924.4278 | 1025977.2593 |

SITE 1 DETOUR

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|----------|-------------|--------------|
| 8000 | POB | 10+00.00 | 396224.0079 | 1025882.3264 |
| 8005 | PC | 10+92.74 | 396136.9533 | 1025914.2984 |
| 8007 | PT | 13+05.58 | 395929.1200 | 1025956.1555 |
| 8008 | PC | 13+54.29 | 395880.4538 | 1025958.3717 |
| 8010 | PT | 15+11.61 | 395725.4485 | 1025983.1901 |
| 8011 | PC | 17+06.49 | 395537.7365 | 1026035.5503 |
| 8013 | PT | 20+61.83 | 395186.3025 | 1026041.2426 |
| 8004 | POE | 23+31.41 | 394924.4278 | 1025977.2593 |

2/5/2020

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 59 | 105 |

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: s080529
 Date: 3/27/2017
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, 580035 - 580035A
 THIS PROJECT HAS GRID COORDS.
 Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|------------|-------------|--------------|---------|---------|------------------------------|
| 1 ISABELL | 372992.8063 | 1026359.9143 | 568.590 | CTL | AHTD STD. MON. STAMPED PN: 1 |
| 2 ISABELL | 373405.1751 | 1026372.9706 | 560.709 | CTL | AHTD STD. MON. STAMPED PN: 2 |
| 3 ISABELL | 374828.5098 | 1026389.3739 | 554.881 | CTL | AHTD STD. MON. STAMPED PN: 3 |
| 4 ISABELL | 376044.4161 | 1025848.3374 | 599.248 | CTL | AHTD STD. MON. STAMPED PN: 4 |
| 104 | 374017.2421 | 1026373.2343 | 552.103 | GPS | AHTD GPS #580035 |
| 105 | 375572.1941 | 1026340.3938 | 568.754 | GPS | AHTD GPS #580035A |

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
 *(standard markings common to all caps), or as indicated
 (other markings indicated in the point description of the individual point).
 ALL DISTANCES ARE GROUND.
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
 *****THIS PROJECT IS IN GRID FEET*****
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GRID COORDINATES ARE STORED UNDER FILE NAME s080529g; ISABELL.CTL
 HORIZONTAL DATUM: NAD 83 (2011)
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
 AT A SPECIFIC POINT.

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

BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: 580035 - 580035A
 CONVERGENCE ANGLE: 00 33 28.98 LEFT AT PN: 3 LT: N 35-21-33.53 LG: W092-57-32.45
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

SITE 2

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|-----------|-------------|--------------|
| 8014 | POB | 200+00.00 | 375122.3355 | 1026361.3942 |
| 8015 | POE | 209+40.92 | 374181.4666 | 1026351.6322 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 60 | 105 |

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES
 Project Name: s080529
 Date: 11/10/2016
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, GRID FEET
 Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|------------|-------------|--------------|--------|---------|-------------------------------|
| 1 | 341229.0794 | 1033052.2655 | 395.02 | CTL | AHTD STD. MON. STAMPED PN# 1 |
| 2 | 341827.3981 | 1033146.5473 | 396.92 | CTL | AHTD STD. MON. STAMPED PN# 2 |
| 3 | 342367.6441 | 1033147.4743 | 398.16 | CTL | AHTD STD. MON. STAMPED PN# 3 |
| 4 | 342903.1207 | 1033090.1523 | 397.63 | CTL | AHTD STD. MON. STAMPED PN# 4 |
| 5 | 394434.4834 | 1025843.9069 | 631.72 | CTL | AHTD STD. MON. STAMPED PN# 5 |
| 6 | 394932.5327 | 1025998.0174 | 639.99 | CTL | AHTD STD. MON. STAMPED PN# 6 |
| 7 | 395599.9003 | 1026113.8884 | 632.40 | CTL | AHTD STD. MON. STAMPED PN# 7 |
| 8 | 396289.2858 | 1025872.3501 | 654.88 | CTL | AHTD STD. MON. STAMPED PN# 8 |
| 9 | 396835.1299 | 1025531.4385 | 678.13 | CTL | AHTD STD. MON. STAMPED PN# 9 |
| 10 | 397077.2786 | 1025133.5711 | 706.98 | CTL | AHTD STD. MON. STAMPED PN# 10 |
| 100 | 342152.2370 | 1033169.2945 | 395.74 | GPS | AHTD GPS # 580032 |
| 101 | 343796.9463 | 1032940.4987 | 410.23 | GPS | AHTD GPS # 580032A |
| 102 | 393544.2310 | 1025849.0028 | 621.08 | GPS | AHTD GPS # 580033 |
| 103 | 394543.8392 | 1024757.1710 | 629.79 | GPS | AHTD GPS # 580033A |
| 900 | 395799.2690 | 1026048.9630 | 633.98 | TBM | 15.5' EAST OF CVL |
| 999 | 397063.2030 | 1025112.7980 | 711.59 | BM | NGS 2ND ORDER BM H 66 |

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped (standard markings common to all caps), or as indicated (other markings indicated in the point description of the individual point). ALL DISTANCES ARE GROUND.
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
 *****THIS PROJECT IS IN GRID FEET*****
 GRID DISTANCE = GROUND DISTANCE X CAF.
 GRID COORDINATES ARE STORED UNDER FILE NAME s080529gi.cti
 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: 80033 - 580033A
 CONVERGENCE ANGLE: 00 33 32.34 LEFT AT LAT N 35-24-58.93 LON W092-57-38.22 (HECTOR SITE)
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

SITE 3

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|-----------|-------------|--------------|
| 8050 | POB | 292+00.00 | 343708.5402 | 1032977.4966 |
| 8028 | PI | 299+98.57 | 342915.3912 | 1033070.3799 |
| 8051 | PI | 303+78.56 | 342537.8772 | 1033113.6703 |
| 8052 | PC | 305+79.83 | 342337.6696 | 1033134.3057 |
| 8054 | PT | 309+64.05 | 341954.0083 | 1033138.3343 |
| 8033 | POE | 312+39.70 | 341679.2775 | 1033115.8365 |

SITE 3 DETOUR

| POINT NO. | TYPE | STATION | NORTHING | EASTING |
|-----------|------|----------|-------------|--------------|
| 8050 | POB | 22+00.00 | 343708.5402 | 1032977.4966 |
| 8067 | PC | 24+50.00 | 343460.2394 | 1033006.5744 |
| 8069 | PT | 26+67.51 | 343254.1003 | 1033071.7871 |
| 8070 | PC | 27+08.97 | 343217.6432 | 1033091.7871 |
| 8072 | PT | 29+16.12 | 343021.3203 | 1033153.6318 |
| 8073 | PC | 34+36.69 | 342504.2868 | 1033214.1800 |
| 8075 | PT | 35+85.01 | 342356.4444 | 1033211.3212 |
| 8076 | PC | 41+06.97 | 341840.7631 | 1033130.6143 |
| 8078 | PT | 41+49.11 | 341798.9337 | 1033696.6814 |
| 8033 | POE | 42+69.16 | 341679.2775 | 1033115.8365 |

2/5/2020

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AD PROJ. NO. | SHEET NO. | TOTAL SHEETS | |
|--------------|-------------|--------------|-------------|----------------|-------|-------------------|----------------|--------------|-----|
| 3/5/2020 | | | | 6 | ARK. | | | | |
| | | | | | | | JOB NO. 080529 | 61 | 105 |

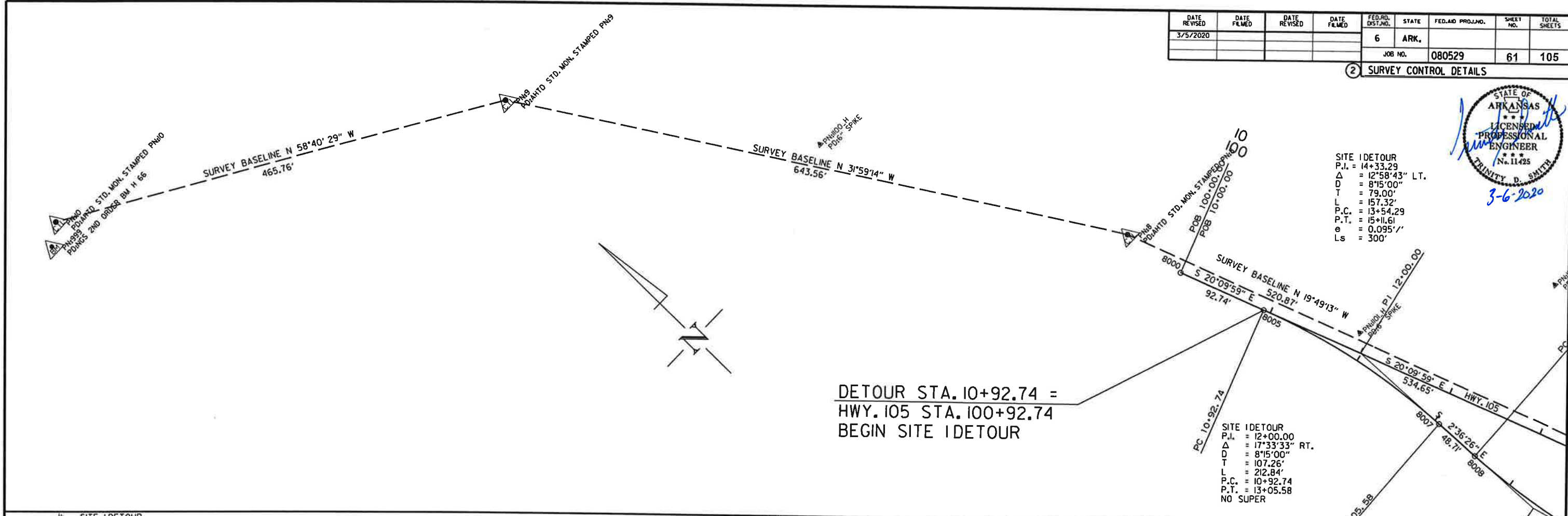
2 SURVEY CONTROL DETAILS



SITE I DETOUR
 P.I. = 14+33.29
 Δ = 12°58'43" LT.
 D = 8'15"00"
 T = 79.00'
 L = 157.32'
 P.C. = 13+54.29
 P.T. = 15+11.61
 e = 0.095'/'
 Ls = 300'

SITE I DETOUR
 P.I. = 12+00.00
 Δ = 17°33'33" RT.
 D = 8'15"00"
 T = 107.26'
 L = 212.84'
 P.C. = 10+92.74
 P.T. = 13+05.58
 NO SUPER

DETOUR STA. 10+92.74 =
 HWY. 105 STA. 100+92.74
 BEGIN SITE I DETOUR



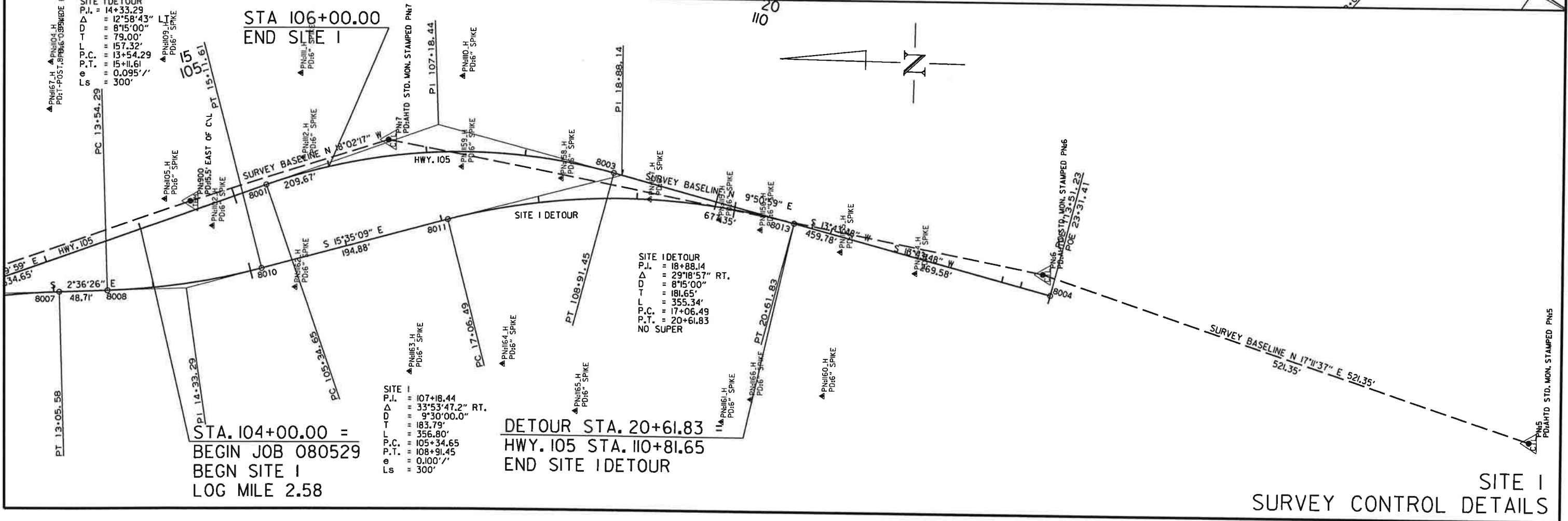
STA 106+00.00
 END SITE I

DETOUR STA. 20+61.83
 HWY. 105 STA. 110+81.65
 END SITE I DETOUR

STA. 104+00.00 =
 BEGIN JOB 080529
 BEGN SITE I
 LOG MILE 2.58

SITE I
 P.I. = 107+18.44
 Δ = 33°53'47.2" RT.
 D = 9°30'00.0"
 T = 183.79'
 L = 356.80'
 P.C. = 105+34.65
 P.T. = 108+91.45
 e = 0.100'/'
 Ls = 300'

SITE I DETOUR
 P.I. = 18+88.14
 Δ = 29°18'57" RT.
 D = 8'15"00"
 T = 181.65'
 L = 355.34'
 P.C. = 17+06.49
 P.T. = 20+61.83
 NO SUPER

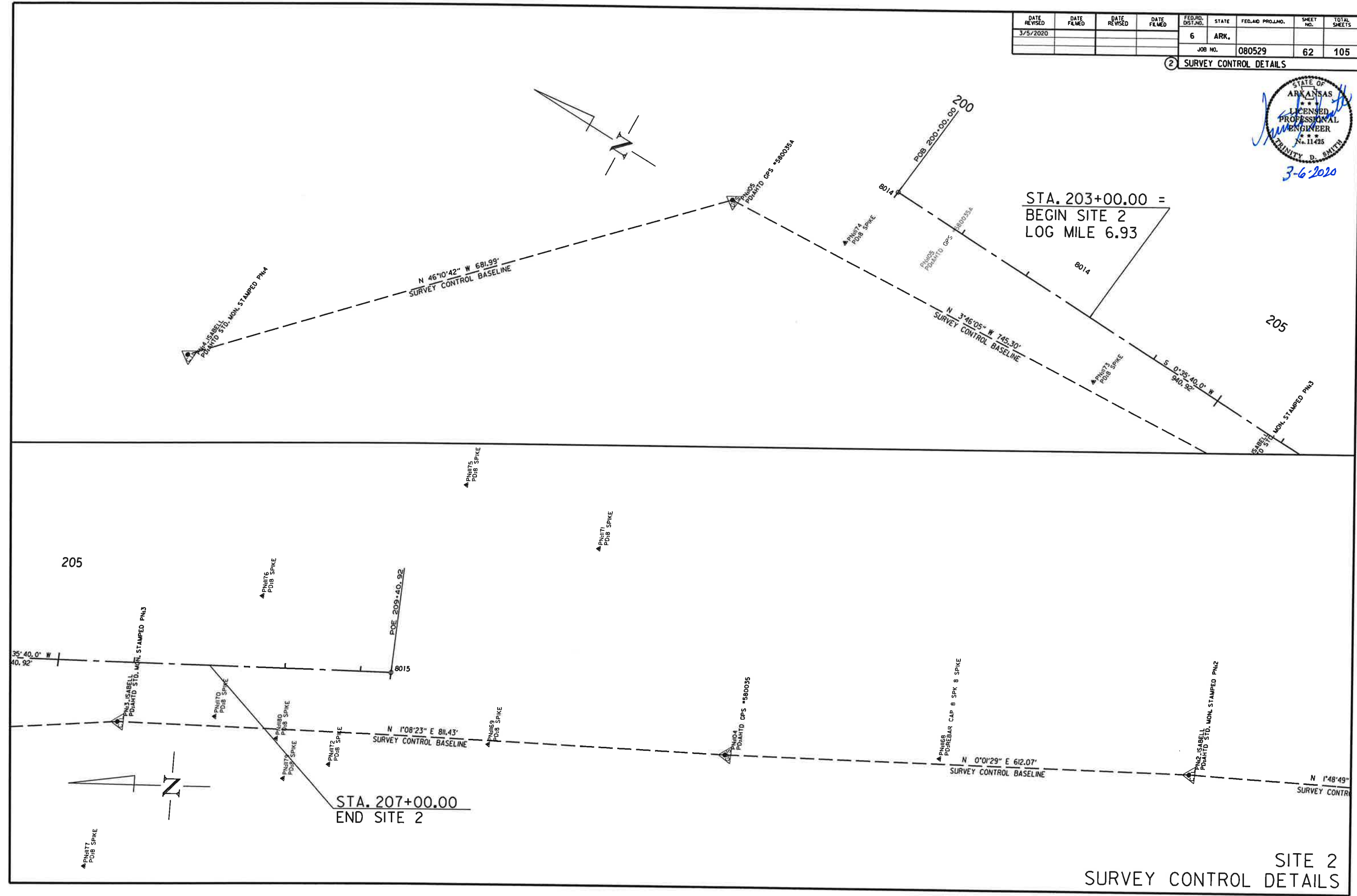


R080529.DGN 2/5/2020

SITE I SURVEY CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 62 | 105 |

2 SURVEY CONTROL DETAILS



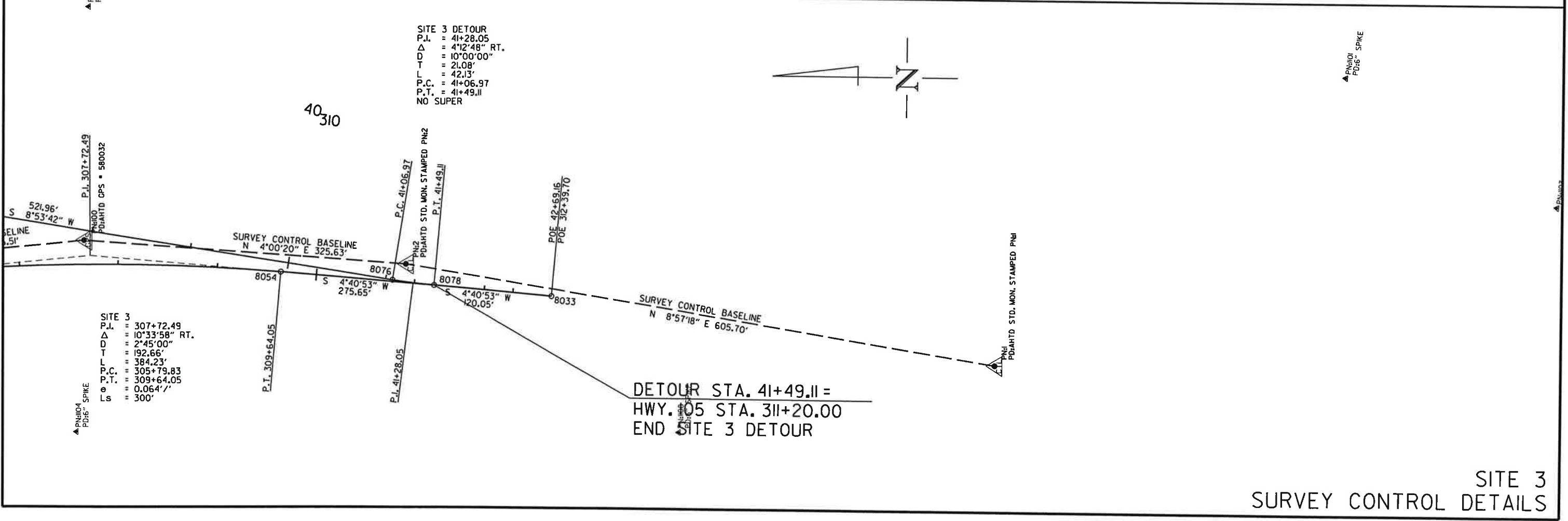
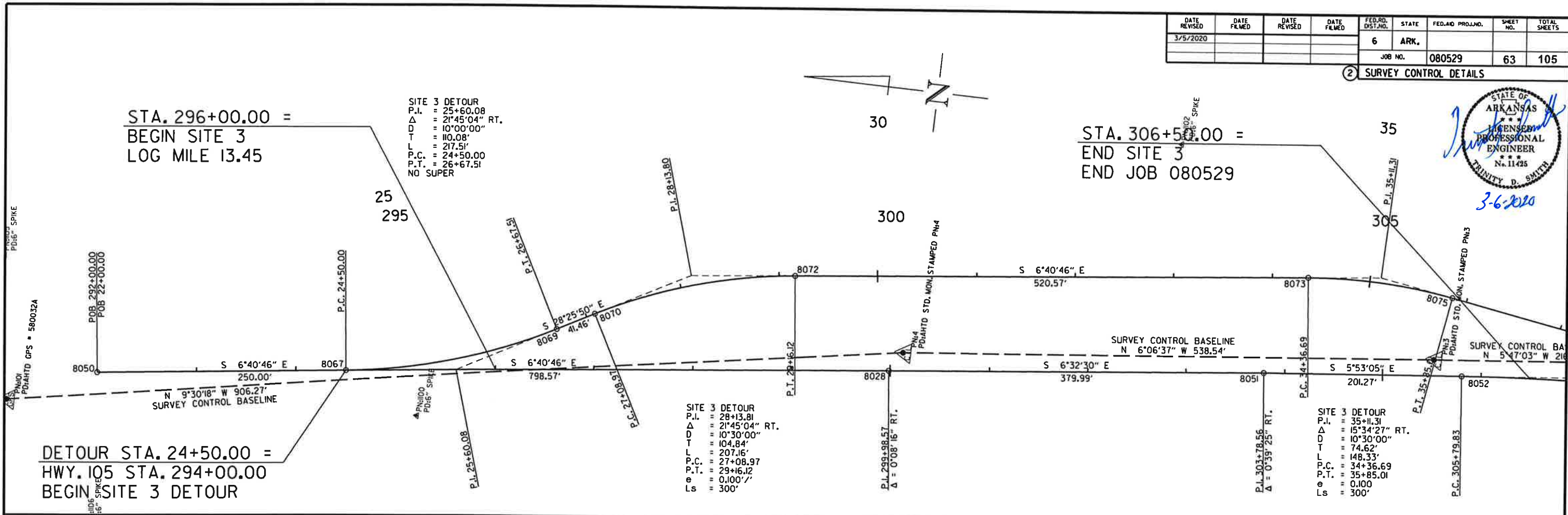
2/5/2020

RO80529.DGN

SITE 2 SURVEY CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|----------------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | | JOB NO. 080529 | 63 105 |

2 SURVEY CONTROL DETAILS



R080529.DGN 2/5/2020

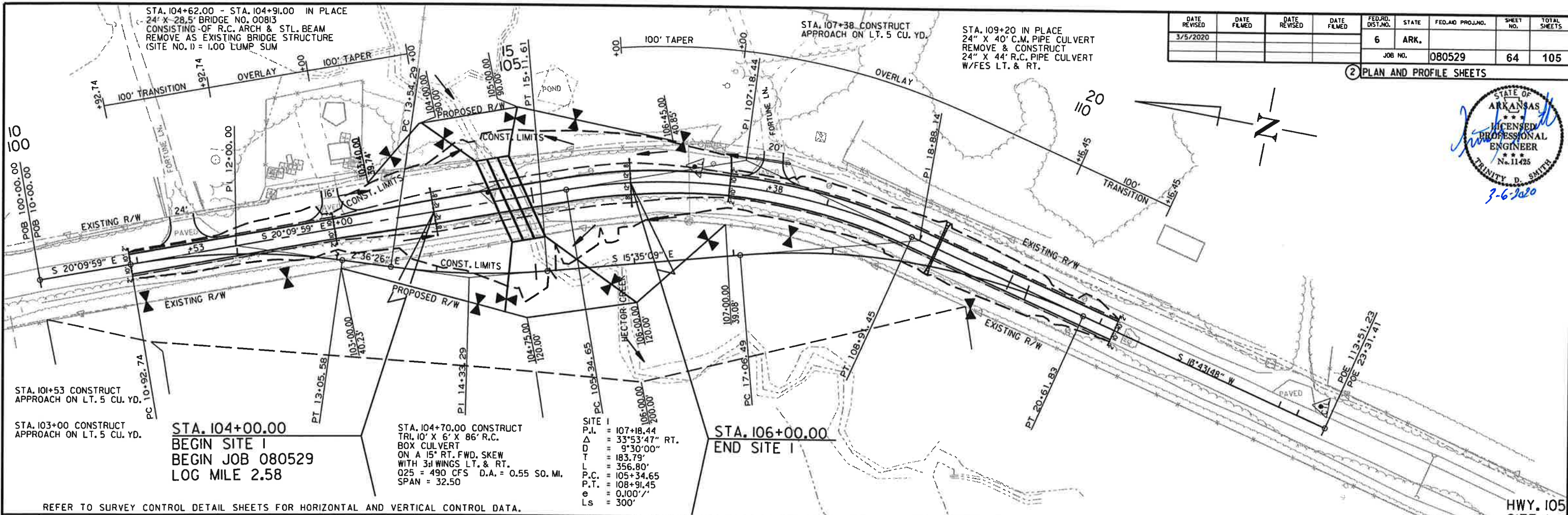
STA. 104+62.00 - STA. 104+91.00 IN PLACE
 24' X 28.5' BRIDGE NO. 00813
 CONSISTING OF R.C. ARCH & STL. BEAM
 REMOVE AS EXISTING BRIDGE STRUCTURE
 (SITE NO. 1) = 1.00 LUMP SUM

STA. 107+38.00 CONSTRUCT
 APPROACH ON LT. 5 CU. YD.

STA. 109+20 IN PLACE
 24" X 40" C.M. PIPE CULVERT
 REMOVE & CONSTRUCT
 24" X 44" R.C. PIPE CULVERT
 W/FES LT. & RT.

| DATE REVISION | DATE FILED | DATE REVISION | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---------------|------------|---------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 64 | 105 |

PLAN AND PROFILE SHEETS



STA. 101+53 CONSTRUCT
 APPROACH ON LT. 5 CU. YD.

STA. 103+00 CONSTRUCT
 APPROACH ON LT. 5 CU. YD.

STA. 104+00.00
 BEGIN SITE 1
 BEGIN JOB 080529
 LOG MILE 2.58

STA. 104+70.00 CONSTRUCT
 TRI. 10' X 6' X 86' R.C.
 BOX CULVERT
 ON A 15° RT. FWD. SKEW
 WITH 3:1 WINGS LT. & RT.
 Q25 = 490 CFS D.A. = 0.55 SO. MI.
 SPAN = 32.50

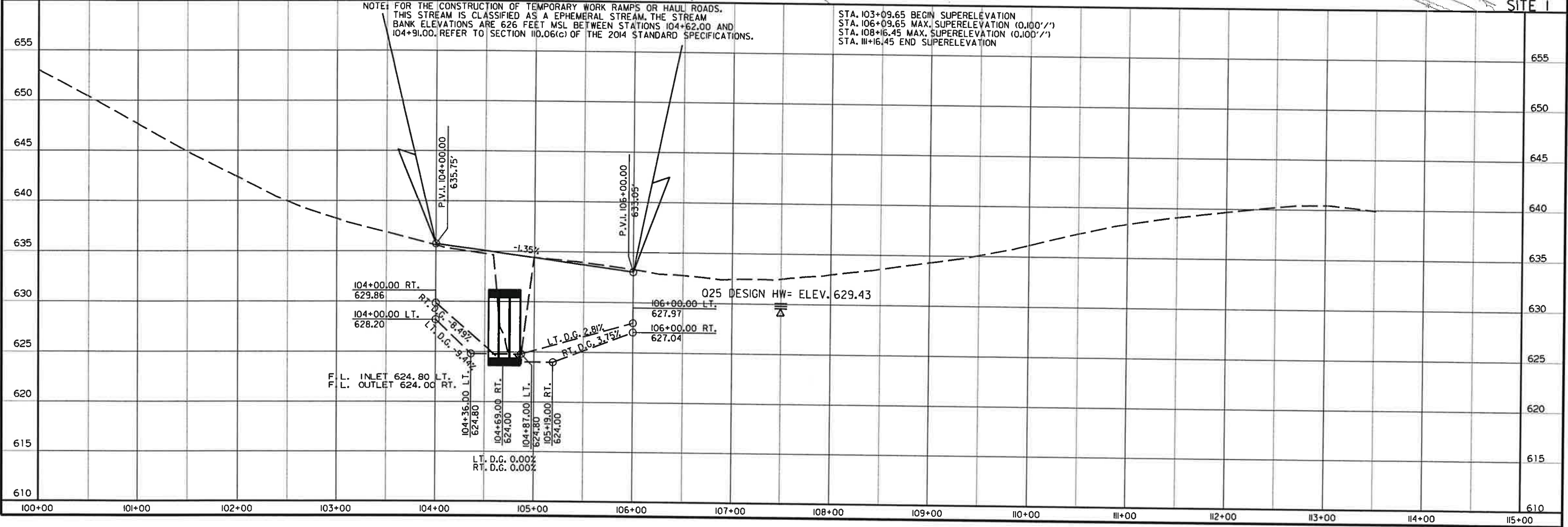
SITE 1
 P.I. = 107+18.44
 Δ = 33°53'47" RT.
 D = 9°30'00"
 T = 183.79'
 L = 356.80'
 P.C. = 105+34.65
 P.T. = 108+91.45
 e = 0.100'/'
 Ls = 300'

STA. 106+00.00
 END SITE 1

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

NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS A EPHEMERAL STREAM. THE STREAM BANK ELEVATIONS ARE 626 FEET MSL BETWEEN STATIONS 104+62.00 AND 104+91.00. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.

STA. 103+09.65 BEGIN SUPERELEVATION
 STA. 106+09.65 MAX. SUPERELEVATION (0.100'/')
 STA. 108+16.45 MAX. SUPERELEVATION (0.100'/')
 STA. 111+16.45 END SUPERELEVATION



4/2/2018 R080529.DGN

STA. 202+46 IN PLACE
 24" X 42" SIDE DRAIN
 REMOVE & INSTALL
 24" X 54" PIPE CULVERT
 LT. SIDE DRAIN
 CONSTRUCT TURNOUT = 5 CU. YD.
 UNCLASSIFIED EXCAVATION = 10 CU. YD.

STA. 203+12 IN PLACE
 18" X 24" SIDE DRAIN
 REMOVE & INSTALL
 24" X 28" PIPE CULVERT
 LT. SIDE DRAIN
 CONSTRUCT APPROACH = 15 CU. YD.
 UNCLASSIFIED EXCAVATION = 15 CU. YD.

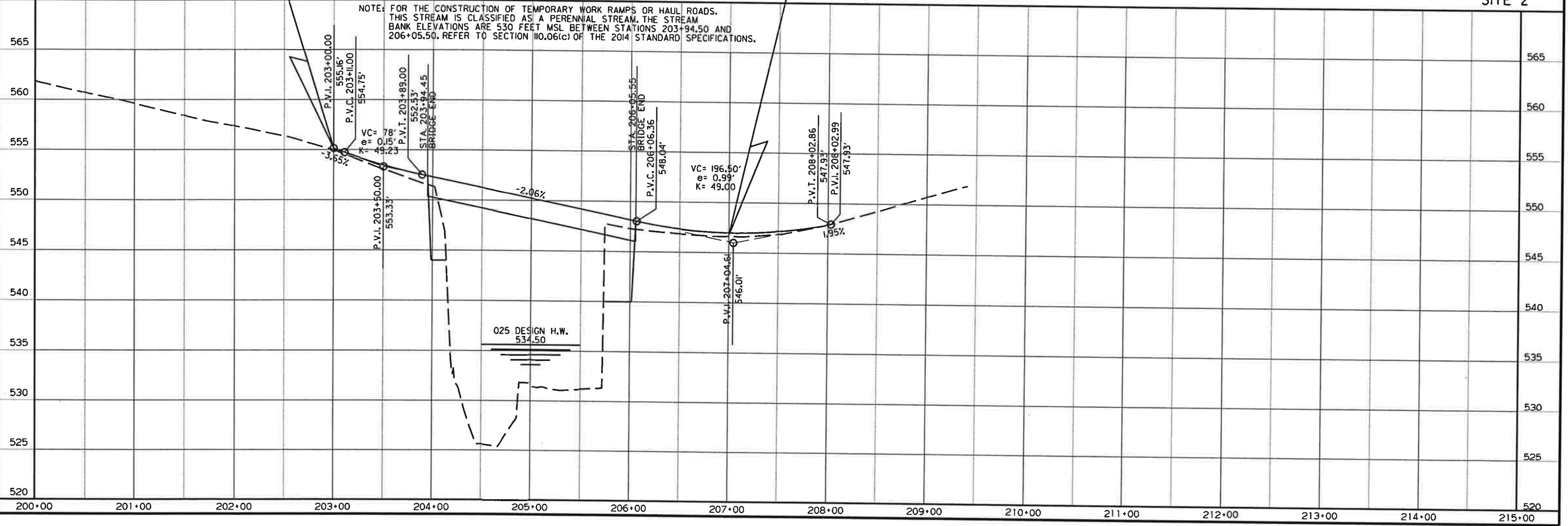
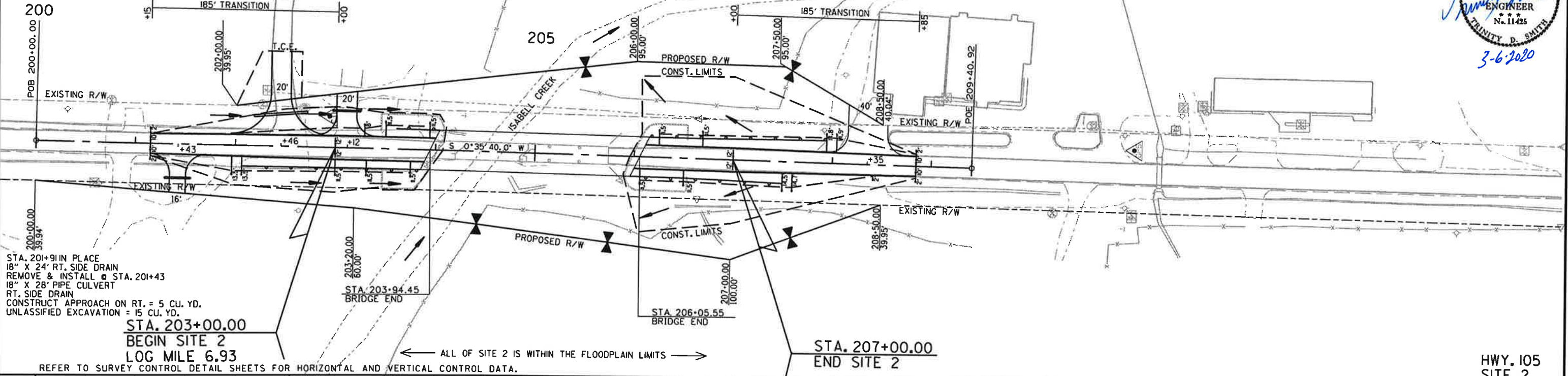
STA. 204+03.00 - STA. 205+74.00 IN PLACE
 179' X 21' BRIDGE NO. 00811
 CONSISTING OF R.C. ARCH & R.C. T-BEAM
 REMOVE AS EXISTING BRIDGE STRUCTURE
 (SITE NO. 2) = 1.00 LUMP SUM

STA. 203+94.45 TO STA. 206+05.55 CONSTRUCT
 211'-1/4" X 40' BRIDGE NO. 07474
 210'-0" CONTINUOUS INTEGRAL
 W-BEAM UNIT (45'-60'-60'-45')
 025 = 3690 CFS D.A. = 8.6 SQ. MI.

STA. 208+35 CONSTRUCT
 TURNOUT = 5 CU. YD.
 UNCLASSIFIED EXCAVATION = 5 CU. YD.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 65 | 105 |

JOB NO. 080529
 PLAN AND PROFILE SHEETS



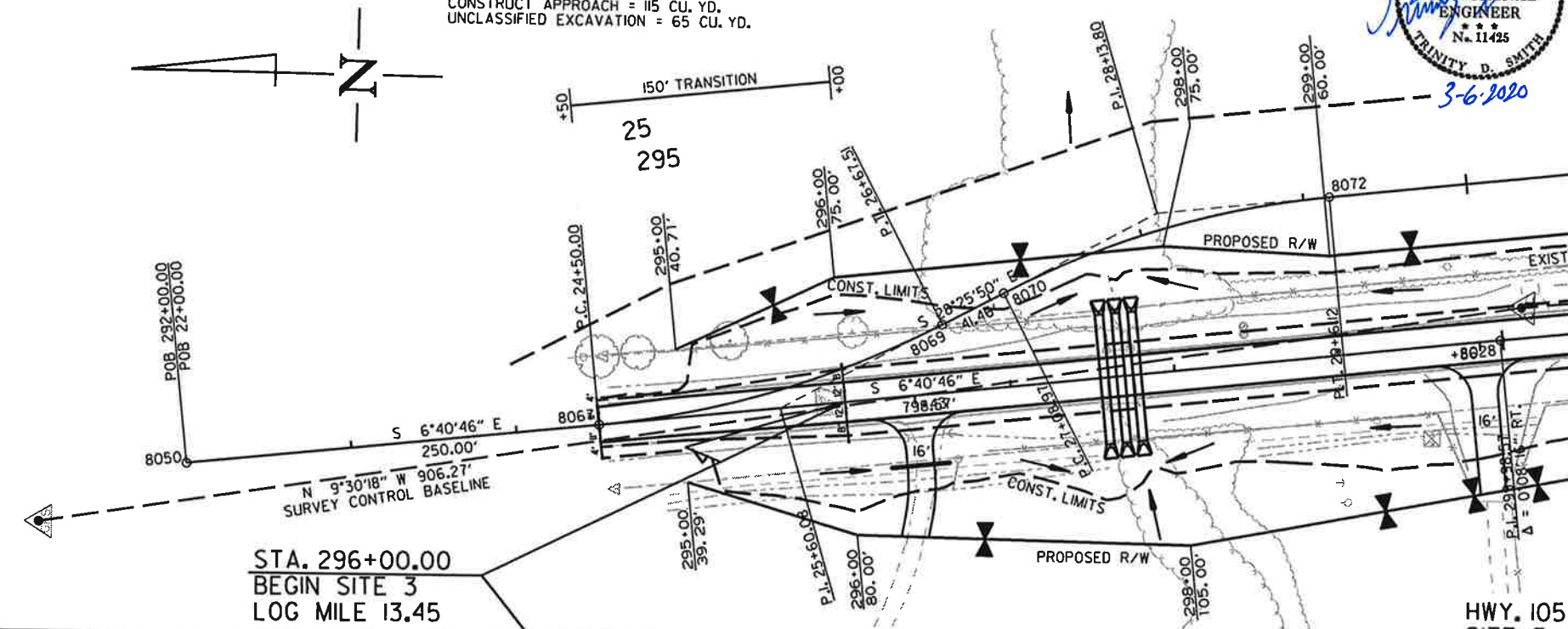
4/2/2018
 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 66 | 105 |

STA. 297+68.00 IN PLACE
 12" X 5' X 33' R.C. BOX CULVERT (MODIFIED)
 REMOVE

STA. 297+69 CONSTRUCT
 TRI. 60" X 78" R.C. PIPE CULVERT
 WITH F.E.S. LT. & RT.
 Q25 = 210 CFS D.A. = 120 AC.
 60" R.C. PIPE (CLASS III) (TYPE 3 BEDDING) = 234 LIN. FT.
 60" F.E.S. = 6 EACH

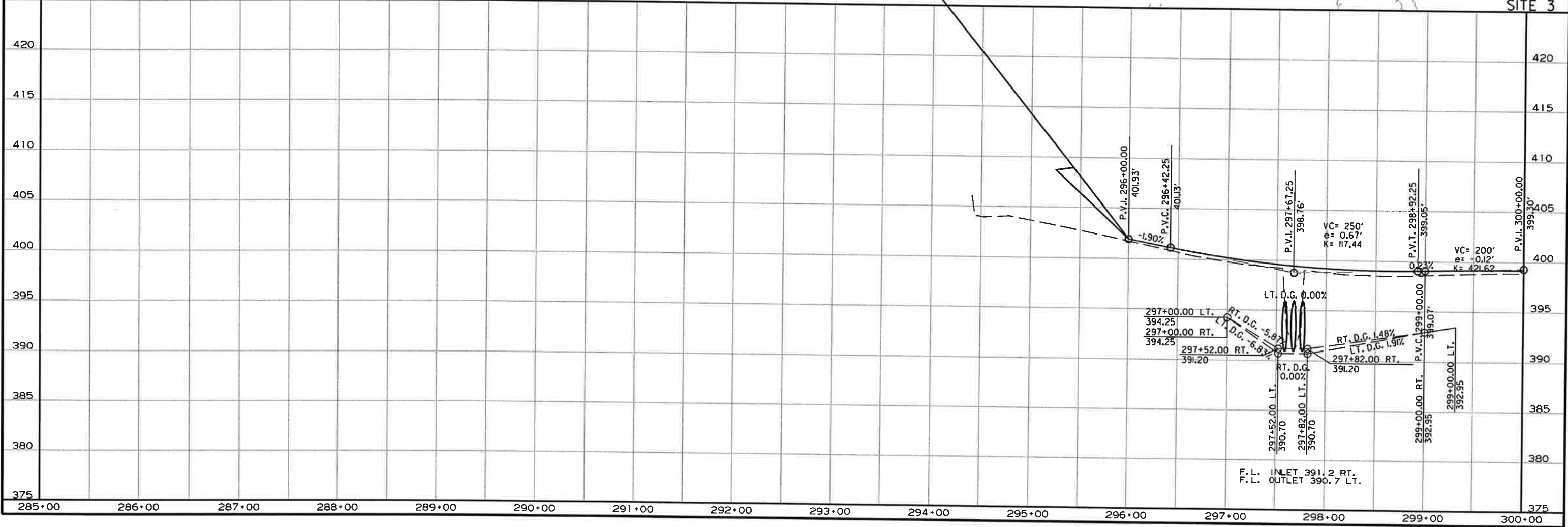
2 PLAN AND PROFILE SHEETS



STA. 296+00.00
 BEGIN SITE 3
 LOG MILE 13.45

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

HWY. 105
 SITE 3



F.L. INLET 391.2 RT.
 F.L. OUTLET 390.7 LT.

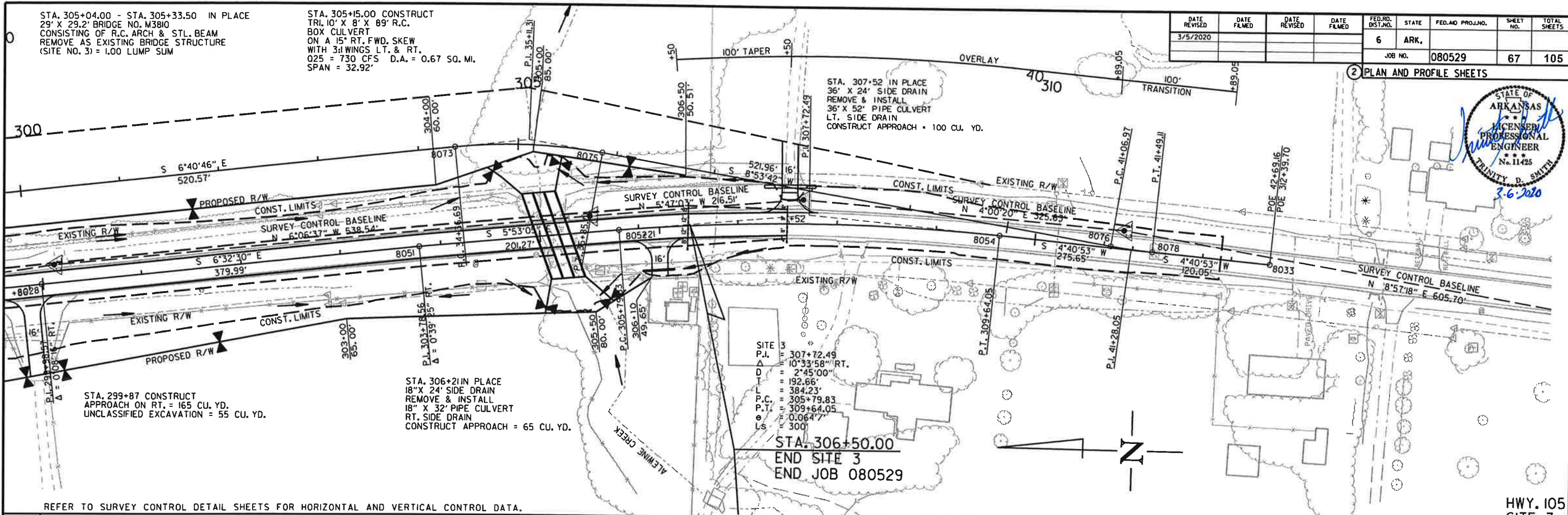
R080529.DGN 4/2/2018

STA. 305+04.00 - STA. 305+33.50 IN PLACE
 29' X 29.2' BRIDGE NO. M3810
 CONSISTING OF R.C. ARCH & STL. BEAM
 REMOVE AS EXISTING BRIDGE STRUCTURE
 (SITE NO. 3) = 1.00 LUMP SUM

STA. 305+15.00 CONSTRUCT
 TRI. 10' X 8' X 89' R.C.
 BOX CULVERT
 ON A 15° RT. FWD. SKEW
 WITH 3/4 WINGS LT. & RT.
 Q25 = 730 CFS D.A. = 0.67 SQ. MI.
 SPAN = 32.92'

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 67 | 105 |
| JOB NO. 080529 | | | | | | | | |

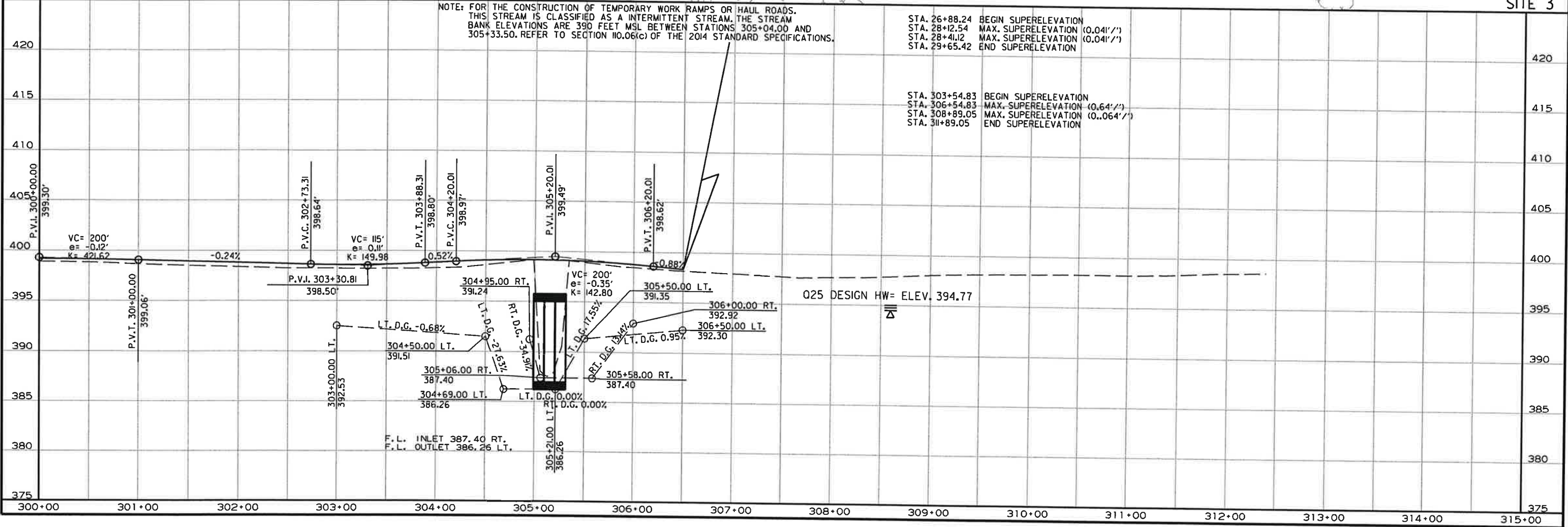
2 PLAN AND PROFILE SHEETS



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

HWY. 105
 SITE 3

NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS AN INTERMITTENT STREAM, THE STREAM BANK ELEVATIONS ARE 390 FEET MSL BETWEEN STATIONS 305+04.00 AND 305+33.50. REFER TO SECTION 110.06(c) OF THE 2014 STANDARD SPECIFICATIONS.



STA. 26+88.24 BEGIN SUPERELEVATION
 STA. 28+12.54 MAX. SUPERELEVATION (0.041'/'')
 STA. 28+41.12 MAX. SUPERELEVATION (0.041'/'')
 STA. 29+65.42 END SUPERELEVATION

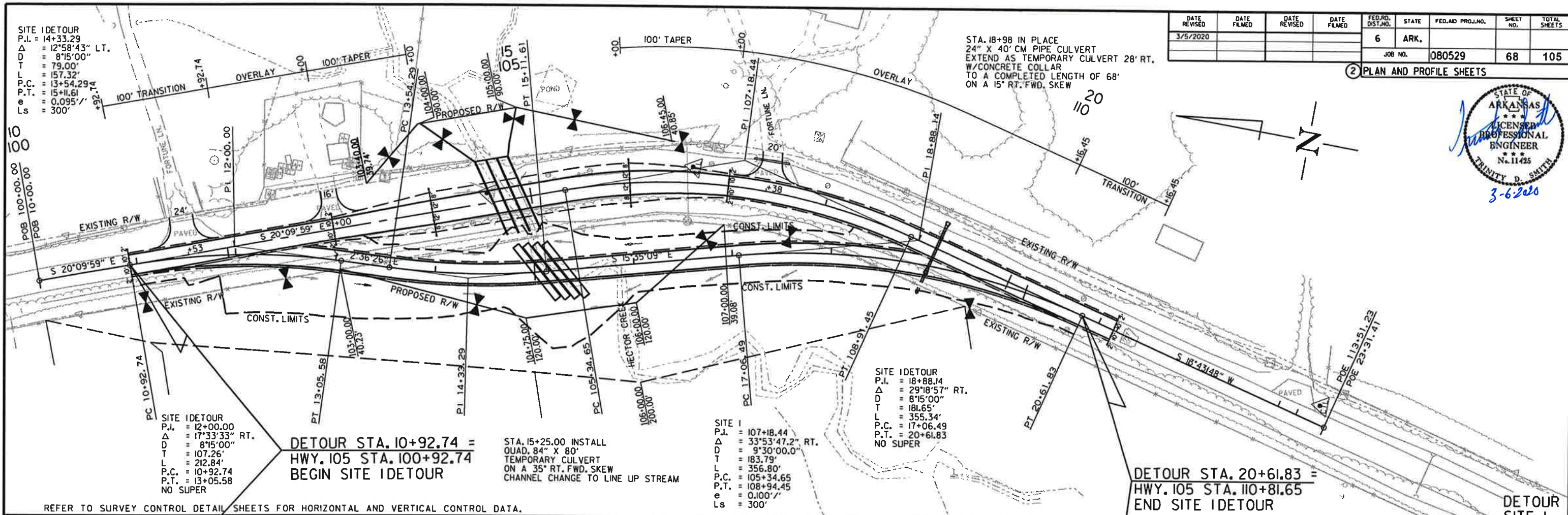
STA. 303+54.83 BEGIN SUPERELEVATION
 STA. 306+54.83 MAX. SUPERELEVATION (0.64'/'')
 STA. 308+89.05 MAX. SUPERELEVATION (0.064'/'')
 STA. 311+89.05 END SUPERELEVATION

4/2/2018
 R080529.DGN

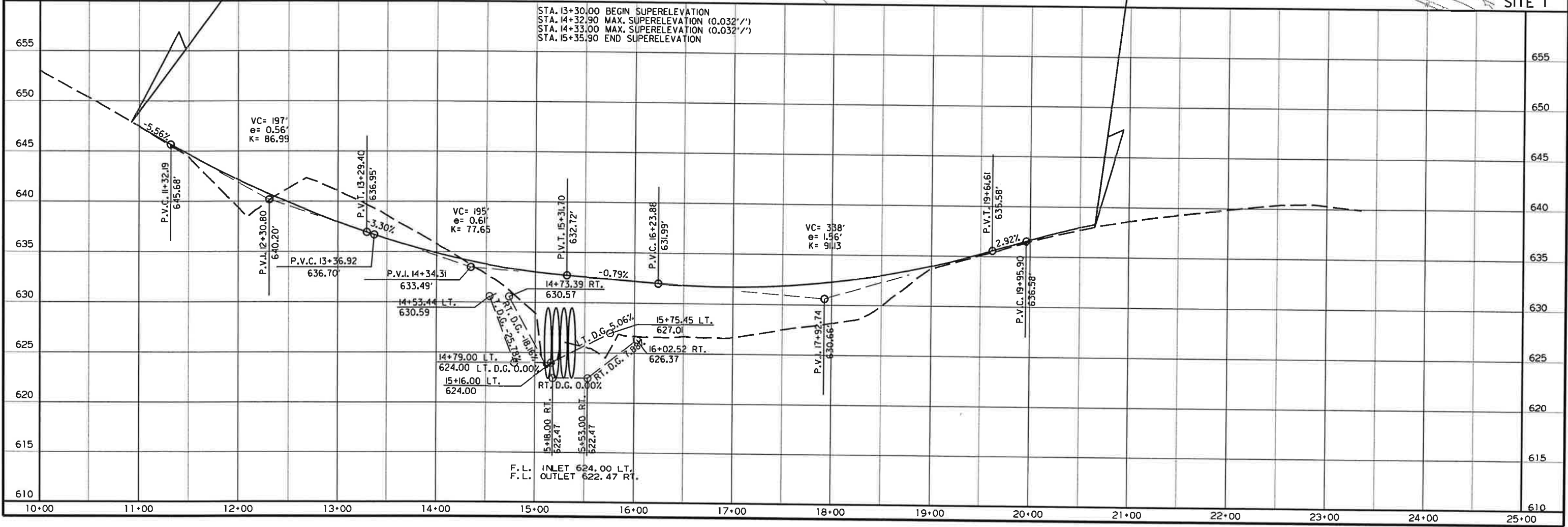
SITE IDETOUR
 P.I. = 14+33.29
 Δ = 12°58'43" LT.
 D = 8'15"00"
 T = 79.00'
 L = 157.32'
 P.C. = 13+54.29
 P.T. = 15+11.61
 e = 0.095'/'
 Ls = 300'

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 68 | 105 |

2 PLAN AND PROFILE SHEETS



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



4/2/2018 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 69 | 105 |
| | | | | | | JOB NO. | 080529 | |

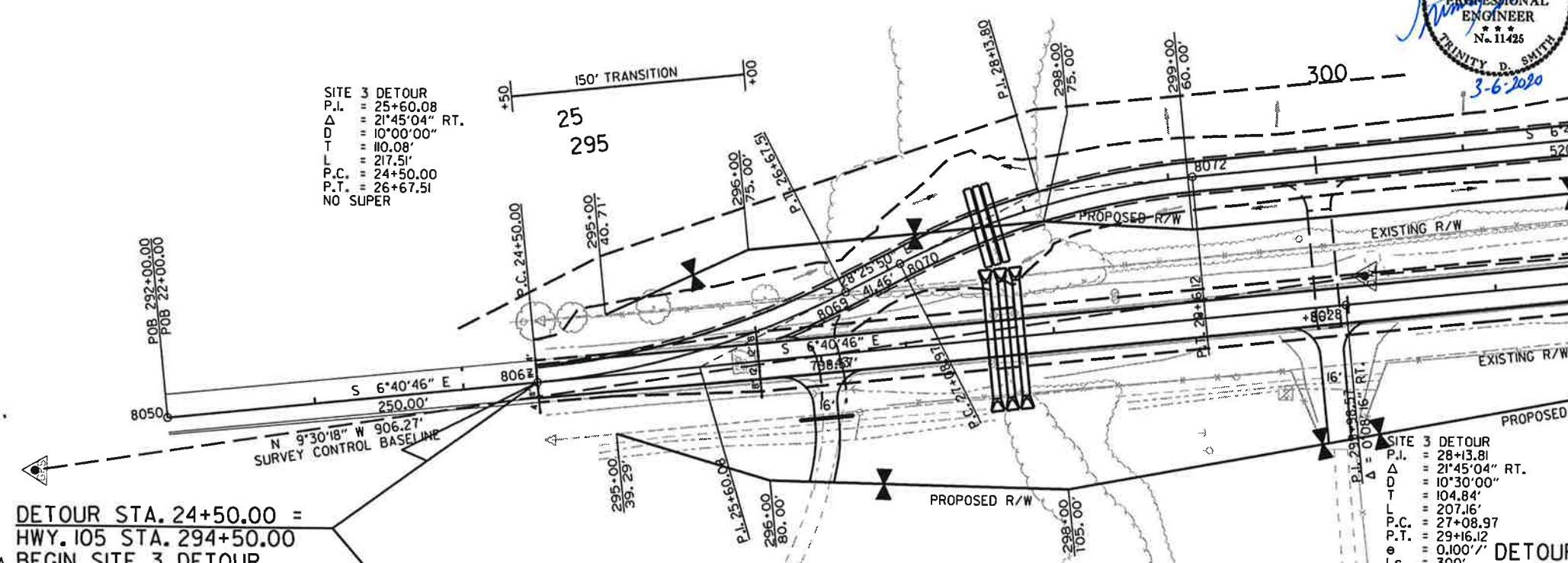
2 PLAN AND PROFILE SHEETS

30

STA. 27+70.00 INSTALL
TRI. 60" X 54"
TEMPORARY CULVERT

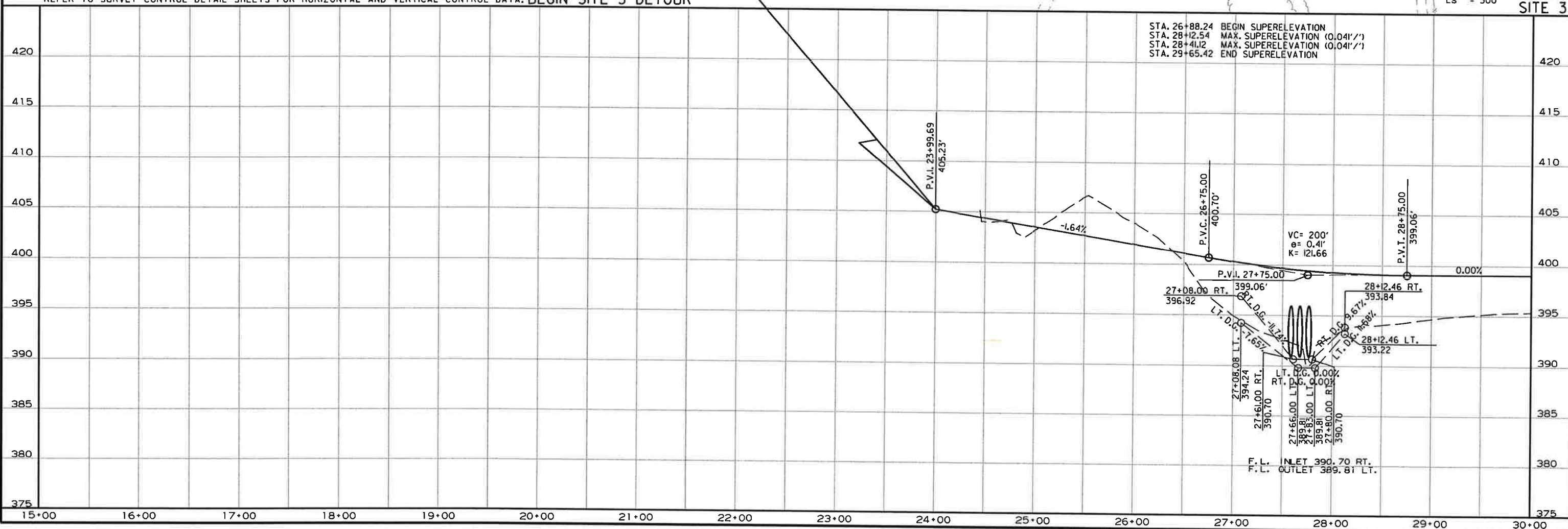


SITE 3 DETOUR
P.I. = 25+60.08
Δ = 21°45'04" RT.
D = 10°00'00"
L = 110.08'
T = 217.51'
P.C. = 24+50.00
P.T. = 26+67.51
NO SUPER



SITE 3 DETOUR
P.I. = 28+13.81
Δ = 21°45'04" RT.
D = 10°30'00"
L = 104.84'
T = 207.16'
P.C. = 27+08.97
P.T. = 29+16.12
e = 0.100'/'
Ls = 300'

STA. 26+88.24 BEGIN SUPERELEVATION
STA. 28+12.54 MAX. SUPERELEVATION (0.041'/')
STA. 28+41.12 MAX. SUPERELEVATION (0.041'/')
STA. 29+65.42 END SUPERELEVATION



4/2/2018
R080529.DGN

STA. 35+12.00 INSTALL
TRI. 96" X 68"
TEMPORARY CULVERT
15° RT. FWD. SKEW

STA. 37+75.00 INSTALL
36" TEMP. SIDE DRAIN = 36 LIN. FT.

| DATE REVISED | DATE FILED | DATE REVISED | DATE FILED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|------------|--------------|------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 70 | 105 |

PLAN AND PROFILE SHEETS



SITE 3 DETOUR
 P.I. = 41+28.05
 Δ = 4°12'48" RT.
 D = 10°00'00"
 T = 21.08'
 L = 42.13'
 P.C. = 41+06.97
 P.T. = 41+49.11
 NO SUPER

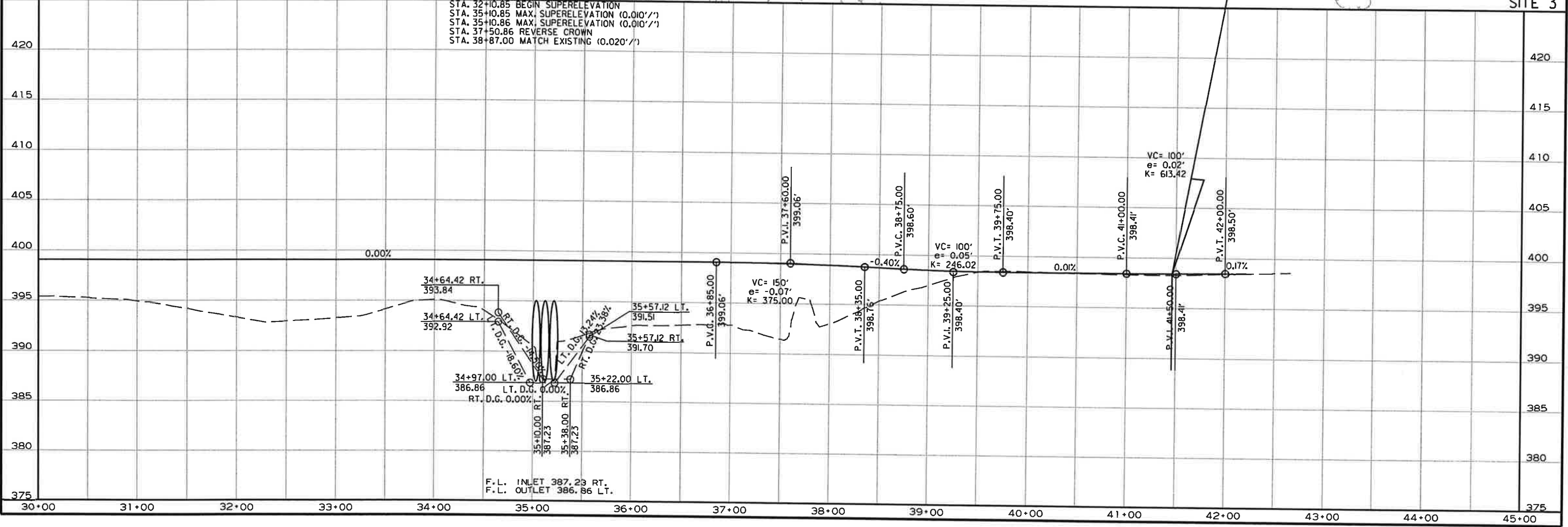
SITE 3 DETOUR
 P.I. = 35+11.31
 Δ = 15°34'27" RT.
 D = 10°30'00"
 T = 74.62'
 L = 148.33'
 P.C. = 34+36.69
 P.T. = 35+85.01
 e = 0.100
 Ls = 300'

SITE 3
 P.I. = 305+93.93
 Δ = 10°33'58.4" RT.
 D = 2°45'00"
 T = 192.66'
 L = 384.23'
 P.C. = 304+01.27
 P.T. = 307+85.49
 e = 0.100
 Ls = 300'

DETOUR STA. 41+49.11 =
 HWY. 105 STA. 311+20.00
 END SITE 3 DETOUR

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

STA. 32+10.85 BEGIN SUPERELEVATION
 STA. 35+10.85 MAX. SUPERELEVATION (0.010'/')
 STA. 35+10.86 MAX. SUPERELEVATION (0.010'/')
 STA. 37+50.86 REVERSE CROWN
 STA. 38+87.00 MATCH EXISTING (0.020'/')



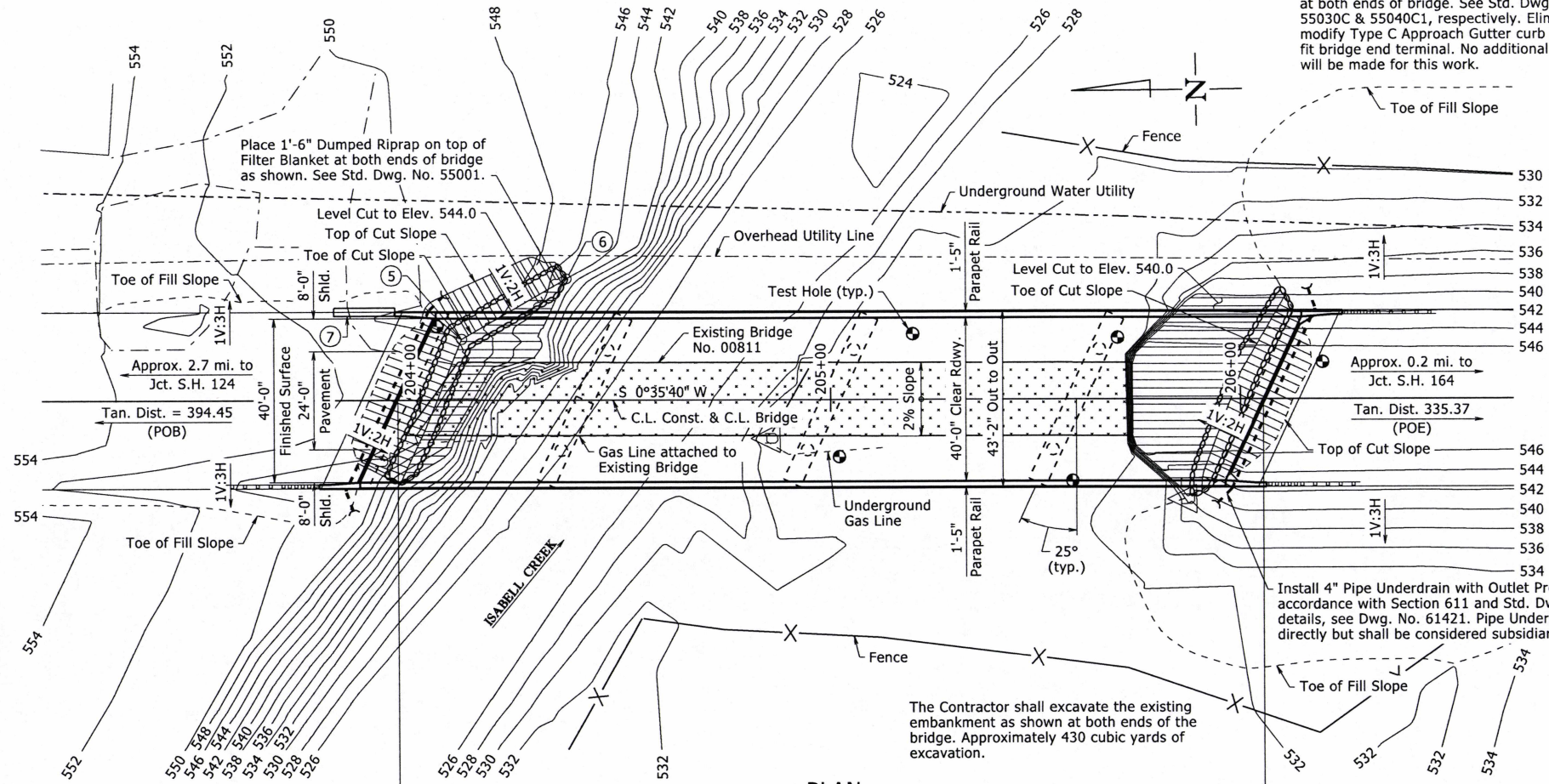
4/2/2018

R080529.DGN

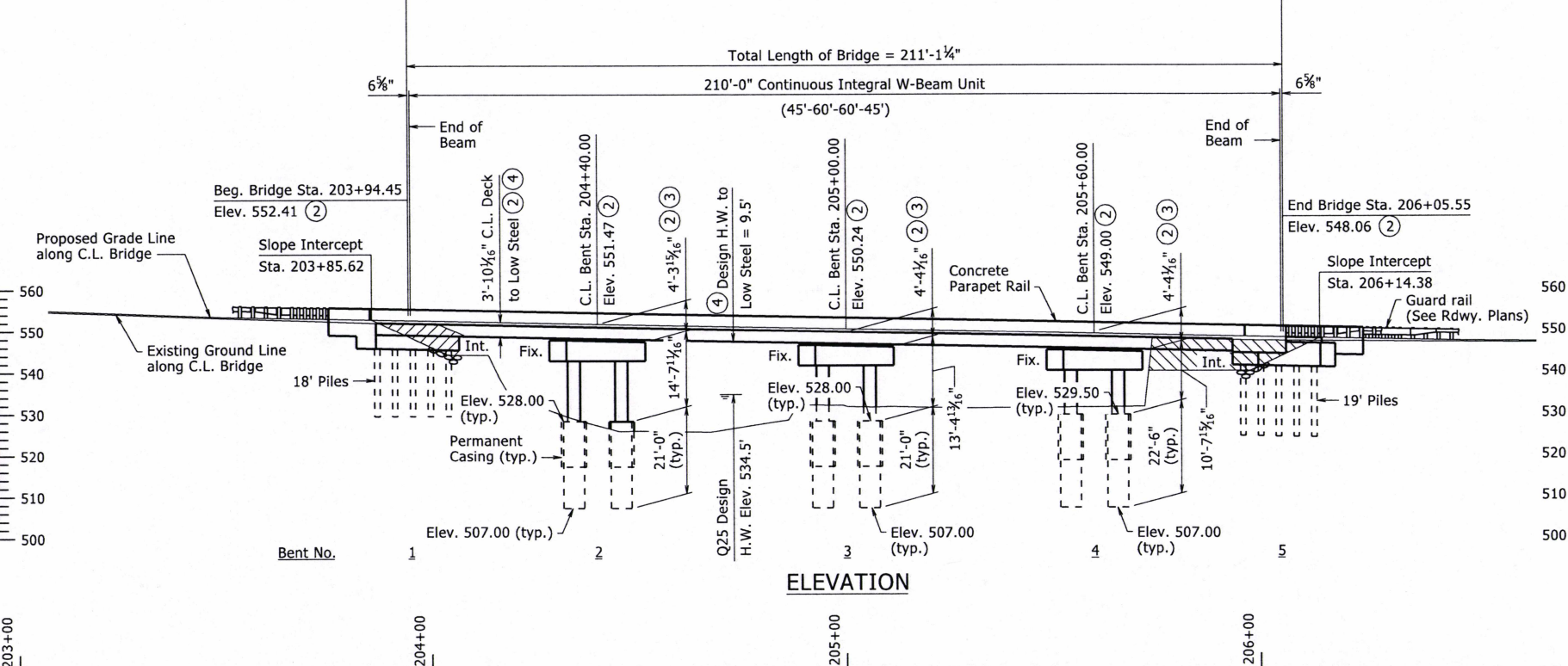
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|------------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 080529 | 71 | 105 |
| | | | | 07474 - LAYOUT - 61409 | | | | |

For R/W Data, see Roadway Plans.

Use Type C Approach Gutters ("W" = 8'-0") and Type C1 Approach Slabs (width = 24'-0") at both ends of bridge. See Std. Dwg. Nos. 55030C & 55040C1, respectively. Eliminate or modify Type C Approach Gutter curb section to fit bridge end terminal. No additional payment will be made for this work.



PLAN



ELEVATION

HYDRAULIC DATA

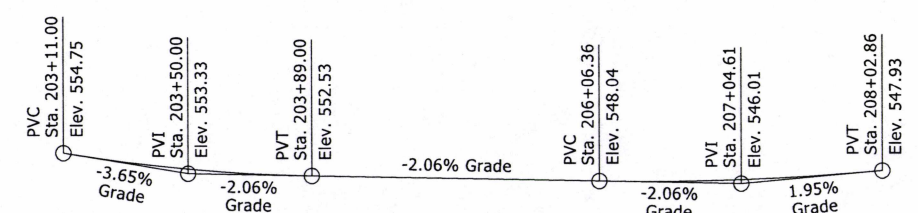
| FLOOD DESCRIPTION | FREQUENCY | DISCHARGE | NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEVATION WITH BACKWATER |
|-------------------|-----------|-----------|---------------------------------|--|
| | YEARS | CFS | FEET | FEET |
| Design | 25 | 3690 | 533.8 | 534.7 |
| Base | 100 | 5300 | 535.0 | 536.0 |
| Extreme | 500 | 7660 | 536.3 | 537.6 |
| Overtopping | >500 | - | - | - |

- ① Unconstricted water surface elevation without structure or roadway approaches.
Q100 backwater elevation for existing structure = 535.6 feet
- ④ Proposed Low Bridge Chord Elev. = 544.01 feet
Drainage Area = 8.6 square miles
Historical H.W. Elev. = 537.7

All stations and elevations shown are along C.L. Construction & C.L. Bridge.

For Soil Borings and General Notes, see Dwg. No. 61410.

- ② Measured at working point, see "Rounding Detail" on Std. Dwg. No. 55007.
- ③ Measured from top of deck at C.L. Bridge to low cap seat.
- ④ Low steel occurs 18.5' left of C.L. Bridge, Sta. 206+11.97.
- ⑤ Approx. Sta. 204+10, 15' Lt. of C.L. Const.
- ⑥ Approx. Sta. 204+36, 30' Lt. of C.L. Const.
- ⑦ Bridge End Terminal (See Rdwy. Plans).



VERTICAL ALIGNMENT DATA

Along Profile Grade Line



SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 105 OVER ISABELL CREEK
HECTOR, ISABELL & ALEWINE CREEKS
STRS. & APPRS. (S)
POPE COUNTY

ROUTE 105 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 08-2018 FILENAME: b080529x2.ll.dgn
CHECKED BY: BHS DATE: 2-19-2020 SCALE: 1" = 20'
DESIGNED BY: BHS DATE: 8-2017
BRIDGE NO. 07474 DRAWING NO. 61409

| 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. | | 080529 | 72 | 105 |

GENERAL NOTES:

07474 - LAYOUT - 61410

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

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, Seventh Edition (2014) with 2015 interim revisions.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 $S_{D1} = 0.08$ SITE CLASS = B

MATERIALS AND STRENGTHS:
 Class S(AE) Concrete (superstructure) $f_c = 4,000$ psi
 Class S Concrete (substructure) $f_c = 3,500$ psi
 Class S Concrete (substructure) $f_c = 5,000$ psi
 Reinforcing Steel (AASHTO M 31 or M 322, Type A) $f_y = 60,000$ psi
 Structural Steel (ASTM A709, Gr. 50W) $F_y = 50,000$ psi
 Structural Steel (ASTM A709, Gr. 50) $F_y = 50,000$ psi
 Structural Steel (ASTM A709, Gr. 36) $F_y = 36,000$ psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling at Bents 1 and 5 shall be HP 10x42 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 77 tons per pile and into material designated as Sandstone or Shale on the boring legend. Minimum penetration shall be 15' below bottom of cap. Piling shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piles in Bents 1 and 5. Preboring at Bent 1 shall be to a minimum depth of 5' into material designated as Sandstone or Shale on the boring legend or to a minimum depth of 15' below the bottom of the cap, whichever is lower. After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of end bent cap, and the remaining 10' shall be backfilled with sand or pea gravel.

Preboring at Bent 5 shall be to a minimum depth of 10' below the bottom of the cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel.

Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of remaining preboring, as required, shall be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free of debris prior to driving piles and backfilling which may require the use of temporary casings or other approved methods. The cost of any backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item "Preboring."

DRILLED SHAFTS: Drilled shafts at Bents 2 thru 4 shall be constructed in accordance with Special Provision Job No. 080529 "Drilled Shaft Foundations." Drilled shafts shall be socketed a minimum of 10' into competent rock designated as Unweathered Shale on the boring legend. No adjustment to plan tip elevations shall be made without prior approval from the Engineer.

CROSSHOLE SONIC LOGGING: Nondestructive testing shall be performed in accordance with Special Provision Job No. 080529 "Nondestructive Testing of Drilled Shafts."

ACCELERATED BRIDGE CONSTRUCTION: The drilled shafts and columns shall be constructed, and structural steel, precast abutments, and precast bent caps fabricated before removal of the existing bridge. See Detail Drawings for additional information on precast abutments and bent caps.

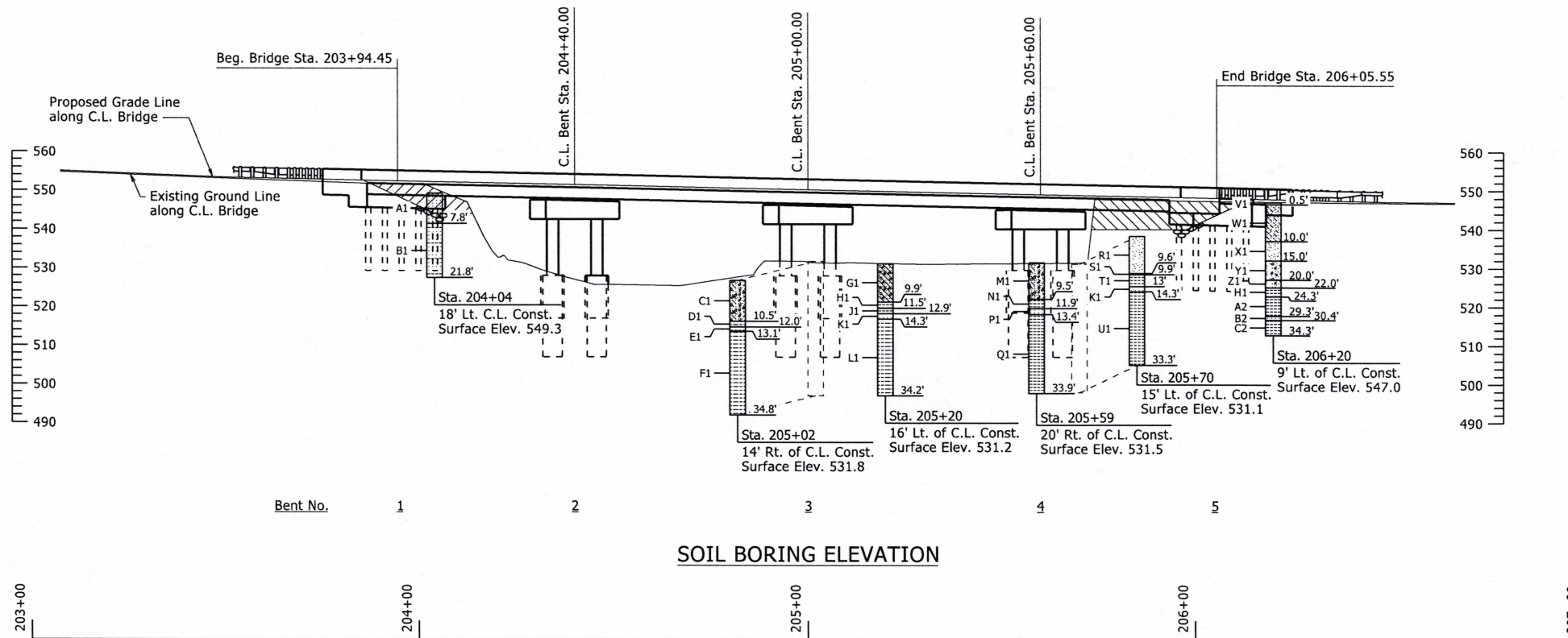
BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface, roadway face, and top of the concrete parapet rails in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 00811 (Log Mile 6.97) is 21.0' wide (18.0' roadway) and 179.0' long and consists of a R.C. Deck Arch main span and R.C. Tee-Beam approach spans supported by concrete abutments and concrete columns on spread footings. The existing bridge is located at approximately the same location as the proposed new bridge.

REMOVAL AND SALVAGE: After completion and acceptance of the drilled shafts, columns, and the fabrication of structural steel, precast abutments, and bent caps, the Contractor shall remove Existing Bridge No. 00811 in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: The road will be closed during the construction of this project.



BORING LEGEND

- A1-SANDSTONE - Weathered, Cemented, Brown
- B1-SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Unweathered, Well Cemented, Gray
- C1-Moist, Loose, Brown Clayey Sand with Gravel
- D1-SHALE WITH FREQUENT SANDSTONE PARTINGS AND SEAMS - Slightly Weathered, Medium Hard, Frequent Fractures, Gray
- E1-SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Slightly Weathered, Well Cemented, Frequent Fractures, Gray
- F1-SHALE WITH FREQUENT TO OCCASIONAL SANDSTONE PARTINGS AND SEAMS - Unweathered, Hard, Occasional Fractures, Gray
- G1-Moist, Stiff, Brown Sandy Clay with Gravel (Rock Fragments)
- H1-SHALE - Weathered, Medium Hard, Gray
- J1-SHALE WITH OCCASIONAL SANDSTONE PARTINGS AND SEAMS - Weathered, Medium Hard, Gray
- K1-SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Slightly Weathered, Well Cemented, Occasional Fractures, Gray
- L1-SHALE WITH FREQUENT TO OCCASIONAL SANDSTONE PARTINGS AND SEAMS - Unweathered, Hard, Occasional Fractures, Gray
- M1-Moist, Medium Dense, Brown Clayey Sand with Gravel (Rock Fragments)
- N1-SHALE WITH OCCASIONAL SANDSTONE PARTINGS - Slightly Weathered, Medium Hard, Occasional Fractures, Gray
- P1-SANDSTONE WITH FREQUENT SHALE PARTINGS - Slightly Weathered, Well Cemented, Gray
- Q1-SHALE WITH OCCASIONAL SANDSTONE PARTINGS, LAYERS, AND SEAMS - Unweathered, Medium Hard, Gray
- R1-Moist, Medium Dense, Brown Sand with Some Clay and Gravel
- S1-SHALE - Highly Weathered, Medium Hard, Gray
- T1-SHALE WITH OCCASIONAL SANDSTONE PARTINGS AND SEAMS - Slightly Weathered, Medium Hard, Occasional Fractures, Gray
- U1-SHALE - Unweathered, Hard, Occasional Sandstone Partings and Seams, Occasional Fractures, Gray
- V1-Asphalt
- W1-Moist, Very Loose, Reddish Brown Clayey Sand
- X1-Moist, Medium Dense, Reddish Brown Sand with Some Clay
- Y1-Moist, Medium Dense, Reddish Brown Sand with Gravel (Rock Fragments)
- Z1-Dry, Very Dense, Brown Sand with Gravel (Sandstone Fragments)
- A2-SHALE WITH OCCASIONAL CALCAREOUS SANDSTONE PARTINGS AND SEAMS - Unweathered, Medium Hard, Gray
- B2-SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Unweathered, Well Cemented, Gray
- C2-SHALE WITH FREQUENT TO OCCASIONAL SANDSTONE PARTINGS AND SEAMS - Unweathered, Hard, Gray

"N" VALUES

- Sta. 204+04 - 18' Left of C.L. Const.
- Sta. 205+02 - 14' Right of C.L. Const.
6.0- 7.0,N=8
10.5- 10.8,N=15 (4")
- Sta. 205+20 - 16' Left of C.L. Const.
5.4- 6.4,N=11
9.9- 10.0,N=25 (1")
- Sta. 205+59 - 20' Right of C.L. Const.
5.0- 6.0,N=17
10.0- 10.3,N=35 (4")
- Sta. 205+70 - 15' Left of C.L. Const.
5.1- 6.1,N=17
9.6- 9.9,N=60 (4")
- Sta. 206+20 - 9' Left of C.L. Const.
5.5- 6.5,N=4
10.5- 11.5,N=14
15.5- 16.5,N=21
20.5- 21.1,N=45 (7")

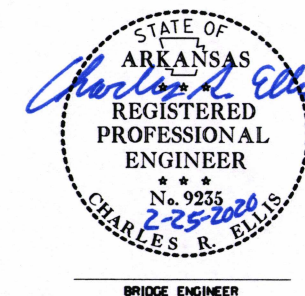
- DETAIL DRAWINGS
- End Bents
- Intermediate Bents
- Elastomeric Bearings
- 210' Continuous Integral W-Beam Unit
- General Notes For Steel Bridge Structures
- Details For Steel Bridge Structures
- Steel H-Piling
- Type C Approach Gutters
- Type C1 Approach Slabs

- DRAWING NOS.
- 61411 - 61413
- 61414 - 61415
- 61416
- 61417 - 61422
- 55006
- 55007
- 55020
- 55030C
- 55040C1

SHEET 2 OF 2
 LAYOUT OF BRIDGE
 HIGHWAY 105 OVER ISABELL CREEK
 HECTOR, ISABELL & ALEWINE CREEKS
 STRS. & APPRS. (S)
 POPE COUNTY

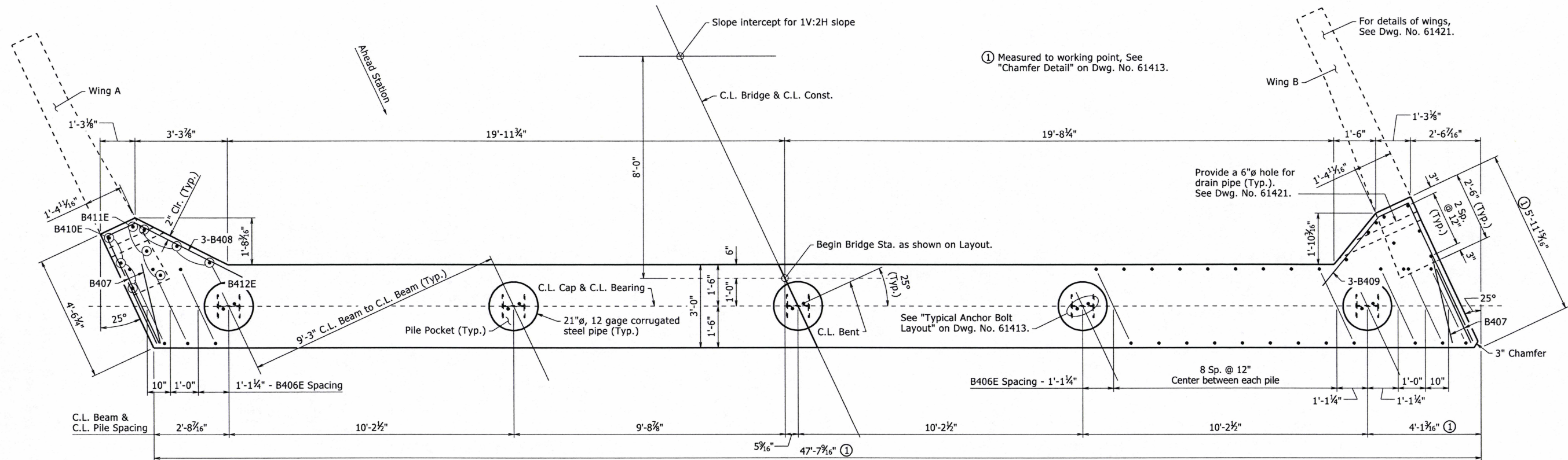
ROUTE 105 SEC. 1
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 08-2018 FILENAME: b080529x2.ll.dgn
 CHECKED BY: BHS DATE: 2-20-2020 SCALE: 1" = 20'
 DESIGNED BY: BHS DATE: 8-2017
 BRIDGE NO. 07474 DRAWING NO. 61410

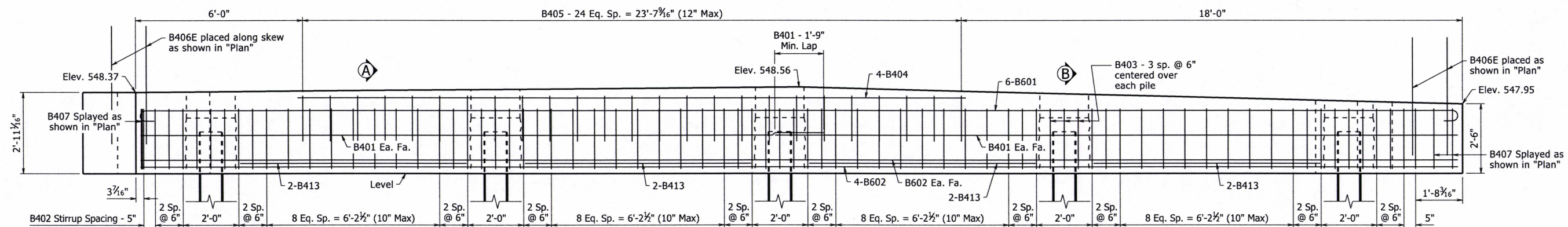


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 080529 | 73 | 105 |

07474 - END BENTS - 61411



PLAN
Bent 1



ELEVATION
Bent 1
Looking Back

For all "Sections", "Chamfer Detail", and General Notes, See Dwg. No. 61413.



SHEET 1 OF 3
 DETAILS OF END BENTS
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: BHS DATE: 11/21/2019 FILENAME: b080529_b1.dgn
 CHECKED BY: JHP DATE: 2/24/2020 SCALE: 1/2" = 1'-0"
 DESIGNED BY: BHS DATE: 11/2019
 BRIDGE NO. 07474 DRAWING NO. 61411

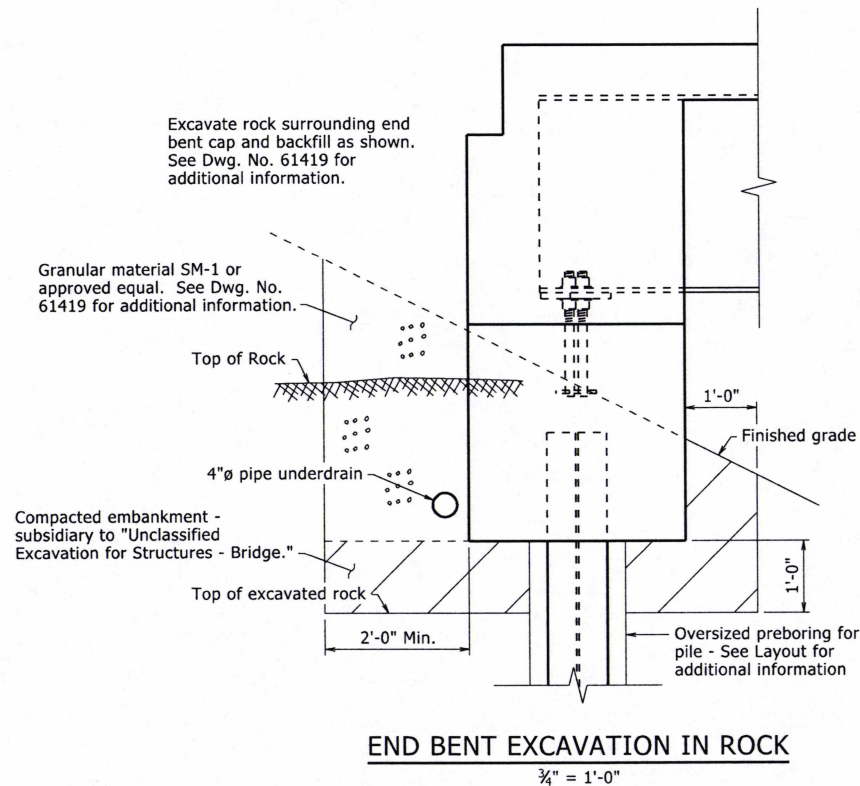
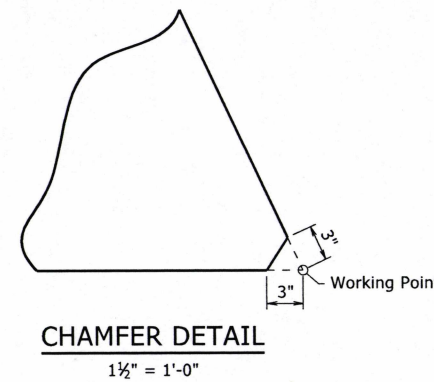
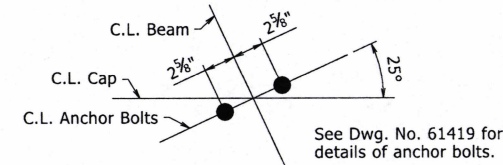
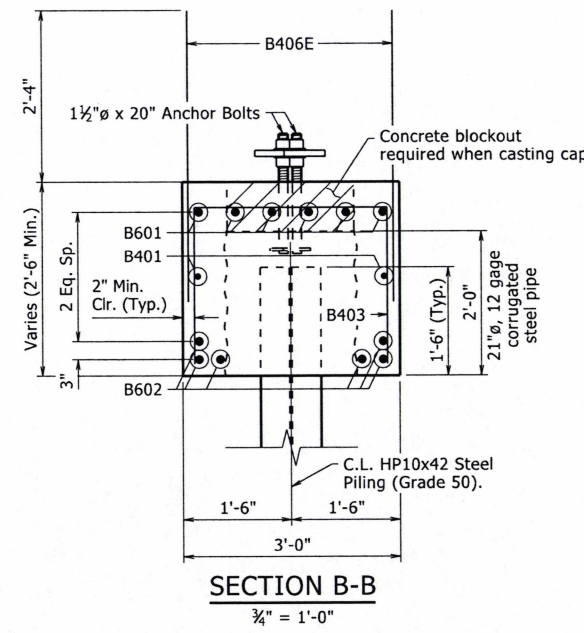
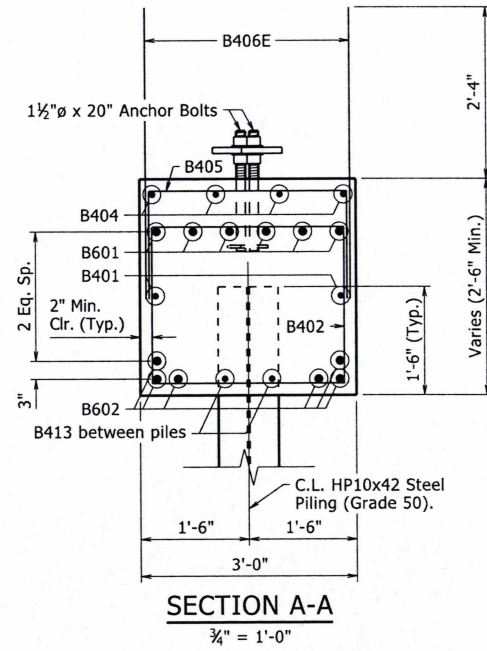
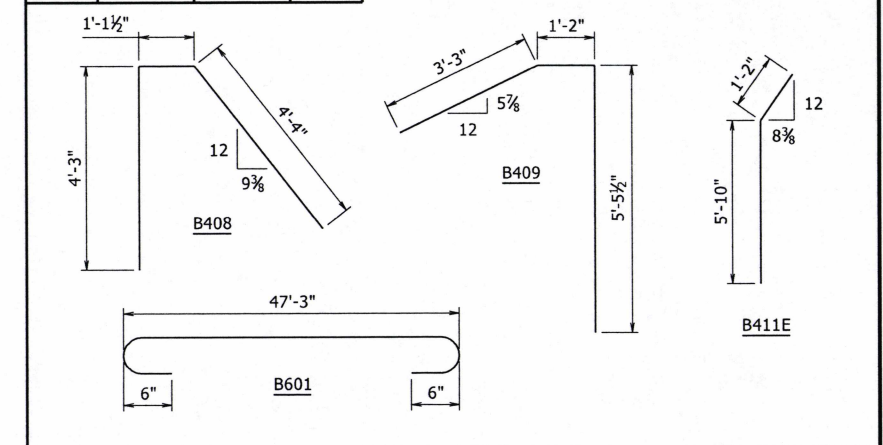
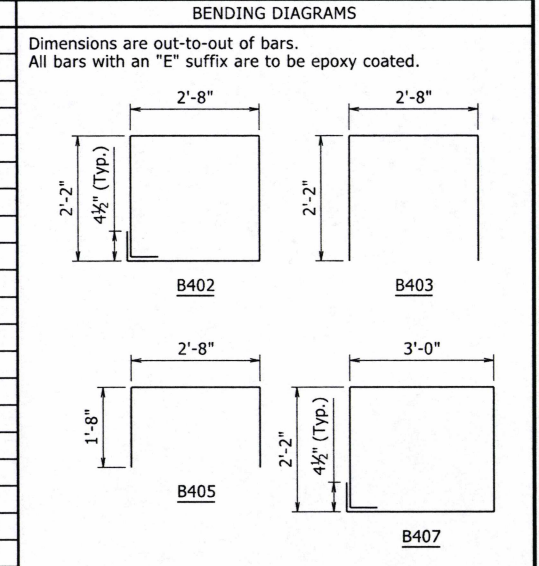
PRINT DATE: 2/24/2020

| 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. | | 080529 | 75 | 105 |

07474 - END BENTS - 61413

BAR LIST - PER BENT

| MARK | NO. | REQ'D. | LENGTH | P.D. |
|-------|-----|--------|--------|------|
| B401 | 4 | 24'-6" | Str. | |
| B402 | 60 | 10'-0" | 2" | |
| B403 | 15 | 6'-10" | 2" | |
| B404 | 4 | 24'-0" | Str. | |
| B405 | 25 | 5'-10" | 2" | |
| B406E | 84 | 3'-10" | Str. | |
| B407 | 4 | 10'-8" | 2" | |
| B408 | 3 | 9'-8" | 3" | |
| B409 | 3 | 9'-10" | 3" | |
| B410E | 6 | 8'-2" | Str. | |
| B411E | 6 | 7'-0" | 2" | |
| B412E | 6 | 4'-6" | Str. | |
| B413 | 8 | 8'-1" | Str. | |
| B601 | 6 | 48'-7" | 4 1/2" | |
| B602 | 6 | 47'-3" | Str. | |



The excavation below bottom of cap as shown is included in the contract pay item "Unclassified Excavation for Structures - Bridge".

GENERAL NOTES:

For additional General Notes, See Dwg. No. 55006.

All steel piling shall be grade 50 and shall conform to Std. Dwg. No. 55020. The top of the completed piles shall be no more than 2" from the true positions shown on the plans.

Bars B406E, B410E, & B411E shall have a minimum embedment of 1'-6" into cap.

Corrugated Steel pipe for pile pockets shall be 21"Ø, 12 gage and shall conform to AASHTO M 36 or M 218.

Concrete for precast abutments (excluding pile pockets) shall be Class S except that the coarse aggregate size shall meet AASHTO M 43, Size 67 (3/4" Max.).

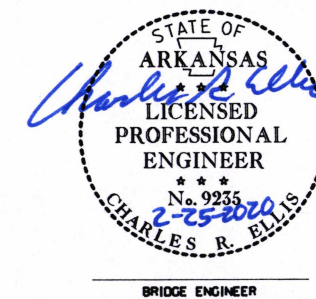
Concrete in pile pockets shall be Class S except as modified herein. The minimum 28 day compressive strength f'c shall be 5,000psi. The slump of concrete, at placement, shall be 7" +/- 1". The maximum water to cement ratio specified in Subsection 802.05 shall not be increased. The maximum aggregate size shall not be greater than 3/4". Shrinkage at 28 days shall be less than 0.032 percent in accordance with AASHTO T 160. Approved admixtures may be used to obtain desired workability, shrinkage, and early strength gain.

Drawings show general features of design only. Shop drawings for precast abutments shall be submitted and have approval secured before fabrication is begun. The Contractor's proposed lifting details shall be submitted on the shop drawings.

After steel piling are driven, the precast abutment shall be lifted into place and set to plan elevation. The top of pile pockets shall be trowel finished to be flush with the top of the cap. Care shall be taken to ensure there are no voids in the pile to cap connection. Temporary supports shall not be removed, and no load shall be placed on the cap until the pile pocket concrete has reached a compressive strength of 3,500 psi.

Abutments shall be precast. Concrete (including pile pockets), reinforcing, corrugated pipe, and bar supports are considered subsidiary to the pay item "Precast Concrete Abutments." See Job SP "Precast Substructure."

For additional information, see Layout.

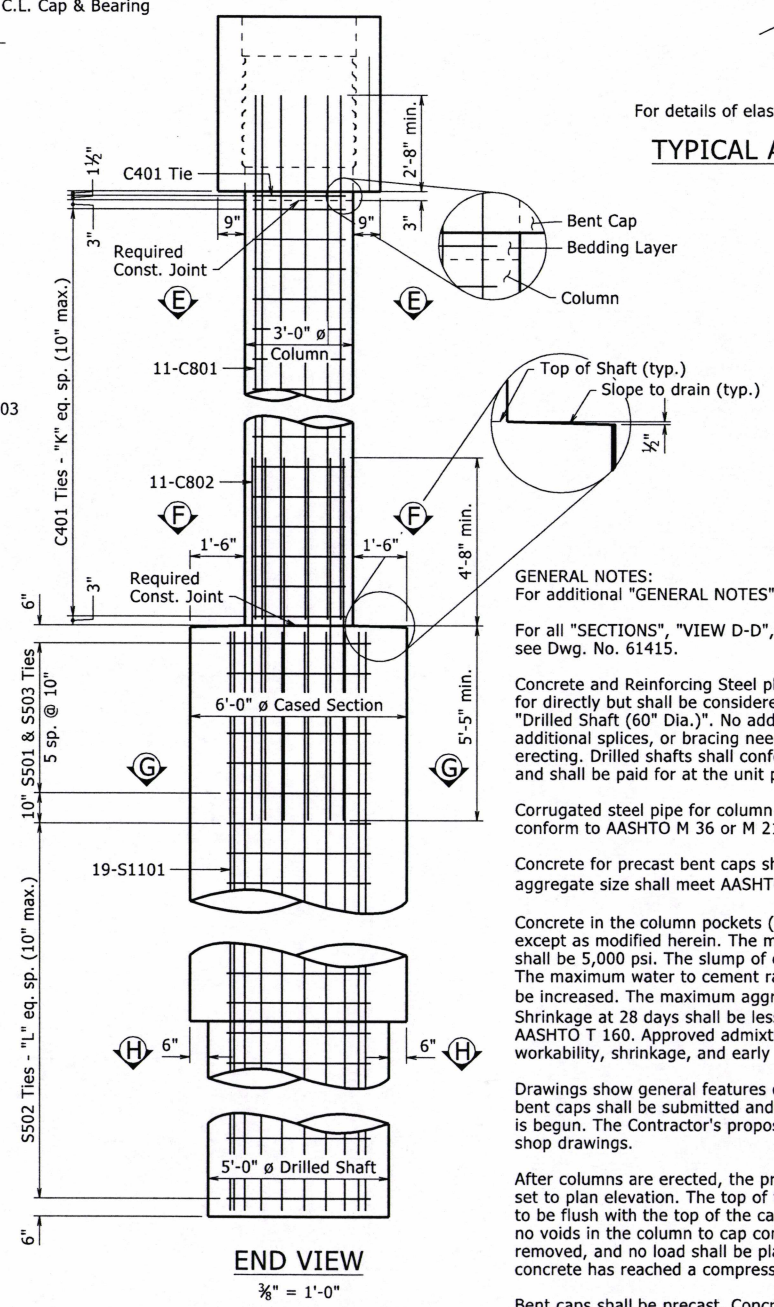
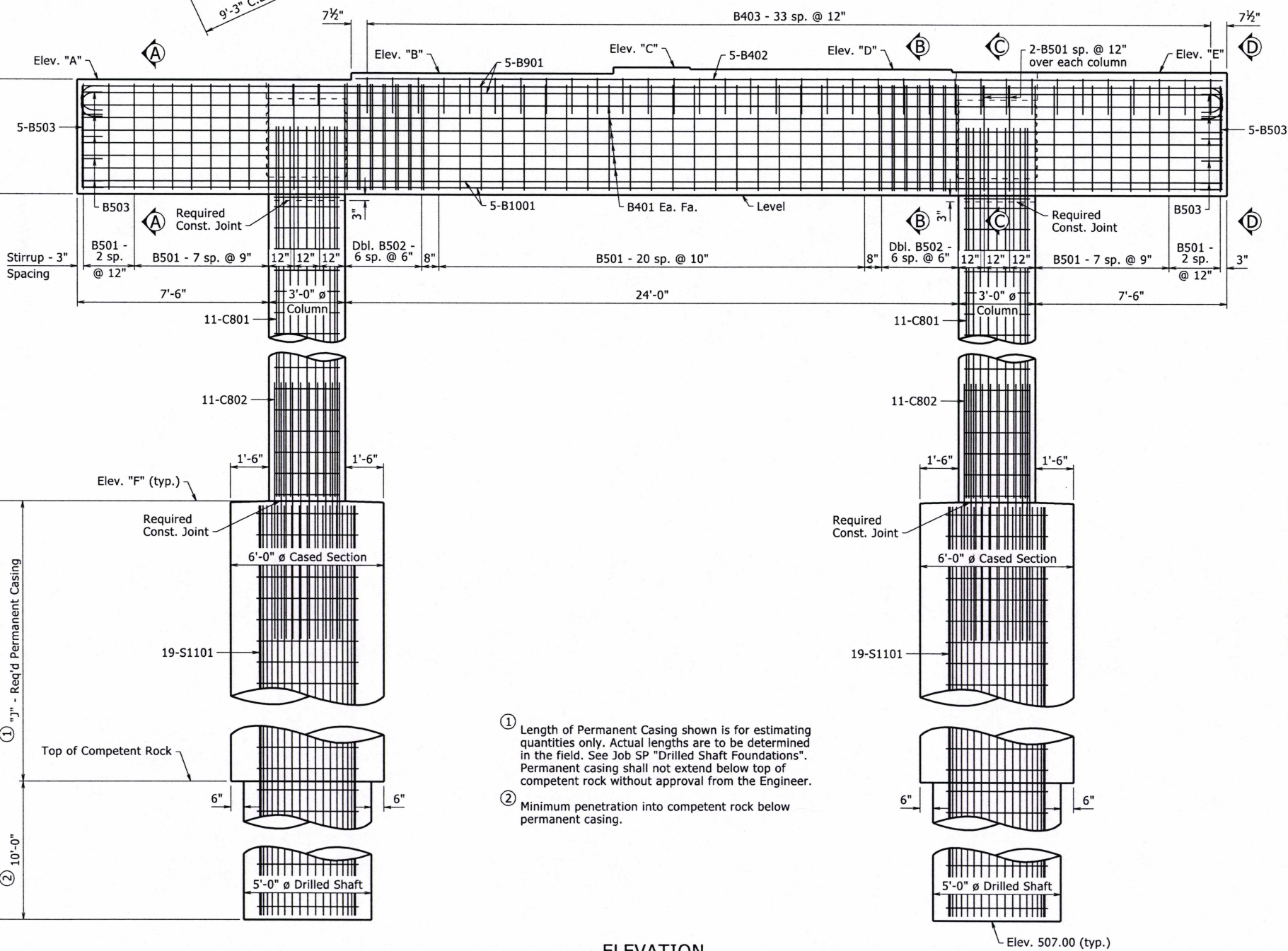
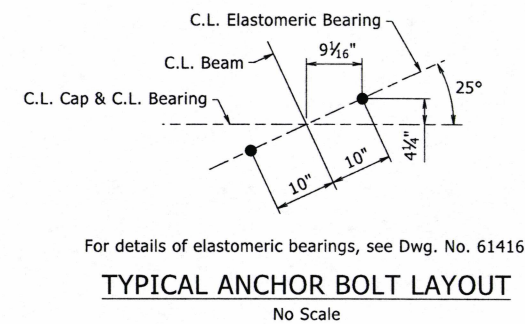
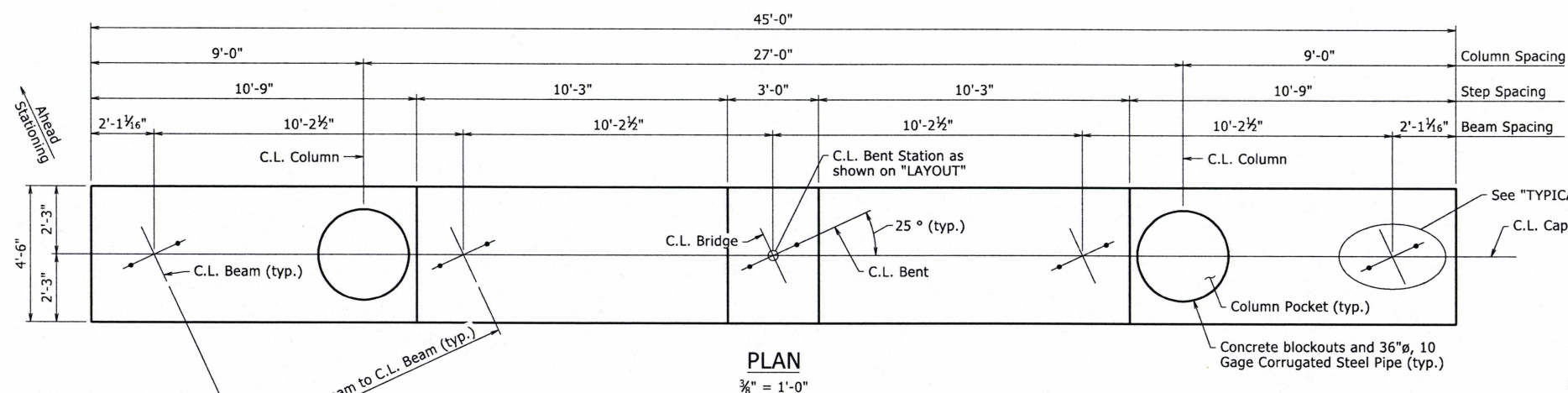


SHEET 3 OF 3
DETAILS OF END BENTS

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

DRAWN BY: BHS DATE: 11/21/2019 FILENAME: b080529_b1.dgn
CHECKED BY: JHP DATE: 2/24/2020 SCALE: As Shown
DESIGNED BY: GHS DATE: 11/2019
BRIDGE NO. 07474 DRAWING NO. 61413

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|----------------------------|--------------|
| | | | | 6 | ARK. | | 76 | 105 |
| | | | | JOB NO. | 080529 | | 07474 - INT. BENTS - 61414 | |



GENERAL NOTES:
 For additional "GENERAL NOTES", see Std. Dwg. No. 55006.

For all "SECTIONS", "VIEW D-D", "TABLE OF VARIABLES", & "BAR LIST", see Dwg. No. 61415.

Concrete and Reinforcing Steel placed in the Drilled Shafts will not be paid for directly but shall be considered subsidiary to the unit price bid for "Drilled Shaft (60" Dia.)". No additional payment shall be made for spacers, additional splices, or bracing needed for assembly, shipping, handling, or erecting. Drilled shafts shall conform to Job SP "Drilled Shaft Foundations" and shall be paid for at the unit price bid for "Drilled Shaft (60" Dia.)".

Corrugated steel pipe for column pockets shall be 36"Ø, 10 gage and shall conform to AASHTO M 36 or M 218.

Concrete for precast bent caps shall be Class S except that the coarse aggregate size shall meet AASHTO M 43, Size 67 (3/4" Max.).

Concrete in the column pockets (including bedding layer) shall be Class S except as modified herein. The minimum 28 day compressive strength f'c shall be 5,000 psi. The slump of concrete, at placement, shall be 7" ± 1". The maximum water to cement ratio specified in Subsection 802.05 shall not be increased. The maximum aggregate size shall not be greater than 3/4". Shrinkage at 28 days shall be less than 0.032 percent in accordance with AASHTO T 160. Approved admixtures may be used to obtain desired workability, shrinkage, and early strength gain.

Drawings show general features of design only. Shop drawings for precast bent caps shall be submitted and have approval secured before fabrication is begun. The Contractor's proposed lifting details shall be submitted in the shop drawings.

After columns are erected, the precast bent cap shall be lifted into place and set to plan elevation. The top of the column pockets shall be trowel finished to be flush with the top of the cap. Care shall be taken to ensure there are no voids in the column to cap connection. Temporary supports shall not be removed, and no load shall be placed on the cap until the cap pocket concrete has reached a compressive strength of 3,500 psi.

Bent caps shall be precast. Concrete (including column pockets), reinforcing, corrugated pipes, and bar supports are considered subsidiary to the pay item "Precast Concrete Bent Caps". See Job SP "Precast Substructure".

For additional information, see Layout.

- Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Job SP "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock without approval from the Engineer.
- Minimum penetration into competent rock below permanent casing.



SHEET 1 OF 2
 DETAILS OF INTERMEDIATE BENTS

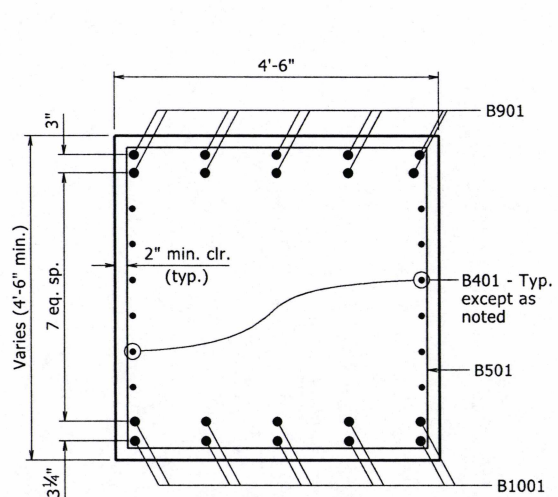
ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 11/14/2019 FILENAME: b080529_b2.dgn
 CHECKED BY: BAS DATE: 2/24/2020 SCALE: As Shown
 DESIGNED BY: BAS DATE: 11/2019
 BRIDGE NO. 07474 DRAWING NO. 61414

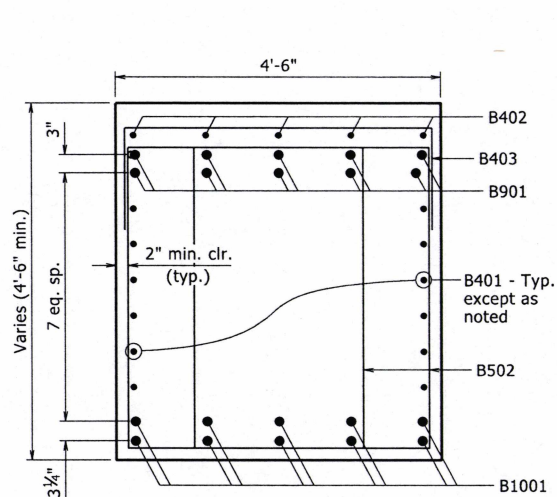
PRINT DATE: 2/24/2020

| 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. | 080529 | 77 | 105 | |

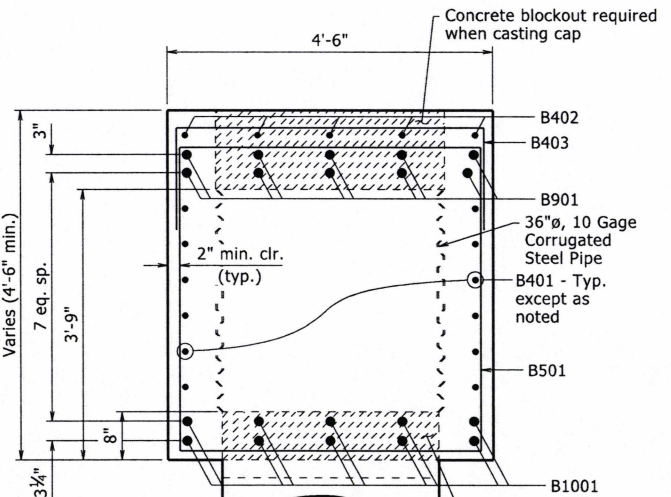
07474 - INT. BENTS - 61415



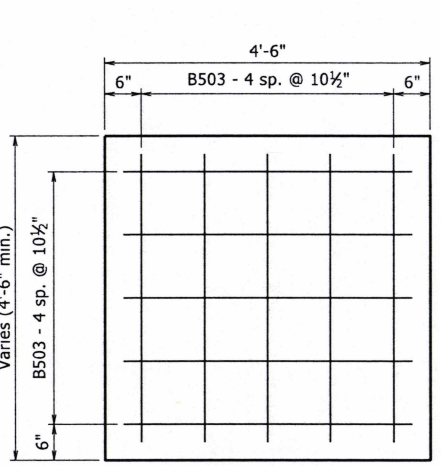
SECTION A-A



SECTION B-B

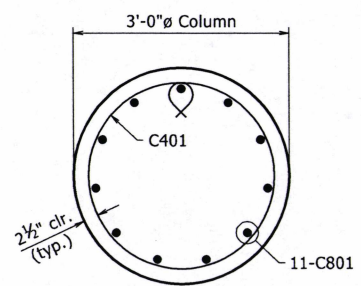


SECTION C-C

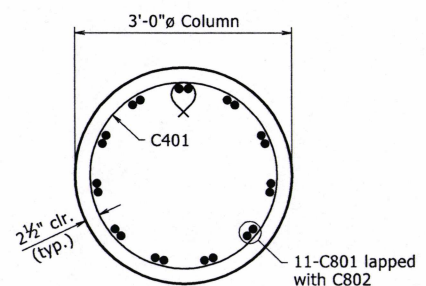


VIEW D-D

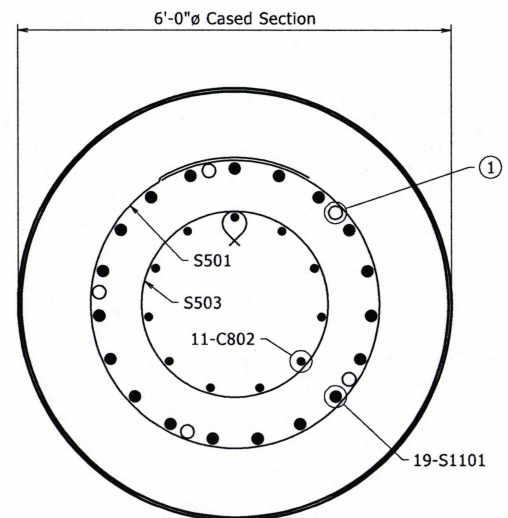
Typ. both ends of cap



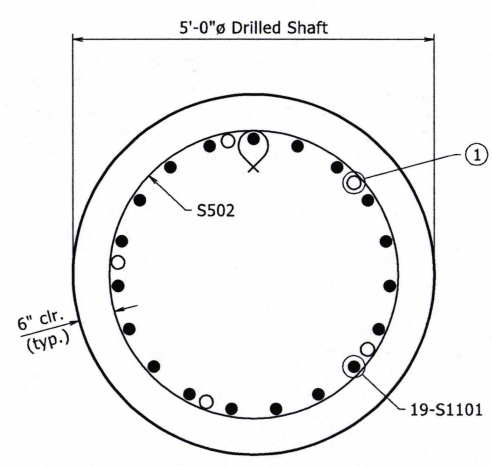
SECTION E-E



SECTION F-F



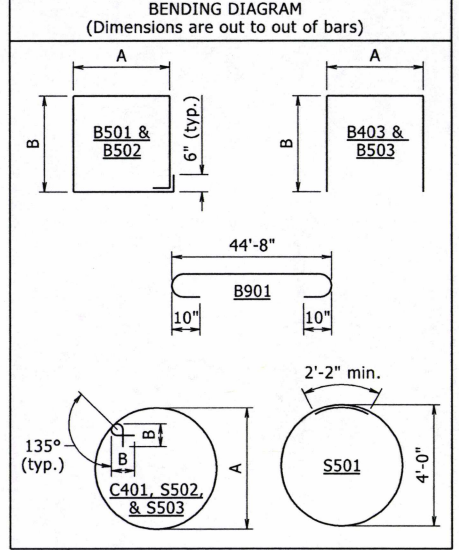
SECTION G-G



SECTION H-H

BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | A | B | PIN DIA. |
|---------|------------|---------|-------|--------|----------|
| ② B401 | 12 | 44'-8" | | | Str. |
| ② B402 | 5 | 33'-11" | | | Str. |
| ② B403 | 34 | 6'-10" | 4'-2" | 1'-5" | 2" |
| ② B501 | 45 | 17'-2" | 4'-2" | 4'-2" | 2 1/2" |
| ② B502 | 28 | 15'-4" | 3'-3" | 4'-2" | 2 1/2" |
| ② B503 | 20 | 5'-5" | 4'-0" | 10" | 3 3/4" |
| ② B901 | 10 | 47'-2" | | | 9" |
| ② B1001 | 10 | 44'-8" | | | Str. |
| C401 | "M" | 9'-3" | 2'-7" | 5" | 3" |
| C801 | 22 | "N" | | | Str. |
| C802 | 22 | 10'-1" | | | Str. |
| S501 | 12 | 14'-8" | | | |
| S502 | "P" | 14'-0" | 4'-0" | 6 1/4" | 3 3/4" |
| S503 | 12 | 9'-7" | 2'-7" | 6 1/4" | 3 3/4" |
| S1101 | 38 | "Q" | | | Str. |



② No direct payment for bars in bent cap or drilled shafts, see Job SPs "PRECAST SUBSTRUCTURE" and "DRILLED SHAFT FOUNDATIONS", respectively.

TABLE OF VARIABLES

| BENT | ELEV. "A" | ELEV. "B" | ELEV. "C" | ELEV. "D" | ELEV. "E" | ELEV. "F" | "G" | "H" | "J" | "K" | "L" | "M" | "N" | "P" | "Q" |
|------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|--------|--------|-----|-----|-----|--------|-----|--------|
| 2 | 547.14 | 547.41 | 547.66 | 547.59 | 547.50 | 528.00 | 14'-7 1/16" | 21'-0" | 11'-0" | 17 | 18 | 38 | 17'-2" | 38 | 20'-8" |
| 3 | 545.90 | 546.17 | 546.42 | 546.35 | 546.26 | 528.00 | 13'-4 1/16" | 21'-0" | 11'-0" | 16 | 18 | 36 | 16'-0" | 38 | 20'-8" |
| 4 | 544.66 | 544.94 | 545.18 | 545.11 | 545.02 | 529.50 | 10'-7 1/16" | 22'-6" | 12'-6" | 12 | 20 | 28 | 13'-2" | 42 | 22'-2" |

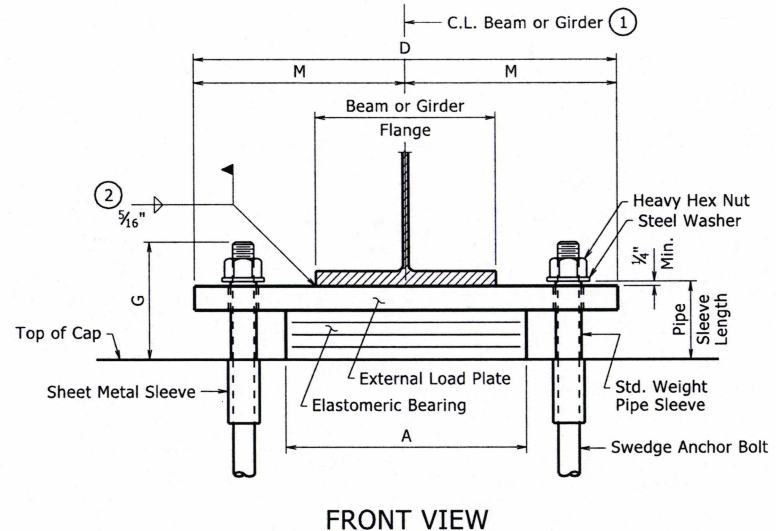


SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 11/14/2019 FILENAME: b080529_b2.dgn
CHECKED BY: BHS DATE: 11/20/2019 SCALE: 3/4" = 1'-0"
DESIGNED BY: BHS DATE: 11/20/2019
BRIDGE NO. 07474 DRAWING NO. 61415

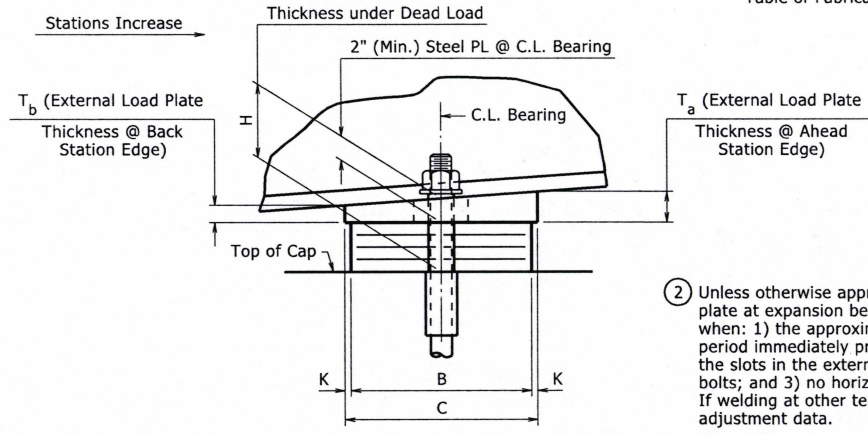
PRINT DATE: 2/20/2020

| 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. | 080529 | 78 | 105 | |
| | | | | 07474 - ELASTO BRGS. - 61416 | | | | |



FRONT VIEW

① C.L. Elastomeric Pad shall be aligned with C.L. Beam or Girder.

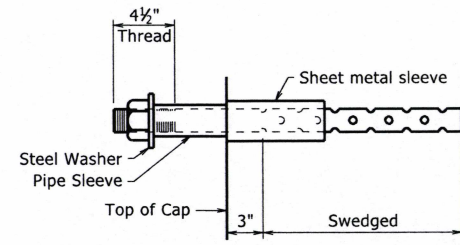


SIDE VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in the "Table of Fabricator Variables."

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

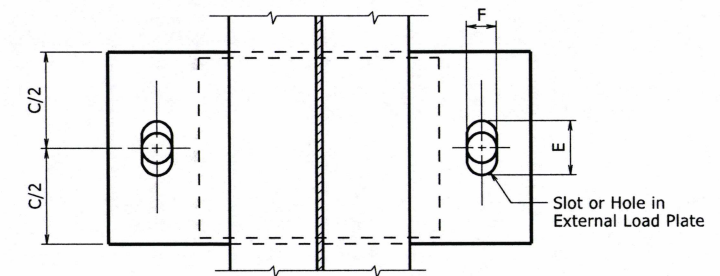
Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



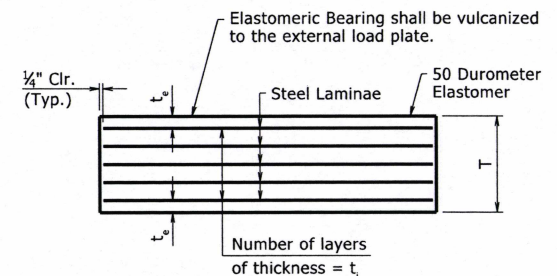
ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam, or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM A653, CS Type B or approved equivalent, be of minimum 16 gauge thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (A709, Gr. 50W)."



PLAN VIEW



t_e = Thickness of elastomer cover on top and bottom of pad
t_i = Thickness of elastomer between steel laminae
N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

Prior to erection of the beams or girders, the Contractor shall verify the orientation of the bearings with respect to T_a and T_b.

GENERAL NOTES

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

External load plates shall conform to ASTM A709, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

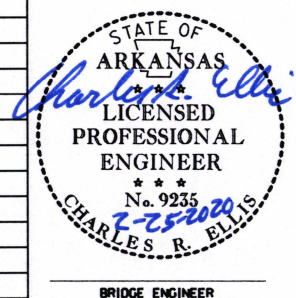
External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)." External load plates will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings."

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

| BRIDGE NO. | LOCATION | | BEARING TYPE | NO. of BEARINGS EACH BENT | MAXIMUM DESIGN LOAD (KIPS) | G | H | ELASTOMERIC PAD | | | | EXTERNAL LOAD PLATE | | | | | | ANCHOR BOLT | | | | | | | | | |
|------------|-------------|--------------------|--------------|---------------------------|----------------------------|--------|----------|-----------------|-----|---|----------------|---------------------|----------------------------------|----------|-----|-----|--------|-------------|------|-----|----------------|----------------|--------------|-------|---------------------------|---------------------------------|--------------------------|
| | BENT NO (S) | BEAM OR GIRDER NO. | | | | | | A | B | N | t _i | t _e | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | T _a | T _b | ANCHOR BOLT | | PI PE SLEEVE SIZE (Ø x L) | SHEET METAL SLEEVE SIZE (Ø x L) | STEEL WASHER SIZE (O.D.) |
| | | | | | | | | | | | | | | | | | | | | | | | (Ø x L) | GRADE | | | |
| 07474 | 2 thru 4 | All | Fix | 5 | 207 | 6 7/8" | 3 13/16" | 15" | 12" | 2 | 1/2" | 1/4" | 3 @ 12 ga. | 1 13/16" | 13" | 26" | 2 5/8" | 2 5/8" | 1/2" | 10" | 1.87" | 2.13" | 1 3/4" x 28" | 55 | 2" x 4 1/8" | 4" x 12" | 3 3/8" |



BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS

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

DRAWN BY: BHS DATE: 10/31/19 FILENAME: b080529_e1.dgn
CHECKED BY: JYP DATE: 2/20/2020 SCALE: None
DESIGNED BY: JSB DATE: 8/20/18

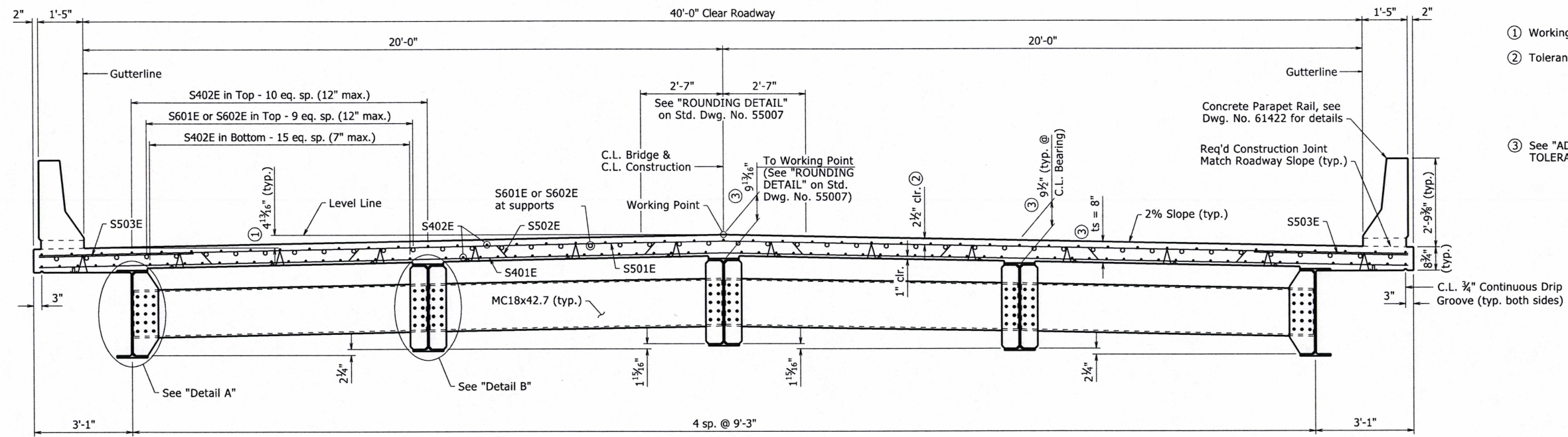
BRIDGE NO. 07474 DRAWING NO. 61416

| 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. | 080529 | | 79 | 105 |
| | | | | 07474 - 210' UNIT - 61417 | | | | |

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners directly on removable deck forms will not be allowed.

Class 1 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and Top of Concrete Parapet Rail.

At the Contractor's option, two straight epoxy coated No. 5 bars, one placed in the top and one placed in the bottom, may be substituted for bar S502E. Payment will be based on the weight of bar S502E.



- ① Working Point to Gutterline
- ② Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.
- ③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

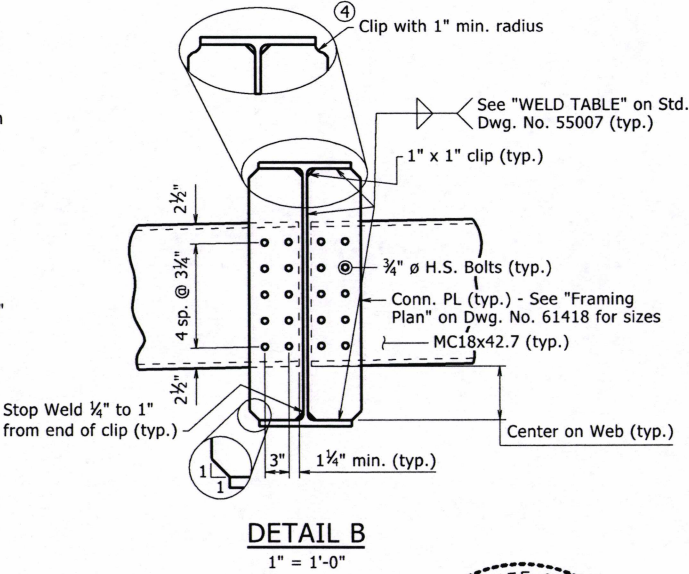
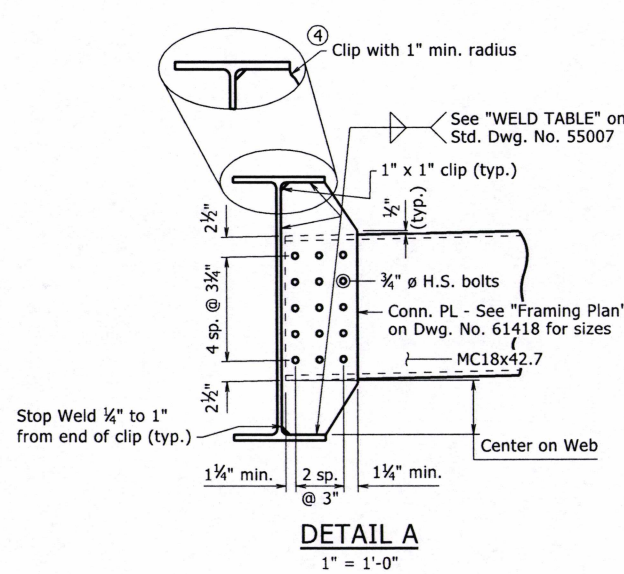
TYPICAL ROADWAY SECTION
Looking Ahead
1/2" = 1'-0"

BAR LIST

| MARK | NO. REQ'D. | LENGTH | P.D. | BENDING DIAGRAMS |
|---------------|------------|----------------|--------|------------------|
| S401E | 193 | 42'-10" | Str. | |
| S402E | 605 | 44'-6" | Str. | |
| S403E | 84 | 8'-8" | 2" | |
| S404E | 36 | 17'-6" | Str. | |
| S501E | 193 | 42'-10" | Str. | |
| S502E | 192 | 43'-8" | 3" | |
| S503E | 838 | 4'-10" | Str. | |
| S504E - S537E | 4 EA. | 5'-0" - 40'-5" | Str. | |
| S538E | 2 | 47'-1" | 3 3/4" | |
| S539E | 6 | 5'-3" | 3 3/4" | |
| S540E | 80 | 4'-8" | Str. | |
| S601E | 92 | 7'-11" | 4 1/2" | |
| S602E | 138 | 30'-0" | Str. | |
| S603E | 6 | 10'-6" | 4 1/2" | |
| S604E | 6 | 7'-6" | 4 1/2" | |
| P401E | 684 | 5'-6" | 3" | |
| P402E | 160 | 4'-10" | 3" | |
| P403E | 112 | 5'-7" | Str. | |
| P404E | 28 | 8'-8" | Str. | |
| P405E | 84 | 10'-2" | Str. | |
| P406E | 140 | 12'-8" | Str. | |
| P501E | 684 | 4'-10" | 3 3/4" | |
| R401E | 16 | 3'-11" | 2" | |
| R402E | 16 | 4'-0" | 2" | |
| R403E | 24 | 9'-8" | Str. | |
| R404E | 24 | 4'-0" | Str. | |
| R601E | 16 | 6'-5" | Str. | |
| R602E | 12 | 5'-0" | Str. | |
| R603E | 16 | 6'-0" | Str. | |
| W401E | 10 | 5'-2" | 2" | |
| W402E | 10 | 6'-4" | Str. | |
| W403E | 10 | 4'-11" | 2" | |
| W404E | 10 | 6'-1" | Str. | |
| W701E | 20 | 11'-9" | Str. | |
| W702E | 20 | 12'-5" | Str. | |

Slab Reinforcing:
 Longitudinal: S402E Top and Bottom placed as shown
 S601E placed as shown over end supports and S602E placed as shown over intermediate supports, see "HALF-REINFORCING PLAN AND SLAB POURING SEQUENCE", Dwg. No. 61420.
 Transverse: S501E @ 12" o.c. in top, S401E @ 12" o.c. in bottom - Alternate S502E @ 12" o.c. bent up over beams
 S503E @ 6" in top of overhang (bundled with No. 5 bars)

④ If permanent steel bridge deck forms are used, the Fabricator shall clip plates as necessary to accommodate the deck form supports.



STATE OF ARKANSAS
Charles R. Ellis
 LICENSED PROFESSIONAL ENGINEER
 No. 9235
 2-25-2020
 CHARLES R. ELLIS
 BRIDGE ENGINEER

SHEET 1 OF 6
 DETAILS OF 210'-0"
 CONTINUOUS INTEGRAL W-BEAM UNIT
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
 CHECKED BY: BHS DATE: 2/20/2020 SCALE: As Shown
 DESIGNED BY: JSQ DATE: 8/20/18
 BRIDGE NO. 07474 DRAWING NO. 61417

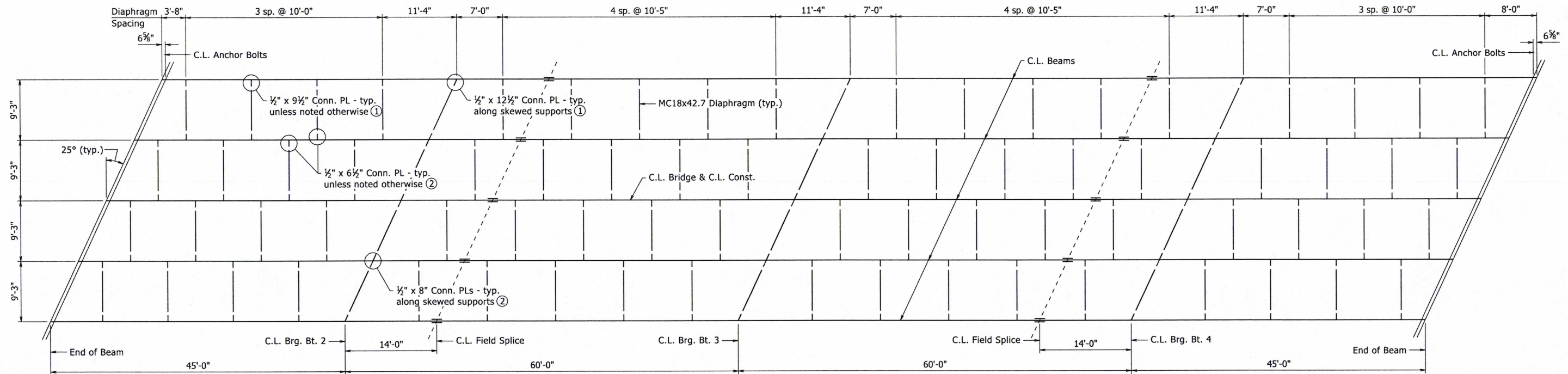
PRINT DATE: 2/20/2020

All bars designated with an "E" suffix are to be epoxy coated. Dimensions are out to out of bars.

- ① See "Detail A" on Dwg. No. 61417
- ② See "Detail B" on Dwg. No. 61417

All structural steel shall be ASTM A709, Gr. 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)". See Std. Dwg. Nos. 55006 and 55007 for additional notes and details.

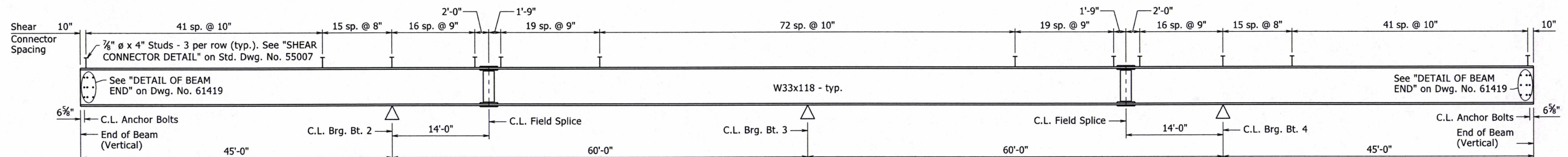
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 080529 | 80 | 105 |
| | | | | 07474 - 210' UNIT - 61418 | | | | |



FRAMING PLAN

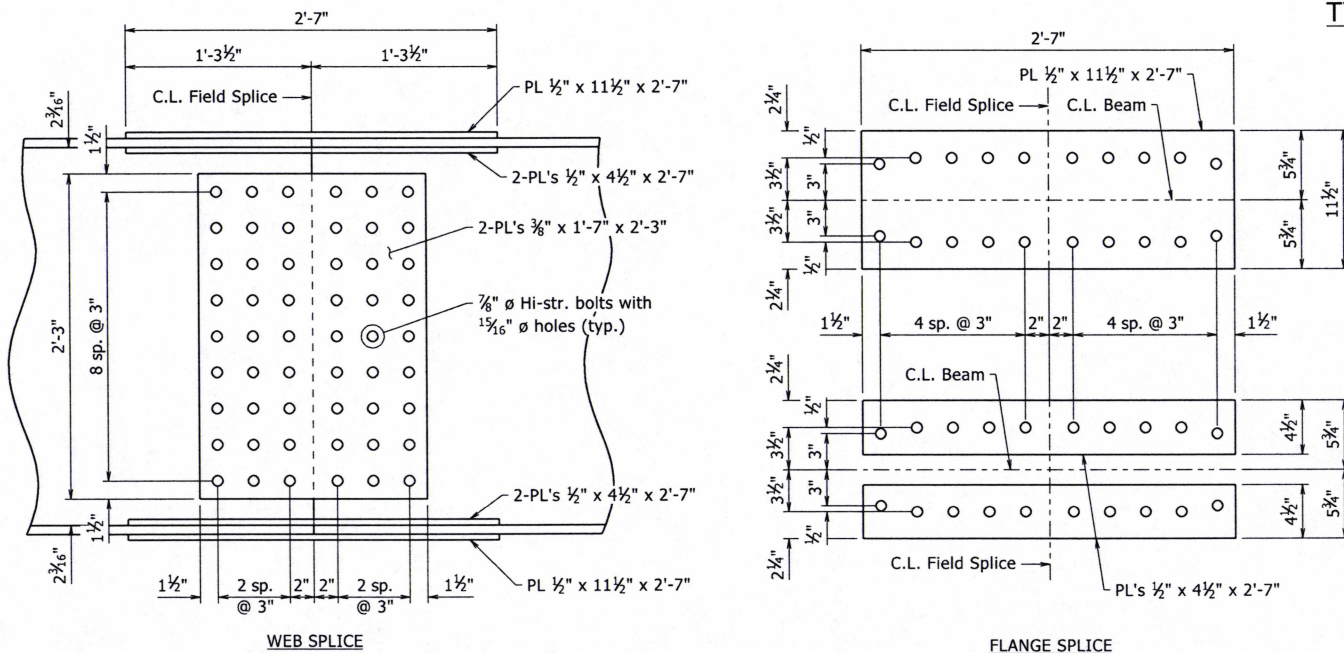
1/8" = 1'-0"

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



TYPICAL BEAM ELEVATION

No Scale



FIELD SPLICE DETAIL

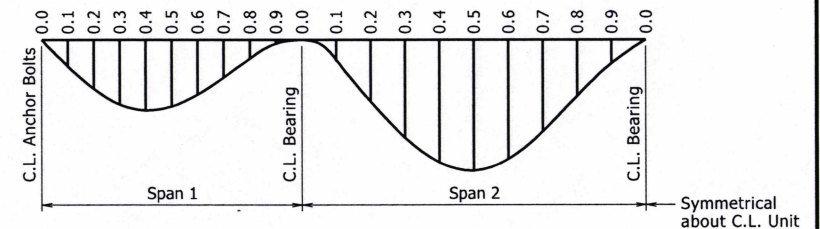
1/2" = 1'-0"

All field splice bolts shall be 7/8" Hi-str. bolts. All holes for splice bolts shall be 1 1/16" ø.

TABLE OF DEAD LOAD DEFLECTIONS - INCHES

| Span | Point of Deflection | Structural Steel | | Structural Steel + Slab | | Structural Steel + Slab + Parapet | |
|--------|---------------------|------------------|---------------|-------------------------|---------------|-----------------------------------|---------------|
| | | Exterior Beam | Interior Beam | Exterior Beam | Interior Beam | Exterior Beam | Interior Beam |
| Span 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0.1 | 0.011 | 0.013 | 0.078 | 0.094 | 0.085 | 0.098 |
| | 0.2 | 0.020 | 0.023 | 0.144 | 0.173 | 0.156 | 0.181 |
| | 0.3 | 0.026 | 0.030 | 0.187 | 0.225 | 0.203 | 0.235 |
| | 0.4 | 0.028 | 0.033 | 0.203 | 0.245 | 0.220 | 0.256 |
| | 0.5 | 0.027 | 0.031 | 0.191 | 0.231 | 0.207 | 0.241 |
| | 0.6 | 0.022 | 0.026 | 0.156 | 0.188 | 0.169 | 0.196 |
| | 0.7 | 0.015 | 0.017 | 0.105 | 0.127 | 0.114 | 0.133 |
| | 0.8 | 0.007 | 0.008 | 0.05 | 0.061 | 0.054 | 0.064 |
| | 0.9 | 0.001 | 0.001 | 0.008 | 0.010 | 0.009 | 0.010 |
| Span 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0.1 | 0.009 | 0.010 | 0.063 | 0.076 | 0.068 | 0.079 |
| | 0.2 | 0.024 | 0.028 | 0.172 | 0.207 | 0.187 | 0.216 |
| | 0.3 | 0.039 | 0.046 | 0.279 | 0.337 | 0.303 | 0.352 |
| | 0.4 | 0.050 | 0.058 | 0.354 | 0.428 | 0.384 | 0.447 |
| | 0.5 | 0.053 | 0.062 | 0.378 | 0.456 | 0.410 | 0.476 |
| | 0.6 | 0.048 | 0.056 | 0.344 | 0.415 | 0.373 | 0.434 |
| | 0.7 | 0.037 | 0.043 | 0.261 | 0.315 | 0.283 | 0.329 |
| | 0.8 | 0.021 | 0.025 | 0.151 | 0.182 | 0.164 | 0.190 |
| | 0.9 | 0.007 | 0.008 | 0.047 | 0.057 | 0.051 | 0.060 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

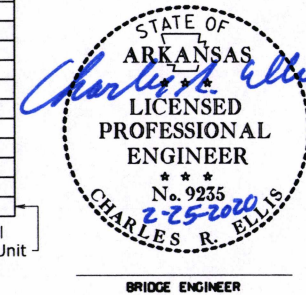
Symmetrical about C.L. Unit



DEAD LOAD DEFLECTION DIAGRAM

No Scale

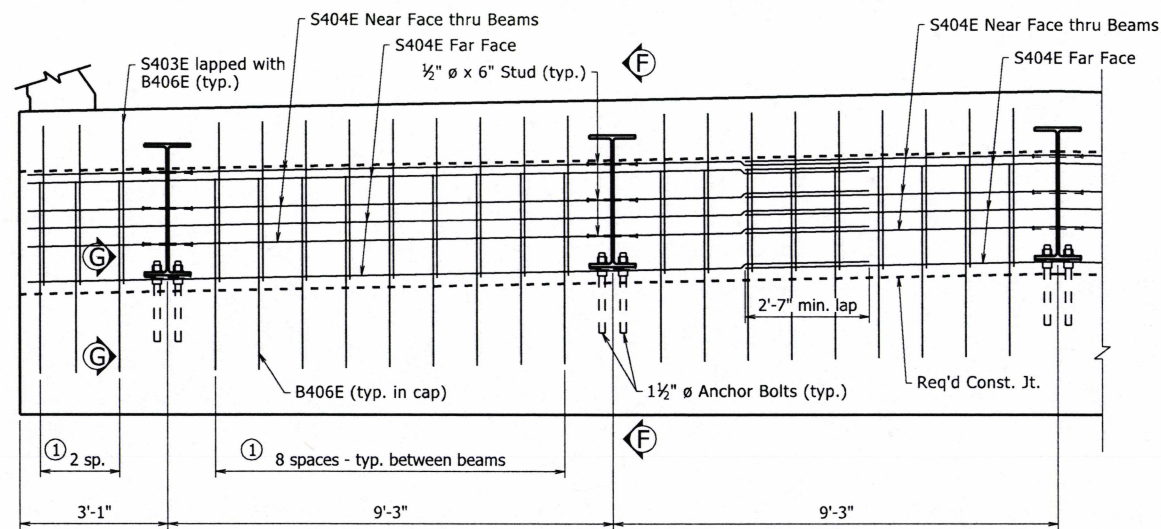
Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are along C.L. Beam on a chord from C.L. Anchor Bolt to C.L. Bearing, or C.L. Bearing to C.L. Bearing.



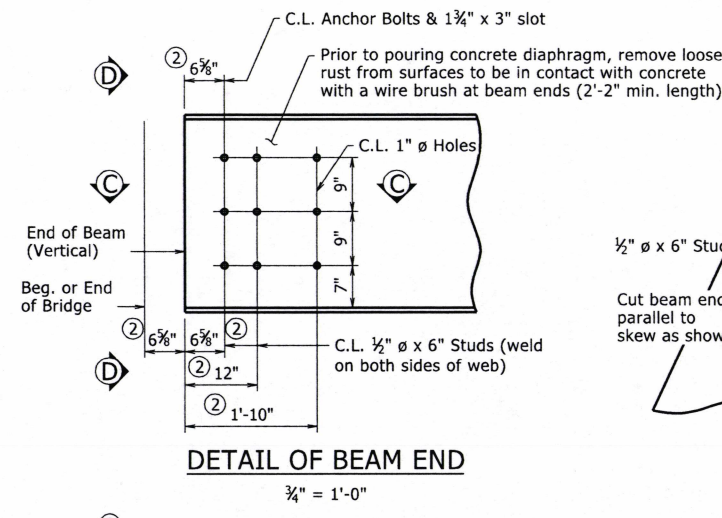
BRIDGE ENGINEER

SHEET 2 OF 6
 DETAILS OF 210'-0"
 CONTINUOUS INTEGRAL W-BEAM UNIT
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
 CHECKED BY: BHS DATE: 2/25/2020 SCALE: As Shown
 DESIGNED BY: JSQ DATE: 8/2018
 BRIDGE NO. 07474 DRAWING NO. 61418

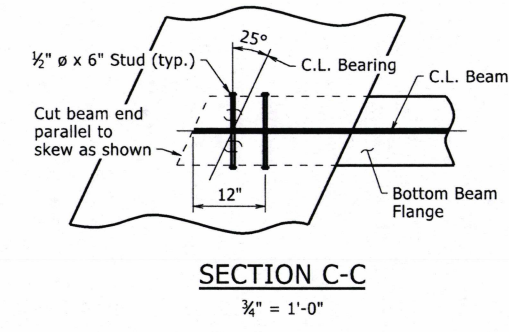
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 080529 | 81 | 105 |
| | | | | 07474 - 210' UNIT - 61419 | | | | |



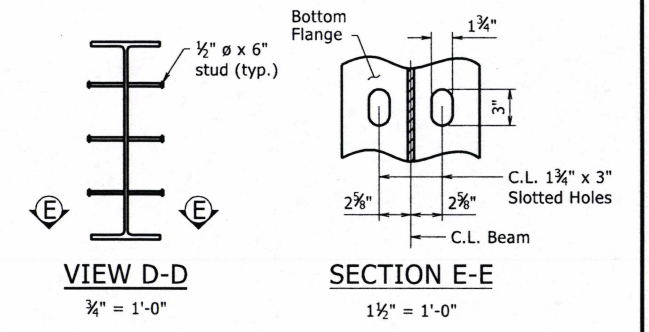
TYPICAL SECTION AT CONCRETE END BENT DIAPHRAGMS



DETAIL OF BEAM END



SECTION C-C



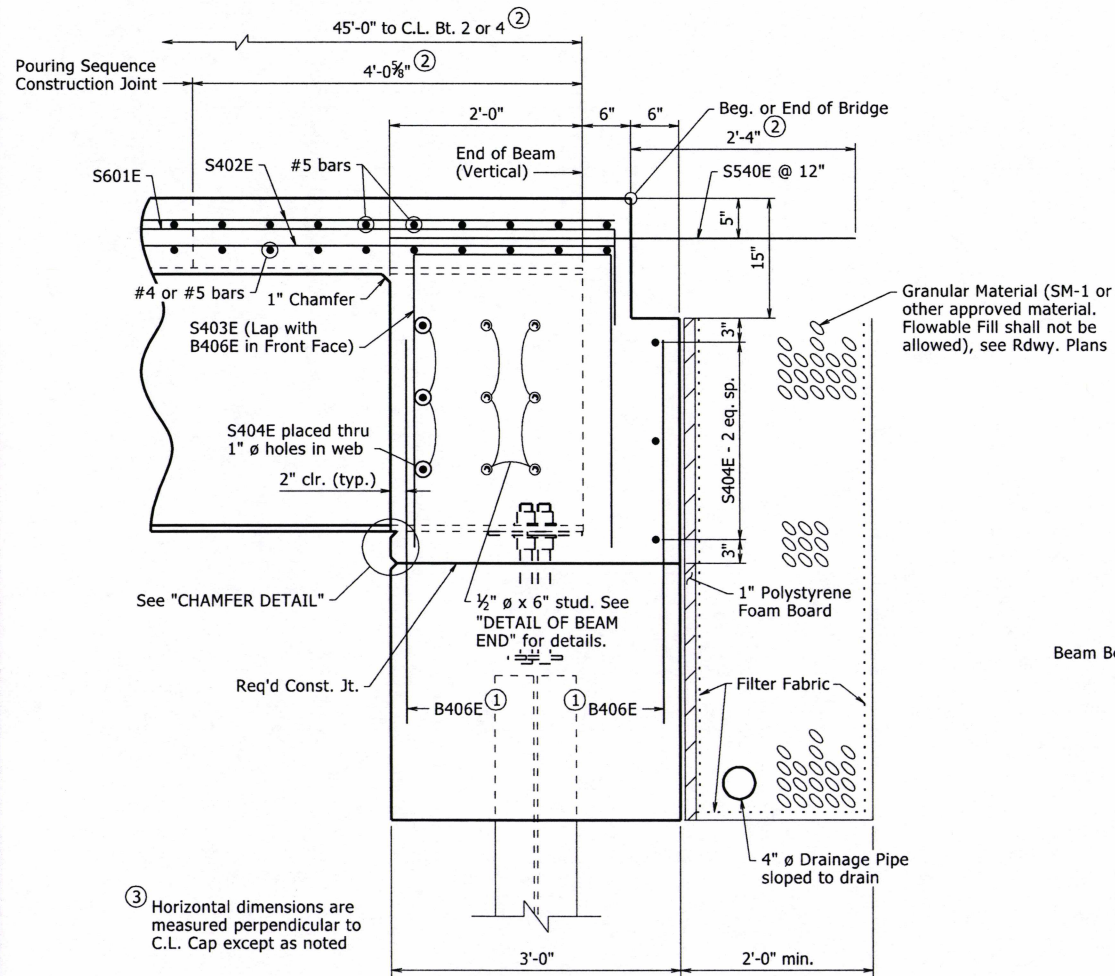
VIEW D-D

SECTION E-E

② Measured along C.L. Beam

① See Dwg. Nos. 61411 & 61412 for bent reinforcing details and placement.

Looking Back Bent 1
Looking Ahead Bent 5
1/2" = 1'-0"



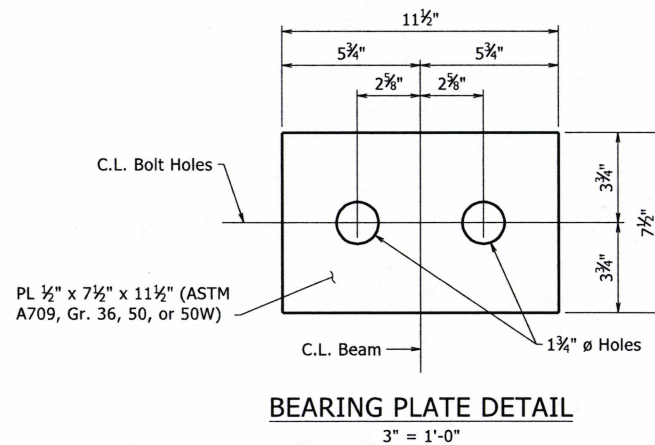
SECTION F-F

1" = 1'-0"

Limits of the concrete end diaphragm shall match plan dimension of End Bent Cap.

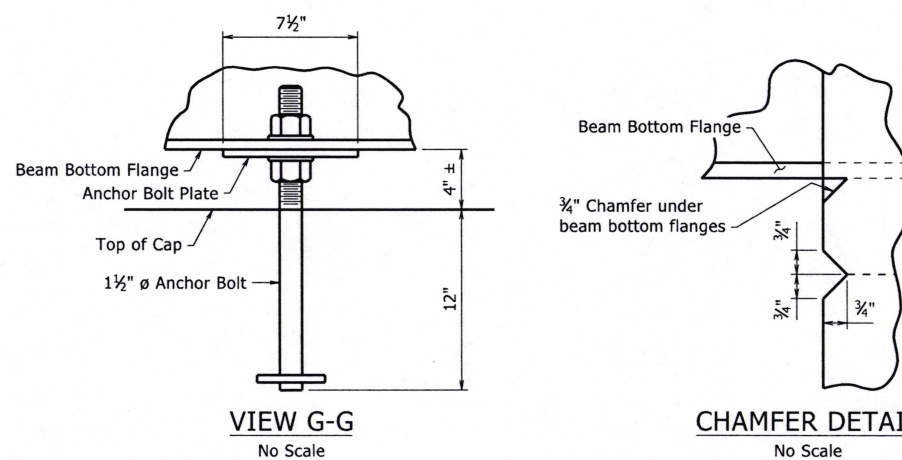
For additional details of pipe underdrain see Std. Dwg. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation".

1" Polystyrene Foam Board, Filter Fabric and Granular Material shall not be paid for directly, but shall be considered subsidiary to the various bid items.



BEARING PLATE DETAIL

3" = 1'-0"

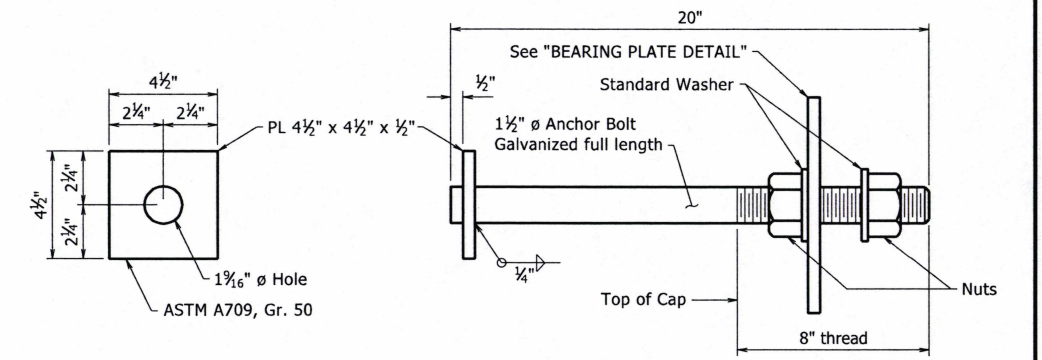


VIEW G-G

No Scale

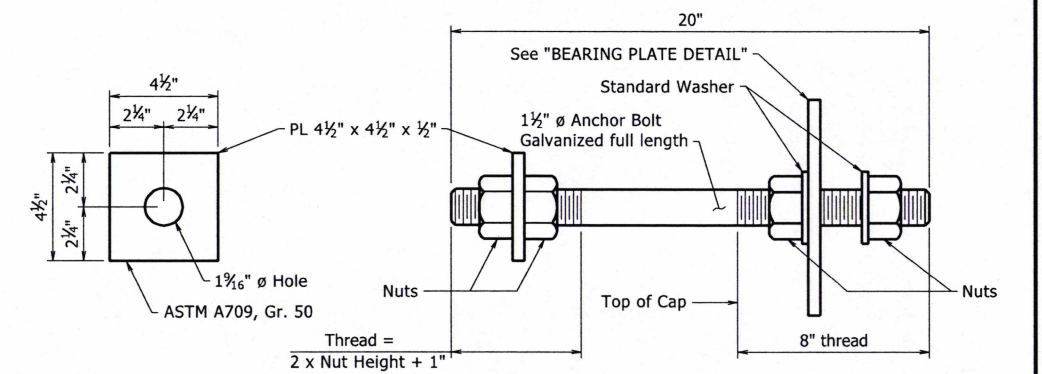
CHAMFER DETAIL

No Scale



ANCHOR BOLT DETAIL

No Scale



ALTERNATE ANCHOR BOLT DETAIL

No Scale

Anchor bolts shall comply with AASHTO M 314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and Washers for bolts shall be as specified in Subsection 807.07.

Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.

Plates, bolts, nuts, and washers shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)".



SHEET 3 OF 6
DETAILS OF 210'-0"
CONTINUOUS INTEGRAL W-BEAM UNIT

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

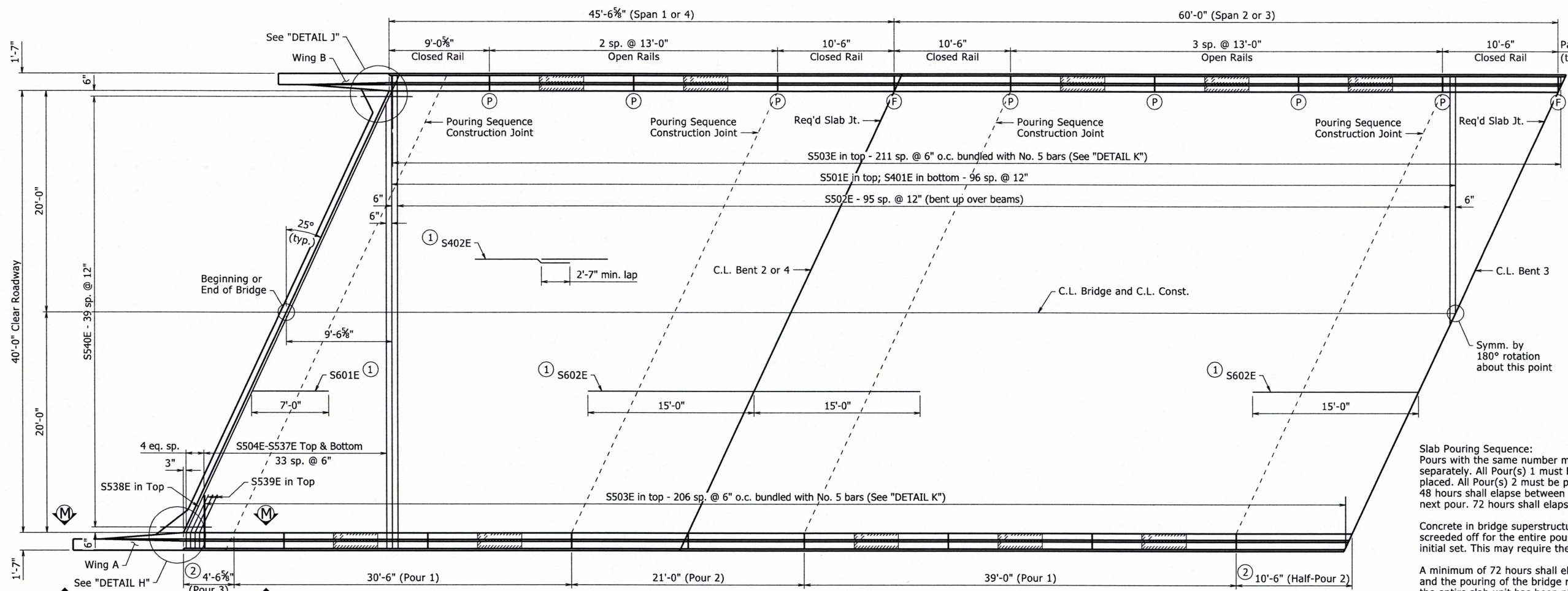
BRIDGE ENGINEER

BRIDGE NO. 07474 DRAWING NO. 61419

DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
CHECKED BY: BWS DATE: 2/16/2020 SCALE: As Shown
DESIGNED BY: JBR DATE: 6/2018

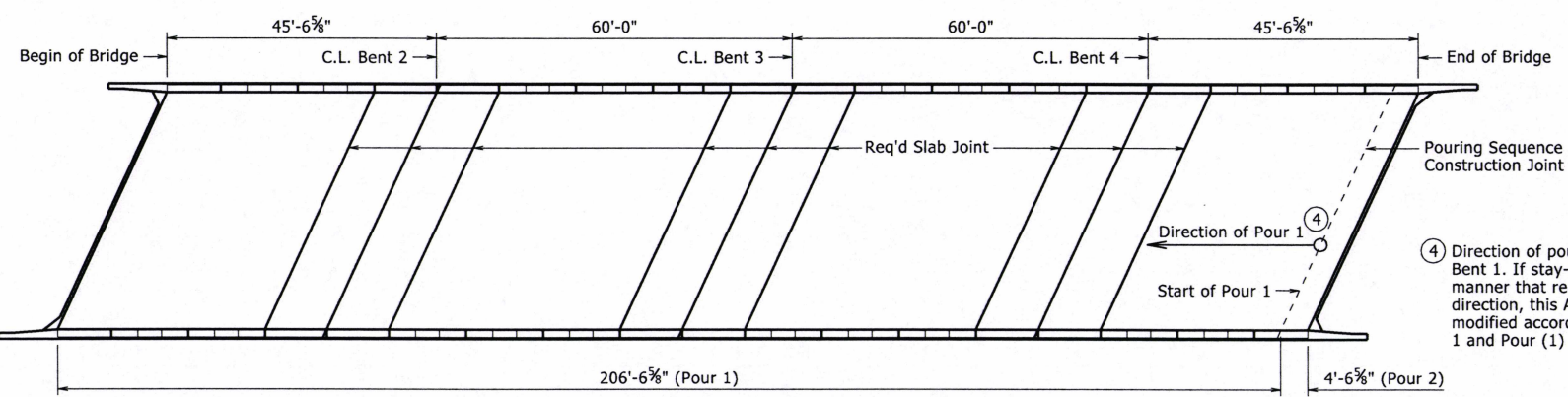
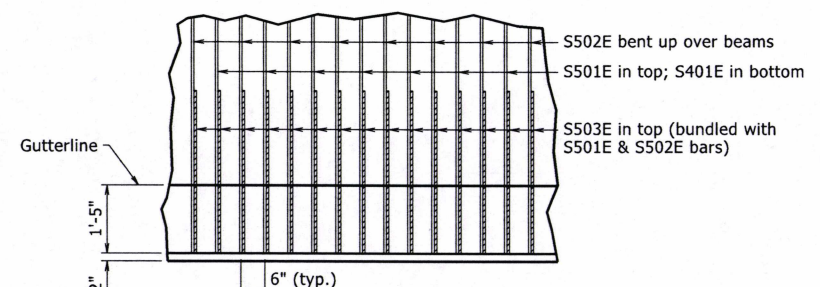
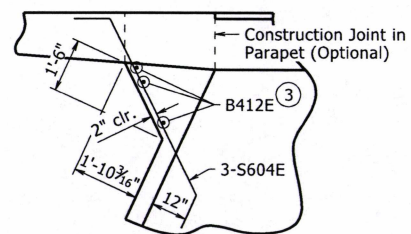
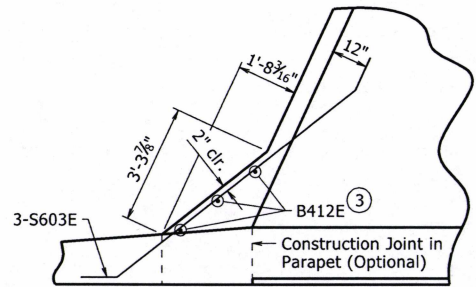
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 82 | 105 |

07474 - 210' UNIT - 61420



HALF-REINFORCING PLAN AND SLAB POURING SEQUENCE

3/16" = 1'-0"



ALTERNATE POURING SEQUENCE

3/16" = 1'-0"

Slab Pouring Sequence:
 Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. All Pour(s) 2 must be placed before Pour(s) 3 can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours.

Concrete in bridge superstructure shall be placed, consolidated, and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s) shown.

Unless otherwise noted, required slab joints and pouring sequence construction joints shall align with parapet joints at the gutterline.

Concrete diaphragms at end bents shall be poured monolithically with the deck.

- (1) Placed as shown in "TYPICAL ROADWAY SECTION", see Dwg. No. 61417.
- (2) Measured along gutterline.
- (3) See End Bent Details on Dwg. Nos. 61411 & 61412 for reinforcing and additional details.
- (P) Partial Depth Parapet Joint at this location.
- (F) Full Depth Parapet Joint at this location.

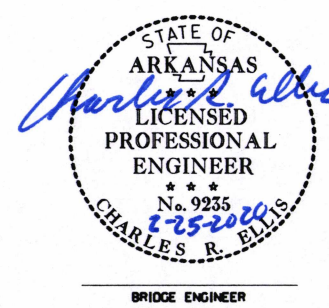
Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 61422.

For Views "L-L" and "M-M", see Dwg. No. 61421.

Rails and wings are included in span construction and are included in span quantities.

For bar list, see Dwg. No. 61417.

(4) Direction of pour shall be from near Bent 5 progressing to Bent 1. If stay-in-place forms are used and installed in a manner that requires pouring of the slab in the opposite direction, this Alternate Pouring Sequence shall be modified accordingly to where Closure Pour (2) is at Bent 1 and Pour (1) progresses from near Bent 1 to Bent 5.



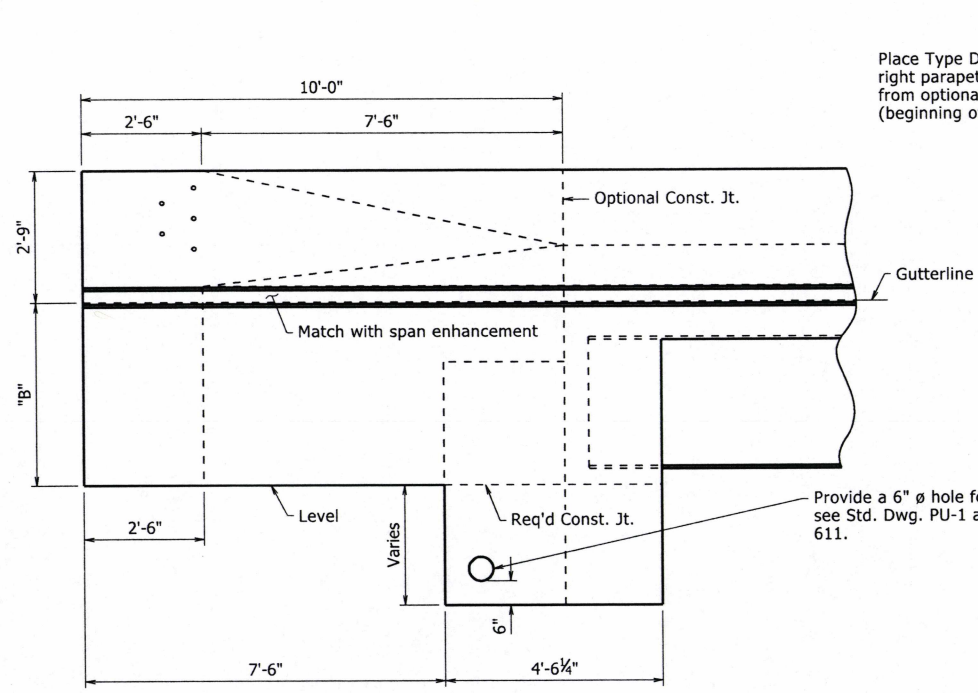
SHEET 4 OF 6
 DETAILS OF 210'-0"
 CONTINUOUS INTEGRAL W-BEAM UNIT

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

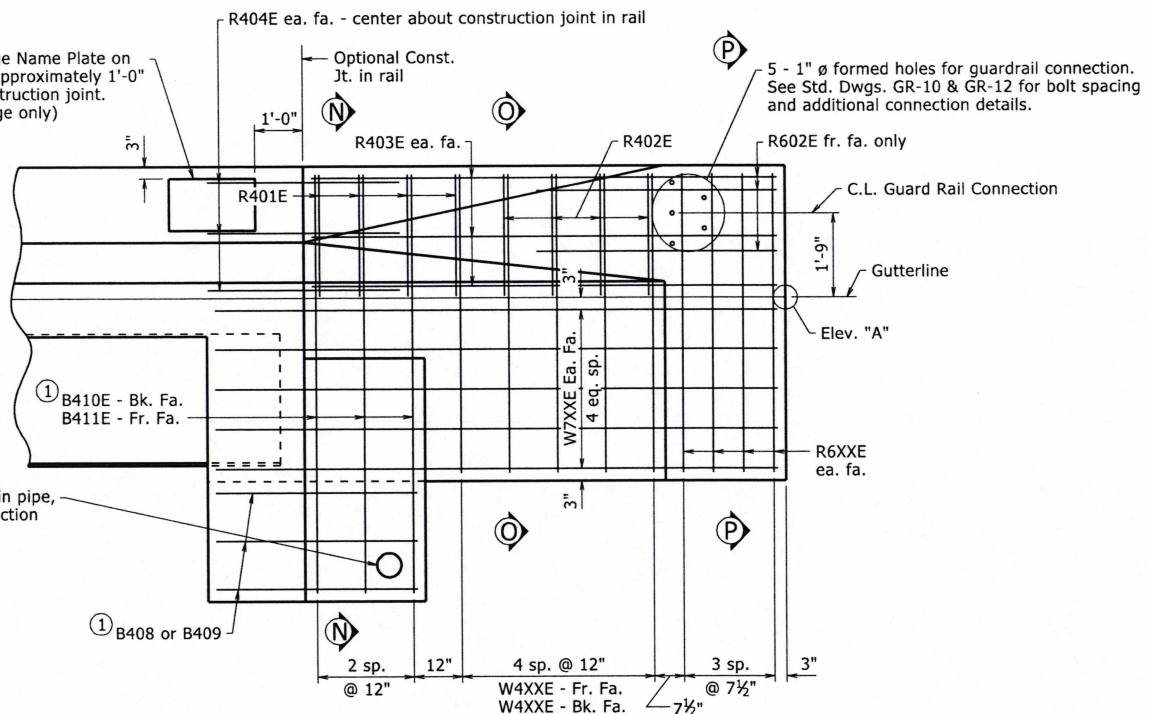
DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
 CHECKED BY: BHS DATE: 2/20/2020 SCALE: As Shown
 DESIGNED BY: JSB DATE: 8/20/19
 BRIDGE NO. 07474 DRAWING NO. 61420

PRINT DATE: 2/19/2020

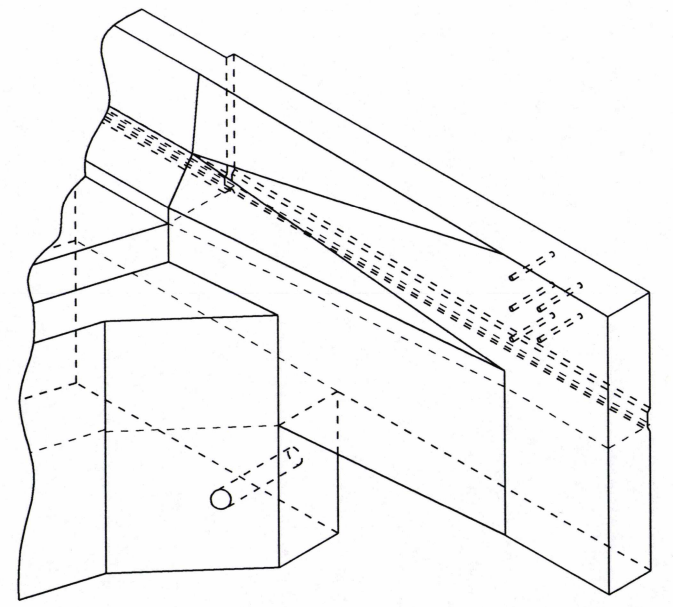
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------------|--------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 83 | 105 |
| | | | | 07474 - 210' UNIT - 61421 | | | | |



VIEW L-L
Wing A Shown, Wing B Similar
1/2" = 1'-0"



VIEW M-M
Wing A Shown, Wing B Similar
1/2" = 1'-0"



THREE DIMENSIONAL VIEW OF WING AND RAIL AT INTEGRAL END BENT
No Scale

① See End Bent Details on Dwg. Nos. 61411 & 61412 for reinforcing and additional details.

For location of "VIEW L-L" & "VIEW M-M", see "HALF-REINFORCING PLAN AND SLAB POURING SEQUENCE" on Dwg. No. 61420.

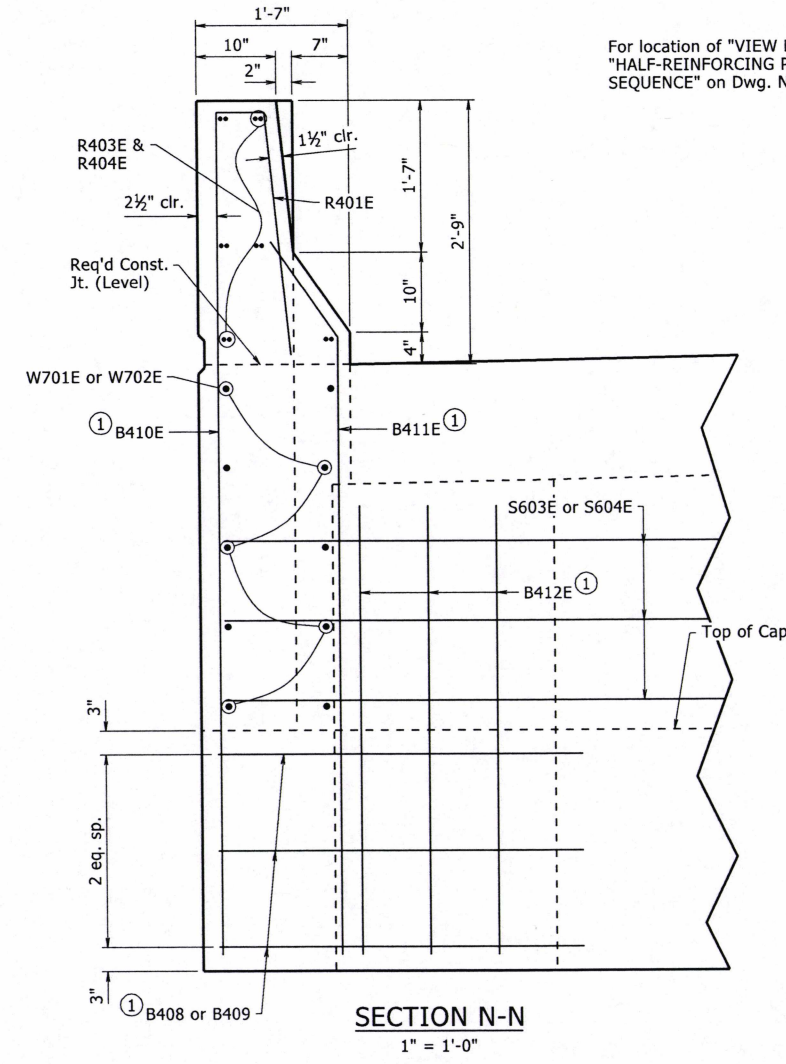
TABLE OF VARIABLES

| Bent | Wing | Elev. "A" | "B" | R6XXE | W4XXE - Fr. Fa. | W4XXE - Ba. Fa. | W7XXE |
|------|------|-----------|------------|-------|-----------------|-----------------|-------|
| 1 | A | 552.43 | 4'-0 3/4" | R601E | W401E | W402E | W701E |
| | B | 552.03 | 4'-0 3/8" | R601E | W401E | W402E | W702E |
| 5 | A | 547.29 | 3'-7 1/16" | R603E | W403E | W404E | W701E |
| | B | 547.64 | 3'-7 1/16" | R603E | W403E | W404E | W702E |

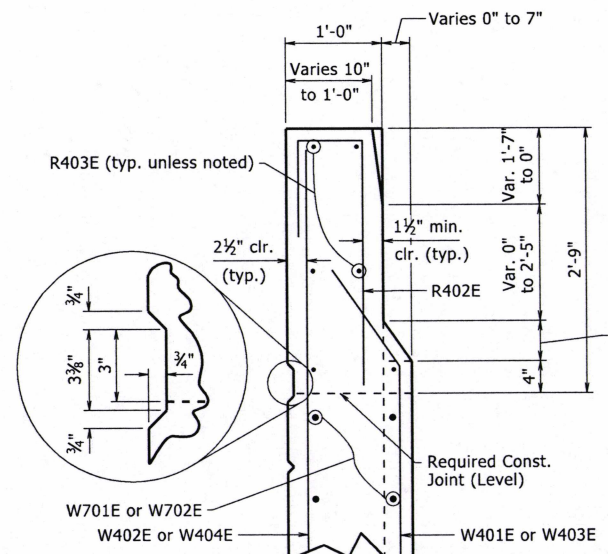
Modify the wing rail and connection detail above the gutterline as required by the manufacturer of the bridge end terminal. Reinforcing bars that are relocated or bent to fit the modified bridge rail should have minimum concrete cover.

② Connector Plate not required at location of bridge end terminal, unless required by manufacturer of the bridge end terminal.

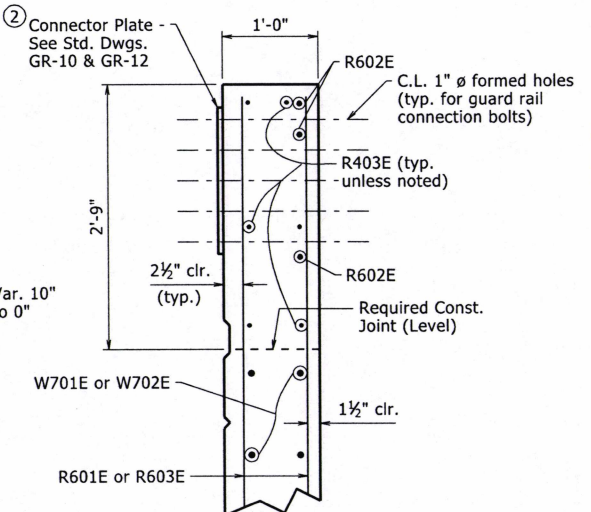
See Dwg. No. 61409 for location of bridge end terminal.



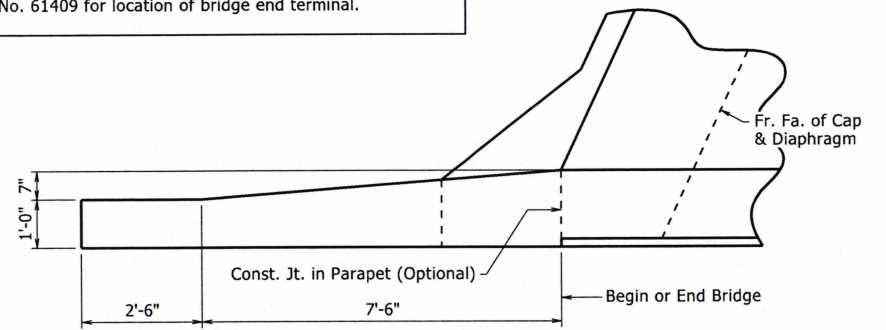
SECTION N-N
1" = 1'-0"



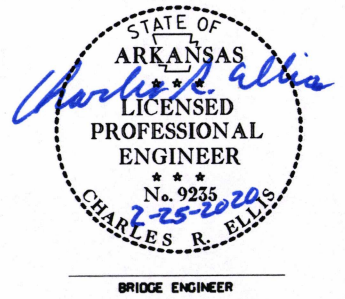
SECTION O-O
1" = 1'-0"



SECTION P-P
1" = 1'-0"



PLAN OF RAIL
Wing A Shown, Wing B Similar
1/2" = 1'-0"



SHEET 5 OF 6
DETAILS OF 210'-0"
CONTINUOUS INTEGRAL W-BEAM UNIT

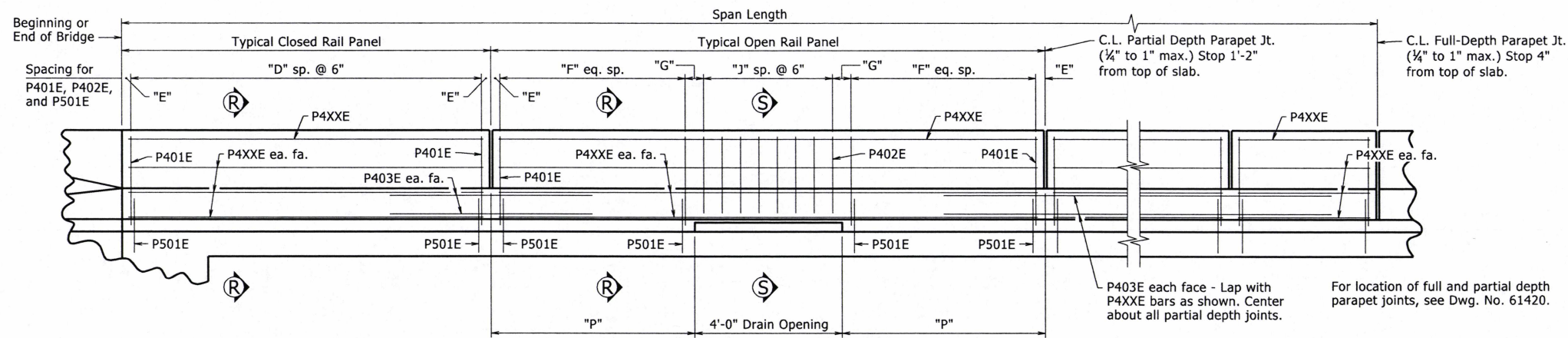
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
CHECKED BY: BHS DATE: 2/20/2020 SCALE: As Shown
DESIGNED BY: JSR DATE: 8/20/18

BRIDGE NO. 07474 DRAWING NO. 61421

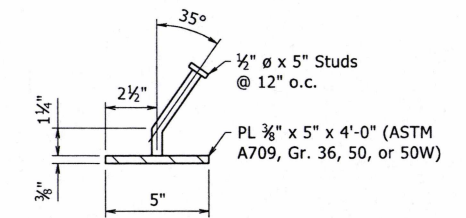
PRINT DATE: 2/19/2020

| 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. | 080529 | 84 | 106 | |
| | | | | 07474 - 210' UNIT - 61422 | | | | |



ELEVATION - CONCRETE PARAPET RAIL

1/2" = 1'-0"

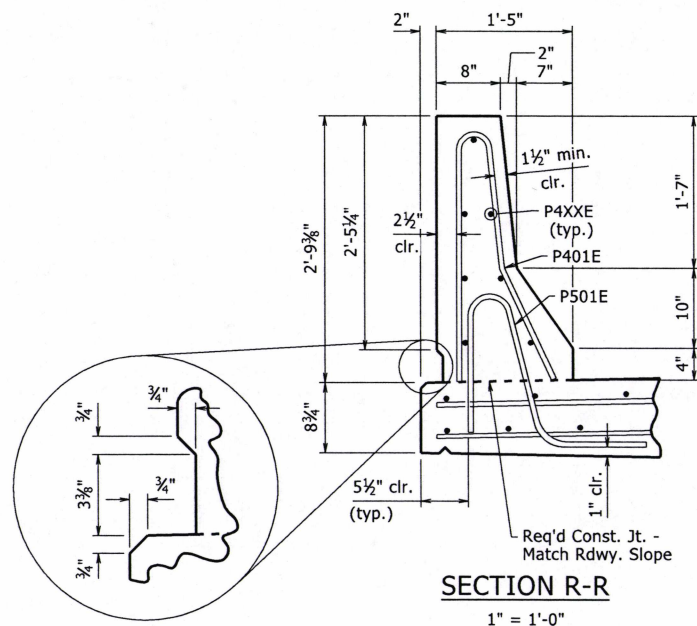


Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (A709, Gr. 50W)".

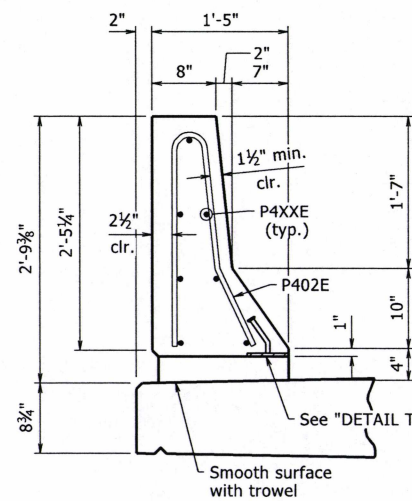
DETAIL T

No Scale



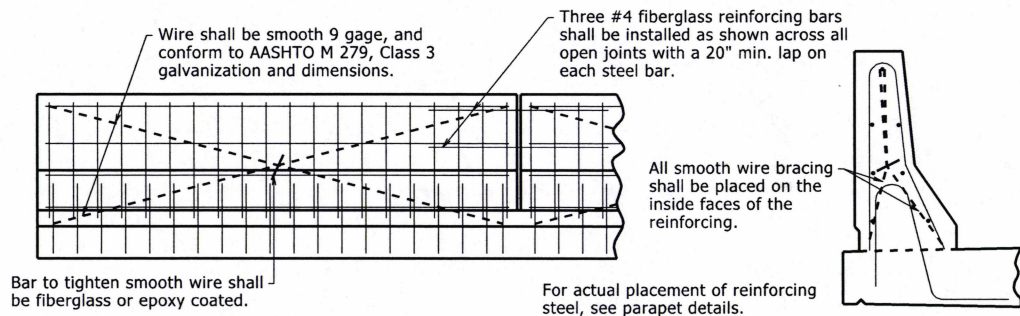
SECTION R-R

1" = 1'-0"



SECTION S-S

1" = 1'-0"



DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

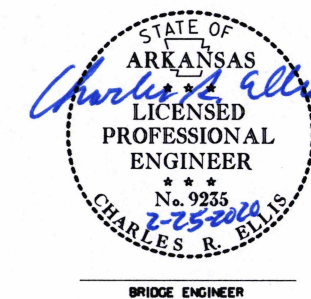
No Scale

All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

TABLE OF VARIABLES

| Closed Rail Panels | | | | Open Rail Panels | | | | | | |
|--------------------|-----|---------|-----------|------------------|-----|-----|-----|-----|-------|-----------|
| Panel Length | "D" | "E" | P4XXE Bar | Panel Length | "E" | "F" | "G" | "J" | "p" | P4XXE Bar |
| 9'-0 5/8" | 17 | 3 5/16" | P404E | 13'-0" | 3" | 8 | 6" | 7 | 4'-6" | P406E |
| 10'-6" | 20 | 3" | P405E | | | | | | | |



BRIDGE ENGINEER

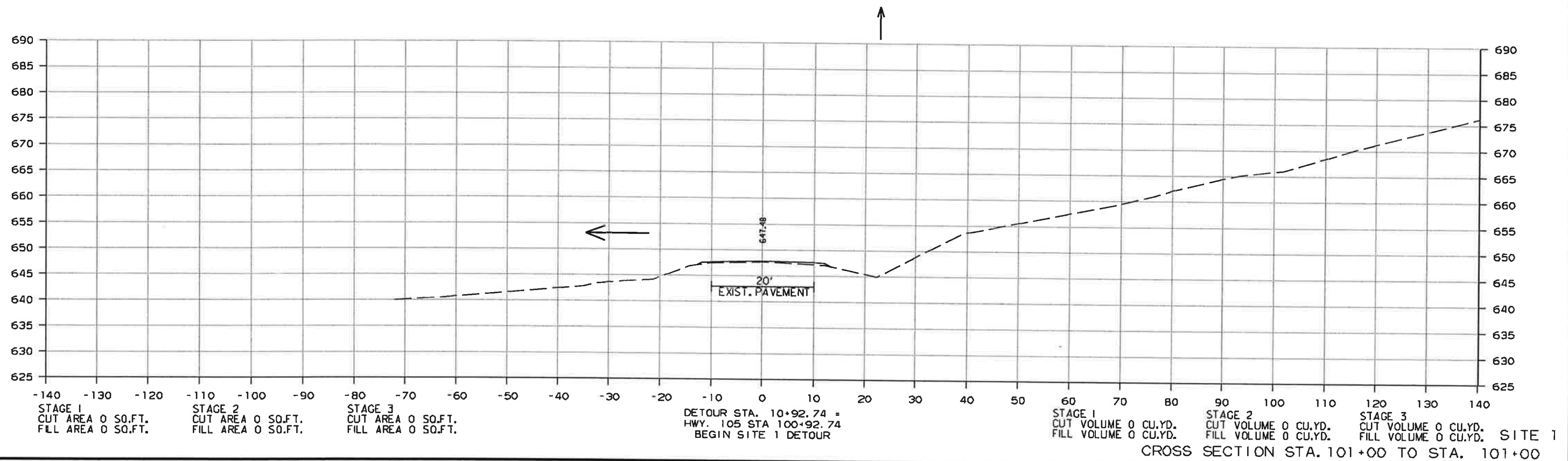
SHEET 6 OF 6
 DETAILS OF 210'-0"
 CONTINUOUS INTEGRAL W-BEAM UNIT

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

DRAWN BY: JYP DATE: 10/21/2019 FILENAME: b080529_s1.dgn
 CHECKED BY: BHS DATE: 2/20/2020 SCALE: As Shown
 DESIGNED BY: JSB DATE: 6/2019
 BRIDGE NO. 07474 DRAWING NO. 61422

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|-------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 85 | 105 |

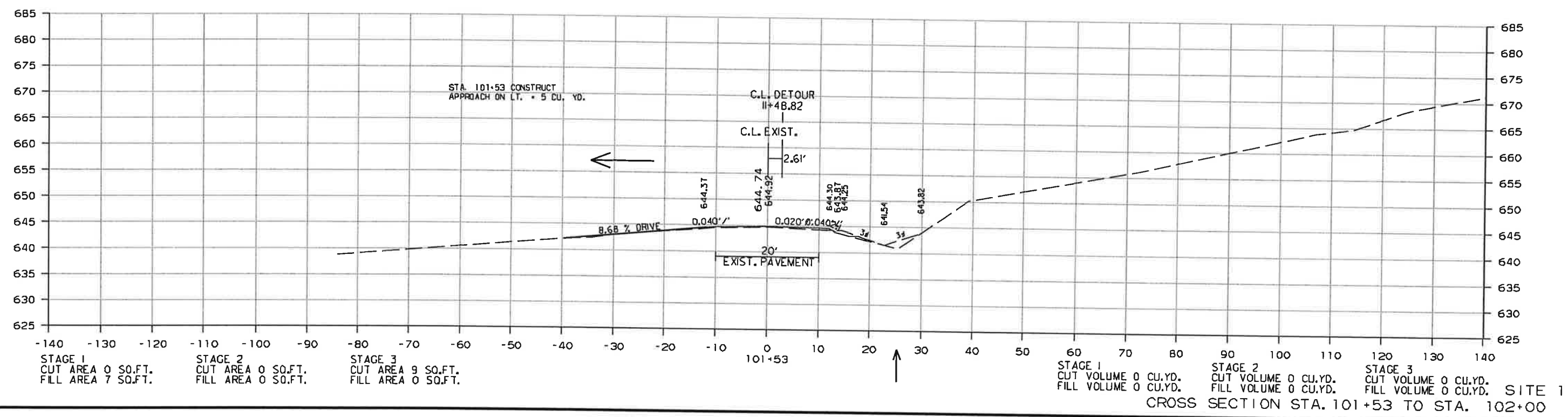
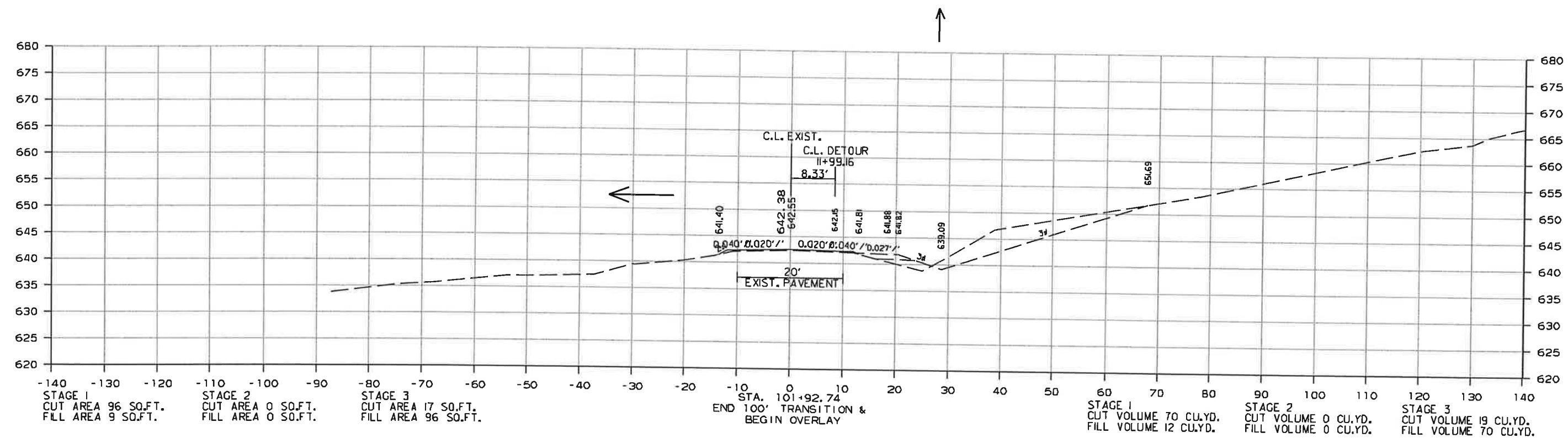
2 CROSS SECTIONS



8/15/2018
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------------|-------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 86 | 105 |

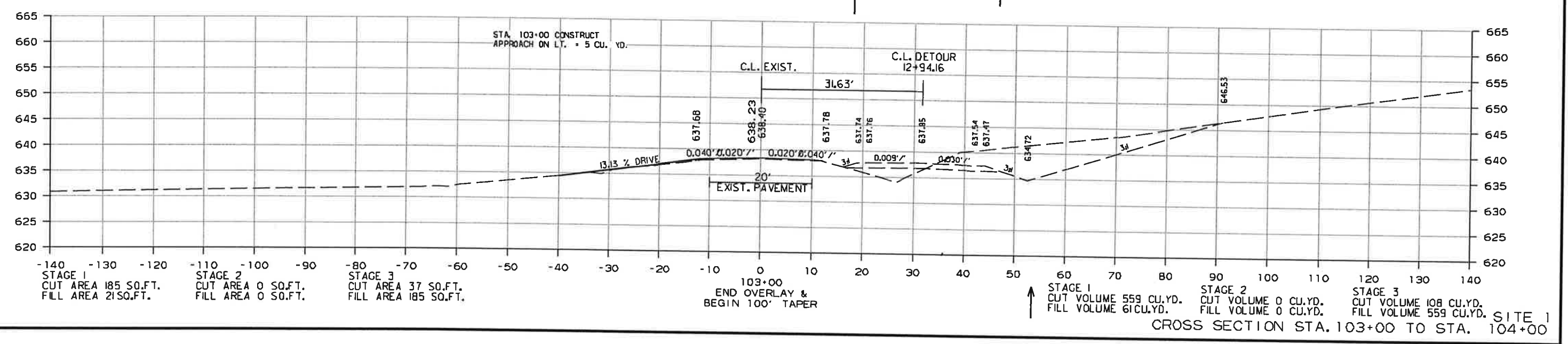
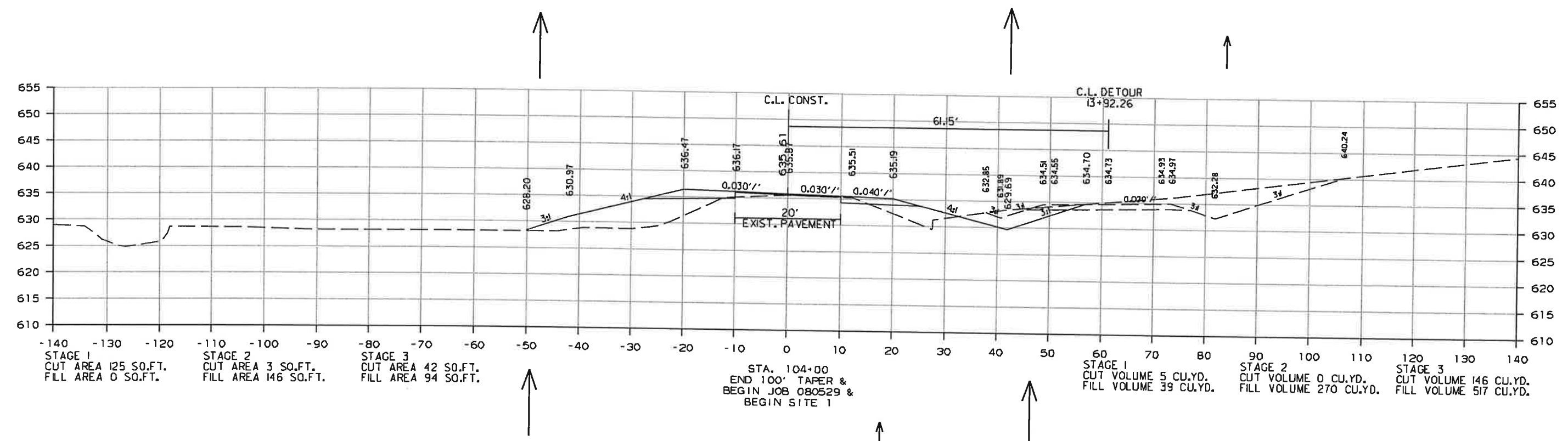
2 CROSS SECTIONS



8/15/2018 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|--------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | | 87 | 105 |

2 CROSS SECTIONS

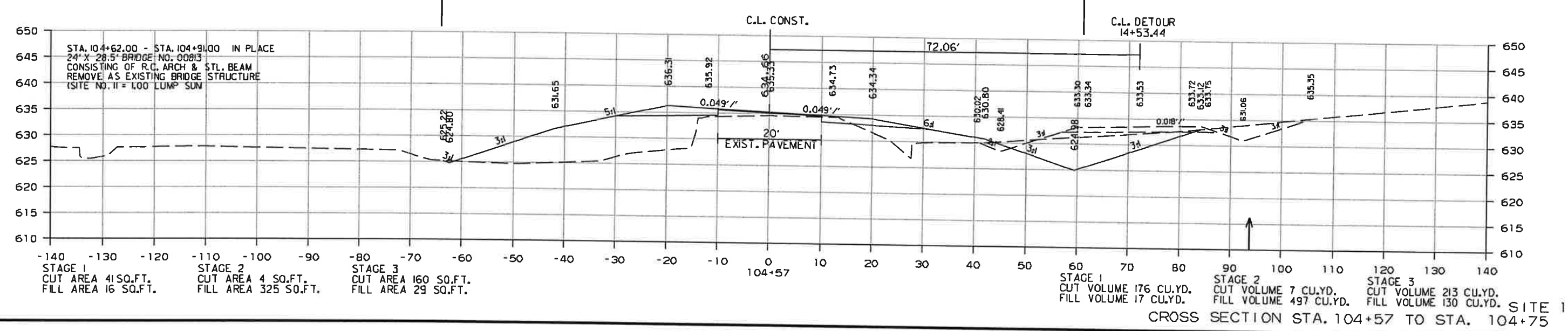
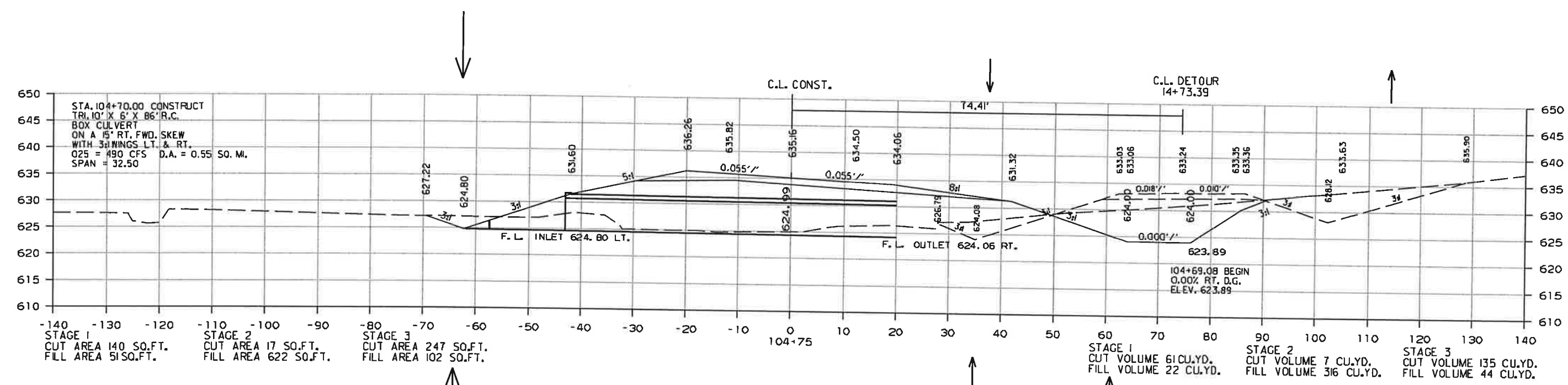


8/15/2018

RO80529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 88 | 105 |
| | | | | | | JOB NO. | 080529 | |

2 CROSS SECTIONS

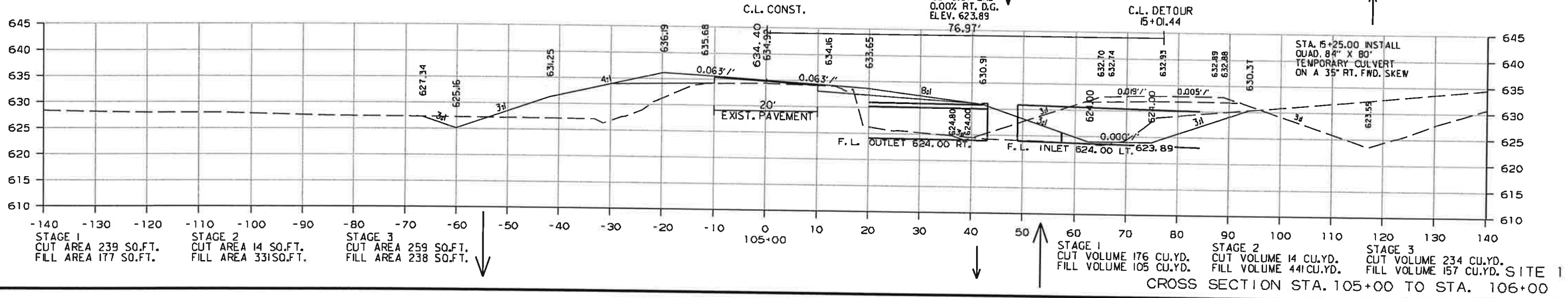
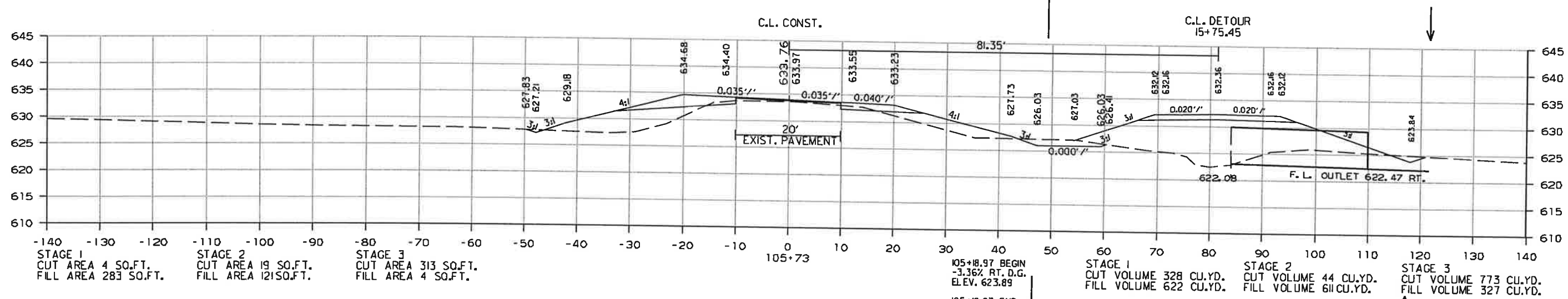
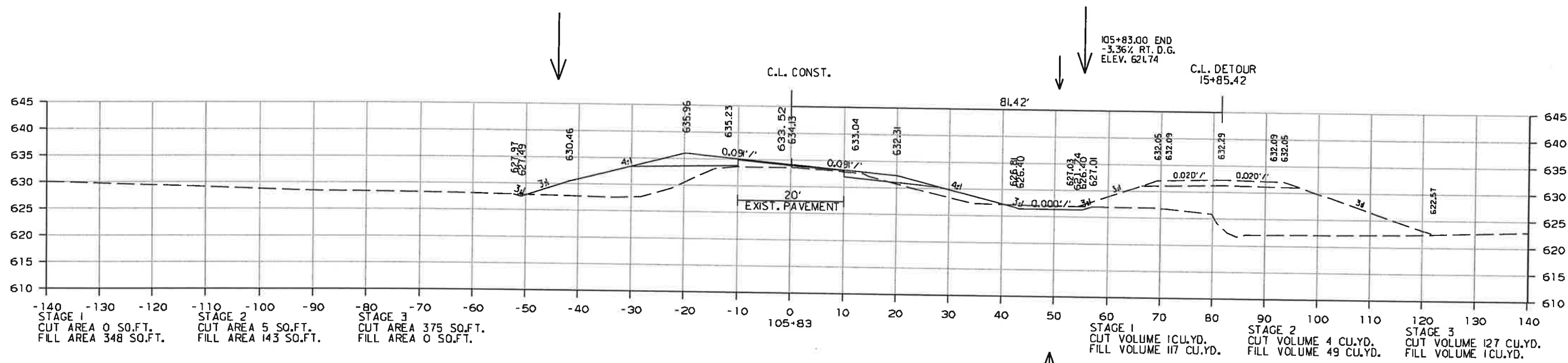


8/15/2018

RO80529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|----------------------|-------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 89 | 105 |

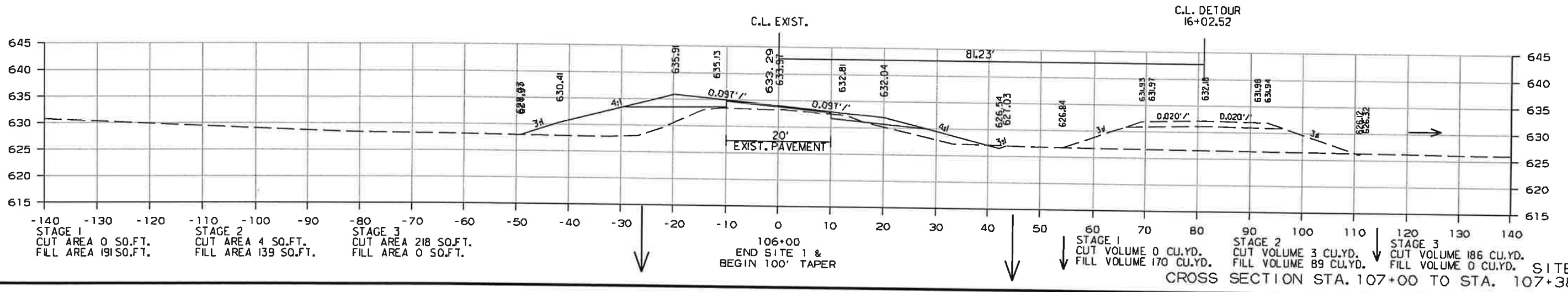
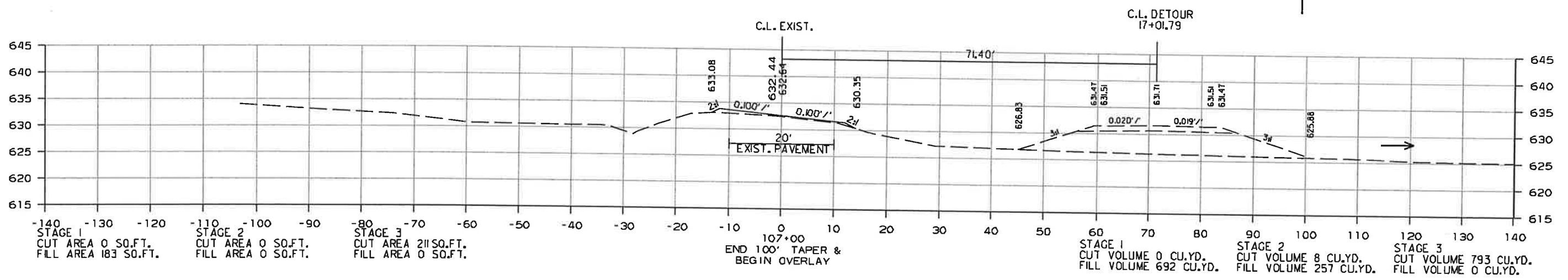
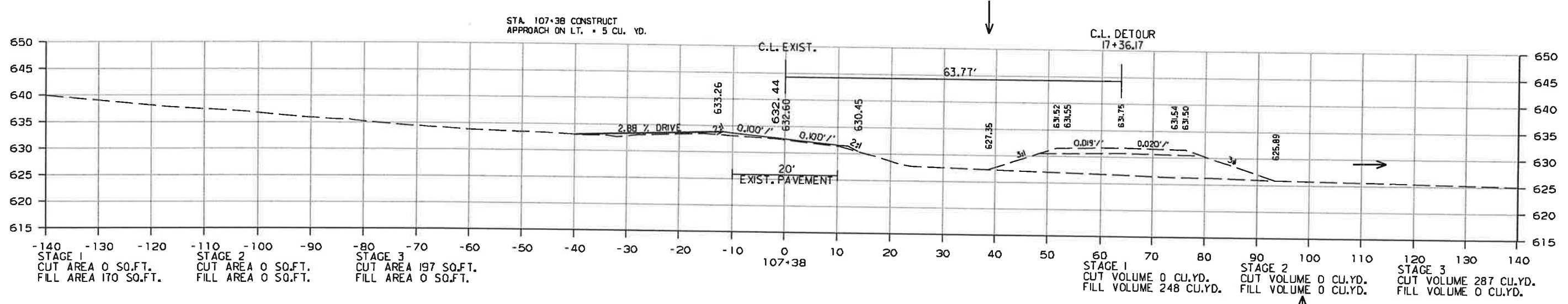
2 CROSS SECTIONS



8/15/2018
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. PROJ. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------------|--------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | 080529 | 90 | 105 | |

2 CROSS SECTIONS



CROSS SECTION STA. 107+00 TO STA. 107+38 SITE 1

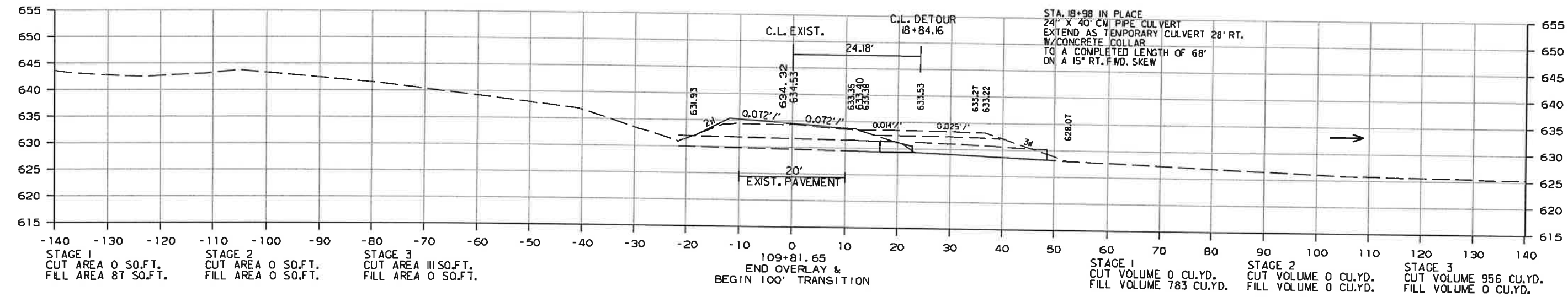
8/15/2018
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|-------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. | 080529 | 91 |

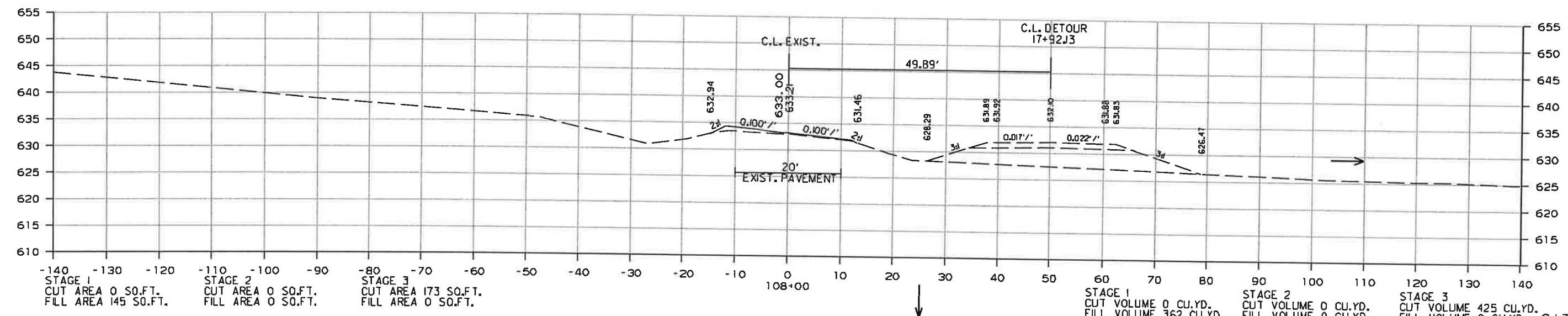
2 CROSS SECTIONS

STA. 109+20 IN PLACE
 24" X 40" C.M. PIPE CULVERT
 REMOVE & CONSTRUCT
 24" X 44" R.C. PIPE CULVERT
 W/FES LT. & RT.

STA. 18+98 IN PLACE
 24" X 40" C.M. PIPE CULVERT
 EXTEND AS TEMPORARY CULVERT 28' RT.
 W/ CONCRETE COLLAR
 TO A COMPLETED LENGTH OF 68'
 ON A 15° RT. FWD. SKEW



STAGE 1 CUT VOLUME 0 CU.YD. FILL VOLUME 783 CU.YD.
 STAGE 2 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
 STAGE 3 CUT VOLUME 956 CU.YD. FILL VOLUME 0 CU.YD.



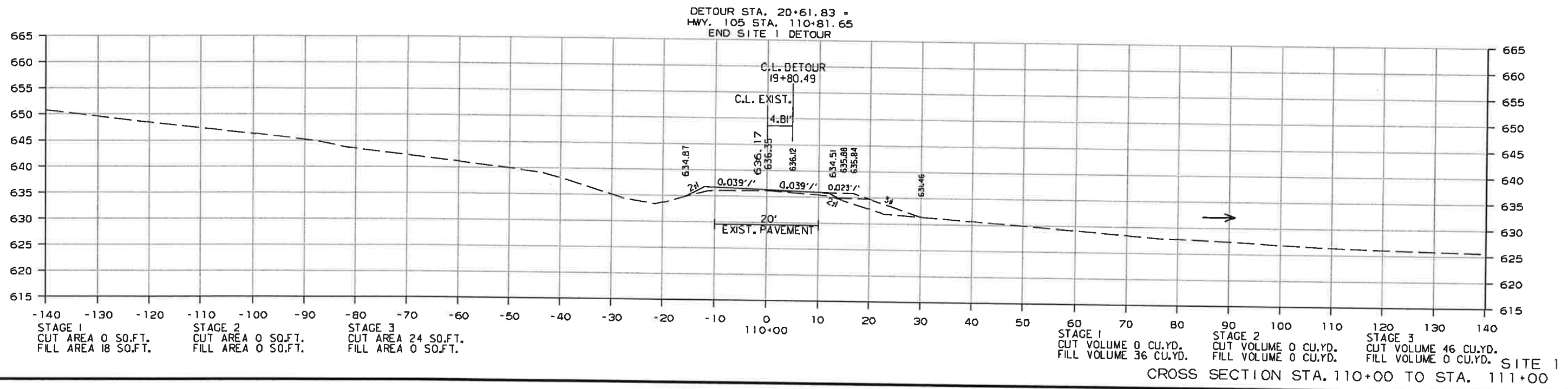
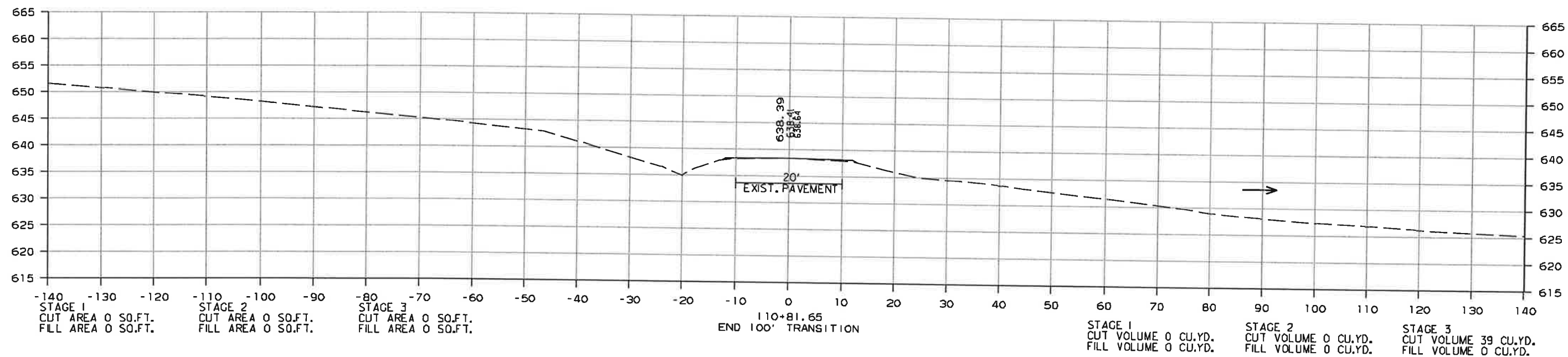
STAGE 1 CUT VOLUME 0 CU.YD. FILL VOLUME 362 CU.YD.
 STAGE 2 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD.
 STAGE 3 CUT VOLUME 425 CU.YD. FILL VOLUME 0 CU.YD.

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

8/15/2018
 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|-------|----------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 92 | 105 |
| | | | | | | JOB NO. | 080529 | |

2 CROSS SECTIONS

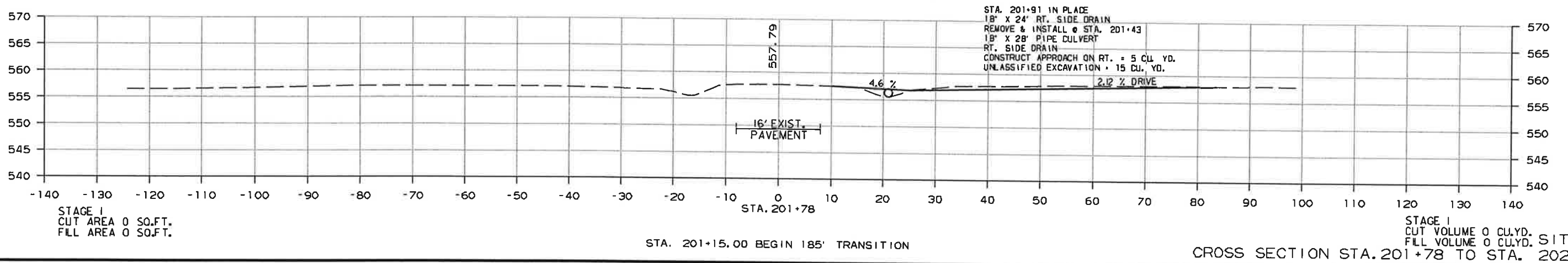
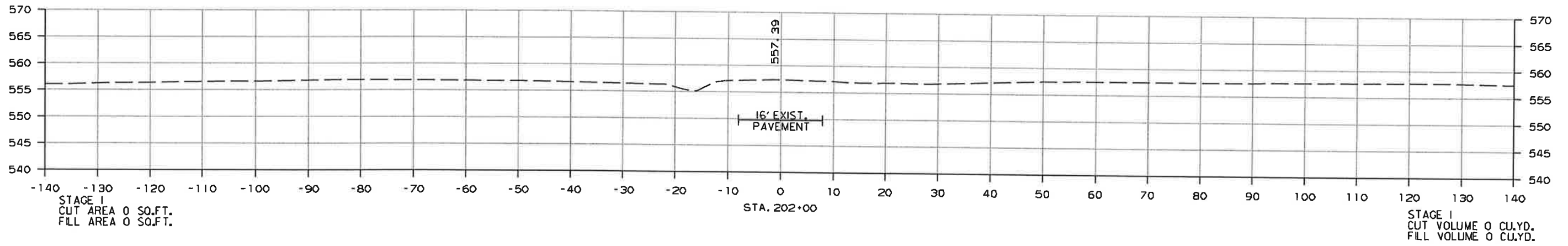
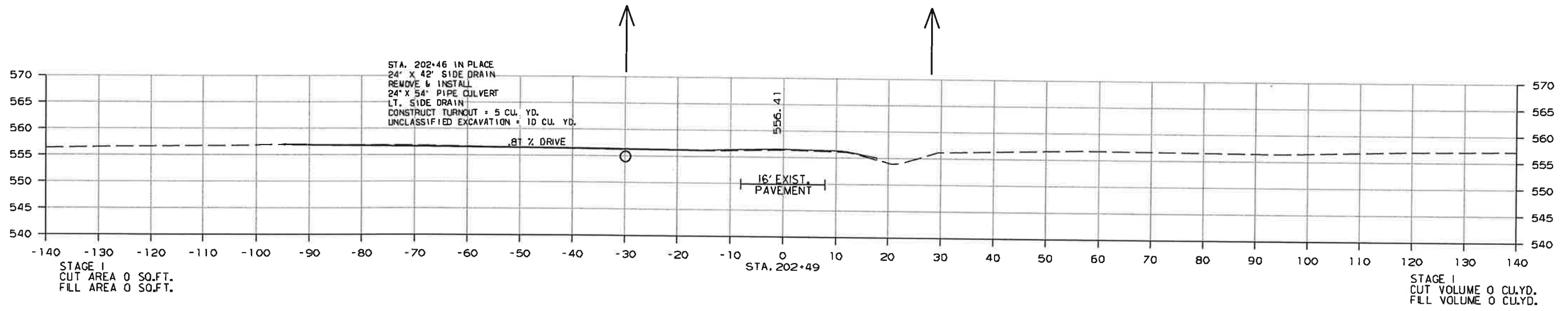


8/15/2018

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 93 | 105 |
| | | | | | | JOB NO. 080529 | | |

2 CROSS SECTIONS

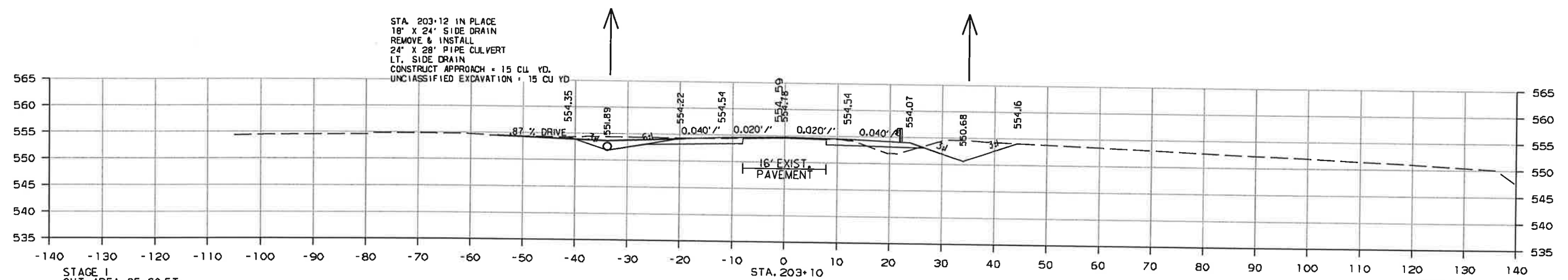


8/15/2018

R080529.DGN

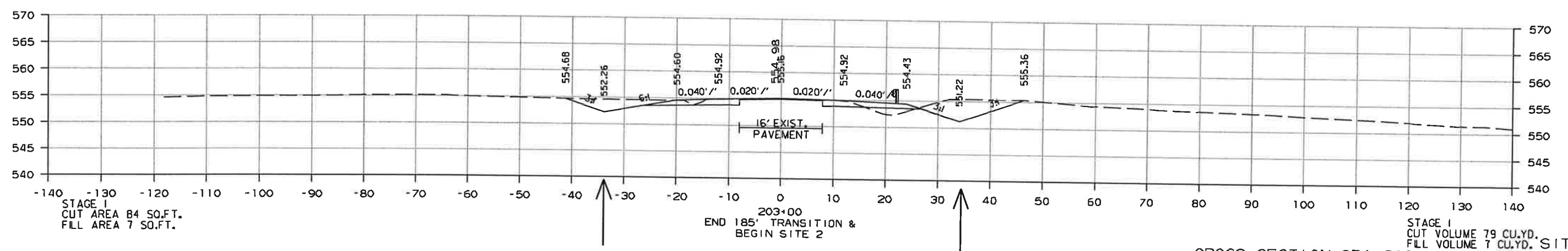
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 94 | 105 |

② CROSS SECTIONS



STAGE I
 CUT AREA 85 SQ.FT.
 FILL AREA 7 SQ.FT.

STAGE I
 CUT VOLUME 31 CU.YD.
 FILL VOLUME 3 CU.YD.



STAGE I
 CUT AREA 84 SQ.FT.
 FILL AREA 7 SQ.FT.

STAGE I
 CUT VOLUME 79 CU.YD.
 FILL VOLUME 7 CU.YD. SITE 2

CROSS SECTION STA. 203+00 TO STA. 203+10

8/15/2018

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 95 | 105 |

2 CROSS SECTIONS

STAGE I
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

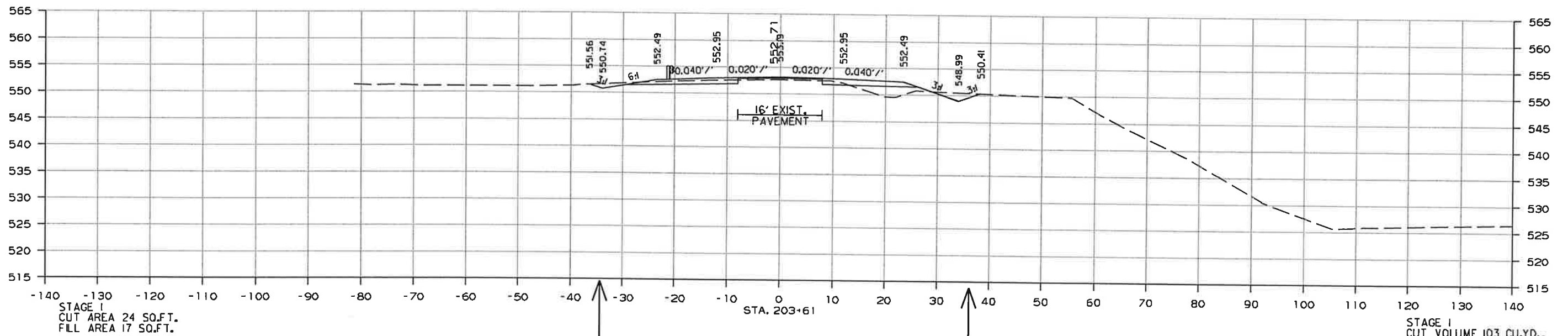
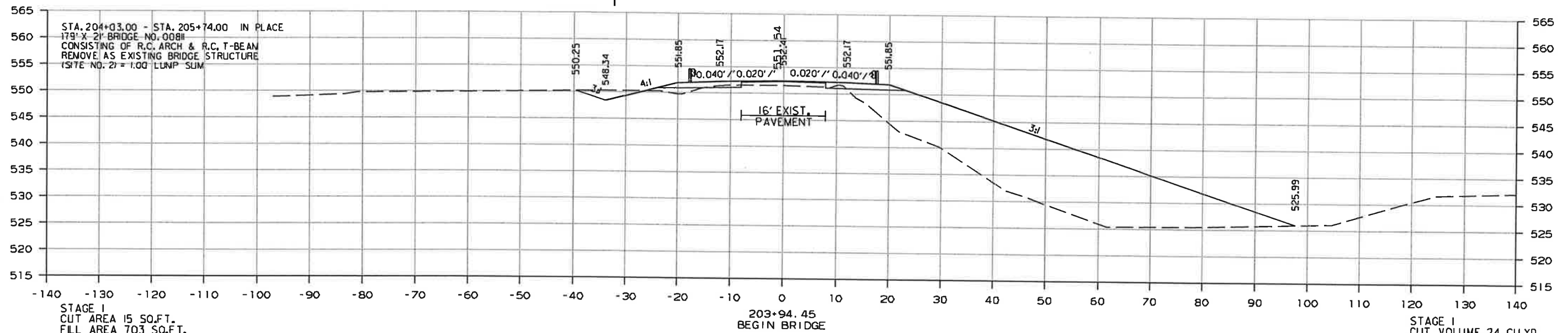
STAGE I
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

205+97.50
TOE OF SLOPE

204+01.80
TOE OF SLOPE

STAGE I
CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.

STAGE I
CUT VOLUME 2 CU.YD.
FILL VOLUME 95 CU.YD.

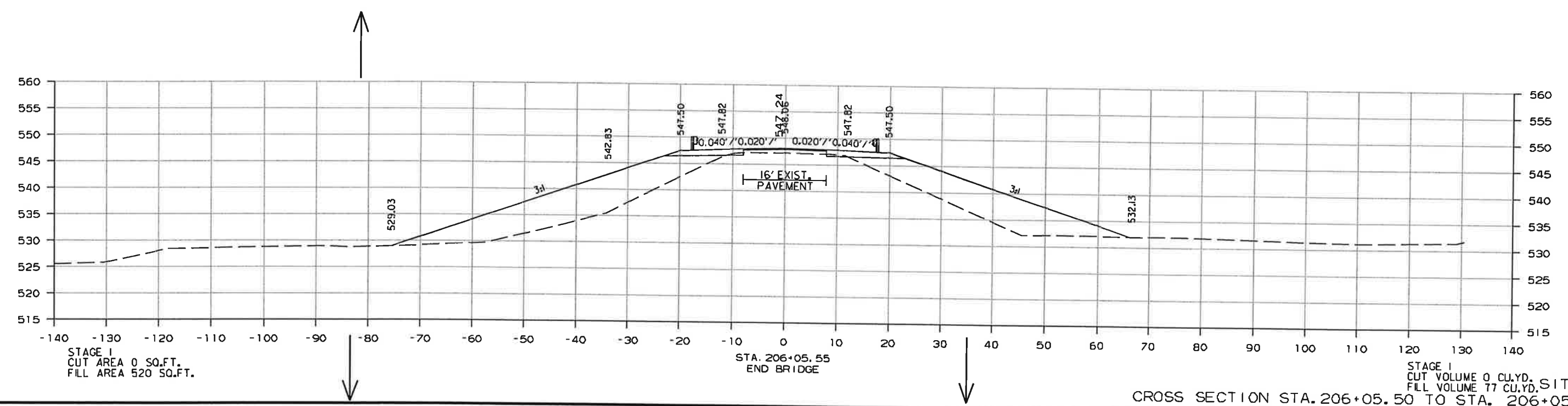


CROSS SECTION STA. 203+61 TO STA. 203+95

R080529.DGN 8/15/2018

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 96 | 105 |

② CROSS SECTIONS

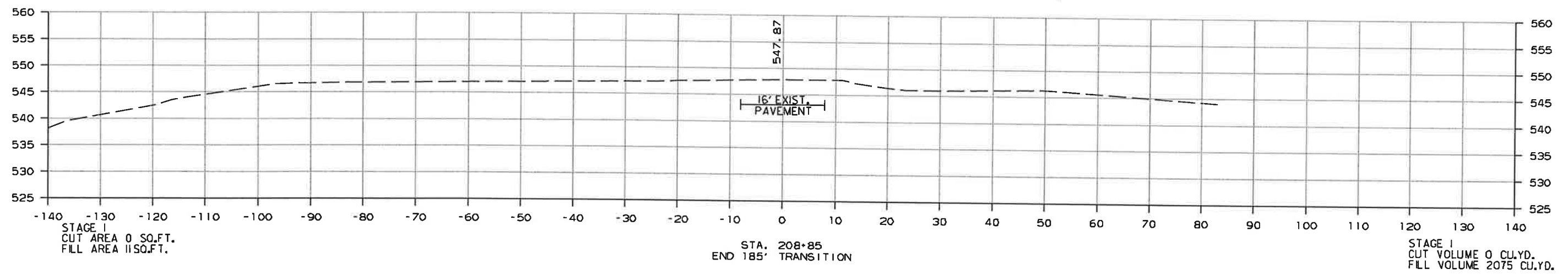


R080529.DGN 8/15/2018

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 97 | 105 |

2 CROSS SECTIONS

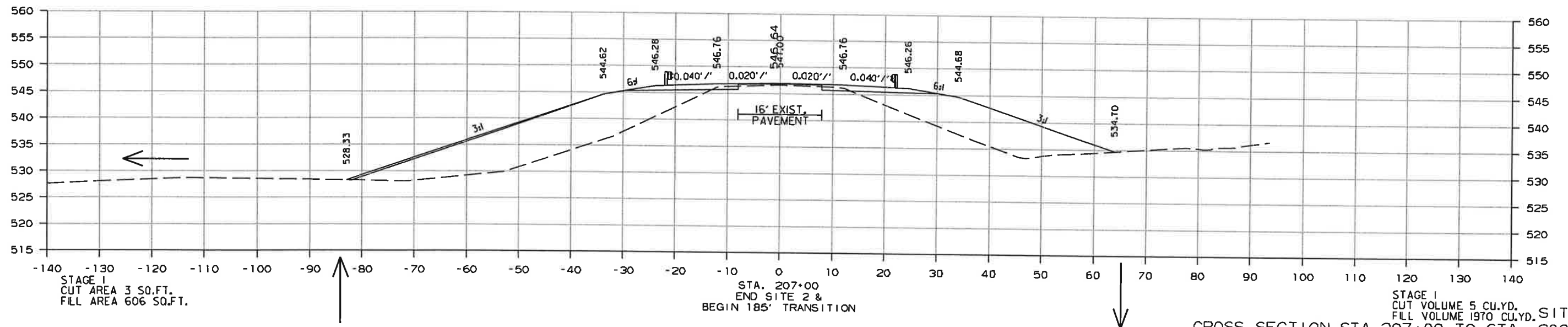
STA. 208+35 CONSTRUCT
 TURNOUT = 5 CU. YD.
 UNCLASSIFIED EXCAVATION = 5 CU. YD.



STAGE I
 CUT AREA 0 SQ.FT.
 FILL AREA 11 SQ.FT.

STA. 208+85
 END 185' TRANSITION

STAGE I
 CUT VOLUME 0 CU.YD.
 FILL VOLUME 2075 CU.YD.



STAGE I
 CUT AREA 3 SQ.FT.
 FILL AREA 606 SQ.FT.

STA. 207+00
 END SITE 2 &
 BEGIN 185' TRANSITION

STAGE I
 CUT VOLUME 5 CU.YD.
 FILL VOLUME 1970 CU.YD. SITE 2

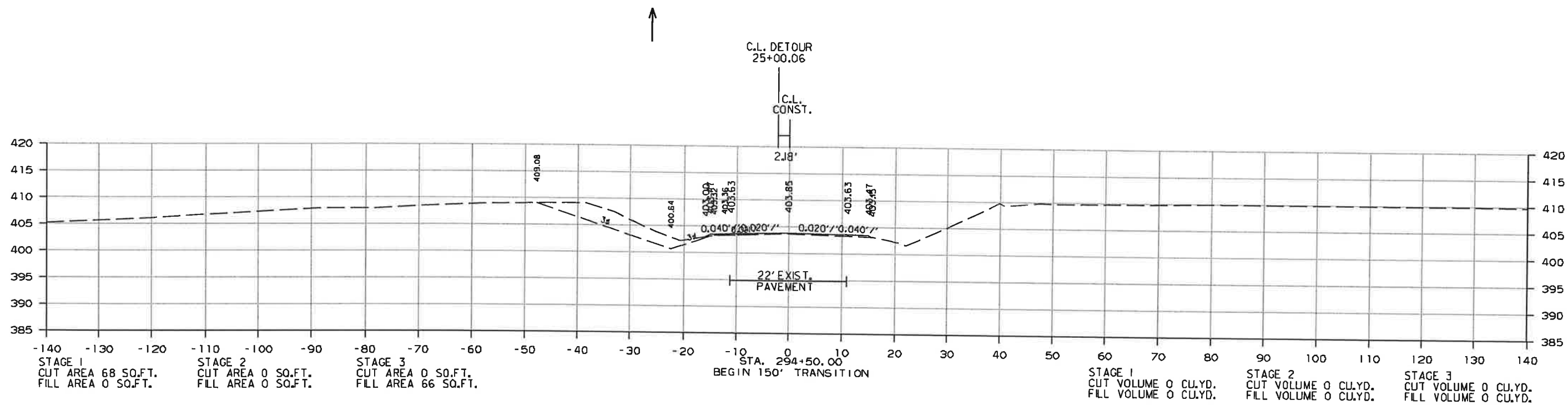
CROSS SECTION STA. 207+00 TO STA. 208+00

8/15/2018

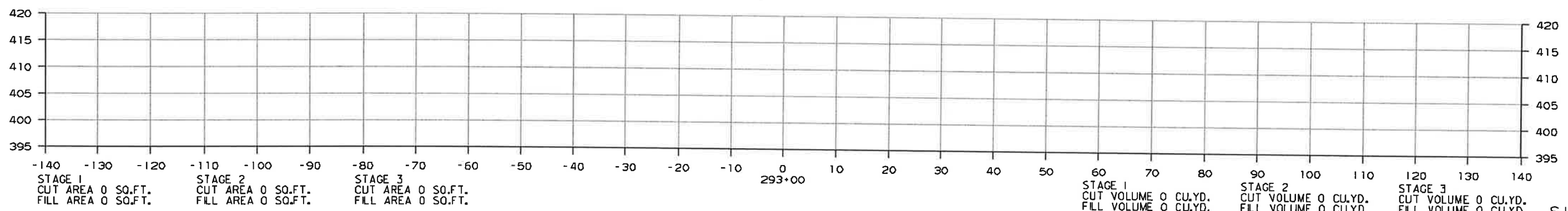
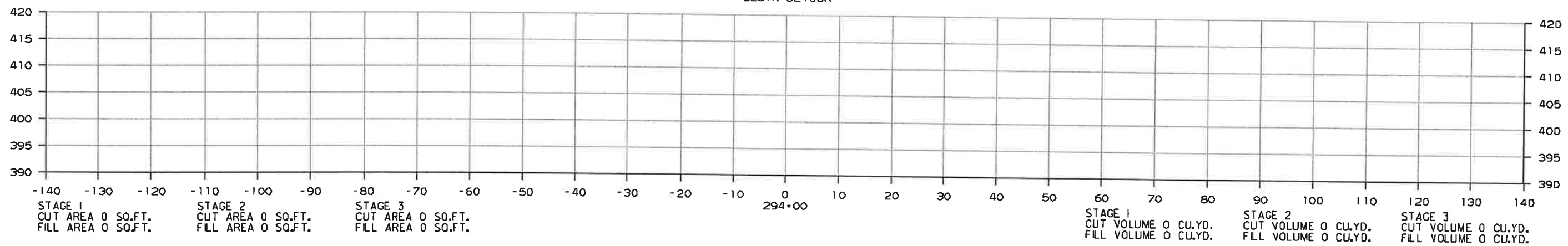
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | 98 | 105 |
| | | | | | | JOB NO. 080529 | | |

2 CROSS SECTIONS



DETOUR STA. 24+50.00 =
HWY. 105 STA. 294+50.00
BEGIN DETOUR

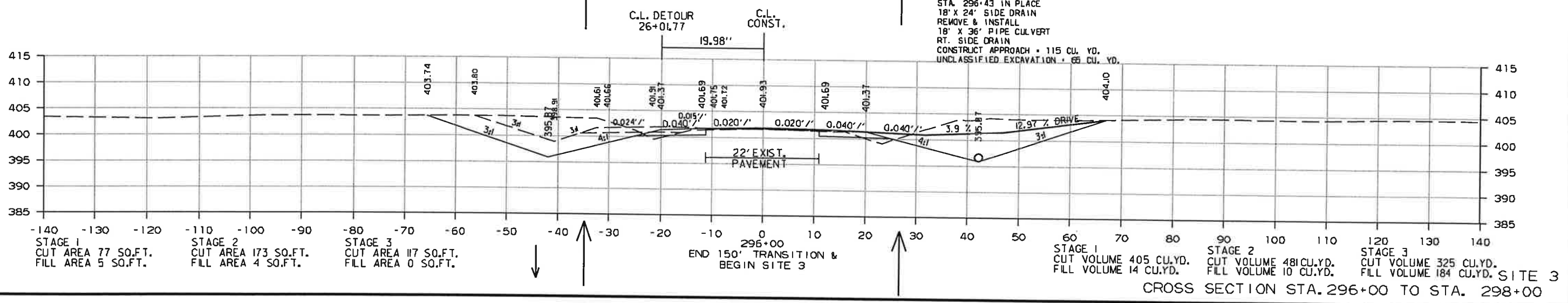
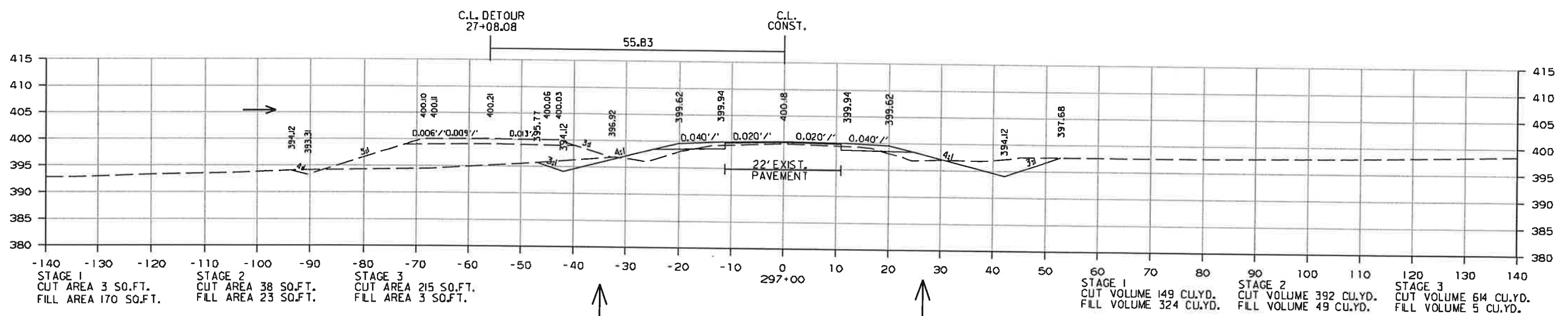
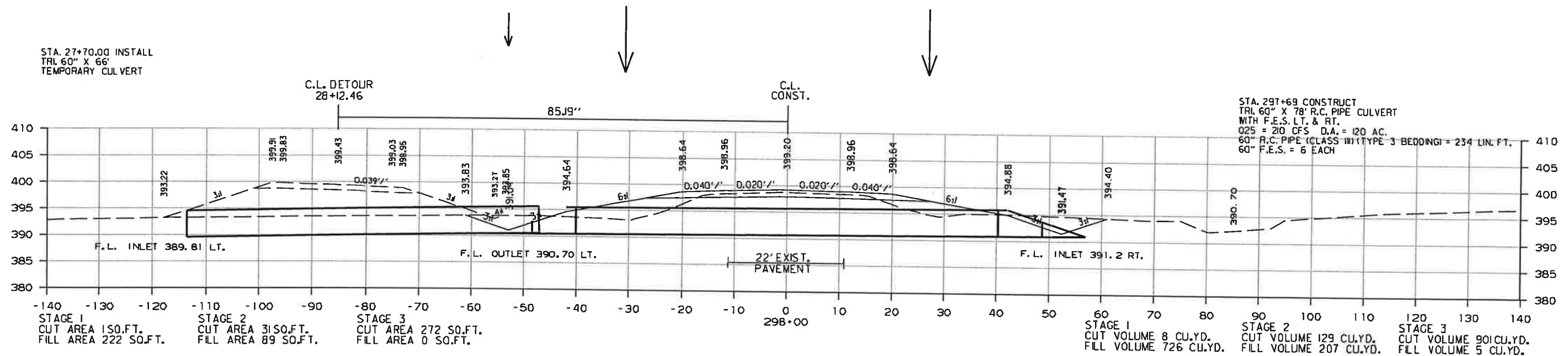


SITE 3
CROSS SECTION STA. 293+00 TO STA. 295+00

8/15/2018
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 99 | 105 |

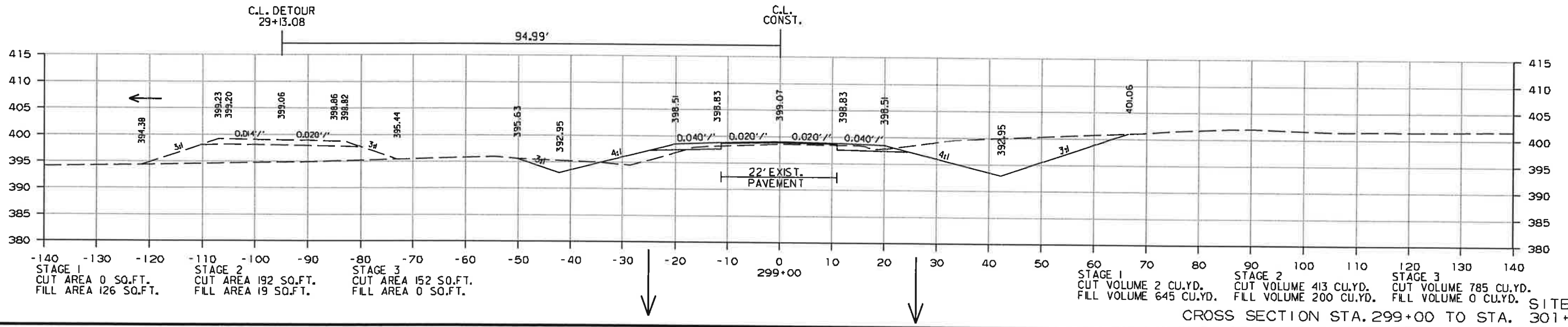
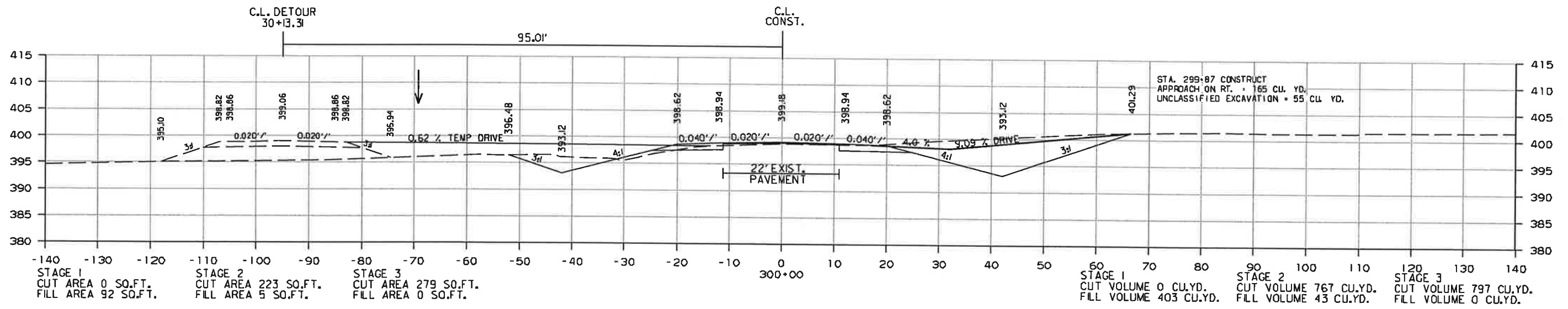
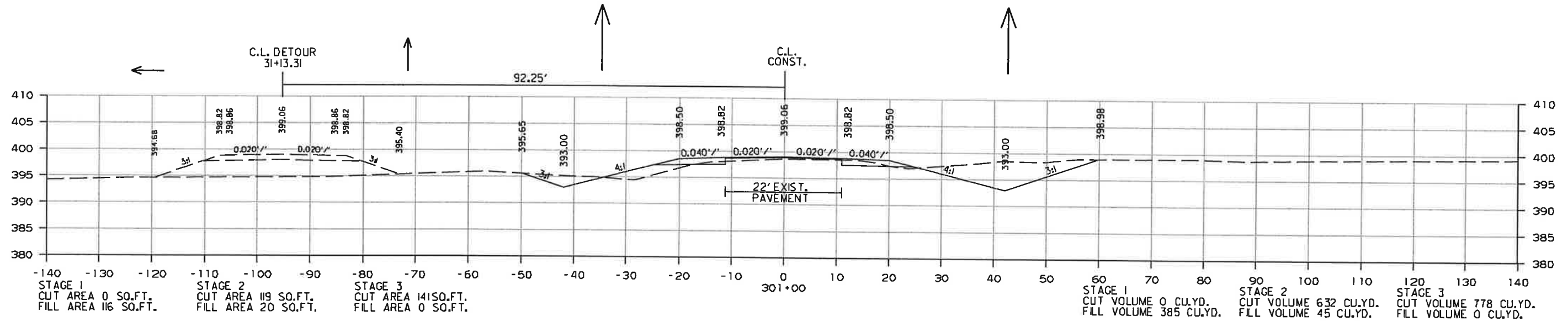
2 CROSS SECTIONS



8/15/2018 R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | 100 | 105 | |

2 CROSS SECTIONS

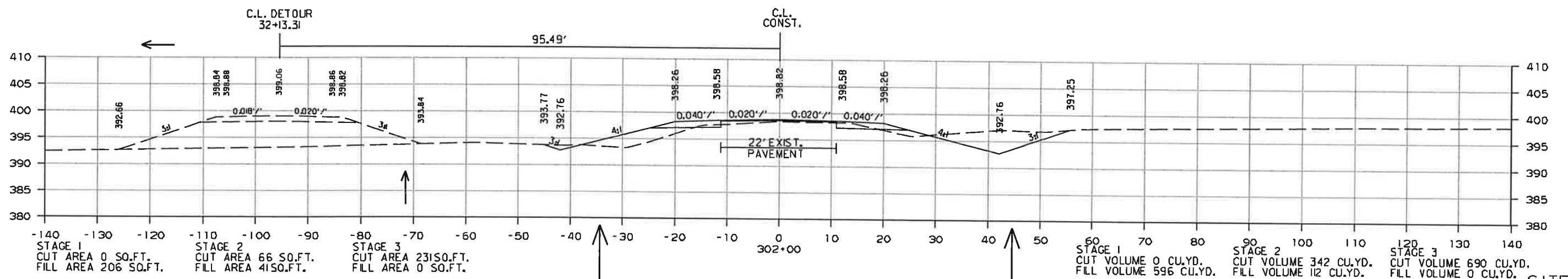
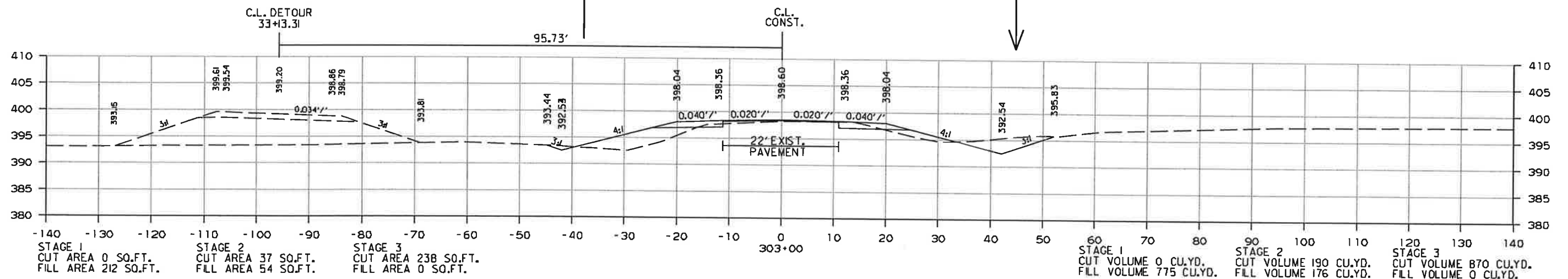
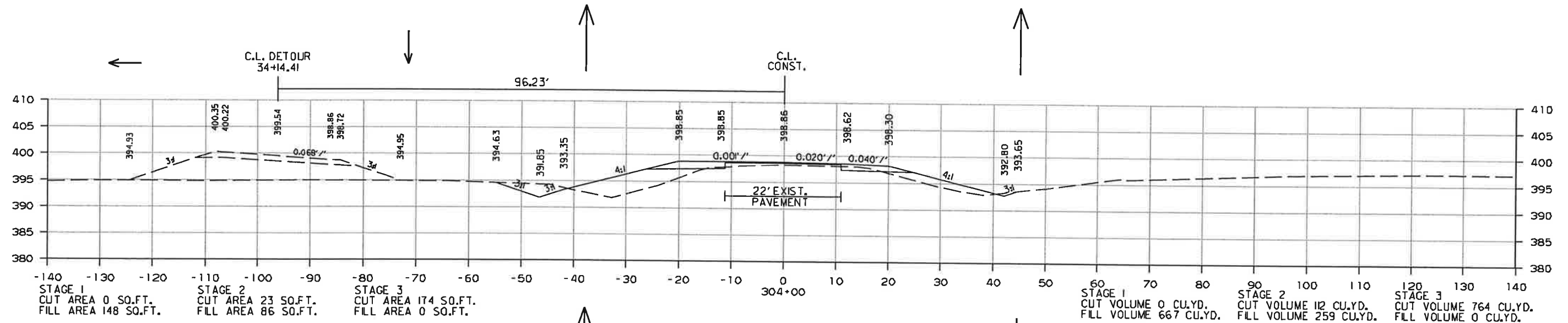


8/15/2018

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | 101 | 105 | |

2 CROSS SECTIONS



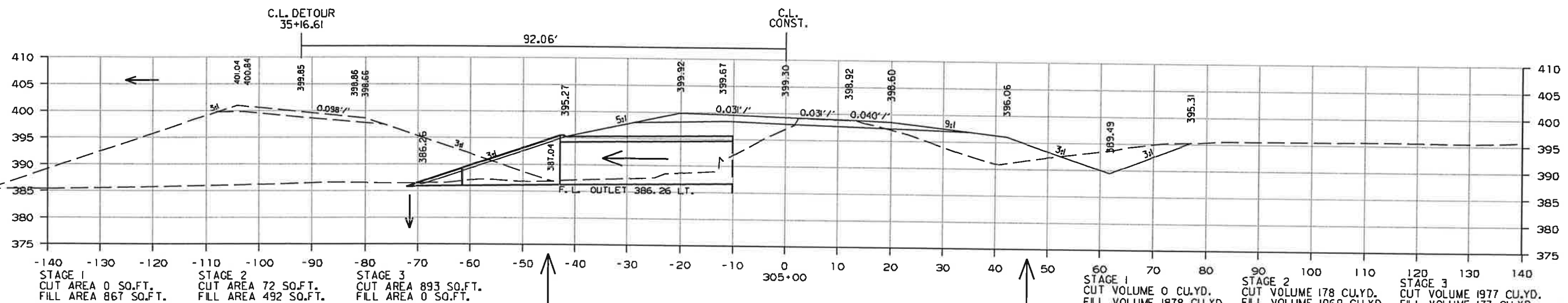
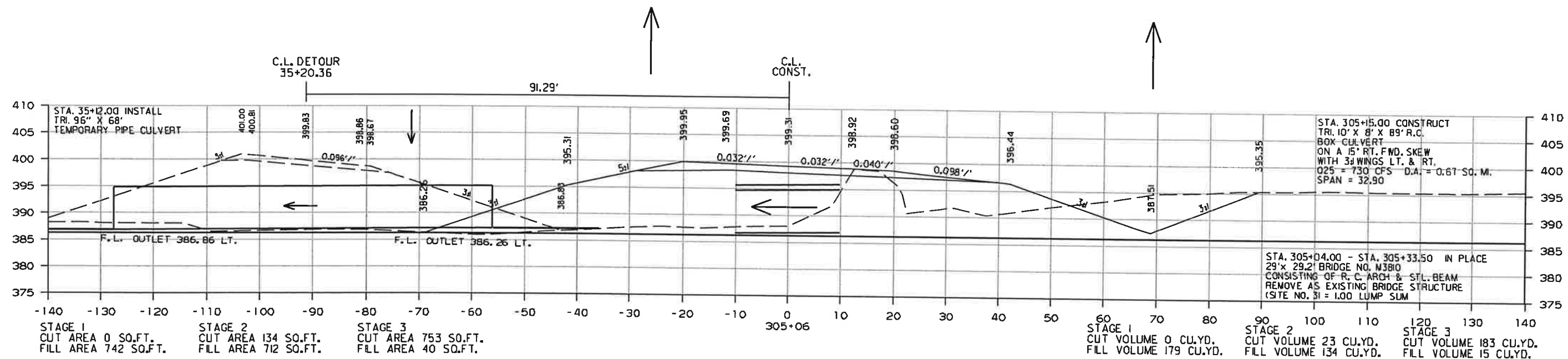
CROSS SECTION STA. 302+00 TO STA. 304+00 SITE 3

8/15/2018

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | | 102 | 105 |

2 CROSS SECTIONS



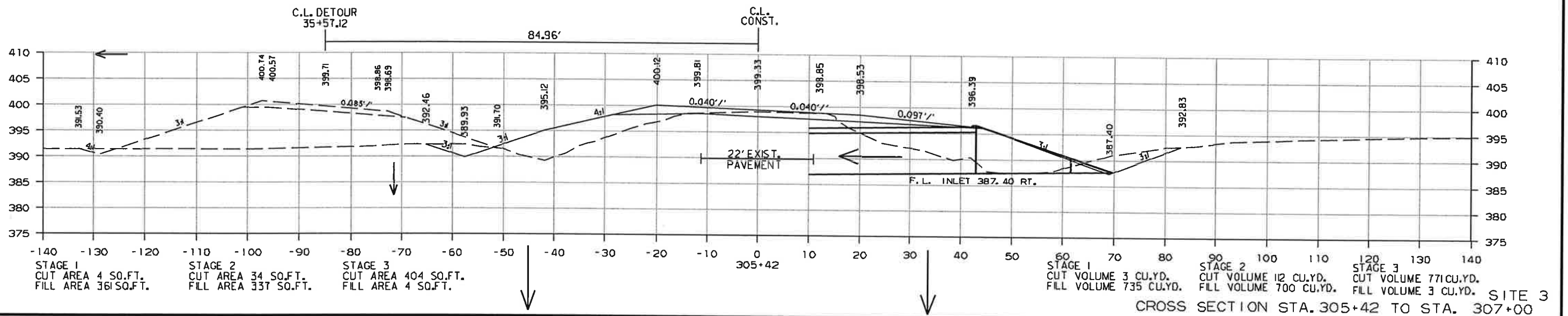
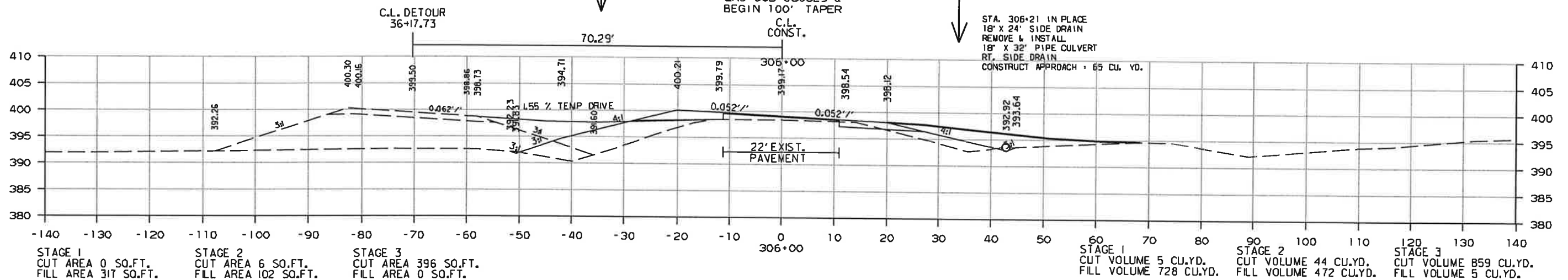
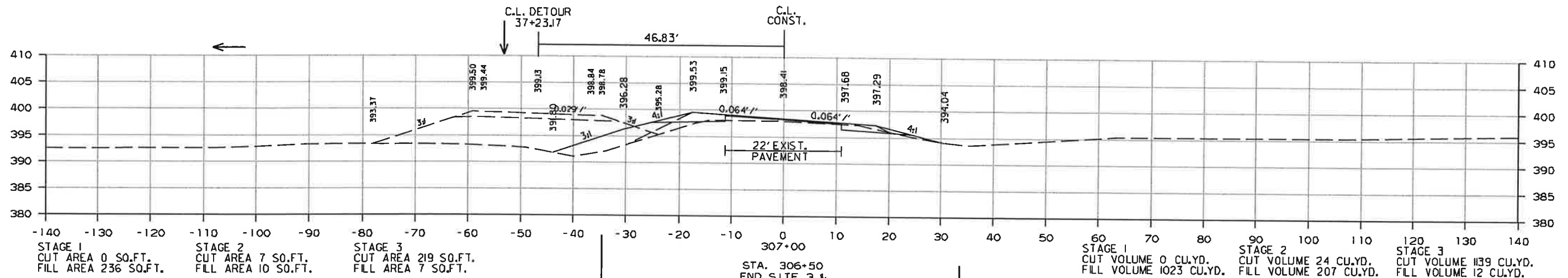
SITE 3
CROSS SECTION STA. 305+00 TO STA. 305+06

8/15/2018

R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|----------------|-------------|--------------|-------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| JOB NO. 080529 | | | | | | 103 | 105 | |

2 CROSS SECTIONS

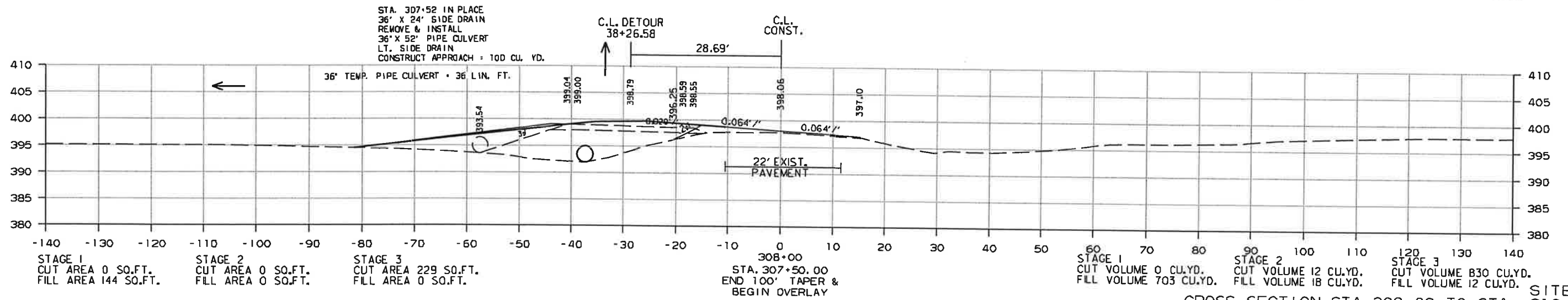
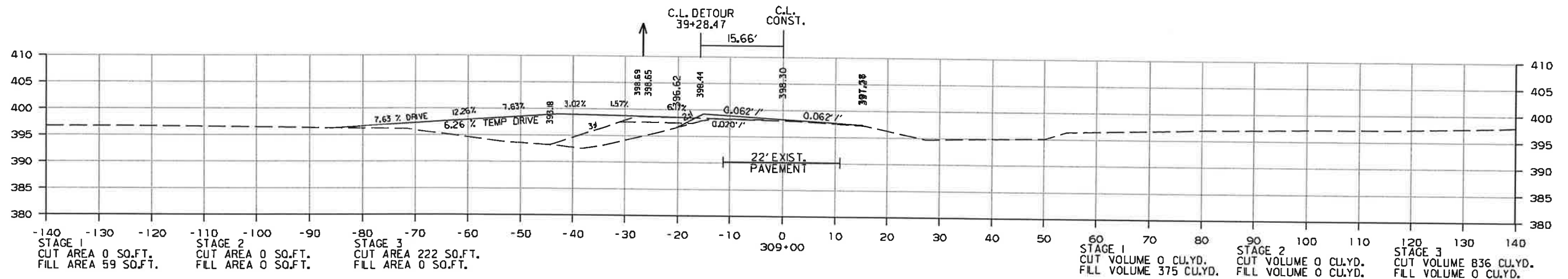
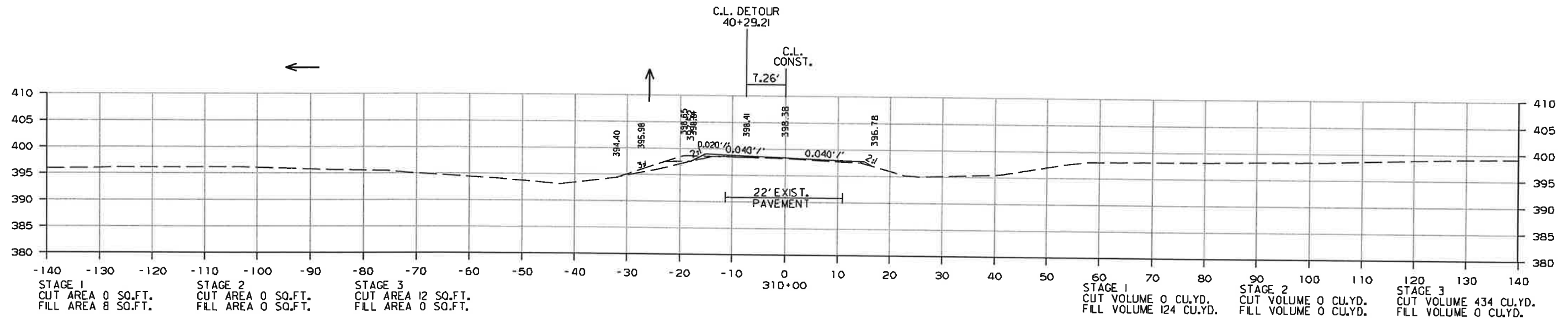


8/15/2018

R080529.DGN

| DATE REVISED | DATE FILLED | DATE REVISED | DATE FILLED | FED. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|----------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 104 | 105 |

2 CROSS SECTIONS

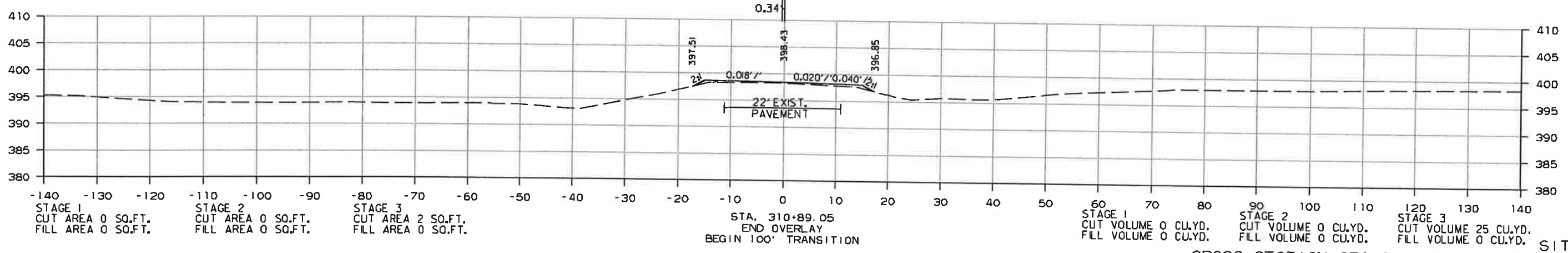
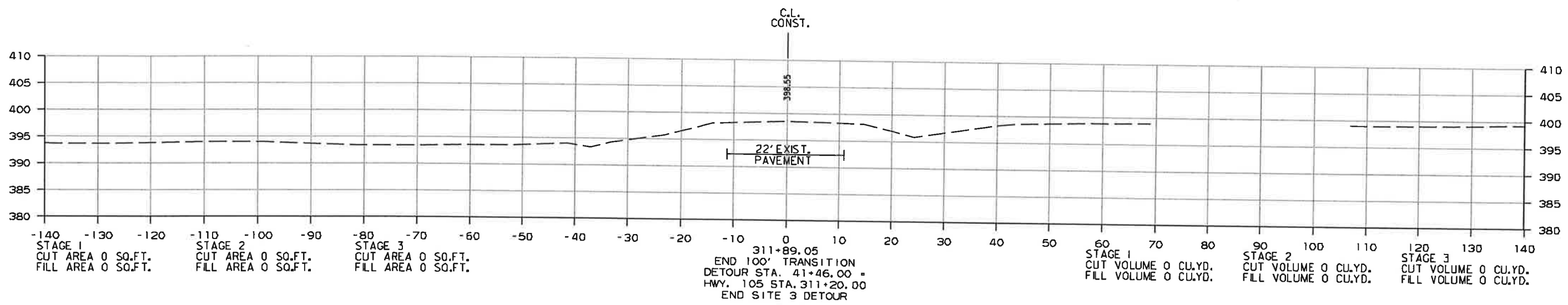
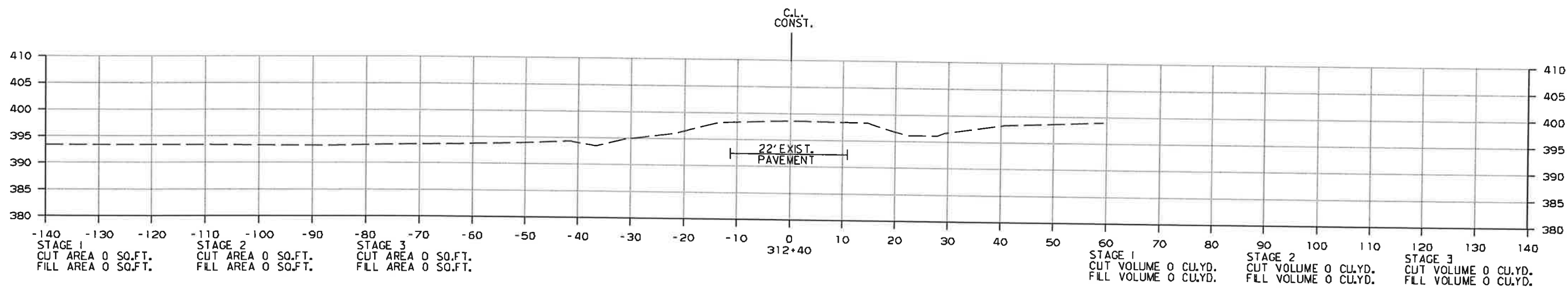


CROSS SECTION STA. 308+00 TO STA. 310+00 SITE 3

8/15/2018
R080529.DGN

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. RD. DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|--------------------|-------|--------------------|-----------|--------------|
| 3/5/2020 | | | | 6 | ARK. | | | |
| | | | | | | JOB NO. 080529 | 105 | 105 |

2 CROSS SECTIONS



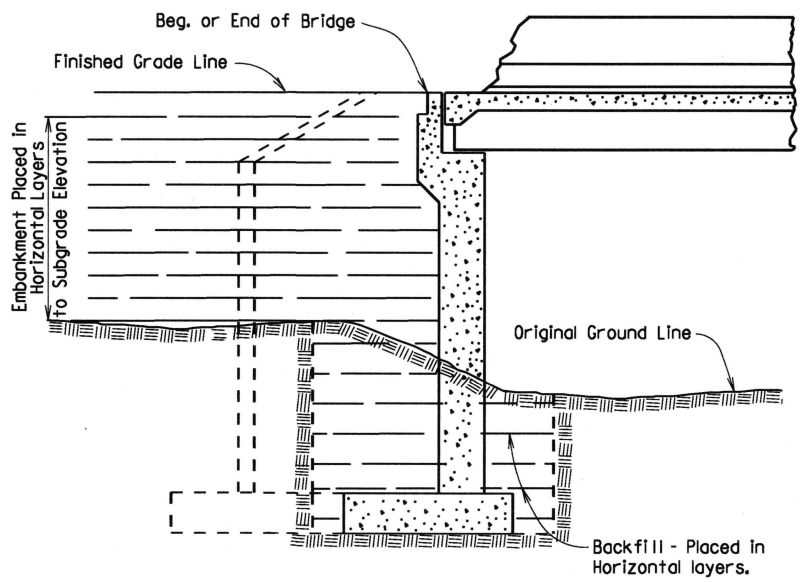
CROSS SECTION STA. 311+00 TO STA. 312+40

8/15/2018
R080529.DGN

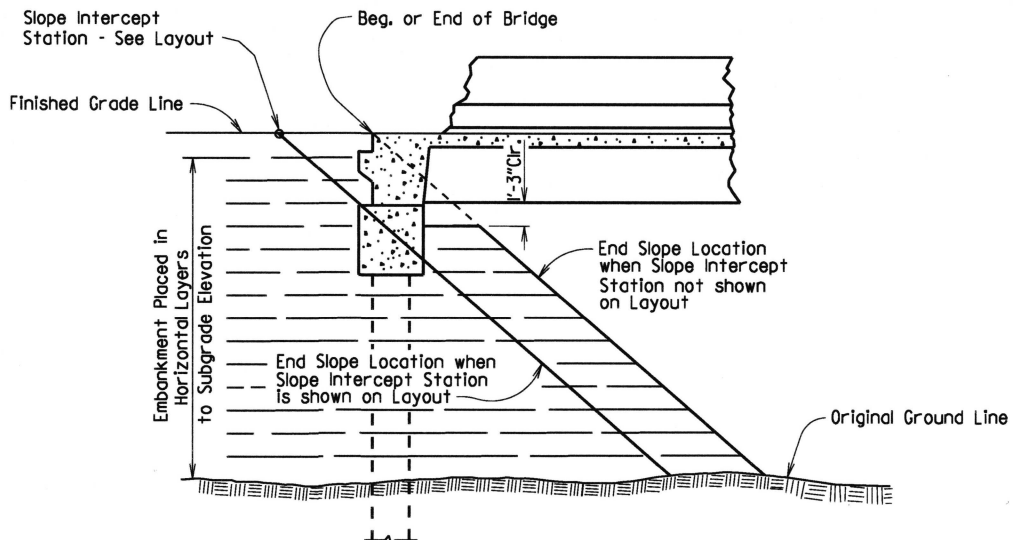
SITE 3

| 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. | | | | | | | | |

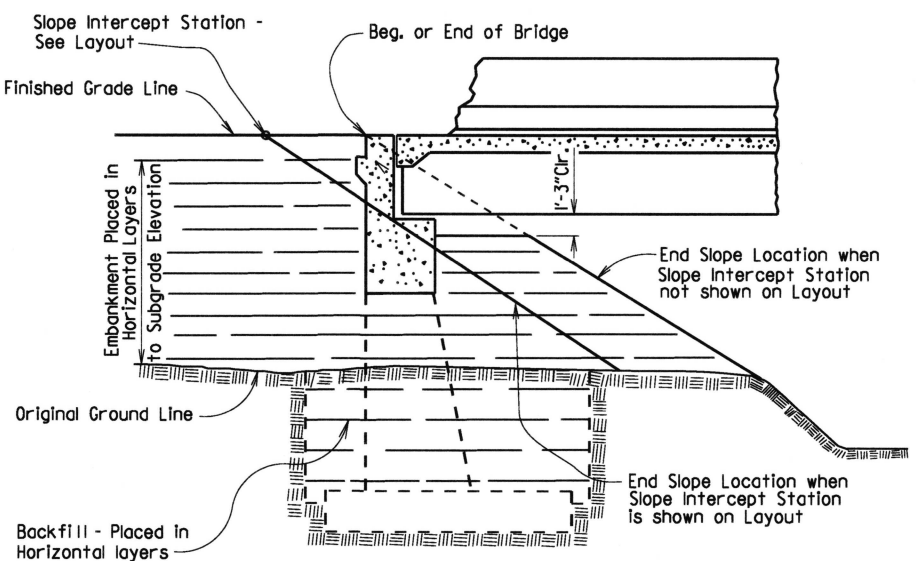
① EMBANKMENT & BACKFILL 55000



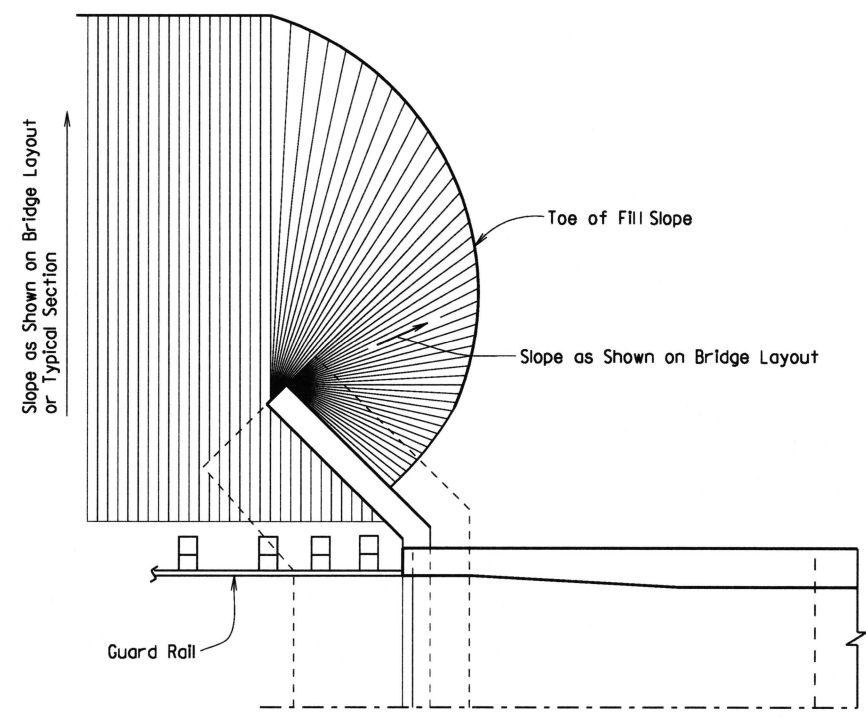
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



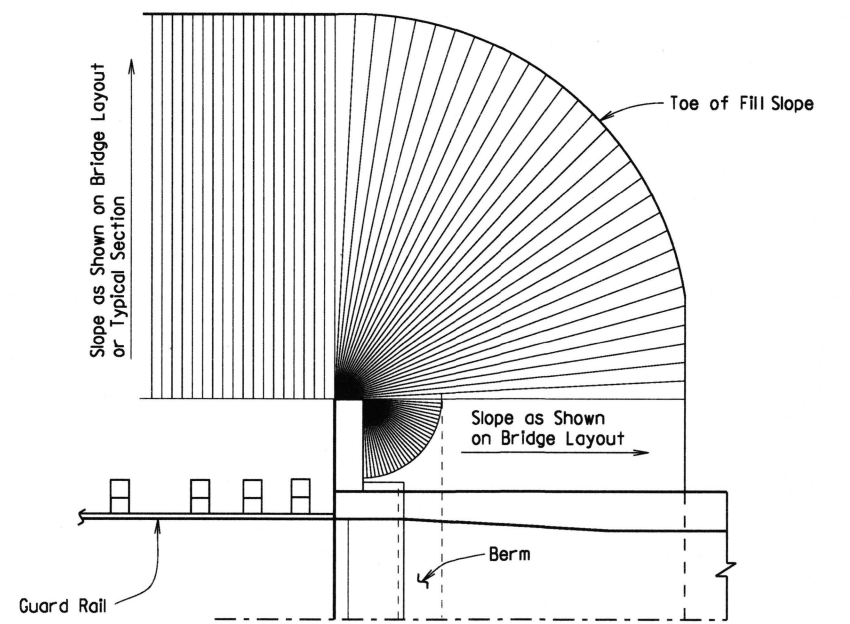
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



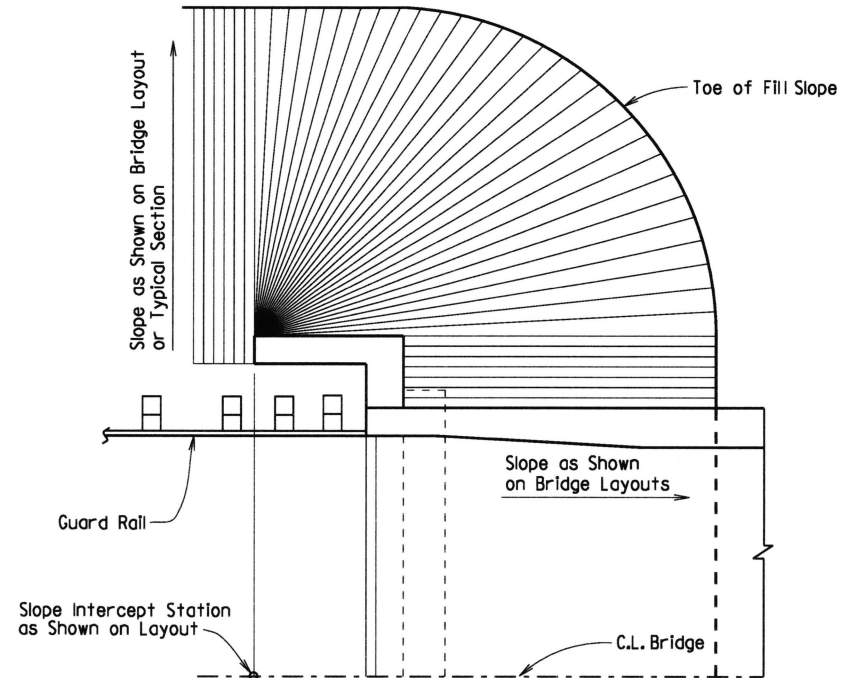
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



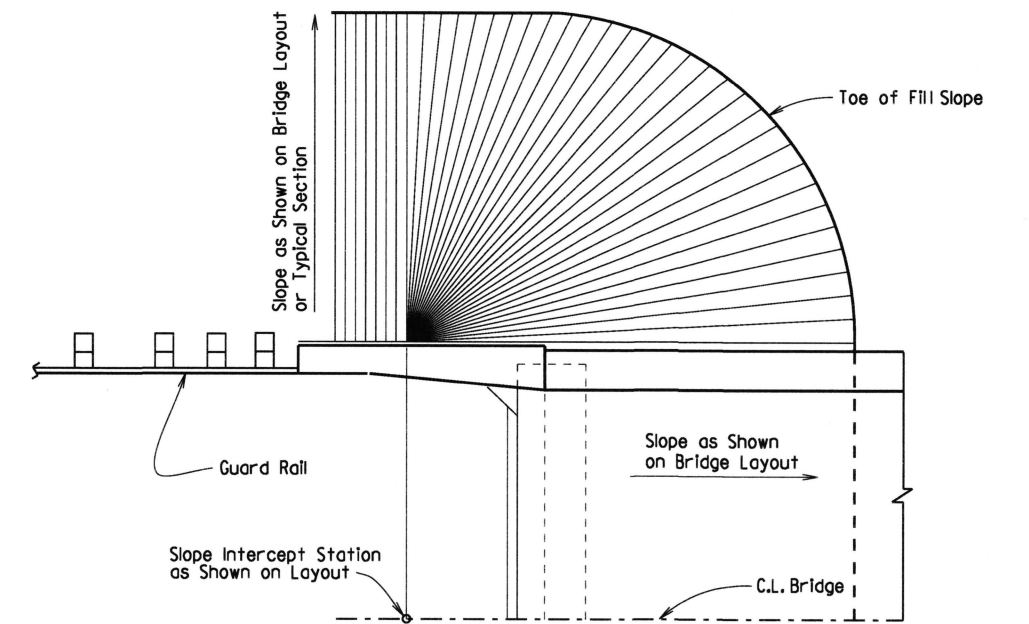
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

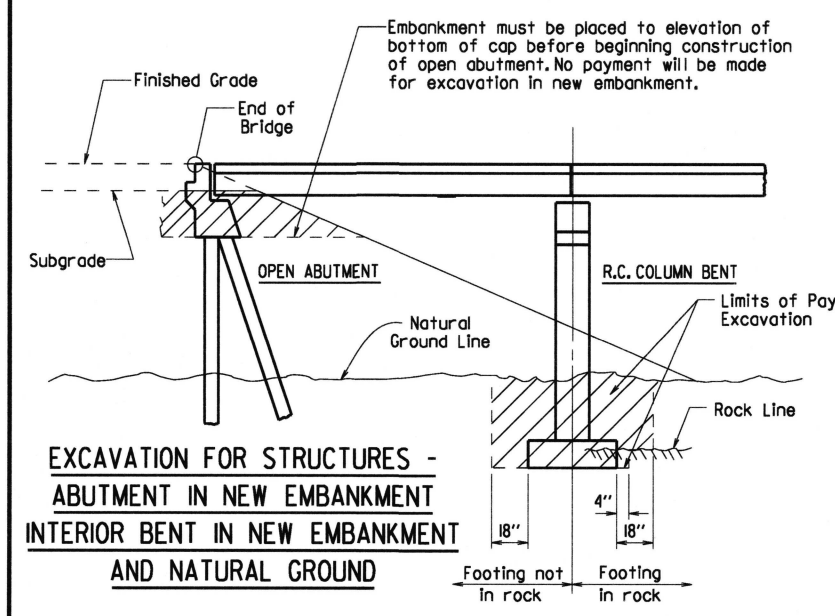
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

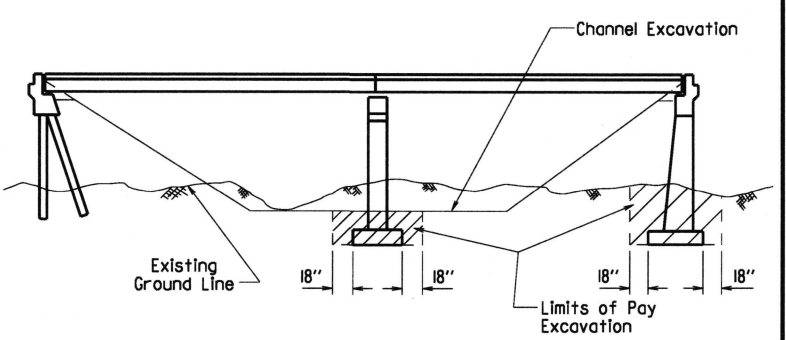
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn
 CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
 DESIGNED BY: STD. DATE: -

DRAWING NO. 55000

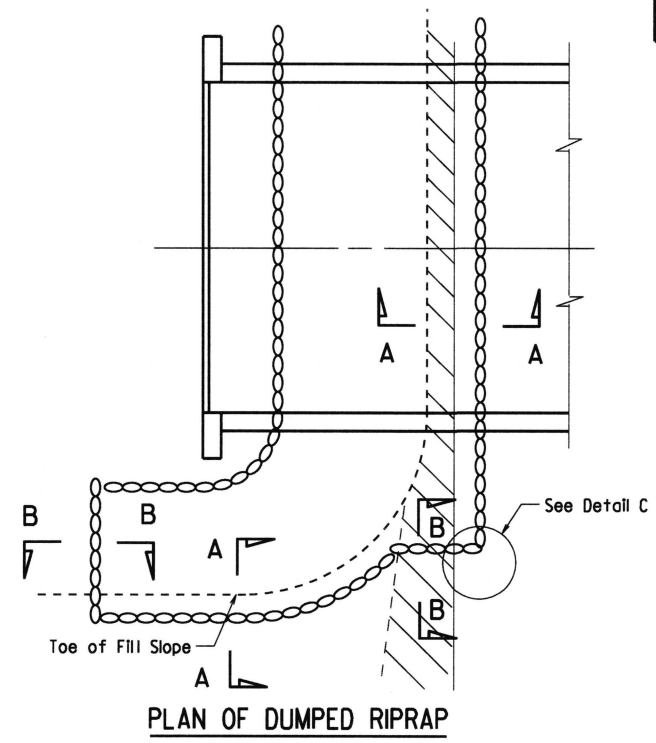
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | | | |
| | | | | ① RIPRAP & EXCAV. | | 55001 | | |



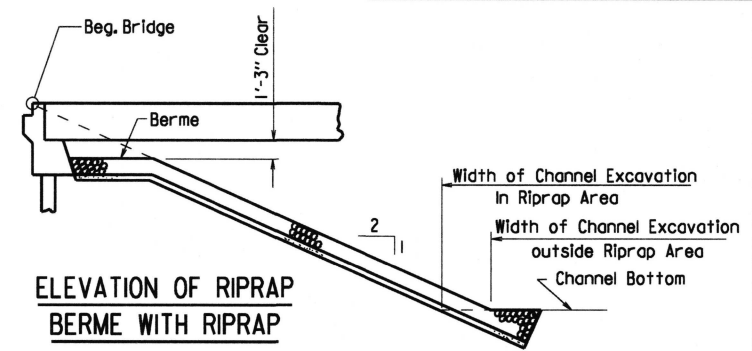
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



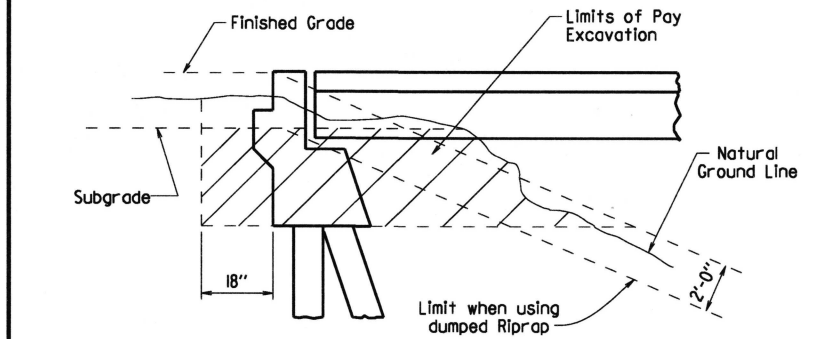
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



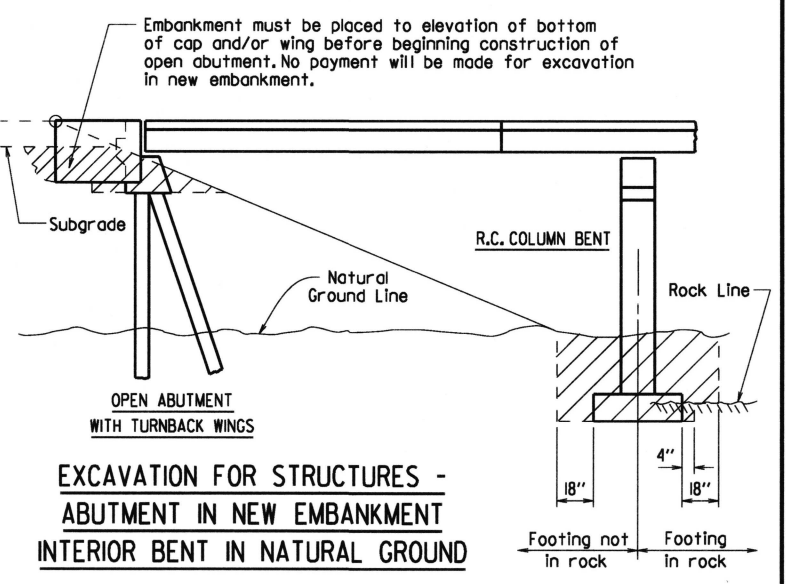
PLAN OF DUMPED RIPRAP



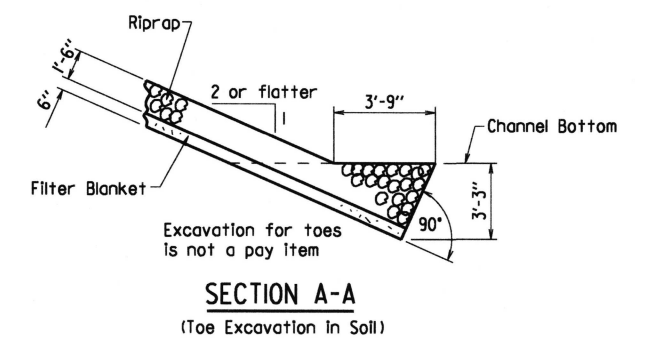
ELEVATION OF RIPRAP BERME WITH RIPRAP



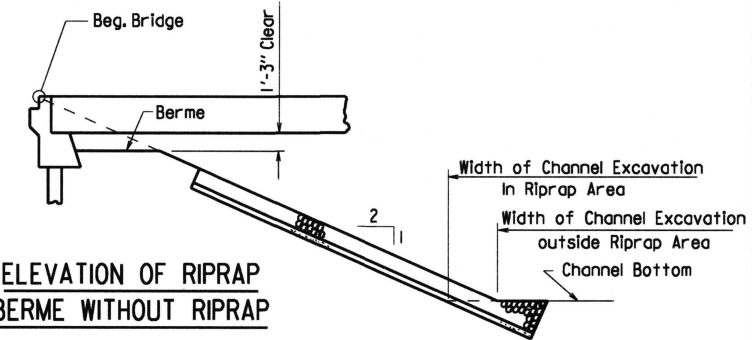
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



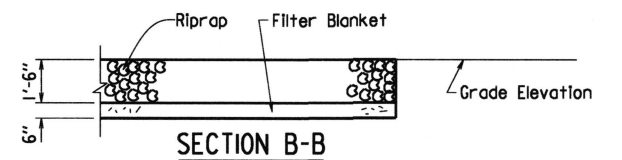
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



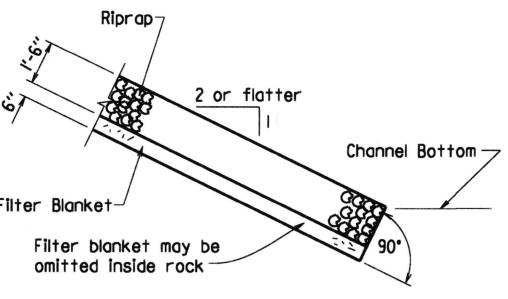
SECTION A-A (Toe Excavation in Soil)



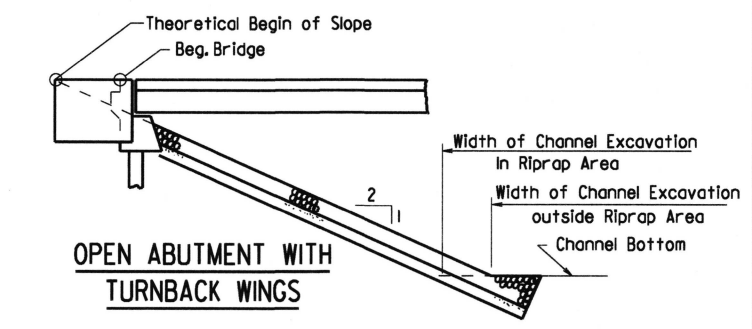
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



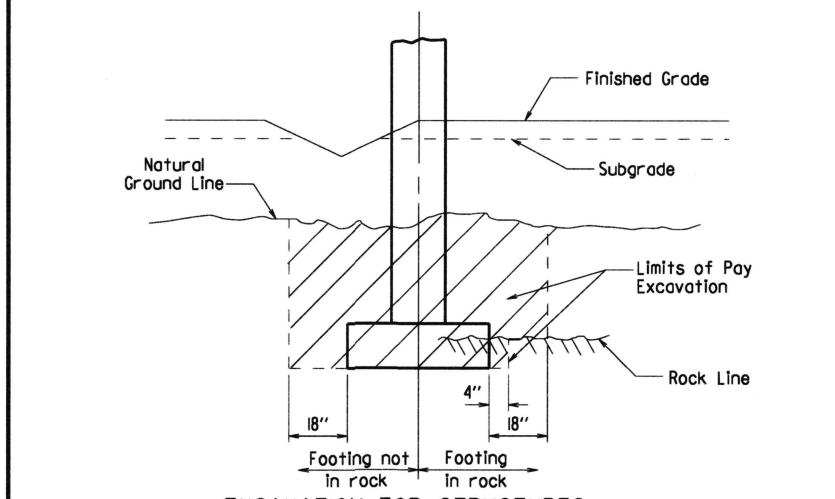
SECTION B-B



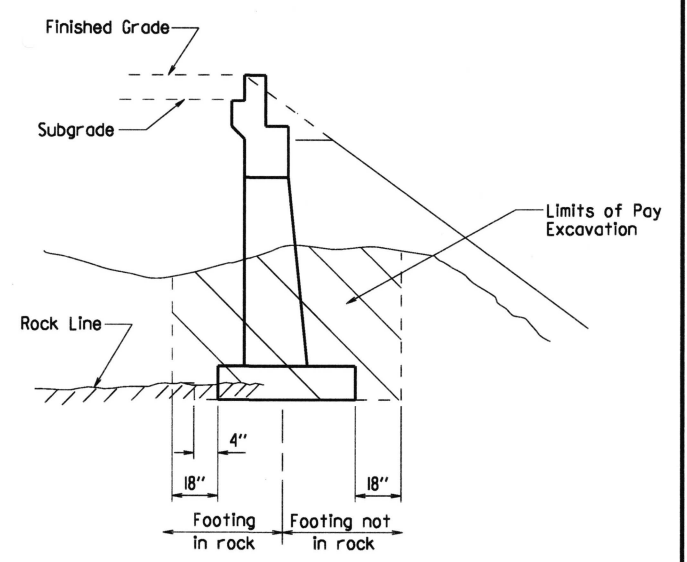
SECTION A-A (Toe Excavation in Rock)



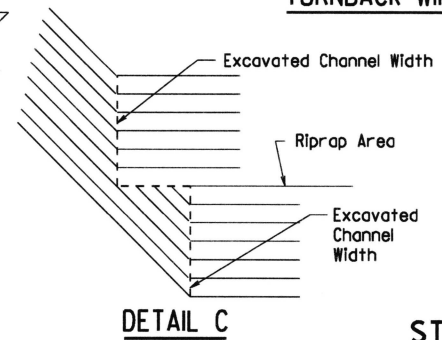
OPEN ABUTMENT WITH TURNBACK WINGS



EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



DETAIL C

Note: Use this type of toe when rock is encountered which is in a stable condition.

Note: In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

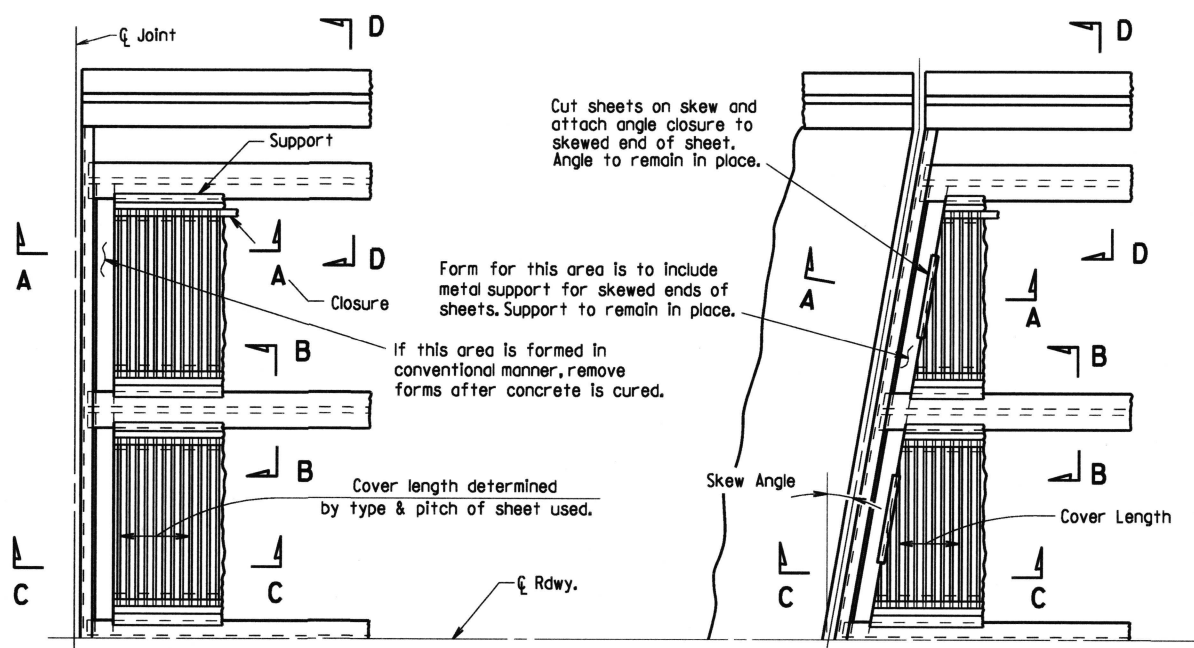
Note: Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: DATE:
DRAWING NO. 55001

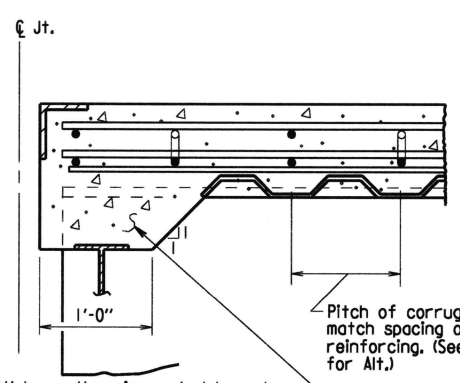
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| 3/24/16 | | | | 6 | ARK. | | | |
| JOB NO. | | | | | | | | |

BRIDGE DECK FORMS 55005

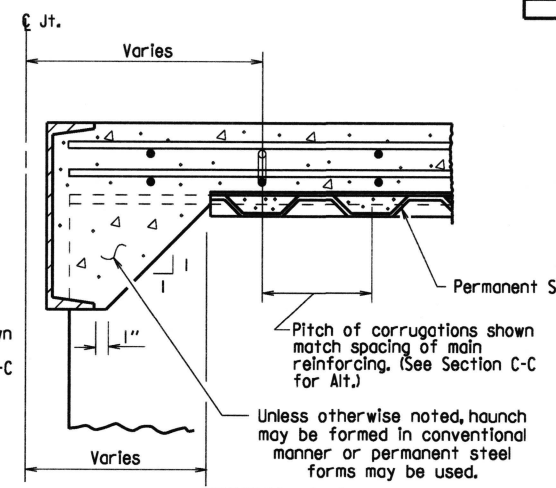


PART PLAN - SQUARE SPAN
3/8" = 1'-0"

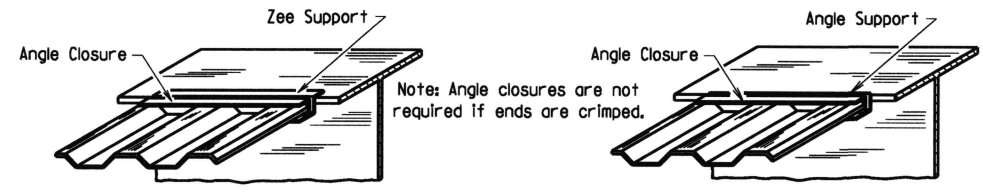
PART PLAN - SKEWED SPAN
3/8" = 1'-0"



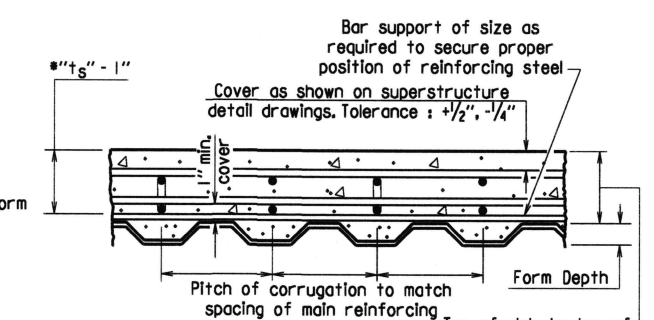
SECTION A-A
N.T.S.
(Angle at end of span)



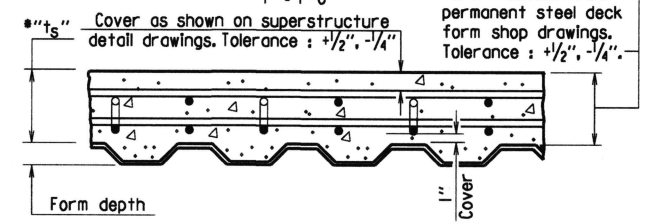
SECTION A-A
N.T.S.
(Channel at end of span)



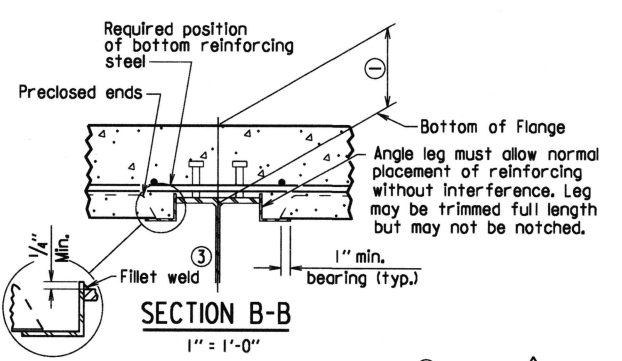
SKETCH OF PERMISSIBLE SUPPORTS
N.T.S.



SECTION C-C
1" = 1'-0"

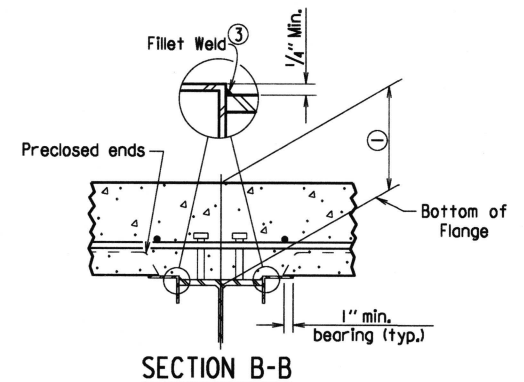


SECTION C-C - ALTERNATE
1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



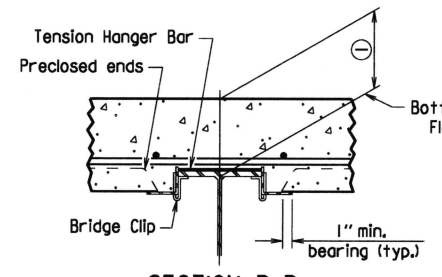
SECTION B-B
1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)



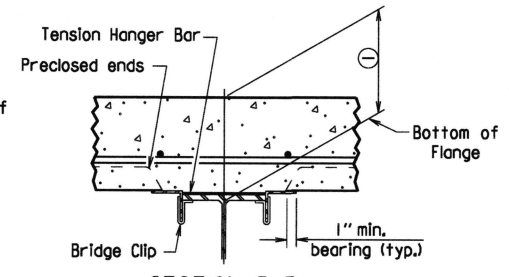
SECTION B-B
1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



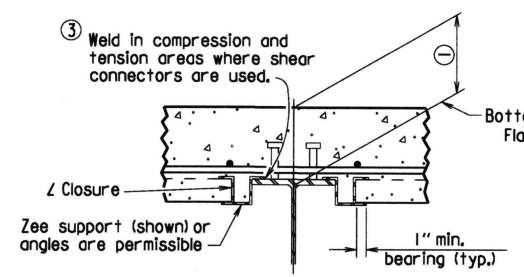
SECTION B-B
1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)



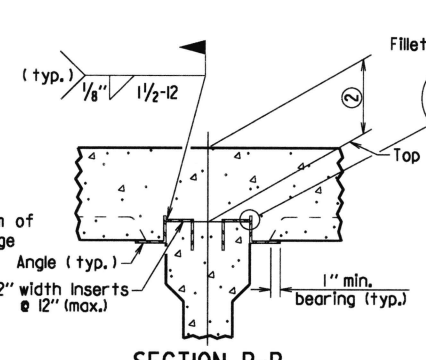
SECTION B-B
1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)



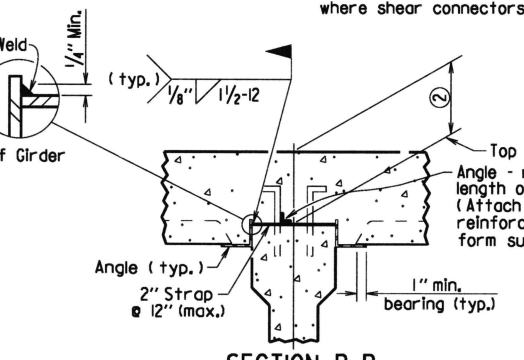
SECTION B-B
1" = 1'-0"

(Showing Z Closure)



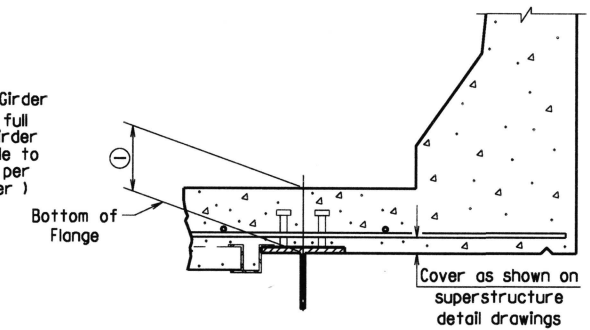
SECTION B-B (FOR CONCRETE GIRDERS)
1" = 1'-0"

(Showing support by Insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)
1" = 1'-0"

(Showing support by Strap)



SECTION D-D
1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

*t_s = slab thickness as shown on superstructure detail drawings.
GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.4(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or L supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE
DESIGNED BY: STD. DATE: —

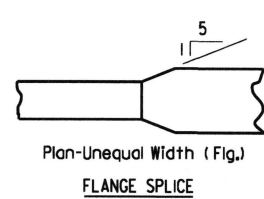
DRAWING NO. 55005

Revised weld dimension by KWH, Ck'd. by BEF, 3/24/16.

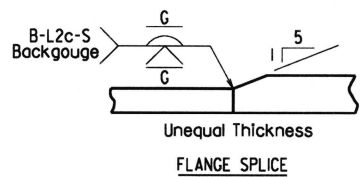
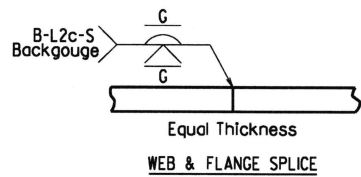
① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

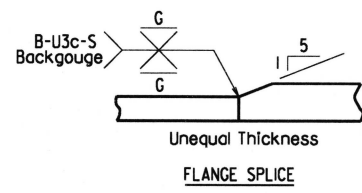
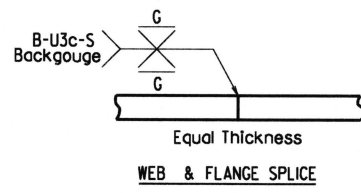
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|-------------------------------|-------|--------------------|-----------|--------------|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | | | |
| | | | | STEEL BRIDGE STRUCTURES 55007 | | | | |



FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

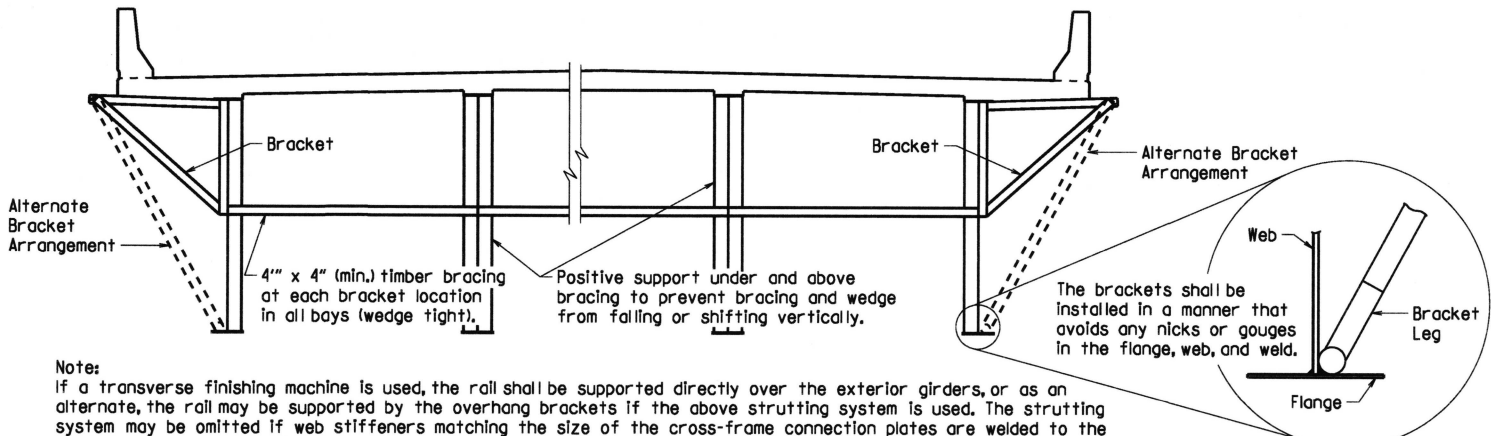


(Use when Base Metal Thickness is Equal to or Less than 2")



(Use when Base Metal Thickness is Greater than 2")

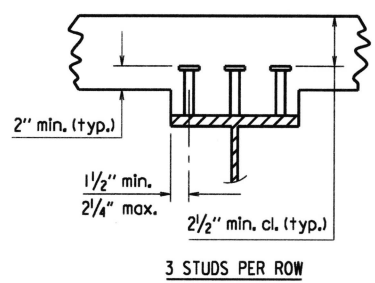
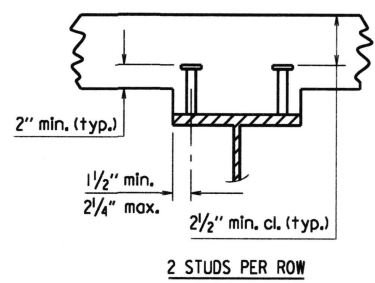
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the cross-frame connection plates are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on the plans. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (___)".

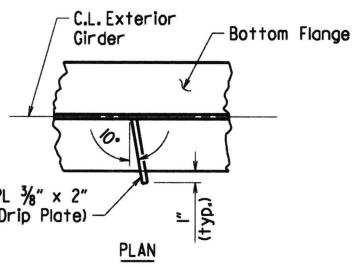
SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



Stud Shear Connectors shall be automatically end welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

SHEAR CONNECTOR DETAIL

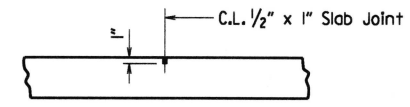


Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

BOTTOM FLANGE DRIP PLATE

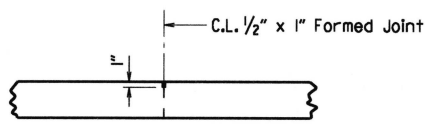
(USE WHEN WEB DEPTHS ARE 54" OR GREATER AND UNIT OR SPAN IS NOT IN LEVEL GRADE)



Use Type 3 or 4 Joint Sealer. See Subsections 50L02(h) and 50L05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class (S1AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

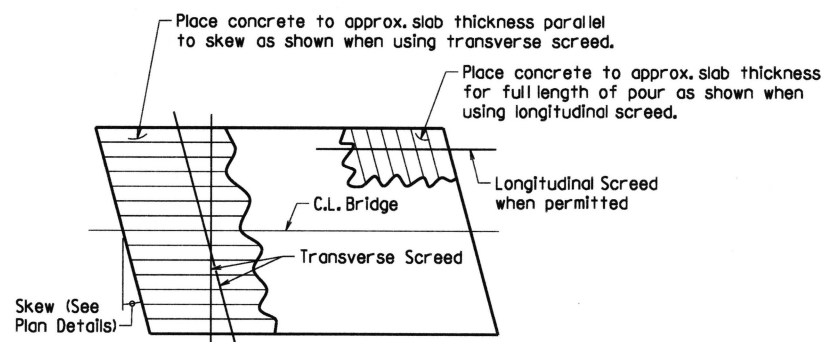
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and across the top of the sidewalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL



Use 1/2" x 1" Type 3 or 4 Joint Sealer. See Subsections 50L02(h) and 50L05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class (S1AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

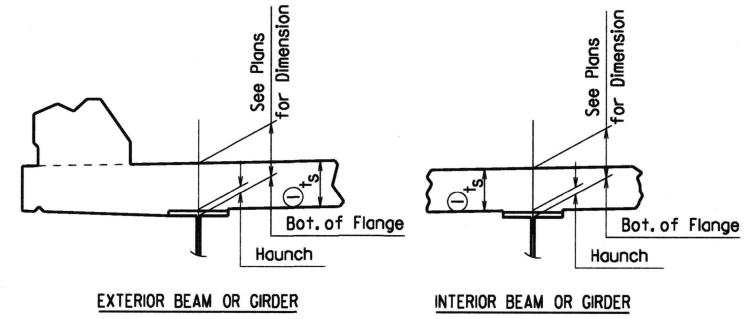
LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C.L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW

t_s = slab thickness. See "Typical Roadway Section" in the plans.

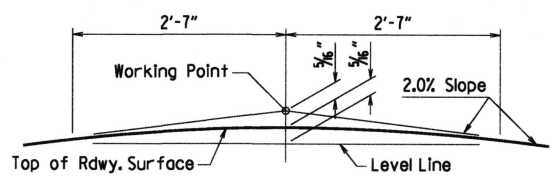


① Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1/4" unless otherwise noted in the plans. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL BRIDGES IN NORMAL CROWN

WELD TABLE

| Material Thickness of Thicker Part Joined (Inches) | Minimum Size of Fillet Weld (Inches) | Single Pass Weld Must Be Used |
|--|--------------------------------------|-------------------------------|
| To 3/4" Inclusive | 1/4" | Used |
| Over 3/4" | 3/8" | |

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

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 2/11/2016 FILENAME: b55007.dgn
CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale
DESIGNED BY: STD. DATE: —

DRAWING NO. 55007

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
| 12-1-14 | | 1-15-19 | | 6 | ARK. | | | |
| 1-14-15 | | 3-24-2020 | | | | | | |
| 1-17-17 | | | | | | | | |

1 TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using 3/8" raised letters and numerals 3/8" high.

| Line | Example 1 | Example 2 | Example 3 | Example 4 |
|--------|-----------|-----------|-----------|-----------|
| Line 1 | Red River | Southern | Saline | Highway 5 |
| Line 2 | Relief | Railroad | River | |
| Line 3 | | Overpass | Relief | |

GENERAL NOTES

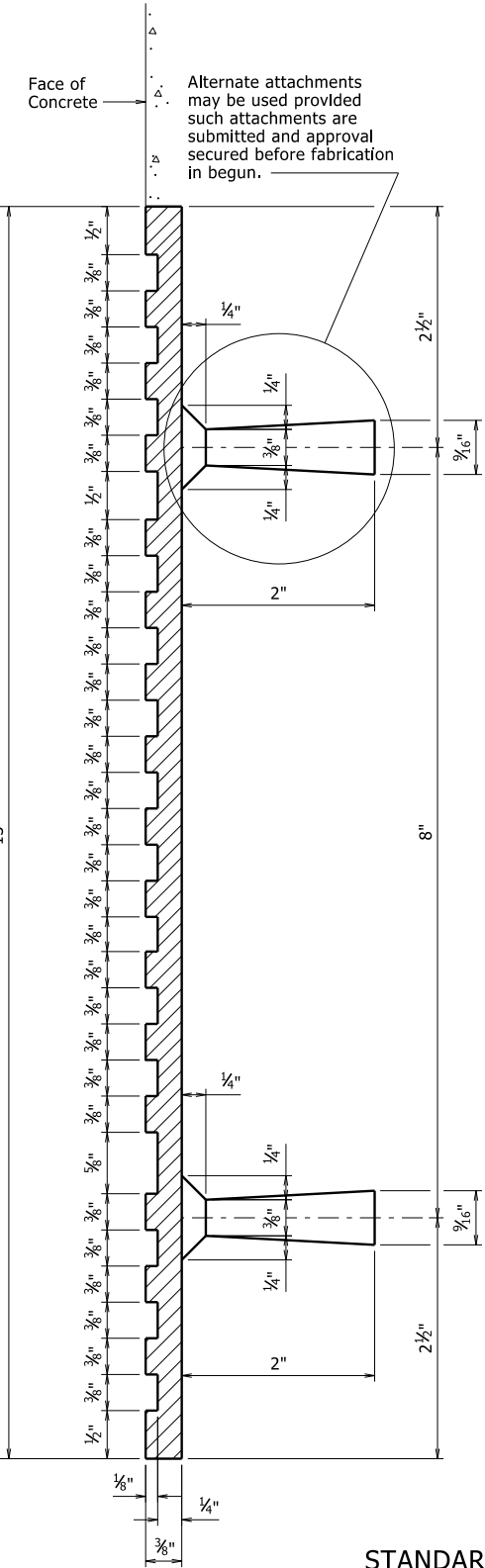
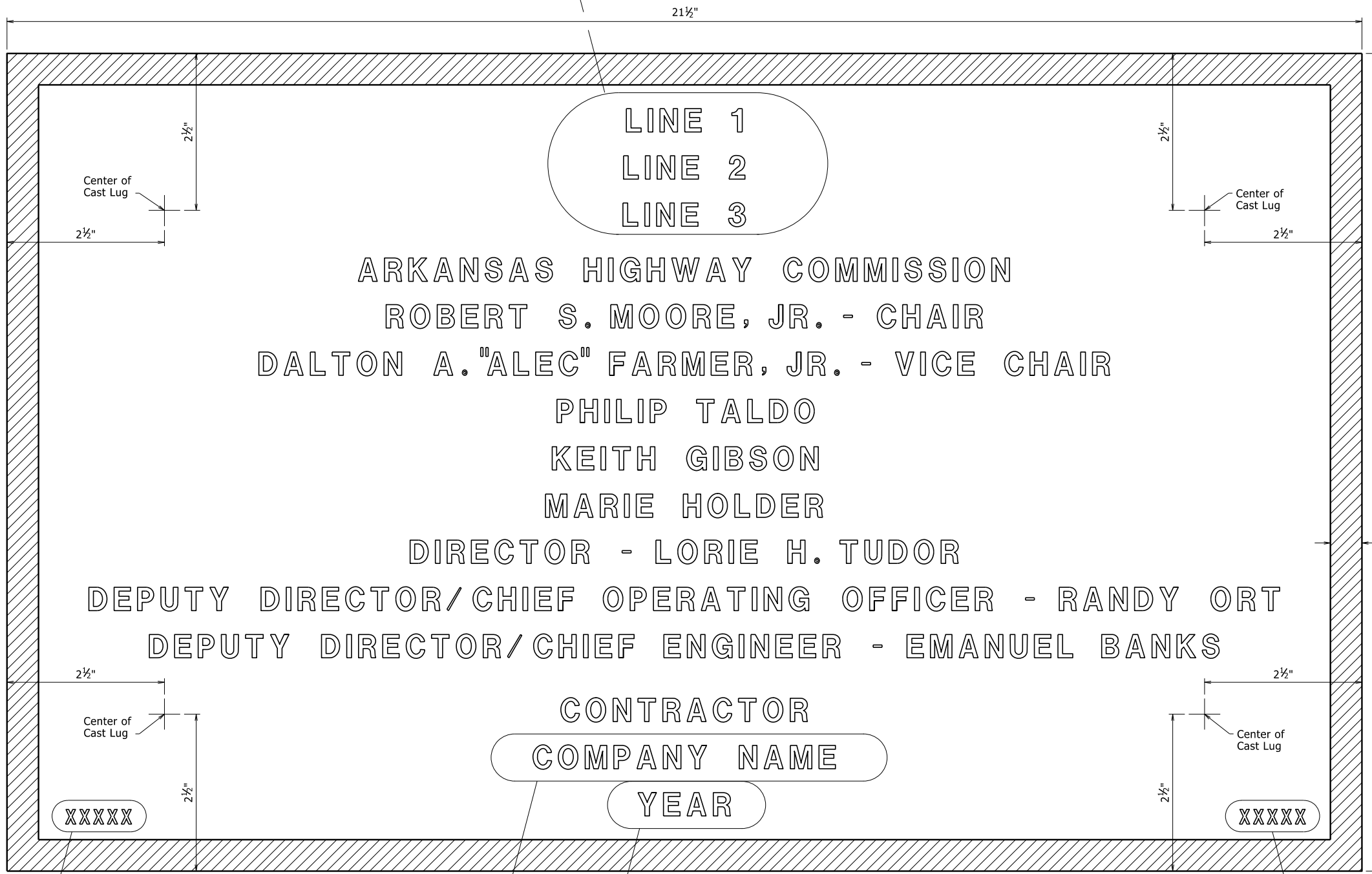
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 5/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.



- 5 Revised Director, Deputy Director/Chief Operating Officer, Chair, Vice Chair and added New Commissioner
3-24-2020 CGP Checked By: CRE
- 4 Revised Chair and Vice Chair Added New Commissioner
1-15-19 CGP Checked By: CRE
- 3 Added New Commissioner
1-17-17 KDH Checked By: CRE
- 2 Revised Chair and Vice Chair Added New Commssloner
1-14-15 KDH Checked By: CRE
- 1 Revised Deputy Director/Chief Engineer Added Deputy Director/Chief Operating Officer
12-1-14 KDH Checked By: CRE

Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples: HS20 HL-93

Place the Year in which Contract was awarded here using 3/8" raised numerals 3/8" high. Example: 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples: A1234 05432

TYPICAL BRIDGE NAME PLATE

STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE

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

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

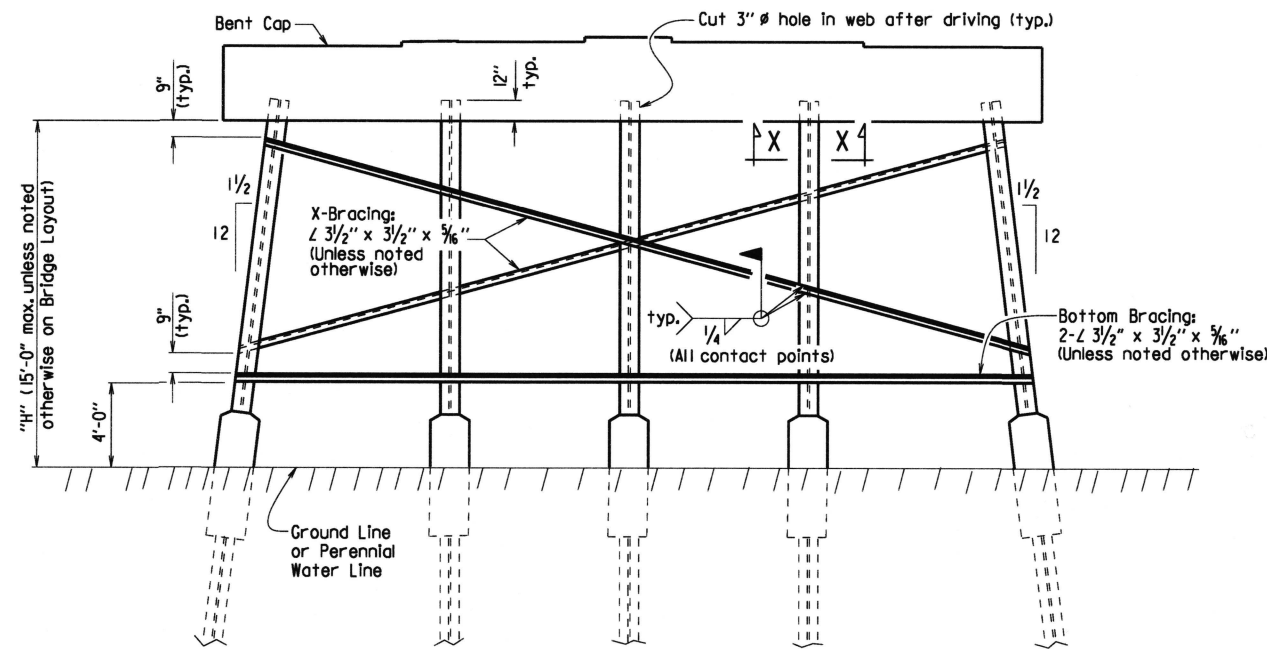
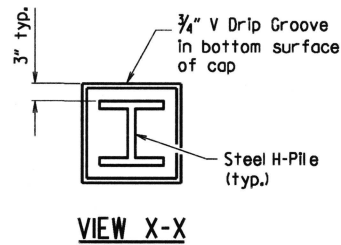
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



Notes:

All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

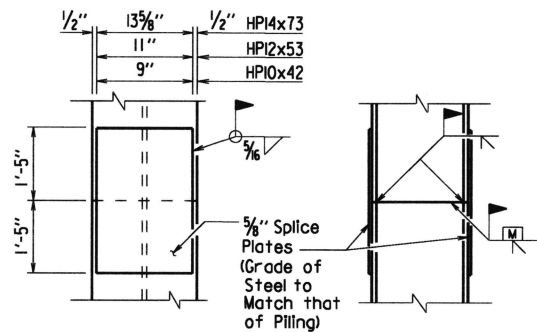
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

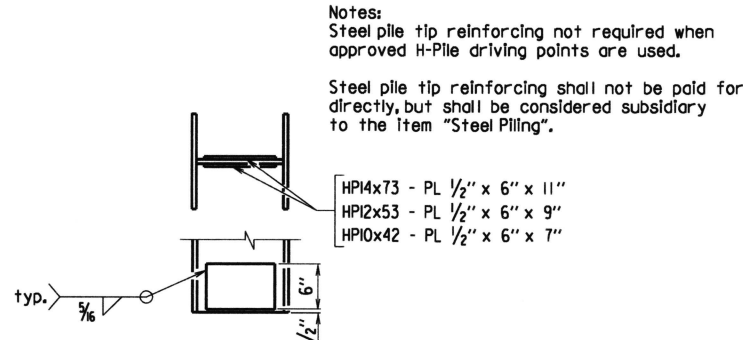
(Shown with Partial Height Encasement)



The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a 5/16" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifications for Highway Construction (2014 Edition).



REINFORCING DETAIL FOR STEEL H-PILE TIP

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.
Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".
HP14x73 - PL 1/2" x 6" x 11"
HP12x53 - PL 1/2" x 6" x 9"
HP10x42 - PL 1/2" x 6" x 7"

GENERAL NOTES FOR H-PILE ENCASEMENTS:

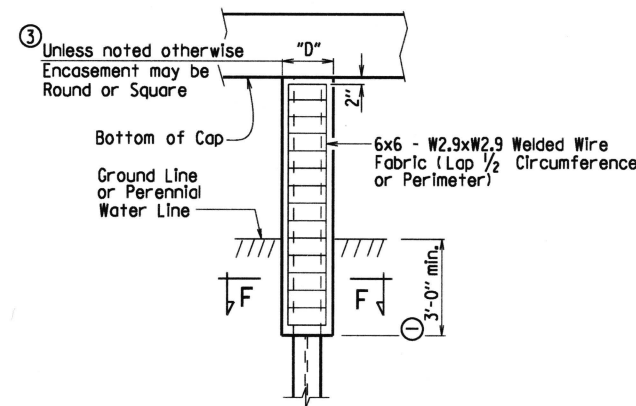
See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

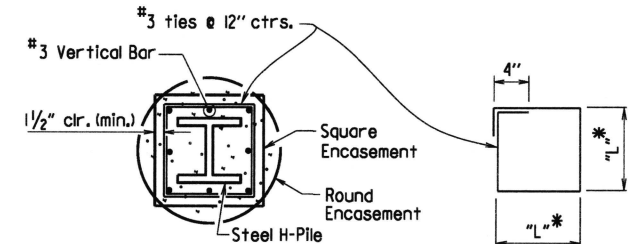
Welded Wire Fabric shall conform to AASHTO M 55 or M 22L. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Encasement to Bottom of Cap)

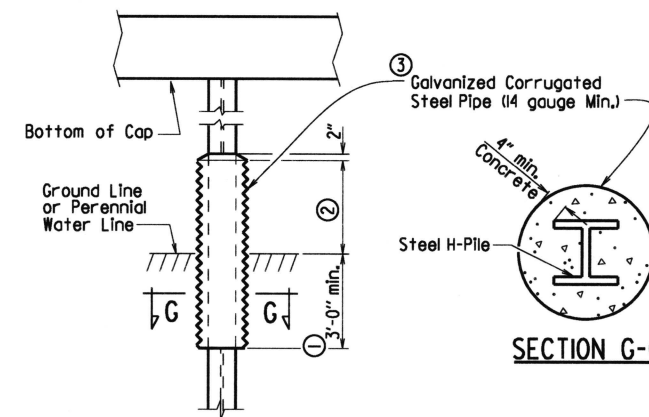


SECTION F-F

* Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

| Pile Size | "D" | | "L"* |
|-----------|----------------|---------------|-------|
| | Square Encsmt. | Round Encsmt. | |
| HP10x42 | 1'-7" | 2'-0" | 1'-4" |
| HP12x53 | 1'-8" | 2'-2" | 1'-5" |
| HP14x73 | 1'-11" | 2'-6" | 1'-8" |

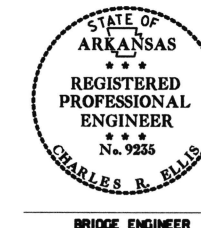


ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

Added alternate method of splicing H-piles and revised pile encasement note. 3/24/2016 AMS

- ① Unless otherwise noted on Bridge Layout.
- ② 3'-0" minimum or as shown on Bridge Layout.
- ③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1 1/2" and a minimum clearance of 1 1/4" from the pile.
- ④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.



This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

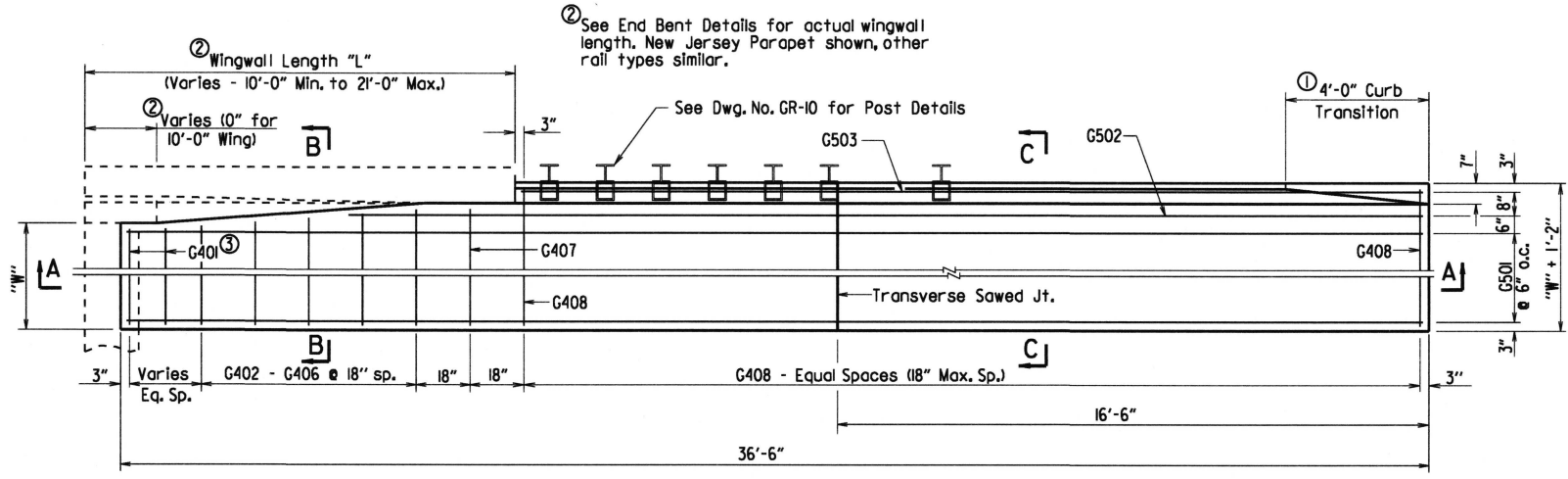
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
 CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
 DESIGNED BY: STD. DATE: —

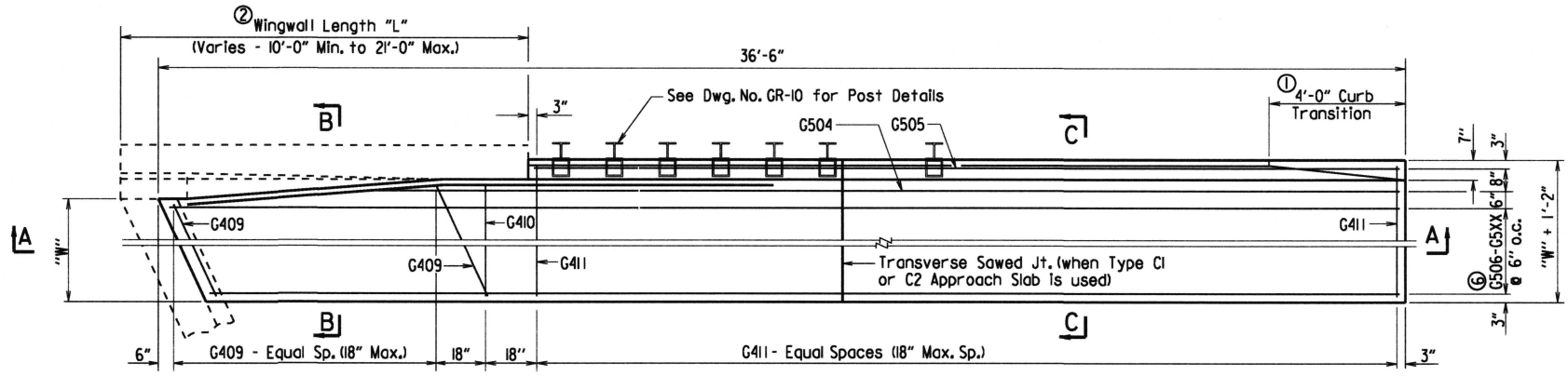
DRAWING NO. 55020

| 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. | | | | | | | TYPE C GUTTERS | 55030C |

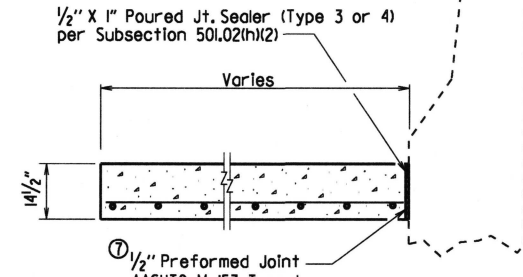


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

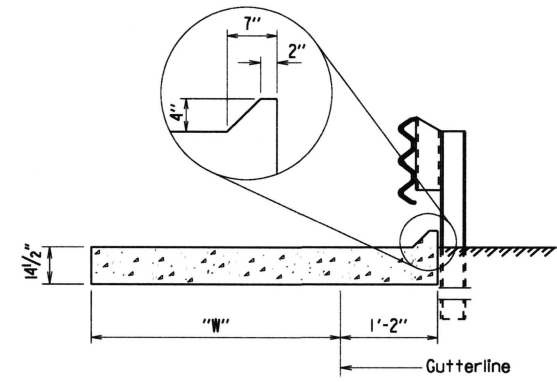
③ Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.



PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

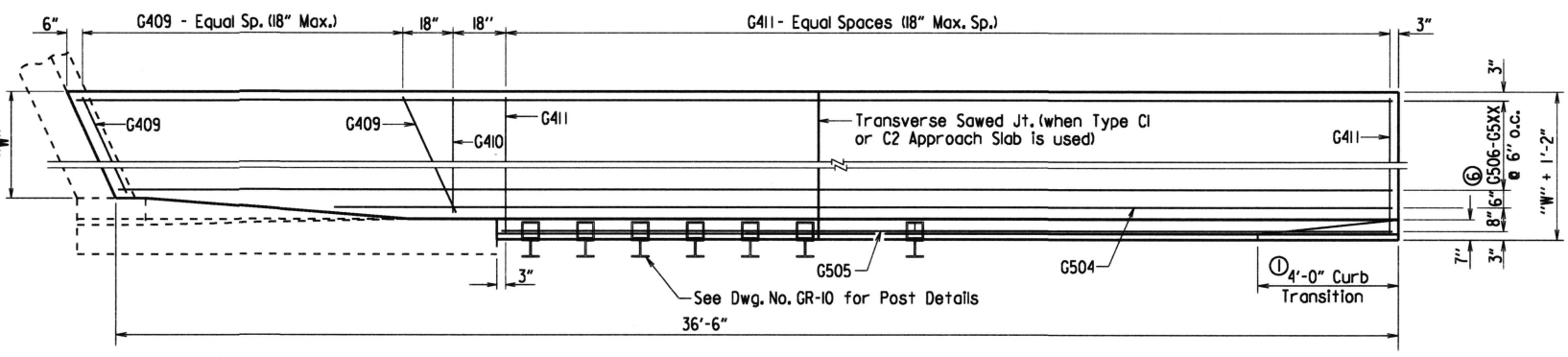


SECTION B-B
N.T.S.

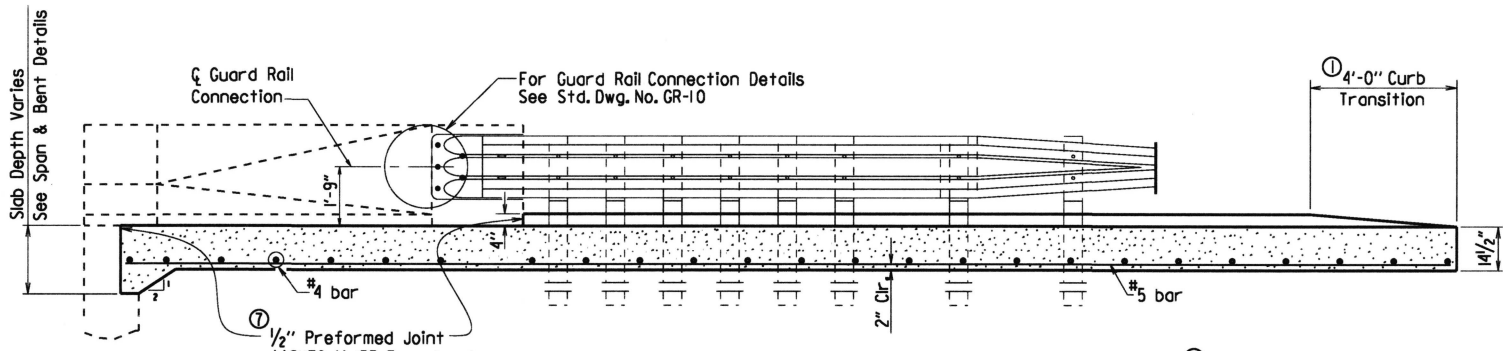


SECTION C-C
N.T.S.

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



PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



SECTION A-A

⑦ Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

BAR LIST FOR ONE TYPE C GUTTER

| Mark | No. Req'd. for Width "W" | | | | Length |
|-------------|--------------------------|--------|--------|--------|----------------------|
| | 4'-0" | 6'-0" | 8'-0" | 10'-0" | |
| G401 | ④ | ④ | ④ | ④ | "W" - 4" |
| G402 - G406 | 1 each | 1 each | 1 each | 1 each | "W" - 3" to "W" + 2" |
| G407 | 1 | 1 | 1 | 1 | "W" + 3" |
| G408 | ④ | ④ | ④ | ④ | "W" + 10" |
| G501 | 8 | 12 | 16 | 20 | 36'-2" |
| G502 | 1 | 1 | 1 | 1 | (4' - 1") - "L" |
| G503 | 1 | 1 | 1 | 1 | (37'-2") - "L" |
| G409 | ④ | ④ | ④ | ④ | ⑤ |
| G410 | 1 | 1 | 1 | 1 | "W" + 3" |
| G411 | ④ | ④ | ④ | ④ | "W" + 10" |
| G504 | 1 | 1 | 1 | 1 | ⑤ |
| G505 | 1 | 1 | 1 | 1 | ⑤ |
| G506 - G5XX | 1 each | 1 each | 1 each | 1 each | ⑤ |

④ No. Req'd. varies with Skew and Wingwall Length.
 ⑤ Bar Lengths vary with Skew and Wingwall Length.
 ⑥ G513 for "W" = 4'
 G517 for "W" = 6'
 G521 for "W" = 8'
 G525 for "W" = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER (FOR INFORMATION ONLY)

| "W" Width (ft.) | Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|-----------------|--------------------------|---------------------|
| 4 | 445 | 8.30 |
| 6 | 630 | 11.55 |
| 8 | 810 | 14.80 |
| 10 | 995 | 18.10 |

Quantities are based on "L" = 10'-0".

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.
 All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.
 Approach Gutters will be measured and paid for in accordance with Section 504.

STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

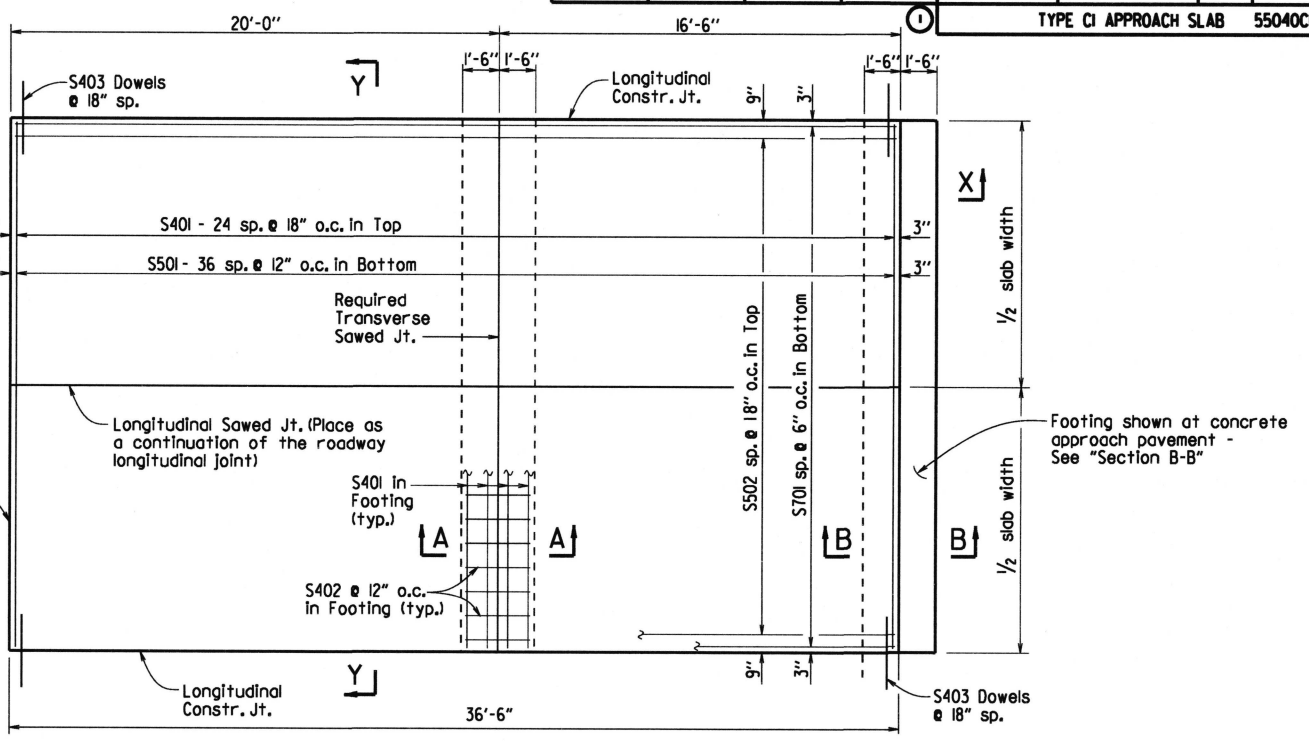
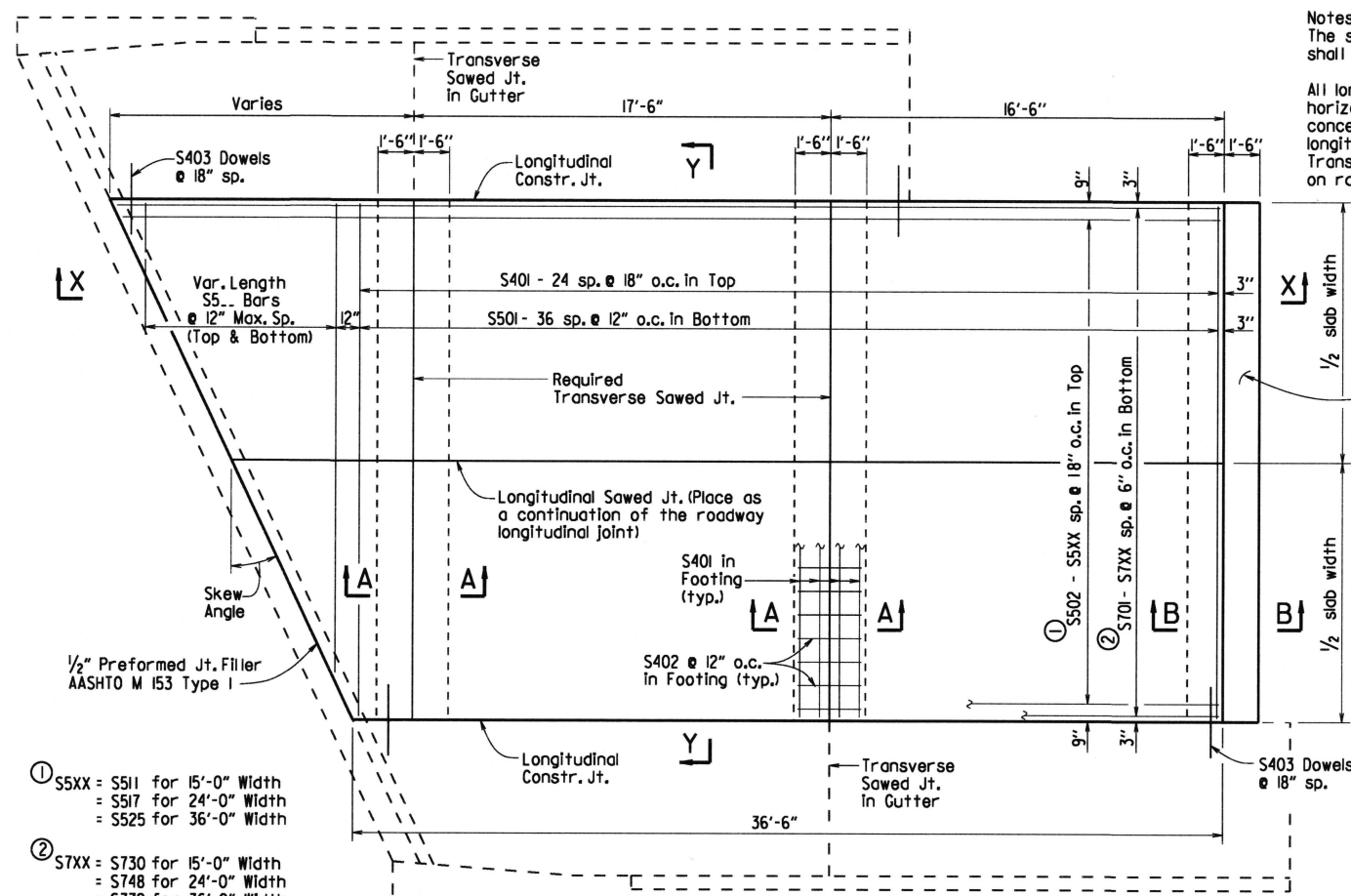
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
 CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: 3/8" = 1'-0"
 DESIGNED BY: STD. DATE: SCALE: or As Shown
 DRAWING NO. 55030C

| 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. | | | | | | | | |

TYPE CI APPROACH SLAB 55040CI

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

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



- ① S5XX = S511 for 15'-0" Width
= S517 for 24'-0" Width
= S525 for 36'-0" Width
- ② S7XX = S730 for 15'-0" Width
= S748 for 24'-0" Width
= S772 for 36'-0" Width

PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS
1/4" = 1'-0"

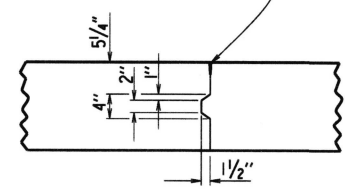
PLAN - SQUARE APPROACH SLAB
1/4" = 1'-0"

BAR LIST
(Square & Skewed Approach Slabs)

| Slab Width | Square | | Skewed | | |
|------------|-------------|------------|--------|------------|---|
| | Mark | No. Req'd. | Length | No. Req'd. | Length |
| 15'-0" | S401 | 33 | 14'-8" | 37 | 14'-8" |
| | S402 | 30 | 2'-8" | 45 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| | S501 | 37 | 14'-8" | 37 | 14'-8" |
| | S502 | 10 | 36'-2" | | |
| | S502 - S511 | | | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle) |
| | S5... | | | 2 Ea. | 14.7' - 0.75' (tan skew angle) to 2'-0" Min. |
| 24'-0" | S701 | 30 | 36'-2" | | |
| | S701 - S730 | | | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle) |
| | S401 | 33 | 23'-8" | 37 | 23'-8" |
| | S402 | 48 | 2'-8" | 72 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| | S501 | 37 | 23'-8" | 37 | 23'-8" |
| | S502 | 16 | 36'-2" | | |
| 36'-0" | S502 - S517 | | | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle) |
| | S5... | | | 2 Ea. | 23.7' - 0.75' (tan skew angle) to 2'-0" Min. |
| | S701 | 48 | 36'-2" | | |
| | S701 - S748 | | | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle) |
| | S401 | 33 | 35'-8" | 37 | 35'-8" |
| | S402 | 72 | 2'-8" | 108 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| 36'-0" | S501 | 37 | 35'-8" | 37 | 35'-8" |
| | S502 | 24 | 36'-2" | | |
| | S502 - S525 | | | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle) |
| | S5... | | | 2 Ea. | 35.7' - 0.75' (tan skew angle) to 2'-0" Min. |
| | S701 | 72 | 36'-2" | | |
| | S701 - S772 | | | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle) |

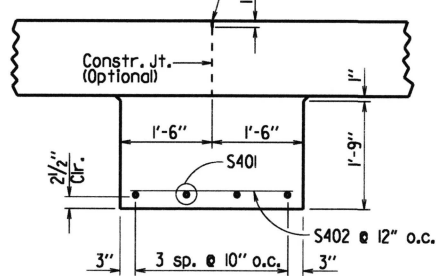
* Varies with skew angle

1/2" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
3/4" = 1'-0"

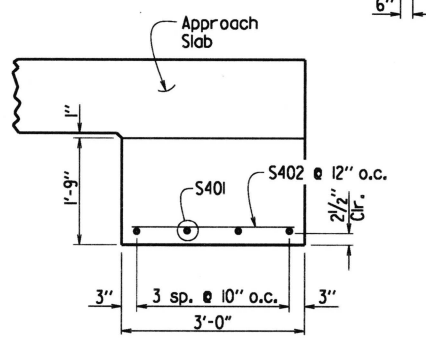
1/2" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.



SECTION A-A
N.T.S.

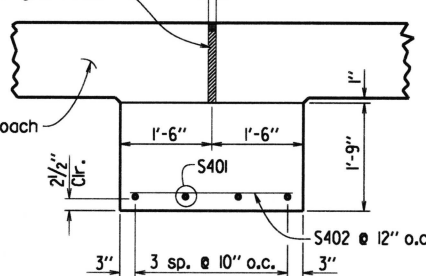
1/2" Preamformed Jt. Filler AASHTO M 153 Type I

1/2" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2)

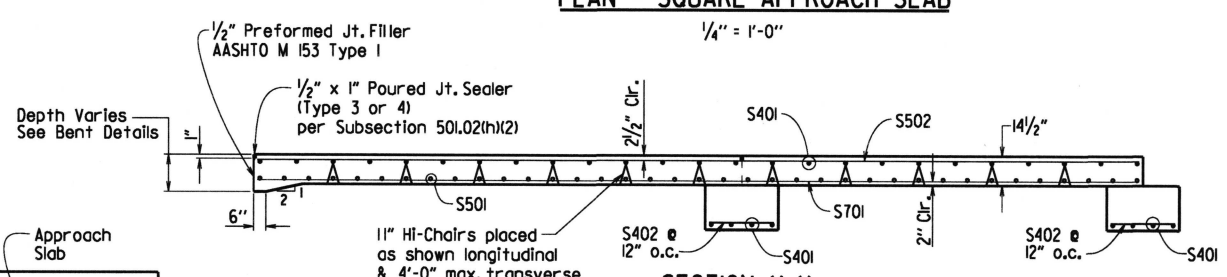


SECTION B-B AT ASPHALT APPROACH PAVEMENT
N.T.S.

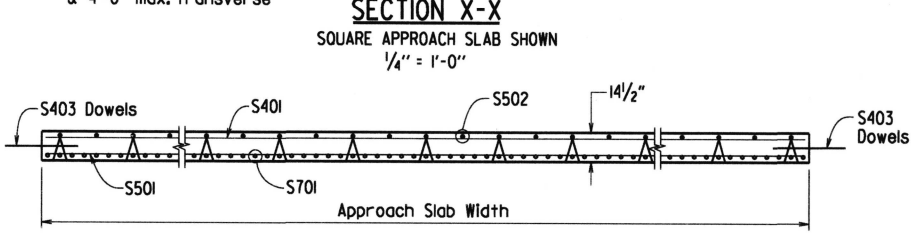
Seal expansion joint according to details shown on Std. Dwg. CPTJ-6A



SECTION B-B AT CONCRETE APPROACH PAVEMENT
N.T.S.



SECTION X-X SQUARE APPROACH SLAB SHOWN
1/4" = 1'-0"



SECTION Y-Y
N.T.S.

TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB
(FOR INFORMATION ONLY)

| Slab Width | Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|------------|--------------------------|---------------------|
| 15'-0" | 3640 | 30.75 |
| 24'-0" | 5775 | 49.15 |
| 36'-0" | 8620 | 73.75 |

GENERAL NOTES
This drawing shall be used for Approach Slabs in Seismic Performance Zone 1 and for the maximum skew angles shown below:

- 15'-0" Slab Width: Maximum Skew Angle = 50°
- 24'-0" Slab Width: Maximum Skew Angle = 40°
- 36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

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

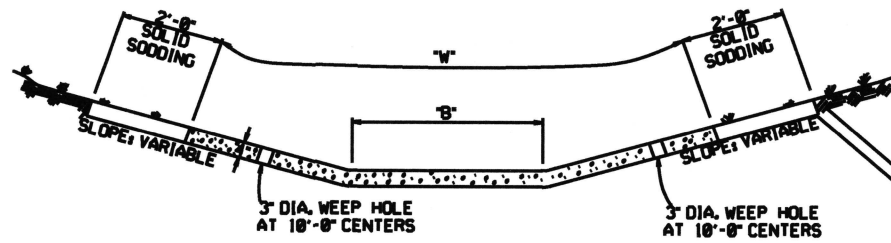
STANDARD DETAILS FOR TYPE CI APPROACH SLAB
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

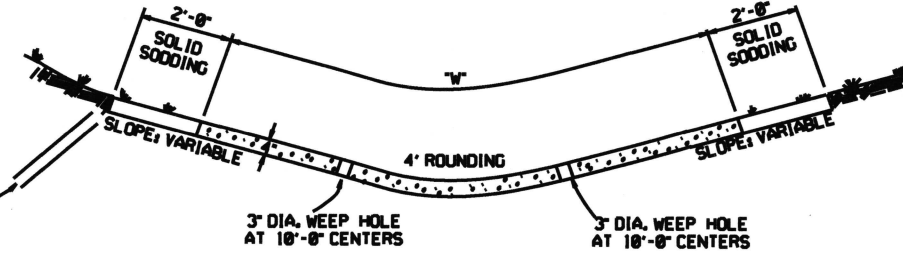
DRAWING NO. 55040CI

REFER TO TABULATION OF QUANTITIES FOR "W" & "S" DIMENSIONS

REFER TO TABULATION OF QUANTITIES FOR "W" DIMENSIONS



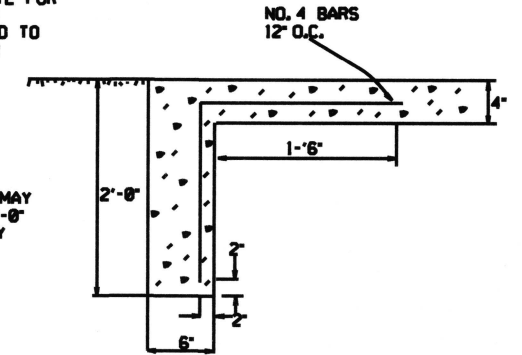
TYPE A



TYPE B

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

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."



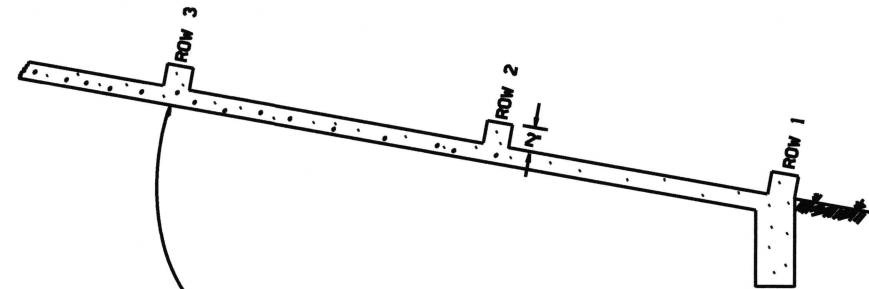
TOE WALL DETAIL FOR CONCRETE DITCH PAVING

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.

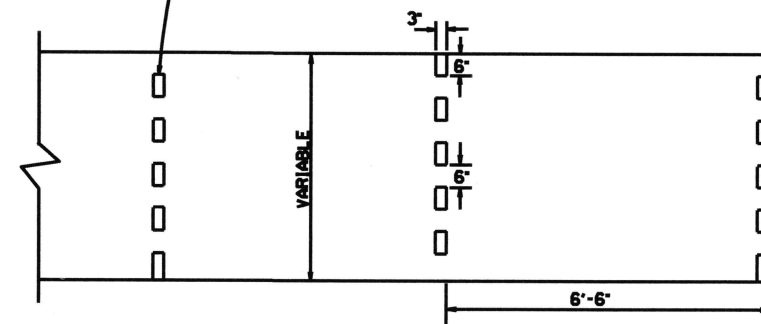
SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

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.



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.



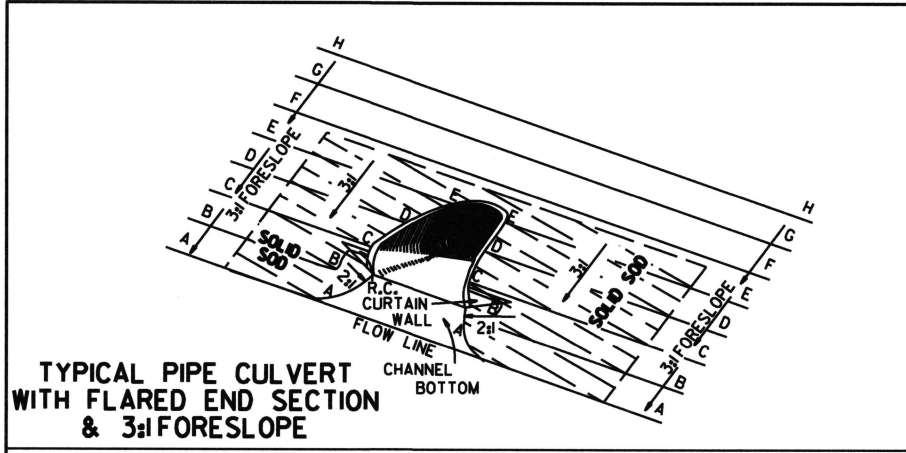
ENERGY DISSIPATORS
(NO SCALE)

| DATE | REVISION | DATE FILED |
|----------|--|-------------|
| 12-8-16 | CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE | |
| 11-7-10 | 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 | 853-7-15-88 |
| 4-3-87 | REVISED ENERGY DISSIPATOR | 871-4-3-87 |
| 1-8-87 | MODIFIED NOTE ON ENERGY DISS. | 882-1-8-87 |
| 11-3-86 | ADDED NOTE TO ENERGY DISS. | 883-11-3-86 |
| 11-1-84 | ENERGY DISSIPATOR DETAILS ADDED | 808-11-1-84 |
| 11-1-84 | EXCAVATION DETAILS ADDED | |
| | TYPED A & B | |
| 10-2-72 | REVISED AND REDRAWN | 808-10-2-72 |
| | | |
| | | |

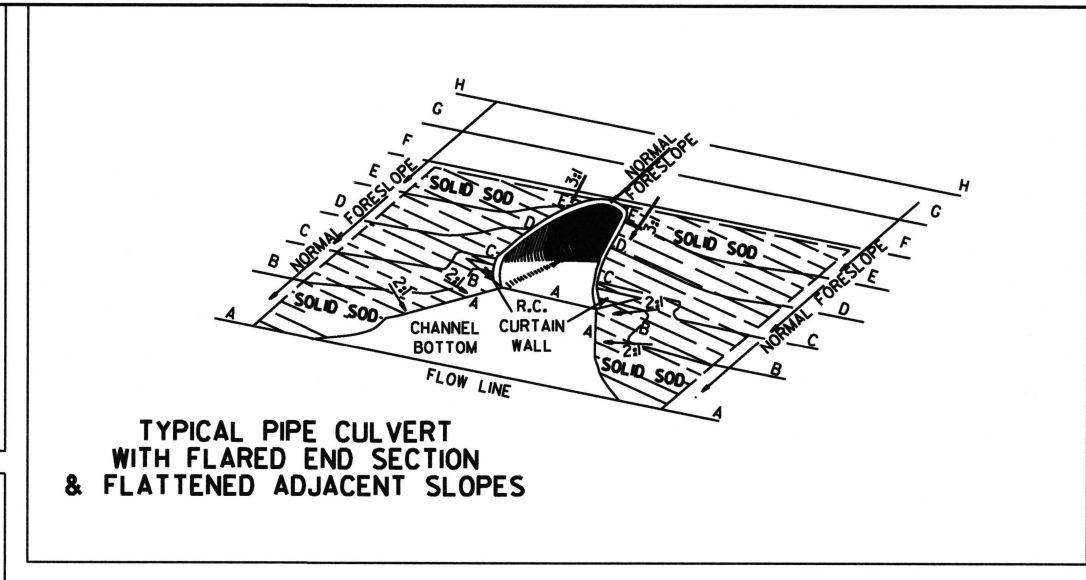
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

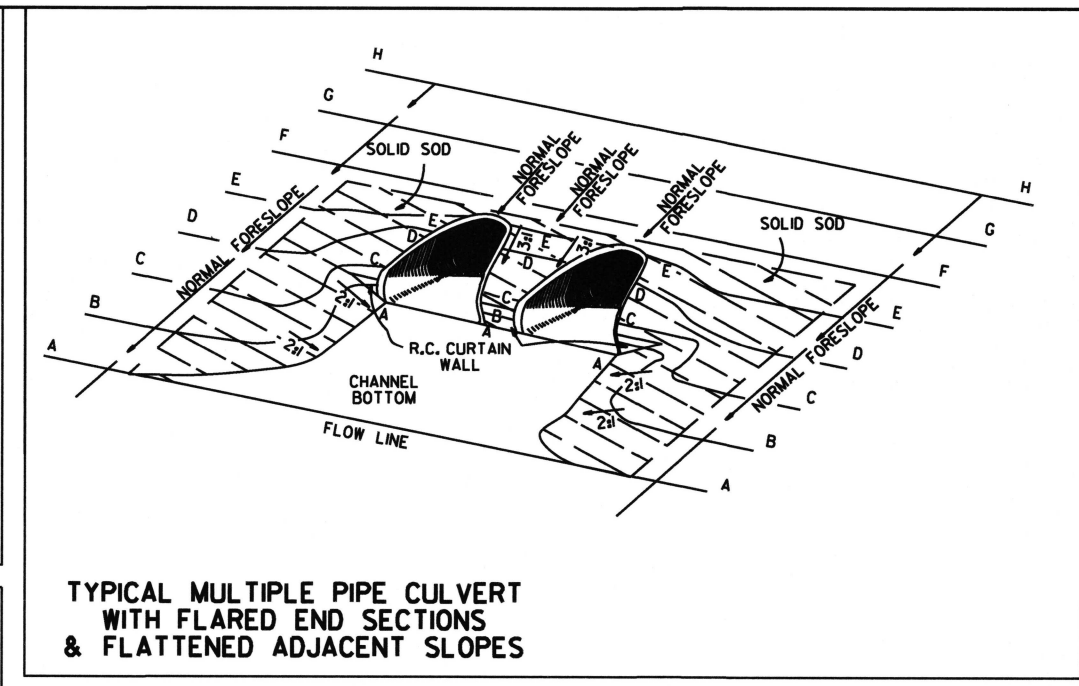
STANDARD DRAWING CDP-1



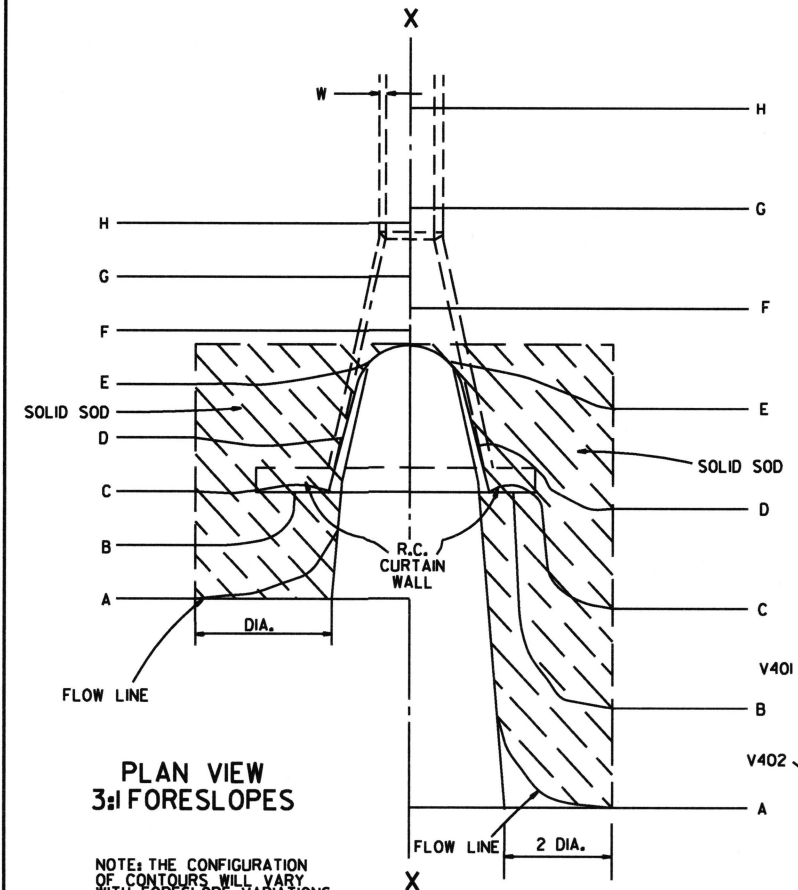
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES



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



PLAN VIEW 3:1 FORESLOPES

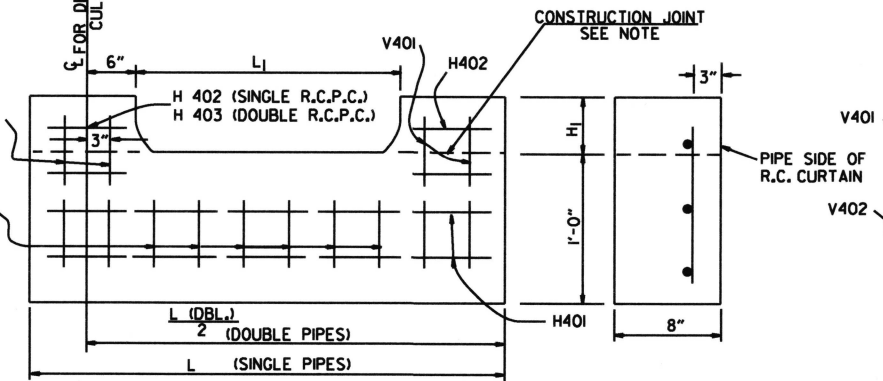
PLAN VIEW FLATTENED FORESLOPES

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

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

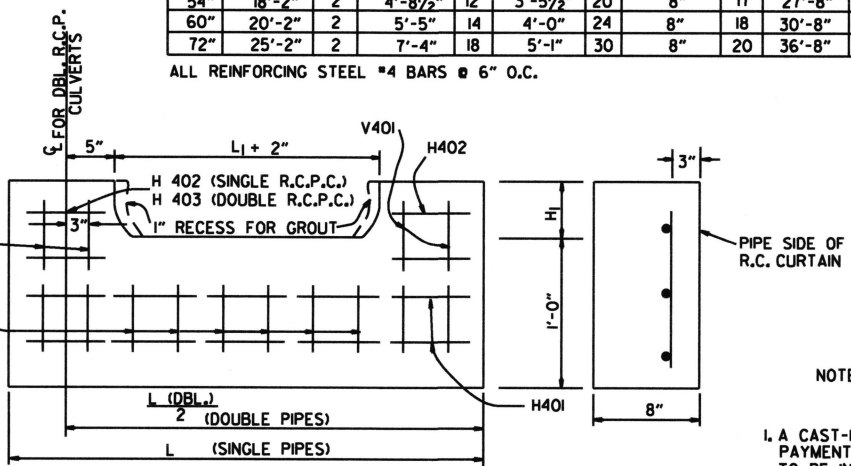
| PIPE DIA. | H ₁ | L ₁ | L | L (DBL.) / 2 | SINGLE R.C.P.C. | | DOUBLE R.C.P.C. | |
|-----------|----------------|----------------|--------|--------------|-----------------|--------------|-----------------|--------------|
| | | | | | CONC. | REINF. STEEL | CONC. | REINF. STEEL |
| | | | | | CU. YDS.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

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



R.C. CURTAIN WALL DETAILS

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



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

REINFORCING STEEL SCHEDULE

| PIPE DIA. | SINGLE R.C. PIPE CULVERT | | | | | | | | DOUBLE R.C. PIPE CULVERT | | | | | | | | | |
|-----------|--------------------------|-----|-----------|-----|------------|-----|------|-----|--------------------------|-----|-----------|-----|------|-----|------------|-----|----|----|
| | H401 | | H402 | | V401 | | V402 | | H401 | | H402 | | V401 | | V402 | | | |
| | L | NO. | L | NO. | L | NO. | L | NO. | L | NO. | L | NO. | L | NO. | L | NO. | | |
| 18" | 7'-8" | 2 | 1'-11/2" | 4 | 1'-7 1/2" | 8 | 8" | 8 | 12'-2" | 2 | 1'-11/2" | 4 | 8" | 2 | 1'-7 1/2" | 10 | 8" | 14 |
| 24" | 9'-2" | 2 | 2'-2" | 4 | 1'-8 1/2" | 10 | 8" | 9 | 14'-8" | 2 | 2'-2" | 4 | 8" | 2 | 1'-8 1/2" | 12 | 8" | 18 |
| 30" | 10'-8" | 2 | 2'-4 1/2" | 4 | 1'-11 1/2" | 10 | 8" | 12 | 17'-8" | 2 | 2'-4 1/2" | 4 | 8" | 2 | 1'-11 1/2" | 14 | 8" | 22 |
| 36" | 12'-8" | 2 | 2'-10" | 6 | 2'-3" | 12 | 8" | 14 | 20'-8" | 2 | 2'-10" | 6 | 8" | 3 | 2'-3" | 14 | 8" | 28 |
| 42" | 15'-2" | 2 | 3'-9 1/2" | 8 | 2'-9 1/2" | 16 | 8" | 15 | 23'-8" | 2 | 3'-9 1/2" | 8 | 8" | 4 | 2'-9 1/2" | 18 | 8" | 30 |
| 48" | 16'-8" | 2 | 4'-3" | 10 | 3'-1" | 18 | 8" | 16 | 25'-8" | 2 | 4'-3" | 10 | 8" | 5 | 3'-1" | 20 | 8" | 32 |
| 54" | 18'-2" | 2 | 4'-8 1/2" | 12 | 3'-5 1/2" | 20 | 8" | 17 | 27'-8" | 2 | 4'-9" | 12 | 8" | 6 | 3'-5 1/2" | 22 | 8" | 34 |
| 60" | 20'-2" | 2 | 5'-5" | 14 | 4'-0" | 24 | 8" | 18 | 30'-8" | 2 | 5'-5" | 14 | 8" | 7 | 4'-0" | 26 | 8" | 36 |
| 72" | 25'-2" | 2 | 7'-4" | 18 | 5'-1" | 30 | 8" | 20 | 36'-8" | 2 | 7'-4" | 18 | 8" | 9 | 5'-1" | 33 | 8" | 40 |

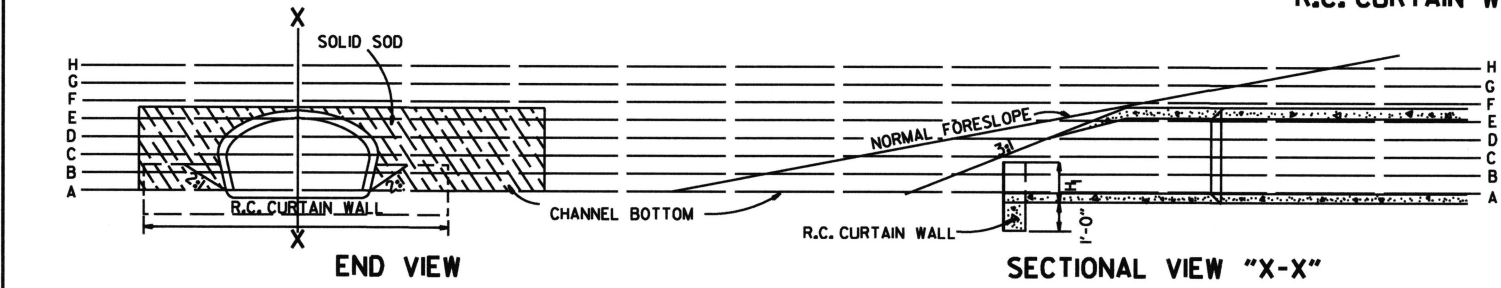
ALL REINFORCING STEEL #4 BARS @ 6" O.C.

SOLID SODDING

| PIPE DIA. | SINGLE R.C.P.C. | | | | | | DOUBLE R.C.P.C. | | | | | |
|-----------|-----------------|----|-----|----|-----|-----|-----------------|----|-----|----|-----|-----|
| | 3:1 | | 4:1 | | 6:1 | | 3:1 | | 4:1 | | 6:1 | |
| | SO. YDS. | | | | | | SO. YDS. | | | | | |
| 18" | 5 | 7 | 12 | 6 | 8 | 13 | 5 | 7 | 12 | 6 | 8 | 13 |
| 24" | 8 | 12 | 20 | 9 | 13 | 20 | 8 | 12 | 20 | 9 | 13 | 20 |
| 30" | 12 | 18 | 29 | 14 | 19 | 30 | 12 | 18 | 29 | 14 | 19 | 30 |
| 36" | 17 | 26 | 41 | 18 | 26 | 43 | 17 | 26 | 41 | 18 | 26 | 43 |
| 42" | 23 | 36 | 54 | 25 | 37 | 57 | 23 | 36 | 54 | 25 | 37 | 57 |
| 48" | 29 | 46 | 68 | 31 | 48 | 70 | 29 | 46 | 68 | 31 | 48 | 70 |
| 54" | 36 | 54 | 85 | 37 | 59 | 87 | 36 | 54 | 85 | 37 | 59 | 87 |
| 60" | 45 | 67 | 104 | 48 | 75 | 107 | 45 | 67 | 104 | 48 | 75 | 107 |
| 72" | 64 | 92 | 156 | 67 | 95 | 159 | 64 | 92 | 156 | 67 | 95 | 159 |

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

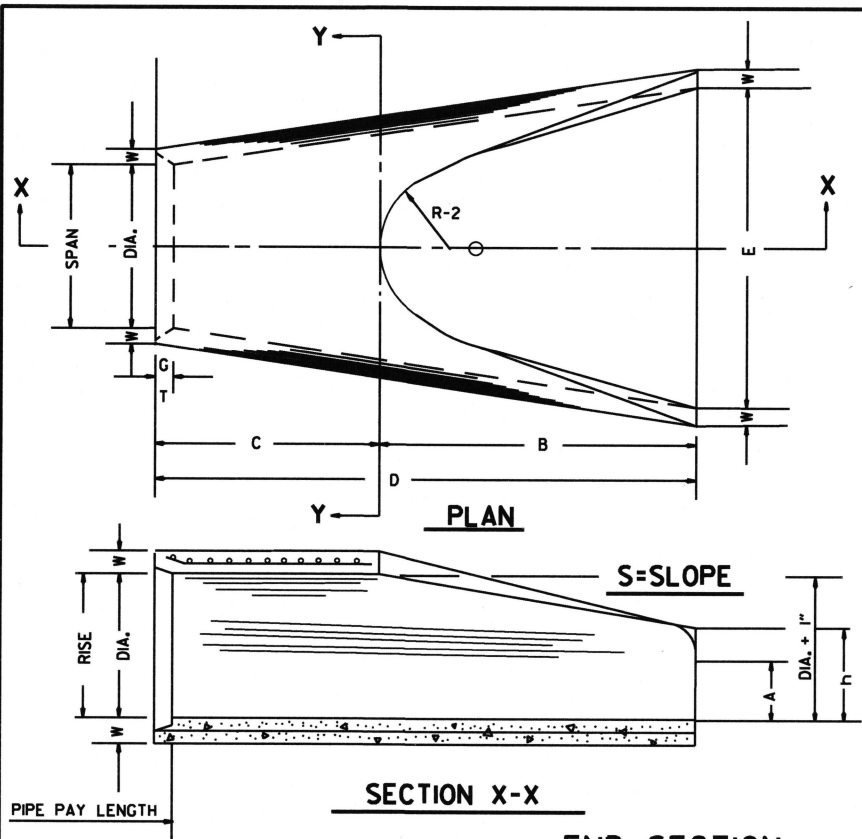
- GENERAL NOTES
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE; FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
 2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
 4. WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

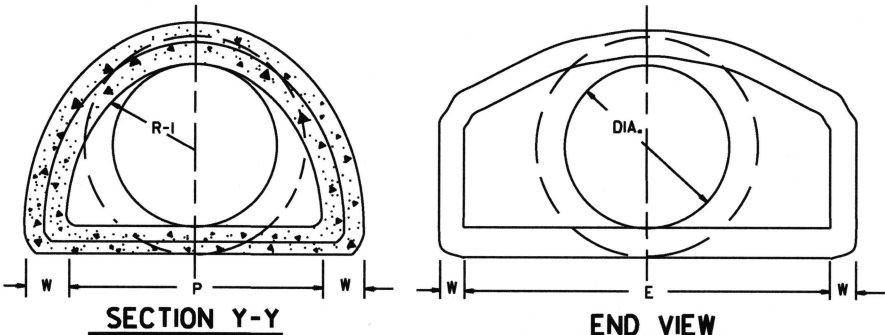
| | | | | | |
|----------|--|--|--|--------|-----------------------------------|
| 10-18-98 | ADDED NOTE TO SOLID SODDING | | | | ARKANSAS STATE HIGHWAY COMMISSION |
| 10-12-95 | CORRECTED SPELLING | | | | |
| 11-3-94 | ADDED GENERAL NOTE NO. 4 | | | | |
| 8-15-91 | REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT. | | | | |
| 3-2-81 | ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES | | | | |
| 5-15-80 | ADDED PRECAST WALL & GENERAL NOTES | | | | |
| 10-2-72 | REVISED AND REDRAWN | | | | |
| DATE | REVISION | | | FILMED | STANDARD DRAWING FES-1 |



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

| DIA. | WALL | A | B | C | D | E | S | DIA. + 1" | P | R-1 | R-2 | G-T | WT. | h |
|------|--------|--------|-----------|------------|-----------|-------|-----|-----------|---------|---------|-----|--------|-------|------------|
| 18" | 2 1/2" | 9" | 2'-3" | 3'-10" | 6'-1" | 3'-0" | 3#1 | 19" | 29" | 15 1/2" | 12" | 2" | 1000 | 1'-0 1/2" |
| 24" | 3" | 9 1/2" | 3'-7 1/2" | 2'-6" | 6'-1 1/2" | 4'-0" | 3#1 | 25" | 33 3/8" | 16 1/4" | 14" | 2 1/2" | 1600 | 1'-1 1/2" |
| 30" | 3 1/2" | 1'-0" | 4'-6" | 1'-7 3/4" | 6'-1 3/4" | 5'-0" | 3#1 | 31" | 37" | 18 1/2" | 15" | 3 1/4" | 1940 | 1'-4 5/8" |
| 36" | 4" | 1'-3" | 5'-3" | 2'-10 3/4" | 8'-1 3/4" | 6'-0" | 3#1 | 37" | 47 1/4" | 24 1/2" | 20" | 3 1/2" | 4100 | 1'-8" |
| 42" | 4 1/2" | 1'-9" | 5'-3" | 2'-11" | 8'-2" | 6'-6" | 3#1 | 43" | 53 1/2" | 27 1/2" | 22" | 3 1/2" | 5380 | 2'-2 1/2" |
| 48" | 5" | 2'-0" | 6'-0" | 2'-2" | 8'-2" | 7'-0" | 3#1 | 49" | 56 1/2" | 28 1/2" | 22" | 3 1/2" | 6550 | 2'-6" |
| 54" | 5 1/2" | 2'-4" | 6'-6" | 1'-10" | 8'-4" | 7'-6" | 3#1 | 55" | 65 1/2" | 33 1/8" | 24" | 4" | 8750 | 2'-10 1/2" |
| 60" | 6" | 2'-10" | 6'-6" | 1'-10" | 8'-4" | 8'-0" | 3#1 | 61" | 72 1/2" | 36 1/8" | 24" | 4" | 9270 | 3'-5" |
| 72" | 7" | 3'-10" | 6'-6" | 1'-10" | 8'-4" | 9'-0" | 3#1 | 73" | 77 3/4" | 38 3/8" | 24" | 5" | 13250 | 4'-6" |

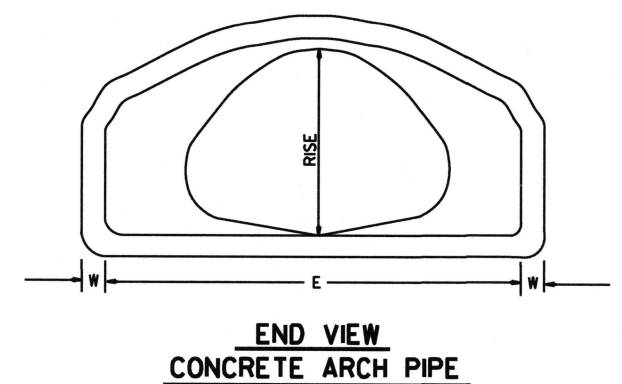


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

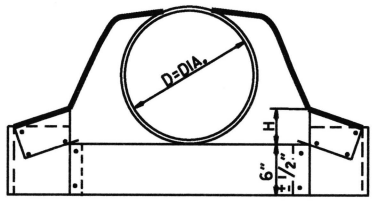
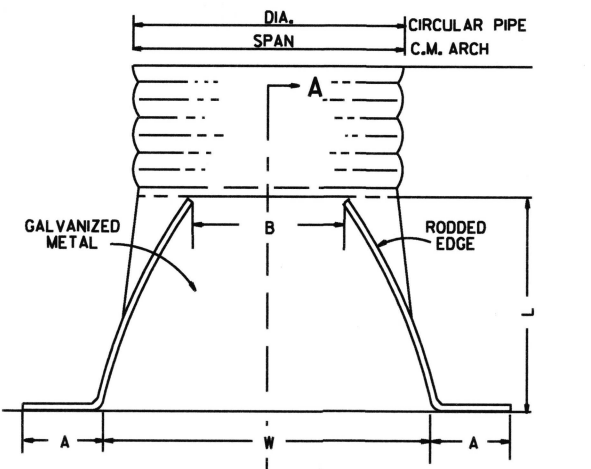
ARCH PIPE

| EQUIV. DIA. | SPAN | | RISE | | W | A | B | C | D | E | P | R2 | G-T | S |
|-------------|--------------|-------------|--------------|-------------|--------|---------|-------|------------|-----------|--------|---------|-----|--------|---------|
| | AASHTO M 206 | AHD NOMINAL | AASHTO M 206 | AHD NOMINAL | | | | | | | | | | |
| INCHES | | | | | | | | | | | | | | |
| 15 | 18 | 18 | 11 | 11 | 2" | 4" | 2'-0" | 4'-0" | 6'-0" | 3'-0" | 29" | 12" | 1 1/2" | 2 1/2#1 |
| 18 | 22 | 22 | 13 1/2 | 14 | 2 1/2" | 5" | 2'-0" | 4'-1" | 6'-1" | 3'-6" | 32 1/8" | 13" | 2 1/2" | 2 1/2#1 |
| 21 | 26 | 26 | 15 1/2 | 16 | 2 3/4" | 7" | 2'-3" | 3'-10" | 6'-1" | 4'-0" | 34 1/8" | 14" | 2 1/2" | 2 1/2#1 |
| 24 | 28 1/2 | 29 | 18 | 18 | 3" | 9" | 2'-3" | 3'-10" | 6'-1" | 5'-0" | 36 1/8" | 15" | 2 1/2" | 2 1/2#1 |
| 30 | 36 1/4 | 36 | 22 1/2 | 23 | 3 1/2" | 10" | 3'-1" | 3'-0 1/2" | 6'-1 1/2" | 6'-0" | 47 1/8" | 20" | 3" | 2 1/2#1 |
| 36 | 43 1/4 | 44 | 26 1/2 | 27 | 4" | 10 1/2" | 4'-0" | 2'-1 1/2" | 6'-1 1/2" | 6'-6" | 54 1/8" | 22" | 3 1/2" | 2 1/2#1 |
| 42 | 51 1/4 | 51 | 31 1/2 | 31 | 4 1/2" | 11 1/2" | 4'-7" | 1'-10 1/4" | 6'-5 1/4" | 7'-2" | 59 1/2" | 23" | 3 3/4" | 2 1/2#1 |
| 48 | 58 1/2 | 59 | 36 | 36 | 5" | 1'-3" | 5'-3" | 2'-10 3/4" | 8'-1 3/4" | 7'-10" | 70 1/8" | 24" | 4 1/4" | 2 1/2#1 |
| 54 | 65 | 65 | 40 | 40 | 5 1/2" | 1'-7" | 5'-3" | 2'-11" | 8'-2" | 8'-6" | 72 1/8" | 24" | 4 3/4" | 2 1/2#1 |
| 60 | 73 | 73 | 45 | 45 | 6" | 1'-10" | 5'-6" | 2'-8" | 8'-2" | 9'-0" | 77 1/8" | 24" | 5" | 2 1/2#1 |

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



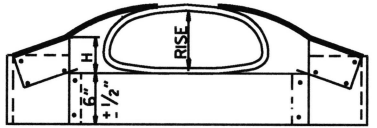
END VIEW CONCRETE ARCH PIPE



CIRCULAR PIPE

CIRCULAR PIPE

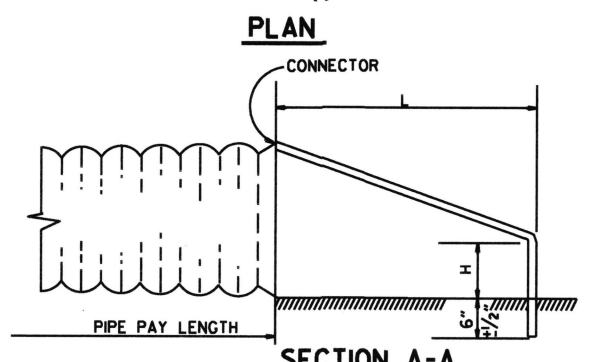
| D. DIA. | GAUGE | A | B. MAX. | H | L | W | S |
|---------|-------|----|---------|----|----|-----|---------|
| 12 | 16 | 6 | 6 | 6 | 21 | 24 | 2 1/2#1 |
| 15 | 16 | 7 | 8 | 6 | 26 | 30 | 2 1/2#1 |
| 18 | 16 | 8 | 10 | 6 | 31 | 36 | 2 1/2#1 |
| 21 | 16 | 9 | 12 | 6 | 36 | 42 | 2 1/2#1 |
| 24 | 16 | 10 | 13 | 6 | 41 | 48 | 2 1/2#1 |
| 30 | 14 | 12 | 16 | 8 | 51 | 60 | 2 1/2#1 |
| 36 | 14 | 14 | 19 | 9 | 60 | 72 | 2 1/2#1 |
| 42 | 12 | 16 | 22 | 11 | 69 | 84 | 2 1/2#1 |
| 48 | 12 | 18 | 27 | 12 | 78 | 90 | 2 1/2#1 |
| 54 | 12 | 18 | 30 | 12 | 84 | 102 | 2#1 |
| 60 | 12 | 18 | 33 | 12 | 87 | 114 | 1 3/4#1 |
| 66 | 12 | 18 | 36 | 12 | 87 | 120 | 1 1/2#1 |
| 72 | 12 | 18 | 39 | 12 | 87 | 126 | 1 1/3#1 |



C.M. ARCH PIPE

C.M. ARCH PIPE

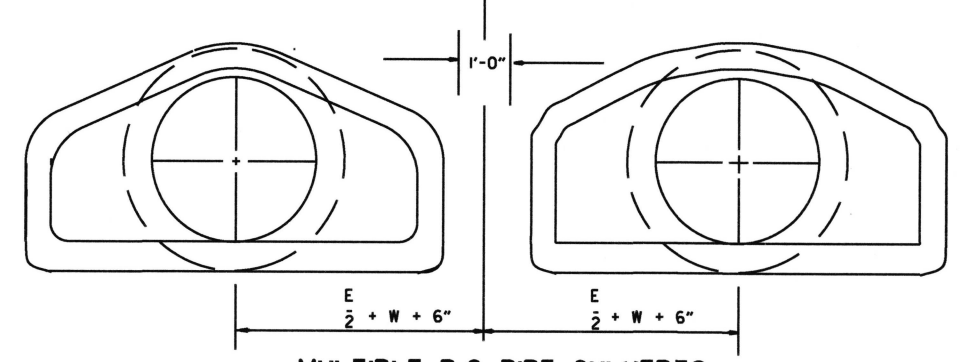
| EQUIV. DIA. | SPAN | RISE | A | B. MAX. | H | L | W | S | GAUGE |
|-------------|------|------|----|---------|----|----|-----|---------|-------|
| 15" | 17 | 13 | 7 | 9 | 6 | 19 | 30 | 2 1/2#1 | 16 |
| 18" | 21 | 15 | 7 | 10 | 6 | 23 | 36 | 2 1/2#1 | 16 |
| 21" | 24 | 18 | 8 | 12 | 6 | 28 | 42 | 2 1/2#1 | 16 |
| 24" | 28 | 20 | 9 | 14 | 6 | 32 | 48 | 2 1/2#1 | 16 |
| 30" | 35 | 24 | 10 | 16 | 6 | 39 | 60 | 2 1/2#1 | 14 |
| 36" | 42 | 29 | 12 | 18 | 8 | 46 | 75 | 2 1/2#1 | 14 |
| 42" | 49 | 33 | 13 | 21 | 9 | 53 | 85 | 2 1/2#1 | 12 |
| 48" | 57 | 38 | 18 | 26 | 12 | 63 | 90 | 2 1/2#1 | 12 |
| 54" | 64 | 43 | 18 | 30 | 12 | 70 | 102 | 2 1/2#1 | 12 |
| 60" | 71 | 47 | 18 | 33 | 12 | 77 | 114 | 2 1/4#1 | 12 |



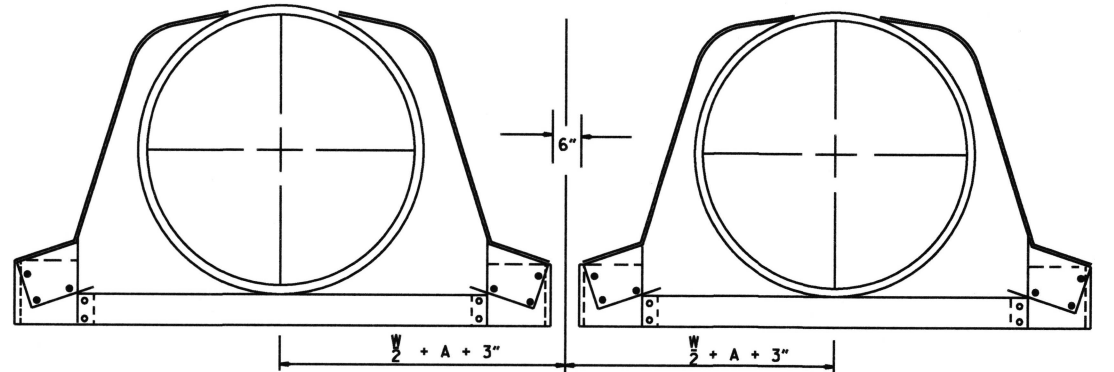
SECTION A-A

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

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



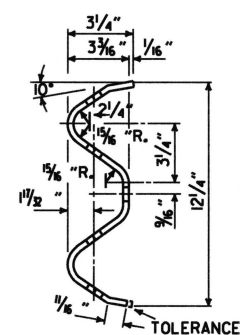
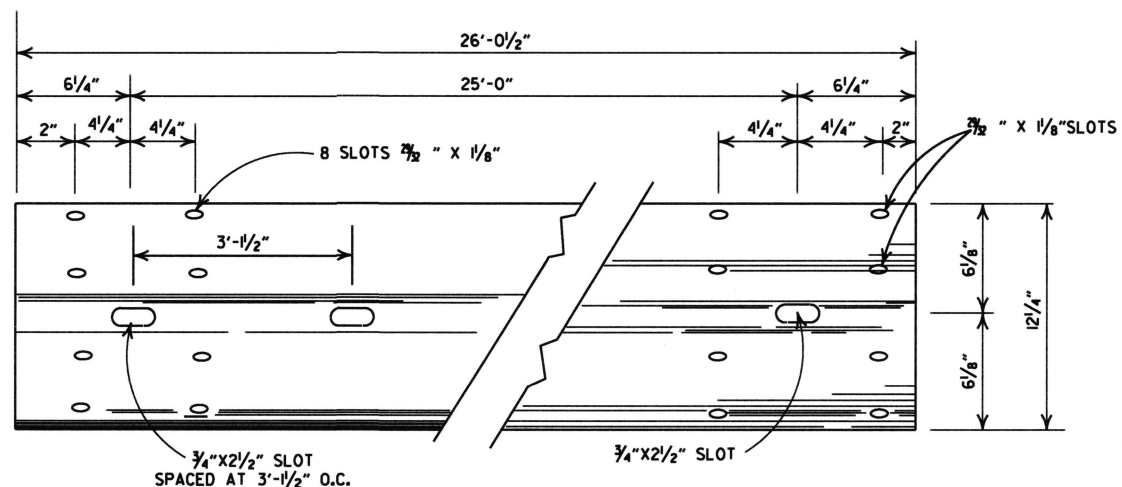
MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

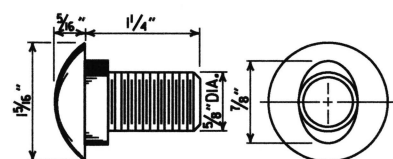
| DATE | REVISION | FILED |
|----------|---|-------------|
| 10-18-96 | REVISED ASTM REF. TO AASHTO | |
| 5-15-80 | REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S. | 664-5-15-80 |
| 7-14-78 | C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES | 752-7-14-78 |
| 8-22-75 | ADDED MULTIPLE PIPE CULVERTS | 517-8-22-75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

ARKANSAS STATE HIGHWAY COMMISSION
FLARED END SECTION
STANDARD DRAWING FES-2

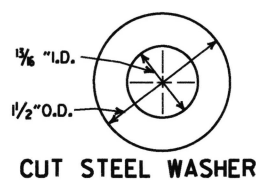


DETAILS OF W-BEAM GUARDRAIL

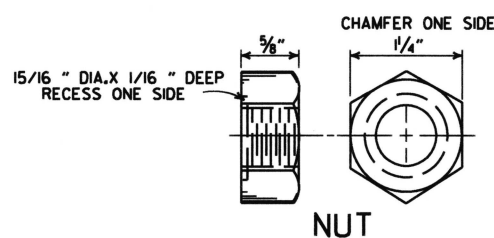
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



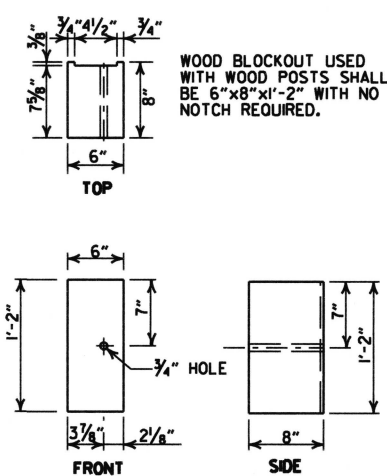
**SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH**



CUT STEEL WASHER

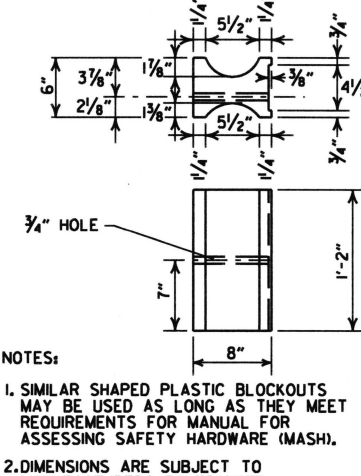


NUT



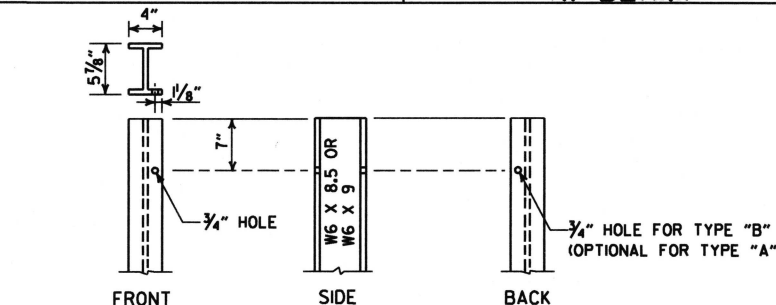
WOOD BLOCKOUT (W-BEAM)

WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

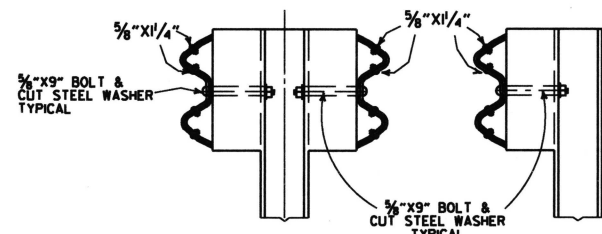


PLASTIC BLOCKOUT (W-BEAM)

NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

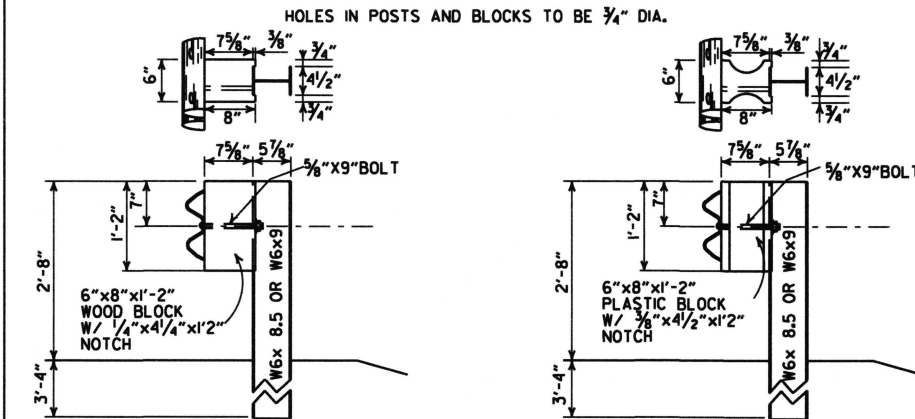
W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

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

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

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

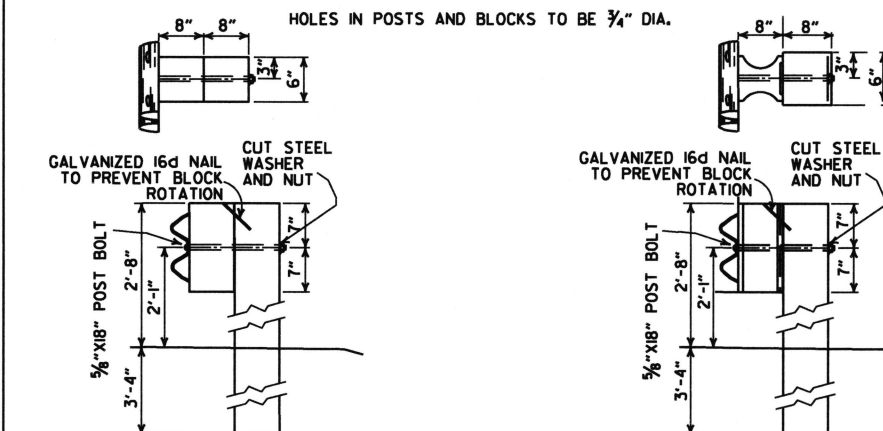
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.



WOOD BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

PLASTIC BLOCKOUT CONNECTIONS



POSTS AND BLOCKS TO BE ROUGH SAWN 6"x8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

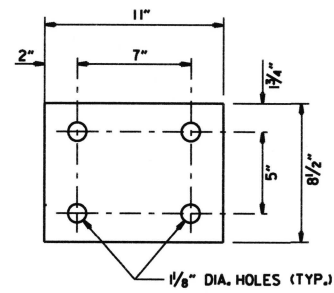
PLASTIC BLOCKOUT CONNECTIONS

| DATE | REVISION | FILMED |
|----------|--|--------------|
| 11-07-19 | RENUMBERED AND RENAMED | |
| 11-16-17 | REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3" | |
| 07-14-10 | RAISED HEIGHT OF GUARDRAIL 1" | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 04-10-03 | REVISED GENERAL NOTES | |
| 08-22-02 | REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST | |
| 11-16-01 | REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS | |
| 03-30-00 | REMOVED GUARDRAIL AT BRIDGE ENDS | |
| 01-12-00 | ADDED PLASTIC BLOCKOUT | |
| 08-12-98 | REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONC. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES | |
| 04-03-97 | REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS | |
| 10-18-96 | REVISED WOOD POST NOTE | |
| 06-02-94 | ADDED ALT. STEEL POST SIZE | |
| 08-05-93 | REVISED STEEL POST SIZE | 8-5-93 |
| 10-01-92 | REDRAWN & REVISED | 10-1-92 |
| 08-15-91 | REVISED WASHER NOTE | 8-15-91 |
| 08-02-90 | REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK | 8-2-90 |
| 07-15-88 | REVISED SECTION 3 & GENERAL NOTES | |
| 03-04-88 | REV. ANCHOR POST .ELEV. NOTES & POST IN ROCK | 780-3-4-88 |
| 10-30-87 | REVISED WOOD LINE POST DETAIL | 546-10-30-87 |
| 10-09-87 | REDRAWN & REVISED | 802-10-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

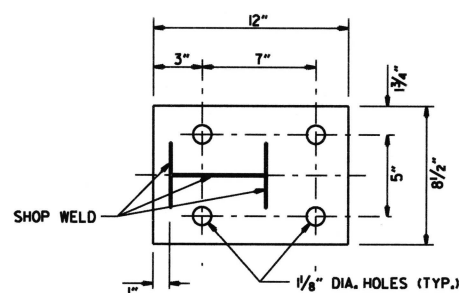
GUARDRAIL DETAILS

STANDARD DRAWING GR-6

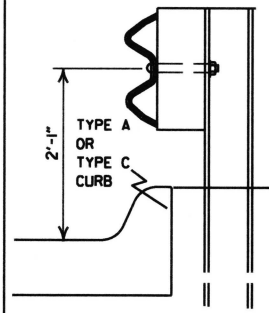


WASHER PLATE

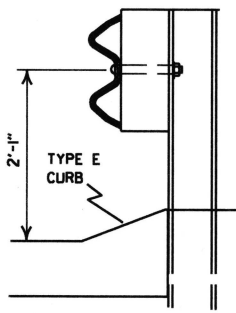
Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.



BASE PLATE



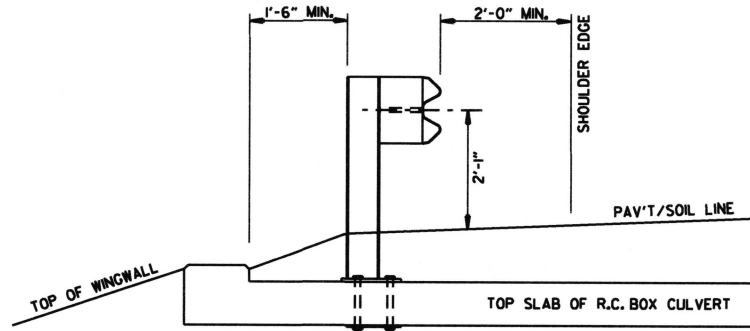
FOR DESIGN SPEEDS OF 50 MPH OR LESS
ALIGN FACE OF GUARDRAIL WITH FACE OF CURB.



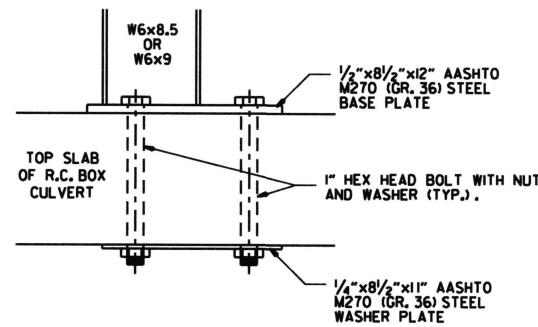
FOR DESIGN SPEEDS OF 55 MPH OR MORE
PLACE GUARDRAIL POSTS AGAINST BACK OF CURB.

DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

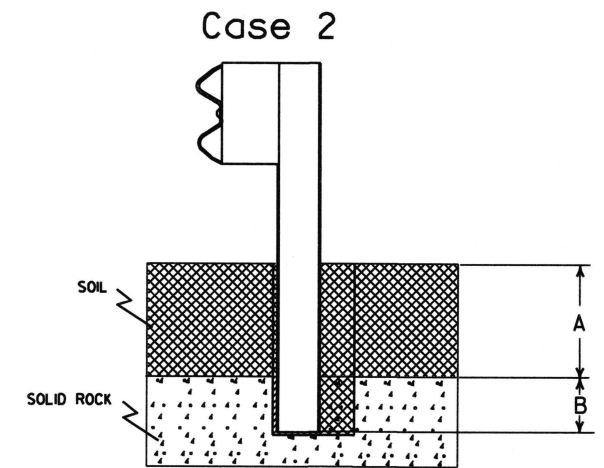
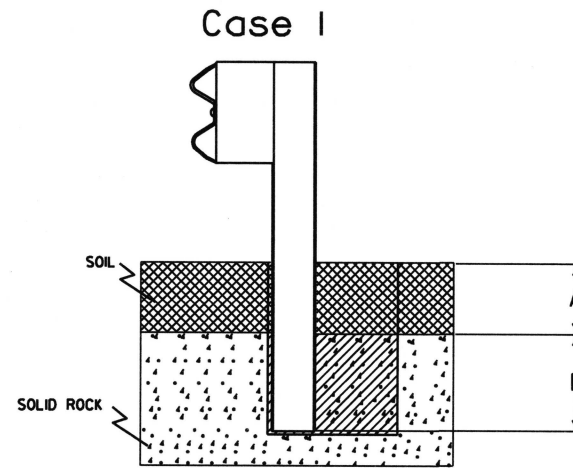
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A

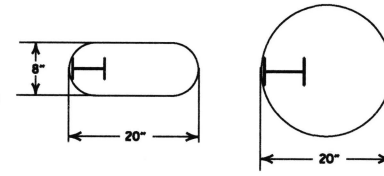


DETAIL OF CONNECTION



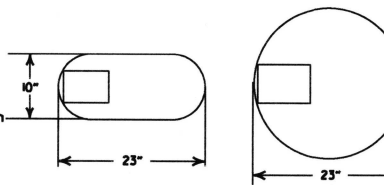
Plan View Steel Posts

Either hole configuration acceptable



Plan View Wood Posts

Either hole configuration acceptable



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

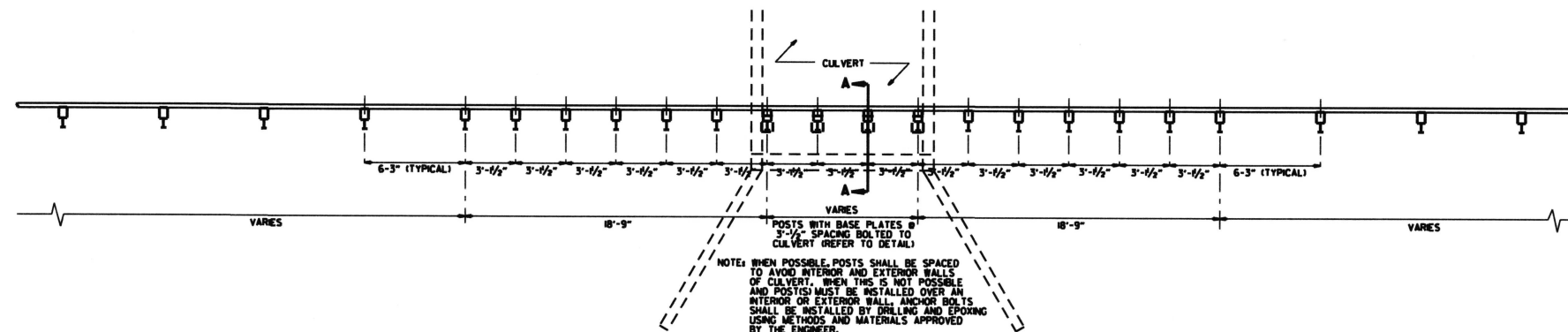
Zone A: Backfill according to Section 617.03(a).

Zone B: Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

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

Zone A & B: Backfill according to Section 617.03(a).

DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DRG. GR-6.

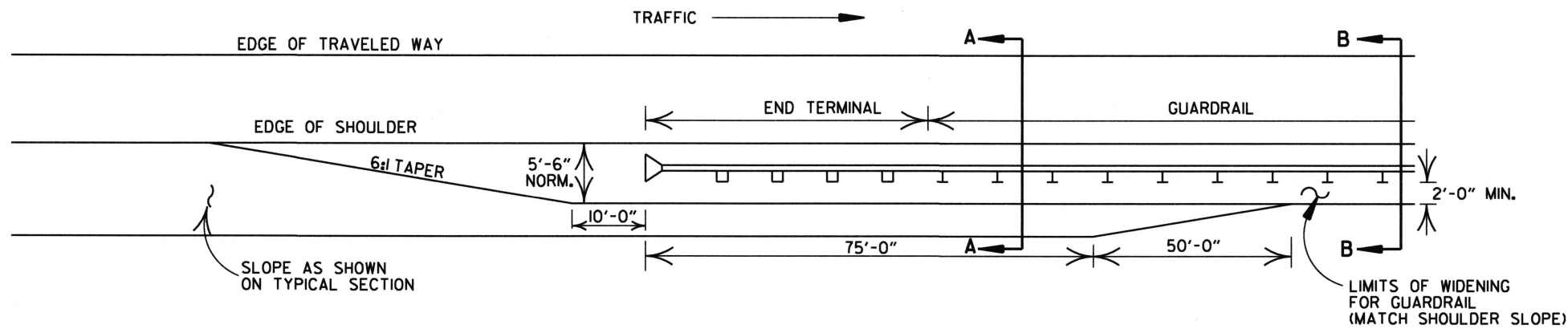
NOTE: WHEN POSSIBLE POSTS SHALL BE SPACED TO AVOID INTERIOR AND EXTERIOR WALLS OF CULVERT. WHEN THIS IS NOT POSSIBLE AND POSTS MUST BE INSTALLED OVER AN INTERIOR OR EXTERIOR WALL, ANCHOR BOLTS SHALL BE INSTALLED BY DRILLING AND EPOXYING USING METHODS AND MATERIALS APPROVED BY THE ENGINEER.

| DATE | REVISION | FILMED |
|----------|--|--------------|
| 11-07-19 | RENUMBERED, RENAMED, REVISED REFERENCE | |
| 11-16-17 | REVISED GUARDRAIL HEIGHT | |
| 07-14-10 | RAISED HEIGHT OF GUARDRAIL 1" | |
| 04-12-07 | REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB | |
| 11-10-05 | ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION | |
| 11-18-04 | REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS | |
| 03-30-00 | REMOVED CONCRETE INSERT ANCHOR | |
| 08-12-98 | CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK | |
| 04-03-96 | PLACED ARROWS AT CUT STEEL WASHERS | 4-3-96 |
| 10-18-96 | REV. ASTM REF. TO AASHTO | |
| 11-22-95 | ADDED OPTIONAL HOLES | |
| 06-02-94 | REVISED ALTERNATE POST SIZE | |
| 08-05-93 | REVISED STEEL POST SIZE | |
| 10-01-92 | REDRAWN & REVISED | 10-1-92 |
| 08-02-90 | DEL. WASHER ON ANCHOR ASSEMBLY | 8-2-90 |
| 07-15-88 | CONFORMED TO 1988 SPECS | |
| 03-04-88 | REVISED ANCHOR NOTE | |
| 10-30-87 | REVISED ANCHOR ASSEMBLY | 712-10-30-87 |
| 10-30-87 | REVISED PLACEMENT BEHIND CURB | 547-10-30-87 |
| 10-09-87 | REDRAWN & REVISED | 803-10-9-87 |

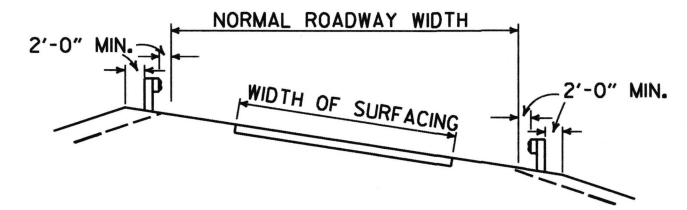
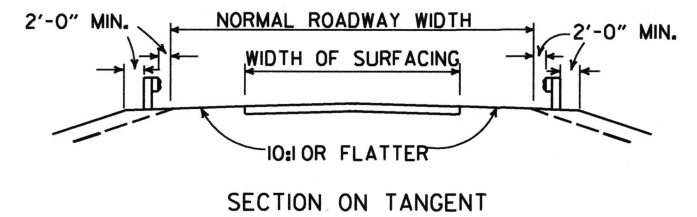
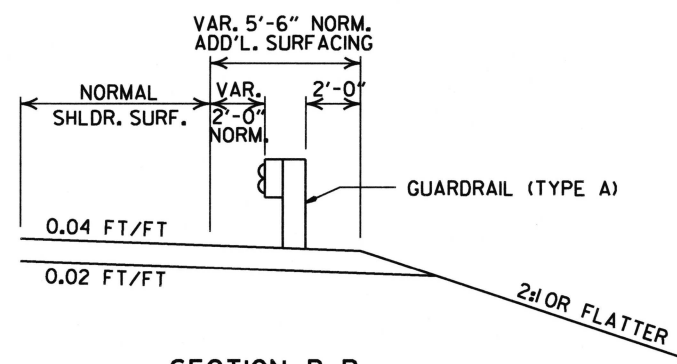
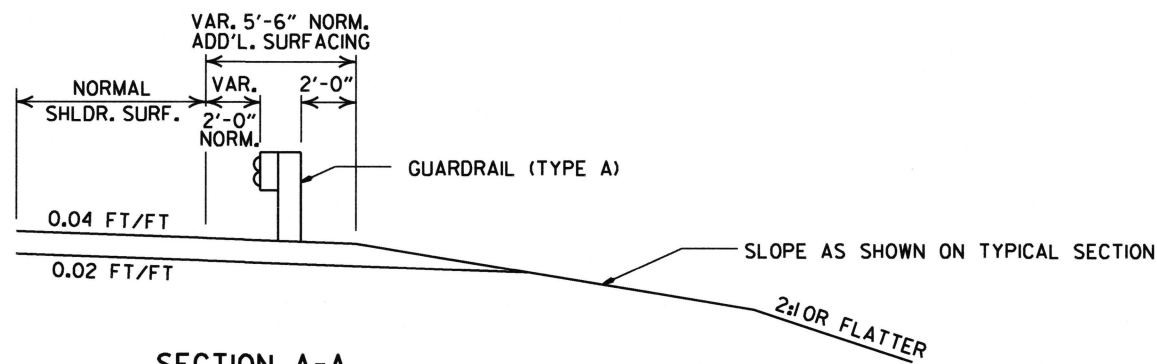
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-7

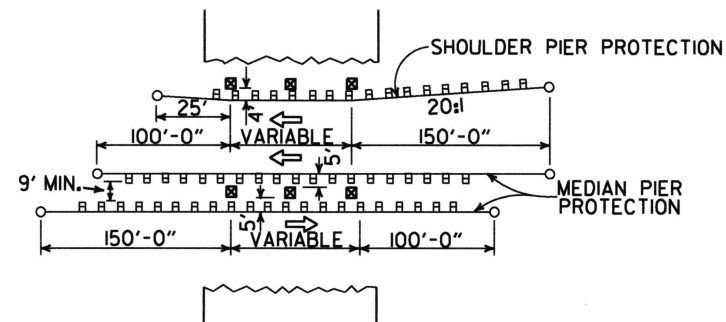


NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



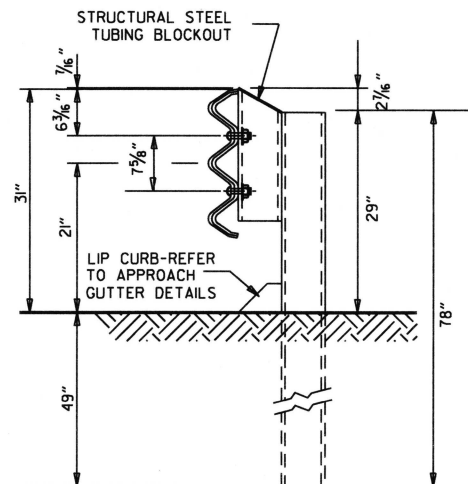
DETAILS OF WIDENING FOR GUARDRAIL

DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

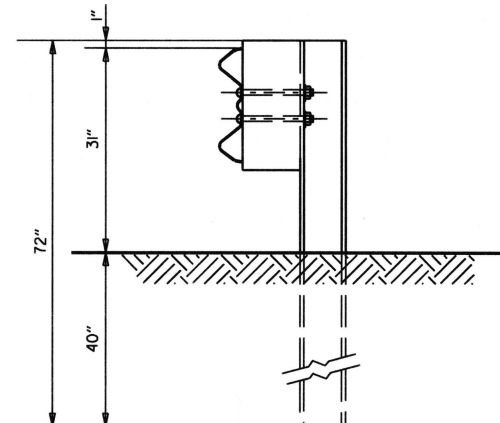


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

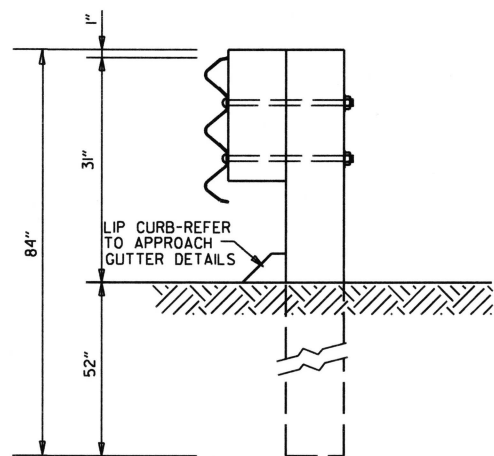
| | | | |
|----------|------------------------|------|-----------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | GUARDRAIL DETAILS |
| | | | STANDARD DRAWING GR-9 |
| 11-07-19 | RENUMBERED AND RENAMED | | |
| 4-17-08 | MINOR REVISION | | |
| 11-10-05 | DRAWN | | |
| DATE | REVISION | DATE | FILM |



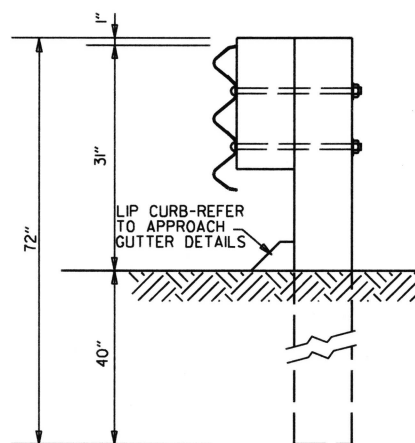
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST
POSTS 1-7



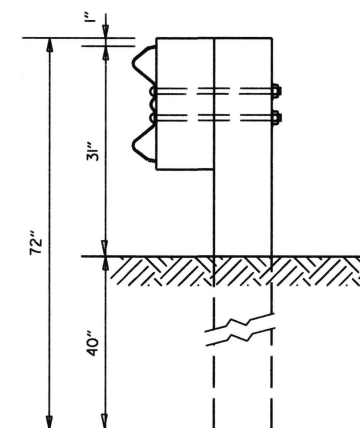
W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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



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

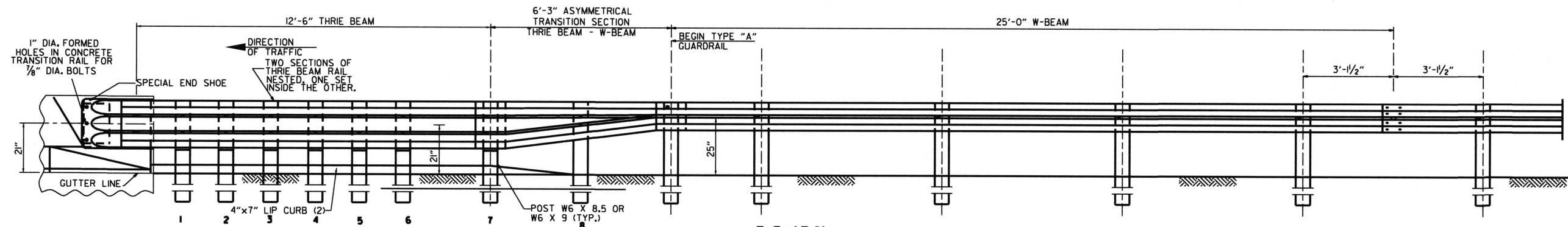


W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST
POST 8

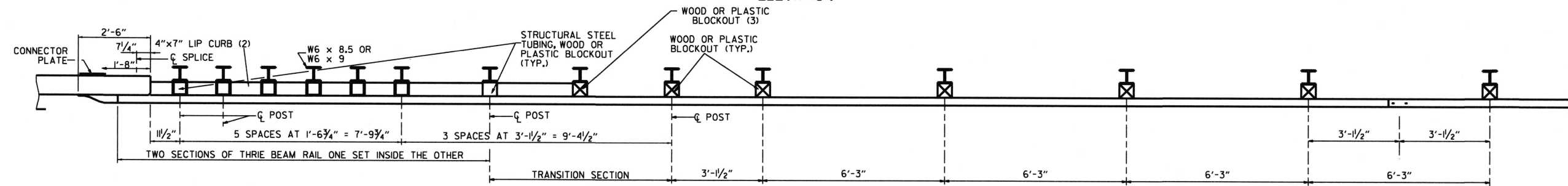
GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

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

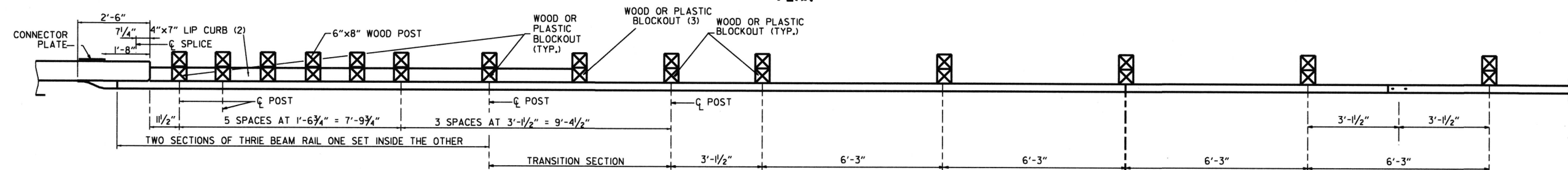
| | | | |
|----------|---|--------|-----------------------------------|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| 11-07-19 | RENAMED | | GUARDRAIL DETAILS |
| 11-16-17 | REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-II | | |
| 07-14-10 | REVISED POST 8 DIMENSIONS | | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | | |
| 08-22-02 | REVISED LIP CURB NOTE | | |
| 03-30-00 | DRAWN & ISSUED | | STANDARD DRAWING GR-II |
| DATE | REVISION | FILMED | |



ELEVATION



PLAN



PLAN

- (1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
- (2) REFER TO APPROACH GUTTER DETAILS.
- (3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

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

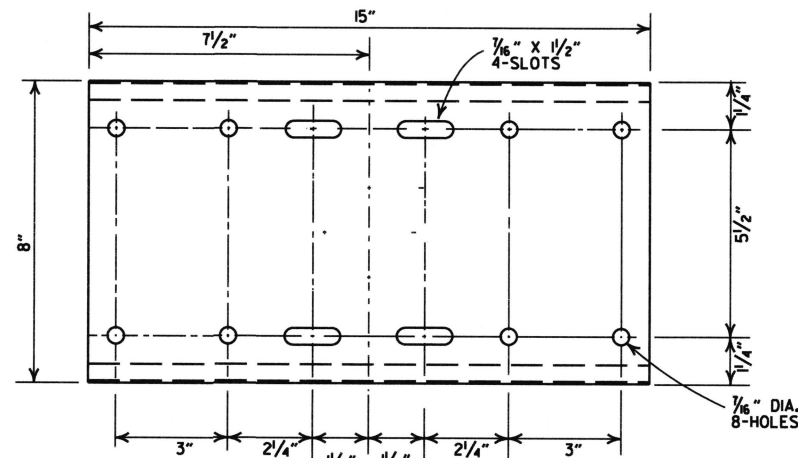
USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

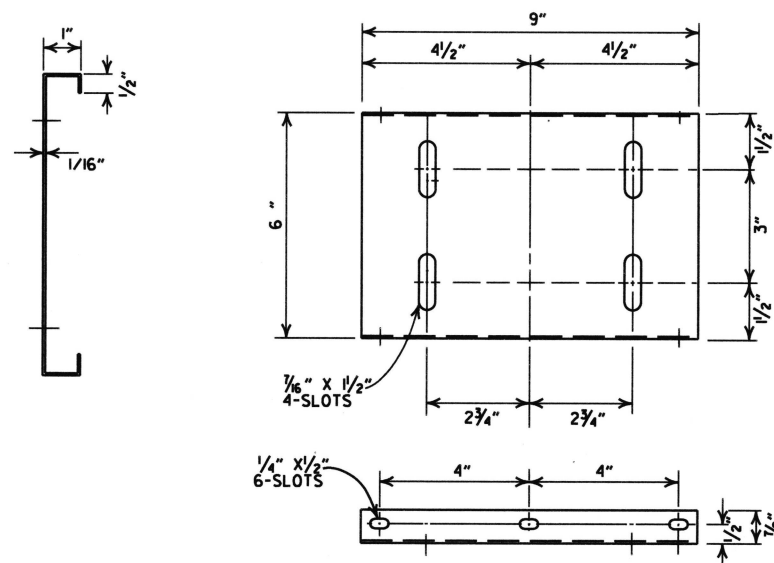
POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

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

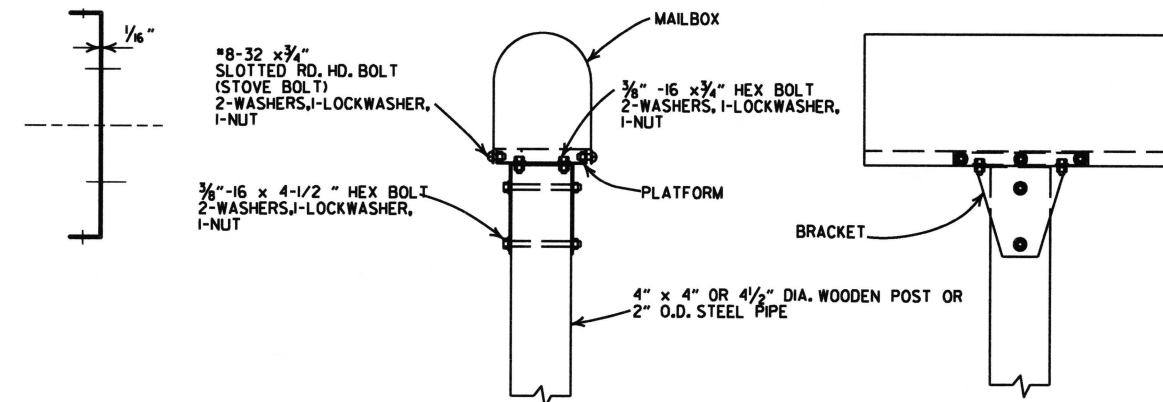
| | | |
|-----------------------------------|--|--------|
| ARKANSAS STATE HIGHWAY COMMISSION | | |
| GUARDRAIL DETAILS | | |
| STANDARD DRAWING GR-12 | | |
| II-07-19 | RENAMED & REVISED REFERENCES | |
| II-16-17 | RE-DRAWN FROM STD. DWG. GR-10 & ISSUED | |
| DATE | REVISION | FILMED |



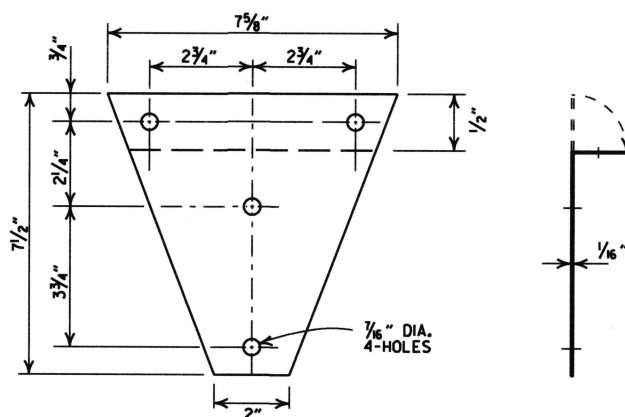
SHELF



PLATFORM



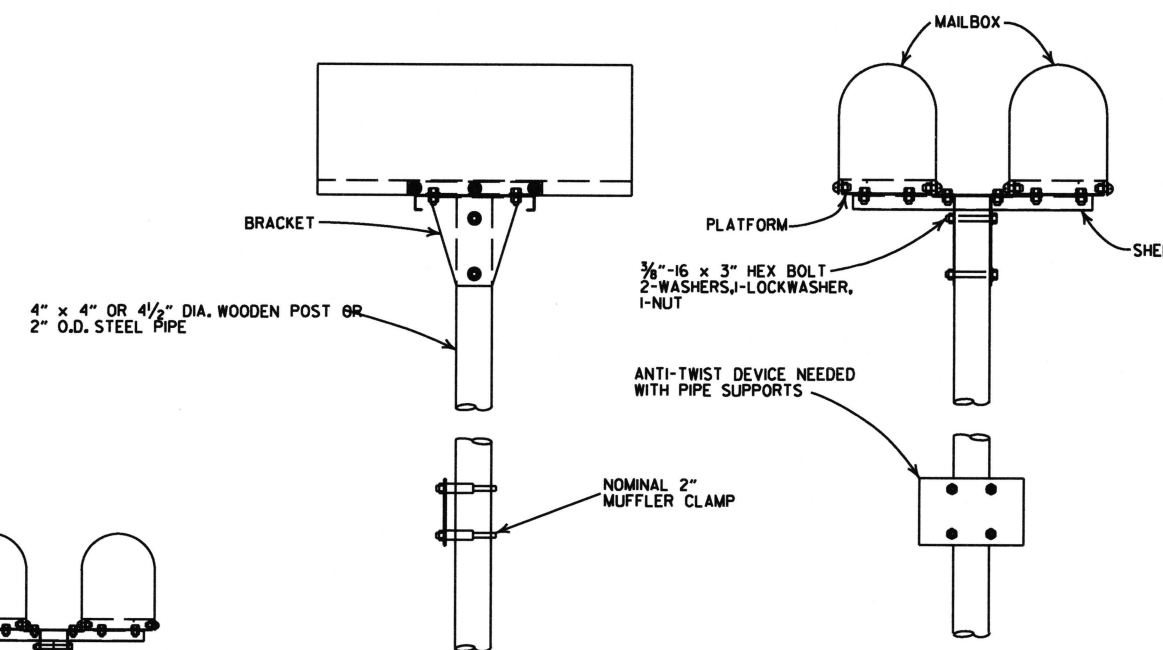
SINGLE INSTALLATION



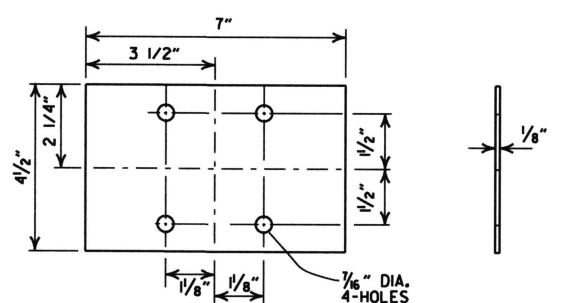
BRACKET

GENERAL NOTES

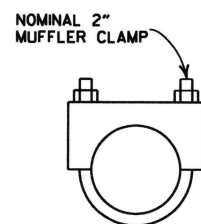
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED 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.



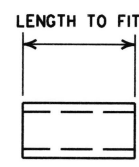
DOUBLE INSTALLATION



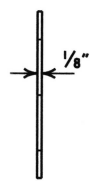
ANTI-TWIST PLATE



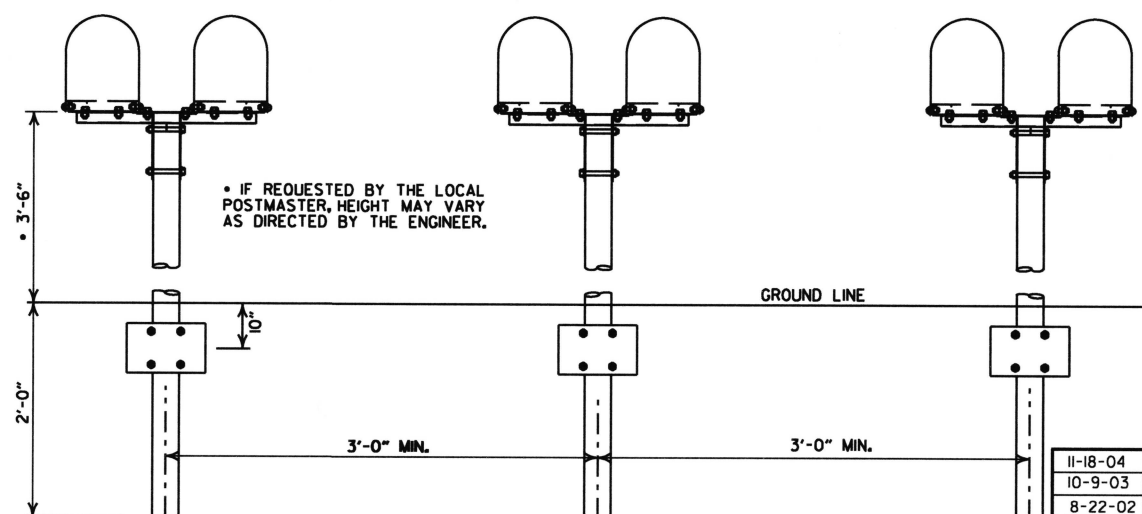
CLAMP



SPACER



NOMINAL 1/2" STD. WT. PIPE



SPACING FOR MULTIPLE POST INSTALLATION

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

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

CORRUGATED STEEL PIPE (ROUND)

| PIPE DIAMETER (INCHES) | 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 3/8 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 | 36 | 47 | | | |
| 36 | 2 | 34 | 30 | 39 | 41 | |
| 42 | 2 | | 43 | 67 | 70 | 73 |
| 48 | 2 | | 37 | 58 | 61 | 64 |
| 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 |

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.

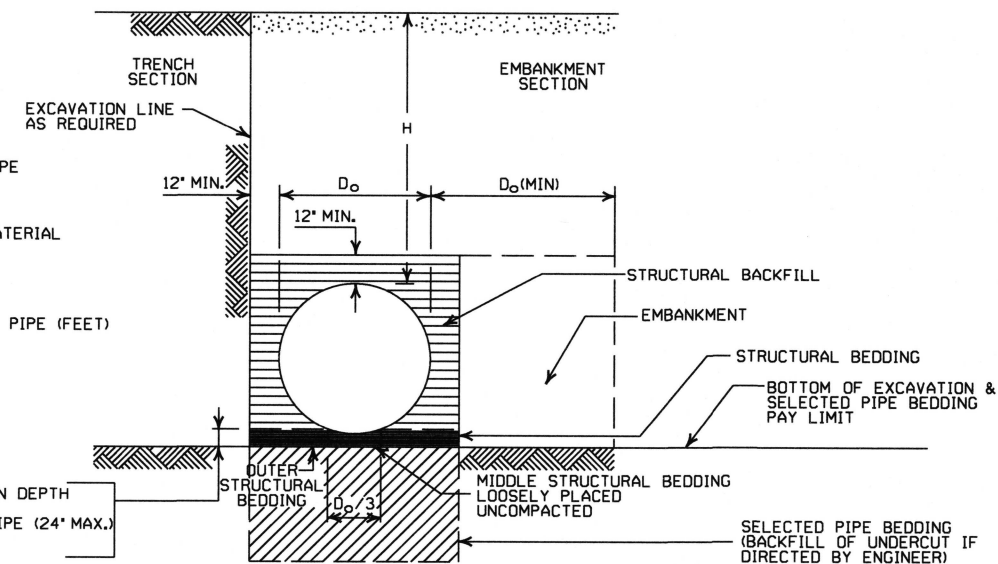
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

| 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.

- LEGEND -

- D_o = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Hatched Pattern] = STRUCTURAL BACKFILL MATERIAL
- [Diagonal Lines] = UNDISTURBED SOIL
- [Dotted Pattern] = EQUIV. DIA. = EQUIVALENT DIAMETER
- H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" 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."

CORRUGATED ALUMINUM PIPE (ROUND)

| PIPE DIAMETER (INCHES) | 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 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | | | | | |
| 12 | 1 | 45 | 45 | 52 | 41 | |
| 18 | 2 | 30 | 30 | 39 | | |
| 24 | 2 | 22 | 22 | 31 | 32 | 34 |
| 30 | 2 | | 18 | 26 | 27 | 28 |
| 36 | 2.5 | | 15 | 23 | 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 |

EQUIVALENT METAL THICKNESSES AND GAUGES

| METAL THICKNESS IN INCHES | | | GAUGE NUMBER |
|---------------------------|----------|----------|--------------|
| STEEL | | | |
| ZINC COATED | UNCOATED | ALUMINUM | |
| 0.064 | 0.0598 | 0.060 | 16 |
| 0.079 | 0.0747 | 0.075 | 14 |
| 0.109 | 0.1046 | 0.105 | 12 |
| 0.138 | 0.1345 | 0.135 | 10 |
| 0.168 | 0.1644 | 0.164 | 8 |

CORRUGATED METAL PIPE ARCHES

| EQUIV. DIA. (INCHES) | PIPE DIMENSION SPAN X RISE (INCHES) | MINIMUM CORNER RADIUS (INCHES) | STEEL | | | | ALUMINUM | | | |
|--|-------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------|--------------------------------|--------------------------------|--------|--------|--------|
| | | | MIN. THICKNESS REQUIRED INCHES | MIN. HEIGHT OF FILL, "H" (FT.) | | MIN. THICKNESS REQUIRED INCHES | MIN. HEIGHT OF FILL, "H" (FT.) | | | |
| | | | | INSTALLATION | | | INSTALLATION | | | |
| | | | | TYPE 1 | TYPE 1 | | TYPE 1 | TYPE 1 | | |
| 2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, 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 | 3/2 | 0.079 | 3 | 12 | 0.105 | 3 | 12 | | |
| 42 | 49x33 | 4 | 0.079 | 3 | 12 | 0.105 | 3 | 12 | | |
| 48 | 57x38 | 5 | 0.109 | 3 | 13 | 0.135 | 3 | 13 | | |
| 54 | 64x43 | 6 | 0.109 | 3 | 14 | 0.135 | 3 | 14 | | |
| 60 | 71x47 | 7 | 0.138 | 3 | 15 | 0.164 | 3 | 15 | | |
| 66 | 77x52 | 8 | 0.168 | 3 | 15 | | | | | |
| 72 | 83x57 | 9 | 0.168 | 3 | 15 | | | | | |
| 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | | | | | | | |
| | | | INSTALLATION | | | | INSTALLATION | | | |
| | | | TYPE 2 | TYPE 1 | TYPE 2 | TYPE 1 | TYPE 2 | TYPE 1 | TYPE 2 | TYPE 1 |
| 36 | 40x31 | 5 | 0.079 | 3 | 2 | 12 | 15 | | | |
| 42 | 46x36 | 6 | 0.079 | 3 | 2 | 13 | 15 | | | |
| 48 | 53x41 | 7 | 0.079 | 3 | 2 | 13 | 15 | | | |
| 54 | 60x46 | 8 | 0.079 | 3 | 2 | 13 | 15 | | | |
| 60 | 66x51 | 9 | 0.079 | 3 | 2 | 13 | 15 | | | |
| 66 | 73x55 | 12 | 0.079 | 3 | 2 | 15 | 15 | | | |
| 72 | 81x59 | 14 | 0.079 | 3 | 2 | 15 | 15 | | | |
| 78 | 87x63 | 14 | 0.079 | 3 | 2 | 15 | 15 | | | |
| 84 | 95x67 | 16 | 0.109 | 3 | 2 | 15 | 15 | | | |
| 90 | 103x71 | 16 | 0.109 | 3 | 2 | 15 | 15 | | | |
| 96 | 112x75 | 18 | 0.109 | 3 | 2 | 15 | 15 | | | |
| 102 | 117x79 | 18 | 0.109 | 3 | 2 | 15 | 15 | | | |
| 108 | 128x83 | 18 | 0.138 | 3 | 2 | 15 | 15 | | | |

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

② WHERE THE STANDARD 2 2/3" x 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.

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



| | |
|-------------------|---|
| INSTALLATION TYPE | ** MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
| TYPE 2 | •SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) |

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL. SM3 WILL NOT BE ALLOWED.
 - STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.
- STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---------------|---------------------|-----------------|
| | "H" < 10'-0" | "H" >OR= 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |
| 42" | 7'-0" | 10'-6" |
| 48" | 8'-0" | 12'-0" |

NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)
MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

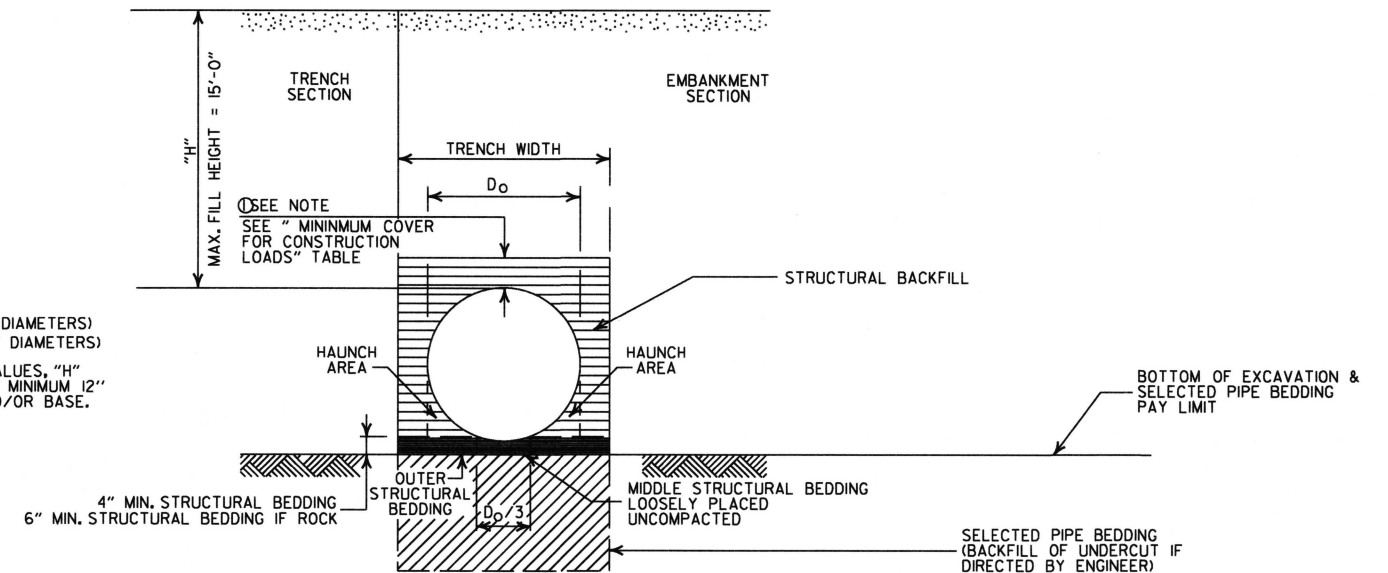
MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---------------|------------------------------|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |
| 42" | 3'-6" |
| 48" | 4'-0" |

MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|----------------|--|------------------|-------------------|--------------------|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
| 36" OR LESS | 2'-0" | 2'-6" | 3'-0" | 3'-0" |
| 42" OR GREATER | 3'-0" | 3'-0" | 3'-6" | 4'-0" |

MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

==== = STRUCTURAL BACKFILL MATERIAL
===== = UNDISTURBED SOIL

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

| DATE | REVISION | DATE FILMED |
|----------|--|-------------|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED GENERAL NOTES & MINIMUM COVER NOTE | |
| 11-17-10 | ISSUED | |

| |
|---|
| ARKANSAS STATE HIGHWAY COMMISSION |
| PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) |
| STANDARD DRAWING PCP-1 |

| INSTALLATION TYPE | ** MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|-------------------|---|
| TYPE 2 | *SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) |

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/8 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

| PIPE DIAMETER | "H" |
|---------------|--------|
| 18" | 45'-0" |
| 24" | 45'-0" |
| 30" | 40'-0" |
| 36" | 40'-0" |

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---------------|---------------------|-------------------|
| | "H" < 10'-0" | "H" > OR = 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |

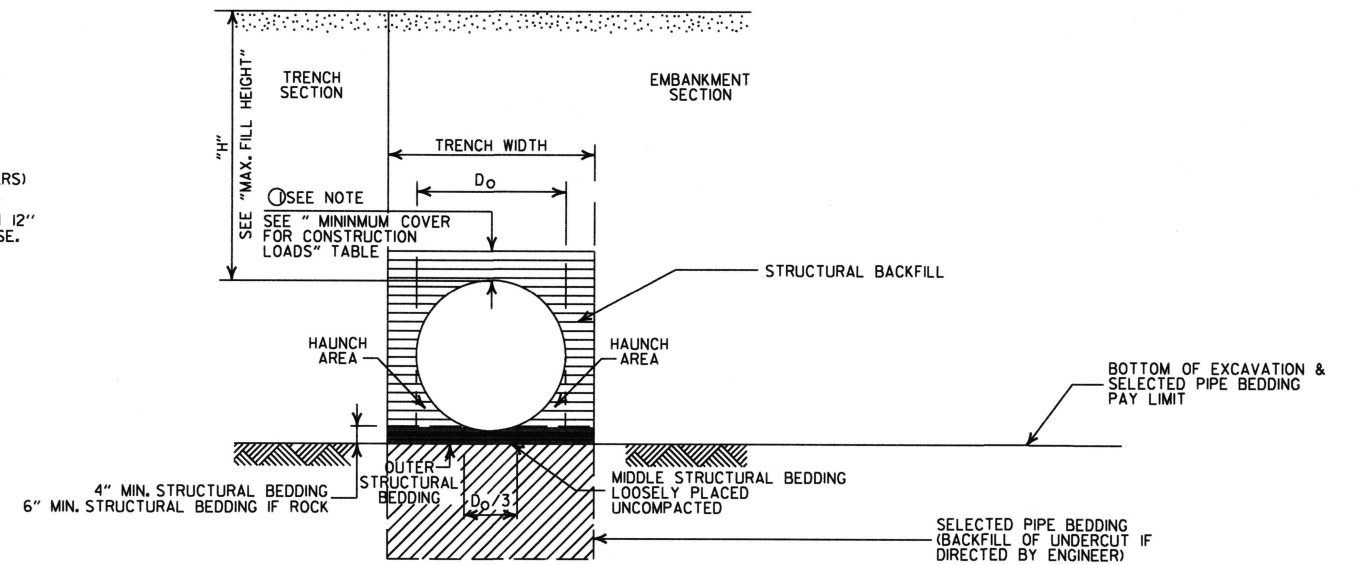
MULTIPLE INSTALLATION OF PVC PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---------------|------------------------------|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |

MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|---------------|--|------------------|-------------------|--------------------|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
| 18" THRU 36" | 2'-0" | 2'-6" | 3'-0" | 3'-0" |

② MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

==== = STRUCTURAL BACKFILL MATERIAL
===== = UNDISTURBED SOIL

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS I2454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

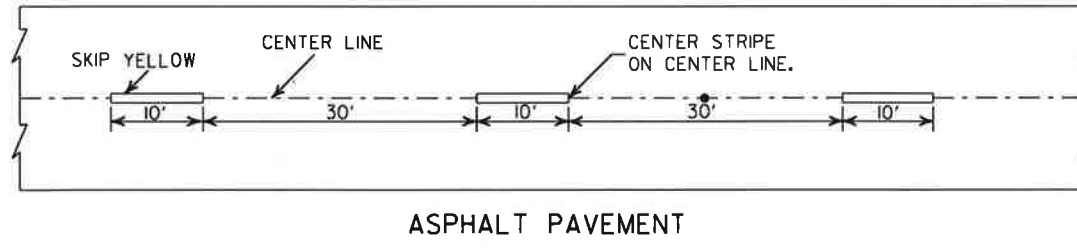
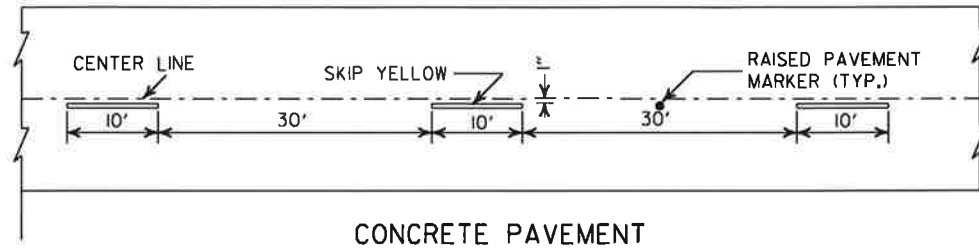
| DATE | REVISION | DATE FILMED |
|----------|--|-------------|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL | |
| 11-17-10 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(PVC F949)

STANDARD DRAWING PCP-2

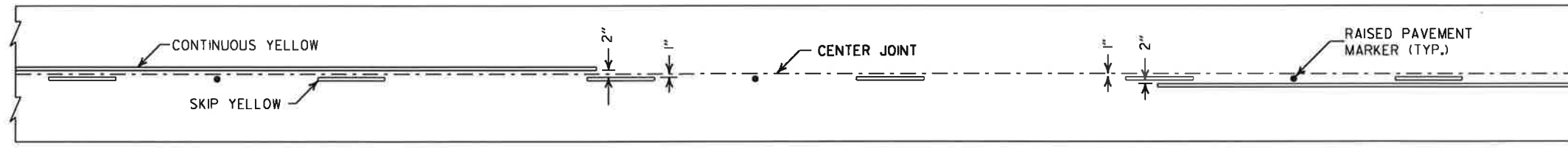




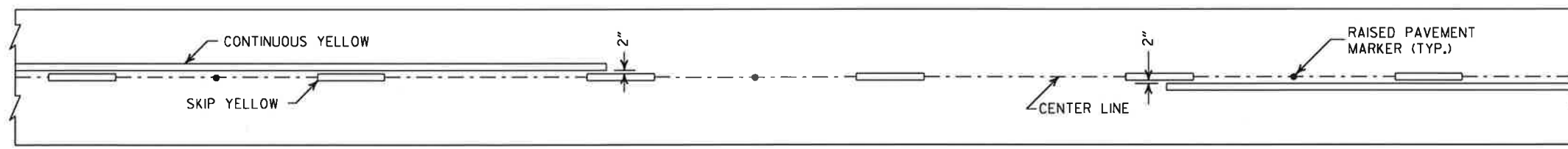
CONCRETE PAVEMENT

ASPHALT PAVEMENT

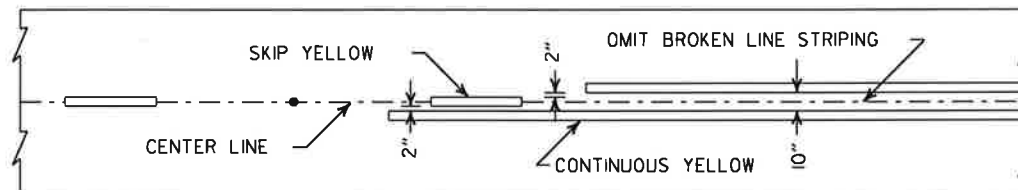
BROKEN LINE STRIPING



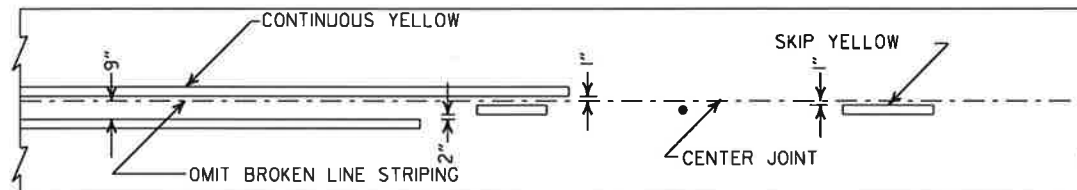
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

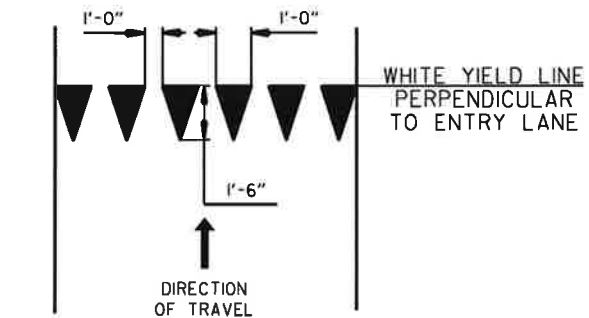


ASPHALT PAVEMENT

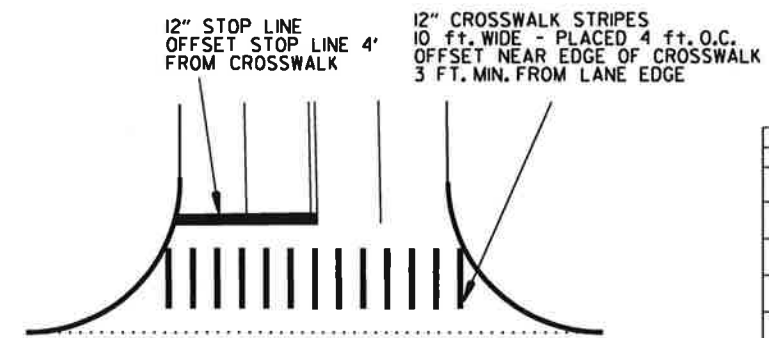


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

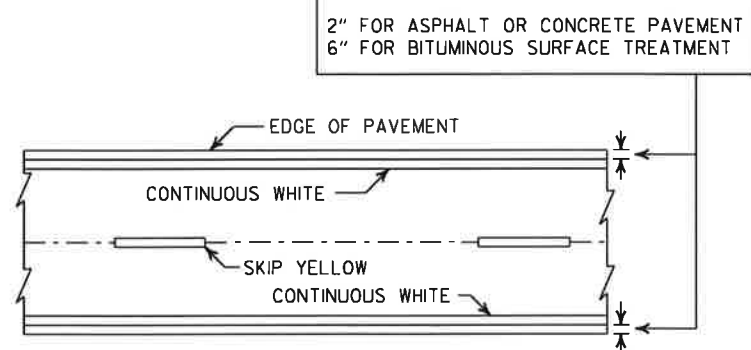


YIELD LINE DETAIL



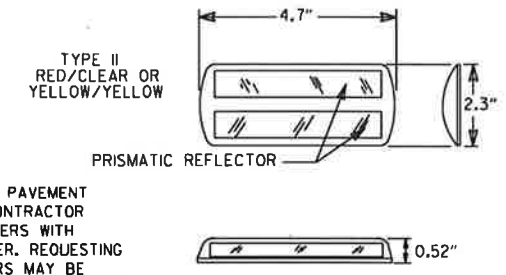
CROSSWALK AND STOP LINE DETAILS

- 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.



PAVEMENT EDGE LINE MARKING

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



NOTE: DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

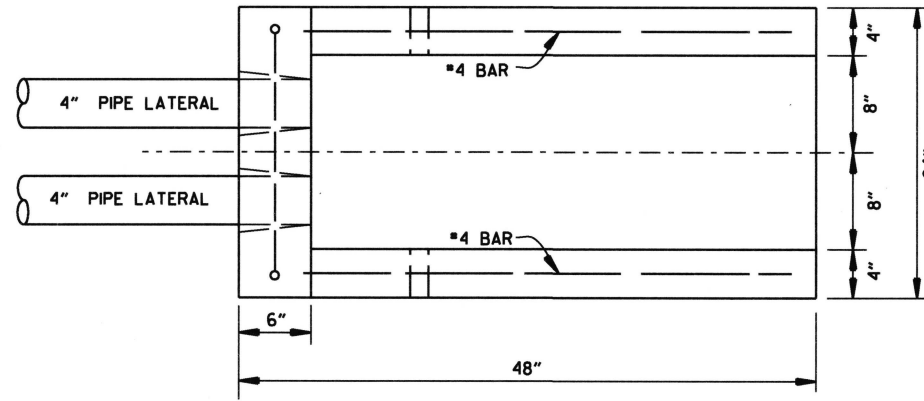
| DATE | REVISION | FILMED |
|----------|---|-----------|
| 2-27-20 | REVISED STOP LINE DETAILS | |
| 6-1-17 | ADDED YIELD LINE DETAIL | |
| 5-12-16 | REVISED LINE WIDTHS, SPACING, & NOTES | |
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 11-17-10 | REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS | |
| 11-18-04 | REVISED NOTE 2 & GENERAL NOTES | |
| 8-22-02 | ADDED CROSSWALK & STOPBAR DTLS. | |
| 7-02-98 | ADDED DETAILS OF STD. RAISED PAV'T. MARKERS | |
| 4-26-96 | REV. NOTES 3&4; ADDED R.P.M. | |
| 9-30-80 | DRAWN | 1-9-30-80 |
| | | FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

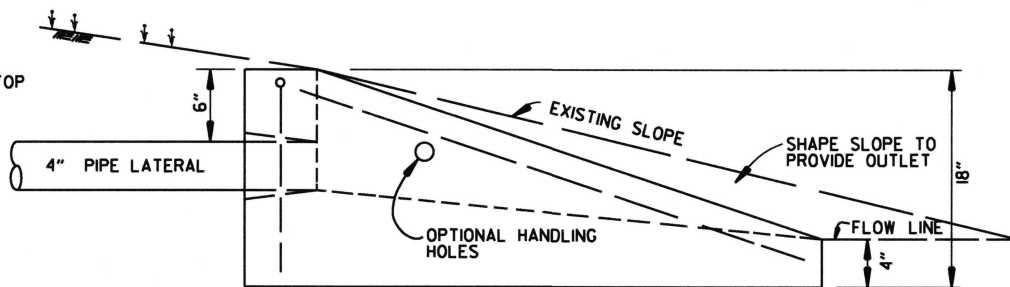
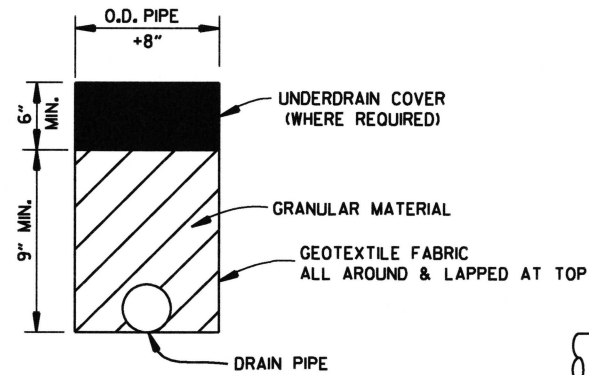
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

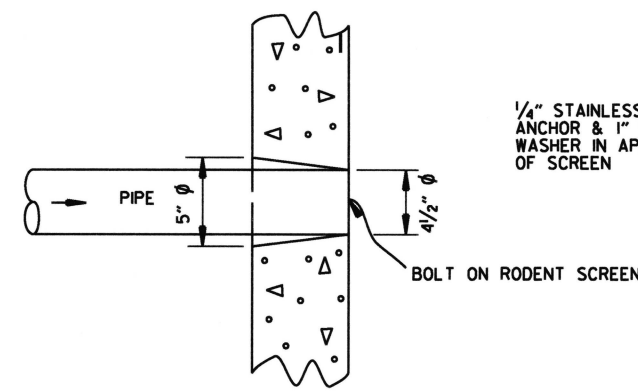
NOTE:
 1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



PLAN VIEW

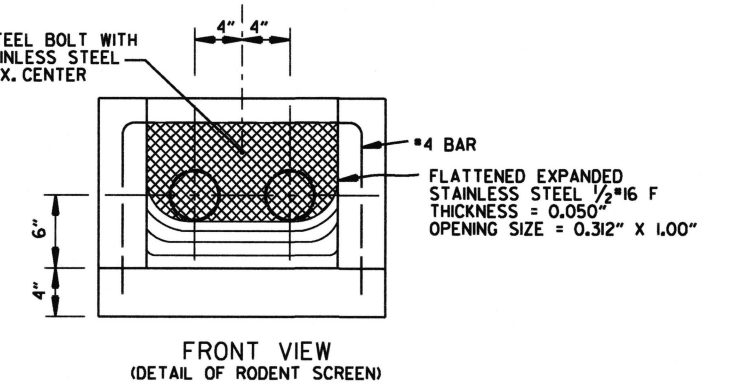


SIDE VIEW

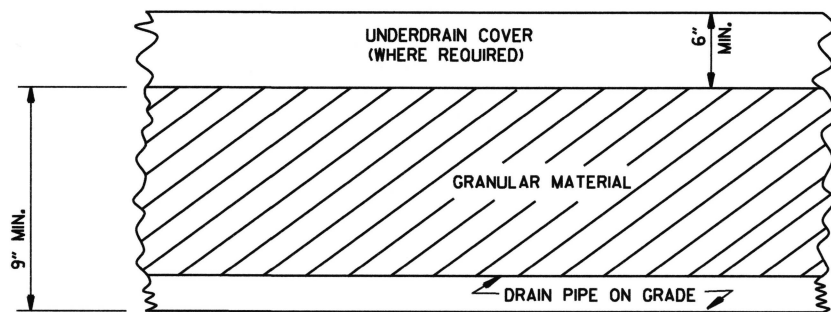


DETAIL OF HOLE FOR 4" PIPE

1/4" STAINLESS STEEL BOLT WITH ANCHOR & 1" STAINLESS STEEL WASHER IN APPROX. CENTER OF SCREEN



FRONT VIEW (DETAIL OF RODENT SCREEN)

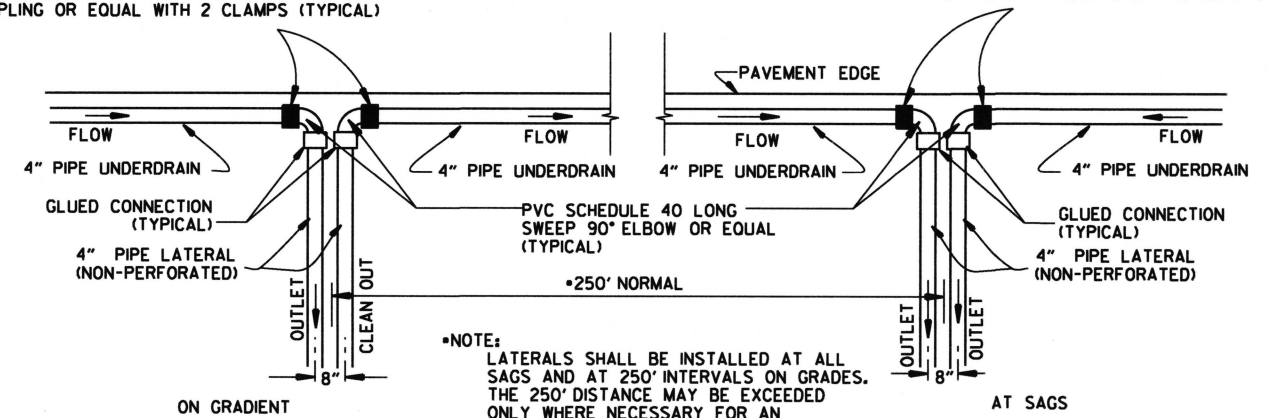


DETAILS OF PIPE UNDERDRAIN

FERNCO 1056-44 (4" CI/PLASTIC) OR FERNCO 1051-44 (4" AC/DIOR 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/DIOR 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.

NOTES FOR PIPE UNDERDRAINS

- 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.
- 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.
- 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."
- 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.
- PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."
- 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."
- 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.

| | | |
|----------|--|-------------|
| 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

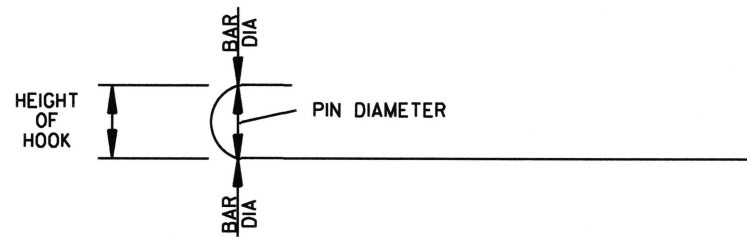
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

| BAR SIZE | PIN DIAMETER | HOOK EXTENSION "K" |
|----------|--------------|--------------------|
| 3 | 2 1/4" | 4" |
| 4 | 3" | 4 1/2" |
| 5 | 3 3/4" | 5" |
| 6 | 4 1/2" | 6" |
| 7 | 5 1/4" | 7" |
| 8 | 6" | 8" |

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" OR "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2 3/4 INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

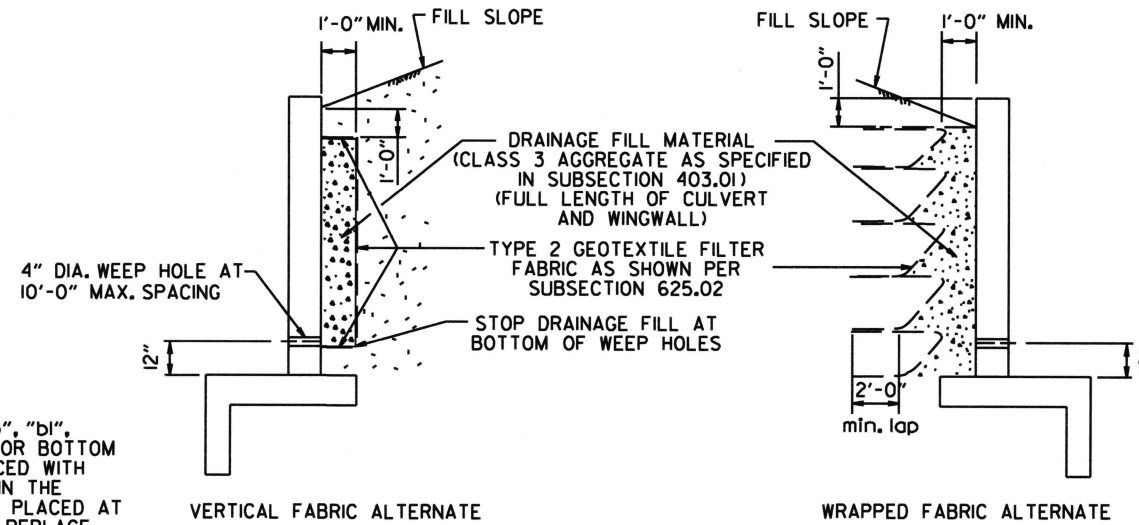
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

| BAR SIZE: "b", "b1", "b2" OR "b3" | LENGTH OF HOOKED BAR | LENGTH OF STRAIGHT BAR |
|-----------------------------------|----------------------|------------------------|
| #4 | L + 1' - 0" | SEE "c" BAR LENGTH |
| #5 | L + 1' - 2" | SEE "c" BAR LENGTH |
| #6 | L + 1' - 4" | SEE "c" BAR LENGTH |
| #7 | L + 1' - 8" | SEE "c" BAR LENGTH |
| #8 | L + 1' - 10" | SEE "c" BAR LENGTH |
| #9 | L + 2' - 6" | SEE "c" BAR LENGTH |

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

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

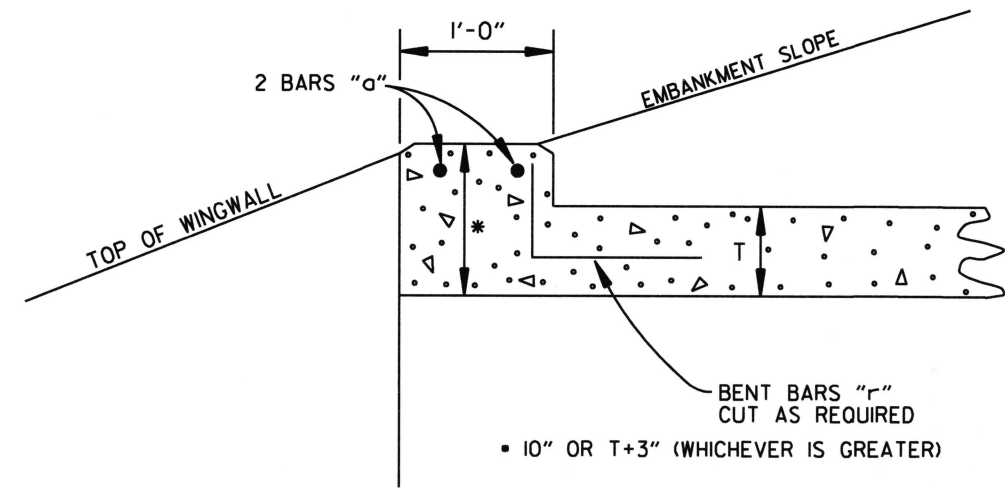
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS 1/2 INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

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

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



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

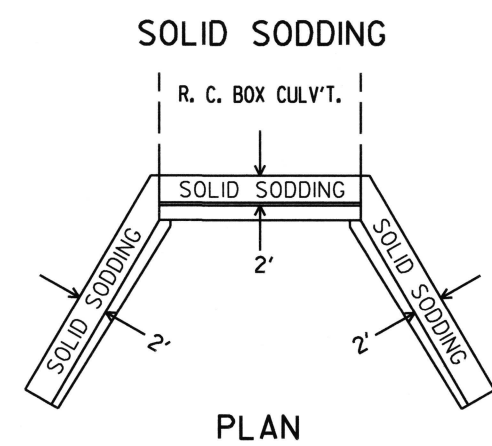
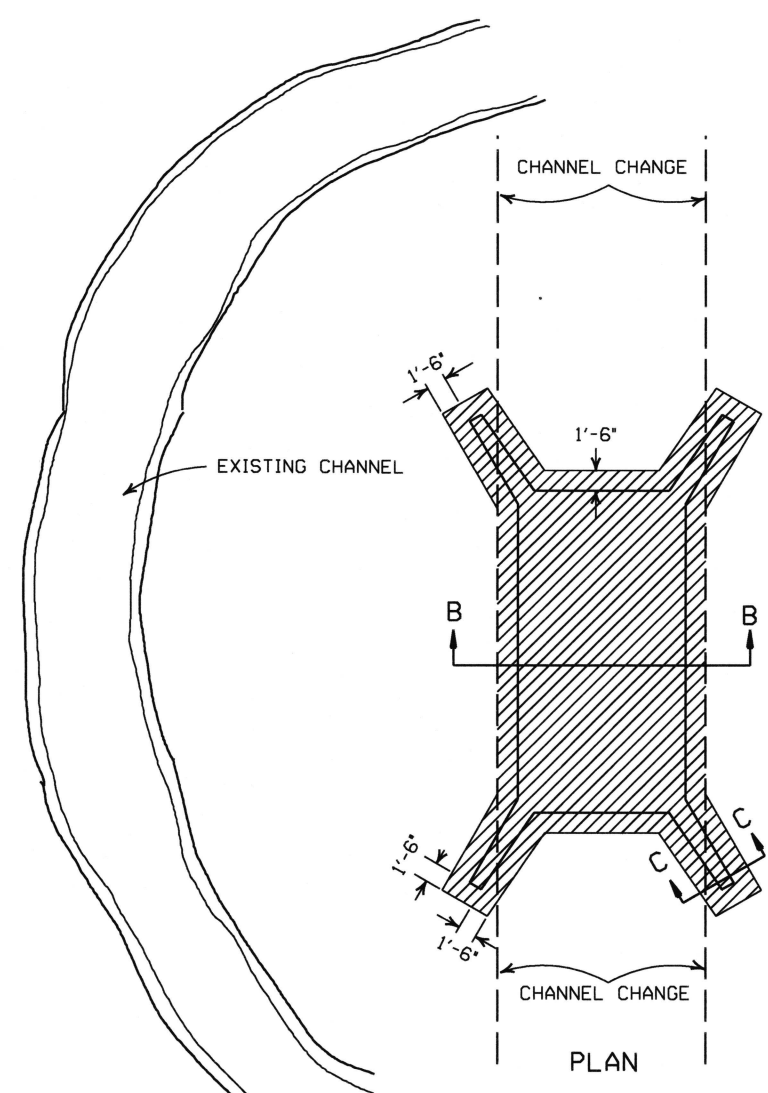
R.C. BOX CULVERT HEADWALL MODIFICATIONS

| DATE | REVISION | DATE FILMED |
|----------|---|-------------|
| 7/26/12 | REV. DRAINAGE FILL MATERIAL & DETAIL | |
| 12/15/11 | REQUIRE WEEP HOLES IN BOX CULVERT WALLS | |
| 5-25-06 | REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM | |
| 11-16-01 | ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES | |
| 10-18-96 | REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM | |
| 10-12-95 | MOVED SOLID SODDING DETAIL TO RCB-2 | |
| 6-2-94 | ADDED SOLID SODDING DETAIL | |
| 8-5-93 | REVISED PIN DIAMETER TO SPECS. | |
| 8-15-91 | DRAWN AND ISSUED | |
| | | |

ARKANSAS STATE HIGHWAY COMMISSION

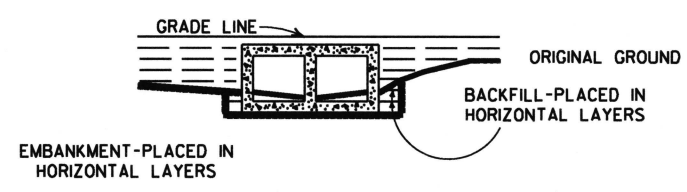
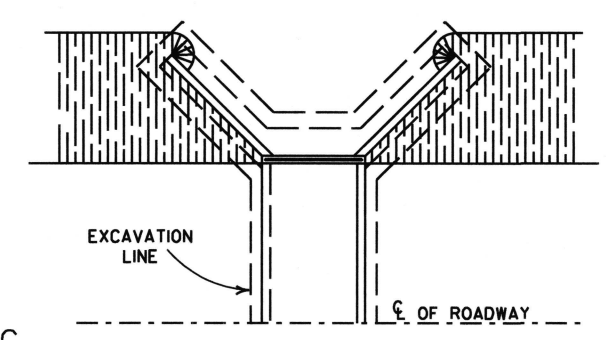
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1

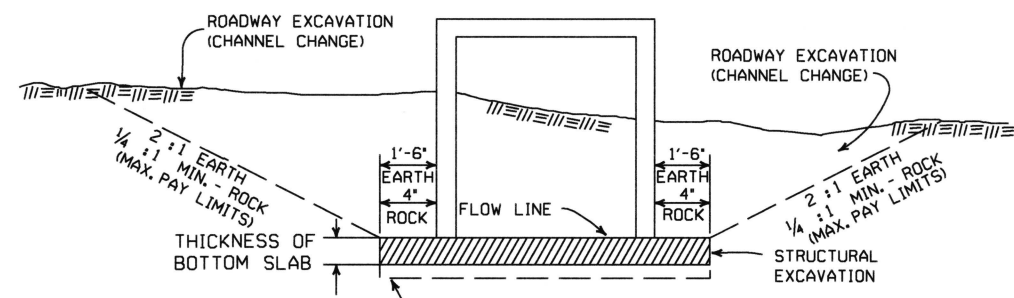
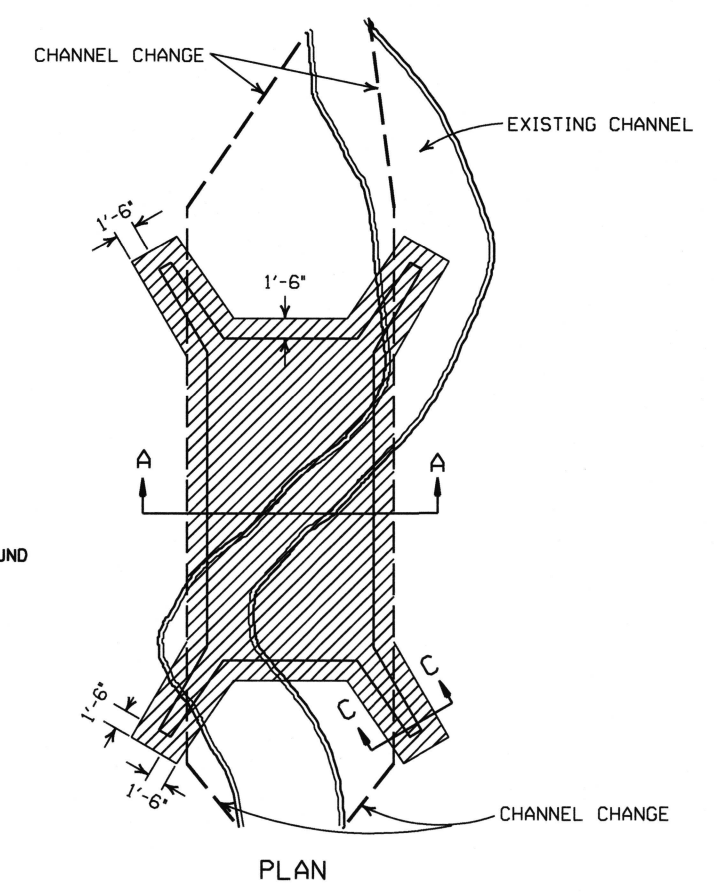


SOLID SODDING
PLAN
 PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

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

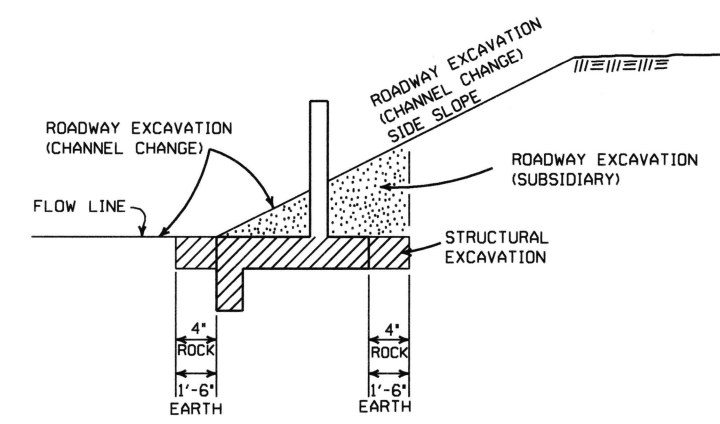


LONGITUDINAL SECTION
BACKFILL DETAILS FOR BOX CULVERT

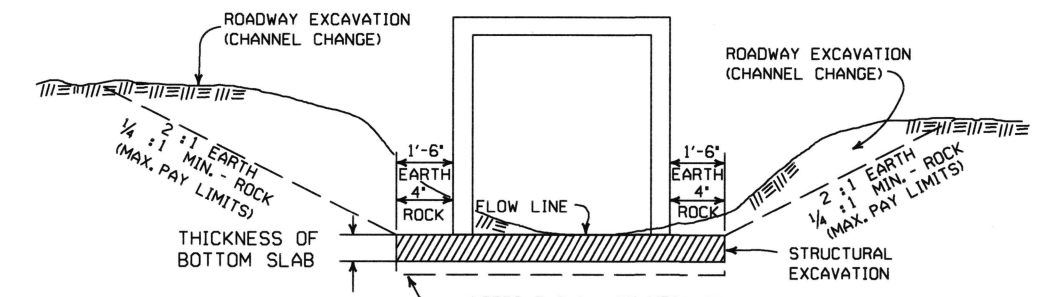


SECTION B-B
DETAILS FOR NEW CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.



SECTION C-C



SECTION A-A
DETAILS THROUGH EXISTING CHANNELS

UNDERCUT SHALL BE MEASURED AND PAID FOR ACCORDING TO SECTIONS 801.10 AND 801.11, RESPECTIVELY, OF THE STANDARD SPECIFICATIONS.

GENERAL NOTES:
 ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.
 EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.
 ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

| DATE | REVISION | FILMED |
|----------|--|--------------|
| 11-20-03 | REVISED SECTION A-A NOTE | |
| 8-22-02 | REVISED SECTION B-B NOTE | |
| 10-12-95 | COMBINED 1891B AND 1888A | |
| 1-4-83 | REVISED GENERAL NOTES 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 |

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) | |
| | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE |
| 0° 15' | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | |
| 0° 30' | NC | | | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | |
| 0° 45' | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | | RC | 96 | |
| 1° 00' | NC | | | NC | | | NC | | | RC | 90 | | 0.022 | 101 | | 0.026 | 110 | | 0.030 | 120 | |
| 1° 15' | NC | | | NC | | | RC | 84 | | 0.022 | 95 | | 0.028 | 115 | | 0.032 | 125 | | 0.038 | 139 | |
| 1° 30' | NC | | | RC | 78 | | 0.022 | 88 | | 0.028 | 108 | | 0.032 | 125 | | 0.038 | 139 | | 0.044 | 154 | |
| 1° 45' | RC | 72 | | RC | 78 | | 0.026 | 97 | | 0.030 | 113 | | 0.036 | 134 | | 0.044 | 154 | | 0.050 | 168 | |
| 2° 00' | RC | 72 | | 0.024 | 86 | | 0.028 | 101 | | 0.034 | 122 | | 0.042 | 149 | | 0.048 | 163 | | 0.056 | 182 | |
| 2° 15' | RC | 72 | | 0.026 | 90 | | 0.032 | 109 | | 0.038 | 131 | | 0.046 | 158 | | 0.054 | 178 | | 0.062 | 197 | |
| 2° 30' | 0.022 | 75 | | 0.028 | 94 | | 0.034 | 113 | | 0.042 | 140 | | 0.050 | 168 | | 0.058 | 187 | | 0.068 | 211 | |
| 2° 45' | 0.024 | 79 | | 0.030 | 98 | | 0.038 | 122 | | 0.046 | 149 | | 0.054 | 178 | | 0.064 | 202 | | 0.072 | 221 | |
| 3° 00' | 0.026 | 83 | | 0.034 | 105 | | 0.040 | 126 | | 0.050 | 158 | | 0.058 | 187 | | 0.068 | 211 | | 0.078 | 235 | |
| 3° 15' | 0.028 | 86 | | 0.036 | 109 | | 0.044 | 134 | | 0.052 | 162 | | 0.062 | 197 | | 0.072 | 221 | | 0.082 | 245 | |
| 3° 30' | 0.030 | 90 | | 0.038 | 113 | | 0.046 | 139 | 200 | 0.056 | 171 | | 0.066 | 206 | | 0.076 | 230 | | 0.086 | 254 | |
| 3° 45' | 0.032 | 93 | | 0.040 | 117 | | 0.050 | 147 | | 0.058 | 176 | | 0.070 | 216 | | 0.080 | 240 | | 0.090 | 264 | |
| 4° 00' | 0.034 | 97 | | 0.042 | 121 | | 0.052 | 151 | | 0.062 | 185 | | 0.072 | 221 | | 0.084 | 250 | | 0.094 | 274 | |
| 4° 15' | 0.036 | 100 | | 0.044 | 125 | 200 | 0.054 | 155 | | 0.064 | 189 | | 0.076 | 230 | | 0.086 | 254 | | 0.096 | 278 | |
| 4° 30' | 0.036 | 100 | | 0.046 | 129 | | 0.056 | 160 | | 0.068 | 198 | | 0.078 | 235 | | 0.090 | 264 | | 0.098 | 283 | |
| 4° 45' | 0.038 | 104 | 200 | 0.048 | 133 | | 0.060 | 168 | | 0.070 | 203 | | 0.082 | 245 | | 0.092 | 269 | | 0.100 | 288 | |
| 5° 00' | 0.040 | 108 | | 0.050 | 137 | | 0.062 | 172 | | 0.072 | 207 | | 0.084 | 250 | | 0.094 | 274 | | 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 | |
| 6° 00' | 0.046 | 119 | | 0.058 | 152 | | 0.070 | 189 | | 0.082 | 230 | | 0.092 | 269 | | 0.100 | 288 | | | | |
| 6° 30' | 0.050 | 126 | | 0.062 | 160 | | 0.074 | 198 | | 0.086 | 239 | | 0.096 | 278 | | | | | | | |
| 7° 00' | 0.052 | 130 | | 0.064 | 164 | | 0.078 | 206 | | 0.090 | 248 | | 0.098 | 283 | | | | | | | |
| 7° 30' | 0.054 | 133 | | 0.068 | 172 | | 0.080 | 210 | | 0.092 | 252 | | 0.098 | 283 | | | | | | | |
| 8° 00' | 0.058 | 140 | | 0.070 | 176 | | 0.084 | 219 | | 0.094 | 257 | | 0.096 | 261 | | | | | | | |
| 8° 30' | 0.060 | 144 | | 0.072 | 179 | | 0.086 | 223 | | 0.096 | 261 | | | | | | | | | | |
| 9° 00' | 0.062 | 148 | | 0.076 | 187 | | 0.088 | 227 | 250 | 0.098 | 266 | | | | | | | | | | |
| 9° 30' | 0.064 | 151 | | 0.078 | 191 | | 0.092 | 235 | | 0.100 | 270 | | | | | | | | | | |
| 10° 00' | 0.066 | 155 | | 0.080 | 195 | | 0.094 | 240 | | | | | | | | | | | | | |
| 11° 00' | 0.070 | 162 | | 0.084 | 203 | | 0.096 | 244 | | | | | | | | | | | | | |
| 12° 00' | 0.074 | 169 | | 0.088 | 211 | | 0.098 | 248 | | | | | | | | | | | | | |
| 13° 00' | 0.076 | 173 | | 0.090 | 215 | 250 | 0.100 | 252 | 300 | | | | | | | | | | | | |
| 14° 00' | 0.080 | 180 | | 0.094 | 222 | | | | | | | | | | | | | | | | |
| 15° 00' | 0.082 | 184 | | 0.096 | 226 | | | | | | | | | | | | | | | | |
| 16° 00' | 0.086 | 191 | | 0.098 | 230 | | | | | | | | | | | | | | | | |
| 17° 00' | 0.088 | 194 | | 0.100 | 234 | | | | | | | | | | | | | | | | |
| 18° 00' | 0.090 | 198 | 250 | | | | | | | | | | | | | | | | | | |
| 19° 00' | 0.092 | 202 | | | | | | | | | | | | | | | | | | | |
| 20° 00' | 0.094 | 205 | | | | | | | | | | | | | | | | | | | |
| 21° 00' | 0.096 | 209 | | | | | | | | | | | | | | | | | | | |
| 22° 00' | 0.096 | 209 | | | | | | | | | | | | | | | | | | | |
| 23° 00' | 0.098 | 212 | | | | | | | | | | | | | | | | | | | |
| 24° 00' | 0.098 | 212 | | | | | | | | | | | | | | | | | | | |
| 25° 00' | 0.100 | 216 | | | | | | | | | | | | | | | | | | | |

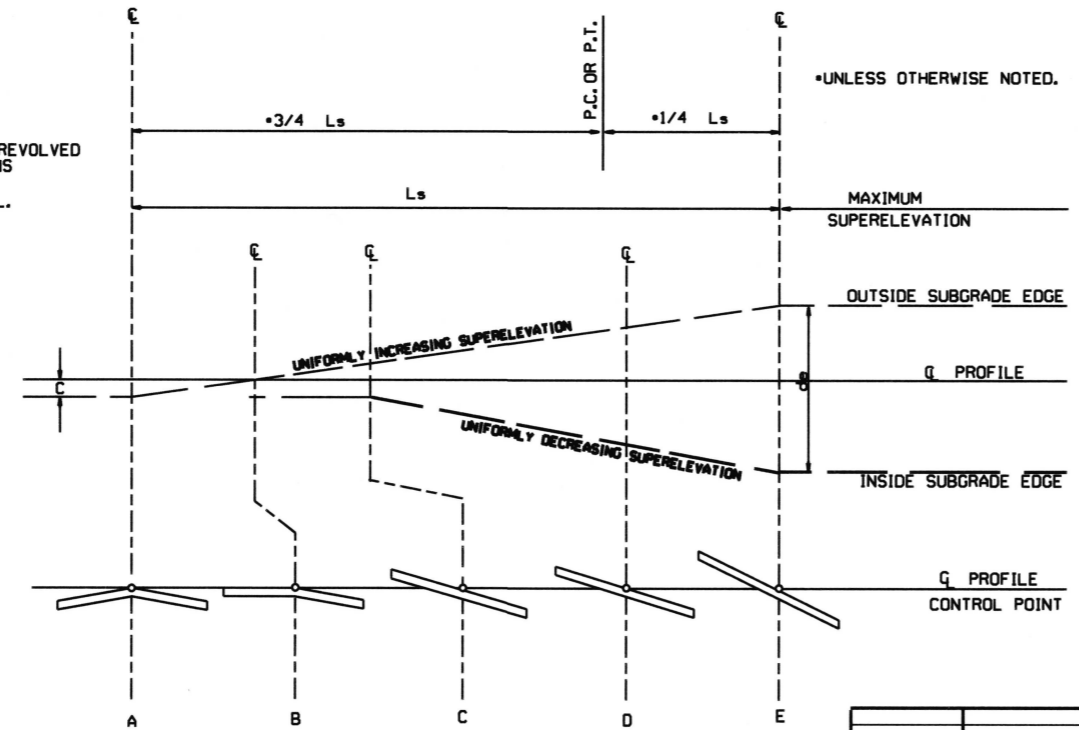
ABBREVIATIONS

- 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.)

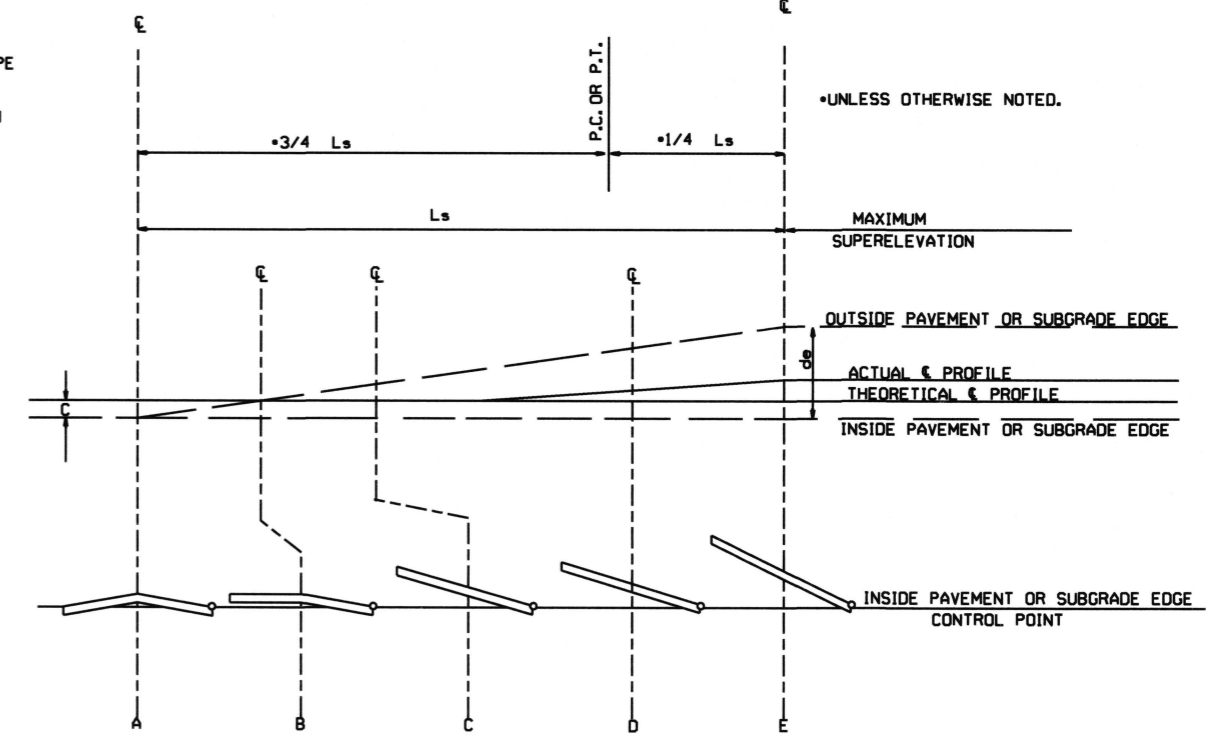
- GENERAL NOTES**
- ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
 - SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
 - LENGTHS FOR 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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE










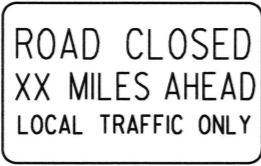










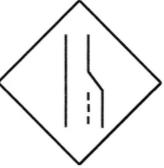


















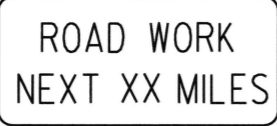
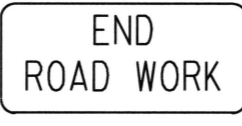
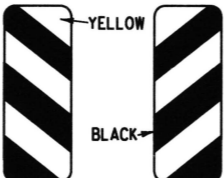


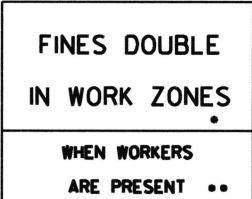
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

| | |
|----------|------------------------------|
| 11-07-19 | REVISED SUPERELEVATION TABLE |
| 10-18-96 | ADDED FORMULA |
| 01-09-87 | ISSUED |
| DATE | REVISION |
| | DATE FILLED |

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

| | | | | | | | |
|--|---|---|---|--|---|---|---|
| <p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p> | <p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p> | <p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | <p>W3-5</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p> | <p>W3-5a</p>  <p>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</p> | <p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | <p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p> | |
| <p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p> | <p>R11-2</p>  <p>48"x30"</p> | <p>R11-3A</p>  <p>60"x30"</p> | <p>R11-4</p>  <p>60"x30"</p> | <p>W21-5a</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | |
| <p>W1-3</p>  <p>STD. 48"x48"</p> | <p>W1-4</p>  <p>STD. 48"x48"</p> | <p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p> | <p>W1-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p> | <p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | |
| <p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p> | <p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p> | <p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p> | <p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W13-1</p>  <p>STD. 24"x24"</p> | <p>W20-1</p>  <p>STD. 48"x48"</p> | <p>W20-2</p>  <p>STD. 48"x48"</p> | <p>W20-3</p>  <p>STD. 48"x48"</p> |
| <p>W20-4</p>  <p>STD. 48"x48"</p> | <p>W20-5</p>  <p>STD. 48"x48"</p> | <p>W20-7a</p>  <p>500 FEET 24" W6-2</p> <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p> | <p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p> | <p>W24-1</p>  <p>STD. 36"x36"</p> | <p>W1-4b</p>  <p>STD. 48"x48"</p> | <p>R56-1</p>  <p>STD. 18"x18"</p> |
| <p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p> | <p>G20-1</p>  <p>60"x24"</p> | <p>G20-2</p>  <p>48"x24"</p> | <p>OM-3L OM-3R</p>  <p>12"x36"</p> | <p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p> | <p>M4-10</p>  <p>48"x18"</p> | <p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p> |

ADVANCE DISTANCES (XXXX)

| | |
|---------|--------------|
| 500 FT | 1/2 MILE |
| 1000 FT | 3/4 MILE |
| 1500 FT | 1 MILE AHEAD |

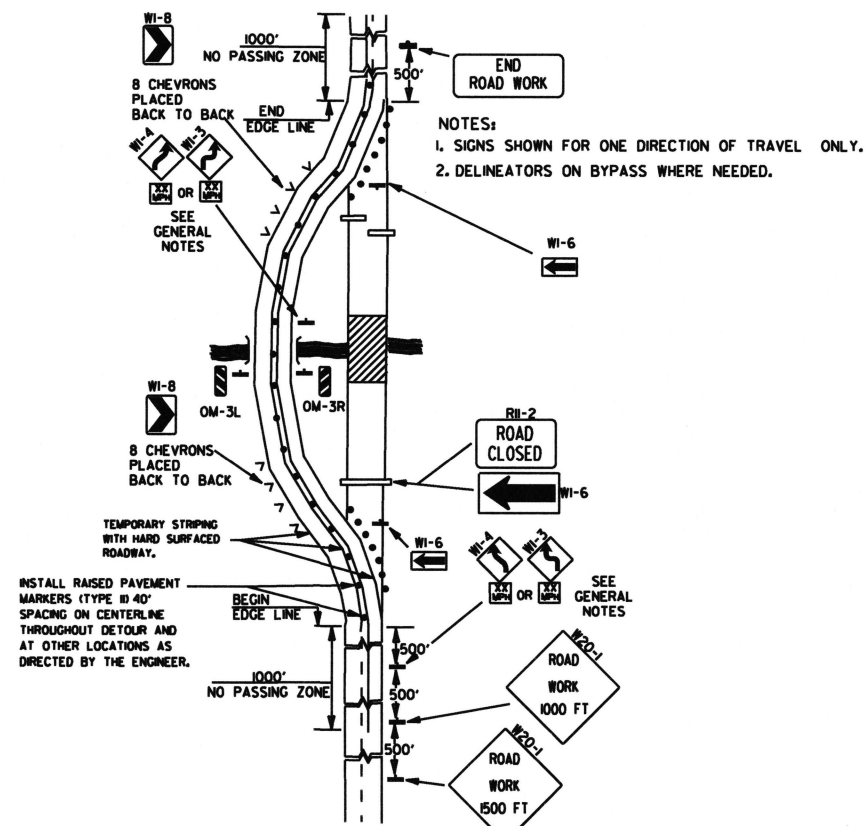
GENERAL NOTES:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- 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.

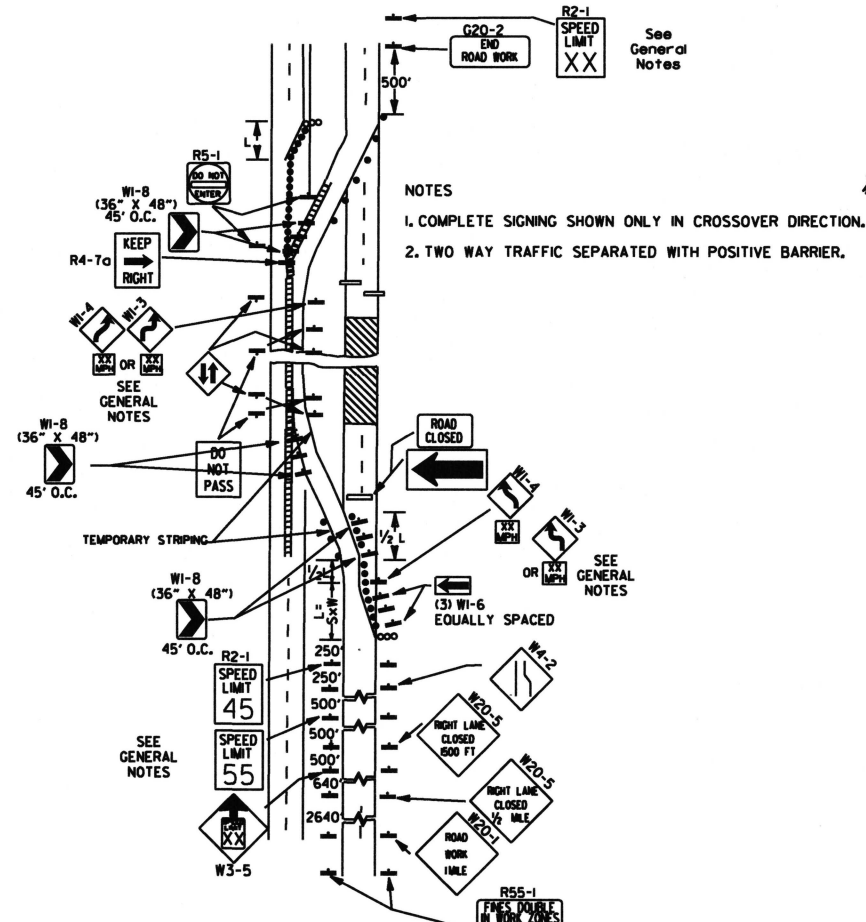
NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

| DATE | REVISION | FILMED |
|----------|--|--------|
| 11-07-19 | REVISED FOR MASH | |
| 4-13-17 | DELETED RSP-1 & ADDED W21-5a | |
| 9-2-15 | REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES | |
| 12-15-11 | REVISED W24-1 | |
| 8-17-10 | DELETED W8-9a & ADDED W8-9 | |
| 10-15-09 | ADDED REFERENCE TO MASH & ADDED SIGN W24-1 | |
| 4-17-08 | REVISED SIGN DESIGNATIONS | |
| 1-18-04 | REVISED NOTES | |
| 10-9-03 | REVISED NOTE 1 | |
| 11-16-01 | REVISED NOTE 7 | |
| 9-28-00 | REVISED NOTE | |
| 1-18-98 | 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 | |
| | | |

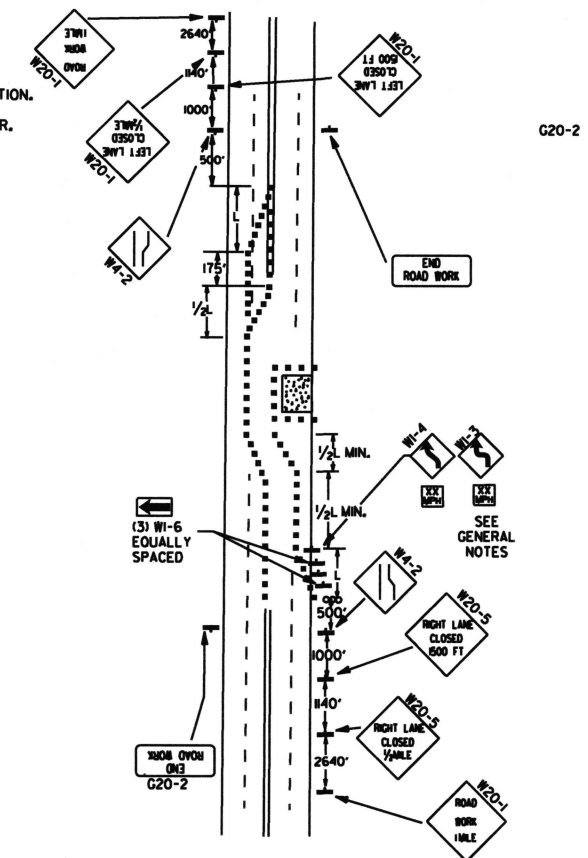
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



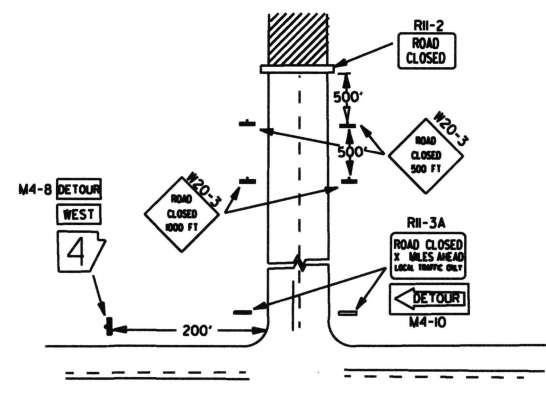
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



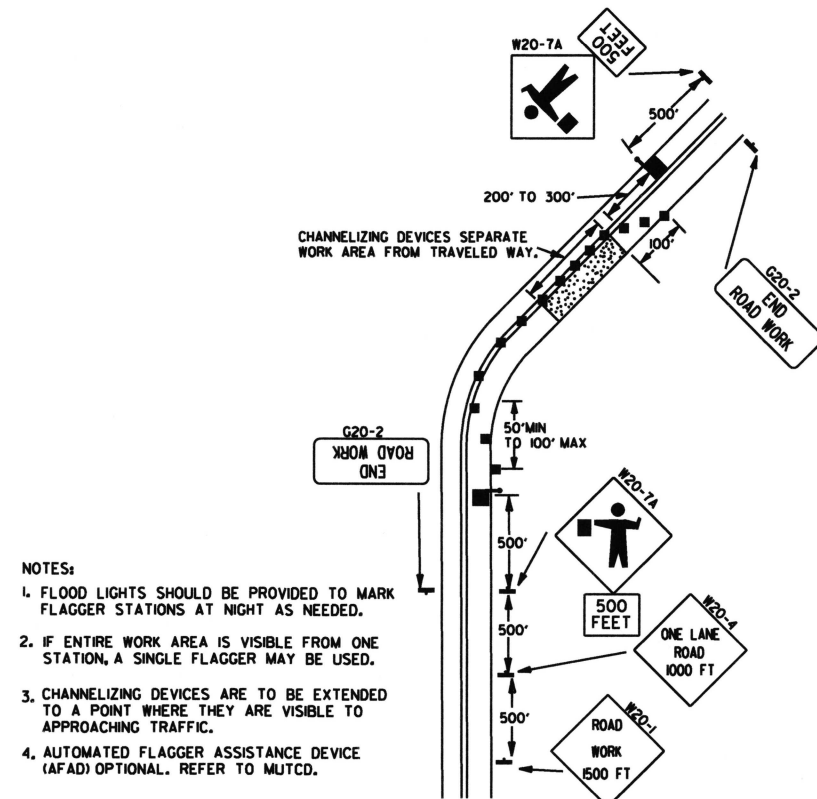
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



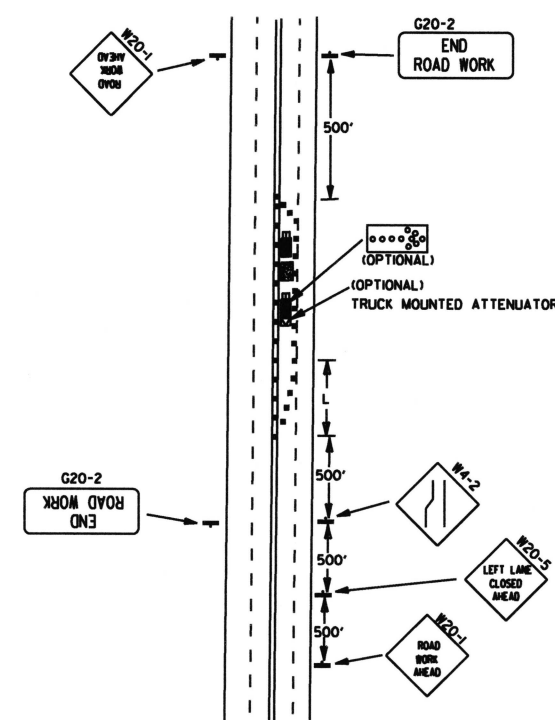
(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



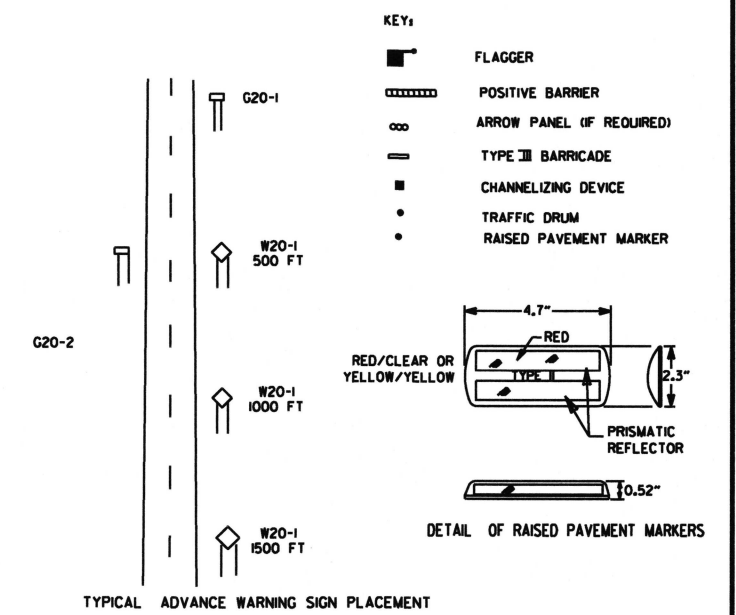
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



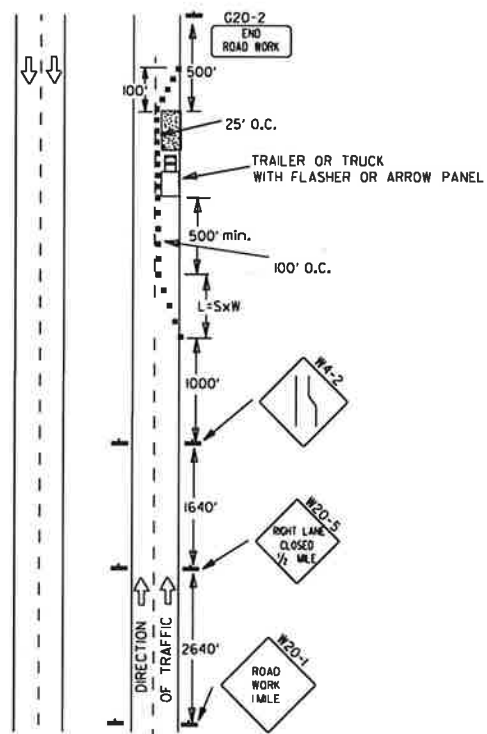
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.



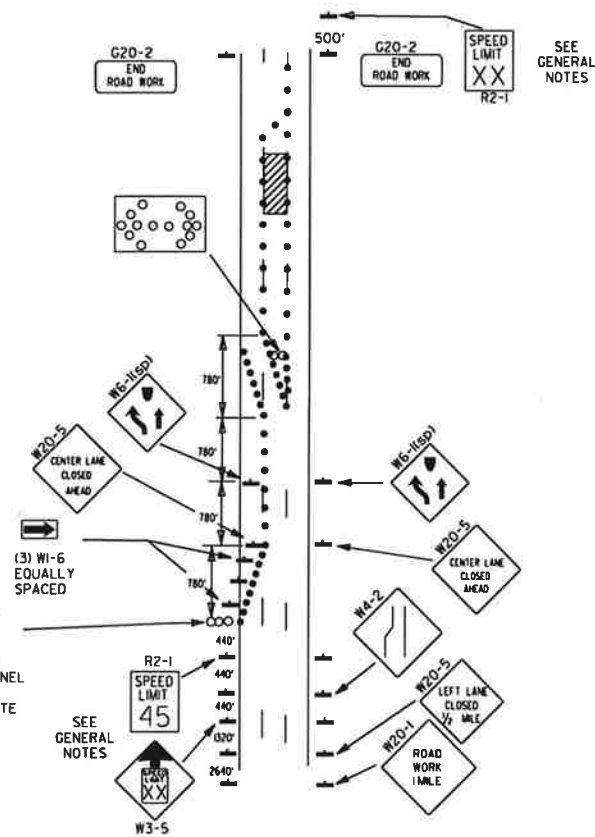
TAPER FORMULAE:
 $L = SXW$ FOR SPEEDS OF 45MPH OR MORE.
 $L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.
 WHERE:
 L = MINIMUM LENGTH OF TAPER.
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
 W = WIDTH OF OFFSET.

- GENERAL NOTES:
- 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.
 - WHEN THE EXISTING SPEED LIMIT IS 45MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-155 SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1XX 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 R2-145 SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1XX 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.
 - 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.
 - 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.
 - 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).

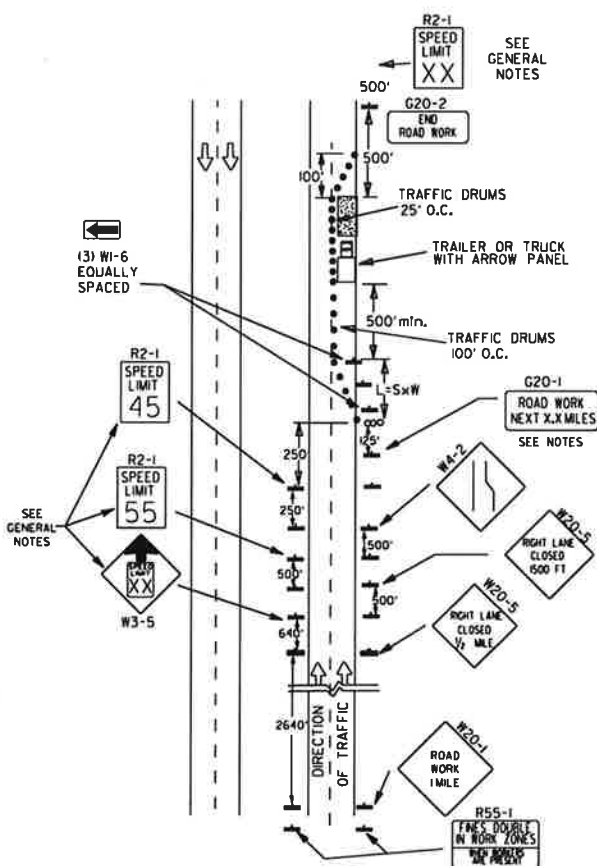
| DATE | REVISION | FILED |
|----------|--|--------|
| 1-07-19 | REVISED NOTE 1, ADDED NOTE 9 | |
| 9-2-15 | REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5 | |
| 9-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKERS | |
| 3-11-10 | ADDED (AFAD) | |
| 1-20-08 | REVISED SIGN DESIGNATIONS | |
| 1-18-04 | 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 | |



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



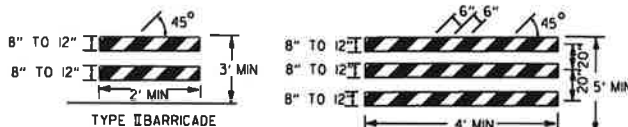
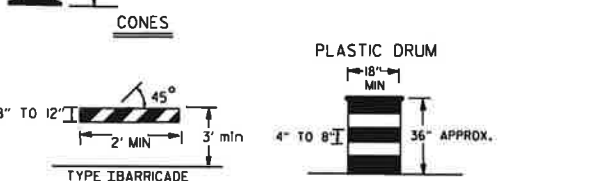
(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.



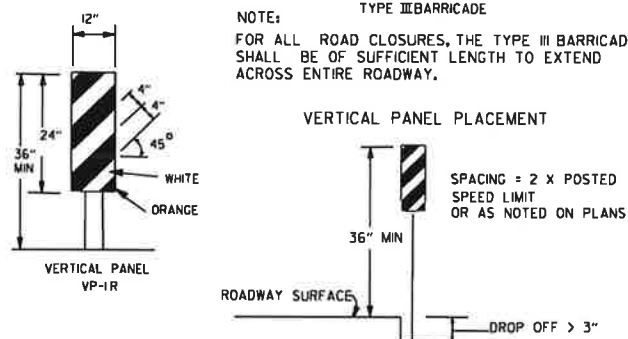
(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

CHANNELIZING DEVICES

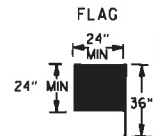
• WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.



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



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

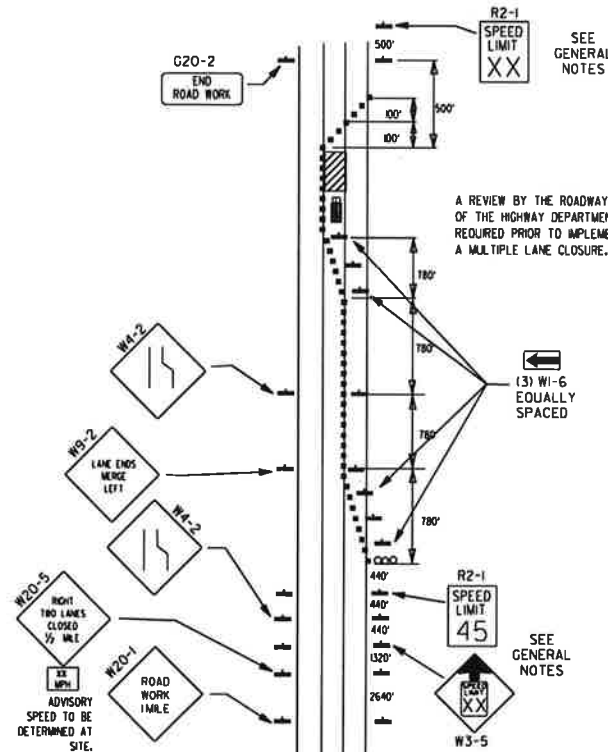


KEY:

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

GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-(155) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(155) 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-(165) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-(165) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN 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.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
10. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

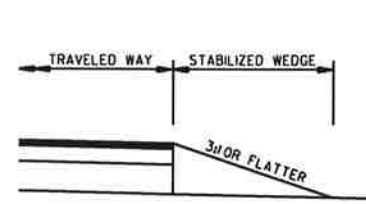
TRAFFIC CONTROL DEVICES

| VERTICAL DIFFERENTIAL | LOCATION | NON-INTERSTATE | |
|-----------------------|---|---|---|
| | | TRAFFIC CONTROL | |
| | | ≤ 45 MPH | > 45 MPH |
| ≤ 2" | CENTERLINE | W8-11 AND LANE STRIPING | W8-11 AND LANE STRIPING |
| > 2" | CENTERLINE | STANDARD LANE CLOSURE | STANDARD LANE CLOSURE |
| ≤ 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS | W8-9, EDGE LINE STRIPING, AND VERTICAL PANELS |
| > 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS | W8-17, EDGE LINE STRIPING, AND VERTICAL PANELS |
| ≤ 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) |
| > 6" | 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(1) |
| > 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER(4) & EDGE LINES | PRECAST CONCRETE BARRIER(4) & EDGE LINES |

| VERTICAL DIFFERENTIAL | LOCATION | INTERSTATE | |
|-----------------------|---|---|---|
| | | TRAFFIC CONTROL | |
| | | ≤ 45 MPH | > 45 MPH |
| ≤ 2" | CENTERLINE | W8-11 AND LANE STRIPING | W8-11 AND LANE STRIPING |
| > 2" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) | W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) |
| ≤ 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS(2) |
| > 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER & EDGE LINES | PRECAST CONCRETE BARRIER & EDGE LINES |

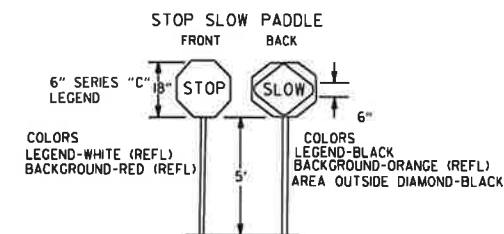
| INTERSTATE AND NON-INTERSTATE | | |
|-------------------------------|--------|--------------------------|
| FORESLOPE | HEIGHT | TRAFFIC CONTROL |
| 1:1 | > 2 FT | PRECAST CONCRETE BARRIER |
| 2:1 | ≤ 5 FT | TRAFFIC DRUMS |
| 2:1 | > 5 FT | PRECAST CONCRETE BARRIER |
| Flatter than 2:1 | N/A | TRAFFIC DRUMS |

- GENERAL NOTES:
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
 2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS.
 3. 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.
 4. 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.



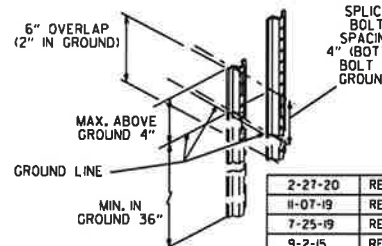
STABILIZED WEDGE

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



DETAIL OF SPLICES

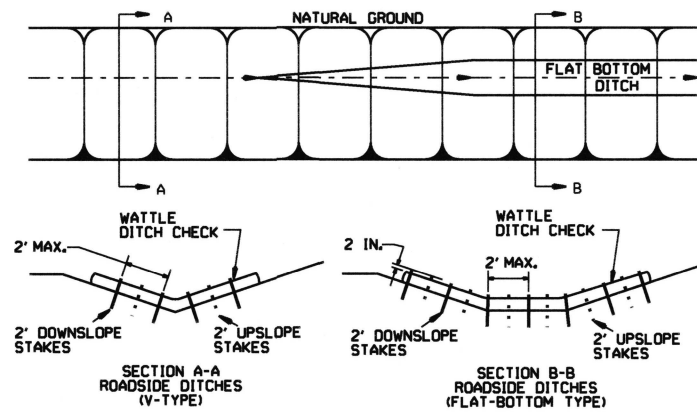
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)
 NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.
 SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



| DATE | REVISION | FILED |
|----------|--|--------|
| 2-27-20 | REVISED TRAFFIC CONTROL DEVICES DETAILS | |
| 11-07-19 | REVISED NOTE 9, ADDED NOTE II | |
| 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 | |

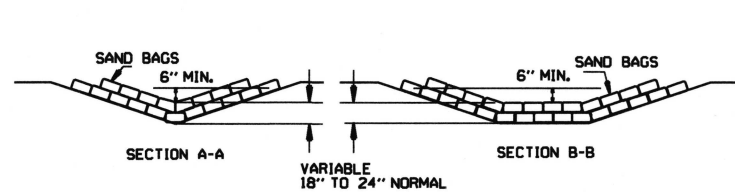
GENERAL NOTES

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

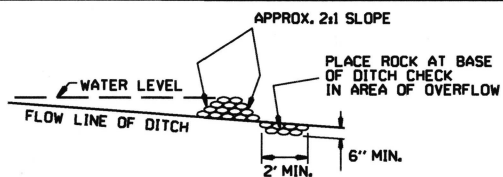


WATTLE DITCH CHECK (E-1)

NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.

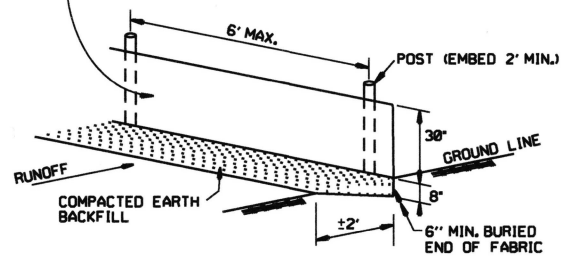


SAND BAG DITCH CHECK (E-5)

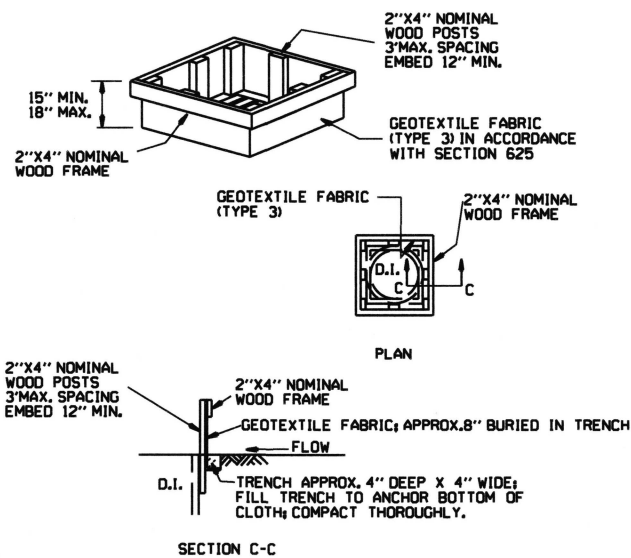


ROCK DITCH CHECK (E-6)

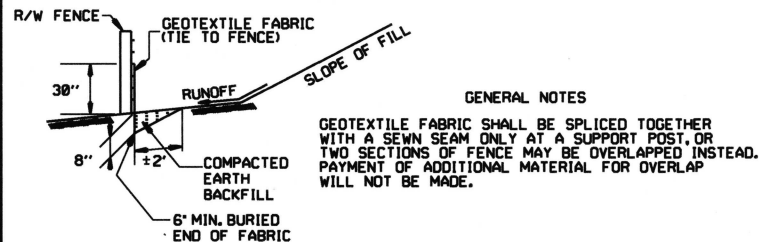
GENERAL NOTES
 GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625
 GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

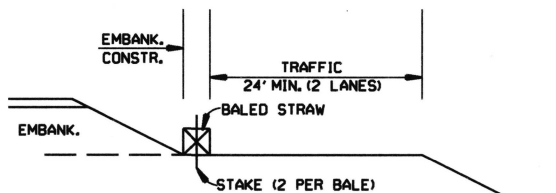


DROP INLET SILT FENCE (E-7)

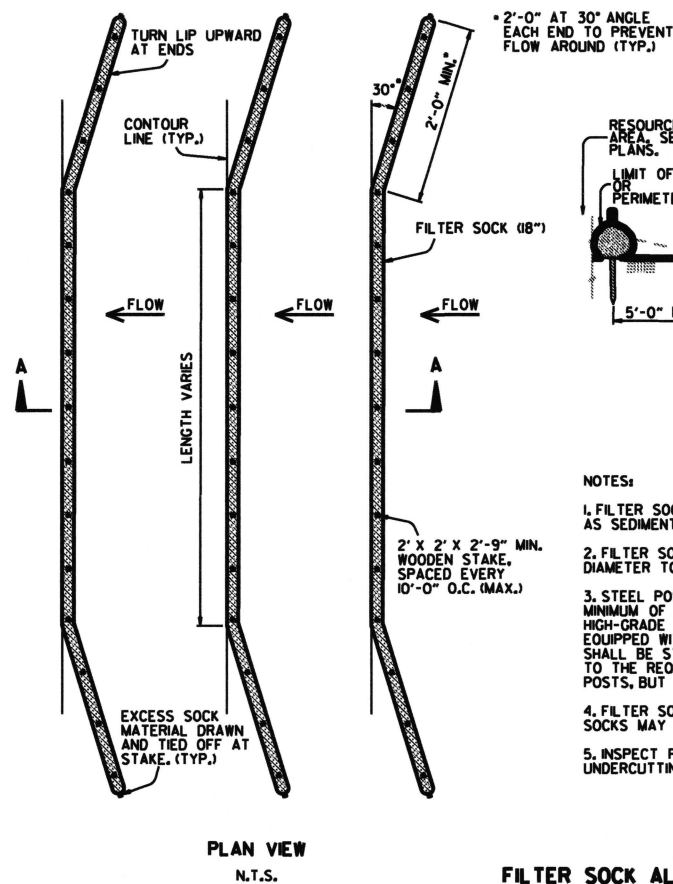


SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES
 1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
 2. NO GAPS SHALL BE LEFT BETWEEN BALES.
 3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.

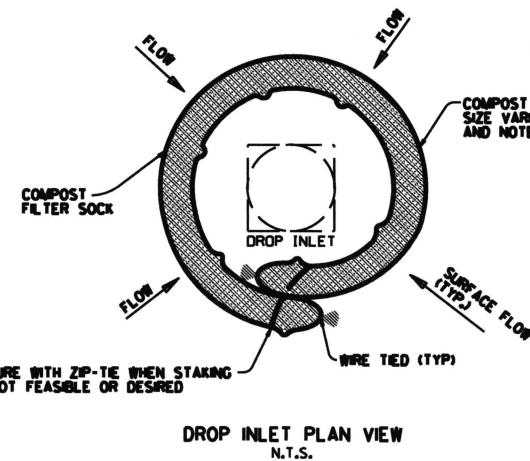


BALED STRAW FILTER BARRIER (E-2)



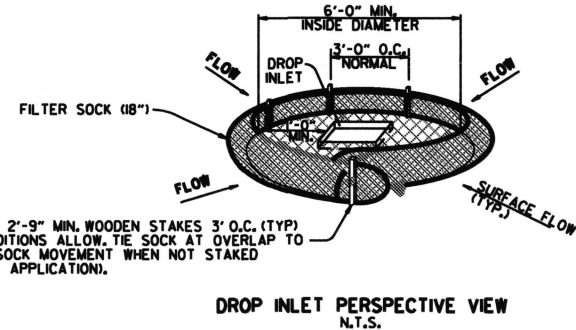
FILTER SOCK ALONG SLOPE (E-3)

NOTES:
 1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.
 2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.
 3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBSIDIARY TO "FILTER SOCK (18\"/>



COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

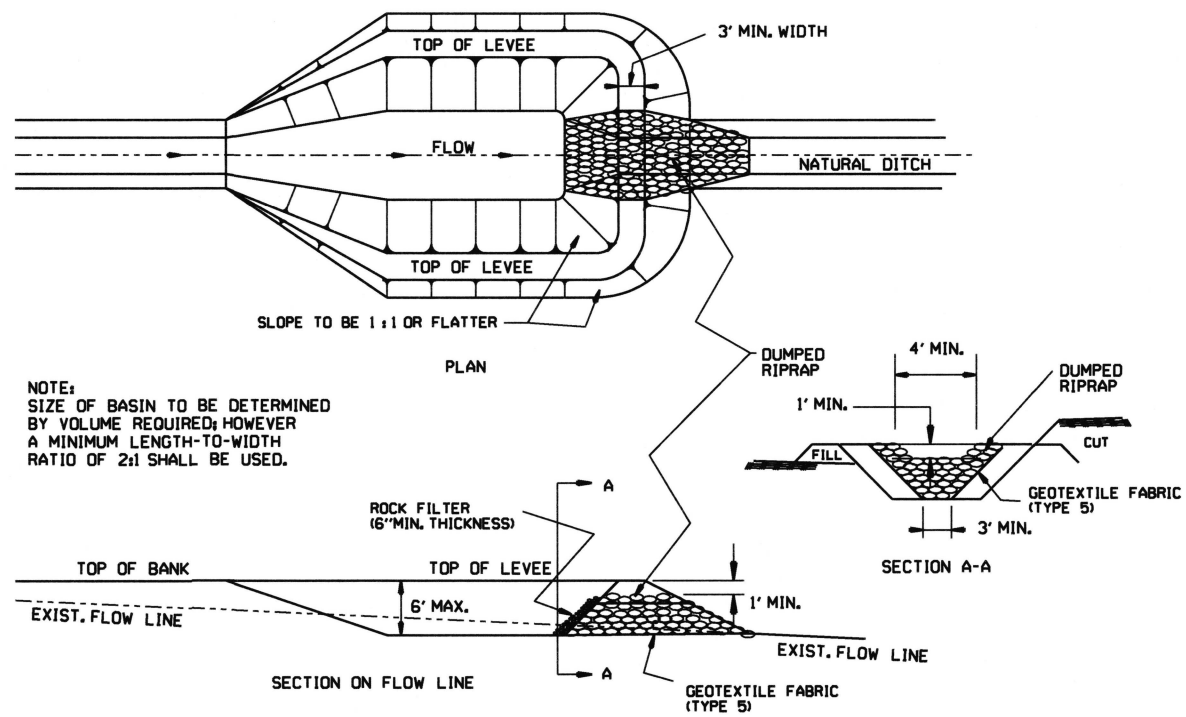
NOTES:
 1. OVERLAP ENDS OF SOCK (1\"/>



DROP INLET PERSPECTIVE VIEW N.T.S.

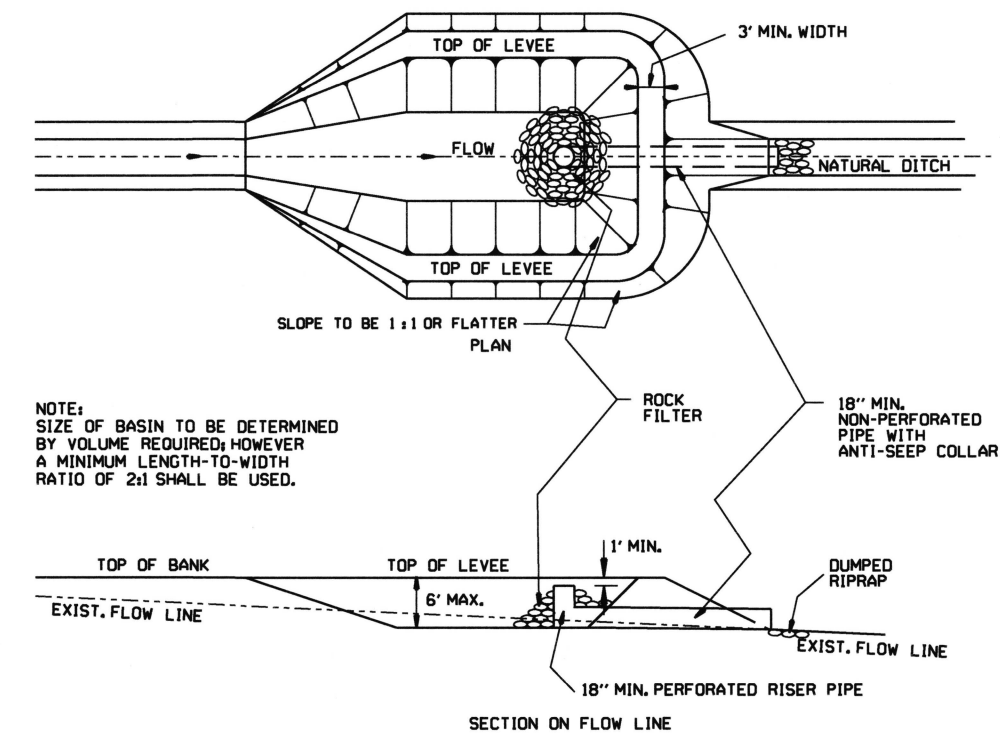
| DATE | REVISION | FILED |
|----------|--|-------------|
| 11-16-17 | ADDED FILTER SOCK E-3 AND E-13 | |
| 12-15-11 | DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK | |
| 11-18-98 | ADDED NOTES | |
| 07-02-98 | ADDED BALED STRAW FILTER BARRIER (E-2) | |
| 07-20-95 | REVISED SILT FENCE E-4 AND E-11 | 7-20-95 |
| 07-15-94 | REV. E-4 & E-11 MIN. 13\"/> | |
| 06-02-94 | REVISED E-1, 4, 7 & 11 DELETED E-2 & 3 | 6-2-94 |
| 04-01-93 | REDRAWN | |
| 10-01-92 | REDRAWN | |
| 08-02-76 | ISSUED R.D.M. | 298-7-28-76 |

ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION CONTROL DEVICES
 STANDARD DRAWING TEC-1



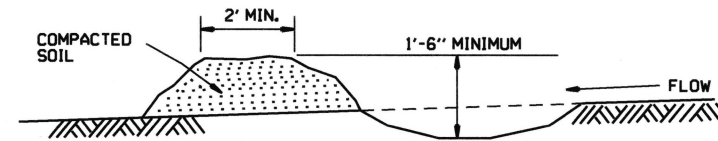
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

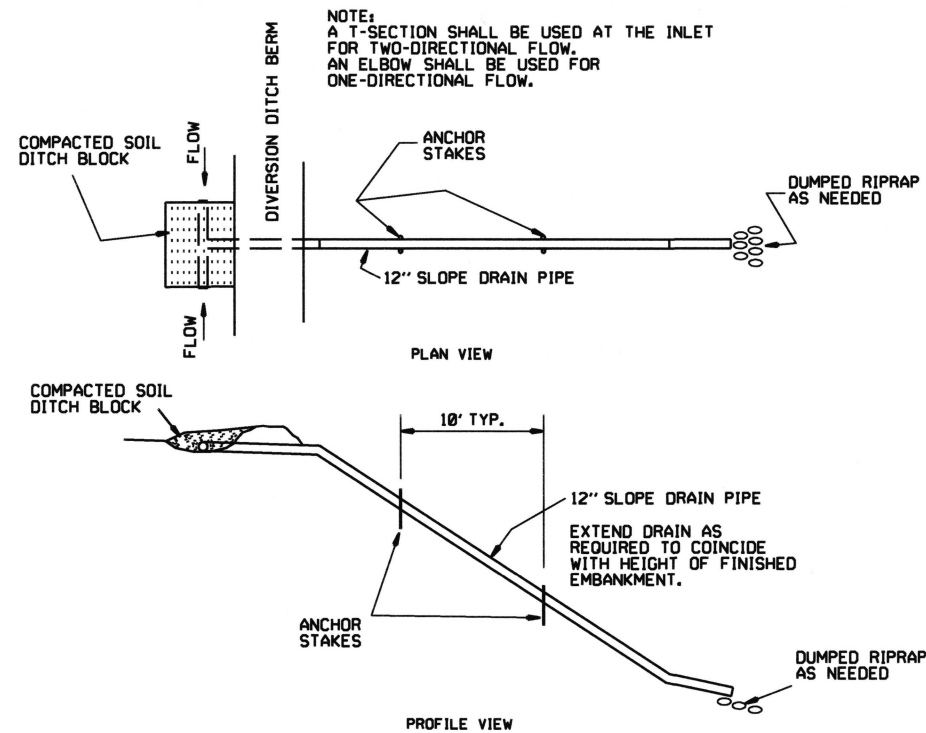


NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

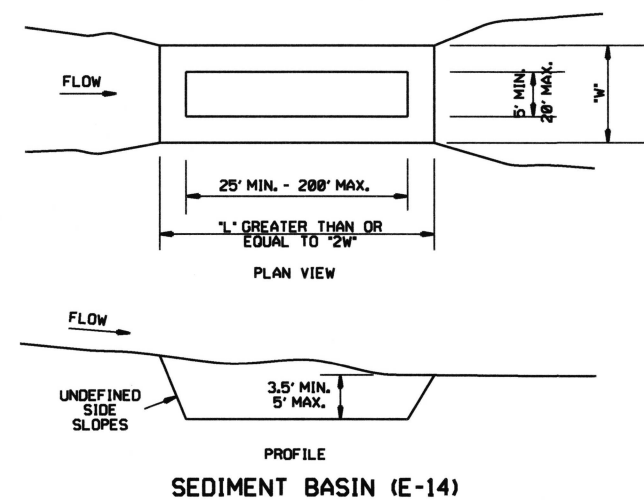
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

| | | | |
|--------|---|--|--------|
| 6-2-94 | Revised E-8 & E-12; Added E-14 & Deleted E-13 | | |
| 4-1-93 | ISSUED | | |
| DATE | REVISION | | FILMED |

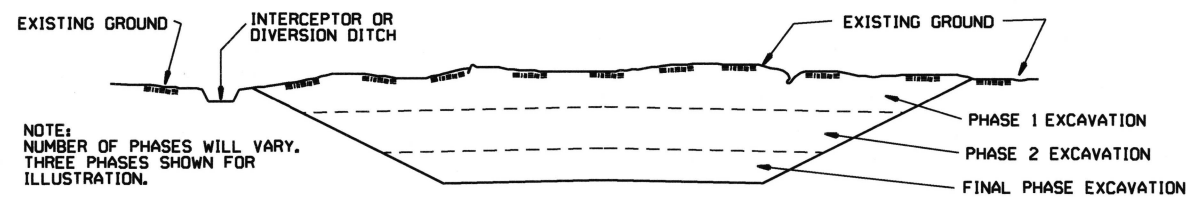
ARKANSAS STATE HIGHWAY COMMISSION
 TEMPORARY EROSION
 CONTROL DEVICES
 STANDARD DRAWING TEC-2

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

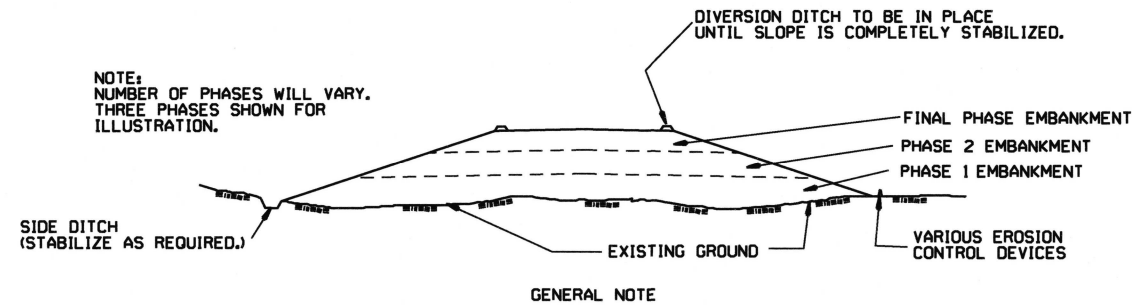
GENERAL NOTE

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

GENERAL NOTE

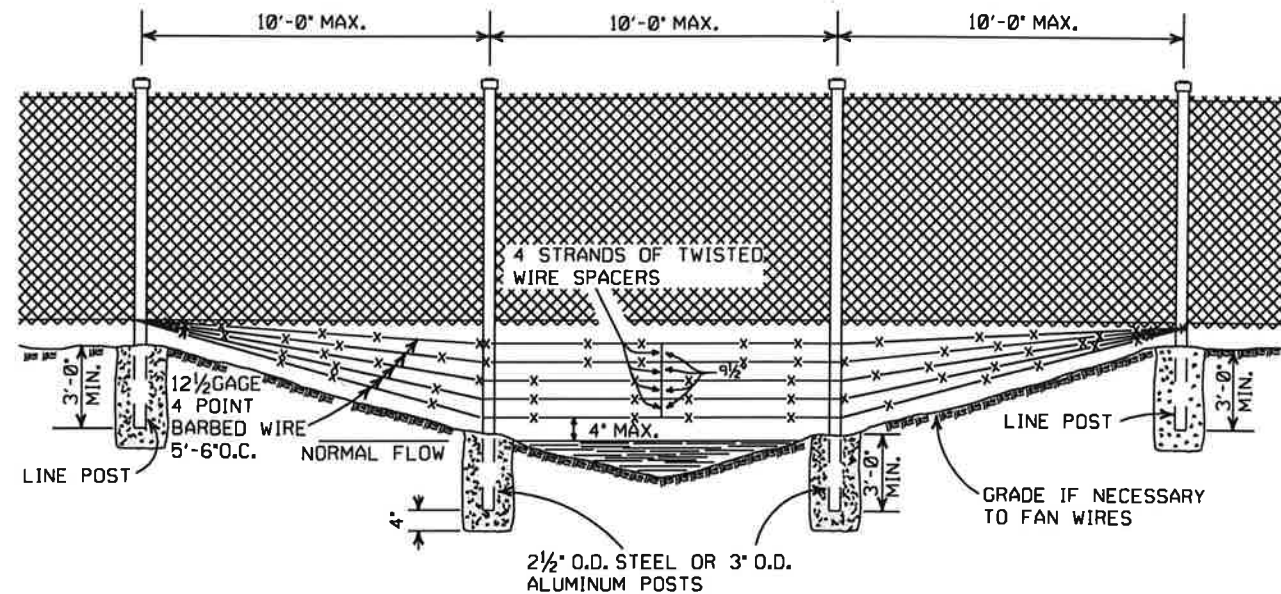
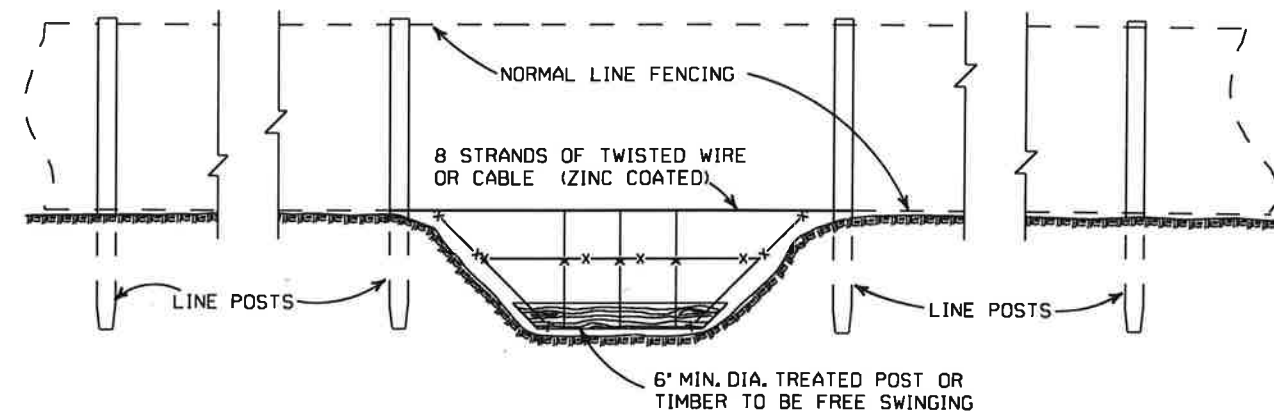
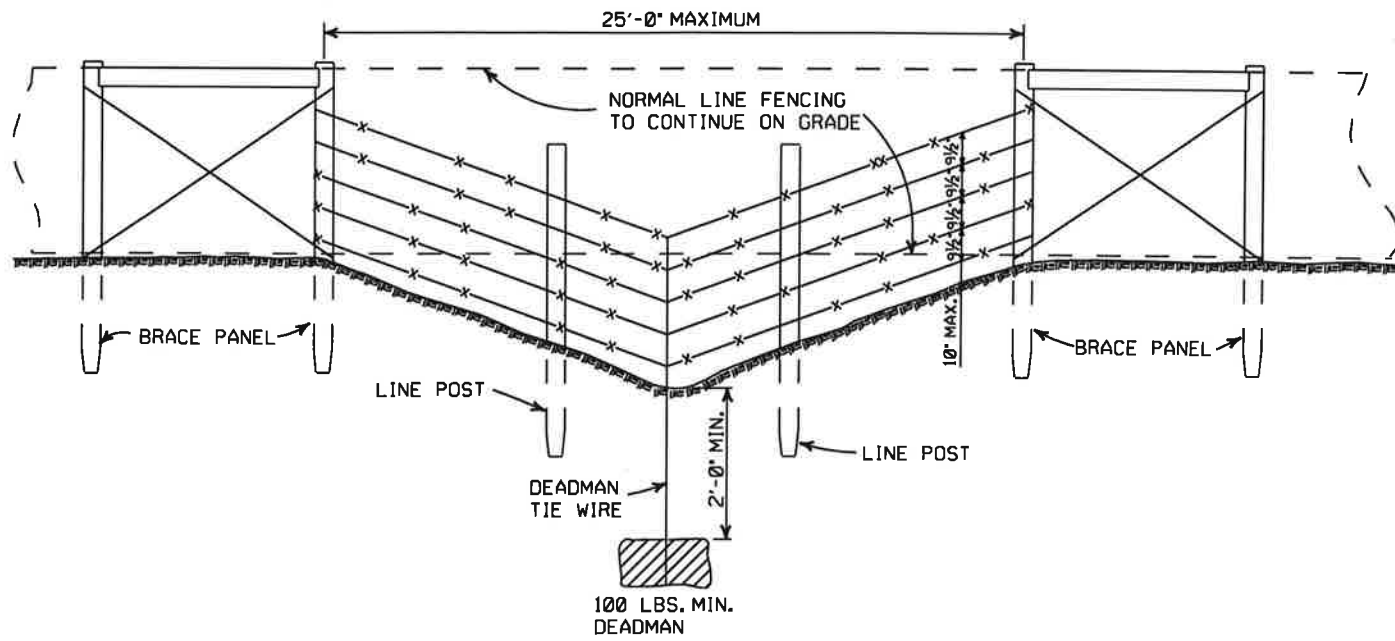
ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

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 | | |
| 6-2-94 | Drawn & Issued | 6-2-94 | FILMED |
| DATE | REVISION | | |

STANDARD DRAWING TEC-3



GENERAL NOTES:

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

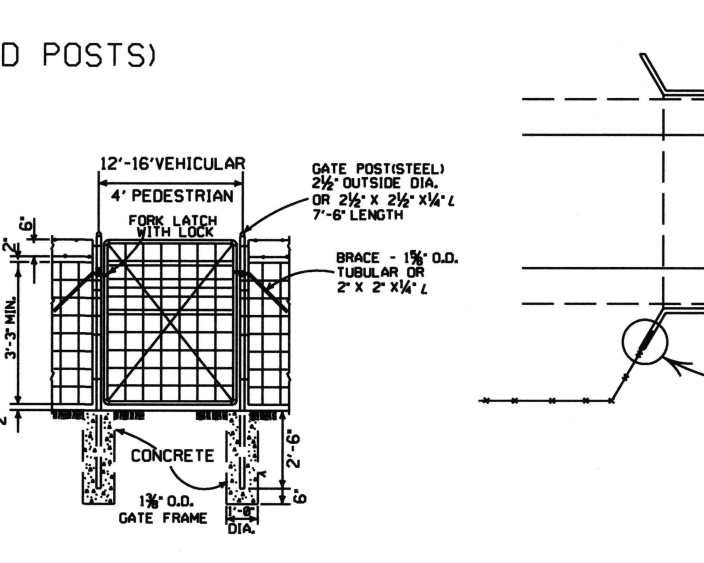
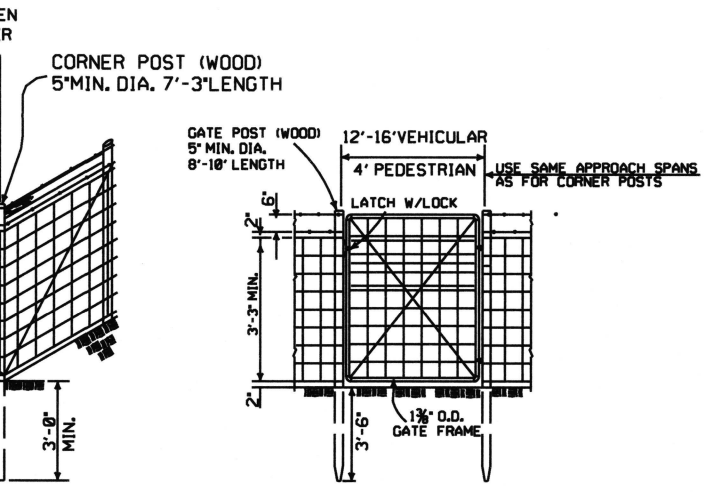
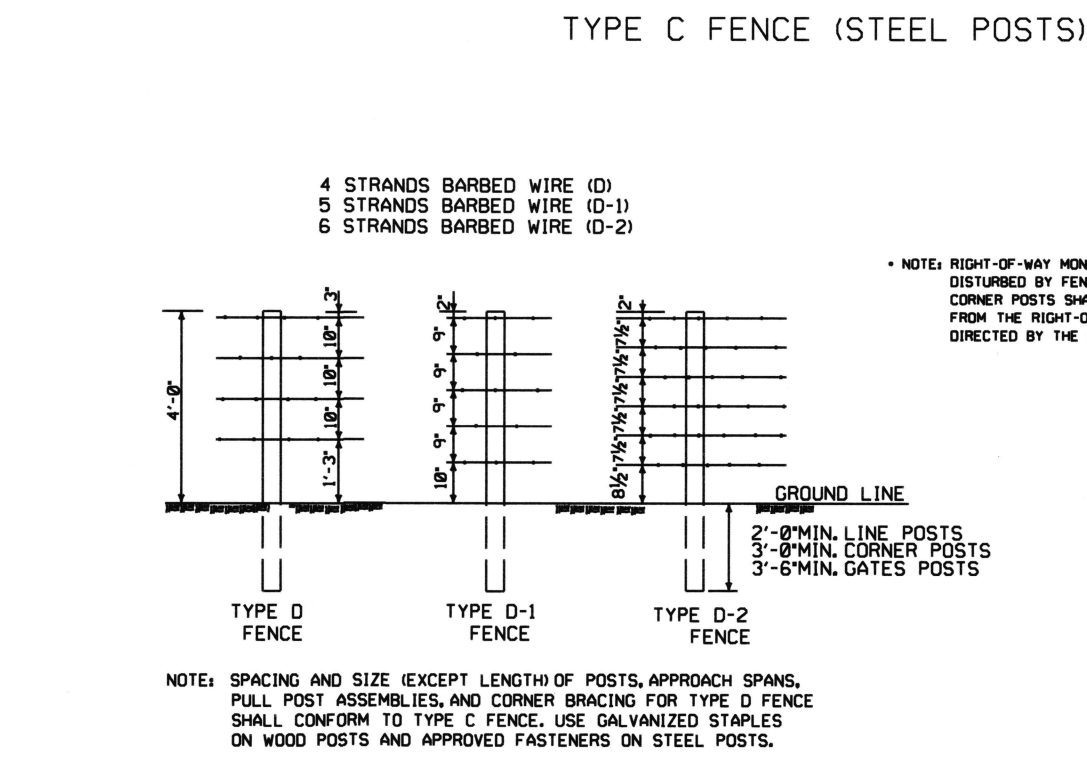
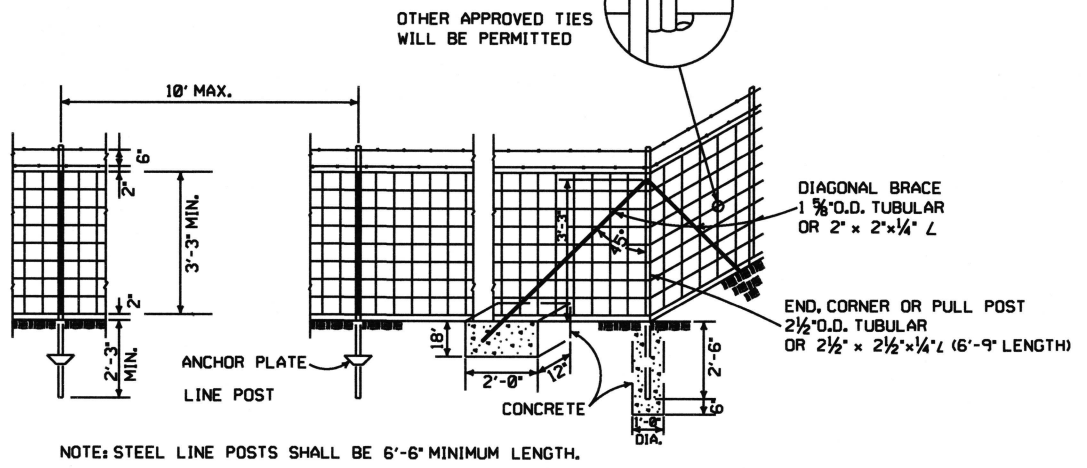
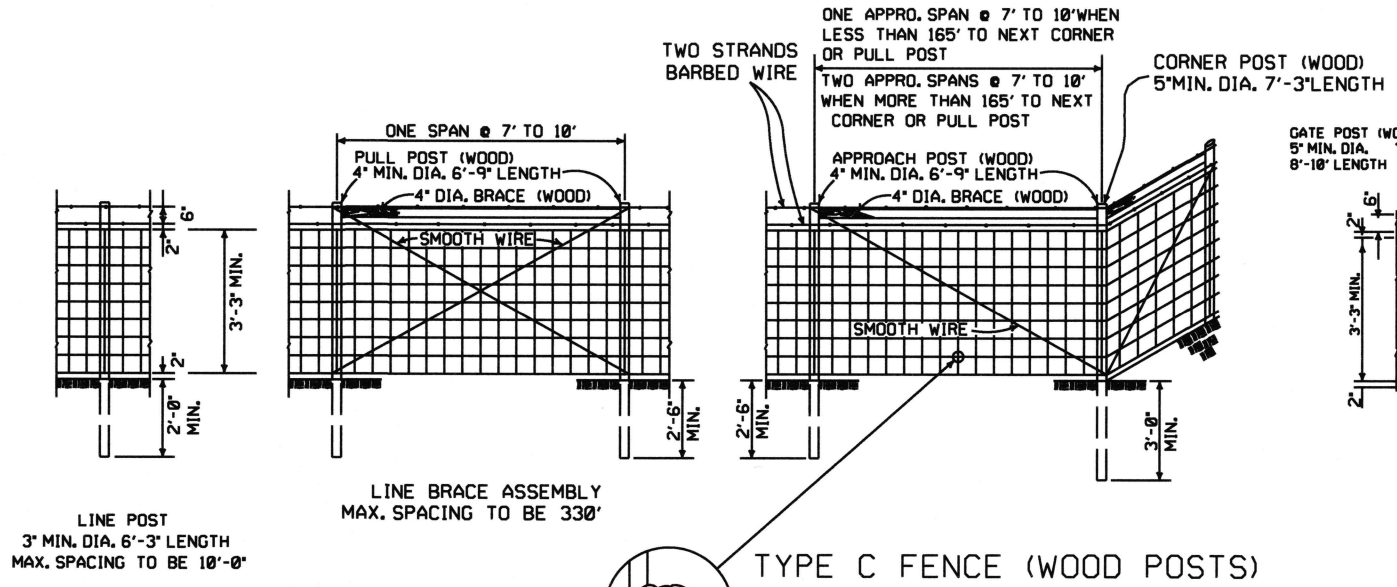
WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

| | | |
|---------|---------------------------------|-------------|
| 4-20-79 | REVISED TOP RAIL & TENSION WIRE | 696-4-20-79 |
| 10-2-72 | REVISED AND REDRAWN | 529-10-2-72 |
| DATE | REVISION | FILMED |

ARKANSAS STATE HIGHWAY COMMISSION
WIRE FENCE WATER GAPS
 STANDARD DRAWING WF-2



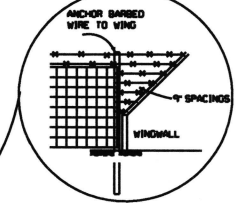
GENERAL NOTES:
 STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE. AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1\"/>

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.

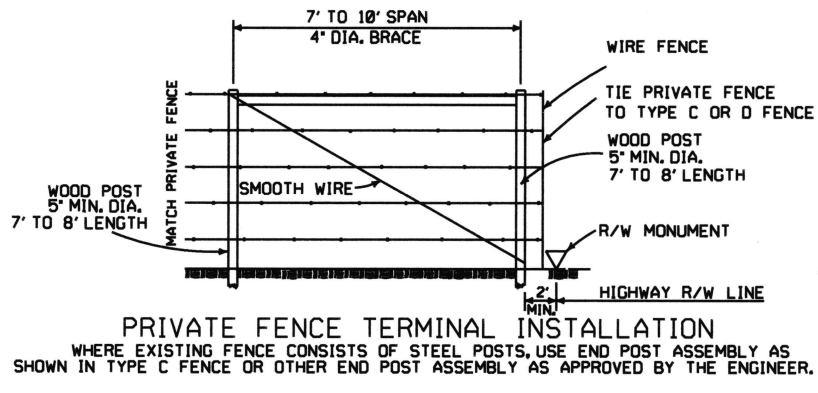
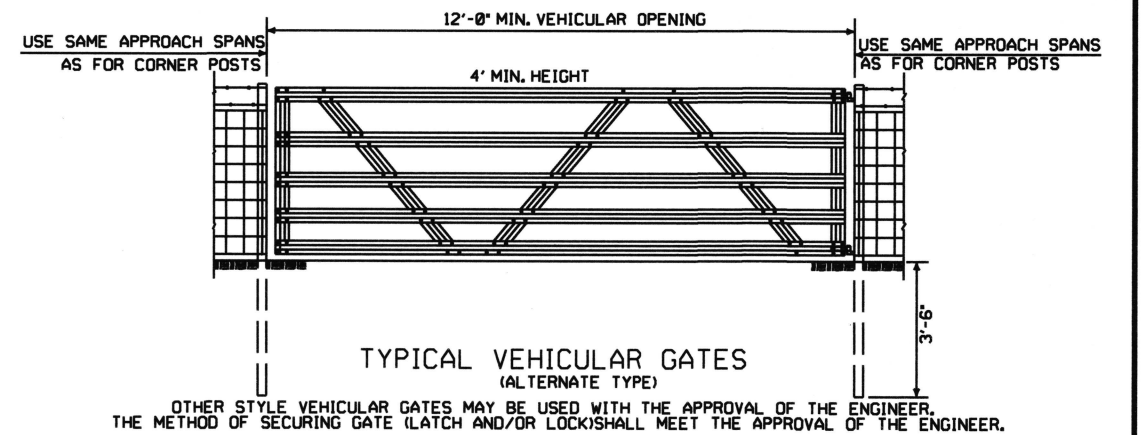
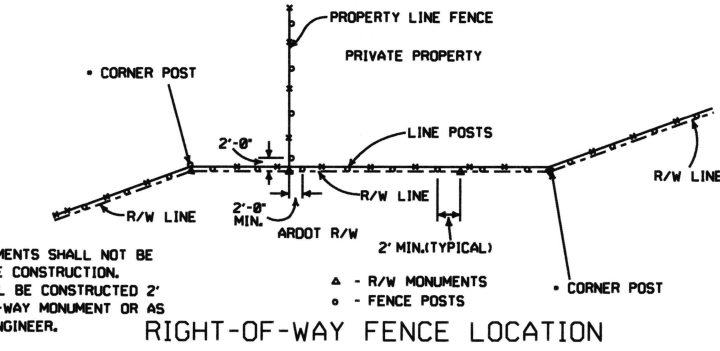
NOTE: USE 3/8\"/>



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.



| | | |
|----------|---|--------------|
| 8-22-02 | REVISED GENERAL NOTES | |
| 10-10-96 | REVISED AASHTO | |
| 11-22-95 | REVISED R-O-W LOCATION DETAIL | |
| 6-2-94 | REVISED BARB WIRE AND ADDED CORNER POST NOTES | 6-2-94 |
| 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