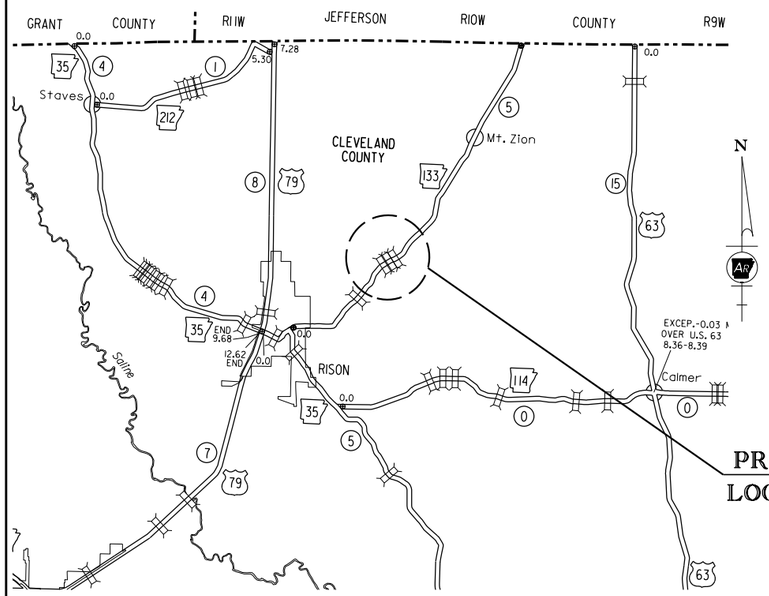
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 1 | 93 |
| | | | | (2) | BIG CREEK & RELIEF STRS. & APPRS. (S) | | | |

# ARKANSAS DEPARTMENT OF TRANSPORTATION
## CONSTRUCTION PLANS

# BIG CREEK & RELIEF
# STRS. & APPRS. (S)
## CLEVELAND COUNTY
## ROUTE 133 SECTION 5
# JOB 070416

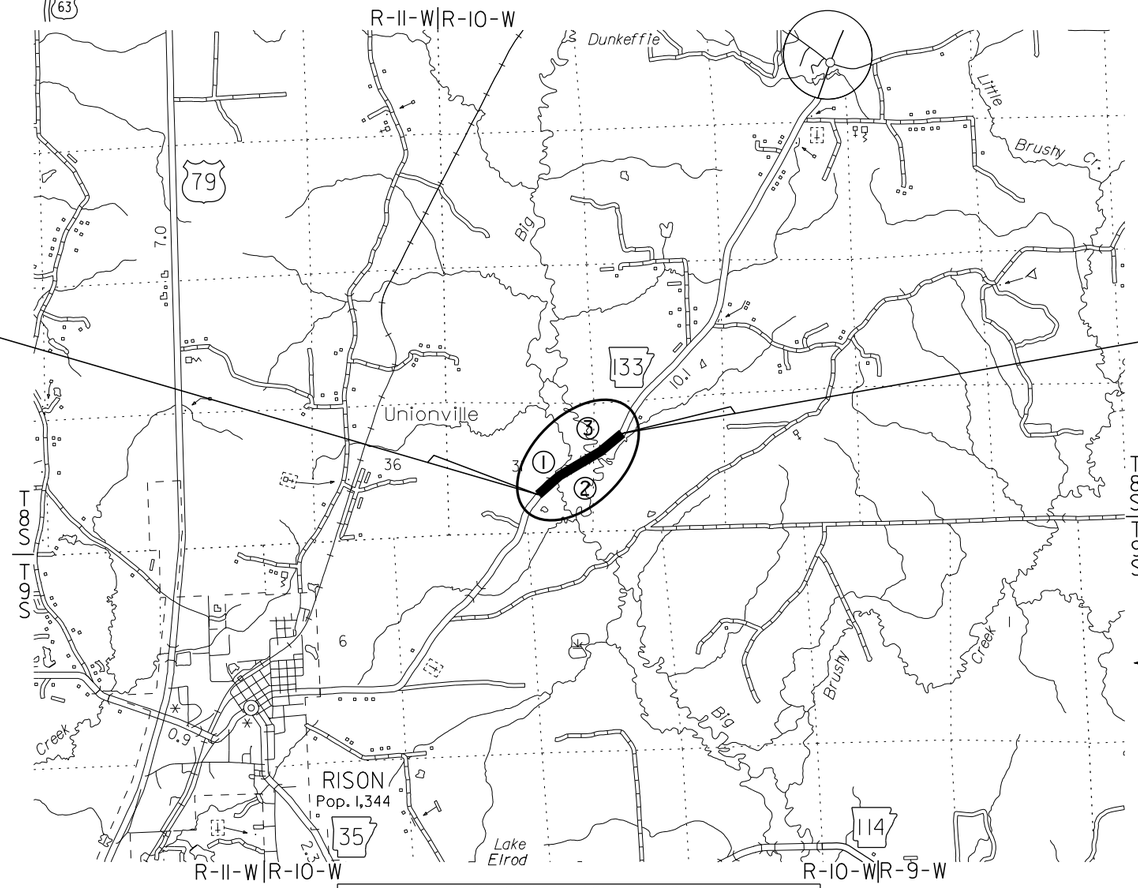
PROJECT LOCATION

FED. AID PROJ. ACNHPP-0013(19)



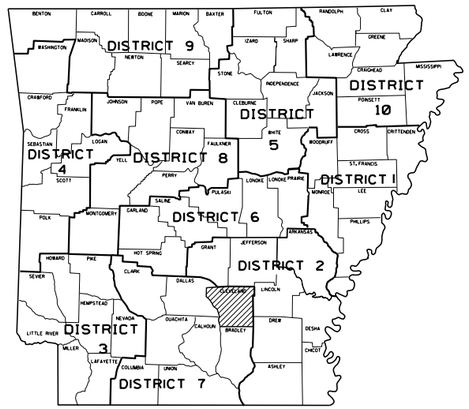

VICINITY MAP

NOT TO SCALE




STA. 181+64.00
BEGIN JOB 070416
LOG MILE 2.93

STA. 221+00.00
END JOB 070416




ARKANSAS HIGHWAY DISTRICT 7

## BRIDGE CONSTRUCTION DATA

(1) STA. 190+73.00 BRIDGE END
BRIDGE NO. 07476 OVER BRANCH OF BIG CREEK
PRECAST PRESTRESSED BEAM UNITS
(40' - 40' - 40' - 40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 192+33.00 BRIDGE END

(2) STA. 199+55.00 BRIDGE END
BRIDGE NO. 07477 OVER BIG CREEK RELIEF
ON 30° LT. FWD. SKEW
PRECAST PRESTRESSED BEAM UNITS
(40' - 40' - 40' - 40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 201+15.00 BRIDGE END

(3) STA. 207+55.00 BRIDGE END
BRIDGE NO. 07478 OVER BIG CREEK
ON 30° RT. FWD. SKEW
PRECAST PRESTRESSED BEAM UNITS
(40' - 40' - 40' - 40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 209+15.00 BRIDGE END

| | BEGIN OF PROJECT | MID-POINT OF PROJECT | END PROJECT |
|---|---|---|---|
| LATITUDE | N 33°58'51" | N 33°59'02" | N 33°59'13" |
| LONGITUDE | W 92°09'06" | W 92°08'47" | W 92°08'28" |

| LENGTH COMPUTED ALONG C.L. HWY. 133 | | | |
|---|---|---|---|
| GROSS LENGTH OF PROJECT | 3936.00 FEET | 0.745 | MILES |
| NET LENGTH OF ROADWAY | 3456.00 FEET | 0.654 | MILES |
| NET LENGTH OF BRIDGES | 480.00 FEET | 0.091 | MILES |
| NET LENGTH OF PROJECT | 3936.00 FEET | 0.745 | MILES |

## • DESIGN TRAFFIC DATA •

| | |
|---|---|
| DESIGN YEAR | 2040 |
| 2021 ADT | 700 |
| 2041 ADT | 850 |
| 2041 DHV | 94 |
| DIRECTIONAL DISTRIBUTION | 0.60 |
| TRUCKS | 2% |
| DESIGN SPEED | 55 MPH |

CERTIFICATE OF AUTHORIZATION
MICHAEL BAKER INTERNATIONAL INC
No. 1126
ARKANSAS - ENGINEER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
9-20-2021

ByronLawrence 9/20/2021 10:35:16 AM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 2 | 93 |

(2) INDEX OF SHEETS AND STANDARD DRAWINGS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
8-10-2021

## INDEX OF SHEETS


| SHEET NO. | TITLE | BRIDGE NO. | DRWG.NO. |
|---|---|---|---|
| 1 | TITLE SHEET | | |
| 2 | INDEX OF SHEETS AND STANDARD DRAWINGS | | |
| 3 | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | |
| 4 - 5 | TYPICAL SECTIONS OF IMPROVEMENT | | |
| 6 - 9 | SPECIAL DETAILS | | |
| 10 - 18 | TEMPORARY EROSION CONTROL DETAILS | | |
| 19 - 31 | MAINTENANCE OF TRAFFIC DETAILS | | |
| 32 - 34 | PERMANENT PAVEMENT MARKING DETAILS | | |
| 35 - 38 | QUANTITIES | | |
| 39 | SCHEDULE OF BRIDGE QUANTITIES | 07476, 07477, 07478 | 61451 |
| 40 | SUMMARY OF QUANTITIES AND REVISIONS | | |
| 41 - 44 | SURVEY CONTROL DETAILS | | |
| 45 - 47 | PLAN AND PROFILE SHEETS | | |
| 48 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BRANCH OF BIG CREEK (SHEET 1 OF 2) | 07476 | 61452 |
| 49 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BRANCH OF BIG CREEK (SHEET 2 OF 2) | 07476 | 61453 |
| 50 | DETAILS OF END BENTS | 07476 | 61454 |
| 51 | DETAILS OF INTERMEDIATE BENTS | 07476 | 61455 |
| 52 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 1 OF 5) | 07476 | 61456 |
| 53 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 2 OF 5) | 07476 | 61457 |
| 54 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 3 OF 5) | 07476 | 61458 |
| 55 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 4 OF 5) | 07476 | 61459 |
| 56 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 5 OF 5) | 07476 | 61460 |
| 57 | DETAILS OF TYPE 1 SPECIAL APPROACH GUTTERS | 07476 | 61461 |
| 58 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BIG CREEK RELIEF (SHEET 1 OF 2) | 07477 | 61462 |
| 59 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BIG CREEK RELIEF (SHEET 2 OF 2) | 07477 | 61463 |
| 60 | DETAILS OF END BENTS (SHEET 1 OF 2) | 07477 | 61464 |
| 61 | DETAILS OF END BENTS (SHEET 2 OF 2) | 07477 | 61465 |
| 62 | DETAILS OF INTERMEDIATE BENTS | 07477 | 61466 |
| 63 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 1 OF 5) | 07477 | 61467 |
| 64 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 2 OF 5) | 07477 | 61468 |
| 65 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 3 OF 5) | 07477 | 61469 |
| 66 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 4 OF 5) | 07477 | 61470 |
| 67 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 5 OF 5) | 07477 | 61471 |
| 68 | DETAILS OF TYPE 2 SPECIAL APPROACH GUTTERS | 07477 | 61472 |
| 69 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BIG CREEK (SHEET 1 OF 2) | 07478 | 61473 |
| 70 | LAYOUT OF BRIDGE HIGHWAY 133 OVER BIG CREEK (SHEET 2 OF 2) | 07478 | 61474 |
| 71 | DETAILS OF END BENTS (SHEET 1 OF 2) | 07478 | 61475 |
| 72 | DETAILS OF END BENTS (SHEET 2 OF 2) | 07478 | 61476 |
| 73 | DETAILS OF INTERMEDIATE BENTS | 07478 | 61477 |
| 74 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 1 OF 5) | 07478 | 61478 |
| 75 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 2 OF 5) | 07478 | 61479 |
| 76 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 3 OF 5) | 07478 | 61480 |
| 77 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 4 OF 5) | 07478 | 61481 |
| 78 | DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS (SHEET 5 OF 5) | 07478 | 61482 |
| 79 | DETAILS OF TYPE 3 SPECIAL APPROACH GUTTERS | 07478 | 61483 |
| 80 - 93 | CROSS SECTIONS | | |


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

## BRIDGE STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|---|---|---|
| 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 |
| 55010 | STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE | 05-11-21 |
| 55021 | STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS | 03-24-16 |
| 55040E | STANDARD DETAILS FOR TYPE E APPROACH SLAB | 02-27-14 |

## ROADWAY STANDARD DRAWINGS

| DRWG.NO. | TITLE | DATE |
|---|---|---|
| GR-6 | GUARDRAIL DETAILS | 11-07-19 |
| GR-7 | GUARDRAIL DETAILS | 11-07-19 |
| GR-8 | GUARDRAIL DETAILS | 11-07-19 |
| GR-9 | GUARDRAIL DETAILS | 11-07-19 |
| GR-10 | GUARDRAIL DETAILS | 11-07-19 |
| GR-11 | GUARDRAIL DETAILS | 11-07-19 |
| GR-12 | GUARDRAIL DETAILS | 05-14-20 |
| PM-1 | PAVEMENT MARKING DETAILS | 02-27-20 |
| PU-1 | DETAILS OF PIPE UNDERDRAIN | 12-08-16 |
| SE-2 | TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC | 11-07-19 |
| TC-1 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 11-07-19 |
| TC-2 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 05-20-21 |
| TC-3 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | 08-12-21 |
| TC-4 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER | 11-07-19 |
| TC-5 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER | 11-07-19 |
| TEC-1 | TEMPORARY EROSION CONTROL DEVICES | 11-16-17 |
| TEC-2 | TEMPORARY EROSION CONTROL DEVICES | 06-02-94 |
| TEC-3 | TEMPORARY EROSION CONTROL DEVICES | 11-03-94 |


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| | | | | JOB NO. | | 070416 | 3 | 93 |
| | | | | (2) | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
* * *
No.10887
SCOTT P. THORNSBERRY
8-4-2021

## 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 |
| 400-7 | TRACKLESS TACK |
| 404-3 | DESIGN OF ASPHALT MIXTURES |
| 410-1 | CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES |
| 410-2 | DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS |
| 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) |
| 617-1 | GUARDRAIL TERMINAL (TYPE 2) |
| 620-1 | MULCH COVER |
| 621-1 | FILTER SOCKS |
| 800-1 | STRUCTURES |
| 802-3 | CONCRETE FOR STRUCTURES |
| 804-2 | REINFORCING STEEL FOR STRUCTURES |
| JOB 070416 | BIDDING REQUIREMENTS AND CONDITIONS |
| JOB 070416 | BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT |
| JOB 070416 | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB 070416 | CARGO PREFERENCE ACT REQUIREMENTS |
| JOB 070416 | CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE |
| JOB 070416 | COMPACTED EMBANKMENT |
| JOB 070416 | DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES |
| JOB 070416 | ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT |
| JOB 070416 | FLEXIBLE BEGINNING OF WORK |
| JOB 070416 | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION |
| JOB 070416 | MANDATORY ELECTRONIC CONTRACT |
| JOB 070416 | MANDATORY ELECTRONIC DOCUMENT SUBMITTAL |
| JOB 070416 | NESTING SITES OF MIGRATORY BIRDS |
| JOB 070416 | PARTNERING REQUIREMENTS |
| JOB 070416 | PRESTRESSED CONCRETE MEMBERS |
| JOB 070416 | PRICE ADJUSTMENT FOR ASPHALT BINDER |
| JOB 070416 | PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT |
| JOB 070416 | RUMBLE STRIPS |
| JOB 070416 | SHORING |
| JOB 070416 | STORM WATER POLLUTION PREVENTION PLAN |
| JOB 070416 | SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB 070416 | UTILITY ADJUSTMENTS |
| JOB 070416 | VALUE ENGINEERING |
| JOB 070416 | VEGETATED BUFFER ZONE |
| JOB 070416 | WARM MIX ASPHALT |
| JOB 070416 | WATER POLLUTION CONTROL |

## GENERAL NOTES

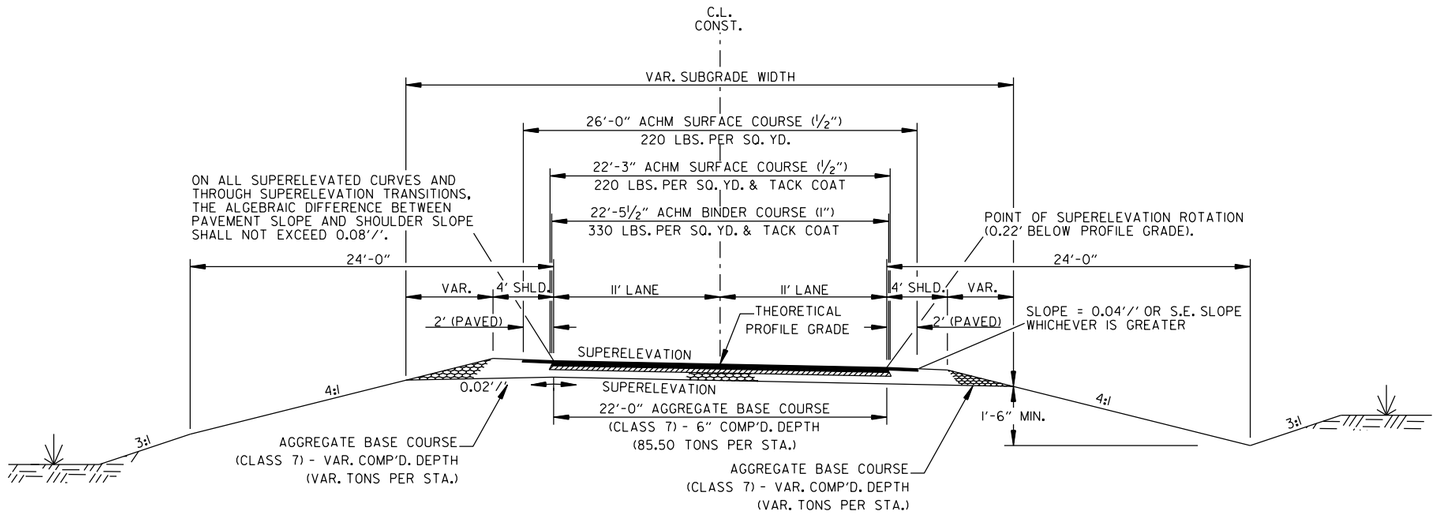
1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY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



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| | | | | JOB NO. | | 070416 | 4 | 93 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
5-4-2021




## SUPERELEVATION SECTION - FULL DEPTH

STA. 185+70.00 TO STA. 190+51.02
TRANSITION NOTCH AND WIDENING SUPERELEVATION SECTION TO FULL DEPTH SUPERELEVATION SECTION.

STA. 216+10.00 TO STA. 218+90.00
TRANSITION NOTCH AND WIDENING SUPERELEVATION SECTION TO FULL DEPTH SUPERELEVATION SECTION.

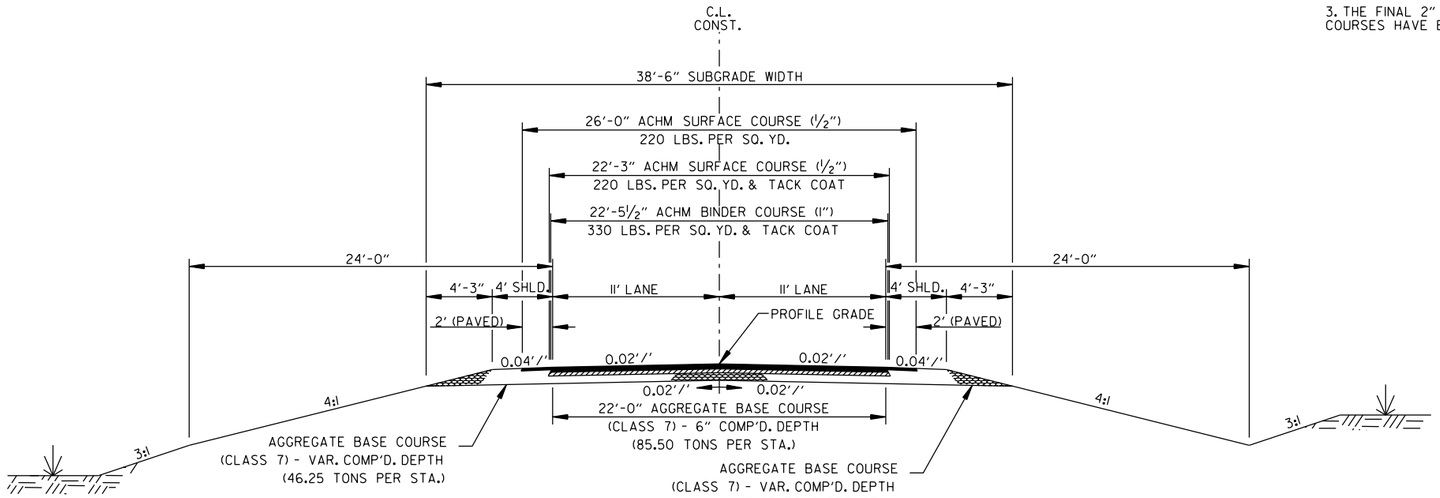
REFER TO "METHOD OF RAISING GRADE" SPECIAL DETAIL SHEET NO. 8.

NOTES:

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

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

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




## TANGENT SECTION - FULL DEPTH

STA. 205+40.00 TO STA. 207+28.65
TRANSITION NOTCH AND WIDEN TANGENT SECTION TO FULL DEPTH TANGENT SECTION.

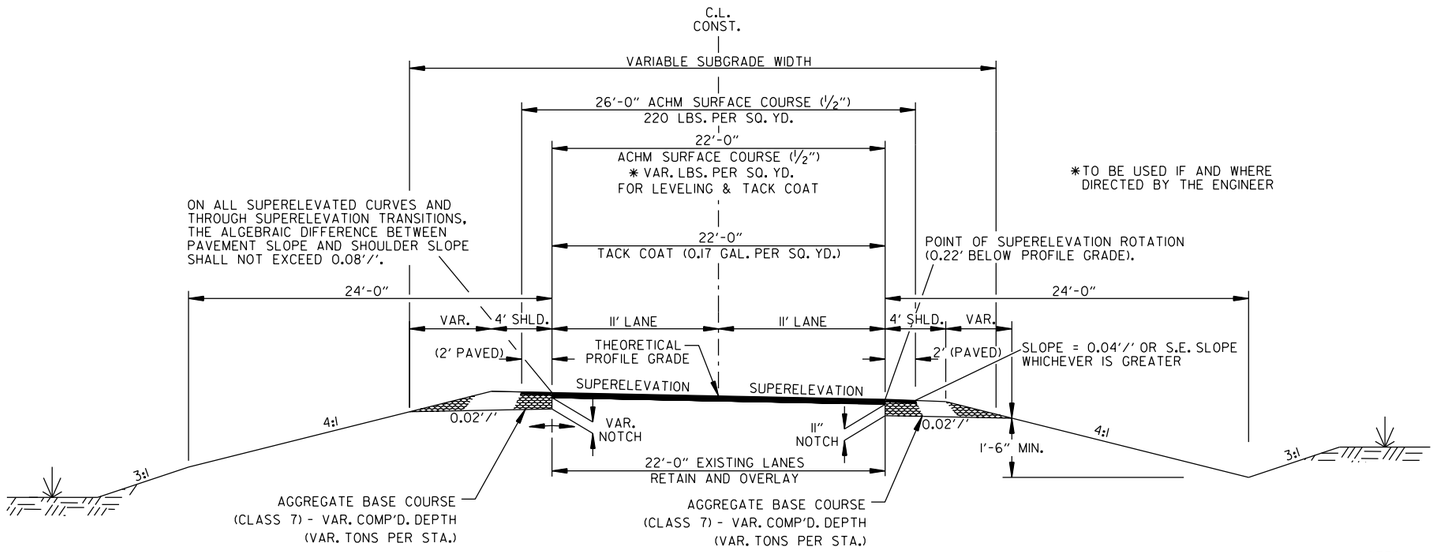
STA. 185+70.00 TO STA. 190+53.00
STA. 192+53.00 TO STA. 199+28.65
STA. 201+41.35 TO STA. 203+70.00
STA. 205+40.00 TO STA. 207+28.65
STA. 209+41.35 TO STA. 214+20.00
STA. 215+06.89 TO STA. 218+90.00

TYPICAL SECTIONS OF IMPROVEMENT

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| | | | | JOB NO. | | 070416 | 5 | 93 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
5-4-2021




## SUPERELEVATION SECTION NOTCH AND WIDENING

STA. 181+64.49 TO STA. 185+70.00
TRANSITION NOTCH AND WIDEN SUPERELEVATION SECTION TO FULL DEPTH SUPERELEVATION SECTION.

STA. 218+90.00 TO STA. 224+28.00
TRANSITION FULL DEPTH SUPERELEVATION SECTION TO NOTCH AND WIDEN SUPERELEVATION SECTION.

NOTES:

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

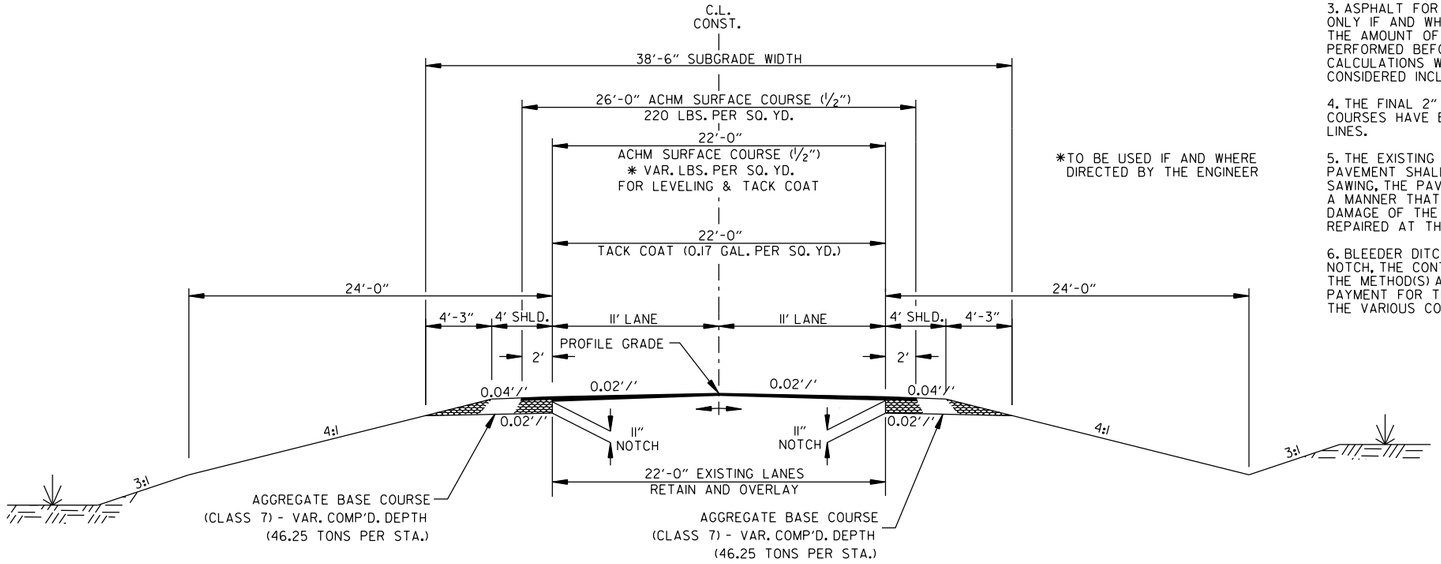
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WIL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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

5. 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.

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




STA. 203+70.00 TO STA. 205+40.00
TRANSITION FULL DEPTH TANGENT SECTION TO NOTCH AND WIDEN TANGENT SECTION.

STA. 214+20.00 TO STA. 215+06.89
TRANSITION FULL DEPTH TANGENT SECTION TO NOTCH AND WIDEN TANGENT SECTION.

## TANGENT SECTION NOTCH AND WIDENING

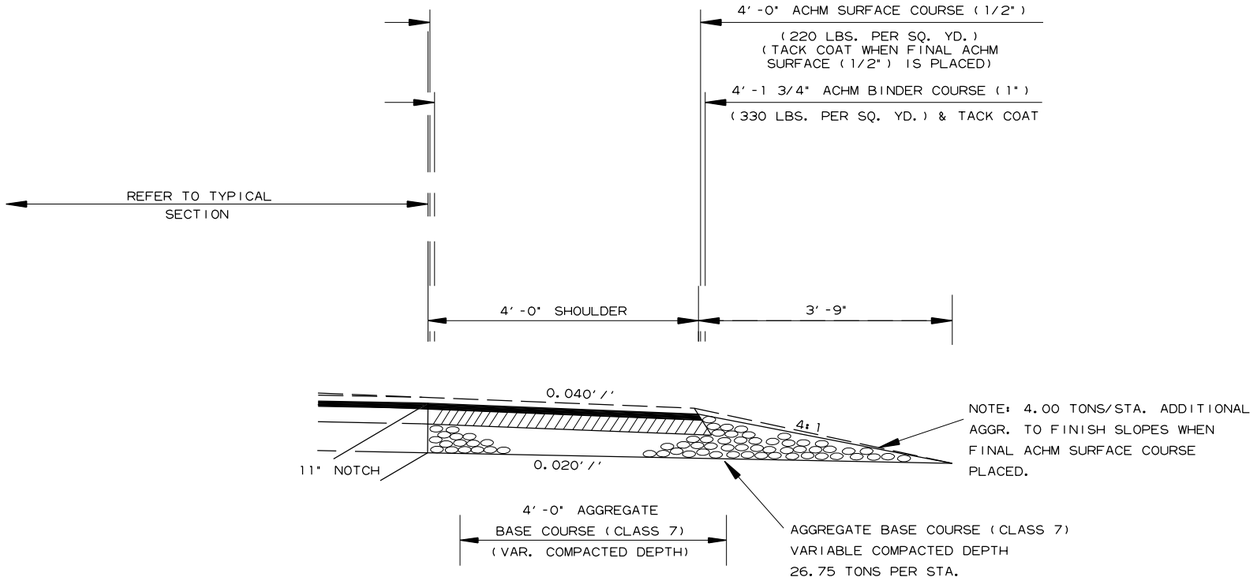
STA. 181+64.00 TO STA. 185+70.00
STA. 203+70.00 TO STA. 205+40.00
STA. 214+20.00 TO STA. 215+06.89
STA. 218+90.00 TO STA. 224+28.00

TYPICAL SECTIONS OF IMPROVEMENT


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| | | | | (2) | SPECIAL DETAILS | | | |

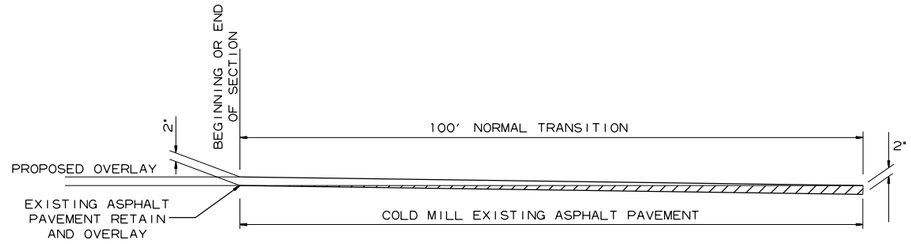
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
4-29-2021



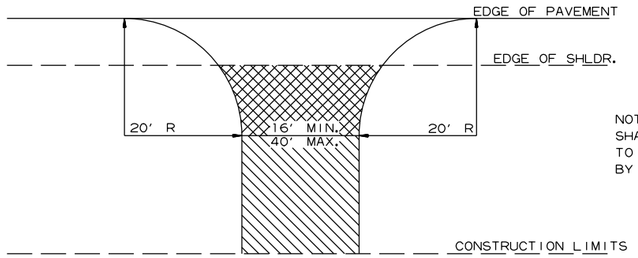

## FULL DEPTH SHOULDER FOR MAINTENANCE OF TRAFFIC *

STA. 181+64.00 TO STA. 187+00.00

* TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER




## DETAIL FOR TRANSITIONS




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

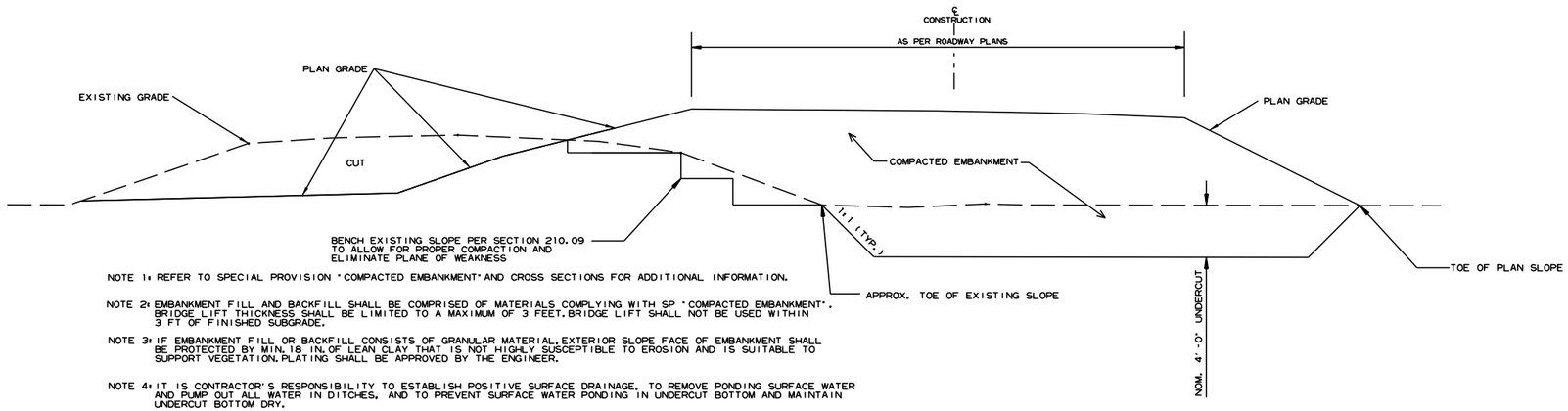
## DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

SPECIAL DETAILS

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| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
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No.10887
SCOTT P. THORNSBERRY
8-4-2021




NOTE 1: REFER TO SPECIAL PROVISION "COMPACTED EMBANKMENT" AND CROSS SECTIONS FOR ADDITIONAL INFORMATION.

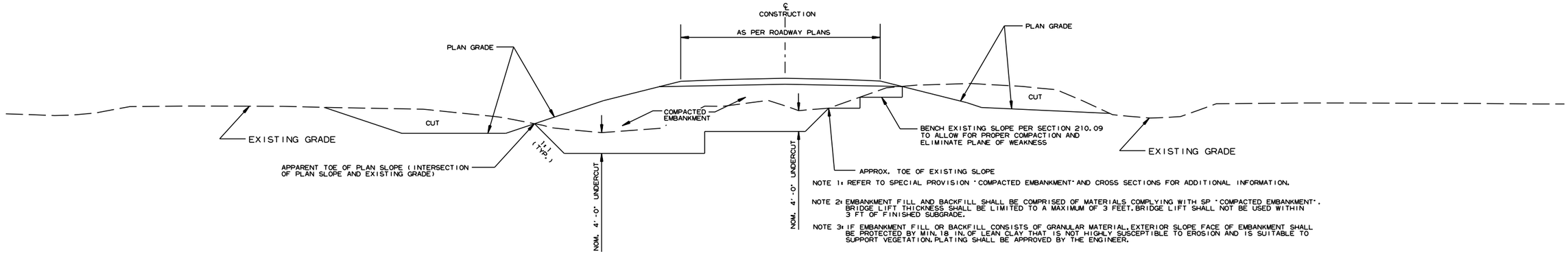
NOTE 2: EMBANKMENT FILL AND BACKFILL SHALL BE COMPRISED OF MATERIALS COMPLYING WITH SP "COMPACTED EMBANKMENT". BRIDGE LIFT THICKNESS SHALL BE LIMITED TO A MAXIMUM OF 3 FEET. BRIDGE LIFT SHALL NOT BE USED WITHIN 3 FT OF FINISHED SUBGRADE.

NOTE 3: IF EMBANKMENT FILL OR BACKFILL CONSISTS OF GRANULAR MATERIAL, EXTERIOR SLOPE FACE OF EMBANKMENT SHALL BE PROTECTED BY MIN. 18 IN. OF LEAN CLAY THAT IS NOT HIGHLY SUSCEPTIBLE TO EROSION AND IS SUITABLE TO SUPPORT VEGETATION. PLATING SHALL BE APPROVED BY THE ENGINEER.

NOTE 4: IT IS CONTRACTOR'S RESPONSIBILITY TO ESTABLISH POSITIVE SURFACE DRAINAGE, TO REMOVE PONDING SURFACE WATER AND PUMP OUT ALL WATER IN DITCHES, AND TO PREVENT SURFACE WATER PONDING IN UNDERCUT BOTTOM AND MAINTAIN UNDERCUT BOTTOM DRY.

## SPECIAL EMBANKMENT DETAIL - UNDERCUT AND BACKFILL

(LOCATIONS OF UNDERCUT AS DIRECTED BY THE ENGINEER WHERE SUBGRADE IS IDENTIFIED UNSTABLE)




NOTE 1: REFER TO SPECIAL PROVISION "COMPACTED EMBANKMENT" AND CROSS SECTIONS FOR ADDITIONAL INFORMATION.

NOTE 2: EMBANKMENT FILL AND BACKFILL SHALL BE COMPRISED OF MATERIALS COMPLYING WITH SP "COMPACTED EMBANKMENT". BRIDGE LIFT THICKNESS SHALL BE LIMITED TO A MAXIMUM OF 3 FEET. BRIDGE LIFT SHALL NOT BE USED WITHIN 3 FT OF FINISHED SUBGRADE.

NOTE 3: IF EMBANKMENT FILL OR BACKFILL CONSISTS OF GRANULAR MATERIAL, EXTERIOR SLOPE FACE OF EMBANKMENT SHALL BE PROTECTED BY MIN. 18 IN. OF LEAN CLAY THAT IS NOT HIGHLY SUSCEPTIBLE TO EROSION AND IS SUITABLE TO SUPPORT VEGETATION. PLATING SHALL BE APPROVED BY THE ENGINEER.

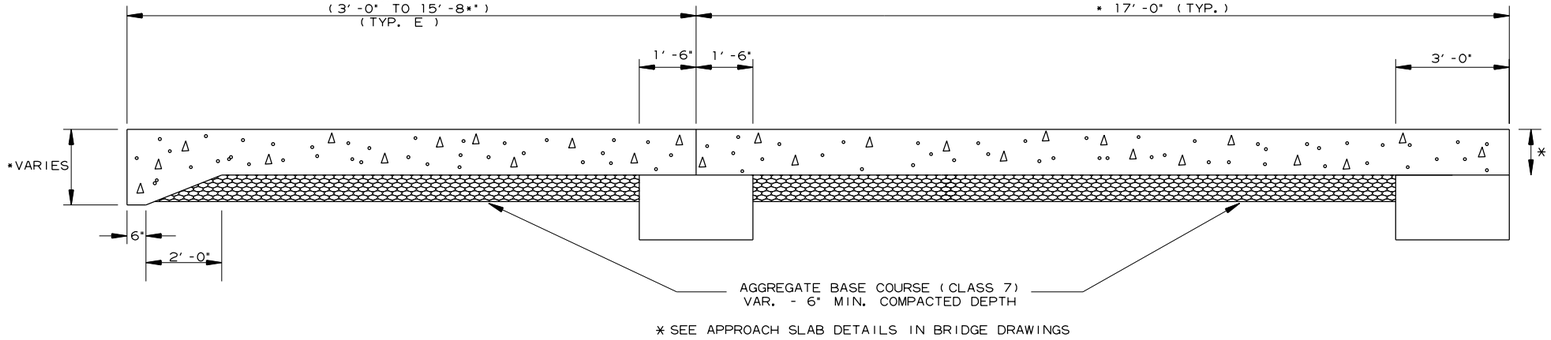
NOTE 4: IT IS CONTRACTOR'S RESPONSIBILITY TO ESTABLISH POSITIVE SURFACE DRAINAGE, TO REMOVE PONDING SURFACE WATER AND PUMP OUT ALL WATER IN DITCHES, AND TO PREVENT SURFACE WATER PONDING IN UNDERCUT BOTTOM AND MAINTAIN UNDERCUT BOTTOM DRY.

## SPECIAL EMBANKMENT DETAIL - UNDERCUT AND BACKFILL

(LOCATIONS OF UNDERCUT AS DIRECTED BY THE ENGINEER WHERE SUBGRADE IS IDENTIFIED UNSTABLE)

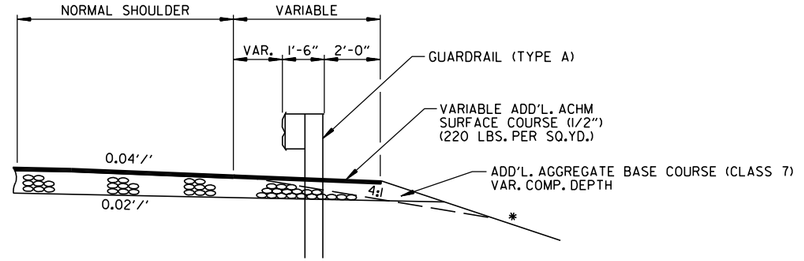

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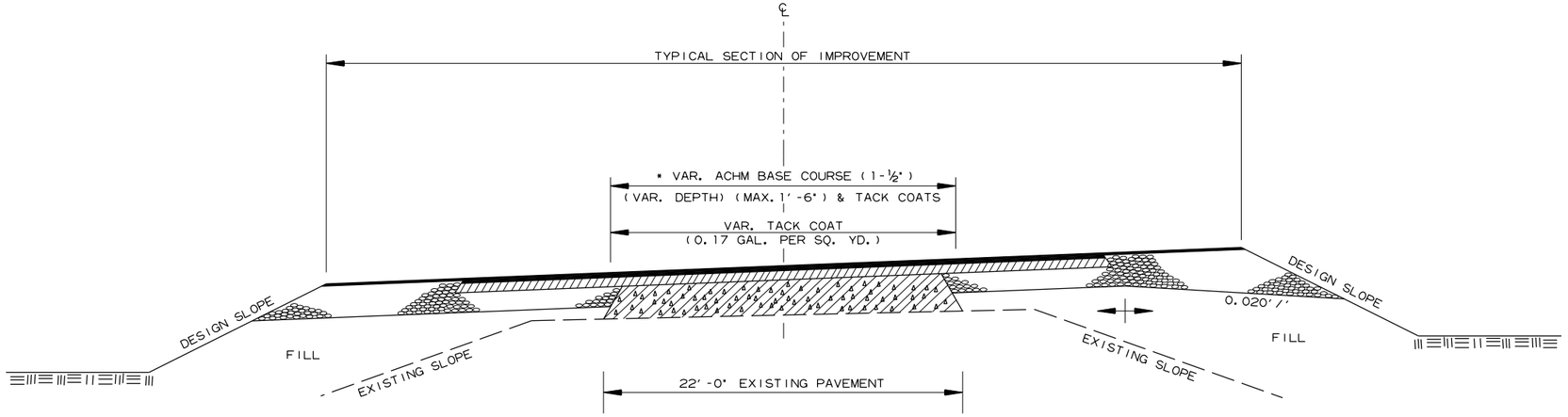

* SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

## SECTION OF APPROACH SLAB




## WIDENING FOR GUARDRAIL

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




* 6" AGGREGATE BASE COURSE ( CLASS 7)
TO BE REPLACED WITH ACHM BASE COURSE ( 1-½" )

## METHOD OF RAISING GRADE

STA. 185+70.00 TO STA. 186+60.00
STA. 216+40.00 TO STA. 219+00.00

NOTES:

(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.

(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09, OF THE STANDARD SPECIFICATIONS.

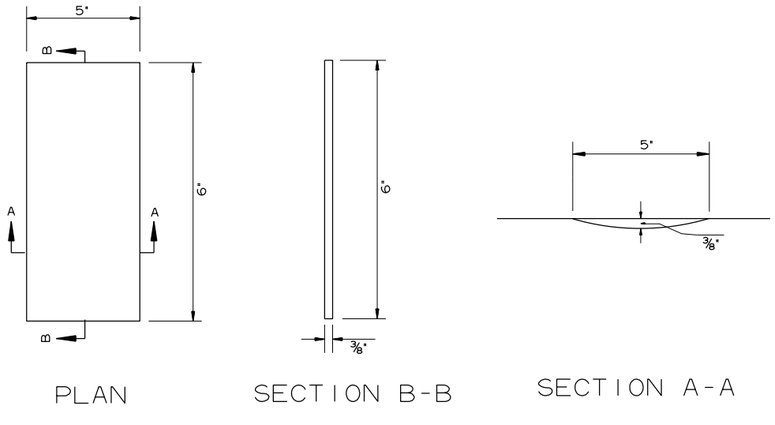
STATE OF ARKANSAS
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No.10887
SCOTT P. THORNSBERRY
7-21-2021

## SPECIAL DETAILS


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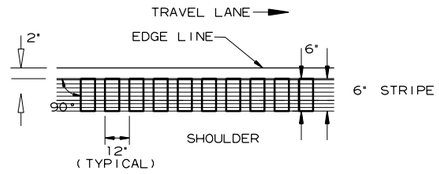
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SCOTT P. THORNSBERRY
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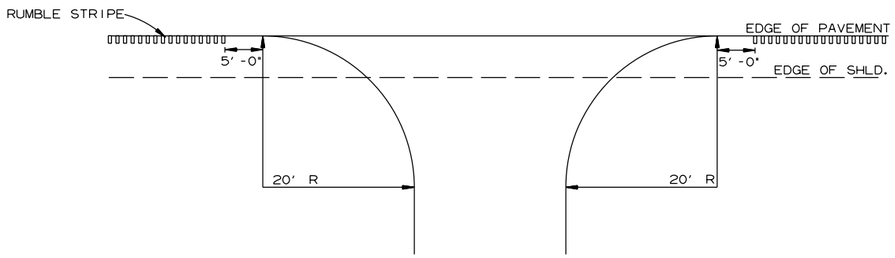



PLAN SECTION B-B SECTION A-A

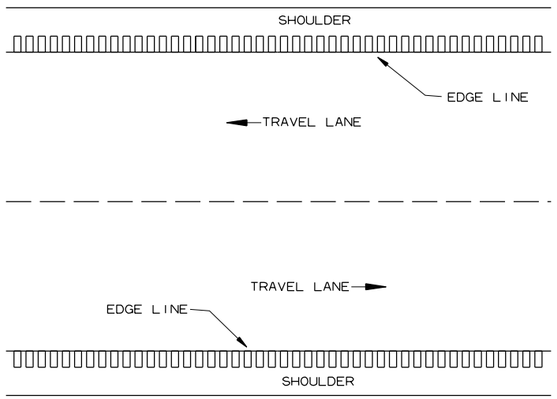
DETAILS OF RUMBLE STRIPE




LOCATION PLAN OF RUMBLE STRIPE
LEFT OR RIGHT SHOULDER



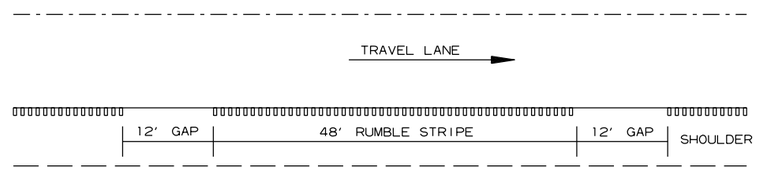

DETAIL FOR RUMBLE STRIPE GAP
AT DRIVEWAY TURNOUTS




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



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| | | | | (2) | TEMPORARY EROSION CONTROL DETAILS | | | |

## LEGEND

- E-14 = SEDIMENT BASIN
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-11) = SILT FENCE

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

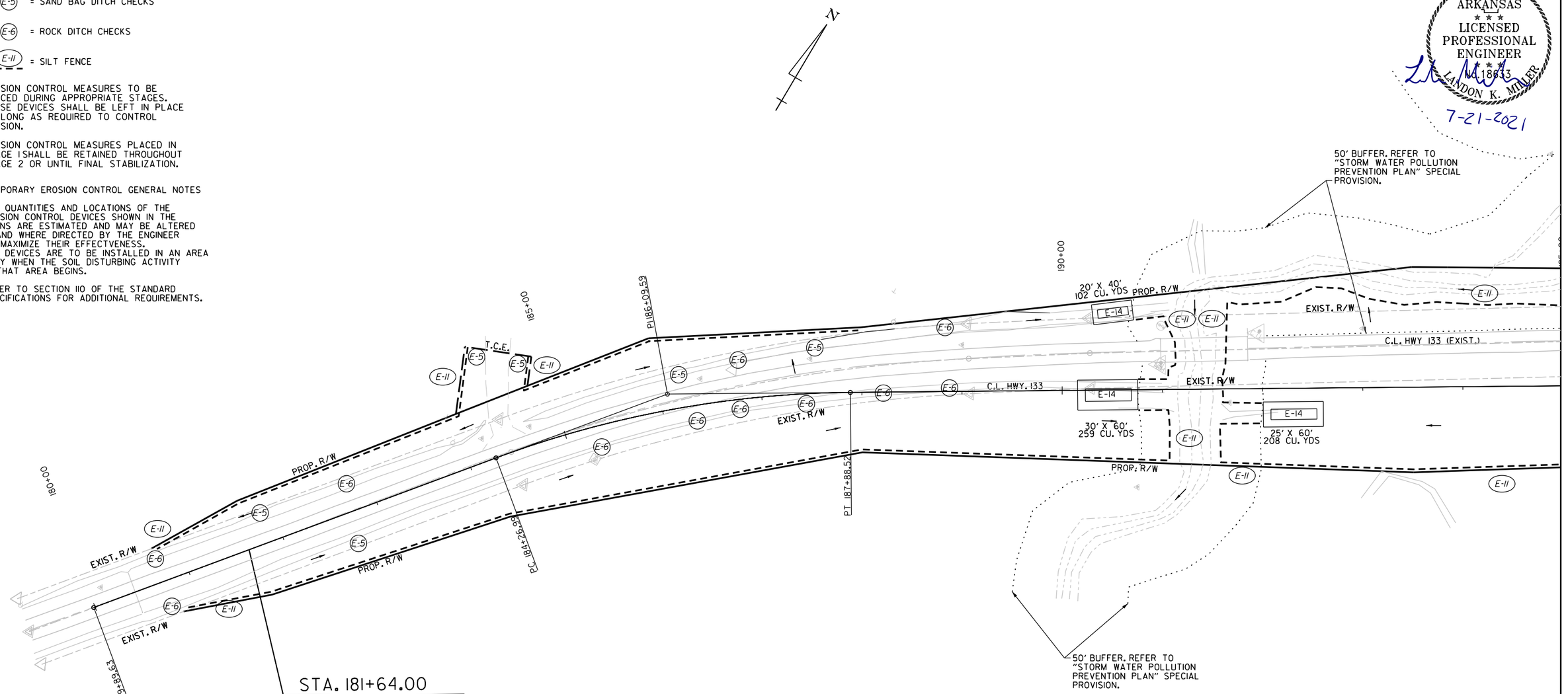
EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER
7-21-2021




| ROCK DITCH CHECKS | (E-6) | INSTALLATION |
|---|---|---|
| STA. 180+64 TO 182+75 | LT. | 2 |
| STA. 180+64 | RT. | 1 |
| STA. 185+25 TO 188+90 | RT. | 6 |
| STA. 186+75 TO 188+90 | LT. | 2 |

| SAND BAG DITCH CHECKS | (E-5) | INSTALLATION |
|---|---|---|
| STA. 181+75 | LT. | 1 |
| STA. 182+75 | RT. | 1 |
| STA. 184+30 TO 184+80 | LT. | 2 |
| STA. 186+25 TO 187+50 | LT. | 2 |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 180+64 TO 184+30 | LT. | 400 |
| STA. 180+64 TO 191+00 | RT. | 1080 |
| STA. 184+75 TO 188+00 | LT. | 380 |
| STA. 190+75 TO 191+15 | LT. | 130 |
| STA. 191+60 TO 194+00 | LT. | 380 |
| STA. 191+60 TO 194+00 | RT. | 320 |

| SEDIMENT BASIN | E-14 | CU. YDS. |
|---|---|---|
| STA. 191+50 | LT. | 102 |
| STA. 191+50 | RT. | 259 |
| STA. 192+30 | RT. | 208 |

## REVISIONS

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CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS

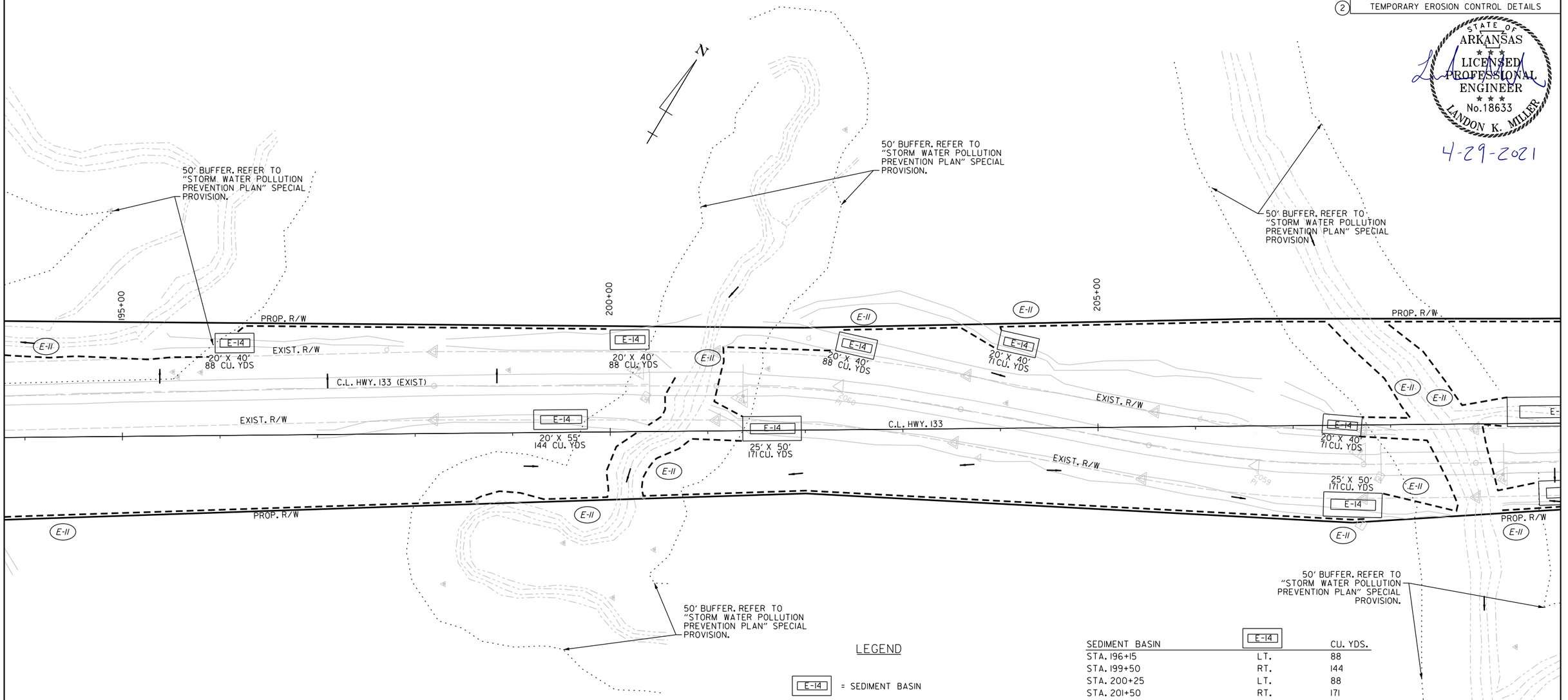
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| JOB NO. | | 070416 | 11 | 93 |
| 2 | TEMPORARY EROSION CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER

4-29-2021




LEGEND

E-14 = SEDIMENT BASIN

E-11 = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

| SEDIMENT BASIN (E-14) | | CU. YDS. |
|---|---|---|
| STA. 196+15 | LT. | 88 |
| STA. 199+50 | RT. | 144 |
| STA. 200+25 | LT. | 88 |
| STA. 201+50 | RT. | 171 |
| STA. 202+50 | LT. | 88 |
| STA. 204+00 | LT. | 71 |
| STA. 207+50 | LT. | 71 |
| STA. 207+50 | RT. | 171 |

| SILT FENCE (E-11) | | LIN FT |
|---|---|---|
| STA. 194+00 TO 196+00 | LT. | 190 |
| STA. 194+00 TO 200+30 | RT. | 680 |
| STA. 196+25 TO 200+00 | LT. | 380 |
| STA. 200+50 TO 200+75 | LT. | 60 |
| STA. 200+50 TO 207+75 | RT. | 880 |
| STA. 201+00 TO 202+30 | LT. | 200 |
| STA. 204+00 TO 208+25 | LT. | 520 |
| STA. 207+50 TO 208+50 | RT. | 230 |
| STA. 208+00 TO 209+00 | LT. | 270 |
| STA. 208+00 TO 208+50 | RT. | 130 |

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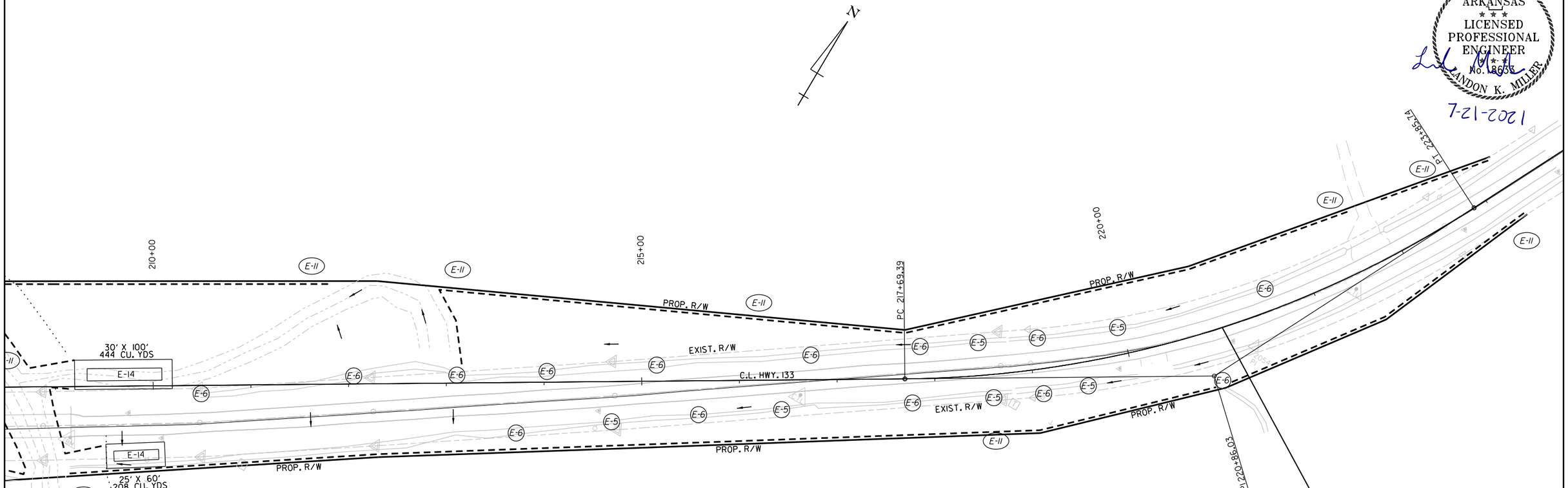
CLEARING AND GRUBBING
TEMPORARY EROSION CONTROL DETAILS


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| JOB NO. | | 070416 | 12 | 93 |
| 2 | TEMPORARY EROSION CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18638
BRANDON K. MILLER
7-21-2021




## LEGEND

E-14 = SEDIMENT BASIN

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

| SEDIMENT BASIN | E-14 | CU. YDS. |
|---|---|---|
| STA. 209+75 | RT. | 208 |
| STA. 209+75 | LT. | 444 |

| SAND BAG DITCH CHECKS | E-5 | INSTALLATION |
|---|---|---|
| STA. 214+75 TO 219+50 | RT. | 4 |
| STA. 218+50 TO 220+00 | LT. | 2 |

| ROCK DITCH CHECKS | E-6 | INSTALLATION |
|---|---|---|
| STA. 210+50 TO 221+50 | LT. | 9 |
| STA. 213+75 TO 220+75 | RT. | 5 |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 209+00 TO 211+75 | LT. | 280 |
| STA. 209+00 TO 220+75 | RT. | 1180 |
| STA. 213+00 TO 222+50 | LT. | 1030 |
| STA. 220+80 TO 224+80 | RT. | 350 |
| STA. 223+00 TO 224+80 | LT. | 120 |

## REVISIONS

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


Scott.Thornsberry 2/1/2021 10:34:20 AM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 13 | 93 |
| | | | | (2) | TEMPORARY EROSION CONTROL DETAILS | | | |

## LEGEND

- E-14 = SEDIMENT BASIN
- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-11 = SILT FENCE
- E-13 = FILTER SOCK

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

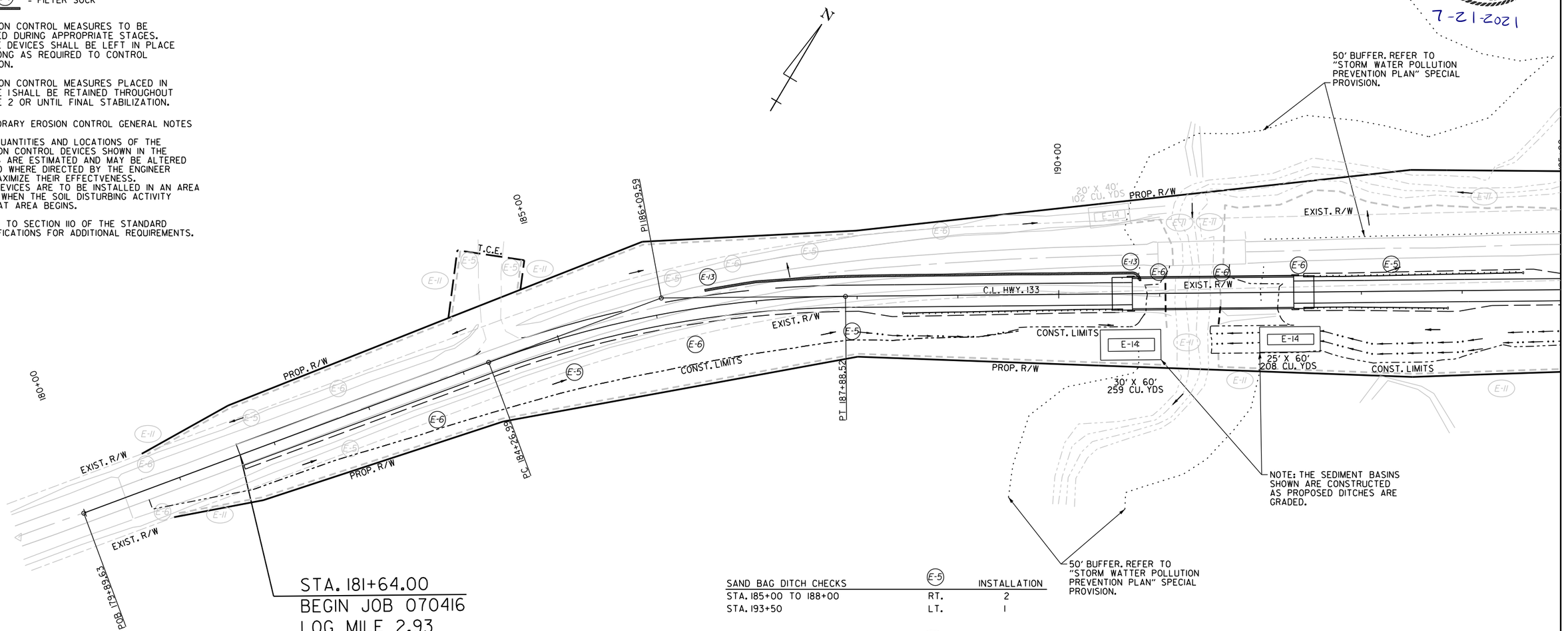
EROSION CONTROL MEASURES PLACED IN STAGE ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER
7-21-2021




| SAND BAG DITCH CHECKS | E-5 | INSTALLATION |
|---|---|---|
| STA. 185+00 TO 188+00 | RT. | 2 |
| STA. 193+50 | LT. | 1 |

| SILT FENCE | E-11 | INSTALLATION |
|---|---|---|
| STA. 191+10 | C.L. | 30 |
| STA. 192+60 | C.L. | 20 |

| ROCK DITCH CHECKS | E-6 | INSTALLATION |
|---|---|---|
| STA. 183+50 TO 186+50 | RT. | 2 |
| STA. 191+00 TO 192+50 | LT. | 3 |

| FILTER SOCK | E-13 | LIN FT. |
|---|---|---|
| STA. 186+60 TO 190+80 | LT. | 440 |

| SEDIMENT BASINS | E-14 | CU. YDS. |
|---|---|---|
| STA. 190+75 | RT. | 259 |
| STA. 192+25 | RT. | 208 |

## REVISIONS

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STAGE I
TEMPORARY EROSION CONTROL DETAILS

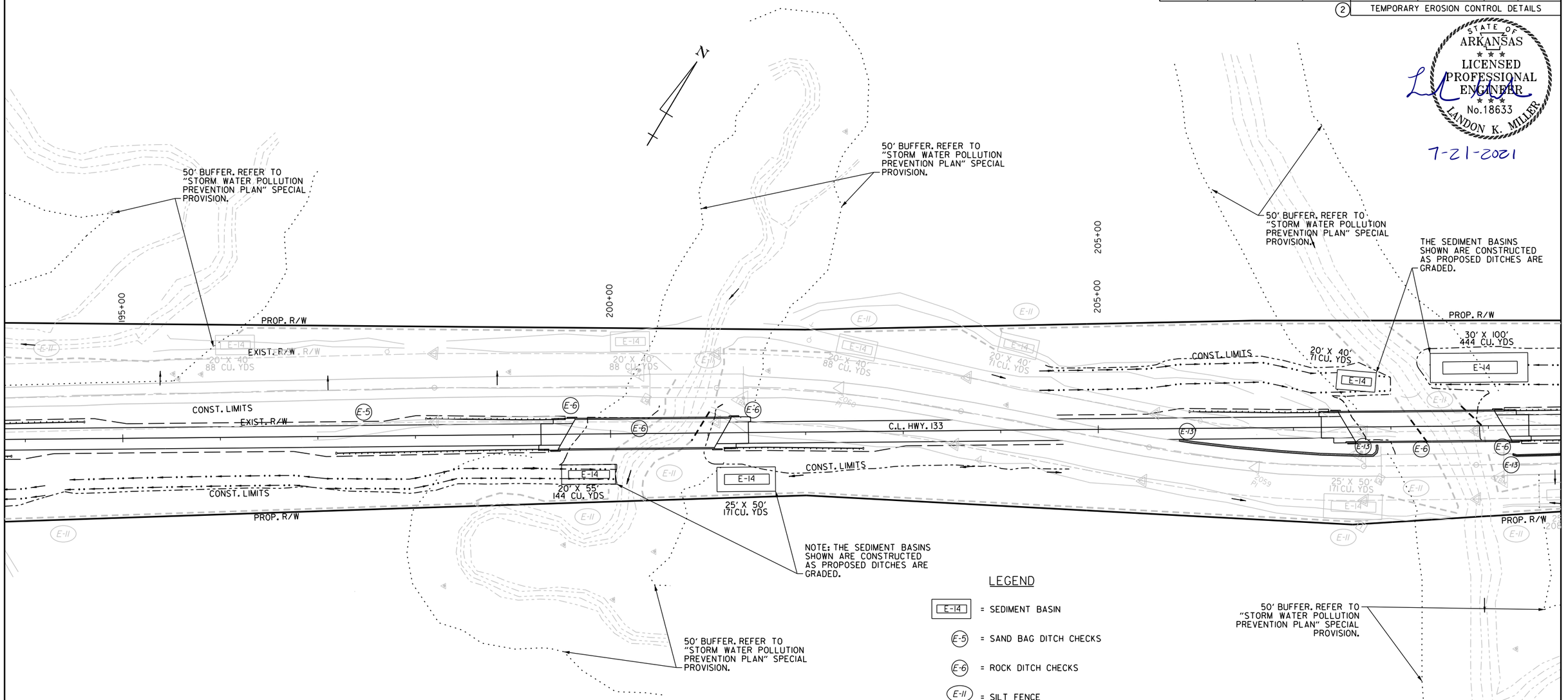
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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 14 | 93 |
| (2) | TEMPORARY EROSION CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER

7-21-2021




| SAND BAG CHECKS | E-5 | INSTALLATION |
|---|---|---|
| STA. 197+50 | LT. | 1 |

## REVISIONS

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| SEDIMENT BASINS | E-14 | LIN FT. |
|---|---|---|
| STA. 199+75 | RT. | 144 |
| STA. 201+30 | RT. | 171 |
| STA. 207+50 | LT. | 71 |
| STA. 209+75 | LT. | 444 |

| ROCK DITCH CHECKS | E-6 | INSTALLATION |
|---|---|---|
| STA. 199+50 TO 200+30 | LT. | 2 |
| STA. 201+40 | LT. | 1 |
| STA. 208+30 TO 209+25 | RT. | 2 |

| FILTER SOCK | E-13 | LIN FT. |
|---|---|---|
| STA. 205+91 TO 207+70 | LT. | 230 |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 200+75 TO 201+00 | C.L. | 35 |
| STA. 208+25 TO 208+40 | C.L. | 30 |
| STA. 208+75 TO 208+90 | C.L. | 30 |

## LEGEND

- E-14 = SEDIMENT BASIN
- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-11 = SILT FENCE
- E-13 = FILTER SOCK

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

# STAGE 1
# TEMPORARY EROSION CONTROL DETAILS

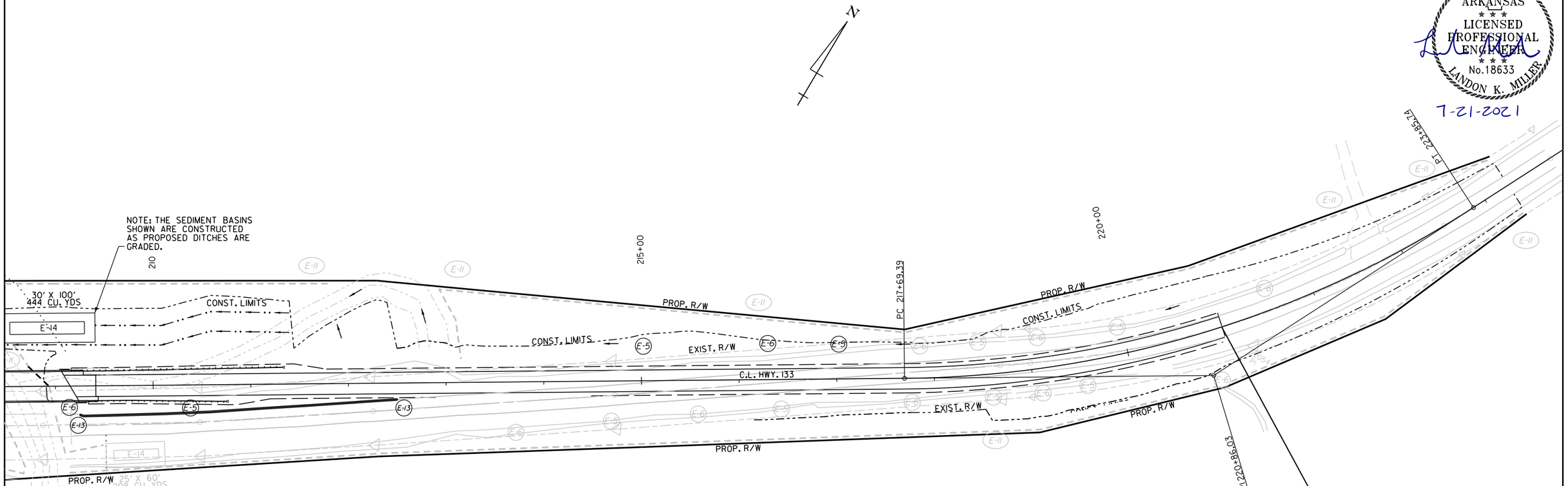
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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 15 | 93 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
7-21-2021




STA. 221+00.00
END JOB 070416

LEGEND

E-14 = SEDIMENT BASIN

(E-5) = SAND BAG DITCH CHECKS

(E-6) = ROCK DITCH CHECKS

(E-13) = FILTER SOCK

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

| FILTER SOCK | (E-13) | LIN. FT. |
|---|---|---|
| STA. 209+25 TO 212+50 | RT. | 325 |

| SAND BAG DITCH CHECKS | (E-5) | INSTALLATION |
|---|---|---|
| STA. 210+50 | RT. | 1 |
| STA. 215+00 TO 217+00 | LT. | 2 |

| ROCK DITCH CHECKS | (E-6) | INSTALLATION |
|---|---|---|
| STA. 216+30 TO 217+00 | LT. | 1 |

## REVISIONS

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STAGE 1
TEMPOARARY EROSION CONTROL DETAILS

Scott.Thornsberry 7/21/2021 10:34:25 AM
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|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 16 | 93 |

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

(E-13) = FILTER SOCK

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

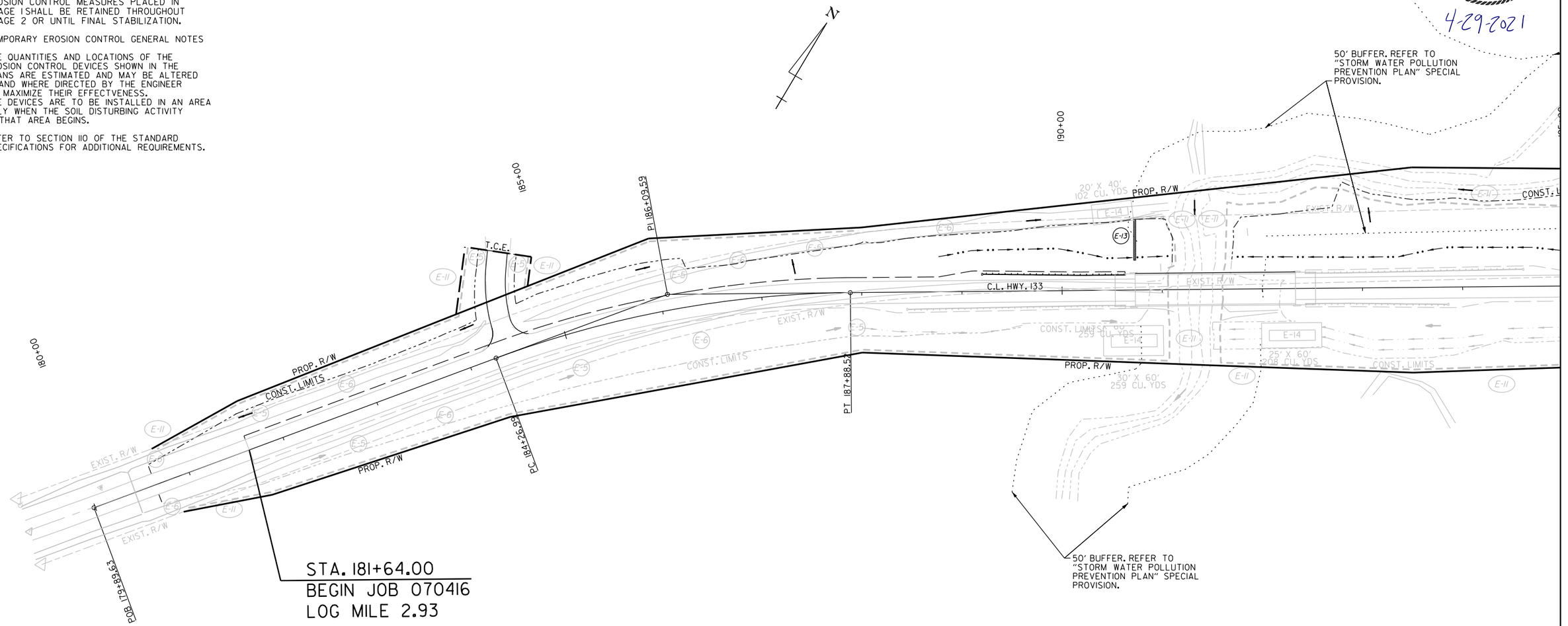
EROSION CONTROL MEASURES PLACED IN STAGE ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




| FILTER SOCK (E-13) | | LIN. FT. |
|---|---|---|
| STA. 190+75 | LT. | 40 |

## REVISIONS

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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

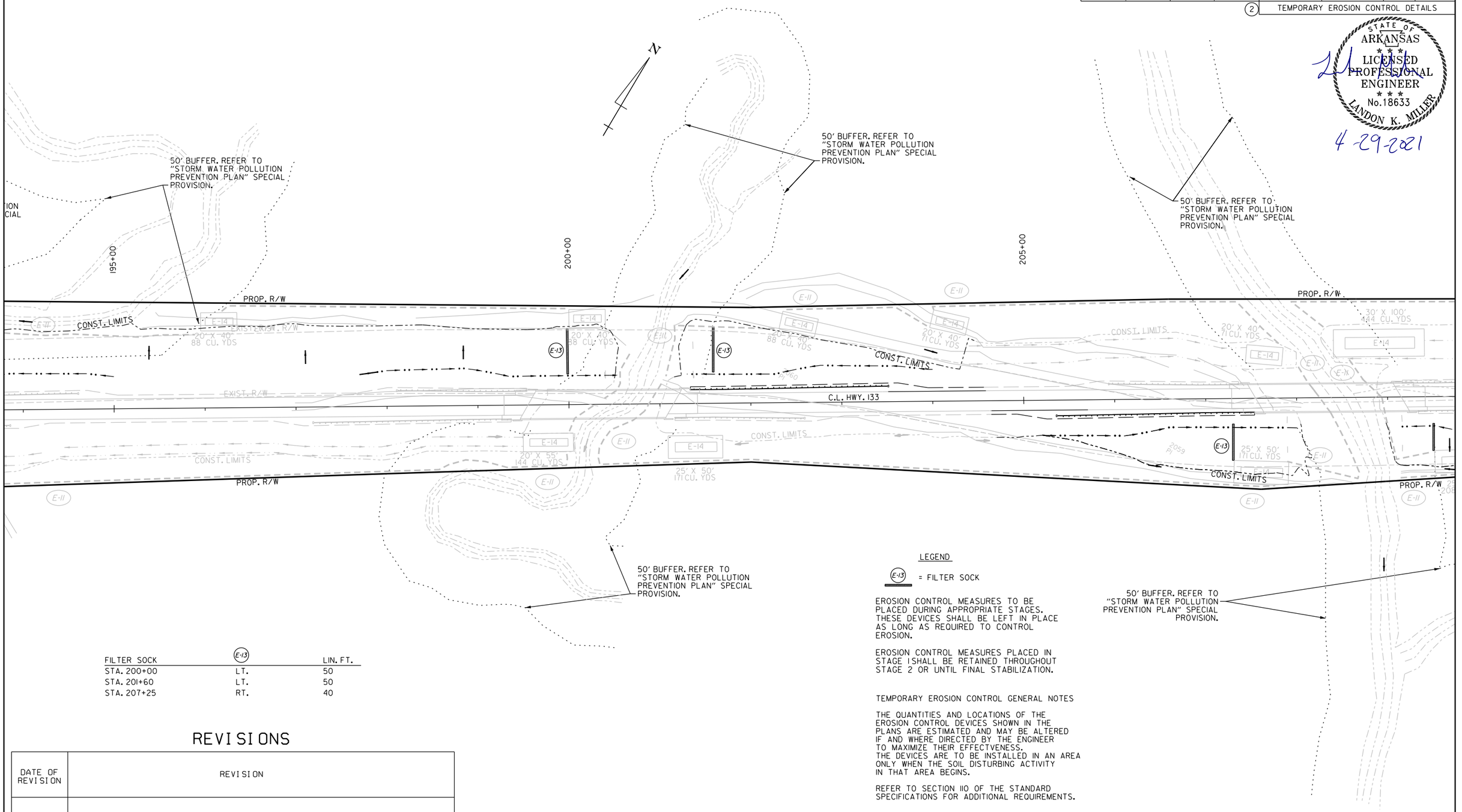

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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 17 | 93 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




| FILTER SOCK | (E-13) | LIN. FT. |
|---|---|---|
| STA. 200+00 | LT. | 50 |
| STA. 201+60 | LT. | 50 |
| STA. 207+25 | RT. | 40 |

LEGEND

(E-13) = FILTER SOCK

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

EROSION CONTROL MEASURES PLACED IN STAGE ISHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

## REVISIONS

| DATE OF REVISION | REVISION |
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STAGE 2
TEMPORARY EROSION CONTROL DETAILS

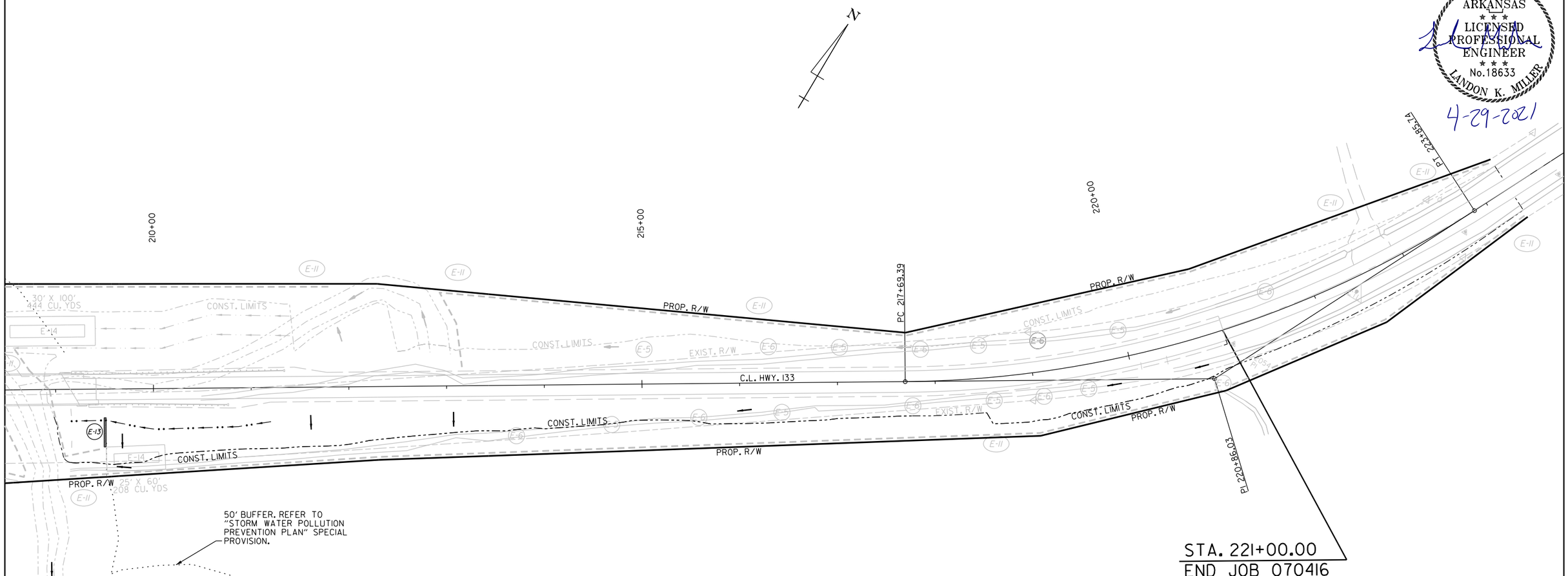

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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 18 | 93 |

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




STA. 221+00.00
END JOB 070416

LEGEND

(E-13) = FILTER SOCK

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL GENERAL NOTES

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

| FILTER SOCK | (E-13) | LIN. FT. |
|---|---|---|
| STA. 209+50 | RT. | 30 |

REVISIONS

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STAGE 2
TEMPOARARY EROSION CONTROL DETAILS

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| | | | | JOB NO. | | 070416 | 19 | 93 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

# CONSTRUCTION SEQUENCE

STAGE IA:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGES AS SHOWN IN THE STAGE IA MAINTENANCE OF TRAFFIC DETAILS.

STAGE IB:

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGE AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGES.

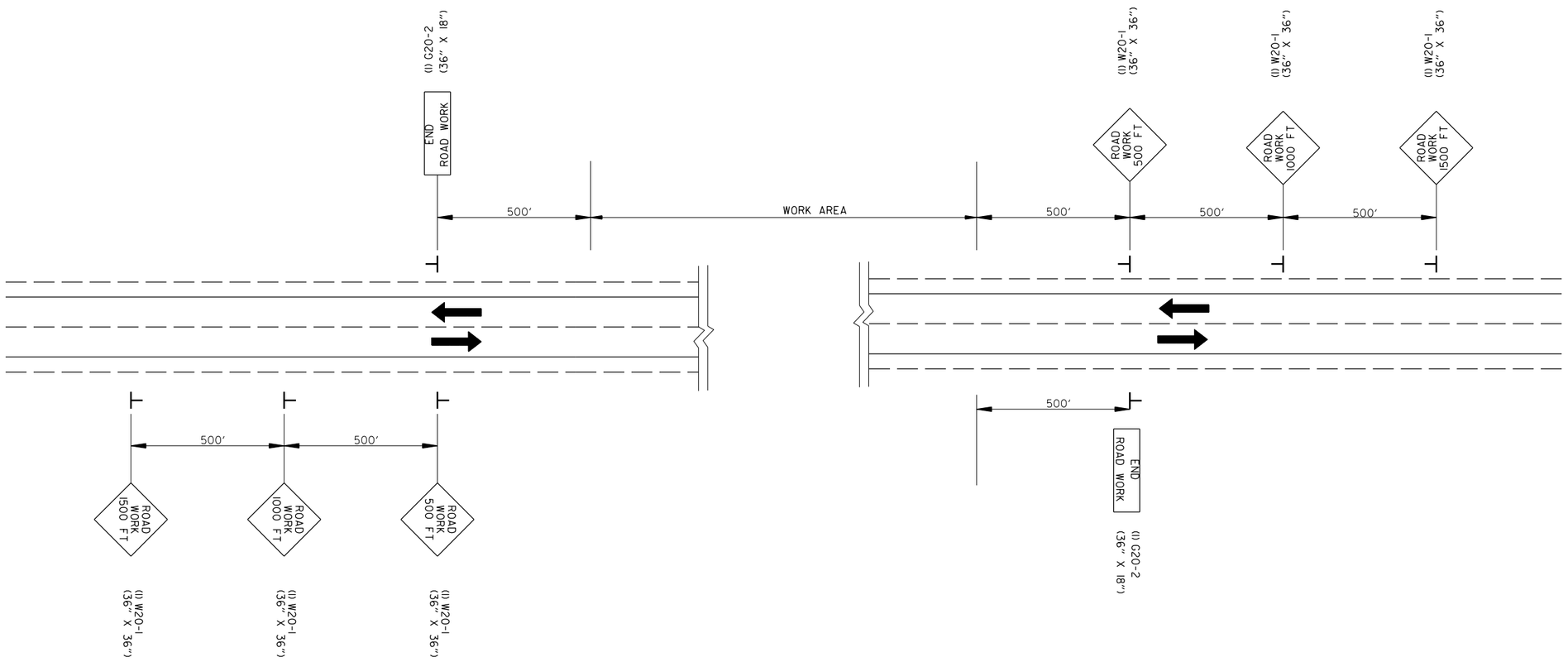
CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

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

DO NOT PASS — * (2) R4-1 (24" X 30")

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




ADVANCE WARNING DETAILS AT BEGINNING AND END OF JOB
ALL STAGES

LEGEND

TEMPORARY TRAFFIC SIGN

TRAFFIC FLOW ARROWS

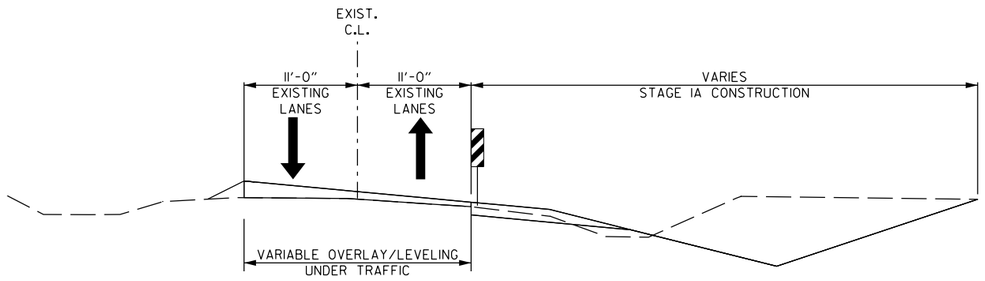
MAINTENANCE OF TRAFFIC DETAILS
ADVANCE WARNING SIGNS

Travis.Keymer 4/29/2021 8:31:9 AM
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REVISED DATE: $$REVDATE$$

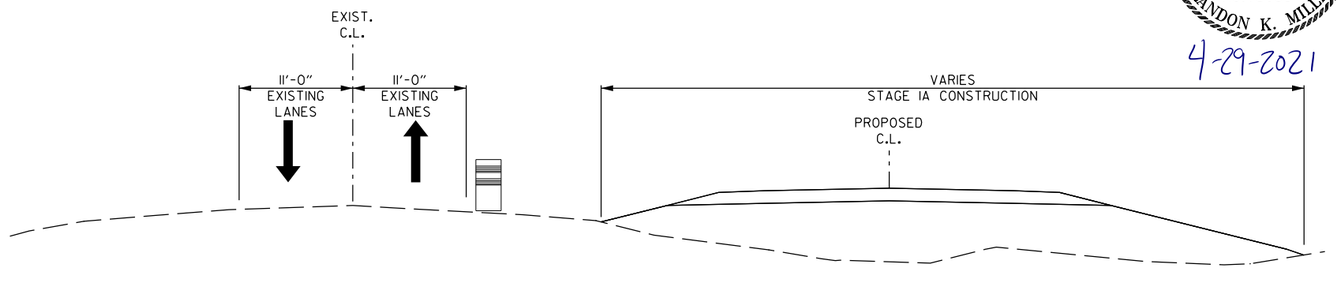
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| JOB NO. | | 070416 | 20 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021

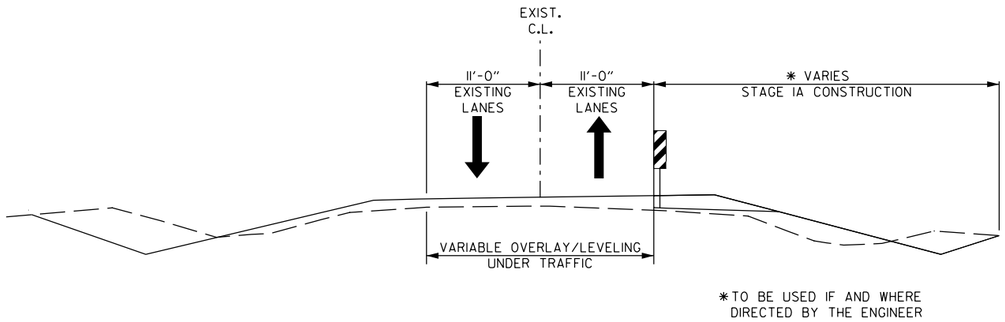



STA. 181+64.00 TO STA. 187+65.00
STA. 203+03.00 TO STA. 206+30.00




STA. 187+65.00 TO STA. 203+03.00

## STAGE IA - TYPICAL SECTIONS




STA. 216+75.00 TO STA. 221+00.00

## STAGE IA - TYPICAL SECTIONS

Travis.Keymer 4/29/2021 8:13:23 AM
WORKSPACE: ARDOT
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REVISED DATE: $$REVDATE$$

MAINTENANCE OF TRAFFIC DETAILS
STAGE IA - TYPICAL SECTION

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | JOB NO. | | 070416 | 21 | 93 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

# CONSTRUCTION SEQUENCE

STAGE IA:

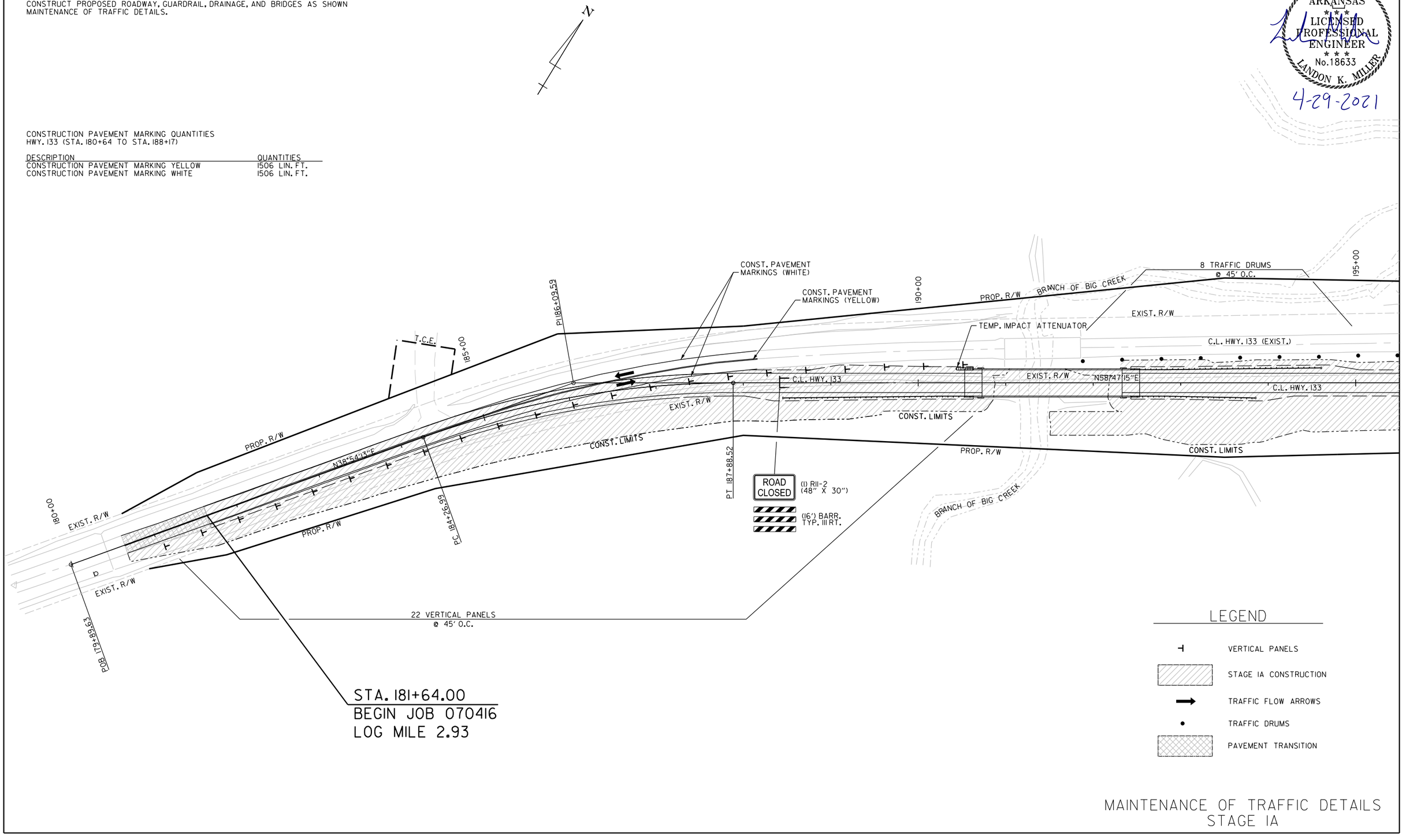
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGES AS SHOWN MAINTENANCE OF TRAFFIC DETAILS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021

CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 180+64 TO STA. 188+17)

| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING YELLOW | 1506 LIN. FT. |
| CONSTRUCTION PAVEMENT MARKING WHITE | 1506 LIN. FT. |




MAINTENANCE OF TRAFFIC DETAILS
STAGE IA


TravisKeymer 4/29/2021 8:13:26 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_003.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE IA:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGES AS SHOWN IN THE STAGE IA MAINTENANCE OF TRAFFIC DETAILS.

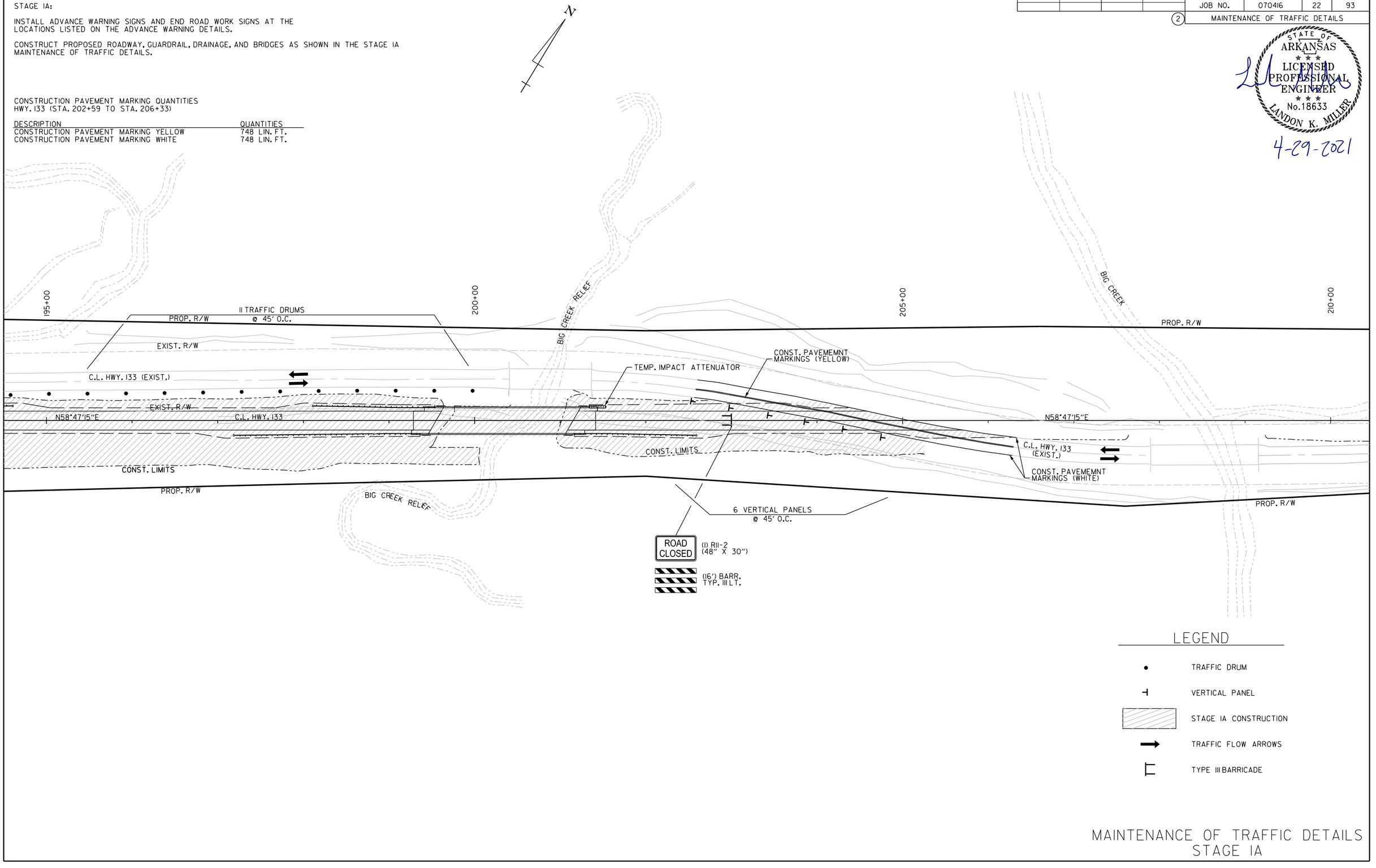
CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 202+59 TO STA. 206+33)

| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING YELLOW | 748 LIN. FT. |
| CONSTRUCTION PAVEMENT MARKING WHITE | 748 LIN. FT. |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 22 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER
4-29-2021




## LEGEND

- TRAFFIC DRUM
- VERTICAL PANEL
- STAGE IA CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE

## MAINTENANCE OF TRAFFIC DETAILS STAGE IA

TravisKeymer 4/29/2021 8:13:28 AM
WORKSPACE: ARDOT
Y:\Projects\AR-DOT-166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_004.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE IA:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGES AS SHOWN IN THE STAGE IA MAINTENANCE OF TRAFFIC DETAILS.

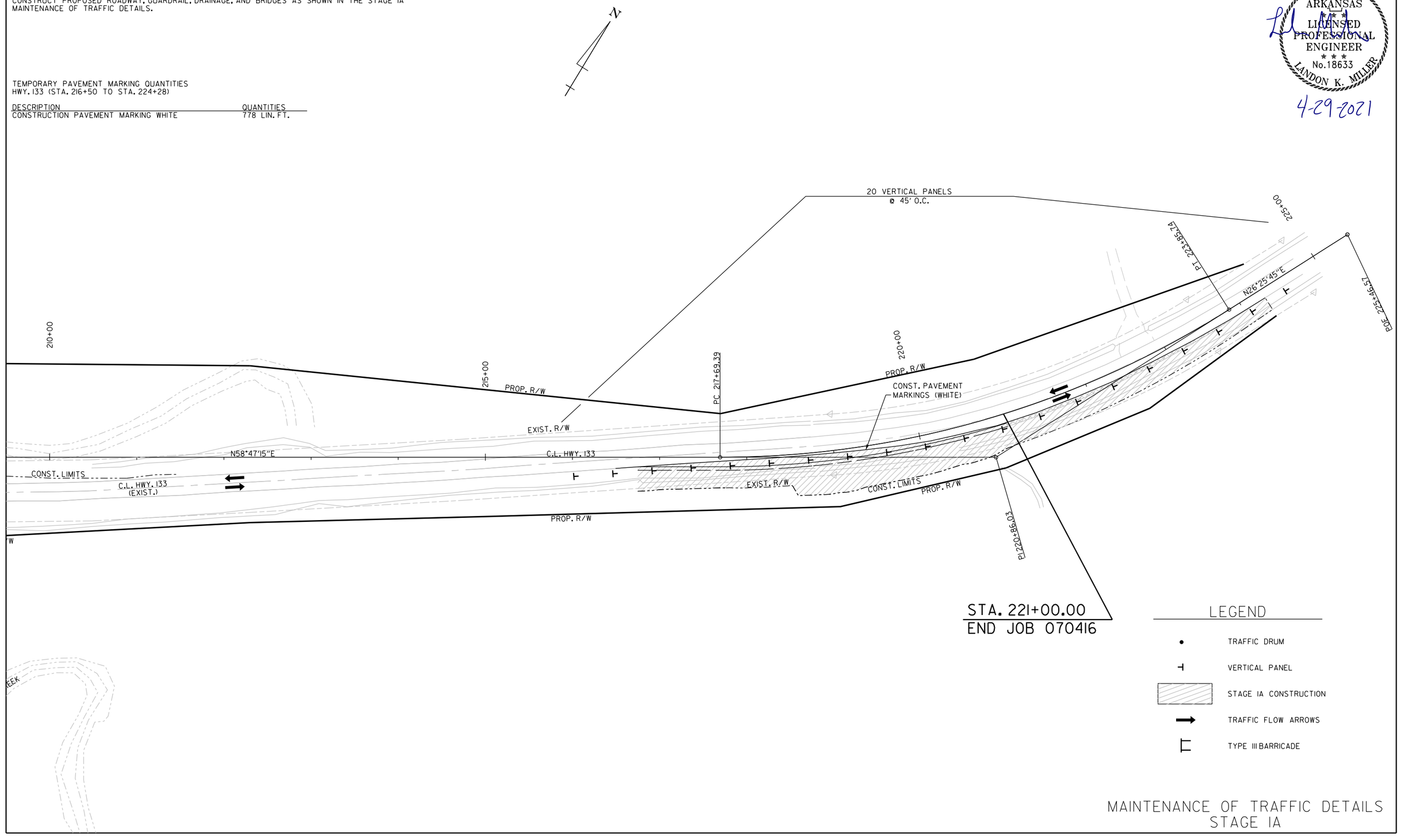
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 23 | 93 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER

4-29-2021

TEMPORARY PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 216+50 TO STA. 224+28)

| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING WHITE | 778 LIN. FT. |



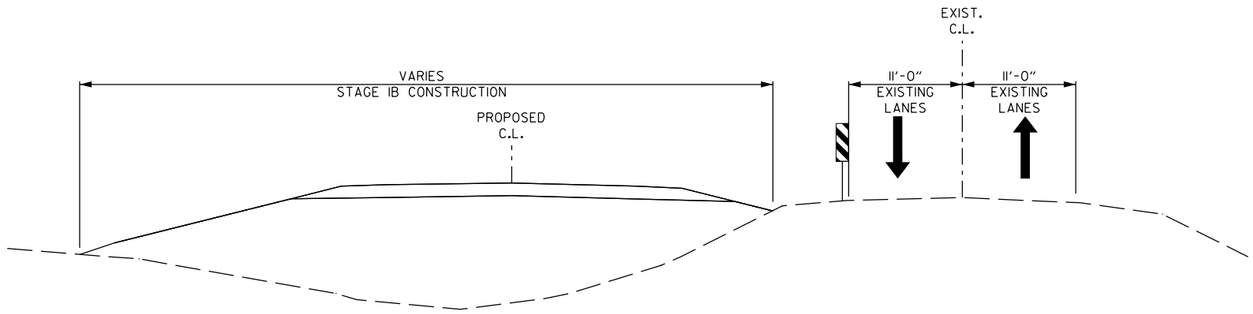

MAINTENANCE OF TRAFFIC DETAILS
STAGE IA

TravisKeymer 4/29/2021 8:13:29 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_005.dgn
REVISED DATE: $$REVDATE$$

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
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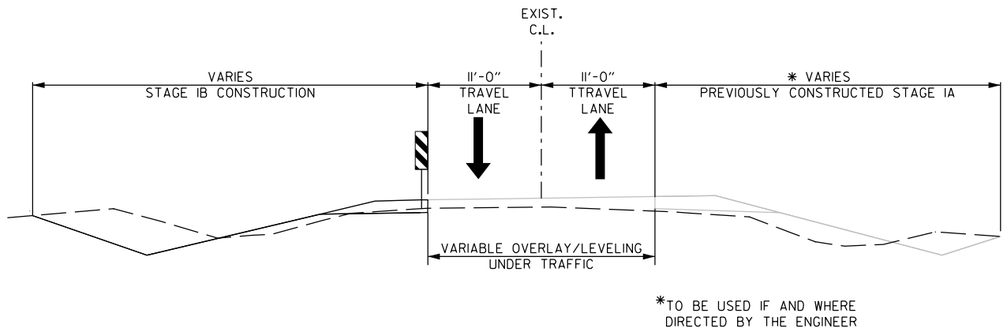
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 24 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




STA. 206+30.00 TO STA. 214+20.00

## STAGE IB - TYPICAL SECTIONS




*TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

STA. 204+40.00 TO STA. 206+30.00
STA. 214+20.00 TO STA. 221+00.00

## STAGE IB - TYPICAL SECTIONS



Travis.Keymer 4/29/2021 8:13:31 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_006.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

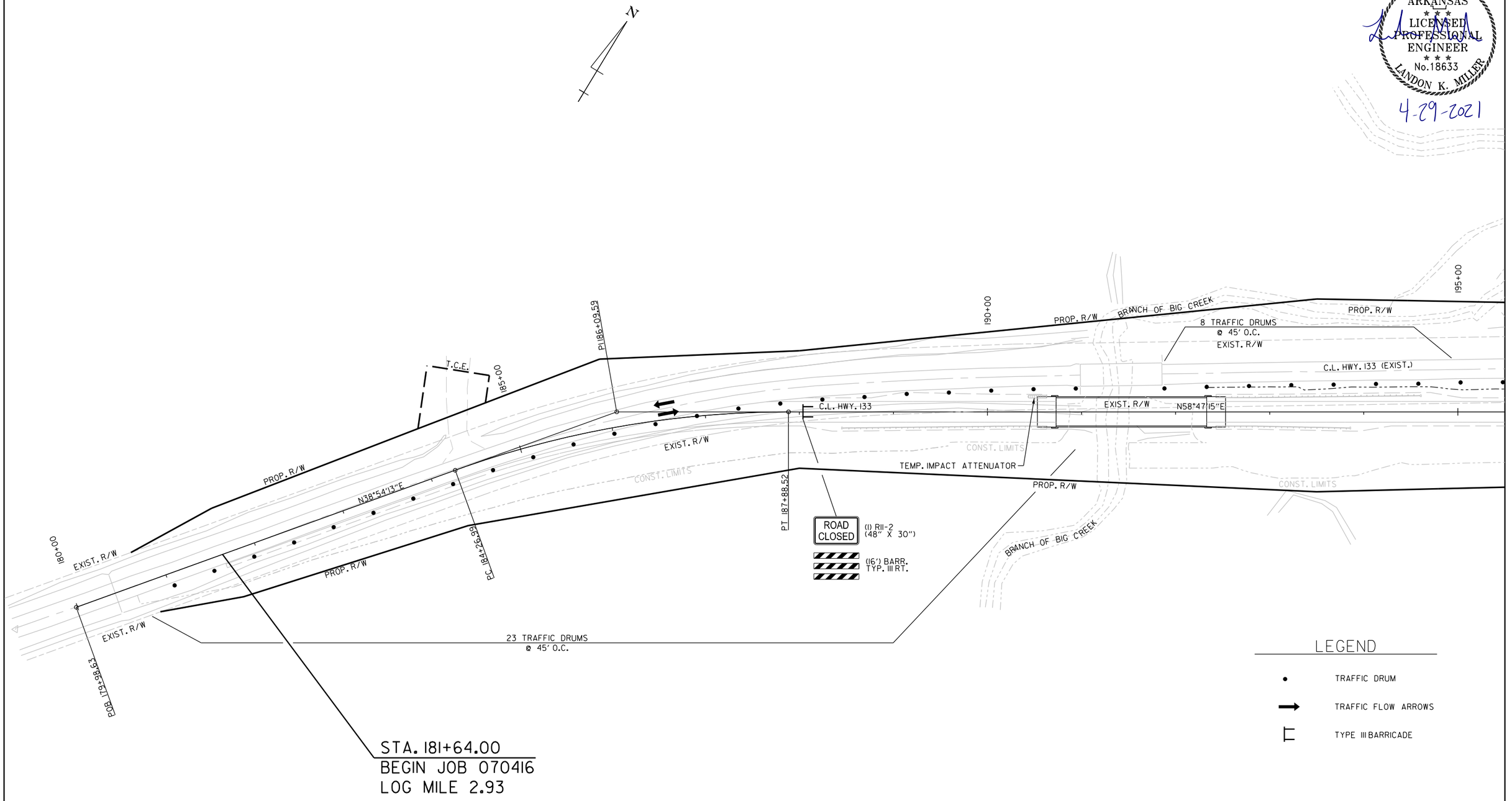
STAGE IB:

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGE AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
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| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 25 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




## LEGEND

- TRAFFIC DRUM
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE

## MAINTENANCE OF TRAFFIC DETAILS
## STAGE IB


TravisKeymer 4/29/2021 8:33:33 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_007.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE IB:

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGE AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 203+90 TO STA. 206+90)

| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING WHITE | 300 LIN. FT. |

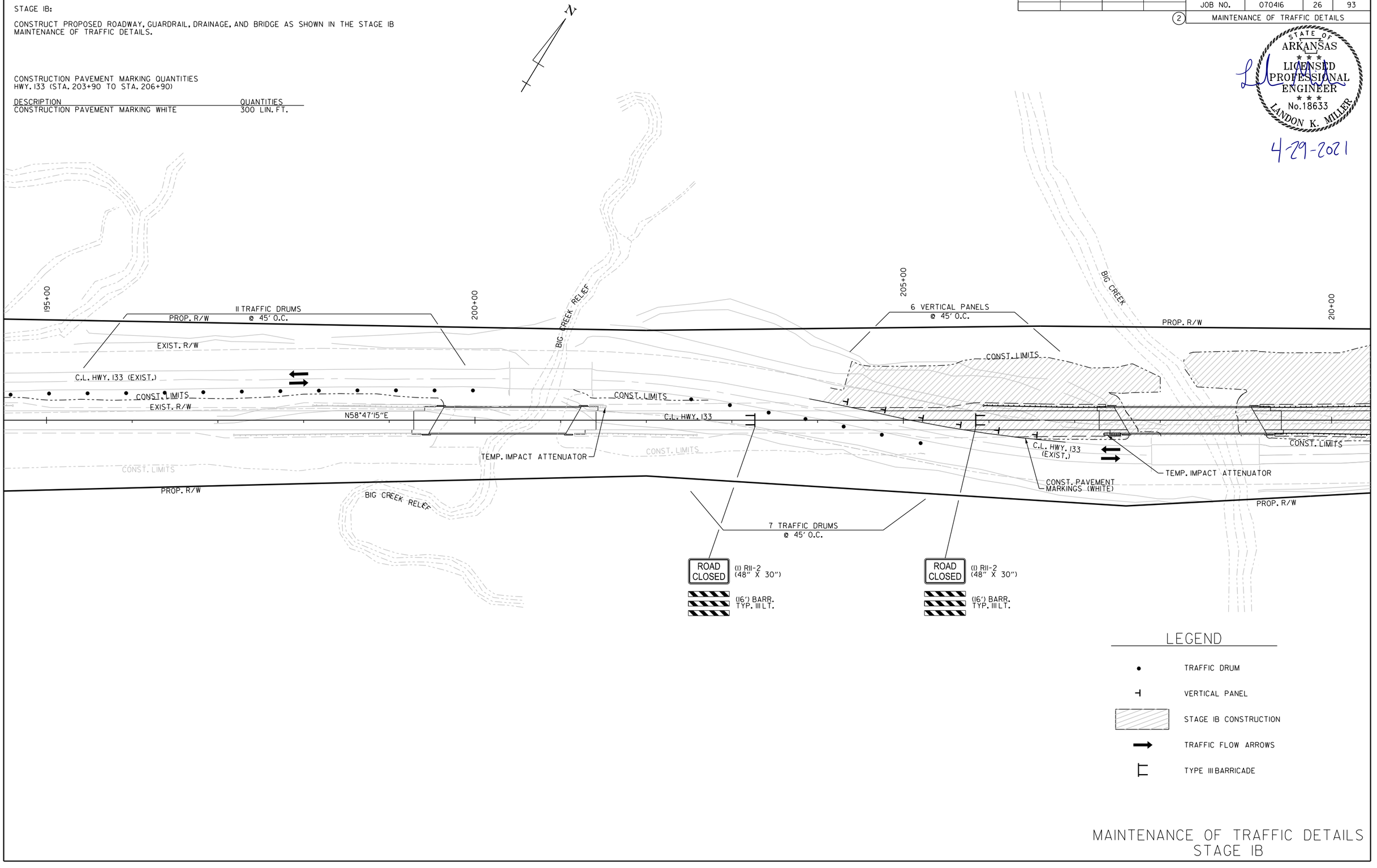
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
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| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 26 | 93 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER

4-29-2021




## LEGEND

- TRAFFIC DRUM
- VERTICAL PANEL
- STAGE IB CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE

## MAINTENANCE OF TRAFFIC DETAILS STAGE IB


Travis.Keymer 4/29/2021 8:33:35 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693.070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416.06.MOT_008.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE IB:

CONSTRUCT PROPOSED ROADWAY, GUARDRAIL, DRAINAGE, AND BRIDGE AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

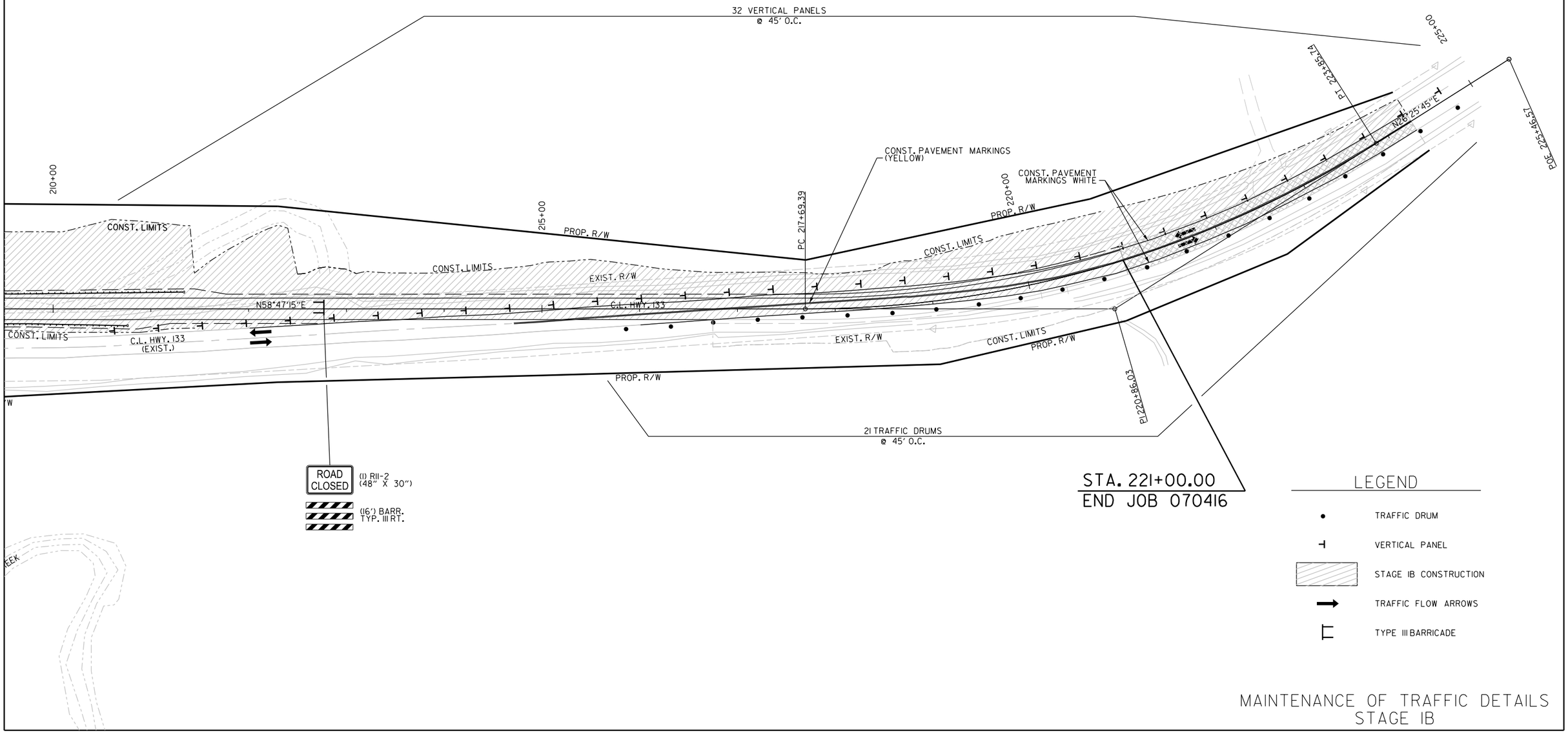
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 27 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021

CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 212+00 TO STA. 224+28)

| DESCRIPTION | QUANTITIES |
|---|---|
| STA. 212+00 TO STA. 224+28<br>CONSTRUCTION PAVEMENT MARKING WHITE LT. | 1228 LIN. FT. |
| STA. 216+00 TO STA. 224+28<br>CONSTRUCTION PAVEMENT MARKING WHITE RT. | 828 LIN. FT. |
| STA. 214+71 TO STA. 224+28<br>CONSTRUCTION PAVEMENT MARKING YELLOW. | 1914 LIN. FT. |



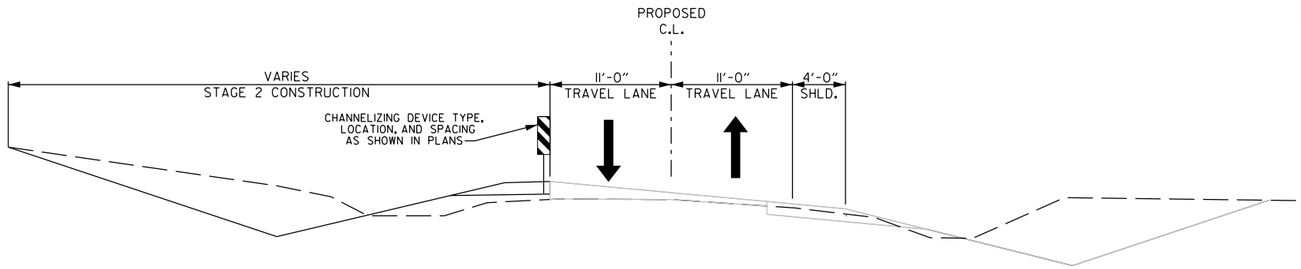

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

Travis.Keymer 4/29/2021 8:13:37 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_009.dgn
REVISED DATE: $$REVDATE$$

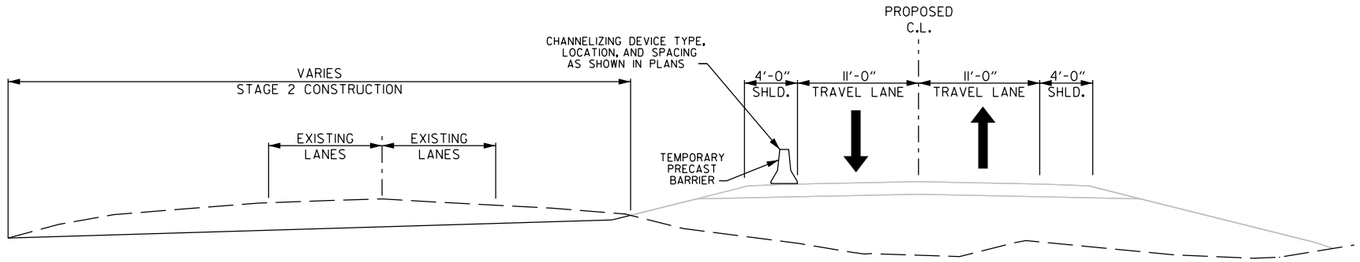
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 28 | 93 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER

4-29-2021

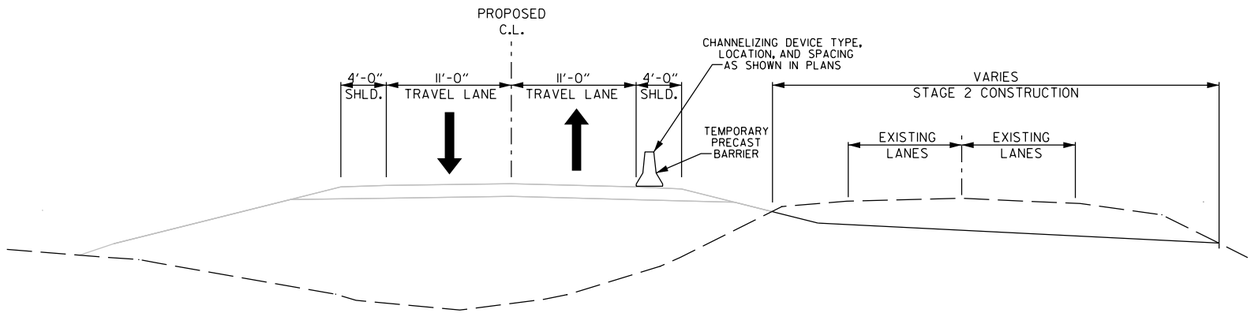



STA. 181+64.00 TO STA. 188+07.00

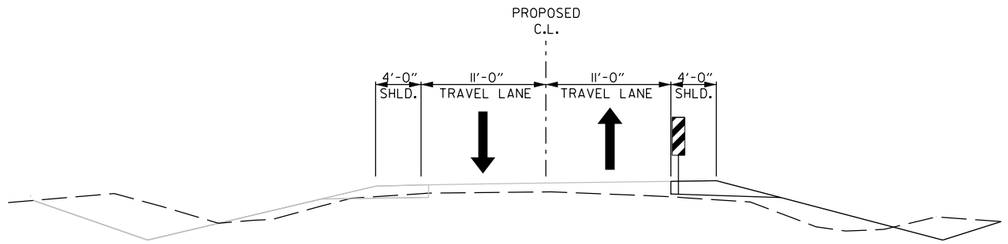



STA. 188+63.00 TO STA. 195+21.00
STA. 197+59.00 TO STA. 204+12.00

## STAGE 2 - TYPICAL SECTION




STA. 205+75.00 TO STA. 212+81.00




STA. 212+81.00 TO STA. 216+75.00

## STAGE 2 - TYPICAL SECTION

# MAINTENANCE OF TRAFFIC DETAILS
# STAGE 2 - TYPICAL SECTION

Travis.Keymer 4/29/2021 8:13:39 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_000.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGES.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 180+64 TO STA. 189+00)

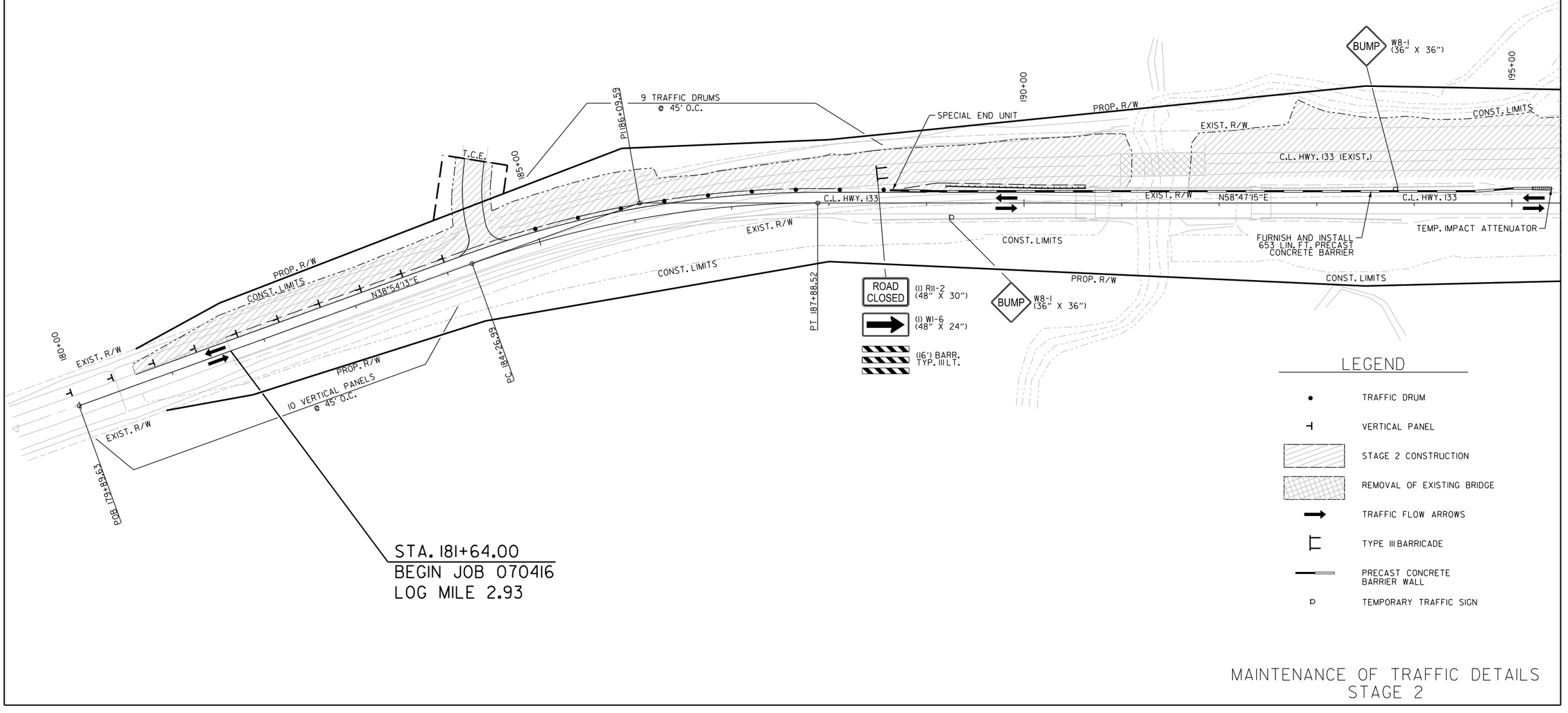
| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING WHITE | 836 LIN. FT. |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 29 | 93 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER
4-29-2021




MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

Travis.Keymer 4/29/2021 8:13:49 AM
WORKSPACE: ARDOT
Y:\Projects\A-DOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_01.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

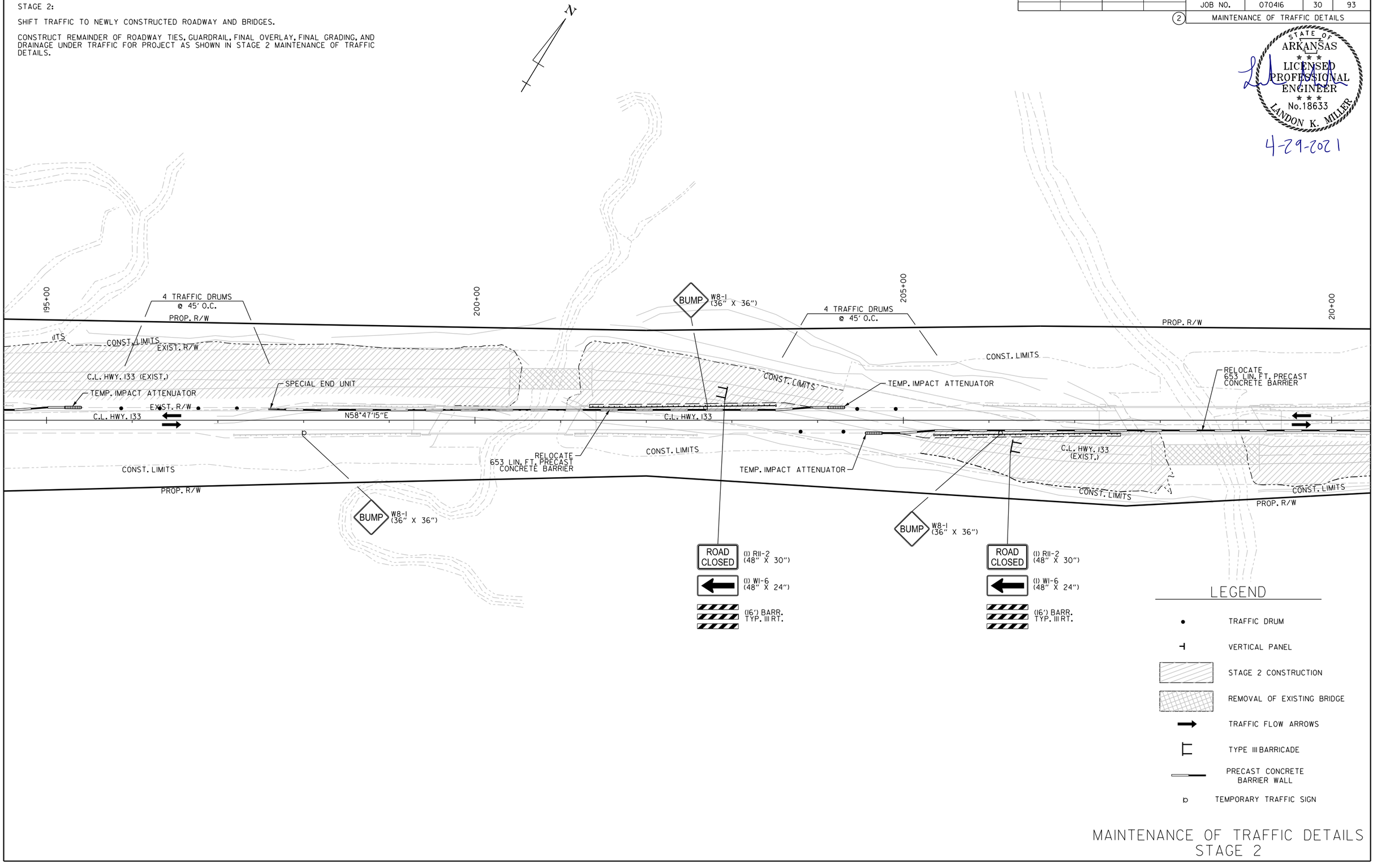
STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGES.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR PROJECT AS SHOWN IN STAGE 2 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 |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 30 | 93 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
4-29-2021




## LEGEND

- TRAFFIC DRUM
- VERTICAL PANEL
- STAGE 2 CONSTRUCTION
- REMOVAL OF EXISTING BRIDGE
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- PRECAST CONCRETE BARRIER WALL
- TEMPORARY TRAFFIC SIGN

## MAINTENANCE OF TRAFFIC DETAILS STAGE 2


TravisKeymer 4/29/2021 8:31:52 AM
WORKSPACE: ARDOT
Y:\Projects\A-DOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_02.dgn
REVISED DATE: $$REVDATE$$

# CONSTRUCTION SEQUENCE

STAGE 2:

SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY AND BRIDGES.

CONSTRUCT REMAINDER OF ROADWAY TIES, GUARDRAIL, FINAL OVERLAY, FINAL GRADING, AND DRAINAGE UNDER TRAFFIC FOR PROJECT AS SHOWN IN STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCTION PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 212+00 TO STA. 217+00)

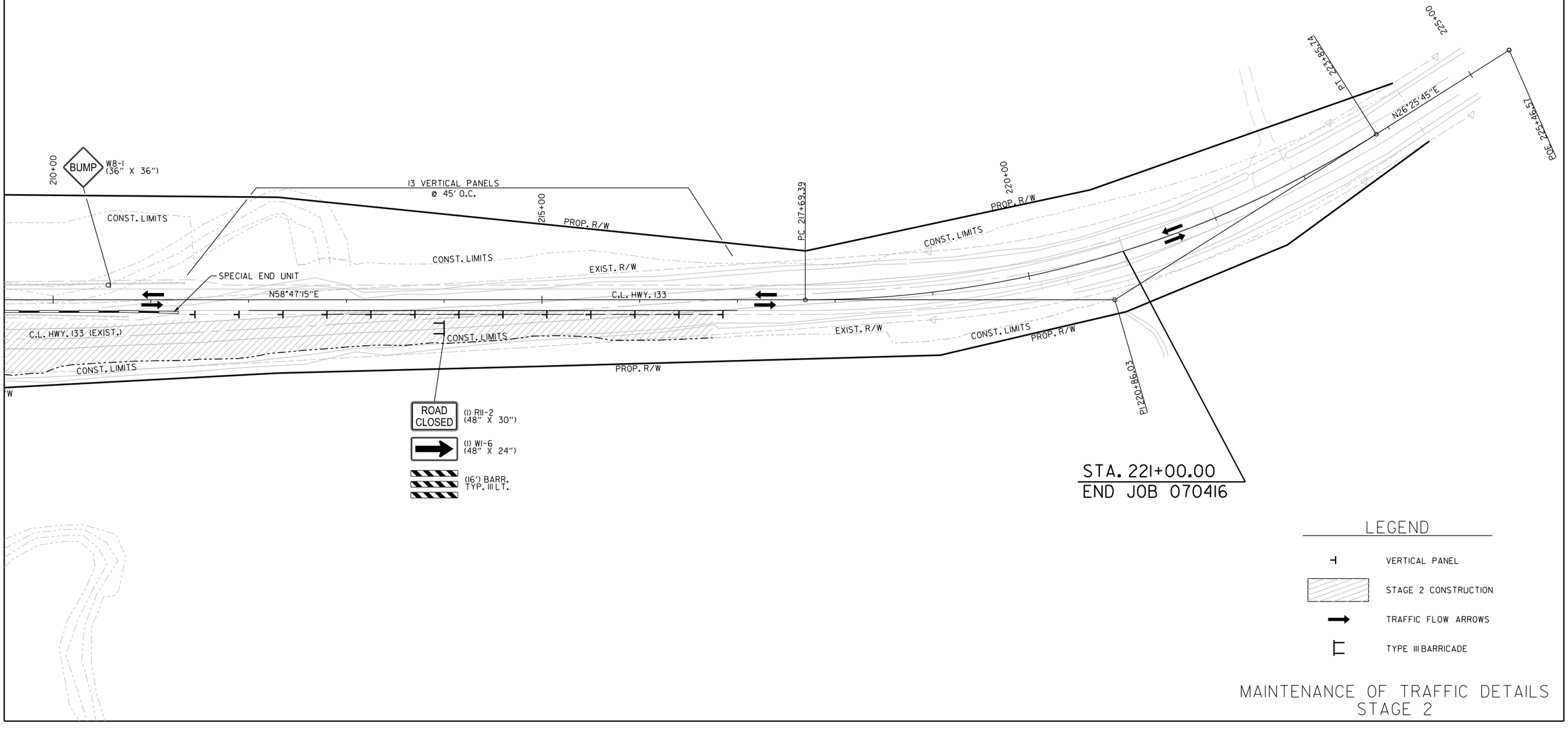
| DESCRIPTION | QUANTITIES |
|---|---|
| CONSTRUCTION PAVEMENT MARKING WHITE | 500 LIN. FT. |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 31 | 93 |
| (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER

4-29-2021




LEGEND

- VERTICAL PANEL
- STAGE 2 CONSTRUCTION
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

TravisKeymer 4/29/2021 8:13:55 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_06_MOT_013.dgn
REVISED DATE: $$REVDATE$$

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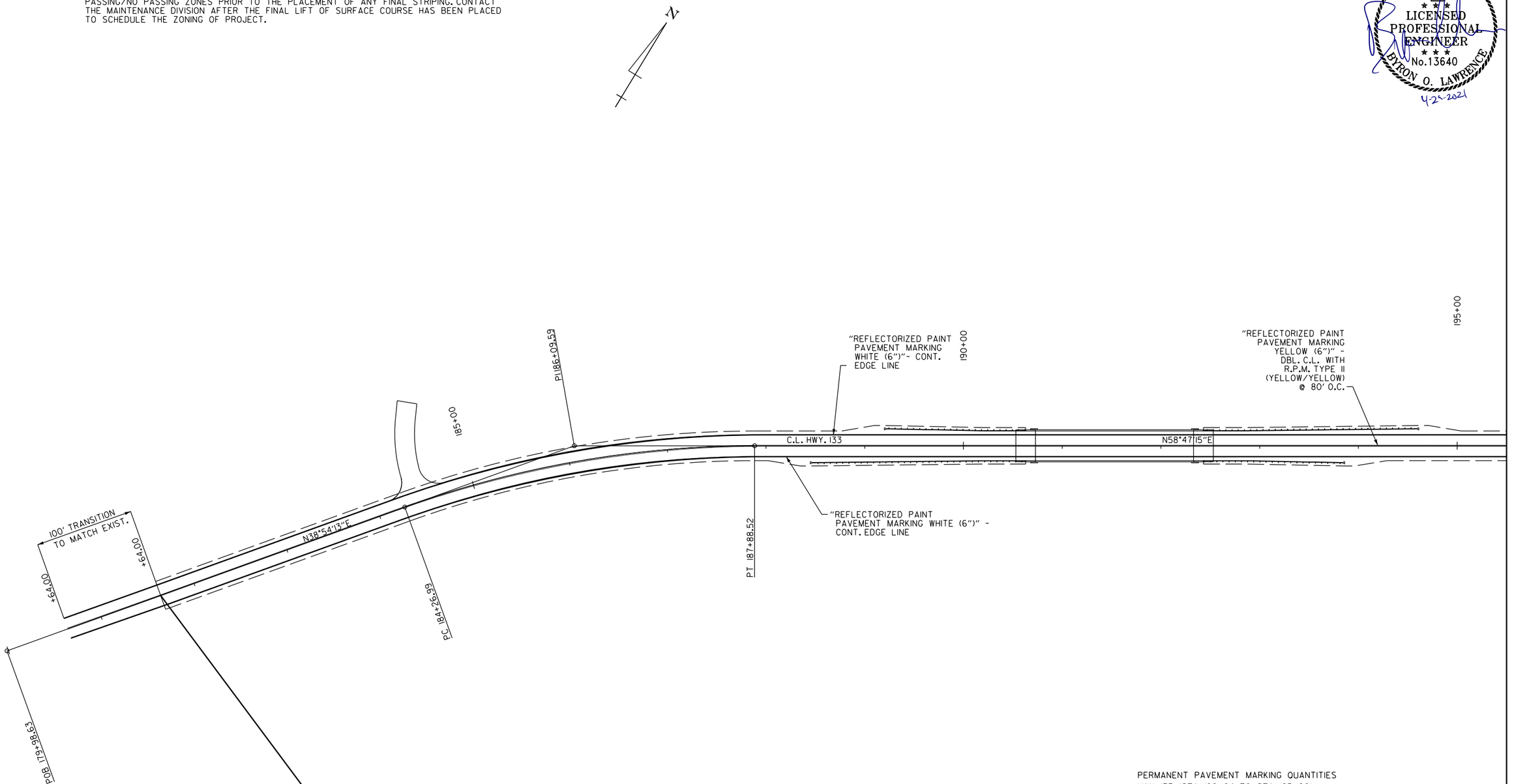
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 32 | 93 |

(2) PERMANENT PAVEMENT MARKING DETAILS

NOTE:

1. 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 PROJECT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
4-29-2021




STA. 181+64.00
BEGIN JOB 070416
LOG MILE 2.93

PERMANENT PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 180+64 TO STA. 195+00)

| DESCRIPTION | QUANTITIES |
|---|---|
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | 2872 LIN. FT. |
| RAISED PAVEMENT MARKER TYPE II (YELLOW/YELLOW) | 18 EACH |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | 2872 LIN. FT. |

PERMANENT PAVEMENT MARKING DETAILS

Travis.Keymer 4/29/2021 8:13:56 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_07_PM_001.dgn
REVISED DATE: $$REVDATE$$

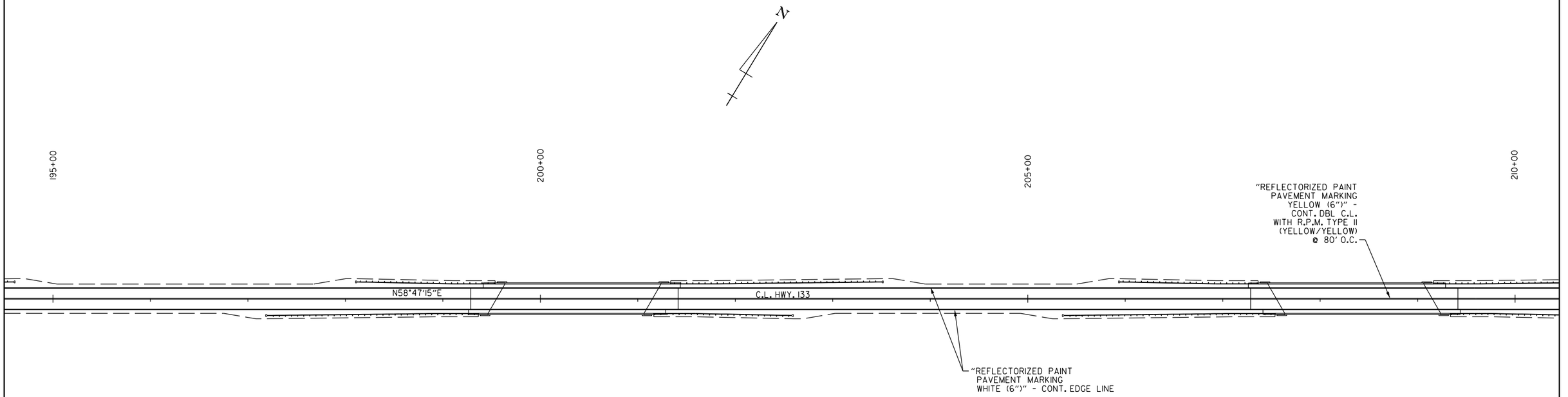
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 33 | 93 |

(2) PERMANENT PAVEMENT MARKING DETAILS

NOTE:

1. 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 PROJECT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
4-29-2021




PERMANENT PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 195+00 TO STA. 210+00)

| DESCRIPTION | QUANTITIES |
|---|---|
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | 3000 LIN. FT. |
| RAISED PAVEMENT MARKER TYPE II (YELLOW/YELLOW) | 19 EACH |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | 3000 LIN. FT. |

# PERMANENT PAVEMENT MARKING DETAILS


Travis.Keymer 4/29/2021 8:13:57 AM
WORKSPACE: ARDOT
Y:\Projects\AR-DOT-166693.070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_07_PM_002.dgn
REVISED DATE: $$REVDATE$$

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
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| | | | |
| | | | |

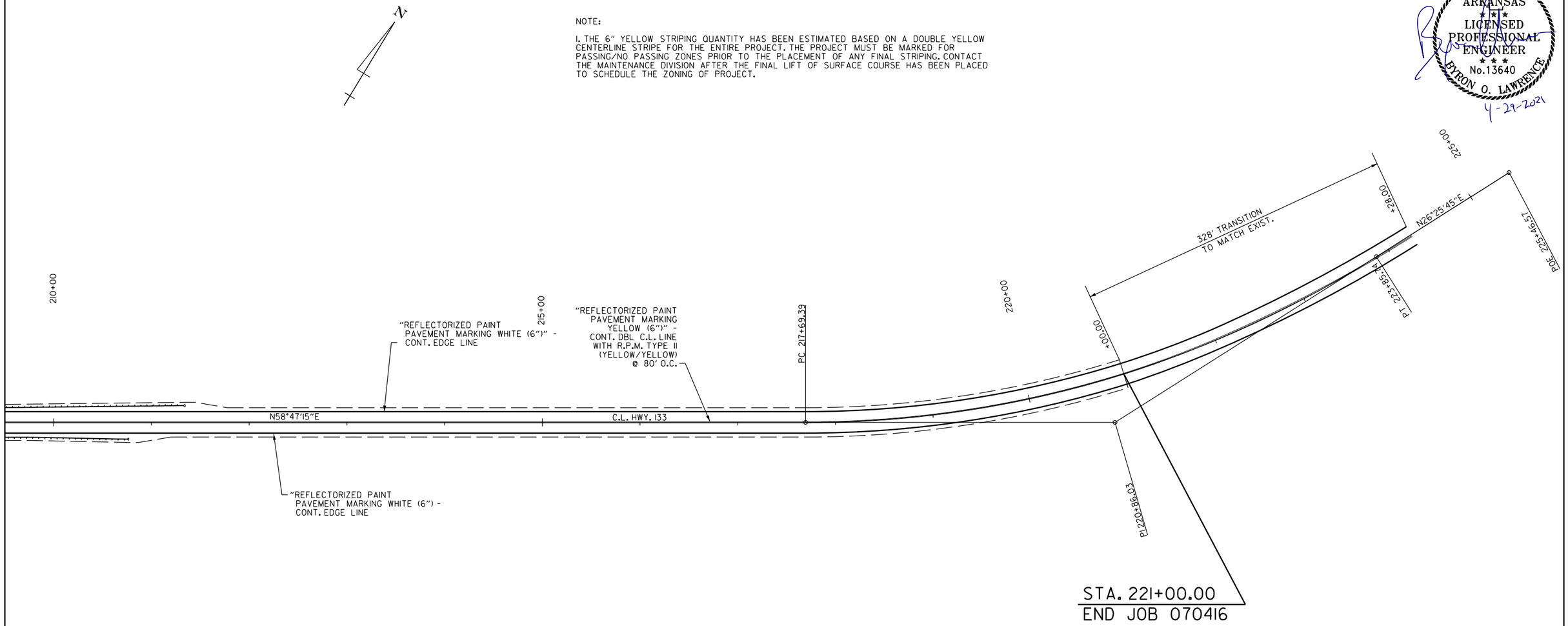
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 34 | 93 |

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
4-29-2021

NOTE:

1. 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 PROJECT.




PERMANENT PAVEMENT MARKING QUANTITIES
HWY. 133 (STA. 210+00 TO STA. 224+28)

| DESCRIPTION | QUANTITIES |
|---|---|
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | 2856 LIN. FT. |
| RAISED PAVEMENT MARKER TYPE II (YELLOW/YELLOW) | 18 EACH |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | 2856 LIN. FT. |

PERMANENT PAVEMENT MARKING DETAILS


TravisKeymer 4/29/2021 8:13:59 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_07_PM_003.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 35 | 93 |

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-21-2021

## ADVANCE WARNING SIGNS AND DEVICES

| SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1A | STAGE 1B | STAGE 2 | MAXIMUM NUMBER REQUIRED | TOTAL SIGNS REQUIRED | | VERTICAL PANELS | TRAFFIC DRUMS | BARRICADES (TYPE III) | | FURNISHING & INSTALLING PRECAST CONC. BARRIER | RELOCATING PRECAST CONCRETE BARRIER | TEMPORARY IMPACT ATTENUATION BARRIER | TEMP. IMPACT ATTEN.BARR. (RELOCATION) | TEMP. IMPACT ATTEN.BARR. (REPAIR) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | RIGHT | LEFT | | | | | |
| | | | LIN. FT. - EACH | | | | NO. | SQ. FT. | EACH | | | | LIN. FT. | | | EACH | |
| W20-1 | ROAD WORK 1500 FT. | 36"x36" | 2 | 2 | | 2 | 2 | 18.0 | | | | | | | | | |
| W20-1 | ROAD WORK 1000 FT. | 36"x36" | 2 | 2 | | 2 | 2 | 18.0 | | | | | | | | | |
| W20-1 | ROAD WORK 500 FT. | 36"x36" | 2 | 2 | | 2 | 2 | 18.0 | | | | | | | | | |
| G20-2 | END ROAD WORK | 36"x18" | 2 | 2 | | 2 | 2 | 9.0 | | | | | | | | | |
| R11-2 | ROAD CLOSED | 48"x30" | 2 | 4 | 4 | 4 | 4 | 40.0 | | | | | | | | | |
| W1-6 | LARGE ARROW | 48"x24" | | | 4 | 4 | 4 | 32.0 | | | | | | | | | |
| * R4-1 | DO NOT PASS | 24"x30" | 2 | 2 | 2 | 2 | 2 | 10.0 | | | | | | | | | |
| * W21-5a | RIGHT SHOULDER CLOSED | 36"x36" | 2 | 2 | 2 | 2 | 2 | 18.0 | | | | | | | | | |
| W8-1 | BUMP | 36"x36" | | | 4 | 4 | 4 | 36.0 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | VERTICAL PANELS | | 48 | 70 | 23 | 70 | | | 70 | | | | | | | | |
| | TRAFFIC DRUMS | | 19 | 38 | 17 | 38 | | | | 38 | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | TYPE III BARRICADE-RT. (16') | | 1 | 2 | 2 | 2 | | | | | 32 | | | | | | |
| | TYPE III BARRICADE-LT. (16') | | 1 | 2 | 2 | 2 | | | | | | 32 | | | | | |
| | | | | | | | | | | | | | | | | | |
| | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | | | | 653 | 653 | | | | | | | 653 | | | | |
| | RELOCATING PRECAST CONCRETE BARRIER | | | | 1306 | 1306 | | | | | | | | 1306 | | | |
| | TEMPORARY IMPACT ATTENUATION BARRIER | | 2 | 1 | 1 | 4 | | | | | | | | | 4 | | |
| | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | | | | 2 | 2 | | | | | | | | | | 2 | |
| | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | | 2 | 1 | 3 | 6 | | | | | | | | | | | 6 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| **TOTALS:** | | | | | | | | **199.0** | **70** | **38** | **32** | **32** | **653** | **1306** | **4** | **2** | **6** |

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

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

## CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | STAGE 1A | STAGE 1B | STAGE 2 | END OF JOB | CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | REFLECTORIZED PAINT PAVEMENT MARKING | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TYPE II | 6" | |
| | | | | | | (YELLOW/YELLOW) | WHITE | YELLOW |
| | LIN. FT. - EACH | | | | LIN. FT. | EACH | LIN. FT. | |
| CONSTRUCTION PAVEMENT MARKINGS | 5286 | 4270 | 1336 | | 10892 | | | |
| | | | | | | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | | | | 8728 | | | 8728 | |
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | | | | 8728 | | | | 8728 |
| RAISED PAVEMENT MARKER TYPE II | | | | 55 | | 55 | | |
| **TOTALS:** | | | | | **10892** | **55** | **8728** | **8728** |

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

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

## APPROACH GUTTERS AND SLABS

| STATION | STATION | LOCATION | APPROACH GUTTER | APPROACH SLABS | REINFORCING STEEL-RDWY. | AGGREGATE BASE CRS. (CLASS 7) |
|---|---|---|---|---|---|---|
| | | | CU.YD. | CU.YD. | POUND | TON |
| 190+53.00 | 190+73.00 | C.L. HWY. 133 - BR. 07476: RT. & LT. GUTTER | 8.34 | | 1360 | 6.2 |
| 190+53.00 | 190+73.00 | C.L. HWY. 133 - BR. 07476 APPROACH SLAB | | 17.20 | 1325 | 12.0 |
| 192+33.00 | 192+53.00 | C.L. HWY. 133 - BR. 07476 APPROACH SLAB | | 17.20 | 1325 | 12.0 |
| 192+33.00 | 192+53.00 | C.L. HWY. 133 - BR. 07476: RT. & LT. GUTTER | 8.34 | | 1360 | 6.2 |
| | | | | | | |
| 199+35.00 | 199+55.00 | C.L. HWY. 133 - BR. 07477: RT. & LT. GUTTER | 8.28 | | 1353 | 8.2 |
| 199+28.65 | 199+55.00 | C.L. HWY. 133 - BR. 07477 APPROACH SLAB | | 22.66 | 1910 | 17.4 |
| 201+15.00 | 201+41.35 | C.L. HWY. 133 - BR. 07477 APPROACH SLAB | | 22.66 | 1910 | 17.4 |
| 201+15.00 | 201+41.35 | C.L. HWY. 133 - BR. 07477: RT. & LT. GUTTER | 8.28 | | 1353 | 8.2 |
| | | | | | | |
| 207+28.65 | 207+55.00 | C.L. HWY. 133 - BR. 07478: RT. & LT. GUTTER | 8.28 | | 1353 | 8.2 |
| 207+28.65 | 207+55.00 | C.L. HWY. 133 - BR. 07478 APPROACH SLAB | | 22.66 | 1910 | 17.4 |
| 209+15.00 | 209+41.35 | C.L. HWY. 133 - BR. 07478 APPROACH SLAB | | 22.66 | 1910 | 17.4 |
| 209+15.00 | 209+41.35 | C.L. HWY. 133 - BR. 07478: RT. & LT. GUTTER | 8.28 | | 1353 | 8.2 |
| | | | | | | |
| **TOTALS:** | | | **49.80** | **125.04** | **18422** | **138.8** |

NOTE: USE T =13" FOR 4' SHOULDER.

## SUMMARY SOIL CLASSIFICATION TEST RESULTS - BIG CREEK CROSSING

| BORING NO. | APPROX. STATION | SAMPLE DEPTH (ft.) | WATER CONTENT (%) | ATTERBERG LIMITS | | | PERCENT PASSING #200 | UNIFIED CLASS. | AASHTO CLASS. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | | | |
| B-1 | 200+07.63 | 5 - 6.5 | 26 | 36 | 20 | 16 | 28 | SC | A-2-6 |
| B-1 | 200+07.63 | 13.5 - 15 | 23 | 45 | 17 | 28 | 83 | CL | A-7-6 |
| B-1 | 200+07.63 | 23.5 - 25 | 10 | NP | NP | NP | 8 | SP-SM | A-3 |
| B-1 | 200+07.63 | 33.5 - 35 | 36 | 61 | 15 | 46 | 58 | CH | A-7-6 |
| B-1 | 200+07.63 | 43.5 - 45 | 37 | 91 | 27 | 64 | 90 | CH | A-7-6 |
| B-1 | 200+07.63 | 53.5 - 55 | 27 | 79 | 23 | 56 | 80 | CH | A-7-6 |
| B-1 | 200+07.63 | 63.5 - 65 | 34 | 96 | 26 | 70 | 75 | CH | A-7-6 |
| B-1 | 200+07.63 | 83.5 - 85 | 35 | 98 | 25 | 73 | 99 | CH | A-7-6 |
| B-1 | 200+07.63 | 93.5 - 95 | 31 | 84 | 24 | 60 | 98 | CH | A-7-6 |
| B-2 | 201+52.00 | 0.5 - 2 | 5 | -- | -- | -- | 12 | SP-SC | -- |
| B-2 | 201+52.00 | 13.5 - 15 | 19 | 26 | 15 | 11 | 57 | CL | A-6 |
| B-2 | 201+52.00 | 33.5 - 35 | 33 | 73 | 22 | 51 | 43 | SC | A-7-6 |
| B-2 | 201+52.00 | 48.5 - 50 | 18 | 57 | 19 | 38 | 35 | SC | A-2-7 |
| B-2 | 201+52.00 | 63.5 - 65 | 32 | 84 | 25 | 59 | 100 | CH | A-7-6 |
| B-2 | 201+52.00 | 73.5 - 75 | 33 | 76 | 23 | 53 | 90 | CH | A-7-6 |
| R-1 | 199+41.20 | 2 - 3.5 | 17 | 26 | 18 | 8 | 85 | CL | A-4 |
| R-1 | 199+41.20 | 5 -6.5 | 28 | 39 | 18 | 21 | 82 | CL | A-6 |
| R-2 | 202+64.52 | 3.5 -5 | 19 | 25 | 17 | 8 | 69 | CL | A-4 |
| S-1 | 199+41.20 | 2 - 3.5 | 23 | 37 | 17 | 20 | 83 | CL | A-6 |
| S-2 | 202+00.30 | 2 - 3.5 | 19 | 34 | 17 | 17 | 83 | CL | A-6 |
| B-3 | 207+70.40 | 3.5 - 5.5 | 16 | 33 | 19 | 14 | 76 | CL | A-6 |
| B-3 | 207+70.40 | 18.5 - 20 | 20 | -- | -- | -- | 33 | SM | -- |
| B-3 | 207+70.40 | 33.5 - 35 | 37 | 100 | 29 | 71 | 89 | CH | A-7-6 |
| B-3 | 207+70.40 | 43.5 - 45 | 26 | 65 | 19 | 46 | 79 | CH | A-7-6 |
| B-3 | 207+70.40 | 53.5 - 55 | 35 | 94 | 27 | 67 | 99 | CH | A-7-6 |
| B-3 | 207+70.40 | 63.5 - 65 | 33 | 66 | 26 | 40 | 88 | CH | A-7-6 |
| B-3 | 207+70.40 | 78.5 - 80 | 34 | 99 | 29 | 70 | 100 | CH | A-7-6 |
| B-4 | 209+44.79 | 2 - 3.5 | 9 | 32 | 14 | 18 | 44 | SC | A-6 |
| B-4 | 209+44.79 | 13.5 - 15.5 | 7 | 30 | 15 | 15 | 30 | SC | A-2-6 |
| B-4 | 209+44.79 | 23.5 - 25 | 20 | -- | -- | -- | 29 | SC | -- |
| B-4 | 209+44.79 | 38.5 - 40 | 29 | 76 | 24 | 52 | 79 | CH | A-7-6 |
| B-4 | 209+44.79 | 53.5 - 55 | 30 | 87 | 26 | 61 | 78 | CH | A-7-6 |
| B-4 | 209+44.79 | 63.5 - 65 | 29 | 67 | 23 | 44 | 95 | CH | A-7-6 |
| B-4 | 209+44.79 | 73.5 - 75 | 33 | 96 | 29 | 67 | 86 | CH | A-7-6 |
| B-4 | 209+44.79 | 88.5 - 90 | 29 | 71 | 19 | 52 | 82 | CH | A-7-6 |
| R-3 | 206+59.07 | 3.5 - 5 | 23 | 27 | 15 | 12 | 56 | CL | A-6 |
| R-4 | 210+94.07 | 2 - 3.5 | 21 | 44 | 29 | 15 | 73 | ML | A-7-6 |
| S-3 | 207+17.74 | 3.5 - 5 | 23 | 35 | 21 | 14 | 87 | CL | A-6 |
| S-4 | 210+17.45 | 2 - 3.5 | 12 | 31 | 15 | 16 | 58 | CL | A-6 |

NOTE: 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 THE SAME DIFFERING FROM THE ABOVE TABULATIONS.

## COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH | COLD MILLING ASPHALT PAVEMENT |
|---|---|---|---|---|
| | | | FEET | SQ. YD. |
| 180+64.00 | 181+64.00 | HWY. 133 MAIN LANES | 22.00 | 244.44 |
| 221+00.00 | 224+28.00 | HWY. 133 MAIN LANES | 22.00 | 801.78 |
| | | | | |
| **TOTAL:** | | | | **1046.22** |

NOTE: AVERAGE MILLING DEPTH 1".

## BENCH MARKS

| STATION | LOCATION | BENCH MARKS |
|---|---|---|
| | | EACH |
| 190+73 | HWY. 133 BRANCH OF BIG CREEK | 1 |
| 199+55 | HWY. 133 BIG CREEK RELIEF | 1 |
| 207+55 | HWY. 133 BIG CREEK | 1 |
| | | |

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



Scott.Thornsberry 9/21/2021 10:34:53 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_08_QTY_001.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 36 | 93 |
| | | | | (2) | QUANTITIES | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
8-4-2021

## 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) | FILTER SOCK (18") (E-13) | 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. | LIN. FT. | CU.YD. | CU.YD. | CU. YD. |
| ENTIRE | PROJECT | CLEARING AND GRUBBING | | | | | | 13.74 | 13.74 | 280.3 | 264 | 75 | 9190 | | 2113 | 2113 | 2490 |
| ENTIRE | PROJECT | STAGE 1 | 8.86 | 17.72 | 8.86 | 903.7 | 8.86 | 17.72 | 17.72 | 361.5 | 132 | 33 | 145 | 995 | 1297 | 1297 | 1320 |
| ENTIRE | PROJECT | STAGE 2 | 4.89 | 9.78 | 4.89 | 498.8 | 4.89 | 9.78 | 9.78 | 199.5 | | | | 210 | | | 9 |
| *ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. | | | 1.38 | 2.76 | 1.38 | 140.8 | 1.38 | 2.76 | 2.76 | 56.3 | 110 | 45 | 934 | 121 | 300 | 300 | 335 |
| **TOTALS:** | | | **15.13** | **30.26** | **15.13** | **1543.3** | **15.13** | **44.00** | **44.00** | **897.6** | **506** | **153** | **10269** | **1326** | **3710** | **3710** | **4154** |

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.

## 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 | | | 1000 | 8 |
| **TOTALS:** | | | **1000** | **8** |

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

## ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

| LOCATION | TON | TACK COAT |
|---|---|---|
| | | GALLON |
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 19 | 38 |
| **TOTALS:** | **19** | **38** |

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

QUANTITIES ESTIMATED. REFER TO SECTION 104.03 OF THE STD. SPECS.

## DRIVEWAYS

| STATION | SIDE | LOCATION | WIDTH | ACHM SURFACE CRSE. (1/2") 220 LBS. PER SQ. YD. (PG 64-22) | | AGGREGATE BASE COURSE (CLASS 7) |
|---|---|---|---|---|---|---|
| | | | FEET | SQ. YD. | TON | TON |
| 184+43 | LT. | C.L. HWY. 133 | 20 | 219.68 | 24.16 | 89.70 |
| *ENTIRE PROJECT TEMPORARY DRIVES | | | 20 | | | 10.00 |
| **TOTALS:** | | | | **219.68** | **24.16** | **99.70** |

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

* QUANTITY ESTIMATED
SEE SECTION 104,03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

## EROSION CONTROL MATTING

| STATION | STATION | LOCATION | LENGTH | CLASS 3 |
|---|---|---|---|---|
| | | | LIN. FT. | SQ. YD. |
| 188+44.85 | 190+63.60 | C.L. HWY. 133 RT. | 218.75 | 194.44 |
| 189+19.85 | 190+63.60 | C.L. HWY. 133 LT. | 143.75 | 127.78 |
| 192+42.40 | 194+61.15 | C.L. HWY. 133 LT. | 218.75 | 194.44 |
| 192+42.40 | 193+86.15 | C.L. HWY. 133 RT. | 143.75 | 127.78 |
| 197+18.19 | 199+36.94 | C.L. HWY. 133 RT. | 218.75 | 194.44 |
| 198+10.51 | 199+54.26 | C.L. HWY. 133 LT. | 143.75 | 127.78 |
| 201+15.74 | 202+59.49 | C.L. HWY. 133 RT. | 143.75 | 127.78 |
| 201+33.06 | 203+51.81 | C.L. HWY. 133 LT. | 218.75 | 194.44 |
| 205+35.51 | 207+54.26 | C.L. HWY. 133 RT. | 218.75 | 194.44 |
| 205+93.19 | 207+36.94 | C.L. HWY. 133 LT. | 143.75 | 127.78 |
| 209+15.74 | 211+34.49 | C.L. HWY. 133 LT. | 218.75 | 194.44 |
| 209+33.06 | 210+76.81 | C.L. HWY. 133 RT. | 143.75 | 127.78 |
| **TOTAL:** | | | | **1933.32** |

NOTES: 1. AVERAGE WIDTH = 8'-0"
2. EROSION CONTROL MATTING IS TO BE USED BEHIND GUARDRAIL ON 2:1 SLOPES IF AND WHERE DIRECTED BY THE ENGINEER.

## GUARDRAIL

| STATION | STATION | LOCATION | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|---|---|
| | | | LIN. FT. | EACH | |
| 188+44.85 | 190+63.60 | C.L. HWY. 133 R.T. | 150 | 1 | 1 |
| 189+19.85 | 190+63.60 | C.L. HWY. 130 L.T. | 75 | 1 | 1 |
| 192+42.40 | 194+61.15 | C.L. HWY. 133 .L.T. | 150 | 1 | 1 |
| 192+42.40 | 193+86.15 | C.L. HWY. 133 R.T. | 75 | 1 | 1 |
| 198+10.51 | 199+54.26 | C.L. HWY. 133 L.T. | 75 | 1 | 1 |
| 197+18.19 | 199+36.94 | C.L. HWY. 133 R.T. | 150 | 1 | 1 |
| 201+33.06 | 203+51.81 | C.L. HWY. 133 L.T. | 150 | 1 | 1 |
| 201+15.74 | 202+59.49 | C.L. HWY. 133 R.T. | 75 | 1 | 1 |
| 205+93.19 | 207+36.94 | C.L. HWY. 133 L.T. | 75 | 1 | 1 |
| 205+35.51 | 207+54.26 | C.L. HWY. 133 R.T. | 150 | 1 | 1 |
| 209+15.74 | 211+34.49 | C.L. HWY. 133 L.T. | 150 | 1 | 1 |
| 209+33.06 | 210+76.81 | C.L. HWY. 133 R.T. | 75 | 1 | 1 |
| **TOTALS:** | | | **1350** | **12** | **12** |

## REMOVAL AND DISPOSAL OF CULVERTS

| STATION | DESCRIPTION | PIPE CULVERTS |
|---|---|---|
| | | EACH |
| 206+69 | HWY. 133: 30" X 28' RCP - RT. SIDE DRAIN | 1 |
| **TOTAL:** | | **1** |

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

## RUMBLE STRIPES IN ASPHALT SHOULDERS

| STATION | STATION | LOCATION | * RUMBLE STRIPES IN ASPHALT SHOULDERS |
|---|---|---|---|
| | | | LIN.FT. |
| 180+64 | 184+20 | C.L. HWY. 133 LT. | 356 |
| 184+50 | 190+53 | C.L. HWY. 133 LT. & RT. | 603 |
| 180+64 | 190+53 | C.L. HWY. 133 LT. & RT. | 989 |
| 192+53 | 199+29 | C.L. HWY. 133 LT. & RT. | 1352 |
| 201+41 | 207+29 | C.L. HWY. 133 LT. & RT. | 1176 |
| 209+41 | 224+28 | C.L. HWY. 133 LT. & RT. | 2974 |
| **TOTAL:** | | | **7450** |

* QUANTITY ESTIMATED.

## EARTHWORK

| STATION | STATION | LOCATION / DESCRIPTION | UNCLASSIFIED EXCAVATION | COMPACTED EMBANKMENT |
|---|---|---|---|---|
| | | | CU. YD. | |
| ENTIRE | PROJECT | STAGE 1-MAIN LANES | 18520 | 31945 |
| ENTIRE | PROJECT | STAGE 2-MAIN LANES | 15361 | 1190 |
| 184+43 | | APPROACH | | 160 |
| **TOTALS:** | | | **33881** | **33295** |

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

## ACHM PATCHING OF EXISTING ROADWAY

| DESCRIPTION | TON |
|---|---|
| ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | 10 |
| **TOTAL:** | **10** |

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

## CLEARING AND GRUBBING

| STATION | STATION | CLEARING | GRUBBING |
|---|---|---|---|
| | | STATION | |
| 180+64 | 221+00 | 41 | 41 |
| **TOTALS:** | | **41** | **41** |

LondonMiller 8/3/2021 3:15:58 PM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_08_QTY_001.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 37 | 93 |
| | | | | (2) | QUANTITIES | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
4-27-2021

## BASE AND SURFACING - MAIN LANES (BOX 1 OF 2)

| STATION | STATION | LOCATION | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | | | | ACHM BASE COURSE (1 1/2") | | | | ACHM BINDER COURSE (1") | | | | ACHM SURFACE COURSE (1/2") | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (0.05 GAL. PER SQ. YD.) | | | (0.17 GAL. PER SQ. YD.) | | | | | | | | | | | | | | | | | | |
| | | | TON / STATION | TON | TOTAL WID. FEET | SQ.YD. | GALLON | TOTAL WID. FEET | SQ.YD. | GALLON | 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 | AVG. WID. FEET | SQ.YD. | POUND / SQ.YD. | TOTAL PG 64-22 TON |
| **MAIN LANES** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 180+64.00 | 181+64.00 | C.L. HWY. 133 TRANSITION | | | | | | 22.00 | 244.44 | 41.55 | 41.55 | | | | | | | | | | | | | 24.00 | 266.67 | 220 | 29.33 | 29.33 |
| 181+64.00 | 184+26.99 | C.L. HWY. 133 OVERLAY | 92.50 | 243.27 | | | | | | | | | | | | | | | | | | | | 26.00 | 759.75 | 220 | 83.57 | 83.57 |
| 184+26.99 | 185+70.00 | C.L. HWY. 133 NOTCH AND WIDEN | 104.25 | 149.09 | 6.36 | 101.06 | 5.05 | | | | 5.05 | | | | | 3.23 | 51.32 | 330 | 8.47 | 3.13 | 49.74 | 220 | 5.47 | 26.00 | 413.14 | 220 | 45.45 | 50.92 |
| 185+70.00 | 186+60.00 | C.L. HWY. 133 FULL DEPTH WITH RAISING GRADE | 127.50 | 114.75 | 44.71 | 447.10 | 22.36 | | | | 22.36 | | | | | 22.46 | 224.60 | 330 | 37.06 | 22.25 | 222.50 | 220 | 24.48 | 26.00 | 260.00 | 220 | 28.60 | 53.08 |
| 186+60.00 | 190+53.00 | C.L. HWY. 133 FULL DEPTH | 178.00 | 699.54 | 44.71 | 1952.34 | 97.62 | | | | 97.62 | | | | | 22.46 | 980.75 | 330 | 161.82 | 22.25 | 971.58 | 220 | 106.87 | 26.00 | 1135.33 | 220 | 124.89 | 231.76 |
| 192+53.00 | 199+28.65 | C.L. HWY. 133 FULL DEPTH | 178.00 | 1202.66 | 44.71 | 3356.48 | 167.82 | | | | 167.82 | | | | | 22.46 | 1686.12 | 330 | 278.21 | 22.25 | 1670.36 | 220 | 183.74 | 26.00 | 1951.88 | 220 | 214.71 | 398.45 |
| 201+41.45 | 203+70.00 | C.L. HWY. 133 FULL DEPTH | 178.00 | 406.82 | 44.71 | 1135.39 | 56.77 | | | | 56.77 | | | | | 22.46 | 570.36 | 330 | 94.11 | 22.25 | 565.03 | 220 | 62.15 | 26.00 | 660.26 | 220 | 72.63 | 134.78 |
| 203+70.00 | 205+40.00 | C.L. HWY. 133 NOTCH AND WIDEN | 127.50 | 216.75 | 18.36 | 346.80 | 17.34 | | | | 17.34 | | | | | 9.23 | 174.34 | 330 | 28.77 | 9.13 | 172.46 | 220 | 18.97 | 26.00 | 491.11 | 220 | 54.02 | 72.99 |
| 205+40.00 | 207+28.65 | C.L. HWY. 133 FULL DEPTH | 178.00 | 335.80 | 44.71 | 937.17 | 46.86 | | | | 46.86 | | | | | 22.46 | 470.79 | 330 | 77.68 | 22.25 | 466.38 | 220 | 51.30 | 26.00 | 544.99 | 220 | 59.95 | 111.25 |
| 209+41.35 | 214+20.00 | C.L. HWY. 133 FULL DEPTH | 178.00 | 852.00 | 44.71 | 2377.83 | 118.89 | | | | 118.89 | | | | | 22.46 | 1194.50 | 330 | 197.09 | 22.25 | 1183.33 | 220 | 130.17 | 26.00 | 1382.77 | 220 | 152.10 | 282.27 |
| 214+20.00 | 216+40.00 | C.L. HWY. 133 NOTCH AND WIDEN | 135.25 | 297.55 | 22.36 | 546.58 | 27.33 | | | | 27.33 | | | | | 11.23 | 274.51 | 330 | 45.29 | 11.13 | 272.07 | 220 | 29.93 | 26.00 | 635.56 | 220 | 69.91 | 99.84 |
| 216+40.00 | 219+00.00 | C.L. HWY. 133 FULL DEPTH WITH RAISING GRADE | 112.00 | 291.20 | 44.71 | 1291.62 | 64.58 | | | | 64.58 | | | | | 22.46 | 648.84 | 330 | 107.06 | 22.25 | 642.78 | 220 | 70.71 | 26.00 | 751.11 | 220 | 82.62 | 153.33 |
| 219+00.00 | 221+00.00 | C.L. HWY. 133 NOTCH AND WIDEN | 108.00 | 216.00 | 8.36 | 185.78 | 9.29 | | | | 9.29 | | | | | 4.23 | 94.00 | 330 | 15.51 | 4.13 | 91.78 | 220 | 10.10 | 26.00 | 577.78 | 220 | 63.56 | 73.66 |
| 221+00.00 | 224+28.00 | C.L. HWY. 133 TRANSITION | | | | | | 22.00 | 801.78 | 136.30 | 136.30 | | | | | | | | | | | | | 24.00 | 874.67 | 220 | 96.21 | 96.21 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ADDITIONAL FOR LEVELING & RAISING GRADE** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 181+64.00 | 184+26.99 | C.L. HWY. 133 OVERLAY | | | 22.00 | 642.86 | 32.14 | 22.00 | 642.86 | 109.29 | 141.43 | | | | | 22.00 | 642.86 | 140 | 45.00 | 22.00 | 642.86 | 220 | 70.71 | | | | | 70.71 |
| 184+26.99 | 185+70.00 | C.L. HWY. 133 NOTCH AND WIDEN | | | 19.00 | 301.91 | 15.10 | 19.00 | 301.91 | 51.32 | 66.42 | | | | | 19.00 | 301.91 | 130 | 19.62 | 19.00 | 301.91 | 220 | 33.21 | | | | | 33.21 |
| 185+70.00 | 186+60.00 | C.L. HWY. 133 RAISING GRADE | | | 13.00 | 130.00 | 6.50 | 13.00 | 130.00 | 22.10 | 28.60 | 13.00 | 130.00 | 495.00 | 32.18 | 13.00 | 130.00 | 330 | 21.45 | | | | | | | | | |
| 203+70.00 | 205+40.00 | C.L. HWY. 133 NOTCH AND WIDEN | | | 13.00 | 245.56 | 12.28 | 13.00 | 245.56 | 41.75 | 54.03 | | | | | 13.00 | 245.56 | 400 | 49.11 | 13.00 | 245.56 | 220 | 27.01 | | | | | 27.01 |
| 214+20.00 | 216+40.00 | C.L. HWY. 133 NOTCH AND WIDEN | | | 11.00 | 268.89 | 13.44 | 11.00 | 268.89 | 45.71 | 59.15 | | | | | 11.00 | 268.89 | 575 | 77.31 | 11.00 | 268.89 | 220 | 29.58 | | | | | 29.58 |
| 216+40.00 | 219+00.00 | C.L. HWY. 133 RAISING GRADE | | | 17.00 | 491.11 | 24.56 | 17.00 | 491.11 | 83.49 | 108.05 | 17.00 | 491.11 | 1320.00 | 324.13 | 17.00 | 491.11 | 330 | 81.03 | | | | | | | | | |
| 219+00.00 | 221+00.00 | C.L. HWY. 133 NOTCH AND WIDEN | | | 18.00 | 400.00 | 20.00 | 18.00 | 400.00 | 68.00 | 88.00 | | | | | 18.00 | 400.00 | 440 | 88.00 | 18.00 | 400.00 | 220 | 44.00 | | | | | 44.00 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ADDITIONAL FOR SUPERELEVATION** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 181+64.49 | 190+51.02 | C.L. HWY. 133 | 44.75 | 396.72 | | | | | | | | | | | | | | | | | | | | | | | | |
| 215+06.89 | 224+28.00 | C.L. HWY. 133 | 44.75 | 412.20 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SUBTOTALS (BOX 1 OF 2):** | | | | **5834.35** | | **15158.48** | **757.93** | | **3526.55** | **599.51** | **1357.44** | | **621.11** | | **356.31** | | **8850.46** | | **1432.59** | | **8167.23** | | **898.40** | | **10705.02** | | **1177.55** | **2075.95** |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

Travis.Keymer 4/29/2021 8:14:04 AM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_08_QTY_001.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 38 | 93 |
| | | | | (2) | | QUANTITIES | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
4-29-2021

## BASE AND SURFACING - GUARDRAIL WIDENING (BOX 2 OF 2)

| STATION | STATION | LOCATION | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | | | | ACHM BASE COURSE (1 1/2") | | | | ACHM BINDER COURSE (1") | | | | ACHM SURFACE COURSE (1/2") | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (0.05 GAL. PER SQ. YD.) | | | (0.17 GAL. PER SQ. YD.) | | | | | | | | | | | | | | | | | | | |
| | | | TON / STATION | TON | TOTAL WID. FEET | SQ.YD. | GALLON | TOTAL WID. FEET | SQ.YD. | GALLON | 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 | AVG. WID. FEET | SQ.YD. | POUND / SQ.YD. | TOTAL PG 64-22 TON |
| **GUARDRAIL WIDENING** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 188+01.85 | 190+53.00 | C.L. HWY. 133 RT. BR. 1 GR WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.81 | 220 | 6.14 | 6.14 |
| 188+01.85 | 188+34.85 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 188+34.85 | 188+44.85 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 188+44.85 | 190+19.85 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 190+19.85 | 190+53.00 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 188+76.85 | 190+53.00 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 39.14 | 220 | 4.31 | 4.31 |
| 188+76.85 | 189+09.85 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 189+09.85 | 189+19.85 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 189+19.85 | 190+19.85 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 190+19.85 | 190+53.00 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 192+53.00 | 194+29.15 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 39.14 | 220 | 4.31 | 4.31 |
| 192+53.00 | 192+86.15 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 192+86.15 | 193+86.15 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 193+86.15 | 193+96.15 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 193+96.15 | 194+29.15 | C.L. HWY. 133 RT. BR. 1 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 192+53.00 | 195+04.15 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.81 | 220 | 6.14 | 6.14 |
| 192+53.00 | 192+86.15 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 192+86.15 | 194+61.15 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 194+61.15 | 194+71.15 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 194+71.15 | 195+04.15 | C.L. HWY. 133 LT. BR. 1 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 196+75.19 | 199+26.34 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.81 | 220 | 6.14 | 6.14 |
| 196+75.19 | 197+08.19 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 197+08.19 | 197+18.19 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 197+18.19 | 198+93.19 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 198+93.19 | 199+26.34 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 197+67.51 | 199+41.35 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 38.63 | 220 | 4.25 | 4.25 |
| 197+67.51 | 198+00.51 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 198+00.51 | 198+10.51 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 198+10.51 | 199+10.51 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 199+10.51 | 199+41.35 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - THRIE BEAM | 25.00 | 7.71 | | | | | | | | | | | | | | | | | | | | 3.50 | 11.99 | 220 | 1.32 | 1.32 |
| 201+28.65 | 203+02.49 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 38.63 | 220 | 4.25 | 4.25 |
| 201+28.65 | 201+59.49 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - THRIE BEAM | 25.00 | 7.71 | | | | | | | | | | | | | | | | | | | | 3.50 | 11.99 | 220 | 1.32 | 1.32 |
| 201+59.49 | 202+59.49 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 202+59.49 | 202+69.49 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 202+69.49 | 203+02.49 | C.L. HWY. 133 RT. BR. 2 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 201+43.66 | 203+94.81 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.81 | 220 | 6.14 | 6.14 |
| 201+43.66 | 201+76.81 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 201+76.81 | 203+51.81 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 203+51.81 | 203+61.81 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 203+61.81 | 203+94.81 | C.L. HWY. 133 LT. BR. 2 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 204+92.51 | 207+41.35 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.30 | 220 | 6.08 | 6.08 |
| 204+92.51 | 205+25.51 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 205+25.51 | 205+35.51 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 205+35.51 | 207+10.51 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 207+10.51 | 207+41.35 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - THRIE BEAM | 25.00 | 7.71 | | | | | | | | | | | | | | | | | | | | 3.50 | 11.99 | 220 | 1.32 | 1.32 |
| 205+50.19 | 207+26.34 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 39.14 | 220 | 4.31 | 4.31 |
| 205+50.19 | 205+83.19 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 205+83.19 | 205+93.19 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 205+93.19 | 206+93.19 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 206+93.19 | 207+26.34 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 209+43.66 | 211+19.81 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 39.14 | 220 | 4.31 | 4.31 |
| 209+43.66 | 209+76.81 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - THRIE BEAM | 25.00 | 8.29 | | | | | | | | | | | | | | | | | | | | 3.50 | 12.89 | 220 | 1.42 | 1.42 |
| 209+76.81 | 210+76.81 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - TAPER | 32.00 | 32.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 50.00 | 220 | 5.50 | 5.50 |
| 210+76.81 | 210+86.81 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 210+86.81 | 211+19.81 | C.L. HWY. 133 RT. BR. 3 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| 209+28.65 | 211+77.49 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - 2' | | | | | | | | | | | | | | | | | | | | | | 2.00 | 55.30 | 220 | 6.08 | 6.08 |
| 209+28.65 | 209+59.49 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - THRIE BEAM | 25.00 | 7.71 | | | | | | | | | | | | | | | | | | | | 3.50 | 11.99 | 220 | 1.32 | 1.32 |
| 209+59.49 | 211+34.49 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - TAPER | 32.00 | 56.00 | | | | | | | | | | | | | | | | | | | | 4.50 | 87.50 | 220 | 9.63 | 9.63 |
| 211+34.49 | 211+44.49 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - 10' | 39.25 | 3.93 | | | | | | | | | | | | | | | | | | | | 5.50 | 6.11 | 220 | 0.67 | 0.67 |
| 211+44.49 | 211+77.49 | C.L. HWY. 133 LT. BR. 3 GR. WIDENING - TAPER | 19.50 | 6.44 | | | | | | | | | | | | | | | | | | | | 2.75 | 10.08 | 220 | 1.11 | 1.11 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SUBTOTALS (BOX 2 OF 2):** | | | | **749.60** | | | | | | | | | | | | | | | | | | | | | **1738.02** | | **191.24** | **191.24** |
| **SUBTOTALS (BOX 1 OF 2):** | | | | **5834.35** | | **15158.48** | **757.93** | | **3526.55** | **599.51** | **1357.44** | | **621.11** | | **356.31** | | **8850.46** | | **1432.59** | | **8167.23** | | **898.40** | | **10705.02** | | **1177.55** | **2075.95** |
| **TOTALS:** | | | | **6583.95** | | **15158.48** | **757.93** | | **3526.55** | **599.51** | **1357.44** | | **621.11** | | **356.31** | | **8850.46** | | **1432.59** | | **8167.23** | | **898.40** | | **12443.04** | | **1368.79** | **2267.19** |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

Travis.Keymer 4/29/2021 8:14:04 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166933_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_08_QTY_001.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 39 | 93 |

(1) 07476, 07477 & 07478 - QUANTITIES - 61451

# SCHEDULE OF BRIDGE QUANTITIES - JOB 070416

| BRIDGE NUMBER | NAME PLATE TITLE | UNIT OF STRUCTURE | ITEM NUMBER | 205 | SS & 802 | SP, SS & 802 | SP, SS & 802 | 803 | SS & 804 | SS & 804 | SS & 805 | SS & 805 | SS & 805 | 812 | 816 | 816 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ITEM | REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _ ) | CLASS S CONCRETE-BRIDGE | CLASS S(AE) CONCRETE-BRIDGE | PRESTRESSED CONCRETE BEAMS (NON - VOIDED 15" x 47¾") | CLASS I PROTECTIVE SURFACE TREATMENT | REINFORCING STEEL- BRIDGE (GRADE 60) | EPOXY COATED REINFORCING STEEL (GRADE 60) | STEEL SHELL PILING (18" DIA.) (1) | STEEL SHELL PILING (24" DIA.) (1) | PILE ENCASEMENT | BRIDGE NAME PLATE (TYPE D) | DUMPED RIPRAP | FILTER BLANKET |
| | | | UNIT | LUMP SUM | CU. YD. | CU. YD. | LIN. FT. | GAL. | POUND | POUND | LIN. FT. | LIN. FT. | LIN. FT. | EACH | CU. YD. | SQ. YD. |
| 07476 | HIGHWAY 133 OVER BRANCH OF BIG CREEK | | | | | | | | | | | | | | | |
| | | END BENT NO. 1 | | | 14.80 | | | | 1,960 | 344 | 305 | | | | 95 | 167 |
| | | INTERMEDIATE BENT NO. 2 | | | 15.50 | | | | 1,960 | 491 | | 405 | 75 | | | |
| | | INTERMEDIATE BENT NO. 3 | | | 15.50 | | | | 1,960 | 491 | | 405 | 50 | | | |
| | | INTERMEDIATE BENT NO. 4 | | | 15.50 | | | | 1,960 | 491 | | 405 | 50 | | | |
| | | END BENT NO. 5 | | | 14.80 | | | | 1,960 | 344 | 305 | | | | 85 | 164 |
| | | 4 - 40'-0" PRECAST PRESTRESSED BEAM UNITS | | | | 126.70 | 1,256 | 13.3 | | 30,999 | | | | 1 | | |
| | | EXIST. BRIDGE NO. M3948 (SITE NO. 1) | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| TOTAL FOR BRIDGE NO. 07476 | | | | 1 | 76.10 | 126.70 | 1,256 | 13.3 | 9,800 | 33,160 | 610 | 1,215 | 175 | 1 | 180 | 331 |
| | | | | | | | | | | | | | | | | |
| 07477 | HIGHWAY 133 OVER BIG CREEK RELIEF | | | | | | | | | | | | | | | |
| | | END BENT NO. 1 | | | 17.40 | | | | 2,459 | 344 | 305 | | | | 57 | 151 |
| | | INTERMEDIATE BENT NO. 2 | | | 19.50 | | | | 2,444 | 527 | | 405 | 30 | | | |
| | | INTERMEDIATE BENT NO. 3 | | | 19.50 | | | | 2,444 | 527 | | 405 | 45 | | | |
| | | INTERMEDIATE BENT NO. 4 | | | 19.50 | | | | 2,444 | 527 | | 405 | 55 | | | |
| | | END BENT NO. 5 | | | 17.40 | | | | 2,459 | 344 | 305 | | | | 91 | 159 |
| | | 4 - 40'-0" PRECAST PRESTRESSED BEAM UNITS | | | | 127.40 | 1,256 | 13.3 | | 31,031 | | | | 1 | | |
| | | EXIST. BRIDGE NO. M3977 (SITE NO. 2) | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| TOTAL FOR BRIDGE NO. 07477 | | | | 1 | 93.30 | 127.40 | 1,256 | 13.3 | 12,250 | 33,300 | 610 | 1,215 | 130 | 1 | 148 | 310 |
| | | | | | | | | | | | | | | | | |
| 07478 | HIGHWAY 133 OVER BIG CREEK | | | | | | | | | | | | | | | |
| | | END BENT NO. 1 | | | 17.40 | | | | 2,459 | 344 | 340 | | | | 55 | 143 |
| | | INTERMEDIATE BENT NO. 2 | | | 19.50 | | | | 2,444 | 527 | | 460 | 35 | | | |
| | | INTERMEDIATE BENT NO. 3 | | | 19.50 | | | | 2,444 | 527 | | 460 | 55 | | | |
| | | INTERMEDIATE BENT NO. 4 | | | 19.50 | | | | 2,444 | 527 | | 460 | 55 | | | |
| | | END BENT NO. 5 | | | 17.40 | | | | 2,459 | 344 | 340 | | | | 111 | 194 |
| | | 4 - 40'-0" PRECAST PRESTRESSED BEAM UNITS | | | | 127.40 | 1,256 | 13.3 | | 31,031 | | | | 1 | | |
| | | EXIST. BRIDGE NO. M3949 (SITE NO. 3) | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| TOTAL FOR BRIDGE NO. 07478 | | | | 1 | 93.30 | 127.40 | 1,256 | 13.3 | 12,250 | 33,300 | 680 | 1,380 | 145 | 1 | 166 | 337 |
| | | | | | | | | | | | | | | | | |
| TOTALS FOR JOB NO. 070416 | | | | | 262.70 | 381.50 | 3,768 | 39.9 | 34,300 | 99,760 | 1,900 | 3,810 | 450 | 3 | 494 | 978 |

(1) Steel Shell Piles shall conform to ASTM A252, Grade 3, Fy = 45 ksi.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/20/2021

BRIDGE ENGINEER
PRINT DATE: 7/20/2021

SCHEDULE OF BRIDGE QUANTITIES
BIG CREEK & RELIEF STRS. & APPRS. (S)
CLEVELAND COUNTY
ROUTE 133 SECTION 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 01/2020 FILENAME: B070416X_QXI.dgn
CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: - - DATE: - - SCALE: NONE
BRIDGE NO. 07476, 07477 & 07478 DRAWING NO. 61451

Sharath.Ranganath 7/20/2021 16:31:49
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\BRIDGE\Drawings\B070416X_QXI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 10-07-2021 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 40 | 93 |

(2) SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-07-2021

## SUMMARY OF QUANTITIES

| ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 201 | CLEARING | 41 | STATION |
| 201 | GRUBBING | 41 | STATION |
| 202 | REMOVAL AND DISPOSAL OF PIPE CULVERTS | 1 | EACH |
| SS & 210 | UNCLASSIFIED EXCAVATION | 33881 | CU. YD. |
| SP & 210 | COMPACTED EMBANKMENT | 33295 | CU. YD. |
| SS & 303 | AGGREGATE BASE COURSE (CLASS 7) | 6822 | TON |
| SS & 401 | TACK COAT | 1395 | GAL. |
| SP, SS, & 405 | MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2") | 342 | TON |
| SP, SS, & 405 | ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2") | 14 | TON |
| SP, SS, & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | 1370 | TON |
| SP, SS, & 406 | ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1") | 63 | TON |
| SP, SS, & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") | 2170 | TON |
| SP, SS, & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") | 121 | TON |
| 412 | COLD MILLING ASPHALT PAVEMENT | 1046 | SQ. YD. |
| SP, SS, & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | 19 | TON |
| SP, SS, & 415 | ACHM PATCHING OF EXISTING ROADWAY | 10 | TON |
| 504 | APPROACH SLABS | 125.04 | CU. YD. |
| 504 | APPROACH GUTTERS | 49.80 | CU. YD. |
| 601 | MOBILIZATION | 1.00 | LUMP SUM |
| SP & 602 | FURNISHING FIELD OFFICE | 1 | EACH |
| SS & 603 | MAINTENANCE OF TRAFFIC | 1.00 | LUMP SUM |
| SS & 604 | SIGNS | 199 | SQ. FT. |
| SS & 604 | BARRICADES | 64 | LIN. FT. |
| SS & 604 | TRAFFIC DRUMS | 38 | EACH |
| SS & 604 | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | 653 | LIN. FT. |
| SS & 604 | RELOCATING PRECAST CONCRETE BARRIER | 1306 | LIN. FT. |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | 10892 | LIN. FT. |
| SS & 604 | VERTICAL PANELS | 70 | EACH |
| SS & 611 | 4" PIPE UNDERDRAINS | 1000 | LIN. FT. |
| SS & 611 | UNDERDRAIN OUTLET PROTECTORS | 8 | EACH |
| SS & 617 | GUARDRAIL (TYPE A) | 1350 | LIN. FT. |
| SS & 617 | GUARDRAIL TERMINAL (TYPE 2) | 12 | EACH |
| SS & 617 | THRIE BEAM GUARDRAIL TERMINAL | 12 | EACH |
| 620 | LIME | 30 | TON |
| 620 | SEEDING | 15.13 | ACRE |
| SS & 620 | MULCH COVER | 59.13 | ACRE |
| 620 | WATER | 2440.9 | M. GAL. |
| 621 | TEMPORARY SEEDING | 44.00 | ACRE |
| 621 | SILT FENCE | 10269 | LIN. FT. |
| 621 | SAND BAG DITCH CHECKS | 506 | BAG |
| 621 | SEDIMENT BASIN | 3710 | CU. YD. |
| 621 | OBLITERATION OF SEDIMENT BASIN | 3710 | CU. YD. |
| 621 | SEDIMENT REMOVAL AND DISPOSAL | 4154 | CU. YD. |
| 621 | ROCK DITCH CHECKS | 153 | CU. YD. |
| SS & 621 | FILTER SOCK (18") | 1326 | LIN. FT. |
| 623 | SECOND SEEDING APPLICATION | 15.13 | ACRE |
| 626 | EROSION CONTROL MATTING (CLASS 3) | 1933 | SQ. YD. |
| 635 | ROADWAY CONSTRUCTION CONTROL | 1.00 | LUMP SUM |
| SP & 642 | RUMBLE STRIPES IN ASPHALT SHOULDERS | 7450 | LIN. FT. |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6") | 8728 | LIN. FT. |
| 718 | REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6") | 8728 | LIN. FT. |
| 721 | RAISED PAVEMENT MARKERS (TYPE II) | 55 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER | 4 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | 6 | EACH |
| SS & 731 | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | 2 | EACH |
| SS & 804 | REINFORCING STEEL-ROADWAY (GRADE 60) | 18422 | 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 |
| SS & 802 | CLASS S CONCRETE-BRIDGE | 262.70 | CU. YD. |
| SP, SS, & 802 | CLASS S(AE) CONCRETE-BRIDGE | 381.50 | CU. YD. |
| SP, SS, & 802 | PRESTRESSED CONCRETE BEAMS (NON-VOIDED 15" x 47 3/4") | 3768 | LIN. FT. |
| 803 | CLASS 1 PROTECTIVE SURFACE TREATMENT | 39.9 | GAL. |
| SS & 804 | REINFORCING STEEL-BRIDGE (GRADE 60) | 34300 | POUND |
| SS & 804 | EPOXY COATED REINFORCING STEEL (GRADE 60) | 99760 | POUND |
| SS & 805 | STEEL SHELL PILING (18" DIAMETER) | 1900 | LIN. FT. |
| SS & 805 | STEEL SHELL PILING (24" DIAMETER) | 3810 | LIN. FT. |
| SS & 805 | PILE ENCASEMENT | 450 | LIN. FT. |
| 812 | BRIDGE NAME PLATE (TYPE D) | 3 | EACH |
| 816 | FILTER BLANKET | 978 | SQ. YD. |
| 816 | DUMPED RIPRAP | 494 | CU. YD. |
| | | | |
| | | | |
| | | | |

## REVISIONS

| DATE | REVISION | SHEET NUMBER |
|---|---|---|
| 10/7/2021 | REVISED "UNCLASSIFIED EXCAVATION" AND "COMPACTED EMBANKMENT" QUANTITIES. | 40 |
| | | |
| | | |
| | | |
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| | | |

Scott.Thornsberry@7/2021 11:04:33 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_166693_070416 Big Creek Relief Bridges\Design\CIVIL\Drawings\R070416_08_QTY_QQ.dgn
REVISED DATE: $$REVDATE$$

| 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. | | 070416 | 41 | 93 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
4-29-2021

SURVEY CONTROL COORDINATES

Project Name: s070416
Date: 1/11/2018
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

| Point Name | Northing | Easting | Elev | Feature | Description |
|---|---|---|---|---|---|
| 1 | 1791409.7772 | 1267199.3945 | 185.230 | CTL | STANDARD ARDOT CAP STAMPED PN: 1 |
| 2 | 1791847.9279 | 1267907.6463 | 185.968 | CTL | STANDARD ARDOT CAP STAMPED PN: 2 |
| 3 | 1792153.1038 | 1268586.9975 | 185.468 | CTL | STANDARD ARDOT CAP STAMPED PN: 3 |
| 4 | 1792624.9320 | 1269345.2637 | 188.721 | CTL | STANDARD ARDOT CAP STAMPED PN: 4 |
| 5 | 1793008.5079 | 1269779.2233 | 198.081 | CTL | STANDARD ARDOT CAP STAMPED PN: 5 |
| 6 | 1793717.1511 | 1270139.1869 | 200.232 | CTL | STANDARD ARDOT CAP STAMPED PN: 6 |
| 900 | 1791332.5998 | 1267130.8853 | 186.284 | TBM | CHISELED SQUARE CUT IN BRIDGE |
| 901 | 1791877.7088 | 1268013.8432 | 186.309 | TBM | CHISELED SQUARE CUT IN BRIDGE |
| 902 | 1792206.0694 | 1268724.5251 | 187.013 | TBM | CHISELED SQUARE CUT IN BRIDGE |
| 903 | 1793732.7990 | 1270178.7708 | 203.453 | TBM | X CUT IN BOLT TOP OF FIRE HYDRANT |
| 998 | 1774387.6073 | 1248836.5096 | 186.477 | TBM | 8" SPIKE IN 12" PINE STUMP |
| 999 | 1774488.3504 | 1249005.2328 | 183.900 | BM | RV 185 STANDARD MONEL-METAL RIVET |

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.9999099885 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s070416gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
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 - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: BASED ON STATIC GPS PTS 1 - 6
CONVERGENCE ANGLE: 0-99-99.9 LEFT/RIGHT AT LT: 33-59-05N LG: 092-08-41W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

**ALIGNMENT NAME: HWY. 133**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8000 | 179+98.63 | POB | 1790578.7328 | 1266339.4728 |
| 8001 | 184+26.99 | PC | 1790912.0869 | 1266608.4893 |
| 8002 | | CC | 1790257.8622 | 1267419.1775 |
| 8003 | 187+88.52 | PT | 1791148.8134 | 1266879.3338 |
| 8004 | 217+69.39 | PC | 1792693.5407 | 1269428.7324 |
| 8005 | | CC | 1793626.9182 | 1268863.1819 |
| 8006 | 223+85.74 | PT | 1793141.1703 | 1269840.4689 |
| 8007 | 225+46.56 | POE | 1793285.1822 | 1269912.0482 |



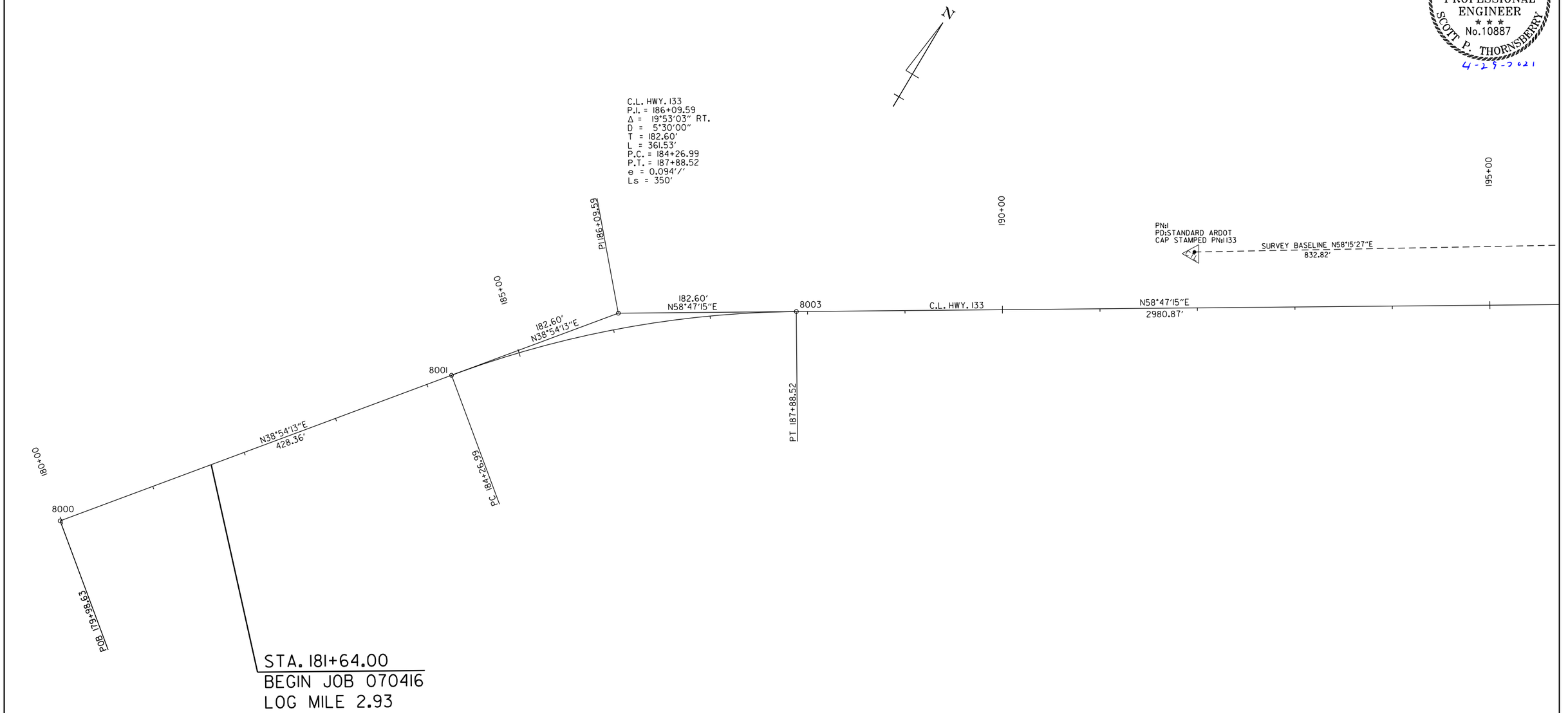
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 42 | 93 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
4-29-2021



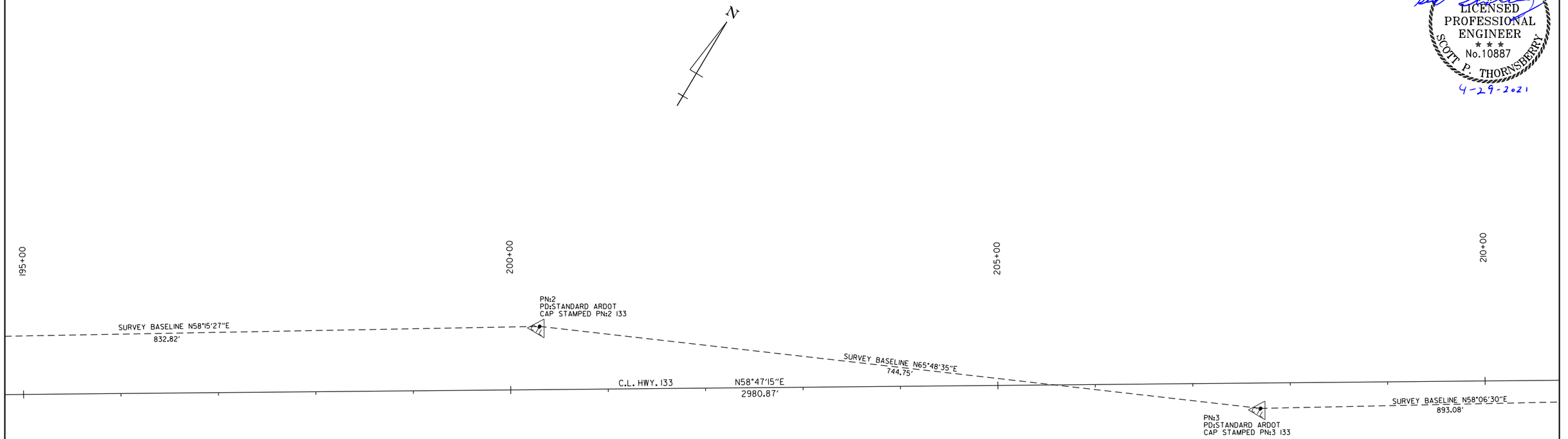

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|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 43 | 93 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
4-29-2021




SURVEY CONTROL DETAILS

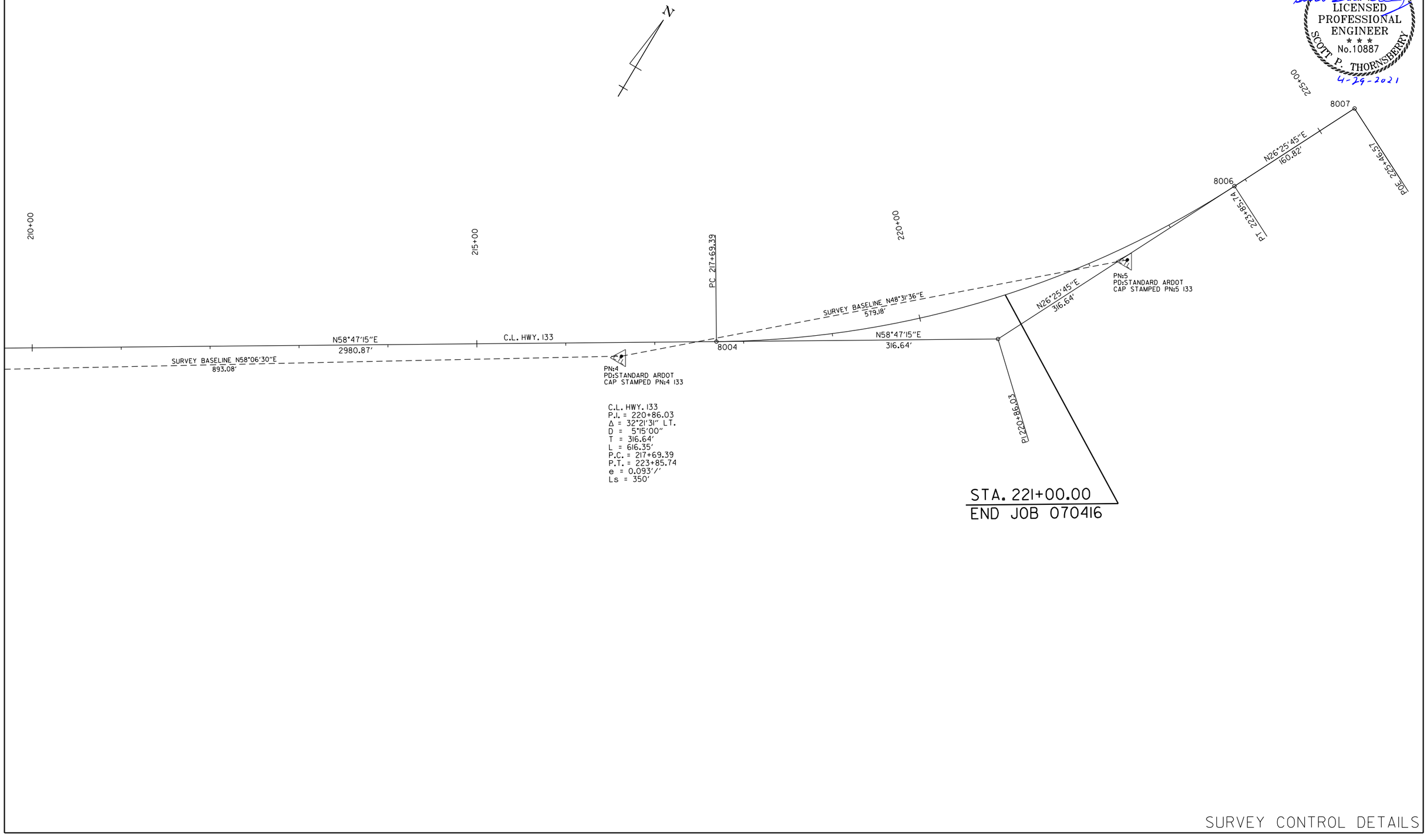
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 44 | 93 |

(2) SURVEY CONTROL DETAILS

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No.10887
SCOTT P. THORNSBERRY
4-29-2021




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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 45 | 93 |
| (2) PLAN AND PROFILE SHEETS | | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
4-29-2021

C.L. HWY. 133
P.I. = 186+09.59
Δ = 19°53'03" RT.
D = 5°30'00"
T = 182.60'
L = 361.53'
P.C. = 184+26.99
P.T. = 187+88.52
e = 0.094'/'
Ls = 350'

STA. 184+43.00
CONSTRUCT APPROACH ON LT. =
160 CU. YDS.

| | | | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|---|---|
| STA. 188+44.85 | TO STA. 190+63.60 | RT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH |
| STA. 189+19.85 | TO STA. 190+63.60 | LT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 192+42.40 | TO STA. 194+61.15 | LT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH |
| STA. 192+42.40 | TO STA. 193+86.15 | RT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH |

APPROACH SLAB AND GUTTERS

| | | | |
|---|---|---|---|
| STA. 190+53.00 | TO | STA. 190+73.00 | |
| STA. 192+33.00 | TO | STA. 192+53.00 | |

STA. 181+64.49 BEGIN SUPERELEVATION
STA. 185+14.49 MAX SUPERELEVATION (0.094'/')
STA. 187+01.02 MAX SUPERELEVATION (0.094'/')
STA. 190+51.02 END SUPERELEVATION

STA. 190+73.00 BRIDGE END
BRIDGE NO. 07476 OVER BRANCH OF BIG CREEK
PRECAST PRESTRESSED BEAM UNITS
(40'-40'-40'-40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 192+33.00 BRIDGE END

STA. 190+98.76 TO STA. 191+85.53
EXISTING BRIDGE NO. M3948
88' X 24' STEEL BEAM SUPERSTRUCTURE WITH
CONCRETE DECK & SUBSTRUCTURE
COMPOSED OF TIMBER PILES
(3 SPANS @ 27'-9"- 29'-3" - 27'-10")
REMOVE AS EXISTING BRIDGE STRUCTURE
(SITE NO. 1) = 1.00 LUMP SUM

50' BUFFER. REFER TO "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION

LEGEND
PAVEMENT TRANSITION

HWY. 133

*REFER TO SURVEY CONTROL DETAILS FOR HORIZONTAL AND VERTICAL CONTROLS

STA. 181+64.00
BEGIN JOB 070416
LOG MILE 2.93

PVI 181+64.00 ELEV. 192.62
PVI 184+25.00 ELEV. 193.04
PVC 186+40.00 ELEV. 189.45
PVT 189+00.00 ELEV. 187.43
PVI 191+30.00 ELEV. 187.71
PVC 194+00.00 ELEV. 186.09
ELEV. 185.64
PVC 182+85.00 ELEV. 192.81
PVT 185+65.00 ELEV. 190.70
PVI 187+70.00 ELEV. 187.28
PVC 189+80.00 ELEV. 187.53
PVT 192+80.00 ELEV. 186.81

VC=280.00' K=153.01 e=-0.64'
VC=260.00' K=145.25 e=0.58'
VC=300.00' K=416.67 e=-0.27'
VC=400.00' K=320.00 e=0.63'

BEGIN BRIDGE STA. 190+73.00
END BRIDGE STA. 192+33.00

PROFILE GRADE
EXISTING GROUND

(0.18% EXIST.) 0.16% -1.67% 0.12% -1.74% LT. DT. GR. 0.00% LT. DT. GR. 0.00% LT. DT. GR. -0.60% 0.09% LT. DT. GR. 0.25% RT. DT. GR.

100' TRANSITION TO MATCH EXIST.

-0.88% RT. DT. GR.

+00.00 RT. 181.99
+76.00 LT. 183.42
+69.00 RT. 180.50
+73.00 LT. 180.00
+10.00 LT. 180.00
025 DESIGN H.W. ELEV. 183.7
+50.00 RT. 175.99
+70.00 LT. 180.00
+33.00 LT. 180.00
+20.00 RT. 176.66
+38.00 RT. 178.13
+00.00 LT. 180.25

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| BRANCH OF BIG CREEK | 191+10 - 191+55 | INTERMITTENT | 178 FT. MSL |

HWY. 133

230 220 210 200 190 180 170 160 150 140

180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00 190+00 191+00 192+00 193+00 194+00 195+00

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 46 | 93 |
| | | | | (2) | PLAN AND PROFILE SHEETS | | | |

50' BUFFER. REFER TO "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION.

BRANCH OF BIG CREEK

STA. 200+40.82 TO STA. 201+36.53
EXISTING BRIDGE NO. M3977
97' X 24' TIMBER SUPERSTRUCTURE WITH CONCRETE DECK & SUBSTRUCTURE COMPOSED OF TIMBER PILES
(5 SPANS @ 18'-5" - 19' - 19'-3" - 19'-1" - 18'-6")
REMOVE AS EXISTING BRIDGE STRUCTURE
(SITE NO. 2) = 1.00 LUMP SUM

50' BUFFER. REFER TO "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION.

| | | | | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|---|---|---|
| STA. 198+10.51 | TO STA. 199+54.26 | LT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH | |
| STA. 197+18.19 | TO STA. 199+36.94 | RT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH | |
| STA. 201+33.06 | TO STA. 203+51.81 | LT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH | |
| STA. 201+15.74 | TO STA. 202+59.49 | RT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH | |
| STA. 205+93.19 | TO STA. 207+36.94 | LT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH | |
| STA. 205+35.51 | TO STA. 207+54.26 | RT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH | |

STA. 207+89.82 TO STA. 209+15.48
EXISTING BRIDGE NO. M3949
126' X 23.5' STEEL BEAM SUPERSTRUCTURE WITH CONCRETE DECK & SUBSTRUCTURE
COMPOSED OF TIMBER PILES (4 SPANS @ 31'-6")
REMOVE AS EXISTING BRIDGE STRUCTURE
(SITE NO. 3) = 1.00 LUMP SUM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
4-29-2021

195+00 | +00 112' | 200+00 | +00 105' | 205+00 | +60 110' | PROP. R/W | CONST. LIMITS | EXIST. R/W | C.L. HWY. 133 | BIG CREEK RELIEF | BIG CREEK | N58°47'15"E

199+28.65 | 199+55.00 BR. END | 201+15.00 BR. END | 201+41.35 | 207+28.65 | 207+55.00 BR. END | 209+15.00 | 209+41.35

9.5' | 4' | 22' | 7.5'

STA. 199+55.00 BRIDGE END
BRIDGE NO. 07477 OVER BIG CREEK RELIEF
ON 30° LT. FWD. SHEW
PRECAST PRESTRESSED BEAM UNITS
(40'-40'-40'-40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 201+15.00 BRIDGE END

50' BUFFER. REFER TO "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION.

APPROACH SLABS

| | | | | |
|---|---|---|---|---|
| STA. | 199+28.65 | TO | STA. | 199+55.00 |
| STA. | 201+15.00 | TO | STA. | 201+41.35 |
| STA. | 207+28.65 | TO | STA. | 207+55.00 |
| STA. | 209+15.00 | TO | STA. | 209+41.35 |

STA. 206+69.00 IN PLACE
30"X28' R.C. PIPE CULVERT
RT. SIDE DRAIN
REMOVE

STA. 207+55.00 BRIDGE END
BRIDGE NO. 07478 OVER BIG CREEK
ON 30° RT. FWD. SHEW
PRECAST PRESTRESSED BEAM UNITS
(40'-40'-40'-40')
30'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 209+15.00 BRIDGE END

50' BUFFER. REFER TO "STORM WATER POLLUTION PREVENTION PLAN" SPECIAL PROVISION.

HWY. 133

*REFER TO SURVEY CONTROL DETAILS FOR HORIZONTAL AND VERTICAL CONTROLS

APPROACH GUTTERS: BR. # 07477

| | | | | | |
|---|---|---|---|---|---|
| STA. | 199+48.65 | TO | STA. | 199+68.65 | RT. |
| STA. | 199+28.65 | TO | STA. | 199+48.65 | LT. |
| STA. | 201+08.65 | TO | STA. | 201+28.65 | RT. |
| STA. | 201+21.35 | TO | STA. | 201+41.35 | LT. |

APPROACH GUTTERS: BR. # 07478

| | | | | | |
|---|---|---|---|---|---|
| STA. | 207+28.65 | TO | STA. | 207+88.65 | LT. |
| STA. | 207+41.35 | TO | STA. | 207+61.35 | RT. |
| STA. | 209+08.65 | TO | STA. | 209+28.65 | LT. |
| STA. | 209+21.35 | TO | STA. | 209+41.35 | RT. |

230 | 220 | 210 | 200 | 190 | 180 | 170 | 160 | 150 | 140

ELEV. 185.64 | VC=400.00' K=320.00 e=0.63' | PVI 198+00.00 ELEV. 186.19 | BEGIN BRIDGE STA. 199+55.00 | PVI 201+00.00 ELEV. 188.14 | END BRIDGE STA. 201+15.00 | VC=320.00' K=206.45 e=-0.62' | PVRC 202+60.00 ELEV. 186.70 | VC=380.00' K=223.53 e=0.81' | PVT 206+40.00 ELEV. 186.51 | BEGIN BRIDGE STA. 207+55.00 | PVI 208+50.00 ELEV. 188.19 | END BRIDGE STA. 209+15.00 | VC=305.00' K=203.33 e=-0.57' | ELEV. 187.14

PROFILE GRADE | EXIST. GROUND

0.65% | -0.90% | 0.80% | -0.70%

0.25% RT. DT. GR. | -0.25% RT. DT. GR. | -0.36% LT. DT. GR. | 0.00% LT. DT. GR. | 0.18% LT. DT. GR. | -0.90% | -0.17% RT. DT. GR. | -0.17% LT. DT. GR. | 0.00% RT. DT. GR. | 0.33% LT. DT. GR. | 0.45% RT. DT. GR.

PVI 196+00.00 ELEV. 184.89 | +00.00 RT. 178.78 | LT. 180.67 | +68.00 | PVC 199+40.00 ELEV. 180.00 | +55.00 LT. 180.00 | +06.00 RT. 178.02 | +52.00 LT. 180.00 | 025 DESIGN H.W. ELEV. 183.7 | +30.00 LT. 180.00 | +00.00 LT. 180.49 | +40.00 LT. 178.60 | PVI 204+50.00 ELEV. 184.99 | +20.00 RT. 180.40 | PVC 206+97.50 ELEV. 186.97 | +55.00 RT. 180.00 | +00.00 LT. 178.00 | +00.00 RT. 180.00 | +40.00 LT. 175.00 | 025 DESIGN H.W. ELEV. 183.7 | +15.00 RT. 180.00

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| BIG CREEK RELIEF | 200+45 - 200+95 | INTERMITTENT | 180 FT. MSL |
| BIG CREEK | 208+10 - 208+90 | PERENNIAL | 180 FT. MSL |

195+00 | 196+00 | 197+00 | 198+00 | 199+00 | 200+00 | 201+00 | 202+00 | 203+00 | 204+00 | 205+00 | 206+00 | 207+00 | 208+00 | 209+00 | 210+00

HWY. 133

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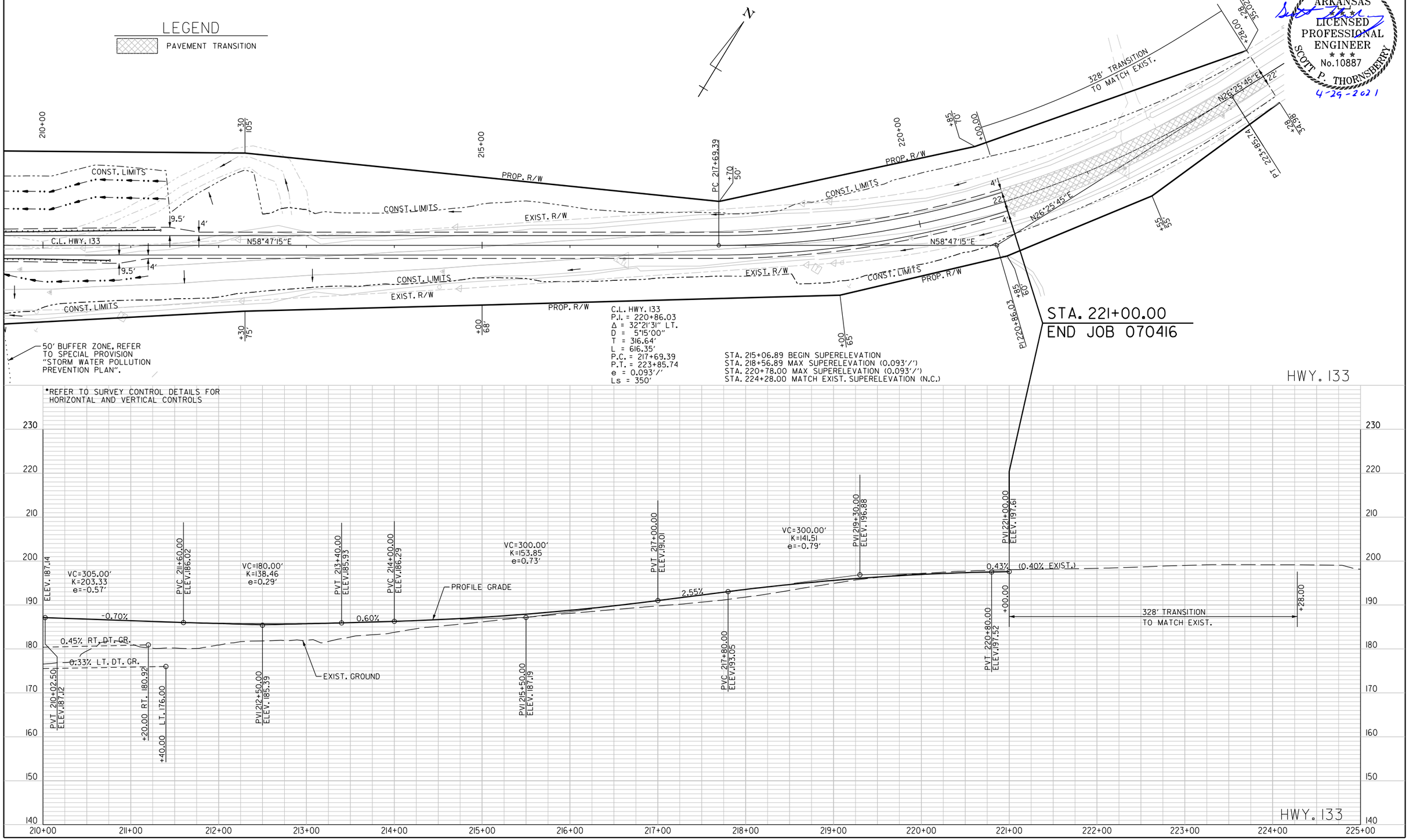
| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 209+15.74 TO STA. 211+34.49 LT. OF C.L. HWY. 133 = | 150 LIN. FT. | 1 EACH | 1 EACH |
| STA. 209+33.06 TO STA. 210+76.81 RT. OF C.L. HWY. 133 = | 75 LIN. FT. | 1 EACH | 1 EACH |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 47 | 93 |
| | | | | (2) | PLAN AND PROFILE SHEETS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
4-29-2021

LEGEND

PAVEMENT TRANSITION




*REFER TO SURVEY CONTROL DETAILS FOR HORIZONTAL AND VERTICAL CONTROLS

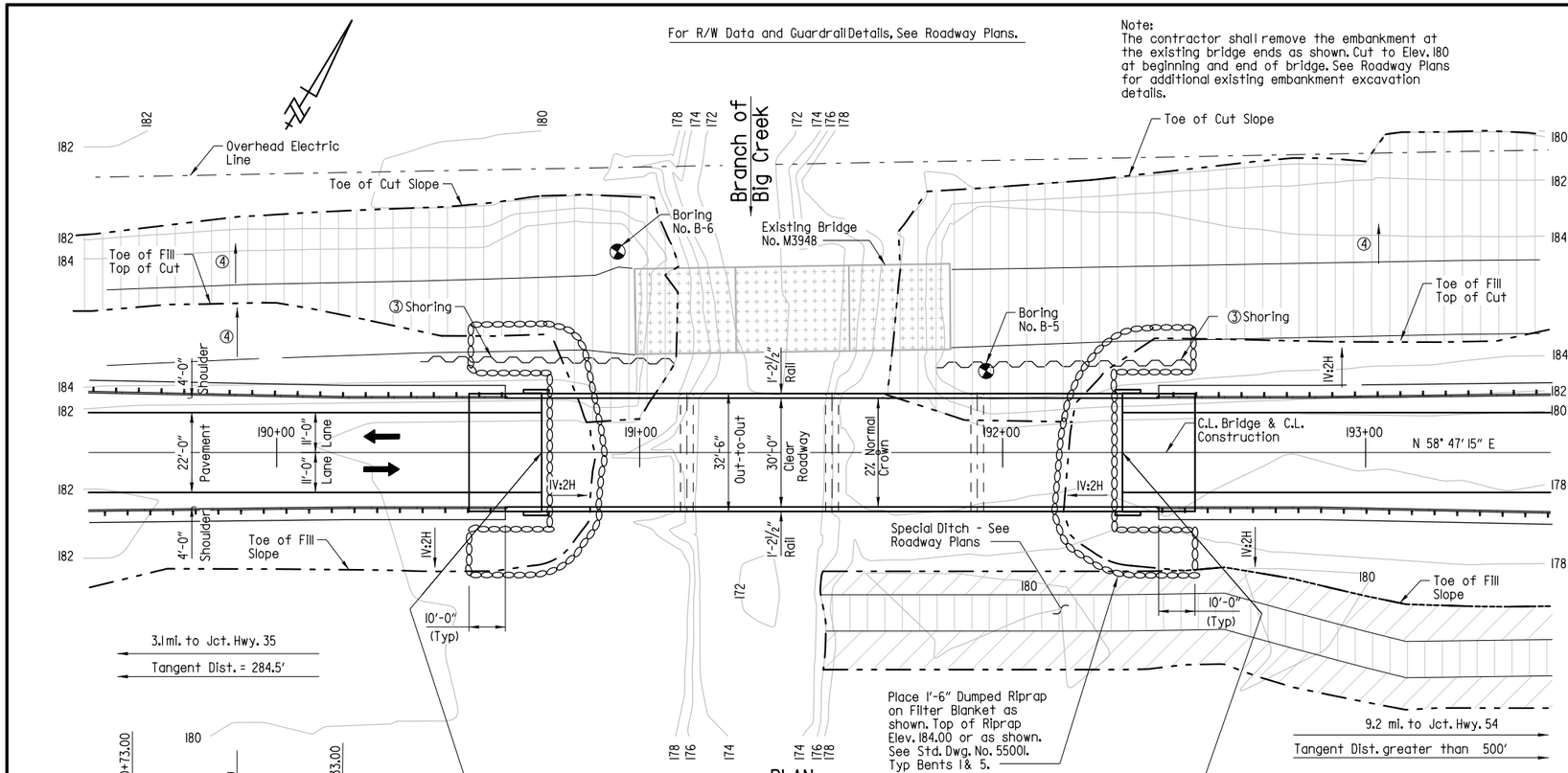



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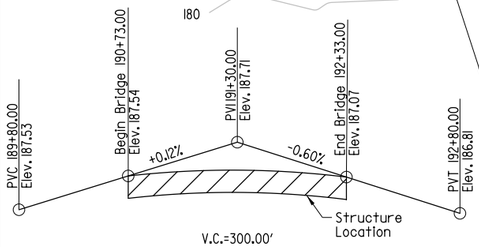
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 48 | 93 |
| | | | | (1) | | 07476 - LAYOUT - 61452 | | |

For R/W Data and Guardrail Details, See Roadway Plans.

Note:
The contractor shall remove the embankment at the existing bridge ends as shown. Cut to Elev. 180 at beginning and end of bridge. See Roadway Plans for additional existing embankment excavation details.




## PLAN




## VERTICAL CURVE DATA

Stations and Elevations are along C.L. Bridge

## TABLE OF VARIABLES

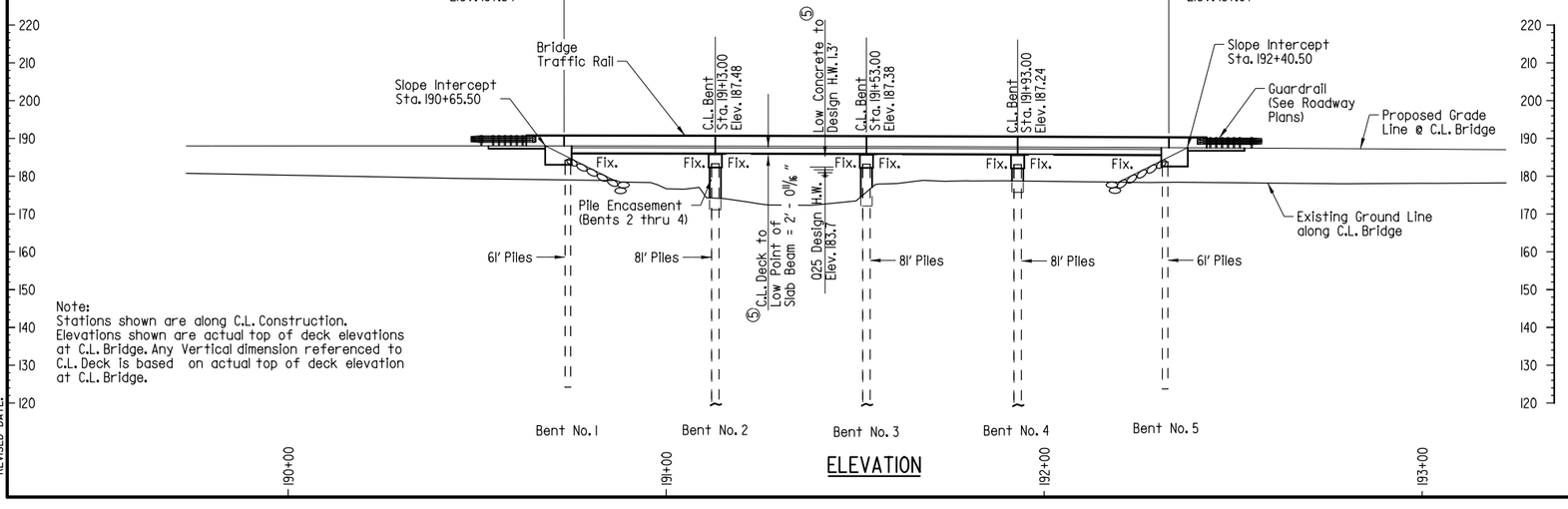
| Bent No(s) | C.L. Deck at C.L. Bent to Low Side Top of Cap | Min. Pile Tip Elevation "A" |
|---|---|---|
| 1 | -------- | 160 |
| 2 | 2' - 1 11/16" | 147 |
| 3 | 2' - 1 11/16" | 147 |
| 4 | 2' - 1 11/16" | 147 |
| 5 | ------- | 160 |

③ Shoring may be required during construction, see SP Job No. 070416 "Shoring".

④ Slope Varies. See Roadway Plans.

Notes:
For Soil Borings and additional General Notes, See Dwg. No. 61453.

Use Type E Approach Slab (width = 22'-0") and Type I Special Approach Gutters at both ends of bridge, See Std. Dwg. No. 55040E and Dwg. No. 61461, respectively.




Note:
Stations shown are along C.L. Construction. Elevations shown are actual top of deck elevations at C.L. Bridge. Any Vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge.

## ELEVATION

## GENERAL NOTES

BENCH MARK: 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. Unless otherwise noted, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition with current Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 2 $S_{DI}$ = 0.179 SITE CLASS = D

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 (Prestressed Beams) | f'c = 8,000 psi |
| Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr, 60) | fy = 60,000 psi |
| Pipe Pile Grade 3, ASTM A252 | Fy = 45,000 psi |
| Prestressing Strands (AASHTO M203, Gr. 270) | fpu = 270,000 psi |

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

STEEL SHELL PILING: Piling in Bents 1 and 5 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 160 tons per pile. Piling in Bents 2 thru 4 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 310 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer to the minimum tip elevation "A" shown in the table on this drawing. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g).

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Section 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum hammer energy required to obtain the ultimate bearing capacity for all piles will be 45,000 foot pounds per blow.

PILE ENCASEMENT: Pile encasement for Bents 2 thru 4 shall extend from bottom of cap to 3' below natural ground. See Standard Drawing number 55021 for additional information.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of the Rail. Class I Protective Surface Treatment shall meet the requirements of Section 803.

| DETAIL DRAWINGS: | DRAWING NO(S). |
|---|---|
| End Bents | 61454 |
| Intermediate Bents | 61455 |
| 40'-0" Precast Prestressed Beam Units | 61456-61460 |
| Concrete Filled Steel Shell Piles | 55021 |
| Type I Special Approach Gutters | 61461 |
| Type E Approach Slabs | 55040E |

## HYDRAULIC DATA

| FLOOD DESCRIPTION | FREQUENCY | ② TOTAL DISCHARGE | DISCHARGE THIS SITE | ① NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEV. WITH BACKWATER |
|---|---|---|---|---|---|
| | YEARS | CFS | CFS | FEET | FEET |
| Design | 25 | 7430 | 3045 | 182.5 | 183.7 |
| Base | 100 | 10740 | 4286 | 183.1 | 184.7 |
| Extreme | 500 | 14950 | 4952 | 183.8 | 185.8 |
| Overtopping | >500 | >500 | >500 | >500 | >500 |

① Unconstricted water surface without structure or roadway approaches.

② The total discharge includes flow at this Site and Sites 2 and 3.
Q100 backwater elevation for existing structure = 184.5 feet.

⑤ Proposed Low Bridge Chord Elevation = 185.03 and occurs at Sta. 192+30.50
Drainage area = 68.9 square miles.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

4/30/2021

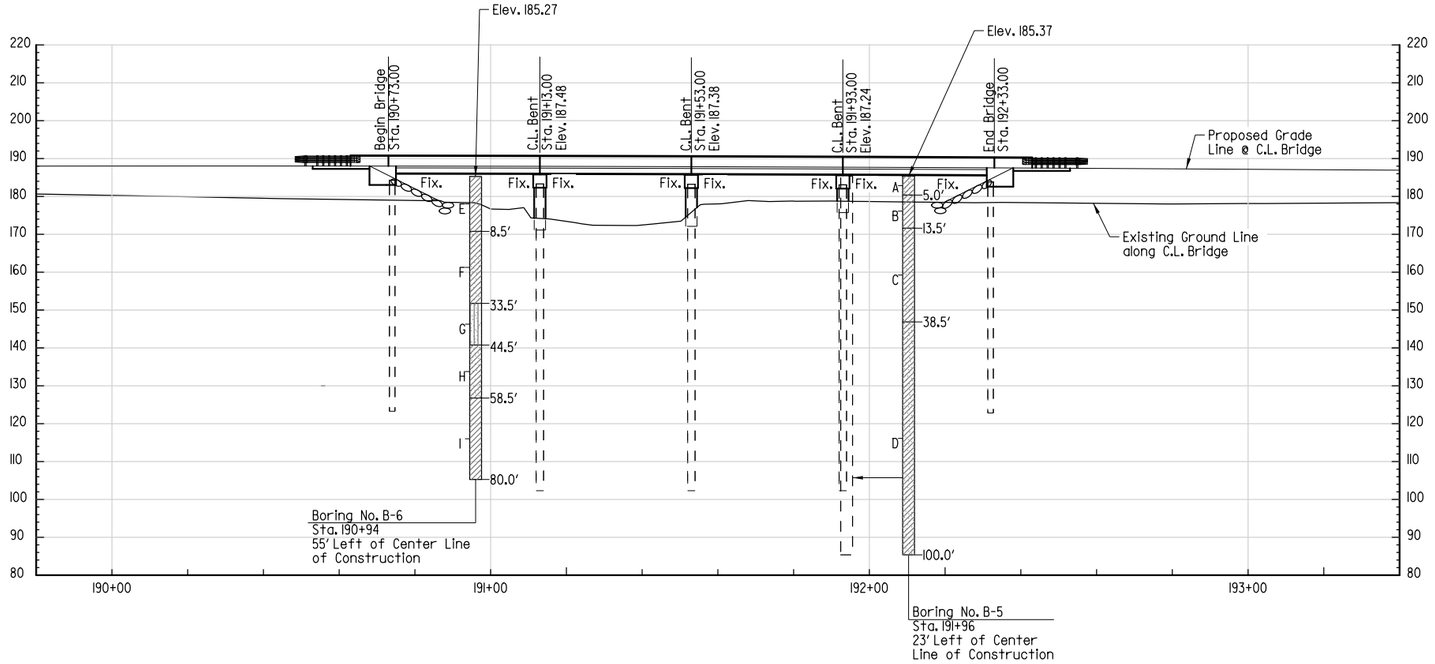
BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 1 OF 2
# LAYOUT OF BRIDGE
# HIGHWAY 133 OVER BRANCH OF BIG CREEK
# BIG CREEK & RELIEF STRS. & APPRS. (S)
# CLEVELAND COUNTY
## ROUTE 133 SECTION 5
## ARKANSAS STATE HIGHWAY COMMISSION
## LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 04/2019 FILENAME: B070416X1_LX1.dgn
CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 04/2019 SCALE: 1" = 20'
BRIDGE NO. 07476 DRAWING NO. 61452

Leonard,Speed 4/30/2021 2:19:55 PM
WORKSPACE: ARDOT
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REVISED DATE:

| 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. | | 070416 | 49 | 93 |
| | | | | (1) | 07476 - LAYOUT - 61453 | | | |




## ELEVATION OF SOIL BORINGS

## "N" VALUES

Boring No. B-5
Sta. 191+96 - 23' Left of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=4 | 54.0 -55.0 | N=17 |
| 2.5 - 3.5 | N=11 | 59.0 -60.0 | N=16 |
| 4.0 - 5.0 | N=5 | 64.0 -65.0 | N=17 |
| 5.5 - 6.5 | N=4 | 69.0 -70.0 | N=15 |
| 9.0 - 10.0 | N=1 | 74.0 -75.0 | N=25 |
| 14.0 - 15.0 | N=5 | 79.0 -80.0 | N=29 |
| 24.0 -25.0 | N=10 | 84.0 -85.0 | N=26 |
| 29.0 -30.0 | N=10 | 89.0 -90.0 | N=25 |
| 34.0 -35.0 | N=15 | 94.0 -95.0 | N=28 |
| 44.0 -45.0 | N=17 | 99.0 -100.0 | N=42 |
| 49.0 -50.0 | N=15 | | |

Boring No. B-6
Sta. 190+94 - 55' Left of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=1 | 44.0 -45.0 | N=19 |
| 2.5 - 3.5 | N=0 | 49.0 -50.0 | N=20 |
| 4.0 - 5.0 | N=1 | 54.0 -55.0 | N=17 |
| 5.5 - 6.5 | N=1 | 59.0 -60.0 | N=20 |
| 9.0 - 10.0 | N=0 | 64.0 -65.0 | N=24 |
| 14.0 - 15.0 | N=8 | 69.0 -70.0 | N=28 |
| 19.0 - 20.0 | N=7 | 74.0 -75.0 | N=21 |
| 24.0 -25.0 | N=10 | 79.0 -80.0 | N=25 |
| 29.0 -30.0 | N=12 | | |
| 34.0 -35.0 | N=55 | | |
| 39.0 -40.0 | N=41 | | |

## BORING LEGEND

A- FILL- CLAYEY SAND (SC), with gravel, dark gray and reddish-brown
B- LEAN CLAY (CL), brown and gray, very soft to soft
C- CLAYEY SAND (SC), gray and brown, loose to medium dense
D- FAT CLAY (CH), gray, stiff to hard
E- FILL- LEAN CLAY (CL), with gravel, reddish-brown and gray
F- SANDY LEAN CLAY (CL), brown and gray, very soft to stiff
G- SILTY SAND (SM), gray, dense to very dense
H- FAT CLAY WITH SAND (CH), gray, very stiff
I- FAT CLAY (CH), gray, very stiff

## GENERAL NOTES- CONTINUED

EXISTING BRIDGE: Existing Bridge No. M3948 (Log Mi. 3.13) is 25.0' wide (24.0' clear roadway) and 87.0' long and consists of a concrete deck on steel I-beam spans (3 spans total) supported by timber pile bents. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. M3948, including dumped riprap, in accordance with Section 205. Removal of dumped riprap will not be paid for directly but shall be considered subsidiary to the item "Removal of Existing Bridge Structure (Site No. 1)". The Seven beams in best condition (to be identified by the Engineer) will be retained and loaded onto ARDOT equipment and the remaining material from the existing bridge shall become the property of the Contractor.

The Contractor shall notify the Department prior to removal to determine the specific pieces deemed salvageable. The Contractor shall provide temporary storage and on-site loading onto ARDOT equipment for removal of salvage items from the site. The work shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. 1)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 133 OVER BRANCH OF BIG CREEK
BIG CREEK & RELIEF STRS. & APPRS. (S)
CLEVELAND COUNTY
ROUTE 133 SECTION 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

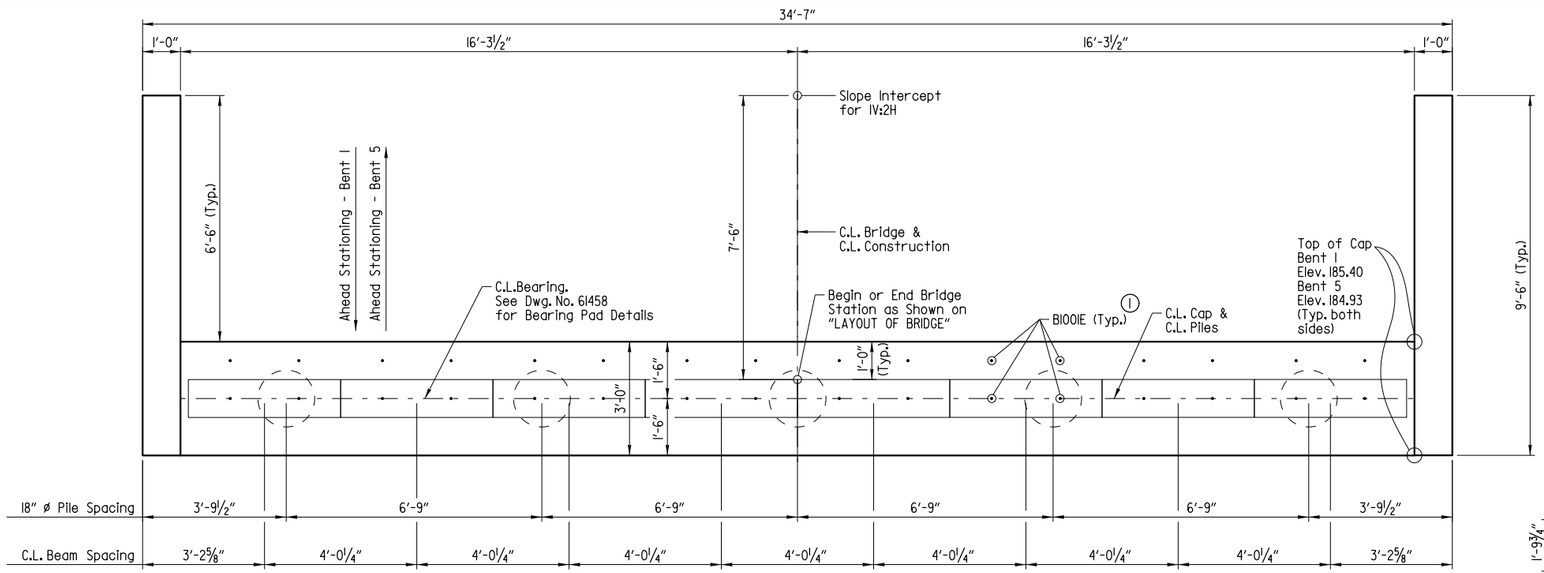
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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 07/2019 SCALE: 1" = 20'
BRIDGE NO. 07476 DRAWING NO. 61453

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REVISED DATE:

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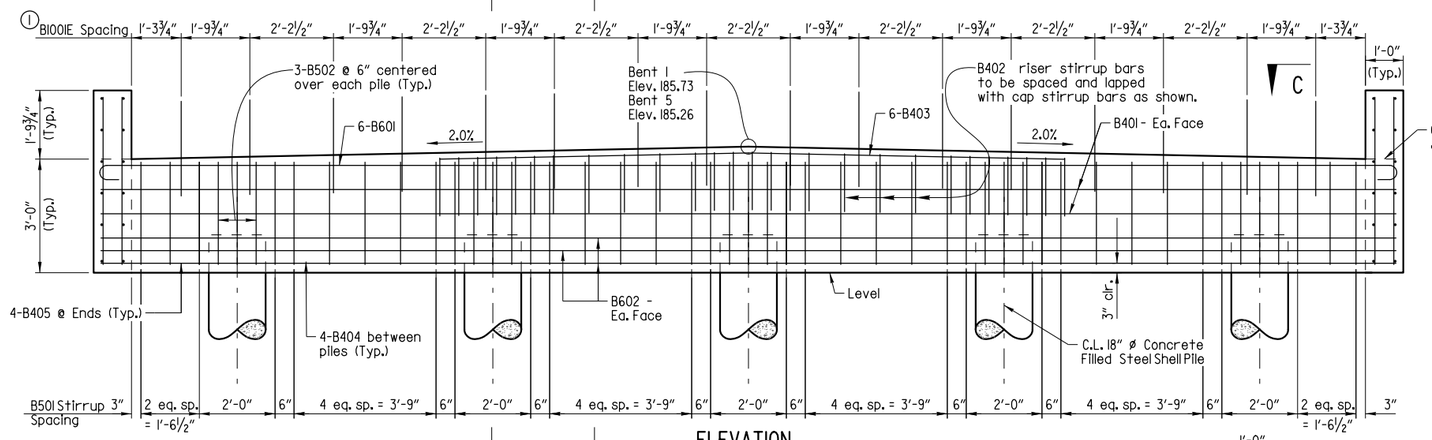
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 50 | 93 |

(1) 07476 - END BENTS - 61454




PLAN

½" = 1'-0"

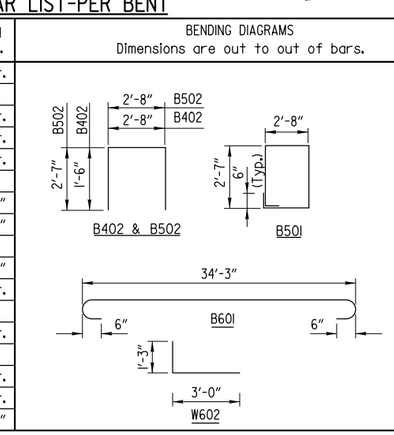



ELEVATION

(Bent 1- Looking Back)
(Bent 5 - Looking Ahead)
½" = 1'-0"

## BAR LIST-PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars. |
|---|---|---|---|---|
| B401 | 4 | 34'-3" | Str. | |
| B402 | 27 | 5'-6" | 2" | |
| B403 | 6 | 16'-6" | Str. | |
| B404 | 16 | 4'-11" | Str. | |
| B405 | 8 | 2'-8" | Str. | |
| | | | | |
| B501 | 34 | 11'-0" | 2½" | |
| B502 | 15 | 7'-7½" | 2½" | |
| | | | | |
| B601 | 6 | 35'-7" | 4½" | |
| B602 | 6 | 34'-3" | Str. | |
| | | | | |
| B100IE | 32 | 2'-6" | Str. | |
| | | | | |
| W401 | 40 | 4'-5" | Str. | |
| W601 | 24 | 9'-2" | Str. | |
| W602 | 8 | 4'-1" | 4½" | |




## GENERAL NOTES

Concrete in the cap shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi., and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

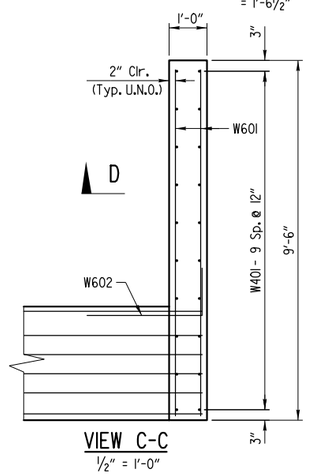
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

For additional information, see "LAYOUT OF BRIDGE".

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

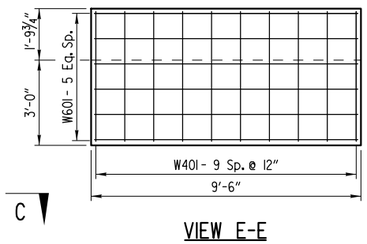
For details of Concrete Filled Steel Shell Piles, See Std. Dwg. No. 55021.

(1) Dowel bars B100IE shall be drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shall be in accordance with the manufacturer's recommendations. Dowel bars B100IE to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.



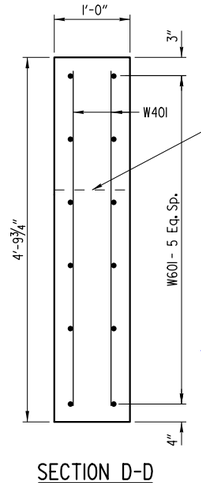

VIEW C-C

½" = 1'-0"



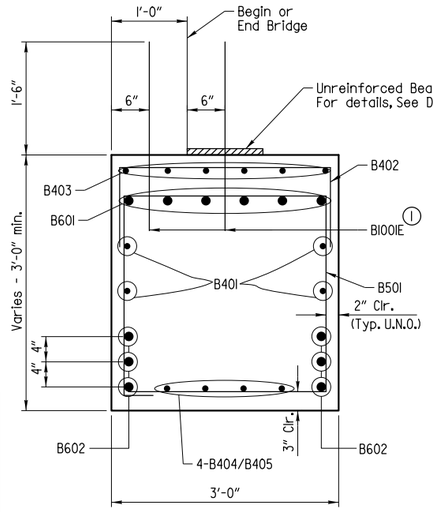

VIEW E-E

No Scale



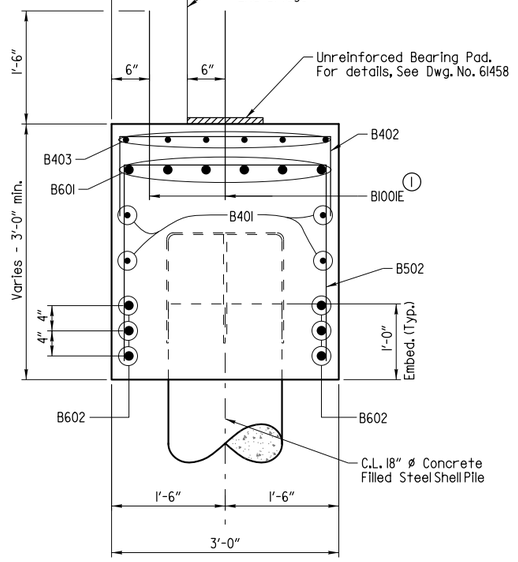

SECTION D-D

1" = 1'-0"




SECTION A-A

1" = 1'-0"




SECTION B-B

1" = 1'-0"

7/13/2021

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER STEPHEN F. HARPER No.14501

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# DETAILS OF END BENTS BRANCH OF BIG CREEK

ROUTE SECTION

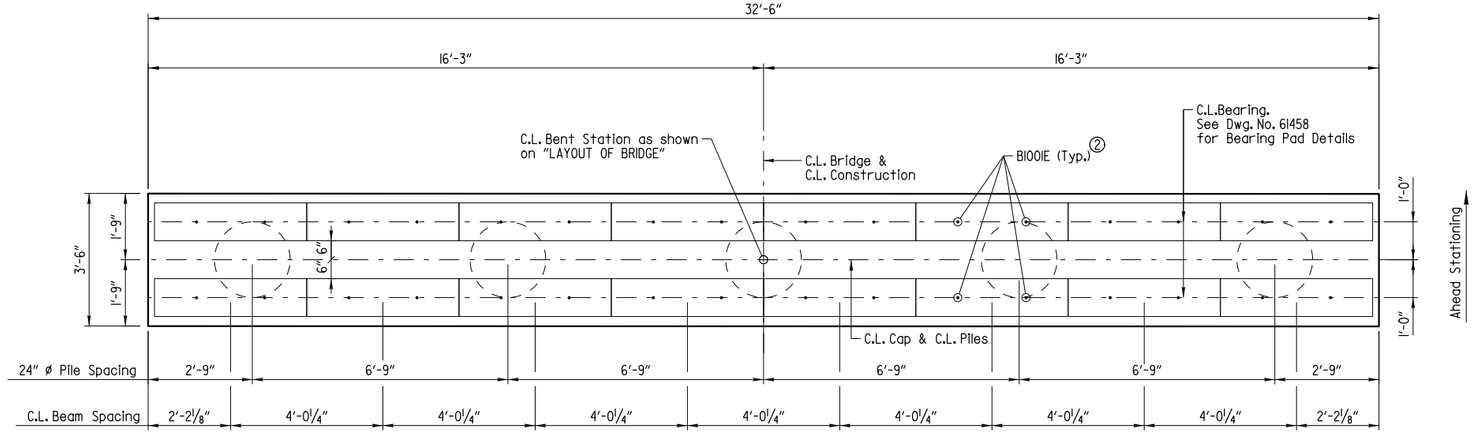
## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

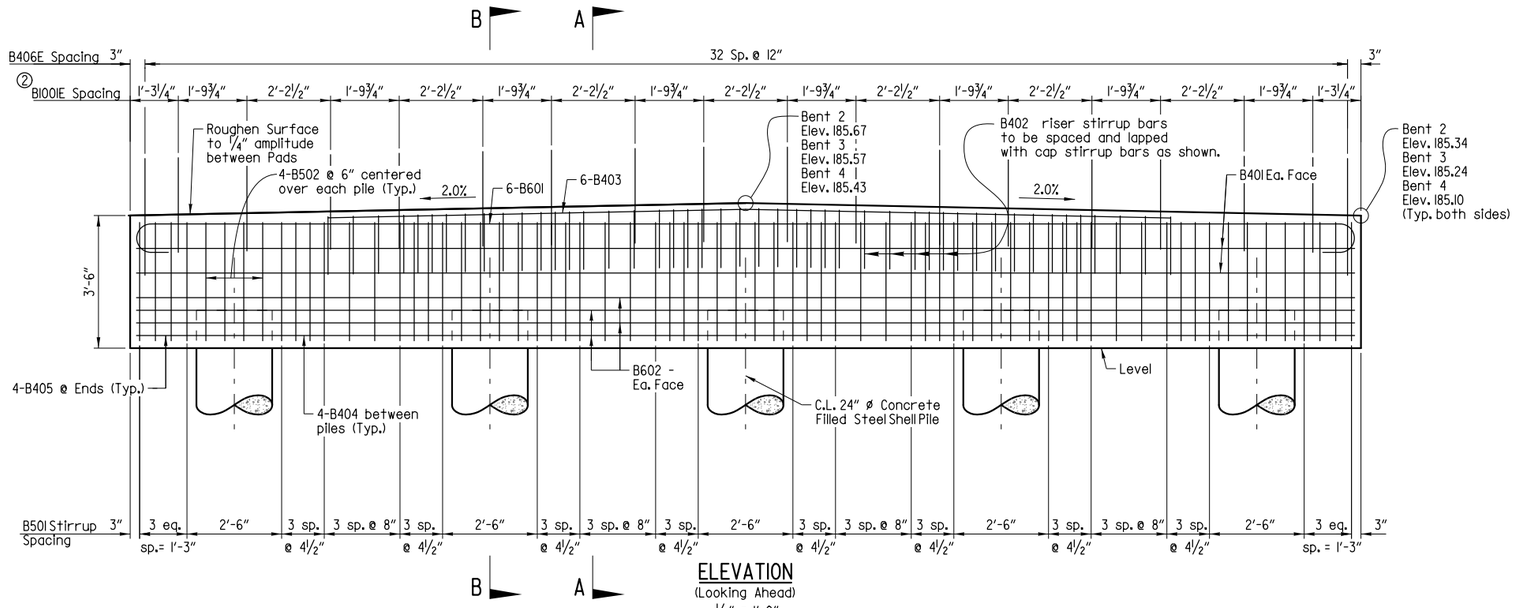
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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 01/2020 SCALE: As Shown
BRIDGE NO. 07476 DRAWING NO. 61454

Sharath.Ranganath 7/9/2021 10:44:32
WORKSPACE: ARDOT
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REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 51 | 93 |
| | | | | (1) | 07476 - INTERMEDIATE BENTS - 61455 | | | |



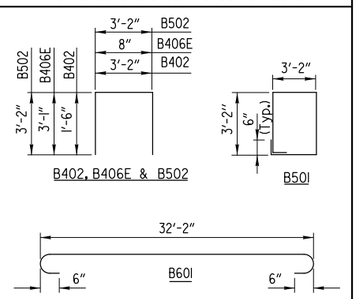

PLAN
1/2" = 1'-0"




ELEVATION
(Looking Ahead)
1/2" = 1'-0"

## BAR LIST-PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars. |
|---|---|---|---|---|
| B401 | 4 | 32'-2" | Str. | |
| B402 | 46 | 6'-0" | 2" | |
| B403 | 6 | 22'-3" | Str. | |
| B404 | 16 | 4'-5" | Str. | |
| B405 | 8 | 1'-5" | Str. | |
| B406E | 33 | 6'-8" | 2" | |
| | | | | |
| B501 | 48 | 13'-2" | 2 1/2" | |
| B502 | 20 | 9'-3 1/2" | 2 1/2" | |
| | | | | |
| B601 | 6 | 33'-6" | 4 1/2" | |
| B602 | 8 | 32'-2" | Str. | |
| | | | | |
| B100IE | 32 | 2'-6" | Str. | |
| | | | | |




## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shallbe poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

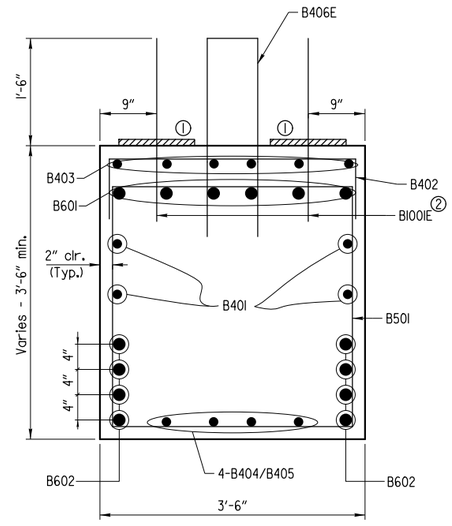
All reinforcing steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Grade 60 (yield strength = 60,000 psi.).

For additional information, see "LAYOUT OF BRIDGE".

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

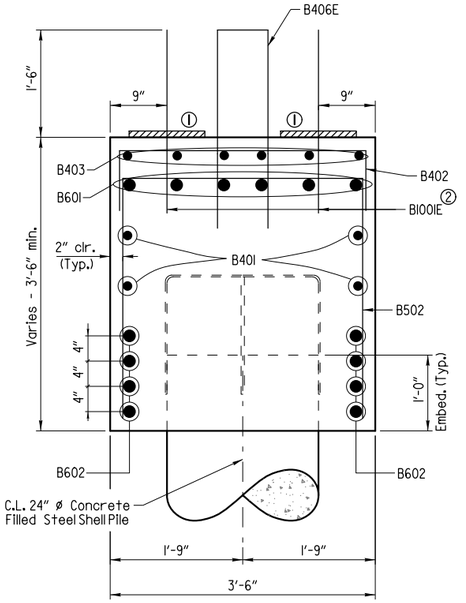
For details of Concrete Filled Steel Shell Piles, See Std. Dwg. No. 55021.

② Dowel bars B100IE shallbe drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shallbe in accordance with the manufacturer's recommendations. Dowelbars B100IE to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.




SECTION A-A
1" = 1'-0"

① Unreinforced Bearing Pad. For details, See Dwg. No. 61458




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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# DETAILS OF INTERMEDIATE BENTS BRANCH OF BIG CREEK

ROUTE SECTION

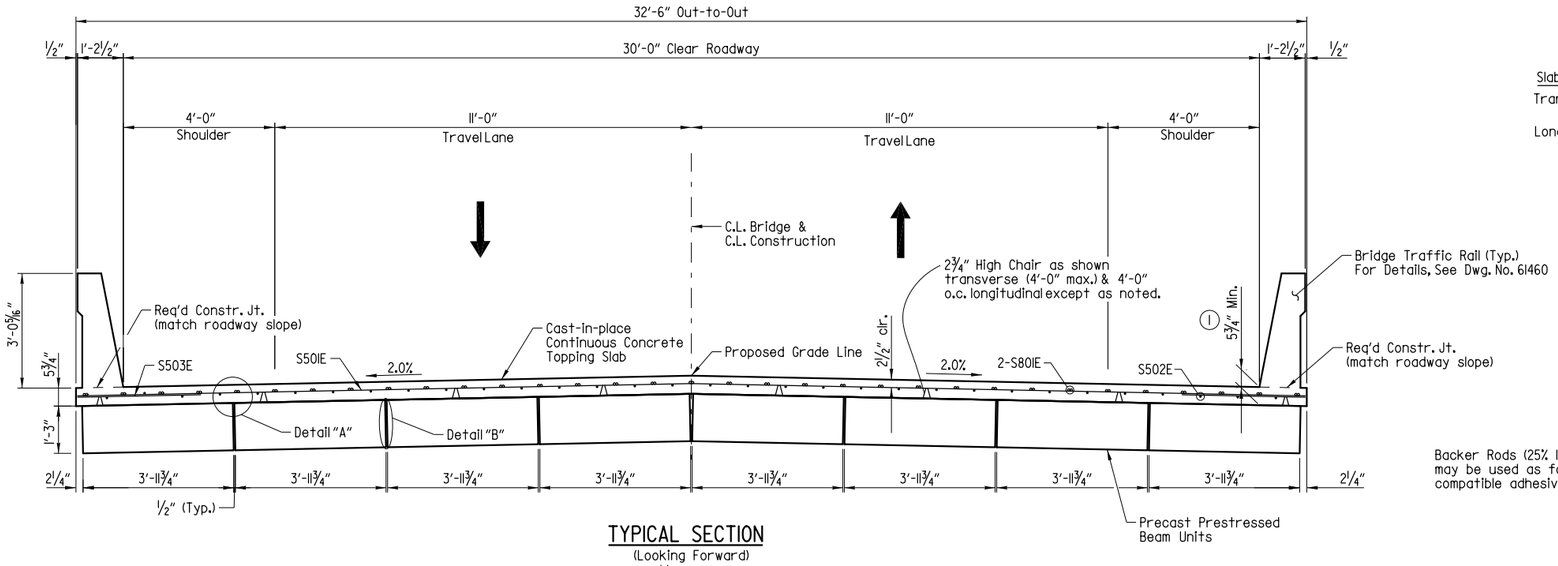
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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| CHECKED BY: | SFH | DATE: | 01/2020 | | |
| DESIGNED BY: | SCR | DATE: | 01/2020 | SCALE: | As Shown |
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REVISED DATE:

| 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. | | 070416 | 52 | 93 |

(1) 07476 - 40'-0" PRESTR. BEAM UNIT - 61456




## TYPICAL SECTION

(Looking Forward)
1/2" = 1'-0"

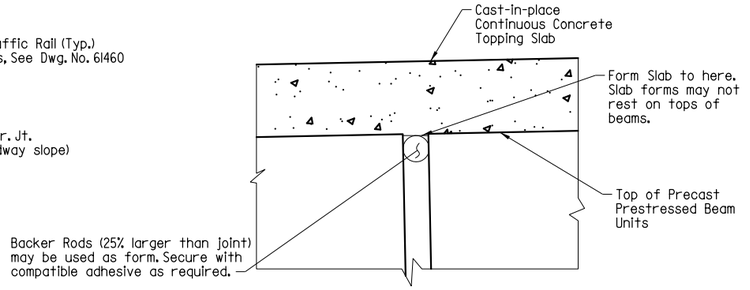
Note:
The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(1) Tolerance: Minus = 1/4"; Plus = 1/2"

Slab Reinforcing:

Transverse: S501E @ 12" o.c.
S503E @ 12" o.c. under each Rail bundled with S501E

Longitudinal: S502E placed as shown
S801E placed as shown over Int. supports



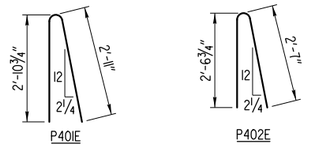

## DETAIL A

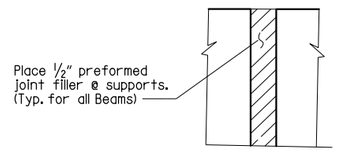
No Scale

Note:
Backer Rods and Preformed Joint filler shall not be paid for directly, but shall be considered subsidiary to the item "Prestressed Concrete Beams (Non - Voided 15" x 47 3/4")."

## BAR LIST

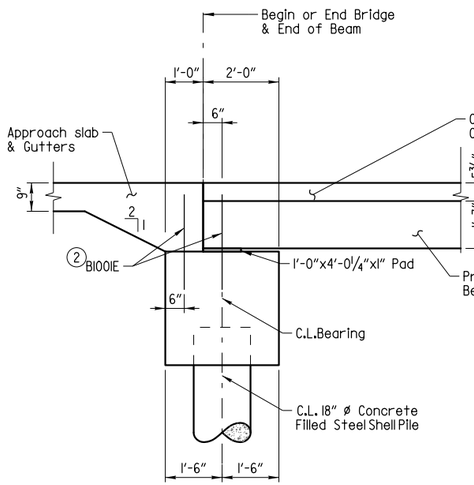
| MARK | NO. REQ'D. | LENGTH | P.D. | BENDING DIAGRAMS |
|---|---|---|---|---|
| S401E | 12 | 32'-2" | Str. | Note: All bars designated with an "E" suffix are to be epoxy coated. |
| | | | | Dimensions are out to out of bars. |
| S501E | 162 | 32'-2" | Str. | |
| S502E | 96 | 54'-10" | Str. | |
| S503E | 320 | 3'-3" | Str. | |
| | | | | |
| S801E | 198 | 27'-0" | Str. | |
| | | | | |
| P401E | 576 | 5'-11" | 2 1/2" | |
| P402E | 64 | 5'-3" | 2 1/2" | |
| P403E | 12 | 5'-10 3/4" | 3", 4 3/4" | |
| P404E | 64 | 5'-6" | Str. | |
| P405E | 128 | 9'-8" | Str. | |
| P406E | 64 | 19'-8" | Str. | |



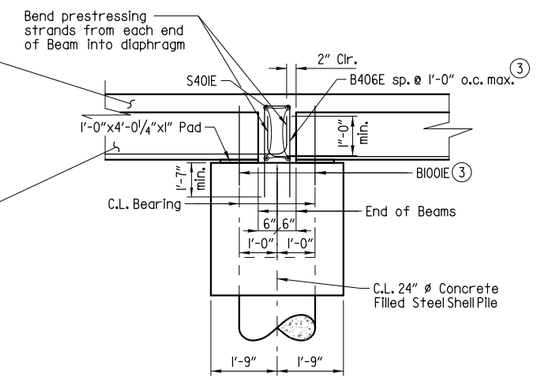

## DETAIL B

No Scale




## ELEVATION VIEW AT END BENT

1/2" = 1'-0"




## ELEVATION VIEW AT INTERMEDIATE BENT

1/2" = 1'-0"

Note:
After all the precast prestressed beam units are in their final position, and prior to placing the continuous cast-in-place concrete deck, dowel bars shall be grouted in placed using a QPL approved non-shrink grout that completely fills the holes. Grout shall not be paid for directly, but shall be considered subsidiary to the item "Class S(AE) Concrete-Bridge."

(2) See End Bent details on Dwg. No. 61454 for additional details.

(3) See Intermediate Bent details on Dwg. No. 61455 for additional details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 1 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BRANCH OF BIG CREEK
ROUTE SECTION

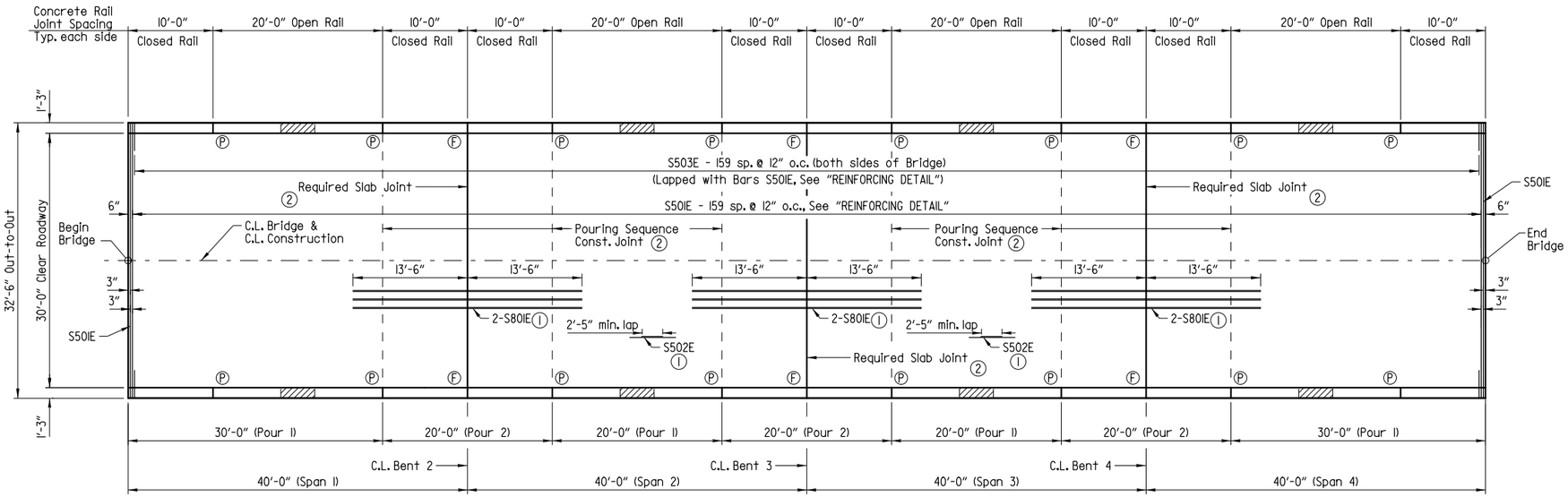
## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | | |
|---|---|---|---|---|---|
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| CHECKED BY: | SFH | DATE: | 01/2020 | | |
| DESIGNED BY: | SCR | DATE: | 12/2019 | SCALE: | As Shown |
| BRIDGE NO. | 07476 | | | DRAWING NO. | 61456 |

Sharath.Ranganath 9/9/2021 10:44:33
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REVISED DATE:

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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 53 | 93 |

(1) 07476 - 40'-0" PRESTR. BEAM UNIT - 61457




## REINFORCING PLAN AND POURING SEQUENCE

1/8"= 1'-0"

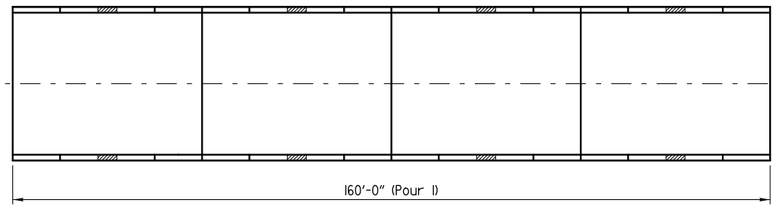
Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the Rail. Concrete Diaphragms at Bents 2, 3 & 4 shall be poured monolithically with the deck. 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 shown. The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(P) Partial depth Rail joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth Rail joint at this location. (Stop 4" above top of slab)

(1) Placed as shown in "TYPICAL SECTION", See Dwg. No. 61456.

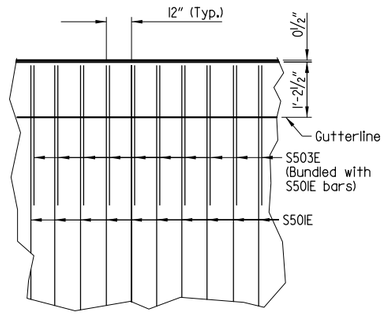
(2) Align with Rail open joint unless noted otherwise. See "TRANSVERSE SLAB JOINT DETAIL".




## ALTERNATE POURING SEQUENCE

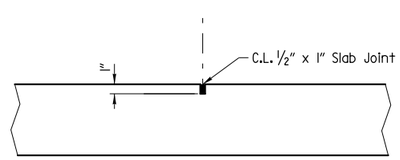
1/16"= 1'-0"

Note:
Entire slab can be placed at once as shown. 72 hours shall elapse between the completion of the entire deck and the pouring of the Rail. Concrete diaphragms at Bents 2, 3 & 4 shall be placed monolithically with the deck. 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 shown.




## REINFORCING DETAIL

No Scale




Use Type 3 or 4 Joint Sealer, See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "CLASS S(AE) 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 Rail. Slab joints shall be installed before the Rail 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.

## TRANSVERSE SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 2 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BRANCH OF BIG CREEK
ROUTE SECTION

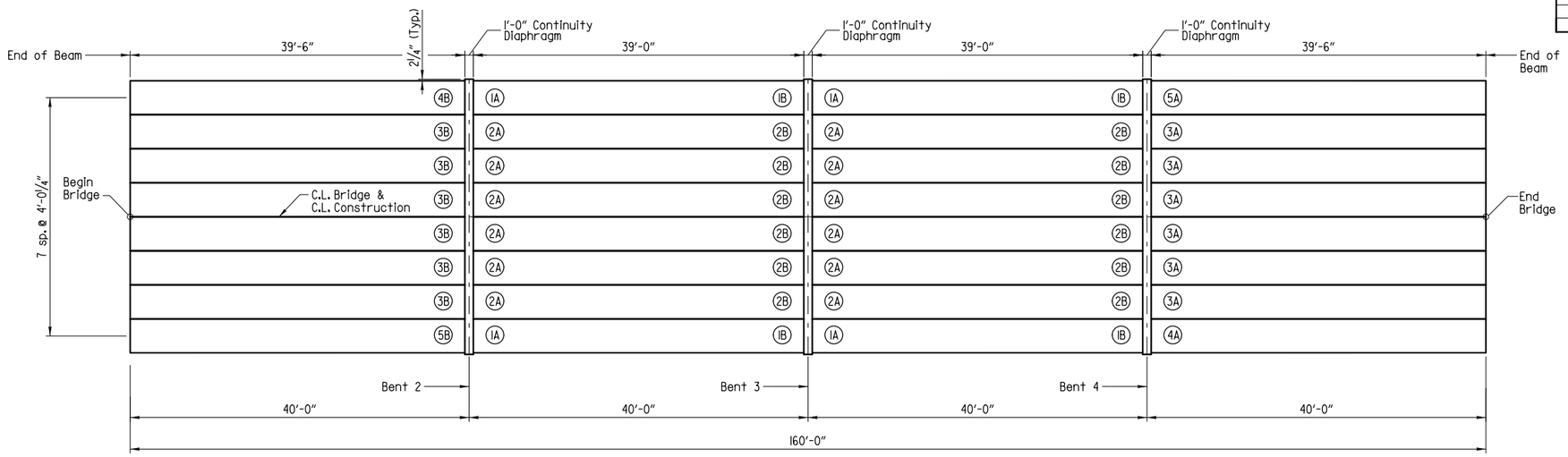
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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| BRIDGE NO. | 07476 | | | DRAWING NO. | 61457 |

Sharath.Ranganath 9/3/2021 10:44:33
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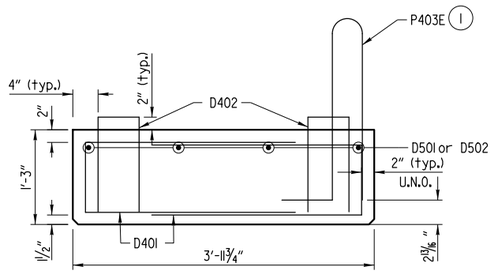
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 54 | 93 |

(1) 07476 - 40'-0" PRESTR. BEAM UNIT - 61458




## FRAMING PLAN

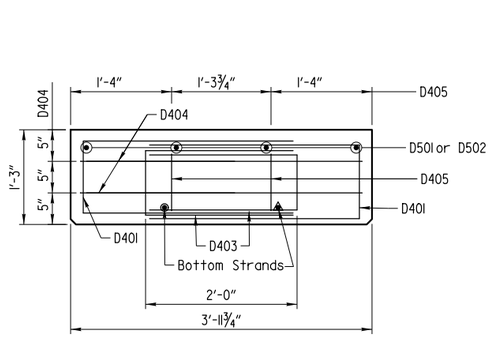
1/8" = 1'-0"




## REBAR PATTERN

1" = 1'-0"

(1) For Exterior Beams only (1, 4, & 5).




## REBAR PATTERN @ END

D402 not shown for clarity

1" = 1'-0"

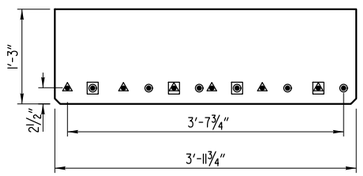



## PLAN

1" = 1'-0"

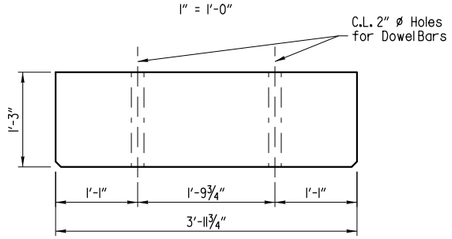
## UNREINFORCED BEARING PAD DETAILS

Unreinforced bearing pads shall meet the requirements of Section 808 and the hardness shall be 70 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S (AE) Concrete-Bridge".




## STRAND PATTERN

12 - 0.6" ø 270 ksi Low-Relaxation Strands
(Looking Forward)
1" = 1'-0"




## SECTION @ END SHOWING FORMED HOLES

1" = 1'-0"

Note:
△ Denotes strands to project from beam ends (XA)

○ Denotes strands to project from beam ends (XB)

□ Debond these strands for 3'-0" at Beam ends.

## GENERAL NOTES

Pretensioning steel shall be 0.6" diameter Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

Prestressing strands and steel reinforcing bars in the beam will not be paid for directly, but will be subsidiary to the item "Prestressed Concrete Beams" (Non-Voided 15" x 47¾")

All beams shall be non-voided 15"x47¾" rectangular beams as shown on the details. Chamfer all exposed corners to ¾".

All beams shall be cast in concrete floored pallets and in metal forms.

All work and materials shall be specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 8,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6" diameter strand shall be 43,943 pounds except as noted. Transfer of this tensioning load to the beam shall not be done until the compressive strength of the concrete is 6,000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The top of the beam shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beam length shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening, creep and shrinkage.

Exposed steel at begin and end bridge shall be protected against corrosion after cutting strands by a coating of two layers of zinc-rich paint.

Extreme care shall be exercised in handling and moving Precast Prestressed Concrete Beams. Beams must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the beam. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposed will not be permitted.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the beams.

The Contractor may submit alternate strand patters with design calculations for review and approval in accordance with Subsection 802.22. except that only 0.6" diameter strands shall be allowed.

Reinforcing steel shall be AASHTO M 31 or M 322 type A, Grade 60 fy = 60,000 psi with Mill Test Reports.

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be submitted to the engineer and approval shall be secured before fabrication can begin.

All steel projecting from beam ends at bents 1 & 5 shall be cut flush and painted with two layers of zinc rich paint.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 3 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS BRANCH OF BIG CREEK

ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION

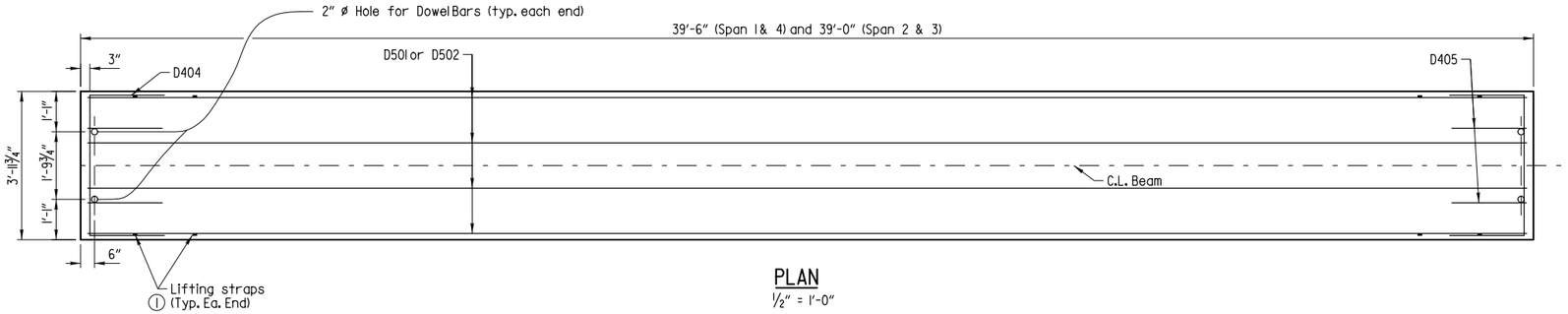
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 11/2019 SCALE: As Shown
BRIDGE NO. 07476 DRAWING NO. 61458

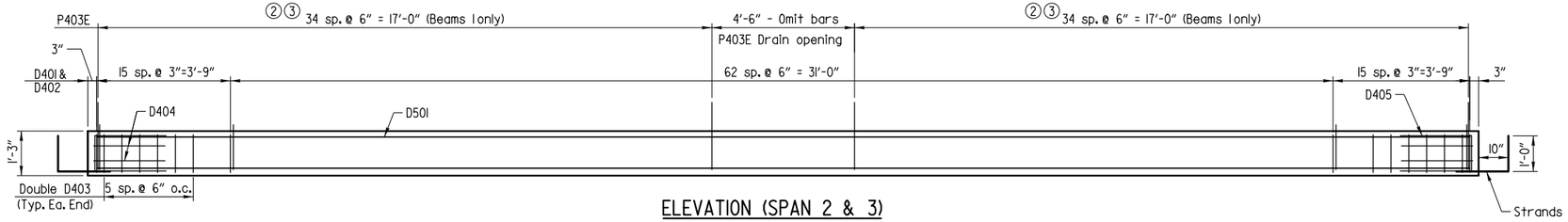
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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 55 | 93 |

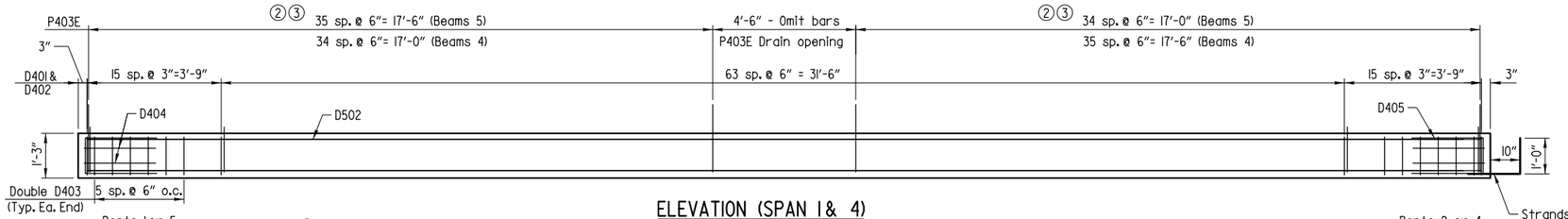
(1) 07476 - 40'-0" PRESTR. BEAM UNIT - 61459




PLAN
½" = 1'-0"




ELEVATION (SPAN 2 & 3)
½" = 1'-0"




ELEVATION (SPAN 1 & 4)
½" = 1'-0"

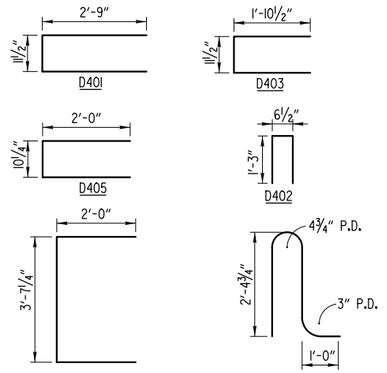
① Location to be determined by Fabricator. (Typ. Ea. End)

② P403E bars are for Exterior Beams only. For Rail Details, See Dwg. No. 61460

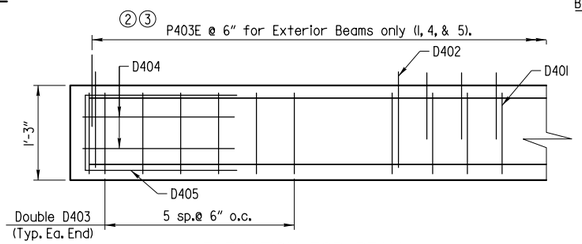
③ For Beam locations, See "FRAMING PLAN" in Dwg. No. 61458

## BAR LIST - ALL BEAMS

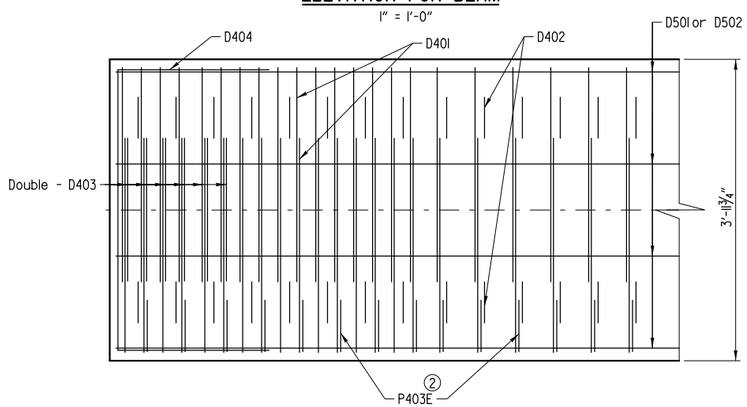
| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars |
|---|---|---|---|---|
| D401 | 5984 | 6'-3½" | 2" | Note: All bars designated with an "E" suffix are to be epoxy coated. |
| D402 | 5984 | 2'-10½" | 2" | |
| D403 | 768 | 4'-6½" | 2" | |
| D404 | 128 | 7'-5½" | 2" | |
| D405 | 128 | 4'-8½" | 2" | |
| | | | | |
| D501 | 64 | 38'-8" | Str. | |
| D502 | 64 | 39'-2" | Str. | |
| | | | | |
| ② P403E | 564 | 5'-10¾" | 3", 4¾" | |



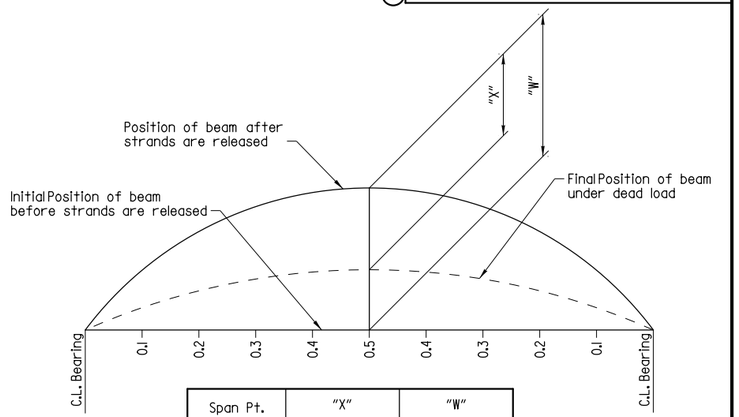

Note: All bars in this list shall be subsidiary to the item "Prestressed Concrete Beams" (Non-Voided 15" x 47¾").




ELEVATION FOR BEAM
1" = 1'-0"




REINFORCING PLAN FOR PRESTRESSED PRECAST BEAM
1" = 1'-0"




| Span Pt. | "X" | "W" |
|---|---|---|
| C.L. Bearing | 0.000 | 0.000 |
| 0.1 | 0.064 | 0.406 |
| 0.2 | 0.130 | 0.533 |
| 0.3 | 0.183 | 0.676 |
| 0.4 | 0.216 | 0.753 |
| 0.5 | 0.228 | 0.778 |

Table is symm. about the C.L. Unit.

"W" is expected Camber of Beam at 90 days after release (Prestress + Dead Load of Beam).

"X" is Dead Load Deflection of Slab + Composite Dead Load.

## CAMBER & DEFLECTIONS (INCHES)

Note: 'W' & 'X' are based on the required minimum concrete strength and may vary from the dimensions shown. 'W' & 'X' shall be measured along bottom of beams unless otherwise approved by the Engineer. See Slab Tolerance on Dwg. No. 61456 for limitations of the beam final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the slab when camber is less than shown.

## SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the precast prestressed concrete beam units. The contractor shall provide the Engineer with the following information:

A. Actual 28 - day concrete strength of prestressed concrete beams.

B. Estimated age of prestressed concrete beams at time of erection which shall not be less than 90 days from release.

C. Profile of each beam under its own weight.

D. Number of days since release of strands of each beam.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if necessary.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
STEPHEN F. HARPER
No. 14501

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 4 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
## BRANCH OF BIG CREEK
ROUTE SECTION

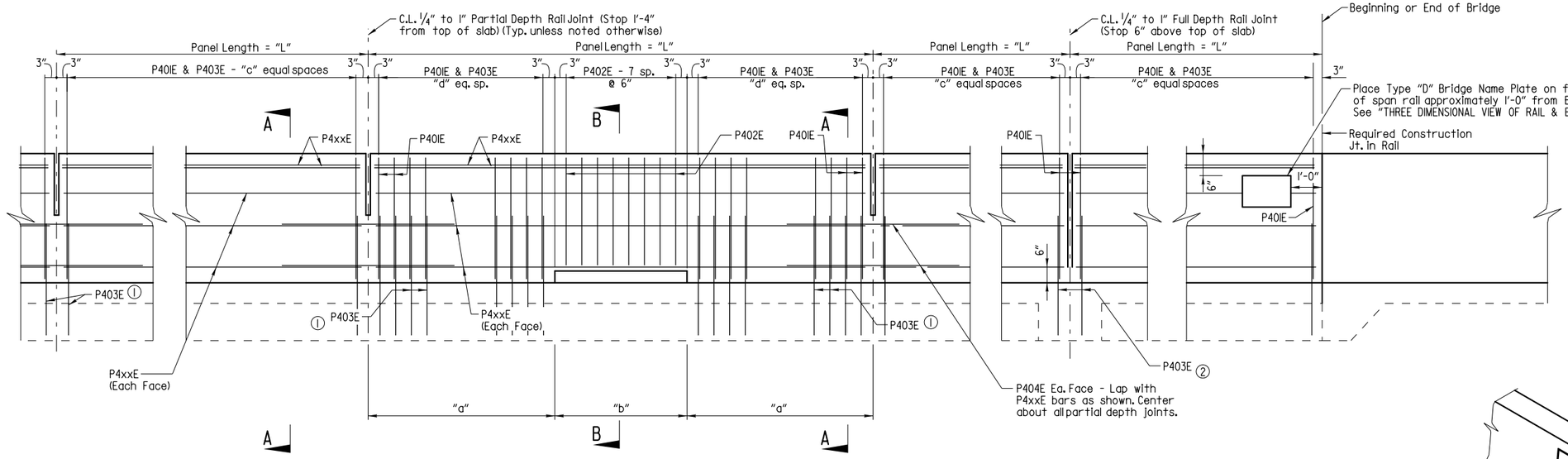
## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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BRIDGE NO. 07476 DRAWING NO. 61459

Sharath.Ranganathy 9/2021 10:44:34
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REVISED DATE:

| 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. | | 070416 | 56 | 93 |

(1) 07476 - 40'-0" PRESTR. BEAM UNIT - 61460




## TYPICAL CLOSED PANEL RAIL

## TYPICAL OPEN PANEL RAIL

## TYPICAL FULL DEPTH JOINT

## RAIL VARIABLES

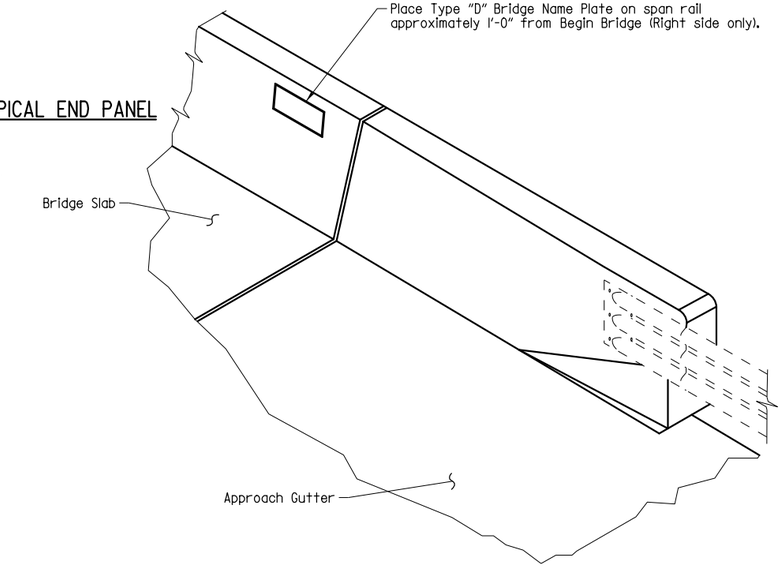
| Panel Length "L" | Panel Type | "a" | "b" | "c" | "d" | P4xxE Bars |
|---|---|---|---|---|---|---|
| 10'-0" | closed | ----- | ----- | 19 | ----- | P405E |
| 20'-0" | open | 8'-0" | 4'-0" | ----- | 15 | P406E |

Note:
For location of full and partial depth Rail joints, see Dwg. No. 61457.

## TYPICAL END PANEL

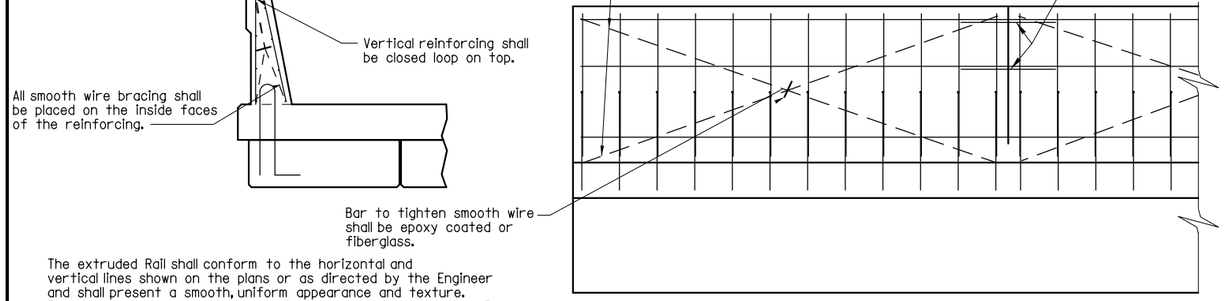
(1) P403E in Precast Beam. For Details, See Dwg. Nos. 61458 & 61459.

(2) P403E in Diaphragms over interior bents.




## ELEVATION - CONCRETE RAIL

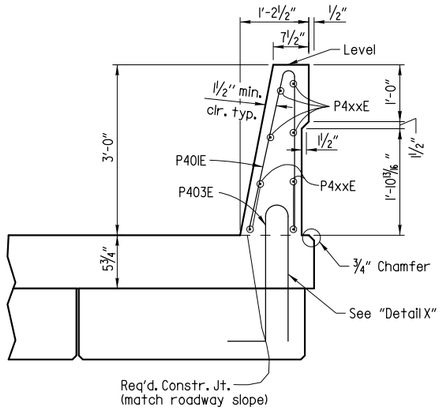
(As viewed from roadway side of Rail)



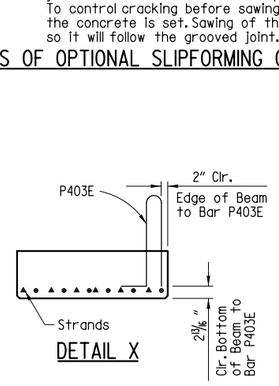

The extruded Rail shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed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

All panels shall be braced as shown 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.

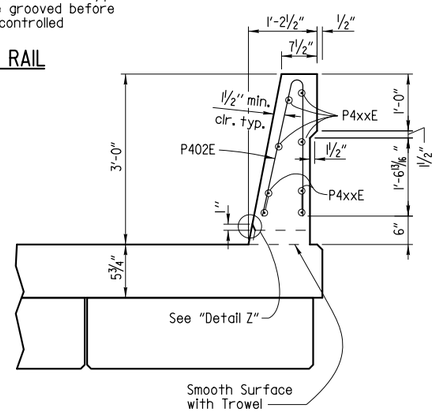
## DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE RAIL



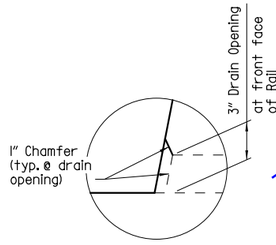

## SECTION A-A




## DETAIL X




## SECTION B-B




## DETAIL Z

## THREE DIMENSIONAL VIEW OF RAIL & END BENT

7/13/2021

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 5 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS BRANCH OF BIG CREEK

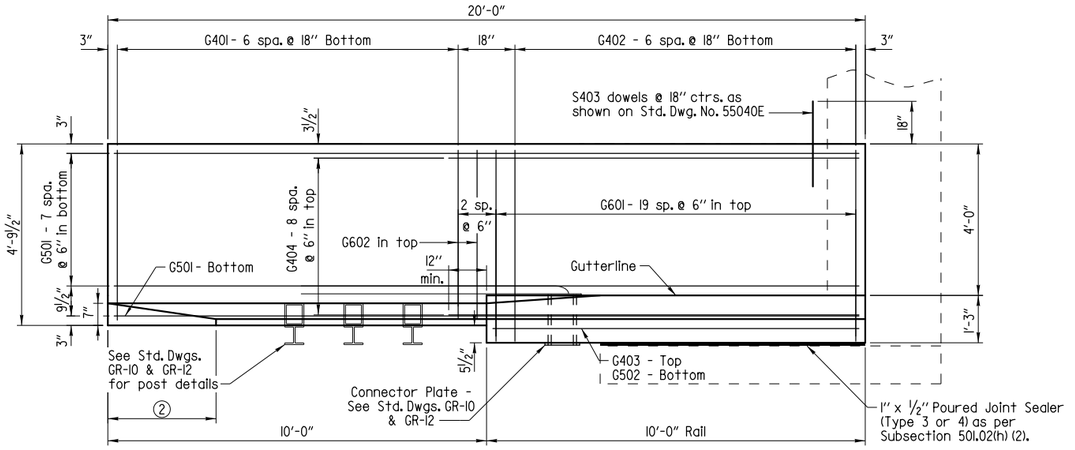
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | |
|---|---|---|---|---|
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| CHECKED BY: | SFH | DATE: | 01/2020 | |
| DESIGNED BY: | SCR | DATE: | 11/2019 | SCALE: No Scale |
| BRIDGE NO. | 07476 | | | DRAWING NO. 61460 |

Sharath.Ranganathy 9/2021 10:44:35
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REVISED DATE:

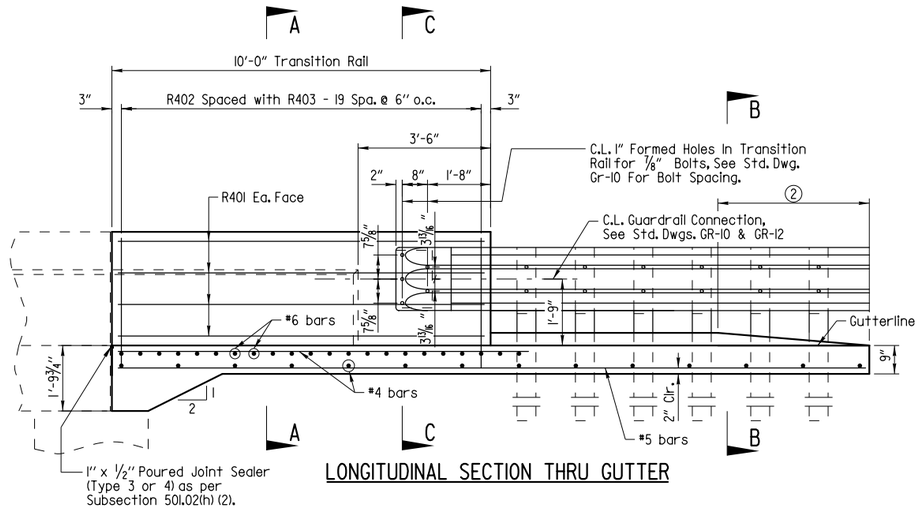
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 57 | 93 |
| | | | | (1) | 07476 - APPROACH GUTTERS - 61461 | | | |



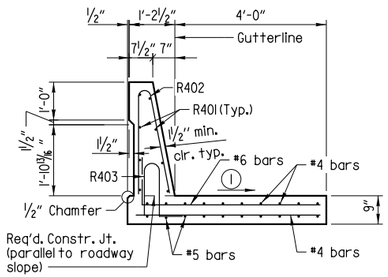

## PLAN

(Shown for Begin Bridge Right Side - adjust orientation at other locations)

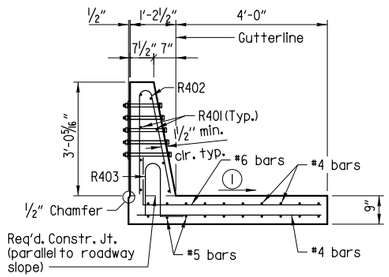
(1) Match Roadway cross-slope as required at a given approach gutter location



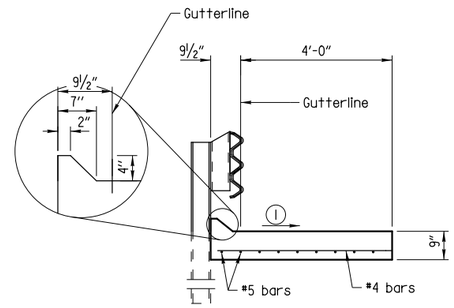

## LONGITUDINAL SECTION THRU GUTTER




## SECTION A-A




## SECTION C-C




## SECTION B-B

## QUANTITIES FOR ONE TYPE I SPECIAL APPROACH GUTTER

| Length (ft.) | Reinforcing Steel (lbs.) | Concrete (cubic yds) |
|---|---|---|
| 20'-0" | 680 | 4.17 |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

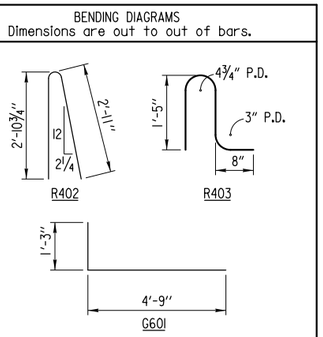
Reinforcing Steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Gutters to match that used on the bridge deck.

## BAR LIST FOR ONE TYPE I SPECIAL APPROACH GUTTER

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars. |
|---|---|---|---|---|
| G401 | 7 | 4'-5½" | Str. | |
| G402 | 7 | 4'-11" | Str. | |
| G403 | 1 | 9'-8" | Str. | |
| G404 | 9 | 10'-10" | Str. | |
| | | | | |
| G501 | 9 | 19'-8" | Str. | |
| G502 | 1 | 9'-8" | Str. | |
| | | | | |
| G601 | 20 | 5'-11" | 4½" | |
| G602 | 2 | 4'-3" | Str. | |
| | | | | |
| R401 | 8 | 9'-8" | Str. | |
| R402 | 20 | 5'-11" | 2½" | |
| R403 | 20 | 3'-7" | 3", 4¾" | |
| | | | | |




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No. 14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

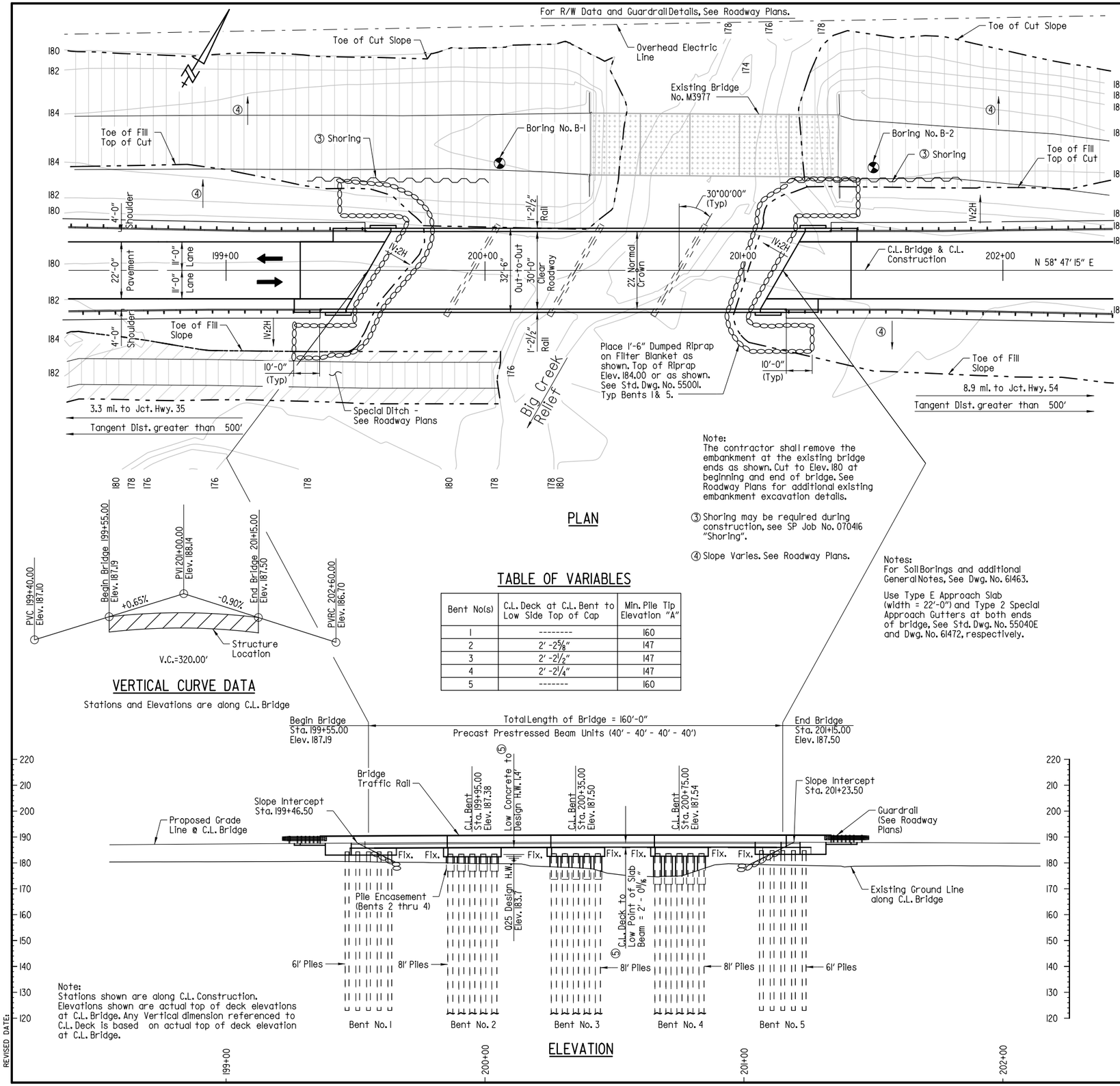
# DETAILS OF TYPE I SPECIAL APPROACH GUTTERS BRANCH OF BIG CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | KDH | DATE: | 01/2020 | FILENAME: | B070416XI_AGI.dgn |
| CHECKED BY: | HSS | DATE: | 01/2020 | | |
| DESIGNED BY: | SCR | DATE: | 12/2019 | SCALE: | ½" = 1'-0" |
| BRIDGE NO. | 07476 | | DRAWING NO. | 61461 | |

Leonard.Speed 4/30/2021 2:20:03 PM
WORKSPACE: ARDOT
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REVISED DATE:




## PLAN

Note:
The contractor shall remove the embankment at the existing bridge ends as shown. Cut to Elev. 180 at beginning and end of bridge. See Roadway Plans for additional existing embankment excavation details.

③ Shoring may be required during construction, see SP Job No. 070416 "Shoring".

④ Slope Varies. See Roadway Plans.

Notes:
For Soil Borings and additional General Notes, See Dwg. No. 61463.

Use Type E Approach Slab (width = 22'-0") and Type 2 Special Approach Gutters at both ends of bridge, See Std. Dwg. No. 55040E and Dwg. No. 61472, respectively.




## VERTICAL CURVE DATA

Stations and Elevations are along C.L. Bridge

## TABLE OF VARIABLES

| Bent No(s) | C.L. Deck at C.L. Bent to Low Side Top of Cap | Min. Pile Tip Elevation "A" |
|---|---|---|
| 1 | -------- | 160 |
| 2 | 2' -2⅝" | 147 |
| 3 | 2' -2½" | 147 |
| 4 | 2' -2¼" | 147 |
| 5 | ------- | 160 |




Note:
Stations shown are along C.L. Construction. Elevations shown are actual top of deck elevations at C.L. Bridge. Any Vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge.

## ELEVATION

| 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. | | 070416 | 58 | 93 |
| | | | | (1) | | 07477 - LAYOUT - 61462 | | |

## GENERAL NOTES

BENCH MARK: 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. Unless otherwise noted, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition with current interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 2 $S_{DI}$ =0.179 SITE CLASS = D

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 (Prestressed Beams) | f'c = 8,000 psi |
| Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr, 60) | fy = 60,000 psi |
| Pipe Pile Grade 3, ASTM A252 | Fy = 45,000 psi |
| Prestressing Strands (AASHTO M203, Gr. 270) | fpu = 270,000 psi |

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

STEEL SHELL PILING: Piling in Bents 1 and 5 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 160 tons per pile. Piling in Bents 2 thru 4 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 310 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer to the minimum tip elevation "A" shown in the table on this drawing. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g).

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Section 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum hammer energy required to obtain the ultimate bearing capacity for all piles will be 45,000 foot pounds per blow.

PILE ENCASEMENT: Pile encasement for Bents 2 thru 4 shall extend from bottom of cap to 3' below natural ground. See Standard Drawing number 55021 for additional information.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of the Rail. Class I Protective Surface Treatment shall meet the requirements of Section 803.

| DETAIL DRAWINGS: | DRAWING NO(S). |
|---|---|
| End Bents | 61464 & 61465 |
| Intermediate Bents | 61466 |
| 40'-0" Precast Prestressed Beam Unit | 61467 - 61471 |
| Concrete Filled Steel Shell Piles | 55021 |
| Type 2 Special Approach Gutters | 61472 |
| Type E Approach Slabs | 55040E |

## HYDRAULIC DATA

| FLOOD DESCRIPTION | FREQUENCY | ② TOTAL DISCHARGE | DISCHARGE THIS SITE | ①NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEV. WITH BACKWATER |
|---|---|---|---|---|---|
| | YEARS | CFS | CFS | FEET | FEET |
| Design | 25 | 7430 | 1985 | 182.5 | 183.7 |
| Base | 100 | 10740 | 2991 | 183.1 | 184.7 |
| Extreme | 500 | 14950 | 4856 | 183.8 | 185.8 |
| Overtopping | >500 | >500 | >500 | >500 | >500 |

① Unconstricted water surface without structure or roadway approaches.
The total discharge includes flow at this Site and Sites 1 and 3.

② Q100 backwater elevation for existing structure = 184.5 feet.

⑤ Proposed Low Bridge Chord Elevation = 185.09 and occurs at Station 199+47.93
Drainage area = 68.9 square miles.

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4/30/2021

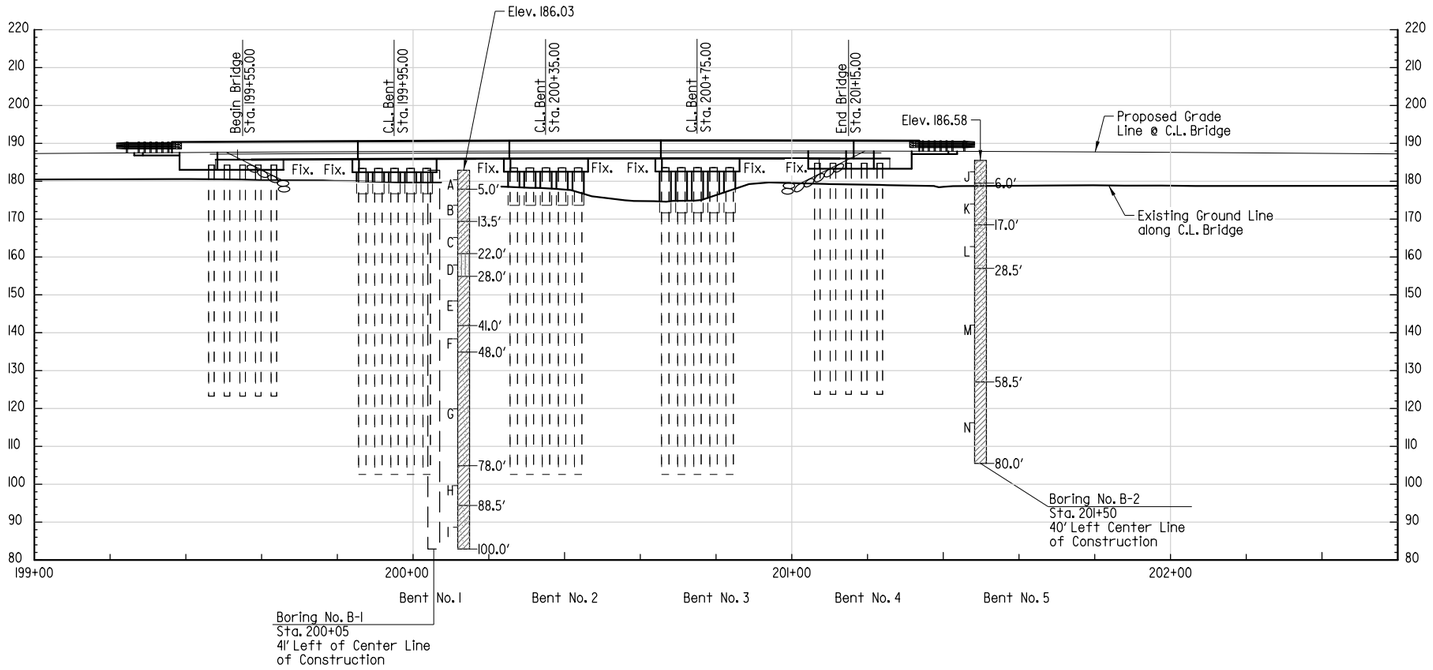
BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 1 OF 2
# LAYOUT OF BRIDGE
# HIGHWAY 133 OVER BIG CREEK RELIEF
# BIG CREEK & RELIEF STRS. & APPRS. (S)
## CLEVELAND COUNTY
## ROUTE 133 SECTION 5
## ARKANSAS STATE HIGHWAY COMMISSION
## LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 04/2019 SCALE: 1" = 20'
BRIDGE NO. 07477 DRAWING NO. 61462

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REVISED DATE:

| 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. | | 070416 | 59 | 93 |
| | | | | (1) | 07477 - LAYOUT - 61463 | | | |




## ELEVATION OF SOIL BORINGS

## "N" VALUES

Boring No. B-1
Sta. 200+05- 41' Left of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=11 | 49.0 -50.0 | N=12 |
| 2.5 - 3.5 | N=5 | 54.0 -55.0 | N=14 |
| 5.5 - 6.5 | N=2 | 59.0 -60.0 | N=14 |
| 9.0 - 10.0 | N=2 | 64.0 -65.0 | N=14 |
| 19.0 - 20.0 | N=12 | 69.0 -70.0 | N=16 |
| 24.0 -25.0 | N=26 | 74.0 -75.0 | N=19 |
| 29.0 -30.0 | N=9 | 79.0 -80.0 | N=18 |
| 34.0 -35.0 | N=15 | 84.0 -85.0 | N=18 |
| 39.0 -40.0 | N=12 | 89.0 -90.0 | N=19 |
| 44.0 -45.0 | N=12 | 94.0 -95.0 | N=19 |
| | | 99.0 -100.0 | N=20 |

Boring No. B-2
Sta. 201+50 - 40' Left of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=10 | 39.0 -40.0 | N=12 |
| 2.5 - 3.5 | N=11 | 44.0 -45.0 | N=12 |
| 5.5 - 6.5 | N=4 | 49.0 -50.0 | N=39 |
| 9.0 - 10.0 | N=3 | 54.0 -55.0 | N=14 |
| 19.0 - 20.0 | N=13 | 59.0 -60.0 | N=17 |
| 24.0 -25.0 | N=21 | 64.0 -65.0 | N=18 |
| 29.0 -30.0 | N=15 | 69.0 -70.0 | N=19 |
| 34.0 -35.0 | N=18 | 74.0 -75.0 | N=15 |
| | | 79.0 -80.0 | N=20 |

## BORING LEGEND

A- ASPHALT CONCRETE - 2 inches, FILL- SANDY LEAN CLAY (CL), trace gravel, reddish-brown, FILL- LEAN CLAY WITH SAND (CL), trace gravel, gray
B- CLAYEY SAND (SC), gray and brown, very loose
C- LEAN CLAY WITH SAND (CL), gray, stiff
D- POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, gray, medium dense
E- SANDY FAT CLAY (CH), trace gravel, brownish gray, stiff to very stiff
F- FAT CLAY (CH), trace sand, brownish gray, stiff
G- FAT CLAY WITH SAND (CH), trace gravel, brownish gray, stiff to very stiff
H- FAT CLAY (CH), gray and brownish gray, very stiff
I- SANDY FAT CLAY (CH), brownish gray, very stiff
J- ASPHALT CONCRETE - 3 inches, FILL- POORLY GRADED SAND WITH CLAY (SP-SC), trace asphalt, reddish-brown, FILL- LEAN CLAY WITH SAND (CL), trace gravel and asphalt, gray and brownish gray
K- SANDY LEAN CLAY (CL), trace gravel, gray and brown, soft to stiff
L- CLAYEY SAND (SC), gray and brown, medium dense
M- CLAYEY SAND (SC), gray and brownish, gray, medium dense to dense
N- FAT CLAY (CH), trace sand, brownish gray, very stiff

## GENERAL NOTES - CONTINUED

EXISTING BRIDGE: Existing Bridge No. M3977 (Log Mi. 3.31) is 25.4' wide (24.0' clear roadway) and 97.0' long and consists of a concrete deck on timber spans (5 spans total) supported by timber pile bents. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. M3977 in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

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No.14501
STEPHEN F. HARPER
4/30/2021

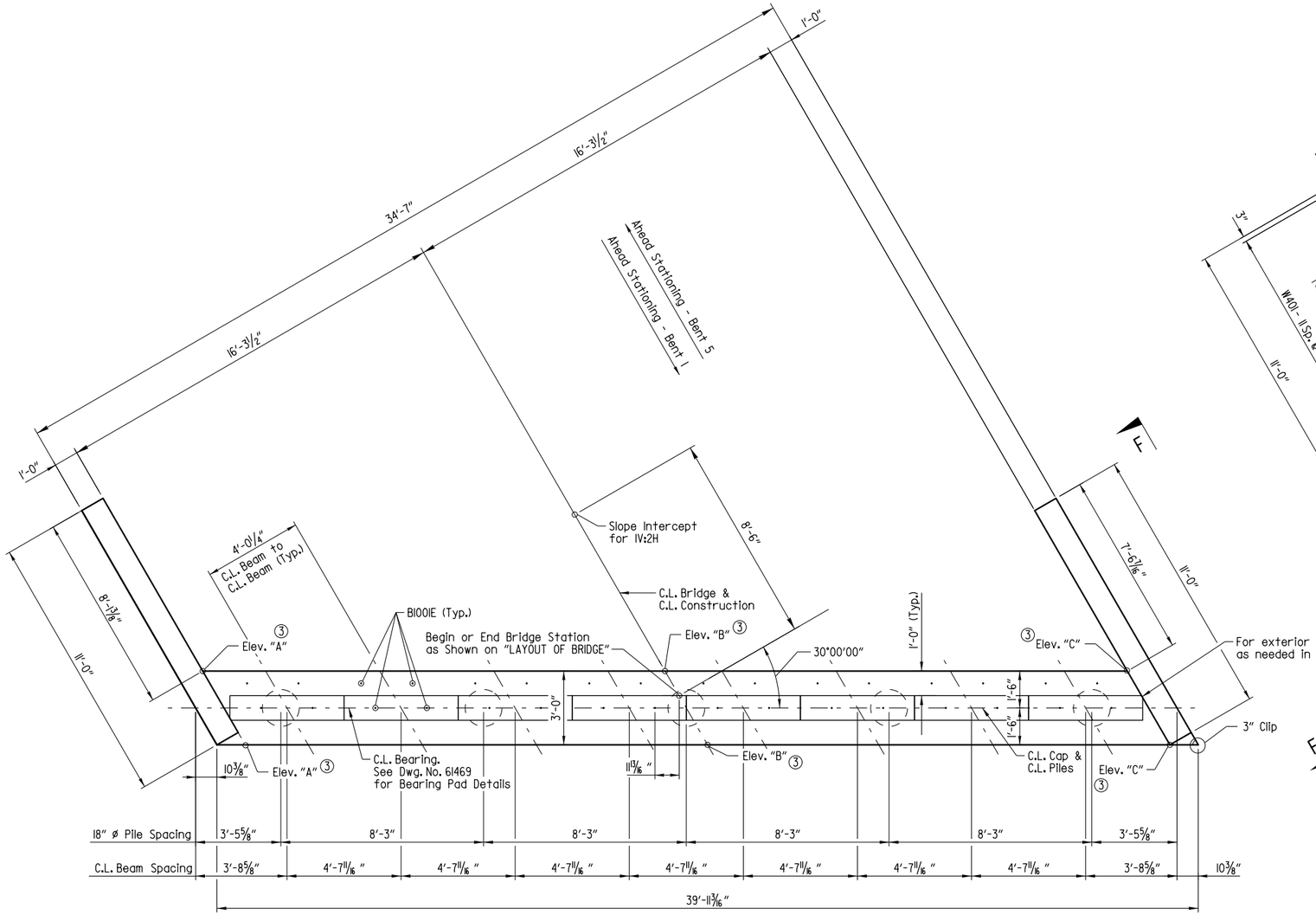
BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 2 OF 2
# LAYOUT OF BRIDGE
# HIGHWAY 133 OVER BIG CREEK RELIEF
# BIG CREEK & RELIEF STRS. & APPRS. (S)
# CLEVELAND COUNTY
## ROUTE 133 SECTION 5
## ARKANSAS STATE HIGHWAY COMMISSION
## LITTLE ROCK, ARKANSAS

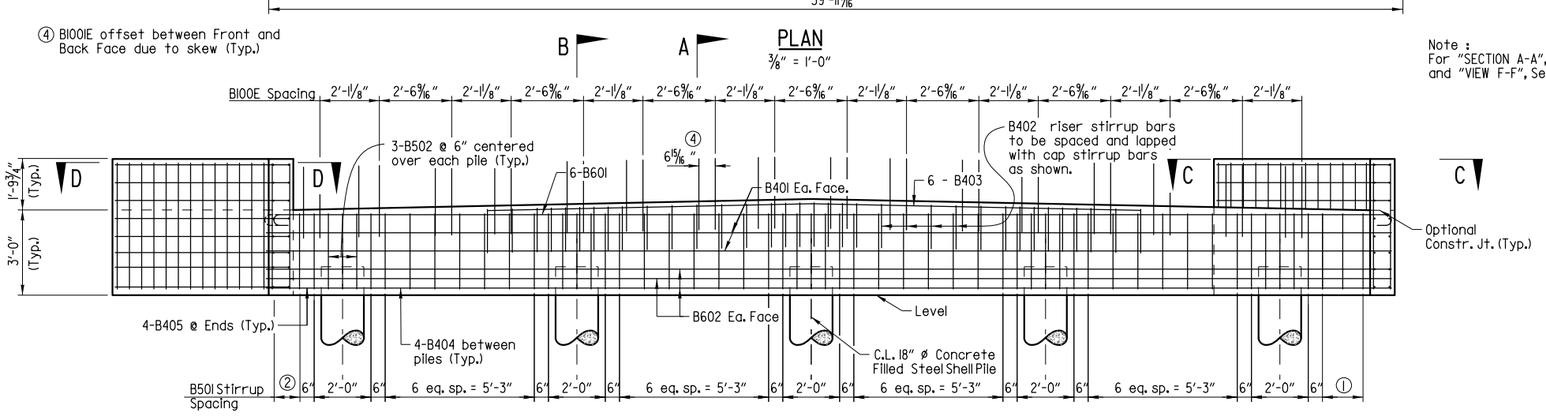
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BRIDGE NO. 07477 DRAWING NO. 61463

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REVISED DATE:

| 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. | | 070416 | 60 | 93 |
| | | | | (1) | 07477 - END BENTS - 61464 | | | |




## PLAN
3/8" = 1'-0"

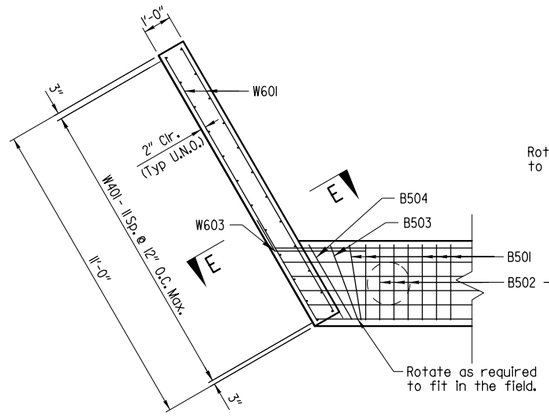



## ELEVATION
(Bent 1- Looking Back)
(Bent 5 - Looking Ahead)
3/8" = 1'-0"

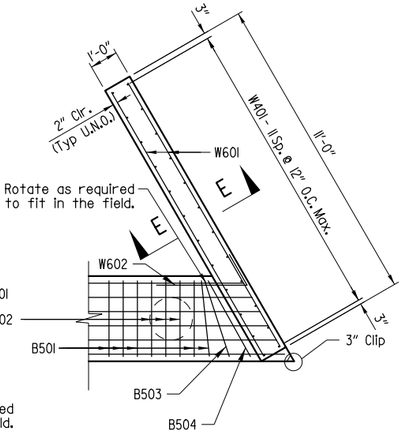
Note :
For "SECTION A-A", SECTION B-B" and "VIEW F-F", See Dwg. No. 61465.

① See "VIEW C-C" for bar details.

② See "VIEW D-D" for bar details.




## VIEW D-D
3/8" = 1'-0"

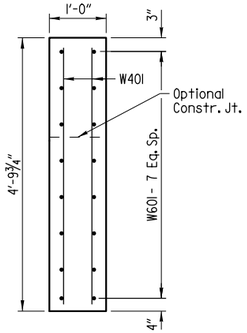



## VIEW C-C
3/8" = 1'-0"

## TABLE OF VARIABLES

| Location | Bent 1 | Bent 5 |
|---|---|---|
| Elev. "A" | 185.00 | 185.33 |
| Elev. "B" | 185.38 | 185.69 |
| Elev. "C" | 185.10 | 185.37 |

③ Top of Cap Elevations.




## SECTION E-E
3/4" = 1'-0"

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4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 1 OF 2

## DETAILS OF END BENTS
## BIG CREEK RELIEF
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | |
|---|---|---|---|---|
| DRAWN BY: | SCR | DATE: | 01/2020 | FILENAME: B070416X2_AXI.dgn |
| CHECKED BY: | SFH | DATE: | 01/2020 | |
| DESIGNED BY: | SCR | DATE: | 01/2020 | SCALE: As Shown |
| BRIDGE NO. | 07477 | | | DRAWING NO. 61464 |

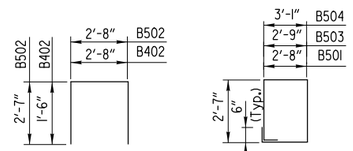
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REVISED DATE:

| 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. | | 070416 | 61 | 93 |
| | | | | (1) | 07477 - END BENTS - 61465 | | | |

## BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. |
|---|---|---|---|
| B401 | 4 | 39'-7" | Str. |
| B402 | 35 | 5'-6" | 2" |
| B403 | 6 | 23'-0" | Str. |
| B404 | 16 | 6'-5" | Str. |
| B405 | 8 | 2'-2" | Str. |
| | | | |
| B501 | 44 | 11'-0" | 2½" |
| B502 | 15 | 7'-7½" | 2½" |
| (1) B503 | 2 | 11'-2" | 2½" |
| (1) B504 | 2 | 11'-10" | 2½" |
| | | | |
| B601 | 6 | 40'-11" | 4½" |
| B602 | 6 | 39'-7" | Str. |
| | | | |
| B100IE | 32 | 2'-6" | Str. |
| | | | |
| W401 | 48 | 4'-5" | Str. |
| W601 | 32 | 10'-8" | Str. |
| W602 | 5 | 4'-4" | 4½" |
| W603 | 5 | 4'-6" | 4½" |

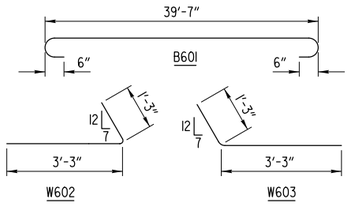
BENDING DIAGRAMS
Dimensions are out to out of bars.




B402 & B502




B501, B503 & B504




W602 W603

## GENERAL NOTES

Concrete in the cap shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi., and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

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.

For additional information, See "LAYOUT OF BRIDGE".

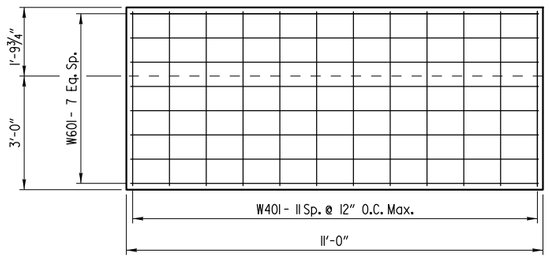
All bars designated with an "E" suffix are to be epoxy coated.

For Concrete Filled Steel Shell Piles See Std. Dwg. No. 55021.

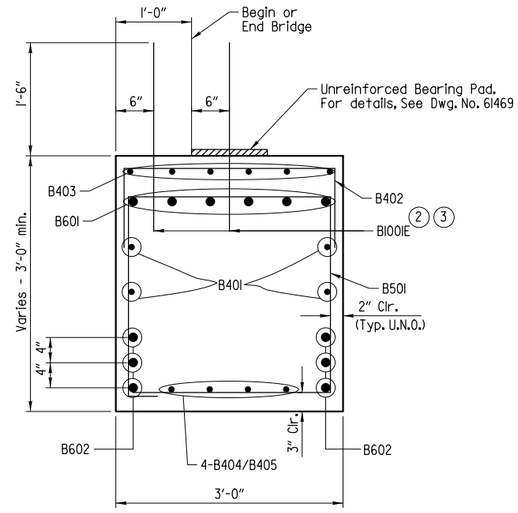
(1) See "VIEW C-C" and See "VIEW D-D" on Dwg. No. 61464 for additional details.

(2) See "PLAN" and "ELEVATION" on Dwg. No. 61464 for plan layout, spacing and additional details.

(3) Dowel bars B100IE shall be drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shall be in accordance with the manufacturer's recommendations. Dowel bars B100IE to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.




VIEW F-F
½" = 1'-0"




SECTION A-A
1" = 1'-0"




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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 2 OF 2
## DETAILS OF END BENTS
## BIG CREEK RELIEF
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

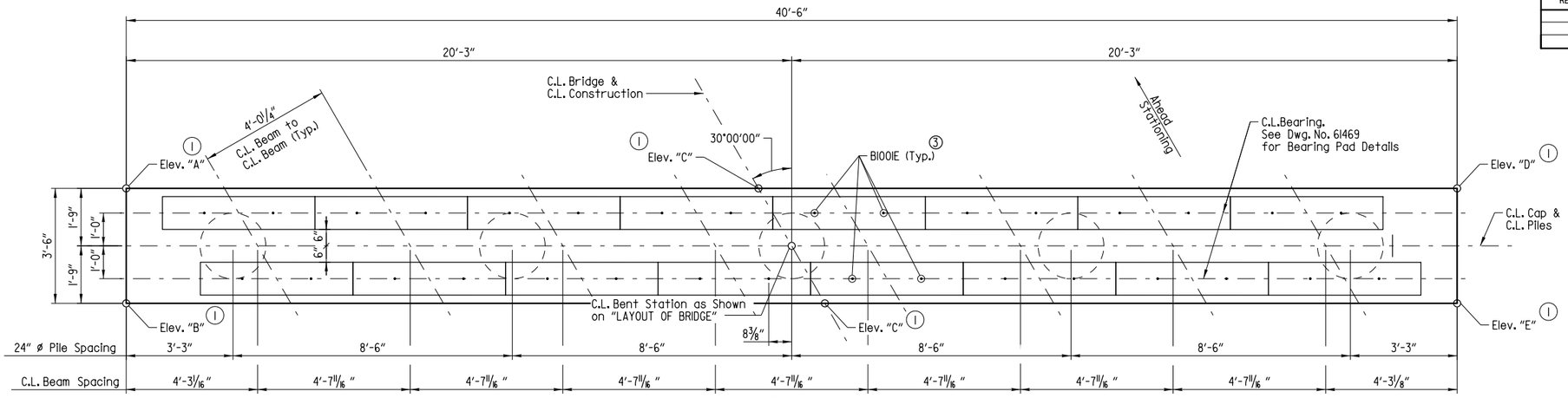
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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 01/2020 SCALE: As Shown
BRIDGE NO. 07477 DRAWING NO. 61465

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REVISED DATE:

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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 62 | 93 |

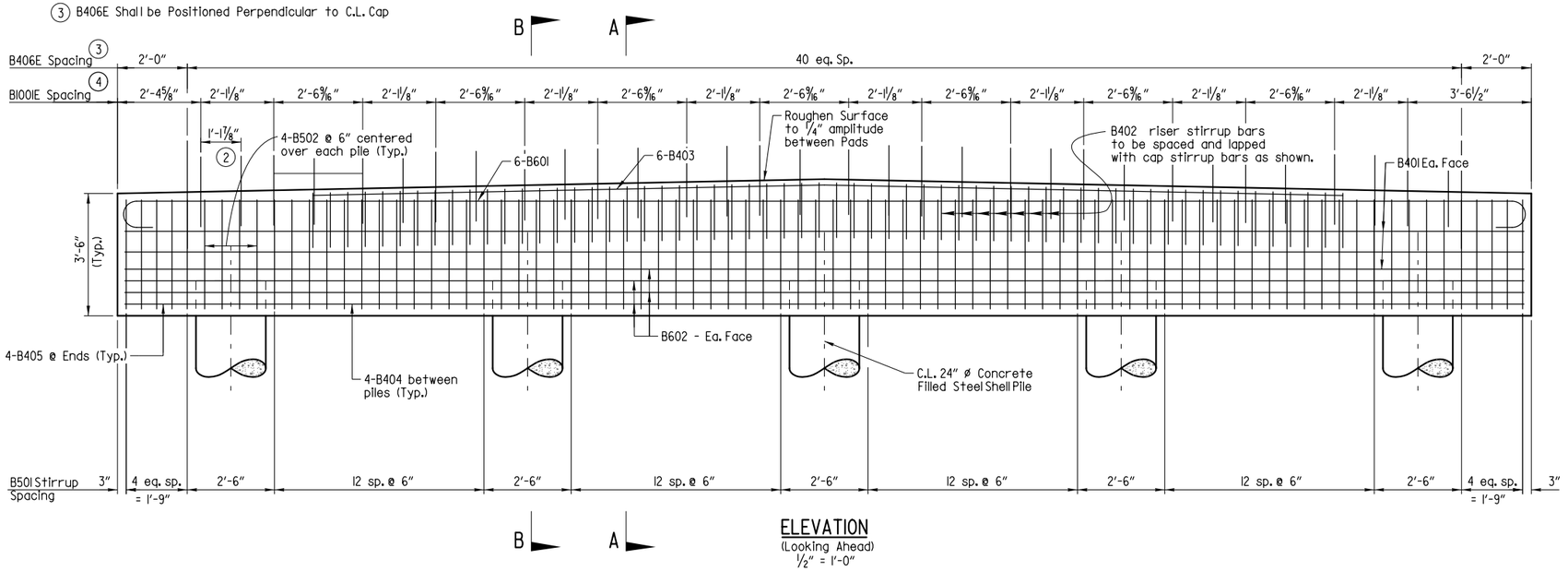
(1) 07477 - INTERMEDIATE BENTS - 61466



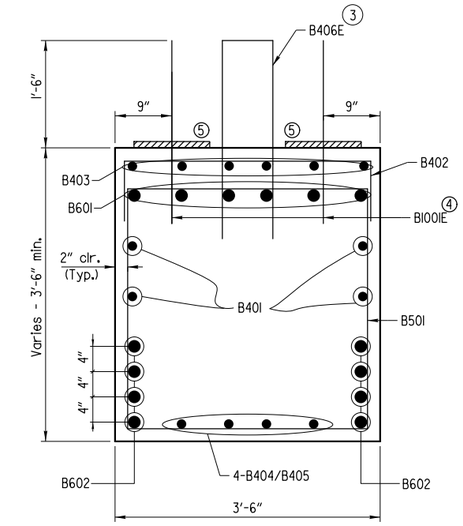

## PLAN
½" = 1'-0"

(2) B1001E Spacing (Typ.) Between Front and Back Face

(3) B406E Shall be Positioned Perpendicular to C.L. Cap

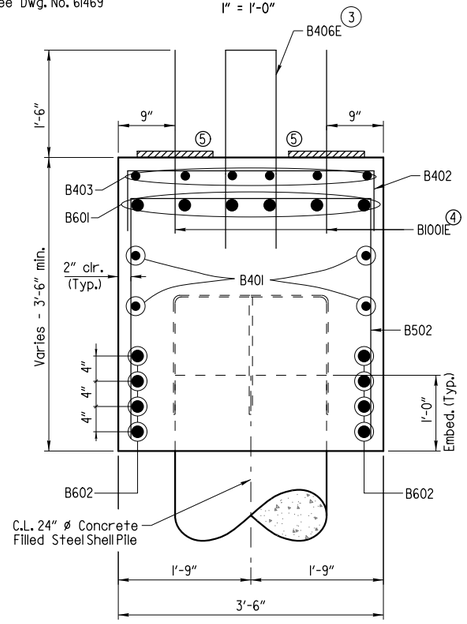



## ELEVATION
(Looking Ahead)
½" = 1'-0"




(5) Unreinforced Bearing Pad. For details, See Dwg. No. 61469

## SECTION A-A
1" = 1'-0"




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

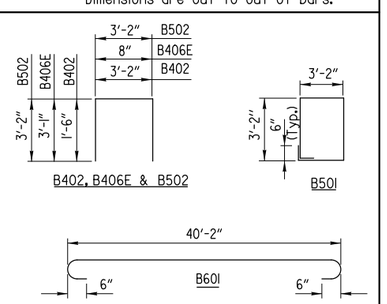
## TABLE OF VARIABLES

| Location | Bent 2 | Bent 3 | Bent 4 |
|---|---|---|---|
| Elev. "A" | 185.27 | 185.37 | 185.38 |
| Elev. "B" | 185.24 | 185.33 | 185.35 |
| Elev. "C" | 185.57 | 185.69 | 185.73 |
| Elev. "D" | 185.16 | 185.29 | 185.35 |
| Elev. "E" | 185.19 | 185.33 | 185.38 |

(1) Top of Cap Elev.

## BAR LIST-PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars. |
|---|---|---|---|---|
| B401 | 4 | 40'-2" | Str. | |
| B402 | 60 | 6'-0" | 2" | |
| B403 | 6 | 29'-6" | Str. | |
| B404 | 16 | 6'-2" | Str. | |
| B405 | 8 | 1'-11" | Str. | |
| B406E | 41 | 6'-8" | 2" | |
| | | | | |
| B501 | 62 | 13'-2" | 2½" | |
| B502 | 20 | 9'-3½" | 2½" | |
| | | | | |
| B601 | 6 | 41'-6" | 4½" | |
| B602 | 8 | 40'-2" | Str. | |
| | | | | |
| B1001E | 32 | 2'-6" | Str. | |
| | | | | |




## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Grade 60 (yield strength = 60,000 psi.).

For additional information, see "LAYOUT OF BRIDGE".

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

For details of Concrete Filled Steel Shell Piles, See Std. Dwg. No. 55021.

(4) Dowel bars B1001E shall be drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shall be in accordance with the manufacturer's recommendations. Dowel bars B1001E to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

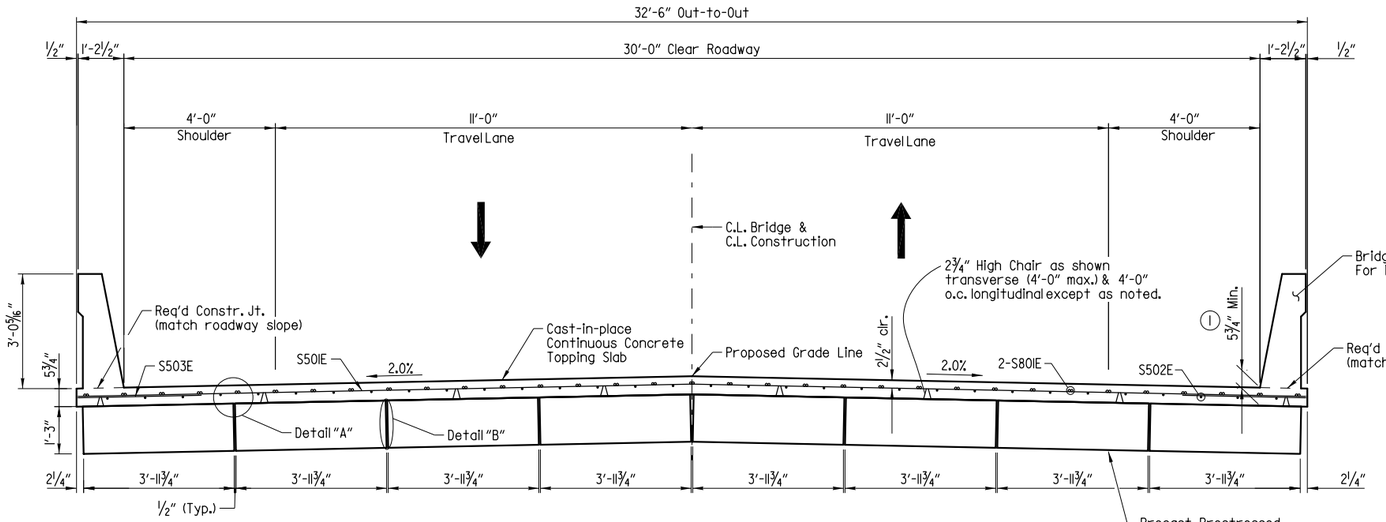
# DETAILS OF INTERMEDIATE BENTS
# BIG CREEK RELIEF
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | SCR | DATE: | 01/2020 | FILENAME: | B070416X2_BXI.dgn |
| CHECKED BY: | SFH | DATE: | 01/2020 | | |
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 63 | 93 |
| | | | | (1) 07477 - 40'-0" PRESTR. BEAM UNIT - 61467 | | | | |




## TYPICAL SECTION

(Looking Ahead)
1/2" = 1'-0"

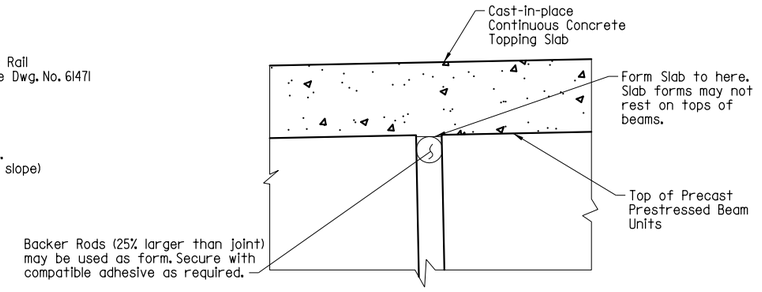
Note:
The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(1) Tolerance: Minus = 1/4"; Plus = 1/2"

Slab Reinforcing:

Transverse: S501E @ 12" o.c.
S503E @ 12" o.c. under each Rail bundled with S501E

Longitudinal: S502E placed as shown
S801E placed as shown over int. supports




## DETAIL A

No Scale

Note:
Backer Rods and Preformed Joint filler shall not be paid for directly, but shall be considered subsidiary to the item "Prestressed Concrete Beams (Non - Voided 15" x 47 3/4")."

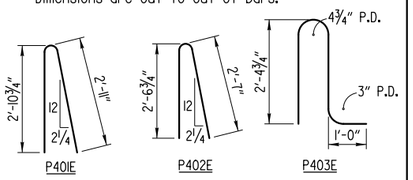
## BAR LIST

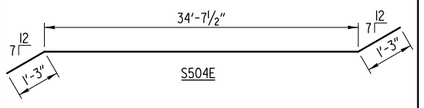
| MARK | NO. REQ'D. | LENGTH | P.D. |
|---|---|---|---|
| S401E | 12 | 37'-2" | Str. |
| | | | |
| S501E | 143 | 32'-2" | Str. |
| S502E | 96 | 54'-10" | Str. |
| S503E | 318 | 3'-3" | Str. |
| S504E | 2 | 37'-2" | 3 3/4" |
| S505E to S521E | 2 each | Var 2'-0" to 29'-9" | Str. |
| | | | |
| S801E | 198 | 27'-0" | Str. |
| | | | |
| P401E | 576 | 5'-11" | 2 1/2" |
| P402E | 64 | 5'-3" | 2 1/2" |
| P403E | 12 | 5'-10 3/4" | 3", 4 3/4" |
| P404E | 64 | 5'-6" | Str. |
| P405E | 128 | 9'-8" | Str. |
| P406E | 64 | 19'-8" | Str. |

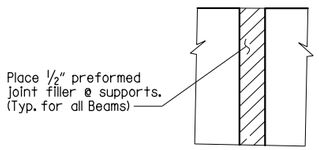
BENDING DIAGRAMS

Note: All bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

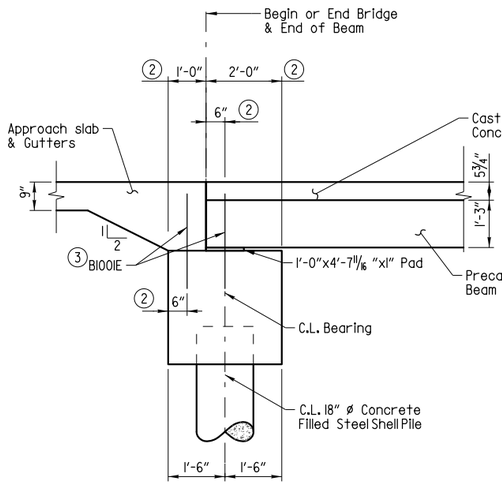


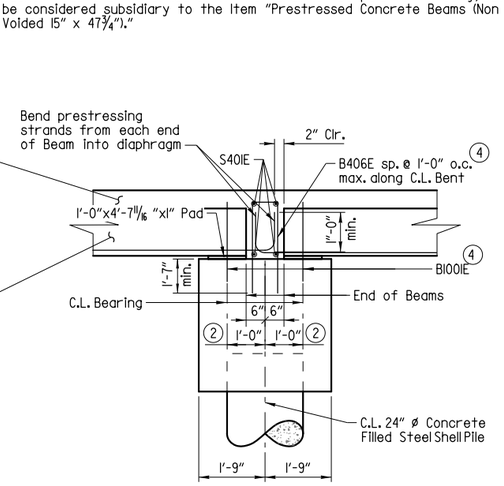

## DETAIL B

No Scale




## ELEVATION VIEW AT END BENT

1/2" = 1'-0"




## ELEVATION VIEW AT INTERMEDIATE BENT

1/2" = 1'-0"

Note:
After all the precast prestressed beam units are in their final position, and prior to placing the continuous cast-in-place concrete deck, dowel bars shall be grouted in placed using a QPL approved non-shrink grout that completely fills the holes. Grout shall not be paid for directly, but shall be considered subsidiary to the item "Class S(AE) Concrete-Bridge."

(2) Measured perpendicular to C.L. Bearing

(3) See End Bent details on Dwg. No. 61465 for additional details.

(4) See Intermediate Bent details on Dwg. No. 61466 for additional details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 1 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK RELIEF
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

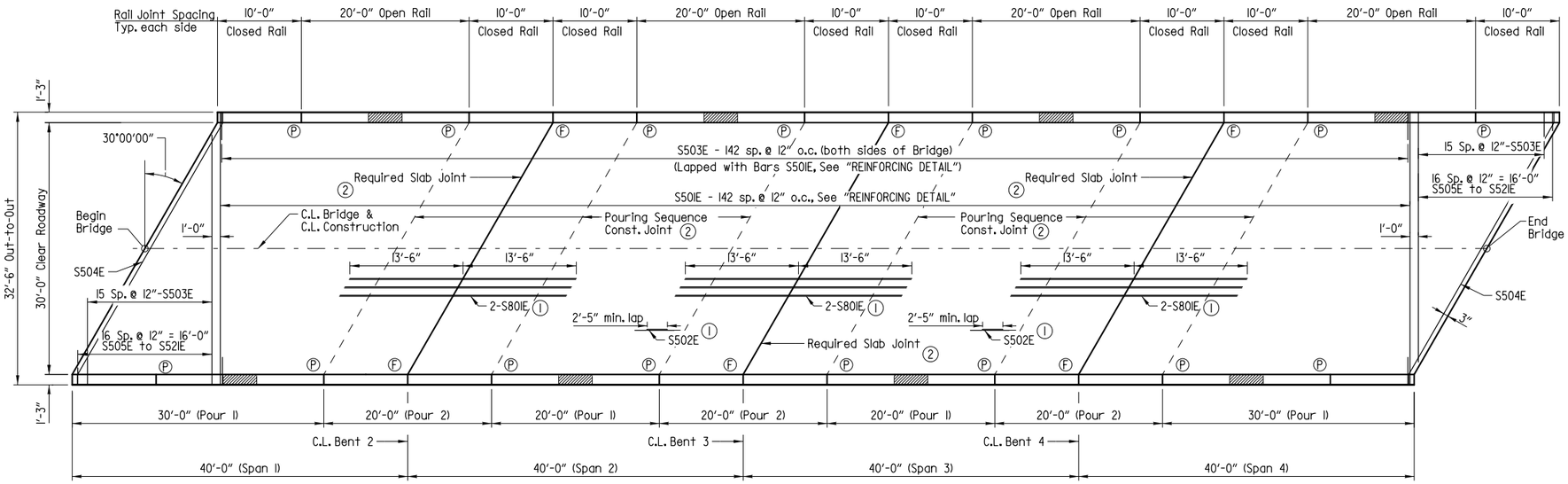
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| BRIDGE NO. | 07477 | | | DRAWING NO. | 61467 |

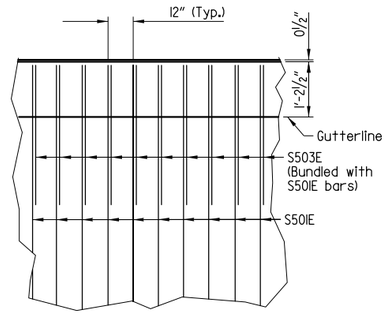
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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 64 | 93 |

(1) 07477 - 40'-0" PRESTR. BEAM UNIT - 61468




REINFORCING DETAIL
No Scale

## REINFORCING PLAN AND POURING SEQUENCE
1/8"= 1'-0"

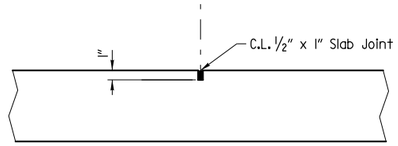
Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the rail. Concrete Diaphragms at Bents 2, 3 & 4 shall be poured monolithically with the deck. 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 shown. The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(P) Partial depth rail joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth rail joint at this location. (Stop 4" above top of slab)

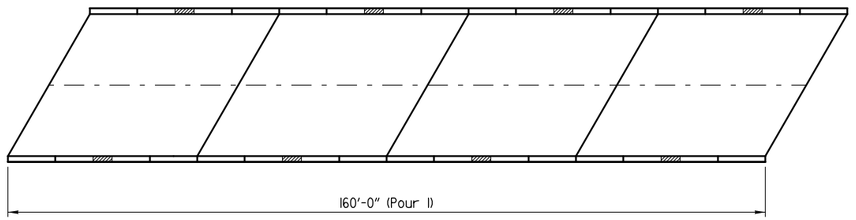
(1) Placed as shown in "TYPICAL SECTION", See Dwg. No. 61467.

(2) Align with rail open joint unless noted otherwise. See "TRANSVERSE SLAB JOINT DETAIL".




Use Type 3 or 4 Joint Sealer, See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "Class S(AE) 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 rail. Slab joints shall be installed before the rail 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.

TRANSVERSE SLAB JOINT DETAIL
No Scale




ALTERNATE POURING SEQUENCE
1/16"= 1'-0"

Note:
Entire slab can be placed at once as shown. 72 hours shall elapse between the completion of the entire deck and the pouring of the rail. Concrete diaphragms at Bents 2, 3 & 4 shall be placed monolithically with the deck. Any rail 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 shown.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

## SHEET 2 OF 5
## DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS BIG CREEK RELIEF

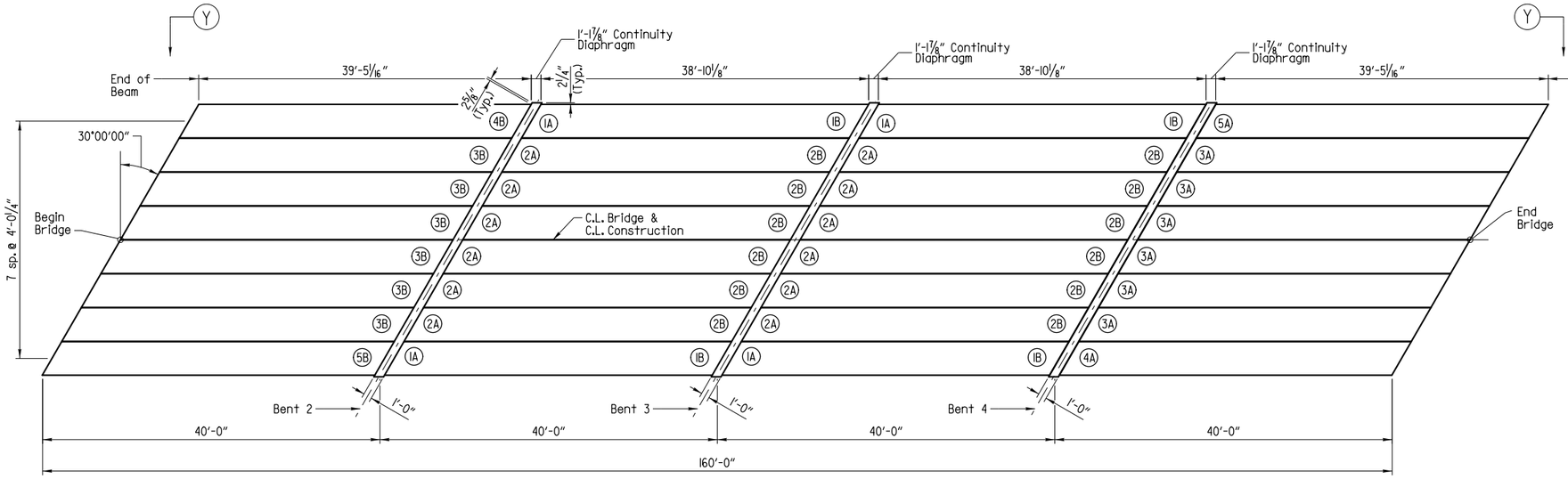
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

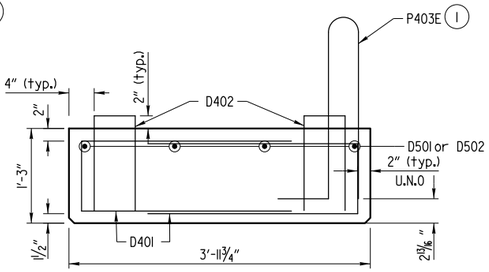
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 65 | 93 |
| | | | | (I) | 07477 - 40'-0" PRESTR. BEAM UNIT - 61469 | | | |

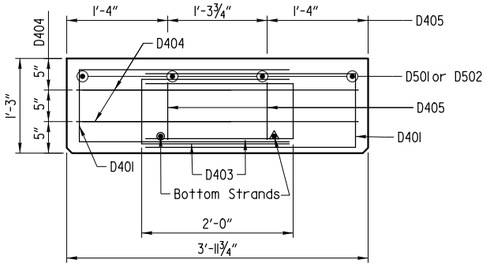



## FRAMING PLAN
1/8" = 1'-0"

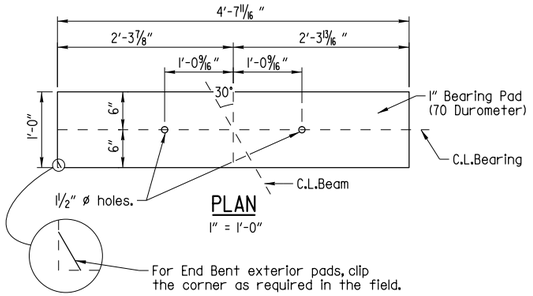



## REBAR PATTERN
1" = 1'-0"

(I) For Exterior Beams only (1, 4, & 5).

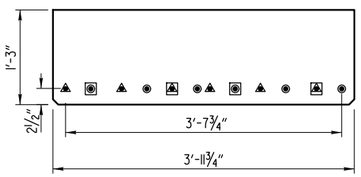



## REBAR PATTERN @ END
D402 not shown for clarity
1" = 1'-0"




## PLAN
1" = 1'-0"

## UNREINFORCED BEARING PAD DETAILS
Unreinforced bearing pads shall meet the requirements of Section 808 and the hardness shall be 70 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S (AE) Concrete-Bridge".

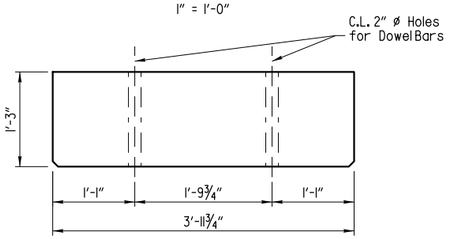



## STRAND PATTERN
12 - 0.6" ø 270 ksi Low-Relaxation Strands
(Looking Forward)
1" = 1'-0"

Note:
△ Denotes strands to project from beam ends (XA)

○ Denotes strands to project from beam ends (XB)

□ Debond these strands for 3'-0" at Beam ends.




## SECTION @ END SHOWING FORMED HOLES
1" = 1'-0"

## GENERAL NOTES

Pretensioning steel shall be 0.6" diameter Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

Prestressing strands and steel reinforcing bars in the beam will not be paid for directly, but will be subsidiary to the item "Prestressed Concrete Beams" (Non-Voided 15" x 47 3/4")

All beams shall be non-voided 15"x47 3/4" rectangular beams as shown on the details. Chamfer all exposed corners to 3/4".

All beams shall be cast in concrete floored pallets and in metal forms.

All work and materials shall be specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 8,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6" diameter strand shall be 43,943 pounds except as noted. Transfer of this tensioning load to the beam shall not be done until the compressive strength of the concrete is 6,000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The top of the beam shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beam length shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening, creep and shrinkage.

Exposed steel at begin and end bridge shall be protected against corrosion after cutting strands by a coating of two layers of zinc-rich paint.

Extreme care shall be exercised in handling and moving Precast Prestressed Concrete Beams. Beams must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the beam. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposed will not be permitted.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the beams.

The Contractor may submit alternate strand patters with design calculations for review and approval in accordance with Subsection 802.22. except that only 0.6" diameter strands shall be allowed.

Reinforcing steel shall be AASHTO M 31 or M 322 type A, Grade 60 fy = 60,000 psi with Mill Test Reports.

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be submitted to the engineer and approval shall be secured before fabrication can begin.

All steel projecting from beam ends at bents 1 & 5 shall be cut flush and painted with two layers of zinc rich paint.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 3 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK RELIEF
ROUTE SECTION

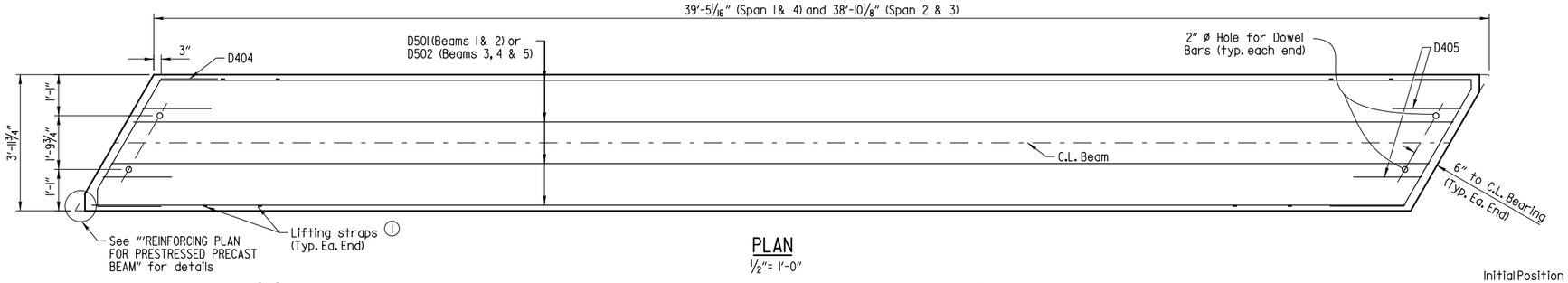
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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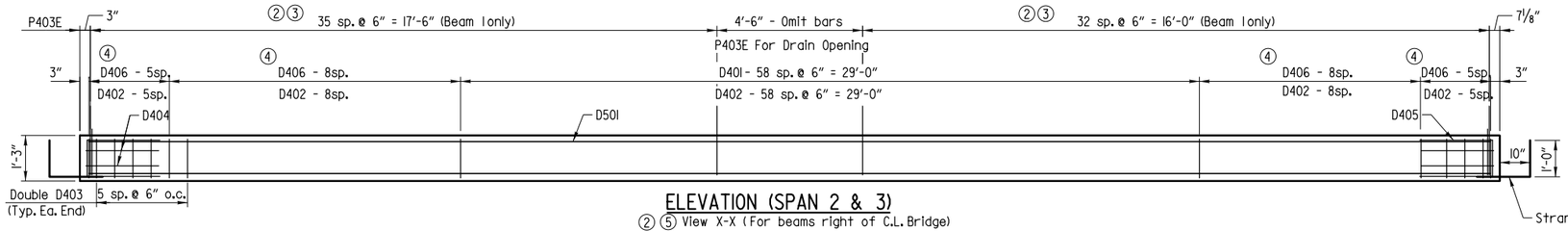
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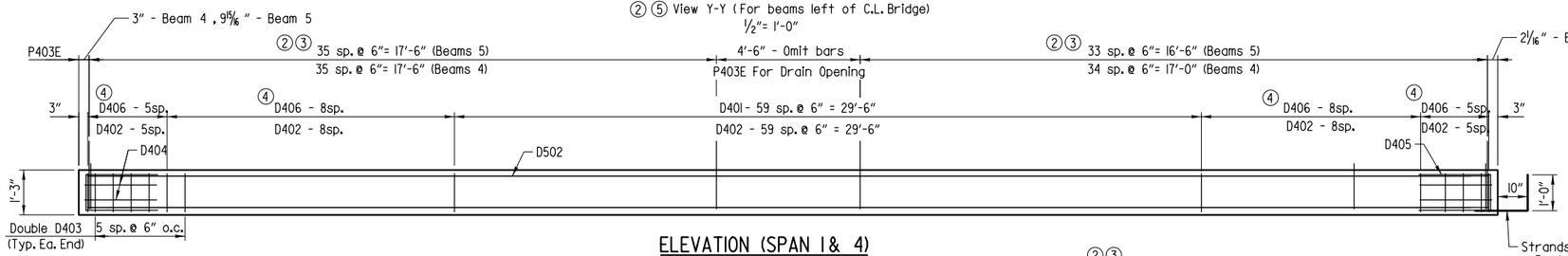
(1) 07477 - 40'-0" PRESTR. BEAM UNIT - 61470




## PLAN
1/2"= 1'-0"




## ELEVATION (SPAN 2 & 3)
(2)(5) View X-X (For beams right of C.L. Bridge)
(2)(5) View Y-Y (For beams left of C.L. Bridge)
1/2"= 1'-0"




## ELEVATION (SPAN 1 & 4)
(2)(5) View X-X (For beams right of C.L. Bridge)
(2)(5) View Y-Y (For beams left of C.L. Bridge)
1/2"= 1'-0"

(1) Location to be determined by Fabricator. (Typ. Ea. End)

(2) P403E bars are for Exterior Beams only. For Details, See Dwg. No. 61471. Measured along outside edge of exterior beams. Lap with Bars P401E as show on Dwg. No. 61471.

(3) For Beam locations, See Framing Plan in Dwg. No. 61469.

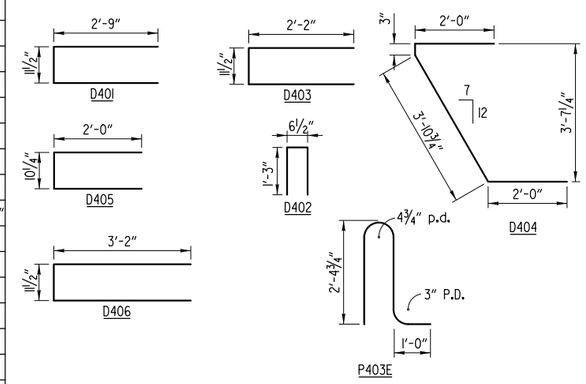
(4) For D406 Spacings, See "REINFORCING PLAN FOR PRESTRESSED PRECAST BEAM".

(5) For "VIEW X-X" & "VIEW Y-Y", See Framing Plan in Dwg. No. 61469.

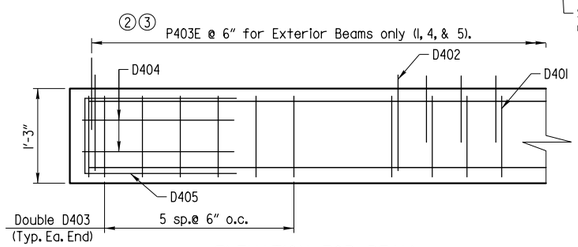
(6) Strand extension measured perpendicular to skewed beam end.

## BAR LIST - ALL BEAMS

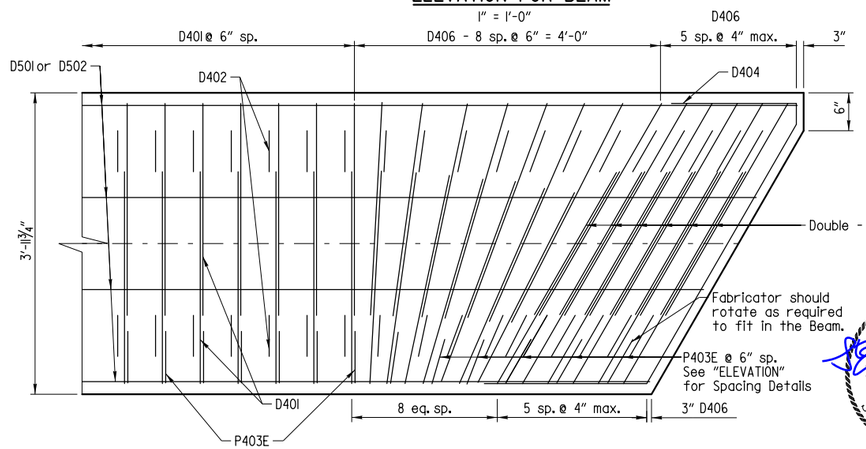
| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars |
|---|---|---|---|---|
| D401 | 3808 | 6'-3 1/2" | 2" | Note: All bars designated with an "E" suffix are to be epoxy coated. |
| D402 | 5472 | 2'-10 1/2" | 2" | |
| D403 | 768 | 5'-1 1/2" | 2" | |
| D404 | 128 | 7'-9" | 2" | |
| D405 | 128 | 4'-8 1/4" | 2" | |
| (4) D406 | 1792 | 7'-1 1/2" | 2" | |
| | | | | |
| D501 | 64 | 38'-6" | Str. | |
| D502 | 64 | 39'-1" | Str. | |
| | | | | |
| (2) P403E | 558 | 5'-10 3/4" | 3", 4 3/4" | |



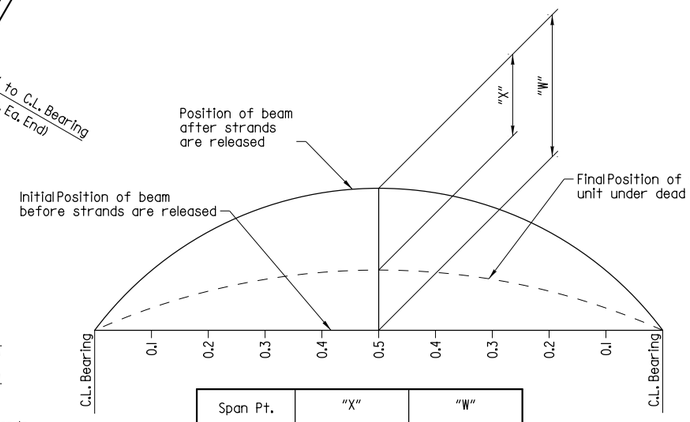

Note: All bars in this list shall be subsidiary to the item "Prestressed Concrete Beams" (Non-Voided 15" x 47 3/4").




## ELEVATION FOR BEAM
1" = 1'-0"




## REINFORCING PLAN FOR PRESTRESSED PRECAST BEAM
1" = 1'-0"




| Span Pt. | "X" | "W" |
|---|---|---|
| C.L. Bearing | 0.000 | 0.000 |
| 0.1 | 0.057 | 0.405 |
| 0.2 | 0.121 | 0.533 |
| 0.3 | 0.172 | 0.677 |
| 0.4 | 0.195 | 0.754 |
| 0.5 | 0.215 | 0.778 |

Table is symm. about the C.L. Unit.

"W" is expected Camber of Beam at 90 days after release (Prestress + Dead Load of Beam).

"X" is Dead Load Deflection of Slab + Composite Dead Load.

## CAMBER & DEFLECTIONS (INCHES)

Note: 'W' & 'X' are based on the required minimum concrete strength and may vary from the dimensions shown. 'W' & 'X' shall be measured along bottom of beams unless otherwise approved by the Engineer. See Slab Tolerance on Dwg. No. 61467 for limitations of the beam final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the slab when camber is less than shown.

## SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the precast prestressed concrete beam units. The contractor shall provide the Engineer with the following information:

A. Actual 28 - day concrete strength of prestressed concrete beams.

B. Estimated age of prestressed concrete beams at time of erection which shall not be less than 90 days from release.

C. Profile of each beam under its own weight.

D. Number of days since release of strands of each beam.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if necessary.

7/13/2021

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 4 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS BIG CREEK RELIEF

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

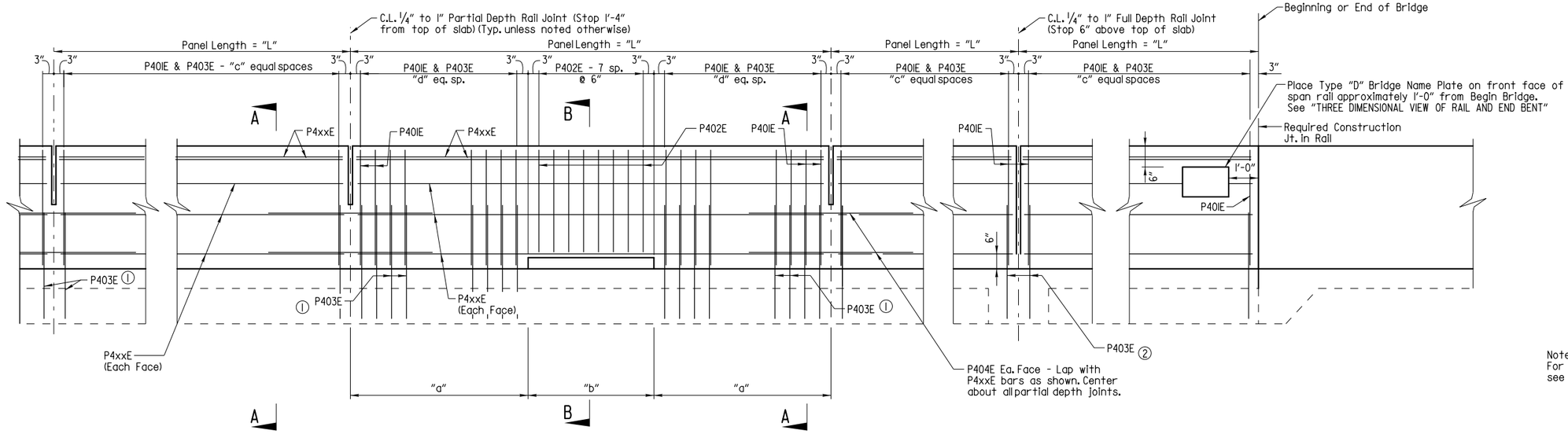
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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 67 | 93 |

(1) 07477 - 40'-0" PRESTR. BEAM UNIT - 61471

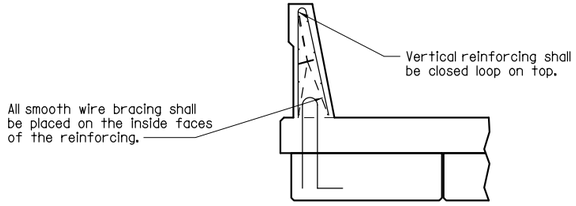



## RAIL VARIABLES

| Panel Length "L" | Panel Type | "a" | "b" | "c" | "d" | P4xxE Bars |
|---|---|---|---|---|---|---|
| 10'-0" | closed | ----- | ----- | 19 | ----- | P405E |
| 20'-0" | open | 8'-0" | 4'-0" | ----- | 15 | P406E |

Note:
For location of full and partial depth rail joints, see Dwg. No. 61468.

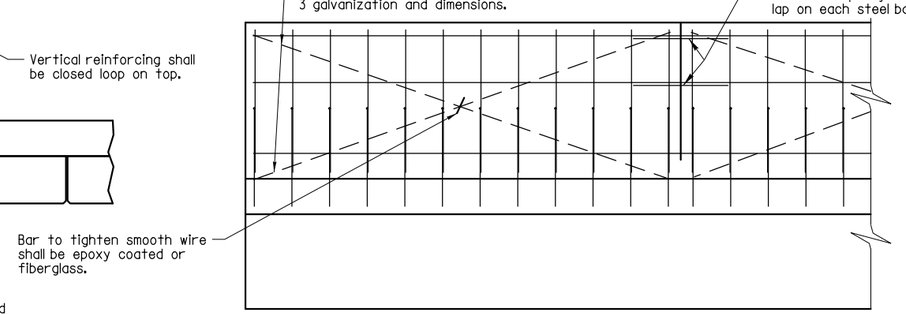
## TYPICAL CLOSED PANEL RAIL




## TYPICAL OPEN PANEL RAIL

### ELEVATION - CONCRETE RAIL

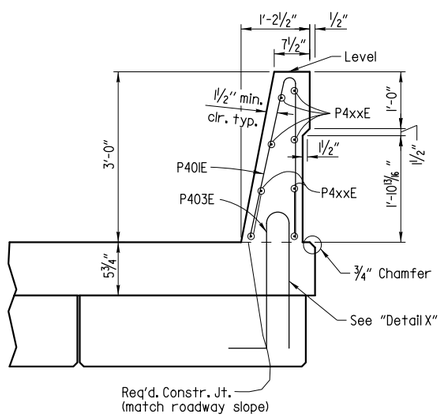
(As viewed from roadway side of Rail)



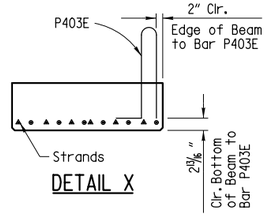

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded rail 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. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

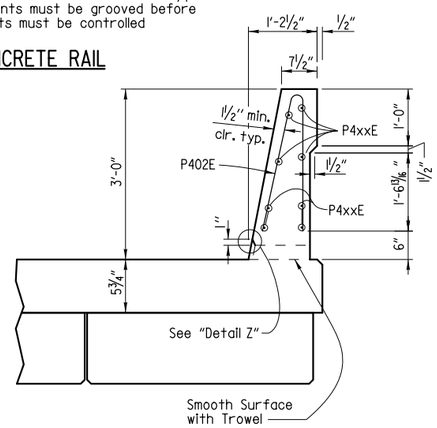
### DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE RAIL




SECTION A-A




DETAIL X



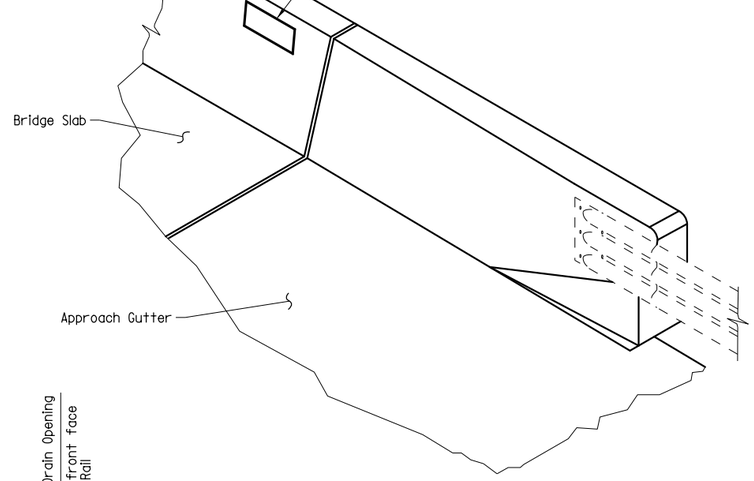

SECTION B-B

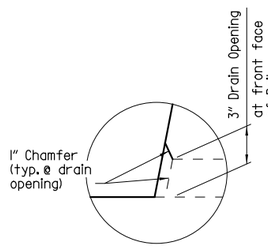
## TYPICAL FULL DEPTH JOINT

(1) P403E in Precast Beam. For Details, See Dwg. Nos. 61469 & 61470.

(2) P403E in Diaphragms over interior bents.

## TYPICAL END PANEL




DETAIL Z

THREE DIMENSIONAL VIEW OF RAIL & END BENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 5 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK RELIEF

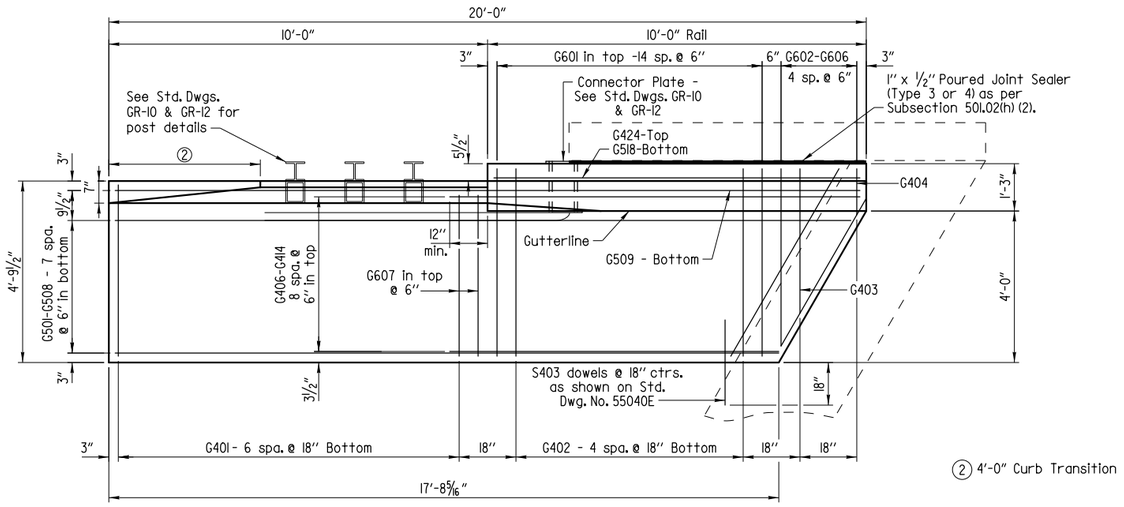
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ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

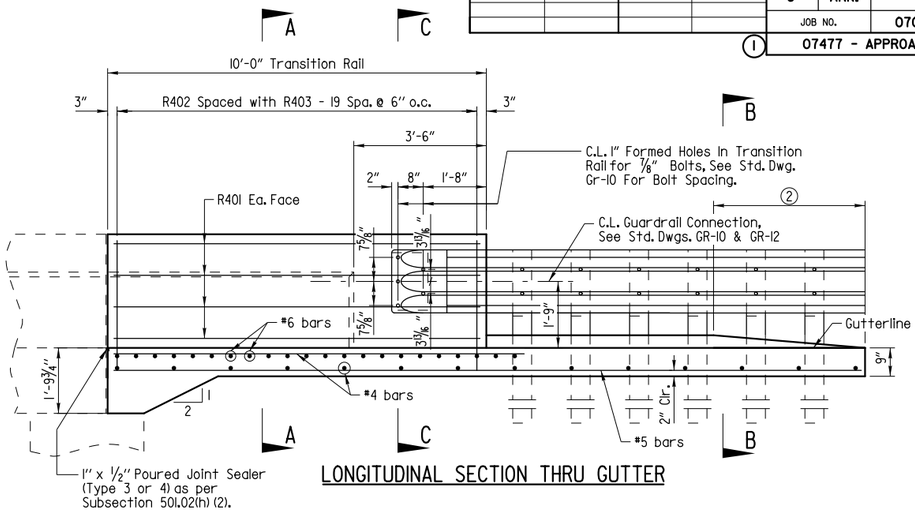
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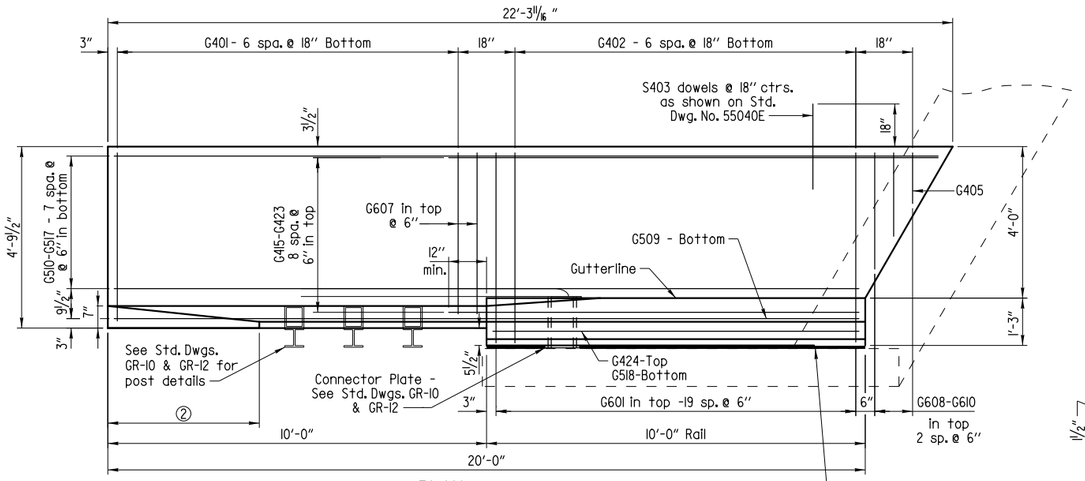
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| | | | | JOB NO. | | 070416 | 68 | 93 |
| | | | | (1) | 07477 - APPROACH GUTTERS - 61472 | | | |




(2) 4'-0" Curb Transition

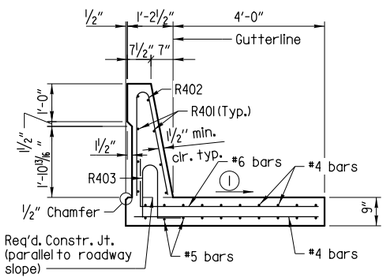



LONGITUDINAL SECTION THRU GUTTER



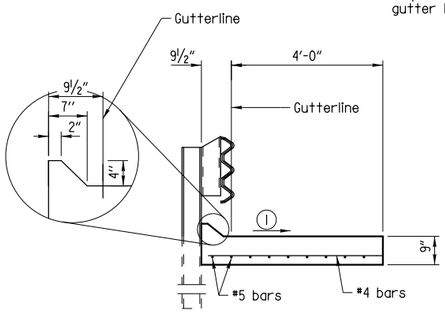

PLAN

(Shown for Begin Bridge - adjust orientation at other locations)

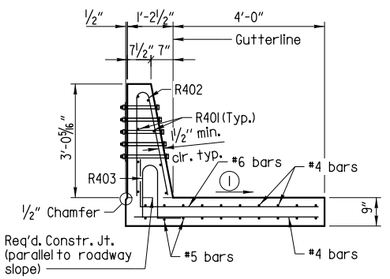



SECTION A-A

(1) Match Roadway cross-slope as required at a given approach gutter location




SECTION B-B

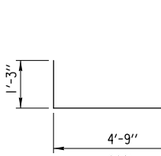



SECTION C-C

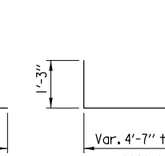
## BAR LIST FOR TYPE 2 SPECIAL APPROACH GUTTER ONE END OF BRIDGE

| MARK | NO. REQ'D. | LENGTH | PIN DIA. |
|---|---|---|---|
| G401 | 14 | 4'-5 1/2" | Str. |
| G402 | 12 | 4'-11" | Str. |
| G403 | 1 | 3'-11" | Str. |
| G404 | 1 | 1'-3" | Str. |
| G405 | 1 | 1'-3" | Str. |
| G406-G414 | 1 ea. | Var. 8'-9" to 11'-1" | Str. |
| G415 - G423 | 1 ea. | Var. 10'-10" to 13'-0" | Str. |
| G424 | 2 | 9'-8" | Str. |
| | | | |
| G501 - G508 | 1 ea. | Var. 17'-6" to 19'-8" | Str. |
| G509 | 2 | 19'-8" | Str. |
| G510 - G517 | 1 ea. | Var. 19'-8" to 21'-9" | Str. |
| G518 | 2 | 9'-8" | Str. |
| | | | |
| G601 | 35 | 5'-11" | 4 1/2" |
| G602-G606 | 1 ea. | Var. 5'-9" to 2'-4" | 4 1/2" |
| G607 | 4 | 4'-3" | Str. |
| G608-G610 | 1 ea. | Var. 1'-4" to 3'-0" | Str. |
| | | | |
| R401 | 16 | 9'-8" | Str. |
| R402 | 40 | 5'-11" | 2 1/2" |
| R403 | 40 | 3'-7" | 3", 4 3/4" |

BENDING DIAGRAMS
Dimensions are out to out of bars.




R402




R403




G601




G602-G606

## QUANTITIES FOR TYPE 2 SPECIAL APPROACH GUTTER ONE END OF BRIDGE

| Length (ft.) | Reinforcing Steel (lbs.) | Concrete (cubic yds) |
|---|---|---|
| 20'-0" | 1353 | 8.28 |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Gutters to match that used on the bridge deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# DETAILS OF TYPE 2 SPECIAL APPROACH GUTTERS BIG CREEK RELIEF

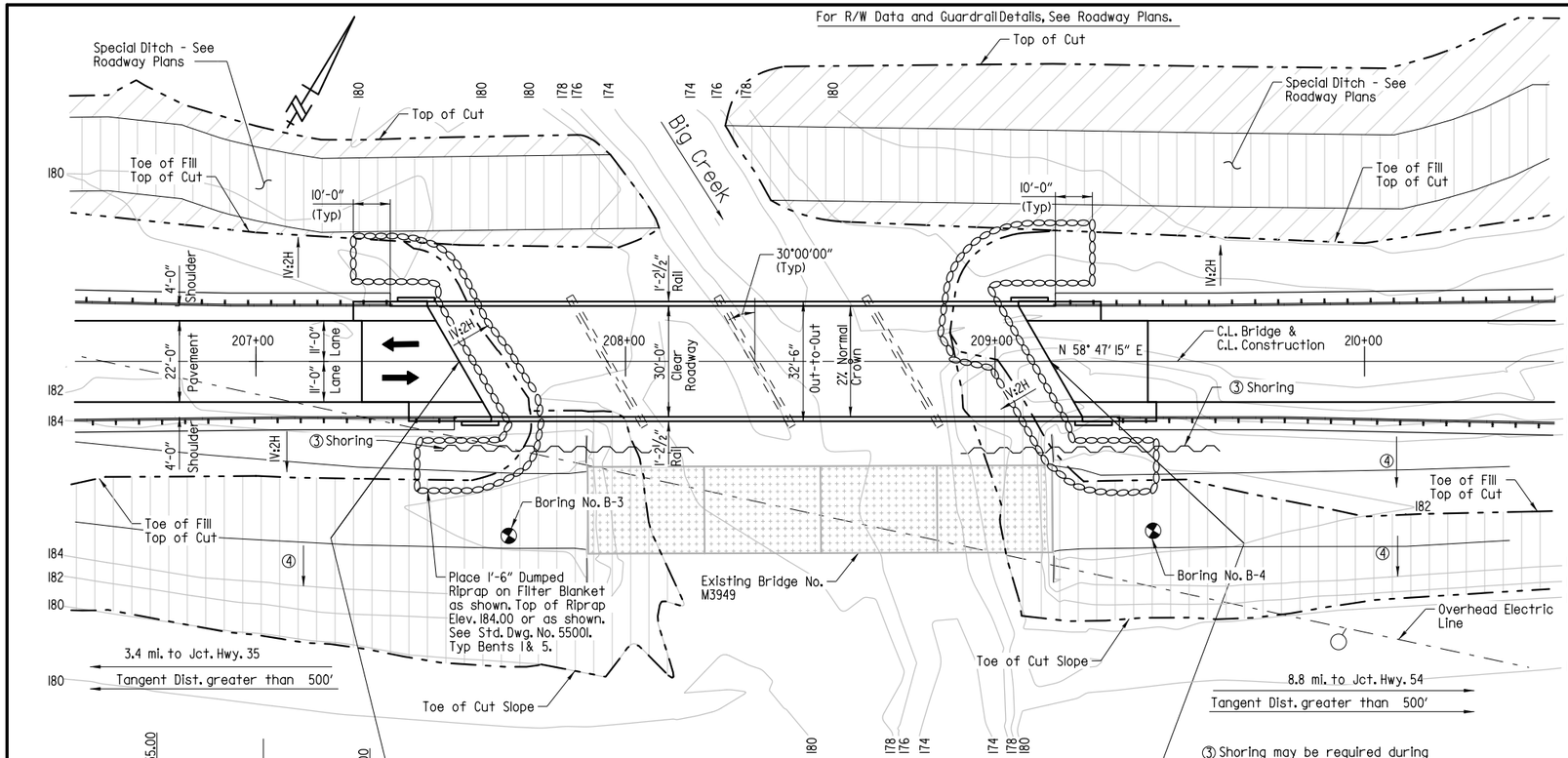
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

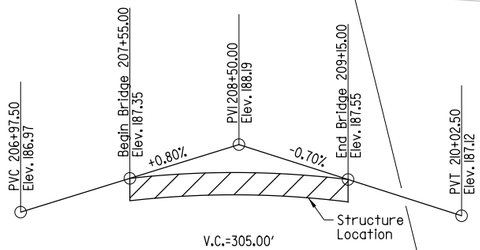
LITTLE ROCK, ARKANSAS

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## PLAN




## VERTICAL CURVE DATA

Stations and Elevations are along C.L. Bridge

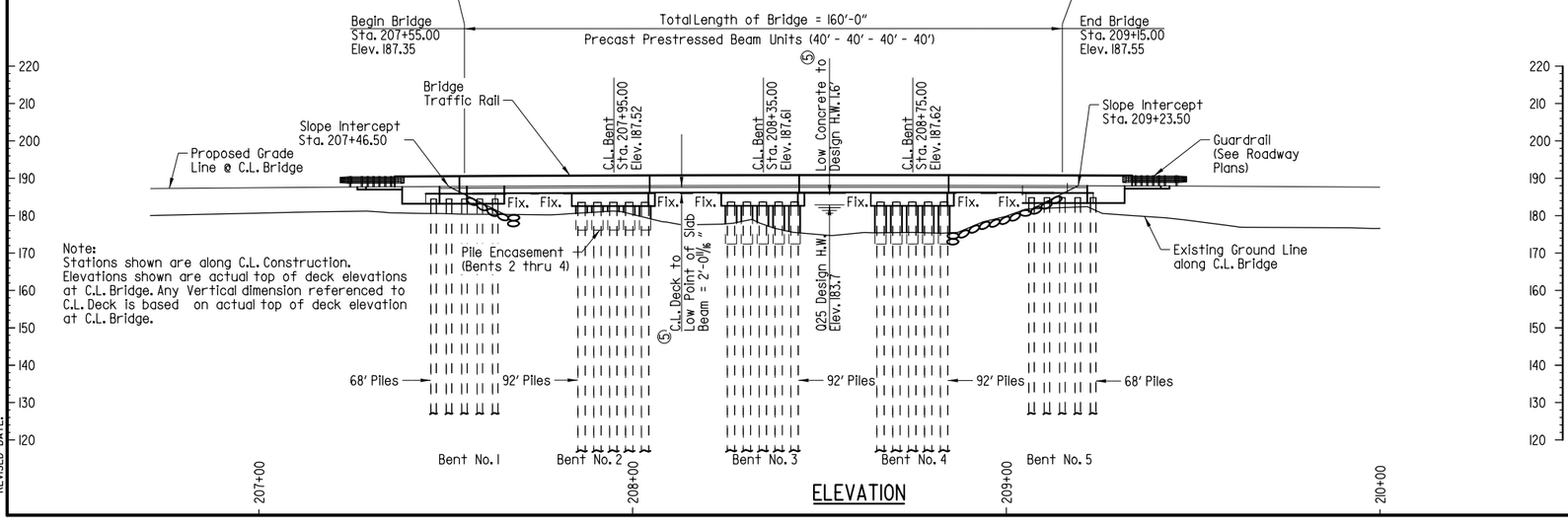
Notes:
For Soil Borings and additional General Notes, See Dwg. No. 61474.

Use Type E Approach Slab (width = 22'-0") and Type 3 Special Approach Gutters at both ends of bridge, See Std. Dwg. No. 55040E and Dwg. No. 61483, respectively.

Note:
The contractor shall remove the embankment at the existing bridge ends as shown. Cut to Elev. 180 or lower at beginning and end of bridge. See Roadway Plans for additional existing embankment excavation details.

## TABLE OF VARIABLES

| Bent No(s) | C.L. Deck at C.L. Bent to Low Side Top of Cap | Min. Pile Tip Elevation "A" |
|---|---|---|
| 1 | -------- | 156 |
| 2 | 2' - 2¾" | 145 |
| 3 | 2' - 2½" | 145 |
| 4 | 2' - 2⅜" | 145 |
| 5 | ------- | 156 |




Note:
Stations shown are along C.L. Construction. Elevations shown are actual top of deck elevations at C.L. Bridge. Any Vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge.

## ELEVATION

| 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. | | 070416 | 69 | 93 |
| | | | | (1) | | 07478 - LAYOUT - 61473 | | |

## GENERAL NOTES

BENCH MARK: 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. Unless otherwise noted, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Seventh Edition with current Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 2 $S_{DI}$ =0.179 SITE CLASS = D

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 (Prestressed Beams) | f'c = 8,000 psi |
| Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr, 60) | fy = 60,000 psi |
| Pipe Pile Grade 3, ASTM A252 | Fy = 45,000 psi |
| Prestressing Strands (AASHTO M203, Gr. 270) | fpu = 270,000 psi |

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

STEEL SHELL PILING: Piling in Bents 1 and 5 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 165 tons per pile. Piling in Bents 2 thru 4 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 310 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer to the minimum tip elevation "A" shown in the table on this drawing. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g).

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Section 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum hammer energy required to obtain the ultimate bearing capacity for all piles will be 45,000 foot pounds per blow.

PILE ENCASEMENT: Pile encasement for Bents 2 thru 4 shall extend from bottom of cap to 3' below natural ground. See Standard Drawing number 55021 for additional information.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of rails. Class I Protective Surface Treatment shall meet the requirements of Section 803.

| DETAIL DRAWINGS: | DRAWING NO(S). |
|---|---|
| End Bents | 61475 & 61476 |
| Intermediate Bents | 61477 |
| 40'-0" Precast Prestressed Beam Unit | 61478 - 61482 |
| Concrete filled Steel Shell Piles | 55021 |
| Type 3 Special Approach Gutters | 61483 |
| Type E Approach Slabs | 55040E |

## HYDRAULIC DATA

| FLOOD DESCRIPTION | FREQUENCY | ② TOTAL DISCHARGE | DISCHARGE THIS SITE | ①NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEV. WITH BACKWATER |
|---|---|---|---|---|---|
| | YEARS | CFS | CFS | FEET | FEET |
| Design | 25 | 7430 | 2400 | 182.5 | 183.7 |
| Base | 100 | 10740 | 3463 | 183.1 | 184.7 |
| Extreme | 500 | 14950 | 5142 | 183.8 | 185.8 |
| Overtopping | >500 | >500 | >500 | >500 | >500 |

① Unconstricted water surface without structure or roadway approaches.

② The total discharge includes flow at this Site and Sites 1 and 2.

⑤ Q100 backwater elevation for existing structure = 184.5 feet.

Proposed Low Bridge Chord Elevation = 185.25 and occurs at Sta. 207+47.93

Drainage area = 68.9 square miles.

# SHEET 1 OF 2
# LAYOUT OF BRIDGE
# HIGHWAY 133 OVER BIG CREEK
# BIG CREEK & RELIEF STRS. & APPRS. (S)
# CLEVELAND COUNTY
## ROUTE 133 SECTION 5
## ARKANSAS STATE HIGHWAY COMMISSION
## LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
STEPHEN F. HARPER
No. 14501

4/30/2021

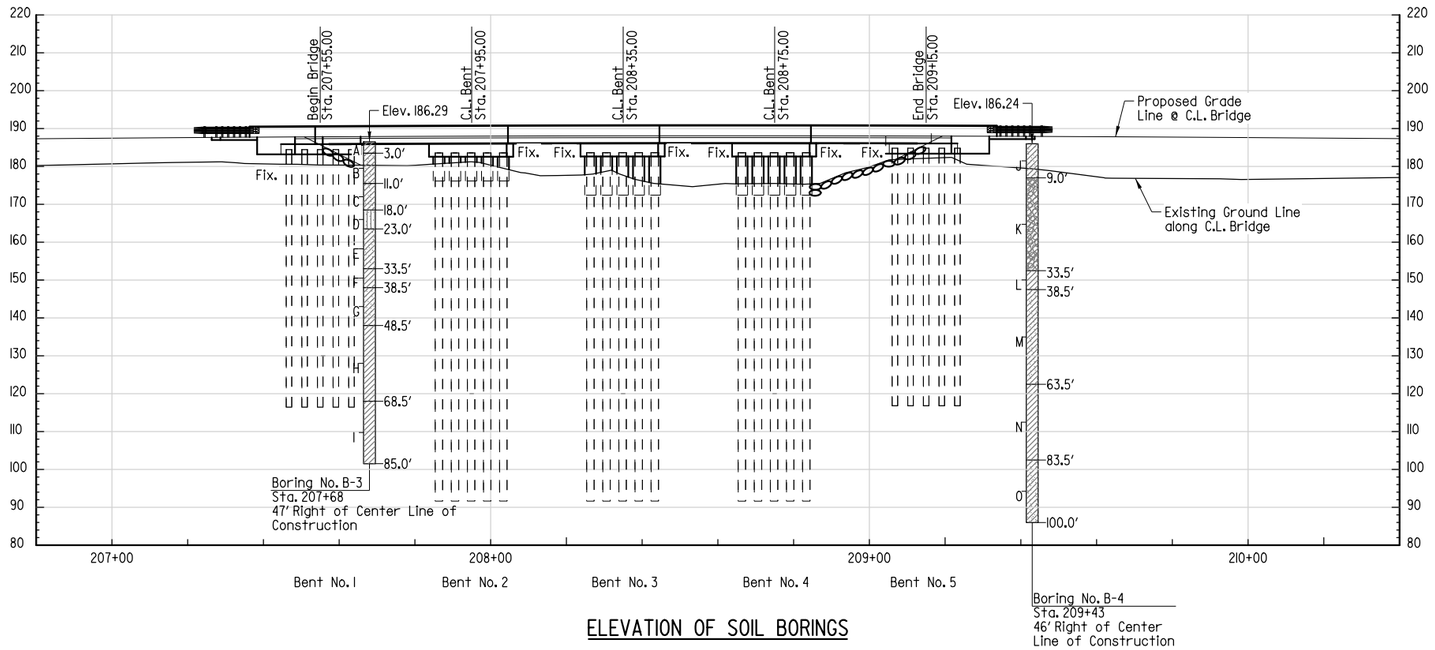
BRIDGE ENGINEER
PRINT DATE: 4/30/2021

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| DESIGNED BY: | SCR | DATE: | 04/2019 | SCALE: | 1" = 20' |
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REVISED DATE:

| 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. | | 070416 | 70 | 93 |
| | | | | 07478 - LAYOUT - 61474 | | | | |

(1)




## ELEVATION OF SOIL BORINGS

## "N" VALUES

Boring No. B-3
Sta. 207+68 - 47' Right of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=6 | 39.0 -40.0 | N=15 |
| 2.5 - 3.5 | N=9 | 44.0 -45.0 | N=14 |
| 6.0 - 7.0 | N=0 | 49.0 -50.0 | N=13 |
| 9.0 - 10.0 | N=1 | 54.0 -55.0 | N=17 |
| 14.0 - 15.0 | N=0 | 59.0 -60.0 | N=20 |
| 19.0 - 20.0 | N=22 | 64.0 -65.0 | N=17 |
| 24.0 -25.0 | N=6 | 69.0 -70.0 | N=21 |
| 29.0 -30.0 | N=19 | 74.0 -75.0 | N=23 |
| 34.0 -35.0 | N=13 | 79.0 -80.0 | N=22 |
| | | 84.0 -85.0 | N=23 |

Boring No. B-4
Sta. 209+43 - 46' Right of Center Line of Construction

| | | | |
|---|---|---|---|
| 1.0 - 2.0 | N=12 | 49.0 -50.0 | N=16 |
| 2.5 - 3.5 | N=18 | 54.0 -55.0 | N=17 |
| 4.0 - 5.0 | N=11 | 59.0 -60.0 | N=24 |
| 5.5 - 6.5 | N=13 | 64.0 -65.0 | N=20 |
| 9.0 - 10.0 | N=4 | 69.0 -70.0 | N=24 |
| 19.0 - 20.0 | N=14 | 74.0 -75.0 | N=28 |
| 24.0 -25.0 | N=13 | 79.0 -80.0 | N=23 |
| 29.0 -30.0 | N=25 | 84.0 -85.0 | N=34 |
| 34.0 -35.0 | N=16 | 89.0 -90.0 | N=23 |
| 39.0 -40.0 | N=15 | 94.0 -95.0 | N=32 |
| 44.0 -45.0 | N=16 | 99.0 -100.0 | N=32 |

## BORING LEGEND

A- ASPHALT CONCRETE - 2 inches, FILL- SANDY LEAN CLAY WITH GRAVEL (CL), reddish-brown
B- LEAN CLAY WITH SAND (CL), gray, very soft to medium stiff
C- SANDY LEAN CLAY (CL), trace gravel, grayish brown, very soft
D- SILTY SAND (SM), fine grained, brownish gray, medium dense
E- SANDY LEAN CLAY (CL), trace gravel, brownish gray, medium stiff to very stiff
F- FAT CLAY (CH), trace sand, brownish gray, stiff
G- FAT CLAY WITH SAND (CH), brownish gray, stiff to very stiff
H- FAT CLAY (CH), trace sand, gray and brown, stiff to very stiff
I- FAT CLAY (CH), with sand seams, gray and brownish gray, very stiff
J- ASPHALT CONCRETE - 2.5 inches, AGGREGATE BASE COURSE, FILL- CLAYEY SAND (SC), trace gravel and reddish-brown and gray
K- CLAYEY SAND WITH GRAVEL (SC), fine grained, brown and gray, loose to medium dense
L- FAT CLAY (CH), trace sand, gray, very stiff
M- FAT CLAY WITH SAND (CH), brownish gray, very stiff
N- FAT CLAY (CH), trace sand, gray, very stiff
O- FAT CLAY WITH SAND (CH), brownish gray, very stiff to hard

## GENERAL NOTES - CONTINUED

EXISTING BRIDGE: Existing Bridge No. M3949 (Log Mi. 3.45) is 25.1' wide (23.6' clear roadway) and 126.0' long and consists of a concrete deck on steel I-beam spans (4 spans total) supported by timber pile bents. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. M3949 in accordance with Section 205. The Nine beams in best condition (to be identified by the Engineer) will be retained and loaded onto ARDOT equipment and the remaining material from the existing bridge shall become the property of the Contractor.

The Contractor shall notify the Department prior to removal to determine the specific pieces deemed salvageable. The Contractor shall provide temporary storage and on-site loading onto ARDOT equipment for removal of salvage items from the site. The work shall be considered incidental to the item "Removal of Existing Bridge Structure (Site No. 3)".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 133 OVER BIG CREEK
BIG CREEK & RELIEF STRS. & APPRS. (S)
CLEVELAND COUNTY
ROUTE 133 SECTION 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

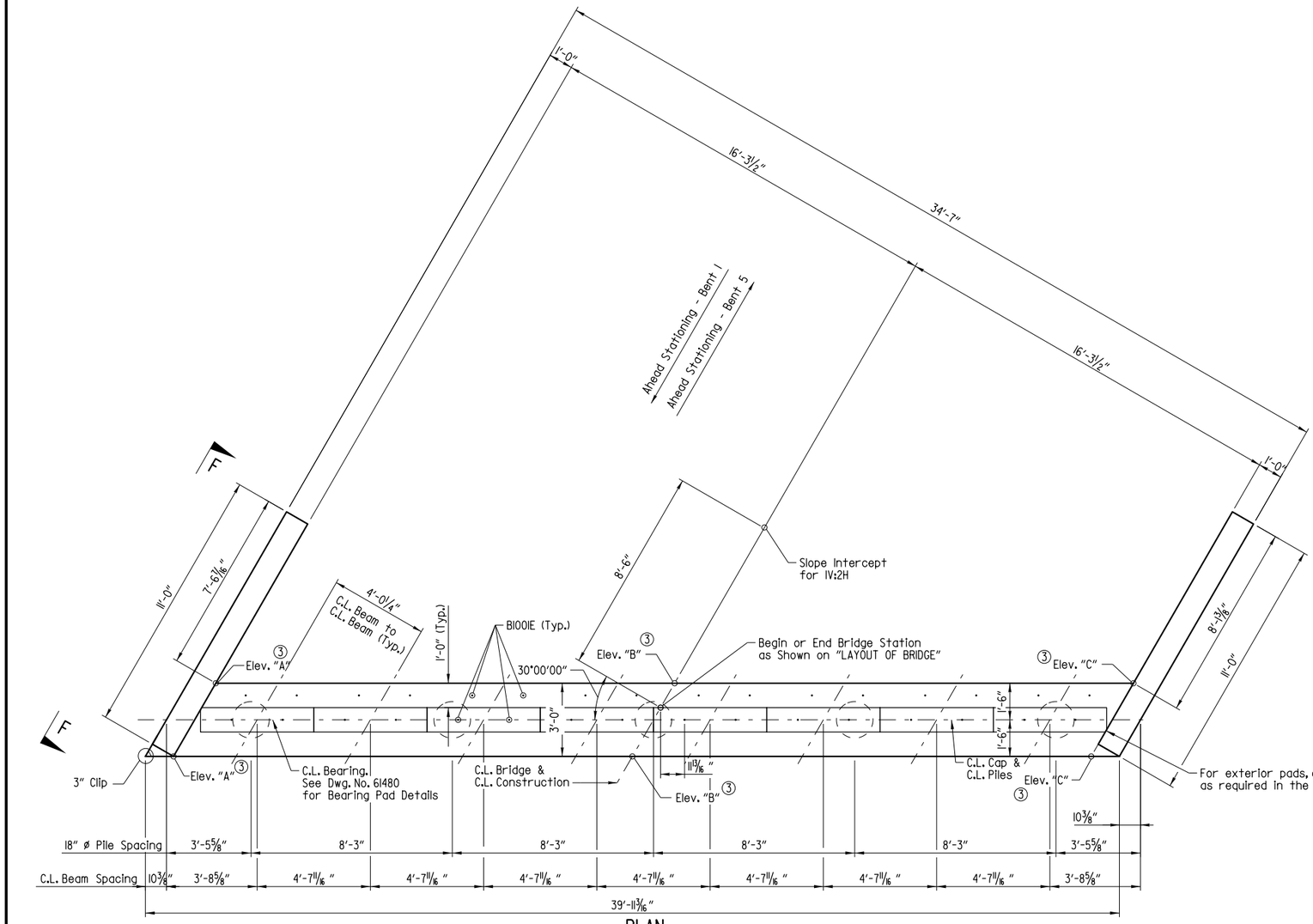
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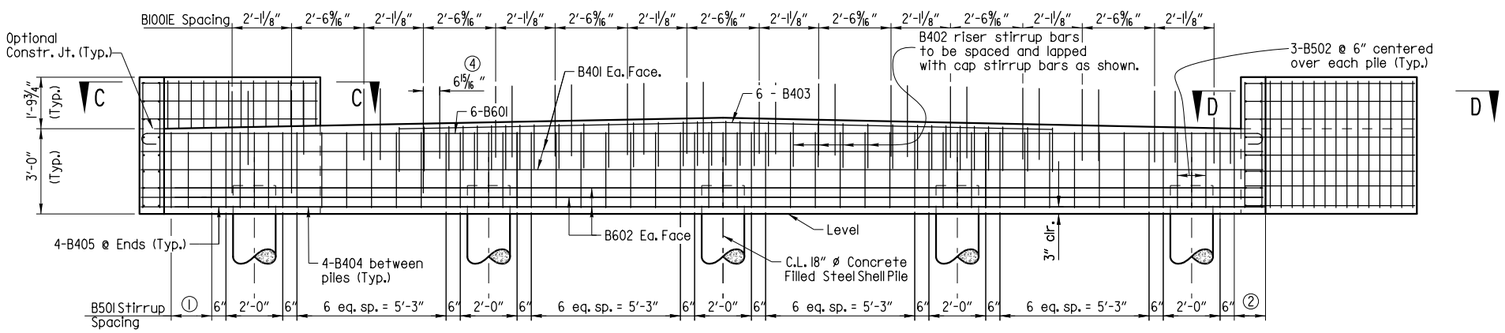
| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 71 | 93 |

(1) 07478 - END BENT DETAILS - 61475




PLAN
⅜" = 1'-0"

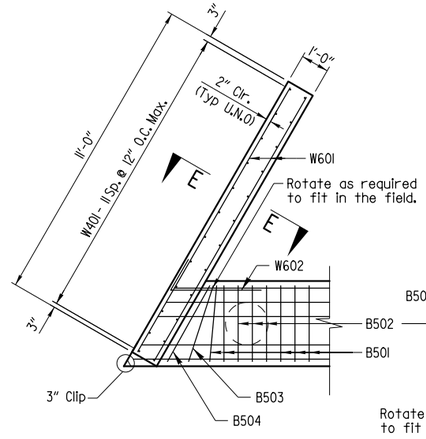
④ B1001E offset between Front and Back Face due to skew (Typ.)



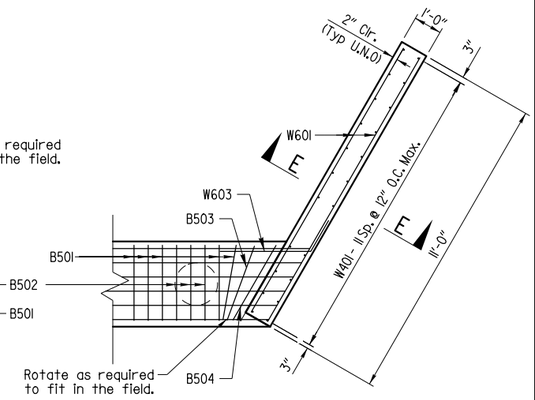

ELEVATION
(Bent 1- Looking Back)
(Bent 5 - Looking Ahead)
⅜" = 1'-0"

① See "VIEW C-C" for bar details.

② See "VIEW D-D" for bar details.




VIEW C-C
⅜" = 1'-0"



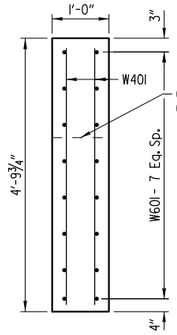

VIEW D-D
⅜" = 1'-0"

## TABLE OF VARIABLES

| Location | Bent 1 | Bent 5 |
|---|---|---|
| Elev. "A" | 185.26 | 185.43 |
| Elev. "B" | 185.54 | 185.74 |
| Elev. "C" | 185.16 | 185.38 |

③ Top of Cap Elevations.

Note :
For "SECTION A-A", "SECTION B-B" and "VIEW F-F", See Dwg. No. 61476.




SECTION E-E
¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 1 OF 2

## DETAILS OF END BENTS
## BIG CREEK
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

| | | | | | |
|---|---|---|---|---|---|
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| CHECKED BY: | SFH | DATE: | 01/2020 | | |
| DESIGNED BY: | SCR | DATE: | 01/2020 | SCALE: | As Shown |
| BRIDGE NO. | 07478 | | | DRAWING NO. | 61475 |

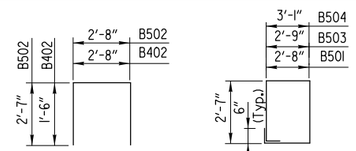
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REVISED DATE:

| 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. | | 070416 | 72 | 93 |
| | | | | (1) 07478 - END BENTS - 61476 | | | | |

## BAR LIST-PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. |
|---|---|---|---|
| B401 | 4 | 39'-7" | Str. |
| B402 | 35 | 5'-6" | 2" |
| B403 | 6 | 23'-0" | Str. |
| B404 | 16 | 6'-5" | Str. |
| B405 | 8 | 2'-2" | Str. |
| | | | |
| B501 | 44 | 11'-0" | 2½" |
| B502 | 15 | 7'-7½" | 2½" |
| (1) B503 | 2 | 11'-2" | 2½" |
| (1) B504 | 2 | 11'-10" | 2½" |
| | | | |
| B601 | 6 | 40'-11" | 4½" |
| B602 | 6 | 39'-7" | Str. |
| | | | |
| B100IE | 32 | 2'-6" | Str. |
| | | | |
| W401 | 48 | 4'-5" | Str. |
| W601 | 32 | 10'-8" | Str. |
| W602 | 5 | 4'-4" | 4½" |
| W603 | 5 | 4'-6" | 4½" |

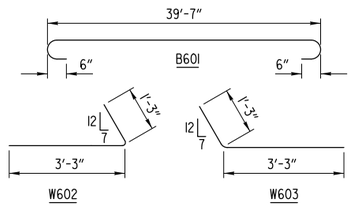
BENDING DIAGRAMS
Dimensions are out to out of bars.




B402 & B502




B501, B503 & B504




W602 W603

## GENERAL NOTES

Concrete in the cap shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi., and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

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.

For additional information, see "LAYOUT OF BRIDGE".

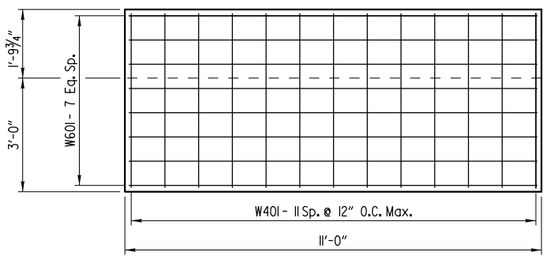
All bars designated with an "E" suffix are to be epoxy coated.

For Concrete Filled Steel Shell Piles See Std Dwg. No. 55021.

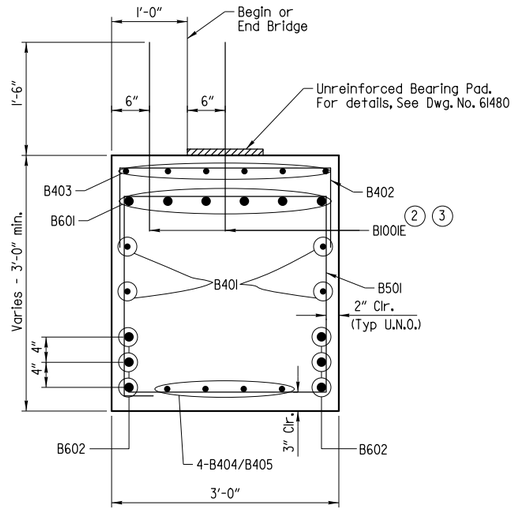
(1) See "VIEW C-C" and "VIEW D-D" on Dwg. No. 61475 for additional details.

(2) See "PLAN" and "ELEVATION" on Dwg. No. 61475 for plan layout, spacing and additional details.

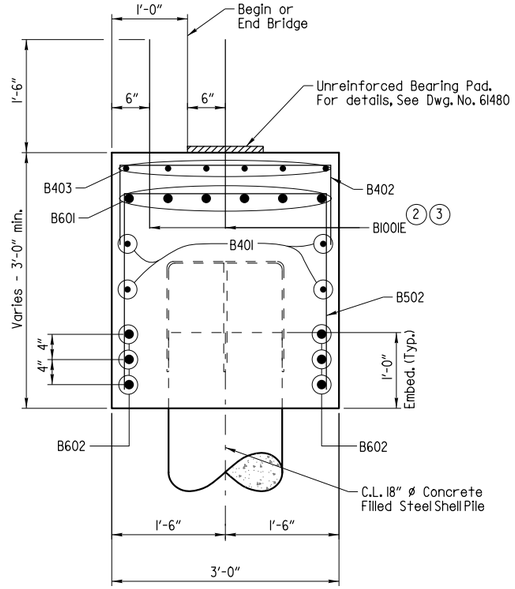
(3) Dowel bars B100IE shall be drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shall be in accordance with the manufacturer's recommendations. Dowel bars B100IE to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.




VIEW F-F
½" = 1'-0"




SECTION A-A
1" = 1'-0"




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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 2 OF 2
## DETAILS OF END BENTS
## BIG CREEK
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

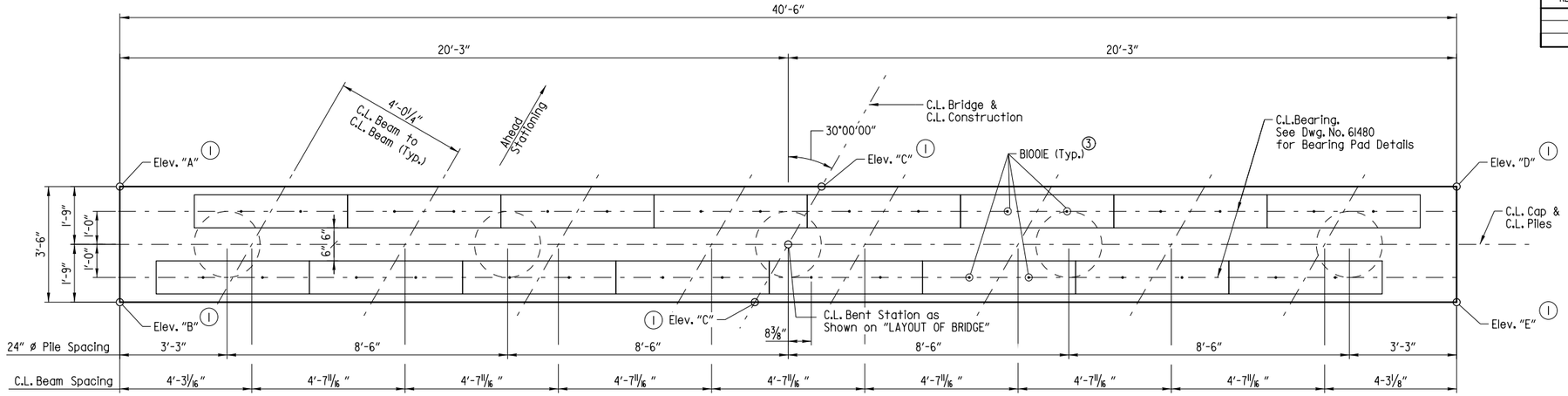
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BRIDGE NO. 07478 DRAWING NO. 61476

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REVISED DATE:

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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 73 | 93 |

(1) 07478 - INTERMEDIATE BENTS - 61477

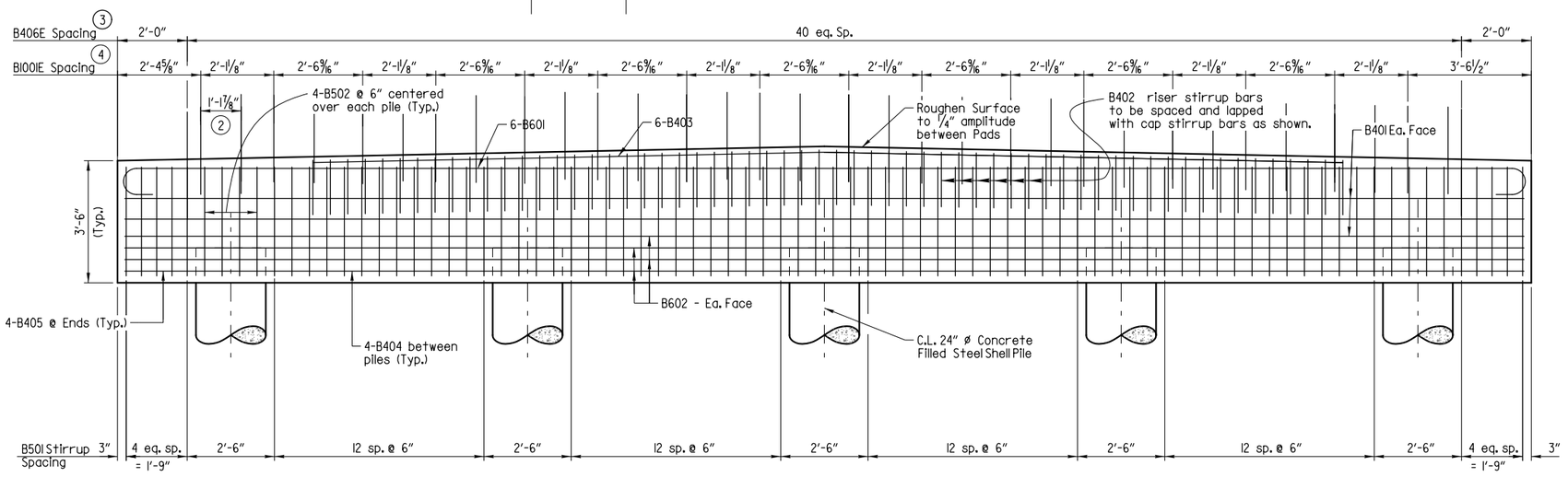



PLAN
1/2" = 1'-0"

(2) B1001E Spacing (Typ.) Between Front and Back Face

(3) B406E Shall be Positioned Perpendicular to C.L. Cap

B A




ELEVATION
(Looking Ahead)
1/2" = 1'-0"

B A

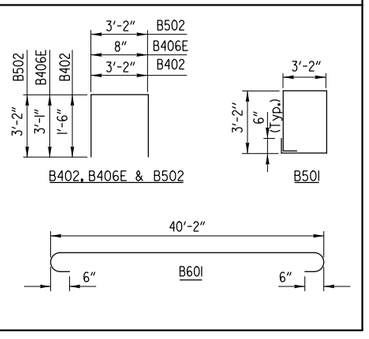
## TABLE OF VARIABLES

| Location | Bent 2 | Bent 3 | Bent 4 |
|---|---|---|---|
| Elev. "A" | 185.29 | 185.40 | 185.44 |
| Elev. "B" | 185.33 | 185.44 | 185.47 |
| Elev. "C" | 185.71 | 185.80 | 185.81 |
| Elev. "D" | 185.39 | 185.46 | 185.46 |
| Elev. "E" | 185.36 | 185.44 | 185.42 |

(1) Top of Cap Elev.

## BAR LIST-PER BENT

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars. |
|---|---|---|---|---|
| B401 | 4 | 40'-2" | Str. | |
| B402 | 60 | 6'-0" | 2" | |
| B403 | 6 | 29'-6" | Str. | |
| B404 | 16 | 6'-2" | Str. | |
| B405 | 8 | 1'-11" | Str. | |
| B406E | 41 | 6'-8" | 2" | |
| | | | | |
| B501 | 62 | 13'-2" | 2 1/2" | |
| B502 | 20 | 9'-3 1/2" | 2 1/2" | |
| | | | | |
| B601 | 6 | 41'-6" | 4 1/2" | |
| B602 | 8 | 40'-2" | Str. | |
| | | | | |
| B1001E | 32 | 2'-6" | Str. | |
| | | | | |




## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

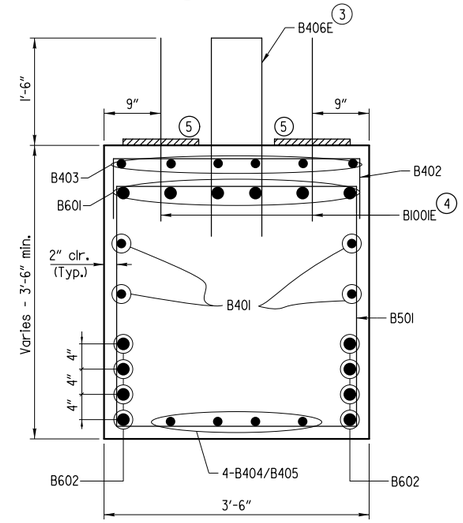
All reinforcing steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Grade 60 (yield strength = 60,000 psi.).

For additional information, see "LAYOUT OF BRIDGE".

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

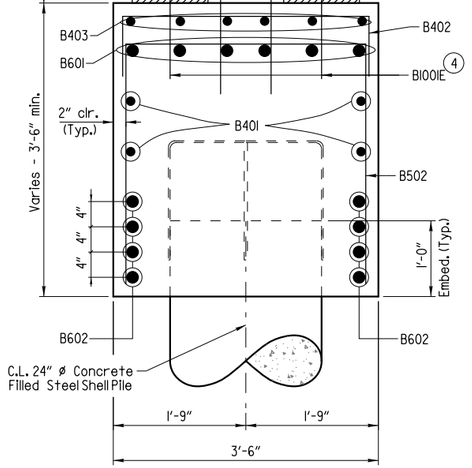
For details of Concrete Filled Steel Shell Piles, See Std. Dwg. No. 55021.

(4) Dowel bars B1001E shall be drilled and grouted into the cap with an approved epoxy. Embedment shown is approximate. Actual embedment and hole size shall be in accordance with the manufacturer's recommendations. Dowel bars B1001E to project thru bearing pads 18" into preformed holes in prestressed beams. Preformed holes in prestressed beams to be filled with an approved non-shrink grout.




(5) Unreinforced Bearing Pad. For details, See Dwg. No. 61480

SECTION A-A
1" = 1'-0"




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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
STEPHEN F. HARPER
No. 14501

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# DETAILS OF INTERMEDIATE BENTS BIG CREEK

ROUTE SECTION

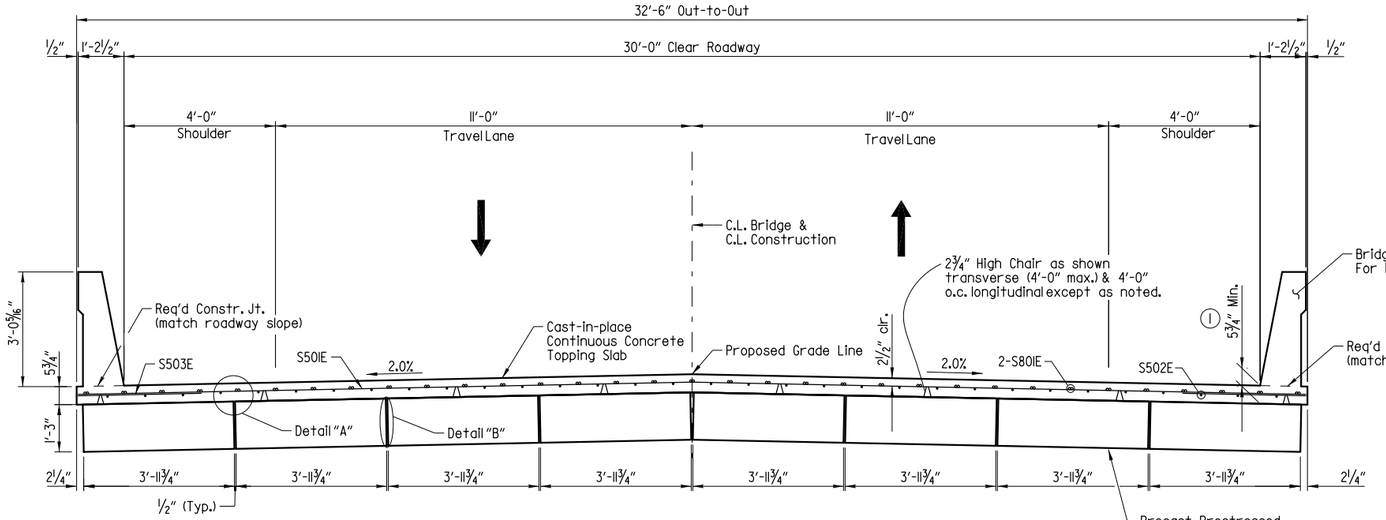
## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

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| CHECKED BY: | SFH | DATE: | 01/2020 | | |
| DESIGNED BY: | SCR | DATE: | 01/2020 | SCALE: | As Shown |
| BRIDGE NO. | 07478 | | | DRAWING NO. | 61477 |

Leonard.Speed 4/30/2021 2:20:20 PM
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 74 | 93 |
| | | | | (1) 07478 - 40'-0" PRESTR. BEAM UNIT - 61478 | | | | |




## TYPICAL SECTION

(Looking Ahead)
1/2" = 1'-0"

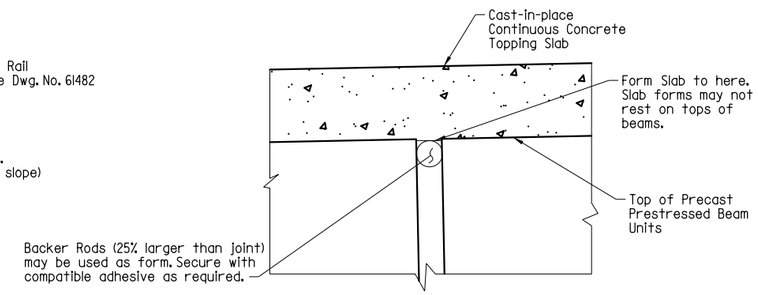
Note:
The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(1) Tolerance: Minus = 1/4"; Plus = 1/2"

Slab Reinforcing:

Transverse: S501E @ 12" o.c.
S503E @ 12" o.c. under each rail bundled with S501E

Longitudinal: S502E placed as shown
S801E placed as shown over int. supports




## DETAIL A

No Scale

Note:
Backer Rods and Preformed Joint filler shall not be paid for directly, but shall be considered subsidiary to the Item "Prestressed Concrete Beams (Non - Voided 15" x 47 3/4")."

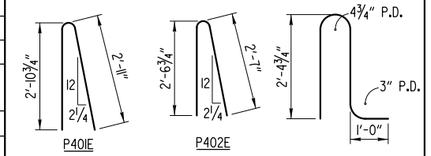
## BAR LIST

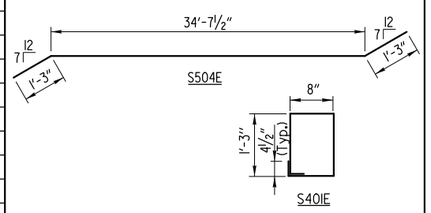
| MARK | NO. REQ'D. | LENGTH | P.D. |
|---|---|---|---|
| S40IE | 12 | 37'-2" | Str. |
| | | | |
| S50IE | 143 | 32'-2" | Str. |
| S502E | 96 | 54'-10" | Str. |
| S503E | 318 | 3'-3" | Str. |
| S504E | 2 | 37'-2" | 3 3/4" |
| S505E to S52IE | 2 each | Var 2'-0" to 29'-9" | Str. |
| | | | |
| S80IE | 198 | 27'-0" | Str. |
| | | | |
| P40IE | 576 | 5'-11" | 2 1/2" |
| P402E | 64 | 5'-3" | 2 1/2" |
| P403E | 12 | 5'-10 3/4" | 3", 4 3/4" |
| P404E | 64 | 5'-6" | Str. |
| P405E | 128 | 9'-8" | Str. |
| P406E | 64 | 19'-8" | Str. |
| | | | |
| | | | |
| | | | |

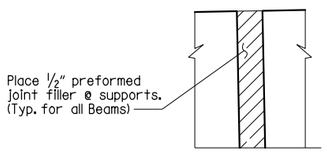
BENDING DIAGRAMS

Note: All bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

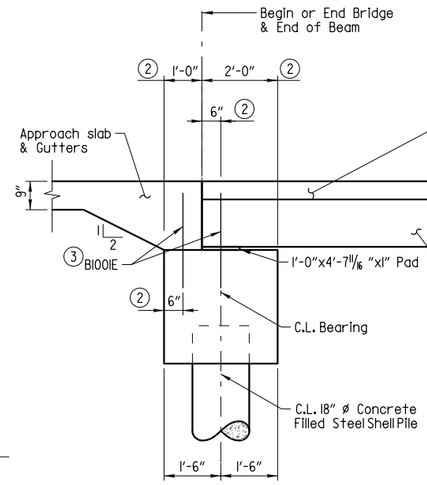


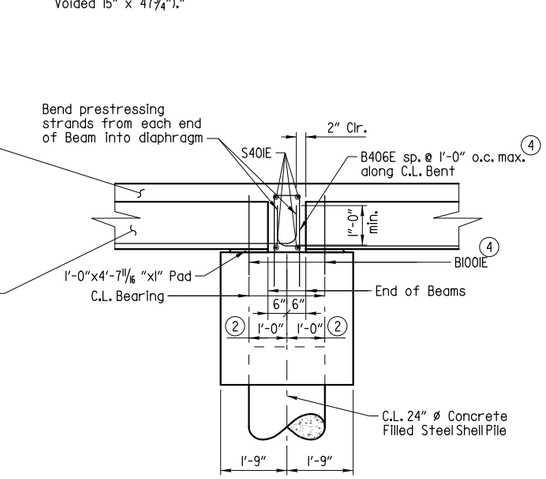

## DETAIL B

No Scale




## ELEVATION VIEW AT END BENT

1/2" = 1'-0"




## ELEVATION VIEW AT INTERMEDIATE BENT

1/2" = 1'-0"

Note:
After all the precast prestressed beam units are in their final position, and prior to placing the continuous cast-in-place concrete deck, dowel bars shall be grouted in placed using a QPL approved non-shrink grout that completely fills the holes. Grout shall not be paid for directly, but shall be considered subsidiary to the Item "Class S(AE) Concrete-Bridge."

(2) Measured perpendicular to C.L. Bearing

(3) See End Bent details on Dwg. No. 61476 for additional details.

(4) See Intermediate Bent details on Dwg. No. 61477 for additional details.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

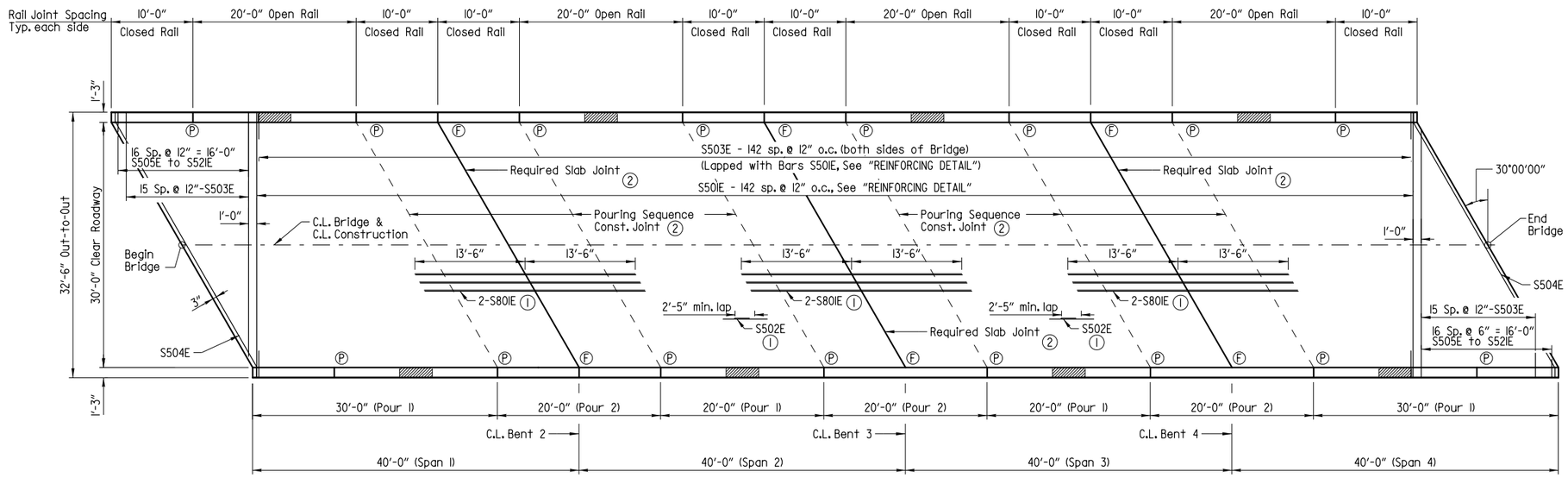
# SHEET 1 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: SCR DATE: 12/2019
CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 12/2019
BRIDGE NO. 07478
FILENAME: B070416X3_SXI.dgn
SCALE: As Shown
DRAWING NO. 61478

Sharath.Ranganathy 9/2021 10:44:44
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REVISED DATE:

| 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. | | 070416 | 75 | 93 |
| | | | | (1) | 07478 - 40'-0" PRESTR. BEAM UNIT - 61479 | | | |




## REINFORCING PLAN AND POURING SEQUENCE

1/8"= 1'-0"

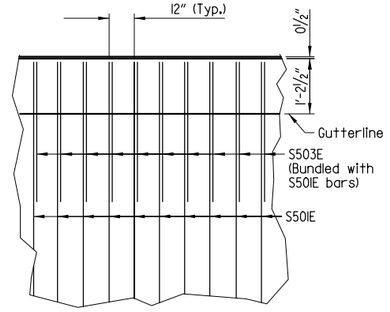
Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the rail. Concrete Diaphragms at Bents 2, 3 & 4 shall be poured monolithically with the deck. 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 shown. The topping slab shall not be poured prior to 90 days following release of the prestressing strands.

(P) Partial depth rail joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth rail joint at this location. (Stop 4" above top of slab)

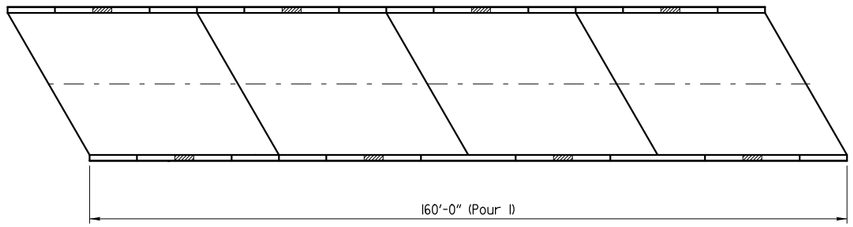
(1) Placed as shown in "TYPICAL SECTION", See Dwg. No. 61478.

(2) Align with rail open joint unless noted otherwise.
See "TRANSVERSE SLAB JOINT DETAIL".




## REINFORCING DETAIL

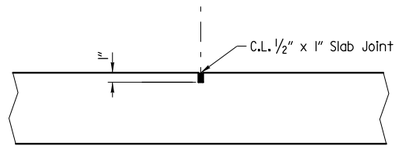
No Scale




## ALTERNATE POURING SEQUENCE

1/16"= 1'-0"

Note:
Entire slab can be placed at once as shown. 72 hours shall elapse between the completion of the entire deck and the pouring of the rail. Concrete diaphragms at Bents 2, 3 & 4 shall be placed monolithically with the deck. 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 shown.




Use Type 3 or 4 Joint Sealer, See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "Class S(AE) 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 rail. Slab joints shall be installed before the rail 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.

## TRANSVERSE SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

7/13/2021

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 2 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK

ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION

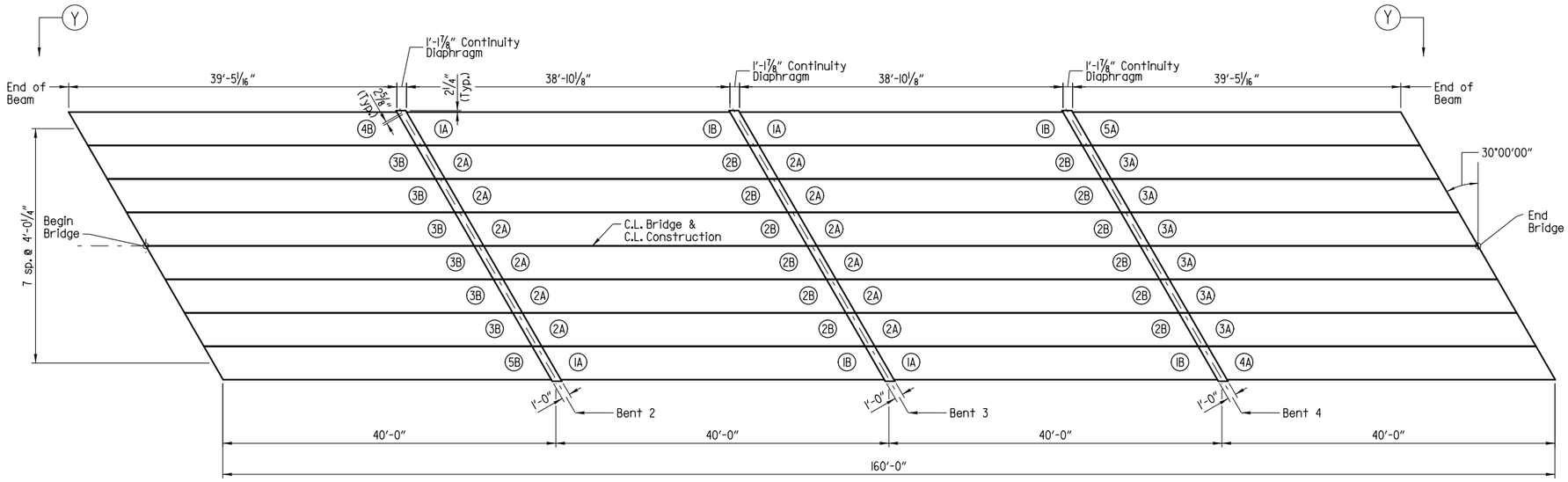
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 01/2020
DESIGNED BY: SCR DATE: 01/2020 SCALE: As Shown
BRIDGE NO. 07478 DRAWING NO. 61479

Sharath.Ranganath 7/9/2021 10:44:44
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REVISED DATE:

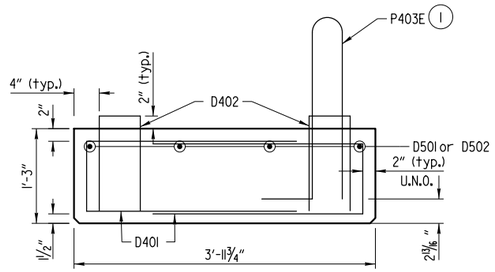
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|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 76 | 93 |

(1) 07478 - 40'-0" PRESTR. BEAM UNIT - 61480




## FRAMING PLAN

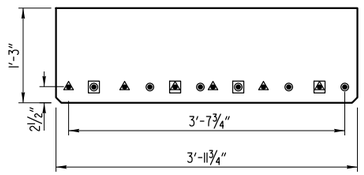
1/8"= 1'-0"




## REBAR PATTERN

1" = 1'-0"

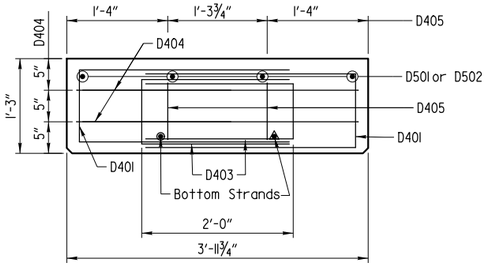
(1) For Exterior Beams only (1, 4, & 5).




## STRAND PATTERN

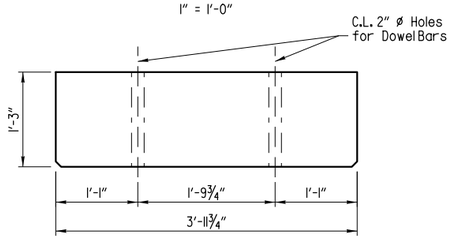
12 - 0.6" ø 270 ksi Low-Relaxation Strands
(Looking Forward)
1" = 1'-0"

Note:
△ Denotes strands to project from beam ends (XA)
○ Denotes strands to project from beam ends (XB)
□ Debond these strands for 3'-0" at Beam ends.



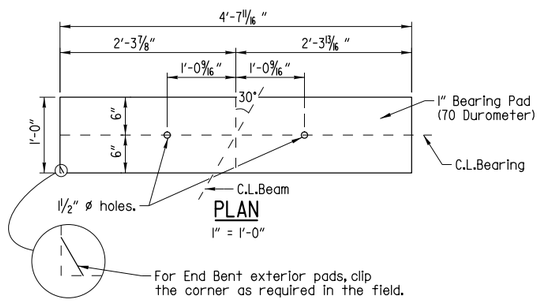

## REBAR PATTERN @ END

D402 not shown for clarity
1" = 1'-0"




## SECTION @ END SHOWING FORMED HOLES

1" = 1'-0"




## PLAN

1" = 1'-0"

## UNREINFORCED BEARING PAD DETAILS

Unreinforced bearing pads shall meet the requirements of Section 808 and the hardness shall be 70 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S (AE) Concrete-Bridge".

## GENERAL NOTES

Pretensioning steel shall be 0.6" diameter Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

Prestressing strands and steel reinforcing bars in the beam will not be paid for directly, but will be subsidiary to the item "Prestressed Concrete Beams" (Non-Voided 15" x 47 3/4")

All beams shall be non-voided 15"x47 3/4" rectangular beams as shown on the details. Chamfer all exposed corners to 3/4".

All beams shall be cast in concrete floored pallets and in metal forms.

All work and materials shall be specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 8,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6" diameter strand shall be 43,943 pounds except as noted. Transfer of this tensioning load to the beam shall not be done until the compressive strength of the concrete is 6,000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The top of the beam shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beam length shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening, creep and shrinkage.

Exposed steel at begin and end bridge shall be protected against corrosion after cutting strands by a coating of two layers of zinc-rich paint.

Extreme care shall be exercised in handling and moving Precast Prestressed Concrete Beams. Beams must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the beam. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposed will not be permitted.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the beams.

The Contractor may submit alternate strand patters with design calculations for review and approval in accordance with Subsection 802.22. except that only 0.6" diameter strands shall be allowed.

Reinforcing steel shall be AASHTO M 31 or M 322 type A, Grade 60 fy = 60,000 psi with Mill Test Reports.

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be submitted to the engineer and approval shall be secured before fabrication can begin.

All steel projecting from beam ends at bents 1 & 5 shall be cut flush and painted with two layers of zinc rich paint.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# SHEET 3 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK
ROUTE SECTION

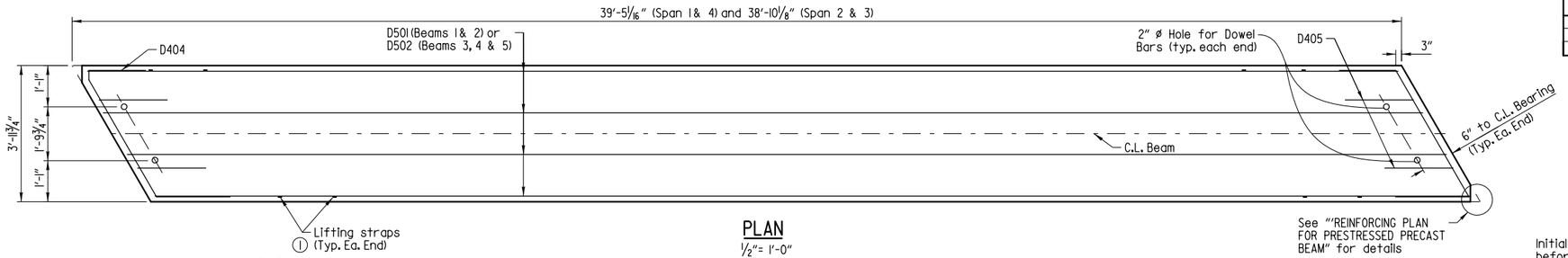
## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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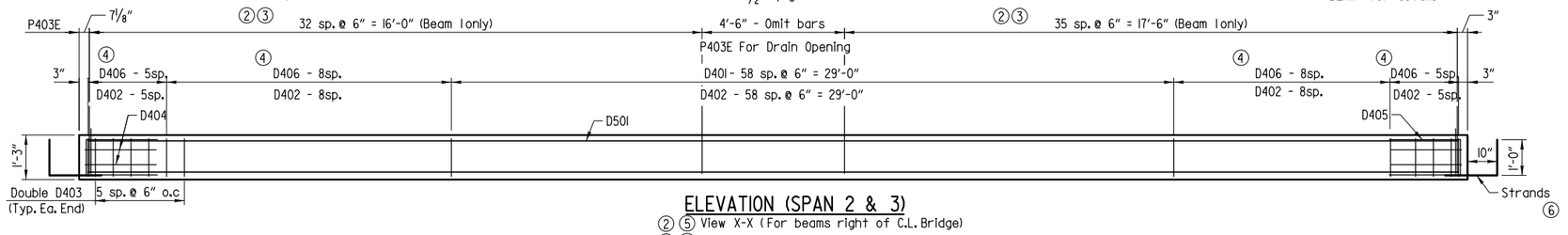
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| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070416 | 77 | 93 |

(1) 07478 - 40'-0" PRESTR. BEAM UNIT - 61481



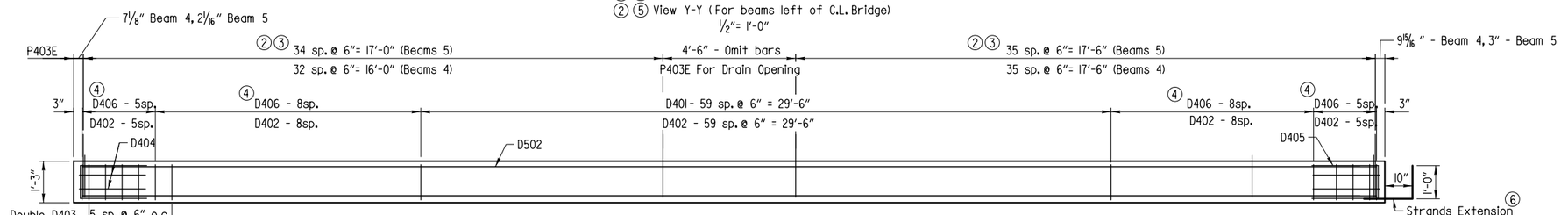

## PLAN

1/2"= 1'-0"




## ELEVATION (SPAN 2 & 3)

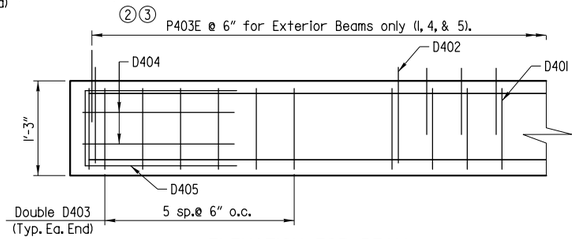
(2)(5) View X-X (For beams right of C.L. Bridge)
(2)(5) View Y-Y (For beams left of C.L. Bridge)
1/2"= 1'-0"




## ELEVATION (SPAN 1& 4)

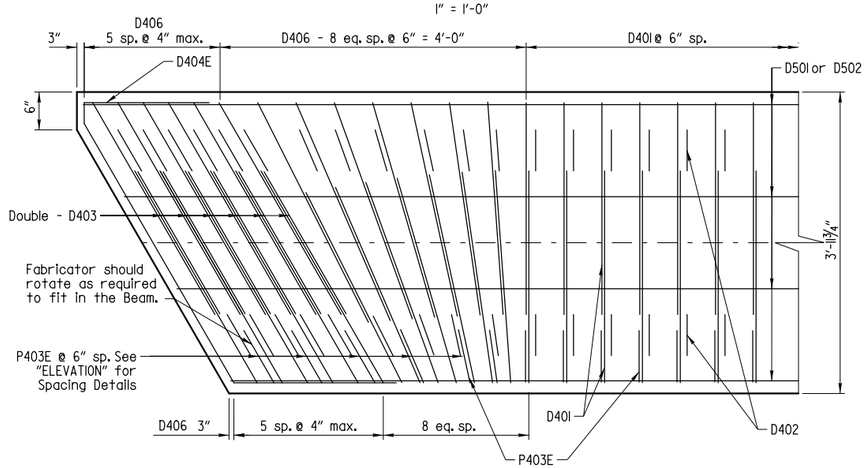
(2)(5) View X-X (For beams right of C.L. Bridge)
(2)(5) View Y-Y (For beams left of C.L. Bridge)
1/2"= 1'-0"

(1) Location to be determined by Fabricator. (Typ. Ea. End)
(2) P403E bars are for Exterior Beams only. For Details, See Dwg. No. 61482. Measured along outside edge of exterior beams. Lap with Bars P401E as show on Dwg. No. 61482.
(3) For Beam locations, See Framing Plan in Dwg. No. 61480.
(4) For D406 Spacings, See "REINFORCING PLAN FOR PRESTRESSED PRECAST BEAM".
(5) For "VIEW X-X" & "VIEW Y-Y", See Framing Plan in Dwg. No. 61480.
(6) Strand extension measured perpendicular to skewed beam end.




## ELEVATION FOR BEAM

1" = 1'-0"

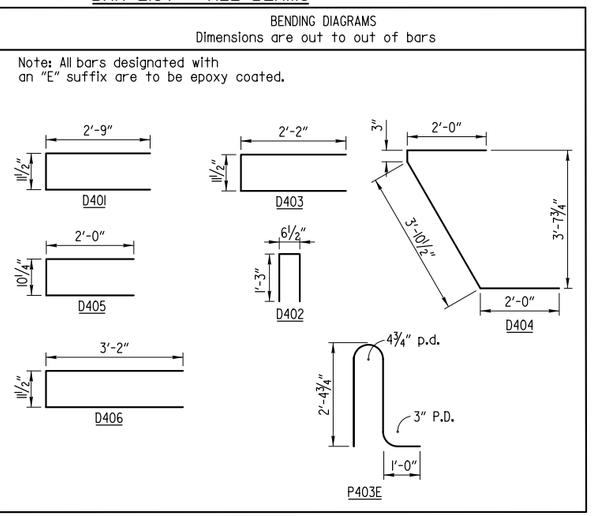



## REINFORCING PLAN FOR PRESTRESSED PRECAST BEAM

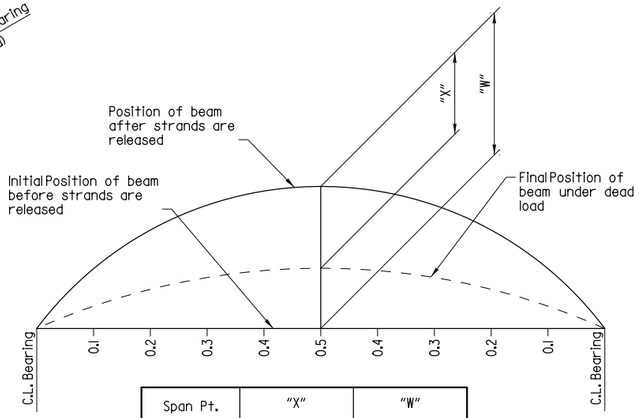
1" = 1'-0"

## BAR LIST - ALL BEAMS

| MARK | NO. REQ'D. | LENGTH | PIN DIA. | BENDING DIAGRAMS Dimensions are out to out of bars |
|---|---|---|---|---|
| D401 | 3808 | 6'-3 1/2" | 2" | Note: All bars designated with an "E" suffix are to be epoxy coated. |
| D402 | 5472 | 2'-10 1/2" | 2" | |
| D403 | 768 | 5'-1 1/2" | 2" | |
| D404 | 128 | 7'-9" | 2" | |
| D405 | 128 | 4'-8 1/4" | 2" | |
| (4) D406 | 1792 | 7'-1 1/2" | 2" | |
| D501 | 64 | 38'-6" | Str. | |
| D502 | 64 | 39'-1" | Str. | |
| (2) P403E | 556 | 5'-10 3/4" | 3", 4 3/4" | |




Note: All bars in this list shall be subsidiary to the item "SP Prestressed Concrete Beams" (Non-Voided 15" x 47 3/4").




| Span Pt. | "X" | "W" |
|---|---|---|
| C.L. Bearing | 0.000 | 0.000 |
| 0.1 | 0.057 | 0.405 |
| 0.2 | 0.121 | 0.533 |
| 0.3 | 0.172 | 0.677 |
| 0.4 | 0.195 | 0.754 |
| 0.5 | 0.215 | 0.778 |

Table is symm. about the C.L. Unit.

"W" is expected Camber of Beam at 90 days after release (Prestress + Dead Load of Beam).

"X" is Dead Load Deflection of Slab + Composite Dead Load.

## CAMBER & DEFLECTIONS (INCHES)

Note: 'W' & 'X' are based on the required minimum concrete strength and may vary from the dimensions shown. 'W' & 'X' shall be measured along bottom of beams unless otherwise approved by the Engineer. See Slab Tolerance on Dwg. No. 61478 for limitations of the beam final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the slab when camber is less than shown.

## SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the precast prestressed concrete beam units. The contractor shall provide the Engineer with the following information:

A. Actual 28 - day concrete strength of prestressed concrete beams.

B. Estimated age of prestressed concrete beams at time of erection which shall not be less than 90 days from release.

C. Profile of each beam under its own weight.

D. Number of days since release of strands of each beam.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if necessary.

7/13/2021

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

BRIDGE ENGINEER
PRINT DATE: 7/9/2021

# SHEET 4 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK
ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

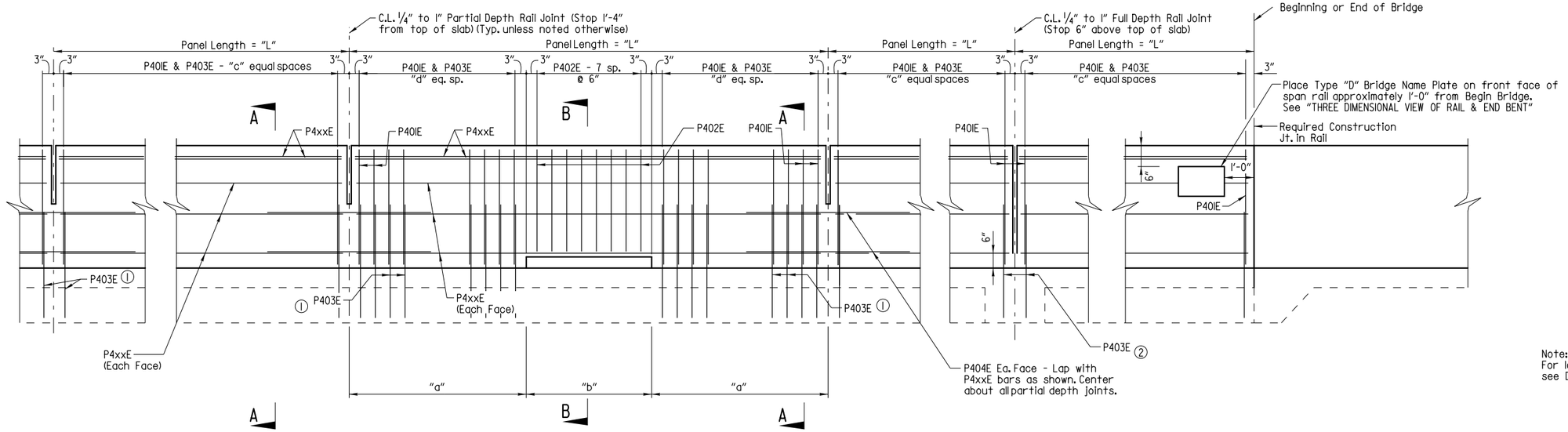
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| BRIDGE NO. | 07478 | | | DRAWING NO. | 61481 |

Sharath.Ranganath 7/9/2021 10:44:45
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REVISED DATE:

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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | 070416 | 78 | 93 |

(1) 07478 - 40'-0" PRESTR. BEAM UNIT - 61482




## RAIL VARIABLES

| Panel Length "L" | Panel Type | "a" | "b" | "c" | "d" | P4xxE Bars |
|---|---|---|---|---|---|---|
| 10'-0" | closed | ----- | ----- | 19 | ----- | P405E |
| 20'-0" | open | 8'-0" | 4'-0" | ----- | 15 | P406E |

Note:
For location of full and partial depth rail joints, see Dwg. No. 61479.

## TYPICAL CLOSED PANEL RAIL

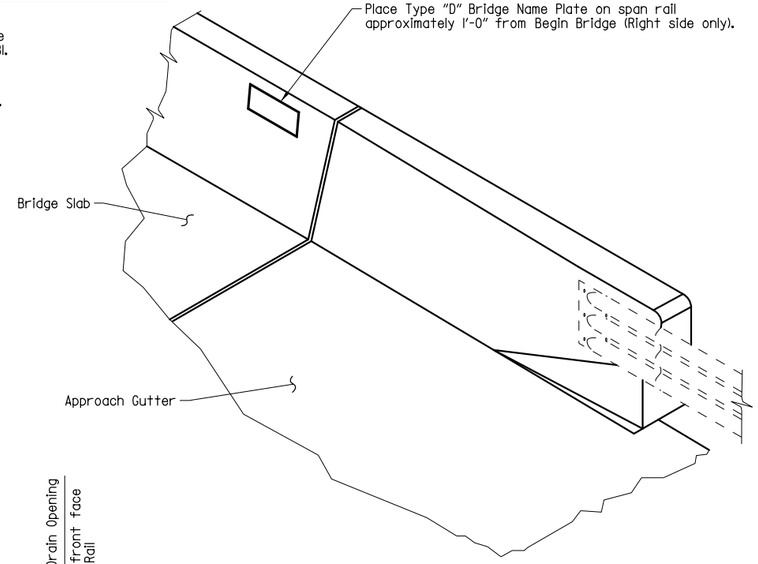
## TYPICAL OPEN PANEL RAIL

## TYPICAL FULL DEPTH JOINT

## TYPICAL END PANEL

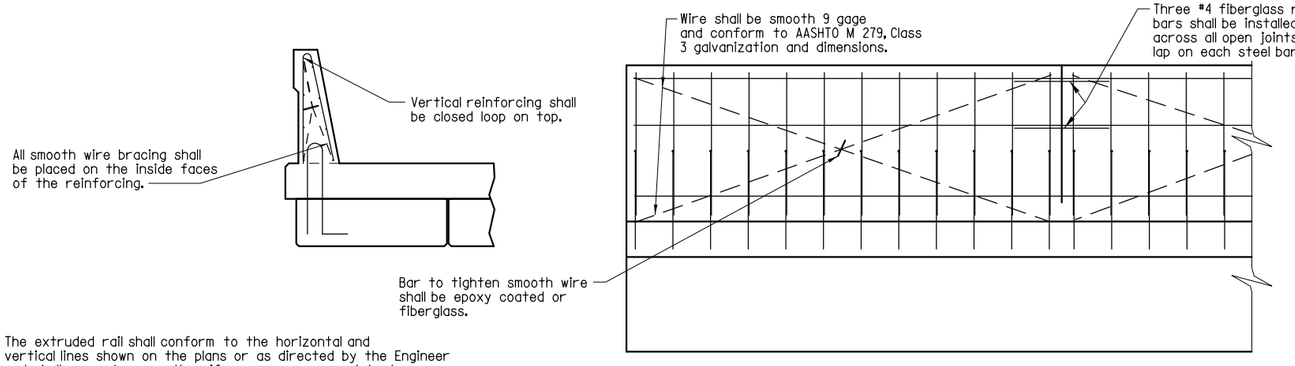
(1) P403E in Precast Beam. For Details, See Dwg. Nos. 61480 & 61481.

(2) P403E in Diaphragms over interior bents.




## ELEVATION - CONCRETE RAIL

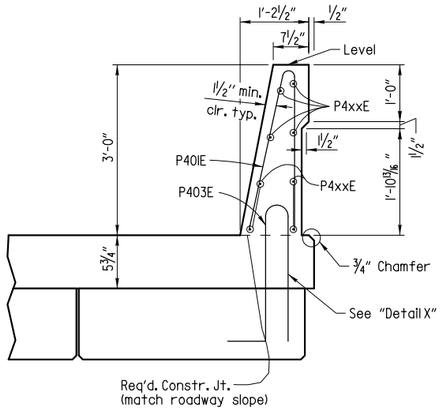
(As viewed from roadway side of Rail)



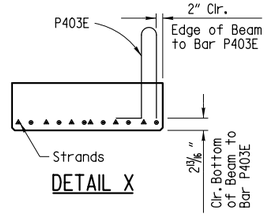

The extruded rail shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed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

All panels shall be braced as shown 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.

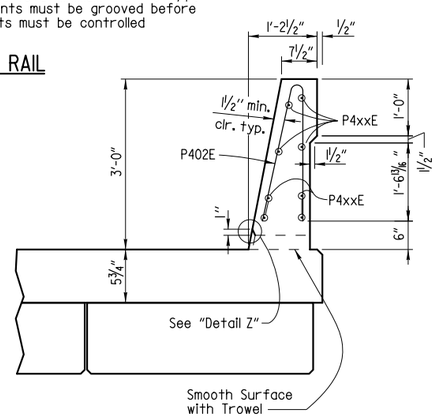
## DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE RAIL



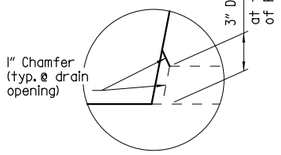

SECTION A-A




DETAIL X




SECTION B-B




DETAIL Z

## THREE DIMENSIONAL VIEW OF RAIL & END BENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

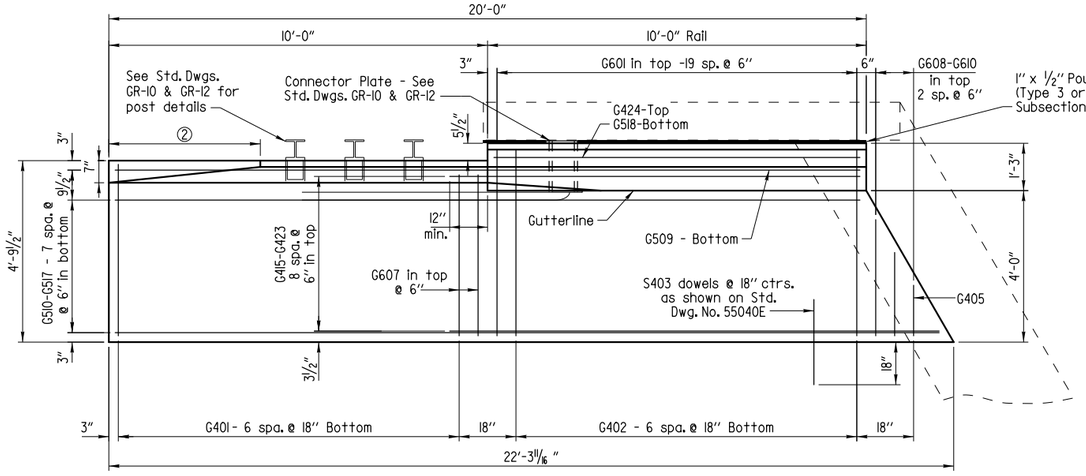
# SHEET 5 OF 5
# DETAILS OF 40'-0" PRECAST PRESTRESSED BEAM UNITS
# BIG CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

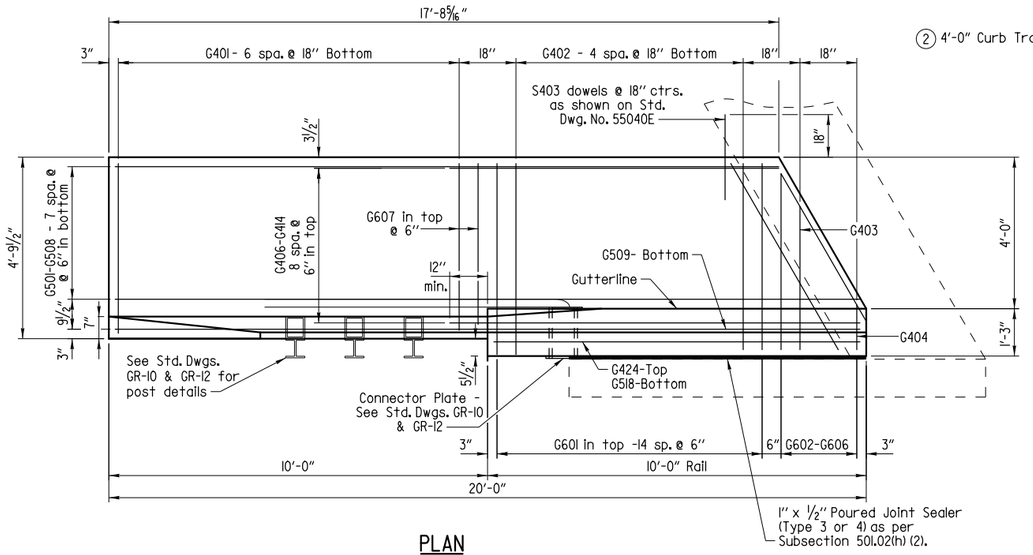
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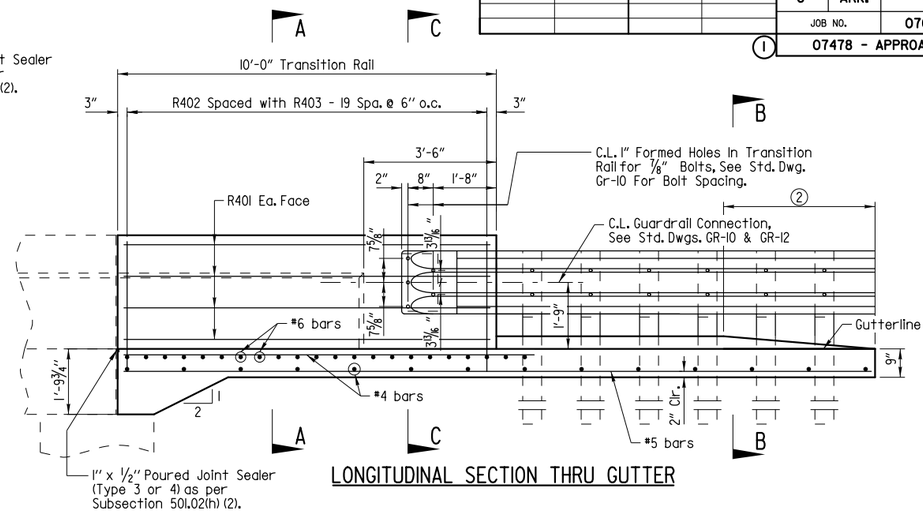



② 4'-0" Curb Transition




## PLAN

(Shown for Begin Bridge - adjust orientation at other locations)

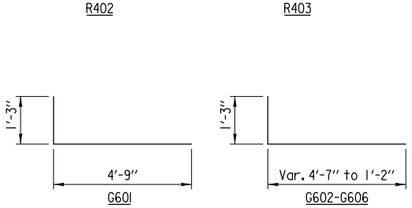


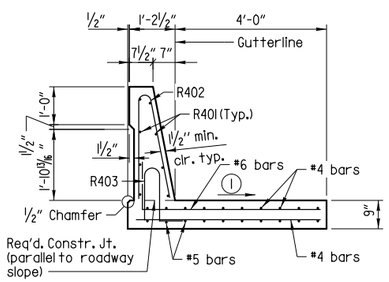

## LONGITUDINAL SECTION THRU GUTTER

## BAR LIST FOR TYPE 3 SPECIAL APPROACH GUTTER ONE END OF BRIDGE

| MARK | NO. REQ'D. | LENGTH | PIN DIA. |
|---|---|---|---|
| G401 | 14 | 4'-5½" | Str. |
| G402 | 12 | 4'-11" | Str. |
| G403 | 1 | 3'-11" | Str. |
| G404 | 1 | 1'-3" | Str. |
| G405 | 1 | 1'-3" | Str. |
| G406-G414 | 1 ea. | Var. 8'-9" to 11'-1" | Str. |
| G415 - G423 | 1 ea. | Var. 10'-10" to 13'-0" | Str. |
| G424 | 2 | 9'-8" | Str. |
| | | | |
| G501 - G508 | 1 ea. | Var. 17'-6" to 19'-8" | Str. |
| G509 | 2 | 19'-8" | Str. |
| G510 - G517 | 1 ea. | Var. 19'-8" to 21'-9" | Str. |
| G518 | 2 | 9'-8" | Str. |
| | | | |
| G601 | 35 | 5'-11" | 4½" |
| G602-G606 | 1 ea. | Var. 5'-9" to 2'-4" | 4½" |
| G607 | 4 | 4'-3" | Str. |
| G608-G610 | 1 ea. | Var. 1'-4" to 3'-0" | Str. |
| | | | |
| R401 | 16 | 9'-8" | Str. |
| R402 | 40 | 5'-11" | 2½" |
| R403 | 40 | 3'-7" | 3", 4¾" |

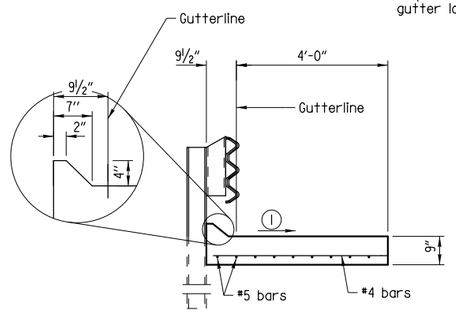
BENDING DIAGRAMS
Dimensions are out to out of bars.



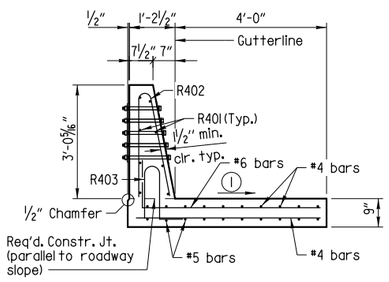




## SECTION A-A

(1) Match Roadway cross-slope as required at a given approach gutter location




## SECTION B-B




## SECTION C-C

## QUANTITIES FOR TYPE 3 SPECIAL APPROACH GUTTER ONE END OF BRIDGE

| Length (ft.) | Reinforcing Steel (lbs.) | Concrete (cubic yds) |
|---|---|---|
| 20'-0" | 1353 | 8.28 |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M 31 or M 322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Gutters to match that used on the bridge deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

4/30/2021

BRIDGE ENGINEER
PRINT DATE: 4/30/2021

# DETAILS OF TYPE 3 SPECIAL APPROACH GUTTERS BIG CREEK

ROUTE SECTION

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

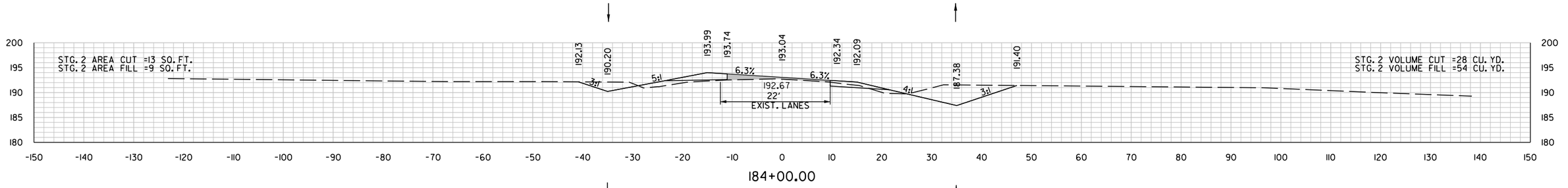
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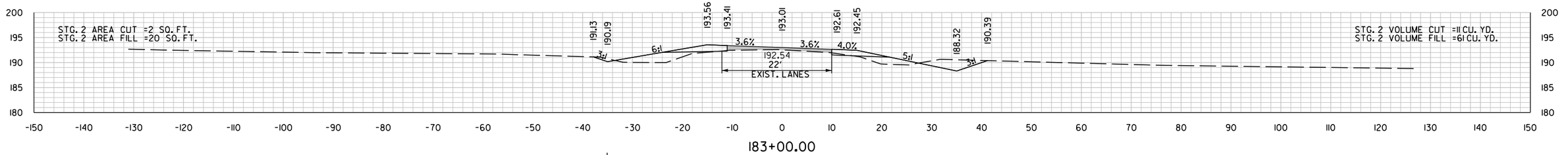
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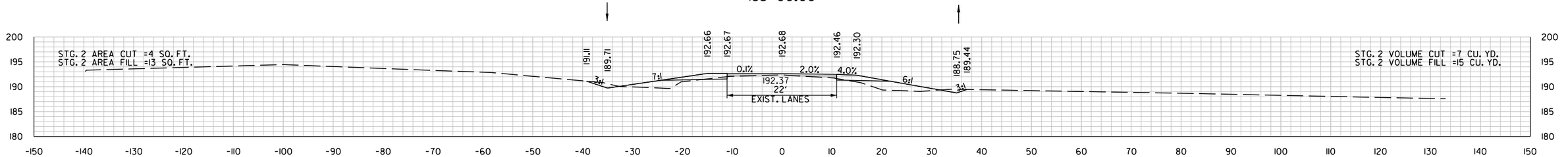
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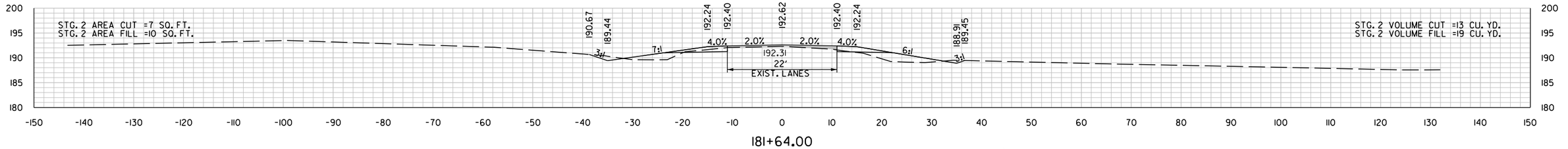

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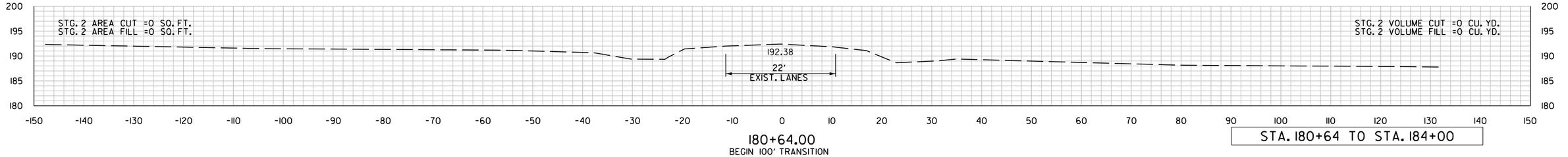



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181+64.00

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& END 100' TRANSITION




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BEGIN 100' TRANSITION

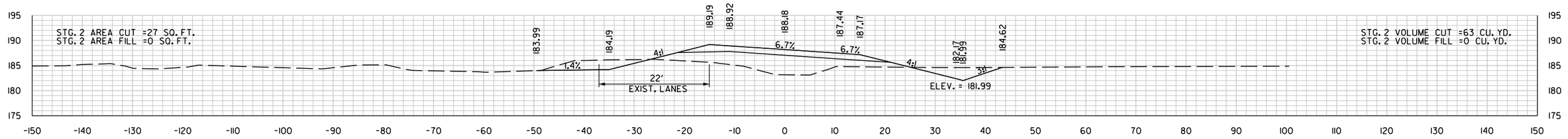
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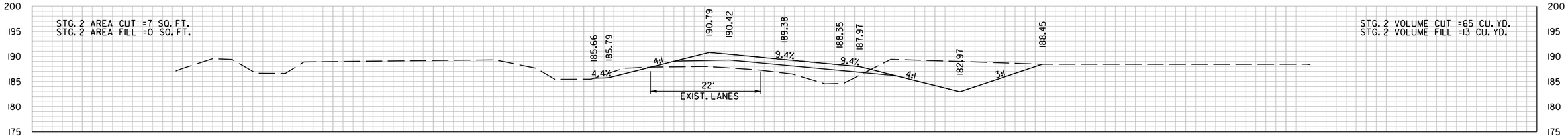
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| | | | | JOB NO. | | 070416 | 81 | 93 |
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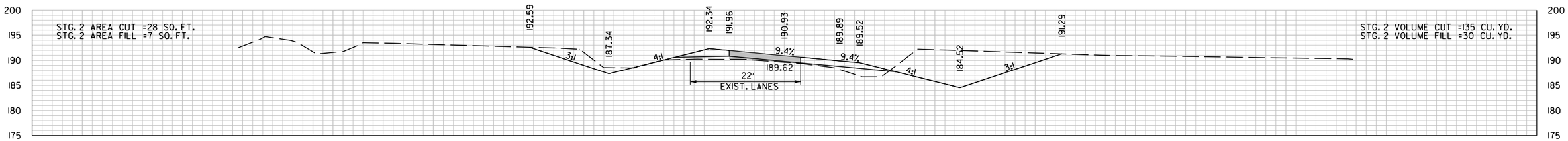
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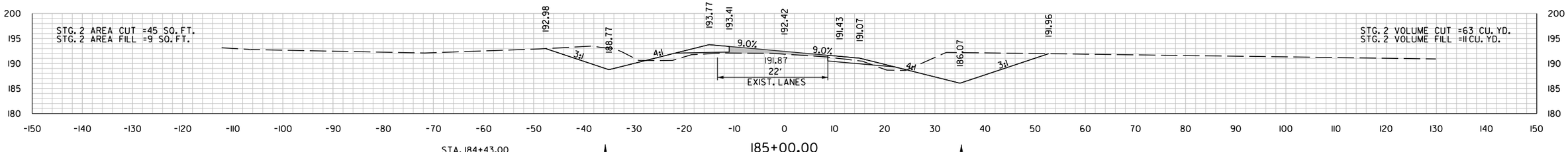

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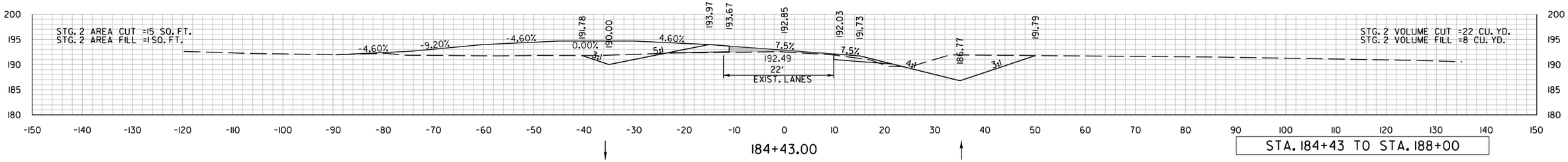



186+00.00




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160 CU. YDS.




184+43.00

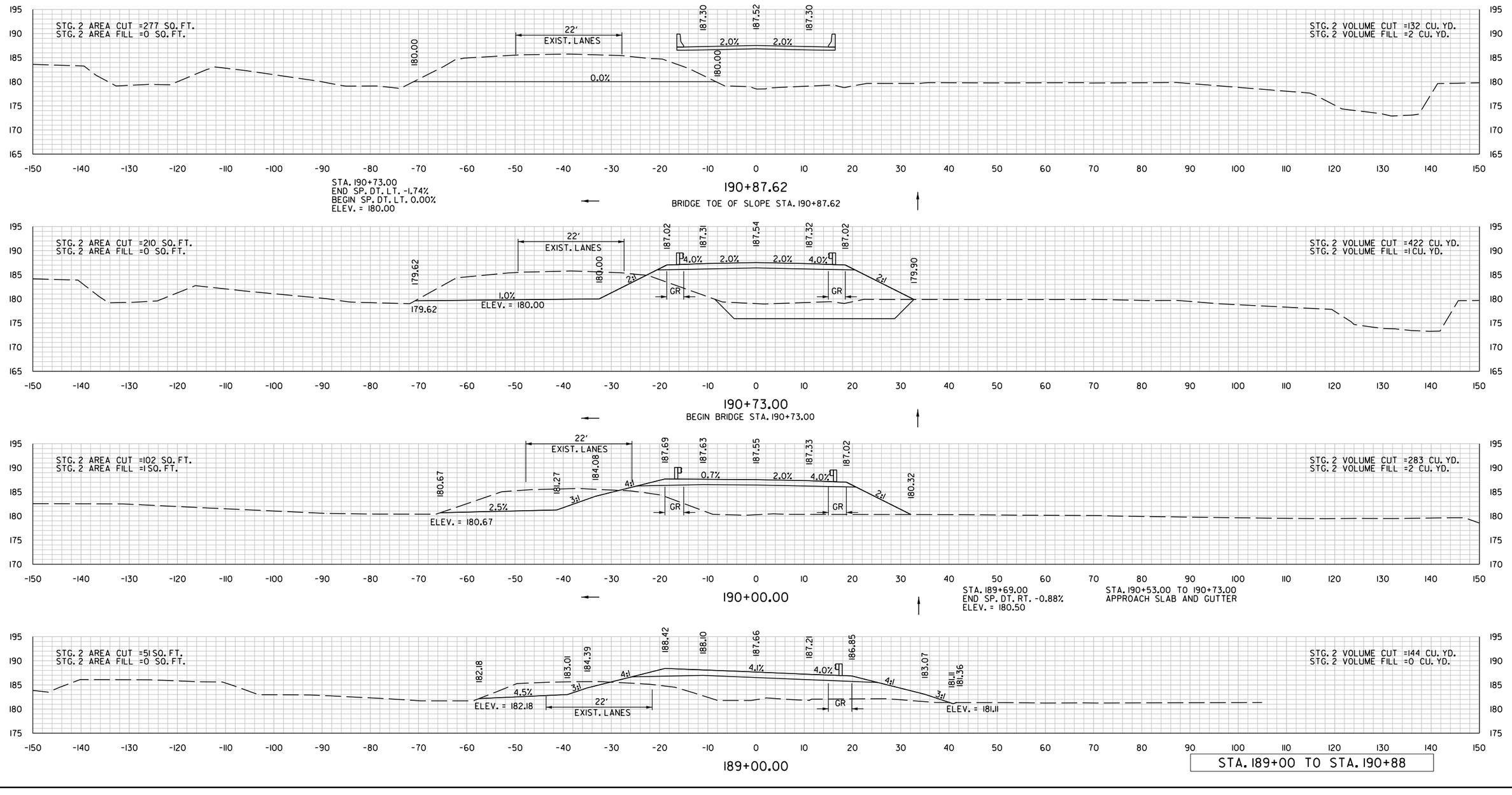
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| JOB NO. | | 070416 | 82 | 93 |

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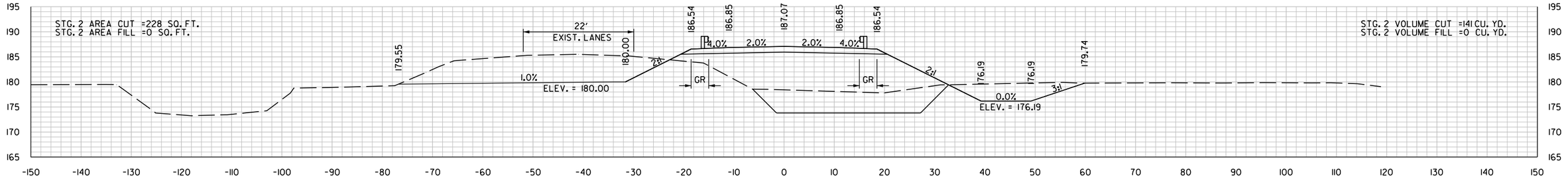




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| | | | | (2) | CROSS SECTIONS | | | |

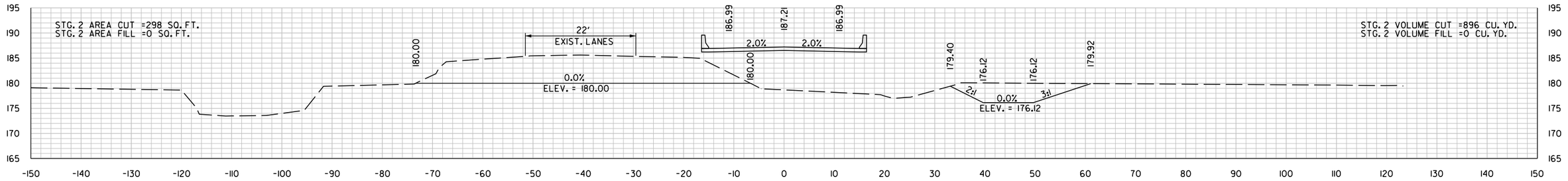
STA. 192+33.00
END SP. DT. LT. 0.00%
BEGIN SP. DT. LT. 0.09%
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192+33.00
END BRIDGE STA. 192+33.00




192+18.17
BRIDGE TOE OF SLOPE STA. 192+18.17

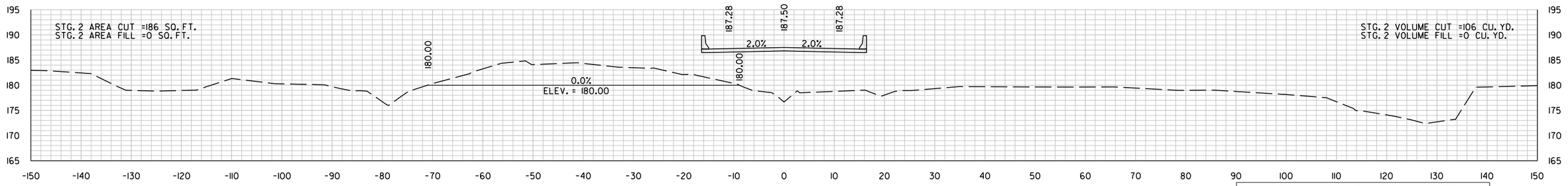



192+00.00

STA. 191+10.00
END SP. DT. LT. 0.00%
ELEV. = 180.00

STA. 191+70.00
BEGIN SP. DT. LT. 0.00%
ELEV. = 180.00

STA. 191+50.00
BEGIN SP. DT. RT. 0.25%
ELEV. = 175.99




191+00.00

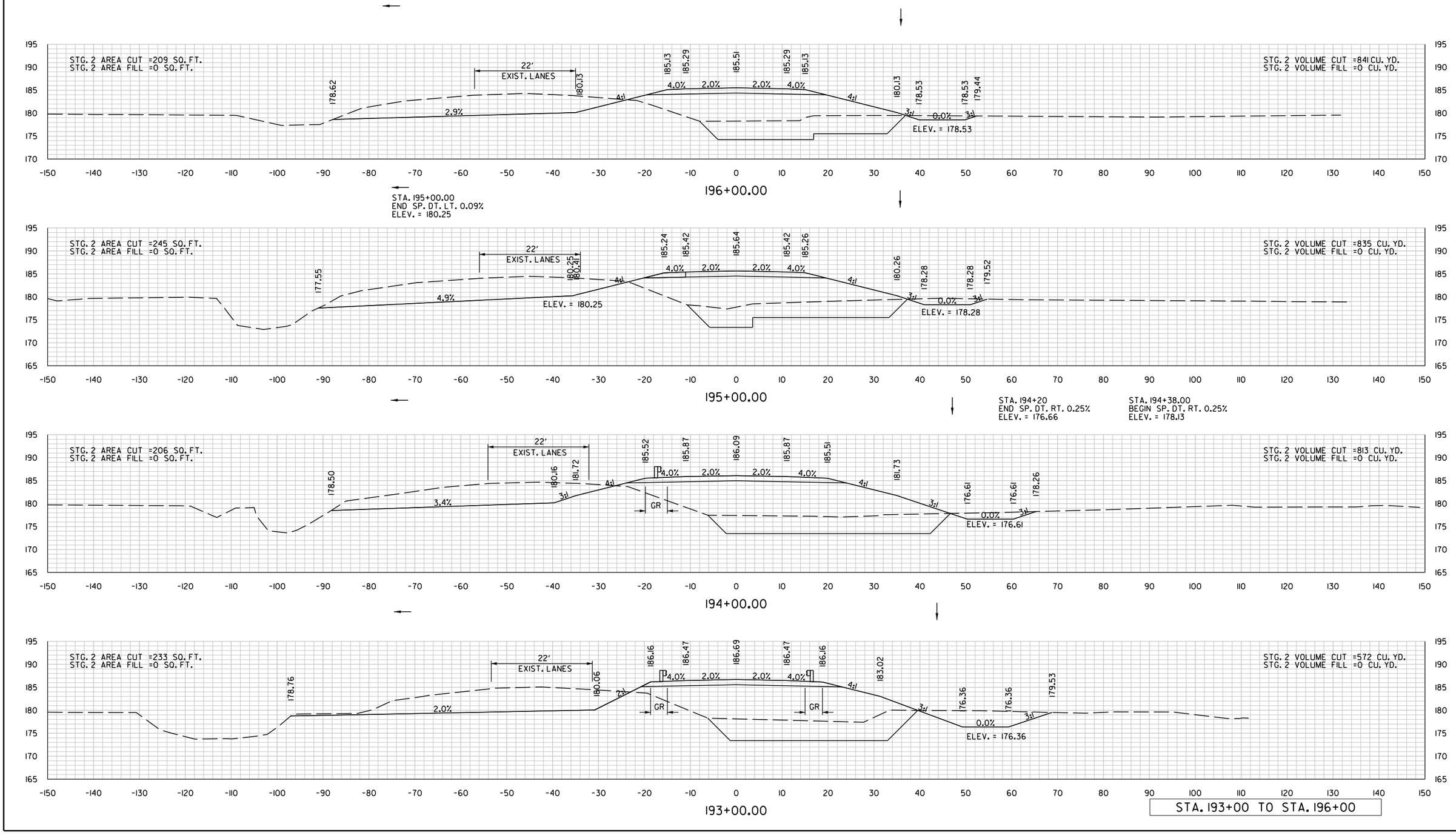
STA. 191+00 TO STA. 192+33

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REVISED DATE: $$REVDATE$$

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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 84 | 93 |

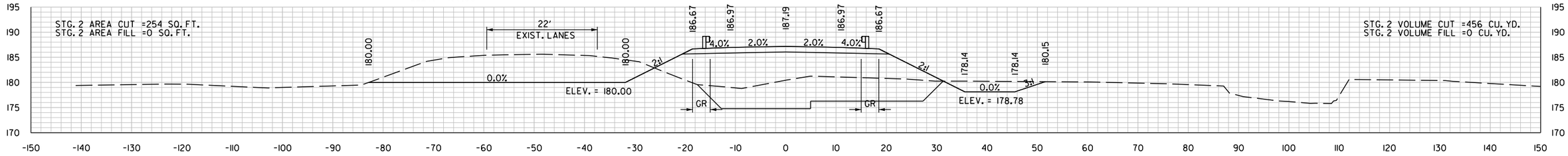
(2) CROSS SECTIONS



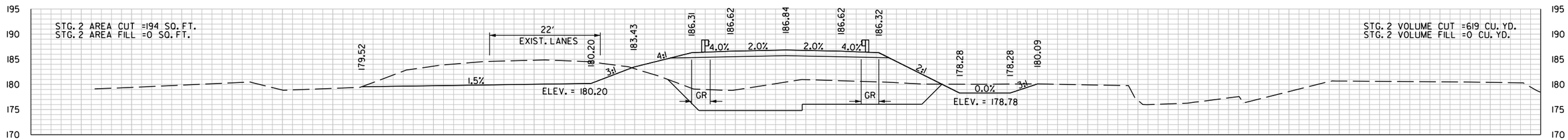

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| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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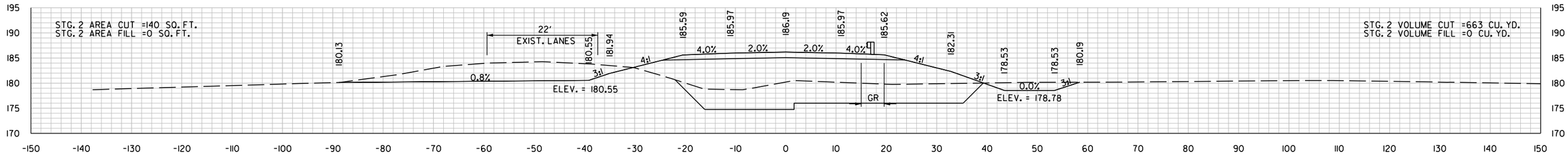
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199+55.00
BEGIN BRIDGE STA. 199+55.00



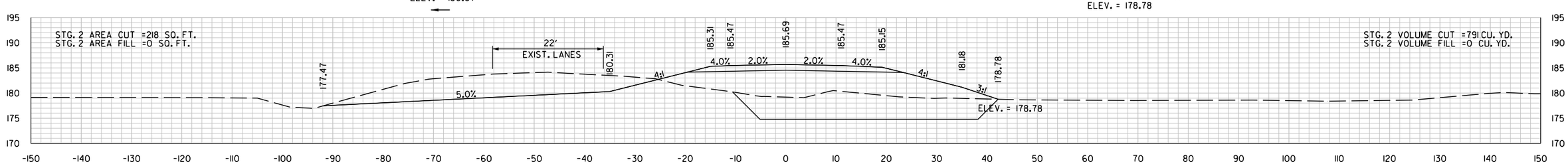

199+00.00




198+00.00

STA. 197+68.00
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STA. 197+00.00
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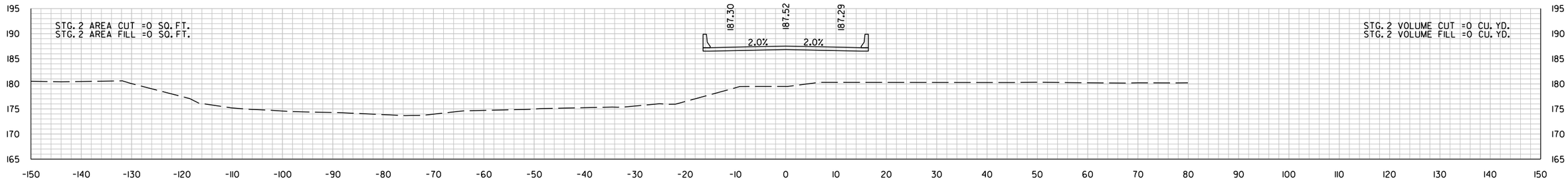



197+00.00

STA. 197+00 TO STA. 199+55

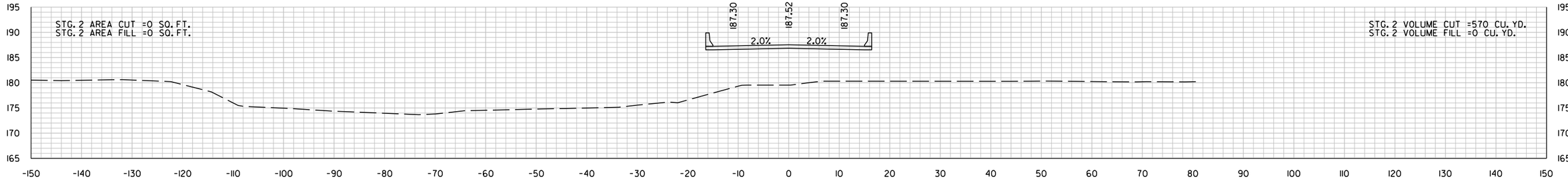

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| | | | | JOB NO. | | 070416 | 86 | 93 |
| | | | | (2) | CROSS SECTIONS | | | |




201+01.59

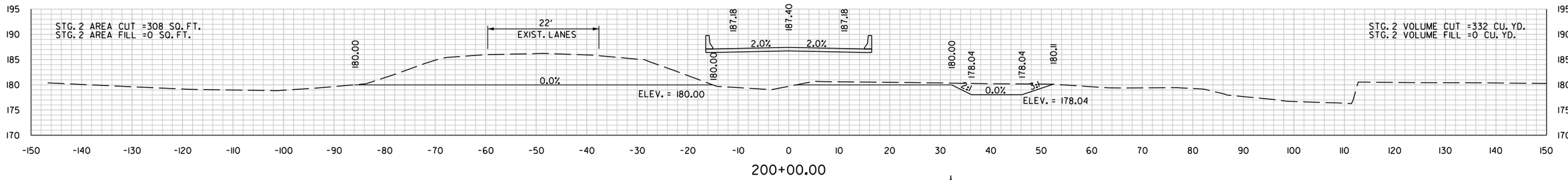
BRIDGE TOE OF SLOPE STA. 201+01.59



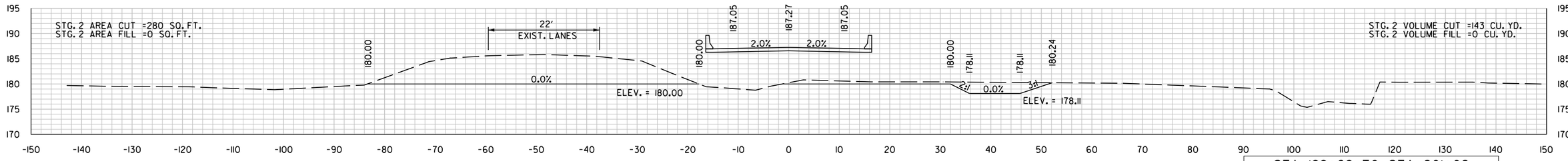

201+00.00

STA. 200+52.00
END SP. DT. LT. 0.00%
ELEV. = 180.00

STA. 200+06.00
END SP. DT. RT. -0.25%
ELEV. = 178.02




200+00.00




199+69.48

BRIDGE TOE OF SLOPE STA. 199+69.48

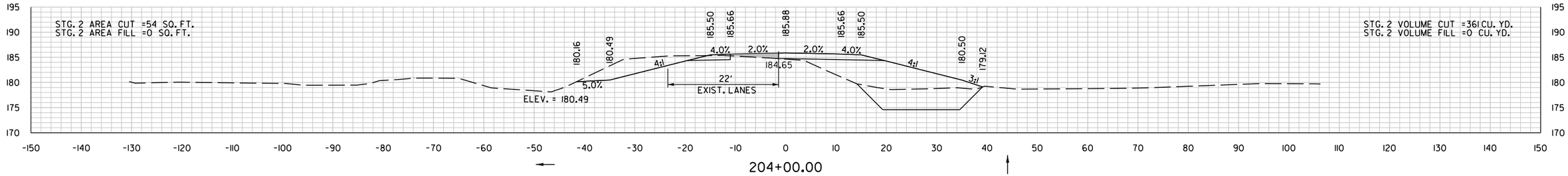
STA. 199+69 TO STA. 201+02


LondonMiller 8/3/2021 1:36:18 PM
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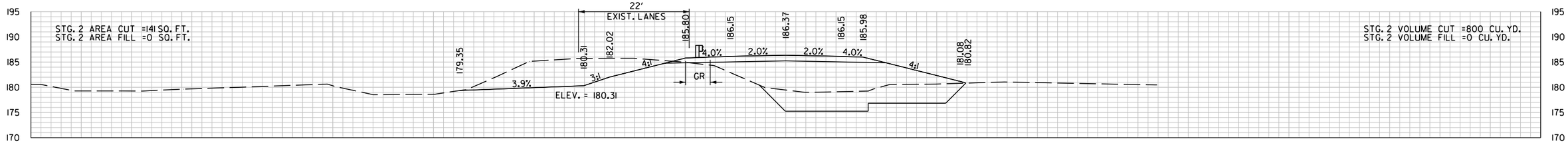
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| | | | | JOB NO. | | 070416 | 87 | 93 |
| | | | | (2) | CROSS SECTIONS | | | |

STA. 204+00.00
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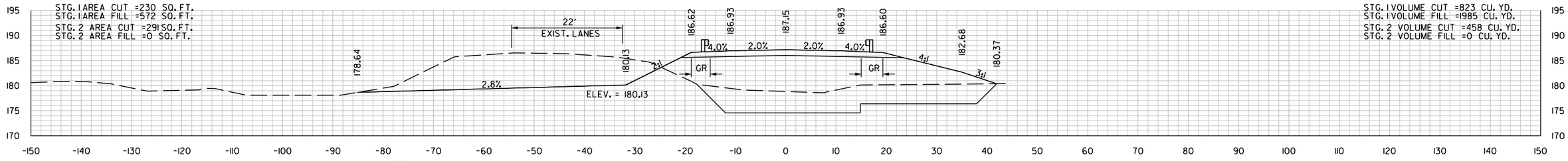
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204+00.00

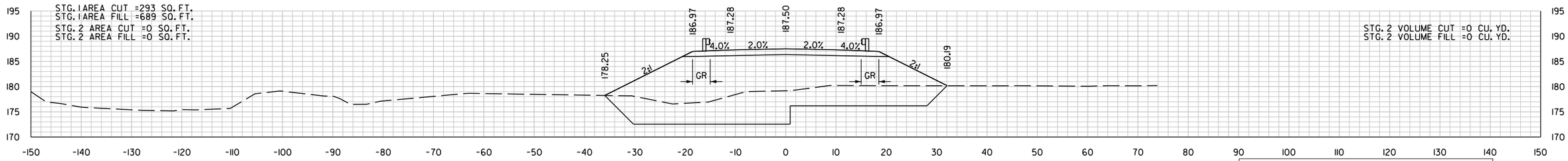



203+00.00




STA. 201+30.00
BEGIN SP. DT. LT. 0.18%
ELEV. = 180.00

202+00.00




201+15.00
END BRIDGE STA. 201+15.00

STA. 201+15 TO STA. 204+00

LandonMiller 8/3/2021 11:36:9 PM
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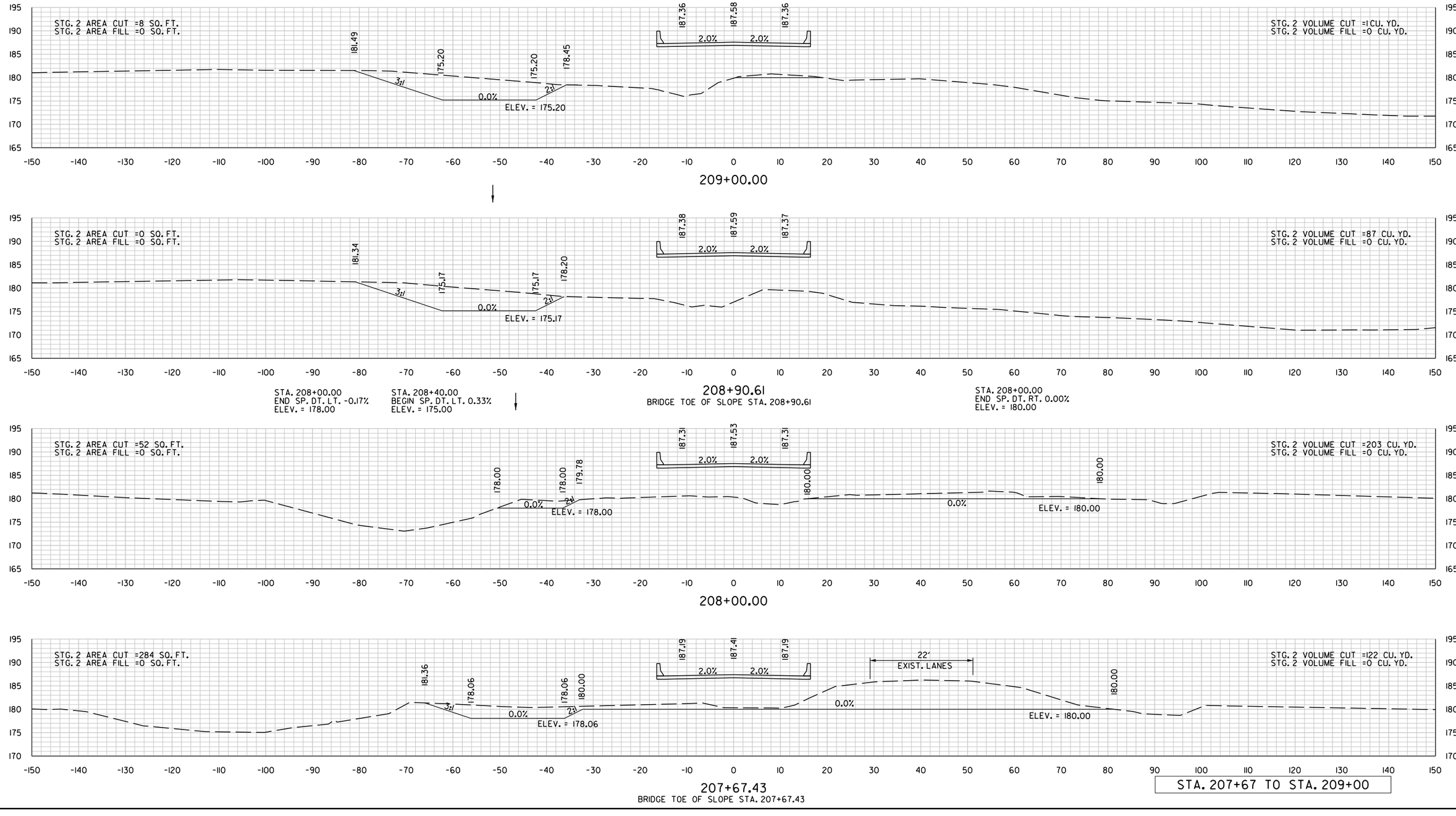



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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 89 | 93 |

(2) CROSS SECTIONS



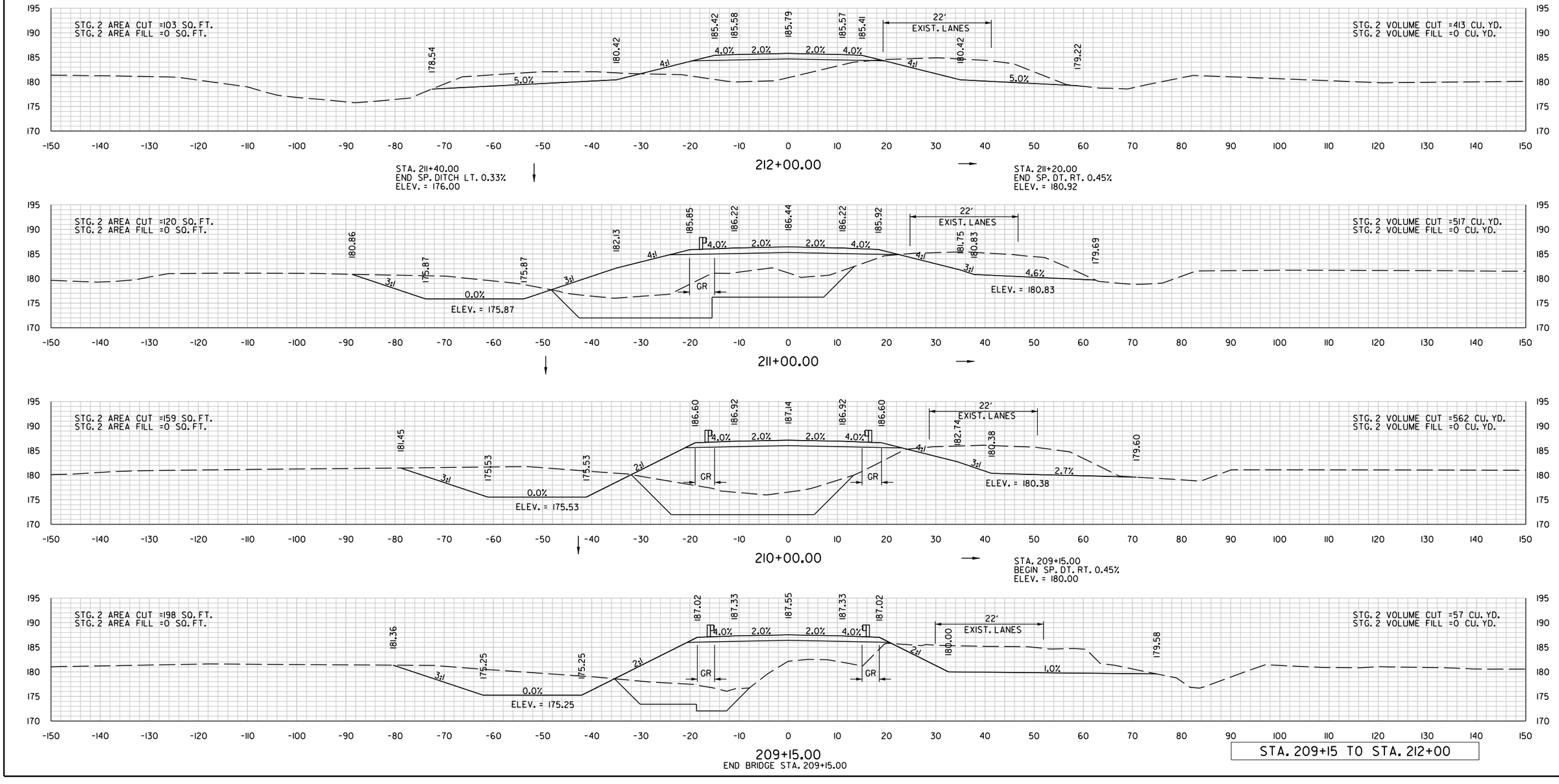


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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| JOB NO. | | 070416 | 90 | 93 |

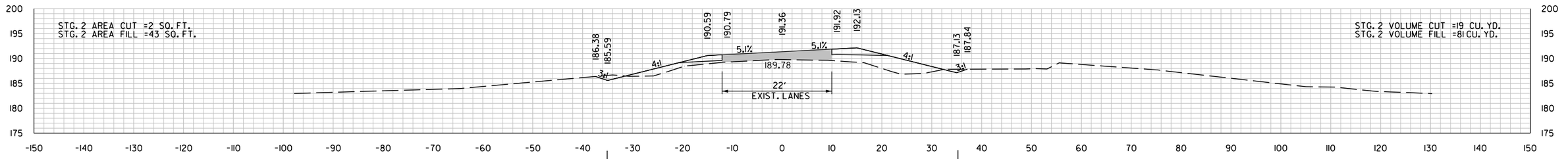
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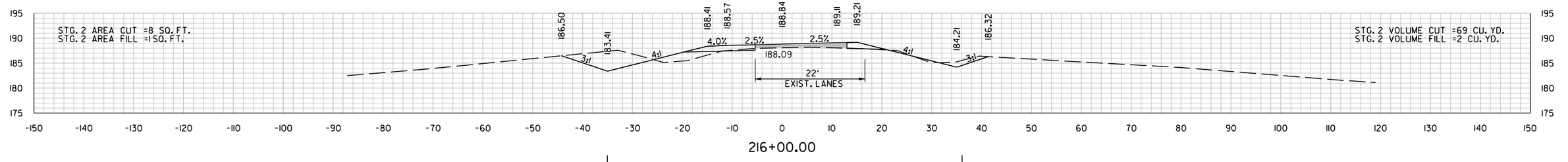


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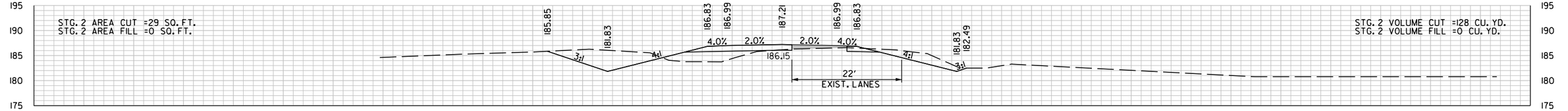
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| | | | | (2) | CROSS SECTIONS | | | |



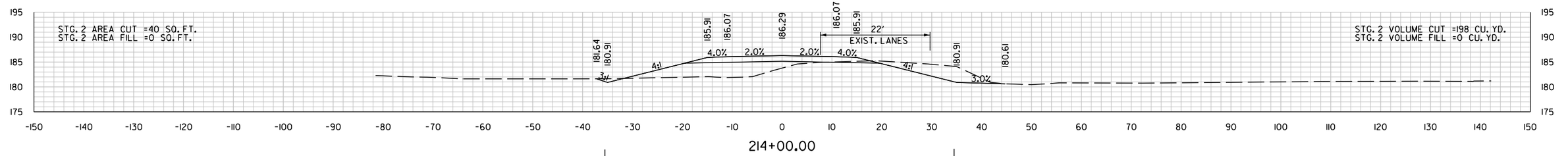

217+00.00



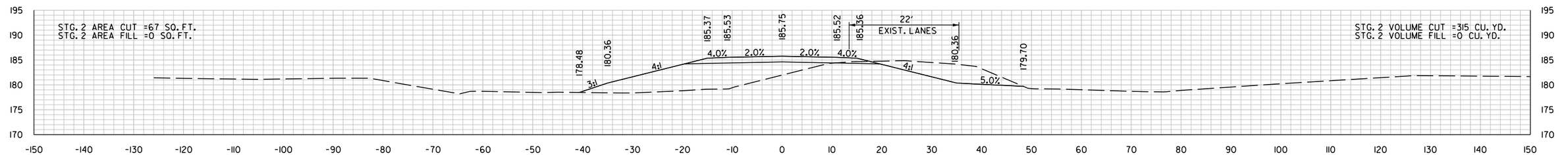

216+00.00




215+00.00




214+00.00



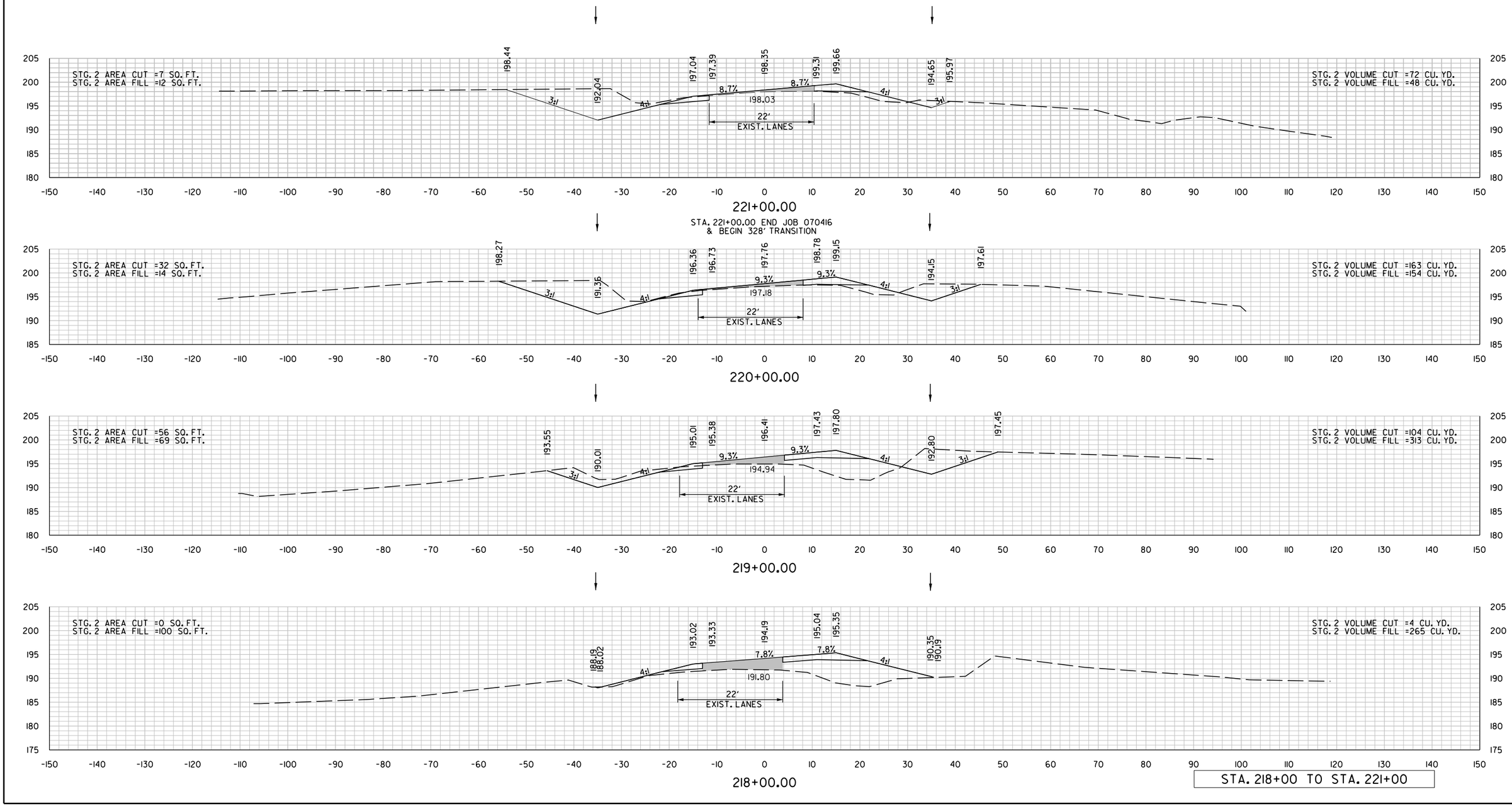

213+00.00

STA. 213+00 TO STA. 217+00


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| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
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| 6 | ARK. | | | |
| JOB NO. | | 070416 | 92 | 93 |
| (2) | CROSS SECTIONS | | | |





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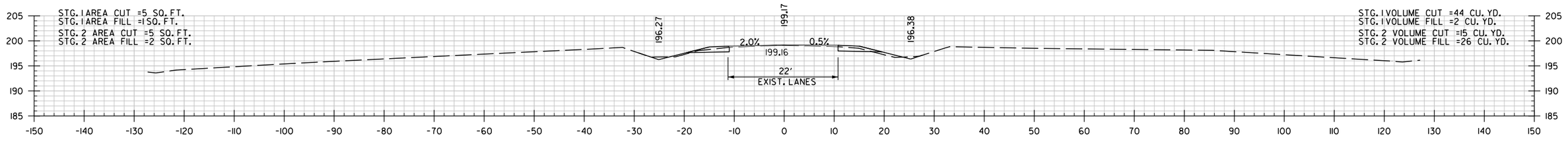
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(2) CROSS SECTIONS

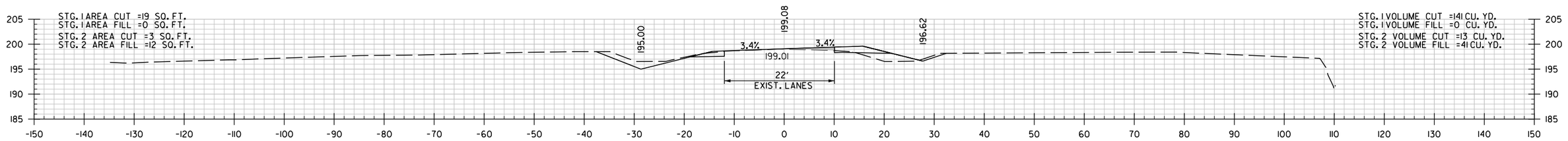



224+28.00

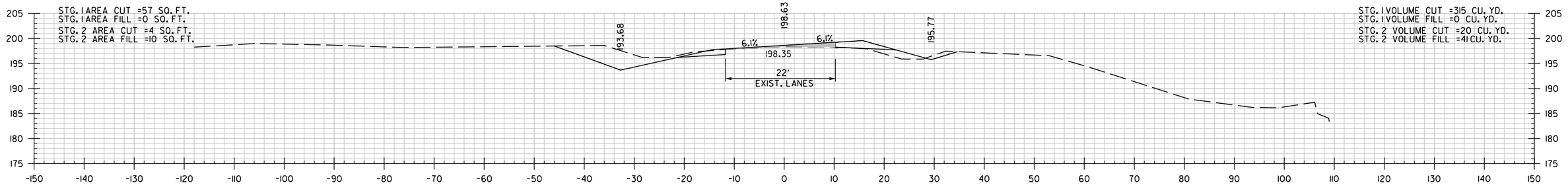
STA. 224+28.00 END 328' TRANSITION




224+00.00




223+00.00



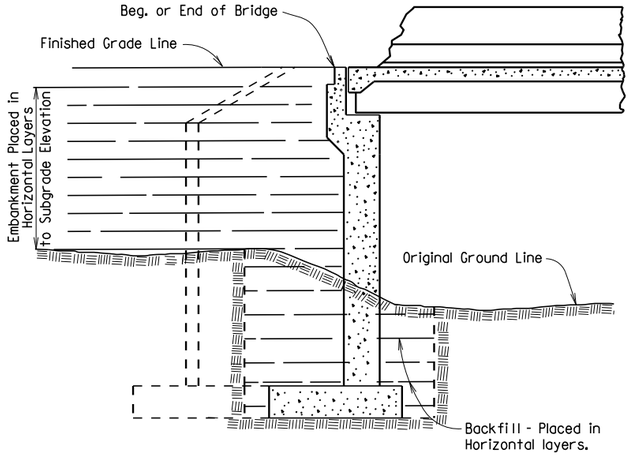

222+00.00

STA. 222+00 TO STA. 224+28

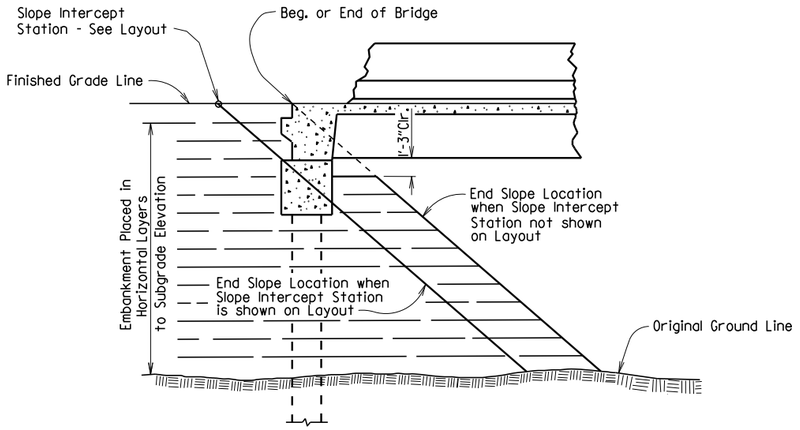

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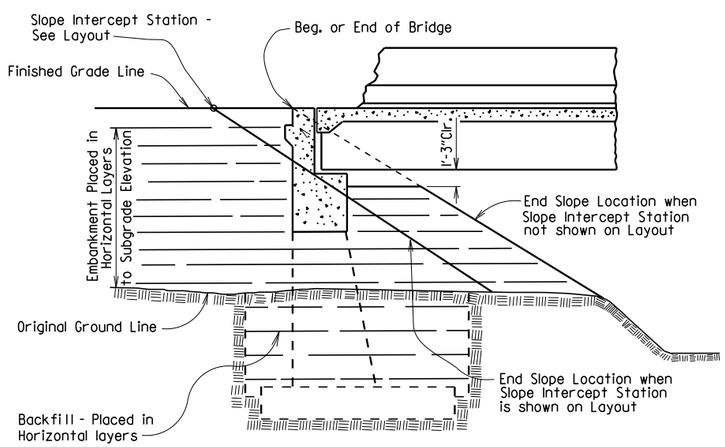
1 EMBANKMENT & BACKFILL 55000



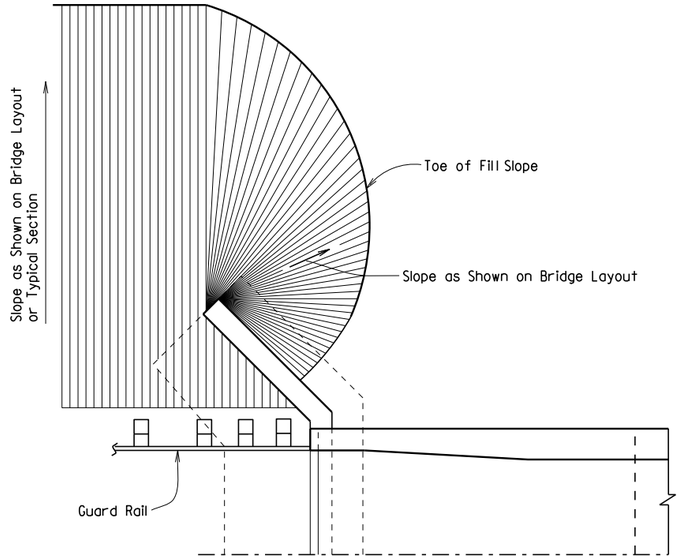

EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



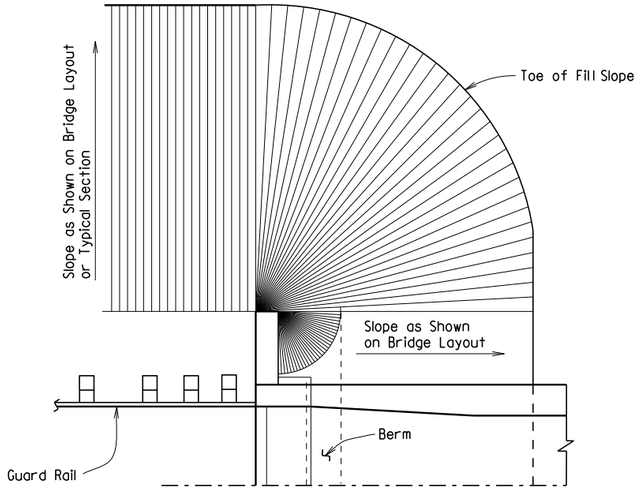

EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



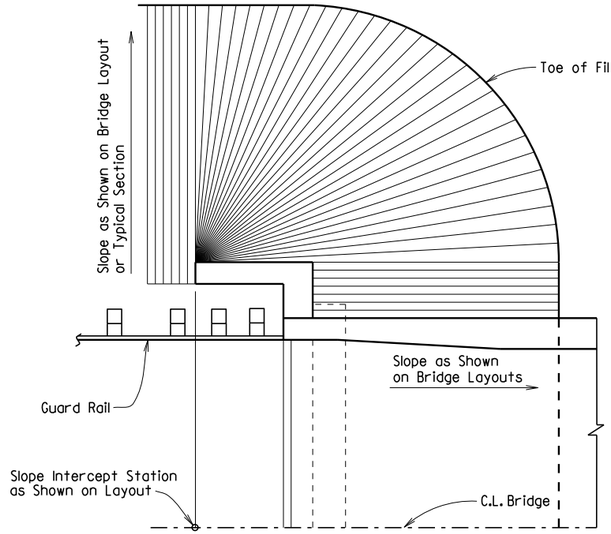

EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



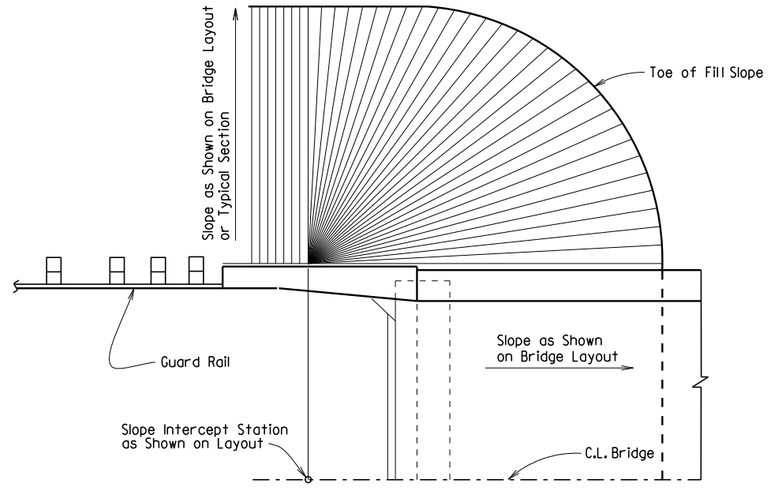

VERTICAL WALL ABUTMENTS




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

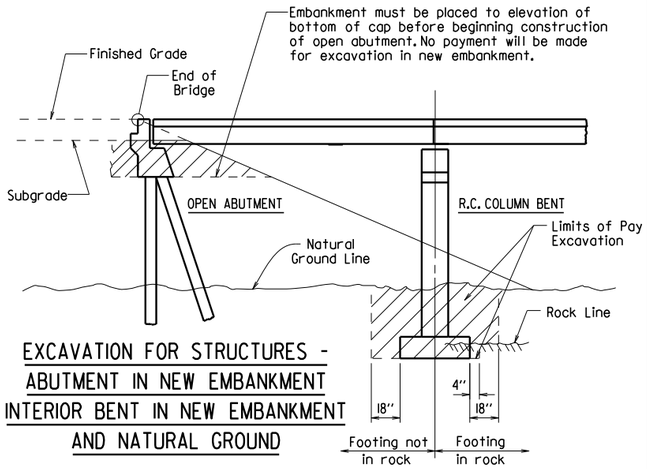
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

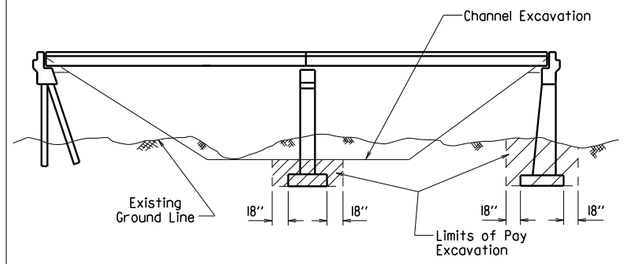
DRAWING NO. 55000

| 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. | | | | |

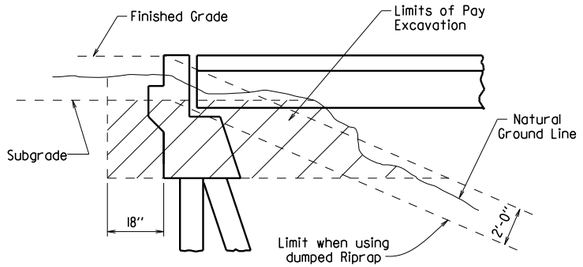
1 RIPRAP & EXCAV. 55001



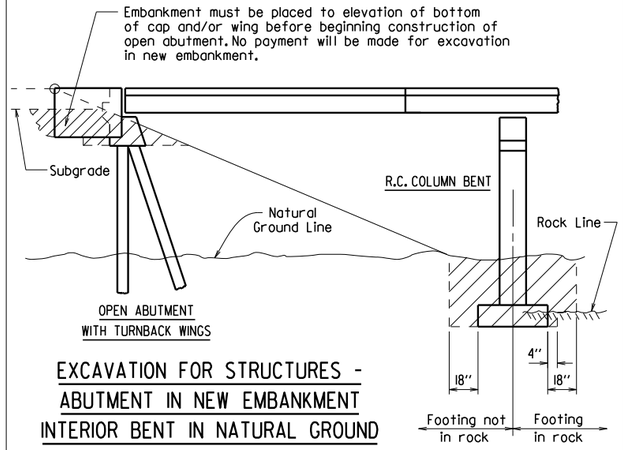

EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



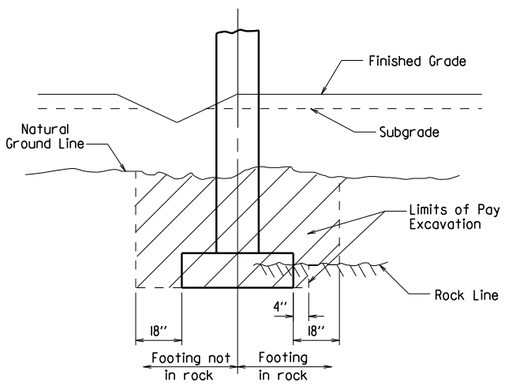

EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



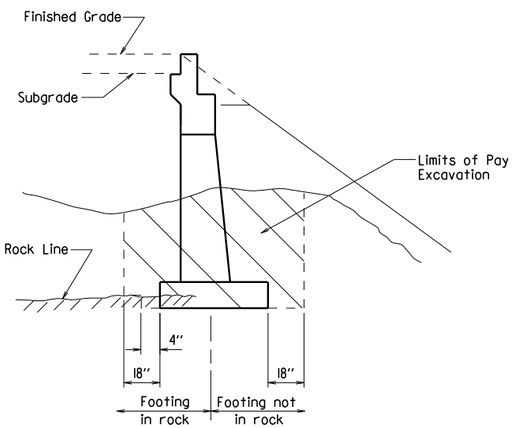

EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



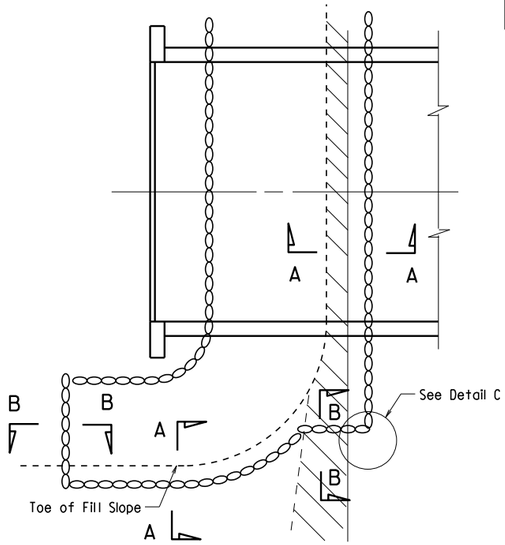

EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



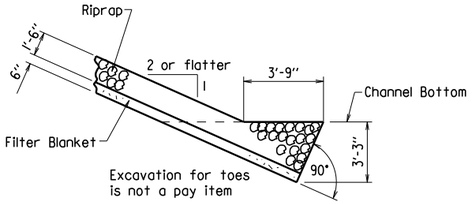

EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND




EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

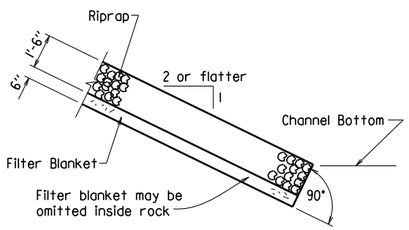



PLAN OF DUMPED RIPRAP




SECTION A-A

(Toe Excavation in Soil)



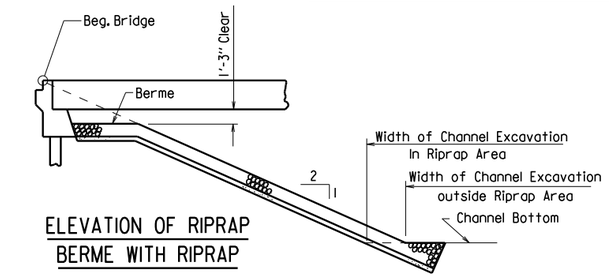

SECTION A-A

(Toe Excavation in Rock)

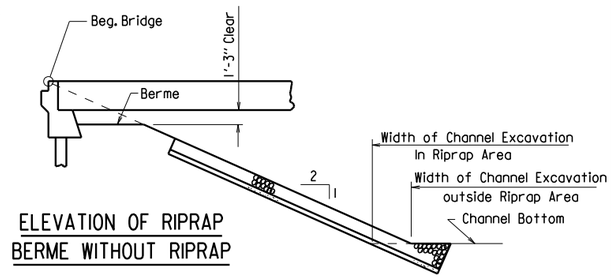
Note : Use this type of toe when rock is encountered which is in a stable condition.

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.

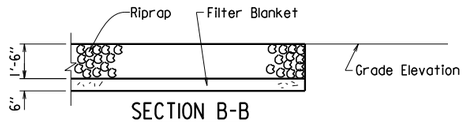
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



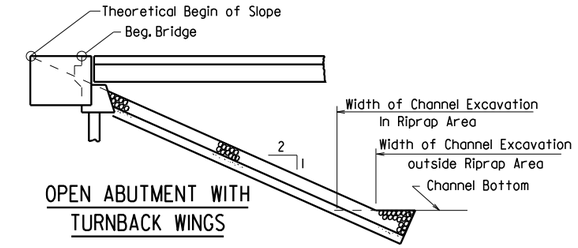

ELEVATION OF RIPRAP BERME WITH RIPRAP



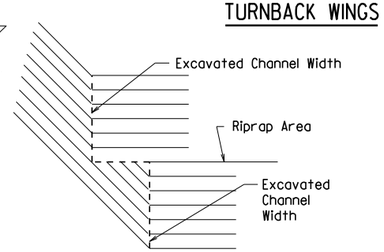

ELEVATION OF RIPRAP BERME WITHOUT RIPRAP




SECTION B-B




OPEN ABUTMENT WITH TURNBACK WINGS




DETAIL C

# 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:

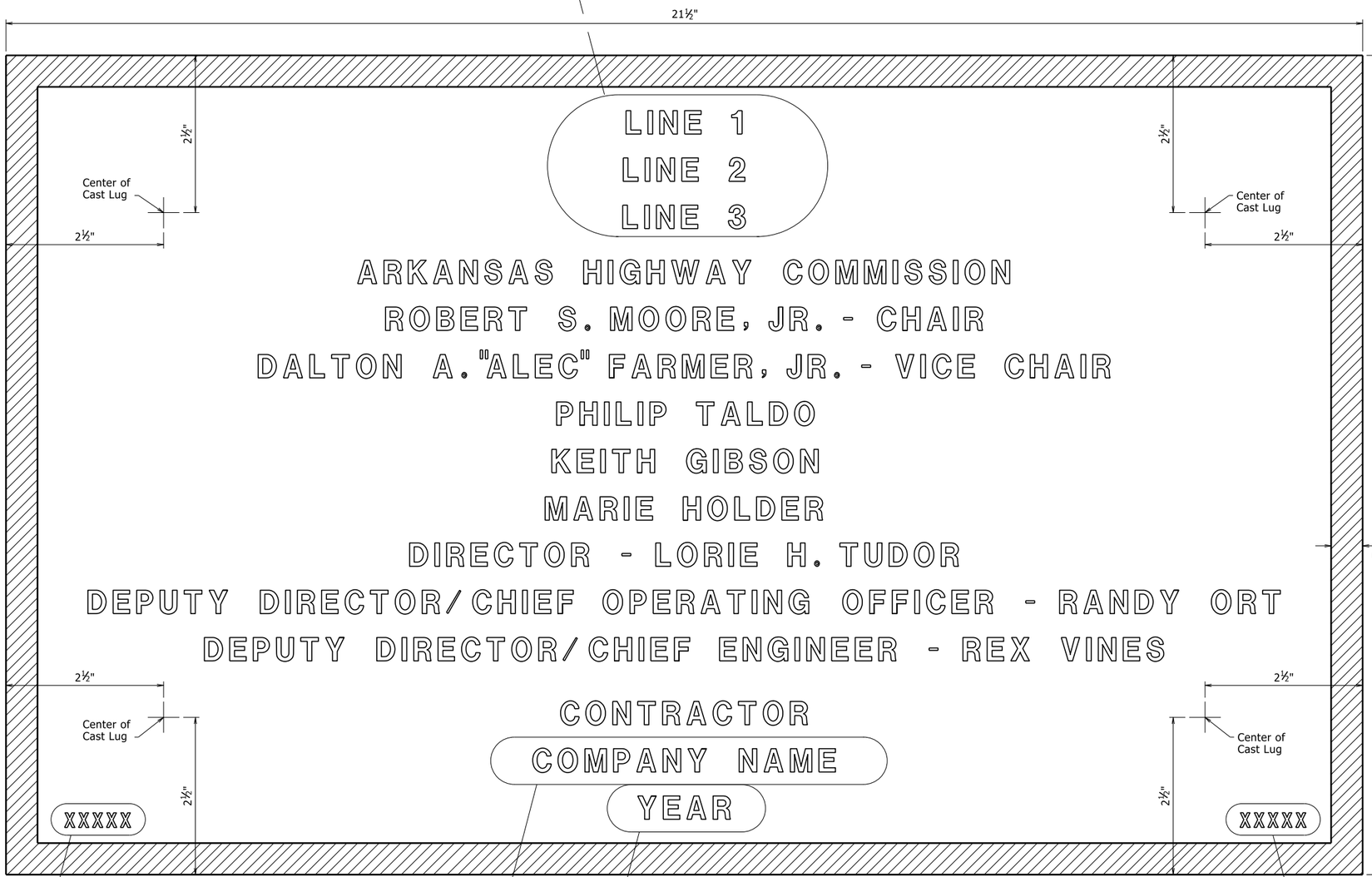
DRAWING NO. 55001

| 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 | | JOB NO. | | | | |
| 1-17-17 | | 5-11-2021 | | | | | | |

1 TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using ⅛" raised letters and numerals ⅜" high.

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



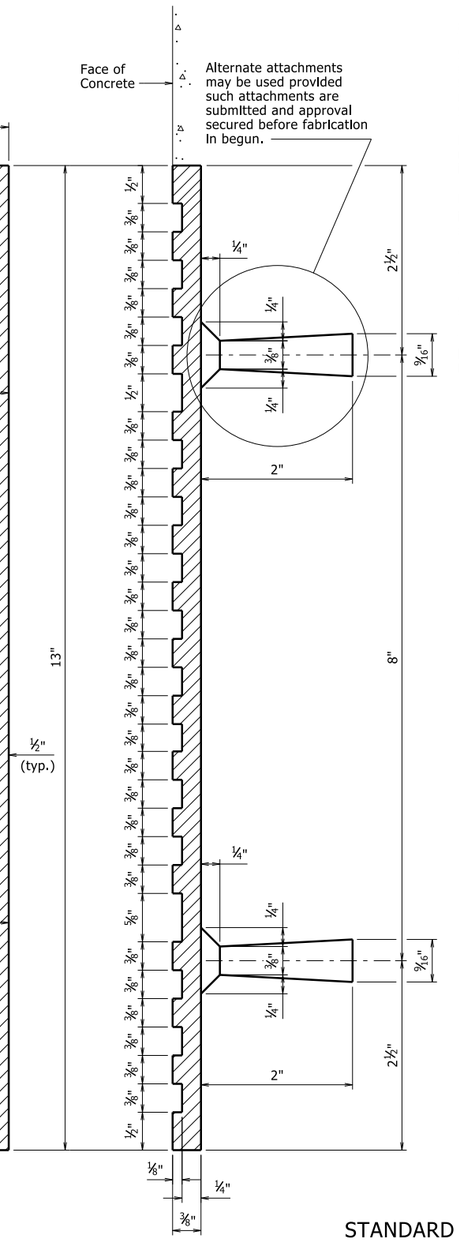

Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE




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 ¼" thick and shall include four tapering cone lugs ⅜" to 9/16" x 2" long. The border and all lettering shall be raised ⅛" 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.

6 Revised Deputy Director/ Chief Engineer
5-11-2021 CGP Checked By: CRE

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 Commissioner
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

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

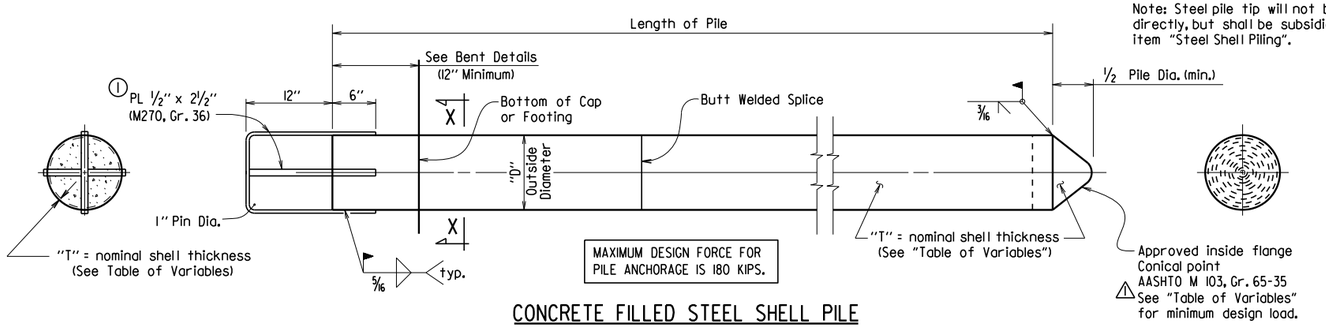
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 5/11/2021

| 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. | | | | |

(1) STEEL SHELL PILES 55021

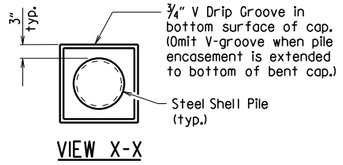



Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

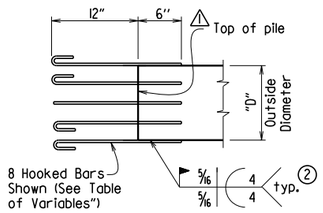
## CONCRETE FILLED STEEL SHELL PILE

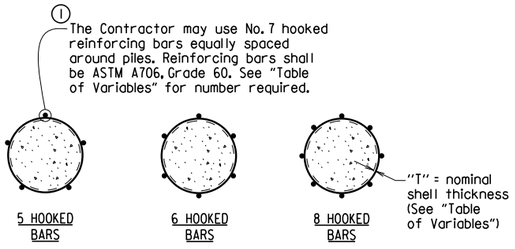
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

(2) Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



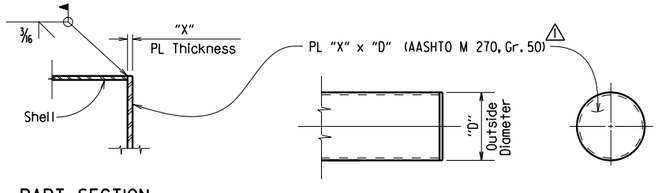

## VIEW X-X




## ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

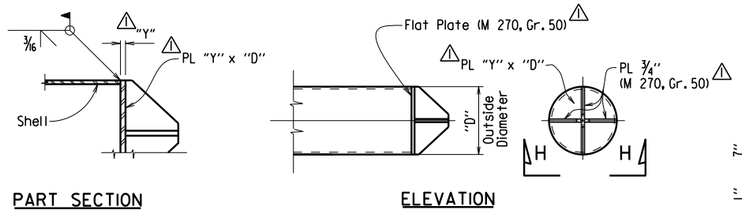



PART SECTION

ELEVATION

## ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.




PART SECTION

ELEVATION

VIEW H-H

## ALTERNATE VANED TIP DETAIL

### GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

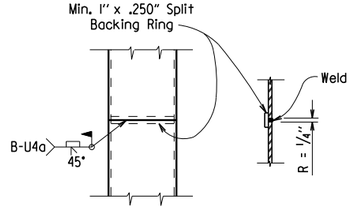
Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

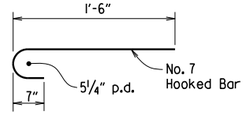
Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".




## TYPICAL SPLICE DETAILS

### TABLE OF VARIABLES

| OUTSIDE DIAMETER "D" | NOMINAL SHELL THICKNESS "T" | ⚠ PLATE THICKNESS "X" | ⚠ PLATE THICKNESS "Y" | NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE | ⚠ MINIMUM CONICAL TIP DESIGN LOAD (KIPS) |
|---|---|---|---|---|---|
| 14" | 0.50" | 2 1/4" | 1 1/2" | 5 | 859 |
| 16" | 0.50" | 2 1/4" | 1 1/2" | 5 | 986 |
| 18" | 0.50" | 2 1/2" | 1 1/2" | 6 | 1,114 |
| 20" | 0.50" | 2 1/2" | 1 3/4" | 6 | 1,241 |
| 24" | 0.50" | 2 3/4" | 1 3/4" | 8 | 1,495 |




## HOOKED BAR DETAIL

⚠ Revised and added various details by KWY, Ck'd. by BEF, 3/24/16.

### GENERAL NOTES FOR PILE ENCASEMENTS:

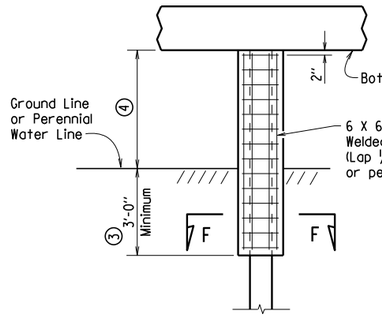
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

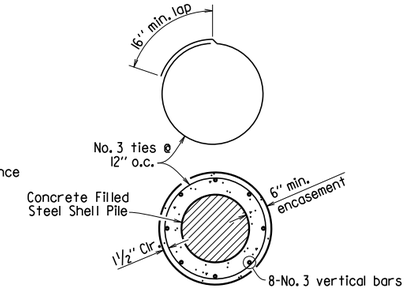
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

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 221.

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".




SECTION F-F (REINF. ALTERNATE)

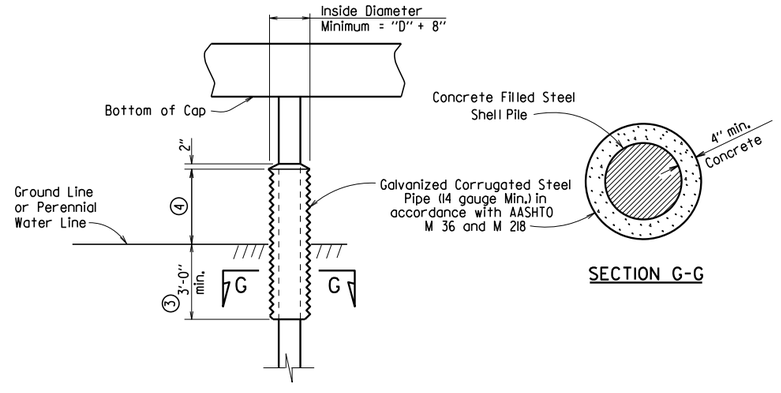
## PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(5) (Shown with Encasement to Bottom of Cap)

(3) Unless otherwise noted on Bridge Layout.

(4) See Bridge Layout for height of pile encasement (3'-0" Minimum).

(5) Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.




SECTION G-G

## ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

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.

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

BRIDGE ENGINEER

# STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

## ARKANSAS STATE HIGHWAY COMMISSION

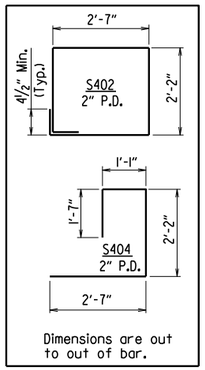
LITTLE ROCK, ARK.

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | A.M.S. | DATE: | 2/27/2014 | FILENAME: | b55021.dgn |
| CHECKED BY: | B.E.F. | DATE: | 2/27/2014 | SCALE: | NO SCALE |
| DESIGNED BY: | STD. | DATE: | — | | |

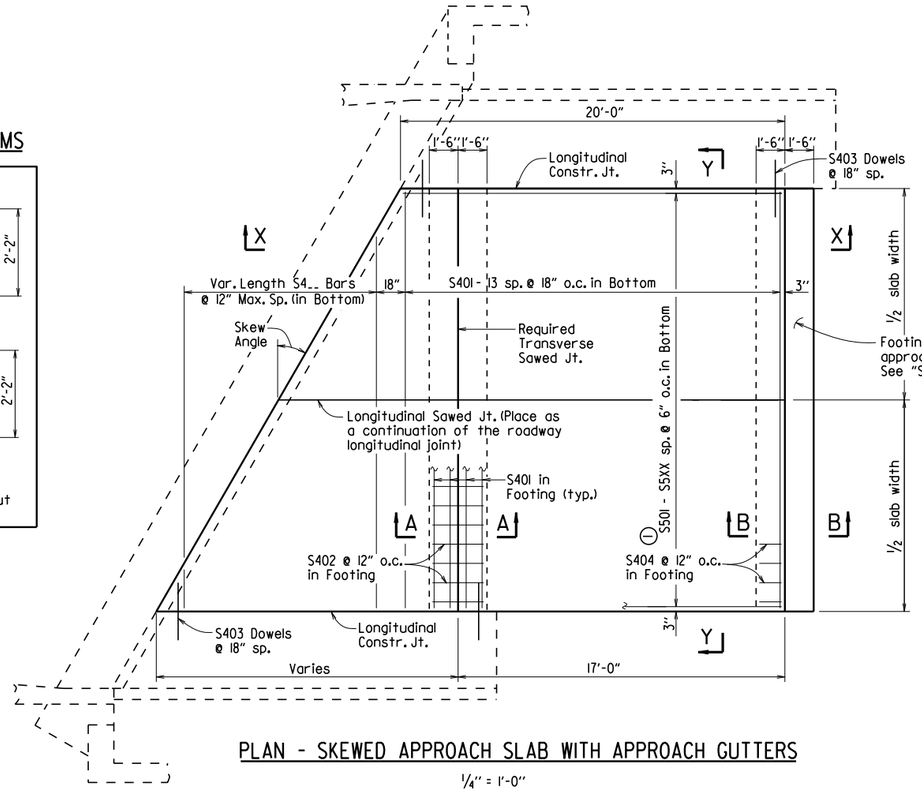
DRAWING NO. 55021

| 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 | TYPE E APPROACH SLAB | | | 55040E |

## BENDING DIAGRAMS




Dimensions are out to out of bar.



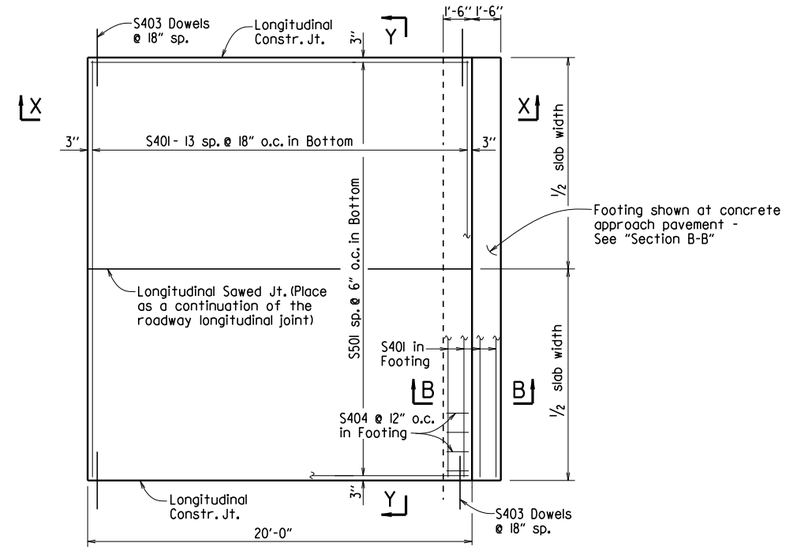

① S5XX = S540 for 20'-0" Width
= S544 for 22'-0" Width
= S548 for 24'-0" Width
= S572 for 36'-0" Width

## PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

1/4" = 1'-0"

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.




## PLAN - SQUARE APPROACH SLAB

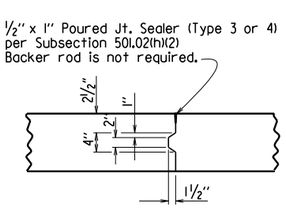
1/4" = 1'-0"

## BAR LIST

(Square & Skewed Approach Slabs)

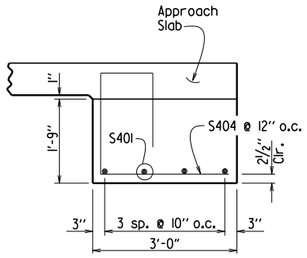
| | | Square | | Skewed | |
|---|---|---|---|---|---|
| | Mark | No. Req'd. | Length | No. Req'd. | Length |
| 20'-0" Slab Width | S401 | 18 | 19'-8" | 22 | 19'-8" |
| | S402 | — | — | 20 | 9'-10" |
| | S403 | 28 | 3'-0" | * | 3'-0" |
| | S404 | 20 | 7'-2" | 20 | 7'-2" |
| | S4__ | — | — | 1 Ea. | 19.7' - 1.25'/(tan skew angle) to 2'-0" Min. |
| | S501 | 40 | 19'-8" | — | — |
| | S501 - S540 | — | — | 1 Ea. | 19.6' + 0.25'(tan skew angle) to 19.6' + 19.75'(tan skew angle) |
| 22'-0" Slab Width | S401 | 18 | 21'-8" | 22 | 21'-8" |
| | S402 | — | — | 22 | 9'-10" |
| | S403 | 28 | 3'-0" | * | 3'-0" |
| | S404 | 22 | 7'-2" | 22 | 7'-2" |
| | S4__ | — | — | 1 Ea. | 21.7' - 1.25'/(tan skew angle) to 2'-0" Min. |
| | S501 | 44 | 19'-8" | — | — |
| | S501 - S544 | — | — | 1 Ea. | 19.6' + 0.25'(tan skew angle) to 19.6' + 21.75'(tan skew angle) |
| 24'-0" Slab Width | S401 | 18 | 23'-8" | 22 | 23'-8" |
| | S402 | — | — | 24 | 9'-10" |
| | S403 | 28 | 3'-0" | * | 3'-0" |
| | S404 | 24 | 7'-2" | 24 | 7'-2" |
| | S4__ | — | — | 1 Ea. | 23.7' - 1.25'/(tan skew angle) to 2'-0" Min. |
| | S501 | 48 | 19'-8" | — | — |
| | S501 - S548 | — | — | 1 Ea. | 19.6' + 0.25'(tan skew angle) to 19.6' + 23.75'(tan skew angle) |
| 36'-0" Slab Width | S401 | 18 | 35'-8" | 22 | 35'-8" |
| | S402 | — | — | 36 | 9'-10" |
| | S403 | 28 | 3'-0" | * | 3'-0" |
| | S404 | 36 | 7'-2" | 36 | 7'-2" |
| | S4__ | — | — | 1 Ea. | 35.7' - 1.25'/(tan skew angle) to 2'-0" Min. |
| | S501 | 72 | 19'-8" | — | — |
| | S501 - S572 | — | — | 1 Ea. | 19.6' + 0.25'(tan skew angle) to 19.6' + 35.75'(tan skew angle) |

*Varies with skew angle



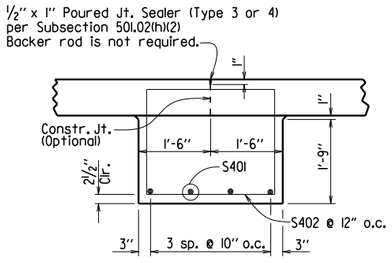

## DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

1" = 1'-0"



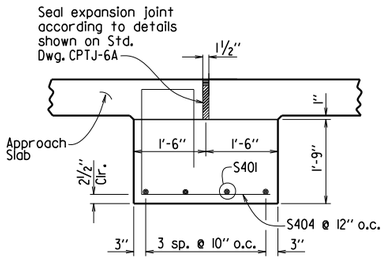

## SECTION B-B

AT ASPHALT APPROACH PAVEMENT
N.T.S.




## SECTION A-A

N.T.S.



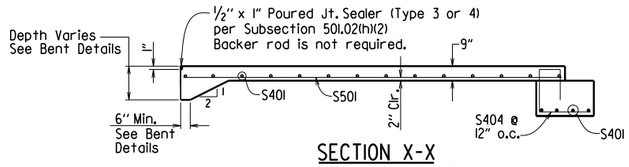

## SECTION B-B

AT CONCRETE APPROACH PAVEMENT
N.T.S.

## TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

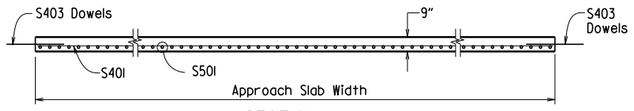
(FOR INFORMATION ONLY)

| Slab Width | Reinforcing Steel | Concrete |
|---|---|---|
| | (Lbs.) | (Cu. Yds.) |
| 20'-0" | 1210 | 15.60 |
| 22'-0" | 1325 | 17.20 |
| 24'-0" | 1440 | 18.70 |
| 36'-0" | 2135 | 28.10 |




## SECTION X-X

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




## SECTION Y-Y

N.T.S.

GENERAL NOTES

This drawing is for use with Reinforced Concrete Slab Spans in Seismic Performance Zones 2, 3 & 4 and for the maximum skew angles shown below:

20'-0" Slab Width: Maximum Skew Angle = 45°
22'-0" Slab Width: Maximum Skew Angle = 45°
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.

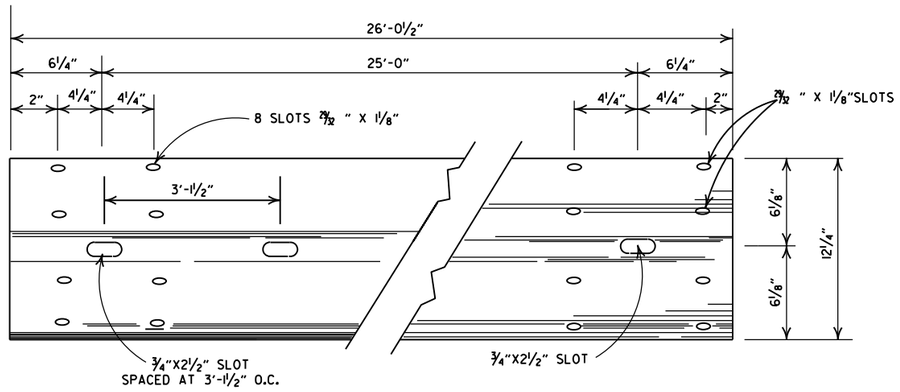
# STANDARD DETAILS FOR TYPE E APPROACH SLAB

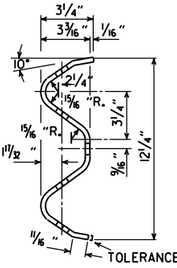
## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040e.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

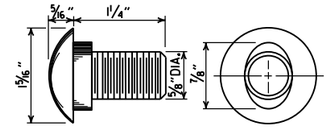
DRAWING NO. 55040E



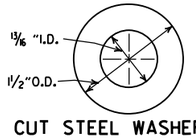




## DETAILS OF W-BEAM GUARDRAIL

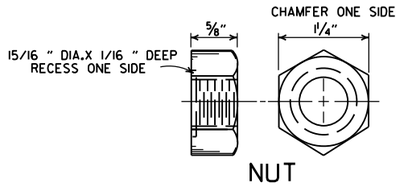
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



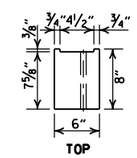

## SPLICE BOLT
## POST BOLT - SAME EXCEPT LENGTH



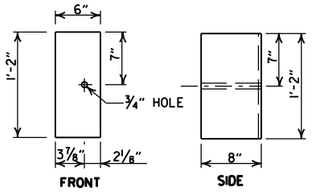

CUT STEEL WASHER



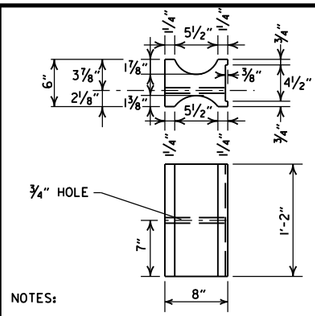

NUT




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




## WOOD BLOCKOUT (W-BEAM)

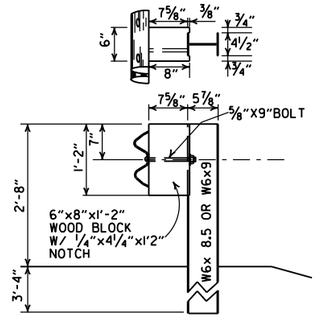



NOTES:

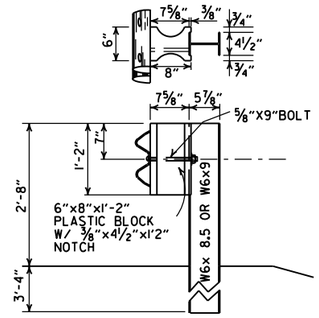
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

## PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

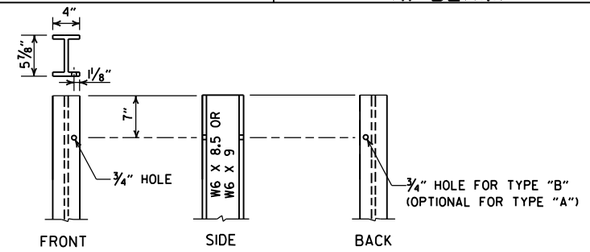



WOOD BLOCKOUT CONNECTIONS

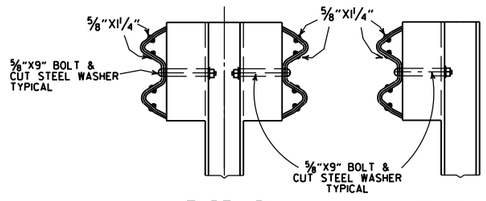



PLASTIC BLOCKOUT CONNECTIONS

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




## STEEL POST




TYPE "B" TYPE "A"

## 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.

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.




POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS




PLASTIC BLOCKOUT CONNECTIONS

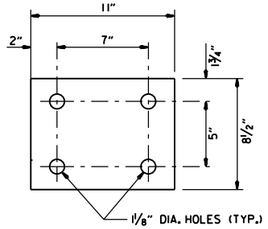
## DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

| 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 CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES | |
| 04-03-97 | REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS | |
| 10-18-96 | REVISED WOOD POST NOTE | |
| 06-02-94 | ADDED ALT. STEEL POST SIZE | |
| 08-05-93 | REVISED STEEL POST SIZE | 8-5-93 |
| 10-01-92 | REDRAWN & REVISED | 10-1-92 |
| 08-15-91 | REVISED WASHER NOTE | 8-15-91 |
| 08-02-90 | REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK | 8-2-90 |
| 07-15-88 | REVISED SECTION 3 & GENERAL NOTES | |
| 03-04-88 | REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK | 780-3-4-88 |
| 10-30-87 | REVISED WOOD LINE POST DETAIL | 546-10-30-87 |
| 10-09-87 | REDRAWN & REVISED | 802-10-9-87 |

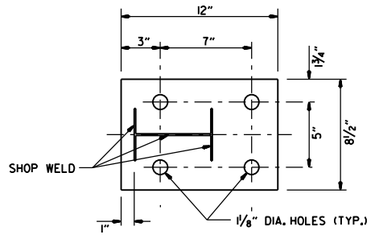
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-6

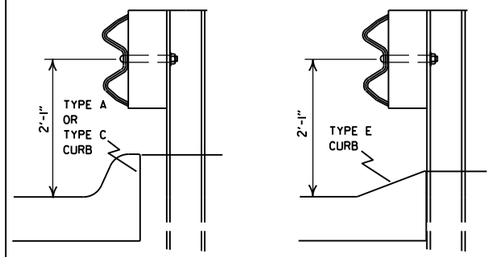



WASHER PLATE



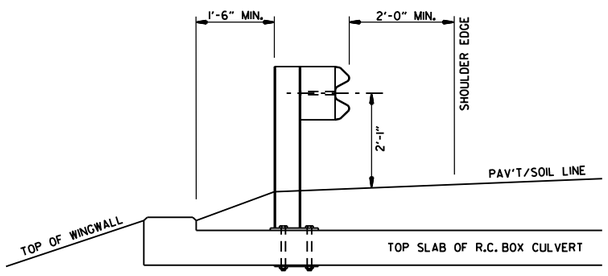

BASE PLATE

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

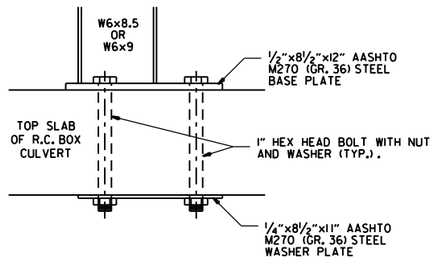



## DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB (W-BEAM)

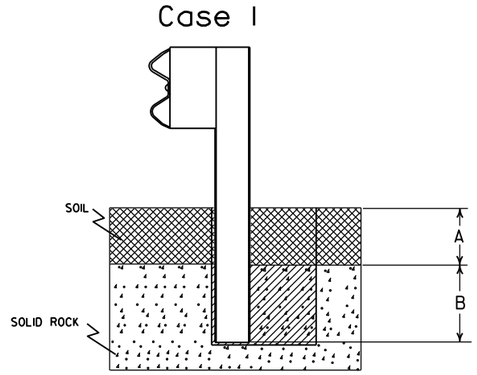
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

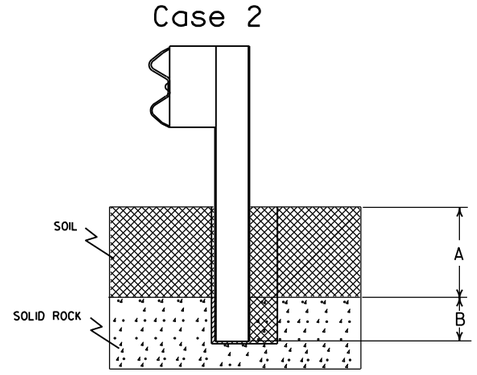



SECTION A-A



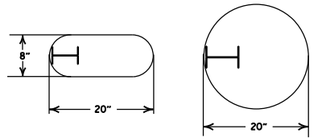

DETAIL OF CONNECTION

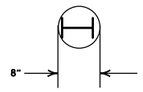



**Plan View Steel Posts**

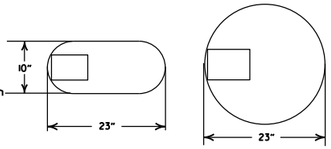
Either hole configuration acceptable

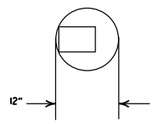



**Plan View Wood Posts**

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".

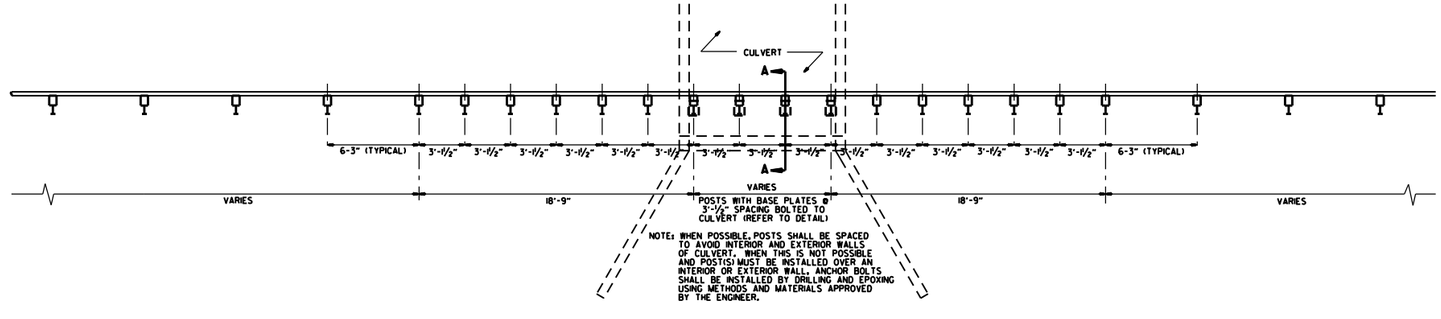
Zone A:
Backfill according to Section 617.03(a).

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. DWG. GR-6.

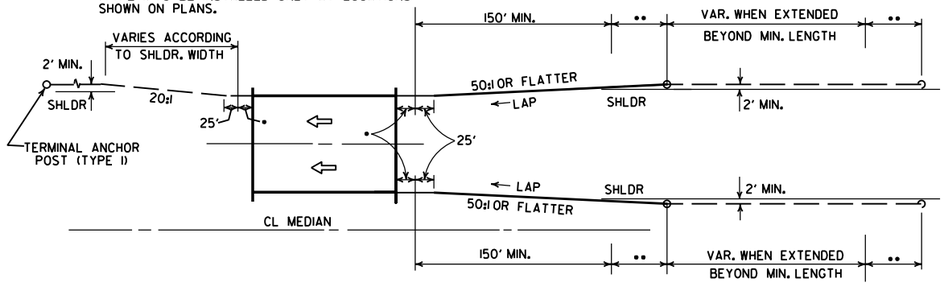
| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | RENUMBERED, RENAMED, REVISED REFERENCE | |
| 11-16-17 | REVISED GUARDRAIL HEIGHT | |
| 07-14-10 | RAISED HEIGHT OF GUARDRAIL 1" | |
| 04-12-07 | REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB | |
| 11-10-05 | ADDED GUARDRAIL PLACEMENT BEHIND 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

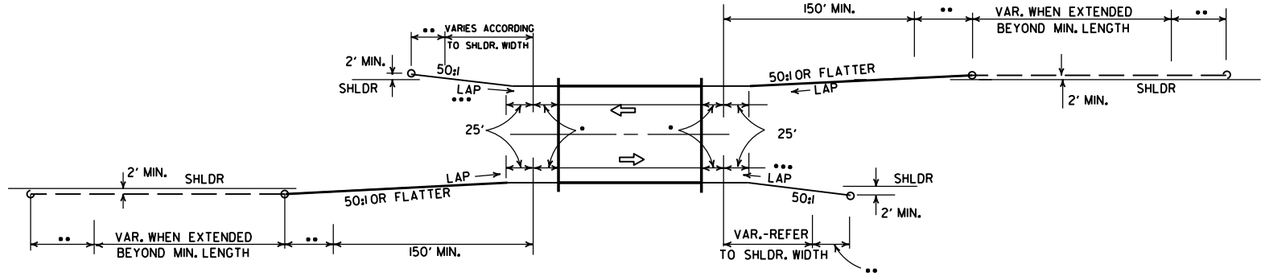
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

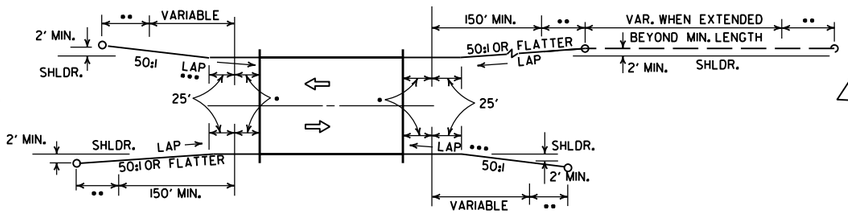
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

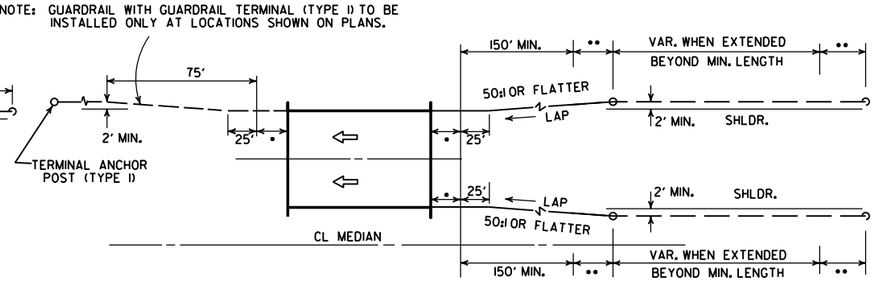
## METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

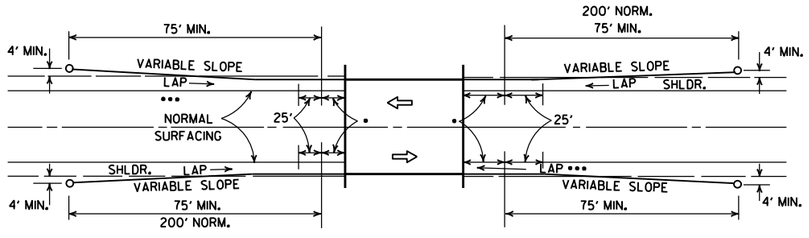
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

## METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200'. CHANGE TO LAP IN DIRECTION OF TRAVEL.




## METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

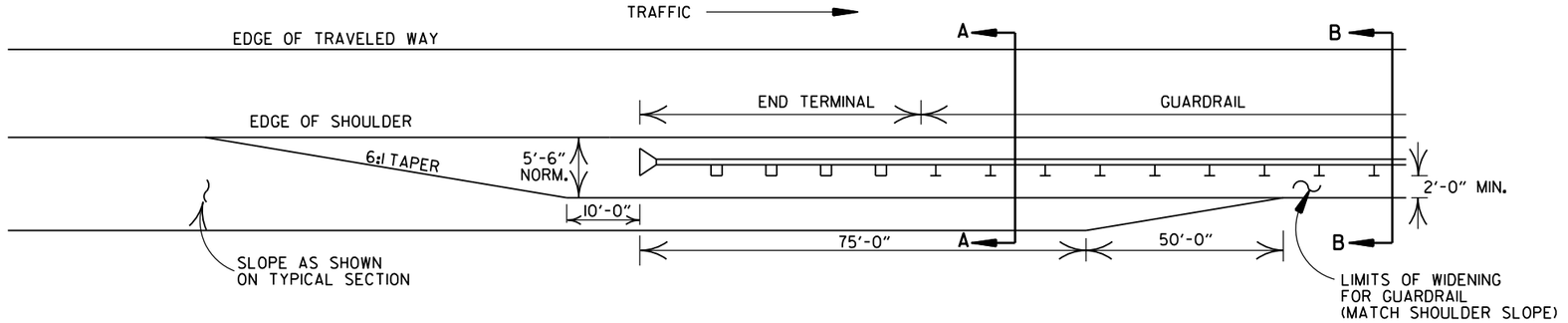
- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

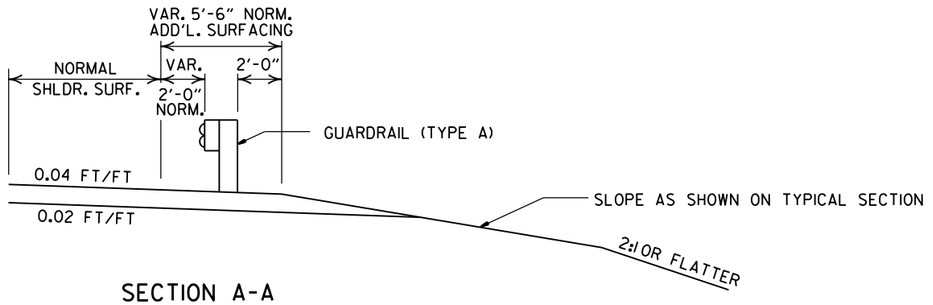
| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| | | |
| 11-07-19 | RENUMBERED AND RENAMED | |
| 4-17-08 | REVISED LAYOUTS | |
| 11-10-05 | REMOVED GUARDRAIL NOTES AND DETAILS | |
| 11-16-01 | DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1) | |
| 1-12-00 | ADDED CONSTRUCTION NOTE | 1-12-00 |
| 6-26-97 | REVISED LAYOUT | |
| 10-1-92 | REDRAWN & REVISED | 10-1-92 |
| | ADDED NOTE | |
| 10-9-87 | REDRAWN & REVISED | |

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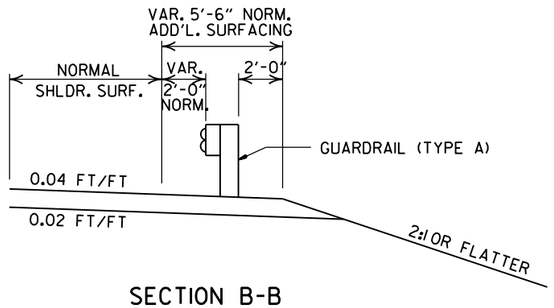
# GUARDRAIL DETAILS

STANDARD DRAWING GR-8



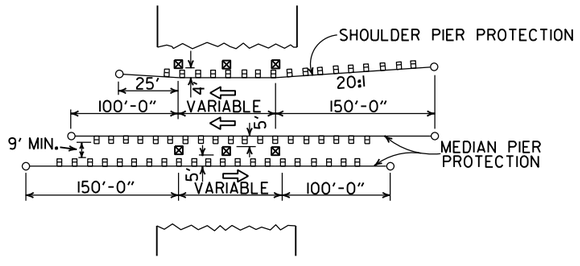




SECTION A-A



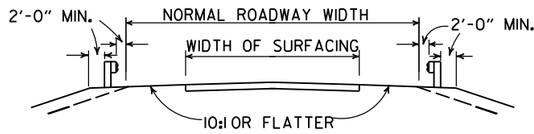

SECTION B-B

## DETAILS OF WIDENING FOR GUARDRAIL

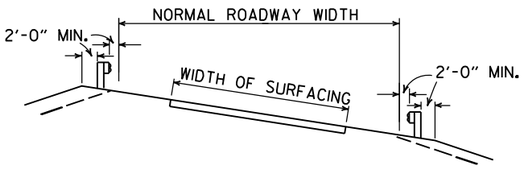



## METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

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




SECTION ON TANGENT




SECTION ON CURVE

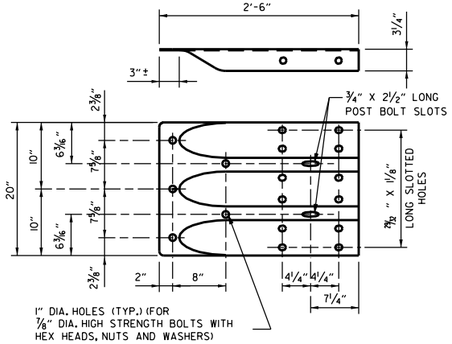
## DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

| DATE | REVISION | DATE FILM |
|---|---|---|
| 11-07-19 | RENUMBERED AND RENAMED | |
| 4-17-08 | MINOR REVISION | |
| 11-10-05 | DRAWN | |

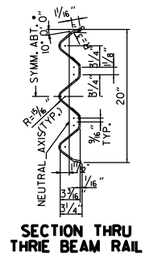
ARKANSAS STATE HIGHWAY COMMISSION

# GUARDRAIL DETAILS

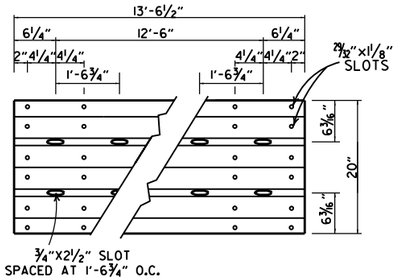
STANDARD DRAWING GR-9



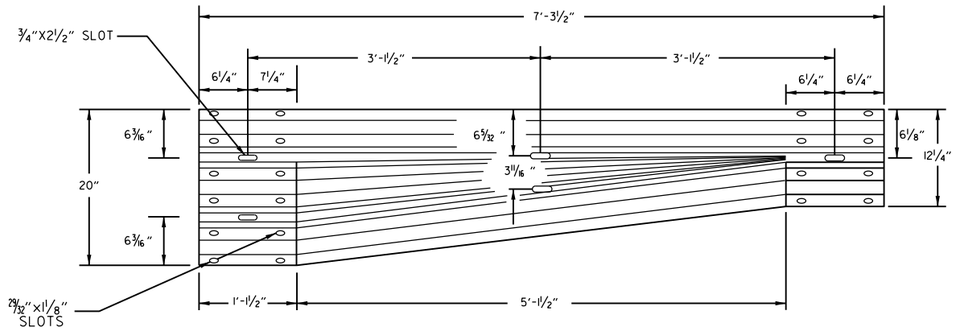

## SPECIAL END SHOE



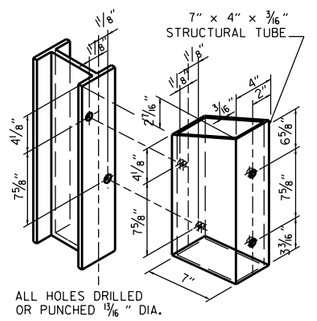

SECTION THRU THRIE BEAM RAIL




## THRIE BEAM RAIL

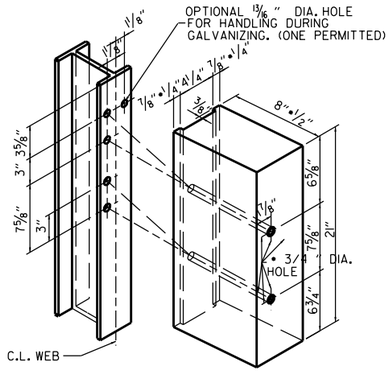



## TRANSITION SECTION




ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

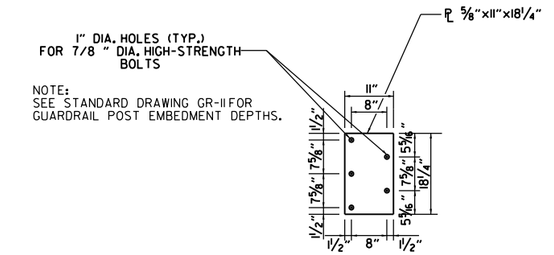
## STRUCTURAL STEEL TUBING BLOCKOUT DETAIL




ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

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

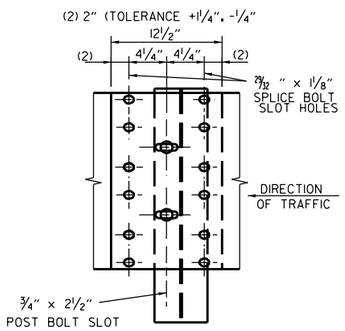
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.




NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

## CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.




## THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1.

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

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

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

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

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

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

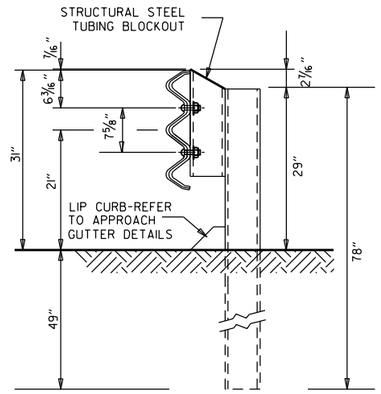
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | RENAMED AND REVISED REFERENCES | |
| 11-16-17 | REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12 | |
| 07-14-10 | RAISED HEIGHT OF W-BEAM 1" | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | |
| 11-10-05 | ADDED NOTE FOR ATTACHING STEEL BLOCKOUT | |
| 11-18-04 | REVISED GENERAL NOTES | |
| 10-9-03 | REVISED GENERAL NOTES | |
| 04-10-03 | REVISED GENERAL NOTES | |
| 08-22-02 | REVISED NOTE (2) | |
| 06-29-00 | MOVED DIMENSION LINES | |
| 05-18-00 | ADDED NOTE | |
| 03-30-00 | DRAWN & ISSUED | |

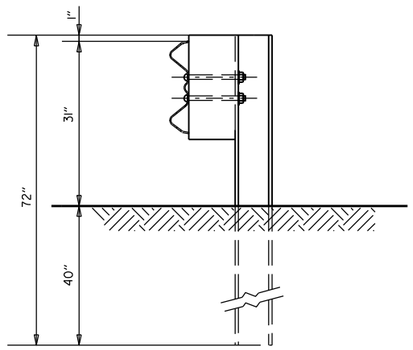
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

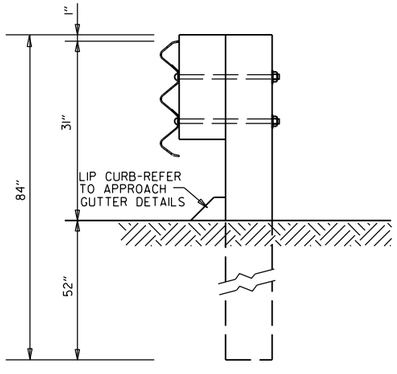
STANDARD DRAWING GR-10



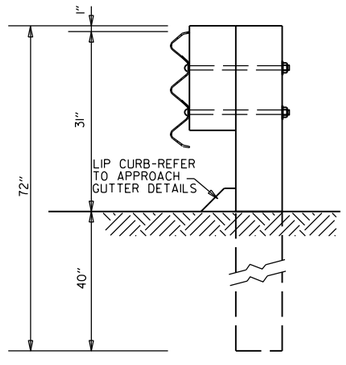

THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



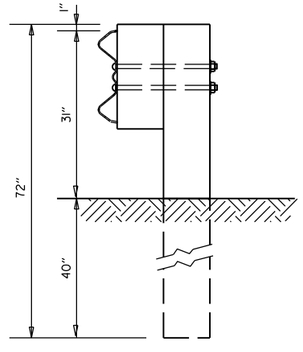

W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8




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




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




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

GENERAL NOTES:

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

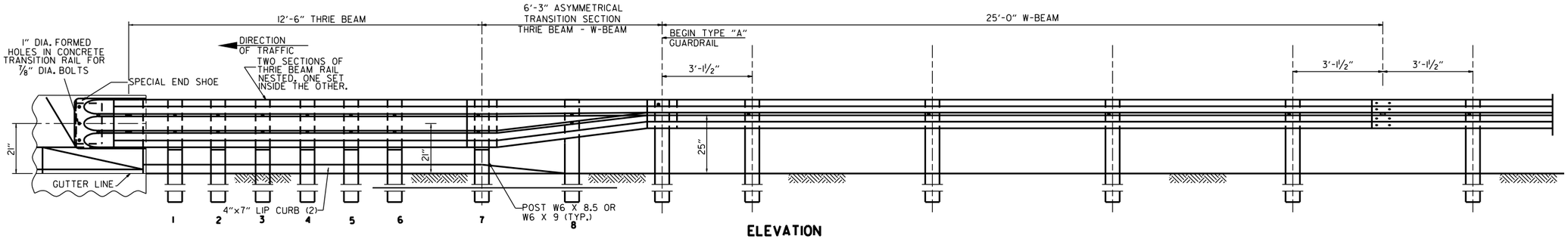
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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

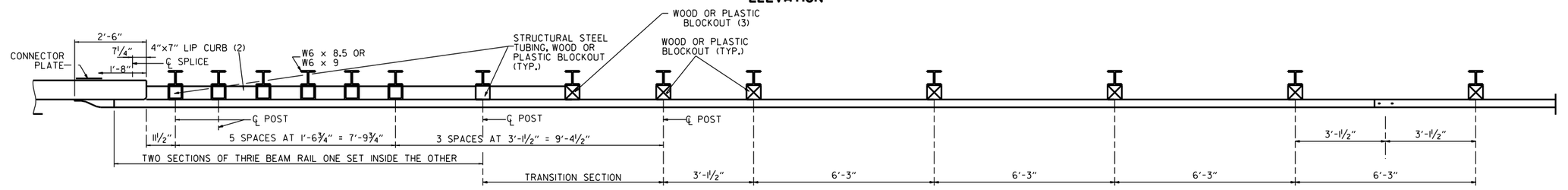
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

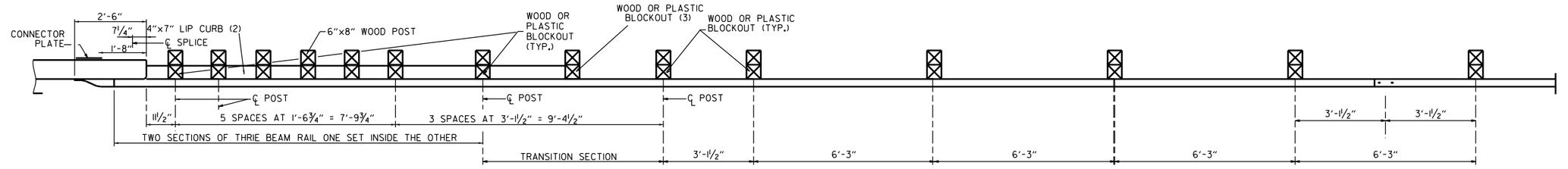
STANDARD DRAWING GR-11




**ELEVATION**




**PLAN**




**PLAN**

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

# THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

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

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

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

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

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

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

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

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

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

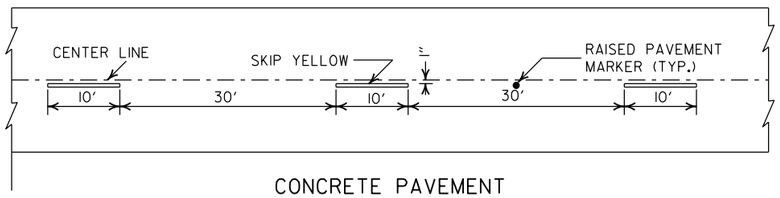
| DATE | REVISION | FILMED |
|---|---|---|
| 05-14-20 | REVISED NOTES | |
| 11-07-19 | RENAMED & REVISED REFERENCES | |
| 11-16-17 | RE-DRAWN FROM STD. DWG. GR-10 & ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

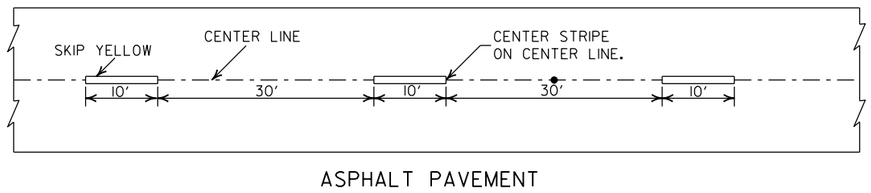
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

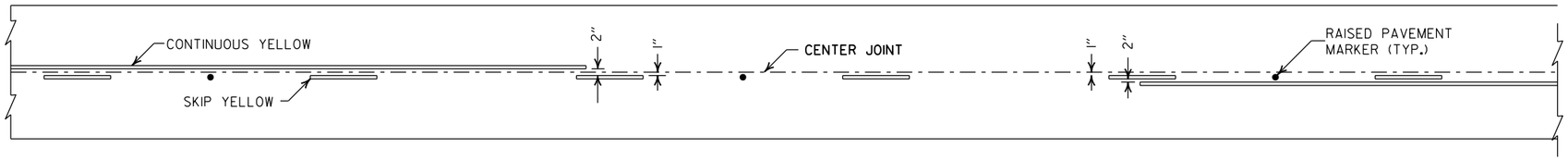



CONCRETE PAVEMENT

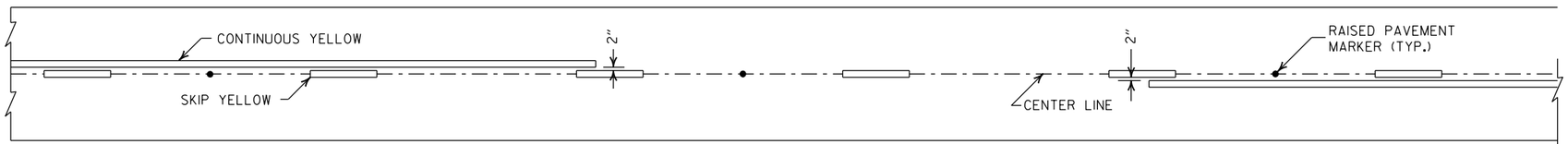



ASPHALT PAVEMENT

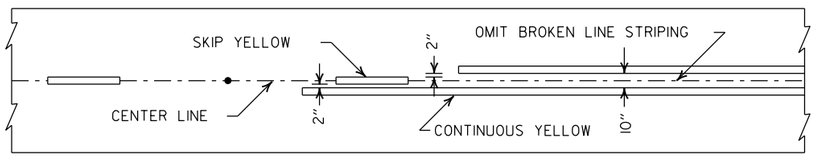
## BROKEN LINE STRIPING



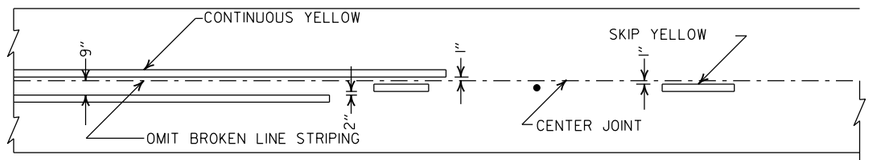

## SOLID LINE STRIPING ON CONCRETE PAVEMENT




## SOLID LINE STRIPING ON ASPHALT PAVEMENT

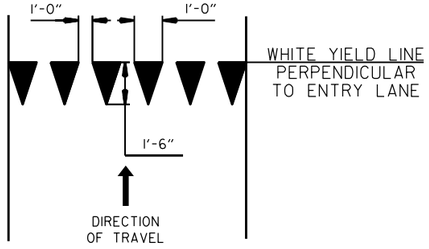



ASPHALT PAVEMENT

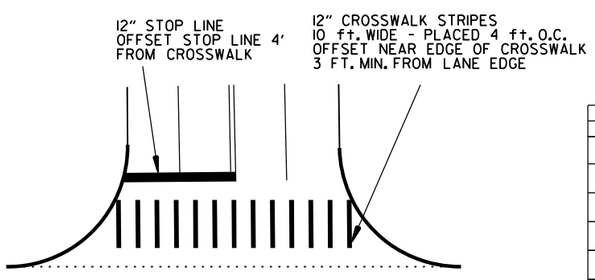



CONCRETE PAVEMENT

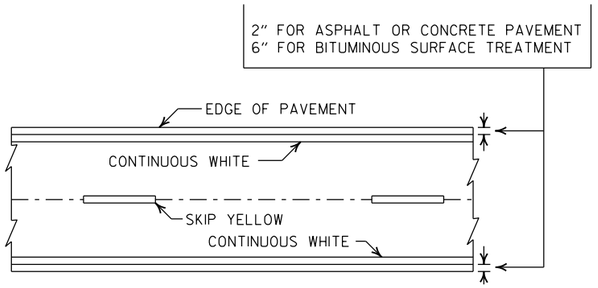
## STRIPING AT ADJACENT NO PASSING LANES




## YIELD LINE DETAIL



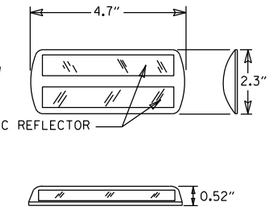

## CROSSWALK AND STOP LINE DETAILS




## PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR YELLOW/YELLOW




NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

## DETAIL OF STANDARD RAISED PAVEMENT MARKERS

| DATE | REVISION | FILMED |
|---|---|---|
| 2-27-20 | REVISED STOP LINE DETAILS | |
| 6-1-17 | ADDED YIELD LINE DETAIL | |
| 5-12-16 | REVISED LINE WIDTHS, SPACING, & NOTES | |
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 11-17-10 | REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS | |
| 11-18-04 | REVISED NOTE 2 & GENERAL NOTES | |
| 8-22-02 | ADDED CROSSWALK & STOPBAR DTLS. | |
| 7-02-98 | ADDED DETAILS OF STD. RAISED PAV'T. MARKERS | |
| 4-26-96 | REV. NOTES 3&4; ADDED R.P.M. | |
| 9-30-80 | DRAWN | 1-9-30-80 |

ARKANSAS STATE HIGHWAY COMMISSION

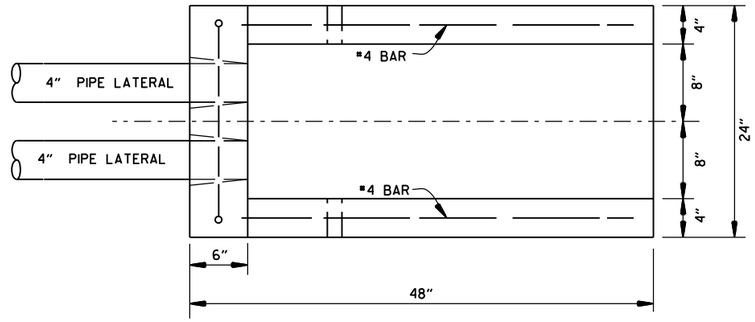
# PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

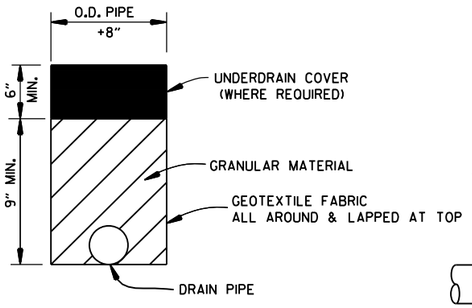
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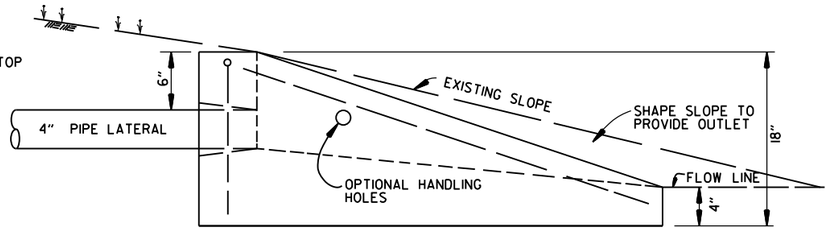
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

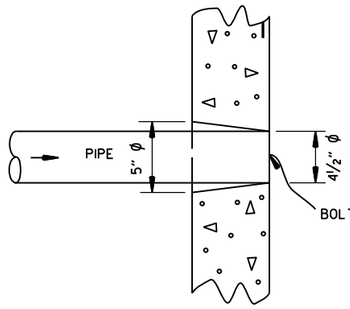



PLAN VIEW

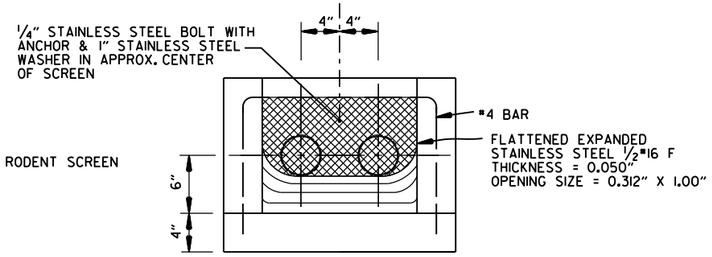


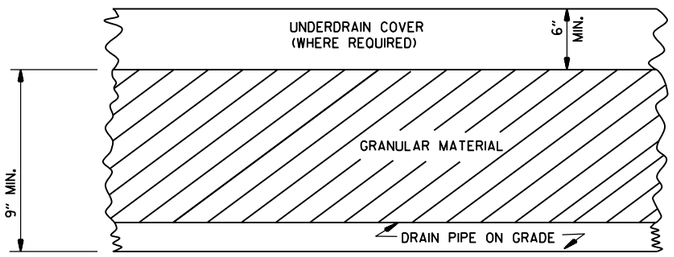

SIDE VIEW




DETAIL OF HOLE FOR 4" PIPE

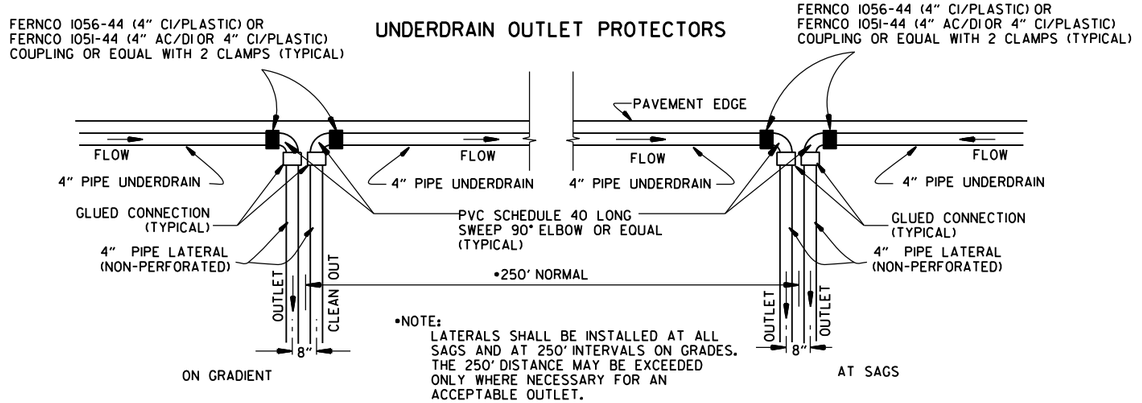



FRONT VIEW
(DETAIL OF RODENT SCREEN)




DETAILS OF PIPE UNDERDRAIN

## UNDERDRAIN OUTLET PROTECTORS




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

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 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; 5½" 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 POLYEDTHYLENE 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 |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

## SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

| DEGREE OF CURVE | 30 MPH | | | 35 MPH | | | 40 MPH | | | 45 MPH | | | 50 MPH | | | 55 MPH | | | 60 MPH | | | 65 MPH | | | 70 MPH | | | 75 MPH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | | e | Ls (FT) | |
| | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE | | MINIMUM | DESIRABLE |
| 0° 15' | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | |
| 0° 30' | NC | | | NC | | | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | | RC | 96 | | 0.022 | 101 | |
| 0° 45' | NC | | | NC | | | NC | | | NC | | | RC | 96 | | RC | 96 | | 0.024 | 106 | | 0.026 | 110 | | 0.030 | 120 | | 0.032 | 125 | |
| 1° 00' | NC | | | NC | | | NC | | | RC | 90 | | 0.022 | 101 | | 0.026 | 110 | | 0.030 | 120 | | 0.034 | 130 | | 0.038 | 139 | 300 | 0.042 | 149 | 300 |
| 1° 15' | NC | | | NC | | | RC | 84 | | 0.022 | 95 | | 0.028 | 115 | | 0.032 | 125 | | 0.038 | 139 | | 0.042 | 149 | | 0.046 | 158 | | 0.052 | 173 | |
| 1° 30' | NC | | | RC | 78 | | 0.022 | 88 | | 0.028 | 108 | | 0.032 | 125 | | 0.038 | 139 | | 0.044 | 154 | | 0.050 | 168 | 300 | 0.056 | 182 | | 0.062 | 197 | |
| 1° 45' | RC | 72 | | RC | 78 | | 0.026 | 97 | | 0.030 | 113 | | 0.036 | 134 | | 0.044 | 154 | | 0.050 | 168 | 300 | 0.056 | 182 | | 0.064 | 202 | | 0.070 | 216 | |
| 2° 00' | RC | 72 | | 0.024 | 86 | | 0.028 | 101 | | 0.034 | 122 | | 0.042 | 149 | | 0.048 | 163 | | 0.056 | 182 | | 0.064 | 202 | | 0.070 | 216 | | 0.080 | 240 | |
| 2° 15' | RC | 72 | | 0.026 | 90 | | 0.032 | 109 | | 0.038 | 131 | | 0.046 | 158 | | 0.054 | 178 | 300 | 0.062 | 197 | | 0.070 | 216 | | 0.078 | 235 | 350 | 0.088 | 259 | 350 |
| 2° 30' | 0.022 | 75 | | 0.028 | 94 | | 0.034 | 113 | | 0.042 | 140 | | 0.050 | 168 | | 0.058 | 187 | | 0.068 | 211 | | 0.076 | 230 | | 0.086 | 254 | | 0.096 | 278 | |
| 2° 45' | 0.024 | 79 | | 0.030 | 98 | | 0.038 | 122 | | 0.046 | 149 | 200 | 0.054 | 178 | | 0.064 | 202 | | 0.072 | 221 | | 0.082 | 245 | | 0.092 | 269 | | 0.100 | 288 | 400 |
| 3° 00' | 0.026 | 83 | | 0.034 | 105 | | 0.040 | 126 | | 0.050 | 158 | | 0.058 | 187 | 250 | 0.068 | 211 | | 0.078 | 235 | | 0.088 | 259 | | 0.098 | 283 | 400 | D MAX = 2° 45' | | |
| 3° 15' | 0.028 | 86 | | 0.036 | 109 | | 0.044 | 134 | | 0.052 | 162 | | 0.062 | 197 | | 0.072 | 221 | | 0.082 | 245 | | 0.092 | 269 | | 0.100 | 288 | | | | |
| 3° 30' | 0.030 | 90 | | 0.038 | 113 | | 0.046 | 139 | 200 | 0.056 | 171 | | 0.066 | 206 | | 0.076 | 230 | | 0.086 | 254 | | 0.096 | 278 | 350 | D MAX = 3° 30' | | | | | |
| 3° 45' | 0.032 | 93 | | 0.040 | 117 | | 0.050 | 147 | | 0.058 | 176 | | 0.070 | 216 | | 0.080 | 240 | | 0.090 | 264 | | 0.098 | 283 | | | | | | | |
| 4° 00' | 0.034 | 97 | | 0.042 | 121 | 200 | 0.052 | 151 | | 0.062 | 185 | | 0.072 | 221 | | 0.084 | 250 | | 0.094 | 274 | 350 | 0.100 | 288 | | | | | | | |
| 4° 15' | 0.036 | 100 | | 0.044 | 125 | | 0.054 | 155 | | 0.064 | 189 | | 0.076 | 230 | | 0.086 | 254 | 350 | 0.096 | 278 | | D MAX = 4° 15' | | | | | | | | |
| 4° 30' | 0.036 | 100 | 200 | 0.046 | 129 | | 0.056 | 160 | | 0.068 | 198 | | 0.078 | 235 | | 0.090 | 264 | | 0.098 | 283 | | | | | | | | | | |
| 4° 45' | 0.038 | 104 | | 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 | | D MAX = 5° 15' | | | | | | | | | | |
| 5° 30' | 0.044 | 115 | | 0.054 | 144 | | 0.066 | 181 | | 0.078 | 221 | 250 | 0.088 | 259 | 300 | 0.098 | 283 | | | | | | | | | | | | |
| 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 | 250 | 0.086 | 239 | | 0.096 | 278 | | D MAX = 6° 30' | | | | | | | | | | | | | | |
| 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 | 300 | 0.100 | 288 | | | | | | | | | | | | | | | | |
| 8° 00' | 0.058 | 140 | | 0.070 | 176 | | 0.084 | 219 | | 0.094 | 257 | | D MAX = 8° 25' | | | | | | | | | | | | | | | | | |
| 8° 30' | 0.060 | 144 | | 0.072 | 179 | | 0.086 | 223 | 250 | 0.096 | 261 | | | | | | | | | | | | | | | | | | | |
| 9° 00' | 0.062 | 148 | | 0.076 | 187 | | 0.088 | 227 | | 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 | | D MAX = 10° 30' | | | | | | | | | | | | | | | | | | | | |
| 11° 00' | 0.070 | 162 | | 0.084 | 203 | | 0.096 | 244 | | | | | | | | | | | | | | | | | | | | | | |
| 12° 00' | 0.074 | 169 | | 0.088 | 211 | 250 | 0.098 | 248 | | | | | | | | | | | | | | | | | | | | | | |
| 13° 00' | 0.076 | 173 | | 0.090 | 215 | | 0.100 | 252 | 300 | | | | | | | | | | | | | | | | | | | | | |
| 14° 00' | 0.080 | 180 | | 0.094 | 222 | | D MAX = 13° 45' | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | D MAX = 19° 30' | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

D MAX = 28° 30'

### GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. 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%

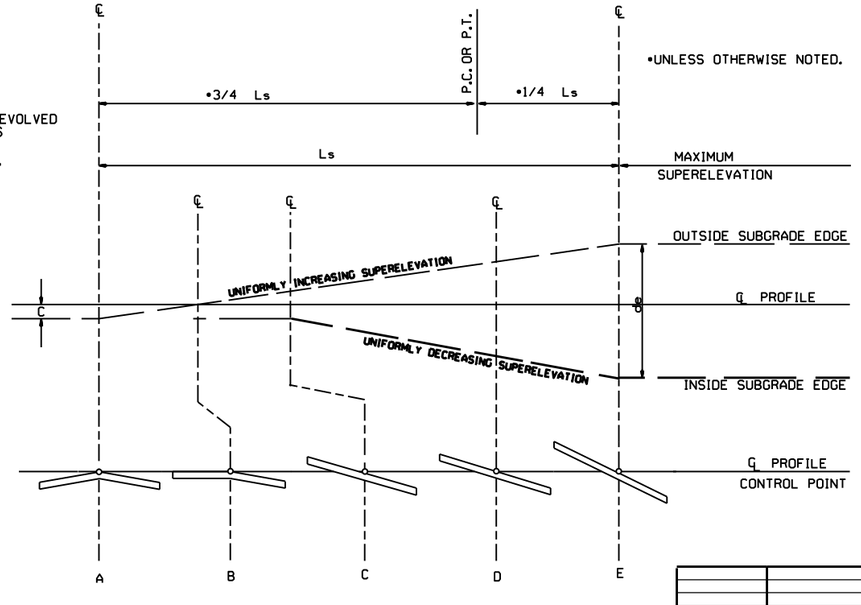
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

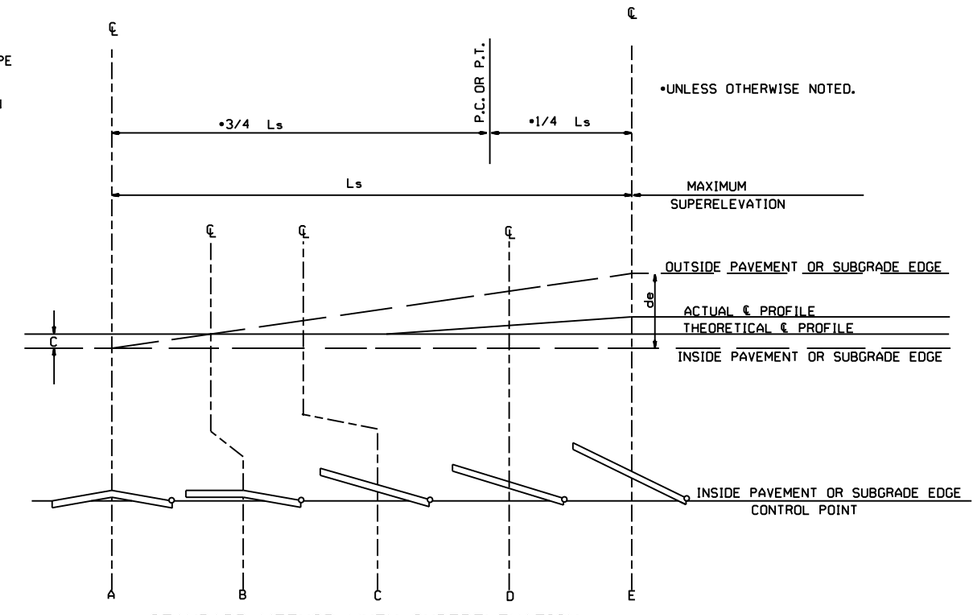
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

### 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.)




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.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 11-07-19 | REVISED SUPERELEVATION TABLE | |
| 10-18-96 | ADDED FORMULA | |
| 01-09-87 | ISSUED | 534-1-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

# TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

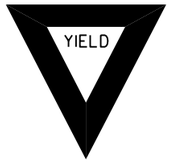
STANDARD DRAWING SE-2

R1-1




STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2




STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5




STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a




STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



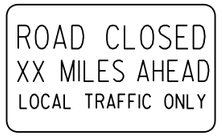

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2




48"X30"

RII-3A




60"X30"

RII-4




60"X30"

W21-5a




STD. 36"X36"
FWY. 48"X48"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2



STD. 36"X36"
FWY. 48"X48"

WI-3



STD. 48"X48"

WI-4



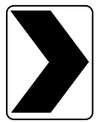
STD. 48"X48"

WI-6



STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



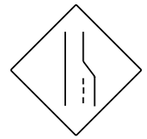
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1




STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7




EXPWY. 36"X36"
FWY. 48"X48"

W9-2




STD. 36"X36"
FWY. 48"X48"

WI3-1




STD. 24"X24"

W20-1




STD. 48"X48"

W20-2




STD. 48"X48"

W20-3




STD. 48"X48"

W20-4




STD. 48"X48"

W20-5




STD. 48"X48"

W20-7a




STD. 36"X36"
FWY. 48"X48"

W21-2




STD. 30"X30"
SPECIAL 36"X36"

W21-5




STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

WI-4b



STD. 48"X48"

R56-1




STD. 18"X18"

W8-11




STD. 36"X36"
FWY. 48"X48"

W8-9



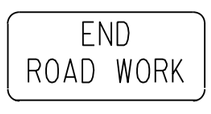

STD. 36"X36"
FWY. 48"X48"

G20-1



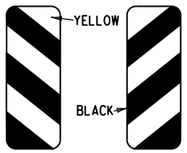

60"X24"

G20-2




48"X24"

OM-3L OM-3R




12"X36"

M4-9



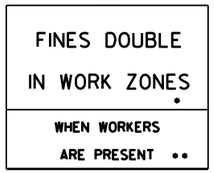

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10




48"X18"

R55-1




36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

| | |
|---|---|
| 500 FT | ½ MILE |
| 1000 FT | ¾ MILE |
| 1500 FT | 1 MILE AHEAD |

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

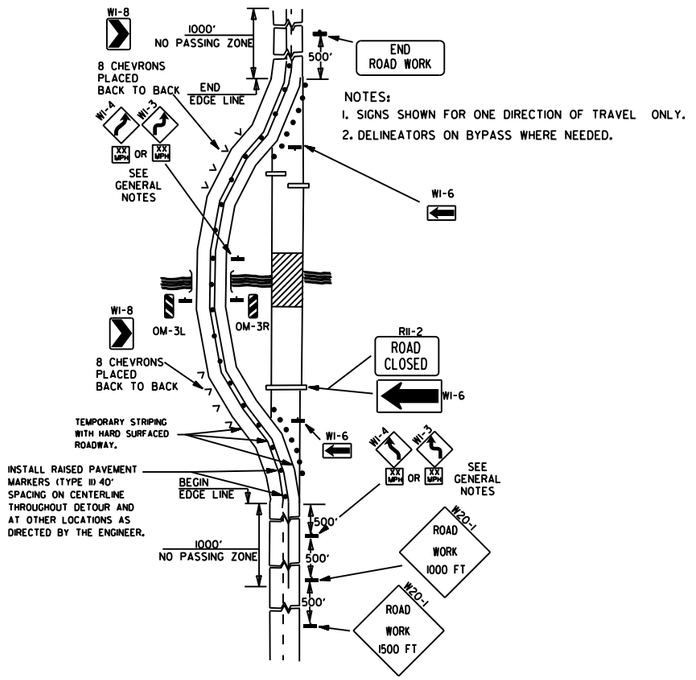
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

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

ARKANSAS STATE HIGHWAY COMMISSION

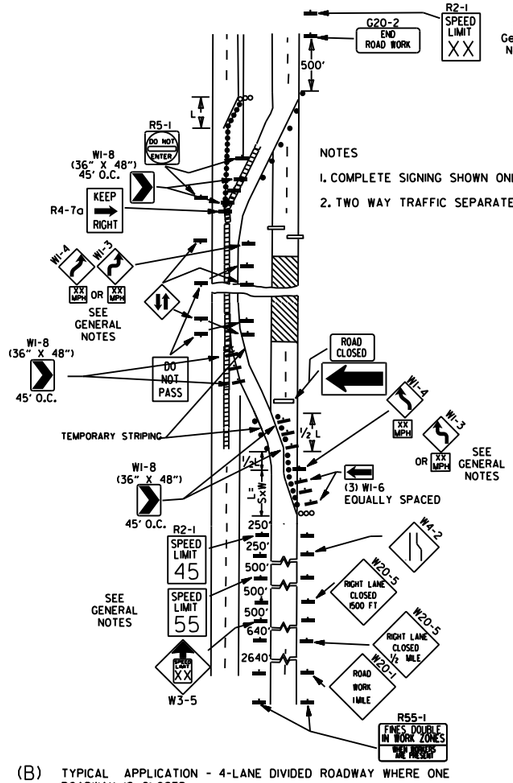
# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



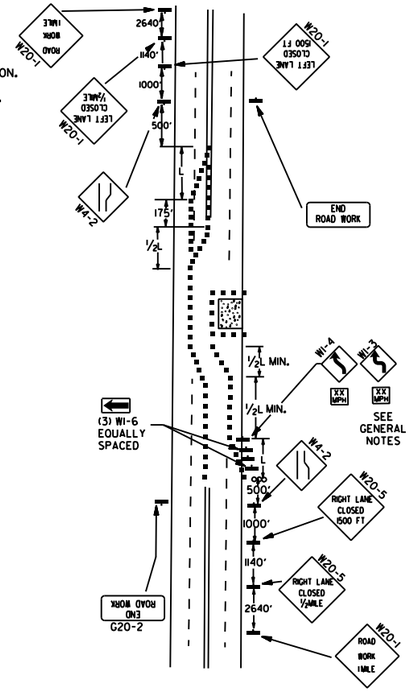

NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

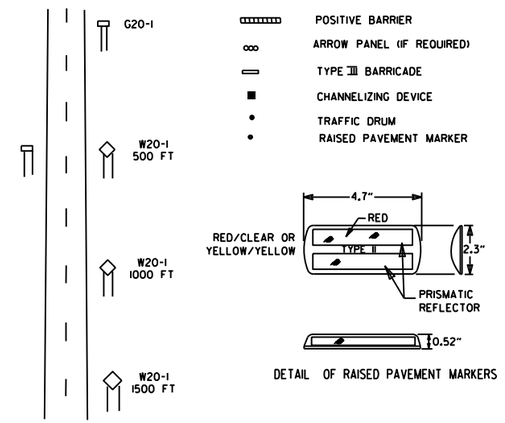



NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(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.




DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

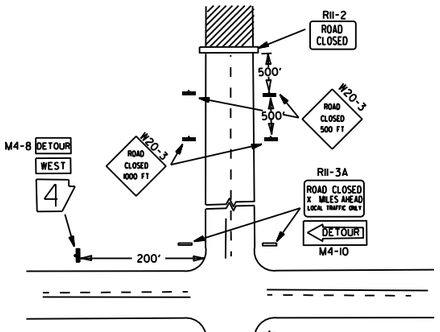
L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

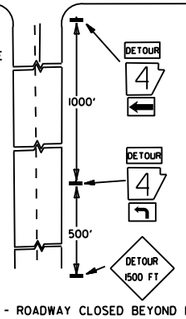
WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

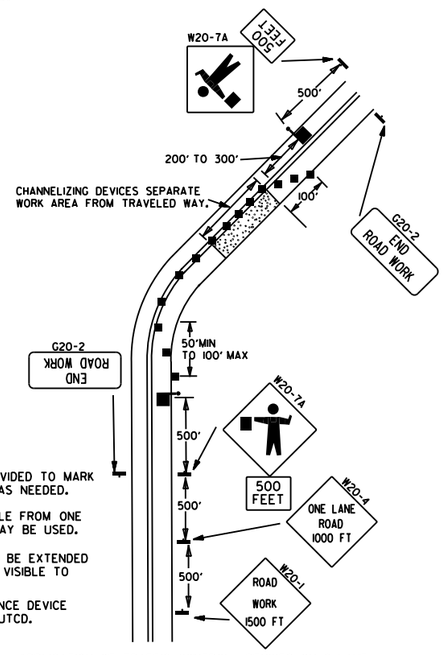
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).




NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

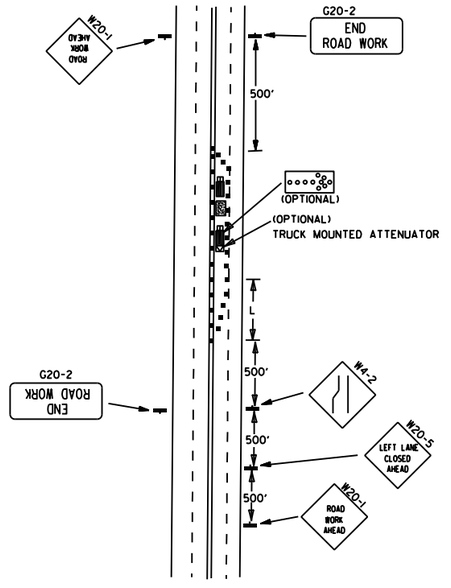



(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.




NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



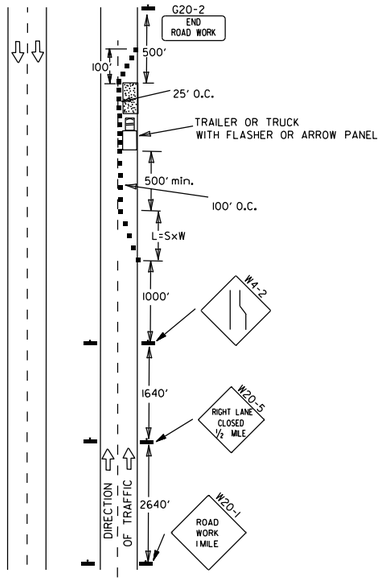

(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

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

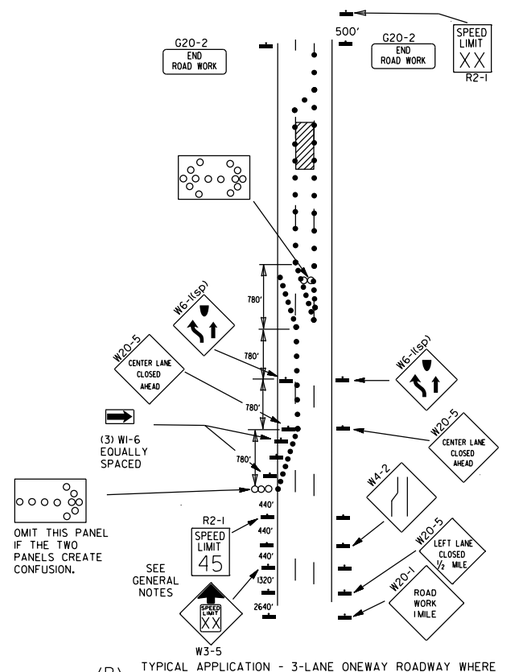
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2




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



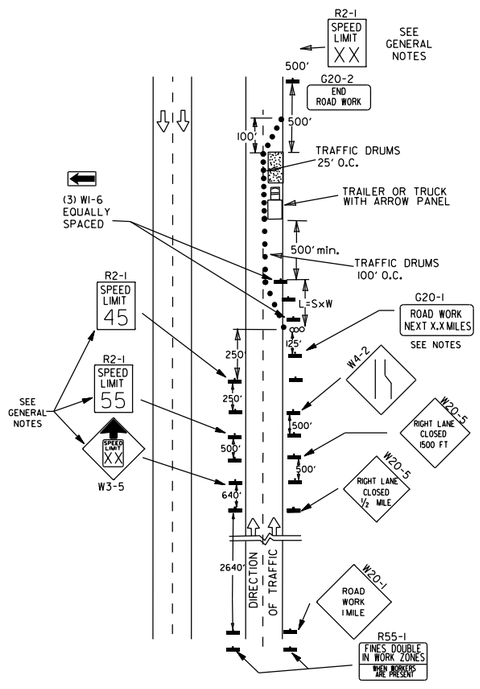

(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

- ARROW PANEL (IF REQUIRED)
- ■ CHANNELIZING DEVICE
- ● TRAFFIC DRUM

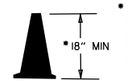
GENERAL NOTES:

1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS, AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. 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 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



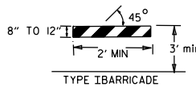

(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

## CHANNELIZING DEVICES



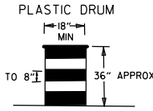

* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

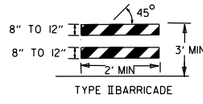
CONES



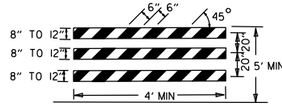

TYPE I BARRICADE

PLASTIC DRUM



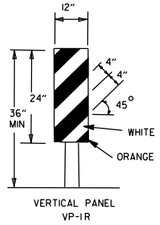




TYPE II BARRICADE



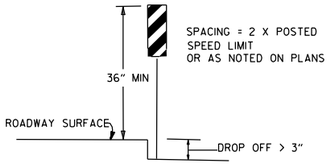

TYPE III BARRICADE

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

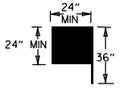



VERTICAL PANEL VP-1R

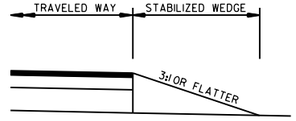
VERTICAL PANEL PLACEMENT




FLAG



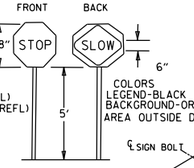

FLAG SHALL BE OF GOOD GRADE RED MATERIAL

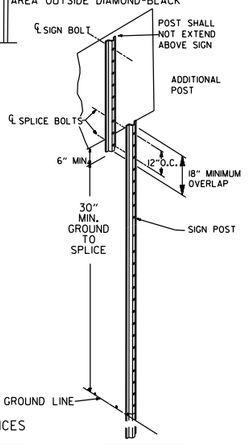


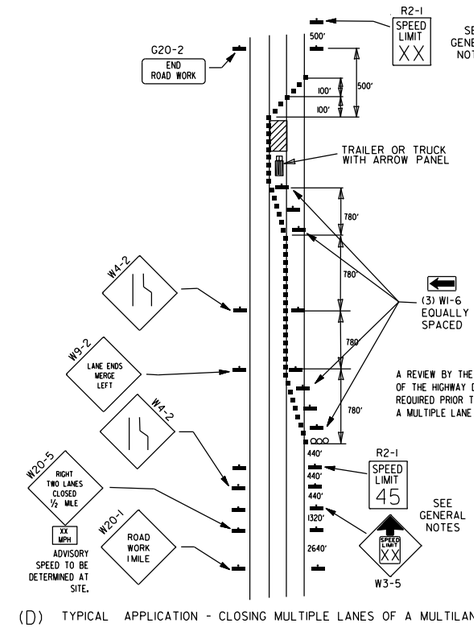

STABILIZED WEDGE

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

STOP SLOW PADDLE



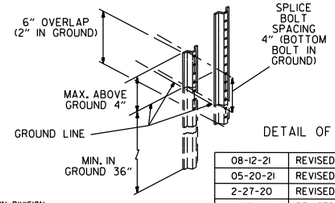

A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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.




DETAIL OF SPLICES

TRAFFIC CONTROL DEVICES

NON-INTERSTATE

| VERTICAL DIFFERENTIAL | LOCATION | TRAFFIC CONTROL | |
|---|---|---|---|
| | | ≤ 45 MPH | > 45 MPH |
| ≤ 1" | CENTERLINE | W8-11 | W8-11 |
| > 1" ≤ 3" | CENTERLINE | W8-11 AND CENTERLINE LANE STRIPING | W8-11 AND CENTERLINE LANE STRIPING |
| > 3" | CENTERLINE | STANDARD LANE CLOSURE[6] | STANDARD LANE CLOSURE[6] |
| ≤ 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9 AND TRAFFIC DRUMS[1] | W8-9 AND TRAFFIC DRUMS[1] |
| > 3" ≤ 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1] | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1] |
| > 6" ≤ 18" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1] | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2] |
| > 18" ≤ 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1] | A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3] |
| > 24" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER[4] & EDGE LINES | PRECAST CONCRETE BARRIER[4] & EDGE LINES |

INTERSTATE

| VERTICAL DIFFERENTIAL | LOCATION | TRAFFIC CONTROL |
|---|---|---|
| ≤ 3" | CENTERLINE | W8-11 AND LANE STRIPING |
| ≤ 3" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2] |
| > 3" ≤ 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2] |
| > 6" | EDGE OF TRAVELED LANE OR EDGE OF SHOULDER | PRECAST CONCRETE BARRIER & EDGE LINES |

INTERSTATE AND NON-INTERSTATE

| FORESLOPE | HEIGHT | TRAFFIC CONTROL |
|---|---|---|
| 1:1 | > 2 FT | PRECAST CONCRETE BARRIER |
| 2:1 | ≤ 5 FT | TRAFFIC DRUMS |
| 2:1 | > 5 FT | PRECAST CONCRETE BARRIER |
| Flatter than 2:1 | N/A | TRAFFIC DRUMS |

GENERAL NOTES:

1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

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

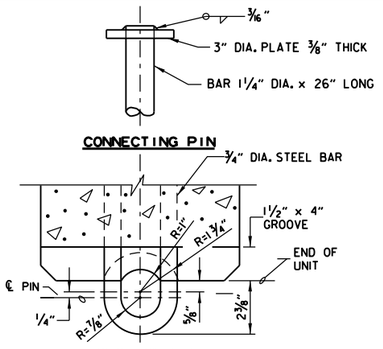
ARKANSAS STATE HIGHWAY COMMISSION

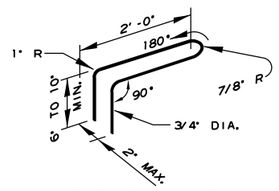
# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

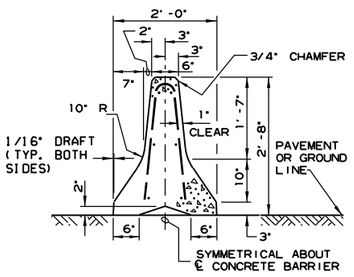
STANDARD DRAWING TC-3

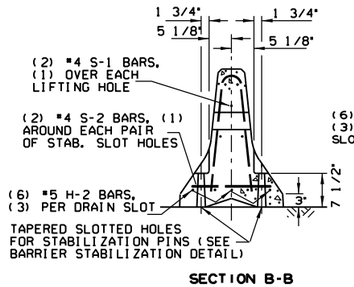
## REINFORCING BAR TABLE PER BARRIER UNIT

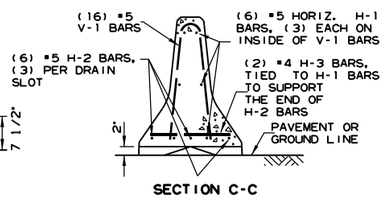
| MARK | LOCATION | BAR SIZE | (NO. BARS) | SKETCH |
|---|---|---|---|---|
| H-1 | HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS | #5 | (6) | 19'-3" |
| H-2 | CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY | #5 | (6) | 6'-6" |
| H-3 | TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1 | #4 | (2) | 1'-6" |
| S-1 | OVER LIFT HOLES | #4 | (2) | 2'-5", LIFTING HOLE, 90°, 3 3/8" R |
| S-2 | HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS | #4 | (2) | 1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP |
| V-1 | VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS | #5 | (16) | TOTAL LENGTH 4'-9"; 2 3/16" R; 12°; 1 1/2"; 9"; 2'-1 3/8"; 4 3/8" |

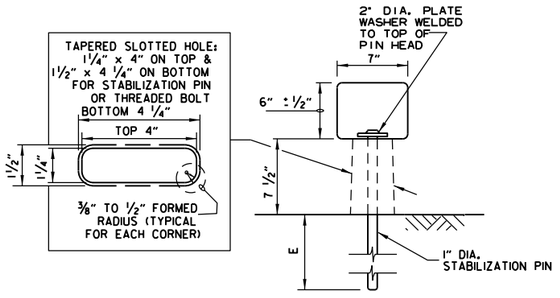


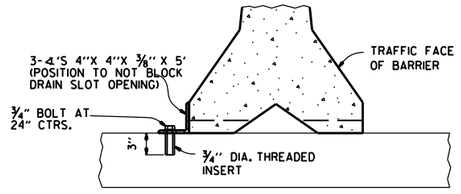



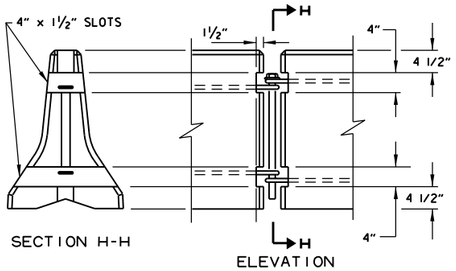

Ⓔ 4" - CONCRETE PAVEMENT
8" - ASPHALT PAVEMENT
12" - SHOULDER AREAS

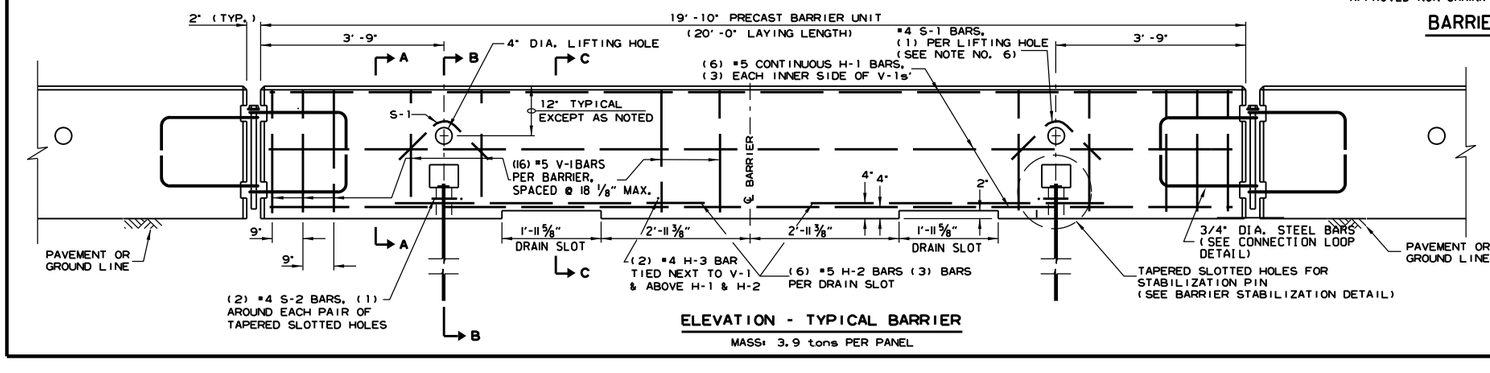



NOTE: " THREADED INSERTS SHALL BE CAST IN PLACE FOR ALL NEW BRIDGE DECKS AND DRILLED AND GROUTED FOR EXISTING BRIDGE DECKS. INSERTS SHALL HAVE A MINIMUM ULTIMATE LOAD CAPACITY OF 8000 LBS. IN TENSION. AFTER REMOVAL OF BARRIER, BOLTS, AND ANGLES, THE INSERTS SHALL BE FILLED WITH APPROVED NON-SHRINK EPOXY.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS




MASS: 3.9 tons PER PANEL

### GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE PRECAST CONCRETE BARRIER UNITS AND SHALL BE RESPONSIBLE FOR THE MANUFACTURE, SHIPMENT, STORAGE, PLACEMENT AND REMOVAL. AT THE COMPLETION OF THE PROJECT, THE PRECAST UNITS WILL REMAIN THE PROPERTY OF THE CONTRACTOR.

2. MATERIALS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   CONCRETE: 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   REINFORCING STEEL: AASHTO M 31 OR M 53, GRADE 60
   STRUCTURAL STEEL: AASHTO-M270 GRADE 36 SHALL BE USED FOR THE CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3" ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN.
   DELINEATORS: DELINEATORS SHALL BE MOUNTED AT 10' SPACING ON TOP OF PRECAST BARRIER.

   IN APPLICATIONS WHERE BARRIER WALL IS WITHIN 6 FEET OF A TRAFFIC LANE, ADDITIONAL DELINEATORS SHALL BE PLACED ON THE BARRIER AT 10' SPACING APPROXIMATELY ONE (1) FOOT FROM THE TOP OF THE BARRIER. DELINEATORS SHALL BE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR CONSTRUCTION CONCRETE BARRIER MARKERS.
   DELINEATOR COLOR SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
   PAYMENT FOR DELINEATORS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID PER LIN. FT. FOR "FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER". THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE MATERIAL AND THE DESIGN USED IN THE PRECAST BARRIER UNITS MEETS THE REQUIREMENTS AS SHOWN ON THIS STANDARD DRAWING.

3. OTHER PRECAST CONCRETE BARRIERS THAT HAVE BEEN CRASH TESTED AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION TO MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) WILL BE ACCEPTED IN LIEU OF THE BARRIER SHOWN. DRAIN SLOTS SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH A CERTIFICATION OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) COMPLIANCE FOR ANY OTHER TYPES OF PRECAST BARRIER TO BE USED. THE CERTIFICATION SHALL STATE THAT THE PRECAST CONCRETE BARRIER MEETS THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH). MIXING OF SHAPES WILL NOT BE ALLOWED IN A CONTINUOUS LINE OF UNITS.

4. DOWEL HOLES IN PAVEMENT OR BRIDGE SLABS THAT ARE TO REMAIN IN PLACE SHALL BE FILLED. HOLES IN CONCRETE PAVEMENT AND BRIDGE SLABS SHALL BE FILLED WITH AN APPROVED NON-SHRINK EPOXY GROUT. HOLES IN ASPHALT PAVEMENT SHALL BE FILLED WITH AN APPROVED ASPHALT JOINT FILLER. PAYMENT FOR DRILLING AND FILLING HOLES TO BE INCLUDED IN THE PRICE FOR VARIOUS BARRIER ITEMS.

5. ATTACH UNITS TO ROADWAY SURFACE WITH STABILIZATION PINS AND TO DECK SLABS USING BOLTS WHEN REQUIRED.

6. A 4" WHITE PVC SLEEVE MAY BE USED TO FORM THE LIFTING HOLE AND IF USED THE SLEEVE IS TO BE LEFT IN PLACE.

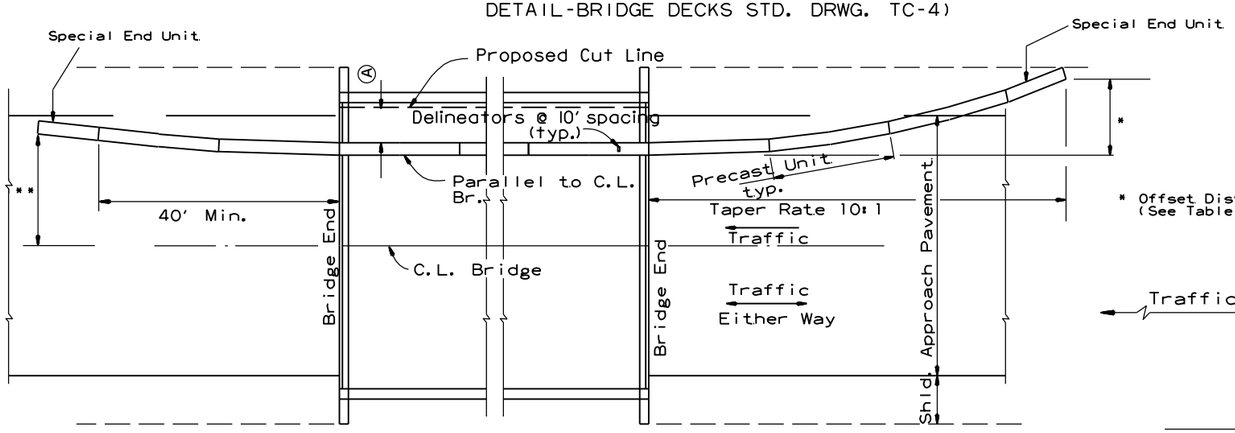
| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | REVISED NOTE 3 | |
| 2-27-14 | REVISED BARRIER STABILIZATION DETAIL | |
| 10-15-09 | ADDED REFERENCE TO WASH | |
| 8-5-09 | REV. NOTE 3 CONCERNING DRAIN SLOTS | |
| 11-29-07 | REVISED NOTE 3 | |
| 5-25-06 | DELETED GENERAL NOTE 7 | |
| 11-18-04 | REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS | |
| 4-10-03 | REVISED GENERAL NOTE 2 | |
| 8-22-02 | ISSUED NEW DRAWING | |

ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

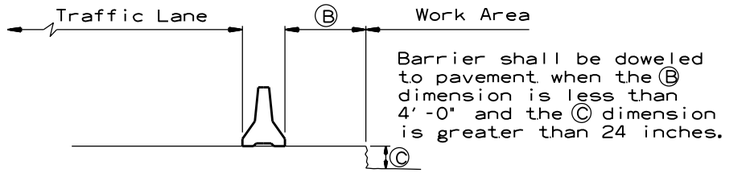
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)




BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

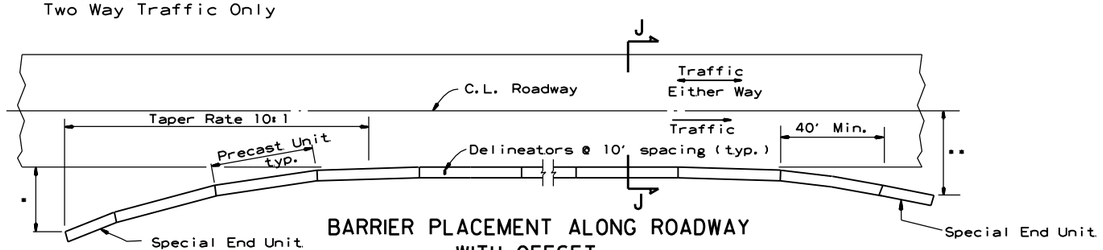
** Offset Distance for Two Way Traffic Only




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

SECTION J-J

No Scale




BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

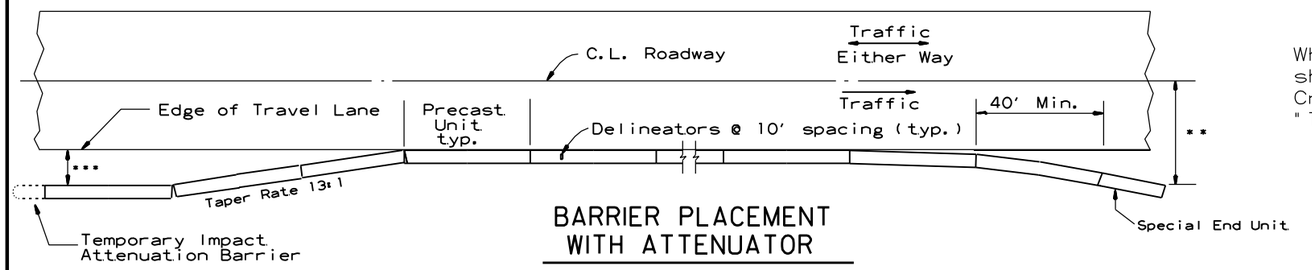
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

| Speed (MPH) | Offset Distance (FT.) |
|---|---|
| ≤ 45 | 12 |
| > 45 | 18 |

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

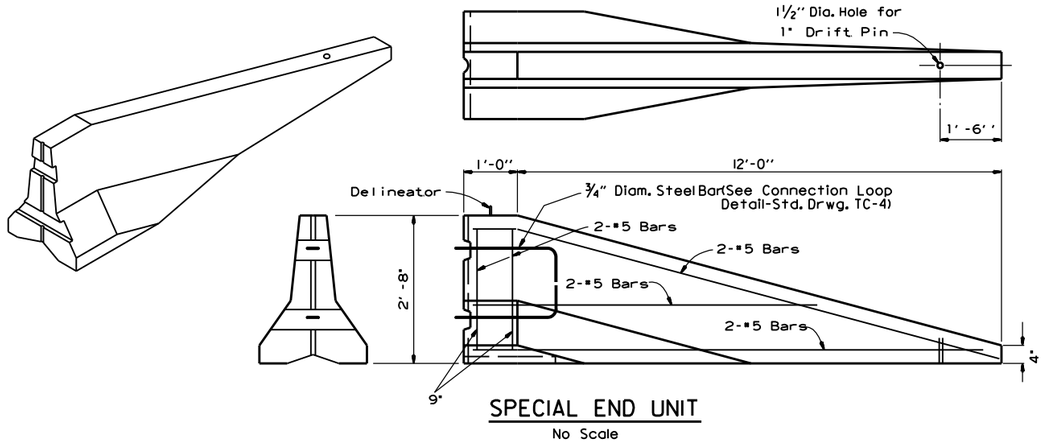



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only




SPECIAL END UNIT

No Scale

General Notes

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

| DATE | REVISION | FILMED |
|---|---|---|
| 11-07-19 | REVISED NOTE | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 5-25-06 | REVISED BARRIER PLACEMENT | |
| 8-22-02 | ISSUED NEW DRAWING | |

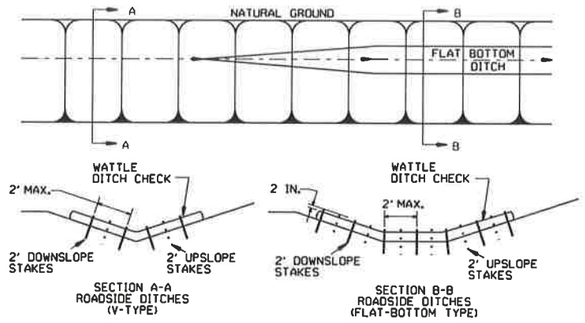
**ARKANSAS STATE HIGHWAY COMMISSION**

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

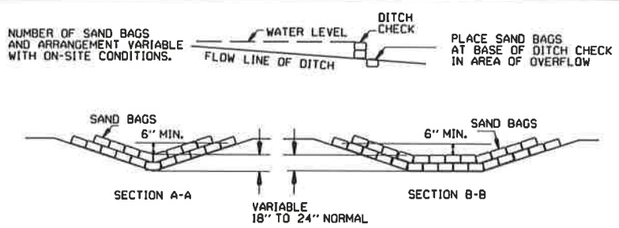
STANDARD DRAWING TC-5

GENERAL NOTES

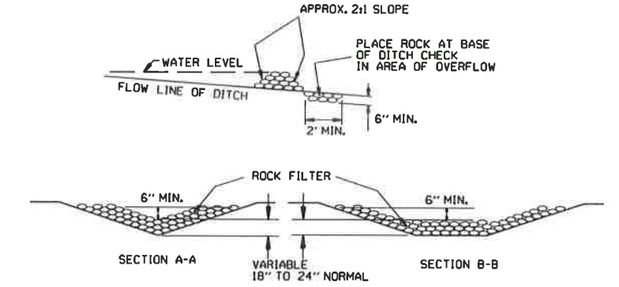
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.




## WATTLE DITCH CHECK (E-1)




## SAND BAG DITCH CHECK (E-5)

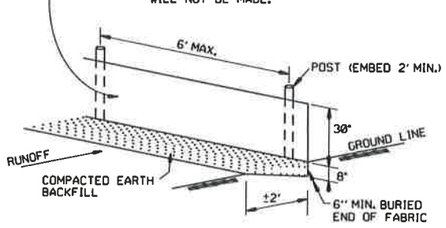



## ROCK DITCH CHECK (E-6)

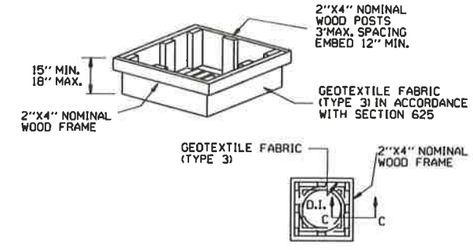
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

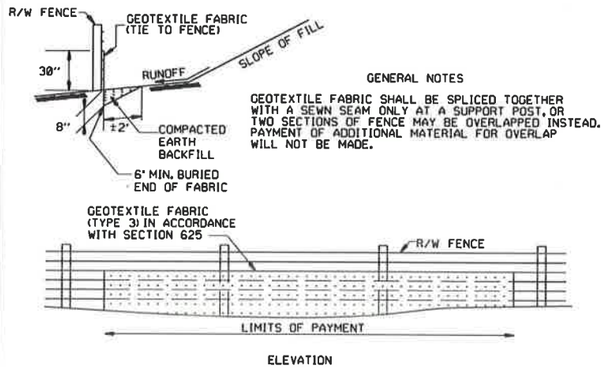
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.




## SILT FENCE (E-11)




## DROP INLET SILT FENCE (E-7)




GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

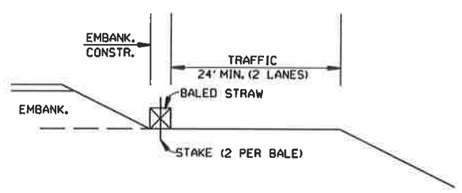
## SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

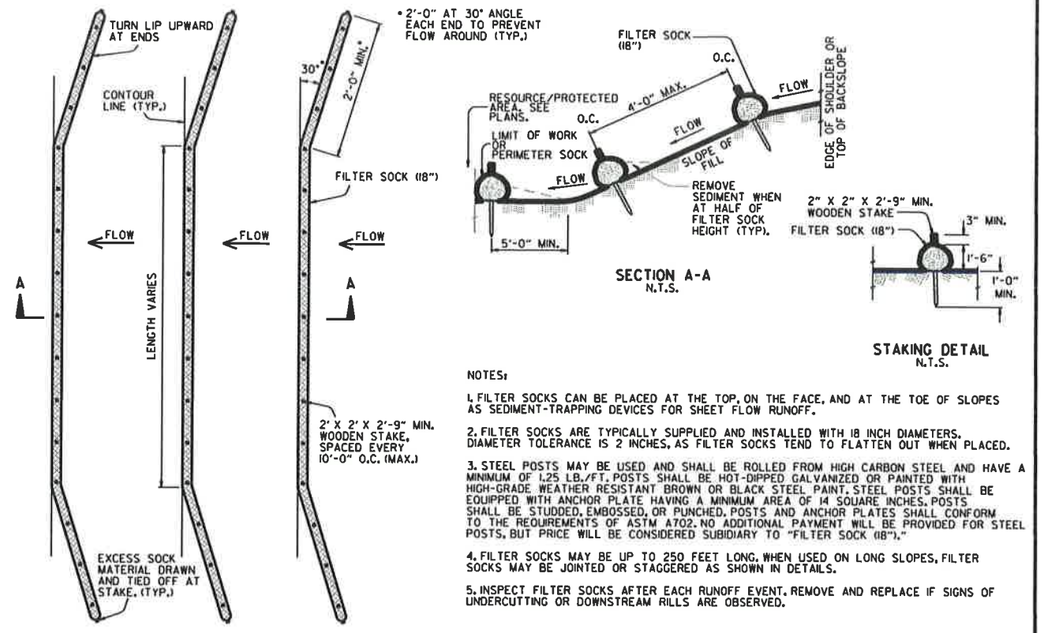
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.




## BALED STRAW FILTER BARRIER (E-2)




NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

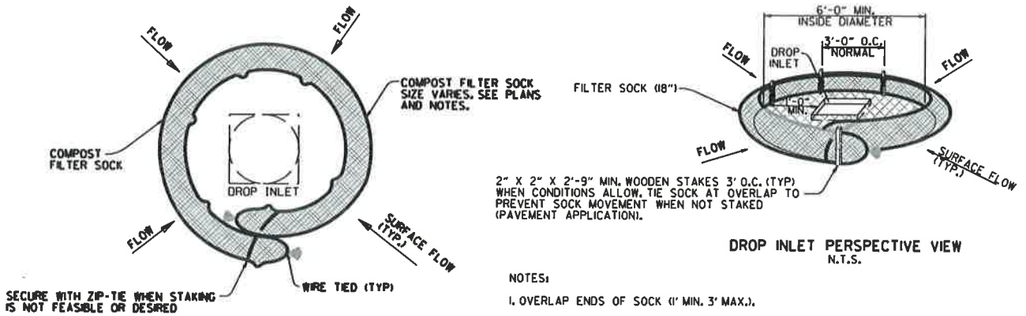
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

## FILTER SOCK ALONG SLOPE (E-3)




NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

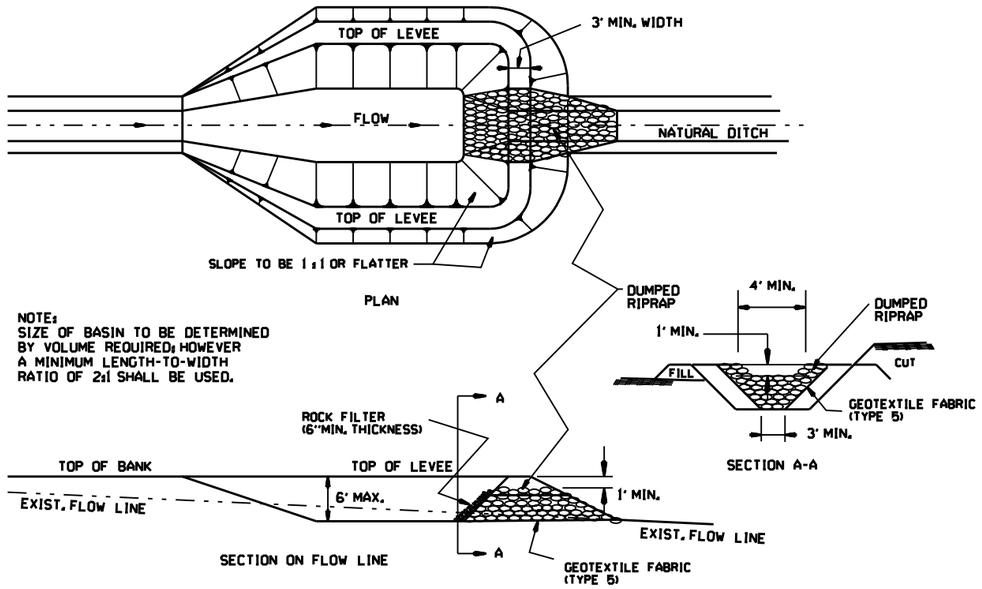
## COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

| DATE | REVISION | FILMED |
|---|---|---|
| 11-16-17 | ADDED FILTER SOCK E-3 AND E-13 | |
| 12-15-11 | DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK | |
| 11-18-98 | ADDED NOTES | |
| 07-02-98 | ADDED BALED STRAW FILTER BARRIER (E-2) | |
| 07-20-95 | REVISED SILT FENCE E-4 AND E-11 | 7-20-95 |
| 07-15-94 | REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC | |
| 06-02-94 | REVISED E-1,4,7 & 11; DELETED E-2 & 3 | 6-2-94 |
| 04-01-93 | REDRAWN | |
| 10-01-92 | REDRAWN | |
| 08-02-76 | ISSUED R.D.M. | 298-7-28-76 |

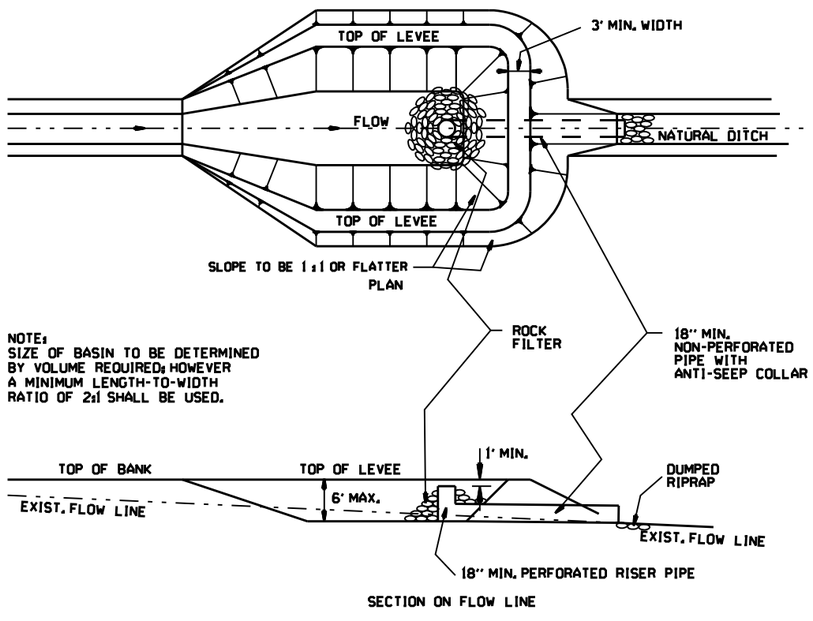
ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

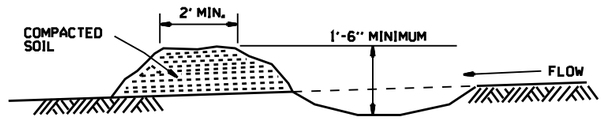
STANDARD DRAWING TEC-1



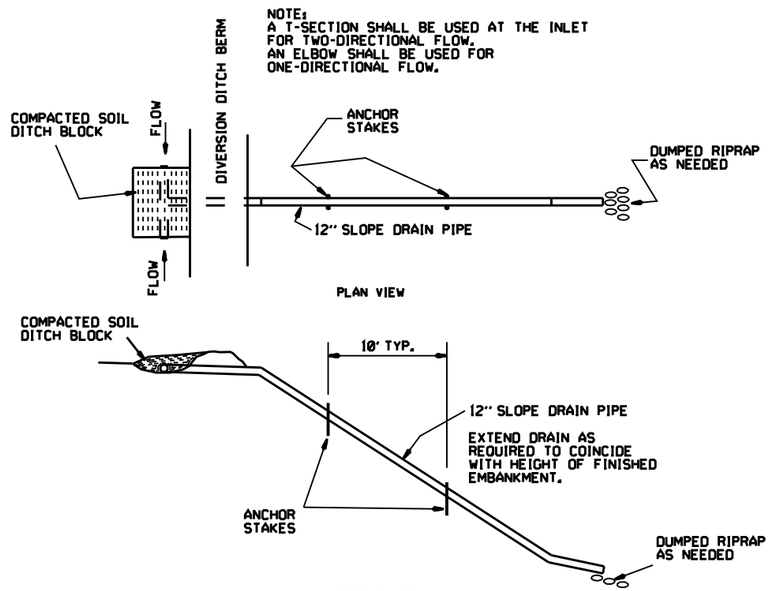

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



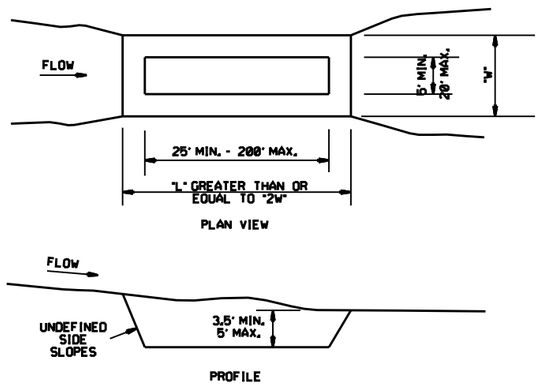

SEDIMENT BASIN WITH PIPE OUTLET (E-10)




DIVERSION DITCH (E-8)




SLOPE DRAIN (E-12)




SEDIMENT BASIN (E-14)

| DATE | REVISION | FILMED |
|---|---|---|
| 6-2-94 | Revised E-8 & E-12; Added E-14 & Deleted E-13 | |
| 4-1-93 | ISSUED | |

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# TEMPORARY EROSION CONTROL DEVICES

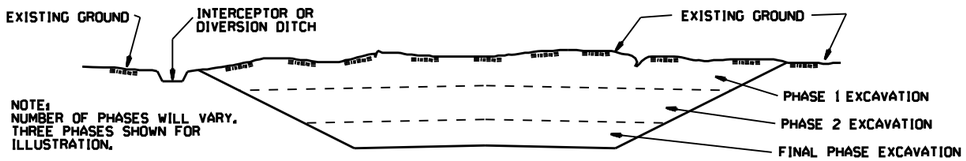
STANDARD DRAWING TEC-2

# 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



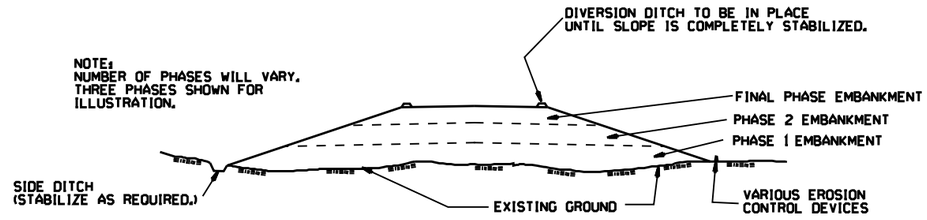

GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

# EMBANKMENT




GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-03-94 | CORRECTED SPELLING | |
| 6-2-94 | Drawn & Issued | 6-2-94 |

ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3