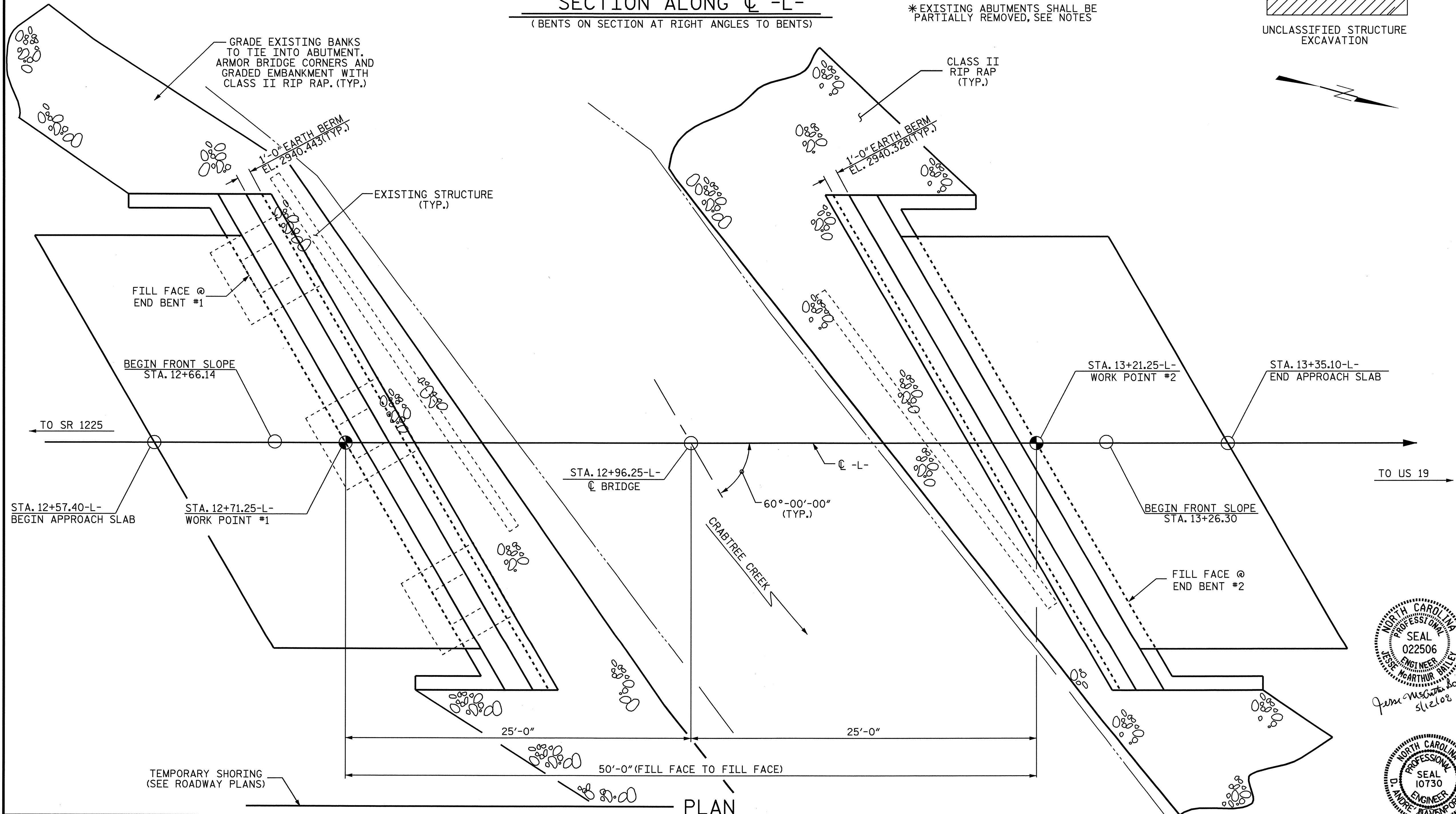
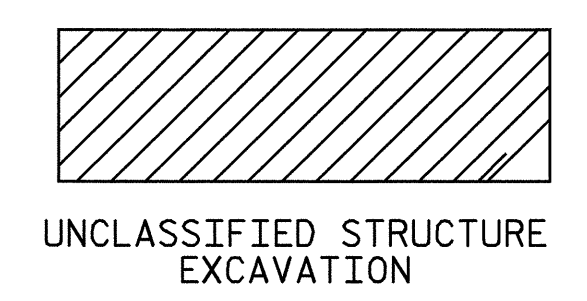


(-10.2468% (-)3.5625%
 PI = 14+25.00-L-
 EL. = 2945.500
 VC = 150'
GRADE DATA -L-

SECTION ALONG C-L-
 (BENTS ON SECTION AT RIGHT ANGLES TO BENTS)

*EXISTING ABUTMENTS SHALL BE PARTIALLY REMOVED, SEE NOTES



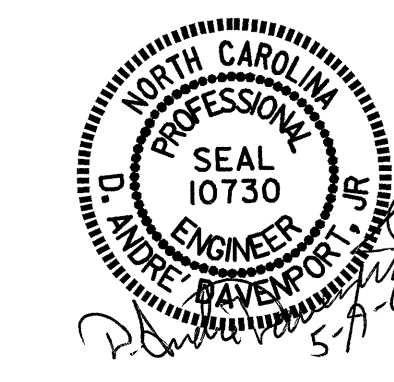
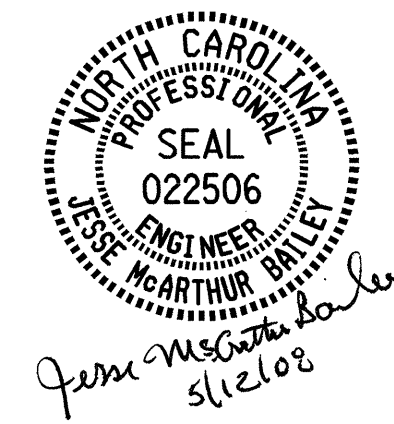
PLAN
 (PILES NOT SHOWN FOR CLARITY)

DRAWN BY : W.B.HILL DATE : 8/07
 CHECKED BY : A.SORSENGINH DATE : 8/07

09-MAY-2008 12:22
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 ddavenport

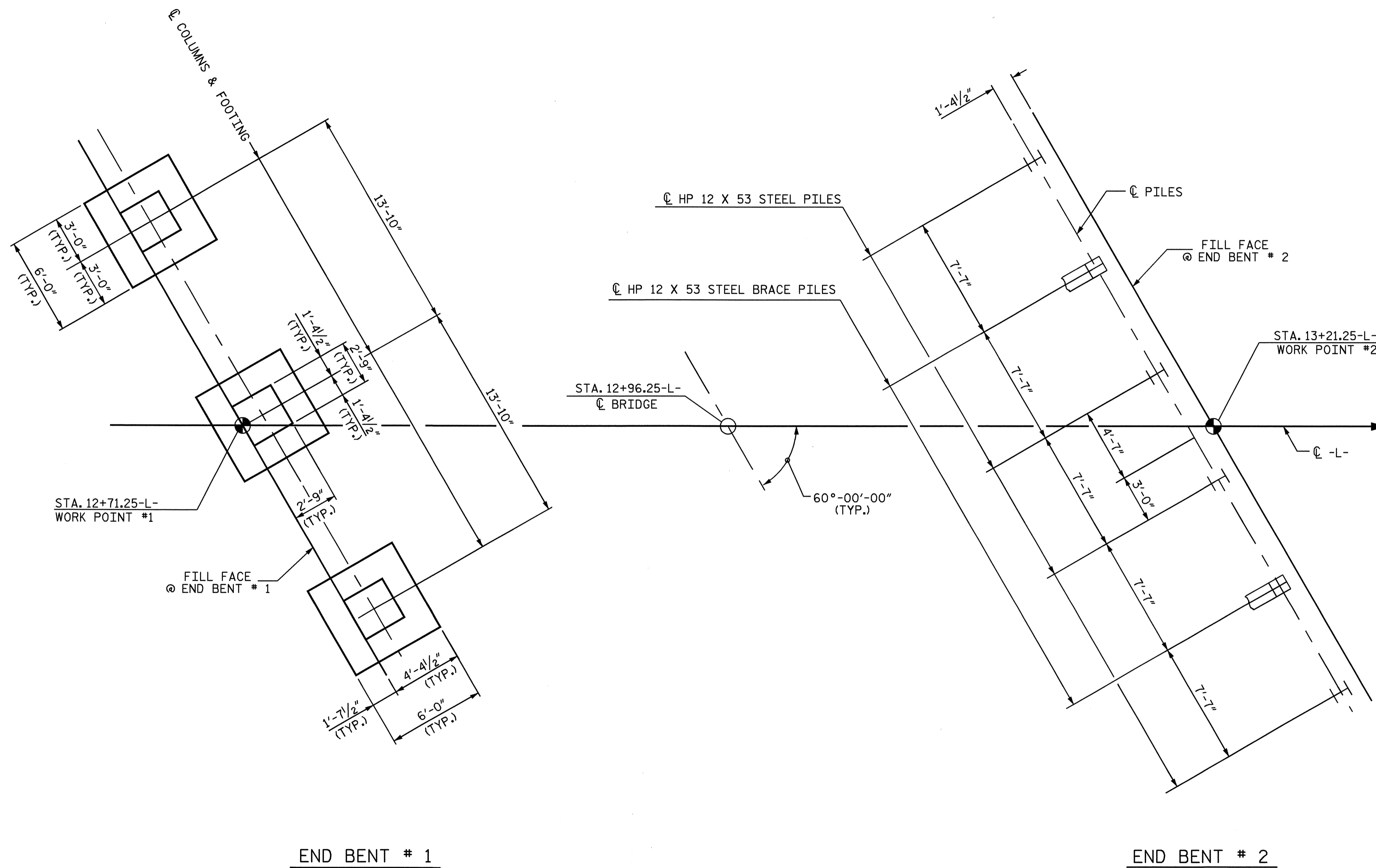
PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25-L-

SHEET 1 OF 3 REPLACES BRIDGE #110



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19**

| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|--------------|----|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-1 | |
| 1 | | | 3 | | | TOTAL SHEETS | 34 |
| 2 | | | 4 | | | | |



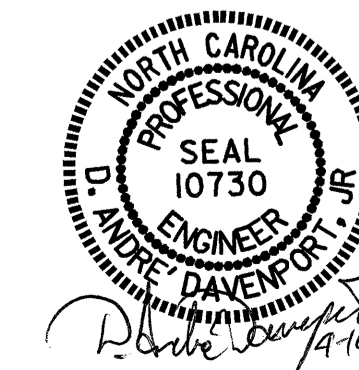
FOUNDATION LAYOUT

ALL DIMENSIONS LOCATING PILES ARE TO PILE CENTERLINE
 HP 12 X 53 STEEL BRACE PILES ARE BATTERED AT 3:12

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25-L-

SHEET 2 OF 3

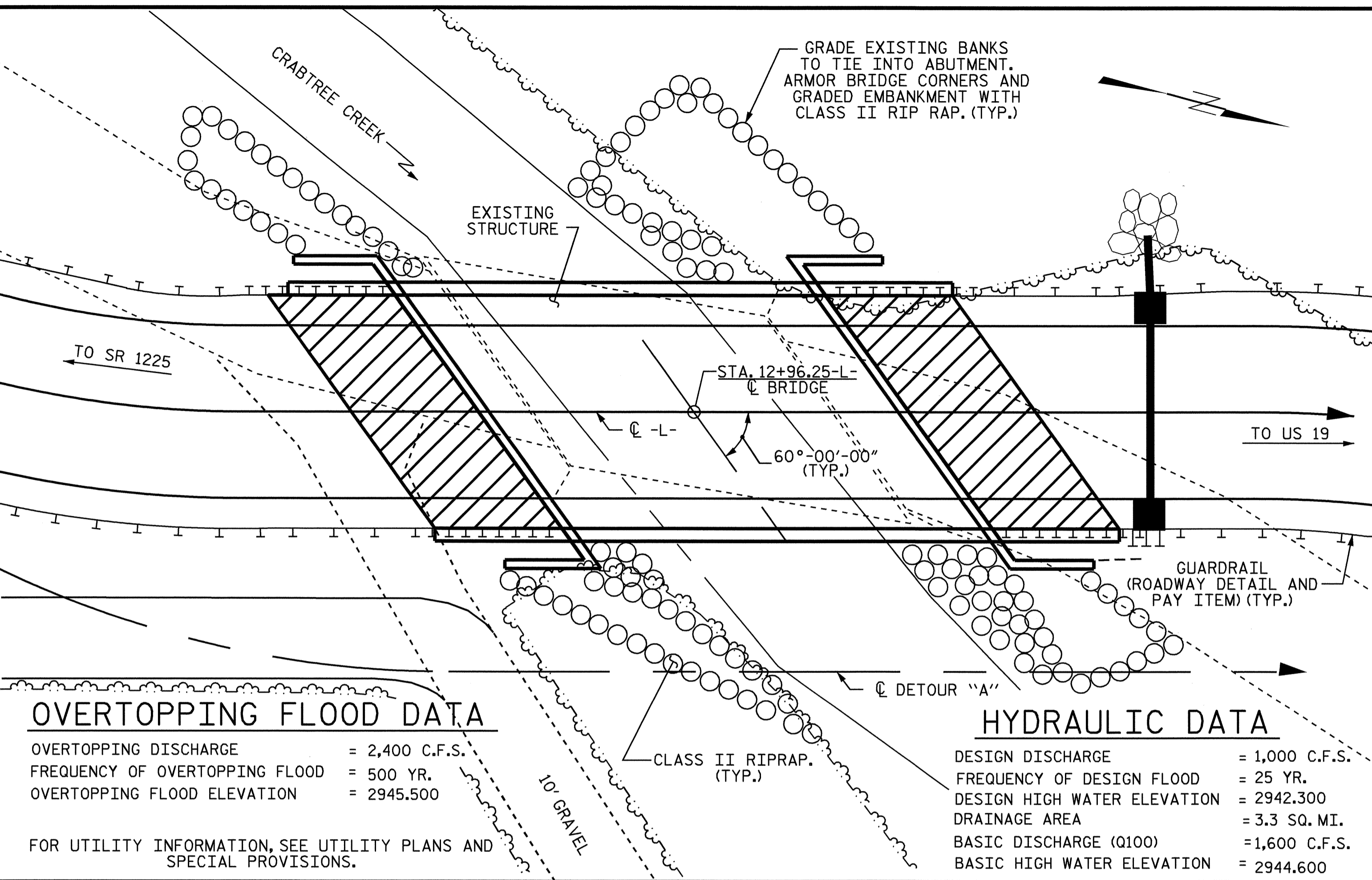
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19



| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|--------------|----|
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS | |
| 1 | | | 3 | | | S-2 | 34 |
| 2 | | | 4 | | | | |

DRAWN BY : W. B. HILL DATE : 9/07
 CHECKED BY : D. A. DAVENPORT DATE : 1/08

BENCH MARK 1: RAILROAD SPIKE IN BASE OF 24" Ø OAK, 30' RIGHT OF STA. 16+15.00-BL-, EL. 2951.190



OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 2,400 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD = 500 YR.
 OVERTOPPING FLOOD ELEVATION = 2945.500

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE = 1,000 C.F.S.
 FREQUENCY OF DESIGN FLOOD = 25 YR.
 DESIGN HIGH WATER ELEVATION = 2942.300
 DRAINAGE AREA = 3.3 SQ. MI.
 BASIC DISCHARGE (Q100) = 1,600 C.F.S.
 BASIC HIGH WATER ELEVATION = 2944.600

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.
 THE EXISTING STRUCTURE CONSISTING OF 1 SIMPLE SPAN @ 42'-0" TIMBER FLOOR WITH 4" ASPHALT WEARING SURFACE ON I-BEAMS ON MOUNT MASONRY ABUTMENTS WITH A CLEAR ROADWAY WIDTH OF 19'-3" AND LOCATED AT THE PROPOSED SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
 THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
 ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18 "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY B.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.
 THE REQUIRED BEARING CAPACITY FOR SPREAD FOOTINGS AT END BENT NO. 1 IS 15 TONS PER SQUARE FOOT. CHECK FIELD CONDITIONS FOR THE REQUIRED BEARING JUST PRIOR TO PLACING CONCRETE.
 THE ALLOWABLE BEARING CAPACITY FOR SPREAD FOOTINGS AT END BENT NO. 1 IS 5 TONS PER SQUARE FOOT.
 DRIVE PILES AT END BENT NO. 2 TO A REQUIRED BEARING CAPACITY OF 120 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.
 THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO. 2 IS 60 TONS PER PILE.
 THE SCOUR CRITICAL ELEVATION FOR END BENT NO. 1, IS THE BOTTOM OF FOOTING ELEVATION. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 CARRY IN SPREAD FOOTINGS AT END BENT NO. 1 AT LEAST 12 INCHES INTO ROCK WITH MINIMUM THICKNESS SHOWN ON THE PLANS.
 FOR BLASTING ADJACENT TO HIGHWAY STRUCTURES, SEE ARTICLE 410-11 OF THE STANDARD SPECIFICATION.
 PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO. 2, EXCAVATED HOLE TO ELEVATION 2927 FEET. SEE PILE EXCAVATION SPECIAL PROVISION.
 THE EXISTING ABUTMENTS AT END BENTS NO. 1 AND NO. 2 SHALL BE REMOVED DOWN TO AN ELEVATION AS DETERMINED BY THE ENGINEER. THE EXISTING ABUTMENT FOOTINGS SHALL REMAIN IN PLACE UNLESS PARTIAL REMOVAL IS REQUIRED TO CONSTRUCT THE PROPOSED END BENTS.
 INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 12+96.25."
 FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.
 FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.
 THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 12+96.25-L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

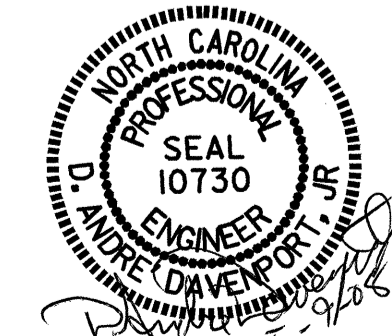
| | CONST. MAINT. & REMOVAL OF TEMP. STRUCTURE | REMOVAL OF EXISTING STRUCTURE | FOUNDATION EXCAVATION | PILE EXCAVATION IN SOIL | PILE EXCAVATION NOT IN SOIL | UNCLASSIFIED STRUCTURE EXCAVATION | CLASS A CONCRETE | BRIDGE APPROACH SLABS | REINFORCING STEEL | HP 12 X 53 STEEL PILES | CONCRETE BARRIER RAIL | RIP RAP CLASS II (2'-0" THICK) | FILTER FABRIC FOR DRAINAGE | ELASTOMERIC BEARINGS | 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS |
|----------------|--|-------------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------------|------------------|-----------------------|-------------------|------------------------|-----------------------|--------------------------------|----------------------------|----------------------|--|
| | LUMP SUM | LUMP SUM | CU. YDS. | LIN. FT. | LIN. FT. | LUMP SUM | CU. YDS. | LUMP SUM | LBS. | NO. | LIN. FT. | TONS | SQ. YD. | LUMP SUM | LIN. FT. |
| SUPERSTRUCTURE | | | | | | | | | | | 94.81 | | | | |
| END BENT NO. 1 | | | 100.0 | | | | 24.5 | | 5128 | | | 120 | 135 | | |
| END BENT NO. 2 | | | | 54 | 30 | | 13.3 | | 2710 | 6 | 90 | 115 | 130 | | |
| TOTAL | LUMP SUM | LUMP SUM | 100.0 | 54 | 30 | LUMP SUM | 37.8 | LUMP SUM | 7838 | 6 | 90 | 94.81 | 265 | LUMP SUM | 474.063 |

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25-L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

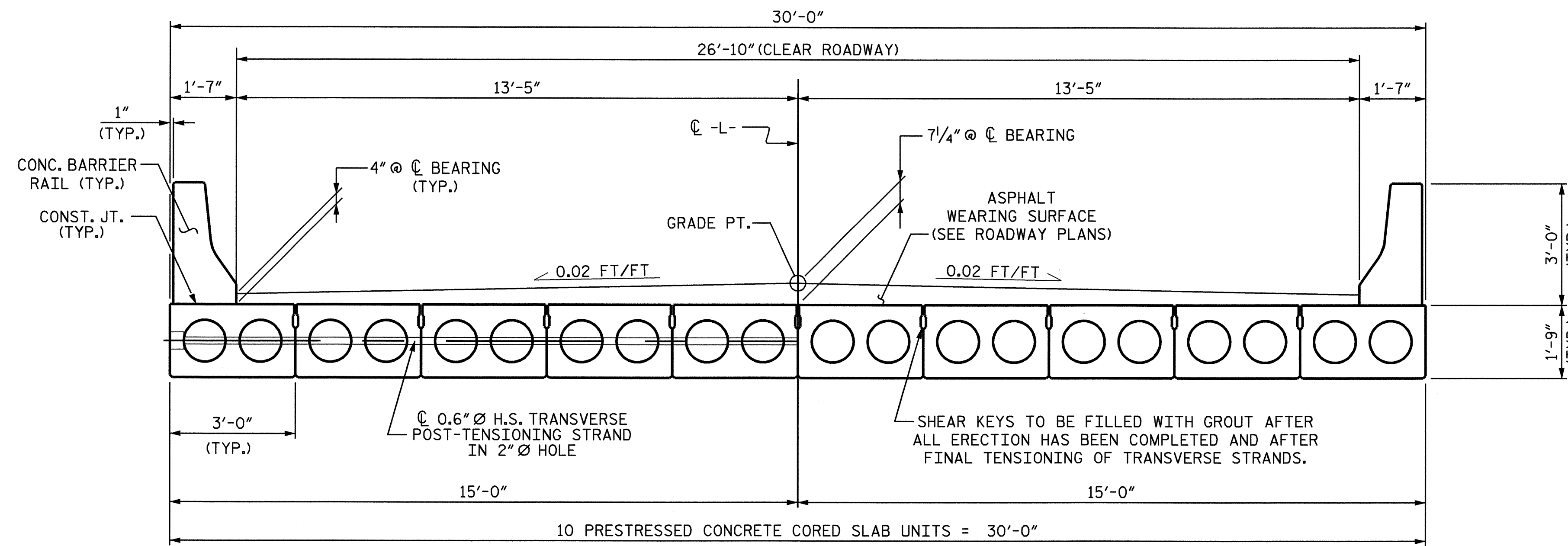
GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19



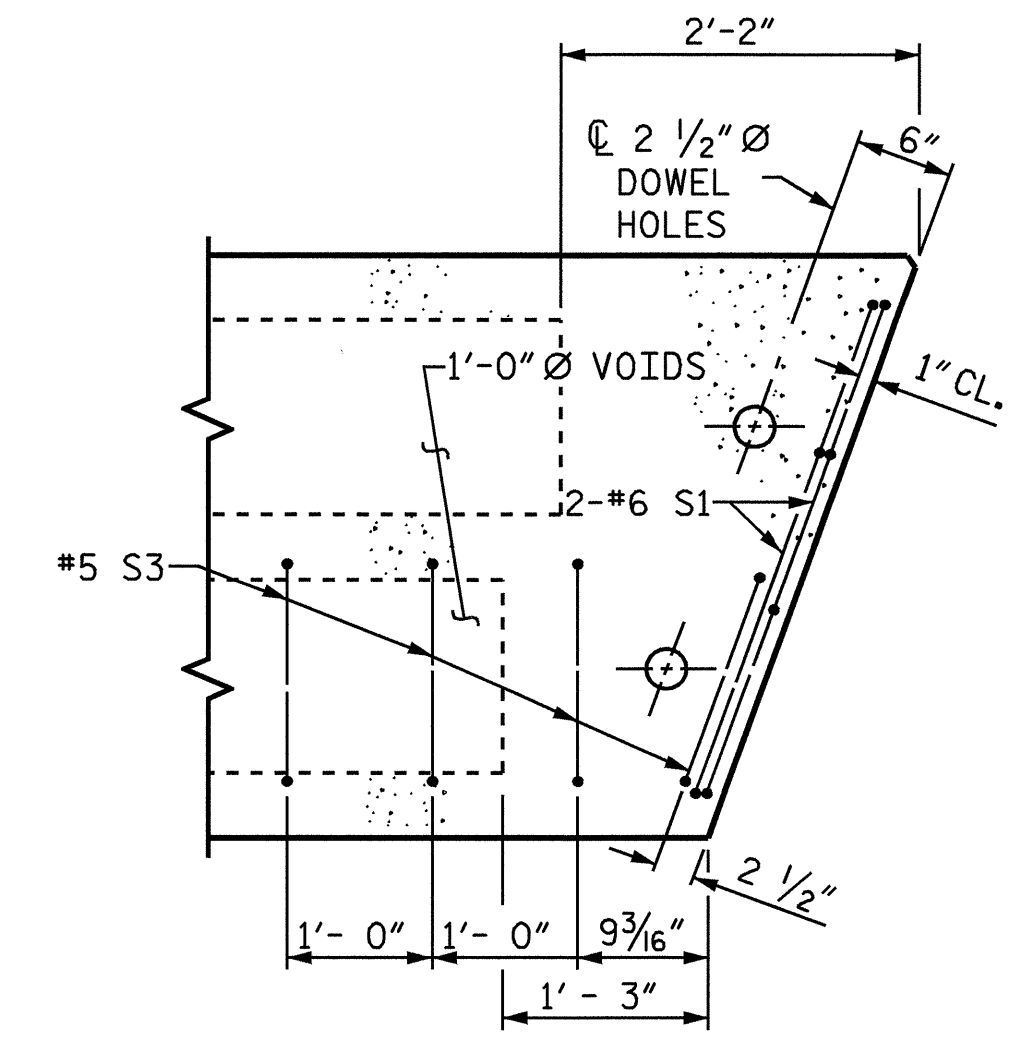
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|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-3 |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

DRAWN BY : W.B. HILL DATE : 7-07
 CHECKED BY : A. SORSENGINH DATE : 8/1/07

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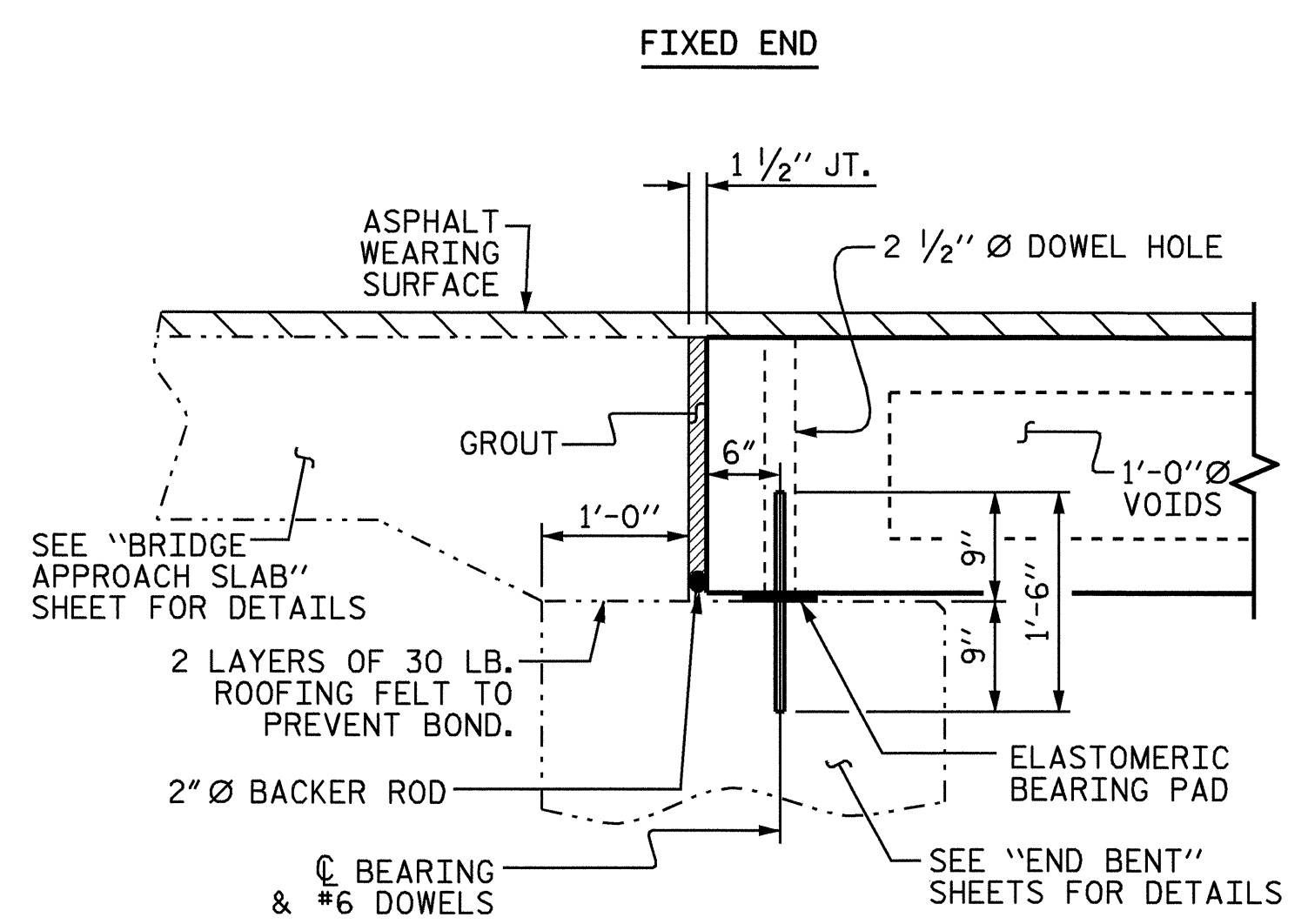


TYPICAL SECTION

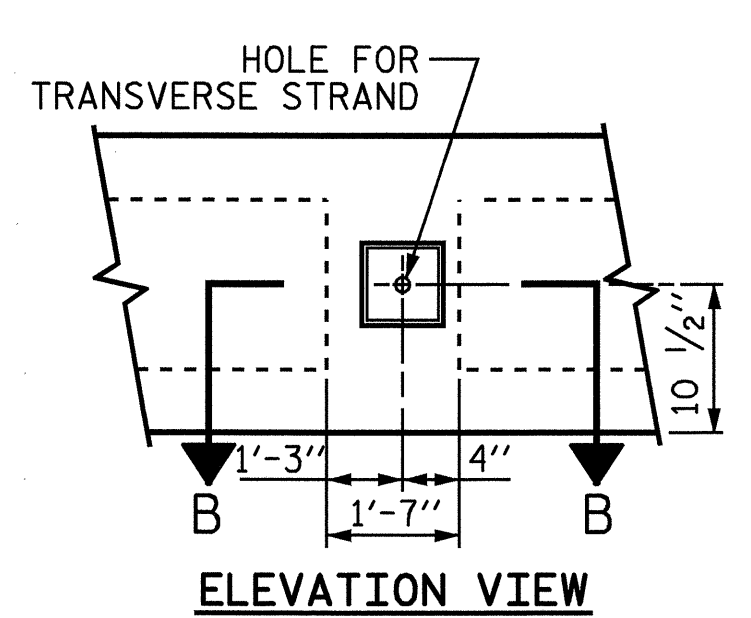


PART PLAN-EXTERIOR SECTION

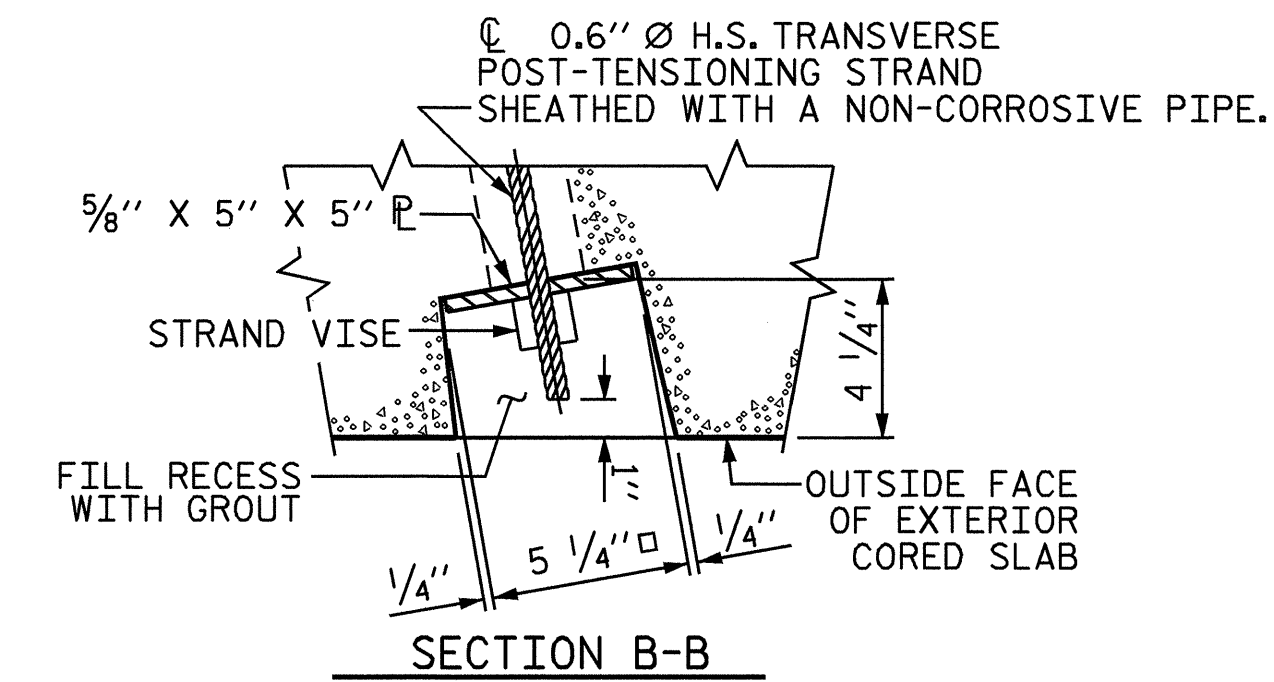
NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.



SECTION AT END BENT

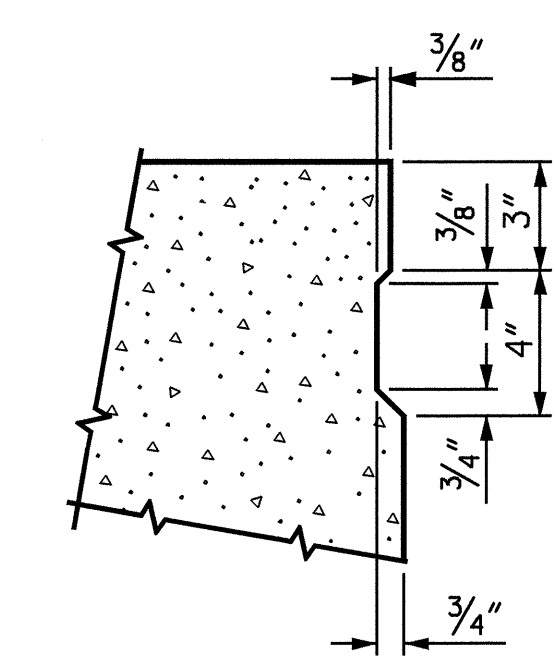


ELEVATION VIEW



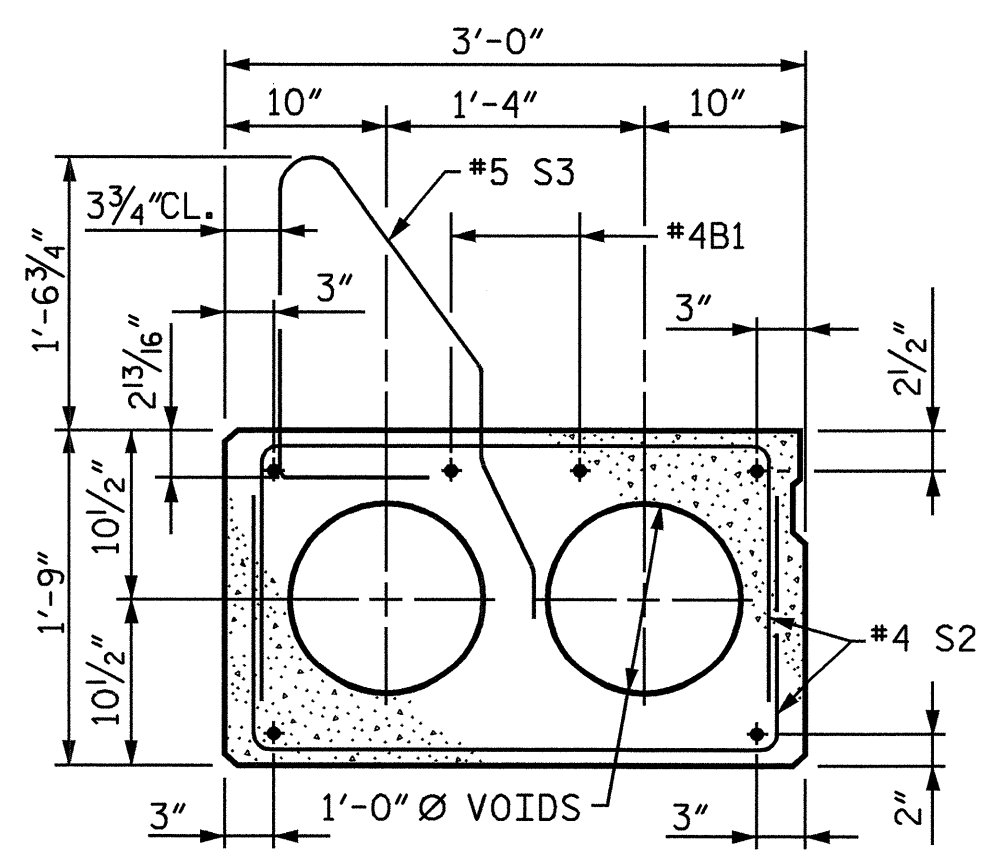
SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



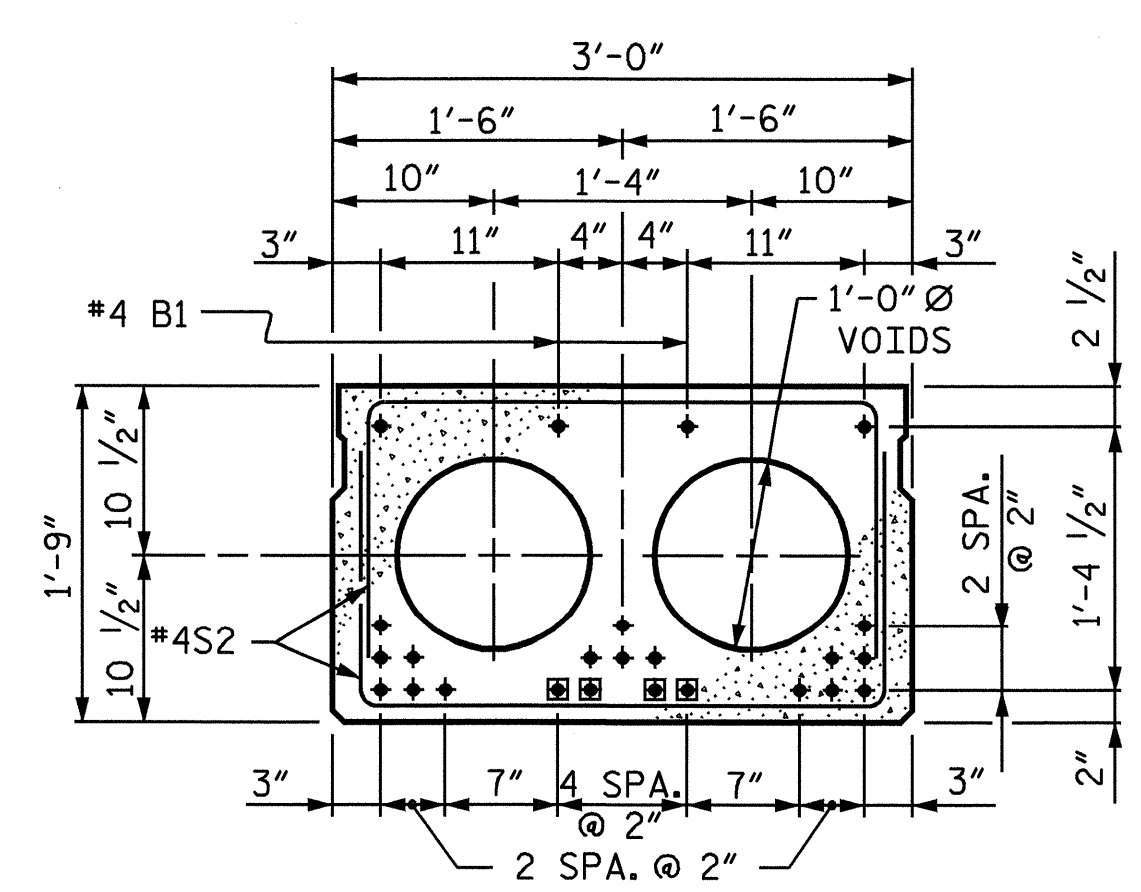
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



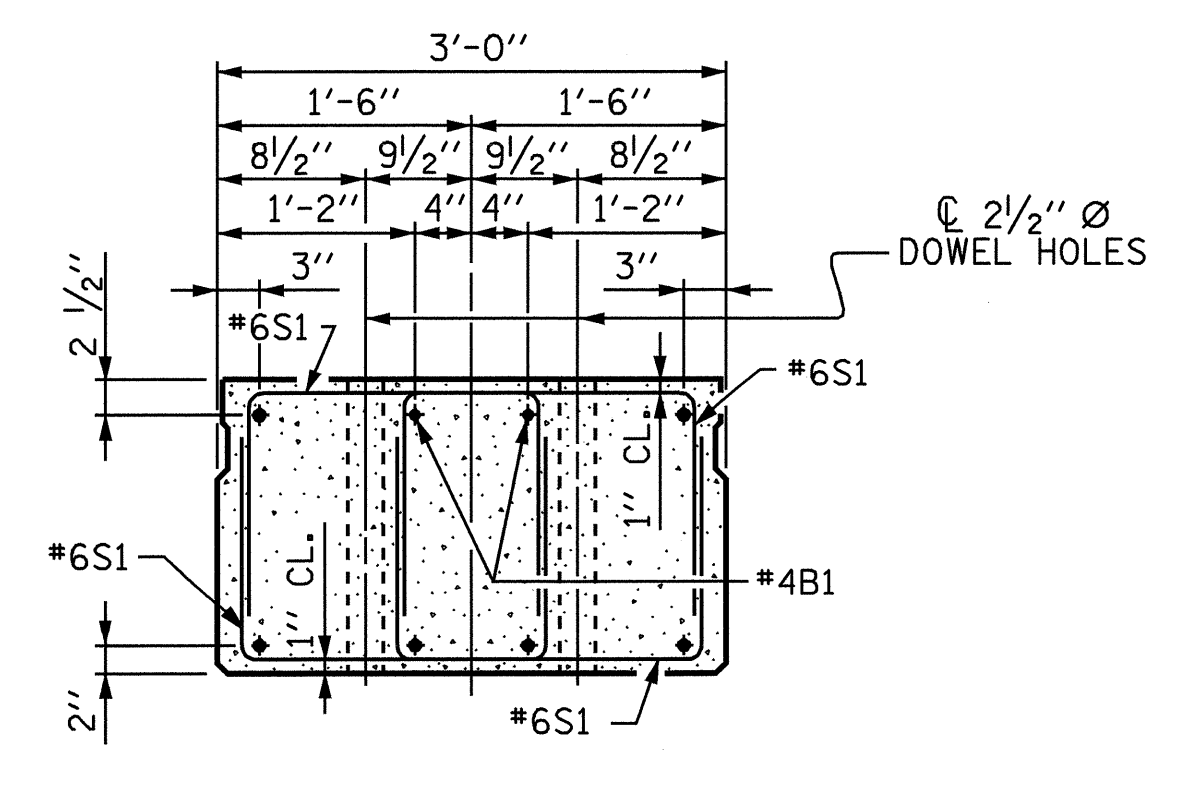
EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTIONS.)



SPAN A INTERIOR SLAB SECTION

0.6" Ø LOW RELAXATION STRAND LAYOUT



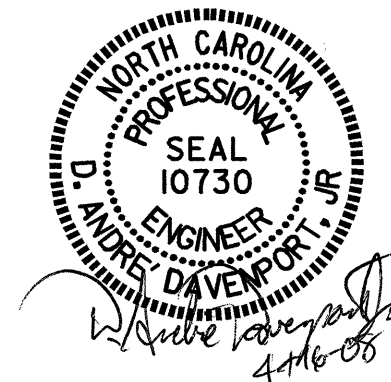
END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.

☐ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 3'-6" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7

| | |
|-----------------------------|-----------------------|
| ASSEMBLED BY : H.T. BARBOUR | DATE : 5-30-06 |
| CHECKED BY : C.R. YARBROUGH | DATE : 6-16-06 |
| DRAWN BY : WJH 4/89 | REV. 8/16/99 RWW/LES |
| CHECKED BY : FCJ 5/89 | REV. 10/17/00 RWW/LES |
| | REV. 7/10/01 RWW/LES |

16-APR-2008 09:45
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 dcdavenport



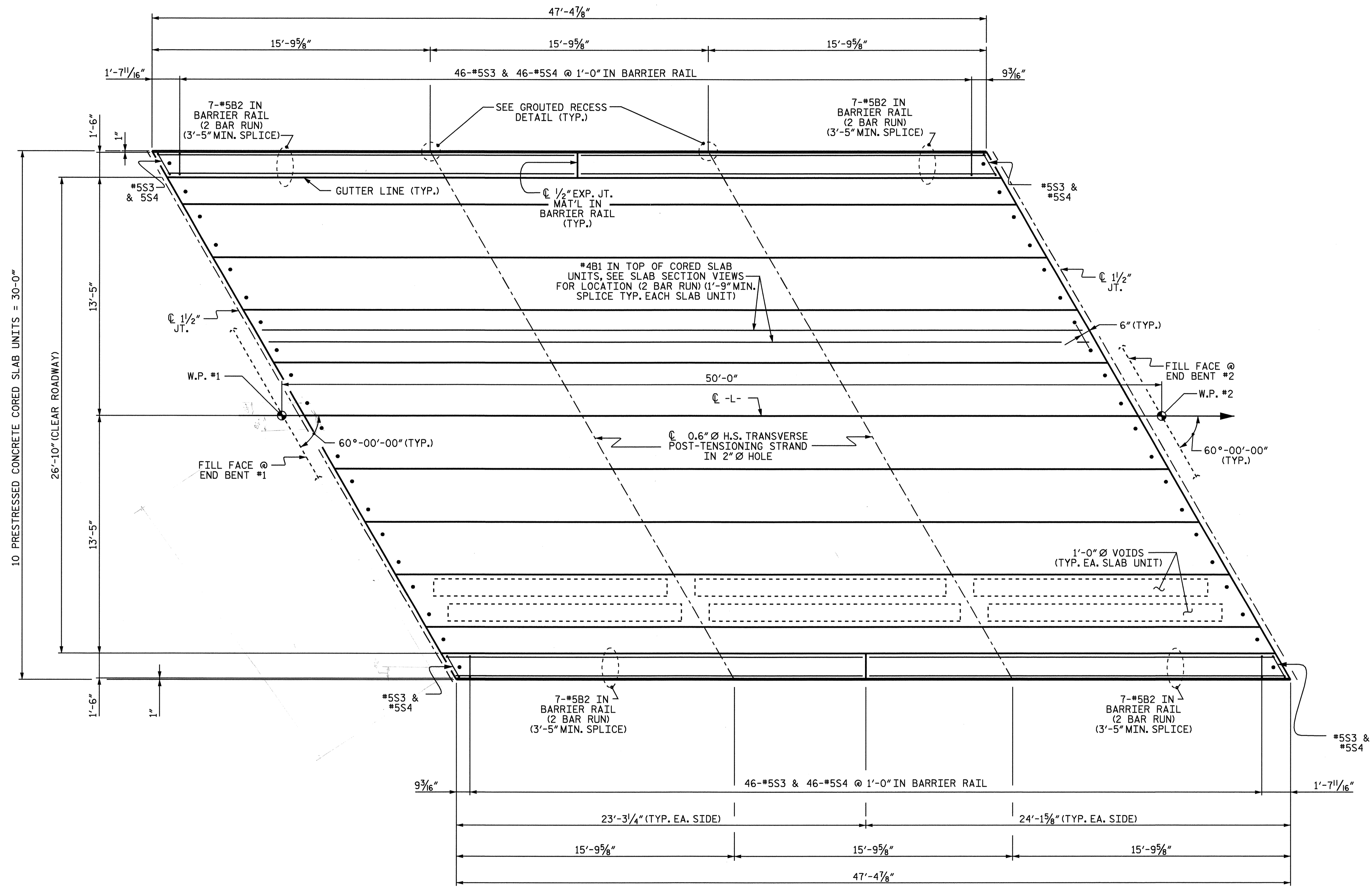
PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |

STR. #1



PLAN OF SPAN A

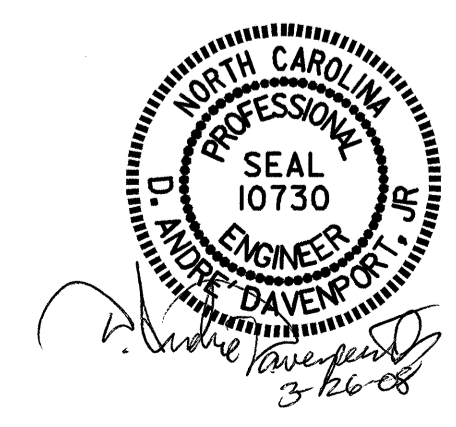
PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25-L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

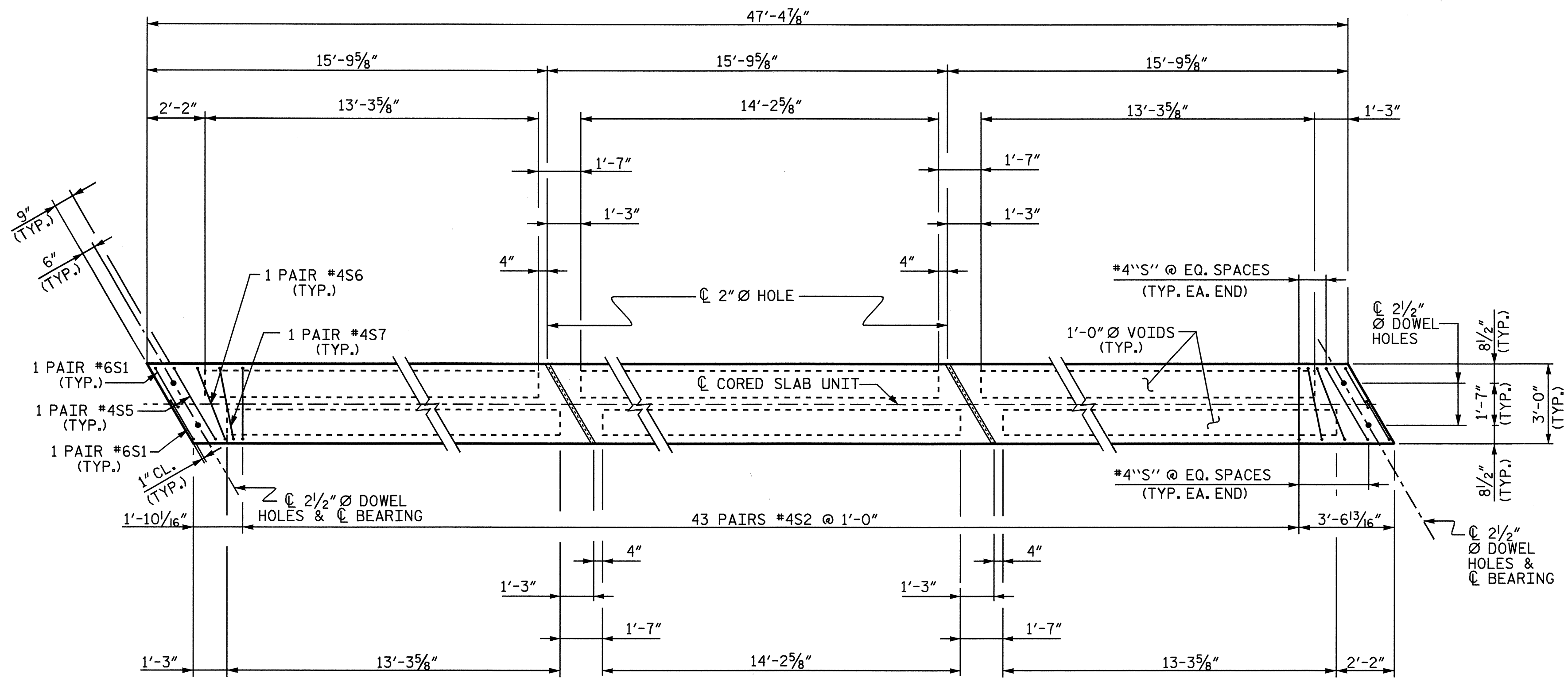
SUPERSTRUCTURE
 PLAN OF SPAN A

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-5 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |

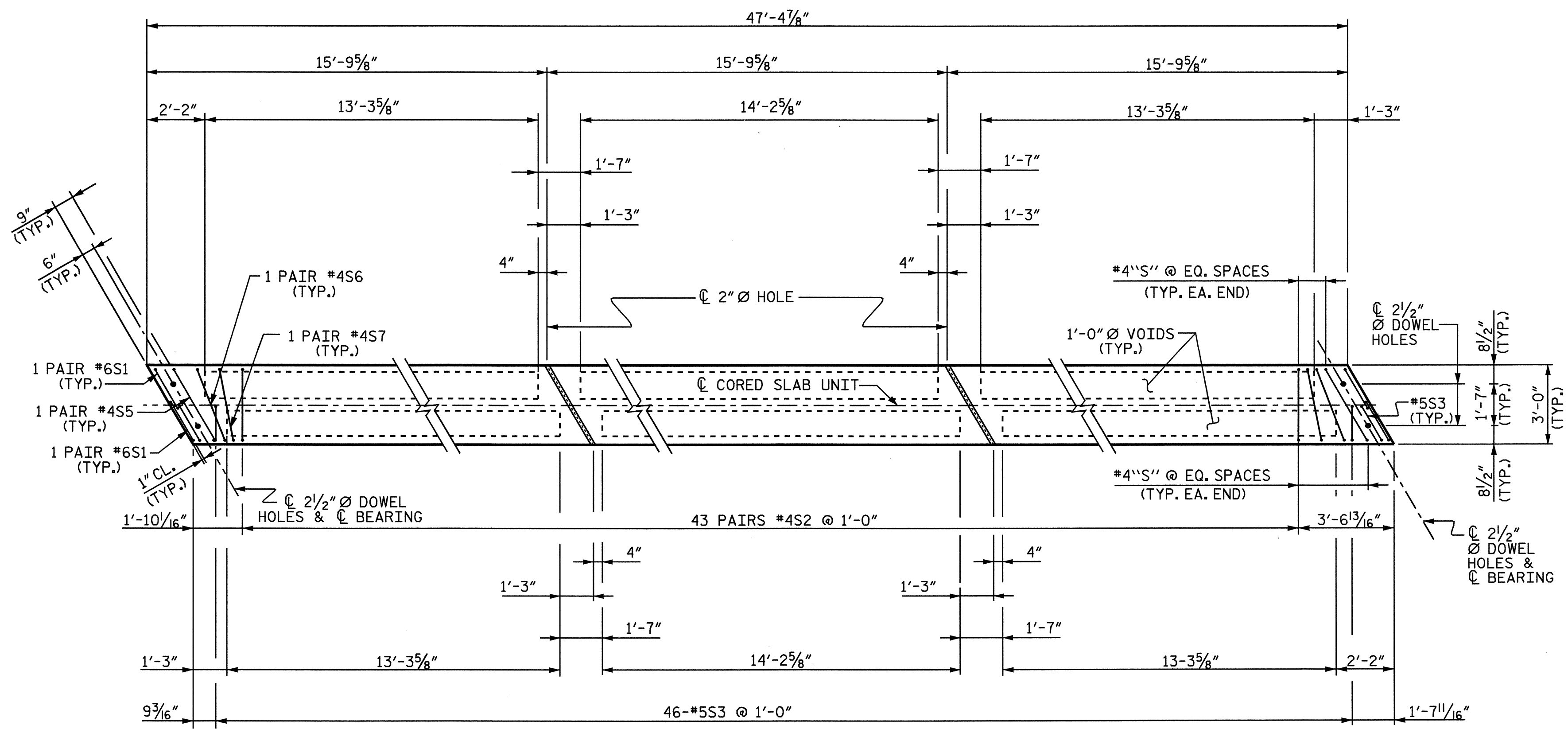


DRAWN BY : H. T. BARBOUR DATE : 5-30-06
 CHECKED BY : C. R. YARBROUGH DATE : 6-16-06

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 ADAVENPORT



PLAN OF INTERIOR CORED SLAB UNIT



PLAN OF EXTERIOR CORED SLAB UNIT

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25-L-
 SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT



DRAWN BY : H. T. BARBOUR DATE : 5-30-06
 CHECKED BY : C. R. YARBROUGH DATE : 6-16-06

| REVISIONS | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

S-6
 TOTAL SHEETS
 34

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

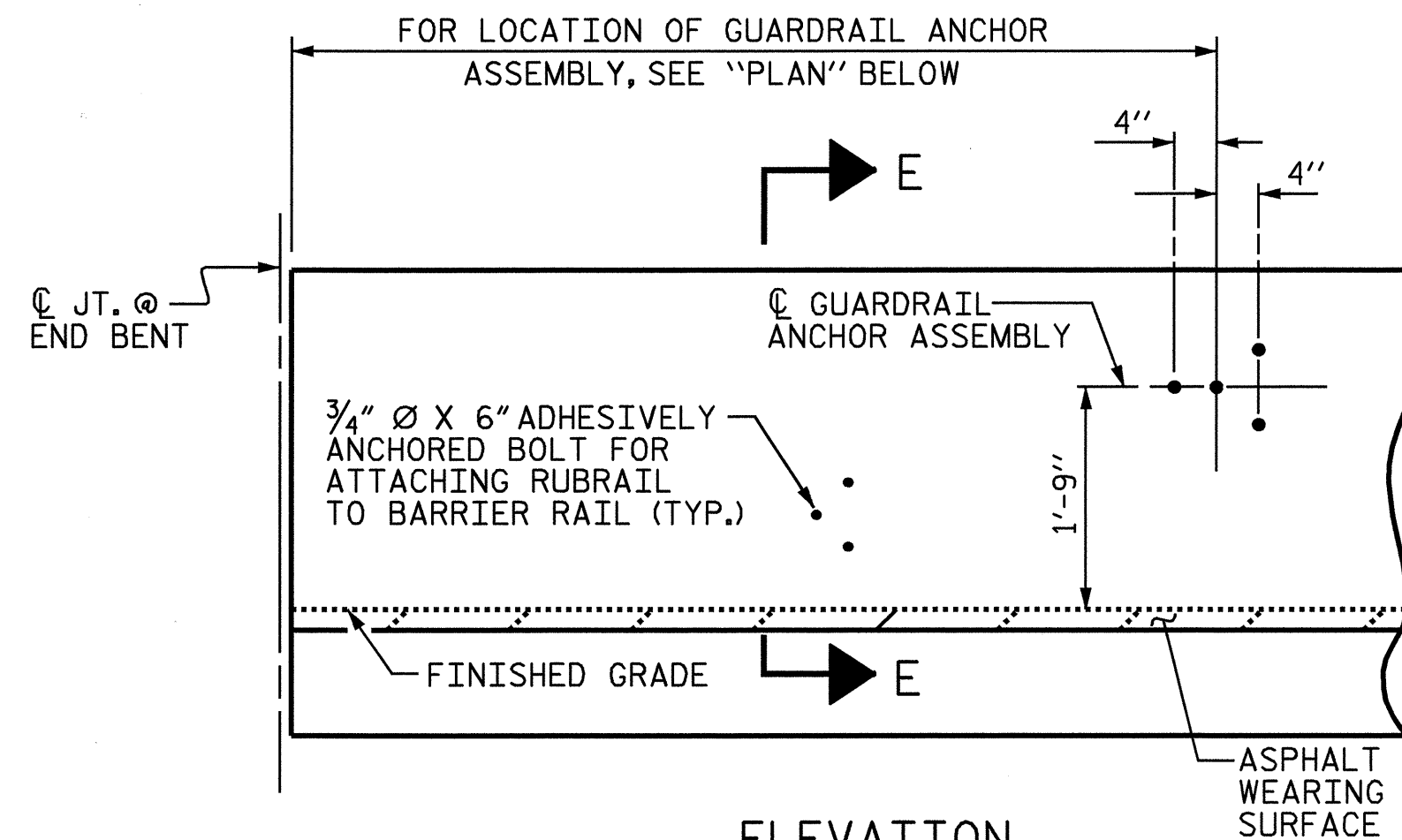
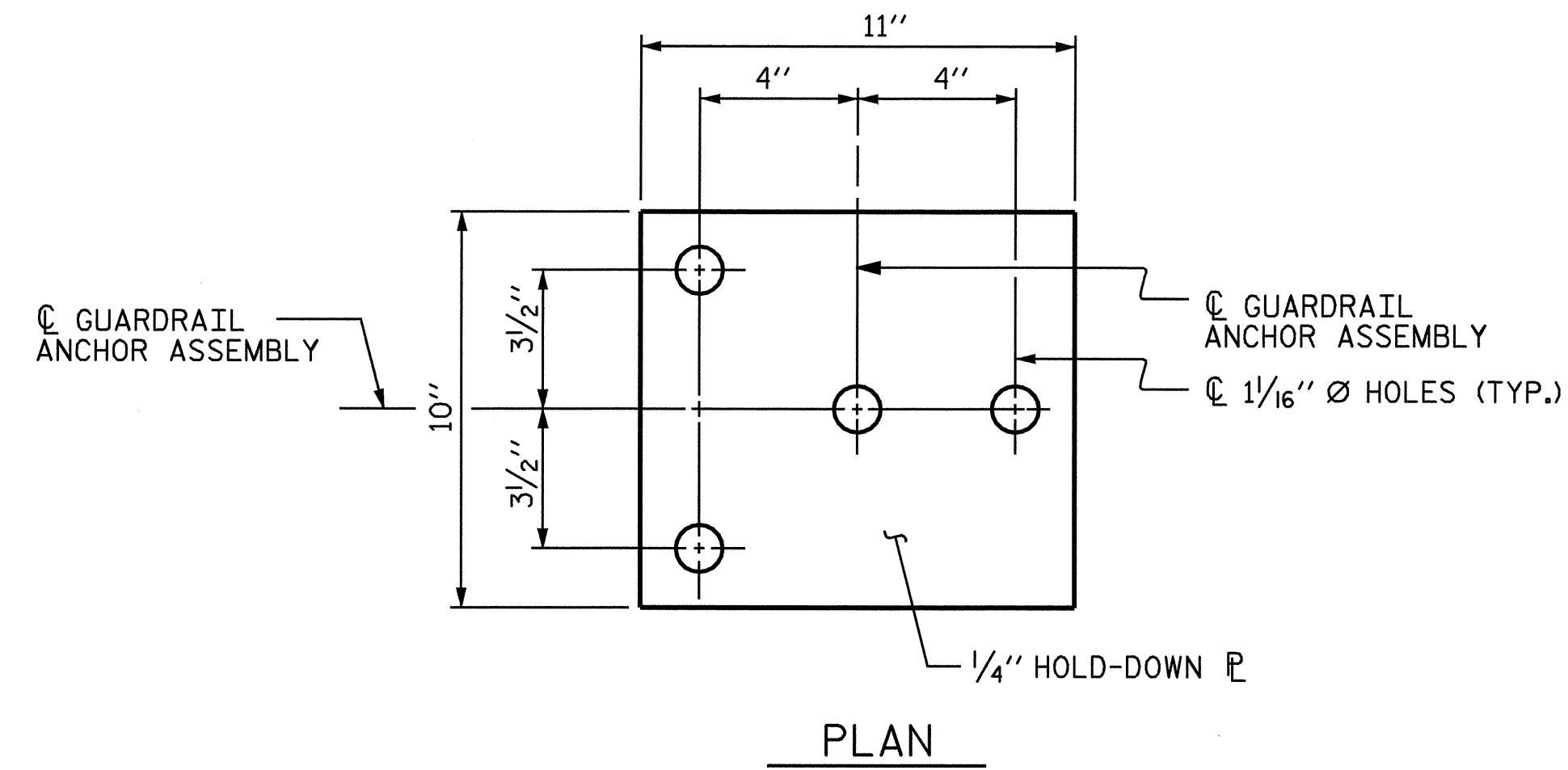
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

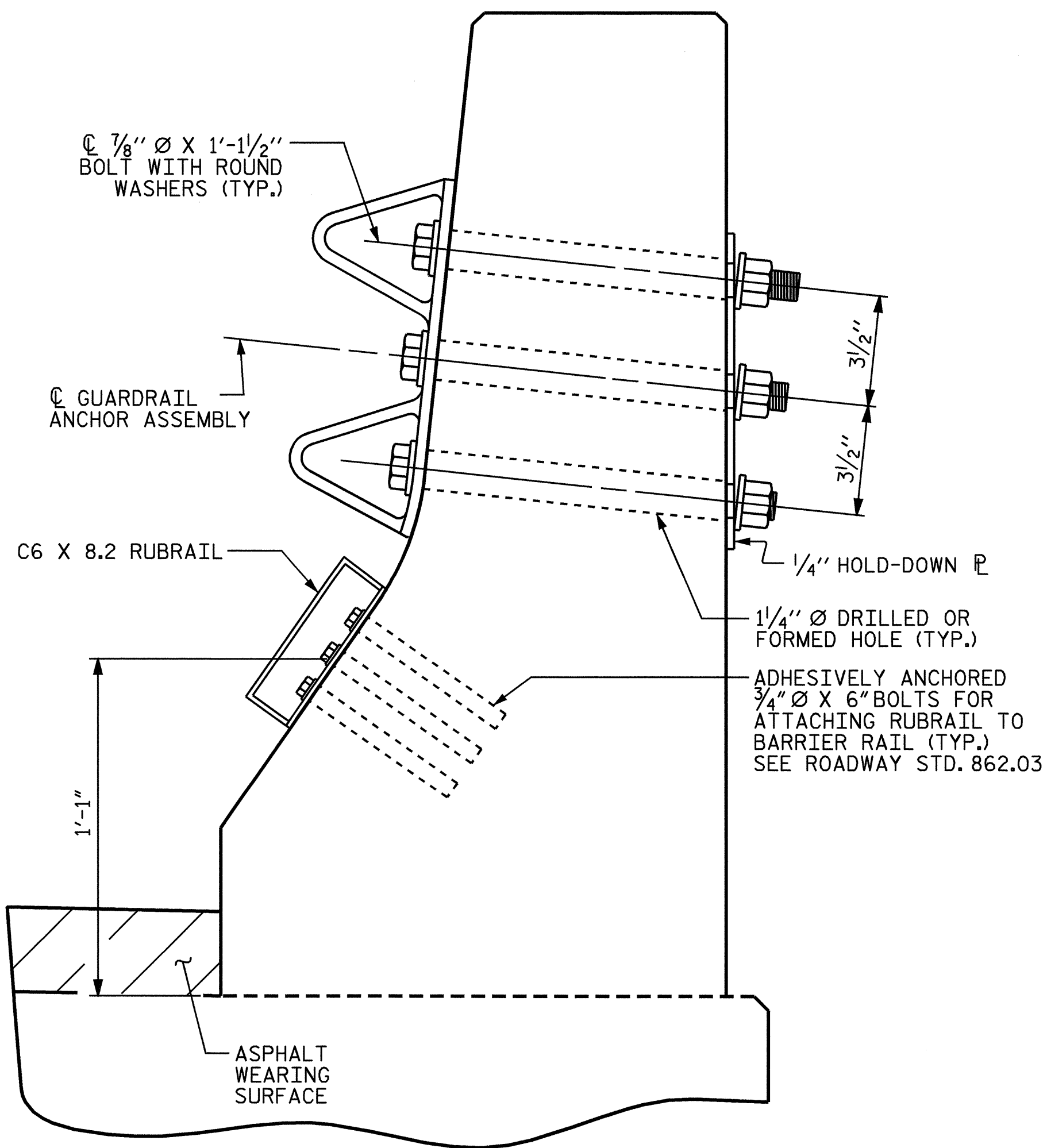
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

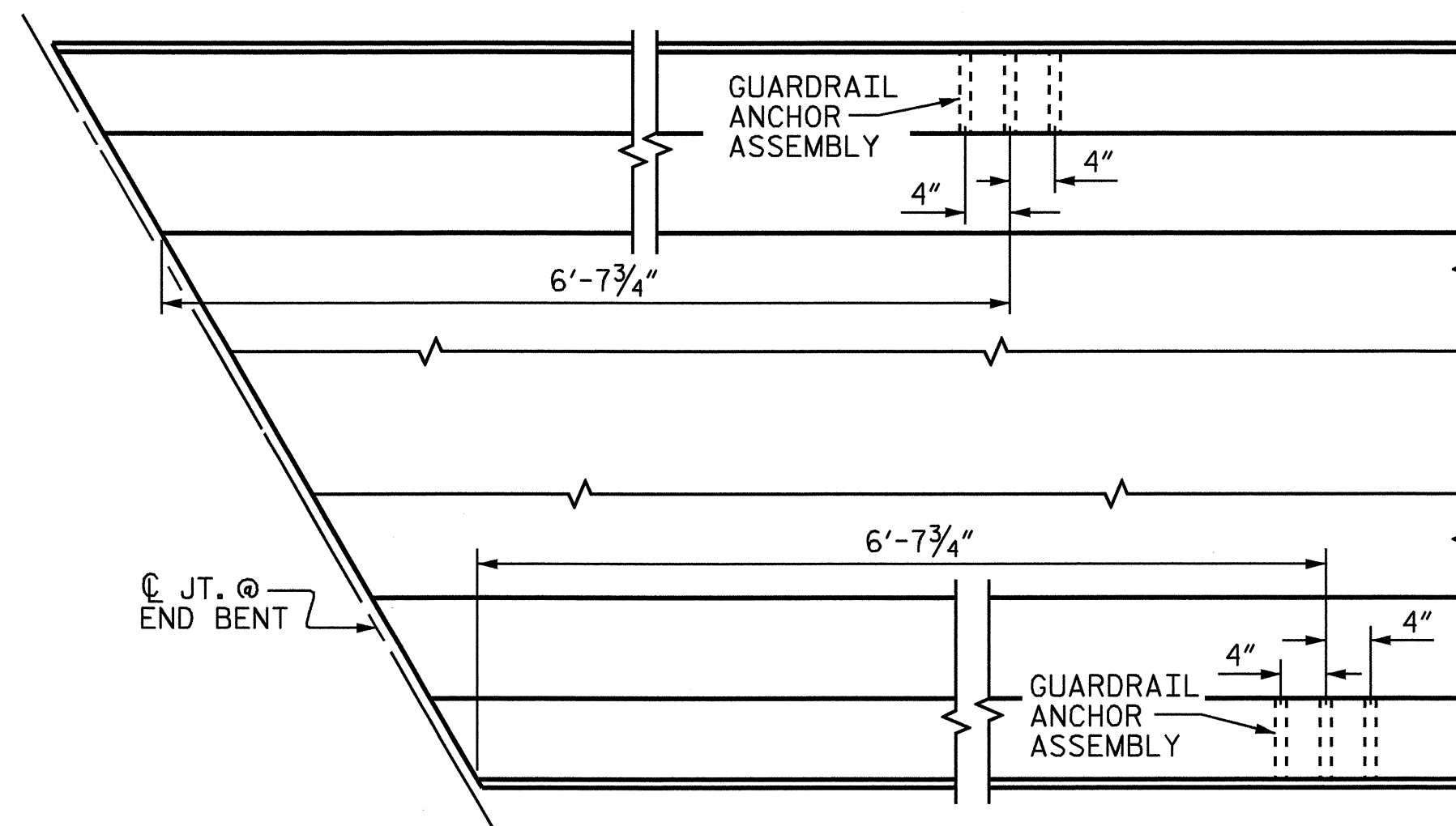


FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

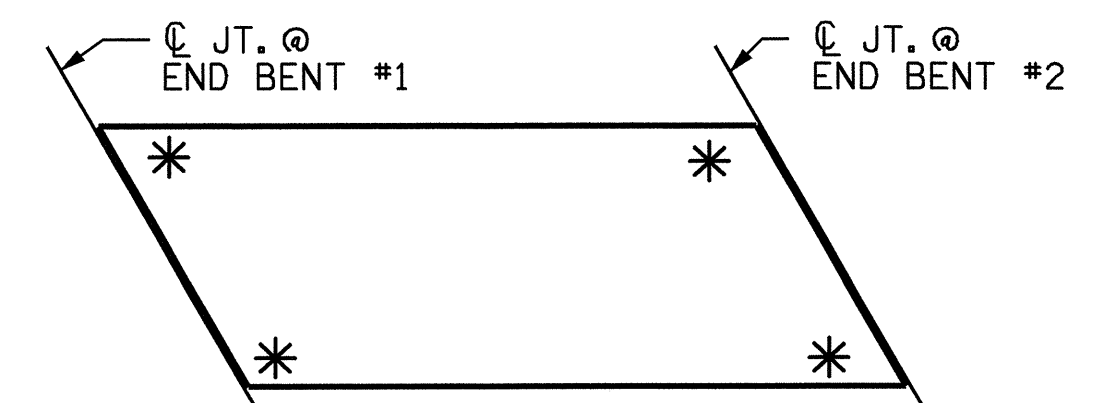
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4202

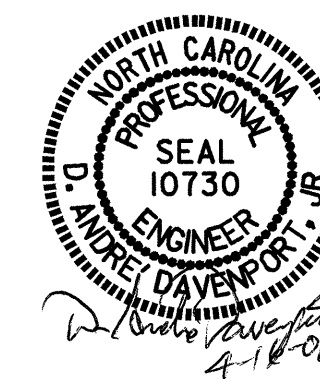
MITCHELL COUNTY

STATION: 12+96.25-L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

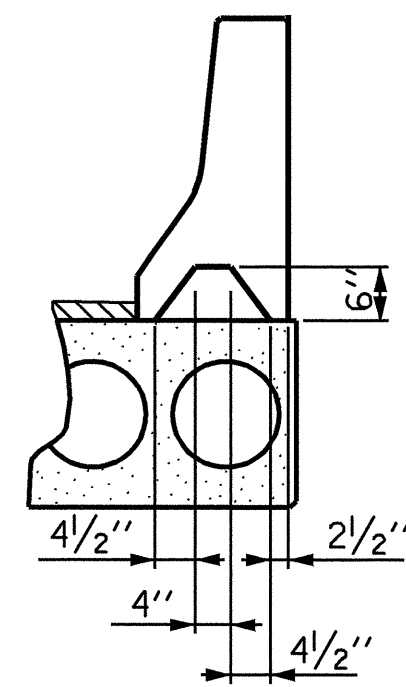
STANDARD
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL



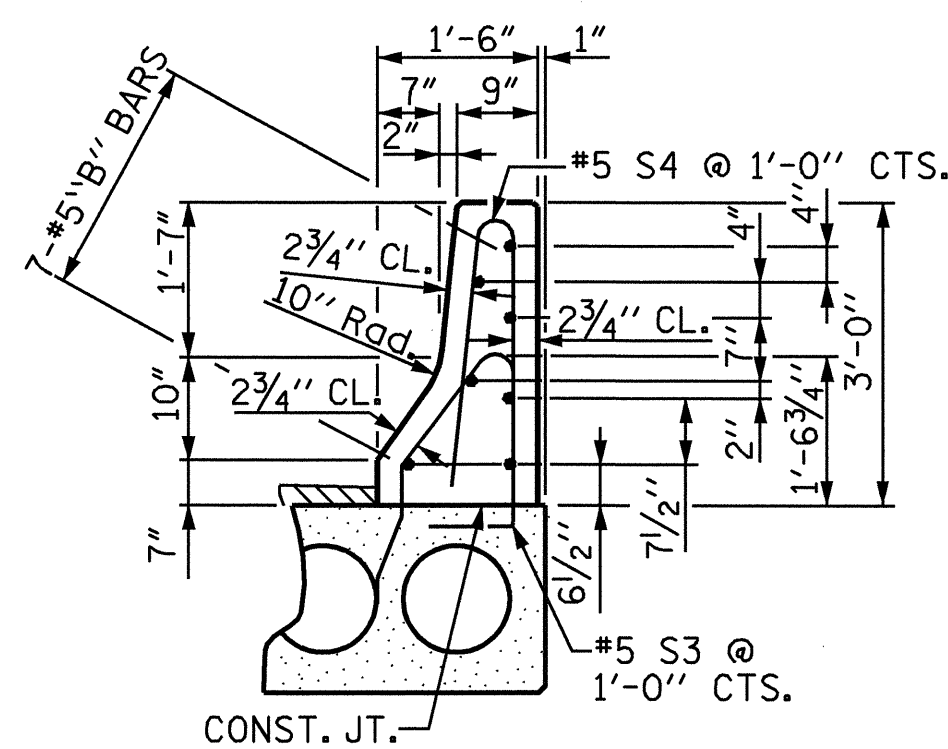
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|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

| | |
|------------------------------|----------------|
| ASSEMBLED BY : H. T. BARBOUR | DATE : 7-03-06 |
| CHECKED BY : C. R. YARBROUGH | DATE : 7-03-06 |
| DRAWN BY : TLA 5/06 | ADDED 5/1/06 |
| CHECKED BY : GM 5/06 | |

| GRADE 270 STRANDS | |
|---------------------------------------|-------------|
| AREA (SQUARE INCHES) | 0.6" Ø L.R. |
| ULTIMATE STRENGTH (LBS. PER STRAND) | 58,600 |
| APPLIED PRESTRESS (LBS. PER STRAND) | 43,950 |

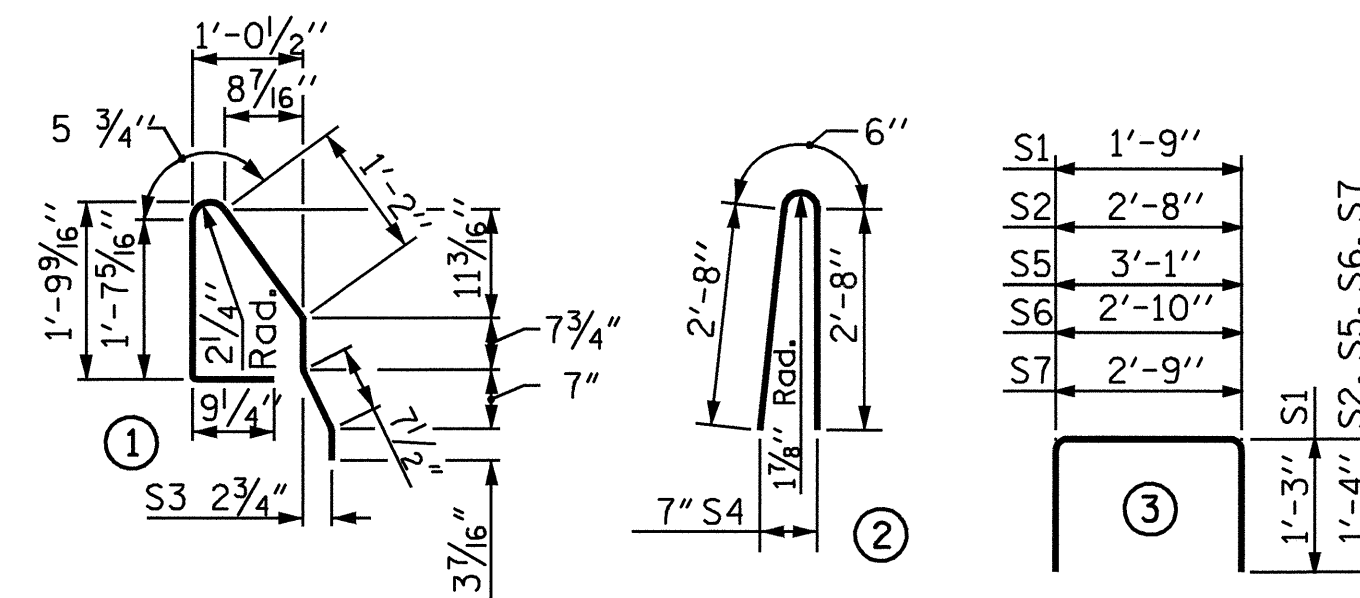


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



SECTION THRU RAIL

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION SPAN A

| BAR | NUMBER | SIZE | TYPE | EXTERIOR UNIT | | INTERIOR UNIT | |
|---------------------------------|--------|------|------|---------------|--------|---------------|--------|
| | | | | LENGTH | WEIGHT | LENGTH | WEIGHT |
| B1 | 4 | #4 | STR | 24'-5" | 65 | 24'-5" | 65 |
| S1 | 8 | #6 | 3 | 4'-3" | 51 | 4'-3" | 51 |
| S2 | 86 | #4 | 3 | 5'-4" | 306 | 5'-4" | 306 |
| *S3 | 48 | #5 | 1 | 5'-7" | 280 | | |
| S5 | 4 | #4 | 3 | 5'-9" | 15 | 5'-9" | 15 |
| S6 | 4 | #4 | 3 | 5'-6" | 15 | 5'-6" | 15 |
| S7 | 4 | #4 | 3 | 5'-5" | 14 | 5'-5" | 14 |
| REINFORCING STEEL | | | | LBS. | 466 | | 466 |
| *EPOXY COATED REINFORCING STEEL | | | | LBS. | 280 | | |
| 5,800 P.S.I. CONCRETE | | | | CU. YDS. | 6.9 | | 6.8 |
| 0.6" Ø L.R. STRANDS No. | | | | | 22 | | 22 |

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT 0.6" Ø STRANDS SHALL BE USED.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" DIA. DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4800 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

DEAD LOAD DEFLECTION AND CAMBER

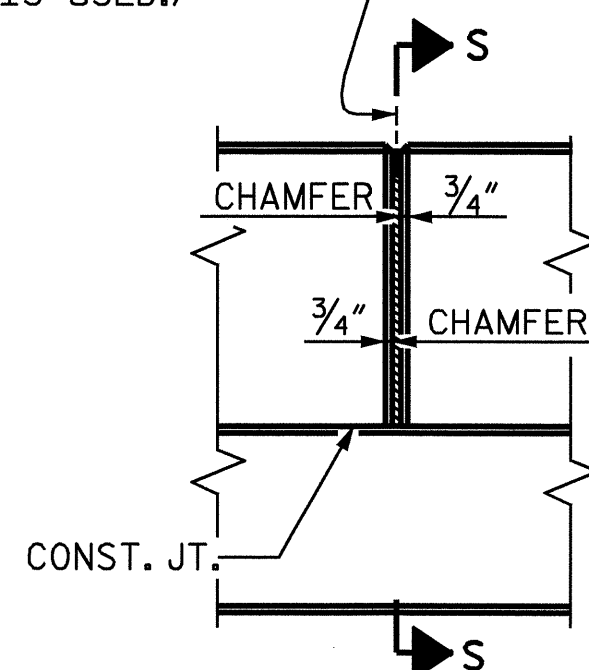
| | SPAN A | |
|---|--------------------|--------------------|
| | EXT. UNITS | INT. UNITS |
| | 3'-0" x 1'-9" | 3'-0" x 1'-9" |
| | 0.6" Ø L.R. STRAND | 0.6" Ø L.R. STRAND |
| CAMBER (SLAB ALONE IN PLACE) | 2 1/16" ↑ | 2 1/16" ↑ |
| DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ** | 1/4" ↓ | 1/4" ↓ |
| FINAL CAMBER | 2 7/16" ↑ | 2 7/16" ↑ |

** INCLUDES FUTURE WEARING SURFACE

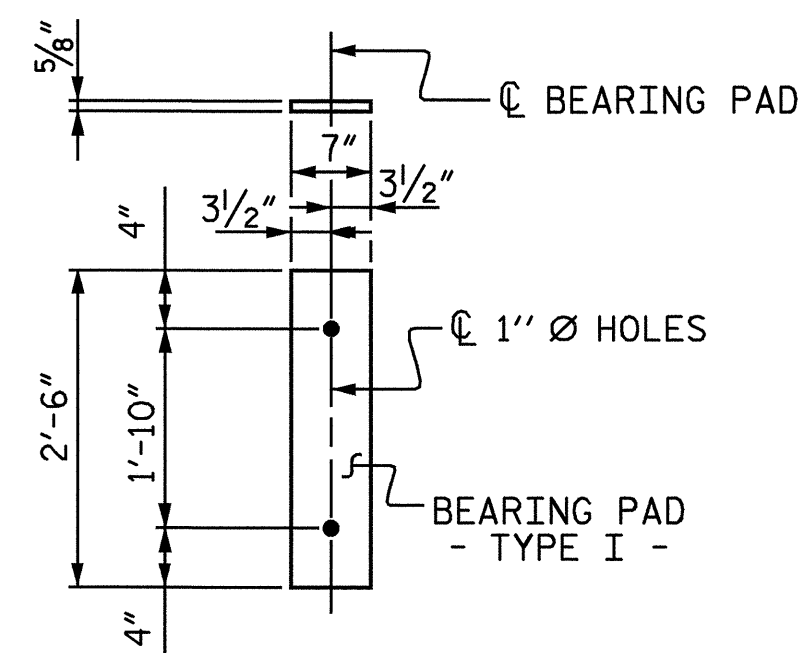
CORED SLABS REQUIRED

| | NUMBER PER SPAN | LENGTH | TOTAL LENGTH |
|---------------|-----------------|------------|--------------|
| | | SPAN A | |
| EXTERIOR C.S. | 2 | 47'-4 1/8" | 94'-9 3/4" |
| INTERIOR C.S. | 8 | 47'-4 1/8" | 379'-3" |
| TOTAL | 10 | 47'-4 1/8" | 474'-0 3/4" |

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS



FIXED END
(TYPE I - 20 REQ'D)

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL

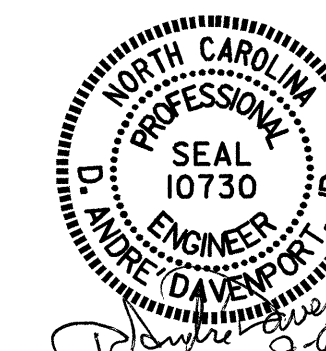
| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
|---|--------|------|------|----------|--------|
| *B2 | 56 | #5 | STR | 13'-10" | 808 |
| *S4 | 96 | #5 | 2 | 5'-10" | 584 |
| *EPOXY COATED REINFORCING STEEL | | | | LBS. | 1392 |
| CLASS AA CONCRETE | | | | CU. YDS. | 11.2 |
| TOTAL LIN. FT. OF CONCRETE BARRIER RAIL | | | | | 94.81 |

PROJECT NO. B-4202
MITCHELL COUNTY
STATION: 12+96.25 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 1'-9"
PRESTRESSED
CONCRETE CORED
SLAB UNIT



| | | | |
|----------------|----------------|--------------|---------|
| ASSEMBLED BY : | H.T. BARBOUR | DATE : | 5-30-06 |
| CHECKED BY : | C.R. YARBROUGH | DATE : | 6-16-06 |
| DRAWN BY : | WJH 4/89 | REV. 6/16/95 | EEM/RGW |
| CHECKED BY : | FCJ 5/89 | REV. 2/6/97 | EEM/RGW |
| | | REV. 8/16/99 | RWW/LES |

ELASTOMERIC BEARING DETAILS

| REVISIONS | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----------|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

TOTAL SHEETS 34

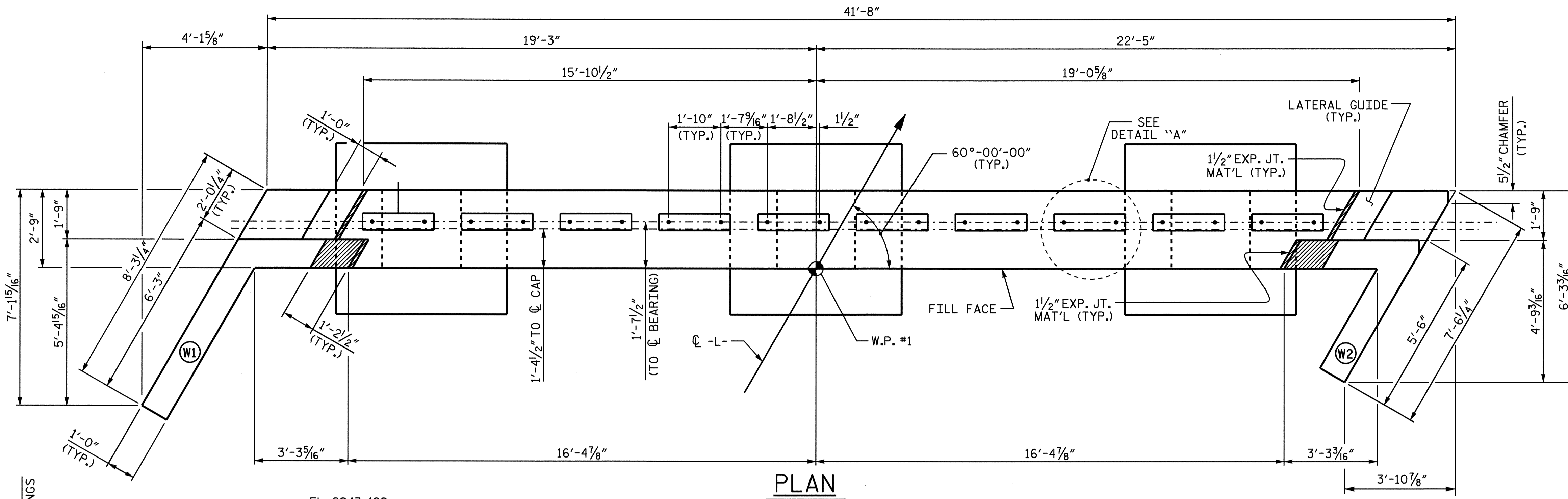
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

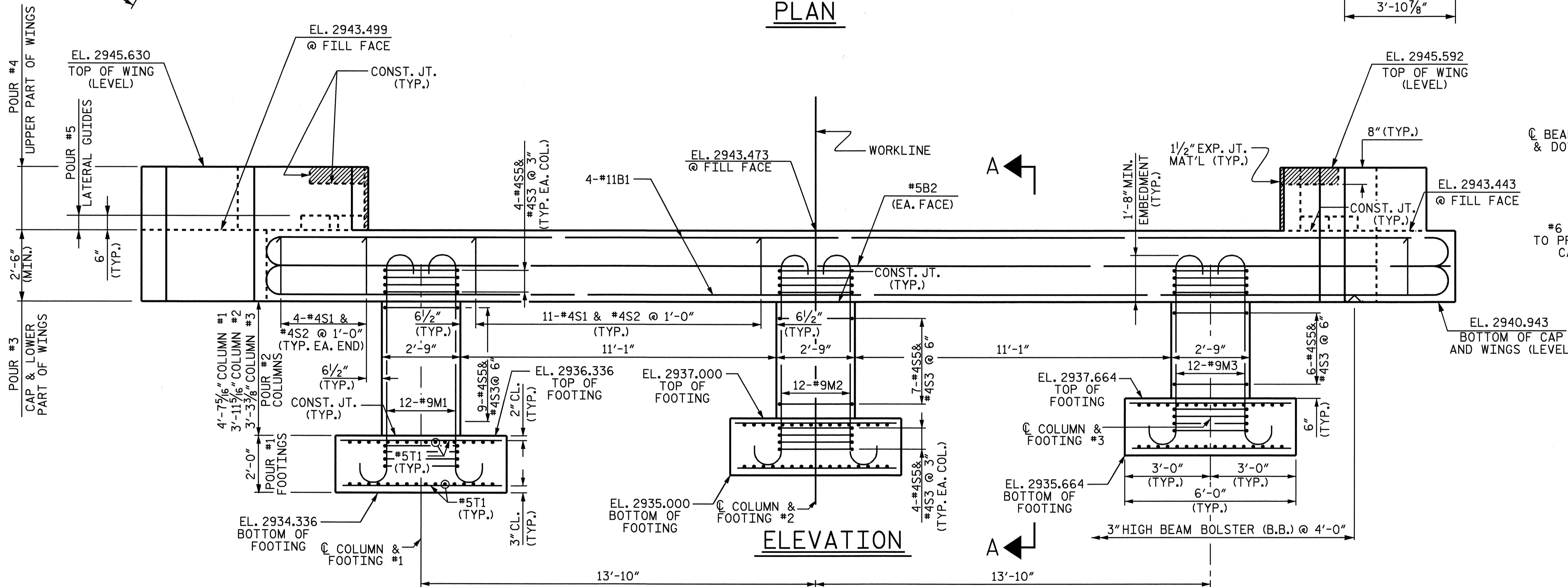
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

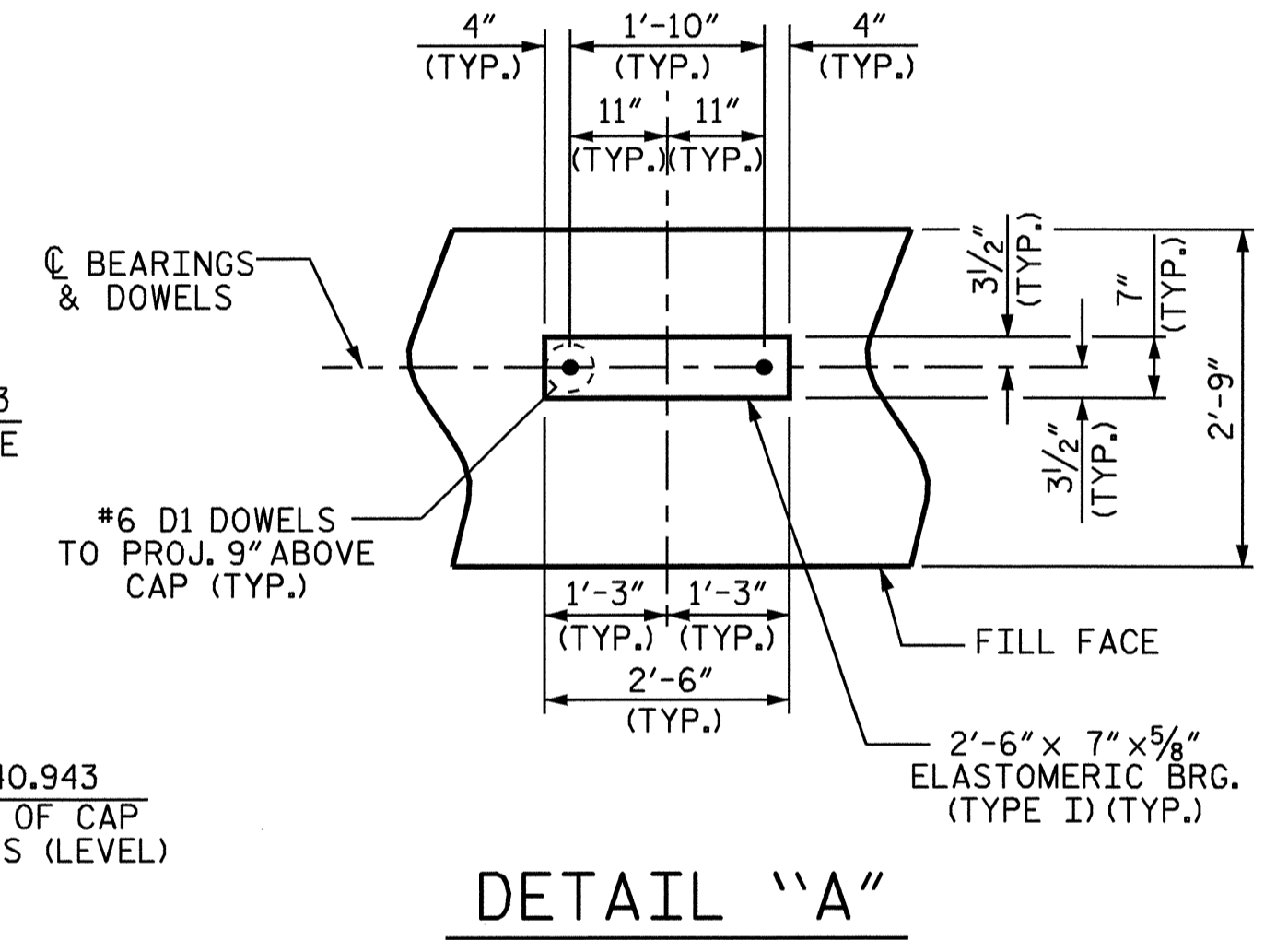
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



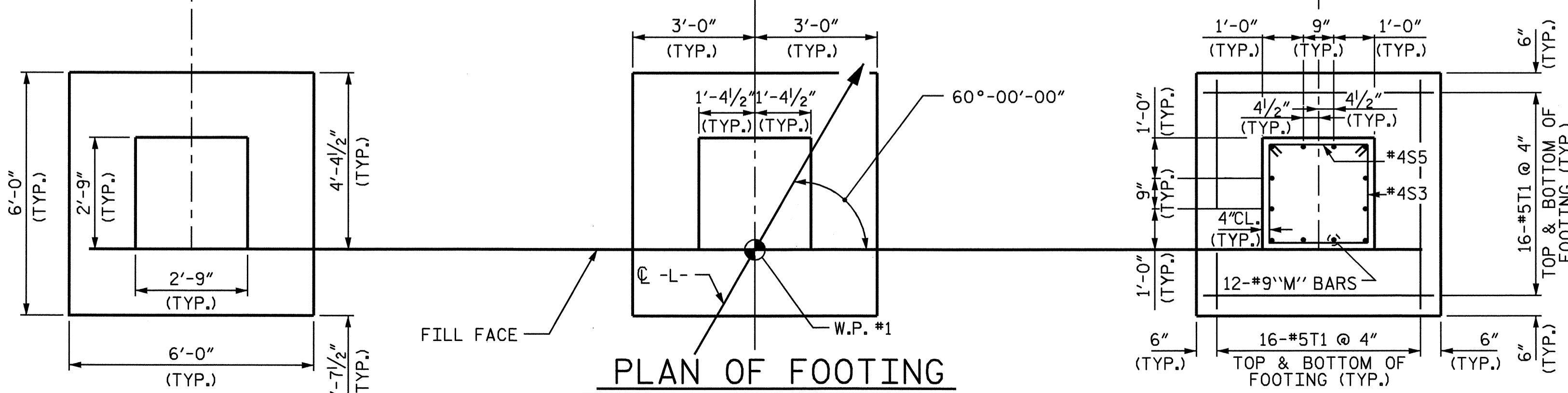
PLAN



ELEVATION



DETAIL "A"



PLAN OF FOOTING

ALL FOOTINGS ARE IDENTICAL AND ALL COLUMNS ARE SIMILAR

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25 -L-

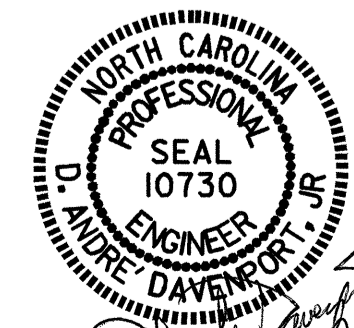
SHEET 1 OF 3

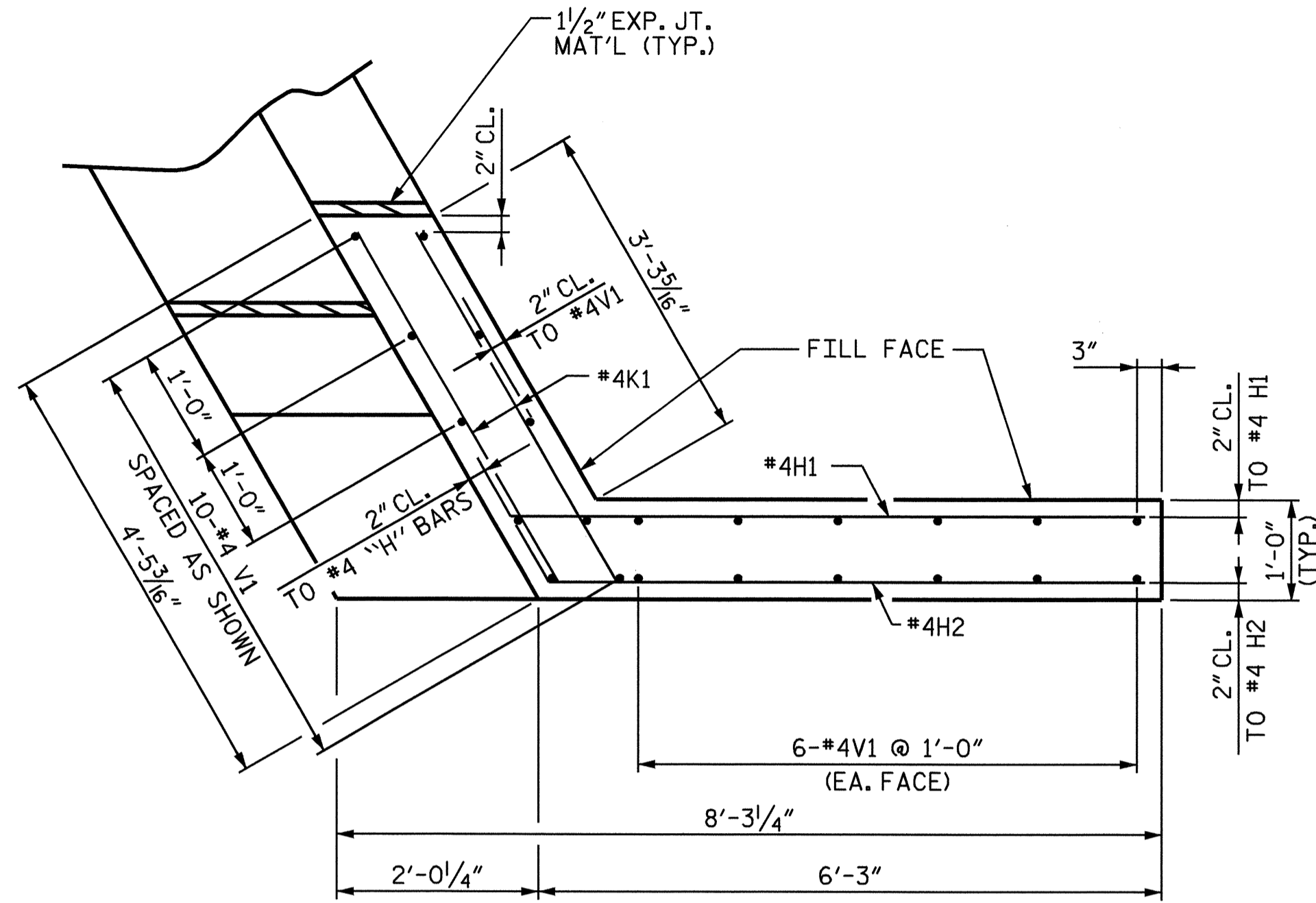
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #1**

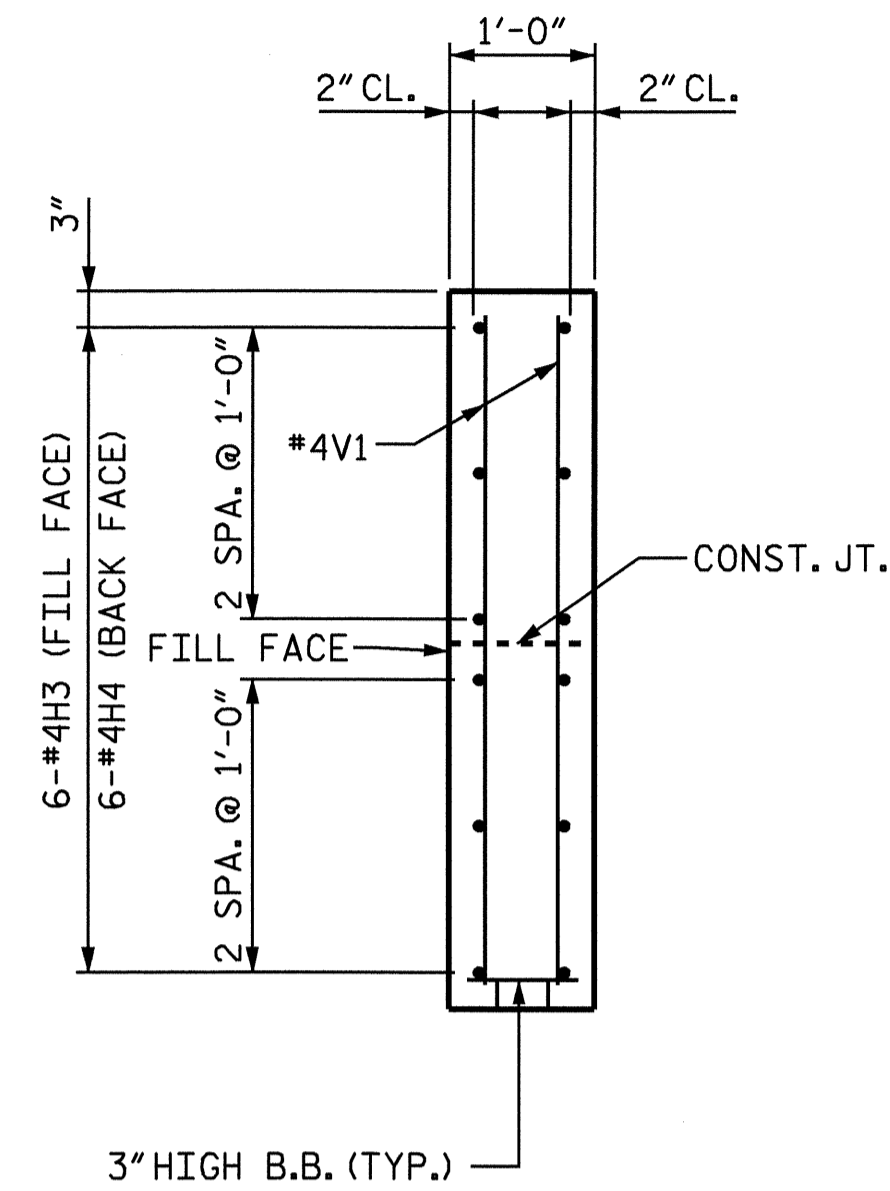
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|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

DRAWN BY: M. G. SHAIKH DATE: 9-25-07
 CHECKED BY: D. A. DAVENPORT DATE: 02-04-08

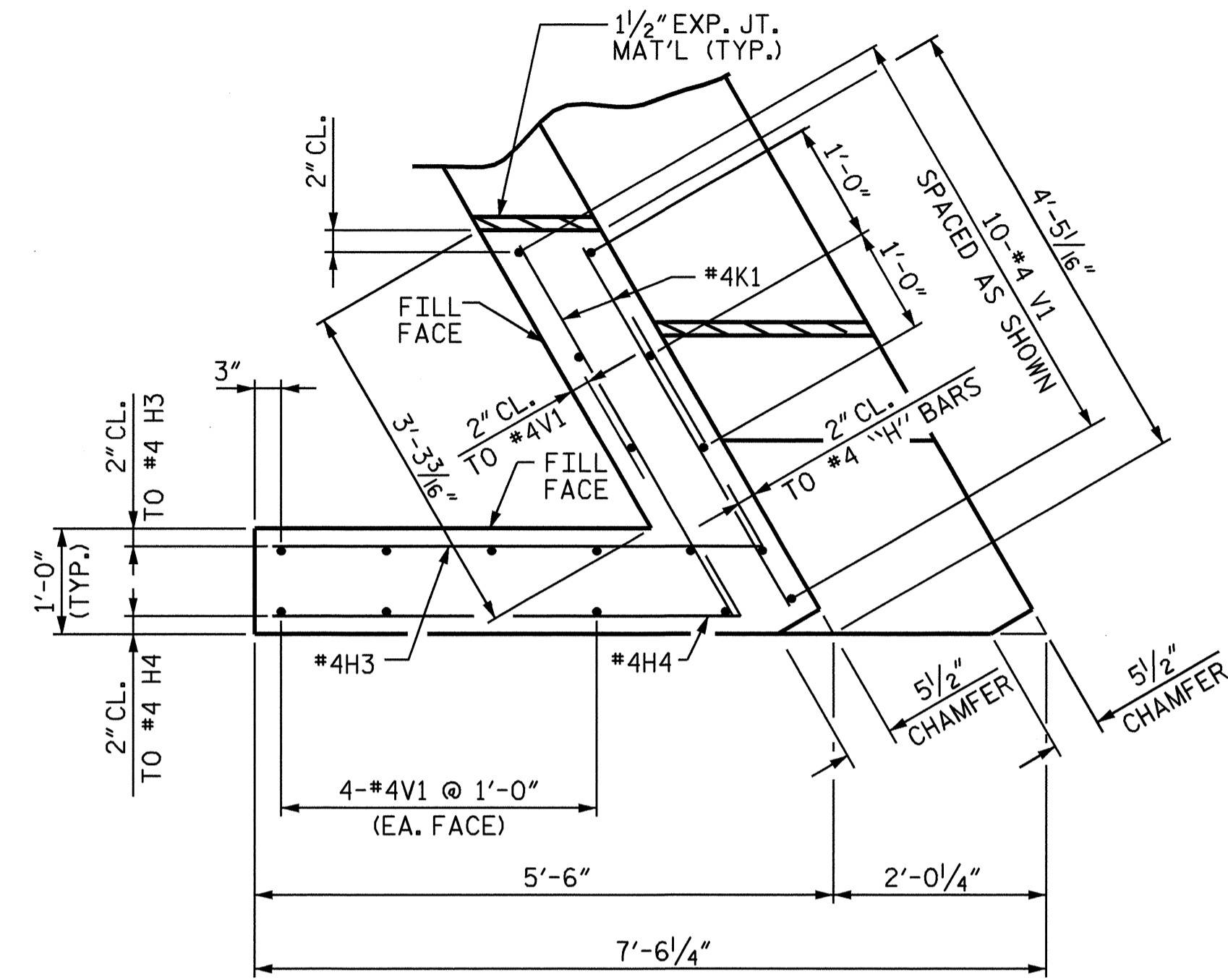




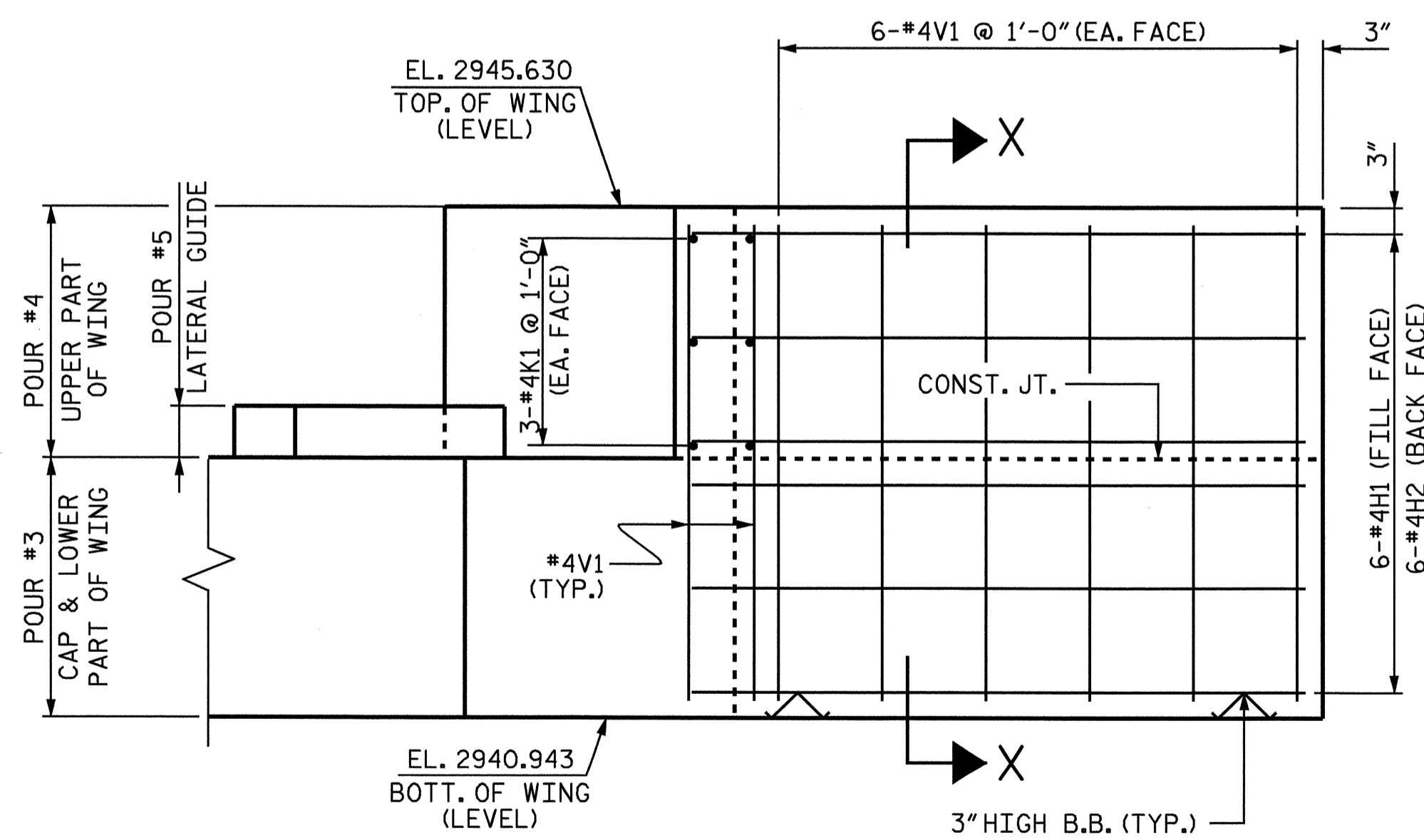
PLAN OF LEFT WING - (W1)



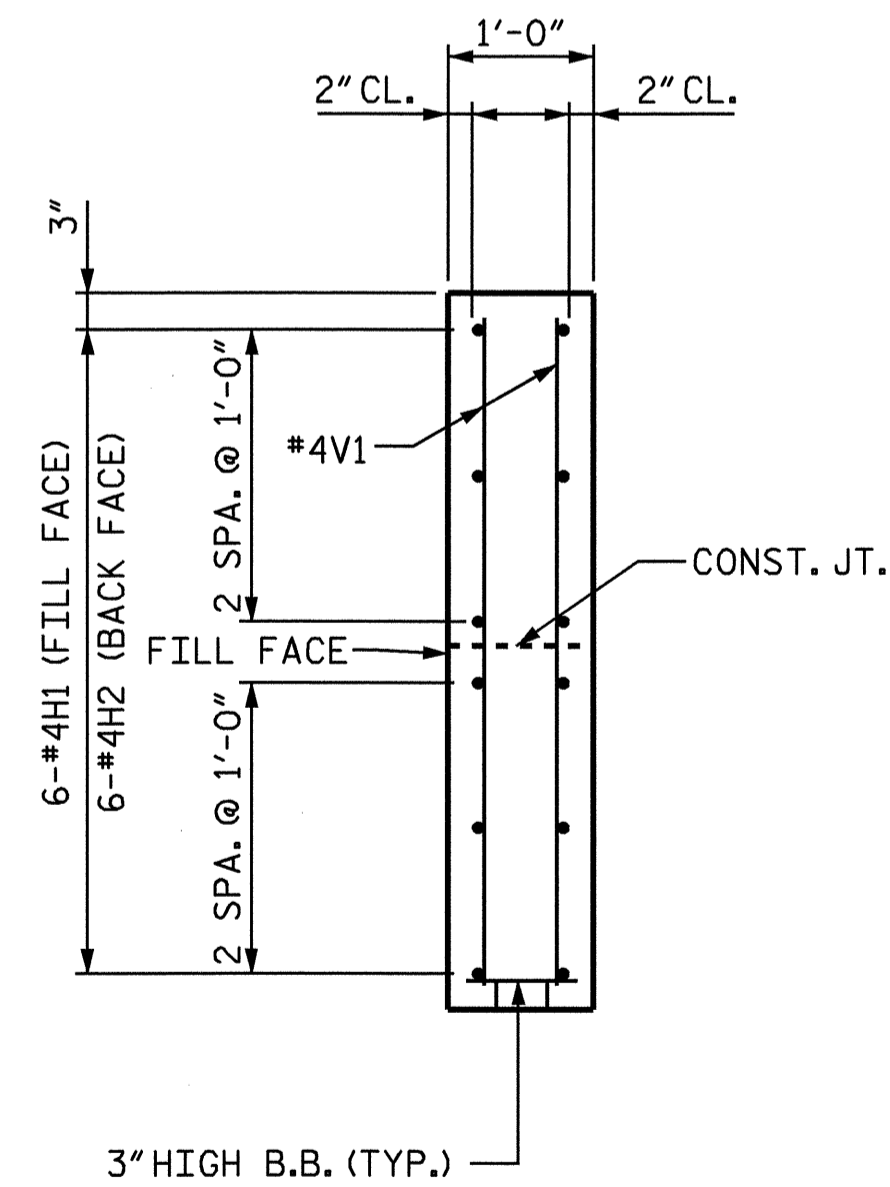
SECTION Y-Y



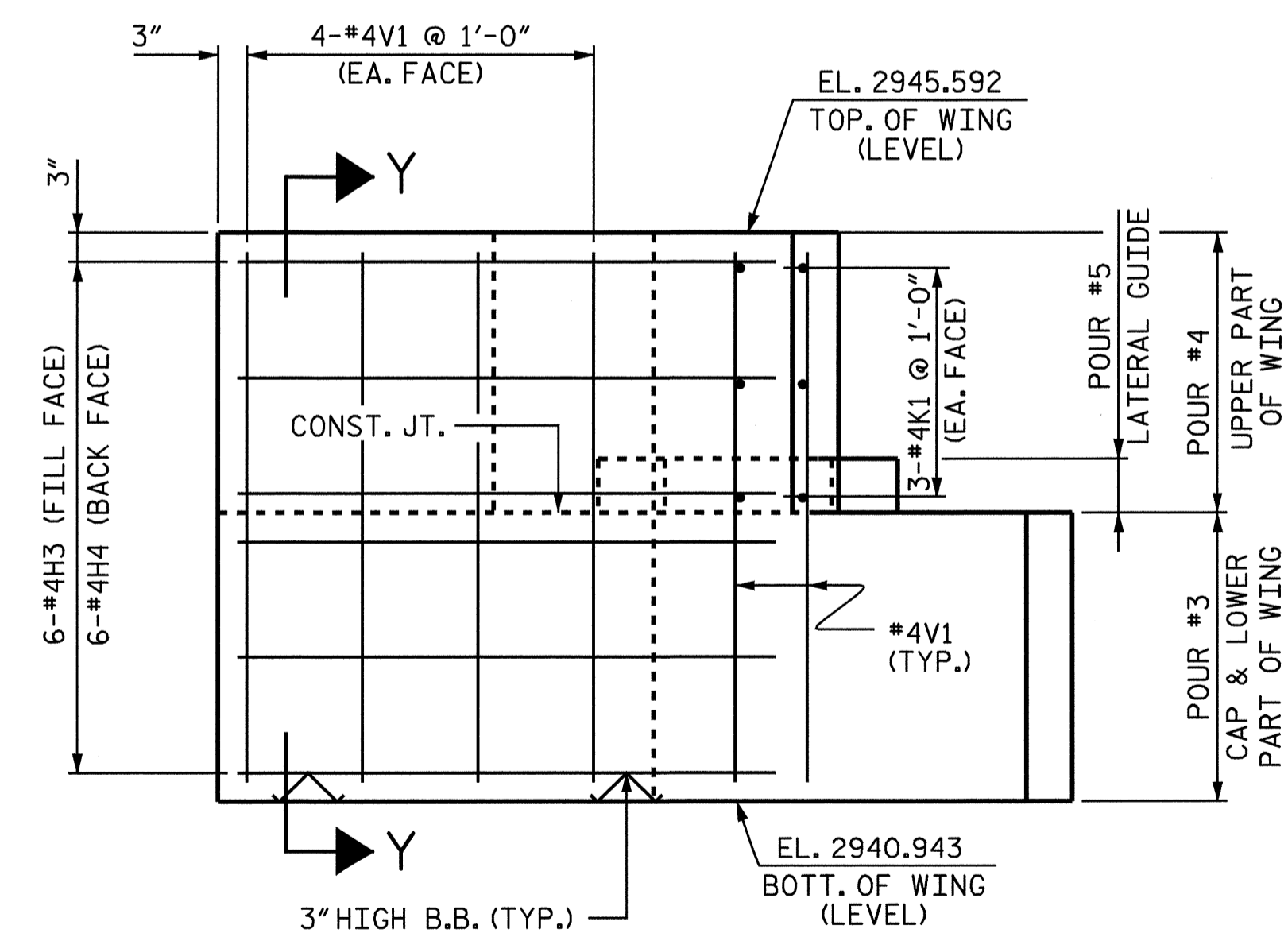
PLAN OF RIGHT WING - (W2)



ELEVATION OF LEFT WING - (W1)



SECTION X-X



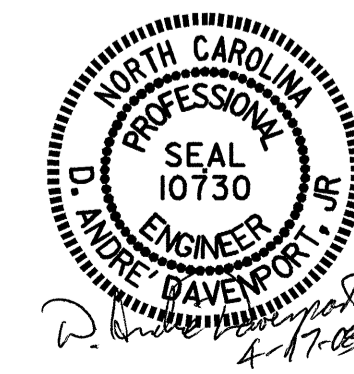
ELEVATION OF RIGHT WING - (W2)

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

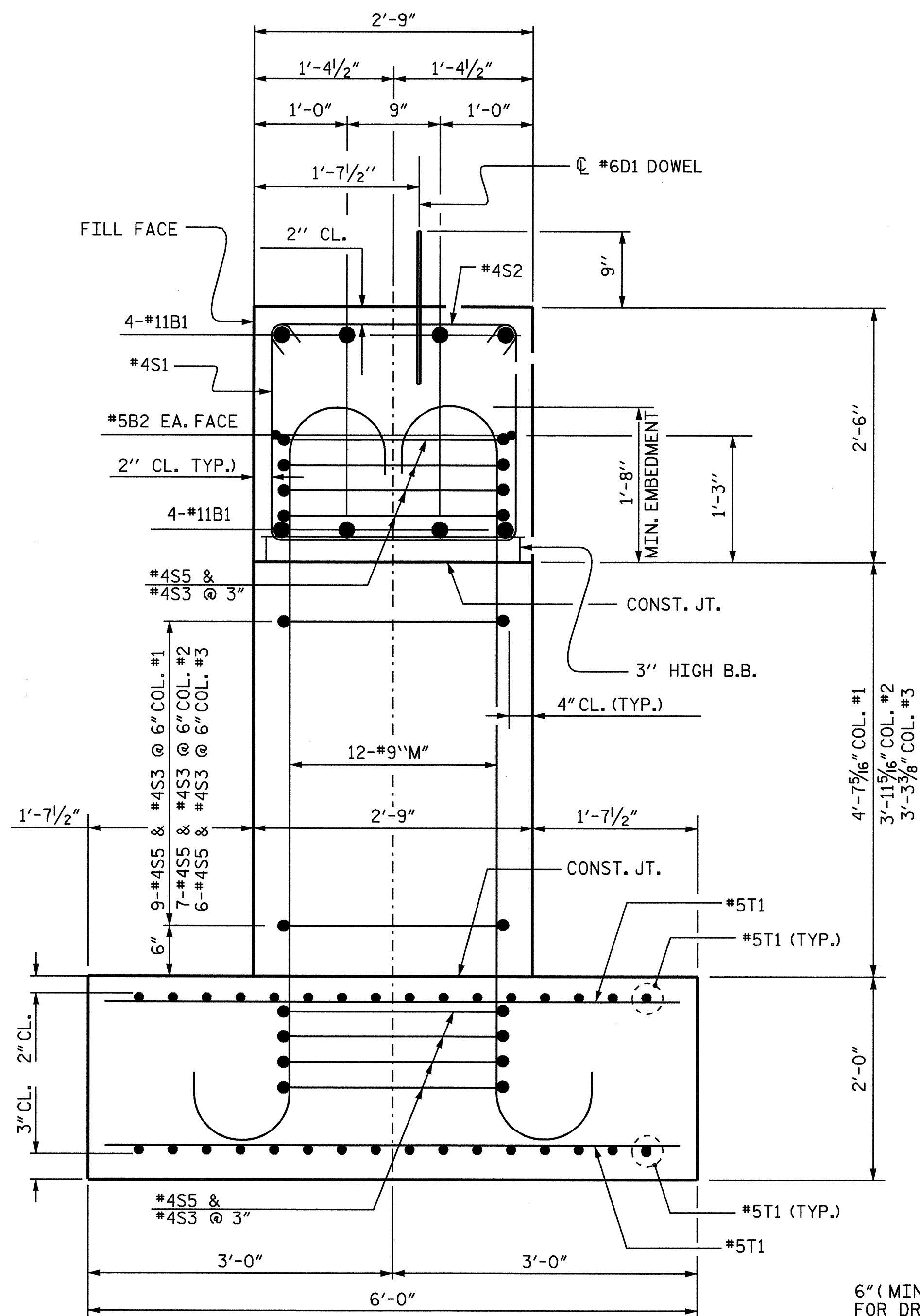


DRAWN BY: M. G. SHAIKH DATE: 9-26-07
 CHECKED BY: D. A. DAVENPORT DATE: 02-04-08

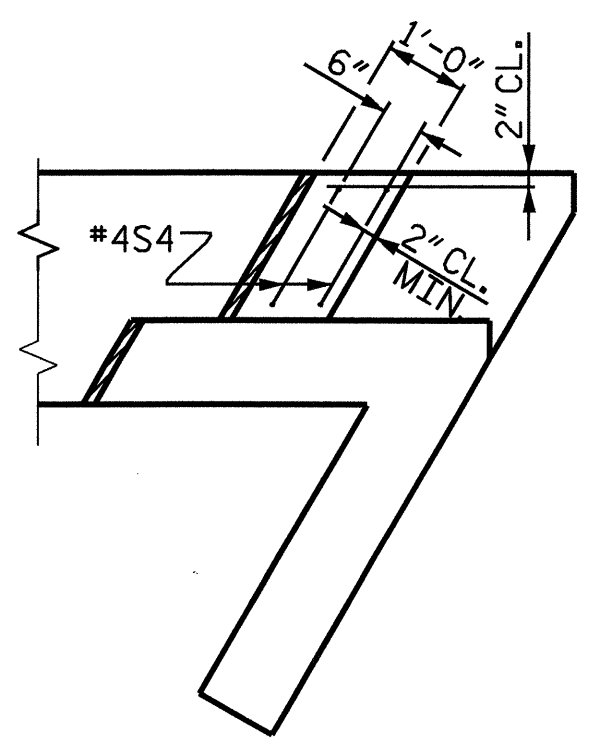
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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
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| 2 | | | 4 | | | 34 |

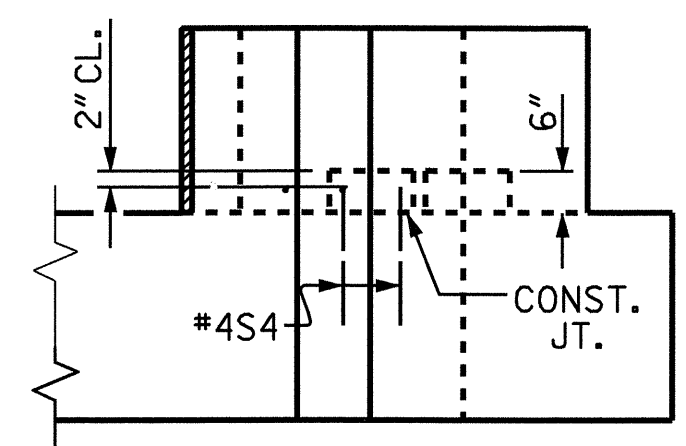
STR #1



SECTION A-A

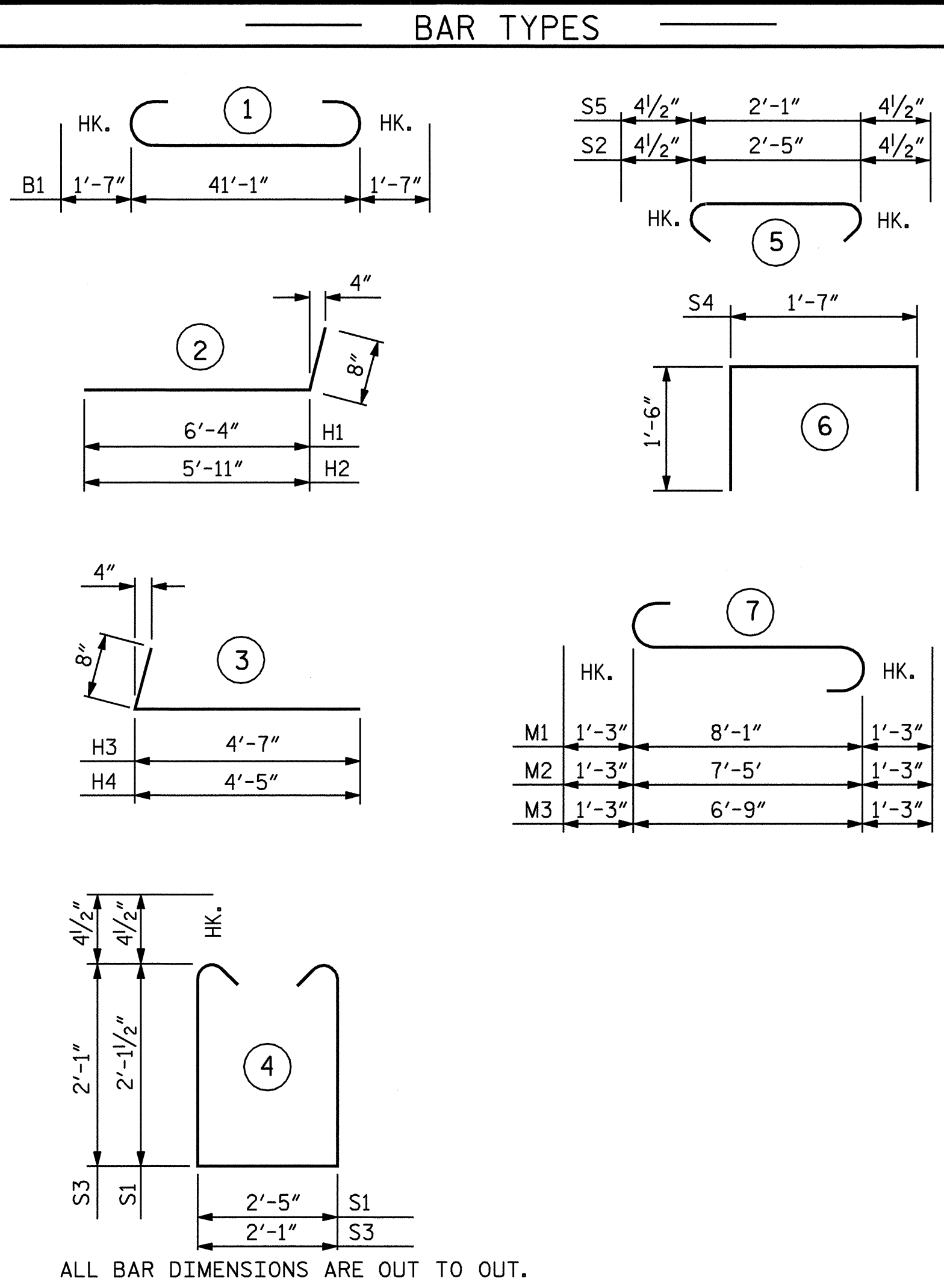


PLAN



ELEVATION

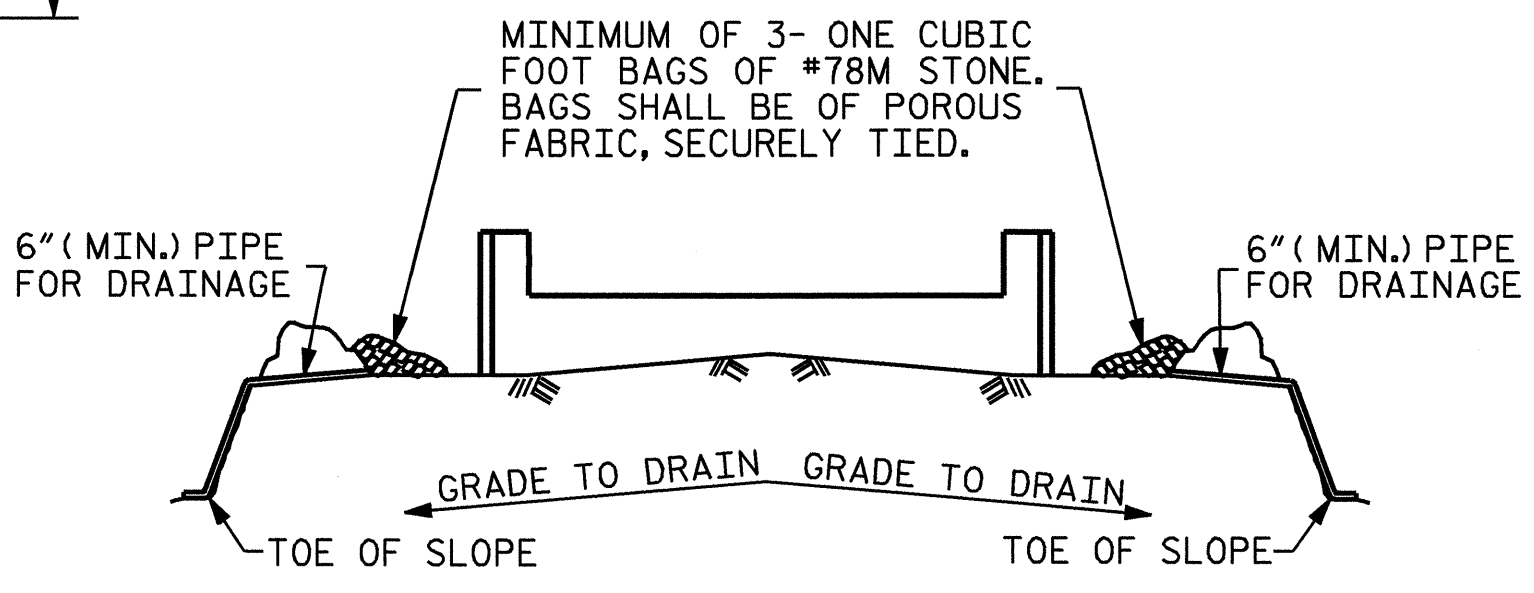
LATERAL GUIDE DETAILS



BAR TYPES

BILL OF MATERIAL

| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|--|-----|------|------|--------|--------|
| B1 | 8 | #11 | 1 | 44'-3" | 1881 |
| B2 | 2 | #5 | STR | 41'-3" | 86 |
| D1 | 20 | #6 | STR | 1'-6" | 45 |
| H1 | 6 | #4 | 2 | 7'-0" | 28 |
| H2 | 6 | #4 | 2 | 6'-7" | 26 |
| H3 | 6 | #4 | 3 | 5'-3" | 21 |
| H4 | 6 | #4 | 3 | 5'-1" | 20 |
| K1 | 12 | #4 | STR | 4'-0" | 32 |
| M1 | 12 | #9 | 8 | 10'-7" | 432 |
| M2 | 12 | #9 | 8 | 9'-11" | 405 |
| M3 | 12 | #9 | 8 | 9'-3" | 377 |
| S1 | 30 | #4 | 4 | 7'-5" | 149 |
| S2 | 30 | #4 | 5 | 3'-2" | 63 |
| S3 | 46 | #4 | 4 | 7'-0" | 215 |
| S4 | 4 | #4 | 6 | 4'-7" | 12 |
| S5 | 46 | #4 | 5 | 2'-10" | 87 |
| T1 | 192 | #5 | STR | 5'-8" | 1135 |
| V1 | 40 | #4 | STR | 4'-3" | 114 |
| REINFORCING STEEL LBS = | | | | | 5128 |
| CLASS A CONCRETE BREAKDOWN | | | | | |
| POUR #1 FOOTINGS (C.Y.) | | | | | 8.0 |
| POUR #2 COLUMNS (C.Y.) | | | | | 3.3 |
| POUR #3 CAP & LOWER PART OF WINGS (C.Y.) | | | | | 11.5 |
| POUR #4 UPPER PART OF WINGS (C.Y.) | | | | | 1.6 |
| POUR #5 LATERAL GUIDES (C.Y.) | | | | | 0.1 |
| TOTAL CLASS A CONCRETE (C.Y.) | | | | | 24.5 |



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

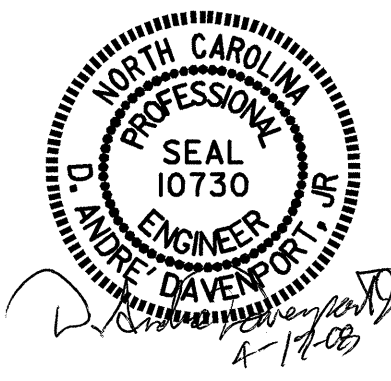
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

DRAWN BY : M. G. SHAIKH DATE : 9-25-07
 CHECKED BY : D. A. DAVENPORT DATE : 02-04-08

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PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 3 OF 3

| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
|--|-----|-------|-----|-----|--------------------|
| SUBSTRUCTURE END BENT #1 | | | | | |
| REVISIONS | | | | | SHEET NO. |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| | | | | | TOTAL SHEETS 34 |

STR #1

NC006

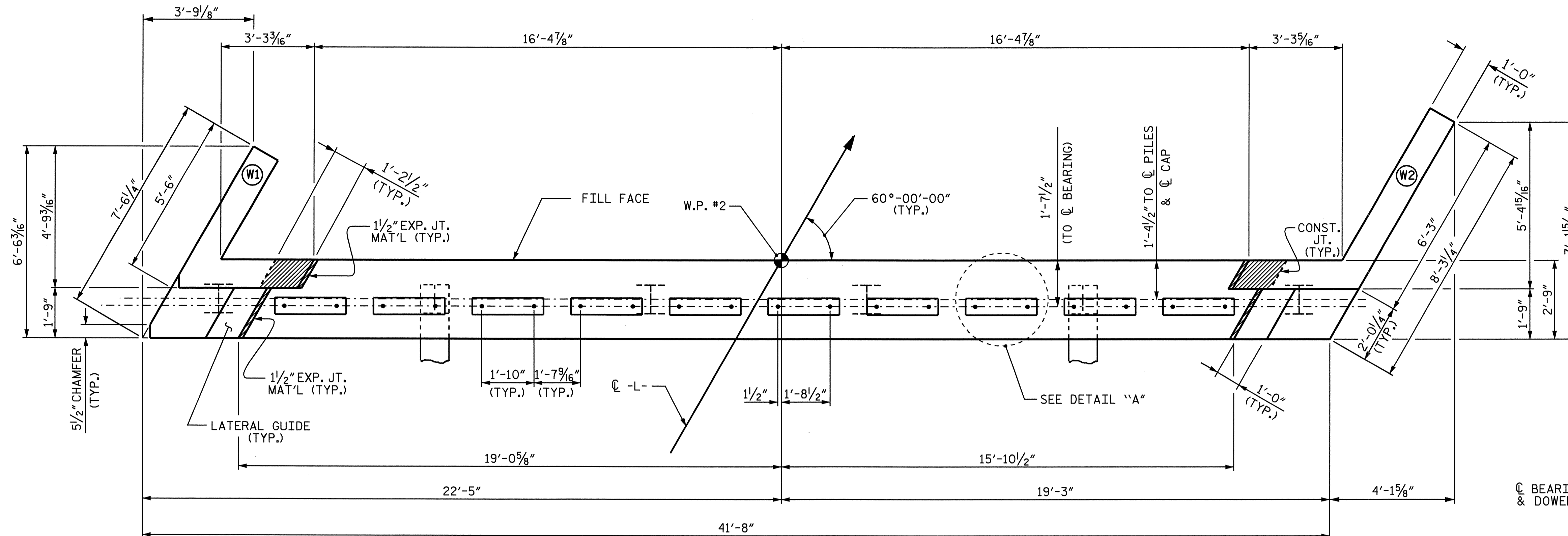
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

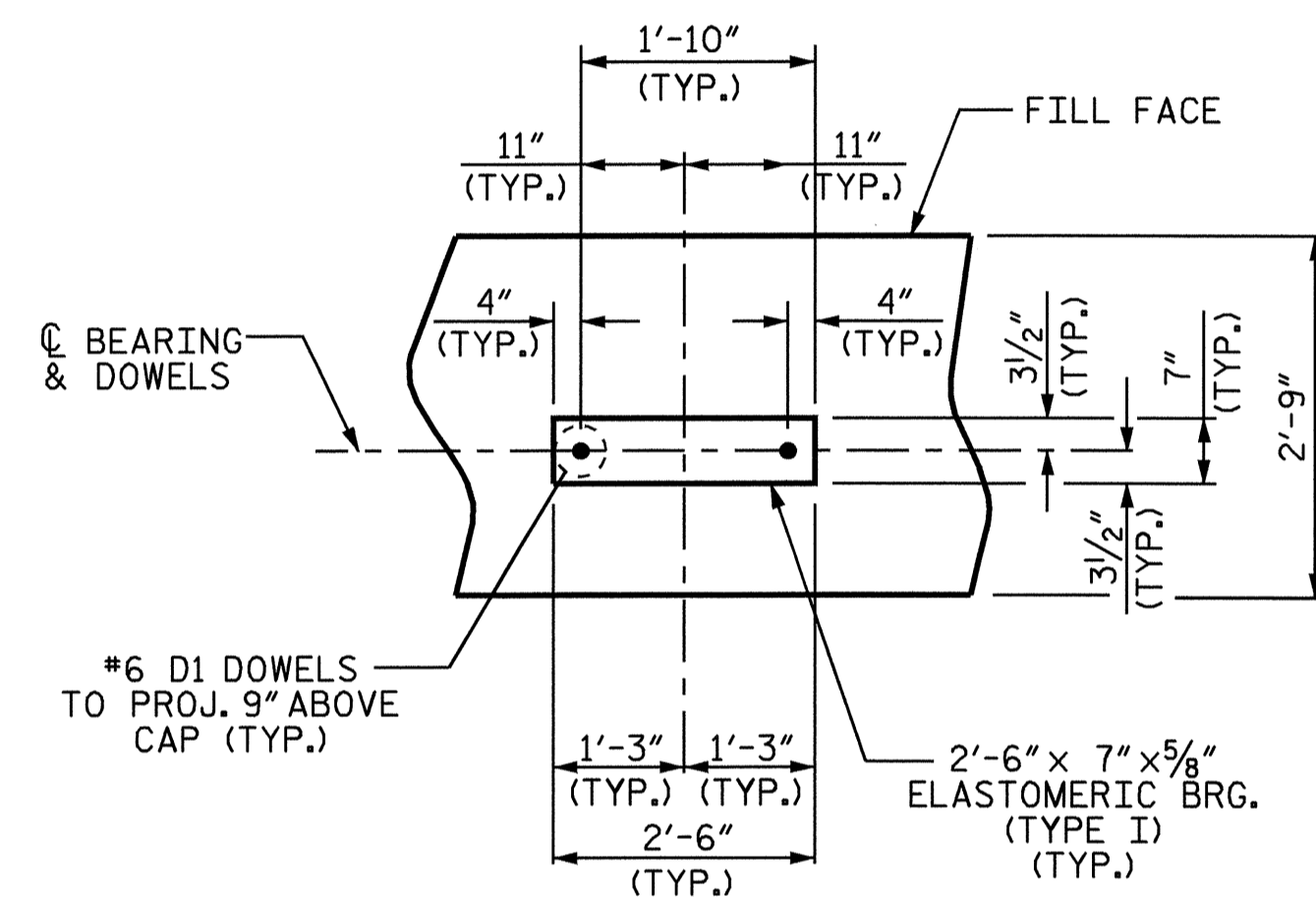
THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS. SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

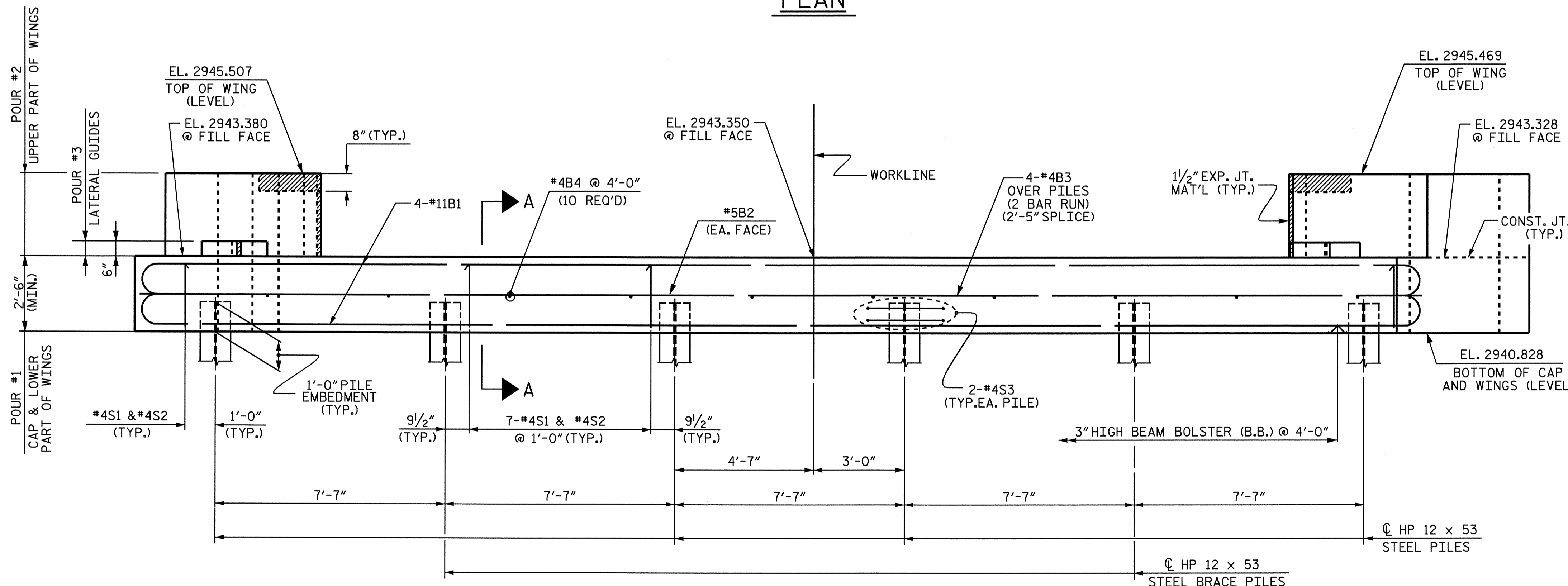
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL HAS BEEN CAST IF SLIP FORMING IS USED.



PLAN



DETAIL "A"



ELEVATION

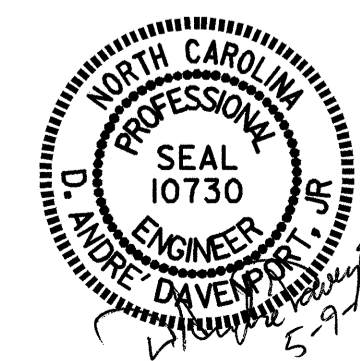
PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 1 OF 3

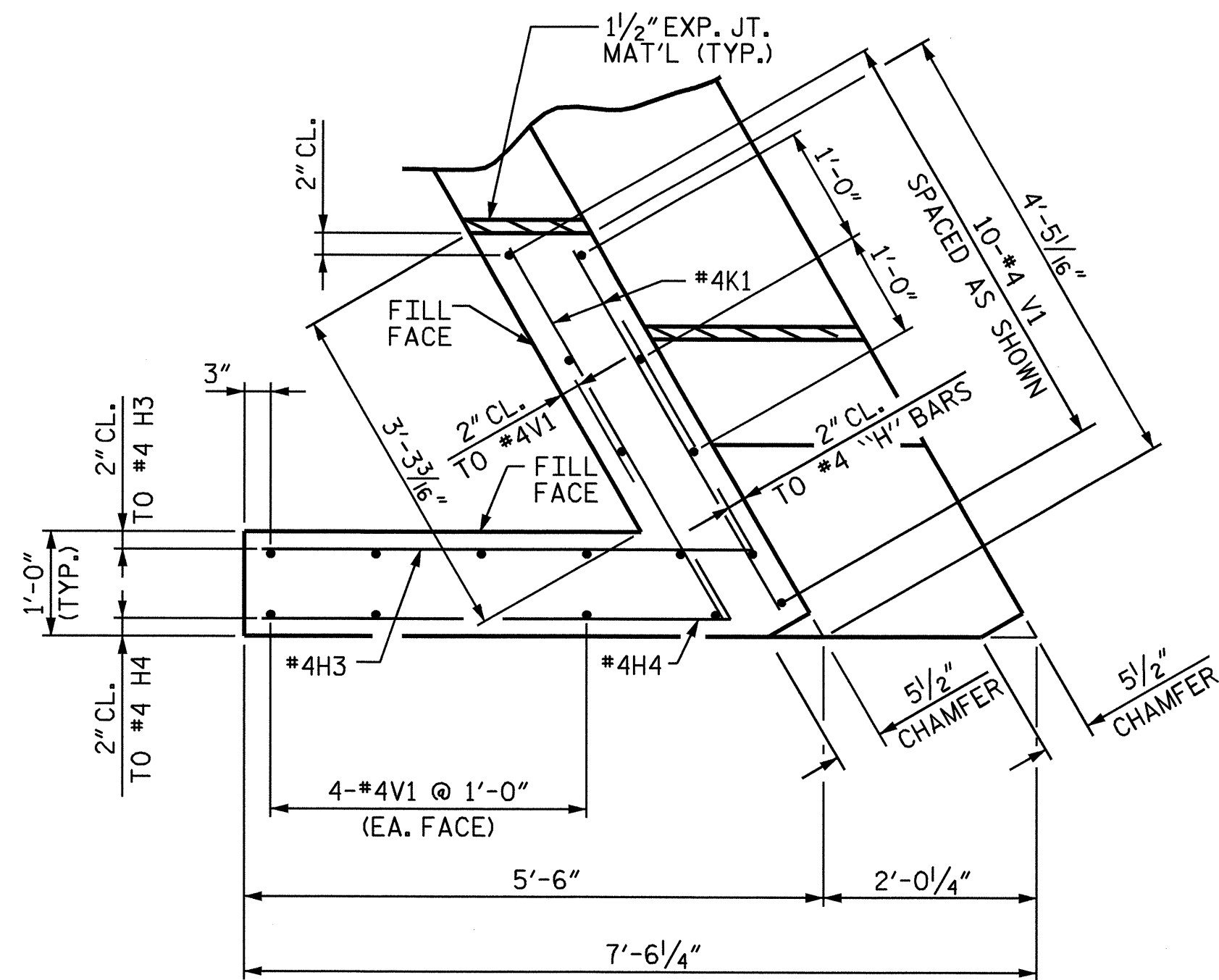
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #2**

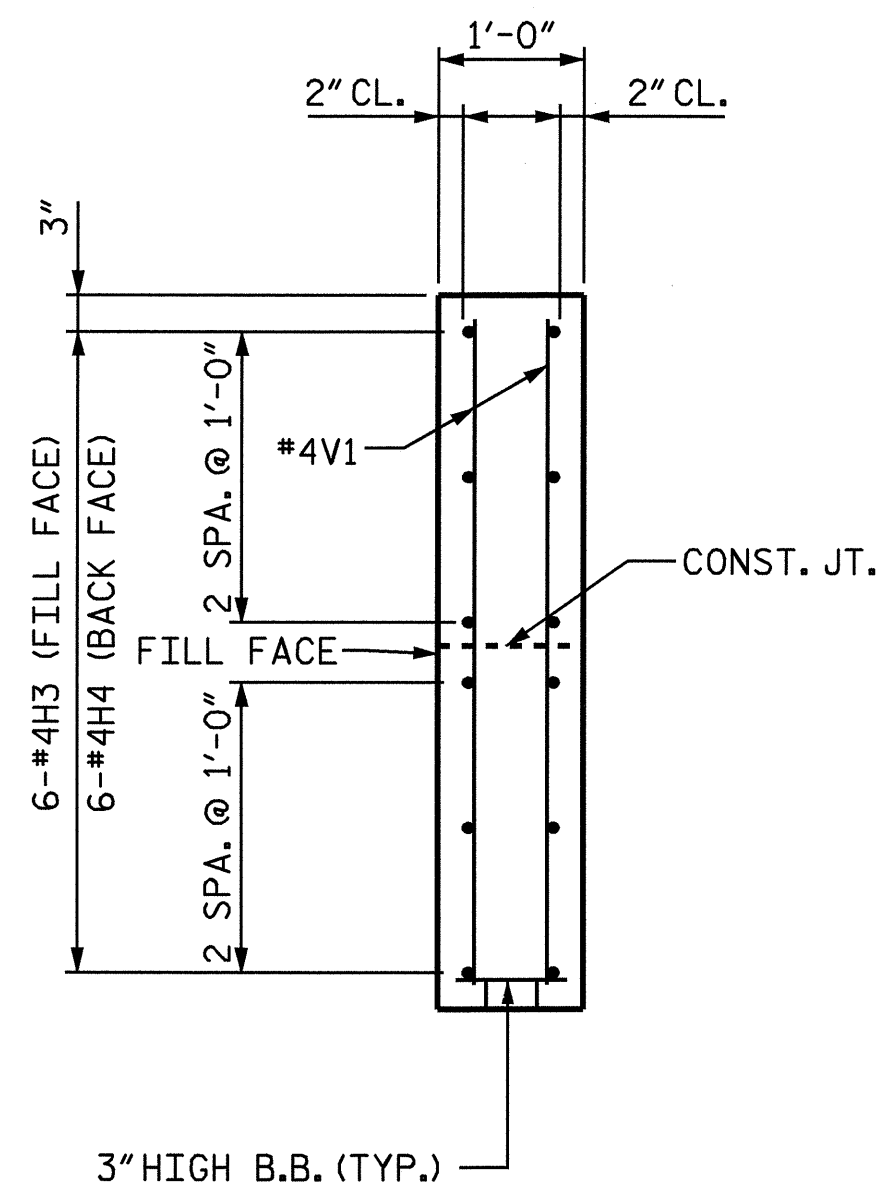
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |



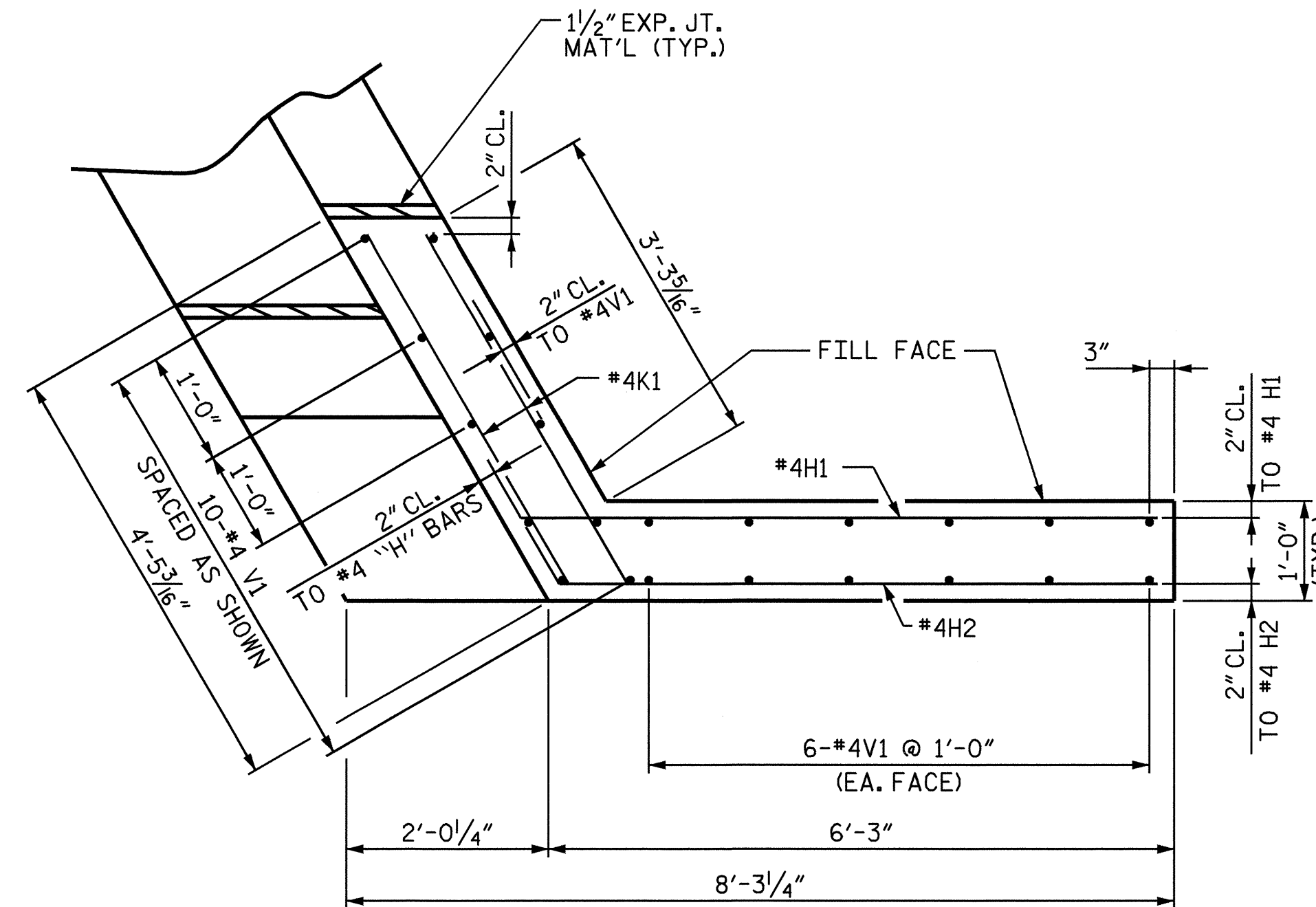
DRAWN BY : M. G. SHAIKH DATE : 9-28-07
 CHECKED BY : D. A. DAVENPORT DATE : 01-28-08



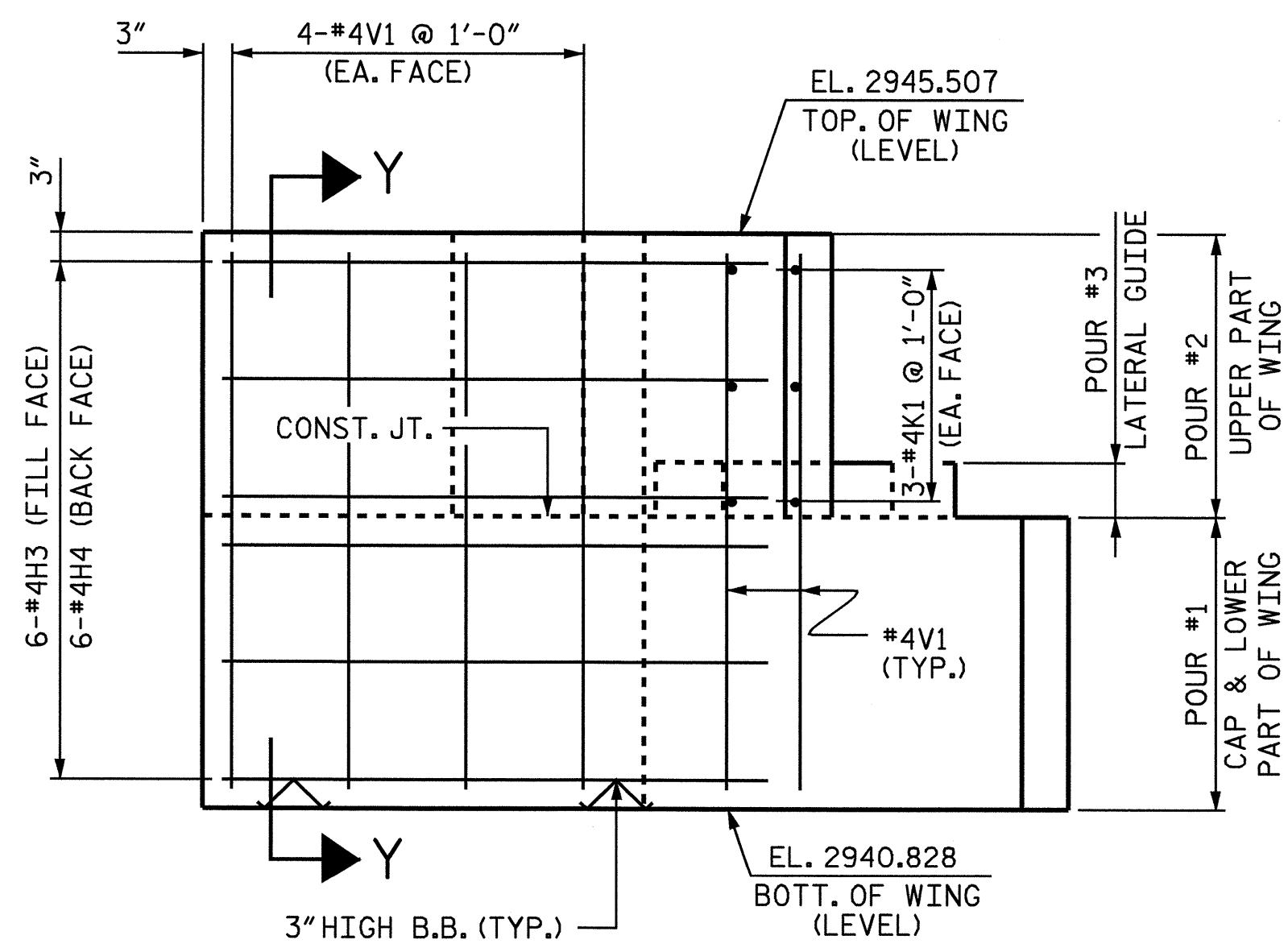
PLAN OF LEFT WING - (W1)



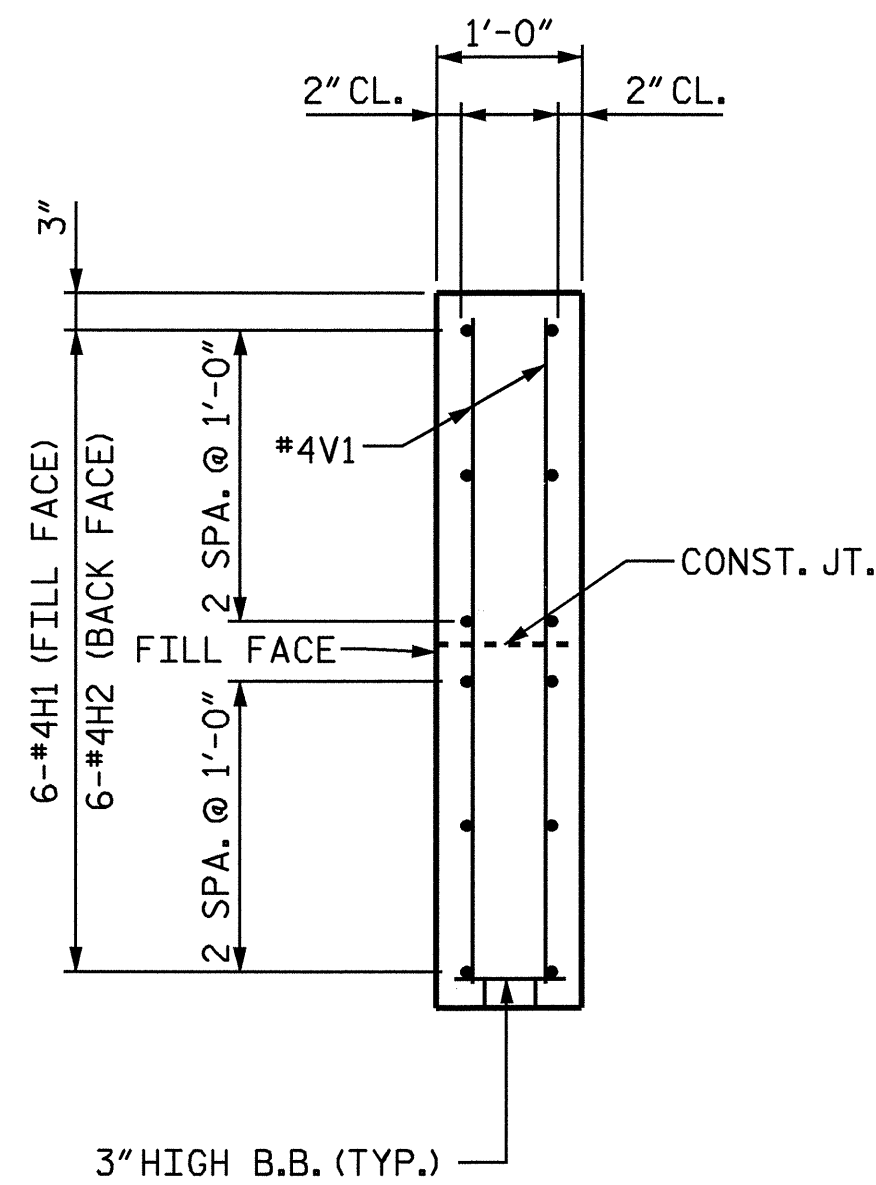
SECTION Y-Y



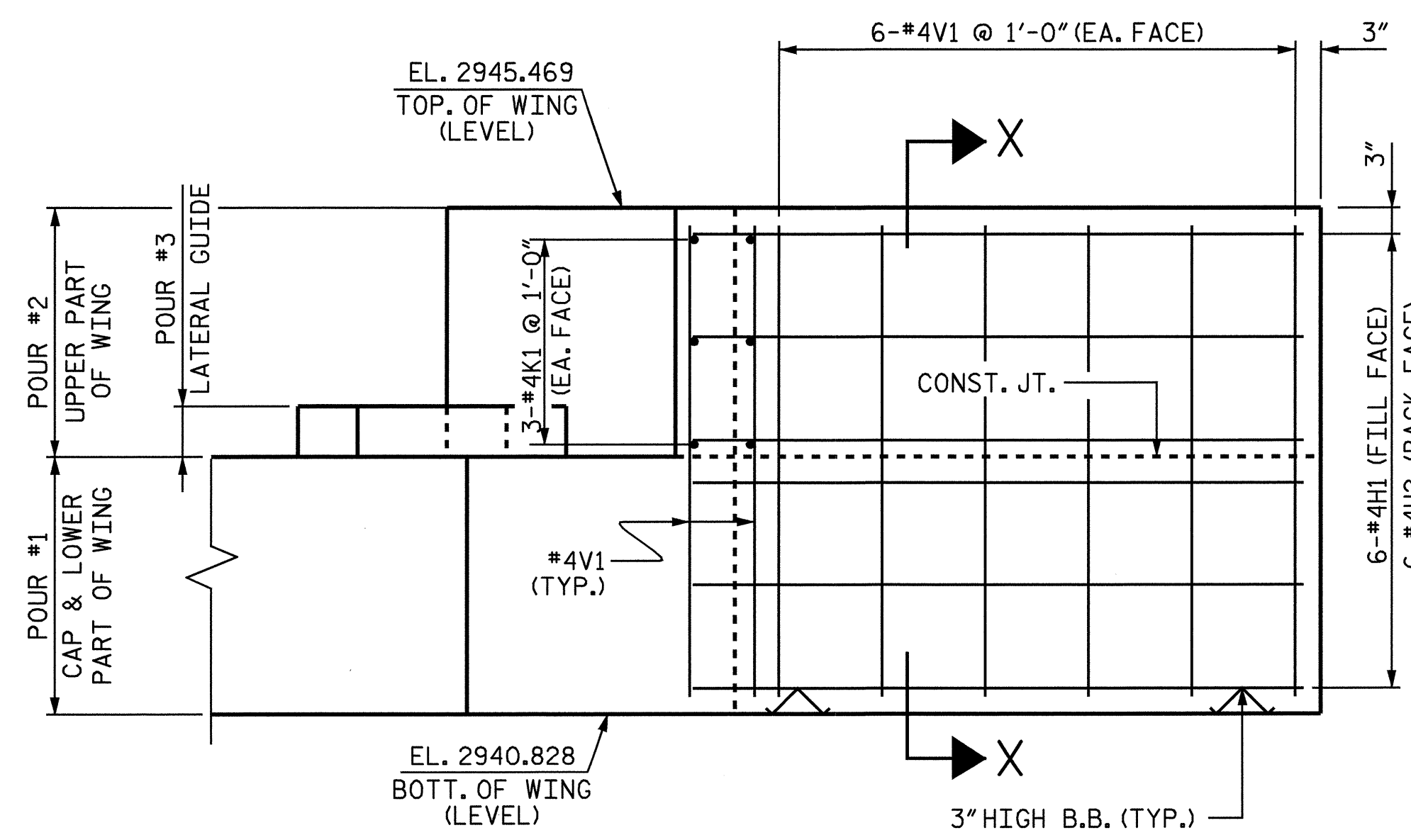
PLAN OF RIGHT WING - (W2)



ELEVATION OF LEFT WING - (W1)



SECTION X-X



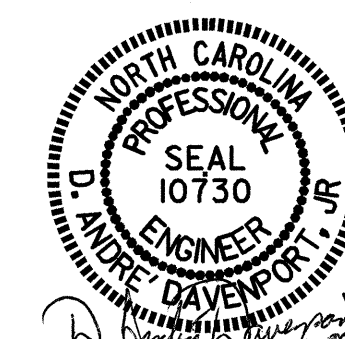
ELEVATION OF RIGHT WING - (W2)

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

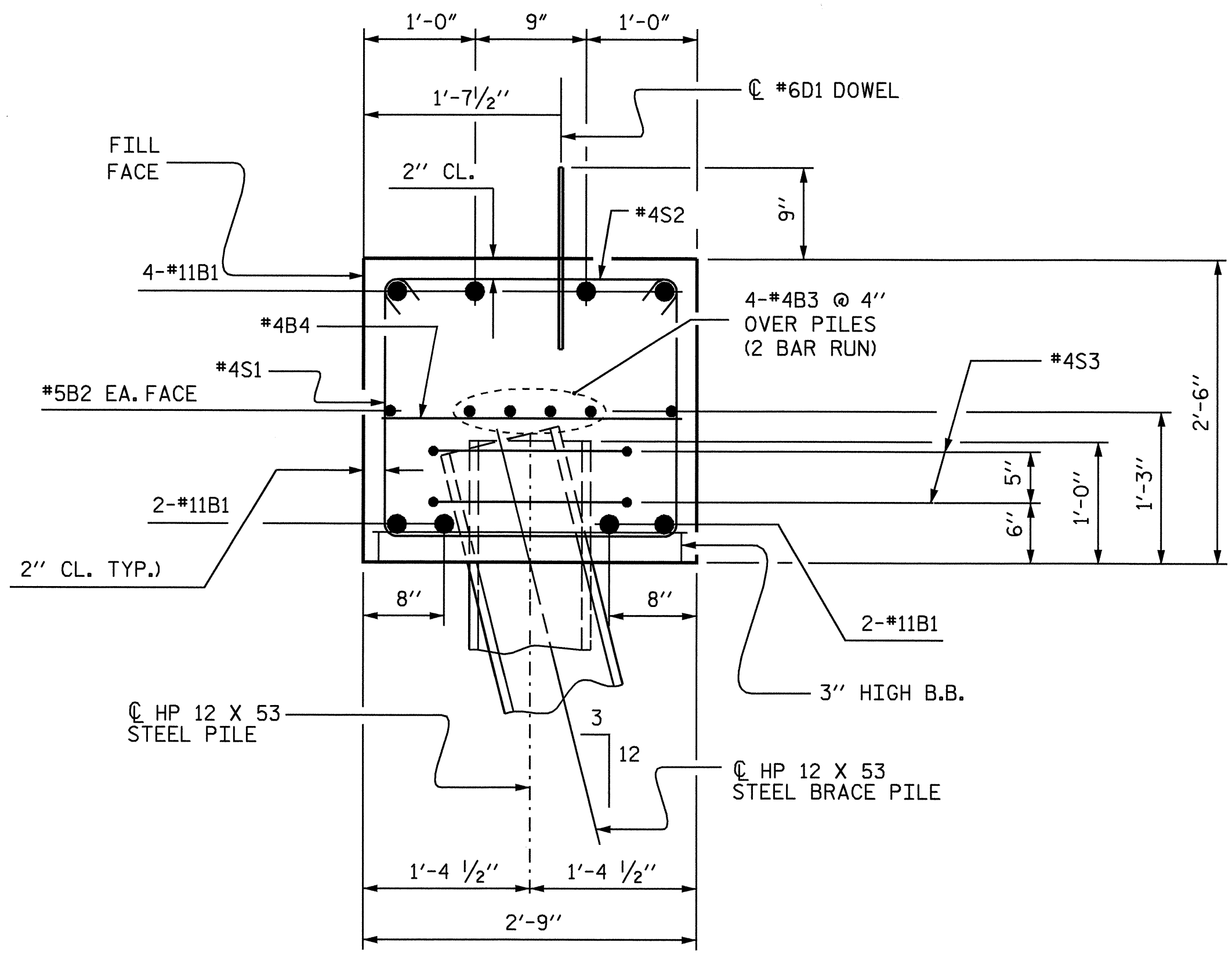


DRAWN BY: M. G. SHAIKH DATE: 9-27-07
 CHECKED BY: D. A. DAVENPORT DATE: 01-28-08

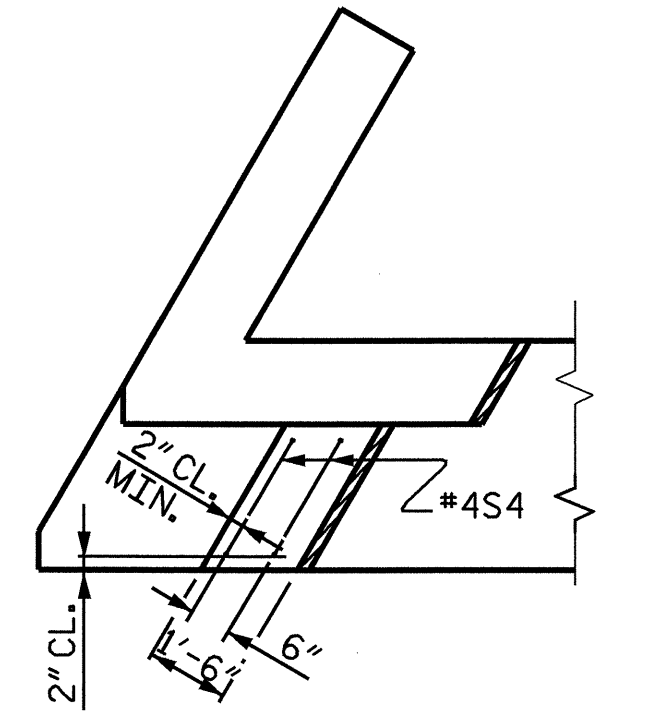
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| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | 5-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |

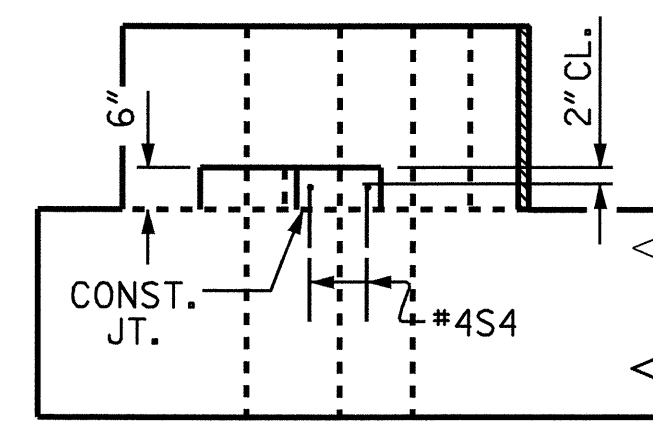
STR #1



SECTION A-A



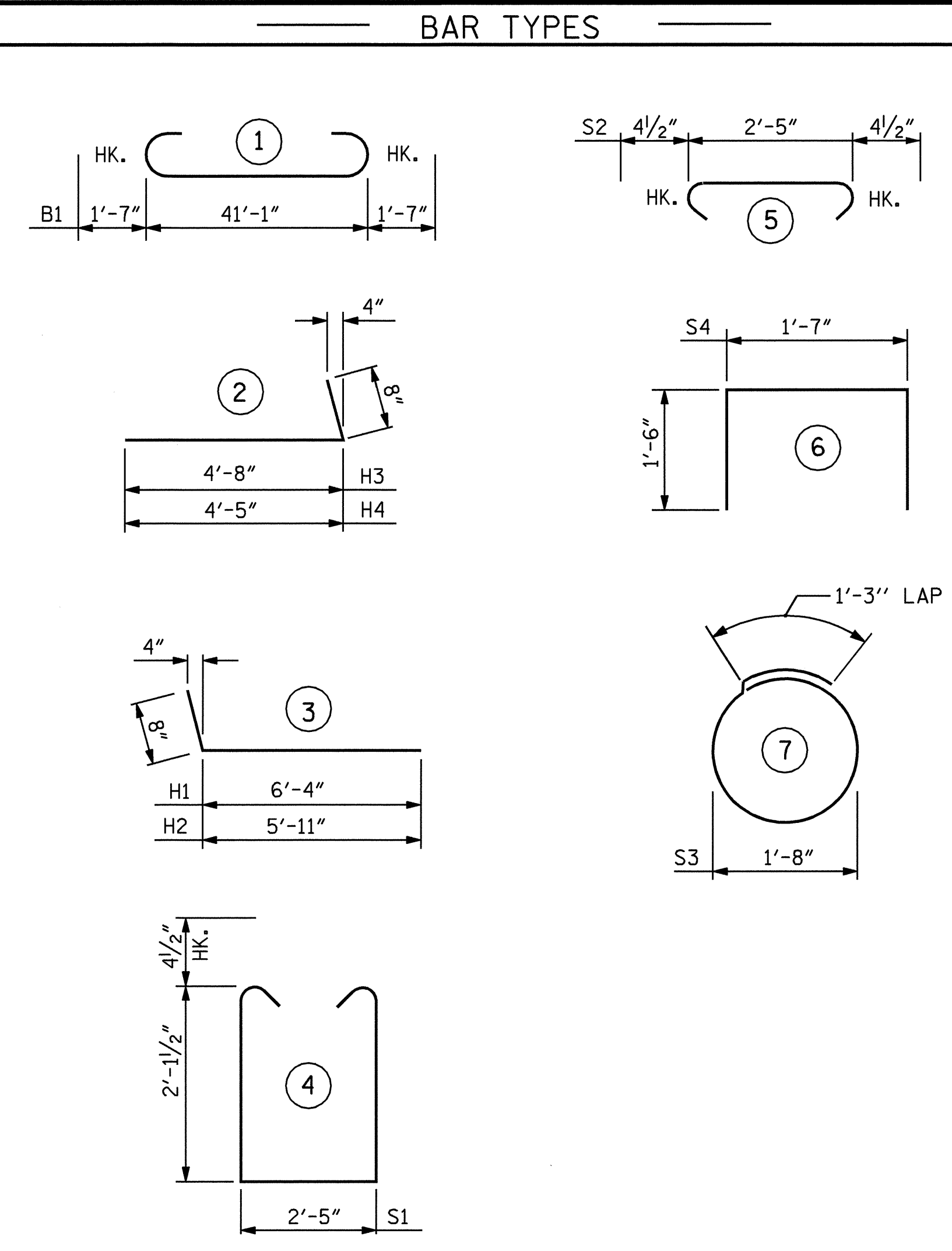
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(EACH SIDE SIMILAR)



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

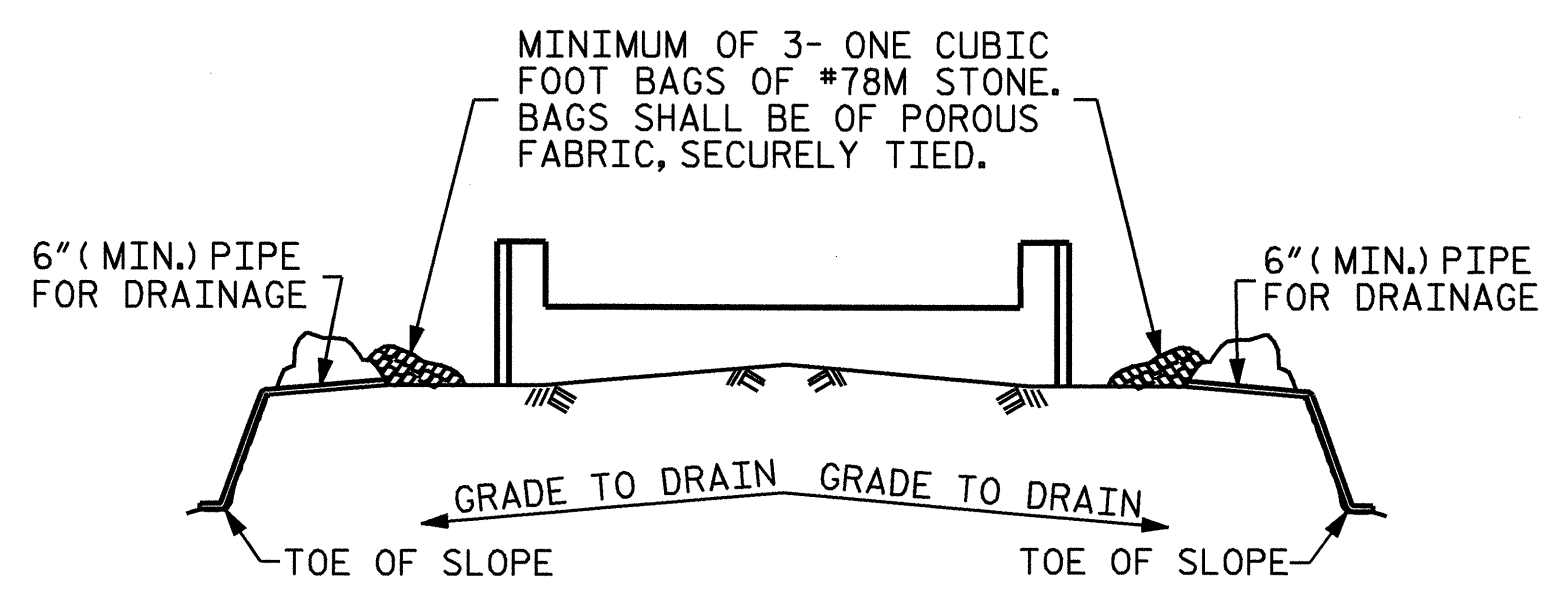
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|-----|-----|------|------|---------|--------|
| B1 | 8 | #11 | 1 | 44'-3" | 1881 |
| B2 | 2 | #5 | STR | 41'-3" | 86 |
| B3 | 8 | #4 | STR | 21'-11" | 117 |
| B4 | 10 | #4 | STR | 2'-5" | 16 |
| D1 | 20 | #6 | STR | 1'-6" | 45 |
| H1 | 6 | #4 | 3 | 7'-0" | 28 |
| H2 | 6 | #4 | 3 | 6'-7" | 26 |
| H3 | 6 | #4 | 2 | 5'-4" | 21 |
| H4 | 6 | #4 | 2 | 5'-1" | 20 |
| K1 | 12 | #4 | STR | 3'-11" | 31 |
| S1 | 37 | #4 | 4 | 7'-5" | 183 |
| S2 | 37 | #4 | 5 | 3'-2" | 78 |
| S3 | 12 | #4 | 7 | 6'-6" | 52 |
| S4 | 4 | #4 | 6 | 4'-7" | 12 |
| V1 | 40 | #4 | STR | 4'-3" | 114 |

REINFORCING STEEL LBS = 2710

CLASS A CONCRETE BREAKDOWN

| | |
|--|-------------|
| POUR #1 CAP & LOWER PART OF WINGS (C.Y.) | 11.5 |
| POUR #2 UPPER PART OF WINGS (C.Y.) | 1.7 |
| POUR #3 LATERAL GUIDES (C.Y.) | 0.1 |
| TOTAL CLASS A CONCRETE (C.Y.) | 13.3 |

| | |
|---|--------|
| HP 12 X 53 STEEL PILES NO. 6 (LIN. FT.) | 90 |
| PILE EXCAVATION IN SOIL | 54 FT. |
| PILE EXCAVATION NOT IN SOIL | 30 FT. |

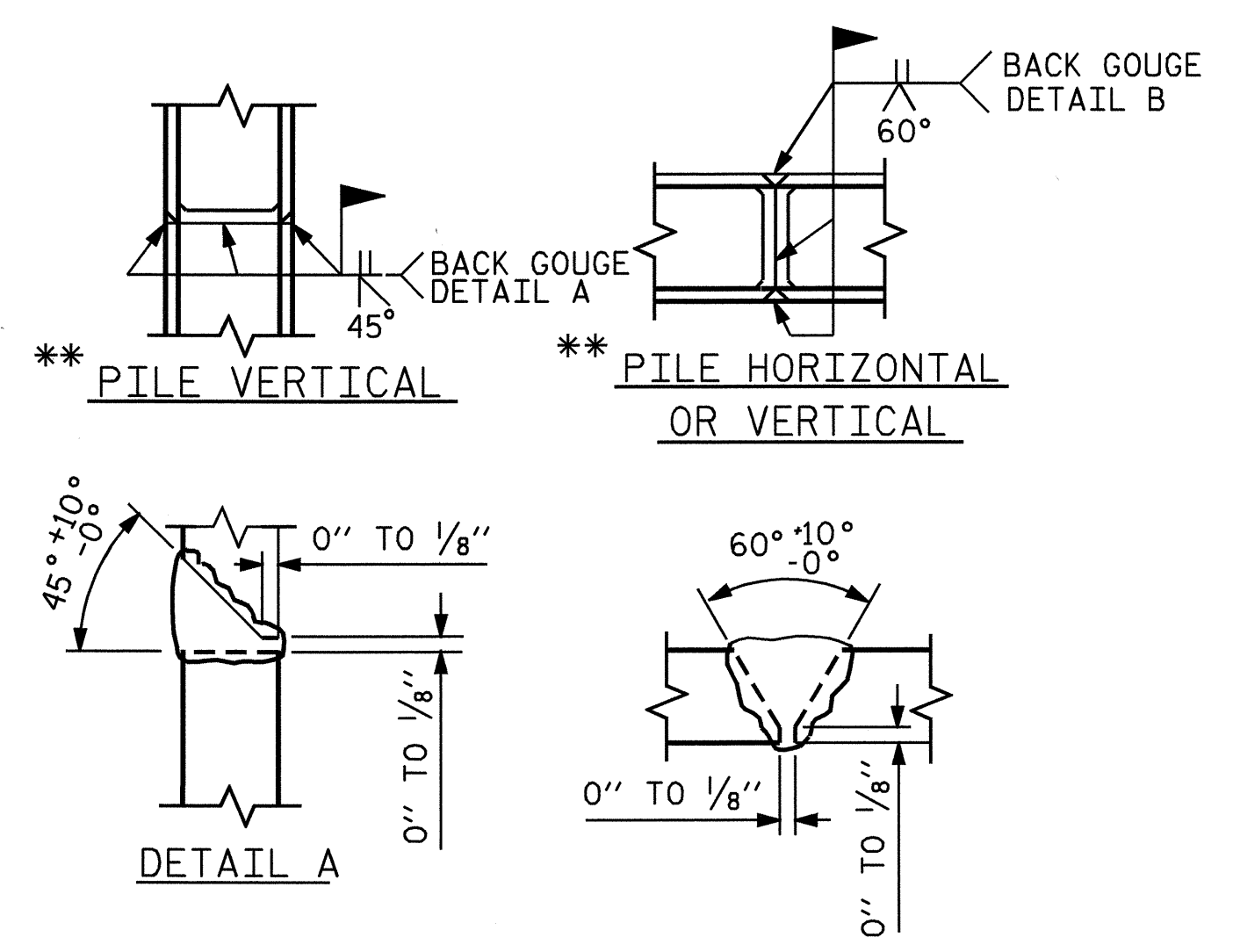


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



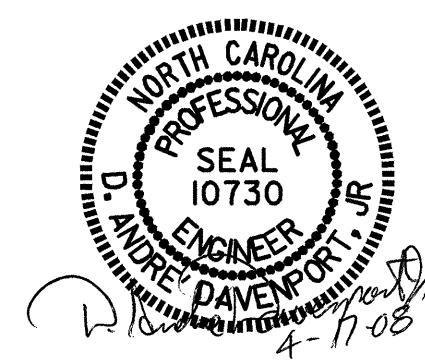
PILE SPLICE DETAILS

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

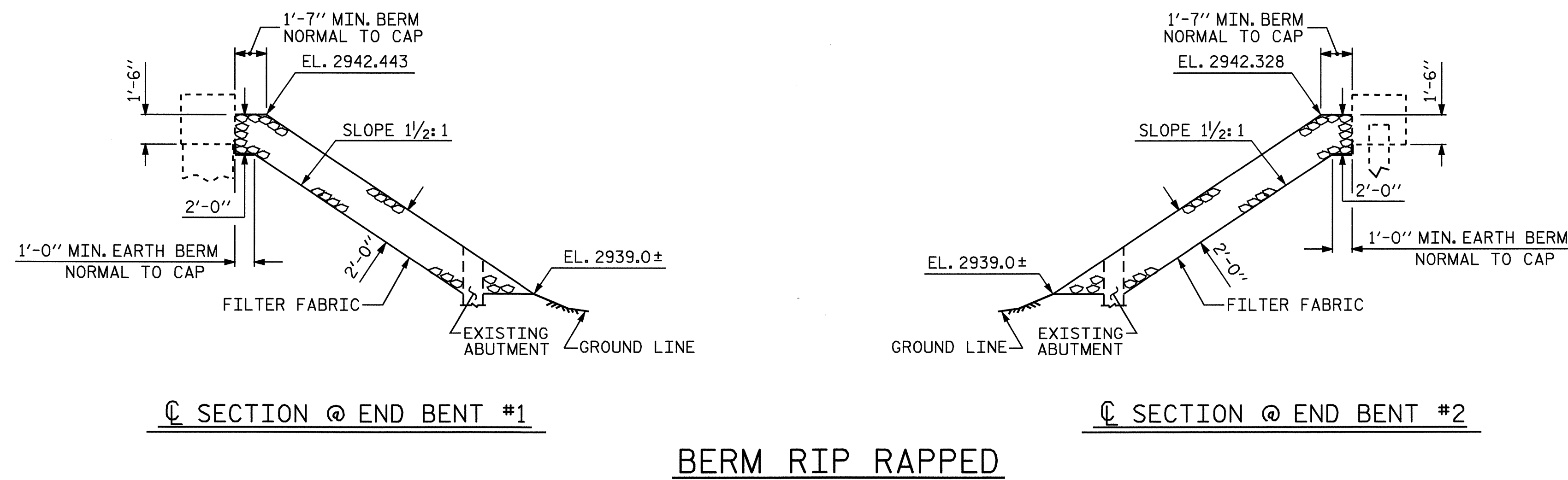
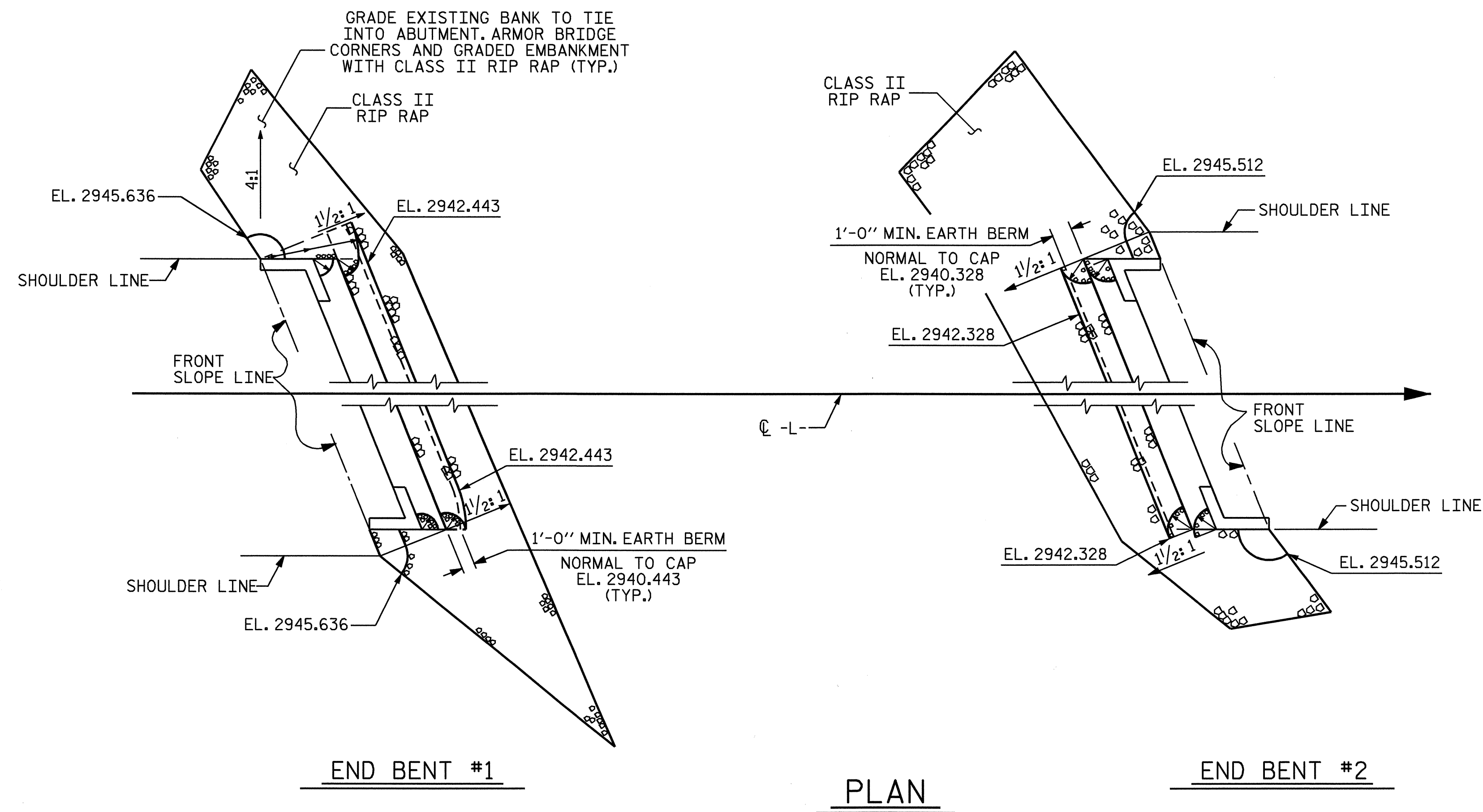
**SUBSTRUCTURE
 END BENT#2**



| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-14 |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

DRAWN BY: M. G. SHAIKH DATE: 9-28-07
 CHECKED BY: D. A. DAVENPORT DATE: 01-28-08

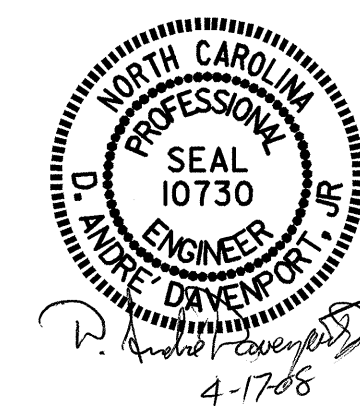
| ESTIMATED QUANTITIES | | |
|-------------------------------|---------------------|-------------------------------|
| BRIDGE @ STA. 12+96.25 -L- | RIP RAP CLASS II | FILTER FABRIC FOR DRAINAGE |
| | TONS | SQUARE YARDS |
| END BENT 1 | 120 | 135 |
| END BENT 2 | 115 | 130 |
| TOTAL | 235 | 265 |



PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 12+96.25 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

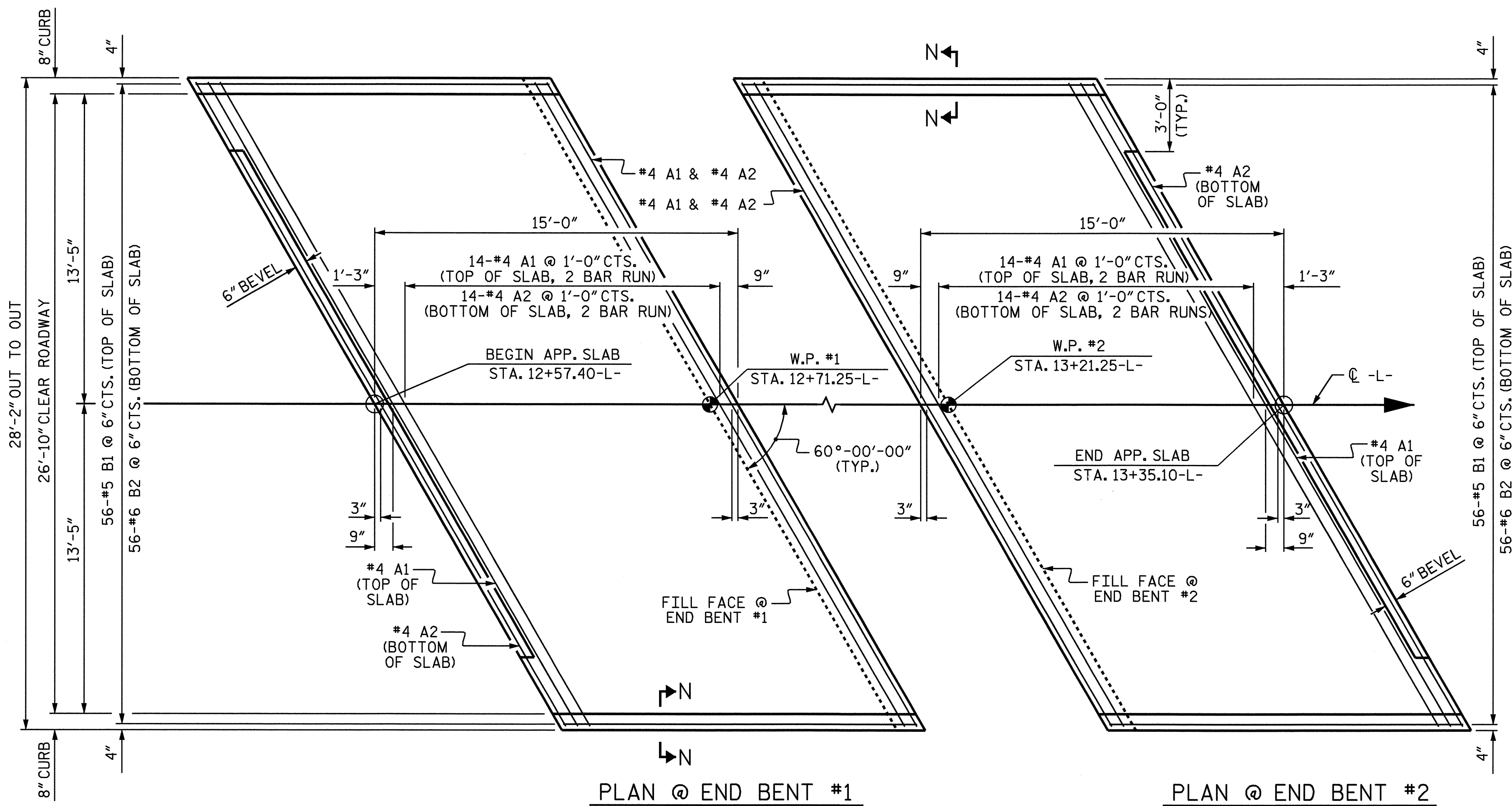
—RIP RAP DETAILS—



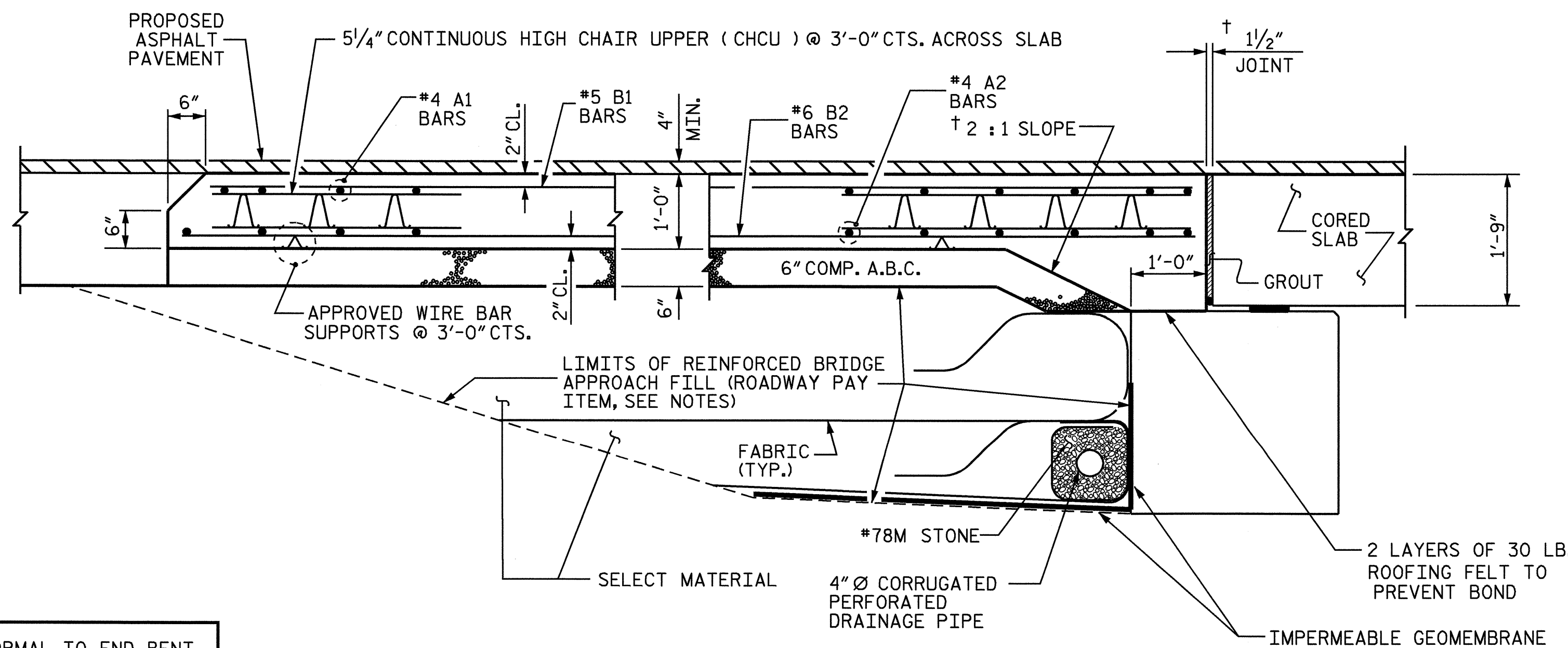
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|----------------|---------------|---------------|----------|
| ASSEMBLED BY : | A. SORSENGIH | DATE : | 9/28/07 |
| CHECKED BY : | H. T. BARBOUR | DATE : | 11/19/07 |
| DRAWN BY : | REK 1/84 | REV. 8/16/99 | RWW/LES |
| CHECKED BY : | RDU 1/84 | REV. 10/17/00 | RWW/LES |
| | | REV. 5/1/06 | TLA/GM |

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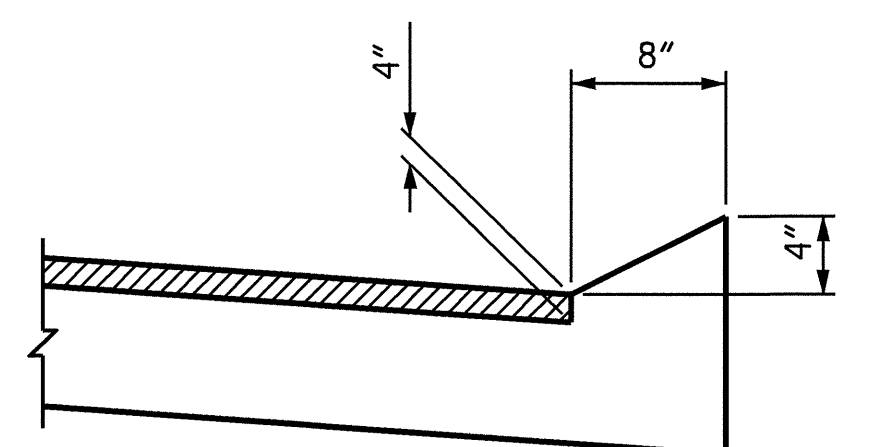
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| 2 | | | 4 | | | 34 |



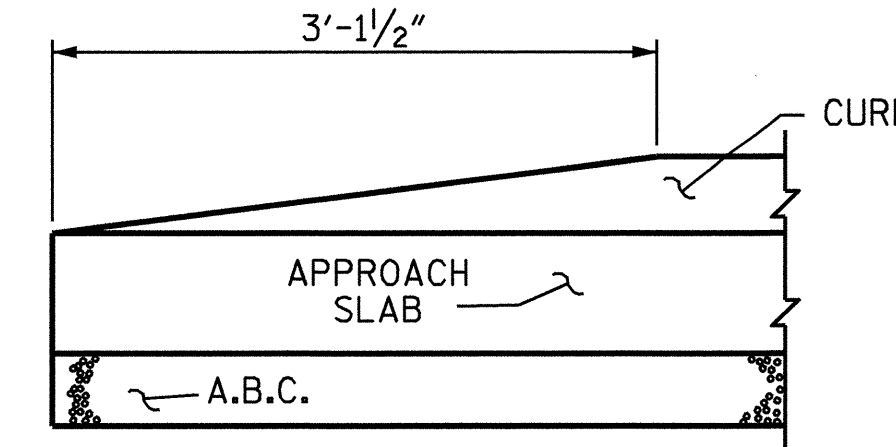
PLAN @ END BENT #1 PLAN @ END BENT #2
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

| APPROACH SLAB AT EB #1 | | | | | |
|---------------------------------|-----|------|------|--------|-----------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| *A1 | 32 | #4 | STR | 17'-1" | 365 |
| A2 | 32 | #4 | STR | 17'-0" | 363 |
| *B1 | 56 | #5 | STR | 14'-1" | 823 |
| B2 | 56 | #6 | STR | 14'-7" | 1227 |
| REINFORCING STEEL | | | | | LBS. 1590 |
| *EPOXY COATED REINFORCING STEEL | | | | | LBS. 1188 |
| CLASS AA CONCRETE | | | | | C.Y. 17.5 |
| APPROACH SLAB AT EB #2 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| *A1 | 32 | #4 | STR | 17'-1" | 365 |
| A2 | 32 | #4 | STR | 17'-0" | 363 |
| *B1 | 56 | #5 | STR | 14'-1" | 823 |
| B2 | 56 | #6 | STR | 14'-7" | 1227 |
| REINFORCING STEEL | | | | | LBS. 1590 |
| *EPOXY COATED REINFORCING STEEL | | | | | LBS. 1188 |
| CLASS AA CONCRETE | | | | | C.Y. 17.5 |

| | |
|------------------------------|----------------------|
| ASSEMBLED BY : H. T. BARBOUR | DATE : 6-01-06 |
| CHECKED BY : C. R. YARBROUGH | DATE : 7-06-06 |
| DRAWN BY : FCJ 6/87 | REV. 7/10/01 LES/RDR |
| CHECKED BY : EGA 6/87 | REV. 5/7/03R RWW/JTE |
| | REV. 5/1/06 TLA/GM |

PROJECT NO. B-4202
MITCHELL COUNTY
STATION: 12+96.25-L-

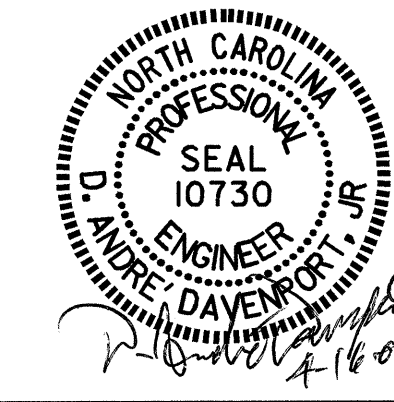
SHEET 1 OF 2

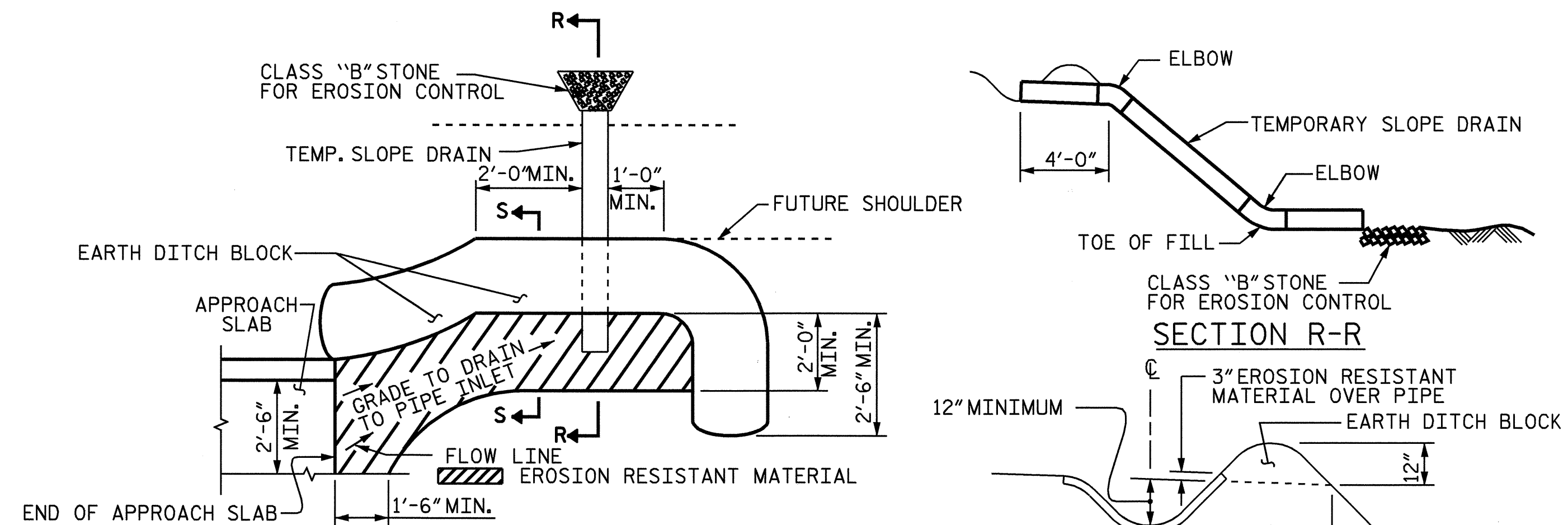
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB

| REVISIONS | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----------|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

TOTAL SHEETS 34



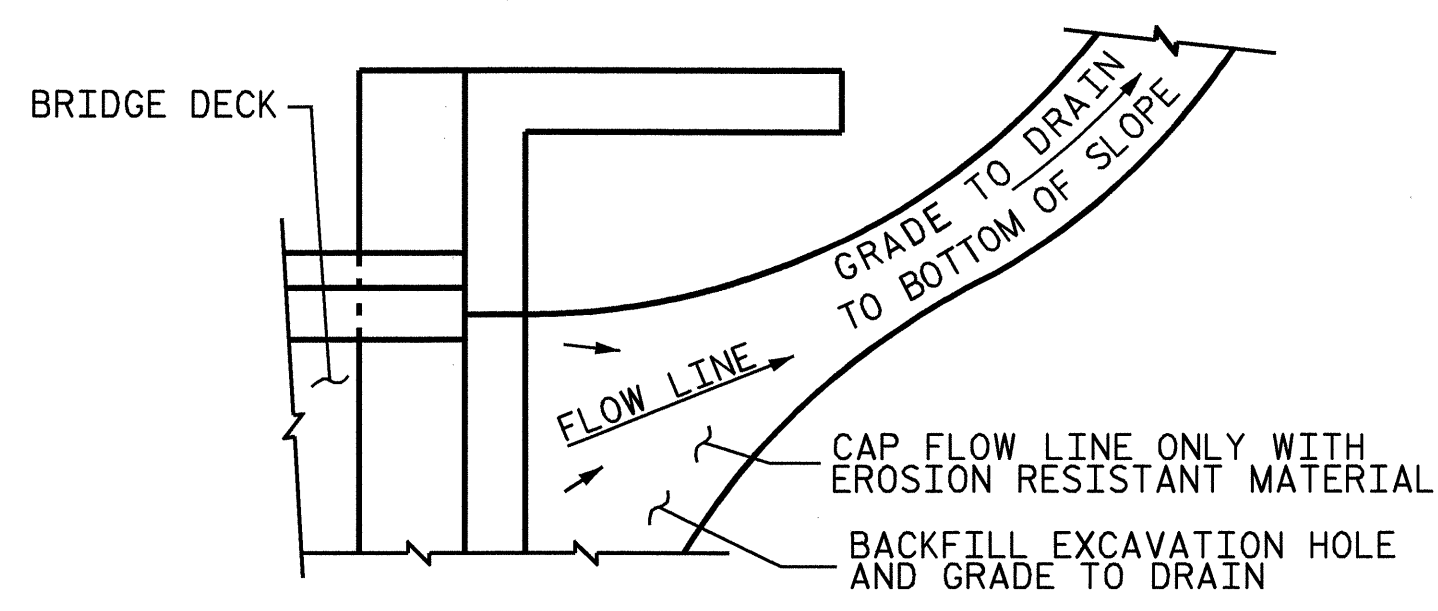


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

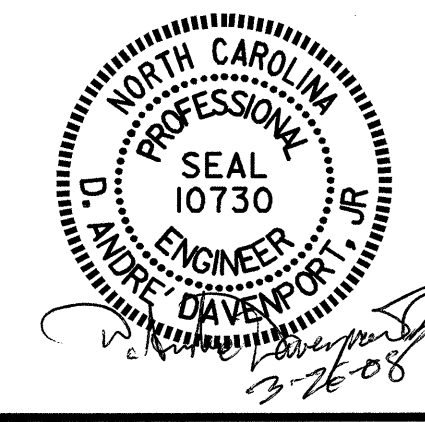
TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 12+96.25-L-

SHEET 2 OF 2

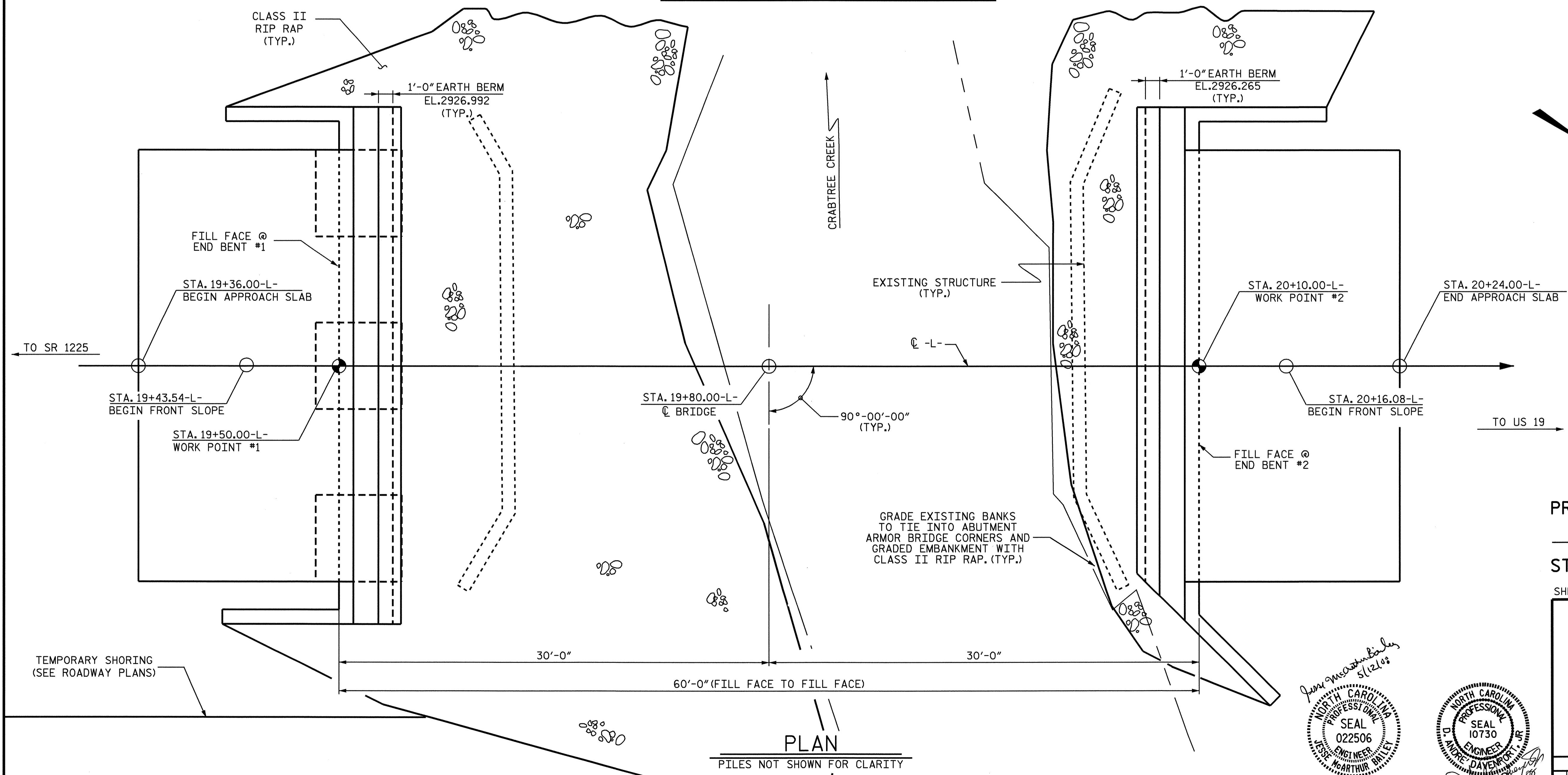
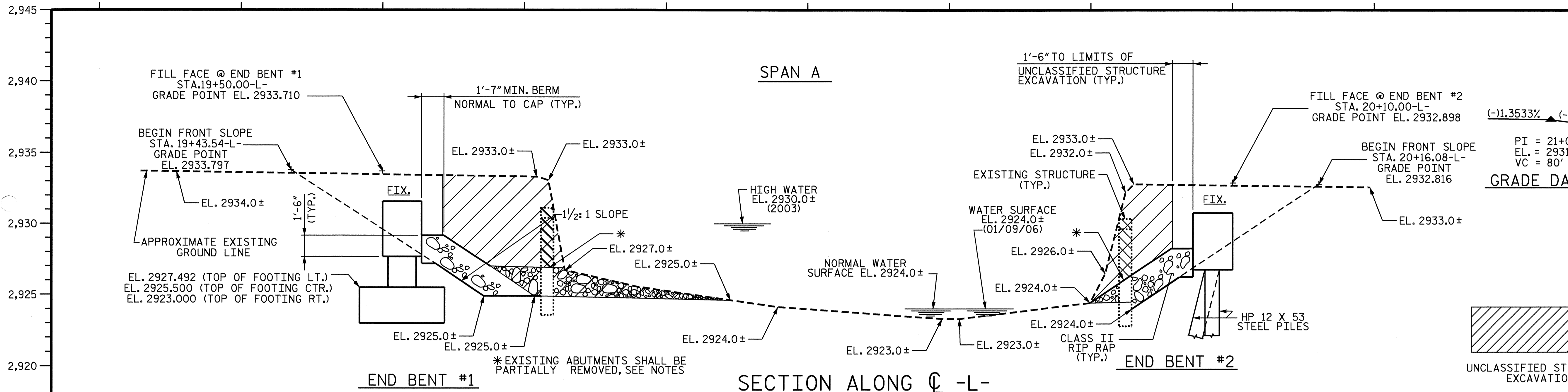
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BRIDGE APPROACH
 SLAB DETAILS**



DRAWN BY : H. T. BARBOUR DATE : 6-01-06
 CHECKED BY : C. R. YARBROUGH DATE : 7-06-06

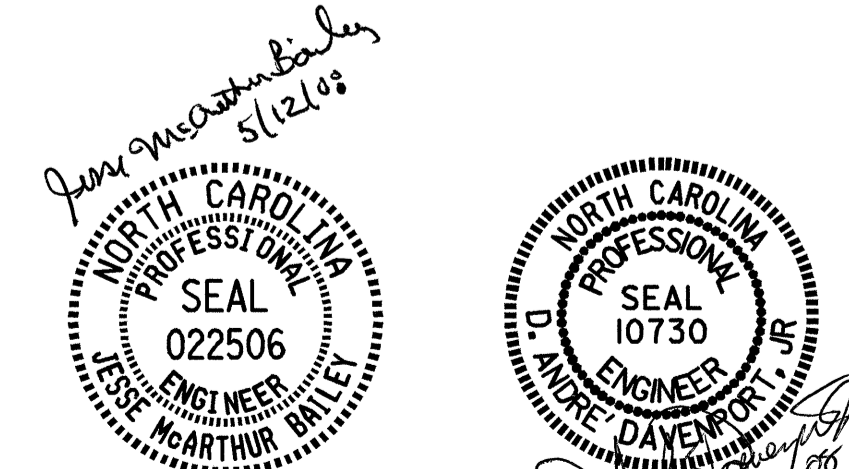
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|-----------|-----|-------|-----|-----|-------|--------------------|
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| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |



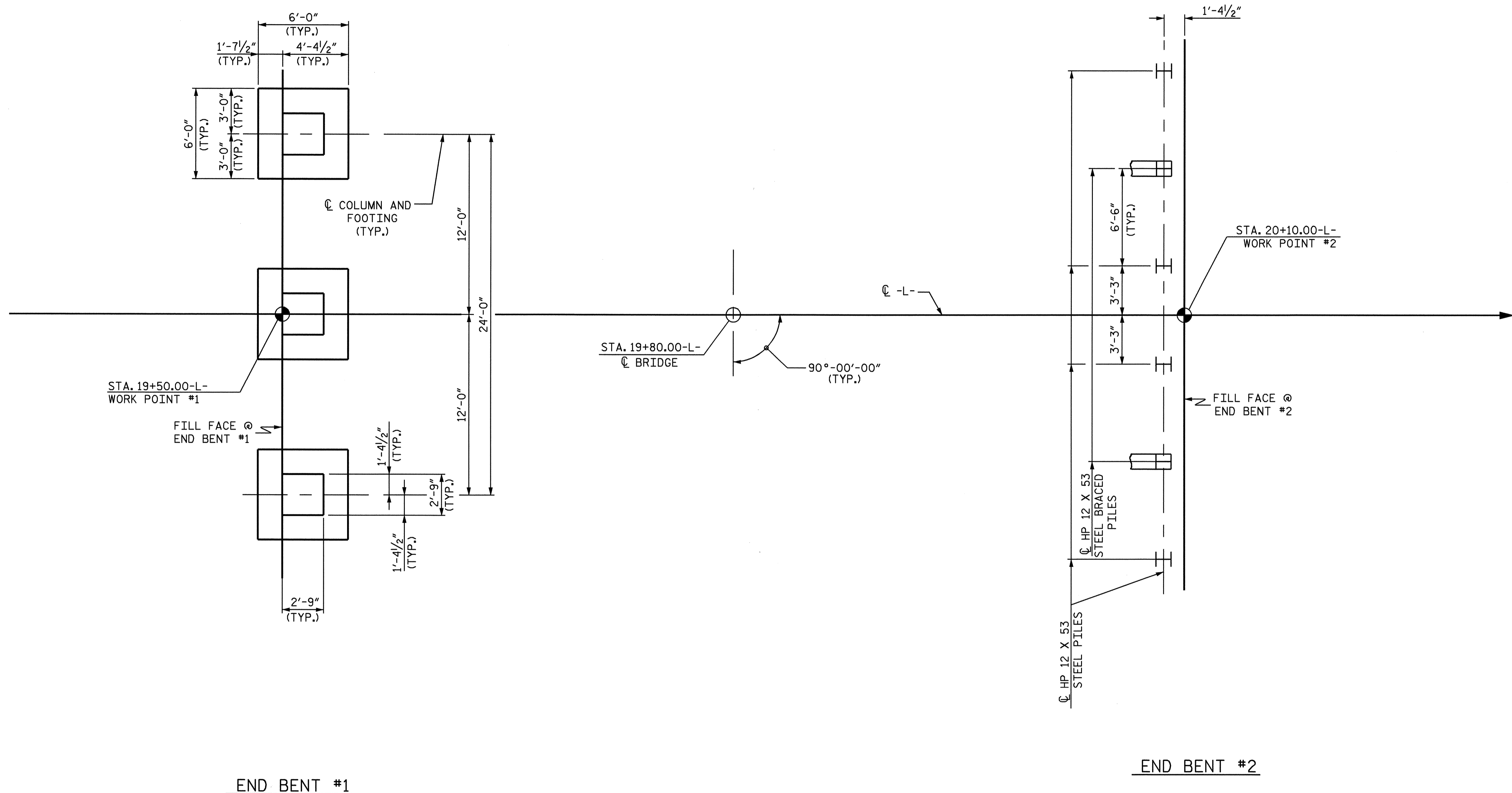
PROJECT NO. B-4202
 COUNTY MITCHELL
 STATION: 19+80.00-L-
 SHEET 1 OF 3 REPLACES BRIDGE #109

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19**

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-18 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |



DRAWN BY : D.A. DAVENPORT DATE : 1/08
 CHECKED BY : A. SORSENGINH DATE : 1/08



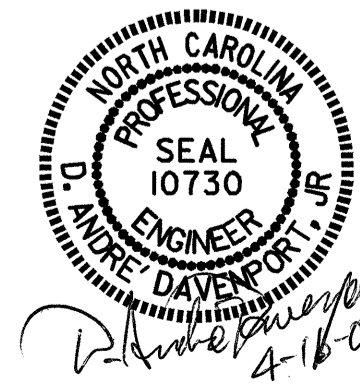
FOUNDATION LAYOUT SKETCH

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE
 BRACE PILES AT END BENT #2 ARE BATTERED AT 3:12

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

SHEET 2 OF 3

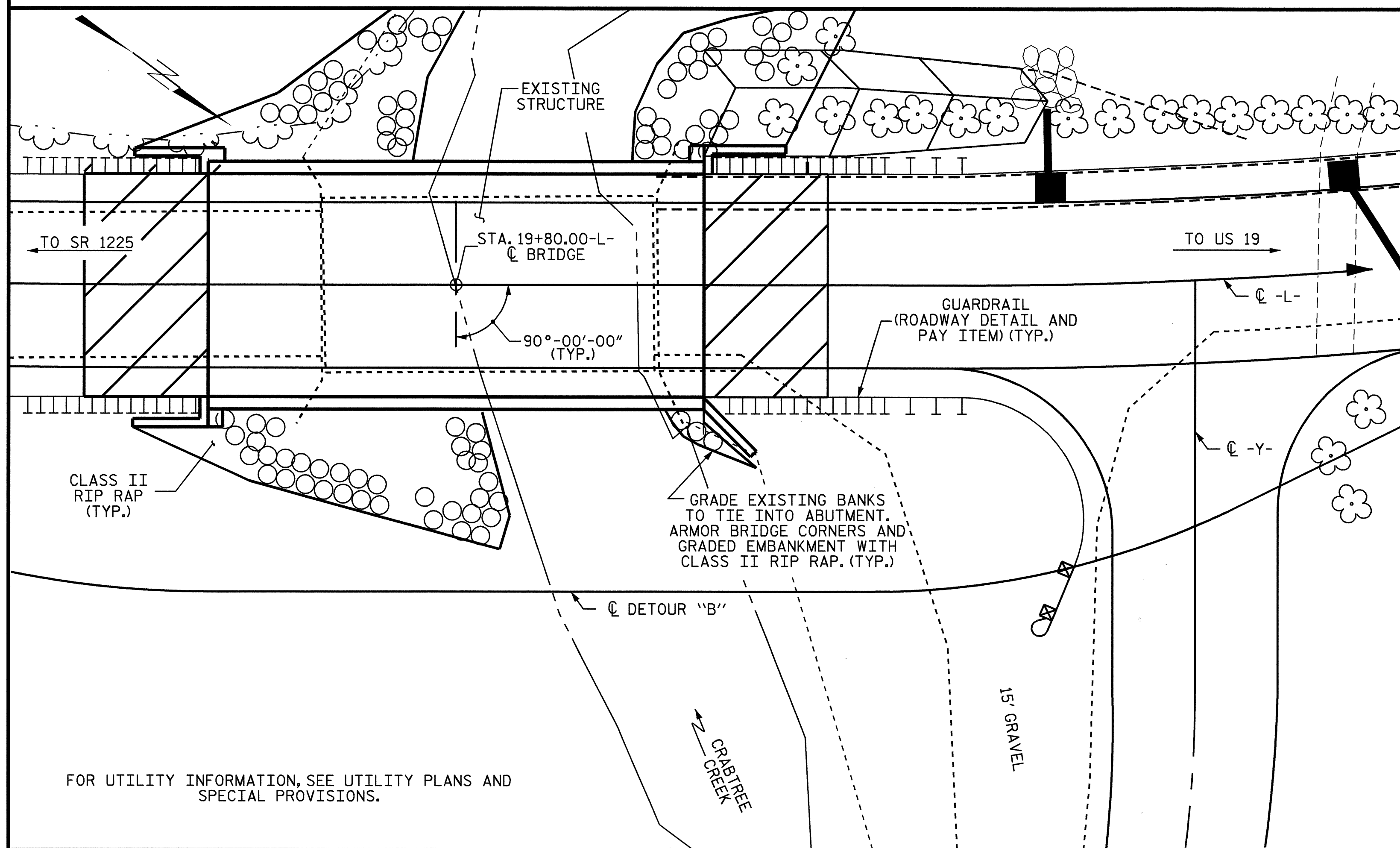
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19



DRAWN BY : D.A. DAVENPORT DATE : 1 / 08
 CHECKED BY : A. SORSENGINH DATE : 1 / 08

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-19 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |

BENCH MARK No. 2: RAILROAD SPIKE IN 36" Ø POPLAR, 18' RIGHT OF STA. 21+35.00-BL-, EL. 2943.33



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE = 1500 C.F.S.
 FREQUENCY OF DESIGN FLOOD = 25 YRS.
 DESIGN HIGH WATER ELEVATION = 2930.6
 DRAINAGE AREA = 6.1 SQ. MI.
 BASIC DISCHARGE (Q100) = 2300 C.F.S.
 BASIC HIGH WATER ELEVATION = 2931.900

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = < 1100 C.F.S.
 FREQUENCY OF OVERTOPPING FLOOD = < 10 YRS.
 OVERTOPPING FLOOD ELEVATION = 2927.000

TOTAL BILL OF MATERIAL

| | CONST. MAINT. & REMOVAL OF TEMP. STRUCTURE | REMOVAL OF EXISTING STRUCTURE | FOUNDATION EXCAVATION | PILE EXCAVATION IN SOIL | PILE EXCAVATION NOT IN SOIL | UNCLASSIFIED STRUCTURE EXCAVATION | CLASS A CONCRETE | BRIDGE APPROACH SLABS | REINFORCING STEEL | HP 12 X 53 STEEL PILES | CONCRETE BARRIER RAIL | RIP RAP CLASS II (2'-0" THICK) | FILTER FABRIC FOR DRAINAGE | ELASTOMERIC BEARINGS | 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS | |
|----------------|--|-------------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------------|------------------|-----------------------|-------------------|------------------------|-----------------------|--------------------------------|----------------------------|----------------------|--|----------|
| | LUMP SUM | LUMP SUM | CU. YDS. | LIN. FT. | LIN. FT. | LUMP SUM | CU. YDS. | LUMP SUM | LBS. | NO. | LIN. FT. | LIN. FT. | TONS | SQ. YDS. | LUMP SUM | LIN. FT. |
| SUPERSTRUCTURE | | | | | | | | | | | 115.50 | | | | | |
| END BENT NO. 1 | | | 95.0 | | | | 29.3 | | 4038 | | | 160 | 180 | | | |
| END BENT NO. 2 | | | | 42.0 | 30.0 | | 20.1 | | 2309 | 6 | 90 | 90 | 100 | | | |
| TOTAL | LUMP SUM | LUMP SUM | 95.0 | 42.0 | 30.0 | LUMP SUM | 49.4 | LUMP SUM | 6347 | 6 | 90 | 115.50 | 250 | 280 | LUMP SUM | 577.50 |

DRAWN BY: D.A. DAVENPORT DATE: 01-08
 CHECKED BY: A. SORSENGIN DATE: 01-08

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NOTES

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THAT CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY B.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THE EXISTING ABUTMENTS AT END BENTS NO. 1 AND NO. 2 SHALL BE REMOVED DOWN TO AN ELEVATION AS DETERMINED BY THE ENGINEER. THE EXISTING ABUTMENT FOOTINGS SHALL REMAIN IN PLACE UNLESS PARTIAL REMOVAL IS REQUIRED TO CONSTRUCT THE PROPOSED END BENTS.

THE EXISTING STRUCTURE CONSISTING OF 1 SIMPLE SPAN @ 41'-4", OF TIMBER FLOOR ON I-BEAMS WITH A 4" ASPHALT WEARING SURFACE ON YOUNT MASONRY ABUTMENTS, WITH A CLEAR ROADWAY WIDTH OF 19'-3" AND LOCATED AT THE PROPOSED SITE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE AT STATION 19+80.00-L-.'

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 19+80.00-L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

THE REQUIRED BEARING CAPACITY FOR SPREAD FOOTINGS AT END BENT NO. 1 IS 15 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED BEARING CAPACITY JUST PRIOR TO PLACING CONCRETE.

THE ALLOWABLE BEARING CAPACITY FOR SPREAD FOOTINGS AT END BENT NO. 1 IS 5 TSF.

THE SCOUR CRITICAL ELEVATION FOR END BENT NO. 1 IS THE BOTTOM OF FOOTING ELEVATIONS. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

CARRY IN SPREAD FOOTINGS AT END BENT NO. 1 AT LEAST ONE FOOT INTO ROCK WITH MINIMUM THICKNESS SHOWN ON PLANS.

DRIVE PILES AT END BENT NO. 2 TO A REQUIRED BEARING CAPACITY OF 120 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO. THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO. 2 IS 60 TONS PER PILE.

FOR BLASTING ADJACENT TO HIGHWAY STRUCTURES, SEE ARTICLE 410-11 OF THE STANDARD SPECIFICATIONS.

PILE EXCAVATION IS REQUIRED TO INSTALL PILES AT END BENT NO. 2, EXCAVATED HOLE TO ELEVATION 2915.000. SEE PILE EXCAVATION SPECIAL PROVISION.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-18 SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

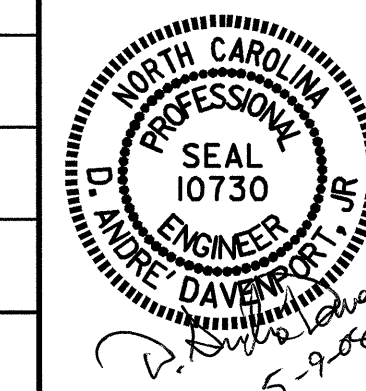
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

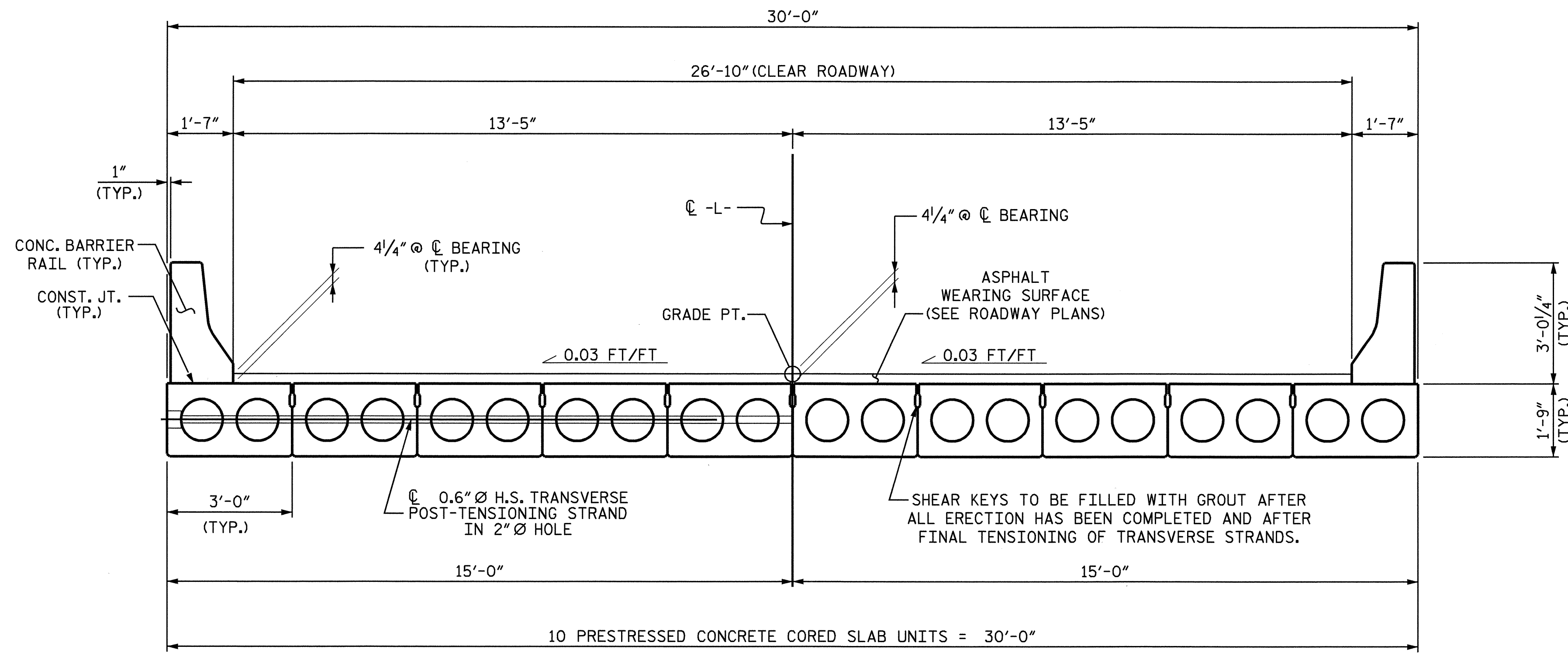
PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 19+80.00-L-

SHEET 3 OF 3

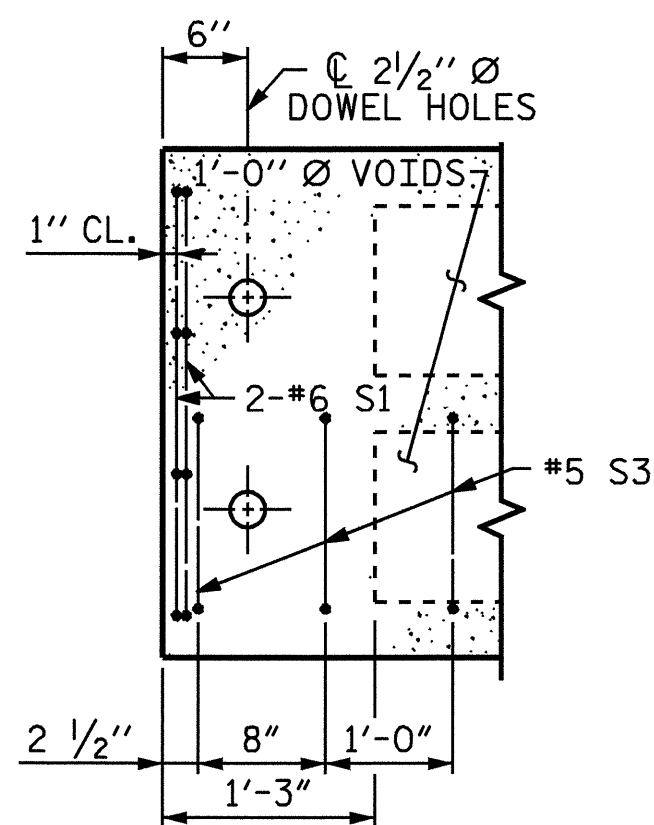
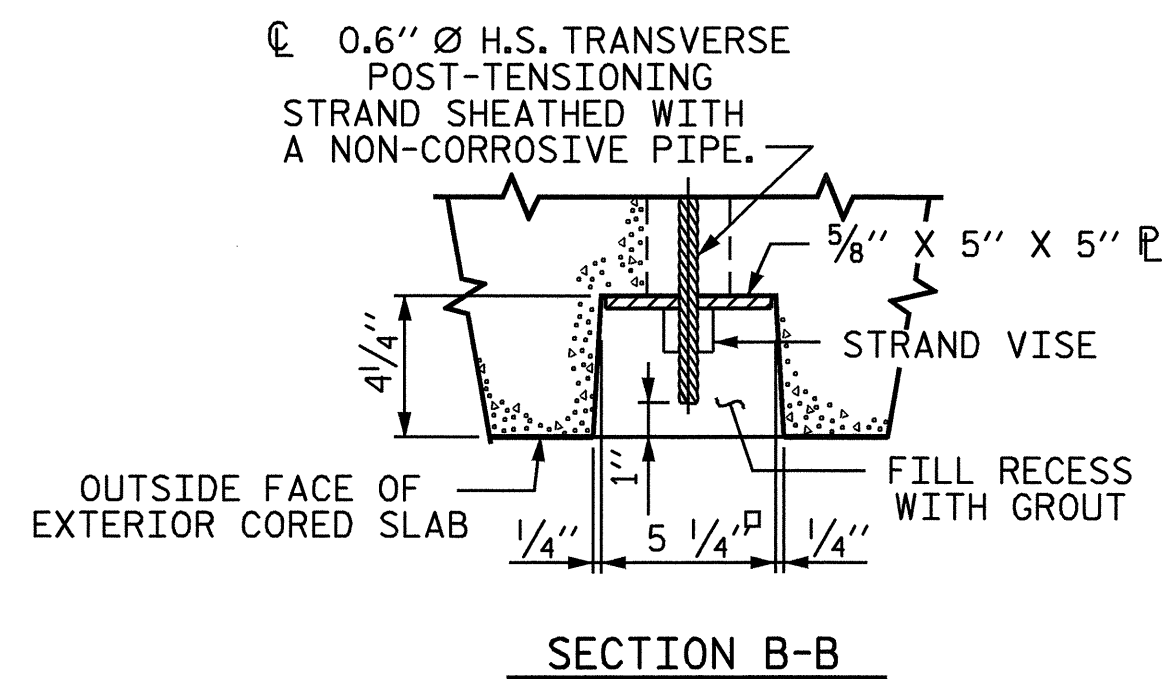
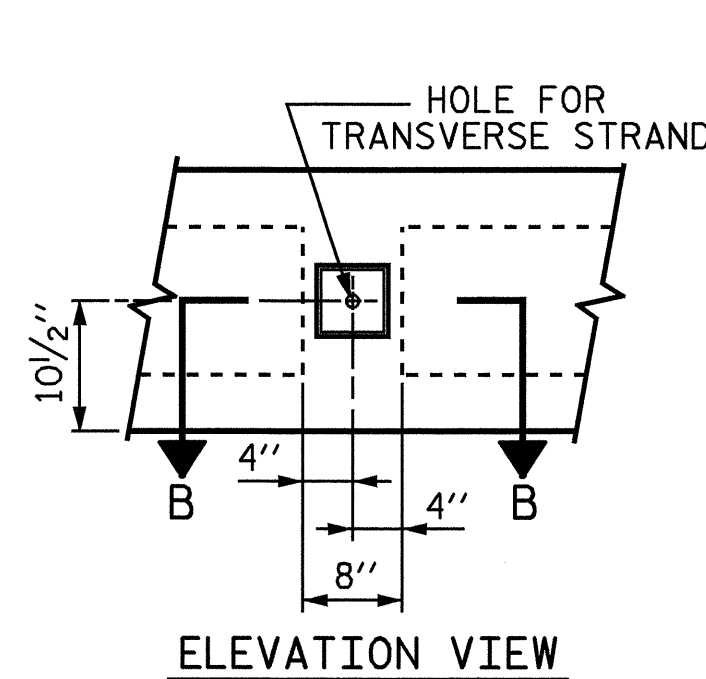
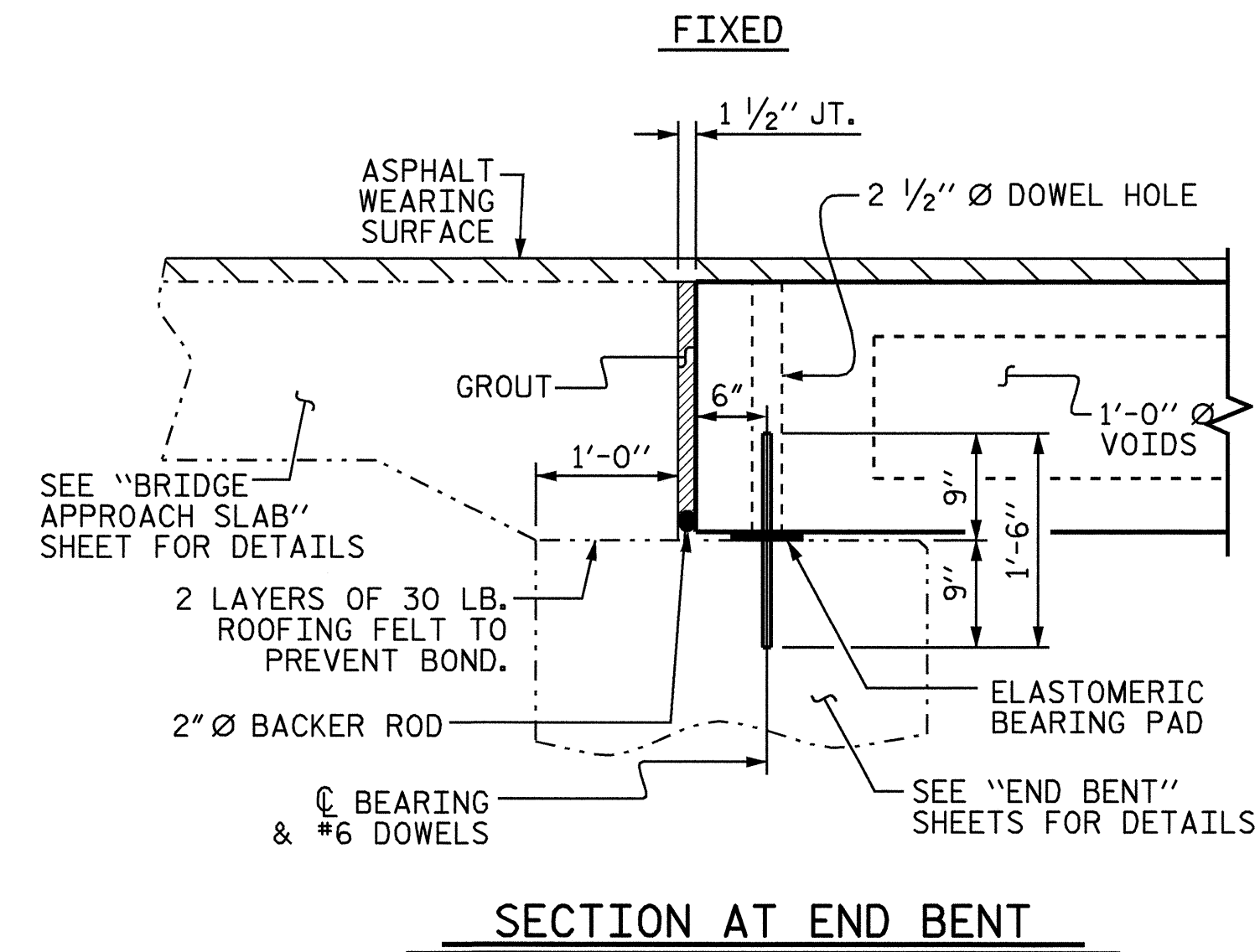


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER
 CRABTREE CREEK ON
 SR 1002 BETWEEN
 SR 1225 AND US 19

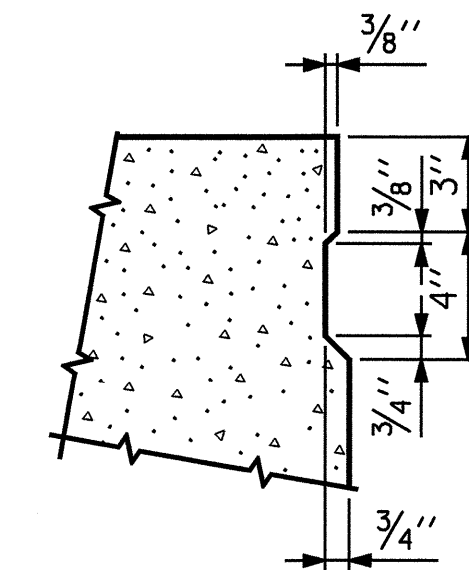
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|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-20 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |



TYPICAL SECTION

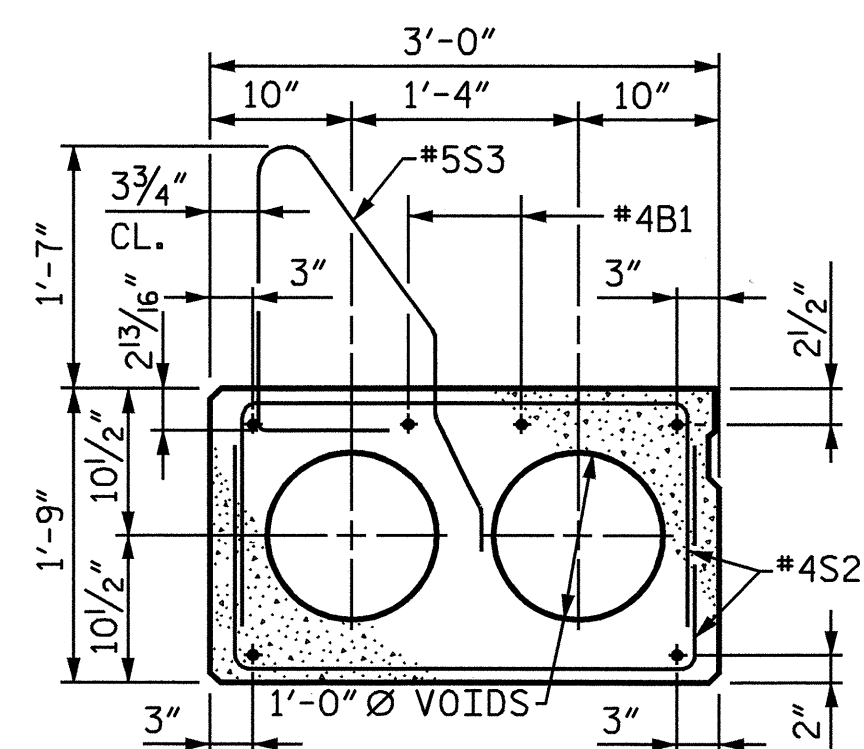


PART PLAN-EXTERIOR SECTION
 NOTE: EXTERIOR SECTION SHOWN-INTERIOR SECTION SIMILAR EXCEPT OMIT S3 BARS.

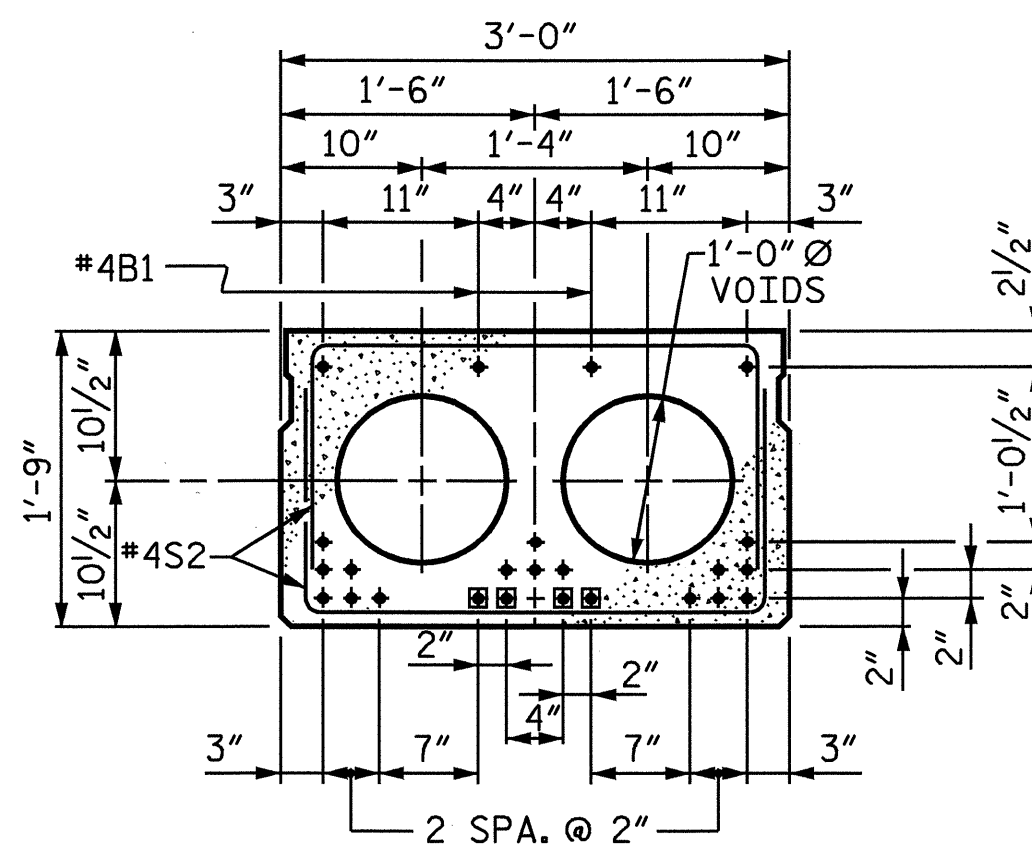


SHEAR KEY DETAIL
 NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

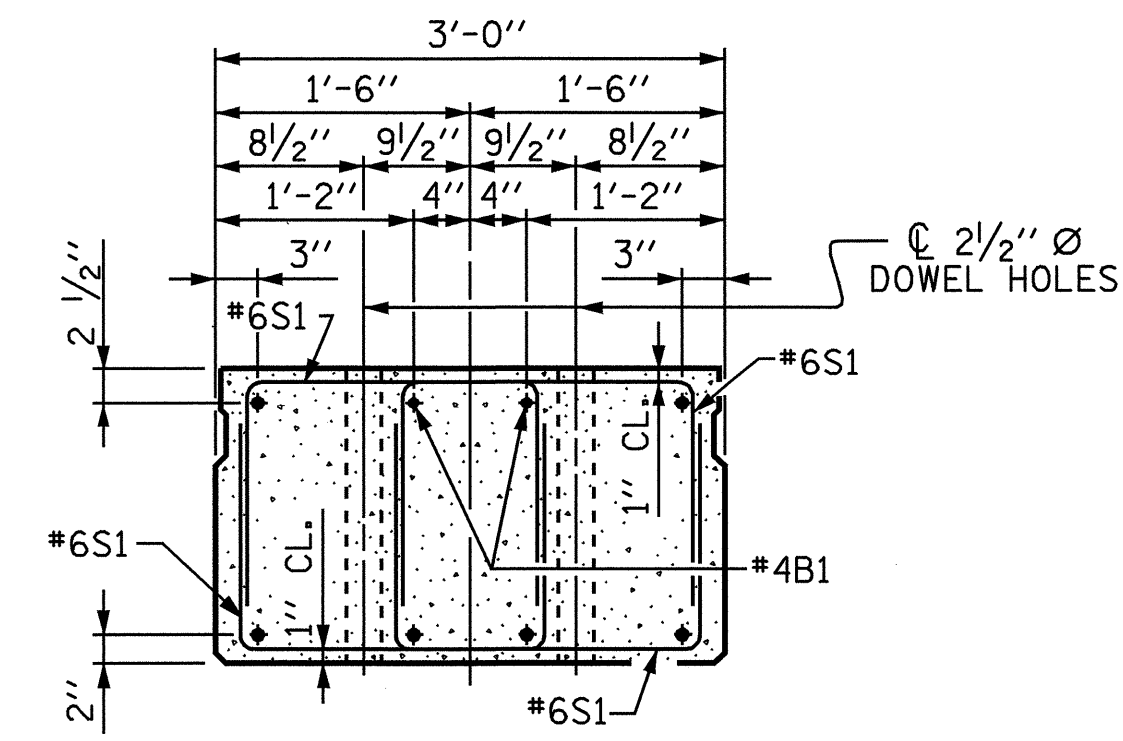


EXTERIOR SLAB SECTION
 (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION
0.6" Ø LOW RELAXATION STRAND LAYOUT

■ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 3'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7



END ELEVATION
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB SECTION SHOWN-EXTERIOR SLAB SECTION SIMILAR EXCEPT SHEAR KEY LOCATION.



PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

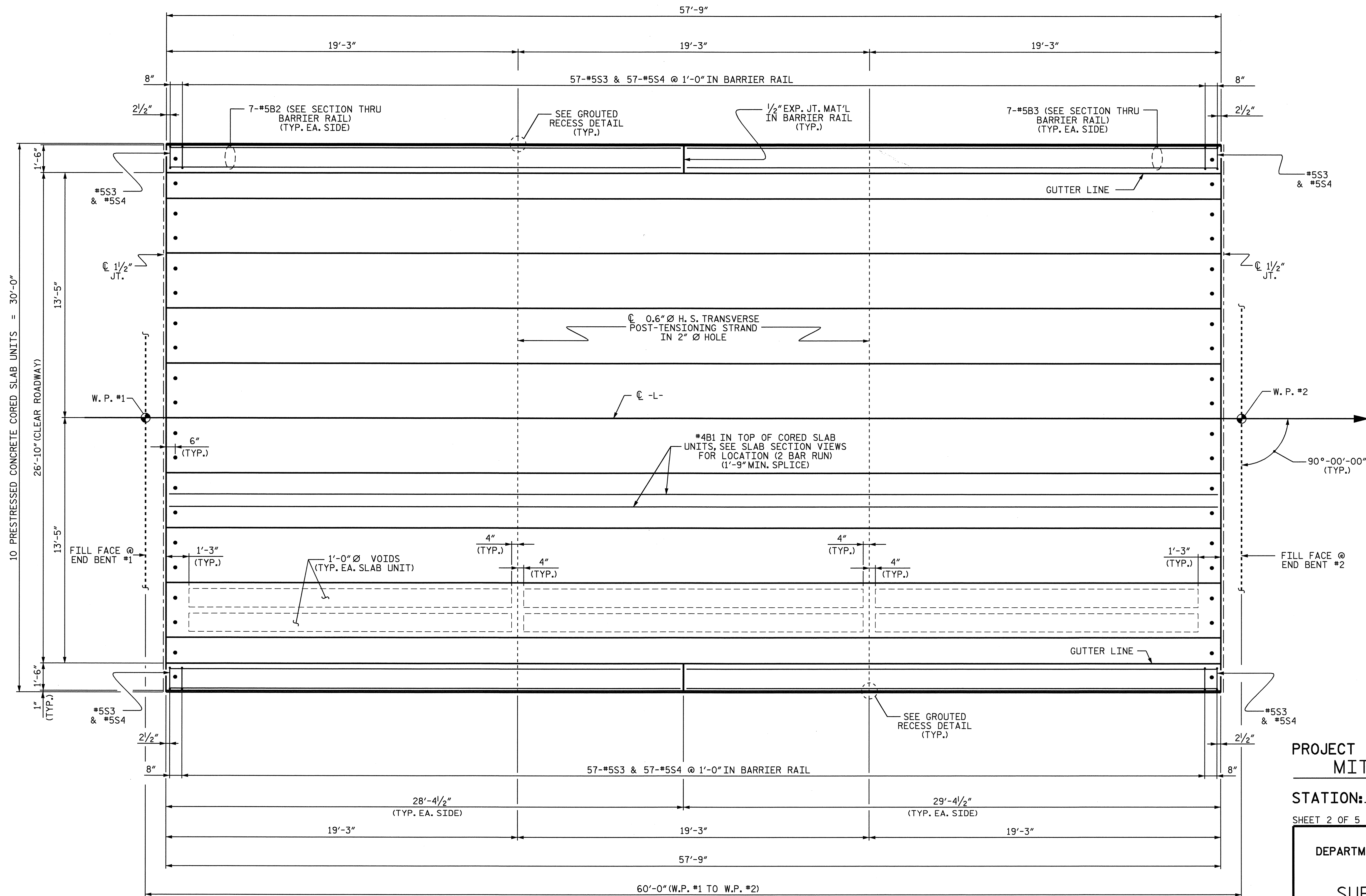
SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

| | |
|------------------------------|-----------------------|
| ASSEMBLED BY : H. T. BARBOUR | DATE : 5-31-06 |
| CHECKED BY : C. R. YARBROUGH | DATE : 6-21-06 |
| DRAWN BY : WJH 4/89 | REV. 8/16/99 RWW/LES |
| CHECKED BY : FCJ 5/89 | REV. 10/17/00 RWW/LES |
| | REV. 7/10/01 RWW/LES |

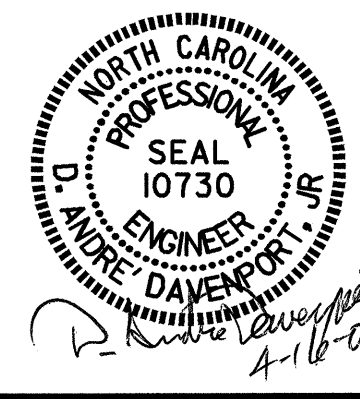
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| 2 | | | 4 | | |
| | | | | S-21 | |
| | | | | TOTAL SHEETS 34 | |



PLAN OF SPAN A

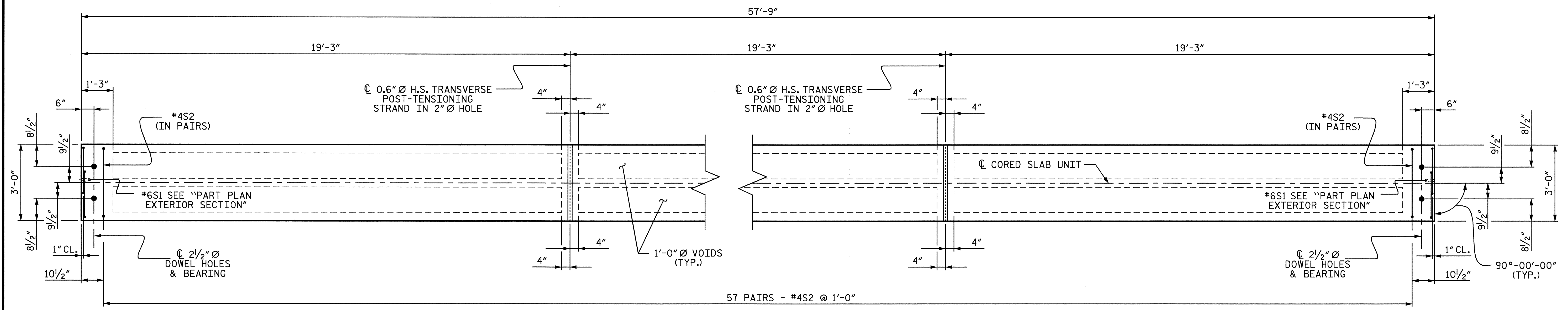
PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-
 SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPAN A

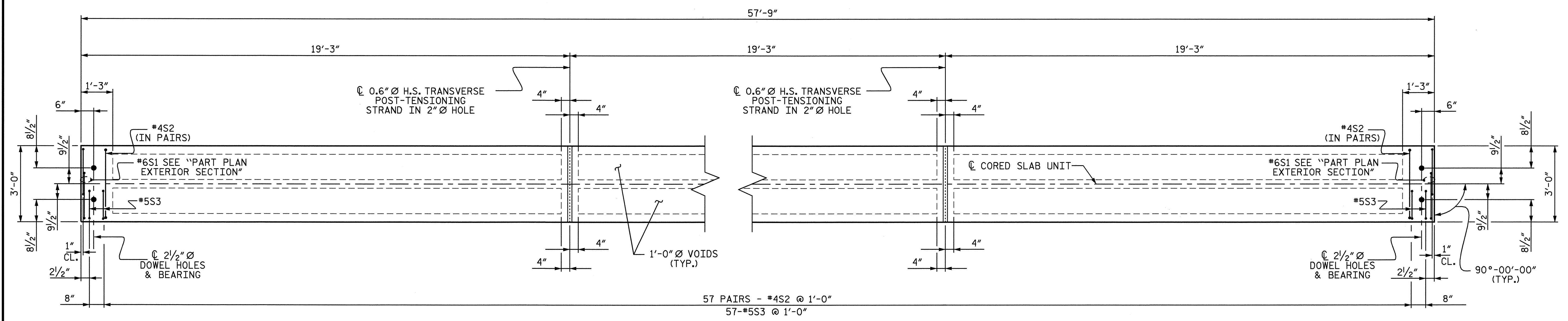


DRAWN BY : H. T. BARBOUR DATE : 5-30-06
 CHECKED BY : C. R. YARBROUGH DATE : 6-21-06

| REVISIONS | | | | | | SHEET NO. S-22 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |



PLAN OF INTERIOR CORED SLAB UNIT



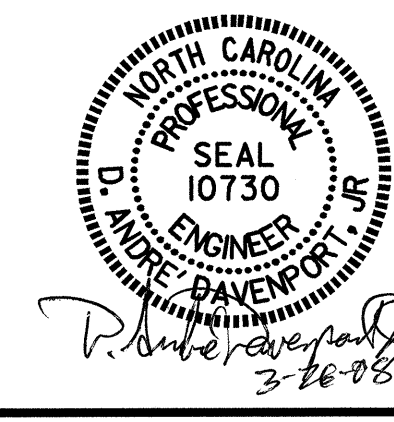
PLAN OF EXTERIOR CORED SLAB UNIT

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT



DRAWN BY: H. T. BARBOUR DATE: 5-30-06
 CHECKED BY: C. R. YARBROUGH DATE: 6-21-06

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-23 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 34 |

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

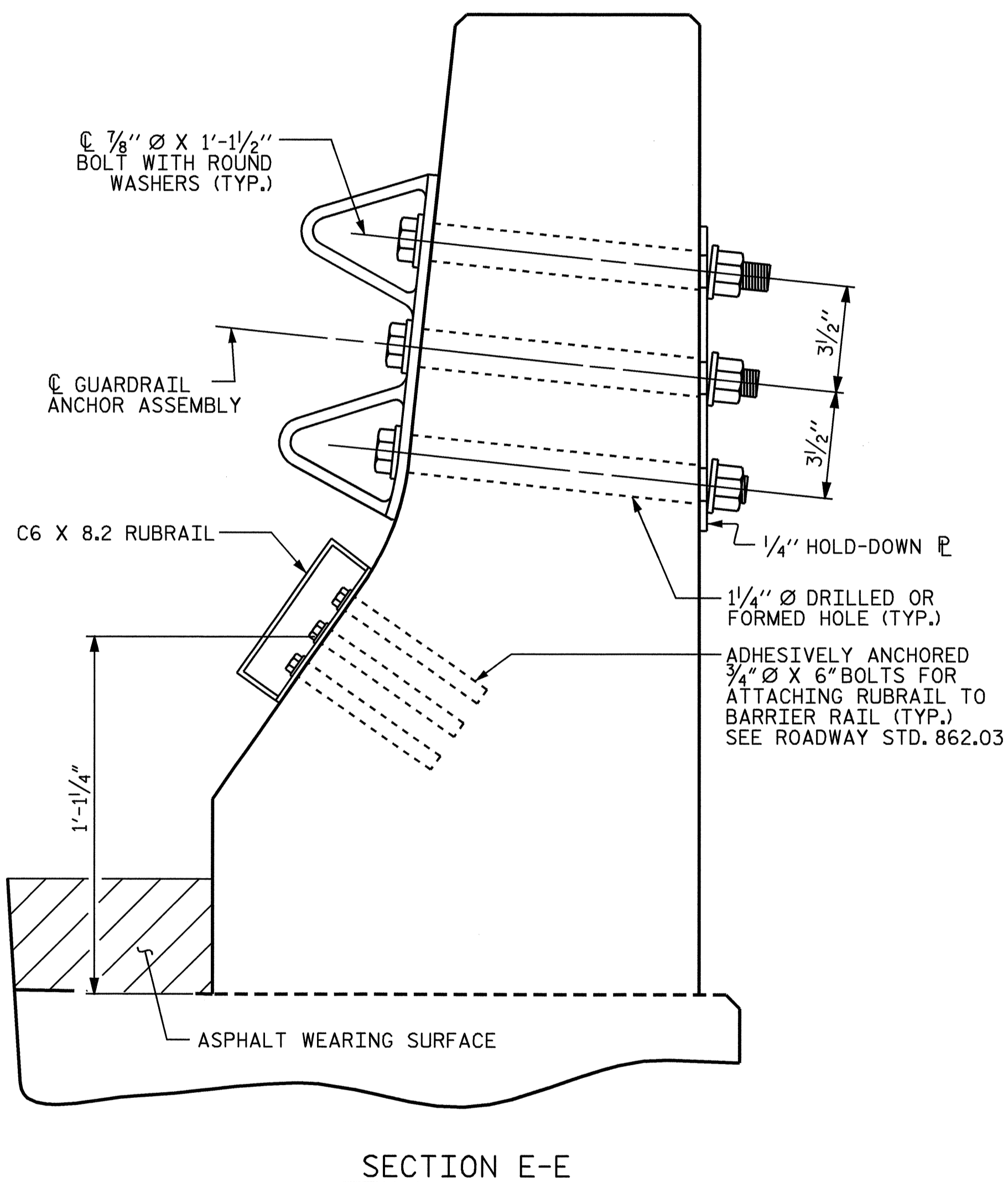
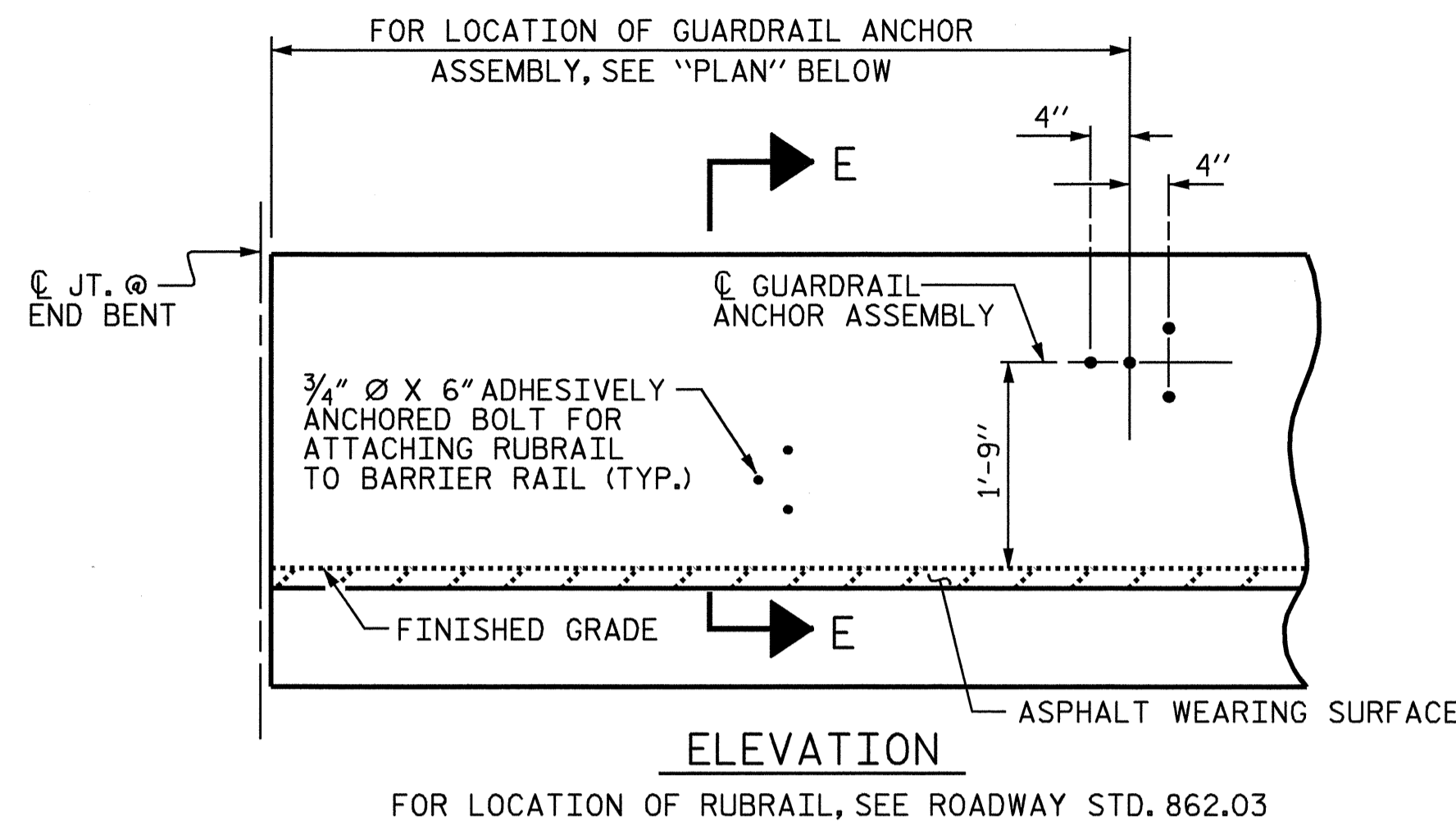
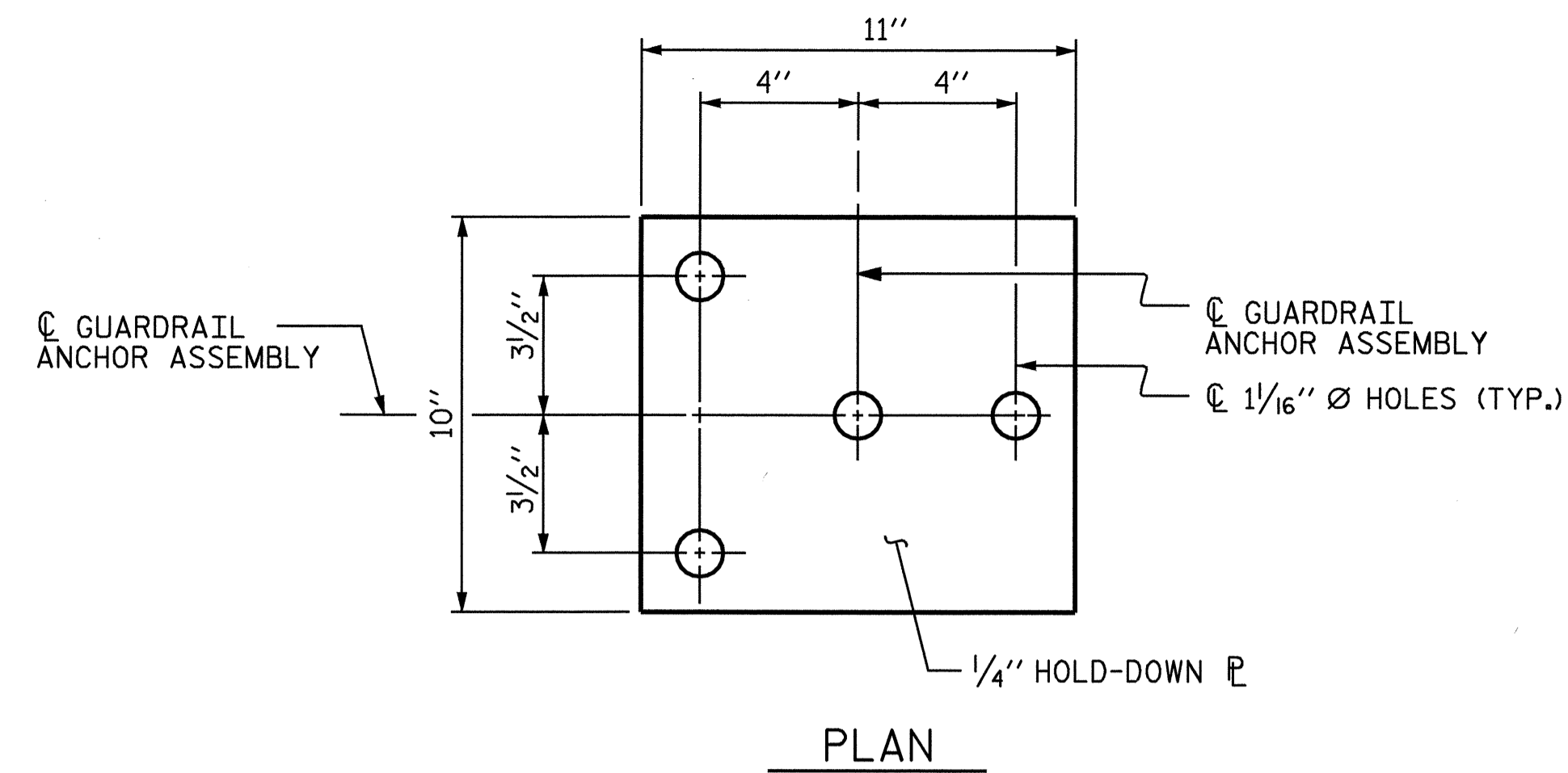
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

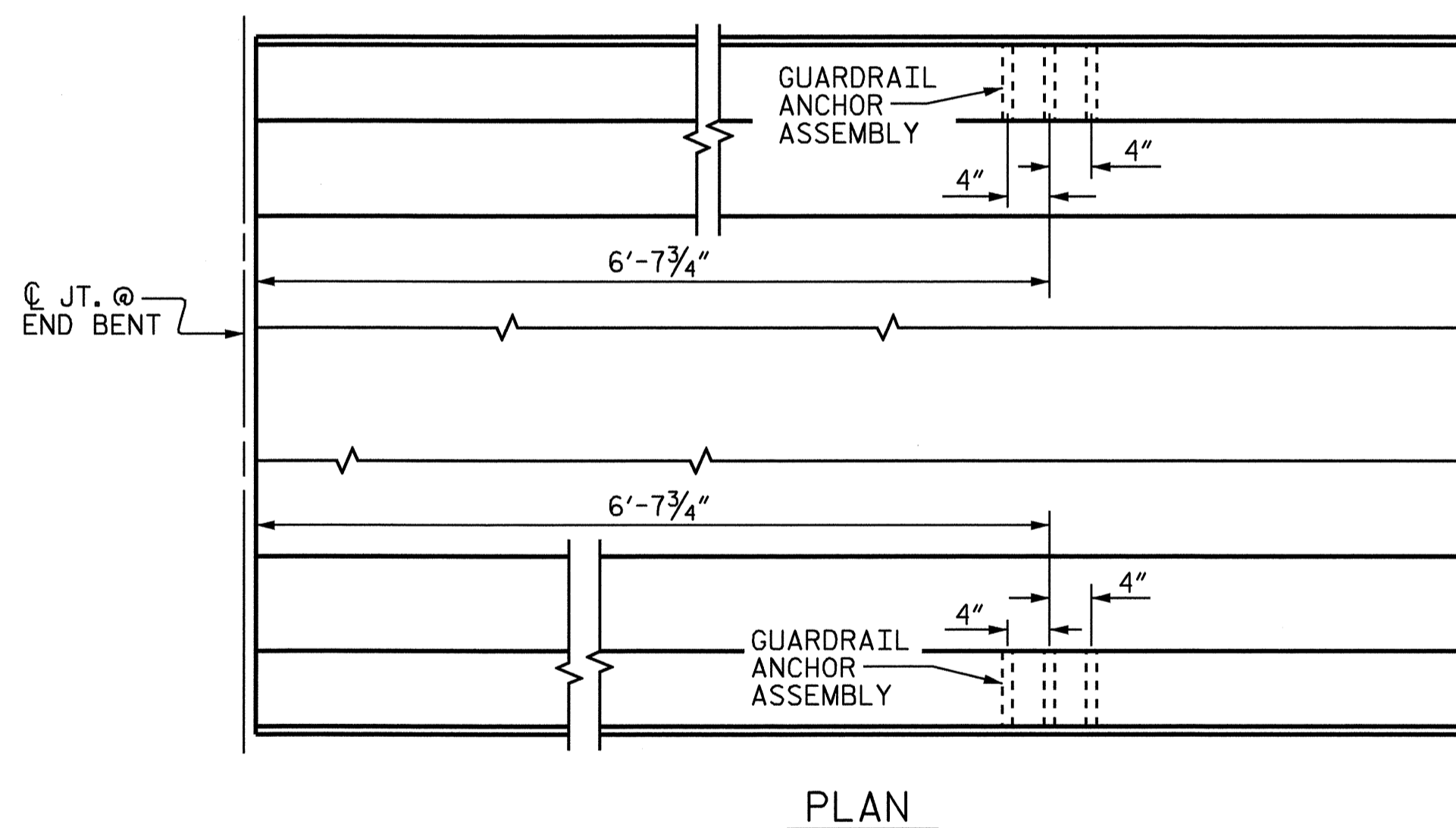
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

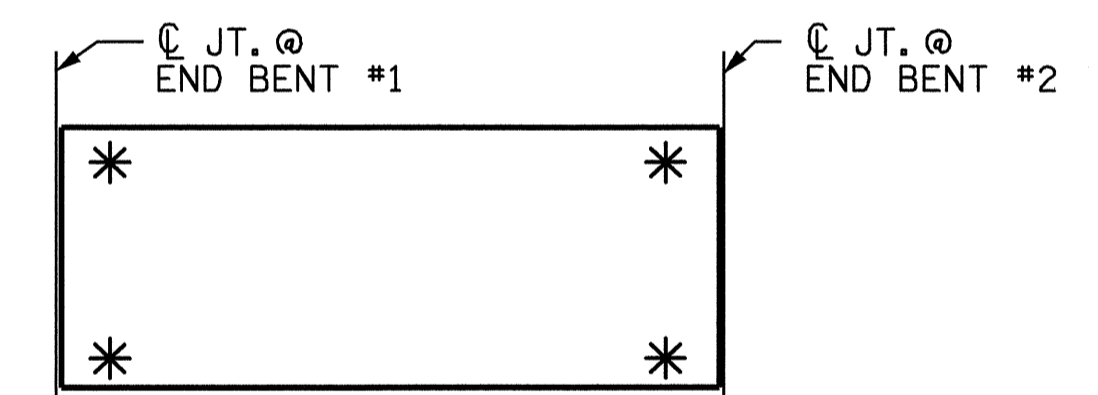


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



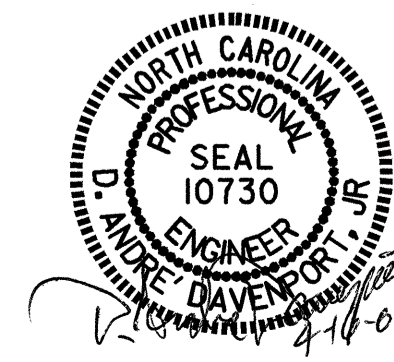
SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

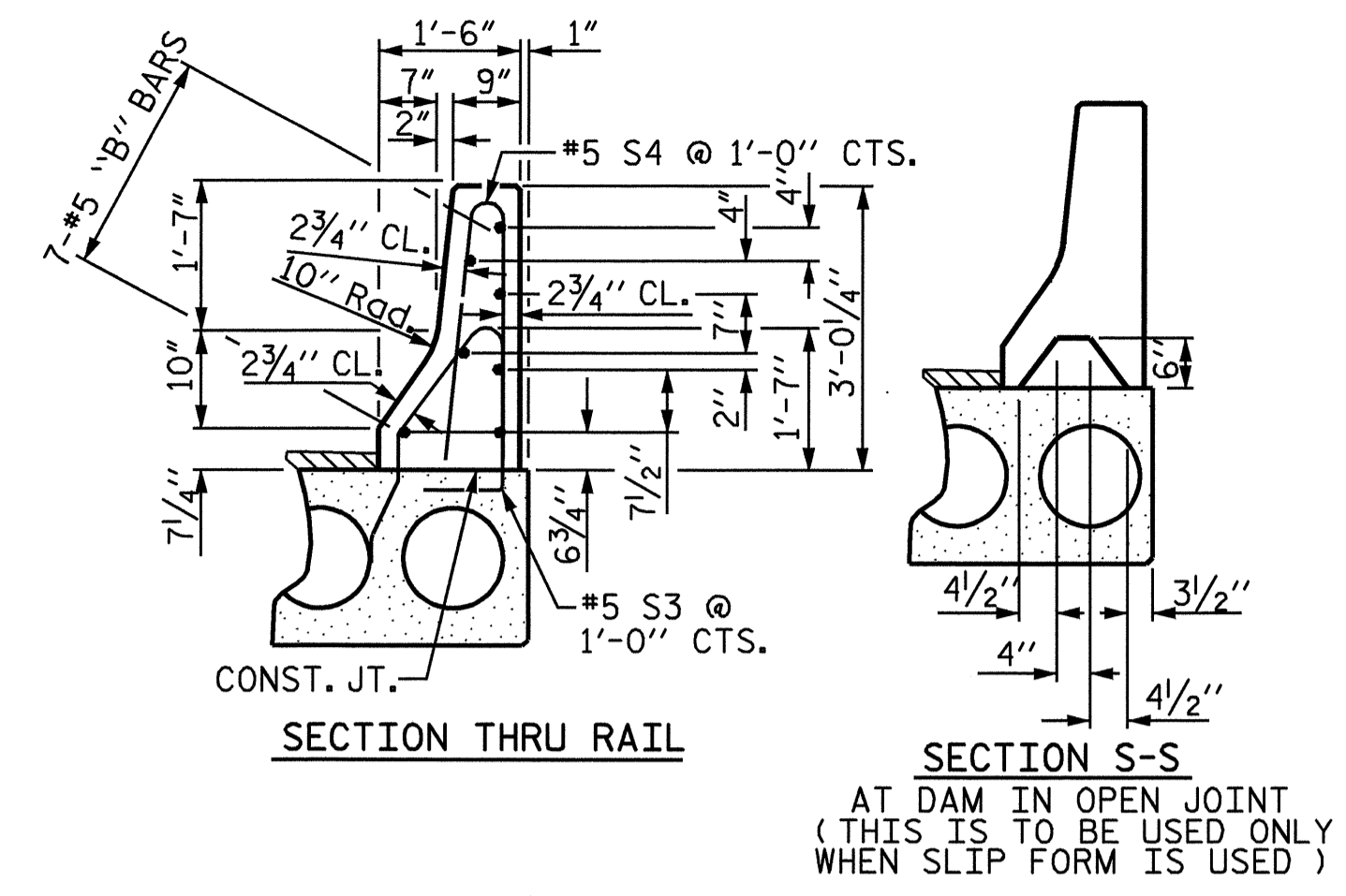
SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

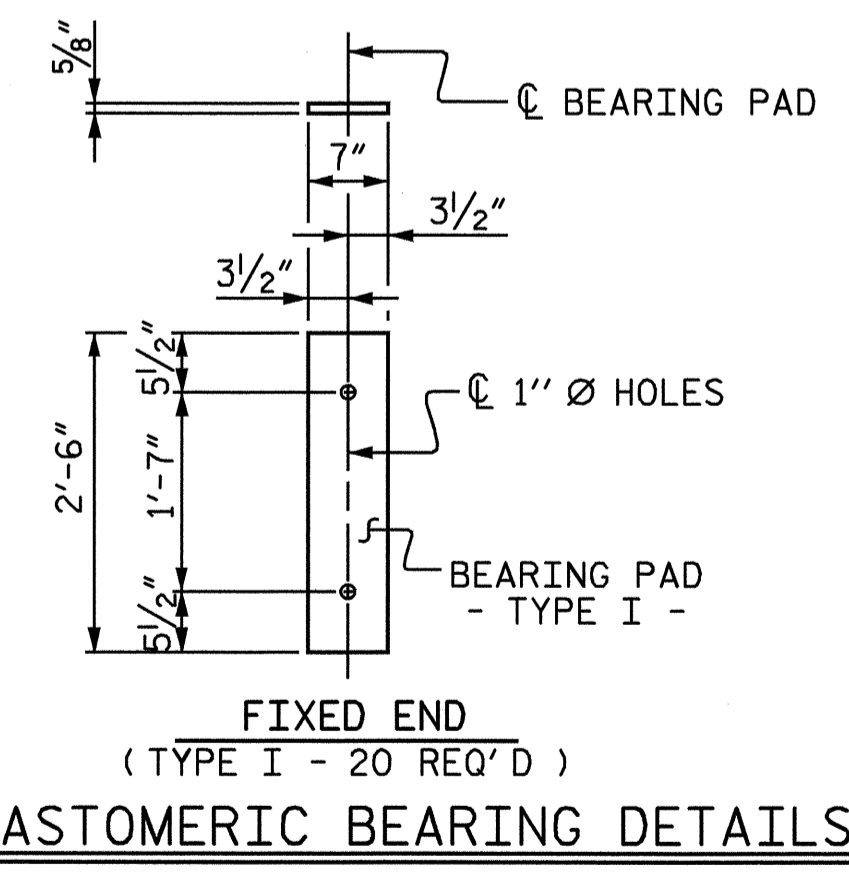
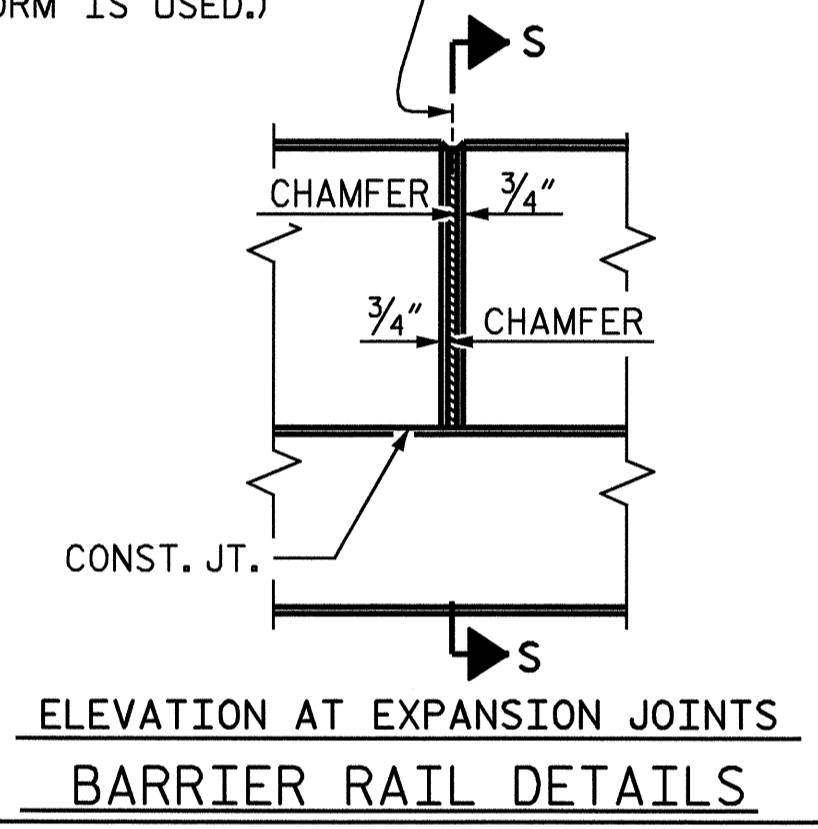


| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|--------------|--|
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| 1 | | | 3 | | | TOTAL SHEETS | |
| 2 | | | 4 | | | 34 | |

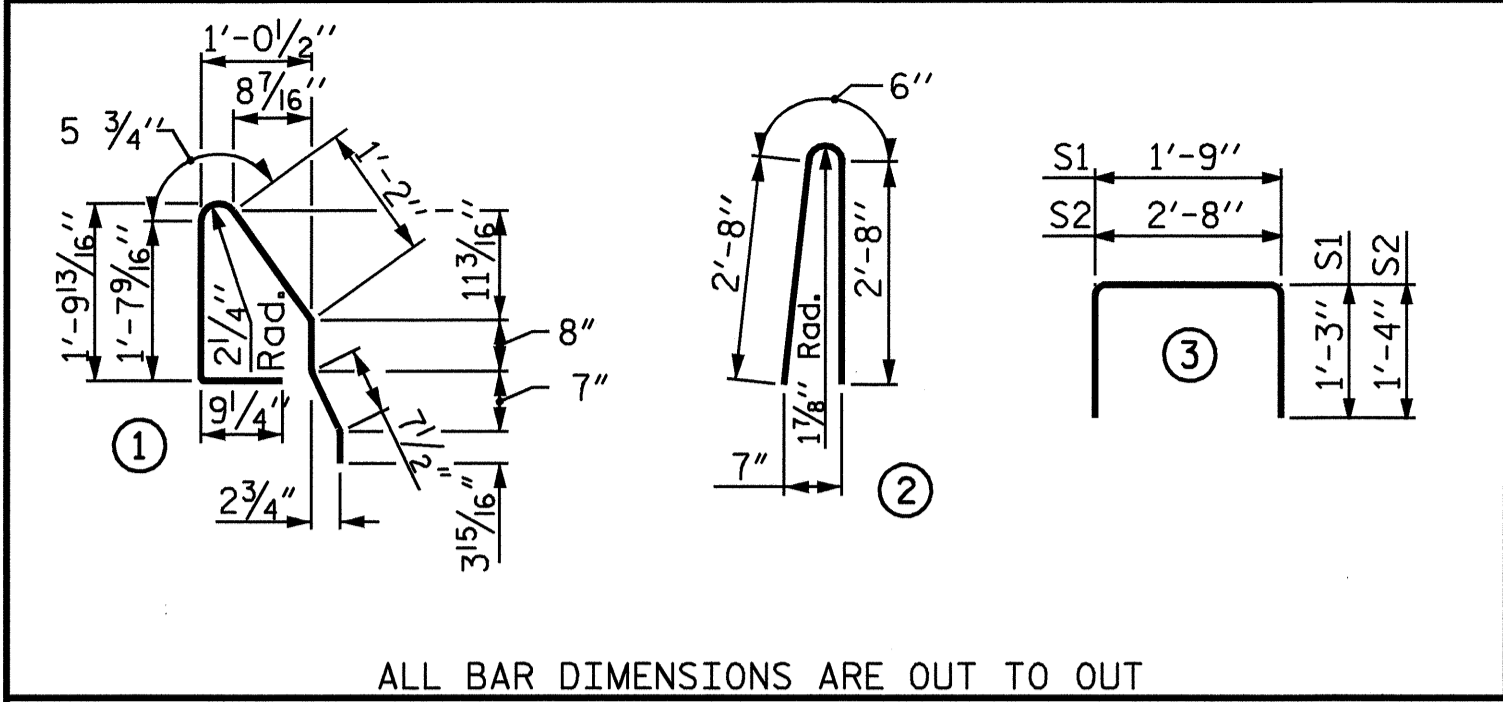
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|----------------|-----------------|--------|--------------|
| ASSEMBLED BY : | H. T. BARBOUR | DATE : | 7-03-06 |
| CHECKED BY : | C. R. YARBROUGH | DATE : | 7-03-06 |
| DRAWN BY : | TLA | 5/06 | ADDED 5/1/06 |
| CHECKED BY : | GM | 5/06 | |



1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

| SPAN A | BAR | NUMBER | SIZE | TYPE | EXTERIOR UNIT | | INTERIOR UNIT | |
|--------|----------------------------------|--------|------|------|---------------|--------|---------------|--------|
| | | | | | LENGTH | WEIGHT | LENGTH | WEIGHT |
| | B1 | 4 | #4 | STR | 29'-7" | 79 | 29'-7" | 79 |
| | S1 | 8 | #6 | 3 | 4'-3" | 51 | 4'-3" | 51 |
| | S2 | 114 | #4 | 3 | 5'-4" | 406 | 5'-4" | 406 |
| | * S3 | 59 | #5 | 1 | 5'-8" | 349 | | |
| | REINFORCING STEEL | | | | LBS. | 536 | 536 | |
| | * EPOXY COATED REINFORCING STEEL | | | | LBS. | 349 | | |
| | 6,000 P.S.I. CONCRETE | | | | CU. YDS. | 8.2 | 8.1 | |
| | 0.6" Ø L.R. STRANDS | | | | No. | 22 | 22 | |

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL

| SPAN A | | | | | |
|---------------------------------------|-----|------|------|----------|--------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| * B2 | 14 | #5 | STR | 28'-0" | 409 |
| * B3 | 14 | #5 | STR | 29'-0" | 423 |
| * S4 | 118 | #5 | 2 | 5'-10" | 718 |
| * EPOXY COATED REINFORCING STEEL | | | | LBS. | 1550 |
| CLASS AA CONCRETE | | | | CU. YDS. | 13.8 |
| TOTAL LENGTH OF CONCRETE BARRIER RAIL | | | | LIN. FT. | 115.50 |

DEAD LOAD DEFLECTION AND CAMBER

| | INTERIOR UNIT | EXTERIOR UNIT |
|--|--------------------|--------------------|
| | 3'-0" x 1'-9" | 3'-0" x 1'-9" |
| | 0.6" Ø L.R. STRAND | 0.6" Ø L.R. STRAND |
| CAMBER (SLAB ALONE IN PLACE) | 3/4" | 3/4" |
| DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD** | 1/2" | 1/2" |
| FINAL CAMBER | 2 3/4" | 2 3/4" |

** INCLUDES FUTURE WEARING SURFACE

GRADE 270 STRANDS

| | |
|---------------------------------------|--------|
| AREA (SQUARE INCHES) | 0.217 |
| ULTIMATE STRENGTH (LBS. PER STRAND) | 58,600 |
| APPLIED PRESTRESS (LBS. PER STRAND) | 43,950 |

CORED SLABS REQUIRED

| SPAN A | | | |
|---------------|--------|--------|--------------|
| | NUMBER | LENGTH | TOTAL LENGTH |
| INTERIOR C.S. | 8 | 57'-9" | 462'-0" |
| EXTERIOR C.S. | 2 | 57'-9" | 115'-6" |
| TOTAL | 10 | 57'-9" | 577'-6" |

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" DIA. DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5000 PSI.

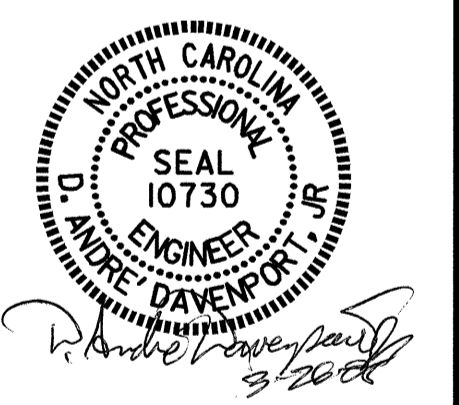
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.



PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
3'-0" X 1'-9"
PRESTRESSED
CONCRETE CORED
SLAB UNIT

| REVISIONS | | | | | | SHEET NO. S-25 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

| | |
|------------------------------|-----------------------|
| ASSEMBLED BY : H. T. BARBOUR | DATE : 5-31-06 |
| CHECKED BY : C. R. YARBROUGH | DATE : 6-21-06 |
| DRAWN BY : WJH 4/89 | REV. 8/16/99 RWW/LES |
| CHECKED BY : FCJ 5/89 | REV. 10/17/00 RWW/LES |
| | REV. 7/10/01R RWW/LES |

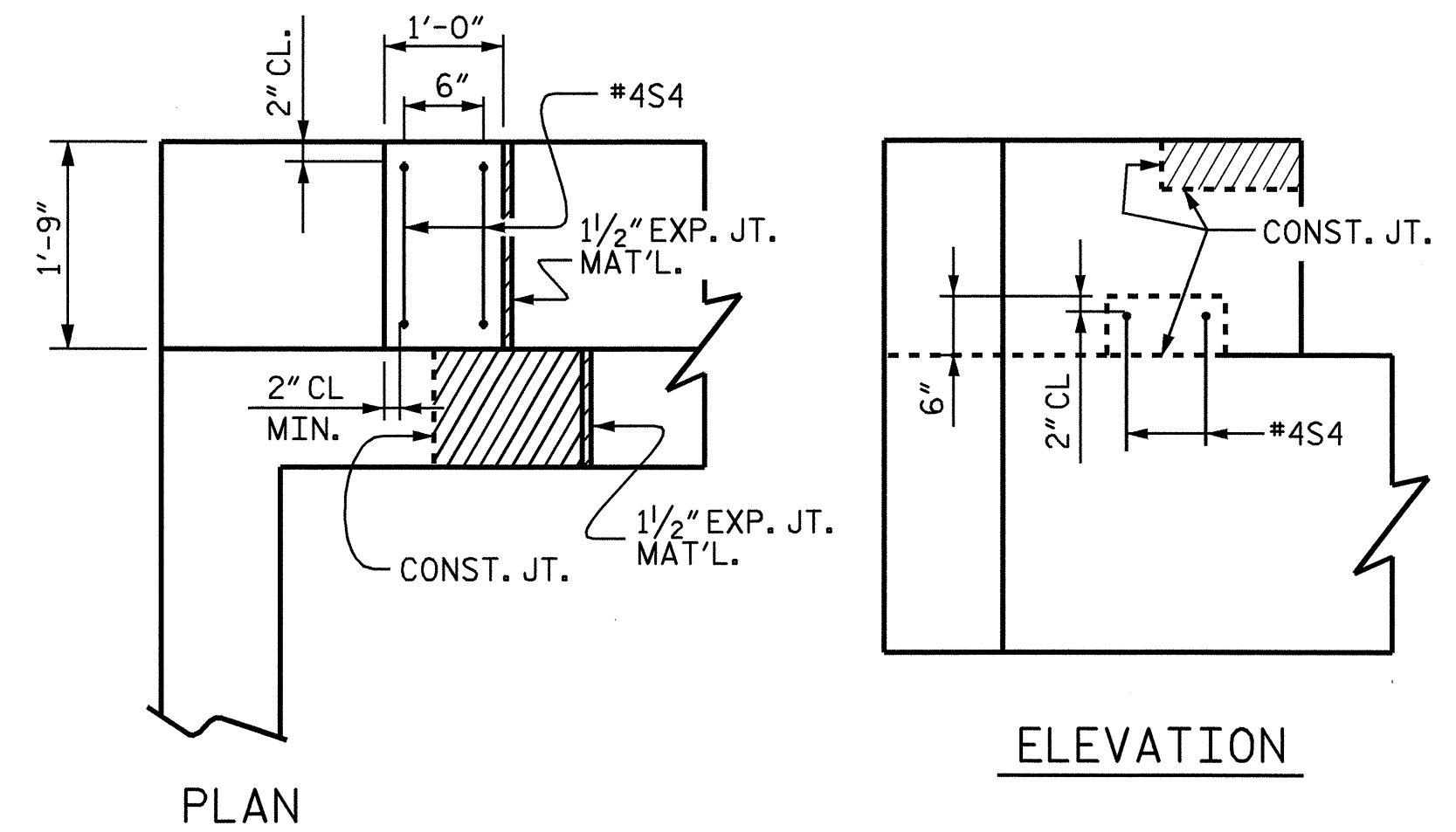
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAILS ARE CAST IF SLIP FORMING IS USED.



LATERAL GUIDE
(EACH END SIMILAR)

BEARING DETAIL

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00 -L-

SHEET 1 OF 3

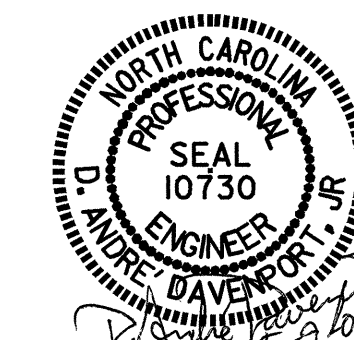
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #1**

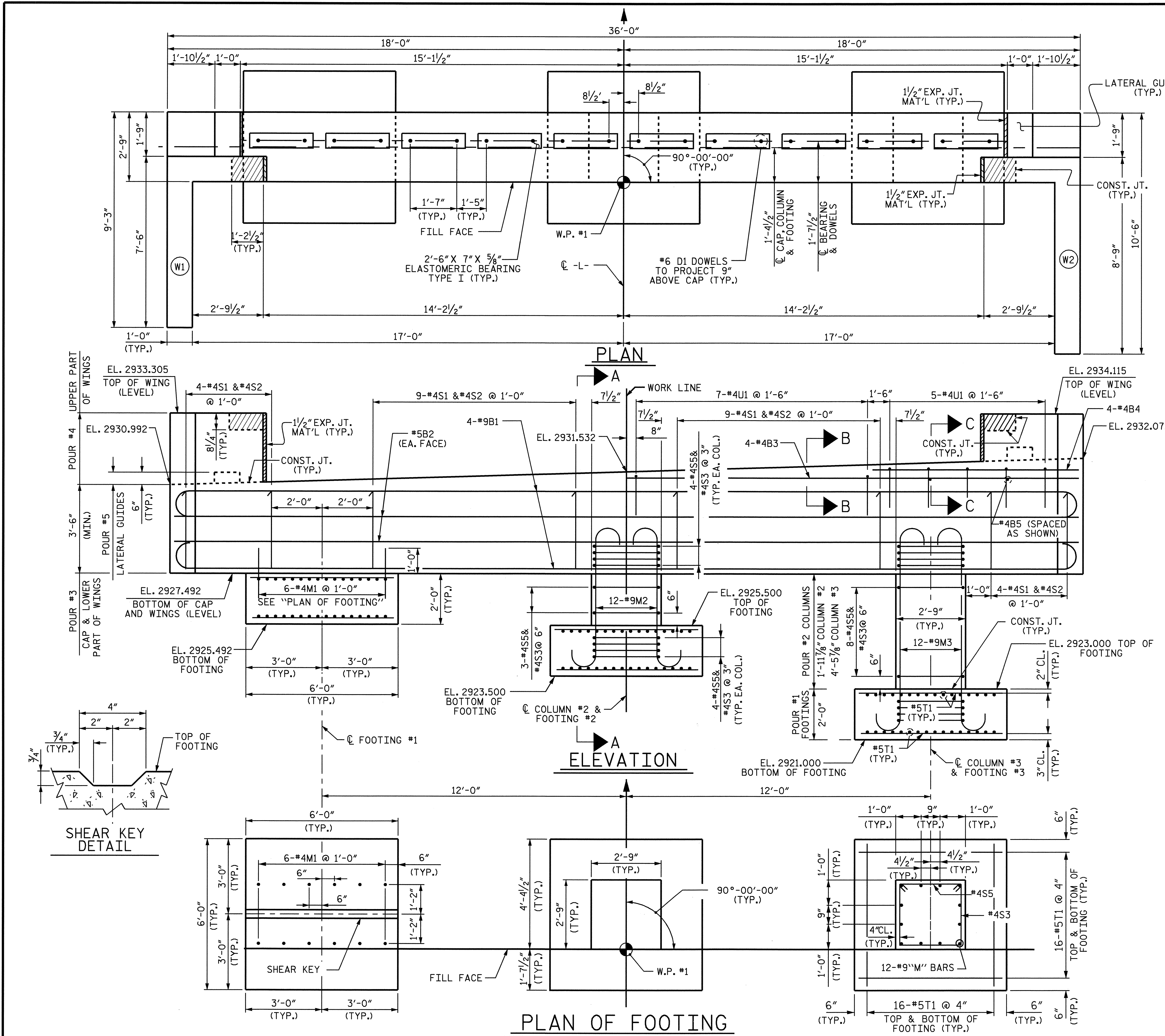
REVISIONS

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|-----|-----|-------|-----|-----|-------|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

| SHEET NO. | |
|-----------|-----------------|
| S-26 | TOTAL SHEETS 34 |

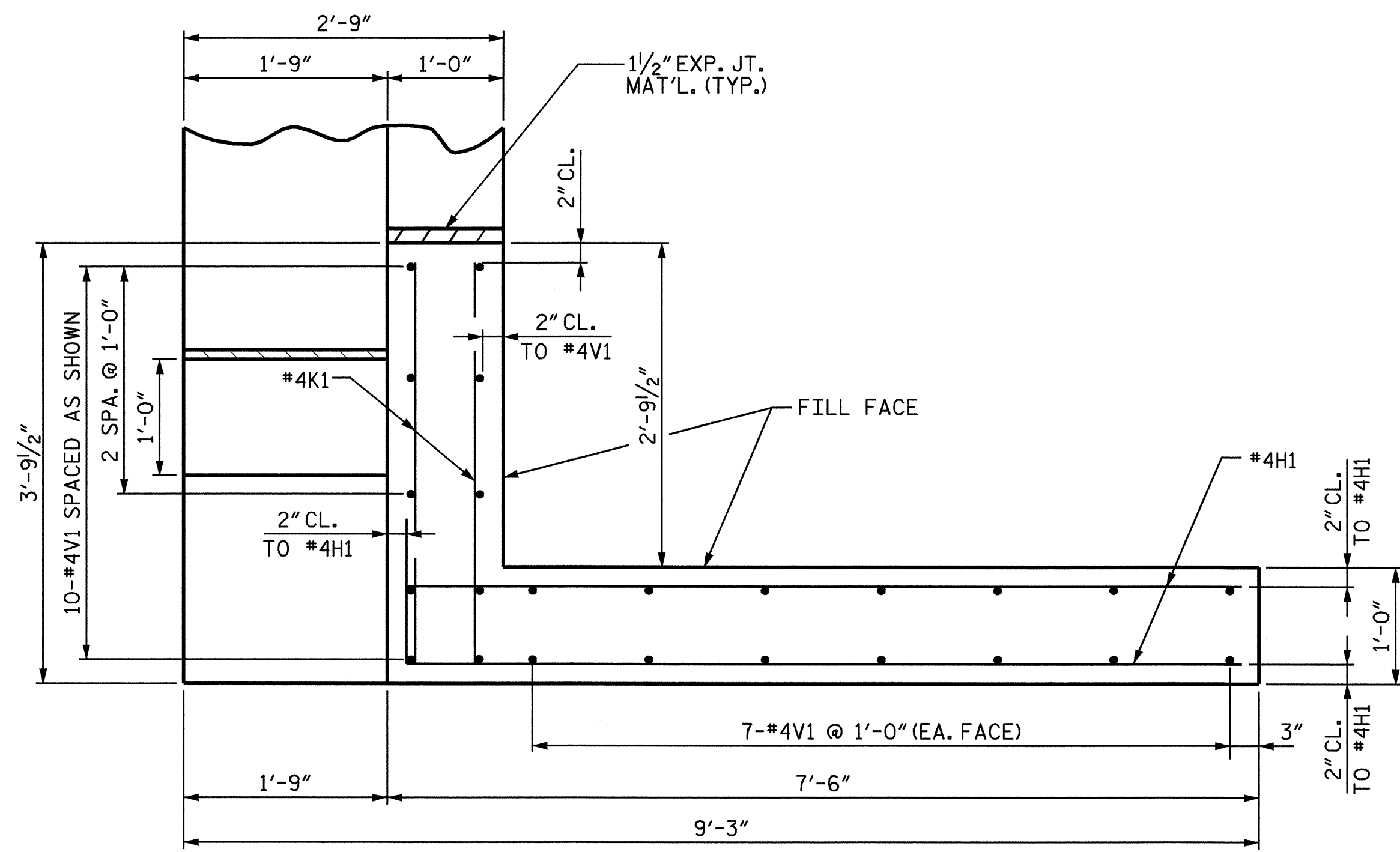


STR #2

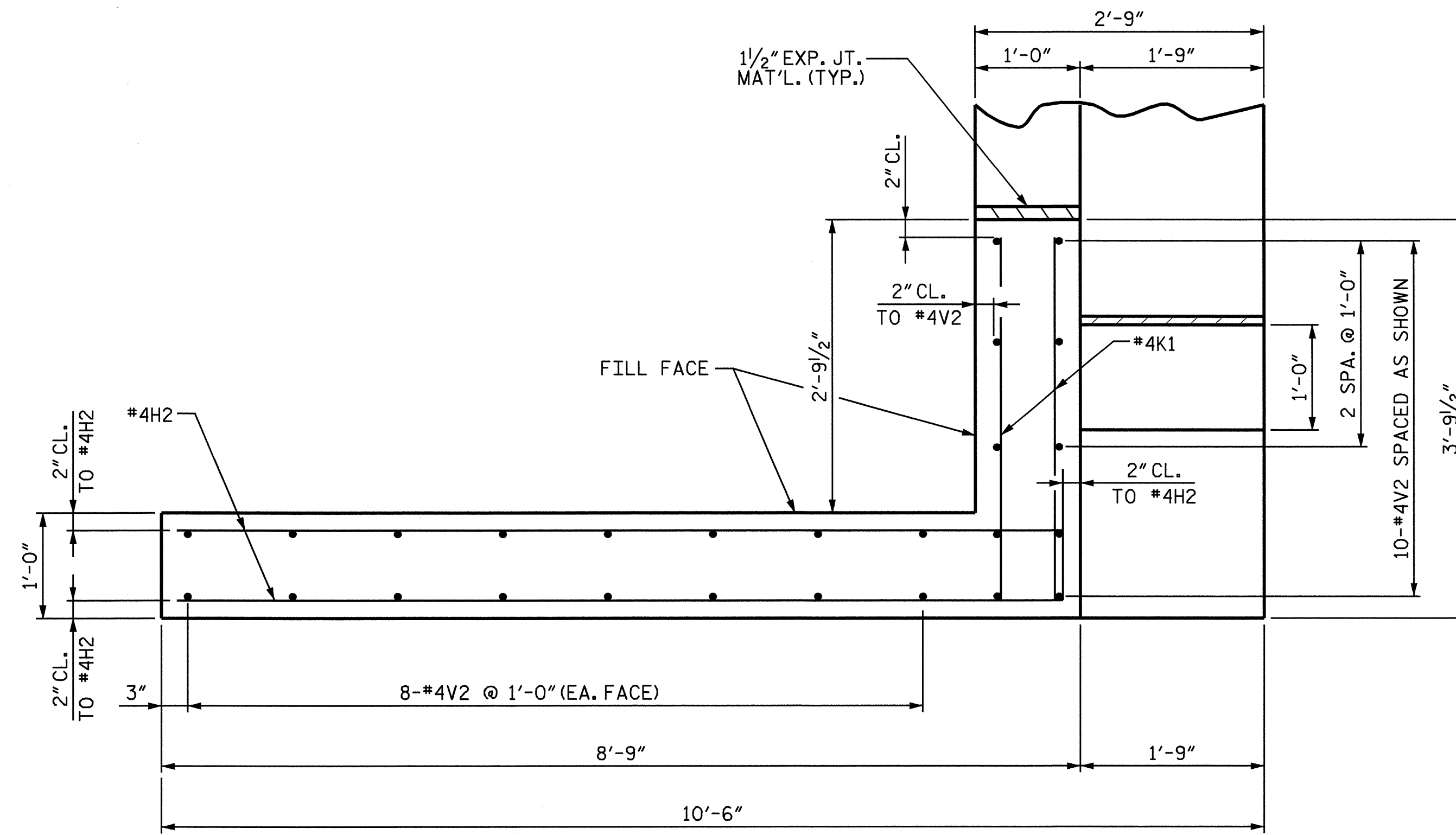


DRAWN BY: M. G. SHAIKH DATE: 01-31-08
 CHECKED BY: D. A. DAVENPORT DATE: 02-11-08

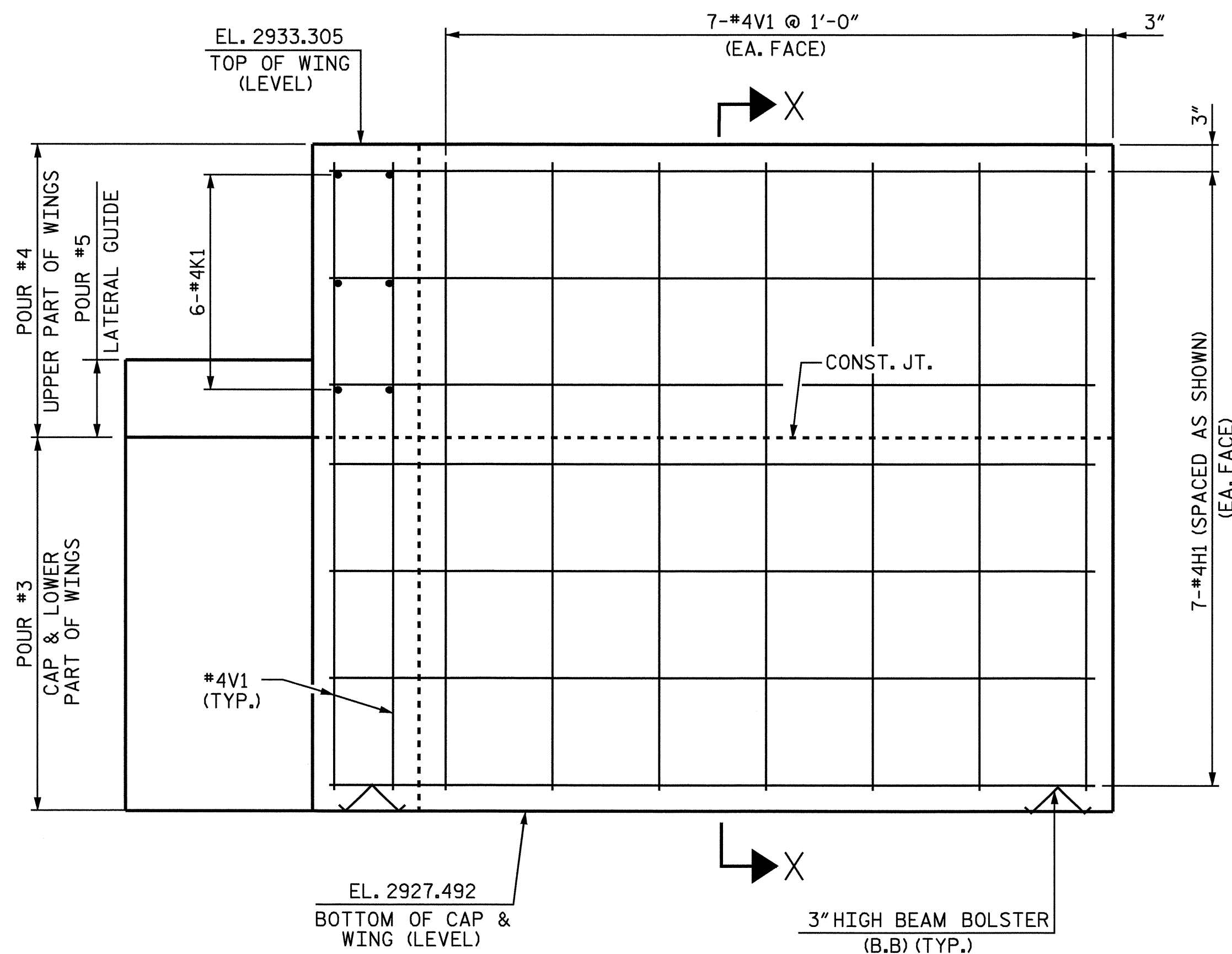
ALL FOOTINGS ARE IDENTICAL AND ALL COLUMNS ARE SIMILAR



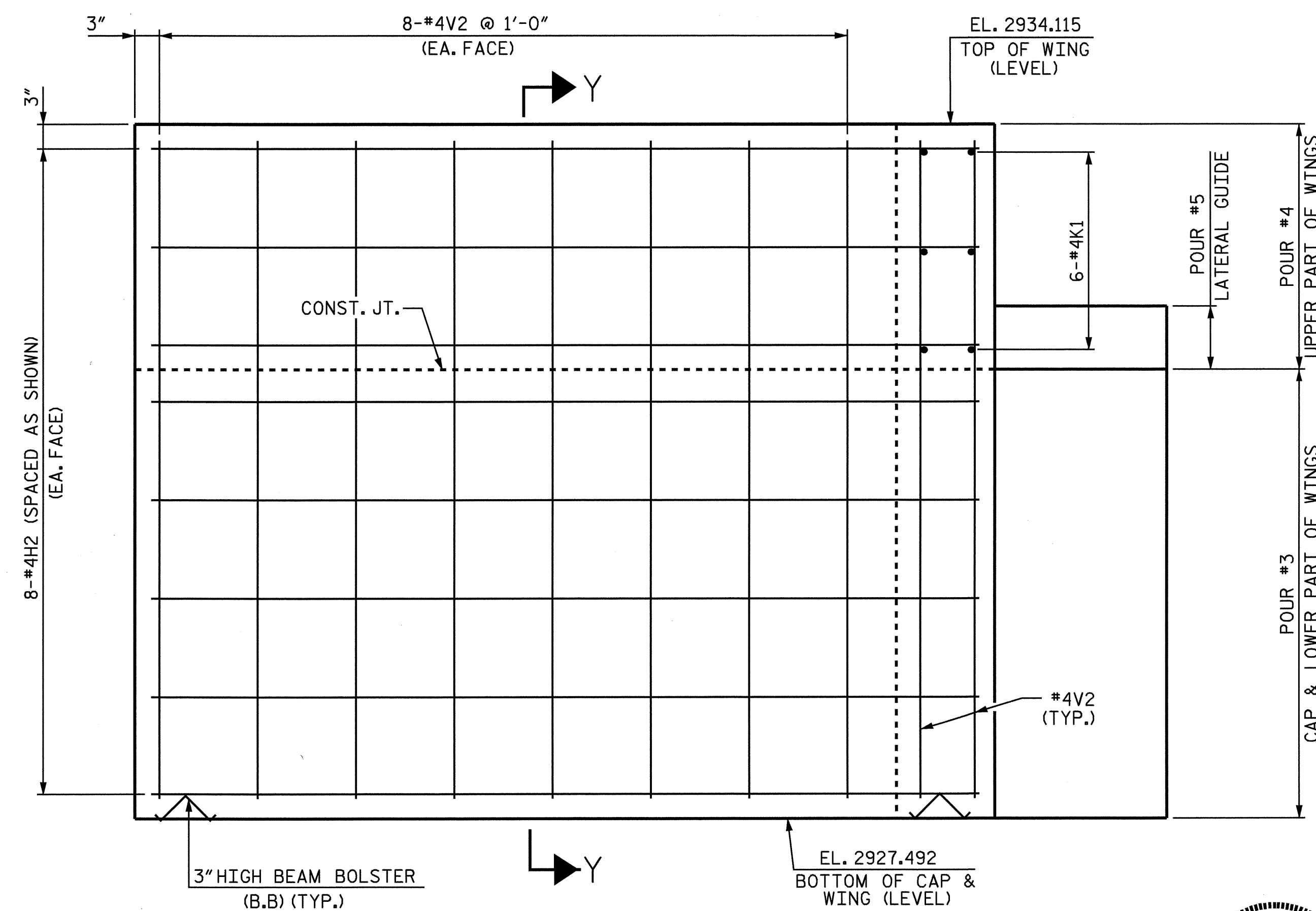
PLAN OF LEFT WING (W1)



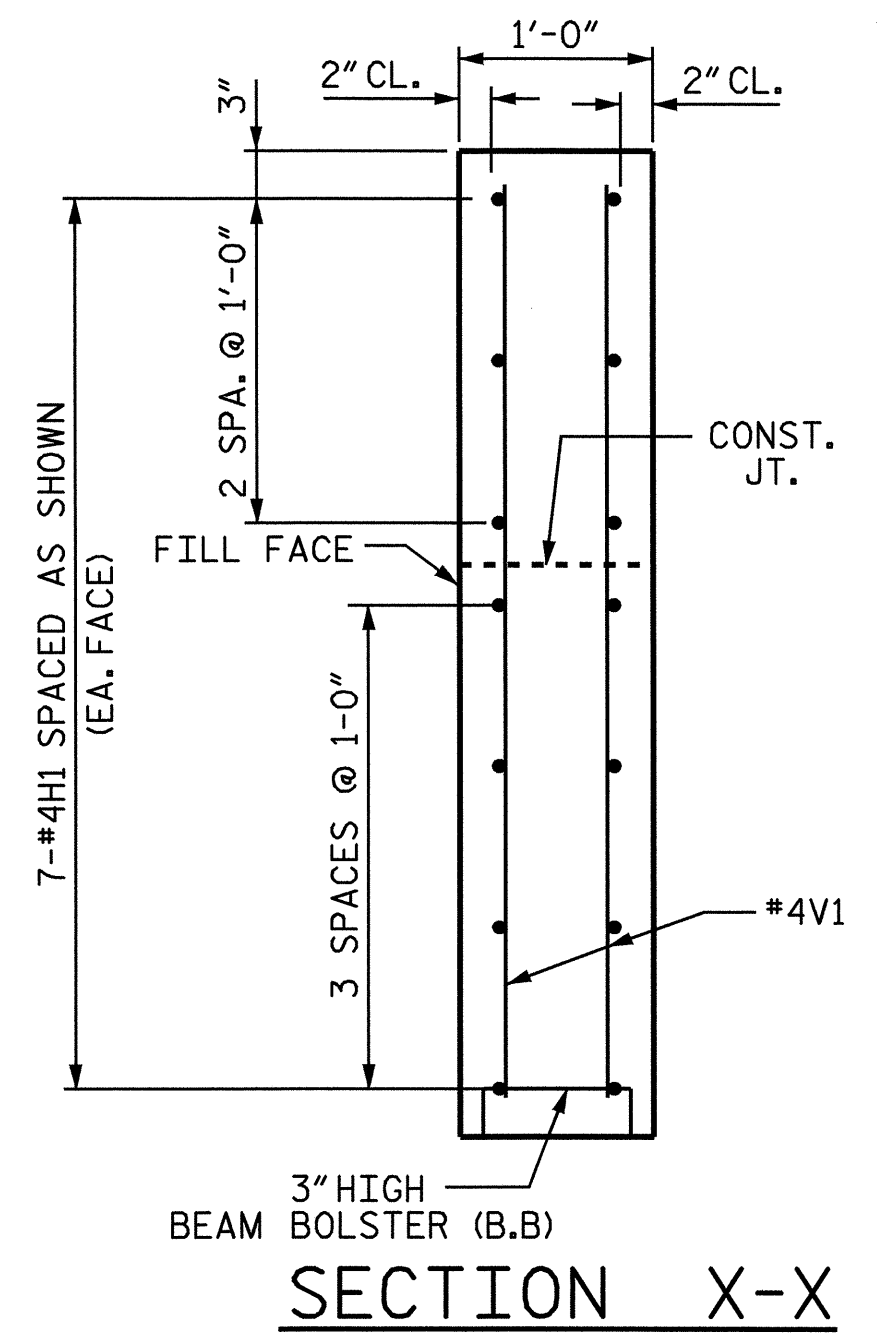
PLAN OF RIGHT WING (W2)



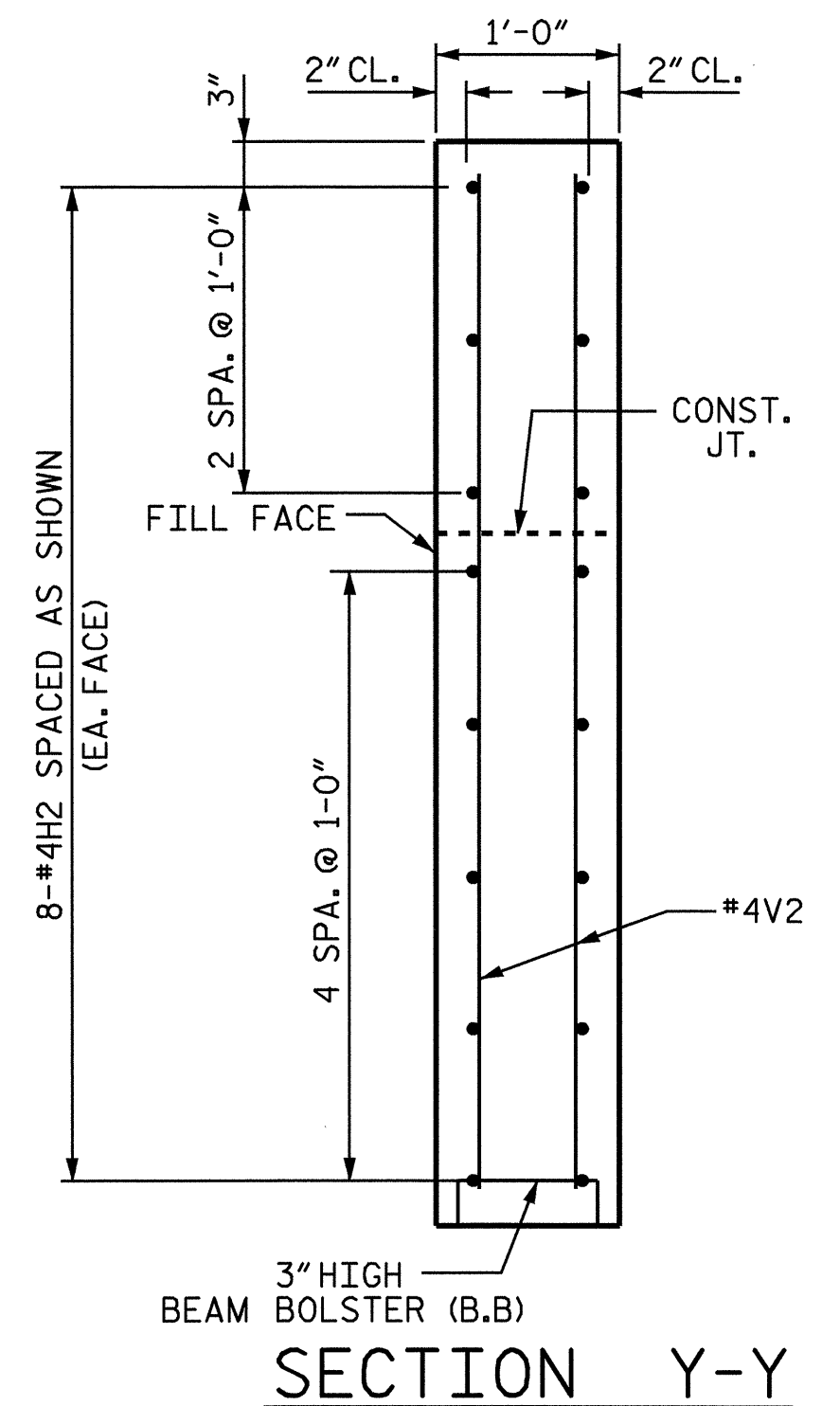
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 19+80.00 -L-

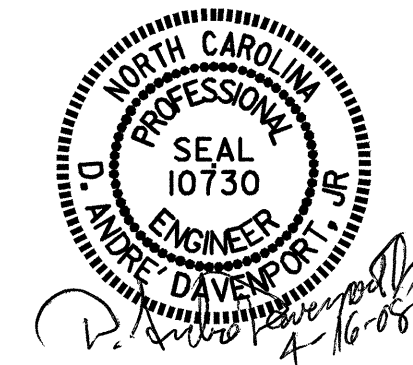
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

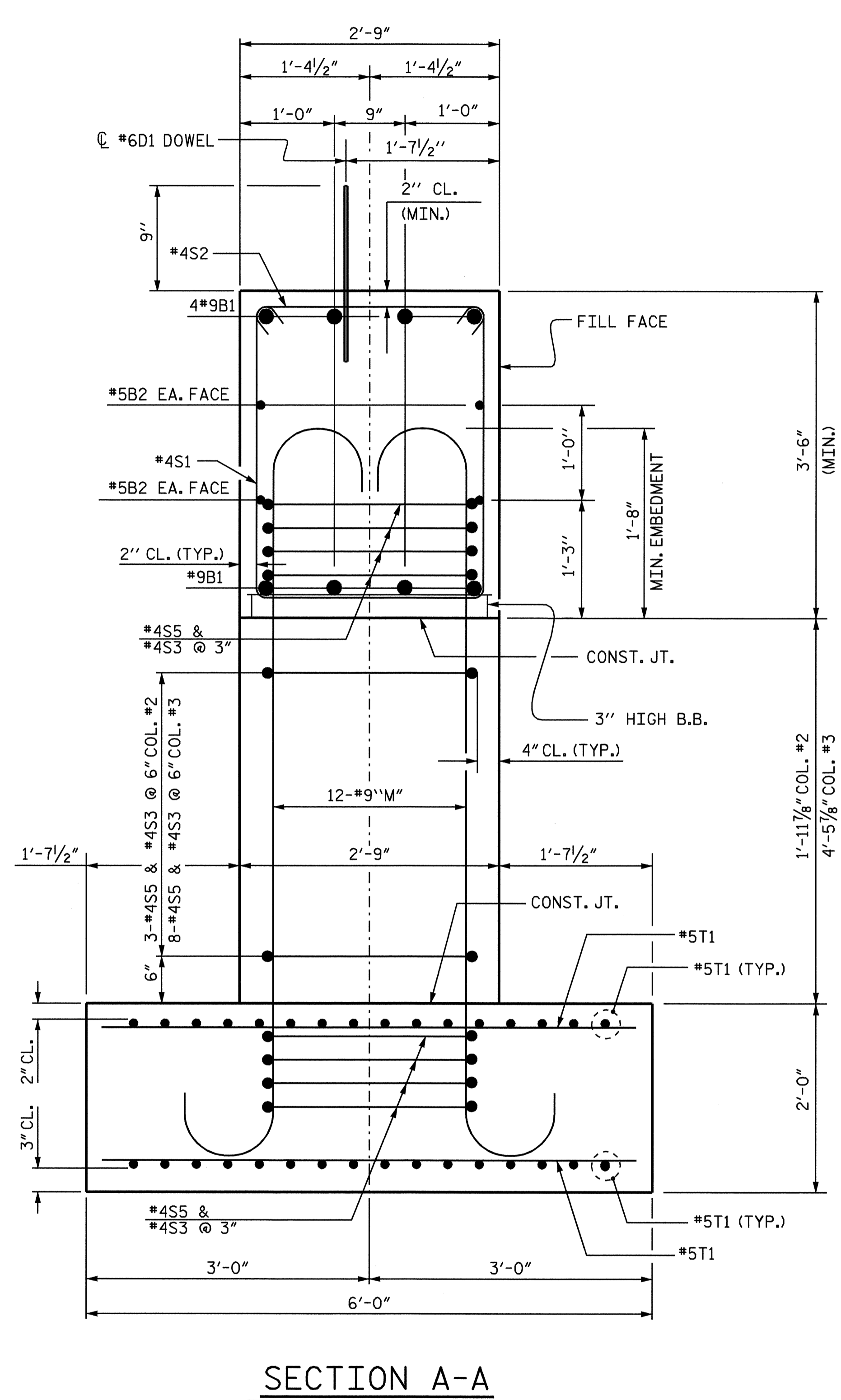
DRAWN BY: M. G. SHAIKH DATE: 10-02-07
 CHECKED BY: D. A. DAVENPORT DATE: 02-11-08

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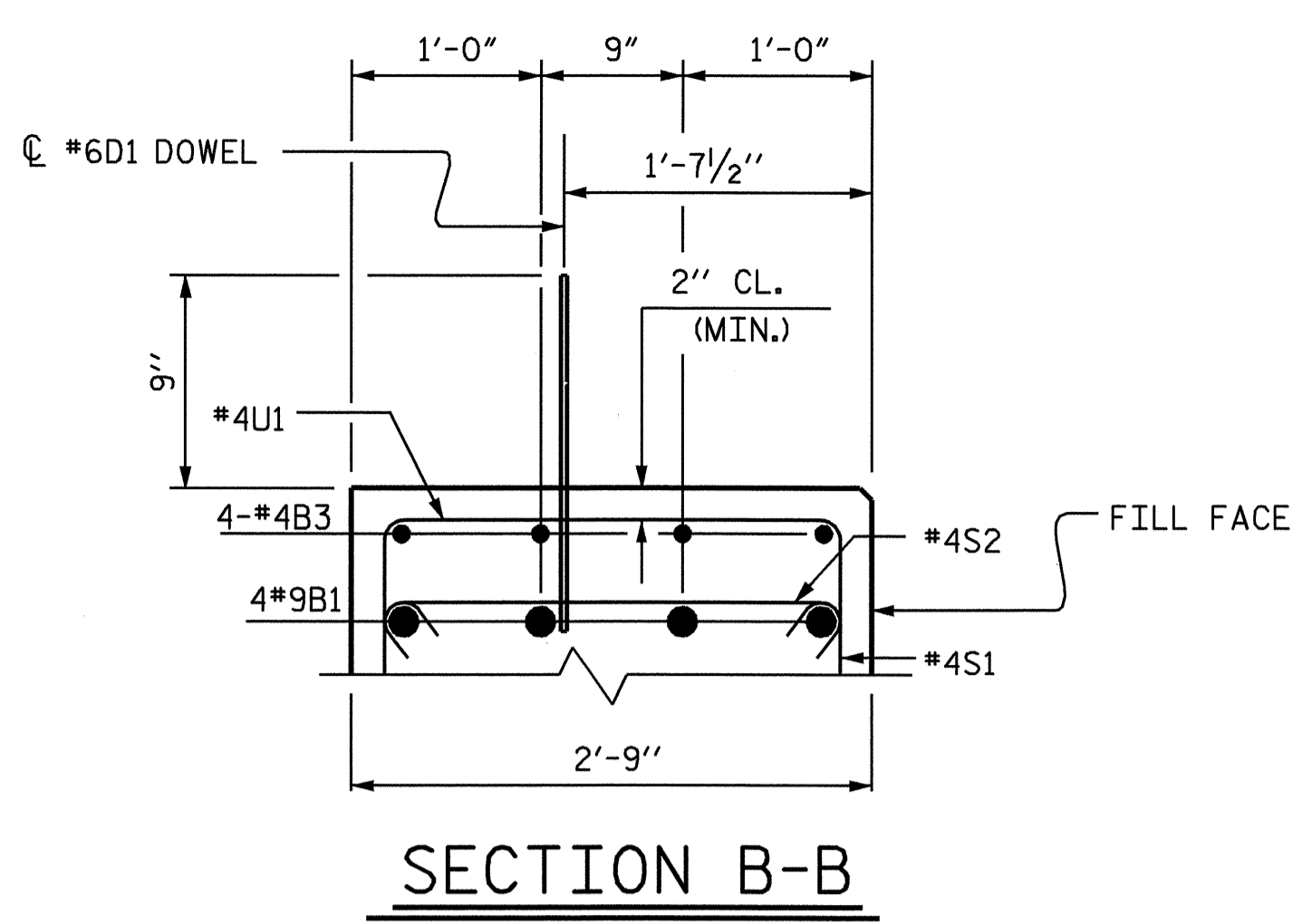


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| 1 | | | 3 | | | TOTAL SHEETS | |
| 2 | | | 4 | | | 34 | |

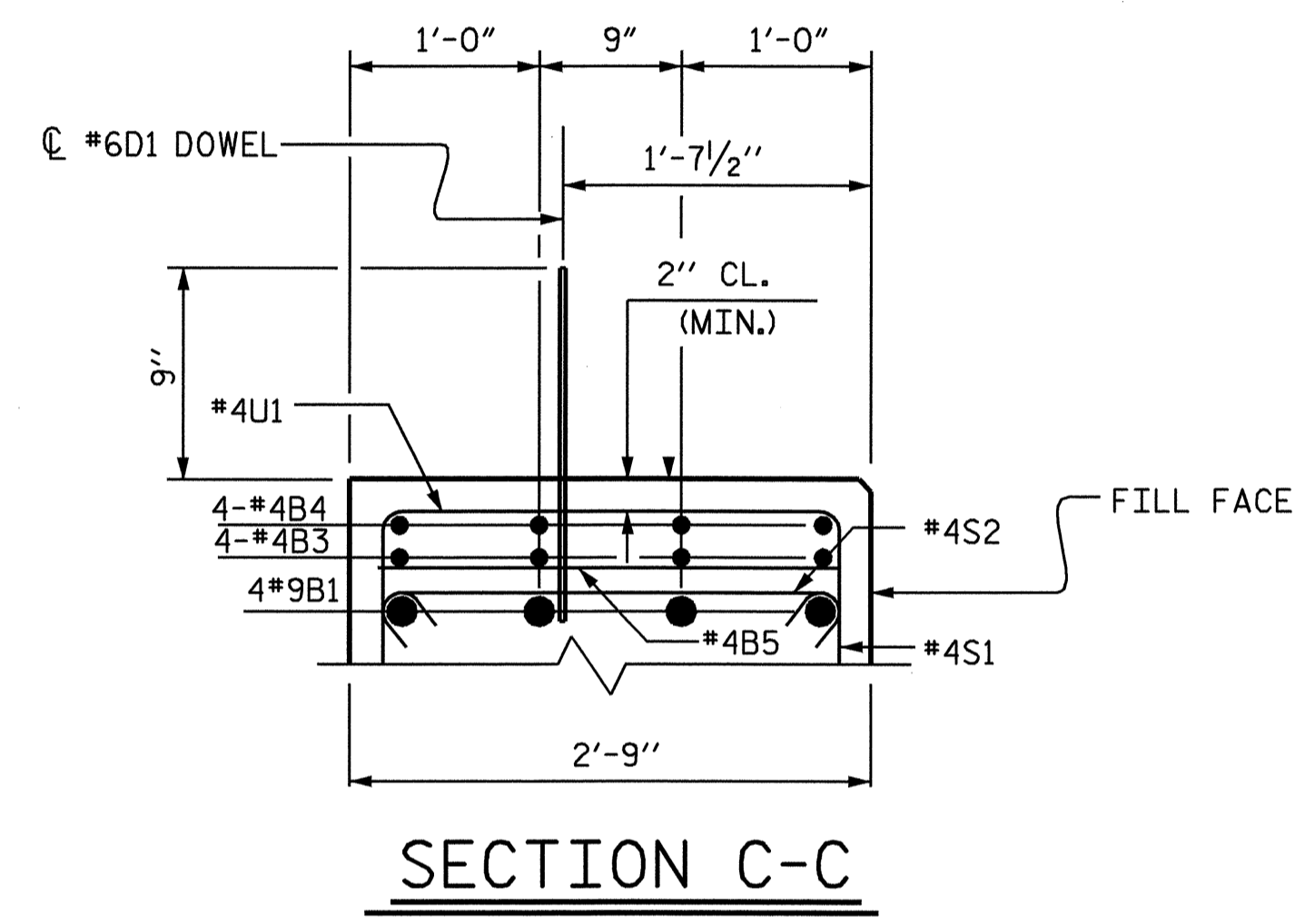
STR #2



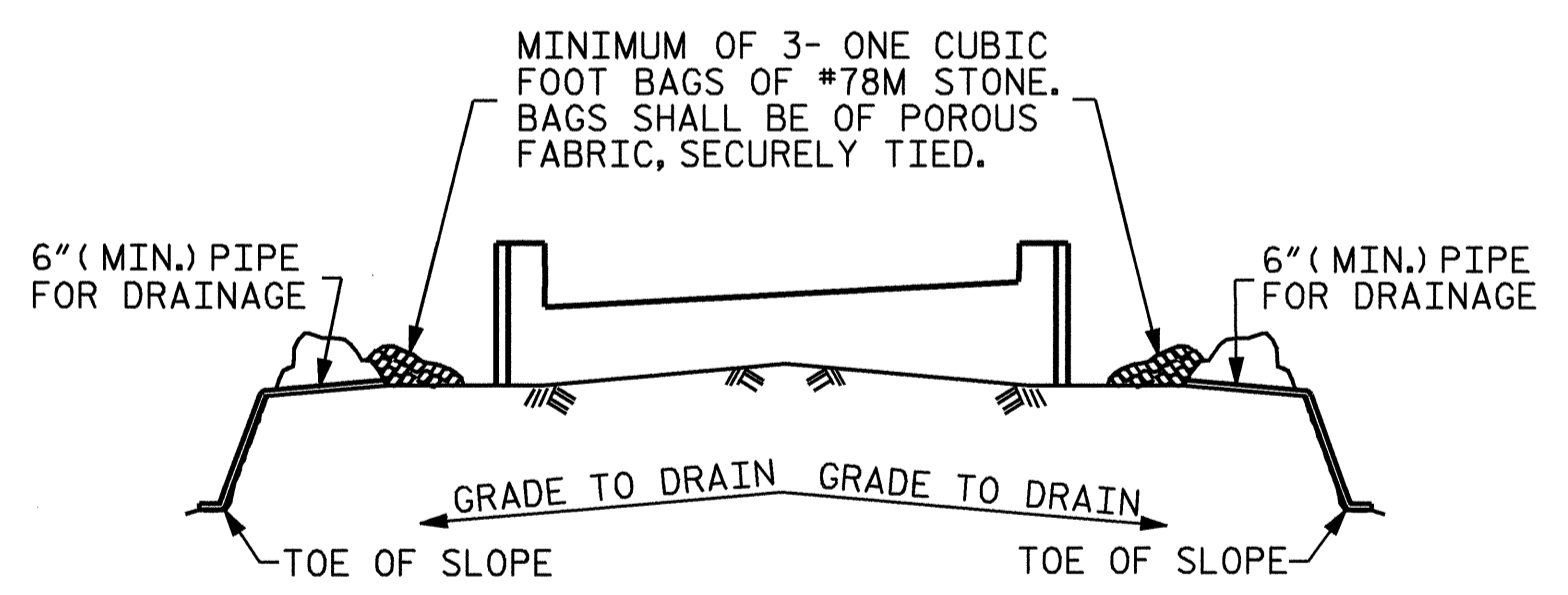
SECTION A-A



SECTION B-B



SECTION C-C



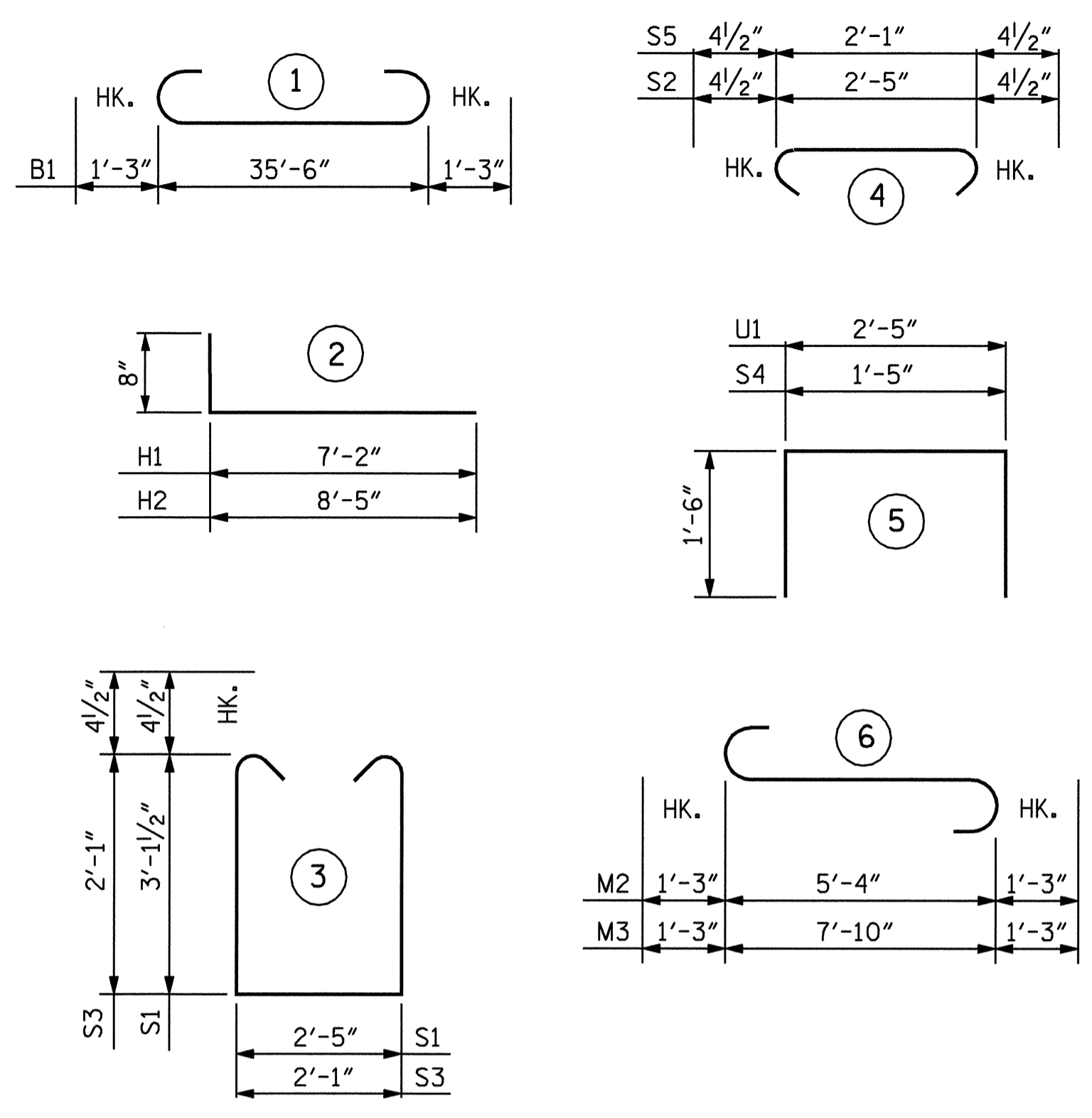
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|--|-----|------|------|---------|--------|
| B1 | 8 | #9 | | 38'-0" | 1034 |
| B2 | 4 | #5 | STR | 35'-8" | 149 |
| B3 | 4 | #4 | STR | 17'-10" | 48 |
| B4 | 4 | #4 | STR | 8'-1" | 22 |
| B5 | 2 | #4 | STR | 2'-5" | 3 |
| D1 | 20 | #6 | STR | 1'-6" | 45 |
| H1 | 14 | #4 | | 7'-10" | 73 |
| H2 | 16 | #4 | | 9'-1" | 97 |
| K1 | 12 | #4 | STR | 3'-5" | 27 |
| M1 | 12 | #4 | STR | 2'-0" | 16 |
| M2 | 12 | #9 | | 7'-10" | 320 |
| M3 | 12 | #9 | | 10'-4" | 422 |
| S1 | 26 | #4 | | 9'-5" | 164 |
| S2 | 26 | #4 | | 3'-2" | 55 |
| S3 | 27 | #4 | | 7'-0" | 126 |
| S4 | 4 | #4 | | 4'-5" | 12 |
| S5 | 27 | #4 | | 2'-10" | 51 |
| T1 | 192 | #5 | STR | 5'-8" | 1135 |
| U1 | 12 | #4 | | 5'-5" | 43 |
| V1 | 24 | #4 | STR | 5'-5" | 87 |
| V2 | 26 | #4 | STR | 6'-3" | 109 |
| REINFORCING STEEL LBS = | | | | | 4038 |
| CLASS A CONCRETE BREAKDOWN | | | | | |
| POUR #1 FOOTINGS (C.Y.) | | | | | 8.0 |
| POUR #2 COLUMNS (C.Y.) | | | | | 2.1 |
| POUR #3 CAP & LOWER PART OF WINGS (C.Y.) | | | | | 17.0 |
| POUR #4 UPPER PART OF WINGS (C.Y.) | | | | | 2.1 |
| POUR #5 LATERAL GUIDES (C.Y.) | | | | | 0.1 |
| TOTAL CLASS A CONCRETE (C.Y.) | | | | | 29.3 |

PROJECT NO. **B-4202**
MITCHELL COUNTY
 STATION: **19+80.00 -L-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT#1**



| REVISIONS | | | | | | SHEET NO. S-28 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

DRAWN BY : M. G. SHAIKH DATE : 10-04-07
 CHECKED BY : D. A. DAVENPORT DATE : 02-11-08

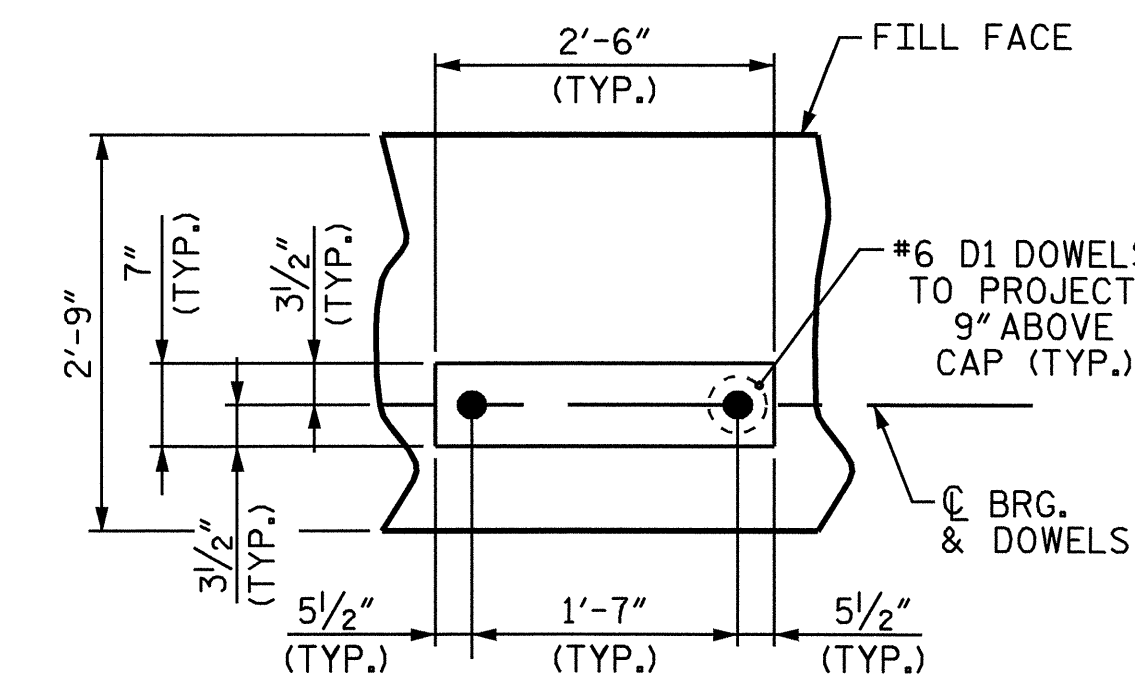
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #6D1 DOWELS.

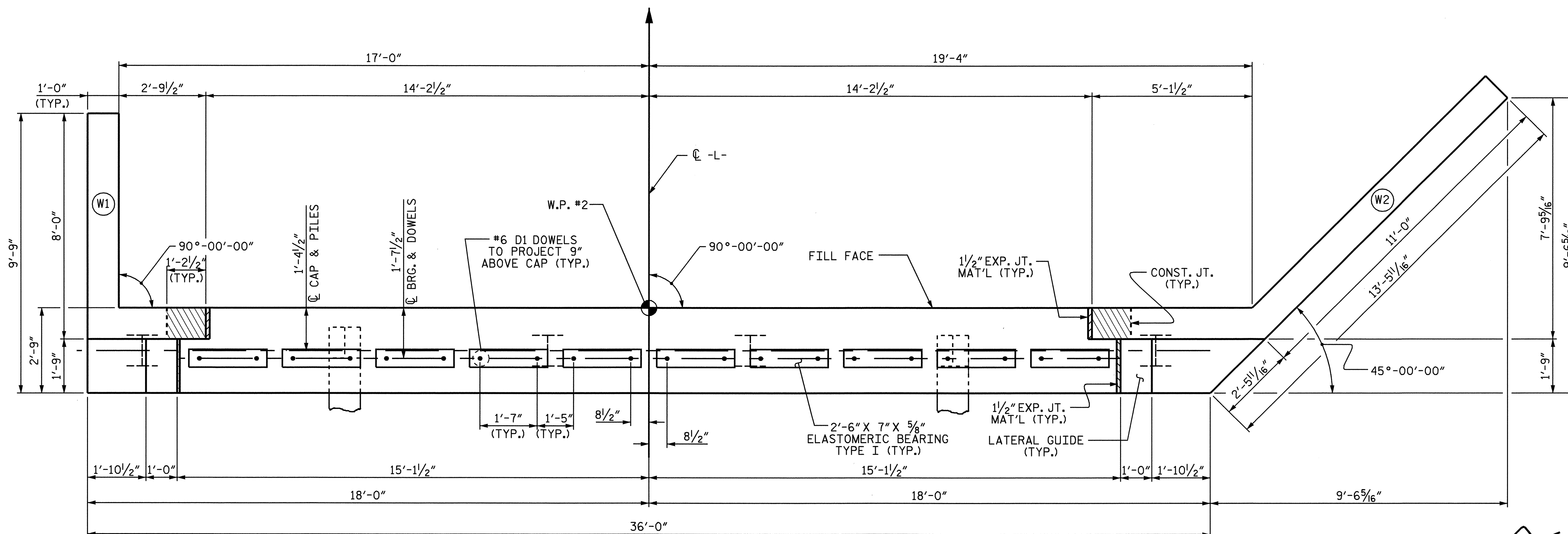
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

THE LATERAL GUIDE AT EACH END OF THE CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

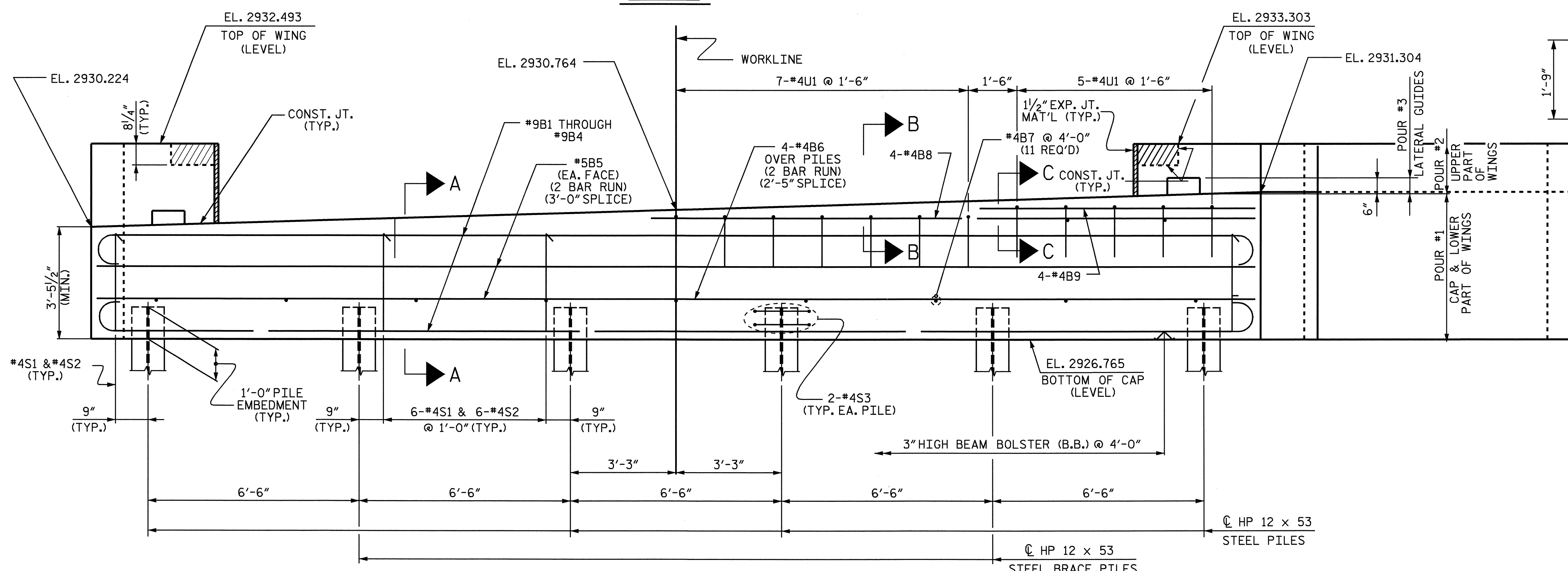
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL HAS BEEN CAST IF SLIP FORMING IS USED.



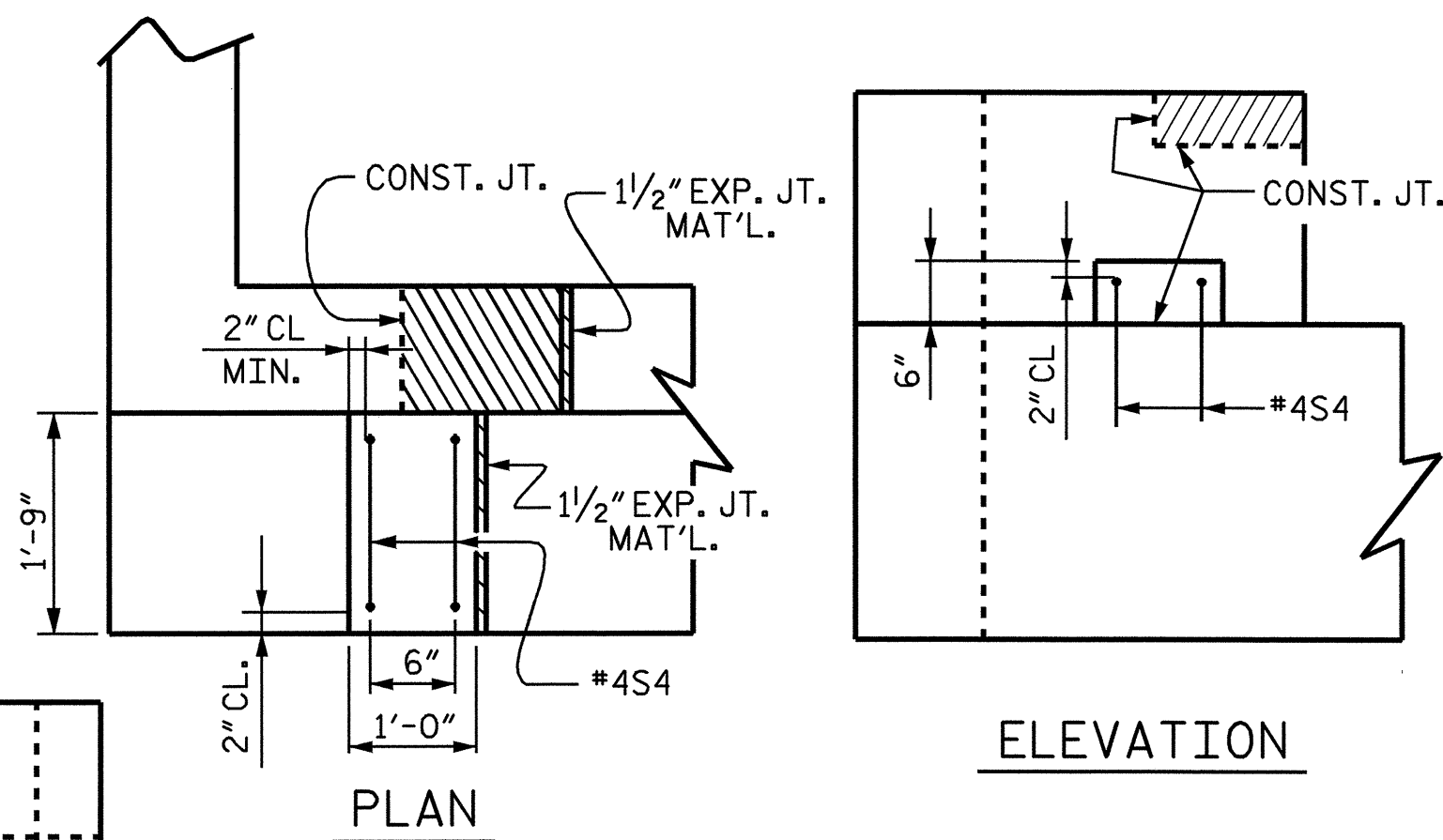
BEARING DETAIL



PLAN



ELEVATION



LATERAL GUIDE

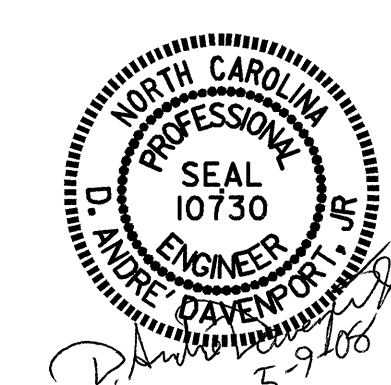
(EACH END SIMILAR)

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 19+80.00 -L-

SHEET 1 OF 3

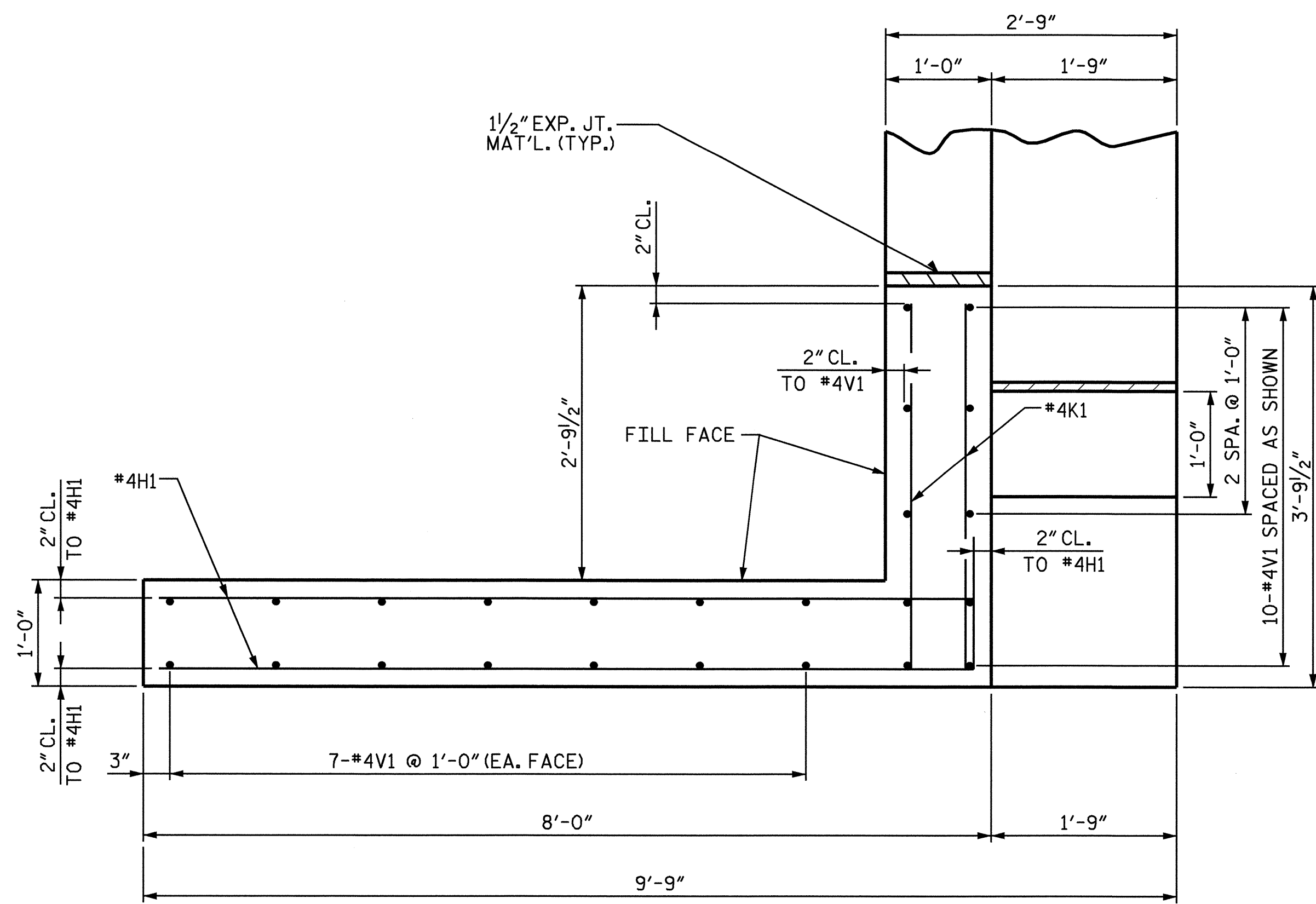
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #2**

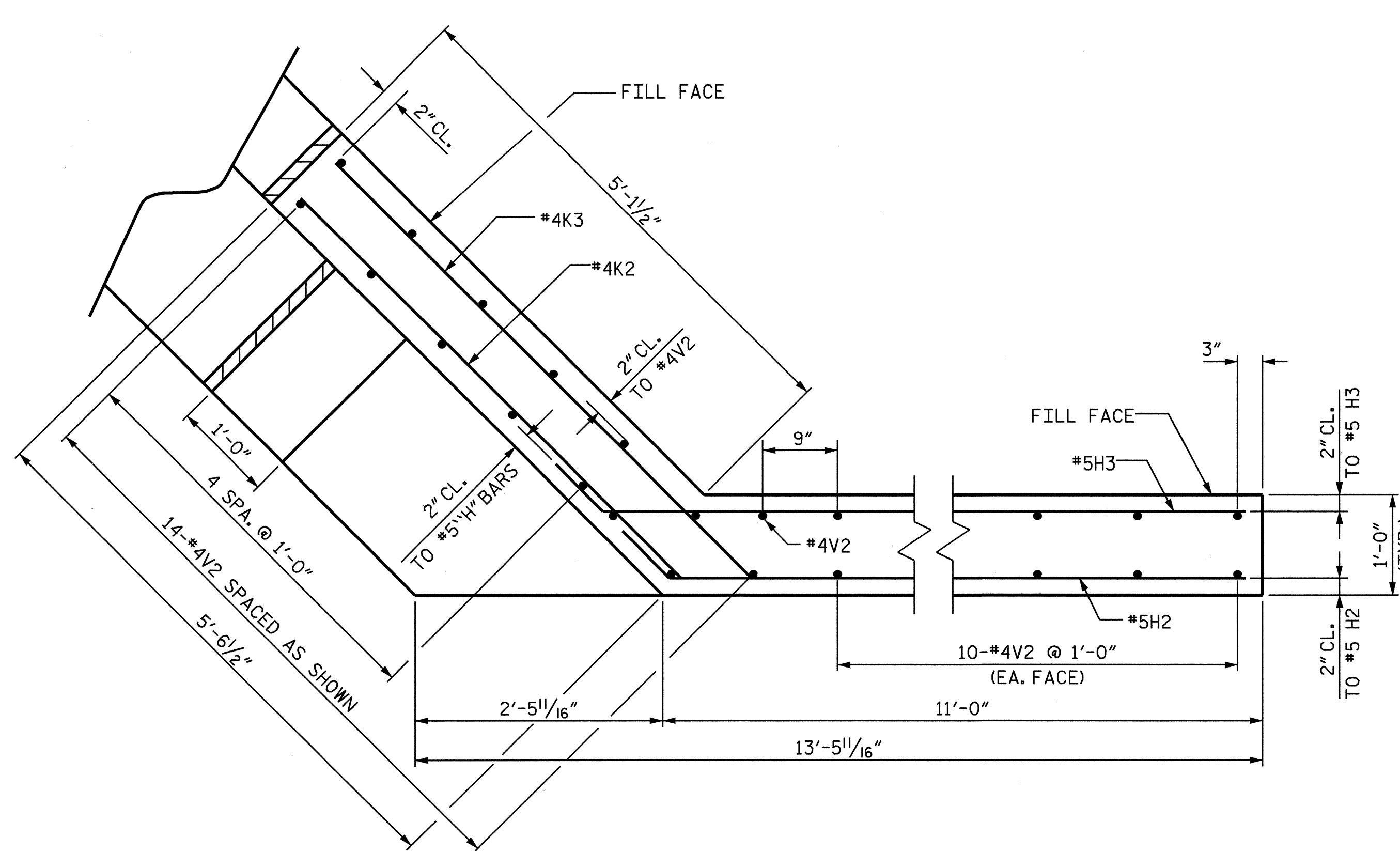


| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-29 |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

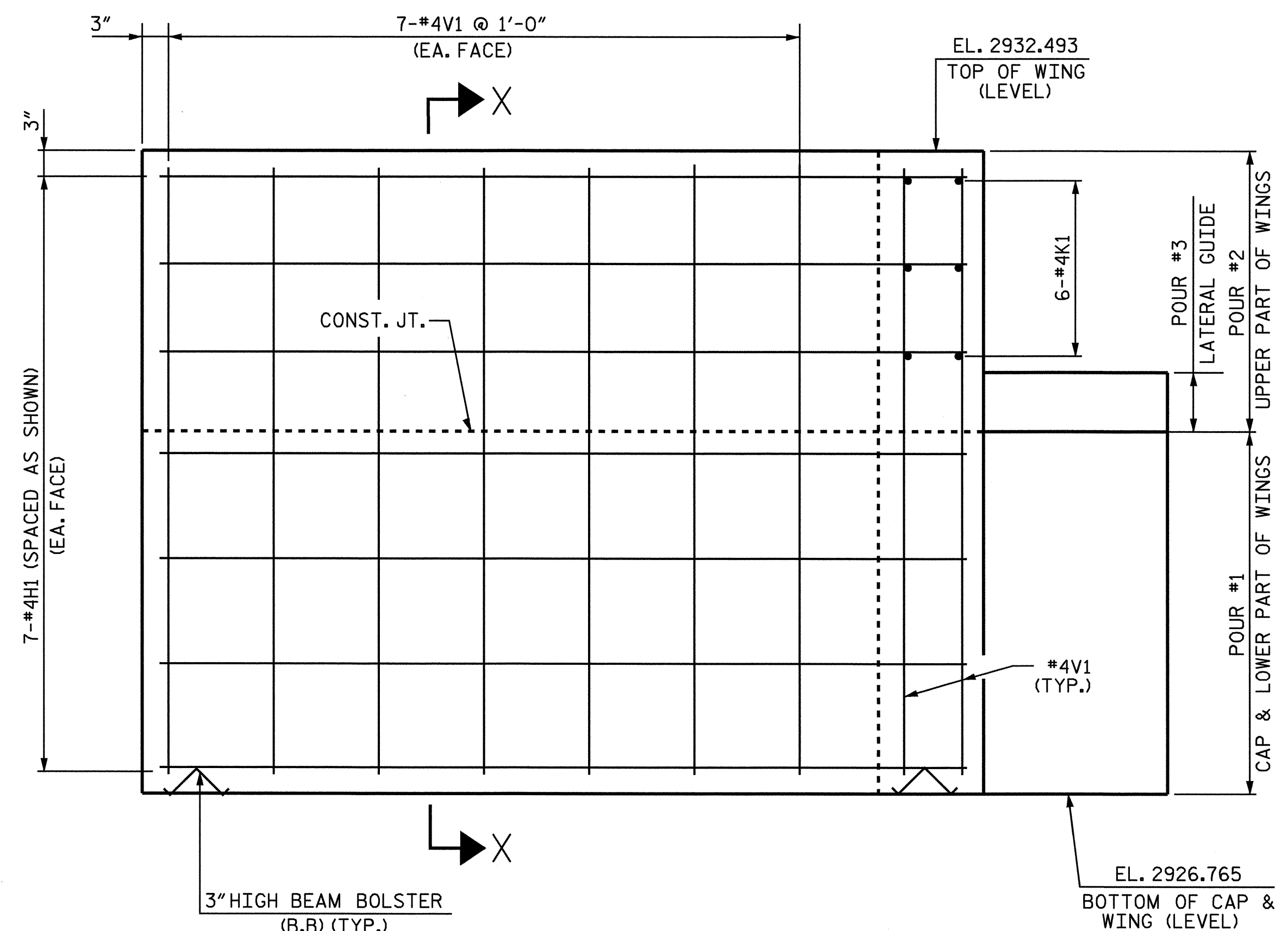
DRAWN BY: M. G. SHAIKH DATE: 10-02-07
 CHECKED BY: D. A. DAVENPORT DATE: 01-30-08



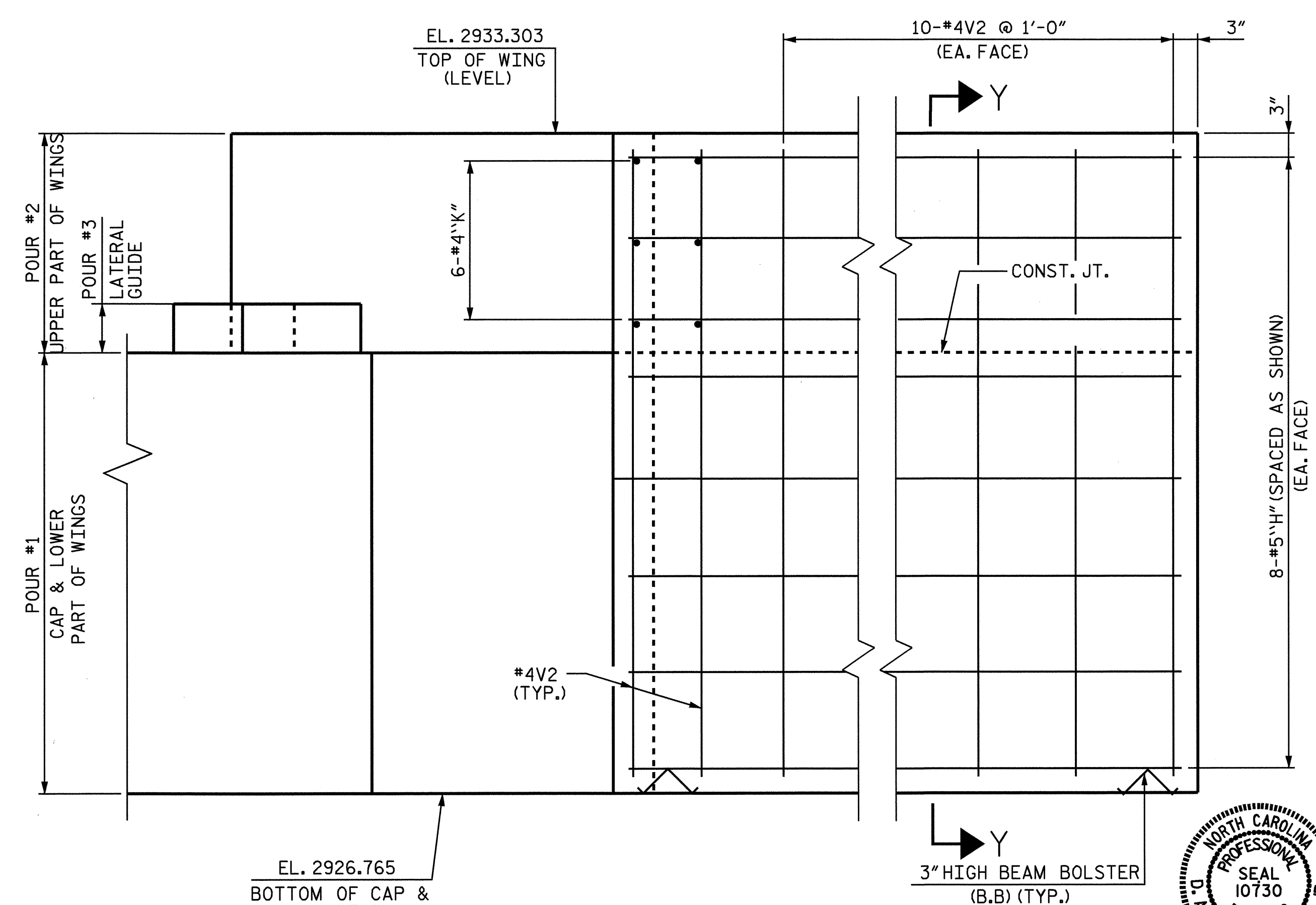
PLAN OF LEFT WING (W1)



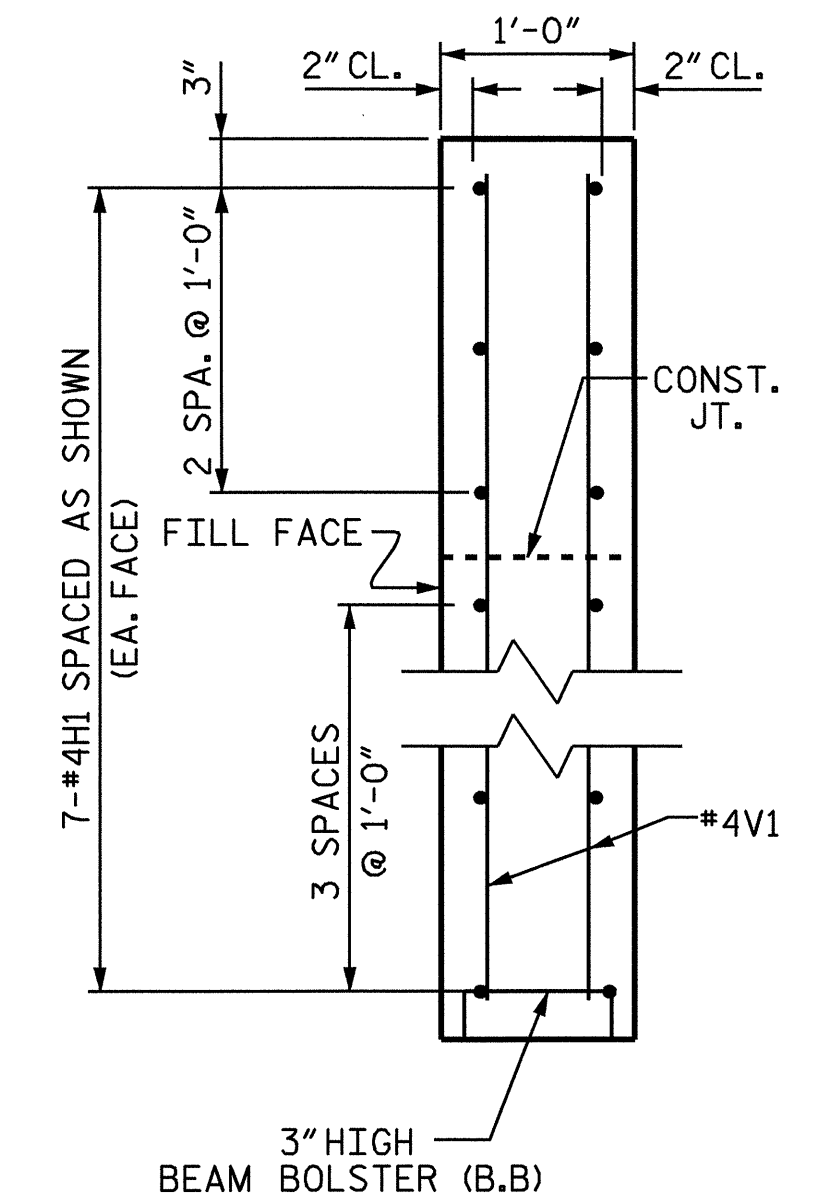
PLAN OF RIGHT WING (W2)



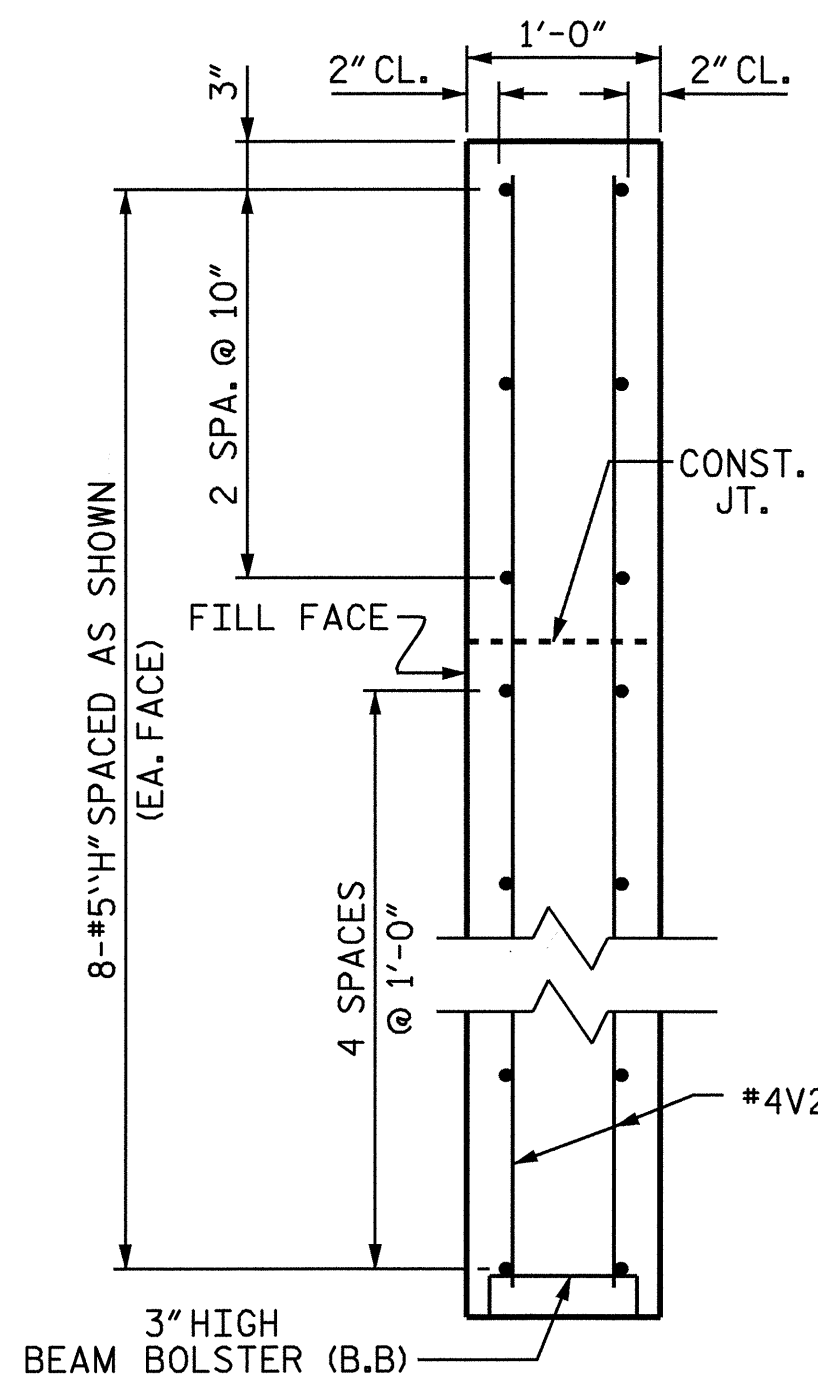
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 19+80.00 -L-

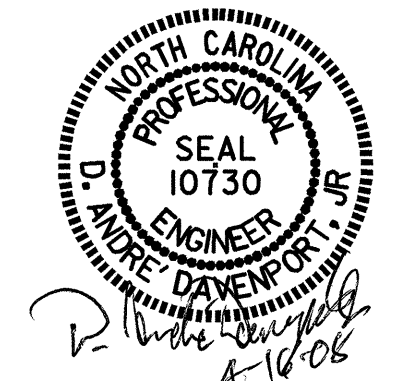
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2

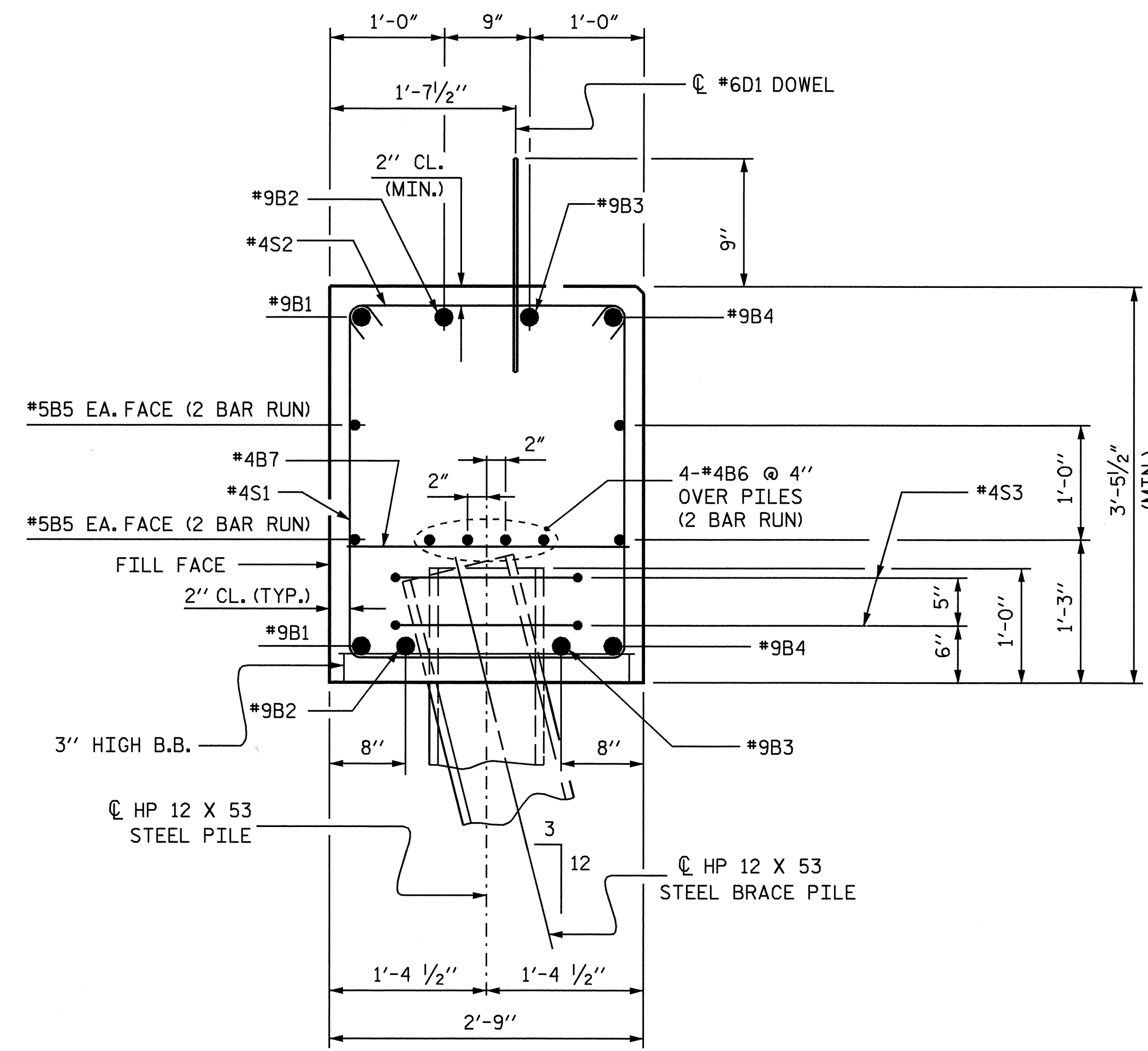
DRAWN BY : M. G. SHAIKH DATE : 10-03-07
 CHECKED BY : D. A. DAVENPORT DATE : 01-30-08

16-APR-2008 09:52
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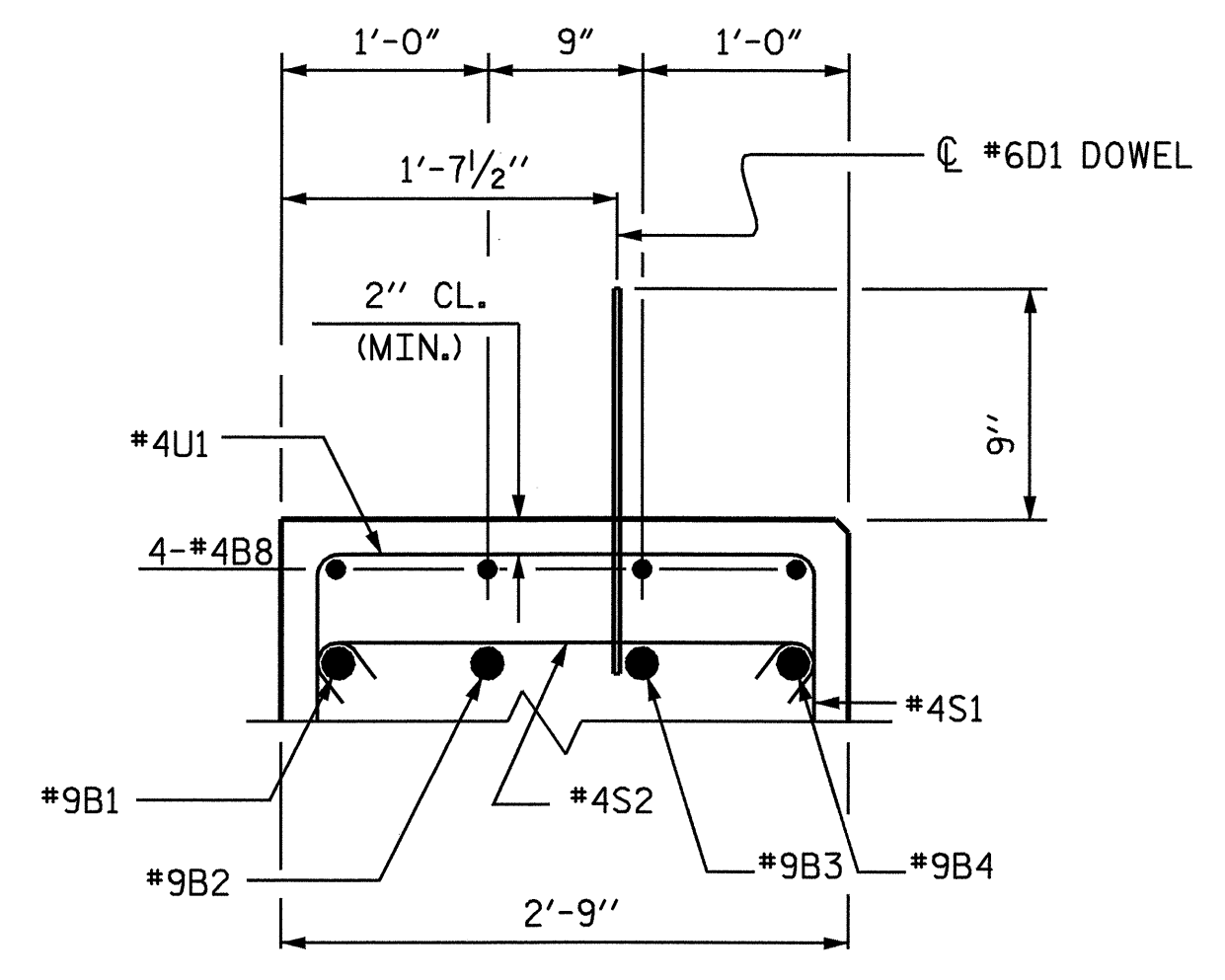


| REVISIONS | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----------|-------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

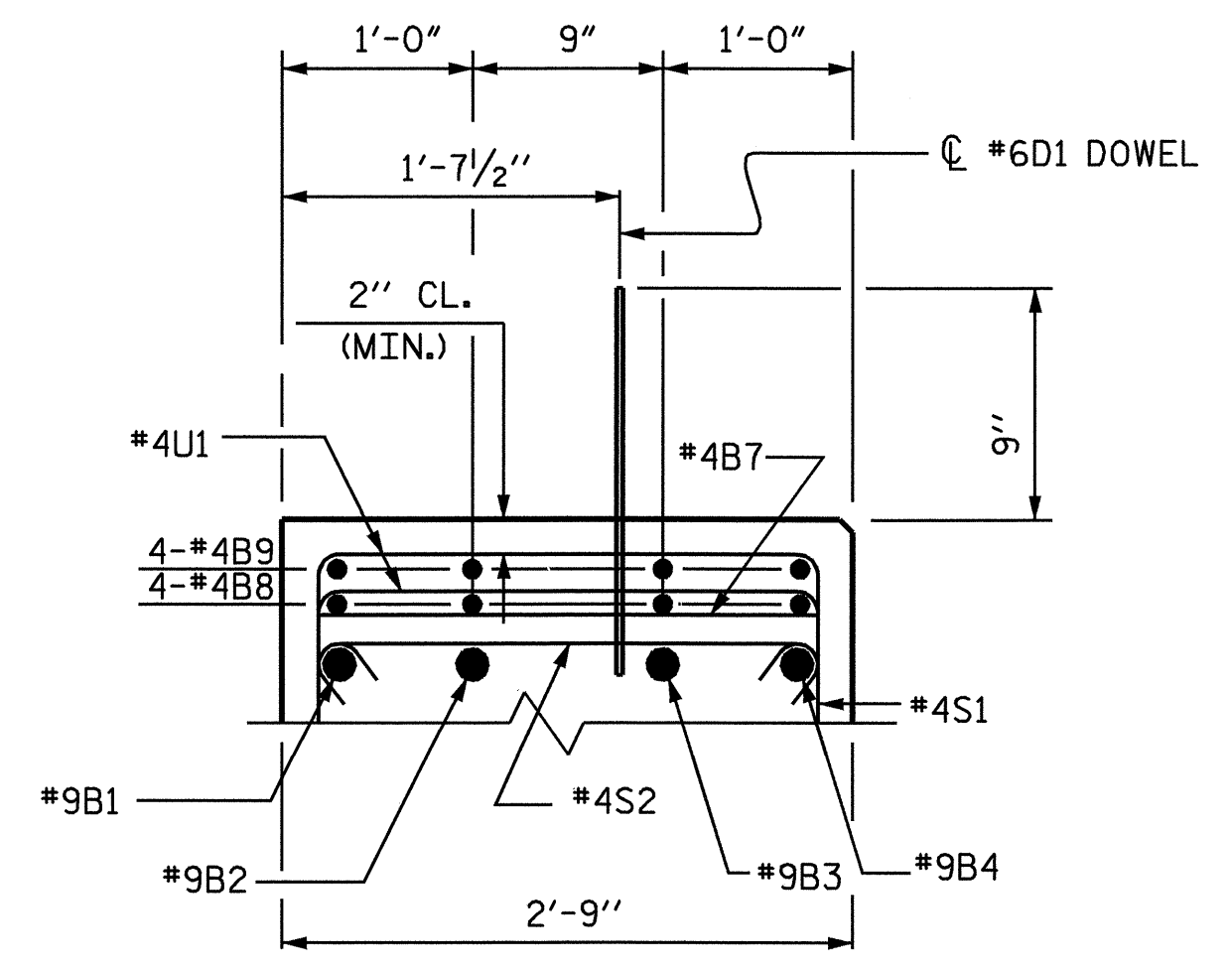
TOTAL SHEETS: 34



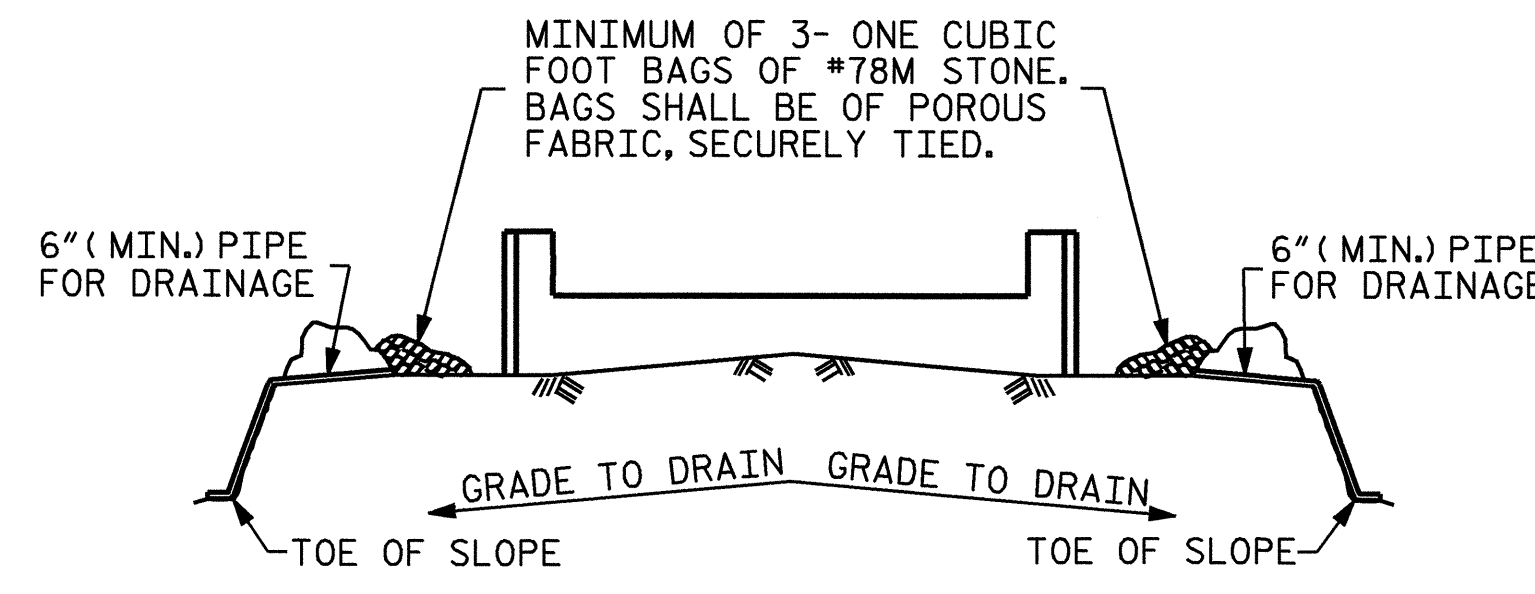
SECTION A-A



SECTION B-B



SECTION C-C



BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

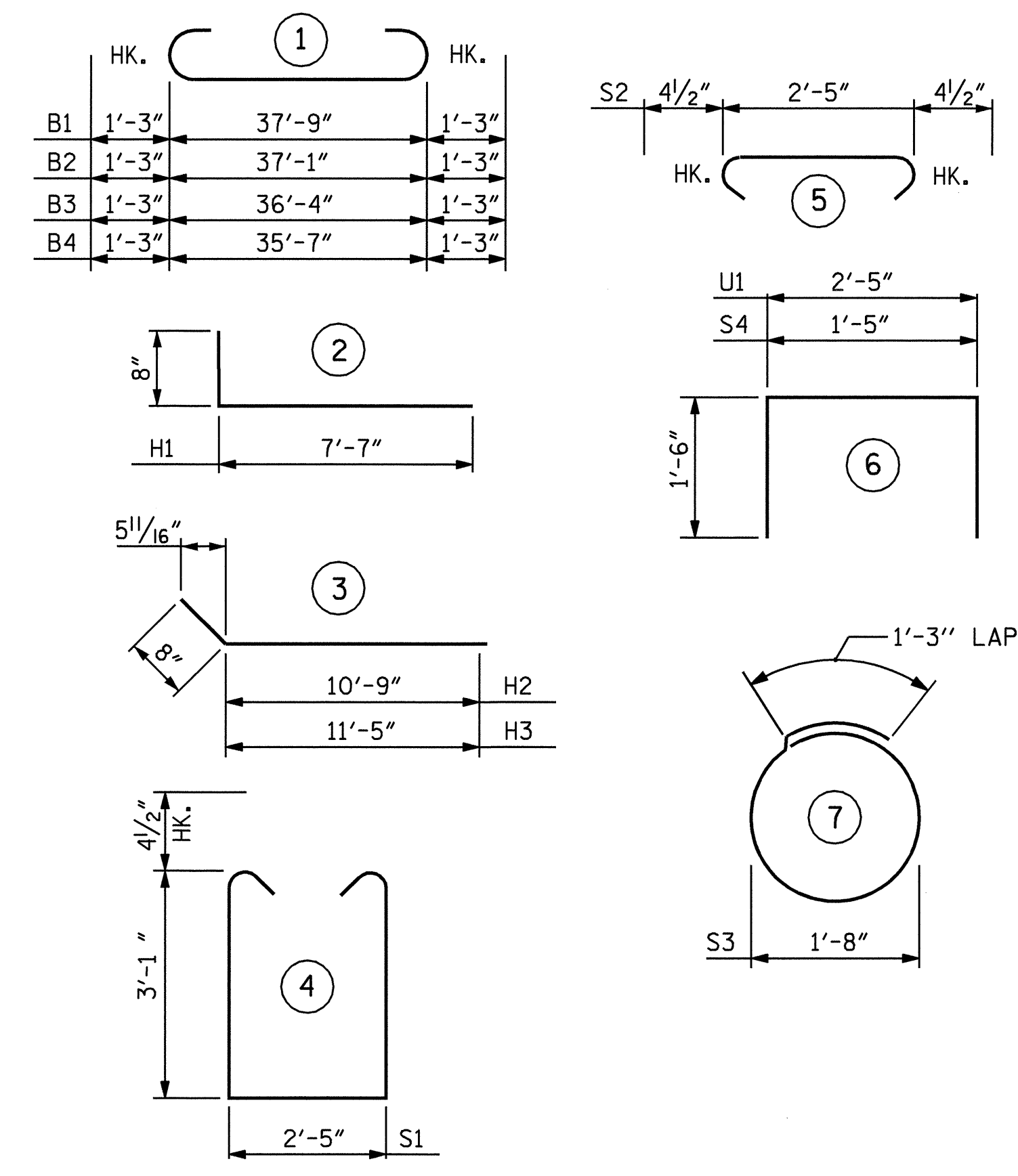
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

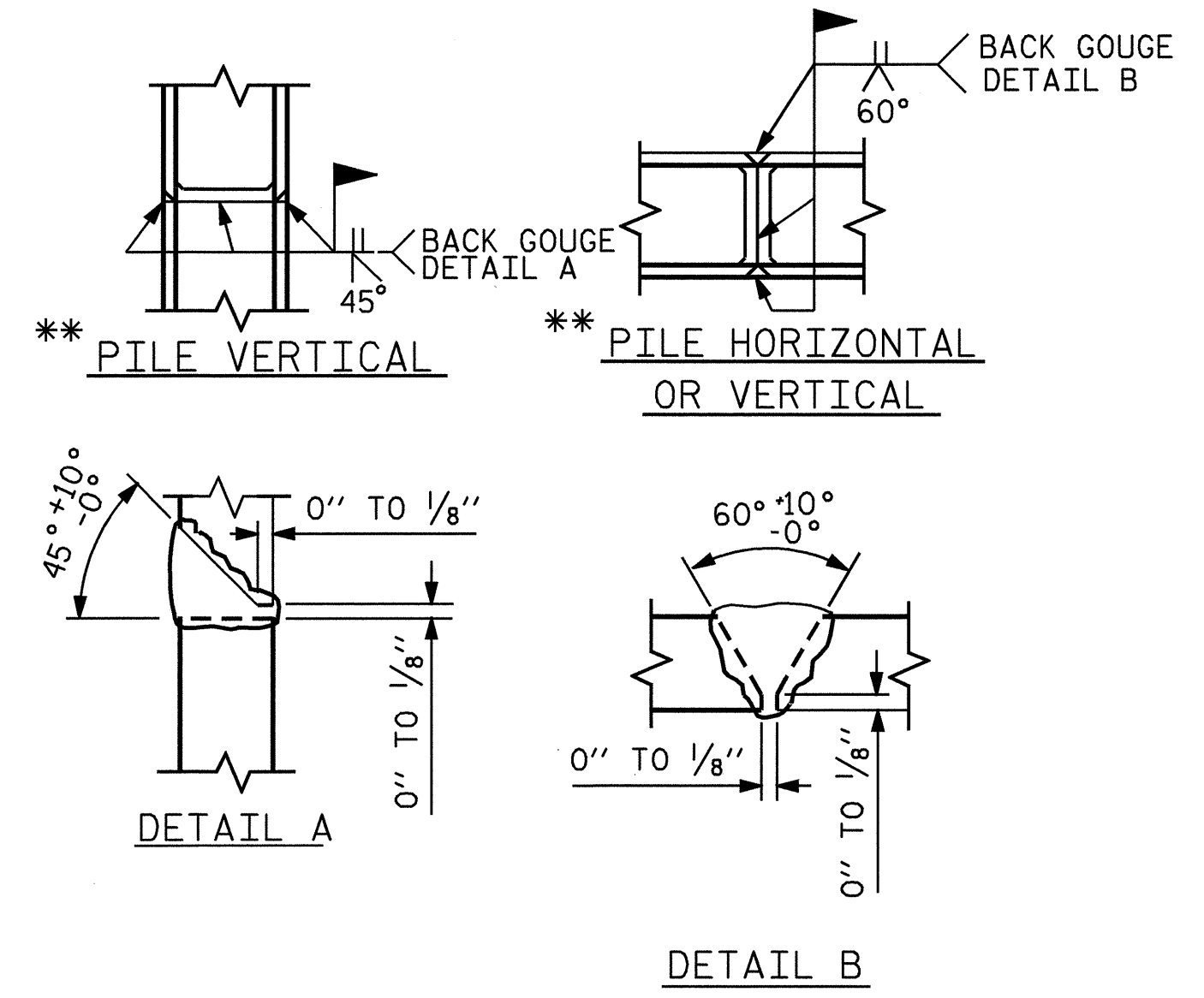
DRAWN BY : M. G. SHAIKH DATE : 10-04-07
 CHECKED BY : D. A. DAVENPORT DATE : 01-30-08

16-APR-2008 09:52
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| BAR TYPES | | | | BILL OF MATERIAL | |
|--|-----|------|------|------------------|--------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| B1 | 2 | #9 | 1 | 40'-3" | 274 |
| B2 | 2 | #9 | 1 | 39'-7" | 269 |
| B3 | 2 | #9 | 1 | 38'-10" | 264 |
| B4 | 2 | #9 | 1 | 38'-1" | 259 |
| B5 | 4 | #5 | STR | 20'-9" | 87 |
| B6 | 8 | #4 | STR | 19'-9" | 106 |
| B7 | 11 | #4 | STR | 2'-5" | 18 |
| B8 | 4 | #4 | STR | 18'-7" | 50 |
| B9 | 4 | #4 | STR | 8'-5" | 22 |
| D1 | 20 | #6 | STR | 1'-6" | 45 |
| H1 | 14 | #4 | 2 | 8'-3" | 77 |
| H2 | 8 | #5 | 3 | 11'-5" | 95 |
| H3 | 8 | #5 | 3 | 12'-1" | 101 |
| K1 | 6 | #4 | STR. | 3'-5" | 14 |
| K2 | 3 | #4 | STR. | 5'-4" | 11 |
| K3 | 3 | #4 | STR. | 5'-10" | 12 |
| S1 | 32 | #4 | 4 | 9'-4" | 200 |
| S2 | 32 | #4 | 5 | 3'-2" | 68 |
| S3 | 12 | #4 | 7 | 6'-6" | 52 |
| S4 | 4 | #4 | 6 | 4'-5" | 12 |
| U1 | 12 | #4 | 6 | 5'-5" | 43 |
| V1 | 24 | #4 | STR | 5'-4" | 86 |
| V2 | 35 | #4 | STR | 6'-2" | 144 |
| REINFORCING STEEL LBS | | | | = | 2309 |
| CLASS A CONCRETE BREAKDOWN | | | | | |
| POUR #1 CAP & LOWER PART OF WINGS (C.Y.) | | | | | 17.6 |
| POUR #2 UPPER PART OF WINGS (C.Y.) | | | | | 2.4 |
| POUR #3 LATERAL GUIDES (C.Y.) | | | | | 0.1 |
| TOTAL CLASS A CONCRETE (C.Y.) | | | | | 20.1 |
| HP 12 X 53 STEEL PILES NO. 6 (LIN FT.) | | | | | 90 |
| PILE EXCAVATION IN SOIL | | | | | 42 FT. |
| PILE EXCAVATION NOT IN SOIL | | | | | 30 FT. |

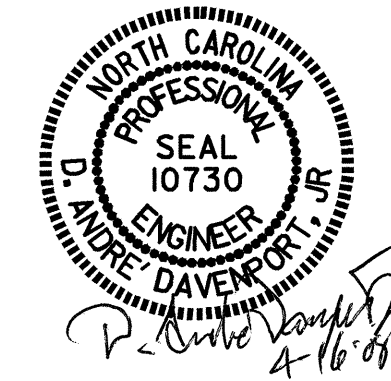


ALL BAR DIMENSIONS ARE OUT TO OUT.



PILE SPLICE DETAILS

** POSITION OF PILE DURING WELDING.



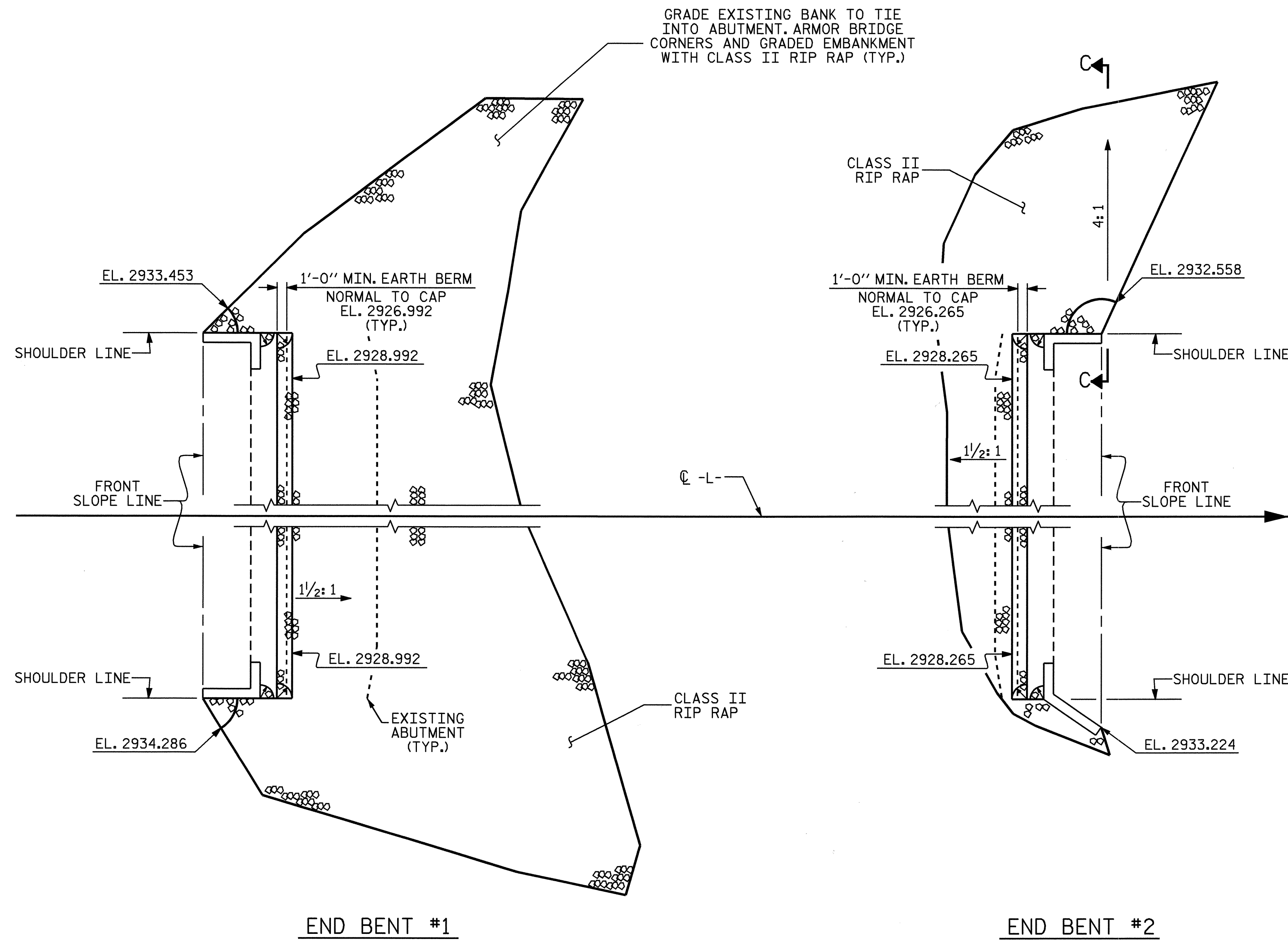
PROJECT NO. B-4202
 MITCHELL COUNTY
 STATION: 19+80.00 -L-

SHEET 3 OF 3

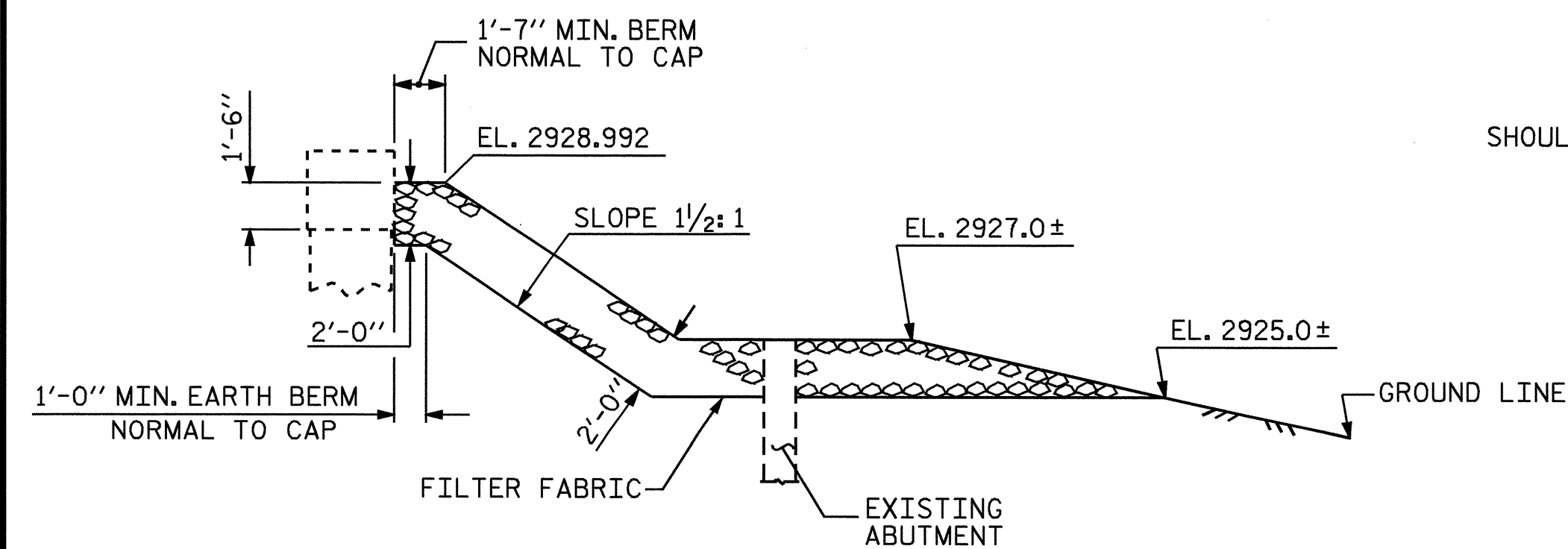
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT #2

| REVISIONS | | | | | | SHEET NO. S-31 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

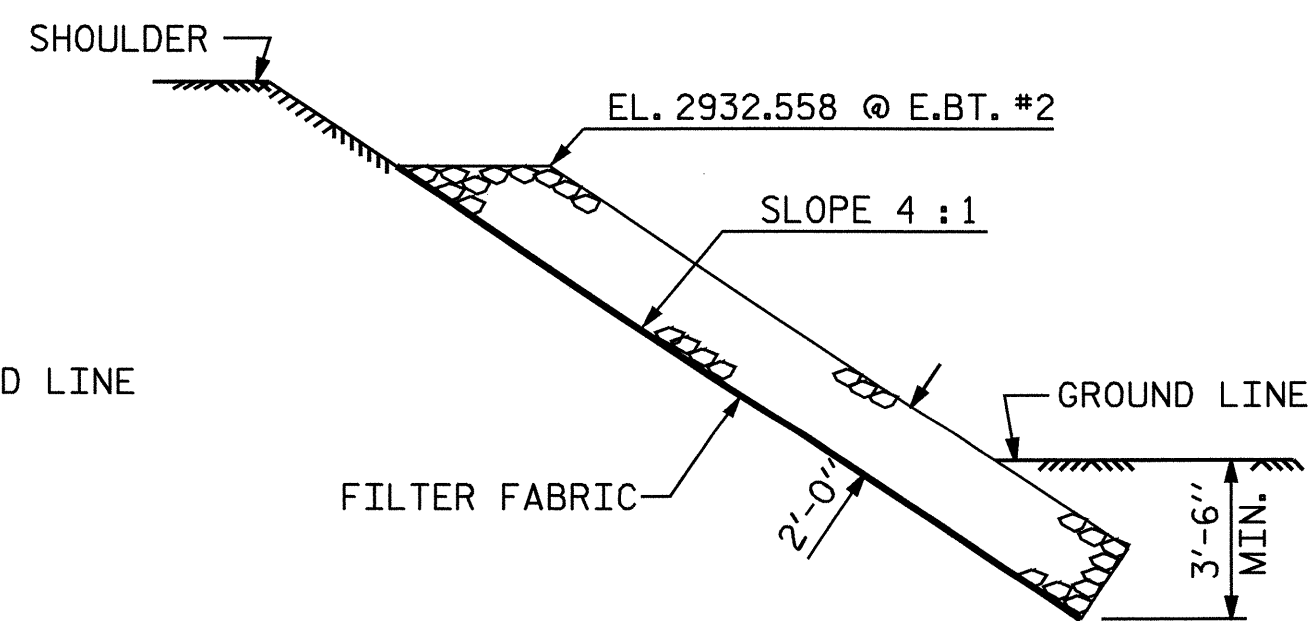
| ESTIMATED QUANTITIES | | |
|-------------------------------|---------------------|-------------------------------|
| BRIDGE @ STA. 19+80.00 -L- | RIP RAP CLASS II | FILTER FABRIC FOR DRAINAGE |
| | TONS | SQUARE YARDS |
| END BENT 1 | 160 | 180 |
| END BENT 2 | 90 | 100 |
| TOTAL | 250 | 280 |



PLAN

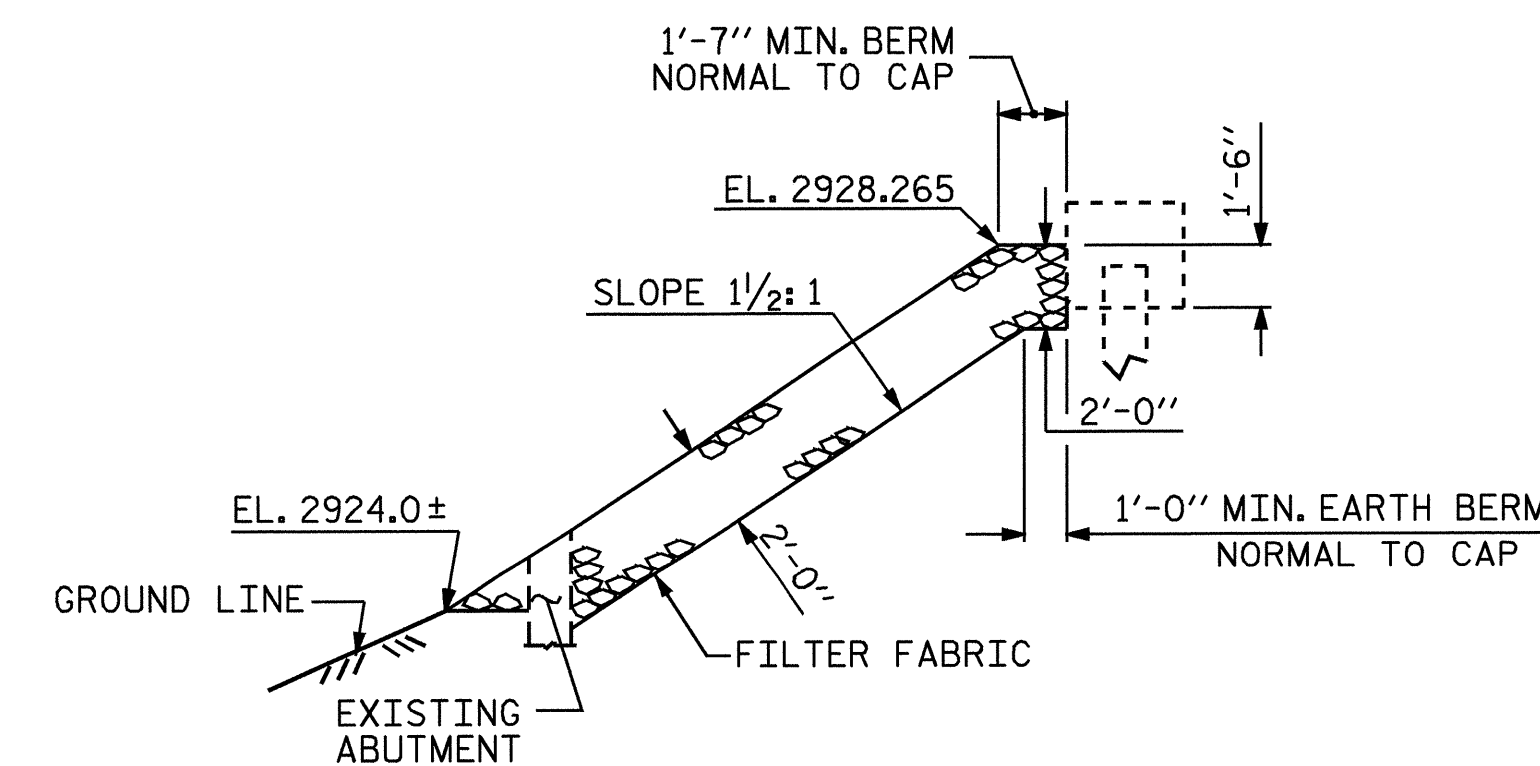


SECTION C-C @ END BENT #1



SECTION C-C

BERM RIP RAPPED

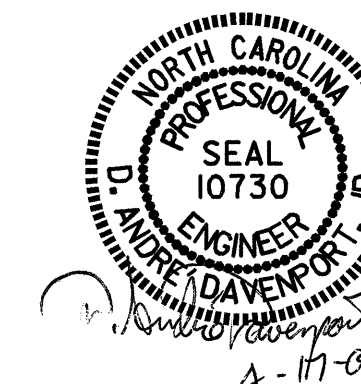


SECTION C-C @ END BENT #2

PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

— RIP RAP DETAILS —

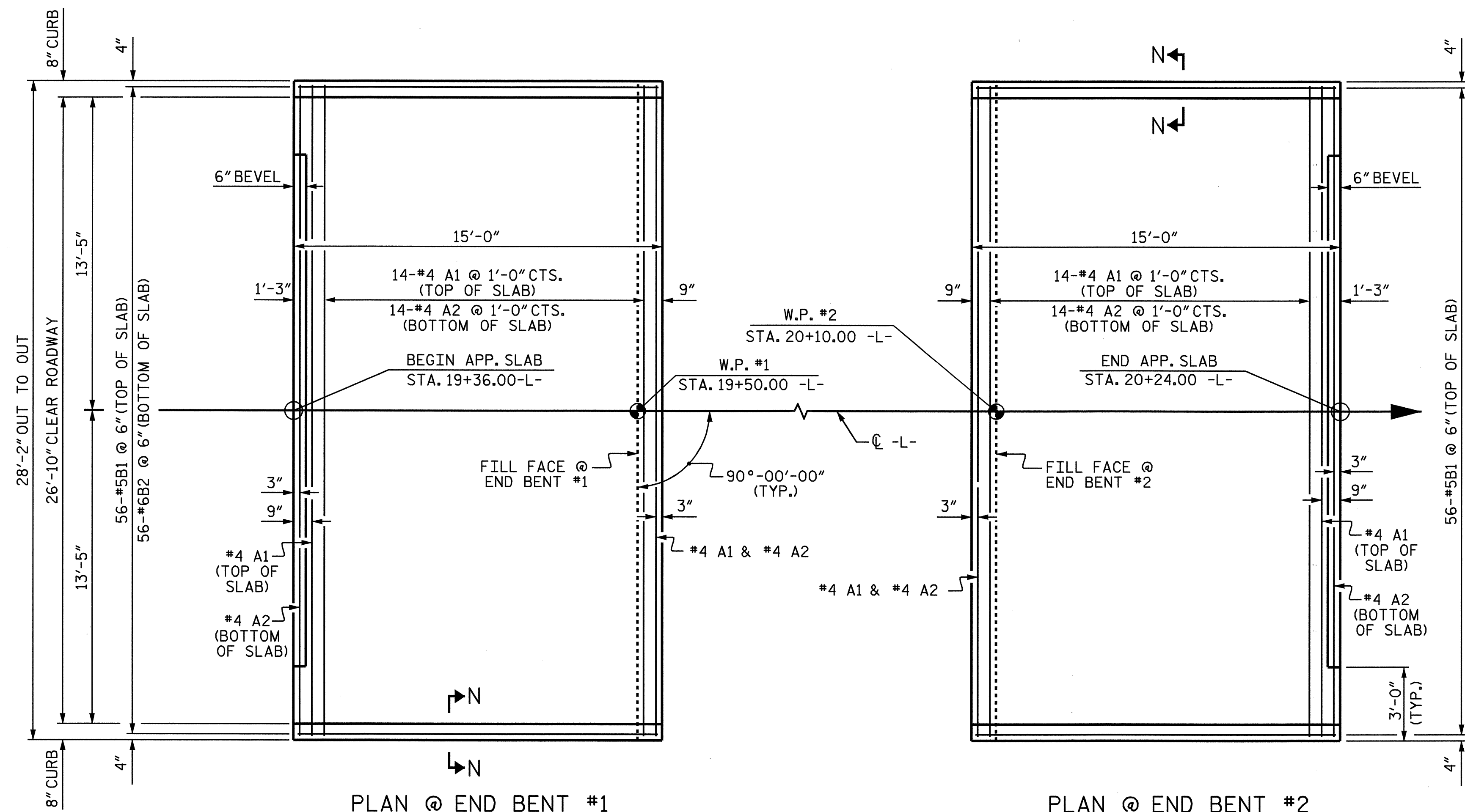


ASSEMBLED BY : A. SORSENGH DATE : 9/26/07
 CHECKED BY : H. T. BARBOUR DATE : 11/19/07
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

17-APR-2008 15:33
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| REVISIONS | | | | | | SHEET NO. S-32 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 34 |
| 2 | | | 4 | | | |

SKEW 90° STD. NO. RR2 STR. #2



PLAN @ END BENT #1
 PLAN @ END BENT #2
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

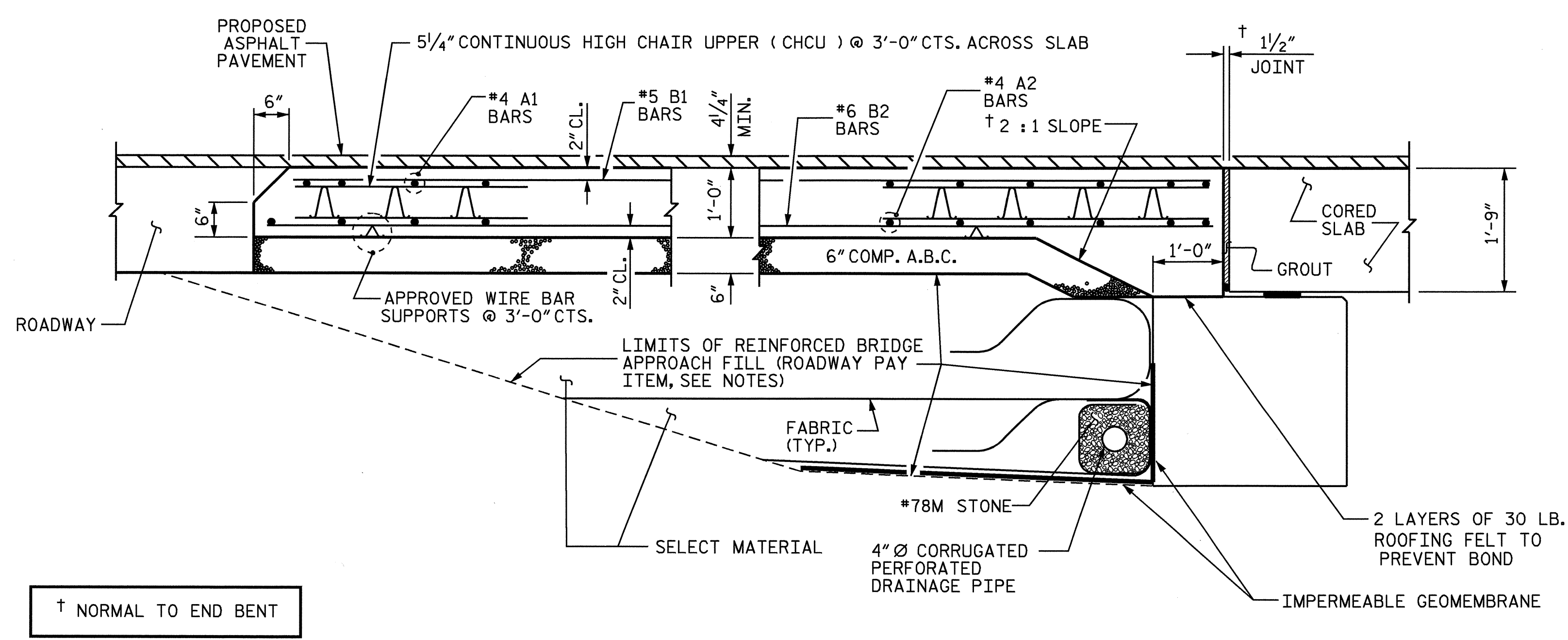
THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

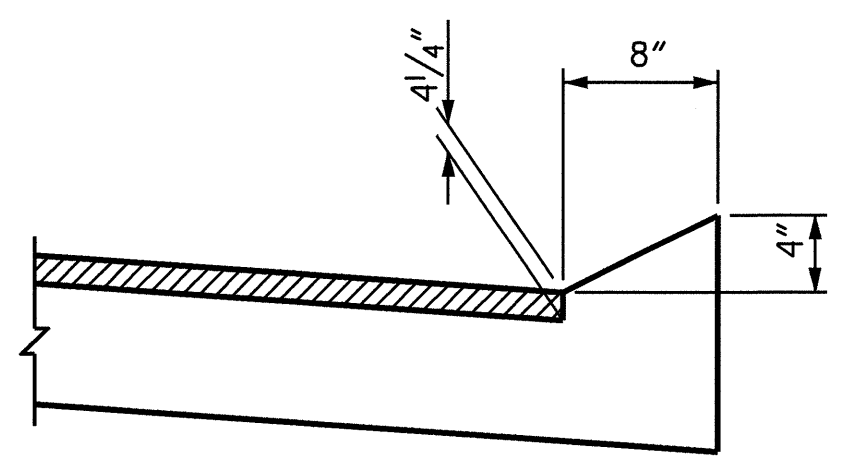
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

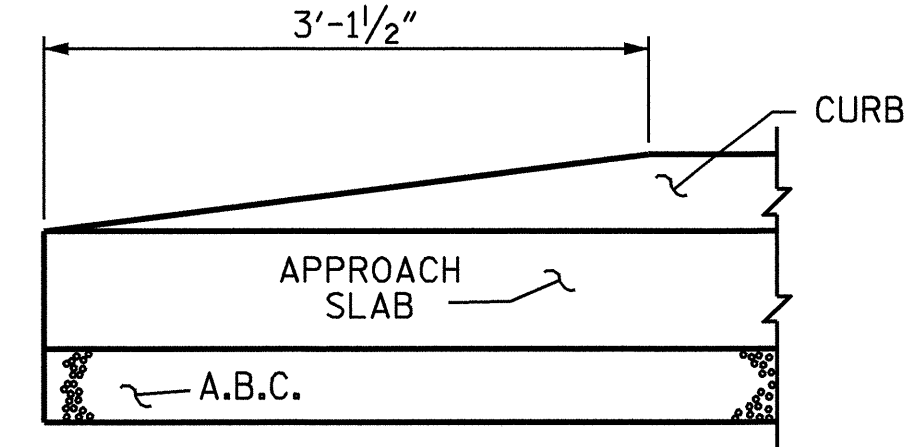
| BILL OF MATERIAL | | | | | |
|---------------------------------|-----|------|------|---------|--------|
| APPROACH SLAB AT EB #1 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| *A1 | 16 | #4 | STR | 27'-10" | 297 |
| A2 | 16 | #4 | STR | 27'-10" | 297 |
| *B1 | 56 | #5 | STR | 14'-2" | 827 |
| B2 | 56 | #6 | STR | 14'-8" | 1234 |
| REINFORCING STEEL | | | | LBS. | 1531 |
| *EPOXY COATED REINFORCING STEEL | | | | LBS. | 1124 |
| CLASS AA CONCRETE | | | | C. Y. | 17.1 |
| APPROACH SLAB AT EB #2 | | | | | |
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| *A1 | 16 | #4 | STR | 27'-10" | 297 |
| A2 | 16 | #4 | STR | 27'-10" | 297 |
| *B1 | 56 | #5 | STR | 14'-2" | 827 |
| B2 | 56 | #6 | STR | 14'-8" | 1234 |
| REINFORCING STEEL | | | | LBS. | 1531 |
| *EPOXY COATED REINFORCING STEEL | | | | LBS. | 1124 |
| CLASS AA CONCRETE | | | | C. Y. | 17.1 |



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

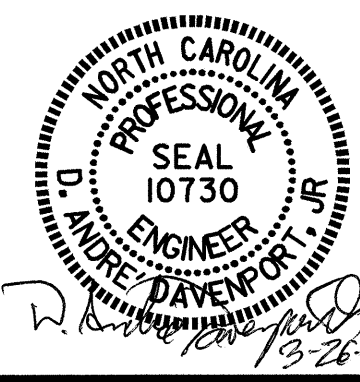
| | | | |
|----------------|-----------------|--------------|---------|
| ASSEMBLED BY : | H. T. BARBOUR | DATE : | 6-05-06 |
| CHECKED BY : | C. R. YARBROUGH | DATE : | 7-08-06 |
| DRAWN BY : | FCJ 6/87 | REV. 7/10/01 | LES/RDR |
| CHECKED BY : | EGA 6/87 | REV. 5/7/03R | RWW/JTE |
| | | REV. 5/1/06 | TLA/GM |

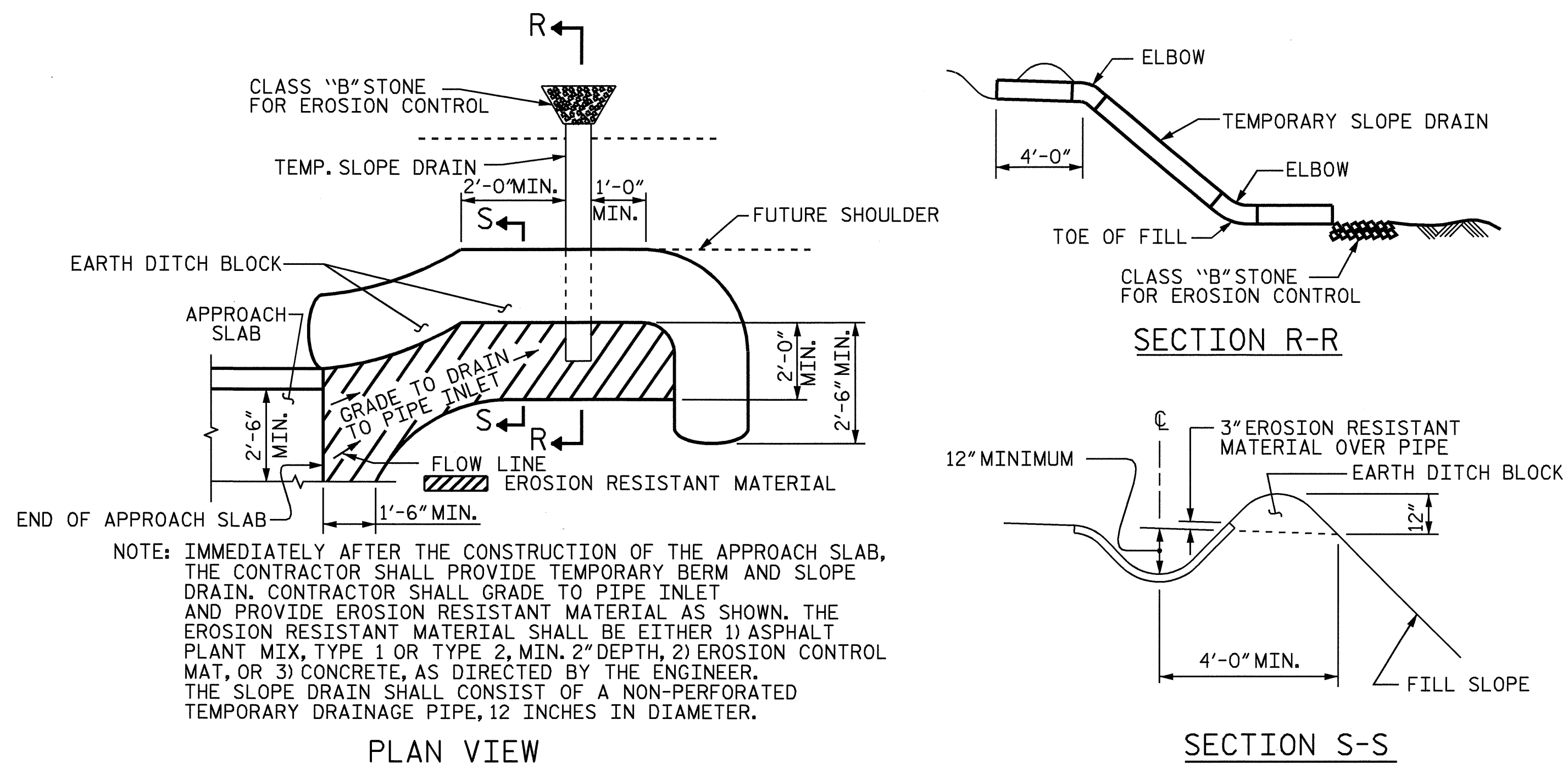
PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB

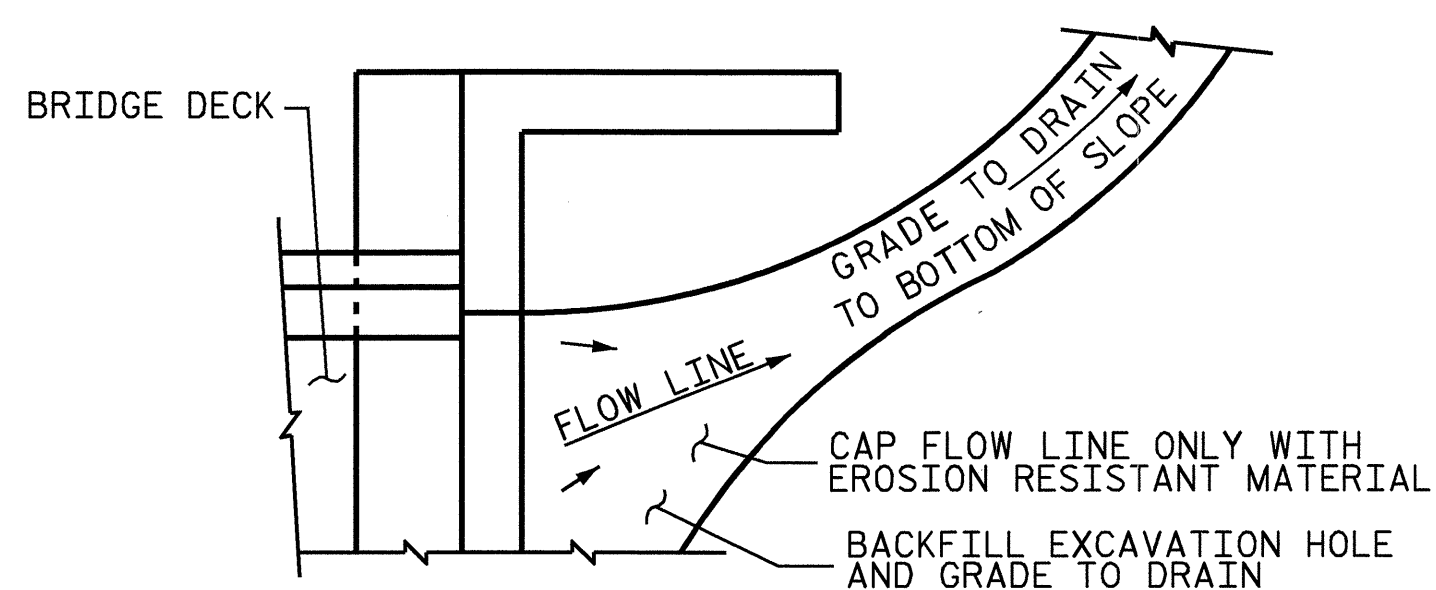
| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|-----------------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-33 | |
| 1 | | | 3 | | | TOTAL SHEETS 34 | |
| 2 | | | 4 | | | | |





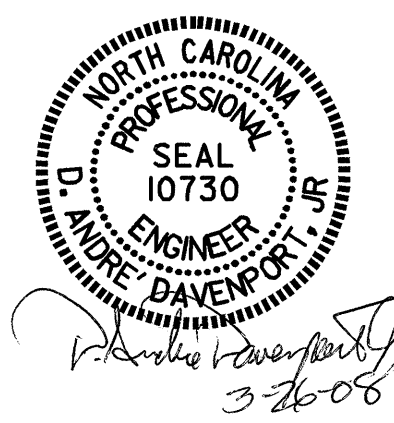
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2\"/>

TEMPORARY BERM AND SLOPE DRAIN DETAILS
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



PROJECT NO. B-4202
MITCHELL COUNTY
 STATION: 19+80.00-L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BRIDGE APPROACH
 SLAB DETAILS**

| | | | |
|----------------|-----------------|----------------|---------|
| ASSEMBLED BY : | H. T. BARBOUR | DATE : | 6-05-06 |
| CHECKED BY : | C. R. YARBROUGH | DATE : | 7-08-06 |
| DRAWN BY : | FCJ 11/88 | REV. 7/17/98 | RWW/LES |
| CHECKED BY : | ARB 11/88 | REV. 8/16/99 | MAB/LES |
| | | REV. 10/17/00R | RWW/LES |

| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|--------------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-34 | |
| 1 | | | 3 | | | TOTAL SHEETS | |
| 2 | | | 4 | | | 34 | |

STANDARD NOTES

DESIGN DATA:

| | | |
|---|-------|----------------------------------|
| SPECIFICATIONS | ----- | A.A.S.H.T.O. (CURRENT) |
| LIVE LOAD | ----- | SEE PLANS |
| IMPACT ALLOWANCE | ----- | SEE A.A.S.H.T.O. |
| STRESS IN EXTREME FIBER OF | | |
| STRUCTURAL STEEL - AASHTO M270 GRADE 36 | - | 20,000 LBS. PER SQ. IN. |
| - AASHTO M270 GRADE 50W | - | 27,000 LBS. PER SQ. IN. |
| - AASHTO M270 GRADE 50 | - | 27,000 LBS. PER SQ. IN. |
| REINFORCING STEEL IN TENSION | | |
| GRADE 60 | -- | 24,000 LBS. PER SQ. IN. |
| CONCRETE IN COMPRESSION | ----- | 1,200 LBS. PER SQ. IN. |
| CONCRETE IN SHEAR | ----- | SEE A.A.S.H.T.O. |
| STRUCTURAL TIMBER - TREATED OR | | |
| UNTREATED - EXTREME FIBER STRESS | ----- | 1,800 LBS. PER SQ. IN. |
| COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER | ----- | 375 LBS. PER SQ. IN. |
| EQUIVALENT FLUID PRESSURE OF EARTH | ----- | 30 LBS. PER CU. FT. (MINIMUM) |

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN