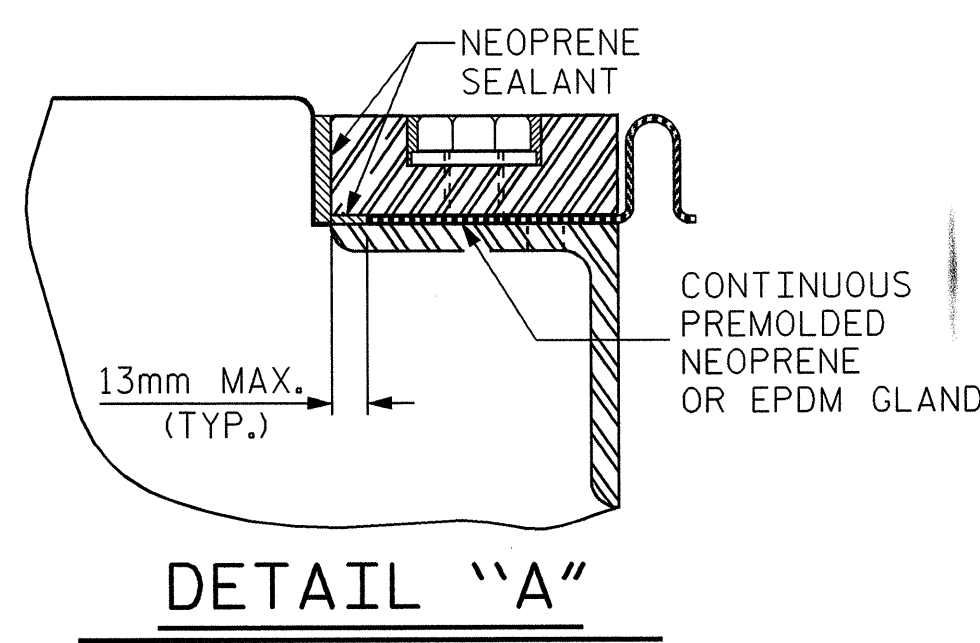
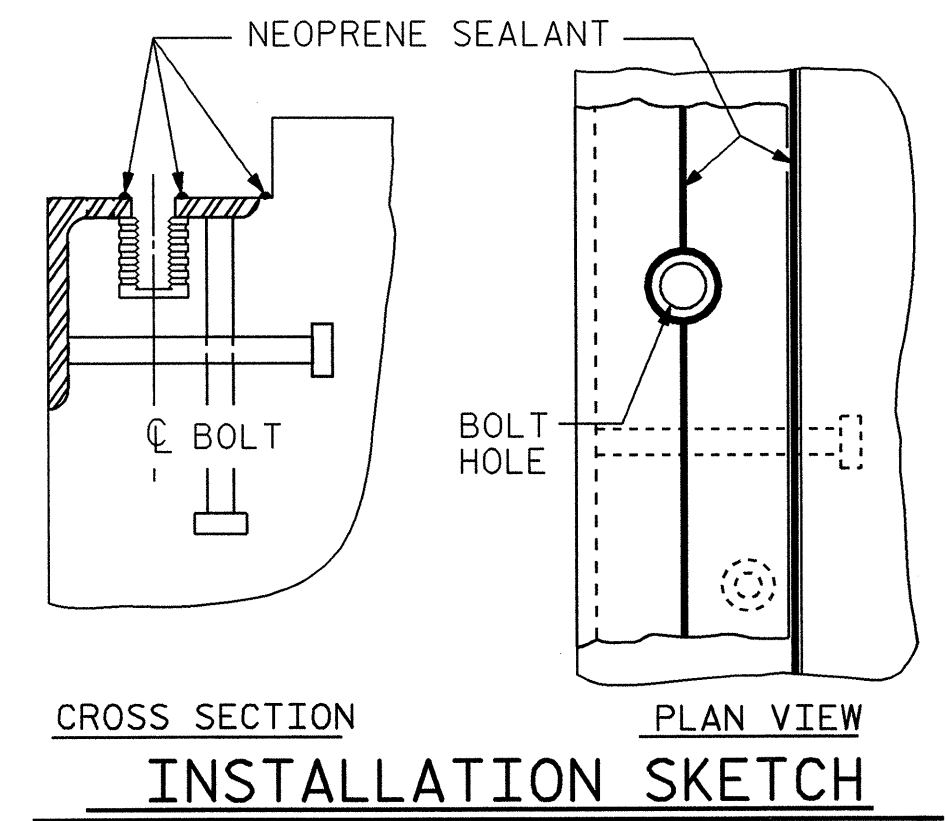


EXPANSION JOINT DETAILS

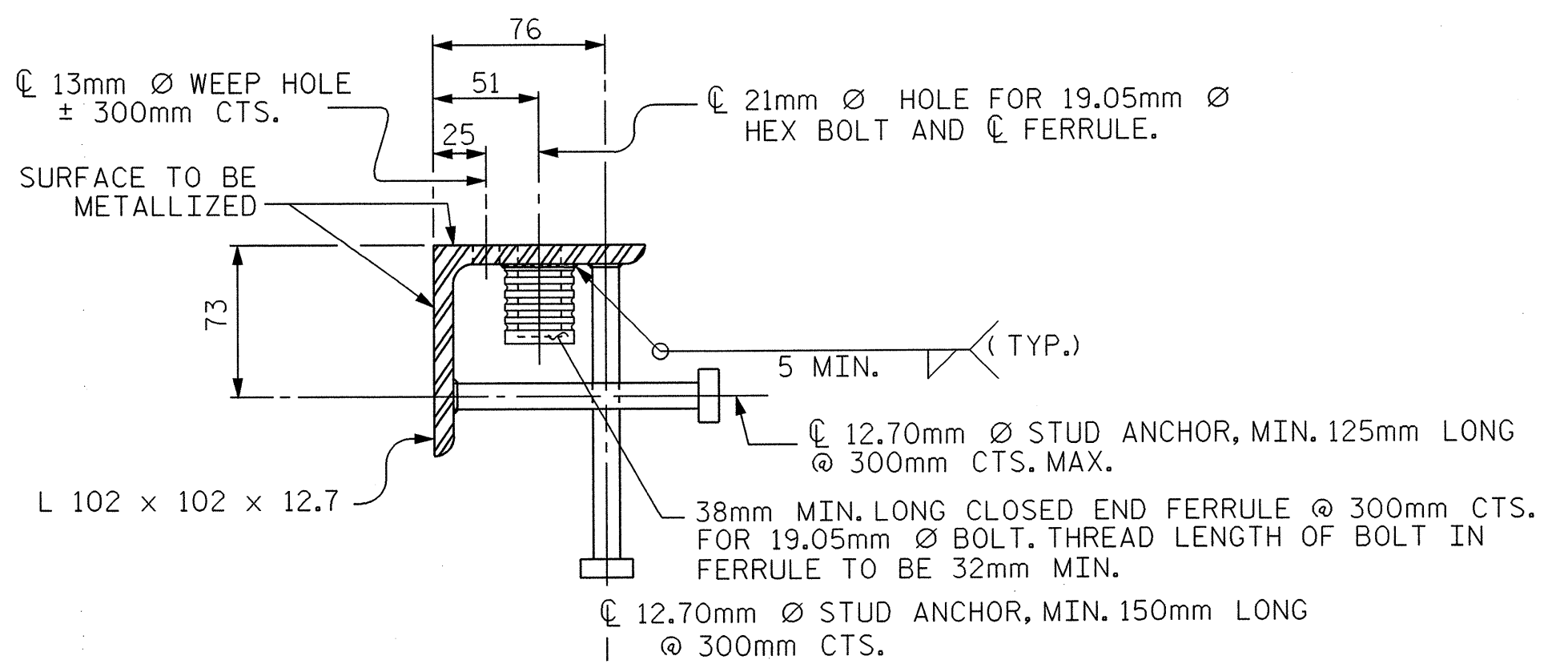
SECTION NORMAL TO JOINT -- STEEL SUPERSTRUCTURE
 * THE QUANTITY OF #13 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 300mm CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHOR BOLTS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



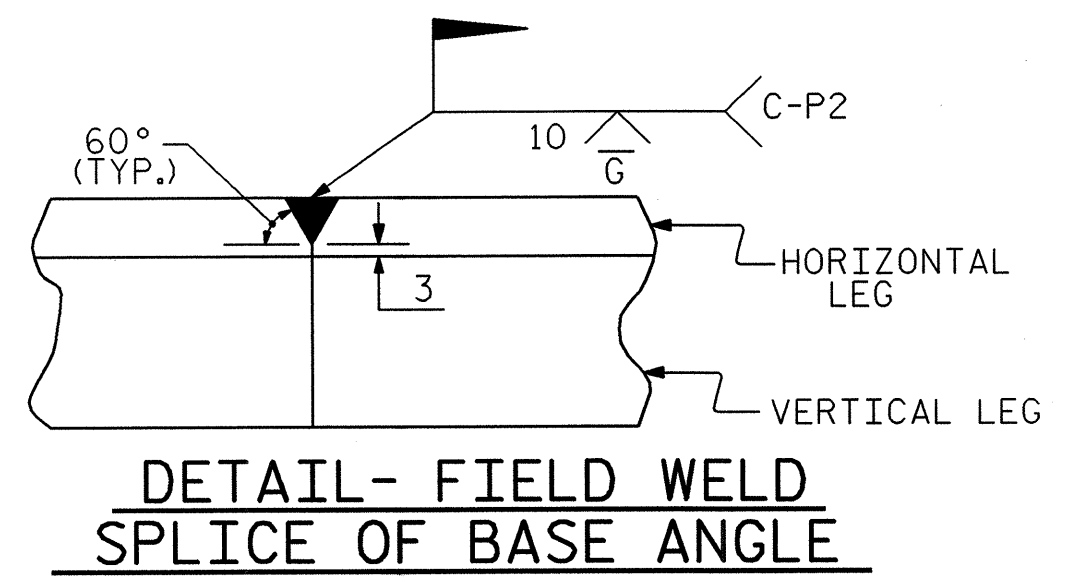
DETAIL "A"



INSTALLATION SKETCH



TYPICAL SECTION OF BASE ANGLE ASSEMBLY



DETAIL- FIELD WELD SPLICE OF BASE ANGLE

GENERAL NOTES

- FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
- ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 250 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 TYPE 304 STAINLESS STEEL. WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 13.3 KN MIN.
- A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
- CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC WELDED WITH COMPLETE FUSION.
- SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
- UPON COMPLETION OF SHOP FABRICATION, THE HOLD DOWN PLATE AND BASE ANGLE ASSEMBLY AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED TO A MINIMUM THICKNESS OF 0.150mm, SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
- BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE GROUND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 0.100mm (DRY) OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 6.1m LENGTHS UNLESS APPROVED BY THE ENGINEER.
- NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
- THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. SEE SPECIAL PROVISION FOR ADHESIVELY ANCHORED ANCHOR BOLT OR DOWELS. THE YIELD LOAD OF THE 19.05mm DIA. BOLT IS 44.5 KN. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

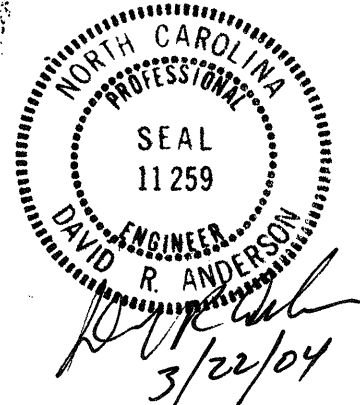
INSTALLATION PROCEDURE

- A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 105mm TO 108mm WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE 19.05mm DIA. HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 25mm DIA. HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 102mm X 102mm X 12.7mm BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
- AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE. THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM THICKNESS OF 0.100mm (DRY) OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED 22mm IN DIAMETER WITH A HAND PUNCH.
- IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
- AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 119.3 N-m WITH A TORQUE WRENCH. THE TORQUE WRENCH SHALL BE CALIBRATED IN ACCORDANCE WITH SECTION 440-10 (D) OF THE STANDARD SPECIFICATIONS. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 119.3 N-m. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 108.5 N-m AFTER SEVEN (7) DAYS.
- AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES AND THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE. COMPLETELY FILL THESE RECESSES WITH NEOPRENE SEALANT.

| MOVEMENT AND SETTING AT JOINT | | | | | |
|-------------------------------|--------------|-------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| END BENT NO. | SKEW ANGLE | TOTAL MOVEMENT (ALONG C RDWY) | PERPENDICULAR JOINT OPENING AT 0° C | PERPENDICULAR JOINT OPENING AT 16° C | PERPENDICULAR JOINT OPENING AT 32° C |
| 1 | 126°-31'-45" | 65 | 65 | 52 | 38 |
| 2 | 126°-31'-45" | 65 | 65 | 52 | 38 |

PROJECT NO. R-513C
ROBESON COUNTY
 STATION: 277+68.339 -L-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

EXPANSION JOINT SEAL DETAILS
 (RIGHT LANE)

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

SHEET NO. 5-185
 TOTAL SHEETS 312

DRAWN BY : T.A. WALTER DATE : 9/5/00
 CHECKED BY : N.O. TRAN DATE : 11/01/02