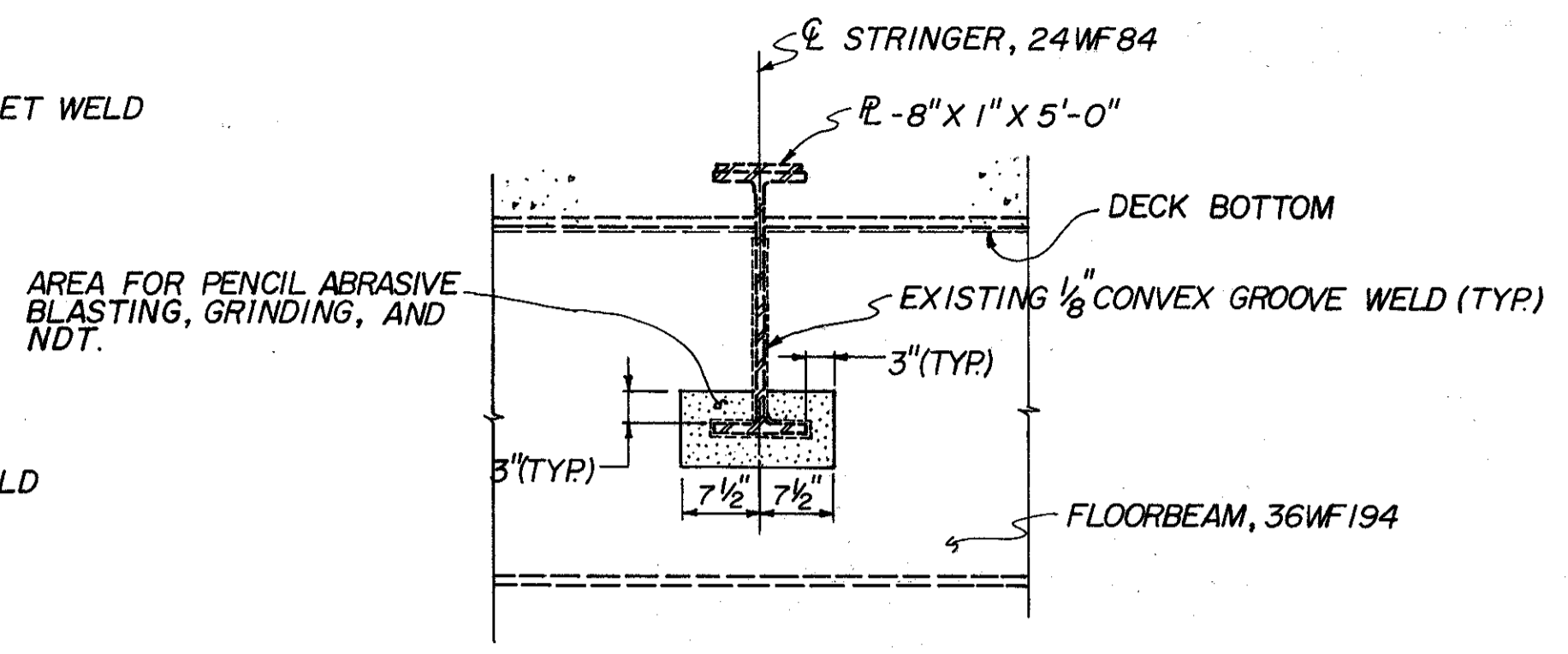
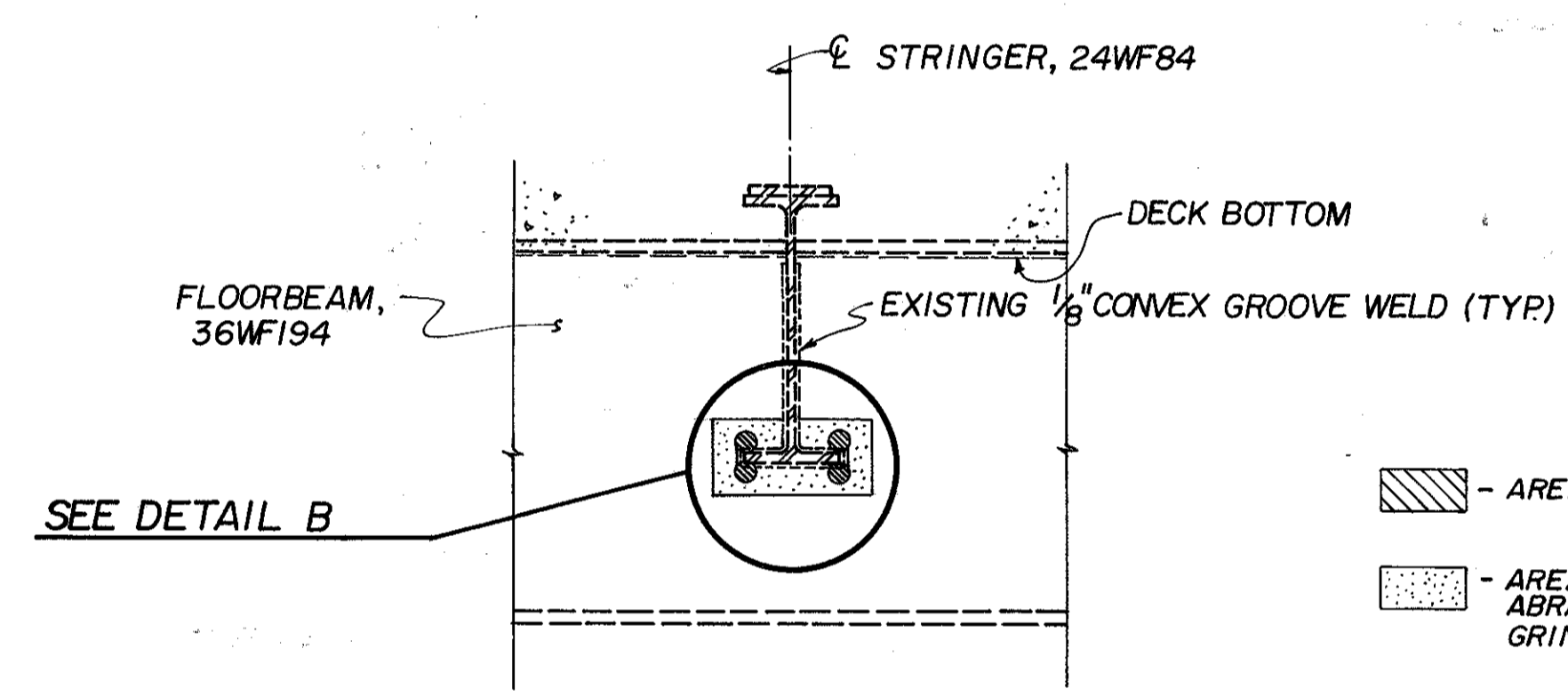


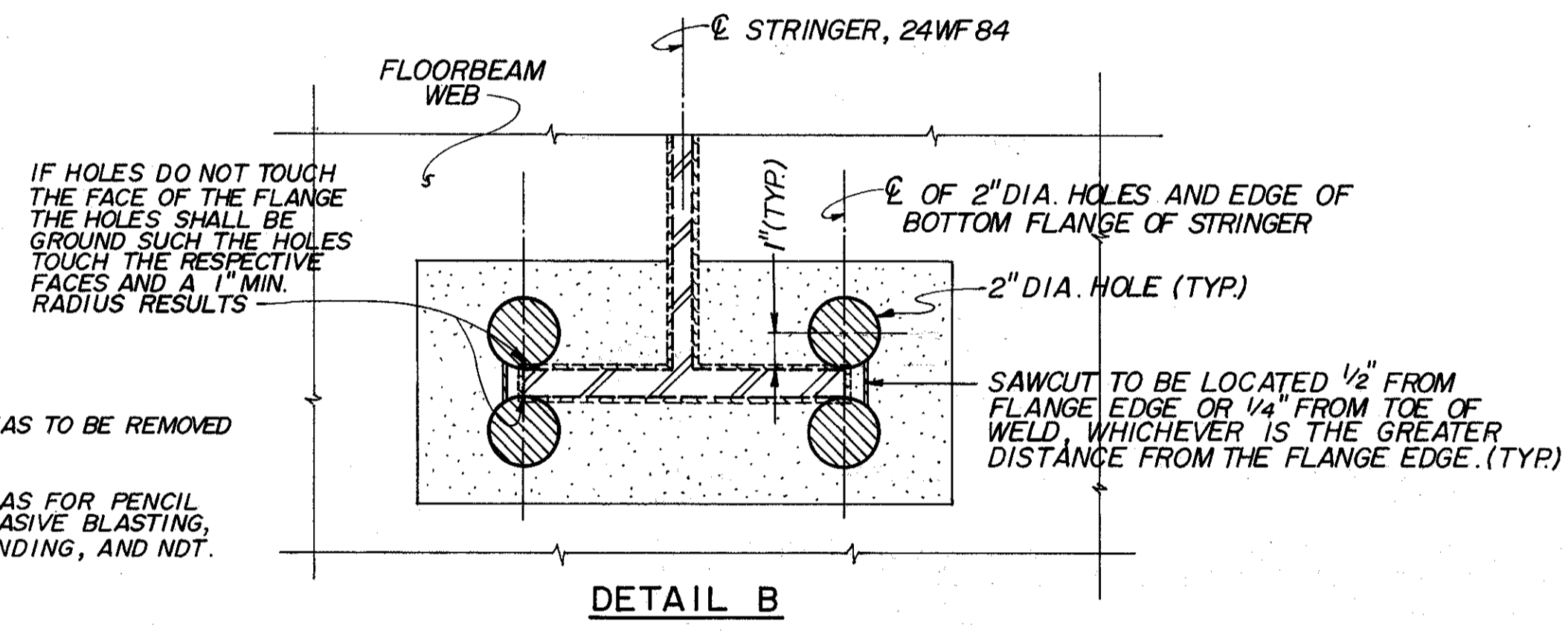
TYPICAL EXISTING STRINGER TO FLOORBEAM WELDED CONNECTION



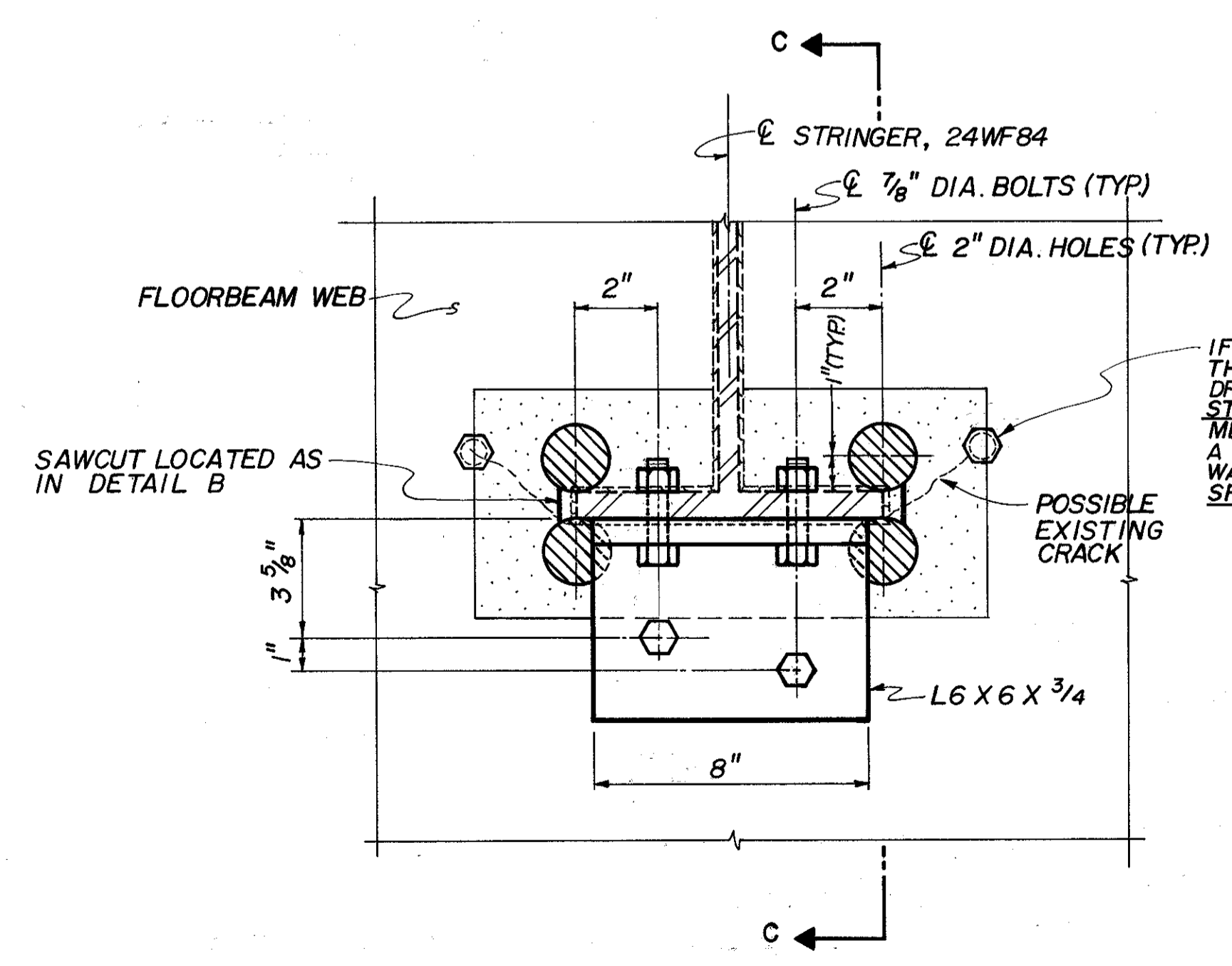
SECTION A-A



STRINGER FLANGE END RETROFIT

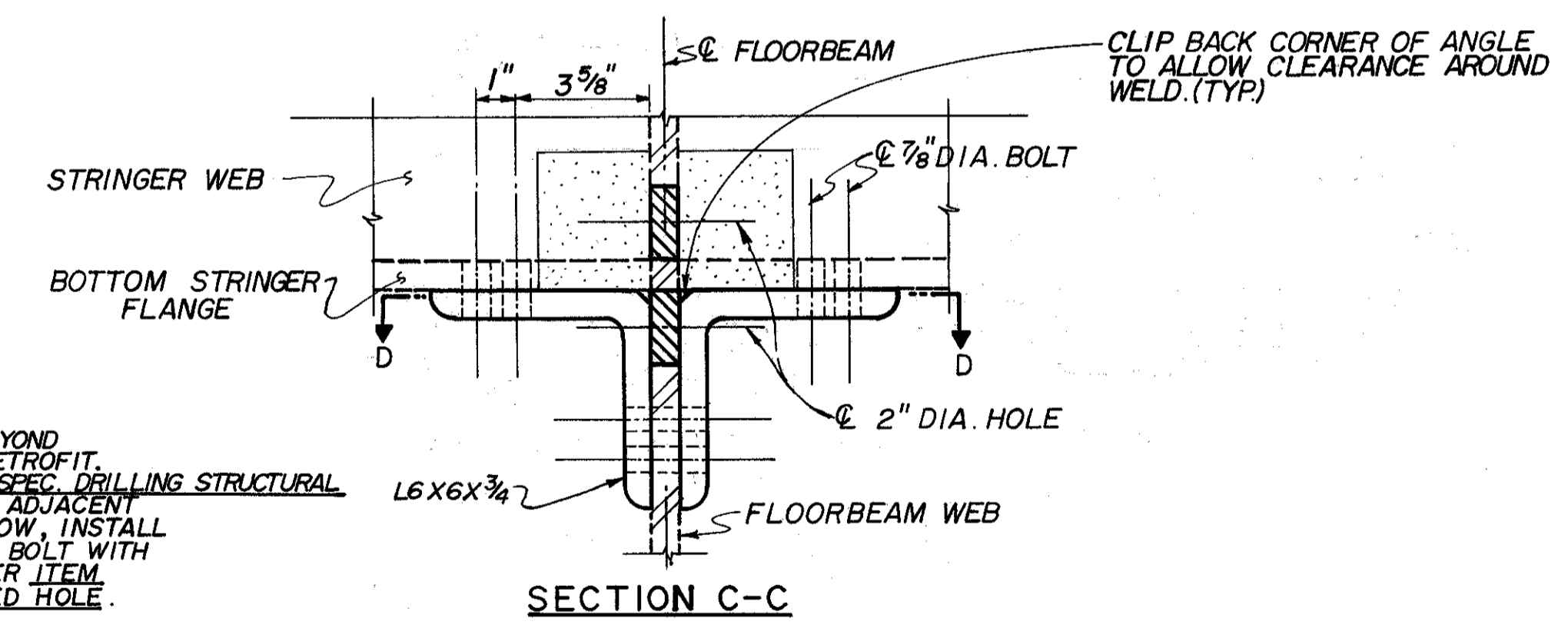


DETAIL B

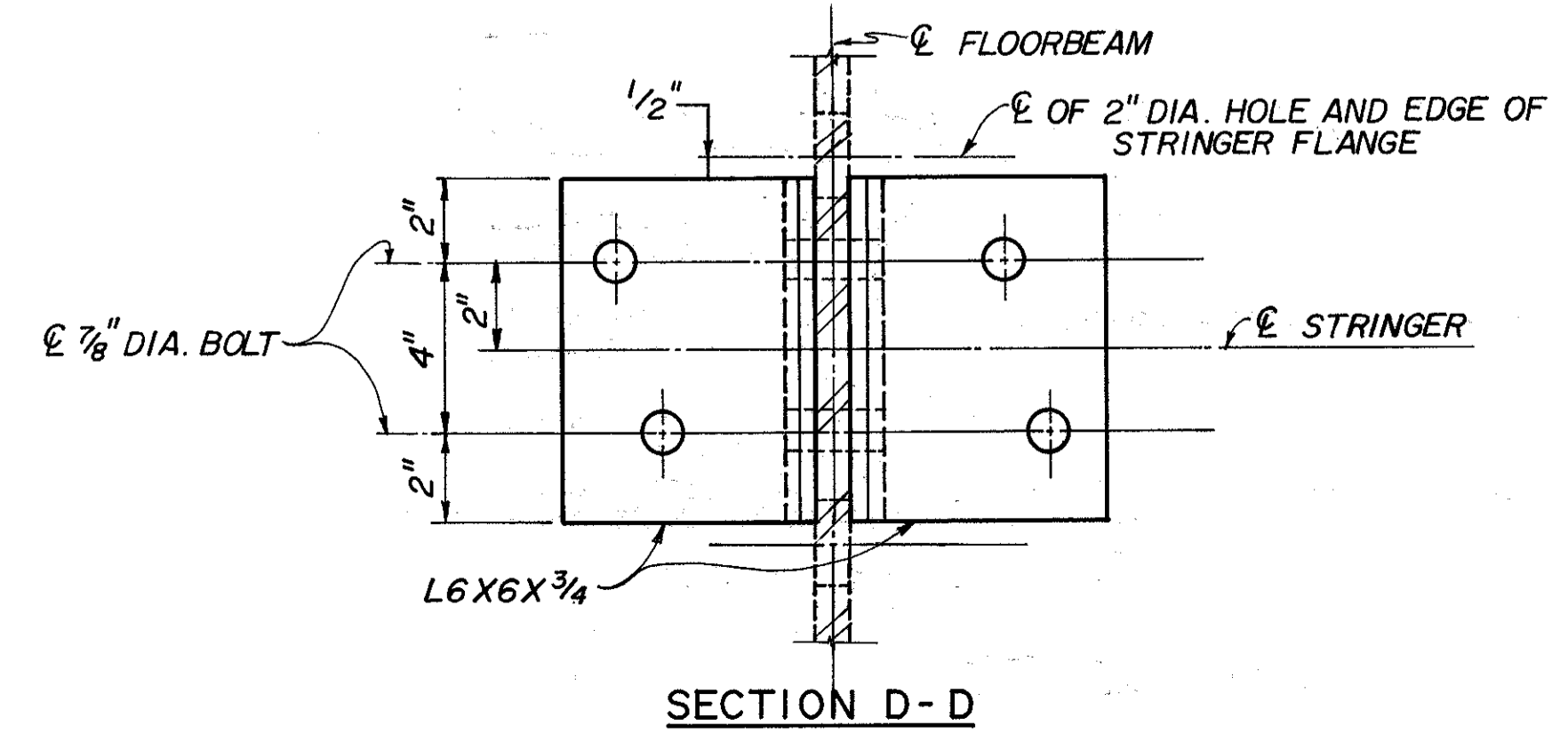


BOLTED STRINGER ANGLE CONNECTION

IF A CRACK PROPAGATES BEYOND THE STRINGER FLANGE END RETROFIT, DRILL 1" DIA. HOLE AS PER ITEM SPEC. DRILLING STRUCTURAL STEEL WHERE PROXIMITY TO ADJACENT MEMBERS AND/OR HOLES ALLOW, INSTALL A 1-INCH DIA. HIGH STRENGTH BOLT WITH WASHER TO BE PAID FOR UNDER ITEM SPECIAL - BOLT FOR DRILLED HOLE.



SECTION C-C



SECTION D-D

ITEM SPECIAL - PENCIL ABRASIVE BLASTING, GRINDING AND NDT OF FLOORBEAM - STRINGER CONNECTION

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED AT LOCATIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER:

- 1.) THE CONTRACTOR SHALL CLEAN THE AREA BY PENCIL ABRASIVE BLASTING THE PAINT AND/OR RUST FROM THE SURFACE OF THE PLATES AND ADJACENT WELDS.
- 2.) THE ENGINEER, ACCOMPANIED BY THE CONTRACTOR, SHALL CAREFULLY, VISUALLY INSPECT THE CLEANED AREA. GRINDING MAY BE DIRECTED BY THE ENGINEER TO ENHANCE INVESTIGATION FOR CRACK PRESENCE. ALL GRINDING MUST BE DONE CAUTIOUSLY, ESPECIALLY IN TENSION ZONES.
- 3.) THE CONTRACTOR SHALL NON-DESTRUCTIVELY TEST (NDT) THE AREA USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRANT SO THAT THE ENGINEER MAY FURTHER INSPECT FOR CRACKS.
- 4.) IF CRACKS ARE FOUND, THEN THESE CRACKS SHALL BE ISOLATED BY PERFORMING IN ACCORDANCE TO, AND PAID FOR UNDER, ITEM SPECIAL - STRINGER FLANGE END RETROFIT.
- 5.) PERFORM THE STEP 1 THROUGH STEP 3 OPERATIONS ON THE OTHER SIDE OF THIS LOCATION.
- 6.) ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE SHALL BE REMOVED ACCORDING TO, AND PAID FOR UNDER, ITEM SPECIAL - DRILLING STRUCTURAL STEEL, AND ANY CRACKS INACCESSIBLE TO DRILLING SHALL BE REMOVED BY CAREFUL GRINDING OR BY CAREFULLY ENLARGING THE DRILLED HOLES BY GRINDING.

THE ACCEPTED NUMBER OF NDT LOCATIONS AS DESCRIBED IN THIS NOTE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, GRIND AND PERFORM NDT ON BOTH SIDES OF THE LOCATION.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

| ITEM | UNIT | DESCRIPTION |
|---------|------|---|
| SPECIAL | EACH | PENCIL ABRASIVE BLASTING, GRINDING AND NDT OF FLOORBEAM - STRINGER CONNECTION |

ITEM SPECIAL - STRINGER FLANGE END RETROFIT

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED ON AREAS WHERE SMALL CRACKS ARE FOUND BY PENCIL ABRASIVE BLASTING, GRINDING AND NDT ON AREAS SHOWN IN THE PLANS:

- 1.) DRILL THE FOUR 2-INCH DIAMETER HORIZONTAL HOLES AT THE STRINGER FLANGE ENDS AS SHOWN IN PLANS.
- 2.) SAW CUT THE WEB OF THE FLOORBEAM VERTICALLY FROM ONE HORIZONTAL HOLE TO THE OTHER AS SHOWN IN THE PLANS.
- 3.) IF THE 2-INCH DIAMETER HOLES OF STEP 1 DID NOT TOUCH THE FLANGE, THE HOLES SHALL BE GROUNDED WITH A MINIMUM RADIUS OF 1-INCH WHICH RESULTS IN THE HOLE TOUCHING THE FLANGE.
- 4.) IF THE EXISTING CRACK ENDS WERE NOT SURROUNDED BY THE DRILLED HOLES AND SAW CUT, THEN THESE CRACK ENDS SHALL BE DRILLED AND PAID FOR AS PER ITEM SPECIAL - DRILLING STRUCTURAL STEEL.

THE ACCEPTED NUMBER OF RETROFITS AS DESCRIBED HEREIN SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, DRILL, CUT, AND GRIND THE STRINGER FLANGE END RETROFIT.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID UNDER:

| ITEM | UNIT | DESCRIPTION |
|---------|------|------------------------------|
| SPECIAL | EACH | STRINGER FLANGE END RETROFIT |

REVISED 11-19-90

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 - BRIDGE DEPT.

RETROFIT DETAILS

BR. NO. LAK-90-2342 (L&R)
I-90 OVER THE GRAND RIVER

| | | | | |
|-----------------|--------------|----------------|-----------------|------------------------|
| DESIGNED BGW | DRAWN GLC | CHECKED DWL | REVIEWED GWM | REVISED DATE: 10/90 |
| LAKE COUNTY | | | | OHIO |
| SHEET | | | | 88 / 19 |