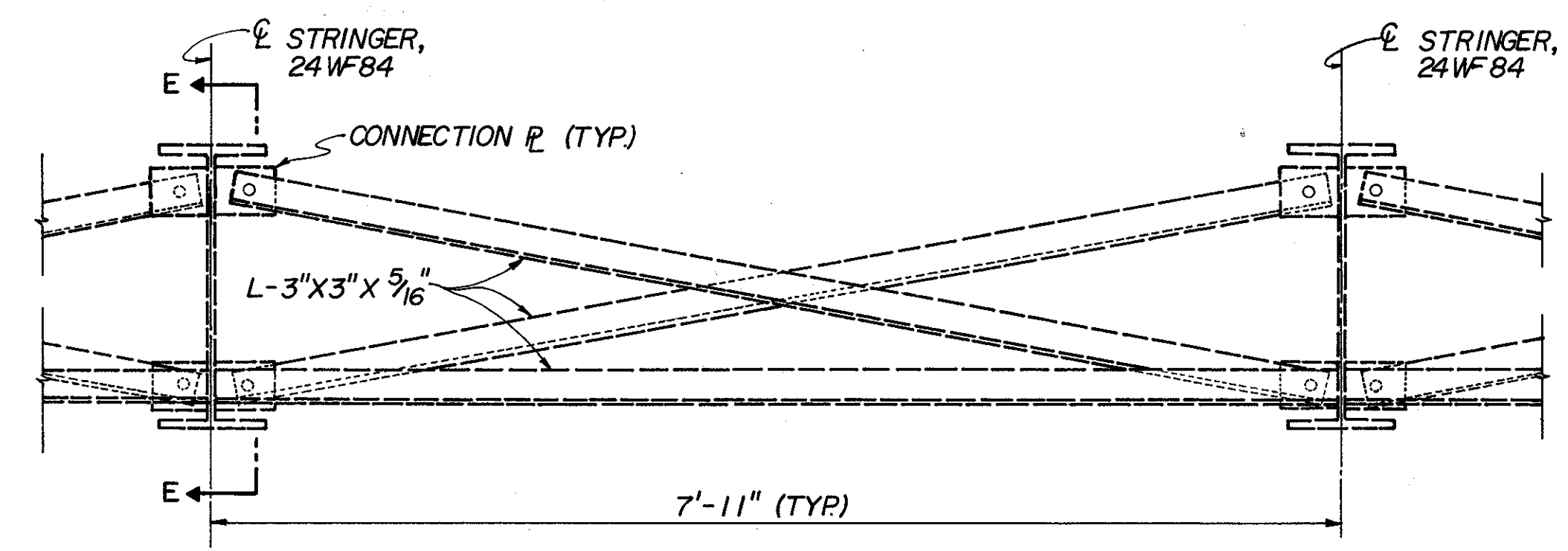
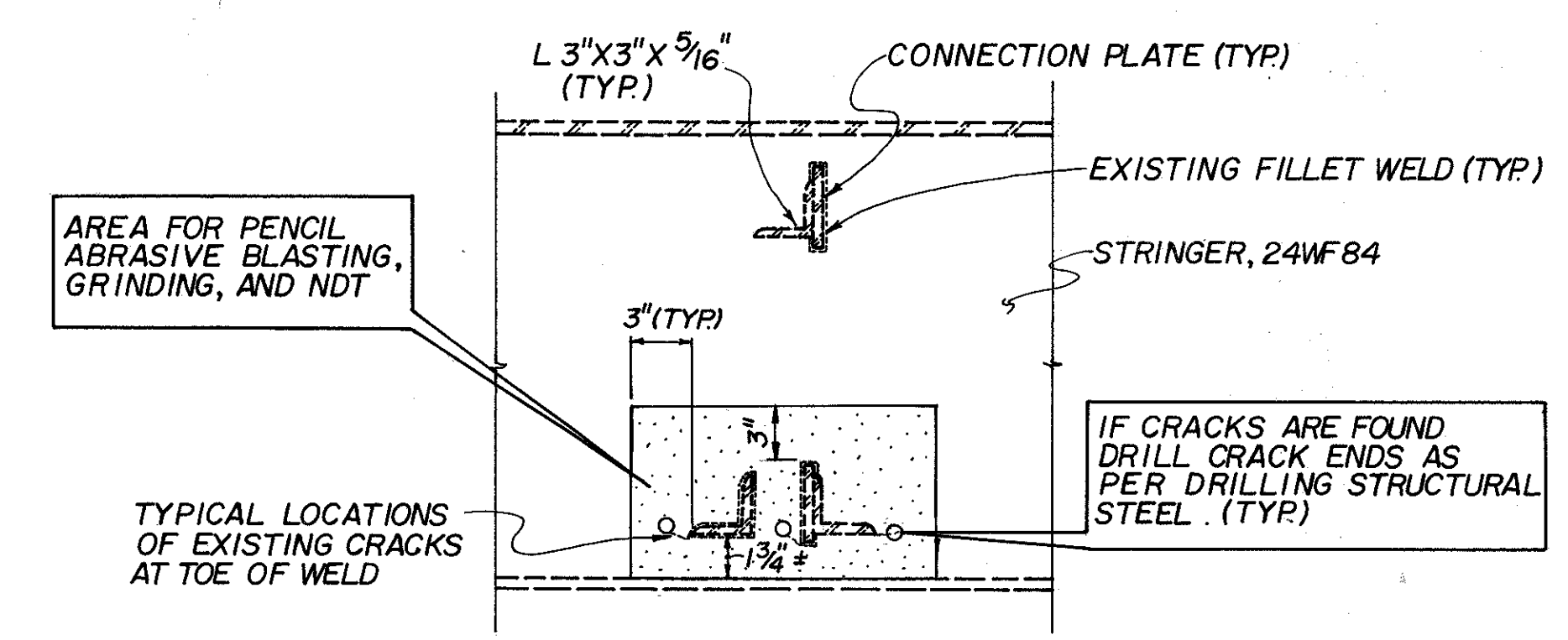


DRAIN HOLE DETAIL



TYPICAL EXISTING STRINGER DIAPHRAGM



SECTION E-E

ITEM SPECIAL - BOLTED STRINGER ANGLE CONNECTION

THIS WORK SHALL CONSIST OF THE FOLLOWING OPERATIONS AT LOCATIONS AS SHOWN IN THE PLANS, AT LOCATIONS WHERE NDT FINDS THAT THE BOTTOM WELD IS CRACKED AT THE FLOORBEAM-STRINGER CONNECTION, AND AS DIRECTED BY THE ENGINEER.

- 1) CLEAN THE AREAS TO RECEIVE ANGLES BY PENCIL ABRASIVE BLASTING THE PAINT RUST, DIRT, AND NDT DEBRIS FROM BOTH SIDES OF THE WEB AND BOTH STRINGER FLANGE BOTTOMS.
- 2) DRILL HOLES IN THE ANGLES, STRINGER FLANGE, AND FLOORBEAM WEB AS SHOWN IN PLANS.
- 3) BOLT BOTH ANGLES TO BOTH SIDES OF THE FLOORBEAM WEB AND THE STRINGER FLANGES WITH 7/8" DIAMETER H.S. BOLTS.

ALL STRUCTURAL STEEL SHALL CONFORM TO ITEM 513 - STRUCTURAL STEEL (AISC CERTIFICATION NOT REQUIRED) AND WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATION OF STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07 OF THE CMS. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05 OF THE CMS.

THE ACCEPTED NUMBER OF RETROFITS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR INSTALLING AN ANGLE ON BOTH SIDES OF THE FLOORBEAM. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, DRILL HOLES, AND INSTALL THE ANGLES AT EACH STRINGER-FLOORBEAM INTERSECTION.

PAYMENT WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	BOLTED STRINGER ANGLE CONNECTION

ITEM SPECIAL - PENCIL ABRASIVE BLASTING, GRINDING AND NDT OF DIAPHRAGM CONNECTIONS

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, 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) 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 NDT ON ONE SIDE OF THE STRINGER.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	PENCIL ABRASIVE BLASTING, GRINDING AND NDT OF DIAPHRAGM CONNECTION

ITEM SPECIAL - BOLT FOR DRILLED HOLE

THIS ITEM SHALL INCLUDE PLACING A 1" DIAMETER H.S. BOLT IN EACH HOLE DRILLED PER ITEM SPECIAL - DRILLING STRUCTURAL STEEL, WHERE DISTANCES FROM ADJACENT MEMBERS PERMIT INSTALLATION.

BOLTS SHALL BE INSTALLED IN ACCORDANCE TO ITEM 513 OF THE CONSTRUCTION AND MATERIALS SPECIFICATION (CMS).

THE HOLES AT THE CRACK ENDS SHALL BE REAMED TO ALLOW PLACEMENT OF A 1-INCH DIAMETER H.S. BOLT.

THE ACCEPTED NUMBER OF BOLTS INSTALLED AS DESCRIBED IN THIS NOTE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH BOLT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO INSTALL EACH BOLT.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	BOLT FOR DRILLED HOLE

ITEM SPECIAL - DRAIN HOLE

THIS ITEM SHALL INCLUDE FLAME CUTTING AND GRINDING 1" X 2" OBLONG DRAIN HOLES IN LOCATIONS WHERE WATER COLLECTS ON THE TRUSS MEMBERS. HOLES SHALL BE CUT IN THE TRANSVERSE MEMBER OF THE K-SHAPED LOWER LATERAL BRACING WHERE THAT MEMBER IS TILTED DUE TO THE SLOPE OF THE BOTTOM TRUSS CHORD. THE HOLES SHALL BE CUT THROUGH THE UPWARD BOTTOM FLANGE AT A MAXIMUM OF 5-FT. CENTERS WITH A HOLE BEING NO FURTHER THAN 1-FT. AWAY FROM A GUSSET PLATE. HOLES SHALL ALSO BE CUT IN THE LOWER LATERAL BRACING GUSSET PLATES IN THE SECTION OF THE TRUSS WHERE THE BOTTOM CHORD IS SLOPED. SEE DETAILS ON SHEET 27C OF 38 AND 38 OF 38 FOR EXACT LOCATIONS OF THE HOLES.

THE ACCEPTED NUMBER OF HOLES CUT AND GROUND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER HOLE, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CUT EACH HOLE.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	DRAIN HOLE

ITEM SPECIAL - REPLACEMENT OF COTTER PINS

THIS ITEM SHALL INCLUDE THE REPLACEMENT OF COTTER PINS AS LOCATED ON SHEET 38 OF 38.

THE EXISTING HOLE FOR THE COTTER PIN SHALL BE CLEANED AND MEASURED BY THE CONTRACTOR. THE DIAMETER OF THE COTTER PIN SHALL BE 1/16" SMALLER THAN THE MEASURED HOLE DIAMETER. THE LENGTH OF THE COTTER PIN SHALL BE APPROPRIATE FOR THE DIAMETER PIN AS NOTED IN THE PLANS.

THE ACCEPTED NUMBER OF COTTER PIN REPLACEMENT SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH PIN REPLACED, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN AND MEASURE THE HOLE AND INSTALL THE COTTER PIN.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	REPLACEMENT OF COTTER PINS

ITEM SPECIAL - TIGHTENING LOOSE BOLT

THIS ITEM SHALL CONSIST OF TIGHTENING OF LOOSE BOLTS AS IDENTIFIED ON SHEET 27A OF 38 AND SHEET 38 OF 38, AND AS DIRECTED BY THE ENGINEER.

THE PROJECT ENGINEER SHALL MARK THE BOLTS TO BE TIGHTENED. ALL WORK SHALL BE IN ACCORDANCE TO 513 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION.

THE ACCEPTED NUMBER OF BOLTS TIGHTENED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER BOLT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR AND EQUIPMENT NECESSARY TO TIGHTEN EACH BOLT.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	TIGHTENING LOOSE BOLT

REVISED 11-19-90

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

MISC. DETAILS

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

DESIGNED BGW	DRAWN GLC	CHECKED DWL	REVIEWED GWM	REVISED
DATE:	DATE:	DATE:	DATE: 10-92	SHEET 8C/19

LAKE COUNTY OHIO