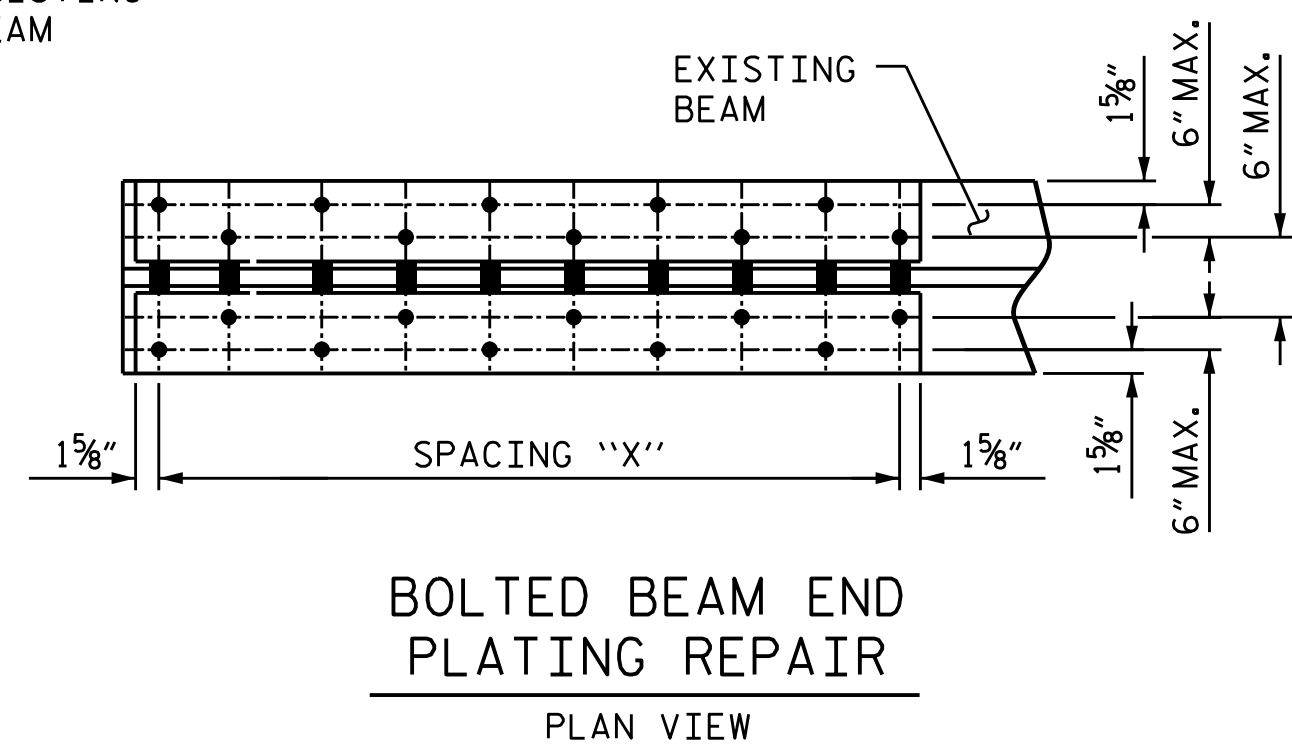
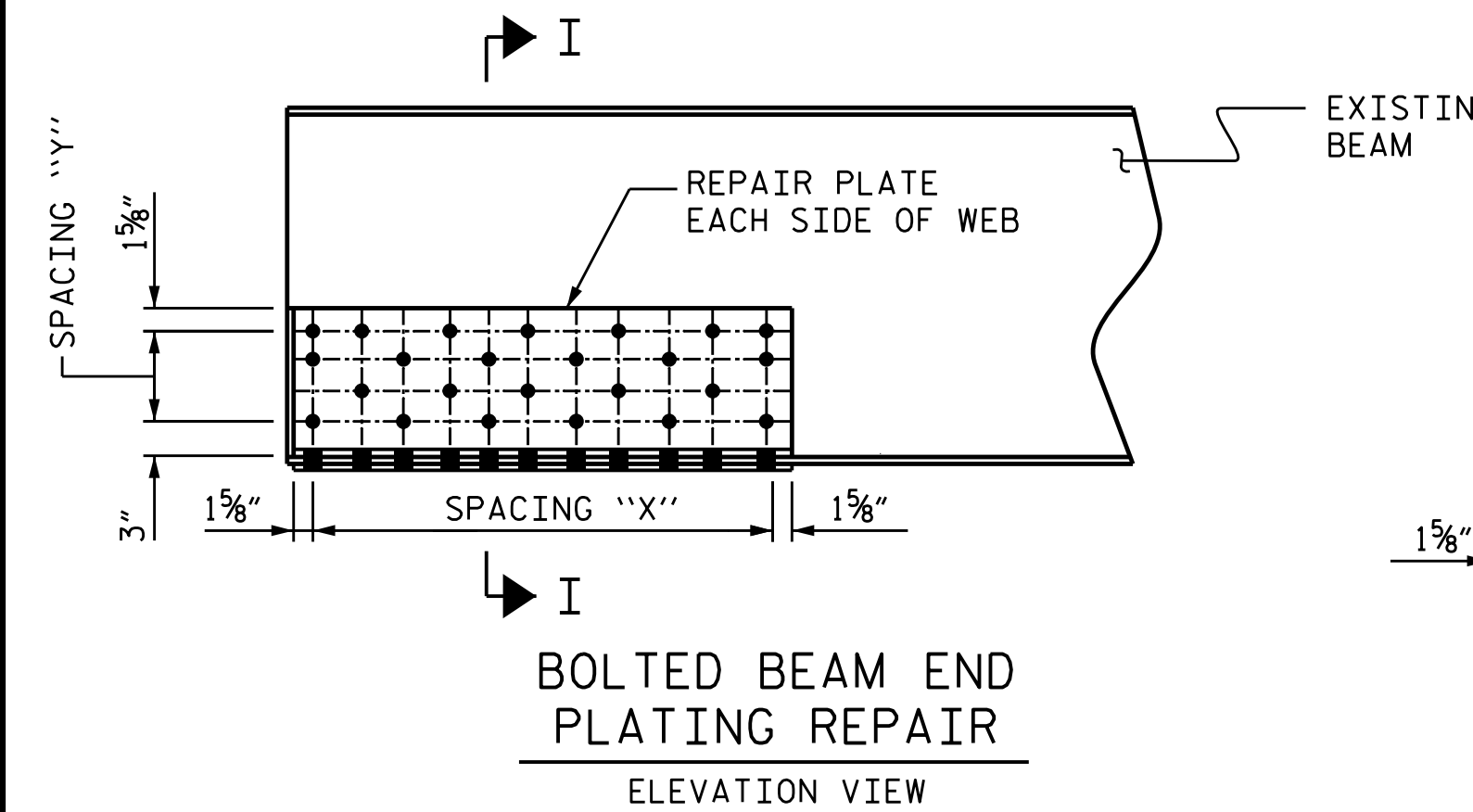


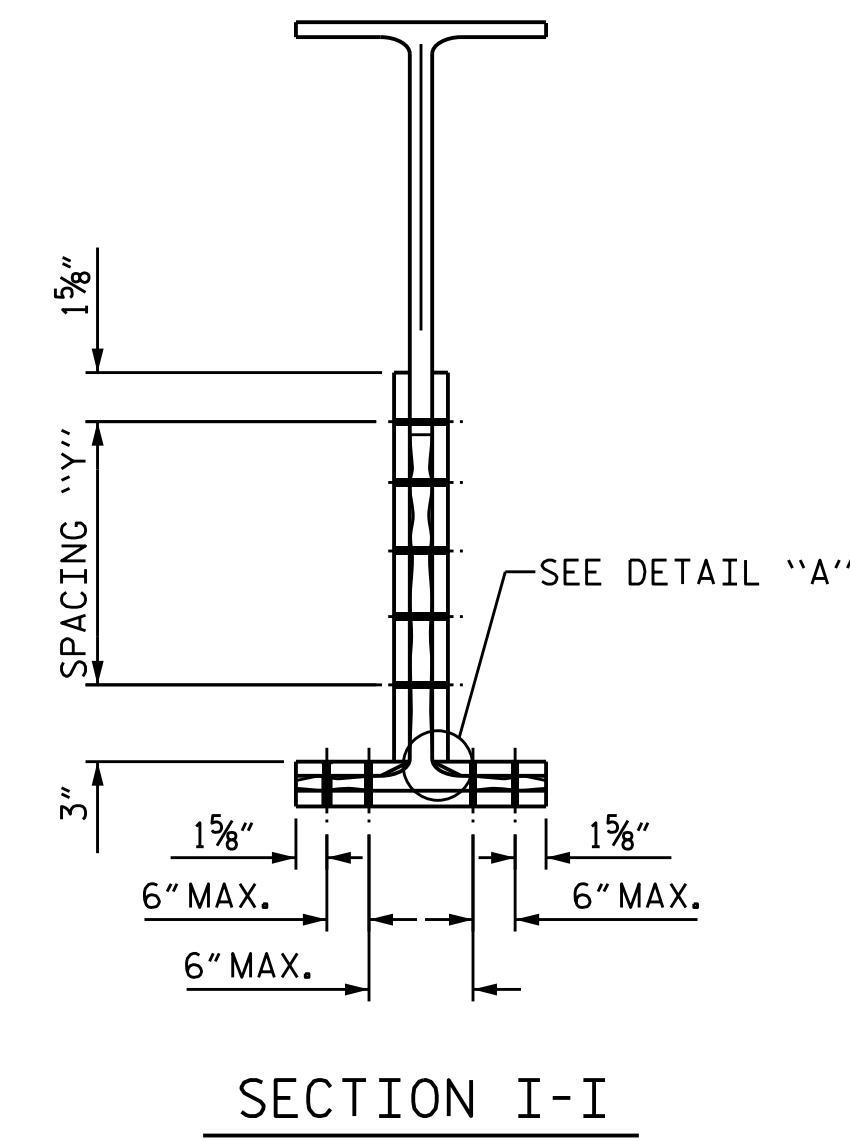
BEAM END SECTION LOSS
ELEVATION VIEW

BEAM END SECTION LOSS
PLAN VIEW



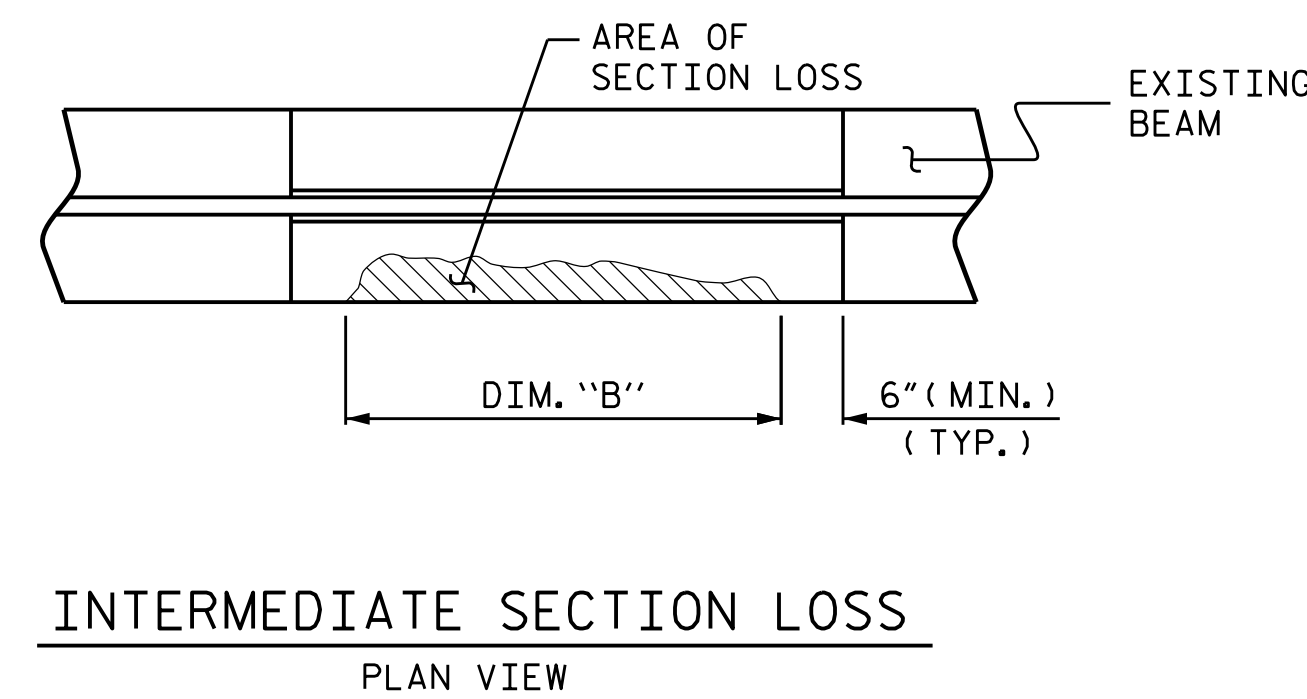
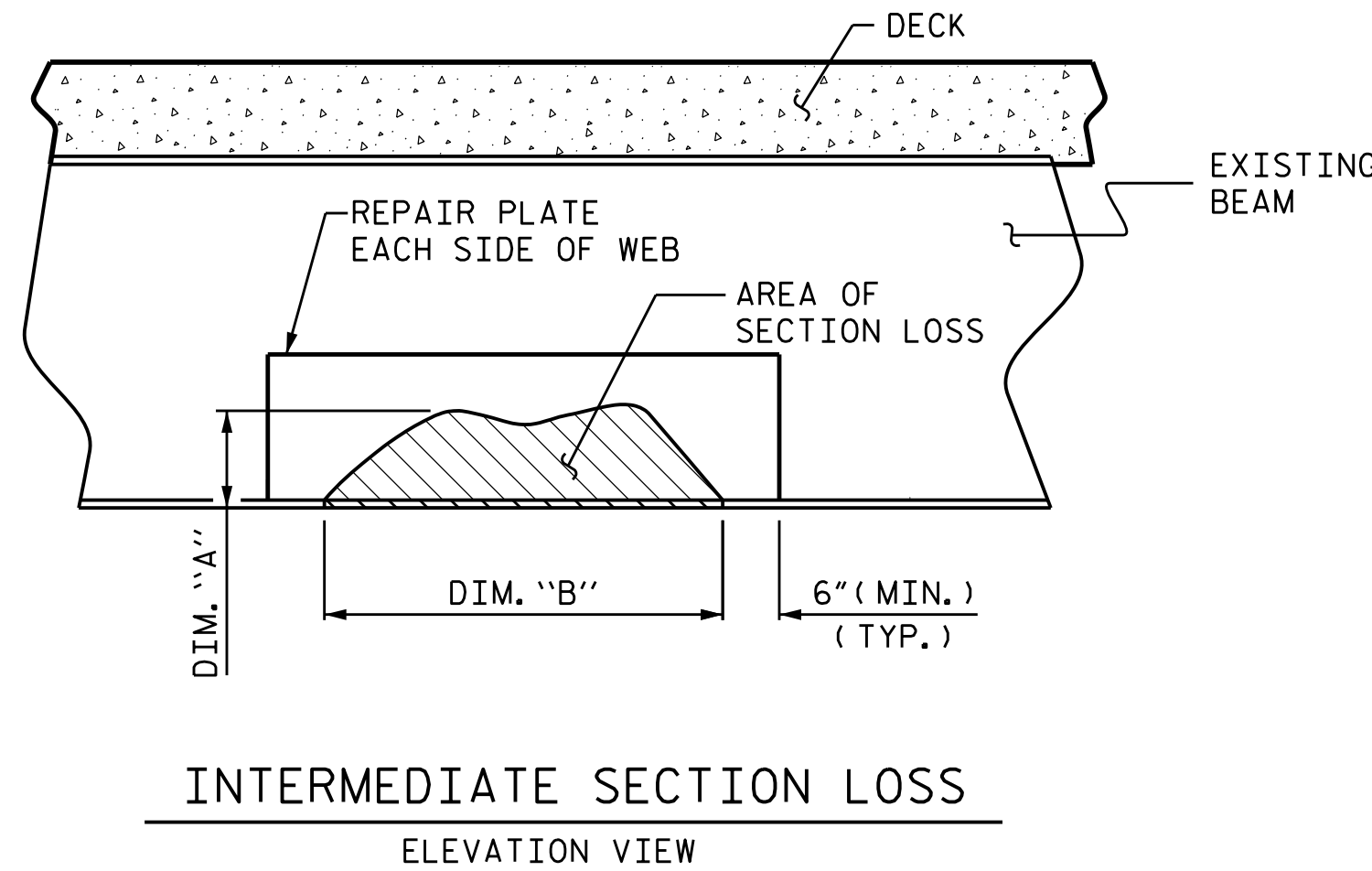
BOLTED BEAM END
PLATING REPAIR
ELEVATION VIEW

BOLTED BEAM END
PLATING REPAIR
PLAN VIEW



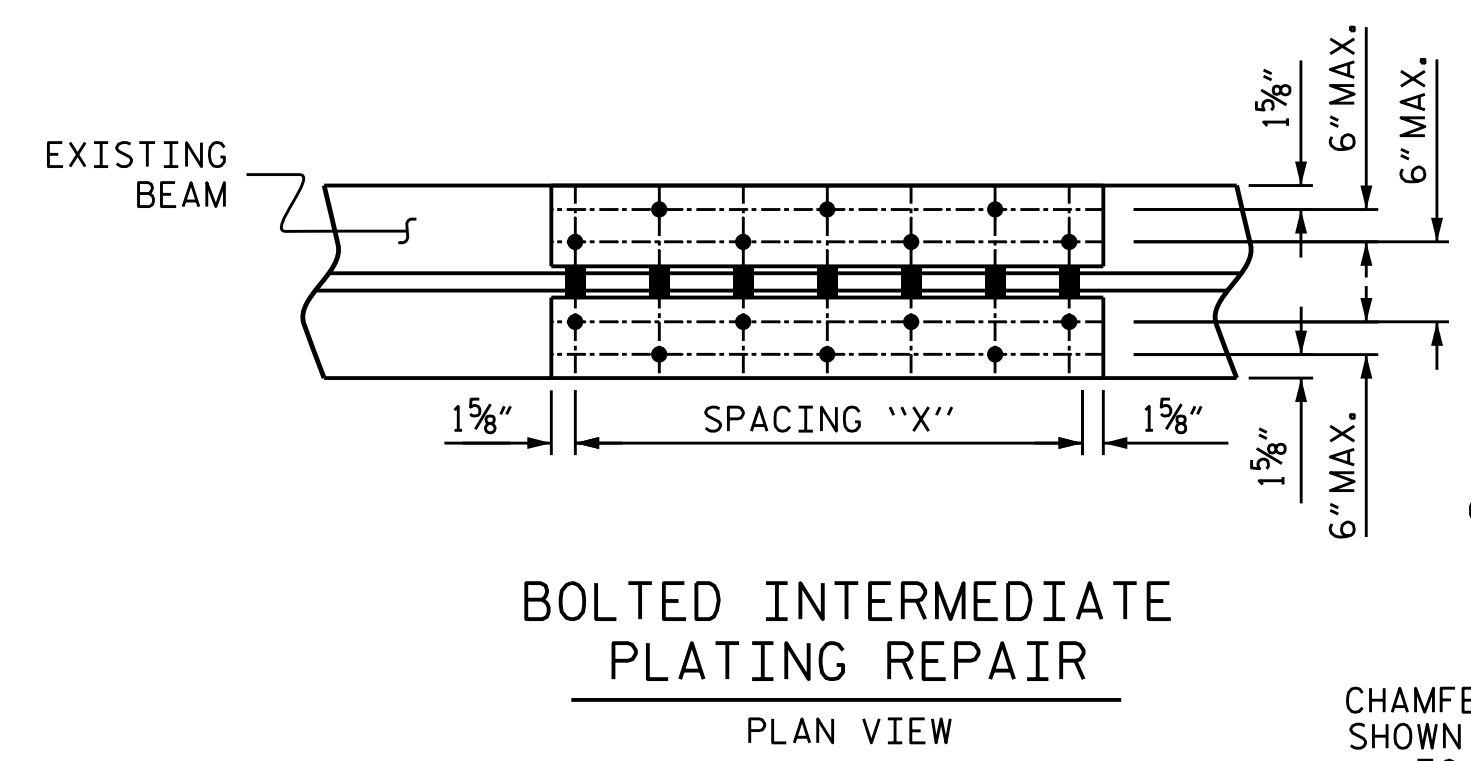
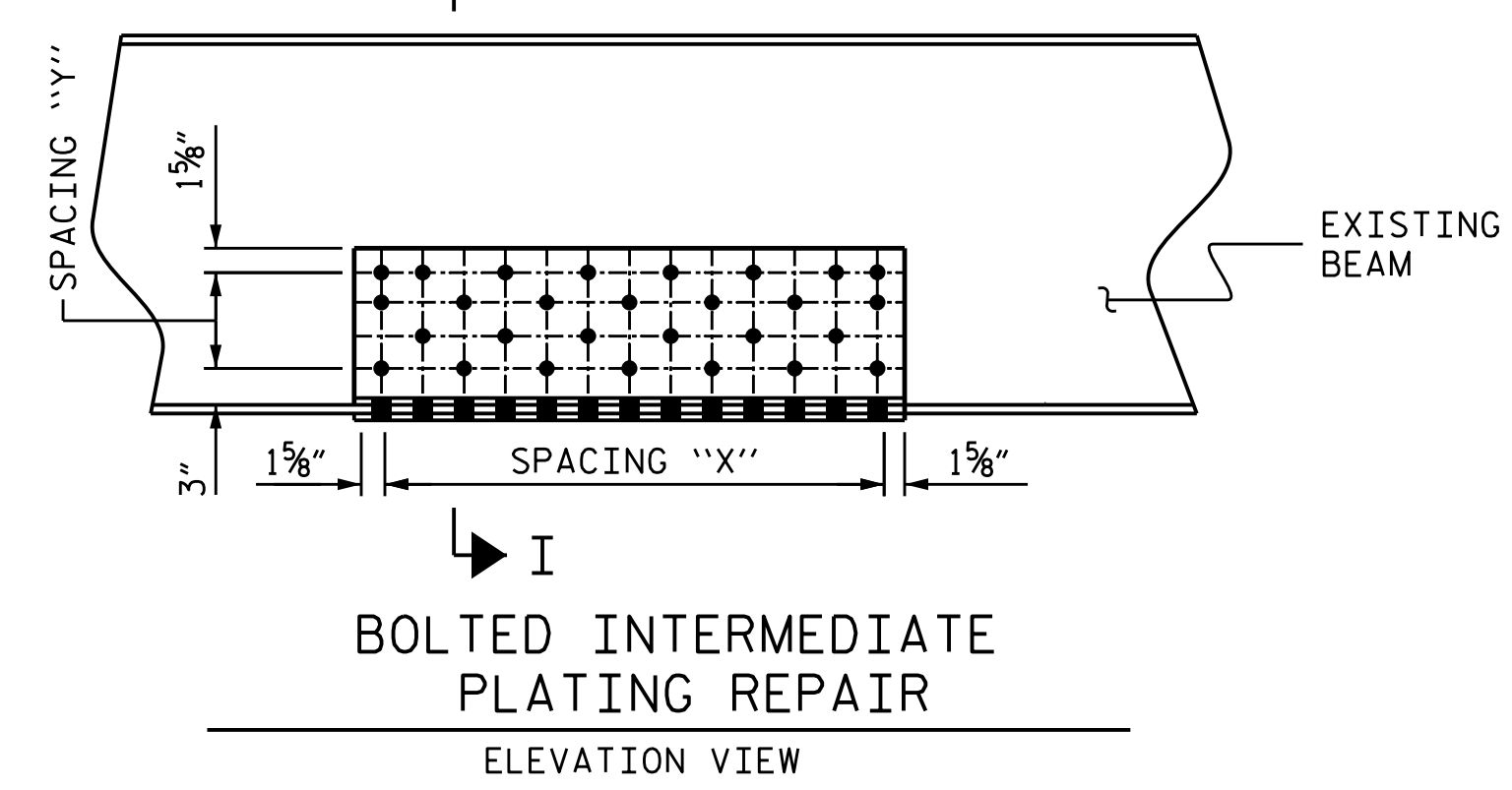
SECTION I-I

BEAM END PLATING REPAIR



INTERMEDIATE SECTION LOSS
ELEVATION VIEW

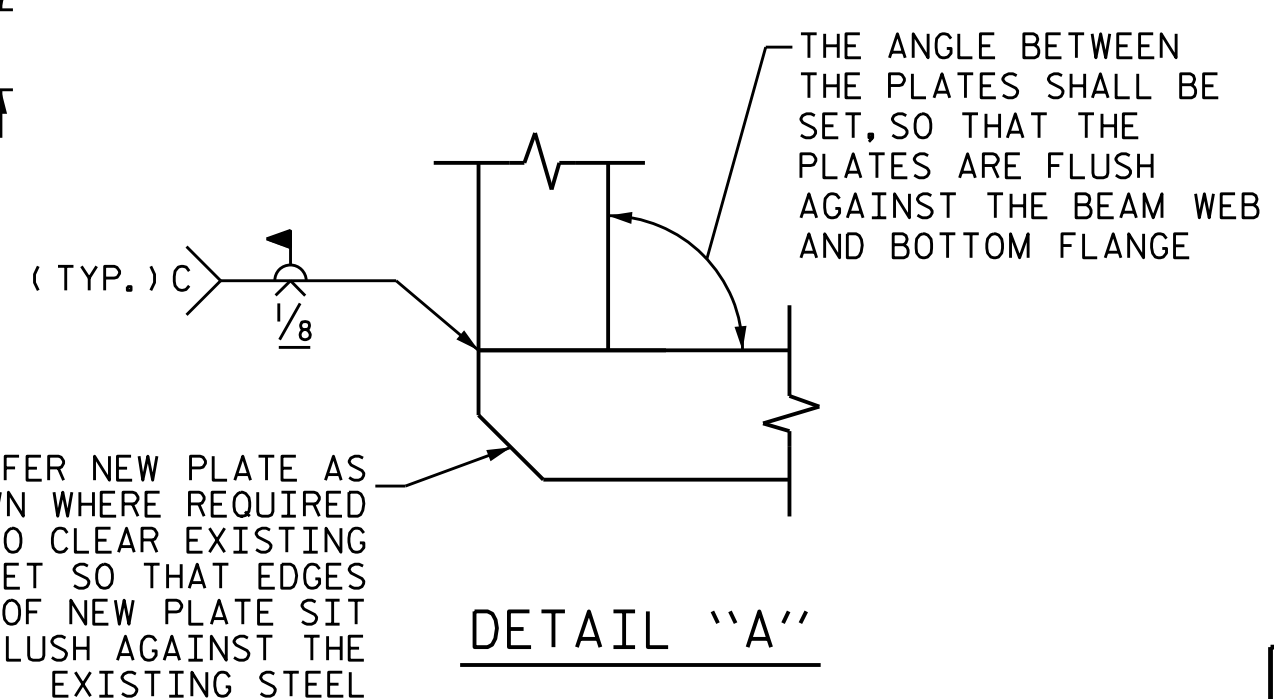
INTERMEDIATE SECTION LOSS
PLAN VIEW



BOLTED INTERMEDIATE
PLATING REPAIR
ELEVATION VIEW

BOLTED INTERMEDIATE
PLATING REPAIR
PLAN VIEW

INTERMEDIATE BEAM PLATING REPAIR



DETAIL "A"

BOLTED BEAM PLATING REPAIR NOTES

ALL CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OR INSTALLATION OF ANY COMPONENTS.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATING STRUCTURAL STEEL ITEMS. FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

REPAIR PLATES SHALL BE MINIMUM 36 KSI STEEL AND MATCH THE EXISTING STEEL TYPE.

FOR BEAMS WITH AN EXISTING WEB THICKNESS OF 1/2" OR LESS, THE MINIMUM REPAIR PLATE THICKNESS SHALL BE 1/2". FOR BEAMS WITH AN EXISTING WEB THICKNESS GREATER THAN 1/2", THE MINIMUM REPAIR PLATE THICKNESS SHALL BE 3/4".

ALL BOLTS SHALL BE GALVANIZED ASTM A325 3/4" DIAMETER BOLTS. ALL BOLT HOLES SHALL BE 13/16" IN DIAMETER.

ALL NUTS SHALL BE GALVANIZED AND MEET ASTM A194.

TENSION ON THE BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS (DTIS) IN ACCORDANCE WITH ARTICLE 440-8 OF THE NCDOT STANDARD SPECIFICATIONS. DTIS SHALL MEET ASTM F959.

MINIMUM BOLT SPACING IS 2.5". MAXIMUM BOLT SPACING IS 6" FOR "X" SPACING, 12" FOR "Y" SPACING. MINIMUM EDGE DISTANCE IS 1 5/8", UNLESS NOTED OTHERWISE.

THE EPOXY MASTIC USED FOR THIS WORK SHALL BE COMPATIBLE WITH THE PAINT SYSTEM USED AND SHALL BE APPROVED BY THE NCDOT MATERIALS AND TEST UNIT. THE EPOXY MASTIC WILL BE ACCEPTED ON THE BASIS OF THE MANUFACTURER'S WRITTEN CERTIFICATION THAT THE BATCH MEETS THEIR PRODUCT SPECIFICATION.

ONE FABRICATED SECTION SHALL BE PLACED, AS SHOWN, ON EACH SIDE OF THE BEAM WEB.

BOLT HEADS SHALL BE ON EXTERIOR FACE OF FASCIA BEAMS AND THE BOTTOM OF THE BOTTOM FLANGE.

ADDITIONAL BOLTS MAY BE REQUIRED AT PLATE CORNERS TO MAINTAIN EDGE DISTANCES.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

ALL WELDS SHALL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, AND THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM THE REPAIR PROCESS.

FOR CLEANING AND PAINTING STEEL, SEE "ZONE PAINTING OF EXISTING STRUCTURE" SPECIAL PROVISION.

REPAIR SEQUENCE:

COORDINATE WITH MATERIALS AND TEST UNIT AT LEAST FOUR (4) DAYS PRIOR TO ANTICIPATED WORK.

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

IF NECESSARY, REMOVE EXISTING STIFFENER TO INSTALL BOLTED PLATE REPAIR, FOLLOWING SECTION 1072 OF THE STANDARD SPECIFICATIONS. REPLACE WITH A NEW STIFFENER PLATE OF SIMILAR SIZE.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM, THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE.

MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3" BEYOND REPAIR AREA.

PRIME ENTIRE REPAIR AREA AND REPAIR PLATES WITH AN ORGANIC ZINC PRIMER PRIOR TO BOLTING NEW PLATES.

ALL AREAS OF SECTION LOSS AND PITTING SHALL BE FILLED WITH METAL EPOXY FILLER JUST PRIOR TO INSTALLING NEW REPAIR PLATES.

PRIOR TO PLACEMENT OF THE PLATES, APPLY WET EPOXY MASTIC AROUND THE TOP AND SIDES OF THE PLATE FACE THAT IS TO BE IN CONTACT WITH THE BEAM. AMOUNT OF EPOXY MASTIC SHALL BE SUFFICIENT TO SEAL THE PLATE INTERFACE AND THE BEAM AFTER BOLTS ARE TIGHTENED. NO EPOXY MASTIC SHALL BE PLACED ALONG THE BOTTOM EDGE OF THE PLATE. WHILE THE MASTIC IS STILL WET, PLATES SHALL BE PUT IN PLACE AND BOLTS PROPERLY TIGHTENED.

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE RECAST. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPLICED WITH A SIMILAR SIZE BAR TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THE "DECK REPAIR DETAILS" SHEET. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "BEAM REPAIR". FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

PROJ. NO. **B-5981**
DUPLIN COUNTY
BRIDGE NO. **300017**



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BOLTED BEAM PLATING REPAIR DETAILS					
SHEET NO. S2-28 TOTAL SHEETS 31					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY : S. T. SANDOR DATE : 07/2022
CHECKED BY : W. C. SMITH DATE : 5/31/23

DocuSigned by:
William C. Smith
10/24/2023
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED