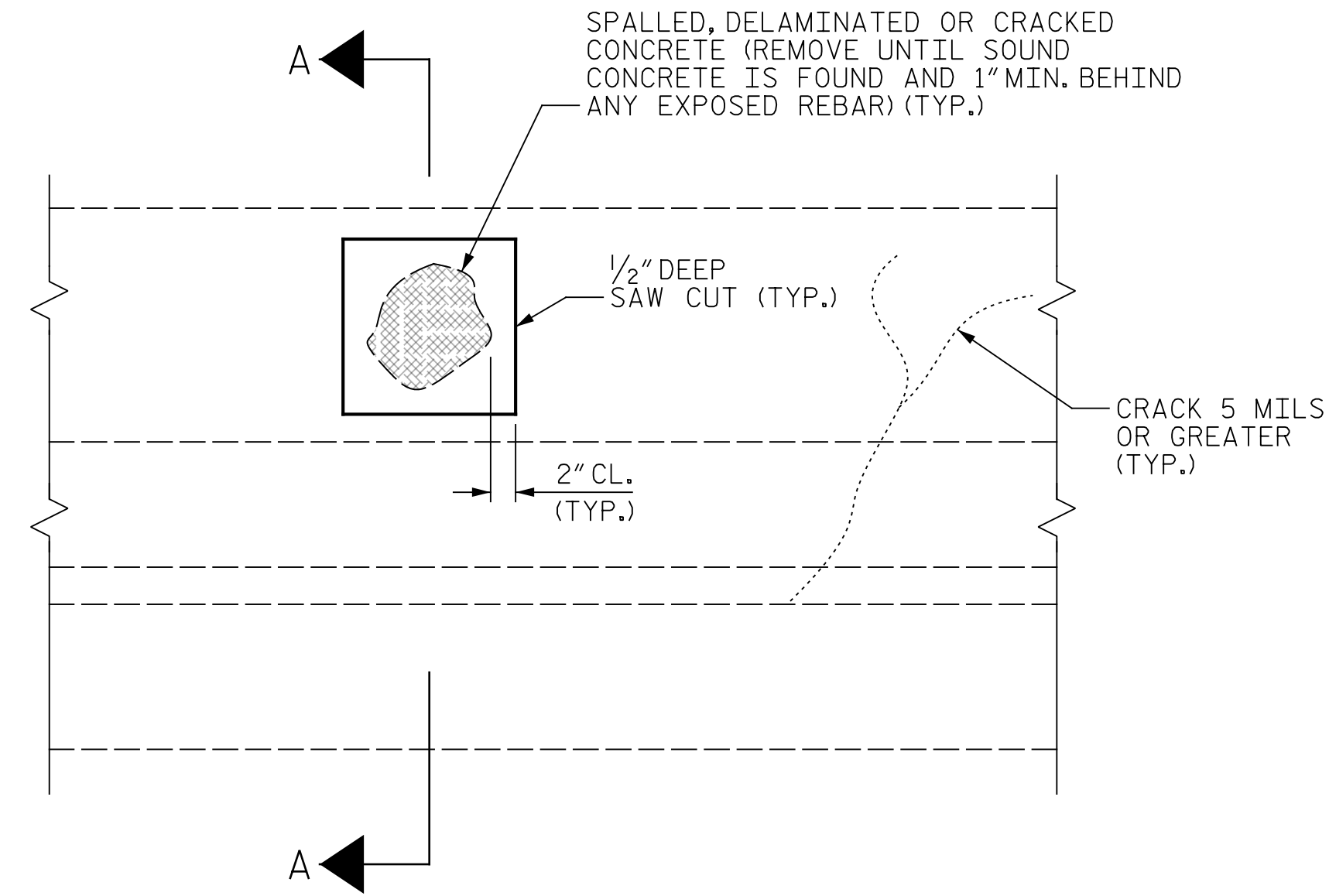
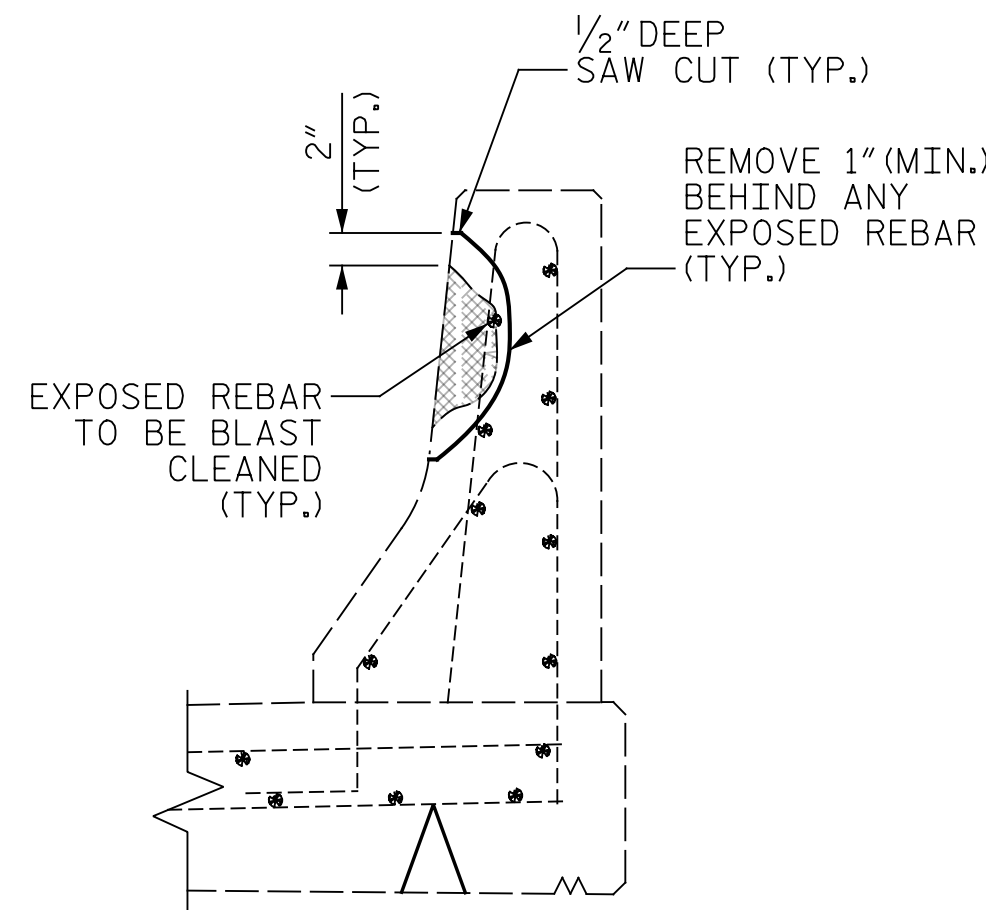


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ELEVATION



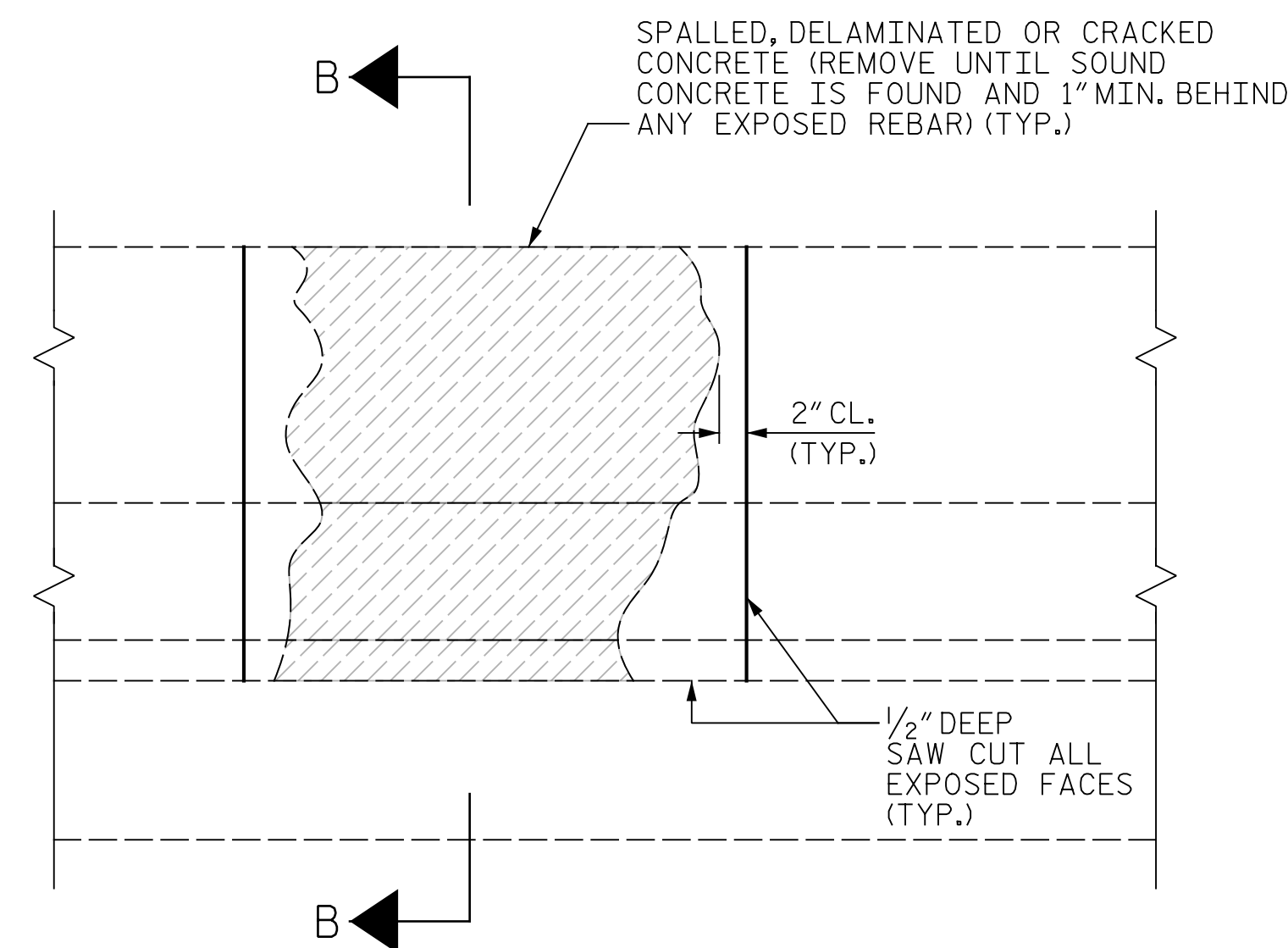
SECTION A-A

PARTIAL SECTION REPAIR

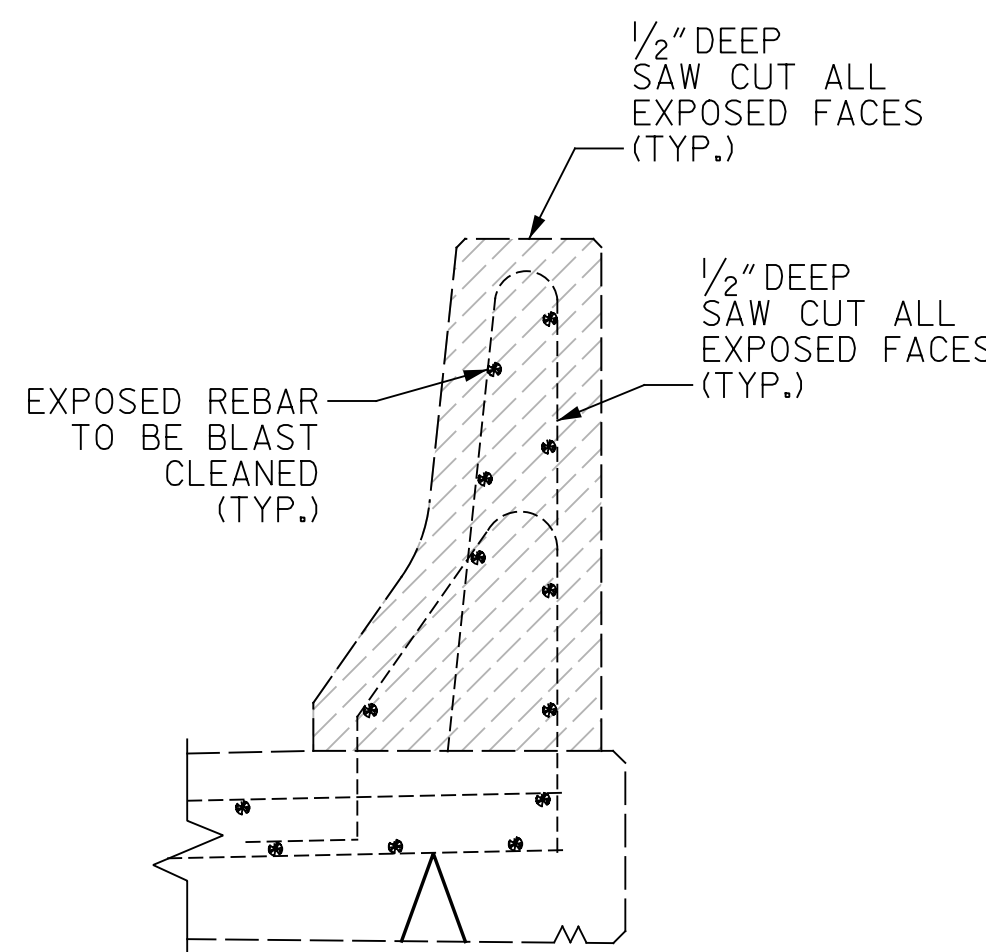
REPAIR KEY

- SHOTCRETE REPAIRS
- CONCRETE REPAIRS
- EPOXY RESIN INJECTION (ERI)

| SPLICE LENGTH TABLE | |
|---------------------|--------------------|
| BAR SIZE | MIN. SPLICE LENGTH |
| #4 | 2'-9" |
| #5 | 3'-5" |
| #6 | 4'-4" |



ELEVATION



SECTION B-B

FULL SECTION REPAIR

NOTES

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL TAKE CARE DURING BARRIER RAIL REHAB OPERATIONS NOT TO DROP ANY MATERIAL BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALL BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE METHOD USED TO DELINEATE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

SAW CUT 1/2 INCH DEEP ALONG LAYOUT LINES INTO SOUND CONCRETE. CARE SHALL BE TAKEN NOT TO CUT OR DAMAGE REINFORCING STEEL DURING CONCRETE REMOVAL. ANY DAMAGED REINFORCING STEEL SHALL BE REPLACED WITH NEW REINFORCING STEEL AS DIRECTED BY THE ENGINEER.

REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO THE POINT WHERE IT IS SOUND. THE REPAIR AREA SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL MATCH EXISTING REINFORCING PLACEMENT, SIZE OR TYPE AND SHALL BE EPOXY COATED.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUTS.

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, THE 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.

THE #5 S1 AND S2 BARS SHALL BE INSTALLED USING AN ADHESIVE ANCHORING SYSTEM. THE YIELD LOAD FOR THE #5 S1 AND S2 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

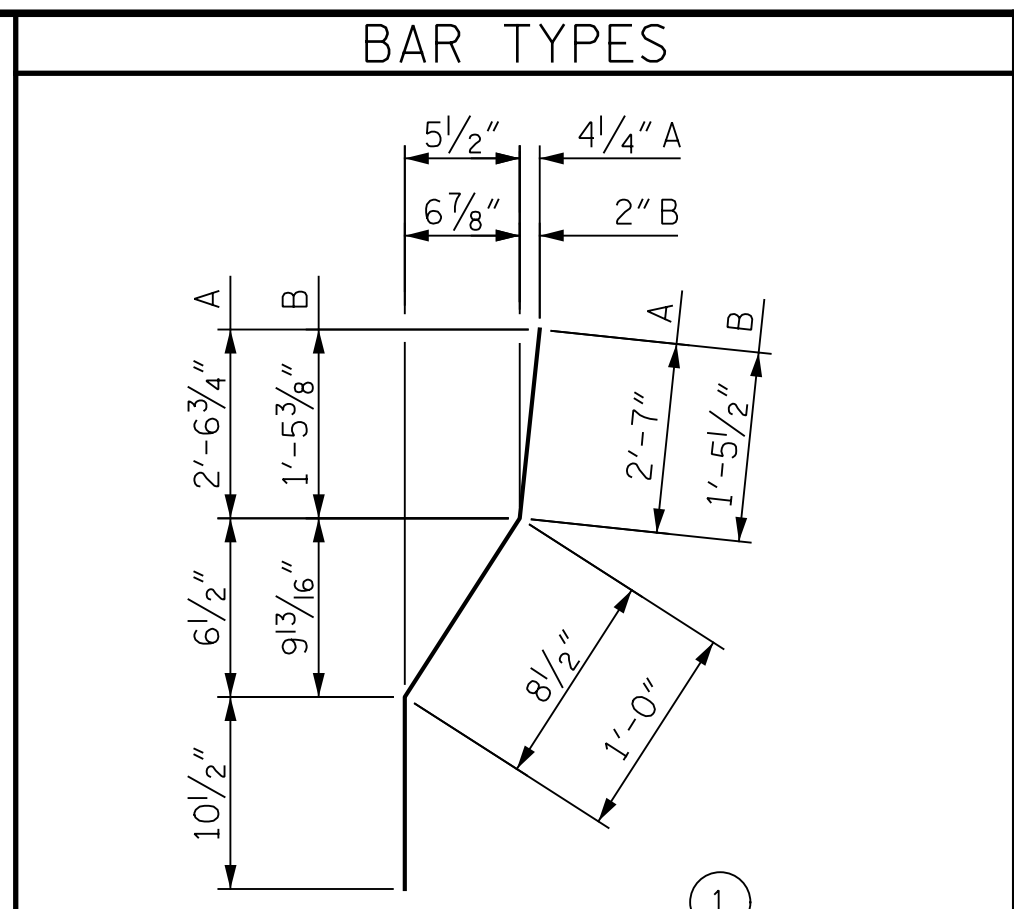
FOR CONCRETE BARRIER RAIL REPAIR QUANTITIES, SEE PLAN OF SPAN SHEETS.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

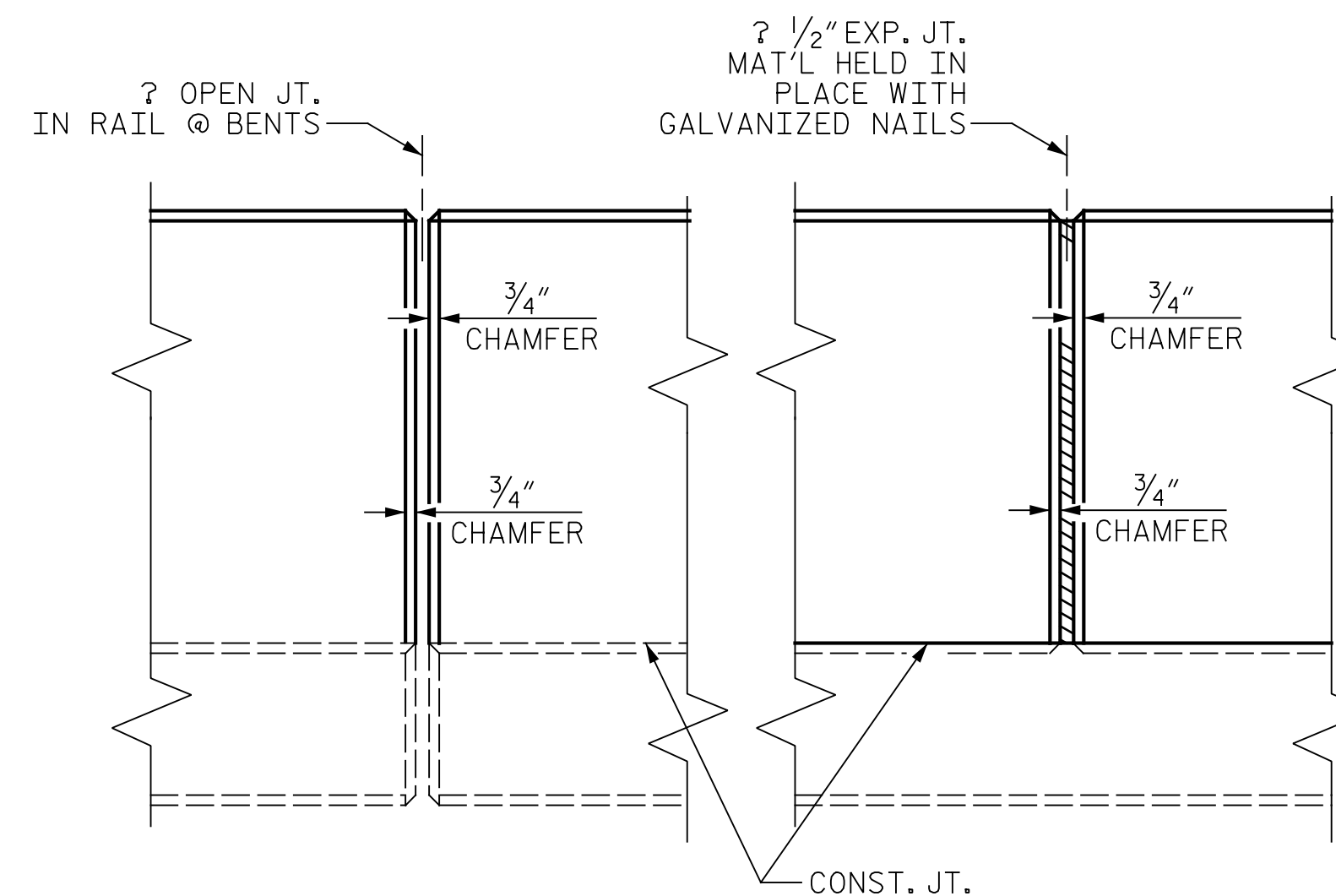
"A" DIMENSIONS FOR EXISTING 42" CONCRETE BARRIER RAIL

| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
|-----|--------|------|------|--------|--------|
| *S1 | 1 | #5 | STR | 4'-0" | 4 |
| *S2 | 1 | #5 | 1 | 4'-2" | 4 |

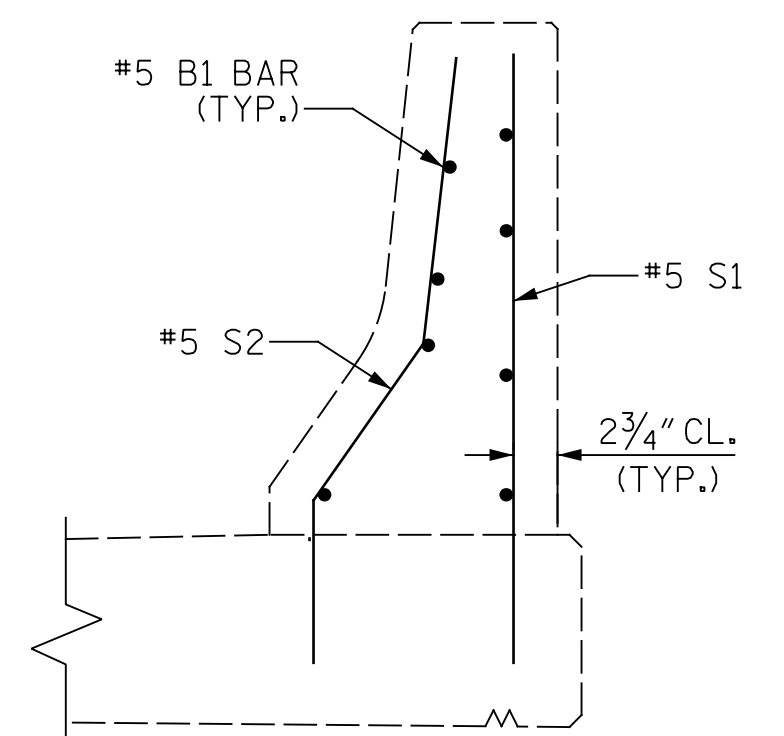
"B" DIMENSIONS FOR EXISTING 32" CONCRETE BARRIER RAIL

| BAR | NUMBER | SIZE | TYPE | LENGTH | WEIGHT |
|-----|--------|------|------|--------|--------|
| *S1 | 1 | #5 | STR | 3'-2" | 3 |
| *S2 | 1 | #5 | 1 | 3'-4" | 3 |

* EPOXY COATED REINFORCING STEEL

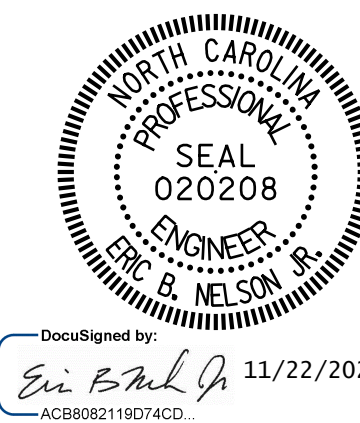


ELEVATION AT EXPANSION JOINTS



SECTION X-X

PROJECT NO. I-5997
 WAKE COUNTY
 BRIDGE NO. 910242



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE BARRIER RAIL REPAIR

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-80 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 82 |

DRAWN BY : J. MYA DATE : 09/2021
 CHECKED BY : J. YANACCONO DATE : 09/2021
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:
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 (919) 420-7660
 NC Lic. No. F-0270

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