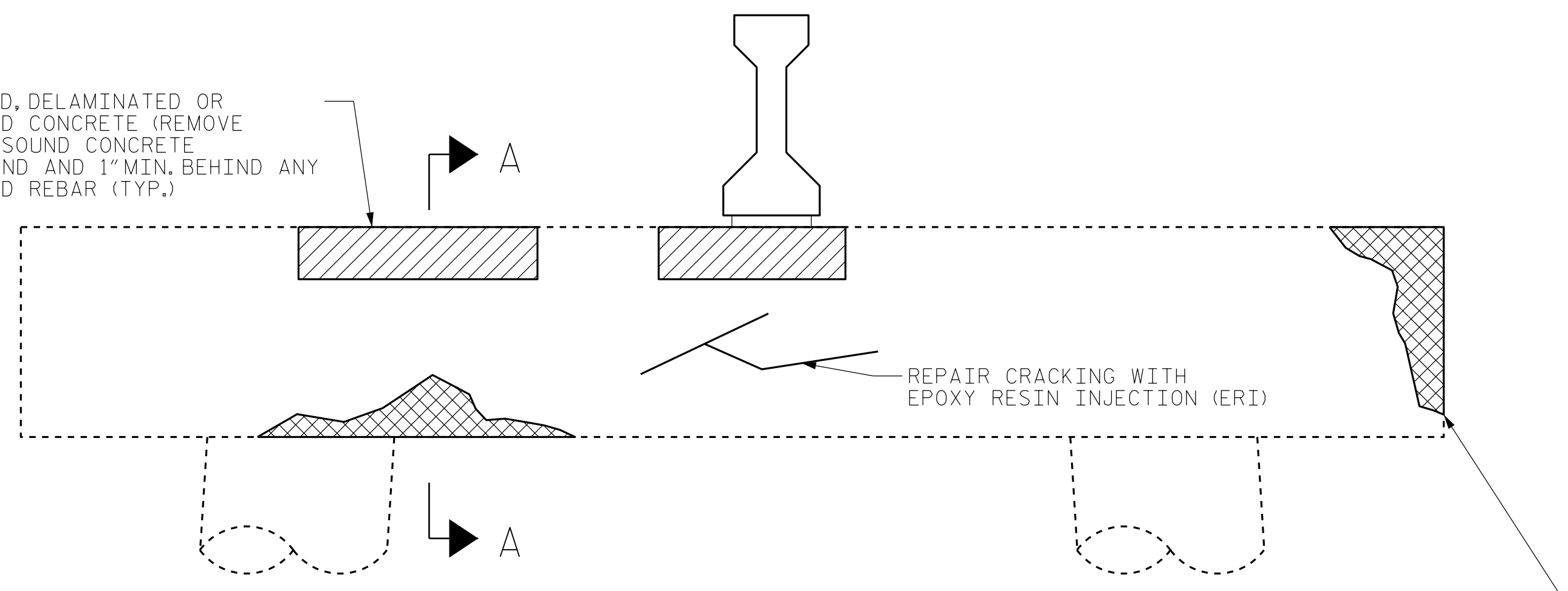


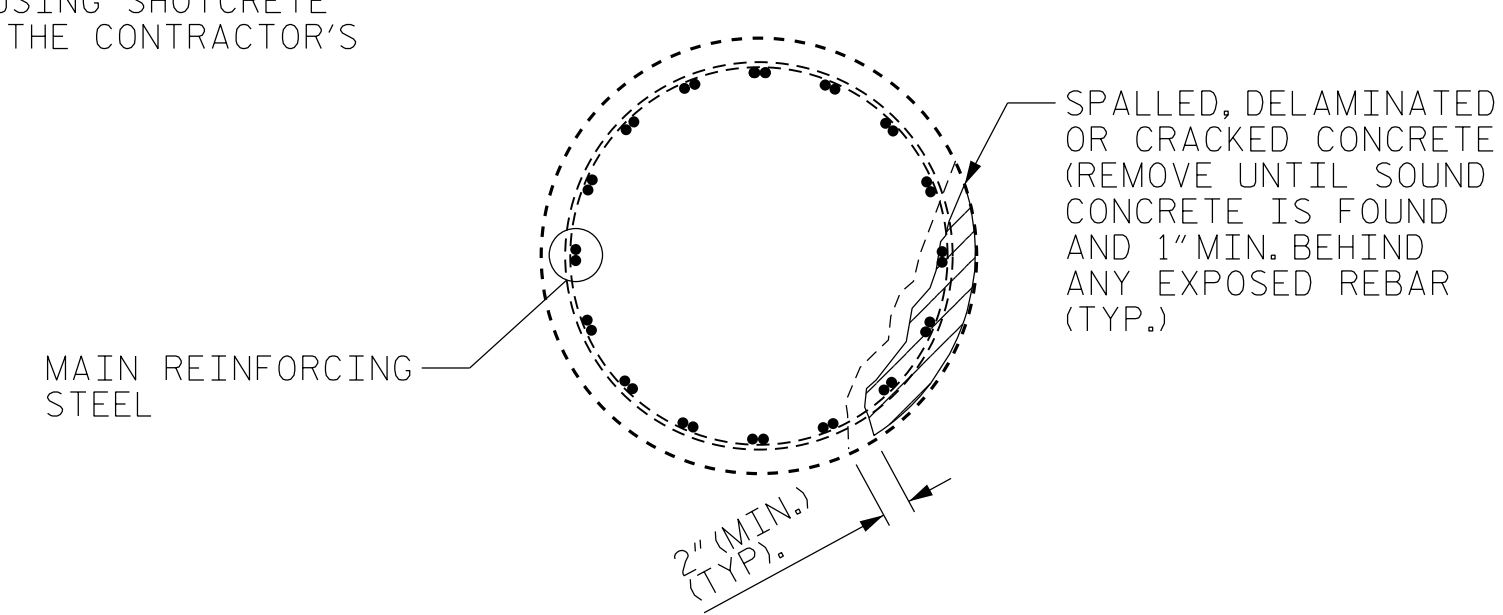
SPALLED, DELAMINATED OR CRACKED CONCRETE (REMOVE UNTIL SOUND CONCRETE IS FOUND AND 1" MIN. BEHIND ANY EXPOSED REBAR (TYP.))



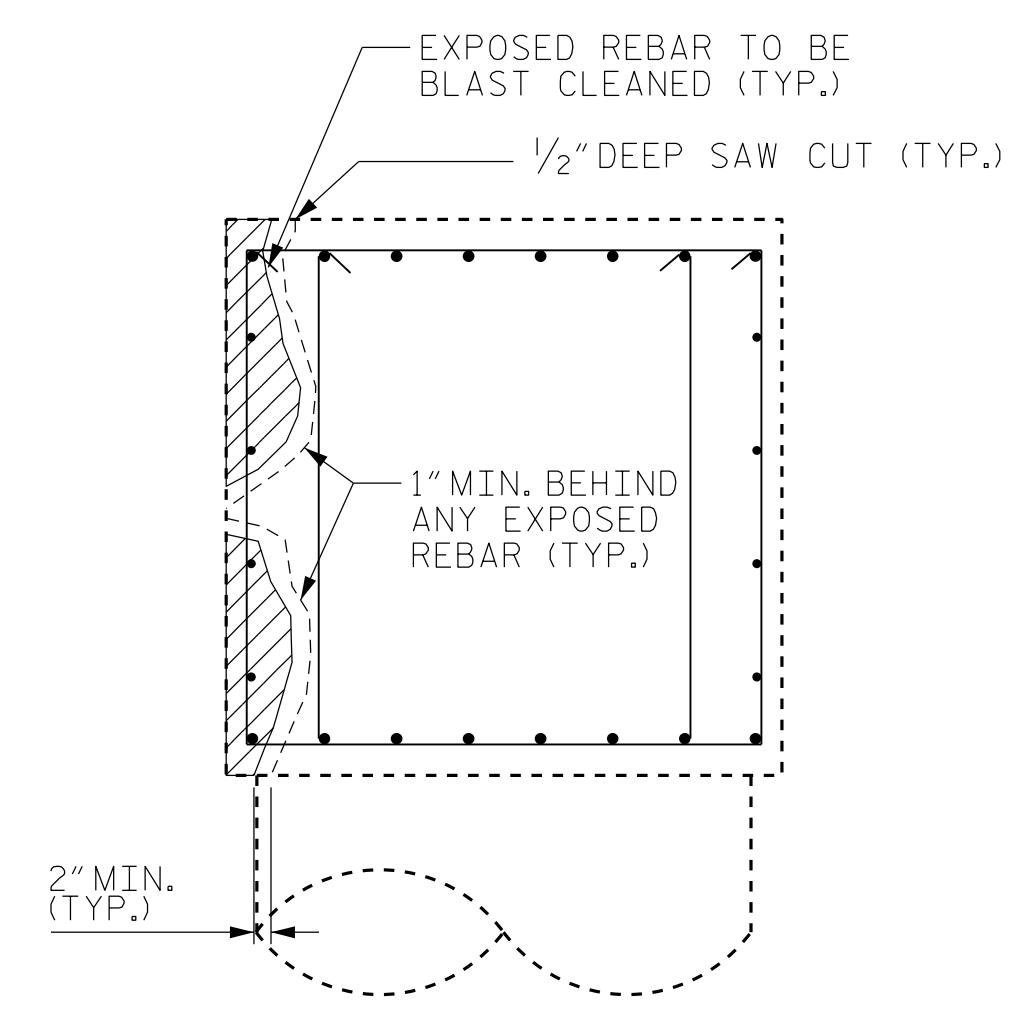
**CAP REPAIRS**

(COLUMN BENT SHOWN PILE BENTS SIMILAR)

REPAIR ALL SPALLED, DELAMINATED OR CRACKED CONCRETE AREAS NOT OCCURRING AT BEAM BEARING AREAS PER PLANS AND PER THE ENGINEER USING SHOTCRETE OR "FORM AND POUR" AT THE CONTRACTOR'S OPTION (SEE NOTES)

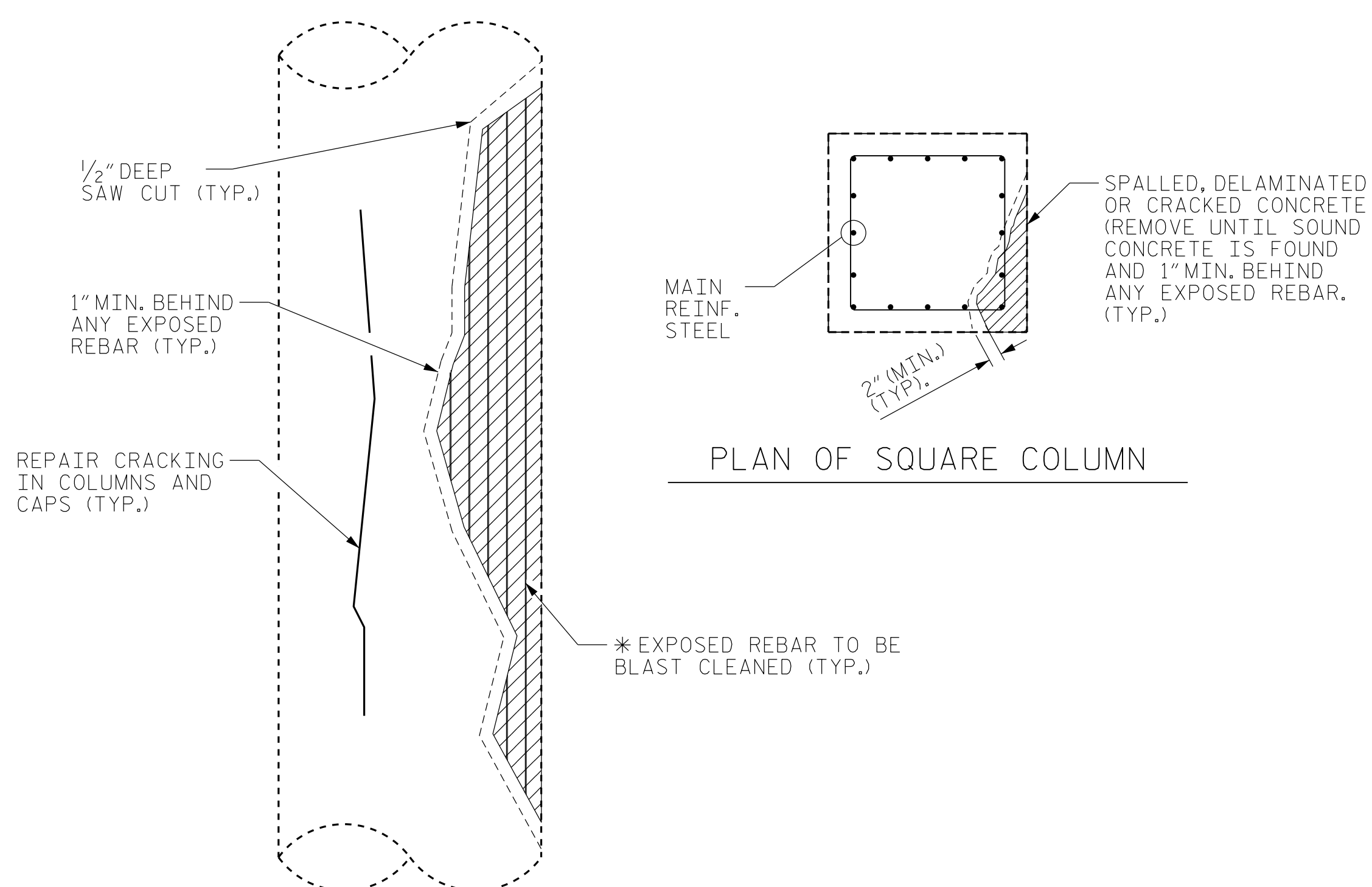


**PLAN OF CIRCULAR COLUMN**



**SECTION A-A**

**BENT CAP REPAIRS**



**ELEVATION OF COLUMN (SQUARE COLUMNS SIMILAR)**

\* REPAIR LENGTH SHALL NOT EXCEED 10 VERTICAL FEET AT ONCE OR 1/2 COLUMN DIAMETER.

**COLUMN REPAIRS**

**SUBSTRUCTURE REPAIR NOTES:**

1. WORK THIS SHEET WITH REPAIR METHODS AND CONCRETE REPAIR NOTES IN "CONCRETE RESTORATION DETAILS" SHEET 1.
2. TYPICAL BENT CAP REPAIRS ARE SHOWN IN THIS SHEET. REPAIR DETAILS SIMILAR FOR END BENT CAPS.
3. THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL, OR REQUIRE HARSH CHEMICALS TO REMOVE.
4. THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS, AND THE STANDARD SPECIFICATIONS.
5. REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, A MINIMUM OF 1" BEHIND REBAR AND MINIMUM CLEARANCE OF 2" TO SAWCUT.
6. REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.
7. IF ANY AREA IS DETERMINED TO BE UNSTABLE DURING THE REPAIR PROCESS AS DETERMINED BY THE ENGINEER, STOP THE CURRENT REPAIR PROCEDURE, SHORE THE AREA AND PERFORM A "FORM AND POUR" CONCRETE REPAIR.
8. NO MORE THAN 1/3 OF THE CAP OR PILE CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF THE CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.
9. SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR PILE, BUT NO MORE THAN 1/3 OF THE CIRCUMFERENCE SHALL BE REMOVED AT A TIME. IF REMOVAL EXTENDS MORE THAN 1-1/2" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.
10. REPAIRS TO THE BENT CAPS MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.
11. FOR SUBSTRUCTURE REPAIRS, SEE "SUBSTRUCTURE REPAIRS" SHEETS.

LEGEND	
	CONCRETE REPAIR AREA
	SHOTCRETE REPAIR AREA
	EPOXY RESIN INJECTION (ERI)

BRIDGES: 170171, 170172, 170177, 170178  
 480006, 480007, 480051, 480054  
 480065, 480066, 480072, 480073  
 480096, 480102, 480104, 480109  
 480123, 480124

PROJECT NO. I-5915B  
 COUNTY \_\_\_\_\_  
 BRIDGE NO. MULTIPLE

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**CONCRETE RESTORATION  
 DETAILS**  
 SUBSTRUCTURE

DRAWN BY : JACOB H. DUKE DATE : 01/2022  
 CHECKED BY : DIEGO A. AGUIRRE DATE : 01/2022  
 DESIGN ENGINEER OF RECORD: DIEGO A. AGUIRRE DATE : 01/2022

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			9
2			4			