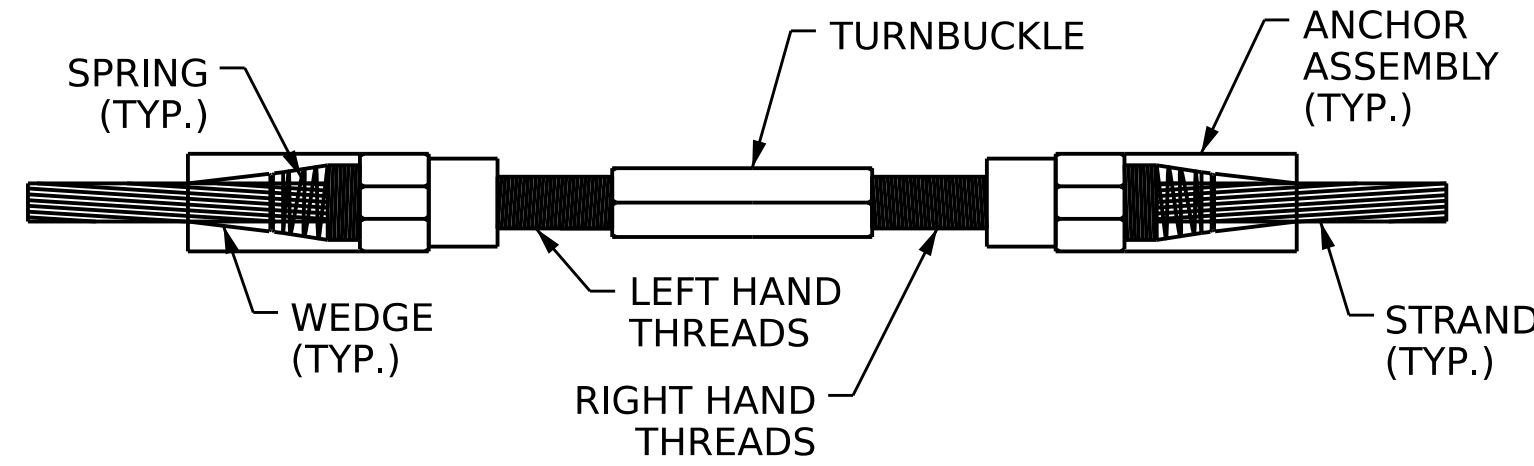
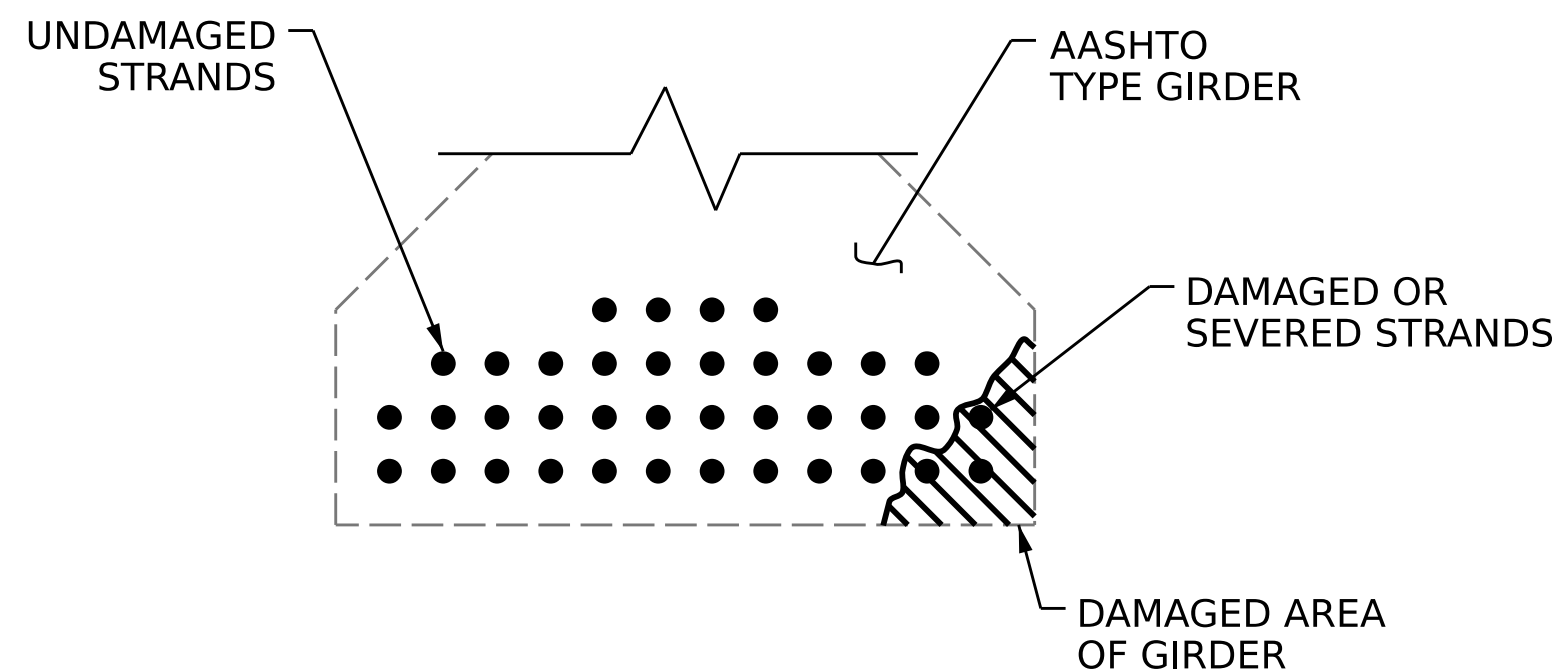


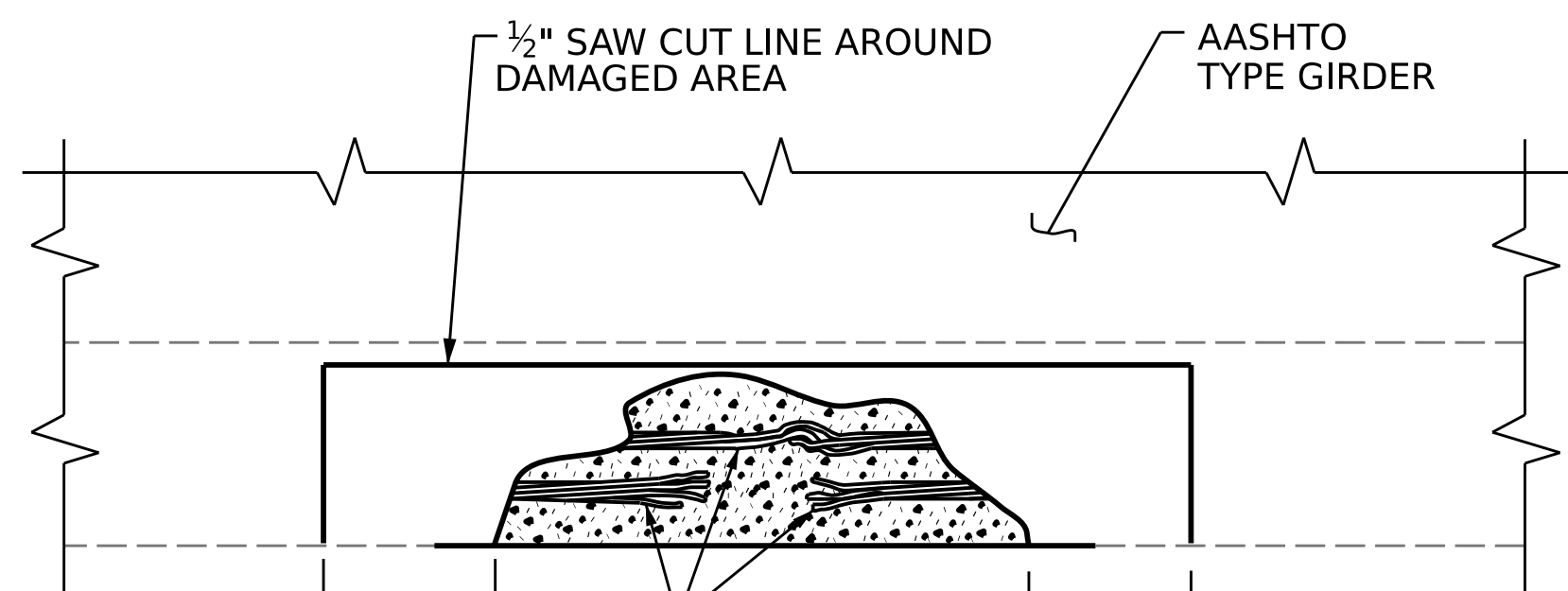
**MECHANICAL STRAND SPLICE ASSEMBLY**  
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



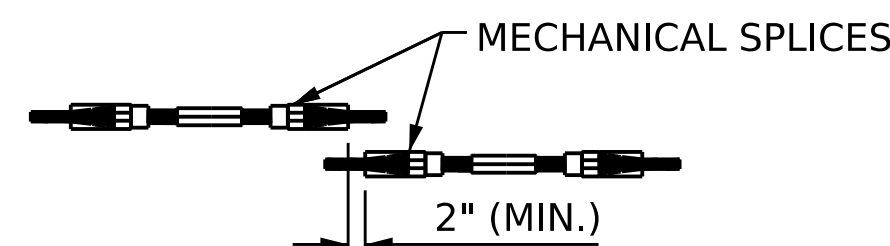
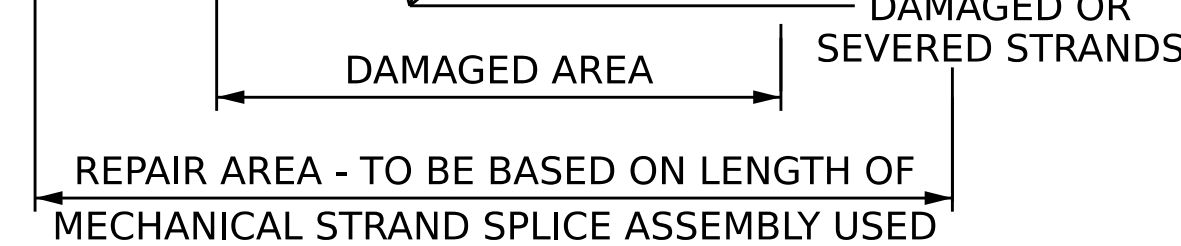
**STRAND SPLICE DETAIL**



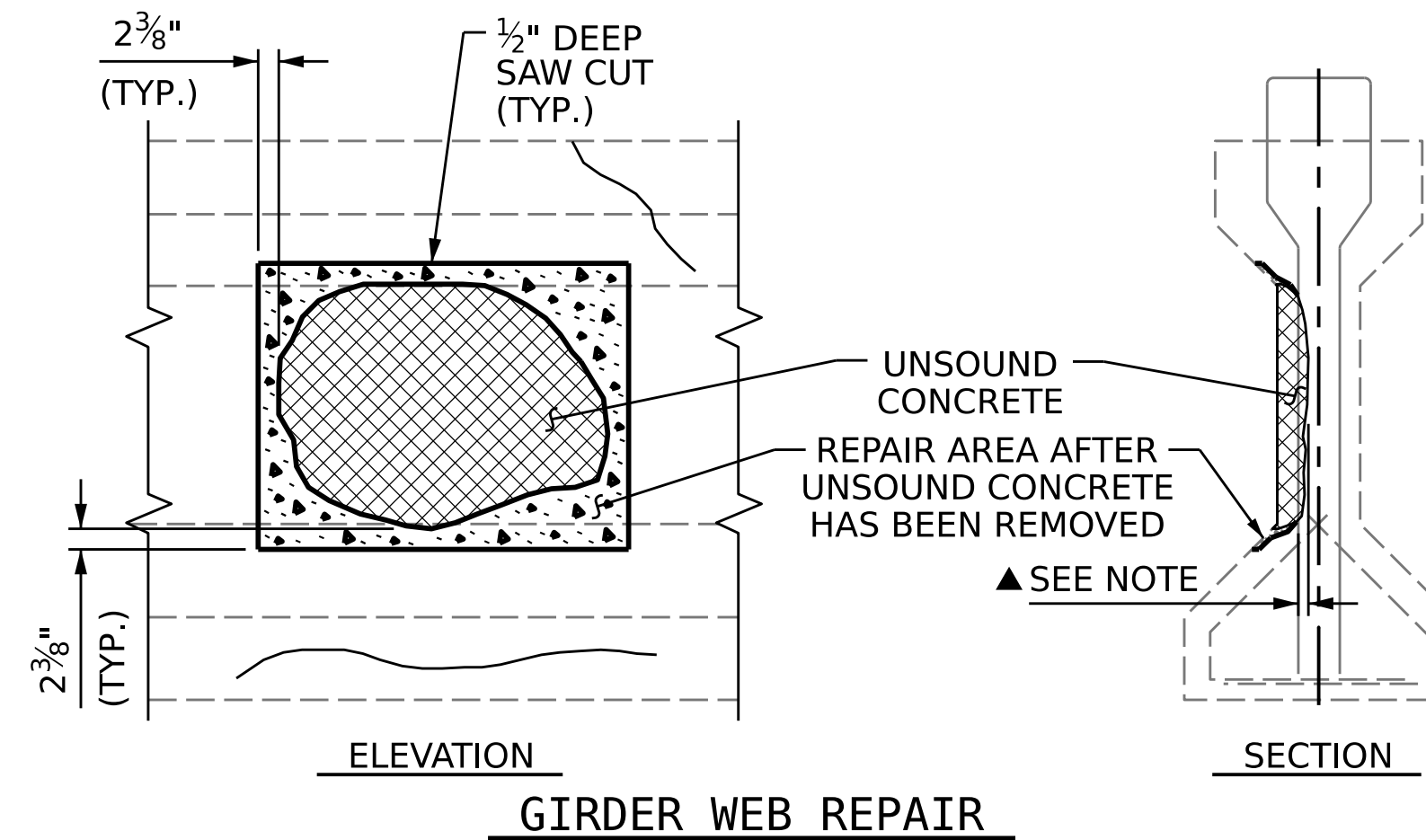
**SECTION VIEW OF DAMAGED GIRDER**



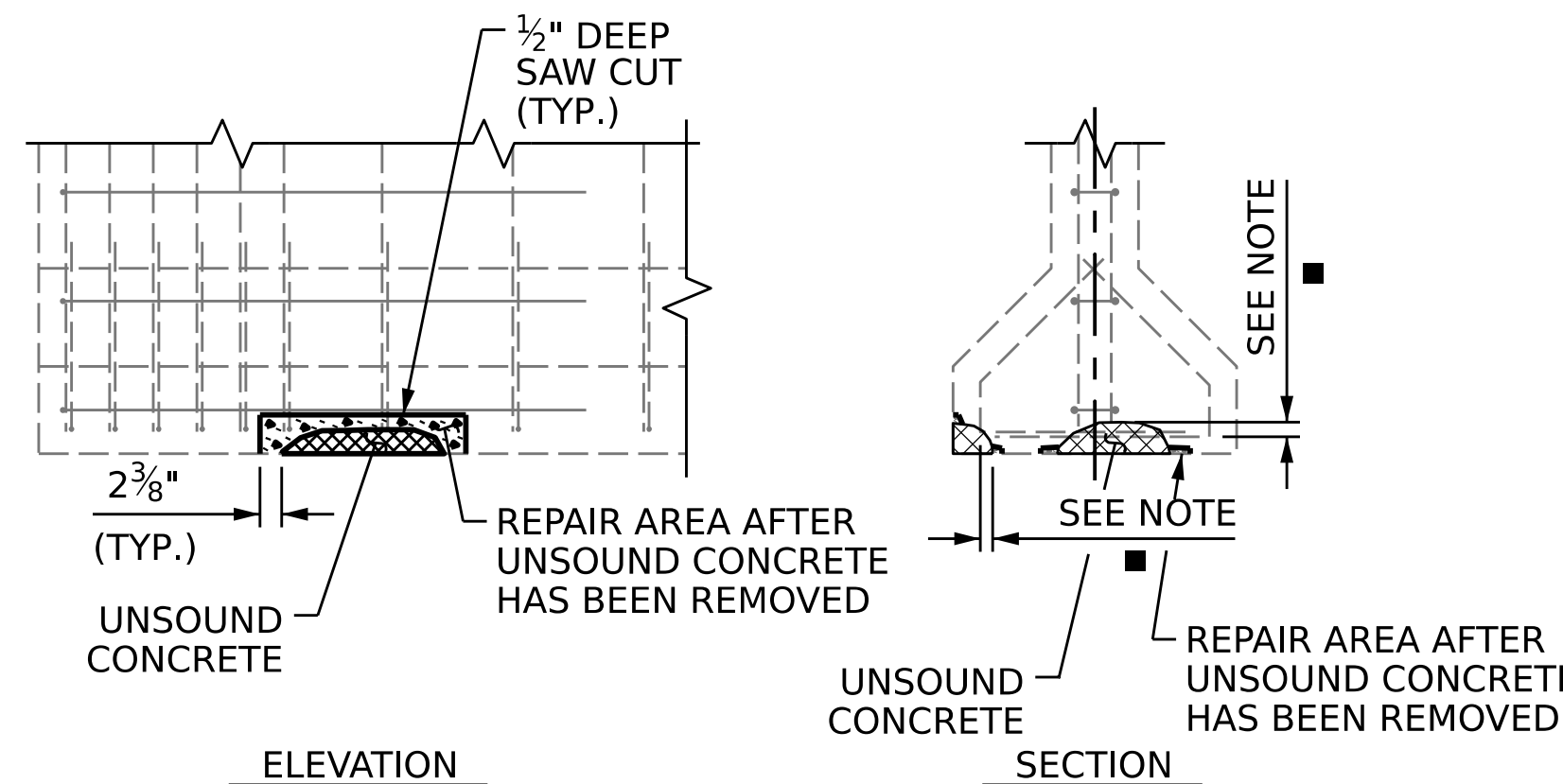
**ELEVATION VIEW OF DAMAGED GIRDER**



**STRAND REPAIR DETAILS**

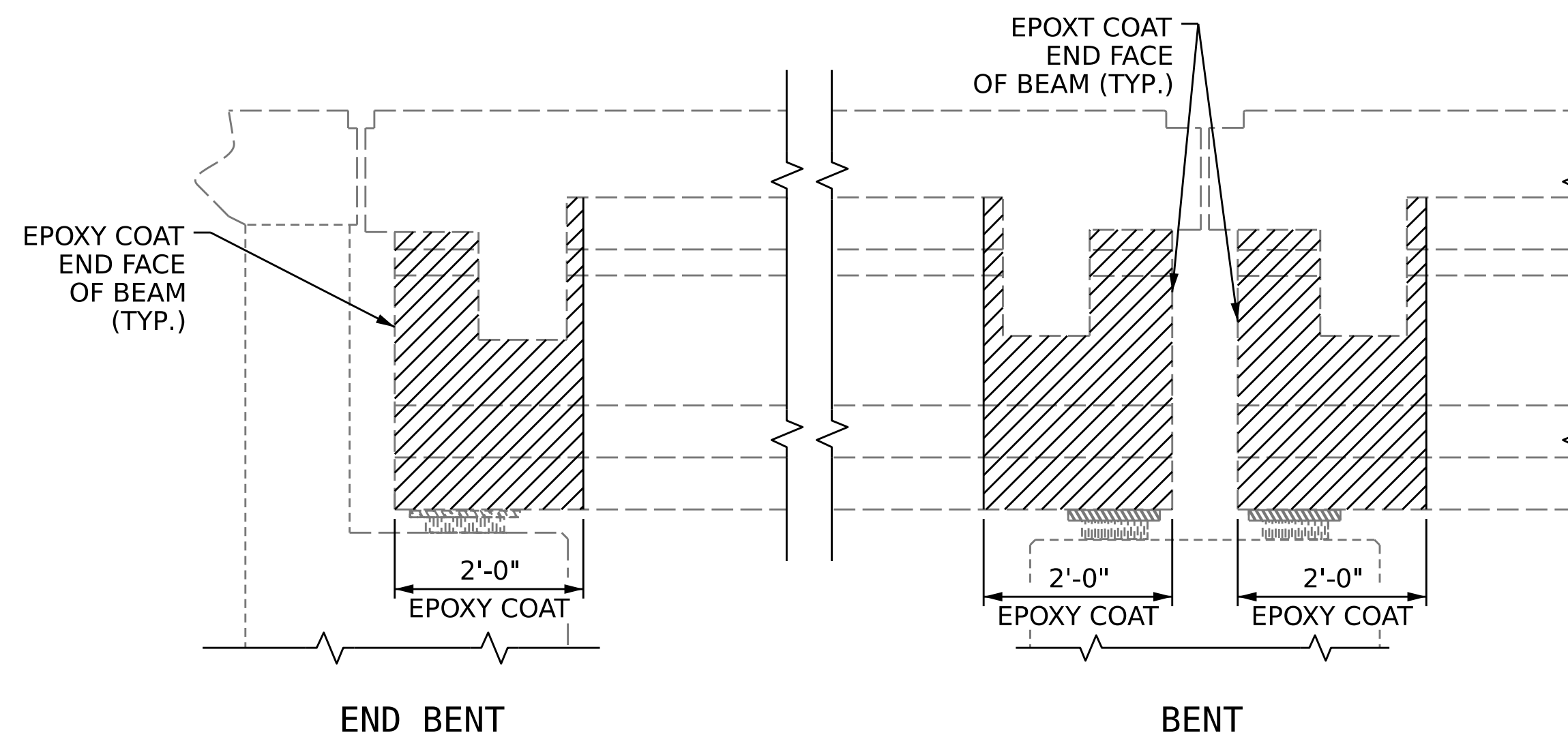
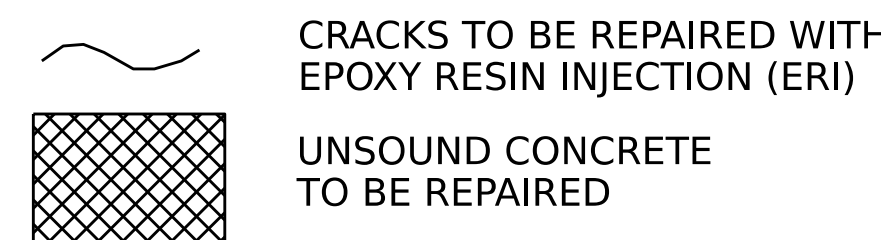


**GIRDER WEB REPAIR**



**GIRDER FLANGE REPAIR**

**PRESTRESSED GIRDER REPAIR**



**LIMITS OF EPOXY COATING**

**NOTES:**

- PREPACKAGED MATERIAL IS REQUIRED.
- CONSULT WITH THE ENGINEER TO DETERMINE PRELOADING REQUIREMENTS WHEN REPAIR IS WITHIN THE CENTER REGION OF THE BEAM (0.25L TO 0.75L).
- FOR REPAIRS OVER TRAFFIC AND SHALLOW REPAIRS THAT DO NOT ENGAGE REINFORCEMENT, ANCHOR PATCH MATERIAL USING 1/4" GALVANIZED BOLTS, EPOXY ANCHORED WITH 2" EMBEDMENT. PLACE BOLTS IN A 6" GRID. USE A LATEX OR EPOXY PATCH MATERIAL FOR IMPROVED BOND. USE EXTREME CARE TO NOT DAMAGE STRANDS.
- FOR PRESTRESSED CONCRETE GIRDER REPAIRS, SEE SPECIAL PROVISIONS.
- FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.
- FOR EPOXY COATING CONCRETE GIRDER ENDS, SEE SPECIAL PROVISIONS.

**PRESTRESSED GIRDER REPAIR SEQUENCE:**

1. SOUND CONCRETE TO DETERMINE EXTENTS OF REPAIR LOCATION.
2. REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL. SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".
3. REMOVE CONCRETE WITHIN SAW CUT AREA TO MINIMUM 1/2" DEPTH. IF CONCRETE IS DAMAGED BEYOND THE ORIGINAL SAW CUT, A NEW SAW CUT IS REQUIRED.
- ▲ 4. IF MORE THAN HALF THE CIRCUMFERENCE OF A REINFORCING BAR IS EXPOSED DURING THIS PROCESS, REMOVE ADDITIONAL CONCRETE TO 1" BEHIND THE BAR. THIS DOES NOT APPLY TO PRESTRESSED STRANDS.
- 5. ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. USE EXTREME CARE TO NOT DAMAGE STRANDS.
6. CLEAN AND PREPARE ALL EXPOSED REINFORCING BARS AND PRESTRESSED STRANDS IN ACCORDANCE WITH THE REPAIRS TO PRESTRESSED CONCRETE GIRDERS SPECIAL PROVISIONS. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED. NOTE AND PROVIDE DETAILED DOCUMENTATION, INCLUDING LOCATION AND SEVERITY, OF ALL DAMAGE TO PRESTRESSED STRANDS THAT EXCEEDS 10% SECTION LOSS. IF FIVE (5) OR MORE STRANDS ARE DAMAGED, NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF REPAIR MATERIAL.
7. REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN THE REPAIR AREA OF DIRT, GREASE, OIL, AND FOREIGN MATTER. (PICTURE REQUIRED)
8. PREPARE SURFACE AND PLACE APPROVED REPAIR MATERIAL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MAXIMUM AGGREGATE SIZE FOR REPAIR MATERIAL SHALL NOT EXCEED 2/3 THE MINIMUM REPAIR DEPTH. (PICTURE REQUIRED)

**PRESTRESSED GIRDER STRAND REPAIR SEQUENCE:**

1. REMOVE LIVE LOAD FORM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.
2. MEASURE OUT THE AREA NEEDED TO HAVE ADEQUATE ROOM TO SPLICE THE BROKEN OR DAMAGED STRAND. IF MULTIPLE STRANDS ARE BROKEN ADJACENT TO ONE ANOTHER THEN THE SPLICES SHALL BE STAGGERED. SEE "SPLICE OFFSET" ABOVE. AFTER YOU HAVE DETERMINED THE REPAIR AREA NEEDED, SAW CUT A MINIMUM OF 1/2" AT RIGHT ANGLES AROUND THE DAMAGED AREA. CHIP OUT REST OF CONCRETE TO A SUFFICIENT REPAIR DEPTH.
3. SPLICE STRANDS USING THE MECHANICAL SPLICE STRAND ASSEMBLY AND TENSION TO REQUIRED FORCE PER THE MANUFACTURER'S GUIDELINES.
4. PATCH REPAIR AREA USING NON SHRINK GROUT. PROFILE OF GIRDER MAY NEED TO BE INCREASED AROUND REPAIR AREA TO PROVIDE PROPER COVER.
5. AFTER GROUT HAS CURED PLACE TRAFFIC BACK ON BRIDGE OR REPAIRED AREA OF BRIDGE.

PROJECT NO. **15BPR.59**  
**DURHAM/WAKE** COUNTY  
 BRIDGE NO. **911084**



12/08/2022

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
**PRESTRESSED CONCRETE  
 GIRDER REPAIR  
 DETAILS**

DRAWN BY : N.A. PIERCE DATE : 10/2022  
 CHECKED BY : A.Y. GODFREY DATE : 10/2022  
 DESIGN ENGINEER OF RECORD : N.A. PIERCE DATE : 12/2022

12/17/2022  
 R:\Structures\Plans\405\_000\_15BPR59\_SMU\_PCG.dgn  
 napierce

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-04
2			4			TOTAL SHEETS 73