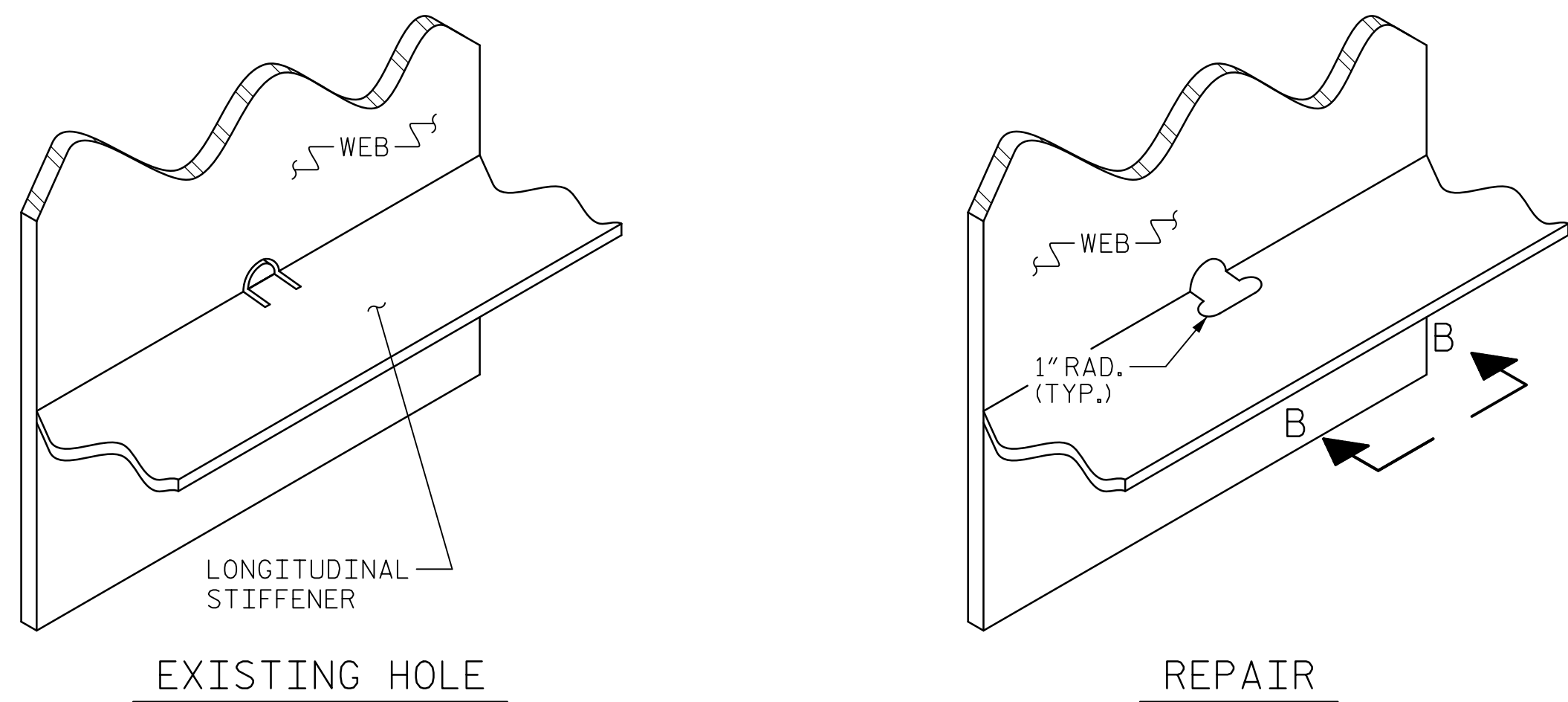


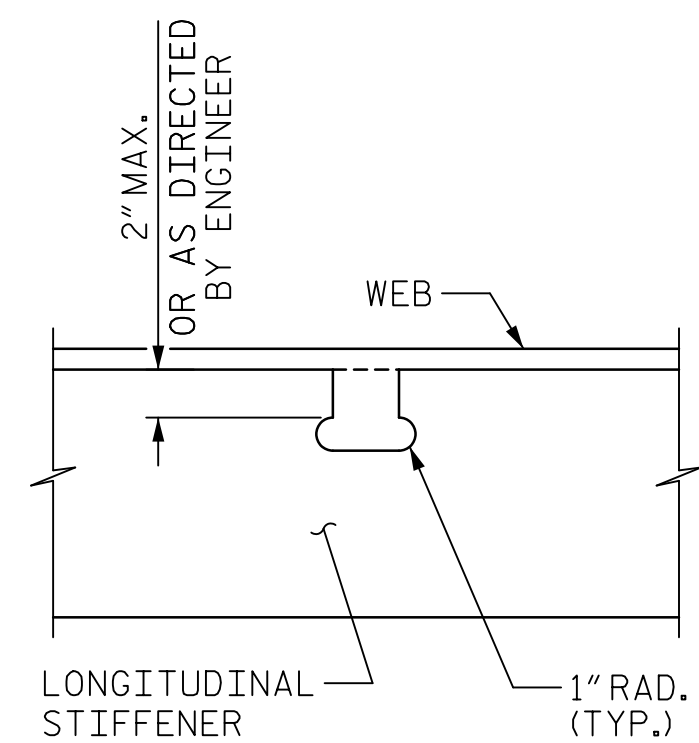
NOTES:

FOR HOLE REPAIRS, SEE SPECIAL PROVISIONS.

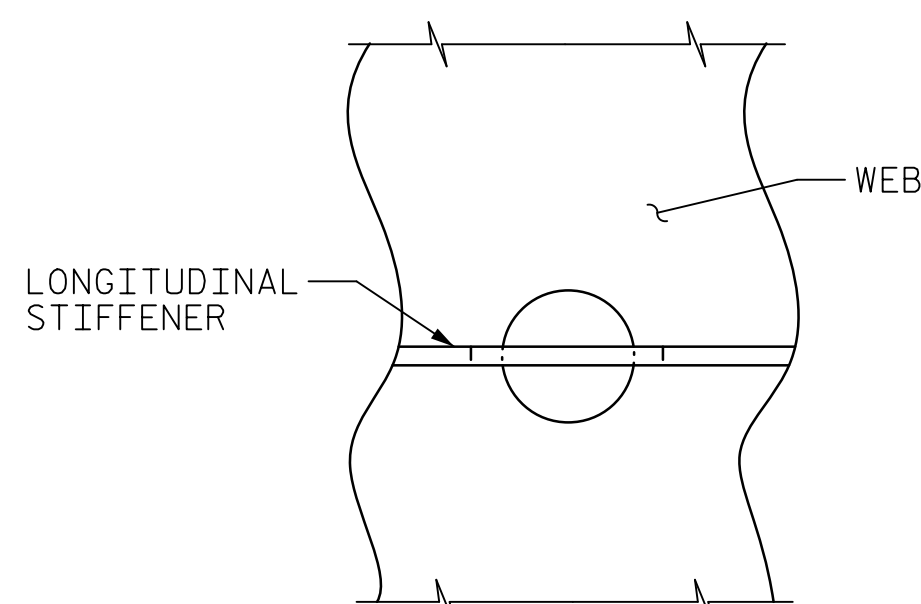
FOR PAY ITEMS, SEE SHEET 14 OF 14.



ISOMETRIC VIEW



PLAN



VIEW B-B

HOLE REPAIRS TYPE I

FOR REPRESENTATION ONLY, REPAIR SHALL BE PERFORMED AT EACH LOCATION NOTED, FOR REPAIR LOCATIONS, SEE PHOTO LEGEND ON SHEET 7.

REPAIR PROCEDURE

1. DRILL 1" RADIUS HOLES AT THE TERMINATION OF THE EXISTING CUTS IN THE LONGITUDINAL STIFFENER.
2. SAW CUT BETWEEN HOLES TANGENTIAL TO THE RADIUS OF THE HOLE.
3. GRIND SMOOTH ADJACENT AREAS OF THE WEB, LONGITUDINAL STIFFENER, AND WELDS.

HR-I-1



HR-I-5



HR-I-2



HR-I-6



HR-I-3



HR-I-7



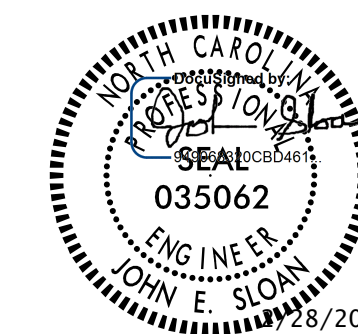
HR-I-4



PROJECT NO. 15BPR.20
HENDERSON COUNTY
 STATION: 35+30.22 -L-

SHEET 6 OF 14

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 701 CORPORATE CENTER DRIVE, SUITE 475
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 (919) 854-6200 www.aecom.com
 AECOM License No. F-0342



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

REHABILITATION

STRUCTURAL STEEL
 REPAIRS

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S-86

TOTAL SHEETS
129

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 TIME: 10:24:49 AM

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DRAWN BY : M. TOM DATE : 2/2019
 CHECKED BY : G. COLS DATE : 2/2019
 DESIGNED BY : J. SLOAN DATE : 2/2019
 DESIGN CHECKED BY : E. ZHOU DATE : 2/2019

DATE: 2/27/2020
TIME: 3:55:07 PM

HR-I-8



HR-I-11



HR-I-9



HR-I-12



HR-I-10

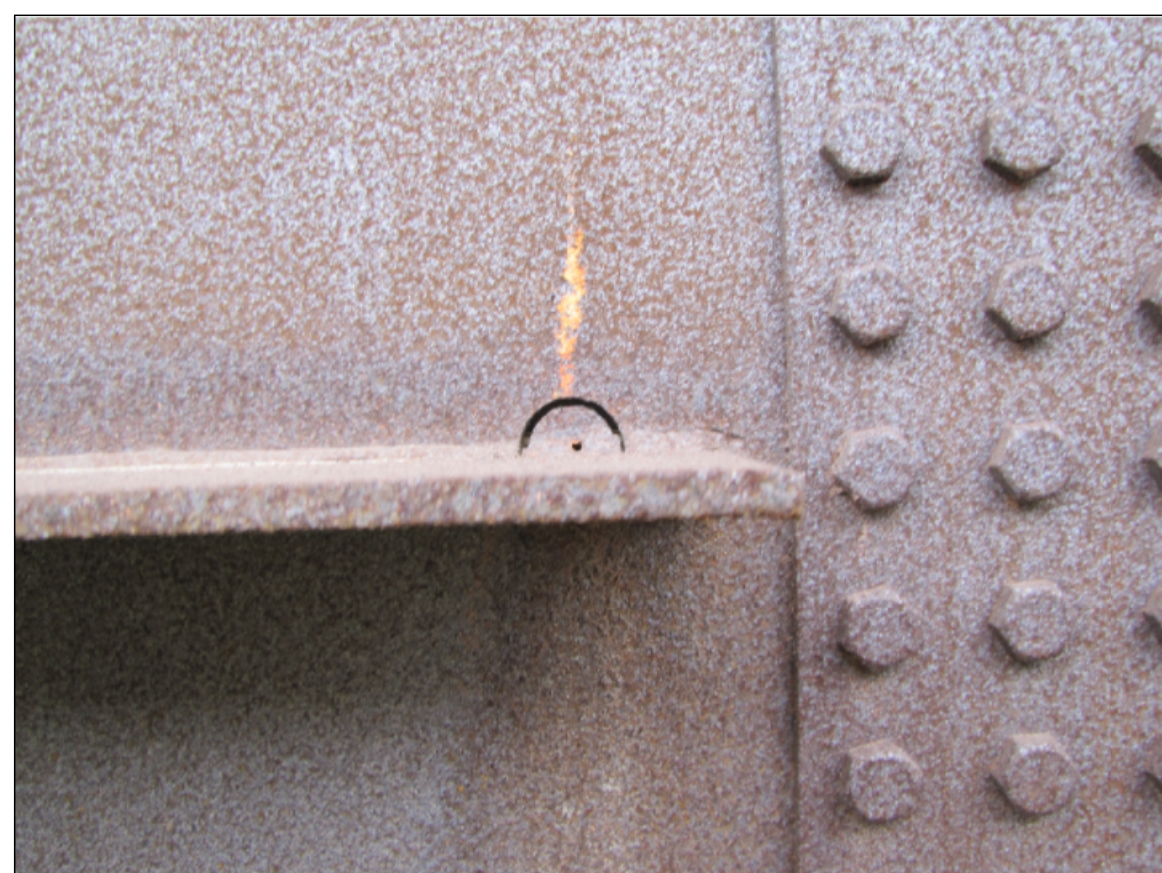


PHOTO LOCATION LEGEND

- HR-I-1 GIRDER 2, SPAN B, IN WEB, 15'-6" WEST OF PANEL POINT 8, AT BOTTOM LONGITUDINAL STIFFENER; 2IN DIAMETER HOLE.
- HR-I-2 GIRDER 1, SPAN C, NORTH FACE, 12'-0" WEST OF PANEL POINT 16 IN WEB, AT BOTTOM LONGITUDINAL STIFFENER; 2IN DIAMETER HOLE.
- HR-I-3 GIRDER 2, SPAN C, AT TOP LONGITUDINAL STIFFENER, 13'-8" WEST OF PANEL POINT 21; 2IN DIAMETER HOLE.
- HR-I-4 GIRDER 1, SPAN C, IN WEB AT TOP LONGITUDINAL STIFFENER, 9'-4" WEST OF PANEL POINT 22; 2IN DIAMETER HOLE.
- HR-I-5 GIRDER 1, SPAN C, IN WEB AT TOP LONGITUDINAL STIFFENER, 9'-9" WEST OF PANEL POINT 22; 2IN DIAMETER HOLE.
- HR-I-6 GIRDER 1, SPAN C, IN WEB AT TOP LONGITUDINAL STIFFENER, 11'-5" WEST OF PANEL POINT 22; 2IN DIAMETER HOLE.
- HR-I-7 GIRDER 1, SPAN C, IN WEB AT TOP LONGITUDINAL STIFFENER, 12'-1" WEST OF PANEL POINT 22; 2" DIAMETER HOLE.
- HR-I-8 GIRDER 1, SPAN C, IN WEB, 6'-0" WEST OF PANEL POINT 22 AT BOTTOM LONGITUDINAL STIFFENER; 2IN DIAMETER HOLE.
- HR-I-9 GIRDER 1, SPAN C, ON WEB AT BOTTOM LONGITUDINAL STIFFENER 20'-1" WEST OF PANEL POINT 22; 2IN DIAMETER HOLE.
- HR-I-10 GIRDER 2, SPAN D, 10'-8" WEST OF PANEL POINT 30 AT BOTTOM LONGITUDINAL STIFFENER; 2IN DIAMETER HOLE.
- HR-I-11 GIRDER 3, SPAN C, IN WEB AT BOTTOM LONGITUDINAL STIFFENER, 8'-4" WEST OF PANEL POINT 15; 2" DIAMETER HOLE.
- HR-I-12 GIRDER 3, SPAN C, IN WEB AT TOP LONGITUDINAL STIFFENER, 8'-3" WEST OF PANEL POINT 15; 2" DIAMETER HOLE.

HOLE REPAIRS TYPE I

PROJECT NO. 15BPR.20
HENDERSON COUNTY
 STATION: 35+30.22 -L-

SHEET 7 OF 14

DRAWN BY : M. TOM	DATE : 2/2019
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DESIGNED BY : J. SLOAN	DATE : 2/2019
DESIGN CHECKED BY : E. ZHOU	DATE : 2/2019

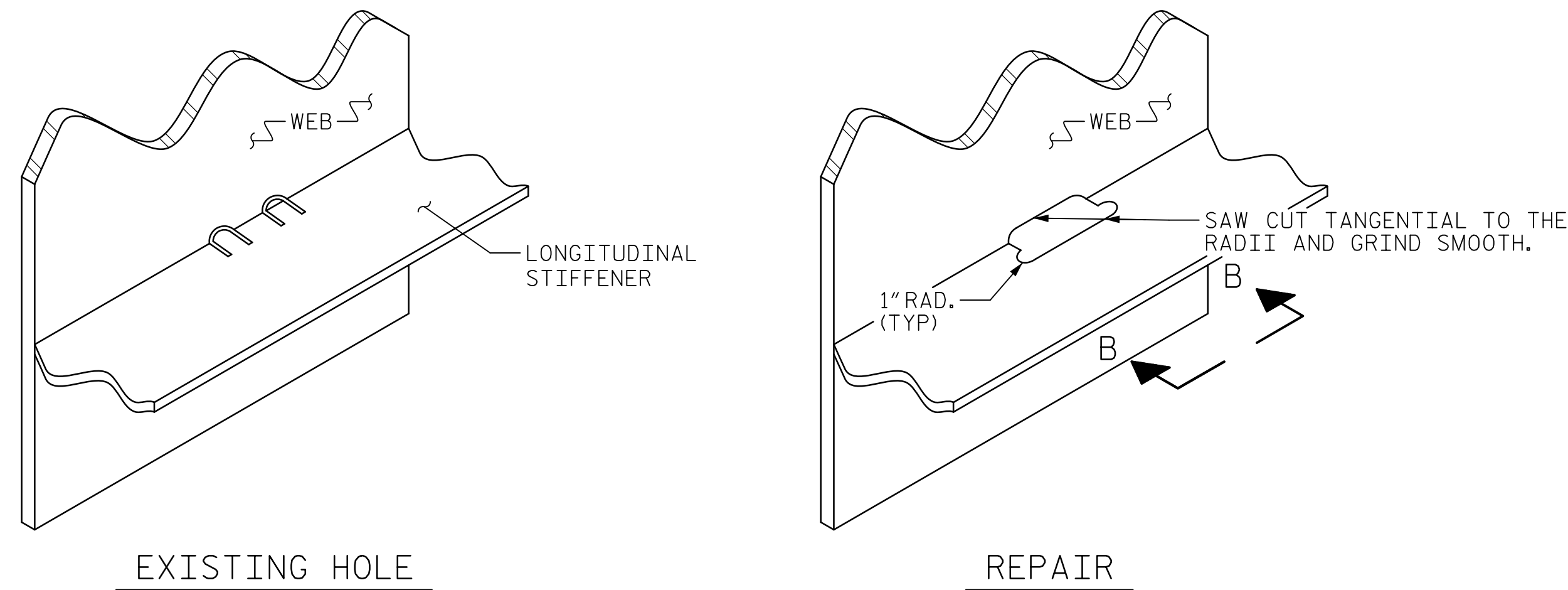
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
REHABILITATION					
STRUCTURAL STEEL REPAIRS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 129

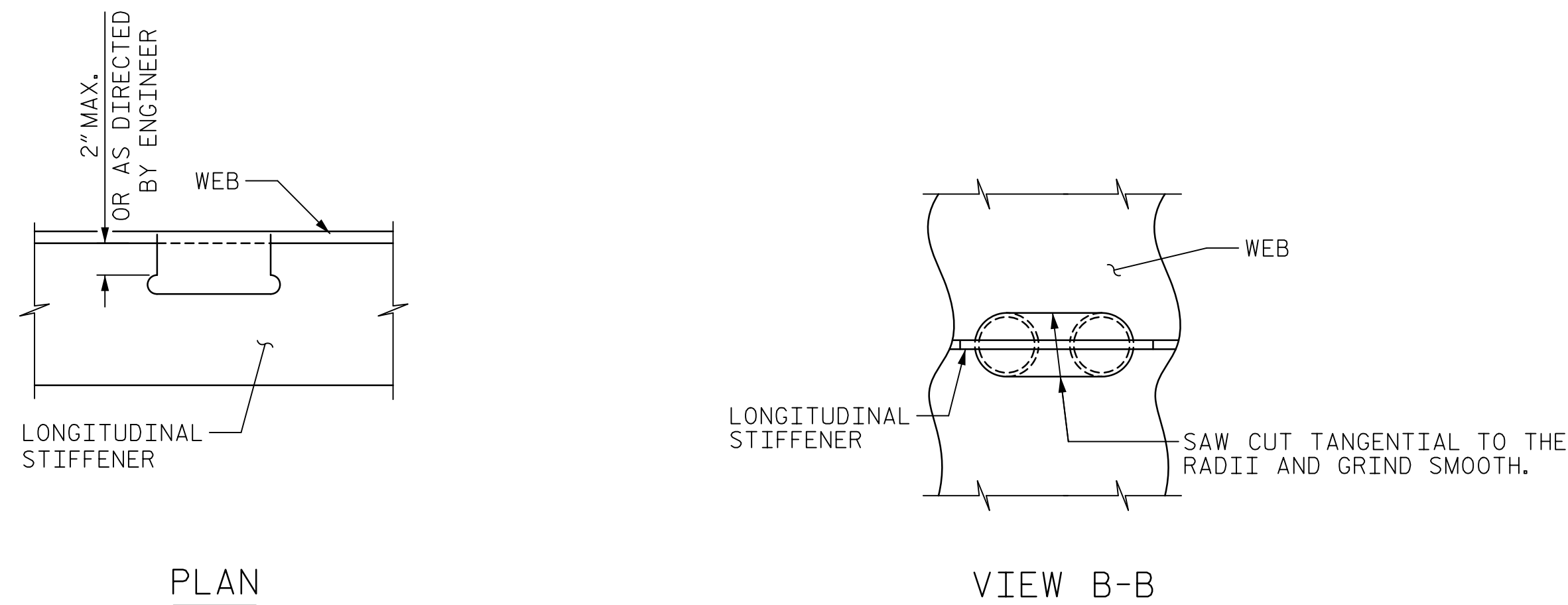
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NOTES:

FOR HOLE REPAIRS, SEE SPECIAL PROVISIONS.
FOR PAY ITEMS, SEE SHEET 14 OF 14.



ISOMETRIC VIEW



HOLE REPAIR TYPE II

FOR REPRESENTATION ONLY. REPAIR SHALL BE PERFORMED AT EACH LOCATION NOTED. FOR REPAIR LOCATIONS, SEE PHOTO LOCATION LEGEND.

REPAIR PROCEDURE

1. DRILL 1" RADIUS AT THE TERMINATION OF THE EXISTING OUTSIDE CUTS IN THE LONGITUDINAL STIFFENER.
2. SAW CUT BETWEEN THE HOLES IN THE WEB AND THE STIFFENER TANGENTIAL TO THE RADII OF THE HOLES.
3. GRIND SMOOTH ADJACENT AREAS OF THE WEB, LONGITUDINAL STIFFENER, AND WELDS.

HR-II-1



HR-II-2



HR-II-3



PHOTO LOCATION LEGEND

- HR-II-1 GIRDER 1, SPAN B, IN WEB AT BOTTOM LONGITUDINAL STIFFENER, 3'-4" WEST OF PANEL POINT 10: (2) 2" Ø HOLES AT APPROXIMATELY 3" SPACING
- HR-II-2 GIRDER 3, SPAN C, IN WEB AT BOTTOM LONGITUDINAL STIFFENER, 5'-10" WEST OF PANEL POINT 15: (2) 2" Ø HOLES AT APPROXIMATELY 4" SPACING
- HR-II-3 GIRDER 3, SPAN C, IN WEB AT BOTTOM LONGITUDINAL STIFFENER, 8'-9" WEST OF PANEL POINT 15: (2) 2" Ø HOLES AT APPROXIMATELY 4" SPACING

DATE: 2/28/2020 TIME: 10:54:30 AM

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CHECKED BY : G. COLS	DATE : 2/2019
DESIGNED BY : J. SLOAN	DATE : 2/2019
DESIGN CHECKED BY : E. ZHOU	DATE : 2/2019

HOLE REPAIRS TYPE II
FOR REPRESENTATION ONLY

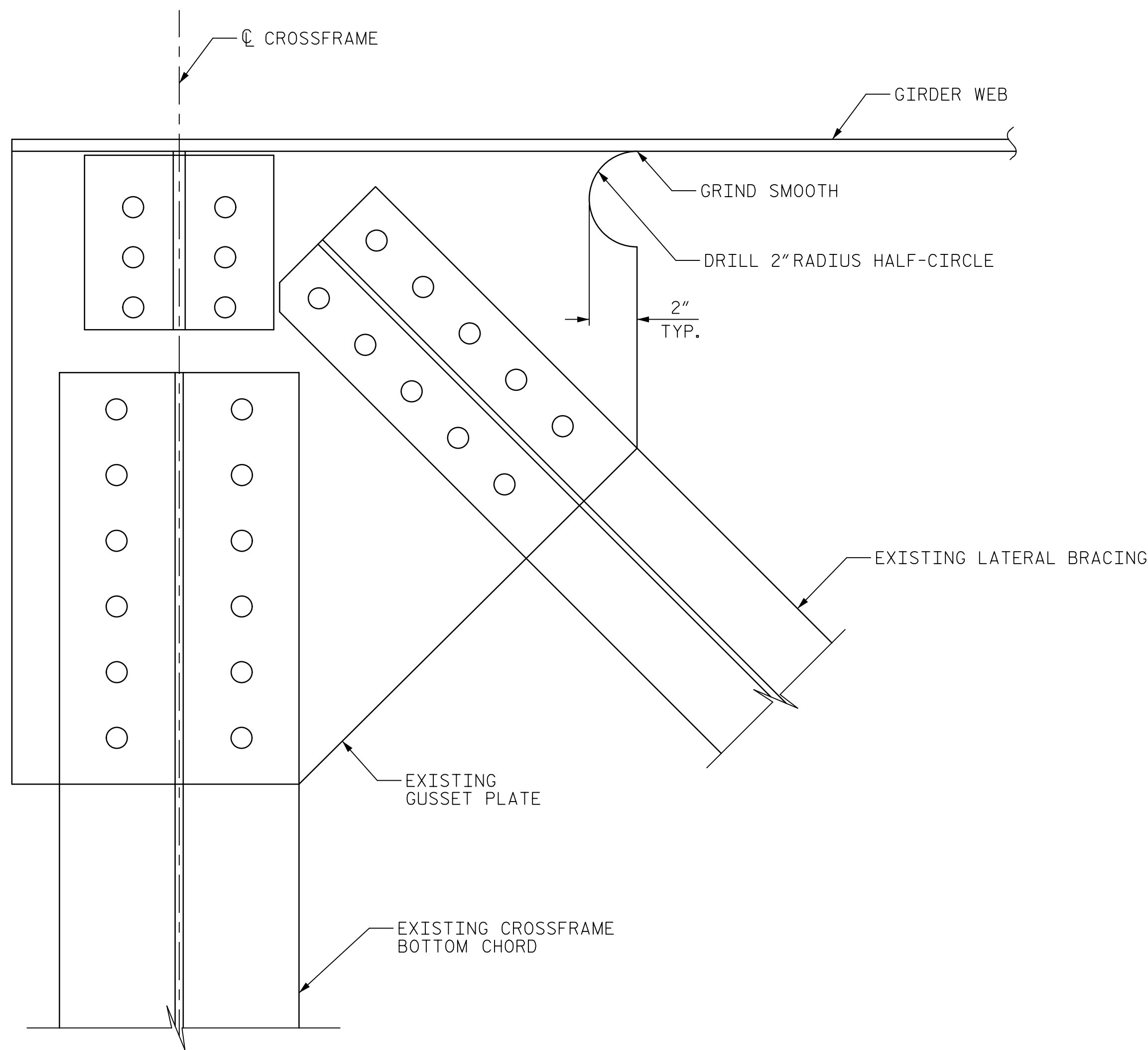
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PROJECT NO. 15BPR.20
HENDERSON COUNTY
STATION: 35+30.22 -L-

SHEET 8 OF 14

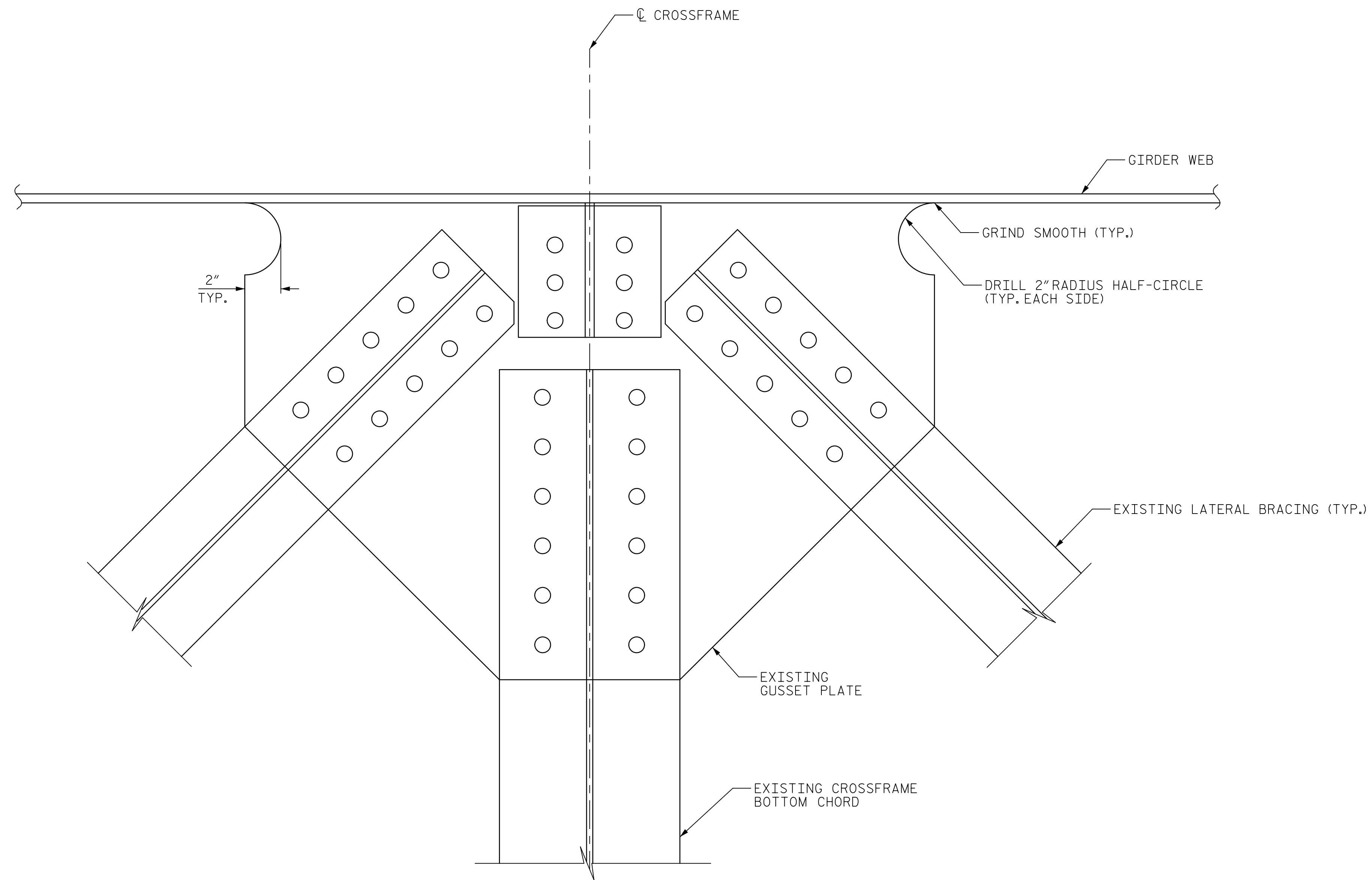
 <small>AECOM TECHNICAL SERVICES OF NC, INC. 701 CORPORATE CENTER DRIVE, SUITE 475 RALEIGH, NC 27607 (919) 854-6200 www.aecom.com AECOM License No. F-0342</small>		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION REHABILITATION STRUCTURAL STEEL REPAIRS																			
		REVISIONS <table border="1"> <tr> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th>NO.</th> <th>BY:</th> <th>DATE:</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </table>		NO.	BY:	DATE:	NO.	BY:	DATE:	1			3			2			4		
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		SHEET NO. S-88 TOTAL SHEETS 129																			

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TIME: 3:55:28 PM



PLAN VIEW OF GUSSET PLATE RETROFIT

AT CROSSFRAMES A1, A5, 1, 37, E1 AND E5



PLAN VIEW OF GUSSET PLATE RETROFIT

AT CROSSFRAMES A2-A4, 2-36 AND E2-E4

NOTES:

DRILL HALF-CIRCLES TO PERFORM RETROFIT AT ALL GUSSET PLATES ON THE BRIDGE, SPANS A THRU E AND GIRDERS 1 THRU 4. DO NOT SAW CUT, PLASMA CUT, OR FLAME CUT HALF-CIRCLES.

THE RADIUS OF CURVATURE OF THE HALF-CIRCLE SHALL BE TANGENTIAL TO THE FACE OF THE GIRDER WEB AND TERMINATE FLUSH WITH THE WEB.

GRIND WELDS, GIRDER WEBS, AND GUSSET PLATES SMOOTH IN THE VICINITY OF THE RETROFIT AND AT THE TERMINATION OF THE RADIUS. GRIND THE HALF-CIRCLE SMOOTH OF JAGGED EDGES.

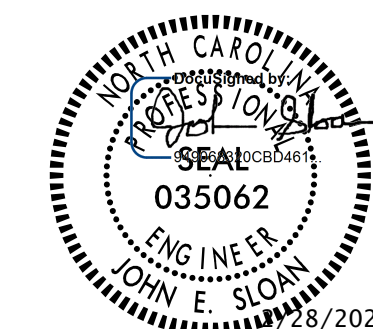
COMPLETE GUSSET PLATE RETROFIT AT ALL FOUR GIRDERS PRIOR TO POURING THE STAGE I DECK. COMPLETE GUSSET PLATE RETROFIT PRIOR TO PAINTING OR COATING THE GUSSET PLATE.

CONTRACTOR SHALL BE PAID AS A LUMP SUM UNDER THE PAY ITEM "GUSSET PLATE RETROFIT."

FOR ADDITIONAL REQUIREMENTS, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.20
HENDERSON COUNTY
 STATION: 35+30.22 -L-

SHEET 10 OF 14



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

REHABILITATION

GUSSET PLATE RETROFIT

REVISIONS

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2			4		

SHEET NO.

S-90

TOTAL SHEETS

129

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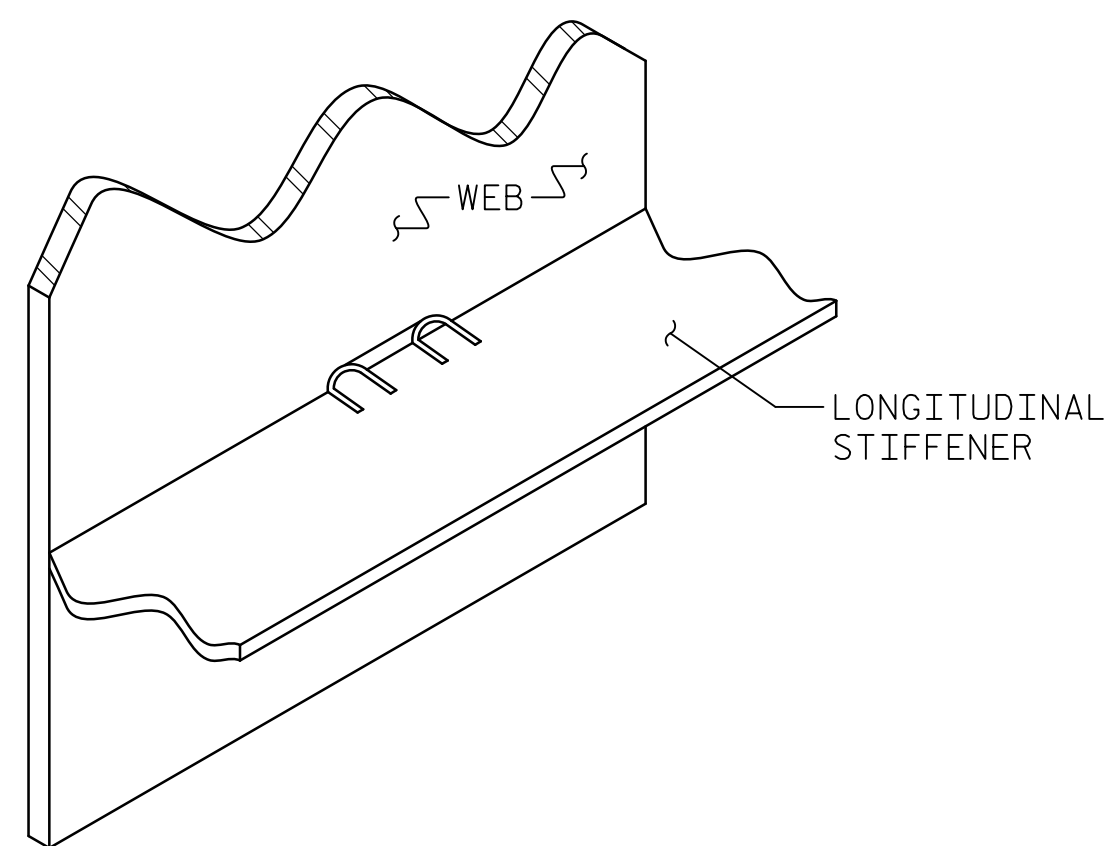
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CHECKED BY : J. SLOAN	DATE : 10/2019
DESIGNED BY : E. ZHOU	DATE : 10/2019
DESIGN CHECKED BY : J. SLOAN	DATE : 10/2019

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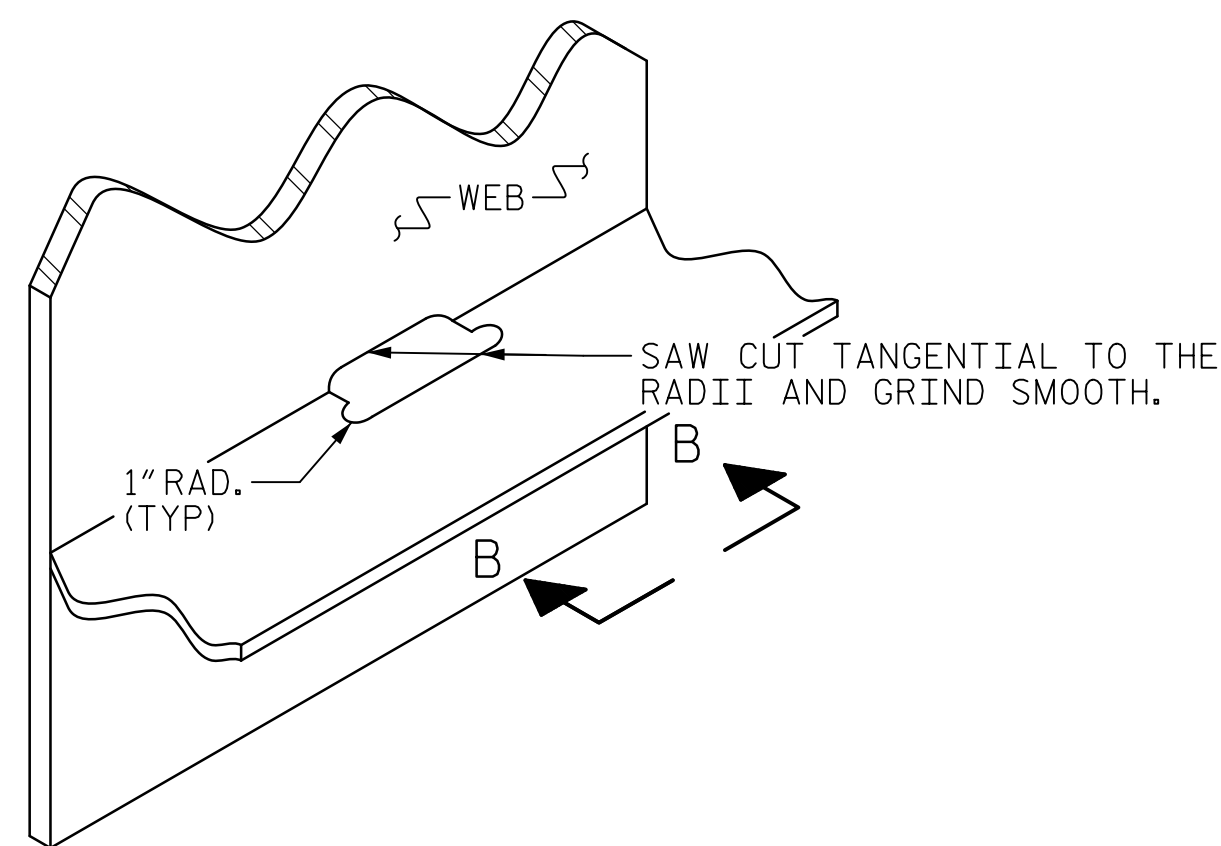
NOTES:

FOR HOLE REPAIRS, SEE SPECIAL PROVISIONS.

FOR PAY ITEMS, SEE SHEET 14 OF 14.

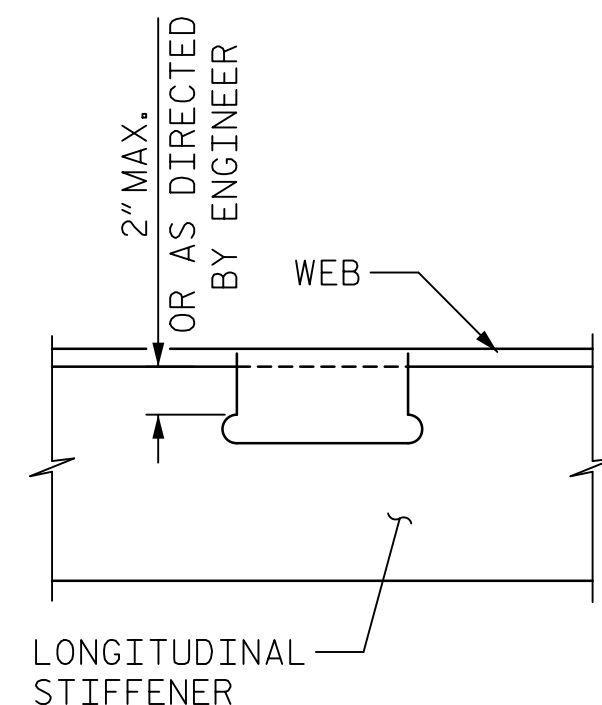


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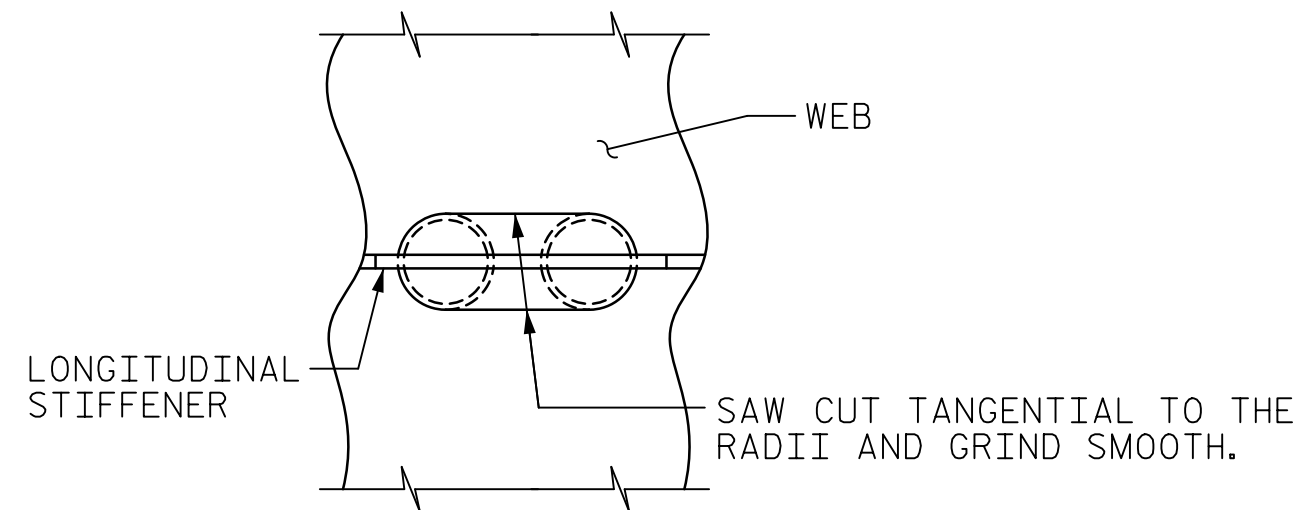


REPAIR

ISOMETRIC VIEW



PLAN



VIEW B-B

HOLE REPAIR TYPE III

FOR REPRESENTATION ONLY. REPAIR SHALL BE PERFORMED AT EACH LOCATION NOTED. FOR REPAIR LOCATIONS, SEE PHOTO LOCATION LEGEND.

REPAIR PROCEDURE

1. DRILL 1" RADIUS AT THE TERMINATION OF THE EXISTING OUTSIDE CUTS IN THE LONGITUDINAL STIFFENER.
2. SAW CUT BETWEEN THE HOLES IN THE WEB AND THE STIFFENER TANGENTIAL TO THE RADII OF THE HOLES.
3. GRIND SMOOTH ADJACENT AREAS OF THE WEB, LONGITUDINAL STIFFENER, AND WELDS.

HR-III-1



PHOTO

LOCATION:

HR-III-1 GIRDER 1, SPAN C, IN WEB AT BOTTOM LONGITUDINAL STIFFENER, 6'-1" WEST OF PANEL POINT 16: (2) 2" Ø HOLES AT APPROXIMATELY 3" SPACING CONNECTED BY SAW CUT

DATE: 2/28/2020 TIME: 10:54:40 AM

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DRAWN BY : M. TOM	DATE : 2/2019
CHECKED BY : G. COLS	DATE : 2/2019
DESIGNED BY : J. SLOAN	DATE : 2/2019
DESIGN CHECKED BY : E. ZHOU	DATE : 2/2019

HOLE REPAIRS TYPE III

FOR REPRESENTATION ONLY

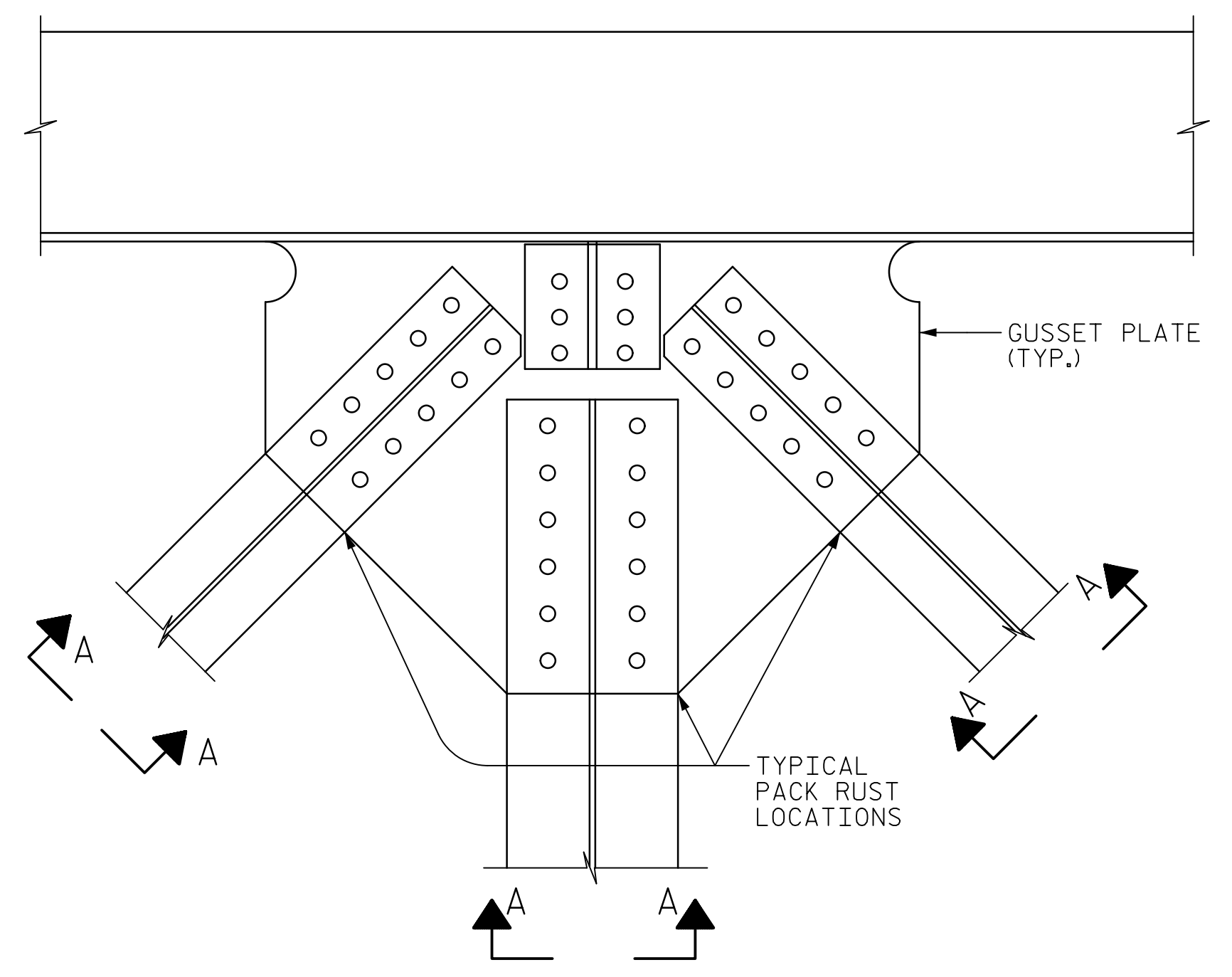
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HENDERSON COUNTY
 STATION: 35+30.22 -L-

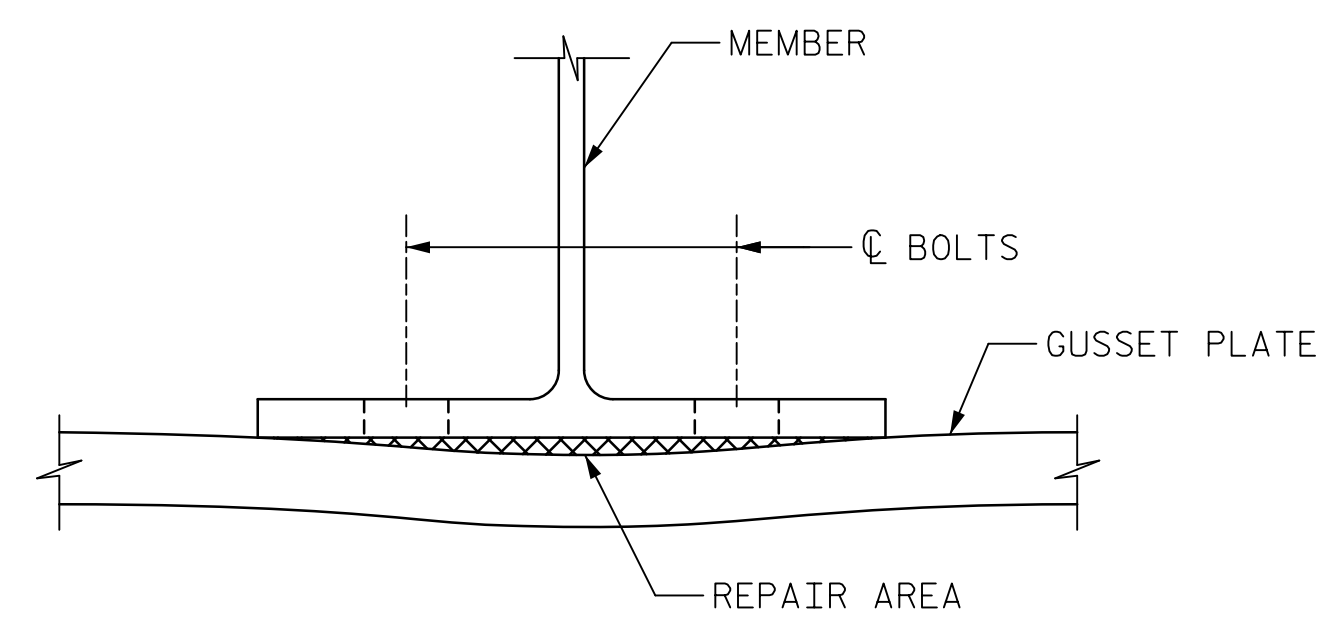
SHEET 9 OF 14

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
REHABILITATION					
STRUCTURAL STEEL REPAIRS					
REVISIONS					SHEET NO.
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1			3		
2			4		
					TOTAL SHEETS 129

DATE: 2/27/2020
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PLAN VIEW OF TYPICAL PACK RUST REPAIR LOCATION - TYPE I



VIEW A-A

TYPE I PACK RUST REPAIR PROCEDURE

FOR PACK RUST REPAIRS, HRCSA PENETRANT, AND PAINT, SEE SPECIAL PROVISIONS.

1. CLEAN AREA TO REMOVE PACK RUST. DO NOT DISCONNECT ANY MEMBERS OR LOOSEN ANY BOLTS.
2. APPLY AN HRCSA PENETRANT TO THE CLEANED AREA IN ACCORDANCE WITH MANUFACTURER'S RECOMENDATIONS.
3. APPLY COMPATIBLE ONE-STEP HRCSA PRIMER/TOP-COAT, APPLYING MULTIPLE COATS AS NECESSARY TO FILL GAP OR CREVICE. COAT THE ENTIRE GUSSET PLATE AND 3" BEYOND THE GUSSET PLATE ON EACH ADJOINING MEMBER.

THE ENGINEER SHALL INSPECT EACH REPAIR AREA BETWEEN EACH STEP OF THE REPAIR.

FOR PAY ITEMS, SEE SHEET 14 OF 14.

PR-I-7



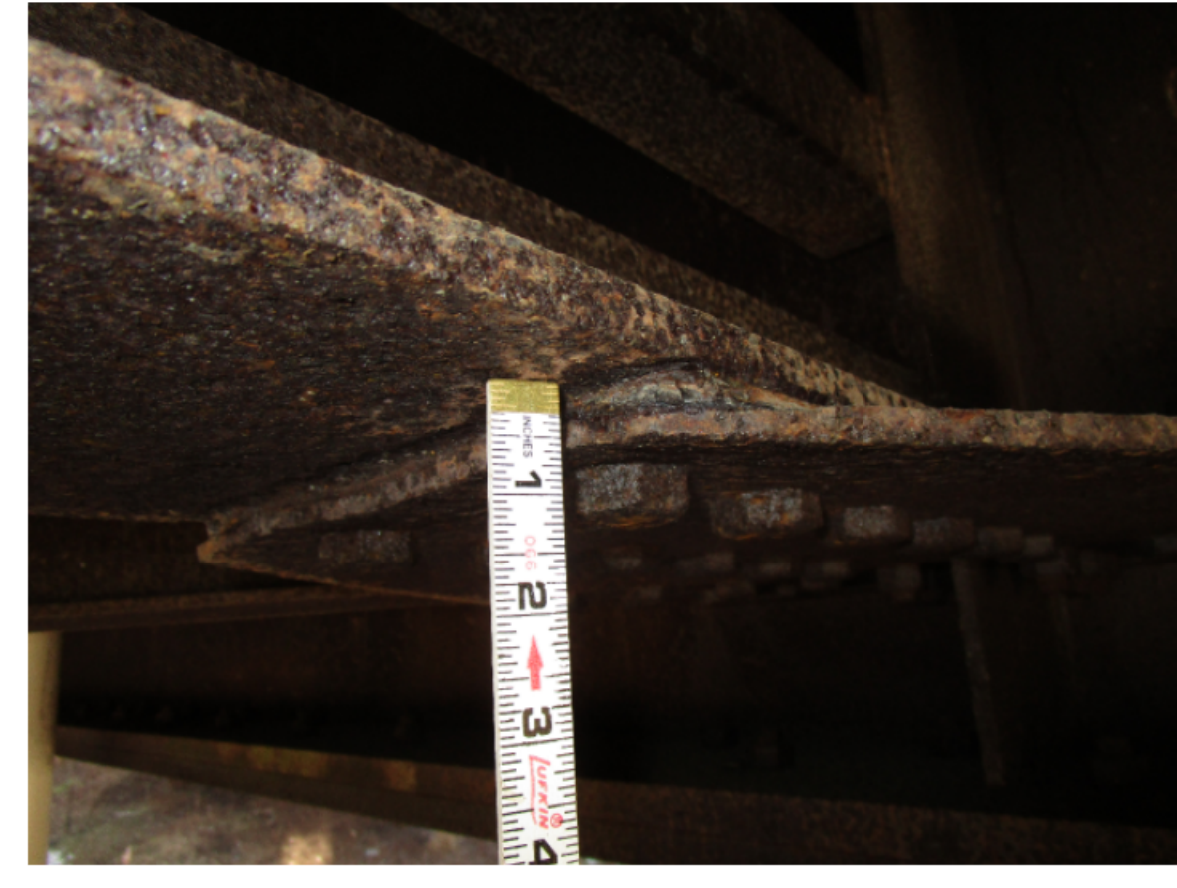
PR-I-8



PR-I-11



PR-I-10



PR-I-9



PR-I-12



PR-I-13



PHOTOS

PROJECT NO. 15BPR.20
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 STATION: 35+30.22 -L-

SHEET 11 OF 14

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STATE OF NORTH CAROLINA
 JOHN E. SLOAN
 ENGINEER
 035062
 2/28/2020

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 REHABILITATION
 STRUCTURAL STEEL REPAIRS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-91
1			3			TOTAL SHEETS
2			4			129

PACK RUST REPAIRS
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DESIGNED BY : J. SLOAN	DATE : 2/2019
DESIGN CHECKED BY : E. ZHOU	DATE : 2/2019

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