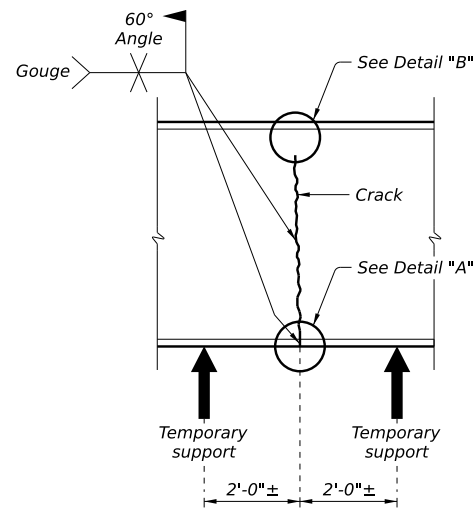
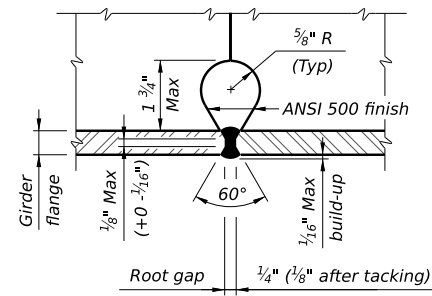


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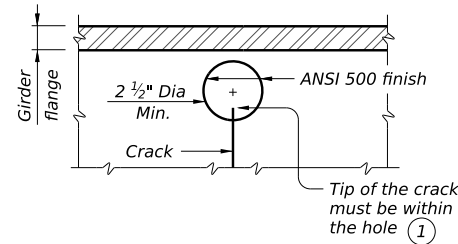


**CRACKED BEAM**

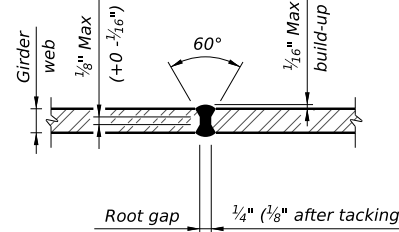
(Showing crack in web and bottom flange)



**DETAIL "A"**



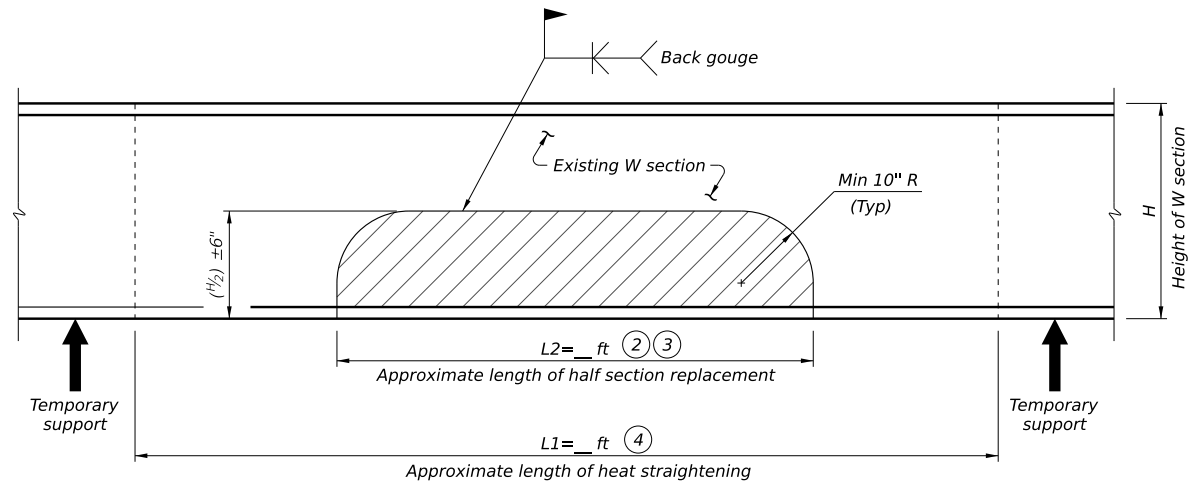
**DETAIL "B"**



**WEB WELD**

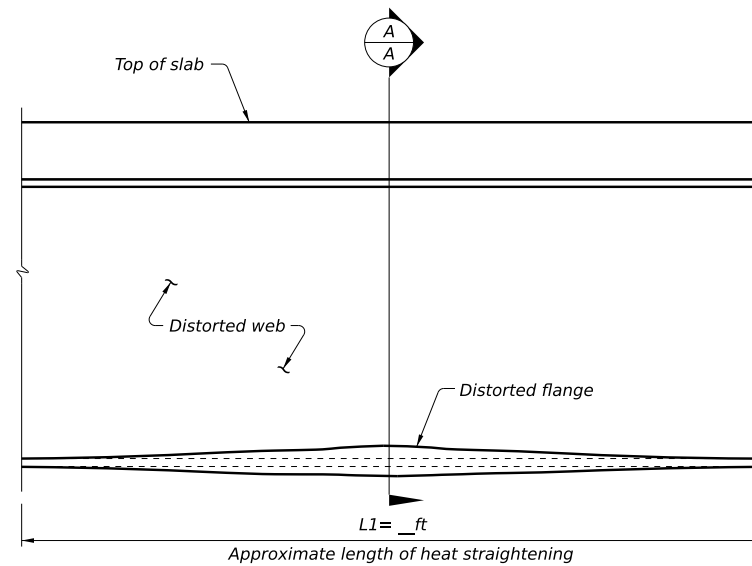
**WELD AND CRACK ARREST DETAILS**

- ① Verify location of crack tip before drilling crack arrest hole by magnetic particle testing or dye penetrant testing. After drilling, verify crack arrest hole captured entire crack tip by repeating the test.



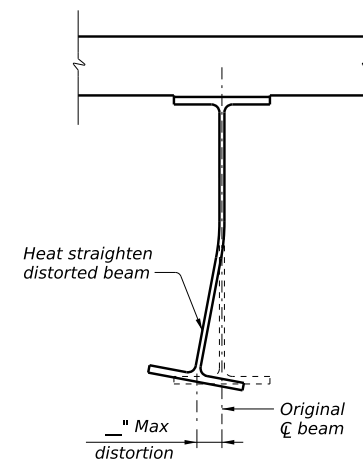
**HALF-SECTION REPLACEMENT**

- ② Remove damaged section.
- ③ Splice new W section.
- ④ Heat straighten.
- ⑤ Limits of defect removal.
- ⑥ Depth of defect. Do not grind deeper into the flange.



**BEAM ELEVATION**

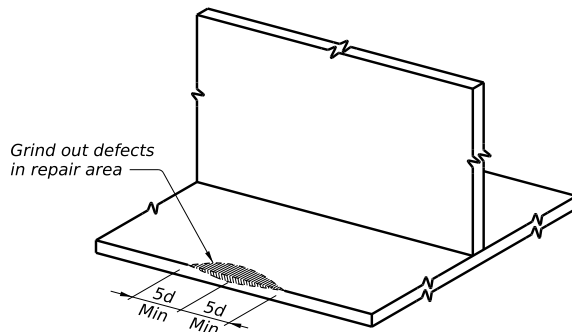
**HEAT STRAIGHTENING**



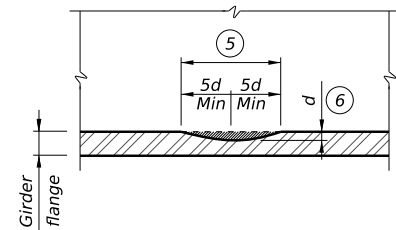
**SECTION A-A**

Repairs performed in accordance with these details will result in a load rating that meets or exceeds the original design loading of the structure.

SHEET 1 OF 2



**ISOMETRIC**



**ELEVATION**

**DEFECT REMOVAL DETAILS**

P.E. SEAL REQUIRED  
**PRELIMINARY**  
SUBJECT TO REVISION

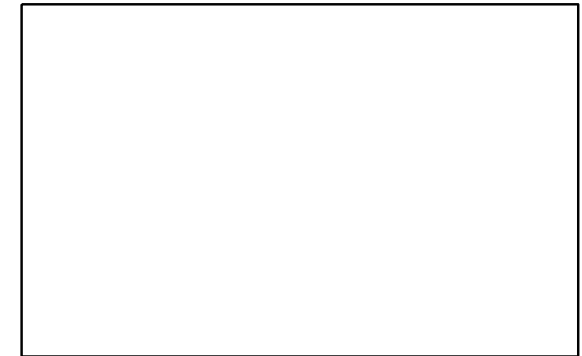
This document is released for informational purposes under the authority of XXXX XXXX P.E. XXXXX on XX/XX/XX. It is not to be used for regulatory approval, permit, bidding, or construction purposes.

		Bridge Division	
<b>STEEL BEAM REPAIR</b>			
(Not to be used as a standard) <b>NBI: XX-XXX-XXXX-XX-XXX</b>			
FILE: WD-SBR-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
©TxDOT February 2024	CONT SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.

DATE:  
FILE:

and clear to allow complete contact to o

3. Remove the diaphragms, if necessary, for heat straightening.
4. Heat straighten existing steel girder in accordance with Item 784, "Steel Member Repair."
5. Install temporary supports and jacks and apply force to push the girder up and bring the top flange in contact with deck.
6. Install half section replacement member.
- \*7. Repair/replace/re-weld damaged diaphragms as shown in the detail after the beam is restored in both shape and alignment.
8. Clean and paint the repair area as directed by the Engineer.
- \*9. Inject epoxy into any remaining gap between top flange and deck. The length of flange separation that must be injected is approximately \_\_ feet.
10. Open the roadways to normal traffic as directed by the Engineer.



**GENERAL NOTES:**

Notify TxDOT Bridge Division at least two weeks in advance by e-mailing BRG-FO-STL@txdot.gov prior to beginning work to allow for inspection of repairs by a Bridge Division structural steel inspector.

Use heat-straightening to repair and restore the shape of beams and diaphragms. Heat-straighten the members in accordance with Item 784, "Steel Member Repair." Apply sufficient force combined with heat to accomplish work but do not fracture member. Repair additional damage caused by Contractor's operations at no additional cost to the Department. Removal and replacement of diaphragm members is an acceptable alternative to straightening. No additional payment will be made for removal and replacement of diaphragms.

\*\*Provide temporary supports and jacks to allow jacking of beam to restore contact of flange to bottom of deck.

\*\*Provide ASTM A709 steel with minimum Grade 36 in accordance with Item 442, "Metal for Structures" for new diaphragms.

\*\*Provide ASTM A709 steel with Grade 50W for half section replacement in unpainted structures, and ASTM A709 steel with grade 50, 50S, or 50W for half section replacement in painted structures in accordance with Item 442, "Metal for Structures."

\*\*Radiographic inspection of flange and web welds are required.

\*\*Provide Type IX epoxy for gap injection in accordance with DMS 6100 "Epoxy and Adhesives."

\*\*\*Restore the paint protection for repaired beams and diaphragms with System XX per Item 446, "Field Cleaning and Painting Steel," and as directed by the Engineer. Match the appearance coat with the existing structure. Assume existing paint coating contains hazardous materials, unless otherwise noted.

\* Remove this step if it does not apply

\*\* Remove this paragraph if it does not apply

\*\*\* Designer to specify the applicable paint system



**STEEL BEAM REPAIR**

<input type="checkbox"/>					