

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SOLDIER-PILE WELDING PROCEDURE SPECIFICATION (WPS) AWS D1.5

Specifications & Codes: NCDOT Standard Specifications/AASHTO/AWS D1.5, Section 2, 5 and 12

Material Specifications: ASTM A-36, A572, (A709-36, 50), (M270-GR250, 345) Unlimited Thickness

Welding Process: SMAW Manual or Semi- Automatic or Automatic: Manual

Filler Metal Specification: AWS A5.1 Classification: E-7018

Manufacturer: NCDOT Approved Electrodes Single or Multiple Pass both Position of Weld Flat, Horizontal, Vertical, Overhead

Welding Current: DC Polarity: Positive Progression: Vertical – up

Root Treatment: N/A

Preheat Temp: 100° minimum Interpass: 450° maximum Post Heat: N/A

Pass Num.	Electrode Size	Welding Current		Travel Speed		Joint Details
		Amperes	Volts			
All	1/8" 5/32"	90-150 120-200	20-23 21-24	6-9 ipm 6-10 ipm		SEE ATTACHMENT

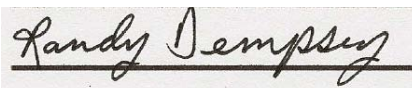
PREHEAT	
Thickness	Min. Temp.
Up to 3/4"	100°
Over 3/4" to 1 1/2"	100°
Over 1 1/2" to 2 1/2"	150°
Over 2 1/2"	225°

**COMMENTS:**

**Remove all coating, rust, dirt and mill scale within one inch of the area to be welded prior to fit-up. Remove all slag, spatter and weld discontinuities between passes. Clean the completed weld of all debris, slag and spatter.**

WPS Description SOLDIER-PILE

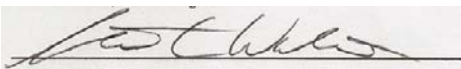
Written By: Randy Dempsey, CWI/CWE, TT IV

Signature: 

WPS #: 030811018

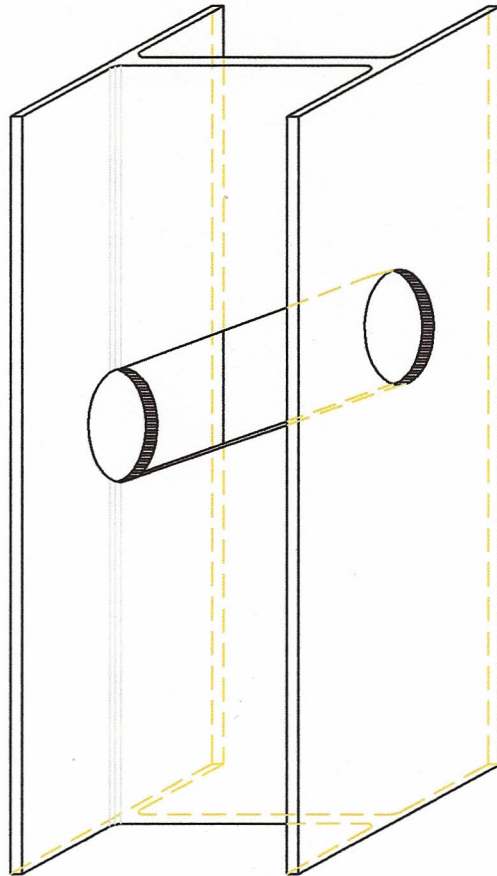
Authorized By: Steve Walton, Metals Engineer

Revision #: 1

Signature: 

WPS SOLDIER-PILE 030811018 R1 JOINT DETAIL ATTACHMENT 1,  
(cut holes in flange and remove web material)

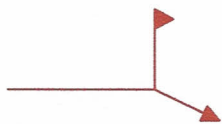
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## SOLDIER-PILE WEB DETAILS

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Weld Symbol definitions per AWS A2.4:2007



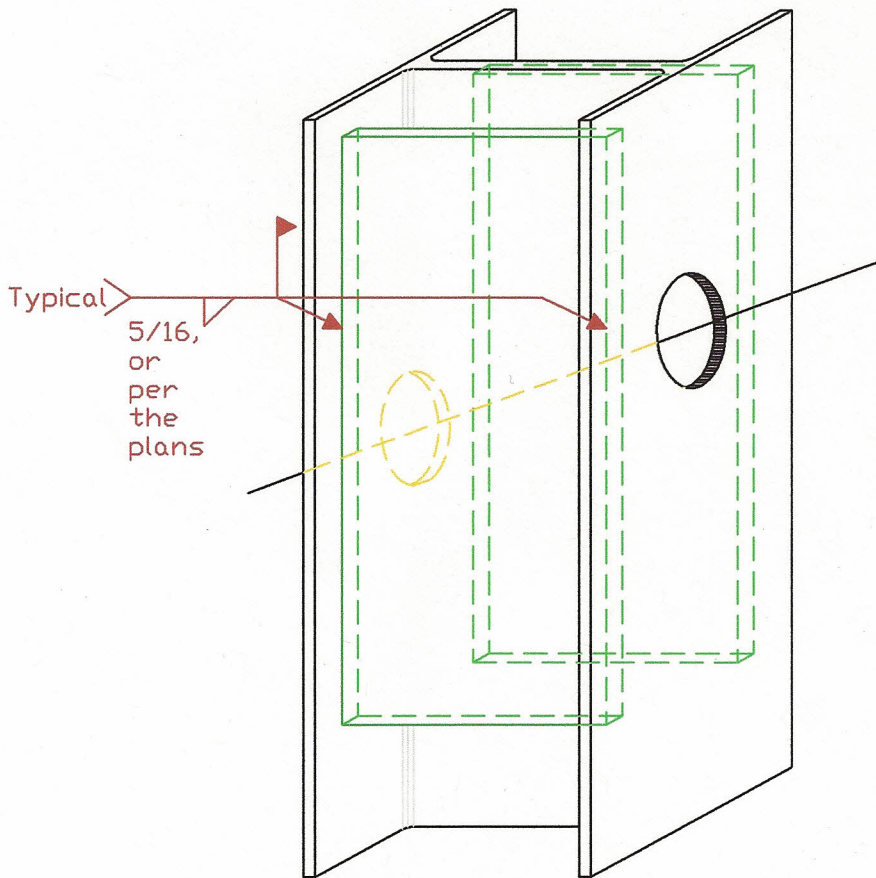
FIELD WELD SYMBOL



FILLET WELD, ARROW  
SIDE with WELD SIZE

WPS SOLDIER-PILE 030811018 R1 JOINT DETAIL ATTACHMENT 2,  
(install stiffener plates, near and far side)

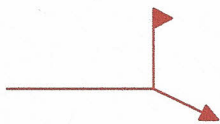
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## SOLDIER-PILE STIFFENER DETAILS

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Weld Symbol definitions per AWS A2.4:2007



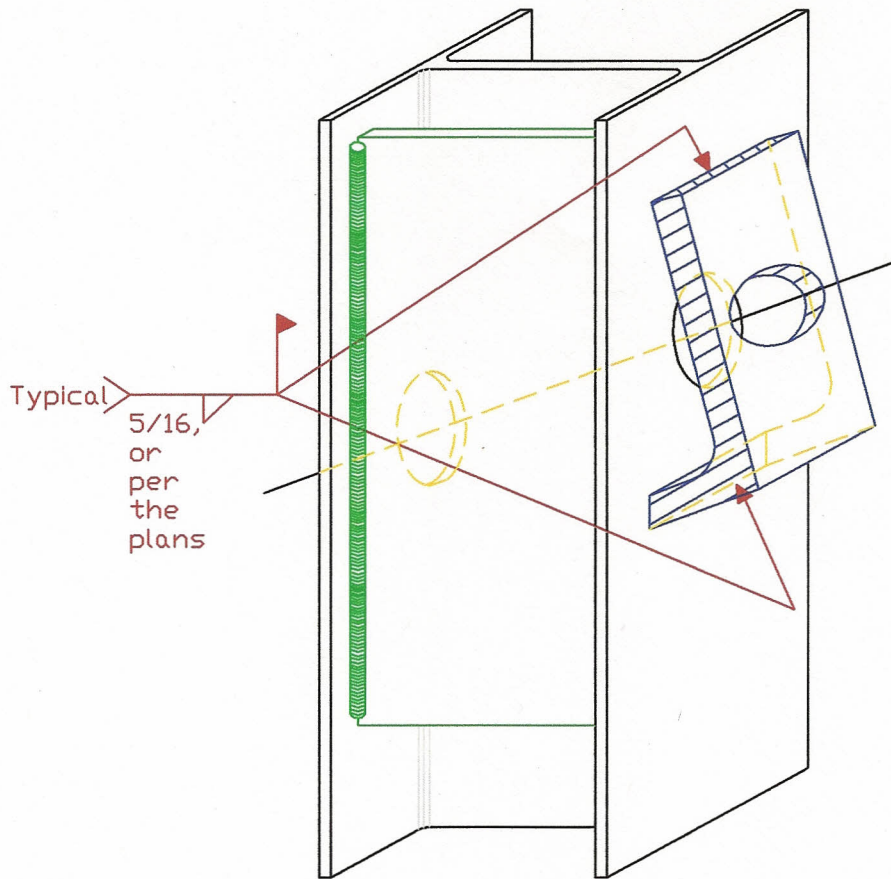
FIELD WELD SYMBOL



FILLET WELD, ARROW  
SIDE with WELD SIZE

WPS SOLDIER-PILE 030811018 R1 JOINT DETAIL ATTACHMENT 3,  
(install anchor angle)

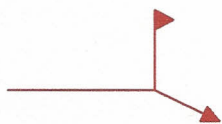
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## SOLDIER-PILE ANCHOR DETAILS

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Weld Symbol definitions per AWS A2.4:2007



FIELD WELD SYMBOL

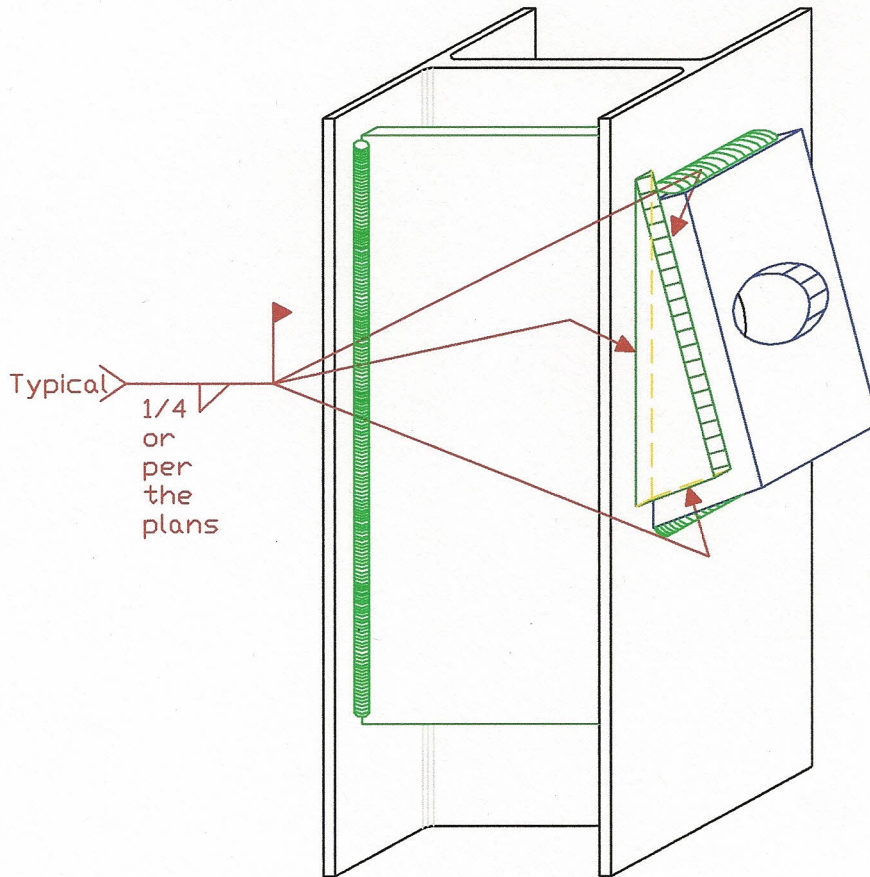


FILLET WELD, ARROW  
SIDE with WELD SIZE



WPS SOLDIER-PILE 030811018 R1 JOINT DETAIL ATTACHMENT 4,  
(install gusset, near and far side in line with stiffener)

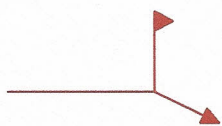
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## SOLDIER-PILE ANCHOR DETAILS

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Weld Symbol definitions per AWS A2.4:2007



FIELD WELD SYMBOL



FILLET WELD, ARROW  
SIDE with WELD SIZE

## Illustrations for soldier pile field welding.



Unacceptable (arc strikes need to be removed by grinding and base metal inspected for cracks, slag needs to be removed).



Completed Piles.

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)