

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DOUBLE V GROOVE WITH BACK GOUGE

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: N/A

Root Treatment: Back Gouge with a grinder to sound metal prior to applying weld to the second side.

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

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

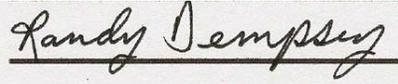
PREHEAT	
Thickness	Min. Temp.
Up to 3/4"	100°
Over 3/4" to 1 1/2"	100°
Over 1 1/2" to 2 1/2"	150°
Over 2 1/2"	225°

COMMENTS:

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

WPS Description: Double V Groove With Back Gouge

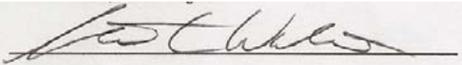
Written By: Randy Dempsey, CWI/CWE, TT IV

Signature: 

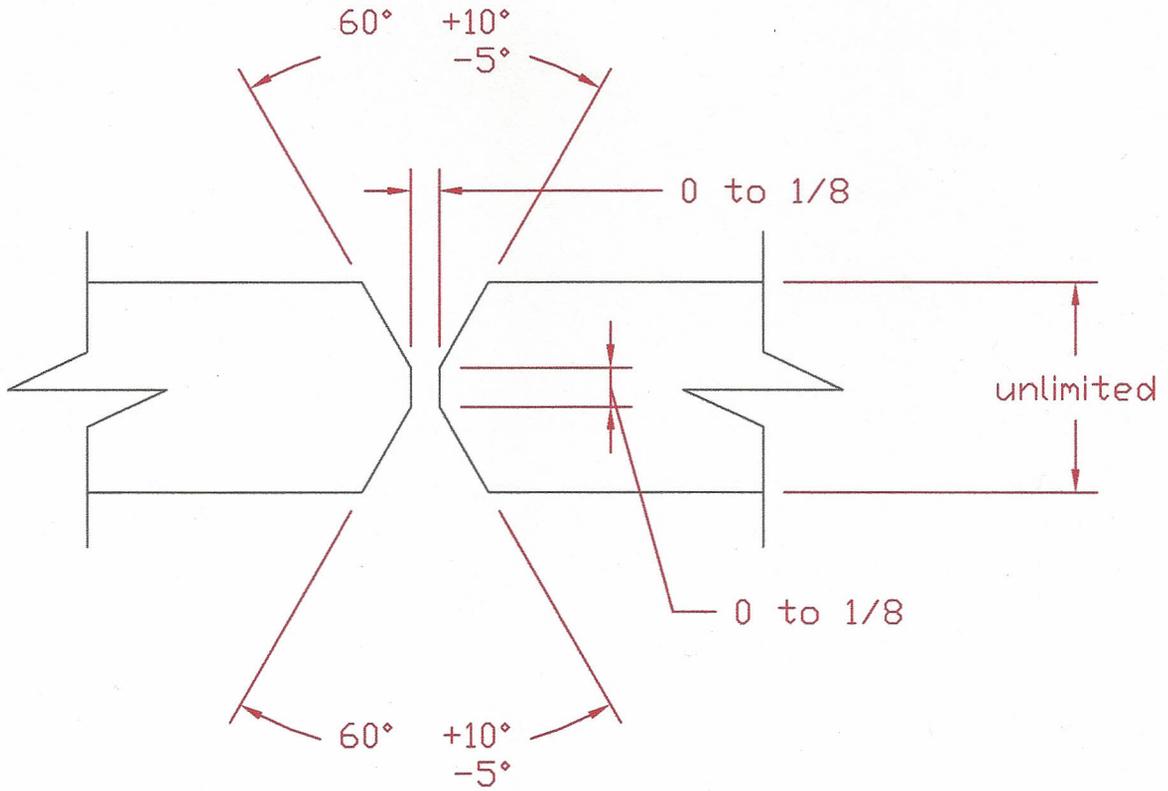
WPS #: 031711025

Authorized By: Steve Walton, Metals Engineer

Revision #: 1

Signature: 

WPS DOUBLE V GROOVE with Back Gouge 031711025 R1
JOINT DETAIL ATTACHMENT

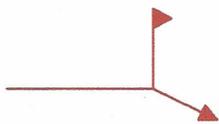


DOUBLE V GROOVE with Back Gouge
JOINT DETAILS

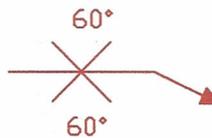
Weld Symbol definitions per AWS A2.4:2007



Back Gouge
Required before
welding side two



FIELD WELD
SYMBOL



Double V Groove,
w/ Groove Angle

Illustrations for a Double V-Groove with Back Gouge.



Runoff tabs are used to help with fit-up.



Each pass is cleaned.



Side 2 before back gouge.



Back gouge on the right is Adequate, left is not.



Completed weld.

NCDOT MATERIALS & TESTS UNIT (STEEL SECTION)