

DSBROWN Production Joint Welding Procedure Specification (D1.5-02)

Procedure No: A-FSV-01 Date Issued: 8-12-03 Revision No: 0 Rev. Date: _____

Contractor (Fabricator) D. S. Brown Company Prepared by: James R. Connor, Quality Assurance Manager

1. Non-Fracture Critical Fracture Critical WPS Expiration Date: _____

2. Qualified in accordance with: AWS D1.5-2002 (5.12.1)

Referenced PQR No(s): PQR-FCAW-01-03

Referenced FWST No(s): N/A

3. Material specification(s) ASTM A709 Gr. 36, 50, 50W

4. Material Thickness (es) Unlimited

5. Welding process FCAW

6. Manual , machine , or semiautomatic

7. Position(s) of welding 1G

8. Filler metal specification AWS A5.20

9. Filler metal class and brand name E71T-1, E71T-9 (Lincoln Outershield Elite)

10. Flux class & brand N/A, Type N/A

11. Shielding gas 100% CO2 Flow rate 45 CFH

12. Single pass Or multiple pass

13. Single arc Or multiple arc

14. Welding Current DCEP

15. Polarity Reverse

16. Welding progression Stringers

17. Root treatment Clean to bright sound metal and per AWS D1.5 (3.2.1 & 3.11)

18. Postheat treatment N/A

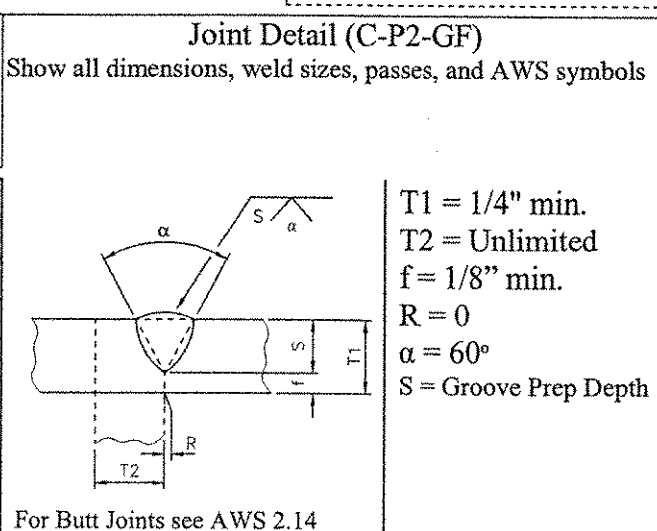
19. Calculated Heat Input (KJ/in) Min 31.20 KJ/in Max 50.72 KJ/in

20. Electrode extension (electrical stickout) 3/4"

For DOT Approval

V.A.O.T. RECEIVED
 NOV 16 2004
 RESUBMIT APPROVED
 DATE 11-30-04

| Weld size (in) | Pass No(s) | Electrode Size (in) | Welding Process Variables | | Travel Speed (IPM) |
|----------------|------------|---------------------|---------------------------|-------|--------------------|
| | | | AMPS | VOLTS | |
| 1/4" | 1 | 1/16" | 260-310 | 26-30 | 11-13 |
| 5/16" | 1-2 | 1/16" | 260-310 | 26-30 | 11-13 |
| 3/8" | 2-3 | 1/16" | 260-310 | 26-30 | 11-13 |
| 1/2" | 4-5 | 1/16" | 260-310 | 26-30 | 11-13 |
| 5/8" | 5-6 | 1/16" | 260-310 | 26-30 | 11-13 |
| 3/4" | 5-8 | 1/16" | 260-310 | 26-30 | 11-13 |



T1 = 1/4" min.
 T2 = Unlimited
 f = 1/8" min.
 R = 0
 alpha = 60°
 S = Groove Prep Depth

| Prepared By: <u>James R. Connor</u> , DSB QA Manager | Preheat and Interpass Temperature Chart | |
|--|---|---|
| | Base Metal Thickness range | Minimum Preheat (°F) / Max Preheat & Interpass (°F) |
| Project: <u>Granite Street over Stevens Branch of the Winooski River</u> | ≤ 3/4" | 50°F / 450°F |
| DSB Job: <u>12550-1042</u> | >3/4" to ≤1.5" | 70°F / 450°F |
| | >1.5" to ≤2.5" | 150°F / 450°F |
| | >2.5" | 225°F / 450°F |

Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.