

WELDING PROCEDURE SPECIFICATION (WPS) Yes
PREQUALIFIED _____ QUALIFIED BY TESTING _____
or PROCEDURE QUALIFICATION RECORDS (PQR) Yes

Company Name Miller Construction, Inc.
 Welding Process(es) SMAW
 Supporting PQR No.(s) N/A

Identification # 1
 Revision 0 Date 4/19/13 By J. Ouelette
 Authorized by E. Murphy Date 4/19/13
 Type—Manual Semiautomatic
 Mechanized Automatic

JOINT DESIGN USED
 Type:
 Single Double Weld
 Backing: Yes No
 Backing Material:
 Root Opening _____ Root Face Dimension _____
 Groove Angle: 45 Radius (J-U) _____
 Back Gouging: Yes No Method _____

POSITION
 Position of Groove: 2G Fillet: 1,2,3,4F
 Vertical Progression: Up Down

BASE METALS
 Material Spec. HP 12 X 84
 Type or Grade GR 50
 Thickness: Groove 0.68 Fillet 0.75
 Diameter (Pipe) _____

ELECTRICAL CHARACTERISTICS
 E7018
 Transfer Mode (GMAW) Short-Circuiting
 Globular Spray
 Current: AC DCEP DCEN Pulsed
 Power Source: CC CV
 Other _____
 Tungsten Electrode (GTAW)
 Size: N/A
 Type: _____

FILLER METALS
 AWS Specification ~~AWS D1.1~~ A5.5
 AWS Classification E7018

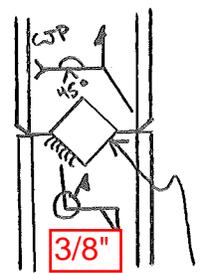
TECHNIQUE
 Stringer or Weave Bead: Stringer
 Multi-pass or Single Pass (per side) MULTI-PASS
 Number of Electrodes _____
 Electrode Spacing Longitudinal _____
 Lateral _____
 Angle _____
 Contact Tube to Work Distance _____
 Peening _____
 Interpass Cleaning: _____

SHIELDING
 Flux X Gas _____
 Composition _____
 Electrode-Flux (Class) _____ Flow Rate _____
 Gas Cup Size _____

PREHEAT
 Preheat Temp., Min. 70 F
 Interpass Temp., Min. N/A Max. N/A

POSTWELD HEAT TREATMENT
 Temp. N/A
 Time _____

WELDING PROCEDURE

Pass or Weld Layer(s)	Process	Filler Metals		Current		Volts	Travel Speed	Joint Details
		Class	Diam.	Type & Polarity	Amps or Wire Feed Speed			
3 Layers	SMAW	E7018	1/8	DC	132	22/26	As Req.	 <div style="border: 1px solid red; padding: 2px; width: fit-content; margin: 5px auto;">3/8"</div> <div style="border: 1px solid red; padding: 2px; width: fit-content; margin: 5px auto;">3/4"x8"x8"</div>

Vermont Agency of Transportation

RECEIVED

Jamaica ER-BRF 015-1 (23) - File Tip WPS Approved 4-23-2013.pdf

CK'D BY JWC OK'D BY JTS

April 19, 2013

RESUBMIT NO Approved AsNoted
 BY KMH DATE 04/23/13

WELDING PROCEDURE SPECIFICATION (WPS) Yes
PREQUALIFIED _____ QUALIFIED BY TESTING _____
or PROCEDURE QUALIFICATION RECORDS (PQR) Yes

Company Name Miller Construction, Inc.
 Welding Process(es) SMAW
 Supporting PQR No.(s) N/A

Identification # 2
 Revision 0 Date 4/19/13 By J. Ouelette
 Authorized by E. Murphy Date 4/19/13
 Type—Manual Semiautomatic
 Mechanized Automatic

JOINT DESIGN USED

Type:
 Single Double Weld
 Backing: Yes No
 Backing Material: _____
 Root Opening _____ Root Face Dimension _____
 Groove Angle: _____ Radius (J-U) _____
 Back Gouging: Yes No Method _____

POSITION

Position of Groove: 2G Fillet: _____
 Vertical Progression: Up Down

BASE METALS

Material Spec. HP 12 X 84
 Type or Grade GR 50
 Thickness: Groove 0.68 Fillet 0.75
 Diameter (Pipe) _____

ELECTRICAL CHARACTERISTICS

E7018
 Transfer Mode (GMAW) Short-Circuiting
 Globular Spray
 Current: AC DCEP DCEN Pulsed
 Power Source: CC CV
 Other _____
 Tungsten Electrode (GTAW)
 Size: N/A
 Type: _____

FILLER METALS

AWS Specification AWS D1.1 **A5.5**
 AWS Classification **E7018**

TECHNIQUE

Stringer or Weave Bead: Stringer
 Multi-pass or Single Pass (per side) **MULTI-PASS**
 Number of Electrodes _____
 Electrode Spacing Longitudinal _____
 Lateral _____
 Angle _____
 Contact Tube to Work Distance _____
 Peening _____
 Interpass Cleaning: _____

SHIELDING

Flux X Gas _____
 Composition _____
 Electrode-Flux (Class) _____ Flow Rate _____
 Gas Cup Size _____

POSTWELD HEAT TREATMENT

Temp. N/A
 Time _____

PREHEAT

Preheat Temp., Min. 70 F
 Interpass Temp., Min. N/A Max. N/A

WELDING PROCEDURE

Pass or Weld Layer(s)	Process	Filler Metals		Current		Volts	Travel Speed	Joint Details
		Class	Diam.	Type & Polarity	Amps or Wire Feed Speed			
3 Layers	SMAW	E7018	3/16	DC	185	22/26	As Req.	

Vermont Agency of Transportation
RECEIVED

CK'D BY JWC

OK'D BY JTS

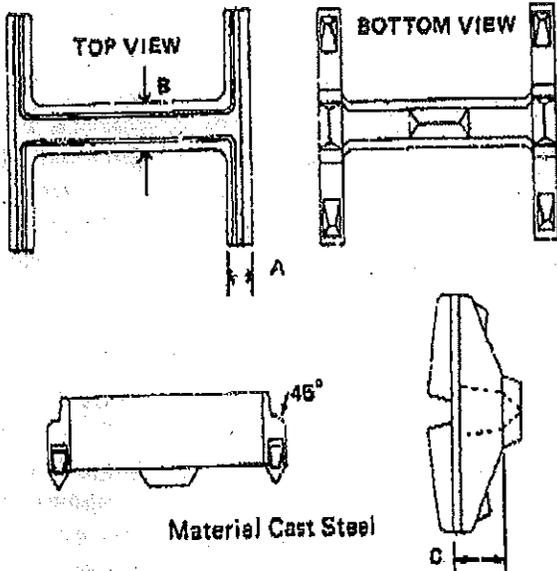
April 19, 2013

RESUBMIT NO
 BY KMH

Approved AsNoted
 DATE 04/23/13

PILE TIP PAGE 3

Dimensions

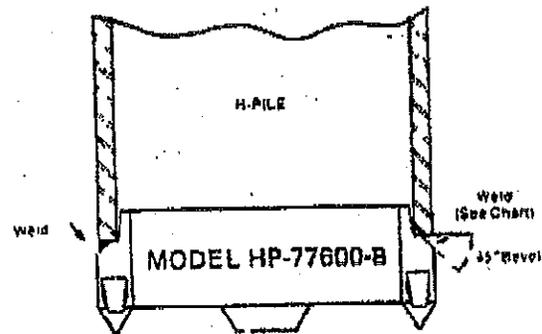


	14"
A	1-1/4"
B	1-1/2"
C	2-3/4"

Installation Instructions

HARD-BITE POINT MODEL HP-77600-B

1. Fit point onto the end of a square cut pile end.
2. Weld point to the pile in either flat or vertical position using E60 or E70XX electrodes.
3. Weld across full width of flange following chart below for minimum size weld.



Pile Size	Flange Thickness	Min. Size Groove Weld
HP 14 x 117	.805	7/16
x 102	.705	3/8
x 89	.615	3/8
x 73	.505	5/16
HP 12 x 84	.885	3/8
x 74	.610	3/8
x 63	.515	5/16
x 53	.435	5/16
HP 10 x 57	.555	5/16
x 42	.420	5/16
HP 6 x 35	.445	5/16

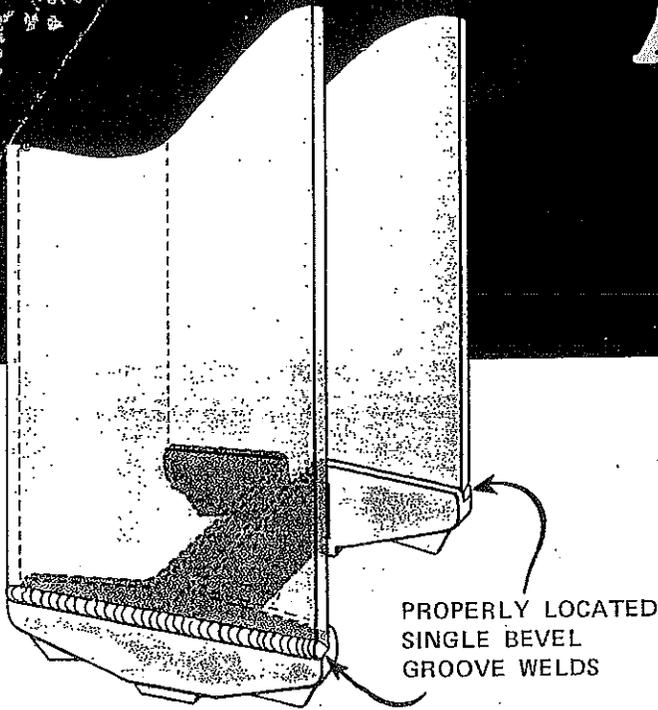
Call toll free 800-526-9047



ASSOCIATED PILE & FITTING CORP.

BOX 1048, CLIFTON, N.J. 07014 ■ 201-773-8400

ATTACHMENT



RELIABLE ATTACHMENT IS QUICK AND EASY

APF Cast Steel H-Pile Points are designed for ease of handling and attachment. The integrally cast back-ups for welding, position the point accurately on the pile. For proper load transfer, the points must be attached by a single bevel groove weld across the outside of each flange. With correct weld placement, the load transfers cleanly to the point. Welding along the inside of the flanges is not advisable as it creates a stress pattern which could prove detrimental to the integrity of the pile.

To facilitate attachment, stack the H-piles with webs horizontal and ends accessible. Use cribbing and/or stack with the ends staggered in and out, allowing welding at opposite ends of the stack simultaneously on the protruding piles.

Bevel a partial groove weld along the outside of each flange of the H. Slip the APF point on the H and hold it in close contact against the pile. For most sizes (see table at right) make a 5/16 in. weld along each flange, being sure to get good penetration for the full width of the flange, not just the corners. E60 or E70 rod is suggested for manual welding. For the semi-automatic Squirt welder, Lincoln Electric Co. suggests AWS E 70 T-G (Lincoln NR 211) flux-cored wire. Total weld consists of a single pass across each flange. Loading and driving are all in compression on the square ledge of a cast steel APF point rather than in shear as with plate and angle reinforcement or weldments.



SIZE OF PILE	FLANGE THICKNESS (INCHES)	SIZE OF FLANGE CUT 45° BEVEL	SIZE OF GROOVE WELD
HP 14 x 117	0.805	3/8"	7/16"
x 102	0.705	3/8"	3/8"
x 89	0.615	5/16"	5/16"
x 73	0.505	1/2"	5/16"
HP 13 x 100	0.765	3/8"	3/8"
x 87	0.665	5/16"	5/16"
x 73	0.565	1/2"	5/16"
x 60	0.460	1/2"	5/16"
HP 12 x 84	0.685	5/16"	5/16"
x 74	0.610	5/16"	5/16"
x 63	0.515	1/2"	5/16"
x 53	0.435	1/2"	5/16"
HP 10 x 57	0.565	1/2"	5/16"
x 42	0.420	1/2"	5/16"
HP 8 x 36	0.445	1/2"	5/16"