

MILLER CONSTRUCTION, INC.

P.O. BOX 86 ASCUTNEY BLVD WINDSOR, VERMONT 05089-0086
 TELEPHONE (802) 674-5525 / FAX (802) 674-5245

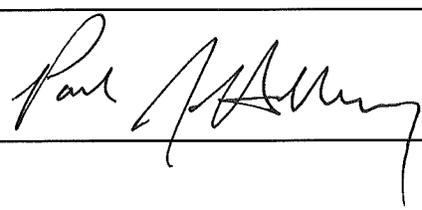
TRANSMITTAL

TO: Jennifer Fitch, PE Project Manager Vermont Agency of Transportation	DATE	PROJECT NO.
	8/21/2014	Brookfield BRF FLBR (2)

XX WE ENCLOSE THE FOLLOWING: _____ UNDER SEPARATE COVER WE ARE SENDING THE FOLLOWING

COPIES	NUMBER	DESCRIPTION	CODE
1		S.S. Shelf Drawing - Rev 1-1	H
1		Splice WPS	H

- CODE:
- A FOR INITIAL APPROVAL
 - B FOR FINAL APPROVAL
 - C APPROVED AS NOTED-RESUBMISSION REQUIRED
 - D APPROVED AS NOTED-RESUBMISSION NOT REQUIRED
 - E DISAPPROVED-RESUBMIT
 - F QUOTATION REQUESTED
 - G APPROVED
 - H FOR APPROVAL
 - I AS REQUESTED OR REQUIRED
 - J FOR USE IN ERECTION
 - K LETTER FOLLOWS
 - L FOR FIELD CHECK
 - M FOR YOUR USE

BY: 



DATE	6/29/14
DESCRIPTION	ADDED TO MATERIAL NOTES AND ADDED ROLL DIRECTION
REV	1
DESCRIPTION	ADDED MISSING DIMENSIONS AND FRP SHIM PLATE

NOTES:

1. AUSTENITIC STAINLESS STEEL CONFORMING TO ASTM A 240/A 240M (PLATE) OR ASTM A 276 (SHAPES) - HOT-FINISHED WITH A MINIMUM YIELD STRENGTH OF 30 KSI AND A MINIMUM TENSILE STRENGTH OF 70 KSI
2. STAINLESS STEEL SHALL BE CHARPY V-NOTCH TESTED PER AASHTO T 243 - MINIMUM AVERAGE ENERGY OF 23 FT-LB AT 40F
3. STAINLESS HARDWARE SHALL CONFORM TO ASTM F 593, ALLOY GROUP 1, 2, OR 3, CONDITION CW, WITH A MINIMUM YIELD STRENGTH OF 43 KSI AND A MINIMUM TENSILE STRENGTH OF 75 KSI (7/8" Ø BOLTS THROUGHOUT)
4. ALL WELDING SHALL CONFORM TO REQUIREMENTS OF AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL - FABRICATION OF THE HSS TUBE HAS BEEN APPROVED TO FOLLOW ASTM A 554

Vermont Agency of Transportation
RECEIVED
 ON: August 21, 2014
 and Checked for
CONFORMANCE
 BY: Jennifer Fitch DATE: 09/05/2014

ALL HOLES TO BE SHOP DRILLED.
 PLEASE LOCATE/DIMENSION ALL
 HOLE LOCATIONS.

APPROX. LOCATION OF BOLT
 HOLES - TO BE MATCH
 DRILLED TO HOLES IN SUPPORT
 BRACKETS ONCE ASSEMBLED.

APPROX. LOCATION OF BEARING
 PAD BOLT HOLES - TO BE MATCH
 DRILLED DURING ASSEMBLY

T.Y. LIN INTERNATIONAL
 THE STAMPED DOCUMENTS ARE HEREBY:

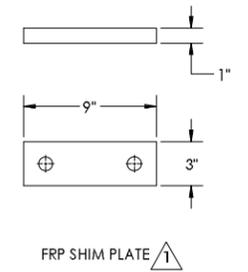
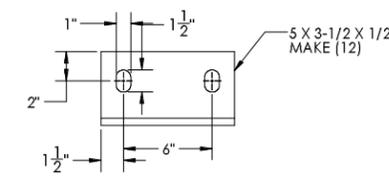
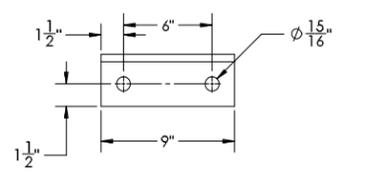
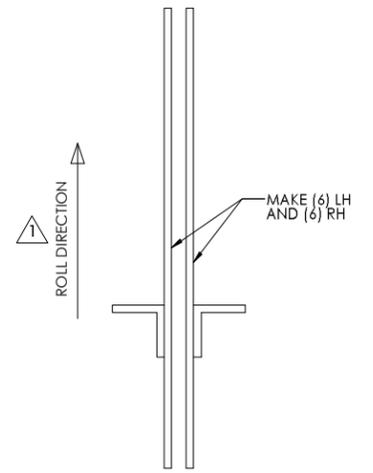
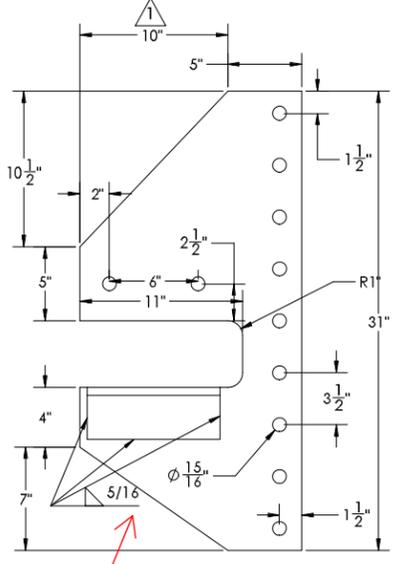
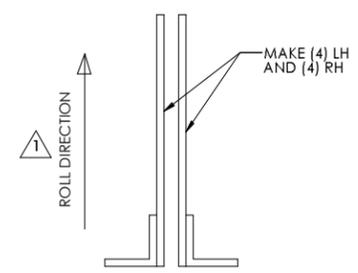
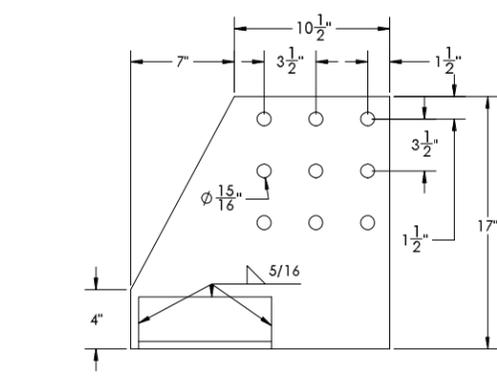
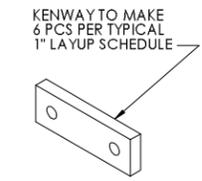
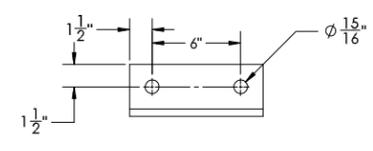
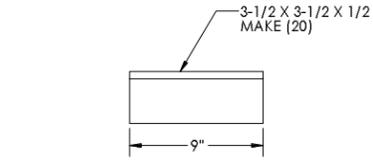
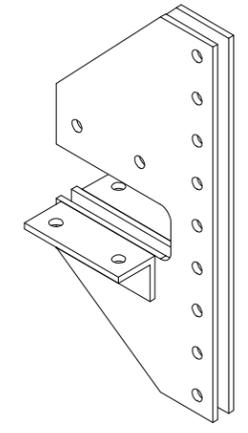
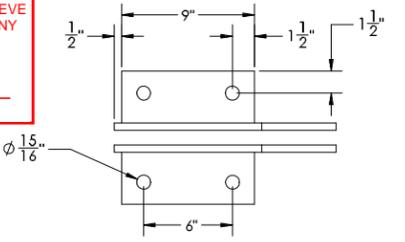
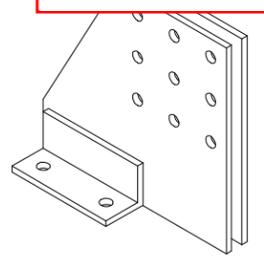
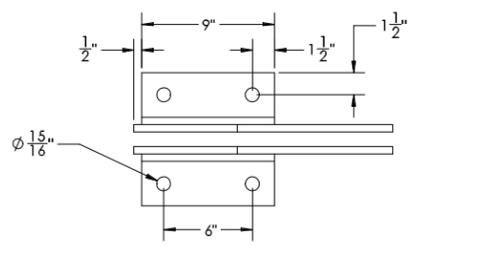
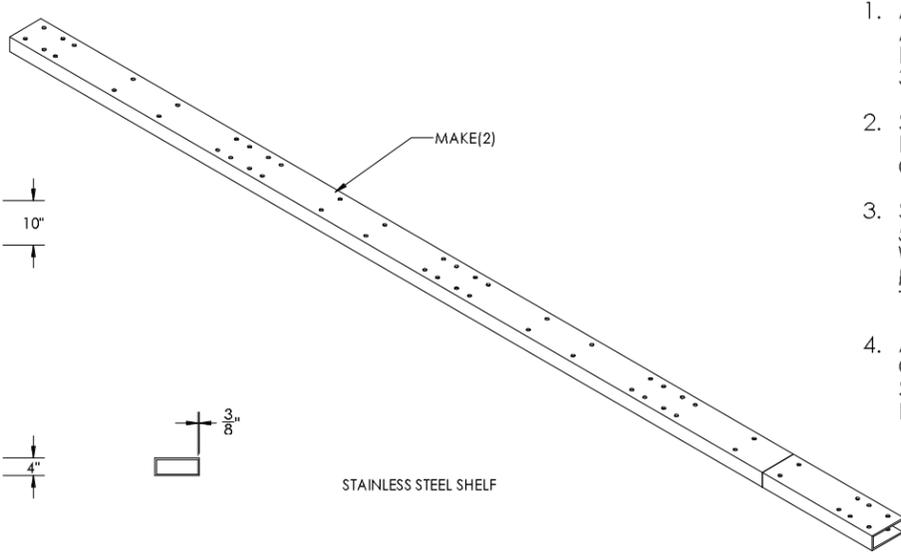
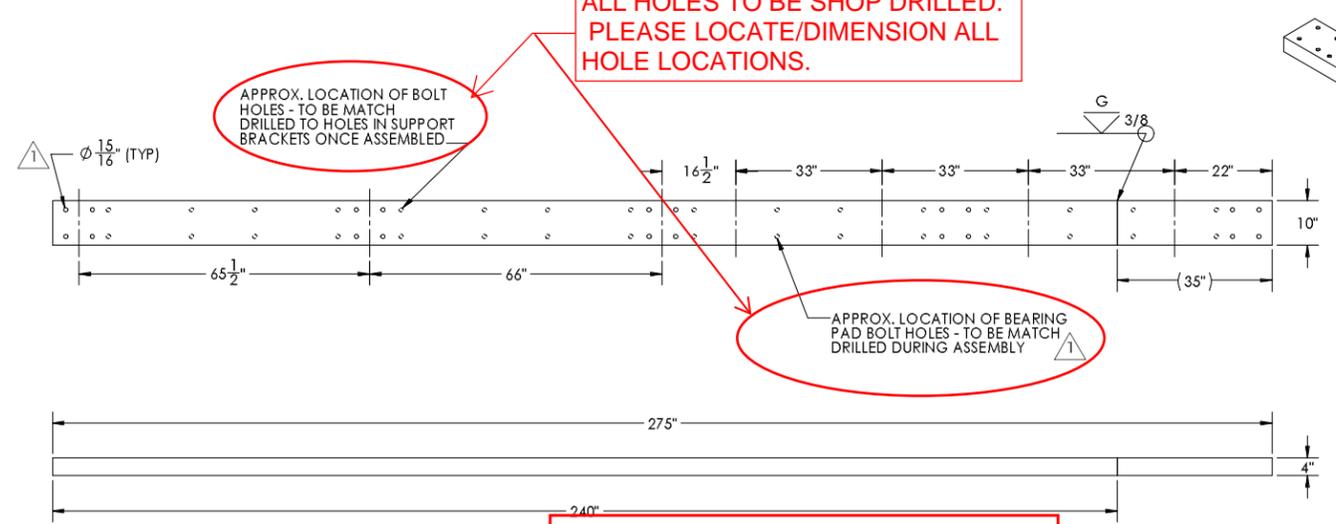
— APPROVED
 — APPROVED AS NOTED
 X REVISE AND RESUBMIT

SEE TRANSMITTAL FOR ADDITIONAL INFORMATION AS APPLICABLE.

THIS REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. ANY DEVIATION FROM THE PLANS OR SPECIFICATIONS NOT CLEARLY NOTED BY THE CONTRACTOR HAS NOT BEEN REVIEWED. REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF THE CONTRACTUAL RESPONSIBILITY FOR ANY ERRORS OR DEVIATION FROM THE CONTRACT REQUIREMENTS.

JOSH OLUND 08/22/2014
 REVIEWER DATE

INDICATE WPS NUMBER IN
 TAIL OF WELD SYMBOL (TYP)



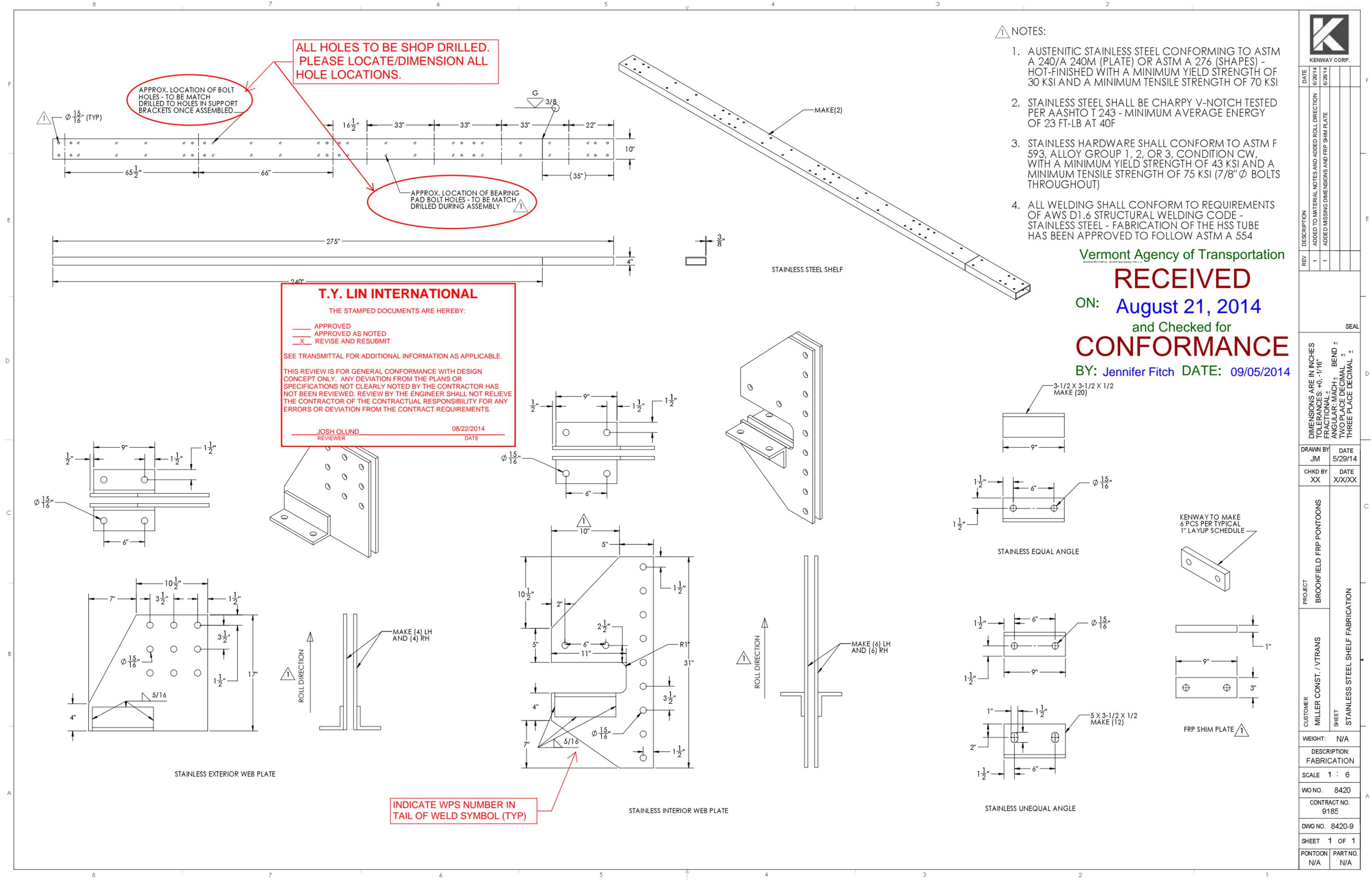
STAINLESS EXTERIOR WEB PLATE

STAINLESS INTERIOR WEB PLATE

STAINLESS UNEQUAL ANGLE

FRP SHIM PLATE

SEAL	DIMENSIONS ARE IN INCHES TOLERANCES: +0, -1/16" FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±
PROJECT	BROOKFIELD FRP PONTOONS
CUSTOMER	MILLER CONST. / VTRANS
SHEET	STAINLESS STEEL SHELF FABRICATION
WEIGHT:	N/A
DESCRIPTION:	FABRICATION
SCALE	1 : 6
WONO.	8420
CONTRACT NO.	9185
DWG NO.	8420-9
SHEET	1 OF 1
PONTOON	PART NO.
N/A	N/A



Bancroft Contracting
Welding Procedure Specification (WPS)

WPS No.: 021

Date: 12/15/1993

Rev.: 0

Page 2

First Process: GTAW		Type: Manual	
Filler Metals (QW-404)			
Weld deposit limits: 0 to 0.240 in			
AWS Classification	ER308L		
Spec. No. (SFA)	5.9		
F-No.	6		
A-No.	8		
Product Form	Bare (Solid)		
Other			
Consumable Insert: none			
Positions (QW-405)		Technique (QW-410)	
Position of Joint: All Positions		String or Weave bead: String and weave bead	
Weld Progression: Any		Nozzle/Gas cup size: #5 to #10	
Gas (QW-408)		Peening: None	
Shielding: 100% Argon / 23-30 CFH		Mult./Single Pass (per side):	
Backing: None / - CFH			
Trailing: None / - CFH			
Electrical Characteristics (QW-409)			
Current Type/Polarity: DCEN (straight)			
Tungsten Type: EWTh-2 Size: 3/32			
Max. Heat Input: None J/in			
Process Notes:			

First Process Welding Parameters

Layer(s) and/or Pass(es)	Filler Metal		Current		Wire Feed Speed (in/min)	Voltage Range	Travel Speed Range (in/min)
	AWS Classification	Size (in)	Type / Polarity	Amperage Range			
Any	ER308L	1/16	DCEN (straight)	70-150		n/r	Var.
Any	ER308L	3/32	DCEN (straight)	80-180		n/r	Var.
Any	ER308L	1/8	DCEN (straight)	130-275		n/r	Var.
Any	ER308L	3/16	DCEN (straight)	200-375		n/r	Var.

Bancroft Contracting
Welding Procedure Specification (WPS)

WPS No.: 021

Date: 12/15/1993

Rev.: 0

Page 3

Second Process:	SMAW	Type:	Manual
Filler Metals (QW-404)			
Weld deposit limits: <u>0</u> to <u>0.240</u> in No Pass Greater Than 1/2" Allowed			
AWS Classification	E316L-16		
Spec. No. (SFA)	5.4		
F-No.	5		
A-No.	8		
Other			
Positions (QW-405)		Technique (QW-410)	
Position of Joint: <u>All Positions</u>		String or Weave bead: <u>String and weave bead</u>	
Weld Progression: <u>Vertical up</u>		Peening: <u>None</u>	
Electrical Characteristics (QW-409)			
Current Type/Polarity: <u>DCEP (reverse)</u>			
Max. Heat Input: <u>None</u> J/in			
Process Notes:			

Second Process Welding Parameters

Layer(s) and/or Pass(es)	Filler Metal		Current		Voltage Range	Travel Speed Range (in/min)
	AWS Classification	Size (in)	Type / Polarity	Amperage Range		
Any	E316L-16	3/32	DCEP (reverse)	60-90	n/r	Var.
Any	E316L-16	1/8	DCEP (reverse)	80-120	n/r	Var.
Any	E316L-16	5/32	DCEP (reverse)	110-160	n/r	Var.
Any	E316L-16	3/16	DCEP (reverse)	155-210	n/r	Var.

Bancroft Contracting

23 Phillips Road
South Paris, ME 04281

Procedure Qualification Record (PQR)

PQR No.: BCC-5

WPS No.: 021

Date: 2/8/1993

Page 1

<p>Joint Design (QW-402)</p> <p>Weld type: <u>Groove weld</u> <u>Single-V groove</u></p> <p>Backing: <u>Open butt, no back weld</u></p> <p>Root opening: <u>1/16</u> in Root face: <u>1/8</u> in</p> <p>Groove angle: <u>30</u> °</p> <div style="text-align: center;"> <p>SINGLE VEE GROOVE</p> </div>	<p>Base Metals (QW-403)</p> <p>Specification type and grade: <u>SA-312, TP304L</u> to <u>SA-312, TP304L</u></p> <p>P-No.: <u>8</u> Group No.: <u>1</u> to P-No.: <u>8</u> Group No.: <u>1</u></p> <p>Thickness: <u>0.120</u> in</p> <p>Diameter: <u>4</u> in</p> <p>Preheat (QW-406)</p> <p>Minimum preheat temperature: <u>50</u> °F</p> <p>Preheat maintenance: <u>n/a</u></p> <p>Maximum interpass temperature: <u>n/a</u> °F</p> <p>Postweld Heat Treatment (QW-407)</p> <p>Type: <u>No PWHT performed</u></p> <p>PWHT temperature: <u>None</u> °F</p> <p>PWHT holding time: <u>None</u> hr</p>
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<p>Process: <u>GTAW</u></p> <p>Filler Metals (QW-404)</p> <p>AWS classification: <u>ER308L</u></p> <p>SFA spec.: <u>5.9</u> F-No: <u>6</u></p> <p>A-No. / Chem. comp.: <u>8</u></p> <p>Filler metal product form: <u>Bare (Solid)</u></p> <p>Consumable insert: <u>none</u></p> <p>Weld deposit 't': <u>0.120</u> in</p> <p>Positions (QW-405)</p> <p>Position of joint: <u>6G - 45 degree pipe</u></p> <p>Weld progression: <u>Vertical up</u></p> <p>Gas (QW-408)</p> <p>Shielding: <u>100% Argon</u> / <u>25</u> CFH</p> <p>Backing: <u>None</u> / <u>-</u> CFH</p> <p>Trailing: <u>None</u> / <u>-</u> CFH</p> <p>Process Notes:</p>	<p>Type: <u>Manual</u></p> <p>Electrical Characteristics (QW-409)</p> <p>Current type/Polarity: <u>DCEN (straight)</u></p> <p>Tungsten type: <u>EWTh-2</u> Size: <u>3/32</u></p> <p>Welding Details</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Elec. / Wire size:</td> <td style="width:10%;"><u>3/32</u></td> <td style="width:10%; border-left: 1px dashed black;">-</td> <td style="width:10%; border-left: 1px dashed black;">-</td> <td style="width:10%; border-left: 1px dashed black;">-</td> <td style="width:10%;">in</td> </tr> <tr> <td>Amperage used:</td> <td><u>75</u></td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td></td> </tr> <tr> <td>Voltage used:</td> <td>-</td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td></td> </tr> <tr> <td>Travel speed:</td> <td>-</td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td style="border-left: 1px dashed black;">-</td> <td>in/min</td> </tr> <tr> <td>Heat input:</td> <td><u>N/R</u></td> <td style="border-left: 1px dashed black;"></td> <td style="border-left: 1px dashed black;"></td> <td style="border-left: 1px dashed black;"></td> <td>J/in</td> </tr> </table> <p>Technique (QW-410)</p> <p>String / Weave bead: <u>String and weave bead</u></p> <p>Mult. / Single pass (per side): <u>Multipass</u></p>	Elec. / Wire size:	<u>3/32</u>	-	-	-	in	Amperage used:	<u>75</u>	-	-	-		Voltage used:	-	-	-	-		Travel speed:	-	-	-	-	in/min	Heat input:	<u>N/R</u>				J/in
Elec. / Wire size:	<u>3/32</u>	-	-	-	in																										
Amperage used:	<u>75</u>	-	-	-																											
Voltage used:	-	-	-	-																											
Travel speed:	-	-	-	-	in/min																										
Heat input:	<u>N/R</u>				J/in																										

Bancroft Contracting

Procedure Qualification Record (PQR)

PQR No.: BCC-5

WPS No.: 021

Date: 2/8/1993

Page 2

Reduced Section Tensile Test (QW-150)

Specimen No.	Width (in)	Thickness (in)	Area (in ²)	Ultimate Total Load (lb)	Ultimate Stress (PSI)	Failure Type and Location
T1	1.545	0.108	0.167	13500	80800	Base metal
T2	1.542	0.105	0.162	13600	84000	Weld metal

Guided Bend Test (QW-160)

Figure Number and Type	Result	Figure Number and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(b) Face bend	Acceptable	QW-462.3(b) Root bend	Acceptable
None		None	

Welder's name: Michael Vascik ID: _____ Stamp: 8

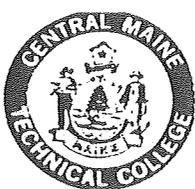
PQR was done and welding of coupon was witnessed by: Bancroft Contracting

Tests conducted by: Central Maine Technical College Test ID: _____

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Prepared By: _____ Jeffrey N. Carver _____ Date _____ Welding Engineer

Accepted By: *[Signature]* _____ 7/5/01 _____ Date _____ QC Manager



Central Maine Technical College

1250 Turner Street, Auburn, Maine 04210-6498 (207) 784-2385

MATERIAL TEST REPORT

Customer Bancroft Contracting Corp. Date 2/8/93
 PQR # BCC-5 PO# G 19150
 Material Type and Dimensions 4" dia. ASTM SA-240 type 304L to same
 Other Welder: Mike Vasick

Guided Bend Tests

- 1 Face Bend Fig. QW-462.3(a)
- 2 Root Bend Fig. QW-462.3(a)
- 3 Face Bend Fig. QW-462.3(a)
- 4 Root Bend Fig. QW-462.3(a)

Results

- No discontinuities
- No discontinuities
- No discontinuities
- No discontinuities

Tensile Tests

Specimen

No.	Width	Thickness	Area	Ultimate Load Lbs.	Ultimate Tensile PSI
T1	<u>1.545</u>	<u>.108</u>	<u>.166</u>	<u>13,500</u>	<u>81,325</u>
T2	<u>1.542</u>	<u>.105</u>	<u>.161</u>	<u>13,600</u>	<u>84,472</u>

Test & Figure QW-462.1(a)

Location

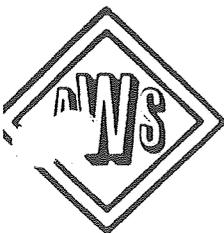
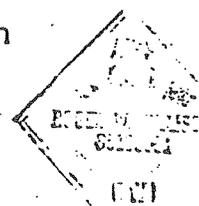
of Fracture

Elongation 2"

T1	<u>base metal</u>	<u>43%</u>
T2	<u>weld metal</u>	<u>40%</u>

I certify that the above specimens were prepared and tested in accordance with ASME section IX-92.

Roger W. Jellison, Test Supervisor



Educational Institution Member

Bancroft Contracting

23 Phillips Road
South Paris, ME 04281

Procedure Qualification Record (PQR)

PQR No.: BCC- 6

WPS No.: 020

Date: 12/7/1993

Page 1

<p>Joint Design (QW-402)</p> <p>Weld type: <u> Groove weld </u> <u> Single-V groove </u></p> <p>Backing: <u> Back-gouged and back welded </u></p> <p>Root opening: <u> 3/32 </u> in Root face: <u> 1/16 </u> in</p> <p>Groove angle: <u> 55 </u> °</p> <div style="text-align: center;"> <p>SINGLE VEE GROOVE</p> </div>	<p>Base Metals (QW-403)</p> <p>Specification type and grade: <u> SA-240, Type 316L </u> to <u> SA-240, Type 316L </u></p> <p>P-No.: <u> 8 </u> Group No.: <u> 1 </u> to P-No.: <u> 8 </u> Group No.: <u> 1 </u></p> <p>Thickness: <u> 0.375 </u> in</p> <hr/> <p>Preheat (QW-406)</p> <p>Minimum preheat temperature: <u> 50 </u> °F</p> <p>Preheat maintenance: <u> n/a </u></p> <p>Maximum interpass temperature: <u> n/a </u> °F</p> <hr/> <p>Postweld Heat Treatment (QW-407)</p> <p>Type: <u> No PWHT performed </u></p> <p>PWHT temperature: <u> None </u> °F</p> <p>PWHT holding time: <u> None </u> hr</p>																									
<p>Process: <u> SMAW </u></p> <p>Filler Metals (QW-404)</p> <p>AWS classification: <u> E316L-16 </u></p> <p>SFA spec.: <u> 5.4 </u> F-No: <u> 5 </u></p> <p>A-No. / Chem. comp.: <u> 8 </u></p> <p>Weld deposit 't': <u> 0.375 </u> in</p> <p>Pass greater than 1/2": <u> No </u></p> <p>Positions (QW-405)</p> <p>Position of joint: <u> 1G - Flat </u></p> <p>Weld progression: <u> N/A </u></p> <p>Process Notes:</p>	<p>Type: <u> Manual </u></p> <p>Electrical Characteristics (QW-409)</p> <p>Current type/Polarity: <u> DCEP (reverse) </u></p> <p>Welding Details</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Elec. / Wire size:</td> <td style="width:10%;">3/32</td> <td style="width:10%; border-left: 1px solid black;">-</td> <td style="width:10%; border-left: 1px solid black;">-</td> <td style="width:10%;">in</td> </tr> <tr> <td>Amperage used:</td> <td>95</td> <td style="border-left: 1px solid black;">-</td> <td style="border-left: 1px solid black;">-</td> <td></td> </tr> <tr> <td>Voltage used:</td> <td>-</td> <td style="border-left: 1px solid black;">-</td> <td style="border-left: 1px solid black;">-</td> <td></td> </tr> <tr> <td>Travel speed:</td> <td>3-8</td> <td style="border-left: 1px solid black;">-</td> <td style="border-left: 1px solid black;">-</td> <td>in/min</td> </tr> <tr> <td>Heat input:</td> <td></td> <td style="border-left: 1px solid black;">N/R</td> <td style="border-left: 1px solid black;"></td> <td>J/in</td> </tr> </table> <p>Technique (QW-410)</p> <p>String / Weave bead: <u> String and weave bead </u></p>	Elec. / Wire size:	3/32	-	-	in	Amperage used:	95	-	-		Voltage used:	-	-	-		Travel speed:	3-8	-	-	in/min	Heat input:		N/R		J/in
Elec. / Wire size:	3/32	-	-	in																						
Amperage used:	95	-	-																							
Voltage used:	-	-	-																							
Travel speed:	3-8	-	-	in/min																						
Heat input:		N/R		J/in																						

**Bancroft Contracting
Procedure Qualification Record (PQR)**

PQR No.: BCC- 6

WPS No.: 020

Date: 12/7/1993

Page 2

Reduced Section Tensile Test (QW-150)

Specimen No.	Width (in)	Thickness (in)	Area (in ²)	Ultimate Total Load (lb)	Ultimate Stress (PSI)	Failure Type and Location
T1	1.496	0.378	0.565	51000	90300	Base metal
T2	1.496	0.363	0.543	50000	92100	Base metal

Guided Bend Test (QW-160)

Figure Number and Type	Result	Figure Number and Type	Result
QW-462.3(a) Face bend	Acceptable	QW-462.3(a) Root bend	Acceptable
QW-462.3(b) Face bend	Acceptable	QW-462.3(b) Root bend	Acceptable
None		None	

Welder's name: Michael Vascik ID: _____ Stamp: 8

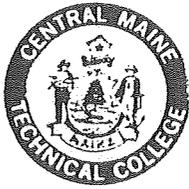
PQR was done and welding of coupon was witnessed by: Bancroft Contracting

Tests conducted by: Central Maine Technical College Test ID: _____

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Prepared By: _____ Jeffrey N. Carver _____ Date _____ Welding Engineer

Accepted By: *Jeffrey N. Carver* _____ 7/5/01 _____ Date _____ QC Manager



Central Maine Technical College

1250 Turner Street, Auburn, Maine 04210-6498 (207) 784-2385

MATERIAL TEST REPORT

Customer Bancroft Contracting Corp. Date 12/9/93
 PQR # BCC-6 PO# F 6547
 Material Type and Dimensions ASTM SA-240 type 316 to same
 Other _____

Guided Bend Tests

- 1 Face Bend Fig. QW-462.2
- 2 Root Bend Fig. QW-462.2
- 3 Face Bend Fig. QW-462.2
- 4 Root Bend Fig. QW-462.2

Results

- No discontinuities
- No discontinuities
- No discontinuities
- No discontinuities

Tensile Tests

Test & Figure QW-462.1(a)

Specimen No.	Width	Thickness	Area	Ultimate Load Lbs.	Ultimate Tensile PSI
T1	<u>1.496</u>	<u>.378</u>	<u>.565</u>	<u>51,000</u>	<u>90,265</u>
T2	<u>1.496</u>	<u>.363</u>	<u>.543</u>	<u>50,000</u>	<u>92,081</u>

	Location of Fracture	Elongation 2"
T1	<u>base metal</u>	<u>45%</u>
T2	<u>base metal</u>	<u>41%</u>

I certify that the above specimens were prepared and tested in accordance with ASME section IX-92.

Roger W. Jellison
 Roger W. Jellison, Test Supervisor

