



Washington State  
Department of Transportation

RAM - 0010

Request for Approval of Material

Contract 8078	FA Number _____	SR Interstate 5	Date 2/8/11
Section I-5 Columbia River Bridge (WA 0.3 to OR MP 308.0)		County WA and OR states	
Contractor American Construction Company, Inc.		Subcontractor _____	

This form shall be completed prior to submittal. If this form is not complete at time of submittal it may be returned for information that was omitted.  
For assistance in completing, see Instructions and Example

**For WSDOT Use Only**  
RAM # 10

Bid Item No.	Material or Product/Type	Name and Location of Fabricator, Manufacturer or Pit Number	Specification Reference	PE/QPL Code	Hdqtr./QPL Code
3.01	80" diameter Bubble Rings	Rainier Welding, Inc. 19020 NE 84th Street Redmond, WA 98053	Special Provisions Page 98	7	
	Only for Unconfined Bubble Ring System				
<sup>NP</sup> 3.02	2/10/11				
3.16	3/8" Steel Plate				
3.13	SCG 80 6061-T6				
3.14	wire rope				

Project Engineer <i>Nicki Peppers</i>	Date <i>2/10/11</i>	State Materials Engineer <i>for Frank Green</i>	Date
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Acceptance Action Codes for use by Project Engineer and State Materials Laboratory

- Acceptance Criteria: Acceptance based upon 'Satisfactory' Test Report for samples of materials to be incorporated into project.
- Acceptance Criteria: Mfg. Cert. of Compliance for 'Acceptance' prior to use of material.
- Acceptance Criteria: Catalog Cuts for 'Acceptance' prior to use of material. Catalog Cut Approved  Yes  No
- Acceptance Criteria: Submit Shop Drawings for 'Approval' prior to fabrication of material.
- Acceptance Criteria: Only 'Approved for Shipment', 'WSDOT Inspected' or 'Fabrication Approved Decal' material shall be used.
- Acceptance Criteria: Submit Certificate of Materials Origin to Project Engineer Office.
- Acceptance Criteria: Request Transmitted to State Materials Laboratory for Approval Action.
- Source Approved:
- Approval Withheld: Submit samples for preliminary evaluation.
- Approval Withheld:
- Miscellaneous Acceptance Criteria.

Remarks:

\*shop drawing attached approved  
cc: American Construction, peppers

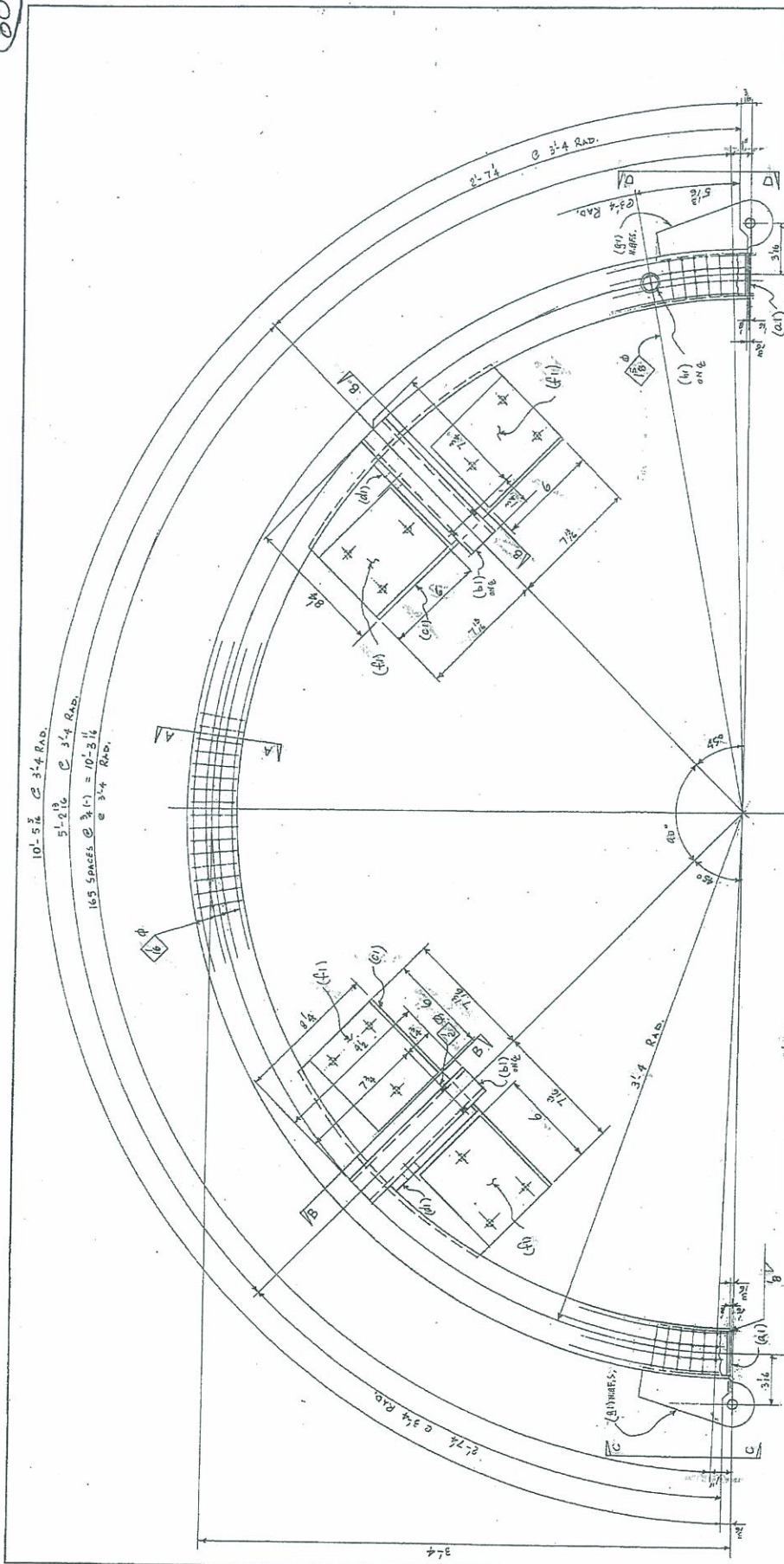
Project Engineer Distribution

- Contractor  
 Region Operations Engineer  
 Fabrication Inspection
- Region Materials  
 State Materials Lab  
M/S 47365

State Materials Engineer Distribution

- General File  
 Other \_\_\_\_\_
- Signing Inspection

8078



**APPROVED AS NOTED**

WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
BRIDGE AND STRUCTURES OFFICE  
BY: CONSTRUCTION SUPPORT ENGINEER

DATE: JAN 31 2011

(GEOMETRY NOT REVIEWED)

MAKE ONE ~ 2 1/2" SCH 80 Pipe x 10'-5 1/2" ~ M21A  
Aluminum Pipe For Bottom Rims, Ref. No.2

Work This Deck With Dwg. 2  
For Field Bolt List See Dwg. 9

Approved JAS 1-28-2011

NO.	REVISION	DATE	BY	CHK.

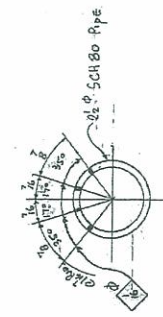
  

DESIGNER	W. A. B. O.
CHECKED	
APPROVED	
DATE	
PROJECT	
CONTRACT	
SCALE	
TITLE	

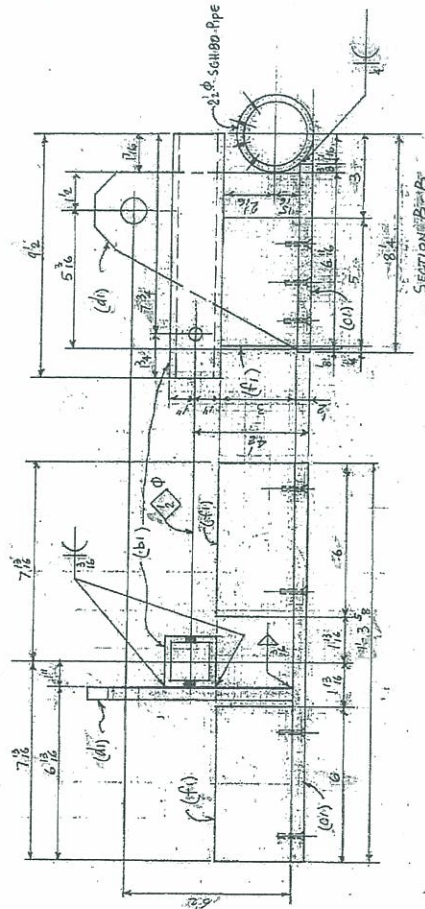
  

<b>RAINIER WELDING</b>	
1800 NE BATH STREET - RECONNO, WA 98083	
STEEL AND ALUMINUM FABRICATING	
BOTTOM RIMS	
COLUMBIA RIVER BRIDGE	
TERRAZAS JUE TEST	
TERRAZAS JUE TEST	
TERRAZAS JUE TEST	
COMPANY	AMERICAN CONST.
PROJECT	
DATE	1/28/11
BY	JAS
CHK	
APP	
REV	

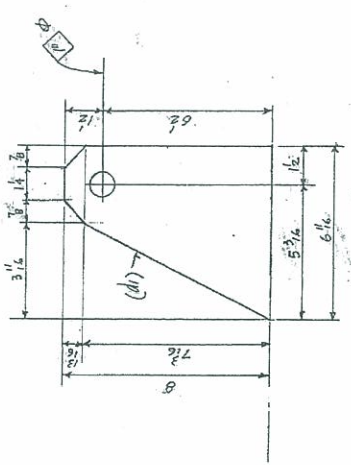
278.00



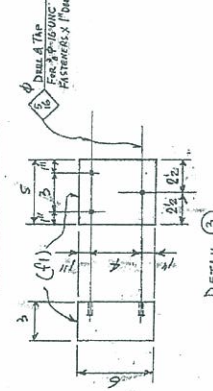
SECTION A-A



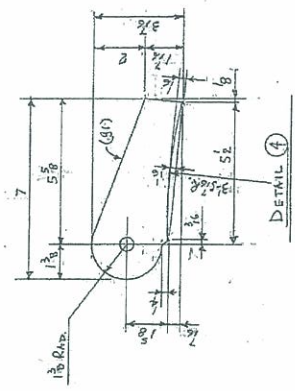
SECTION B-B



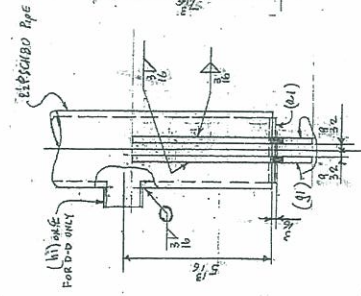
DETAIL (1)



DETAIL (2)

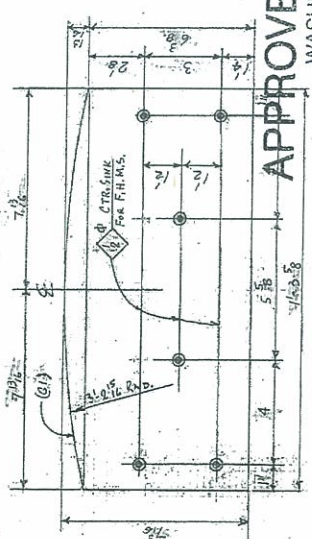


DETAIL (3)



VIEW C-C

VIEW D-D



DETAIL (4)

**APPROVED AS NOTED**

WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
BRIDGE AND STRUCTURES OFFICE  
BY: CONSTRUCTION SUPPORT ENGINEER

DATE JAN 31 2011

(GEOMETRY NOT REVIEWED)

Approved JAS 1-28-2011

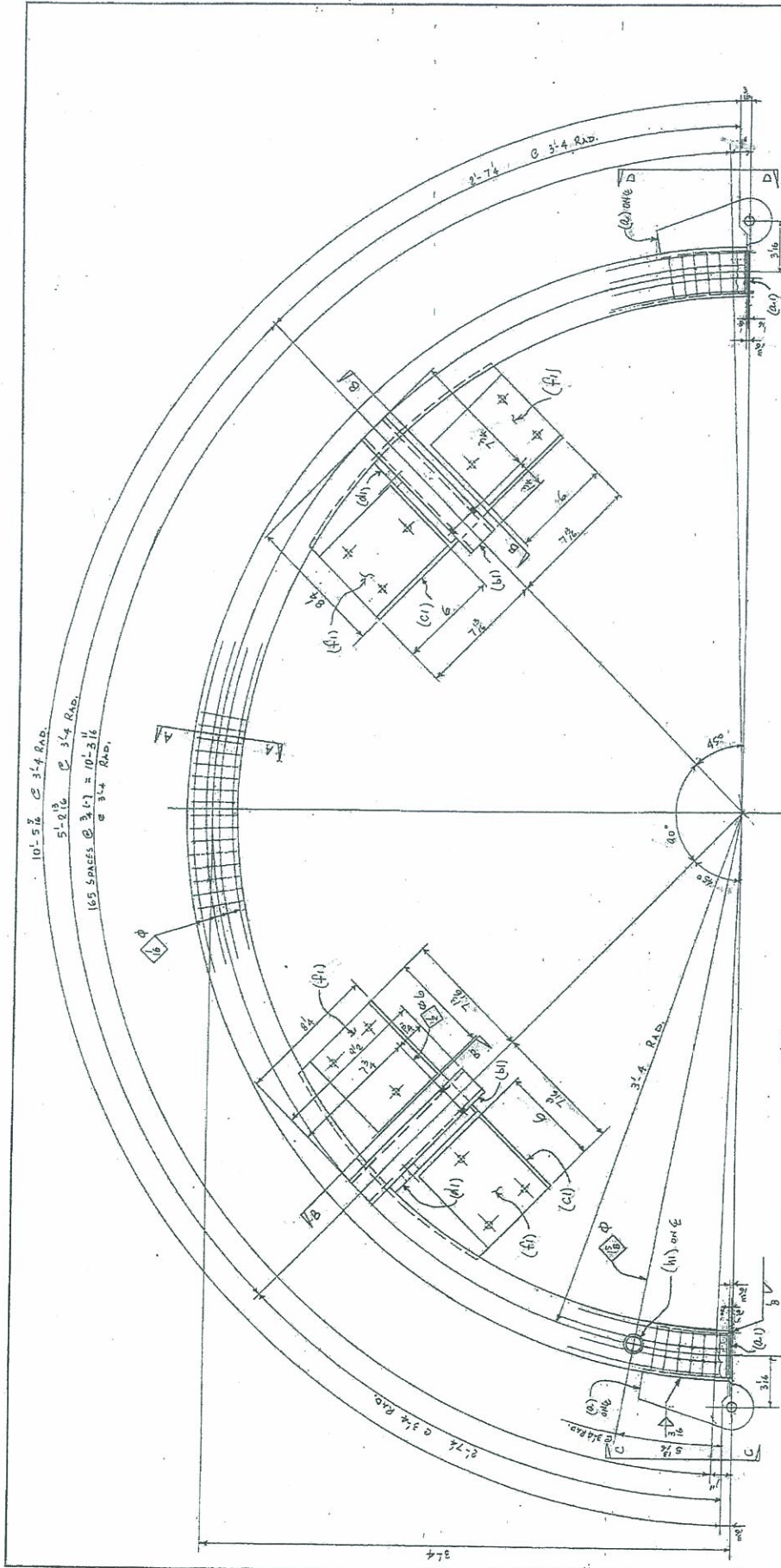
BILL OF MATERIAL

ITEM NO.	QUANTITY	DESCRIPTION	UNIT	REMARKS
1	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
2	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
3	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
4	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
5	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
6	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
7	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
8	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
9	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
10	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
11	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG
12	1	21.0 SCH 80 PIPE 10.5' LONG	LINEAL FEET	10.5' LONG

MATERIAL: AL 6061-T6, U.M.  
MILL CERTS. REQ'D.

WORK THIS DRAW. WITH DRAW. 1

DESIGNER	W. A. B. O.	CHECKED	W. A. B. O.
DATE	1/28/11	SCALE	AS SHOWN
PROJECT	RAINIER WELDING	NO. OF SHEETS	1 OF 1
DESCRIPTION	STEEL AND ALUMINUM FABRICATING	DATE	1/28/11
CLIENT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION	PROJECT NO.	1-28-2011
CONTRACT NO.	1-28-2011	CONTRACT VALUE	\$ 2,850
CONTRACT DATE	1-28-2011	CONTRACT NO.	2



DESIGNER	W.A.B.O.	DATE	
CHECKED		SCALE	
APPROVED		PROJECT	
		NO.	
		REV.	
<b>RAINIER WELDING</b>			
1820 NE 84TH STREET, REDMOND, WA 98053			
TEL: (206) 881-1111 FAX: (206) 881-1112			
WEB: WWW.RAINIERWELDING.COM			
PROJECT: <b>Bottom Ring</b>			
DRAWN BY: <b>W.A.B.O.</b>			
CHECKED BY: <b>W.A.B.O.</b>			
DATE: <b>1-5-11</b>			
SCALE: <b>AS SHOWN</b>			
PROJECT NO.: <b>1-28-2011</b>			
DRAWING NO.: <b>1-28-2011-001</b>			

**APPROVED AS NOTED**  
 WASHINGTON STATE  
 DEPARTMENT OF TRANSPORTATION  
 BRIDGE AND STRUCTURES OFFICE  
 BY: CONSTRUCTION SUPPORT ENGINEER  
 DATE: JAN 31 2011

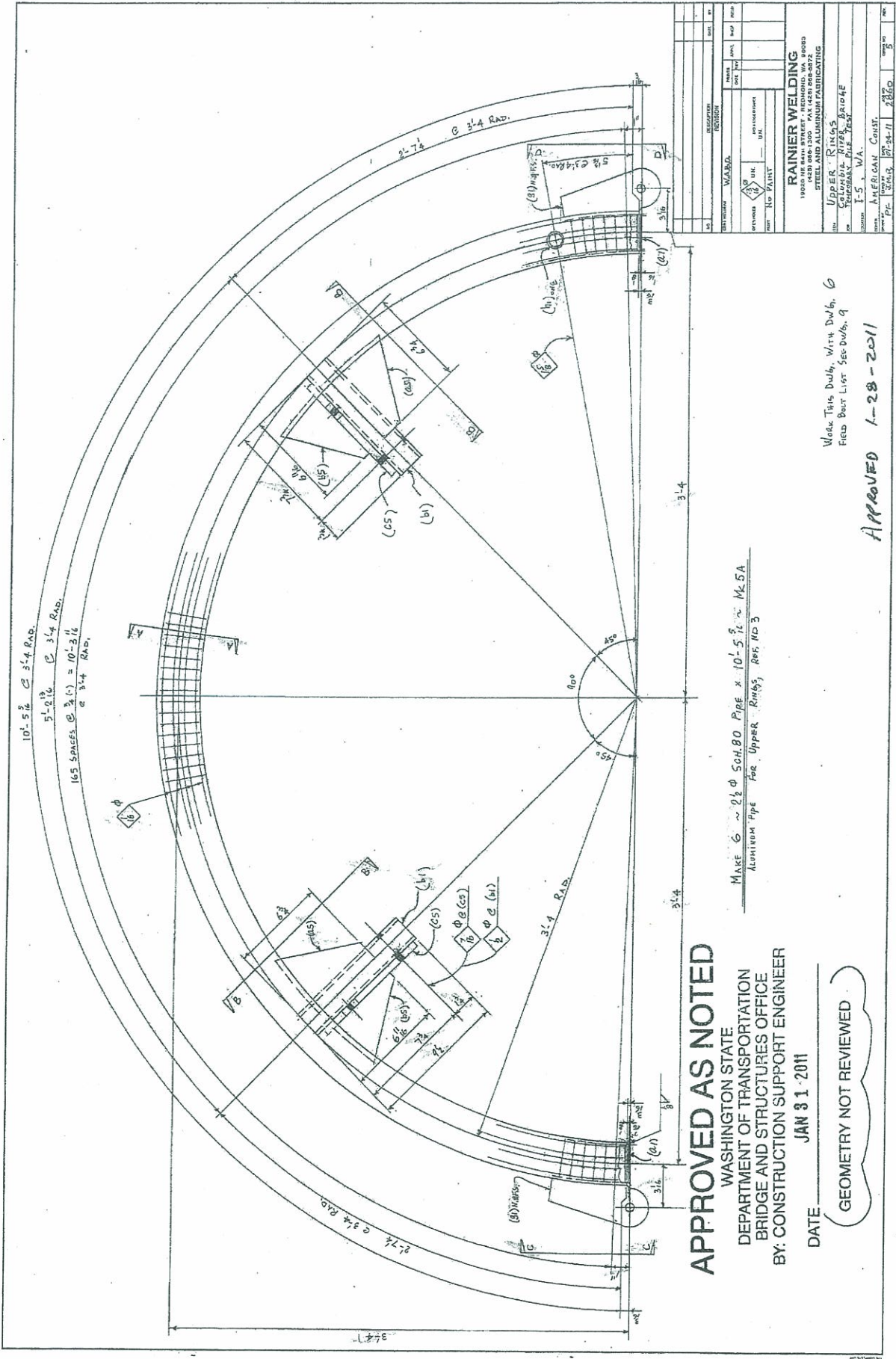
MAKE ONE ~ 24" SCH 80 PIPE x 10'-5 1/2" ~ M23A  
 ALUMINUM PIPE FOR BOTTOM RING, REF. 1102

Work This Dwg. With Dwg. 4  
 Field Bolt Let For This Dwg. See Dwg. 9

Approved **RES 1-28-2011**

GEOMETRY NOT REVIEWED





**APPROVED AS NOTED**

WASHINGTON STATE  
 DEPARTMENT OF TRANSPORTATION  
 BRIDGE AND STRUCTURES OFFICE  
 BY: CONSTRUCTION SUPPORT ENGINEER

DATE: JAN 31 2011

GEOMETRY NOT REVIEWED

MAKE 6 ~ 2 1/2" SCH. 80 PIPE x 10'-5 1/2" M.S.A.  
 ALUMINUM PIPE FOR UPPER RINGS, REF. NO. 3

Make This Draw. With DWG. 6  
 Field Bur. List See DWG. 9

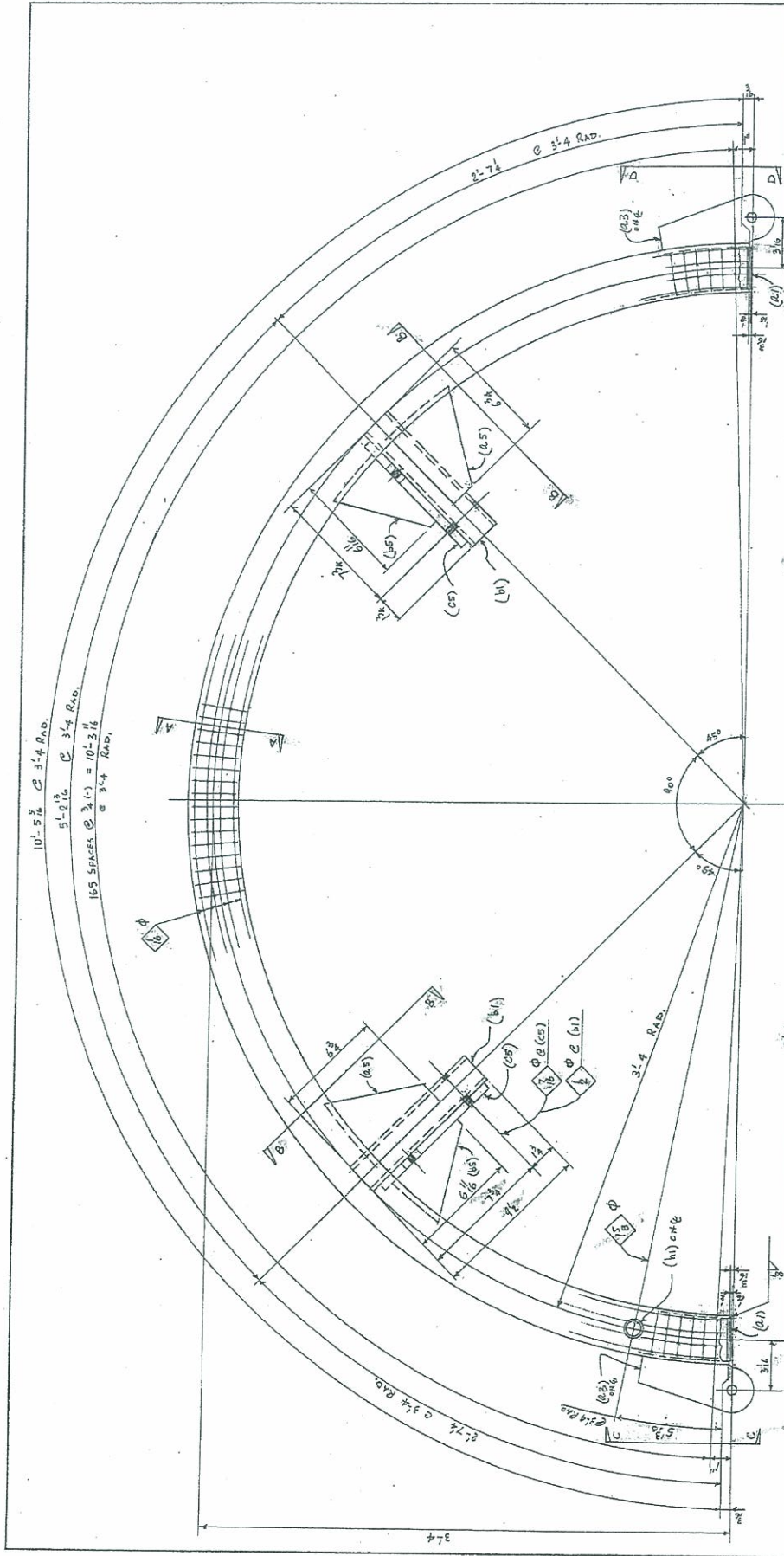
APPROVED 1-28-2011

**RAINIER WELDING**  
 10000 16th Street, Richmond, VA 23185  
 STEEL AND ALUMINUM FABRICATING

Upper Ring 6  
 Columbia River Bridge  
 Temporary Dike Test  
 1-5-11 W.A.

AMERICAN CONST.  
 177-94-11 2860  
 3/11





$10'-5\frac{1}{2}" \text{ @ } 31.4 \text{ RAD.}$   
 $5'-0\frac{1}{2}" \text{ @ } 31.4 \text{ RAD.}$   
 $165 \text{ SPACES @ } \frac{3}{4}" = 10'-2\frac{1}{4}"$   
 $\text{ @ } 31.4 \text{ RAD.}$

DESIGNER	DATE	NO.
REVISION	DATE	NO.
APPROVED	DATE	NO.
PROJECT	WARDO	
CONTRACT		
NO.		
DATE		
BY		
FOR		
SCALE		
PROJECT	RAINIER WELDING	
NO.	1000 16 1/2 ST. S.W. - REDMOND, WA 98053	
DATE	FEBRUARY 1974	
BY	UPPER RAINIER RIVER BRIDGE	
FOR	SALVEMORE PILE TEST	
SCALE	1" = 1'-0"	
PROJECT	AMERICAN CONST.	
NO.	1-28-2011	

MAKE G ~ 2 1/2" S&H 80 PIPE x 10'-5 1/2" ~ M&TA  
 ALUMINUM PIPE FOR UPPER RINGS, REF. NO 3

WORK THIS DUB, WITH DWG. 8  
 FIELD BOAT LIST SEE DUB. 9

APPROVED JKS 1-28-2011

**APPROVED AS NOTED**  
 WASHINGTON STATE  
 DEPARTMENT OF TRANSPORTATION  
 BRIDGE AND STRUCTURES OFFICE  
 BY: CONSTRUCTION SUPPORT ENGINEER  
 DATE: JAN 31 2011  
 GEOMETRY NOT REVIEWED

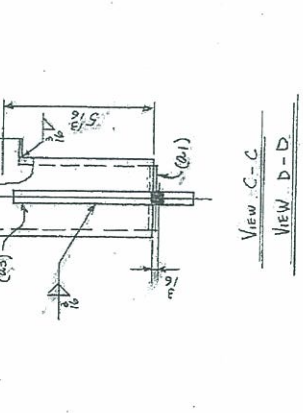
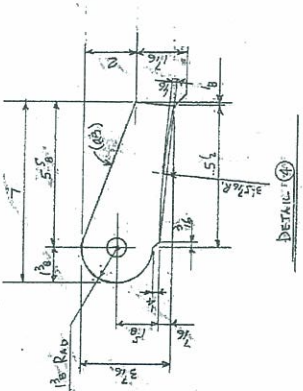
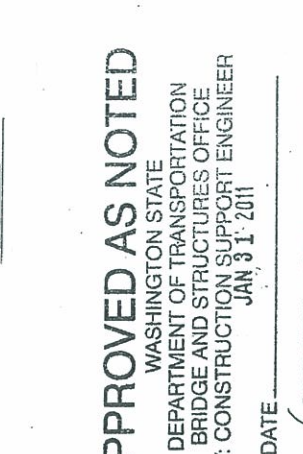
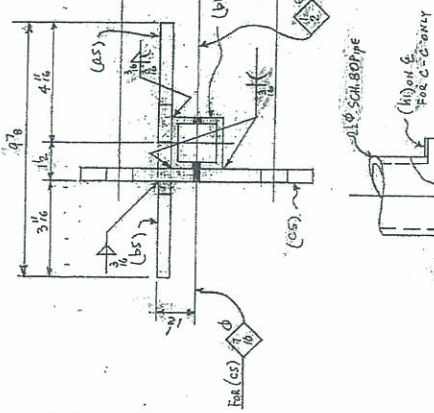
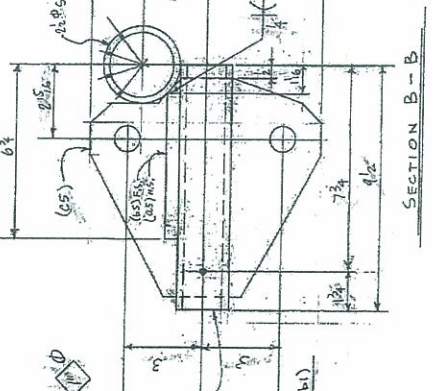
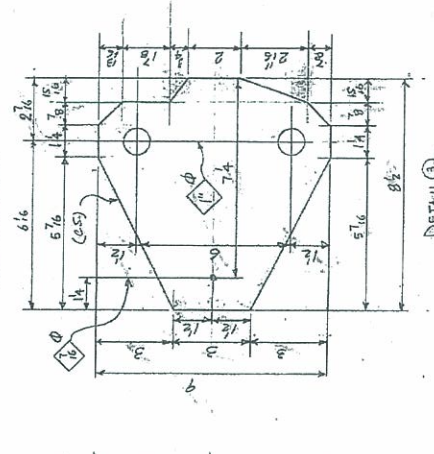
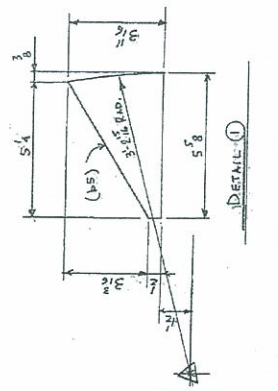
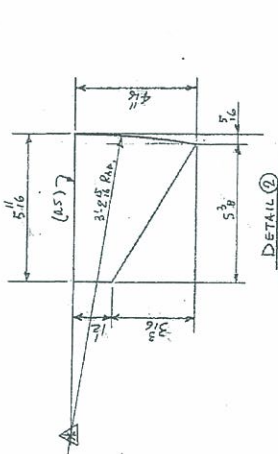


**BILL OF MATERIAL**

ITEM NO.	QUANTITY	DESCRIPTION	UNIT	REMARKS
1	10	24" SCH. 80 PIPE	LF	RAIL
2	0	24" x 24" x 1/2" PL	SQ	
3	0	24" x 24" x 1/2" PL	SQ	
4	0	24" x 24" x 1/2" PL	SQ	
5	0	24" x 24" x 1/2" PL	SQ	
6	0	24" x 24" x 1/2" PL	SQ	
7	0	24" x 24" x 1/2" PL	SQ	
8	0	24" x 24" x 1/2" PL	SQ	
9	0	24" x 24" x 1/2" PL	SQ	
10	0	24" x 24" x 1/2" PL	SQ	
11	0	24" x 24" x 1/2" PL	SQ	
12	0	24" x 24" x 1/2" PL	SQ	
13	0	24" x 24" x 1/2" PL	SQ	
14	0	24" x 24" x 1/2" PL	SQ	
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17	0	24" x 24" x 1/2" PL	SQ	
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23	0	24" x 24" x 1/2" PL	SQ	
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97	0	24" x 24" x 1/2" PL	SQ	
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99	0	24" x 24" x 1/2" PL	SQ	
100	0	24" x 24" x 1/2" PL	SQ	

MATERIAL: AL 6061-T6  
MIL. CERTS. REQ'D

Work This Draw. With DWG. 7



**APPROVED AS NOTED**  
WASHINGTON STATE  
DEPARTMENT OF TRANSPORTATION  
BRIDGE AND STRUCTURES OFFICE  
BY: CONSTRUCTION SUPPORT ENGINEER  
JAN 31, 2011

DATE

GEOMETRY NOT REVIEWED

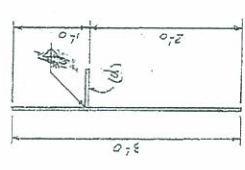
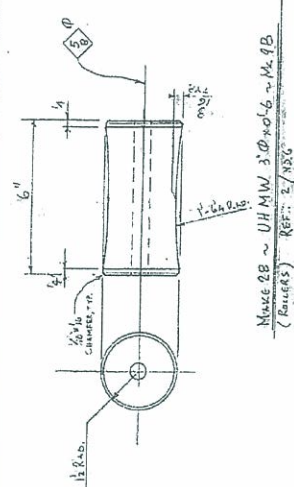
Approved 1-28-2011 JKS

W.A.S.O.  
RAINIER WELDING  
1600 16th Street, Redmond, WA 98053  
STEEL AND ALUMINUM FABRICATING  
Upper Rainier - Section, Details  
COLUMBIA RIVER BRIDGE  
1-5 WA  
AMERICAN CONST.  
2011-11-28

**BILL OF MATERIAL**

NO.	QTY.	DESCRIPTION	UNIT	REMARKS
28	1	TELESCOPING ARMS	EA	SEE DETAIL
29	1	WELDED JOINT	EA	SEE DETAIL
30	1	WELDED JOINT	EA	SEE DETAIL
31	1	WELDED JOINT	EA	SEE DETAIL
32	1	WELDED JOINT	EA	SEE DETAIL
33	1	WELDED JOINT	EA	SEE DETAIL
34	1	WELDED JOINT	EA	SEE DETAIL
35	1	WELDED JOINT	EA	SEE DETAIL
36	1	WELDED JOINT	EA	SEE DETAIL
37	1	WELDED JOINT	EA	SEE DETAIL
38	1	WELDED JOINT	EA	SEE DETAIL
39	1	WELDED JOINT	EA	SEE DETAIL
40	1	WELDED JOINT	EA	SEE DETAIL
41	1	WELDED JOINT	EA	SEE DETAIL
42	1	WELDED JOINT	EA	SEE DETAIL
43	1	WELDED JOINT	EA	SEE DETAIL
44	1	WELDED JOINT	EA	SEE DETAIL
45	1	WELDED JOINT	EA	SEE DETAIL
46	1	WELDED JOINT	EA	SEE DETAIL
47	1	WELDED JOINT	EA	SEE DETAIL
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66	1	WELDED JOINT	EA	SEE DETAIL
67	1	WELDED JOINT	EA	SEE DETAIL
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69	1	WELDED JOINT	EA	SEE DETAIL
70	1	WELDED JOINT	EA	SEE DETAIL
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77	1	WELDED JOINT	EA	SEE DETAIL
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94	1	WELDED JOINT	EA	SEE DETAIL
95	1	WELDED JOINT	EA	SEE DETAIL
96	1	WELDED JOINT	EA	SEE DETAIL
97	1	WELDED JOINT	EA	SEE DETAIL
98	1	WELDED JOINT	EA	SEE DETAIL
99	1	WELDED JOINT	EA	SEE DETAIL
100	1	WELDED JOINT	EA	SEE DETAIL

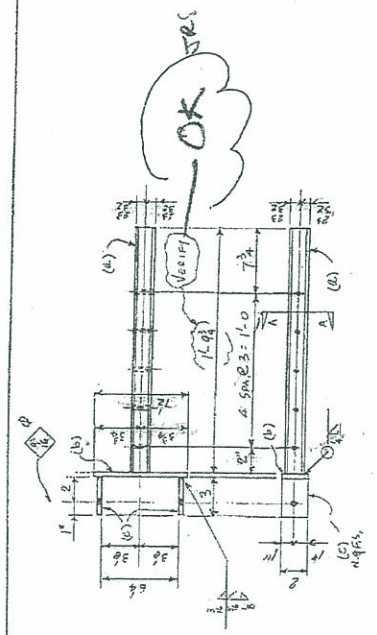
MATERIAL: ALL BOLTS, NUTS, WASHERS, RIVETS, MILL BOLTS, ETC.



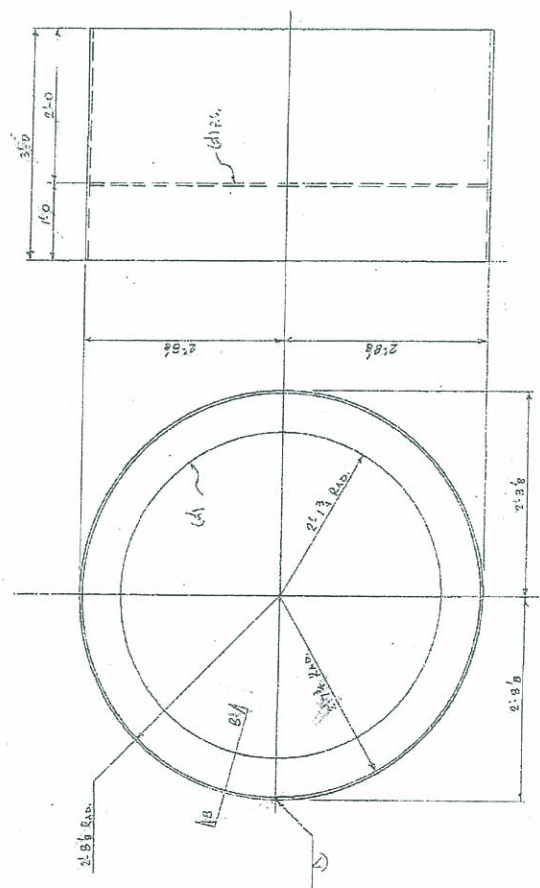
**APPROVED AS NOTED**  
 WASHINGTON STATE  
 DEPARTMENT OF TRANSPORTATION  
 BRIDGE AND STRUCTURES OFFICE  
 BY: CONSTRUCTION SUPPORT ENGINEER  
 JAN 31 2011

DATE: \_\_\_\_\_  
 GEOMETRY NOT REVIEWED

Approved JRS 1-29-2011



MAKE 28 ~ TELESCOPING ARMS ~ Mk. 9A  
 REF: 2/1052



MAKE 2 ~ P. 3 x 35 x 16-8 ~ Mk. 9C  
 REF: NDB

**RAINIER WELDING**  
 1820 4th Avenue - North, WA 98103  
 TEL: 206.465.8888  
 FAX: 206.465.8889  
 WWW.RAINIERWELDING.COM  
 1-800-875-7273  
 AMERICAN CONST.



**SEAPORT  
STEEL**

ISSC, INC

Phone: (206) 343-0700

WATS: (800) 835-4545

Fax: (206) 343-1366

In State: (800) 233-3660

3660 East Marginal Way South, P O. Box 3625, Seattle, WA 98124

## Certification of Compliance

### Sold to

RAINIER WELDING

19020 N E 84TH

REDMOND

WA 98053

**Work Order: G2087**

All W/O Certifications

Page: 1

### Additional Information

Customer Order: 2860-1

Order Date: 1/19/2011

Ordered By: BOB

Salesman: RP

Seaport Steel certifies that Mill Certification documents for materials shipped on this work order have been verified to comply with grade/specification requirements as listed below by material description and heat number.

A36 PL 3 X 96      30' 0"

Heat # 0504750

**NUCOR**  
**PLATE MILL**

P.O. Box 279  
Winton, NC 27986  
(252) 356-3700

# Mill Test Report

Page 4



Issuing Date : 08/16/2010  
Vehicle No : ATW 116052  
Specification : 3.0000" x 96.000" x 380.000"  
ASTM A36-08/A36M A709 Grade 36-08/AASHTO M270 Grade 36/A-SME  
SA36-03a 2009 Addenda AASHTO M270 36

Load No. : 271701  
Our Order No. : 83561/4  
Sold To : SEAPORT STEEL COMPANY  
P.O. BOX 3625  
SEATTLE, WA 98124

Cust. Order No. : E172813  
Ship To : SEAPORT STEEL COMPANY  
3660 EAST MARGINAL WAY SOUTH  
SEATTLE, WA 98134

*E172813*

Marking :

Heat No	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al(tot)	V	Nb	Ti	N	Ca	B	Sn	Ceq	Pcm
0504750	0.18	0.89	0.0039	0.003	0.17	0.16	0.05	0.05	0.01	0.019	0.004	0.002	0.00*	0.00*	0.0016	0.0001	0.009	0.36	0.25

Plate Serial No	Tensile Test		Elongation		Charpy Impacts		Mn Avg.
	Tons	Dir.	% in 2"	% in 8"	Dir.	3	
0504750-07	1	14.70	T	40.000	70.700	31.6	
		T	38.600	58.600	32.2		

Manufactured to fully killed practice by Electric Arc Furnace. Welding or weld repair was not performed on this material. Mercury has not been used in the direct manufacturing of this material. Produced as continuous cast discrete plate as-rolled, unless otherwise noted in Specification.

Yield by 0.5EFL method unless otherwise specified. Ceq = C+(Mn/6)+(Cr+Mo+V/5)+(Cu+Ni/15)

Pcm = C+(Si/30)+(Mn/15)+(Cu+Ni/15)+(Cr+Mo+V/5)+(Al/10)+B

Milled and manufactured in the USA, ISO 9001:2000 certified (0606461) by SRI Quality System Registrar (06065-09), PED 9772-SEC 712 Annex 1, Part 4.3 Compliant

DIN EN 10204 3.1 (2004), DIN EN 10204 3.1 (2005) compliant. For A36 grades only. Quality Assurance certificate 06-MM-PCA-363

T. A. Deparis, Metallurgist

08/18/2010 3:24:29 PM

**CERTIFIED INSPECTION REPORT**

A10:53 050760

**Alcoa Inc.**

We hereby certify that the material covered by this Certificate has been produced in accordance with, and has been found to meet, the specific requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

*[Signature]*

Malcolm Murphy

Director of Manufacturing Operations Works

*[Signature]*

Kenton P. Young  
Quality Assurance Manager

PITTSBURGH, PA DAVENPORT WORKS

Ship From:

IL95221  
Ship Date 2010-12-28  
P.O. No./Govt Contract No. 10077445  
H.L. No. 5519258  
Invoice No. 00000  
Alcoa No. Item 1000251279-1  
Customer Alcoa Item  
Page 1  
DS-53279-1

ALASKAN COPPER & B 6041307416R06

Ship To: ALASKAN COPPER & BRASS COMPANIES, I  
ALASKAN COPPER AND BRASS  
27402 72ND AVE S  
KENT, WA 98032

Item Description  
0.25 IN TX (+.014 -0.000) X 48.5 IN W (+.375 -  
0.000) X 144.5 IN LN (+.5 -0.0) CAT X 134100 (N) A/T 5061 -  
T651 TYPE 200 WROUGHT TOOLING PLATE MILL  
FINISH. AMS4027 REV N ANS1H35.2 REV 2009 EXC PER ASM2-SB-  
209 REV 10 EXC PER ASTM209 REV 07  
((MARKED)) KRAFT PAPER INTERLEAVED  
NRX GROSS SXID WGT: 4500 LB QUAN TOL +/-  
40 % COR D164055 REV 06 CUST REQ 10-12-  
27 \*\*\* W/R 11-01-01 \*\*\*

*RAINIER WELDING \*  
PO# 28602  
2-2-2011  
9005 WENTON  
181-762-5100  
ALCOA ©  
9/11/08*

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector	Clock Numbers
1	265577 ✓	423752 ✓	355	2	PC	47118	
2	265612	207038	1594	9	PC	47007	
3	265612	423751	1418	8	PC	47007	
4	265612	423758	511	3	PC	47007	
5	265614	207038	1593	9	PC	47007	
6	265614	423758	2654	15	PC	47007	
			8145	46			

Notes for COR: D164055.6  
PRODUCT PRODUCED TO THE REQUIREMENTS OF AMS4027 REV N ALSO MEET THE REQUIREMENTS OF AMS-00-A-250 11 ORIGINAL REVISION D DATED 1997-08-01.

COR: D164055.6 -Specification Limits

Temp Dir	UTS KSI	TYS KSI	EL4D PCT
T651 Long Transv.	Max	42.0	35.0
	Min		20

Alloy 6061	Chemical Composition				Other				
	SI	FE	CU	MN	MG	CR	ZN	TI	Total Aluminum
Max	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.15
Min	0.40		0.15		0	0	0	0.04	REMAIN

Notes for Lot: 207038  
TENSILE TEST VALUES IN MPA = 330, 330 YIELD TEST VALUES IN MPA = 294, 294

**CERTIFIED INSPECTION REPORT**

**Alcoa Inc.**

PITTSBURGH, PA DAVENPORT WORKS

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples were taken of the material and the composition tests and had the mechanical properties shown on the face of this report.

*[Signature]*

Melinda Murphy  
Director of Manufacturing Development Works

*[Signature]*  
Kenton P. Young  
Quality Assurance Manager

1195221 Ship Date 2010-12-28 Invoice No. 1000253279-1 Alcoa No. Item 1000253279-1 Page 2  
 0 B.L. No. 5519258 Customer ALCOA IL604  
 P.O. No./Govt Contract No. 10077445 Lot# 1 ALASKAN COPPER & B G34110741GR06

018283

Lot: 207038 - Mechanical, Physical, Metallurgy, Quantometer Results (cont.)  
 Lot: 207038 - Mechanical, Physical, Metallurgy, Quantometer Results

Temp	Dir	Long Transv.	2	UTS	KSI	42.6	15.6	EL4D	PCT
				47.8	42.5	15.4			

Cast Number Chemical - OBS SI FE CU MN MG CR ZN TI  
 H9844092 Actuals 0.64 0.4 0.25 0.06 1.0 0.19 0.04 0.02

Notes for Lot: 423751  
 TENSILE TEST VALUES IN MPA = 325, 326 YIELD TEST VALUES IN MPA = 292, 292

Lot: 423752 - Mechanical, Physical, Metallurgy, Quantometer Results

Temp	Dir	Long Transv.	2	UTS	KSI	42.3	14.9	EL4D	PCT
				47.3	42.4	15.2			

Cast Number Chemical - OBS SI FE CU MN MG CR ZN TI  
 H9844092 Actuals 0.64 0.4 0.25 0.06 1.0 0.19 0.04 0.02

Notes for Lot: 423752  
 TENSILE TEST VALUES IN MPA = 331, 332 YIELD TEST VALUES IN MPA = 297, 296

Lot: 423752 - Mechanical, Physical, Metallurgy, Quantometer Results

Temp	Dir	Long Transv.	2	UTS	KSI	43.1	14.9	EL4D	PCT
				48.2	42.9	15.3			

Cast Number Chemical - OBS SI FE CU MN MG CR ZN TI  
 H9844092 Actuals 0.64 0.4 0.25 0.06 1.0 0.19 0.04 0.02

Notes for Lot: 423758  
 TENSILE TEST VALUES IN MPA = 330, 328 YIELD TEST VALUES IN MPA = 293, 294

**CERTIFIED INSPECTION REPORT**

**Alcoa Inc.**

PITTSBURGH, PA DAVENPORT WORKS

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications for any a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

*John Murphy*  
 Director of Manufacturing Davenport Works

*Kater P. Young*  
 Quality Assurance Manager

1195221 Ship Date 2010-12-28  
 0 P.L. No. 5519258  
 Invoice No. 00000  
 Alcoa No. Item 1000253279-1  
 P.O. No./Govt Contract No. Customer Alcoa Item  
 10077445 Lot#: 1 ALASKAN COPPER & B G041107416R06  
 Page 3  
 DS-55279-1

Lot: 423758 - Mechanical, Physical, Metallurgy, Quantometer Results (cont )  
 Lot: 423758 - Mechanical, Physical, Metallurgy, Quantometer Results

Test	EL4D	YS	UTS	KSI	RCT	EL4D	YS	UTS	KSI	RCT
2651	Long Transv.	2	47.5	42.5	15	47.5	42.5	15	42.6	14.9

Cast Number H584052  
 Chemical - OES SI FE CU MN MG CR ZN TI  
 Actuals 0.64 0.4 0.25 0.06 1.0 0.19 0.04 0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

0432073



**Abnahmeprüfzeugnis 3.1 (EN 10204)**  
**Inspection certificate – mill certificate**

Nr.: 85336910 03 / 6

Rev. 0  
 Seite / page: 1 von / of 2  
 Datum / date: 2010 07 20

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, ENIAS 9100, ISO 14001, NADCAP

*RAI/NIK WELDING*  
*POH-2860-2*  
*SAL/D 762582*  
*DATE: 2-2-11*  
*© BOB*  
*WELDRON*

*PH 1-06*  
*2*

K02-52 05809

<b>Auftraggeber / customer:</b> Empire Resources Inc. 1 Parker Plaza FORT LEE NJ 07024 USA	<b>Bestell Nr. / order no.:</b> R133210/ER-4348-P <b>Datum / date:</b> 2010 04 27
	<b>Auftragsbest. Nr. / order confirm. no.:</b> 612989 <b>Datum / date:</b> 2010 04 28
<b>Wareneempfänger / consignee:</b> Empire Resources, INC 6901 Quad Avenue BALTIMORE MD 21237-2405 USA	<b>Lieferschein Nr. / delivery note:</b> 85336910 <b>Datum / date:</b> 2010 07 20
	<b>Akkreditiv Nr. / letter of credit no.:</b>
<b>Endkunde, Bestell-Nr. / Your cust., ord. no.:</b>	

<b>Produkt/product</b> Form / form: Plate, stretched Werkstoff / material: 6061 Zustand / temper: T651 Dim. / dim: (inch): 0,500x48,50x144,50 Kundenartikel-Nr / customer article no.:	<b>Bedingungen/terms</b> Techn. Lieferbedingungen / techn. spec.: AMS-QQ-A-250/11, 08.1997 ASTM B 209 - 07 Material meets also AMS 4027N, 07.2008, but not marked ASTM B 594 - 06 ANSI H35.2-2006 ASME SB 209, 2007 Sondervorschrift / special terms:
---	---

AB-Pos. ord.-Item.	BNr/Los/Teillos Lot/No./Part	Guss Nr. cast no.	Werkstoff material	Kollo packng.	Gewicht netto weight net	Stk. pcs.
06	44738/04/00	80/0066747/0	6061.1	6129890046	4283,51 lbs	12
06	44738/05/00	80/0067078/0	6061.1	6129890122	1761,464 lbs	5
06	44738/06/00	80/0067078/0	6061.1	6129890125	1748,238 lbs	5

Guss Nr. / cast no.		AMAG designation										
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti		
80/0066747/0	6061.1	actual	0,70	0,43	0,21	0,15	0,82	0,17	0,01	0,06	0,05	
80/0067078/0	6061.1	actual	0,60	0,46	0,23	0,02	0,86	0,17	<0,01	0,13	0,02	

*10077756*





**Abnahmeprüfzeugnis 3.1 (EN 10204)**  
**Inspection certificate - mill certificate**

Nr.: 85336910 03 / 6

Rev. 0  
 Seite / page: 2 von / of 2  
 Datum / date: 2010 07 20

*Handwritten: Nr. 206-L*

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, ENAS 9100, ISO 14001, NADCAP

Zugversuch / Tensile test							
BNr/Los Lot/No.	Zustand temper	Richtung direction		Rm [ksi]	Rp0.2 [ksi]	A2 [%]	
44738/04	T651	LT		46,7	43,1	13	
44738/04	T651	LT		47,0	43,2	13	
44738/04	T651	LT		48,8	42,9	13	
44738/04	T651	LT		48,8	43,1	13	
44738/04	T651	LT		46,8	42,9	14	
44738/05	T651	LT		46,7	43,4	13	
44738/05	T651	LT		46,7	43,2	13	
44738/05	T651	LT		47,4	43,2	11	
44738/05	T651	LT		47,1	43,6	11	
44738/05	T651	LT		47,0	43,5	13	
44738/06	T651	LT		47,0	43,7	13	
44738/06	T651	LT		46,7	43,2	13	
44738/06	T651	LT		47,4	44,1	13	
44738/06	T651	LT		47,3	43,8	13	
44738/06	T651	LT		47,3	43,2	12	

Es wird bestätigt, dass die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellung entspricht.  
 We hereby certify that the material described above has been tested and complies with the terms of the order contract.

Werkssachverständiger / factory specialist	E-Mail / e-mail
Josef Klampfer	j.klampfer@amag.at

Herstellerland: Österreich / goods origin: The goods are of Austrian origin.  
 Maschinell erstellt - Gültig ohne Unterschrift / Automated - valid without being signed.



# Certificate of Mechanical Properties

Customer: ALASKAN COPPER & BRASS-RENT Report Number: 7126 Test Date: 11/8/2010

Description: 1 1/2 IN SQ BAR Cust Purchase Order #: 10076903

Profile: 000842 CastNum: 93 Production Order #: 640381

Customer Part Number: 255118 Sales Order: SO-150183

P10:21 05/14/06

PT/LT Number: 548984		Test Number: 62780		
Alloy/Temper: 6061-T6511				
	Tensile	Actual 43.0 kpsi	Min 38.00	Max N/A kpsi
	Yield	40.0 kpsi	35.00	N/A kpsi
*T6511 & T6510 meets requirements for T6	Elongation	11.7 %	8.00	N/A %
Sapa Profiles, Inc. certifies Aluminum Extrusions are produced and tested in accordance with ASTM-B221-08 and ASTM-B557-06 and meet or exceed minimum requirements				
In addition to ASTM-B221 the extruded products meet the applicable requirements of ASTM-B308, ASTM-B429, AMS-QQ-A-200/3, AMS-QQ-A-200/8, AMS-QQ-A-200/9, AMS-QQ-A-200/11 or AMS-QQ-A-200/15 as determined by product type or alloy/temper. Manufactured in the U.S.A.				
Test Results Reviewed by Employee # 6093				

All alloys and cast numbers have been inspected and found to be within Aluminum Association Chemical Composition Limits (Composition in percent by weight maximum unless shown as a range)

Alloy	Silicon	Iron	Copper	Manganese	Magnesium	Chromium	Zinc	Titanium	Other Elements	
									Each	Total
6005	.6 - .9	.35	.1	.1	.4 - .6	.1	.1	.1	.05	.15
6061	.4 - .8	.7	.15 - .4	.15	.8 - 1.2	.04 - .35	.25	.15	.05	.15
6063	.2 - .6	.35	.1	.1	.45 - .9	.1	.1	.1	.05	.15
6082	.7 - 1.3	.5	.1	.4 - 1.0	.6 - 1.2	.25	.2	.1	.05	.15
6351	.7 - 1.3	.5	.1	.4 - .8	.4 - .8	....	.2	.2	.05	.15
7075	.40	.5	1.2 - 2.0	.30	2.1 - 2.9	.18 - .28	5.1 - 6.1	.20	.05	.15
2024	.5	.5	3.8 - 4.9	.30 - .90	1.2 - 1.8	.10	.25	.15	.05	.15

Handwritten notes: 762483-1, 2860-2, BDB

Sapa Profiles, Inc.  
Address: 7933 NE 21st Avenue, P.O. Box 11263, Portland, OR 97211 USA  
Telephone: 503-802-3000 Toll Free: 800-547-0790 Fax: 503-802-3052  
Email: sapa-inc@sapagroup.com Website: www.sapagroup.com/us/profiles

DOCUMENT NO.: TLF-0103-A-1



Post Office Box 3456 / Seattle, Washington 98124-3546 / 206-623 5800 / acbsea@alascop.com  
Post Office Box 5067 / Portland, Oregon 97208-5067 / 503-238-7171 / acbpdx@alascop.com

## CERTIFICATE OF CONFORMANCE

Company Name: **RAINIER WELDING, INC.**

**31 JAN 2011**

PO#: **2860-2**

ACB#: **762483-1**

Item Number / Specification

2                    1" NPS 6061-T6 ALUMINUM 150# THREADED FULL COUPLING

**The undersigned hereby certifies that:**

**All items furnished in this shipment are in full compliance with all purchase order and specifications requirements.**

**When the above cited purchase order requires material test reports, the undersigned certifies that:**

**The test reports supplied represent the actual attributes of the items furnished and the test results are in full compliance with all applicable specifications and purchase order requirements.**

**The material shipped against the above cited purchase order is free from mercury contamination and weld repair.**

**ALASKAN COPPER & BRASS COMPANY**

**Scott A Erickson,  
Quality Control Representative**



## Certificate of Mechanical Properties

Customer: ALASKAN COPPER & BRASS-RENT      Report Number: 7413      Test Date: 1/10/2011

Description: 3/8 X 2 IN RECT BAR      Cust Purchase Order #: 10078625

Profile: 000545      CastNum: 290      Production Order #: 653403

Customer Part Number: 135693      Sales Order: SO-155330

PT/LT Number: 564214

Test Number: 68163

Alloy/Temper: 6061-T6511

	Actual	Min	Max
Tensile	43.5 kpsi	38.00	N/A kpsi
Yield	40.6 kpsi	35.00	N/A kpsi
*T6511 & T6510 meets requirements for T6      Elongation	16.6 %	10.00	N/A %

Sapa Profiles, Inc. certifies Aluminum Extrusions are produced and tested in accordance with ASTM-B221-08 and ASTM-B557-06 and meet or exceed minimum requirements

In addition to ASTM-B221 the extruded products meet the applicable requirements of ASTM-B308, ASTM-B429, AMS-QQ-A-200/3, AMS-QQ-A-200/8, AMS-QQ-A-200/9, AMS-QQ-A-200/11 or AMS-QQ-A-200/15 as determined by product type or alloy/temper.  
Manufactured in the U.S.A.

Test Results Reviewed by Employee # 6093

All alloys and cast numbers have been inspected and found to be within Aluminum Association Chemical Composition Limits  
(Composition in percent by weight maximum unless shown as a range)

Alloy	Silicon	Iron	Copper	Manganese	Magnesium	Chromium	Zinc	Titanium	Other Elements	
									Each	Total
6005A	.5 - .9	.35	.3	.5	.4 - .7	.3	.2	.1	.05	.15
6061	.4 - .8	.7	.15 - .4	.15	.8 - 1.2	.04 - .35	.25	.15	.05	.15
6063	.2 - .6	.35	.1	.1	.45 - .9	.1	.1	.1	.05	.15
6082	.7 - 1.3	.5	.1	.4 - 1.0	.6 - 1.2	.25	.2	.1	.05	.15
6351	.7 - 1.3	.5	.1	.4 - .8	.4 - .8	....	.2	.2	.05	.15
7075	.40	.5	1.2 - 2.0	.30	2.1 - 2.9	.18 - .28	5.1 - 6.1	.20	.05	.15
2024	.5	.5	3.8 - 4.9	.30 - .90	1.2 - 1.8	.10	.25	.15	.05	.15

Sapa Profiles, Inc.  
Address: 7933 NE 21st Avenue, P.O. Box 11263, Portland, OR 97211 USA  
Telephone: 503-802-3000      Toll Free: 800-547-0790      Fax: 503-802-3052  
Email: sapa-inc@sapagroup.com      Website: www.sapagroup.com/us/profiles

DOCUMENT NO.: TLF-0103-A-1

308  
 2560-2  
 761939-1  
 ALUMINUM EXTRUSIONS



Post Office Box 3456 / Seattle, Washington 98124-3546 / 206-623-5800 / acbsea@alascop.com  
Post-Office Box 5067 / Portland, Oregon 97208-5067 / 503-238-7171 / acbpdx@alascop.com

## CERTIFICATE OF CONFORMANCE

Company Name: **RAINIER WELDING, INC.**

**27 JAN 2011**

PO#: **2860-2**

ACB#: **761439-1**

Item Number / Specification

4                    1" NPS 150# 6061-T6 ALUMINUM THREADED HALF COUPLING

**The undersigned hereby certifies that:**

**All items furnished in this shipment are in full compliance with all purchase order and specifications requirements.**

**When the above cited purchase order requires material test reports, the undersigned certifies that:**

**The test reports supplied represent the actual attributes of the items furnished and the test results are in full compliance with all applicable specifications and purchase order requirements.**

**The material shipped against the above cited purchase order is free from mercury contamination and weld repair.**

**ALASKAN COPPER & BRASS COMPANY**

**Scott A Erickson,  
Quality Control Representative**

ALASKAN COPPER & BRASS COMPANY  
1000 1st Avenue  
Seattle, WA 98101



*AA: sapa welding  
286001  
143632*



## Certificate of Mechanical Properties

Customer: COAST ALUMINUM-PORTLAND Report Number: 6332 Test Date: 6/14/2010

Description: 2-1/2" SCH. 80 PIPE Cust Purchase Order #: D1669-2

Profile: 005914 CastNum: 747 Production Order #: 606635

Customer Part Number: 21280P61 Sales Order: SO-135955

PT/LT Number: 505660 <i>A.E.</i>		Test Number: 45701		
Alloy/Temper: 6061-T6				
	Tensile	Actual 41.7 kpsi	Min 38.00	Max N/A kpsi
	Yield	38.0 kpsi	35.00	N/A kpsi
*T6511 & T6510 meets requirements for T6	Elongation	10.5 %	10.00	N/A %
Sapa Profiles, Inc. certifies Aluminum Extrusions are produced and tested in accordance with ASTM-B221-08 and ASTM-B557-06 and meet or exceed minimum requirements				
In addition to ASTM-B221 the extruded products meet the applicable requirements of ASTM-B308, ASTM-B429, AMS-QQ-A-200/3, AMS-QQ-A-200/8, AMS-QQ-A-200/9, AMS-QQ-A-200/11 or AMS-QQ-A-200/15 as determined by product type or alloy/temper. Manufactured in the U.S.A.				
Test Results Reviewed by Employee # 6093				

All alloys and cast numbers have been inspected and found to be within Aluminum Association Chemical Composition Limits (Composition in percent by weight maximum unless shown as a range)

Alloy	Silicon	Iron	Copper	Manganese	Magnesium	Chromium	Zinc	Titanium	Other Elements	
									Each	Total
6005	6 - 9	.35	.1	.1	.4 - .6	1	1	1	.05	15
6061	.4 - .8	.7	.15 .4	.15	.8 - 1.2	.04 - .35	.25	.15	.05	15
6063	.2 - .6	.35	1	.1	.45 - .9	1	1	1	.05	15
6082	.7 - 1.3	.5	1	.4 - 1.0	.6 - 1.2	.25	.2	1	.05	15
6351	7 - 13	.5	1	.4 - .8	.4 - .8		.2	2	.05	15
7075	.10	.5	1.2 - 2.0	.30	2.1 - 2.9	.18 - .28	5.1 - 6.1	.20	.05	15
2024	.5	.5	3.8 - 4.9	.30 - .90	1.2 - 1.8	10	.25	15	.05	15

Sapa Profiles, Inc.  
Address: 7933 NE 21st Avenue, P.O. Box 11263, Portland, OR 97211 USA  
Telephone: 503-802-3000 Toll Free: 800-547-0790 Fax: 503-802-3052  
Email: sapa-inc@sapagroup.com Website: www.sapagroup.com/us/profiles

DOCUMENT NO.: TLF-0103-A-1

Washington Chain & Supply  
P O Box 3645  
Seattle, WA 98124-3645  
206.623.8500 ph 206.621.9834 fx

February 3, 2011

American Construction Co.  
1501 Taylor Way  
Tacoma, Wa 98421

**CERTIFICATE OF COMPLIANCE**

Re: Your PO#15757

We hereby certify that the items listed below, purchased on your above noted purchase order, and shipped on our order #1079680, meet with your specifications.

4 Ea 1/4" x 20' 7x19 galv aircraft cable with 12" eyes each end

Regards,



Rick Mello,

Sales Representative

Washington Chain & Supply  
P O Box 3645  
Seattle, WA 98124-3645  
206.623.8500 ph 206.621.9834 fx

February 3, 2011

American Construction Co.  
1501 Taylor Way  
Tacoma, Wa 98421

**CERTIFICATE OF COMPLIANCE**

Re: Your PO#15757

We hereby certify that the items listed below, purchased on your above noted purchase order, and shipped on our order #1079668, meet with your specifications.

52 Ea 1/2" galv SPA shackle

4 Ea 3/16" x 4' 7x19 galv aircraft cable with standard eyes

20 Ea 3/16" x 6' 7x19 galv aircraft cable with standard eyes

Regards,



Rick Mello,

Sales Representative