

From: [Ablson, Maha](#)
To: [Daly, Keith](#);
cc: [Peppers, Nicki](#); [Molohon, Rob](#);
Subject: RE: 008078 RAM#8, 9, 10, 11 & 12
Date: Tuesday, March 08, 2011 12:37:42 PM
Attachments: [Cont 8078 RAM 10 2-17-11.pdf](#)
[RAM-0011.pdf](#)

Here is the 2nd one.

Maha Ablson

*RAM Engineer
WSDOT, Materials Lab
Office: 360.709.5403
Fax: 360.709.5588
mahaab@wsdot.wa.gov*

From: Ablson, Maha
Sent: Tuesday, March 08, 2011 12:26 PM
To: Daly, Keith
Cc: 'Peppers, Nicki'; Molohon, Rob
Subject: 008078 RAM#8, 9, 10, 11 & 12

Good afternoon Keith,

A copy of the processed electronic RAMs are attached. The coded RAMs were sent back on the 18th of February. RAM # 11 is a PEO approved RAM. if you have any questions concerning this issue, please feel free to either call or e-mail me.

Thank you,

Maha Ablson

*RAM Engineer
WSDOT, Materials Lab
Office: 360.709.5403
Fax: 360.709.5588
mahaab@wsdot.wa.gov*

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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	5
	Only for Unconfined Bubble Ring System				
^{NP} 3.02	2/10/11				
3.16	3/8" Steel Plate				
3.13	SCG 80 6061-T6				
3.14	wire rope				

Project Engineer	Date	State Materials Engineer	Date
<i>Nicki Peppers</i> ^{for Frank Green}	2/10/11	Steve Hughes	2-17-11

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: **Notify Fabrication Inspection office**

* shop drawing attached approved

cc: American Construction, peppers

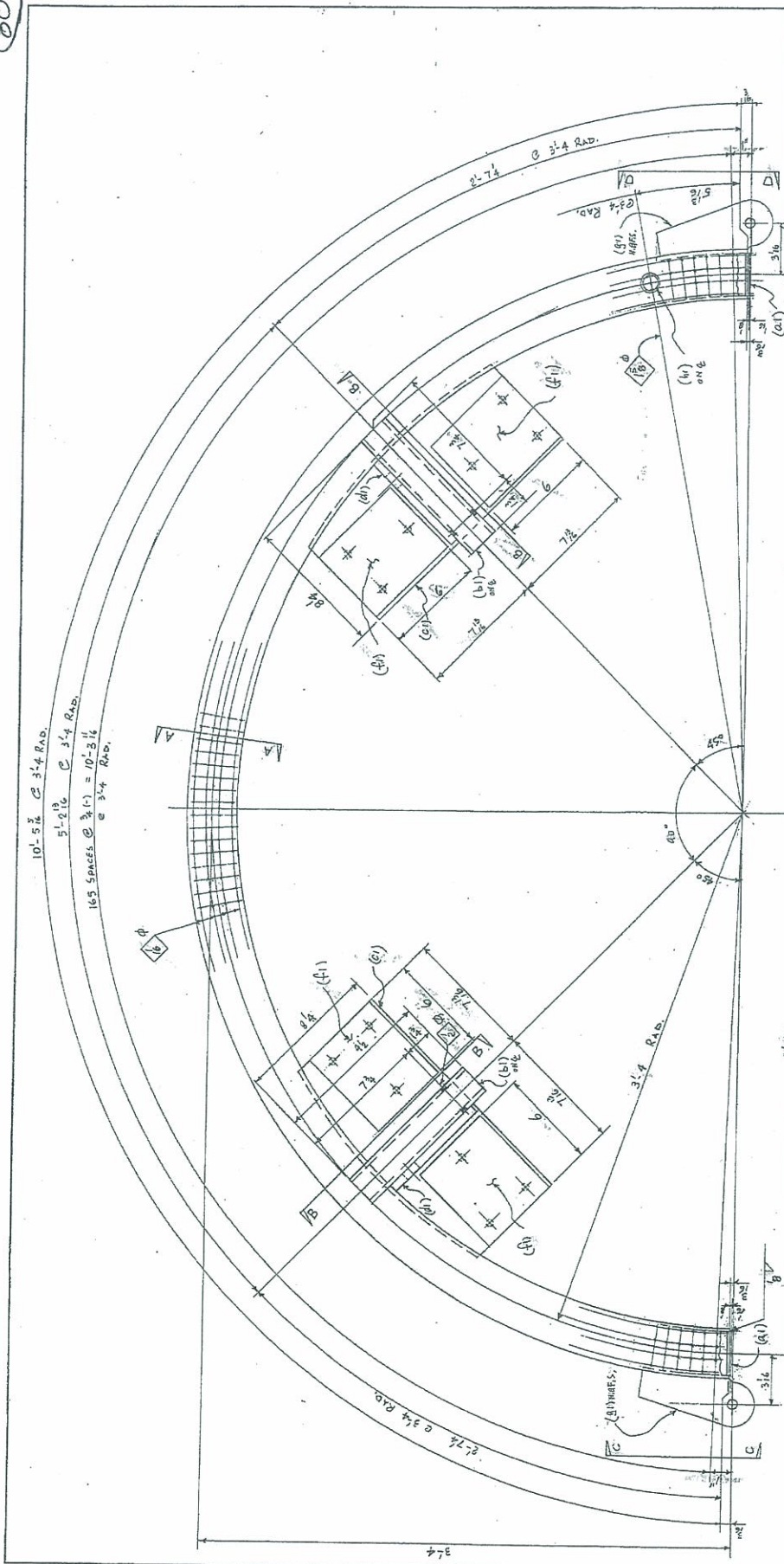
Project Engineer Distribution

- 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

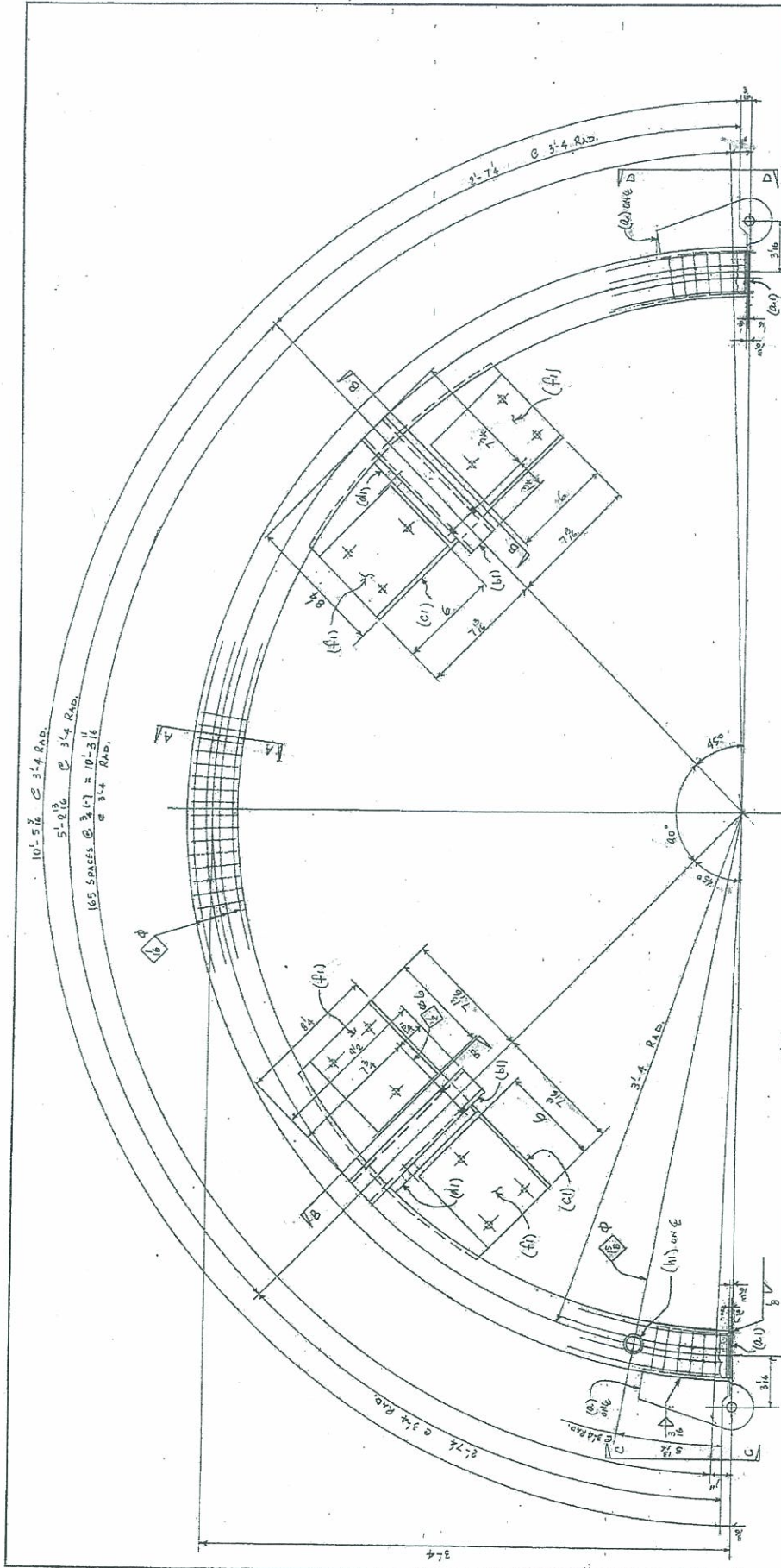
(GEOMETRY NOT REVIEWED)

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

Work This Draft With Dwg. 2
 For Field Bot List See Dwg. 9

Approved JAS 1-28-2011

DESIGNER	W.A.B.O.	CHECKED	
DATE	1-28-11	APPROVED	JAS
RAINIER WELDING 1800 NE 84TH STREET - REDMOND, WA 98073 STEEL AND ALUMINUM FABRICATING BOTTOM RIMS COLUMBIA RIVER BRIDGE TENDERS JUNE TEST TENDERS 1-5, WA.			
SCALE	AS SHOWN	PROJECT NO.	2820
DATE	1-28-11	REVISED	



DESIGNER	W.A.B.O.	DATE	
CHECKED		SCALE	
APPROVED		PROJECT	
		NO.	
		REV.	
RAINIER WELDING			
1800 NE 84TH STREET, REDMOND, WA 98053			
TEL: (206) 881-1111 FAX: (206) 881-1112			
WEB: WWW.RAINIERWELDING.COM			
PROJECT: Bottom Ring			
DRAWN BY: W.A.B.O.			
CHECKED BY: W.A.B.O.			
DATE: 1-5-11			
SCALE: AS SHOWN			
PROJECT NO.: 1-28-2011			
DRAWING NO.: 1-28-2011			

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" ~ M2.3A
 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

BILL OF MATERIAL		ITEM NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
ONE	3A	0	ALUMINUM PIPE 10 1/2" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 6" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 4" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 2" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1 1/2" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 3/4" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/2" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/2" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/4" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/4" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/8" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/8" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/16" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/16" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/32" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/32" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/64" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/64" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/128" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/128" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/256" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/256" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/512" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/512" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/1024" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/1024" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/2048" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/2048" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/4096" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/4096" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/8192" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/8192" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/16384" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/16384" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/32768" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/32768" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/65536" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/65536" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/131072" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/131072" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/262144" THICK	1	LINEAL FT.	
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		0	ALUMINUM PIPE 1/4" DIA. 1/1048576" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/1048576" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/4" DIA. 1/2097152" THICK	1	LINEAL FT.	
		0	ALUMINUM PIPE 1/8" DIA. 1/2097152" THICK	1	LINEAL FT.	
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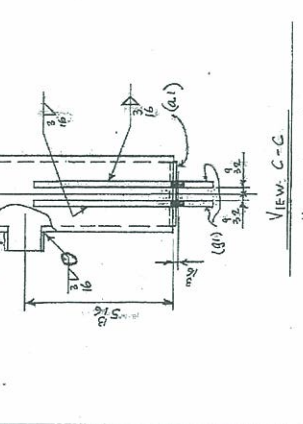
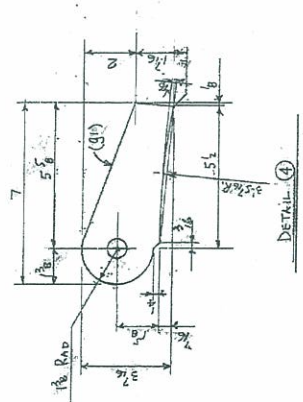
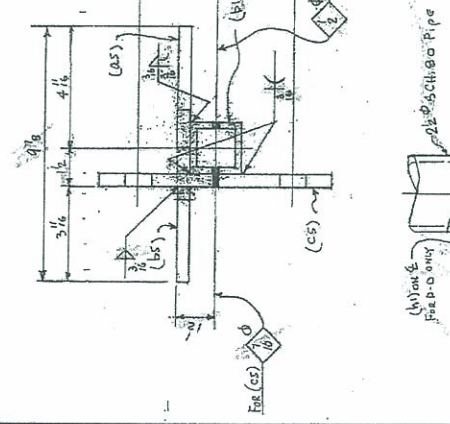
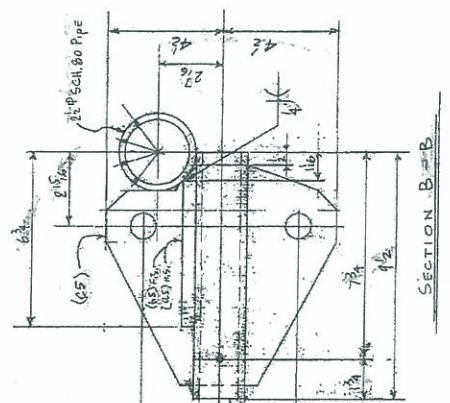
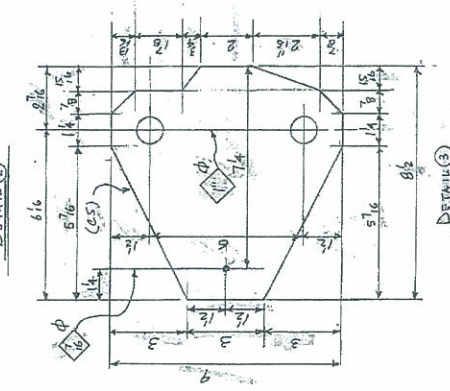
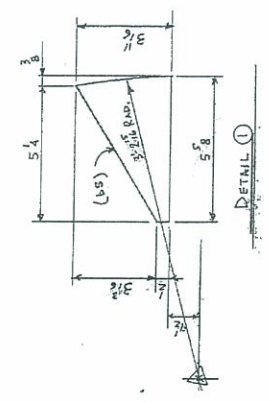
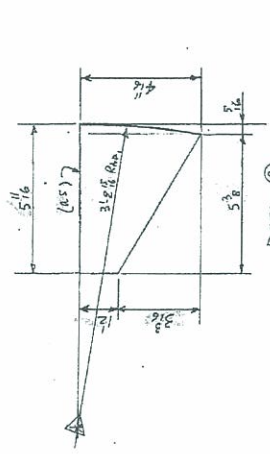
BILL OF MATERIAL		QUANTITY	UNIT	REMARKS
5A	PIPE	10.5%	RSBL	
5B	PIPE	0.9%	RSBL	
5C	PIPE	0.9%	RSBL	
5D	PIPE	0.9%	RSBL	
5E	PIPE	0.9%	RSBL	
5F	PIPE	0.9%	RSBL	
5G	PIPE	0.9%	RSBL	
5H	PIPE	0.9%	RSBL	
5I	PIPE	0.9%	RSBL	
5J	PIPE	0.9%	RSBL	
5K	PIPE	0.9%	RSBL	
5L	PIPE	0.9%	RSBL	
5M	PIPE	0.9%	RSBL	
5N	PIPE	0.9%	RSBL	
5O	PIPE	0.9%	RSBL	
5P	PIPE	0.9%	RSBL	
5Q	PIPE	0.9%	RSBL	
5R	PIPE	0.9%	RSBL	
5S	PIPE	0.9%	RSBL	
5T	PIPE	0.9%	RSBL	
5U	PIPE	0.9%	RSBL	
5V	PIPE	0.9%	RSBL	
5W	PIPE	0.9%	RSBL	
5X	PIPE	0.9%	RSBL	
5Y	PIPE	0.9%	RSBL	
5Z	PIPE	0.9%	RSBL	

MATERIAL: AL 6061-T6
MUL. CEPS. REB'S

WORK THIS D.W.G. WITH DWG. 5

DESIGNED BY	W. A. B. O.
CHECKED BY	
DATE	
PROJECT	
DESCRIPTION	
SCALE	
BY	
DATE	
REVISIONS	
NO.	DESCRIPTION
1	AS SHOWN

RAINIER WELDING
1400 48th St. S. P.O. Box 10000
Burien, WA 98148
Upper RAINIER SECTION, DETAILS
STEEL AND ALUMINUM FABRICATING
TEMPERATURE RESISTANT
1-5 WA
AMERICAN CONST.

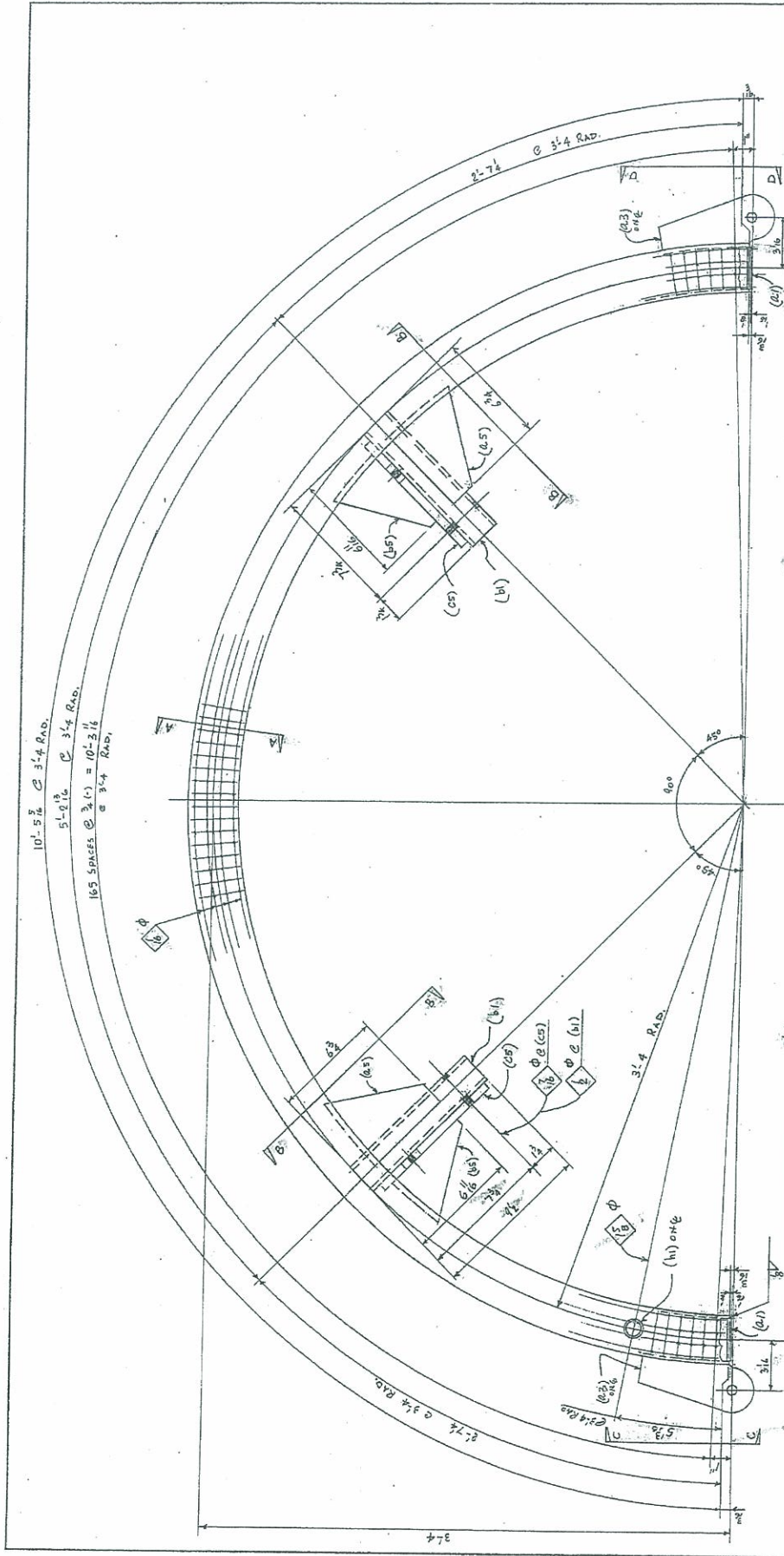


APPROVED AS NOTED
WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
BRIDGE AND STRUCTURES OFFICE
BY: CONSTRUCTION SUPPORT ENGINEER

DATE: JAN 31 2011

GEOMETRY NOT REVIEWED

APPROVED SRS 1-2011



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

DESIGNER	DATE	NO.
REVISION	DATE	NO.
APPROVED	DATE	NO.
PROJECT	WARREN	
CONTRACT		
NO.		
DATE		
BY		
FOR		
SCALE		
RAINIER WELDING 1000 1/2 BATH STREET - REDMOND, WA 98053 STEEL AND ALUMINUM FABRICATING		
Upper RAINIER RIVER BRIDGE SOLUMBIA RIVER BRIDGE PENNSYLVANIA PILE TEST 1-5, WA. AMERICAN CONST.		
DATE	1-28-2011	
BY	JKS	

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

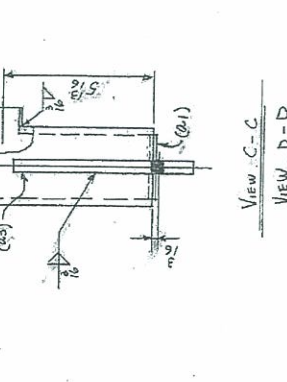
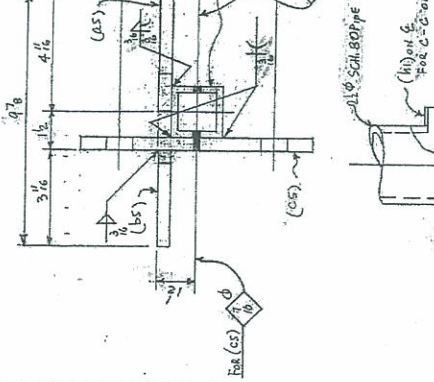
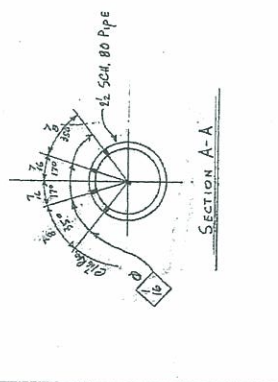
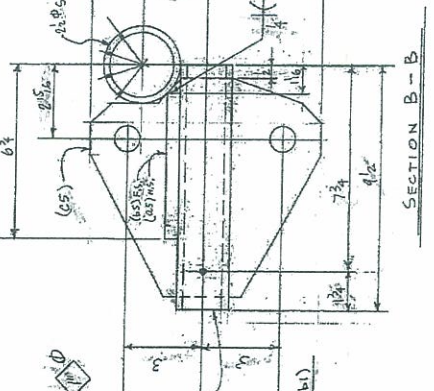
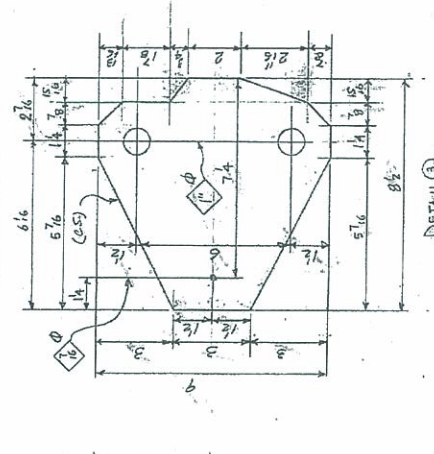
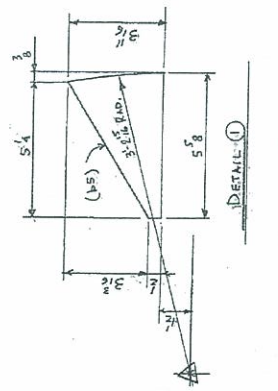
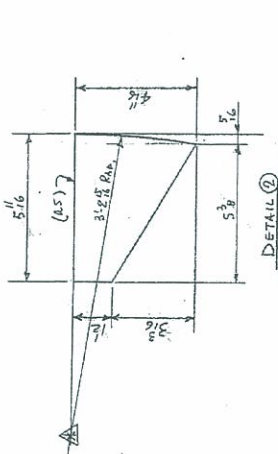
MAKE 6 ~ 2 1/2" S&H 80 PIPE x 10'-5 1/2" ~ M&TA
 ALUMINUM PIPE FOR UPPER RINGS, REF. NO 3
 WORK THIS DUB, WITH DWG. 8
 FIELD BOAT LIST SEE DUB. 9
APPROVED JKS 1-28-2011

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	
3	0	24" x 24" x 1/2"	PL	
4	0	24" x 24" x 1/2"	PL	
5	0	24" x 24" x 1/2"	PL	
6	0	24" x 24" x 1/2"	PL	
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100	0	24" x 24" x 1/2"	PL	

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

DATE	1/28/11
BY	JKS
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**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		Dir.	Charpy Impacts			Mn Avg.
	Tons	Yield	% in 2"	% in 8"		1 shear	2 shear	3 shear		Temp
0504750-07	14.70	40,000	31.6	31.6		(F) shear	(F) shear	(F) shear	Avg.
	T	T							
		38,600		32.2					
		58,600							

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 0.5EUL 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 50049 & 1, 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. Depriest, 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]
 Kenon P. Young
 Quality Assurance Manager

PITTSBURGH, PA DAVENPORT WORKS

Ship From:

IL95221
 Ship Date 2010-12-28
 H.L. No. 0
 Invoice No. 00000
 Alcoa No. Item 1000251279-1
 P.O. No./Govt Contract No. Customer Alcoa Item
 10077445 Encl: 1 ALASKAN COPPER & B 604130741GR06
 Page 1
 DS-53279-1

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 VALLEY *
 PO# 28 602
 PO# 2-2-2011
 181-782-5191
 9005 WENTON
 9/11/03*

Item	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		
	Min	42.0	35.0

Chemical Composition

Alloy 5061	SI	FE	CU	MN	MG	CR	ZN	TI	Other
Max	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	Total Aluminum
Min	0.40		0.15		0.8	0.04			REMAIN

Notes for Lot: 207038

TENSILE TEST VALUES IN MPA = 330, 330 YIELD TEST VALUES IN MPA = 294, 293

CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

1195221 Ship Date 2010-12-28 Invoice No. 1000253279-1 Alcoa No. Item 1000253279-1 Page 2
 Ship From: Alcoa IL64
 P.O. No./Govt Contract No. 10077445 Ln# 1 Customer ALASKAN COPPER & B G34110741GR06

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.
 Peter P. Young
 Quality Assurance Manager

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

Temp Dir Long Transv. 2
 UTS KSI 47.8
 KSI 42.6
 PCT 15.6
 ELD 42.5
 PCT 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 47.2
 KSI 42.4
 PCT 14.9
 ELD 42.9
 PCT 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, 296.

018283

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.

Mark Murphy
 Mark John Murphy
 Director of Manufacturing Davenport Works

Karen P. Young
 Karen P. Young
 Quality Assurance Manager

1195221 Ship Date 2010-12-28
 0 B.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

Temp	Dir	Long Transv.	Test	UTS	KSI	YS	EL4D
			2	47.5	42.5	15	

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
WEBS/REX

PH 1-OF 2

K02-52 05809

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

Produkt/product Form / form: Plate, stretched Werkstoff / material: 6061 Zustand / temper: T651 Dim. / dim: (inch): 0,500x48,50x144,50 Kundenartikel-Nr / customer article no.:	Bedingungen/terms 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:
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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										
80/0066747/0		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti		
actual		0,70	0,43	0,21	0,15	0,82	0,17	0,01	0,06	0,05		
80/0067078/0		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti		
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/Temp: 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

Handwritten notes: 308, 2560-2, 761939-1

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.**

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

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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