

**From:** [Ablson, Maha](#)  
**To:** [Peppers, Nicki](#);  
**cc:** [Daly, Keith](#); [Molohon, Rob](#);  
**Subject:** 008078 RAM#1 & 2 Driving Steel Test Piles & Drive Shoes for Piling  
**Date:** Friday, February 04, 2011 1:48:05 PM  
**Attachments:** [8078 RAM1 Driving Steel Test Piles.pdf](#)  
[8078 RAM2 Drive Shoes for Piling.pdf](#)

---

Good afternoon Nicki,  
The processed electronic RAM is attached.  
Have a good day,

*Maha Ablson*

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

---

**From:** Peppers, Nicki [mailto:peppersn@columbiarivercrossing.com]  
**Sent:** Thursday, February 03, 2011 1:35 PM  
**To:** Ablson, Maha  
**Cc:** Daly, Keith  
**Subject:** Resubmitting RAM 1 and 2  
**Importance:** High

Maha,

Attached is RAM 1 and RAM 2, there has been changes made to both, replace these two with the first set I sent.

High Priority.  
James Schufreider (Marine Mechanical Engineer) is the designer.

Thanks,  
Nicki

\*\*\* eSafe2 scanned this email for malicious content \*\*\*  
\*\*\* IMPORTANT: Do not open attachments from unrecognized senders \*\*\*  
\*\*\* eSafe scanned this email for malicious content \*\*\*  
\*\*\* IMPORTANT: Do not open attachments from unrecognized senders \*\*\*



Request for Approval of Material

Contract	8078	FA Number		SR	I-5	Date	2/1/11
Section	I-5 COLUMBIA RIVER BRIDGE (WA 0.3 to OR MP318)			County	WA AND OR states		
Contractor	American Construction Company, Inc.		Subcontractor	YN BEST AND COMPANY, INC.			

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 # 2

Bid Item No.	Material or Product/Type	Name and Location of Fabricator, Manufacturer or Pit Number	Specification Reference	PE/QPL Code	Hdqtr./QPL Code
4.0 <sup>1</sup>	FURNISHING & INSTALLING DRIVE SHOES FOR PILING	NP 2/3/11 <del>VERSA-STEEL, INC.</del> 1618 NE 1st Avenue Portland, OR 97232  www.piletips.com  Farwest Fabrication	SPECIAL PROVISIONS PP-103	7,3	2,3*

Project Engineer	Date	State Materials Engineer	Date
Ricki Peppers for Frank Green	2/1/2011	Maha Ablson	02/04/2011

Acceptance Action Codes for use by Project Engineer and State Materials Laboratory

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

9. Approval Withheld: Submit samples for preliminary evaluation.

10. Approval Withheld:

11. Miscellaneous Acceptance Criteria.

Remarks: **Contact Kyle Cauffman/WSDOT Fabrication 1/23/11 Office prior to welding.**  
CAT CUT 0001 sent to EQEP Material Lab, waiting for approval

\* cc: American Construction, Peppers

Project Engineer Distribution

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

State Materials Engineer Distribution

- General File  Signing Inspection  
 Other



CAT - 0001

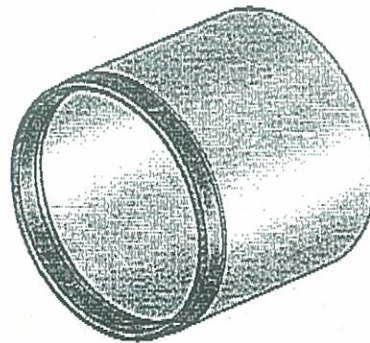
Phone: 1-800-678-0814 / 1-503-287-9822 Fax: 1-800-287-7483 / 1-503-287-7483

# Versa-Steel, Inc.

[www.piletips.com](http://www.piletips.com)

1618 NE 1st Avenue Portland, Oregon 97232-1136

## Open End Cutting Shoe Data Sheet

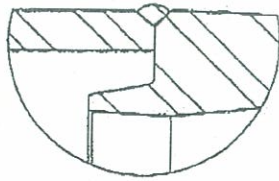


**PROPRIETARY AND CONFIDENTIAL**  
THE INFORMATION CONTAINED IN THIS  
DRAWING IS THE SOLE PROPERTY OF  
VERSA-STEEL, INC. ANY  
REPRODUCTION IN PART OR AS A WHOLE  
WITHOUT THE WRITTEN PERMISSION OF  
VERSA-STEEL INC. IS PROHIBITED.

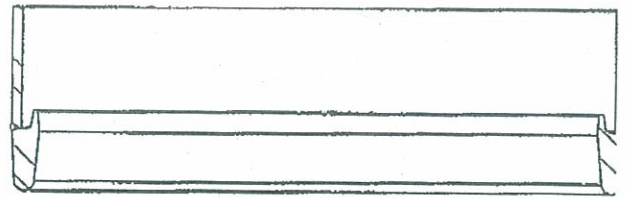
SHEET NO. **A** DWG. NO. **Equipment Data Sheet** REV. **A**  
SCALE: 1:10 WEIGHT: SHEET NO. 3

Open End Cutting Shoes

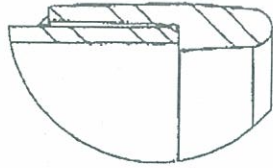
Type Inside Fit  
700 Series



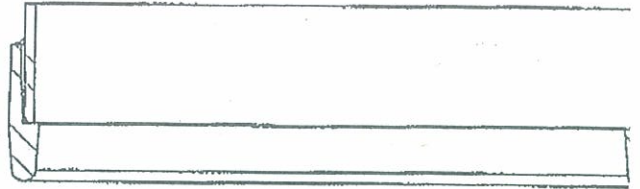
These tips are designed with a weld chamfer built into the casting. Slip shoe inside pipe and using a 70xx series rod weld a 5/16" or larger weld all around.



Type Outside Fit  
200 Series



These slip fit shoes are easily attached with a 5/16" or larger fillet weld at the top of the flange. For best results, weld all around the shoe with a 70xx series rod.



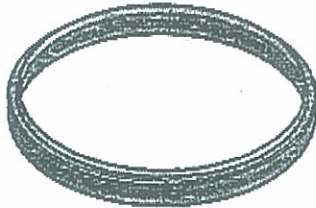
### Product Description

Our inside fit and outside fit cutting shoes are designed to install with a slip-on fit. The design places the cross-sectional area directly below the wall of the pipe for maximum support during penetration. They are a more heavy duty construction than other brands.

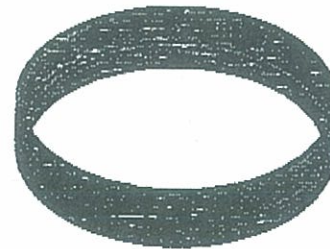
The inside fit cutting shoe has a weld prep chamfer built into the casting. Slip shoe inside pipe and using a 70xx series rod weld a 5/16" or larger weld all around.

The outside fit cutting shoe has a natural fillet on top for easy welding. These slip fit shoes are easily attached with a 5/16" or larger fillet weld at the top of the flange. Weld all around the shoe with a 70xx series rod.

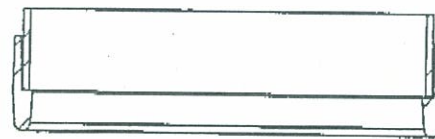
Type Inside Fit  
700 Series



Type Outside Fit  
200 Series



### Versa Steel Open End Cutting Shoe and Pipe Cross-Section View



PROPRIETARY AND CONFIDENTIAL  
THE INFORMATION CONTAINED IN THIS  
DRAWING IS THE SOLE PROPERTY OF  
VERSA-STEEL, INC. ANY  
REPRODUCTION IN PART OR AS A WHOLE  
WITHOUT THE WRITTEN PERMISSION OF  
VERSA-STEEL, INC. IS PROHIBITED.

DIMENSIONS ARE IN INCHES TOLERANCES:		NAME	DATE
1/X	± 1/16"	JML	12/27/2007
.XX	± .01	CHECKED	
.XXX	± .003	ENG APPR	
.XXXX	± .0005	MFG APPR	
MATERIAL	Steel Alloy	G.A.	
FINISH	None	COMMENTS:	
NEXT ASSY	USED ON	Description: Open End Cutting Shoes Part Number:	
APPLICATION	DO NOT SCALE DRAWING	SRE 17WGS, HQ A: Equipment Data Sheet A	
		SCALE: 1:5	WEIGHT: DATE: 2/21/11

*Drive shoes*



**Vancouver Iron & Steel, Inc.**

MATERIAL CERTIFICATE

Customer: Versa Steel Inc. Date: 9-Mar-09  
 PO Number: 2947 Part Number: VS748  
 Heat Number: \_\_\_\_\_ Total Quantity: 3  
 Specification : ASTM A148 Gr. 80-50  
 Heat Treatment: NORMALIZE

<u>CHEMICALS</u>		<u>MECHANICAL</u>		<u>LOT NUMBER</u>	
Carbon	<u>0.21</u>	Tensile	<u>85,500</u> psi	Julian Date	Qty.
Silicon	<u>0.58</u>	Yield	<u>54,500</u> psi	_____	_____
Manganese	<u>0.66</u>	Elong.	<u>25</u> %	_____	_____
Phosphorus	<u>0.01</u>	Reduc.	<u>42</u> %	_____	_____
Sulfur	<u>0.01</u>	Brinell	<u>179</u> BHN	_____	_____
Chromium	_____				
Nickel	_____				
Molybdenum	_____				
Copper	_____	Notch:	_____	Temp:	_____
Vanadium	_____				
Aluminum	<u>0.04</u>	Test 1:	_____		
Magnesium	_____	Test 2:	_____		
		Test 3:	_____		
		Average:	_____		

CHARPY TEST:

We certify that the above items have been melted and manufactured in the United States in accordance with, and conform to, the applicable specifications, standards, requirements, instructions and/or drawings referenced on the above purchase order, subject to our acknowledgment of said purchase order.

Vancouver Iron and Steel, Inc

Quality Assurance Department

Dec. 20. 2010 12:22PM Vancouver Iron & Steel

No. 7267 P. 2



**VANCOUVER IRON & STEEL, INC**

MATERIAL CERTIFICATE

Customer: Versa Steel Inc. Date: 12/20/2010  
 PO Number: 2907 Part Number: VS724-80/50  
2888  
 Heat Number: \_\_\_\_\_ Total Quantity: 75  
 Specification: ASTM A148 Gr. 80-50  
 Heat Treatment: NORMALIZE

CHEMICALS		MECHANICAL		LOT NUMBER	
Carbon	<u>0.28</u>	Tensile	<u>82,600</u> psi	Julian Date	Qty.
Silicon	<u>0.55</u>	Yield	<u>53,000</u> psi	_____	_____
Manganese	<u>0.86</u>	Elong.	<u>28</u> %	_____	_____
Phosphorus	<u>0.01</u>	Reduc.	<u>30</u> %	_____	_____
Sulfur	<u>0.01</u>	Brinell	<u>174</u> BHN	_____	_____
Chromium	<u>0.13</u>				
Nickel	<u>0.06</u>				
Molybdenum	<u>0.10</u>				
Copper	<u>0.13</u>	Notch:	_____	Temp:	_____
Vanadium	_____				
Aluminum	<u>0.04</u>			Test 1:	_____
Magnesium	_____			Test 2:	_____
				Test 3:	_____
				Average:	_____

We certify that the above items have been melted and manufactured in the United States in accordance with, and conform to the applicable specifications, standard, requirements, instructions and/or drawings referenced on the above purchase order, subject to our acknowledgement of said purchase order.

Vancouver Iron and Steel, Inc  
  
 Quality Assurance Department

Vancouver Iron Steel, Inc  
 603-821-8100

1200 West 13th Street  
 Fax: 509-821-8138

Vancouver, WA 98660

QD10.04.01A Rev D



Request for Approval of Material

Contract	8078	FA Number		SR	I-5	Date	1/25/11
Section	I-5 COLUMBIA RIVER BRIDGE (WA 0.3 to OR MP308.0)			County	WA AND OR states		
Contractor	American Construction Company, Inc.		Subcontractor	P.N. Best AND Company, Inc.			

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 #
1

Bid Item No.	Material or Product/Type	Name and Location of Fabricator, Manufacturer or Pit Number	Specification Reference	PE/QPL Code	Hdqr./QPL Code
4.01	FURNISHING & DRIVING steel TEST PILES	NP 2/2/2011 <del>P.N. Best AND Company, Inc.</del> 6541 Redmond Way #262 C Redmond, WA 98052  http://pnbestco.com  NP 2/3/11 <del>Farwest Fabrication</del> Jiangsu Yulong Steel Pipe Co. LTD	SPECIAL PROVISIONS PP-100	7	2

Project Engineer	<i>for</i> Lucky Peppers / Frank Green	Date	1/26/11	State Materials Engineer	Maha Ablson	Date	02/04/2011
------------------	---	------	---------	--------------------------	-------------	------	------------

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:

\* cc: Peppers, American Construction

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



48' x 1.000

208340

# YISP 江苏玉龙钢管股份有限公司

## JIANGSU YULONG STEEL PIPE CO. LTD

NO.15, YULONG ROAD, YUQI, WUXI, JIANGSU 214183, CHINA  
Tel: +86-510-83696197 Fax: +86-510-83689771

### MILL TEST CERTIFICATES

Acc to EN 10204-2004 3.1.B

P/C No. 04282008-01  
Issue No. F02EAM15802355  
LIC No.:

Manufacturer: JIANGSU YULONG STEEL PIPE CO. LTD  
Commodity: PERISAWI, LONGITUDINAL WELDED CARBON STEEL PIPE  
Spec: API 5L B742X52 PSL 2  
MADE IN CHINA

ISO 9001:2000

API 5L-4150

No.: Y-415MTC03  
Date: AUG 1 2008

PAGE 1/1

All other tolerances including dimensions are per API 2B

Item No	Total Quantity		Type (1)	Outer Size				Heat No	V 9 (4) Minm2	T.S (5) Minm2	EL 18 (%)	Hydro-Test		HOT (7)		Hardness Test		T.S of Voids Minm2	Visual	Flatten-Test	Bend-Test		Impact-Test	RMI (10)	Other Test		
	Pa	Lt		OD (8) Inch	WT (3) mm	WT (3) mm	FT					Pressure PSI	Duration Sec	U T (8)	R T (9)	Blk HV (2)	Wm HV (2)				Face Bend	Root Bend				kg	Avg 5-3003
YL-433-05	26	237 0264	BBE	48"	1219.2	1.000	23.40	40.0	0871005023	475	535	30	1950	210	OK	OK	145	145	151	625	OK	N/A	OK	OK	98	OK	N/A
YL-433-05	24	218 2914	BBE	48"	1219.2	1.000	33.40	40.0	0871005028	465	555	31	1950	210	OK	OK	146	147	155	685	OK	N/A	OK	OK	80	OK	N/A
YL-433-05	34	214 2976	BBE	48"	1219.2	1.000	23.40	40.0	0871005024	470	535	29	1950	210	OK	OK	145	147	154	575	OK	N/A	OK	OK	110	OK	N/A
YL-433-05	26	237 0264	BBE	48"	1219.2	1.000	23.40	40.0	0871005027	475	530	31	1950	210	OK	OK	145	148	155	610	OK	N/A	OK	OK	116	OK	N/A

#### Chemical Analysis %, on the product

Heat No.	C	Mn	Si	S	P	Cr	Mo	Ni	Al	As	Ti	B	V	Nb	Bi	As	Se	Ag	Cd	Co	Cu	Fe	Mg	Mn	Ni	P	S	Si	Sn	Zn
0871005023	0.14	1.37	0.29	0.010	0.011	0.021	0.013	0.017	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
0871005028	0.14	1.34	0.29	0.007	0.018	0.024	0.012	0.015	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
0871005024	0.13	1.34	0.30	0.009	0.018	0.023	0.011	0.015	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
0871005027	0.14	1.34	0.29	0.009	0.018	0.024	0.011	0.014	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002

Remarks: [1] TYPE BPE=Beck Plain Ends RSE=Beck Beveled Ends BTE=Beck Threaded Ends

Notes: 1. Orientation of Tensile Test Specimens: □ Longitudinal & Transverse  
2. welder # 38, 5mm O25.4mm  
3. Gape Length 50.8mm  
4. Impact test size: □ 10x10x5mm □ 7.5x10x5mm □ 5x10x5mm  
5. Impact test temperature: N/A

- [2] O.D.=Outside Diameter
- [3] W.T.=Wall Thickness
- [4] Y.S.=Yield Strength
- [5] T.S.=Tensile Strength
- [6] EL=Elongation
- [7] HOT=Hot Destructive Test
- [8] U.T=Ultrasonic Test
- [9] R.T.=Radiogram Test
- [10] P.M.=Residual Magnets

We hereby certify that the products herein have been manufactured and tested in accordance with the above specification and requirements called for the order

Quality Director: Cai Jian Feng  
Inspection Dept.  
Inspector/Buyer Representative

FOR AND ON BEHALF OF  
JIANGSU YULONG STEEL PIPE CO. LTD

唐永清

Authorized signature

MP X 145,059 = PSI

24" x 500 wall

LIAONING LARGE SCALE STEEL PIPE CO., LTD

ROLL TEST CERTIFICATE

COPY

CERTIFICATE NO. 019

DESCRIPTION: NEWLY PRODUCED PRIME QUALITY ERW STEEL PIPE

CO. No: L1325089509P

STANDARD: AFI 5L

DATE: 2008-3-8

NO.	HEAT	Pieces	SIZE			WEIGHT (kg/m)	TOTAL WEIGHT (M <sup>2</sup> )	CHEMICAL COMPOSITION								BASE METAL MECHANICAL PROPERTIES		ELONGATION (%)							
			W/D (mm)	W/T (mm)	Length (m)			C	Mn	P	S	Si	Ni	Cr	Mo	V	Y.S. (MPa)		T.S. (MPa)						
1	08CDB5900	24	0.5	0.5	11.98		0.052	1.42	0.017	0.004	0.010	0.01	0.01	0.01	0.01	0.01	0.01	477	550	20					
2	08CDB5903	24	0.5	0.5	11.98		0.058	1.40	0.016	0.006	0.010	0.01	0.01	0.01	0.01	0.01	0.01	458	541	24					
3	08ADB3671	24	0.5	0.5	11.98	126.45	0.059	1.40	0.015	0.004	0.010	0.01	0.02	0.02	0.01	0.01	0.01	458	541	24					
4	08ADB3676	24	0.5	0.5	11.98	126.45	0.059	1.42	0.016	0.006	0.010	0.01	0.01	0.01	0.01	0.01	0.01	477	550	30					
5	08ADB3672	24	0.5	0.5	11.98		0.070	1.42	0.016	0.005	0.010	0.01	0.02	0.02	0.01	0.01	0.01	458	541	24					
6	08CDB5901	24	0.5	0.5	11.98		0.058	1.43	0.016	0.006	0.010	0.01	0.01	0.01	0.01	0.01	0.01	477	550	30					
7	08CDB5904	24	0.5	0.5	11.98		0.070	1.41	0.018	0.007	0.020	0.01	0.02	0.01	0.01	0.01	0.01	477	550	30					
NO	HEAT	WEELD JOINT MECHANICAL PROPERTIES					FLATTENING	VISUAL DIMENSIONS								U.T.	HYDROSTATIC PRESSURE (MPa)		DURATION OF TEST (s)						
		T.S. (MPa)																							
		1	08CDB5900					555	OK	OK	OK	OK	OK	OK	OK		OK	OK		OK	OK	OK	OK	OK	10
		2	08CDB5903					550	OK	OK	OK	OK	OK	OK	OK		OK	OK		OK	OK	OK	OK	OK	10
		3	08ADB3671					550	OK	OK	OK	OK	OK	OK	OK		OK	OK		OK	OK	OK	OK	OK	10
		4	08ADB3670					555	OK	OK	OK	OK	OK	OK	OK		OK	OK		OK	OK	OK	OK	OK	10
		5	08ADB3672					550	OK	OK	OK	OK	OK	OK	OK		OK	OK		OK	OK	OK	OK	OK	10
6	08CDB5901				550	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10				
7	08CDB5904				555	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	10				

PIPE HAS BEEN MADE ACCORDING TO ASTM A352 GRADE 3/API 5L AND 160PGT OF OIL FIELD FOR EACH HEAT NUMBER.

INSPECTOR:

ISSUER: