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MANUFACTURED &
CERTIFIED BY:

BLUESTAR
WELDING



GRANDE PRAIRIE, AB., CANADA
1-780-532-1160

A-NUMBER

Ⓐ 514075

SERIAL No.

BSC 10K2MM-03A

JOB No.

10252-P

DESIGN PRESSURE

10000 PSI

M.A.W.P.

10000 PSI

DESIGN TEMP. MINIMUM

-40°F

CORROSION ALLOWANCE

0.025 IN.

DESIGN TEMP. MAXIMUM

180°F

CRN No.

ALD-05-001

YEAR BUILT

2005

STEAM COIL M.A.W.P.

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RTI
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MANUFACTURED &
CERTIFIED BY:



GRANDE PRAIRIE, AB., CANADA
1-780-532-1160

A-NUMBER

Ⓐ 514076

SERIAL No.

BSC 10K2MM-03B

JOB No.

10252-P

DESIGN PRESSURE

10000 PSI

M.A.W.P.

10000 PSI

DESIGN TEMP. MINIMUM

-40°F

CORROSION ALLOWANCE

0.025 in.

DESIGN TEMP. MAXIMUM

180°F

CRN No.

ALD-05-001

YEAR BUILT

2005

STEAM COIL M.A.W.P.

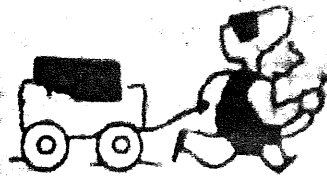
@ °F

BLUESTAR

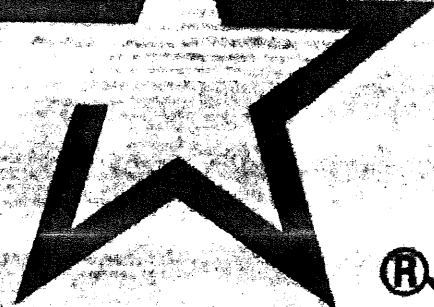
WELDING

GRANDE PRAIRIE, AB.

1-780-532-1160



® YR MANU 2004



A-NUMBER	
SERIAL NO.	BSFGS 227
DESIGN PRESSURE	150 PSI
DESIGN TEMP.	-20°F / 100°F
SHELL THICKNESS	
HEAD THICKNESS	
REG. DESIGN NO.	
STRESS RELIEVED	NO
X-RAY	NO
DERATED	NO
HYDRO TEST	196 PSI
INSPECTOR	C.F.
CRN NO.	OH6510.2



MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

(A) No. **514075**

Manufactured by Bluestar Welding Ltd, RR 2, Site 7, Box 20 Grande Prairie, AB T8V 2Z9

Manufactured for Pure Energy Services Ltd, 300 1010 - 1 St SW, Calgary AB

Ultimate Owner Pure Energy Services Ltd, 300 1010 - 1 St SW, Calgary AB

Location of Installation Portable

Mfg. Serial No. BS10K2MM-03A Code: ASME B31.3, Edition 2002 Addenda _____

Drawing Number 1931.06 Rev 2 Year Built 2005 Intended Service Corrosive Hydrocarbons

a. Material Specifications ASTM A-519 Grade 4130 / Grade 4130 - API 6A, Class L
Coil Ends (Flanges/N.P.T.) Rating

b. Material Specifications Elbows 90° Machined Grade 4130
Coil Ends (Flanges/N.P.T.) Rating

a. Diameter 4 1/2 in. Nom. Thickness 1 in. O/A Length Varies: 112 in. 105 in. C.A. 1/8"

b. Diameter _____ Nom. Thickness _____ O/A Length _____ C.A. _____

a. Maximum Working Pressure 10,000 psi at Maximum Temperature 180°F °C

b. Maximum Working Pressure _____ kPa at Maximum Temperature _____ °C

a. Hydrostatic Test Pressure 15,000 psi C.R.N. ALD-05-001

b. Hydrostatic Test Pressure _____ kPa C.R.N. _____

Heating Surface 86.53 Ft² Radiography 100 % (Random, % or Full)

Volume 10.01 Ft³ P.W.H.T. 1150°F 4 Hr

Remarks _____

CERTIFICATE OF COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this coil bundle are in accordance with Registered Design No.

Date FEBRUARY 24, 2005 Signed *CLE* For Bluestar Welding Ltd.
(Representative) *(Manufacturer)*

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, a duly authorized Safety Codes Officer employed by The Alberta Boilers Safety Association have inspected the above Heater Coils and state that, to the best of my knowledge and belief, the construction is in accordance with the Alberta Safety Codes Act and Regulations.

Date Feb 24/05 Signed *Harve A. Wadd*



MANUFACTURER'S DATA REPORT FOR INDIRECT FIRED HEATER COILS

(A) No. **514076**

Manufactured by Bluestar Welding Ltd, RR 2, Site 7, Box 20 Grande Prairie, AB T8V 2Z9

Manufactured for Pure Energy Services Ltd, 300 1010 - 1 St SW, Calgary AB

Ultimate Owner Pure Energy Services Ltd, 300 1010 - 1 St SW, Calgary AB

Location of Installation Portable

Mfg. Serial No. BS10K2MM-03B Code: ASME B31.3, Edition 2002 Addenda _____

Drawing Number 1931.06 Rev 2 Year Built 2005 Intended Service Corrosive Hydrocarbons

a. Material Specifications ASTM A-519 Grade 4130 / Grade 4130 - API 6A, Class L
Coil *Ends (Flanges/N.P.T.)* *Rating*

b. Material Specifications Elbows 90° Machined Grade 4130
Coil *Ends (Flanges/N.P.T.)* *Rating*

a. Diameter 4 1/2 in. Nom. Thickness 1 in. O/A Length Varies: 112 in. 105 in. C.A. 1/8"

b. Diameter _____ Nom. Thickness _____ O/A Length _____ C.A. _____

a. Maximum Working Pressure 10,000 psi at Maximum Temperature 180°F °C

b. Maximum Working Pressure _____ kPa at Maximum Temperature _____ °C

a. Hydrostatic Test Pressure 15,000 psi C.R.N. ALD-05-001

b. Hydrostatic Test Pressure _____ kPa C.R.N. _____

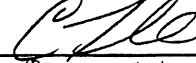
Heating Surface 86.53 Ft² Radiography 100 % (Random, % or Full)

Volume 10.01 Ft³ P.W.H.T. 1150°F 4 Hr

Remarks _____

CERTIFICATE OF COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this coil bundle are in accordance with Registered Design No.

Date FEBRUARY 24, 2005 Signed  For Bluestar Welding Ltd.
(Representative) *(Manufacturer)*

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, a duly authorized Safety Codes Officer employed by The Alberta Boilers Safety Association have inspected the above Heater Coils and state that, to the best of my knowledge and belief, the construction is in accordance with the Alberta Safety Codes Act and Regulations.

Date Feb 24/05 Signed 

EXHIBIT 9.4 TRAVEL SHEET (FRONT)

DO NOT START CONSTRUCTION WITHOUT AI REVIEW									
AI REVIEW: <i>Harvey R. Waddy</i>					REVIEW DATE: <i>Feb 10/05</i>				
SERIAL NO: BS10K2MM-03A JOB NO: 10252-P					VESSEL TYPE: Heater Coil				
DRAWING NO: 1931-06 REVISION NO: 1									
Seq	Item	Comments	Q.C.	Date	A.I. Hold Points	A.I.	Date	Owner	Date
1.	Calculations in File		<i>C-7</i>	<i>02/00/05</i>					
2.	Release of App'd		<i>C-7</i>	<i>02/10/05</i>		<i>HAW</i>	<i>Feb 24/05</i>		
3.	Heat Numbers Recorder		<i>C-7</i>	<i>02/10/05</i>					
4.	MTRs Checked		<i>C-7</i>	<i>02/10/05</i>		<i>HAW</i>	<i>Feb 24/05</i>		
5.	W.P.S. Checked		<i>C-7</i>	<i>02/10/05</i>					
6.	Welders Quality		<i>C-7</i>	<i>02/10/05</i>					
7.	Thicknesses Recorded		<i>C-7</i>	<i>02/10/05</i>					
8.	Shell & Head Fitted								
9.	Nozzles & Fittings Fitted		<i>C-7</i>	<i>02/10/05</i>					
10.	Nozzle Orientation		<i>C-7</i>	<i>02/10/05</i>					
11.	Nozzle & Flange Rating Checked		<i>C-7</i>	<i>02/10/05</i>					
12.	Impact Tests								
13.	Internals Checked								
14.	Final Internal Inspection	Shell side Tube side							
15.	Weld Size Checked		<i>C-7</i>	<i>02/10/05</i>					
16.	Welder I.D. Checked		<i>C-7</i>	<i>02/10/05</i>					
17.	Final External Inspection		<i>C-7</i>	<i>02/24/05</i>					
18.	Radiography		<i>C-7</i>	<i>02/10/05</i>		<i>HAW</i>	<i>Feb 10/05</i>		
19.	Other N.D.E.								
20.	Final Ext. Prior to P.W.H.T.		<i>C-7</i>	<i>02/10/05</i>	<i>Xc</i>	<i>HAW</i>	<i>Feb 10/05</i>		
21.	PWHT Chart Checked		<i>C-7</i>	<i>02/19/05</i>		<i>HAW</i>	<i>Feb 24/05</i>		
22.	Hydrostatic Test	Shell side Gauge # Tube side Gauge #			<i>Xc</i>	<i>HAW</i>	<i>Feb 24/05</i>		
23.	CRN Drawing	CRN#	<i>C-7</i>	<i>02/22/05</i>					
24.	N.C.R. #				<i>Xc</i>	<i>HAW</i>	<i>Feb 24/05</i>		
25.	Nameplate Stamping		<i>C-7</i>	<i>02/24/05</i>	<i>Xc</i>	<i>HAW</i>	<i>Feb 24/05</i>		
26.	Mfg Data Report		<i>C-7</i>	<i>02/24/05</i>					
27.	Nameplate Installation		<i>C-7</i>	<i>02/24/05</i>					

The Authorized Inspector shall be presented with the travel sheet prior to construction so that he can designate additional inspection points and/or Hold Points.

* Denotes an A.I. Inspection Point

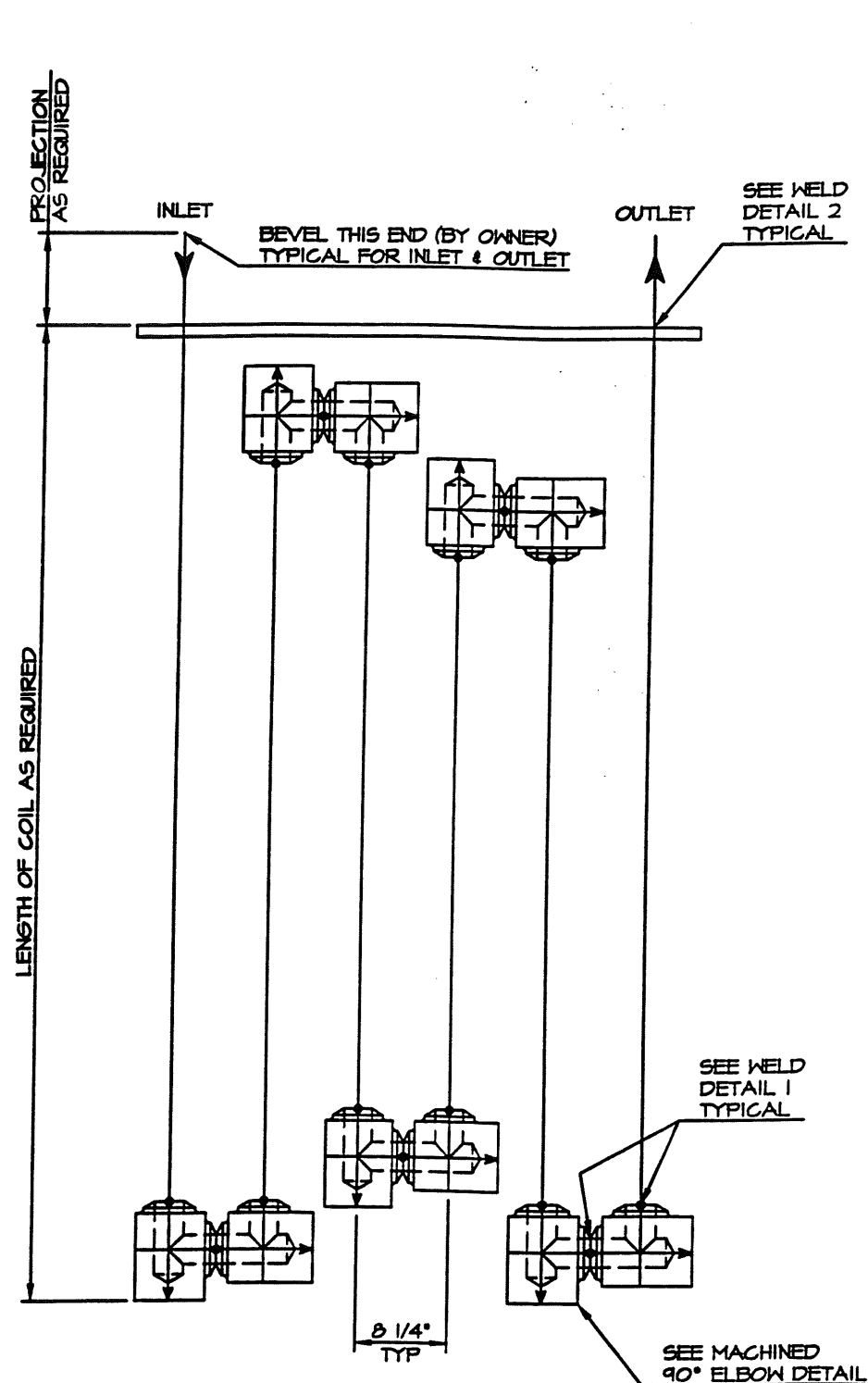
** Denotes an A.I. Hold Point

EXHIBIT 9.4 TRAVEL SHEET (FRONT)

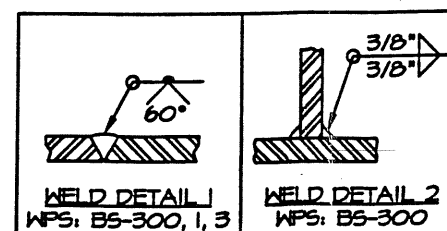
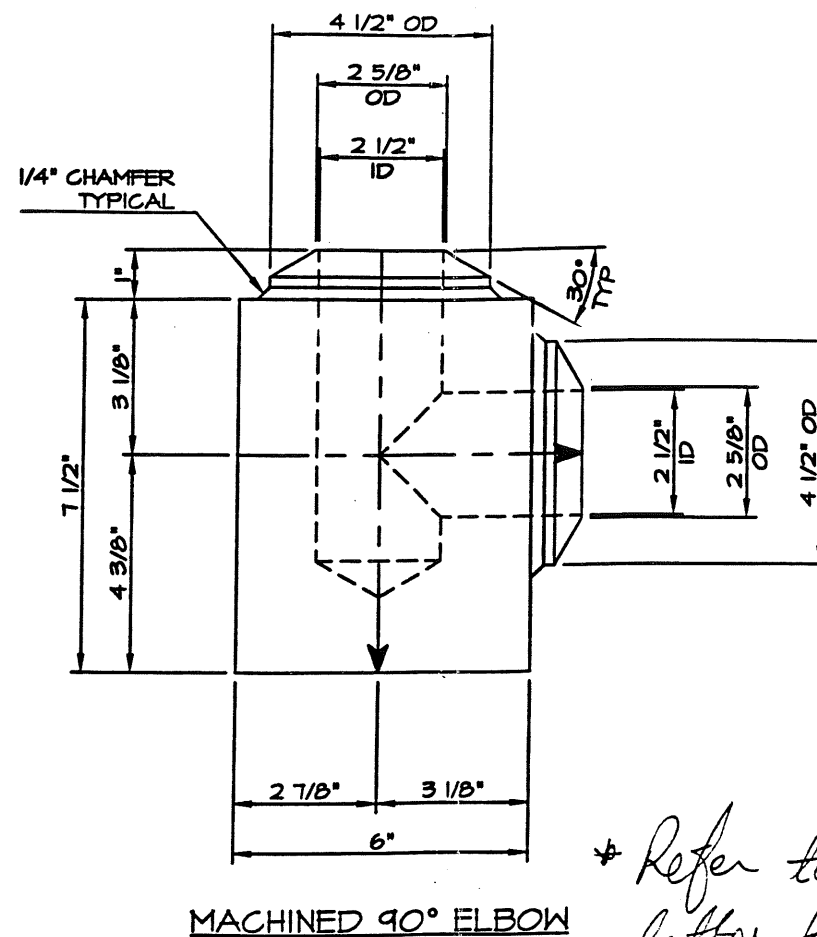
DO NOT START CONSTRUCTION WITHOUT AI REVIEW									
AI REVIEW: <i>Harvey A. Waddy</i>					REVIEW DATE: <i>Feb 10/05</i>				
SERIAL NO: BS10K2MM-03B					JOB NO: 10252-P				
DRAWING NO: 1931-06					REVISION NO: 1				
Seq	Item	Comments	Q.C.	Date	A.I. Hold Points	A.I.	Date	Owner	Date
1.	Calculations in File		C.F.	02/10/05					
2.	Release of App'd		C.F.	02/10/05		<i>Feb 24/05</i>	<i>HA</i>		
3.	Heat Numbers Recorder		C.F.	02/10/05					
4.	MTRs Checked		C.F.	02/10/05		<i>HA</i>	<i>Feb 24/05</i>		
5.	W.P.S. Checked		C.F.	02/10/05					
6.	Welders Quality		C.F.	02/10/05					
7.	Thicknesses Recorded		C.F.	02/10/05					
8.	Shell & Head Fitted								
9.	Nozzles & Fittings Fitted		C.F.	02/10/05					
10.	Nozzle Orientation		C.F.	02/10/05					
11.	Nozzle & Flange Rating Checked		C.F.	02/10/05					
12.	Impact Tests								
13.	Internals Checked								
14.	Final Internal Inspection	Shell side Tube side							
15.	Weld Size Checked		C.F.	02/10/05					
16.	Welder I.D. Checked		C.F.	02/10/05					
17.	Final External Inspection		C.F.	02/24/05					
18.	Radiography		C.F.	02/10/05		<i>HA</i>	<i>Feb 24/05</i>		
19.	Other N.D.E.								
20.	Final Ext. Prior to P.W.H.T.		C.F.	02/10/05	<i>xx</i>	<i>HA</i>	<i>Feb 10/05</i>		
21.	PWHT Chart Checked		C.F.	02/19/05		<i>HA</i>	<i>Feb 24/05</i>		
22.	Hydrostatic Test	Shell side Tube side	Gauge # Gauge #		<i>xx</i>	<i>HA</i>	<i>Feb 24/05</i>		
23.	CRN Drawing	CRN#	C.F.	02/22/05					
24.	N.C.R. #								
25.	Nameplate Stamping		C.F.	02/24/05	<i>xx</i>	<i>HA</i>	<i>Feb 24/05</i>		
26.	Mfg Data Report		C.F.	02/24/05	<i>xx</i>	<i>HA</i>	<i>Feb 24/05</i>		
27.	Nameplate Installation		C.F.	02/24/05					

The Authorized Inspector shall be presented with the travel sheet prior to construction so that he can designate additional inspection points and/or Hold Points.

* Denotes an A.I. Inspection Point ** Denotes an A.I. Hold Point



TYPICAL COIL SCHEMATIC
NUMBER OF PASSES AS REQUIRED



STANDARD TOLERANCES	
FABRICATION:	
GENERAL DEVIATION	± 1/8"
OVERALL LENGTH	± 1/4"
ANGULAR	± 1°
WELD PREPARATION:	
LAND (ROOT FACE)	1/16" ± 1/32"
ROOT GAP	1/8" ± 1/16"
ANGULAR	± 5°
MACHINING:	
O.XX	± 0.015"
O.XXX	± 0.005"
EXCEPT AS NOTED	

* Refer to the acceptance letters for the conditions of registration.

△
SERIAL NUMBERS FOR 4 UNITS

BS-10K-2MM-03A
BS-10K-2MM-03B

BS-10K-2MM-04A
BS-10K-2MM-04B

BS-10K-4MM-05A
BS-10K-4MM-05B

BS-10K-2MM-06A
BS-10K-2MM-06B

COIL DESIGN NOTES

DESIGN & FABRICATE TO: ASME B31.3, 2002 EDITION
MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP): 10,000 PSIG
DESIGN TEMPERATURE: 180° F
MINIMUM DESIGN METAL TEMPERATURE (MDMT): -40° F AT 10,000 PSIG
IMPACT TESTS: EXEMPT
RADIOGRAPHY: 100%
PWHT: OPTIONAL, USE WELDING PROCEDURE BSW-4130.
TEMPERATURE AND TIME: 1150° F FOR 4 HOURS.
HYDROSTATIC TEST PRESSURE: 15,000 PSIG
CORROSION ALLOWANCE: 1/8"

GENERAL NOTES

1. QUALITY CONTROL PROGRAM NUMBER: AQP-1336
2. WELDING PROCEDURE REGISTRATION NUMBER: WP-ITT9.2
3. SERVICE: CORROSIVE HYDROCARBONS
4. SURFACE PREPARATION: HAND TOOL CLEAN (MIN)
5. PRIME AND PAINT: AS PER CLIENT SPECIFICATIONS
6. ALL BOLT HOLES TO STRADDLE CENTERLINES.
7. CLEAN AND COVER ALL OPENINGS FOR SHIPMENT.

8. MATERIAL INFORMATION:
TUBING: ASTM A-519 GRADE 4130 - 4 1/2" OD x 1" THK
90° ELBOW: 4130 - L6060 (ROCKWELL 18-22 MAXIMUM)

9. WELDING INFORMATION:
PREHEAT TEMPERATURE: 450° F
INTERPASS TEMPERATURE: 600° F
WELDING ROD: 10018-D2

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT

REG. No. ALD-05-001
DWG. No. 1931-06, Rev. 2

MAWP kPa 68948 Design Temp. °C 40/82

ACCEPTED As Noted
FEB 10 2005 Signed Desai

Date B.C. DESAI, P. ENG.
DESIGN SURVEY ENGINEER

CANADIAN REGISTRATION NUMBER

NO.	DATE	REVISION	BY	APP
2	05-02-10	DESIGN TEMP WAS 200° F, ADD S/N	PJD...	WB
1	05-01-11	ISSUED FOR REGISTRATION	PJD...	WB
0	05-01-05	ISSUED FOR APPROVAL	PJD...	WB

BLUESTAR WELDING LTD.

RR 2, SITE 7, BOX 20
GRANDE PRAIRIE, AB T8V 2Z9
TELEPHONE: (780) 532-1160 FAX: (780) 532-1148

CLIENT:		HEATER COIL 4 1/2" OD c/w MACHINED 90° ELBOWS
DATE:	05-01-05	
BDD NO.:	1931 / 1943	
CUST. NO.:		
SCALE:	NTS	
DRAWN BY:	PJD...	REV. 1
CHECKED BY:	WB	
DWG NO.:	1931-06	

APPROVED: _____

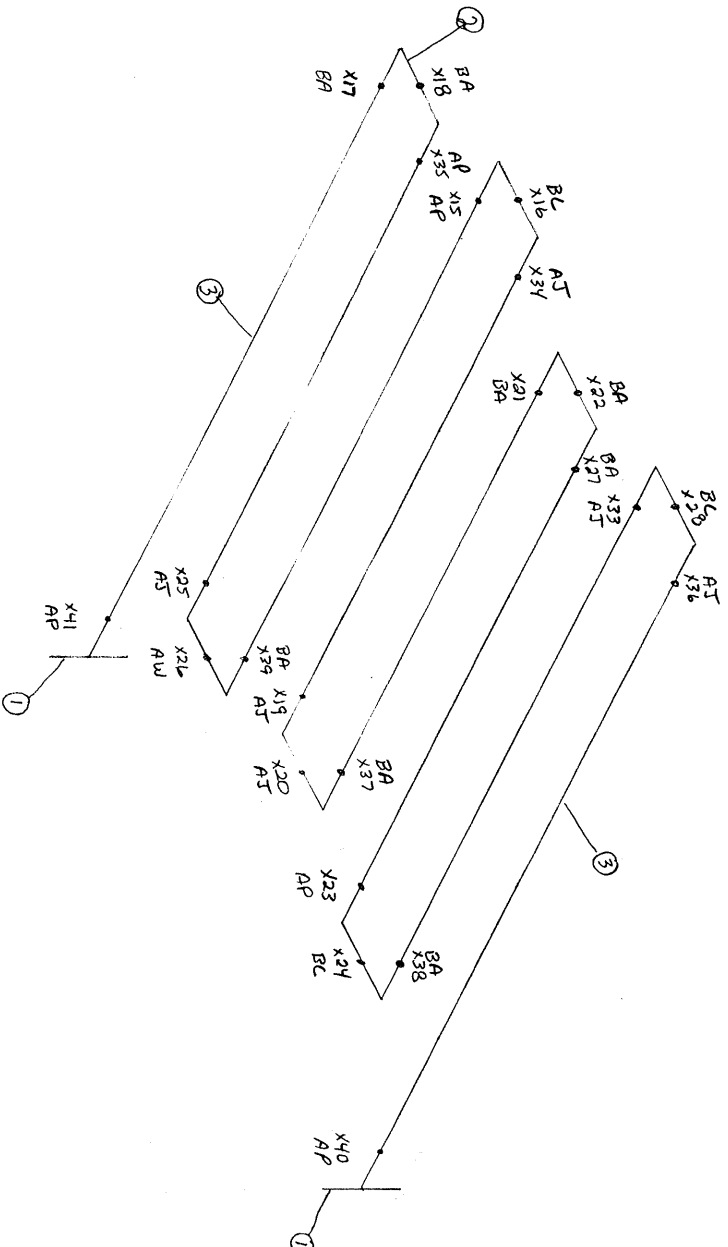
DATE: _____



BSc 10K2mm-03B



ITEM QTY	HEAT NUMBER
1 2 1/4" 10" WALL ASTM A516 PLATE A1514150	14133
2 1 1/4" x 10" WALL A516 ELL APT A1514150	17302
3 1/2" 10" 10" WALL SEAMLESS PIPE A1514150	242200



NOTE (1) ALL WELDS SAME HT & MATERIAL
(2) ALL PIPE SAME HT & MATERIAL

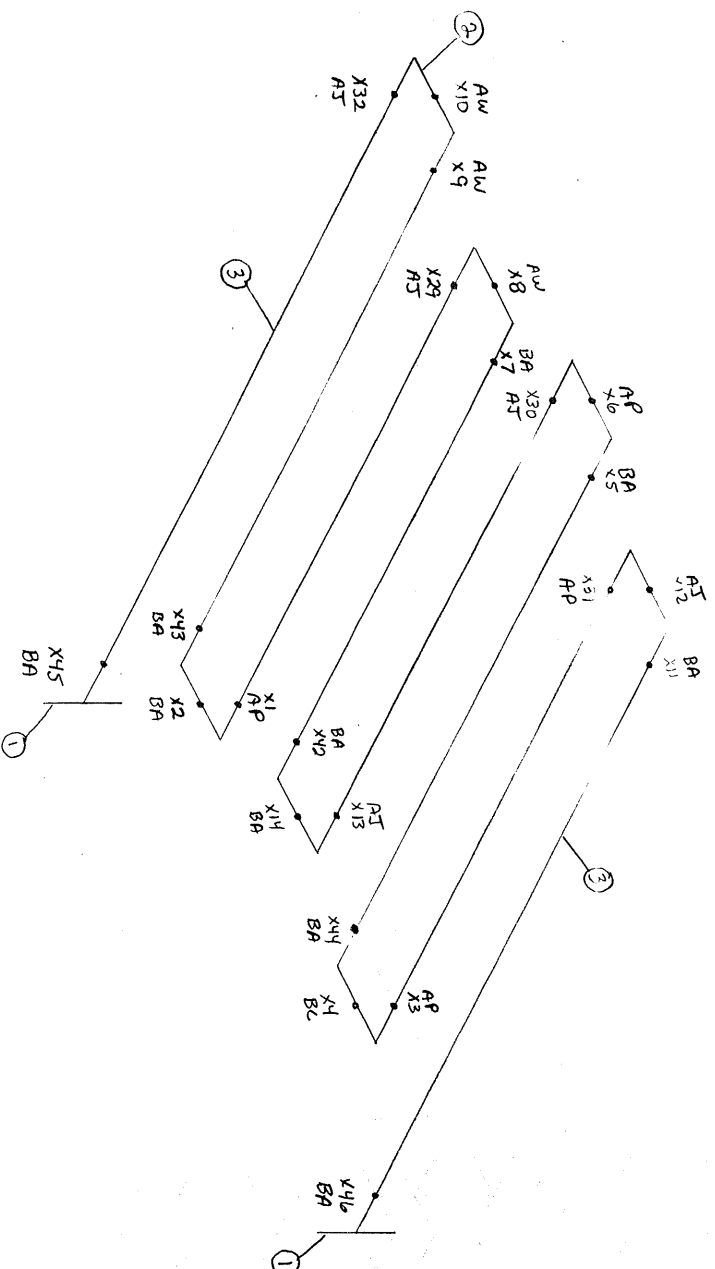
WELD PROCEDURES										PROJECT		REV 	
RT	AT	HYDRO	AREA CODE	INSUL.	DRAWN	DIA - INS							
WPI	BHN	DES. PRESS.	LINE SPEC.	TRACING	DATE								
LPI	PWHT	DES. TEMP.	FAB. CODE	PAINT SPEC.	CHK.	WEIGHT							
					REF. DWG.								
					APPR.								



BSC 1012mm-03A



ITEM QTY	HEAT NUMBER
1 2 1/4" 10" diam K355H401 716 AB14130	14133
2 1/4 1/4" 10" diam W600ELL AB14130	17032
3 1/4 10" 10" diam Seamless Pipe AB14130	24220



NOTE

- ② ALL WELD FILLS SAME HT[#] & MATERIAL
- ③ ALL PIPE SAME HT[#] & MATERIAL

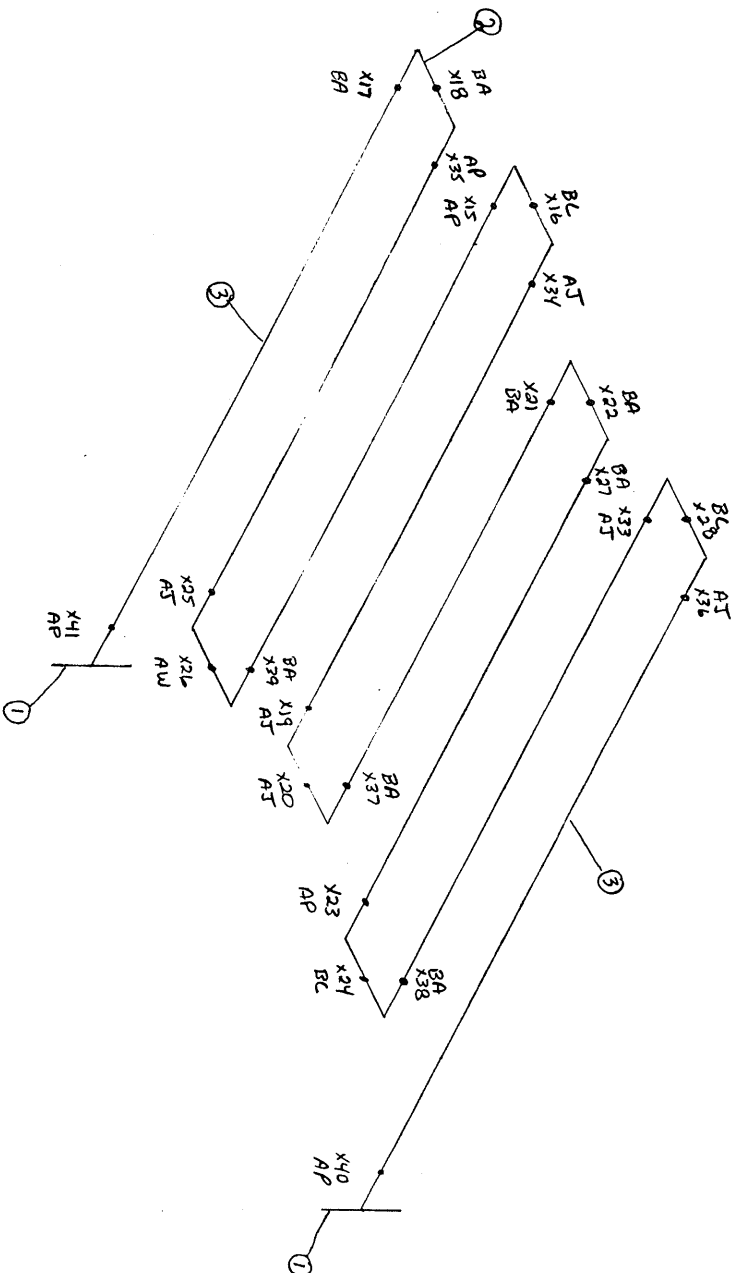
RT	AF	HYDRO	AREA CODE	INSULN.	DRAWN	PROJECT	REV 
WPI	BHN	DES. PRESS.	LINE SPEC.	TRACING	DATE		
LPI	PWHT	DES. TEMP.	FAB. CODE	PAINT SPEC.	CHK		
WEELD PROCEDURES			REF DWG.	APPR.	WEIGHT		
						SPOOL #	



Всc 10K2mm-03B



ITEM QTY		HEAT NUMBER	PL 1
1	2 1/8" I.D. WALL FITTING NO. 1 FILE A15141350	141133	
2	1 1/4" I.D. WITH 1/2 I.D. END API A15141350	17302	
3	1/8" I.D. WALL SEAMLESS PIPE A11141350	242200	



NOTE ① ALL WELDERS SAME HTⁿ. MATERIAL
③ ALL PIPE SAME HTⁿ. MATERIAL

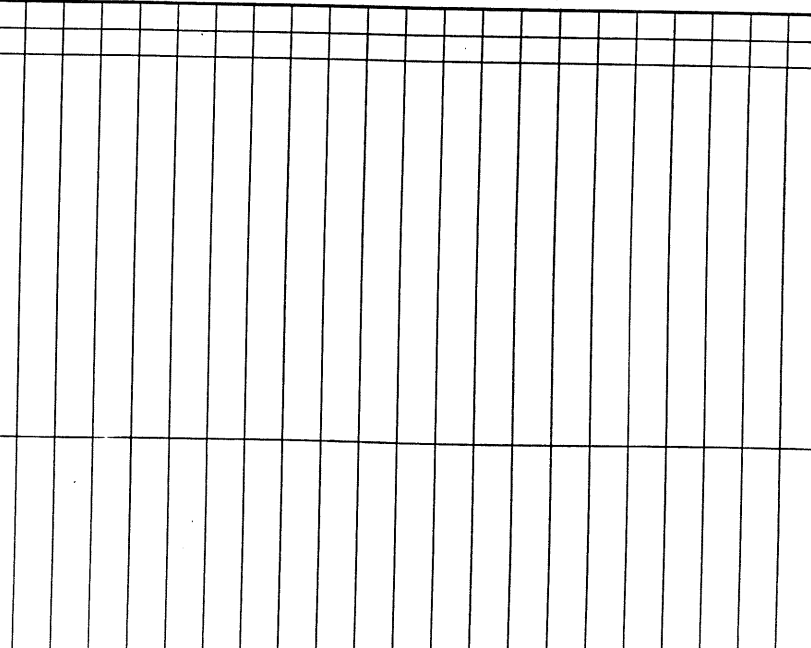
CLIENT										P.O. #	
PROJECT											
WEIGHT											
SPOOL #											
REV 											
WELD PROCEDURES											
LPI											
PMHT											
DES. TEMP.											
DES. PRESS.											
AREA CODE											
INSULN											
TRACING											
LINE SPEC.											
FAB. CODE											
PAINT SPEC.											
REF. DWG.											
APPR.											
RT											
HYDRO											
BHN											
AF											



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242200



JOB # _____ **CONTROL #** _____

REV Δ