

PT No		SIZE DIM.	DESCRIPTION DESCRIPCIÓN
1	22122 MM	300	PIPE, CS, ERW, PLAIN, GROOVED ENDS C/W 6mm RUBBER LINED GROOVED AS PER VICTAULIC 25.03
2	400 1414	200	A53 Gr.B STD, ERW
	400 MM	300	100MM NIPPLE, GROOVED END AS PER 25.03 + BW END, ASTM A53 GR B. RUBBERLINED 6MM
-	1		TEE, RED, VICTAULIC NO. 25 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON, A536
	2	300	90 DEG 3D BEND TRIMMED, CARBON STEEL, BW, ASTM A53 GR B. RUBBERLINED 6MM
5	1	300	45 DEG 3D BEND, VICTAULIC NO. 110-3D, GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON
_		000	A536
6	1	300	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, AS A536
7	1	80	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, AS
			A536
8	1	300	FE0135
9	2	300	PIPE CLAMP HANGER ASSEMBLY
10	1	300	CLAMPED SLOPED MEDIUM PIPE SHOE - 3 DEGREE SLOPE
11	6	300	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536
12	5	300	COUPLING, RIGID, STYLE 07 ZERO-FLEX RIDGID COUPLING DUCTILE IRON, A536
13	1	80	COUPLING, RIGID, STYLE 07 ZERO-FLEX RIDGID COUPLING DUCTILE IRON, A536
14	1	300	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000
15	2	80	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000
16		22	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 127 mm Length
17		22	WASHER, ROUND, FLAT, STEEL, GALV, for 0.875in bolt
18		16	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 101.6 mm Length
19		16	WASHER, ROUND, FLAT, STEEL, GALV, for 0.625in bolt
20		80	KNIFE GATE VALVE, CLARKSON KGA, FLANGE TYPE (KG01)
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BILL OF MATERIALS / LISTA DE MATERIALES

FOR PROJECT PIPING STANDARDS, REFER TO DRAWING ECFN-AUS-PI-6000-STD-01001

ALL ISOMETRICS ARE DRAWN TO VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01. ALL DIMENSIONS INDICATED ARE TO THE FACE OF STEEL.

GAPS WHERE VICTAULIC COUPLINGS WILL BE ADDED RESPECT DIMENSIONS FOR MAXIMUM SEPARATION ALLOWANCE.

FOR RUBBERLINING MANUFACTURING PURPOSE

STRAIGHT PIPE SPOOLS AND CUSTOM FITTINGS ARE TO BE FABRICATED TO VICTAULIC STANDARD GROOVE DIMENSIONS FOR RUBBER LINING 25.03.

FOR PIPE-TO-FITTING JOINT, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD

GROOVE SPECIFICATIONS 25.01 (3 MM RUBBER TO BE ADDED). FOR FITTING-TO-FITTING JOINT, 12 INCH AND LESS, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01 (1.6 TO 3 MM RUBBER TO BE ADDED).

FOR FITTING-TO-FITTING JOINT, 14 INCH AND LARGER, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.03.

		***************************************	017111071110		
LINE NUMBER NÚMERO DE LINEA	6210-300-SPR-L03-0114		SPEC ESP.	L03	P&I NÚI
TITLE / TITULO				SUB-PROJEC	

FRUTA DEL NORTE PROJECT PIPING ISOMETRIC

PROYECTO FRUTA DEL NORTE ISOMÉTRICOS DE TUBERÍAS

MID NUMBER 6210-PID-00001 ENGINEERING CONSTRUCTION / SUB-PROYECTO: INGENIERIA Y CONSTRUCCIÓN ALL DIMENSIONS IN MM / TODAS LAS DIMENSIONES EN MM

DRAWING No

ECFN-AUS-PI-6210-ISO-01013

TAMA

NO **A3**

REV. 2

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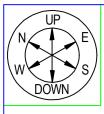
DESIGN TEMP (°C) / TEMPERATURA DE DISEÑO DESIGN PRESS (kPag) / PRESIÓN DE DISEÑO M.ROCHE 18-04-02 esign/diseño 2 RE-ISSUED FOR FABRICATION MR PD 18-10-11 DESIGN CODE & CLASS / CÓDIGO Y CLASE DE DISEÑO INSULAȚION (TYPE/THK) / AISLACIÓN (TIPO/ESPESOR) RE-ISSUED FOR FABRICATION MR PD 18-09-07 RAWN/DIBUJADO M.ROCHE 18-04-02 ISSUED FOR FABRICATION MR PD 18-07-06 TRACING / TRAZADO ISSUED FOR TENDER MR PD 18-05-08 18-04-05 CLIENTE HECKED/VERIFICADO A.CHARLEB ISSUED FOR PROJECT REVIEW NDE MR PD 18-04-05 TEST TYPE / PRUEBA TIPO PD ISSUED FOR INTERNAL REVIEW MR 18-04-05 ENGINEER/INGENIERO P.DUMONT 18-04-05 TEST PRESS (kPag) / PRUEBA DE PRESIÓN REV DESCRIPTION / DESCRIPCION BY / DE ENG DATE/FECHA

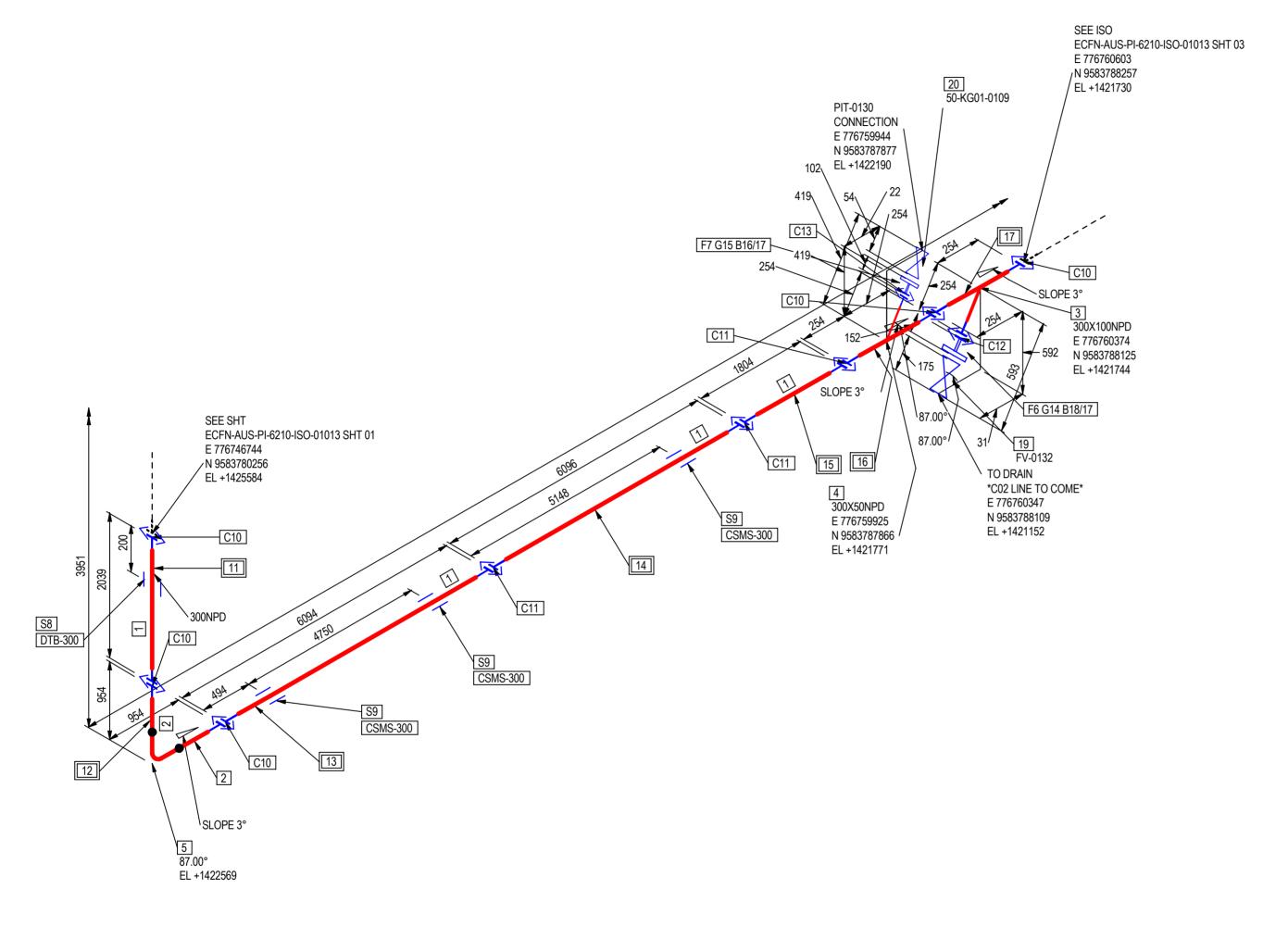
Montréal, Québec, Ausenco Canada T +1 514 866 1221 W www.ausenco.com

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	BILL OF MATERIALS / LISTA DE MATERIALES						
PT No	QTY CANT.	SIZE DIM.	DESCRIPTION DESCRIPCIÓN				
1	16034 MM	300	PIPE, CS, ERW, PLAIN, GROOVED ENDS C/W 6mm RUBBER LINED GROOVED AS PER VICTAULIC 25.03				
			A53 Gr.B STD, ERW				
2	200 MM	300	100MM NIPPLE, GROOVED END AS PER 25.03 + BW END, ASTM A53 GR B. RUBBERLINED 6MM				
3	1	300X100	TEE, RED, VICTAULIC NO. 25 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON, A536				
4	1	300X50	TEE, RED, VICTAULIC NO. 25 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON, A536				
5	1	300	90 DEG 3D BEND TRIMMED, CARBON STEEL, BW, ASTM A53 GR B. RUBBERLINED 6MM				
6	1	100	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, ASTM				
			A536				
7	1	50	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, ASTM				
			A536				
8	1	300	SINGLE TRUNNION				
9	3	300	CLAMPED SLOPED MEDIUM PIPE SHOE - 3 DEGREE SLOPE				
10	5	300	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536				
11	3	300	COUPLING, RIGID, STYLE 07 ZERO-FLEX RIDGID COUPLING DUCTILE IRON, A536				
12	1	100	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536				
13	1	50	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536				
14	1	100	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000				
15	1	50	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000				
16	4	16	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 88.9 mm Length				
17	24	16	WASHER, ROUND, FLAT, STEEL, GALV, for 0.625in bolt				
18	8	16	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 101.6 mm Length				
19	1	100	KNIFE GATE VALVE, CLARKSON KGA, FLANGE TYPE (KG01)				
20	1	50	KNIFE GATE VALVE, CLARKSON KGD, WAFER TYPE (KG03)				

ALL DIMENSIONS INDICATED ARE TO THE FACE OF STEEL. GAPS WHERE VICTAULIC COUPLINGS WILL BE ADDED RESPECTS VICTAULIC STAND DIMENSIONS FOR MAXIMUM SEPARATION ALLOWANCE.

FOR RUBBERLINING MANUFACTURING PURPOSE

STRAIGHT PIPE SPOOLS AND CUSTOM FITTINGS ARE TO BE FABRICATED TO VICTAULIC STANDARD GROOVE DIMENSIONS FOR RUBBER LINING 25.03. FOR PIPE-TO-FITTING JOINT, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD

GROOVE SPECIFICATIONS 25.01 (3 MM RUBBER TO BE ADDED). FOR FITTING-TO-FITTING JOINT, 12 INCH AND LESS, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01 (1.6 TO 3 MM RUBBER TO BE ADDED).

FOR FITTING-TO-FITTING JOINT, 14 INCH AND LARGER, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDA

FOR PROJECT PIPING STANDARDS, REFER TO DRAWING ECFN-AUS-PI-6000-STD-01001 ALL ISOMETRICS ARE DRAWN TO VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01.

02 OF 03	LINE NUMBER NÚMERO DE LINEA	6210-300-SPR-L03-0114
Ausenco	111011	A DEL NORTE PROJECT PIPING ISOMETRIC

PROYECTO FRUTA DEL NORTE ISOMÉTRICOS DE TUBERÍAS

IC STANDARD GROOVE SPECIFICATIONS 25.03.					
	SPEC ESP.	L03	P&ID NUMBER NÚMERO P&ID	6210-PID-00	0001
		SUB-PROJEC SUB-PROYEC	•	, .	SIZE / TAMA
		ALL DIMENSI TODAS LAS [NO A3

DRAWING No

ECFN-AUS-PI-6210-ISO-01013

SIZE /

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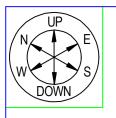
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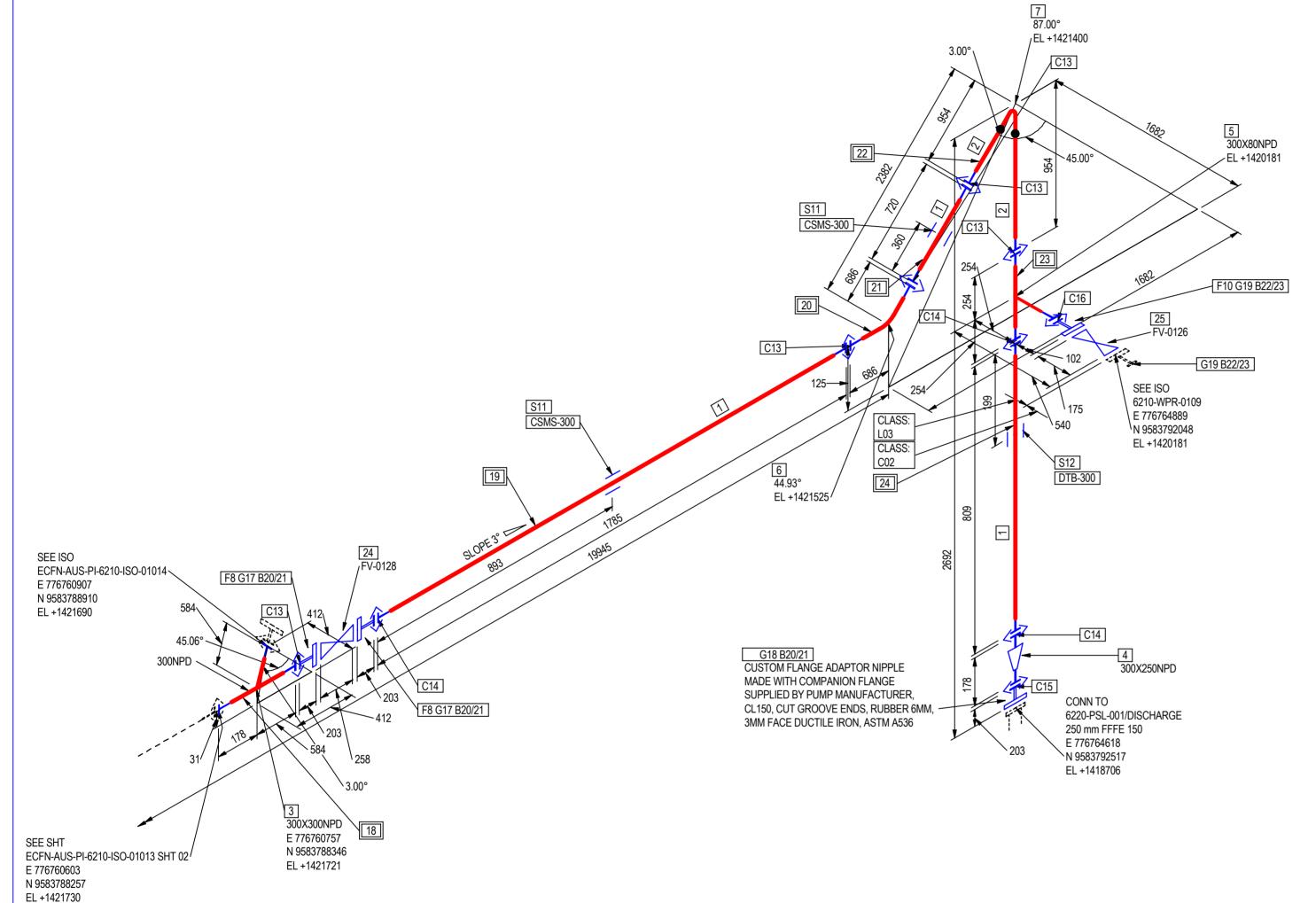
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DESIGN TEMP (°C) / TEMPERATURA DE DISEÑO DESIGN PRESS (kPag) / PRESIÓN DE DISEÑO M.ROCHE 18-04-02 esign/diseño 2 RE-ISSUED FOR FABRICATION MR PD 18-10-11 Montréal, Québec, DESIGN ODE & CLASS / ODIGO Y CLASE DE DISEÑO INSULAȚION (TYPE/THK) / AISLACIÓN (TIPO/ESPESOR) Canada RE-ISSUED FOR FABRICATION MR PD 18-09-07 T +1 514 866 1221 RAWN/DIBUJADO M.ROCHE 18-04-02 ISSUED FOR FABRICATION MR PD 18-07-06 W www.ausenco.com ISSUED FOR TENDER MR PD 18-05-08 TRACING / TRAZADO 18-04-05 CLIENTE HECKED/VERIFICADO A.CHARLEB B ISSUED FOR PROJECT REVIEW MR PD 18-04-05 NDE TEST TYPE / PRUEBA TIPO A ISSUED FOR INTERNAL REVIEW PD MR 18-04-05 ENGINEER/INGENIERO P.DUMONT 18-04-05 TEST PRESS (kPag) / PRUEBA DE PRESIÓN REV DESCRIPTION / DESCRIPCION BY / DE ENG DATE/FECHA

MINING SERVICES INC.

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1		1	
1	3314 MM	300	PIPE, CS, ERW, PLAIN, GROOVED ENDS C/W 6mm RUBBER LINED GROOVED AS PER VICTAULIC 25.03
			A53 Gr.B STD, ERW
2	200 MM	300	100MM NIPPLE, GROOVED END AS PER 25.03 + BW END, ASTM A53 GR B. RUBBERLINED 6MM
3	1	300X300	LATERAL, 45 DEG, EQUAL, VICTAULIC NO. 30 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE
Г			IRON, A536
4	1	300X250	REDUCER, CONC, VICTAULIC NO. 50 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON, A536
5	1	300X80	TEE, RED, VICTAULIC NO. 25 GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON, A536
6	1	300	45 DEG 3D BEND, VICTAULIC NO. 110-3D, GROOVED TO VICTAULIC 25.01, 6MM RUBBER DUCTILE IRON,
			A536
7	1	300	90 DEG 3D BEND TRIMMED, CARBON STEEL, BW, ASTM A53 GR B. RUBBERLINED 6MM
8	2	300	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, ASTM
			A536
9			
10	1	80	FLANGE, CL150, VICTAULIC NO 45F, CUT GROOVE ENDS, RUBBER 6MM, 3MM FACE DUCTILE IRON, ASTN
			A536
11	2	300	CLAMPED SLOPED MEDIUM PIPE SHOE - 3 DEGREE SLOPE
12	1	300	SINGLE TRUNNION
13	5	300	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536
14	3	300	COUPLING, RIGID, STYLE 07 ZERO-FLEX RIDGID COUPLING DUCTILE IRON, A536
15	1	250	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536
16	1	80	COUPLING, FLEXIBLE, STYLE 77 FLEX COUPLING DUCTILE IRON, A536
17	2	300	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000
18	1	250	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000
19	2	80	GASKET, 1.5MM RING or FULL FACE TO SUIT FLANGES GARLOCK 3000
20	36	22	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 127 mm Length
21	72	22	WASHER, ROUND, FLAT, STEEL, GALV, for 0.875in bolt
22	8	16	BOLT, HEX HD BOLTS c/w HEX HEAD NUT A193 Gr.B7, A194 Gr.2H - 101.6 mm Length
23	16	16	WASHER, ROUND, FLAT, STEEL, GALV, for 0.625in bolt
24	1	300	KNIFE GATE VALVE, CLARKSON KGA, FLANGE TYPE (KG01)
25	1	80	KNIFE GATE VALVE, CLARKSON KGA, FLANGE TYPE (KG01)
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BILL OF MATERIALS / LISTA DE MATERIALES

DESCRIPTION

DESCRIPCIÓN

PT QTY SIZE

No CANT. DIM.

ALL ISOMETRICS ARE DRAWN TO VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01. ALL DIMENSIONS INDICATED ARE TO THE FACE OF STEEL.

FOR PROJECT PIPING STANDARDS, REFER TO DRAWING ECFN-AUS-PI-6000-STD-01001

GAPS WHERE VICTAULIC COUPLINGS WILL BE ADDED RESPECT DIMENSIONS FOR MAXIMUM SEPARATION ALLOWANCE.

FOR RUBBERLINING MANUFACTURING PURPOSE

STRAIGHT PIPE SPOOLS AND CUSTOM FITTINGS ARE TO BE FABRICATED TO VICTAULIC STANDARD GROOVE DIMENSIONS FOR RUBBER LINING 25.03. FOR PIPE-TO-FITTING JOINT, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD

GROOVE SPECIFICATIONS 25.01 (3 MM RUBBER TO BE ADDED). FOR FITTING-TO-FITTING JOINT, 12 INCH AND LESS, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.01 (1.6 TO 3 MM RUBBER TO BE ADDED).

FOR FITTING-TO-FITTING JOINT, 14 INCH AND LARGER, FITTINGS ARE TO BE SUPPLIED AS PER VICTAULIC STANDARD GROOVE SPECIFICATIONS 25.03.

LINE NUMBER 6210-300-SPR-L03-0114 NÚMERO DE LINEA TITLE / TITULO

FRUTA DEL NORTE PROJECT PIPING ISOMETRIC

PROYECTO FRUTA DEL NORTE ISOMÉTRICOS DE TUBERÍAS

P&ID NUMBER 6210-PID-00001 L03 NÚMERO P&ID SUB-PROJECT / ENGINEERING CONSTRUCTION / SUB-PROYECTO: INGENIERIA Y CONSTRUCCIÓN ALL DIMENSIONS IN MM / TODAS LAS DIMENSIONES EN MM

SIZE /

TAMA

NO **A3**

REV. 2

DRAWING No

DESIGN TEMP (°C) / TEMPERATURA DE DISEÑO DESIGN PRESS (kPag) / PRESIÓN DE DISEÑO M.ROCHE 18-04-02 ESIGN/DISEÑO 2 RE-ISSUED FOR FABRICATION MR PD 18-10-11 DESIGN CODE & CLASS / CÓDIGO Y CLASE DE DISEÑO INSULATION (TYPE/THK) / AISLACIÓN (TIPO/ESPESOR) RE-ISSUED FOR FABRICATION MR PD 18-09-07 RAWN/DIBUJADO M.ROCHE 18-04-02 ISSUED FOR FABRICATION MR PD 18-07-06 TRACING / TRAZADO ISSUED FOR TENDER MR PD18-05-08 A.CHARLEB NDE MR 18-04-05 ISSUED FOR PROJECT REVIEW PD ac TEST TYPE / PRUEBA TIPO ISSUED FOR INTERNAL REVIEW MR PD 18-04-05 NGINEER/INGENIERO P.DUMONT 18-04-05 TEST PRESS (kPag) / PRUEBA DE PRESIÓN REV DESCRIPTION / DESCRIPCION BY / DE ENG DATE/FECHA

MINING SERVICES INC.

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03 OF 03

Montréal, Québec, Ausenco Canada AURELIAN ECUADOR S.A. T +1 514 866 1221 W www.ausenco.com 18-04-05 | CLIENTE

ECFN-AUS-PI-6210-ISO-01013