

PIPING
FLOW
INFO



Direct Energy Resources

a division of Direct Energy Marketing Limited

CHANNEL LAKE SOUTH ALBERTA

YEAR 2002

COMPRESSOR STATION LSD 1-18-14-5 W4M

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				• TANK DRAWING: WILCO INDUSTRIES LTD.	
				T-1401-D101A	DOUBLE WALLED TANK WITH SKID

PLOT No. 23209

REFERENCE DRAWINGS	DWG No

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A	02.01.18	PRELIMINARY (U1)	WSG
REV	DATE	REVISION DESCRIPTION	BY

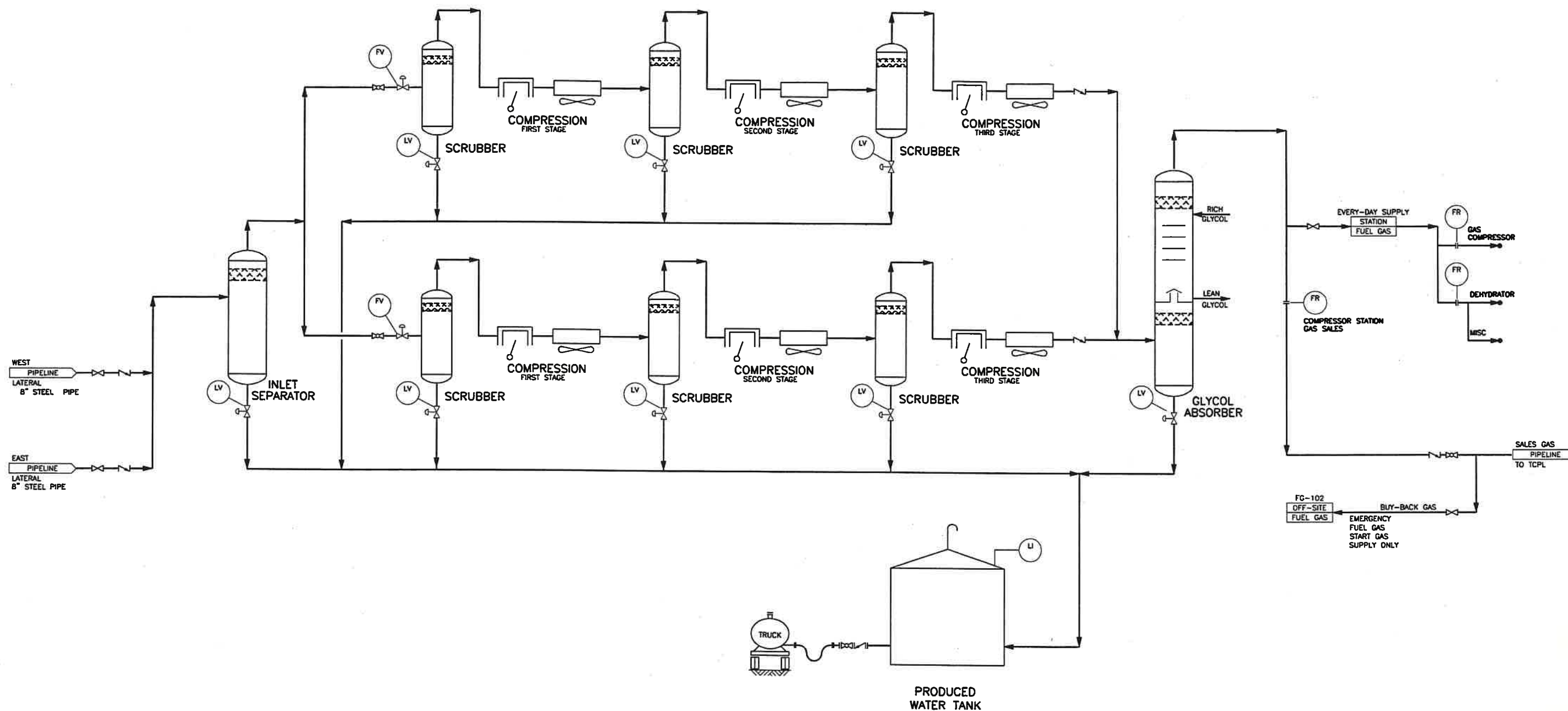
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APPROVAL	-		
CHECKER	-		
DRAWN	WS GALL		
DATE	02.01.08		
SCALE:	NTS	APPROVED	DATE

CHANNEL LAKE SOUTH YEAR 2002 COMPRESSOR STATION TITLE PAGE LSD 1-18-14-5 W4M	
TECHSKIL INC.	PHONE (403) 287-3375 FAX (403) 287-9982 EMAIL info@techskil.com
PLANT No	DRAWING No. REV
U1	000.01 0

FEB 11 2002

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PLOT No. 23209



PIPING SPECIFICATIONS: SWEET HYDROCARBONS

ANSI CODE for PRESSURE PIPING, B31.3

AA 150 ANSI
BA 300 ANSI
CA 600 ANSI
P = PROCESS
FG = FUEL GAS
HC = HYDROCARBON DRAIN
V = VENT
SG = START GAS
PW = PRODUCED WATER

REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WG
A	02.01.16	PRELIMINARY	WSG

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.22		
SCALE:	NTS	APPROVED	DATE

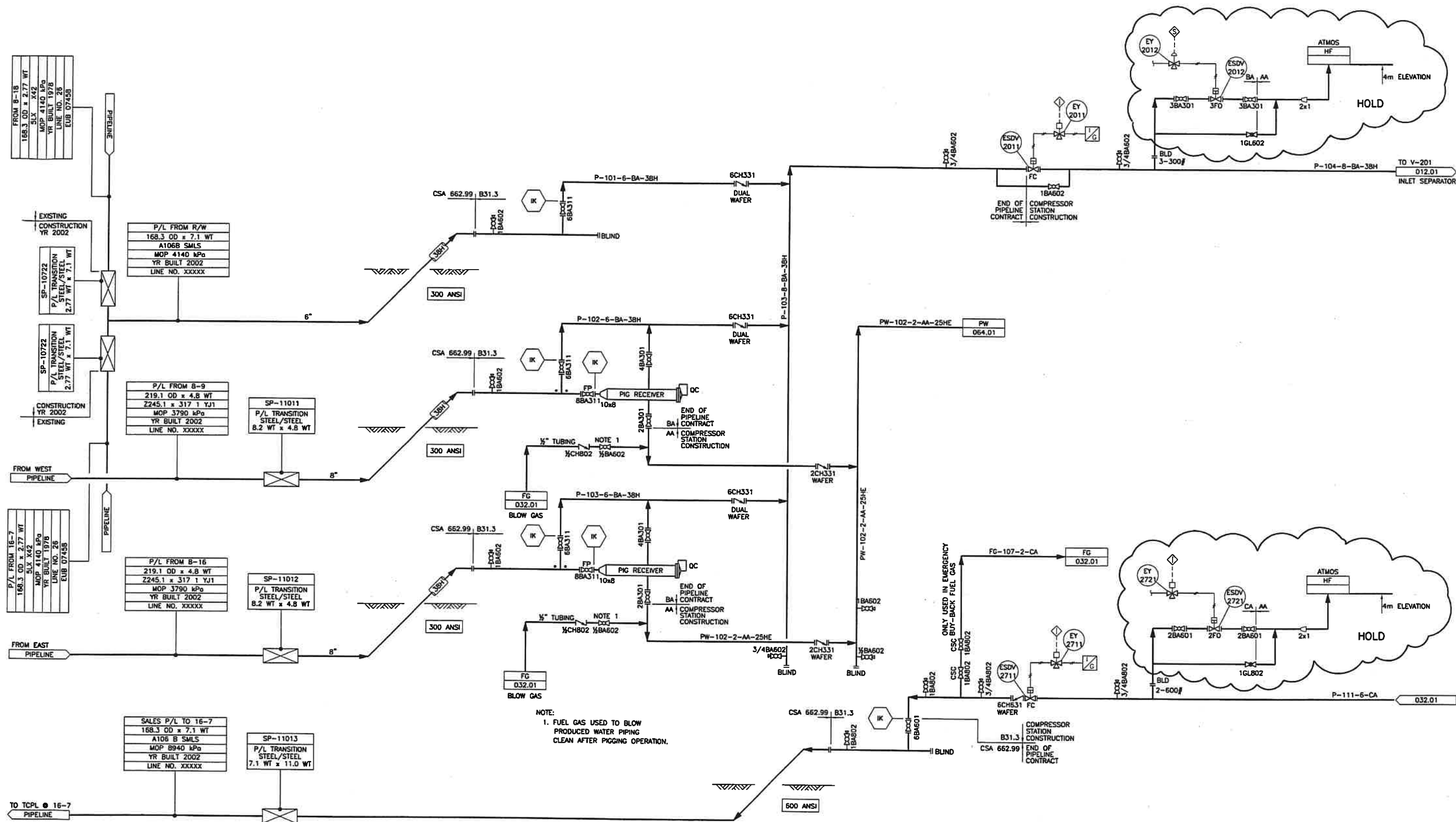
CHANNEL LAKE SOUTH COMPRESSOR STATION PROCESS FLOW SCHEMATIC
LSD 1-18-14-5 W4M
TECHSKIL INC.
TECHNICAL DRAFTING-DESIGN SERVICES

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 010.01 0

FEB 11 2002

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PLOT No. 23209



PIPING SPECIFICATIONS: SWEET HYDROCARBONS
ANSI CODE for PRESSURE PIPING, B31.3

AA 150 ANSI
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P = PROCESS
FG = FUEL GAS
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V = VENT
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VALVE SPECIFICATIONS:

BA602 BALL VALVE API 800 NPT A105
BA311 BALL VALVE 300 ANSI FLG FULL PORT A216 WCB
CH331 CHECK VALVE 300 ANSI FLG-DUAL & SINGLE WAFER
BA301 BALL VALVE 300 ANSI FLG A216 WCB
BA602 BALL VALVE API 800 NPT A105
GL602 GLOBE VALVE API 800 NPT A105
BA601 BALL VALVE 600 ANSI FLG A216 WCB
CH631 CHECK VALVE 600 ANSI FLG-SINGLE WAFER

TYPICAL WELLHEAD PIPING (SALES HEADER)	U1.510.02
TYPICAL WELLHEAD PIPING (INLET HEADER)	U1.501.01
REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WG
A	02.01.16	PRELIMINARY	WSG

ENGINEER	B.TOMAS
APPROVAL	B.TOMAS
CHECKER	J.H-T
DRAWN	WS GALL
DATE	02.01.16
SCALE:	NTS
APPROVED	
DATE	

LICENCE AND PERMIT

CHANNEL LAKE SOUTH
COMPRESSOR STATION
INLET HEADER & SALES GAS
MECHANICAL FLOW DIAGRAM
LSD 1-18-14-5 W4M

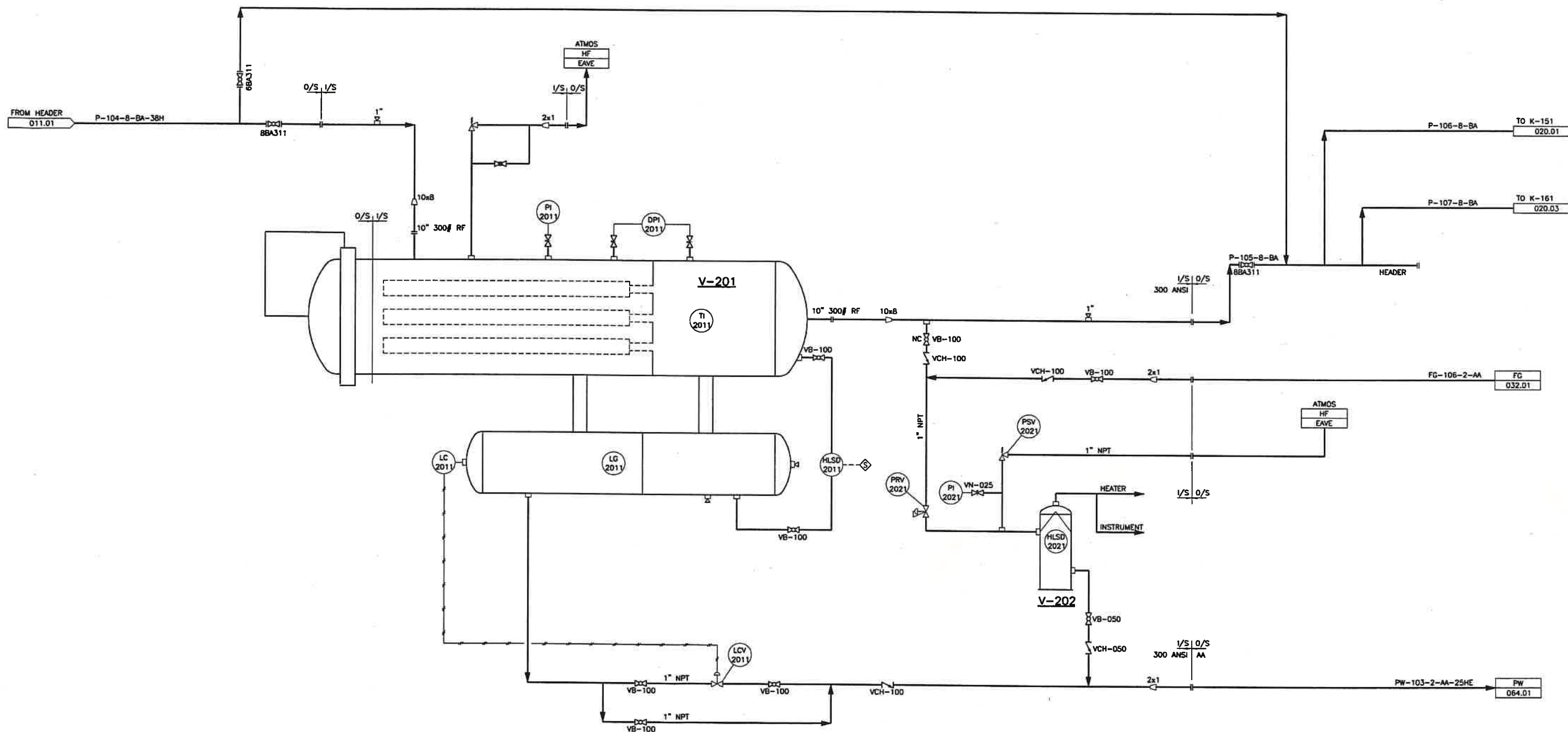
TECHSKIL INC. PHONE (403) 267-3373
FAX (403) 267-8882
EMAIL info@techskil.com

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 011.01 0

FEB 11 2002

V-201
INLET FILTER/SEPARATOR
 30" O.D. x 12'-0" S/S
 720 PSI @ -20°F/130°F
 CORROSION ALLOWANCE: 0.0625"
 X-RAY: RT-2 PWHT: NONE
 C/W (19) FILTER ELEMENTS
 JONELL# JFG-336-0.5-CE

V-202
FUEL GAS SCRUBBER
 8.625" O.D. x 2'-2" S/S
 285 PSIG @ -20°F/130°F
 CORROSION ALLOWANCE: 0.125"
 X-RAY: RT-2 PWHT: NONE



FILTER/SEPARATOR PACKAGE
 MFG.: PETRO FIELD INDUSTRIES INC.
 JOB. NO.: J-01-298

PARTIAL FLOW DIAGRAM ONLY, REFERENCE VENDOR DRAWINGS FOR DETAILS

TYPICAL WELLHEAD PIPING (SALES HEADER)	U1.510.02
TYPICAL WELLHEAD PIPING (INLET HEADER)	U1.501.01
REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
D	02.02.08	ISSUED FOR CONSTRUCTION	WG
A	02.01.16	PRELIMINARY	WSG

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.16		
SCALE:	NTS	APPROVED	DATE

CHANNEL LAKE SOUTH COMPRESSOR STATION INLET SEPARATOR MECHANICAL FLOW DIAGRAM LSD 1-18-14-5 W4M		 Direct Energy Resources
TECHSKIL INC.	PHONE (403) 287-3375 FAX (403) 287-8982 EMAIL info@techskil.com	
PLANT No	DRAWING No.	REV
U1	012.01	0

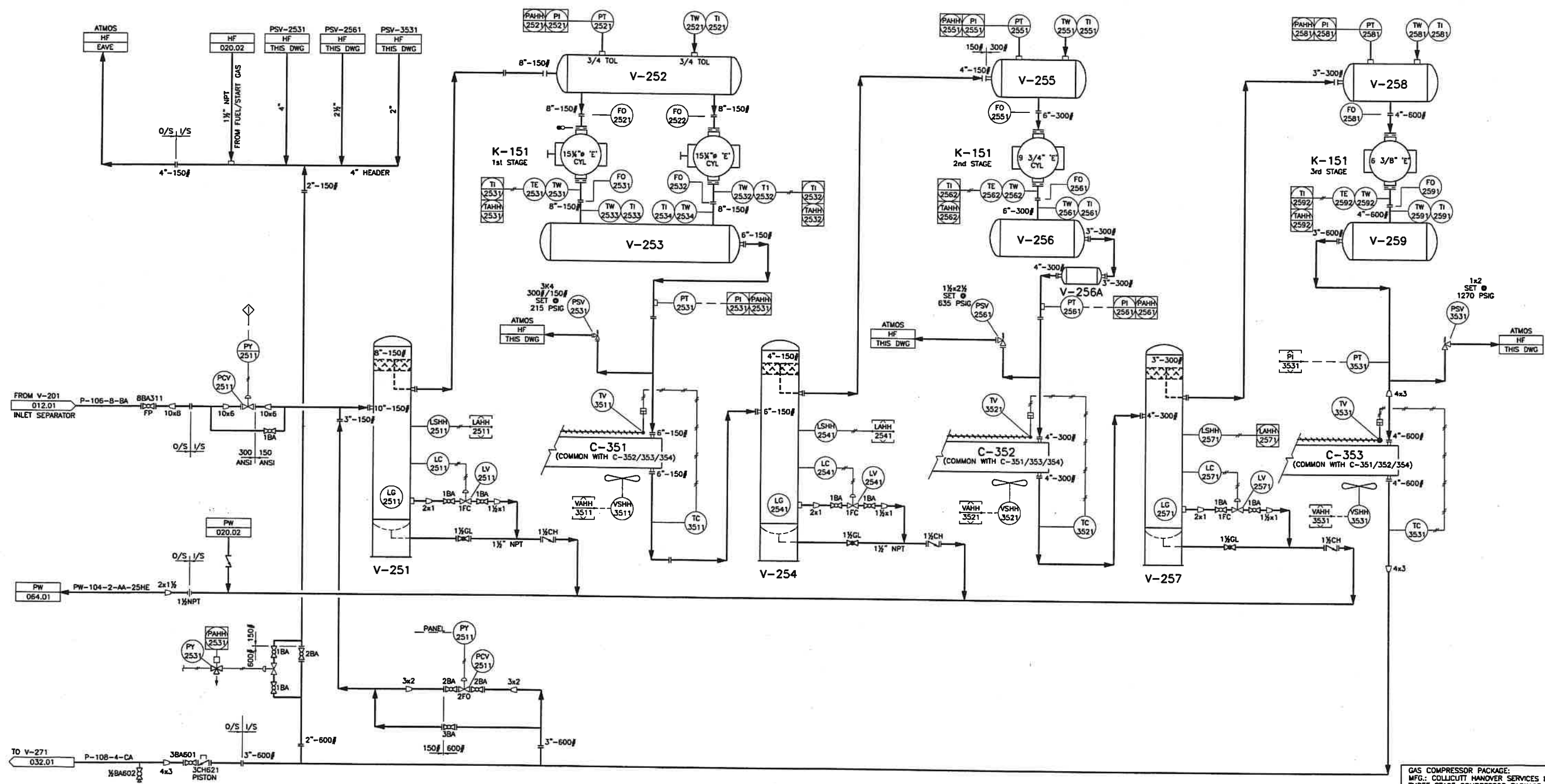
PLOT No. 23209

FEB 11 2002

PLOT No. 23209

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- V-251**
SUCTION SCRUBBER
30" OD x 96" S/S
270PSIG MAWP @ 150°F
- V-252**
1st STAGE SUCTION BOTTLE
24" OD x 78" S/S
270 PSIG MAWP @ 150°F
- C-351**
1st STAGE INTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
IC-1: 215 PSI MAWP @350°F/-50°F
- V-255**
2nd STAGE SUCTION BOTTLE
18" OD x 24" S/S
270 PSIG MAWP @ 150°F
- V-256**
2nd STAGE DISCHARGE BOTTLE
18" OD x 30" S/S
635 PSIG MAWP @ 350°F
- C-352**
2nd STAGE INTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
IC-2: 635 PSI MAWP @350°F/-50°F
- C-353**
3rd STAGE AFTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
A-C: 1270 PSI MAWP @350°F/-50°F
- V-253**
1st STAGE DISCHARGE BOTTLE
20" OD x 132" S/S
215 PSIG MAWP @ 350°F
- V-254**
INTERSTAGE SCRUBBER
20" OD x 72" S/S
270 PSIG MAWP @ 150°F
- K-151**
GAS COMPRESSOR
COMPRESSOR: ARIEL JGE-4
DRIVER: WAUK, L5774 LT
VENDOR: COLLICUTT/ HANOVER
- V-256A**
2nd STAGE PULSATION BOTTLE
18" OD x 30" S/S
635 PSIG MAWP @ 350°F
- V-257**
INTERSTAGE
16" OD x 72" S/S
705 PSIG MAWP @ 150°F
- V-258**
3rd STAGE SUCTION BOTTLE
12.75" OD x 24" S/S
705 PSIG MAWP @ 150°F
- V-259**
3rd STAGE DISCHARGE BOTTLE
16" OD x 84" S/S
1270 PSIG MAWP @ 350°F



GAS COMPRESSOR PACKAGE:
MFG.: COLLICUTT HANOVER SERVICES LTD.
THREE STAGE COMPRESSOR PACKAGE
5774LT/JGE-4/144EH
DWG. NO.: 3411A02 FH 251

PIPING SPECIFICATIONS: SWEET HYDROCARBONS
ANSI CODE for PRESSURE PIPING, B31.3
AA 150 ANSI
BA 300 ANSI
CA 600 ANSI
CH621 CHECK VALVE 600 ANSI FLG PISTON-DANIEL
P = PROCESS
FG = FUEL GAS
HC = HYDROCARBON DRAIN
V = VENT
SC = START GAS
PW = PRODUCED WATER

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REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WG
A	02.01.17	PRELIMINARY	WSG

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.17		
SCALE:	NTS	APPROVED	DATE

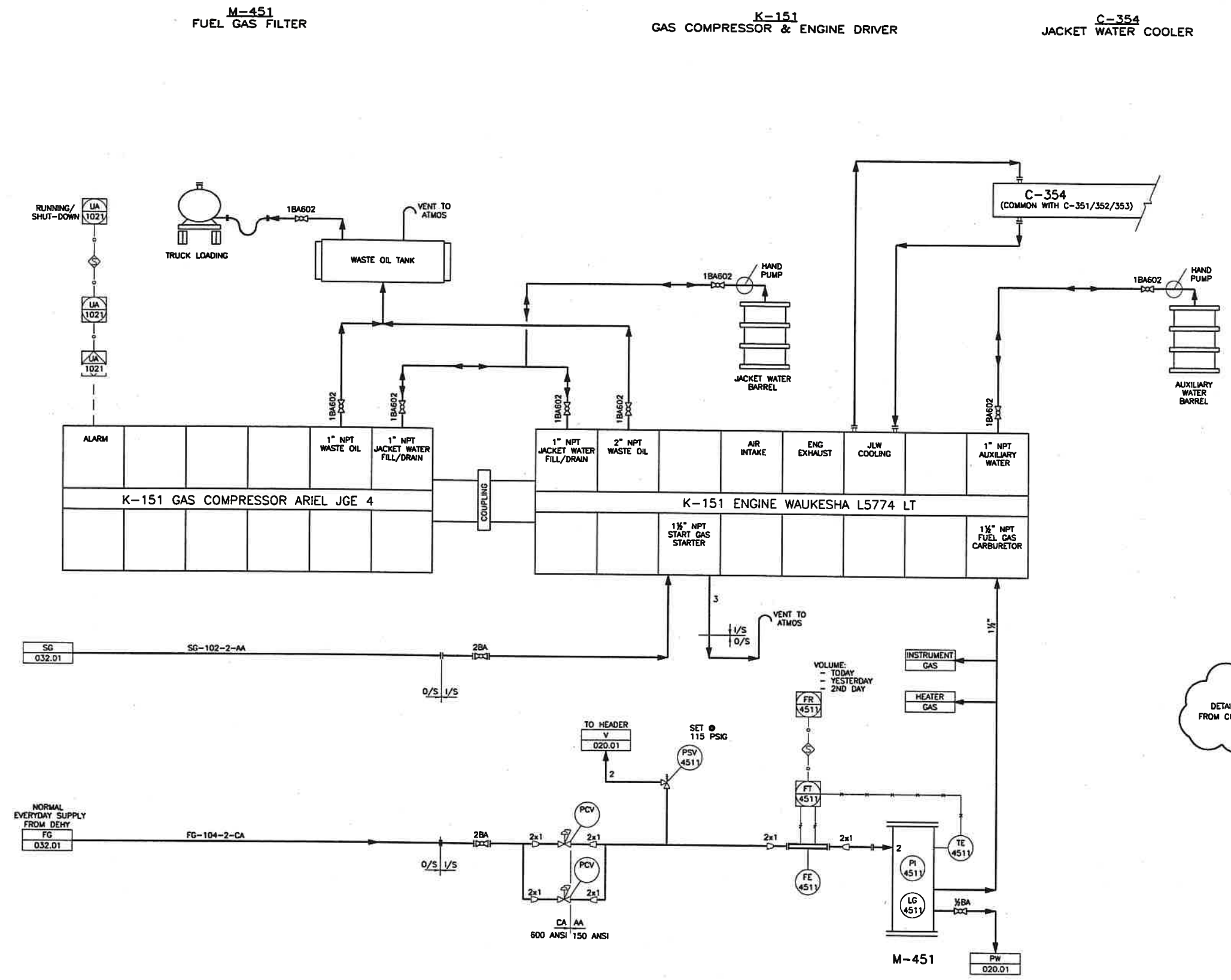
LICENCE AND PERMIT

PARTIAL FLOW DIAGRAM ONLY, REFERENCE VENDOR DRAWINGS FOR DETAILS
**CHANNEL LAKE SOUTH
COMPRESSOR STATION
K-151 GAS COMPRESSOR
MECHANICAL FLOW DIAGRAM
LSD 1-18-14-5 W4M**
TECHSKIL INC. PHONE (403) 287-3379
TECHNICAL DRAFTING-DESIGN SERVICES FAX (403) 287-9982
EMAIL info@techskil.com

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 020.01 0

PLOT No. 23209

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HOLD
DETAILS REQUIRED
FROM COLLICUTT/HANOVER

PIPING SPECIFICATIONS: SWEET HYDROCARBONS
ANSI CODE for PRESSURE PIPING, B31.3
AA 150 ANSI
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REFERENCE DRAWINGS	DWG No

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A	02.01.16	PRELIMINARY	WSG

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.17		
SCALE:	NTS	APPROVED	DATE

LICENCE AND PERMIT

GAS COMPRESSOR PACKAGE:
MFG.: COLLICUTT HANOVER SERVICES LTD.
THREE STAGE COMPRESSOR PACKAGE
5774LT/JGE-4/144EH
JOB#: J-01-298 FH 251

PARTIAL FLOW DIAGRAM ONLY, REFERENCE VENDOR DRAWINGS FOR DETAILS

CHANNEL LAKE SOUTH
COMPRESSOR STATION
K-151 EQUIP & CONTROLS
MECHANICAL FLOW DIAGRAM
LSD 1-18-14-5 W4M
TECHSKIL INC. PHONE (403) 287-3373
FAX (403) 287-9882
EMAIL info@techskil.com

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 020.02 0

FEB 11 2002

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PLOT No. 23209

V-261
SUCTION SCRUBBER
30" OD x 96" S/S
270 PSIG MAWP @ 150°F

V-262
1st STAGE SUCTION BOTTLE
24" OD x 78" S/S
270 PSIG MAWP @ 150°F

C-371
1st STAGE INTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
IC-1: 215 PSI MAWP @ 350°F/-50°F

V-265
2nd STAGE SUCTION BOTTLE
18" OD x 24" S/S
270 PSIG MAWP @ 150°F

V-266
2nd STAGE DISCHARGE BOTTLE
18" OD x 30" S/S
635 PSIG MAWP @ 350°F

C-357
2nd STAGE INTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
IC-2: 635 PSI MAWP @ 350°F/-50°F

C-373
3rd STAGE AFTERCOOLER
AIR-X-CHANGERS MODEL: 144 EH
A-C: 1270 PSI MAWP @ 350°F/-50°F

V-263
1st STAGE DISCHARGE BOTTLE
20" OD x 132" S/S
215 PSIG MAWP @ 350°F

V-264
INTERSTAGE SCRUBBER
20" OD x 72" S/S
270 PSIG MAWP @ 150°F

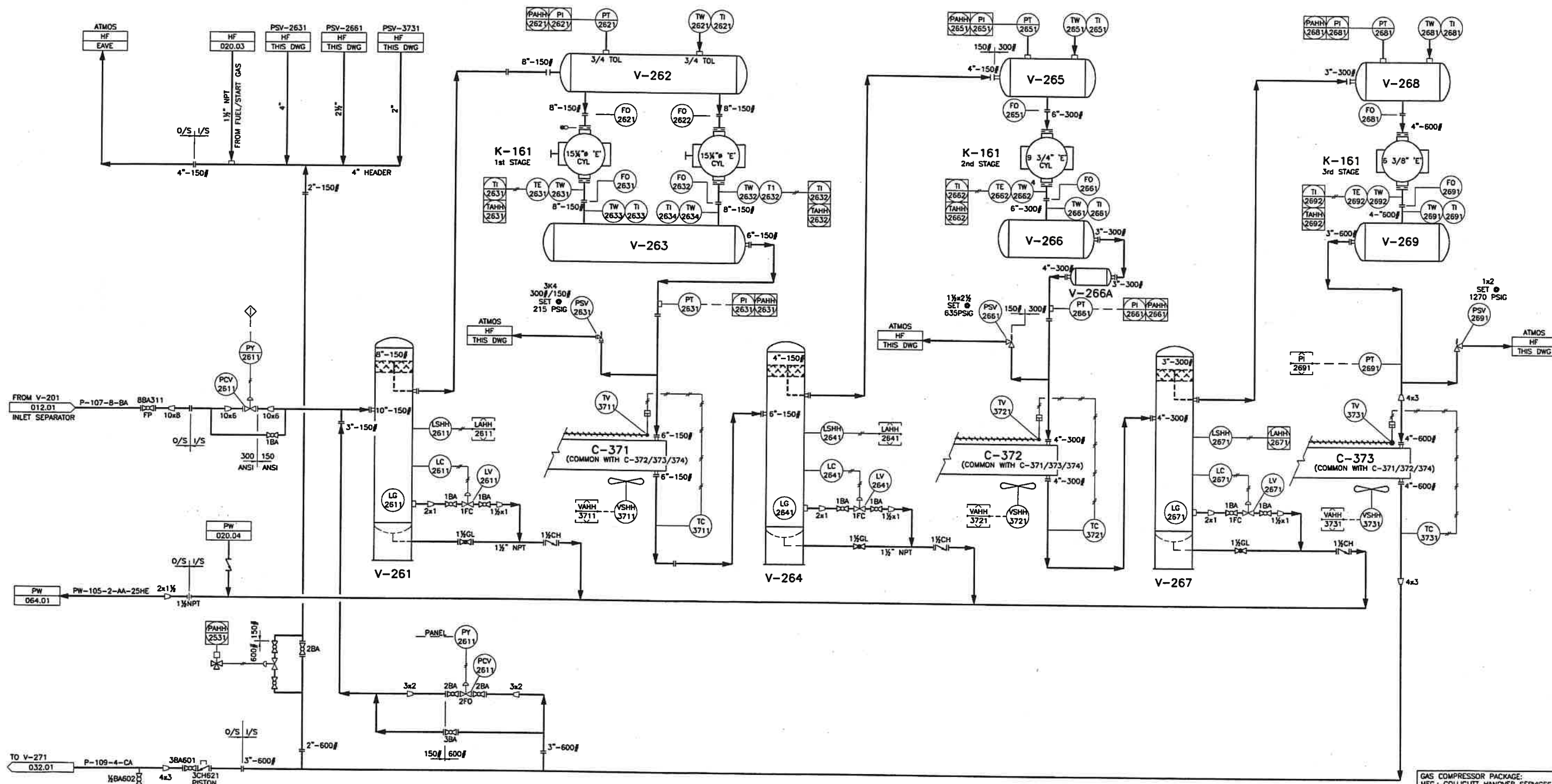
K-161
GAS COMPRESSOR
COMPRESSOR: ARIEL JGE-4
DRIVER: WAUK, L5774 LT
VENDOR: COLLICUTT/HANDOVER

V-266A
2nd STAGE PULSATION BOTTLE
18" OD x 30" S/S
635 PSIG MAWP @ 350°F

V-267
INTERSTAGE
16" OD x 72" S/S
705 PSIG MAWP @ 150°F

V-268
3rd STAGE SUCTION BOTTLE
12.75" OD x 24" S/S
705 PSIG MAWP @ 150°F

V-269
3rd STAGE DISCHARGE BOTTLE
16" OD x 84" S/S
1270 PSIG MAWP @ 350°F



PIPING SPECIFICATIONS: SWEET HYDROCARBONS
ANSI CODE for PRESSURE PIPING, B31.3
AA 150 ANSI
BA 300 ANSI
CA 600 ANSI
CH621 CHECK VALVE 600 ANSI FLG PISTON-DANIEL

P = PROCESS
FC = FUEL GAS
HC = HYDROCARBON DRAIN
V = VENT
SG = START GAS
PW = PRODUCED WATER

REFERENCE DRAWINGS

DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WSG
A	02.01.17	PRELIMINARY	WSG

ENGINEER	B.TOMAS
APPROVAL	B.TOMAS
CHECKER	J.H.-T
DRAWN	WS GALL
DATE	02.01.17
SCALE:	NTS
APPROVED	DATE

LICENCE AND PERMIT

PARTIAL FLOW DIAGRAM ONLY. REFERENCE VENDOR DRAWINGS FOR DETAILS

CHANNEL LAKE SOUTH
COMPRESSOR STATION
K-161 GAS COMPRESSOR
MECHANICAL FLOW DIAGRAM
LSD 1-18-14-5 W4M

TECHSKIL INC. PHONE (403) 287-3370
TECHNICAL DRAFTING-DESIGN SERVICES FAX (403) 287-9982
EMAIL: info@techskil.com

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 020.03 0

FEB 11 2009

C-374
JACKET WATER COOLER



Direct Energy Resources

PLANT No.	DRAWING No.	REV
U1	020.04	0

GAS COMPRESSOR PACKAGE:
MFG.: COLLICUTT HANOVER SERVICES LTD.
THREE STAGE COMPRESSOR PACKAGE
5774LT/JGE-4/144EH
JOB#: J-01-298 FH 252

PLOT No.	23209
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FEB 11 2002

V-271
GLYCOL CONTACTOR - 8 TRAY
30" O.D. x 28'-0" S/S
DP: 1440 PSIG @ 130°F
MAWP: 1435 PSIG

E-571
GAS/GLYCOL HEAT EXCHANGER
8" NPS OUTER PIPE (SCH.80)
6" NPS INNER PIPE (SCH.80)
DP: 1435 PSIG @ 130°F
MAX. DIFF. PRESS: 700 PSIG

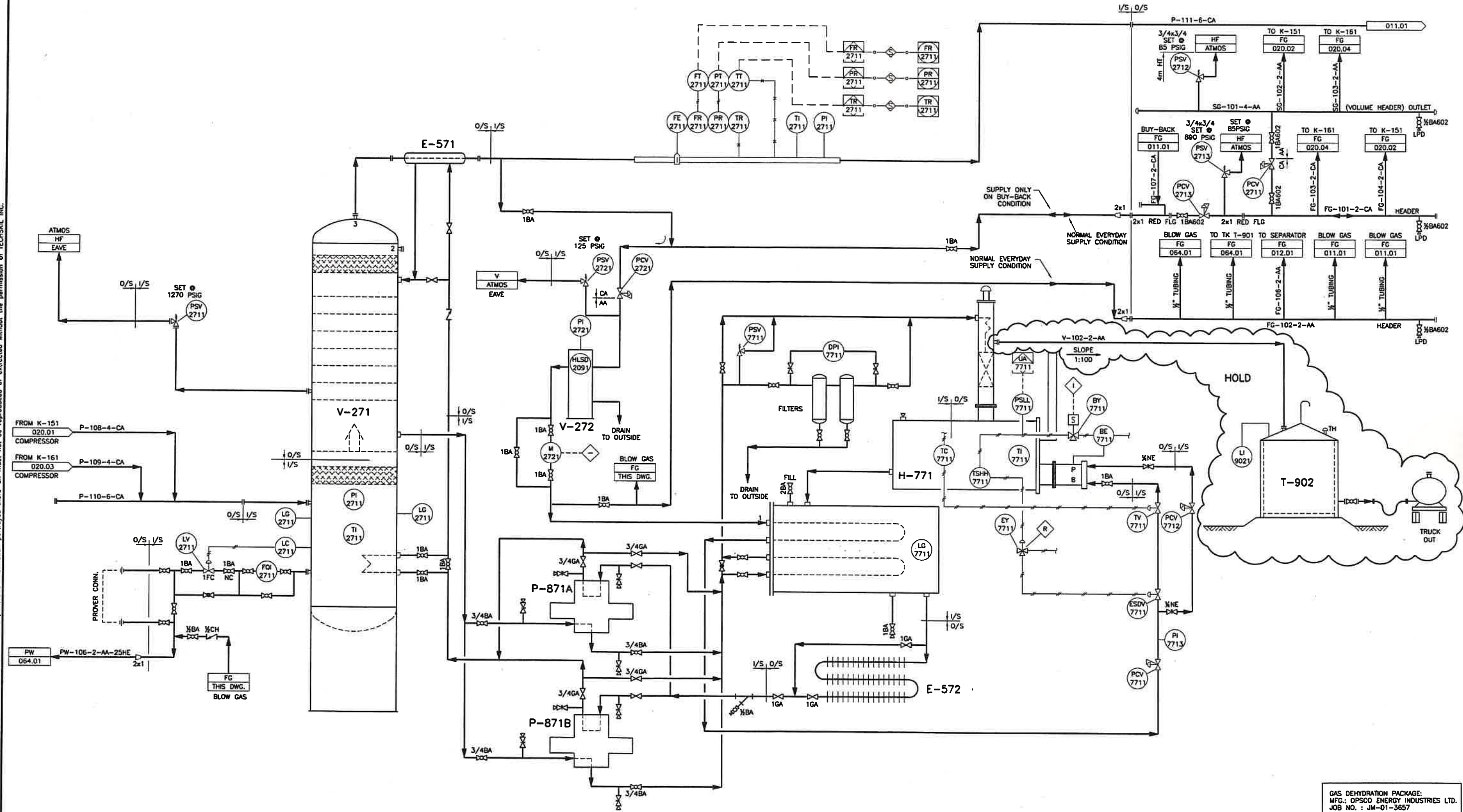
P-871 A/B
GLYCOL PUMP
VENDOR: KIMRAY

V-272
FUEL GAS SCRUBBER
6.625" O.D. x 39" LONG
DP: 150 PSIG @ 100 °F
MODEL: SMF-639, CA = 0.0

E-572
AIR/GLYCOL HEAT EXCHANGER
1' x 10'-0"

H-771
GLYCOL REGENERATOR
36" OD x 10'-0" LG
500,000 Btu/hr, 12.75" NPS STACK
AND FIRETUBE
STILL/REFLUX COLUMN: 12.75" NPS x 7'-0" LG

T-902
STILL COLUMN VENT TANK



GAS DEHYDRATION PACKAGE:
MFG.: OPSCO ENERGY INDUSTRIES LTD.
JOB NO.: JM-01-3657

PARTIAL FLOW DIAGRAM ONLY, REFERENCE VENDOR DRAWINGS FOR DETAILS

PIPING SPECIFICATIONS: SWEET HYDROCARBONS

ANSI CODE for PRESSURE PIPING, B31.3

AA 150 ANSI
BA 300 ANSI
CA 600 ANSI
P = PROCESS
FG = FUEL GAS
HC = HYDROCARBON DRAIN
V = VENT
SG = START GAS
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REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WSG
A	02.01.16	PRELIMINARY	WSG

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.17		
SCALE:	NTS	APPROVED	DATE

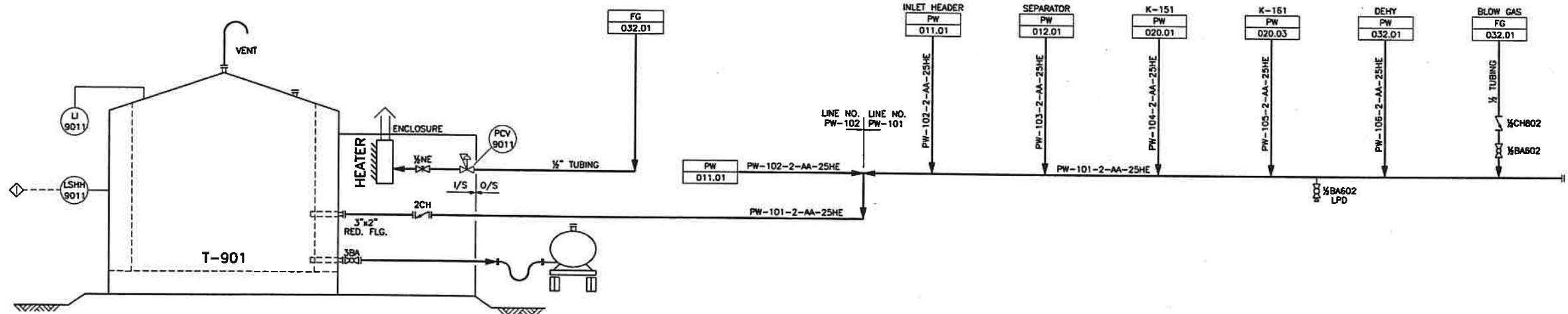
CHANNEL LAKE SOUTH COMPRESSOR STATION GAS DEHYDRATION MECHANICAL FLOW DIAGRAM LSD 1-18-14-5 W4M	TECHSKIL INC. TECHNICAL DRAFTING-DESIGN SERVICES	PHONE (403) 287-3373 FAX (403) 287-9882 EMAIL info@techskil.com
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Direct Energy Resources	PLANT No	DRAWING No	REV
	U1	032.01	0

PLOT No. 23209

FFB 11 2002

T-901
WATER TANK
DOUBLE WALL WATER TANK
100 BBL



PLOT No. 23209

REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.08	ISSUED FOR CONSTRUCTION	WSG
A	02.01.17	AS BUILT	WSG

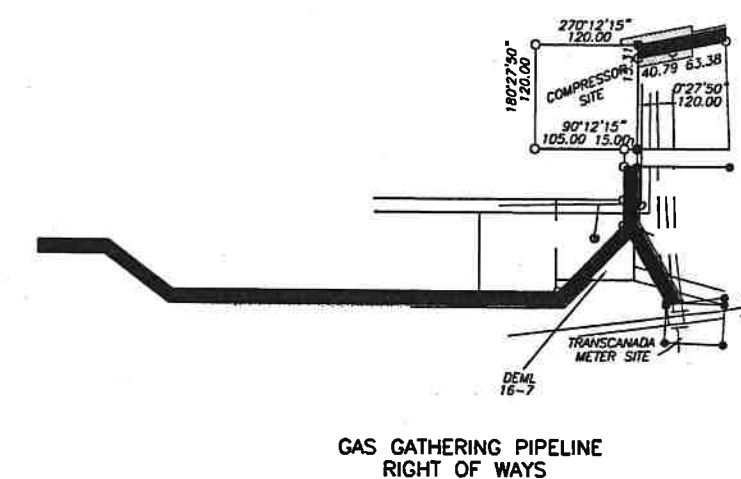
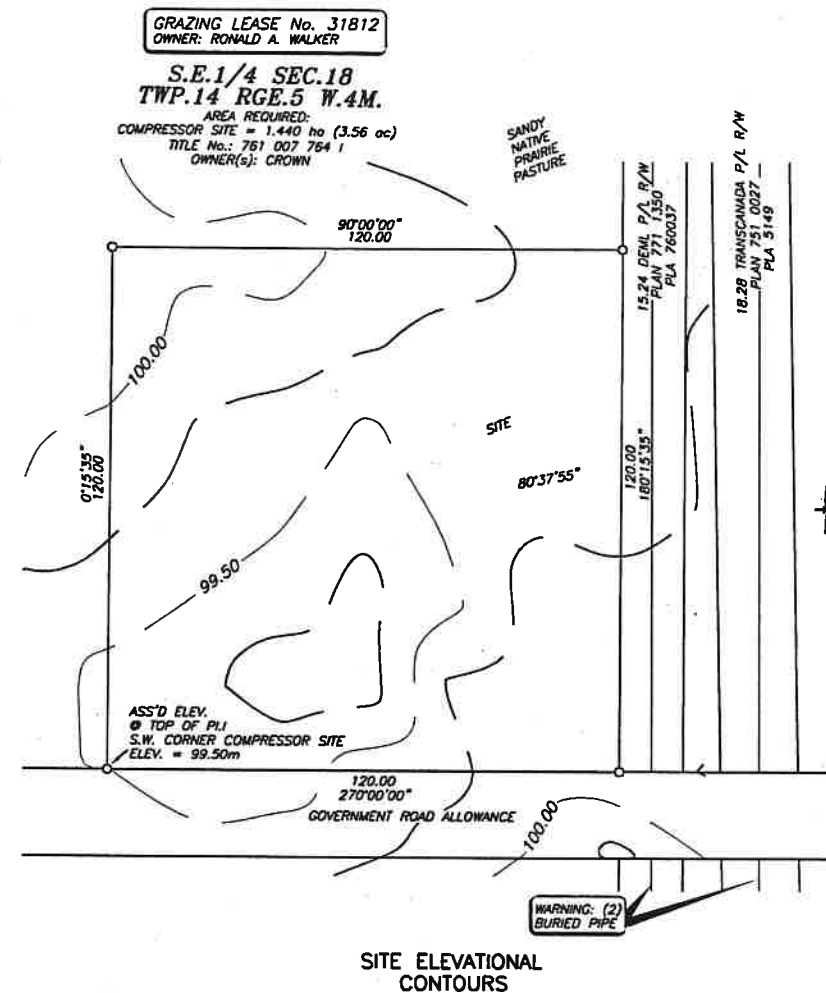
ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	WS GALL		
DATE	02.01.17		
SCALE:	NTS	APPROVED	DATE

CHANNEL LAKE SOUTH COMPRESSOR STATION T-901 WATER TANK MECHANICAL FLOW DIAGRAM LSD 1-18-14-5 W4M
TECHSKIL INC. PHONE (403) 287-3375 FAX (403) 287-9982 EMAIL info@techskil.com

Direct Energy Resources	PLANT No	DRAWING No	REV
	U1	064.01	0

FEB 17 2007

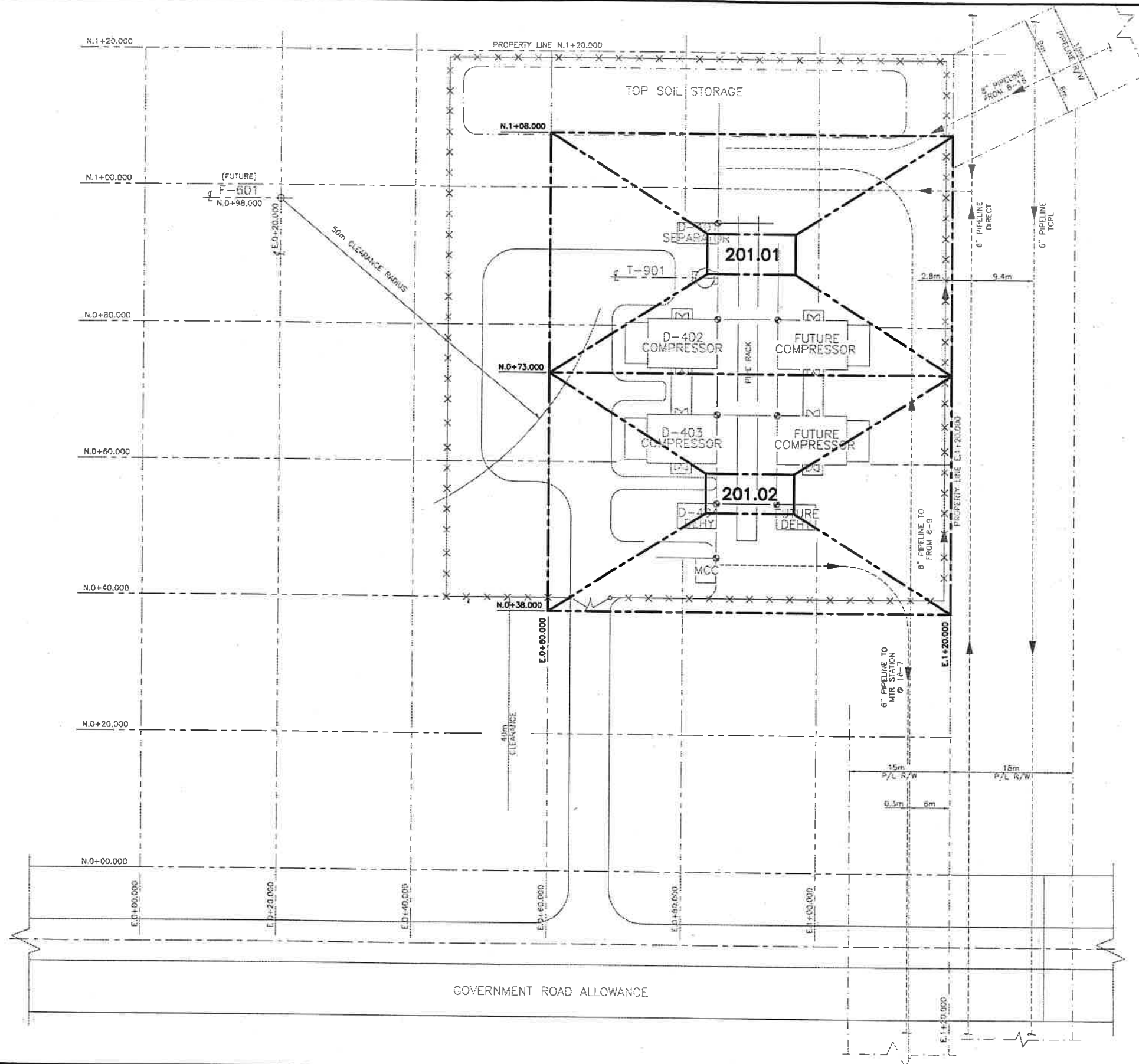
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ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	JHT		
DRAWN	WS GALL		
DATE	02.01.02		
SCALE:	1:300	APPROVED	DATE

CHANNEL LAKE SOUTH COMPRESSOR STATION SITE PLAN LSD 1-18-14-5 W4M		 Direct Energy Resources						
TECHSKIL INC. TECHNICAL DRAFTING-DESIGN SERVICES		PHONE (403) 287-3379 FAX (403) 287-9892 EMAIL info@techskil.com						
		<table border="1"> <thead> <tr> <th>PLANT No</th> <th>DRAWING No.</th> <th>REV</th> </tr> </thead> <tbody> <tr> <td>U1</td> <td>100.01</td> <td>0</td> </tr> </tbody> </table>	PLANT No	DRAWING No.	REV	U1	100.01	0
PLANT No	DRAWING No.	REV						
U1	100.01	0						

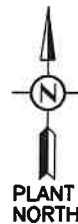
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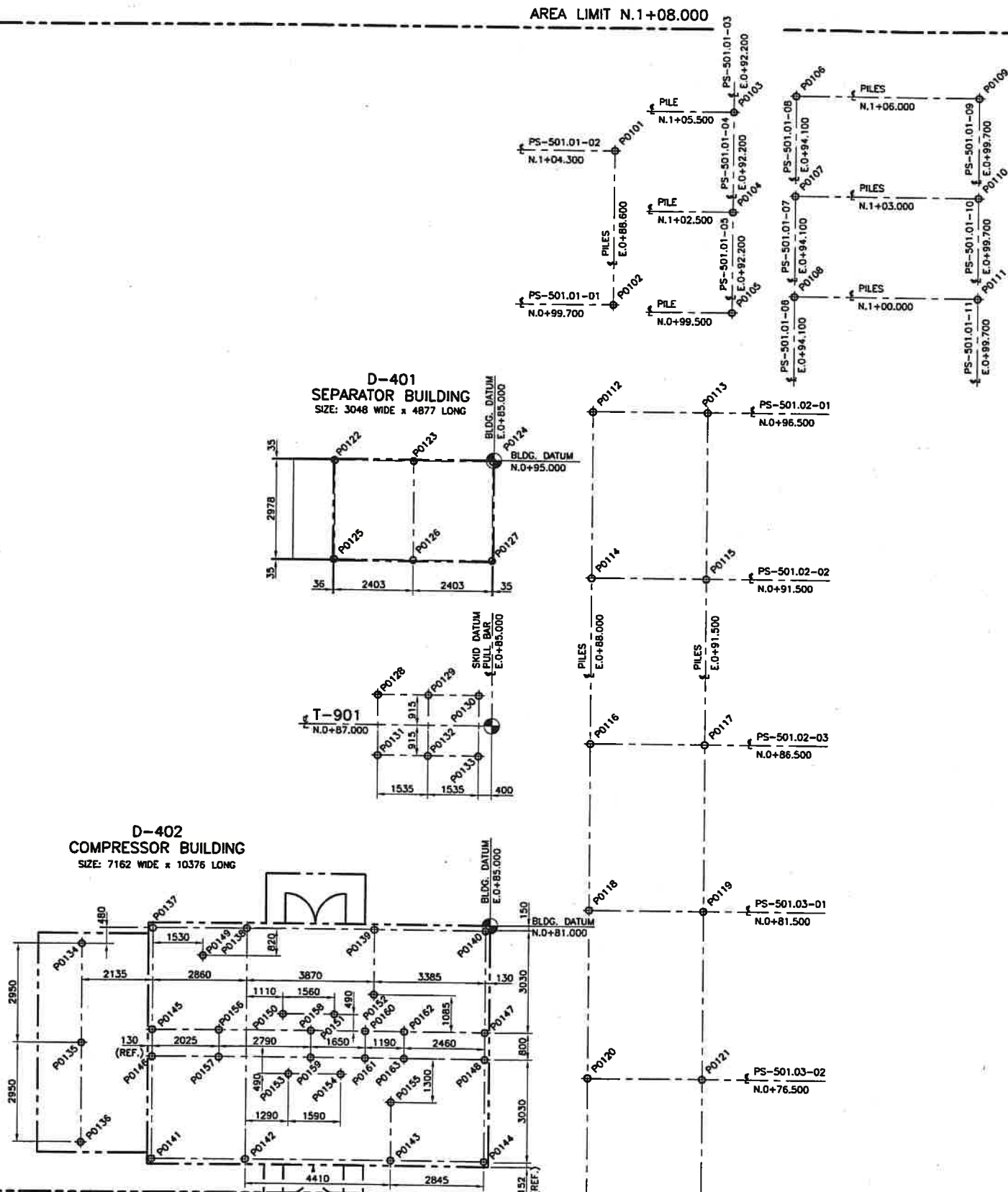

Direct Energy Resources
 PLANT No. DRAWING No. REV.
 111 000 00 0

PLOT No. 23166

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AREA LIMIT E.O+60.000



MATCHLINE N.O+73.000 CONT. ON DWG. 201.02

AREA LIMIT E.1+20.000

PILE SCHEDULE	202.01
PILE KEY PLAN	200.00
REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
0	02.02.04	ISSUED FOR CONSTRUCTION	RF

ENGINEER	B.TOMAS
APPROVAL	B.TOMAS
CHECKER	J.H.-T
DRAWN	R.FERN
DATE	02.01.21
SCALE:	1:75
APPROVED	DATE

LICENCE AND PERMIT

CHANNEL LAKE SOUTH COMPRESSOR STATION PROCESS AREA PILE LOCATION PLAN LSD 1-18-14-5 W4M	
TECHSKIL INC.	PHONE (403) 287-3375 FAX (403) 287-8882 EMAIL info@techskil.com

PLANT No	DRAWING No.	REV
U1	201.01	0



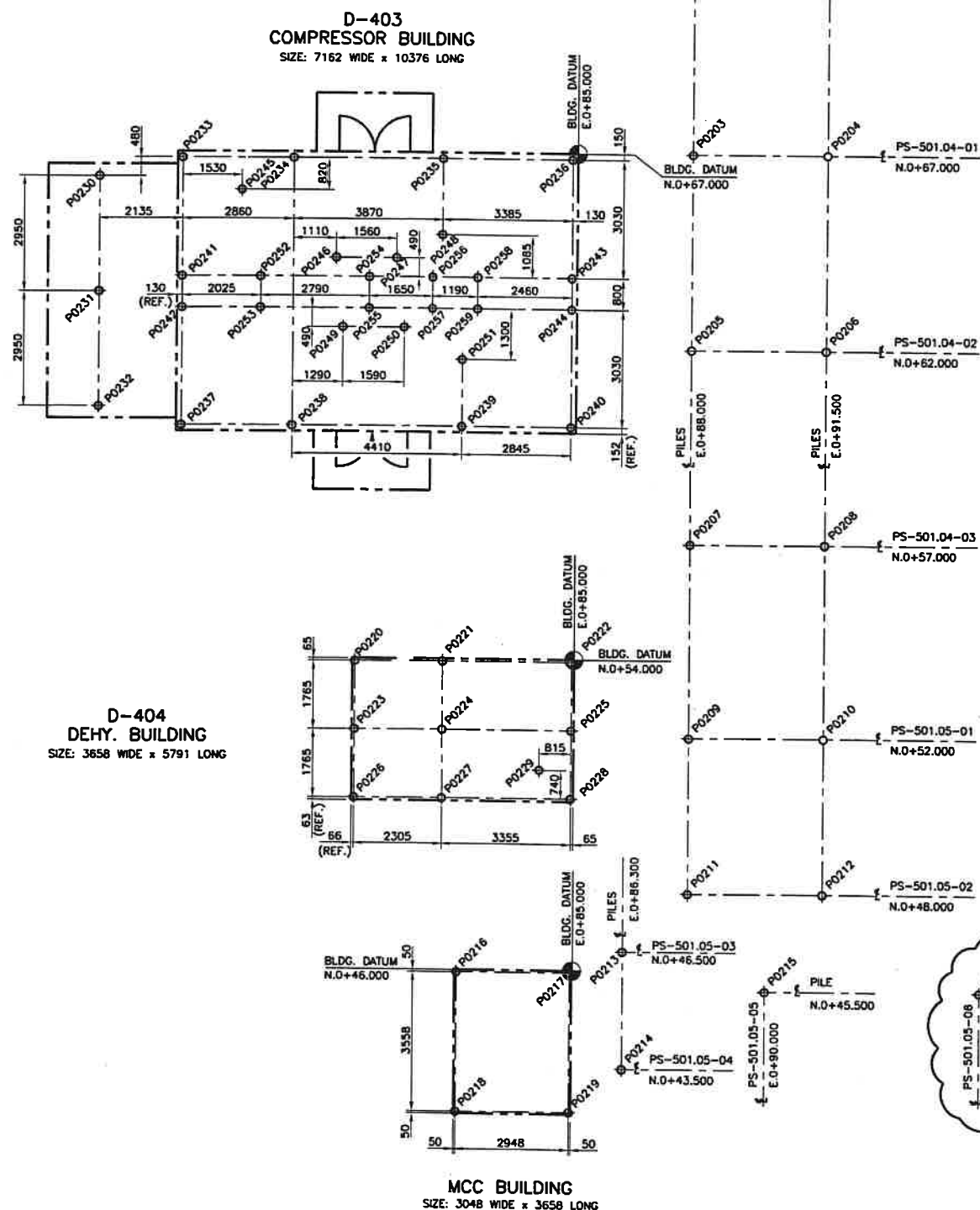
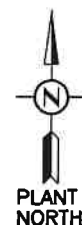
Direct Energy Resources

FEB 11 2002

PLOT No. 23175

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AREA LIMIT E.O.+60.000



AREA LIMIT N.O.+38.000

AREA LIMIT E.1+20.000

PILE SCHEDULE	202.01
PIILING KEY PLAN	200.00
REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
1	02.02.05	ADDED PILE P0260	JHT
0	02.02.04	ISSUED FOR CONSTRUCTION	RF

ENGINEER	B.TOMAS
APPROVAL	B.TOMAS
CHECKER	J.H-T
DRAWN	R.FERN
DATE	02.01.21
SCALE:	1:75
APPROVED	DATE

LICENCE AND PERMIT

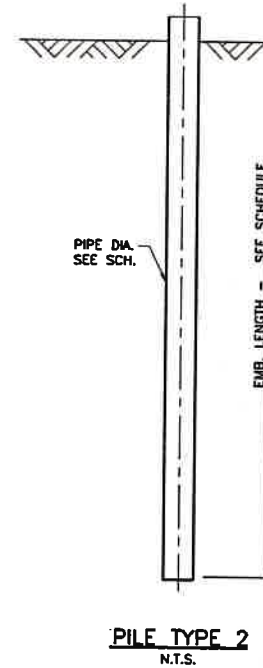
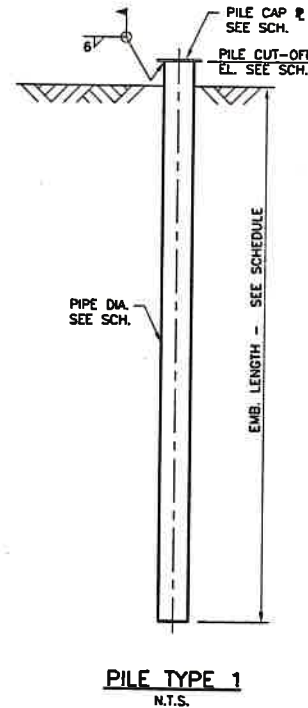
CHANNEL LAKE SOUTH COMPRESSOR STATION PROCESS AREA PILE LOCATION PLAN LSD 1-18-14-5 W4M
TECHSKIL INC. PHONE (403) 287-3375 FAX (403) 287-9982 EMAIL info@techskil.com

Direct Energy Resources
PLANT No. DRAWING No. REV
U1 201.02 1

PLOT No. 23175

PILE SCHEDULE

PILE NO.	TYPE	QTY.	DIA.	W.T.	EMB. LENGTH	PILE CAP SIZE	CUT-OFF EL.	REMARKS
P0101 - P0102	2	2	168.3	7.1	6000	-	100.887	INLET AREA PIPE SUPPORTS
P0103 - P0104	2	2	168.3	7.1	6000	-	100.911	INLET AREA PIPE SUPPORTS
P0105	2	1	168.3	7.1	6000	-	100.964	INLET AREA PIPE SUPPORT
P0106 - P0107	2	2	168.3	7.1	6000	-	100.938	INLET AREA PIPE SUPPORTS
P0108	2	1	168.3	7.1	6000	-	100.964	INLET AREA PIPE SUPPORT
P0109 - P0111	2	3	168.3	7.1	6000	-	97.848	INLET AREA PIPE SUPPORTS
P0112 - P0121	2	10	168.3	7.1	6000	-	100.197	PIPE RACK SUPPORTS
P0122 - P0127	1	6	219.1	8.2	8000	300x300x13	100.433	D-401 INLET SEPARATOR BUILDING
P0128 - P0133	1	6	168.3	7.1	7000	250x250x13	100.187	T-901 WATER TANK
P0134 - P0155	1	22	219.1	8.2	8000	300x300x13	100.437	D-402 COMPRESSOR BUILDING
P0156 - P0163	1	8	273.1	9.3	8000	350x350x20	100.430	D-402 COMPRESSOR BUILDING
P0201 - P0212	2	12	168.3	7.1	6000	-	100.197	PIPE RACK SUPPORTS
P0213 - P0214	2	2	168.3	7.1	6000	-	100.848	PIPE SUPPORTS
P0215	2	1	168.3	7.1	6000	-	100.913	PIPE SUPPORT
P0216 - P0219	1	4	168.3	7.1	7000	250x250x13	100.187	MCC BUILDING
P0220 - P0229	1	10	219.1	8.2	8000	300x300x13	100.380	D-404 DEHY. BUILDING
P0230 - P0251	1	22	219.1	8.2	8000	300x300x13	100.437	D-403 COMPRESSOR BUILDING
P0252 - P0259	1	8	273.1	9.3	8000	350x350x20	100.430	D-403 COMPRESSOR BUILDING
P0260	2	1	168.3	7.1	6000	-	97.848	SALES LINE PIPE SUPPORT
TOTAL PILE COUNT		123						



1. PILING MATERIAL SHALL BE NEW OR GOOD RECLAIMED PIPE WITH MINIMUM WALL THICKNESS OF STANDARD PIPE (SCH.40). MATERIAL SHALL MEET MINIMUM REQUIREMENTS FOR A-106-GR.B OR A-53-GR.B PIPE AND SHALL HAVE A MINIMUM CHARPY IMPACT OF 20.4 J (15 FT lbs) AT 0 DEGREES CELSIUS.
2. WHERE RECLAIMED PIPE IS USED THEN THE OWNER SHALL INSPECT EACH PIECE AND ANY SECTION NOT ACCEPTABLE TO HIM SHALL BE REMOVED FROM SITE.
3. CARE MUST BE TAKEN TO ENSURE PILE MATERIAL HAS NOT BEEN MAGNETISED NOR CONTAMINATED TO MAKE THE STEEL BRITTLE, CORRODED OR BENT.
4. SAMPLES OF PILE MATERIAL SHALL BE TESTED FOR STRENGTH, ELONGATION AND CHARPY IMPACT IF REQUIRED BY OWNER.
5. DRIVEN STEEL PILES SHALL BE DRIVEN TO A TOLERANCE OF 75mm Laterally AND WITHIN 2% OF THEORETICAL CENTRE OF PILE.
6. PILES SHALL BE DRIVEN WITH A HAMMER ENERGY PER BLOW OF NOT LESS THAN 24,400 JOULES (18,000 ft.lbs), AND WITH A HAMMER MASS OF NOT LESS THAN 3 TIMES THAT OF THE PILE AND NOT LESS THAN 1300 Kg (3000 lbs). MAXIMUM ENERGY PER BLOW SHALL BE 630 J /CM² CROSS SECTION AREA OF STEEL.
7. PROPER CUSHION SHALL BE PROVIDED BETWEEN THE HAMMER AND PILE.
8. TIPS SHALL BE PROVIDED AND INSTALLED WHERE REQUIRED.
9. PILES ARE DESIGNED AS FRICTION PILES AND SHALL BE DRIVEN TO A DEPTH AS SHOWN ON THE PILE SCHEDULE UNLESS REFUSAL IS REACHED AT A LESSER DEPTH IN WHICH CASE THE DESIGN ENGINEER SHALL BE NOTIFIED TO DECIDE IF CAPACITIES WILL BE ADEQUATE, OR IF FROST JACKING WILL BE A PROBLEM.
10. THE CONTRACTOR SHALL MAINTAIN DRIVING RECORDS FOR EACH PILE DRIVEN, SHOWING DATE AND TIME, SIZE, LENGTH, HAMMER ENERGY, HAMMER TYPE, BLOW COUNT FOR EACH FOOT AFTER 3 METERS DEPTH, AND REMARKS. ONE COPY OF THESE RECORDS SHALL BE SENT TO THE OWNER WITHIN ONE DAY OF DRIVING. (PHONE (403) 781-2440, FAX (403) 781-2424)
11. WHERE BEDROCK IS ENCOUNTERED AND WILL PREVENT ADEQUATE PENETRATION TO PREVENT UPLIFT, (LESS THAN 7m DEPTH (23 FT)) THEN THE PILE SHALL BE PREDRILLED TO 90% OF THE PIPE OUTSIDE DIAMETER AND A MINIMUM OF 2 m (7 FT) INTO COMPETENT BEDROCK AND THE PILE DRIVEN TO THE BOTTOM OF THE HOLE. CARE MUST BE TAKEN TO DRIVE THE PILE TO THE BOTTOM OF THE HOLE WITHOUT DAMAGING THE PIPE. THIS MAY NECESSITATE REVISING THE PREDRILLED HOLE DIAMETER. SHOULD THE DIAMETER CHANGE, THE DESIGN ENGINEER MUST BE NOTIFIED TO VERIFY THAT THE CAPACITY WILL NOT BE COMPROMISED.
12. REFUSAL MAY BE TAKEN AS:

PILES TO 114mm (4") DIA.	3 BLOWS PER 25mm (1")
PILES TO 168mm (6") DIA.	5 BLOWS PER 25mm (1")
PILES TO 219mm (8") DIA.	6 BLOWS PER 25mm (1")
PILES TO 273mm (10") DIA.	8 BLOWS PER 25mm (1")
PILES TO 324mm (12") DIA.	10 BLOWS PER 25mm (1")
13. FIELD TO CONFIRM THE EXISTENCE OF ANY UNDERGROUND PIPES OR ELECTRICAL CABLES PRIOR TO DRIVING PILES.
14. REFER TO TECHSKIL DWG. 931.08 FOR PILE CAP DETAIL.

PILE LOCATION PLAN	201.02
PILE LOCATION PLAN	201.01
REFERENCE DRAWINGS	DWG No

REV	DATE	REVISION DESCRIPTION	BY
1	02.02.05	REVISED AS SHOWN	JHT
0	02.02.04	ISSUED FOR CONSTRUCTION	RF

ENGINEER	B.TOMAS		
APPROVAL	B.TOMAS		
CHECKER	J.H-T		
DRAWN	R.FERN		
DATE	02.01.22		
SCALE:	NTS	APPROVED	DATE

LICENCE AND PERMIT

CHANNEL LAKE SOUTH COMPRESSOR STATION PILE NOTES DETAILS AND SCHEDULE LSD 1-18-14-5 W4M			
TECHSKIL INC.	PHONE (403) 287-3378 FAX (403) 287-9862 EMAIL info@techskil.com	PLANT No	DRAWING No
U1	202.01	1	