

# I . ABBREVIATION

NO.	ITEM	DESCRIPTION	REMARK
1	LC	LOCK CLOSE (VALVE WITH LOCKING DEVICE)	
2	LO	LOCK OPEN (VALVE WITH LOCKING DEVICE)	
3	LS	LIMIT SWITCH (See BELOW SPECIFICATION)	
4	NO	NOMARLLY OPEN	
5	NC	NOMARLLY CLOSE	
6	BI	BI-DIRECTIONAL VALVE	
7	UN1	UNI-DIRECTIONAL VALVE (TIGHTNESS SAME AS FLOW DIRECTION)	GENERAL TYPE
8	UN2	UNI-DIRECTIONAL VALVE (TIGHTNESS OPPOSITE TO FLOW DIRECTION)	
9	WAFER	DUAL PLATE WAFER CHECK VALVE	
10	SWING	SWING CHECK VALVE	
11	FLANGED	FLANGED TYPE VALVE	
12	PBE	SW VALVE WITH PBE(PLAIN BOTH ENDS) NIPPLE	
13	POE/TOE	SW VALVE WITH POE/TOE(PLAIN ONE END, THREAD ONE END) NIPPLE	
14	T/SW	THREADED / SOCKET WELD	
15	FULL	FULL PORT TYPE	
16	PIV	POST INDICATION VALVE FOR UNDERGROUND	
17	IV	INDICATING VALVE FOR A/G FIRE FIGHTING SYSTEM	
18	FB	FULL BORE TYPE	


주) Valve Type 선정시 상기사항은 매우 중요사항으로서 비고란에 표기된 내용을 반드시 확인후 구매하여야 할 것 입니다.


## GENERAL NOTES


- 1) 초저온 BALL VALVE(1R1J, 3R1J, 25R1J)중 1/2"~1.1/2"는 UNI-DIRECTIONAL TYPE이고, 2"이상은 BI-DIRECTIONAL TYPE 기준이다.
- 2) 초저온 GATE VALVE, BUTTERFLY VALVE는 TIGHTNESS DIRECTION이 있으며 이는 비고란에 표기되어 있다.
- 3) 1R1J, 3R1J, 25R1J 에 사용되는 모든 Ball Valves는 Remarks에 표기된 LO,LC에 상관없이 모두 Locking Device를 공급 해야 한다.
- 4) ISO 도면의 Valve Tag No를 본 valve List와 함께 확인한후 발주하여야 한다.
- 5) Hold 표기시 발주처 승인 후 구매하여야 한다.


## LIMIT SWITCH SPECIFICATION

- 1) WHEN SPECIFIED, LIMIT SWITCHES SHALL BE SECURELY FASTENED TO THE VALVE YOKE SUCH A MANNER NOT TO INTERFACE WITH ANY VALVE OR ACCESSORY FUNCTION.
- 2) LIMIT SWITCHES SHALL BE UNAFFECTED BY VIBRATION AND FLAME PROOF TYPE.
- 3) LIMIT SWITCHES SHALL NORMALLY HAVE SPDT(SINGLE PLOE, DOUBLE THROW) CONTACT ACTION, UNLESS OTHERWISE SPECIFIED.
- 4) LIMIT SWITCHES SHALL BE INSTALLED TO MONITOR VALVE POSITION IN CCR.
- 5) ENCLOSURE SHALL BE SUITABLE FOR IP 56 AND FLAME PROOF.
- 6) THE ELECTRICAL CONNECTIONS SHALL BE TERMINAL BOX TYPE AND CONDUIT OF 1/2" NPT, FEMALE TYPE.
- 7) THE TERMINAL BOX SHALL BE SUITABLE FOR AREA ELECTRICAL CLASSIFICATION (FLAME PROOF) AND SHALL HAVE A WEATHERPROOF ENCLOSURE.


													Issue Date : 2019.09.05 Ref. P&ID : Rev.3
			MANUAL VALVE LISTS										
NO.	Valve Tag	PID NO.	Coordi ation	SIZE (in inch)	Service Code	END TYPE	Piping Class	Temperature (°C)		Pressure (Barg)		Valve Type	
								Oper.	Design	Oper.	Design		
1	B-0112	LTB-R-DWG-2101	D7	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
2	B-0113	LTB-R-DWG-2101	E3	1"	NG	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
3	B-0115	LTB-R-DWG-2101	E3	2"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
4	B-0209	LTB-R-DWG-2102-1	E3	2"	N2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
5	B-0210	LTB-R-DWG-2102-1	E3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	Limit Switch
6	B-0211	LTB-R-DWG-2102-1	D3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
7	B-0212	LTB-R-DWG-2102-1	D3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
8	B-0214	LTB-R-DWG-2102-1	A3	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
9	B-0217	LTB-R-DWG-2102-1	D7	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
10	B-0218	LTB-R-DWG-2102-1	D3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
11	B-0219	LTB-R-DWG-2102-1	F3	1"	N2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Vent
12	B-0220	LTB-R-DWG-2102-1	E3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
13	B-0221	LTB-R-DWG-2102-1	B4	4"	LN2	BW, SCH 10S	1R1J	-162/60	-196/65	13.8	18	BALL	
14	B-0222	LTB-R-DWG-2102-1	A4	2"	LN2	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL	
15	B-0259	LTB-R-DWG-2102-2	E3	2"	N2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
16	B-0264	LTB-R-DWG-2102-2	A4	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	
17	B-0267	LTB-R-DWG-2102-2	D7	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
18	B-0268	LTB-R-DWG-2102-2	D3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
19	B-0269	LTB-R-DWG-2102-2	F3	1"	N2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Vent
20	B-0270	LTB-R-DWG-2102-2	E3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
21	B-0271	LTB-R-DWG-2102-2	B4	4"	LN2	BW, SCH 10S	1R1J	-162/60	-196/65	13.8	18	BALL	
22	B-0301	LTB-R-DWG-2103	B8	1"	LNG	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
23	B-0302	LTB-R-DWG-2103	B8	3"	LNG	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL	LO
24	B-0303	LTB-R-DWG-2103	B5	1"	LNG	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
25	B-0304	LTB-R-DWG-2103	B5	3"	LNG	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL	LO
26	B-0305	LTB-R-DWG-2103	C7	2"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
27	B-0306	LTB-R-DWG-2103	D6	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
28	B-0307	LTB-R-DWG-2103	D6	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
29	B-0308	LTB-R-DWG-2103	C5	2"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
30	B-0309	LTB-R-DWG-2103	D4	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
31	B-0310	LTB-R-DWG-2103	D4	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
32	B-0311	LTB-R-DWG-2103	C7	1/2"	LNG	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
33	B-0312	LTB-R-DWG-2103	B7	1/2"	LNG	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
34	B-0313	LTB-R-DWG-2103	C4	1/2"	LNG	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
35	B-0314	LTB-R-DWG-2103	B4	1/2"	LNG	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
36	B-0315	LTB-R-DWG-2103	C7	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
37	B-0316	LTB-R-DWG-2103	C4	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
38	B-0317	LTB-R-DWG-2103	D6	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain


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								Oper.	Design	Oper.	Design		
39	B-0318	LTB-R-DWG-2103	D4	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
40	B-0319	LTB-R-DWG-2103	E2	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
41	B-0401	LTB-R-DWG-2104	B7	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
42	B-0402	LTB-R-DWG-2104	B7	3"	LN2	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL	LO
43	B-0403	LTB-R-DWG-2104	B5	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain
44	B-0404	LTB-R-DWG-2104	B5	3"	LN2	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL	LO
45	B-0405	LTB-R-DWG-2104	C7	2"	N2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
46	B-0406	LTB-R-DWG-2104	D6	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
47	B-0407	LTB-R-DWG-2104	D6	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
48	B-0408	LTB-R-DWG-2104	C4	2"	N2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
49	B-0409	LTB-R-DWG-2104	D4	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
50	B-0410	LTB-R-DWG-2104	D4	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
51	B-0411	LTB-R-DWG-2104	C6	1/2"	LN2	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
52	B-0412	LTB-R-DWG-2104	B6	1/2"	LN2	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
53	B-0413	LTB-R-DWG-2104	C4	1/2"	LN2	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
54	B-0414	LTB-R-DWG-2104	B4	1/2"	LN2	SW, 800LB POE/TOE	3R1J	-162/60	-196/65	24	26	BALL	UN2
55	B-0415	LTB-R-DWG-2104	C6	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
56	B-0416	LTB-R-DWG-2104	C4	2"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
57	B-0417	LTB-R-DWG-2104	D6	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
58	B-0418	LTB-R-DWG-2104	D4	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
59	B-0419	LTB-R-DWG-2104	A4	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	
60	B-0420	LTB-R-DWG-2104	E2	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
61	B-0501	LTB-R-DWG-2105	C7	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
62	B-0601	LTB-R-DWG-2106	C6	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain
63	B-0602	LTB-R-DWG-2106	C4	1"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain
64	B-0603	LTB-R-DWG-2106	E4	4"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	
65	B-0604	LTB-R-DWG-2106	C4	4"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	
66	B-0605	LTB-R-DWG-2106	C6	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	
67	B-0606	LTB-R-DWG-2106	C3	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	Limit Switch
68	B-0702	LTB-R-DWG-2107-1	C5	2"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
69	B-0703	LTB-R-DWG-2107-1	D5	2"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
70	B-0712	LTB-R-DWG-2107-2	C5	2"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
71	B-0713	LTB-R-DWG-2107-2	D5	2"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
72	B-0721	LTB-R-DWG-2107-3	A5	1"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain
73	B-0722	LTB-R-DWG-2107-3	C5	2"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
74	B-0723	LTB-R-DWG-2107-3	D5	2"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	LO
75	B-0741	LTB-R-DWG-2107-4	E5	3"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	NO
76	B-0742	LTB-R-DWG-2107-4	C5	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain


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								Oper.	Design	Oper.	Design			
77	B-0743	LTB-R-DWG-2107-4	B5	6"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL	LC	
78	B-0802	LTB-R-DWG-2108	C7	10"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL	LO	
79	B-0803	LTB-R-DWG-2108	C6	4"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL	LO	
80	B-0804	LTB-R-DWG-2108	A6	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	LO	
81	B-0805	LTB-R-DWG-2108	A5	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
82	B-0806	LTB-R-DWG-2108	A5	2"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
83	B-0807	LTB-R-DWG-2108	D4	6"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL	LO	
84	B-0808	LTB-R-DWG-2108	A5	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
85	B-0809	LTB-R-DWG-2108	B4	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
86	B-0901	LTB-R-DWG-2109	E2	3"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
87	B-0902	LTB-R-DWG-2109	D2	3"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL	NC	
88	B-1001	LTB-R-DWG-2110	C4	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
89	B-1002	LTB-R-DWG-2110	D7	3"	LN2	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL		
90	B-1004	LTB-R-DWG-2110	B5	3"	LNG	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL		
91	B-1005	LTB-R-DWG-2110	B5	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
92	B-1006	LTB-R-DWG-2110	B5	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
93	B-1101	LTB-R-DWG-2111	C4	1"	NG	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Drain	
94	B-1102	LTB-R-DWG-2111	A4	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL		
95	B-1103	LTB-R-DWG-2111	E3	1"	NG	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL		
96	B-1201	LTB-R-DWG-2112	C6	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
97	B-1202	LTB-R-DWG-2112	C5	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
98	B-1203	LTB-R-DWG-2112	C6	3"	LNG	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL		
99	B-1204	LTB-R-DWG-2112	B6	3"	LN2	BW, SCH 40S	1R1J	-162/60	-196/65	13.8	18	BALL		
100	B-1205	LTB-R-DWG-2112	C4	2"	N2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
101	B-1206	LTB-R-DWG-2112	C4	2"	NG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
102	B-1207	LTB-R-DWG-2112	C3	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL		
103	B-1208	LTB-R-DWG-2112	C6	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
104	B-1209	LTB-R-DWG-2112	C6	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
105	B-1210	LTB-R-DWG-2112	C5	1"	N2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Vent	
106	B-1211	LTB-R-DWG-2112	C4	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Vent	
107	B-1301	LTB-R-DWG-2113-1	F7	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
108	B-1302	LTB-R-DWG-2113-1	E7	4"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
109	B-1303	LTB-R-DWG-2113-1	E7	6"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL		
110	B-1307	LTB-R-DWG-2113-1	F4	6"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL		
111	B-1308	LTB-R-DWG-2113-1	E4	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
112	B-1309	LTB-R-DWG-2113-1	D4	4"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
113	B-1310	LTB-R-DWG-2113-1	D4	6"	NG	BW, SCH 10S	3R1J	-162/60	-196/65	24	26	BALL		
114	B-1311	LTB-R-DWG-2113-1	D4	3"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		

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			MANUAL VALVE LISTS											
NO.	Valve Tag	PID NO.	Coordi ation	SIZE (in inch)	Service Code	END TYPE	Piping Class	Temperature (°C)		Pressure (Barg)		Valve Type		Remark
								Oper.	Design	Oper.	Design			
115	B-1312	LTB-R-DWG-2113-1	C4	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
116	B-1313	LTB-R-DWG-2113-1	E4	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
117	B-1314	LTB-R-DWG-2113-1	E3	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
118	B-1315	LTB-R-DWG-2113-1	E4	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
119	B-1316	LTB-R-DWG-2113-1	D4	3"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
120	B-1317	LTB-R-DWG-2113-1	D3	3"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
121	B-1318	LTB-R-DWG-2113-1	D4	1"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain	
122	B-1319	LTB-R-DWG-2113-1	B4	3"	LN2	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
123	B-1320	LTB-R-DWG-2113-1	C4	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
124	B-1321	LTB-R-DWG-2113-1	C3	3"	LN2	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
125	B-1322	LTB-R-DWG-2113-1	C4	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
126	B-1323	LTB-R-DWG-2113-1	B4	3"	LN2	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
127	B-1324	LTB-R-DWG-2113-1	B3	3"	LN2	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
128	B-1325	LTB-R-DWG-2113-1	B4	1"	LN2	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain	
129	B-1330	LTB-R-DWG-2113-1	F4	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Vent	
130	B-1331	LTB-R-DWG-2113-1	E4	1"	LNG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
131	B-1332	LTB-R-DWG-2113-1	E4	1"	LNG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain	
132	B-1333	LTB-R-DWG-2113-1	D4	1"	NG	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Vent	
133	B-1334	LTB-R-DWG-2113-1	D4	1"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Vent	
134	B-1335	LTB-R-DWG-2113-1	C4	1"	LN2	SW, 800LB PBE	3R1J	-162/60	-196/65	24	26	BALL	Drain	
135	B-1336	LTB-R-DWG-2113-1	B4	1"	LN2	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Drain	
136	B-1351	LTB-R-DWG-2113-2	E7	3"	LNG	BW, SCH 40S	3R1J	-162/60	-196/65	24	26	BALL		
137	B-1352	LTB-R-DWG-2113-2	E4	2"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL		
138	B-1353	LTB-R-DWG-2113-2	E4	1"	NG	BW, SCH XXS	25R1J	-162/60	-196/65	320	342	BALL	Vent	
139	B-1502	LTB-R-DWG-2118	D6	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	Vent	
140	B-1601	LTB-R-DWG-2116-1	D7	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL		
141	B-1602	LTB-R-DWG-2116-1	D5	2"	N2	RF, 150LB	1P1	70	-29/100	7	18	BALL		
142	B-1603	LTB-R-DWG-2116-1	C2	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
143	B-1604	LTB-R-DWG-2116-1	C4	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
144	B-1605	LTB-R-DWG-2116-1	C4	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
145	B-1606	LTB-R-DWG-2116-1	B4	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
146	B-1607	LTB-R-DWG-2116-1	D4	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
147	B-1608	LTB-R-DWG-2116-1	D4	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
148	B-1613	LTB-R-DWG-2003	C7	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
149	B-1614	LTB-R-DWG-2003	C7	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
150	B-1615	LTB-R-DWG-2003	C7	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
151	B-1616	LTB-R-DWG-2003	C7	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		
152	B-1617	LTB-R-DWG-2003	C7	1"	N2	SW, 800LB PBE	1P1	70	-29/100	7	18	BALL		



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NO.	Valve Tag	PID NO.	Coordi ation	SIZE (in inch)	Service Code	END TYPE	Piping Class	Temperature (°C)		Pressure (Barg)		Valve Type	
								Oper.	Design	Oper.	Design		
153	B-1701	LTB-R-DWG-2117	C7	6"	NG	RF, 300LB	3P1	50	-29/75	20	26	BALL	
154	B-1702	LTB-R-DWG-2117	C6	6"	NG	RF, 300LB	3P1	50	-29/75	20	26	BALL	
155	B-1703	LTB-R-DWG-2117	C6	6"	NG	RF, 300LB	3P1	50	-29/75	20	26	BALL	
156	B-1801	LTB-R-DWG-2118	D6	1"	LN2	SW, 800LB PBE	1R1J	-162/60	-196/65	13.8	18	BALL	
157	G-1501	LTB-R-DWG-2115	D4	2"	IA	RF, 150LB	Z1	15	-29/65	7	12	GATE	
158	G-1610	LTB-R-DWG-2116-2	D6	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	Drain
159	G-1611	LTB-R-DWG-2116-2	B5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	Drain
160	G-1651	LTB-R-DWG-2116-2	D6	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
161	G-1652	LTB-R-DWG-2116-2	D6	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
162	G-1653	LTB-R-DWG-2116-2	D6	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
163	G-1654	LTB-R-DWG-2116-2	C6	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
164	G-1655	LTB-R-DWG-2116-2	C5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
165	G-1656	LTB-R-DWG-2116-2	C5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
166	G-1657	LTB-R-DWG-2116-2	C5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
167	G-1658	LTB-R-DWG-2116-2	C5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
168	G-1659	LTB-R-DWG-2116-2	C4	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
169	G-1660	LTB-R-DWG-2116-2	B5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
170	G-1661	LTB-R-DWG-2116-2	B5	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	
171	G-1662	LTB-R-DWG-2116-2	C4	1"	IA	SW, 800LB	Z1	15	-29/65	7	12	GATE	Drain
172	G-0506	LTB-R-DWG-2105	B5	3/4"	GWR	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	
173	G-0503	LTB-R-DWG-2105	C5	4"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
174	G-0504	LTB-R-DWG-2105	D6	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
175	G-0505	LTB-R-DWG-2105	D6	4"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
176	G-0701	LTB-R-DWG-2107-1	D5	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
177	G-0704	LTB-R-DWG-2107-1	C5	3"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
178	G-0705	LTB-R-DWG-2107-1	D5	3"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
179	G-0711	LTB-R-DWG-2107-2	D5	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
180	G-0714	LTB-R-DWG-2107-2	C5	3"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
181	G-0715	LTB-R-DWG-2107-2	D5	3"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
182	G-0721	LTB-R-DWG-2107-3	D5	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
183	G-0724	LTB-R-DWG-2107-3	C5	3"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
184	G-0725	LTB-R-DWG-2107-3	D5	3"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
185	G-0801	LTB-R-DWG-2108	E5	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
186	G-0802	LTB-R-DWG-2108	D5	3"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
187	G-0805	LTB-R-DWG-2108	C5	3"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
188	G-1301	LTB-R-DWG-2113-1	C7	6"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	
189	G-1302	LTB-R-DWG-2113-1	A4	6"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
190	G-1351	LTB-R-DWG-2113-2	C7	6"	GWS	RF, 150LB	1P1	70	-29/100	7	18	GATE	

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NO.	Valve Tag	PID NO.	Coordi ation	SIZE (in inch)	Service Code	END TYPE	Piping Class	Temperature (°C)		Pressure (Barg)		Valve Type	
								Oper.	Design	Oper.	Design		
191	G-1352	LTB-R-DWG-2113-2	C4	6"	GWR	RF, 150LB	1P1	70	-29/100	7	18	GATE	
192	G-1401	LTB-R-DWG-2114	D8	3/4"	GWR	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
193	G-1402	LTB-R-DWG-2114	C3	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Drain
194	G-1403	LTB-R-DWG-2114	D8	3/4"	GWR	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Vent
195	G-1404	LTB-R-DWG-2114	C3	3/4"	GWS	SW, 800LB T/SW	1P1	70	-29/100	7	18	GATE	Vent
196	G-1502	LTB-R-DWG-2115	C4	2"	PA	RF, 150LB	1P1	70	-29/100	7	18	GATE	
197	G-1681	LTB-R-DWG-2116-3	C4	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
198	G-1682	LTB-R-DWG-2116-3	C6	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
199	G-1683	LTB-R-DWG-2116-3	C6	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
200	G-1684	LTB-R-DWG-2116-3	B6	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
201	G-1685	LTB-R-DWG-2116-3	D7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
202	G-1691	LTB-R-DWG-2003	C7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
203	G-1692	LTB-R-DWG-2003	C7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
204	G-1693	LTB-R-DWG-2003	C7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
205	G-1694	LTB-R-DWG-2003	C7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
206	G-1695	LTB-R-DWG-2003	C7	1"	PA	SW, 800LB	1P1	70	-29/100	7	18	GATE	
207	T-0301	LTB-R-DWG-2103	D6	2"	LNG	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
208	T-0302	LTB-R-DWG-2103	D4	2"	LNG	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
209	T-0303	LTB-R-DWG-2103	D2	1"	LNG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
210	T-0304	LTB-R-DWG-2103	C3	1"	LNG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
211	T-0401	LTB-R-DWG-2104	D6	2"	LN2	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
212	T-0402	LTB-R-DWG-2104	D4	2"	LN2	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
213	T-0403	LTB-R-DWG-2104	D2	1"	LN2	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
214	T-0601	LTB-R-DWG-2106	C8	1"	LNG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
215	T-0602	LTB-R-DWG-2106	D5	1"	LNG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
216	T-0702	LTB-R-DWG-2107-4	D5	1"	NG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
217	T-0801	LTB-R-DWG-2108	A5	2"	LNG	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
218	T-0803	LTB-R-DWG-2108	D2	1"	NG	SW	3R1J	-162/60	-196/65	24	26	GLOBE	
219	T-1001	LTB-R-DWG-2110	B5	3"	LNG	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
220	T-1302	LTB-R-DWG-2113-1	E4	3"	LNG	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
221	T-1304	LTB-R-DWG-2113-1	C4	3"	LN2	BW	3R1J	-162/60	-196/65	24	26	GLOBE	
222	T-1701	LTB-R-DWG-2117	C7	6"	NG	RF	3P1	50	-29/75	20	26	GLOBE	NC
223	T-0703	LTB-R-DWG-2107-4	D5	3"	NG	BW	25R1J	-162/60	-196/65	320	342	GLOBE	
224	T-1303	LTB-R-DWG-2113-1	D4	3"	LNG	BW	25R1J	-162/60	-196/65	320	342	GLOBE	
225	T-1305	LTB-R-DWG-2113-1	B4	3"	LN2	BW	25R1J	-162/60	-196/65	320	342	GLOBE	
226	T-0101	LTB-R-DWG-2101	D7	3"	LNG	BW	1R1J	-162/60	-196/65	13.8	18	GLOBE	
227	T-0103	LTB-R-DWG-2101	D8	1"	LNG	SW	1R1J	-162/60	-196/65	13.8	18	GLOBE	
228	T-0104	LTB-R-DWG-2101	A3	1"	LNG	SW	1R1J	-162/60	-196/65	13.8	18	GLOBE	

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NO.	Valve Tag	PID NO.	Coordi ation	SIZE (in inch)	Service Code	END TYPE	Piping Class	Temperature (°C)		Pressure (Barg)		Valve Type		Remark
								Oper.	Design	Oper.	Design			
229	T-0201	LTB-R-DWG-2102-1	D8	3"	LN2	BW	1R1J	-162/60	-196/65	13.8	18	GLOBE		
230	T-0203	LTB-R-DWG-2102-1	D8	1"	LN2	SW	1R1J	-162/60	-196/65	13.8	18	GLOBE		
231	T-0204	LTB-R-DWG-2102-1	B3	1"	LN2	SW	1R1J	-162/60	-196/65	13.8	18	GLOBE		
232	T-0205	LTB-R-DWG-2102-1	A3	1"	LN2	SW	1R1J	-162/60	-196/65	13.8	18	GLOBE		
233	T-0501	LTB-R-DWG-2105	B3	4"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
234	T-0701	LTB-R-DWG-2107-1	C3	3"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
235	T-0711	LTB-R-DWG-2107-2	C3	3"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
236	T-0721	LTB-R-DWG-2107-3	C3	3"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
237	T-0802	LTB-R-DWG-2108	C4	3"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
238	T-1301	LTB-R-DWG-2113-1	A3	6"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
239	T-1351	LTB-R-DWG-2113-2	C3	6"	GWR	RF	1P1	70	-29/100	7	18	GLOBE		
240	T-1401	LTB-R-DWG-2114	D3	1"	GWS	SW	1P1	70	-29/100	7	18	GLOBE		