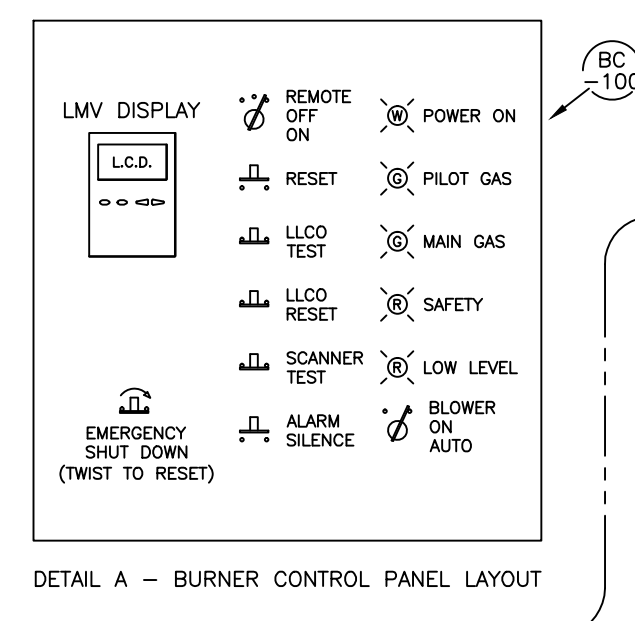
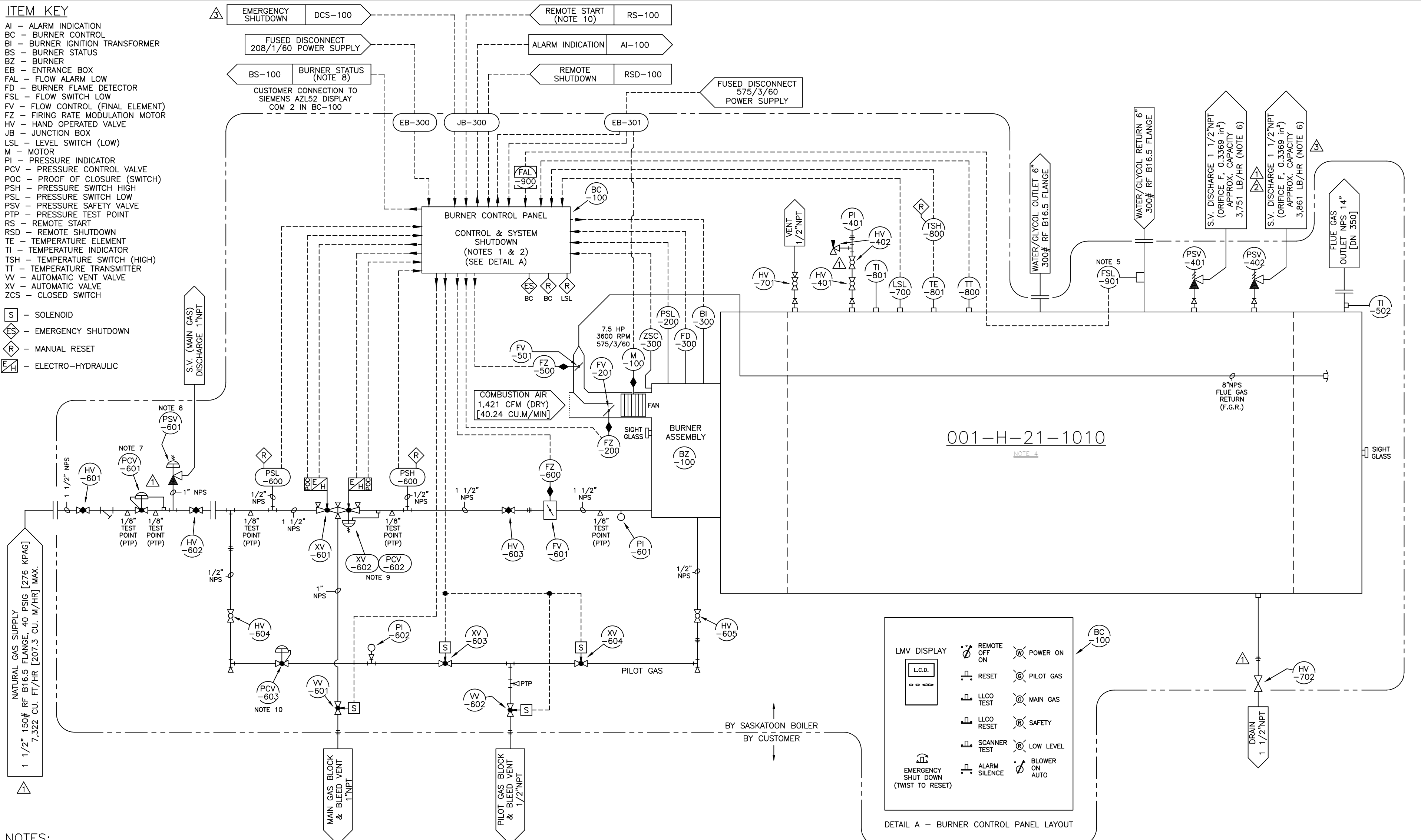


ITEM KEY

- AI - ALARM INDICATION
- BC - BURNER CONTROL
- BI - BURNER IGNITION TRANSFORMER
- BS - BURNER STATUS
- BZ - BURNER
- EB - ENTRANCE BOX
- FAL - FLOW ALARM LOW
- FD - BURNER FLAME DETECTOR
- FSL - FLOW SWITCH LOW
- FV - FLOW CONTROL (FINAL ELEMENT)
- FZ - FIRING RATE MODULATION MOTOR
- HV - HAND OPERATED VALVE
- JB - JUNCTION BOX
- LSL - LEVEL SWITCH (LOW)
- M - MOTOR
- PI - PRESSURE INDICATOR
- PCV - PRESSURE CONTROL VALVE
- POC - PROOF OF CLOSURE (SWITCH)
- PSH - PRESSURE SWITCH HIGH
- PSL - PRESSURE SWITCH LOW
- PSV - PRESSURE SAFETY VALVE
- PTP - PRESSURE TEST POINT
- RS - REMOTE START
- RSD - REMOTE SHUTDOWN
- TE - TEMPERATURE ELEMENT
- TI - TEMPERATURE INDICATOR
- TSH - TEMPERATURE SWITCH (HIGH)
- TT - TEMPERATURE TRANSMITTER
- V - AUTOMATIC VENT VALVE
- XV - AUTOMATIC VALVE
- ZCS - CLOSED SWITCH

- [S] - SOLENOID
- [ES] - EMERGENCY SHUTDOWN
- [R] - MANUAL RESET
- [E/H] - ELECTRO-HYDRAULIC



NOTES:

1. BOILER FUEL GAS & COMBUSTION AIR CONTROLLED BY FLUID TEMPERATURE USING TEMPERATURE INPUT FROM TEMPERATURE TRANSMITTER (TI-800) TO BURNER CONTROL (BC-100). BC-100 OPERATING TEMPERATURE SET POINT MUST BE BELOW HIGH TEMPERATURE SWITCH (TSH-800) SET POINT.
2. BOILER BURNER WILL SHUT DOWN UPON:
 - (A) POWER SUPPLY INTERRUPTION
 - (B) LOW WATER LEVEL (LSL-700), MANUAL RESET AT BC-100.
 - (C) HIGH LIQUID TEMPERATURE (TSH-800), BACKUP TO BC-100 OPERATING TEMPERATURE, MANUAL RESET AT TSH-800.
 - (D) HIGH LIQUID TEMPERATURE (OPERATING) (BC-100) (SEE NOTE iii)
 - (E) LOW COMBUSTION AIR PRESSURE (PSL-200), MANUAL RESET AT BC-100.
 - (F) LOW GAS PRESSURE (PSL-600), MANUAL RESET AT PSL-600.
 - (G) HIGH GAS PRESSURE (PSH-600), MANUAL RESET AT PSH-600.
 - (H) FLAME FAILURE OR FAILURE TO IGNITE (FD-300), MANUAL RESET AT BC-100.
 - (J) LOW WATER FLOW (FT-901), MANUAL RESET AT BC-100.
 - (K) EMERGENCY SHUTDOWN AT BC-100.
 - (L) CUSTOMER'S REMOTE SHUTDOWN DEVICE (RS-100) (IF TERMINALS RSD IN JUCTION BOX NOT JUMPERED).
3. BURNER REMOTE START SWITCH (CUSTOMER INSTALLED) IS ONLY ACTIVE WHEN THE BURNER ON/OFF/REMOTE SWITCH IS IN THE "REMOTE" POSITION.
4. SASKATOON BOILER MODEL JWG-175 (001-H-21-1010), ASME SECTION I WATER/GLYCOL POWER BOILER.
 - HEAT OUTPUT: 5,857,600 BTU/HR (1 717 KW)
 - DESIGN PRESSURE: 250 PSIG [1 724 KPAG]
 - MAXIMUM RECOMMENDED OPERATING PRESSURE (LIMITED BY SAFETY VALVES PSV-401 & PSV-402): 112.5 PSIG [776 KPAG]
 - DESIGN TEMPERATURE: 410°F [210°C]
 - MAXIMUM TEMPERATURE (LIMITED BY HIGH TEMPERATURE SWITCH TSH-800): 250°F [121°C]
5. FLOW SWITCH (FSL-901 & FAL-900) MINIMUM ALLOWABLE FLOW 250 USGPM [946 LPM].
6. SAFETY RELIEF VALVES: (PSV-401) KUNKLE 927 (STEEL), 1"NPT INLET x 1 1/2"NPT OUTLET, SET AT 225 PSIG [1 551 KPAG]. (PSV-402) KUNKLE 927 (STEEL), 1"NPT INLET x 1 1/2"NPT OUTLET, SET AT 232 PSIG [1 600 KPAG]. MAXIMUM RECOMMENDED OPERATED PRESSURE 202 PSIG [1 393 KPAG].
7. LINE PRESSURE REGULATOR (PCV-601): 1 1/2"NPT FISHER 299H (INTEGRAL PILOT) DUAL REGISTRATION, 1/2" ORIFICE, 3.25 TO 6 PSIG OUTLET SET RANGE, SET AT 5 PSIG.
8. MAIN GAS SAFETY RELIEF VALVE (PSV-601): 1"NPT FISHER 289H, 4 TO 15 PSIG SET RANGE, SET AT 8 PSIG.
9. MAIN GAS PRESSURE REGULATOR (PCV-601): 1 1/2"NPT SIEMENS SKP25.011U1 w/ VGD20.403U VALVE BODY.
10. PILOT GAS PRESSURE REGULATOR (PCV-602): 1/2"NPT MAXITROL 325-5A.
11. CUSTOMER CONNECTION TO SIEMENS AZL52 DISPLAY COM 2 MODBUS CONNECTION IS AN RJ45 CONNECTOR V.24/RS232 PROTOCOL. THIS CONNECTION CAN BE CONVERTED INTO AN RS-485 PORT WITH A HEDIN TEX H-4 INTERFACE CONVERTER BY CUSTOMER 9FT/3m MAXIMUM DATA LINE LENGTH FROM AZL52 TO H-4. PIN 5 & PIN 7 CAN DELIVER A 5mA CURRENT EACH. ADEQUATE INSULATION AGAINST OTHER POTENTIALS MUST BE ENSURED.
12. BURNER BLOWER MOTOR MAY BE OPERATED MANUALLY WITH THE BLOWER ON/AUTO SWITCH. THE ON/AUTO SWITCH IS ONLY ACTIVE WHEN THE BURNER ON/OFF/REMOTE SWITCH IS IN THE "OFF" POSITION. THIS PREVENTS FAULTS DURING BURNER CONTROL PRE IGNITION TESTS.

NO.	REVISION	BY	DATE
1	REVISED SAFETY VALVE SETTING/SIZE, GAS INLET PRESSURE, & PRESSURE GAUGE VALVE MANIFOLD.	MR	21AUG2013
2	REVISED S.V. SETTING/SIZE PER CUSTOMER.	MR	06NOV2013
3	REV'D S.V. SETTING & ADDED DCS INPUT RELAY.	MR	22JAN2014

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PIPING & INSTRUMENTATION DIAGRAM FOR GLYCOL/WATER POWER BOILER, MODULATION FIRING, NATURAL GAS, STACK THERMOMETER, ALARM INDICATION, BURNER ON/OFF/REMOTE, REMOTE START, REMOTE SHUTDOWN, BLOWER ON/AUTO, FLOW SWITCH, SIEMENS BURNER CONTROL & LOW NOx BURNER

DWG BY: MIKE ROWE	CHK'D BY:
SASKATOON BOILER MFG. CO. LTD.	
2011 QUEBEC AVENUE, SASKATOON, SK, CANADA, S7K 1W5	
PROJECT/JOB NO.: 8426-50	TAG: 001-H-21-1010
MODEL: JWG-175	UNITS: ONE
OWNER: DEVON CANADA CORPORATION	
LOCATION: FERRIER CPF PROJECT	LSR: 11-02-038-08 W5M, AB
DATE: 15 JULY 2013	JOB: 13-39A
	DWG: B1802C-1