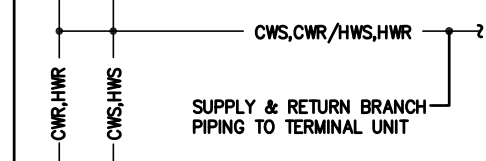




GENERAL LEGEND					
<small>(Not all symbols listed below are used on these drawings)</small>					
ABBR.	SYMBOL	DESCRIPTION	ABBR.	SYMBOL	DESCRIPTION
		SECTION DESIGNATION			CAP END OF PIPE
		SECTION DRAWN ON THIS SHEET			PITCH DOWN IN DIRECTION OF ARROW
		SECTION CUT ON THIS SHEET			PIPE ANCHOR
		RISER DIAGRAM NUMBER			PIPE ALIGNMENT GUIDE
		SHEET RISER IS DRAWN ON			UNION OR FLANGE
		EQUIPMENT UNIT IDENTIFICATION			CONCENTRIC PIPE REDUCER
		EQUIPMENT UNIT NUMBER			ECCENTRIC PIPE REDUCER
		DIFFUSER IDENTIFICATION	PRV		PRESSURE REDUCING VALVE
		DIFFUSER NECK DIAMETER	PRVR		PRESSURE AND/OR TEMPERATURE RELIEF VALVE
		DIFFUSER CFM			PLUG VALVE
(E)		EXISTING	GV		GATE VALVE
(N)		NEW			VERTICAL PIPE VALVE
(R)		RELOCATED	QV		GLOBE VALVE
(F)		FUTURE	QLV		BUTTERFLY VALVE
		POINT OF CONNECTION, NEW TO EXISTING	BV		BALL VALVE
		DIRECTION OF FLOW IN PIPE	CV		CHECK VALVE
		DUCTWORK, PIPING AND EQUIPMENT TO BE REMOVED			SOLENOID VALVE
DA	ϕ	DIAMETER			BUTTERFLY SOLENOID VALVE
WAD		WALL ACCESS DOOR			HOSE END DRAIN VALVE
NIC		NOT IN CONTRACT	P/T		PRESSURE/TEMPERATURE TAP
ATF		ABOVE FINISHED FLOOR			STRAINER
GC		GENERAL CONTRACTOR			STRAINER W/ BLOWDOWN
MC		MECHANICAL CONTRACTOR			FLEXIBLE PIPE CONNECTOR
EC		ELECTRICAL CONTRACTOR			THERMOMETER
TCO		TEMPERATURE CONTROL CONTRACTOR			PRESSURE GAUGE
KEC		KITCHEN EQUIPMENT CONTRACTOR			SIGHT GLASS
C		COMMON	C.A.P.		CEILING ACCESS PANEL
NC		NORMALLY CLOSED			PUMP
NO		NORMALLY OPEN	TB		THRUST BLOCK

HVAC LEGEND					
<small>(Not all symbols listed below are used on these drawings)</small>					
ABBR.	SYMBOL	DESCRIPTION	ABBR.	SYMBOL	DESCRIPTION
HWS	---	HEATING WATER SUPPLY PIPING			SUPPLY DUCT UP / SUPPLY DUCT DOWN
HWR	---	HEATING WATER RETURN PIPING			RETURN/EXHAUST DUCT UP / RETURN/EXHAUST DUCT DOWN
HTWS	---	HIGH TEMPERATURE HOT WATER SUPPLY PIPING			ROUND DUCT UP / ROUND DUCT DOWN
HTWR	---	HIGH TEMPERATURE HOT WATER RETURN PIPING	48F12		INDICATES FLAT OVAL DUCTWORK
CWS	---	CHILLED WATER SUPPLY PIPING			FLEXIBLE DUCT CONNECTION
CWR	---	CHILLED WATER RETURN PIPING	BDD		BACKDRAFT DAMPER
D	---	COOLING COIL DRAIN PAN PIPING	TCO		TEMP. CONTROL DAMPER-OPPOSED BLADE
C	---	CONDENSER WATER SUPPLY PIPING	TCO		TEMP. CONTROL DAMPER-PARALLEL BLADE
CR	---	CONDENSER WATER RETURN PIPING			LOUVER WITH SCREEN
LPS	---	LOW PRESSURE STEAM SUPPLY PIPING (0-15#)	MVD		MANUAL VOLUME DAMPER
LPC	---	LOW PRESSURE CONDENSATE RETURN PIPING			MOTOR OPERATED DAMPER
MPS	---	MEDIUM PRESSURE STEAM SUPPLY PIPING (16-50#)			SPIN-IN FITTING WITH MVD
MPC	---	MEDIUM PRESSURE CONDENSATE RETURN PIPING	FD		DUCT FIRE DAMPER
HPS	---	HIGH PRESSURE STEAM SUPPLY PIPING (61-125#)	FSD		COMBINATION DUCT SMOKE & FIRE DAMPER
HPC	---	HIGH PRESSURE CONDENSATE RETURN PIPING	SD		DUCT SMOKE DAMPER
PC	---	PUMPED CONDENSATE PIPING			DUCT SMOKE DETECTOR
BBD	---	BOILER BLOWDOWN PIPING	DAO		DUCT ACCESS DOOR
BF	---	BOILER FEED WATER PIPING			TURNING VANES IN DUCT ELBOW
RL	---	REFRIGERANT LIQUID PIPING	EP		ELECTRIC-PNEUMATIC CONTROL VALVE
RS	---	REFRIGERANT SUCTION PIPING	PE		PNEUMATIC-ELECTRIC CONTROL SWITCH
RHG	---	REFRIGERANT HOT GAS PIPING			TEMPERATURE SENSOR
					WALL MOUNTED THERMOSTAT
TT		THERMOSTATIC STEAM TRAP			UNIT MOUNTED THERMOSTAT
F&T		FLOAT AND THERMOSTATIC STEAM TRAP			HUMIDISTAT
IBT		INVERTED BUCKET STEAM TRAP			UNDERCUT DOOR
TCV		(2 OR 3-WAY) TEMPERATURE CONTROL VALVE			LOUVER
		VENTURI METER			DUCT RISE
		CALIBRATED BALANCING VALVE			DUCT DROP
RSV		REFRIGERANT SERVICE VALVE			
DPS		DIFFERENTIAL PRESSURE SWITCH	A.L.		ACOUSTICALLY LINED DUCTWORK
MAV		MANUAL AIR VENT	TCOAD		TEMPERATURE CONTROL OUTSIDE AIR DAMPER
AAV		AUTOMATIC AIR VENT	TCRAD		TEMPERATURE CONTROL RETURN AIR DAMPER
FS		FLOW SWITCH	TCRAD		TEMPERATURE CONTROL EXHAUST AIR DAMPER
EJ		EXPANSION JOINT	SP IN WC		STATIC PRESSURE IN INCHES WATER COLUMN
BJ		BALL JOINT EXPANSION COMPENSATOR	SD		SUPPLY AIR DEVICE
			RG		RETURN/EXHAUST AIR DEVICE



PLUMBING LEGEND					
<small>(Not all symbols listed below are used on these drawings)</small>					
ABBR.	SYMBOL	DESCRIPTION	ABBR.	SYMBOL	DESCRIPTION
CW	---	DOMESTIC COLD WATER PIPING	SCD		SURFACE CLEANOUT
HW	---	DOMESTIC HOT WATER PIPING	FCO		FLOOR CLEANOUT
HWC	---	DOMESTIC HOT WATER CIRC. PIPING	WCO		WALL CLEANOUT
C-SW	---	SOFTENED DOMESTIC COLD WATER PIPING	COI		CLEANOUT TEE
H-SW	---	SOFTENED DOMESTIC HOT WATER PIPING	LCO		LINE CLEANOUT
140° HW	---	DOMESTIC HOT WATER PIPING @ TEMPERATURE SHOWN			FIXTURE OR DRAIN P-TRAP
V	---	VENT PIPING	AD		AREA DRAIN
AV	---	ACID RESISTANT VENT PIPING	FD		FLOOR DRAIN (ROUND GRATE)
W	---	WASTE PIPING (ABOVE FLOOR IN BUILDING)	FS		FLOOR SINK (SQUARE GRATE)
W	---	WASTE PIPING (BELOW FLOOR IN BUILDING)	RD/OD		ROOF DRAIN OR OVERFLOW DRAIN
AW	---	ACID RESISTANT WASTE PIPING (ABOVE FLOOR IN BUILDING)			GAS PRESSURE REDUCING VALVE
AW	---	ACID RESISTANT WASTE PIPING (BELOW FLOOR IN BUILDING)	VB		ATMOSPHERIC VACUUM BREAKER
GD	---	GREASE DRAIN (WASTE LINE TO GREASE INTERCEPTOR)	RPBP		REDUCED PRESSURE BACKFLOW PREVENTER
IW	---	INDIRECT WASTE PIPING	BFP		DOUBLE CHECK BACKFLOW PREVENTER
S	---	SANITARY SEWER PIPING (OUTSIDE BUILDING)	SA		SHOCK ARRESTER W/ISOLATION VALVE
ST	---	STORM SEWER PIPING (BELOW GRADE OUTSIDE BUILDING)	GC		GAS SHUT-OFF VALVE
SSD	---	SUB-SURFACE DRAIN PIPING			STOP AND DRAIN VALVE
SD	---	STORM DRAIN PIPING (ABOVE FLOOR IN BUILDING)	FC		FLOW CONTROL VALVE
SD	---	STORM DRAIN PIPING (BELOW FLOOR IN BUILDING)	WH		WALL HYDRANT
OD	---	OVERFLOW DRAIN PIPING (ABOVE FLOOR IN BUILDING)	HB		HOSE BIBB
OD	---	OVERFLOW DRAIN PIPING (BELOW FLOOR IN BUILDING)	YH		YARD HYDRANT
A	---	COMPRESSED AIR	MH		MANHOLE
G	---	NATURAL GAS PIPING	CI		CAST IRON
LPG	---	LIQUEFIED PETROLEUM GAS PIPING (PROPANE)	VCP		VITRIFIED CLAY PIPE
GV	---	GAS VENT PIPING	CB		CATCH BASIN
			YVR		VENT THRU ROOF
			IE		INVERT ELEVATION
			PVC		POLYVINYL CHLORIDE

GENERAL NOTES:

- WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
- A DETAILED METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY AFFECTS THE SAFETY OF THE OCCUPANTS, OWNER'S EQUIPMENT OR VALUABLE CONTENTS OR ANY SYSTEM WHICH SUPPORTS THESE SYSTEMS, OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK AND SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY DISCREPANCIES FOR RESOLUTION.
- COORDINATE WORK WITH ALL TRADES.
- CONTRACTOR IS RESPONSIBLE FOR SECURING AND WEATHERPROOFING ANY ROOF OPENING NOT COMPLETED DURING WORKING HOURS.
- COORDINATE ALL DUCTWORK AND PIPING WITH EQUIPMENT, STRUCTURE, ETC.

DEMOLITION GENERAL NOTES:

- EXISTING ITEMS TO REMAIN ARE DENOTED LIGHTLY UNLESS OTHERWISE NOTED. ALL ITEMS SHOWN HATCHED OR CROSS HATCHED SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL NOT SHUT-OFF OR PUT-OUT OF SERVICE ANY SYSTEMS OR SERVICE WITHOUT FIRST COORDINATING WITH THE OWNER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND UNDERSTAND THE EXTENT OF THE REMODEL WORK REQUIRED PRIOR TO BID. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENT.
- CONTRACTOR SHALL DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENT.
- PRIOR TO COMMENCEMENT OF ANY DEMOLITION WORK, VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
- ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY UNLESS OTHERWISE NOTED. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER UNLESS OTHERWISE NOTED AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
- WHERE EXISTING PIPING, T.C. TUBING/WIRING ETC. ARE TO BE REMOVED FROM WALLS WHICH ARE REMAINING, THE WALLS SHALL BE REPAIRED TO MATCH ORIGINAL CONDITIONS.

PROJECT NOTES:

- THIS PROJECT IS TO REPLACE THE BURNERS ON BOILERS B-2 AND B-3. THE EXISTING BOILERS ARE KEMANEZ FIRE TUBE FIREBOX BOILERS. THE BOILERS PROVIDE HEATING HOT WATER TO THE LOCC CAMPUS.
- THIS PROJECT IS TO BE PHASED. ONLY ONE BURNER IS TO BE REPLACED AT A TIME. THE BURNER B-3 IS TO BE INSTALLED FIRST. THIS NEW BURNER HAS TO BE COMMISSIONED AND PROVEN RELIABLE BEFORE MOVING ON TO INSTALLING BURNER B-2.
- THE BUILDINGS ARE TO REMAIN OCCUPIED DURING CONSTRUCTION. PHASE WORK TO KEEP BUILDING SYSTEMS ON LINE. OUTAGES TO THE HEATING WATER TO BE LIMITED TO A FEW HOURS AND COORDINATED WITH THE OWNER WELL IN ADVANCE. PREPARE METHOD OF PROCEDURES (MOPS) FOR ALL SYSTEM SHUT DOWNS.
- PAINT ALL EXPOSED PIPING TO MATCH EXISTING. THE COLORS ARE TO IDENTIFY SYSTEMS.
- INSTALL NEW MOTORIZED CONTROL DAMPERS AND ACTUATORS FROM THE DRAFT CONTROL SYSTEM AS PART OF THE BASE BID. THE DAMPERS ARE FOR HEAT RETENTION INSIDE THE BOILERS. THIS IS FOR ALL THREE BOILERS (B-1, B-2 AND B-3).
- ADD ALTERNATE 1: INSPECT, TEST AND SERVICE EXISTING MOTOR CONTROL CENTER (MCC).
- ADD ALTERNATE 2: PROVIDE OXYGEN O2 CONTROL FOR THE NEW BURNERS AT B-2 AND B-3 AND EXISTING BURNER AT B-1. THIS INCLUDES THE ZIRCONIUM DIOXIDE MEASURING CELLS, FLUE GAS COLLECTORS, EXPANSION CONTROL MODULES, AND CONNECTIONS TO THE BURNER CONTROLS.

DRAWING TITLE

MECHANICAL LEGENDS AND NOTES

LCCC - MAIN PLANT
BOILER BURNER UPGRADES

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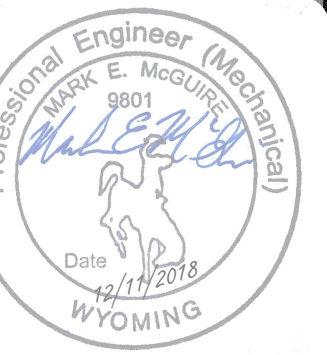
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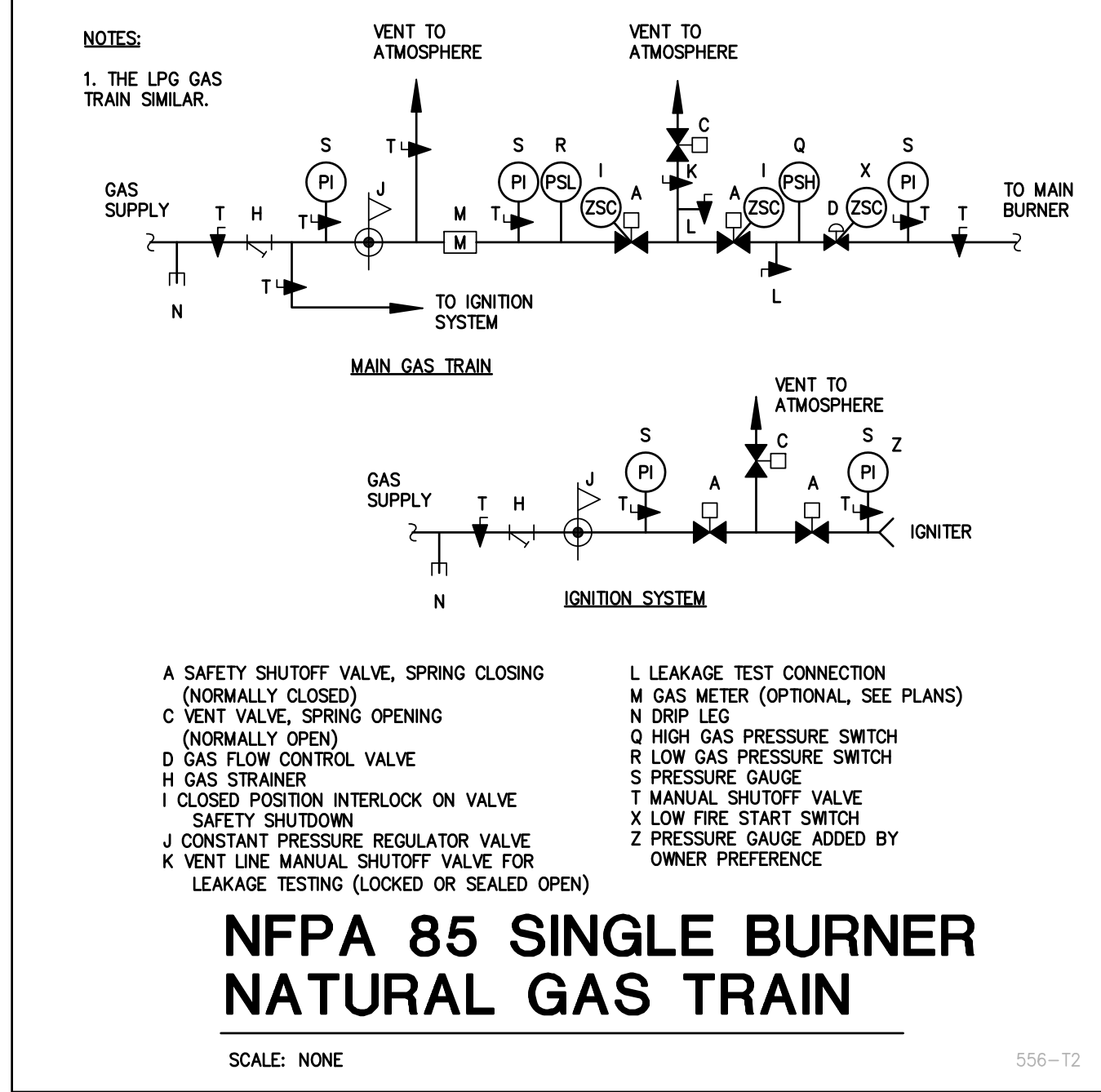
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BURNER SCHEDULE FOR WATER BOILERS												
DESIG.	MFR.	MODEL	ASSOCIATED BOILER	BOILER HORSEPOWER (BHP)	MBH INPUT (S.L.)	MBH OUTPUT (S.L.)	MBH OUTPUT AT ELEV.	MAX FUEL CONSUMPTION		BURNER TURN DOWN	BLOWER MOTOR (HP)	NOTES
								NAT. GAS (CFH)	PROPANE (CFH)			
B-2	RIELLO	RS300/EV	KEWANEE MODEL 7L287KG TYPE C FIREBOX FIRETUBE	265	11,072	8,857	8,857	10,457	3,543	7:1	7.5	
B-3	RIELLO	RS300/EV	KEWANEE MODEL 7L287KG TYPE C FIREBOX FIRETUBE	265	11,072	8,857	8,857	10,457	3,543	7:1	7.5	

NOTES:
 1. SITE ELEVATION = 6100 FT.
 2. PROVIDE DUAL FUEL BURNERS WITH FLAME SAFEGUARD SYSTEM, PARALLEL POSITIONING FIRING CONTROLS, FULL MODULATION, VARIABLE FREQUENCY DRIVES, TOUCH SCREEN, AND BANET MS/TP NETWORK CONNECTIONS.
 3. FUEL RATES BASED ON NATURAL GAS = 847 BTU/CF AND PROPANE = 2,500 BTU/CF. NATURAL GAS SUPPLY PRESSURE IS 2 PSIG. PROPANE GAS SUPPLY PRESSURE IS 2 PSIG. PROVIDE RESSURE REGULATORS.
 4. EMISSIONS: 40 PPM NOX OR LESS UNDER ALL FIRING CONDITIONS.

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CONTROL SEQUENCES

- BOILER SEQUENCE OF OPERATION: B-1, B-2, AND B-3**
- MODIFY THE EXISTING GAS CONTROLS TO INCORPORATE THE FOLLOWING SEQUENCE OF OPERATION.
 - THE BAS SYSTEM SHALL OPERATE THE BOILERS IN A LEAD-LAG-LAG CONFIGURATION, ON AN OWNER DEFINED SCHEDULE. ALL BOILERS MAY OPERATE AT THE SAME TIME. THE LEAD BOILER SHALL OPERATE ANY TIME THE HEATING WATER SYSTEM IS ENABLED. IF A BOILER FAILS TO OPERATE, INDICATE AN ALARM, AND GO TO THE NEXT BOILER SCHEDULED.
 - START THE ASSOCIATED BOILER PUMP AND OPEN THE HW ISOLATION VALVE WHEN A BOILER IS ENABLED.
 - THE BOILERS SHALL RUN SUBJECT TO THEIR OWN INTERNAL SAFETIES AND CONTROLS. THE PACKAGE BOILER CONTROLS SHALL START THE BOILERS AND MODULATE THE BURNERS TO MAINTAIN THE HEATING WATER SUPPLY TEMPERATURE (HWS) SET POINT. THE BAS SHALL BE ABLE TO REST THE HWS SET POINT. THE FUEL SELECTION (NATURAL GAS OR LPG) SHALL BE DONE BY A MANUAL SWITCH AT THE BOILERS.
 - THE FIRST LAG BOILER SHALL BE TURNED ON WHEN THE HEATING WATER TEMPERATURE IS 10°F (ADJ.) UNDER SET POINT OR WHEN THE OPERATING BOILER'S FIRING RATE IS OVER 95% (ADJ.) FOR 15 MINUTES (ADJ.). MODULATE BOTH BOILERS IN UNISON. THE SECOND LAG BOILER TO BE STARTED IN A SIMILAR FASHION.
 - THE LAG BOILERS SHALL BE TURNED OFF WHEN THE HEATING WATER TEMPERATURE IS 10°F (ADJ.) OVER SET POINT OR WHEN THE BOILER FIRING RATE IS UNDER 40% (ADJ.) FOR 15 MINUTES (ADJ.). THE LAG BOILERS SHALL BE TURNED OFF ONE AT A TIME.
 - THE HEATING WATER SUPPLY TEMPERATURE SET POINT SHALL BE 180°F (ADJ.).
 - THE BOILER CONTROLS SHALL HAVE A NETWORK INTERFACE TO THE BAS. INDICATE BOILER ALARMS AND STATUS AT THE BAS.
 - EMERGENCY SHUTDOWN: THE BOILERS SHALL SHUT DOWN WHEN THE EMERGENCY POWER OFF SWITCH(ES) ARE ACTIVATED. THE BOILERS SHALL OPERATE IN ACCORDANCE WITH ASME CSD-1.
 - HOT STANDBY: FROM MANUAL INPUTS AT THE BAS, THE HOT STANDBY MODE CAN BE ENABLED. THIS APPLIES FOR THE LAG BOILERS DURING A STANDBY CONDITION. START THE ASSOCIATED BOILER PUMP BUT KEEP THE HW ISOLATION VALVE CLOSED. FIRE THE BOILERS AT LOW FIRING RATE. ON WHEN THE BOILER HWS TEMPERATURE IS 120°F (ADJ.) OR LESS AND OFF WHEN THE BOILER HWS TEMPERATURE REACHES 140°F (ADJ.).
- DRAFT CONTROL**
- BASE BID: CONTROL THE BOILER MOTORIZED DAMPERS IN AN OPEN-CLOSE FASHION. OPEN THE DAMPERS 100% WHEN THE BOILERS ARE ENABLE. HAVE END SWITCHES MAKE BEFORE THE BOILERS CAN PROCEED. CONNECT THE MOTORIZED CONTROL DAMPERS TO THE BOILER SAFETY CIRCUITS.
 - ADD ALTERNATE 2: DRAFT CONTROL TO BE THROUGH THE DRAFT CONTROL SYSTEM. THE BAS TO BE USED FOR MONITORING FLUE PRESSURE, DAMPER POSITION, AND GENERAL ALARMS. THE DAMPER TO HAVE A SPRING RETURN TO FAIL OPEN. CONNECT THE DRAFT CONTROL TO THE BOILER SAFETY CIRCUIT.

BUILDING AUTOMATION SYSTEM CONTROL MATRIX									
EQUIPMENT, SYSTEM & POINT	NO. OF UNITS	POINT TYPE				STATUS	ALARM	NETWORK COMMUNICATIONS	REMARKS
		DIGITAL INPUT	DIGITAL OUTPUT	ANALOG INPUT	ANALOG OUTPUT				
BOILER BURNERS: B-2 AND B-3 BACNET NETWORK CONNECTION									
BOILER ENABLE (OFF-HOT STAND BY-ON)			X						
BOILER STATUS (OFF-HOT STAND BY-ON)		X							
BOILER GENERAL ALARM		X					X		
BOILER HWS SET POINT					X				
BOILER HWS TEMPERATURE				X					
BOILER HWR TEMPERATURE				X					
BOILER FIRING RATE				X					
BOILER STACK OXYGEN O2 LEVEL				X					ADD ALTERNATE 1
BOILER FUEL SELECTION		X							FUEL SELECTED AT BURNER. BAS FOR MONITORING.
DRAFT CONTROL									
DRAFT CONTROL GENERAL ALARM		X							
FLUE PRESSURE				X					
DAMPER POSITION				X					

NOTES:
 1. THE CONTROLS SHALL BE RELIABLE CONTROLS, INSTALLED BY AN OWNER APPROVED CONTRACTOR.
 2. REFER TO DRAWINGS FOR QUANTITY.
 3. PROVIDE OPEN PROTOCOL COMMUNICATION WITH FACTORY SUPPLIED CONTROLLER.
 4. BAS CONTRACTOR SHALL COORDINATE STATUS LEVEL FOR EACH ALARM POINT WITH THE OWNER TO DETERMINE WHICH ONES REQUIRE IMMEDIATE ATTENTION.

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DRAWING TITLE

MECHANICAL SCHEDULES AND DETAILS

LCCC - MAIN PLANT BOILER BURNER UPGRADES

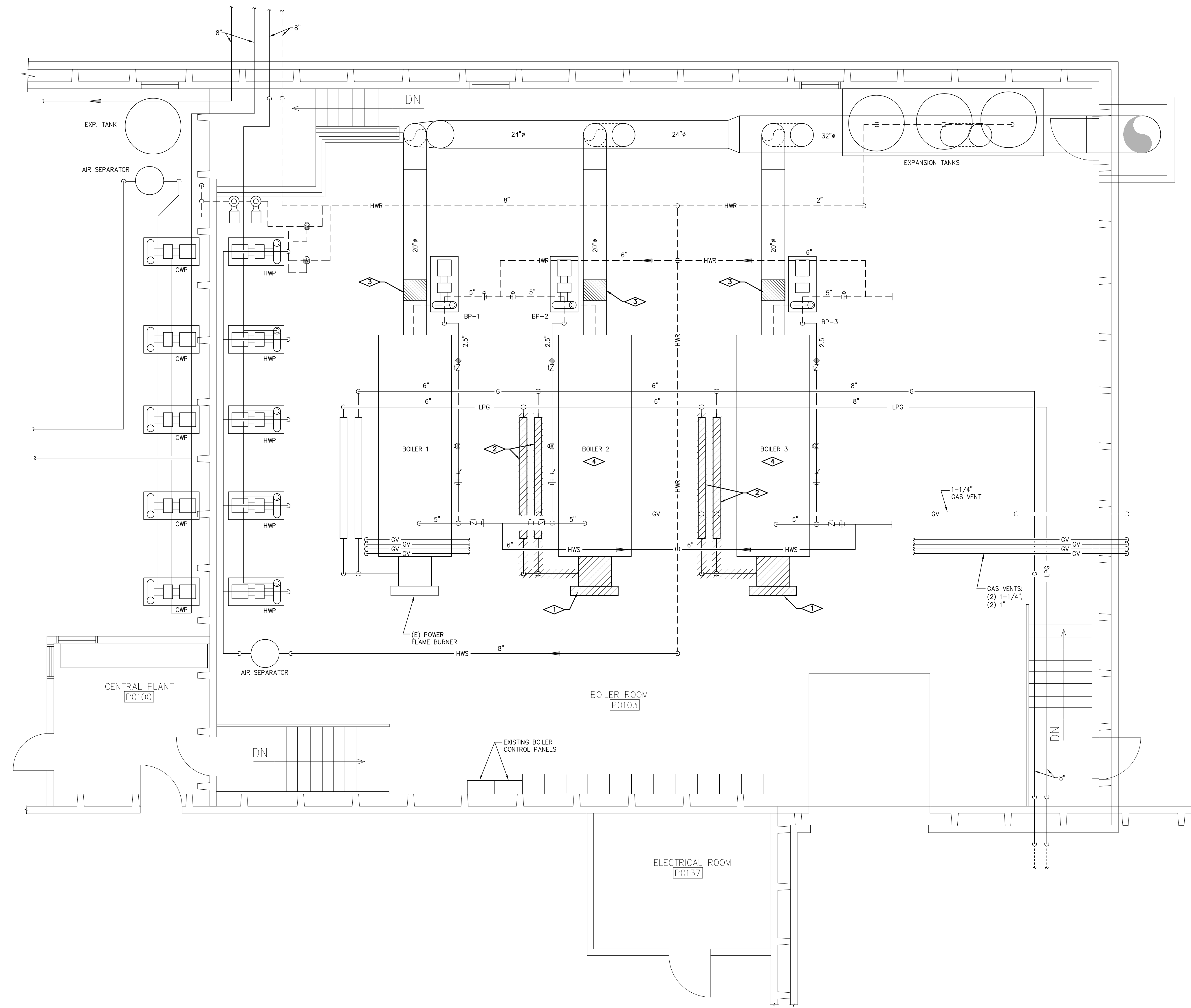
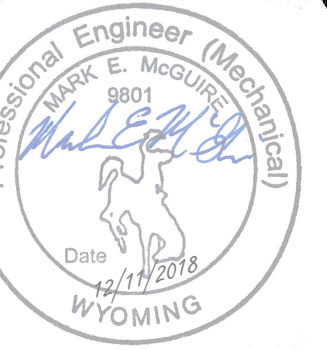
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DEMO KEY NOTES:

- 1 DEMO AND REMOVE THE BURNERS ON THE EXISTING BOILERS B-2 AND B-3.
- 2 DEMO AND REMOVE THE EXISTING NATURAL GAS AND PROPANE GAS TRUNKS. COORDINATE THE EXTENT OF PIPING DEMOLITION WITH THE NEW EQUIPMENT AND PIPING TO BE INSTALLED.
- 3 REMOVE SECTIONS OF THE EXISTING FLUES FOR THE NEW MOTORIZED CONTROL DAMPERS. THE EXISTING FLUE IS A METALBESTOS MODEL PS, DOUBLE WALL WITH 304 STAINLESS.
- 4 FOR REFERENCE, THE EXISTING BOILERS ARE SUPPORTED ON STRUCTURAL STEEL. THE BOILERS ARE 24'-8" AFF.

DRAWING TITLE

**BOILER PLANT
MECHANICAL DEMO PLAN**

TITLE

**LCCC - MAIN PLANT
BOILER BURNER UPGRADES**

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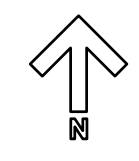
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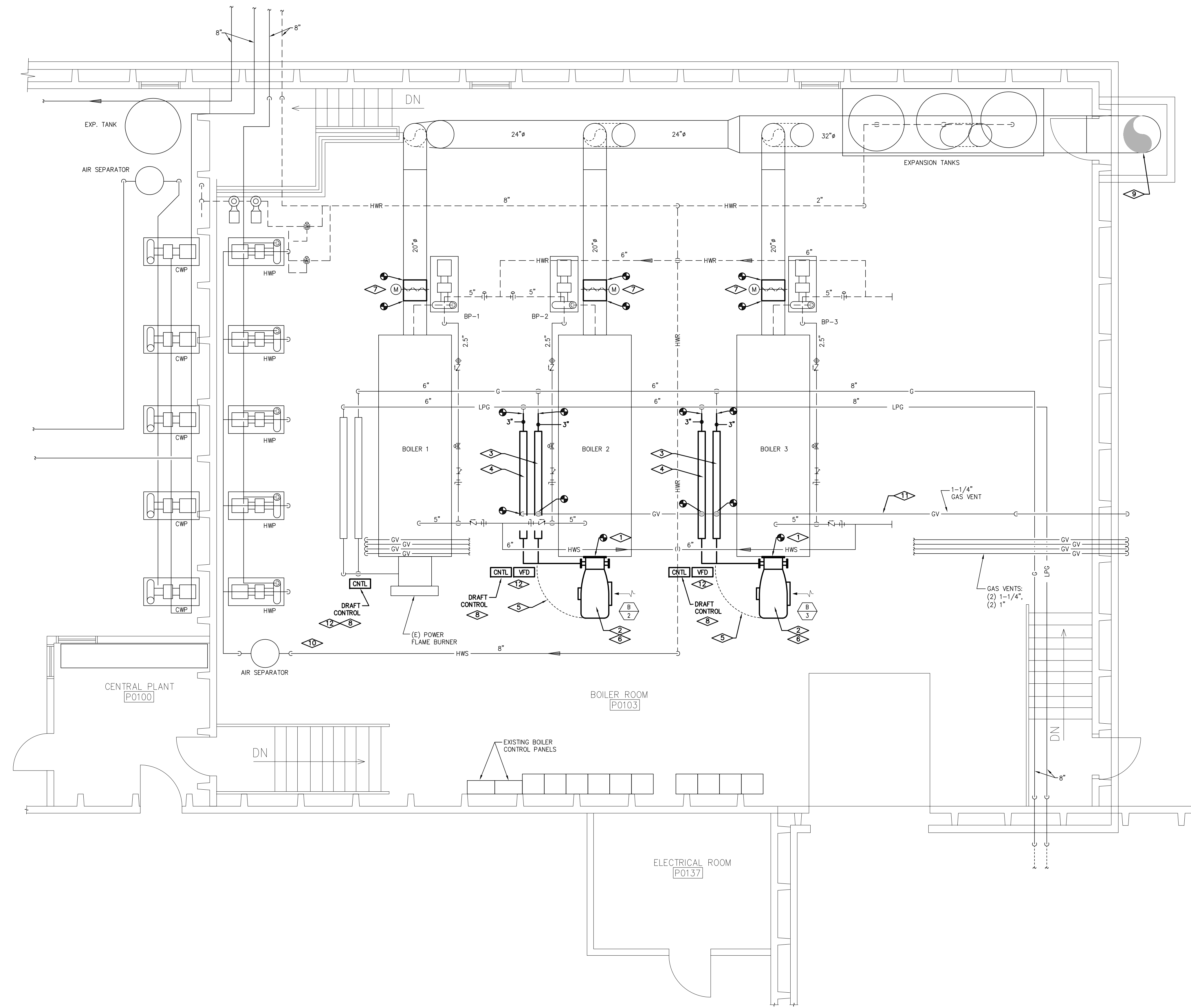
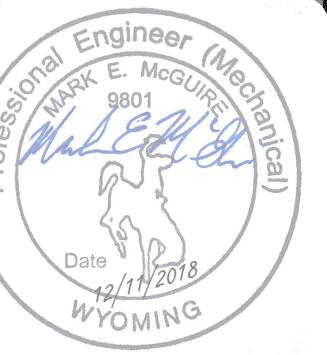
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BOILER PLANT MECHANICAL PLAN - DEMOLITION
 SCALE: 1/8"=1'-0"



NEW KEY NOTES:

- 1. NEW BURNER PLUGS (REFRACTORY NECK) AND MOUNTING PLATES. COORDINATE DIMENSIONS OF THE NEW BURNERS WITH THE EXISTING BOILERS. WELD THE MOUNTING PLATES TO THE BOILERS. THE WELDING TO BE DONE BY CURRENT NATIONAL BOARD R STAMP HOLDERS IN ACCORDANCE WITH ASME BOILER PRESSURE CODES. SUBMIT CERTIFICATIONS.
- 2. INSTALL THE NEW BURNERS ON THE EXISTING BOILERS.
- 3. NEW NATURAL GAS TRAINS AND PRESSURE REGULATORS. EXTEND 3" PIPING TO THE NEW BURNERS. ROUTE THE GAS VENTS TO THE EXTERIOR OF THE BUILDING.
- 4. NEW LPG GAS TRAIN AND PRESSURE REGULATOR. EXTEND 3" PIPING TO THE NEW BURNERS. ROUTE THE GAS VENTS TO THE EXTERIOR OF THE BUILDING.
- 5. THE BURNERS SWING OPEN. INSTALL ELECTRICAL CONNECTIONS AND PIPING TO ALLOW THE BURNERS TO OPEN UP.
- 6. HARD WIRE THE EXISTING BOILER SAFETIES TO THE NEW BURNER FLAME SAFEGUARD SYSTEM. SAFETIES INCLUDE LOW WATER CUTOFF (MANUAL RESET), HIGH TEMPERATURE LIMIT (MANUAL RESET), HIGH OPERATING TEMPERATURE LIMIT (AUTO RESET), AND EPO SWITCHES AT THE DOORS (ASME CSD-1). VERIFY OPERATION AND CALIBRATE THE EXISTING SAFETIES.
- 7. INSTALL THE NEW MOTORIZED CONTROL DAMPERS AND ACTUATORS FROM THE DRAFT CONTROL SYSTEM. BASIS OF DESIGN: US DRAFT COMPANY OCS (OVERDRAFT CONTROL SYSTEM). STAINLESS STEEL (316L) OPPOSED BLADE CONTROL DAMPERS. INSULATE THE NEW MOTORIZED DAMPERS. THE INSULATION AND JACKET TO MATCH THE THERMAL PERFORMANCE OF THE EXISTING FLUE.
- 8. ADD ALTERNATE 2: INSTALL THE REMAINDER OF THE DRAFT CONTROL SYSTEM. BASIS OF DESIGN: US DRAFT COMPANY OCS (OVERDRAFT CONTROL SYSTEM). THIS INCLUDES THE CONTROLLERS, PRESSURE TRANSDUCERS, FLOW SWITCHES, CONTROL PANELS, AND CONTROL WIRING.
- 9. THE EXISTING FLUE TERMINATES ±36 FT ABOVE THE BOILER ROOM FLOOR IN A CONE.
- 10. FOR REFERENCE, COMBUSTION AIR IS THROUGH A ROOF HOOD AND A 96/36 DUCT. THE COMBUSTION AIR IS TEMPERED BY A WING COIL, MODEL IFB C-114, AND HEATING HOT WATER.
- 11. INSTALL THE GAS VENTS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. THIS INCLUDES ROUTING THE VENTS INDIVIDUALLY OR IN A MANIFOLD. THIS EXISTING 1-1/4" GAS VENT MAY BE REUSED. ROUTE THE NEW VENTS THROUGH THE EAST WALL, ADJACENT TO THE EXISTING VENTS.
- 12. PROVIDE UNI-STRUT RACK FOR MOUNTING OF VFD AND CONTROLS. INCLUDE EXPANDED SIZE OF RACK TO ACCOMMODATE ALTERNATE 2 DRAFT CONTROLS.

BOILER PLANT MECHANICAL PLAN - NEW
SCALE: 1/8"=1'-0"

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BOILER PLANT MECHANICAL PLAN
LCCC - MAIN PLANT BOILER BURNER UPGRADES
CATOR | RUMA & ASSOCIATES CO.
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ISSUES/REVISIONS:	
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