

WILLISTON MIDDLE SCHOOL BOILER REPLACEMENT

FOR NEW HANOVER COUNTY SCHOOLS

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Wilmington, NC 28401



New Hanover County Schools
Engaging Students, Achieving Excellence

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NC# P-0506

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MECHANICAL PIPE SYMBOLS	
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	45 DEGREE ELBOW DOWN
	45 DEGREE ELBOW SIDE
	45 DEGREE ELBOW UP
	ANGLE VALVE
	BACKFLOW PREVENTER
	BALL VALVE SIDE
	BLOCK VALVE / SHUTOFF VALVE
	BOILER BLOWDOWN VALVE (SUPPLIED WITH BOILER)
	BOILER STOP CHECK VALVE
	BUTTERFLY VALVE SIDE
	CHECK VALVE SIDE
	CIRCUIT SETTER
	DOMESTIC WATER METER
	DRAIN
	ELBOW DOWN
	ELBOW SIDE
	ELBOW UP
	FLANGE
	FLANGED STARTUP STRAINER
	FLOW MEASURING ORIFICE
	FLOW TRANSMITTER
	GATE VALVE SIDE
	GAUGE
	GLOBE VALVE
	PUMP END
	PUMP SIDE
	PUMP
	RPZ
	SLIP ON FLANGE END
	SLIP ON FLANGE SIDE
	STEAM TRAP
	TEE BRANCH DOWN
	TEE END UP
	TEE SIDE
	TRIPLE DUTY VALVE
	WELD NECK FLANGE END
	WELD NECK FLANGE SIDE

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

MECHANICAL PIPE LEGEND	
	BOILER FEED WATER PIPING
	BOILER FEED WATER PIPING - EXISTING
	CONDENSATE PIPING
	CONDENSATE PIPING - EXISTING
	LOW PRESSURE CONDENSATE PIPING
	LOW PRESSURE CONDENSATE PIPING - EXISTING
	NATURAL GAS PIPING
	NATURAL GAS PIPING - EXISTING

NOTE: ALL ITEMS LISTED MAY NOT BE USED IN THIS PROJECT.

- ### MECHANICAL GENERAL NOTES:
- ALL MECHANICAL WORK SHALL BE IN STRICT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS.
 - ALL DIMENSIONS AND ELEVATIONS FOR NEW EQUIPMENT, DUCTWORK, PIPING AND APPARATUS ARE APPROXIMATE AND ARE ONLY FOR CONTRACTOR'S GUIDANCE. CONTRACTOR SHALL SUBMIT DIMENSIONS AND ELEVATIONS VERIFIED IN THE FIELD. DUCTWORK AND PIPING INDICATED ON THE DRAWINGS, SECTIONS AND PROSPECTIVE VIEWS ARE SHOWN DIAGRAMMATICALLY. DUCT AND PIPE ELEVATIONS IN EXACT LOCATIONS SHALL BE DETERMINED BY THE INSTALLING CONTRACTOR AND DETAILED ON THE SHOP DRAWINGS.
 - ALL DUCT DIMENSIONS INDICATED ON PLAN ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR MUST ACCOUNT FOR THE THICKNESS OF EXTERIOR INSULATION WHEN DETERMINING INSTALLATION CLEARANCES.
 - THE CONTRACTOR SHALL TEMPORARILY COVER ALL EXPOSED DUCT AND PIPE OPENINGS WITH A NON-COMBUSTIBLE MATERIAL, AND SEAL THEM AIR TIGHT TO PREVENT CONTAMINATION OF THE RESPECTIVE SYSTEMS DURING CONSTRUCTION.
 - CONTRACTOR SHALL REMOVE AND DISPOSE OF OFFSITE ALL DEMOLISHED WORK IN ACCEPTABLE AND SAFE MANNER AND SHALL KEEP ALL NON-WORK AREAS CLEAN AND SAFE.
 - ALL EXISTING EQUIPMENT AND CONNECTIONS THAT NEED TO BE TEMPORARILY DEMOLISHED FOR RIGGING AND / OR INSTALLATION SHALL BE REINSTALLED AND BROUGHT BACK TO ORIGINAL CONDITIONS PRIOR TO TEMPORARY REMOVAL.
 - INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

- ### MECHANICAL DEMOLITION NOTES:
- THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. REMOVE ALL EQUIPMENT, DUCTWORK, SUPPORTS CONTROLS, ACCESSORIES, ETC... AND MECHANICAL ITEMS MADE OBSOLETE BY THESE ALTERATIONS AS SHOWN IN THE MECHANICAL DRAWINGS. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY MECHANICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE BUILDING OWNER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID.
 - SCHEDULING OF DEMOLITION - COORDINATE SCHEDULING OF MECHANICAL DEMOLITION WORK WITH THE BUILDING OWNER SO AS TO MINIMIZE DISRUPTION OF THE OWNERS USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE. SEE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
 - DEMOLISHED MATERIALS - UNLESS SPECIFICALLY REQUESTED BY THE OWNER, ALL DEMOLISHED MECHANICAL MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
 - CUTTING AND PATCHING - PERFORM CUTTING AND PATCHING FOR MECHANICAL WORK SO AS TO MINIMIZE DAMAGE TO CEILING, FLOORS AND WALLS.
 - THESE DRAWINGS ARE COMPILED BY THE ENGINEER FROM THE OWNER'S AS-BUILT RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DUCTWORK, EQUIPMENT LOCATIONS, DIMENSIONS AND ALL FIELD CONDITIONS AFFECTING HIS WORK.
 - WHERE MECHANICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL REMAIN OR BE SUITABLY RELOCATED AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE OWNER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
 - PROTECT ALL EXISTING LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER IN WRITING OF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED MAINTAINING SERVICE.
 - SURVEY THE AFFECTED AREAS BEFORE STARTING DEMOLITION AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS EXIST.
 - IF ANY UNUSUAL STRUCTURAL OR ARCHITECTURAL CONDITIONS ARE ENCOUNTERED DURING DEMOLITION, CONTACT THE OWNER FOR ASSISTANCE.

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

CLIMATE ZONE	3A - WARM/HUMID
WINTER DRY BULB:	23 °F
SUMMER DRY BULB	93 °F
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	70 °F
SUMMER DRY BULB	75 °F
RELATIVE HUMIDITY	60%RH*
BUILDING HEATING LOAD: EXISTING EQUIPMENT	
BUILDING COOLING LOAD: EXISTING EQUIPMENT	
MECHANICAL SPACING CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT:	N/A EXISTING EQUIPMENT
HEATING EFFICIENCY:	N/A EXISTING EQUIPMENT
COOLING EFFICIENCY:	N/A EXISTING EQUIPMENT
SIZE CATEGORY OF UNIT:	N/A EXISTING EQUIPMENT
BOILER	
SIZE CATEGORY, IF OVERSIZED STATE REASON:	SEE SCHEDULES
CHILLER	
SIZE CATEGORY, IF OVERSIZED STATE REASON:	N/A
LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES	

ABBREVIATIONS

TERM	ABBREVIATION	TERM	ABBREVIATION
ABOVE FINISHED FLOOR	AFF	INCH OF WATER GAUGE	INWG
ABOVE GROUND	AG	INDOOR UNIT	IDU
ABOVE SEA LEVEL	ASL	IRON PIPE SIZE	IPS
ACROSS THE LINE	ACL	KILOVOLT-AMP	KVA
AIR ADMITTANCE VALVE	AAV	KILOWATT	KW
AIR CONDITION(-ING, -ED)	AIR COND	KILOWATT HOUR	KWH
AIR HANDLING UNIT	AHU OR AH	LEAVING AIR TEMPERATURE	LAT
AIR FLOW MEASURING STATION	AFMA	LEAVING WATER TEMPERATURE	LWT
AMBIENT	AMB	LENGTH	LG
AMPERE (AMP, AMPS)	AMP	LINEAR FEET	LF
ANALOG INPUT	AI	MAXIMUM	MAX
ANALOG OUTPUT	AO	MAXIMUM OVERCURRENT PROTECTION	MOC
AND	&	MEDIUM-PRESSURE STEAM	MPS
APPARATUS DEW POINT	ADP	MILES PER HOUR	MPH
APPROXIMATE	APPROX	MINIMUM	MIN.
ARCHITECT	ARCH	MINIMUM CIRCUIT AMPERES	MCA
ATMOSPHERE	ATM	MINUTE	MIN
AVERAGE	AVG	MANUFACTURER	MFR
BRAKE HORSEPOWER	BHP	MOTOR CONTROL CENTER	MCC
BROWN & SHARPE WIRE GAGE	B&S	NOISE CRITERIA	NC
BRITISH THERMAL UNIT	BTU	NON-STANDARD PART LOAD	NPLV
BRITISH THERMAL UNIT PER HOUR	MBH	NORMALLY OPEN	NO
1000 BRITISH THERMAL UNIT	MBH	NORMALLY CLOSED	NC
BUILDING	BLDG	NOT APPLICABLE	N/A
BUILDING AUTOMATION SYSTEM	BAS	NOT IN CONTRACT	N I C
CELSIUS	°C	NOT TO SCALE	NTS
CHILLED WATER RETURN	CHWR	NUMBER	NO
CHILLED WATER SUPPLY	CHWS	ON CENTER	OC
COEFFICIENT, VALVE FLOW	CV	OUNCE	OZ
COEFFICIENT OF PERFORMANCE FACTOR	COP	OUTDOOR UNIT	ODU
COMPRESSOR	COMP	OUTSIDE AIR	OA
CONCRETE	CONC	PACKAGE UNIT	PU
CONDENS(-ER, -ING, -ATION)	COND	PACKAGE TERMINAL AIR CONDITIONER	PTAC
CONNECTION	CONN	PARTS PER MILLION	PPM
CONTINUATION	CONT	PERCENT	%
COOLING LOAD	CLG LOAD	PHASE	PH
CUBIC FEET	CU FT	POUNDS	LBS
CUBIC INCH	CU IN	POUNDS PER SQUARE FOOT	PSF
CUBIC FEET PER MINUTE	CFM	POWER VENTILATOR	PV
CFM, STANDARD CONDITIONS	SCFM	PRESSURE	PRESS
DECIBEL	DB	PRESSURE REDUCING VALVE	PRV
DEGREE	DEG OR °	PRESSURE SAFETY VALVE	PSV
DEDICATED OUTDOOR AIR SYSTEM	DOAS	PUMPED CONDENSATE	PC
DEGREES FAHRENHEIT	DEG. F	QUANTITY	QTY
DETAIL	DET	RATED LOAD AMPS	RLA
DEW-POINT TEMPERATURE	DPT	RECIRCULATE	RECIRC
DIAMETER	DIA	REDUCED PRESSURE BACKFLOW PREVENTER	RPZ
DIAMETER, INSIDE	ID	REFRIGERANT (12, 22, ETC.)	R22, R410
DIAMETER, OUTSIDE	OD	REFRIGERANT LIQUID	RL
DIFFERENCE OR DELTA	DIFF	REFRIGERANT SUCTION	RS
DIGITAL INPUT	DI	REQUIRED	REQD OR REQ'D
DIGITAL OUTPUT	DO	RELATIVE HUMIDITY	RH
DOMESTIC HOT WATER	DHW	RETURN AIR	RA
DOMESTIC HOT WATER RECIRCULATION	DHWR	REVOLUTIONS PER MINUTE	RPM
DRY-BULB TEMPERATURE	DBT	REVOLUTIONS PER SECOND	RPS
DUCTLESS SPLIT SYSTEM AIR HANDLER	DAH	ROOF VENTILATOR	RV
DUCTLESS SPLIT SYSTEM HEAT PUMP	DHP	ROOF TOP UNIT	RTU
ENERGY EFFICIENCY RATING	ERR	SAFETY FACTOR	SF
EFFICIENCY	EFF	SEASONAL ENERGY EFFICIENCY RATIO	SEER
ELECTRIC UNIT HEATER	EUH	SECOND	S
ELEVATION	EL	SHADING COEFFICIENT	SC
ENTERING	ENT	SPECIFICATION	SPEC
ENTERING WATER TEMPERATURE	EWT	SQUARE	SQ
ENTERING AIR TEMPERATURE	EAT	STANDARD	STD
EXISTING	(X)	STATIC PRESSURE	SP
EXTERNAL AMBIENT TEMPERATURE	EAT	SUPPLY	SPLY
EXTERNAL STATIC PRESSURE	ESP	SUPPLY AIR	SA
EXHAUST AIR	EA	TEMPERATURE	TEMP
EXHAUST FAN	EF	TEMPERATURE DIFFERENCE	TD
FACE VELOCITY	FVEL	THERMOSTAT	T STAT
FAHRENHEIT	°F	TONS OF REFRIGERATION	TONS
FEET PER MINUTE	FPM	TO BE DETERMINED	TBD
FEET PER SECOND	FPS	TOP OF STEEL	TOS
FLOOR	FLR	TOTAL DYNAMIC HEAD	TDH
FOOT OR FEET	FT	TYPICAL	TYP
FULL LOAD AMPS	FLA	U-FACTOR	U
GAGE OR GAUGE	GA	UNDER GROUND	UG
GALLONS	GAL	UNLESS OTHERWISE NOTED	UNOT
GALLONS PER HOUR	GPH	UNIT HEATER - ELECTRIC	UH
GALLONS PER MINUTE	GPM	VARIABLE AIR VOLUME	VAV
GALLONS PER DAY	GPD	VARIABLE FREQUENCY DRIVE	VFD
GAS UNIT HEATER	GUH	VELOCITY	VEL
GRAINS	GR	VENTILATION, VENT	VENT
HEAD	HD	VENT THRU ROOF	VTR
HEAT EXCHANGER	HX	VERTICAL	VERT
HEATING AND VENTILATION UNIT	HV	VOLT	V
HEATING, VENTILATION AND AIR CONDITIONING	HVAC	VOLT AMPERE	VA
HEIGHT	HGT	VOLUME	VOL
HERTZ	HZ	WATER PRESSURE DROP	WPD
HIGH DENSITY POLYPROPYLENE	HDPE	WATER GAUGE	WG
HIGH-PRESSURE STEAM	HPS	WATT	W
HORSEPOWER, HEAT PUMP	HP	WATT-HOUR	WH
HOT WATER COIL	HWC	WITH	WI
HOUR(S)	HR	WEIGHT	WT
HUMIDITY, RELATIVE	RH	WET BULB	WB
INTEGRATED PART LOAD VALUES	IPLV	YARD	YD
INCH	IN.	YEAR	YR

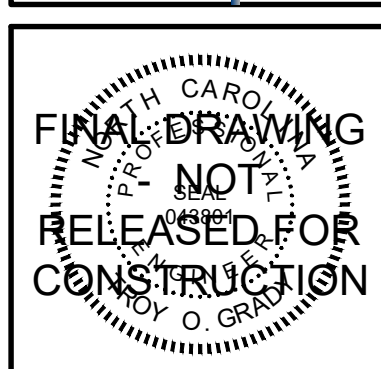
NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

03.08.24	Date
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REVISION NO.	DESCRIPTION

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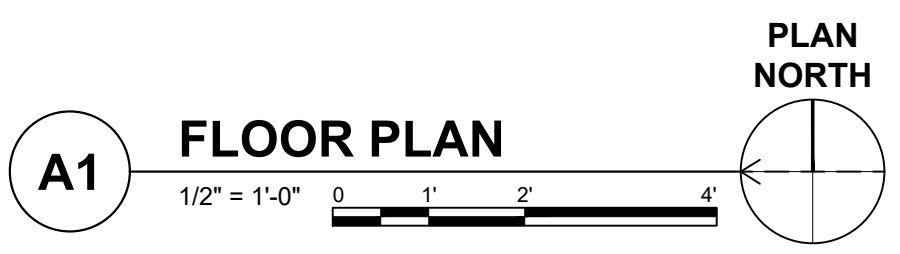
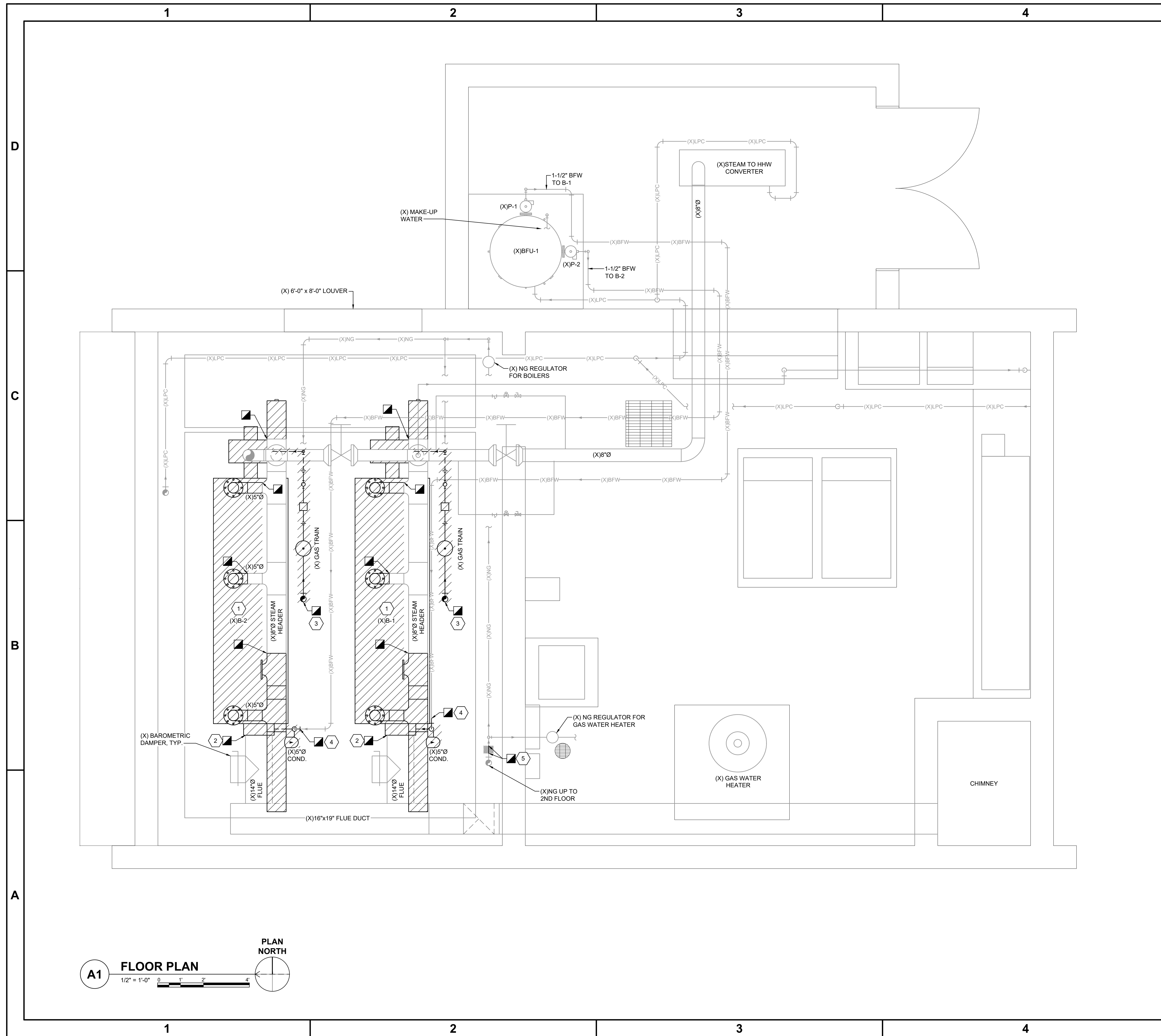
WILLISTON MIDDLE SCHOOL
BOILER REPLACEMENT
401 S. 10TH STREET
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MECHANICAL
ABBREVIATIONS, LEGENDS, NOTES
SYMBOLS AND CODE SUMMARIES

JOB NO.:	23280
DRAWN:	CRG
DESIGNED:	CRG
CHECKED:	TOG

DRAWING NO:
M-001

REVISION:
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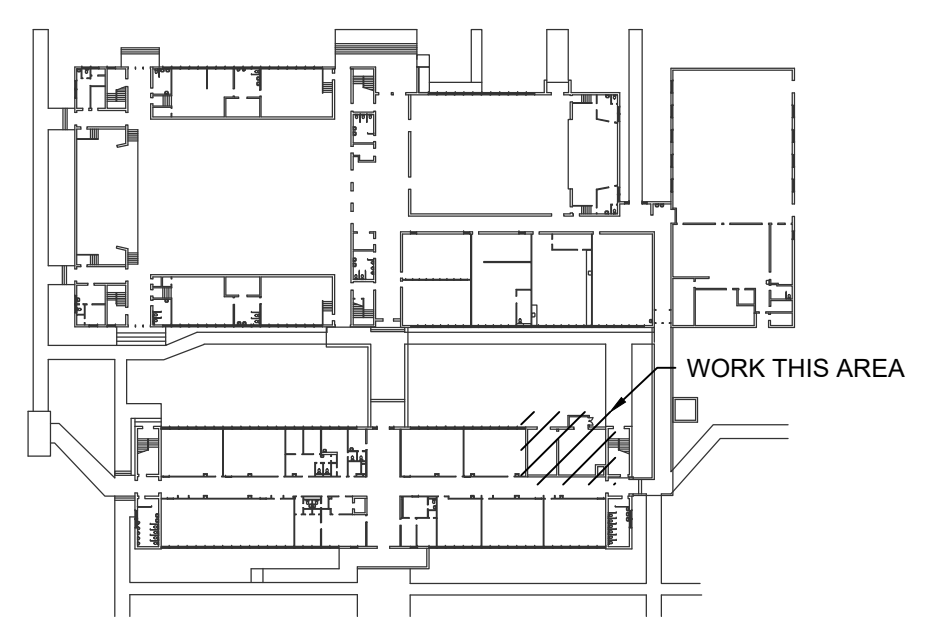


GENERAL NOTES

1. DRAWINGS ARE DEVELOPED FROM AS-BUILT DRAWINGS AND LIMITED FIELD OBSERVATIONS. THE MECHANICAL CONTRACTOR IS REQUIRED TO CONFIRM ALL WORK THROUGH FIELD VERIFICATION PRIOR TO COMMENCING ANY WORK.
2. REFER TO THE RISER DIAGRAM C2/M-701 FOR MORE PIPING DETAILS AND PIPE SIZES.
3. CONTRACTOR MUST CLEAN EXISTING BOILER VENTS AND CHIMNEYS AS PART OF THIS PROJECT.
4. IF THE EXISTING BOILER IS REMOVED FROM THE SPACE BY REMOVING THE EXISTING LOUVER, THEN THE CONTRACTOR IS TO REPLACE THE LOUVER WITH LIKE IN KIND.

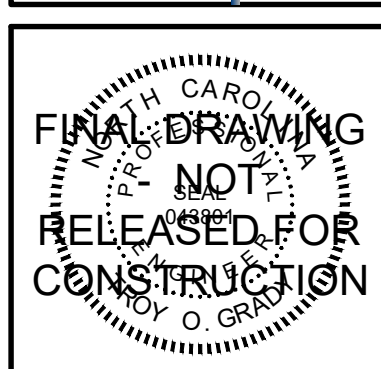
DEMOLITION KEYED NOTES

- 1 REMOVE AND DISPOSE OF EXISTING NATURAL GAS-FIRED STEAM BOILER AND BURNER EQUIPMENT IN THEIR ENTIRETY. DEMOLISH PIPING TO THE EXTENT INDICATED ON PLANS. REFER TO RISER DIAGRAM C2/M-701 FOR MORE INFORMATION.
- 2 DISCONNECT EXISTING FLUE DUCT FROM BOILER AND PREPARE DUCT FOR CONNECTION TO NEW BOILER.
- 3 REMOVE AND DISPOSE OF EXISTING NATURAL GAS PIPING TO THE EXTENT INDICATED ON PLANS INCLUDING EXISTING FLOOR MOUNTED GAS TRAIN, REFER TO RISER DIAGRAM C2/M-701 FOR MORE INFORMATION.
- 4 REMOVE AND DISPOSE OF EXISTING BOILER FEED WATER PIPING TO THE EXTENT INDICATED ON PLANS. REFER TO RISER DIAGRAM C2/M-701 FOR MORE INFORMATION.
- 5 DEMOLISH EXISTING NATURAL GAS PIPING TO EXTENT INDICATED AND PREPARE FOR THE INSTALLATION OF A NEW GAS SHUTOFF SOLENOID VALVE.



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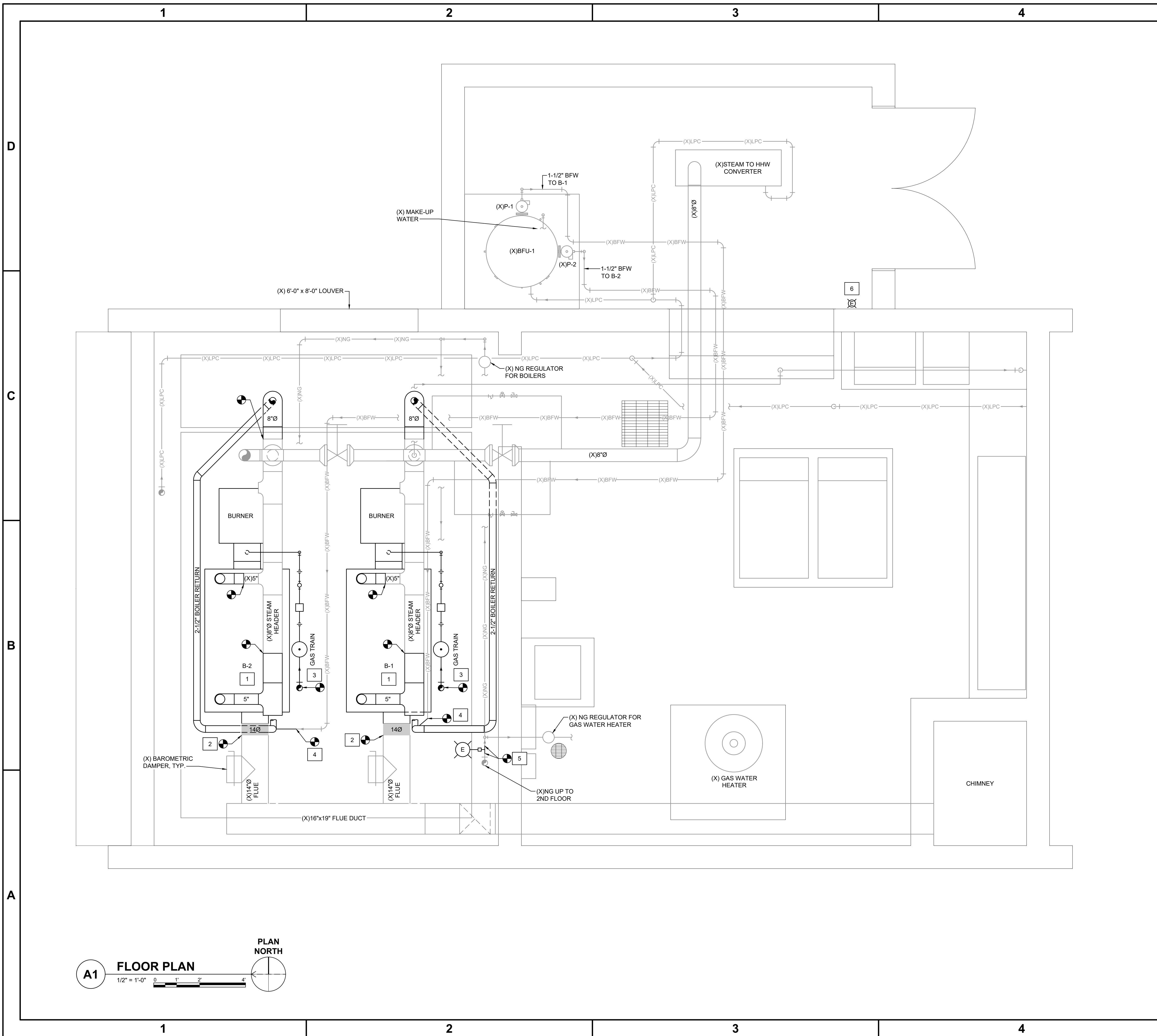
**WILLISTON MIDDLE SCHOOL
 BOILER REPLACEMENT
 401 S. 10TH STREET
 WILMINGTON, NC 28401**

**MECHANICAL DEMOLITION
 PARTIAL FIRST FLOOR PLAN**

JOB NO.:	23280
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DESIGNED:	CRG
CHECKED:	TOG

DRAWING NO. **MD101**

REVISION: **A**

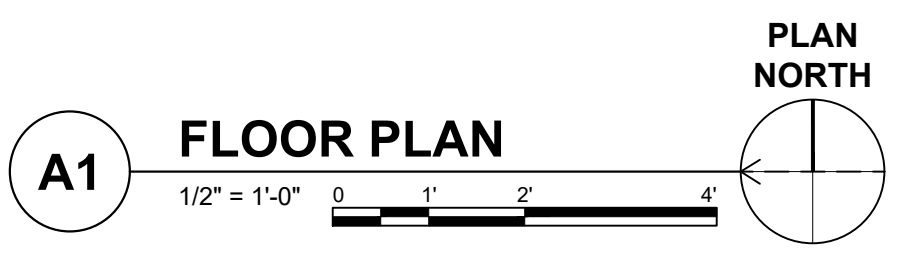
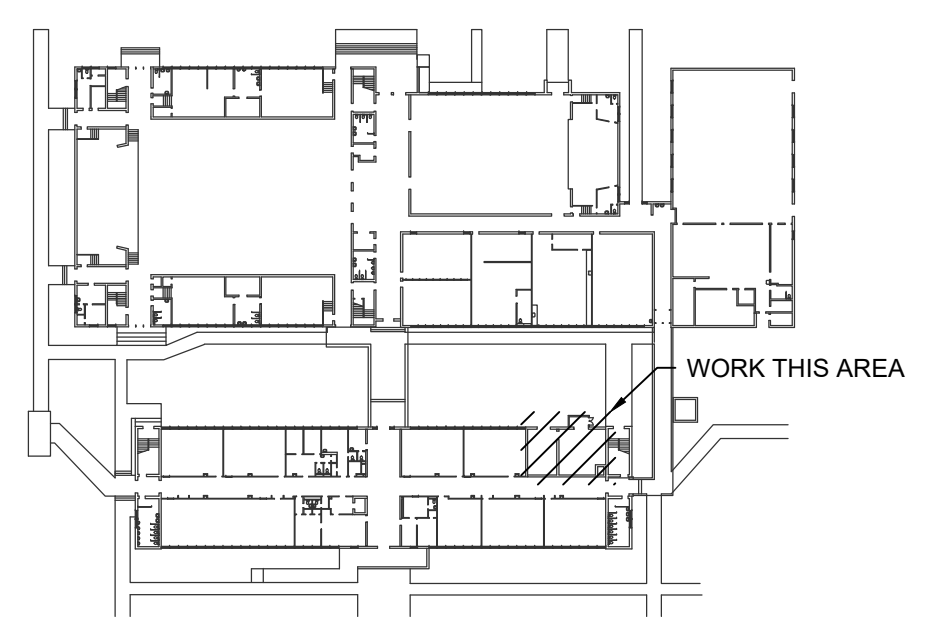


GENERAL NOTES

- DRAWINGS ARE DEVELOPED FROM AS-BUILT DRAWINGS AND LIMITED FIELD OBSERVATIONS. THE MECHANICAL CONTRACTOR IS REQUIRED TO CONFIRM ALL WORK THROUGH FIELD VERIFICATION PRIOR TO COMMENCING ANY WORK.
- REFER TO THE RISER DIAGRAM A2/M-701 FOR MORE PIPING DETAILS AND PIPE SIZES
- CONTRACTOR MUST CLEAN EXISTING BOILER VENTS AND CHIMNEYS AS PART OF THIS PROJECT.
- IF THE NEW BOILER IS BROUGHT INTO THE SPACE BY REMOVING THE EXISTING LOUVER, THEN THE CONTRACTOR IS TO REPLACE THE LOUVER WITH LIKE IN KIND.

NEW WORK KEYED NOTES

- INSTALL NEW NATURAL GAS-FIRED STEAM BOILER AND BURNER EQUIPMENT ON EXISTING CONCRETE PAD. INSTALL NEW PIPING TO THE EXTENT INDICATED ON PLANS. REFER TO RISER DIAGRAM A2/M-701 FOR MORE INFORMATION.
- INSTALL NEW FLUE DUCT AS REQUIRED TO CONNECT NEW BOILER TO EXISTING FLUE DUCT.
- CONNECT NEW GAS PIPING TO THE EXISTING ELEVATED GAS PIPE. EXTEND IT DOWN TO THE FLOOR. WHERE A NEW GAS TRAIN IS TO BE INSTALLED, THEN EXTEND AND INTEGRATE THE GAS INTO THE NEW BURNER. REFER TO DETAIL A4/M-501 FOR MORE INFORMATION ON THE GAS TRAIN. REFER TO RISER DIAGRAM FOR MORE INFORMATION ABOUT THE GAS PIPING SIZES AND CONNECTION LOCATIONS.
- INSTALL AND CONNECT NEW BOILER FEED WATER PIPING TO THE EXTENT INDICATED ON PLANS. REFER TO RISER DIAGRAM A2/M-701 FOR MORE INFORMATION.
- INSTALL GAS SHUTDOWN SOLENOID VALVE IN CLOSE PROXIMITY TO THE GAS PIPING ENTRANCE INTO THE ROOM FROM ABOVE AND PRIOR TO ANY BRANCHES OR REGULATORS IN THE ROOM. REFER TO RISER DIAGRAM A2/M-701 FOR MORE INFORMATION.
- INSTALL EMERGENCY GAS EMERGENCY SHUTOFF ACTIVATION BUTTON. PROVIDE SWITCH WITH ADDITIONAL CONTACTS TO INTERFACE WITH BOILER CONTROLS.



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**WILLISTON MIDDLE SCHOOL
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 401 S. 10TH STREET
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**MECHANICAL PIPING
 PARTIAL FIRST FLOOR PLAN**

JOB NO.:	23280
DRAWN:	CRG
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CHECKED:	TOG

DRAWING NO. **MP101**

REVISION: **A**

GAS-FIRED STEAM BOILER SCHEDULE

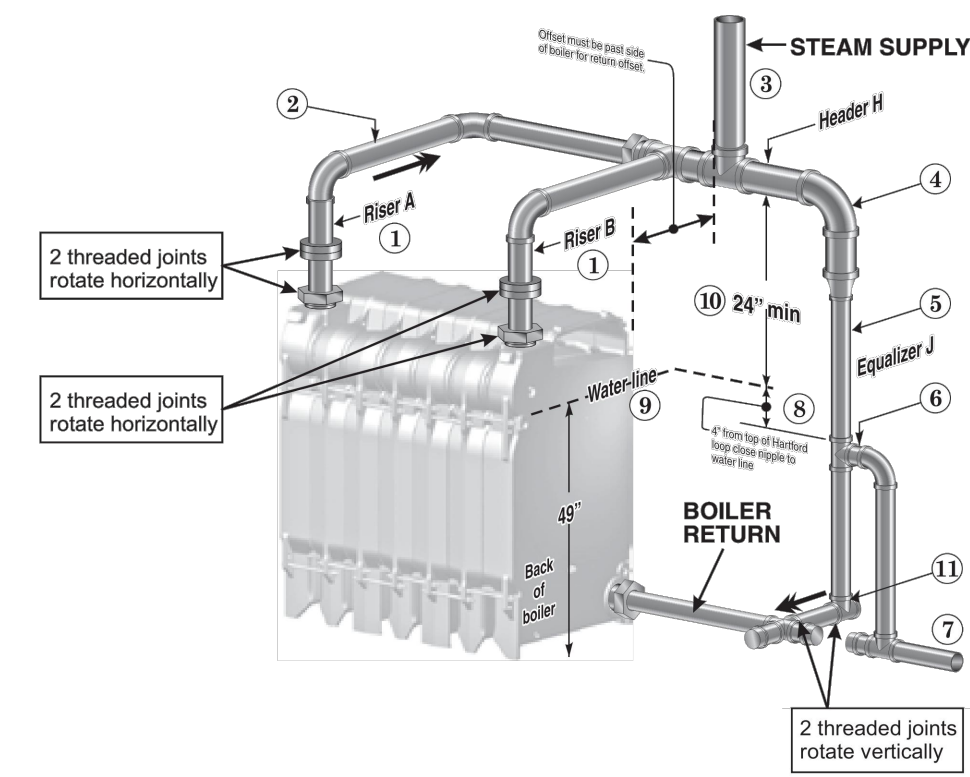
DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	NUMBER OF SECTIONS	SERVICE	FUEL / BURNER				STEAM				ELECTRICAL		VENTING SIZE (IN.)	WEIGHT (LBS.)	NOTES	ACCESSORIES				
							BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	INLET (IN.)	INLET PRESSURE (in wc)	GROSS INPUT (MBH)	GROSS OUTPUT (MBH)	COMBUSTION EFFICIENCY	DESIGN PRESSURE (PSIG)					IBR NET RATING (MBH)	BOILER (HP)	VOLTAGE (V/PH/Hz)	BURNER BLOWER MOTOR (HP)
B-1	WEIL-MCLAIN	988	SMITH, BURNHAM	GAS-FIRED BOILER	9	STEAM	WEBSTER COMBUSTION	JB2-10	POWER-FLAME, RIELLO	NATURAL GAS	2	8" (LFS) / 14" (LHL)	2,737	2,274	84%	2	1,766	67.9	208/3/60	1	14	5,600	1,2,3,4,5	A,B,C
B-2	WEIL-MCLAIN	988	SMITH, BURNHAM	GAS-FIRED BOILER	9	STEAM	WEBSTER COMBUSTION	JB2-10	POWER-FLAME, RIELLO	NATURAL GAS	2	8" (LFS) / 14" (LHL)	2,737	2,274	84%	2	1,766	67.9	208/3/60	1	14	5,600	1,2,3,4,5	A,B,C

NOTES:
 1 REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.
 2 CONTRACTOR TO CONFIRM EXISTING STEAM SYSTEM OPERATING PRESSURE.
 3 BURNER SHALL BE COMPLETE WITH INTEGRAL MOTOR DRIVEN BLOWER, IGNITION ASSEMBLY, COMBUSTION GAS VALVES, AND ALL NECESSARY CONTROLS.
 4 PROVIDE 120V CONTROL CIRCUIT POWER.
 5 EXISTING (2) POSITION MANUAL FLUE DAMPER WITH END PROVING SWITCH TO BE RE-USED.

ACCESSORIES:
 A BURNER CONTROL SYSTEM OPTIONS - ON/OFF, LOW FIRE START, LOW HIGH LOW, MODULATION, POSI-CONTROL.
 B PROVIDE GAUGE GLASS SET, PRESSURE GAUGE, AND 15 PSI ASME RELIEF VALVE.
 C PROVIDE 2" IRI GAS TRAIN

BOILER PIPE DIMENSIONS:

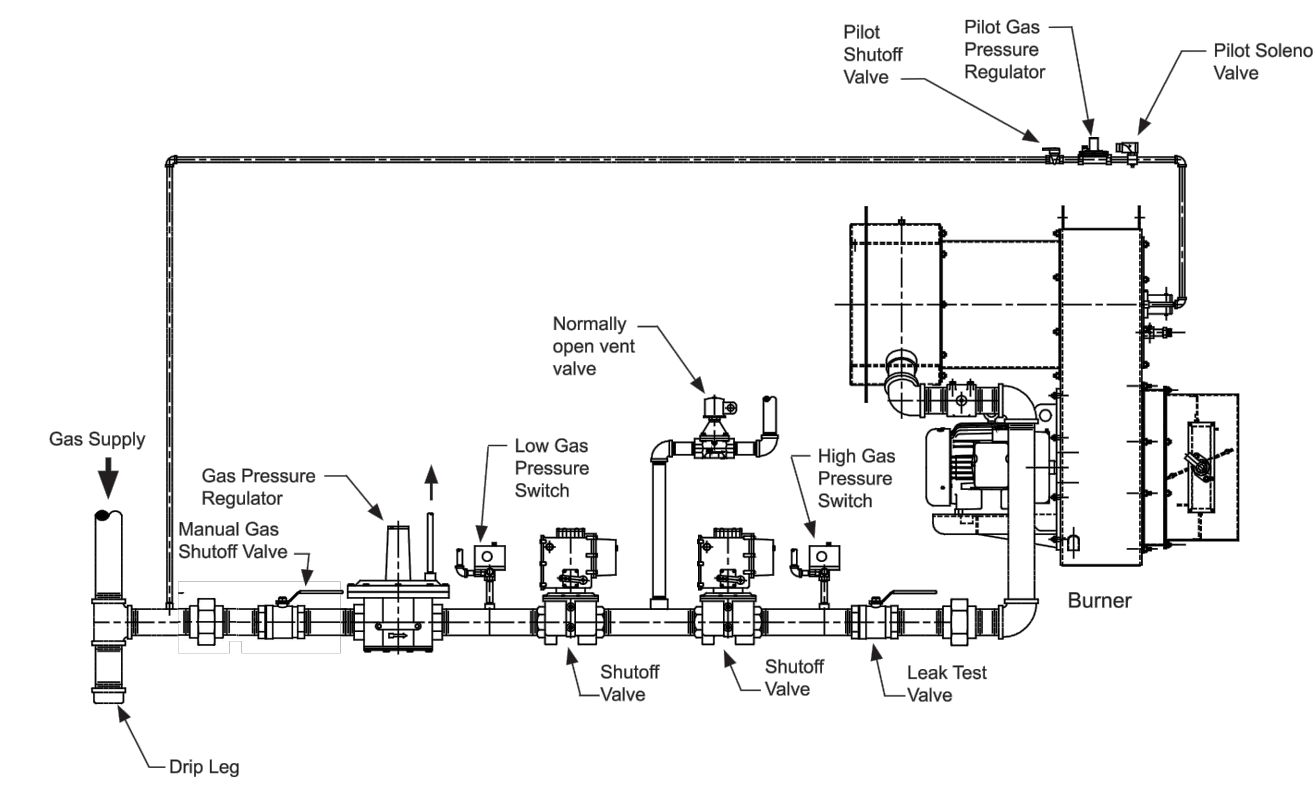
RISER A:	5"
RISER B:	5"
HEADER H:	8"
EQUALIZER J:	2-1/2"



A2 STEAM BOILER AND HARTFORD LOOP PIPING DETAIL
NOT TO SCALE

DETAIL LEGEND AND NOTES:

- RISER PIPES (ONE FOR EACH SUPPLY INTERMEDIATE SECTION)
- HORIZONTAL PIPES NEEDED TO OFFSET THE HEADER TO ALLOW FOR EXPANSION AND CONTRACTION OF THE HEADER
- STEAM SUPPLY MUST BE LOCATED BETWEEN LAST RISER CONNECTION AND EQUALIZER ELBOW
- EQUALIZER ELBOW - FULL SIZE OR REDUCING
- EQUALIZER PIPE
- CLOSE NIPPLE AT HARTFORD LOOP TEE TO REDUCE WATER HAMMER POTENTIAL
- CONDENSATE RETURN LINE (GRAVITY OR PUMPED)
- MINIMUM 4 INCHES BETWEEN WATER LINE AND TOP OF HARTFORD LOOP RETURN NIPPLE
- BOILER WATER LINE - ALL AUTOMATIC WATER LEVEL CONTROLS MUST BE SET TO MAINTAIN THIS LEVEL
- MINIMUM OF 24 INCHES BETWEEN WATER LINE AND BOTTOM OF HEADER
- OFFSET TEE



A4 TYPICAL GAS TRAIN AND BURNER PIPING DETAIL
NOT TO SCALE

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**WILLISTON MIDDLE SCHOOL
BOILER REPLACEMENT**
401 S. 10TH STREET
WILMINGTON, NC 28401

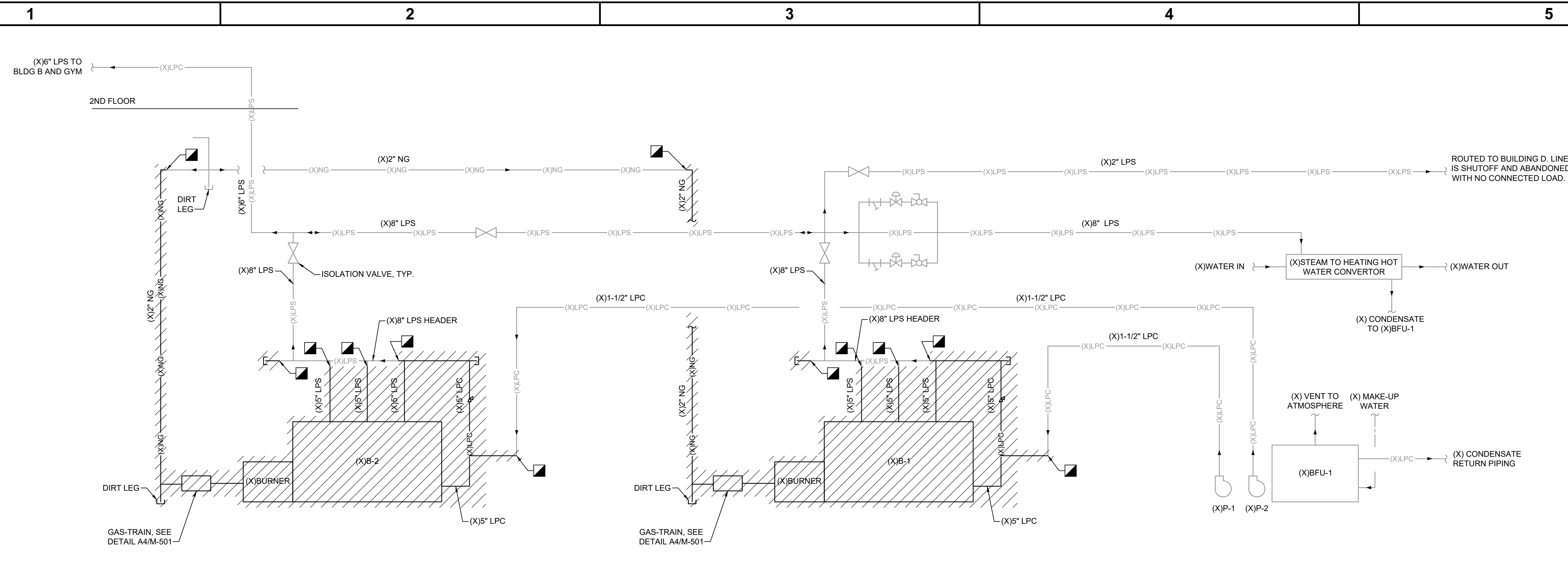
**MECHANICAL
DETAILS AND SCHEDULES**

JOB NO.: 23280
DRAWN: CRG
DESIGNED: CRG
CHECKED: TOG

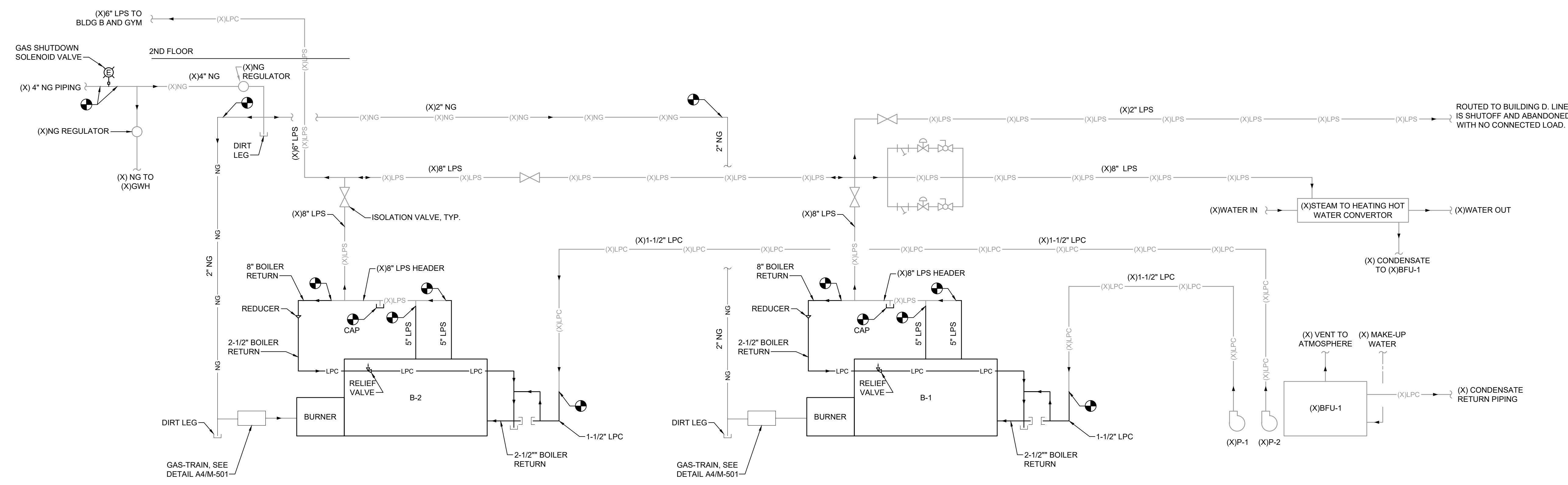
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C2 STEAM, CONDENSATE AND NATURAL GAS PIPING RISER DIAGRAM - DEMOLITION
NOT TO SCALE

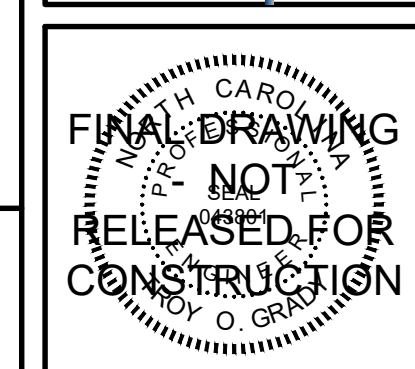


NOTE: HARTFORD LOOP PIPING MUST BE INSTALLED FOR ALL STEAM BOILERS. M.C. MUST INSTALL THE SYSTEM SUPPLY PIPE BETWEEN THE EQUALIZER ELBOW AND THE LAST BOILER RISER PIPE CONNECTION TO THE HEADER. REFER TO MANUFACTURER'S INSTRUCTION MANUAL FOR FULL DETAILS AND FOLLOW THESE REQUIREMENTS.

A2 STEAM, CONDENSATE AND NATURAL GAS PIPING RISER DIAGRAM - NEW WORK
NOT TO SCALE

03.08.24	Date
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**WILLISTON MIDDLE SCHOOL
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**MECHANICAL
DEMOLITION AND NEW WORK
RISER DIAGRAMS**

JOB NO.:	23280
DRAWN:	CRG
DESIGNED:	CRG
CHECKED:	TOG

DRAWING NO:
M-701

REVISION:
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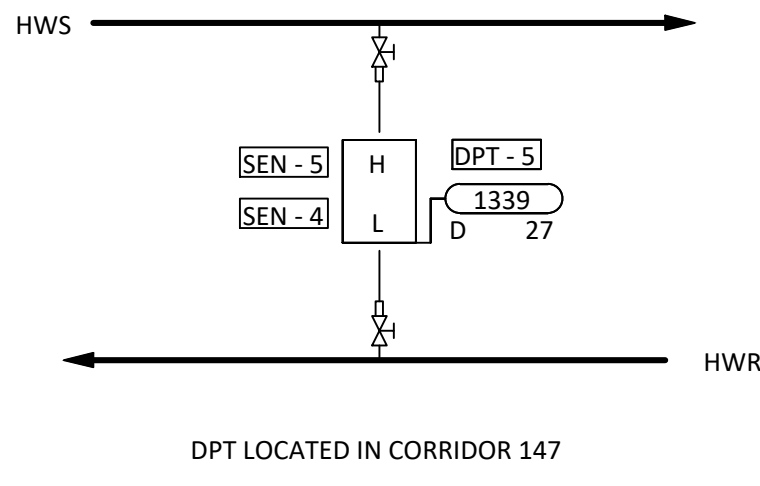
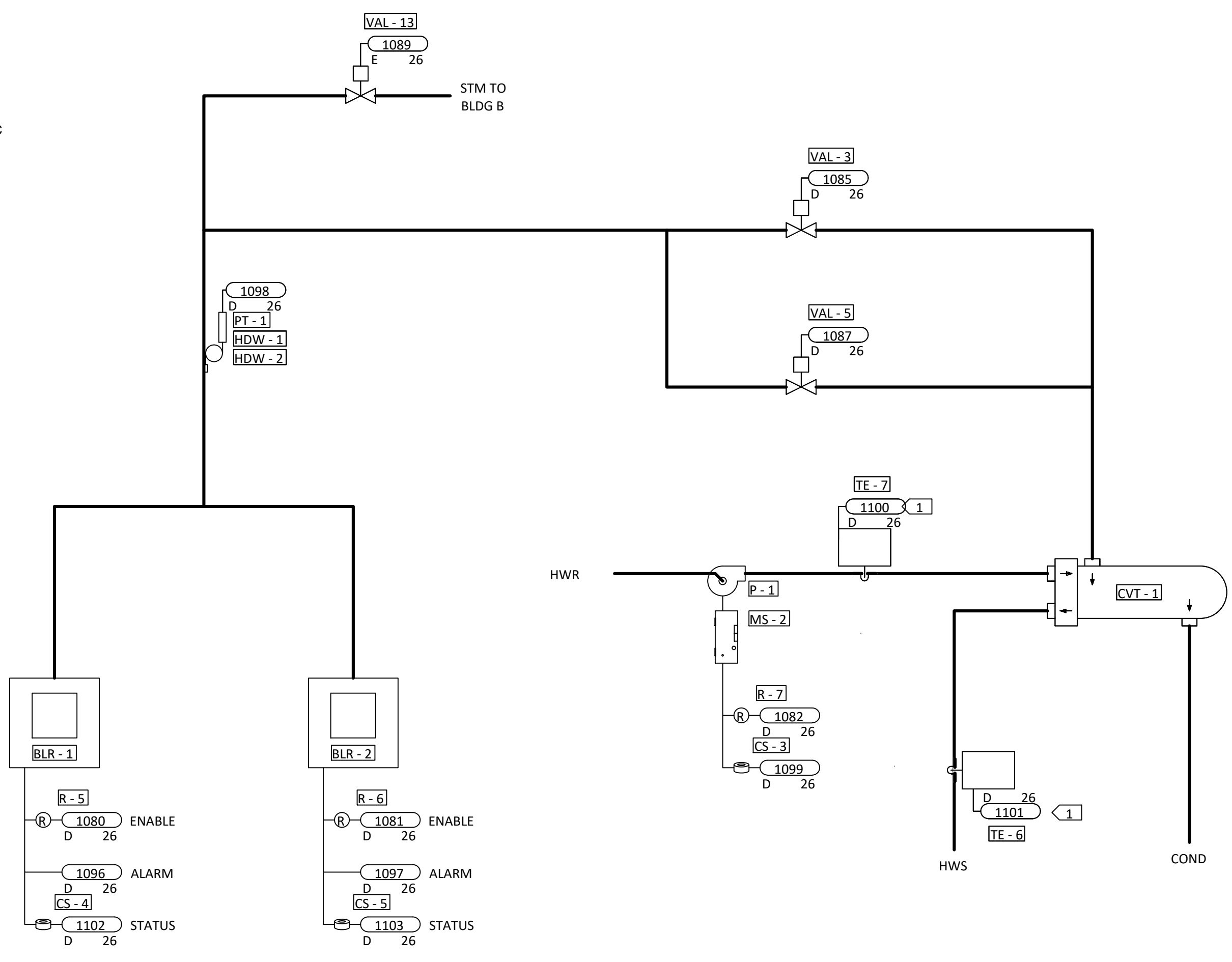
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BI - EMERGENCY GAS SHUTOFF

NOTE: BUTTON SHALL BE HARD-WIRED TO SHUT OFF NATURAL GAS DELIVERY TO BOILER AND SEND A CONTROL SIGNAL TO THE BUILDING DDC SYSTEM TO GENERATE AN ALARM.

NOTE: THE CONTRACTOR SHALL PROVIDE NEW COMPONENTS AND MAKE NECESSARY MODIFICATIONS TO ENSURE THE CURRENT OPERATIONAL SEQUENCES ARE MAINTAINED AND ANY NEW REQUIREMENTS AS REQUIRED OR DESCRIBED THROUGHOUT THESE DRAWINGS ARE INTEGRATED INTO THE EXISTING CONTROLS SYSTEM.



NON-CONDENSING STEAM BOILERS, PRIMARY-HOT WATER FLOW: SEQUENCE OF OPERATION

STEAM AND HOT WATER SYSTEM, NON-CONDENSING STEAM BOILERS, PRIMARY HOT WATER FLOW:

ENABLE/DISABLE SYSTEM VIA DO POINT UPON OPERATOR COMMAND.

WHEN ENABLED, HOT WATER SYSTEM SHALL:
 START IS OUTDOOR TEMPERATURE IS LESS THAN 50F (ADJ.), EITHER ONE OR MORE USER-DEFINED AHU/UV/FCU SYSTEMS, BUILDING B SYSTEMS, AND VALVES OR SPACE TEMPERATURE SENSORS, OR INDICATE A HEATING DEMAND.

STOP IF NONE OF THE USER-DEFINED AHU/UV/FCU SYSTEMS, AS TABULATED ABOVE, SPACE TEMPERATURE SENSORS INDICATE HEATING DEMAND FOR 30 MINUTES.

SYSTEM START SEQUENCE SHALL BE AS FOLLOWS:
 COMMAND SYSTEM HOT WATER PUMP(S) ON VIA DO POINT(S).
 CONFIRM EACH PUMP(S) OPERATION BASED ON MOTOR STATUS VIA DI POINT(S) IN ACCORDANCE WITH SEQUENCE 1.25.
 COMMAND BOILERS ON.
 STEAM BOILERS, CONDENSATE PUMP, AND BOILER FEED UNIT OPERATE OFF OF THEIR OWN INTERNAL CONTROLS.
 COMMAND BOILER "ON" THROUGH INTERFACE TO BOILERS VIA DO POINT IN ACCORDANCE WITH SEQUENCE 3.21.

MONITOR BOILER STATUS/FAULT:
 IF BOILER INDICATES A BOILER FAULTS, COMMAND BOILER AND HOT WATER PUMP(S) OFF VIA DO POINTS AND INITIATE ALARM.

IF BOILER FAILS TO START WITHIN 5 MINUTES AFTER BEING COMMANDED ON, COMMAND PRIMARY AND SECONDARY HOT WATER PUMP(S) AND BOILER OFF VIA DO POINTS AND INITIATE ALARM.

UPON RESUMPTION OF POWER AFTER A POWER OUTAGE, BOILER SHALL RESTART, IF COMMANDED ON, AFTER 5 MINUTE TIME DELAY.

HWS TEMPERATURE CONTROL:
 MONITOR PRIMARY HWS TEMPERATURE AS AI POINT.
 MONITOR PRIMARY HWR TEMPERATURE AS AI POINT.
 COMPUTE PRIMARY HWS TEMPERATURE SETPOINT AS A LINEAR FUNCTION OF OUTDOOR AIR TEMPERATURE AS FOLLOWS:

OUTDOOR AIR TEMP (°F)	PRIMARY HWS TEMP SETPOINT
≤ 40°F	180°F ≥
≤ 70°F	150°F ≥

EMERGENCY GAS SHUTOFF: BUTTON SHALL BE HARD-WIRED TO SHUT OFF NATURAL GAS DELIVERY TO BOILER AND SEND A CONTROL SIGNAL TO THE BUILDING DDC SYSTEM TO GENERATE AN ALARM. UPON ACTIVATION, BOILERS SHALL BE DISABLED.

A2 STEAM BOILER SYSTEM CONTROLS
NOT TO SCALE

REVISION NO.	A	ISSUED FOR REVIEW
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**MECHANICAL
CONTROLS**

JOB NO.:	23280
DRAWN:	CRG
DESIGNED:	CRG
CHECKED:	TOG

DRAWING NO:
M-801

REVISION:
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(X) PANEL A												
TYPE:	208	120	VOLTAGE			3	PHASE	4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
BOLT-ON									IF	XX	100% NEUTRAL BUS	
CUTLER HAMMER									CHECKED		USE LABEL	
											ISOLATED GROUND BAR	
LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA			CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED		
SPARE			20/2	1			2	30/2		SPARE		
X(B)OILER ROOM EX. FAN	1,800	20/1	3				4	20/2		SPARE		
SPARE		20/1	5				6	20/2		SPARE		
SPARE		20/1	7				8	20/1		SPARE		
SPARE		20/1	9				10	20/1		SPARE		
SPARE		20/1	11				12	20/1		SPARE		
RECEP. BELOW PANEL A	180	20/1	13	1,380			14	20/1	1,200	(X)NOVAR CONTROL PANEL		
RECEP. AT CONTROL PANEL	180	20/1	15		180		16	20/1		SPARE		
SPARE		20/1	17				18	20/1		SPARE		
BOILER 1 (NOTE 1)	721	15/3	19	1,442			20	15/3	721	BOILER 2 (NOTE 1)		
	721	15/3	21	1,442			22	15/3	721			
	721	15/3	23		1,442		24	15/3	721			
BOILER 1 CONTROL POWER (NOTE 1)	480	15/1	25	960			26	15/1	480	BOILER 2 CONTROL POWER (NOTE 1)		
GAS SOLENOID VALVE (NOTE 1)	192	15/1	27	192			28	15/1	192			
SPARE		20/1	29				30	20/1		SPARE		
SPARE		20/1	31				32	20/1		SPARE		
SPARE		20/1	33				34	20/1		SPARE		
SPARE		20/1	35				36	20/1		SPARE		
(X)CONDENSATE PUMPS	1,830	30/2	37	1,830			38	30/3		(X)SPD		
	1,830	30/2	39		1,830		40	30/3				
SPARE		20/1	41				42	20/1		SPARE		
NOTES (AS APPLICABLE):												
1. CONTRACTOR SHALL INSTALL NEW CIRCUIT BREAKERS TO MATCH PANEL												
				5,612	3,644	3,242	TOTAL PHASE VA			200	A BUS (COPPER, UNO)	
				47	30	27	TOTAL PHASE AMP			200	A MAIN LUGS AND/OR FEEDER RATING	
				45%	28%	28%	PHASE BALANCE			10	KAIC MINIMUM RATING	

(X) PANEL B												
TYPE:	208	120	VOLTAGE			3	PHASE	4	WIRE	PROVIDE	XX	EQUIPMENT GROUND BUS
LOAD CENTER									IF	XX	100% NEUTRAL BUS	
SQUARE D									CHECKED		USE LABEL	
											ISOLATED GROUND BAR	
LOAD SERVED	LOAD VA	CKT BKR TRIP/POLES	CKT #	PHASE LOAD VA			CKT #	CKT BKR TRIP/POLES	LOAD VA	LOAD SERVED		
(X)SPARE (NOTE 1)			20/2	1			2	20/2		(X)SPARE (NOTE 1)		
			3				4	20/1				
BLANK		20/1	5				6	20/1		BLANK		
CLOCK & TRANSFORMER	15/1	7					8	15/1		(X)SPARE (NOTE 1)		
(X)OVERHEAD LIGHT	20/1	9					10	20/1		(X)PUMP RECEPTACLE		
(X)WATER HEATER	20/1	11					12	20/1		(X)BOILER LIGHTS		
NOTES (AS APPLICABLE):												
1. CIRCUIT BREAKER TO REMAIN IN PLACE												
										125	A BUS (COPPER, UNO)	
										60	A MAIN LUGS AND/OR FEEDER RATING	
										10	KAIC MINIMUM RATING	

TYPICAL ABBREVIATIONS:			
A, AMP	AMPERE	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MCC	MOTOR CONTROL CENTER
AHU	AIR HANDLING UNIT	MCP	MOTOR CIRCUIT PROTECTOR
AIC	AMPERE INTERRUPTING CAPACITY	MDP	MAIN DISTRIBUTION PANEL
ATS	AUTOMATIC TRANSFER SWITCH	MFR	MANUFACTURER
AWG	AMERICAN WIRE GAUGE	MH	MANHOLE
BOF	BOTTOM OF FIXTURE	MLO	MAIN LUGS ONLY
BRKR	BREAKER	MTD	MOUNTED
C, COND	CONDUIT	MTG	MOUNTING
CAB	CABINET	MTS	MANUAL TRANSFER SWITCH
CAT	CATALOG	MV	MEDIUM VOLTAGE
CL	CHLORINE	N, NEUT	NEUTRAL
CB	CIRCUIT BREAKER	N/A	NOT APPLICABLE
CCTV	CLOSED CIRCUIT TELEVISION	NC	NORMALLY CLOSED
CKT	CIRCUIT	NEC	NATIONAL ELECTRIC CODE
CLS	CEILING	NIC	NOT IN CONTRACT
CP	CONTROL PANEL	NL	NIGHT LIGHT
CR	CONTROL RELAY, CORROSION RESISTANT	NO	NORMALLY OPEN
CS	CONTROL SWITCH	NTS	NOT TO SCALE
CV	CONTROL VALVE	P	POLE
CT	CURRENT TRANSFORMER	PA	PUBLIC ADDRESS
CJ	COPPER	PB	PULL BOX, PUSH-BUTTON
EF	EXHAUST FAN	PF	POWER FACTOR
EM	EMERGENCY	PH, φ	PHASE
EMT	ELECTRICAL METALLIC TUBING	PLC	PROGRAMMABLE LOGIC CONTROLLER
ENCL	ENCLOSURE	PNL	PANEL
EQ, EQUIP	EQUIPMENT	PP	POWER PANEL, POWER POLE
EWC	ELECTRIC WATER COOLER	PT	POTENTIAL TRANSFORMER
EWH	ELECTRIC WATER HEATER	PWR	POWER
EPRF	EXPLOSION PROOF	RECPT, RCP	RECEPTACLE
FA	FIRE ALARM	REQD	REQUIRED
FAAP	FIRE ALARM ANNUNCIATOR PANEL	RGS	RIGID GALVANIZED STEEL CONDUIT
FACP	FIRE ALARM CONTROL PANEL	RM	ROOM
FBO	FURNISHED BY OTHERS	RTU	REMOTE TELEMETRY UNIT
FLA	FULL LOAD AMPS	SCR	DC MOTOR DRIVE
FLUOR	FLUORESCENT	SH	SHEET
FLR	FLOOR	SM	SURFACE MOUNTED
FWE	FURNISHED WITH EQUIPMENT	SPEC	SPECIFICATION
GEN	GENERATOR	SS	SELECTOR SWITCH
G, GND	GROUND	SST	STAINLESS STEEL
GFI, GFCCI	GROUND FAULT CIRCUIT INTERRUPTER	SW	SWITCH
HH	HANDHOLE	SWBD	SWITCHBOARD
HID	HIGH INTENSITY DISCHARGE	SWGR	SWITCH GEAR
HOA	HAND-OFF-AUTO	TEL	TELEPHONE
HP	HORSE POWER	TPS	TWISTED PAIR SHIELDED
HPF	HIGH POWER FACTOR	TVSS, SPD	TRANSIENT VOLTAGE SURGE SUPPRESSOR
HPS	HIGH PRESSURE SODIUM	TYP	TYPICAL
HTR	HEATER	UG, UGND	UNDERGROUND
HV	HIGH VOLTAGE	UH	UNIT HEATER
HZ	HERTZ	UON	UNLESS OTHERWISE NOTED
IMC	INTERMEDIATE METALLIC CONDUIT	UTIL	UTILITY
INCAND	INCANDESCENT	V	VOLTS
JB	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE
K	THOUSAND	W	WIRE, WATT
Kcmil	THOUSAND CIRCULAR MILLS	WH	WATT-HOUR
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF
KW	KILOWATTS	XFMR	TRANSFORMER
KWH	KILOWATT-HOURS	(X)	EXISTING
LP	LIGHTING PANEL, LIGHT POLE		

ELECTRICAL LEGEND	
	POWER & SWITCH LEG
	CONDUIT, HOME RUN TO PANEL BOARD
	RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A, MOUNTED 16" AFF, UNLESS OTHERWISE NOTED.
	(X)DISCONNECT SWITCH/STARTER, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWINGS
	MANUAL MOTOR STARTER, ELECTRICAL CONTRACTOR SHALL COORDINATE POLES AND SIZE WITH EQUIPMENT
	JUNCTION BOX - WALL MOUNTED
	DEMOLITION KEY NOTE SYMBOL
	KEY NOTE SYMBOL
	HATCHING INDICATES ITEMS TO BE DEMOLISHED. REMOVE DEVICE, EQUIPMENT, FIXTURE INDICATED, CIRCUIT, AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.
	2 HOUR RATED FIRE WALL - EXISTING
	COMBINATION STARTER WITH CIRCUIT BREAKER DISCONNECT, FULL VOLTAGE, SIZE AS INDICATED ON DRAWINGS
	WALL MOUNTED 120V EMERGENCY OFF PUSH BUTTON WITH RED MUSHROOM STYLE HEAD WITH MANUAL PULL REST, NORMALLY OPEN, WITH CLEAR PROTECTIVE COVER. MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED.
**FOR ALL RECEPTACLE TYPES ABOVE: +XX- INDICATES MOUNTING HEIGHT OF DEVICE IN INCHES AFF (IF GIVEN) (SEE ELECTRICAL MOUNTING HEIGHT DETAIL) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF IN USE COVER TR - TAMPER RESISTANT S - INDICATES THE TOP RECEPTACLE OF THE DEVICE IS CONTROLLED VIA WALL SWITCH H - DEVICE MOUNTED HORIZONTALLY U - USB IN-WALL CHARGER	
	ENLARGED PLAN
	ELEVATION

03.08.24
Date

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ELECTRICAL
LEGEND, ABBREVIATIONS,
AND PANEL SCHEDULES

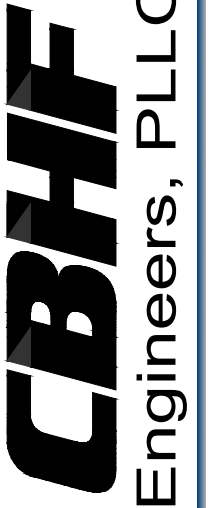
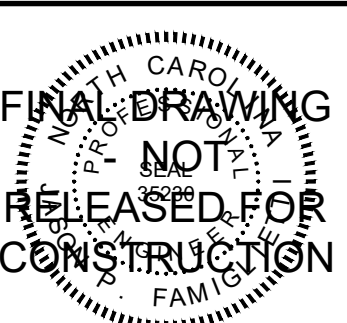
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DRAWN: CCS
DESIGNED: CCS
CHECKED: JPF

DRAWING NO:
E-001

REVISION:
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ELECTRICAL GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA 70, THE [NORTH CAROLINA] STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE NEW CURRENT PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.)
3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.
4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
5. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.
6. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE ELECTRICAL UTILITY COMPANY AS REQUIRED.
7. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
8. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
9. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY PERMANENT SHELTERS. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.
10. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS. FIELD VERIFY ALL DIMENSIONS.
11. CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
12. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.
13. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.
14. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
15. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL, EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
16. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
17. IN WET LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOF WHILE IN USE COVER. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT INCLUDING 0 DEGREE BALLASTS FOR FLUORESCENT.
18. RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKE/TIGHT.
19. RACEWAYS PENETRATING RATED FLOOR, CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED FIRESTOPPING MATERIALS AND MANUFACTURER APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.
20. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE [EXCEPT THOSE SHOWN TO BE EXPOSED ON DRAWINGS]. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
21. INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
22. PROVIDE AND PLACE ALL SLEEVES FOR CONDUITS PENETRATING WALLS, FLOORS, PARTITIONS, ETC. LOCATE ALL NECESSARY SLOTS FOR ELECTRICAL WORK AND FORM BEFORE CONCRETE IS POURED.
23. ALL MOTORS, AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
24. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
25. PROVIDE ADHESIVE BACKED RECEPTACLE AND SWITCH/DIMMER/OCCUPANCY SENSOR DEVICE PLATE LABELS IDENTIFYING THE PANEL AND CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER. IDENTIFICATION FOR MULTIWIRE BRANCH CIRCUIT PHASE CONDUCTORS IN PANELBOARD. SEE SPECIFICATIONS SECTION 260553 FOR REQUIREMENTS.
26. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.
27. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
28. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.
29. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY.
30. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS WITH A TOTAL INSTALLED LENGTH GREATER THAN 75 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 50 FEET, I.E., #12 AWG INCREASED TO #10 AWG FOR RECEPTACLE BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET.
31. COMMON NEUTRAL, MULTIWIRE RECEPTACLE BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
32. KEEP CONDUCTOR SPLICES TO A MINIMUM. INSTALL SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN CONDUCTORS BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL. INSTALL CONDUCTORS AT EACH OUTLET WITH AT LEAST 6 INCHES OF SLACK. CONNECT OUTLETS AND COMPONENTS TO WIRING AND TO GROUND AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.
33. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.
34. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, FEEDERS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
35. UNLESS SPECIFICALLY NOTED OTHERWISE, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL MAKE FINAL CONNECTIONS TO HIS EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL, PLUMBING AND GENERAL CONTRACTOR PROVIDED EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. IF ELECTRICAL REQUIREMENTS DIFFER FROM THOSE SHOWN ON THE DRAWINGS, THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEM TO MATCH UTILIZATION EQUIPMENT.
36. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SAFETY SWITCHES AND CIRCUIT BREAKERS AND PROVIDE WIRING AND CONNECTIONS TO THE LINE SIDE OF SAFETY SWITCHES AND/OR CIRCUIT BREAKERS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL PROVIDE LOAD SIDE WIRING AND CONNECTIONS TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
37. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
38. THE LAYOUT AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IN ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IN THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, TRANSFORMERS, SAFETY SWITCHES, SWITCHBOARDS, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
39. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIRE ALARM WORK ON THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO DE-PROGRAMMING REMOVED DEVICES, PUTTING SYSTEM ON TEST, PROTECTING EXISTING DEVICES DURING CONSTRUCTION, ETC. EC SHALL INCLUDE IN BID THE COST FOR THE SCHOOL'S FIRE ALARM VENDOR TO PERFORM THIS WORK. THE CURRENT NHCS FIRE ALARM VENDOR IS KELLER'S INC. THE EC SHALL BE RESPONSIBLE FOR PAYING FOR ANY FALSE ALARMS CAUSED BY THE CONSTRUCTION FOR THIS PROJECT.
40. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
41. PROTECT ALL EXISTING POWER, COMMUNICATIONS, DATA, LIFE SAFETY SYSTEMS, FIRE ALARM AND PUBLIC ADDRESS SYSTEMS AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
42. THE CONTRACT REQUIRES SEVERAL NEW CIRCUITS BE ADDED TO EXISTING PANELBOARDS AND NUMEROUS EXISTING CIRCUITS' LOADING WILL CHANGE AS A RESULT OF THIS WORK. THE CONTRACTOR SHALL ENDEAVOR TO MAINTAIN PHASE BALANCE ON ALL PANELBOARDS AFFECTED BY THIS WORK. RECONNECT/MODIFY/EXTEND EXISTING CIRCUITING AS REQUIRED TO MAINTAIN SAFE CIRCUIT LOADING AND PHASE BALANCE. COORDINATE CONNECTIONS TO THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITH THE OWNER AND ARCHITECT/ENGINEER. PROVIDE ACCURATE, UPDATED, TYPED PANEL SCHEDULES FOR ALL AFFECTED PANELS. NOTE ALL FINAL CIRCUIT CONFIGURATIONS ON AS-BUILT DRAWINGS.
43. EXISTING CIRCUITING WHERE SHOWN IS FOR CONVENIENCE PURPOSES ONLY. VERIFICATION OF EXISTING WIRING DESTINATION, TERMINATION AND ADDITIONS OF NEW LOADS IS THE RESPONSIBILITY OF THE CONTRACTOR.
44. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.
45. DESIGN AND ADDITION OF NEW CIRCUITING IS BASED ON THE ENGINEER'S BEST INFORMATION REGARDING EXISTING CONDITIONS AND CURRENT DRAWINGS. AVAILABILITY OF ADEQUATE CIRCUIT BREAKER SPACE FOR NEW WORK IN EXISTING PANELBOARDS SHALL BE VERIFIED BY THE CONTRACTOR AFTER DEMOLITION OF THE EXISTING SPACE. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION.
46. ABANDONED POWER WIRING, RACEWAYS AND CONDUCTORS, SHALL BE REMOVED BACK TO THEIR SOURCE. THE ACCESSIBLE PORTIONS OF ABANDONED CABLES (VOICE, DATA, VIDEO, ALARM, ETC.) SHALL BE REMOVED.
47. TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED, OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.
48. THE EXISTING ELECTRICAL SYSTEMS DEPICTED ON THESE DRAWINGS HAVE BEEN COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF THE EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.
49. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND BUILDINGS AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. NO EXTRAS WILL BE CONSIDERED BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.
50. SOME EXISTING RECEPTACLE, LIGHTING OR OTHER LOADS MAY BE SERVED BY CIRCUITS INDICATED TO BE REMOVED. IF SUCH CONDITIONS ARE DISCOVERED, REQUEST THE ARCHITECT/ENGINEER PROVIDE NEW CIRCUIT NUMBER FOR THE LOAD. DO NOT INDISCRIMINATELY CONNECT TO THE NEAREST CIRCUIT.
51. ALL UNUSED OUTLET BOXES SHALL BE REMOVED OR, WITH SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER, SHALL BE BLANKED WITH STAINLESS STEEL PLATES. ALL OPENINGS IN EXISTING WALLS AND CEILINGS MADE BY THIS CONTRACTOR SHALL BE REPAIRED TO AN EQUAL FINISH AS ADJACENT SURFACES.
52. PROVIDE ALL ELECTRICAL RELOCATION WORK ASSOCIATED WITH THE RELOCATING OF EQUIPMENT FOR THE EXISTING FACILITIES, INCLUDING DISCONNECTING ALL EXISTING WIRING AND CONDUITS AND PROVIDING NEW WIRING AND CONDUITS TO THE RELOCATED EQUIPMENT.
53. THE EXISTING FACILITIES WILL REMAIN OCCUPIED BY STUDENTS AND THE STAFF THROUGHOUT THE PROJECT. AS SUCH, WORK WILL [BE DONE IN PHASES AND WILL] REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK.
54. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.

03.08.24 Date	REVISIONS
A ISSUED FOR REVIEW	DESCRIPTION
	
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WILLISTON MIDDLE SCHOOL BOILER REPLACEMENT 401 S. 10TH STREET WILMINGTON, NC 28401	
ELECTRICAL GENERAL NOTES	
JOB NO.: 23280	DRAWN: CCS
DESIGNED: CCS	CHECKED: JPF
DRAWING NO.:	
E-002	
REVISION:	
A	

1

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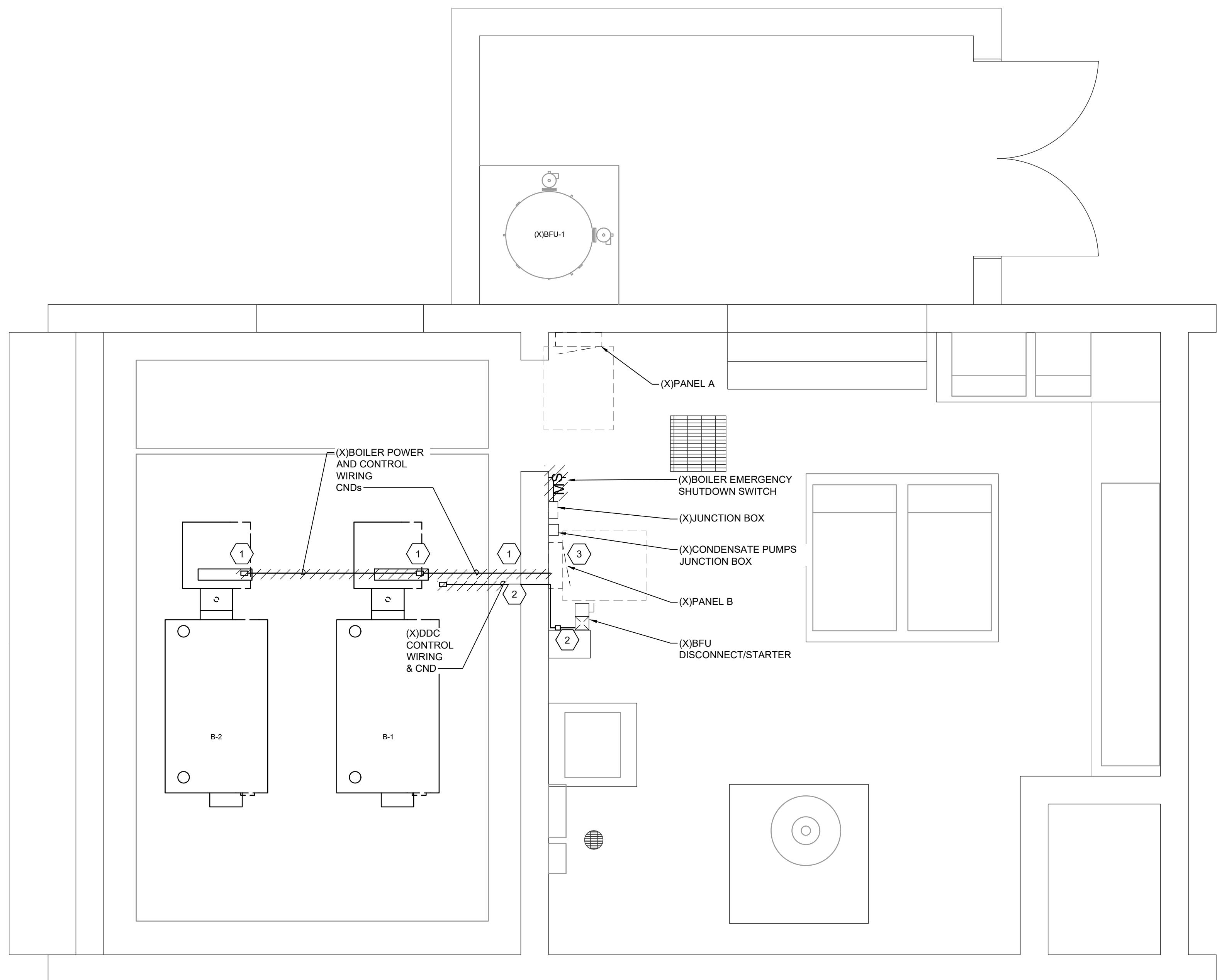
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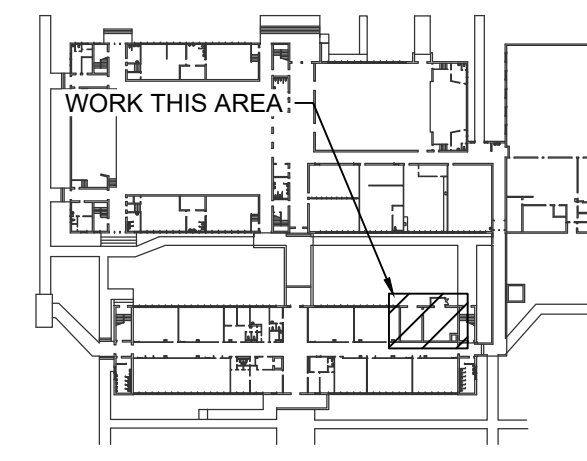
GENERAL NOTES

KEYED NOTES

- 1 ALL EXISTING CONDUITS, CABLES, AND JUNCTION BOXES ASSOCIATED WITH THE OPERATION OF THE EXISTING BOILERS SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE IN ENTIRETY.
- 2 EXISTING DDC CONTROL WIRING TIED INTO THE EXISTING BOILERS SHALL BE DISCONNECTED AND RE-ROUTED TO BE RE-CONNECTED TO THE NEW BOILERS WHERE NEEDED.
- 3 EXISTING BOILER PUMP AND CONTROL CIRCUITS SHALL BE REMOVED FROM PANEL "B" IN ENTIRETY. CIRCUIT BREAKERS SHALL REMAIN IN PANEL "B" AND BE RE-LABELLED AS "SPARE".



A2 FLOOR PLAN
 3/8" = 1'-0"
 0 2 4 6
 PLAN NORTH



A5 BLDG A KEYPLAN
 NOT TO SCALE
 PLAN NORTH

**WILLISTON MIDDLE SCHOOL
 BOILER REPLACEMENT
 401 S. 10TH STREET
 WILMINGTON, NC 28401**

**ELECTRICAL DEMOLITION
 PARTIAL FIRST FLOOR PLAN**

JOB NO.: 23280
 DRAWN: CCS
 DESIGNED: CCS
 CHECKED: JPF

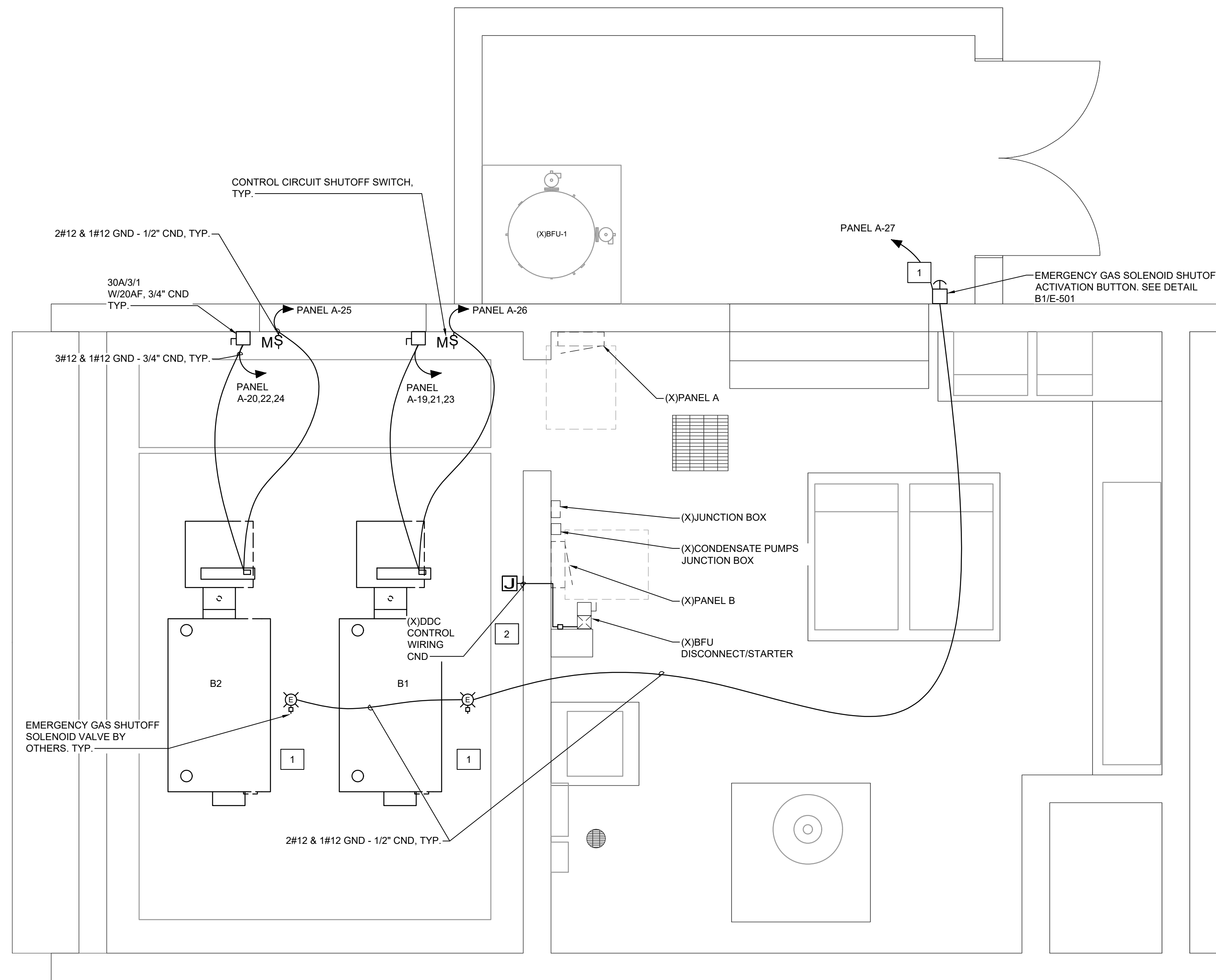
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Revision No.	Description	Date
A	ISSUED FOR REVIEW	03.08.24
	REVISIONS	



EMERGENCY GAS SHUTOFF SOLENOID VALVE BY OTHERS. TYP.

CONTROL CIRCUIT SHUTOFF SWITCH, TYP.

2#12 & 1#12 GND - 1/2" CND, TYP.

30A/3/1 W/20AF, 3/4" CND TYP.

3#12 & 1#12 GND - 3/4" CND, TYP.

2#12 & 1#12 GND - 1/2" CND, TYP.

(X)DDC CONTROL WIRING CND

(X)JUNCTION BOX

(X)CONDENSATE PUMPS JUNCTION BOX

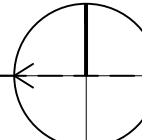
(X)PANEL B

(X)BFU DISCONNECT/STARTER

A2 FLOOR PLAN

3/8" = 1'-0" 0 2' 4' 6'

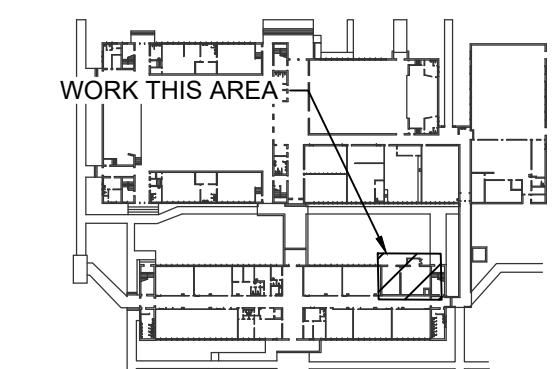
PLAN NORTH



GENERAL NOTES

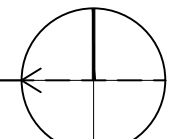
KEYED NOTES

- 1 PROVIDE NEW OR MODIFY WIRING AND CONDUIT FOR EMERGENCY GAS SHUTOFF SOLENOID IF APPLICABLE. COORDINATE THE RELOCATION WITH THE CONTRACTOR PERFORMING THE WORK.
- 2 ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR THE DISCONNECTION AND RE-CONNECTION OF DDC CONTROL WIRING.



A5 BLDG A KEYPLAN
NOT TO SCALE

PLAN NORTH



03.08.24	Date
ISSUED FOR REVIEW	DESCRIPTION
REVISION NO.	REVISIONS

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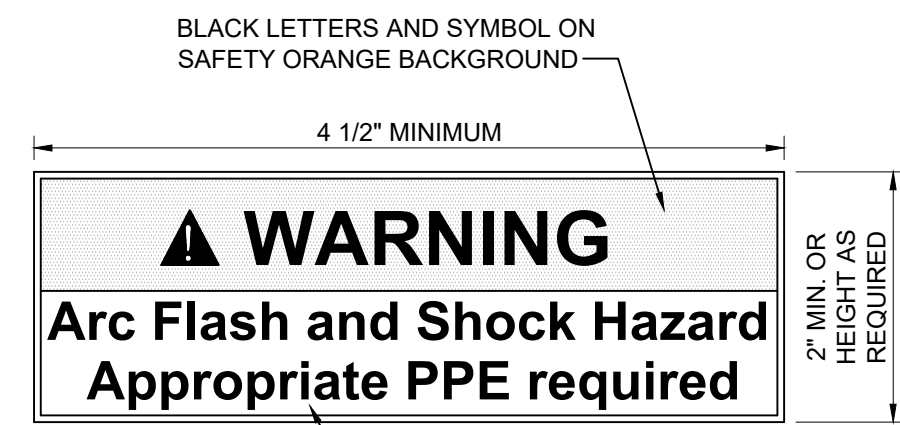
**WILLISTON MIDDLE SCHOOL
BOILER REPLACEMENT**
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WILMINGTON, NC 28401

**ELECTRICAL POWER
PARTIAL FIRST FLOOR PLAN**

JOB NO.:	23280
DRAWN:	CCS
DESIGNED:	CCS
CHECKED:	JPF

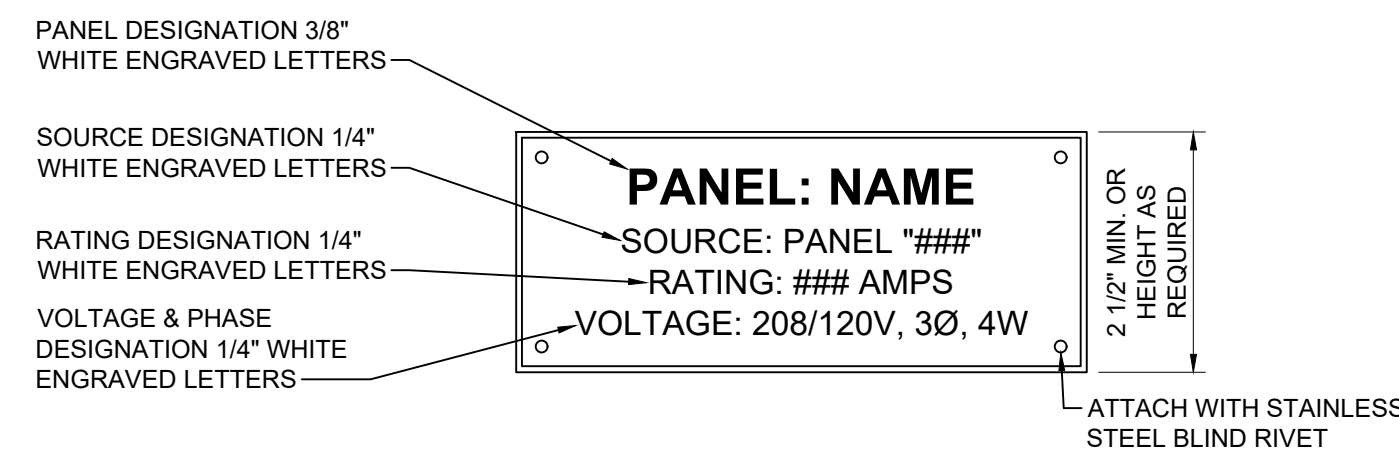
DRAWING NO. **EP101**

REVISION: **A**



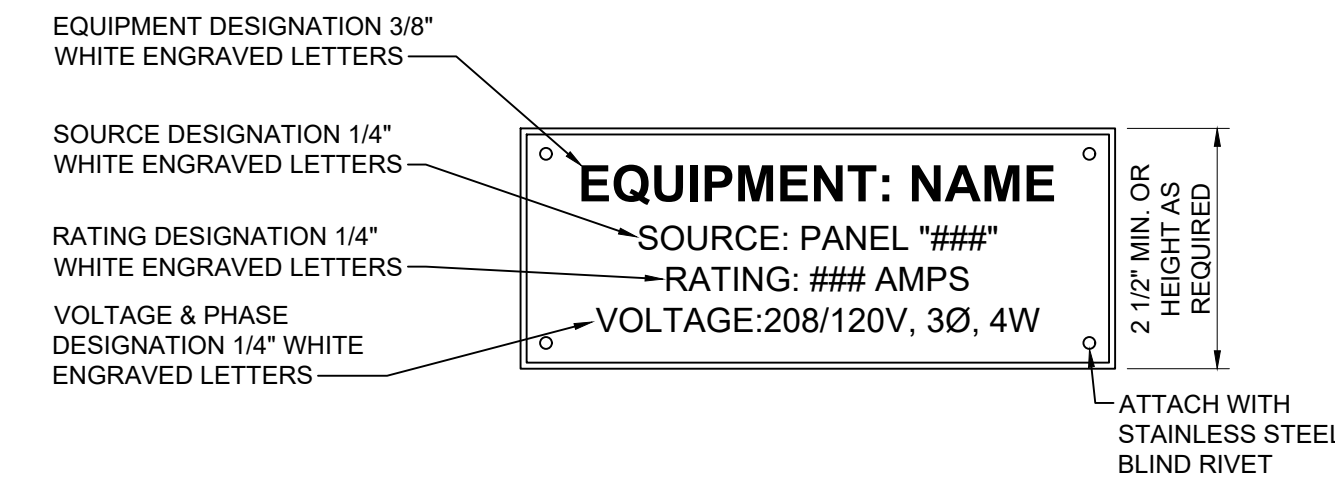
NOTES:
 1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM
 2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

D1 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL
 NOT TO SCALE



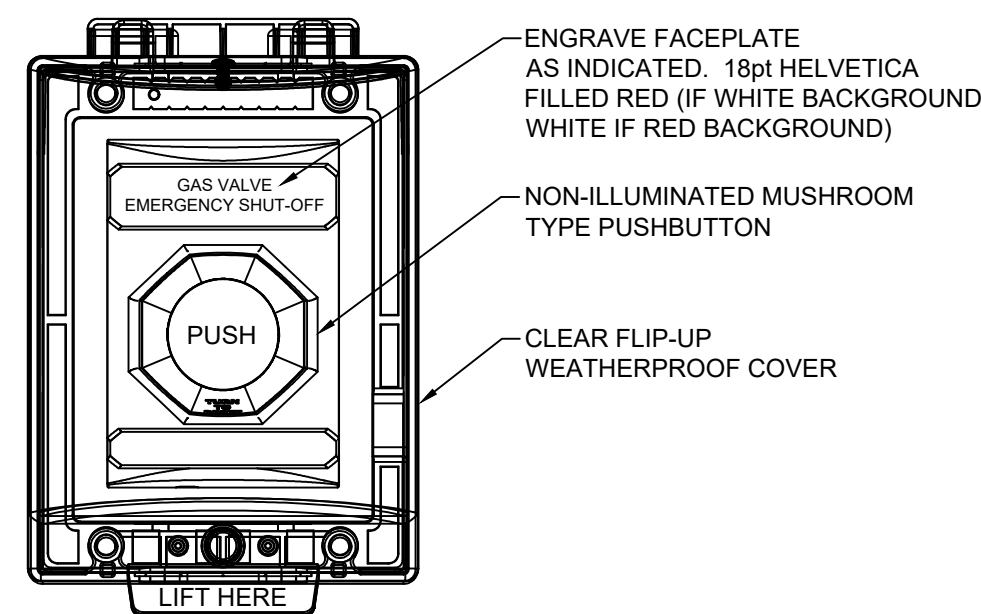
NOTE: SEE SPECS. SECTION 280553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

D2 TYPICAL PANELBOARD NAMEPLATE DETAIL
 NOT TO SCALE

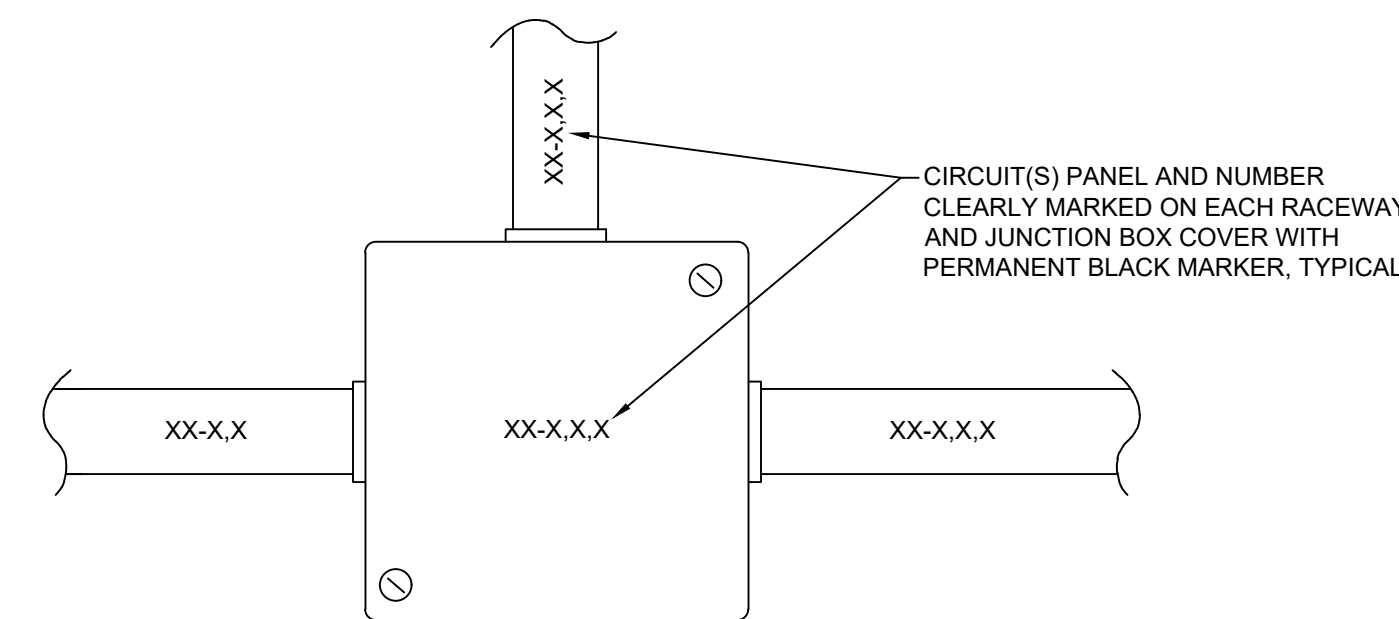


NOTE: SEE SPECS. SECTION 280553 FOR NAMEPLATE MATERIAL AND ENGRAVING COLORS.

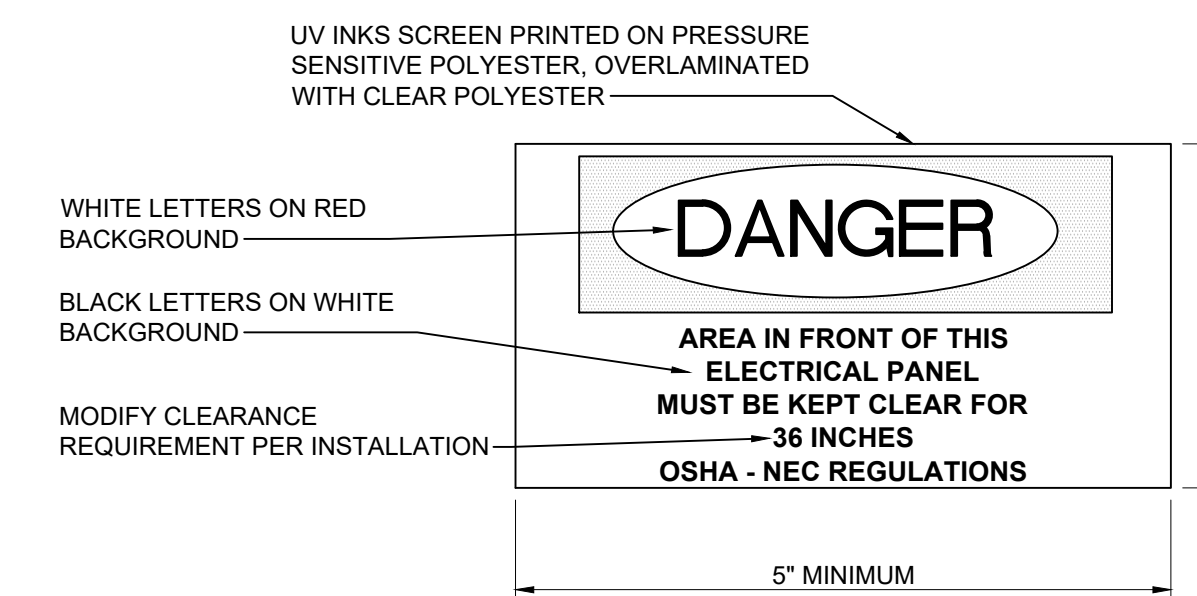
D4 TYPICAL EQUIPMENT NAMEPLATE DETAIL
 NOT TO SCALE



B1 GAS VALVE EMERGENCY SHUTOFF SWITCH
 NOT TO SCALE



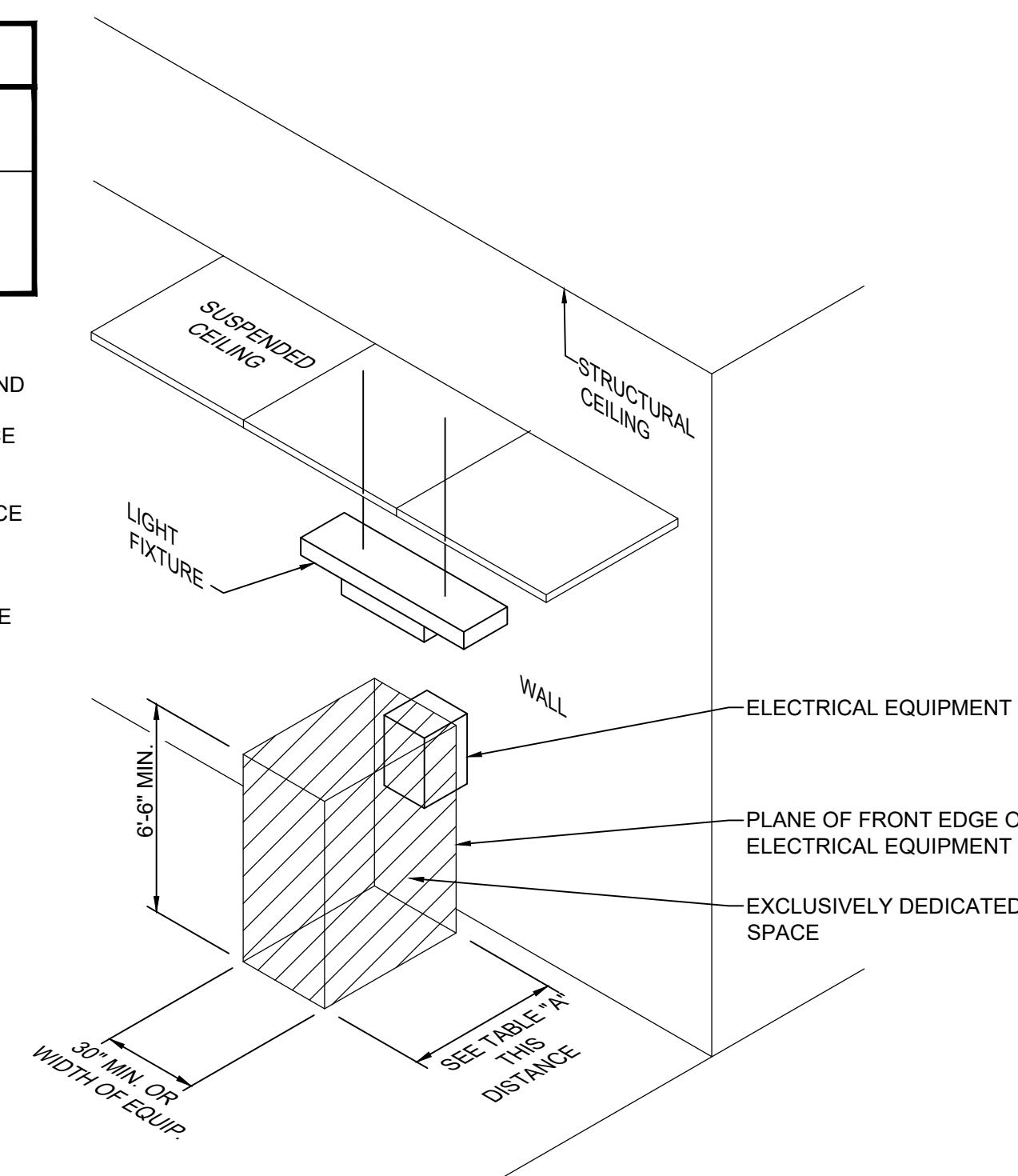
B3 CIRCUIT IDENTIFICATION DETAIL
 NOT TO SCALE



B4 NEC WORKING SPACE LABEL DETAIL
 NOT TO SCALE

NOMINAL VOLTAGE TO GROUND	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITION 1	CONDITION 2	CONDITION 3
0 - 150	900mm (3 ft)	900mm (3 ft)	900mm (3 ft)
151 - 600	900mm (3 ft)	1.0m (3 ft 6 in.)	1.2 m (4 ft.)
601 - 1000	900mm (3 ft)	1.2 m (4 ft.)	1.5 m (5 ft.)

NOTE: WHERE THE "CONDITIONS" ARE AS FOLLOWS:
 CONDITION 1 - EXPOSED LIVE PARTS ON ONE SIDE OF WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.
 CONDITION 2 - EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF WORKING SPACE. CONCRETE BRICK, OR TILE WALLS SHALL BE CONSIDERED GROUNDED.
 CONDITION 3 - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE



A1 WORKING CLEARANCE FOR ELECTRICAL
 NOT TO SCALE

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WILLISTON MIDDLE SCHOOL
 BOILER REPLACEMENT
 401 S. 10TH STREET
 WILMINGTON, NC 28401
 ELECTRICAL
 DETAILS

JOB NO.: 23280
 DRAWN: CCS
 DESIGNED: CCS
 CHECKED: JPF

DRAWING NO.:

E-501

REVISION:
 A