GENERAL NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH BY 2015 IBC AND SHALL CONFORM TO ALL OTHER APPLICABLE MUNICIPAL, STATE, AND FEDERAL REGULATIONS INCLUDING THE ILLINOIS ACCESSIBILITY CODE (1997) AND THE AMERICANS WITH DISABILITIES ACT.

1. ALL CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND BE KNOWLEDGEABLE REGARDING EXISTING CONDITIONS AND THEIR EFFECT ON THE PROPOSED WORK. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR, ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING WITH THE PROJECT.
2. NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO THE INTERRUPTION OF ANY UTILITY.
3. CONTRACTORS AND SUBCONTRACTORS SHALL COORDINATE THEIR WORK WITH THAT OF OTHER TRADES.
4. NO WORK WILL BE PERMITTED TO BE INSTALLED WITHOUT RECEIPT AND SUBSEQUENT REVIEW OF FULL AND COMPLETE SUBMITTALS BY THE ARCHITECT/ENGINEER.
5. DO NOT SCALE DRAWINGS, DIMENSIONS INDICATED TAKE PRECEDENCE OVER SCALE.
6. VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD. WHERE DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS OR ELEVATIONS SHOWN AND ACTUAL FIELD CONDITIONS, NOTIFY ARCHITECT/ENGINEER.
7. DEFINITIONS:
   - 7.1. FURNISH: SUPPLY, DELIVER TO AND UNLOAD AT PROJECT SITE READY FOR ASSEMBLY AND INCORPORATION INTO THE WORK.
   - 7.2. INSTALL: AT THE PROJECT SITE, UNPACK/UNCRATE ASSEMBLE, PLACE, ANCHOR, FINISH, PROTECT, CLEAN, AND PERFORM ALL OTHER SIMILAR OPERATIONS REQUIRED TO FULLY AND PROPERLY INCORPORATE AN ITEM INTO THE WORK. LEGALLY DISPOSE OF OR RECYCLE PACKAGING AND EXTRA MATERIAL OFF-SITE.
   - 7.3. PROJECT SITE: THE SPACE AVAILABLE TO THE CONTRACTOR FOR PERFORMANCE OF CONSTRUCTION ACTIVITIES. THE EXTENT OF THE PROJECT SITE IS THE AREAS TO BE REMODELED AS INDICATED ON THE DRAWINGS, AND EXTENDS TO SUCH AREAS AS CONTAIN TERMINATIONS FOR POWER, DATA AND OTHER SERVICES.
   - 7.4. OFF-SITE: OUTSIDE THE PROPERTY IN WHICH THE PROJECT SITE IS LOCATED.
   - 7.5. PROVIDE: FURNISH AND INSTALL, AS DEFINED ABOVE.
8. WHERE CONFLICTS MAY EXIST BETWEEN THE REQUIREMENTS OF PORTIONS OF THE CONTRACT DOCUMENTS, THE GREATER QUANTITY, HIGHER QUALITY OR MORE STRINGENT REQUIREMENT SHALL GOVERN. THEREFORE, BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT, IF IT RAISED NO QUESTIONS REGARDING SUCH CONFLICTS DURING THE BIDDING PROCESS, AND IN THE ABSENCE OF A CLARIFYING ADDENDUM ISSUED DURING THE BIDDING PROCESS, IT HAS VOLUNTEERED TO COMPLY WITH THE MORE EXPENSIVE REQUIREMENT AS PART OF ITS BASE BID AND IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION TO RESOLVE THE CONFLICT.
9. THE CONTRACT DOCUMENTS REQUIRE THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE PRODUCTS, SYSTEMS AND SERVICES. BY EXECUTING A CONTRACT FOR CONSTRUCTION, THE CONTRACTOR AGREES THAT THE DRAWINGS SET FORTH THE DESIGN INTENT AND, THEREFORE, MAY NOT EXPRESSLY DEPICT EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE. THE CONTRACTOR FURTHER AGREES THAT, AS PART OF ITS BID, IT MUST FURNISH AND INSTALL EVERY LENGTH, SEGMENT, PIECE, PART, COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE AND, CONSEQUENTLY, THE CONTRACTOR IS NOT ENTITLED TO ANY ADDITIONAL COMPENSATION FOR ANY LENGTH, SEGMENT, PIECE, PART COMPONENT OR UNIT OF A PRODUCT, SYSTEM OR SERVICE BECAUSE IT IS NOT EXPRESSLY DEPICTED HEREIN.
10. ARCHITECT SHALL BE NAMED AS ADDITIONAL INSURED ON ALL REQUIRED INSURANCE POLICIES.

B: MISCELLANEOUS AND DEMOLITION NOTES

1. DEFINITIONS:
   - 1.1. DEMOLISH: DISCONNECT FROM SERVICES, UNFASTEN, REMOVE, DISASSEMBLE AND LEGALLY DISPOSE OF OR RECYCLE OFF-SITE.
   - 1.2. SALVAGE: CAREFULLY, SO AS TO PRESERVE INTEGRITY AND USEFULNESS, DISCONNECT FROM SERVICES, UNFASTEN, REMOVE, DISASSEMBLE IF NECESSARY, AND STORE TEMPORARILY FOR REINCORPORATION INTO THE WORK OR FOR DELIVERY/TURN-OVER TO THE OWNER AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
   - 1.3. SALVAGE IN PLACE: PROTECT, RE-USE, CLEAN, RE-CONDITION IF NECESSARTY, REFINISH IF INDICATED IN THE DRAWINGS, EXISTING INSTALLED ITEM/COMPONENT WITHOUT DISCONNECTING, UNFASTENING OR REMOVING FROM THE WORK.
2. BRING ANY UNFORESEEN OR CONFLICTING CONDITIONS TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. REPAIR, PATCH, OR REPLACE FINISH MATERIALS OR VISIBLE ASSEMBLIES THAT ARE SOILED, CUT OR DAMAGED IN ANY FASHION DURING THE COURSE OF THE WORK. PERFORM PATCHING SUCH THAT EDGES BLEND INTO CONTIGUOUS SURFACES SMOOTHLY, MATCHING TEXTURE AND COLOR OF ADJACENT SURFACES.
4. SEAL PENETRATIONS OF DUCTWORK, CONDUIT OR PIPES WITH UL APPROVED MATERIALS TO MAINTAIN THE FIRE RATING OF ASSEMBLIES.
5. APPLY APPROPRIATE & COMPATIBLE SEALANT MATERIALS AS REQUIRED TO SEPARATE DISSIMILAR METALS, FILL GAPS IN EXISTING ASSEMBLIES OR WHERE NEW AND EXISTING ASSEMBLIES MEET OR WHERE OTHERWISE REQUIRED BY THE SPECIFICATIONS.
6. UNTIL PERMANENT LIGHTING IS IN PLACE AND ENERGIZED, PROVIDE AND MAINTAIN TEMPORARY LIGHTING IN THE PROJECT AREAS, TO ACHIEVE A MINIMUM LIGHTING LEVEL OF 2 WATTS PER S.F.
7. OWNER WILL CONTINUE TO OCCUPY AREAS ADJACENT TO THE PROJECT AREAS DURING THE CONSTRUCTION PERIOD. COORDINATE WITH OWNER TO MINIMIZE CONFLICT AND TO FACILITATE OWNER'S OPERATIONS. LIMIT CONDUCT OF ESPECIALLY NOISY OR DISRUPTIVE WORK TO ONLY THOSE TIMES MUTUALLY AGREED TO BY OWNER. REQUEST MUTUALLY AGREEABLE TIME FROM OWNER PRIOR TO CONDUCTING SUCH WORK, AND PROCEED WITH SUCH WORK ONLY AFTER RECEIVING OWNER'S EXPRESS PERMISSION TO DO SO.

C: BIDDING NOTES

1. REFER TO THE JJC FRONT-END DOCUMENTS FOR THE ALLOWANCE THAT THE GENERAL CONTRACTOR IS TO PROVIDE AS PART OF HIS/HER BID FOR UNFORSEEN/MISCELLANEOUS CONDITIONS. WHEN FIGURING THIS ALLOWANCE IN THE BID, CONTRACTOR IS TO INCLUDE ALL NECESSARY OVERHEAD AND PROFIT. THIS ALLOWANCE IS NOT FOR THE CONTRACTOR'S BENEFIT, AND IS ONLY AUTHORIZED TO CHARGE AGAINST THIS ALLOWANCE WHEN DIRECTED AND APPROVED BY JOLIET JUNIOR COLLEGE. THE CONTRACTOR WILL BE ALLOWED TO INVOICE FOR MATERIAL AND RAW LABOR COST ONLY.
2. CONSTRUCTION SCHEDULE:

   CONSTRUCTION START AND SUBSTANTIAL COMPLETION IN ACCORDANCE WITH JJC FRONT-END DOCUMENTS.
3. ALL LOUD AND DISRUPTIVE WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM.

STANDARD ABBREVIATIONS

@	– AT	EXP	– EXPANSION	PL	– PLATE
A B	– ANCHOR BOLT	EXP CONST	– EXPOSED CONSTRUCTION	PL LAM	– PLASTIC LAMINATE
ABR	– ABRASIVE	FD	– FLOOR DRAIN	PL	– PLASTER
AT–(1)	– ACOUSTIC TILE CEILING (TYPE)	FDN	– FOUNDATION	PLB'G	– PLUMBING
AFF	– ABOVE FINISH FLOOR	FE	– FIRE EXTINGUISHER	PLB'G CONTR	– PLUMBING CONTRACTOR
AFG	– ABOVE FINISH GRADE	FEC	– FIRE EXTINGUISHER CABINET	PLYWD	– PLYWOOD
ACOUS	– ACOUSTIC	FHC	– FIRE HOSE CABINET	PNT	– PAINT
ADD'N	– ADDITION	FIN	– FINISH	PVC	– POLYVINYL CHLORIDE
ADD'L	– ADDITIONAL	FLR	– FLOOR	PL–(1)	– GYPSUM PLASTER (TYPE)
ADJ	– ADJACENT	FRT	– FIRE RETARDANT TREATED (RATED)	R OR RAD	– RADIUS
ADJT	– ADJUSTABLE	FUR CHN'L	– FURRING CHANNEL	R	– RISER
AL	– ALUMINUM	FTG	– FOOTING	RD	– ROOF DRAIN
ALT	– ALTERNATE	GA	– GAUGE	RO	– ROUGH OPENING
ANCH	– ANCHOR	GALV	– GALVANIZED	RF (1)	– RUBBER FLOORING (TYPE)
AP	– ACCESS PANEL	GEN CONTR	– GENERAL CONTRACTOR	RH	– RIGHT HAND
APPROX	– APPROXIMATE	GC	– GENERAL CONTRACTOR	REF	– REFERANCE
ASPH	– ASPHALT	GL	– GLASS	REINF	– REINFORCING
AUTO	– AUTOMATIC	GYP DB–(1)	– GYPSUM WALL BOARD (DRYWALL)(TYPE)	REQ'D	– REQUIRED
AVG	– AVERAGE	GYP PL–(1)	– GYPSUM PLASTER (TYPE)	RM	– ROOM
BSMT	– BASEMENT	H	– HIGH	SF	– SQUARE FOOT
BD	– BOARD	HD	– HEAVY DUTY	SI	– SQUARE INCH
BITUM	– BITUMINOUS/BITUMASTIC	HD	– HARD	SK	– SINK
BLDG	– BUILDING	HDNR	– HARDENER	SS	– STAINLESS STEEL
BLK'G	– BLOCKING (WOOD)	HD WD–(1)	– HARD WOOD (TYPE)	SSK	– SERVICE SINK
BM	– BEAM	HDWRE	– HARDWARE	SQ	– SQUARE
B.M.	– BENCH MARK	HGT	– HEIGHT	SCHED	– SCHEDULE
BT STL PL	– BENT STEEL PLATE	HM	– HOLLOW METAL	SEAL/HDNR	– SEALER/HARDENER
BRG	– BEARING	HP	– HIGH POINT	SEC	– SECTION
BRKT	– BRACKET	HORIZ	– HORIZONTAL	SHT	– SHEET
BRK	– BRICK	HTG	– HEATING	SIM	– SIMILAR
BTM	– BOTTOM	HVAC	– HEATING/VENTILATING/AIR CONDITIONING	SOG	– SLAB ON GRADE
BTW'N	– BETWEEN	IN	– INCH	SPEC	– SPECIFICATION(S)
CJ	– CONSTRUCTION/CONTRACTION JOINT	ID	– INSIDE DIAMETER	SPC'G	– SPACING
CAB	– CABINET	INCL	– INCLUDE (D)	SPK'R	– SPEAKER
CEM PL–(1)	– CEMENT PLASTER (TYPE)	INSUL	– INSULATION OR INSULATING	STN	– STN
CT PAV–(1)	– CERAMIC PAVER TILE (TYPE)	JT	– JOINT	STD	– STANDARD
CIPC	– CAST– IN– PLACE CONCRETE	KD	– KNOCK DOWN	STD WGT	– STANDARD WEIGHT
CLG	– CEILING	L	– LONG	STL	– STEEL
CLR	– CLEAR	LAM	– LAMINATED	STRUCT	– STRUCTURAL OR STRUCTURE
CO	– CLEAN OUT	LAV	– LAVATORY	SUSP	– SUSPEND(ED)
CMU	– CONCRETE MASONRY UNIT	LH	– LEFT HAND	SYM	– SYMMETRICAL
COL	– COLUMN	LP	– LOW POINT	T	– TREAD
COMB	– COMBINATION	LGT WGT	– LIGHTWEIGHT	T&G	– TONGUE AND GROOVE
COMP	– COMPRESSIBLE	LL	– LIVE LOAD	T/B	– TOP OF BEAM
COMPT'D	– COMPACTED	LLH	– LONG LEG HORIZONTAL	T/C	– TOP OF CURB
CONC	– CONCRETE	LLV	– LONG LEG VERTICAL	T/F	– TOP OF FOUNDATION
CONC OPNG	– CONCRETE OPENING	LVR	– LOUVER	T/S	– TOP OF SLAB
COND	– CONDITION	MO	– MASONRY OPENING	T/STL	– TOP OF STEEL
CONT	– CONTINUOUS	MT	– METAL THRESHOLD	T/W	– TOP OF WALL
CONTR	– CONTRACT (OR)	MAS'Y	– MASONRY	TB (4)	– TACKBOARD (LENGTH)
CPT–(1)	– CARPET (TYPE)	MAT'L	– MATERIAL	TOM	– TOP OF MASONRY
CT–(1)	– CERAMIC TILE (TYPE)	MAX	– MAXIMUM	TYP	– TYPICAL
CTR	– COUNTER	MB–(16)	– MARKERBOARD– (LENGTH)	UNO	– UNLESS NOTED OTHERWISE
CTR SK	– COUNTER SINK	MECH	– MECHANICAL	VBC	– VINYL BASE COVED
CTS	– CENTER(S)	MECH CONTR	– MECHANICAL CONTRACTOR	VBS	– VINYL BASE STRAIGHT
CUH	– CABINET UNIT HEATER	MFR	– MANUFACTURER	VCT	– VINYL COMPOSITION TILE
CUV	– CABINET UNIT VENTILATOR	MIN	– MINIMUM	VEN PL (1)	– VENEER PLASTER (TYPE)
DIA	– DIAMETER	MISC	– MISCELLANEOUS	VERT	– VERTICAL
DIM	– DIMENSION	MSB	– MOP SERVICE BASIN (SINK)	W	– WIDE OR WIDTH
DN	– DOWN	MT(D)	– MOUNT(ED)	W/	– WITH
DR	– DOOR	MTL	– METAL	W/O	– WITHOUT
DWG'S	– DRAWINGS	NIC	– NOT IN CONTRACT	WCG	– WALL CORNER GUARD
DTL	– DETAIL	NOM	– NOMINAL	WD	– WOOD
DWL'S	– DOWELS	NTS	– NOT TO SCALE	WDN	– WINDOW
EA	– EACH	NO	– NUMBER	WGT	– WEIGHT
EJ	– EXPANSION JOINT	OA	– OVERALL	WP	– WATER PROOF
EL	– ELEVATION	OC	– ON CENTER	WWF	– WELDED WIRE FABRIC
ELEC	– ELECTRIC/ELECTRICAL	OD	– OUTSIDE DIAMETER	WSB	– WALL SERVICE BASIN
ELEC CONTR	– ELECTRICAL CONTRACTOR	OF	– OUTSIDE FACE		
ELEV	– ELEVATOR	OPN'G	– OPENING		
EMBED	– EMBEDMENT	OPP	– OPPOSITE		
EMER	– EMERGENCY	OPP HD	– OPPOSITE HAND		
EP PNT	– EPOXY PAINT	PSF	– POUNDS PER SQUARE FOOT		
EQ	– EQUAL	PSI	– POUNDS PER SQUARE INCH		
EW	– EACH WAY	PT	– PRESSURE TREATED		
EWC	– ELECTRIC WATER COOLER	PTN	– PARTITION		
EWH	– ELECTRIC WATER HEATER	PAV'T	– PAVEMENT		
ER–(26)	– EXHIBIT RAIL (LENGTH)	PC	– PIECE		
EXIST	– EXISTING	PFM	– PERMANENT FLOOR MAT		

THE MATERIALS, ABBREVIATIONS, AND DRAFTING SYMBOLS LEGEND ARE EACH AN ALL INCLUSIVE MASTER LIST USED BY THIS FIRM. THE INCLUSION OF THESE LEGENDS INTO THESE DOCUMENTS DOES NOT IMPLY THAT ALL THE SYMBOLS OR MATERIALS INCLUDED IN THESE LEGENDS ARE INCORPORATED INTO THIS PROJECT.

DRAFTING SYMBOLS AND MATERIALS LEGEND

DETAIL NUMBER / DRAWING NUMBER	8 / A12.24
DETAIL NUMBER / DRAWING NUMBER	23 / A7.19
DETAIL NUMBER / DRAWING NUMBER	2, 6, 9.16, 5, 3
DETAIL NUMBER / DRAWING NUMBER	1 / A6.05
COLUMN NUMBER	26
LOCATION ELEVATION	T/1ST FLR. 100'-0"
ROOM NUMBER	204
DOOR NO. NEW / DOOR NO. EXISTING	203.2 / 203.1X
NOMINAL THICKNESS / CONSTRUCTION TYPE / SPECIAL CONDITION	M8 / 3.0
KEYNOTE IDENTIFICATION	15.211
WINDOW TYPE IDENTIFICATION	X
TOILET ACCESSORY IDENTIFICATION	A
SPOT ELEVATION	T/1ST FLR. 100'-0"
CONCRETE	
BRICK MASONRY IN PLAN	
CONCRETE MASONRY IN PLAN (RUNNING BOND)	
CONCRETE MASONRY IN PLAN (STACK BOND)	
STONE MASONRY IN PLAN	
RAKED JOINT IN PLAN / CTRL./EXP. JOINT IN PLAN	
BRICK MASONRY IN SECTION DETAIL	
CONCRETE MASONRY IN SECTION DETAIL	
STONE MASONRY IN SECTION DETAIL	
STEEL IN SECTION DETAIL	
DISCONTINUOUS WOOD BLOCKING IN SECTION	
CONTINUOUS WOOD BLOCKING IN SECTION	
FINISHED WOOD IN SECTION DETAIL	
RIGID BOARD INSULATION	
RIGID BOARD INSULATION (ROOFING)	
BATT INSULATION	
GYPSUM BOARD	
ACOUSTICAL CEILING PANEL	
BITUMINOUS CONCRETE (ASPHALT) PAVING IN SECTION	
AGGREGATE BALLAST, FILL OR BACKFILL IN SECTION	
UNDISTURBED EARTH	
EARTH BACKFILL	

JOLIET JUNIOR COLLEGE — 1901

PROJECT

STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS
JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, IL 60431

OWNER

JOLIET JUNIOR COLLEGE
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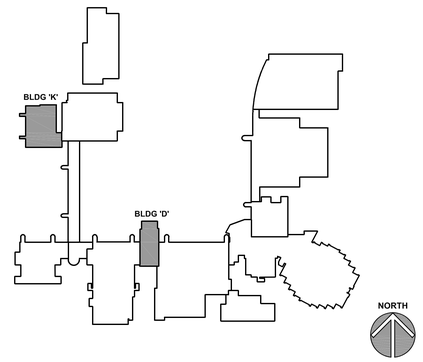

INDEX OF DRAWINGS

BUILDING CODE DATA

2015 INTERNATIONAL BUILDING CODE
2014 ILLINOIS STATE PLUMBING CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL FUEL AND GAS CODE
2015 INTERNATIONAL ENERGY CODE
2015 INTERNATIONAL FIRE PREVENTION CODE
1997 IL ACCESSIBILITY CODE
2014 NATIONAL ELECTRIC CODE
LOCAL AMENDMENTS TO THE ABOVE CODES

SEALS & CERTIFICATES

I HAVE PREPARED, OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION, THEY ARE IN COMPLIANCE WITH IBC 2015 EDITION, THE ENVIRONMENTAL BARRIERS ACT AND THE ILLINOIS ACCESSIBILITY CODE.

KLUBER, INC. ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184–001284

ARCHITECT'S SEAL	MECHANICAL ENGINEER'S SEAL	ELECTRICAL ENGINEER'S SEAL
"G" SERIES, "A" SERIES	"G" SERIES "M" SERIES	"G" SERIES "E" SERIES

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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS
JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

SHEET TITLE
COVER SHEET, GENERAL NOTES, SYMBOLS AND DRAWING INDEX

SHEET NUMBER
G100

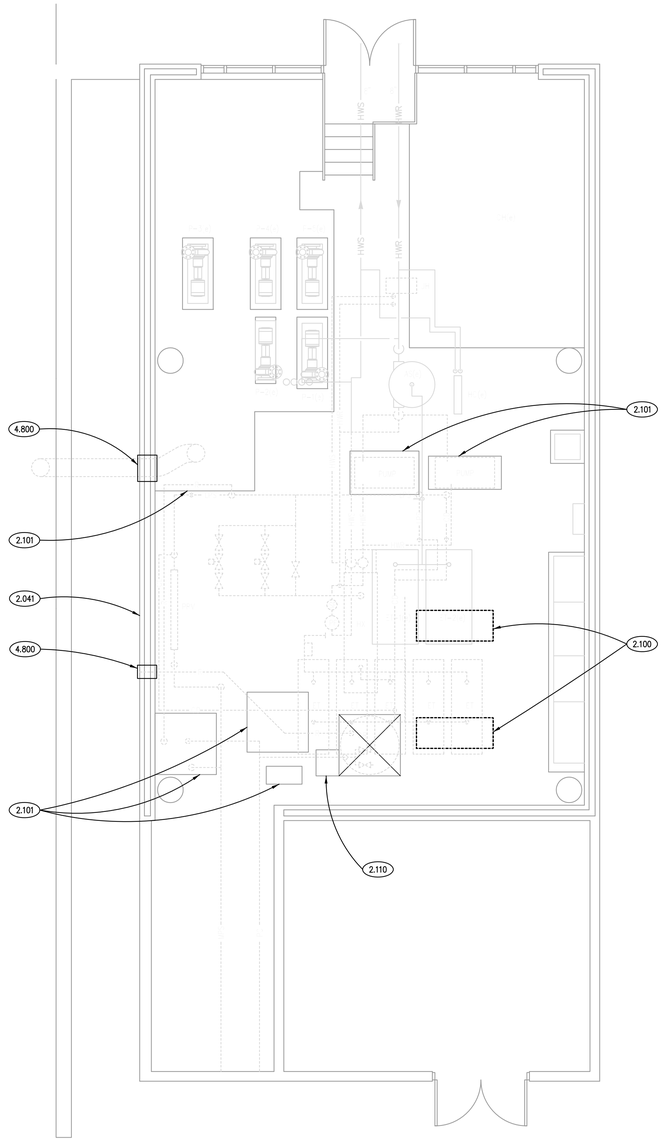
P:\1160 - JJC - Main Campus - Steam Pipe System Replacement with Condensing Boilers\00_Design\Dwgs\DD-CD\01_Gen\1160G0100.dwg, 2/16/2018 10:33:29 AM, xiel

GENERAL NOTES

1. DEMOLISH ALL EXIST. SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXIST. BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.

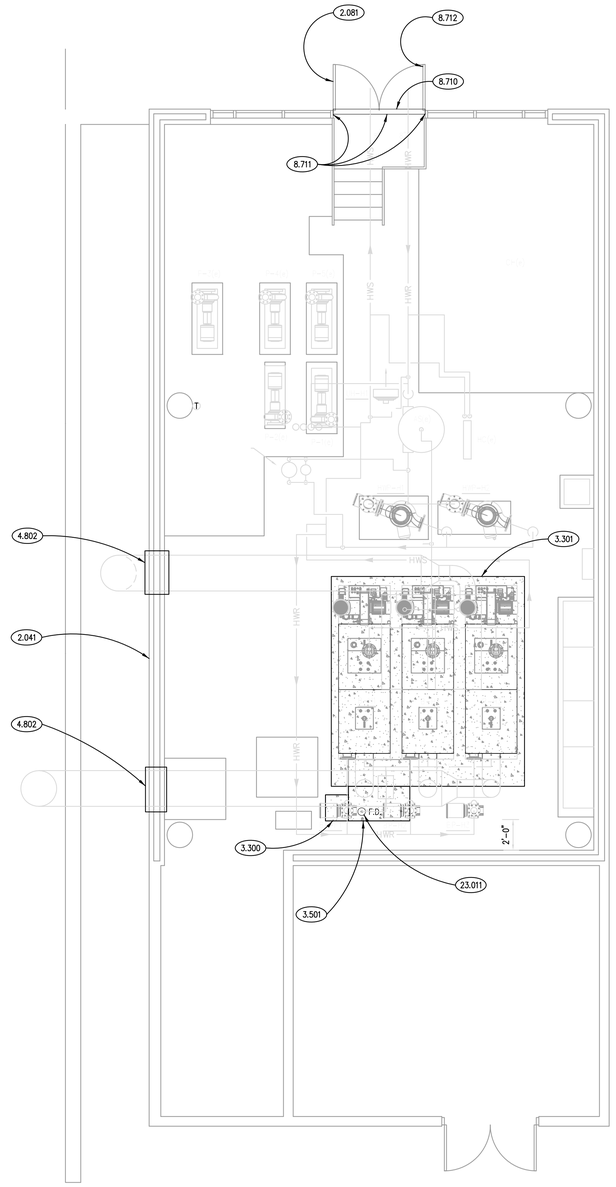
2. EXISTING SLAB CUTS AND INFILL REQUIRED AT ALL UNDERGROUND WORK. CONTRACTOR TO COORDINATE REQUIREMENTS WITH PLUMBING DRAWINGS AND EXISTING CONDITIONS. AREAS SHOWN ARE APPROXIMATE.

3. ADDITIONAL ARCHITECTURAL SYSTEMS WORK DEPICTED ON MECHANICAL AND PLUMBING DRAWINGS IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ARCHITECTURAL WORK SCOPE ITEMS AND INCLUDE ALL SUCH WORK, FOR A COMPLETE INSTALLATION, IN THE BASE BID.



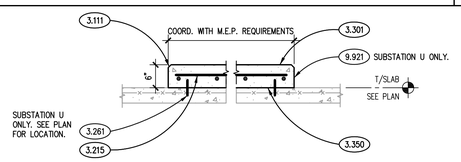
SUBSTATION H ARCHITECTURAL / STRUCTURAL DEMOLITON PLAN (2)

SCALE: 1/4" = 1'-0"



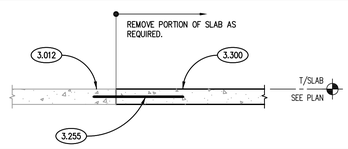
SUBSTATION H ARCHITECTURAL / STRUCTURAL NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"



TYPICAL EQUIPMENT PAD DETAILS (A)

SCALE: N.T.S.



TYP. NEW SLAB TO EXIST. SLAB DETAIL (B)

SCALE: N.T.S.

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

2.041 EXISTING CONCRETE MASONRY WALL.
2.081 EXISTING PAIR OF 3'-0" X 8'-0" HOLLOW STEEL DOORS IN HOLLOW STEEL FRAME.
2.100 DEMOLISH EXISTING EQUIPMENT PAD.
2.101 EXISTING EQUIPMENT PAD TO REMAIN.
2.110 SAWCUT AND REMOVE PORTION OF EXISTING SLAB AS REQUIRED TO INSTALL NEW WORK.

3.012 EXISTING CONCRETE SLAB.
3.111 CONCRETE FORMING AND ACCESSORIES: CONTINUOUS 3/4" CHAMFER U.N.O.
3.215 CONCRETE REINFORCING: REINFORCING STEEL MAT. #5 @ 12" O.C. EACH WAY U.N.O.
3.255 CONCRETE REINFORCING: #4 DOWEL X 2'-0" @ 1'-0" O.C. U.N.O. ANCHOR INTO EXISTING SLAB/WALL/FOOTING USING INJECTION ADHESIVE/EPOXY SYSTEM PER PROJECT SPECIFICATIONS. EMBEDMENT TO BE 6" U.N.O.
3.261 CONCRETE REINFORCING: #4 DOWEL X 4" LG. @ 2'-0" O.C. U.N.O. ANCHOR INTO EXISTING SLAB/WALL/FOOTING USING INJECTION ADHESIVE/EPOXY SYSTEM PER PROJECT SPECIFICATIONS. EMBEDMENT TO BE 2" U.N.O.
3.300 CAST-IN-PLACE CONCRETE: INTERIOR SLAB-ON-GRADE. REFER TO SPECIFICATIONS FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. SLAB, DOWEL PER DETAIL B/AS310. MATCH EXIST. SLAB THICKNESS.
3.301 CAST-IN-PLACE CONCRETE: EQUIPMENT PAD. REFER TO SPECIFICATIONS AND DETAIL A/AS310 FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. COORDINATE SIZE, LOCATION AND QUANTITY WITH M.E.P. DRAWINGS AND REQUIREMENTS. REFER TO TYPICAL DETAIL ON A/AS310. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. PAD, DOWEL PER DETAIL B/AS310. MATCH EXIST. PAD THICKNESS.
3.350 CAST-IN-PLACE CONCRETE ACCESSORY: BONDING AGENT. ROUGHEN BASE SLAB AS REQUIRED.
3.501 CAST-IN-PLACE CONCRETE: EXISTING PIT TO BE FILLED WITH GRANULAR MATERIAL AND CAST A NEW SLAB ON TOP AS PER DETAIL A/AS310. DOWEL NEW SLAB INTO EXISTING AS PER DETAIL B/AS310.

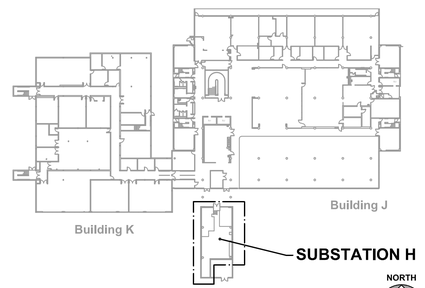
4.800 MASONRY ASSEMBLY: PATCH OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA – REFER TO MECHANICAL DRAWINGS; CUT OUT DAMAGED/PARTIAL UNITS AND PROVIDE NEW WHOLE UNITS MATCHING THICKNESS OF EXISTING TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.
4.802 MASONRY ASSEMBLY: CREATE OPENING FOR NEW MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS.

8.710 DOOR HARDWARE: PROVIDE NEW SILICONE BUMPER SEAL THRESHOLD; COORDINATE HEIGHT OF THRESHOLD WITH DOOR CLEARANCE OVER SLAB; SET THRESHOLD IN CONTINUOUS BED OF SILICONE SEALANT AND ANCHOR SECURELY TO CONCRETE SLAB.
8.711 DOOR HARDWARE: PROVIDE NEW ALUMINUM SILICONE SPONGE PERIMETER SEALS; DARK BRONZE ANODIZED FINISH; NATIONAL GUARD PRODUCTS #12750KB.
8.712 DOOR HARDWARE: PROVIDE NEW ALUMINUM OVERLAPPING ASTRAGAL WITH SILICONE SEAL ON INSIDE FACE OF LHR INACTIVE LEAF; DARK BRONZE ANODIZED FINISH; NATIONAL GUARD PRODUCTS #114SDKB.

9.921 INTERIOR PAINTING: EPOXY PAINT VERTICAL SIDE FACES AND CHAMFERED EDGE FACES OF NEW HOUSEKEEPING PAD; SAFETY YELLOW COLOR TO MATCH EXISTING HOUSEKEEPING PADS.

23.011 M.E.P. ITEM: FLOOR DRAIN. REFER TO PLUMBING DRAWINGS AND ARCHITECTURAL DRAWINGS. PROVIDE ALL SLOPES TO DRAINS AS REQUIRED.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

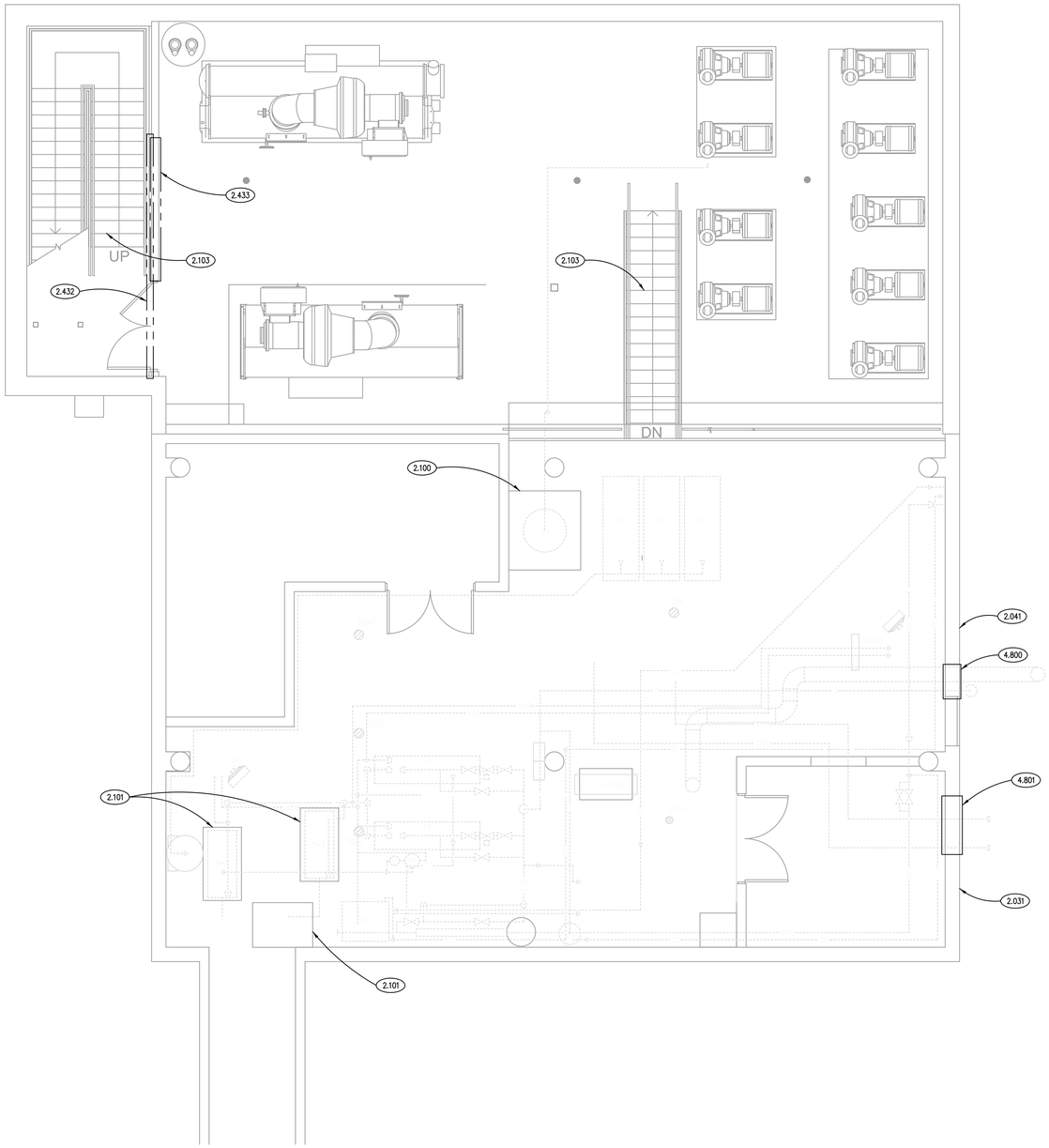
JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO. 17-292-1160
DRAWN CDH/JMB/VAD
CHECKED CDH/JMB
APPROVED CDH/JMB

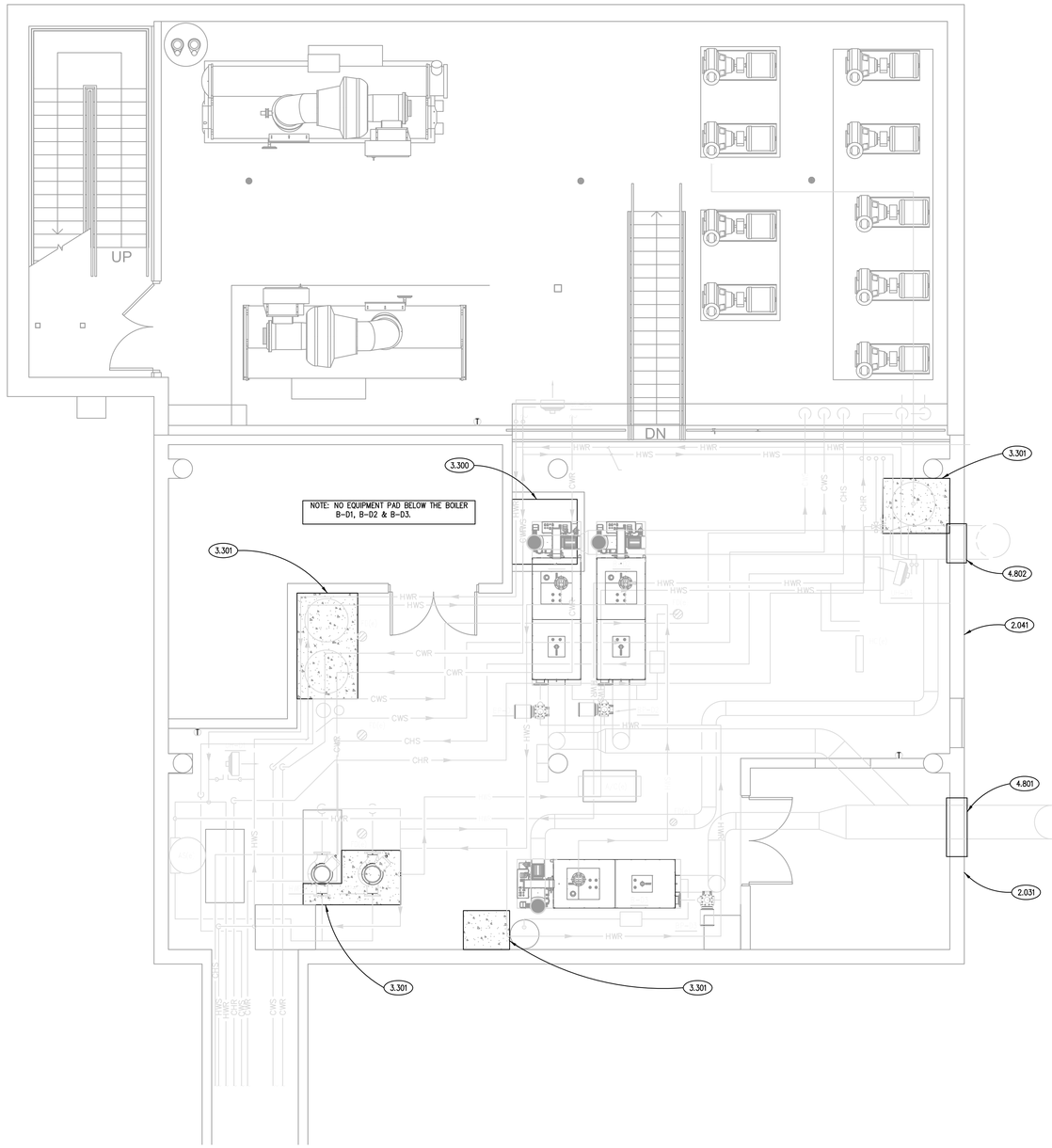
SHEET TITLE
SUBSTATION H ENLARGED ARCHITECTURAL / STRUCTURAL FLOOR PLANS

SHEET NUMBER
AS310



SUBSTATION D ARCHITECTURAL / STRUCTURAL DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION D ARCHITECTURAL / STRUCTURAL NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

2.031 EXISTING CONCRETE FOUNDATION WALL.

2.041 EXISTING CONCRETE MASONRY WALL.

2.100 DEMOLISH EXISTING EQUIPMENT PAD.

2.101 EXISTING EQUIPMENT PAD TO REMAIN.

2.103 SALVAGE EXISTING STEEL FRAMED / GRATED STAIR AND RAIL ASSEMBLY. REMOVE AND RE-INSTALL AS REQUIRED TO FACILITATE NEW CONSTRUCTION.

2.432 SALVAGE EXISTING EXTERIOR WALL CONSTRUCTION: INSULATED METAL SANDWICH PANELS 15'± HIGH IN THIS AREA, ALONG WITH EXISTING HORIZONTAL FURRING CHANNELS, COPING FLASHINGS, BASE FLASHINGS AND PERIMETER SIDE EDGE FLASHINGS; TO PERMIT ACCESS FOR BOILER EQUIPMENT INSTALLATION; TAKE NOTE OF EXISTING JOINT SEALANT LOCATIONS; AFTER ACCESS IS NO LONGER NEEDED DURING CONSTRUCTION, RE-INSTALL SALVAGED WALL PANELS, FLASHINGS AND OTHER COMPONENTS IN THEIR ORIGINAL CONFIGURATION; APPLY LOW MODULUS SILICONE JOINT SEALANT TO JOINTS THAT WERE PREVIOUSLY SEALED WITH JOINT SEALANT.

2.433 SALVAGE EXISTING EXTERIOR WALL CONSTRUCTION: STEEL STUDS @ 16" O.C. 15'± HIGH, AND ASSOCIATED BRACING IN THIS AREA; TO PERMIT ACCESS FOR POILER EQUIPMENT INSTALLATION; AFTER ACCESS IS NO LONGER NEEDED DURING CONSTRUCTION, RE-INSTALL SALVAGED STUDS, BRACING AND OTHER COMPONENTS IN THEIR ORIGINAL CONFIGURATION.

3.300 CAST-IN-PLACE CONCRETE: INTERIOR SLAB-ON-GRADE. REFER TO SPECIFICATIONS FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. SLAB, DOWEL PER DETAIL B/AS310. MATCH EXIST. SLAB THICKNESS.

3.301 CAST-IN-PLACE CONCRETE: EQUIPMENT PAD. REFER TO SPECIFICATIONS AND DETAIL A/AS310 FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. COORDINATE SIZE, LOCATION AND QUANTITY WITH M.E.P. DRAWINGS AND REQUIREMENTS. REFER TO TYPICAL DETAIL ON A/AS310. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. PAD, DOWEL PER DETAIL B/AS310. MATCH EXIST. PAD THICKNESS.

4.800 MASONRY ASSEMBLY: PATCH OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA – REFER TO MECHANICAL DRAWINGS; CUT OUT DAMAGED/PARTIAL UNITS AND PROVIDE NEW WHOLE UNITS MATCHING THICKNESS OF EXISTING TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.

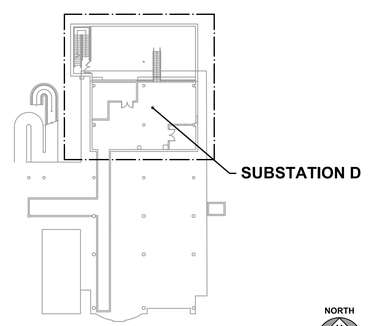
4.801 MASONRY ASSEMBLY: MODIFY OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS; CUT OUT DAMAGED/PARTIAL UNITS AND PROVIDE NEW WHOLE UNITS MATCHING THICKNESS OF EXISTING TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.

4.802 MASONRY ASSEMBLY: CREATE OPENING FOR NEW MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS.

GENERAL NOTES

1. DEMOLISH ALL EXIST. SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXIST. BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
2. EXISTING SLAB CUTS AND INFILL REQUIRED AT ALL UNDERGROUND WORK. CONTRACTOR TO COORDINATE REQUIREMENTS WITH PLUMBING DRAWINGS AND EXISTING CONDITIONS. AREAS SHOWN ARE APPROXIMATE.
3. ADDITIONAL ARCHITECTURAL SYSTEMS WORK DEPICTED ON MECHANICAL AND PLUMBING DRAWINGS IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ARCHITECTURAL WORK SCOPE ITEMS AND INCLUDE ALL SUCH WORK, FOR A COMPLETE INSTALLATION, IN THE BASE BID.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
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JOLIET, ILLINOIS 60431

ISSUED	
02/16/18	BID DOCUMENTS

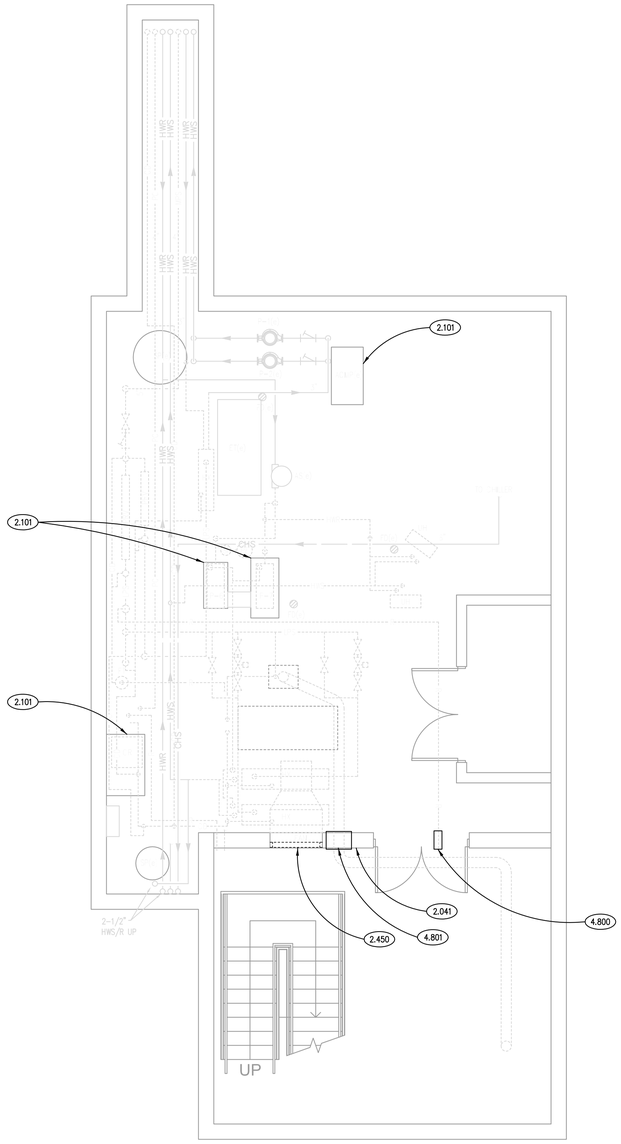
JOB NO.	17-292-1160
DRAWN	CDH/JMB/VAD
CHECKED	CDH/JMB
APPROVED	CDH/JMB

SHEET TITLE

SUBSTATION D ENLARGED ARCHITECTURAL / STRUCTURAL FLOOR PLANS

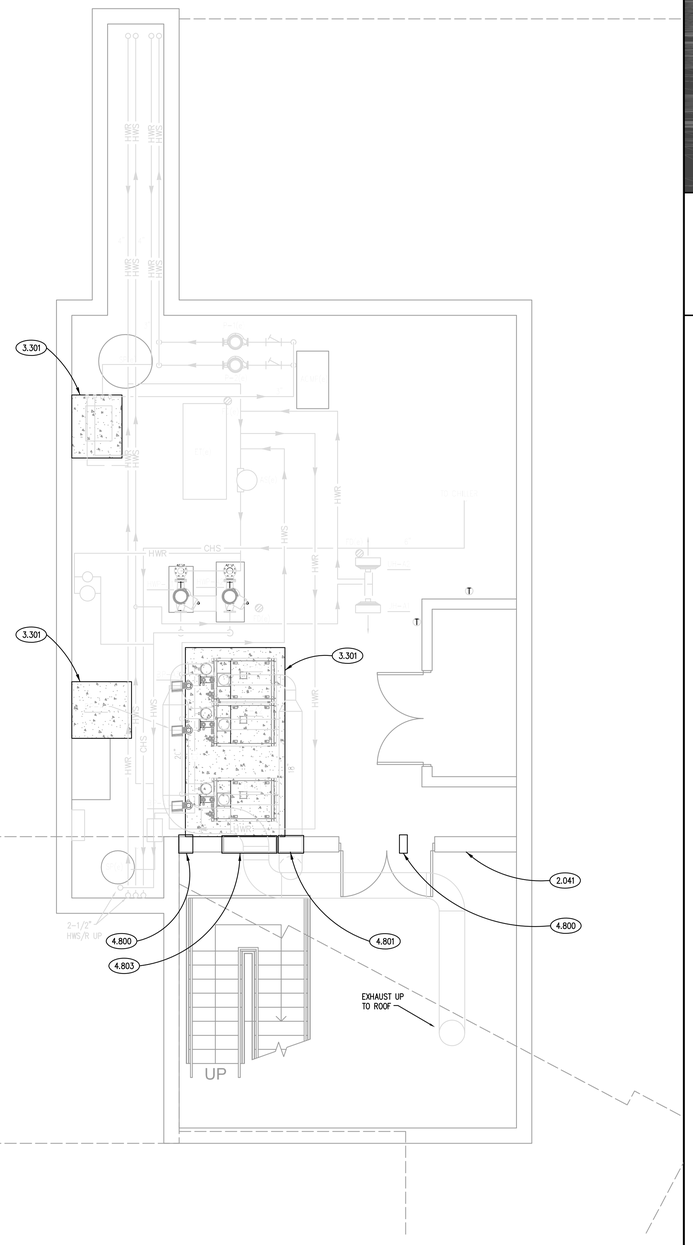
SHEET NUMBER

AS311



SUBSTATION A ARCHITECTURAL / STRUCTURAL DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION A ARCHITECTURAL / STRUCTURAL NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

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GENERAL NOTES

1. DEMOLISH ALL EXIST. SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXIST. BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
2. EXISTING SLAB CUTS AND INFILL REQUIRED AT ALL UNDERGROUND WORK. CONTRACTOR TO COORDINATE REQUIREMENTS WITH PLUMBING DRAWINGS AND EXISTING CONDITIONS. AREAS SHOWN ARE APPROXIMATE.
3. ADDITIONAL ARCHITECTURAL SYSTEMS WORK DEPICTED ON MECHANICAL AND PLUMBING DRAWINGS IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ARCHITECTURAL WORK SCOPE ITEMS AND INCLUDE ALL SUCH WORK, FOR A COMPLETE INSTALLATION, IN THE BASE BID.

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

2.041 EXISTING CONCRETE MASONRY WALL.
2.101 EXISTING EQUIPMENT PAD TO REMAIN.
2.450 DEMOLISH EXISTING EXTERIOR WALL LOUVER.

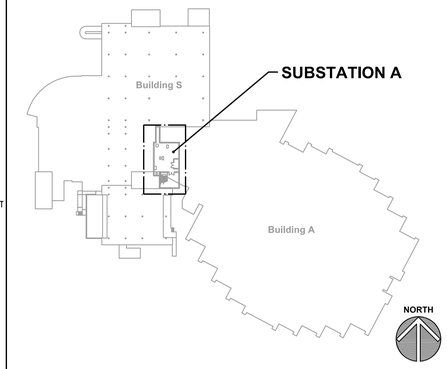
3.301 CAST-IN-PLACE CONCRETE: EQUIPMENT PAD. REFER TO SPECIFICATIONS AND DETAIL A/AS310 FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. COORDINATE SIZE, LOCATION AND QUANTITY WITH M.E.P. DRAWINGS AND REQUIREMENTS. REFER TO TYPICAL DETAIL ON A/AS310. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. PAD, DOWEL PER DETAIL B/AS310. MATCH EXIST. PAD THICKNESS.

4.800 MASONRY ASSEMBLY: PATCH OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA – REFER TO MECHANICAL DRAWINGS; CUT OUT DAMAGED/PARTIAL UNITS AND PROVIDE NEW WHOLE UNITS MATCHING THICKNESS OF EXISTING TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.

4.801 MASONRY ASSEMBLY: MODIFY OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS; CUT OUT DAMAGED/PARTIAL UNITS AND PROVIDE NEW WHOLE UNITS MATCHING THICKNESS OF EXISTING WALL TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.

4.803 MASONRY ASSEMBLY: INFILL EXISTING LOUVER OPENING LEFT AFTER DEMOLITION OF MECHANICAL LOUVER TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS; PROVIDE UNITS MATCHING THICKNESS OF EXISTING WALL TO COMPLETE PATCHING WORK; PROVIDE CONCRETE MASONRY UNITS MANUFACTURED WITH INTEGRAL WATER REPELLANT AND PROVIDE STANDARD GRAY COLOR MORTAR CONTAINING WATER REPELLANT ADMIXTURE.

KEY PLAN



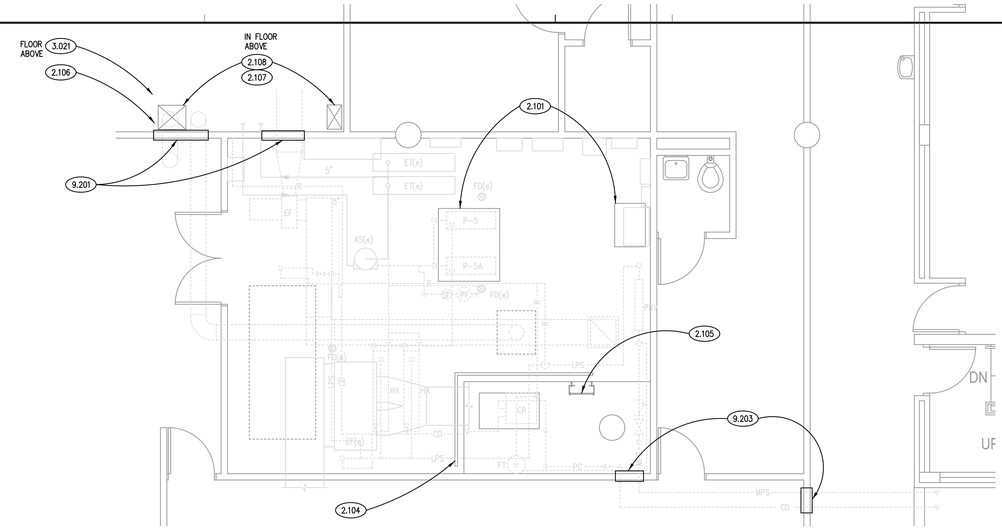
ISSUED
07/16/18 BID DOCUMENTS

JOB NO. 17-292-1160
DRAWN CDH/JMB/VAD
CHECKED CDH/JMB
APPROVED CDH/JMB

SHEET TITLE
SUBSTATION A ENLARGED ARCHITECTURAL / STRUCTURAL FLOOR PLANS

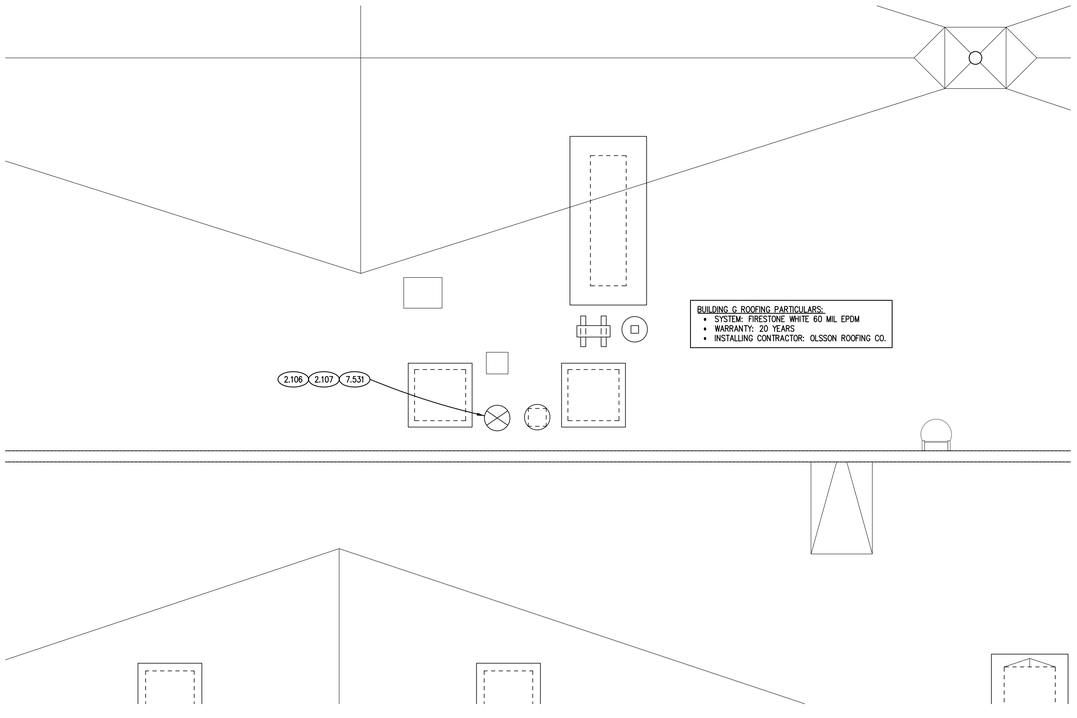
SHEET NUMBER
AS312

P:\1160 - JJC - Main Campus - Steam Pipe System Replacement with Condensing Boilers\3D_Design\Dwgs\DD-CD\10_Arch\1160AS312.dwg, 2/16/2018 11:21:20 AM, cdh



SUBSTATION G ARCHITECTURAL / STRUCTURAL DEMOLITION PLAN

SCALE: 1/4" = 1'-0" (2)

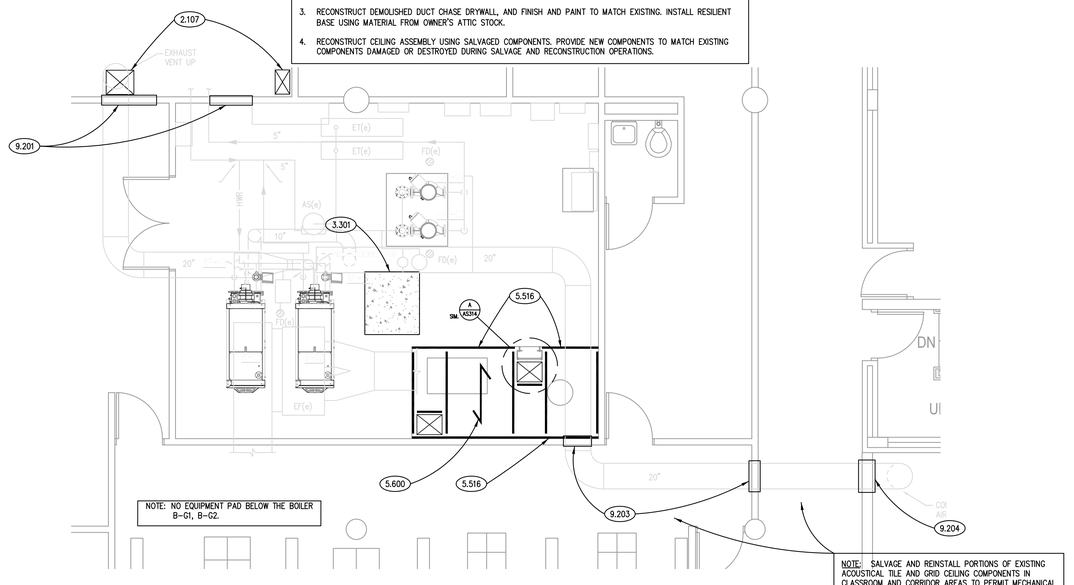


BUILDING G ROOFING PARTICULARS:
- SYSTEM: FIRESTONE WHITE 60 MIL EPDM
- WARRANTY: 20 YEARS
- INSTALLING CONTRACTOR: OLSSON ROOFING CO.

SUBSTATION G ARCHITECTURAL / STRUCTURAL NEW WORK ROOF PLAN

SCALE: 1/4" = 1'-0" (3)

NOTE: IN HPR STORAGE ROOM G2006 ON SECOND FLOOR ABOVE THIS AREA:
1. DEMOLISH GYPSUM DRYWALL OF EXISTING DUCT CHASE IN CENTER OF SOUTH WALL (APPROX. 6'–0" LONG BY 10' HIGH) TO PERMIT ACCESS FOR MECHANICAL DEMOLITION AND CONSTRUCTION OF NEW DUCTWORK. PROTECT EXISTING SERVICE SINK AND PORTION OF CHASE DRYWALL BEHIND SERVICE SINK TO REMAIN.
2. SALVAGE ENTIRE ACOUSTICAL CEILING TILE AND GRID ASSEMBLY (APPROX. 120 S.F.) TO PERMIT ACCESS FOR MECHANICAL DEMOLITION AND CONSTRUCTION OF NEW DUCTWORK. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES AND OTHER ITEMS MOUNTED IN CEILING OR ON GRID.
3. RECONSTRUCT DEMOLISHED DUCT CHASE DRYWALL, AND FINISH AND PAINT TO MATCH EXISTING. INSTALL RESILIENT BASE USING MATERIAL FROM OWNER'S ATTIC STOCK.
4. RECONSTRUCT CEILING ASSEMBLY USING SALVAGED COMPONENTS. PROVIDE NEW COMPONENTS TO MATCH EXISTING COMPONENTS DAMAGED OR DESTROYED DURING SALVAGE AND RECONSTRUCTION OPERATIONS.



SUBSTATION G ARCHITECTURAL / STRUCTURAL NEW WORK PLAN

SCALE: 1/4" = 1'-0" (1)

GENERAL NOTES

1. DEMOLISH ALL EXIST. SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE–SUPPORT SUCH ITEMS DIRECTLY TO THE EXIST. BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
2. EXISTING SLAB CUTS AND INFILL REQUIRED AT ALL UNDERGROUND WORK. CONTRACTOR TO COORDINATE REQUIREMENTS WITH PLUMBING DRAWINGS AND EXISTING CONDITIONS. AREAS SHOWN ARE APPROXIMATE.
3. ADDITIONAL ARCHITECTURAL SYSTEMS WORK DEPICTED ON MECHANICAL AND PLUMBING DRAWINGS IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ARCHITECTURAL WORK SCOPE ITEMS AND INCLUDE ALL SUCH WORK, FOR A COMPLETE INSTALLATION, IN THE BASE BID.

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN–KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

2.101 EXISTING EQUIPMENT PAD TO REMAIN.
2.104 DEMOLISH RAILING.
2.105 EXISTING LADDER TO REMAIN.
2.106 NON–DESTRUCTIVELY (X–RAY OR EQUIVALENT) LOCATE EXISTING CONCRETE TENDONS / REINFORCING. DO NOT CUT OR DAMAGE EXISTING TENDONS / REINFORCING.
2.107 ENLARGE EXISTING OPENING TO ACCOMODATE NEW MEP WORK.
2.108 EXISTING SLAB OPENING TO REMAIN.

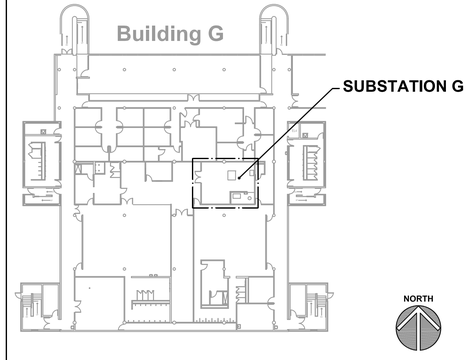
3.021 EXISTING POST TENSIONED CAST–IN–PLACE CONCRETE SLAB.
3.301 CAST–IN–PLACE CONCRETE: EQUIPMENT PAD. REFER TO SPECIFICATIONS AND DETAIL A/AS310 FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. COORDINATE SIZE, LOCATION AND QUANTITY WITH M.E.P. DRAWINGS AND REQUIREMENTS. REFER TO TYPICAL DETAIL ON A/AS310. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. PAD, DOWEL PER DETAIL B/AS310. MATCH EXIST. PAD THICKNESS.

5.516 METAL FABRICATION: CONTINUOUS STEEL ANGLE ANCHORED TO WALL USING POST INSTALLED ANCHORS. ANGLE ORIENTATION AS DEPICTED. ANGLE SIZE TO BE L6x4x3/8 U.N.O. ANCHORS TO BE 3/4"ø EXPANSION ANCHORS PER PROJECT SPECIFICATIONS. SPACING TO BE 2'–0" O.C. U.N.O. EMBEDMENT TO BE 4 3/4" U.N.O. AT BACK TO BACK LOCATIONS, OFFSET ANCHORS 1'–0" TO AVOID CONFLICTING ANCHORS.
5.600 METAL GRATING: GW 1 1/2" x 1/8" PLAIN STEEL, SMOOTH BAR GRATING BY MCNICHOLS OR EQ.. PROVIDE NON–WELDED ATTACHMENTS PER MANUFACTURER. GRATING TO BE SET FLUSH WITH EXIST. CONCRETE SLAB ELEVATION.

7.531 FLASH PIPE/DUCT THROUGH ROOF (REFER TO MECHANICAL DRAWINGS) IN ACCORDANCE WITH EXISTING ROOFING SYSTEM MANUFACTURER?S REQUIREMENTS, NRCA RECOMMENDATIONS, AND SO AS NOT TO VOID EXISTING ROOFING SYSTEM WARRANTY; PROVIDE CARPENTER–BUILT CURB FOR PENETRATIONS REQUIRING A CURB BUT NOT PROVIDED WITH A PRE–MANUFACTURED CURB.

9.201 GYPSUM ASSEMBLY: MODIFY OPENING LEFT IN LATH AND PLASTER WALL AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS; BLEND NEW SURFACE INTO EXISTING AND PAINT PATCH TO MATCH EXISTING WALL SURFACE.
9.203 GYPSUM ASSEMBLY: MODIFY OPENING(S) LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS.
9.204 GYPSUM INTERIOR AND STUCCO EXTERIOR ASSEMBLY: MODIFY OPENING LEFT AFTER DEMOLITION OF MECHANICAL DUCT(S)/PIPE(S) IN THIS AREA TO SUIT SIZE OF NEW PIPE/DUCT TO BE PROVIDED – REFER TO MECHANICAL DRAWINGS.

KEY PLAN



STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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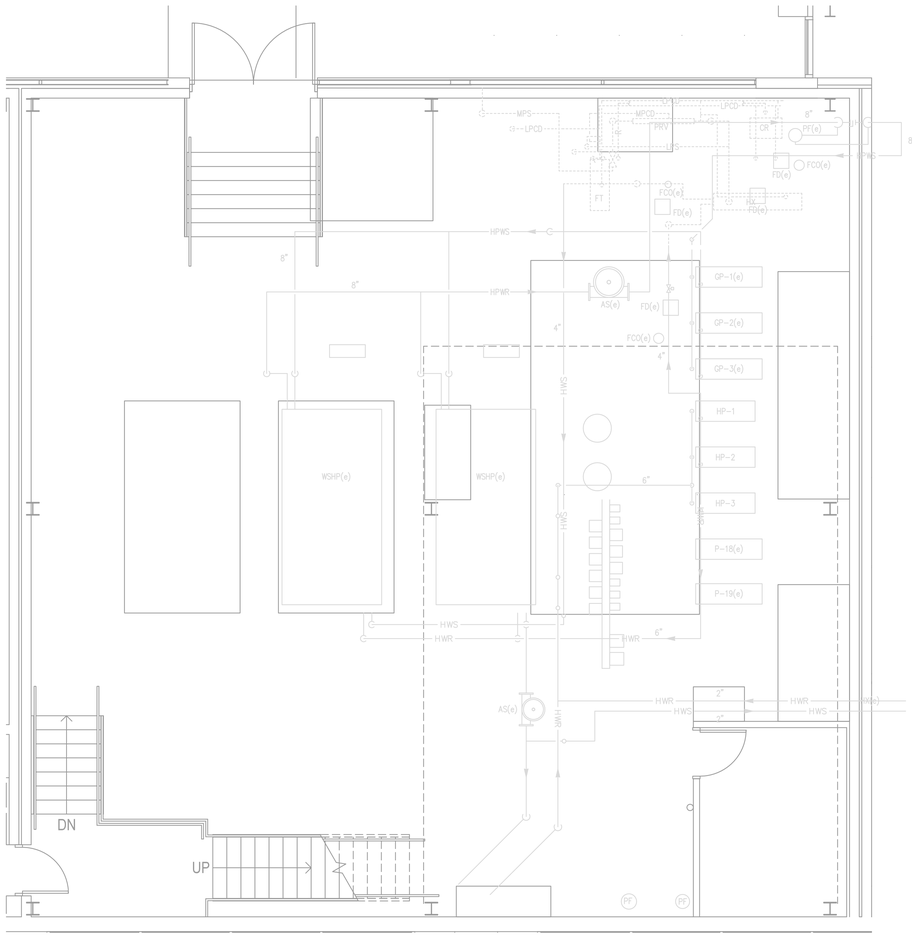
ISSUED	
02/16/18	BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	CDH/JMB/VAD
CHECKED	CDH/JMB
APPROVED	CDH/JMB

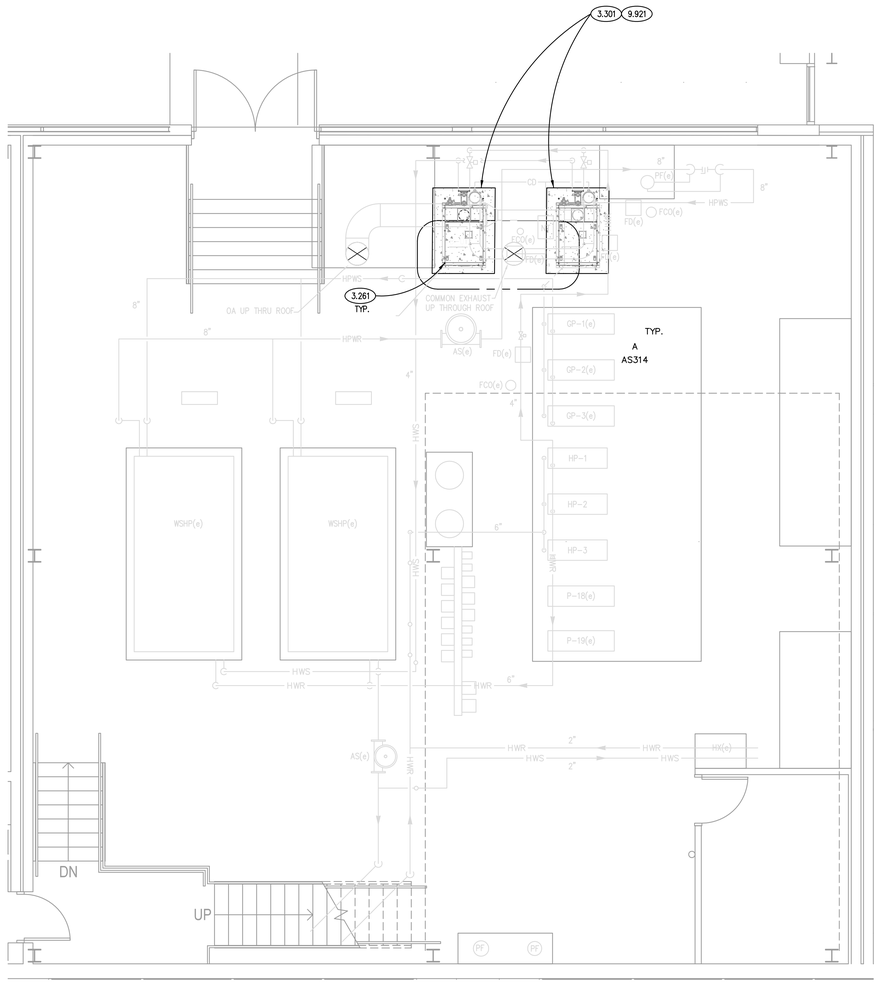
SHEET TITLE
SUBSTATION G ENLARGED ARCHITECTURAL / STRUCTURAL FLOOR PLANS

SHEET NUMBER
AS313



SUBSTATION U ARCHITECTURAL / STRUCTURAL DEMOLITION PLAN (3)

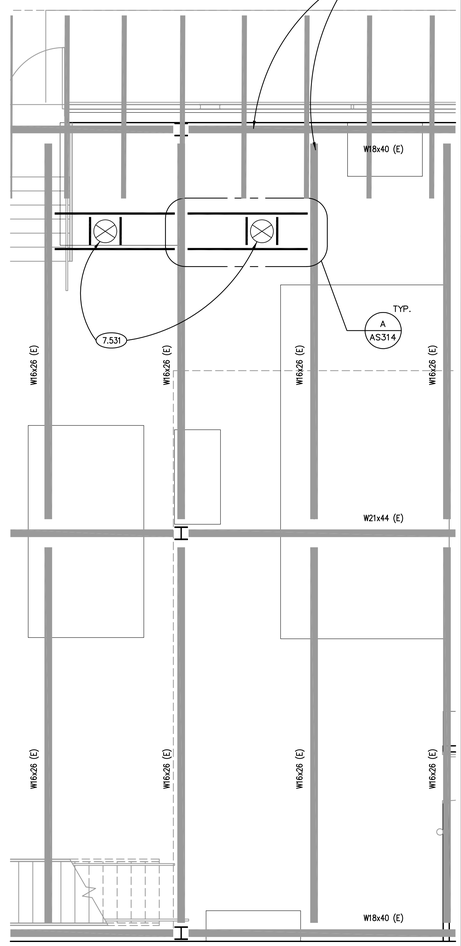
SCALE: 1/4" = 1'-0"



SUBSTATION U ARCHITECTURAL / STRUCTURAL NEW WORK PLAN (2)

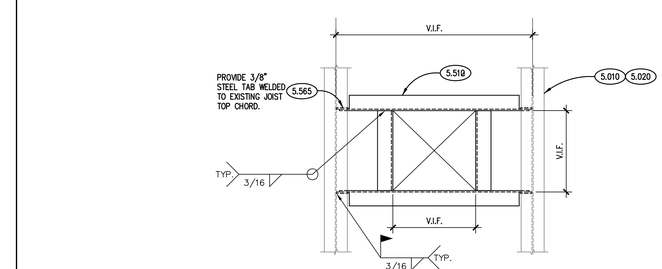
SCALE: 1/4" = 1'-0"

BUILDING U ROOFING PARTICULARS:
- SYSTEM: CARLISLE WHITE 60 MIL EPDM
- WARRANTY: 15 YEARS
- INSTALLING CONTRACTOR: SULLIVAN ROOFING



SUBSTATION U NEW WORK ROOF PLAN (1)

SCALE: 1/4" = 1'-0"



TYP. ROOF OPENING FRAMING DETAIL (@ EXISTING) (A)

SCALE: N.T.S.

GENERAL NOTES

1. DEMOLISH ALL EXIST. SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXIST. BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
2. EXISTING SLAB CUTS AND INFILL REQUIRED AT ALL UNDERGROUND WORK. CONTRACTOR TO COORDINATE REQUIREMENTS WITH PLUMBING DRAWINGS AND EXISTING CONDITIONS. AREAS SHOWN ARE APPROXIMATE.
3. ADDITIONAL ARCHITECTURAL SYSTEMS WORK DEPICTED ON MECHANICAL AND PLUMBING DRAWINGS IS REQUIRED TO COMPLETE THE WORK OF THIS PROJECT. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL ARCHITECTURAL WORK SCOPE ITEMS AND INCLUDE ALL SUCH WORK, FOR A COMPLETE INSTALLATION, IN THE BASE BID.

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

2.109 EXISTING STEEL FRAMING TO REMAIN.

3.261 CONCRETE REINFORCING: #4 DOWEL X 4" LG. @ 2'-0" O.C. U.N.O. ANCHOR INTO EXISTING SLAB/WALL/FOOTING USING INJECTION ADHESIVE/EPOXY SYSTEM PER PROJECT SPECIFICATIONS. EMBEDMENT TO BE 2" U.N.O.

3.301 CAST-IN-PLACE CONCRETE: EQUIPMENT PAD. REFER TO SPECIFICATIONS AND DETAIL A/AS.310 FOR THICKNESS, REINFORCING, MIX TYPE AND FINISH. COORDINATE SIZE, LOCATION AND QUANTITY WITH M.E.P. DRAWINGS AND REQUIREMENTS. REFER TO TYPICAL DETAIL ON A/AS310. AT LOCATIONS WHERE NEW PAD INTERFACES WITH AN EXIST. PAD, DOWEL PER DETAIL B/AS.310. MATCH EXIST. PAD THICKNESS.

5.010 METAL FABRICATION: EXISTING STEEL BEAM.

5.020 METAL FABRICATION: EXISTING STEEL JOIST.

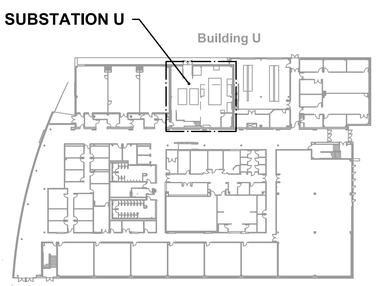
5.512 METAL FABRICATION: L3x3x5/16 (LEG DOWN) ANGLE FRAME AS REQUIRED TO ACCOMMODATE ARCHITECTURAL AND M.E.P. OPENINGS. FRAMES REQUIRED FOR ALL OPENINGS 1'-0" AND LARGER AND WHEN MULTIPLE PENETRATIONS IN CLOSE PROXIMITY TO EACH OTHER CAUSE DECK TO BE UNSTABLE. TYPICAL APPLICATIONS INCLUDE, BUT NOT LIMITED TO FLOOR DRAINS, DOWNSPOUTS, PIPING, ROOF DRAINS, SKYLIGHTS, DUCT PENETRATIONS AND CURBS OF MECHANICAL EQUIPMENT. COORDINATE SIZE, LOCATION AND QUANTITY WITH ARCHITECTURAL DRAWINGS, M.E.P. DRAWINGS AND CONTRACTORS.

5.565 METAL FABRICATION: MISCELLANEOUS STEEL ELEMENTS AS NOTED. CONNECT TO SUPPORTING ELEMENTS AS DEPICTED.

7.531 FLASH PIPE/DUCT THROUGH ROOF (REFER TO MECHANICAL DRAWINGS) IN ACCORDANCE WITH EXISTING ROOFING SYSTEM MANUFACTURER'S REQUIREMENTS, NRCA RECOMMENDATIONS, AND SO AS NOT TO VOID EXISTING ROOFING SYSTEM WARRANTY; PROVIDE CARPENTER-BUILT CURB FOR PENETRATIONS REQUIRING A CURB BUT NOT PROVIDED WITH A PRE-MANUFACTURED CURB.

9.921 INTERIOR PAINTING: EPOXY PAINT VERTICAL SIDE FACES AND CHAMFERED EDGE FACES OF NEW HOUSEKEEPING PAD; SAFETY YELLOW COLOR TO MATCH EXISTING HOUSEKEEPING PADS.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO. 17-292-1160
DRAWN CDH/JMB/VAD
CHECKED CDH/JMB
APPROVED CDH/JMB

SHEET TITLE
SUBSTATION U ENLARGED ARCHITECTURAL / STRUCTURAL FLOOR PLANS

SHEET NUMBER
AS314

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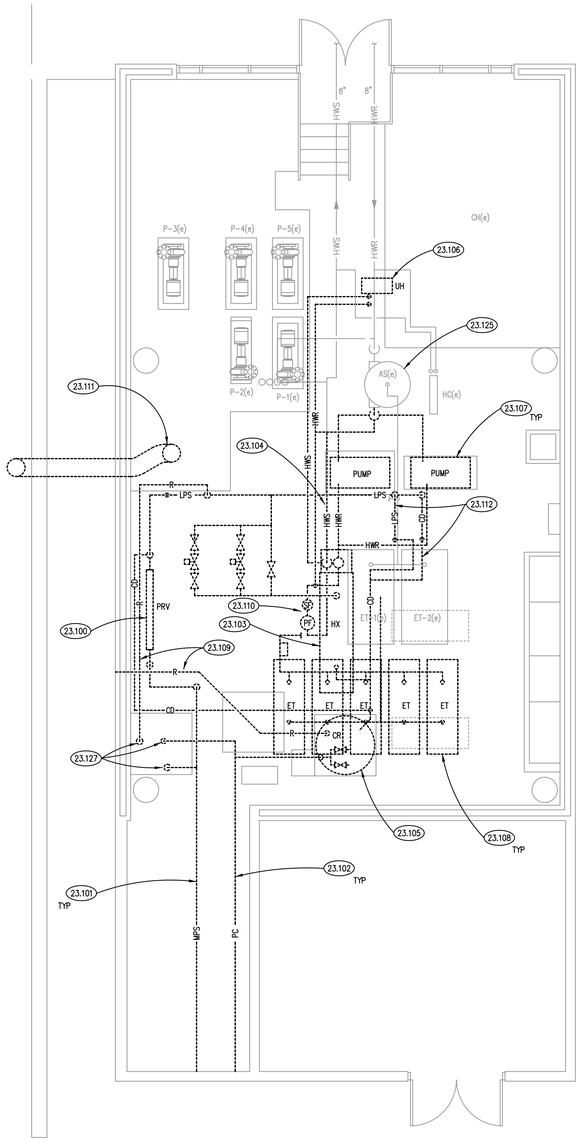
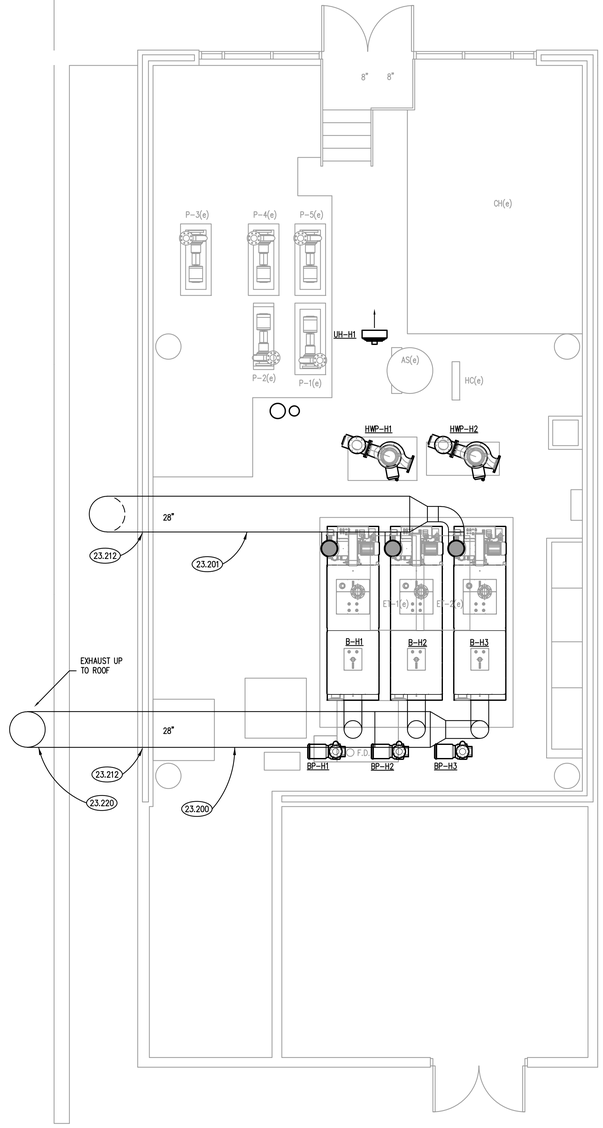


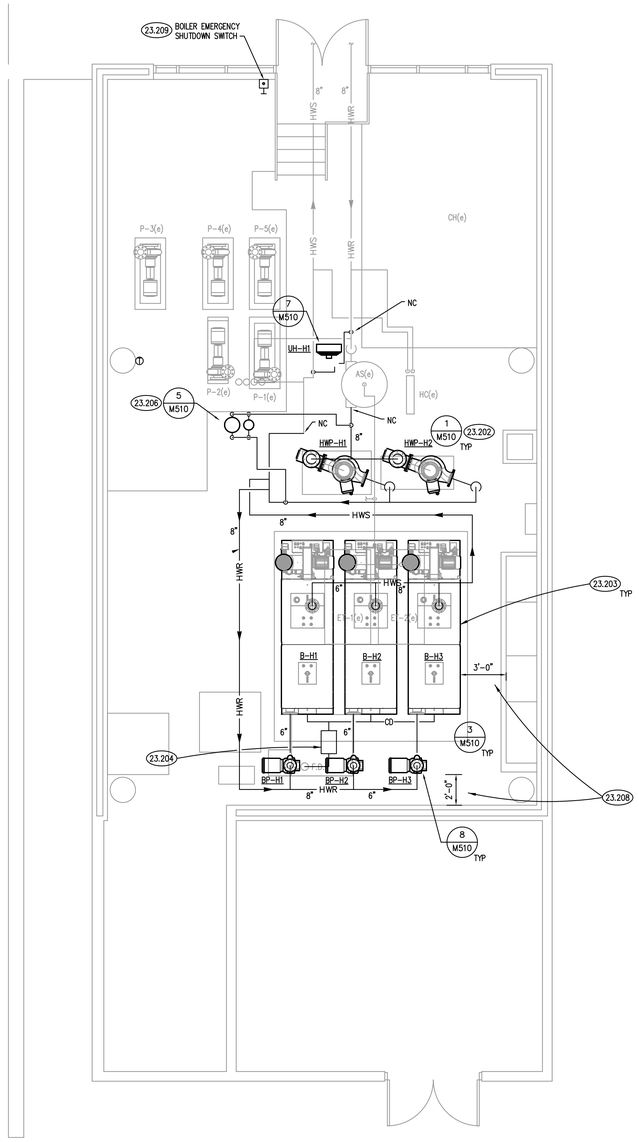
SUBSTATION H DEMOLITON PLAN 3

SCALE: 1/4" = 1'-0"



SUBSTATION H VENTING PLAN 2

SCALE: 1/4" = 1'-0"



SUBSTATION H PIPING PLAN 1

SCALE: 1/4" = 1'-0"

STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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MECHANICAL GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL REQUIRED FITTINGS, OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, ETC.
3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

KEYNOTES

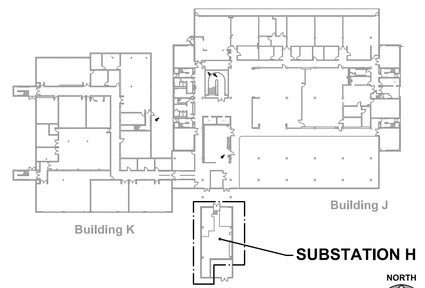
23.100 REMOVE STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING AND SPECIALITIES.
23.101 REMOVE STEAM PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.102 REMOVE STEAM CONDENSATE PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.103 REMOVE STEAM HEAT EXCHANGER. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING.
23.104 REMOVE HOT WATER SUPPLY / RETURN PIPING BACK TO LOCATIONS SHOWN.
23.105 REMOVE CONDENSATE PUMP AND PIT. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES. REFER TO ARCHITECTURAL DRAWINGS FOR FILLING OF PIT.
23.106 REMOVE UNIT HEATER. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES BACK TO MAIN AND PROVIDE PERMANENT CAP ON PIPING.
23.107 REMOVE HEATING WATER PUMPS. REMOVE ASSOCIATED PIPING BACK TO AIR SEPARATOR AS SHOWN.
23.108 REMOVE ABANDONED EXPANSION TANKS IN ITS ENTIRETY. REFER TO MECHANICAL GENERAL NOTES FOR REMOVAL OF ANY SUPPORTS.
23.109 REMOVE STEAM PRESSURE RELIEF PIPING IN ITS ENTIRETY. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF WALLS.
23.110 REMOVE HEATING WATER CHEMICAL TREATMENT STATION. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.111 REMOVE BOILER VENT THROUGH WALL AND UP TO ROOF IN ITS ENTIRETY.
23.112 REMOVE ALL STEAM AND CONDENSATE PIPING TO HOT WATER STORAGE TANK.
23.125 REMOVE, RETAIN, AND PROTECT AIR SEPARATOR AS REQUIRED TO ALLOW CLEARANCE FOR DEMOLITION AND INSTALLATION OF NEW BOILERS.
23.127 REMOVE STEAM, CONDENSATE, AND RELIEF PIPING DOWN INTO PIT. PROVIDE PERMANENT CAP ON PIPING AT WALL.

23.200 PROVIDE BOILER EXHAUST VENT SYSTEM. VENT TO GO THROUGH SIDE WALL AND UP TO ROOF. EXHAUST VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER.
23.201 PROVIDE COMBUSTION AIR DUCT FOR NEW BOILERS COMBUSTION AIR VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER. TERMINATE IN ACCORDANCE WITH BOILER MANUFACTURER'S REQUIREMENTS.

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

23.202 PROVIDE NEW VERTICAL INLINE PUMP, SPECIALITIES, AND PIPING.
23.203 PROVIDE NEW BOILER, ALL ASSOCIATED SPECIALITIES AND PIPING.
23.204 PROVIDE CONDENSATE NEUTRALIZING TANK AND DISCHARGE IN FLOOR DRAIN.
23.206 PROVIDE NEW CHEMICAL TREATMENT EQUIPMENT AS SHOWN. MOUNT EQUIPMENT ON RACK. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER.
23.208 MAINTAIN MINIMUM CLEARANCES SHOWN BETWEEN BOILER AND ELECTRICAL EQUIPMENT AND BOILER PIPING AND WALL.
23.209 PROVIDE BOILER EMERGENCY SHUTDOWN SWITCH AT THE ENTRANCE OF THE MECHANICAL ROOM.
23.212 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
23.220 PROVIDE BOILER VENT UP SIDE OF BUILDING AND TERMINATE 36" ABOVE ROOF WITH VELOCITY CONE.

KEY PLAN



ISSUED	
02/16/18	BID DOCUMENTS

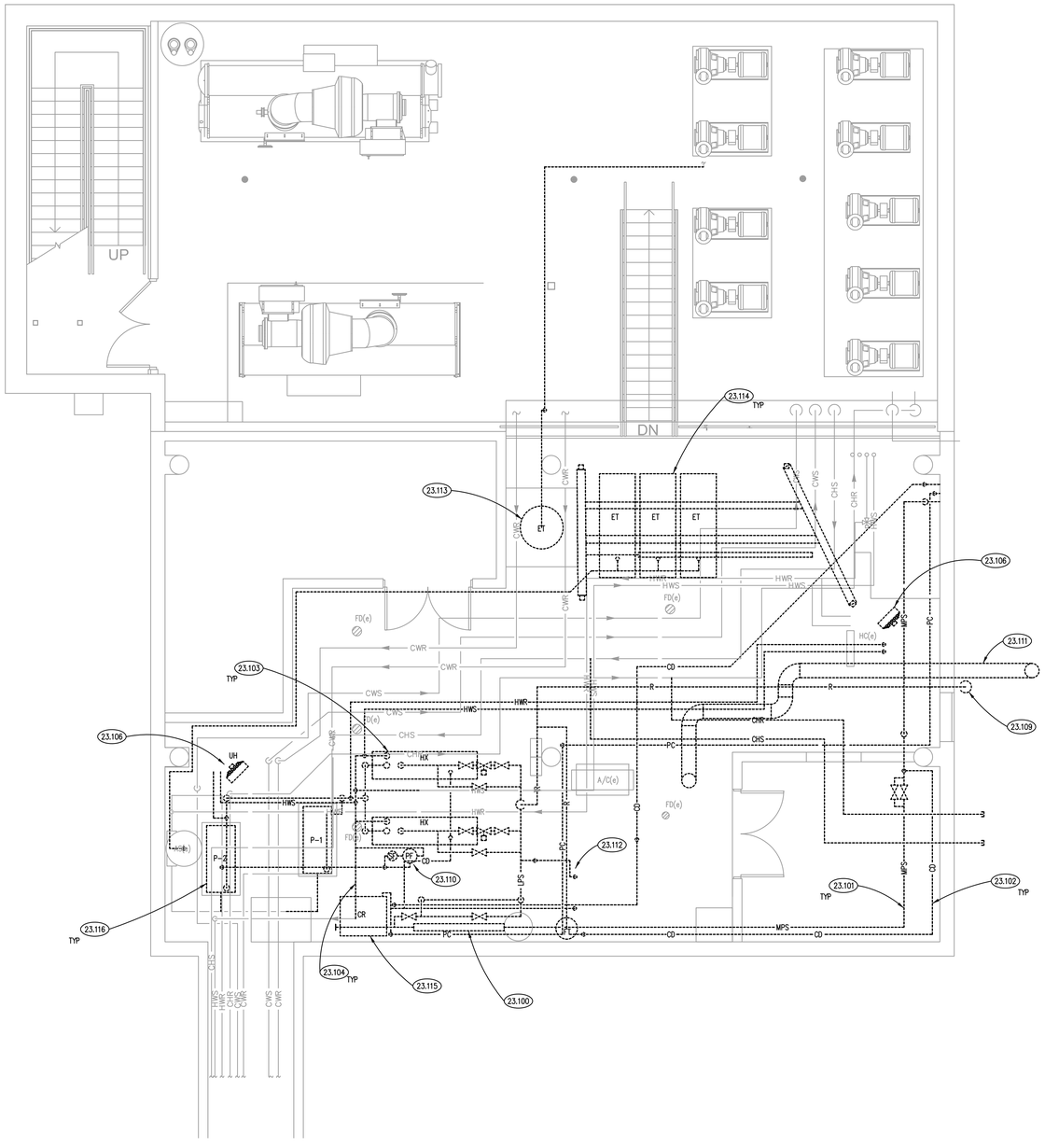
JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

SUBSTATION H ENLARGED MECHANICAL FLOOR PLANS

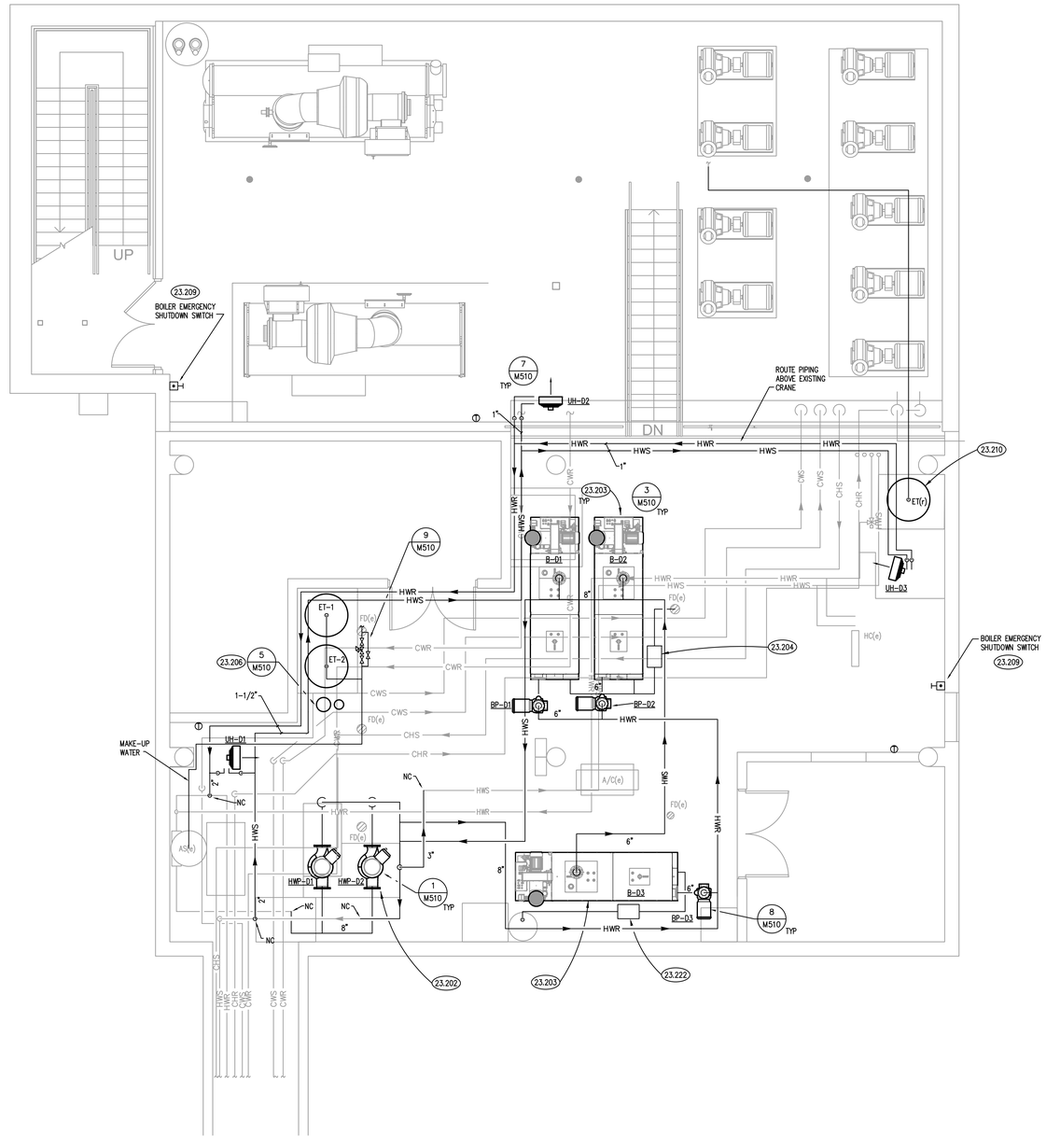
SHEET NUMBER

M310



SUBSTATION D DEMOLITION PLAN 2

SCALE: 1/4" = 1'-0"



SUBSTATION D PIPING PLAN 1

SCALE: 1/4" = 1'-0"

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MECHANICAL GENERAL NOTES

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3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

KEYNOTES

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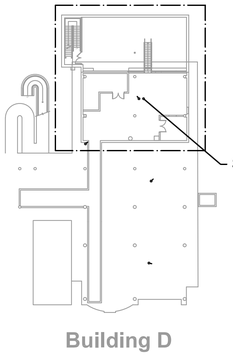
23.101 REMOVE STEAM PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.102 REMOVE STEAM CONDENSATE PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.103 REMOVE STEAM HEAT EXCHANGER. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING.
23.104 REMOVE HOT WATER SUPPLY / RETURN PIPING BACK TO LOCATIONS SHOWN.
23.106 REMOVE UNIT HEATER. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES BACK TO MAIN AND PROVIDE PERMANENT CAP ON PIPING.
23.109 REMOVE STEAM PRESSURE RELIEF PIPING IN ITS ENTIRETY. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF WALLS.
23.110 REMOVE HEATING WATER CHEMICAL TREATMENT STATION. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.111 REMOVE BOILER VENT THROUGH WALL AND UP TO ROOF IN ITS ENTIRETY.
23.112 REMOVE ALL STEAM AND CONDENSATE PIPING TO HOT WATER STORAGE TANK.
23.113 REMOVE, RETAIN, AND PROTECT CHILLED WATER EXPANSION TANK AND SPECIALITIES FOR RELOCATION. REMOVE PIPING BACK TO LOCATION SHOWN. PROVIDE TEMPORARY CAP ON PIPING FOR NEW CONNECTION.
23.114 REMOVE HEATING WATER EXPANSION TANKS AS SHOWN. REMOVE STEEL SUPPORT BRACING IN ITS ENTIRETY IN ACCORDANCE WITH MECHANICAL GENERAL NOTES.
23.115 REMOVE CONDENSATE PUMP. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.116 REMOVE HEATING WATER PUMPS AND ASSOCIATED SPECIALITIES. REMOVE PIPING BACK TO LOCATIONS SHOWN.

23.202 PROVIDE NEW VERTICAL INLINE PUMP, SPECIALITIES, AND PIPING.
23.203 PROVIDE NEW BOILER, ALL ASSOCIATED SPECIALITIES AND PIPING.
23.204 PROVIDE CONDENSATE NEUTRALIZING TANK AND DISCHARGE IN FLOOR DRAIN.
23.206 PROVIDE NEW CHEMICAL TREATMENT EQUIPMENT AS SHOWN. MOUNT EQUIPMENT ON RACK. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER.
23.209 PROVIDE BOILER EMERGENCY SHUTDOWN SWITCH AT THE ENTRANCE OF THE MECHANICAL ROOM.
23.210 RELOCATE CHILLED WATER EXPANSION TANK. PROVIDE ALL MATERIAL AND LABOR TO ROUTE PIPING TO LOCATION SHOWN. INSTALLATION TO MATCH EXISTING.
23.222 PROVIDE CONDENSATE NEUTRALIZING TANK AND DISCHARGE IN SUMP PIT.

KEY PLAN



ISSUED
02/16/18 BID DOCUMENTS

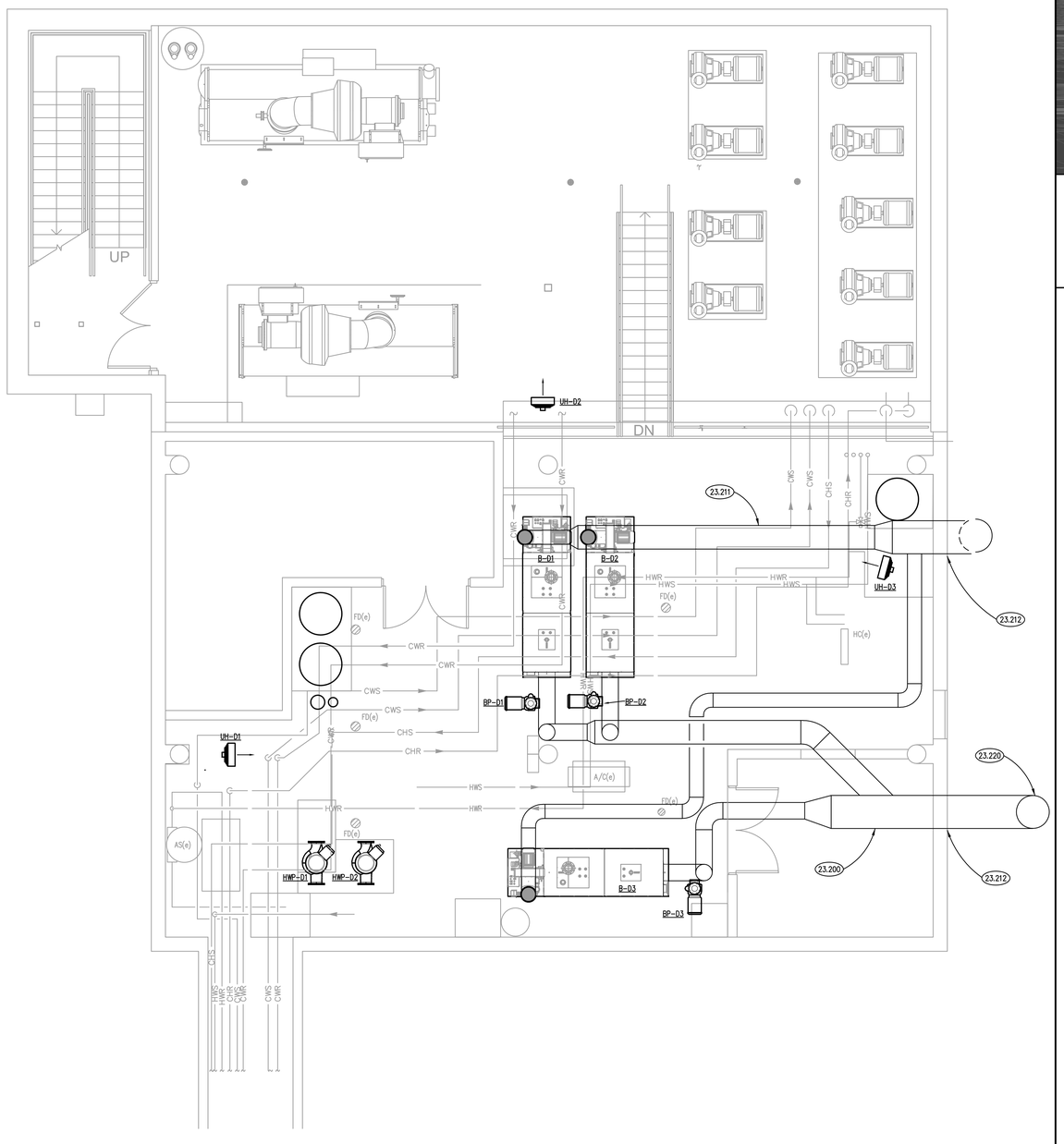
JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

SUBSTATION D ENLARGED MECHANICAL FLOOR PLANS

SHEET NUMBER

M311



NOT USED (2)

SUBSTATION D VENTING PLAN (1)

SCALE: 1/4" = 1'-0"

STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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MECHANICAL GENERAL NOTES

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3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

KEYNOTES

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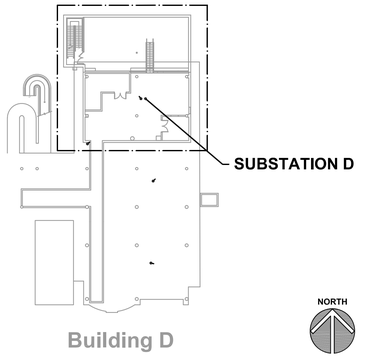
23.200 PROVIDE BOILER EXHAUST VENT SYSTEM. VENT TO GO THROUGH SIDE WALL AND UP TO ROOF. EXHAUST VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER.
23.211 PROVIDE COMBUSTION AIR DUCT FOR NEW BOILERS. ROUTE DUCTWORK OVER EXISTING CHILLED WATER PIPE MAINS. COMBUSTION AIR VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER.
23.212 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
23.220 PROVIDE BOILER VENT UP SIDE OF BUILDING AND TERMINATE 36" ABOVE ROOF WITH VELOCITY CONE.

KEY PLAN



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SHEET TITLE

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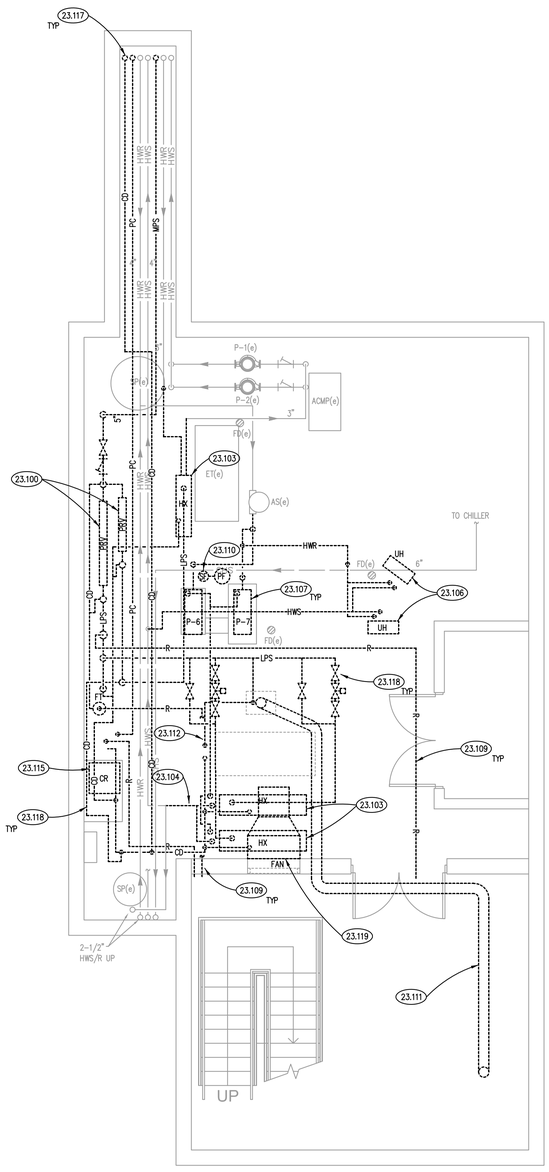
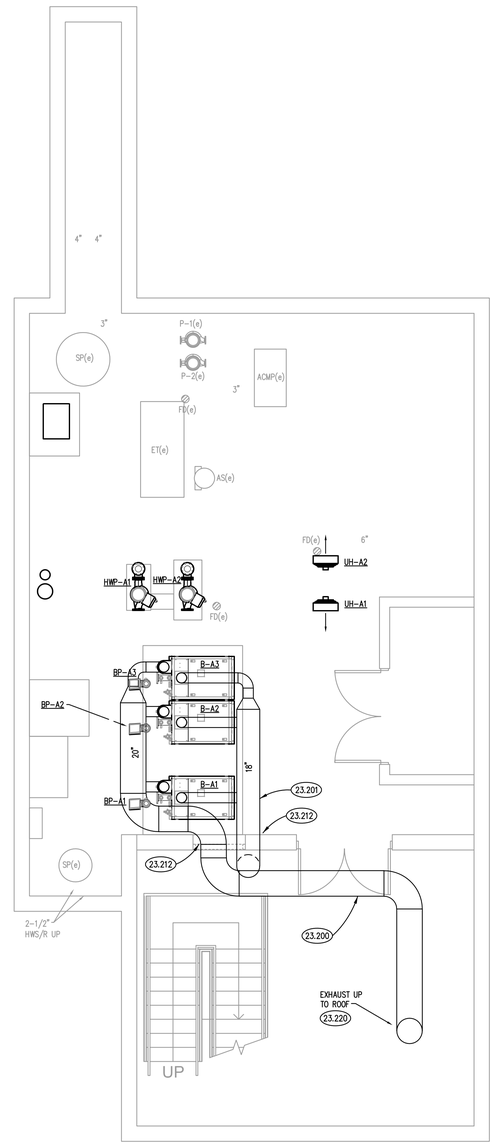
SHEET NUMBER

M311A



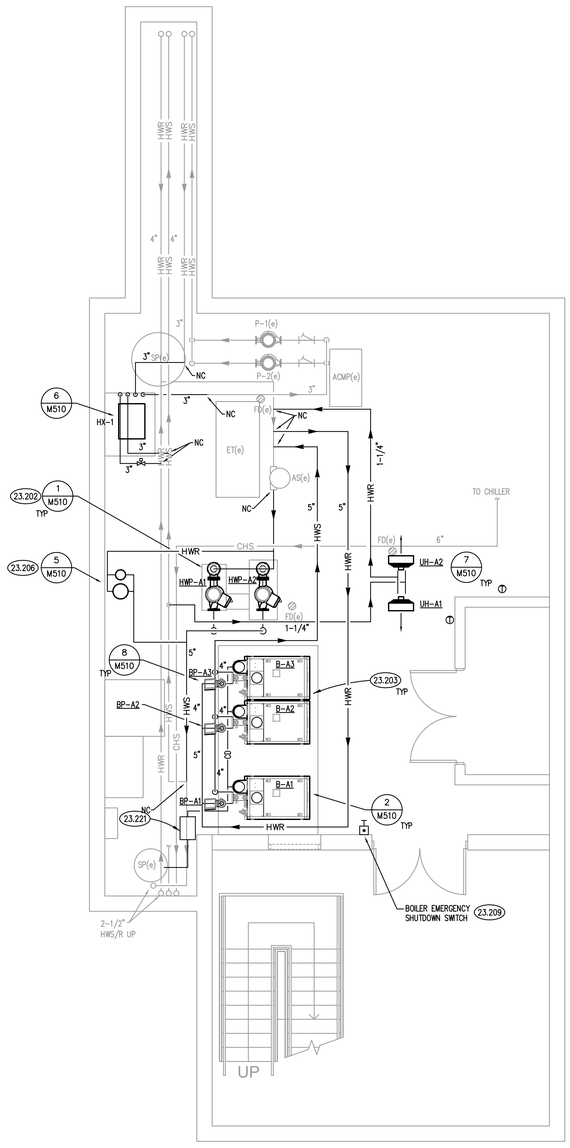
SUBSTATION A DEMOLITON PLAN 3

SCALE: 1/4" = 1'-0"



SUBSTATION A VENTING PLAN 2

SCALE: 1/4" = 1'-0"



SUBSTATION A PIPING PLAN 1

SCALE: 1/4" = 1'-0"

STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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MECHANICAL GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL REQUIRED FITTINGS, OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, ETC.
3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

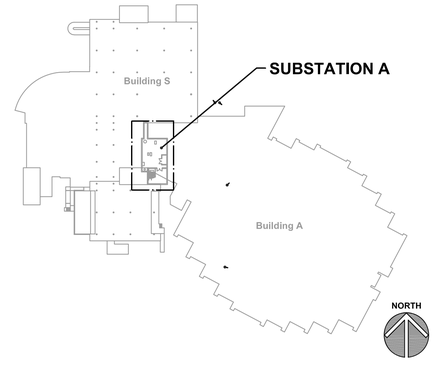
KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

23.100 REMOVE STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING AND SPECIALITIES.
23.103 REMOVE STEAM HEAT EXCHANGER. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING.
23.104 REMOVE HOT WATER SUPPLY / RETURN PIPING BACK TO LOCATIONS SHOWN.
23.106 REMOVE UNIT HEATER. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES BACK TO MAIN AND PROVIDE PERMANENT CAP ON PIPING.
23.107 REMOVE HEATING WATER PUMPS. REMOVE ASSOCIATED PIPING BACK TO AIR SEPARATOR AS SHOWN.
23.109 REMOVE STEAM PRESSURE RELIEF PIPING IN ITS ENTIRETY. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF WALLS.
23.110 REMOVE HEATING WATER CHEMICAL TREATMENT STATION. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.111 REMOVE BOILER VENT THROUGH WALL AND UP TO ROOF IN ITS ENTIRETY.
23.112 REMOVE ALL STEAM AND CONDENSATE PIPING TO HOT WATER STORAGE TANK.
23.115 REMOVE CONDENSATE PUMP. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.117 REMOVE ALL STEAM AND STEAM CONDENSATE TO PIPE CHASE. PROVIDE PERMANENT CAPS ON PIPING.
23.118 REMOVE ALL STEAM AND STEAM CONDENSATE PIPING IN ITS ENTIRETY AS SHOWN.
23.119 REMOVE FAN. REMOVE ALL ASSOCIATED DUCTWORK AS SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF WALL OPENING.

23.200 PROVIDE BOILER EXHAUST VENT SYSTEM. VENT TO GO THROUGH SIDE WALL AND UP TO ROOF. EXHAUST VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER.
23.201 PROVIDE COMBUSTION AIR DUCT FOR NEW BOILERS COMBUSTION AIR VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER. TERMINATE IN ACCORDANCE WITH BOILER MANUFACTURER'S REQUIREMENTS.
23.202 PROVIDE NEW VERTICAL INLINE PUMP, SPECIALITIES, AND PIPING.
23.203 PROVIDE NEW BOILER, ALL ASSOCIATED SPECIALITIES AND PIPING.
23.206 PROVIDE NEW CHEMICAL TREATMENT EQUIPMENT AS SHOWN. MOUNT EQUIPMENT ON RACK. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER.
23.209 PROVIDE BOILER EMERGENCY SHUTDOWN SWITCH AT THE ENTRANCE OF THE MECHANICAL ROOM.
23.212 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
23.220 PROVIDE BOILER VENT UP SIDE OF BUILDING AND TERMINATE 36" ABOVE ROOF WITH VELOCITY CONE.
23.221 PROVIDE CONDENSATE NEUTRALIZING TANK AND DISCHARGE IN SUMP PIT TROUGH.

KEY PLAN



ISSUED	
02/16/18	BID DOCUMENTS

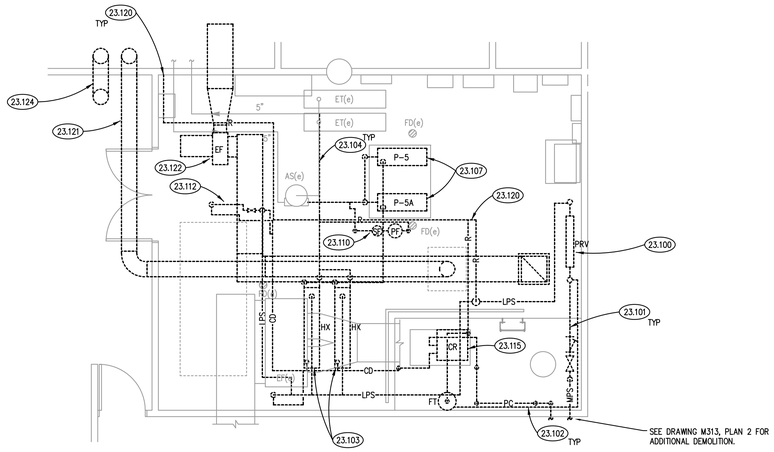
JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

SUBSTATION A ENLARGED MECHANICAL FLOOR PLANS

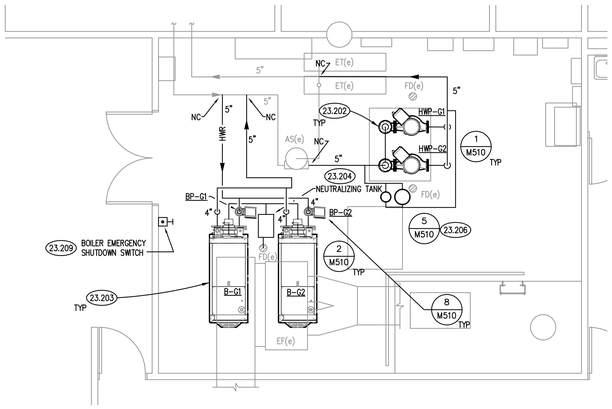
SHEET NUMBER

M312



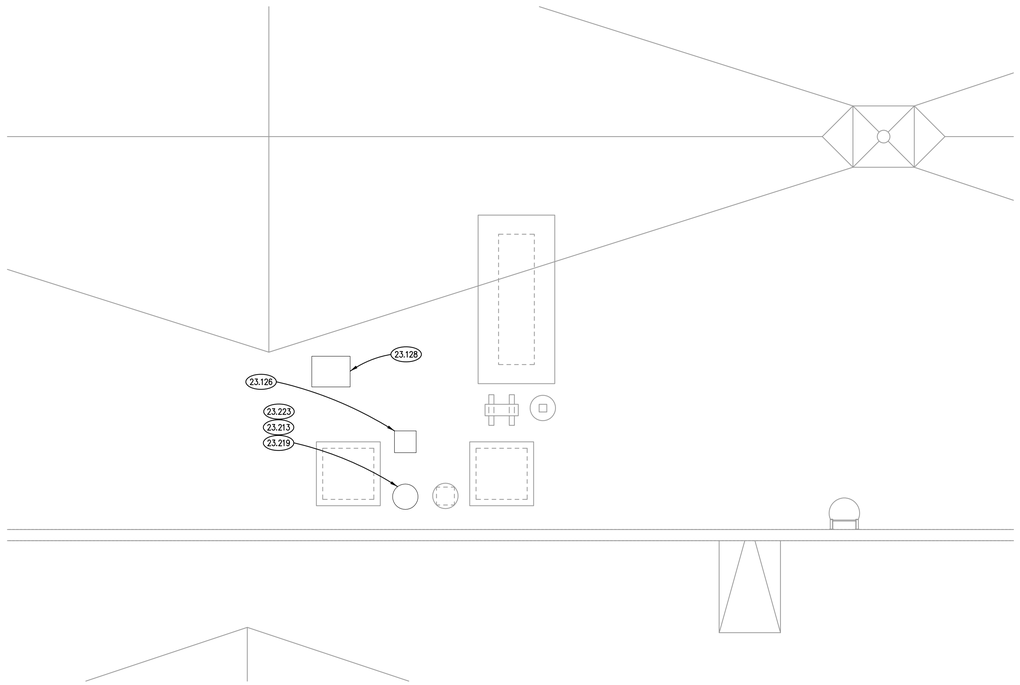
SUBSTATION G DEMOLITON PLAN 3

SCALE: 1/4" = 1'-0"



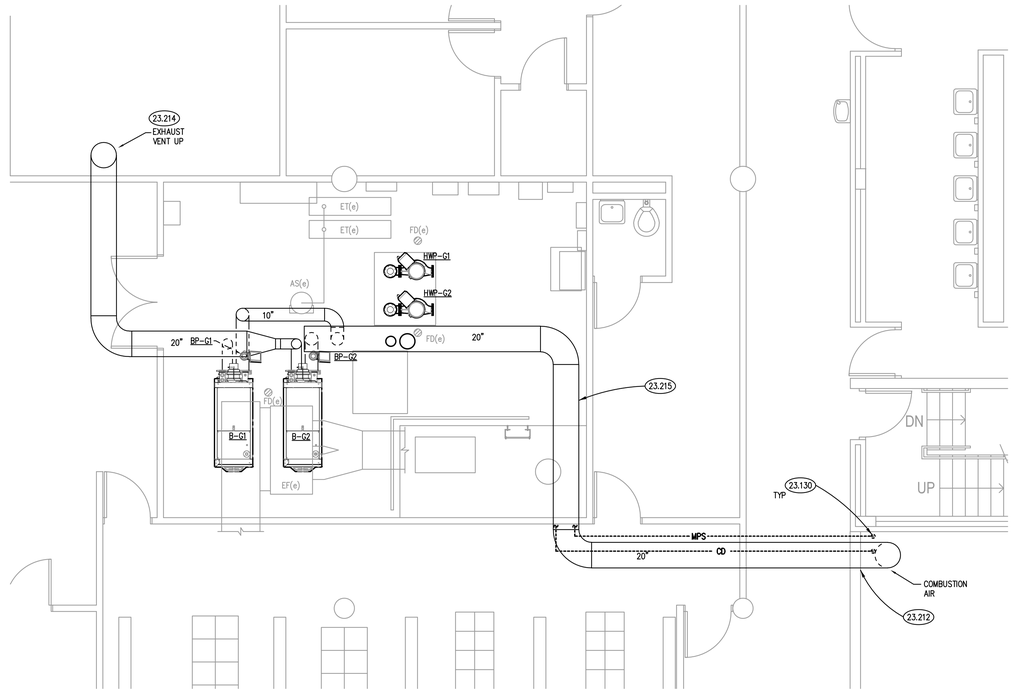
SUBSTATION G PIPING PLAN 1

SCALE: 1/4" = 1'-0"



SUBSTATION G ROOF PLAN 3

SCALE: 1/4" = 1'-0"



SUBSTATION G VENTING PLAN 2

SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL REQUIRED FITTINGS, OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, ETC.
3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

KEYNOTES

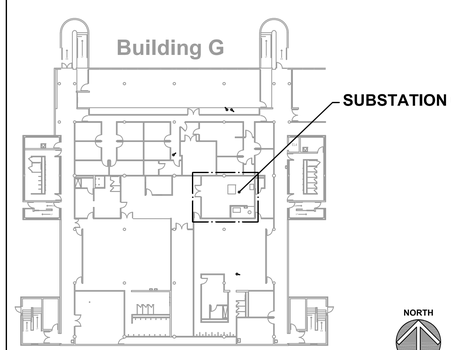
KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

23.100 REMOVE STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING AND SPECIALITIES.
23.101 REMOVE STEAM PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.102 REMOVE STEAM CONDENSATE PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.103 REMOVE STEAM HEAT EXCHANGER. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING.
23.104 REMOVE HOT WATER SUPPLY / RETURN PIPING BACK TO LOCATIONS SHOWN.
23.107 REMOVE HEATING WATER PUMPS. REMOVE ASSOCIATED PIPING BACK TO AIR SEPARATOR AS SHOWN.
23.110 REMOVE HEATING WATER CHEMICAL TREATMENT STATION. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.112 REMOVE ALL STEAM AND CONDENSATE PIPING TO HOT WATER STORAGE TANK.
23.115 REMOVE CONDENSATE PUMP. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.120 REMOVE STEAM PRESSURE RELIEF PIPING BACK TO WALL. PROVIDE PERMANENT CAP ON PIPE.
23.121 REMOVE BOILER VENTING IN ITS ENTIRETY. REMOVE VENTING BACK INTO ADJACENT MECHANICAL ROOM AND UP THROUGH CHASE.
23.122 REMOVE EXHAUST FAN. REMOVE ALL ASSOCIATED DUCTWORK AS SHOWN. REMOVE EXHAUST DUCT BACK INTO MECHANICAL ROOM AS SHOWN.
23.124 REMOVE DRYER EXHAUST DUCT IN IS ENTIRETY. DRYER EXHAUST DUCT ROUTING TO BE USED FOR NEW BOILER VENTING.
23.126 REMOVE BOILER EXHAUST VENTING ON ROOF. PROVIDE PERMANENT WEATHERTIGHT CAP ON ROOF CURB.
23.128 REMOVE GRAVITY VENTILATOR FOR EXHAUST DEMOLISHED EXHAUST FAN. PROVIDE PERMANENT WEATHERTIGHT CAP ON ROOF CURB.
23.130 REMOVE STEAM AND STEAM CONDENSATE PIPING THROUGH WALL TO THE EXTERIOR. REMOVE PIPING BACK TO 12" BELOW GRADE AND PROVIDE PERMANENT CAP ON PIPING.

23.202 PROVIDE NEW VERTICAL INLINE PUMP, SPECIALITIES, AND PIPING.
23.203 PROVIDE NEW BOILER, ALL ASSOCIATED SPECIALITIES AND PIPING.
23.204 PROVIDE CONDENSATE NEUTRALIZING TANK AND DISCHARGE IN FLOOR DRAIN.
23.206 PROVIDE NEW CHEMICAL TREATMENT EQUIPMENT AS SHOWN. MOUNT EQUIPMENT ON RACK. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER.
23.209 PROVIDE BOILER EMERGENCY SHUTDOWN SWITCH AT THE ENTRANCE OF THE MECHANICAL ROOM.

23.212 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
23.213 FLASH PIPE/DUCT THROUGH ROOF IN ACCORDANCE WITH EXISTING ROOFING SYSTEM MANUFACTURERR'S REQUIREMENTS, NRCA RECOMMENDATIONS, AND SO AS NOT TO VOID EXISTING ROOFING SYSTEM WARRANTY; PROVIDE CARPENTER-BUILT CURB FOR PENETRATIONS REQUIRING A CURB BUT NOT PROVIDED WITH A PRE-MANUFACTURED CURB.
23.214 PROVIDE BOILER EXHAUST VENT SYSTEM AS SHOWN. VENT TO GO THROUGH WALL INTO ADJACENT MECHANICAL ROOM, UP THROUGH CHASE TO ROOF. FOLLOW ROUTING OF DRYER EXHAUST VENT. PROVIDE ALL MATERIALS AND LABOR TO ENLARGE OPENINGS AS REQUIRED OR NEW BOILER VENT. EXHAUST VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER.
23.215 PROVIDE COMBUSTION AIR DUCT FOR NEW BOILERS. DUCTWORK TO BE ROUTED AS SHOWN. COMBUSTION AIR VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER. TERMINATE IN ACCORDANCE WITH BOILER MANUFACTURER'S REQUIREMENTS. MINIMUM 10 FEET REQUIRED BETWEEN COMBUSTION AIR AND EXHAUST.
23.219 REMOVE DRYER EXHAUST VENT CAP AND ASSOCIATED CURB. PROVIDE ALL MATERIALS AND LABOR TO ENLARGE OPENING AS REQUIRED FOR NEW BOILER VENTING.
23.223 TERMINATE BOILER VENT 6" ABOVE ROOF WITH VELOCITY CONE. PROPERLY SUPPORT EXHAUST VENT STACK.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

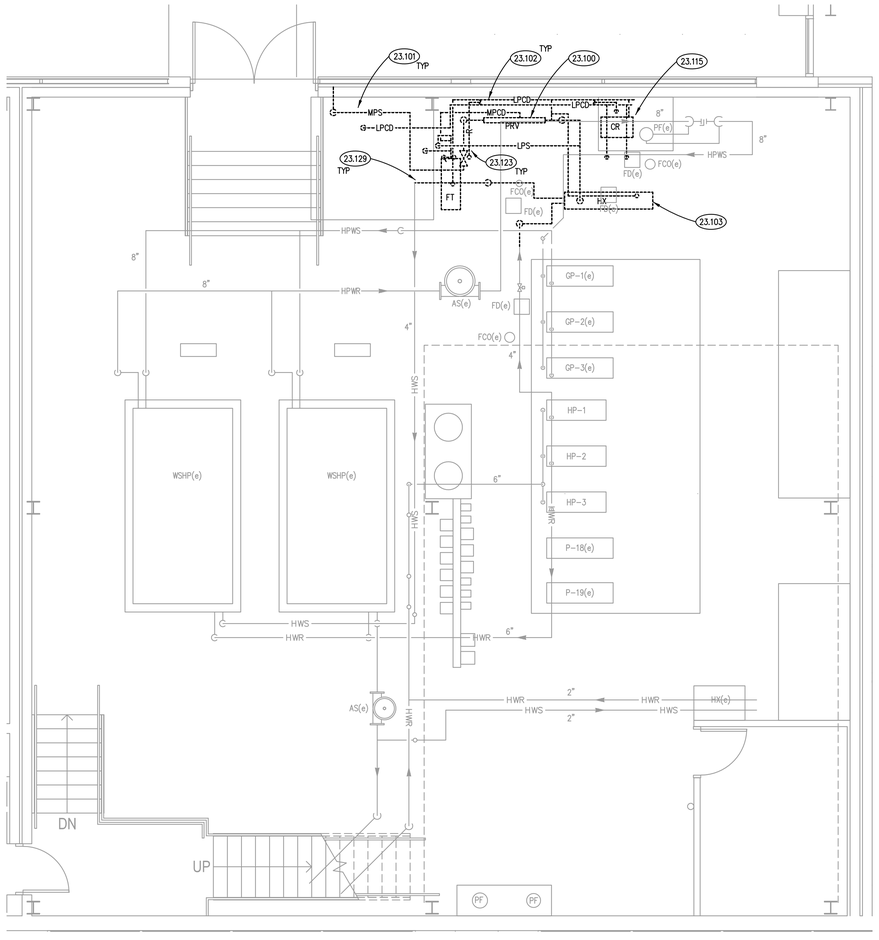
SHEET TITLE

SUBSTATION G ENLARGED MECHANICAL FLOOR PLANS

SHEET NUMBER

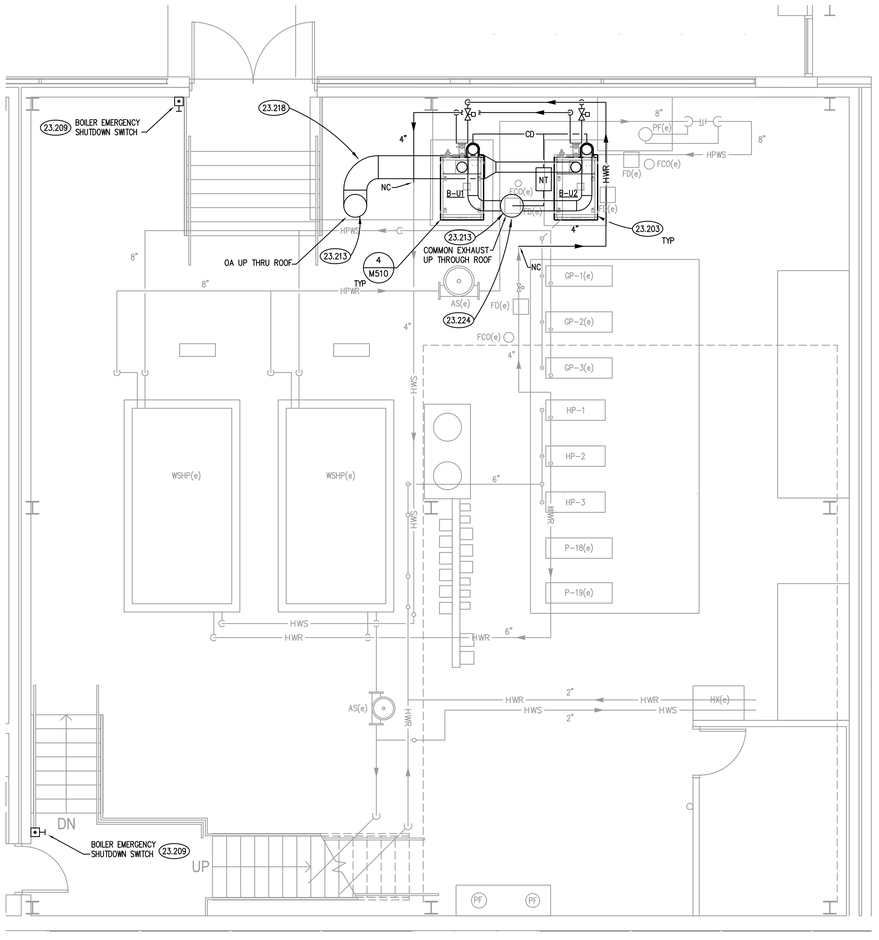
M313

P:\1160 - JJC - Main Campus - Steam Pipe System Replacement with Condensing Boilers\03_Design\Dwgs\CD-CD\03_Mech\1160M313.dwg, 2/16/2018 11:14:42 AM, BWG



SUBSTATION U DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION U NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL REQUIRED FITTINGS, OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM. COORDINATE WITH OTHER TRADES FOR SPACE AVAILABLE AND RELATIVE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK, ETC.
3. ALL TAPES AND MASTICS USED TO SEAL DUCTWORK LISTED AND LABELED IN ACCORDANCE WITH UL 181A SHALL BE MARKED ACCORDINGLY. ALL TAPES AND MASTICS USED TO SEAL FLEXIBLE DUCTS AND AIR CONNECTORS SHALL COMPLY WITH UL 181B AND MARKED ACCORDINGLY.
4. THERMOSTATIC CONTROLS OF EQUIPMENT SHALL HAVE A 5° F DEADBAND.
5. CONFIRM ALL EQUIPMENT TAGS WITH OWNER. RECORD TAG NAMES ON PROJECT RECORD DRAWINGS.
6. GENERALLY, SMALL DIAMETER PIPE RUNS FROM DRIPS, CONDENSATE PANS AND OTHER SERVICES ARE NOT SHOWN BUT MUST BE PROVIDED.
7. DEMOLISH ALL EXISTING SUPPORTS INCLUDING STEEL ELEMENTS, HANGERS, RODS, ETC. CURRENTLY SUPPORTING ANY EXISTING ITEMS TO BE DEMOLISHED. REMOVE ALL SUCH SUPPORTS TO THE BUILDING STRUCTURAL ELEMENTS. RECESSED ANCHORS IN SLABS ARE TO REMAIN. IF ANY EXISTING ITEMS ARE TO REMAIN AND ARE CURRENTLY HUNG FROM THESE SUPPORTS, RE-SUPPORT SUCH ITEMS DIRECTLY TO THE EXISTING BUILDING STRUCTURAL FRAMING SYSTEM USING INDUSTRY STANDARD, ENGINEER APPROVED SYSTEMS.
8. SPACE ALLOCATION, COORDINATION WITH ELECTRICAL, ARCHITECTURAL & OTHER MECHANICAL COMPONENTS HAVE BEEN MADE WITH RESPECT TO ALL EQUIPMENT SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS OF THE FIRST NAMED MANUFACTURER ONLY. OTHER MANUFACTURERS ARE ACCEPTABLE PROVIDED THEY MEET PERFORMANCE REQUIREMENTS AND AFOREMENTIONED COORDINATION.
9. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL DUCTWORK, PIPING, CONDUITS OR OTHER WORK. COORDINATE WITH THE STRUCTURAL DRAWINGS AND MASON CONTRACTOR FOR ALL BOND BEAM AND STRUCTURAL ELEMENT LOCATIONS. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
10. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND ALL INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.

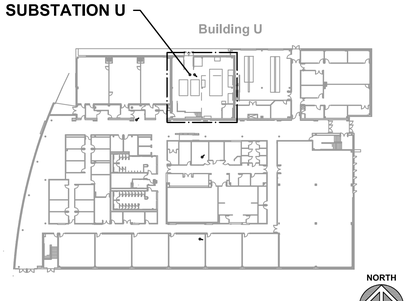
KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

23.100 REMOVE STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING AND SPECIALITIES.
23.101 REMOVE STEAM PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.102 REMOVE STEAM CONDENSATE PIPING IN ITS ENTIRETY. REMOVE PIPING BACK TO WALL AND PROVIDE PERMANENT CAP ON PIPE.
23.103 REMOVE STEAM HEAT EXCHANGER. REMOVE ALL ASSOCIATED STEAM AND CONDENSATE PIPING.
23.115 REMOVE CONDENSATE PUMP. REMOVE ALL ASSOCIATED PIPING AND SPECIALITIES.
23.123 REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING OF ROOF.
23.129 REMOVE GLYCOL HEATING SUPPLY / RETURN PIPING BACK TO LOCATIONS SHOWN.

23.203 PROVIDE NEW BOILER, ALL ASSOCIATED SPECIALITIES AND PIPING.
23.209 PROVIDE BOILER EMERGENCY SHUTDOWN SWITCH AT THE ENTRANCE OF THE MECHANICAL ROOM.
23.213 FLASH PIPE/DUCT THROUGH ROOF IN ACCORDANCE WITH EXISTING ROOFING SYSTEM MANUFACTURER?S REQUIREMENTS, NRCA RECOMMENDATIONS, AND SO AS NOT TO VOID EXISTING ROOFING SYSTEM WARRANTY; PROVIDE CARPENTER-BUILT CURB FOR PENETRATIONS REQUIRING A CURB BUT NOT PROVIDED WITH A PRE-MANUFACTURED CURB.
23.218 PROVIDE COMBUSTION AIR DUCT FOR NEW BOILERS. COMMON COMBUSTION AIR TO GO UP THROUGH ROOF. COMBUSTION AIR VENT SHALL BE SIZED AND CONFIGURED AS APPROVED BY THE BOILER MANUFACTURER. TERMINATE IN ACCORDANCE WITH BOILER MANUFACTURER'S REQUIREMENTS.
23.224 PROVIDE BOILER VENTING UP THROUGH ROOF. TERMINATE 36" ABOVE ROOF WITH VELOCITY CONE.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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ISSUED
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JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

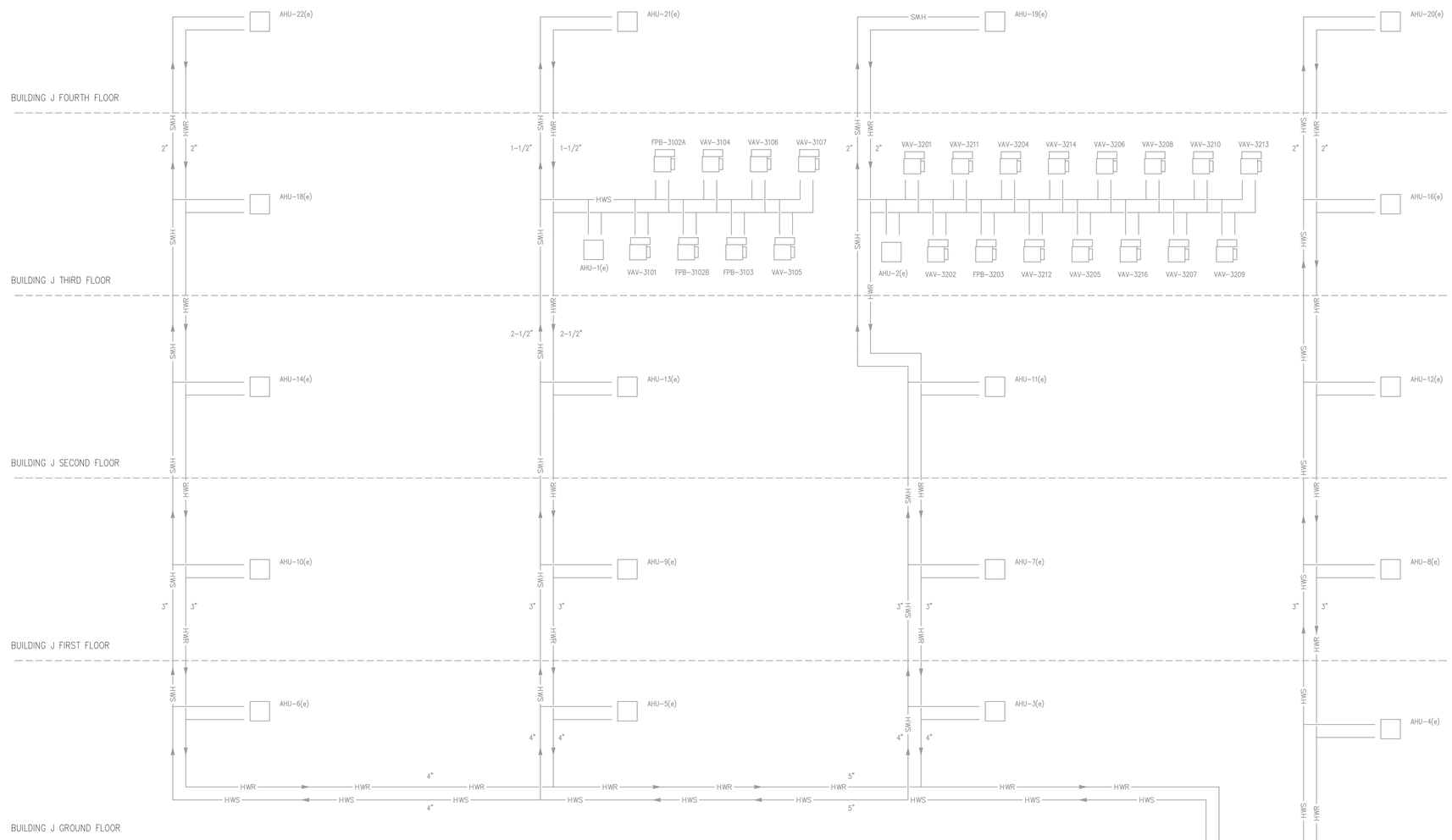
SHEET TITLE

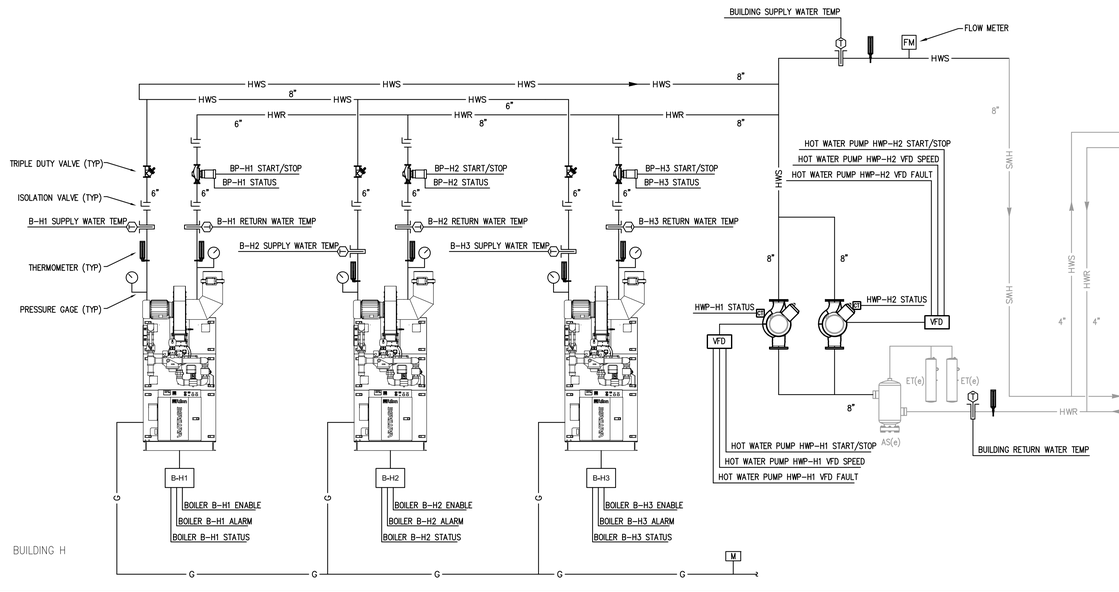
SUBSTATION U ENLARGED MECHANICAL FLOOR PLANS

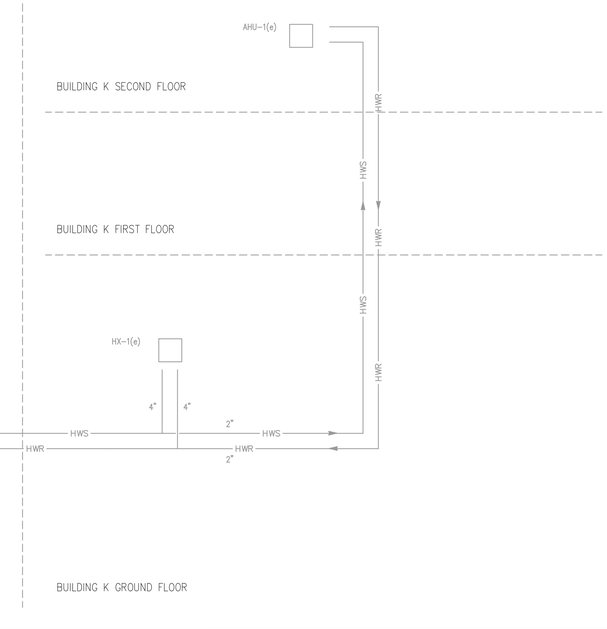
SHEET NUMBER

M314

SUBSTATION H BOILER CONTROL SCHEMATIC







SEQUENCE OF OPERATIONS

BOILER (B-H1, B-H2, B-H3):

THE BOILER CONTROLLER SHALL CONTROL THE OPERATION OF THE THREE BOILERS. THE LEAD BOILER SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE FALLS BELOW 60 DEGREES F (ADJ.). THE BOILER CONTROL PANEL SHALL EQUALIZE THE RUN TIME OF THE THREE BOILERS AUTOMATICALLY AT SET INTERVALS.

THE BOILER CONTROL PANEL SHALL ENERGIZE THE BOILERS IN A ENERGY OPTIMIZATION SEQUENCE. ON A CALL FOR HEAT THE FIRST BOILER PUMP BP-HX SHALL BE ENERGIZED. THE FIRST BOILER SHALL MODULATE IT'S FIRING RATE TO MAINTAIN THE HEATING WATER TEMPERATURE SETPOINT. ONCE THE FIRST BOILER REACHES 50% OF ITS FIRING RATE THE SECOND BOILER PUMP BP-HX SHALL BE ENERGIZED. THE BOILER CONTROLLER SHALL CALCULATE THE RATE AT WHICH THE FIRST AND SECOND BOILER SHOULD FIRE TO MEET THE BUILDING LOAD. THE BOILERS SHALL THEN MODULATE THEIR FIRING RATE TOGETHER TO MAINTAIN THE HEATING WATER TEMPERATURE SETPOINT. ONCE THE FIRST AND SECOND BOILERS REACH 50% OF ITS FIRING RATE, THE THIRD BOILER PUMP BP-HX SHALL BE ENERGIZED. THE BOILER CONTROLLER SHALL CALCULATE THE RATE AT WHICH THE FIRST, SECOND, AND THIRD BOILER SHOULD FIRE TO MEET THE BUILDING LOAD. THE BOILER SHALL THEN MODULATE THEIR FIRING RATE TOGETHER TO MAINTAIN THE HEATING WATER TEMPERATURE SETPOINT.

AS THE HEATING DEMAND DECREASES, THE BOILERS FIRING RATE SHALL MODULATE DOWN TOGETHER UNTIL THEY REACH A MINIMUM OF 10% OF THEIR FIRING RATE AT WHICH TIME THE THIRD BOILER SHALL BE DE-ENERGIZED AND THE ASSOCIATED BOILER PUMP BP-HX SHALL BE DE-ENERGIZED. THE FIRST AND SECOND BOILER FIRING RATE SHALL THEN MODULATE TO MEET THE HEATING LOAD. WHEN THE FIRST AND SECOND BOILER REACH A MINIMUM OF 10% OF THEIR FIRING RATE, THE SECOND BOILER SHALL BE DE-ENERGIZED AND THE ASSOCIATED BOILER PUMP BP-HX SHALL BE DE-ENERGIZED. THE FIRST BOILER FIRING RATE SHALL THEN MODULATE TO MEET THE HEATING LOAD.

THE HEATING WATER TEMPERATURE SHALL BE RESET BASED ON OUTDOOR AIR TEMPERATURE. THE WATER TEMPERATURE SHALL BE 180 DEGREES F WHEN THE OUTDOOR AIR TEMPERATURE IS 0 DEGREES F. THE WATER TEMPERATURE SHALL BE 100 DEGREES F WHEN THE OUTDOOR AIR TEMPERATURE IS 60 DEGREES F. TEMPERATURE RESET CURVES AND SETPOINTS SHALL BE ADJUSTABLE.

AN ALARM SHALL BE GENERATED IF THERE IS A BOILER ALARM OR A LOW WATER LEVEL ALARM.

IF THE BOILER EMERGENCY SHUTDOWN SWITCH IS ACTIVATED. ALL OF THE BOILERS SHALL BE IMMEDIATELY DE-ENERGIZED AND AN ALARM SHALL BE GENERATED.

PUMP (BP-H1, BP-H2, BP-H3)

THE BOILER PUMPS SHALL BE ENERGIZED WHEN AN ASSOCIATED BOILER IS REQUIRED TO OPERATE. AN ALARM SHALL BE GENERATED UPON A PUMP FAULT STATUS.

PUMP (HWP-H1, HWP-H2)

THE HEATING WATER PUMPS SHALL OPERATE IN A LEAD/LAG SEQUENCE. IF THE LEAD PUMP FAILS, THE LAG PUMP SHALL BE ENERGIZED. THE PUMPS SHALL BE ALTERNATED AS LEAD AT SET INTERVALS.

UPON A CALL FOR HEAT THE LEAD PUMP SHALL BE ENERGIZED. THE PUMP SPEED SHALL MODULATE TO MEET SYSTEM DEMAND BASED ON SENSORLESS SYSTEM PRESSURE CONTROL.

AN ALARM SHALL BE GENERATED UPON A PUMP OR A VFD FAULT STATUS.

POINTS LIST

BOILER (B-H1, B-H2, B-H3)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
BOILER ENABLE (B-H1, B-H2, B-H3)				X	X			X
BOILER STATUS (B-H1, B-H2, B-H3)			X				X	X
BOILER ALARM (B-H1, B-H2, B-H3)			X				X	X
BUILDING HOT WATER FLOW RATE (FM)	X					X		X
HOT WATER PUMP START/STOP (HWP-H1, HWP-H2)				X				X
HOT WATER PUMP STATUS (HWP-H1, HWP-H2)			X				X	X
HOT WATER PUMP VFD SPEED (HWP-H1, HWP-H2)		X				X		X
HOT WATER PUMP VFD FAULT (HWP-H1, HWP-H2)			X				X	X
BUILDING SUPPLY WATER TEMPERATURE	X					X		X
BUILDING RETURN WATER TEMPERATURE	X					X		X
BUILDING HOT WATER SETPOINT		X					X	X
BOILER SUPPLY WATER TEMPERATURE (B-H1, B-H2, B-H3)	X					X		X
BOILER RETURN WATER TEMPERATURE (B-H1, B-H2, B-H3)	X					X		X
BOILER PUMP STATUS (BP-H1, BP-H2, BP-H3)			X				X	X
BOILER PUMP START/STOP (BP-H1, BP-H2, BP-H3)				X				X
OUTSIDE AIR TEMPERATURE	X					X		X
GAS FLOW MEASUREMENT	X					X		X
BOILER KILL SWITCH STATUS							X	X

NOTE: ALL ADDITIONAL POINTS AVAILBLE FROM BOILER AND PUMP CONTROLLERS SHALL BE INTERFACED IN A TABLE FORMAT.

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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED	
02/16/18	BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

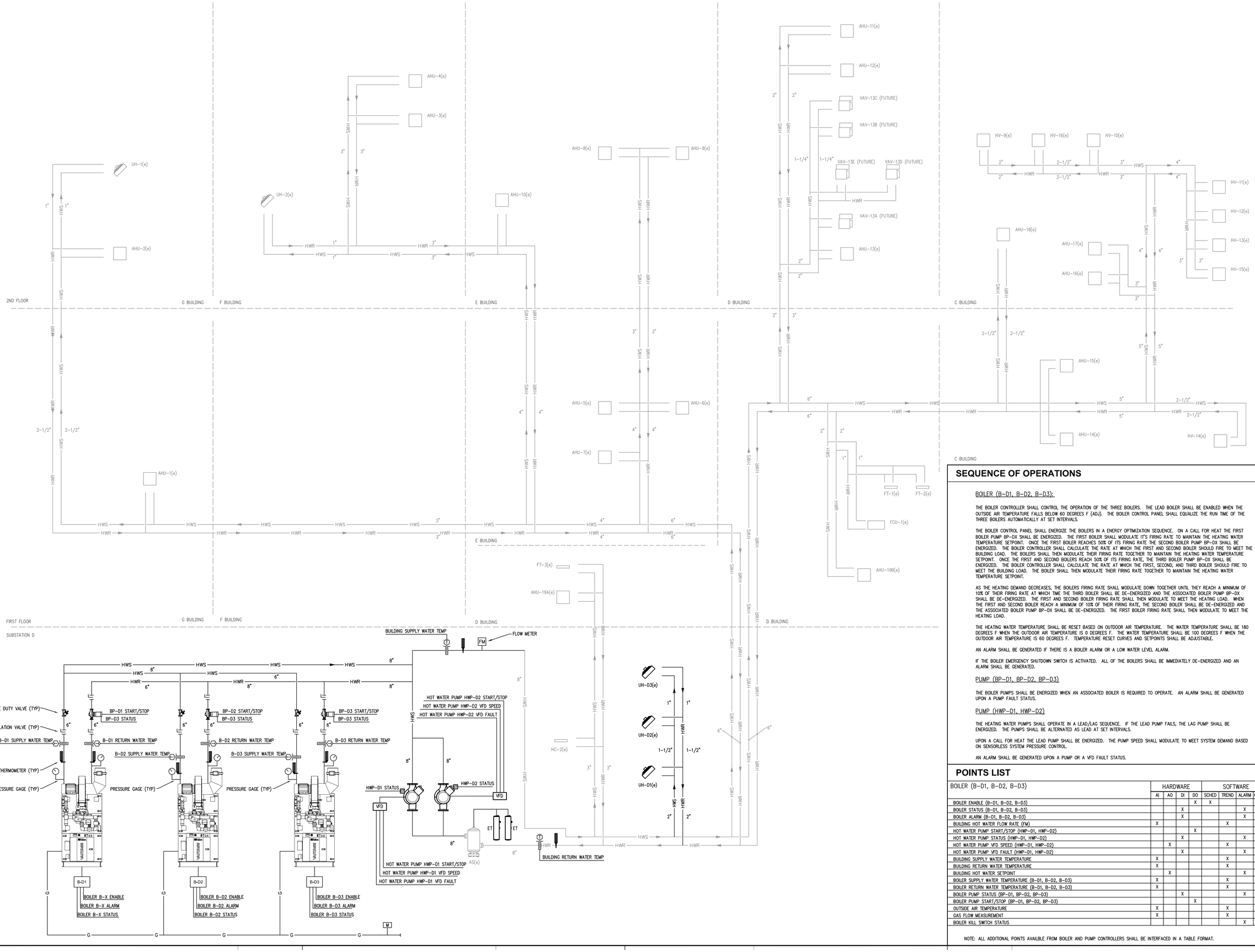
SHEET TITLE

TEMPERATURE CONTROLS AND PIPING SCHEMATIC

SHEET NUMBER

M410

SUBSTATION D BOILER CONTROL SCHEMATIC



SEQUENCE OF OPERATIONS

BOILER (B-D1, B-D2, B-D3):

THE BOILER CONTROLLER SHALL CONTROL THE OPERATION OF THE THREE BOILERS. THE LEAD BOILER SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE FALLS BELOW 60 DEGREES F (ADJ.). THE BOILER CONTROL PANEL SHALL EQUALIZE THE RUN TIME OF THE THREE BOILERS AUTOMATICALLY AT SET INTERVALS.

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PUMP (BP-D1, BP-D2, BP-D3)

THE BOILER PUMPS SHALL BE ENERGIZED WHEN AN ASSOCIATED BOILER IS REQUIRED TO OPERATE. AN ALARM SHALL BE GENERATED UPON A PUMP FAULT STATUS.

PUMP (HWP-D1, HWP-D2)

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AN ALARM SHALL BE GENERATED UPON A PUMP OR A VFD FAULT STATUS.

POINTS LIST

BOILER (B-D1, B-D2, B-D3)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
BOILER ENABLE (B-D1, B-D2, B-D3)				X	X			X
BOILER STATUS (B-D1, B-D2, B-D3)			X				X	X
BOILER ALARM (B-D1, B-D2, B-D3)			X				X	X
BUILDING HOT WATER FLOW RATE (FM)	X					X		X
HOT WATER PUMP START/STOP (HWP-D1, HWP-D2)				X				X
HOT WATER PUMP STATUS (HWP-D1, HWP-D2)			X				X	X
HOT WATER PUMP VFD SPEED (HWP-D1, HWP-D2)		X				X		X
HOT WATER PUMP VFD FAULT (HWP-D1, HWP-D2)			X				X	X
BUILDING SUPPLY WATER TEMPERATURE	X					X		X
BUILDING RETURN WATER TEMPERATURE	X					X		X
BUILDING HOT WATER SETPOINT		X					X	X
BOILER SUPPLY WATER TEMPERATURE (B-D1, B-D2, B-D3)	X					X		X
BOILER RETURN WATER TEMPERATURE (B-D1, B-D2, B-D3)	X					X		X
BOILER PUMP STATUS (BP-D1, BP-D2, BP-D3)			X				X	X
BOILER PUMP START/STOP (BP-D1, BP-D2, BP-D3)				X				X
OUTSIDE AIR TEMPERATURE	X					X		X
GAS FLOW MEASUREMENT	X					X		X
BOILER KILL SWITCH STATUS							X	X

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TEMPERATURE CONTROLS AND PIPING SCHEMATIC

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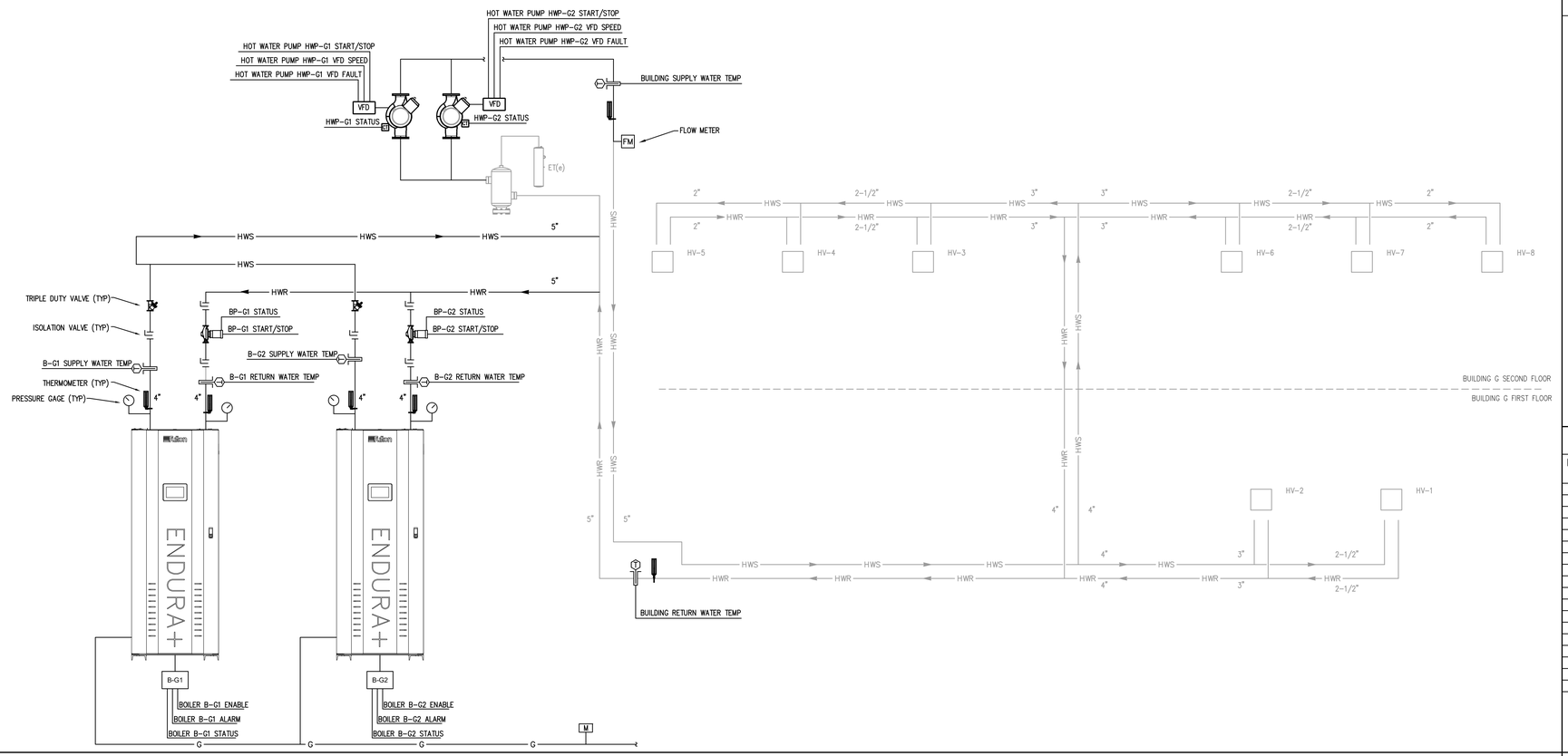

SEQUENCE OF OPERATIONS

BOILER (B-G1, B-G2):

THE BOILER CONTROLLER SHALL CONTROL THE OPERATION OF THE TWO BOILERS. THE LEAD BOILER SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE FALLS BELOW 60 DEGREES F (ADJ). THE BOILER CONTROL PANEL SHALL EQUALIZE THE RUN TIME OF THE TWO BOILERS AUTOMATICALLY AT SET INTERVALS.

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PUMP (BP-G1, BP-G2)

THE BOILER PUMPS SHALL BE ENERGIZED WHEN AN ASSOCIATED BOILER IS REQUIRED TO OPERATE. AN ALARM SHALL BE GENERATED UPON A PUMP FAULT STATUS.

PUMP (HWP-G1, HWP-G2)

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POINTS LIST

BOILER (B-G1, B-G2)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
BOILER ENABLE (B-G1, B-G2)				X	X			X
BOILER STATUS (B-G1, B-G2)			X				X	X
BOILER ALARM (B-G1, B-G2)			X				X	X
BUILDING HOT WATER FLOW RATE (FM)	X					X		X
HOT WATER PUMP START/STOP (HWP-G1, HWP-G2)				X				X
HOT WATER PUMP STATUS (HWP-G1, HWP-G2)			X				X	X
HOT WATER PUMP VFD SPEED (HWP-G1, HWP-G2)		X				X		X
HOT WATER PUMP VFD FAULT (HWP-G1, HWP-G2)			X				X	X
BUILDING SUPPLY WATER TEMPERATURE	X					X		X
BUILDING RETURN WATER TEMPERATURE	X					X		X
BUILDING HOT WATER SETPOINT		X					X	X
BOILER SUPPLY WATER TEMPERATURE (B-G1, B-G2)	X					X		X
BOILER RETURN WATER TEMPERATURE (B-G1, B-G2)	X					X		X
BOILER PUMP STATUS (BP-G1, BP-G2)			X				X	X
BOILER PUMP START/STOP (BP-G, BP-G2)				X				X
OUTSIDE AIR TEMPERATURE	X					X		X
GAS FLOW MEASUREMENT	X					X		X
BOILER KILL SWITCH STATUS							X	X

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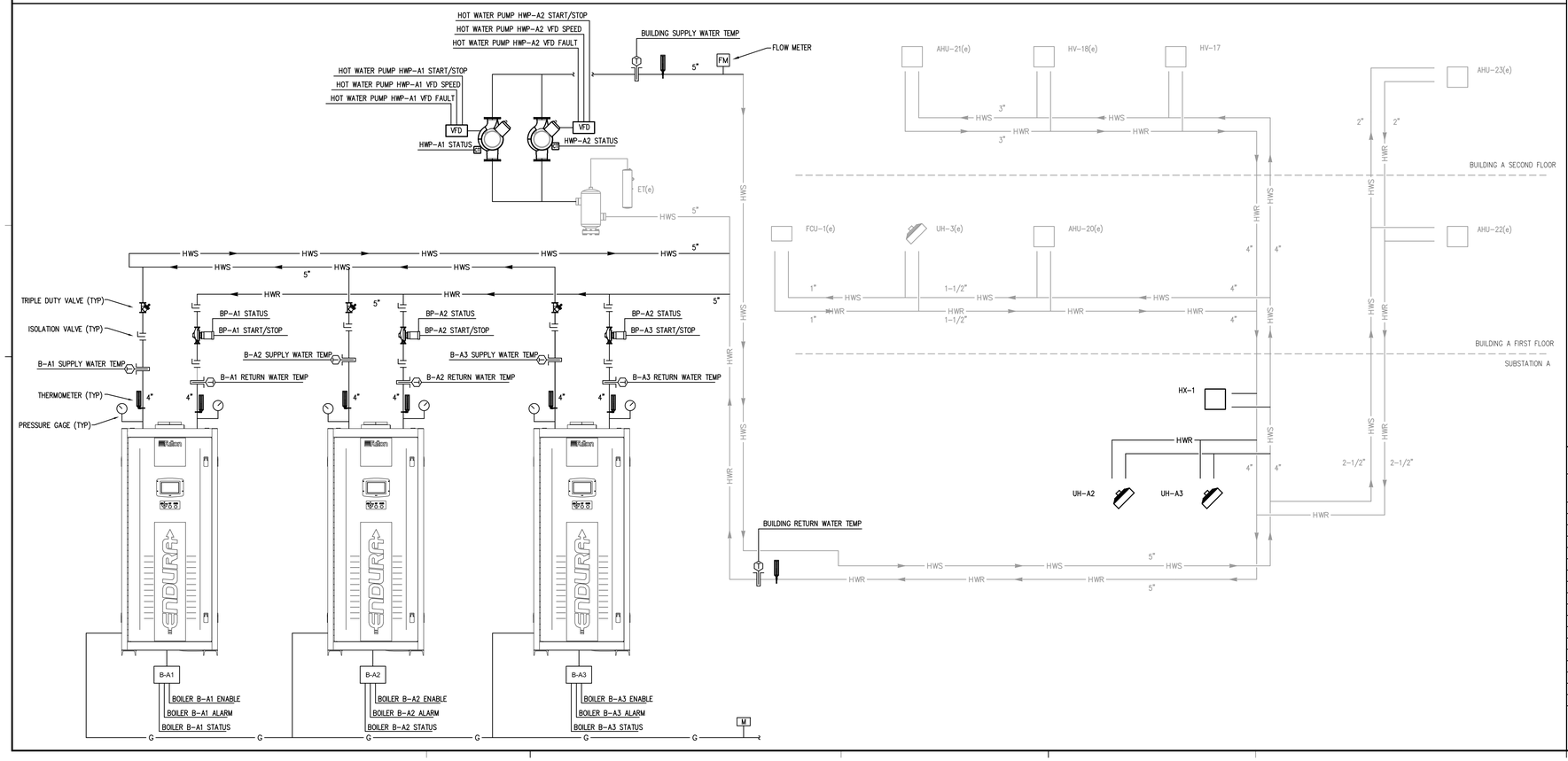
SUBSTATION A BOILER CONTROL SCHEMATIC



SEQUENCE OF OPERATIONS

BOILER (B-A1, B-A2, B-A3):

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PUMP (BP-A1, BP-A2, BP-A3)

THE BOILER PUMPS SHALL BE ENERGIZED WHEN AN ASSOCIATED BOILER IS REQUIRED TO OPERATE. AN ALARM SHALL BE GENERATED UPON A PUMP FAULT STATUS.

PUMP (HWP-A1, HWP-A2)

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POINTS LIST

BOILER (B-A1, B-A2, B-A3)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
BOILER ENABLE (B-A1, B-A2, B-A3)				X	X			X
BOILER STATUS (B-A1, B-A2, B-A3)			X				X	X
BOILER ALARM (B-A1, B-A2, B-A3)			X				X	X
BUILDING HOT WATER FLOW RATE (FM)	X					X		X
HOT WATER PUMP START/STOP (HWP-A1, HWP-A2)				X				X
HOT WATER PUMP STATUS (HWP-A1, HWP-A2)			X				X	X
HOT WATER PUMP VFD SPEED (HWP-A1, HWP-A2)		X				X		X
HOT WATER PUMP VFD FAULT (HWP-A1, HWP-A2)			X				X	X
BUILDING SUPPLY WATER TEMPERATURE	X					X		X
BUILDING RETURN WATER TEMPERATURE	X					X		X
BUILDING HOT WATER SETPOINT		X					X	X
BOILER SUPPLY WATER TEMPERATURE (B-A1, B-A2, B-A3)	X					X		X
BOILER RETURN WATER TEMPERATURE (B-A1, B-A2, B-A3)	X					X		X
BOILER PUMP STATUS (BP-A1, BP-A2, BP-A3)			X				X	X
BOILER PUMP START/STOP (BP-A1, BP-A2, BP-A3)				X				X
OUTSIDE AIR TEMPERATURE	X					X		X
GAS FLOW MEASUREMENT	X					X		X
BOILER KILL SWITCH STATUS							X	X

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SHEET TITLE
TEMPERATURE CONTROLS AND PIPING SCHEMATIC

SHEET NUMBER
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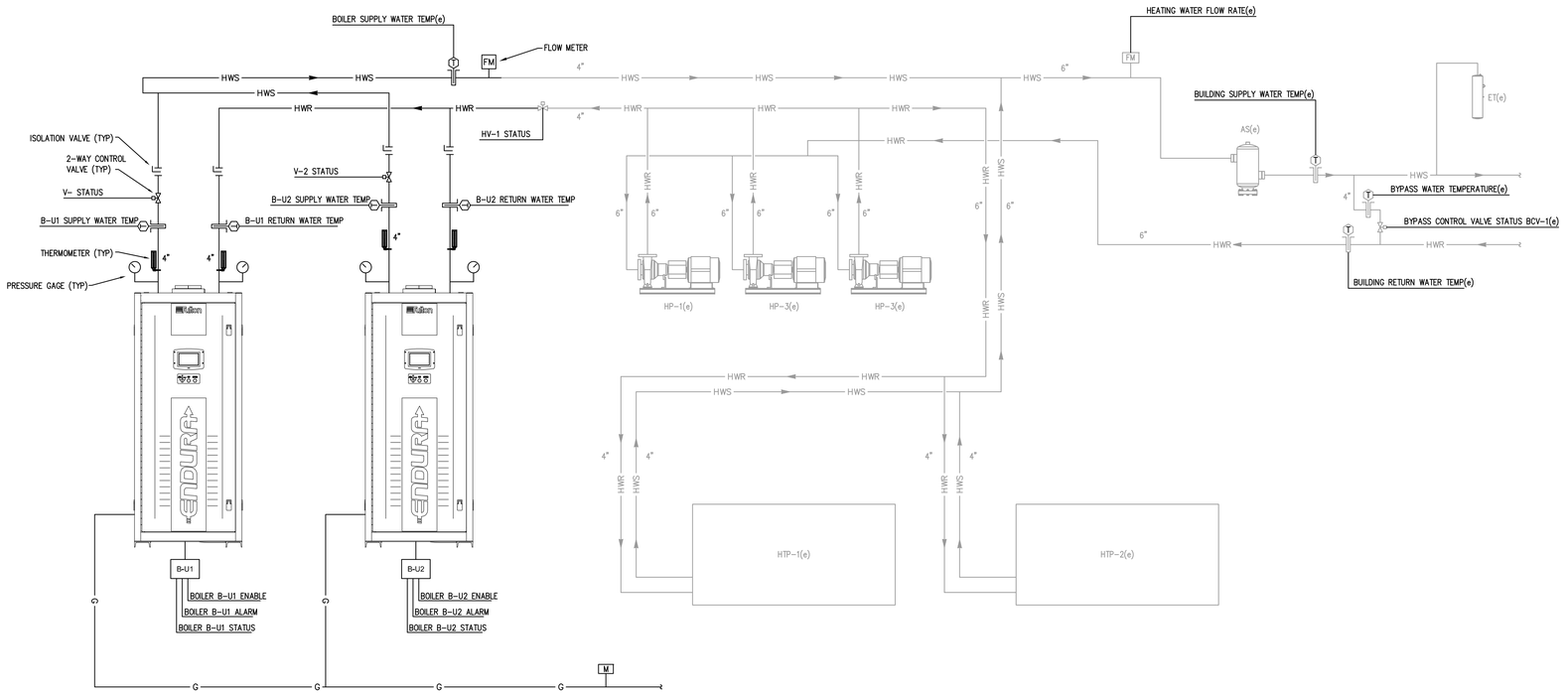
P:\1160 - JJC - Main Campus - Steam Pipe System Replacement with Condensing Boilers\30_Design\Dwgs\02D-CD\30_Mech\1160M0412.dwg, 2/16/2018 11:19:44 AM, BWG

SUBSTATION U BOILER CONTROL SCHEMATIC



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BOILER (B-X, B-X):

THE BOILER CONTROLLER SHALL CONTROL THE OPERATION OF THE TWO BOILERS. THE BOILER CONTROL PANEL SHALL EQUALIZE THE RUN TIME OF THE TWO BOILERS AUTOMATICALLY AT SET INTERVALS.

THE LEAD BOILER CONTROL PANEL SHALL ENERGIZE THE BOILERS IN A CASCADING SEQUENCE. IF ALL AVAILABLE HEAT PUMP MODULES ARE OPERATING AND THE HOT WATER SUPPLY TEMPERATURE FALLS BELOW THE HOT WATER SUPPLY TEMPERATURE SETPOINT, THE HOT WATER CONTROL VALVE HV-1 SHALL OPEN, THE LEAD BOILER CONTROL VALVE BV-UX SHALL OPEN, AND THE LEAD BOILER SHALL BE ENERGIZED. THE LEAD BOILER SHALL MODULATE IT'S FIRING RATE TO MAINTAIN THE BOILER HOT WATER SUPPLY WATER TEMPERATURE SETPOINT. ONCE THE FIRST BOILER REACHES 50% OF ITS FIRING RATE, THE SECOND BOILER CONTROL VALVE BV-UX SHALL OPEN. THE BOILER CONTROLLER SHALL CALCULATE THE RATE AT WHICH THE FIRST AND SECOND BOILER SHOULD FIRE TO MEET THE BUILDING LOAD. THE BOILERS SHALL THEN MODULATE THEIR FIRING RATE TOGETHER TO MAINTAIN THE BOILER HOT WATER TEMPERATURE SETPOINT.

AS THE HEATING DEMAND FOR THE BOILERS DECREASES, THE BOILERS' FIRING RATE SHALL MODULATE DOWN TOGETHER UNTIL THEY REACH A MINIMUM OF 10% OF THEIR FIRIN RATE AT WHICH TIME THE SECOND BOILER SHALL BE DE-ENERGIZED AND THE ASSOCIATED CONTROL VALVE BV-UX SHALL CLOSE. THE FIRST BOILER FIRING RATE SHALL THEN MODULATE TO MEET THE HEATING LOAD.

AN ALARM SHALL BE GENERATED IF THERE IS A BOILER ALARM OR A LOW WATER LEVEL ALARM.

IF THE BOILER EMERGENCY SHUTDOWN SWITCH IS ACTIVATED. ALL OF THE BOILERS SHALL BE IMMEDIATELY DE-ENERGIZED AND AN ALARM SHALL BE GENERATED.

POINTS LIST

BOILER (B-U1, B-U2)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
BOILER ENABLE (B-U1, B-U2)				X	X			X
BOILER STATUS (B-U1, B-U2)			X				X	X
BOILER ALARM (B-U1, B-U2)			X				X	X
BUILDING HOT WATER FLOW RATE(e)	X					X		X
BOILER HOT WATER FLOW RATE(e)	X					X		X
BUILDING SUPPLY WATER TEMPERATURE(e)	X					X		X
BUILDING RETURN WATER TEMPERATURE(e)	X					X		X
HEATING WATER BYPASS WATER TEMPERATURE(e)	X					X		X
BUILDING HOT WATER SETPOINT		X					X	X
BOILER SUPPLY WATER TEMPERATURE (B-U1, B-U2)	X					X		X
BOILER RETURN WATER TEMPERATURE (B-U1, B-U2)	X					X		X
BOILER CONTROL VALVE (V-1, V-2)			X			X		X
HOT WATER CONTROL VALVE (HV-1)			X			X		X
GAS FLOW MEASUREMENT	X					X		X
BOILER KILL SWITCH STATUS							X	X

NOTE: 1) ALL ADDITIONAL POINTS AVAILBLE FROM BOILER CONTROLLERS SHALL BE INTERFACED IN A TABLE FORMAT.
2) ALL EXISTING POINTS HEATING WATER POINTS NOT SHOWN SHALL REMAIN.
3) EXISTING HEAT PUMP AND HOT WATER PUMP SEQUENCE OF OPERATIONS TO REMAIN.

MISCELLANEOUS EQUIPMENT CONTROLS

UNIT HEATERS

WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 40 DEGREES F (ADJ), THE FAN SHALL BE ENABLED AND CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. IF THE CONTROL VALVE BECOMES FULLY CLOSED THE FAN SHALL BE DISABLED.

WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 40 DEGREES F (ADJ), THE FAN SHALL OPERATE CONTINUOUSLY AND THE CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE.

UNIT HEATER (UHs)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
FAN START/STOP				X	X			
SPACE TEMPERATURE	X					X	X	X
UNIT HEATER STATUS			X				X	X
CONTROL VALVE		X				X		X

HEAT EXCHANGER (HX-1)

POINTS LIST

HEAT EXCHANGER (HX-1)	HARDWARE				SOFTWARE			
	AI	AO	DI	DO	SCHED	TREND	ALARM	GRAPHIC
GLYCOL HEATING SUPPLY WATER TEMPERATURE	X					X		X
GLYCOL HEATING RETURN WATER TEMPERATURE	X					X		X
HEATING SUPPLY WATER TEMPERATURE	X					X		X
HEATING RETURN WATER TEMPERATURE	X					X		X

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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

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ISSUED	
BID DOCUMENTS	02/16/18

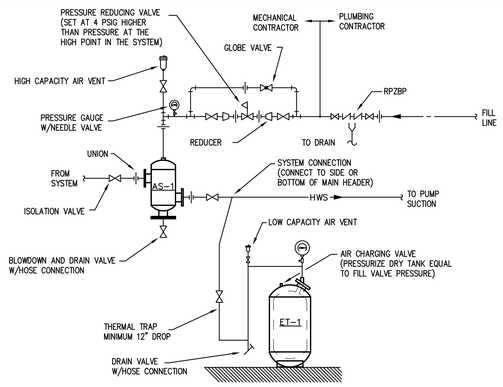
JOB NO.	17-292-1160
DRAWN	BWG
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

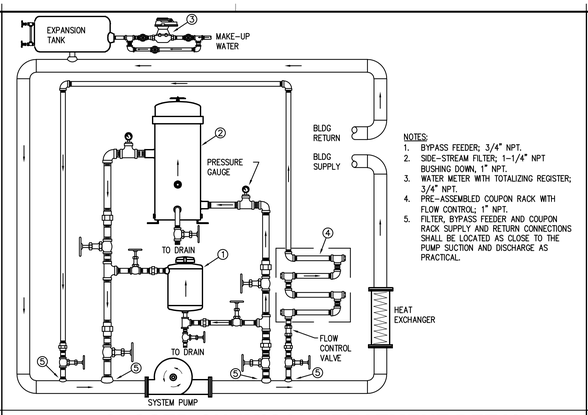
TEMPERATURE CONTROLS AND PIPING SCHEMATIC

SHEET NUMBER

M413

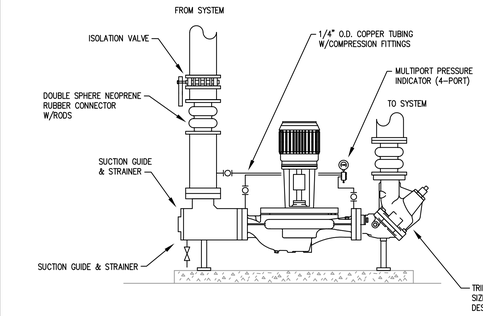


AIR SEPARATOR & EXPANSION TANK DETAIL (9)
SCALE: NTS



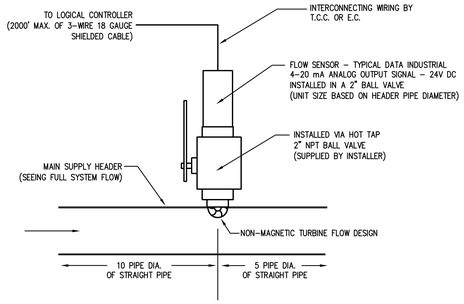
NOTES:
1. BYPASS FEEDER; 3/4" NPT.
2. SIDE-STREAM FILTER; 1-1/4" NPT BUSHING DOWN, 1" NPT.
3. WATER METER WITH TOTALIZING REGISTER; 3/4" NPT.
4. PRE-ASSEMBLED COUPON RACK WITH FLOW CONTROL; 1" NPT.
5. FILTER, BYPASS FEEDER AND COUPON RACK SUPPLY AND RETURN CONNECTIONS SHALL BE LOCATED AS CLOSE TO THE PUMP SUCTION AND DISCHARGE AS PRACTICAL.

CLOSED CHEMICAL TREATMENT DETAIL (5)
SCALE: NTS



NOTES:
1. SUPPORT PUMP INACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS

VERTICAL IN-LINE PUMP DETAIL (1)
SCALE: NTS



VARIABLE SPEED AND CONSTANT SPEED CONTROL SYSTEM SIGNAL

FLOW SENSOR DETAIL (10)
SCALE: NTS

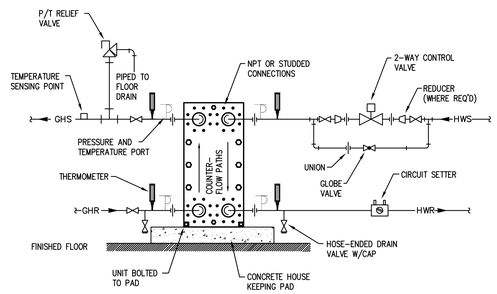
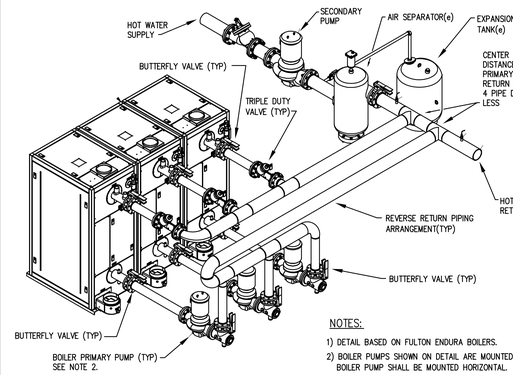
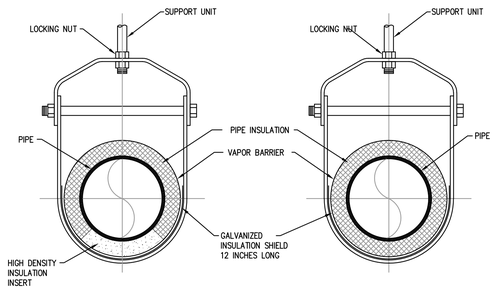


PLATE AND FRAME HEAT EXHANGER DETAIL (6)
SCALE: NTS



NOTES:
1) DETAIL BASED ON FULTON ENDURA BOILERS.
2) BOILER PUMPS SHOWN ON DETAIL ARE MOUNTED VERTICAL, BOILER PUMP SHALL BE MOUNTED HORIZONTAL.

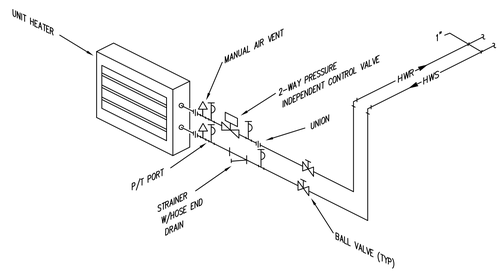
BOILER PRIMARY SECONDARY PIPING DETAIL (2)
SCALE: NTS



HEAVY-DUTY CLEVIS HANGER (FOR 2-1/2 INCH AND UP)

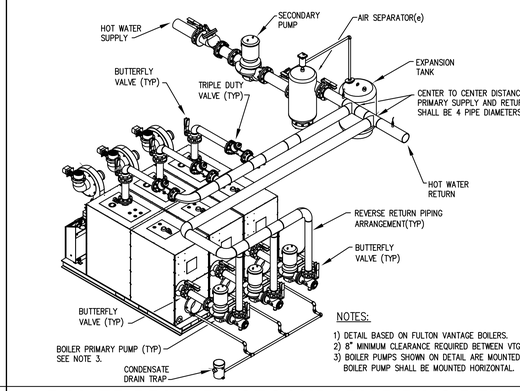
HEAVY-DUTY CLEVIS HANGER (FOR 1/2 INCH UP TO AND INCLUDING 2 INCH PIPE)

PIPE HANGER DETAILS (11)
SCALE: NTS



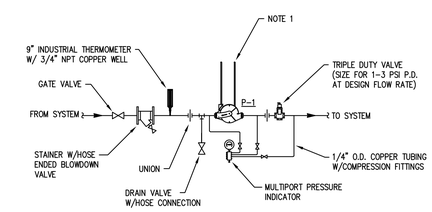
NOTES:
1. PIPING TO UNIT HEATER SHALL BE MINIMUM 3/4" UNLESS OTHERWISE NOTED.
2. SEPARATE PIPING SPECIALTIES ARE SHOWN. MODULAR COMPONENTS ARE ACCEPTABLE.

UNIT HEATER PIPING DETAIL (7)
SCALE: NTS



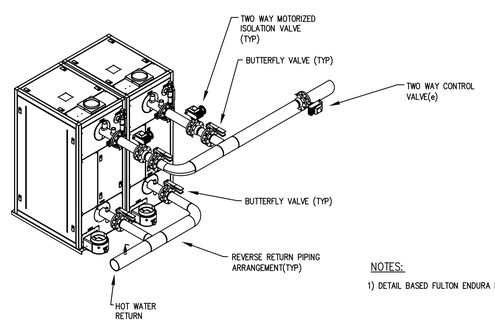
NOTES:
1) DETAIL BASED ON FULTON VANTAGE BOILERS.
2) 8" MINIMUM CLEARANCE REQUIRED BETWEEN VTG-5000 BOILERS.
3) BOILER PUMPS SHOWN ON DETAIL ARE MOUNTED VERTICAL, BOILER PUMP SHALL BE MOUNTED HORIZONTAL.

BOILER PRIMARY SECONDARY PIPING DETAIL (3)
SCALE: NTS



NOTES:
1. PROVIDE MOTOR SUPPORTS ON PUMPS GREATER THAN 1/2 HP. SUPPORTS SHALL BE PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.

IN-LINE PUMP DETAIL (8)
SCALE: NTS



NOTES:
1) DETAIL BASED FULTON ENDURA BOILERS.

BOILER PIPING DETAIL (4)
SCALE: NTS

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JOB NO.	17-292-1160
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APPROVED	DDW

SHEET TITLE

MECHANICAL SCHEDULES AND DETAILS

SHEET NUMBER

M510

BOILER SCHEDULE

MARK	TYPE	WATER FLOW RATE (GPM)	MAX PRESS DROP (FT)	GAS INPUT (MBH)	GAS OUPUT (MBH)	EWT / LWT (°F)	ELECTRICAL (V/PH/HZ)	MINIMUM EFFICIENCY	MODEL	LOCATION	NOTES
B-H1	CONDENSING	466	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB D	1
B-H2	CONDENSING	466	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB D	1
B-H3	CONDENSING	466	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB D	1
B-D1	CONDENSING	464	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB H	1
B-D2	CONDENSING	464	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB H	1
B-D3	CONDENSING	464	11.1	5,000	4,630	180 / 160	460/3/60	92.6	VTC-5000	SUB H	1
B-A1	CONDENSING	162	3.5	2,000	1,874	180 / 160	120/1/60	93.7	EDR-2000	SUB A	1
B-A2	CONDENSING	162	3.5	2,000	1,874	180 / 160	120/1/60	93.7	EDR-2000	SUB A	1
B-A3	CONDENSING	162	3.5	2,000	1,874	180 / 160	120/1/60	93.7	EDR-2000	SUB A	1
B-G1	CONDENSING	210	7.4	2,500	2,420	180 / 160	460/3/60	96.8	EDR+2500	SUB G	1
B-G2	CONDENSING	210	7.4	2,500	2,420	180 / 160	460/3/60	96.8	EDR+2500	SUB G	1
B-U1	CONDENSING	282	3.5	2,000	1,874	130 / 110	120/1/60	93.7	EDR-2000	SUB U	1, 2
B-U2	CONDENSING	282	3.5	2,000	1,874	130 / 110	120/1/60	93.7	EDR-2000	SUB U	1, 2

NOTES
1. MODEL BASED ON FULTON.
2. BASED ON 30% ETHYLENE GLYCOL.

PUMP SCHEDULE

MARK	WATER FLOW RATE (GPM)	HEAD (FT)	TYPE	MOTOR POWER (HP)	ELECTRICAL (V/PH/HZ)	MOTOR SPEED (RPM)	SERVICE	MODEL	NOTES
HWP-H1	1400	48	VERT INLINE	25	460/3/60	1800	SUB H	e-80SC	1, 2
HWP-H2	1400	48	VERT INLINE	25	460/3/60	1800	SUB H	e-80SC	1, 2
HWP-D1	1392	95	VERT INLINE	60	460/3/60	1800	SUB D	e-80SC	1, 2
HWP-D2	1392	95	VERT INLINE	60	460/3/60	1800	SUB D	e-80SC	1, 2
HWP-A1	489	44	VERT INLINE	10	460/3/60	1800	SUB A	e-80SC	1, 2
HWP-A2	489	44	VERT INLINE	10	460/3/60	1800	SUB A	e-80SC	1, 2
HWP-G1	420	85	VERT INLINE	20	460/3/60	1800	SUB G	e-80SC	1, 2
HWP-G2	420	85	VERT INLINE	20	460/3/60	1800	SUB G	e-80SC	1, 2
BP-H1	465	20	VERT INLINE	5	460/3/60	1800	B-H1	e-80	1
BP-H2	465	20	VERT INLINE	5	460/3/60	1800	B-H2	e-80	1
BP-H3	465	20	VERT INLINE	5	460/3/60	1800	B-H3	e-80	1
BP-D1	464	22	VERT INLINE	5	460/3/60	1800	B-D1	e-80	1
BP-D2	464	22	VERT INLINE	5	460/3/60	1800	B-D2	e-80	1
BP-D3	464	22	VERT INLINE	5	460/3/60	1800	B-D3	e-80	1
BP-A1	163	16	VERT INLINE	2	208/1/60	–	B-A1	ECORCIR-XL	1
BP-A2	163	16	VERT INLINE	2	208/1/60	–	B-A1	ECORCIR-XL	1
BP-A3	163	16	VERT INLINE	2	208/1/60	–	B-A1	ECORCIR-XL	1
BP-G1	210	17	VERT INLINE	2	208/1/60	–	B-G1	ECORCIR-XL	1
BP-G2	210	17	VERT INLINE	2	208/1/60	–	B-G2	ECORCIR-XL	1

NOTES
1. MODEL BASED ON BELL AND GOSSETT.
2. PROVIDE WITH MOTOR MOUNTED VARIABLE SPEED CONTROL AND INTERFACE GATEWAY FOR TIE-IN TO B.A.S.

UNIT HEATER SCHEDULE

MARK	AIR FLOW RATE (CFM)	EAT / LAT (° F)	WATER FLOW RATE (GPM)	WATER PRESS DROP (FT)	EWT / LWT (° F)	MIN CAPACITY (MBH)	SUPPLY FAN (HP)	ELECTRICAL (V/PH/HZ)	MODEL	AREA SERVED	NOTES
UH-H1	1,900	50 / 90	8.9	0.39	180 / 160	82.0	1/3	115/1/60	HS-120	SUB-H	1
UH-D1	1,900	50 / 90	8.9	0.39	180 / 160	82.0	1/3	115/1/60	HS-120	SUB-D	1
UH-D2	1,900	50 / 90	8.9	0.39	180 / 160	82.0	1/3	115/1/60	HS-120	SUB-D	1
UH-D3	1,900	50 / 90	8.9	0.39	180 / 160	82.0	1/3	115/1/60	HS-120	SUB-D	1
UH-A1	1100 / 950	50 / 91	5.3	0.23	180 / 160	49.2	1/20	115/1/60	HS-72	SUB-A	1
UH-A2	1100 / 950	50 / 91	5.3	0.23	180 / 160	49.2	1/20	115/1/60	HS-72	SUB-A	1

NOTES
1. MODEL BASED ON STERLING.

PLATE HEAT EXCHANGER SCHEDULE

MARK	COLD SIDE					HOT SIDE					HEAT EXCHANGED (MBH)	NOMINAL DIMENSIONS (IN X IN)	NUMBER OF PLATES	LOCATION	NOTES
	FLUID CIRCULATED	FLOW RATE (GPM)	PRESSURE DROP (PSI)	ENT/LVG TEMP (°F)	CONNECTION SIZE IN/OUT (IN)	FLUID CIRCULATED	FLOW RATE (GPM)	PRESSURE DROP (PSI)	ENT/LVG TEMP (°F)	CONNECTION SIZE IN/OUT (IN)					
HX-1	30% EG	75	10	110 / 130	2 / 2	WATER	76	10	180 / 160	2 / 2	750	–	15	SUB A	1

NOTES
1. MODEL BASED ON BELL AND GOSSETT.

EXPANSION TANK SCHEDULE

MARK	TANK VOLUME (GAL)	TANK ACCEPTANCE (GAL)	LENGTH X DIAMETER (IN X IN)	MAXIMUM DESIGN PRESS (PSIG)	MAXIMUM DESIGN TEMP (°F)	SERVICE	LOCATION	MODEL	NOTES
ET-1	317	317	85-3/8 X 36	125	240	SUB-D HW	SUB-D	B-1200	1
ET-2	317	317	85-3/8 X 36	125	240	SUB-D HW	SUB-D	B-1200	1

NOTES
1. MODEL BASE ON BELL AND GOSSETT.
2. PRECHARGE TANK TO 23 PSI.

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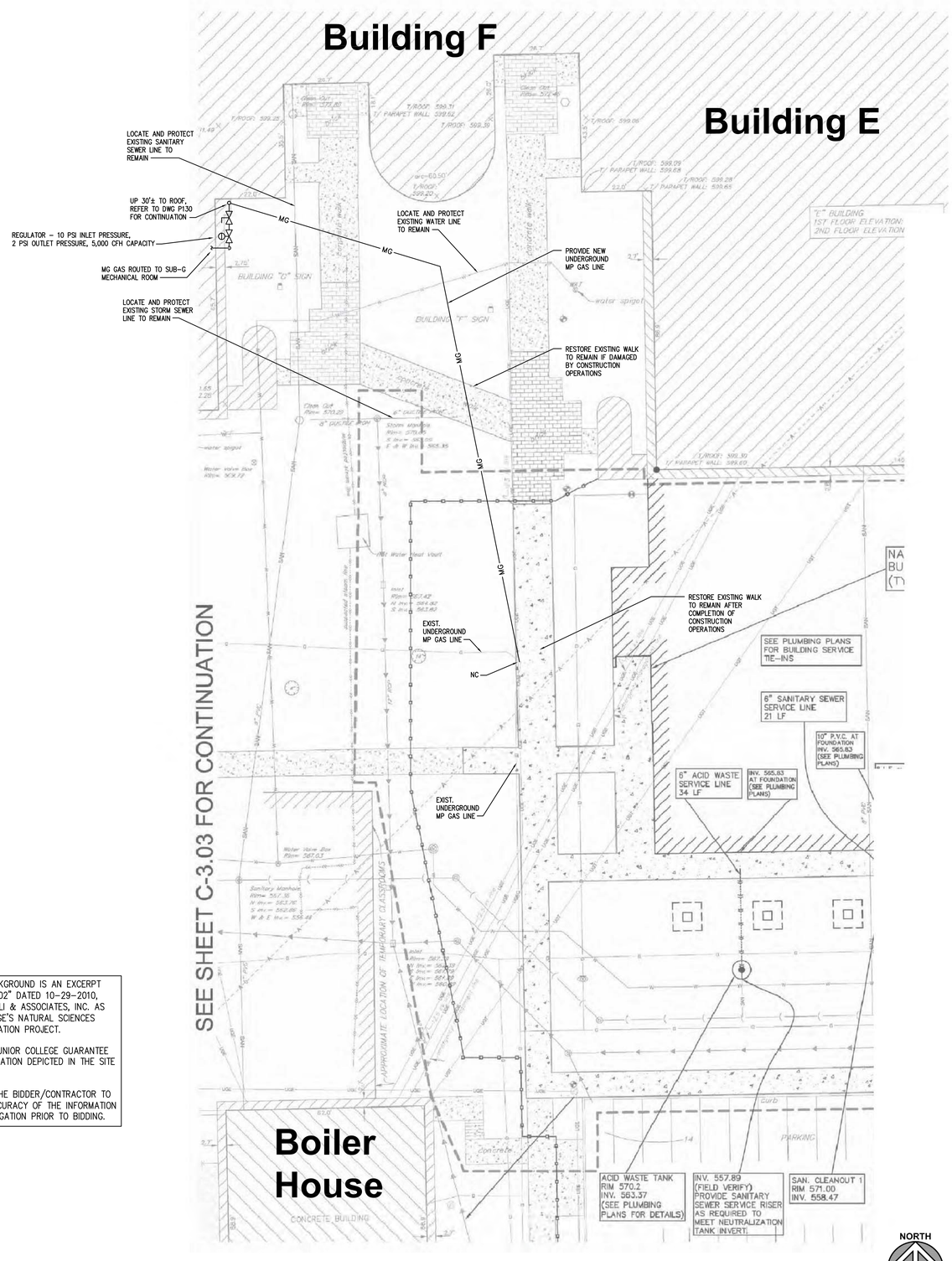
MECHANICAL SCHEDULES

SHEET NUMBER

M610



NOTE: PARTIAL SITE PLAN BACKGROUND IS AN EXCERPT FROM "SITE UTILITY PLAN C-3.02" DATED 10-29-2010, CREATED BY RUETTIGER, TONELLI & ASSOCIATES, INC. AS PART OF JOLIET JUNIOR COLLEGE'S NATURAL SCIENCES BUILDING ADDITION AND RENOVATION PROJECT.

NEITHER KLUBER NOR JOLIET JUNIOR COLLEGE GUARANTEE THE ACCURACY OF THE INFORMATION DEPICTED IN THE SITE PLAN BACKGROUND.

IT IS THE RESPONSIBILITY TO THE BIDDER/CONTRACTOR TO SATISFY ITSELF AS TO THE ACCURACY OF THE INFORMATION BY MEANS OF ON-SITE INVESTIGATION PRIOR TO BIDDING.

PLUMBING PARTIAL SITE PLAN

SCALE: 1/16" = 1'-0" (1)

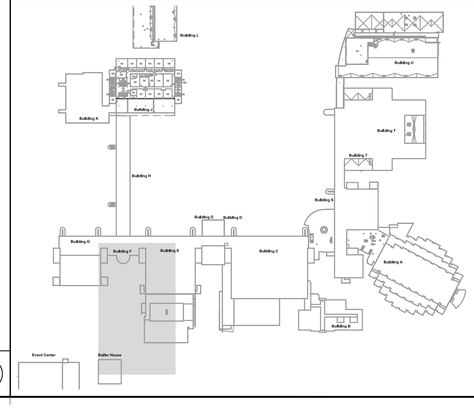
KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

GAS PIPING GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE 10 PSI MEDIUM PRESSURE GAS PIPE. THE DESIGN SHALL BE ACCOMPLISHED UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE LICENSED PROFESSIONAL'S STAMP.
3. THE FUEL LINE (NATURAL GAS) ROUTING SHOWN ON THE DRAWINGS IS SCHEMATIC AND GENERALLY REPRESENTS STRAIGHT LINE RUNS TO THE GENERAL AREAS NEEDING GAS SUPPLY. DETERMINE EXACT ROUTING AND REVIEW WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.
4. AT VERTICAL TRANSITIONS AND ROUTING OF PIPES, ANCHOR TO EXISTING BUILDING FRAMING. INSTALL PIPES IN SUCH A MANNER THAT CONCEALS FROM VIEW AS MUCH AS POSSIBLE AND LIMIT AMOUNT (SIZE AND SPACING) OF ATTACHMENTS. REVIEW WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.
5. LOCATE PIPES AS CLOSE AS POSSIBLE TO EXISTING PIPE ROUTING CURRENTLY ON THE ROOFS. DO NOT USE ANY OF THE EXISTING SUPPORTS ON THE ROOF TO SUPPORT NEW GAS PIPES.
6. SUPPORT PIPES ON THE ROOF ON LOW-RISE ROOF SUPPORTS THAT DO NOT PENETRATE THE EXISTING ROOF MEMBRANE. ANCHOR PIPES TO SUPPORTS. PROVIDE SACRIFICIAL WHITE EPDM MEMBRANE SHEET BENEATH EACH SUPPORT LOCATION TO PROTECT EXISTING ROOF MEMBRANE.
7. PROTECT ALL ROOF AND WALL SURFACES DURING INSTALLATION, INCLUDING WELDING OPERATIONS. REPAIR ANY DAMAGE TO SUCH SURFACES.
8. INDICATED ROOF ELEVATION CHANGES AND BUILDING DIMENSIONS ARE APPROXIMATE AND ARE BASED ON CASUAL VISUAL OBSERVATION. CONFIRM ALL ELEVATIONS AND DIMENSIONS IN THE FIELD.
9. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES. INSTALL, LAYOUT AND CONFIGURE ALL GAS PIPES AND THEIR ASSOCIATED CONNECTIONS, BENDS, OFFSETS, ETC. IN ACCORDANCE WITH INDUSTRY STANDARDS. HONOR BUILDING EXPANSION JOINTS AS THE PIPES ROUTE OVER THE VARIOUS BUILDING AREAS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM.
10. DETERMINE EXACT ROUTING AND MEANS TO PROVIDE THE BELOW GRADE, EXTERIOR GAS PIPE. RESTORE ANY DISTURBED HARD SURFACE AREAS AND LANDSCAPED AREAS TO THEIR EXISTING CONDITION PRIOR TO GAS PIPE INSTALLATION. PROVIDE MEANS TO CONFIRM LOCATION OF UNDERGROUND UTILITIES IN THE PROPOSED VICINITY OF THE PIPE ROUTING.
11. EXISTING PIPING INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
12. BACKFILL AND COMPACT (IF REQUIRED) BELOW GRADE PIPES WITH MATERIALS THAT PROVIDE ADEQUATE SUPPORT FOR THE FINAL FINISH RESTORED EXTERIOR SURFACE.
13. PAINT GAS PIPING ALONG ENTIRE ABOVE-GROUND LENGTH; MPI #163 – SEMI-GLOSS LIGHT INDUSTRIAL COATING; COLOR SAFETY YELLOW ON ROOFTOP AREAS; COLOR WHITE FOR VERTICAL RISERS EXTENDING FROM GROUND TO ROOF AND FOR VERTICAL RISERS TRANSITIONING BETWEEN DIFFERING ROOF ELEVATIONS; 2 TOP COATS OVER ONE COAT OF MANUFACTURER'S RECOMMENDED PRIMER; SUBMIT MANUFACTURER'S PRODUCT DATA AND APPLICATION INSTRUCTIONS; PROVIDE SURFACE PREP BY REMOVING RUST, SCALE AND OTHER FOREIGN SUBSTANCES IN ACCORDANCE WITH PAINT MANUFACTURER'S RECOMMENDATIONS AND SOLVENT CLEAN SURFACES ACCORDING TO SSPC-SP-1.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	CDH
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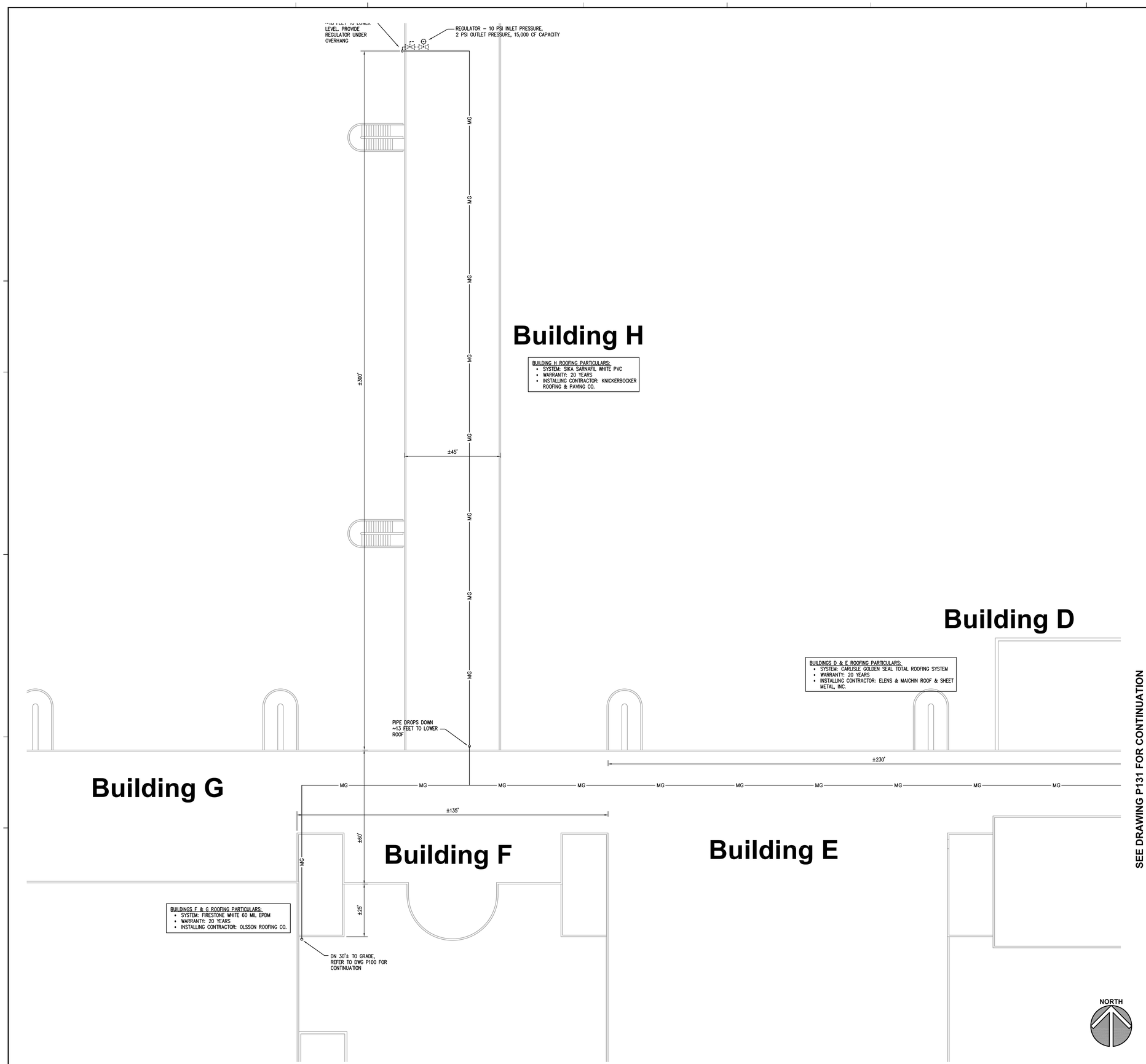
APPROVED	DDW

SHEET TITLE

PLUMBING PARTIAL SITE PLAN

SHEET NUMBER

P100



PLUMBING PARTIAL ROOF PLAN (1)

SCALE: 1/16" = 1'-0"

KEYNOTES

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GAS PIPING GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE 10 PSI MEDIUM PRESSURE GAS PIPE. THE DESIGN SHALL BE ACCOMPLISHED UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE LICENSED PROFESSIONAL'S STAMP.
3. THE FUEL LINE (NATURAL GAS) ROUTING SHOWN ON THE DRAWINGS IS SCHEMATIC AND GENERALLY REPRESENTS STRAIGHT LINE RUNS TO THE GENERAL AREAS NEEDING GAS SUPPLY. DETERMINE EXACT ROUTING AND REVIEW WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.
4. AT VERTICAL TRANSITIONS AND ROUTING OF PIPES, ANCHOR TO EXISTING BUILDING FRAMING. INSTALL PIPES IN SUCH A MANNER THAT CONCEALS FROM VIEW AS MUCH AS POSSIBLE AND LIMIT AMOUNT (SIZE AND SPACING) OF ATTACHMENTS. REVIEW WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.
5. LOCATE PIPES AS CLOSE AS POSSIBLE TO EXISTING PIPE ROUTING CURRENTLY ON THE ROOFS. DO NOT USE ANY OF THE EXISTING SUPPORTS ON THE ROOF TO SUPPORT NEW GAS PIPES.
6. SUPPORT PIPES ON THE ROOF ON LOW-RISE ROOF SUPPORTS THAT DO NOT PENETRATE THE EXISTING ROOF MEMBRANE. ANCHOR PIPES TO SUPPORTS. PROVIDE SACRIFICIAL WHITE EPDM MEMBRANE SHEET BENEATH EACH SUPPORT LOCATION TO PROTECT EXISTING ROOF MEMBRANE.
7. PROTECT ALL ROOF AND WALL SURFACES DURING INSTALLATION, INCLUDING WELDING OPERATIONS. REPAIR ANY DAMAGE TO SUCH SURFACES.
8. INDICATED ROOF ELEVATION CHANGES AND BUILDING DIMENSIONS ARE APPROXIMATE AND ARE BASED ON CASUAL VISUAL OBSERVATION. CONFIRM ALL ELEVATIONS AND DIMENSIONS IN THE FIELD.
9. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES. INSTALL, LAYOUT AND CONFIGURE ALL GAS PIPES AND THEIR ASSOCIATED CONNECTIONS, BENDS, OFFSETS, ETC. IN ACCORDANCE WITH INDUSTRY STANDARDS. HONOR BUILDING EXPANSION JOINTS AS THE PIPES ROUTE OVER THE VARIOUS BUILDING AREAS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM.
10. DETERMINE EXACT ROUTING AND MEANS TO PROVIDE THE BELOW GRADE, EXTERIOR GAS PIPE. RESTORE ANY DISTURBED HARD SURFACE AREAS AND LANDSCAPED AREAS TO THEIR EXISTING CONDITION PRIOR TO GAS PIPE INSTALLATION. PROVIDE MEANS TO CONFIRM LOCATION OF UNDERGROUND UTILITIES IN THE PROPOSED VICINITY OF THE PIPE ROUTING.
11. EXISTING PIPING INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
12. BACKFILL AND COMPACT (IF REQUIRED) BELOW GRADE PIPES WITH MATERIALS THAT PROVIDE ADEQUATE SUPPORT FOR THE FINAL FINISH RESTORED EXTERIOR SURFACE.
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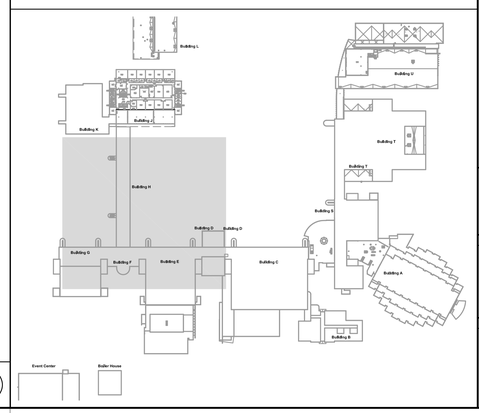
KEY PLAN



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SHEET TITLE

PLUMBING PARTIAL ROOF PLAN

SHEET NUMBER

P130

SEE DRAWING P132 FOR CONTINUATION

SEE DRAWING P130 FOR CONTINUATION

Building T

Building S

BUILDING S ROOFING PARTICULARS:
- SYSTEM: FIRESTONE WHITE 60 MIL EPDM
- WARRANTY: 20 YEARS
- INSTALLING CONTRACTOR: OLSSON ROOFING CO.

Building D

REGULATOR – 10 PSI INLET PRESSURE, 2 PSI OUTLET PRESSURE, 15,399 CF CAPACITY

PIPE DROPS DOWN ~30 FEET TO LOWER LEVEL. PROVIDE REGULATOR UNDER OVERHANG

Building C

BUILDING C ROOFING PARTICULARS:
- SYSTEM: CARLISLE GOLDEN SEAL TOTAL ROOFING SYSTEM
- WARRANTY: 20 YEARS
- INSTALLING CONTRACTOR: SULLIVAN ROOFING

±235'
±125'
±250'
±80'
±40'
±35'
±55'
±20'

MG

PIPE DROPS DOWN ~8 FEET TO LOWER ROOF

PIPE RISES UP ~11 FEET TO HIGHER ROOF

REGULATOR – 10 PSI INLET PRESSURE, 2 PSI OUTLET PRESSURE, 6,285 CF CAPACITY

PIPE DROPS DOWN ~16 FEET TO LOWER LEVEL. PROVIDE REGULATOR UNDER OVERHANG

NORTH

PLUMBING PARTIAL ROOF PLAN (1)

SCALE: 1/16" = 1'-0"

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GAS PIPING GENERAL NOTES

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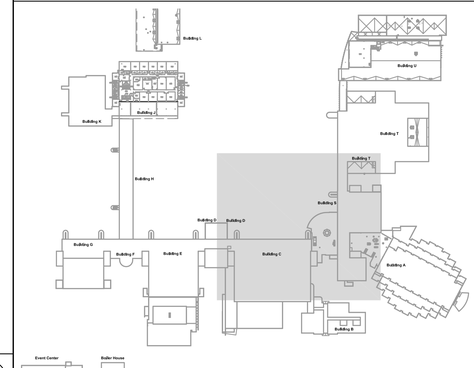

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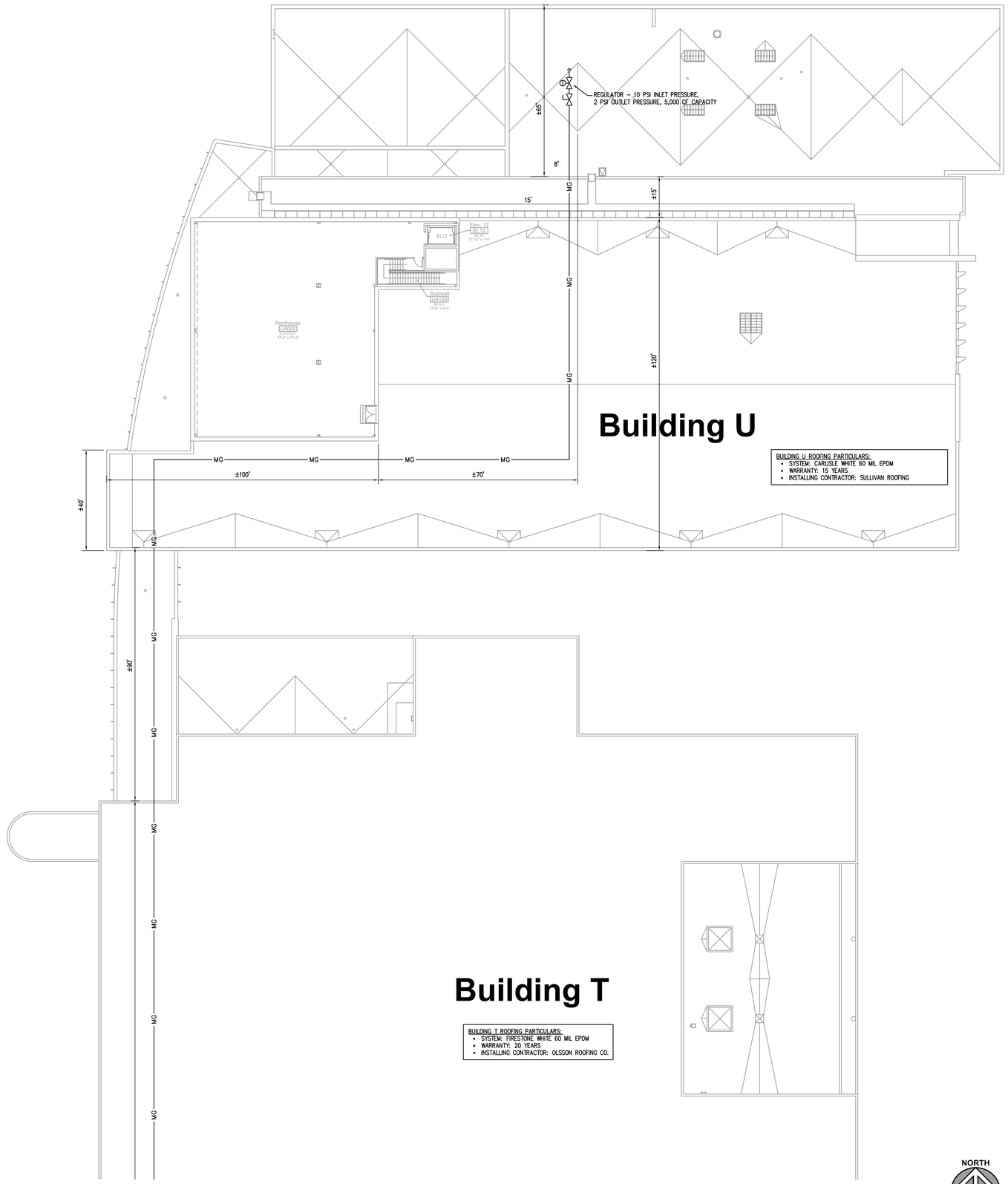
APPROVED	DDW

SHEET TITLE

PLUMBING PARTIAL ROOF PLAN

SHEET NUMBER

P131



SEE DRAWING P131 FOR CONTINUATION

PLUMBING PARTIAL ROOF PLAN (1)

SCALE: 1/16" = 1'-0"

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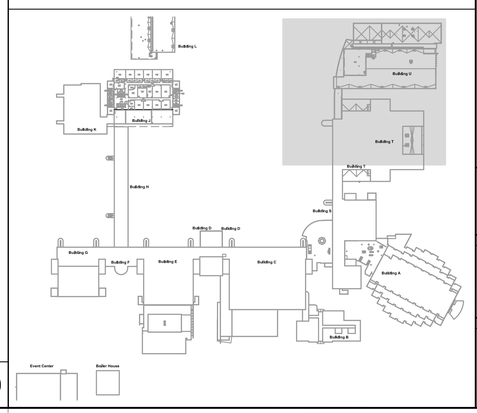

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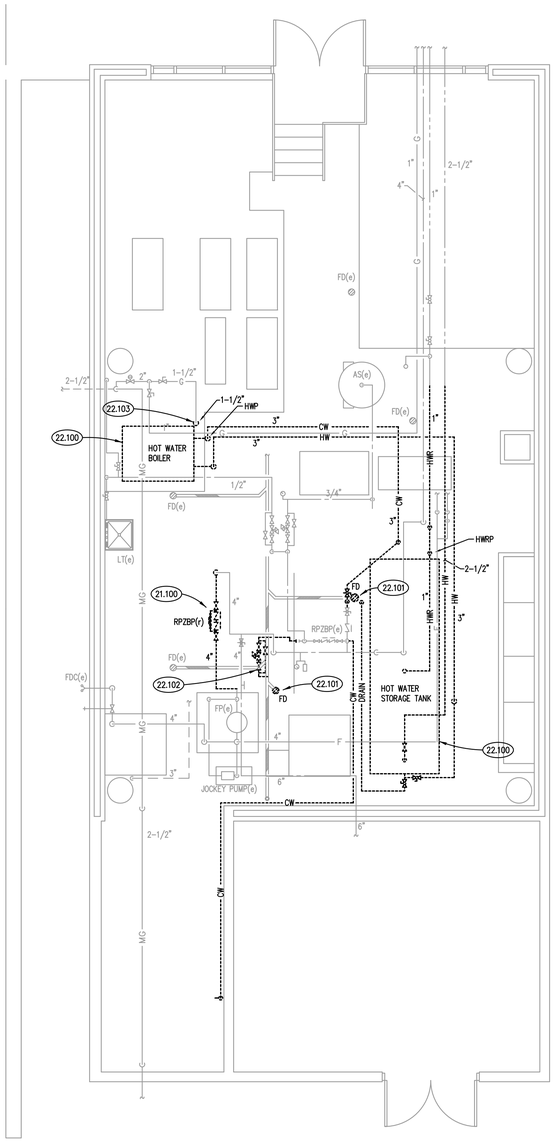
SHEET TITLE

PLUMBING PARTIAL ROOF PLAN

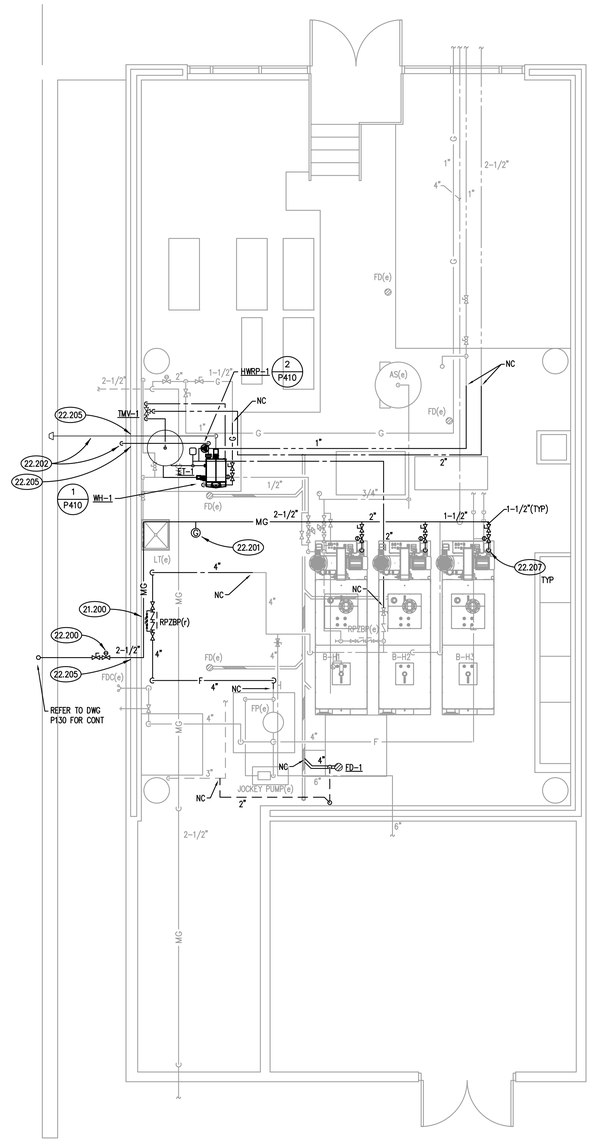
SHEET NUMBER

P132



SUB-H PLUMBING AND FIRE PROTECTION DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUB-H PLUMBING AND FIRE PROTECTION FLOOR PLAN (1)

SCALE: 1/4" = 1'-0"

PLUMBING GENERAL NOTES

1. REFER TO DRAWING G100 FOR PROJECT GENERAL NOTES.
2. ALL SANITARY, WASTE AND STORM PIPES UP TO AND INCLUDING 3 INCHES SHALL SLOPE AT 1/4 INCH PER FOOT, 4 INCHES AND LARGER SHALL SLOPE AT 1/8 INCH PER FOOT, UNLESS OTHERWISE NOTED.
3. ALL PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE AND WORKING SYSTEM.
4. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.
5. EXISTING PIPING INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
6. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL PIPING OR OTHER WORK. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
7. ALL REDUCED PRESSURE BACKFLOW PREVENTER (RPZBP) ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCCDI) BEFORE INITIAL OPERATION, AND AT LEAST ANNUALLY THEREAFTER.

KEYNOTES

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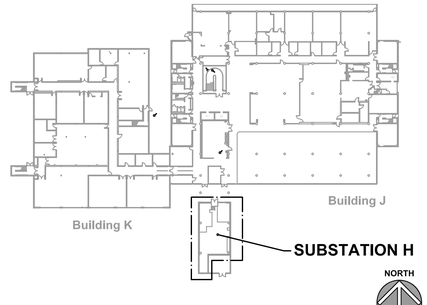
21.100 REMOVE, RETAIN AND PROTECT FIRE PROTECTION BACKFLOW PREVENTER. REMOVE PIPING AS REQUIRED FOR NEW LOCATION. SYSTEM SHUT DOWN MUST BE COORDINATED WITH OWNER AND COMPLETED IN ONE DAY.
21.200 RELOCATED FIRE PROTECTION BACKFLOW PREVENTER. PROVIDE ALL PIPING AND MATERIAL TO CONNECT TO BACKFLOW PREVENTER IN NEW LOCATION.

22.100 REMOVE HOT WATER BOILER AND HOT WATER STORAGE TANK. REMOVE ALL PIPES TO LOCATION AS SHOWN AND PROVIDE TEMPORARY CAP. COORDINATE WITH OWNER FOR SHUTDOWN OF DOMESTIC WATER SYSTEM. DEMOLITION OF PLUMBING SYSTEM COMPONENTS AND INSTALLATION OF NEW EQUIPMENT SHALL BE COMPLETED WITHIN THREE DAYS TIME.
22.101 REMOVE FLOOR DRAIN AND CAP WASTE PIPE WATER-TIGHT BELOW FLOOR. PATCH FLOOR TO MATCH EXISTING.
22.102 REMOVE ABANDONED WATER PIPES AND SPECIALTIES.
22.103 REMOVE GAS PIPE AND PROVIDE TEMPORARY CAP.

22.200 PROVIDE GAS PRESSURE REGULATOR FOR 10 PSI – 2 PSI PRESSURE.
22.201 PROVIDE THERMAL MASS FLOW METER FOR NATURAL GAS AND INTERFACE INTO BUILDING AUTOMATION SYSTEM.
22.202 PROVIDE WATER HEATER VENTING THROUGH EXISTING WALL OPENING. EXTEND FLUE PIPE OUT PAST END OF OVERHANG. SIZE AND TERMINATE PIPES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
22.205 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
22.207 PROVIDE FINAL GAS CONNECTION TO MECHANICAL EQUIPMENT. PROVIDE REQUIRED PRESSURE REGULATOR AND SHUTOFF VALVE. PROVIDE SHUT OFF VALVE WITH PRESSURE TEST PORT UPSTREAM AND DOWNSTREAM OF PRESSURE REGULATOR. OUTSIDE REGULATORS SHALL BE PROVIDED WITH MANUFACTURER OUTSIDE VENT PROTECTORS. PROVIDE DIRT LEG UPSTREAM OF PRESSURE REGULATOR.

KEY PLAN



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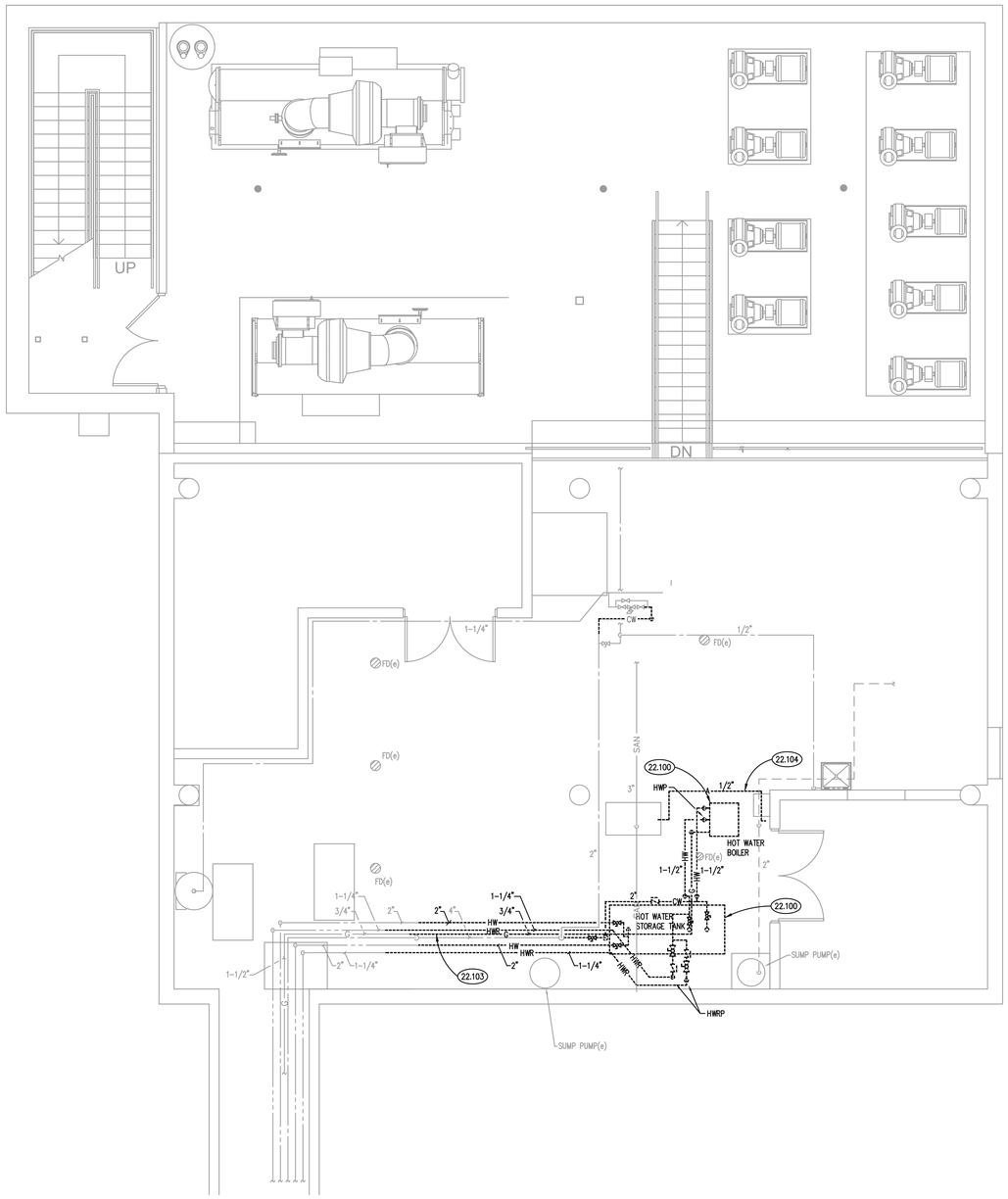
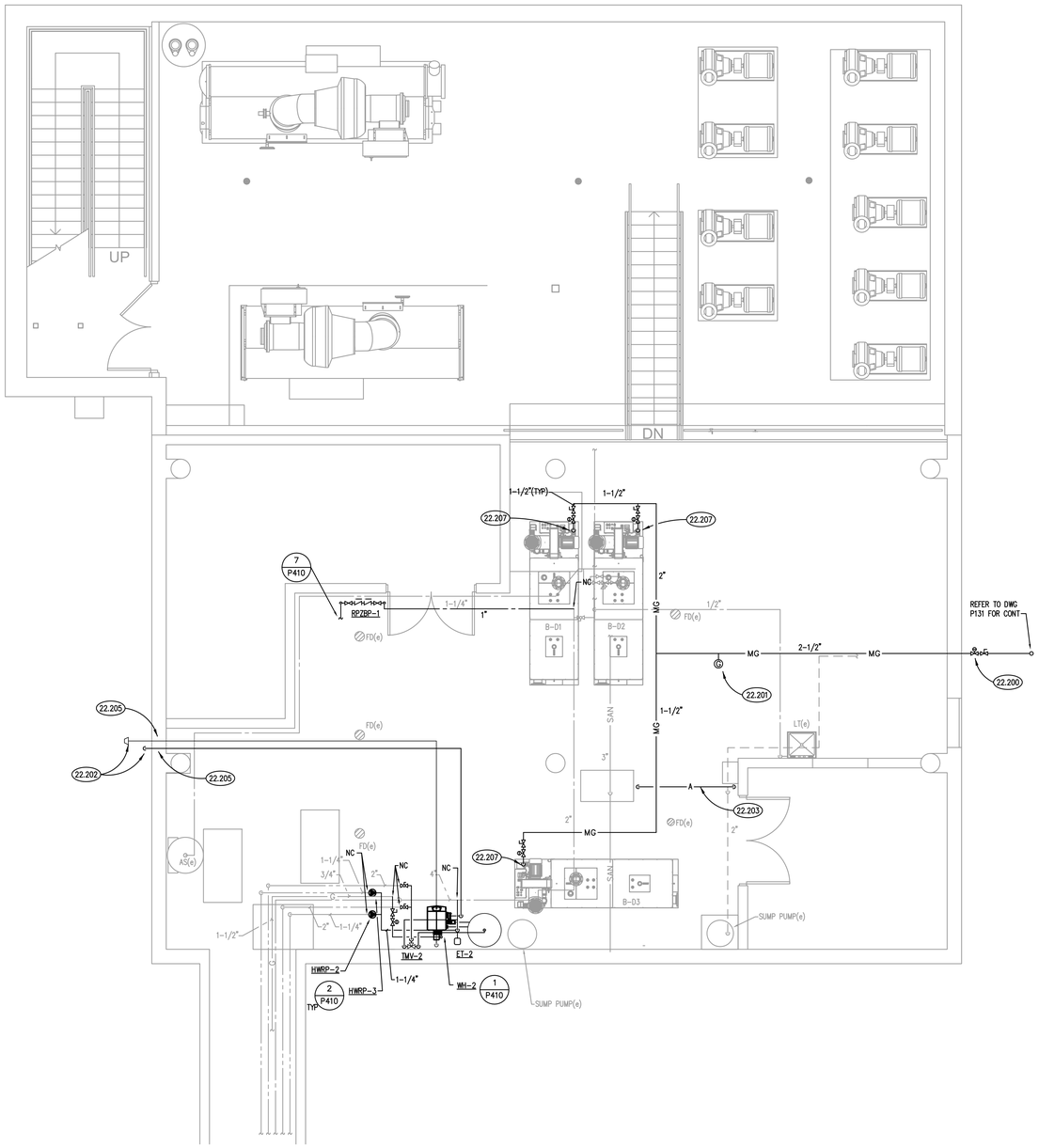
SHEET TITLE
SUBSTATION H ENLARGED PLUMBING AND FIRE PROTECTION FLOOR PLANS

SHEET NUMBER
P310



SUBSTATION D PLUMBING DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION D PLUMBING PLAN (1)

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PLUMBING GENERAL NOTES

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4. OBTAIN AND PAY ALL COSTS FOR PERMITS, LICENSES, CERTIFICATE FILING AND INSPECTIONS BY AUTHORITIES HAVING JURISDICTION.
5. EXISTING PIPING INDICATED ON THESE PLANS SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS, QUANTITY AND PIPE SIZES.
6. DO NOT CUT THROUGH THE MASONRY BOND BEAMS OR OTHER STRUCTURAL ELEMENT WHEN INSTALLING OPENINGS REQUIRED FOR ALL PIPING OR OTHER WORK. CONTRACTOR CUTTING THROUGH OR OTHERWISE DAMAGING THESE ELEMENTS WILL BE RESPONSIBLE FOR ALL ASSOCIATED ENGINEERING FEES AND SUBSEQUENT RETRO-FIT/REINFORCING DEEMED NECESSARY TO REINSTATE THE CONTINUITY OF THE DISRUPTED ELEMENTS.
7. ALL REDUCED PRESSURE BACKFLOW PREVENTER (RPZBP) ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCCDI) BEFORE INITIAL OPERATION, AND AT LEAST ANNUALLY THEREAFTER.

KEYNOTES

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22.100 REMOVE HOT WATER BOILER AND HOT WATER STORAGE TANK. REMOVE ALL PIPES TO LOCATION AS SHOWN AND PROVIDE TEMPORARY CAP. COORDINATE WITH OWNER FOR SHUTDOWN OF DOMESTIC WATER SYSTEM. DEMOLITION OF PLUMBING SYSTEM COMPONENTS AND INSTALLATION OF NEW EQUIPMENT SHALL BE COMPLETED WITHIN THREE DAYS TIME.

22.103 REMOVE GAS PIPE AND PROVIDE TEMPORARY CAP.

22.104 REMOVE COMPRESSED AIR PIPE BETWEEN AIR COMPRESSOR AND AIR DRYER/SPECIALTIES.

22.200 PROVIDE GAS PRESSURE REGULATOR FOR 10 PSI – 2 PSI PRESSURE.

22.201 PROVIDE THERMAL MASS FLOW METER FOR NATURAL GAS AND INTERFACE INTO BUILDING AUTOMATION SYSTEM.

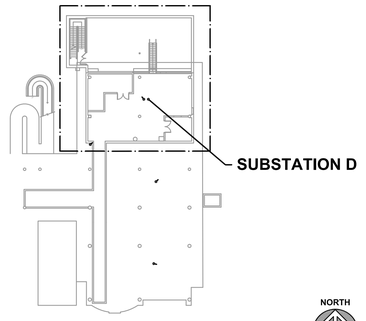
22.202 PROVIDE WATER HEATER VENTING THROUGH EXISTING WALL OPENING. EXTEND FLUE PIPE OUT PAST END OF OVERHANG. SIZE AND TERMINATE PIPES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

22.203 PROVIDE COMPRESSED AIR PIPE BETWEEN AIR COMPRESSOR AND AIR DRYER/SPECIALTIES. ROUTE OVERHEAD TO ALLOW CLEAR FREE WALKWAY.

22.205 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.

22.207 PROVIDE FINAL GAS CONNECTION TO MECHANICAL EQUIPMENT. PROVIDE REQUIRED PRESSURE REGULATOR AND SHUTOFF VALVE. PROVIDE SHUT OFF VALVE WITH PRESSURE TEST PORT UPSTREAM AND DOWNSTREAM OF PRESSURE REGULATOR. OUTSIDE REGULATORS SHALL BE PROVIDED WITH MANUFACTURER OUTSIDE VENT PROTECTORS. PROVIDE DIRT LEG UPSTREAM OF PRESSURE REGULATOR.

KEY PLAN



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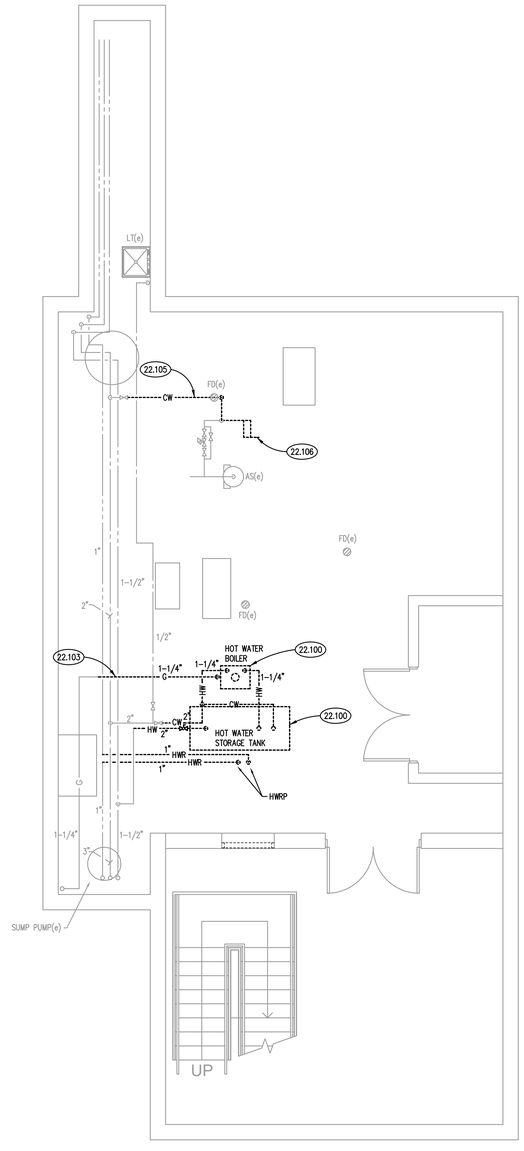
APPROVED	DDW

SHEET TITLE

SUBSTATION D ENLARGED PLUMBING FLOOR PLANS

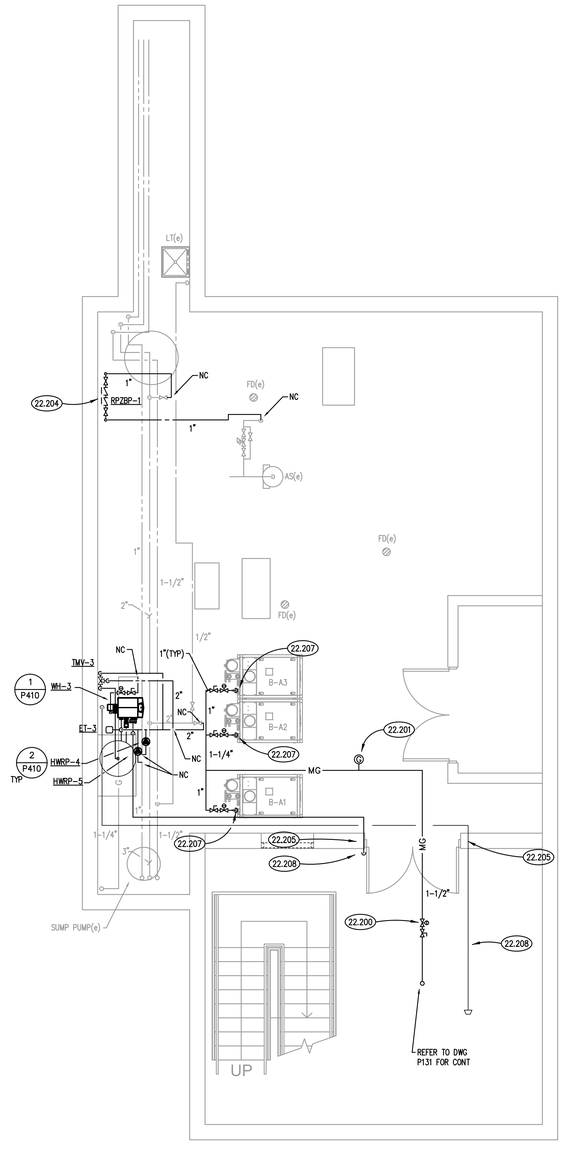
SHEET NUMBER

P311



SUBSTATION A PLUMBING DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION A PLUMBING PLAN (1)

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22.103 REMOVE GAS PIPE AND PROVIDE TEMPORARY CAP.
22.105 REMOVE SECTION OF MAKE-UP WATER PIPE AND PROVIDE TEMPORARY CAP FOR NEW CONNECTION.
22.106 REMOVE DEAD-END PIPES.

22.200 PROVIDE GAS PRESSURE REGULATOR FOR 10 PSI – 2 PSI PRESSURE.
22.201 PROVIDE THERMAL MASS FLOW METER FOR NATURAL GAS AND INTERFACE INTO BUILDING AUTOMATION SYSTEM.
22.204 PROVIDE REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR MAKE-UP WATER TO HEATING SYSTEM.
22.205 INSULATE ANNULAR SPACE AROUND PIPE/DUCT WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE INSULATION PRODUCT AND PROVIDE SHEET METAL SURFACE FLANGE SEALS AT INTERIOR AND EXTERIOR SURFACES OF WALL; PROVIDE A CONTINUOUS BEAD OF NOT-HARDENING, NON-SKINNING JOINT SEALANT BETWEEN WALL SURFACE AND BACKSIDE SURFACE OF SHEET METAL; PROVIDE A CONTINUOUS BEAD OF LOW-MODULUS SILICONE JOINT SEALANT ALONG PERIMETER EDGES OF FLANGES.
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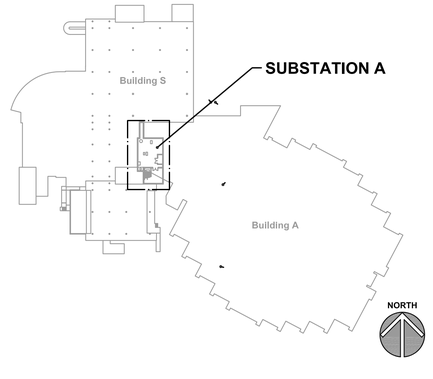
22.208 PROVIDE WATER HEATER VENTING THROUGH WALL. EXTEND FLUE PIPE OUT PAST END OF OVERHANG. SIZE AND TERMINATE PIPES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

KEY PLAN



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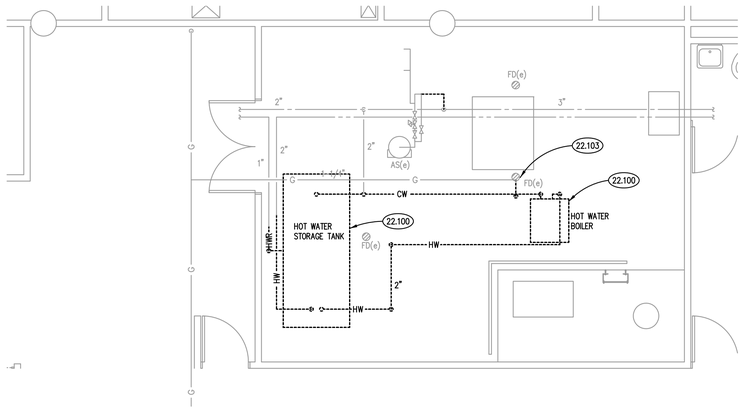
SUBSTATION A ENLARGED PLUMBING FLOOR PLANS

SHEET NUMBER

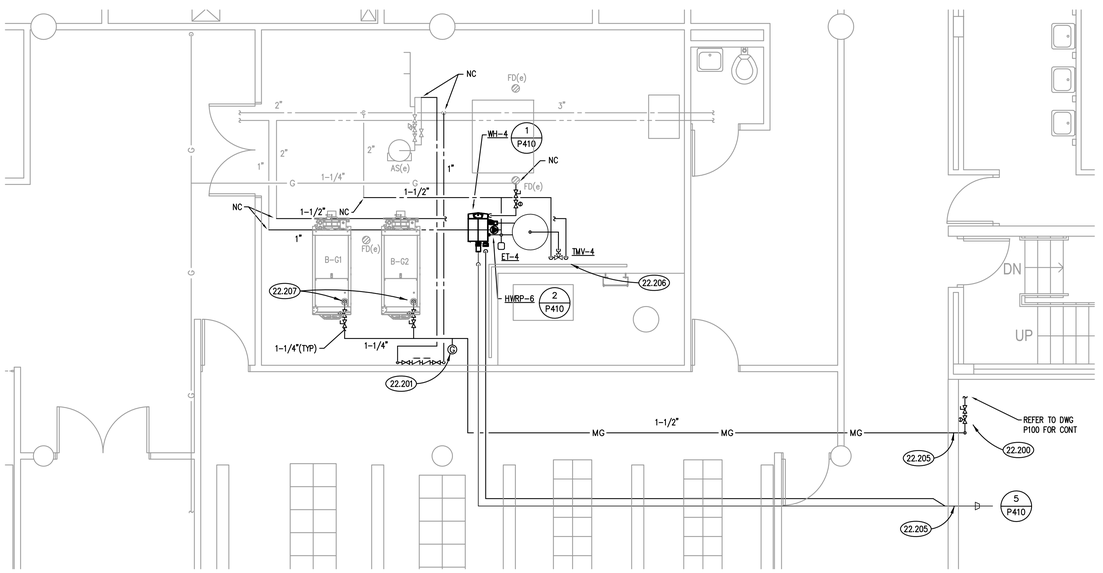
P312



SUBSTATION G PLUMBING DEMOLITON PLAN

SCALE: 1/4" = 1'-0"

3



SUBSTATION G PLUMBING PLAN

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22.206 PROVIDE STEEL STAND, ANCHORED TO FLOOR, TO SUPPORT THERMOSTATIC MIXING VALVE.

22.207 PROVIDE FINAL GAS CONNECTION TO MECHANICAL EQUIPMENT. PROVIDE REQUIRED PRESSURE REGULATOR AND SHUTOFF VALVE. PROVIDE SHUT OFF VALVE WITH PRESSURE TEST PORT UPSTREAM AND DOWNSTREAM OF PRESSURE REGULATOR. OUTSIDE REGULATORS SHALL BE PROVIDED WITH MANUFACTURER OUTSIDE VENT PROTECTORS. PROVIDE DIRT LEG UPSTREAM OF PRESSURE REGULATOR.

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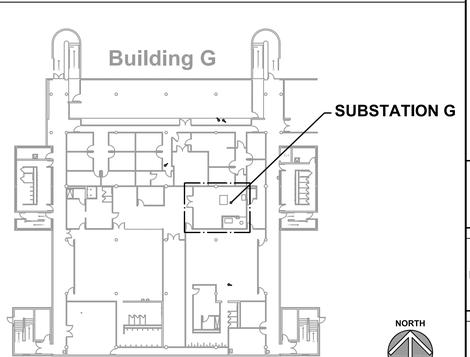

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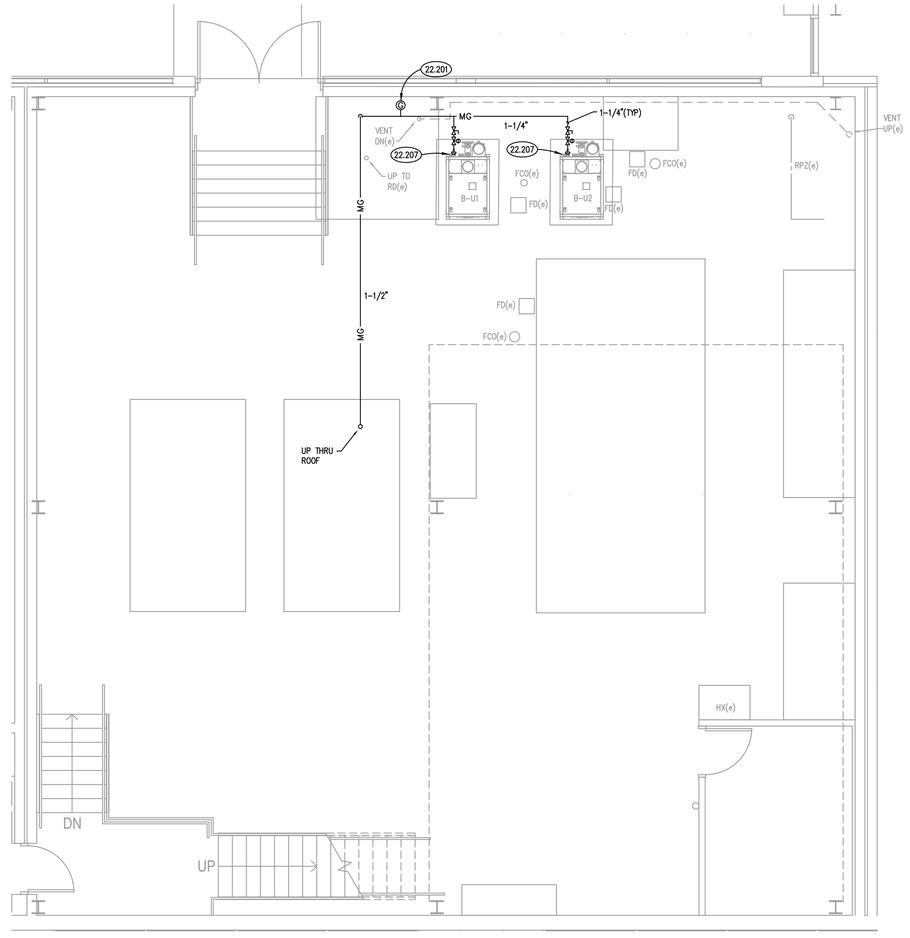

SUBSTATION U NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

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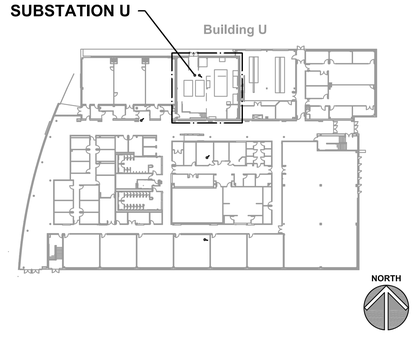
KEY PLAN



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SUBSTATION U ENLARGED PLUMBING FLOOR PLANS

SHEET NUMBER

P314

ABBREVIATIONS

&	AND
@	AT
ø	DIAMETER OR ROUND
ACT	ACTUAL
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AP	ACCESS PANEL
APPROX	APPROXIMATE
AS	AIR SEPARATOR
AV	ACID VENT
AVG	AVERAGE
AVTR	ACID VENT THROUGH ROOF
AW	ACID WASTE
BLR	BOILER
BM	BEAM
BTM	BOTTOM
BTU	BRITISH THERMAL UNIT
CFH	CUBIC FEET PER HOUR
CH	CHILLER
CIP	CAST IN PLACE
CLG	CEILING
CLNG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONT	CONTINUATION
CS	CUP SINK
CT	COOLING TOWER
CW	DOMESTIC COLD WATER
DBL	DOUBLE
DCBP	DOUBLE CHECK BACKFLOW PREVENTER
DCDBP	DOUBLE CHECK DETECTOR BACKFLOW PREVENTER
DEG	DEGREE
DENS	DENSITY
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWG	DRAWING
(e)	EXISTING
EL	ELEVATION
EQUIP	EQUIPMENT
ES	EMERGENCY STATION
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXT	EXTERNAL
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FLR	FLOOR
FT	FEET
FTG	FOOTING
G	NATURAL GAS, LOW PRESSURE
GA	GAUGE
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HB	HOSE BIB
HORIZ	HORIZONTAL
HP	HORSEPOWER
HW	DOMESTIC HOT WATER
HWR	HOT WATER RECIRCULATION
HWRP	HOT WATER RECIRCULATION PUMP
ID	INSIDE DIAMETER
INCR	INCREASER
INSUL	INSULATION
INT	INTERNAL
kW	KILOWATT
L	LAVATORY
LAV	LAVATORY
LT	LAUNDRY TUB
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSANDS OF BTUs
MECH	MECHANICAL
MFR	MANUFACTURER
MG	NATURAL GAS, MEDIUM PRESSURE
MIN	MINIMUM
MISC	MISCELLANEOUS
NC	NEW CONNECTION
NO / #	NUMBER
NOM	NOMINAL
OD	OUTSIDE DIAMETER
OPNG	OPENING
PD	PUMP DISCHARGE
PDI	PLUMBING AND DRAINAGE INSTITUTE
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
R	RADIUS
RCO	RODDING CLEAN OUT
RD	ROOF DRAIN
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION
RPM	REVOLUTIONS PER MINUTE
RPZBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SAN	SANITARY
SCHED	SCHEDULE
SD	SHOWER DRAIN
SF	SQUARE FEET
SH	SHOWER
SHT	SHEET
SK	SINK
SQ	SQUARE
SS	SERVICE SINK
ST	STORM
SUSP	SUSPENDED
TB	TRIPLE BASIN
TD	TRENCH DRAIN
THK	THICK
TMV	THERMOSTATIC MIXING VALVE
TYP	TYPICAL
UFS	UNDER FLOOR SLAB
UR	URINAL
V	VENT
VERT	VERTICAL
VTR	VENT THROUGH ROOF
W/	WITH
W/O	WITHOUT
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTER

THIS LIST IS AN ALL INCLUSIVE MASTER LIST USED BY THIS FIRM. THE INCLUSION OF THESE ABBREVIATIONS INTO THESE DOCUMENTS DOES NOT IMPLY THAT ALL THE ABBREVIATIONS ARE INCORPORATED INTO THIS PROJECT.

PLUMBING SYMBOLS

——— - ———	COLD WATER PIPING		GATE VALVE
——— - - ———	HOT WATER PIPING		CHECK VALVE
——— - - - ———	HOT WATER RECIRC PIPING		BALL VALVE
——— - - ——— °F ———	HOT WATER PIPING (TEMP)		GAS COCK VALVE
— — — — — — — —	VENT PIPING		GAS PRESSURE REGULATOR
——— W ———	WASTE PIPING		PRESSURE REDUCING VALVE
——— SAN ———	SANITARY WASTE PIPING		BALANCING VALVE
═══	WASTE PIPE, UNDERGROUND		BACKFLOW PREVENTER
——— ST ———	STORM PIPING		STRAINER
——— ST ———	STORM PIPING, UNDERGROUND		RELIEF VALVE
——— AW ———	ACID WASTE PIPE, UNGD		FLOOR DRAIN, ROUND
═══ AW ═══	ACID WASTE PIPE, UNGD		FLOOR DRAIN, SQUARE
——— G ———	GAS PIPING, LOW PRESSURE		FLEXIBLE PIPE CONNECTION
——— MG ———	GAS PIPING, MEDIUM PRESS	Ⓦ	WATER METER
——— SSD ———	SUBSOIL DRAIN	Ⓖ	GAS METER
	PIPE ELBOW DOWN		PIPE FLANGE
	PIPE ELBOW UP		CAP
	PIPE TEE, DOWN		DRIP POCKET
	PIPE TEE, UP	Ⓟ	PRESSURE GAUGE
	HOSE BIB	Ⓣ	TEMPERATURE GAUGE
	THERMOSTATIC BALANCING VALVE WITH CHECK AND SHUTOFFS	Ⓘ	IN-LINE PUMP

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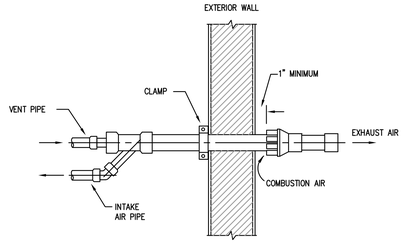
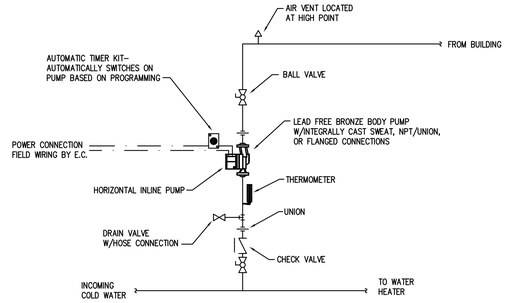


CONCENTRIC VENT - SIDEWALL TERMINATION (5)
SCALE: NTS

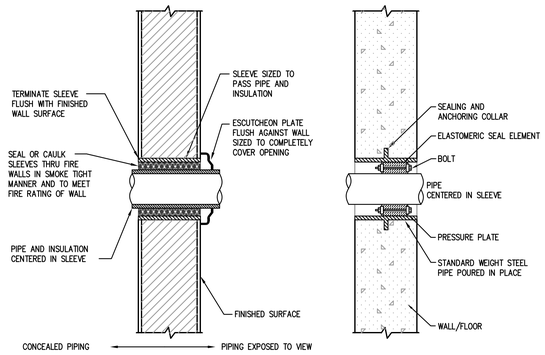


HOT WATER RECIRCULATION PUMP DETAIL (2)
SCALE: NTS

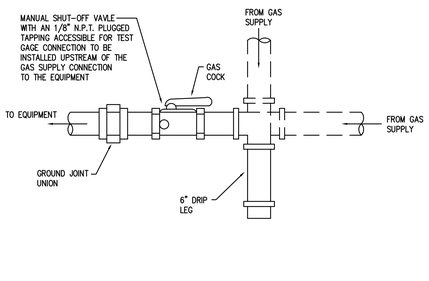
GAS WATER HEATER SCHEDULE

MARK	WH-1	WH-2	WH-3	WH-4
MODEL	AWN200PM	AWN286PM	AWN286PM	AWN200PM
TYPE	CONDENSING	CONDENSING	CONDENSING	CONDENSING
NATURAL GAS INPUT (MBH)	200	285	285	200
STORAGE CAPACITY (GALLONS)	120	120	120	120
RECOVERY @ 100 DEGREE F RISE (GPH)	233	311	311	233
THERMAL EFFICIENCY (%)	95	95	95	95
ELECTRICAL (V/PH/HZ)	120/1/60	120/1/60	120/1/60	120/1/60
SERVICE	SUB-H DOMESTIC WATER	SUB-D DOMESTIC WATER	SUB-A DOMESTIC WATER	SUB-G DOMESTIC WATER
REMARKS	1, 2, 3	1, 2, 3	1, 2, 3	1, 2, 3

1. MODEL BASED ON LOCHINVAR.
2. WATER HEATER SHALL MEET THE THERMAL EFFICIENCY AND STANDBY LOSS REQUIREMENTS OF THE U.S. DEPARTMENT OF ENERGY AND CURRENT EDITION OF ASHRAE/IES 90.1.
3. PROVIDE WITH STORAGE TANK CIRCULATION PUMP.



PIPE SLEEVE DETAILS (6)
SCALE: NTS

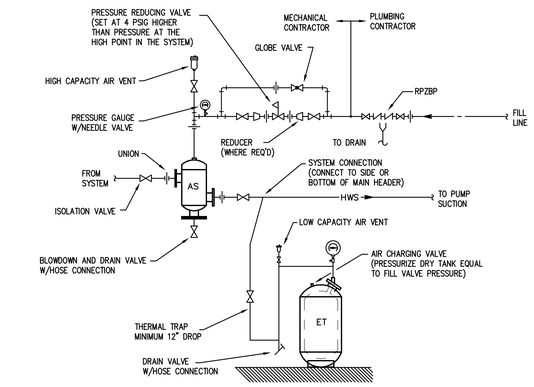


GAS CONNECTION TO EQUIPMENT DETAIL (3)
SCALE: NTS

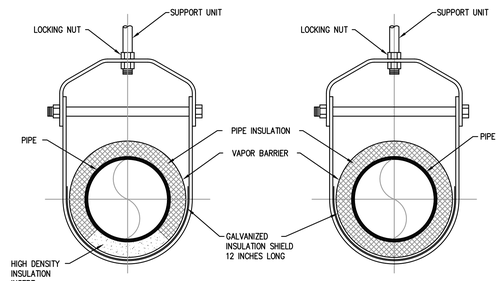
EXPANSION TANK SCHEDULE

MARK	ET-1	ET-2	ET-3	ET-4
MODEL	ST-30VC	ST-30VC	ST-30VC	ST-30VC
TANK VOLUME (GAL)	14	14	14	14
TANK ACCEPTANCE (GAL)	9	9	9	9
LENGTH x DIAMETER (IN x IN)	19 x 16	19 x 16	19 x 16	19 x 16
MAXIMUM DESIGN PRESSURE (PSIG)	175	175	175	175
MAXIMUM DESIGN TEMPERATURE (°F)	200	200	200	200
SERVICE	SUB-H HW	SUB-D HW	SUB-A HW	SUB-G HW
REMARKS	1	1	1	1

1. MODEL BASED ON AMTROL.



AIR SEPARATOR & EXPANSION TANK DETAIL (7)
SCALE: NTS



PIPE HANGER DETAILS (4)
NTS

PUMP SCHEDULE

MARK	HWRP-1	HWRP-2	HWRP-3	HWRP-4
MODEL	PL-30	PL-30	PL-30	PL-30
WATER FLOW RATE (GPM)	3	10	10	10
HEAD (FT)	24	10	10	10
TYPE	IN-LINE	IN-LINE	IN-LINE	IN-LINE
MOTOR SIZE (HP)	1/12	1/12	1/12	1/12
ELECTIRCAL (V/PH/HZ)	120/1/60	120/1/60	120/1/60	120/1/60
MOTOR SPEED (RPM)	2650	2650	2650	2650
SERVICE	SUB-H HW RECIRC	SUB-D HW RECIRC	SUB-D HW RECIRC	SUB-A HW RECIRC
REMARKS	1	1	1	1

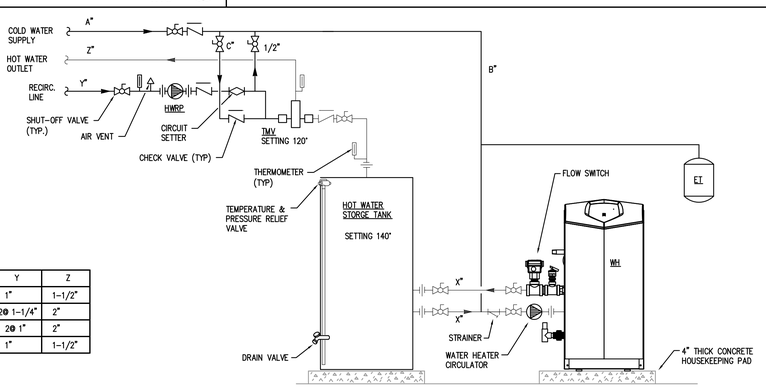
MARK	HWRP-5	HWRP-6		
MODEL	PL-30	PL-30		
WATER FLOW RATE (GPM)	10	10		
HEAD (FT)	10	20		
TYPE	IN-LINE	IN-LINE		
MOTOR SIZE (HP)	1/12	1/12		
ELECTIRCAL (V/PH/HZ)	120/1/60	120/1/60		
MOTOR SPEED (RPM)	2650	2650		
SERVICE	SUB-A HW RECIRC	SUB-G HW RECIRC		
REMARKS	1	1		

1. MODEL BASED ON BELL & GOSSETT.

NOTES:

1. RECIRCULATION PIPING SHALL BE IN ACCORDANCE WITH MIXING VALVE MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE 24" HEAT TRAP IF TMV IS LOCATED ABOVE WATER HEATER.

BOILER	A	B	C	X	Y	Z
WH-1	1-1/2"	1-1/4"	1"	1-1/4"	1"	1-1/2"
WH-2	2"	1-1/2"	1"	2"	2Ø 1-1/4"	2"
WH-3	2"	1-1/2"	1"	2"	2Ø 1"	2"
WH-4	1-1/2"	1-1/4"	1"	1-1/4"	1"	1-1/2"



GAS FIRED WATER HEATER DETAIL (1)
SCALE: NTS

STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
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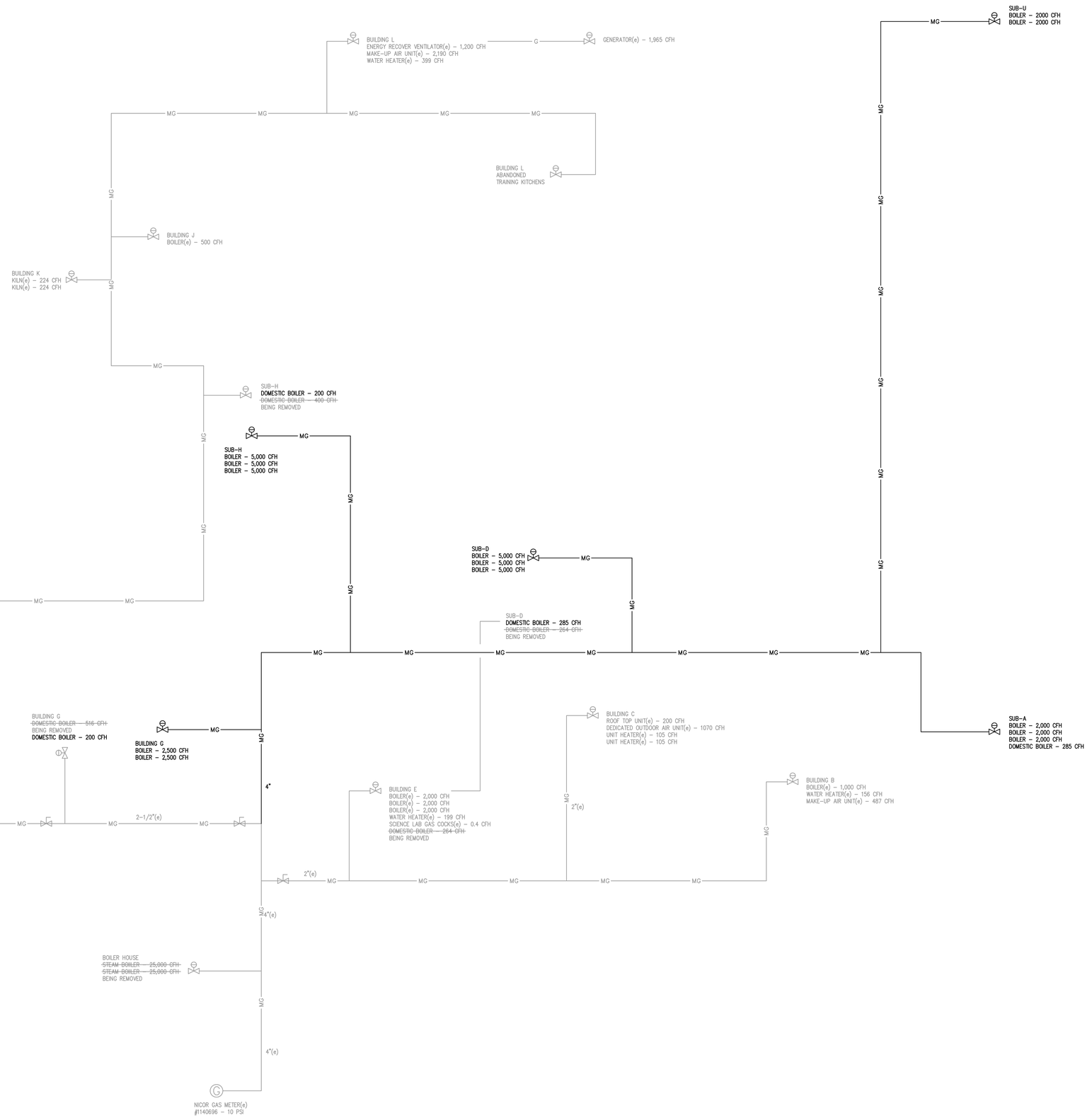
JOB NO. 17-292-1160
DRAWN DDW
CHECKED DDW
APPROVED DDW

SHEET TITLE
PLUMBING SCHEDULES AND DETAILS

SHEET NUMBER
P410



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JOB NO.	17-292-1160
DRAWN	DDW
CHECKED	DDW
APPROVED	DDW

SHEET TITLE

NATURAL GAS PIPING SCHEMATIC

SHEET NUMBER

P411

ABBREVIATIONS

SYMBOL	DESCRIPTION
A	
A	AMPS
AC	ABOVE COUNTER
AF	AMPERE FRAME/AMPERE FUSE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CURRENT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAGE
B	
BKR	BREAKER
BOL	BUILT–IN OVERLOAD
BWE	BAKED WHITE ENAMEL
BTU	BRITISH THERMAL UNIT
C	
C	CONDUIT
CATV	CABLE TELEVISION SYSTEM
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CU	COPPER
D	
DPDT	DOUBLE–POLE, DOUBLE–THROW
DPST	DOUBLE–POLE, SINGLE–THROW
DS	DOWNSPOUT
E	
EBH	ELECTRIC BASEBOARD HEATER
EC, E.C.	ELECTRICAL CONTRACTOR
ECH	ELECTRIC CABINET HEATER
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	
F	FUSED
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FC	FUSE CLIP SIZE
FPB	FAN POWERED BOX
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FLR	FLOOR
FPC	FIRE PROTECTION CONTRACTOR
FS	FLOAT SWITCH
FVNR	FULL–VOLTAGE, NON–REVERSING
G	
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
H	
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING AND VENTILATING CONTRACTOR
HWGC	HEAVY WALL GALVANIZED CONDUIT
I	
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
INC	INCANDESCENT
INT	INTEGRAL
IR	IN ROOM
IU	IN UNIT
J	
JB	JUNCTION BOX
K	
Kcmil	1000 CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT–AMPS
KVAR	KILOVOLT–AMPS REACTIVE
KW	KILOWATT
KWH	KILOWATT–HOUR
L	
LP	LOW PRESSURE
LV	LOW–VOLTAGE
LVT	LOW–VOLTAGE THERMOSTAT
M	
MAG	MAGNETIC MOTOR STARTER
MAN	MANUAL MOTOR STARTER W/THERMAL OVERLOAD PROTECTION
MC	MECHANICAL CONTRACTOR
MCA	MAXIMUM CURRENT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MDF	MAIN DISTRIBUTION FRAME
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MLO	MAIN LUG ONLY
MNS	MASS NOTIFICATION SYSTEM
MOCP	MINIMUM OVERCURRENT PROTECTION
MS	MANUAL SWITCH
MSBD	MAIN SWITCH BOARD
MTD	MOUNTED
MUA	MAKE–UP AIR UNIT
N	
N/A	NOT APPLICABLE
N.C.	NORMALLY CLOSED
NF	NON–FUSED
N.I.C.	NOT IN CONTRACT
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
N.T.S., NTS	NOT TO SCALE
NU	NEAR UNIT
O	
O.H.	OVERHEAD
OU	ON UNIT
OCPD	OVERCURRENT PROTECTION DEVICE
P	
PB	PUSH BUTTON
PC	PLUMBING CONTRACTOR
PDU	POWER DISTRIBUTION UNIT
PH	PHASE
PNL	PANEL
PROVIDE	FURNISHED, INSTALLED, WIRED AND CONNECTED COMPLETE BY CONTRACTOR
PVC	POLYVINYL CONDUIT
PW	PRE–WIRED
Q	
QTY.	QUANTITY
R	
REQ'D	REQUIRED
RTU	ROOF TOP UNIT

SYMBOL	DESCRIPTION
S	
SC	SEPARATE CIRCUIT
SD	SMOKE DETECTOR
SF	SQUARE FEET
SPDT	SINGLE–POLE, DOUBLE–THROW
SPST	SINGLE–POLE, SINGLE–THROW
SS	STAINLESS STEEL
SW	SWITCH
SWBD	SWITCHBOARD
T	
T	THERMOSTAT
TELE	TELEPHONE
TC	TIME CLOCK
TCP	TEMPERATURE CONTROL PANEL
TS	TOGGLE SWITCH
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
TWU	THRU WALL AIR CONDITIONING UNIT
TYP.	TYPICAL
U	
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
U.N.O.	UNLESS NOTED OTHERWISE
UM	UNIT MANUFACTURER
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	
V	VOLT
VA	VOLT–AMPERES
VAC	VOLT ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
W	
W	WATT
W/	WITH
W/O	WITHOUT
WG	WIRE GUARD
WP	WEATHER PROOF
X	
X	EXISTING EQUIPMENT
XFMR	TRANSFORMER
XP	EXPLOSION–PROOF
MISCELLANEOUS	
2–SP	TWO SPEED

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ABBREVIATIONS, ETC., ARE NECESSARILY USED IN THIS PROJECT.

ELECTRICAL SYMBOLS LIST

SYMBOL CEILING	SYMBOL WALL	SYMBOL FLOOR	DESCRIPTION
			LUMINARIES
			2X4 FLUORESCENT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE. SHADING=NIGHT LIGHT
			2X2 FLUORESCENT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE. NIGHT LIGHT AND EMERGENCY FIXTURE.
			FIXTURE WITH NORMAL/EMERGENCY LIGHTING TRANSFER DEVICE. SEE LIGHTING FIXTURE SCHEDULE.
			4' FLUORESCENT INDIRECT FIXTURE TYPE. SEE LIGHT FIXTURE SCHEDULE.
A/2α			4' FLUORESCENT STRIP FIXTURE TYPE. SEE LIGHT FIXTURE SCHEDULE. A= FIXTURE TYPE, 2= CIRCUIT ASSIGNMENT, α=SWITCH LEG
			DOWN LIGHT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE.
			TRACK LIGHT FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE.
			WALL MTD. FIXTURE TYPE. SEE LIGHTING FIXTURE SCHEDULE.
			SELF CONTAINED EMERGENCY BATTERY PACK W/ BATTERY BACK–UP SEE LIGHTING FIXTURE SCHEDULE.
			LED EXIT SIGN. ARROWS AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE. WG= WIRE GUARD, PG= PLEXIGLASS SHIELD.
			EM/EXIT COMBO UNIT. SEE LIGHTING FIXTURE SCHEDULE.
			WIRING DEVICES & OUTLETS
			SPECIAL PURPOSE SINGLE RECEPTACLE. @18"AFF MATCH CONFIGURATION TO EQUIPMENT.
			DUPLEX RECEPTACLE. 20A 125V 2P 3W GRD. NEMA5–20R. @18"AFF D=DEDICATED CIRCUIT. 1' =MTD. @48"AFF, OR @6" ABOVE COUNTER.
	WP		GFCI(GROUND FAULT CIRCUIT INTERRUPTER) PROTECTED RECEPTACLE. WP=WEATHER PROOF. 20A 125V 2P 3W GRD. NEMA5–20R. @18"AFF
			GFCI(GROUND FAULT CIRCUIT INTERRUPTER) PROTECTED RECEPTACLE MTD. @48"AFF, OR @6" ABOVE COUNTER.
			ISOLATED GROUND(IG) RECEPTACLE. @18"AFF 20A 125V 2P 3W GRD. NEMA5–20R OR AS SPECIFIED.
			DOUBLE DUPLEX RECEPTACLE. @18"AFF 20A 125V 2P 3W GRD. NEMA5–20R. PO=POP UP RECEPTACLE
			DOUBLE DUPLEX RECEPTACLE NEXT TO VIDEO OUTLET IN 2–GANG JBOX. REFER TO VIDEO OUTLET DETAIL. 20A 125V 2P 3W GRD. NEMA5–20R. @96"AFF
	PO / PO / PO		POP OPEN ENCLOSURE WITH GFCI(GROUND FAULT CIRCUIT INTERRUPTER) PROTECTED RECEPTACLE OR GFCI RECEPTACLE AND DATA JACK
	PD		PEDESTAL MOUNTED GFCI RECEPTACLE FOR COUNTERTOP
			FURNITURE RECEPTACLE. COORDINATE WITH FURNITURE OR CABINET MANUFACTURER. 20A 125V 2P 3W GRD. NEMA5–20R OR AS SPECIFIED.
	TP		TAMPER PROOF DUPLEX RECEPTACLE. 20A 125V 2P 3W GRD. @18" AFF D=DEDICATED CIRCUIT. 1' =MTD. @48"AFF, OR @6" ABOVE COUNTER.
			CEILING RECEPTACLE, DROP CORD, OR CORD REEL AS NOTED.
	▼	▽	TELEPHONE OUTLET @18"AFF. REFER TO COMMUNICATION OUTLET DETAIL. W=PUBLIC WALL PHONE @54"AFF. 2V= 2 PHONE JACKS. ▼ =6" ABOVE COUNTER
	▽	▽	COMMUNICATIONS OUTLET @18"AFF. REFER TO COMMUNICATION OUTLET DETAIL. B = BLANK JACK, AV= AUDIO/VISUAL JACK, MIC= MICROPHONE JACK. ▽ = 6" ABOVE COUNTER, AUX = AUX. CONNECT. PO=POP UP LOW VOLTAGE SECTION. PD=PEDESTAL MOUNTED
	F		JUNCTION BOX FOR LOW VOLTAGE CONNECTION TO FURNITURE SEE SHEET E630 FOR DETAILS
			FLUSH MTD. FLOOR BOX AND RECEPTACLE. (COVER & CARPET FLANGE SELECTED BY ARCHITECT/OWNER)
	PD		STAINLESS STEEL PEDESTAL MTD. FLOOR BOX AND RECEPTACLE (SEE FLOOR PLANS FOR RECEPTACLE TYPE – I.E. GFI, SPECIAL, ETC.)
			FLUSH MTD. FLOOR BOX AND TELE/DATA OUTLET. (COVER & CARPET FLANGE SELECTED BY ARCHITECT/OWNER)
			MULTI–SERVICE STEEL RECESSED FLOOR BOX WITH DOUBLE DUPLEX RECEPTACLE AND LOW VOLTAGE CONNECTIONS (SEE "T" DRAWINGS) COVER & CARPET FLANGE SELECTED BY ARCHITECT/OWNER SEE SHEETS E630 AND E810 FOR BOXES LABELED "1", "2" AND "3".
			POKE THRU POWER. (SERVICE FITTING SELECTED BY ARCHITECT/OWNER)
			POKE THRU TELE/DATA. (SERVICE FITTING SELECTED BY ARCHITECT/OWNER)
			POKE THRU COMBINATION POWER AND DATA (SEE PLANS FOR EXACT CONFIGURATIONS – SERVICE FITTING SELECTED BY ARCHITECT/OWNER) L = DENOTES LARGE POKE THRU
			POKE THRU COMBINATION POWER AND DATA – FINAL CONNECTION TO FURNITURE (SEE PLANS FOR EXACT CONFIGURATIONS – SERVICE FITTING SELECTED BY ARCHITECT/OWNER) L = DENOTES LARGE POKE THRU
	PD		SPECIAL PURPOSE OUTLET. NEMA SIZE AS NOTED. PD = PEDESTAL MOUNTED, STAINLESS STEEL ENCLOSURE
			POWER CONNECTION FOR OPTHALMOSCOPE. COORDINATE EXACT MOUNTING HEIGHT AND WIRING REQUIREMENTS WITH EQUIPMENT.
			MULTI–CHANNEL SURFACE RACEWAY @48"AFF OR @6" ABOVE COUNTER. RUN LENGTH AS SHOWN ON PLANS W/RECEP. 6" ON CENTER, U.N.O.
	EBB		ELECTRIC BASEBOARD HEATER
			SCIENCE STATION. COMBINATION AC/DC OUTLET AND JACKS. FIXED AND VARIABLE CIRCUITS AS INDICATED.
	UC		UTILITY CONTROLLER
		TS	JUNCTION BOX TS = TOMBSTONE TYPE
	HD		HAND DRYER. PROVIDE TOGGLE 30A/1P DISCONNECT SWITCH ABOVE ACCESSIBLE CEILING.
PB	PB	PB	PULL BOX. SIZE AS NOTED.
	P		POWER/TELEPHONE/DATA POLE OR MULTI CHANNEL METAL RACEWAY VERTICAL RUN. REFER TO DRAWINGS & DETAILS.
	C		ELECTRICALLY HELD LIGHTING CONTACTOR. SIZE, COIL VOLTAGE, AND NUMBER OF POLES AS INDICATED.
	TC		ELECTRONIC TIME CLOCK.
	PP		POWER POLE
	PC		PHOTOCELL.
			FLEXIBLE CONDUIT CONNECTION.
			WIRING IN CONDUIT CONCEALED ABOVE CEILING, IN WALL AND UNDER FLOOR OR UNDERGROUND.
			WIRING IN CONDUIT EXPOSED ON CEILING OR WALL.
			BRANCH CIRCUIT WIRING IN CONDUIT HOMERUN TO PANEL. ONE ARROW PER HOMERUN. SLASHES INDICATE NUMBER OF CONDUCTORS.
			INDICATES GROUND CONDUCTOR.
			INDICATES ISOLATED GROUND CONDUCTOR.

SYMBOL CEILING	SYMBOL WALL	SYMBOL FLOOR	DESCRIPTION
			POWER EQUIPMENT & DEVICES
			MANUAL MOTOR STARTER OR 1P DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION.
			SPEED CONTROL SWITCH FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
			UP/DOWN/STOP PUSHBUTTON CONTROL STATION.
			SAFETY SWITCH. N=NON–FUSED (AMPS/POLES/ENCLOSURE). F=FUSED (AMPS/FUSE/POLES/ENCLOSURE).
			MAGNETIC MOTOR STARTER. NEMA SIZE AS NOTED.
			COMBINATION MAGNETIC MOTOR STARTER AND FUSED DISCONNECT SW. (AMPS/FUSE/POLES/NEMA SIZE).
			MOTOR. HP= HORSE–POWER RATING.
			ELECTRIC HEAT OUTLET
	DO		DOOR OPENER
			PANEL 240V & BELOW.
			PANEL ABOVE 240V.
	T		TRANSFORMER. TYPE AND RATINGS ARE AS SHOWN.
	RAP		GENERATOR REMOTE ANNUNCIATOR PANEL.
	CP		EQUIPMENT CONTROL PANEL
			CEILING FAN
			FIRE ALARM, EMERGENCY EVACUATION/COMMUNICATION SYSTEM
	FACP		FIRE ALARM CONTROL PANEL.
	FAAP		FIRE ALARM ANNUNCIATOR PANEL.
	NAC		FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT BOOSTER PANEL.
	F		FIRE ALARM PULL STATION. @48"AFF
	V C	V	FIRE ALARM STROBE LIGHT. NUMBER INDICATES CANDELA LEVEL. (110cd UNLESS NOTED OTHERWISE) @80"AFF
	V C	V	FIRE ALARM HORN/STROBE COMBINATION. @80"AFF NUMBER INDICATES CANDELA LEVEL (110cd UNLESS NOTED OTHERWISE)
	S C	S	FIRE ALARM SPEAKER/STROBE COMBINATION. @80"AFF NUMBER INDICATES CANDELA LEVEL (110cd UNLESS NOTED OTHERWISE)
	SD	SD	SMOKE DETECTOR. E=ELEVATOR RECALL.
	HD 135°	HD 135°	HEAT DETECTOR. NUMBER=TEMP. RATING, RR=RATE OF RISE.
	DD	DD	FIRE ALARM DUCT SMOKE DETECTOR WITH FAN SHUT DOWN RELAY.
		RT	REMOTE INDICATING LIGHT WITH TEST SWITCH.
R	R		PROGRAMMABLE FAN SHUT DOWN RELAY.
	FS		SPRINKLER ALARM FLOW SWITCH. FURNISHED BY DIV. 21, WIRED BY E.C.
	TS		SPRINKLER ALARM TAMPER SWITCH. FURNISHED BY DIV. 21, WIRED BY E.C.
	Z S	Z S	MONITOR/CONTROL MODULE. S=SINGLE POINT MONITOR MODULE, D=DUAL POINT, C=CONTROL MODULE.
	DH F		MAGNETIC DOOR HOLDER FOR FIRE ALARM SYSTEM. W=WALL, F=FLOOR.
	B		SPRINKLER BELL. WP=WEATHER PROOF.
EOL	EOL		END OF LINE RESISTOR.
			FIRE FIGHTERS HAT.
	ANSUL		ANSUL SYSTEM.
			MISCELLANEOUS
			RTU 1 — HVAC EQUIPMENT IDENTIFICATION
			6.0 — KEYNOTE IDENTIFICATION
			1 DETAIL NUMBER / E7.1 DRAWING NUMBER — DETAIL IDENTIFICATION
			DEMOLITION
			N — NEW DEVICE OR EQUIPMENT.
			D — EXISTING ELECTRICAL OUTLET OR EQUIPMENT TO BE DEMOLISHED COMPLETE INCLUDING BRANCH CIRCUITRY TO SOURCE.
			X — EXISTING ELECTRICAL OUTLET OR EQUIPMENT TO REMAIN. (CIRCUIT # = REROUTE EXISTING CIRCUIT TO NEW CIRCUIT NUMBER)
			R — EXISTING ELECTRICAL OUTLET OR EQUIPMENT RELOCATED. (NEW LOCATION)
			XR — EXISTING ELECTRICAL OUTLET OR EQUIPMENT TO BE REMOVED & RELOCATED(OLD LOCATION).

MOUNTING HEIGHT

FIRE ALARM PULL STATION	48"
STROBES	80"
FIRE ALARM BELLS(EXTERIOR)	12'–0"
FACP & FAAP	48"
EXIT SIGNS(BOTTOM)	80"
TV OUTLET	18"
INTERCOM	48"
PHOTOCELL	12'–0"
RECEPTACLE(CENTERLINE)	18"
RECEPTACLE(EXTERIOR)	24"
RECEPTACLE(WAREHOUSE)	30"
TELEPHONE OUTLET(PUBLIC)	54"
TELEPHONE OUTLET	18"
SWITCH	48"
SAFETY SWITCHES	48"
PANELS(TOP)	72"
CLOCK(CENTERLINE)	96"
VIDEO OUTLET	96"

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JOB NO. 17-292-1160
DRAWN ATR
CHECKED MTK
APPROVED MTK

SHEET TITLE
ELECTRICAL ABBREVIATIONS, SYMBOLS LIST & DETAILS

SHEET NUMBER
E050

SBDP-J (EXISTING)		400 AMPERE, 277/480 VOLT, 3 PHASE, 4 WIRE, FRONT ACCESSIBLE, NEMA1 ENCLOSURE, 65kAIC					
LEFT							
CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
1	*30/3*	*SEWAGE EJECTOR*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
3	*30/3*	*JOCKEY PUMP*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
5	*30/3*	*AHU-23A*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
7	*100/3*	*PANEL EMDP-2*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
9	*30/3*	*COMPRESSOR #1*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
11	*100/3*	*EM-5 (XFMR EM-5)*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
13	-	*FIRE PUMP*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
15	*100/3*	*EXISTING*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
17	*125/3*	*TEMP. CHILLER FEED*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
19	-	SPACE	-	0	0	0	0
21	-	SPACE	-	0	0	0	0
23	-	SPACE	-	0	0	0	0
RIGHT							
CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
2	***60/3***	***HTG WATER PUMP***	***60/3***	*EXISTING*	*EXISTING*	*EXISTING*	0
4	***60/3***	***HTG WATER PUMP***	***60/3***	*EXISTING*	*EXISTING*	*EXISTING*	0
6	*30/3*	*COMPRESSOR #2*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
8	***30/3***	***CONDENSATE PUMP***	***60/3***	*EXISTING*	*EXISTING*	*EXISTING*	0
10	*100/3*	*T-SB-JG*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
12	*200/3*	*PANEL H2-C*	*200/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
14	*30/3*	*SBPB-J*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
16	-	SPACE	-	0	0	0	0
18	-	SPACE	-	0	0	0	0
20	-	SPACE	-	0	0	0	0
22	-	SPACE	-	0	0	0	0
EXISTING TO REMAIN		CALCULATED VA:		0	0	0	0
		CALCULATED AMPS:		0	0	0	0
DEMO						DEMAND VA:	0
NEW						DEMAND AMPS:	0

SBDP-J (NEW)		400 AMPERE, 277/480 VOLT, 3 PHASE, 4 WIRE, FRONT ACCESSIBLE, NEMA1 ENCLOSURE, 65kAIC					
LEFT							
CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
1	*30/3*	*SEWAGE EJECTOR*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
3	*30/3*	*JOCKEY PUMP*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
5	*30/3*	*AHU-23A*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
7	*100/3*	*PANEL EMDP-2*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
9	*30/3*	*COMPRESSOR #1*	*60/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
11	*100/3*	*EM-5 (XFMR EM-5)*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
13	-	*FIRE PUMP*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
15	*100/3*	*EXISTING*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
17	*125/3*	*TEMP. CHILLER FEED*	*150/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
19	**15/3**	**BP-H1**	**60/3**	2105	2105	2105	6316
21	**15/3**	**BP-H2**	**60/3**	2105	2105	2105	6316
23	**15/3**	**BP-H3**	**60/3**	2105	2105	2105	6316
RIGHT							
CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
2	**20/3**	**BOILER H1**	**60/3**	3601	3601	3601	10803
4	**20/3**	**BOILER H2**	**60/3**	3601	3601	3601	10803
6	30/3	COMPRESSOR #2	60/3	*EXISTING*	*EXISTING*	*EXISTING*	0
8	**20/3**	**BOILER H3**	**60/3**	3601	3601	3601	10803
10	100/3	T-SB-JG	150/3	*EXISTING*	*EXISTING*	*EXISTING*	0
12	200/3	PANEL H2-C	200/3	*EXISTING*	*EXISTING*	*EXISTING*	0
14	30/3	SBPB-J	60/3	*EXISTING*	*EXISTING*	*EXISTING*	0
16	**70/3**	**HWP-H1**	**100/3**	9418	9418	9418	28254
18	**70/3**	**HWP-H2**	**100/3**	0	0	0	0
20	-	SPACE	-	0	0	0	0
22	-	SPACE	-	0	0	0	0
EXISTING TO REMAIN		NEW CALCULATED VA:		26537	26537	26537	79610
		NEW CALCULATED AMPS:		96	96	96	96
DEMO						NEW DEMAND VA:	79610
NEW						NEW DEMAND AMPS:	96

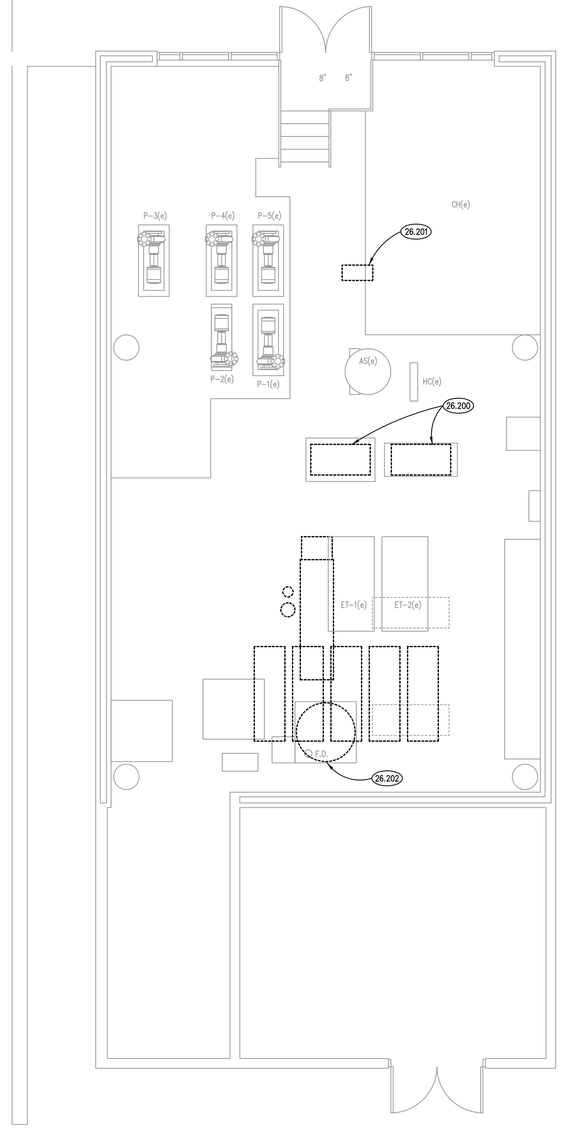
PANEL : H1L1 — **110 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	3P20	*EF-1*				*OLD CIRCUIT?*	1P20	2
3	/					*OLD CIRCUIT?*	1P20	4
5	/					*JOHNSON CONTROL RECIR PUMP*	1P20	6
7	1P20	*BOILER*				*JOHNSON CONTROL*	1P20	8
9	1P20	*EXISTING*				*JOHNSON CONTROL*	1P20	10
11	1P20	*SUB-D RECEPTACLES*				*SPARE*	1P20	12
13	1P20	*EXISTING*				*OLD CIRCUIT?*	1P20	14
15	1P20	*EXISTING*				*OLD CIRCUIT?*	1P20	16
17	1P20	*AERATOR*				*OLD CIRCUIT?*	1P20	18
19	1P20	*SPARE*				*EXF-1B*	1P20	20
21	1P20	*SPARE*				*FIRE ALARM PANEL*	1P20	22
23	1P20	**HANGING UNIT HEATER**			864	*EM PUSH BUTTON CONTROL*	1P20	24
25	1P20	*LIGHTING, J1067 OUTLETS*				*JOHNSON CONTROL PANEL*	1P20	26
27	1P20	*REFRIGERANT MONITOR*				*SPARE*	1P20	28
29	1P20	*SPARE*				*SPARE*	1P20*	30
31	**1P20**	**WATER HEATER**	384			SPACE	-	32
33	**1P20**	**HWRP-1**		132		SPACE	-	34
35		SPACE				SPACE	-	36
37	-	SPACE				SPACE	-	38
39	-	SPACE				SPACE	-	40
41	-	SPACE				SPACE	-	42

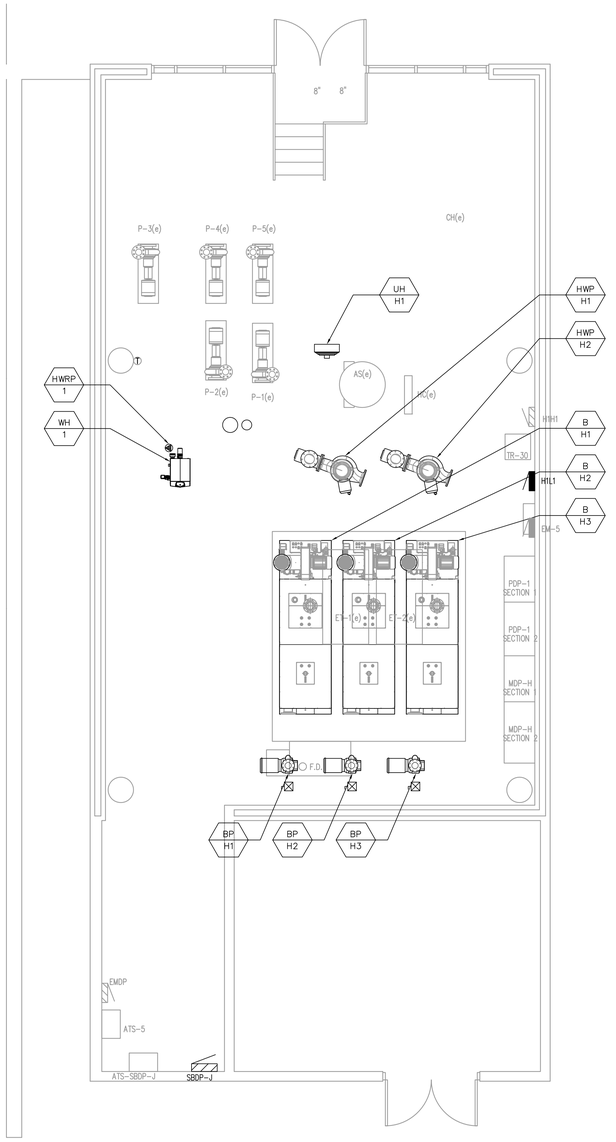
		NOTES:
TOTAL PHASE A:	384	* DENOTES HANDLELOCK
TOTAL PHASE B:	132	CIRCUIT BREAKER
TOTAL PHASE C:	864	*EXISTING TO REMAIN*
DEMAND VA:	1380	**NEW**
DEMAND AMPS:	3.8	

MOUNTING:	SURFACE	VOLTAGE (LN):	120
RATING:	EXISTING	VOLTAGE (LL):	208
ENCLOSURE:	NEMA 1	PHASE:	3
FED FROM:	H1H1	WIRE:	4
FEEDER SIZE:	EXISTING		
LOCATION:	SUB H		

PANEL SCHEDULES (3)
SCALE: N.T.S.



SUBSTATION H DEMOLITON PLAN (2)
SCALE: 1/4" = 1'-0"



SUBSTATION H NEW WORK PLAN (1)
SCALE: 1/4" = 1'-0"

HVAC/PLUMBING EQUIPMENT SCHEDULE

NO.	DESCRIPTION	FLA	KW	HP	VOL	PH	CCT NO.	DISC. FURN BY	STARTER TYPE	STARTER BY	CIRCUIT WIRING	NOTE
Sub H Equipment												
B-H1	BOILER	13			480	3	SBDP-J - 2	EC	N/A	N/A	3#12,#12G,1/2"C	
B-H2	BOILER	13			480	3	SBDP-J - 4	EC	N/A	N/A	3#12,#12G,1/2"C	
B-H3	BOILER	13			480	3	SBDP-J - 8	EC	N/A	N/A	3#12,#12G,1/2"C	
BP-H1	BOILER PUMP			5	480	3	SBDP-J - 19	EC	FVNR	EC	3#12,#12G,1/2"C	
BP-H2	BOILER PUMP			5	480	3	SBDP-J - 21	EC	FVNR	EC	3#12,#12G,1/2"C	
BP-H3	BOILER PUMP			5	480	3	SBDP-J - 23	EC	FVNR	EC	3#12,#12G,1/2"C	
HWP-H1	PUMP			25	480	3	SBDP-J - 16	UNIT	VFD	MC	3#8,#10G,3/4"C	1
HWP-H2	PUMP			25	480	3	SBDP-J - 18	UNIT	VFD	MC	3#8,#10G,3/4"C	1
WH-1	WATER HEATER	3.2			120	1	H1L1-31	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-1	HOT WATER RECIRC. PUMP	1.4		F	120	1	H1L1-33	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-H1	UNIT HEATER			1/3	120	1	H1L1-23	EC	N/A	N/A	2#12,#12G,1/2"C	

NOTES:
1. FULL VOLTAGE, NON-REVERSING, NEMA SIZE 1. NEMA 1 ENCLOSURE. 480 VOLT, 3 PHASE..

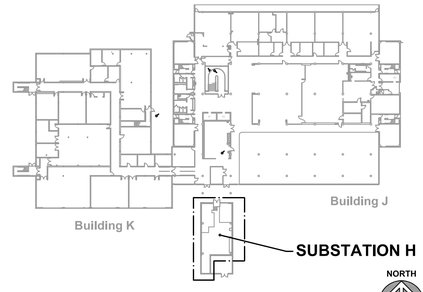
MECHANICAL/PLUMBING EQUIPMENT SCHEDULE (4)
SCALE: N.T.S.

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

26.200 DEMOLISH EXISTING ELECTRICAL CONNECTION TO HOT WATER PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.201 DEMOLISH EXISTING ELECTRICAL CONNECTION TO UNIT HEATER TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.202 DEMOLISH EXISTING ELECTRICAL CONNECTION TO CONDENSATE PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

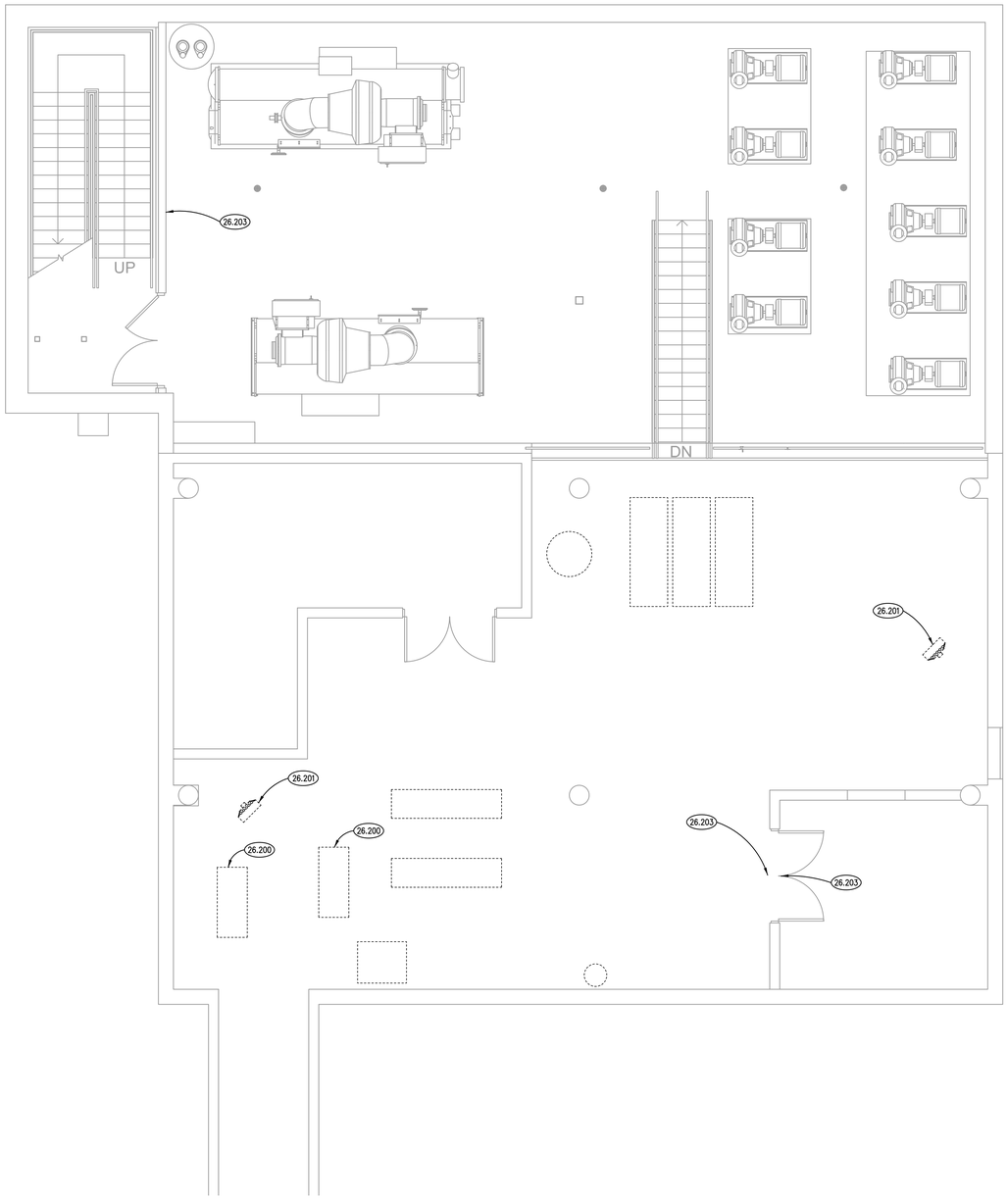
JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	ATR
CHECKED	MTK
APPROVED	MTK

SHEET TITLE
SUBSTATION H ENLARGED ELECTRICAL PLANS

SHEET NUMBER
E310



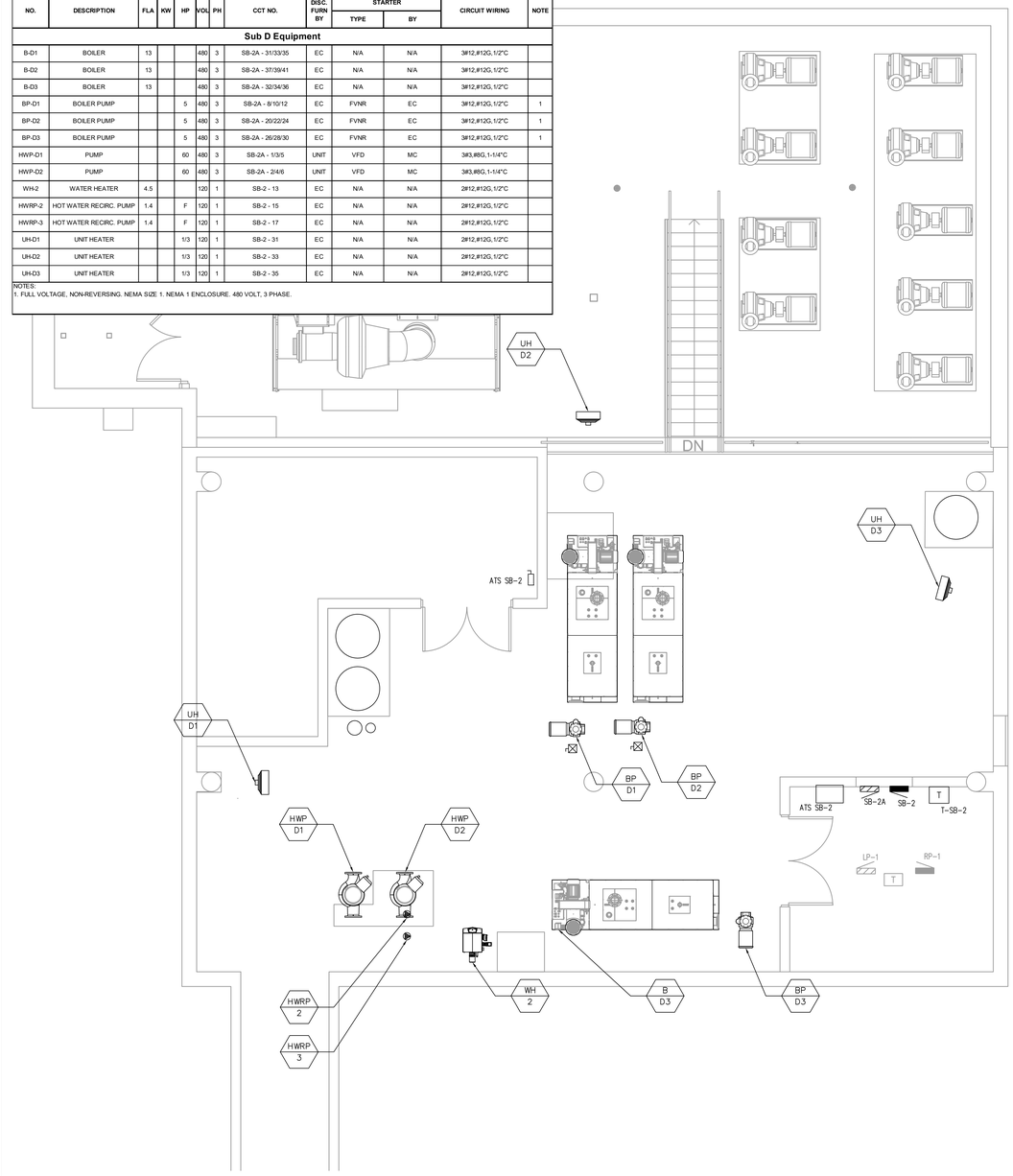
SUBSTATION D DEMOLITION PLAN (2)

SCALE: 1/4" = 1'-0"

HVAC/PLUMBING EQUIPMENT SCHEDULE

NO.	DESCRIPTION	FLA	KW	HP	VOL	PH	CCT NO.	DISC. FURN BY	STARTER TYPE	STARTER BY	CIRCUIT WIRING	NOTE
Sub D Equipment												
B-D1	BOILER	13			480	3	SB-2A - 31/33/35	EC	N/A	N/A	3#12,#12G,1/2"C	
B-D2	BOILER	13			480	3	SB-2A - 37/39/41	EC	N/A	N/A	3#12,#12G,1/2"C	
B-D3	BOILER	13			480	3	SB-2A - 32/34/36	EC	N/A	N/A	3#12,#12G,1/2"C	
BP-D1	BOILER PUMP			5	480	3	SB-2A - 8/10/12	EC	FVNR	EC	3#12,#12G,1/2"C	1
BP-D2	BOILER PUMP			5	480	3	SB-2A - 20/22/24	EC	FVNR	EC	3#12,#12G,1/2"C	1
BP-D3	BOILER PUMP			5	480	3	SB-2A - 26/28/30	EC	FVNR	EC	3#12,#12G,1/2"C	1
HWP-D1	PUMP			60	480	3	SB-2A - 1/3/5	UNIT	VFD	MC	3#3,#8G,1-1/4"C	
HWP-D2	PUMP			60	480	3	SB-2A - 2/4/6	UNIT	VFD	MC	3#3,#8G,1-1/4"C	
WH-2	WATER HEATER	4.5			120	1	SB-2 - 13	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-2	HOT WATER RECIRC. PUMP	1.4		F	120	1	SB-2 - 15	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-3	HOT WATER RECIRC. PUMP	1.4		F	120	1	SB-2 - 17	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-D1	UNIT HEATER			1/3	120	1	SB-2 - 31	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-D2	UNIT HEATER			1/3	120	1	SB-2 - 33	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-D3	UNIT HEATER			1/3	120	1	SB-2 - 35	EC	N/A	N/A	2#12,#12G,1/2"C	

NOTES:
1. FULL VOLTAGE, NON-REVERSING. NEMA SIZE 1. NEMA 1 ENCLOSURE. 480 VOLT, 3 PHASE.



SUBSTATION D NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

PANEL : SB-2A (EXISTING/DEMO) — 200 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	3P100	***P-1***				***CONDENSATE WATER PUMP #1***	3P30	2
3	/						/	4
5	/						/	6
7	3P30	*AIR COMPRESSOR*				***P-2 HEATING WATER PUMP***	3P100	8
9	/						/	10
11	/						/	12
13	3P60	*T-SB6*				*TRANSFORMER SB-2*	3P100	14
15	/						/	16
17	/						/	18
19	3P30	*SPARE*				***SPARE***	***3P100***	20
21	/						/	22
23	1P20	*SPARE*					/	24
25	1P20	*SPARE*				***SPARE***	***1P20***	26
27	-	SPACE				SPACE	-	28
29	-	SPACE				SPACE	-	30
31	-	SPACE				SPACE	-	32
33	-	SPACE				SPACE	-	34
35	-	SPACE				SPACE	-	36
37	-	SPACE				SPACE	-	38
39	-	SPACE				SPACE	-	40
41	-	SPACE				SPACE	-	42

		NOTES:			
TOTAL PHASE A:	0	* DENOTES HANDLELOCK	MOUNTING:	SURFACE	VOLTAGE (L/N): 277
TOTAL PHASE B:	0	CIRCUIT BREAKER	RATING:	EXISTING	VOLTAGE (L/L): 480
TOTAL PHASE C:	0	*EXISTING TO REMAIN*	ENCLOSURE:	NEMA 1	PHASE: 3
DEMAND VA:	0	**NEW**	FED FROM:		WIRE: 4
DEMAND AMPS:	0.0	***DEMO***	FEEDER SIZE:	EXISTING	
			LOCATION:	SUB D	

PANEL : SB-2A (REMODELED) — 200 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	**3P110**	**HWP-D1**	21329			**HWP-D2**	**3P110**	2
3	/			21329			/	4
5	/				21329		/	6
7	3P30	AIR COMPRESSOR	2105			**BP-D1**	**3P15**	8
9	/			2105			/	10
11	/				2105		/	12
13	3P60	T-SB6	1404			TRANSFORMER SB-2	3P100	14
15	/			1032			/	16
17	/				1032		/	18
19	3P30	SPARE	2105			**BP-D2**	**3P15**	20
21	/			2105			/	22
23	1P20	SPARE			2105		/	24
25	1P20	SPARE	2105			**BP-D3**	**3P15**	26
27	-	SPACE		2105			/	28
29	-	SPACE			2105		/	30
31	**3P20**	**B-D1**	3601			**B-D3**	**3P20**	32
33	/		3601	3601			/	34
35	/			3601	3601		/	36
37	**3P20**	**B-D2**	3601		3601	SPACE	-	38
39	/			3601		SPACE	-	40
41	/				3601	SPACE	-	42

		NOTES:			
TOTAL PHASE A:	39852	* DENOTES HANDLELOCK	MOUNTING:	SURFACE	VOLTAGE (L/N): 277
TOTAL PHASE B:	39480	CIRCUIT BREAKER	RATING:	EXISTING	VOLTAGE (L/L): 480
TOTAL PHASE C:	39480	*EXISTING TO REMAIN*	ENCLOSURE:	NEMA 1	PHASE: 3
DEMAND VA:	118811	**NEW**	FED FROM:		WIRE: 4
DEMAND AMPS:	142.9		FEEDER SIZE:	EXISTING	
			LOCATION:	SUB D	

PANEL : SB-2 — 100 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	3P100	PANEL SB-5				MAIN BREAKER	3P100	2
3	/						/	4
5	/						/	6
7	1P20	BOILER FEED				DRYER	1P20	8
9	1P20	PANEL REC				JOHNSON CONTROL	1P20	10
11	1P20	FIRE ALARM PANEL				DATA D2027	1P20	12
13	1P20	**WH-2**	540			SPARE	1P20	14
15	1P20	**HWRP-2**		168		JOHNSON CONTROL	1P20	16
17	1P20	**HWRP-3**			168	DOMESTIC HOT WATER PUMP 1	1P20	18
19	3P60	EXTERIOR OUTLET				SUB A SUMP PUMP REC	1P20	20
21	/					DOMESTIC HOT WATER PUMP 2	1P20	22
23	/					UTILITY RECEPT. AT PANEL	1P20	24
25	3P30	SPARE				SUB A SUMP PUMP #1	2P20	26
27	/	SPARE					/	28
29	/	SPARE				SUMP PUMP 1 CONTROL CIRCUIT	1P20	30
31	**1P20**	**UH-D1**	864			SUB A SUMP PUMP #2	2P20	32
33	**1P20**	**UH-D2**		864			/	34
35	**1P20**	**UH-D3**			864	-	-	36
37		-				-	-	38
39		-				SPARE	1P20	40
41		-						42

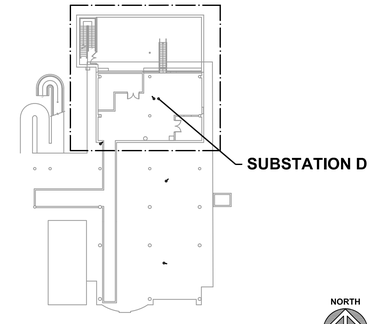
		NOTES:			
TOTAL PHASE A:	1404	* DENOTES HANDLELOCK	MOUNTING:	SURFACE	VOLTAGE (L/N): 120
TOTAL PHASE B:	1032	CIRCUIT BREAKER	RATING:	EXISTING	VOLTAGE (L/L): 208
TOTAL PHASE C:	1032	*EXISTING TO REMAIN*	ENCLOSURE:	NEMA 1	PHASE: 3
DEMAND VA:	3468	**NEW**	FED FROM:	SB-2A	WIRE: 4
DEMAND AMPS:	9.6		FEEDER SIZE:	EXISTING	
			LOCATION:	SUB D	

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

26.200 DEMOLISH EXISTING ELECTRICAL CONNECTION TO HOT WATER PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.201 DEMOLISH EXISTING ELECTRICAL CONNECTION TO UNIT HEATER TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.203 RELOCATE POWER AND FIRE ALARM CIRCUITS. PROVIDE PULL BOX, SPLICE AND EXTEND AS NECESSARY TO ACCOMMODATE WALL DEMOLITION.

KEY PLAN



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ISSUED
BID DOCUMENTS 02/16/18

JOB NO.	17-292-1160
DRAWN	ATR
CHECKED	MTK
APPROVED	MTK

SHEET TITLE

SUBSTATION D ENLARGED ELECTRICAL FLOOR PLANS

SHEET NUMBER

E311

PANELBOARD NO. 4 (EXISTING)	800 AMPERE, 277/480 VOLT, 3 PHASE, 4 WIRE, FRONT ACCESSIBLE, NEMA1 ENCLOSURE, 65kAIC

LEFT

CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
1	-	*SPACE*	-	*EXISTING*	*EXISTING*	*EXISTING*	0
2	*350/3*	*PDP-5*	*350/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
3	*400/3*	*PWR DISTRIBUTION4*	*400/3*	*EXISTING*	*EXISTING*	*EXISTING*	0
4	*800/3*	*MAIN BREAKER*	*800/3*	*EXISTING*	*EXISTING*	*EXISTING*	0

RIGHT

CKT	TRIP	DESCRIPTION	FRAME	A	B	C	TOTAL
5	-	SPACE	-	*EXISTING*	*EXISTING*	*EXISTING*	0
6	***30/3***	***VFD P-7A/7B***	***60/3***	*EXISTING*	*EXISTING*	*EXISTING*	0
7	35/3	PANEL 27	60/3	*EXISTING*	*EXISTING*	*EXISTING*	0
8	50/3	ATS-3	60/3	*EXISTING*	*EXISTING*	*EXISTING*	0
9	200/3	ATS-SB-3	250/3	*EXISTING*	*EXISTING*	*EXISTING*	0
10	50/3	SPARE	100/3	*EXISTING*	*EXISTING*	*EXISTING*	0
11	100/3	SPARE	150/3	*EXISTING*	*EXISTING*	*EXISTING*	0
EXISTING TO REMAIN		CALCULATED VA:		0	0	0	0
		CALCULATED AMPS:		0	0	0	0
DEMO						DEMAND VA:	
NEW						DEMAND AMPS:	0

PANEL : SB-3A (EXISTING/DEMO) — **200 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	***3P30***	***P-6***				***CONDENSATE WATER PUMP***	***3P30***	2
3	/						/	4
5	/						/	6
7	3P30	AIR COMPRESSOR				SPARE	3P100	8
9	/						/	10
11	/						/	12
13	3P100	TRANSFORMER SB-3				SPARE	3P30	14
15	/						/	16
17	/						/	18
19	1P20	SPARE				SPARE	1P20	20
21	1P20	SPARE				SPARE	1P20	22
23	1P20	SPARE				SPARE	1P20	24
25	1P20	SPARE				SPARE	1P20	26
27	-						-	28
29	-						-	30
31	-						-	32
33	-						-	34
35	-						-	36
37	-						-	38
39	-						-	40
41								42

		NOTES:	MOUNTING	SURFACE	VOLTAGE (LN)/277
TOTAL PHASE A	0	* DENOTES HANDLELOCK	RATING	EXISTING	VOLTAGE (LL)/480
TOTAL PHASE B	0	CIRCUIT BREAKER	ENCLOSURE	NEMA 1	PHASE 3
TOTAL PHASE C	0	*EXISTING TO REMAIN*	FED FROM		WIRE 4
DEMAND VA	0	**NEW**	FEEDER SIZE	EXISTING	
DEMAND AMPS	0.0	**DEMO**	LOCATION	SUB A	

PANEL : SB-3A (REMODELED) — **200 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	**3P60**	**TRANSFORMER SB-3.1**	3878 8792			**HWP-A1**	**3P25**	2
3	/			3878 5429			/	4
5	/				3878 7556		/	6
7	*3P30*	*AIR COMPRESSOR*				**HWP-A2**	**3P25**	8
9	/						/	10
11	/						/	12
13	*3P100*	*TRANSFORMER SB-3*				SPARE	*3P30*	14
15	/						/	16
17	/						/	18
19	*1P20*	*SPARE*				SPARE	*1P20*	20
21	*1P20*	*SPARE*				SPARE	*1P20*	22
23	*1P20*	*SPARE*				SPARE	*1P20*	24
25	*1P20*	*SPARE*				SPARE	*1P20*	26
27								28
29								30
31								32
33								34
35								36
37								38
39								40
41								42

		NOTES:	MOUNTING	SURFACE	VOLTAGE (LN)/277
TOTAL PHASE A	12670	* DENOTES HANDLELOCK	RATING	EXISTING	VOLTAGE (LL)/480
TOTAL PHASE B	12298	CIRCUIT BREAKER	ENCLOSURE	NEMA 1	PHASE 3
TOTAL PHASE C	11434	*EXISTING TO REMAIN*	FED FROM		WIRE 4
DEMAND VA	36402	**NEW**	FEEDER SIZE	EXISTING	
DEMAND AMPS	43.8		LOCATION	SUB A	

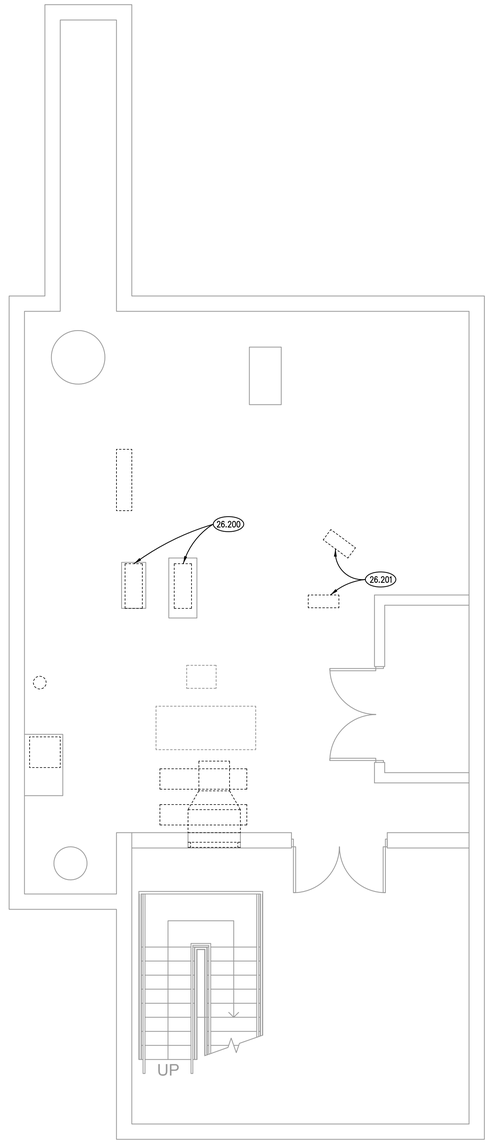
PANEL : SB-3.1 (NEW) — **100 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	1P25	B-A1	2494 2400			BP-A1	2P25	2
3	1P25	B-A2		2494 2400		/		4
5	1P25	B-A3			2494 2400	BP-A2	2P25	6
7	1P20	WH-3	2494 540			/		8
9	1P20	HWRP-4		2494 168		BP-A3	2P25	10
11	1P20	HWRP-5			2494 168	/		12
13	1P20	UH-A1	864					14
15	1P20	UH-A2		864				16
17								18
19								20
21								22
23								24
25								26
27								28
29								30
31								32
33								34
35								36
37								38
39								40
41								42

		NOTES:	MOUNTING	SURFACE	VOLTAGE (LN)/120
TOTAL PHASE A:	8792	* DENOTES HANDLELOCK	RATING	EXISTING	VOLTAGE (LL)/208
TOTAL PHASE B:	8420	CIRCUIT BREAKER	ENCLOSURE	NEMA 1	PHASE 3
TOTAL PHASE C:	7556	*EXISTING TO REMAIN*	FED FROM	SB-3A-1S/S	WIRE 4
DEMAND VA:	24768	**NEW**	FEEDER SIZE	#4/1.#6G,1-1/4"C	
DEMAND AMPS:	68.8		LOCATION	SUB A	

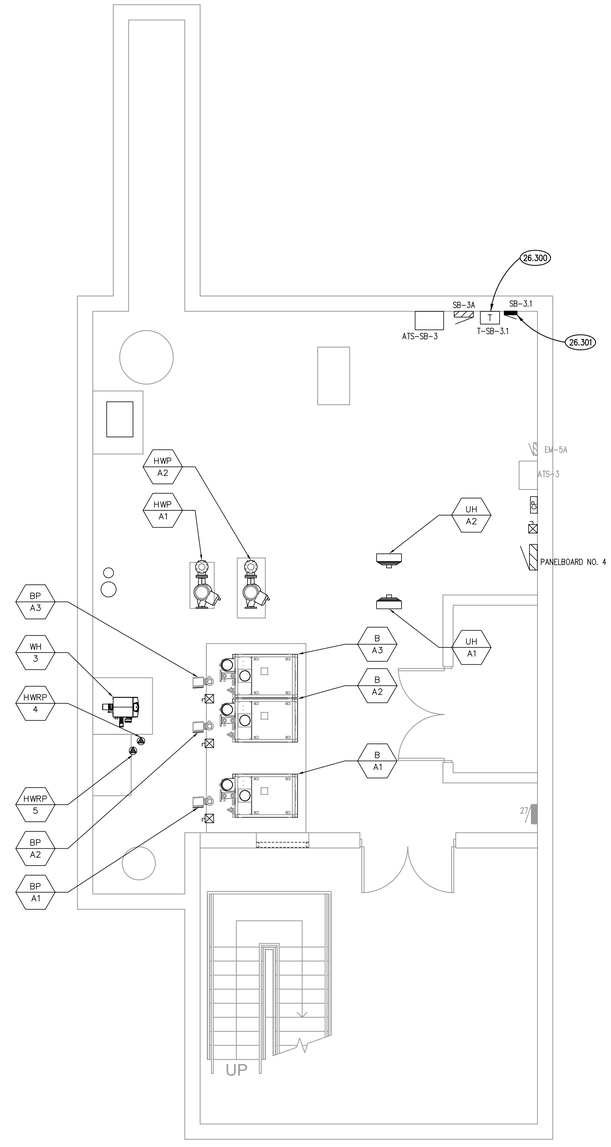
PANEL SCHEDULES (3)

SCALE: NTS



SUBSTATION A DEMOLITON PLAN (2)

SCALE: 1/4" = 1'-0"



SUBSTATION A NEW WORK PLAN (1)

SCALE: 1/4" = 1'-0"

HVAC/PLUMBING EQUIPMENT SCHEDULE												
NO.	DESCRIPTION	FLA	KW	HP	VOL	PH	CCT NO.	DISC. FURN BY	STARTER TYPE	STARTER BY	CIRCUIT WIRING	NOTE
Sub A Equipment												
B-A1	BOILER	20			120	1	SB-3.1 - 1	EC	N/A	N/A	2#10,#12G,1/2"C	
B-A2	BOILER	20			120	1	SB-3.1 - 3	EC	N/A	N/A	2#10,#12G,1/2"C	
B-A3	BOILER	20			120	1	SB-3.1 - 5	EC	N/A	N/A	2#10,#12G,1/2"C	
BP-A1	BOILER PUMP			2	208	1	SB-3.1 - 2/4	EC	FVNR	EC	3#12,#12G,1/2"C	1
BP-A2	BOILER PUMP			2	208	1	SB-3.1 - 6/8	EC	FVNR	EC	3#12,#12G,1/2"C	1
BP-A3	BOILER PUMP			2	208	1	SB-3.1 - 10/12	EC	FVNR	EC	3#12,#12G,1/2"C	1
HWP-A1	PUMP			10	480	3	SB-3A - 2/4/6	UNIT	VFD	MC	3#12,#12G,1/2"C	
HWP-A2	PUMP			10	480	3	SB-3A - 8/10/12	UNIT	VFD	MC	3#12,#12G,1/2"C	
WH-3	WATER HEATER	4.5			120	1	SB-3A - 7	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-4	HOT WATER RECIRC. PUMP	1.4		F	120	1	SB-3A - 9	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-5	HOT WATER RECIRC. PUMP	1.4		F	120	1	SB-3A - 11	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-A1	UNIT HEATER	1.4		F	120	1	SB-3A - 13	EC	N/A	N/A	2#12,#12G,1/2"C	
UH-A2	UNIT HEATER	1.4		F	120	1	SB-3A - 15	EC	N/A	N/A	2#12,#12G,1/2"C	

NOTES:
1. FULL VOLTAGE, NON-REVERSING. NEMA SIZE 1. NEMA 1 ENCLOSURE. 208 VOLT, 1 PHASE.

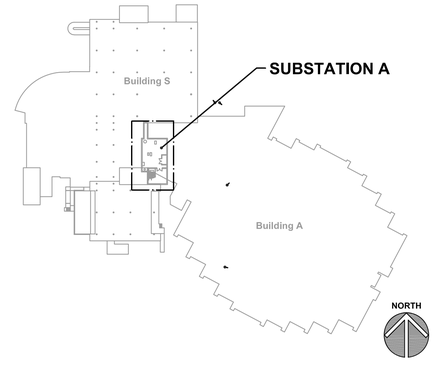
KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

26.200 DEMOLISH EXISTING ELECTRICAL CONNECTION TO HOT WATER PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.201 DEMOLISH EXISTING ELECTRICAL CONNECTION TO UNIT HEATER TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.

26.300 PROVIDE NEW 45 KVA 480 DELTA TO 208 WYE, 3 PHASE 4 WIRE TRANSFORMER FOR NEW PANEL SB-3.1.
26.301 PROVIDE NEW 100 AMPERE PANELBOARD SB-3.1. SEE PANEL SCHEDULE THIS SHEET.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	ATR
CHECKED	MTK
APPROVED	MTK

SHEET TITLE

SUBSTATION A ENLARGED ELECTRICAL FLOOR PLANS

SHEET NUMBER

E312

PANEL : SB-1A (EXISTING/DEMO) — **200 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	*3P30*	*EAST STAIRWELL HEAT*				***CONDENSATE PUMP (SUB B)***	***3P30***	2
3	/						/	4
5	/						/	6
7	*3P30*	*WEST STAIRWELL HEAT*				*PLANETARIUM TUNNEL*	*3P30*	8
9	/						/	10
11	/						/	12
13	*3P100*	*TRANSFORMER SB-1*				*SPARE*	*1P20*	14
15	/					*SPARE*	*1P20*	16
17	/					*SPARE*	*1P20*	18
19	*1P20*	*SPARE*				*SPARE*	*1P20*	20
21	*1P20*	*SPARE*				*SPARE*	*1P20*	22
23	*1P20*	*SPARE*				*SPARE*	*1P20*	24
25	*1P20*	*SPARE*				*SPARE*	*1P20*	26
27	-	-				-	-	28
29	-	-				-	-	30
31	-	-				***HP-005***	***3P30***	32
33	-	-					/	34
35	-	-					/	36
37	-	-				***HP-005A***	***3P30***	38
39	-	-					/	40
41	-	-					/	42

TOTAL PHASE A:	0	NOTES:	
TOTAL PHASE B:	0	* DENOTES HANDLELOCK	
TOTAL PHASE C:	0	CIRCUIT BREAKER	
DEMAND VA:	0	EXISTING TO REMAIN	
DEMAND AMPS:	0.0	**NEW**	
		DEMO	

MOUNTING:	SURFACE	VOLTAGE (L/N):	277
RATING:	EXISTING	VOLTAGE (L/L):	480
ENCLOSURE:	NEMA 1	PHASE:	3
FED FROM:		WIRE:	4
FEEDER SIZE:	EXISTING		
LOCATION:	SUB G		

PANEL : SB-1A (REMODELED) — **200 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	*3P30*	*EAST STAIRWELL HEAT*				***SPARE***	***3P30***	2
3	/						/	4
5	/						/	6
7	*3P30*	*WEST STAIRWELL HEAT*				*PLANETARIUM TUNNEL*	*3P30*	8
9	/						/	10
11	/						/	12
13	*3P100*	*TRANSFORMER SB-1*	2662			*SPARE*	*1P20*	14
15	/			4988		*SPARE*	*1P20*	16
17	/				2878	*SPARE*	*1P20*	18
19	*1P20*	*SPARE*				*SPARE*	*1P20*	20
21	*1P20*	*SPARE*				*SPARE*	*1P20*	22
23	*1P20*	*SPARE*				*SPARE*	*1P20*	24
25	*1P20*	*SPARE*				*SPARE*	*1P20*	26
27	-	-				-	-	28
29	-	-				-	-	30
31	**3P20**	**B-G1**	7479 4155			**HWP-G1**	**3P60**	32
33	/			7479 4155			/	34
35	/				7479 4155		/	36
37	**3P20**	**B-G2**	7479 4155			**HWP-G2**	**3P60**	38
39	/			7479 4155			/	40
41	/				7479 4155		/	42

TOTAL PHASE A:	25930.08	NOTES:	
TOTAL PHASE B:	28256.16	* DENOTES HANDLELOCK	
TOTAL PHASE C:	26146.08	CIRCUIT BREAKER	
DEMAND VA:	80332.32	EXISTING TO REMAIN	
DEMAND AMPS:	96.6	**NEW**	
		DEMO	

MOUNTING:	SURFACE	VOLTAGE (L/N):	277
RATING:	EXISTING	VOLTAGE (L/L):	480
ENCLOSURE:	NEMA 1	PHASE:	3
FED FROM:		WIRE:	4
FEEDER SIZE:	EXISTING		
LOCATION:	SUB G		

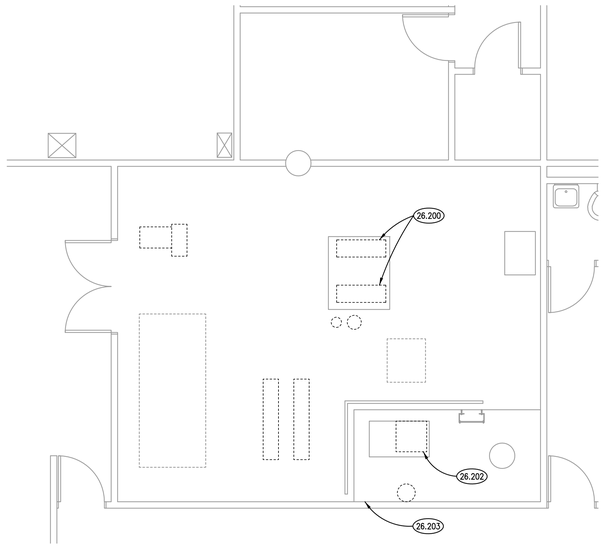
PANEL : SB-1 (REMODELED) — **100 AMPERE MAIN BREAKER**

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	1P20	*NETWORK SWITCHES BLDG F*				*MAIN BREAKER*	3P100	2
3	1P20	*FPUIDX CONTROLLER SUB B*				/	/	4
5	1P20	*FPU BLDG F*				/	/	6
7	2P20	*CONDENSATE PUMP UNIT BLDG F*				*FPU 11/12 BLDG G*	1P20	8
9	/					*SPARE*	1P20	10
11	2P20	*SUMP BLDG F*				*EAST DRYER*	1P20	12
13	/					*POLIEC A/C*	1P20	14
15	1P20	*EXISTING*				*EXISTING*	1P20	16
17	1P20	*EXISTING*				*EAST WASHER RM 1034*	3P15	18
19	1P20	*EXISTING*				/	/	20
21	1P20	*DUCANE CLOCK*				/	/	22
23	1P20	*EAST STAIRWELL GEN LITES*				*WEST WASHER RM 1034*	3P15	24
25	1P20	*WEST STAIRWELL GEN LITES*				/	/	26
27	**2P25**	**BP-G1**	2494			/	/	28
29	/				2494	*SPARE*	1P20	30
31	**2P25**	**BP-G2**	2494			*UTILITY REC. AT PANEL*	1P20	32
33	/			2494		*EXISTING*	1P20	34
35	**1P20**	**WH-4**			384	*EXISTING*	1P20	36
37	**1P20**	**HWRP-6**	168			*EXISTING*	1P20	38
39	-	-				*EXISTING*	1P20	40
41	-	-				*EXISTING*	1P20	42

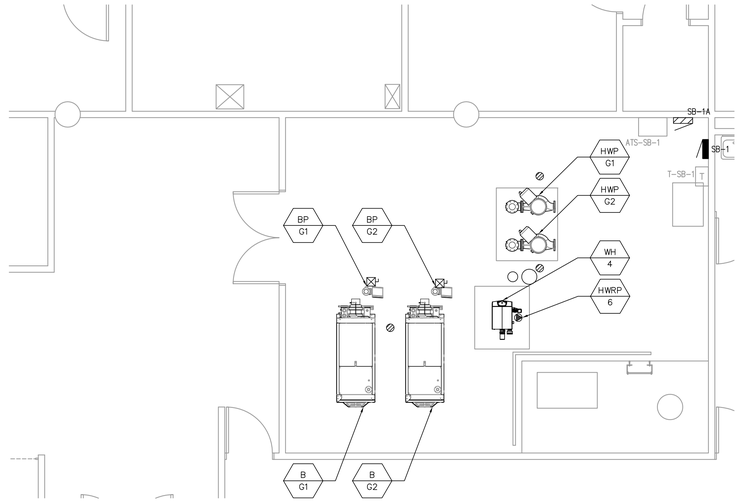
TOTAL PHASE A:	2662	NOTES:	
TOTAL PHASE B:	4988	* DENOTES HANDLELOCK	
TOTAL PHASE C:	2878	CIRCUIT BREAKER	
DEMAND VA:	10528	EXISTING TO REMAIN	
DEMAND AMPS:	29.2	**NEW**	

MOUNTING:	SURFACE	VOLTAGE (L/N):	120
RATING:	EXISTING	VOLTAGE (L/L):	208
ENCLOSURE:	NEMA 1	PHASE:	3
FED FROM:	SB-1A - 13/15/17	WIRE:	4
FEEDER SIZE:	EXISTING		
LOCATION:	SUB G		

PANEL SCHEDULES (3)
SCALE: NTS



SUBSTATION G DEMOLTION PLAN (2)
SCALE: 1/4" = 1'-0"



SUBSTATION G NEW WORK PLAN (1)
SCALE: 1/4" = 1'-0"

HVAC/PLUMBING EQUIPMENT SCHEDULE

NO.	DESCRIPTION	FLA	KW	HP	VOL	PH	CCT NO.	DISC. FURN BY	STARTER TYPE	STARTER BY	CIRCUIT WIRING	NOTE
Sub G Equipment												
B-G1	BOILER	15			480	3	SB-1A - 31/33/35	EC	N/A	N/A	3#12,#12G,1/2"C	
B-G2	BOILER	15			480	3	SB-1A - 37/39/41	EC	N/A	N/A	3#12,#12G,1/2"C	
BP-G1	BOILER PUMP			2	208	1	SB-1 - 27/29	EC	FVNR	EC	3#12,#12G,1/2"C	
BP-G2	BOILER PUMP			2	208	1	SB-1 - 31/33	EC	FVNR	EC	3#12,#12G,1/2"C	
HWP-G1	PUMP			20	480	3	SB-1A - 32/34/36	UNIT	VFD	MC	3#10,#12G,1/2"C	1
HWP-G2	PUMP			20	480	3	SB-1A - 38/40/42	UNIT	VFD	MC	3#10,#12G,1/2"C	1
WH-4	WATER HEATER	3.2			120	1	SB-1 - 35	EC	N/A	N/A	2#12,#12G,1/2"C	
HWRP-6	HOT WATER RECIRC. PUMP	1.4		F	120	1	SB-1 - 37	EC	N/A	N/A	2#12,#12G,1/2"C	

NOTES:
1. FULL VOLTAGE, NON-REVERSING. NEMA SIZE 1. NEMA 1 ENCLOSURE. 480 VOLT, 3 PHASE.

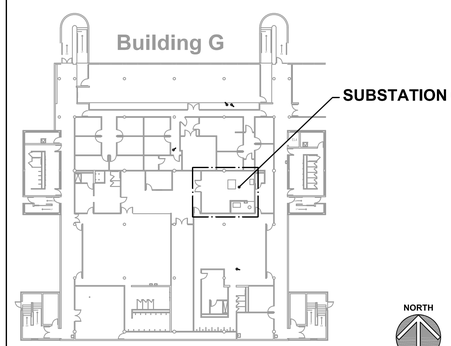
MECHANICAL/PLUMBING EQUIPMENT SCHEDULE (4)
SCALE: NTS

KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

26.200 DEMOLISH EXISTING ELECTRICAL CONNECTION TO HOT WATER PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.202 DEMOLISH EXISTING ELECTRICAL CONNECTION TO CONDENSATE PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.
26.203 RELOCATE POWER AND FIRE ALARM CIRCUITS. PROVIDE PULL BOX, SPLICE AND EXTEND AS NECESSARY TO ACCOMMODATE DEMOLITION.

KEY PLAN



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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
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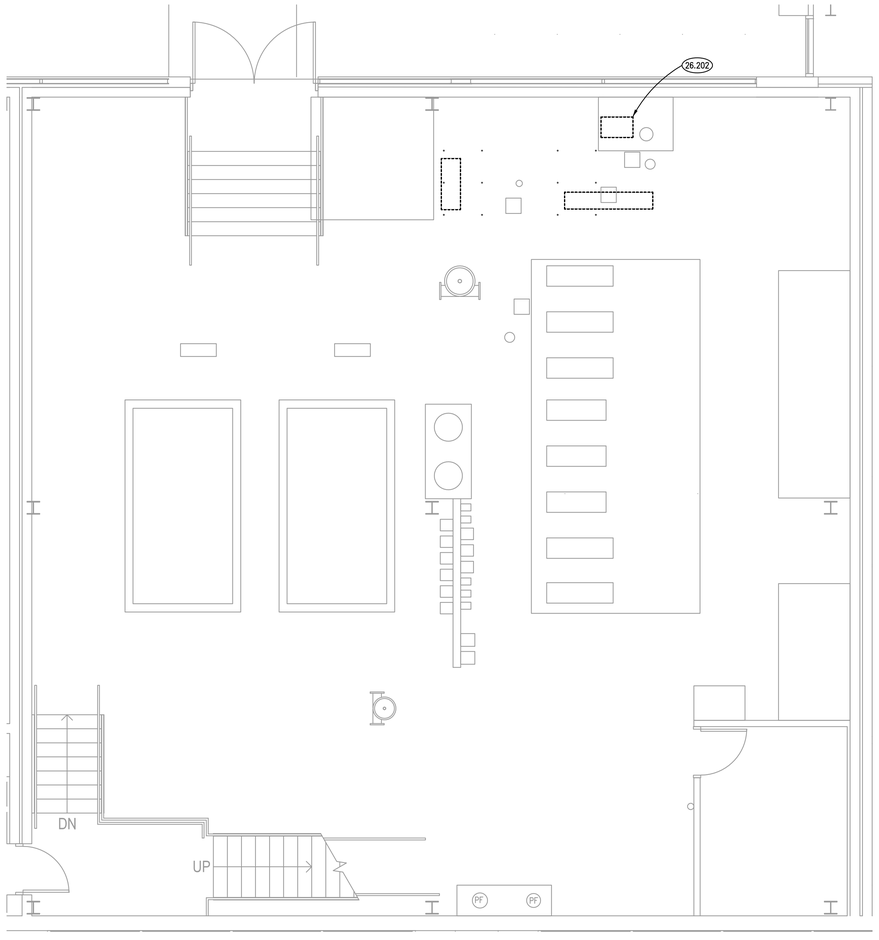
JOLIET, ILLINOIS 60431

ISSUED
02/16/18 BID DOCUMENTS

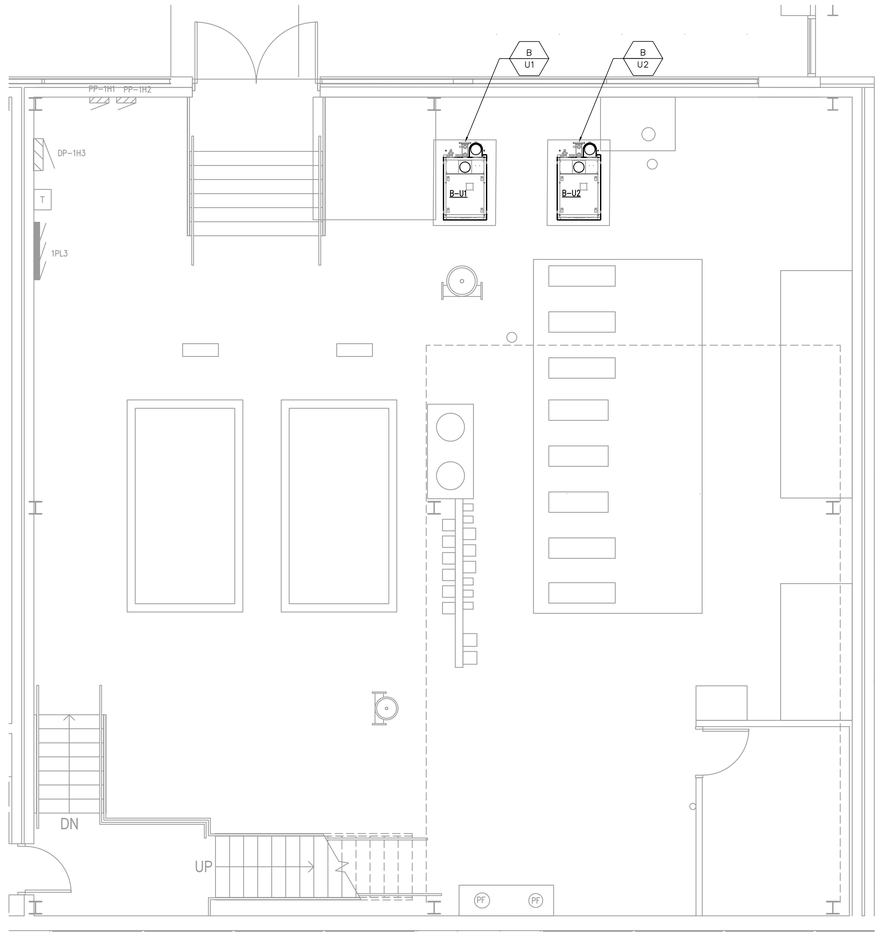
JOB NO.	17-292-1160
DRAWN	ATR
CHECKED	MTK
APPROVED	MTK

SHEET TITLE
SUBSTATION G ENLARGED ELECTRICAL FLOOR PLANS

SHEET NUMBER
E313



SUBSTATION U DEMOLITION PLAN (2)
SCALE: 1/4" = 1'-0"



SUBSTATION U NEW WORK PLAN (1)
SCALE: 1/4" = 1'-0"

HVAC/PLUMBING EQUIPMENT SCHEDULE

NO.	DESCRIPTION	FLA	KW	HP	VOL	PH	CCT NO.	DISC. FURN BY	STARTER TYPE	STARTER BY	CIRCUIT WIRING	NOTE
Sub U Equipment												
B-U1	BOILER	20			120	1	1EPL1-29	EC	N/A	N/A	2#10,#12G,1/2"C	
B-U2	BOILER	20			120	1	1EPL1-33	EC	N/A	N/A	2#10,#12G,1/2"C	

NOTES:

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STEAM PIPE SYSTEM REPLACEMENT WITH CONDENSING BOILERS

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

PANEL : 1EPL1 SECTION 1 (REMODELED) 110 AMPERE MAIN BREAKER

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
1	*1P20*	*SECURITY PANEL*				*SPD-2*	*3P20*	2
3	*1P20*	*SECURITY PANEL*				/		4
5	*1P20*	*SECURITY PANEL*				/		6
7	*1P20*	*REC*				*REC*	*1P20*	8
9	*1P20*	*REC*				*REC*	*1P20*	10
11	*1P20*	*SECURITY PANEL*				*BATHROOM SENSORS*	*1P20*	12
13	*1P20*	*SECURITY PANEL*				*BATHROOM SENSORS*	*1P20*	14
15	*1P20*	*SECURITY PANEL*				*BATHROOM SENSORS*	*1P20*	16
17	*1P20*	*REC*				*BATHROOM SENSORS*	*1P20*	18
19	*1P20*	*REC*				*BATHROOM SENSORS*	*1P20*	20
21	*1P20*	*BATHROOM SENSORS*				*BATHROOM SENSORS*	*1P20*	22
23	*1P20*	*BATHROOM SENSORS*				*BATHROOM SENSORS*	*1P20*	24
25	*1P20*	*BATHROOM SENSORS*				*REC*	*1P20*	26
27	*1P20*	*REC (OLD 27+29)*				*REC*	*1P20*	28
29	**1P25**	**B-U1**			2400	*SPARE*	*1P20*	30

NOTES:
* DENOTES HANDLELOCK CIRCUIT BREAKER
EXISTING TO REMAIN
NEW
DEMO

MOUNTING	SURFACE
RATING	EXISTING
VOLTAGE (L-L)	208
VOLTAGE (L-N)	120
ENCLOSURE	NEMA 1
PHASE	3
WIRE	4
FED FROM	
FEEDER SIZE	EXISTING
LOCATION	U1116

PANEL : 1EPL1 SECTION 2 (REMODELED)

CKT. NO.	BRKR	DESCRIPTION	PHASE A	PHASE B	PHASE C	DESCRIPTION	BRKR	CKT. NO.
31	*1P20*	*REC (OLD 31+33)*				*REC*	*1P20*	32
33	**1P25**	**B-U2**		2400		*REC*	*1P20*	34
35	*1P20*	*REC*				*PYXIS, SINK CORR 3015*	*1P20*	36
37	*1P20*	*REC*				*REC*	*1P20*	38
39	*1P20*	*REC*				*SECURITY PANEL*	*1P20*	40
41	*1P20*	*REC*				*SECURITY PANEL*	*1P20**	42
43	*1P20*	*BATHROOM SENSORS*				*SECURITY PANEL*	*1P20**	44
45	*1P20*	*SP-2*				*DOOR HOLDS*	*1P20**	46
47	*1P20*	*SMOKE DAMPERS*				*SMOKE DAMPERS*	*1P20*	48
49	*1P20*	*SMOKE DAMPERS*				*SMOKE DAMPERS*	*1P20*	50
51	*1P20*	*TEMP CONTROL PANEL*				*ELECTRONIC BELL*	*1P20*	52
53	*1P20*	*REC*				*FIRE DOOR*	*3P20*	54
55	*1P20**	*TEMP CONTROL PANEL*				/		56
57	*1P20**	*TEMP CONTROL PANEL*				/		58
59	*1P20**	*TEMP CONTROL PANEL*				*TEMP CONTROL PANEL*	*1P20**	60

TOTAL PHASE A:	0
TOTAL PHASE B:	2400
TOTAL PHASE C:	2400
DEMAND VA:	0
DEMAND AMPS:	13.3

NOTES:
* DENOTES HANDLELOCK CIRCUIT BREAKER
EXISTING TO REMAIN
NEW
DEMO

MOUNTING	SURFACE
RATING	EXISTING
VOLTAGE (L-L)	208
VOLTAGE (L-N)	120
ENCLOSURE	NEMA 1
PHASE	3
WIRE	4
FED FROM	
FEEDER SIZE	EXISTING
LOCATION	U1116

SUBSTATION U DEMOLITION PLAN (2)
SCALE: 1/4" = 1'-0"

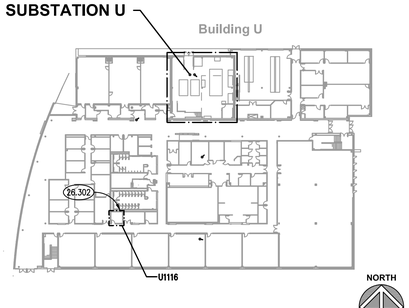
KEYNOTES

KEYNOTES ARE NOT ALWAYS REPEATED ACROSS ALL DRAWINGS ON THIS SHEET. AN UN-KEYNOTED ITEM ON THIS SHEET IS THE SAME AS A KEYNOTED ITEM ON THIS SHEET HAVING THE SAME GRAPHIC APPEARANCE.

26.202 DEMOLISH EXISTING ELECTRICAL CONNECTION TO CONDENSATE PUMP TO BE REMOVED. REMOVE ALL ABANDONED IN PLACE BRANCH CIRCUITRY.

26.302 PROVIDE SPLICE AND COMBINE CIRCUITS 27 AND 29 ON 1EPL1-27. PROVIDE SPLICE AND COMBINE CIRCUITS 31 AND 33 ON 1EPL1-31. DEMOLISH EXISTING 20 AMPERE SINGLE POLE CIRCUIT BREAKER (1EPL1-29 AND 1EPL1-33). PROVIDE NEW 25 AMPERE, SINGLE POLE CIRCUIT BREAKER FOR NEW BOILERS (B-U1 AND B-U2).

KEY PLAN



ISSUED
02/16/18 BID DOCUMENTS

JOB NO.	17-292-1160
DRAWN	ATR
CHECKED	MTK
APPROVED	MTK

SHEET TITLE

SUBSTATION U ENLARGED ELECTRICAL FLOOR PLANS

SHEET NUMBER

E314

P:\1160 - JJC - Main Campus - Steam Pipe System Replacement with Condensing Boilers\30_Design\Dwgs\DD-CDR\[0_Elec1116E0314.dwg, 2/16/2018 10:34:57 AM, ATR