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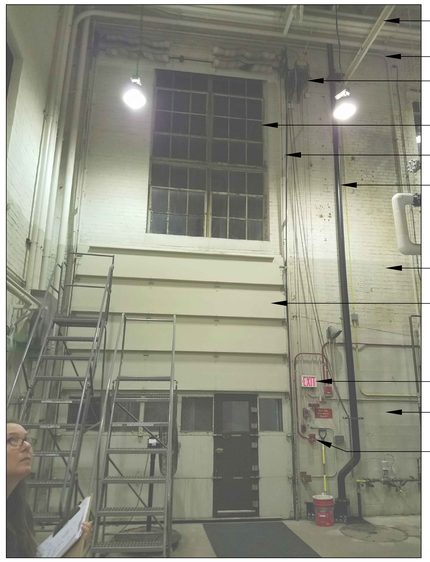
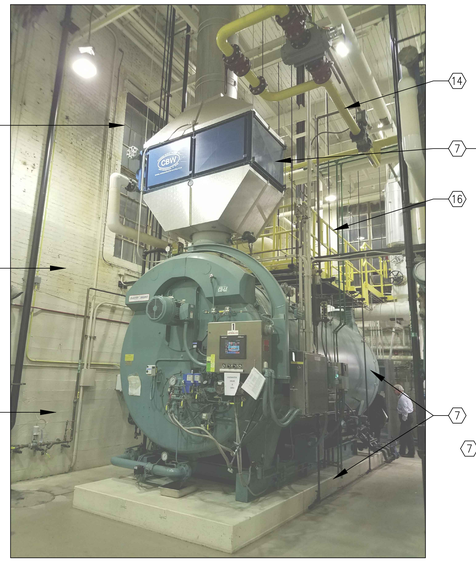


1 EXISTING ELEVATION - 1
NTS



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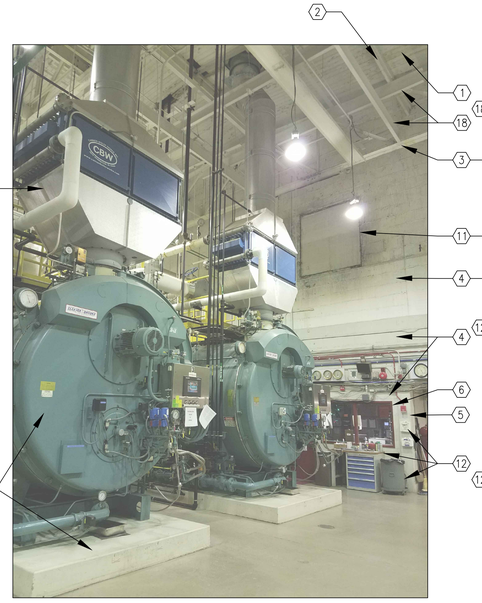

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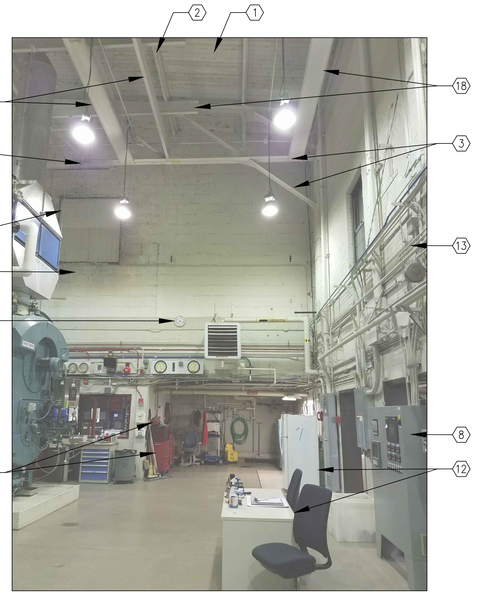

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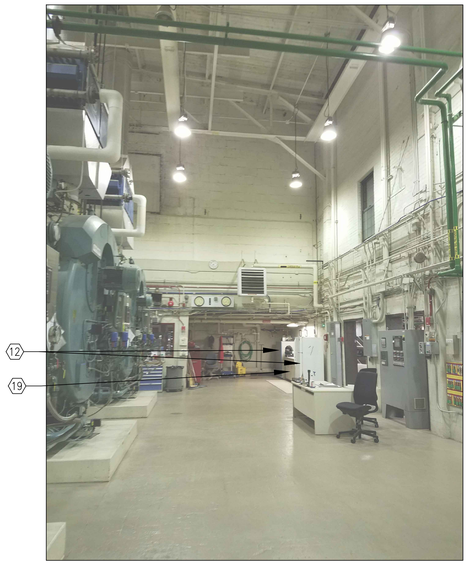

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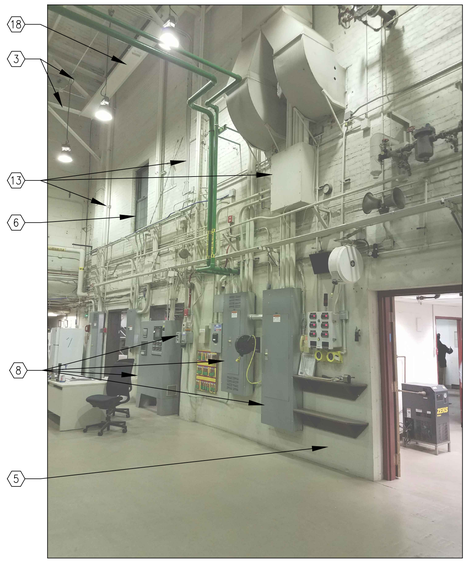

6 EXISTING ELEVATION - 6
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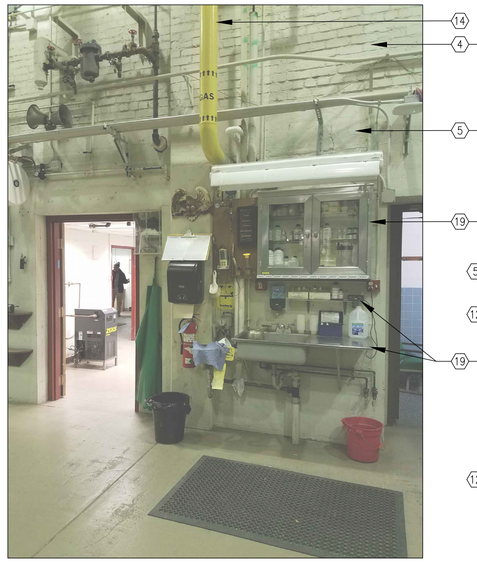

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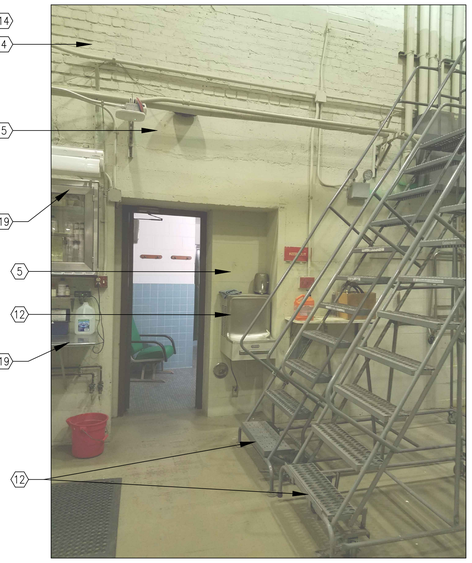

8 EXISTING ELEVATION - 8
NTS

KEYNOTES - EXISTING ELEVATIONS

1. EXISTING PAINTED WOOD ROOF DECKING. REMOVE LOOSE PAINT, PREPARE, PRIME & PAINT. FINISH COLOR P-1. TYPICAL.
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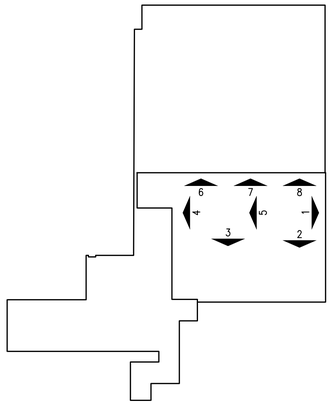

KEY PLAN BUILDING 7
NTS

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

ARCHITECT/ENGINEER OF RECORD
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Elk Grove Village, IL 60007
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www.bancroft-ae.com
BAE PROJECT NO. 18-116

APPROVED PROJECT COR DATE:
APPROVED SERVICE LINE DIRECTOR DATE:
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APPROVED GEMS PROJECT MANAGER DATE:
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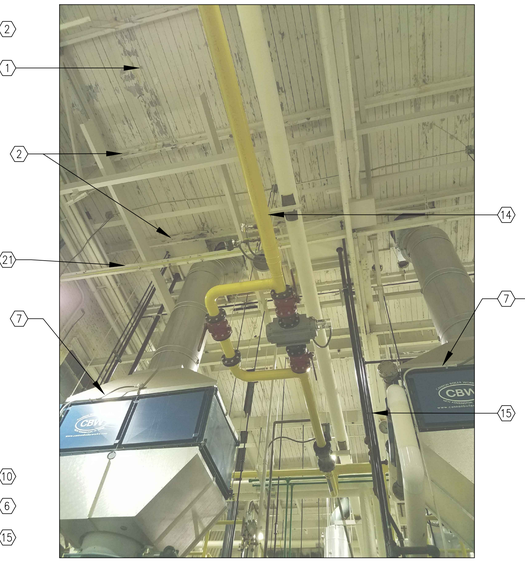
APPROVED SAFETY MANAGER DATE:
APPROVED ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
APPROVED CHIEF OF STAFF DATE:
APPROVED HEALTH CARE SYSTEM DIRECTOR DATE:

DRAWING TITLE: INTERIORS - EXISTING ELEVATIONS
PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
DATE: 11/11/2020
PLOT SCALE:
PROJECT NO: 656-19-310
BUILDING No: 7 | CHECKED BY: GL | DRAWN: DA
DRAWING NO: IF502
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG OF

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

PRINT IN COLOR

1 EXISTING ELEVATION - 1
NTS



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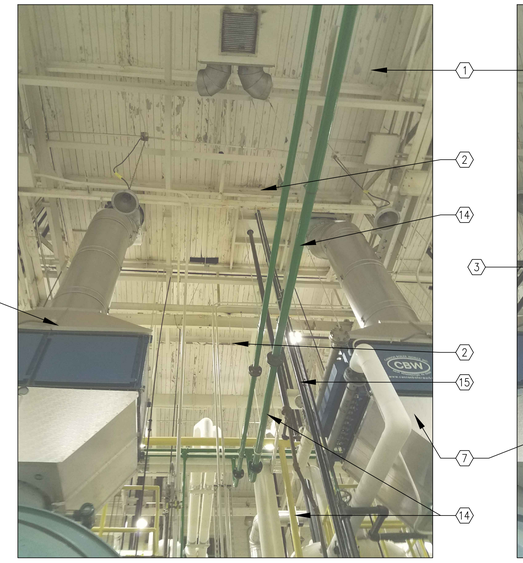

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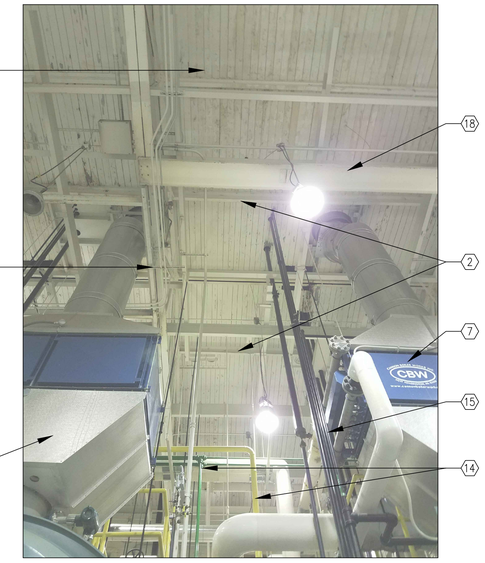

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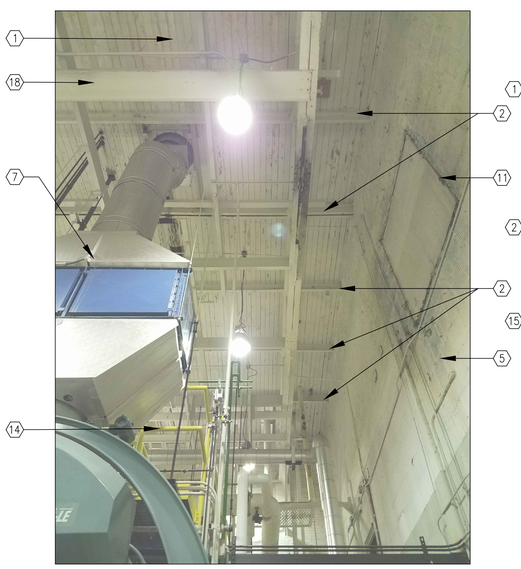

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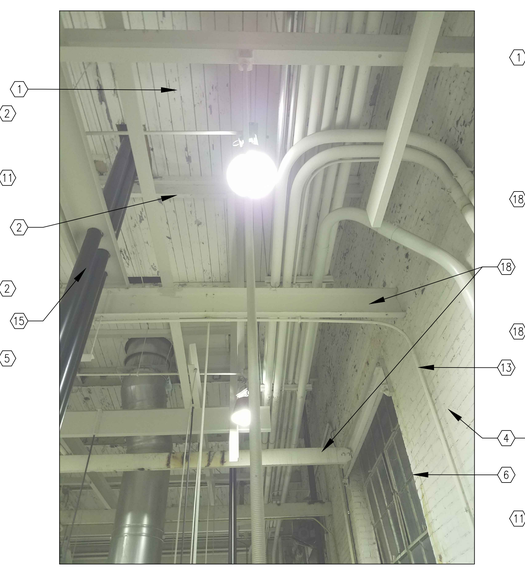
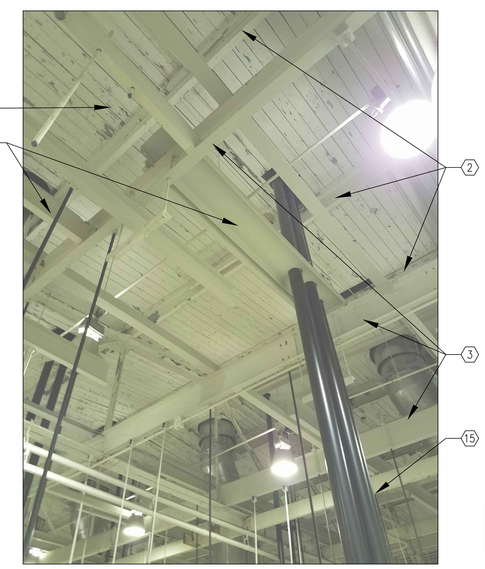


6 EXISTING ELEVATION - 6
NTS

7 EXISTING ELEVATION - 7
NTS



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NTS

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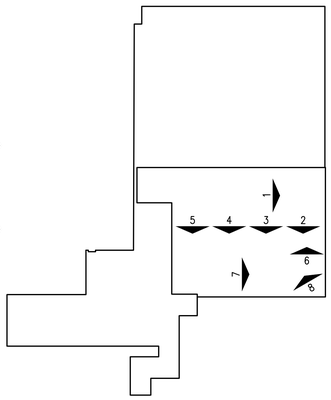

KEY PLAN BUILDING 7
NTS

No	REVISION	DATE
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www.bancroft-ae.com
BAE PROJECT NO. 18-116

APPROVED PROJECT COR DATE:
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APPROVED ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
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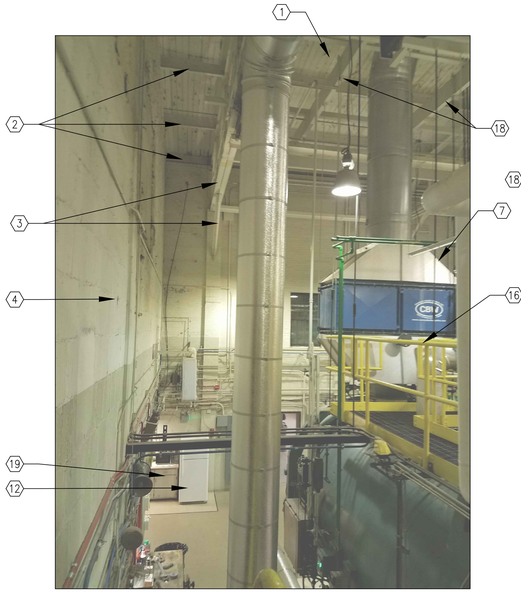
PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
BUILDING No: 7 | CHECKED BY: GL | DRAWN: DA
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303

DATE: 11/11/2020
PLOT SCALE:
PROJECT NO: 656-19-310
DRAWING NO: IF503
DWG OF

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

PRINT IN COLOR



1 EXISTING ELEVATION - 1
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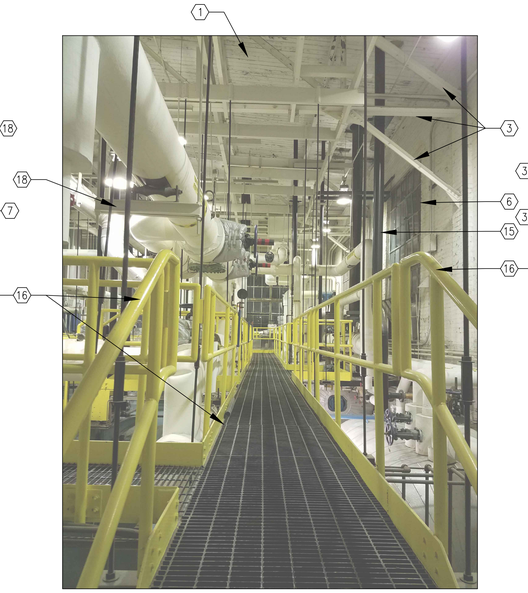

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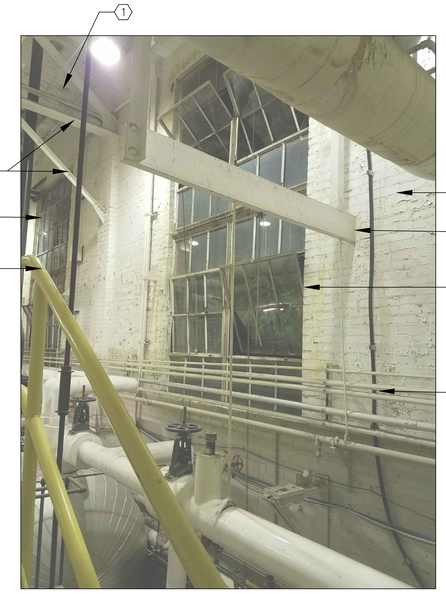

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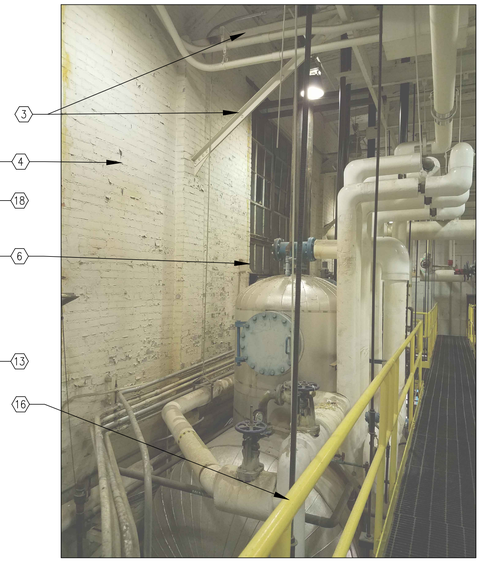

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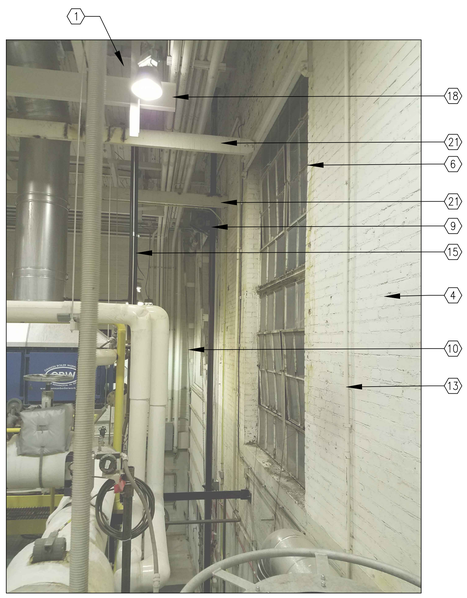

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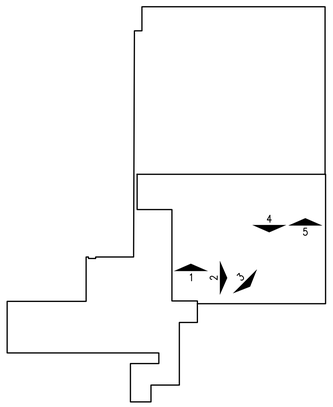

KEY PLAN BUILDING 7
NTS

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BAE PROJECT NO. 18-116

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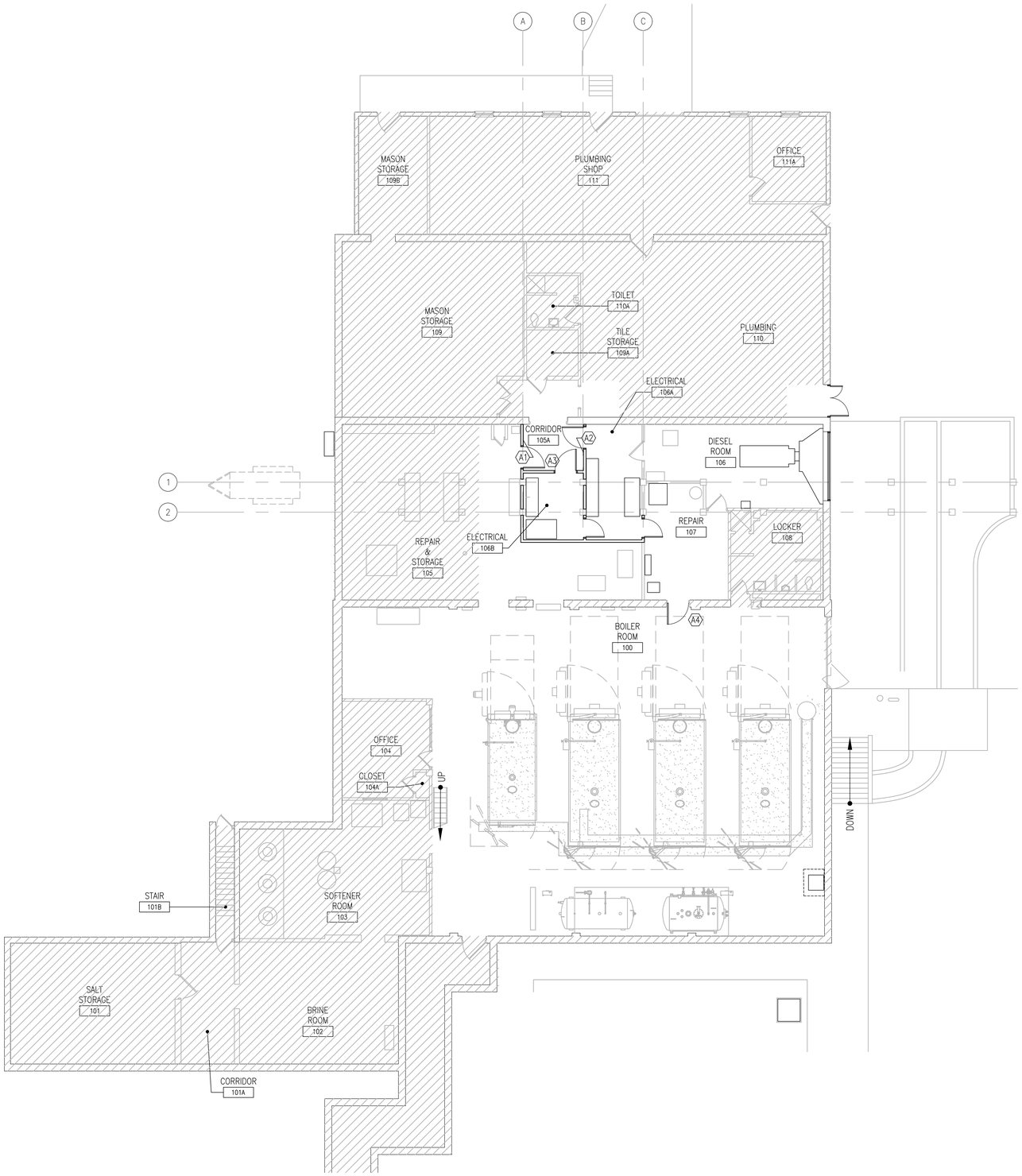
PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
BUILDING No: 7
CHECKED BY: GL
DRAWN: DA
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303

DATE: 11/11/ 2020
PLOT SCALE
PROJECT NO: 656-19-310
DRAWING NO: IF604
SHS OF

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System



NORTH

1 INTERIORS - SIGNAGE PLAN - FIRST FLOOR

1/8"=1'-0"

0 2' 4' 8' 16'

SIGNAGE SCHEDULE

Mark	LOCATION		SIGN			Type	Remarks
	Room ID	Room Name	Type	Room ID	Count		
A1	105	REPAIR & STORAGE	IN-03.01	105 REPAIR & STORAGE	1	A	
A2	106A	ELECTRICAL	IN-03.01	106A ELECTRICAL	2	A	
A3	107	REPAIR	IN-03.01	107 REPAIR	1	A	

SIZE
3"H X 9"W

SIGN COMPONENTS
REFER TO SPECIFICATIONS

GRAPHIC PROCESS
TACTILE RAISED TEXT AND BRAILLE ON TOP SECTION. SURFACE APPLIED VINYL OR INSERT IN LOWER SIGN SECTION

COLORS
TEXT: REFER TO FINISH PLANS
BACKGROUND: REFER TO FINISH PLANS

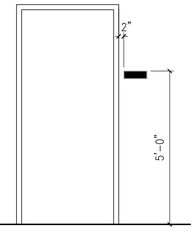
TYPOGRAPHY
HELVETICA CONDENSED
BOLD RAISED
TACTILE GRADE 2
BRAILLE DOMED

MOUNTING
DOUBLE SIDED FOAM TAPE OR SILASTIC ADHESIVE

INSTALLATION
KNOB SIDE OF DOOR, 60" TO TOP OF SIGN AND 2" OVER FROM DOOR FRAME.

TYPE A - ROOM NUMBER IDENTIFICATION SIGN **IN-03.01**

6" = 1'-0"



MOUNTING DETAIL 1
MOUNTING HEIGHT FOR SIGN TYPE IN-03.01

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

ARCHITECT/ENGINEER OF RECORD
BANCROFT ARCHITECTS + ENGINEERS
700 Nicholas Blvd, Suite 300
Elk Grove Village, IL 60007
T: 847.952.9362
www.bancroft-ae.com
BAE PROJECT NO. 18-116

APPROVED PROJECT COR DATE:
APPROVED SERVICE LINE DIRECTOR DATE:
APPROVED INFECTION CONTROL NURSE DATE:
APPROVED GEMS PROJECT MANAGER DATE:
APPROVED PATIENT SAFETY DATE:
APPROVED PROJECTS SECTION MANAGER DATE:
APPROVED CHIEF OF POLICE DATE:
APPROVED DIRECTOR FMS DATE:
APPROVED SAFETY MANAGER DATE:
APPROVED ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
APPROVED CHIEF OF STAFF DATE:
APPROVED HEALTH CARE SYSTEM DIRECTOR DATE:

DRAWING TITLE: INTERIORS - SIGNAGE PLAN - FIRST FLOOR

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS

DATE: 11/11/ 2020
PLOT SCALE:
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: GL
DRAWN: DA
DRAWING NO: IQ601
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

VIEW KEY

NAME — LEVEL NAME
10' - 0" — HEIGHT ABOVE PROJECT 0' - 0"

1 — INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

NORTH

1 VIEW NAME — 1/8" = 1'-0"

- INDICATES DIRECTION OF TRUE NORTH
- PLAN OR DETAIL NUMBER
- PLAN OR DETAIL NAME
- PLAN OR DETAIL SCALE

SIM — INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
1 — DETAIL REFERRED TO BY SECTION CUT
M101 — SHEET DETAIL IS LOCATED ON

SIM — INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
4 2 3 — DETAIL REFERRED TO BY ELEVATION
T101 — SHEET DETAIL IS LOCATED ON

LINE TYPE KEY:

- NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
- NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE)
- NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
- EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK SHORT DASHED LINE)

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

1 HOUR FIRE BARRIER	
3 HOUR FIRE BARRIER	

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR

PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
AV	ACID VENT
AW	ACID WASTE
CA	COMPRESSED AIR
CW	COLD WATER - POTABLE
D	DRAIN
DI	DEIONIZED WATER
DT	DRAIN TILE
G	NATURAL GAS
GRV	GAS REGULATOR VENT
GSAN	SANITARY DRAINAGE (GREASE SANITARY DRAINAGE)
GV	GREASE VENT
HW	HOT WATER - POTABLE
HWC	HOT WATER CIRCULATING - POTABLE
HW140	HOT WATER - POTABLE NUMBER INDICATES TEMP
HWC140	HOT WATER CIRC. - POTABLE NUMBER INDICATES TEMP
IA	INSTRUMENT AIR
MA	MEDICAL AIR
MV	MEDICAL VACUUM
N	NITROGEN
NCW	NON-POTABLE COLD WATER
NHW	NON-POTABLE HOT WATER
NO	NITROUS OXIDE
OR	OIL RETURN
OS	OIL SUPPLY
O	OXYGEN
P	PROPANE GAS
PD	PUMPED DISCHARGE
PW	PURE WATER
RO	REVERSE OSMOSIS WATER
SAN	SANITARY DRAINAGE
SCW	SOFT COLD WATER
SHW	SOFT HOT WATER
ST(1,000)	STORM DRAINAGE (ROOF SQUARE FOOTAGE)
STS	STORM DRAINAGE (SECONDARY)
STW	SOFT TEMPERED WATER
TW	TEMPERED WATER
V	VENT
VAC	LAB VACUUM
W	SERVICE WATER - POTABLE
WAGD	WASTE ANETHESIA GAS DISPOSAL
	PIPE CONTINUATION
	PIPE CAP
	PIPE DOWN
	PIPE UP OR UP/DOWN
FD	PIPE SERVING FIXTURE ON FLOOR ABOVE (EXAMPLE: FD = FLOOR DRAIN)
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	ROUTE TO DRAIN
RD-1 6"(1000)	ROOF DRAIN PROPERTIES — SYMBOL; SIZE (ROOF SQ. FT.)
	NEW CONNECTION
	DIELECTRIC CONNECTION
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
GPM	BALANCING VALVE (NUMBER INDICATES GPM)
	CHECK VALVE
	SOLENOID VALVE
	SAFETY/RELIEF VALVE
	VACUUM BREAKER
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
T	TEMPERATURE SENSOR WITH WELL
T	THERMOMETER WITH WELL (DIAL TYPE)
	THERMOMETER WITH WELL (FILLED TYPE)
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	PUMP
M	METER
	ALIGNMENT GUIDE
	PIPE ANCHOR
	EXPANSION JOINT

PLUMBING ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BT	BATHTUB
CB	CATCH BASIN
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
DB	DIALYSIS BOX
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
E	EXISTING
EE	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
ESE	EMERGENCY SHOWER/EYEWASH
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
GD	GARBAGE DISPOSER
GI	GREASE INTERCEPTOR
HB	HOSE BIBB
I.E.	INVERT ELEVATION (FOR REFERENCE ONLY)
LAV	LAVATORY
MB	MOP BASIN
MH	MANHOLE
MV	MIXING VALVE
NC	NEW CONNECTION
NIC	NOT IN CONTRACT
NT	NEUTRALIZATION TANK
OS	OIL SEPARATOR
RD	ROOF DRAIN
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WATER HEATER
WMF	WASHING MACHINE FIXTURE
WM	WATER METER
WS	WATER SOFTENER
UB	UTILITY BOX
UNO	UNLESS NOTED OTHERWISE
YCO	YARD CLEANOUT

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY VA/COR OF ANY CONFLICTS WITH NEW WORK.
3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF HIS/HER WORK AND SHALL NOTIFY THE VA/CONTRACTING OFFICER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO HIS/HER AREA OF WORK.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
8. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
9. OBTAIN PERMISSION FROM VA/COR BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
10. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM VA/COR BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE.
11. REFER TO DIVISION 01 SPECIFICATIONS FOR PERFORMANCE OF WORK REQUIREMENTS FOR BUILDING OPERATION DURING CONSTRUCTION.

GENERAL SCOPE OF WORK (SOW) DESCRIPTION:

GENERAL

THE SCOPE OF WORK OF THIS PROJECT IS AN UPGRADE AND REPAIR OF THE BOILER HOUSE SYSTEMS, INCLUDING ELECTRICAL POWER DISTRIBUTION AND BACK UP POWER, NEW LIGHTING, ROOF REPAIRS, CEILING PAINTING, AND EVALUATION OF BUILDING MAKE-UP AIR.

DEDUCT ALTERNATES

THE CONTRACTOR SHALL PROVIDE ADJUSTMENTS TO BASE BID CONTRACT AMOUNT FOR THE FOLLOWING BID DEDUCT ALTERNATES. (INDICATE CLEARLY WHETHER THE AMOUNT FOR THE DEDUCT ALTERNATE IS AN INCREASE, DECREASE, OR NO CHANGE TO THE BASE BID AMOUNT.)

1. DEDUCT ALTERNATE NO.1 - "GENERATOR DEDUCT ALTERNATE": RETAIN EXISTING EMERGENCY GENERATOR, IN LIEU OF REMOVING EXISTING GENERATOR & PROVIDING NEW GENERATOR, GEN-SET #1. REMOVE EXISTING GENERATOR RADIATOR & PROVIDE NEW GENERATOR RADIATOR IN BOTH BASE BID & DEDUCT ALTERNATE #1. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. DEDUCT ALTERNATE NO.2 - "TRANSFORMER DEDUCT ALTERNATE": RETAIN EXISTING 500KVA 13.8 KV TRANSFORMER, IN LIEU OF REMOVING EXISTING TRANSFORMER & PROVIDING NEW 500KVA 13.8 KV TRANSFORMER. PROVIDE CONNECTION CABINET & ASSOCIATED CONCRETE PAD EXTENSION IF DEDUCT ALTERNATE #2 IS NOT ACCEPTED. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. DEDUCT ALTERNATE NO.3 - "MAKE-UP UNIT DEDUCT ALTERNATE": RETAIN EXISTING MAKE-UP AIR UNIT, ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING, IN LIEU OF PROVIDING NEW MAKE-UP AIR UNIT (MAU-1), ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. DEDUCT ALTERNATE NO.4 - "SWITCHBOARD DEDUCT ALTERNATE": RETAIN EXISTING 1600A SWITCHBOARD, IN LIEU OF REMOVING EXISTING SWITCHBOARD & PROVIDING NEW SWITCHBOARDS (7-MDP-EQ & 7-MDP). REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ENGINEERING DISCIPLINE REFERENCE NOTES

GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

PLUMBING GENERAL NOTES:

1. THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT.
2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.
3. CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES.
4. ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874
5. INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY ALL ELEVATIONS BEFORE BEGINNING WORK.
6. VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
7. REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES.
8. FOR CLARITY, NOT ALL VALVES HAVE BEEN SHOWN. PROVIDE SHUTOFF VALVES IN DOMESTIC WATER PIPING SERVING EACH ROOM WITH FIXTURES. ANGLE STOPS SHALL NOT BE CONSIDERED SHUTOFF VALVES.
9. EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL DEMOLITION INFORMATION.
10. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL INFORMATION.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE VA/COR BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
10. SEAL ALL WALL AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.
16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT.
17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.
18. CONTINUOUS AND UNINTERRUPTED OPERATIONS OF THE BOILER HOUSE ARE CRITICAL TO THE ACTIVITIES OF THE ST. CLOUD VA HEALTH CARE SYSTEM. UPON AWARD OF THE CONTRACT AND PRIOR TO STARTING ON-SITE ACTIVITIES THE CONTRACTOR WILL MEET WITH THE VA/COR TO DEVELOP AN UNDERSTANDING OF BOILER HOUSE OPERATIONS AND DEVELOP A PLAN FOR PERFORMING WORK IN PROXIMITY TO ONGOING OPERATIONS WITHOUT IMPEDING THEM. THE PLAN, TO BE APPROVED BY THE VA/COR, IS TO INCLUDE, BUT NOT BE LIMITED TO:
    A. THE MEANS & METHODS OF PROTECTING EXISTING AND INSTALLED EQUIPMENT DURING DEMOLITION AND CONSTRUCTION.
    B. SCHEDULE OF POWER INTERRUPTIONS TO EQUIPMENT AND UTILITIES.
    C. PROVISION FOR TEMPORARY POWER AS REQUIRED DURING INSTALLATION OF THE SWITCHGEAR, TRANSFORMER, AND EMERGENCY GENERATOR AS WELL AS FOR THE UNINTERRUPTED OPERATION OF THE EXISTING EMERGENCY/SECURITY SYSTEM.
    D. ACTIVATION OF NEW ELECTRICAL GEAR.
    E. ELECTRICAL OUTAGES THAT WILL REQUIRE A STEAM OUTAGE WILL BE SCHEDULED BETWEEN THE MONTHS OF MAY AND AUGUST. OUTAGES DURING APRIL AND SEPTEMBER WILL BE CONSIDERED BY THE VA/COR BASED ON WEATHER CONDITIONS AND CAMPUS HEAT LOAD.
    F. OTHER WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.

PLUMBING SHEET INDEX

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
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4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
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1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

CONSULTANTS

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3001 BROADWAY STREET NE, SUITE 601 MINNEAPOLIS, MN 55413
PH: 612.540.5000 www.imegcorp.com

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
700 Nicholas Blvd. Suite 300
Elk Grove Village, IL 60007
T: 847.952.9362 F: 847.952.9403
www.bancroft-aa.com
BAE PROJECT NO. 18-116

REFERENCE SCALE IN INCHES: 0 1 2 3

APPROVED: PROJECT COR — DATE
APPROVED: SERVICE LINE DIRECTOR — DATE
APPROVED: INFECTION CONTROL NURSE — DATE
APPROVED: GEME PROJECT MANAGER — DATE
APPROVED: PATIENT SAFETY — DATE
APPROVED: PROJECT'S SECTION MANAGER — DATE
APPROVED: CHIEF OF POLICE — DATE
APPROVED: DIRECTOR FMS — DATE
APPROVED: SAFETY MANAGER — DATE

Drawing Title 2: PLUMBING - COVER SHEET

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR — DATE
APPROVED: CHIEF OF STAFF — DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR — DATE

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS

DATE: 11/11/20
PLOT SCALE:
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO.: P000
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

U.S. Department of Veterans Affairs
Veterans Health Administration
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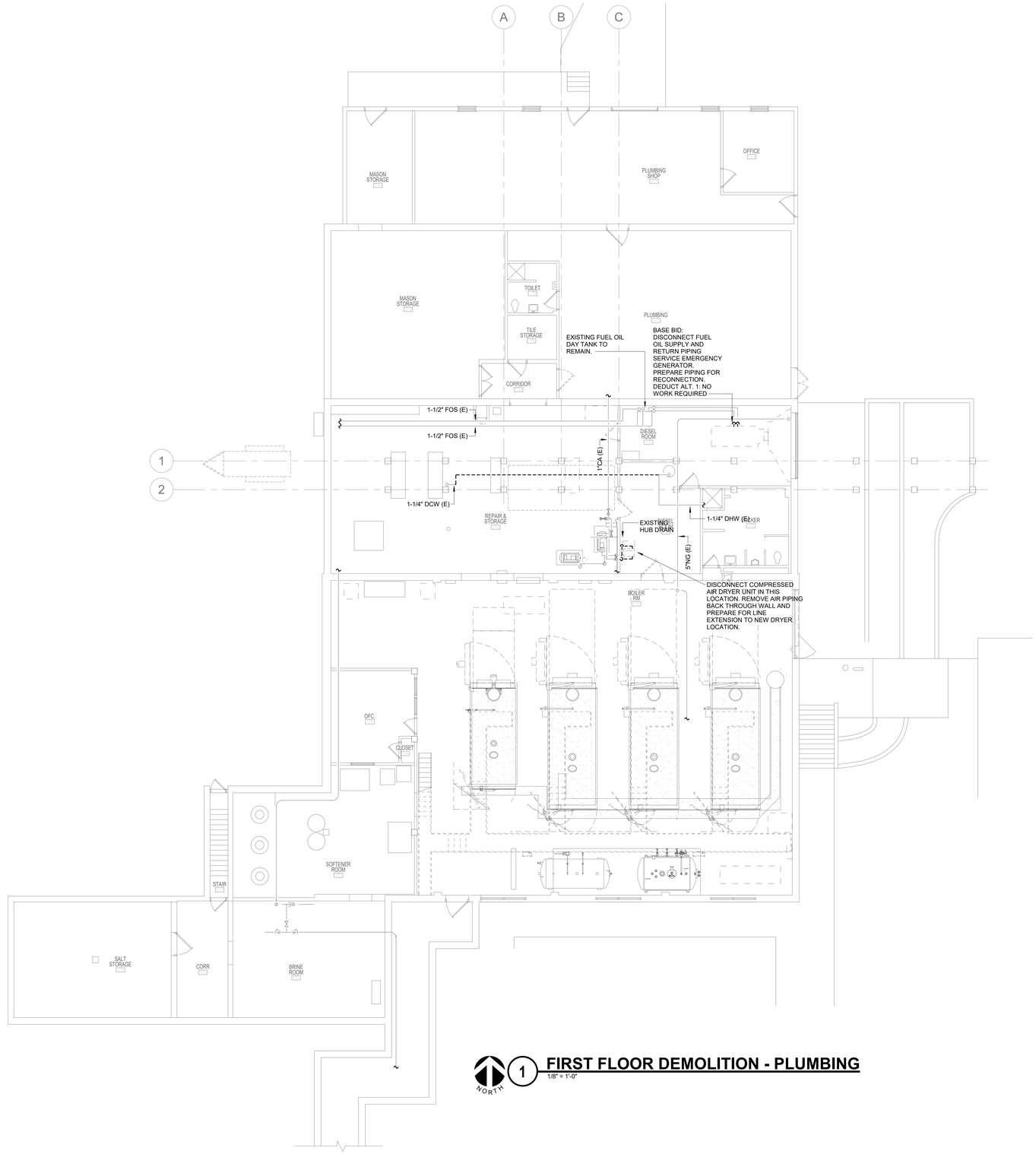

1 FIRST FLOOR DEMOLITION - PLUMBING

1/8" = 1'-0"

No	REVISION	DATE
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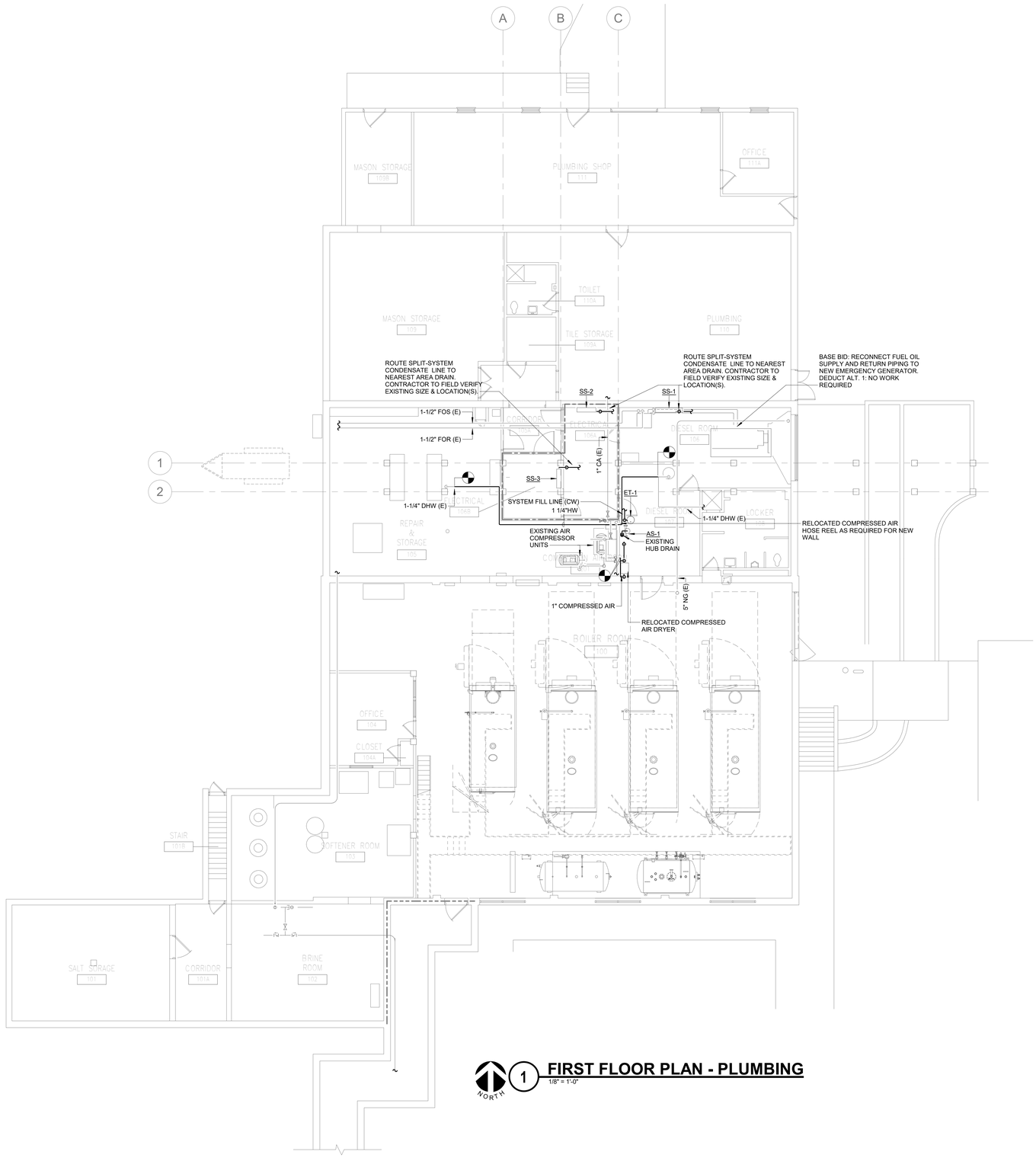
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: PD101
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System



1 FIRST FLOOR PLAN - PLUMBING

1/8" = 1'-0"

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

CONSULTANTS

PLUMBING, MECHANICAL & ELECTRICAL ENGINEERS: IMEG

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ARCHITECT/ENGINEER OF RECORD

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Elk Grove Village, IL 60007
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www.bancroft-ae.com
BAE PROJECT NO. 18-116

APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: DEMS PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECTS SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FMS DATE
APPROVED: SAFETY MANAGER DATE

DRAWING TITLE
PLUMBING -PLAN - FIRST FLOOR

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE
REPAIR / UPGRADE BOILER HOUSE SYSTEMS

DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: P101
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

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VIEW KEY

NAME — LEVEL NAME
10' - 0" — HEIGHT ABOVE PROJECT 0' - 0"

1 — INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

NORTH — INDICATES DIRECTION OF TRUE NORTH
1 — PLAN OR DETAIL NUMBER
VIEW NAME — PLAN OR DETAIL NAME
1/8" = 1'-0" — PLAN OR DETAIL SCALE

SIM — INDICATES SIMILAR DETAIL
1 — DETAIL REFERRED TO BY SECTION CUT
M101 — SHEET DETAIL IS LOCATED ON

SIM — INDICATES SIMILAR DETAIL
1 2 3 4 — DETAIL REFERRED TO BY ELEVATION
T101 — SHEET DETAIL IS LOCATED ON

LINE TYPE KEY:

- NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
- NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE)
- NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
- EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK SHORT DASHED LINE)

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

1 HOUR FIRE BARRIER	
3 HOUR FIRE BARRIER	

PIPING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LCS	LOW PRESSURE CLEAN STEAM
LIQ	REFRIGERANT LIQUID
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
	PIPE CAP
	PIPE DOWN
	PIPE UP OR UP/DOWN
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	NEW CONNECTION
	DIELECTRIC CONNECTION
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	THROTTLING VALVE
	BALANCING VALVE (NUMBER INDICATES GPM)
	AUTOMATIC BALANCING VALVE
	MIXING VALVE
	CONTROL VALVE (THREE-WAY)
	CONTROL VALVE (TWO-WAY)
	SOLENOID VALVE
	CHECK VALVE
	SAFETY/RELIEF VALVE
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	PRESSURE REDUCING VALVE (STEAM)
	TRIPLE DUTY VALVE (ANGLE TYPE)
	TRIPLE DUTY VALVE (IN-LINE TYPE)
	PUMP
	VACUUM BREAKER
	"WYE" - STRAINER
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP
	BASKET STRAINER
	FLEXIBLE CONNECTION
	PRESSURE/TEMPERATURE TEST PLUG
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	SUCTION DIFFUSER WITH SUPPORT FOOT
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	DRAIN VALVE WITH HOSE CONNECTION AND CAP
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
	DIFFERENTIAL PRESSURE SENSOR
SP	STATIC SWITCH
FM	FLOW METER
F	FLOW SWITCH
FS	FLOW SENSOR
T	THERMOSTAT
T	THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE
T	TEMPERATURE SENSOR
T TF	TEMPERATURE SENSOR WITH WELL
T TF	THERMOMETER WITH WELL (DIAL TYPE)
TF	THERMOMETER WITH WELL (FILLED TYPE)
T T.*	STEAM TRAP (REFER TO SCHEDULE)
T.*	F&T STEAM TRAP (REFER TO SCHEDULE)
T.*	INVERTED BUCKET STEAM TRAP (REFER TO SCHEDULE)

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY VA/COR OF ANY CONFLICTS WITH NEW WORK.
3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF HIS/HER WORK AND SHALL NOTIFY THE VA/CONTRACTING OFFICER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO HIS/HER AREA OF WORK.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
8. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
9. OBTAIN PERMISSION FROM VA/COR BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
10. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM VA/COR BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE.
11. REFER TO DIVISION 01 SPECIFICATIONS FOR PERFORMANCE OF WORK REQUIREMENTS FOR BUILDING OPERATION DURING CONSTRUCTION.

GENERAL SCOPE OF WORK (SOW) DESCRIPTION:

GENERAL

THE SCOPE OF WORK OF THIS PROJECT IS AN UPGRADE AND REPAIR OF THE BOILER HOUSE SYSTEMS, INCLUDING ELECTRICAL POWER DISTRIBUTION AND BACK UP POWER, NEW LIGHTING, ROOF REPAIRS, CEILING PAINTING, AND EVALUATION OF BUILDING MAKE-UP AIR.

DEDUCT ALTERNATES

THE CONTRACTOR SHALL PROVIDE ADJUSTMENTS TO BASE BID CONTRACT AMOUNT FOR THE FOLLOWING BID DEDUCT ALTERNATES. (INDICATE CLEARLY WHETHER THE AMOUNT FOR THE DEDUCT ALTERNATE IS AN INCREASE, DECREASE, OR NO CHANGE TO THE BASE BID AMOUNT.)

1. DEDUCT ALTERNATE NO.1 - "GENERATOR DEDUCT ALTERNATE": RETAIN EXISTING EMERGENCY GENERATOR, IN LIEU OF REMOVING EXISTING GENERATOR & PROVIDING NEW GENERATOR, GEN-SET #1. REMOVE EXISTING GENERATOR RADIATOR & PROVIDE NEW GENERATOR RADIATOR IN BOTH BASE BID & DEDUCT ALTERNATE #1. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. DEDUCT ALTERNATE NO.2 - "TRANSFORMER DEDUCT ALTERNATE": RETAIN EXISTING 500KVA 13.8 KV TRANSFORMER, IN LIEU OF REMOVING EXISTING TRANSFORMER & PROVIDING NEW 500KVA 13.8 KV TRANSFORMER. PROVIDE CONNECTION CABINET & ASSOCIATED CONCRETE PAD EXTENSION IF DEDUCT ALTERNATE #2 IS NOT ACCEPTED. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. DEDUCT ALTERNATE NO.3 - "MAKE-UP UNIT DEDUCT ALTERNATE": RETAIN EXISTING MAKE-UP AIR UNIT, ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING, IN LIEU OF PROVIDING NEW MAKE-UP AIR UNIT (MAU-1), ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. DEDUCT ALTERNATE NO.4 - "SWITCHBOARD DEDUCT ALTERNATE": RETAIN EXISTING 1600A SWITCHBOARD, IN LIEU OF REMOVING EXISTING SWITCHBOARD & PROVIDING NEW SWITCHBOARDS (7-MDP-EQ & 7-MDP). REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ENGINEERING DISCIPLINE REFERENCE NOTES

GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

PIPING GENERAL NOTES:

1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" UNLESS NOTED OTHERWISE.
2. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN.
3. INSTALL ALL REFRIGERANT LIQUID AND SUCTION PIPING SIZED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE VA/COR BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
10. SEAL ALL WALL AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.
16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT.
17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.
18. CONTINUOUS AND UNINTERRUPTED OPERATIONS OF THE BOILER HOUSE ARE CRITICAL TO THE ACTIVITIES OF THE ST. CLOUD VA HEALTH CARE SYSTEM. UPON AWARD OF THE CONTRACT AND PRIOR TO STARTING ON-SITE ACTIVITIES THE CONTRACTOR WILL MEET WITH THE VA/COR TO DEVELOP AN UNDERSTANDING OF BOILER HOUSE OPERATIONS AND DEVELOP A PLAN FOR PERFORMING WORK IN PROXIMITY TO ONGOING OPERATIONS WITHOUT IMPEDING THEM. THE PLAN, TO BE APPROVED BY THE VA/COR, IS TO INCLUDE, BUT NOT BE LIMITED TO:
    - A. THE MEANS & METHODS OF PROTECTING EXISTING AND INSTALLED EQUIPMENT DURING DEMOLITION AND CONSTRUCTION.
    - B. SCHEDULE OF POWER INTERRUPTIONS TO EQUIPMENT AND UTILITIES.
    - C. PROVISION FOR TEMPORARY POWER AS REQUIRED DURING INSTALLATION OF THE SWITCHGEAR, TRANSFORMER, AND EMERGENCY GENERATOR AS WELL AS FOR THE UNINTERRUPTED OPERATION OF THE EXISTING EMERGENCY/SECURITY SYSTEM.
    - D. ACTIVATION OF NEW ELECTRICAL GEAR.
    - E. ELECTRICAL OUTAGES THAT WILL REQUIRE A STEAM OUTAGE WILL BE SCHEDULED BETWEEN THE MONTHS OF MAY AND AUGUST. OUTAGES DURING APRIL AND SEPTEMBER WILL BE CONSIDERED BY THE VA/COR BASED ON WEATHER CONDITIONS AND CAMPUS HEAT LOAD.
    - F. OTHER WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.

PIPING SHEET INDEX

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DRAWING TITLE: PIPING - COVER SHEET

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
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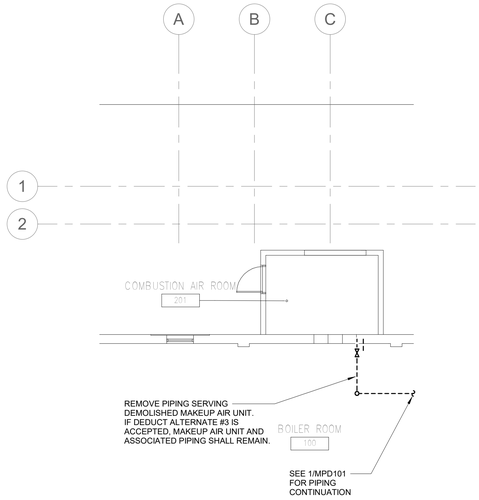
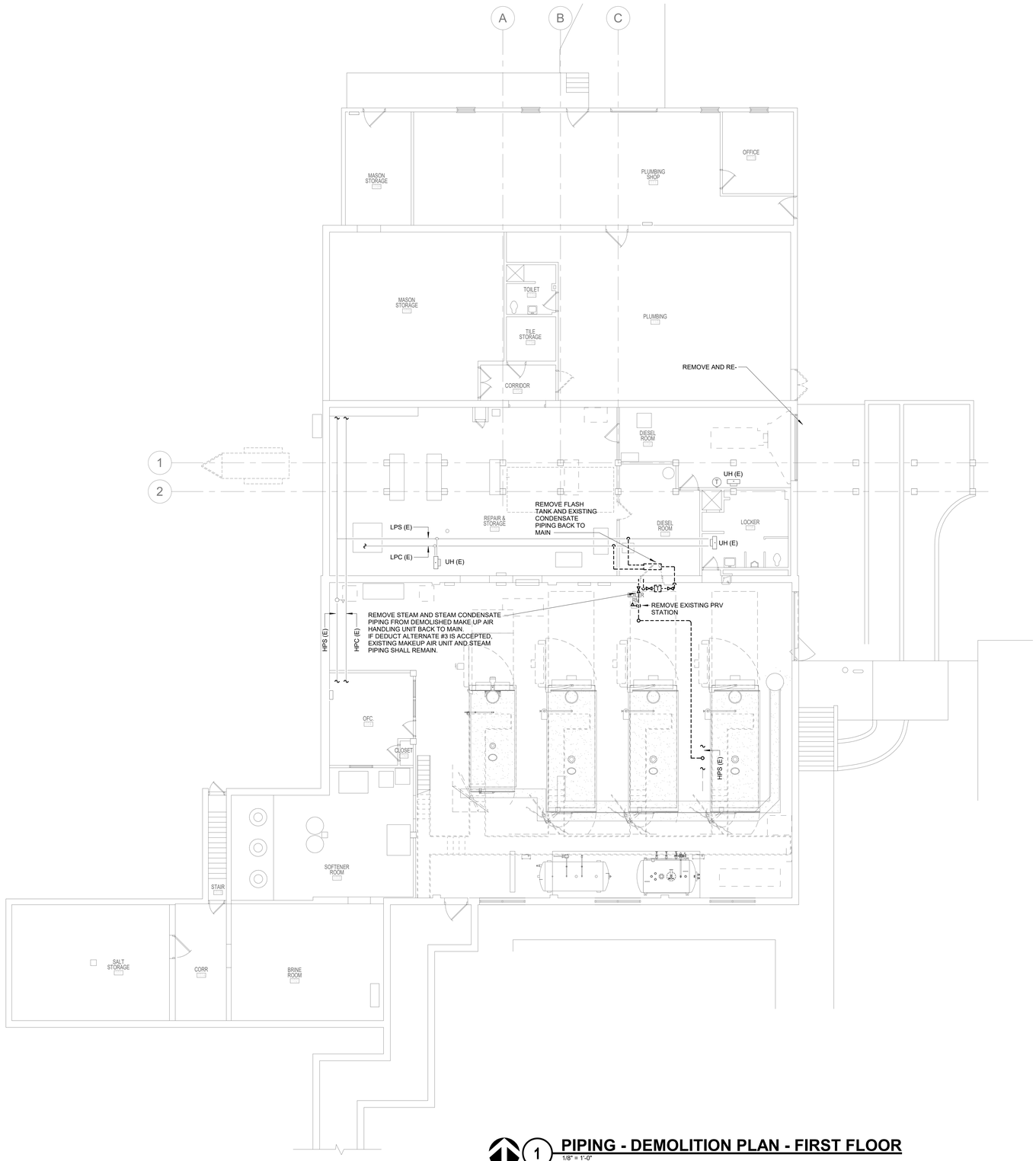


NORTH 2 **PIPING - DEMOLITION PLAN - MEZZANINE LEVEL**
1/8" = 1'-0"



NORTH 1 **PIPING - DEMOLITION PLAN - FIRST FLOOR**
1/8" = 1'-0"

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DRAWING TITLE: PIPING - DEMOLITION PLANS - FIRST FLOOR & MEZZANINE
APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR
DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

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DATE: 11/11/20
PLOT SCALE
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BUILDING No: 7
DESIGNED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: MPD101
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG OF

VA

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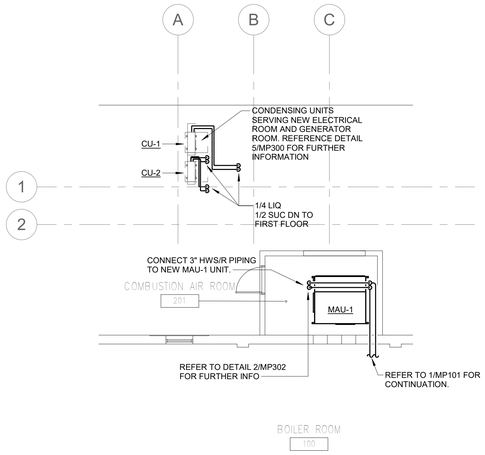
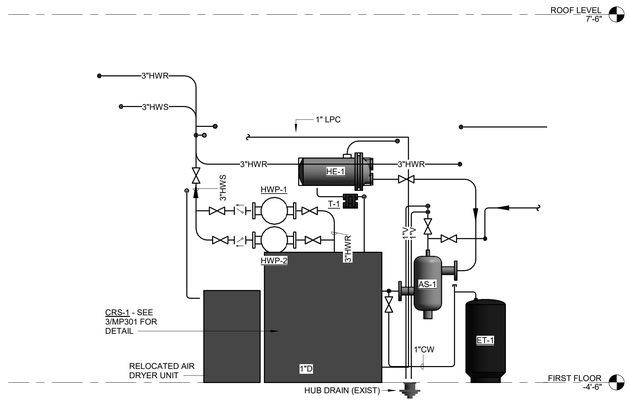
GENERAL SHEET NOTES :

1. REFER TO MP500 FOR HEAT EXCHANGER, HEATING WATER PUMP AND TRAP SCHEDULES.
2. IF DEDUCT ALTERNATE #3 IS ACCEPTED, HE-1, HWP-1 AND ALL ASSOCIATED PIPING AND EQUIPMENT SHALL NOT BE INSTALLED.



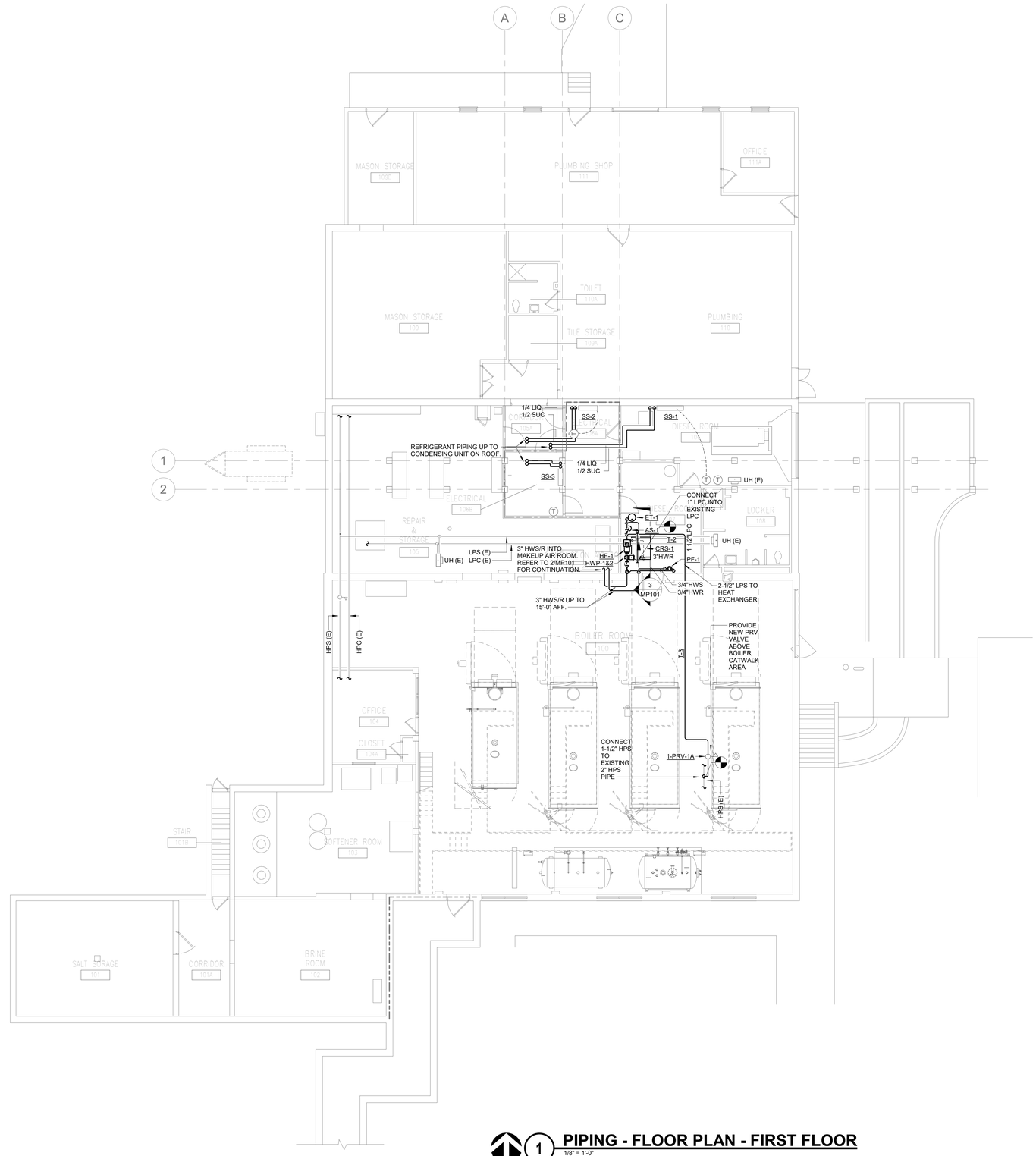
2 PIPING - MEZZANINE LEVEL PLAN

1/8" = 1'-0"



3 HYDRONIC EQUIPMENT - ENLARGED SECTION

1/2" = 1'-0"



1 PIPING - FLOOR PLAN - FIRST FLOOR

1/8" = 1'-0"

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BAE PROJECT NO. 18-116

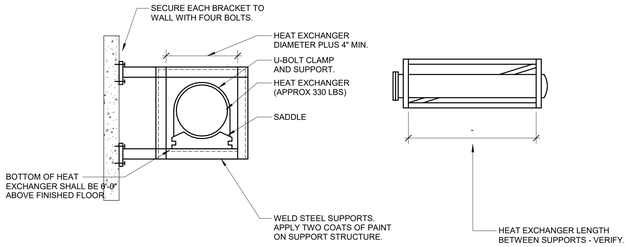
APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: GEMS PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECT SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FMS DATE
APPROVED: SAFETY MANAGER DATE

(Attached) TITLE
PIPING - PLANS - FIRST FLOOR & MEZZANINE

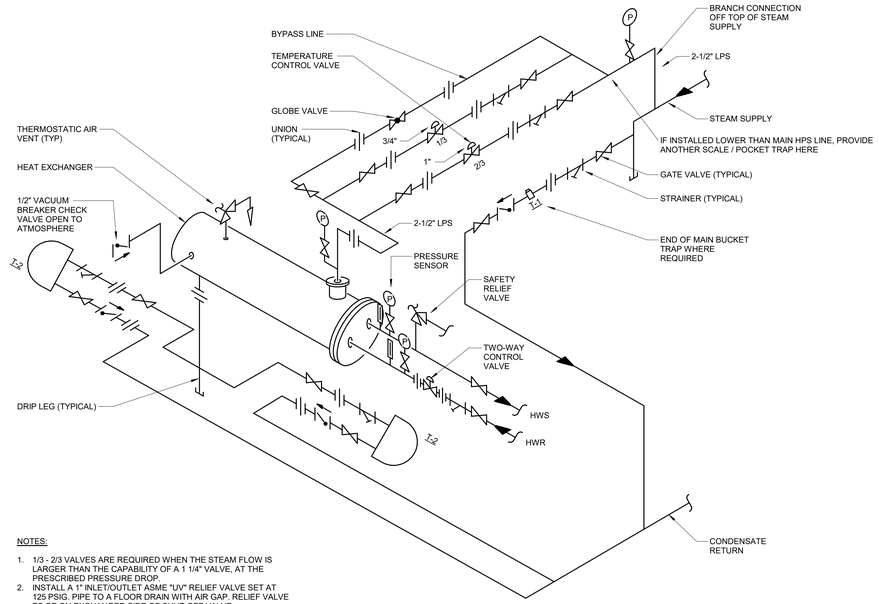
APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: MP101
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System



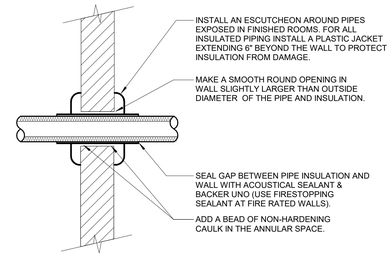
1 HEAT EXCHANGER SUPPORT DETAIL
NO SCALE



NOTES:

1. 1/3 - 2/3 VALVES ARE REQUIRED WHEN THE STEAM FLOW IS LARGER THAN THE CAPABILITY OF A 1 1/4" VALVE, AT THE PRESCRIBED PRESSURE DROP.
2. INSTALL A 1" INLET/OUTLET ASME "UV" RELIEF VALVE SET AT 125 PSIG. PIPE TO A FLOOR DRAIN WITH AIR GAP. RELIEF VALVE TO BE ON EXCHANGER SIDE OF SHUT-OFF VALVE.
3. BALL VALVE IN PIPING 2" AND SMALLER. BUTTERFLY VALVE IN PIPING ABOVE 2" (TYPICAL).
4. GLOBE VALVE TO BE ONE HALF THE SIZE OF LARGER TEMPERATURE CONTROL VALVE.
5. LINE SIZE TWO-POSITION MOTORIZED VALVE FOR ISOLATION AND BALANCING.
6. CONTRACTOR MUST VERIFY NUMBER OF HEAT EXCHANGERS AND APPLY THIS DETAIL TO EACH HEAT EXCHANGER.

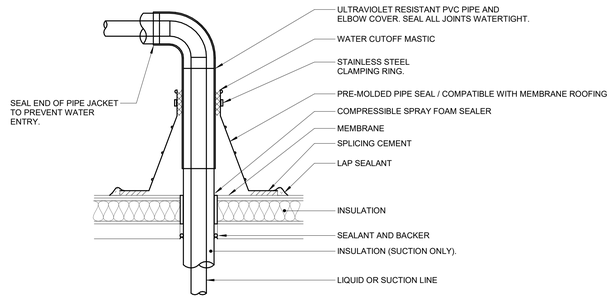
4 HEAT EXCHANGER PIPING DETAIL
NO SCALE



NOTES:

1. THIS DETAIL APPLIES TO ALL PIPES. MAINTAIN CONTINUOUS INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE TRANSMISSION CONTROL.
2. FLOOR OPENINGS ARE SIMILAR SEE SPECIFICATION SECTION (SECTION 22 05 29 - PLUMBING, SECTION 23 05 29 - HVAC) FOR DIFFERENCES BETWEEN FLOOR AND WALL PENETRATIONS.
3. SEE SPECIFICATION SECTIONS (SECTION 21 05 03 - FIRE PROTECTION, SECTION 22 05 03 - PLUMBING, SECTION 23 05 03 - HVAC) AND (SECTION 22 05 29 - PLUMBING, SECTION 23 05 29 - HVAC) FOR ADDITIONAL INFORMATION.

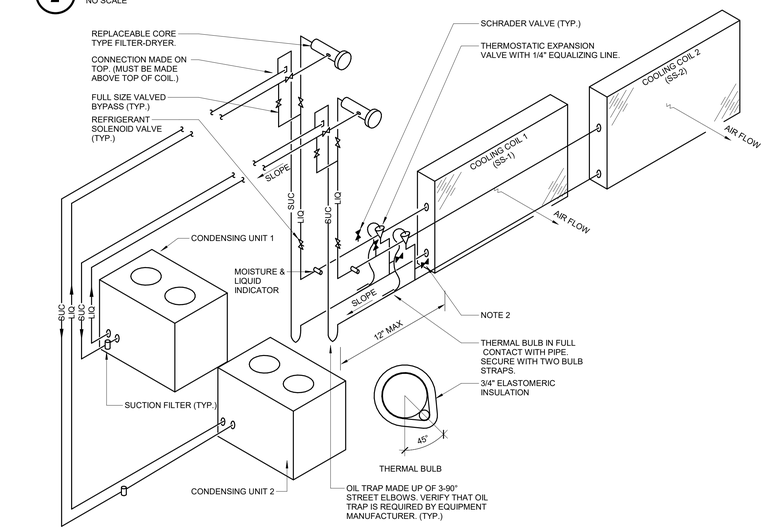
2 PIPE THROUGH NON-FIRE RATED WALL
NO SCALE



3 REFRIGERANT PIPING WEATHERPROOFING DETAIL
NO SCALE

NOTES:

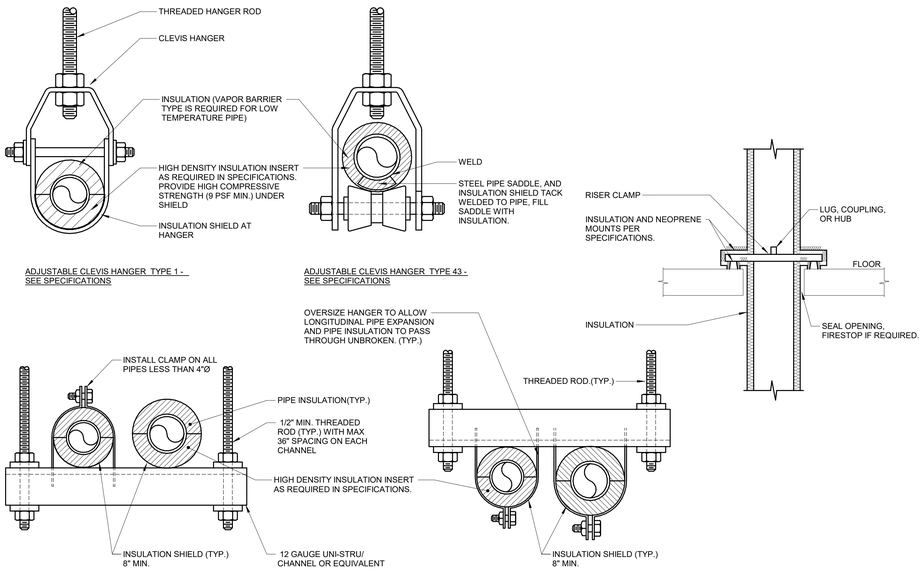
1. MASTIC, PIPE SEAL, AND CEMENT TO MATCH ROOFING SUPPLIERS REQUIREMENTS.



NOTES:

1. THIS DIAGRAM IS SCHEMATIC IN NATURE. UNIT MANUFACTURER SHALL SUBMIT DETAILED PIPING DIAGRAM SHOWING RECOMMENDED PIPING ARRANGEMENT IF DIFFERENT FROM ABOVE.
2. INSTALL 1/4" SCHRADER VALVES TO MEASURE REFRIGERANT PRESSURE WITH REFRIGERANT GAUGES.
3. PIPE SIZES, IF SHOWN ON DRAWINGS, ARE ONLY FOR THE CONVENIENCE OF THE BIDDERS. ACTUAL NUMBERS AND SIZES OF PIPES AND ANY ACCESSORIES SUCH AS ACCUMULATORS, RECEIVERS, SEPARATORS AND HEAT TRACING SHALL BE DETERMINED BY THE COIL SUPPLIER AND SUBMITTED AS SHOP DRAWINGS. NO ADDITIONAL COMPENSATION WILL BE MADE IF ACTUAL NUMBER OR SIZES OF PIPES EXCEED WHAT IS SHOWN.

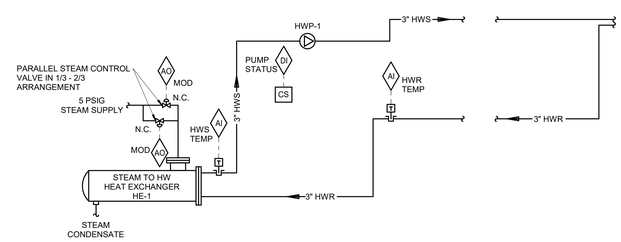
5 REFRIGERANT PIPING DETAIL (DOUBLE COIL)
12" = 1'-0"

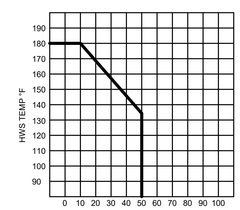


6 PIPE SUPPORT DETAILS
NO SCALE

NOTES:

1. REFER TO SPECIFICATION SECTIONS (SECTION 23 05 29-HVAC) & (SECTION 23 07 19-HVAC).





HWS TEMP RESET SCHEDULE

SEQUENCE OF OPERATION:
THE STEAM CONTROL VALVES SHALL MODULATE TO THE HEAT EXCHANGER AS REQUIRED TO MAINTAIN SYSTEM SUPPLY TEMP AS FOLLOWS:

- THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL BE MODULATED IN ORDER TO MAINTAIN THE HEATING WATER SUPPLY TEMPERATURE.
- IF THE 1/3 CAPACITY CONTROL VALVE IS 100% OPEN AND THE HEAT EXCHANGER IS UNABLE TO MAINTAIN SETPOINT, THE 1/3 CAPACITY CONTROL VALVE SHALL CLOSE AND THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT.
- IF THE 2/3 CAPACITY CONTROL VALVE IS 100% OPEN AND IS UNABLE TO MAINTAIN SETPOINT, THE 2/3 CAPACITY CONTROL VALVE SHALL REMAIN OPEN AND THE 1/3 CAPACITY CONTROL VALVE SHALL ALSO MODULATE OPEN TO MAINTAIN SETPOINT.
- ON A DECREASE IN LOAD, THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL REMAIN OPEN AND THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE CLOSED UNTIL SETPOINT IS ACHIEVED.
- ON A FURTHER DECREASE IN LOAD, THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL REMAIN SHUT AND THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE CLOSED UNTIL SETPOINT IS ACHIEVED OR UNTIL IT REACHES 40% (ADJ.) OPEN.
- IF THE 2/3 CAPACITY STEAM CONTROL VALVE REACHES 40% (ADJ.) OPEN AND SETPOINT IS STILL NOT ACHIEVED, THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL CLOSE AND THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE OPEN UNTIL SETPOINT IS ACHIEVED.

STEAM CONTROL VALVE OPERATION SHALL NOT BE ENABLED UNLESS THE HW PUMP IS RUNNING AS PROVEN BY MOTOR STATUS. FMCS SHALL LIMIT THE HWS TEMP TO MAX. 190°F (ADJ.).

HWS TEMP SETPOINT:
FMCS SHALL RESET THE HWS TEMP IN ACCORDANCE WITH HWS RESET SCHEDULE.

HEATING WATER PUMP CONTROL:
START/STOP: THE FMCS SHALL START THE PUMP AND SHALL RUN CONTINUOUSLY WHEN OUTSIDE AIR TEMPERATURE IS BELOW 55 DEGREES F. HEATING WATER PUMP SHALL BE STARTED AND STOPPED THROUGH A HAND-OFF-AUTO SWITCH. WHEN PLACED IN THE HAND POSITION, PUMP MOTOR SHALL RUN AT FULL SPEED CONTINUOUSLY. WHEN PLACED IN THE AUTO POSITION, THE FMCS SHALL CONTROL PUMP OPERATION. WHEN PLACED IN THE OFF POSITION, THE PUMP MOTOR SHALL BE DE-ENERGIZED.

ALARMS, INTERLOCKS & SAFETIES:
FMCS SHALL INDICATE AN ALARM TO THE FMCS OPERATOR WORKSTATION IN THE EVENT THE FOLLOWING OCCUR:

- SHOULD THE FMCS COMMAND THE HW PUMP TO OPERATE AND THE PUMP FAILS TO DO SO AS DETERMINED BY THE MOTOR STATUS, AN ALARM SHALL BE INDICATED AT THE FMCS OPERATOR WORKSTATION.
- WATER SUPPLY TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR MORE THAN 10 MINUTES (ADJ.).

7 HEATING CONTROL - HEAT EXCHANGER
NO SCALE

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

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APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
APPROVED: CHIEF OF STAFF DATE
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DATE: 11/11/20
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PROJECT NO.: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO.: MP300
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG OF

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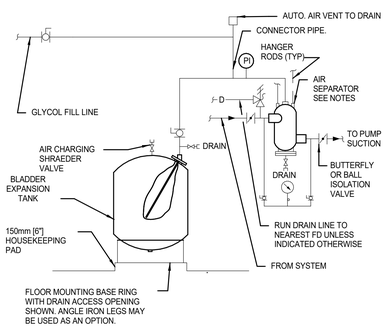
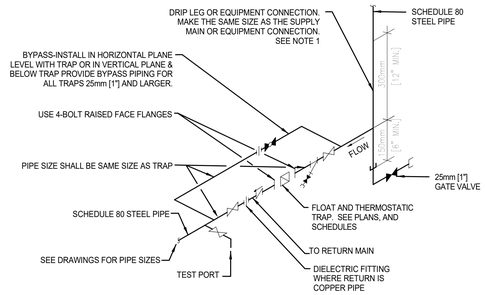
St. Cloud VA Health Care System



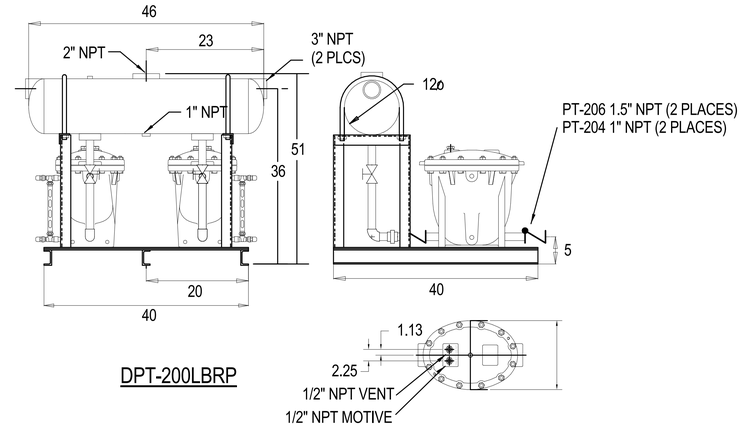
NOTES:
1. SEE EXPANSION TANK SYSTEM SCHEDULE FOR COMPONENT SIZES.
2. SET PRESSURE REDUCING VALVE SO PRESSURE AT HIGHEST POINT IN SYSTEM HAS A MINIMUM OF 28kPa [4 PSIG].
3. PROVIDE STRAINER IN AIR SEPARATOR IF INDICATED IN AIR SEPARATOR SCHEDULE.
4. RELIEF VALVE FOR CHILLED WATER SYSTEM IS SHOWN. OMIT WHEN RELIEF VALVE IS SHOWN ON HEAT EXCHANGER DETAIL AND SYSTEM IS USED ONLY FOR HOT WATER HEATING.

1 FLOOR MOUNTED EXPANSION TANK - PIPE CONNECTIONS
NO SCALE



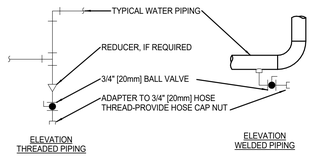
NOTE:
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A 300mm [12"] MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 150mm [6"] SCALE POCKET BELOW TRAP INLET.

2 FLOAT AND THERMOSTATIC STEAM TRAP ASSEMBLY
NO SCALE



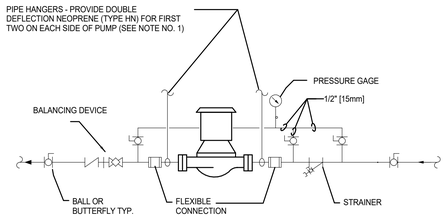
DPT-200LBRP

3 AIR PURGE CONDENSATE RETURN STATION - PIPING
NO SCALE



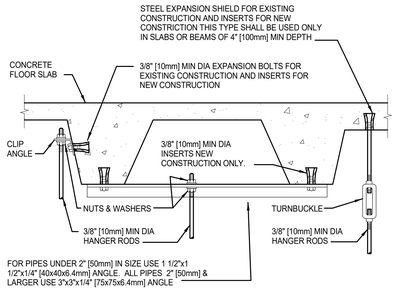
TYPICAL AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

NOTES:
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

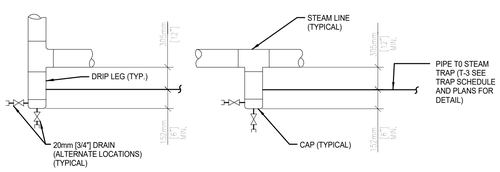


NOTES:
1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

5 IN-LINE PUMP CONNECTIONS
NO SCALE

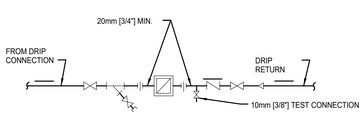


6 HANGER ROD CONCRETE MOUNTING DETAIL
NO SCALE



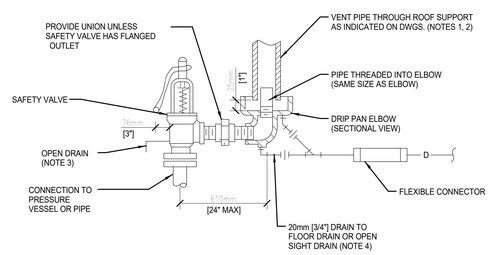
STEAM LINE DRIP POCKET

NOTE:
DRIP POCKET PIPE SIZE SAME AS STEAM MAIN UNLESS OTHERWISE NOTED.



STEAM TRAP ASSEMBLY

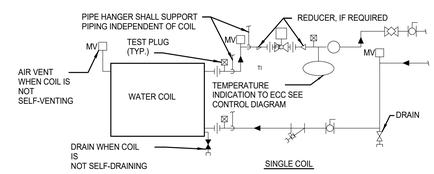
7 STEAM LINE DRIP POCKET AND STEAM TRAP ASSEMBLY
NO SCALE



ELEVATION

NOTES:
1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, SIZE THE VENT PIPE SO THAT STEAM IS NOT BLOWN OUT AT THE VENT PIPE ENTRANCE. UTILIZE THE CALCULATION METHOD CONTAINED IN ANSI B31.1. POWER PIPING CODE, APPENDIX II.
2. VENT PIPE SHALL TERMINATE 1829mm [6'] MIN. ABOVE FINISHED ROOF.
3. DISCHARGE OF DRAIN SHALL BE DIRECTED AWAY FROM PLATFORMS OR OTHER AREAS WHICH PERSONNEL MAY OCCUPY.
4. NO OTHER DRAIN SHALL BE CONNECTED TO THE DRIP PAN ELBOW DRAIN PIPE.

8 STEAM SAFETY VALVE
NO SCALE



SINGLE COIL

NOTES:
1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATORS THE FIRST 2 HANGERS FOR EACH PIPE SHALL BE SPRING & NEOPRENE TYPE. TYPE "H" FOR 100mm [4"]:: PIPE & SMALLER. TYPE "H-P" FOR 125mm [5"]:: PIPE & LARGER.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALES, OR EQUIPMENT.
3. THE FLOW ELEMENT MAY BE INSTALLED IN THE SUPPLY PIPING IF THE REQUIRED MINIMUM UPSTREAM AND DOWNSTREAM DIMENSIONS CANNOT BE OBTAINED IN THE RETURN PIPING.

9 WATER COILS - PIPE CONNECTIONS
NO SCALE

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

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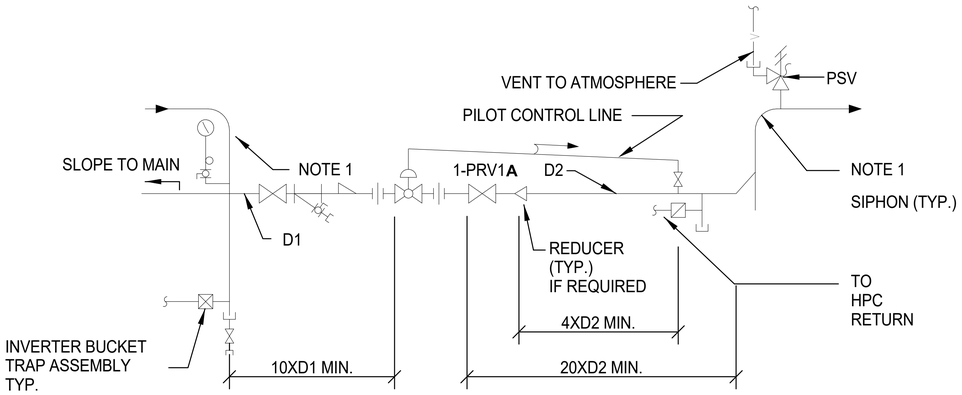
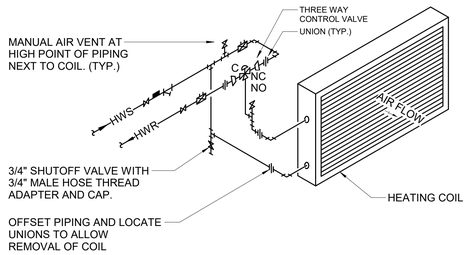


NOTES:

1. SEE FLOOR PLANS FOR PIPE SIZES.
2. SEE EQUIPMENT SCHEDULES FOR VALVE DATA AND PIPE SIZES D1. INSTALL VALVES AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE NECESSARY UNIONS FOR THE REMOVAL OF VALVE WITH SCREWED CONNECTIONS.
4. SLOPE PILOT CONTROL LINE FROM PRESSURE REDUCING VALVE TO DOWN STREAM STEAM PIPING. MIMIMUM SLOPE SHALL BE 25mm/300mm [1"/12"]

1 STEAM PRESSURE REDUCING STATION

1" = 1'-0"



NOTES:

1. SEE SPECIFICATION SECTION 23 21 00 - HYDRONIC PIPING FOR BALANCE VALVE SIZING REQUIREMENTS.

2 MAU-1 HOT WATER COIL PIPING (THREE WAY VALVE)

12" = 1'-0"

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St. Cloud VA Health Care System

PUMP SCHEDULE

NOTES:
1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.

TAG NAME	AREA SERVED	GPM	PUMP FT. HEAD AT DESIGN	MINIMUM PUMP EFFICIENCY	INLET SIZE	IMPELLER SIZE	ELECTRICAL (NOTE 1)								BASIS OF DESIGN		NOTES
							HP	RPM	VOLTAGE	PHASES	DISCONNECT		CONTROLLER/ STARTER		MANUFACTURER	MODEL	
											BY	TYPE	BY	TYPE			
HWP-1	MAU-1	85.0	13.00	51	2"	5.250	0.75	1405	208	3	EC	NF	EC	VFD	B & G	SERIES 80	
HWP-2	MAU-1	85.0	13.00	51	2"	5.250	0.75	1405	208	3	EC	NF	EC	VFD	B & G	SERIES 80	

HEAT EXCHANGER SCHEDULE - STEAM TO WATER

NOTES:
1.STEAM PRESSURE INDICATED IS THE PRESSURE AVAILABLE DOWNSTREAM OF THE CONTROL VALVE.
2. SYSTEM SHALL CONTAIN 30% PROPYLENE GLYCOL MIXTURE.

TAG NAME	AREA SERVED	WATER				STEAM (NOTE 1)		HEATING SURFACE FT²	FOULING FACTOR	MAX. DIMENSIONS		BASIS OF DESIGN		NOTES
		GPM	W.P.D. FT. HEAD	EWT °F	LWT °F	PSIG	LB/HR			LENGTH	DIAMETER	MANUFACTURER	MODEL	
HE-1	MAU-1	85.0	3.6	150	180	5	1250	55.3	0.0005	40"	10"	B & G	SU-104	

TRAP SCHEDULE

NOTES:
1.CAPACITY LISTED IS FOR EACH TRAP AND INCLUDES SAFETY FACTOR.
2.SUITABLE TO 125 PSIG, SIDE INLET & OUTLET, SS FLOAT MECHANISM AND VALVE, CAST IRON BODY, BALANCED PRESSURE THERMOSTATIC AIR VENT, ALL INTERNALS REPLACEABLE IN-LINE.
3.CAPACITY AT OTHER DIFFERENTIAL PRESSURES SHALL BE AT LEAST 525#/HR AT 10 PSID, AND 1080#/HR AT 75 PSID. 1/8" ORIFICE.
4.WITH INTEGRAL VACUUM BREAKER.

TAG NAME	AREA SERVED	TYPE	SAFETY FACTOR	SIZE	CAPACITY LB HR (NOTE 1)	PRESSURE DIFFERENTIAL (PSIG)	BASIS OF DESIGN		NOTES
							MANUFACTURER	MODEL	
T-1	HE-1	F & T	0	1"	1250	5	ARMSTRONG	125-A SERIES	NOTES 2, 3, 4
T-2	HE-1	INV. BUCKET	0	1-1/2"	1250	5	ARMSTRONG	200 - SERIES	NOTES 2, 3, 4

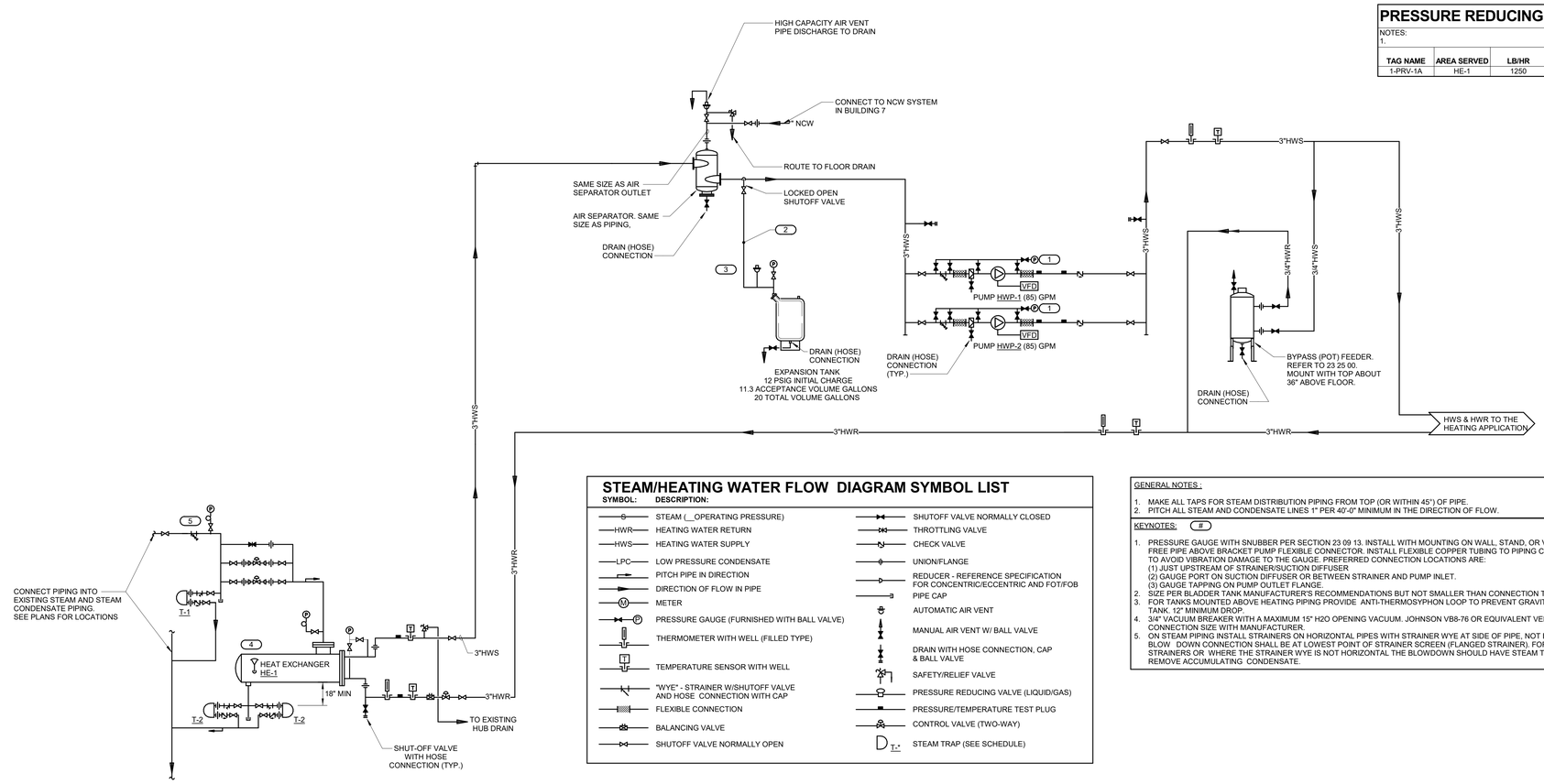
AIR SEPARATOR SCHEDULE

TAG NAME	AREA SERVED	GPM	DIAMETER	HEIGHT	MODEL	NOTES
AS-1	HE-1 / MEZZ	80 GPM	8.6	31.4	VDT 2-12	INCLUDE UNIT STRAINER

PRESSURE REDUCING VALVE SCHEDULE

NOTES:
1.

TAG NAME	AREA SERVED	LB/HR	INLET PRESSURE PSI	OUTLET PRESSURE PSI	VALVE SIZE	MANUFACTURER	MODEL	NOTES
1-PRV-1A	HE-1	1250	115	10	2"	SPENCE	-	



STEAM/HEATING WATER FLOW DIAGRAM SYMBOL LIST

SYMBOL:	DESCRIPTION:
S	STEAM (__OPERATING PRESSURE)
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPC	LOW PRESSURE CONDENSATE
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
M	METER
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
	THERMOMETER WITH WELL (FILLED TYPE)
T	TEMPERATURE SENSOR WITH WELL
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP
	FLEXIBLE CONNECTION
	BALANCING VALVE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	THROTTLING VALVE
	CHECK VALVE
	UNION/FLANGE
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	PIPE CAP
	AUTOMATIC AIR VENT
	MANUAL AIR VENT W/ BALL VALVE
	DRAIN WITH HOSE CONNECTION, CAP & BALL VALVE
	SAFETY/RELIEF VALVE
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	PRESSURE/TEMPERATURE TEST PLUG
	CONTROL VALVE (TWO-WAY)
T.*	STEAM TRAP (SEE SCHEDULE)

GENERAL NOTES :

1. MAKE ALL TAPS FOR STEAM DISTRIBUTION PIPING FROM TOP (OR WITHIN 45°) OF PIPE.
2. PITCH ALL STEAM AND CONDENSATE LINES 1" PER 40'-0" MINIMUM IN THE DIRECTION OF FLOW.

KEYNOTES: (#)

1. PRESSURE GAUGE WITH SNUBBER PER SECTION 23 09 13. INSTALL WITH MOUNTING ON WALL, STAND, OR VIBRATION-FREE PIPE ABOVE BRACKET PUMP FLEXIBLE CONNECTOR. INSTALL FLEXIBLE COPPER TUBING TO PIPING CONNECTIONS TO AVOID VIBRATION DAMAGE TO THE GAUGE. PREFERRED CONNECTION LOCATIONS ARE:
   (1) JUST UPSTREAM OF STRAINER/SUCTION DIFFUSER
   (2) GAUGE PORT ON SUCTION DIFFUSER OR BETWEEN STRAINER AND PUMP INLET.
   (3) GAUGE TAPPING ON PUMP OUTLET FLANGE.
2. SIZE PER BLADDER TANK MANUFACTURER'S RECOMMENDATIONS BUT NOT SMALLER THAN CONNECTION TO TANK.
3. FOR TANKS MOUNTED ABOVE HEATING PIPING PROVIDE ANTI-THERMOSYPHON LOOP TO PREVENT GRAVITY HEATING OF TANK. 12" MINIMUM DROP.
4. 3/4" VACUUM BREAKER WITH A MAXIMUM 15" H2O OPENING VACUUM. JOHNSON VB8-76 OR EQUIVALENT VERIFY CONNECTION SIZE WITH MANUFACTURER.
5. ON STEAM PIPING INSTALL STRAINERS ON HORIZONTAL PIPES WITH STRAINER WYE AT SIDE OF PIPE, NOT BOTTOM. BLOW DOWN CONNECTION SHALL BE AT LOWEST POINT OF STRAINER SCREEN (FLANGED STRAINER). FOR LARGE STRAINERS OR WHERE THE STRAINER WYE IS NOT HORIZONTAL THE BLOWDOWN SHOULD HAVE STEAM TRAP TO REMOVE ACCUMULATING CONDENSATE.

2 STEAM-HEATING WATER FLOW DIAGRAM

NO SCALE

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

CONSULTANTS

PLUMBING, MECHANICAL & ELECTRICAL ENGINEERS: IMEG

IMEG
3001 BROADWAY STREET NE, SUITE 601 MINNEAPOLIS, MN 55413
PH: 612.540.5000 www.imegcorp.com

REFERENCE SCALE IN INCHES 0 1 2 3

ARCHITECT/ENGINEER OF RECORD

BANCROFT ARCHITECTS + ENGINEERS
700 Nicholas Blvd. Suite 300
Elk Grove Village, IL 60007
T: 847.952.9342 F: 847.952.9403
www.bancroft-aa.com
BAE PROJECT NO. 18-116

APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: GEMI PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECT SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FMS DATE
APPROVED: SAFETY MANAGER DATE

Attachment VII-F
PIPING - SCHEDULES & DIAGRAMS

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: MP500
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

VIEW KEY

NAME — LEVEL NAME
10' - 0" — HEIGHT ABOVE PROJECT 0' - 0"

1 — INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

NORTH

1 VIEW NAME — 1/8" = 1'-0"

- INDICATES DIRECTION OF TRUE NORTH
- PLAN OR DETAIL NUMBER
- PLAN OR DETAIL NAME
- PLAN OR DETAIL SCALE

SIM — M101

- INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
- DETAIL REFERRED TO BY SECTION CUT
- SHEET DETAIL IS LOCATED ON

SIM — 4 2 3 — T101

- INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
- DETAIL REFERRED TO BY ELEVATION
- SHEET DETAIL IS LOCATED ON

LINE TYPE KEY:

- NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
- NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE)
- NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
- EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK SHORT DASHED LINE)

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

1 HOUR FIRE BARRIER	
3 HOUR FIRE BARRIER	

MECHANICAL ABBREVIATION KEY

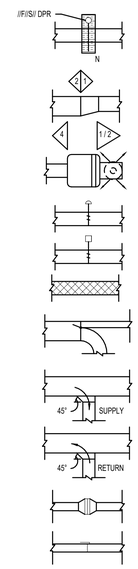
ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
C	COMMON
CO	CLEANOUT
CD-E	CEILING DIFFUSER - EXISTING
CFSD	CONTROL/FIRE/SMOKE DAMPER
DPG (0-2")	DIFFERENTIAL PRESSURE GAUGE (RANGE)
DPS	DIFFERENTIAL PRESSURE SWITCH
EA	EXHAUST/RELIEF AIR
ECFSD	EXISTING CONTROL FIRE SMOKE DAMPER
EFD	EXISTING FIRE DAMPER
EFSD	EXISTING FIRE SMOKE DAMPER
EP	ELECTRICAL TO PNEUMATIC VALVE
ESD	EXISTING SMOKE DAMPER
FD	FIRE DAMPER
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FSD	FIRE/SMOKE DAMPER
MA	MIXED AIR
MV	MIXING VALVE
NC	NEW CONNECTION
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
OA	OUTSIDE AIR
PS	PRESSURE SWITCH
RA	RETURN AIR
SA	SUPPLY AIR
SD	SMOKE DAMPER
TAB	TERMINAL AIR BOX
TD	TRANSFER DUCT
TYP	TYPICAL
UC-1	DOOR UNDERCUT BY OTHERS (1" TYPICAL)
UNO	UNLESS NOTED OTHERWISE

MECHANICAL SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
LIQ	REFRIGERANT LIQUID
SUC	REFRIGERANT SUCTION
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
	PIPE CAP
	PIPE DOWN
	PIPE UP OR UP/DOWN
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	NEW CONNECTION
	DIELECTRIC CONNECTION
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	THROTTLING VALVE
	BALANCING VALVE (NUMBER INDICATES GPM)
	AUTOMATIC BALANCING VALVE
	MIXING VALVE
	CONTROL VALVE (THREE-WAY)
	CONTROL VALVE (TWO-WAY)
	SOLENOID VALVE
	CHECK VALVE
	SAFETY/RELIEF VALVE
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	PRESSURE REDUCING VALVE (STEAM)
	TRIPLE DUTY VALVE (ANGLE TYPE)
	TRIPLE DUTY VALVE (IN-LINE TYPE)
	PUMP
	VACUUM BREAKER
	"WYE" - STRAINER
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP
	BASKET STRAINER
	FLEXIBLE CONNECTION
	PRESSURE/TEMPERATURE TEST PLUG
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	SUCTION DIFFUSER WITH SUPPORT FOOT
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	DRAIN VALVE WITH HOSE CONNECTION AND CAP
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
T T-*	STEAM TRAP (REFER TO SCHEDULE)
D T-*	F&T STEAM TRAP (REFER TO SCHEDULE)

DUCTWORK SYMBOLS



- //FIRE//SMOKE// DAMPER (VA DOES NOT ALLOW COMBINATION FIRE/SMOKE DAMPERS.)
- POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS. THE NUMBER ASSIGNS PRESSURE CLASS (IN. OF WATER) WHICH WILL ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SUBSECTION. THE SYMBOL CONTINUES THE ASSIGNMENT UNTIL THE DUCT TERMINATES OR ANOTHER SYMBOL APPEARS. A "N" SUPERSCRIPT INDICATES NEGATIVE PRESSURE.
- AUTOMATIC CONTROL DAMPER MODULATING
- AUTOMATIC CONTROL DAMPER TWO POSITION
- STAINLESS STEEL DUCT
- MANUAL SPLITTER DAMPER
- STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)
- DUCT MOUNTED COIL (HOT WATER OR STEAM COIL)
- DUCT MOUNTED COIL (ELECTRIC)

MECHANICAL SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
	DIRECTION OF AIR FLOW
	FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
R	RISE IN DIRECTION OF AIR FLOW
D	DROP IN DIRECTION OF AIR FLOW
	DUCT CAP
	DUCT DOWN
	DUCT UP
CD-1 6/115	AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM
T	THERMOSTAT/SENSOR
T	TEMPERATURE SENSOR WITH WELL
T	THERMOMETER WITH WELL (DIAL TYPE)
	THERMOMETER WITH WELL (FILLED TYPE)

GENERAL SCOPE OF WORK (SOW) DESCRIPTION:

GENERAL

THE SCOPE OF WORK OF THIS PROJECT IS AN UPGRADE AND REPAIR OF THE BOILER HOUSE SYSTEMS, INCLUDING ELECTRICAL POWER DISTRIBUTION AND BACK UP POWER, NEW LIGHTING, ROOF REPAIRS, CEILING PAINTING, AND EVALUATION OF BUILDING MAKE-UP AIR.

DEDUCT ALTERNATES

THE CONTRACTOR SHALL PROVIDE ADJUSTMENTS TO BASE BID CONTRACT AMOUNT FOR THE FOLLOWING BID DEDUCT ALTERNATES. (INDICATE CLEARLY WHETHER THE AMOUNT FOR THE DEDUCT ALTERNATE IS AN INCREASE, DECREASE, OR NO CHANGE TO THE BASE BID AMOUNT.)

1. DEDUCT ALTERNATE NO.1 - "GENERATOR DEDUCT ALTERNATE": RETAIN EXISTING EMERGENCY GENERATOR, IN LIEU OF REMOVING EXISTING GENERATOR & PROVIDING NEW GENERATOR. GEN-SET #1. REMOVE EXISTING GENERATOR RADIATOR & PROVIDE NEW GENERATOR RADIATOR IN BOTH BASE BID & DEDUCT ALTERNATE #1. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. DEDUCT ALTERNATE NO.2 - "TRANSFORMER DEDUCT ALTERNATE": RETAIN EXISTING 500KVA 13.8 KV TRANSFORMER, IN LIEU OF REMOVING EXISTING TRANSFORMER & PROVIDING NEW 500KVA 13.8 KV TRANSFORMER. PROVIDE CONNECTION CABINET & ASSOCIATED CONCRETE PAD EXTENSION IF DEDUCT ALTERNATE #2 IS NOT ACCEPTED. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.

3. DEDUCT ALTERNATE NO.3 - "MAKE-UP UNIT DEDUCT ALTERNATE": RETAIN EXISTING MAKE-UP AIR UNIT, ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING, IN LIEU OF PROVIDING NEW MAKE-UP AIR UNIT (MAU-1), ASSOCIATED DUCTWORK & LOUVER, AND RELATED SYSTEM PIPING. REFER TO DRAWINGS & SPECIFICATIONS FOR ADDITIONAL INFORMATION.

4. DEDUCT ALTERNATE NO.4 - "SWITCHBOARD DEDUCT ALTERNATE": RETAIN EXISTING 1600A SWITCHBOARD, IN LIEU OF REMOVING EXISTING SWITCHBOARD & PROVIDING NEW SWITCHBOARDS (7-MDP-EQ & 7-MDP). REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE VA/COR BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
10. SEAL ALL WALL AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.
16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT.
17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.
18. CONTINUOUS AND UNINTERRUPTED OPERATIONS OF THE BOILER HOUSE ARE CRITICAL TO THE ACTIVITIES OF THE ST. CLOUD VA HEALTH CARE SYSTEM. UPON AWARD OF THE CONTRACT AND PRIOR TO STARTING ON-SITE ACTIVITIES THE CONTRACTOR WILL MEET WITH THE VA/COR TO DEVELOP AN UNDERSTANDING OF BOILER HOUSE OPERATIONS AND DEVELOP A PLAN FOR PERFORMING WORK IN PROXIMITY TO ONGOING OPERATIONS WITHOUT IMPEDING THEM. THE PLAN, TO BE APPROVED BY THE VA/COR, IS TO INCLUDE, BUT NOT BE LIMITED TO:
   - A. THE MEANS & METHODS OF PROTECTING EXISTING AND INSTALLED EQUIPMENT DURING DEMOLITION AND CONSTRUCTION.
   - B. SCHEDULE OF POWER INTERRUPTIONS TO EQUIPMENT AND UTILITIES.
   - C. PROVISION FOR TEMPORARY POWER AS REQUIRED DURING INSTALLATION OF THE SWITCHGEAR, TRANSFORMER, AND EMERGENCY GENERATOR AS WELL AS FOR THE UNINTERRUPTED OPERATION OF THE EXISTING EMERGENCY/SECURITY SYSTEM.
   - D. ACTIVATION OF NEW ELECTRICAL GEAR.
   - E. ELECTRICAL OUTAGES THAT WILL REQUIRE A STEAM OUTAGE WILL BE SCHEDULED BETWEEN THE MONTHS OF MAY AND AUGUST. OUTAGES DURING APRIL AND SEPTEMBER WILL BE CONSIDERED BY THE VA/COR BASED ON WEATHER CONDITIONS AND CAMPUS HEAT LOAD.
   - F. OTHER WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS.

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY VA/COR OF ANY CONFLICTS WITH NEW WORK.
3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF HIS/HER WORK AND SHALL NOTIFY THE VA/CONTRACTING OFFICER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO HIS/HER AREA OF WORK.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
8. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
9. OBTAIN PERMISSION FROM VA/COR BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
10. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM VA/COR BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE.
11. REFER TO DIVISION 01 SPECIFICATIONS FOR PERFORMANCE OF WORK REQUIREMENTS FOR BUILDING OPERATION DURING CONSTRUCTION.

PIPING GENERAL NOTES:

1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" UNLESS NOTED OTHERWISE.
2. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN.
3. INSTALL ALL REFRIGERANT LIQUID AND SUCTION PIPING SIZED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.

VENTILATION GENERAL NOTES:

1. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO EACH OTHER.
2. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT.
3. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS.
4. CONTRACTOR MAY REUSE PORTIONS OF EXISTING DUCT PROVIDED SIZES AND PRESSURE CLASSES ARE CORRECT. DUCT IS THOROUGHLY CLEANED AND FREE OF DEFECTS, AND ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS ARE SEALED AS SPECIFIED FOR NEW DUCTWORK.

TAB POST-CONSTRUCTION NOTES:

1. AFTER CONSTRUCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND BALANCING CONTRACTOR SHALL REBALANCE AIR HANDLING UNITS AND EXHAUST FANS AS REQUIRED TO ACHIEVE THE NEW AIRFLOW VALUES SHOWN ON THE CONSTRUCTION DRAWINGS.
2. TAB CONTRACTOR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-CONSTRUCTION TAB REPORT AS REQUIRED BY SECTION 23 05 93.
3. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE SPECIFICATIONS.

MECHANICAL SHEET INDEX

ENGINEERING DISCIPLINE REFERENCE NOTES

GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.

EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

CONSULTANTS

PLUMBING, MECHANICAL & ELECTRICAL ENGINEERS: IMEG

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PH: 612.540.5000 www.imegcorp.com

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www.bancroft-ae.com
BAE PROJECT NO. 18-116

APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: GEMS PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECT'S SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FMS DATE
APPROVED: SAFETY MANAGER DATE

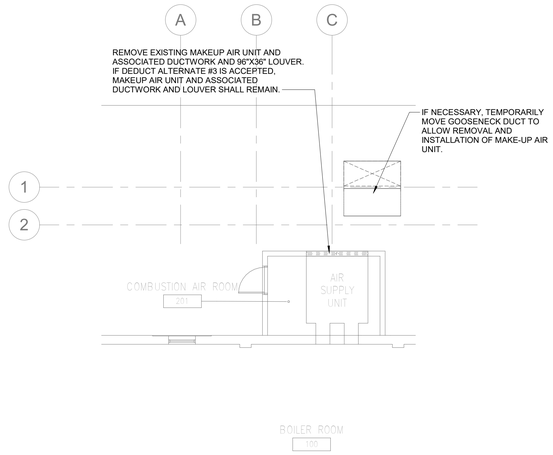
Drawing TITLE: MECHANICAL - COVER SHEET

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS

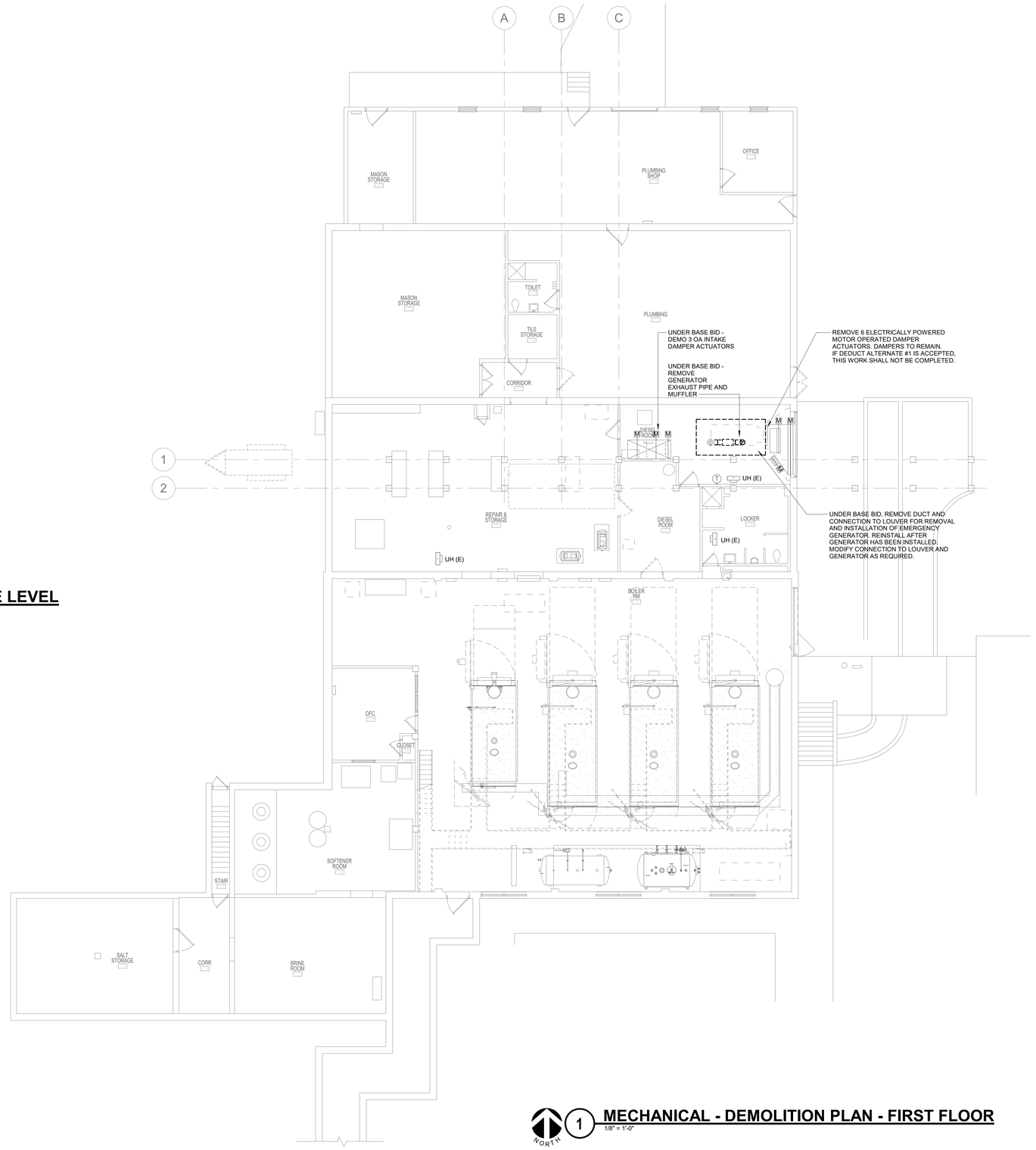
DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO.: M000
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System



2 MECHANICAL - DEMOLITION PLAN - MEZZANINE LEVEL

1/8" = 1'-0"



1 MECHANICAL - DEMOLITION PLAN - FIRST FLOOR

1/8" = 1'-0"

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APPROVED: SAFETY MANAGER DATE

DRAWING TITLE: MECHANICAL - DEMOLITION PLANS - 1ST FLOOR & MEZZ

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
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DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7
DESIGNED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: MD101
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG OF

VA

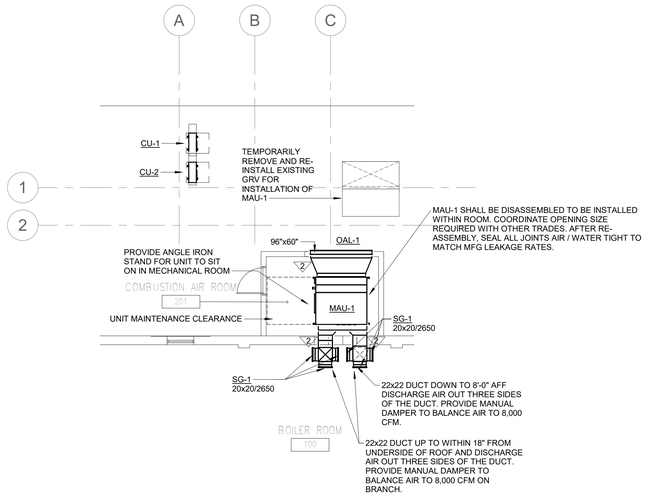
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

GENERAL SHEET NOTES :

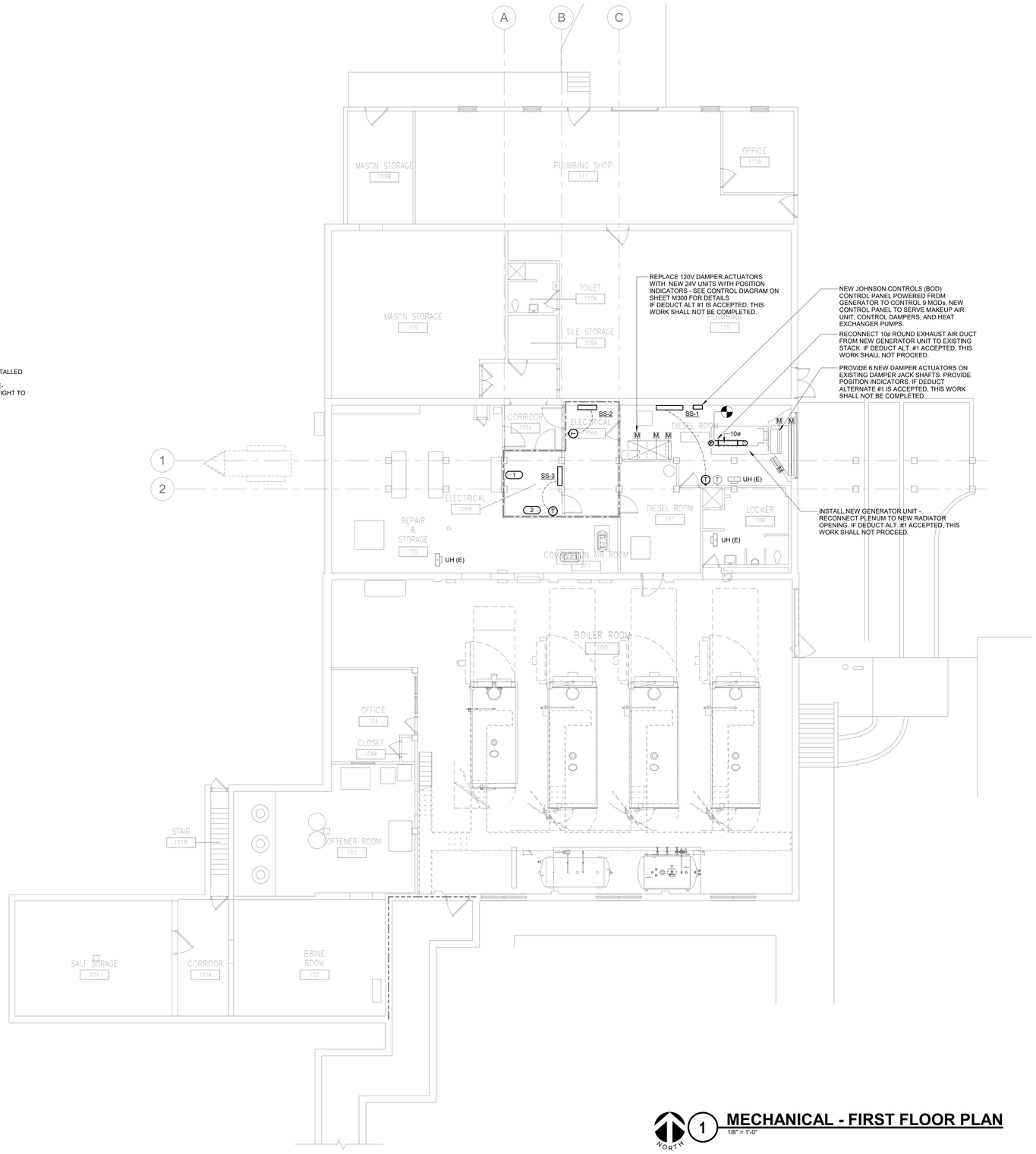
1. REFER TO M500 EQUIPMENT SCHEDULES.
2. IF DEDUCT ALTERNATE #3 IS ACCEPTED, MAU-1 AND ASSOCIATED DUCTWORK SHALL NOT BE INSTALLED.

KEYED NOTES :

1. PROVIDE DDC CONNECTION TO STANDBY AND NORMAL POWER MONITORS LOCATED IN SE CORNER (NORMAL) AND ELECTRICAL ROOM (STANDBY). SEE SPECIFICATION SECTION 251010 FOR POINTS REQUIRED. ALL ALARMS SHALL BE CONNECTED TO THE BAS SYSTEM.
2. PROVIDE DDC CONNECTION FOR STATUS OF LOCKOUT RELAY IN 7-ATS-EQ.



NORTH 2 **MECHANICAL - MEZZANINE LEVEL PLAN**
1/8" = 1'-0"



NORTH 1 **MECHANICAL - FIRST FLOOR PLAN**
1/8" = 1'-0"

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PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS

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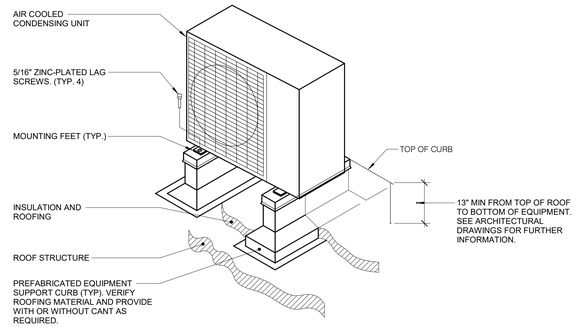
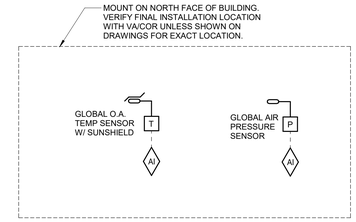


1 CONDENSING UNIT ROOF SUPPORT

NO SCALE

NOTES:

1. VERIFY DIAMETER OF ANCHOR BOLT REQUIRED TO FIT WITHIN MOUNTING FEET ANCHOR HOLES.



SEQUENCE OF OPERATION:
PROVIDE GLOBAL O.A. DRY-BULB TEMPERATURE AND OUTSIDE AIR REFERENCE PRESSURE TRANSMITTERS.

OUTSIDE AIR PRESSURE SENSORS SHALL BE INSTALLED ON ALL FOUR SIDES OF THE BUILDING AND PIPED WITH EQUAL LENGTHS OF 1/4" TUBING TO A PIPE MANIFOLD. PIPING BY TCC. LOCATIONS TO BE DETERMINED PER MANUFACTURER'S RECOMMENDATIONS AND ENGINEER'S APPROVAL. TCC SHALL PRIME AND PAINT THE DEVICE ENCLOSURE.

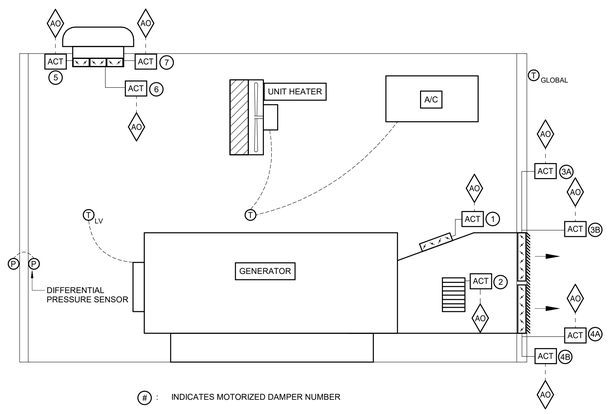
GLOBAL SENSORS SHALL CONTINUOUSLY UPDATE FMCS FOR USE IN CONTROLLING MECHANICAL EQUIPMENT AS REQUIRED IN SEQUENCES OF OPERATION.

2 GLOBAL REFERENCE POINTS

NO SCALE

MAU REPORT GENERATION:
DDC FMCS SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 14-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL AUTOMATICALLY OVERWRITE THE OLDEST VALUES:

PROVIDED BY PACKAGED MANUFACTURER THROUGH GATEWAY TO FMCS:	PROVIDED BY FMCS POINTS AND SYSTEM:
• BLOWER STATUS (ON/OFF)	• DATE • TIME • GLOBAL OUTSIDE AIR TEMPERATURE (°F) • GLOBAL AIR PRESSURE (IN. W.C.) • DISCHARGE AIR TEMP (DAT) (°F) • DAT SETPOINT (°F) • SUPPLY AIRFLOW [CFM] • SPACE AIR TEMP (°F)



SEQUENCE OF OPERATION:

GENERATOR IS OFF:
- SPACE THERMOSTAT THRU BUILDING AUTOMATION SYSTEM (BAS) SHALL OPERATE UNIT HEATER ON A CALL FOR HEAT TO MAINTAIN SETPOINT OF 80°F (ADJ.). UNIT HEATER SHALL BE OFF WHEN THE OA TEMP IS ABOVE 70°F (ADJ.).
- SPACE THERMOSTAT THRU BUILDING AUTOMATION SYSTEM (BAS) SHALL OPERATE ROOM AIR CONDITIONING UNIT ON A CALL FOR COOLING TO MAINTAIN SETPOINT OF 80°F (ADJ.). AIR CONDITIONING SHALL BE OFF WHEN THE OA TEMP IS BELOW 70°F (ADJ.).
- DAMPER(S) 1 & 2 SHALL BE OPEN, DAMPER(S) 3 - 7 SHALL BE CLOSED.

GENERATOR IS ON:
- UNIT HEATER AND AIR CONDITIONING SHALL BE OFF.
- ON GENERATOR START DAMPER 7 SHALL OPEN. DAMPERS 3A, 3B, 4A, & 4B SHALL MODULATE TO MINIMUM POSITION AS REQUIRED TO MAINTAIN A NEGATIVE PRESSURE DIFFERENTIAL OF 0.05 IN W.C. (ADJ.) IN THE GENERATOR ROOM IN RELATION TO THE ADJACENT SPACE.
- WHEN OA TEMP IS ABOVE GENERATOR SPACE SETPOINT 90°F (ADJ.) DAMPERS 1 & 2 SHALL BE CLOSED. DAMPERS 5-7 SHALL BE OPEN.

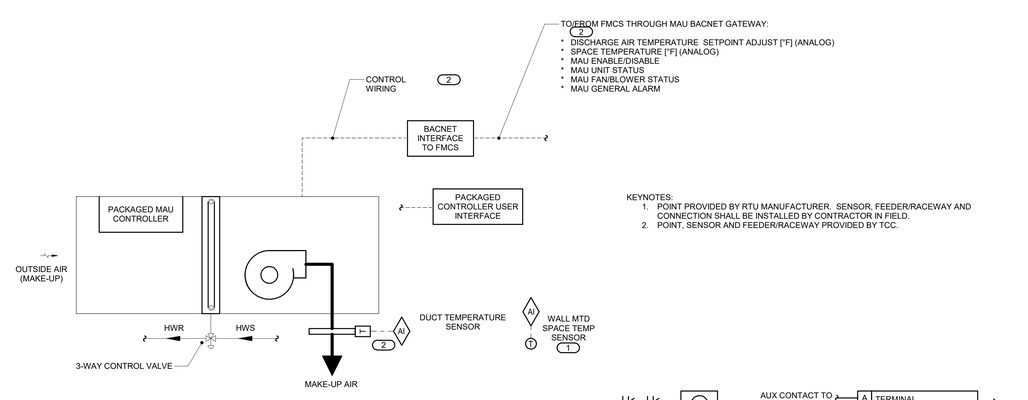
ALARMS, INTERLOCKS AND SAFETIES:

- BAS SHALL MONITOR SPACE TEMPERATURE. ALARM SHALL BE GENERATED AT BAS WORKSTATION FOR THE FOLLOWING:
  - SPACE TEMP BELOW 70°F WHEN GENERATOR IS NOT OPERATING.
  - SPACE TEMP ABOVE 85°F WHEN GENERATOR IS NOT OPERATING.
  - SPACE TEMP ABOVE 110°F WHEN GENERATOR IS OPERATING.
  - SPACE TEMP BELOW 60°F WHEN GENERATOR IS OPERATING.

- BAS SHALL INDICATE WHEN A/C UNIT IS IN OPERATION ON GRAPHICS.
- BAS SHALL INDICATE WHEN UNIT HEATER IS IN OPERATION ON GRAPHICS.
- BAS SHALL INDICATE DAMPER POSITIONS AT ALL TIMES ON THE GRAPHICS.

3 EMERGENCY GENERATOR ROOM CONTROL DIAGRAM

NO SCALE



SUPPLY FAN VFD CONTROL

CONTROLS PROVIDED BY CONTRACTOR IN THE FIELD:
THE TCC SHALL EXTEND THE FMCS NETWORK TO THE MAU UNITARY CONTROLLER PER THE PROTOCOL SPECIFIED IN SECTION 23 09 00.

SEQUENCE OF OPERATION:
BOILER INTERLOCK MAKEUP AIR UNIT OPERATION WITH BOILER OPERATION. WHEN ONE BOILER IS OPERATING, THE MAKEUP AIR UNIT SHALL BE OPERATING. THE FAN VFD SHALL MAINTAIN A SPACE PRESSURE DIFFERENTIAL OF + 0.10" W.C. (ADJ.) RELATED TO THE GLOBAL PRESSURE TRANSMITTER READING.
MAKEUP AIR UNIT SHUTDOWN SHALL NOT CAUSE FOR SHUTDOWN OF EXISTING BOILERS.

SPACE TEMPERATURE:
IF THE OUTDOOR AIR TEMPERATURE IS ABOVE 45°F (ADJ.) THE HEATING COIL SHALL BE DISABLED.
IF THE OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.) FOR MORE THAN 30 MINUTES (ADJ.), THE HEATING COIL SHALL BE ENABLED.
HEATING WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 50°F (ADJ.).

4 PACKAGED MAKEUP AIR UNIT CONTROL - BOILER ROOM

NO SCALE

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DRAWING TITLE: MECHANICAL - DETAILS
APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE:
APPROVED: CHIEF OF STAFF DATE:
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE:

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
DATE: 11/11/20
PLOT SCALE:
PROJECT NO: 656-19-310
BUILDING No: 7
CHECKED BY: RAYBRA
DRAWN: MIKWES
DRAWING NO: M300
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

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U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

MAKE-UP AIR UNIT SCHEDULE

NOTES:
1.30% PROPYLENE GLYCOL WATER MIXTURE.

		SUPPLY FAN												PRE-FILTER				HEATING COIL - WATER								MAXIMUM DIMENSIONS (IN.)				VIBRATION ISOLATION		ELECTRICAL		BASIS OF DESIGN		
									DISCONNECT		CONTROLLER/STARTER				FACE	PRESSURE DROP								W.P.D.											
TAG NAME	AREA SERVED	CFM	MIN. CFM	EXT. S.P.	TYPE	RPM	BHP	MHP	BY	TYPE	BY	TYPE	SCCR (kA)	TYPE	VELOCITY	DIRTY	CLEAN	EAT °F	LAT °F	EWT °F	LWT °F	GPM	MBH	MAX.A.P.D.IN.W.C.	FEET HEAD	LENGTH	WIDTH	HEIGHT	WEIGHT (LBS)	TYPE	DEFL.	VOLTAGE	PHASE	MANUFACTURER	MODEL	NOTES
MAU-1	BOILER HOUSE	16,000 CFM	4,000 CFM	0.5 in-wg	AF22	1750	17	20	MFR	NF	MFR	VFD	9	MERV 8	483 FPM	1.00	0.2	-20.0	50.2	180	149.9	82 GPM	1240	0.39	7.70	74	80	78	2500	-	0.000	208	3	DAIKIN APPLIED	CAH	1.

SPLIT SYSTEM UNIT SCHEDULE

NOTES:
1.

		INDOOR UNIT												ELECTRICAL				
									MAX. DIMENSIONS (IN)					DISCONNECT		CONTROLLER/ STARTER		
TAG NAME	AREA SERVED	CFM	MCA	MOCP AMPS	VOLTAGE	PHASE	COOLING MBH	HEATING MBH	LENGTH	WIDTH	HEIGHT	WEIGHT (LBS)	MODEL	BY	TYPE	BY	BASIS OF DESIGN MANUFACTURER	NOTES
SS-1	GEN 106	425	2.5	15	208	1	18	0	35-3/8	9-13/16	11-5/8	29	PKA-A18HA7	EC	NF	MC	MITSUBISHI	SERVED BY CONDENSING UNIT CU-1
SS-2	ELEC 106A	320	2.5	15	208	1	12	0	35-3/8	9-13/16	11-5/8	29	PKA-A12HA7	EC	NF	MC	MITSUBISHI	SERVED BY CONDENSING UNIT CU-2
SS-3	ELEC 106A	320	2.5	15	208	1	12	0	35-3/8	9-13/16	11-5/8	29	PKA-A12HA7	EC	NF	MC	MITSUBISHI	SERVED BY CONDENSING UNIT CU-2

LOUVER SCHEDULE

NOTES:
1.FINISH TYPES: TYPE 1 - MILL FINISH, TYPE 2 - 204-R1 SATIN ANODIZED, TYPE 3 - BAKED ENAMEL FINISH ON PRETREATED PRIME PAINT. STANDARD COLOR - SELECTION BY VA-COR. TYPE 4 - BAKED EPOXY FINISH ON PRIME COATED METAL. STANDARD COLOR - SELECTION BY VA-COR. TYPE 5 - DURANODIC BRONZE - LIGHT, MEDIUM, DARK. TYPE 6 - AMAA 2605(REFER TO 08 09 00 FOR ADDITIONAL INFORMATION). PAINT DARK BROWN - COLOR SELECTION BY VA-COR.

TAG NAME	AREA SERVED	CFM	SIZE (INCHES) WIDTH	SIZE (INCHES) HEIGHT	FREE AREA VELOCITY	S.P. IN. W.C.	FINISH (NOTE 1)	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
OAL-1	BOILER HOUSE	16000	96	60	800	0.10	TYPE 6	RUSKIN	ELF375	

GRILLES REGISTERS & DIFFUSERS SCHEDULE

NOTES:
1.CONTRACTOR SHALL DETERMINE PROPER MARGIN STYLE TO MATCH CEILING CONSTRUCTION.
2.ALL RUN OUT DUCTWORK TO DIFFUSERS SHALL BE NECK SIZE UNLESS OTHERWISE NOTED.

TAG NAME	MATERIAL	CONFIGURATION	MARGIN (NOTE 1)	INLET SIZE (IN.) (NOTE 2)	FACE SIZE (IN.)	VOLUME DAMPER REQUIRED	FINISH	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
SG-1	STEEL	SINGLE DEFLECTION	1 1/4"	SEE DWG	INLET +2	NO	WHITE	TITUS	301R	BLADES VERTICAL UNLESS NOTED OTHERWISE

CONDENSATE RETURN STATION SCHEDULE

NOTES:
1.LB/HR IS ACTUAL MAXIMUM LOAD OF SYSTEM.
2.MOTIVE TYPE - AIR / ACCESSORIES - GAUGE GLASS; PRESSURE GAUGE ASSEMBLY; REMOVABLE INSULATION BLANKETS ; CYCLE COUNTER

TAG NAME	AREA SERVED	LB/HR (NOTE 1)	CONDENSATE TEMPERATURE °F	MOTIVE PRESSURE (PSIG)	BACK PRESSURE (PSIG)	FILL HEAD (IN.)	RECIEVER CAPACITY (GAL.)	MAX. DIMENSIONS LENGTH	MAX. DIMENSIONS WIDTH	MAX. DIMENSIONS HEIGHT	MANUFACTURER	MODEL	NOTES
CRS-1	REPAIR - 107	1250	210 °F	50	15	6	13	40"	48"	51"	ARMSTRONG	DPT-200LBRP-12	1, 2

CONDENSING UNIT SCHEDULE

NOTES:
1.REFER TO SPECIFICATION SECTION 15671 [23 62 13] FOR ADDITIONAL REQUIREMENTS.

												ELECTRICAL										WEIGHT		VIBRATION ISOLATION				
																	DISCONNECT		CONTROLLER/ STARTER									
TAG NAME	AREA SERVED	NOMINAL DESIGN TONS	REFRIGERANT	MAX. REFRIGERANT CHARGE (LBS)	SATURATED SUCTION °F	AMBIENT TEMP °F (INDOOR)	MIN. AMBIENT TEMP. °F (OUTDOOR)	NUMBER OF COMPRESSORS	NUMBER OF STAGES	NUMBER OF CIRCUITS	NUMBER OF FANS	NO. OF POWER CONNECTIONS	VOLTAGE	PHASES	FLA	MCA	MOCP	BY	TYPE	BY (NOTE A)	SCCR	DRY	OPERATING	TYPE	DEFL.	MANUFACTURER	MODEL (NOTE 1)	NOTES
CU-1	GEN 106	1.5	R410-A	4.5	0.0	66.0	-20.0	1	1	1	1	1	208	1	0.3	11	28	MFR	NF	MC	9	92	97	-	0.00	MITSUBISHI	PUY-A18NKA7	
CU-2	ELEC 106A / B	1	R410-A	4.5	0.0	66.0	-20.0	1	1	1	1	1	208	1	0.3	11	28	MFR	NF	MC	9	92	97	-	0.00	MITSUBISHI	PUY-A18NKA7	

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BAE PROJECT NO. 18-116

APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: DEMS PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECTS SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FMS DATE
APPROVED: SAFETY MANAGER DATE

Drawing Title
MECHANICAL - SCHEDULES

APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE
REPAIR / UPGRADE BOILER HOUSE SYSTEMS

DATE 11/11/20
PLOT SCALE
PROJECT NO. 656-19-310
BUILDING No 7
CHECKED BY RAYBRA
DRAWN MIKWES
DRAWING NO. M500
LOCATION VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA

U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

ELECTRICAL SYMBOL LIST

SYMBOL:	SPEC SECTION:	DESCRIPTION:
GB	26 05 26	GROUND BUS
IBT	26 05 26	INTERSYSTEM BONDING TERMINATION
E / E	26 05 33	ELECTRICAL CONNECTION
J / J	26 05 33	JUNCTION BOX
RI	26 05 33	TECHNOLOGY OUTLET ROUGH-IN
DEM	26 09 13	ENERGY METER
DPM	26 09 13/ 26 24 13	DIGITAL POWER METER
PB	26 09 16	MOMENTARY PUSHBUTTON OPERATOR
	26 24 16	PANELBOARD - RECESS MOUNT
	26 24 16	PANELBOARD - SURFACE MOUNT
	26 24 19	MANUAL SWITCH / STARTER / COMBINATION STARTER/ CIRCUIT BREAKER. REFER TO DISC/STA SCHEDULE
		VFD
	26 22 00	TRANSFORMER. REFER TO TRANSFORMER SCHEDULE
	26 28 16	CIRCUIT BREAKER - SURFACE MOUNTED. REFER TO DISC/STA SCHEDULE
	26 28 16	CIRCUIT BREAKER - FLUSH MOUNTED. REFER TO DISC/STA SCHEDULE
	26 28 16	DISCONNECT. REFER TO DISC/STA SCHEDULE
	26 28 16	MOBILE DIAGNOSTICS SERVICE DISCONNECT. REFER TO DISC/STA SCHEDULE
	26 25 00	BUSWAY
	26 25 00	BUSS PLUG - COMBINATION STARTER. REFER TO DISC/STA SCHEDULE
	26 25 00	BUSS PLUG - CIRCUIT BREAKER. REFER TO DISC/STA SCHEDULE
	26 25 00	BUSS PLUG - FUSIBLE DISCONNECT. REFER TO DISC/STA SCHEDULE
#	26 25 00	BUSSWAY RECEPTACLE UNIT. REFER TO DISC/STA SCHEDULE
	26 27 26	DUPLEX RECEPTACLE, 125V
	26 27 26	DUPLEX GFI RECEPTACLE, 125V
G	26 27 26	GROUND FAULT DEVICE
	26 27 26	QUAD RECEPTACLE, 125V
	26 27 26	QUAD GFI RECEPTACLE, 125V
W	26 27 26	QUAD GFI WEATHERPROOF RECEPTACLE, 125V
	26 05 33	RECEPTACLE - PEDESTAL STYLE
	26 05 33	RECEPTACLE - PEDESTAL STYLE
#	26 27 26	FLOOR BOX - POKE THRU, 125V
#	26 27 26	IEC PIN AND SLEEVE RECEPTACLE, 600V
	26 27 23	POWER POLE

VIEW KEY

NAME — LEVEL NAME
10' - 0" — HEIGHT ABOVE PROJECT 0' - 0"

1 — INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME
PLAN OR DETAIL SCALE

NORTH 1 VIEW NAME 1/8" = 1'-0"

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
DETAIL REFERRED TO BY SECTION CUT
SHEET DETAIL IS LOCATED ON

SIM 1 M101

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
DETAIL REFERRED TO BY ELEVATION
SHEET DETAIL IS LOCATED ON

SIM 1 2 3 4 T101

LINE TYPE KEY:

NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE)
NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK SHORT DASHED LINE)

ELECTRICAL SYMBOL LIST

SYMBOL:	SPEC SECTION:	DESCRIPTION:
	28 31 00	FIRE ALARM CONTROL PANEL
SD	28 31 00	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED
SD	28 31 00	FIRE ALARM DUCT SMOKE DETECTOR
F	28 31 00	FIRE ALARM MANUAL PULL STATION
H	28 31 00	FIRE ALARM HEAT DETECTOR
A1	28 31 00	FIRE ALARM AUDIO NOTIFICATION DEVICE - WALL MOUNTED
V1 V3 V5 V7 V9	28 31 00	FIRE ALARM VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
A	28 31 00	FIRE ALARM AUDIO NOTIFICATION DEVICE - CEILING MOUNTED
A1 A3 A5 A7 A9	28 31 00	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE - CEILING MOUNTED
SD	28 31 00	FIRE ALARM SMOKE DAMPER
FS	28 31 00	FIRE ALARM FLOW SWITCH TO MONITOR FIRE PROTECTION SYSTEM
MS	28 31 00	FIRE ALARM MONITOR SWITCH TO MONITOR FIRE PROTECTION SYSTEM
PIV	28 31 00	FIRE ALARM POST INDICATOR VALVE CONNECTION
DH	28 31 00	FIRE ALARM ELECTROMAGNETIC DOOR HOLD DEVICE
DH PD	28 31 00	FIRE ALARM HOLD OPEN OVERRIDE CONNECTION
IM	28 31 00	ISOLATION MODULE
PP	ARCH	PUSH PAD
$	26 09 33	SWITCH - SINGLE POLE
$K	26 09 33	SWITCH - SINGLE POLE - KEY LOCK
$2	26 09 33	SWITCH - TWO POLE
$3	26 09 33	SWITCH - THREE WAY
$4	26 09 33	SWITCH - FOUR WAY
OC	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY
OC D	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY - WALL MOUNTED
OC HA	26 09 33	OCCUPANCY SENSOR - HIGH BAY AISLE COVERAGE
OC HB	26 09 33	OCCUPANCY SENSOR - HIGH BAY
$O	26 09 33	SWITCH - OCCUPANCY SENSOR WALL SWITCH
$O2	26 09 33	SWITCH - OCCUPANCY SENSOR AND DUAL SWITCH
OC P	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 360 DEGREE COVERAGE
OC P2	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 100 DEGREE COVERAGE
OC P	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED - WALL MOUNTED
OC U	26 09 33	OCCUPANCY SENSOR - ULTRASONIC 360 DEGREE COVERAGE
OC U2	26 09 33	OCCUPANCY SENSOR - ULTRASONIC 35'X30' HAND MOTION COVERAGE
OC A	26 09 33	OCCUPANCY SENSOR - ULTRASONIC TWO SIDED CORRIDOR COVERAGE
OC U	26 09 33	OCCUPANCY SENSOR - ULTRASONIC - WALL MOUNTED
TC	26 09 33	TIME SWITCH
$LV	26 09 33	CENTRAL CONTROL - STATION

GENERAL SCOPE OF WORK (SOW) DESCRIPTION:

GENERAL

THE SCOPE OF WORK OF THIS PROJECT IS AN UPGRADE AND REPAIR OF THE BOILER HOUSE SYSTEMS, INCLUDING ELECTRICAL POWER DISTRIBUTION AND BACK UP POWER, NEW LIGHTING, ROOF REPAIRS, CEILING PAINTING, AND EVALUATION OF BUILDING MAKE-UP AIR.

DEDUCT ALTERNATES

THE CONTRACTORS SHALL PROVIDE ADJUSTMENTS TO BASE BID CONTRACT AMOUNT FOR THE FOLLOWING BID DEDUCT ALTERNATES. (INDICATE CLEARLY WHETHER THE AMOUNT FOR THE DEDUCT ALTERNATE IS AN INCREASE, DECREASE, OR NO CHANGE TO THE BASE BID AMOUNT.)

1. DEDUCT ALTERNATE NO.1 - "GENERATOR DEDUCT ALTERNATE." RETAIN EXISTING EMERGENCY GENERATOR, IN LIEU OF REMOVING EXISTING GENERATOR & PROVIDING NEW GENERATOR, GEN-SET #1. REMOVE EXISTING GENERATOR RADIATOR AND PROVIDE NEW GENERATOR RADIATOR IN BOTH BASE BID AND DEDUCT ALTERNATE #1. REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. DEDUCT ALTERNATE NO.2 - "TRANSFORMER DEDUCT ALTERNATE." RETAIN EXISTING 500KVA 13.8KV TRANSFORMER, IN LIEU OF REMOVING EXISTING TRANSFORMER AND PROVIDING NEW 500KVA 13.8KV TRANSFORMER. PROVIDE CONNECTION CABINET AND ASSOCIATED CONCRETE PAD EXTENSION IF DEDUCT ALTERNATE #2 IS NOT ACCEPTED. REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

3. DEDUCT ALTERNATE NO.3 - "MAKE-UP UNIT DEDUCT ALTERNATE." RETAIN EXISTING MAKE-UP AIR UNIT, ASSOCIATED DUCTWORK AND LOUVER, AND RELATED SYSTEM PIPING, IN LIEU OF PROVIDING NEW MAKE-UP AIR UNIT (MAU-1), ASSOCIATED DUCTWORK AND LOUVER, AND RELATED SYSTEM PIPING. REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

4. DEDUCT ALTERNATE NO.4 - "SWITCHBOARD DEDUCT ALTERNATE." RETAIN EXISTING 1600A SWITCHBOARD, IN LIEU OF REMOVING EXISTING SWITCHBOARD AND PROVIDING NEW SWITCHBOARDS (7-MDP-EQ & 7-MDP). REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ELECTRICAL EQUIPMENT TAGS

TAG:	DESCRIPTION:	RELATED SPECIFICATION
ACU-#	AUTONOMOUS CONTROL UNIT	28 31 00
ASSD-#	AIR SAMPLING SMOKE DETECTION	28 31 50
ATS-#	AUTOMATIC TRANSFER SWITCH. REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
BAT-#	BATTERY RACK	26 32 13
C-#	GENERAL PURPOSE CONTACTOR	26 28 21
CGA-#	FIRE ALARM - GRAPHIC ANNUNCIATOR	28 31 00
CMD#	EMERGENCY COMMUNICATION MESSAGE DISPLAY	28 31 00
CR-#	CORD REEL	26 27 26
CT-#	CABLE TRAY	26 05 36
CUP-#	CUSTOM UTILITY PEDESTAL	26 27 16
DIM-#	DC DIMMING PANEL	26 09 33
DP-#	DISTRIBUTION PANEL	26 24 16
DR-#	DIMMING RACK	26 09 33
DT-#	GENERATOR DAY TANK	26 32 13
DTR-#	TRANSFORMER - DISTRIBUTION TYPE REFER TO TRANSFORMER SCHEDULE	26 12 19 / 26 12 13 / 26 12 16 / 26 12 21
EVCS-#	ELECTRICAL VEHICLE CHARGING STATION	26 27 29
FAA-#	FIRE ALARM - ANNUNCIATOR	28 31 00
GAP-#	GENERATOR ANNUNCIATOR PANEL	26 32 13
GCC-#	TEMP. GENERATOR/LOAD BANK CONNECTION CABINET	26 32 13
GCP-#	GENERATOR CONTROL PANEL	26 32 13
GEN-#	GENERATOR	26 32 13
GPS-#	GENERATOR PARALLELING AND DISTRIBUTION SWITCHBOARD	26 24 14 / 26 13 35
GRR-#	GENERATOR REMOTE RADIATOR	26 32 13
HH-#	HANDHOLE	26 05 33
HT-#	HEAT TAPE	26 05 17
INV-#	LIGHTING INVERTER	26 52 00
LC-#	LIGHTING CONTACTOR, REFER TO CONTACTOR SCHEDULE	26 28 31
LOC-#	LOCAL OPERATING CONSOLE	28 31 00
M-#	METER DISTRIBUTION CENTER	26 20 00
MC-#	EXTERIOR MOUNTED METERING CABINET	26 20 00
MCC-#	MOTOR CONTROL CENTER, REFER TO MOTOR CONTROL SCHEDULE	26 14 19
MH-#	MANHOLE	26 05 37
MPC-#	PACKAGED POWER CENTER	26 24 23
MTS-#	MANUAL TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
MVSG-#	MEDIUM VOLTAGE SWITCHGEAR	26 13 13 / 26 13 34
MX-#	MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 24 19
NEP-#	FIRE ALARM - EXTENDER PANEL	28 31 00
PDU-#	POWER DISTRIBUTION UNIT	26 26 00
PS-#	PAD-MOUNT MEDIUM VOLTAGE SWITCH	26 13 15
R-#	RELAY	26 09 39
RA-ATS-#	REMOTE ANNUNCIATOR FOR ATS	26 36 00
SB-#	SWITCHBOARD	26 24 13
SC-#	SECTIONALIZING CABINET	26 13 14
SCP-#	FIREFIGHTERS SMOKE CONTROL PANEL	28 31 00
SG-#	SWITCHGEAR	26 23 00
SMP-#	SNOW MELT CONTROL PANEL	26 05 17
SMS-#	PAVEMENT MOUNTED DEICING CONTROLLER	26 05 17
SPD-#	SURGE PROTECTION DEVICE	26 43 00
TVA-#	TEXTURAL VISIBLE APPLIANCE	28 31 00
UD-#	UNDERFLOOR DUCT - TRENCH DUCT - CELLULAR FLOOR DUCT	26 05 38
UPS-#	UNINTERRUPTIBLE POWER SUPPLY	26 33 53
US-#	UNIT SUBSTATION	26 11 00
VCC-#	FIRE ALARM - VOICE COMMAND CENTER	28 31 00
VFD-#	VARIABLE FREQUENCY DRIVE - REFER TO VFD SCHEDULE	26 29 23
WD-#	WALL DUCT	26 05 38

ELECTRICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
GFI	GROUND FAULT INTERRUPTER
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
SV	SOLENOID VALVE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

LUMINAIRE SYMBOL KEY

SYMBOL:	DESCRIPTION:
	NORMAL BRANCH LUMINAIRE
	EMERGENCY BRANCH LUMINAIRE

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
	REFER TO LUMINAIRE SCHEDULE		LINEAR LUMINAIRES
			HIGH BAY
			WALL SCONCE LUMINAIRE
			DOWNLIGHT LUMINAIRE
			AIMABLE OR WALL WASH LUMINAIRE
			INDUSTRIAL LUMINAIRE
			WALL BRACKET LUMINAIRE
			POLE MOUNTED LUMINAIRE
			SINGLE FACE EXIT SIGN
			DOUBLE FACE EXIT SIGN
			WALL/CEILING EMERGENCY EXIT SIGN
EM			EMERGENCY UNIT

ELECTRICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK.
3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF HIS/HER WORK AND SHALL NOTIFY THE CONTRACTOR AND VA/CONTRACTING OFFICER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO HIS/HER AREA OF WORK.
5. THE CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
7. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
8. CONTRACTOR SHALL PROVIDE A DETAILED SCHEDULE OF POWER OUTAGES. EACH OUTAGE SHALL HAVE DURATION AND EQUIPMENT AFFECTED. ALL OUTAGES SHALL BE APPROVED BY OWNER.
9. REFER TO DIVISION 01 SPECIFICATIONS FOR PERFORMANCE OF WORK REQUIREMENTS FOR BUILDING OPERATION DURING CONSTRUCTION.

ELECTRICAL PHASING NOTES:

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS.

1. REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO GENERAL CONTRACTOR'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
2. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
3. PROVIDE TEMPORARY LIGHTING, POWER, SYSTEMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.
4. INSTALL TEMPORARY LIGHTING, CIRCUITS, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT
5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

ELECTRICAL SHEET INDEX

ELECTRICAL GENERAL NOTES:

1. ##-### INDICATES ELECTRICAL EQUIPMENT DEFINED IN ELECTRICAL SCHEDULES OR SPECIFICATION. REFER TO DRAWINGS CONTAINING ELECTRICAL SCHEDULES. PERMANENT NAMEPLATE SHALL MATCH FINAL EQUIPMENT NOMENCLATURE. NOT ELECTRICAL EQUIPMENT TAG NAME, REFER TO SPECIFICATIONS.
2. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
3. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY CIRCUIT.
4. REFER TO MECHANICAL SHEETS M500 AND MP500 FOR MECHANICAL ELECTRICAL REQUIREMENTS.

LUMINAIRE KEY:

LUMINAIRE
F1 = FIXTURE TAG
1 = CIRCUIT NUMBER
a = SWITCH DESIGNATION
NL = SUBSCRIPT (IF APPLICABLE)

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / a / NL

DEVICE KEY:

DEVICE
A = MOUNTING (IF APPLICABLE)
1 = CIRCUIT NUMBER

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

ELECTRICAL MOUNTING SUBSCRIPT KEY:

A	MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
C	MOUNT AT CEILING
H	MOUNT ORIENTED HORIZONTALLY
L	MOUNT IN CASEWORK
M	MOUNT IN MODULAR FURNITURE
R	MOUNT IN SURFACE RACEWAY
EWC	ELECTRIC WATER COOLER

ELECTRICAL INSTALLATION NOTES:

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION AND ARE REFERENCE ONLY. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
3. LIFE SAFETY AND EQUIPMENT BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.
4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
6. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.
7. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
8. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
9. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE.
10. CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
11. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
13. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB.
14. CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK. CONTRACTOR SHALL REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.
15. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
16. ELECTRICAL IDENTIFICATION. REFER TO COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.
17. DURING PROJECT CONSTRUCTION, CONTRACTOR SHALL PROVIDE TEMPORARY GENERATOR POWER (SEPARATE FROM CAMPUS GENERATORS) WHEN PERFORMING ALL WORK WHERE POWER IS REQUIRED TO BE MAINTAINED IN THE BUILDING. GENERATOR SHALL BE SIZED TO MATCH EXISTING BUILDING 300KW GENERATOR. TEMPORARY GENERATOR STAGED AT WEST SIDE AREA FOR ALL PHASES OF CONSTRUCTION, (COORDINATE EXACT LOCATION WITH V.A.) PROVIDE PARALLEL FEED WITH EXISTING GENERATOR. PROVIDE TERMINATION BOX AS REQUIRED WITH CABLES RUN OVERHEAD TO EXISTING GENERATOR LOUVER AREA. TEMPORARY GENERATOR SHALL HAVE REMOTE START CIRCUIT WITH CONNECTION TO NEW/EXISTING ATS'S AS REQUIRED DURING CONSTRUCTION. PROVIDE ALL FUEL FOR RUN TIME AS REQUIRED BY THE VA. EMERGENCY POWER SHALL BE PROVIDED AT ALL TIMES DURING PROJECT TO EXISTING ATS AND NEW ATS.
18. CONTRACTOR SHALL MAINTAIN CONSTANT NON-INTERRUPTIVE POWER TO SECURITY SYSTEM, FIRE ALARM SYSTEM AND ALL OTHER SYSTEMS AS REQUIRED BY COR.

ENGINEERING DISCIPLINE REFERENCE NOTES:

1. GENERAL NOTES FOR CONTRACTORS: SEE ALL PROJECT GENERAL NOTES AND OTHER REQUIREMENTS INCLUDING THE LIFE SAFETY AND INFECTION CONTROL WORK LOCATED WITHIN THE GENERAL DRAWINGS SECTION. COMPLY WITH ALL REQUIREMENTS AS THEY ARE A DIRECT PART OF THIS SECTION AS IF THEY WERE DIRECTLY INCLUDED AND PROVIDED HEREIN.
2. EQUIVALENCY SUBSTITUTIONS: THE "BASIS OF DESIGN (BOD) COMPLIANCE PROTOCOLS" ARE TO BE FOLLOWED FOR ALL MATERIALS, EQUIPMENT, ASSEMBLIES AND SYSTEMS SPECIFIED AND DETAILED THROUGHOUT ALL DRAWINGS AND SPECIFICATION SECTIONS, WHETHER THE BOD DESIGNATE IS SPECIFICALLY REFERENCED THEREIN OR NOT. SEE THE GENERAL DRAWINGS SECTION FOR THE SPECIFIC BOD COMPLIANCE REQUIREMENTS AND PROTOCOLS TO BE FOLLOWED.

No	REVISION	DATE
6	CONSTRUCTION DOCUMENTS (CD - 100%)	11/11/20
5	CONSTRUCTION DOCUMENTS (CD - 95%)	8/14/20
4	DESIGN DEVELOPMENT (DD 2 - 75%)	5/22/20
3	DESIGN DEVELOPMENT (DD 1 - 50%)	3/20/20
2	SCHEMATIC DESIGN (SD 2 - 35%)	1/10/20
1	CONCEPTUAL DESIGN (SD 1 - 10%)	11/8/19

CONSULTANTS
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REFERENCE SCALE IN INCHES 0 1 2 3

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BAE PROJECT NO. 18-116

APPROVED: PROJECT COR DATE
APPROVED: SERVICE LINE DIRECTOR DATE
APPROVED: INFECTION CONTROL NURSE DATE
APPROVED: GEMS PROJECT MANAGER DATE
APPROVED: PATIENT SAFETY DATE
APPROVED: PROJECT'S SECTION MANAGER DATE
APPROVED: CHIEF OF POLICE DATE
APPROVED: DIRECTOR FWB DATE
APPROVED: SAFETY MANAGER DATE

Drawing Title: ELECTRICAL - COVER SHEET
APPROVED: ASSOCIATE HEALTH CARE SYSTEM DIRECTOR DATE
APPROVED: CHIEF OF STAFF DATE
APPROVED: HEALTH CARE SYSTEM DIRECTOR DATE

PROJECT TITLE: REPAIR / UPGRADE BOILER HOUSE SYSTEMS
DATE: 11/11/20
PLOT SCALE
PROJECT NO: 656-19-310
BUILDING No: 7 | CHECKED BY: GJL | DRAWN: TKH | DRAWING NO: E000
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303
DWG. OF

VA
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System