ANDERSON

**Project: Renovate Building 28 First Floor East RRTP**
**Revision Set: 2 (Prebid Addendum)**
VA Project #: 656-19-306
Anderson Project # 15451

Issued to: **St Cloud V. A. Health Care System**
4801 Veterans Dr, St Cloud, MN 56303
Attn: Mike Engmark, COR

Date: July 23rd, 2021

**DRAWING SHEET(S)**
**REPLACE:** *(The drawing sheet(s) below replace previously issued versions)*

Sheet MP101, Basement Piping Plan: Clarified notes to indicate deduct alternate #4.

Sheet MP111, First Floor Piping Plan: Added 3 temperature monitors for refrigerators.

Sheet M602, Mechanical/Electrical Schedules: Clarified Fluid Cooler omitted under deduct alternate #4.

Sheet M603, Mechanical/Electrical Schedules: Updated VFD equipment schedule.

Sheet EP111, First Power Floor Plan: Revised device layout in patient rooms.

Sheet ES111, First Systems Floor Plan: Revised device layout in patient rooms.

**ATTACHMENTS:**
**DRAWING SHEETS** (*30"x42" when printed at full size)*
SHEET MP101 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)
SHEET MP111 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)
SHEET M602 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)
SHEET M603 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)
SHEET EP111 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)
SHEET ES111 (Revision Set 2- Prebid Addendum, Dated 7/23/2021)

**Revision Document issued by:**
Steve Schlotthauer, Anderson Engineering

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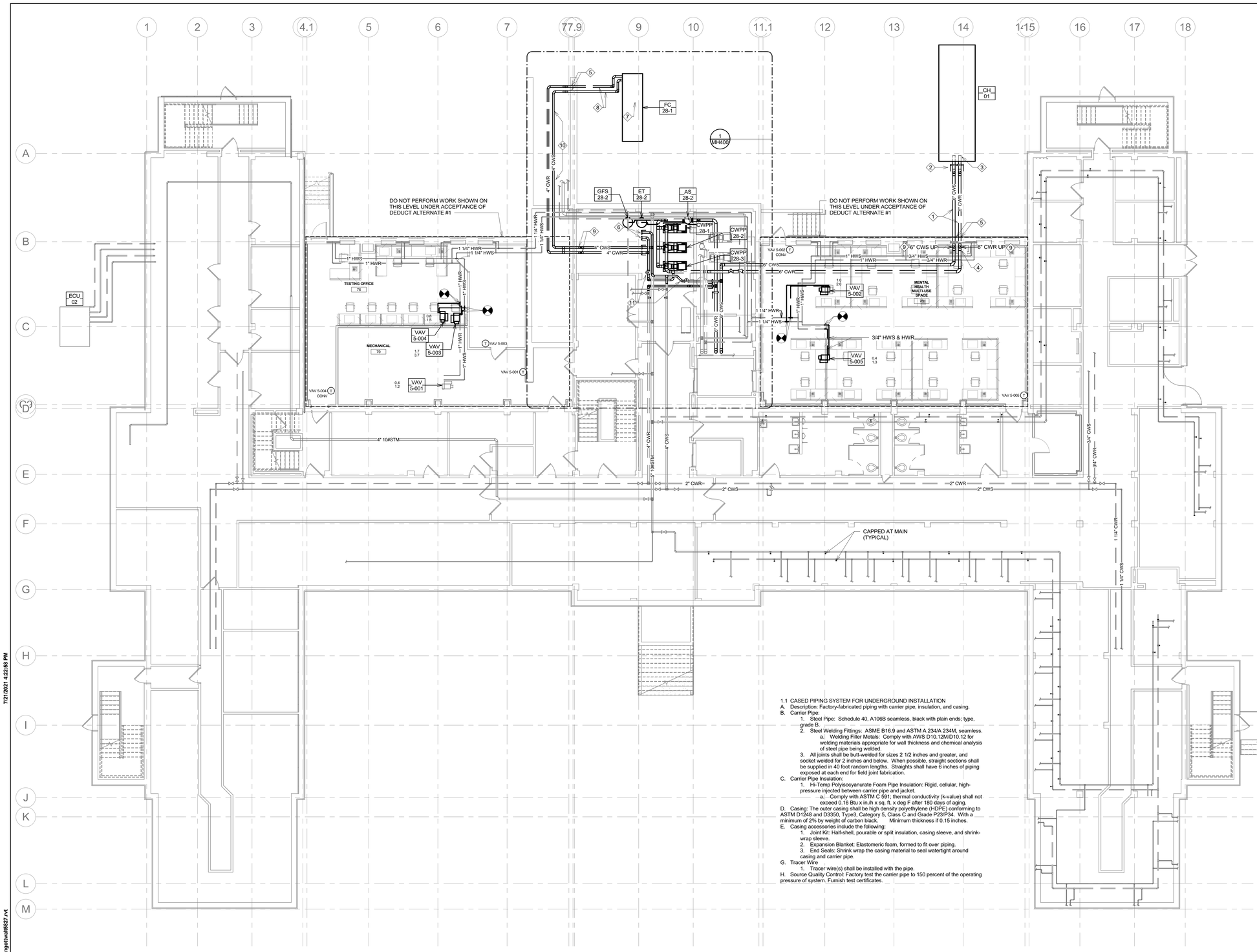



1 BASEMENT PIPING PLAN
1/8" = 1'-0"

## GENERAL NOTES:

A. MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH WORK SHIFT SHOULD BE ASSUMED IN THE BASE BID SCOPE.

B. ANY MAJOR OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.

C. COORDINATE ALL NEW PIPE ROUTING WITH ALL OTHER TRADES TO ENSURE ADEQUATE CLEARANCES FOR DUCTWORK, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.

D. SUPPORT ALL PIPING DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY PIPING FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.

E. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.

F. ALL EXISTING PIPING THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.

G. THE MECHANICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORD DRAWINGS SHOWING ALL DISCREPANCIES WITH ANY EXISTING PIPING INDICATED OR REVISIONS TO THE NEW PLUMBING LAYOUTS. ALL CHANGES WILL BE UPDATED WITHIN THE FINAL RECORD DRAWING SET.

H. THE SMALLEST ALLOWABLE PIPE SIZE FOR HEATING WATER SUPPLY AND RETURN WILL BE 3/4".

I. UNLESS NOTED OTHERWISE, HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS TO REHEAT COILS SHALL BE 3/4" DIAMETER.

J. HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS SHALL BE OFF THE TOP OF MAIN.

K. PROVIDE 1/2" DRAIN VALVE AT NEW HEATING WATER SUPPLY AND RETURN PIPE LOW POINTS, DOWNSTREAM OF ISOLATION VALVES.

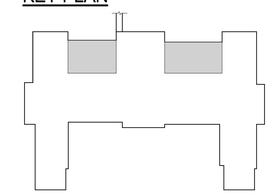
L. ALL VALVES TO BE LOCATED ABOVE LAY-IN CEILING FOR ACCESSIBILITY. WHERE VALVES MUST BE LOCATED ABOVE GYPSUM BOARD CEILINGS, MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF 24"x24" ACCESS PANELS WITH GENERAL CONTRACTOR.

## KEY NOTES:

1. 6" CHILLED WATER SUPPLY AND RETURN PIPING BURIED BENEATH GRADE. REFER TO SPECIFICATION REQUIREMENTS ON THIS DRAWING FOR STEEL PIPING CASED WITHIN HDPE FOR UNDERGROUND INSTALLATION. CONTRACTOR TO EITHER BURY PIPE UNDER FROST LINE OR COVER WITH 2" FIBERBOARD INSULATION TO PROTECT PER DETAIL (PROVIDED UPON REQUEST TO NOT BURY UNDER FROST LEVEL).
2. PROVIDE DOUBLE OFFSET HIGH PERFORMANCY BUTTERFLY VALVES WITH WEATHER RESISTANT GEAR DRIVEN ACTUATOR, BRAY VALVE McCANNALOK OR EQUAL. INSTALL VALVES ON BOTH CHILLER CONNECTIONS WITHIN FENCE ENCLOSURE.
3. INSTALL FLOW SWITCH FURNISHED BY CHILLER MANUFACTURER. COORDINATE INTEGRATION WITH PACKAGED CHILLER CONTROLLER AND BUILDING AUTOMATION. SEE SEQUENCE OF OPERATION.
4. REFER TO ARCHITECTURAL PLAN FOR CHASE WALLS AROUND CHILLED WATER PIPING DROPS. SAWCUT FLOOR IF REQUIRED AND EXCAVATE TO PENETRATE WALL APPROXIMATELY 48" BELOW GRADE (coordinate with existing wall footings). PENETRATE WALL USING LINKSEAL ASSEMBLIES AND INFILL WITH DRAINABLE FILL MATERIAL ON COMPLETION PRIOR TO PATCHING FLOOR TO ORIGINAL CONDITION.
5. CORE DRILL FOUNDATION WALL PENETRATIONS FOR CHILLED WATER PIPING A MINIMUM OF 48" BELOW GRADE (OR PROVIDE INSULATION REQUIREMENTS FROM KEY NOTE #1 ABOVE). INSTALL LINKSEAL ASSEMBLY AT WALL PENETRATIONS TO SEAL WATERTIGHT. AD-2
6. UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4 THE INDICATED DRYCOOLER, AND ASSOCIATED PIPING AND CONTROLS, WILL NOT BE INSTALLED. INSTEAD EXISTING CONDENSING UNIT AND CHILLER WILL REMAIN. TIE CHILLER SUPPLY/RETURN WATER CONNECTIONS INTO NEW ISOLATION VALVES INDICATED. COORDINATE ALL PIPING INSTALLATION TO ALLOW FOR MINIMAL OUTAGE TO THIS SYSTEM THAT PROVIDES YEAR-ROUND COOLING TO LOWER LEVEL.
7. PROVIDE DRYCOOLER ON EXISTING CONCRETE PAD. CONTRACTOR TO VERIFY PAD SIZE WITH SHOP DRAWINGS AND EXTEND, OR MODIFY, CONCRETE PAD AS REQUIRED FOR DIMENSIONS OF DRYCOOLER FURNISHED WITHIN THEIR CONTRACT. DO NOT PROVIDE UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4.
8. ROUTE 4" PIPING UNDERGROUND WITHIN CASED PIPING SYSTEM (REFER TO SPECIFICATION REQUIREMENTS ON THIS DRAWING). CONTRACTOR TO PROVIDE MINIMUM OF 48" BURY ABOVE PIPING AND TERMINATE UP THROUGH GROUND NEAR EXISTING EQUIPMENT PAD.
9. PROVIDE LOW POINT DRAIN WITH THREADED CONNECTION (TYPICAL OF ALL LOW SPOTS WITHIN CHILLED WATER SYSTEM FOR COMPLETE DRAINAGE WHEN REQUIRED).
10. PIPING SHOWN IN THIS AREA IS WITHIN CONFINED SPACE. STEAM TUNNEL UNDER WALKWAY ABOVE IS VERY CONGESTED AND SHOULD BE REVIEWED PRIOR TO BID.
11. PROVIDE 2-WAY CONTROL VALVE TO AUTOMATICALLY ISOLATE LOWER LEVEL CHILLER, OR FLUID COOLER (UNDER ALETERNATE) FROM REMAINER OF CENTRAL SYSTEM FOR COOLING LOWER LEVEL DURING WINTER MONTHS. REFER TO SEQUENCE OF OPERATION.

1.1 CASED PIPING SYSTEM FOR UNDERGROUND INSTALLATION
A. Description: Factory-fabricated piping with carrier pipe, insulation, and casing.
B. Carrier Pipe:
1. Steel Pipe: Schedule 40, A106B seamless, black with plain ends; type, grade B.
2. Steel Welding Fittings: ASME B16.9 and ASTM A 234/A 234M, seamless.
a. Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
3. All joints shall be butt-welded for sizes 2 1/2 inches and greater, and socket welded for 2 inches and below. When possible, straight sections shall be supplied in 40 foot random lengths. Straights shall have 6 inches of piping exposed at each end for field joint fabrication.
C. Carrier Pipe Insulation:
1. Hi-Temp Polyisocyanurate Foam Pipe Insulation: Rigid, cellular, high-pressure injected between carrier pipe and jacket.
a. Comply with ASTM C 591; thermal conductivity (k-value) shall not exceed 0.16 Btu x in./h x sq. ft. x deg F after 180 days of aging.
D. Casing: The outer casing shall be high density polyethylene (HDPE) conforming to ASTM D1248 and D3350, Type3, Category 5, Class C and Grade P23/P34. With a minimum of 2% by weight of carbon black. Minimum thickness if 0.15 inches.
E. Casing accessories include the following:
1. Joint Kit: Half-shell, pourable or split insulation, casing sleeve, and shrink-wrap sleeve.
2. Expansion Blanket: Elastomeric foam, formed to fit over piping.
3. End Seals: Shrink wrap the casing material to seal watertight around casing and carrier pipe.
G. Tracer Wire
1. Tracer wire(s) shall be installed with the pipe.
H. Source Quality Control: Factory test the carrier pipe to 150 percent of the operating pressure of system. Furnish test certificates.

KEY PLAN



| Revision# | Description | Date: |
|---|---|---|
| AD-2 | REVISION SET 2 (PREBID ADDENDUM) | 07/23/2021 |

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STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Jason R. Gottwalt, P.E.
Date 05/22/2020 Reg. No. 41360

| | |
|---|---|
| Project Title | RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP |
| Location | SAINT CLOUD, MN |
| Phase | CONSTRUCTION DOCUMENTS |
| Drawing Title | BASEMENT PIPING PLAN |
| Issue Date | MAY 22, 2020 |
| Checked | JRG |
| Drawn | TNH |
| Project Number | 656-19-306 |
| Building Number | 28 |
| Drawing Number | MP101 |

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

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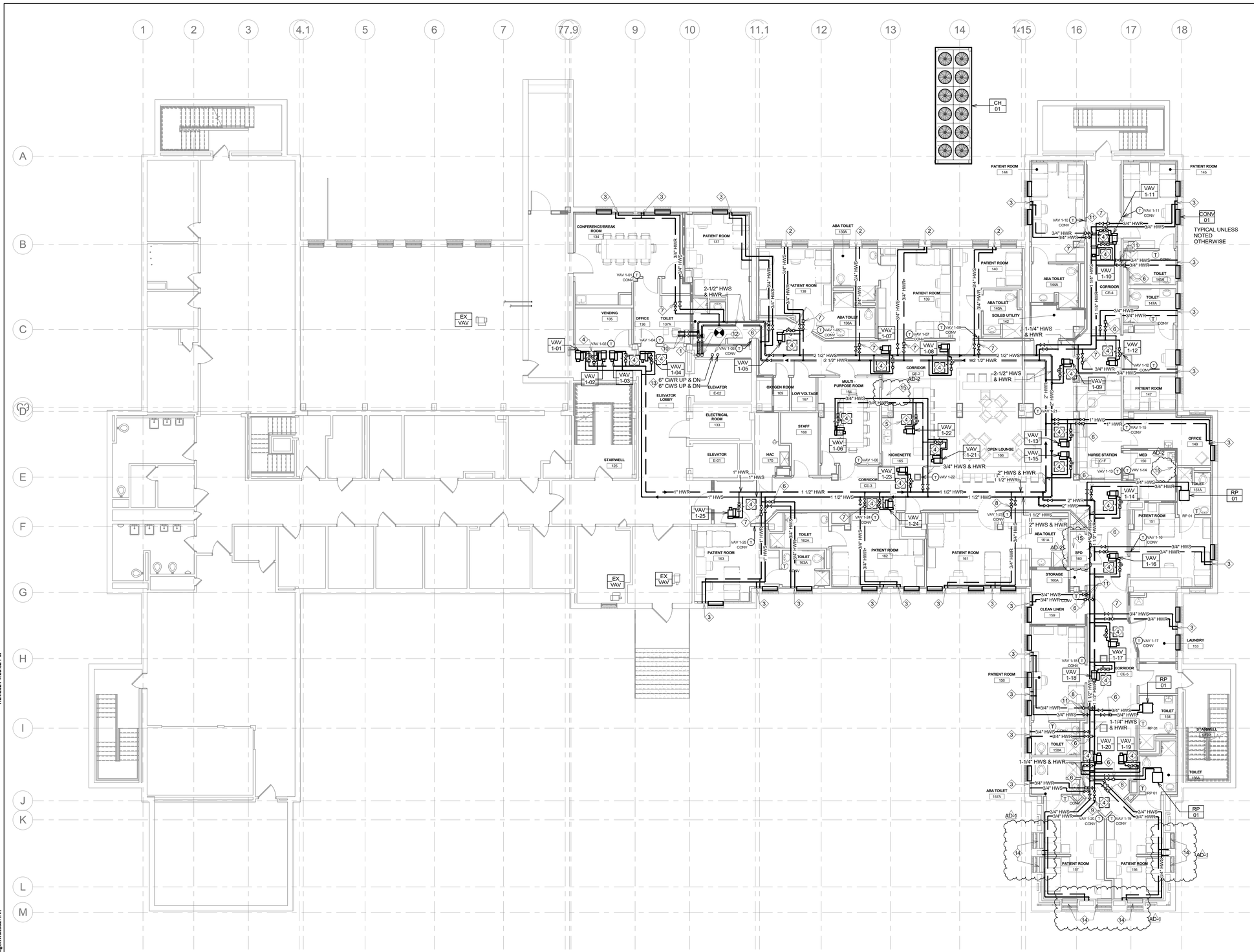


1 FIRST FLOOR PIPING PLAN
1/8" = 1'-0"

## GENERAL NOTES:

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B. ANY MAJOR OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.

C. COORDINATE ALL NEW PIPE ROUTING WITH ALL OTHER TRADES TO ENSURE ADEQUATE CLEARANCES FOR DUCTWORK, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.

D. SUPPORT ALL PIPING DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY PIPING FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.

E. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.

F. ALL EXISTING PIPING THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.

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J. HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS SHALL BE OFF THE TOP OF MAIN.

K. PROVIDE 1/2" DRAIN VALVE AT NEW HEATING WATER SUPPLY AND RETURN PIPE LOW POINTS, DOWNSTREAM OF ISOLATION VALVES.

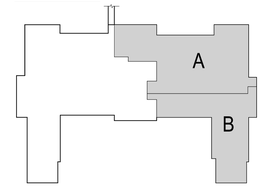
L. ALL VALVES TO BE LOCATED ABOVE LAY-IN CEILING FOR ACCESSIBILITY. WHERE VALVES MUST BE LOCATED ABOVE GYPSUM BOARD CEILINGS, MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF 24"x24" ACCESS PANELS WITH GENERAL CONTRACTOR.

## KEY NOTES:

1. EXISTING 6" HEATING WATER SUPPLY AND RETURN AND 2" LOW PRESSURE STEAM UP AND DOWN.
2. ROUTE 3/4" HEATING WATER SUPPLY AND RETURN DOWN IN WALL AND CONNECT TO EXISTING CONVECTOR.
3. ROUTE 3/4" HEATING WATER SUPPLY AND RETURN DOWN IN WALL AND CONNECT TO NEW CONVECTOR(S). INCLUDE WORK ASSOCIATED WITH OPENING UP EXTERIOR WALL FOR PIPING INSTALLATION (AND DEMO OF OLD STEAM PIPING RISERS WHERE APPLICABLE). NOTE THAT CONTROL VALVE, STRAINER, BALANCING AND ISOLATION VALVES SHALL ALL BE LOCATED OUTSIDE OF THE PATIENT ROOM IN LOCATION WITH DIRECT ACCESS TO CORRESPONDING VAV REHEAT COIL CONTROL VALVE.
4. DASHED SQUARE BOX REPRESENTS 24"X24" ACCESS AREA FOR BOTH VAV BOX ACTUATOR, AND THE REHEAT COIL PIPING COMPONENTS SHOWN ON DETAIL 10/MH500. NOTE THAT VA'S PREFERENCE IS TO PROVIDE PRE-PIPED VALVE KITS AS SPECIFIED IN EQUIPMENT SCHEDULE. VERIFY THERE IS ENOUGH CLEARANCE FOR INSTALLATION OF THESE KITS, OR MODIFY THEM AS REQUIRED.
5. PROVIDE 24" x 24" ACCESS PANEL IN GYPSUM CEILING. COORDINATE LOCATION WITH GENERAL CONTRACTOR.
6. BALANCE TO 1 GPM.
7. BALANCE TO 2 GPM.
8. BALANCE TO 3 GPM.
9. BALANCE TO 4 GPM.
10. 2-1/2" HEATING WATER SUPPLY AND RETURN PIPING CAPPED AND VALVED FOR FUTURE EXPANSION LOOP TO WEST SIDE OF BUILDING.
11. LOCATE CONTROL VALVES AND ASSOCIATED PIPING COMPONENTS IN CORRIDOR CEILING PLENUM. SHOWN HERE FOR CLARITY.
12. CONTRACTOR TO OPEN RATED CHASE/SHAFT TO ALLOW ACCESS TO INSTALL NEW CHILLED WATER PIPING RISERS NEXT TO EXISTING HEATING WATER RISERS. COORDINATE EXACT CONFIGURATION OF CHASE TO DETERMINE AMOUNT OF DEMOLITION AND REBUILDING OF RATED SHAFT WALL IS REQUIRED. ALL RISER PIPING FLOOR PENETRATIONS TO BE PROVIDED WITH FLOOR SLEEVE RAISED 2" ABOVE FLOOR LEVEL TO PREVENT POTENTIAL WATER/FLOODING FROM PENETRATING INTO LOWER LEVELS.
13. COORDINATE EXTENSION OF NEW CHILLED WATER RISERS UP TO ATTIC SPACE. REFER TO BASEMENT LEVEL BELOW, AND SECOND FLOOR ABOVE, PIPING PLANS FOR CONTINUATION.
14. RECONNECT HEATING WATER SUPPLY/RETURN PIPING TO EXISTING CONVECTORS AND PROVIDE ALL NEW CONTROL VALVES AND PIPING COMPONENTS ABOVE CEILING WITH ADEQUATE ACCESS AS REQUIRED.
15. PROVIDE A TEMPERATURE MONITOR WITHIN EACH REFRIGERATOR STORING PATIENT DRUGS AND/OR FOOD. THREE(3) MONITORS SHALL BE INCLUDED WITHIN THIS PROJECT INSTALLED IN KITCHENETTE AREA, MEDS ROOM, AND SPD CLOSET. COORDINATE EXACT MODEL TO INCORPORATE INTO ST CLOUD VA WIRELESS DATA FOR TREND LOGGING AND REMOTE ALARMS TO BUILDING AUTOMATION SYSTEM.

AD-2

KEY PLAN




| Revision# | Description | Date: |
|---|---|---|
| AD-2 | REVISION SET 2 (PREBID ADDENDUM) | 07/23/2021 |
| AD-1 | REVISION SET 1 (PREBID ADDENDUM) | 06/15/2021 |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STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Jason R. Gottwalt, P.E.

Date 05/22/2020 Reg. No. 41360

| | |
|---|---|
| Project Title | RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP |
| Location | SAINT CLOUD, MN |
| Phase | CONSTRUCTION DOCUMENTS |
| Drawing Title | FIRST FLOOR PIPING PLAN |
| Issue Date | MAY 22, 2020 |
| Checked | JRG |
| Drawn | TNH |
| Project Number | 656-19-306 |
| Building Number | 28 |
| Drawing Number | MP111 |

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

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# CHILLER SCHEDULE - AIR COOLED

MECHANICAL (236423 & 236426)

| EQUIPMENT TAG | APPLICATION | TYPE | RATING POINT CAPACITY (TONS) | RATING POINT POWER (KW) | EVAPORATOR (WATER SIDE) GPM | GLYCOL TYPE | GLYCOL % | WPD (FT) | FOULING FACTOR | EWT (F) | LWT (F) | COMPRESSOR NUMBER OF COMPRESSORS | COMPRESSOR RLA (EACH) | EER COOLING | IPLV | SOUND POWER - NOTE 7 250 | SOUND POWER - NOTE 7 500 | SOUND POWER - NOTE 7 1000 | REFRIGERAN T TYPE | VFD (YES/NO) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CH 01 | AIR-COOLED | SCROLL | 185 | 228 | 430 | PROPYLENE | 45 | 13 | 0.0001 | 54 | 42 | 6 | 112 - 154 | 10.28 | 17.43 | 90 | 89 | 89 | R410A | NO - NOTE 8 | DAIKIN | AGZ211E | 1,2,3,4,5,6,7,8 |

AD-1

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

1. VERIFY THAT CHILLER CONTROLLER IS COMPTABILBLE WITH BACNET COMMUNICATION WITH JOHNSON CONTROLS CAMPUS AUTOMATION SYSTEM. INTERLOCK PRIMARY PUMPS WITH CHILLER CONTROL PANEL VIA BAS. REFER TO SEQUENCE OF OPERATION.
2. INCLUDE VFD'S FOR ALL SCROLL COMPRESSORS FOR LOW PARTIAL LOAD CONDITIONS AT HIGH EFFICIENCY. REFER TO DRAWINGS FOR MINIM FLOW BYPASS VALVE SET FOR CHILLER MANUFACTUER'S LOW LIMIT REQUIREMENT.
3. INCLUDE COMPRESSOR BLANKET TO REDUCE SOUND OUTPUT POWER LEVELS FROM UNIT. REFER TO SPECIFICATIONS FOR MAXIMUM ALLOWABLE SOUND LEVELS.
4. PROVIDE WITH THERMAL DISPERSION TYPE WATER FLOOW INDICATOR. COORDINATE FIELD INSTALLATION WITH ALL AFFECTED CONTRACTORS.
5. PROVIDE WITH PRE-WIRED 115 VOLT CONVENIANCE OUTLET AND ASSOCIATED INTERNAL TRANSFORMER AND WIRING CONNECTIONS.
6. PROVIDE BASE RAIL WITH SPRING TYPE VIBRATION ISOLATOR UNIT. REFERENCE SLABS FOR NEW CONCRETE EQUIPMENT PAD AND ANCHOR BOLT. ALL SPRING ISOLATORS PER MANUFACTURER REQUIREMENTS.
7. SOUND POWER LEVELS FOR THIS BASIS-OF-DESIGN UNIT ARE BASED ON LOW NOISE EQUIPMENT SELECTION WITH COMPRESSOR BLANKETS TO ACHIEVE AN OVERALL SOUND PRESSURE OF 85 dBA (AT 30') AND SOUND POWER OF 93 dBA.
8. INSTEAD OF A VFD THE FIRST STAGE COMPRESSOR WILL UTILIZE HOT GAS BYPASS FOR MODULATION DURING LOW LOAD CONDITIONS. SUBMIT LOW LOAD POWER PERFORMANCE WITHIN SUBMITTAL FOR EVALUATION AND APPROVAL BY ENGINEER

AD-1

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER TYPE | CONTROLLER FURNISHED BY/ INSTALLED BY | CONTROLLER LOCATION | CONTROLLER CTRL WIRE BY | DISCONNECT AT MOTOR AMPS/TYPE | DISCONNECT AT MOTOR FUSE SIZE (AMPS) | DISCONNECT AT MOTOR NEMA TYPE | DISCONNECT AT MOTOR FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CH 01 | 1000 | 208 V | 3 | 17045 | INTEGRAL | N/A | N/A | DIV 23 | 1000 | 1000 | NEMA 3R | DIV 26 / DIV 26 | OUTSIDE | 28 MSB-1 | 11 | RISER | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

VFD - VARIABLE FREQUENCY MOTOR CONTROLLER
MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL

MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

# HYDRONIC PUMP SCHEDULE

MECHANICAL (232123)

| EQUIPMENT TAG | APPLICATION | TYPE | GPM | DISCHARGE HEAD (FT) | GLYCOL TYPE | GLYCOL % | NPSHR (FT) | RPM | BHP | SUCTION SIZE (IN) | DISCHARGE SIZE (IN) | TRIPLE DUTY VALVE MODEL NUMBER | TRIPLE DUTY VALVE PRESSURE DROP (PSI) | SUCTION DIFFUSER MODEL NUMBER | SUCTION DIFFUSER PRESSURE DROP (PSI) | VFD (YES/NO) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CWPP 28-1 | CHILLED WATER | END SUCTION | 250 | 75' | PROPYLENE | 45 | 8' | 1750 | 6.5 | 3" | 2.5" | 3DS-3S | | CC-3 | 1.0 PSI | YES | BELL & GOSSETT | SERIES E-1510-2.5BB | 1,2,3,4 |
| CWPP 28-2 | CHILLED WATER | END SUCTION | 250 | 75' | PROPYLENE | 45 | 8' | 1750 | 6.5 | 3" | 2.5" | 3DS-3S | | CC-3 | 1.0 PSI | YES | BELL & GOSSETT | SERIES E-1510-2.5BB | 1,2,3,4 |
| CWPP 28-3 | CHILLED WATER | END SUCTION | 250 | 75' | PROPYLENE | 45 | 8' | 1750 | 6.5 | 3" | 2.5" | 3DS-3S | | CC-3 | 1.0 PSI | YES | BELL & GOSSETT | SERIES E-1510-2.5BB | 1,2,3,4 |

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

1. PROVIDE A 4" CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED PUMPS. CONTRACTOR TO VERIFY FRAME TYPE AND SECURE WITH ANCHOR BOLTS WHILE SITTING ON TOP OF NEAPRENE PADS (INERTIA BASES WILL NOT BE REQUIRED FOR THIS SLAB ON GRADE INSTALLATION)
2. REFERENCE PIPING DIAGRAMS FOR INSTALLAITON OF ALL REQUIRED ISOLATION VALVE, PRESSURE GAUGES, TRIPLE DUTY VALVES, SUCTION DIFFUSERS, ECT FOR EACH PUMP INSTALLATION TO BE COMPLETE.
3. INCLUDE START-UP OF EACH PUMP BY A FACTORY CERTIFIED TECNICIAN. ENSURE THAT ALL PUMPS ARE NOT OVERLOADING BY EITHER ADJUSTING TRIPLE DUTY VALVE OR SETTING HIGH LIMIT SETPOINTS ON VFD CONTROLLER.
4. PUMP MANUFACTURER'S THAT HAVE OPTION TO FURNISH INTEGRAL VFD WITH PUMP MAY SUBMIT, WITH FINAL APPROVAL REQUIRED FROM VA AND ENGINEER. CONTROLS CONTRACTOR TO VERIFY COMPATIBILITY TO INTGRATE INTO THEIR JCI AUTOMATION SYSTEM.

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER TYPE | CONTROLLER FURNISHED BY/ INSTALLED BY | CONTROLLER LOCATION | CONTROLLER CTRL WIRE BY | DISCONNECT AT MOTOR AMPS/TYPE | DISCONNECT AT MOTOR FUSE SIZE (AMPS) | DISCONNECT AT MOTOR NEMA TYPE | DISCONNECT AT MOTOR FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CWPP 28-1 | 5 | 208 V | 3 | 3650 | VFD | DIV 23 / DIV 26 | BASEMENT | DIV 23 | 20 | 20 | NEMA 1 | DIV 26 / DIV 26 | BASEMENT | 28 LB-7 | 13,15,17 | 3/4" C. / 3#10 AWG, 1#10 GND | |
| CWPP 28-2 | 5 | 208 V | 3 | 3650 | VFD | DIV 23 / DIV 26 | BASEMENT | DIV 23 | 20 | 20 | NEMA 1 | DIV 26 / DIV 26 | BASEMENT | 28 LB-7 | 8,10,12 | 3/4" C. / 3#10 AWG, 1#10 GND | |
| CWPP 28-3 | 5 | 208 V | 3 | 3650 | VFD | DIV 23 / DIV 26 | BASEMENT | DIV 23 | 20 | 20 | NEMA 1 | DIV 26 / DIV 26 | BASEMENT | 28 LB-7 | 1,3,5 | 3/4" C. / 3#10 AWG, 1#10 GND | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

VFD - VARIABLE FREQUENCY MOTOR CONTROLLER
MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL

MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

# FLUID COOLER SCHEDULE - REMOVE UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4

AD-2

MECHANICAL (236510)

| EQUIPMENT TAG | LOCATION | APPLICATION | FAN NUMBER OF FANS | FAN NUMBER OF MOTORS | FAN MOTOR HP (EACH) | FAN TOTAL CFM | PERFORMANCE GPM | PERFORMANCE EWT (F) | PERFORMANCE LWT (F) | PERFORMANCE AMBIENT AIR DB (F) | PERFORMANCE WPD (FT) | GLYCOL TYPE | GLYCOL % | VFD (YES/NO) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FC 28-1 | BLDG 28 | WINTER COOLING | 2 | 2 | 3 KW | 30,632 | 66.5 | 54 | 42 | 25 F | 24.3' | PROPYLENE | 45 | YES | GUNTNER | S-GFH 090.3A-2-N(2)-G6/6P.M | 1,2,3 |

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

1. PROVIDE FLUID COOLER WITH NEW CONCETE EQUIPMENT PAD INSTALLED AT LOCATION INDICATED ON PLANS. CONFIRM FINAL DIMENSIONS OF PAD WITH MANUFACTURER SHOP DRAWINGS.
2. INCLUDE VFD CONTROL FOR ALL FLUID COOLER FANS, REFER TO SEQUENCE OF OPERATION FOR FAN STAGING.
3. FAN GAURDS SHALL BE HAIL RESISTANT. POSITION FLUID COOLER FAR ENOUGH AWAY FROM BUILDING TO PROVECT AGAINST FALLING ICE.

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER TYPE | CONTROLLER FURNISHED BY/ INSTALLED BY | CONTROLLER LOCATION | CONTROLLER CTRL WIRE BY | DISCONNECT AT MOTOR AMPS/TYPE | DISCONNECT AT MOTOR FUSE SIZE (AMPS) | DISCONNECT AT MOTOR NEMA TYPE | DISCONNECT AT MOTOR FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FC 28-1 | 6 HP | 208 V | 3 | 2280 | VFD | DIV 23 / DIV 26 | OUTSIDE | DIV 23 | 60/FUSED | 50 | NEMA 3R | DIV 26 / DIV 26 | OUTSIDE | 28 MSB-1 | 13 | 3/4" C. / 3#6 AWG, 1#10 GND | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

VFD - VARIABLE FREQUENCY MOTOR CONTROLLER
MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL

MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

# FAN SCHEDULE

MECHANICAL (233413, 233416, 233423)

| EQUIPMENT TAG | APPLICATION | TYPE | CFM | ESP (IN W.C.) | BHP | FAN RPM | DRIVE TYPE | SONES | VFD (YES/NO) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF 01 | GENERAL EXHAUST | UTILITY SET | 1430 | 1 | 0.4 | 1559 | DIRECT | 64 | NO | GREENHECK | USF-13 | |
| EF 02 | GENERAL EXHAUST | UTILITY SET | 1370 | 1 | 0.37 | 1525 | DIRECT | 64 | NO | GREENHECK | USF-13 | |

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER TYPE | CONTROLLER FURNISHED BY/ INSTALLED BY | CONTROLLER LOCATION | CONTROLLER CTRL WIRE BY | DISCONNECT AT MOTOR AMPS/TYPE | DISCONNECT AT MOTOR FUSE SIZE (AMPS) | DISCONNECT AT MOTOR NEMA TYPE | DISCONNECT AT MOTOR FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF 01 | 1/2 | 120 V | 1 | 600 | SWITCH | DIV 23 / DIV 26 | ATTIC | DIV 23 | SWITCH | | NEMA 3R | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 25 | 2#10 AWG + 1#10 AWG GND | |
| EF 02 | 1/2 | 120 V | 1 | 600 | SWITCH | DIV 23 / DIV 26 | ATTIC | DIV 23 | SWITCH | | NEMA 3R | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 27 | 2#10 AWG + 1#10 AWG GND | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

VFD - VARIABLE FREQUENCY MOTOR CONTROLLER
MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL

MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

# AIR SEPARATOR SCHEDULE

MECHANICAL (232113)

| EQUIPMENT TAG | APPLICATION | GPM | WATER CONNECTION SIZE (IN) | WPD (FT) | STRAINER (YES/NO) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|
| AS 28-2 | CHILLED WATER | 450 | 6" | 2.0' | YES | BELL & GOSSETT | R-6F | 1,2 |

MECHANICAL NOTES:

1. REFER TO FLOW DIAGRAM FOR APPROXIMATE MOUNTING LOCATION. INCLUDE ALL OTHER PIPING COMPONENTS INDICATED.
2. INCLUDE WITH BLOWDOWN VALVE AND THREADED HOSE CONNECITON. CONTRACTOR TO CLEAN ALL STRAINERS PRIOR TO OCCUPANCY.

# EXPANSION TANK SCHEDULE

MECHANICAL (232113)

| EQUIPMENT TAG | APPLICATION | TYPE | TANK VOLUME (GAL) | ACCEPTANCE VOLUME (GAL) | PRECHARGE PRESSURE (PSIG) | ASME CERTIFIED (YES/NO) | SIZE DIAMETER (IN) | SIZE LENGTH (IN) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ET 28-2 | GLYCOL | DIAPHRAM | 44 | 34 | 24 | NO | 22" | 36" | BELL & GOSSETT | HFT-90V | 1,2 |

MECHANICAL NOTES:

1. PROVIDE 4" CONCRETE EQUIPMENT PAD TO SUPPORT EXPANSION TANK ON FLOOR.
2. REFER TO PIPING DIAGRAM FOR INSTALLATION OF AIR SEPARATOR AND MAKE-UP WATER CONNECTION.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Curtis D. Barlage, P.E.
Date 05/22/2020 Reg. No. 45914

| Revision# | Description | Date: |
|---|---|---|
| AD-2 | REVISION SET 2 (PREBID ADDENDUM) | 07/23/2021 |
| AD-1 | REVISION SET 1 (PREBID ADDENDUM) | 06/15/2021 |


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STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Jason R. Gottwalt, P.E.
Date 05/22/2020 Reg. No. 41360

Project Title: RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP
Location: SAINT CLOUD, MN
Phase: CONSTRUCTION DOCUMENTS
Drawing Title: MECHANICAL/ ELECTRICAL SCHEDULES
Issue Date: MAY 22, 2020
Checked
Drawn
Project Number: 656-19-306
Building Number: 28
Drawing Number: MH602

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

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# VARIABLE FREQUENCY MOTOR CONTROLLER SCHEDULE

MECHANICAL/ELECTRICAL (230923)

| EQUIPMENT TAG | VOLTAGE | PHASE | ENCLOSURE TYPE (NEMA 1/4X/12) | ENCLOSURE PLENUM RATED (YES/NO) | SEISMIC BRACING (YES/NO) | VARIABLE TORQUE/ CONSTANT TORQUE | HARMONIC CONTROL: INPUT AC LINE (YES/NO) | HARMONIC CONTROL: OUTPUT AC LINE (YES/NO) | VFD BYPASS: BYPASS (YES/NO) | VFD BYPASS: BYPASS TYPE (CONTACTOR/VFD) | VFD BYPASS: BYPASS CONTROL TYPE (MANUAL/ AUTOMATIC) | VFD BYPASS: MOTOR STARTING IN BYPASS MODE (FULL/REDUCED VOLTAGE) | MULTIPLE MOTOR CONTROL (YES/NO) | DAMPER CONTROL CIRCUIT (YES/NO) | ESSENTIAL SERVICE/ FIRE FIGHTER MODE (YES/NO) | LEED REQUIREMENTS (YES/NO) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AHUR 28-1A | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-1B | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-2A | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-2B | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-3A | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-3B | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-4A | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUR 28-4B | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-1C | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-1D | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-1E | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-1F | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-2C | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-2D | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-2E | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-2F | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-3C | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-3D | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-3E | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-3F | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-4C | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-4D | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-4E | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| AHUS 28-4F | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| CWPP 28-1 | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| CWPP 28-2 | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| CWPP 28-3 | 208 V | 3 | NEMA 1 | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |
| FC 28-1 | 208 V | 3 | NEMA 3R | NO | NO | VT | YES | NO | YES | VFD / INTEGRAL | MANUAL | FULL | NO | NO | NO | NO | |

AD-2 AD-2

GENERAL NOTES:

A. FOR VFD'S WITH BYPASS PROVISIONS, SEPARATE MOTOR OVERLOAD PROTECTION REQUIRED FOR EACH MOTOR, WHEN IN THE BYPASS POSITION.
B. VFD EQUIPMENT SHALL HAVE STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THE MOTOR SCHEDULE.
C. VFDS TO HAVE INTEGRAL DISCONNECT UNLESS NOTED OTHERWISE.

NOTES:

# GLYCOL FILL STATION SCHEDULE

MECHANICAL (232113)

| EQUIPMENT TAG | APPLICATION | PUMP: NUMBER OF PUMPS | PUMP: GPM (EACH) | PUMP: DISCHARGE HEAD (FT) | PUMP: MOTOR HP (EACH) | PUMP: RPM (EACH) | PUMP: VOLTAGE/PHASE (EACH) | TANK CAPACITY (GAL) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GFS 28-2 | CHILLED WATER | 1 | 10 | 70' | 1/2 | 3600 | 120/1 | 55 | BELL & GOSSETT | GMU-30 | 1,2,3 |

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

1. PROVIDE A 4" CONCRETE EQUIPMENT PAD POSITIONED CLOSE TO AN EXISTING FLOOR DRAIN. REFER TO PLANS FOR COORDINATION OF SERVICE ACCESS.
2. INCLUDE WITH LOW WATER CUT OFF SWITCH. STARTER TO BE PREWIRED FROM FACTORY FOR STANDARD PLUG INTO ELECTRICAL RECEPTACLE.
3. SET UP SYSTEM TO MAINTAIN 45% PROPYLENE GLYCOL WITHIN CHILLED WATER SYSTEM.

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER: TYPE | CONTROLLER: FURNISHED BY/ INSTALLED BY | CONTROLLER: LOCATION | CONTROLLER: CTRL WIRE BY | DISCONNECT AT MOTOR: AMPS/TYPE | DISCONNECT AT MOTOR: FUSE SIZE (AMPS) | DISCONNECT AT MOTOR: NEMA TYPE | DISCONNECT AT MOTOR: FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR: LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GFS 28-2 | 1/2 HP | 120 V | 1 | 3650 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | N/A | N/A | N/A | N/A | N/A | 28 LB-7 | 14 | 2#10 AWG + 1#10 AWG GND | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL
MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

# UNIT HEATER SCHEDULE - HEATING WATER

MECHANICAL (238239)

| EQUIPMENT TAG | APPLICATION | TYPE | FAN: CFM | FAN: MOTOR HP | COIL: EAT (F) | COIL: COIL ROWS | COIL: EWT (F) | COIL: LWT (F) | COIL: GPM | COIL: GLYCOL TYPE | COIL: GLYCOL % | COIL: WPD (FT) | COIL: CAPACITY (MBH) | MANUFACTURER | MODEL NUMBER | MECHANICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UH 3-01 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-01 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |
| UH 3-02 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-02 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |
| UH 3-03 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-03 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |
| UH 3-04 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-04 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |
| UH 3-05 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-05 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |
| UH 3-06 | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 180 | 150 | 11 | PROPYLENE | 35 | 0.5 | 161 | STERLING | HS-240 | 1,2,3,4 |
| UH 3-06 (FUTURE CONDITION) | ATTIC | HORIZONTAL | 3500 | 1/3 | 60 | - | 120 | 105 | 17 | PROPYLENE | 35 | 1.06 | 76 | STERLING | HS-240 | |

GENERAL MECHANICAL NOTES:

A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.

MECHANICAL NOTES:

1. MANUFACTURER TO PROVIDE ALL MOUNTING HARDWARE TO SECURE UNIT HEATER TO COMBUSTIBLE WOOD FRAMING IN ATTIC SPACE. COORDINATE APPROPRIATE CLEARANCES FROM HOT COILS AND FAN CONNECTIONS.
2. CONTROLS CONTRACTOR TO PROVIDE DDC THERMOSTAT FOR EACH UNIT HEATER. CHOOSE APPROPRIATE LOCATION IN ATTIC AFTER ALL DUCTWORK AND PIPING IS INSTALLED TO ENSURE STAT IS IN LOCATION WITH FREE AIRFLOW FOR ACCURATE SAMPLING.
3. CONTROLS CONTRACTOR TO SELECT CONTROL VALVE FOR FUTURE WATER FLOW CONDITIONS (REPRESENTING POTENTIAL SWITCH TO GEOTHERMAL IN BUILDING). BUT INITIALLY BALANCE AND CONTROL ON CURRENT FLOW CONDITIONS SHOWN.
4. REFER TO DETAILS FOR ADDITIONAL PIPING COMPONENTS REQUIRED AT EACH UNIT HEATER LOCATION. PROVIDE ISOLATION VALVES AT TAKE-OFF CONNECTIONS FOR SERVICING.

ELECTRICAL

| EQUIPMENT TAG | HP/LOAD | VOLTAGE | PHASE | CALCULATED AFC | CONTROLLER: TYPE | CONTROLLER: FURNISHED BY/ INSTALLED BY | CONTROLLER: LOCATION | CONTROLLER: CTRL WIRE BY | DISCONNECT AT MOTOR: AMPS/TYPE | DISCONNECT AT MOTOR: FUSE SIZE (AMPS) | DISCONNECT AT MOTOR: NEMA TYPE | DISCONNECT AT MOTOR: FURNISHED BY/ INSTALLED BY | DISCONNECT AT MOTOR: LOCATION | PANEL | CIRCUIT NUMBER | CONDUIT/FEEDER SIZE | ELECTRICAL NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UH 3-01 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 26 | 2#10 AWG + 1#10 AWG GND | |
| UH 3-02 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 28 | 2#10 AWG + 1#10 AWG GND | |
| UH 3-03 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 30 | 2#10 AWG + 1#10 AWG GND | |
| UH 3-04 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 32 | 2#10 AWG + 1#10 AWG GND | |
| UH 3-05 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 34 | 2#10 AWG + 1#10 AWG GND | |
| UH 3-06 | 1/3 HP | 120 V | 1 | 1423 | INTEGRAL | DIV 23 / DIV 26 | INTEGRAL | DIV 23 | 30/FUSED | 15 | NEMA 1 | DIV 26 / DIV 26 | ATTIC | 28-LA-DP | 36 | 2#10 AWG + 1#10 AWG GND | |

GENERAL ELECTRICAL NOTES:

A. WHEN THE CONTROLLER TYPE IS A VFD OR MAGNETIC STARTER, REFER TO THE VARIABLE FREQUENCY DRIVE CONTROLLER SCHEDULE OR THE MAGNETIC STARTER SCHEDULE FOR MORE INFORMATION.
B. MECHANICAL EQUIPMENT AND CORRESPONDING ELECTRICAL DISCONNECTS/CONTROLLERS SHALL HAVE A STANDARD SHORT-CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN IN THIS SCHEDULE, DETAILED BY THE "CALCULATED AFC" COLUMN.

ELECTRICAL NOTES:

CONTROLLER TYPES:

MMS - MANUAL MOTOR STARTER (WITH OVERLOADS)
CP - CONTROL PANEL
MAGS - MAGNETIC STARTER
MRS/MS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Curtis D. Barlage, P.E.
Date 05/22/2020 Reg. No. 45914

STAMP

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Name Jason R. Gottwalt, P.E.
Date 05/22/2020 Reg. No. 41360

| | | |
|---|---|---|
| AD-2 | REVISION SET 2 (PREBID ADDENDUM) | 07/23/2021 |
| Revision# | Description | Date: |

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Anderson Engineering of Minnesota, LLC | Proj # Project Number

| | |
|---|---|
| Project Title | RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP |
| Location | SAINT CLOUD, MN |
| Phase | CONSTRUCTION DOCUMENTS |
| Drawing Title | MECHANICAL/ ELECTRICAL SCHEDULES |
| Issue Date | MAY 22, 2020 |
| Checked | JRG |
| Drawn | TNH |
| Project Number | 656-19-306 |
| Building Number | 28 |
| Drawing Number | MH603 |

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

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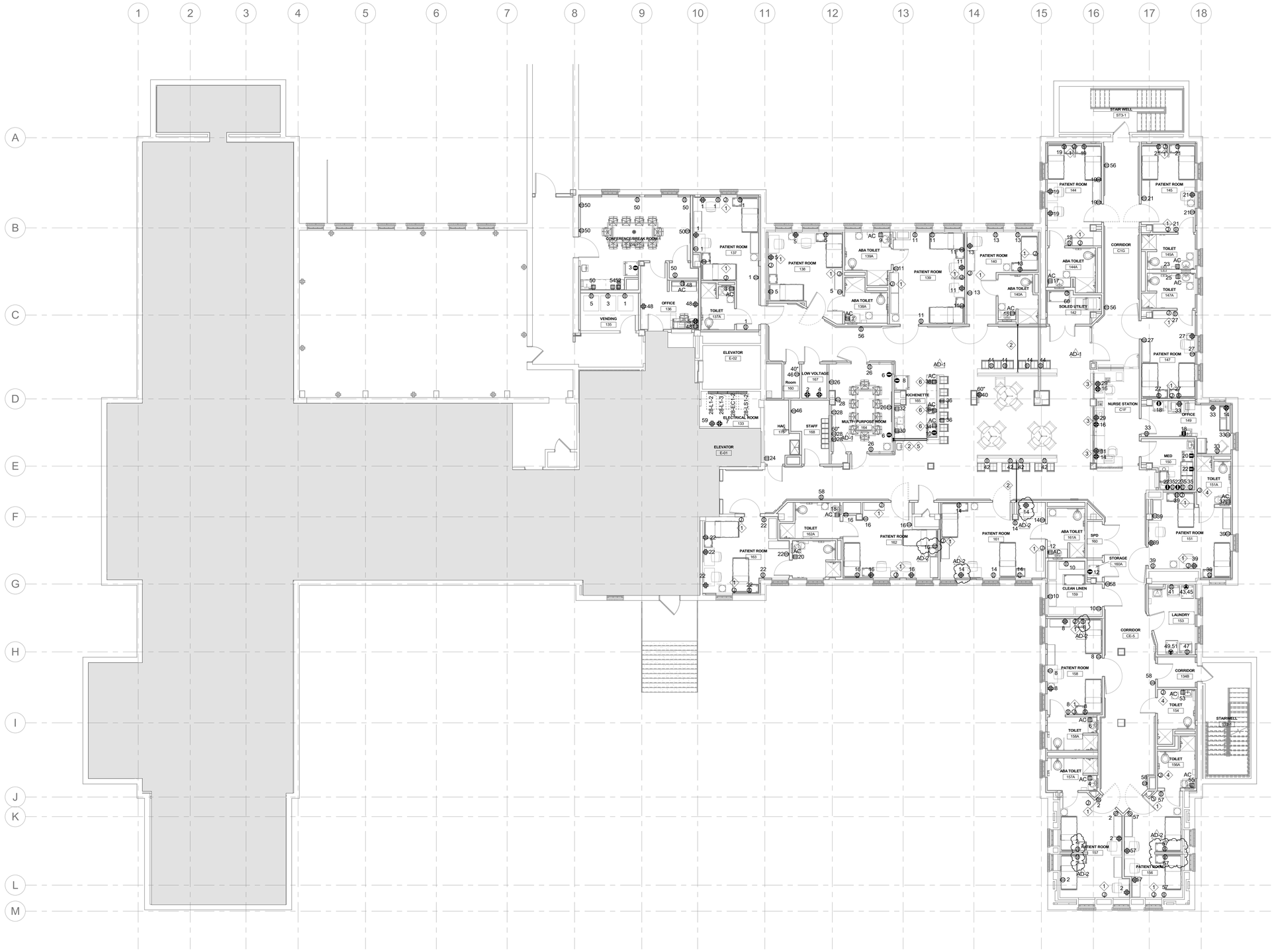



1 FIRST POWER FLOOR PLAN
1/8" = 1'-0"

## GENERAL NOTES:

A. BUILDING WILL BE IN USE DURING CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTION. TEMPORARY SERVICES (FEEDER, BRANCH CIRCUIT, AND SIGNAL SYSTEMS) SHALL BE INSTALLED IF ONE AREA OR PHASE OF CONSTRUCTION DISRUPTS SERVICE TO ANOTHER AREA OF THE BUILDING(S) OR IF THE EQUIPMENT, CONDUITS, OR FEEDERS HAVE TO BE RELOCATED TO ALLOW CONSTRUCTION TO PROGRESS. SERVICE INTERRUPTIONS SHALL BE CONFINED TO THE SMALLEST AREA POSSIBLE AT ANY ONE TIME AND INTERRUPTIONS SHALL BE SCHEDULED WITH THE OWNER'S SITE REPRESENTATIVE. THERE SHALL BE DESIGNATED AREAS WHERE INTERRUPTIONS LIMITED TO AND SHALL BE CONDUCTED AFTER HOURS (8:00 PM -6:00 AM) MONDAY THROUGH SATURDAY. AFTER SERVICE HAS BEEN RESTORED FOLLOWING AN INTERRUPTION, INSPECT AREAS AFFECTED BY THE INTERRUPTION AND BE RESPONSIBLE FOR RETURNING AUTOMATICALLY CONTROLLED EQUIPMENT TO THE SAME OPERATING CONDITION WHICH EXISTED PRIOR TO THE INTERRUPTION.

B. SIGNIFICANT NOISE PRODUCING WORK SHALL BE CONDUCTED AFTER HOURS (8:00 PM -6:00 AM) AND WEEKENDS.

C. DO NOT REUSE EXISTING WIRING. PROVIDE NEW HOME RUNS UNLESS NOTED OTHERWISE. PROVIDE DEDICATED NEUTRALS AS REQUIRED BY THE NEC. HANDLE TIES OR MULTI POLE BREAKERS FOR SINGLE PHASE LOADS ARE UNACCEPTABLE.

D. COORDINATE LOCATION AND INSTALLATION OF CEILING MOUNTED EQUIPMENT WITH THE VA PRIOR TO ROUGH-IN.

E. INSTALL MINIMUM #10 AWG FOR ALL 120V CIRCUIT HOMERUNS IN EXCESS OF 75'.

F. ROUTE CONDUITS IN A MANNER TO CONCEAL WHERE POSSIBLE.

G. DEVICES SHOWN BACK-TO-BACK ARE FOR INTENT PURPOSES ONLY. DO NOT INSTALL BACK-TO-BACK TO PREVENT NOISE TRAVEL. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

H. ALL FURNITURE LAYOUTS ARE SHOWN FOR DESIGN INTENT ONLY. FINAL LOCATIONS OF FURNITURE AND ASSOCIATED POWER/DATA OUTLETS TO BE COORDINATED WITH OWNER.

I. REFER TO MECHANICAL ELECTRICAL (ME) SCHEDULES FOR ELECTRICAL CONNECTION REQUIREMENTS TO MECHANICAL EQUIPMENT.

J. COORDINATE RECEPTACLE DEVICES NEXT TO COMMUNICATION DEVICES, SUCH THAT THE DEVICES ARE MOUNTED NEXT TO EACH OTHER.

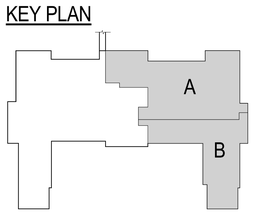
K. UNLESS NOTED OTHERWISE, NORMAL POWER-FED DEVICES AND EQUIPMENT ARE CIRCUITED TO PANEL 28-L1-3. CRITICAL POWER-FED DEVICES AND EQUIPMENT ARE CIRCUITED TO PANEL 28-EC1-2.

## KEY NOTES:

1. PROVIDE DOUBLE GANG DEEP JUNCTION BOX WITH SINGLE GANG MUDRING, BLANK COVER PLATE AND A 3/4" CONDUIT STUB TO CABLE TRAY FOR FUTURE USE.
2. PROVIDE CONDUIT(S) UNDER FLOOR BELOW TO DEVICES IN ISLANDS.
3. MOUNT DEVICES TO OWNER PROVIDED FURNITURE.
4. PROVIDE CONNECTION FOR EBR-01 WALL HEATER.
5. PROVIDE SEPERATE CONDUIT FOR CRITICAL POWER.
6. MOUNT DEVICE HORIZONTAL.

AD-1

KEY PLAN




| Revision# | Description | Date: |
|---|---|---|
| 2 | REVISION SET 2 (PREBID ADDENDUM) | 07/23/2021 |
| 1 | REVISION SET 1 (PREBID ADDENDUM) | 06/15/2021 |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Name Curtis D. Barlage, P.E.
Date 05/22/2020 Reg. No. 45914

| | |
|---|---|
| Project Title | RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP |
| Location | SAINT CLOUD, MN |
| Phase | CONSTRUCTION DOCUMENTS |
| Drawing Title | FIRST POWER FLOOR PLAN |
| Issue Date | MAY 22, 2020 |
| Checked | CB |
| Drawn | BZ |
| Project Number | 656-19-306 |
| Building Number | 28 |
| Drawing Number | EP111 |

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

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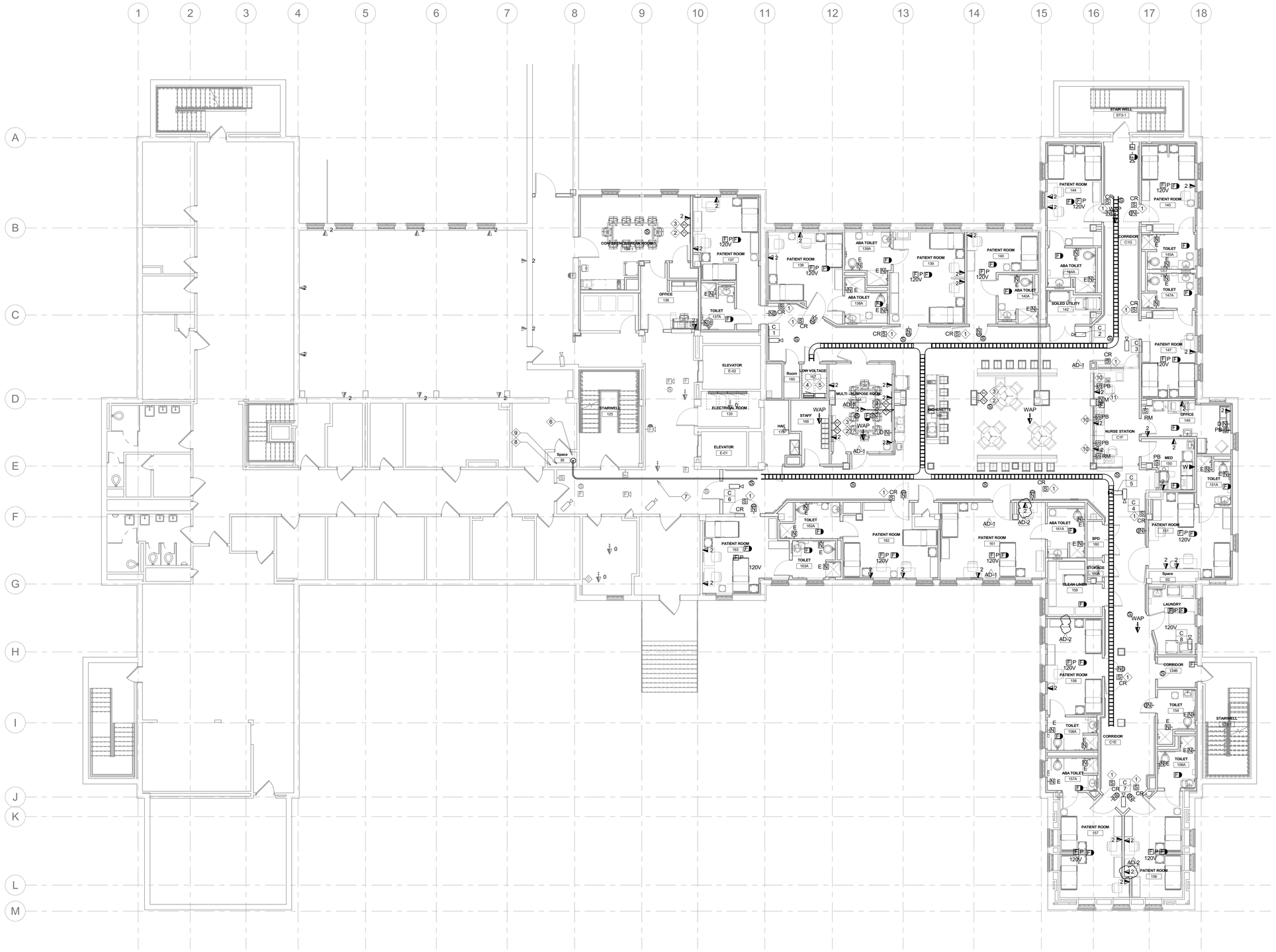



1 FIRST SYSTEMS FLOOR PLAN
1/8" = 1'-0"

## GENERAL NOTES:

A. BUILDING WILL BE IN USE DURING CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTION. TEMPORARY SERVICES (FEEDER, BRANCH CIRCUIT, AND SIGNAL SYSTEMS) SHALL BE INSTALLED IF ONE AREA OR PHASE OF CONSTRUCTION DISRUPTS SERVICE TO ANOTHER AREA OF THE BUILDING(S) OR IF THE EQUIPMENT, CONDUITS, OR FEEDERS HAVE TO BE RELOCATED TO ALLOW CONSTRUCTION TO PROGRESS. SERVICE INTERRUPTIONS SHALL BE CONFINED TO THE SMALLEST AREA POSSIBLE AT ANY ONE TIME AND INTERRUPTIONS SHALL BE SCHEDULED WITH THE OWNER'S SITE REPRESENTATIVE. THERE SHALL BE DESIGNATED AREAS WHERE INTERRUPTIONS LIMITED TO AND SHALL BE CONDUCTED AFTER HOURS (8:00 PM - 6:00 AM) MONDAY THROUGH SATURDAY. AFTER SERVICE HAS BEEN RESTORED FOLLOWING AN INTERRUPTION, INSPECT AREAS AFFECTED BY THE INTERRUPTION AND BE RESPONSIBLE FOR RETURNING AUTOMATICALLY CONTROLLED EQUIPMENT TO THE SAME OPERATING CONDITION WHICH EXISTED PRIOR TO THE INTERRUPTION.

B. SIGNIFICANT NOISE PRODUCING WORK SHALL BE CONDUCTED AFTER HOURS (8:00 PM -6:00 AM) AND WEEKENDS.

C. DO NOT REUSE EXISTING WIRING. PROVIDE NEW HOME RUNS UNLESS NOTED OTHERWISE. PROVIDE DEDICATED NEUTRALS AS REQUIRED BY THE NEC. HANDLE TIES OR MULTI POLE BREAKERS FOR SINGLE PHASE LOADS ARE UNACCEPTABLE.

D. COORDINATE LOCATION AND INSTALLATION OF CEILING MOUNTED EQUIPMENT WITH THE VA PRIOR TO ROUGH-IN.

E. INSTALL MINIMUM #10 AWG FOR ALL 120V CIRCUIT HOMERUNS IN EXCESS OF 75'.

F. ROUTE CONDUITS IN A MANNER TO CONCEAL WHERE POSSIBLE.

G. DEVICES SHOWN BACK-TO-BACK ARE FOR INTENT PURPOSES ONLY. DO NOT INSTALL BACK-TO-BACK TO PREVENT NOISE TRAVEL. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

H. ALL FURNITURE LAYOUTS ARE SHOWN FOR DESIGN INTENT ONLY. FINAL LOCATIONS OF FURNITURE AND ASSOCIATED POWER/DATA OUTLETS TO BE COORDINATED WITH OWNER.

I. ROUTE LOW VOLTAGE CABLING TO DATA ROOM AS INDICATED ON DRAWINGS. PROVIDE CABLE COUNT AS INDICATED. ROUTE VOICE/DATA CABLING IN INDICATED CABLE TRAYS. CABLING NOT IN CABLE TRAY SHALL BE INSTALLED IN CONDUIT.

J. PROVIDE A DOUBLE GANG BOX WITH A SINGLE GANG MUDRING AND (1) 3/4" CONDUIT ROUTED TO ADJACENT CABLE TRAY FOR LOW VOLTAGE ROUGH IN.

K. COORDINATE COMMUNICATION DEVICES NEXT TO RECEPTACLE DEVICES SUCH THAT THE DEVICES ARE MOUNTED NEXT TO EACH OTHER.

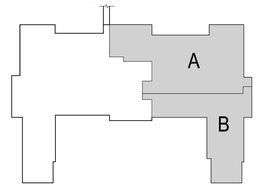
L. INSTALL SMOKE DETECTORS A MINIMUM OF 3' FROM SUPPLY DIFFUSERS.

M. COORDINATE DURESS BUTTON WALL-MOUNTED LOCATION WITH THE CONTRACTING OFFICER REPRESENTATIVE(COR) PRIOR TO ROUGH-IN.

## KEY NOTES:

1. PROVIDE INTEGRATED DOOR MOUNTED STAND-ALONE BATTERY OPERATED CARD READER AT EACH DOOR LOCATION SHOWN THAT CONNECT VIA WIRELESS COMMUNICATION TO CARD ACCESS SYSTEM IN LOW VOLTAGE EQUIPMENT ROOM.
2. PROVIDE ONE (1) RG-6/U COAXIAL CABLE. F-TYPE CONNECTOR AND TELEVISION LCD MONITOR AT TV OUTLET TO LOCATION SHOWN. ELECTRICAL CONTRACTOR TO PROVIDE 3/4" CONDUIT TO CABLE TRAY FROM DEVICE. EXTEND RG-6 CABLE TO CATV CONNECTION POINT IN ROOM 72 (ACCESS HATCH IN TUNNEL). PROVIDE SPLITTERS AND TAPS.
3. PROVIDE LOW AUDIO/VISUAL OUTLET WITH HDMI, VGA, C-VIDEO, AUDIO L/R CABLES ROUTED TO TV OUTLET FOR CONNECTION OF OWNER EQUIPMENT TO TV MONITOR. ELECTRICAL CONTRACTOR TO PROVIDE (2) 1" CONDUITS TO CABLE TRAY FROM DEVICE.
4. PROVIDE RAULAND RESPONDER 5000 NURSE CALL PANEL. PROVIDE BACKBONE CABLING TO NURSE CALL HEAD END ON SECOND FLOOR. PROVIDE PROGRAMMING TO INTEGRATE NEW DEVICES INTO EXISTING SYSTEM.
5. PROVIDE SECURITY PANEL. PROVIDE BACKBONE CABLING TO SECURITY HEAD END IN EXISTING FIRST FLOOR DATA ROOM. PROVIDE PROGRAMMING TO INTEGRATE NEW DEVICE INTO EXISTING SYSTEM. PROVIDE DVR WITH 500GB STORAGE.
6. PROVIDE (3) THREE CONDUIT SLEEVES UP TO SECOND LEVEL IT ROOM.
7. PROVIDE (3) 3" CONDUITS FOR IT CABLING PATHWAY TO SECOND FLOOR IT ROOM.
8. EXISTING PA SYSTEM AMPLIFIER. EXTEND TO ALL NEW SPEAKERS.
9. EXISTING SECURITY SYSTEM HEAD END. EXPAND AND EXTEND TO NEW PANEL.
10. MOUNT DEVICES TO OWNER PROVIDED FURNITURE.
11. PRIMARY MASTER STATION FOR FIRST FLOOR NURSE CALL DEVICES. DEVICES SHALL ALSO REPORT TO SECOND FLOOR, EAST SIDE NURSE STATION.

KEY PLAN

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Name Curtis D. Barlage, P.E.
Date 05/22/2020 Reg. No. 45914

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| Drawing Number | ES111 |

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