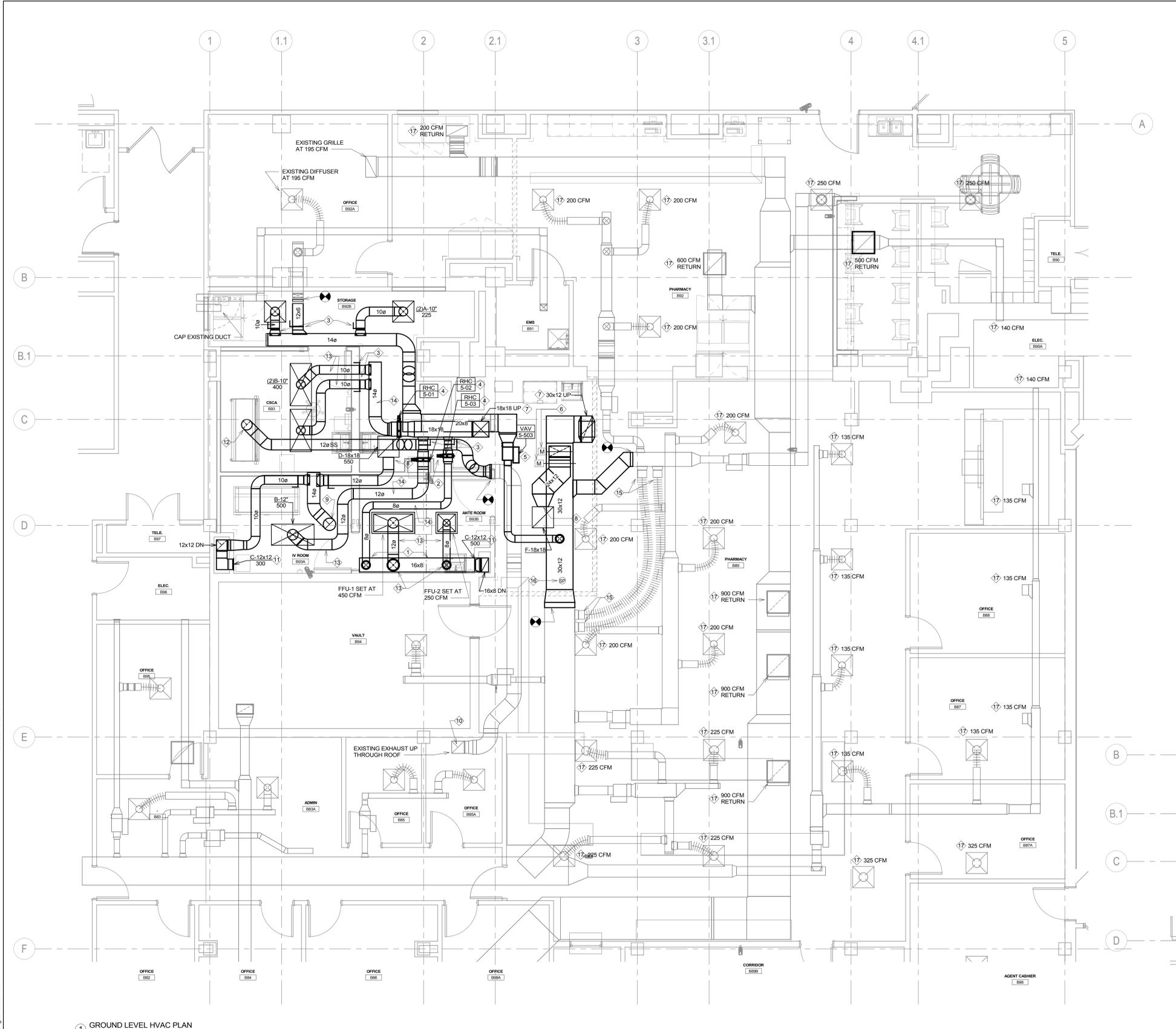
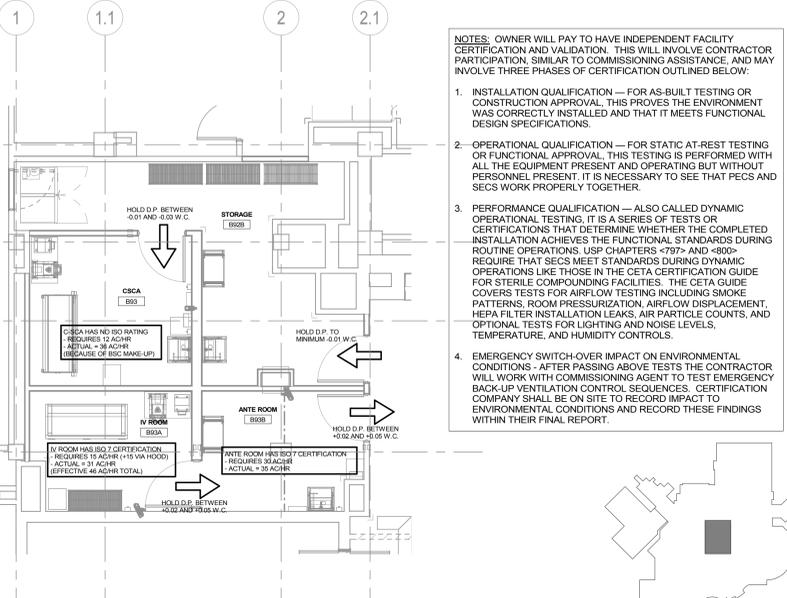


three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one sixteenth inch = one foot



- KEY NOTES:**
- INSTALL RETURN DUCT CLOSE TO WALL SO THAT IT IS BEHIND EXISTING CABLE TRAY ROUTED IN PARALLEL TO THIS LOCATION APPROXIMATELY 18" FROM WALL. COORDINATE TOP DUCT CONNECTIONS TO GO OVER TOP OF EXISTING CABLE TRAY AND TRANSITION TO CONNECTION POINT AS REQUIRED.
 - BIOSAFETY CABINET EXHAUST TO BE WELDED STAINLESS STEEL AND TRANSITION UNDER SUPPLY DUCTS INDICATED AND BACK UP TO POINT OF CONNECTION INTO EXISTING 16"x10" STAINLESS DUCT.
 - IF MANUAL BALANCING DAMPERS SHOWN ABOVE LAY-IN CEILING ARE BLOCKED AND NOT ACCESSIBLE, OR NEED TO BE SHIFTED INTO ROOM WITH INACCESSIBLE GYPSUM CEILING, THEN THEY SHOULD BE FURNISHED INSTEAD AS GEAR DRIVEN DAMPERS WITH REMOTE CABLE ACCESS POINT MOUNTED TO NEAREST WALL OR CEILING OUTSIDE OF CLEANROOM AREAS FOR ADJUSTMENT.
 - REHEAT COIL PIPING COMPONENTS TO ALL BE LOCATED ABOVE ACCESSIBLE LAY-IN CEILING AREA AND NOT ABOVE GYPSUM CEILING IN CLEANROOM SPACES. COORDINATE CEILING TILE ACCESS POINTS AND MARK GRID WITH OPTIMAL TILE FOR SERVICE AND MAINTENANCE. PROVIDE ACCESS PANELS ON BOTH SIDE OF REHEAT COILS FOR CLEANING PURPOSES.
 - COORDINATE APPROPRIATE ACCESS TO VAV BOX/REHEAT COIL AND MOTORIZED DAMPER FROM THIS LOCATION. MARK CEILING GRID FOR WHICH CEILING TILE PROVIDES AS ACCESS POINT TO ALL.
 - PROVIDE INTERLOCKED PAIR OF MOTORIZED DAMPERS TO SWITCH MAKE-UP AIR SOURCE BETWEEN CENTRAL AHU-5 AND DIRECT AIR FROM PHARMACY THROUGH RETURN GRILLE BELOW. REFER TO SEQUENCE OF OPERATION FOR SWITCHING AWAY FROM AHU-5 MAKE-UP DURING LOSS OF POWER EVENT, OR UPON ANY SHUT-DOWN OF AHU-5.
 - 30"x12" SUPPLY AND MAKE-UP AIR DUCTS TO TRANSITION UP THROUGH ROOF TO RTU UNIT ABOVE. REFER TO DRAWING MH111 FOR CONTINUATION. SEE STRUCTURAL DRAWINGS/DETAIL FOR PENETRATION THROUGH EXISTING WAFFLE SLAB. REFER TO PLAN FOR BASE BID RTU UNIT, OR ADD ALTERNATE INDOOR AHU UNIT WITH OUTDOOR DOUBLE WALL DUCTWORK TO/FROM INTERSTITIAL MECHANICAL ROOM SPACE.
 - EXHAUST, OR RETURN GRILLE, INDICATED WILL HAVE LIMITED ACCESS FROM ABOVE AND MUST BE PROVIDED WITH SHEET METAL PLENUM FOR SIDE CONNECTION TO DUCTWORK. COORDINATE OPTIMAL HEIGHT OF PLENUM ON SITE.
 - ROUTE EXHAUST DUCT UP THROUGH ROOF USING PREVIOUS PENETRATION FROM DEMOLISHED DUCTWORK. ALTER OPENING SIZE AS REQUIRED WITH WAFFLE SLAB.
 - EXISTING WELDED STAINLESS STEEL EXHAUST DUCT UP THROUGH ROOF. REFER TO ROOF PLAN FOR REPLACEMENT OF EXISTING UPBLAST FAN WITH NEW PLUME TYPE FAN WITH 10' STACK. REFER TO DRAWING MH111 FOR MECHANICAL ROOF PLAN.
 - MOUNT BOTTOM OF FLOOR MOUNTED GRILL APPROXIMATELY 12" ABOVE FINISHED FLOOR. PAINT INSIDE OF DUCT VISIBLE THROUGH GRILL FACE FLAT BACK TO CONCEAL.
 - PROVIDE BLAST GATE TYPE BALANCING DAMPER ACCESSIBLE FROM BELOW CEILING. UTILIZE 3" STAINLESS STEEL SECTION PORT INSTALLED FLUSH TO CEILING AND ASSOCIATED PARTS IN PAO CHALLENGE PORT KIT BY THECLEANROOMPARTSGUYS.COM.
 - PROVIDE AEROSOL INJECTION PORT FOR EACH HEPA DIFFUSER, AND FAN FILTER UNIT. UTILIZE 3" STAINLESS STEEL SECTION PORT INSTALLED FLUSH TO CEILING AND ASSOCIATED PARTS IN PAO CHALLENGE PORT KIT BY THECLEANROOMPARTSGUYS.COM.
 - PROVIDE AIRFLOW SENSOR AT APPROXIMATE LOCATION INDICATED. EBTRON GOLD SERIES OR EQUAL. INCLUDE ACCESS PANELS TO ALLOW FOR PERIODIC CLEANING OF SENSING ELEMENT. COORDINATE WITH BALANCING CONTRACTOR TO FULLY CALIBRATE AIRFLOW SENSOR ON COMPLETION OF WORK.
 - REMOVE THE TWO(2) TEMPORARY 10" FLEXIBLE DUCTS UPON COMPLETION OF DUCTWORK MODIFICATIONS, BUT PRIOR TO FINAL AIR BALANCING. PATCH DUCT AT POINT OF DISCONNECT AIRTIGHT AND REPAIR DAMAGED INSULATION AS REQUIRED.
 - PROVIDE NEW DUCT STATIC PRESSURE SENSOR IN THIS LOCATION FOR CONTROL OF EXISTING AHU-5. BALANCING CONTRACTOR WILL ADJUST TO SETPOINT READINGS TAKEN PRIOR TO DEMOLITION IN THIS AREA.
 - BALANCE EXISTING DIFFUSERS AND GRILLES BACK TO AIRFLOW'S INDICATED. PERFORM ROOM PRESSURIZATION READING BETWEEN MAIN PHARMACY AND ADJACENT CORRIDOR TO BE NEUTRAL TO SLIGHTLY POSITIVE. IF NEGATIVE CONDITION IS FOUND COORDINATE WITH ENGINEER OF RECORD FOR ADJUSTMENT OF THESE AIRFLOW BALANCE TO THESE SPECIFIC DIFFUSERS/GRILLES TO COMPENSATE.

- GENERAL NOTES:**
- MECHANICAL CONTRACTOR SHALL REFER TO THE VA MASTER SPECIFICATION MANUAL EDITED FOR THIS PROJECT ALONG WITH ANY APPLICABLE STANDARDS WITHIN THE VA DESIGN GUIDE. ALL REQUIREMENTS OF THESE MANUALS SHALL BE MAINTAINED IN ADDITION TO ALL NOTES AND DESCRIPTIONS INDICATED WITHIN THESE DRAWINGS. ANY CONFLICTS BETWEEN THESE DOCUMENTS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR INTERPRETATION.
 - 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.
 - ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION. VA HOSPITAL FACILITIES WILL REQUIRE A MINIMUM OF TWO(2) WEEKS NOTICE PRIOR TO ANY SUCH OUTAGE AFFECTING MORE THAN ONE ADJACENT AREA.
 - 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.
 - ALL EXISTING DUCTWORK AND PIPING THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED. PIPING PENETRATIONS THROUGH INTERSTITIAL FLOOR SHALL BE DRILLED, OR CUT, BY THE CONTRACTOR, AND FIRE SEALED AS REQUIRED.
 - THE EXACT LOCATION OF EQUIPMENT ROUGH-INS SHALL BE VERIFIED WITH THE STAMPED APPROVED SHOP DRAWINGS PRIOR TO ANY FIELD INSTALLATION.
 - THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN EACH PROJECT SPACE IN A NEGATIVE PRESSURIZATION AND PROVIDE HEPA FILTRATION UNITS AS REQUIRED BY INFECTION CONTROL. IF NECESSARY CONSULT WITH VA OR ENGINEER OF RECORD FOR SUGGESTED METHODS THAT MAY BE UTILIZED TO ELIMINATE CONTAMINATED AIR TO OUTSIDE. VISUAL PRESSURIZATION INDICATORS SHALL BE PROVIDED AT EACH ENTRANCE TO THE CONSTRUCTION ZONE AND MONITORED DAILY TO INSURE A CONSTANT NEGATIVE PRESSURE IS MAINTAINED THROUGHOUT EACH PHASE. COORDINATE PRESSURIZATION PLANNING WITH VA FACILITIES AND INFECTION CONTROL REPRESENTATIVE PRIOR TO EACH CONSTRUCTION PHASE.
 - ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
 - ALL WORK OUTSIDE THE PROTECTED PROJECT BOUNDARIES ABOVE EXISTING CEILING SHALL BE COMPLETED WITH CEILING REPLACED IN THE SAME DAY UNLESS FULLY COORDINATED THROUGH INFECTION CONTROL. CLEAN AREA TO ORIGINAL CONDITION ON COMPLETION.
 - CONTRACTOR TO INSTALL TEMPORARY BARRIERS FOR EACH PROJECT PHASE AND/OR AREA. THESE BARRIERS SHALL BE COORDINATED WITH VA HOSPITAL AND, IN MOST CASES, CONTAIN SOME FORM OF AIRLOCK VESTIBULE PRIOR TO ENTERING THE CONSTRUCTION AREA.
 - FLUTTER STRIPS OR AIR PRESSURE GAUGES SHALL BE PROVIDED AT THE ENTRANCES TO EACH CONSTRUCTION AREA. ALL CONTRACTED WORKERS SHALL BE TRAINED TO VISUALLY MONITOR THESE DEVICES FOR ADEQUATE NEGATIVE PRESSURIZATION AS THEY ENTER/EXIT THE CONSTRUCTION AREA. DAILY LOGS SHALL BE KEPT BY THE MECHANICAL CONTRACTOR TO INSURE CONSTANT PRESSURIZATION HAS BEEN MAINTAINED.
 - NEGATIVE PRESSURIZATION SHALL BE MAINTAINED IN EACH CONSTRUCTION AREA. IF LOCATED ON AN EXTERIOR WALL FANS SHOULD BE UTILIZED TO EXHAUST AIR DIRECTLY OUT A NEARBY WINDOW, TAKING PRECAUTIONS TO NOT INTERFERE WITH EXISTING BUILDING AIR INTAKES, PUBLIC AREAS, ETC. IF NO EXTERIOR WALL IS AVAILABLE THEN NEGATIVE AIR MACHINES WITH INTERNAL FILTRATION SHALL BE PROVIDED AND CONNECTION TO THE NEAREST EXHAUST OR RETURN DUCT AVAILABLE (CONTACT ENGINEER FOR DETAILS). EXISTING DUCTWORK CAPACITY PRIOR TO EXHAUST CONNECTION.
 - TAKEOFFS TO SUPPLY AIR DIFFUSERS AND REGISTERS SHALL BE SAME SIZE AS DUCT CONNECTION SIZE, UNLESS OTHERWISE NOTED.



1 GROUND LEVEL HVAC PLAN
1/4" = 1'-0"

Revision#	Description	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title GROUND LEVEL HVAC PLAN	Phase BID SET
Approved:	

Project Title UPGRADE PHARMACY 797	Location SIoux FALLS, SOUTH DAKOTA
Issue Date 02/10/2021	Checked JRG
	Drawn TNH

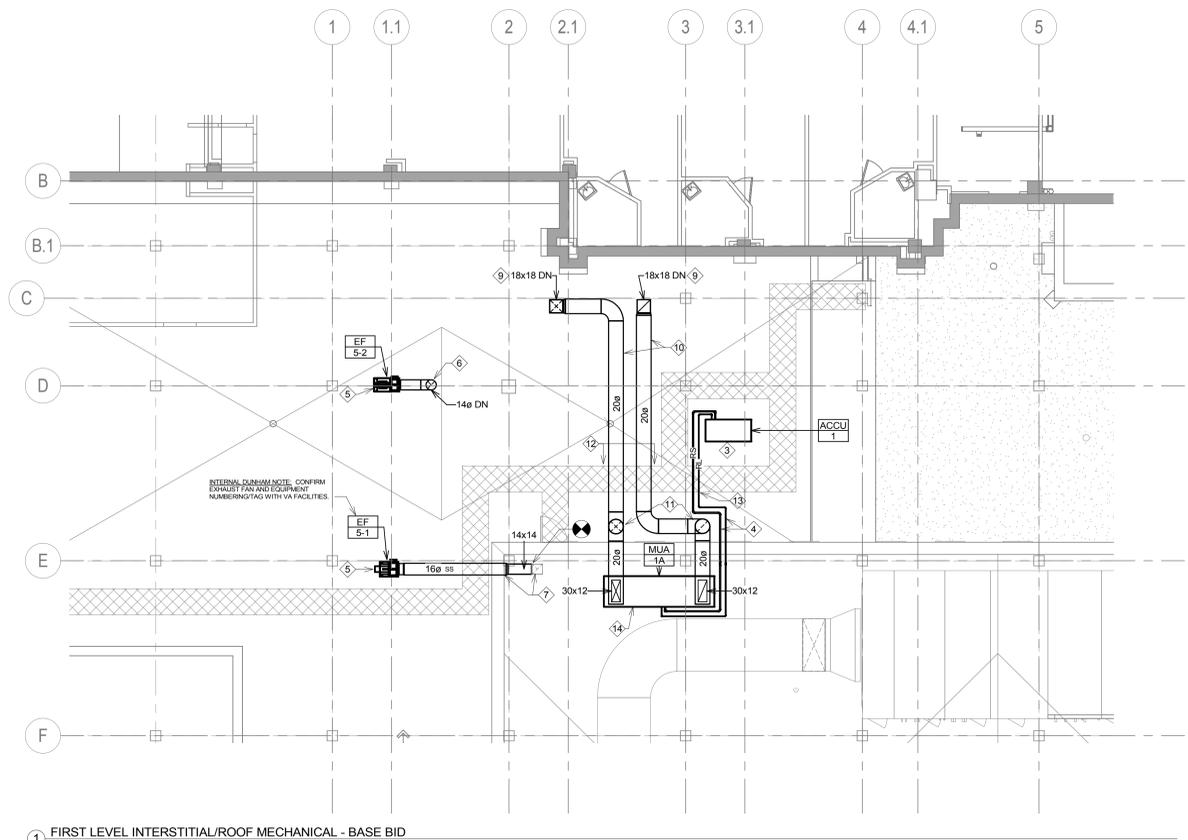
Project Number VA #438-20-109 SGA #201927	Drawing Number MH101
Building Number 5	

GENERAL NOTES:

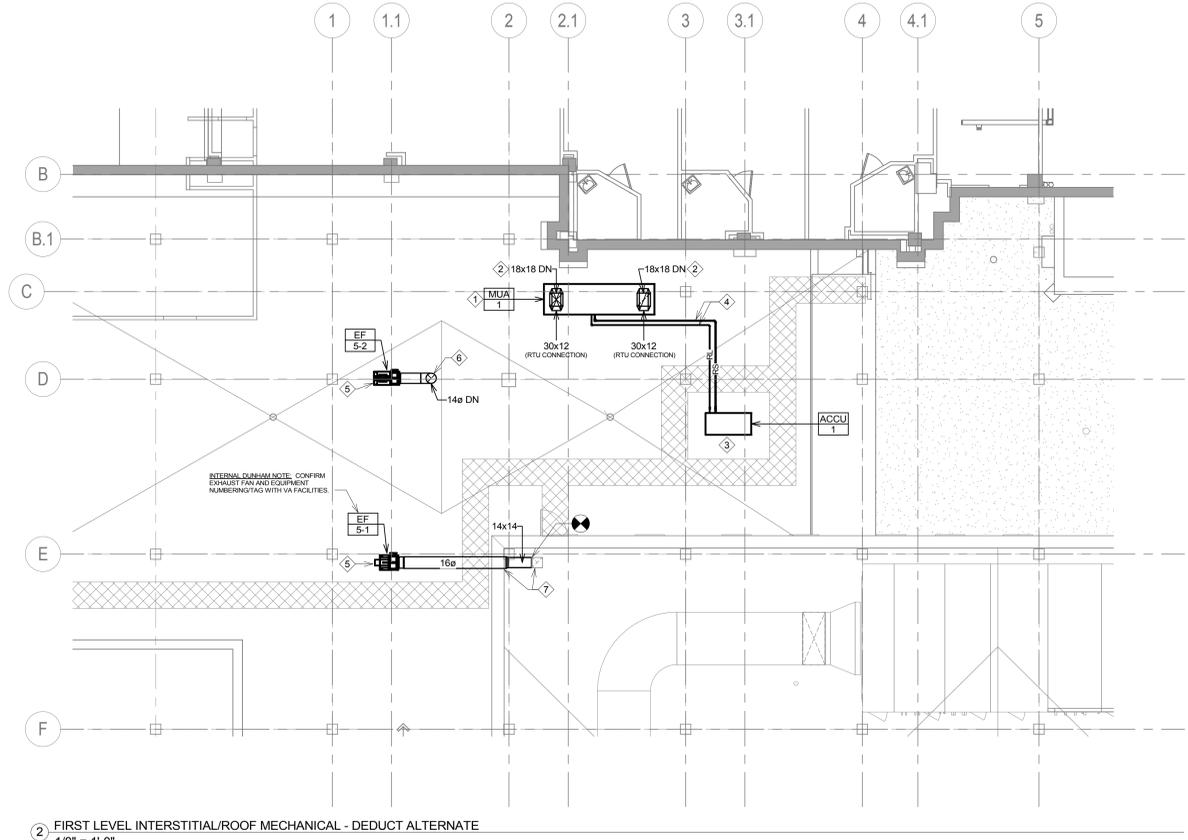
- APPLY ALL GENERAL NOTES FROM DRAWING MH101 TO THIS DRAWING IN ADDITION TO THE NOTES FOLLOWING BELOW.
- ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED WITH NEW EQUIPMENT CURBS TIED DIRECTLY INTO ROOF STRUCTURE AND INTEGRATED INTO EXISTING ROOF FLASHING/MEMBRANE. CONTRACTOR SHALL HIRE THE ORIGINAL ROOFING CONTRACTOR TO PERFORM ANY MODIFICATIONS TO THE ROOFING SYSTEM IN ORDER TO MAINTAIN ANY CURRENT ROOF WARRANTIES IN PLACE. DO NOT ALLOW FLOATING SUPPORTS OF EQUIPMENT OR PIPING/DUCTWORK UNLESS SPECIFICALLY NOTED IN THESE DRAWINGS.
- ROOF PENETRATIONS SHALL BE ENCLOSED/PROTECTED WITH A FULL PERIMETER CURB THAT IS INSTALLED AS DESCRIBED ABOVE.
- EXISTING ROOF PENETRATIONS MAY BE REQUIRED TO BE ENLARGED AS PART OF THIS PROJECT. CONTRACTOR SHALL NOT EXTEND OPENING INTO CONCRETE JOISTS OF THE WAFFLE SLAB SYSTEM WITHOUT COORDINATING WITH STRUCTURAL ENGINEER. ANY NEW ROOF PENETRATIONS SHALL ALSO BE FULLY CONTAINED WITHIN PAN SPACE OF EXISTING CONCRETE WAFFLE SLAB.
- DUCTWORK AND PIPING PENETRATIONS THROUGH ROOF SHALL BE CONTINUOUSLY INSULATED PER ENERGY CODE. ALLOW FOR VA REPRESENTATIVE, OR ENGINEER OF RECORD, TO VISUALLY INSPECT AND DOCUMENT DUCTWORK/PIPING INSULATION WITHIN CONCEALED CURB AREA BEFORE SETTING OF EQUIPMENT INTO POSITION.
- TEMPORARILY PROTECT ALL OPENINGS THROUGH ROOF TO BE FULLY WEATHER RESISTANT AND INSULATED AS REQUIRED.

KEY NOTES:

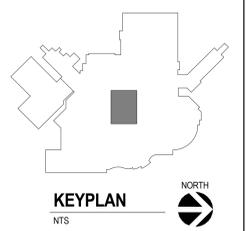
- UNDER DUCT/ALTERNATE THE BLOWER COIL UNIT SHALL BE AN OUTSIDE ROOFTOP UNIT. REFER TO EQUIPMENT SCHEDULES FOR SPECIFIC CAPACITY REQUIREMENTS AND INCLUDED OPTIONS. COORDINATE INSTALLATION OF TALL ROOF CURB (REFER TO KEY NOTE #2 BELOW). CURB SHALL BE INSTALLED BY ORIGINAL ROOFING SUBCONTRACTOR TO MAINTAIN ANY EXISTING ROOF WARRANTIES. ALIGN WITH DUCT PENETRATIONS THROUGH ROOF AS REQUIRED.
- CONTRACTOR TO FURNISH A ROOF CURB TALL ENOUGH TO ACCOMMODATE DUCT TRANSITION FROM 18"X18" PENETRATIONS THROUGH WAFFLE SLAB STRUCTURE UP TO SIZE OF BOTTOM INLET ON RTU (TYPICAL OF BOTH SUPPLY AND RETURN CONNECTIONS). NOTE THAT ACTUAL DUCT PENETRATION SIZE MAY VARY SLIGHTLY SINCE TIGHT TOLERANCE OF DUCT MAY REQUIRE INSULATION THROUGH OPENING TO BE COMPRESSED, OR APPLIED IN A CLOSED CELL SPRAY FOAM APPLICATION AT THAT TIGHT ROOF PENETRATION. INSULATION ON DUCTWORK SHALL BE CONTINUOUS THROUGH CURB UP TO UNIT CONNECTION POINT.
- INSTALL EQUIPMENT CURB ON ROOF FOR NEW DIGITAL SCROLL CONDENSING UNIT IN SAME LOCATION AS REMOVED CHILLER. SEE DEMOLITION PLANS. HIRE THE ORIGINAL ROOFING CONTRACTOR TO INSTALL CURB INTO FLASHING AND EITHER REMOVE, OR MODIFY, EXISTING CURB AS REQUIRED.
- INSTALL REFRIGERANT PIPING BETWEEN NEW DIGITAL SCROLL CONDENSING UNIT AND DX COOLING COIL WITHIN RTU. PIPING SHALL BE SUPPORTED ON CURBS THAT ARE TIED INTO ROOF FLASHING (NOT FLOATING BLOCK SUPPORTS). ORIGINAL ROOFING CONTRACTOR SHALL PERFORM WORK IF REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES. CONSULT MANUFACTURER TO VERIFY ADEQUATE PIPING SIZING AND SUPPORT SPACING. ALL OUTDOOR PIPING INSULATION TO BE COVERED WITH EITHER ALUMINUM JACKETING, OR VENTURECLAD COVER. SEE SPECIFICATIONS.
- INSTALL NEW UTILITY EXHAUST FAN WITH 10' TALL STACK. SEE DRAWING SCHEDULES FOR MODEL WITH INTEGRATED STACK RATED FOR 115 MPH WIND CONDITIONS (OR PROVIDE WITH ADEQUATE GUY WIRE SUPPORTS). INSTALL SUPPORT CURB INTO ROOF FLASHING AND INSTALLED ANCHOR BOLTS AS REQUIRED BY MANUFACTURER.
- EXPAND EXISTING ROOF PENETRATION WITHIN WAFFLE SLAB STRUCTURE TO ACCOMMODATE NEW DUCT PENETRATION. DUCT SHALL BE CONTINUOUSLY INSULATED THROUGH CURB/ROOF PENETRATION AND TRANSITION TO 3M VENTURECLAD COVERING ONCE EXPOSED TO OUTDOOR CONDITIONS. SEE SPECIFICATION REQUIREMENTS.
- EXISTING STAINLESS STEEL DUCT PENETRATION THROUGH INTERSTITIAL FLOOR TO REMAIN. CONNECT NEW STAINLESS DUCT JUST ABOVE FLOOR PENETRATION AND ROUTE TO PLUMB EXHAUST FAN. SEAL EXTERIOR WALL PENETRATION AS REQUIRED. ALL DUCT EXPOSED TO OUTDOOR CONDITIONS TO HAVE INSULATION COVERED WITH 3M VENTURECLAD OR EQUAL.
- NOT USED.
- CUT NEW ROOF PENETRATIONS FOR SUPPLY AND MAKE-UP AIR DUCTS FROM FLOOR BELOW. REFER TO KEY NOTE #2 RELATED TO ANTICIPATED TIGHT TOLERANCES WITHIN EXISTING WAFFLE SLAB STRUCTURE WHILE MAINTAINING REQUIREMENT FOR CONTINUAL INSULATION/VAPOR BARRIER. TRANSITION TO DOUBLE WALL DUCTWORK WITH 3M VENTURECLAD COVERING.
- UNDER BASE BID, ROUTE SUPPLY AND RETURN (MAKE-UP) DUCTWORK FROM ROOF PENETRATIONS OVER INTO INTERSTITIAL SPACE BELOW LAB EXPANSION. ALL OUTDOOR DUCTWORK EXPOSED TO WEATHER SHALL HAVE MINIMUM 3" THICK INSULATION COVERED WITH 3M VENTURECLAD JACKET/COVER, OR APPROVED EQUAL. UNLIKE PIPING/EQUIPMENT INDICATED ELSEWHERE IN THIS DRAWING, THIS EXPOSED DUCTWORK MAY BE SUPPORTED ON FLOATING BLOCK SUPPORTS ABOVE ROOF IF ADEQUATELY SECURED ON EITHER END WHERE LEAVING ROOF PENETRATION/CURB, AND ENTERING INTO INTERSTITIAL FLOOR WALL PENETRATION.
- TRANSITION DUCTS UP AT EXTERIOR WALL TO AN ELEVATION HIGH ENOUGH TO GET ABOVE INDOOR AHU WITH SPACE ALLOWANCE FOR CLEAN TRANSITION TO TOP MOUNTED DAMPERS.
- PROVIDE PEDESTRIAN RAMP WITH HANDRAIL, OVER BOTH OUTDOOR DUCTS CROSSING THE MAINTENANCE WALKWAY. RAMP SHALL BE MADE OF STEEL WITH EPOXY COATING AND BE ABLE TO WITHSTAND A 500 LB. LOADING. PERMANENTLY ANCHOR RAMP INTO ROOF STRUCTURE AS REQUIRED. SUBMIT FABRICATION DRAWINGS, AND PROPOSED METHOD TO SECURE TO ROOF, TO A/E FOR APPROVAL.
- PROVIDE A 1/4" STEEL PLATE BENT TO FORM A PROTECTIVE COVER OVER THE REFRIGERANT PIPING WHERE IT CROSSES THE MAINTENANCE WALKWAY TO AVOID DAMAGE FROM FOOT TRAFFIC OR SNOW REMOVAL. PAINT PROTECTIVE COVER WITH CORROSION RESISTANT EPOXY COATING ON COMPLETION.
- UNDER BASE BID, PROVIDE 4" HIGH CONCRETE EQUIPMENT CURB FOR NEW AIR HANDLING UNIT. ANCHOR NEW UNIT TO PAD AND INSTALL ALL PIPING, DUCTWORK, AND CONTROLS REQUIRED. COORDINATE WITH FINAL LAYOUT OF INTERSTITIAL SPACE CREATED BY LAB PROJECT.



1 FIRST LEVEL INTERSTITIAL/ROOF MECHANICAL - BASE BID
1/8" = 1'-0"



2 FIRST LEVEL INTERSTITIAL/ROOF MECHANICAL - DUCTWORK ALTERNATE
1/8" = 1'-0"



Revision#	Description	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title
FIRST LEVEL INTERSTITIAL/ROOF MECHANICAL PLANS

Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Project Number
VA #438-20-109
SGA #201927
Building Number
5

Location
SIOUX FALLS, SOUTH DAKOTA

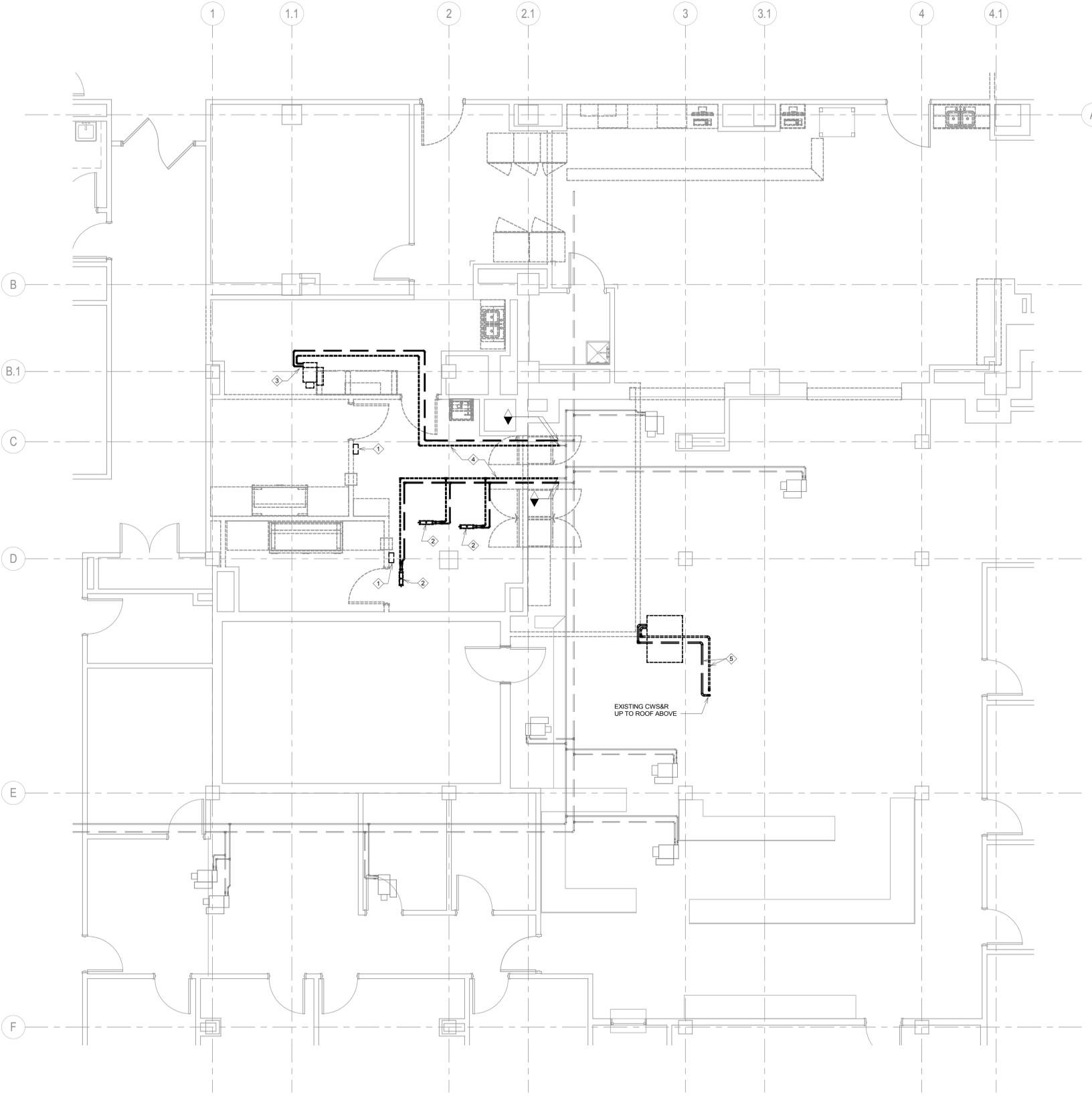
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Checked
JRG

Drawn
TNH

Drawing Number
MH111

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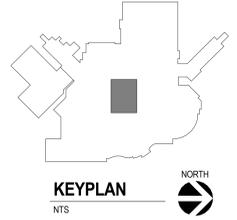
1 GROUND LEVEL DEMOLITION PIPING PLAN
1/4" = 1'-0"

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. ADEQUATELY FIRE SEALED AS REQUIRED.
- 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.

KEY NOTES:

- 1 REMOVE EXISTING SETRA ROOM PRESSURE MONITOR AND TURN OVER TO OWNER TO SALVAGE FOR REPLACEMENT PARTS. CONTRACTOR TO REMOVE ANY CURRENT PROGRAMMING, OR ALARM NOTIFICATIONS, WITHIN BUILDING AUTOMATION.
- 2 REMOVE EXISTING REHEAT COIL ALONG WITH ALL ASSOCIATED PIPING COMPONENTS AND CONTROL VALVES. CONTRACTOR TO REMOVE EXISTING THERMOSTAT CONTROLS, WIRING, AND PROGRAMMING WITHIN AUTOMATION SYSTEM.
- 3 REMOVE EXISTING VAV BOX REHEAT COIL. REFER TO KEY NOTE #2 ABOVE FOR ASSOCIATED COMPONENTS FOR DEMOLITION.
- 4 REMOVE PIPING UP TO POINT INDICATED AND PROVIDE NEW FULL PORT BALL VALVES FOR RECONNECTION TO NEW PIPING. REFER TO PIPING PLANS FOR RECONFIGURATION OF REHEAT WATER PIPING.
- 5 REMOVE EXISTING CHILLED WATER PIPING BETWEEN BLOWER COIL AND REMOTE CHILLER ON ROOF ABOVE. REFER TO ROOF DEMOLITION PLAN FOR CONTINUATION OF DEMOLITION OF EXISTING CHILLER UNIT AND COMPONENTS.



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VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL DEMOLITION PIPING PLAN

Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Project Number
VA #438-20-109
SGA #201927

Building Number
5

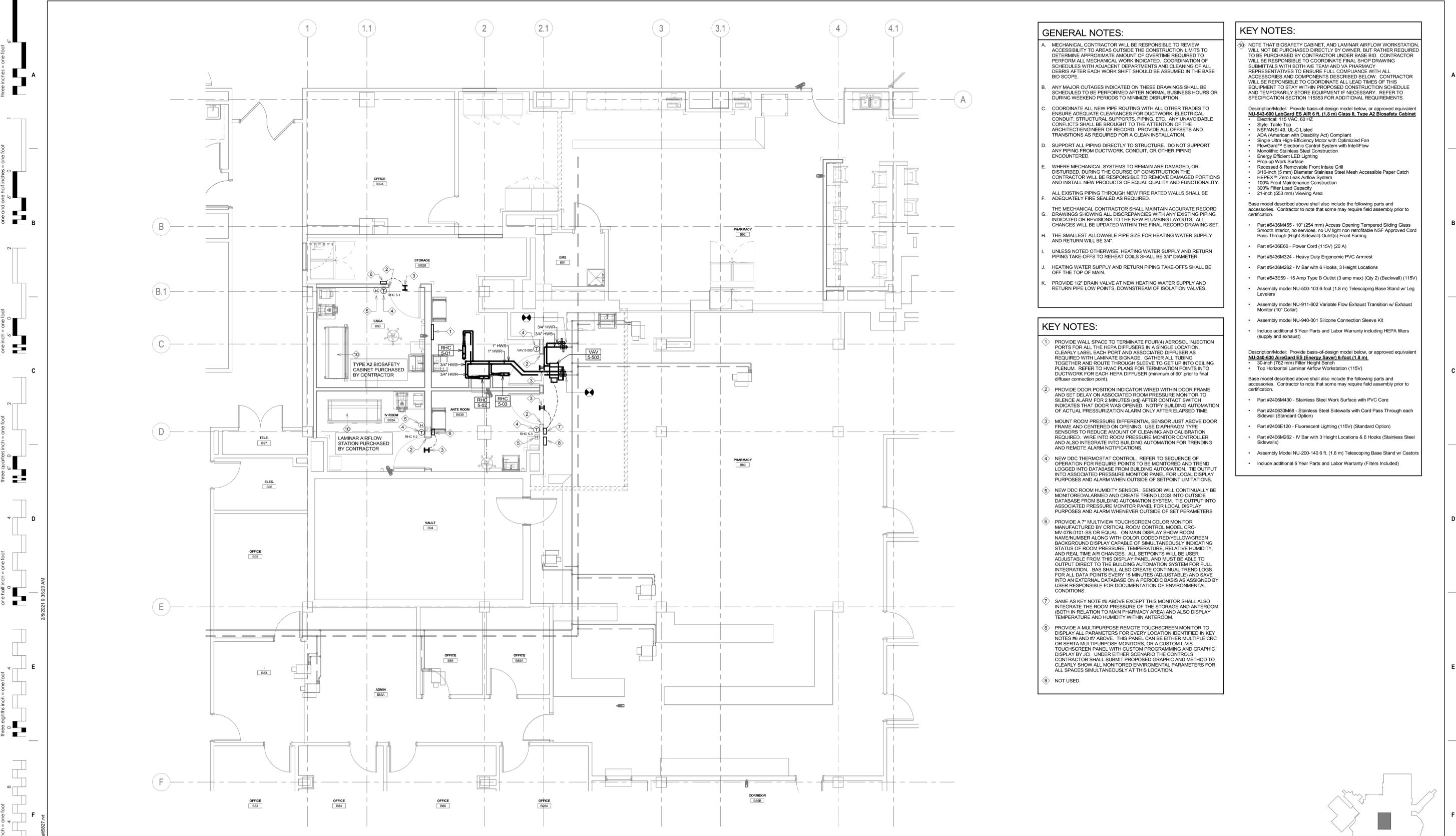
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Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
02/10/2021

Checked
JRG

Drawn
TNH



1 GROUND LEVEL PIPING PLAN
1/4" = 1'-0"

GENERAL NOTES:

- 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.
- ANY MAJOR OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- 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.
- SUPPORT ALL PIPING DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY PIPING FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- 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.
- ALL EXISTING PIPING THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- 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.
- THE SMALLEST ALLOWABLE PIPE SIZE FOR HEATING WATER SUPPLY AND RETURN WILL BE 3/4"
- UNLESS NOTED OTHERWISE, HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS TO REHEAT COILS SHALL BE 3/4" DIAMETER.
- HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS SHALL BE OFF THE TOP OF MAIN.
- PROVIDE 1/2" DRAIN VALVE AT NEW HEATING WATER SUPPLY AND RETURN PIPE LOW POINTS, DOWNSTREAM OF ISOLATION VALVES.

KEY NOTES:

- PROVIDE WALL SPACE TO TERMINATE FOUR(4) AEROSOL INJECTION PORTS FOR ALL THE HEPA DIFFUSERS IN A SINGLE LOCATION. CLEARLY LABEL EACH PORT AND ASSOCIATED DIFFUSER AS REQUIRED WITH LAMINATE SIGNAGE. GATHER ALL TUBING TOGETHER AND ROUTE THROUGH SLEEVE TO GET UP INTO CEILING FLENUM. REFER TO HVAC PLANS FOR TERMINATION POINTS INTO DUCTWORK FOR EACH HEPA DIFFUSER (minimum of 60" prior to final diffuser connection point).
- PROVIDE DOOR POSITION INDICATOR WIRED WITHIN DOOR FRAME AND SET DELAY ON ASSOCIATED ROOM PRESSURE MONITOR TO SILENCE ALARM FOR 2 MINUTES (MIN) AFTER CONTACT SWITCH INDICATES THAT DOOR WAS OPENED. NOTIFY BUILDING AUTOMATION OF ACTUAL PRESSURIZATION ALARM ONLY AFTER ELAPSED TIME.
- MOUNT ROOM PRESSURE DIFFERENTIAL SENSOR JUST ABOVE DOOR FRAME AND CENTERED ON OPENING. USE DIAPHRAGM TYPE SENSORS TO REDUCE AMOUNT OF CLEANING AND CALIBRATION REQUIRED. WIRE INTO ROOM PRESSURE MONITOR CONTROLLER AND ALSO INTEGRATE INTO BUILDING AUTOMATION FOR TRENDDING AND REMOTE ALARM NOTIFICATIONS.
- NEW DDC THERMOSTAT CONTROL. REFER TO SEQUENCE OF OPERATION FOR REQUIRE POINTS TO BE MONITORED AND TREND LOGGED INTO DATABASE FROM BUILDING AUTOMATION. THE OUTPUT INTO ASSOCIATED PRESSURE MONITOR PANEL FOR LOCAL DISPLAY PURPOSES AND ALARM WHEN OUTSIDE OF SETPOINT LIMITATIONS.
- NEW DDC ROOM HUMIDITY SENSOR. SENSOR WILL CONTINUALLY BE MONITORED/ALARMED AND CREATE TREND LOGS INTO OUTSIDE DATABASE FROM BUILDING AUTOMATION SYSTEM. THE OUTPUT INTO ASSOCIATED PRESSURE MONITOR PANEL FOR LOCAL DISPLAY PURPOSES AND ALARM WHEN OUTSIDE OF SETPOINT LIMITATIONS.
- PROVIDE A 7" MULTIVIEW TOUCHSCREEN COLOR MONITOR MANUFACTURED BY CRITICAL ROOM CONTROL MODEL CRC-MV-07B-0101-SS OR EQUAL. ON MAIN DISPLAY SHOW ROOM NAME/NUMBER ALONG WITH COLOR CODED RED/YELLOW/GREEN BACKGROUND DISPLAY CAPABLE OF SIMULTANEOUSLY INDICATING STATUS OF ROOM PRESSURE, TEMPERATURE, RELATIVE HUMIDITY, AND REAL TIME AIR CHANGES. ALL SETPOINTS WILL BE USER ADJUSTABLE FROM THIS DISPLAY PANEL AND MUST BE ABLE TO OUTPUT DIRECT TO THE BUILDING AUTOMATION SYSTEM FOR FULL INTEGRATION. BAS SHALL ALSO CREATE CONTINUAL TREND LOGS FOR ALL DATA POINTS EVERY 15 MINUTES (ADJUSTABLE) AND SAVE INTO AN EXTERNAL DATABASE ON A PERIODIC BASIS AS ASSIGNED BY USER RESPONSIBLE FOR DOCUMENTATION OF ENVIRONMENTAL CONDITIONS.
- SAME AS KEY NOTE #6 ABOVE EXCEPT THIS MONITOR SHALL ALSO INTEGRATE THE ROOM PRESSURE OF THE STORAGE AND ANTEROOM (BOTH IN RELATION TO MAIN PHARMACY AREA) AND ALSO DISPLAY TEMPERATURE AND HUMIDITY WITHIN ANTEROOM.
- PROVIDE A MULTIPURPOSE REMOTE TOUCHSCREEN MONITOR TO DISPLAY ALL PARAMETERS FOR EVERY LOCATION IDENTIFIED IN KEY NOTES #6 AND #7 ABOVE. THIS PANEL CAN BE EITHER MULTIPLE CRC OR SEITA MULTIPURPOSE MONITORS, OR A CUSTOM L-VIS TOUCHSCREEN PANEL WITH CUSTOM PROGRAMMING AND GRAPHIC DISPLAY BY JCI. UNDER EITHER SCENARIO THE CONTROLS CONTRACTOR SHALL SUBMIT PROPOSED GRAPHIC AND METHOD TO CLEARLY SHOW ALL MONITORED ENVIRONMENTAL PARAMETERS FOR ALL SPACES SIMULTANEOUSLY AT THIS LOCATION.
- NOT USED.

KEY NOTES:

NOTE THAT BIOSAFETY CABINET, AND LAMINAR AIRFLOW WORKSTATION WILL NOT BE PURCHASED DIRECTLY BY OWNER, BUT RATHER REQUIRED TO BE PURCHASED BY CONTRACTOR UNDER BASE BID. CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE FINAL SHOP DRAWING SUBMITTALS WITH BOTH AET TEAM AND VA PHARMACY REPRESENTATIVES TO ENSURE FULL COMPLIANCE WITH ALL ACCESSORIES AND COMPONENTS DESCRIBED BELOW. CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE ALL LEAD TIMES OF THIS EQUIPMENT TO STAY WITHIN PROPOSED CONSTRUCTION SCHEDULE AND TEMPORARILY STORE EQUIPMENT IF NECESSARY. REFER TO SPECIFICATION SECTION 113363 FOR ADDITIONAL REQUIREMENTS.

Description/Model: Provide basis-of-design model below, or approved equivalent
NU-240-630 AireGard ES (Energy Saver) 6-foot (1.8 m)

- Electrical: 115 VAC, 60 Hz
- Style: Table Top
- NSF/ANSI 49 UL-C Listed
- ADA (American with Disability Act) Compliant
- Single Ultra High-Efficiency Motor with Optimized Fan
- FlowGuard™ Electronic Control System with IntelliFlow
- Monolithic Stainless Steel Construction
- Energy Efficient LED Lighting
- Pop-up Work Surface
- Recessed & Removable Front Intake Grill
- 3/16-inch (5 mm) Diameter Stainless Steel Mesh Accessible Paper Catch
- HEPEX™ Zero Leak Airflow System
- 100% Front Maintenance Construction
- 300% Filter Load Capacity
- 21-inch (533 mm) Viewing Area

Base model described above shall also include the following parts and accessories. Contractor to note that some may require field assembly prior to certification.

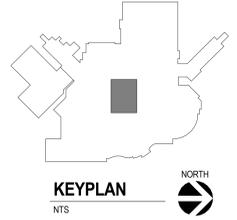
- Part #6436M455 - 10" (254 mm) Access Opening Tempered Sliding Glass Smooth Interior, no services, no UV light non retrofittable NSF Approved Cord Pass Through (Right Side) Outlet(s) Front Fanning
- Part #6436E66 - Power Cord (115V) (20 A)
- Part #6436M324 - Heavy Duty Ergonomic PVC Armrest
- Part #6436M262 - IV Bar with 6 Hooks, 3 Height Locations
- Part #643E59 - 15 Amp Type B Outlet (3 amp max) (Qty 2) (Backwall) (115V)
- Assembly model NU-500-103 6-foot (1.8 m) Telescoping Base Stand w/ Leg Levelers
- Assembly model NU-911-602 Variable Flow Exhaust Transition w/ Exhaust Monitor (10" Collar)
- Assembly model NU-940-001 Silicone Connection Sleeve Kit
- Include additional 5 Year Parts and Labor Warranty including HEPA filters (supply and exhaust)

Description/Model: Provide basis-of-design model below, or approved equivalent
NU-240-630 AireGard ES (Energy Saver) 6-foot (1.8 m)

- 30-inch (762 mm) Filter Height Bench
- Top Horizontal Laminar Airflow Workstation (115V)

Base model described above shall also include the following parts and accessories. Contractor to note that some may require field assembly prior to certification.

- Part #2406M430 - Stainless Steel Work Surface with PVC Core
- Part #2406S0168 - Stainless Steel Sidewalls with Cord Pass Through each Side (Standard Option)
- Part #2406E120 - Fluorescent Lighting (115V) (Standard Option)
- Part #2406M262 - IV Bar with 3 Height Locations & 6 Hooks (Stainless Steel Sidewalls)
- Assembly Model NU-200-140 6 ft. (1.8 m) Telescoping Base Stand w/ Castors
- Include additional 5 Year Parts and Labor Warranty (Filters Included)



Revision#	Description	Date:

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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: **GROUND LEVEL PIPING PLAN**

Phase: **BID SET**

Approved: _____

Project Title: **UPGRADE PHARMACY 797**

Location: **SIOUX FALLS, SOUTH DAKOTA**

Issue Date: 02/10/2021

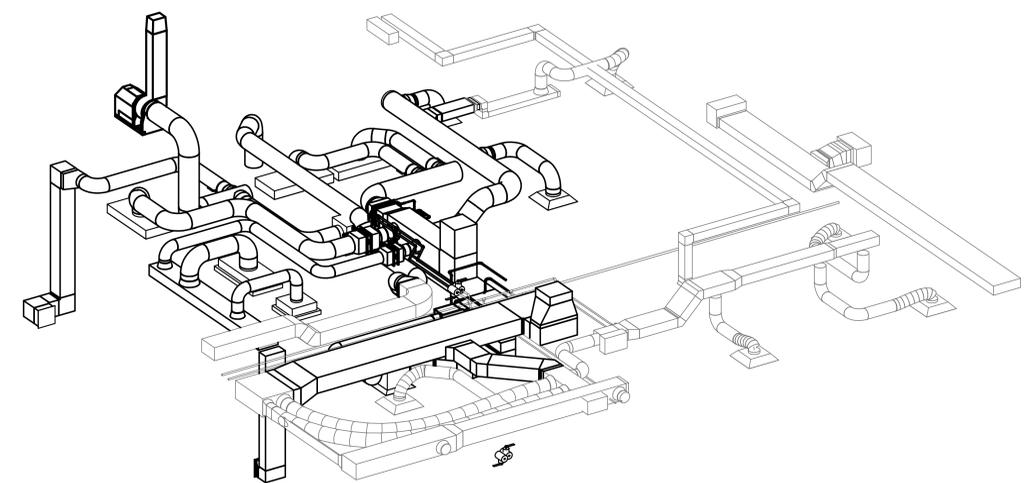
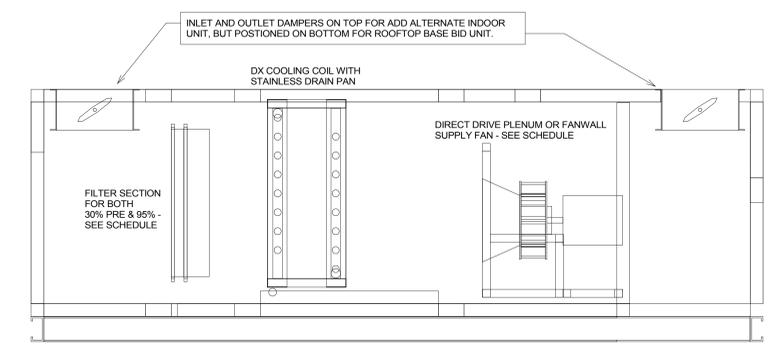
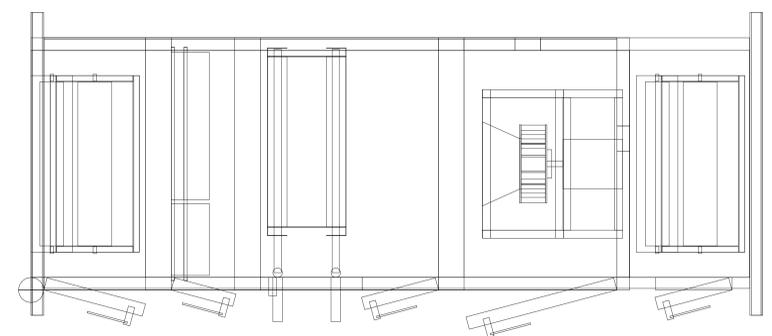
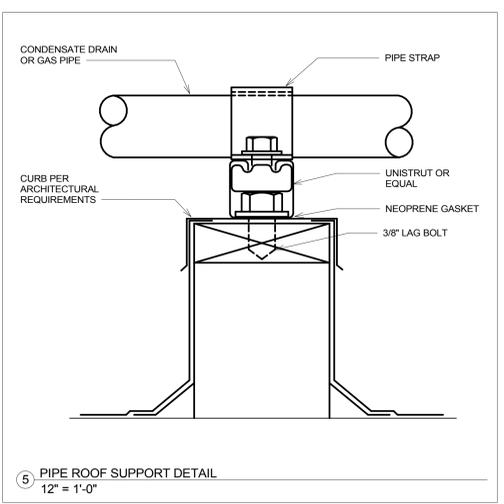
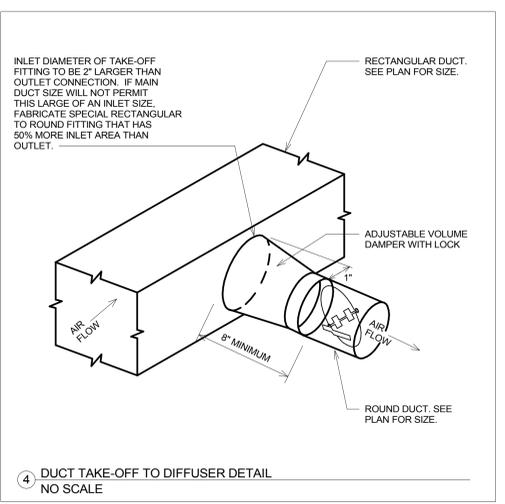
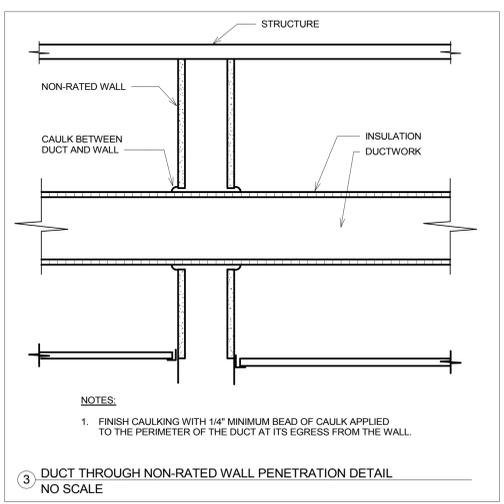
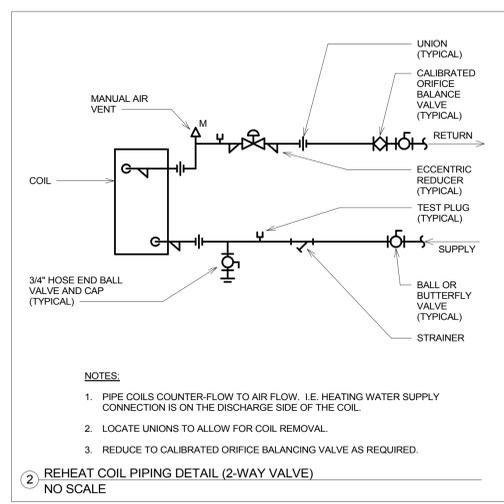
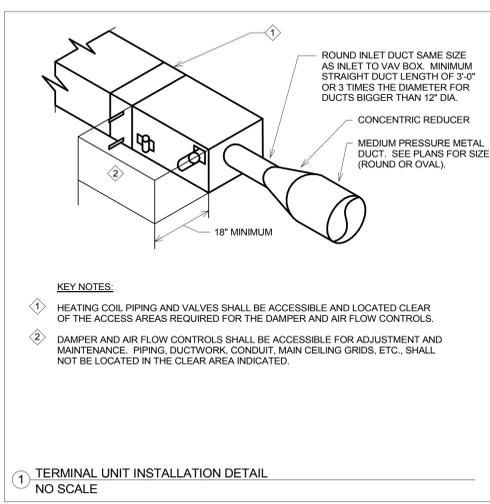
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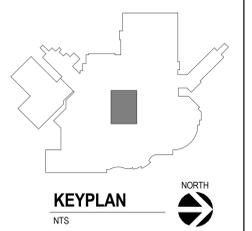
Project Number: **VA #438-20-109 SGA #201927**

Building Number: **5**

Drawing Number: **MP101**



7 MAKE-UP AIR UNIT DETAILS (BASE BID AND ADD ALTERNATE)
NO SCALE



Revision#	Description	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL DETAILS

Phase
BID SET

Approved:

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
02/10/2021

Checked
JRG

Drawn
TNH

Project Number
VA #438-20-109
SGA #201927

Building Number
5

Drawing Number
M500

MAKE-UP AIR UNIT SCHEDULE

EQUIPMENT TAG	APPLICATION	MIXING BOX (YES/NO)	MINIMUM OUTDOOR AIR CFM	COOLING COIL	CONDENSING UNIT	AIR PRE-FILTER	AIR FINAL-FILTER	SUPPLY FAN	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
MAU 1	CLEANROOM COOLING	NO	N/A (AHU-5 PRE-TREAT)	MAUCO 1	ACCU 1	MAUPF 1	MAUFF 1	MAUSF 1	DAIKIN SKYLINE	CAH06SGDM	1,2,3,4,5

GENERAL MECHANICAL NOTES:
 A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.
MECHANICAL NOTES:
 1. UNDER BASE BID THIS MAKE-UP AIR UNIT SHALL BE A CABINET BUILT AS SPECIFIED FOR INDOOR INSTALLATION ON CONCRETE PAD. UNDER DEDUCT ALTERNATE PROVIDE DAIKIN MODEL OAH06SGDM WITH SIMILAR CAPACITY CHARACTERISTICS FOR OUTDOOR ROOFTOP INSTALL.
 2. INCLUDE ROOF CURB UNDER DEDUCT ALTERNATE OPTION, OR 4" CONCRETE CURB WITH MECHANICAL ROOM UNDER BASE BID. FANS TO BE INTERNALLY ISOLATED FOR VIBRATION UNDER EITHER SCENARIO.
 3. REFER TO SPECIFICATIONS FOR CASING CONSTRUCTION REQUIREMENTS. PANELS USING FIBERGLASS INSULATION WILL NOT BE CONSIDERED EQUIVALENT TO CLOSED-CELL FOAM PANELS.
 4. INTERNAL LINING OF MAKE-UP AIR UNIT SHALL BE A MINIMUM 20-GAUGE STAINLESS STEEL FOR FULL WASH DOWN. PROVIDE DRAINS AT EACH SECTION FOR PERIODIC CLEANING.
 5. PRESSURE TESTING OF MAKE-UP UNIT TO BE PERFORMED ON SITE WITH DUCT TESTING. ANY LEAKAGE SHALL BE SEALED BY CONTRACTOR USING ACCEPTABLE METHOD AND MATERIALS.

MAKE-UP AIR UNIT - SUPPLY FAN SCHEDULE

EQUIPMENT TAG	AHU SERVED	NUMBER OF FANS	TYPE	CLASS	CFM PER FAN	TOTAL CFM	ESP (IN W.C.)	TOTAL SP (IN W.C.)	WHEEL DIAMETER (IN)	VFD (YES/NO)	FAN RPM	BHP	DRIVE TYPE (BELT/DIRECT)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
MAUSF 1	MAU 1	1	AIR/OIL PLENUM	2	2000	2000	1.5"	4.2"	12.4"	YES	3419	2.13	DIRECT	DAIKIN		1,2,3

GENERAL MECHANICAL NOTES:
 A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.
MECHANICAL NOTES:
 1. PROVIDE FAN WITH NEOPRENE ISOLATOR PADS FOR VIBRATION AND SOUND TRANSMISSION. SUBMIT SOUND DATA WITH SHOP DRAWINGS FOR REVIEW AND APPROVAL.
 2. INCLUDE SHAFT GROUNDING KIT MOUNTED IN FACTORY. VFD DRIVE SHALL BE PREWIRED FROM FACTORY FOR FINAL CONNECTIONS ON SITE. SEE SPEC FOR INLET LINE FILTER REQUIREMENTS.
 3. PROVIDE ALLOWANCE FOR DIRTY FILTER LOADING WHEN SUBMITTING FAN SELECTIONS FOR APPROVAL. ENGINEERS MAY REJECT DUE TO INSUFFICIENT SAFETY FACTOR AND REQUEST LARGER FAN WHEEL.

EQUIPMENT TAG	HP/LOAD	VOLTAGE	PHASE	CALCULATED AFC	TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	CTRL WIRE BY	AMPS/TYP	FUSE SIZE (AMPS)	NEMA TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	PANEL	CIRCUIT NUMBER	CONDUIT/FEEDER SIZE	ELECTRICAL NOTES
MAUSF 1	3 HP	480 V	3	17,000	VFD	DIV 23/DIV26	AT UNIT	DIV 23	INTEGRAL		NEMA 1	DIV 23/DIV 26	AT UNIT	QH-2	13,15,17	3/4" - 3#12 & #12GND	

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
 MRSMS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

MAKE-UP AIR UNIT - COOLING COIL SCHEDULE - DX

EQUIPMENT TAG	AHU SERVED	CFM	NUMBER OF COILS	EACH COIL SIZE (W"xH")	ROWS	COIL				REFRIGERANT TYPE	SUCTION TEMPERATURE (F)	SENSIBLE CAPACITY (MBH)	TOTAL CAPACITY (MBH)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES	
						EAT (F)	LAT (F)	W/F (F)	FACE VELOCITY (FPM)								
MAUCO 1	MAU 1	2000	1	27"x27"	5	10	61.5	58.3	48.1	47.8	R-410A	40	29,272	55,827	DAIKIN	5EN1005B	1,2,3

GENERAL MECHANICAL NOTES:
 1. STAINLESS STEEL DRAIN PAN SHALL BE DOUBLE SLOPED AND CONSTRUCTED OF 316 STAINLESS STEEL. CONFIRM APPROPRIATE BASE RAILS HEIGHT REQUIRED FOR CONDENSATE TRAP.
 2. MANUFACTURER TO ALLOW FOR ADEQUATE SPACE FOR PERIODIC COIL CLEANING. SUBMIT DIMENSIONAL DRAWING WITH SHAP DRAWINGS FOR APPROVAL.

MAKE-UP AIR UNIT - CONDENSING UNIT SCHEDULE

EQUIPMENT TAG	AHU SERVED	TYPE	NUMBER OF CONTROL STEPS	TOTAL CAPACITY (MBH)	AMBIENT TEMPERATURE (F)	MINIMUM OPERATING TEMPERATURE (F)	REFRIGERANT TYPE	SUCTION TEMPERATURE (F)	FANS MOTOR HP (EACH)	MOTOR FLA (EACH)	COMPRESSORS MOTOR HP (EACH)	COMPRESSORS FLA (EACH)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
ACCU 1	MAU 1	DIGITAL SCROLL	MODULATING	60,000	95	-20	R-410A	40	1	0.33	1	8.1	AAON	CFA-005-A-A-3-DC00H1A-A0-00-00-AND-N000-00B0G	1,2,3,4

GENERAL MECHANICAL NOTES:
 A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.
MECHANICAL NOTES:
 1. PROVIDE UNIT WITH FLOODED CONDENSER FOR AMBIENT OPERATIONS DOWN TO -20 DEGREE IN WINTER.
 2. PROVIDE WITH SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT PREWIRED IN FACTORY.
 3. UNIT SHALL BE ABLE TO INTEGRATE INTO EXISTING BUILDING AUTOMATION SYSTEM TO MODULATE BOTH COMPRESSOR AND CONDENSER FAN, TO MAXIMIZE EFFICIENCY AND OUTPUT.
 4. INCLUDE CONDENSER COIL GAIRD, ECM CONTROL FOR FAN, AND HEAD PRESSURE CONTROLLER. EXTERIOR OF CABINET TO HAVE PREMIUM EPOXY COATING PER SPECIFICATION REQUIREMENTS.

EQUIPMENT TAG	HP/LOAD	VOLTAGE	PHASE	CALCULATED AFC	TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	CTRL WIRE BY	AMPS/TYP	FUSE SIZE (AMPS)	NEMA TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	PANEL	CIRCUIT NUMBER	CONDUIT/FEEDER SIZE	ELECTRICAL NOTES
ACCU 1	10 FLA	480 V	3	17,000	VFD	DIV 23/DIV26	AT UNIT	DIV 23	INTEGRAL	15A	NEMA 1	DIV 23/DIV 26	AT UNIT	QH-2	14,16,18	3/4" - 3#12 & #12GND	

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
 MRSMS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

MAKE-UP AIR UNIT - PREFILTER SCHEDULE

EQUIPMENT TAG	AHU SERVED	TYPE	CFM	NUMBER OF MODULES	SIZE PER MODULE (H"xL"xD")	EFFICIENCY (%)	MERV RATING	APD CLEAN (IN W.C.)	APD AT 50% LOADING (IN W.C.)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
MAUPF 1	MAU 1	2" PLEATED	2,000	2	24"x24" x 24"x12"	30%	8	0.15"	0.57"	CAMFIL-FARR	30/30	1,2

MECHANICAL NOTES:
 1. PROVIDE TWO(2) COMPLETE SETS OF FILTERS. FIRST TO BE INSTALLED UPON OCCUPANCY, AND A SECOND SET TO TURN OVER TO OWNER.
 2. PROVIDE BOTH MAGNETIC GAUGES ACROSS FILTERS, AND DDC DIFFERENTIAL PRESSURE SENSORS, TO NOTIFY STAFF WHEN DIRTY FILTERS NEED REPLACEMENT.

MAKE-UP AIR UNIT - FINAL FILTER SCHEDULE

EQUIPMENT TAG	AHU SERVED	TYPE	CFM	NUMBER OF MODULES	SIZE PER MODULE (H"xL"xD")	EFFICIENCY (%)	MERV RATING	APD CLEAN (IN W.C.)	APD AT 50% LOADING (IN W.C.)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
MAUFF 1	MAU 1	12" CARTRIDGE	2,000	2	24"x24" x 24"x12"	95	14	0.50"	1.00"	CAMFIL-FARR	VARICELL II MH	1,2

MECHANICAL NOTES:
 1. PROVIDE TWO(2) COMPLETE SETS OF FILTERS. FIRST TO BE INSTALLED UPON OCCUPANCY, AND A SECOND SET TO TURN OVER TO OWNER.
 2. PROVIDE BOTH MAGNETIC GAUGES ACROSS FILTERS, AND DDC DIFFERENTIAL PRESSURE SENSORS, TO NOTIFY STAFF WHEN DIRTY FILTERS NEED REPLACEMENT.

FAN SCHEDULE

EQUIPMENT TAG	APPLICATION	TYPE	CFM	ESP (IN W.C.)	BHP	FAN RPM	DRIVE TYPE	SONES	VFD (YES/NO)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
EF 5-1	CHEMO EXHAUST	FUMEJET STACK	800	1.5"	0.38	2230	DIRECT	14.0	YES	GREENHECK	FJ-10-BK-X	1,2,3,4
EF 5-2	HD STORAGE	FUMEJET STACK	550	0.75"	0.14	1536	DIRECT	8.9	YES	GREENHECK	FJ-10-BK-X	1,2,3,4

GENERAL MECHANICAL NOTES:
 A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.
MECHANICAL NOTES:
 1. PROVIDE FAN WITH ELECTROSTATICALLY COATED PERMACTOR OR EQUAL COATING WITH EQUIVALENT RESISTANT TO UV AND CHEMICALS.
 2. INCLUDE A SURE-ARE (OR EQUAL) WIRE LOW SENSOR TIED INTO BUILDING AUTOMATION FOR TROUBLESHOOTING PURPOSES.
 3. INCLUDE A FACTORY MOUNTED DISCONNECT SWITCH AND VFD STARTER WITHIN A NEMA 3R ENCLOSURE FOR OUTDOOR USE.
 4. FAN SHALL EITHER BE PROVIDED WITH AN ECM MOTOR AND SPEED CONTROL, OR VFD CONTROLLER, MOUNTED WITHIN WEATHERPROOF ENCLOSURE NEXT TO FAN FOR BALANCING PURPOSES.

EQUIPMENT TAG	HP/LOAD	VOLTAGE	PHASE	CALCULATED AFC	TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	CTRL WIRE BY	AMPS/TYP	FUSE SIZE (AMPS)	NEMA TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	PANEL	CIRCUIT NUMBER	CONDUIT/FEEDER SIZE	ELECTRICAL NOTES
EF 5-1	1/2 HP	480 V	3	17,000	VFD	DIV 23/DIV26	AT UNIT	DIV23	MRS	-	NEMA 3R	DIV 26/DIV 26	AT UNIT	QH-2	19,21,23	3/4" - 3#12 & #12GND	
EF 5-2	1/3 HP	480 V	3	17,000	VFD	DIV 23/DIV26	AT UNIT	DIV23	MRS	-	NEMA 3R	DIV 26/DIV 26	AT UNIT	QH-2	20,22,24	3/4" - 3#12 & #12GND	

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
 MRSMS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

FAN FILTER UNIT SCHEDULE

EQUIPMENT TAG	APPLICATION	CFM	MODULE SIZE (W"xL")	DUCT CONNECTION SIZE (IN)	EFFICIENCY (%)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
FFU-1	CLEANROOM COOLING	SEE DWGS	48"x24"	10"	99.99%	ENVIRCO	MAC 10 LEAC RSRC	1,2,3,4,5
FFU-2	CLEANROOM COOLING	SEE DWGS	24"x24"	8"	99.99%	ENVIRCO	MAC 10 LEAC RSRC	1,2,3,4,5

GENERAL MECHANICAL NOTES:
 A. REFER TO ELECTRICAL SECTION BELOW FOR CALCULATED SHORT-CIRCUIT CURRENT AT EQUIPMENT.
MECHANICAL NOTES:
 1. FAN FILTER UNIT SHALL HAVE ACCESS FOR ROOM SIDE REPLACEABLE FILTER, MOTOR ASSEMBLY, AND CONTROL CARD. FILTER SHALL SET INSIDE KNIFE EDGE SEAL.
 2. MOTOR SHALL BE A ECM BRUSHLESS MOTOR WITH SPEED CONTROL ADJUSTMENT FOR BALANCING PURPOSES.
 3. PROVIDE PRESSURE DIFFERENTIAL SENSOR ACROSS HEPA FILTER AND INTEGRATE NOTIFICATION FOR FILTER CHANGES TO BUILDING AUTOMATION.
 4. PROVIDE CUSTOM 316 STAINLESS STEEL HOUSING AND PERFORATED PANEL. INCLUDE MATCHING MUD RING FROM MANUFACTURER FOR INSTALLATION WITHIN GYPSUM CEILING.
 5. INCLUDE CHALLENGE TEST PORT UPSTREAM WITHIN DUCTWORK FOR CERTIFICATION PURPOSES, REFER TO DRAWING NOTES FOR ADDITIONAL INFORMATION.

EQUIPMENT TAG	HP/LOAD	VOLTAGE	PHASE	TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	CTRL WIRE BY	AMPS/TYP	FUSE SIZE (AMPS)	NEMA TYPE	FURNISHED BY/ INSTALLED BY	LOCATION	PANEL	CIRCUIT NUMBER	CONDUIT/FEEDER SIZE	ELECTRICAL NOTES
FFU 1	1/8 HP	120 V	1	INTEGRAL	MFR/DIV23	AT UNIT	DIV23	MRS	-	NEMA 1	DIV 26/DIV 26	AT UNIT	LCES	90	3/4" - 2#12 & #12 GND	
FFU 2	1/8 HP	120 V	1	INTEGRAL	MFR/DIV23	AT UNIT	DIV 23	MRS	-	NEMA 1	DIV 26/DIV 26	AT UNIT	LCES	92	3/4" - 2#12 & #12 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
 MRSMS - MOTOR RATED SWITCH (WITHOUT OVERLOADS)

VARIABLE AIR VOLUME BOX SCHEDULE - HEATING WATER

EQUIPMENT TAG	UNIT SERVED	INLET SIZE (IN)	MAXIMUM CFM	MINIMUM CFM	MAXIMUM APD (IN W.C.)	HEATING CFM	EAT (F)	LAT (F)	CAPACIT Y (MBH)	EWT (F)	LWT (F)	HEATING GPM	GLYCOL TYPE	GLYCOL %	MAXIMUM WPD (FT)	COIL ROWS	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
VAV 5-503	AHU 5	8	645	325	0.35	325	55	95	14.0	180	180	1.4	NONE	0	4.5	2	TITUS	DESV	1,2

MECHANICAL NOTES:
 1. PROVIDE ACCESS PANELS ON BOTH SIDE OF COILS FOR CLEANING PURPOSES. ACCESS PANELS TO BE INSULATED WITH CAM LATCHES, FLAT PLATES HELD WITH SHEETMETAL SCREWS ARE NOT ACCEPTABLE.
 2. PROVIDE WITH FIBER FREE WASHABLE INSULATION LINER.

REHEAT COIL SCHEDULE - HEATING WATER

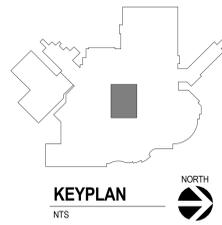
EQUIPMENT TAG	UNIT SERVED	CFM	COIL		AIR		WATER					CAPACITY (MBH)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES			
			DUCT WIDTH (IN)	DUCT HEIGHT (IN)	EAT (F)	LAT (F)	APD (IN W.C.)	EWT (F)	LWT (F)	GPM	GLYCOL TYPE					GLYCOL %	WPD (FT)	
RHC 5-01	MUA 1	800	16"	12"	2	50	90	<0.15"	170	150	3.5	NONE	0	<10"	34.5	AEROFIN	W-SAF	1,2,3
RHC 5-02	MUA 1	500	12"	12"	2	50	90	<0.15"	170	150	2.2	NONE	0	<10"	21.6	AEROFIN	W-SAF	1,2,3
RHC 5-03	MUA 1	200	10"	10"	2	50	90	<0.15"	170	150	0.9	NONE	0	<10"	8.6	AEROFIN	W-SAF	1,2,3

MECHANICAL NOTES:
 1. PROVIDE ACCESS PANELS ON BOTH SIDE OF COILS FOR CLEANING PURPOSES. ACCESS PANELS TO BE INSULATED WITH CAM LATCHES, FLAT PLATES HELD WITH SHEETMETAL SCREWS ARE NOT ACCEPTABLE.
 2. REFER TO DETAILS FOR ALL REQUIRED PIPING COMPONENTS REQUIRED. VERIFY WITH VA MAINTENANCE STAFF FOR ACCEPTABLE ACCESS TO ALL PIPING COMPONENTS ABOVE CEILING.
 3. REFER TO PLANS FOR INCLUSION OF EBTN GOLD SERIES AIRFLOW SENSORS TO BE ASSOCIATED WITH EACH REHEAT COIL LISTED ABOVE.

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

EQUIPMENT TAG	APPLICATION	MOUNTING TYPE	DESCRIPTION	MATERIAL	ACCESSORIES	FINISH	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
A	SUPPLY DIFFUSER	LAY-IN	24"x24" THREE CONE	STEEL		WHITE	TITUS	TMS	1,2,3
B	HEPA FILTER LAMINAR FLOW SURFACE	SURFACE	48"x24" HEPA DIFFUSER	316 SS		STAINLESS STEEL	PRICE	LDFC	1,2,3
C	RETURN/EXHAUST WALL GRILLE	WALL	35 DEGREE SINGLE DEFLECTION	316 SS		STAINLESS STEEL	TITUS	350RL-SS	4
D	RETURN/EXHAUST CEILING GRILLE	SURFACE	PERFORATED FACE GRILLE	316 SS		STAINLESS STEEL	TITUS	8SS	1
F	RETURN/EXHAUST CEILING GRILLE	LAY-IN	24"x24" EGGRATE GRILLE	ALUMINUM		WHITE	TITUS	50F	1,4

MECHANICAL NOTES:
 1. PROVIDE BALANCING DAMPER AS CLOSE TO DUCT TAKE-OFF AS POSSIBLE. DO NOT PROVIDE INTEGRAL DAMPERS WITH DIFFUSERS OR GRILLES.
 2. ISO RATED STERILE IV ROOM LAMINAR FLOW DIFFUSERS WILL BE PROVIDED WITH 99.99% HEPA FILTERS AND DIFFERENTIAL PRESSURE SENSORS INTEGRATED TO BAS.
 3. PROVIDE WITH ALL NECESSARY CONSTRUCTION, INCLUDING PLENUM BOX. DIFFUSERS SHALL HAVE ROOM SIDE HINGED OPENING FOR CLEANING INSIDE OF DIFFUSER AND FILTER REPLACEMENTS.
 4. INTERIOR OF DUCT VISIBLE THROUGH GRILLE FACE SHALL BE EPOXY PAINTED FLAT BLACK TO CONCEAL. INCLUDE PAINTABLE DUCT AND/OR PREPARE SURFACES AS REQUIRED PRIOR TO PAINTING.



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Revision# Description Date:												Location SIoux FALLS, SOUTH DAKOTA		Issue Date 02/10/2021		Checked JRG		Drawn TNH		Drawing Number M600	

ELECTRICAL ABBREVIATIONS		
A	AMP	METER
ABV	ABOVE	MOMENTARY CONTACT OR MECHANICAL CONTRACTOR
AG	ABOVE GRADE	MECHANICAL CONTRACTOR
AA	AUDIBLE ALARM	MCB MAIN CIRCUIT BREAKER
AC	ABOVE COUNTER	MCC MOTOR CONTROL CENTER
ACH	ABOVE COUNTER HEIGHT	MH MAN HOLE
ADD	ADDENDUM	MLO MAIN LUG ONLY
AFC	AVAILABLE FAULT CURRENT	MMFO MULTI MODE FIBER OPTIC
AFCI	ARC FAULT CIRCUIT INTERRUPTER	MRS MOTOR RATED SWITCH
AFF	ABOVE FINISHED FLOOR	MSB MAIN SWITCHBOARD
AHU	AIR HANDLING UNIT	MT EMPTY
AL	ALUMINUM	N NEUTRAL
ANT	ANTENNA	NC NORMALLY CLOSED
ATS	AUTOMATIC TRANSFER SWITCH	NEC NATIONAL ELECTRICAL CODE
AV	AUDIO VISUAL	NIC NOT IN CONTRACT
AWG	AMERICAN WIRE GAUGE	NO NORMALLY OPEN
BAS	BUILDING AUTOMATION SYSTEM	NTS NOT TO SCALE
BFC	BELOW FINISHED CEILING	OC ON CENTER
BPS	BOLTED PRESSURE SWITCH	PB PULL BOX OR PUSHBUTTON
C	CONDUIT OR CONTROLLED RECEPT	PE PNEUMATIC ELECTRIC
CAB	CABINET	PF POWER FACTOR
CB	CIRCUIT BREAKER	PH PHASE
CCTV	CLOSED CIRCUIT TV	PNL PANEL
CKT	CIRCUIT	PRI PRIMARY
CLG	CEILING	PT POTENTIAL TRANSFORMER
COMM	COMMUNICATIONS	R RACEWAY
CT	CURRENT TRANSFORMER	RECEPT RECEPTACLE
CTRL	CONTROL	REFG REFRIGERATOR
CJ	COPPER	RTU ROOF TOP UNIT
DAS	DISTRIBUTED ANTENNA SYSTEM	SEC SECONDARY
DED	DEDICATED	SGB SERVICE GROUND BAR
DN	DOWN	SMFO SINGLE MODE FIBER OPTIC
EC	ELECTRICAL CONTRACTOR	SPKR SPEAKER
EGB	ELECTRICAL GROUND BAR	STP SHIELDED TWISTED PAIR
ELEC	ELECTRIC OR ELECTRICAL	SUB SUBSTATION
EM	EMERGENCY	SW SWITCH
EMT	ELECTRICAL METALLIC TUBING	SWBD SWITCHBOARD
ENCL	ENCLOSURE	TEL TELEPHONE
EP	ELECTRIC PNEUMATIC	TELCOM TELECOMMUNICATIONS
EPO	EMERGENCY POWER OFF	TGB TELECOMMUNICATIONS GROUND BAR
EWC	ELECTRIC WATER COOLER	TMGB TELECOMMUNICATIONS MAIN GROUND BAR
F	FUSE OR FUSED	TR TAMPER RESISTANT
FA	FIRE ALARM	TSTAT THERMOSTAT
FAAP	FIRE ALARM ANNUNCIATOR PANEL	TYP TYPICAL
FACP	FIRE ALARM CONTROL PANEL	UC UNDER COUNTER
FB	FLOOR BOX	UF UNDER FLOOR
FO	FIBER OPTIC	UG UNDER GROUND
FSD	FIRE-SMOKE DAMPER	UH UNIT HEATER
FV	FILM VIEWER	UNO UNLESS NOTED OTHERWISE
G.GND	GROUND	USB UNIVERSAL SERIAL BUS
GC	GENERAL CONTRACTOR	UTP UNSHIELDED TWISTED PAIR
GFEP	GROUND FAULT EQUIPMENT PROTECTION	V VOLT OR VOLTAGE
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER	VA VOLT-AMP
HH	HAND HOLE	VAC VOLTS ALTERNATING CURRENT
HOA	HAND OFF AUTO	VDC VOLTS DIRECT CURRENT
IG	ISOLATED GROUND	W WATT, WIRE OR WALL PHONE
JBOX	JUNCTION BOX	WAP WIRELESS ACCESS POINT
KV	KILOVOLT	WP WEATHERPROOF
KVA	KILOVOLT-AMP	X EXISTING
KW	KILOWATT	XFMR TRANSFORMER
KWH	KILOWATT-HOUR	

ELECTRICAL SYMBOLS LEGEND		
SYMBOL	DESIGNATIONS	MTG HT
SYMBOL SCHEDULE NOTES		
A. THESE SYMBOLS COMPRISE A STANDARD LIST. NOT ALL SYMBOLS MAY APPEAR ON THESE DRAWINGS.		
B. MOUNTING HEIGHTS INDICATED ARE STANDARD. DIMENSIONAL NUMBERS INDICATED AT DEVICES SHALL OVERRIDE THESE STANDARDS. MOUNTED HEIGHTS ARE TO THE CENTER OF THE DEVICE, UNLESS NOTED OTHERWISE.		
C. MOUNTING HEIGHTS INDICATED ARE FOR STUD WALL CONSTRUCTION. WHEN BLOCK OR BRICK CONSTRUCTION IS USED, ADJUST MOUNTING HEIGHTS TO ALIGN DEVICE PLATES WITH RUNNING JOINT.		
D. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.		
GENERAL		
	HEAVY DASHED LINE WEIGHT INDICATES EXISTING ITEM TO BE REMOVED.	
	LIGHT SOLID LINE WEIGHT INDICATES EXISTING ITEM OR NEW LOCATION.	
	HEAVY SOLID LINE WEIGHT INDICATES NEW ITEM OR NEW LOCATION.	
	REMOVE EXISTING ITEM	
	REMOVE EXISTING ITEM AND RELOCATE AS INDICATED	
	EXISTING ITEM TO REMAIN	
	NEW LOCATION FOR RELOCATED ITEM	
NOTES & TAGS		
	EQUIPMENT IDENTIFICATION TAG - SEE EQUIPMENT SCHEDULES	
	FEEDER SIZE TAG - SEE POWER RISER SCHEDULE	
	ELEC EQUIP CONNECTION TAG - SEE EQUIP SCHEDULE	
# symbol"/>	KEYNOTE	
# symbol"/>	MISCELLANEOUS NOTE	
# LC # symbol"/>	LIGHTING CONTROL SEQUENCE - SEE SCHEDULE	
	CABLE TRAY TAG	
	X' W - WIDTH OF CABLE TRAY	
	X' H - HEIGHT OF CABLE TRAY	
	X' X' AFF - MOUNTING HEIGHT OF CABLE TRAY (FROM FINISH FLOOR TO BOTTOM OF TRAY)	
RACEWAYS		
	CONDUIT CONCEALED IN CEILING OR WALLS	
	CONDUIT CONCEALED IN THE FLOOR OR BELOW	
	CONDUIT EXPOSED ON THE CEILING OR WALLS	
	CONDUIT BURIED UNDERGROUND (# = DEPTH)	
	CONDUIT WITH BEND DOWN	
	CONDUIT WITH BEND UP	
	CONDUIT WITH BUSHED END	
	CONDUIT WITH BREAK OR CONTINUATION	
	CIRCUIT HOME RUN	
	L1, 1,3,5 INDICATES PANEL NUMBER	
	PULL BOX, SIZE AS NOTED	
	JUNCTION BOX - WALL/CEILING MOUNT	
	WIREWAY, DUCT BANK, OR FLOOR DUCT AS NOTED	
	CABLE TRAY, TYPE/SIZE AS INDICATED	
LIGHTING		
	LIGHT FIXTURE ID - REFER TO LIGHT FIXTURE SCHEDULE (SCHEDULE OVERRIDES SYMBOL ABBREVIATION)	
	A - INDICATES LIGHT FIXTURE TYPE	
	# - INDICATES CIRCUIT NUMBER	
	D - INDICATES SWITCHING	
	TROFFER TYPE LIGHT FIXTURE, SIZE AS INDICATED - CEILING MOUNT	
	CHANNEL OR INDUSTRIAL, LENGTH AS INDICATED	
	CHANNEL OR INDUSTRIAL WALL MOUNT, LENGTH AS INDICATED	
	ROUND DOWNLIGHT, RECESSED OR SURFACE MOUNT	
	SQUARE DOWNLIGHT, RECESSED OR SURFACE MOUNT	
	CEILING WALL WASH FIXTURE OR TRACK HEAD	
	WALL MOUNT FIXTURE OR SCENCE	VERIFY
	LINEAR SUSPENDED, LENGTH AS INDICATED	VERIFY
	LINEAR RECESSED, LENGTH AS INDICATED	VERIFY
	ROUND OR SQUARE PENDANT	
	TAPE OR ROPE LIGHT	
	UNDER CABINET FIXTURE, LENGTH AS INDICATED	
	TRACK FIXTURE, NUMBER OF HEADS AS INDICATED	
	VANITY FIXTURE	
	EMERGENCY BATTERY LIGHT - WALL/CEILING MOUNT	
	EXIT LIGHT, FILLED QUADRANT INDICATES FACES - WALL/CEILING MOUNT	VERIFY
	WALL PACK	VERIFY
	FLAG OR FLOOD LIGHT	
	SITE LIGHTING POLE FIXTURE, ROUND/RECTANGLE HEAD - NUMBER OF HEADS INDICATED	
	SITE LIGHTING ROUND OR SQUARE BOLLARD	

SYMBOL	DESIGNATIONS	MTG HT
POWER		
	BRANCH CIRCUIT PANEL	VERIFY
	EQUIPMENT CABINET	VERIFY
	TRANSFORMER	VERIFY
	MOTOR OR MOTOR CONNECTION	VERIFY
	MOTOR CONTROLLER, STARTER OF VFD	VERIFY
	COMBINATION STARTER & DISCONNECT SWITCH	VERIFY
	DISCONNECT SWITCH	VERIFY
	MOTOR RATED TOGGLE	VERIFY
	MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD	VERIFY
	DUPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	EMERGENCY DUPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	SPLIT DUPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	EMERGENCY SPLIT DUPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	SIMPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	EMERGENCY SIMPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	QUADPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	EMERGENCY QUADPLEX RECEPTACLE - WALL/CEILING MOUNT	18"
	GFI RECEPTACLE, DUPLEX/QUADPLEX - WALL MOUNT	18"
	GFI RECEPTACLE, DUPLEX/QUADPLEX - CEILING MOUNT	18"
	GFI DEAD FRONT DEVICE, NORMAL/EMERGENCY - WALL MOUNT	18"
	DUPLEX RECEPTACLE - CONTROLLED - WALL/CEILING MOUNT	18"
	SPECIAL PURPOSE RECEPTACLE - WALL/CEILING MOUNT	18"
	EMERGENCY SPECIAL PURPOSE RECEPTACLE - WALL/CEILING MOUNT	18"
	FLOOR BOX - DEVICES AS INDICATED	
	POWER POLE - DEVICES AS INDICATED	VERIFY
	GROUND REFERENCE BUS - AS NOTED - WALL/CEILING MOUNT	VERIFY
SWITCHES AND CONTROLS		
	SINGLE POLE TOGGLE SWITCH	48"
	DOUBLE POLE TOGGLE SWITCH	48"
	THREE WAY TOGGLE SWITCH	48"
	FOUR WAY TOGGLE SWITCH	48"
	TOGGLE SWITCH - "a" INDICATES SWITCHING	48"
	PILOT LIGHT TOGGLE SWITCH	48"
	ILLUMINATED TOGGLE - TOGGLE SWITCH	48"
	KEYED SWITCH	48"
	MOMENTARY CONTACT TOGGLE SWITCH	48"
	TIMER SWITCH	48"
	MULTI SWITCH, MULTI GANG BOX	48"
	DIMMER SWITCH (# = WATTAGE)	48"
	PUSH BUTTON SWITCH	48"
	OCCUPANCY SENSOR - CLG MOUNT	48"
	OCCUPANCY SENSOR WALL MOUNT	48"
	PHOTO ELECTRIC CELL	VERIFY
	TIME CLOCK	60"
	CONTACTOR	60"
	RELAY	VERIFY
	PUSH BUTTON STATION - BUTTONS AS INDICATED	48"
FIRE ALARM		
	MANUAL PULL STATION	48"
	HEAT DETECTOR (#=FIXED TEMP, R=RATE OF RISE)	
	SMOKE DETECTOR (P=PHOTOELECTRIC, IONIZATION)	
	DUCT MOUNTED PHOTOELECTRIC DETECTOR	
	BEAM DET (B-T=TRANSMITTER, B-R=RECEIVER)	VERIFY
	COMBINATION SMOKE DETECTOR AND ALARM	
	REMOTE STATION - WALL/CEILING MOUNT	72"
	REMOTE INDICATOR LAMP - WALL/CEILING MOUNT	72"
	FLOW SWITCH	
	TAMPER SWITCH	
	MONITOR MODULE	
	CONTROL MODULE	
	FIRE/SMOKE DAMPER CONNECTION	
	DOOR HOLD OR DOOR HOLD CONNECTION	VERIFY
	FIREMAN'S STATION - WALL MOUNT	48"
	STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	BELL - WALL/CEILING MOUNT	82"
	BELL/STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	CHIME - WALL/CEILING MOUNT	82"
	CHIME/STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	HORN - WALL/CEILING MOUNT	82"
	HORN/STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	SPEAKER - WALL/CEILING MOUNT	82"
	SPEAKER/STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	COMBINATION FIRE ALARM/MASS NOTIFICATION: SPEAKER/STROBE - WALL/CEILING MOUNT (# = CANDELA)	82"
	FIRE ALARM CONTROL PANEL - WALL MOUNT	VERIFY
SIGNAL AND COMMUNICATIONS		
	DATA BOX - WALL MOUNT (# = WIRE COUNTS)	18"
	VOICE/DATA BOX - WALL MOUNT/FLOOR BOX (# = WIRE COUNTS)	18"
	VOICE BOX - WALL MOUNT (# = WIRE COUNTS)	18"
	DOUBLE GANG VOICE BOX - HIGH WALL MOUNT	48"
	WIRELESS ACCESS POINT - WALL/CEILING MOUNT	VERIFY
	SPEAKER - WALL/CEILING MOUNT	96"
	HORN SPEAKER - WALL MOUNT	96"
	VOLUME SWITCH - WALL MOUNT	60"
	AUDIO JACK (M=MICROPHONE, A=AUXILIARY)	18"
	WALL INTERCOM STATION (M=MASTER, R=REMOTE)	48"
	BUZZER - WALL/CEILING MOUNT	96"
	BELL - WALL/CEILING MOUNT	96"
	CHIME - WALL/CEILING MOUNT	96"
	CLOCK - WALL/CEILING MOUNT (# = DIAMETER)	96"
	PROJECTOR/VIDEO CAMERA/DOCUMENT CAMERA - WALL/CEILING MOUNT	VERIFY
	TV SYSTEM OUTLET - WALL/CEILING MOUNT	18"
	AUDIO VIDEO SYSTEM OUTLET - WALL/CEILING MOUNT	18"
	AV SYSTEMS CONTROLLER - WALL MOUNT	18"
	AV MONITOR - WALL MOUNT	18"
	ANNUNCIATOR PANEL - WALL MOUNT	VERIFY
SECURITY		
	SECURITY - WALL MOUNT - TYPICAL	48"
	CR - CARD READER	
	KP - KEYPAD	
	KS - KEY SWITCH	
	SECURITY - CEILING MOUNT - TYPICAL	
	RX - REQUEST TO EXIT	
	ES - ELECTRIC STRIKE	
	EL - ELECTRIC LOCK	
	ML - MAGNETIC LOCK	
	TH - POWER TRANSFER HINGE	
	SECURITY CAMERA - WALL/CEILING MOUNT	VERIFY
	SECURITY PANEL - WALL MOUNT	VERIFY
	DC - DOOR CONTACT	
	ODC - OVERHEAD DOOR CONTACT	
	MS - MONITOR STRIKE	
	MD - MOTION DETECTOR	
	GB - GLASS BREAKER DETECTOR	
	EP - EXIT PUSHBUTTON	
	M - MASTER STATION	

ELECTRICAL SHEET LIST	
SHEET NUMBER	SHEET NAME
E000	ELECTRICAL TITLE SHEET
ED100	OVERALL ELECTRICAL DEMOLITION PLAN
ED101	GROUND LEVEL DEMOLITION LIGHTING PLAN
ED102	GROUND LEVEL DEMOLITION POWER PLAN
ED103	GROUND LEVEL DEMOLITION SYSTEM PLAN
EE100	OVERALL ELECTRICAL PLAN
EE111	FIRST LEVEL INTERSTITIAL/ROOF ELECTRICAL PLAN
EL101	GROUND LEVEL LIGHTING PLAN
EP101	GROUND LEVEL POWER PLAN
EY101	GROUND LEVEL SYSTEM PLAN
EE301	ELECTRICAL RISERS
EE600	ELECTRICAL SCHEDULES
SHEET TOTAL: 12	

Revision#	Description	Date:

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ARCHITECT OF RECORD A/E: Stone Group Architects 600 E 7th Street Sioux Falls, SD 57103 605-271-1144	STAMP
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Office of Construction and Facilities Management VA U.S. Department of Veterans Affairs

Drawing Title ELECTRICAL TITLE SHEET
Approved:

Phase BID SET

Project Title UPGRADE PHARMACY 797	Project Number VA #438-20-109 SGA #201927
Location SIoux FALLS, SOUTH DAKOTA	Building Number 5
Issue Date 02/10/2021	Drawing Number E000

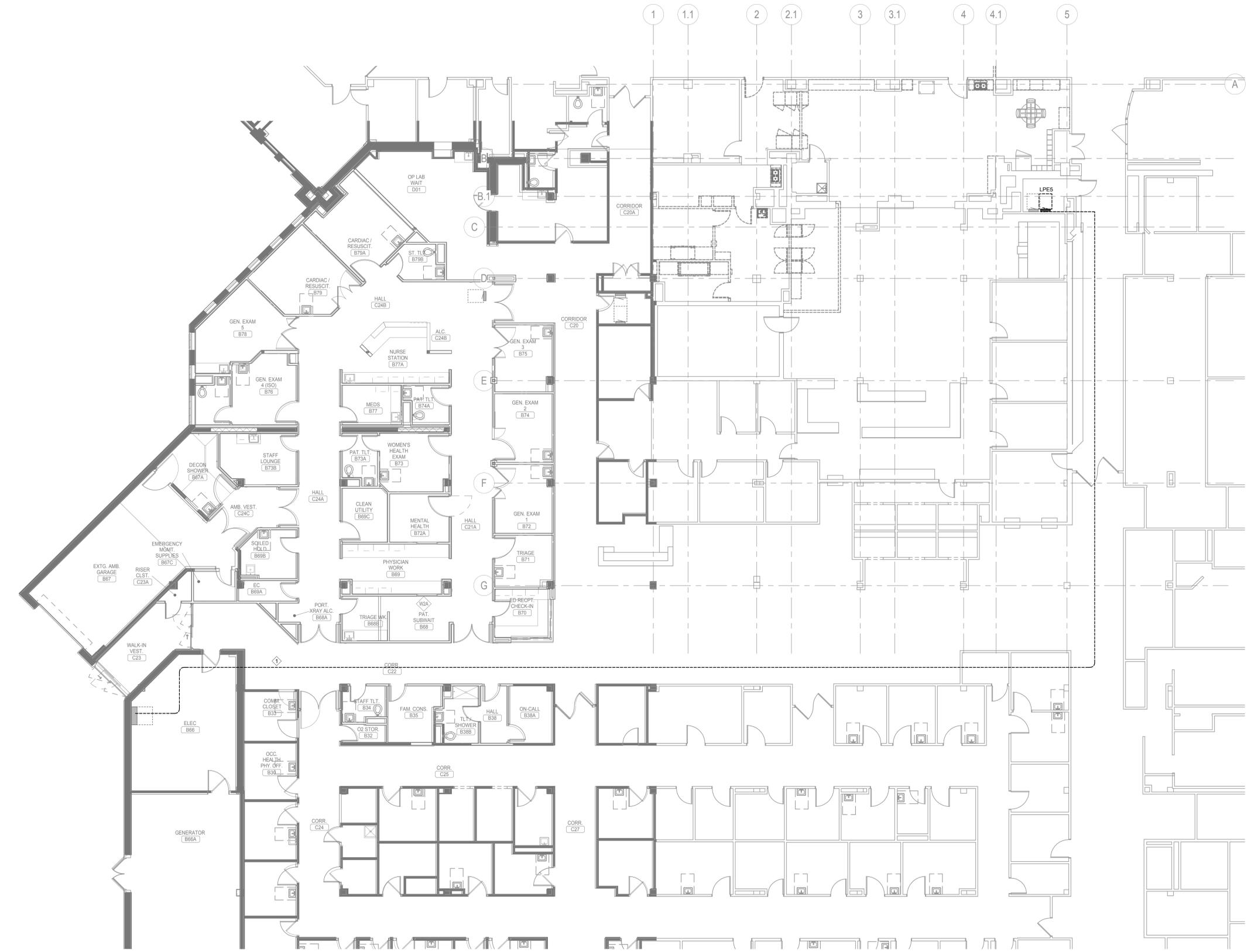
Checked CB	Drawn BZ
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GENERAL NOTES:

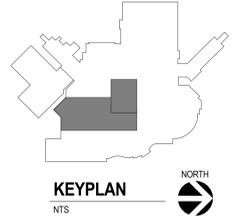
- A. BUILDING WILL BE IN USE DURING CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTION. TEMPORARY SERVICES FEEDER, BRANCH CIRCUIT, AND SIGNAL SYSTEMS SHALL BE INSTALLED IF ONE AREA OR PHASE OF CONSTRUCTION DISRUPTS 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.
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- H. SPlicing OF WIRING AND CABLING WILL NOT BE ALLOWED.
- I. STORE DEMOLISHED CONDUCTORS AS DIRECTED BY OWNER.

KEY NOTES:

- ◆ DEMOLISH CONDUCTORS AND CONDUIT BACK TO SOURCE. PROVIDE TEMPORARY SUPPORT OF EXISTING TO REMAIN CEILING MOUNTED ELECTRICAL DEVICES FOR REMOVAL OF CONDUCTORS AND CONDUIT.



1 OVERALL ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"



Revision#	Description	Date:

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REGISTERED PROFESSIONAL ENGINEER
 REG. NO. 14938
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 SOUTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
OVERALL ELECTRICAL DEMOLITION PLAN

Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
 02/10/2021

Checked
 CB

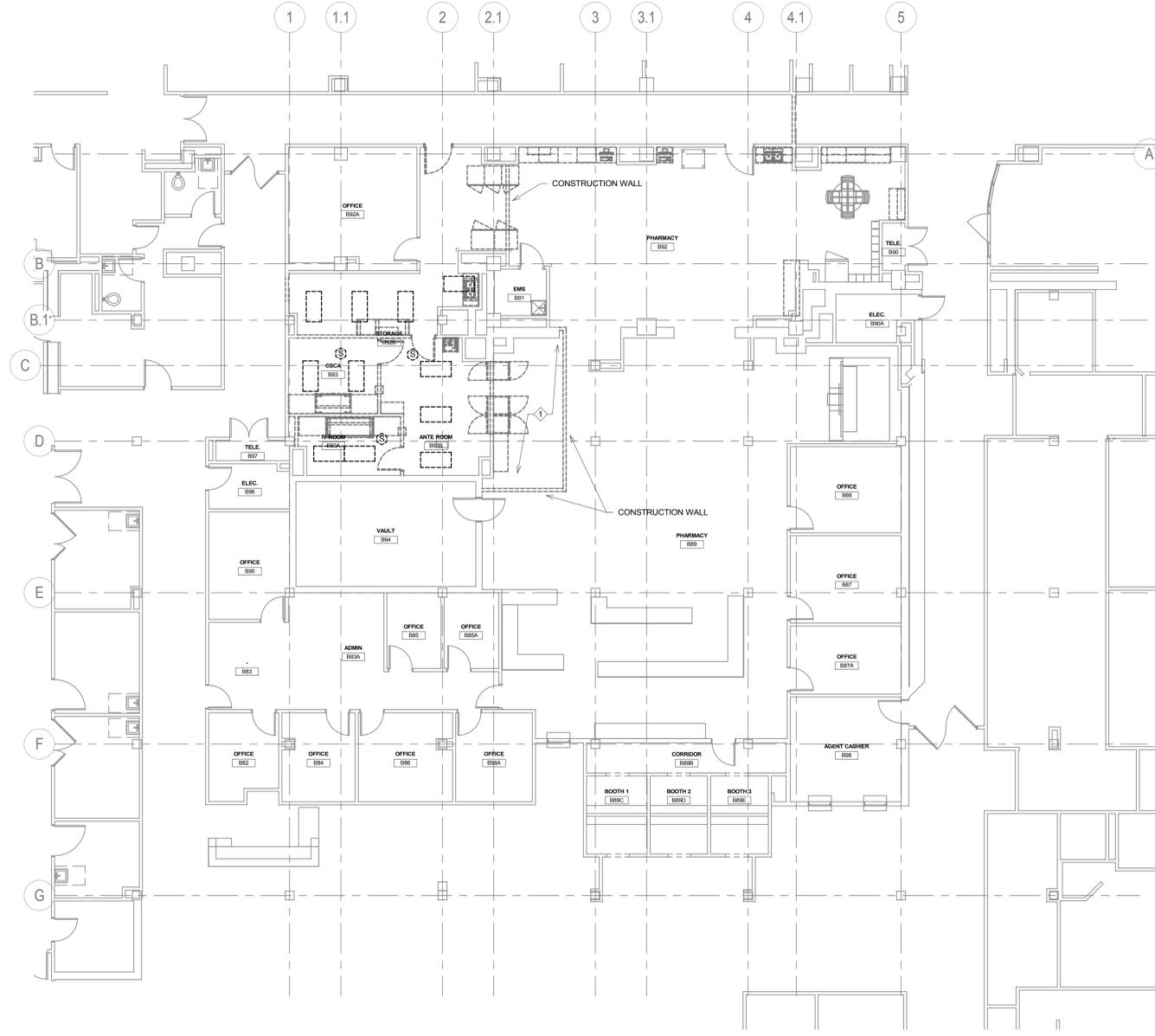
Drawn
 BZ

Project Number
 VA #438-20-109
 SGA #201927

Building Number
 5

Drawing Number
ED100

Three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one eighth inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot



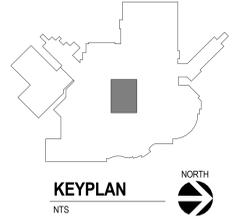
1 GROUND LEVEL DEMOLITION LIGHTING PLAN
 1/8" = 1'-0"

GENERAL NOTES:

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- H. SPLICING OF WIRING AND CABLING WILL NOT BE ALLOWED.
- I. STORE DEMOLISHED CONDUCTORS AS DIRECTED BY OWNER.

KEY NOTES:

- ◆ RELOCATE CEILING MOUNTED LIGHTING AND ELECTRICAL DEVICES DURING CEILING WORK. COORDINATE WITH MECHANICAL AND ARCHITECTURE.



Revision#	Description	Date:

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CURTIS D. BARLAGE
 SOUTH DAKOTA

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL DEMOLITION LIGHTING PLAN

Approved: _____

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Project Number
**VA #438-20-109
 SGA #201927**

Building Number
5

Drawing Number
ED101

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
02/10/2021

Checked
CB

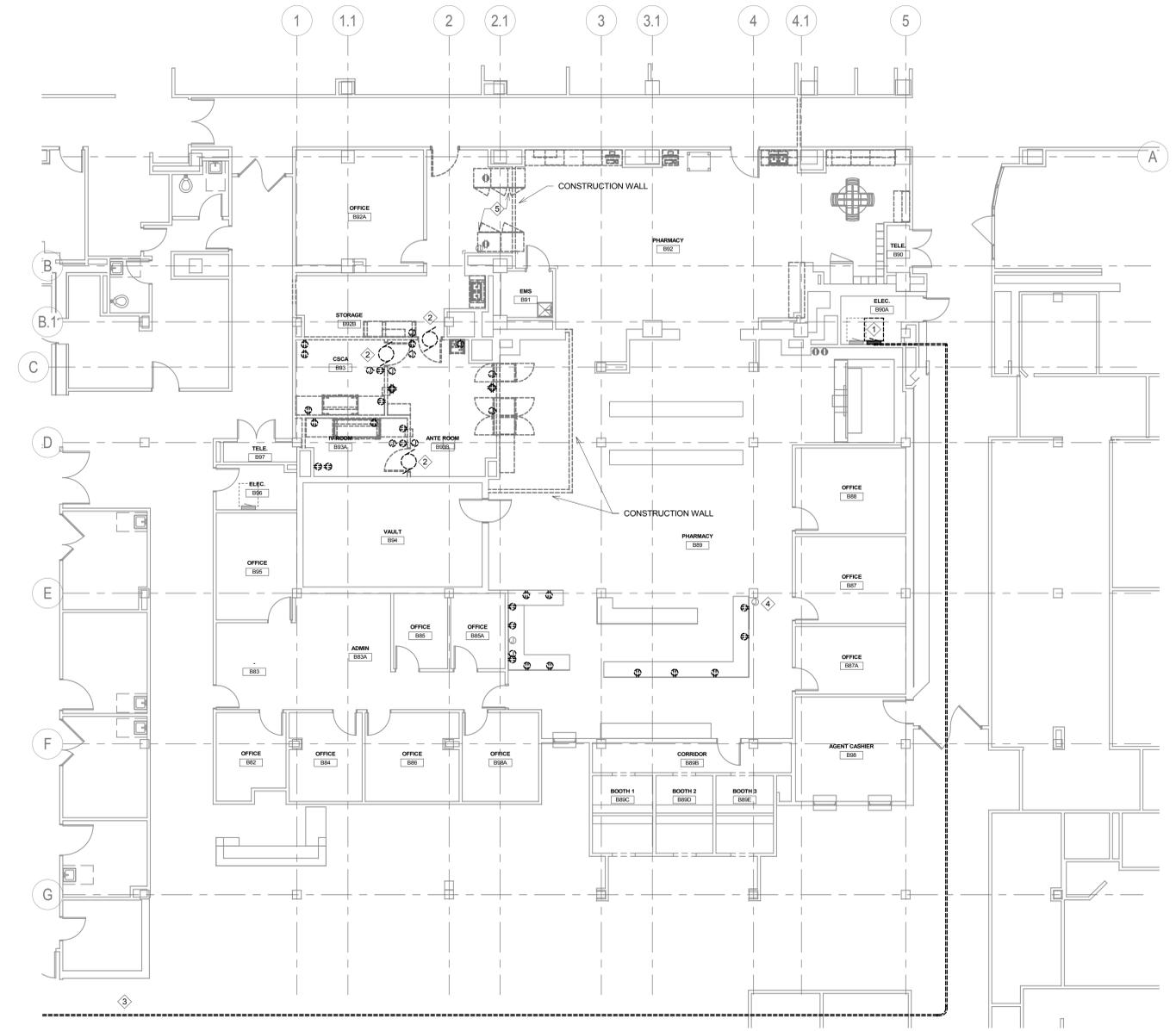
Drawn
BZ

GENERAL NOTES:

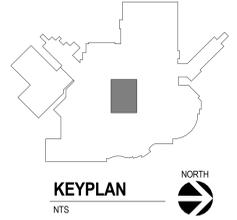
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KEY NOTES:

- ① DEMOLISH PANEL LPE5, CONDUCTORS AND CONDUIT BACK TO SOURCE. SEE RISERS FOR ADDITIONAL INFORMATION.
- ② DEMOLISH POWERED DOOR OPERATORS.
- ③ DEMOLISH EXISTING CONDUCTORS AND CONDUIT BACK TO SOURCE. APPROXIMATE ROUTING CONTINUES THROUGH CORRIDOR C22 INTO ELECTRICAL ROOM B66.
- ④ EXISTING WIREWAY TO BE REUSED FOR NEW WIRING.
- ⑤ INSTALL TEMPORARY POWER PRIOR TO REFRIGERATOR RELOCATION.



① GROUND LEVEL DEMOLITION POWER PLAN
1/8" = 1'-0"



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 SOUTH DAKOTA

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL DEMOLITION POWER PLAN

Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
 02/10/2021

Checked
 CB

Drawn
 BZ

Project Number
 VA #438-20-109
 SGA #201927

Building Number
 5

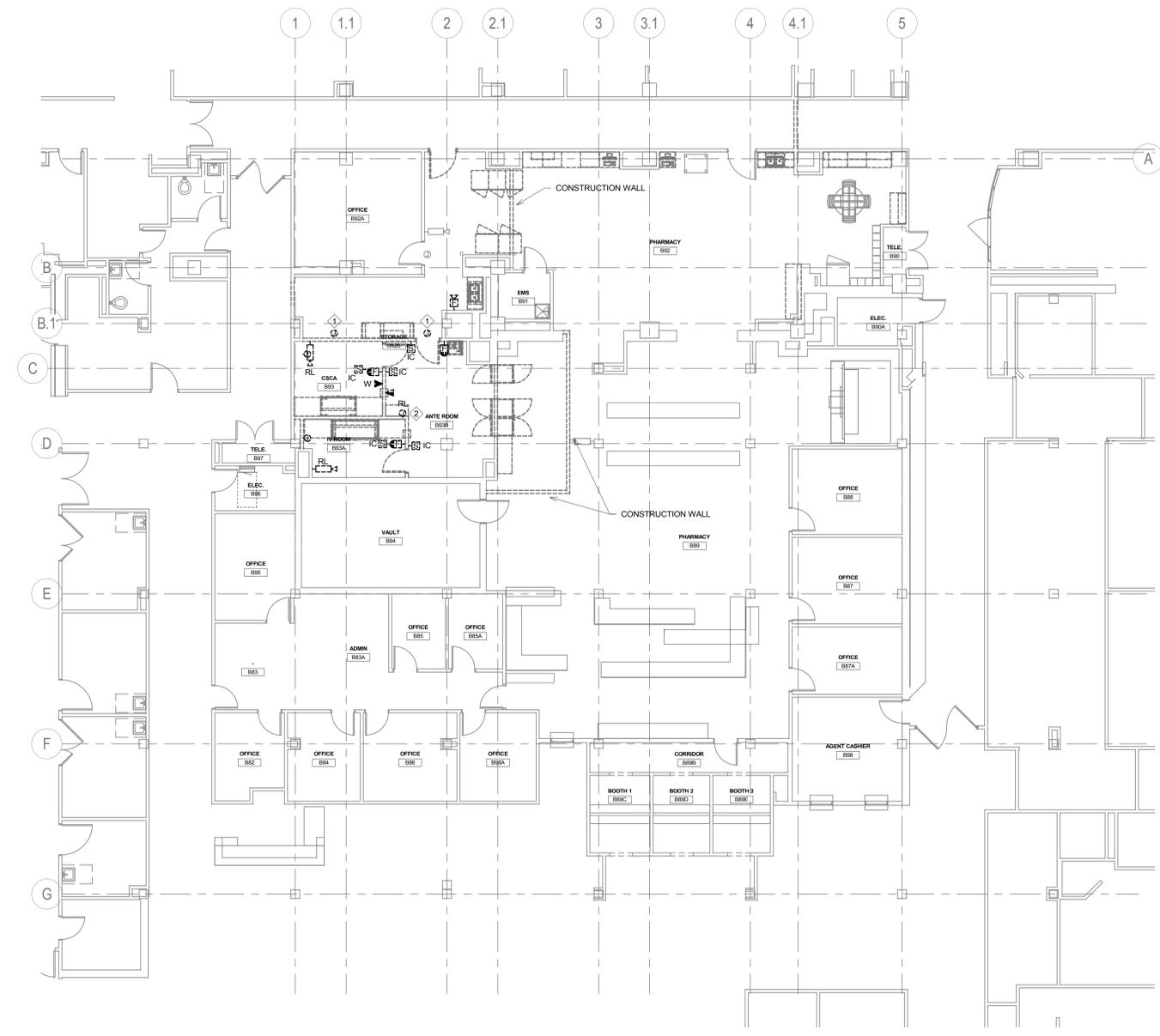
Drawing Number
ED102

GENERAL NOTES:

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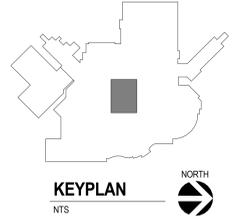
- ① DEMOLISH RFID TRACKING DEVICE. STORE AS DIRECTED BY OWNER.
- ② RELOCATE CHECKPOINT MONITOR.



1 GROUND LEVEL DEMOLITION SYSTEM PLAN
1/8" = 1'-0"

Three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

2/25/2021 10:35:40 AM
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Revision#	Description	Date:

CONSULTANTS

MECHANICAL / ELECTRICAL / PLUMBING:
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 CURTIS D. BARTLAGE
 SOUTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL DEMOLITION SYSTEM PLAN

Approved: _____

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
 02/10/2021

Checked
 CB

Drawn
 BZ

Project Number
 VA #438-20-109
 SGA #201927

Building Number
 5

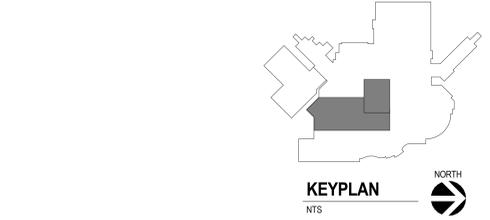
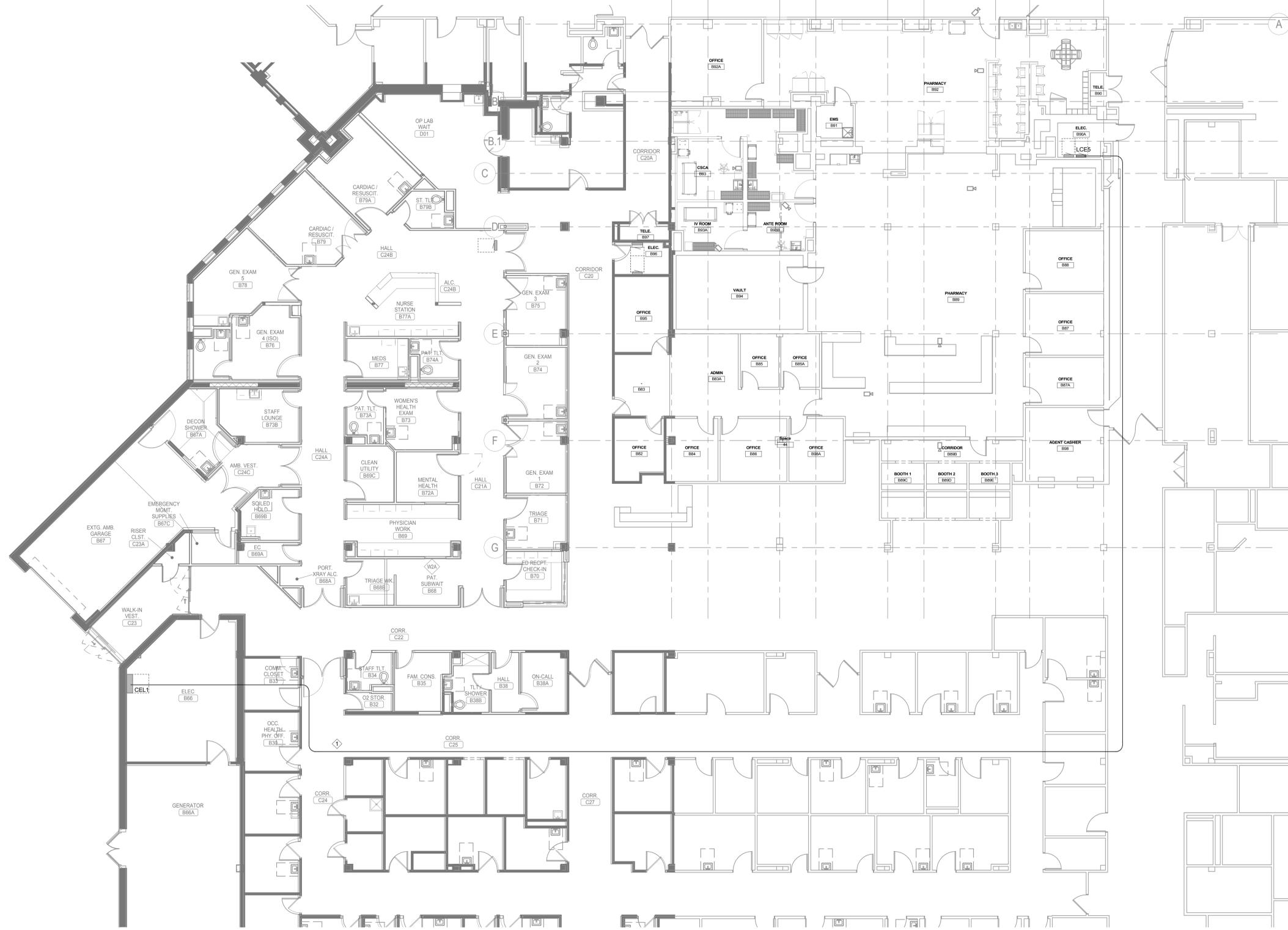
Drawing Number
ED103

GENERAL NOTES:

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KEY NOTES:

- ◆ ROUTE 3" CONDUIT FOR NEW 200A PANEL LCES.



1 OVERALL ELECTRICAL PLAN
1/8" = 1'-0"

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CONSULTANTS

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 SOUTH DAKOTA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
OVERALL ELECTRICAL PLAN

Approved: _____

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Project Number
**VA #438-20-109
 SGA #201927**

Building Number
5

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
02/10/2021

Checked
CB

Drawn
BZ

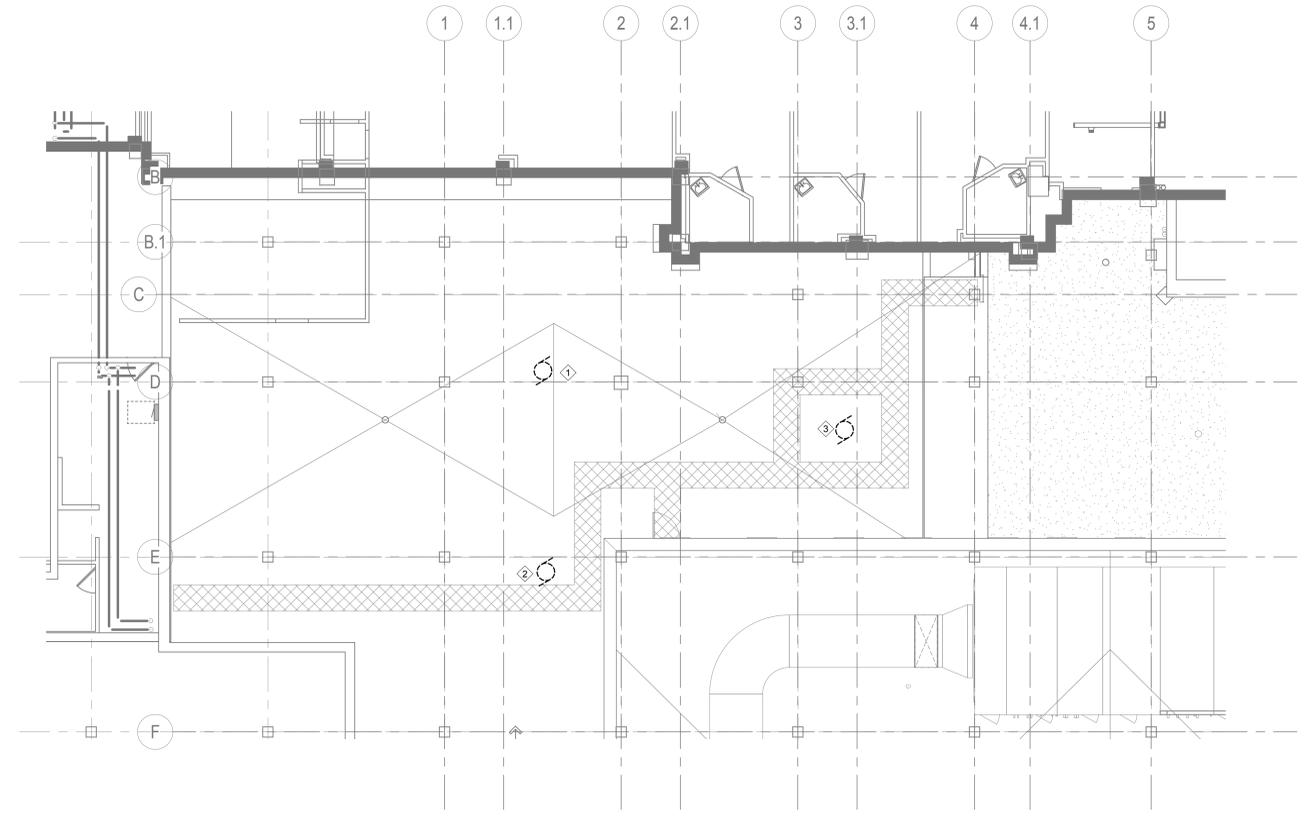
Drawing Number
EE100

GENERAL NOTES:

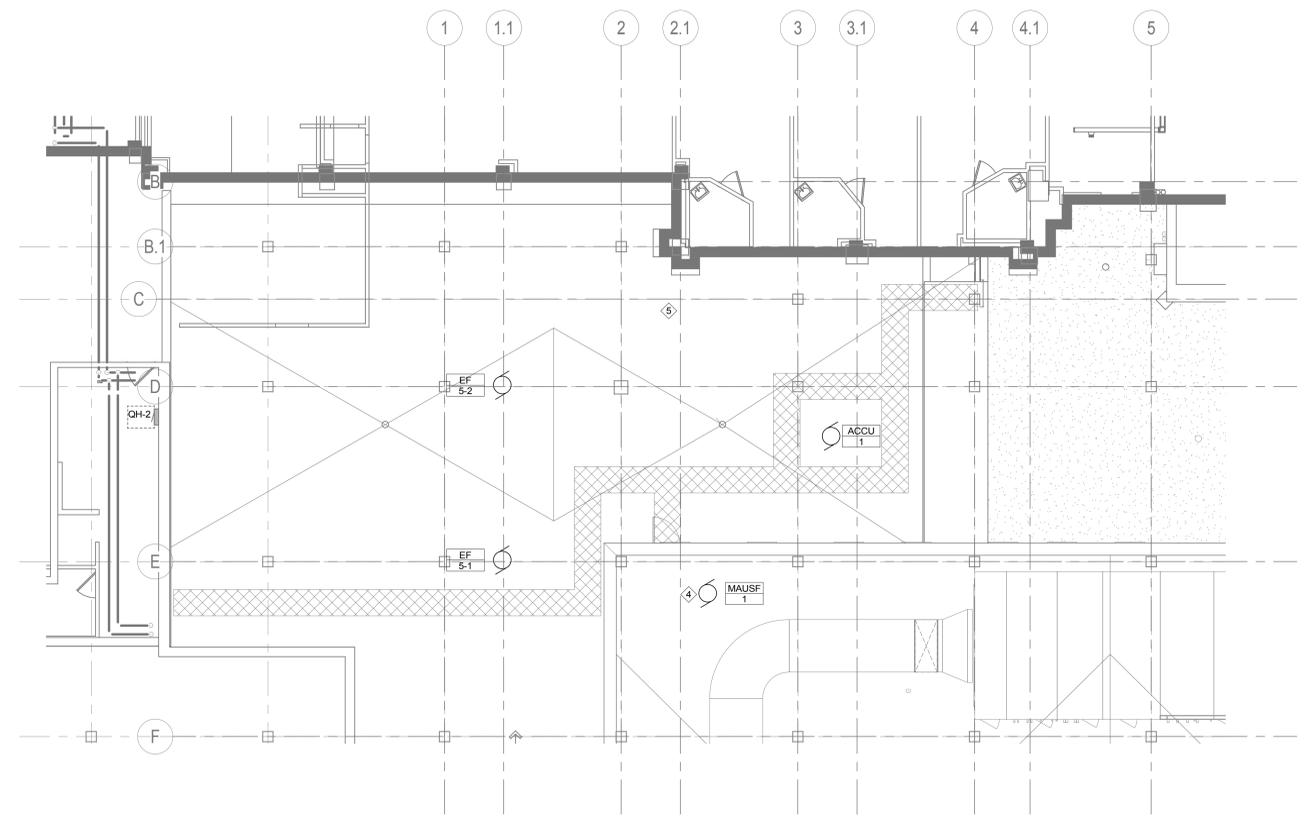
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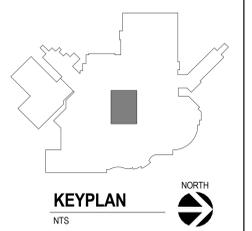
- ① REMOVE EXISTING CONDUCTORS FROM EXHAUST FAN.
- ② REMOVE EXISTING CONDUCTORS FROM CHEMO EXHAUST FAN.
- ③ REMOVE EXISTING CONDUCTORS FROM CHILLER.
- ④ UNDER BASE BID, NEW MECHANICAL UNIT, MAUSF, LOCATION.
- ⑤ UNDER DEDUCT ALTERNATE, MECHANICAL UNIT, MAUSF, WILL BE LOCATED OUTSIDE. SEE SHEET MH111 FOR ADDITIONAL INFORMATION.



① FIRST LEVEL INTERSTITIAL/ROOF ELECTRICAL DEMOLITION
1/8" = 1'-0"



② FIRST LEVEL INTERSTITIAL/ROOF ELECTRICAL
1/8" = 1'-0"



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Drawing Title
FIRST LEVEL INTERSTITIAL/ROOF ELECTRICAL PLAN

Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
 02/10/2021

Checked
 CB

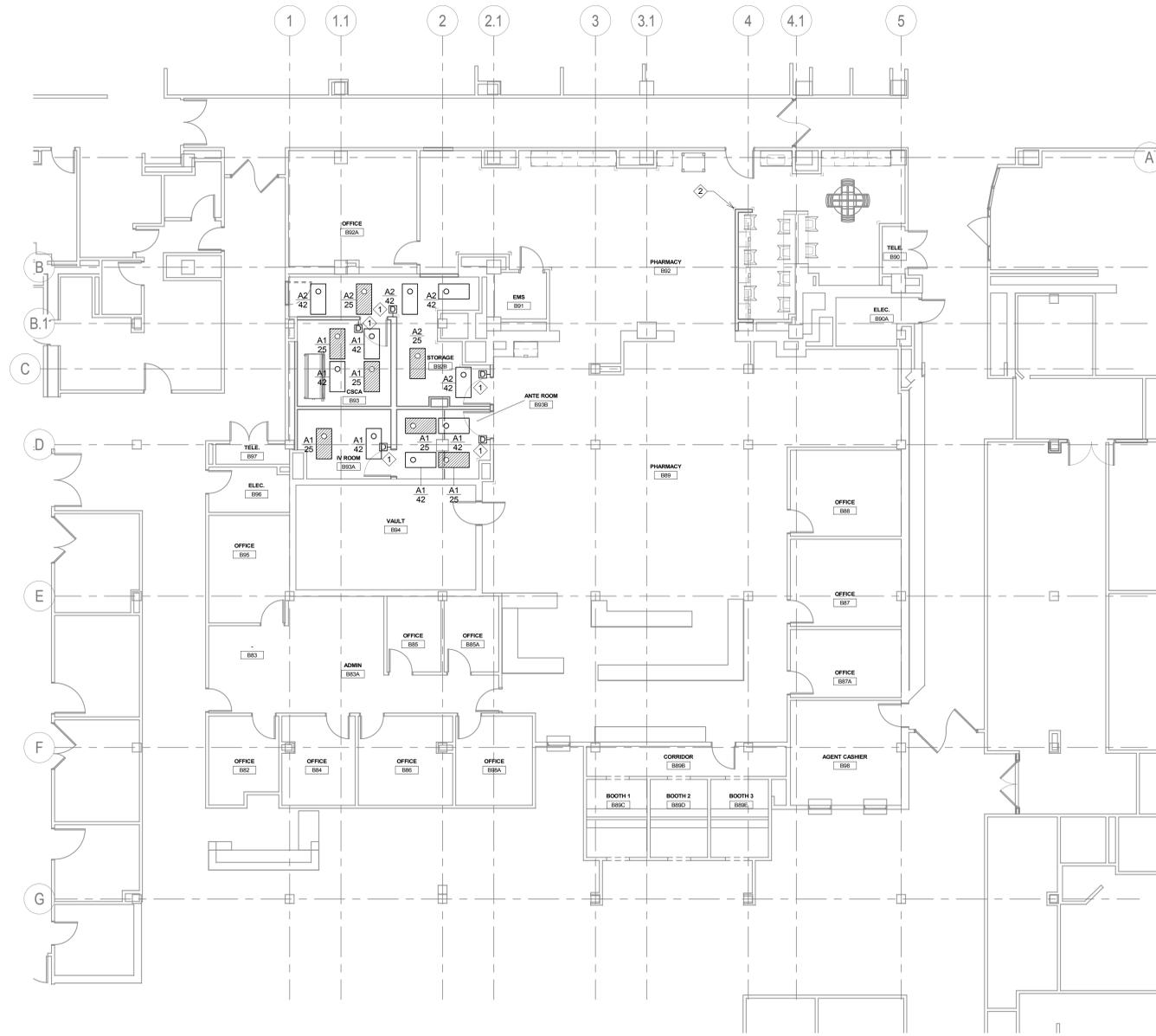
Drawn
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Project Number
 VA #438-20-109
 SGA #201927

Building Number
 5

Drawing Number
EE111

Three inches = one foot
 One and one half inches = one foot
 One inch = one foot
 Three quarters inch = one foot
 One half inch = one foot
 Three eighths inch = one foot
 One quarter inch = one foot
 One eighth inch = one foot



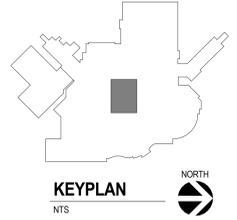
1 GROUND LEVEL LIGHTING PLAN
 1/8" = 1'-0"

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 (FEEDERS, BRANCH CIRCUIT, AND SIGNAL SYSTEMS) SHALL BE INSTALLED IF ONE AREA OR PHASE OF THE 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)
- C. REMOVE, REPLACE, RELOCATE, ETC. ANY ELECTRICAL DEVICES AND/OR ANY CONDUIT/WIRING AS REQUIRED TO COMPLETE REMODELING AS INDICATED IN THE CONTRACT DOCUMENTS.
- D. DRAWINGS INDICATE EXISTING CONDITIONS AS THEY WERE INDICATED ON OWNER PROVIDED AS-BUILT DRAWINGS AND SITE VERIFICATION. ACTUAL CONDITIONS MAY VARY FROM THE CONDITIONS INDICATED. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXACT CONDITIONS.
- E. ALL DEVICES, EQUIPMENT, CABLING, ETC. INDICATED IN THE CONTRACT DOCUMENTS TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF IN ACCORDANCE WITH LOCAL AND FEDERAL REGULATIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- F. PATCH ALL INTERSTITIAL PENETRATION VOIDS RESULTING FROM DEMOLITION WORK. SEE ARCHITECTURAL DRAWINGS FOR PATCHING DETAILS. MAINTAIN FLOOR AND WALL RATINGS.
- G. DEMOLISH HOME RUN WIRING BACK TO SOURCE UNLESS NOTED OTHERWISE. DO NOT LEAVE CONDUCTORS ABANDONED IN WIREWAY SYSTEMS LOCATED WITHIN THE INTERSTITIAL SPACES.

KEY NOTES:

- ◇ PROVIDE UL924 RELAY.
- ◇ RELOCATE LIGHT FIXTURES AS REQUIRED FOR NEW WALL.



Revision#	Description	Date:

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 605-271-1144

STONE GROUP ARCHITECTS



Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title GROUND LEVEL LIGHTING PLAN
Approved:

Phase BID SET

Project Title UPGRADE PHARMACY 797
Location SIoux FALLS, SOUTH DAKOTA
Issue Date 02/10/2021

Project Number VA #438-20-109 SGA #201927
Building Number 5
Drawing Number EL101

GENERAL NOTES:

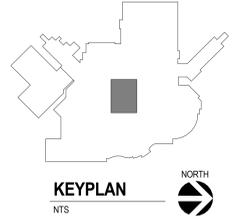
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- G. DEMOLISH HOME RUN WIRING BACK TO SOURCE UNLESS NOTED OTHERWISE. DO NOT LEAVE CONDUCTORS ABANDONED IN WIREWAY SYSTEMS LOCATED WITHIN THE INTERSTITIAL SPACES.

KEY NOTES:

- ① NEW LCE5 PANEL.
- ② DEDICATED CIRCUIT FOR REFRIGERATOR.
- ③ REFEED ELECTRICAL EQUIPMENT. REUSE EXISTING WIREWAY FOR NEW WIRING. PROVIDE NEW RED RECEPTACLES FOR EMERGENCY POWER.
- ④ PROVIDE LEGRAND 250TC TELE-POWER POLE AS BASIS OF DESIGN OR APPROVED EQUAL WITH DEDICATED CIRCUIT TO EACH POWER POLE. PROVIDE 5 RED DUPLEX RECEPTACLES IN EACH POLE.
- ⑤ PROVIDE EMERGENCY POWER (208V AND 120V) TO OMNICELL EQUIPMENT.
- ⑥ PROVIDE 2" CONDUIT TO ALLOW FOR FUTURE EXPANSION.
- ⑦ INSTALL TEMPORARY POWER PRIOR TO REFRIGERATOR RELOCATION.
- ⑧ PROVIDE CIRCUIT FROM PANEL LNS BREAKER 36 TO RECEPTACLE.
- ⑨ PROVIDE EMERGENCY POWER FOR SENSOR.
- ⑩ PROVIDE CIRCUIT FROM PANEL LNS BREAKER 32 TO EQUIPMENT.
- ⑪ PROVIDE CIRCUIT FROM PANEL LNS BREAKER 34 TO EQUIPMENT.
- ⑫ PROVIDE JUNCTION BOX AND CONDUIT FOR POWER DOOR OPERATOR.
- ⑬ PROVIDE JUNCTION BOX AND CONDUIT FOR TOUCHSCREEN DISPLAY.
- ⑭ PROVIDE PATHWAY FOR DOOR INTERLOCK SYSTEM.
- ⑮ PROVIDE 120V CONNECTION TO HEPA FILTERED PASS THROUGH.



① GROUND LEVEL POWER PLAN
1/8" = 1'-0"



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 REG. NO. 14938
 CURTIS D. BARLAGE
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Office of Construction and Facilities Management
 VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL POWER PLAN
 Approved:

Phase
BID SET

Project Title
UPGRADE PHARMACY 797
 Location
SIoux FALLS, SOUTH DAKOTA
 Issue Date
 02/10/2021
 Checked
 CB
 Drawn
 BZ

Project Number
 VA #438-20-109
 SGA #201927
 Building Number
 5
 Drawing Number
EP101

GENERAL NOTES:

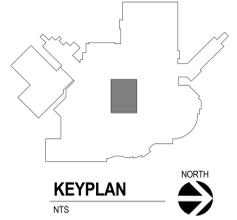
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KEY NOTES:

- ① USE EXISTING PATCH PANEL IN EXISTING DATA RACK FOR NEW CABLING.
- ② BASIS OF DESIGN AIPHONE IX-SS-2G AUDIO ONLY STATION. PROGRAM INTERCOM SYSTEM TO PROVIDE COMMUNICATION FROM ALL AUDIO STATIONS TO MASTER STATION LOCATED IN GENERAL PHARMACY. ALSO PROVIDE COMMUNICATION BETWEEN IV ROOM AND ANTE ROOM AUDIO STATIONS AND CSCA AND STORAGE ROOM AUDIO STATIONS. PROVIDE ALL ADAPTERS, MODULES AND PROGRAMMING FOR A COMPLETE OPERATIONAL INTERCOM SYSTEM.
- ③ REFER TO POWER PLAN FOR ADDITIONAL INFORMATION IN REGARDS TO THE TELE-POWER POLES. PROVIDE 6 CABLES.
- ④ CONTRACTOR TO INSTALL OWNER PROVIDED CHECKPOINT MONITOR DEVICE.
- ⑤ REINSTALL CHECKPOINT MONITORING DEVICE.
- ⑥ BASIS OF DESIGN AIPHONE IX-MV7-4B.



① GROUND LEVEL SYSTEM PLAN
1/8" = 1'-0"



Revision#	Description	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
GROUND LEVEL SYSTEM PLAN

Approved: _____

Phase
BID SET

Project Title
UPGRADE PHARMACY 797

Location
SIoux FALLS, SOUTH DAKOTA

Issue Date
 02/10/2021

Checked
 CB

Drawn
 BZ

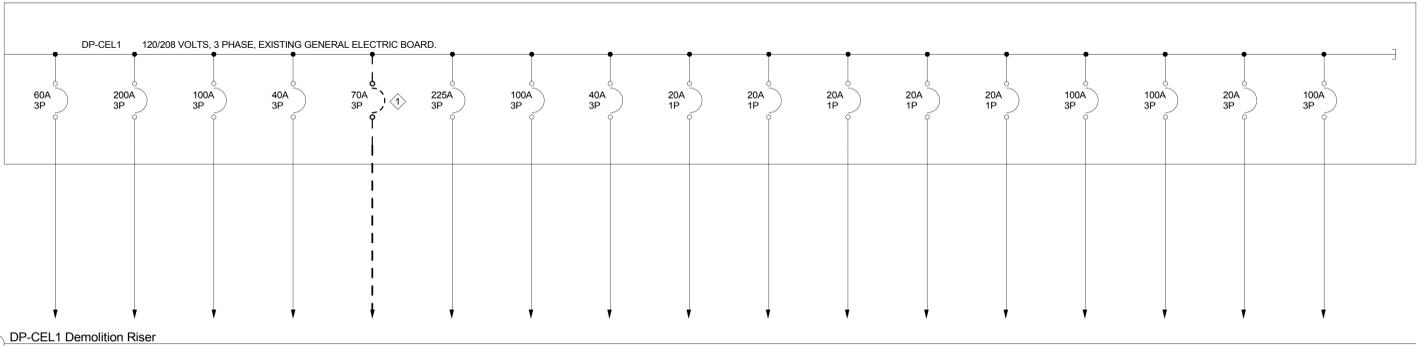
Project Number
 VA #438-20-109
 SGA #201927

Building Number
5

Drawing Number
EY101

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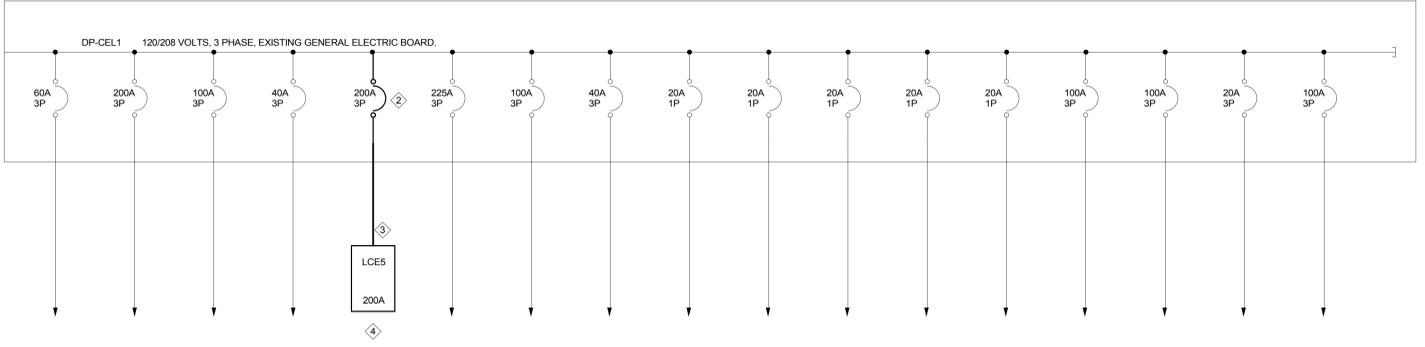
A
 B
 C
 D
 E
 F



KEY NOTES:

- ① REMOVE EXISTING BREAKER SERVING PANEL LCE5. STORE BREAKER AS DIRECTED BY OWNER.
- ② PROVIDE NEW 200A BREAKER TO SERVE PANEL LCE5.
- ③ PROVIDE NEW 3" CONDUIT AND #4GND.
- ④ PROVIDE NEW 200A, 10 KA, 60 POLE LCE5 PANEL.

① DP-CEL1 Demolition Riser
NO SCALE



② DP-CEL1 New Riser
NO SCALE

2/25/2021 10:33:48 AM
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Revision#	Description	Date:

CONSULTANTS

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 SOUTH DAKOTA

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: **ELECTRICAL RISERS**

Approved: _____

Phase: **BID SET**

Project Title: **UPGRADE PHARMACY 797**

Location: **SIoux FALLS, SOUTH DAKOTA**

Issue Date: 02/10/2021
 Checked: CB
 Drawn: BZ

Project Number: **VA #438-20-109 SGA #201927**

Building Number: **5**

Drawing Number: **EE301**

NAME: LCE5

ENCLOSURE: NEMA 1 SUPPLY FROM: CEL1 VOLTAGE: 120/208 MIN. BUS RATING: 225 A
MOUNTING: SURFACE PHASE: 3 MAIN SIZE: 200 A
LOCATION: ELEC. B90A WIRE: 4 MAIN OPTIONS: MCB

CKT	CIRCUIT DESCRIPTION	NOTES	TRIP	POLES	POLES	TRIP	NOTES	CIRCUIT DESCRIPTION	CKT
1	LIGHTS RM B89, B97, & B96		20	1	1	20		LAWF RM B93A	2
3	LIGHTS ROOM B90 & B92		20	1	1	20		BSC RM B93	4
5	REFRIGERATOR B92		20	1	1	20		EF SERVING CHEMO HOOD IN B93	6
7	RECEPTACLES ROOM B89 B92		20	1	1	20		B93 SO LOW FREZZ	8
9	RCPT TELE ROOM B97		20	1	1	20		RCPT ROOM B92 & B90A	10
11	UMD B97		20	1	1	20		RCPT ROOM B90	12
13	REFRIGERATOR B89		20	1	1	20		LIGHTS ROOM A30	14
15	LIGHTS AGENT CASHIER		20	1	1	20		LIGHTS RM A29, A30, A53	16
17	SPARE IN CEILING RM B89 N.E. END		20	1	1	20		LIGHTS RM C7, C6, C5	18
19	AGENT CASHIER SECURITY		20	1	1	20		LIGHTS RM A31	20
21	PHARMACY DOOR LOCK SYSTEM		20	1	1	20		UC REFRIGERATOR B89	22
23	4 PLEX BY PANEL		20	1	1	20		NURSE CALL PANEL B90	24
25	LIGHTS B92B, B93, B93A, B93B		20	1	1	20		RCPT A30-A53	26
27	RCPTS RM B93A, B93B		20	1	1	20		RCPT A30	28
29	RCPTS RM B92B, B93		20	1	1	20		PASS THROUGH REFRIGERATOR B93	30
31	RCPTS RM B93, B93A, B93B	1	20	1	1	20		POWER POLE	32
33	B89 FURNITURE		20	1	1	20		POWER POLE	34
35	B89 FURNITURE		20	1	1	20		POWER POLE	36
37	B89 FURNITURE/OFFICE EXPANSION		20	1	1	20		DOOR OPERATORS	38
39					1	20		PHARMACY BREAK AREA FRIDGE	40
41	OMNICELL		20	3	1	20		RCPT B92	42
43					1	20		B92 FRIDGE	44
45	OMNICELL		20	1	1	20		B92 FRIDGE	46
47	B92B FRIDGE		20	1	1	20		B92 FRIDGE	48
49	OFFICE B88 RCPT		20	1	1	20		FFU 1	50
51	HEPA FILTERED PASS THROUGH		20	1	1	20		FFU 2	52
53	SPARE		20	1	1	20		SPARE	54
55					1	20		SPARE	56
57	LCE5A		40	3	1	20		SPARE	58
59					1	20		SPARE	60

GENERAL NOTES:
A. SEE RISER DIAGRAM FOR CALCULATED AVAILABLE FAULT CURRENT. PANELBOARD AND ASSOCIATED DEVICES WITHIN PANELBOARD ASSEMBLY SHALL HAVE A SHORT CIRCUIT CURRENT RATING HIGHER THAN THE CALCULATED VALUE SHOWN ON RISER DIAGRAM.
NOTES:
1. PROVIDE GFCI BREAKER.
2.
3.
4.

NAME: QH-2

ENCLOSURE: NEMA 1 SUPPLY FROM: VOLTAGE: 277/480 MIN. BUS RATING:
MOUNTING: SURFACE PHASE: 3 MAIN SIZE:
LOCATION: WIRE: 4 MAIN OPTIONS:

CKT	CIRCUIT DESCRIPTION	NOTES	TRIP	POLES	POLES	TRIP	NOTES	CIRCUIT DESCRIPTION	CKT
1									2
3	VFD FOR AHU6 SF		45	3	3	45		VFD FOR AHU1 SF	4
5									6
7									8
9	VFD FOR AHU6 RF		25	3	3	25		VFD FOR AHU1 RF	10
11									12
13									14
15	MAUSF 1	1	20	3	3	15	1	ACCU 1	16
17									18
19									20
21	EF 5-1	1	20	3	3	20	1	EF 5-2	22
23									24
25	SPACE	--	--	--	--	--	--	SPACE	26
27	SPACE	--	--	--	--	--	--	SPACE	28
29	SPACE	--	--	--	--	--	--	SPACE	30

GENERAL NOTES:
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NOTES:
1. PROVIDE NEW SQUARE D, NF TYPE CIRCUIT BREAKER, 18KA.
2.
3.
4.

LIGHT FIXTURE SCHEDULE

FIXTURE LETTER	FIXTURE STYLE	VOLTAGE	MOUNTING	LAMPS		BALLAST/ DRIVER	FIXTURE MAX VA	CONTROL MEDIA (LENS, LOUVER, ETC.)	MANUFACTURER'S SERIES NUMBER	FIXTURE DESCRIPTION	NOTES
				TYPE	COLOR						
A1	2X4 LED LENSED CLEAN ROOM	120/277	RECESSED GYP-BOARD AND/OR LAY-IN GRID INVERTED TEE	LED 11000 LUM MIN	4000K	ELECTRONIC NON-DIMMING	140 VA	PATTERN 12 ACRYLIC, 0.125" THICK INVERTED	COOPER-FAIL-SAFE CLM SERIES	POST PAINTED STEEL HOUSING, DIMMABLE DRIVER, DIMMABLE TO 10%	
A2	2X4 LED INDIRECT TROFFER	120/277	RECESSED GYP-BOARD AND/OR LAY-IN GRID INVERTED TEE	LED 6600 LUM MIN	4000K	DIMMING, 0-10V (10%)	60 VA	WHITE FROSTED LENS WITH SMOOTH PATTERN.	COOPER METALUX 24CZ SERIES	POST PAINTED STEEL HOUSING, DIMMABLE DRIVER, DIMMABLE TO 10%	

GENERAL ELECTRICAL NOTES:
A. REFER TO SPECIFICATION SECTIONS 265100 AND 265600 FOR LIGHT FIXTURE REQUIREMENTS.
B. BRING CONFLICTS BETWEEN THE MANUFACTURER'S CATALOG NUMBER AND DESCRIPTIONS TO THE ATTENTION OF THE ENGINEER.
C. LIGHT SOURCE SHALL HAVE COLOR TEMPERATURE 3500K WITH MINIMUM CRI OF 80 UNLESS OTHERWISE NOTED.
D. UNLESS A SPECIFIC CATALOG NUMBER OR SERIES IS NAMED, THE MANUFACTURER'S NAMED ALTERNATES MUST SUBMIT CATALOG CUT SHEETS AND IES FORMATTED PHOTOMETRIC REPORT TO THE ENGINEER FOR APPROVAL AT LEAST 10 DAYS PRIOR TO BID DATE. THE ENGINEER MAY REQUEST SAMPLE OF LUMINAIRE TO BE SUPPLIED.
E. MINIMUM LUMENS LISTED FOR LIGHT FIXTURES ARE DELIVERED LUMENS BASED ON PHOTOMETRIC TESTING COMPLETED IN ACCORDANCE WITH IES LM-79 STANDARDS.
F. SUBSTITUTE LIGHT FIXTURE IS SUBJECT TO ARCHITECT/ENGINEER APPROVAL.

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A
B
C
D
E
F

Revision#	Description	Date:

CONSULTANTS

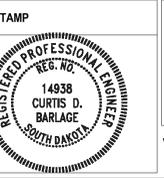
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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: **ELECTRICAL SCHEDULES**

Phase: **BID SET**

Approved: _____

Project Title: **UPGRADE PHARMACY 797**

Location: **SIOUX FALLS, SOUTH DAKOTA**

Issue Date: 02/10/2021

Checked: CB

Drawn: BZ

Project Number: **VA #438-20-109 SGA #201927**

Building Number: **5**

Drawing Number: **EE600**