CITY OF CHARLOTTESVILLE
CENTRAL LIBRARY CHILLER REPLACEMENT

201 EAST MARKET STREET
CHARLOTTESVILLE, VA 22902

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REFERENCE CODES AND INFORMATION

2015 Virginia Uniform Statewide Building Code
2015 Virginia Plumbing Code
2015 Virginia Mechanical Code
2010 NFPA 72 National Electrical Code
2011 NFPA 70 National Fire Alarm and Signaling Code

GENERAL NOTES:

1. DEMOLITION IS THE COMPLETE REMOVAL AND RELOCATION OF THE EXISTING SPLIT SYSTEM CHILLER AND CHILLED WATER PUMPS, ELECTRICAL AND CONTROLS WORK RELATED TO THE MECHANICAL WORK.
MECHANICAL ROOM 109 - DEMOLITION

PLAN NOTES - DEMOLITION:

1. REMOVE EXISTING CIENT CHILLED WATER AND REFRIGERANT PIPING, CABLE SUPPORTS, AND ASSOCIATED ACCESSORIES TO THE EXTENT SHOWN. CLEAN AND PREPARE EXISTING CONDUIT FOR ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR EXISTING PLANS TO IDENTIFY PIPING TO BE REMOVED.
2. REMOVE EXISTING CHILLED WATER PUMP, ASSOCIATED PIPING, VALVES, CONTROLS, ACCESSORIES, SUPPORTS, WIRING, AND ASSOCIATED ACCESSORIES TO THE EXTENT SHOWN. CLEAN, CAP AND PREPARE EXISTING CONDUIT. CLEAN AND PREPARE EXISTING CONCRETE PAVING, HOUSEKEEPING PAD FOR EXTENSION AND ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR REFRIGERANT RECLAIM.
3. REMOVE EXISTING PIPING, SUPPORTS AND INSULATION TO THE EXTENT SHOWN. CLEAN, CAP AND PREPARE FOR CONNECTION TO NEW WORK.
4. REMOVE EXISTING REFRIGERANT PIPING, INSULATION, SUPPORTS AND ACCESSORIES IN THEIR ENTIRETY. PREPARE LOCATION FOR INSTALLATION.
5. REMOVE EXISTING EXPANSION TANK, AIR SEPARATOR, SUPPORTS, PIPING AND ACCESSORIES. CLEAN, CAP AND PREPARE EXISTING CONCRETE PAVING, HOUSEKEEPING PAD FOR EXTENSION AND ACCEPTANCE OF NEW EQUIPMENT. CAP AND PREPARE EXISTING CONCRETE CONDUIT. CLEAN AND PREPARE EXISTING CONCRETE PAVING, HOUSEKEEPING PAD FOR EXTENSION AND ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR REFRIGERANT RECLAIM.
6. REMOVE EXISTING ABANDONED STEAM PIPING AND INSULATION IN THE VICINITY OF THE REFRIGERANT PIPING IN THIS AREA. CAP AND PREPARE EXISTING CONCRETE PAVING, HOUSEKEEPING PAD FOR EXTENSION AND ACCEPTANCE OF NEW EQUIPMENT. CAP AND PREPARE EXISTING CONCRETE CONDUIT. CLEAN AND PREPARE EXISTING CONCRETE PAVING, HOUSEKEEPING PAD FOR EXTENSION AND ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR REFRIGERANT RECLAIM.
7. EXTEND TO NEW EXPANSION/COMPRESSION TANK.
8. INSTALL NEW EXPANSION TANK, ASSOCIATED PIPING, SUPPORTS AND ACCESSORIES AS REQUIRED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. EXTEND TO NEW AIR SEPARATOR.
10. EXTEND TO EXISTING CW MAKE-UP. PROVIDE NEW BACKFLOW PREVENTER, PRV, AND PIPING ACCESSORIES AS SHOWN.
11. INSTALL NEW BUFFER TANK, ASSOCIATED PIPING, SUPPORTS AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
12. INSTALL NEW 3/4" DOMESTIC COLD WATER LINE AND SERVICE VALVE FOR CHILLER CONDENSER COIL WASH-DOWN.

MECHANICAL ROOM 109 - NEW WORK

PLAN NOTES:

1. INSTALL NEW PIPING TO THE EXTENT SHOWN. COORDINATE LOCATION AND ROUTING WITH EXISTING LIGHTS, PIPING, SPRINKLER HEADS, AND ASSOCIATED ACCESSORIES TO THE EXTENT SHOWN. CLEAN, CAP AND PREPARE EXISTING CONDUIT FOR ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR EXISTING PLANS TO IDENTIFY PIPING TO BE REMOVED.
2. INSTALL NEW BASE MOUNTED PUMP AS SHOWN. REFER TO BASE MOUNTED PUMP CONNECTIONS DETAIL, SHEET M-1.
3. CONNECT EXISTING PIPING TO NEW PIPING. REMOVE AND RE-SEAL INSULATION AS REQUIRED.
4. INSTALL THE REFRIGERATION PIPING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. COMPLETE ALL REFRIGERATION PIPING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. INSTALL NEW ONE-SHOT FEEDER, ASSOCIATED PIPING, AND ACCESSORIES AS REQUIRED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. INSTALL NEW AIR SEPARATOR, ASSOCIATED PIPING, SUPPORTS AND ACCESSORIES AS REQUIRED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. EXTEND TO NEW AIR SEPARATOR.
8. INSTALL NEW EXPANSION TANK, ASSOCIATED PIPING, SUPPORTS AND ACCESSORIES AS REQUIRED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. EXTEND TO NEW AIR SEPARATOR.
10. INSTALL NEW REFRIGERANT PIPING TO THE EXTENT SHOWN. COORDINATE LOCATION AND ROUTING WITH EXISTING LIGHTS, PIPING, SPRINKLER HEADS, AND ASSOCIATED ACCESSORIES TO THE EXTENT SHOWN. CLEAN, CAP AND PREPARE EXISTING CONDUIT FOR ACCEPTANCE OF NEW EQUIPMENT. COORDINATE WITH OWNER FOR REFRIGERANT RECLAIM.
11. INSTALL NEW BUFFER TANK, ASSOCIATED PIPING, SUPPORTS AND ACCESSORIES IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
12. INSTALL NEW 3/4" DOMESTIC COLD WATER LINE AND SERVICE VALVE FOR CHILLER CONDENSER COIL WASH-DOWN.
**PARTIAL LEVEL 1 PLAN - PIPING**

**SCALE: 1/8" = 1'-0"**

1. **4" CWS FR ABV & DN**
2. **4" CWR FR BEL & UP**
3. **CHILLER FEEDER FROM PANEL-MP. SEE SHEET E-2.**

**PLAN NOTES:**
1. Coordinate penetration locations with existing floor and structural conditions so as to avoid concrete structural members.
2. Piping up to mechanical, mechanical levels, or below, coordinate locations and routing with existing mechanical equipment, piping and accessories.

**PARTIAL LEVEL 2 PLAN - PIPING**

**SCALE: 1/8" = 1'-0"**

1. **4" CWS DN**
2. **4" CWR FR BEL**
3. **4" CWS FR ABV**
4. **4" CWR UP**
5. **PIPING THROUGH MEZZANINE**
6. **EXISTING PANEL-PB**
7. **CHILLER FEEDER FROM LEVEL 1**
8. **CHILLER FEEDER UP TO ATTIC**

**PLAN NOTES:**
1. Coordinate penetration locations with existing floor and structural conditions so as to avoid concrete structural members.
2. Piping through mechanical, mechanical levels, or below, coordinate locations and routing with existing mechanical equipment, piping and accessories.

**ELECTRICAL PLAN NOTES:**
1. Disconnect existing circuit PB-13 and PB-15 serving the condenser on the roof top. Remove conductors from panel up to unit. Abandon conduit up through roof. See electrical demolition note 1 sheet ME-4. Label breakers "spare" for future use.
2. Route electrical conduit with chilled water piping. Chiller feeder is 3#3/0 and 1#6 ground in 2" conduit.

**PARTIAL LEVEL 3 PLAN - PIPING**

**SCALE: 1/8" = 1'-0"**

1. **4" CWS DN**
2. **4" CWR FR BEL**
3. **PIPING THROUGH ATTIC**
4. **3/4" CW**
5. **3/4" FR BEL**

**PLAN NOTES:**
1. Coordinate penetration locations with existing floor and structural conditions so as to avoid concrete structural members.
2. Piping up to mechanical, mechanical levels, or below, coordinate locations and routing with existing mechanical equipment, piping and accessories.
3. Refer to roof plan, sheet M-4, for continuation.
4. Terminate at exterior wall of shop. Provide freeze proof hose bib with vacuum breaker equal to JOSAM 71050.

**ELECTRICAL PLAN NOTES:**
1. Disconnect existing circuit PB-13 and PB-15 serving the condenser on the roof top. Remove conductors from panel up to unit. Abandon conduit up through roof. See electrical demolition note 1 sheet ME-4. Label breakers "spare" for future use.
2. Route electrical conduit with chilled water piping. Chiller feeder is 3#3/0 and 1#6 ground in 2" conduit.
MECHANICAL DEMOLITION NOTES:
1. REMOVE EXISTING SPLIT SYSTEM CHILLER, ASSOCIATED CONTROLS, REFRIGERANT PIPING, WIRING, CONDUIT, SUPPORTS, AND ASSOCIATED ACCESSORIES TO THE EXTENT SHOWN. COORDINATE WITH OWNER FOR REFRIGERANT RECLAIM.
2. CLEAN AND PREPARE EXISTING STRUCTURAL FRAME TO ACCEPT NEW WORK. REFER TO STRUCTURAL PLANS.
3. REMOVE EXISTING REFRIGERANT PIPING, ASSOCIATED SUPPORTS, ACCESSORIES AND INSULATION TO THE EXTENT SHOWN.
4. CAP PIPING JUST ABOVE PITCH POCKET, SEAL WEATHER-TIGHT AND ABANDON IN PLACE.

MECHANICAL PLAN NOTES:
1. INSTALL NEW CHILLER, ASSOCIATED PIPING, ACCESSORIES, SUPPORTS AND CONTROLS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REFER TO CHILLER CONNECTIONS DETAIL, SHEET M-1. PROVIDE NEW VIBRATION ISOLATION PADS.
2. CWS/CWR PIPING CONNECT TO FULL SIZE OF CHILLER EVAPORATOR INLET AND OUTLET CONNECTIONS.
3. PIPING AND CONDUIT TO/FROM ATTIC. PROVIDE SLEEVE AT WALL PENETRATION AND SEAL WEATHER-TIGHT.
4. CHILLED WATER PIPING ABOVE ROOF. PROVIDE INSULATED METAL JACKETING SEALED WEATHER-TIGHT. PROVIDE PRE-MANUFACTURED BASE AND CHANNEL ROOFTOP PIPING SUPPORTS. ANCHOR PIPING AND ELECTRICAL CONDUIT IN STRICT ACCORDANCE WITH BASE CHANNEL MANUFACTURER'S RECOMMENDATIONS.
5. INSTALL PIPE HEAT TRACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. REFER TO DETAIL, SHEET M-1.
6. CAP AND SEAL EXISTING REFRIGERANT PIPING WEATHER-TIGHT. ABANDON IN PLACE.
7. REFER TO STRUCTURAL PLANS FOR MODIFICATIONS TO THE EXISTING STRUCTURAL FRAME.

ELECTRICAL DEMOLITION NOTES:
1. EXISTING POWER FEED FROM BELOW TO CONDENSING UNIT CONTROL PANEL. REMOVE CONDUCTORS FROM CONDUITS DOWN TO PANEL-PB. CUT CONDUITS 6' ABOVE ROOF AND CAP WATER-TIGHT. REMOVE CONDUIT FROM CUT LOCATION TO CONTROL PANEL.
2. REMOVE DISCONNECT SWITCHES, CONDUIT AND WIRING ASSOCIATED WITH CONDENSING UNIT CONTROL PANEL.

ELECTRICAL PLAN NOTES:
1. MOUNT N/1/30 NEMA 3R DISCONNECT SWITCH ON THE SIDE OF THE CHILLER. CONNECT FROM DISCONNECT SWITCH TO HEAT TRACE ON CHILLED WATER SUPPLY AND RETURN PIPING WITH 2 #12 AND 1 #12 GROUND IN 3/4" LIQUID-TIGHT CONDUIT.
SPECIFICATIONS FOR GENERAL REQUIREMENTS:

1. SPECIFICATIONS FOR GENERAL REQUIREMENTS:

   A. Interpretation of the General Requirements. An interpretation of the General Requirements is a written explanation of the specification that will be released by the Owner. The interpretation shall be done in writing and shall be signed by the Owner and preserved in the file of the Project. The interpretation shall be issued prior to the release of the Project as a whole.

   B. Preparation of the General Requirements. The General Requirements shall be prepared in accordance with the Specifications. The General Requirements shall be prepared in a format that is consistent with the Specifications and shall be consistent with the Specifications.

   C. Payment of the General Requirements. The General Requirements shall be paid for in accordance with the Specifications.

   D. Delivery of the General Requirements. The General Requirements shall be delivered to the Contractor in accordance with the Specifications.

   E. Approval of the General Requirements. The General Requirements shall be approved by the Owner in accordance with the Specifications.

   F. Unusual wear or other misuse.

   11. Unusual wear or other misuse. Where Specifications name two (2) or more products or manufacturers, provide 1 of the specified requirements remains Contractor's responsibility. Where Specifications require compliance with performance requirements, provide products.

PROJECT DESCRIPTION: This project consists of removing one (1) existing split system air-cooled chiller and replacing it with one (1) new (2) chilled water pumps with two (2) new primary chilled water pumps and two (2) secondary chilled water pumps. Additional work includes 5. Project closeout activities.

CONTRACT: The Work will be constructed under a single prime contract. The Owner intends to award the contract to the responsible bidder 5. The term 'Provide' shall be defined as furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.

DEFINITIONS:

RESPONSIBILITIES: Only where specifically indicated to be his responsibility shall the Contractor provide inspections, tests, and other services as indicated in the Specifications. The Contractor shall assume responsibility for the work furnished and performed by the Contractor, regardless of the assignment of responsibility for inspection, testing, or similar services. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests were performed by or for quality-control service activities, and protect repaired construction. Repair and protection is Contractor's responsibility. Where Specifications name two (2) or more products or manufacturers, provide 1 of the specified requirements remains Contractor's responsibility.

PROJECT CONDITIONS: Owner assumes no responsibility for actual condition for the portions of buildings to be selectively demolished. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical. Owner reserves the right to remove materials and equipment from the building for re-use up until the Contractor commences work on the site. Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at Contractor's option.

1. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

3. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by regulations of authorities having jurisdiction. Prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

4. Completion or test data.

5. Touch up and otherwise repair and restore marred, exposed finishes.

6. Carefully protect the areas of the building not to be removed or affected by the work. Satisfy all codes, regulations, and agency requirements. Protect the workman's right of way for preparing the building for the work.

7. Make temporary openings to close after use. Provide and perform all work to accommodate the operations and activities without causing damage to the building or any part thereof. Pay for all related costs. Complete with all necessary accessories, ready for intended use. Pay for all related costs.

8. Do not cut existing walls or partitions which require special consideration under 15. The Contractor shall be responsible for preparing the building as required by the owner.

9. Provide appropriate access for personnel working in the building. Pay for all related costs. Complete with all necessary accessories, ready for intended use.

10. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify passage of people around selective demolition area.


12. Complete all temporary openings to close after use. Remove all access openings and temporary supports. Pay for all related costs. Complete with all necessary accessories, ready for intended use.

13. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign materials. Clean light fixtures and lamps.

14. Where Specifications require compliance with performance requirements, provide products.

15. Do not use record documents for construction purposes. Protect record documents from damage.


17. Protect record documents from damage.

18. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.


20. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.


22. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.

23. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.

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38. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.


40. Keep a complete set of blueprints available for future use. Make all NECA drawings available for future use.
SPECIFICATIONS FOR HVAC WORK:

11. INSTRUCTIONS TO OWNER: INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF THE MECHANICAL SYSTEMS SPECIFIED FOR A LONGER PERIOD IN OTHER PORTIONS OF THE SPECIFICATIONS. DEFECTIVE MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. MATERIAL, DIRT AND DEBRIS SHALL BE REMOVED FROM OCCUPIED AREAS WHENEVER WORK AREAS ARE LEFT UNATTENDED.

12. CLEANING: EQUIPMENT AND PIPING SHALL BE CLEANED TO REMOVE FOREIGN MATERIALS. PROVIDE TEMPORARY FILTERS FOR AIR AND WATER PIPING UNTIL CLEANING IS COMPLETED.

13. Quiet Operation: Systems shall operate under conditions of load without unusual or excessive noise or vibration.

14. Start-up: All major pieces of HVAC equipment, including, but not limited to chillers and pumps, shall include provisions for proper start-up and iniial operation.

15. Balancing: Council, or the National Environmental Balancing Bureau, to adjust and balance all heating, ventilating, air conditioning systems to the design load and in accordance with the manufacturer's recommendations.

16. Removal of Controlling Elements: Without removing valve from piping. Each valve shall be identified as to its function and shall be replaced by the contractor. The unit shall be provided with adjustable support foot to help carry weight of suction and discharge piping.

17. Differential Pressure Readings: Across the orifice to accurately balance the system to specified design pressure differential equal to pump shutoff head and shall have a free area equal to five times cross section of piping.

18. Automatic Flow Control Valves: Shall be Griswold, Autoflow, Hays or equal and shall be provided at all water and condenser water systems.

19. Pressure Gauges: Shall be 4" dial Ashcroft Bourdon tube type suitable for 125 PSI service. Provide PSI scale only.

20. Chiller: Water pumps shall operate not over 1750 RPM and shall be suitable for pumping water at specified flow rates within five (5) percent regardless of system pressure. Valves shall be selected to provide similar items, and at any other points indicated or required for draining, isolation or sectionalizing purposes.

21. Balancing: Council, or the National Environmental Balancing Bureau, to adjust and balance all heating, ventilating, air conditioning systems to the design load and in accordance with the manufacturer's recommendations.

22. Instrumentation and Control for HVAC: Include the following equipment as specified by the successful building automation system (BAS) supplier.

- BACNET ISO 8802-3, (ETHERNET)
- BACNET IP, (ANNEX J)
- Analog Outputs: 10 to 1 Gain; Volts/Hertz Ratio
- Digital Inputs: Unit OFF Switch, Remote Start/Stop, Flow Switch, Motor Protection
- Unit Mode Selection: Selects Standard Cooling, Ice, Glycol, or Test Operation Mode
- Programmable Logic Controller: With integral PLC and optional communication network. Logic programming shall be on a project specific basis.
- Zone Control: Provides set point adjustment for each zone.
- Three Phase Motor Coolers: With integral PLC and optional communication network. Logic programming shall be on a project specific basis.
- Inverter Drive: With integral PLC and optional communication network. Logic programming shall be on a project specific basis.
- Ground Fault Protection: Factory Installed circuit breaker to protect equipment from damage from ground fault.
- Through-The-Door Handle and Compressor Circuit Breakers.

23. Galvanized Steel: Painted parts shall be able to meet ASTM B117, 1000-Hour Salt Spray Test. Upper condenser coil shall be made of galvanized steel. Painted parts shall be UV rated and shall be designed to operate in outdoor environments.

24. Drainage: Systems shall be designed to drain properly at all times.

25. Wind Bracing: The equipment shall be designed to withstand wind loads as indicated by the manufacturer.

26. Noise Reduction: The equipment shall be designed to minimize noise impact on the facility.

27. Electrical: The equipment shall be designed to meet all electrical requirements as indicated by the manufacturer.

28. Commissioning: The equipment shall be commissioned at the time of installation to ensure proper operation.

29. Maintenance: The equipment shall be maintained in accordance with the manufacturer's recommendations.

30. Safety: The equipment shall be designed to meet all safety requirements as indicated by the manufacturer.

31. Service: The equipment shall be designed to be easily serviced and maintained.

32. Testing: The equipment shall be tested in accordance with the manufacturer's recommendations.

33. Warranty: The equipment shall be warranted by the manufacturer for a period of five years from equipment startup or 66 months from shipment.
SPECIFICATIONS FOR HVAC WORK (CONTINUED):

I. APPLICATION SPECIFIC CONTROLLER: APPLICATION SPECIFIC CONTROLLERS SHALL BE STANDALONE, MICROPROCESSOR BASED

F. PROVIDE THE OWNER'S PERSONNEL DIRECT ACCESS TO TECHNICAL SUPPORT INFORMATION, INCLUDING, BUT NOT LIMITED TO,

P. WIRING:

H. SUBMITTALS: THE FOLLOWING DATA/INFORMATION SHALL BE SUBMITTED FOR APPROVAL: COMPLETE CONTROL SEQUENCES AND

M. ENERGY MANAGEMENT SOFTWARE: THE FOLLOWING ENERGY MANAGEMENT CAPABILITIES SHALL BE FURNISHED STANDARD AS

N. BUILDING MANAGEMENT SOFTWARE IS EXISTING.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER CONTROL FOR ALL AREAS THAT ARE TO BE OCCUPIED DURING

E. PROVIDE THE OWNER'S PERSONNEL DIRECT ACCESS TO ALL SOFTWARE COMPONENTS NECESSARY FOR THE OWNER'S PERSONNEL

C. IT SHALL BE THE RESPONSIBILITY OF THE BAS/ATC CONTRACTOR TO FULLY COORDINATE WITH ALL EQUIPMENT SUPPLIERS TO

G. APPLICATION SPECIFIC CONTROLLERS SHALL PROVIDE DISTRIBUTED, PRE-ENGINEERED CONTROL SPECIFIC TO THE MECHANICAL

S. SERVICE AND GUARANTEE - THE CONTROL SYSTEM UPGRADES SHALL BE SERVICED AND MAINTAINED IN FIRST-CLASS CONDITION BY

- THE CONTROLS SYSTEM SPECIFIED HERE-IN IS INTENDED TO INTERFACE WITH THE OWNER'S EXISTING TREND SYSTEM AND THE

FULLY INTEGRATED WITH THE OTHER SYSTEM COMPONENTS.

- CURRENT SENSITIVE SWITCHES: SOLID STATE, SPLIT CORE CURRENT SWITCH THAT OPERATES WHEN THE CURRENT LEVEL (SENSED

- VALVE ACTUATORS 1/2" TO 6": MECHANICAL NON-SPRING RETURN ACTUATORS FOR VAV HEATING COILS SHALL BE BELIMO - NO

- APARTMENT BUILDING. THE BUILDING AUTOMATION SYSTEM SHALL BE STANDALONE, MICROPROCESSOR BASED OPEN PLATFORM SYSTEM

- SUMMARY OF THE INSTALLATION MATERIALS INCLUDING CONDUIT, WIRE, FLEX, ETC., PANEL LOCATIONS, PROVIDE AS PART OF

- SYSTEM SOFTWARE SHALL INCLUDE SYSTEM DESCRIPTION OF THE INSTALLATION MATERIALS INCLUDING CONDUIT, WIRE, FLEX, ETC., PANEL LOCATIONS, PROVIDE AS PART OF

- PROVIDE WIRING AND MISCELLANEOUS APPURTENANCES FOR A COMPLETE SYSTEM IN ACCORDANCE WITH THE ELECTRICAL

- SYSTEM EXPANSION SHALL BE POSSIBLE BETWEEN THE VARIOUS CONTROLLERS IN THE ARCHITECTURE. THE SYSTEM SOFTWARE SHALL INCLUDE SYSTEM

- INTERFACE REQUIREMENTS:

- GENERAL:

- COMMENTS:

- NOT BE OVERLAPPED OR CROSSED, NEC PROVISIONS SHALL BE SERVED IN THE PROPER MANNER.

- TERMINATIONS:

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ELECTRICAL SPECIFICATIONS:

1. PROVIDE APPROVED LISTED ELECTRICAL EQUIPMENT, AS INDICATED ON THE DRAWING.

2. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

3. PROVIDE APPROPRIATE SAFETY INFORMATION AND MARKING INSTRUCTIONS.

4. PROVIDE APPROPRIATE SAFETY INFORMATION AND MARKING INSTRUCTIONS.

5. PROVIDE APPROPRIATE SAFETY INFORMATION AND MARKING INSTRUCTIONS.

6. PROVIDE APPROPRIATE SAFETY INFORMATION AND MARKING INSTRUCTIONS.

7. PROVIDE APPROPRIATE SAFETY INFORMATION AND MARKING INSTRUCTIONS.

GENERAL NOTES:

1. ALL VOLTAGE WILL BE INDICATED ON THE MECHANICAL CONTRACTOR. THIS ELECTRICAL CONTRACTOR SHALL PROVIDE THE VOLTAGE ON THE CONTRACT OR SUBCONTRACT BETWEEN THE GENERAL CONTRACTOR AND THE ELECTRICAL CONTRACTOR.

2. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

3. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

4. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

5. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

6. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.

7. PROVIDE A PLAN FOR THE LOCATION OF THE ELECTRICAL SYSTEM.
DEMO FLOOR PLAN - DEMOLITION

EXISTING 15KW GENERATOR TO REMAIN
EXISTING AUTOMATIC TRANSFER SWITCH TO REMAIN
EXISTING TRANSFORMER LDDP
EXISTING PUMP CHWP-3
EXISTING PUMP CHWP-4
EXISTING EMERGENCY PANEL-EM TO REMAIN
EXISTING PANEL-MP
EXISTING PANEL-MDP
EXISTING PANEL-LA
EXISTING PANEL-PA
EXISTING PANEL-LA
EXISTING PANEL-PA
EXISTING CHIMNEY
EXISTING CHILLER
EXISTING PUMP CHWP-2
EXISTING PUMP CHWP-1
EXISTING 3/0 AND 1 #6 GROUND IN 2" CONDUIT TO CHILLER
3 #3/0 AND 1 #6 GROUND IN 3/4" CONDUIT TO CHILLER PIPING HEAT TRACE
2 #12, 1#12 GROUND IN 3/4" CONDUIT TO CHILLER PIPING HEAT TRACE
ROUTE CONDUIT WITH CHILLED WATER PIPING
3 #12 AND 1 #12 GROUND IN 3/4" CONDUIT
3 #12 AND 1 #12 GROUND IN 3/4" CONDUIT
COORDINATE CONDUIT LOCATION WITH EXISTING DUCT WORK PIPING AND OTHER EQUIPMENT

NEW WORK PLAN NOTES:

1. EXISTING PANEL-MP IS A 600 AMP, 3 PHASE, 4 WIRE, 480/277 VOLT GENERAL ELECTRIC NHB STYLE PANEL.  REMOVE THE EXISTING 3-POLE 175 AMP BREAKER IN SPACE 13 FEEDING THE EXISTING CHILLER AND REPLACE WITH A GENERAL ELECTRIC 3-POLE 200 AMP BREAKER TO FEED THE NEW PACKAGED CHILLER ON THE ROOF.  PROVIDE BREAKER LOCK OUT DEVICE FOR NEW 200 AMP BREAKER.  AIC RATING SHALL MATCH EXISTING BREAKERS IN PANEL.

2. EXISTING CONDUITS FROM PANEL-PA FORMERLY FEEDING CHILLED WATER PUMPS (3 #12 AND 1 #12 GROUND IN EACH CONDUIT).  PROVIDE 6x6x4 SPLICE BOX WITH COVER FOR EACH EXISTING CONDUIT AND EXTEND TO NEW VFD AS INDICATED WITH 3 #12 AND 1 #12 GROUND IN 3/4" CONDUIT.  EXISTING CIRCUIT FROM PANEL-PA SHALL BE REUSED.

3. VFD PROVIDED BY MECHANICAL.  ELECTRICAL SHALL MOUNT VFD ON FLOOR MOUNTED KINDORFF CHANNEL FRAME AND MAKE LINE AND LOAD CONNECTIONS.

4. 3 #12 AND 1 #12 GROUND IN 3/4" CONDUIT.

5. PROVIDE (1) 3 POLE 20 AMP BREAKER IN PANEL-EM TO FEED PUMPS CHWP-P1 AND CHWP-P2.  INSTALL BREAKER IN BOTTOM 3 SPACES.  UPDATE PANEL SCHEDULE TO REFLECT THE ADDITION OF THE BREAKER.  SEE NOTE 6 FOR PANEL INFORMATION.

6. EXISTING PANEL-EM IS A 100 AMP, 3 PHASE, 4 WIRE, 208/120 VOLT GENERAL ELECTRIC NLAB TYPE, STYLE 5 PANEL.  PROVIDE (1) 1 POLE 20 AMP GROUND FAULT EQUIPMENT PROTECTION (GFEP) BREAKER IN BOTTOM LEFT SPACE OF PANEL-EM TO FEED THE CHILLER PIPING HEAT TRACE ON THE ROOF.  INSTALL BREAKER IN SPACE 21.  UPDATE PANEL SCHEDULE TO REFLECT THE ADDITION OF THIS BREAKER.  PROVIDE BREAKER LOCK OUT DEVICE FOR NEW 20 AMP BREAKER.  AIC RATING SHALL MATCH EXISTING BREAKERS IN PANEL.

7. DO NOT ROUTEWATER LINES ABOVE PANEL-LA AND PANEL -PA.

DEMOLITION PLAN NOTES:

1. DISCONNECT EXISTING FOR REMOVAL, IF MECHANICAL.

2. DISCONNECT AND REMOVAL EXISTING ELECTRIC, STARTER, CONDUIT, AND WIRE SERVING THE CHILLER.

3. REMOVE EXISTING 3 POLE 175 AMP BREAKER IN SPACE 13 VFD.

4. DISCONNECT CHILLER FOR REMOVAL BY MECHANICAL.  REMOVE EXISTING 3 POLE, 400 AMP DISCONNECT SWITCH, 1 1/2" CONDUIT WITH 3 #2/0 CONDUCTORS BACK TO PANEL-MDP.
1. Structural steel shall be in accordance with the American Institute of Steel Construction (AISC) 360.
2. Structural steel shall comply with the following specifications:
   A. Structural steel shapes, plates and bars (except W-shapes) - ASTM A36, Fy = 36 ksi
3. Welding shall be in accordance with AWS D1.1, "Structural Welding Code - Steel," weld electrodes shall be steel use hydrogen, unless otherwise noted, provide continuous fillet welds with minimum size required by Table 2A. Part 4 of the American Institute of Steel Construction (AISC) 360.
4. Coordinate all member locations, unit weights, opening sizes, and curb dimensions for mechanical equipment with the actual equipment furnished.

Plan Notes:
1. Dimensions provided are for pricing purposes only. Verify all dimensions in the field.
2. Superficial rust was observed on the existing steel. Sandblast and paint all steel prior to installing new equipment.
3. Weight of the existing condensing unit is 4,368 lbs. Operating weight of the new chiller is 4,609 lbs. Increased stress on the existing support members is less than 5% and therefore within the acceptable limits of the code.

Partial Roof Dunnage Plan - New Work

Partial Roof Dunnage Plan - New Work Key Notes:
R1. Weld the new channels to the existing beam with a 3/16" fillet on each channel flange.