UNIVERSITY of RHODE ISLAND
CENTER FOR BIOTECHNOLOGY AND LIFE SCIENCES
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

120 FLAGG ROAD • KINGSTON, RHODE ISLAND  02881

30 APRIL 2021
ISSUED FOR:  BIDDING and CONSTRUCTION
TLBA Project No:  2020.021
URI Project No:  KC.G.CBLS.2020-001

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STRUCTURAL GENERAL NOTES

GENERAL
1. ARE ARCHITECTURAL, MECHANICAL, ELECTRICAL, LAYOUTS AND SPECIFICATIONS FOR ADDITIONAL
   REQUIREMENTS AND DETAILS.
2. STRUCTURAL DETAILS AND SECTIONS ON DETAILS ARE TO BE COMPLIMENTARY
   DETAILS NOT SHOWN. DETAILS SHOWN IN THE DRAWINGS ARE TO APPLY TO ALL
   BLDG. CONTINUOUS STRUCTURAL ELEMENTS, EXCEPT WHERE NOTED.
3. CONCRETE IS TO BE PLACED AND CURED IN ACCORDANCE WITH THE SPECIFICATION,
   REQUIREMENTS AND DETAILS OF THE CONTRACT DOCUMENTS.

EXISTING CONDITIONS
1. PRIOR TO BEGINNING OF ANY NEW WORK CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS.
   DRAWINGS, ARCHITECTURAL, ENGINEERING, ETC. TO THE FULLEST POSSIBLE EXTENT.
2. CONTRACTOR SHALL VERIFY AND DOCUMENT Tapization, Location of Existing
   Structural Supports, FLOOR SYSTEMS, Exposed Equipment, FLOOR PLANS, EXISTING CONSTRUCTION,
   ETC. THAT MAY CONFlict WITH THE STRUCTURAL DESIGN.

CODES
1. ALLOWABLE UNIT STRESSES AND DESIGN CRITERIA IN ACCORDANCE WITH THE FOLLOWING:
   A) 2019 RHODE ISLAND BUILDING CODE.
   B) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE', ACI 318-14.

DESIGN CRITERIA (NEW WORK ONLY)
1. LIVE LOADS:
   a) GLASS 100 PSF
   b) SLAB ON GRADE 100 PSF
   c) LIVE LOADS:
      - FOLLOW THE ARCHITECTURAL DRAWINGS.

CONCRETE
1. ANY CHANGES IN DIMENSIONS OR DETAILS SHALL BE REVIEWED TO THE SATISFACTION OF
   THE ARCHITECT AND STRUCTURAL ENGINEER. CONCRETE OR CONCRETE PRODUCTS.
   MATERIALS AND CONSTRUCTION METHODS THAT ARE NOT SHOWN ON THIS
   CONTRACT DOCUMENTS WILL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL
   ENGINEER FOR THEIR APPROVAL.

NOTES:
- The material in this sheet is for informational purposes only and does not constitute
  a legal contract, agreement, or any other binding arrangement. The information provided
  is subject to change at any time and without notice.
- The information in this sheet is not intended to replace the information contained in the
  General Notes and Specifications of this project.

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unauthorized alterations and TLB Architecture, LLC will neither have nor accept any liability or legal exposure
arising from said unauthorized alterations."
NOTES:
1. RE-PATCH FIREPROOFING AT EXISTING BEAMS AFTER INSTALLATION OF NEW FRAMING.
2. CONTRACTOR TO VERIFY ALL CONDITIONS, DIMENSIONS, QUANTITIES ETC. IN THE FIELD PRIOR TO INSTALLATION IF ANY NEW CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
3. BEAM END CONNECTIONS SHALL BE SELECTED AND DETAILED FOR 1.25 TIMES THE REACTIONS INDICATED ON PLAN. END CONNECTIONS ON BEAMS DESIGNATED <WXXxYY> SHALL BE SELECTED AND DETAILED FOR A MINIMUM OF 6 KIPS.
GENERAL
1. THE PROJECT DRAWINGS AND SPECIFICATIONS ARE BASED ON THE CONSTRUCTION CONTRACT DOCUMENTS AS OF THE DATE OF COMPLETION. THEY ARE PREPARED AND SUBMITTED TO THE RESPONSIBLE LOCAL AUTHORITY AND CONTRACTOR FOR THE NECESSARY APPROVALS. SEE CONSTRUCTION CONTRACT DOCUMENTS FOR DETAIL REQUIREMENTS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL CONTRACT DOCUMENTS ARE COMPLETE, CORRECT, AND UP-TO-DATE. SEE CONSTRUCTION CONTRACT DOCUMENTS FOR DETAIL REQUIREMENTS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFORM TO ALL LOCAL BUILDING CODES AND ORGANIZATIONS.

PLUMBING
1. FOR DRAWN CLARITY, INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE IS NOT NECESSARILY SHOWN ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF THE INDIVIDUAL BRANCH PIPING.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF FURNITURE, FIXTURES, EQUIPMENT, AND MACHINERY TO THE COMPLIANCE WITH THE CONSTRUCTION CONTRACT DOCUMENTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF DELEGATED DESIGN SUBMITTALS TO THE LOCAL AUTHORITY AND OWNER'S UNDERWRITER FOR APPROVAL.
4. THE FOLLOWING SYSTEMS, OR PORTIONS THEREOF, REQUIRE A DEFERRED SUBMITTAL. REFER TO THE CONTRACT DOCUMENTS FOR DESIGN SPECIFICATIONS.
5. FIRE PROTECTION SYSTEMS REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS.

ELECTRICAL
1. FOR DRAWN CLARITY, VOLUME ELEMENTS ARE NOT NECESSARILY SHOWN ON THE CONSTRUCTION DOCUMENTS. REFER TO SPECIFICATIONS, SCHEDULE, RISERS, SEQUENCES, SPECIFICATIONS AND DRAWINGS.
2. EACH INDIVIDUAL ELECTRICAL HOMERUN SHOWN ON FLOOR PLANS, DETAILS, OR SCHEDULES SHALL BE PROVIDED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. IT IS NOT THE INTENT OF THESE DOCUMENTS TO SHOW EVERY DEVICE, APPURTENANCE, PIPE, WIRE OR OTHER DETAIL REQUIREMENTS. THE CONTRACTOR SHOULD DOCUMENT THE MACHINERY OR COMPONENTS OF THE INSTALLATION.
4. PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL TIGHT TO STRUCTURAL OR CONDUIT FOR COORDINATION WITH OTHER TRADES AND BUILDING ELEMENTS AND STRUCTURES.
5. PROVIDE A CONCRETE REINFORCEMENT FRAMED AROUND ALL CONDUIT TRUNKING.

DELEGATED DESIGN AND DEFERRED SUBMITTALS
1. THE PROJECT INCLUDES SYSTEMS AND ELEMENTS REQUIRING DESIGN AS SUBMITTAL TO A PROFESSIONAL DESIGNER. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF THE DELEGATED DESIGN SUBMITTAL TO THE RESPONSIBLE LOCAL AUTHORITY.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF THE DELEGATED DESIGN SUBMITTAL TO THE RESPONSIBLE LOCAL AUTHORITY.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL LOCAL BUILDING CODES AND ORGANIZATIONS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF DELEGATED DESIGN SUBMITTALS TO THE RESPONSIBLE LOCAL AUTHORITY AND OWNER'S UNDERWRITER FOR APPROVAL.

FIRE PROTECTION
1. CONSTRUCTION DRAWINGS AND SPECIFICATIONS ARE BASED ON THE CONSTRUCTION CONTRACT DOCUMENTS AS OF THE DATE OF COMPLETION. THEY ARE PREPARED AND SUBMITTED TO THE RESPONSIBLE LOCAL AUTHORITY AND CONTRACTOR FOR THE NECESSARY APPROvals. SEE CONSTRUCTION CONTRACT DOCUMENTS FOR DETAIL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF FURNITURE, FIXTURES, EQUPTMENT, AND MACHINERY TO THE COMPLIANCE WITH THE CONSTRUCTION CONTRACT DOCUMENTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF DELEGATED DESIGN SUBMITTALS TO THE LOCAL AUTHORITY AND OWNER'S UNDERWRITER FOR APPROVAL.
4. THE FOLLOWING SYSTEMS, OR PORTIONS THEREOF, REQUIRE A DEFERRED SUBMITTAL. REFER TO THE CONTRACT DOCUMENTS FOR DESIGN SPECIFICATIONS.
5. FIRE PROTECTION SYSTEMS REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS.
RIGID (TYPICAL)
BRACE EACH SIDE - DUCTWORK
SINGLE ARM SEISMIC ANGLE AND ANCHOR SUPPORT; ALL OTHER EQUIPMENT SPRING VIBRATION ISOLATION EQUIPMENT TRAPEZE SUPPORT PROVIDE ROTATING TYPE (CONCRETE OR STEEL) BUILDING STRUCTURE (CONCRETE OR STEEL) MOVEMENT REQUIREMENTS. PROVIDE ROD STIFFENERS AS REQUIRED.
CABLES ARE INSTALLED TO COMPLY WITH ALL SYSTEM SEISMIC CODE CABLE RESTRAINTS MAY BE USED, PROVIDED ADDITIONAL RESTRAINT IS PROVIDED (FOUR REQUIRED)
ATTACH STRUT CHANNEL AT BOTTOM) USING (6) 3/8" TOGGLE BOLTS. 3. LOCATIONS (TOP & BOTTOM) USING (6) 3/8" TOGGLE BOLTS.
4. ALL FLOOR MOUNTED EQUIPMENT NOT REQUIRING VIBRATION ISOLATION SHALL BE ANCHORED DIRECTLY TO THE CONCRETE PAD/STRUCTURE. 5. ALL EQUIPMENT, CONDUIT, PIPING AND DUCTWORK NOT EXCLUDED BY THE LATEST SEISMIC CODE SHALL BE SEISMICALLY RESTRAINED. VERIFY ALL SEISMIC REQUIREMENTS WITH APPLICABLE CODES AND REGULATIONS.
6. FLUSH OR RECESSED LIGHT FIXTURES AND AIR DIFFUSERS OR GRILLES RESTRAINED PER CODE REQUIREMENTS SHALL BE SEISMICALLY RESTRAINED. 7. ALL LIGHTING FIXTURES SHALL BE SECURED TO THE STRUCTURE.
8. ALL MATERIAL AND EQUIPMENT SECURED TO ROOF TRUSSES MUST BE SUPPORTED OR ANCHORED TO THE TOP OR BOTTOM CHORD ONLY. 9. SECURE SURFACE MOUNTED LIGHT FIXTURES WITH POSITIVE CLAMPING DEVICES TO BUILDING STRUCTURE.
10. PROVIDE LARGE ENOUGH PIPES IN REGIONS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS. 11. PROVIDE LARGE ENOUGH PIPE SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.
2. EACH FAN TO BE SERVED BY GENERATOR POWER SOURCE.

1. PROVIDE SHAFT GROUNDING RINGS, DISCONNECT SWITCH, SPARE BELT

SCHEDULE NOTES:
1. PROVIDE CONDENSATE OVERFLOW SENSOR AND NON-FUSED DISCONNECT SWITCH.

F-3A 480/3 50A-3P (3) #6 AND (1) #8 GROUND IN 1" C 60A/ 35A

F-3B 480/3 50A-3P (3) #6 AND (1) #8 GROUND IN 1" C 60A/ 35A

TAG VOLTS / HP VFC EWT/LWT (°F) RPM BHP MOTOR tags MFR MODEL CFM GPM FACE VEL. MAX. WPD

FCU-1 TRANE FCCB100 1" MERV 8 DUCTED CONCEALED 100 1000 0. 5" 0.13/0.25

TYPE MODEL DESCRIPTION
0-100 6 x 6 6"Ø 0-150 6 x 6 0-350 12 x 12 0-100 6"Ø

CEILING SUPPLY DIFFUSER DUCTED CEILING RETURN

B 355 RL LOUVER TYPE CEILING/WALL RETURN OR EXHAUST GRILLE, 35° FIXED DEFLECTION, 1/2"

FTMRA ROUND CEILING DIFFUSER, 360° DISCHARGE PATTERN, FOUR (4) CONES, WITH ROTATING TRANSITIONAL ADAPTER.

POSITIONING SCHEDULE

TOPOLOGY B方面的 DISCHARGE. UNIT WEIGHT IS 617 LBS. CONTRACTOR TO DISASSEMBLE/REASSEMBLE FAN AS REQUIRED TO RIG UP TO PENTHOUSE THROUGH ELEVATOR.

1. PROVIDE CONDENSATE OVERFLOW SENSOR AND NON-FUSED DISCONNECT SWITCH.
FIRE PROTECTION DEMOLITION GENERAL NOTES:
1. ALL EXISTING FIRE PROTECTION PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.
2. REMOVE ALL ASSOCIATED ACCESSORIES, HANGERS, AND SUPPORTS EXCEPT AS NOTED OTHERWISE.

FIRE PROTECTION DEMOLITION DRAWING NOTES:
1. 6" SP MAIN TO REMAIN.
2. 3" SPK MAIN TO REMAIN.
3. REMOVE EXISTING 3" SPK MAIN. CUT BACK PIPING AS SHOWN AND MAKE READY FOR CONNECTION TO NEW.
4. REMOVE SPRINKLER HEADS AND ASSOCIATED BRANCH PIPING PROTECTING THIS AREA.
1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT.
2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.
3. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEAD LOCATION WITH OTHER TRADES TO AVOID CONFLICTS. SPRINKLER HEADS ARE LOCATED TO MINIMIZE OBSTRUCTIONS.
4. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR ALL COMPLETE FULL-EXTENSION SPRINKLER SYSTEMS. COPPER & COPPERS WROUGHT PIPE SHALL BE USED WHERE INCONVIENCE OR DAMAGE HOUSING/CONSTRUCTION WOULD OCCUR.
5. PROVIDE COPPER PLATED IRON PIPE OR BURNT SPRINKLER PIPING PER NFPA 13. USE COPPER PIPE WHERE REQUIRED TO CONFORM TO NFPA 13.
6. IN AREAS WITH NO CEILING ROUTE EXPOSED PIPING TIGHT TO UNDERSIDE OF CEILINGS OR WALLS.
7. SPRINKLER HEADS SHALL BE INSTALLED IN THE CENTER OF ACOUSTICAL CEILING PANELS, ALIGN WITH ADJACENT DEVICES, AND BE EQUALLY SPACED BETWEEN.
8. ALL NEW SPRINKLER HEADS SHALL BE RATED BASED ON AMBIENT TEMPERATURE CONDITIONS AND WITH TEMPERATURE CLASSIFICATION PROVIDED ON DEVICE.
9. SPRINKLER PIPING MUST BE RUN EXPOSED. USE CONCEALED PENDANT SPRINKLERS WHERE REQUIRED TO CONFORM TO NFPA 13.
10. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING.
11. PROVIDE UNITS FOR EXPOSURE TO SPACED BETWEEN.

ADDITIONAL INFORMATION:
- REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

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DESIGN WET PIPE SPRINKLER SYSTEMS AND PROVIDE HYDRAULIC WATER SYSTEM AND ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO

HYDRAULIC CALCULATION GENERAL NOTES:
1. THE HYDRAULICALLY DERIVED FIRE PROTECTION SYSTEM DESIGN HAS BEEN BASED ON FIRE PUMP CRITERIA BELOW:
   - HOSE STREAM ALLOWANCE: 250 GPM
   - QUICK RESPONSE SPRINKLER CEILING REDUCTION: NONE
   - DESIGN CRITERIA: 0.20 GPM / 1,507.15 SF

2. HYDRAULICALLY CALCULATED AREA:
   - RESEARCH LAB (ORDINARY 2)

3. HYDRAULICALLY CALculated AREA:
   - CORRIDOR

HYDRAULIC CALCULATION INFORMATION:
1. HYDRAULIC CALCULATIONS HAVE BEEN BASED ON FIRE PUMP CRITERIA BELOW:
   - HOSE STREAM ALLOWANCE: 250 GPM
   - QUICK RESPONSE SPRINKLER CEILING REDUCTION: NONE
   - DESIGN CRITERIA: 0.20 GPM / 1,507.15 SF

2. HYDRAULICALLY CALCULATED AREA: RESEARCH LAB (ORDINARY 2)

Total Number of Sprinklers Flowing: 18

Total Number of Sprinklers Flowing: 18

Location: Water Service Fire Pump Room

Date: 02-10-2021

Hydraulic Calculation Information:

Sprinkler Schedule

<table>
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<tr>
<th>Station</th>
<th>Room Type</th>
<th>Description</th>
<th>End</th>
<th>Status</th>
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NOTE:

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DRAWN: PROJECT NO: 3/29/21 OWNER’S REVIEW

CHECKED: 4/30/21 BIDDING & CONSTRUCTION

REQUESTED FOR REVISION

PREPARED FOR

REVISED BY

PREPARED BY

STAMPED BY
HYDRAULIC CALCULATION GENERAL NOTES:
1. THE HYDRAULICALLY DESIGNED FIRE PROTECTION SYSTEM DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION TO ENSURE THE SYSTEM MEETS ALL CODE REQUIREMENTS.
2. REFER TO THE UNIVERSITY OF RHODE ISLAND MINIMUM STANDARDS FOR INSTALLATION OF FIRE PROTECTION SYSTEMS.
3. THE CONTRACTOR SHALL OBTAIN A WATER SUPPLY TEST OF THE MUNICIPAL WATER SYSTEM AND ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO PERFORM HYDRAULIC CALCULATIONS AS SET FORTH IN NFPA 13.

HYDRAULIC CALCULATION INFORMATION:
1. HYDRAULIC CALCULATIONS HAVE BEEN BASED ON FIRE PUMP ENTERED BELOW. REFER TO THE UNIVERSITY OF RHODE ISLAND MINIMUM STANDARDS FOR INSTALLATION OF FIRE PROTECTION SYSTEMS.
2. HYDRAULICALLY CALCULATED SYSTEMS REQUIRE AN APPROPRIATE FIRE PUMP CAPACITY, PRESSURE, AND HEAD TO ACHIEVE THE DESIGNED SYSTEM.
3. TOTAL DEMAND AT SUPPLY: 699.55 GPM @ A REQUIRED PRESSURE OF 70.39 PSI. THE CONTRACTOR SHALL OBTAIN A WATER SUPPLY TEST OF THE MUNICIPAL WATER SYSTEM AND ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO PERFORM HYDRAULIC CALCULATIONS AS SET FORTH IN NFPA 13.
### PLUMBING DEMOLITION DRAWING NOTES:

1. In slab cut areas, prior to slab cut, contractor shall perform a ground penetrating radar survey to verify drainage utility locations.

2. All existing plumbing pipe sizes, elevations, and locations shall be verified in field.

### PLUMBING DEMOLITION GENERAL NOTES:

1. In slab cut areas, prior to slab cut, contractor shall perform a ground penetrating radar survey to verify drainage utility locations.

2. All existing plumbing pipes, sizes, elevations, and locations shall be verified in field.

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**NOTE:**

Refer to MEP drawings for additional information.
PLUMBING DRAWING NOTES:

1. CONNECT NEW 1"G TO EXISTING 1"G.
2. CONNECT NEW 2"V TO EXISTING 4"V.
3. CONNECT NEW 3"ENT TO EXISTING 2"V.
4. CONNECT NEW 4"V TO EXISTING 4"V.
5. CONNECT NEW 1-1/2"DCW TO EXISTING 3"DCW.
6. CONNECT NEW 1-1/2"DHW TO EXISTING 1-1/2"DHW.
7. CONNECT NEW 1-1/2"DGW TO EXISTING 1-1/2"DGW.
8. CONNECT NEW 1"G TO EXISTING 1"G.
9. PROVIDE LAB GAS AT FUME HOOD / BIOSAFETY CABINET. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
10. PROVIDE 1/2"LAB GAS AT EMERGENCY MIXING VALVE. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
11. PROVIDE 1-1/4"TW & 2"W DRAIN, TRAP AND CLEANOUT AT EMERGENCY SAFETY SHOWER.
12. PROVIDE 1/2"LCW & 1"IW DRAIN AT GLASS WASHER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
13. PROVIDE 1/2"LCW & 3/4"IW AT ICE-MAKER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
14. PROVIDE 1/2"TCW AT REFRIGERATOR.
15. PROVIDE 1/2"LGW AT DISHWASHER.
16. PROVIDE 1/2"TLCW AT DISHWASHER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
17. PROVIDE 1"TLCW AT DISHWASHER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
18. PROVIDE 1"TQCW AT DISHWASHER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
19. PROVIDE 1/2"TCW AT CONVECTION OVEN.
20. PROVIDE 1-1/2"REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR LHW. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
21. PROVIDE 2"ENT TO EXISTING 2"V.
22. PROVIDE 2"V TO EXISTING 4"V.
23. PROVIDE NEW 3" WASTE TO EXISTING 3" W.
24. TERMINATE XH CONDENSATE DRAIN TO FLOOR DRAIN TURN I AM GAP.
25. PROVIDE XH CONDENSATE DRAIN AND TRAP AT FCU.
26. CAP EXISTING OPEN END PIPE ABOVE CEILING.

PLUMBING GENERAL NOTES:

1. ALL EXISTING PLUMBING PIPE SIZE, DIRECTION OF FLOW, ELEVATION, AND LOCATION SHALL BE VERIFIED IN FIELD.

NOTE:
ANY ALTERATIONS TO THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ARCHITECTS SHALL BE AT THE SOLE RISK OF THE PERSON OR FIRM MAKING SUCH UNAUTHORIZED ALTERATIONS AND TLB ARCHITECTURE, LLC WILL NEITHER HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAID UNAUTHORIZED ALTERATIONS."

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REFER TO SPECIFICATIONS FOR PIPE MATERIALS AND SPECIALTIES
REFER TO FLOOR PLANS FOR PIPE SIZES

NOTES:
1. NOTE:
2. NOTE:

ICE MACHINE
EXTEND FULL SIZE
INDIRECT WASTE
TO FLOOR DRAIN
FLOOR DRAIN W/FUNNEL
FINISHED FLOOR
3/4"
PROVIDE
MINIMUM 3" AIR GAP
1/2" PRESSURE
REGULATOR
SET AT 20 PSIG
PRESSURE GAUGE
WATER FILTER
(BY OTHERS)
1/4" COPPER TUBING
(TYP.)
STRAINER
1/2"LCW
DOUBLE CHECK
VALVE BACKFLOW
PREVENTER
3/4"
BALL VALVE (TYP.)

STRAINER
1/2"LCW
DIRECT DRAIN

1/2" BALL VALVE
1/2" CO2 OUT
THRU WALL
1/2" CO2 DROP IN
WALL
1/2" BALL VALVE
1/2" LG  OUT THRU WALL

CO2 DISTRIBUTION PIPING
CO2 INCUBATOR PRV PIPING
Carlson CARBON DIOXIDE MANIFOLD CONTROL CABINET BY CONTRACTOR
PRESSURE RELAY LINE
FIRE TO CARBON DIOXIDE MANIFOLD CONTROL
CO2 DISTRIBUTION PIPING
CARBON DIOXIDE MANIFOLD CONTROL BY CONTRACTOR
HANGER PIPE Fittings
CARBON DIOXIDE HIGH AND LOW PRESSURE SWITCH
CARBON DIOXIDE MAIN LINE SHUTOFF VALVE
CARBON DIOXIDE MANIFOLD CONTROL BY CONTRACTOR

3/4" CO2 OUT
THRU WALL
1/2" LG OUT THRU WALL
GAS VALVE (TYP)
UNION (TYP)
1/2" LG OUT THRU WALL

1/2" LG OUT THRU WALL
GAS VALVE (TYP)
UNION (TYP)
1/2" LG OUT THRU WALL
SIDE ELEVATION
FRONT ELEVATION
REDUCED PRESSURE ZONE
BACKFLOW PREVENTER
STRAINER
MIN 30" MAX 60"
MIN 18"
UNION (TYPICAL)
BALL VALVE (TYPICAL)
OUTLET PIPE DISCHARGE LINE TO OUTSIDE F.D. OR RECEPTOR
TEST COCK (TYPICAL)
AIR GAP FITTING
FINISH FLOOR
MAINTAIN 8" (MINIMUM)
CLEAR SPACE OFF THE WALL TO THE RPD
MAINTAIN 12" (MINIMUM) CLEAR SPACE ABOVE RPD
MAINTAIN A 30" (MIN.) DEEP X THE LENGTH OF THE RPD ASSEMBLY - CLEAR SPACE IN FRONT OF RPD OUTLET INLET

NOTES:
1. REFER TO DRAWINGS FOR UNIT SIZE(S).
2. THE RPD MOUNTING HEIGHT AND CLEARANCES INDICATED ABOVE SHALL BE MAINTAINED FOR PROPER ACCESS TO UNIT FOR MAINTENANCE, TESTING AND INSPECTION PURPOSES.
3. THE LOCATION AND MOUNTING HEIGHT OF THE RPD SHALL BE APPROVED BY THE WATER COMPANY PRIOR TO INSTALLATION.
4. ACCESS TO THIS UNIT SHALL NOT REQUIRE THE USE OF A LADDER OR REMOVAL OF CEILING TILES OR OTHER PERMANENT OR SEMI-PERMANENT CONSTRUCTION.
5. DO NOT INSTALL UNIT ABOVE A CEILING.
6. THE AREA WHERE THE RPD IS TO BE INSTALLED SHALL BE WELL LIT, PROVIDED WITH ADEQUATE DRAINAGE AND SHALL NOT BE SUBJECT TO FLOODING.

NOTE:
ALL ASSEMBLIES SHALL BE ADEQUATELY SUPPORTED AND/OR RESTRAINED TO PREVENT LATERAL MOVEMENT. PIPE HANGERS, BRACES, SADDLES, STANCHIONS, PIERS, ETC., SHOULD BE USED TO SUPPORT THE DEVICE AND SHOULD BE PLACED IN A MANNER THAT WILL NOT OBSTRUCT THE FUNCTION OF OR ACCESS TO THE RELIEFT VALVE, TEST PORTS OR VALVES.

NOTE:
DIMENSION "X" SHALL BE A MINIMUM OF 2" OR 1/2" HIGHER THAN THE FAN SUCTION STATIC PRESSURE, WHICHEVER IS HIGHER

TRAPS TO BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
SLOPE @ 1/8" PER FOOT, MINIMUM TO DRAIN POINT

2" LV
CLEANOUT
2"V IN WALL
2"W IN WALL
1/2" TW
EMERGENCY THERMOSTATIC MIXING VALVE
REMOVABLE ACCESS PANEL
STAINLESS STEEL CABINET

P4.02
PLUMBING DETAILS
HD1.01

REVISED: 4/30/21
ISSUED FOR: BIDDING & CONSTRUCTION

1 REMOVE ABANDONED AND EXPOSED 28x12 GALVANIZED STEEL DUCT CAPPED AT BOTH ENDS.
2 ABANDON ALL ASSOCIATED SUPPLY DUCTWORK, BRANCH PIPING AND CONTROLS.
3 REMOVE EXISTING VAV BOX AND ALL ASSOCIATED SUPPLY DUCTWORK, BRANCH PIPING AND CONTROLS.
4 REMOVE EXISTING 2" HWS&R PIPING AS REQUIRED TO ACCOMMODATE NEW PIPING INSTALLATION.
5 MODIFY SECTION OF EXISTING HOT WATER RADIANT CEILING PANEL TO ACCOMMODATE ARCHITECTURAL CEILING MODIFICATIONS.
6 REMOVE ALL REMAINING VAC BOX DUCTWORK AS REQUIRED TO ACCOMMODATE NEW VAC BOX CONNECTIONS.
7 REMOVE EXISTING 2" HWS&R RISERS TO REMAIN.
8 REMOVE EXISTING SUPPLY DUCT RISER FROM AHU-4 TO REMAIN.
9 REMOVE ABANDONED & EXPOSED HWS&R PIPING AS REQUIRED TO ACCOMMODATE NEW PIPING CONNECTIONS TO LAB EXHAUST (1/2" DIA.)
**HVAC PRE-DEMOLITION TESTING REQUIREMENTS**

1. Contractor shall take pre-dismantle measurements of existing on-site equipment prior to disconnect, to include all water coil, pressure, flow, and temperature gauges, and record all measurements in a report. A pre-dismantle report will be submitted for Engineer Review and Record prior to any system modifications. Contractor shall take pre-dismantle measurements of existing chilled water pump (P-2.3 & P-2.4) speed, flow, operating pressures, amps, etc. prior to any system modifications. Submit for Engineer Review and Record.

2. Contractor shall take pre-dismantle measurements of existing chilled water pump (P-3.1, P-3.2 & P-3.3) speed, flow, operating pressures, amps, etc. prior to any system modifications. Submit for Engineer Review and Record.

3. Contractor shall take pre-dismantle measurements of existing HVAC & Hydronic piping and associated internal components. Work to be performed by HTS Authorized Service Agent. Provide $2000 allowance for additional work Recharge HVAC & Hydronic piping demobilization drawings.

4. Partially dismantle and reassemble smoke isolation damper including linkage, seals, etc. Work to be performed by HTS Service Group as recommended by Hankon. Work to be performed by HTS Service Group.

5. Thoroughly clean and disinfect entire interior of AHU-4 and all associated internal components. Work to be performed by HTS Service Group.

6. Replace existing laboratory stacks of same type. Make sure stacks exit adjacent cores and are not for reuse.

Note:

- Services integrated
- Refer to MEP drawings for additional information.

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HVAC POST-CONSTRUCTION TESTING REQUIREMENTS:

1. CONTRACTOR SHALL POST CONSTRUCTION TESTING REQUIREMENTS OF EXISTING DUCT WORK IN VARIOUS AREAS TO COME TOGETHER. DUCT WORK TESTING IS REQUIRED TO BE PERFORMED AND REPORTED TO THE OWNER. DUCT WORK TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE MFR INSTRUCTIONS.

2. CONTRACTOR SHALL POST CONSTRUCTION TESTING REQUIREMENTS OF EXISTING DUCT WORK IN VARIOUS AREAS TO COME TOGETHER. DUCT WORK TESTING IS REQUIRED TO BE PERFORMED AND REPORTED TO THE OWNER. DUCT WORK TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE MFR INSTRUCTIONS.

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GLYCOL, ENERGY RECOVERY LOOP MODIFICATIONS:

1. THE EXISTING SYSTEM SHALL BE CONFIGURED TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.

2. PROVIDE ELECTRONIC INTERFACE TO CONTROL AHU TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.

3. PROVIDE ELECTRONIC INTERFACE TO CONTROL AHU TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.

4. PROVIDE ELECTRONIC INTERFACE TO CONTROL AHU TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.

GENERAL NOTES:

1. ALL AIR EXHAUST DUCTWORK SHALL BE STAINLESS STEEL THROUGHOUT.

2. PROVIDE ELECTRONIC INTERFACE TO CONTROL AHU TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.

3. PROVIDE ELECTRONIC INTERFACE TO CONTROL AHU TO PREVENT Operation. THE PROJECT REQUIREMENTS DESCRIBE THE EXISTING SYSTEM TO OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU SERVICES IN UNISON.
6.

WHEN THE SPACE HUMIDITY RISES ABOVE 60% SUBJECT TO A LOW DISCHARGE LIMIT OF 50°F (ADJ).

DISCHARGE AIR TEMPERATURE RESET:

SUPPLY FAN CONTROL:

SINGLE FAN START/STOP:

RESTART/START COMMAND:

STANDBY POWER MODE:

GENERAL:

AIR HANDLER DISCHARGE AIR TEMPERATURE SHALL BE SET TO 5°5F (ADJ) AND RESET 2°F. AIR HANDLER SHALL GO TO DISABLED MODE. EACH EMERGENCY CONDITION SHUTDOWN REQUIRES A MANUAL FANS AND IS ALARMED AT OPERATOR WORKSTATION. ONCE COMMANDED TO SHUTDOWN, THE UNIT DOWN AND THE STANDBY FAN SHALL BE INITIATED TO RUN BASED ON ITS INTERNAL SAFETIES AND RAMP UP.

WHEN THE SYSTEM IS STARTED OR RESET:

DUAL FANS (SUPPLY) ARE POWERED FROM STANDBY BRANCH OF POWER.

UNIT AND CONTROLS SHALL BE PROVIDED ON GENERATOR POWER SOURCE. FANS SHALL BE ROTATED ON A 100% OUTDOOR AIR CONSTANT VOLUME AIR HANDLING UNIT WITH DUAL SUPPLY FANS, GLYCOL ENERGY CHILLED WATER COOLING COIL COME UNDER NORMAL CONTROL.

AND HEATING/COOLING COILS SHALL COME UNDER CONTROL FIRST.

THE HEATING & COOLING VALVES SHALL BE FULLY CLOSED WHEN THE UNIT IS OFF.

OUTSIDE AIR, RELIEF AIR, AND EXHAUST AIR DAMPERS SHALL BE CLOSED.

SHUTDOWN INTERFACE DEVICE FOR ADDRESSABLE SPACE SENSORS.

T.

WORKSPACE.

NOT TO SCALE

EXISTING AIR HANDLING UNIT CONTROL SCHEMATIC (SCALE)

1. SEQUENCE OF OPERATION

2. COOLING ONLY CHILLED WATER FAN COIL UNIT CONTROL

3. SUPPLY AIR DEHUMIDIFICATION

4. SUPPLY AIR HEATING AND DEHUMIDIFICATION

5. SUPPLY AIR HEATING

6. SUPPLY AIR CONDENSATE SHEETING

7. EXHAUST AIR SHEETING

8. OUTDOOR AIR SHEETING

9. OUTDOOR AIR DISTRIBUTION SECURITY

10. SUPPLY AIR ENERGY RECOVERY

11. OUTDOOR AIR ENERGY RECOVERY

12. OUTDOOR AIR ENERGY RECOVERY COIL

13. OUTDOOR AIR ENERGY RECOVERY COIL MOTION

14. OUTDOOR AIR ENERGY RECOVERY COIL INHIBIT

15. OUTDOOR AIR ENERGY RECOVERY COIL INHIBIT MOTOR

16. SUPPLY AIR HEATING AND DEHUMIDIFICATION INHIBIT

17. SUPPLY AIR HEATING INHIBIT

18. EXHAUST AIR SHEETING INHIBIT

19. OUTDOOR AIR SHEETING INHIBIT

20. OUTDOOR AIR DISTRIBUTION SECURITY INHIBIT

21. SUPPLY AIR DEHUMIDIFICATION INHIBIT

22. SUPPLY AIR HEATING INHIBIT

23. SUPPLY AIR CONDENSATE SHEETING INHIBIT

24. OUTDOOR AIR ENERGY RECOVERY INHIBIT

25. OUTDOOR AIR ENERGY RECOVERY COIL MOTION INHIBIT

26. OUTDOOR AIR ENERGY RECOVERY COIL INHIBIT MOTOR INHIBIT

27. SUPPLY AIR DEHUMIDIFICATION INHIBIT MOTOR INHIBIT

28. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT

29. SUPPLY AIR HEATING INHIBIT MOTOR INHIBIT

30. SUPPLY AIR HEATING AND DEHUMIDIFICATION INHIBIT MOTOR INHIBIT

31. EXHAUST AIR SHEETING INHIBIT MOTOR INHIBIT

32. OUTDOOR AIR SHEETING INHIBIT MOTOR INHIBIT

33. OUTDOOR AIR DISTRIBUTION SECURITY INHIBIT MOTOR INHIBIT

34. SUPPLY AIR DEHUMIDIFICATION INHIBIT MOTOR INHIBIT MOTOR INHIBIT

35. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

36. SUPPLY AIR HEATING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

37. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

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39. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

40. SUPPLY AIR HEATING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

41. SUPPLY AIR DEHUMIDIFICATION INHIBIT MOTOR INHIBIT MOTOR INHIBIT

42. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

43. SUPPLY AIR HEATING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

44. SUPPLY AIR CONDENSATE SHEETING INHIBIT MOTOR INHIBIT MOTOR INHIBIT

45. SUPPLY AIR HEATING INHIBIT MOTOR INHIBIT MOTOR INHIBIT
LIGHTING DEMOLITION DRAWING NOTES:

1. REMOVE EXISTING LUMINAIRES AND ASSOCIATED CIRCUITRY BACK TO NEAREST JUNCTION BOX.

2. RELOCATE EXISTING LUMINAIRES TO NEW LOCATION. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS. REFER TO REFLECTED CEILING PLANS FOR FINAL LOCATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.
ENGINEER. CONDUCTORS REFLECT AN 80% DERATING DUE TO NONLINEAR LOADS. MINIMUM AND OVERSIZED AT THE ENGINEERS DISCRETION OR AS DIRECTED BY THE ENGINEER. CONDUCTORS MUST BE SIZED PER CODE AS REQUIRED.

1. ALL CONDUCTORS LISTED BELOW ARE THHN/THWN, COPPER.

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CONDUCTOR(S) PHASE
1
2
3
DP4BN
400A
200A
N
400A
200A
F
1G
GP2BN2
1G
1G
OS21N
7
-400A
-200A
-112.5KVA
-7
OS21N
5
OS24N
6
-45
-30
-25
-15
SIZING CHART BASED ON KVA
GROUNDING ELECTRODE
SECONDARY SHOWN). PROVIDE SECONDARY WINDING TYPES SHOWN IN TX SIZING CHART
INDICATES TRANSFORMER DESIGNATION.
SECONDARY SHOWN). PROVIDE SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
1. PROVIDE ALL TRANSFORMERS WITH THE PHASE TYPE SHOWN IN TX SIZING CHART OR AS DIRECTED BY THE ENGINEER. CONDUCTORS MUST BE SIZED PER CODE AS REQUIRED.
2. PROVIDE MAIN O.C.P.D. ON PRIMARY AND SECONDARY SIDE OF EACH TRANSFORMER. CONNECT ELECTRICAL EQUIPMENT.
3. PROVIDE A NEW ELECTRONIC TRIP POWERPACT BREAKER IN THE EXISTING TO REMAIN SWITCHBOARD. UTILIZE EXISTING SPACE LOCATED BETWEEN DP4BS AND EXTEND CONDUIT.
4. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
5. PROVIDE PANEL BOARD DESIGNATION.
6. PROVIDE 400A FUSED DISCONNECT. MOUNT DISCONNECT UNDER TRANSFORMER.
7. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
8. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.

ELECTRICAL RISERS GENERAL NOTES:
1. ALL ELECTRICAL RISERS ARE TO BE DIMENSIONED OFF THE PICTURE SIZE IF THERE IS A VARIANCE BETWEEN THE ELECTRICAL RISER LEGEND AND THE DRAWING LEGEND TO LIMIT THE SECONDARY CONDUCTOR LENGTHS TO 10' PER NEC 240.21 UNLESS SPECIFICALLY SHOWN OTHERWISE.
2. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
3. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
4. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
5. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
6. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
7. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
8. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.
2. PROVIDE POWER FOR STROBES IN ALL LARGE OPEN AREAS FROM A SINGLE FIRE ALARM SOURCE SO THAT ALL STROBES ARE SYNCHRONIZED PER SPECIFICATIONS. DO NOT HAVE A CROSS-ZONE CAPABILITY.

11. ABNORMAL AC VOLTAGE
9. NOTIFICATION APPLIANCE CIRCUIT (NAC)
7. CO DETECTOR
6. TAMPER SWITCH
5. WATERFLOW SWITCH
4. DUCT SENSOR / DETECTOR
3. HEAT SENSOR / DETECTOR
2. SMOKE SENSOR / DETECTOR
1. MANUAL PULL STATION

FOR OPEN/CLOSE INDICATION. LOCATE WITHIN 3' OF DAMPER CONTROLLING EQUIPMENT BELOW HOODS.

TYPICAL HVAC ENCLOSED CONTROLLER
TYPICAL MAGNETIC HOLD OPEN DEVICE
CONNECT TO 24V POWER SERVICE WITHIN FACU
LOCATE WITHIN 3' OF MOTOR CONTROLLER

PROVIDE MULTIPLE DEVICES FOR EACH DAMPER FOR CONTROL AND SPEAKER/STROBE
TYPICAL WALL MOUNTED ALARM DEVICES
TYPICAL FIRE ALARM CEILING-MOUNTED

SYSTEM OUTPUTS
LOAD CIRCUITS TO A MAXIMUM OF 80%
MULTIPLE CIRCUITS TO MEET ADA REQUIREMENTS.

CONTROL UNIT ANNUNCIATION
NOTIFICATION FIRE SAFETY CONTROL
DISPLAY CHANGE OF STATUS
TRANSMIT ALARM SIGNAL TO SUPERVISING STATION
TRANSMIT SUPVISORY SIGNAL TO SUPERVISING STATION
RELEASE MAG HELD FIRE AND SMOKE DOORS
SWITCH HVAC CONTROLS TO FIRE ALARM MODE
CLOSE SMOKE DAMPERS SERVING ZONE OF ALARM

FIRE ALARM SEQUENCE OF OPERATIONS

TO REMAIN EXISTING CIRCUITRY
ACTIVATE EMERGENCY SHUTOFFS FOR GAS AND TRANSFER DUCT. QUANTITY TO BE DETERMINED BY LOW VELOCITY IN-DUCT SMOKE DETECTOR IN PLENUMS

PARTIAL FIRE ALARM RISER

SYSTEM

GENERAL NOTES

E3.02

FIRE ALARM DEVICE MOUNTING HEIGHTS

NOTES

DATE: 03/19/2021

BIDDING and CONSTRUCTION SERVICES INTEGRATED

URI - CBLS

TLBA

URI - CBLS LABORATORY RENOVATION

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"ANY ALTERATIONS TO THIS DRAWING WITHOUT THE EXPRESSED WRITTEN APPROVAL OF TLB ARCHITECTURE, LLC"
NOTES:
1. ELECTRICAL DEVICE PLATE LABELS SHALL IDENTIFY THE SOURCE OF POWER TO THE DEVICE. LABELS SHALL BE HOT STAMPED OR ENGRAVED.

2. THIS DETAIL DOES NOT APPLY TO LOW VOLTAGE LIGHTING CONTROL DEVICES.

DUPLEX RECEPTACLE
XXX - #XX

PANEL CIRCUIT NUMBER

TOGGLE SWITCH
XXX - XX

PANEL CIRCUIT NUMBER

LABEL

JUNCTION BOX
EQUIPMENT SOURCE

DIGITAL LOAD / ROOM CONTROLLER

ROOM #
QUANTITY OF ZONES

EMERGENCY LIGHTING RELAY (UL924 AND UL1008)

ROOM #
INDICATE THE ROOM # THAT IS BEING CONTROLLED.
QUANTITY OF ZONES IN THE ROOM CONTROLLER

NOTES:
1. LIGHTING CONTROL DEVICE LABELS SHALL IDENTIFY THE SOURCE OF POWER TO THE DEVICE. LABELS SHALL BE SELF-ADHESIVE.

EQUIPMENT IDENTIFICATION
FED FROM EQUIPMENT SOURCE

EQUIPMENT IDENTIFICATION LABEL

1" MIN
2" MIN

BREAKER IDENTIFICATION

PROTECTIVE DEVICE

LOAD LABEL SAMPLE

VOLTAGE LABEL SAMPLE

(1/4" BLACK TEXT ON ORANGE)

208Y/120 VOLT SYSTEM
PHASE A - BLACK
PHASE B - RED
PHASE C - BLUE
NEUTRAL - WHITE OR GRAY
GROUND - GREEN

3-1/2" MIN
5" MIN

(1/4" BLACK TEXT ON WHITE)

480Y/277 VOLT SYSTEM
PHASE A - BROWN
PHASE B - ORANGE
PHASE C - YELLOW
NEUTRAL - WHITE OR GRAY
GROUND - GREEN

3-1/2" MIN
5" MIN

1-1/2" MIN
5" MIN

(1/2" BLACK TEXT ON WHITE)

(1/4" BLACK TEXT ON WHITE)

NOTES:
1. PANELBOARD IDENTIFICATION LABEL
2. VOLTAGE IDENTIFICATION LABEL
3. ARC FLASH WARNING AND INCIDENT ENERGY LEVEL LABELS.
TERMINATE RACEWAY WITH PLASTIC BUSHING IN AN ACCESSIBLE LOCATION ABOVE CEILING

8" RADIUS ELBOW

(1) 1 1/4" RIGID CONDUIT WITH PULL STRING. FLEXIBLE NOT PERMITTED.

(2) GANG DEEP BACK BOX WITH SINGLE GANG EXTENSION BOX 18" AFF. VERIFY HEIGHT WITH ARCHITECT.

PROVIDE COVER PLATE. FINISH AND COLOR SELECTED BY ARCHITECT.

UTILIZE THIS DETAIL WHEN ANY OF THE FOLLOWING SYMBOLS ARE SHOWN ON PLAN:

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE BACKBOX AND CONDUIT FOR ALL TELEPHONE/DATA COMMUNICATION OUTLETS.

2. CABLING WILL BE PROVIDED BY OWNER'S VENDOR.

NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE BACKBOX AND CONDUIT FOR ALL TELEPHONE/DATA COMMUNICATION OUTLETS.

2. CABLING WILL BE PROVIDED BY OWNER'S VENDOR.

PROVIDE NEW CONDUIT TO RUN UP ALONG THE EXISTING COLUMN. COORDINATE CONDUIT WITH NEW COLUMN ENCLOSURE.

PROVIDE JUNCTION BOX TO ALLOW FOR NEW FEEDERS TO BE PULLED AND SPICED INTO THE EXISTING CONDUCTORS.

PROVIDE NEW CONDUIT TO TIE INTO THE EXISTING CONDUIT PENETRATING THE 1ST LEVEL SLAB. CONDUIT TO ROUTED UNDER THE PLAZA LEVEL SLAB. COORDINATE LOCATION OF CONDUIT WITH STRUCTURAL.

GENERAL NOTES:

1. THIS DETAIL APPLIES TO ALL CONDUITS PENETRATING A SLAB.

2. UNDERGROUND WARNING TAPE WHEN OUTSIDE OF THE BUILDING FOOTPRINT.

3. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PROPOSED CONDUIT RELOCATION ROUTING

TYPICAL CONDUIT SWEEP THRU SLAB

OVERHEAD SERVICE CARRIER

PROPOSED CONDUIT RELOCATION ROUTING

TELEPHONE/DATA OUTLET DETAIL

OVERHEAD SERVICE CARRIER

TERMINATE RACEWAY WITH PLASTIC BUSHING IN AN ACCESSIBLE LOCATION ABOVE CEILING

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PROPOSED CONDUIT RELOCATION ROUTING

TYPICAL CONDUIT SWEEP THRU SLAB

OVERHEAD SERVICE CARRIER

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TYPICAL CONDUIT SWEEP THRU SLAB

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2. UNDERGROUND WARNING TAPE WHEN OUTSIDE OF THE BUILDING FOOTPRINT.

3. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
1. FASTENING BONDING CONNECTOR TWO-HOLE LUGS TO ALL BUSBARS SHALL BE CLEANED AND APPLY A COPPER ANTI-OXIDANT TO THE CONTACT AREA OF BOTH THE CONNECTOR LUG AND THE BUSBAR.

2. BONDING CONDUCTORS AND BUSBARS SHALL BE LABELED WITH IDENTIFICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-A.

3. SEE PLANS FOR QUANTITY OF BUS BARS.

**BUSBAR DETAIL GENERAL NOTES**

- Copper Listed Type MAUD, Size 1/4" x 1/2" with Compression connectors, Maximum 8.0 A

**BUSBAR DETAIL DRAWING NOTES**

- Copper Listed Type MAUD, Size 1/4" x 1/2" with Compression connectors, Maximum 8.0 A

**GROUNDING BUSBAR (GB)**

- Copper Listed Type MAUD, Size 1/4" x 1/2" with Compression connectors, Maximum 8.0 A

**GROUNDING & BONDING DETAIL NOTES**

- Copper Listed Type MAUD, Size 1/4" x 1/2" with Compression connectors, Maximum 8.0 A