GENERAL NOTES:
1. THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. ANY WORK REQUIRED TO BUILDING, WALL SECTION SYMBOL
   PROVIDE IN THE CONSTRUCTION DOCUMENTS.
   WHERE MOUNTING HEIGHTS ARE NOT INDICATED, MOUNT ITEMS IN ACCORDANCE WITH REGULATORY AGENCIES. DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO PROCEEDING WITH THE WORK.
2. THE CONTRACTOR SHALL PROMPTLY REPORT TO THE ARCHITECT ANY ERRORS, INCONSISTENCIES OR OMISSIONS IN THE CONTRACT DOCUMENTS DISCOVERED OR MADE KNOWN TO THE CONTRACTOR PRIOR TO ORDERING OF ANY MATERIALS OR PROCEEDING WITH THE WORK AS A REQUEST FOR INFORMATION IN SUCH FORM AS THE ARCHITECT MAY REQUIRE.
3. PROVIDE FLASHING AND ENCLOSURES AS REQUIRED AT NEW MECHANICAL AND ELECTRICAL EXTERIOR WALL PENETRATIONS TO MAINTAIN WATER/WEATHER TIGHT SEAL.
4. PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR BUILDING PERFORMANCE AND FUNCTIONAL REQUIREMENTS. ALL ACCESS PANELS SHALL BE MARKED "ACCESS PANEL" AND LOCATED IN THE MOST CONVENIENT AND ACCESSIBLE PLACEMENT PRIOR TO PROCEEDING.
5. PROVIDE ACCESS PANELS AS REQUIRED FOR ALL NEW MECHANICAL AND ELECTRICAL EXTERIOR WALL PENETRATIONS TO MAINTAIN WATER/WEATHER TIGHT SEAL.
6. PROVIDE ACCESS PANELS AS REQUIRED FOR ALL NEW MECHANICAL AND ELECTRICAL EXTERIOR WALL PENETRATIONS TO MAINTAIN WATER/WEATHER TIGHT SEAL.
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**KEYNOTE LEGEND - NEW WORK**

**A1** INSTALL 60-MIL NON-REINFORCED BLACK EPDM ROOF MEMBRANE OVERTOP TYPE 2, CLASS 1, GRADE 3 ROOFING INSULATION. INSTALL USING MANUFACTURER RECOMMENDED FASTENERS, BONDING ADHESIVE, SEALER, AND PENETRATION SEALS. INSTALL NEW MEMBRANE UP PARAPET WALLS TO UNDERSIDE OF STONECOPING, AND INSTALL MANUFACTURER RECOMMENDED FLASHING AND TERMINATION BARS.

**A2** INSTALL SADDLE/TAPERED INSULATION. 1/4"/1'-0" SLOPE IN TAPERED INSULATION, AS INDICATED ON DRAWING.

**A3** REPOINT ALL FAILED MORTAR JOINTS WITHIN LIMESTONE CAP SYSTEM, AND INSIDE FACE OF PARAPET WALL. REPOINTING TO INCLUDE JOINTS BETWEEN ADJACENT LIMESTONE CAPS, AS WELL AS JOINTS BETWEEN LIMESTONE CAP AND EXTERIOR FINISH MASONRY. FOR LIMESTONE HEAD AND BED JOINTS, LEAVE MORTAR RECESSED 1/2-INCH AND INSTALL BOND-BREAKER TAPE AND INSTALL SEALANT.

**A4** INFILL ROOF DECKING AT INSTANCES WHERE CURBS, EQUIPMENT, OR OTHER PENETRATIONS WERE REMOVED. INFILL PER METAL DECKING DETAIL ON A-501.

**A5** INSTALL SADDLE/TAPERED INSULATION AT HIGH SIDE OF ALL EQUIPMENT CURBS, TO ENCOURAGE POSITIVE WATER DRAINAGE. REFER TO DETAIL ON A-501.

**A6** POWERWASH/CLEAN EXISTING LIMESTONE CAP.

**A7** EPDM ROOF WALKWAY PADS. TYPICAL PADS 24" X 24". MATCH EPDM MEMBRANE COLOR AND INSTALL PER MANUFACTURER AS TO COMPLY WITH ROOF WARRANTY. INSTALL PER WALKWAY PAD LAYOUT ON DRAWINGS TO PROVIDE A CLEAR PATH FROM ACCESS LADDERS, ROOF HATCHES, AND AROUND ALL MAINTAINABLE MECHANICAL EQUIPMENT.

**A8** UPON MEMBRANE DEMOLITION, REPOINT MASONRY WALL (OUTSIDE AND INSIDE FACE) ADJACENT TO SCUPPERS. APPROXIMATELY 200 LF OF REPOINTING ANTICIPATED.

**A9** INSTALL EQUIPMENT SUPPORT RAIL/CURB(S) SIZED AS REQUIRED PER MECHANICAL DRAWINGS.

**A10** INSTALL ROOF CURB. REFER TO MECHANICAL DRAWINGS FOR LOCATION AND TYPE OF EQUIPMENT.

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**GENERAL NOTES - ROOFING**

A. REPAIR AND REPLACE ROOFING SYSTEM OR STRUCTURE DAMAGED BY IMPROPER STORAGE, CONSTRUCTION ACTIVITIES, OR LACK OF ADEQUATE TEMPORARY PROTECTION. THIS ALSO INCLUDES INTERIOR DAMAGE TO FINISHES, EQUIPMENT, FURNISHINGS, ETC. THIS INCLUDES DAMAGES RESULTING FROM LEAKS.

B. VERIFY SIZE, LOCATION, AND NUMBER OF ROOF PENETRATIONS INCLUDING VENTS, PIPES, CURBS, ROOF DRAINS, CONDUITS, ETC. PRIOR TO FLASHING. SEAL ALL PENETRATIONS WHETHER OR NOT INDICATED ON THE DRAWINGS.

C. PROVIDE TAPERED "CRICKETS" WITH A MIN. 1/4" PER FOOT. AT ALL EQUIPMENT CURBS TO ENSURE POSITIVE DRAINAGE.

D. THE OWNER HAS THE RIGHT TO RETAIN ANY EXISTING MATERIALS SCHEDULED FOR REMOVAL. CHECK WITH THE OWNER'S REPRESENTATIVE PRIOR TO REMOVING ANY MATERIALS FROM THE SITE.

E. REPAIR AND REFINISH AREAS THAT HAVE BEEN DAMAGED OR DISTURBED TO MATCH ADJACENT SURFACES.
- Flashing as required.
- Continuous bead of sealant.
- Masonry fastener @ 12" O.C. w/ waterblock.
- Counterflashing.
- Roof membrane.
- Existing limestone cap.
- 0'-3 25/64".
- Remove and replace any unsound mortar.
- Pack mortar in three layers, 2/5, then 2/5, then 1/5. Tool joint to match existing joint profile.
- Clean all sides of joint for joint widths up to 5/8", cut out 3/4" mortar. For joint widths over 5/8", cut out mortar two times the joint width.
- Do not damage galvanized coating.
- Preserve all existing weeps.
- Existing masonry wall.
- 0'-3 25/64".
- 8" opening covered with 22 ga. painted steel deck repair, fastened 6" O.C. at each side lap and each bottom flange.
- Existing metal deck.
- 4" min.
- Note: Remove abandoned roof penetrations and roof curbs.
- Cut and remove roof penetrations below deck and/or as necessary to install new deck repair.
- Install metal deck repair over resultant deck openings and all openings identified on the roof plan.

- Sealant depth = 1/2 width of joint.
- Minimum sealant depth is 1/4" (6mm).
- Maximum sealant depth is 1/2" (12.5mm).

- Replace any unsound mortar.
- Pack mortar in three layers, 2/5, then 2/5, then 1/5. Tool joint to match existing joint profile.
- Clean all sides of joint for joint widths up to 5/8", cut out 3/4" mortar. For joint widths over 5/8", cut out mortar two times the joint width.
- Do not damage galvanized coating.
- Preserve all existing weeps.

- Remove all existing flashing, lead, etc. Pipe surface must be free of all rust, grease, insulation, etc.
- Pipe must be anchored to ensure stability.
- Pre-molded pipe flashing may be cut to height, but no lower than reinforcing ring (no wrinkles or folds under clamping ring).
- Apply lap sealant between penetration and pre-molded pipe flashing prior to installation of clamping ring.
- Do not use when service line temp. exceeds 180°F.

- Field or factory seam: 4" dia. galvanized standard steel pipe bollard. Fill with concrete, provide 1" rounded crown in concrete.
- 5" dia. x 18" long, hot dipped galvanized steel receiver.
- 7'-0".
- 2'-6".
- 2'-0" min.
- 1'-6".
- 4' - 0".
- 2'-0" min.
- 4" glazed CMU.
- New brick (match EXG).
- 3/8" x 12" plate (galv).
- 1/8 3-12.
- Note: Field fabricated metal hood.
- High grade sealant.
- Bonding adhesive (adhered system only).
- Field fabricated metal hood. Flashing continuous.
- Bonding adhesive (adhered system only).
- Hot dipped galvanized steel stops (2 pls).
### General Notes - Demolition

A. All areas designated by dashed lines are to be removed.

B. All areas and partitions not dashed or noted to be removed shall remain intact. Patch and repair existing adjacent surfaces as required after demolition to match existing or in accordance with proposed renovations.

C. Provide interior and exterior shoring, bracing, or other support to prevent movement, settlement, or collapse of elements to be demolished and adjacent existing elements to remain.

D. Locate and identify existing utilities, including sanitary sewer system, and ascertain their condition to ensure adequate performance of all utilities in new construction. Protect utility lines and hardware during demolition and construction phases.

E. Coordinate all demolition with owner and other trades.

F. Verify dimensions and locations. It is anticipated that existing conditions shall require slight adjustments.

### Keynote Legend - Demolition

- **D1**: Remove roof membrane and associated components including but not limited to: insulation, fasteners, and flashing.
- **D2**: Remove equipment curb/rail in its entirety, including but not limited to: associated membrane, flashing, and insulation. Prepare surrounding area to replace with new equipment curb.
- **D3**: Remove equipment curb/rail in its entirety, including but not limited to: associated membrane, flashing, and insulation. Prepare surrounding area to infill roof decking.
- **D4**: Remove and salvage all existing concrete walkway pads and turnover to owner.
- **D5**: Roof hatch to remain. Upon roofing membrane demolition, if hatch curb is observed to be damaged, remove and replace curb in kind (to be paid from the miscellaneous allowance).
- **D6**: Existing steel roof access ladder to remain.
- **D7**: Existing stone coping caps to remain.

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**Scale**: 1/8" = 1'
1. All mechanical work shall be in strict compliance with the latest applicable edition of the respective mechanical and plumbing code and applicable provisions of the International Fuel Gas Code (IFGC).

2. These drawings are schematic in nature and are not intended to show all possible connections. All equipment, ducts, and piping are shown in a single line unless otherwise specified. Dimensions and other details will be specified in the engineering documents. All documents shall be strictly conformed with, any items and labor required for a complete installation according to the engineering documents, any modifications and changes in these documents, and any contract documents or the design of other trades before preparing shop drawings.

3. Bottom of Ductwork shall be mounted between 12-24 inches of ceilings except to avoid interferences with other construction.

4. Coordinate equipment and piping with all other disciplines and trades. Make all offsets and transitions to be determined.

5. Coordinate the exact location and size of all roof, wall, and slab penetrations with the architectural drawings and existing conditions in field. All penetration openings are to be sealed with flashing or trim plate mounted flush to masonry wall to seal openings.

6. Maintain piping a minimum of 7'-0" A.F.F. in all mechanical rooms. All piping shall be located as high as possible.

7. Coordinate the exact location and size of all roof, wall, and slab penetrations with the architectural drawings and existing conditions in field. All penetration openings are to be sealed with flashing or trim plate mounted flush to masonry wall to seal openings.

MECHANICAL LEGEND

1. This legend is for reference only. 2. All symbols which appear within the legend may not apply to this project.

SYMBOLS AND TAGS

1. All mechanical work shall be in strict compliance with the latest applicable edition of the respective mechanical and plumbing code and applicable provisions of the International Fuel Gas Code (IFGC).

2. These drawings are schematic in nature and are not intended to show all possible connections. All equipment, ducts, and piping are shown in a single line unless otherwise specified. Dimensions and other details will be specified in the engineering documents. All documents shall be strictly conformed with, any items and labor required for a complete installation according to the engineering documents, any modifications and changes in these documents, and any contract documents or the design of other trades before preparing shop drawings.

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MECHANICAL DEMOLITION - CHEMICAL FEED BUILDING - BASEMENT LEVEL

GENERAL NOTES

A. BILL QUANTITY AND LOCATION OF DUCTWORK AND PIPING SHOWN ARE APPROXIMATE. ACTUAL ROUTING AND
MATHEMATICALLY WITHIN THE LIMITS INDICATED TO THE CONTRACTOR. MEANS AND METHODS SHALL BE LEFT TO THE
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A.  SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONTRACTOR’S DISCRETION.

B.  CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C.  CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR “NOISY” WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF-HOURS IF NECESSARY. NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES “NOISY” WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.

D.  WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.

E.  CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

F.  CONTRACTOR IS TO REMOVE AND RE-INSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.

GENERAL NOTES

A.  DEMOLISH WALL MOUNTED 36" X 24" INTAKE LOUVER AND ALL ASSOCIATED ACCESSORIES. PROVIDE BASE UNITS, SCREWS AND HARDWARE. REFER TO ARCHITECTURAL DETAILS.

B.  DEMOLISH WALL-MOUNTED 36" X 36" PROPELLOR EXHAUST FAN AND ALL ASSOCIATED ACCESSORIES AND SUPPORTS. REFER TO ARCHITECTURAL DETAILS.

C.  SUPPLY AND RETURN DUCT RISERS IN DUCT CHASE DOWN FROM MEZZANINE ARE TO REMAIN.

D.  DEMOLISH EXHAUST DUCT RISER FROM HYPOCHLORITE FEED ROOM TO EXTERIOR OF BUILDING. WALL PENETRATION IS TO REMAIN.

E.  HYDRONIC UNIT HEATERS AND ALL ASSOCIATED HYDRONIC PIPING, ACCESSORIES, SUPPORTS, CONTROLS AND WIRING ARE TO REMAIN.
A. **ALL ANCHORING EQUIPMENT ON EXTERIOR OF BUILDING IS TO BE OF STAINLESS STEEL CONSTRUCTION.**

B. **UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ROLL EQUIPMENT OR MATERIALS OVER ROOF.**

C. **SIZE, QUANTITY, AND LOCATION OF PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONTRACTOR’S DISCRETION.**

D. **ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE MAINTENANCE CAN BE PERFORMED.**

E. **NOISY WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES "NOISY" WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.**

F. **GENERAL NOTE 200-31537-21005 AA WTP HVAC IMPROVEMENTS - PHASE II MECHANICAL DEMOLITION - CHEMICAL FEED FOURTH FLOOR / MEZZANINE MECHANICAL DEMOLITION - CHEMICAL FEED BUILDING - ROOF SCALE: 1/4" = 1' 0"

KEYNOTES

1. **ISOLATE FLOOR MOUNTED AIR HANDLING UNITS AND ALL ASSOCIATED ACCESSORIES, AND SUBMIT FOR OWNER CONSIDERATION PRIOR TO PERFORMING DISRUPTIVE WORK.**

2. **ISOLATE EXHAUST FAN AND ALL ASSOCIATED EQUIPMENT OR THAT EXISTING EXHAUST FAN IS NON-FUNCTIONAL WHEN CONNECTING NEW DUCTWORK INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP DUCTWORK, Cuts AND PROVIDE MAINTENANCE CAN BE PERFORMED.**

3. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING AIR HANDLING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

4. **ISOLATE ROOF MOUNTED EXHAUST DUCT OUTLET AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

5. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ELEVATOR AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

6. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ROOF MOUNTED AIR COOLED CONDENSING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

7. **ISOLATE EXHAUST FAN AND ALL ASSOCIATED EQUIPMENT OR THAT EXISTING EXHAUST FAN IS NON-FUNCTIONAL WHEN CONNECTING NEW DUCTWORK INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP DUCTWORK, CUTS AND PROVIDE MAINTENANCE CAN BE PERFORMED.**

8. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING ELEVATOR PRIOR TO PERFORMING DISRUPTIVE WORK.**

9. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING AIR HANDLING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

10. **ISOLATE ROOF MOUNTED EXHAUST DUCT OUTLET AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

11. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ELEVATOR AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

12. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ROOF MOUNTED AIR COOLED CONDENSING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

13. **ISOLATE EXHAUST FAN AND ALL ASSOCIATED EQUIPMENT OR THAT EXISTING EXHAUST FAN IS NON-FUNCTIONAL WHEN CONNECTING NEW DUCTWORK INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP DUCTWORK, CUTS AND PROVIDE MAINTENANCE CAN BE PERFORMED.**

14. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING ELEVATOR PRIOR TO PERFORMING DISRUPTIVE WORK.**

15. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING AIR HANDLING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

16. **ISOLATE ROOF MOUNTED EXHAUST DUCT OUTLET AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

17. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ELEVATOR AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

18. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING ELEVATOR PRIOR TO PERFORMING DISRUPTIVE WORK.**

19. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING AIR HANDLING UNITS PRIOR TO PERFORMING DISRUPTIVE WORK.**

20. **ISOLATE ROOF MOUNTED EXHAUST DUCT OUTLET AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

21. **ISOLATE SUPPLY AND RETURN DUCTWORK SERVING ELEVATOR AND ALL ASSOCIATED SUPPORTS. ROOF PENETRATION IS TO REMAIN.**

22. **ISOLATE ROOF MOUNTED ROOF MOUNTED DUCTWORK SERVING ELEVATOR PRIOR TO PERFORMING DISRUPTIVE WORK.**

SCALE: 1/4" = 1' 0"
A. All anchored equipment on exterior of building is to be of stainless steel construction.

B. Roll equipment or material over roof under no circumstances. Remove existing equipment and materials as required.

C. Size, quantity, and location of piping shown is approximate. Any sizes indicated are to aid contractor in establishing demolition scope only. Contractor shall verify all existing equipment sizes and locations prior to demolition.

D. Contractor shall assume there are no existing isolation valves or that existing isolation valves are non-functional. Contractor shall include cost to freeze or hot tap piping, cut and provide isolation valves such that new work and future maintenance can be performed. 

E. Contractor shall coordinate all disruptive or "noisy" work with owner and obtainowner permission prior to performing disruptive work. Perform work during off-hours if necessary. Noisy work may be considered: saw cutting, concrete drilling, grider cutting, etc. If contractor is unsure what work constitutes "noisy" work, submit RFI to owner for clarification.

F. General Notes

1. Demolish roof mounted air handling unit AHU-6, associated condensing unit ACCU-6, energy recovery heat exchanger, exhaust fan EF-A3, and all associated ductwork, accessories, and supports. Coordinate with electrical for extent of demolition of controls and wiring. 

2. Demolish exhaust fan EF-A5 serving basement level of administration building are to remain.

3. Demolish exhaust fan serving bio-hood in laboratory area and all associated ductwork, accessories, supports, controls, and wiring. Reticulate of ductwork and fan location are to remain.

4. Demolish fan coil unit in enclosed office and all associated accessories, outdoor equipment, piping, and supports. Coordinate with electrical for extent of demolition of controls and wiring.

5. Existing laboratory area, corridors, storage, existing ductwork, and existing piping are to remain. New ductwork is to be routed to maintain current ductwork routing. Air terminals, in plenum and at supply and return locations are to remain. New air terminals will be installed in existing location.

6. Contractor shall coordinate with owner on recommended repairs and leak prevention solutions prior to new construction.

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A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONTRACTOR'S DISCRETION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL, WHEN CONNECTING NEW PIPING TO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C. CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR "NOISY" WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF HOURS IF NECESSARY. NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES "NOISY" WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.

D. WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.

E. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

F. CONTRACTOR IS TO REMOVE AND REINSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.
A. SIZE, QUANTITY, AND LOCATIONS OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT HIS DISCRETION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C. CONSTRUCTION IS TO REMOVAL AND INSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.

MECHANICAL DEMOLITION - SODIUM HYDROXIDE VAULT - ROOF

MECHANICAL NEW WORK - SODIUM HYDROXIDE VAULT - ROOF
A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONTRACTOR'S DISCRETION.

B. CONTRACTOR SHALL COMPARE ALL EXISTING OR PROPOSED MACHINES TO MANUFACTURER'S COMPATIBLE VIBRATION LEVELS. CONTRACTOR SHALL USE ALL NECESSARY VIBRATION REDUCING METHODS TO KEEP VIBRATION AT ACCEPTABLE LEVELS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING MACHINES TO DETERMINE REQUIRED REDUCTION LEVELS SUCH THAT FUTURE WORK AND FUTURE MACHINERY CAN BE PERFORMED.

C. CONTRACTOR SHALL COMPARE ALL EXISTING OR PROPOSED VIBRATION REDUCING METHODS TO MANUFACTURER'S COMPATIBLE VIBRATION LEVELS. CONTRACTOR SHALL USE ALL NECESSARY VIBRATION REDUCING METHODS TO KEEP VIBRATION AT ACCEPTABLE LEVELS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING MACHINES TO DETERMINE REQUIRED REDUCTION LEVELS SUCH THAT FUTURE WORK AND FUTURE MACHINERY CAN BE PERFORMED.

D. WHEN MECHANICAL VIBRATION IS REDUCED, PAY ATTENTION TO DUCTWORK SHOWN NOT TO SCALE. THE ACTUAL LOCATION OF DUCTWORK MAY REQUIRE FIELD ADJUSTMENT DUE TO VIBRATION REDUCTION MEASURES.

E. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

F. CONTRACTOR IS TO REMOVE AND REINSTALL EXISTING MASONRY BLOCK WALLS AS NECESSARY TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION. EXISTING MASONRY WALLS ARE TO BE SAFE AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE MASONRY WALLS ARE TO BE REPLACED IN KIND.
A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO ASSIST CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT THEIR DISCRETION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

D. CONTRACTOR IS TO REMOVE AND REINSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.
GENERAL NOTES

A. SIZE, QUANTITY, AND LOCATIONS OF DUCTWORK AND
   PIPING SHOWN IN BLACKCAPS ARE FOR BIDDER REFERENCE ONLY.
   CONTRACTOR SHALL PREPARE MANUALLY SCALE-ADJUSTED
   LAYOUT SHOWING ALL DUCTWORK AND PIPING TO BE CONSTRUCTED.
   DIMENSIONS OF DUCTWORK/CONDUIT SHOWN HEREIN MAY
   DIFFER FROM THE CONTRACTOR'S CONSTRUCTION LAYOUT.
   CONTRACTOR SHALL MEASURE EACH ITEM TO BE CONSTRUCTED
   TO DETERMINE LOCATION AND SIZE PRIOR TO DEMOLITION.
   CONTRACTOR SHALL REMOVE AND FREEZE ISOLATION VALVES;
   SUBSTITUTE WITH PROPER ISOLATION VALVES PRIOR TO
   CONSTRUCTION.

B. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING
   DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED
   WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR
   SHALL PROVIDE AND INSTALL VOLUME DAMPERS.

C. CONTRACTOR IS TO REMOVE AND REPLACE MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.

KEYNOTES

1. ROUTE SUPPLY AND EXHAUST DUCTWORK DOWN TO 1ST FLOOR FROM FLOOR ABOVE. COORDINATE WITH CONVEYOR BELT SYSTEM TO AVOID COLLISION.

2. ROUTE EXHAUST DUCTWORK THROUGH EXISTING WALL PENETRATION ABOVE GRADE. PROVIDE CONICAL TAP AT ROUND EXHAUST DUCT CONNECTION INTO EXTERIOR DUCTWORK. ROUTE EXTERIOR DUCTWORK AS TIGHT TO WALL AS POSSIBLE TO AVOID COLLISIONS.

3. REFER TO KEYNOTES 19, 16, 17, AND 18 FOR BOLLARD DETAILS.

4. CONNECT EXHAUST DUCT FROM FLUORIDE FEED ROOM UP TO EXISTING EXHAUST RISER IN LOADING ROOM ABOVE.

E. CONNECT NEW SUPPLY AIR BRANCH FOR ELECTRICIAN TO EXISTING DUCTWORK. PREPARE CONDITIONS PRIOR TO SUPPLY DUCT AND CONNECT TO OFFICE.
A. **GENERAL NOTES**

1. **SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT THEIR DISCRETION.**

2. **CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.**

3. **CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR "NOISY" WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF HOURS IF NECESSARY. NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES "NOISY" WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.**

4. **WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.**

5. **CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.**

6. **CONTRACTOR IS TO REMOVE AND RE-INSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.**

**KEYNOTES**

1. **ROUTE SUPPLY AND EXHAUST DUCTWORK DOWN TO LIME SLAKING ROOM FROM FLOOR ABOVE. COORDINATE WITH EXISTING EQUIPMENT, BUILDING STRUCTURE, CONDUIT, AND OTHER SYSTEMS TO AVOID COLLISION AT NEW FLOOR PENETRATION(S). ROUTE DUCTWORK TIGHT TO WALL AND CEILING.**

2. **ROUTE EXHAUST DUCTWORK THROUGH EXISTING WALL PENETRATION ABOVE GRADE. PROVIDE CONICAL TAP AT ROUND EXHAUST DUCT CONNECTION INTO EXTERIOR DUCTWORK. ROUTE EXTERIOR DUCTWORK AS TIGHT TO WALL AS POSSIBLE TO AVOID OBSTRUCTIONS WITH WALKWAY AND DUMPSTER AREA. COORDINATE WITH ARCHITECTURAL TO PROVIDE PROTECTIVE BOLLARDS ON EAST SIDE OF DUCTWORK ON EXTERIOR. REFER TO ARCHITECTURAL DRAWINGS FOR BOLLARD DETAILS.**

3. **REBALANCE EXISTING AIR TERMINAL TO THE AIRFLOW INDICATED. CONTRACTOR IS TO FIELD VERIFY DUCTWORK ROUTING, AIR TERMINAL QUANTITIES, AND VOLUME DAMPER LOCATION PRIOR TO SYSTEM BALANCING.**
A. SITE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING MENTIONED IN THIS EXHIBIT ARE NOT TO SCALE. CONSTRUCTION CONTRACTOR IS TO FIELD VERIFY AIRFLOW ROUTING, AIR TERMINAL QUANTITIES, AND VOLUME DAMPER LOCATION PRIOR TO SYSTEM BALANCING. CONTRACTOR IS TO FIELD VERIFY DUCTWORK ROUTING, AIR TERMINAL QUANTITIES, AND VOLUME DAMPER LOCATION PRIOR TO SYSTEM BALANCING. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONSTRUCTION CONTRACTOR'S DISCRETION. CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR "NOISY" WORK WITH OWNER AND OBTAIN OWNERS PERMISSIO PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF-HOURS IF NECESSARY. "NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES DISRUPTIVE WORK OR WORK CONSTITUTES NOISY WORK, SUBMIT A REQUEST FOR CLARIFICATION.

B. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.
GENERAL NOTES

A. Bills, quantities, and location of ductwork and piping shown are approximate, and sizes indicated are to aid contractor in estimating distribution of work. Actual distribution of work shall be left up to the contractor. Upon request, detailed schedules and quantities shall be furnished.

B. Contractor shall assume there are no existing functional piping when connecting new piping into existing. Contractor shall include cost to freeze or hot tap piping, cut and provide maintenance can be performed.

C. Contractor shall coordinate all disruptive or "noisy" work with owner and obtain owner's permission prior to performing. "Noisy" work may be considered saw cutting, concrete drilling, grinder cutting, etc. If contractor is unsure what work constitutes "noisy" work, submit RFI to owner for clarification.

D. Duct openings. Patches shall be constructed of same gauge sheet metal as remaining ductwork, screwed to ductwork and sealed with mastic.

E. Contractor shall field verify that all existing diffuser branch ducts to remain are equipped with volume dampers. If omitted, contractor shall coordinate for proper system balancing. Provide base unit pricing off largest run out for volume damper install.

F. Connect supply and return ductwork from AHU-1 to duct riser in chase down to locker rooms on second and third floors. Connect exhaust ductwork from duct riser in chase up to new exhaust fan on roof. Re-use existing roof penetration.

G. Connect supply ductwork from AHU-4 to supply ductwork serving fourth floor below mezzanine.

H. 8" x 12" RA

I. Connect supply and return ductwork from AHU-3 to duct risers in chase down to second and third floors.

J. Connect outside air intake duct up to existing gravity intake ventilators on roof. Provide weather-stripping for damper and access to damper shaft for maintenance.

K. Install existing A/C units in common areas and base units in tenant spaces.

L. Connect exhaust ductwork from point-to-point to existing fans on roof. Provide weather-stripping for damper and access to damper shaft for maintenance.

M. Connect supply and return ductwork from AHU-2 to duct risers in chase down to basement and ground floors.

N. Connect supply and return ductwork from AHU-1 to chase down to second and third floors.

O. Connect duct openings to existing gravity intake ventilators on roof. Provide weather-stripping for damper and access to damper shaft for maintenance.

P. Connect new steam supply and condensate return piping to existing pipe penetration through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

Q. Connect new stacks and condensate return piping to existing pipe penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

R. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

S. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

T. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

U. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

V. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

W. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

X. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

Y. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

Z. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

AA. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

BB. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

CC. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

DD. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

EE. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

FF. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

GG. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

HH. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

II. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.

JJ. Connect new stacks and steam supply piping to existing penetrations through mezzanine floor. Provide weather-stripping for damper and access to damper shaft for maintenance.
A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT THEIR DISCRETION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C. CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR "NOISY" WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF-HOURS IF NECESSARY. "NOISY" WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES "NOISY" WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.

D. WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.

E. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

F. CONTRACTOR IS TO REMOVE AND REINSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.
GENERAL NOTES

A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO AID CONTRACTOR IN ESTABLISHING DEMOLITION SCOPE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING LOCATIONS AND SIZES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT CONTRACTOR'S DISCRETION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL WHEN CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE WORK IS SAFE AND SECURE.

C. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

D. WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.

E. CONTRACTOR IS TO REMOVE AND REINSTALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED UNTIL DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.

F. REFER TO MECHANICAL DETAILS FOR NATURAL GAS PIPING SUPPORT DETAIL, TYPICAL.

KEYNOTES

1. INSTALL ROOF TOP UNIT SUCH THAT DOWNWARD SUPPLY DISCHARGE FROM UNIT IS ALIGNED WITH EXISTING SUPPLY DUCTWORK TO ENVIRONMENTAL LAB AREA USING EXISTING ROOF PENETRATION. CONNECT TO EXISTING 56" X 22" DUCTWORK BELOW ROOF LINE.

2. ROUTE CONDENSATE PIPING FROM RTU-6 DRAIN CONNECTION TO NEAREST ROOF SCUPPER. MAINTAIN AT MINIMUM 1/8" PER FOOT OF SLOPE. PROVIDE SAFETY YELLOW WALKING RAMP OVER PIPING. REFER TO MECHANICAL DETAILS FOR EQUIPMENT CONDENSATE DRAIN OUTLET.

3. COORDINATE LOCATION OF WALL-MOUNTED FAN COIL UNIT WITH EXISTING ELECTRICAL EQUIPMENT AND BUILDING STRUCTURE. FAN COIL UNIT IS TO BE MOUNTED AT MINIMUM 6'-0" A.F.F. NEW ACOUSTIC CEILING TILES AS NEEDED TO MATCH NEW CEILING TILES TO EXISTING.

4. EXISTING LABORATORY AREA, CORRIDORS, STORAGE, ENCLOSED OFFICE, AND OTHER SPACES ARE TO MAINTAIN CURRENT DUCTWORK ROUTING, AIR TERMINAL PLACEMENT, AND SYSTEM BALANCING. INSTALL NEW THERMOSTAT FOR RTU-6 IN SAME OR SIMILAR LOCATION AS EXISTING THERMOSTAT.

5. REFER TO MECHANICAL DETAILS FOR NATURAL GAS PIPING SUPPORT DETAIL, TYPICAL.
A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. VARYING NUMBERS OF SYSTEM PRESSURE REGULATORS MAY BE REQUIRED PRIOR TO PERFORMANCE OF WORK. FIELD CONSTRUCTORS SHALL PERFORM AND SUBMIT TO CONTRACTOR FOR APPROVAL PRIOR TO DEMOLITION.

B. CONTRACTOR SHALL ASSUME THERE ARE NO EXISTING ISOLATION VALVES OR THAT EXISTING ISOLATION VALVES ARE NON-FUNCTIONAL. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP EXISTING PIPING. CONTRACTOR SHALL INCLUDE COST TO FREEZE OR HOT TAP EXISTING PIPING, CUT AND PROVIDE ISOLATION VALVES SUCH THAT NEW WORK AND FUTURE MAINTENANCE CAN BE PERFORMED.

C. CONTRACTOR SHALL COORDINATE ALL DISRUPTIVE OR "NOISY" WORK WITH OWNER AND OBTAIN OWNERS PERMISSION PRIOR TO PERFORMING DISRUPTIVE WORK. PERFORM WORK DURING OFF-HOURS IF NECESSARY. NOISY WORK MAY BE CONSIDERED, SAW CUTTING, CONCRETE DRILLING, GRINDER CUTTING, ETC. IF CONTRACTOR IS UNSURE WHAT WORK CONSTITUTES "NOISY" WORK, SUBMIT RFI TO OWNER FOR CLARIFICATION.

D. WHEN BRANCH DUCTWORK IS REMOVED, PATCH ALL DUCT OPENINGS. PATCHES SHALL BE CONSTRUCTED OF SAME GAUGE SHEET METAL AS REMAINING DUCTWORK, SCREWED TO DUCTWORK AND SEALED WITH MASTIC.

E. CONTRACTOR SHALL FIELD VERIFY THAT ALL EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

F. CONTRACTOR IS TO REMOVE AND REPLACE ALL EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION IN COORDINATION WITH CEILING PLAN. EXISTING CEILING TILES ARE TO BE SAFELY AND SECURELY STORED TO PREVENT DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.
**GENERAL NOTES**

A. SIZE, QUANTITY, AND LOCATION OF DUCTWORK AND PIPING SHOWN IS APPROXIMATE. ANY SIZES INDICATED ARE TO BE CONFIRMED PRIOR TO DEMOLITION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DUCTWORK AND ISOLATION VALVES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR AT THEIR DISCRETION.

B. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING AND ISOLATION VALVES OR THAT ANY WORK IS CONNECTING NEW PIPING INTO EXISTING. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DUCTWORK AND ISOLATION VALVES PRIOR TO DEMOLITION. MEANS AND METHODS SHALL BE LEFT UP TO THE CONTRACTOR.

C. CONTRACTOR SHALL FIELD VERIFY THE EXISTING DIFFUSER BRANCH DUCTS TO REMAIN ARE EQUIPPED WITH VOLUME DAMPERS. IF OMITTED, CONTRACTOR SHALL PROVIDE AND INSTALL NEW VOLUME DAMPERS FOR PROPER SYSTEM BALANCING. PROVIDE BASE UNIT PRICING OFF LARGEST RUN OUT FOR VOLUME DAMPER INSTALL.

D. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING ACOUSTIC CEILING TILES AS NEEDED TO PERFORM MECHANICAL NEW WORK AT THEIR DISCRETION. EXPAND DUCT WORK TO AVOID EXISTING CEILING TILES AND TO BE AIMED AT REPAIRING ANY DAMAGE DURING NEW CONSTRUCTION. ANY DAMAGED OR UNUSABLE CEILING TILES ARE TO BE REPLACED IN KIND.

**KEYNOTES**

1. PROVIDE ROOF MOUNTED EXHAUST FAN AND ROOF CURB AT EXISTING ROOF PENETRATION INTO FILTER GALLERY. CONTRACTOR TO FIELD VERIFY PENETRATION DIMENSIONS.

2. PROVIDE ROOF MOUNTED EXHAUST FAN AND ROOF CURB AT EXISTING ROOF PENETRATION INTO FILTER GALLERY. CONTRACTOR TO FIELD VERIFY PENETRATION DIMENSIONS.

**MECHANICAL NEW WORK - FILTER GALLERY**
**KEYNOTES**

1. Install roof top unit such that downward supply discharge from unit is aligned with existing supply ductwork to Environmental Lab area using existing roof penetration. Connect to existing 56" x 22" ductwork below roof line.

2. Route supply and exhaust ductwork down to Lime Aging Room from floor above. Coordinate with existing equipment, building structure, conduit, and other systems to avoid collision at new floor penetration(s). Route ductwork tight to wall and ceiling.

3. Refer to mechanical details for roof mounted duct support detail, typical.

4. Contractor to field verify existing wall penetration height and opening prior to louver installation.
GAS FIRED EQUIPMENT CONNECTION DETAIL

UNIT TOTAL

**B (IN.)**

1/2 OF UNIT TOTAL

UNIT A (IN.)

UNIT SECURED TO

AHU - 1

1/4" x 3" LAG SCREWS

#10 SM SCREW, TWO PER BRACKET

THREADED PLUG (TYP.)

4"x8" (MIN) FIRE RETARDANT TREATED (FRT) WOOD FRAME ALL AROUND. PROVIDE INTERMEDIATE SUPPORT FLUTES LONG (MIN) AT 48" OC AS REQUIRED.

NOTE: ALTERNATE SUPPORT DESIGN, WITH CALCULATIONS, MAY BE SUBMITTED FOR ENGINEER REVIEW AND APPROVAL. INSULATION ON TOP OF DUCTWORK MAY BE MONOSLOPED.

MUDDING CHAMFER AT 45 DEGREE ANGLE

MOUNTING HANGER ATTACH TO MI TUBE MOUNTING HANGER

1/2" GAL. STEEL ANCHOR BOLT IN THE CENTER OF THE TUBE SIDES WITH ANCHOR BOLTS

20 GA. STAINLESS STEEL, EXTENDED 5/8" ARMAFLEX INSULATION

NOTES:

1. COORDINATE ANCHORAGE REQUIREMENTS WITH STRUCTURAL DESIGN.

2. BOLT #4@12" O.C. EA. WAY PROVIDE 2" COVER LOCATION AND SIZE OF ANCHOR BOLTS SHALL CONFORM TO EQUIPMENT MANUFACTURER REQUIREMENTS.

3. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS.

4. MOUNTING HANGER ATTACH TO MI TUBE MOUNTING HANGER. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

5. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

6. LOCATION AND SIZE OF THE WALL OPENINGS, SEE PLANS. REFER TO ARCH. DRAWINGS LOUVER/DAMPER ASSEMBLIES AND SPECIFICATION.

7. MANUFACTURER FACTORY.

8. CONCRETE BASE SHALL BE 6" LARGER ALL AROUND THE BASE OF EQUIPMENT PROVIDE 2" COVER LOCATION AND SIZE OF ANCHOR BOLTS SHALL CONFORM TO ROOF MANUFACTURER recommendations.

9. MOTOR ACTUATORS TO BE INSTALLED AT EACH CORNER, WITH DOUBLE NUTS, 4" LONG.

10. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

11. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

12. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

13. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.

14. INSTALLATION OF LOUVER TO OUTSIDE WALL OPENING ON ALL SIDES WITH ANCHOR BOLTS. LOCATIONS OF CUTOUTS TO BE IN DUCT WALL TO ALLOW MANUFACTURER TO INSTALL PROPER INSULATION. LOCATIONS OF LOUVER MANUFACTURER RECOMMENDATIONS.
## Packaged Roof Top Unit Schedule

### Packaged Roof Top Unit Schedule (Contd.)

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<td>-</td>
<td>-</td>
<td>1800</td>
<td>95</td>
<td>6.2</td>
<td>77.2</td>
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<td>105 / 88</td>
<td>54.3 / 53.3</td>
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### Chemical Feed Building Interior Air Handling Unit (AHU) Schedule

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<td>1800</td>
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<td>250</td>
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### Ozone Building Roof Mounted Air Handling Unit (AHU) Schedule

<table>
<thead>
<tr>
<th>Mark</th>
<th>Airflow (CFM)</th>
<th>E.S.P. (IN-WG)</th>
<th>T.S.P. (IN-WG)</th>
<th>Type</th>
<th>HP</th>
<th>Airflow (CFM)</th>
<th>E.S.P. (IN-WG)</th>
<th>T.S.P. (IN-WG)</th>
<th>Return (Exhaust)</th>
<th>Filter Type</th>
<th>Motor Type</th>
<th>RPM</th>
<th>Volts / PH / HZ</th>
<th>Weight (LBS)</th>
<th>M.C.A.</th>
<th>M.O.P.</th>
<th>Notes</th>
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<tr>
<td>AHU-1</td>
<td>1000</td>
<td>0.25</td>
<td>0.50</td>
<td>ACM</td>
<td>1</td>
<td>1000</td>
<td>0.25</td>
<td>0.50</td>
<td>1200</td>
<td>F</td>
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<td>880</td>
<td>4650</td>
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<td>AHU-2</td>
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<td>0.30</td>
<td>0.60</td>
<td>ACM</td>
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<td>F</td>
<td>2</td>
<td>1250</td>
<td>4600</td>
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<td>750</td>
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<td>0.70</td>
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<td>1750</td>
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<td>4600</td>
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<td>0.40</td>
<td>0.80</td>
<td>2000</td>
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<td>1050</td>
<td>900</td>
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### Split System Heat Pump Schedule

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<tr>
<th>Mark</th>
<th>Associated Equipment Airflow (CFM)</th>
<th>Tons</th>
<th>Cooling Capacity (MBH)</th>
<th>Heating Capacity (MBH)</th>
<th>No. of Fans</th>
<th>Ambient Temp. (°F)</th>
<th>Refrigerant</th>
<th>M.C.A.</th>
<th>M.O.P.</th>
<th>E.E.R.</th>
<th>Volts / PH / HZ</th>
<th>Weight (LBS)</th>
<th>Notes</th>
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<td>HP-1</td>
<td>FCU-1</td>
<td>436</td>
<td>1</td>
<td>436</td>
<td>1</td>
<td>10.9</td>
<td>8.6</td>
<td>1</td>
<td>95</td>
<td>R-410A</td>
<td>460 / 1 / 60</td>
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<td>DAIKIN FTX12AXVJU</td>
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<td>FCU-1</td>
<td>1051</td>
<td>1</td>
<td>1051</td>
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<td>10.9</td>
<td>8.6</td>
<td>1</td>
<td>95</td>
<td>R-410A</td>
<td>460 / 1 / 60</td>
<td>64</td>
<td>DAIKIN RX12AXVJU</td>
</tr>
</tbody>
</table>

### Notes
1. Provide GPS Micro Modular Needlepoint Bipolar ionization system in the cooling coil cabinet per Global Plasma Solutions manufacturer specifications.
2. Provide GPS Micro Modular Needlepoint Bipolar ionization system in the supply fan cabinet per Global Plasma Solutions manufacturer specifications.
3. Provide factory roof curb coordinated with existing roof penetrations.
CONDENSING UNIT SCHEDULE

<table>
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<tr>
<th>MARK</th>
<th>NOMINAL TONS</th>
<th>TOTAL CAPACITY (MBH)</th>
<th>NO. OF FANS</th>
<th>NO. OF STAGES</th>
<th>NO. OF CIRCUITS</th>
<th>DESIGN AMBIENT TEMP. (°F)</th>
<th>VOLTS / PH / HZ</th>
<th>FAN HP</th>
<th>MCA</th>
<th>MOP</th>
<th>FLA</th>
<th>ASSOCIATED EQUIPMENT</th>
<th>WEIGHT (LBS)</th>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>NOTES</th>
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<td>120.0</td>
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<td>2</td>
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<td>95</td>
<td>460 / 3 / 60</td>
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<td>22</td>
<td>35</td>
<td>6.1</td>
<td>AHU-1 DAIKIN DX11TA1204</td>
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<td>AHU-2 DAIKIN RCS12F150D</td>
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<tr>
<td>CU-3</td>
<td>4</td>
<td>46.0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>95</td>
<td>460 / 3 / 60</td>
<td>0.33</td>
<td>8.4</td>
<td>15</td>
<td>6.1</td>
<td>AHU-3 DAIKIN DX13SA0484</td>
<td></td>
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</tr>
<tr>
<td>CU-4</td>
<td>4</td>
<td>46.0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>95</td>
<td>460 / 3 / 60</td>
<td>0.33</td>
<td>8.4</td>
<td>15</td>
<td>6.1</td>
<td>AHU-4 DAIKIN DX13SA0484</td>
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FAN SCHEDULE

<table>
<thead>
<tr>
<th>MARK</th>
<th>AIR FLOW (CFM)</th>
<th>F.P. (IN WG)</th>
<th>FAN RPM</th>
<th>HP</th>
<th>VOLTS / PH / HZ</th>
<th>TYPE</th>
<th>LOCATION</th>
<th>SCHEDULE</th>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>NOTES</th>
</tr>
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<tbody>
<tr>
<td>EF-1</td>
<td>3600</td>
<td>1.00</td>
<td>1537</td>
<td>2</td>
<td>208 / 1 / 60</td>
<td>WALL MOUNTED CENTRIFUGAL DIRECT</td>
<td></td>
<td>GREENHECK</td>
<td>CUE-160-VG</td>
<td>1, 2</td>
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<tr>
<td>EF-A2</td>
<td>905</td>
<td>1.50</td>
<td>1755</td>
<td>3/4</td>
<td>115 / 1 / 60</td>
<td>ROOF MOUNTED CENTRIFUGAL DIRECT</td>
<td>CHEMICAL FEED BUILDING ROOF EXHAUST</td>
<td>GREENHECK</td>
<td>CUE-140HP-VG</td>
<td>2</td>
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<tr>
<td>EF-AM1</td>
<td>210</td>
<td>0.51</td>
<td>1550</td>
<td>1/20</td>
<td>115 / 1 / 60</td>
<td>WALL MOUNTED CENTRIFUGAL DIRECT</td>
<td>AMMONIA BUILDING EXHAUST</td>
<td>GREENHECK</td>
<td>CUE-100-A</td>
<td>1, 2</td>
<td></td>
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<tr>
<td>EF-CL1</td>
<td>1350</td>
<td>1.55</td>
<td>3500</td>
<td>3/4</td>
<td>460 / 3 / 60</td>
<td>INLINE TUBE AXIAL DIRECT</td>
<td>HYPOCHLORITE FEED RM EXHAUST</td>
<td>GREENHECK</td>
<td>AX-36-160-0409</td>
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<tr>
<td>EF-F1</td>
<td>1200</td>
<td>0.53</td>
<td>1725</td>
<td>1/3</td>
<td>115 / 1 / 60</td>
<td>ROOF MOUNTED CENTRIFUGAL DIRECT</td>
<td>FILTER GALLERY EAST EXHAUST</td>
<td>GREENHECK</td>
<td>CUE-100-A</td>
<td>2, 3</td>
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<tr>
<td>EF-FL1</td>
<td>450</td>
<td>0.51</td>
<td>1770</td>
<td>1/3</td>
<td>460 / 3 / 60</td>
<td>INLINE TUBE AXIAL DIRECT</td>
<td>FLUORIDE FEED RM EXHAUST</td>
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<td>EF-NA1</td>
<td>510</td>
<td>0.25</td>
<td>1300</td>
<td>1/25</td>
<td>115 / 1 / 60</td>
<td>ROOF MOUNTED CENTRIFUGAL DIRECT</td>
<td>SODIUM HYDROXIDE VAULT EXHAUST</td>
<td>GREENHECK</td>
<td>CUE-100-A</td>
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LOUVER SCHEDULE

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<thead>
<tr>
<th>MARK</th>
<th>LOCATION</th>
<th>TYPE</th>
<th>AIR FLOW (CFM)</th>
<th>SIZE W X H (IN)</th>
<th>FREE AREA (SQ FT)</th>
<th>VELOCITY (FPM)</th>
<th>AIR PRESSURE DROP (IN WG)</th>
<th>MOUNTING</th>
<th>MATERIAL</th>
<th>MANUFACTURER MODEL</th>
<th>NOTES</th>
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<tr>
<td>L-1</td>
<td>LIME SLAKING ROOM</td>
<td>INTAKE</td>
<td>3400</td>
<td>48&quot; X 36&quot;</td>
<td>6.91</td>
<td>492</td>
<td>0.04</td>
<td>SIDEWALL</td>
<td>ALUMINUM</td>
<td>GREENHECK</td>
<td>ESD-635</td>
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<tr>
<td>L-2</td>
<td>FILTER GALLERY</td>
<td>INTAKE</td>
<td>1200</td>
<td>36&quot; X 24&quot;</td>
<td>2.77</td>
<td>433</td>
<td>0.03</td>
<td>SIDEWALL</td>
<td>ALUMINUM</td>
<td>GREENHECK</td>
<td>ESD-635</td>
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GRILLE, REGISTER, AND DIFFUSER SCHEDULE

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<thead>
<tr>
<th>MARK</th>
<th>DESCRIPTION</th>
<th>PANEL SIZE (IN)</th>
<th>AIR FLOW RANGE (CFM)</th>
<th>FINISH MATERIAL</th>
<th>DAMPER</th>
<th>MAX NC</th>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>EG-1</td>
<td>DUCT MOUNTED EXHAUST GRILLE</td>
<td>30 X 12</td>
<td>1200</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
<td>TITUS</td>
<td>272FL</td>
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<tr>
<td>EG-2</td>
<td>DUCT MOUNTED EXHAUST GRILLE</td>
<td>14&quot; ø 4</td>
<td>50</td>
<td>MILL WHITE ALUMINUM</td>
<td>-</td>
<td>&lt; 15</td>
<td>TITUS R-300F</td>
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<tr>
<td>EG-3</td>
<td>DUCT MOUNTED EXHAUST GRILLE</td>
<td>30 X 24</td>
<td>2</td>
<td>400</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
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<td>EG-4</td>
<td>DUCT MOUNTED EXHAUST GRILLE</td>
<td>8 X 8</td>
<td>110</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
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<td>EG-5</td>
<td>DUCT MOUNTED EXHAUST GRILLE</td>
<td>20 X 20</td>
<td>1200</td>
<td>MILL WHITE ALUMINUM</td>
<td>MOTORIZED</td>
<td>&lt; 15</td>
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<tr>
<td>RG-1</td>
<td>DUCT MOUNTED RETURN GRILLE</td>
<td>30 X 12</td>
<td>1190</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
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<td>TITUS 272FL</td>
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<tr>
<td>RG-2</td>
<td>WALL MOUNTED RETURN GRILLE</td>
<td>12 X 8</td>
<td>150</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
<td>TITUS 272FL</td>
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<tr>
<td>SG-1</td>
<td>DUCT MOUNTED SUPPLY GRILLE</td>
<td>30 X 12</td>
<td>1100</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
<td>TITUS 272FL</td>
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<td></td>
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<tr>
<td>SG-2</td>
<td>DUCT MOUNTED SUPPLY GRILLE</td>
<td>48 X 36</td>
<td>2400</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
<td>TITUS 272FL</td>
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<tr>
<td>SG-3</td>
<td>WALL MOUNTED SUPPLY GRILLE</td>
<td>8 X 6</td>
<td>100</td>
<td>MILL WHITE ALUMINUM</td>
<td>MANUAL</td>
<td>&lt; 15</td>
<td>TITUS 272FL</td>
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LABORATORY EXHAUST SNORKEL (SNK) SCHEDULE

<table>
<thead>
<tr>
<th>MARK</th>
<th>DESCRIPTION</th>
<th>AIRFLOW RANGE (CFM)</th>
<th>PRESSURE DROP (IN-WG)</th>
<th>ARM DIAMETER (IN)</th>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNK-1</td>
<td>CEILING MOUNTED EXTRACTION ARM</td>
<td>110 - 265</td>
<td>1.0</td>
<td>4</td>
<td>NEDERMAN FX2-ORIG-D100-L1800</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

NOTES:
1. PROVIDE WITH FACTORY CHEMICAL RESISTANT COATING. REFER TO MANUFACTURER COATING APPLICATION GUIDE FOR COATING RESISTANCE TO SPECIFIC CHEMICALS.
2. PROVIDE WITH FACTORY CURB SEAL, BIRD SCREEN, NON-STICK ALUMINUM WHEEL, AND DISCONNECT SWITCH.
3. PROVIDE WITH FACTORY CURB SEAL, BIRD SCREEN, NON-STICK ALUMINUM WHEEL, AND DISCONNECT SWITCH WITH RAIL.
The diagram includes a sequence of operations for an air handling unit. The text is in English and provides a detailed explanation of the system components and their functions. The diagram is a technical drawing, likely used for maintenance or engineering purposes, showing the flow of air and the various sensors and controls involved in the heating and cooling systems.
1. **CONNECT OUTSIDE AIR INTAKE DUCT UP TO EXISTING GRAVITY INTAKE VENTILATORS ON ROOF. PROVIDE MOTORIZED, INSULATED, LOW LEAK DAMPERS IF NOT PRESENT.**

2. **CONNECT SUPPLY DUCTWORK FROM AHU-4 TO SUPPLY DUCTWORK SERVING FOURTH FLOOR BELOW MEZZANINE.**

3. **CONNECT SUPPLY FROM AHU-1 TO DUCT RISER IN CHASE DOWN TO LOCKER ROOMS ON SECOND AND THIRD FLOORS. CONNECT EXHAUST DUCTWORK FROM DUCT RISER IN CHASE UP TO NEW EXHAUST FAN ON ROOF. RE-USE EXISTING ROOF PENETRATION.**

4. **CONNECT SUPPLY AND RETURN DUCTWORK FROM AHU-2 TO DUCT RISERS IN CHASE DOWN TO BASEMENT AND GROUND FLOORS.**

5. **CONNECT SUPPLY AND RETURN DUCTWORK FROM AHU-3 TO DUCT RISERS IN CHASE DOWN TO SECOND AND THIRD FLOORS.**

6. **MANUFACTURER SUGGESTED CLEARANCE FOR ACCESS AND MAINTENANCE, TYPICAL.**

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**KEYNOTES**

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**SCALE:**

**MECHANICAL MEZZANINE ISOMETRIC VIEW**

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**ISSUED FOR BID:**

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**NOTE:** Bar measures 1 inch, otherwise drawing is not to scale.

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**MARK DATE:** 4/6/2022

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**M-901**
1. Connect outside air intake duct up to existing gravity intake ventilators on roof; provide motorized, insulated, low leak dampers if not present.

2. Connect supply ductwork from AHU-4 to supply ductwork serving fourth floor below mezzanine.

3. Connect supply and return ductwork from AHU-1 to duct riser in chase down to locker rooms on second and third floors; connect exhaust ductwork from duct riser in chase up to new exhaust fan on roof; re-use existing roof penetration.

4. Connect supply and return ductwork from AHU-2 to duct risers in chases down to basement and ground floors.

5. Connect supply and return ductwork from AHU-3 to duct risers in chases down to second and third floors.

6. Manufacturer suggested clearance for access and maintenance, typical.

---

KEYNOTES

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

MECHANICAL MEZZANINE ISOMETRIC VIEW

SOUTH N.T.

Copyright: Tetra Tech
ABBREVIATIONS

1. ALL WORK SHALL BE PERFORMED BY CERTIFIED ELECTRICIANS OR UNDER THE SUPERVISION OF AN ELECTRICIAN.

2. REFER TO THE APPROPRIATE DRAWING FOR THE EXACT LOCATION OF EQUIPMENT AND/OR VFDs AS INDICATED ON MECHANICAL SCHEDULES AND CONTROLS.

3. PROVIDE ELECTRICAL CONTROL PANELS AS INDICATED. PROVIDE AN ELECTRICAL CONTROL PANEL FOR EACH EMERGENCY UNIT.

4. BRANCH CIRCUITS SHALL BE RUN HIGH AND TIGHT TOGETHER WHEN FEASIBLE, BRANCH CIRCUIT, UNDERGROUND OR CONCEALED BEHIND WALL, BRANCH CIRCUIT, CONDUIT OR UNDERGROUND CONDUIT OR IN WALL ALONG PLANE OF STRUCTURE.

5. ELECTRICAL CONNECTION TO EQUIPMENT FURNISHED BY OTHERS.

6. PROVIDE ARC FLASH HAZARD WARNING LABELS ON ELECTRICAL EQUIPMENT IN ACCORDANCE WITH THE NFPA 70E STANDARD.

7. LABEL POWER AND SWITCH OUTLETS WITH RESPECT TO CIRCUIT BREAKER AND PANEL LOCATION.

8. USE SCALE WHEN REQUIRED AS INDICATED.

9. PROVIDE STRUCTURAL SUPPORTS FOR ELECTRICAL CONDUIT.

10. ELECTRICAL LEGEND IS GENERIC. NOT ALL ITEMS NOTED ARE IN THE PROJECT.

11. CONDUITS LEAVING OR ENTERING BUILDING SHALL BE SEALED PER NEC TO PROVIDE NECESSARY MOUNTING SUPPORT AS REQUIRED.

12. PROVIDE NECESSARY MOUNTING SUPPORT AS REQUIRED.

13. PLACE OF PROTECTION DESIGNATION AS LAUGUISH.

14. PROVIDE AND/OR INSTALL WATER COOLER модельов.

15. PROVIDE NECESSARY MOUNTING SUPPORT AS REQUIRED.

16. PROVIDE NECESSARY MOUNTING SUPPORT AS REQUIRED.

17. EMERGENCY LIGHTING FIXTURES SHALL BE PROVIDED WITH AN UNSWITCHED POWER CONDUCTOR TO EACH EMERGENCY UNIT.
A. PROVIDE ALL LABOR AND MATERIALS REQUIRED TO INSTALL ELECTRICAL SYSTEM. THE DESIGN AND METHODS OF INSTALLATION OF THE WIRING MATERIALS, ELECTRICAL EQUIPMENT WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL MATERIALS SHALL BE UL LISTED AND LABELLED.

B. PROVIDE ALL NECESSARY PERMITS AND LICENSES. OBSERVE AND ABIDE BY APPLICABLE LAWS, ORDINANCES, AND RULES OF OSHA, EPA, AND THE STATE (POLITICAL SUBDIVISION) FOR RECONNECTION TO PROPOSED FAN AFTER DEMOLITION OF EXISTING FAN WHERE THE WORK IS DONE.

C. UPON COMPLETION OF THE WORK SECURE CERTIFICATES OF INSPECTION FROM THE INSPECTOR HAVING JURISDICTION AND SUBMIT THREE COPIES TO THE OWNER. PAY THE FEES FOR THE PERMITS INSPECTIONS, LICENSES AND CERTIFICATIONS.

D. CONDUIT SHALL BE RIGID GALVANIZED STEEL (3/4" MINIMUM SIZE) CONFORMING TO ANSI SPECIFICATION C80.1. JUNCTION BOXES, OUTLET BOXES AND FITTINGS SHALL BE CAST TYPE WITH THREADED HUBS COMPLETE WITH GASKETS AND CAST COVERS. PROVIDE GALVANIZED IRON RACKS/SUPPORT FRAMES WHERE REQUIRED FOR SUPPORT OF ELECTRICAL CONDUIT AND EQUIPMENT. CONDUIT JOINTS SHALL BE MADE WATERTIGHT BY COATING FACTORY AND FIELD THREADS WITH A ZINC POWDER PAINT.

E. WHERE FLEXIBLE CONNECTIONS ARE REQUIRED, LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED SHOWN PERMITTED BY THE NATIONAL ELECTRICAL CODE.

F. CONDUIT AND ALL MATERIAL SHALL BE UL LABELED AND THE INSTALLATION SHALL CONFORM TO THE NEMA CLASSIFICATION NOTED ON THE DRAWINGS. AS A MINIMUM, EQUIPMENT ENCLOSURES SHALL BE NEMA 4, 7 OR 12 UNLESS OTHERWISE NOTED ON DRAWINGS. ELECTRICAL WORK WITHIN BUILDING MECHANICAL ROOMS SHALL BE NEMA 4X OR 6P UNLESS OTHERWISE NOTED ON THE DRAWINGS.

G. 600V WIRE SHALL BE SINGLE CONDUCTOR WITH STRANDED COPPER CONDUCTORS OF SIZE (AWG) NOTED ON THE DRAWINGS. AS A MINIMUM, EQUIPMENT ENCLOSURES SHALL BE NEMA 4, 7 OR 12 UNLESS OTHERWISE NOTED ON DRAWINGS. ELECTRICAL WORK WITHIN BUILDING MECHANICAL ROOMS SHALL BE NEMA 4X OR 6P UNLESS OTHERWISE NOTED ON THE DRAWINGS.

H. GROUND CONDUCTORS SHALL BE PROVIDED IN EACH CONDUIT. CONNECT GROUND WIRE AT EACH END TO PANEL BOX, OUTLET BOX AND DEVICE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250.

I. ALL BARE METAL SURFACES SUBJECT TO RUSTING SHALL BE PRIMED AND PAINTED WITH GALVANIZING COMPOUND. PAINT SHALL BE EQUAL TO RUST OLEUM #7785 APPLIED OVER PRIMER #7769 OR #7773. FACTORY FINISHES SHALL BE TOUCHED UP, PRIMED AND PAINTED TO REMOVE ANY MARKS AND SCRATCHES.

J. SUBMIT FOR ENGINEER'S APPROVAL 6 COPIES OF SHOP DRAWINGS, SPECIFICATIONS, AND CATALOG SHEETS DEMONSTRATING COMPLIANCE WITH THE CONTRACT. ALSO SUBMIT 6 COPIES OF INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS INCLUDING TEST DATA, WIRING DIAGRAMS, AND SCHEMATICS.

K. AT COMPLETION, TEST AND DEMONSTRATE OPERATION OF ALL EQUIPMENT FOR ENGINEER'S AND OWNER'S ACCEPTANCE. TELEMETRY PANEL SHALL BE TESTED BY SIGNALING FALSE ALARMS.

L. POWER SHALL BE MAINTAINED TO ALL AREAS OF THE SITE AT ALL TIMES DURING CONSTRUCTION. ANY POWER SHUTDOWN SHALL BE COORDINATED AND COORDINATED WITH THE OWNER.

M. INSTALL SIGN ON TRANSFER SWITCH INDICATING: "CAUTION - DO NOT OPEN UNDER LOAD."

N. ALL PANELBOARDS SHALL BE DIRECT FEED TYPE Z SIZE. ENCLOSURES WITH MOLD CASE CIRCUIT BREAKERS WILLING MIN. INCLUDE SEPARATE NEUTRAL AND GROUND BUS. CIRCUIT BREAKERS SHALL BE 20A UNLESS OTHERWISE NOTED.
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING DAMPER MOTOR, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED DAMPER AFTER DEMOLITION OF EXISTING DAMPER. PROVIDE NEMA 12 MANUAL MOTOR STARTER FOR THE PROPOSED DAMPER. RECONNECT CONDUIT/WIRE TO MMS AND DAMPER.

2. DISCONNECT CONDUIT AND WIRE FROM EXISTING FAN, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED FAN AFTER DEMOLITION OF EXISTING FAN AND ACCESSORIES. PROVIDE 480V, 30A, 3 PHASE NEMA 12 COMBINATION STARTER FOR THE PROPOSED FAN. RECONNECT CONDUIT/WIRE TO STARTER AND FAN.
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED AHU. DISCONNECT ALL CONDUIT AND WIRE FROM THE PREEXISTING AHU TO PROTECT THE AHU FROM DAMAGE. COIL BACK AND PROTECT THE PROPOSED AHU. RECONNECT CONDUIT WIRE TO PROPOSED AHU.

2. DISCONNECT CONDUIT AND WIRE FROM EXISTING FAN LOCATED ON MEZZANINE LEVEL. COIL BACK AND PROTECT CONDUIT/WIRE FOR RECONNECTION TO PROPOSED FAN LOCATION. PROVIDE 480V, 30A, 3 PHASE NEMA 12 DISCONNECT FOR THE PROPOSED FAN. EXTEND CONDUIT AND WIRE UP THROUGH ROOF TO PROPOSED FAN LOCATION AND RECONNECT CONDUIT WIRE TO FAN.

3. DISCONNECT CONDUIT AND WIRE FROM EXISTING ACCU, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED ACCU. PROVIDE 480V, 30A, 3 PHASE NEMA 12 DISCONNECT FOR THE PROPOSED ACCU. RECONNECT CONDUIT/WIRE TO DISCONNECT AND ACCU.

4. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED AHU. DISCONNECT ALL CONDUIT AND WIRE FROM THE PREEXISTING AHU TO PROTECT THE AHU FROM DAMAGE. COIL BACK AND PROTECT THE PROPOSED AHU. RECONNECT CONDUIT WIRE TO PROPOSED AHU.

CONDUIT/WIRE SHALL BE EXTENDED/SHORTENED AS NECESSARY TO CONNECT TO NEW AHU LOCATION.
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROTECT AND ACCURATELY PROVIDE PROTECTIVE COVERS OR VIKS, THEN RECONNECT CONDUIT AND WIRE TO AHU. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROVIDE PROTECTIVE COVERS OR VIKS, THEN RECONNECT CONDUIT AND WIRE FROM AHU.

2. DISCONNECT CONDUIT AND WIRE FROM EXISTING ACCU/FAN/HEAT EXCHANGER, REMOVE WIRE BACK TO POWER SOURCE, INSTALL PULL LINE IN VACATED CONDUIT AND PROVIDE THREADED CAP. DEMOLISH EXISTING ACCU/FAN/HEAT EXCHANGER AND ACCESSORIES.

3. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROVIDE PROTECTIVE COVERS OR VIKS, THEN RECONNECT CONDUIT AND WIRE TO AHU. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROVIDE PROTECTIVE COVERS OR VIKS, THEN RECONNECT CONDUIT AND WIRE FROM AHU.
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING AHU, COIL BACK AND PROTECT FOR RECOMMENED TO BE PERFORMED AFTER DEMAISION OF EXISTING UNITS. PROVIDE 480V, 60A, 3 PHASE NEMA 3R DISCONNECT FOR THE PROPOSED AHU. RECONNECT CONDUIT/WIRE TO DISCONNECT AND AHU.
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING FAN. COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED FAN. AFTER DEMOLITION OF EXISTING FAN AND CONDUIT, PROVIDE 120V, 1 PHASE NEMA 3R MANUAL MOTOR STARTER (MMS) FOR THE PROPOSED FAN. RECONNECT CONDUIT/WIRE TO MMS AND FAN.

2. DEMOLISH MANUAL ON/OFF SWITCH FOR EXHAUST FAN. PROVIDE ON-OFF-AUTO SWITCH MOUNTED IN VACATED ON/OFF SWITCH LOCATION. PROVIDE NEMA 4X RATED LIMIT SWITCH WITH CONTACT RATED TO HANDLE FAN FULL LOAD AMPS TO MONITOR OPENING OF THE HATCH. PROVIDE CONDUIT AND WIRE TO CONNECT EQUIPMENT TOGETHER AS SHOWN IN SCHEMATIC BELOW.

SODIUM HYDROXIDE VAULT - ROOF

ELECTRICAL - SODIUM HYDROXIDE VAULT - ROOF

SCALE: 1/4" = 1'
GENERAL NOTES

1. DISCONNECT CONDUIT AND WIRE FROM EXISTING FAN, COIL BACK AND PROTECT FOR RECONNECTION TO PROPOSED FAN.  PROVIDE 120V, 1 PHASE NEMA 3R MANUAL MOTOR STARTER (MMS) FOR THE PROPOSED FAN. RECONNECT CONDUIT/WIRE TO MMS AND FAN.

ELECTRICAL AMMONIA BUILDING

SCALE: 1/2" = 1'
GENERAL NOTES

1. PROVIDE 120V, 1 PHASE NEMA 12 MANUAL MOTOR STARTER (MMS) FOR THE PROPOSED FAN. PROVIDE 3/4"C (3#10) FROM FAN TO NEAREST PANELBOARD. FAN AND DAMPER SHALL BE CONNECTED PER SCHEMATIC ON THIS SHEET.

2. PROVIDE 120V, 1 PHASE NEMA 12 MANUAL MOTOR STARTER FOR THE PROPOSED DAMPER. PROVIDE 3/4"C (3#10) FROM DAMPER TO FAN EF-F1. FAN AND DAMPER SHALL BE CONNECTED PER SCHEMATIC ON THIS SHEET.

3. FIELD VERIFY EXACT LOCATION OF PANELBOARD PRIOR TO BID. CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUIT/WIRE TO PANELBOARD. NO CHANGE ORDERS WILL BE GIVEN FOR EXTRA CONDUIT/WIRE TO EXACT LOCATION. PROVIDE 20 AMP SINGLE POLE CIRCUIT BREAKER FOR FEED TO FAN. SEE PICTURE TO LEFT FOR CLARIFICATION.
GENERAL NOTES:
1. PROVIDE ADDRESSABLE DUCT SMOKE DETECTOR IN SUPPLY DUCT. PROVIDE 3/4" C (FA CLASS 1 CABLE) TO FIRE ALARM PANEL. INSERT DETECTOR INTO EXISTING ADDRESSABLE LOOP. PROGRAM FA PANEL TO MONITOR AND ALARM ON SMOKE DETECTION.
2. PROGRAMMING OF FA PANEL TO MONITOR AND ALARM ON DETECTION OF SMOKE BY DUCT DETECTOR SHALL BE PERFORMED BY JOHNSON CONTROLS. CONTACT NUMBER IS 734-662-7264.