HVAC UPGRADES

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PROJECT PHASING

PHASE 1
DEMOLITION:

1. EVACUATE REFRIGERANT FROM AHU-1 / CU-1 AND AHU-2 / CU-2 AND REMOVE EACH UNIT.
2. REMOVE EF-1, EF-2 AND RI-1.
3. DEMOLISH ALL INDICATED DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ASSOCIATED WITH EACH UNIT.

PROPOSED INSTALLATION:

4. INSTALLATION OF NEW AHU-1, AHU-2, CU-1, CU-2, EF-1, EF-2, EF-4, RI-1, RI-2.
5. INSTALLATION OF NEW DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ASSOCIATED WITH EACH UNIT.
6. TESTING, ADJUSTING, AND BALANCING OF ALL NEW SYSTEMS.
7. CONTRACTOR TO THOROUGHLY CLEAN ALL EXISTING DUCTWORK WHICH IS TO REMAIN (TOILET EXHAUST, SUPPLY, RETURN AND OUTDOOR AIR). PROVIDE SIX (6) COPIES OF REPORT INCLUDING COLOR PHOTOS INDICATING DUCTWORK CONDITION BEFORE & AFTER CLEANING.

PHASE 2
DEMOLITION:

1. EVACUATE REFRIGERANT FROM AHU-3 / CU-3 AND REMOVE BOTH UNITS.
2. DEMOLISH ALL INDICTED DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ASSOCIATED WITH EACH UNIT.
3. REMOVAL OF CEILING TILES, CEILING GRID, LIGHTS, ETC. ASSOCIATED WITH NEW EF-3 ON FIRST FLOOR.

PROPOSED INSTALLATION:

4. INSTALLATION OF NEW AHU-3, CU-3 AND EF-3.
5. INSTALLATION OF NEW DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ASSOCIATED WITH EACH UNIT.
6. REINSTALLATION OF CEILING TILES, CEILING GRID, LIGHTS, ETC. ASSOCIATED ON FIRST FLOOR.
7. TESTING, ADJUSTING, AND BALANCING OF ALL NEW SYSTEMS.
8. CONTRACTOR TO THOROUGHLY CLEAN ALL EXISTING DUCTWORK WHICH IS TO REMAIN (TOILET EXHAUST, SUPPLY, RETURN AND OUTDOOR AIR). PROVIDE SIX (6) COPIES OF REPORT INCLUDING COLOR PHOTOS INDICATING DUCTWORK CONDITION BEFORE & AFTER CLEANING.

PHASE 3
DEMOLITION:

1. REMOVAL OF CEILING TILES, CEILING GRID, LIGHTS, ETC. ASSOCIATED WITH EACH FAN POWERED VAV TO BE REMOVED AND REPLACED.
2. REMOVAL OF FAN POWERED VAV BOXES, DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ON FIRST AND SECOND FLOORS.

PROPOSED INSTALLATION:

3. INSTALLATION OF NEW FAN POWERED VAV BOXES, DUCTWORK, PIPING, VALVES, CONTROLS, ETC. ON FIRST AND SECOND FLOORS.
4. TESTING, ADJUSTING, AND BALANCING OF ALL NEW SYSTEMS.
5. CONTRACTOR TO THOROUGHLY CLEAN ALL EXISTING DUCTWORK WHICH IS TO REMAIN (TOILET EXHAUST, SUPPLY, RETURN AND OUTDOOR AIR). PROVIDE SIX (6) COPIES OF REPORT INCLUDING COLOR PHOTOS INDICATING DUCTWORK CONDITION BEFORE & AFTER CLEANING.

PHASE 4
DEMOLITION:

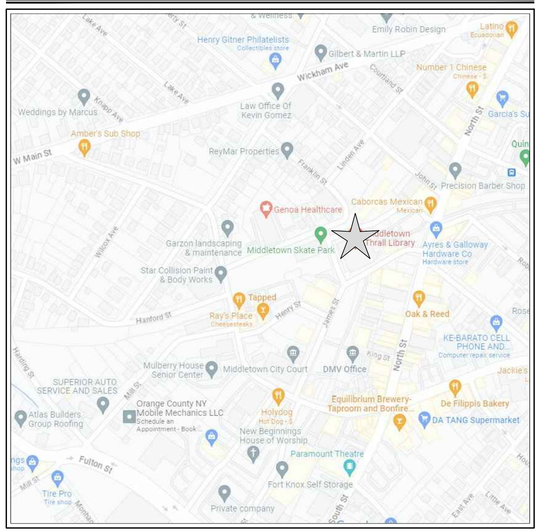
1. REMOVAL OF EXISTING BMS SYSTEM,

PROPOSED INSTALLATION:

3. PROVIDE NEW BMS SYSTEM AND INTERLOCK ALL NEW MECHANICAL EQUIPMENT INSTALLED IN PHASE 1,2, & 3, IN ADDITION, THE NEW BMS SYSTEM SHALL CONNECT EXISTING EQUIPMENT, E.G. BOILERS AND PUMPS LOCATED IN THE BSMNT.

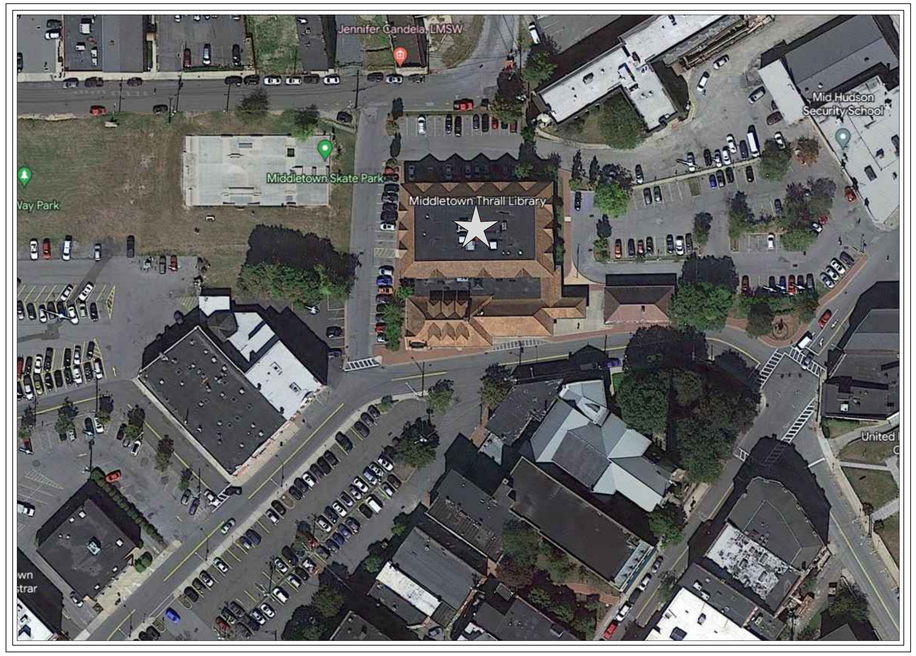
Location Map

NOT TO SCALE



Aerial View

NOT TO SCALE



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ABBREVIATIONS

&	=	AND			
@	=	AT	ID	=	INSIDE DIAMETER (DIM)
℄	=	CENTERLINE	IN	=	INCH
#	=	CFM	INSUL	=	INSULATION
∅	=	DIAMETER OR ROUND			
∿			JAN	=	JANITOR
ABV	=	ABOVE			
ACCU	=	AIR COOLED CONDENSING UNIT	LSD	=	LINEAR SLOT DIFFUSER
AD	=	ACCESS DOOR			
ADD'L	=	ADDITIONAL	MAX	=	MAXIMUM
ADJ	=	ADJUSTABLE	MD	=	MOTORIZED DAMPER
AHU	=	AIR HANDLING UNIT	MECH	=	MECHANICAL
ALT	=	ALTERNATE	MEP	=	MECHANICAL/ELECTRICAL/PLUMBING
AS-#	=	AIR SEPARATOR	MFR	=	MANUFACTURER
B-#	=	BOILER	MIN	=	MINIMUM
BLDG	=	BUILDING	MISC	=	MISCELLANEOUS
BOD	=	BOTTOM OF DUCT	MO	=	MASONRY OPENING
BOS	=	BOTTOM OF STEEL			
BP-#	=	BOILER PUMP	N.A.	=	NOT APPLICABLE
			NK	=	NECK SIZE
CD	=	CONDENSATE DRAIN	NTS	=	NOT TO SCALE
CL	=	CLOSET			
CLG	=	CEILING	OA	=	OUTSIDE AIR
CO	=	CARBON MONOXIDE	OC	=	ON CENTER
COL	=	COLUMN	OD	=	OUTSIDE DIAMETER
CONSTR	=	CONSTRUCTION	OPG	=	OPENING
CONT	=	CONTINUOUS			
CORR	=	CORRIDOR	P-#	=	PUMP
CTR	=	CENTER			
			R	=	RISER
DIA	=	DIAMETER	RA	=	RETURN AIR
DIM	=	DIMENSION	RAD	=	RADIUS
DN	=	DOWN	RAG	=	RETURN AIR GRILLE
DSD	=	DUCT SMOKE DETECTOR	RAR	=	RETURN AIR REGISTER
DWG	=	DRAWING	RM	=	ROOM
EA	=	EACH	SA	=	SUPPLY AIR
EAR	=	EXHAUST AIR REGISTER	SAD	=	SUPPLY AIR DIFFUSER
EF	=	EXHAUST FAN	SAG	=	SUPPLY AIR GRILLE
ELEC	=	ELECTRIC	SAR	=	SUPPLY AIR REGISTER
ENGR	=	ENGINEER (ING)	SD	=	SMOKE DETECTOR
EQ	=	EQUAL	SECT	=	SECTION
EQUIP	=	EQUIPMENT	SPEC	=	SPECIFICATION
ET-#	=	EXPANSION TANK	STD	=	STANDARD
ETR	=	EXISTING TO REMAIN	STG	=	STORAGE
(E)/EXIST	=	EXISTING			
			TG	=	TRANSFER AIR GRILLE
FAI	=	FRESH AIR INTAKE	TOD	=	TOP OF DUCT
FC	=	FLEXIBLE CONNECTION	TX	=	TOILET EXHAUST
FD	=	FIRE DAMPER	TYP	=	TYPICAL
FF	=	FINISHED FLOOR			
FLR	=	FLOOR	UH-#	=	UNIT HEATER
FP	=	FIRE PROTECTION	UTIL	=	UTILITY ROOM
FSD	=	FIRE/SMOKE DAMPER			
			VAV	=	VARIABLE AIR VOLUME BOX
GA	=	GAUGE	VD	=	VOLUME DAMPER
GALV	=	GALVANIZED	VFD	=	VARIABLE FREQUENCY DRIVE
GPM	=	GALLONS PER MINUTE	VIF	=	VERIFY IN FIELD
GRD	=	GRAVITY RELIEF DAMPER			
			W/	=	WITH
HVAC	=	HEAT/VENT/AIR COND.	W/O	=	WITHOUT
HW	=	HOT WATER	WMS	=	WIRE MESH SCREEN
HWH	=	HOT WATER HEATER	WT	=	WEIGHT
HWR	=	HOT WATER RETURN			
HWRR	=	HOT WATER REVERSE RETURN			
HWS	=	HOT WATER SUPPLY			

H.V.A.C. MATERIALS

EQUIPMENT:

- REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND CAPACITY DATA.

DUCTWORK:

- INDOOR SUPPLY, RETURN AND EXHAUST DUCTWORK, EXCEPT AS INDICATED BELOW, SHALL BE GALVANIZED STEEL CONSTRUCTION. WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND/OR SMACNA STANDARDS.
- OUTDOOR AIR INTAKE DUCTWORK SHALL BE ALUMINUM CONSTRUCTION, CLASS "A" SEALED.
- FLEXIBLE DUCTWORK: SHALL NOT EXCEED THREE (3) FEET IN LENGTH. FOR ANY HORIZONTAL FLEX DUCT BRANCH TO A CEILING DIFFUSER, FURNISH A 90° BRACE TO MAINTAIN A LONG RADIUS ELBOW TO THE DIFFUSER ("TITUS" MAKE, MODEL "FLEXRIGHT").
- FIRE DAMPER: GREENHECK MAKE, MODEL FD-150 TYPE B (BLADES OUT OF AIRSTREAM), 1-1/2 HOUR RATED (UNLESS OTHERWISE NOTED) UL-555 LABELED DAMPER WITH STANDARD FRAME OR APPROVED EQUAL. PROVIDE WITH A RETAINING ANGLE AND AN ACCESS DOOR.

PIPING:

- HOT WATER PIPING: SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER SOLDER FITTINGS (3" OR UNDER) OR SCHEDULE 40 BLACK STEEL WITH WELDED FITTINGS (4" OR OVER).
- CONDENSATE DRAIN PIPING: SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER FITTINGS.
- REFRIGERANT PIPING: SHALL BE HARD COPPER TYPE "K" WITH WROUGHT COPPER FITTINGS.

INSULATION:

- EXTERNAL DUCT INSULATION: R-6, 1-1/2" THICK, MIN. 1 LB. DENSITY FLEXIBLE FIBERGLASS DUCT INSULATION WITH REINFORCED FOIL FACED FLAME RESISTANT KRAFT VAPOR BARRIER, ADHERED TO DUCT W/ SEALED LAPS AND TAPED JOINTS.
- INTERNALLY LINED DUCT: R-6, 1-1/2" THICK, MIN. 1.0 LB. DENSITY RIGID INSULATION ADHERED TO DUCT. DUCTS WIDER THAN 12" TO HAVE WELDED PINS AND WASHERS. DUCT DIMENSIONS AS INDICATED ARE CLEAR INSIDE DUCT DIMENSIONS.
  NOTES:
  1. ALL SUPPLY & RETURN AIR DUCTWORK SHALL BE INTERNALLY LINED FOR A MIN. OF 25' TO AND FROM ANY RTU OR AHU.
  2. ALL SUPPLY AIR DUCTWORK SHALL BE INTERNALLY LINED FOR A MINIMUM OF 15' DOWNSTREAM OF ALL VAV BOXES.
- DUCT INSULATION NOTE: PROVIDE A MINIMUM 6" OVERLAP WHERE INTERNAL INSULATION ENDS AND EXTERNAL INSULATION BEGINS.
- ALL CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC ("AP ARMAFLEX BLACK LAPSEAL").
- FRESH AIR INTAKE AND EXPOSED DUCT: R-6, 1-1/2" THICK, MIN. 1 LB. DENSITY RIGID FIBERGLASS DUCT INSULATION WITH FOIL FACING VAPOR BARRIER FASTENED WITH WELDED CLIPS, CEMENTED JOINTS WITH ALUMINUM TAPE.
- HEATING HOT WATER PIPES SHOULD BE INSULATED WITH FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ASJ JACKET. INSTALL WITH APPROVED ADHESIVE AND STAPLES. REFER TO SPECIFICATIONS FOR INSULATION THICKNESS.
- REFRIGERANT SUCTION & HOT GAS BY-PASS PIPING SHALL BE INSULATED WITH MIN. 1" THICK FLEXIBLE ELASTOMERIC INSULATION.
- EXTERIOR REFRIGERANT SUCTION & HOT GAS BYPASS SHALL BE PROVIDED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION AND BE PROVIDED WITH A MIN. 30 MIL PVC FIELD-APPLIED JACKET.

AIR DEVICES:

- RAR - TITUS MAKE, MODEL 50F, 24"x24" EGG CRATE
- NOTES:
  1. ALL CEILING DIFFUSERS LOCATED IN ACOUSTIC CEILING GRID SHALL BE PROVIDED WITH FRAME TYPE FOR GRID MOUNTING. IF THE TILE IS SMALLER THAN TILE SIZE, THE DIFFUSER SHALL BE PROVIDED WITH FRAME TYPE FOR CEILING TYPE.
  2. ALL CEILING DIFFUSERS LOCATED IN GYPSUM BOARD AND/OR CONCEALED SPLINE CEILINGS SHALL BE PROVIDED WITH FRAME TYPE FOR SURFACE MOUNTING
  3. COLOR OF AIR OUTLETS/INLETS SHALL MATCH THE CEILING COLOR.
  4. ALL AIR OUTLETS/INLETS TOILETS, CORRIDORS, AND KITCHEN SHALL BE ALUMINUM CONSTRUCTION

ACCESS DOORS

- FURNISH AND INSTALL ACCESS DOORS AT ALL LOCATIONS WHERE VALVES, DAMPERS, CONTROLS, VENTS, DRAINS, ETC. ARE TO BE INSTALLED ABOVE OR BEHIND ANY INACCESSIBLE SURFACE (GYPSUM BOARD, CMU, ETC.), IRRESPECTIVE OF WHETHER THEY ARE INDICATED ON ALL DRAWINGS OR NOT. ACCESS DOORS SHALL BE A SUITABLE SIZE TO MAINTAIN, OPERATE, REPAIR, AND REPLACE ALL EQUIPMENT. ACCESS DOORS SHALL BE FACTORY PRIMED AND PAINTED TO MATCH THE SURFACE IN WHICH THEY ARE INSTALLED.

VALVES: ISOLATION VALES SHALL BE BALL VALVES. BALANCING VALVES SHALL BE GLOBE VALVES.

SYMBOLS

NOT TO SCALE

= SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND CFM INDICATED ON PLANS

= 3-WAY SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND CFM INDICATED ON PLANS.

= 2-WAY SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND CFM INDICATED ON PLANS.

= RETURN AIR REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLANS

= EXHAUST AIR REGISTER (EAR); GRAVITY RELIEF GRILLE (GRG) WITH NECK SIZE AND CFM INDICATED ON PLANS

= SUPPLY AIR WALL REGISTER/GRILLE (SAR) WITH NECK SIZE AND CFM INDICATED ON PLANS

= RETURN AIR WALL REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLAN

= POINT OF CONNECTION OF NEW PIPING/DUCTWORK TO EXISTING

= POINT OF DISCONNECTION OF NEW PIPING/DUCTWORK TO EXISTING

OR W" X D" = INDICATES HARD DUCT WITH INTERNAL LINING (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH)

OR W" X D" = INDICATES HARD DUCT (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH)

Ø" = INDICATES FLEXIBLE DUCT (DIMENSIONS ARE INSIDE CLEAR DIAMETER; LENGTH NOT TO EXCEED THREE (3) FEET.

= DUCT TURN UP (SUPPLY, RETURN, EXHAUST)

= DUCT TURN DOWN (SUPPLY, RETURN, EXHAUST)

DSD/AD = DUCT SMOKE DETECTOR WITH ACCESS DOOR

FD/AD = FIRE DAMPER WITH ACCESS DOOR

FSD/AD = FIRE/SMOKE DAMPER WITH ACCESS DOOR

VD = VOLUME DAMPER

BDD = BACK DRAFT DAMPER

M = MOTORIZED DAMPER

T = INDICATES NEW WALL MOUNTED THERMOSTAT.

CO2 = CO_2 SENSOR

= SHUT OFF VALVE (SUPPLY SIDE)

= BALANCING VALVE (RETURN SIDE)

= MECHANICAL EXPANSION JOINT

M = MOTORIZED VALVE

= CHECK VALVE

OR = BALL VALVE

= STRAINER

= OS&Y VALVE

= 2-WAY CONTROL VALVE

= 3-WAY CONTROL VALVE

= UNION

= PRESSURE GAUGE

= TEMPERATURE GAUGE

= INDICATES EXISTING TO BE REMOVED

= 6" HIGH CONCRETE HOUSEKEEPING PAD (TYP. FOR ALL FLOOR MOUNTED EQUIPMENT)

= REFRIGERANT PIPING

= MATCH LINE

= PHASE SEPARATION LINE

= HOT WATER SUPPLY

= HOT WATER RETURN

= CONDENSATE DRAIN

= PIPE TURN UP

= PIPE TURN DOWN

NORTH = PROJECT NORTH

CLOSET / 101 = ROOM NAME / ROOM NUMBER

= REVISION

NUMBER B / SHEET A-9 = ELEVATION

NUMBER B / SHEET A-9 = SECTION/DETAIL

= UNDERCUT DOOR (1/2 INCH)

H.V.A.C. GENERAL NOTES

1. PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN. OBTAIN AND PAY FOR ALL FEES.
2. COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED.
3. GUARANTEE H.V.A.C. SYSTEMS FOR A PERIOD OF TWO (2) YEARS FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS.
4. H.V.A.C. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS.
5. BALANCE AIR AND WATER SYSTEMS TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT SIX (6) SETS OF AIR, WATER AND UNIT BALANCING REPORT TO ARCH./ENGR./OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.
6. BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ARCH. & ENGR. OF ALL DISCREPANCIES PRIOR TO SUBMITTING BID.
7. ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK.
8. THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENTLY ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM.
9. SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT ALL MATERIALS & COMPONENTS NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.
10. THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS.
11. CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF PIPING AND DUCTWORK.
12. IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.
13. ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.
14. CONTRACTOR TO SUBMIT SIX (6) SETS OF DUCT AIR LEAKAGE TESTING REPORT FOR REVIEW.
15. PROVIDE ONE SET OF SPARE FILTERS FOR ALL INSTALLED HV/HVAC UNITS.
16. PROVIDE TWO YEAR MAINTENANCE SERVICE FOR ALL INSTALLED HV/HVAC/MECHANICAL SYSTEMS. THIS INCLUDES A MINIMUM OF THREE PERIODIC SERVICE VISITS TO INSPECT, TEST & CHECK ALL COMPONENTS OF HVAC/HV UNITS AND ANY ADDITIONAL VISITS REQUIRED IF ANY HVAC/HV UNIT FAILS. ALL NECESSARY BELT ALIGNMENTS, PROPER OPERATIONS OF ALL DAMPERS, ETC IS INCLUDED IN THIS SCOPE OF WORK.
17. PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR NOT.
18. PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC. PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS.
19. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS.
20. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONTAINER SERVICES AND LABOR TO KEEP THE BUILDING FREE OF DEBRIS.
21. CONTRACTOR TO THOROUGHLY CLEAN ALL EXISTING DUCTWORK WHICH IS TO REMAIN (TOILET EXHAUST, SUPPLY, RETURN AND OUTDOOR AIR). PROVIDE SIX (6) COPIES OF REPORT INCLUDING COLOR PHOTOS INDICATING DUCTWORK CONDITION BEFORE & AFTER CLEANING.
22. PROVIDE NEW VOLUME DAMPERS IN EXISTING DUCTWORK (SUPPLY/RETURN/EXHAUST) WHICH IS TO BE REUSED WHERE THERE ARE NO EXISTING VOLUME DAMPERS (TYPICAL FOR ALL).
23. CONTRACTOR TO PROVIDE NEW WALL MOUNTED THERMOSTATS IN TAMPER PROOF ENCLOSURES FOR ALL AHU'S, RTU'S, VAV BOXES, CABINET HEATERS, UV'S FCU'S, AC UNITS, ETC. IRRESPECTIVE OF WHETHER THEY ARE INDICATED ON ALL DRAWINGS OR NOT. CONTRACTOR TO INDICATE THERMOSTAT LOCATIONS ON ALL SHOP DRAWINGS.
24. CONTRACTOR TO NOTE THAT BOTH DWGS. & SPECS. ARE COLLECTIVELY A PART OF BID REQUIREMENTS. IN CASE OF ANY DIFFERENCES BETWEEN VARIOUS DWGS. OR BETWEEN DWGS. & SPECS, THE MOST STRINGENT REQUIREMENT WILL PREVAIL.
25. CONTRACTOR TO SUBMIT SIX (6) SETS OF OPERATION & MAINTENANCE MANUALS, INCLUDING A SUMMARY SHEET OF ALL EQUIPMENT MFRS/MODEL #/SERIAL #'S, SHOP DRAWING SUBMITTALS, WARRANTY INFORMATION, O&M MANUALS, PROJECT INFORMATION, CONTACT DETAILS & AS-BUILT DRAWINGS.
26. CONTRACTOR TO PROVIDE SIX (6) SETS AND AN ELECTRONIC COPY OF AS-BUILT DRAWINGS OF THE ENTIRE SYSTEM.
27. PROVIDE PROPER IDENTIFICATION TAGS, ARROWS, AND LABELS FOR ALL EQUIPMENT INCLUDING BOILERS, PUMPS, PIPING, VALVES, ELECTRICAL PANELS, ETC.
28. CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) TRAINING SESSIONS (TWO HOURS EACH) THAT ARE TO BE VIDEOTAPED FOR THE OWNERS USE, TO OWNER'S MAINTENANCE STAFF ON PROPER OPERATION, MAINTENANCE & COMMON TROUBLE-SHOOTING GUIDELINES.
29. CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) TRAINING SESSIONS (TWO HOURS EACH) THAT ARE TO BE VIDEOTAPED FOR THE OWNERS USE, TO OWNER'S MAINTENANCE STAFF ON PROPER OPERATION, MAINTENANCE, TROUBLE-SHOOTING, ALARM MANAGEMENT, ETC. OF THE NEW BUILDING MANAGEMENT SYSTEM. REFER TO SPECIFICATION 230900 FOR ADDITIONAL INFORMATION.
30. REFRIGERANT EVACUATION AND DISPOSAL FOR REMOVAL OF EXISTING AIR-CONDITIONING EQUIPMENT SHALL BE DONE AS PRESCRIBED IN EPA REFRIGERANT RECYCLING REQUIREMENTS OF SECTION 608 OF THE CLEAR AIR ACT, AS AMENDED, INCLUDING FINAL REGULATIONS. TECHNICIANS AND THEIR RECOVERY EQUIPMENT MUST BE EPA CERTIFIED. EACH PIECE OF EQUIPMENT RECOVERED MUST BE DOCUMENTED. THE TYPE AND QUANTITIES OF REFRIGERANT REMOVED MUST BE RECORDED AND PROOF OF PROPER DISPOSAL AVAILABLE FOR EPA INSPECTION.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE LATEST EDITIONS OF THE NEW YORK STATE ENERGY CODE, INTERNATIONAL MECHANICAL CODE, ASHRAE GUIDELINES, SMACNA, ORANGE COUNTY GUIDELINES, NEC, NATIONAL STANDARD PLUMBING CODE, AND ALL OTHER APPLICABLE CODES, ORDINANCES, ETC. FOR NEW YORK STATE AND THE LOCAL AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND FAMILIARIZING HIMSELF WITH THE EXISTING CONDITIONS AND SCOPE OF THE WORK PRIOR TO SUBMITTING BIDS AND COMMENCING WORK, AND INCLUDE ALL SUCH NECESSARY WORK BASED ON THIS SITE FAMILIARIZATION IN THIS BID.
3. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFE WORKING CONDITIONS AND SHALL OBSERVE ALL SAFETY REQUIREMENTS ESTABLISHED BY JURISDICTIONAL AGENCIES AND THE OWNER. WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENT SHALL APPLY. CARE SHALL BE EXERCISED TO AVOID ENDANGERING PERSONNEL OR STRUCTURES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS & METHODS, PROCEDURES AND JOB SITE CONDITIONS INCLUDING SAFETY. CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER TO PROTECT WORKMEN, OCCUPANTS AND THE PUBLIC FROM INJURY AND ADJOINING PROPERTY SHALL BE PROTECTED FROM DAMAGE BY USE OF SCAFFOLDING, UNDERPINNING OR OTHER APPROVED METHOD. THE CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGE CAUSED DURING OR RESULTING FROM HIS OPERATIONS IN KIND TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A CLEAN, DEBRIS FREE CONDITION. THE DUST RESULTING FROM REMOVALS SHALL BE CONTROLLED SO AS TO PREVENT ITS SPREAD TO OCCUPIED PORTIONS OF THE BUILDING AND TO AVOID CREATION OF A NUISANCE IN THE SURROUNDING AREA.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, APPROVALS, ETC. PRIOR TO COMMENCING WORK AND SHALL SECURE CERTIFICATE OF OCCUPANCY UPON COMPLETION OF WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE TO DISPOSE OF ALL DEMOLISHED MATERIAL OFF SITE IN AN APPROVED MANNER. THE OWNER SHALL BE CONSULTED PRIOR TO DISPOSAL OF ANY SALVAGED OR EXCESS MATERIALS AT THE COMPLETION OF THE PROJECT.
8. UPON COMPLETION OF WORK, ALL EXCESS MATERIAL, DEBRIS, ETC. SHALL BE REMOVED AND THE WORK AREA SHALL BE LEFT CLEAN TO THE OWNER'S SATISFACTION.
9. ALL WORK SHALL BE SCHEDULED IN COMPLIANCE WITH THE OWNER'S REQUIREMENTS FOR THE USE OF THE EXISTING FACILITY.
10. CONTRACTOR SHALL FURNISH ALL EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER, AND AS NECESSARY FOR A PROPER OPERATIONAL SYSTEM.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION AND TEMPORARY SUPPORT OF ANY UTILITIES ENCOUNTERED DURING THE COURSE OF HIS WORK AND TO ENSURE THE OWNER'S FACILITY TO BE OPERATIONAL.
12. CONTRACTOR SHALL REVIEW DRAWINGS AND FIELD VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND ADDRESS ALL QUESTIONS TO ARCHITECT/ENGINEER PRIOR TO COMMENCING WORK.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, FILLING AND CLEANING UPON COMPLETION OF WORK.
14. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS. ALL WRITTEN OR DIMENSIONED INFORMATION TAKES PRECEDENCE OVER THE DRAWING.
15. CONTRACTOR SHALL SUBMIT, WHERE REQUIRED BY THE ARCH/ENGR, SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL PRIOR TO THE START OF FABRICATION OF THOSE ITEMS. THIS INCLUDES ALL EQUIPMENT, SCHEMATIC DUCTWORK AND PIPING LAYOUT, BOILER ROOM LAYOUT, ETC. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EQUIPMENT ETC WILL FIT (WITH PROPER MAINTENANCE CLEARANCES) AT ALL LOCATIONS. REVIEW OF SHOP DRAWINGS/SUBMITTALS BY THE ARCH/ENGR DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE CURRENT MODEL NUMBERS, TYPE, & FEATURES OF ALL EQUIPMENT'S & MATERIALS.
16. CONTRACTOR SHALL PROVIDE THE OWNER AND ARCHITECT WITH CERTIFICATES OF INSURANCE PRIOR TO STARTING THE WORK.
17. CONTRACTOR SHALL SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF EXISTING STRUCTURES AS NEEDED TO COMPLETE THE NEW WORK.
18. ALL MANUFACTURER'S MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC. SHALL BE HANDLED AND INSTALLED IN ACCORDANCE TO WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. WHERE BRAND NAMES AND MANUFACTURED PRODUCTS ARE CALLED FOR, APPROVED EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE SUBSTITUTED WITH WRITTEN PERMISSION OF THE ARCHITECT AND THE OWNER. WHENEVER BRAND NAMES OR SPECIFIC PRODUCT SYSTEMS ARE INDICATED IT SHALL BE CLEARLY UNDERSTOOD THAT SUCH IDENTIFICATION IS FOR THE PURPOSE OF ILLUSTRATING THE TYPE OF PRODUCT AND DEGREE OF QUALITY DESIRED. SUCH IDENTIFICATION IN NO WAY PRECLUDES THE CONTRACTOR FROM USING PRODUCTS OF OTHER MANUFACTURERS WHICH CAN BE SHOWN IN ADVANCE TO BE OF LIKE AND OF EQUAL OR BETTER QUALITY.
19. ALL CHANGES SHALL BE REQUESTED IN WRITING AND MAY ONLY BE APPROVED IN WRITING BY THE ARCHITECT/ENGINEER AND THE OWNER PRIOR TO ANY CHANGES BEING MADE.
20. THE ARCHITECT HAS THE RIGHT TO REJECT ANY PORTION OF WORK THAT IS POORLY INSTALLED, DOES NOT MEET INDUSTRY STANDARD, UNAUTHORIZED, OR WORK DONE CONTRARY TO THE THE INTENT OF THE CONTRACT DOCUMENTS. SUCH WORK SHALL BE REPLACED, REPAIRED OR REMOVED AT THE CONTRACTOR'S EXPENSE.
21. CONTRACTOR SHALL GUARANTEE ALL HIS WORK AND THE WORK OF HIS SUBCONTRACTORS FOR A PERIOD TWO (2) YEARS AFTER RECEIVING FINAL ACCEPTANCE AND DO ALL REPAIR WORK AND REPLACEMENT AS NECESSARY DURING THAT PERIOD AT THE CONTRACTOR'S EXPENSE.
22. IN NO EVENT SHALL STRUCTURAL MEMBERS BE CUT OR DRILLED WITHOUT THE WRITTEN APPROVAL OF A LICENSED STRUCTURAL ENGINEER.
23. CONTRACTOR SHALL PROVIDE SAFE AND SANITARY CONDITIONS WHERE DEMOLITION AND WRECKING OPERATIONS ARE BEING CARRIED ON. WORK SHALL BE EXECUTED IN SUCH A MANNER THAT HAZARD FROM FIRE, POSSIBILITY OF INJURY, DANGER TO HEALTH AND CONDITIONS WHICH MAY CONSTITUTE A PUBLIC NUISANCE SHALL BE MINIMIZED.
24. ENGINEER/OWNER MAY ASK THE CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS & SUBMITTALS OF ANY/ALL PARTS OF THIS PROJECT WHICH THE ENGINEER/OWNER DEEMS NECESSARY FOR.
25. CONTRACTOR TO NOTE THAT WHENEVER THE OUTDOOR TEMPERATURE IS BELOW 50°F, UNINTERRUPTED HEATING SHOULD BE PROVIDED AT ALL BOILER ROOMS IN THIS PROJECT DURING OCCUPIED HOURS. WORK SHOULD BE SCHEDULED ACCORDINGLY.

Date	01/25/24
Checked	MAM
Drawn	JPD

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MECH. ABBREVIATIONS, NOTES AND SYMBOLS

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 41160302M001

M0.01

Demolition Key Notes

SYMBOL INDICATES DEMOLITION KEY NOTE

1. TEMPORARILY DISCONNECT ELECTRICAL CONNECTION TO FAN POWERED VAV BOX. REFER TO ELECTRICAL PLANS FOR DISCONNECT AND RECONNECTION OF (N) VAV BOXES.
2. REMOVE FAN POWERED VAV UNIT & ALL APPURTENANCES INCLUDING THERMOSTAT, CONTROLS WIRING, INLET FLEXIBLE DUCT CONNECTION, AND 3-WAY CONTROL VALVE.
3. REMOVE REFRIGERANT PIPING IN ITS ENTIRETY FROM AHU-3 TO CU-3. REUSE ROUTING FOR (N) PIPING.

Demolition Plan Notes

1. EXISTING CEILING GRID. ACOUSTIC TILES, LIGHTING, ETC. SHALL BE CAREFULLY REMOVED TO ACCESS THE EXISTING DUCTWORK AND VAV BOXES. UPON COMPLETION OF THE DUCT CLEANING AND AIR DEVICES BALANCING, ALL CEILINGS, LIGHTING, ETC. SHALL BE REINSTALLED. CONTRACTOR SHALL REPLACE ANY DAMAGED TILES TO MATCH EXISTING AND CLEAN CEILING GRID & TILES OF ALL FINGERPRINTS, ETC.
2. CONTRACTOR SHALL VERIFY IN FIELD EXACT DUCT ROUTING AND CONNECTIONS. CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE ANY WORK IS TO BE PERFORMED. REPORT ANY DISCREPANCIES TO ENGINEER.
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4. FURNISH AND INSTALL ISOLATION VALVES AND BLIND FLANGES/CAPS FOR ANY PIPING THAT IS TO BE REUSED AND MUST REMAIN ENERGIZED.
5. CONTRACTOR SHALL VERIFY EXISTING DUCTWORK AND PIPE SIZES IN FIELD AND REPORT ANY DISCREPANCIES TO ENGINEER.
6. ALL ELECTRICAL RELATED TO EQUIPMENT BEING REMOVED SHALL BE PROPERLY TERMINATED IN ACCORDANCE WITH THE LATEST NEC CODES. REFER TO ELECTRICAL DRAWINGS.

1 M1.01 Mechanical First Floor Demolition Plan

1/8" = 1'-0"

NORTH

Key Plan

N.T.S.

NORTH

Phases 2 & 3

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MECHANICAL FIRST FLOOR DEMOLITION PLAN

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11 DEPOT STREET
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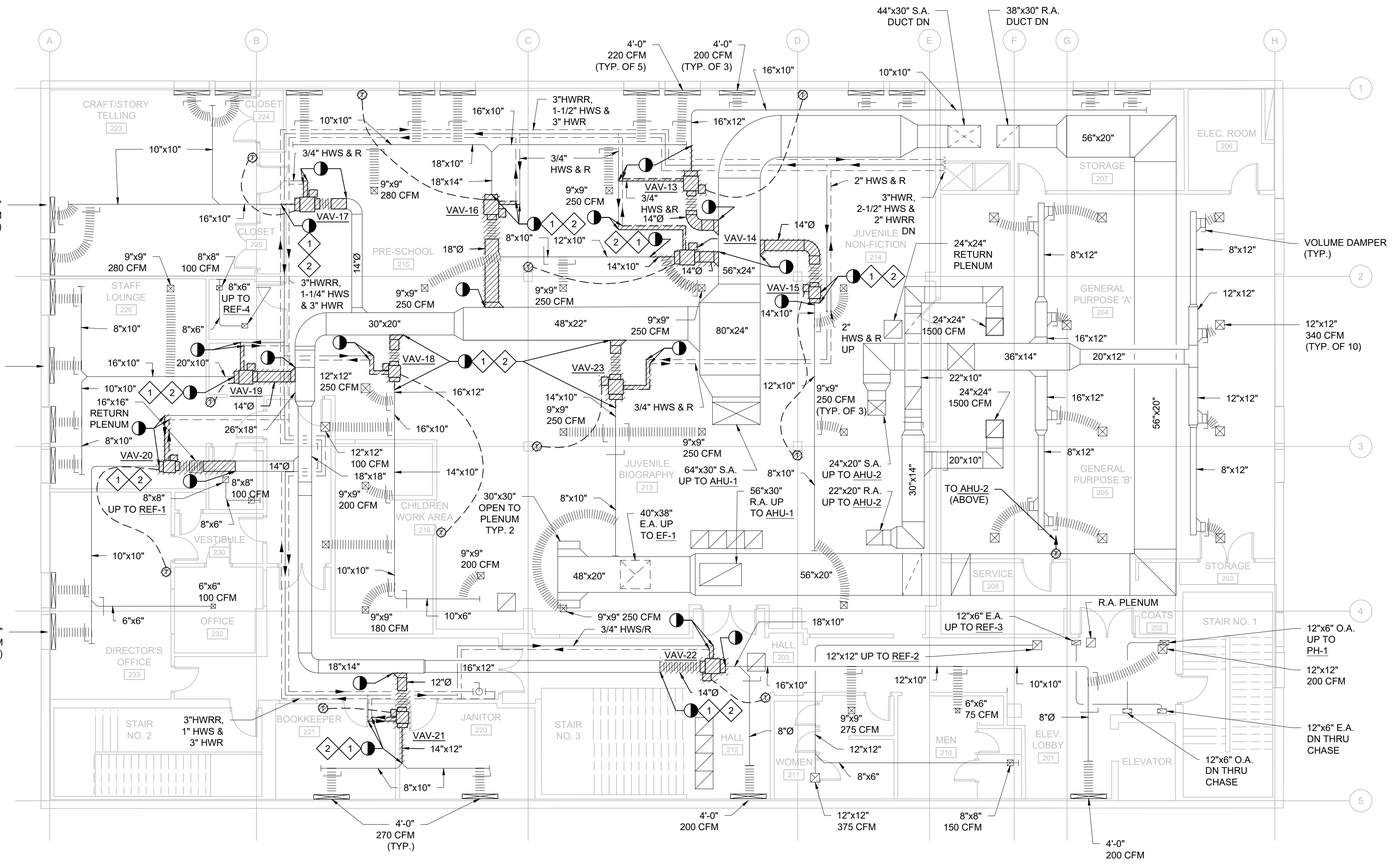
Job No. 4.1603.02

File No. 4160302M101

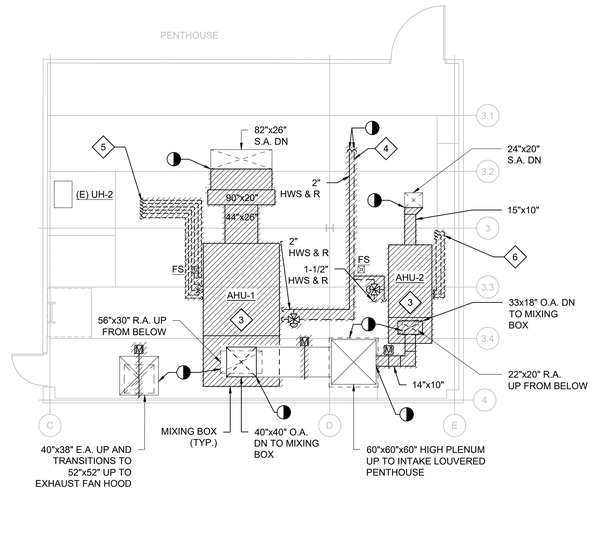
M1.01



1 M1.02 Mechanical Second Floor Demolition Plan

1/8" = 1'-0"

NORTH



2 M1.02 Mechanical Penthouse Demolition Plan

1/8" = 1'-0"

NORTH

Demolition Key Notes

◇ # SYMBOL INDICATES DEMOLITION KEY NOTE

1. TEMPORARILY DISCONNECT ELECTRICAL CONNECTION TO FAN POWERED VAV BOX. REFER TO ELECTRICAL PLANS FOR DISCONNECTION AND RECONNECTION OF (N) VAV BOXES.
2. REMOVE FAN POWERED VAV UNIT & ALL APPURTENANCES INCLUDING THERMOSTAT, CONTROLS WIRING, INLET FLEXIBLE DUCT CONNECTION, AND 3-WAY CONTROL VALVE.
3. REMOVE EXISTING FLOOR MOUNTED AHU AND REMOVE ALL DUCTWORK AND PIPING AS INDICATED UP TO POINTS OF DISCONNECT SHOWN ON THE PLANS. REMOVE ALL REFRIGERANT PIPING BACK TO ASSOCIATED CONDENSING UNIT. REFER TO ELECTRICAL PLANS FOR REMOVAL AND TERMINATION OF ELECTRICAL FEEDERS.
4. REMOVE 3-WAY CONTROL VALVE, CONTROL WIRING AND HOT WATER SUPPLY AND RETURN PIPING UP TO POINT OF DISCONNECTION AS SHOWN.
5. 1-1/8" L, 2-1/8" S & 7/8" HG (TYP. OF 2 CIRCUITS) UP TO CU-1. SEE 1/M1.03 FOR CONTINUATION.
6. 7/8" L, 2-1/8" S, 1-3/8" HG UP TO CU-2. SEE 1/M1.03 FOR CONTINUATION.

Demolition Plan Notes

1. EXISTING CEILING GRID. ACOUSTIC TILES, LIGHTING, ETC. SHALL BE CAREFULLY REMOVED TO ACCESS THE EXISTING DUCTWORK AND VAV BOXES. UPON COMPLETION OF THE DUCT CLEANING AND AIR DEVICES BALANCING, ALL CEILINGS, LIGHTING, ETC. SHALL BE REINSTALLED. CONTRACTOR SHALL REPLACE ANY DAMAGED TILES TO MATCH EXISTING AND CLEAN CEILING GRID & TILES OF ALL FINGERPRINTS, ETC.
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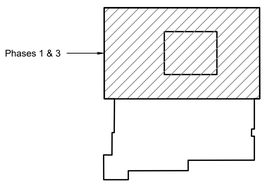
6. ALL ELECTRICAL RELATED TO EQUIPMENT BEING REMOVED SHALL BE PROPERLY TERMINATED IN ACCORDANCE WITH THE LATEST NEC CODES. REFER TO ELECTRICAL DRAWINGS.
7. EXISTING AIR HANDLING UNITS AND ALL RELATED CONTROLS AND TRIMS INCLUDING CONTROL VALVES, SHUT-OFF VALVES, STRAINERS, ETC. TO BE REMOVED, UNLESS OTHERWISE NOTED.



Key Plan

N.T.S.

NORTH

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MECHANICAL DEMOLITION PLANS

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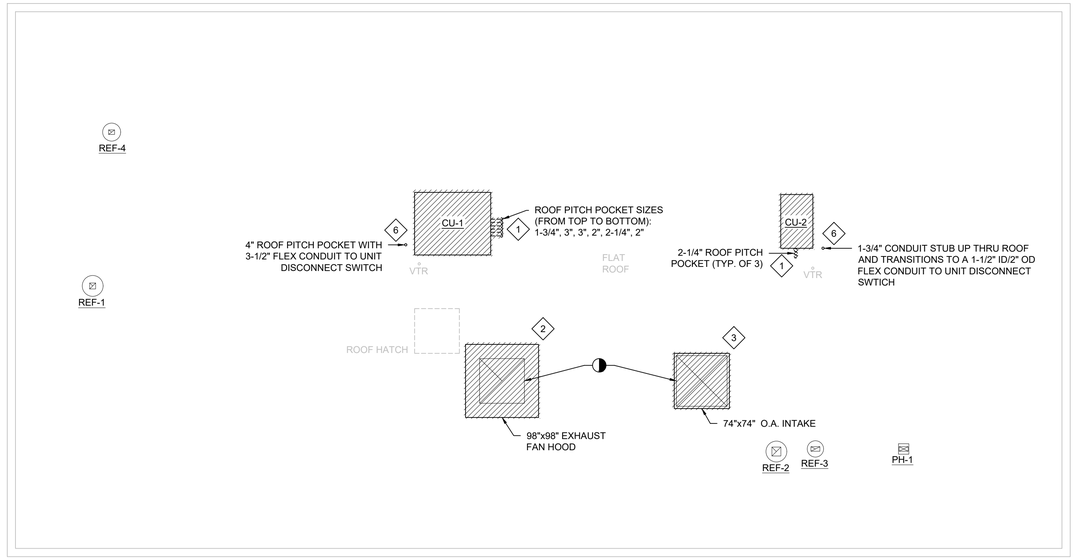
Job No. 4.1603.02

File No. 4160302M102

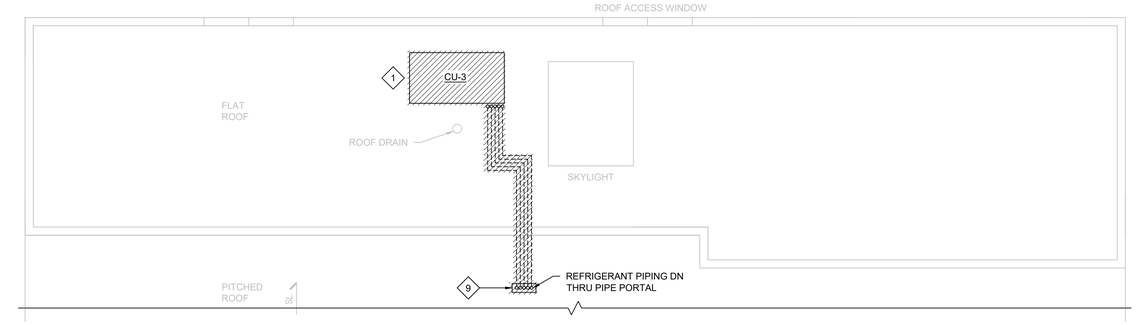
M1.02



1 M1.03 Mechanical Penthouse Roof Demolition Plan

1/8" = 1'-0"

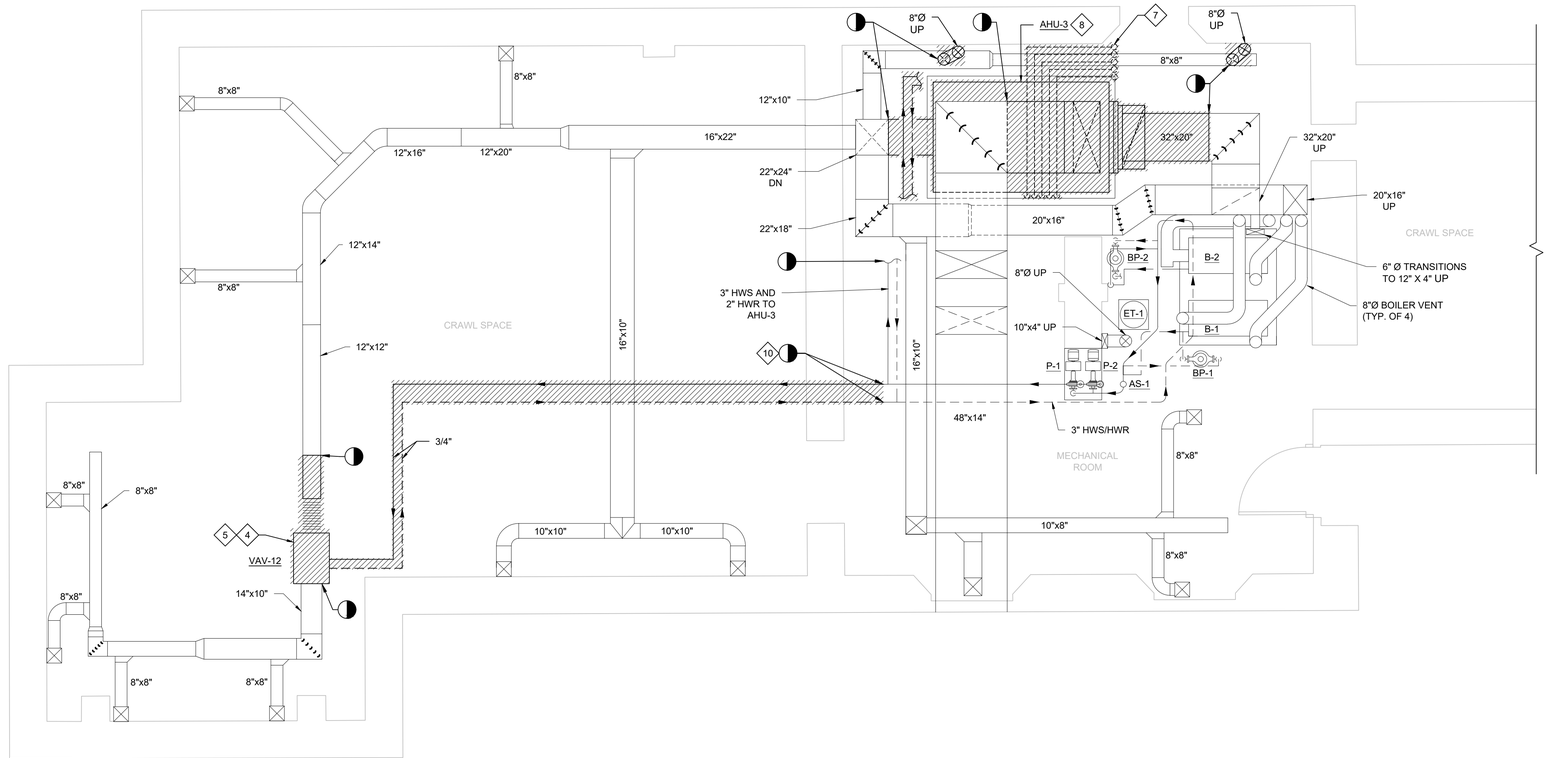
NORTH



2 M1.03 Mechanical Roof Demolition Plan

1/8" = 1'-0"

NORTH



3 M1.03 Mechanical Basement Demolition Plan

1/4" = 1'-0"

NORTH

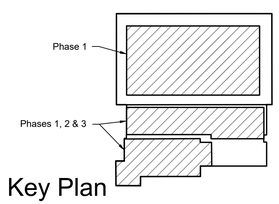
Demolition Key Notes

◇ # SYMBOL INDICATES DEMOLITION KEY NOTE

1. REMOVE CONDENSING UNIT, REFRIGERANT PIPING IN ITS ENTIRETY BACK TO AHU (RE-USE PATH FOR (N) PIPING), ROOF PITCH POCKET, NEOPRENE ROOF PADS UNDER CU AND ALL ELECTRICALS PER LATEST NEC.
2. REMOVE EXHAUST FAN HOOD IN ITS ENTIRETY INCLUDING ROOF CURB AND ELECTRICALS PER LATEST NEC.
3. REMOVE INTAKE LOUVERED PENTHOUSE AND ROOF CURB.
4. TEMPORARILY DISCONNECT ELECTRICAL CONNECTION TO FAN POWERED VAV BOX. REFER TO ELECTRICAL PLANS FOR DISCONNECTION AND RECONNECTION OF ALL EQUIPMENT.
5. REMOVE FAN POWERED VAV UNIT & ALL APPURTENANCES INCLUDING THERMOSTAT, CONTROLS WIRING, INLET FLEXIBLE DUCT CONNECTION, 3-WAY CONTROL VALVE AND ELECTRICALS PER LATEST NEC.
6. REMOVE CONDUCTORS AND CONDUIT. RE-USE PIPE PORTAL FOR (N) ELECTRICAL FEED.
7. REFRIGERANT PIPE UP TO CU-3. REMOVE REFRIGERANT PIPING DOWN FROM ABOVE IN ITS ENTIRETY. REFER TO 1/M1.01 & 2/M1.03 FOR CONTINUATION.
8. REMOVE EXISTING FLOOR MOUNTED AHU AND REMOVE ALL DUCTWORK AND PIPING AS INDICATED UP TO POINTS OF DISCONNECT SHOWN ON THE PLANS. REMOVE ALL REFRIGERANT PIPING AND ASSOCIATED VALVES. REFER TO ELECTRICAL PLANS FOR REMOVAL AND TERMINATION OF ELECTRICAL FEEDERS. REMOVE 3-WAY CONTROL VALVE & CONTROL WIRING ON HOT WATER SUPPLY/RETURN PIPING TO AHU-3. CONCRETE PAD UNDER EXIST. AHU IS E.T.R.
9. REMOVE PIPE PORTAL AND RE-USE OPENING FOR (N) REFRIGERANT. PROTECT OPENING DURING DEMOLITION AND CONSTRUCTION OF (N) PIPE PORTAL. SEE 1/M1.01 & 3/M1.03 FOR CONTINUATION.
10. DEMOLISH (E) HWS/HWR PIPING TO LOCATION INDICATED. PROVIDE AND INSTALL (N) SHUT-OFF VALVE AND CAP.

Demolition Plan Note

1. EXISTING AIR HANDLING UNITS AND ALL RELATED CONTROLS AND TRIMS INCLUDING CONTROL VALVES, SHUT-OFF VALVES, STRAINERS, ETC. TO BE REMOVED, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL VERIFY IN FIELD EXACT DUCT ROUTING AND CONNECTIONS. CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE ANY WORK IS TO BE PERFORMED. REPORT ANY DISCREPANCIES TO ENGINEER.
3. CONTRACTOR SHALL VERIFY IN FIELD EXACT PIPE ROUTING AND CONNECTIONS. CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE ANY WORK IS TO BE PERFORMED. REPORT ANY DISCREPANCIES TO ENGINEER.
4. FURNISH AND INSTALL ISOLATION VALVES AND BLIND FLANGES/CAPS FOR ANY PIPING THAT IS TO BE REUSED AND MUST REMAIN ENERGIZED.
5. CONTRACTOR SHALL VERIFY EXISTING DUCTWORK AND PIPE SIZES IN FIELD AND REPORT ANY DISCREPANCIES TO ENGINEER.
6. ALL ELECTRICAL RELATED TO EQUIPMENT BEING REMOVED SHALL BE PROPERLY TERMINATED IN ACCORDANCE WITH THE LATEST NEC CODES. REFER TO ELECTRICAL DRAWINGS.



Key Plan

N.T.S.

NORTH

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Revisions:

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MECHANICAL DEMOLITION PLANS

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 4160302M103

M1.03

Mechanical First Floor Proposed Plan

1 / M2.01 — 1/8" = 1'-0"

NORTH

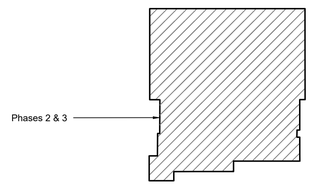
Construction Key Notes

(#) SYMBOL INDICATES CONSTRUCTION KEY NOTE

1. PROVIDE AND INSTALL (N) FAN POWERED VAV BOX. PROVIDE AND INSTALL 2-WAY CONTROL VALVE ON HWR LINE FROM FAN POWERED VAV BOX. CONNECT DUCTWORK TO INLET AND OUTLET OF FAN POWERED VAV BOX. TIE FAN POWERED VAV BOX AND CONTROL VALVE INTO (N) BMS, SEE M6.04. PROVIDE AND INSTALL (N) SPACE TEMPERATURE SENSOR, SEE FLOOR PLANS FOR LOCATION. TYPICAL OF 11 VAV BOXES.
2. PROVIDE AND INSTALL (N) MOTORIZED DAMPER AND ACTUATOR. TIE DAMPER INTO (N) BMS, SEE M6.04.
3. PROVIDE AND INSTALL (N) 2'x2' RETURN GRILLE IN (E) CEILING GRID.
4. CONNECT (N) 46"x16" DUCT TO (E) RETURN PLENUM IN FIRST FLOOR CEILING/ATTIC SPACE AND ROUTE AS SHOWN.
5. (N) REFRIGERANT PIPING DN FROM ACCU-3. SEE 2/M2.03. FIRE STOP ALL PIPE PENETRATIONS.

General Construction Notes

1. INSTALLATION OF (N) FAN POWERED VAV BOXES AND DUCTWORK WILL REQUIRE PARTIAL REMOVAL AND RE-INSTALLATION OF THE EXISTING CEILING GRID. ACOUSTIC TILES, LIGHTING, ETC. SHALL BE CAREFULLY REMOVED TO ACCESS THE EXISTING DUCTWORK AND VAV BOXES. UPON COMPLETION OF THE DUCT CLEANING AND AIR DEVICES BALANCING, ALL CEILINGS, LIGHTING, ETC. SHALL BE REINSTALLED. CONTRACTOR SHALL REPLACE ANY DAMAGED TILES TO MATCH EXISTING AND CLEAN CEILING GRID & TILES OF ALL FINGERPRINTS, ETC.



Key Plan

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NORTH

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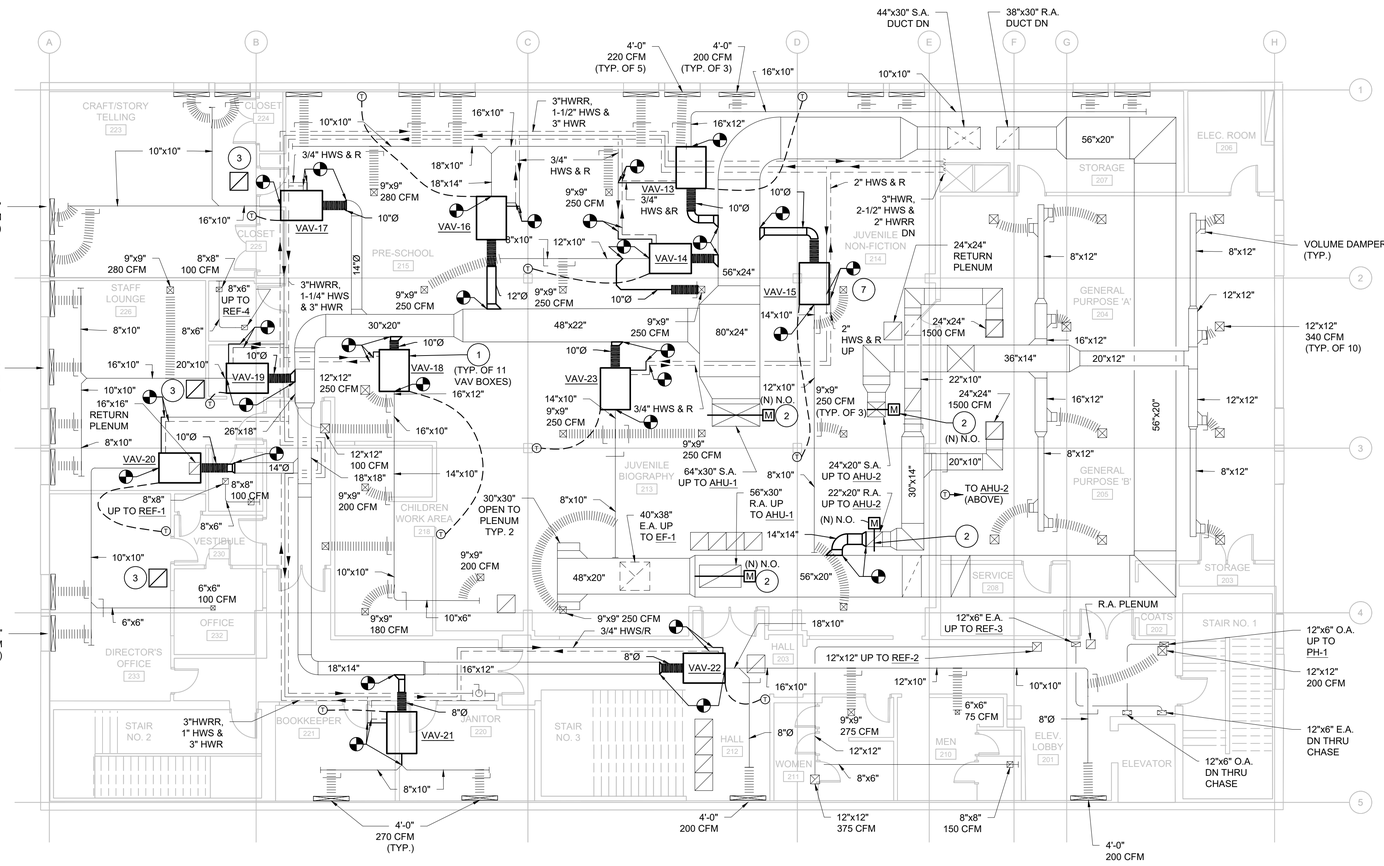
MECHANICAL FIRST FLOOR PROPOSED PLAN

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 4160302M201

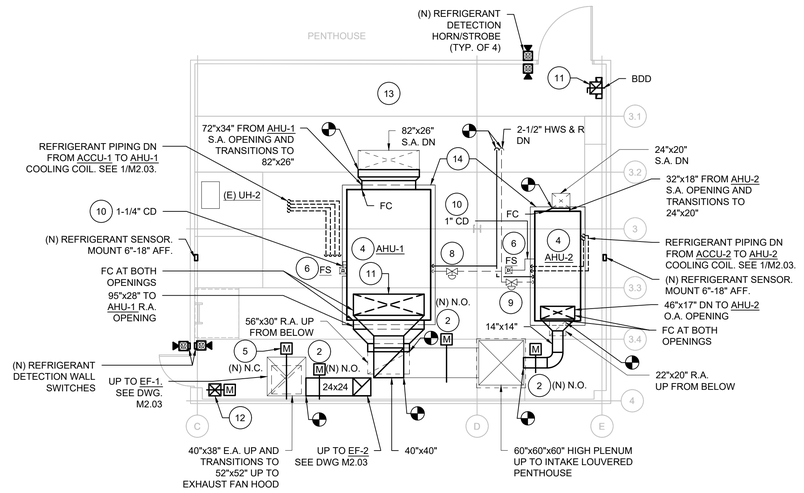
M2.01



1 M2.02 **Mechanical Second Floor Proposed Plan**

1/8" = 1'-0"

NORTH



2 M2.02 **Mechanical Penthouse Proposed Plan**

1/8" = 1'-0"

NORTH

Construction Key Notes

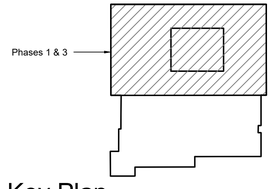
(#) SYMBOL INDICATES CONSTRUCTION KEY NOTE

1. PROVIDE AND INSTALL (N) FAN POWERED VAV BOX. PROVIDE AND INSTALL 2-WAY CONTROL VALVE ON HWR LINE FROM FAN POWERED VAV BOX. CONNECT DUCTWORK TO INLET AND OUTLET OF FAN POWERED VAV BOX. TIE FAN POWERED VAV BOX AND CONTROL VALVE INTO (N) BMS, SEE M6.04. PROVIDE AND INSTALL (N) SPACE TEMPERATURE SENSOR, SEE FLOOR PLANS FOR LOCATION. TYPICAL OF 11 VAV BOXES.
2. PROVIDE AND INSTALL (N) MOTORIZED DAMPER AND ACTUATOR. TIE DAMPER INTO (N) BMS, SEE M6.04.
3. PROVIDE AND INSTALL (N) 2'x2' RETURN GRILLE IN (E) CEILING GRID.
4. PROVIDE AND INSTALL (N) FLOOR-MOUNTED AHU ON (N) NEOPRENE PADS ON TOP OF A (N) 6" HOUSEKEEPING PAD. CONNECT AHU TO (E) DUCTWORK. PROVIDE AND INSTALL (N) 2-WAY CONTROL VALVE ON HWR LINE FROM AHU. INSTALL (N) REFRIGERANT PIPES TO CORRESPONDING ACCU USING THE PATH OF THE OLD REFRIGERANT PIPING. INSTALL PIPING PER MANUFACTURER'S INSTRUCTIONS. (N) AHU SHALL BE KNOCKDOWN. UNIT SHALL BE DISASSEMBLED ON SITE, BROUGHT INTO THE MECH ROOM THROUGH THE ROOF HATCH AND REASSEMBLED INSIDE THE MECH ROOM PER MANUFACTURER'S INSTRUCTIONS.
5. PROVIDE AND INSTALL (N) MOTORIZED DAMPER AND ACTUATOR AT THE CEILING OF PENTHOUSE DOWNSTREAM OF (N) 24"x24" DUCT TAP. TIE DAMPER INTO (N) BMS, SEE M6.04.
6. PROVIDE AND INSTALL (N) 9"x9" FLOOR DRAIN GRATE. CONTRACTOR SHALL V.I.F. SIZE AND STYLE OF GRATE NEEDED
7. PROVIDE (N) HWS/HWR TO FAN POWERED VAV-15. MATCH EXISTING PIPE SIZE.
8. (N) 2" HWS/HWR TO AHU-1 HEATING COIL.
9. (N) 1-1/2" HWS/HWR TO AHU-2 HEATING COIL.
10. PROVIDE AND INSTALL (N) PRIMARY CONDENSATE DRAIN. INDIRECTLY DISCHARGE INTO (E) FLOOR SINK. REFER TO 4/M6.02 FOR MORE INFORMATION.
11. (N) 8"x28" EXHAUST DUCT TERMINATES 6" AFF WITH DUCT MOUNTED 24"x24" RAR AT 10" AFF. DUCT TRANSITIONS TO 16"x16" AND UP TO (N) EF-4 WITH BACKDRAFT DAMPER. EF-4 SHALL BE INTERLOCKED WITH OCCUPANCY SENSOR AND REFRIGERANT DETECTION SYSTEM AND PROVIDE THE FOLLOWING AIRFLOWS:

    MECH ROOM OCCUPIED: 865 CFM
    EMERGENCY MODE (REFRIGERANT LEAK DETECTED): 1375 CFM
12. (N) 16"x16" OUTSIDE AIR DUCT OPEN TO MECH ROOM AND UP TO (N) RI-2 WITH MOTORIZED DAMPER. TERMINATE DUCT 6.5' AFF IN MECH ROOM WITH 24"X24" RAR. MOTORIZED DAMPER SHALL BE INTERLOCKED WITH EACH EF-4 FAN SPEED STATED IN NOTE 11 ABOVE.
13. (N) REFRIGERANT DETECTION SYSTEM FOR PENTHOUSE MECHANICAL ROOM SHALL BE PROVIDED AS PART OF THE (N) BMS. PROVIDE ALL NECESSARY COMPONENTS TO MEET THE REQUIREMENTS OF ASHRAE 15 AND AT A MINIMUM PROVIDE THE FOLLOWING:

    (2) WALL SWITCHES
    (2) SENSORS
    (4) WALL MOUNTED HORN/STROBES (AMBER)

    REFER TO CONTROL SCHEMATICS ON M6.04 FOR MORE INFORMATION.
14. (N) 6" HOUSEKEEPING PAD. REFER TO 10/M6.03.



Key Plan

N.T.S.

NORTH

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Revisions:

1 ISSUED FOR BID 6/1/23

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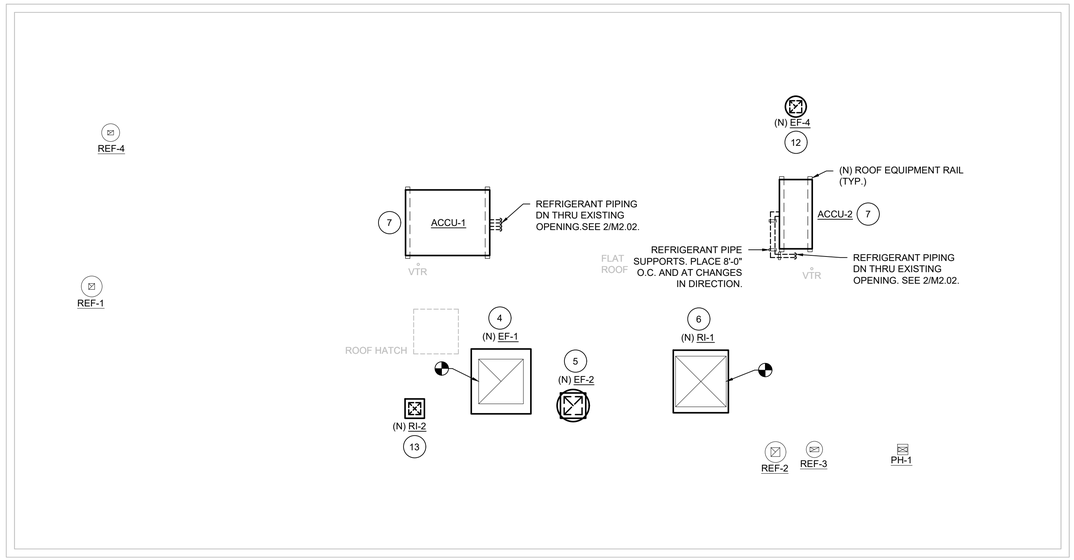
MECHANICAL PROPOSED PLANS

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 4160302M202

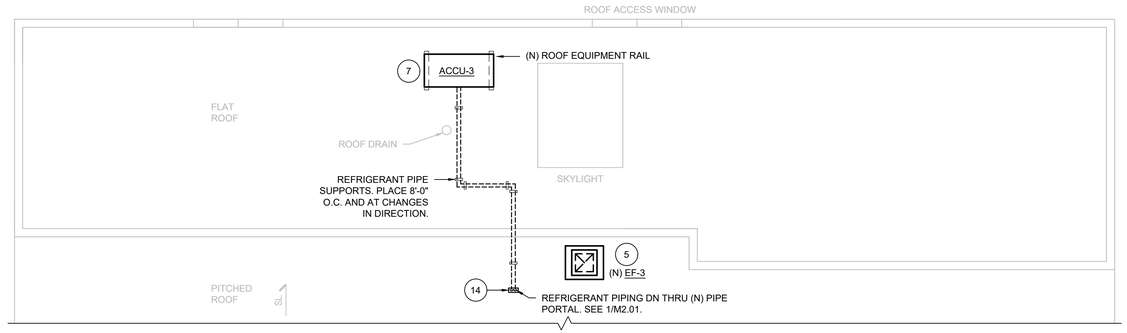
M2.02



1 M2.03 Mechanical Penthouse Roof Proposed Plan

1/8" = 1'-0"

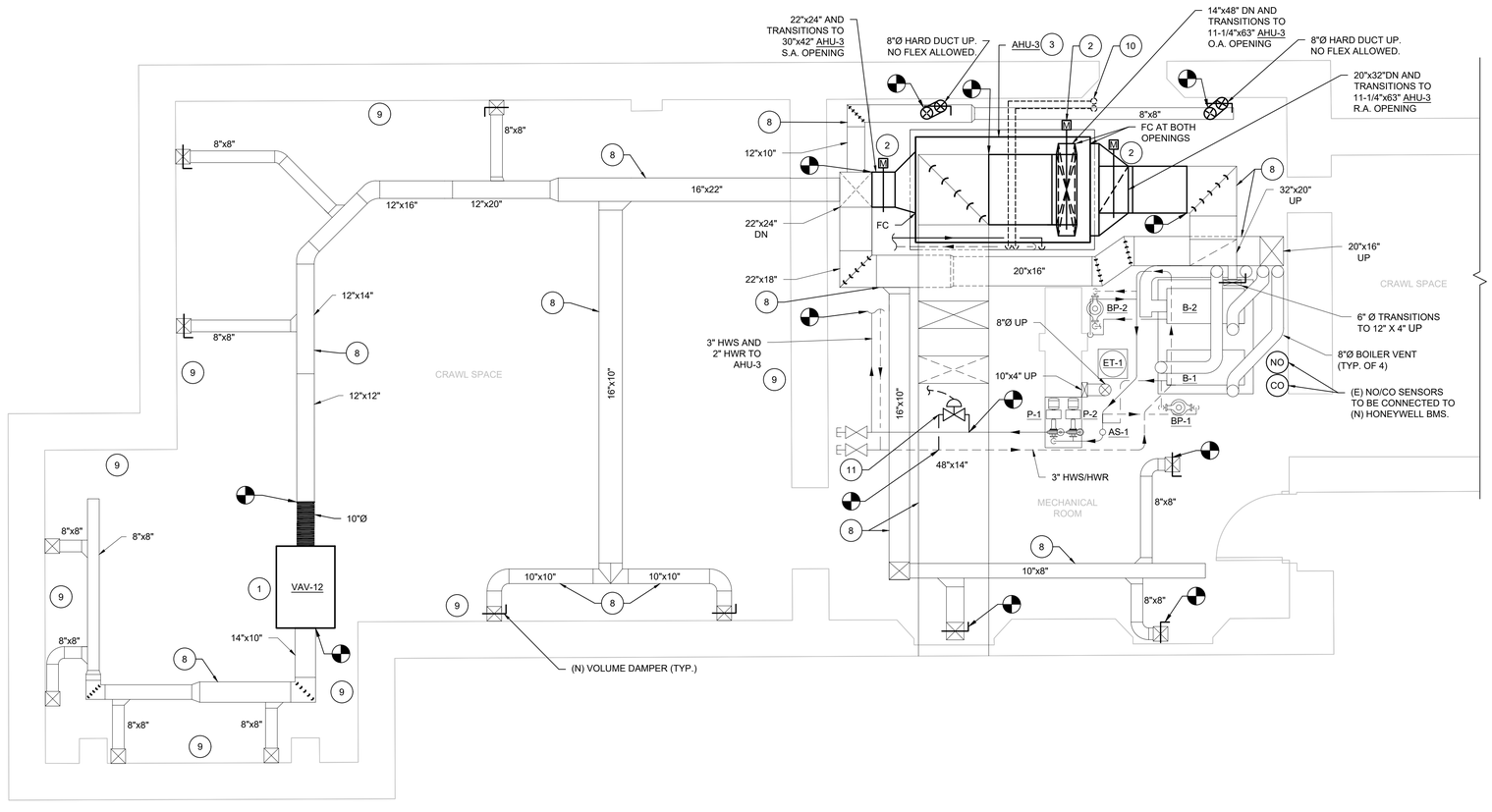
NORTH



2 M2.03 Mechanical Roof Proposed Plan

1/8" = 1'-0"

NORTH



3 M2.03 Mechanical Basement Proposed Plan

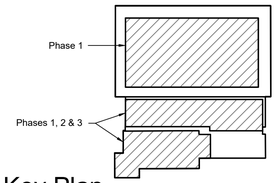
1/8" = 1'-0"

NORTH

Construction Key Notes

(#) SYMBOL INDICATES CONSTRUCTION KEY NOTE

1. PROVIDE AND INSTALL (N) FAN POWERED VAV BOX. PROVIDE AND INSTALL 2-WAY CONTROL VALVE ON HWR LINE FROM FAN POWERED VAV BOX. CONNECT DUCTWORK TO INLET AND OUTLET OF FAN POWERED VAV BOX. TIE FAN POWERED VAV BOX AND CONTROL VALVE INTO (N) BMS, SEE M6.04. PROVIDE AND INSTALL (N) SPACE TEMPERATURE SENSOR, SEE FLOOR PLANS FOR LOCATION. PROVIDE AND INSTALL (N) SECONDARY DRAIN PAN UNDER VAV BOX.
2. PROVIDE AND INSTALL (N) MOTORIZED DAMPER AND ACTUATOR. TIE DAMPER INTO (N) BMS, SEE M6.04.
3. PROVIDE AND INSTALL (N) FLOOR-MOUNTED AHU ON (E) CONCRETE PAD ON (N) NEOPRENE VIBRATION PADS. CONNECT AHU TO (E) DUCTWORK. PROVIDE AND INSTALL (N) 2-WAY CONTROL VALVE ON HWR LINE FROM AHU. INSTALL (N) REFRIGERANT PIPES TO CORRESPONDING ACCU USING THE PATH OF THE OLD REFRIGERANT PIPING. INSTALL PIPING PER MANUFACTURER'S INSTRUCTIONS. (N) AHU SHALL BE KNOCKDOWN. UNIT SHALL BE DISASSEMBLED ON SITE, BROUGHT INTO THE MECH ROOM THROUGH THE MECH ROOM DOOR AND REASSEMBLED INSIDE THE MECH ROOM PER MANUFACTURER'S INSTRUCTIONS.
4. PROVIDE AND INSTALL (N) EF AND (N) ROOF CURB. CONNECT TO (E) DUCTWORK.
5. PROVIDE AND INSTALL (N) EF AND (N) ROOF CURB WITH (N) ROOF PENETRATION. CONNECT TO (N) DUCTWORK. SEE DETAIL 2/M6.02.
6. PROVIDE AND INSTALL (N) INTAKE LOUVERED PENTHOUSE RI-1 AND (N) ROOF CURB. CONNECT TO (E) DUCTWORK.
7. PROVIDE AND INSTALL (N) ACCU IN SAME LOCATION AS DEMOLISHED CU. UTILIZE PREVIOUS REFRIGERANT PIPE PATH FROM (N) ACCU TO ITS CORRESPONDING (N) AHU AND PROVIDE (N) PIPE PORTAL. PROVIDE (N) ROOF EQUIPMENT RAILS UNDERNEATH OF THE ACCU. PLACE MECHANICALLY ATTACHED ROOF CURB TO ROOF DECK AND ANCHOR EQUIPMENT RAIL IN LINE WITH ROOF STEEL FRAMING BELOW. UTILIZE (E) CONDUIT ROOF PENETRATION.
8. RE-INSULATE (E) DUCTWORK.
9. PROVIDE (N) 6" (R39) CLOSED SPRAY FOAM INSULATION ALONG ENTIRE WALL SURFACE.
10. REFRIGERANT PIPING DN FROM 1ST FLR CEILING TO AHU-3 COOLING COIL. SEE 1/M2.01.
11. PROVIDE AND INSTALL (N) TWO-WAY CONTROL VALVE BYPASS AND INTERLOCK WITH (N) DIFFERENTIAL PRESSURE SENSORS LOCATED 2/3 DOWNSTREAM FROM SECONDARY PUMPS.
12. PROVIDE AND INSTALL (N) EF AND (N) ROOF CURB WITH (N) ROOF PENETRATION. CONNECT TO (N) DUCTWORK.
13. PROVIDE AND INSTALL (N) GRAVITY ROOF INTAKE AND ROOF CURB WITH (N) ROOF PENETRATION. CONNECT TO (N) DUCTWORK.
14. PROVIDE AND INSTALL (N) PIPE PORTAL ON SLOPED CLAY TILE ROOF. RE-USE (E) OPENING FOR (N) REFRIGERANT PIPING.



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Job No. 4.1603.02

File No. 41603O2M203

M2.03

INDOOR AIR HANDLING UNIT SCHEDULE

(TRANE AS STANDARD)

TAG	INSTALL PHASE	AREA SERVED	SUPPLY CFM	MINIMUM OUTSIDE AIR (CFM)	HOT WATER HEATING COIL							DX COOLING COIL									SUPPLY FAN DATA					FILTER (TYPE)	ELECTRICAL DATA	FLA	MCA	MOCP	DIMENSIONS (L x W x H) (In.)	APPROX. WEIGHT (Lbs)	MODEL	MANUFACTURER	NOTES
					CAPACITY (MBH)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	WPDB (Ft H_2O)	FLOW RATE (GPM)	COOLING (TMBH)	COOLING (SMBH)	HOT GAS REHEAT (MBH)	EADB (°F)	EAWB (°F)	LADB (°F)	LAWB (°F)	REFRIG. TYPE	FACE VEL. (FT/MIN.)	# OF CIRCUITS	APD (IN. H_2O)	E.S.P. (In H_2O)	T.S.P. (In H_2O)	B.H.P.	M.H.P.	VFD		V - Ph - Hz							
AHU-1	1	FIRST & SECOND FLOORS	22000	3400	455.5	47.0	65.2	180	160	4.27	45.5	687.7	508.1	114.4 - 266.9	75.6	64.0	54.5	53.4	R-410A	551	2	1.03	2.75	4.7	24.9	2 X 15	YES	2" MERV 13	208 - 3 - 60	89.5	111.5	175	175.2 x 112.5 x 70.8	5283	CSAA040	TRANE	SEE NOTE(S) BELOW
AHU-2	1	SECOND FLOOR RM 204 & 205	5000	1200	234.8	51.7	95.0	180	160	1.83	23.5	178.7	123.9	68.6 - 160.1	77.5	65.4	54.9	53.4	R-410A	501	1	0.72	1.25	3.1	4.2	5	YES	2" MERV 13	208 - 3 - 60	23.5	29	50	147 x 61.5 x 41.3	1845	CSAA010	TRANE	SEE NOTE(S) BELOW
AHU-3	2	FIRST FLOOR	7000	570	246.7	62.5	95.0	180	160	1.96	24.6	194.4	152	68.6 - 160.1	73.9	63.3	54.1	53.9	R-410A	513	2	1.12	1.75	5.5	9.2	10	YES	2" MERV 13	208 - 3 - 60	43.5	54	90	119.2 x 72.0 x 45.0	2058	CSAA014	TRANE	SEE NOTE(S) BELOW

NOTES:
1. PROVIDE HINGED ACCESS DOORS.
2. PROVIDE VFD's ON ALL SUPPLY AIR FANS. VFD's SHALL BE FACTORY INSTALLED AND WIRED.
3. ALL MOTORS SHALL BE PREMIUM EFFICIENCY TYPE.
4. UNIT SHALL BE PROVIDED WITH SINGLE POINT POWER CONNECTION.
5. INTERNAL AND EXTERNAL AUTOMATIC TEMPERATURE CONTROLS SHALL BE PROVIDED BY UNIT MANUFACTURER. THE CONTROLS (HONEYWELL B.O.D.) CONTRACTOR SHALL CONNECT ALL AHU CONTROL COMPONENTS AND SENSOR TO NEW BMS. CONTROL COMPONENTS FOR ALL UNITS SHALL BE FACTORY INSTALLED. THE CONTROLS CONTRACTOR SHALL PROVIDE, MOUNT AND WIRE EXTERNAL COMPONENTS (DAMPERS, ETC.). REFER TO CONTROLS DIAGRAMS AND SPECIFICATIONS.
6. DUCT SMOKE DETECTORS IN RETURN AIR DUCT MAINS FOR ALL AHU'S TO BE PROVIDED BY DIV.23 AND INSTALLED BY DIV. 26.
7. INTERLOCK ALL AHU's WITH FIRE ALARM SYSTEM. AHU's TO BE SHUT DOWN WHEN FIRE ALARM SYSTEM INITIATES.
8. PROVIDE WITH HOT GAS REHEAT.

ADDITIONAL REMARKS:
PROVIDE INTERNAL SPRING VIBRATION ISOLATORS ON THE FAN SECTION, EQUIPMENT SUPPORTS. PROVIDE 2-WAY CONTROL VALVES, DISCONNECT SWITCH, DOUBLE WALL CONSTRUCTION WITH PERFORATED INNER WALL FOR FAN SECTION, ACCESS DOORS, HIGH EFFICIENCY MOTORS. AIR HANDLING UNITS SHALL BE DELIVERED TO SITE WITH SMALLEST SHIPPING SPLITS AVAILABLE (FILTER & COIL SECTION, ACCESS SECTION, & FAN SECTION) AND ASSEMBLED IN THE PENTHOUSE OR BASEMENT MECHANICAL ROOM. ALL UNIT DISASSEMBLY AND REASSEMBLY SHALL BE COMPLETED BY TRANE TECHNICIANS IN ORDER TO MAINTAIN WARRANTY.

FAN POWERED VAV TERMINAL UNIT SCHEDULE

(TRANE AS STANDARD)

TAG	INSTALL PHASE	UNIT SERVED	MAX. INLET DUCT SIZE (In.)	MAX. INLET VELCOITY (FPM)	MAX. INLET S.P. (In. W.C.)	MAX. NC @ 0.5" S.P.	PRIMARY AIR		FAN		HEATING COIL				ELECTRICAL		MODEL	MANUFACTURER	NOTES
							MAXIMUM	MINIMUM	CFM	EXT. SP.	EAT/LAT	EWT/LWT	MBH	GPM	V-Ph-Hz	FLA/MCA/MOCP			
VAV-1	3	AHU-1	8	1375	0.25	35	480	105	150	0.25	68/92	180/160	14	1.4	115 - 1 - 60	1.6/2/15	VPWF0800PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-2	3	AHU-1	8	1432	0.25	35	500	120	130	0.25	68/92	180/160	15	1.5	115 - 1 - 60	1.6/2/15	VPWF0800PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-3	3	AHU-1	10	1980	0.25	35	1080	165	400	0.25	68/92	180/160	31	3.1	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-4	3	AHU-1	14	1900	0.25	35	2000	240	815	0.25	68/92	180/160	58	5.8	115 - 1 - 60	4.3/5.38/15	VPWF1400RN0DD00AD11B5L	TRANE	SEE NOTE(S) BELOW
VAV-5	3	AHU-1	10	1833	0.25	35	1000	165	370	0.25	68/92	180/160	29	2.9	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-6	3	AHU-1	8	1604	0.25	35	560	105	175	0.25	68/92	180/160	16	1.6	115 - 1 - 60	1.6/2/15	VPWF0800PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-7	3	AHU-1	10	1400	0.25	35	760	105	310	0.25	68/92	180/160	22	2.2	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-8	3	AHU-1	16	1600	0.25	35	2250	935	300	0.25	68/92	180/160	66	6.6	115 - 1 - 60	5.5/6.88/15	VPWF1600TN0DD00AD11B5L	TRANE	SEE NOTE(S) BELOW
VAV-9	3	AHU-1	8	1934	0.25	35	675	105	250	0.25	68/92	180/160	20	2.0	115 - 1 - 60	1.6/2/15	VPWF0800PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-10	3	AHU-1	16	1780	0.25	35	2485	420	830	0.25	68/92	180/160	72	7.2	115 - 1 - 60	9.5/11.88/20	VPWF1600TN0DD00AE11B5L	TRANE	SEE NOTE(S) BELOW
VAV-11	3	AHU-1	10	1600	0.25	35	880	105	390	0.25	68/92	180/160	26	2.6	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-12	3	AHU-3	10	1700	0.25	35	900	105	350	0.25	95	-	-	-	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-13	3	AHU-1	10	1833	0.25	35	1000	165	430	0.25	68/92	180/160	29	2.9	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-14	3	AHU-1	10	1400	0.25	35	750	105	275	0.25	68/92	180/160	22	2.2	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-15	3	AHU-1	10	1400	0.25	35	750	150	225	0.25	68/92	180/160	22	2.2	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-16	3	AHU-1	12	1400	0.25	35	1100	165	420	0.25	68/92	180/160	32	3.2	115 - 1 - 60	1.6/2/15	VPWF1200QN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-17	3	AHU-1	10	1500	0.25	35	800	175	225	0.25	68/92	180/160	23	2.3	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-18	3	AHU-1	10	1797	0.25	35	980	165	350	0.25	68/92	180/160	29	2.9	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-19	3	AHU-1	10	1723	0.25	35	940	165	395	0.25	68/92	180/160	27	2.7	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-20	3	AHU-1	10	1350	0.25	35	720	105	310	0.25	68/92	180/160	21	2.1	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-21	3	AHU-1	8	1547	0.25	35	540	105	25	0.25	68/92	180/160	16	1.6	115 - 1 - 60	1.6/2/15	VPWF0800PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-22	3	AHU-1	10	1833	0.25	35	1000	165	420	0.25	68/92	180/160	29	2.9	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW
VAV-23	3	AHU-1	10	1400	0.25	35	750	175	200	0.25	68/92	180/160	22	2.2	115 - 1 - 60	1.6/2/15	VPWF1000PN0DD00AD11B3L	TRANE	SEE NOTE(S) BELOW

NOTES:
1. UNITS ARE SCHEDULED TO BE MANUFACTURED BY TRANE. TITUS, CARNES, PRICE, ENVIROTEC, TUTTLE & BAILEY AND YORK ARE CONSIDERED TO BE EQUIVALENT MANUFACTURERS.
2. HEATING CFM IS THE SAME AS THE COOLING CFM. FANS SHALL NOT EXCEED THE MANUFACTURER"S MIDRANGE CFM RATING OF UNIT
3. PROVIDE DISCONNECT SWITCH, FILTER AND SOUND ATTENUATOR ON PLENUM INLET, BOTTOM ACCESS FOR FAN REMOVAL, FACTORY MOUNTED CONTROLS COMPATIBLE WITH (N) BUILDING CONTROL SYSTEM, REMOTE HEATING & COOLING ZONE SENSOR W/ LCD DISPLAY, AUTOMATIC CHANGEOVER AND SWITCHING SUB-BASE WITH UNIT

ROOF INTAKE LOUVERED PENTHOUSE SCHEDULE

(GREENHECK AS STANDARD)

TAG	INSTALL PHASE	LOCATION	AREAS SERVED	UNIT SERVED	MIN CFM	MAX CFM	STATIC PRESSURE LOSS (IN H2O)	THROAT (LxW) (In.)	CURB CAP (In)	MODEL	MANUFACTURER	NOTES
RI-1	1	PENTHOUSE ROOF	1ST & 2ND FLOOR	AHU-1 & AHU-2	4600	23200	0.114	70 x 60	78 x 68	WIH	GREENHECK	SEE NOTE(S) BELOW
RI-2	1	PENTHOUSE ROOF	PENTHOUSE	EF-4	865	1375	0.068	18 x 18	26 x 26	WIH	GREENHECK	SEE NOTE(S) BELOW

NOTES:
1. PROVIDE 24" HIGH, ALUMINUM ROOF CURB.
2. PROVIDE RI-1 WITH (2) MOTORIZED DAMPERS AND AN END SWITCH. INTERLOCK WITH AHU-1 & AHU-2.

OUTDOOR AIR-COOLED CONDENSING UNIT SCHEDULE

(TRANE AS STANDARD)

TAG	INSTALL PHASE	LOCATION	AREAS SERVED	UNIT SERVED	COOLING (TMBH)	AMBIENT TEMP (°F)	SUCTION TEMP (°F)	ELECTRICAL DATA V - Ph - Hz	COMPR. NO. / RLA	COMPR. NO. / RLA	MCA	MOP	EER	DIMENSIONS (L x W x H) (In.)	APPROX. WEIGHT (Lbs)	MODEL	MANUFACTURER	NOTES
ACCU-1	1	ROOF	FIRST AND SECOND FLOOR	AHU-1	687.3	95	45	208 - 3 - 60	2 / 51.9	2 / 47.0	238	250	11.6	113-13/16 x 85-5/8 x 79-1/4	3325	RAUC50	TRANE	SEE NOTE(S) BELOW
ACCU-2	1	ROOF	SECOND FLOOR RM 204 & 205	AHU-2	180	95	45	208 - 3 - 60	1 / 27.6	1 / 22.4	66	90	11	95-7/16 x 46 x 45-1/8	705	TTA18043CAA	TRANE	SEE NOTE(S) BELOW
ACCU-3	2	ROOF	FIRST FLOOR	AHU-3	180	95	45	208 - 3 -60	1 / 27.6	1 / 22.4	66	90	11	95-7/16 x 46 x 45-1/8	705	TTA18043CAA	TRANE	SEE NOTE(S) BELOW

NOTES: PROVIDE WITH DISCONNECT SWITCH, EQUIPMENT ROOF RAILS, AND INTERLOCK EACH OUTDOOR UNIT WITH THE NEW BMS.

EXHAUST FAN SCHEDULE

(GREENHECK AS STANDARD)

TAG	INSTALL PHASE	SERVICE	LOCATION	AREA/UNIT SERVED	CFM	STATIC PRESSURE LOSS (IN)	ELECTRICAL DATA				DIMENSIONS (LxWxH) (In.)	APPROX WEIGHT (Lbs)	MODEL	MANUFACTURER	NOTES
							FLA / MCA	MPH	RPM	V / Ph / Hz					
EF-1	1	ECONOMIZER EA	PENTHOUSE ROOF	1ST & 2ND FLOOR	22475	0.75	24.2 / 30.3	7.5	1725	208 / 3 / 60	87 x 80 x 57.4	660	LB-54-75	GREENHECK	SEE NOTE(S) BELOW
EF-2	1	NORMAL OPERATION EA	PENTHOUSE ROOF	1ST & 2ND FLOOR	3875	0.5	4.6 / N/A	1	726	208 / 3 / 60	43Ø x 44	125	GB-220	GREENHECK	SEE NOTE(S) BELOW
EF-3	2	ECONOMIZER EA	WORKROOM 105 ROOF	AHU-3	6650	0.3	7.5 / 9.4	2	789	208 / 3 / 60	51.5 x 45.5 x 41.8	210	LB-24-20	GREENHECK	SEE NOTE(S) BELOW
EF-4	1	REFRIGERANT LEAK DETECTION EA	PENTHOUSE ROOF	PENTHOUSE	1375 / 865	0.65	4.6 / N/A	1	-	208 / 3 /60	29Ø x 42	84	CUE-140-A	GREENHECK	SEE NOTE(S) BELOW

NOTES:
1. PROVIDE ALL FANS WITH NEW ROOF CURBS. PROVIDE EF-3 WITH CANTED ROOF CURB. CONTRACTOR SHALL FIELD VERIFY PITCH OF EXISTING ROOF AND REQUIRED HEIGHT OF CURB BEFORE SUBMITTAL PHASE.
2. PROVIDE ALL FANS WITH FUSED-DISCONNECT SWITCH, PROVIDED BY DIV. 23, POWERED BY DIV. 26.
3. PROVIDE EF-1, EF-2 AND EF-4 WITH 24" HIGH, ALUMINUM ROOF CURB. PROVIDE EF-1 & EF-2 WITH MOTORIZED DAMPERS AND INTERLOCK BOTH FANS WITH EACH OTHER AS WELL AS AHU-1.
4. SEE 1/M6.04 AND 2/M6.04 FOR AIRFLOWS OF EF-1, EF-2 & EF-3 IN NORMAL AND ECONOMIZER OPERATIONS. SEE KEY NOTE 11 ON M2.02 FOR OCCUPIED AND EMERGENCY OPERATIONS.

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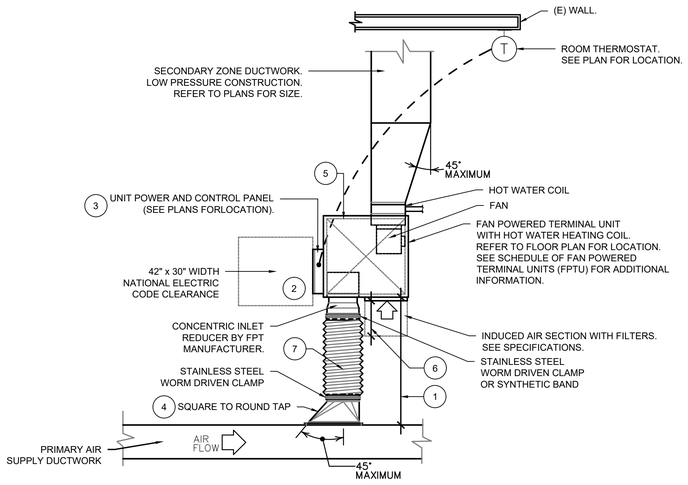
M6.01



General Notes

1. REFER TO FLOOR PLANS FOR DUCTWORK CONFIGURATION FOR EACH INDIVIDUAL FAN POWERED TERMINAL UNIT (FPTU). REFER TO SCHEDULES FOR SPECIFIC FAN POWERED TERMINAL UNIT, HOT WATER HEATING COILS, PRIMARY AIR SUPPLY, SECONDARY AIR SUPPLY AND FAN POWERED TERMINAL UNIT INSTALLATION REQUIREMENTS.
2. FAN POWERED TERMINAL UNIT (FPTU) TO BE INSTALLED IN THE SAME LOCATION AS THE DEMOLISHED UNIT. COORDINATE FAN POWERED UNIT LOCATION WITH STRUCTURE AND ARCHITECTURAL ELEMENTS TO MAINTAIN REQUIRED ACCESS TO MOTORS, FILTERS, ELECTRICAL CONTROL PANEL ON UNIT. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING WORKING CLEARANCES FREE OF PIPING, CONDUIT, DUCTS AND OTHER OBSTRUCTIONS.

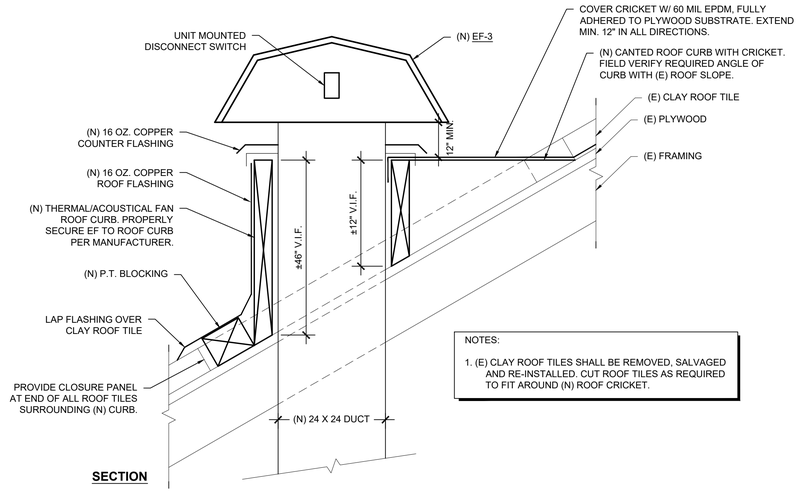
Key Notes

(#) SYMBOL INDICATES KEY NOTE

1. MAINTAIN MINIMUM STRAIGHT DISTANCE AS RECOMMENDED BY MANUFACTURER OF FAN POWERED TERMINAL DEVICE. (3 x INLET DIAMETER MINIMUM.)
2. SERVICE CLEARANCE TO BE 42" DEEP x FULL PANEL WIDTH IF UNIT POWER TO THIS OF UNIT IS 150 VOLTS OR GREATER. (30" MINIMUM WIDTH.)
3. VERIFY UNIT CONTROL POWER JUNCTION BOX LOCATIONS WITH UNIT MANUFACTURER.
4. SIDE TAKE-OFF FITTING EQUAL TO "FLEXMASTER" MODEL STO (WITHOUT VOLUME DAMPER.) REFER TO ROUND TAP DETAIL FOR ADDITIONAL INFORMATION.
5. MAINTENANCE AND SERVICE ACCESS CLEARANCE. GENERAL CONTRACTOR IS RESPONSIBLE FOR KEEPING UNDERSIDE OF FAN POWERED UNIT CLEAR OBSTRUCTION FOR BOTTOM ACCESS PANEL REMOVAL.
   MANUFACTURER SHALL PROVIDE WARNING LABEL ON TOP AND BOTTOM , WHICH READS AS FOLLOWS:
   DO NOT BLOCK ACCESS PANEL WITH PARTITIONS, PIPES, CONDUITS OR WIRE.
6. INDUCED AIR OPENING, CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A MINIMUM OF 20" CLEAR, FREE OF PIPING, CONDUIT, DUCTS AND OTHER OBSTRUCTIONS.
7. TYPE "XM" INSULATED FLEXIBLE DUCT. (3'-0" LONG MAXIMUM.)

1 M6.02 Parallel Fan Powered Terminal Unit Detail

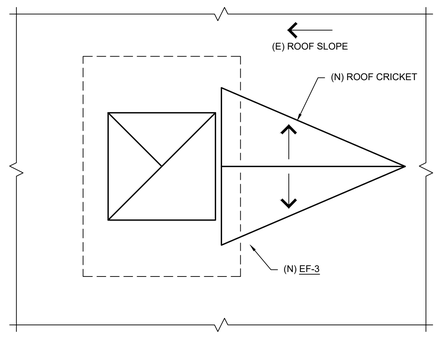
N.T.S.



SECTION

NOTES:

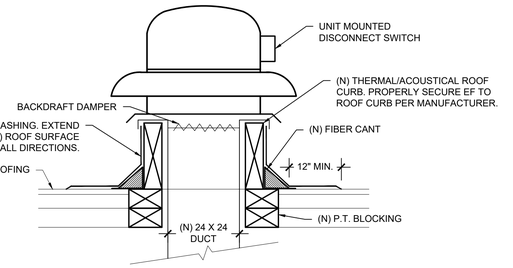
1. (E) CLAY ROOF TILES SHALL BE REMOVED, SALVAGED AND RE-INSTALLED. CUT ROOF TILES AS REQUIRED TO FIT AROUND (N) ROOF CRICKET.



PLAN

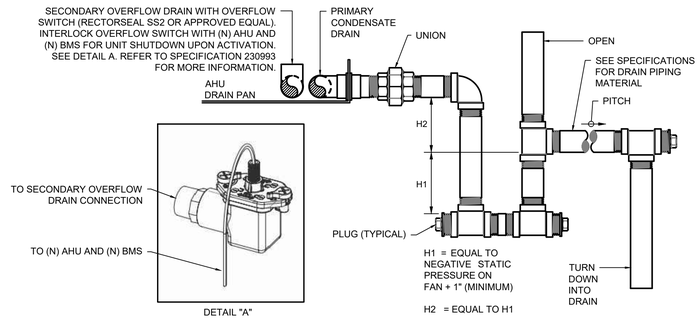
2 M6.02 New Sloped Roof Exhaust Fan Detail

N.T.S. EF-3



3 M6.02 New Flat Roof Exhaust Fan Detail

N.T.S. EF-2

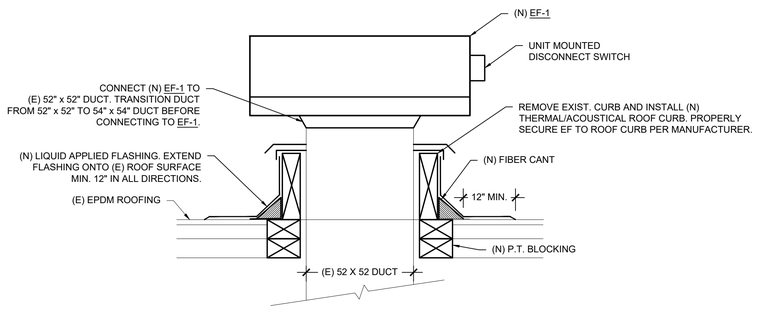


NOTES:

1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP.
2. PITCH DRAIN TOWARDS OUTLET FOR PROPER RUN-OFF.
3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL.
4. SUPPORT LENGTHY DRAIN LINES AT 6'-0" O.C. TO PREVENT SAG AND CONDENSATE OVERFLOW.
5. REFER TO FLOOR PLANS FOR PROPOSED PIPE ROUTING AND SIZE.

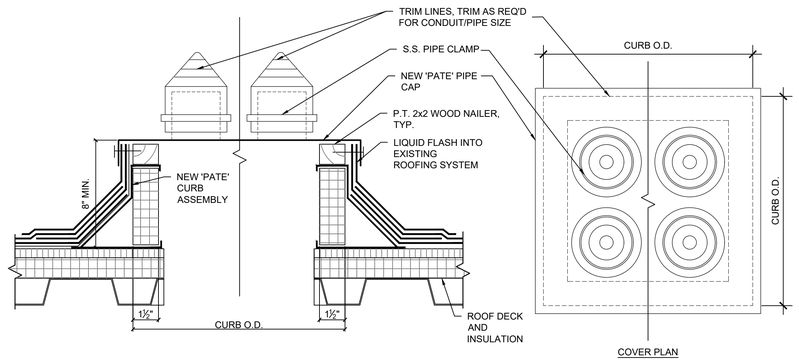
4 M6.02 Condensate Trap Detail

N.T.S.



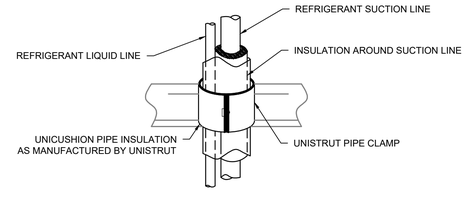
5 M6.02 Replacement Roof Exhaust Fan Detail

N.T.S. EF-1



6 M6.02 Pipe Portal Detail

N.T.S.



NOTES:

1. LIQUID AND SUCTION LINES MAY BE ROUTED TOGETHER FOR CONVENIENCE, BUT MUST BE COMPLETELY INSULATED FROM EACH OTHER. DO NOT SOLDER LIQUID AND SUCTION LINES TOGETHER. DO NOT ALLOW METAL TO METAL CONTACT.
2. LINES SHOULD BE INSTALLED WITH AS FEW BENDS AS POSSIBLE, ALLOWING SERVICE ACCESS TO THE INDOOR COIL.
3. SLOPE HORIZONTAL SUCTION LIENS 1 INCH EVERY 20 FEET TOWARD THE OUTDOOR UNIT.
4. USE LONG RADIUS ELBOWS WHEREVER POSSIBLE, EXCEPT IN OIL RETURN TRAPS, WHERE SHORT RADIUS ELBOWS SHALL BE USED.

7 M6.02 Refrigerant Pipe Support Detail

N.T.S.

Date	01/25/24
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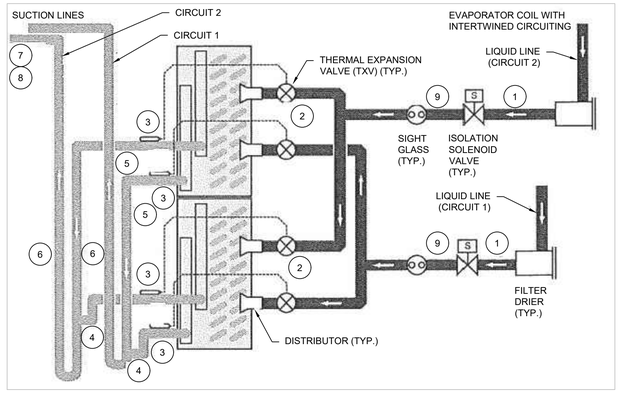
MECHANICAL DETAILS
THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 4160302M602

M6.02



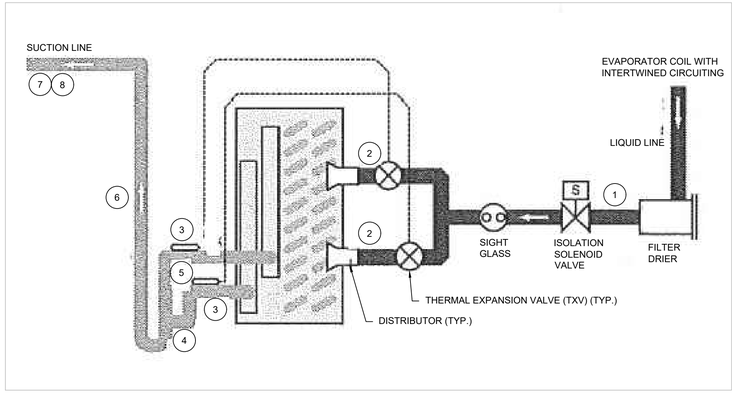
Key Notes

(#) SYMBOL INDICATES KEY NOTE

1. PITCH THE LIQUID LINE SLIGHTLY(1 IN./10 FT) SO THE REFRIGERANT DRAINS TOWARDS THE EVAPORATOR.
2. PROVIDE ONE EXPANSION VALVE PER DISTRIBUTOR.
3. SLIGHTLY PITCH THE OUTLET LINE FROM THE SUCTION HEADER TOWARD THE SUCTION RISER (1 IN./ 10 FT) IN THE DIRECTION OF FLOW. USE THE TUBE DIAMETER THAT MATCHES THE SUCTION-HEADER CONNECTION.
4. USE A DOUBLE-ELBOW CONFIGURATION TO ISOLATE THE TXV BULB FROM OTHER SUCTION HEADERS.
5. USE HORIZONTAL TUBE DIAMETER PROVIDED BY MANUFACTURER.
6. USE TUBE DIAMETER PROVIDED BY MANUFACTURER FOR A VERTICAL RISE. ENSURE THE TOP OF THE RISER IS HIGHER THAT THE EVAPORATOR COIL.
7. PITCH THE SUCTION LINE SLIGHTLY (1 IN./ 10 FT) SO THE REFRIGERANT DRAINS TOWARD THE EVAPORATOR.
8. INSULATE THE SUCTION LINE.
9. INSTALL A SINGLE ISOLATION SOLENOID VALVE BETWEEN THE LIQUID-LINE FILTER DRIER AND THE SIGHT GLASS.

1 M.603 AHU-1 D/X Cooling Coil Piping Schematic

N.T.S



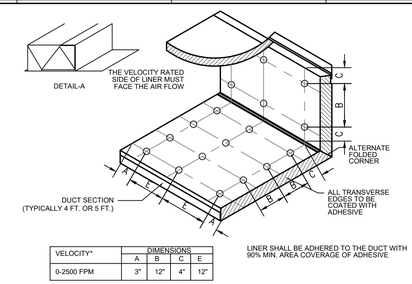
Key Notes

(#) SYMBOL INDICATES KEY NOTE

1. PITCH THE LIQUID LINE SLIGHTLY(1 IN./10 FT) SO THE REFRIGERANT DRAINS TOWARDS THE EVAPORATOR.
2. PROVIDE ONE EXPANSION VALVE PER DISTRIBUTOR.
3. SLIGHTLY PITCH THE OUTLET LINE FROM THE SUCTION HEADER TOWARD THE SUCTION RISER (1 IN./ 10 FT) IN THE DIRECTION OF FLOW. USE THE TUBE DIAMETER THAT MATCHES THE SUCTION-HEADER CONNECTION.
4. USE A DOUBLE-ELBOW CONFIGURATION TO ISOLATE THE TXV BULB FROM OTHER SUCTION HEADERS.
5. USE HORIZONTAL TUBE DIAMETER PROVIDED BY MANUFACTURER.
6. USE TUBE DIAMETER PROVIDED BY MANUFACTURER FOR A VERTICAL RISE. ENSURE THE TOP OF THE RISER IS HIGHER THAT THE EVAPORATOR COIL.
7. PITCH THE SUCTION LINE SLIGHTLY (1 IN./ 10 FT) SO THE REFRIGERANT DRAINS TOWARD THE EVAPORATOR.
8. INSULATE THE SUCTION LINE.

2 M6.03 AHU-2 & AHU-3 D/X Cooling Coil Piping Schematic

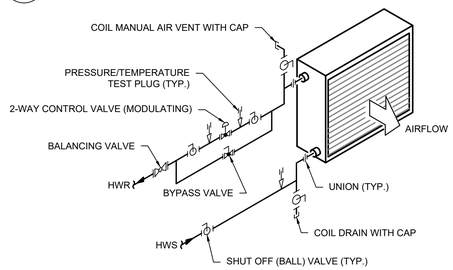
N.T.S.



VELOCITY*	DIMENSIONS			
	A	B	C	E
0-2500 FPM	3"	12"	4"	12"

3 M6.03 Duct Liner Detail

N.T.S.

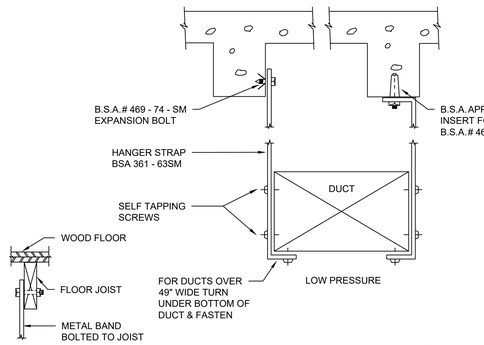


NOTES:

1. INSULATE ALL PIPING, VALVES, FITTINGS AND ACCESSORIES.
2. INSTALL TEST PLUGS IN EASILY ACCESSIBLE LOCATIONS WITH MINIMUM OF 12" CLEARANCE IN FRONT.
3. WHERE DUCT MOUNTED HEATING COILS ARE LOCATED ABOVE NON-ACCESSIBLE CEILING, PROVIDE ACCESS DOOR. COORDINATE FINAL LOCATIONS IN THE FIELD.
4. REFER TO FLOOR PLANS FOR ALL PIPE SIZES..

4 M6.03 Hot Water Coil Piping Detail

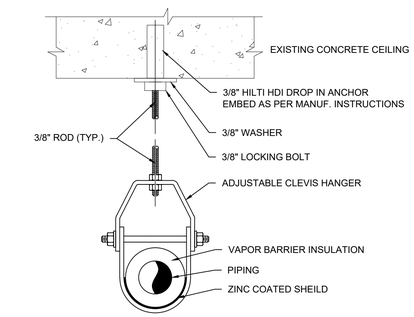
N.T.S.



NOTE: DISTANCE BETWEEN DUCTS HANGERS SHALL BE IN ACCORDANCE WITH SMACNA

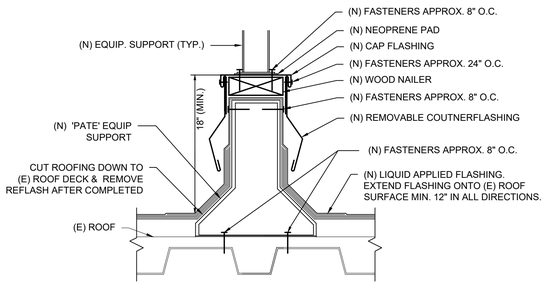
5 M6.03 Duct Hanging Detail

N.T.S.



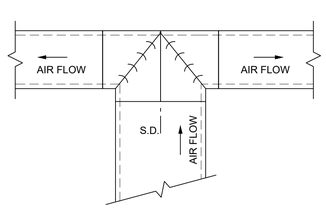
6 M6.03 Pipe Hangar Detail

N.T.S.



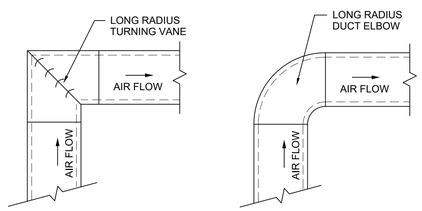
7 M6.03 Roof Equipment Support Rail Detail

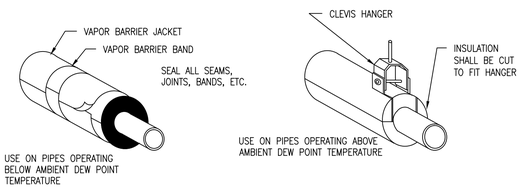
N.T.S.



8 M6.03 Duct Turn Detail

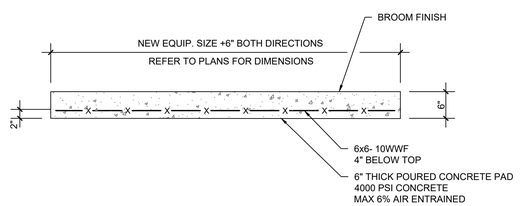
N.T.S.





9 M6.03 Pipe Insulation Detail

N.T.S.



10 M6.03 Concrete Pad Detail

N.T.S.

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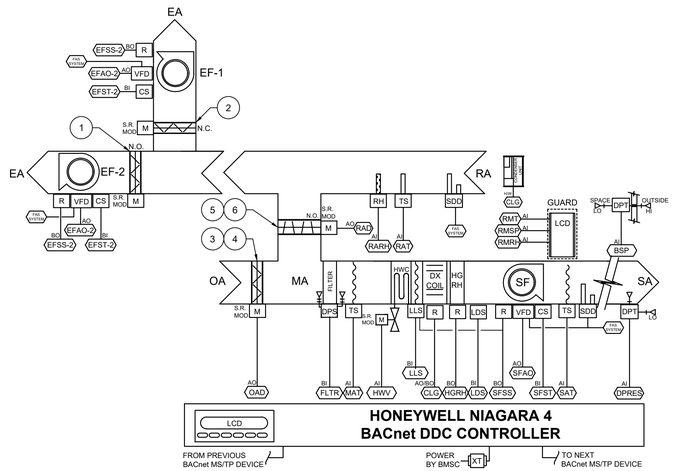
MECHANICAL DETAILS & CONTROL SCHEMATIC

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

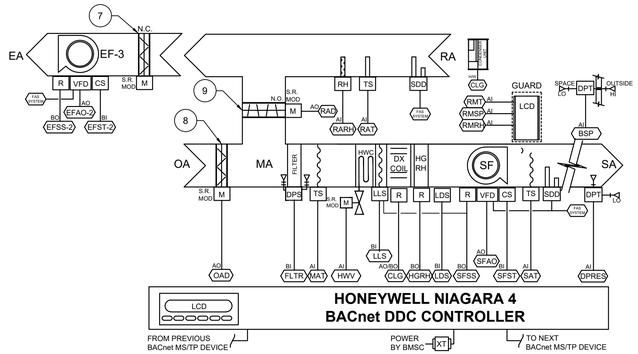
File No. 4160302M603

M6.03



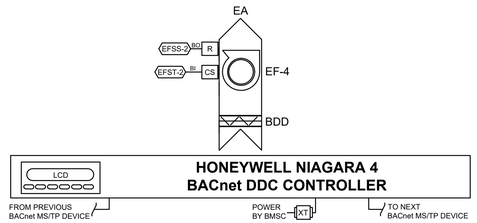
1 M6.04 Air Handling Unit 1 & 2

N.T.S.



2 M6.04 Air Handling Unit 3

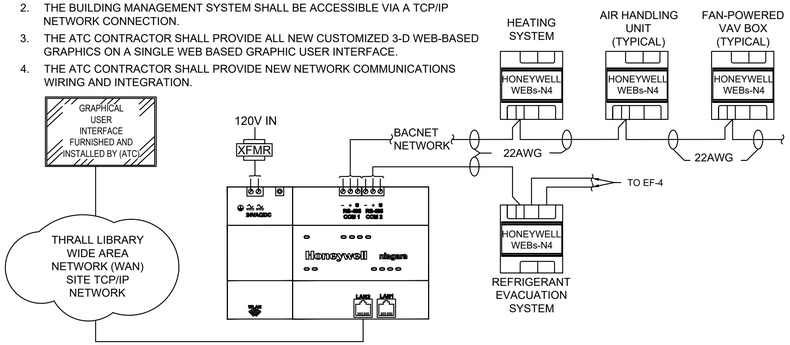
N.T.S.



3 M6.04 Two (2) Speed Exhaust Fan 4

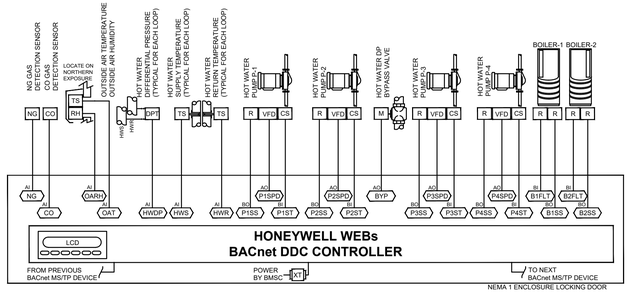
N.T.S.

1. THE ATC CONTRACTOR SHALL PROVIDE A HONEYWELL WEBS NETWORK TO THE NEW CONTROLLERS ON A NIAGARA 4 PLATFORM.
2. THE BUILDING MANAGEMENT SYSTEM SHALL BE ACCESSIBLE VIA A TCP/IP NETWORK CONNECTION.
3. THE ATC CONTRACTOR SHALL PROVIDE ALL NEW CUSTOMIZED 3-D WEB-BASED GRAPHICS ON A SINGLE WEB BASED GRAPHIC USER INTERFACE.
4. THE ATC CONTRACTOR SHALL PROVIDE NEW NETWORK COMMUNICATIONS WIRING AND INTEGRATION.



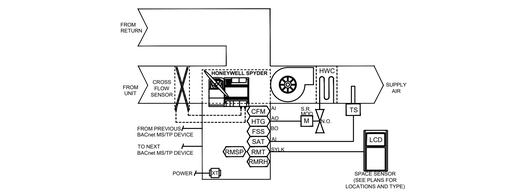
4 M6.04 Building Management System Network

N.T.S.



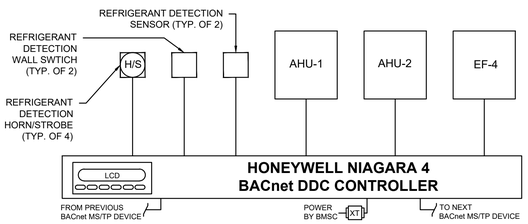
5 M6.04 Hydronic Hot Water System

N.T.S.



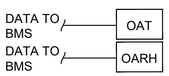
6 M6.04 Variable Air Volume Box w/ Hot Water Reheat

N.T.S.



7 M6.04 Refrigerant Evacuation System

N.T.S.



8 M6.04 Outside Air Temp/Humidity Sensors

N.T.S.

AQ AQUASTATIC SWITCH (SPDT)
FS FLOW SWITCH (DIGITAL)
FL FLOW SENSOR (ANALOG)
M CONTROL ACTUATOR
DPS DIFFERENTIAL PRESSURE SWITCH (SPDT)
DPT DIFFERENTIAL PRESSURE TRANSDUCER (ANALOG)
TC THERMOSTAT SWITCH (SPDT)
LLS LOW LIMIT SENSOR (FREEZESTAT)
CONTROL WIRE OR CABLE
ES POSITION END SWITCH (SPST)
RH RELATIVE HUMIDITY SENSOR
XT CONTROL TRANSFORMER
MS MAGNETIC STARTER
VFD VARIABLE FREQUENCY DRIVE
R CONTROL RELAY (SPDT)
CT CURRENT TRANSDUCER SENSOR (ANALOG)
CS CURRENT SWITCH SENSOR (DIGITAL)
IAQ INDOOR AIR QUALITY SENSOR
TS TEMPERATURE SENSOR (PROBE)
TS TEMPERATURE SENSOR (AVERAGING)
LLS LOW-LIMIT TEMPERATURE SWITCH (SPDT)
SD SMOKE DETECTOR (DUCT)
XX ### WIRED I/O CONTROL POINT
I/O CONTROL POINT DESIGNATION
XX I/O CONTROL POINT TYPE
WIRE OR CABLE
PLENUM RATED #18 AWG MIN.
ATC CONTRACTOR SHALL SIZE WIRING, # CONDUCTORS, #AWG, LENGTH, ETC.
PNEUMATIC TUBING
ATC CONTRACTOR SHALL SIZE TUBING

9 M6.04 BMS Device Legend

N.T.S.

Airflow Operation Key Notes

(#) SYMBOL INDICATES AIRFLOW KEY NOTE

1.	NORMAL: 3,875 CFM	ECONOMIZER: 0 CFM
2.	NORMAL: 0 CFM	ECONOMIZER: 22,475 CFM
3.	AHU-1: • NORMAL: 3,400 CFM	ECONOMIZER: 22,000 CFM
4.	AHU-2: • NORMAL: 1,200 CFM	ECONMIZER: 1,200 CFM
5.	AHU-1: • NORMAL: 17,875 CFM	ECONOMIZER: 0 CFM
6.	AHU-2: • NORMAL: 3,800 CFM	ECONOMIZER: 3,800 CFM
7.	NORMAL: 0 CFM	ECONOMIZER: 6,650 CFM
8.	NORMAL: 570 CFM	ECONOMIZER: 7,000 CFM
9.	NORMAL: 6,430 CFM	ECONOMIZER: 0 CFM

Date 01/25/24
Checked MAM
Drawn JPD

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Revisions:

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CONTROL SCHEMATICS
THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02
File No. 4160302M604

M6.04

Proposed Electrical Key Note

(#) SYMBOL INDICATES PROP. KEY NOTE

1. RECONNECT TO (E) BRANCH CIRCUIT AT FAN POWERED VAV BOX. WHERE THE EXISTING CONDUIT MEETS THE REQUIREMENTS OF THE CODE AND THESE DRAWINGS THE EXISTING CONDUIT MAY BE REUSED.

Electrical Symbols

= POINT OF CONNECTION TO EXISTING

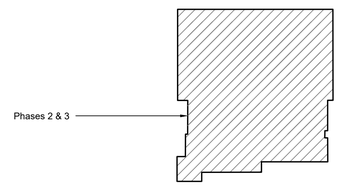
$S^{20/1}_{5HP}$ = FRACTIONAL HORSE POWER MOTOR STARTER - NON-FUSIBLE, TOGGLE-TYPE RATED AS INDICATED ON THE DRAWINGS, (EG. 20/1 INDICATES 20A, 1 POLE). IF NO RATING IS INDICATED, INSTALL A CODE SIZED SWITCH. INSTALL IN A NEMA-1 ENCLOSURE UNLESS NOTED OTHERWISE.

(#) = HOMERUN - HOMERUN TO CIRCUIT(S) INDICATED. IF NOT INDICATED ON THE PLAN, REFER TO THE PANEL SCHEDULE FOR CONDUCTOR/RACEWAY INFORMATION.

1 E2.01 Electrical First Floor Proposed Power Plan

1/8" = 1'-0"

PROJECT NORTH



Key Plan

N.T.S.

NORTH

Date	01/25/24
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Drawn	JDD

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License No. NY 090385

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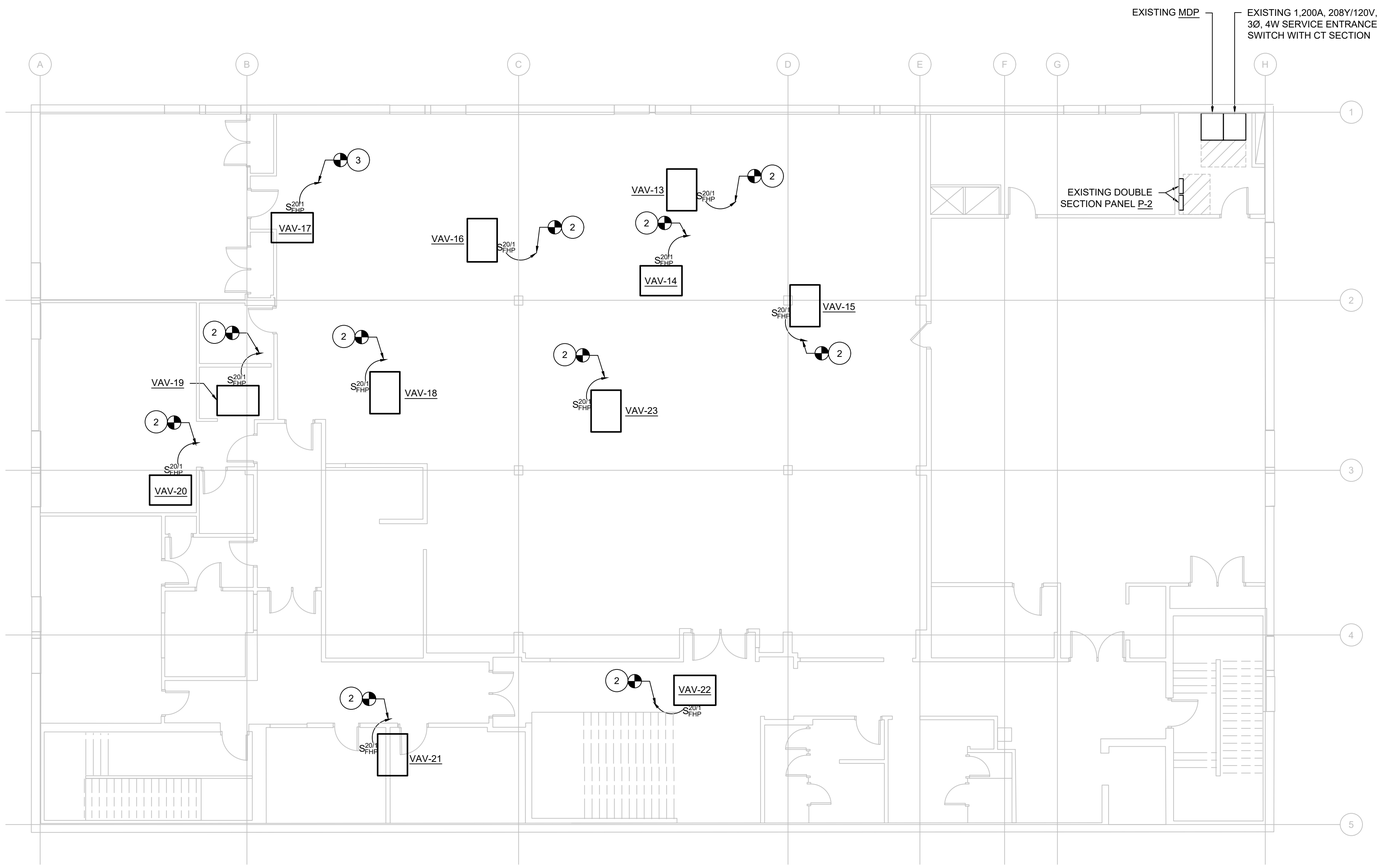
ELECT. 1ST FLR PROPOSED POWER PLAN

THRALL LIBRARY
HVAC UPGRADES
11 DEPOT STREET
MIDDLETOWN, NY 10940

Job No. 4.1603.02

File No. 4160302E201

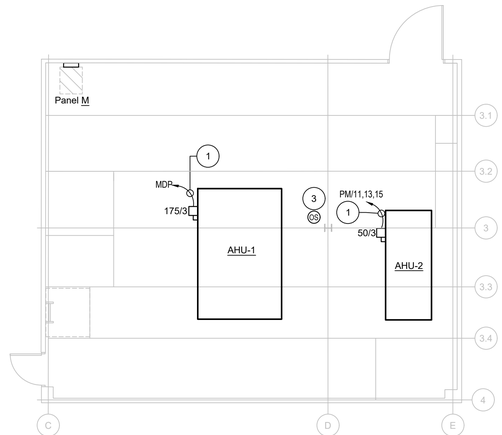
E2.01



1 E2.02 Electrical Second Floor Proposed Power Plan

1/8" = 1'-0"

PROJECT NORTH



2 E2.03 Electrical Penthouse Proposed Power Plan

1/8" = 1'-0"

PROJECT NORTH

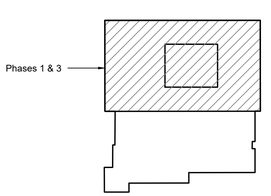
Electrical Symbols

	=	POINT OF CONNECTION TO EXISTING
30/3	=	DISCONNECT SWITCH, NON-FUSIBLE - RATED AS INDICATED ON THE DRAWINGS, (EG 30/3 INDICATES 30A, 3 POLE). IF NO RATING IS INDICATED, INSTALL A CODE SIZED SWITCH. INSTALL ALL IN A NEMA-1 ENCLOSURE UNLESS NOTED OTHERWISE.
S 20/1 THP	=	FRACTIONAL HORSE POWER MOTOR STARTER - NON-FUSIBLE, TOGGLE-TYPE RATED AS INDICATED ON THE DRAWINGS, (EG. 20/1 INDICATES 20A, 1 POLE). IF NO RATING IS INDICATED, INSTALL A CODE SIZED SWITCH. INSTALL IN A NEMA-1 ENCLOSURE UNLESS NOTED OTHERWISE.
#	=	HOMERUN - HOMERUN TO CIRCUIT(S) INDICATED. IF NOT INDICATED ON THE PLAN, REFER TO THE PANEL SCHEDULE FOR CONDUCTOR/RACEWAY INFORMATION.
OS	=	CEILING MOUNTED OCCUPANCY SENSOR

Proposed Electrical Key Notes

(#) SYMBOL INDICATES PROP. KEY NOTE

1. REFER TO PANEL SCHEDULES ON E6.01 FOR MORE INFORMATION. UTILIZE SAME PATH AS ORIGINAL CONDUIT WHERE THE EXISTING CONDUIT MEETS THE REQUIREMENTS OF THE CODE AND THESE DRAWINGS THE EXISTING CONDUIT MAY BE REUSED.
2. RECONNECT TO (E) BRANCH CIRCUIT AT FAN POWERED VAV BOX. WHERE THE EXISTING CONDUIT MEETS THE REQUIREMENTS OF THE CODE AND THESE DRAWINGS THE EXISTING CONDUIT MAY BE REUSED.
3. PROVIDE AND INSTALL (N) CEILING MOUNTED OCCUPANCY SENSOR. INTERLOCK WITH (N) ROOF MOUNTED EXHAUST FAN EF-4 PER MECHANICAL DRAWING M2.02



Key Plan

N.T.S.

NORTH

Date	01/25/24
Checked	MAM
Drawn	JDD

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Revisions:

1 ISSUED FOR BID 6/1/23

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ELECTRICAL PROPOSED POWER PLANS

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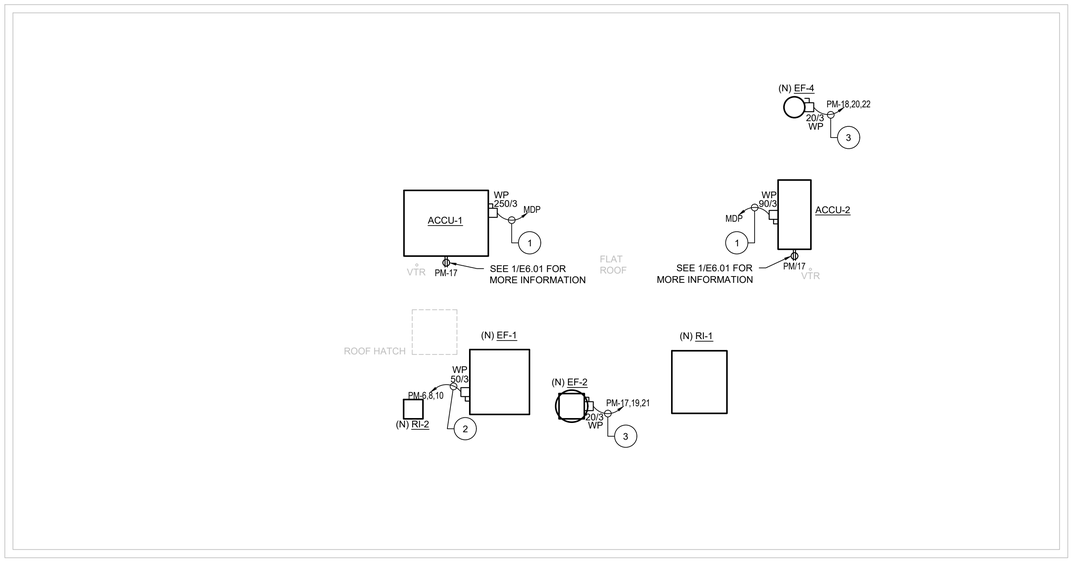
Job No. 4.1603.02

File No. 4160302E202

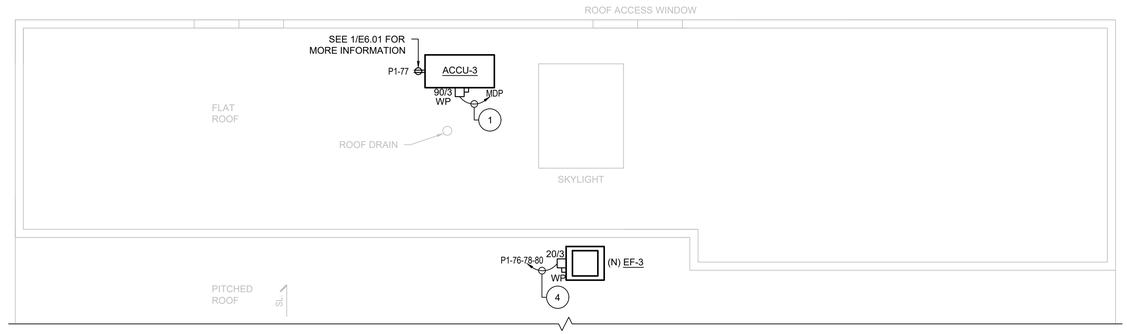
E2.02



1 E2.03 Electrical Penthouse Roof Proposed Power Plan

1/8" = 1'-0"

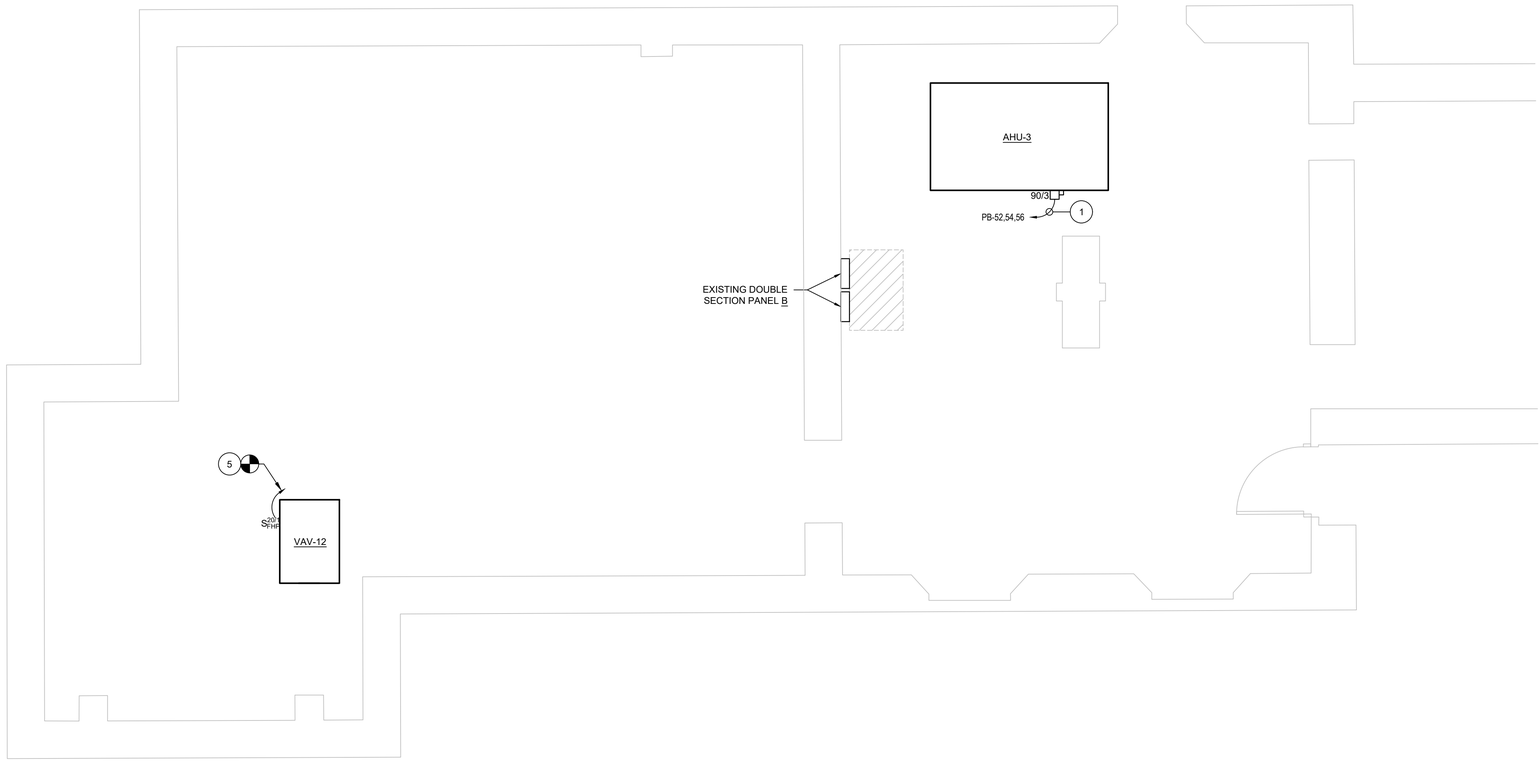
PROJECT NORTH



2 E2.03 Electrical Roof Proposed Power Plan

1/8" = 1'-0"

PROJECT NORTH



3 E2.03 Electrical Basement Proposed Power Plan

1/4" = 1'-0"

PROJECT NORTH

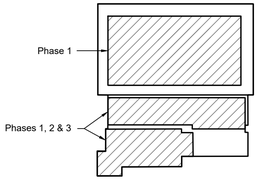
Proposed Electrical Key Notes

(#) SYMBOL INDICATES PROP. KEY NOTE

1. REFER TO PANEL SCHEDULES ON E6.01 FOR MORE INFORMATION. UTILIZE SAME PATH AS ORIGINAL CONDUIT.
2. REFER TO PANEL SCHEDULES ON E6.01 FOR MORE INFORMATION. UTILIZE SAME PATH AS ORIGINAL CONDUIT. WHERE THE EXISTING CONDUIT MEETS THE REQUIREMENTS OF THE CODE AND THESE DRAWINGS THE EXISTING CONDUIT MAY BE REUSED.
3. REFER TO PANEL SCHEDULES ON E6.01 FOR MORE INFORMATION. ROUTE CONDUIT TIGHT TO PENTHOUSE ROOF.
4. REFER TO PANEL SCHEDULES ON E6.01 FOR MORE INFORMATION. ROUTE CONDUIT ABOVE DROP CEILING AND ALONG NEW REFRIGERANT PIPING UP THRU ROOF.
5. RECONNECT TO (E) BRANCH CIRCUIT AT FAN POWERED VAV BOX. WHERE THE CONDUIT MEETS THE REQUIREMENT OF THE CODE AND THESE DRAWINGS THE EXISTING CONDUIT MAY BE REUSED.

Electrical Symbols

- = POINT OF CONNECTION TO EXISTING
- 30/3 = DISCONNECT SWITCH, NON-FUSIBLE - RATED AS INDICATED ON THE DRAWINGS, (EG 30/3 INDICATES 30A, 3 POLE). IF NO RATING IS INDICATED, INSTALL A CODE SIZED SWITCH. INSTALL ALL IN A NEMA-1 ENCLOSURE UNLESS NOTED OTHERWISE.
- S 20/1 FHP = FRACTIONAL HORSE POWER MOTOR STARTER - NON-FUSIBLE, TOGGLE-TYPE RATED AS INDICATED ON THE DRAWINGS, (EG. 20/1 INDICATES 20A, 1 POLE). IF NO RATING IS INDICATED, INSTALL A CODE SIZED SWITCH. INSTALL IN A NEMA-1 ENCLOSURE UNLESS NOTED OTHERWISE.
- # = HOMERUN - HOMERUN TO CIRCUIT(S) INDICATED. IF NOT INDICATED ON THE PLAN, REFER TO THE PANEL SCHEDULE FOR CONDUCTOR/RACEWAY INFORMATION.
- # = DUPLEX RECEPTACLE (WALL) - WALL MOUNTED 20A, 120V RECEPTACLE TO CIRCUIT INDICATED.



Key Plan

N.T.S.

NORTH

Date	01/25/24
Checked	MAM
Drawn	JDD

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Job No. 4.1603.02

File No. 4160302E203

E2.03

PANEL SCHEDULE - EXISTING MDP W/ NEW WORK

FED FROM UTILITY | 208Y/120V

CT#	Load Description	OCPD Type	OCPD Poles	OCPD Rated	Conductors Current	Conductors Neutral	Conductors Ground	Raceway	Voltage	Load kVA	Load per Phase(A) Phase A	Phase B	Phase C
1	**(N) ACCU-1 (D)CU-1**	**Std**	**3**	**250A**	**(3) 250 ga.**	**(1) 250 ga.**	**(1) 4 ga.**	**2-1/2 in. EMT**	**208**	**85.74**	**238**	**238**	**238**
2	*(E) PANEL P2*						*EXISTING TO REMAIN*						
3	*(E) PANEL PB*						*EXISTING TO REMAIN*						
4	*(E) PANEL PM*						*EXISTING TO REMAIN*						
5	*(E) PANEL P1*						*EXISTING TO REMAIN*						
6	*(E) SPARE*						*EXISTING TO REMAIN*						
7	*(E) ELEVATOR*						*EXISTING TO REMAIN*						
8	*(E) BLANK SPACE*						*EXISTING TO REMAIN*						
9	**(N) AHU-1 (D) AHU-1**	**Std**	**3**	**175A**	**(3) 2/0 ga.**	**none**	**(1) 6 ga.**	**2 in. EMT**	**208**	**40.17**	**111.5**	**111.5**	**111.5**
10	**(N) ACCU-3 (D)CU-3**	**Std**	**3**	**90A**	**(3) 3 ga.**	**none**	**(1) 8 ga.**	**1-1/4 in. EMT**	**208**	**23.78**	**66**	**66**	**66**
11	**(N) ACCU-2 (D)CU-2**	**Std**	**3**	**90A**	**(3) 3 ga.**	**none**	**(1) 8 ga.**	**1-1/4 in. EMT**	**208**	**23.78**	**66**	**66**	**66**
12	*(E) BLANK SPACE*						*EXISTING TO REMAIN*						
	Total Circuits	*12*						Proposed Connected Loads:			**481.5**	**481.5**	**481.5**

Voltage: 120 / 208
Circuits: 10 / 12
Neutral Buss: Yes
Ground Buss: Yes
Buss Capacity: 1200 A
NEMA: Type 1

Main Connection: breaker
Load kVA:
OCPD Size: 1200A
OCPD Type: Std
Location:
Remarks:

(E) - EXISTING TO REMAIN
(D) - REMOVE EXISTING BREAKER
(N) - PROVIDE AND INSTALL NEW BREAKER IN EXISTING LOCATION

PANEL SCHEDULE - EXISTING PANEL PB W/ NEW WORK

FED FROM MDP | 208Y/120V

CT#	Load Description	OCPD Type	OCPD Poles	OCPD Rated	Conductors Current	Conductors Neutral	Conductors Ground	Raceway	Voltage	Load kVA	Load per Phase(A) Phase A	Phase B	Phase C
1	*(E) RECEPT RM 113*						*EXISTING TO REMAIN*						
2	*(E) RECEPT PANEL*						*EXISTING TO REMAIN*						
3	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
4	*(E) AIR COMP*						*EXISTING TO REMAIN*						
5	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
6	*(E) SUB PUMP*						*EXISTING TO REMAIN*						
7	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
8	*(E) RECEPT BASEMENT*						*EXISTING TO REMAIN*						
9	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
10	*(E) LTG BASEMENT*						*EXISTING TO REMAIN*						
11	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
12	*(E) LTG CRAWL SPACE*						*EXISTING TO REMAIN*						
13	*(E) LTG READING RM*						*EXISTING TO REMAIN*						
14	*(E) LTG CRAWL SPACE*						*EXISTING TO REMAIN*						
15	*(E) RECEPT READING RM*						*EXISTING TO REMAIN*						
16	*(E) RECEPT RM 114*						*EXISTING TO REMAIN*						
17	*(E) RECEPT READING RM*						*EXISTING TO REMAIN*						
18	*(E) LTG RM 114/116*						*EXISTING TO REMAIN*						
19	*(E) LTG TYPE E*						*EXISTING TO REMAIN*						
20	*(E) RECEPT RM 116*						*EXISTING TO REMAIN*						
21	*(E) LTG TYPE E*						*EXISTING TO REMAIN*						
22	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
23	*(E) LIGHTING*						*EXISTING TO REMAIN*						
24	*(E) BOILER*						*EXISTING TO REMAIN*						
25	*(E) LIGHTING*						*EXISTING TO REMAIN*						
26	*(E) BOILER*						*EXISTING TO REMAIN*						
27	*(E) RECEPT*						*EXISTING TO REMAIN*						
28	*(E) VAV BOX*						*EXISTING TO REMAIN*						
29	*(E) RECEPT*						*EXISTING TO REMAIN*						
30	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
31/33/35	*(E) PUMP 1*						*EXISTING TO REMAIN*						
32/34/36	*(E) UNIT HEATER*						*EXISTING TO REMAIN*						
37/39/41	*(E) SPARE*						*EXISTING TO REMAIN*						
38/40/42	*(E) PUMP 2*						*EXISTING TO REMAIN*						
43	*(E) RECEPT RM 107*						*EXISTING TO REMAIN*						
44	*(E) LTG TYPE 1*						*EXISTING TO REMAIN*						
45	*(E) RECEPT RM 107*						*EXISTING TO REMAIN*						
46	*(E) RECEPT SVC RM*						*EXISTING TO REMAIN*						
47	*(E) PLUGMOLD*						*EXISTING TO REMAIN*						
48	*(E) RECEPT SVC RM*						*EXISTING TO REMAIN*						
49	*(E) PLUGMOLD*						*EXISTING TO REMAIN*						
50	*(E) FLOOR RECEPT*						*EXISTING TO REMAIN*						
51	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
52/54/56	**(N) AHU-3 (D) AHU-3**	**Std**	**3**	**90A**	**(3) 3 ga.**	**none**	**(1) 8 ga.**	**1-1/4 in. EMT**	**208**	**19.45**	**54**	**54**	**54**
53	*(E) CONTROL CIRCUIT*						*EXISTING TO REMAIN*						
55	*(E) CONTROL CIRCUIT*						*EXISTING TO REMAIN*						
57	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
58/60/62	*(E) RELIEF FAN*						*EXISTING TO REMAIN*						
59/61	*(E) WATER HEATER*						*EXISTING TO REMAIN*						
63/65/67	*(E) BOILER 2 CIRC. PUMP*						*EXISTING TO REMAIN*						
64													
66													
68													
69/71/73	*(E) BOILER 1 CIRC. PUMP*						*EXISTING TO REMAIN*						
70													
72													
74-84													
								Proposed Connected Loads:			**54**	**54**	**54**

Voltage: 120 / 208
Circuits: 68 / 84
Neutral Buss: No
Ground Buss: Yes
Buss Capacity: 225 A
NEMA: Type 1

Main Connection: breaker
Load kVA: 19
OCPD Size: 225A
OCPD Type: Std
Location:
Remarks:

(E) - EXISTING TO REMAIN
(D) - REMOVE EXISTING BREAKER
(N) - PROVIDE AND INSTALL NEW BREAKER IN EXISTING LOCATION

PANEL SCHEDULE - EXISTING PANEL PM W/ NEW WORK

FED FROM MDP | 208Y/120V

CT#	Load Description	OCPD Type	OCPD Poles	OCPD Rated	Conductors Current	Conductors Neutral	Conductors Ground	Raceway	Voltage	Load kVA	Load per Phase(A) Phase A	Phase B	Phase C
1	*(E) CONTROL CCT*						*EXISTING TO REMAIN*						
2	*(E) RECEPTACLES*						*EXISTING TO REMAIN*						
3	*(E) ROOF LTS & RECEPT*						*EXISTING TO REMAIN*						
4	*(E) FAN CONTROLS*						*EXISTING TO REMAIN*						
5	*(E) RELIEF FAN CONTROL*						*EXISTING TO REMAIN*						
6/8/10	**(N) EF-1 (D) RELIEF FAN**	**Std**	**3**	**50A**	**(3) 8 ga.**	**none**	**(1) 10 ga.**	**1 in. EMT**	**208**	**9.28**	**30.3**	**30.3**	**30.3**
7	*(E) LIGHTING*						*EXISTING TO REMAIN*						
9	*(E) LIGHTING*						*EXISTING TO REMAIN*						
11/13/15	**(N) AHU-2 (D) AHU-2**	**Std**	**3**	**50A**	**(3) 8 ga.**	**none**	**(1) 10 ga.**	**1 in. EMT**	**208**	**10.45**	**29**	**29**	**29**
12/14/16	*(E) UNIT HEATER*						*EXISTING TO REMAIN*						
17/19/21	**(N) EF-2**	**Std**	**3**	**20A**	**(3) 12 ga.**	**none**	**(1) 12 ga.**	**3/4 in. EMT**	**208**	**1.07**	**3.48**	**3.48**	**3.48**
18/20/22	**(N) EF-4**	**Std**	**3**	**20A**	**(3) 12 ga.**	**none**	**(1) 12 ga.**	**3/4 in. EMT**	**208**	**1.07**	**3.48**	**3.48**	**3.48**
23-30													
								Proposed Connected Loads:			**66.26**	**66.26**	**66.26**

Voltage: 120 / 208
Circuits: 22 / 30
Neutral Buss: No
Ground Buss: Yes
Buss Capacity: 200 A
NEMA: Type 1

Main Connection: breaker
Load kVA: 22
OCPD Size: 200A
OCPD Type: Std
Location:
Remarks:

(E) - EXISTING TO REMAIN
(D) - REMOVE EXISTING BREAKER
(N) - PROVIDE AND INSTALL NEW BREAKER IN EXISTING LOCATION

PANEL SCHEDULE - EXISTING PANEL P1 W/ NEW WORK

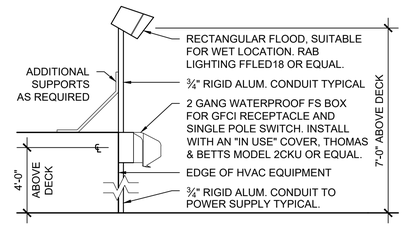
FED FROM MDP | 208Y/120V

CT#	Load Description	OCPD Type	OCPD Poles	OCPD Rated	Conductors Current	Conductors Neutral	Conductors Ground	Raceway	Voltage	Load kVA	Load per Phase(A) Phase A	Phase B	Phase C
1	*(E) LIGHTING*						*EXISTING TO REMAIN*						
2	*(E) LIGHTING*						*EXISTING TO REMAIN*						
3	*(E) LIGHTING*						*EXISTING TO REMAIN*						
4	*(E) LIGHTING*						*EXISTING TO REMAIN*						
5	*(E) LIGHTING*						*EXISTING TO REMAIN*						
6	*(E) LIGHTING*						*EXISTING TO REMAIN*						
7	*(E) LIGHTING*						*EXISTING TO REMAIN*						
8	*(E) LIGHTING*						*EXISTING TO REMAIN*						
9	*(E) LIGHTING*						*EXISTING TO REMAIN*						
10	*(E) LIGHTING*						*EXISTING TO REMAIN*						
11	*(E) SPARE*						*EXISTING TO REMAIN*						
12	*(E) LIGHTING*						*EXISTING TO REMAIN*						
13	*(E) EXIT & NIGHT LITES*						*EXISTING TO REMAIN*						
14	*(E) LIGHTING*						*EXISTING TO REMAIN*						
15	*(E) LIGHTING*						*EXISTING TO REMAIN*						
16	*(E) LIGHTING RARE BOOKS*						*EXISTING TO REMAIN*						
17	*(E) RECEPT STAIRWELL*						*EXISTING TO REMAIN*						
18	*(E) LIGHTING GOV. DOC.*						*EXISTING TO REMAIN*						
19	*(E) RECEPT STAIRWELL*						*EXISTING TO REMAIN*						
20	*(E) LIGHTING*						*EXISTING TO REMAIN*						
21	*(E) RECEPT STAIRWELL*						*EXISTING TO REMAIN*						
22	*(E) RECEPT N/E WALL*						*EXISTING TO REMAIN*						
23	*(E) RECEPT STAIRWELL*						*EXISTING TO REMAIN*						
24	*(E) RECEPT ADULT BOOKS*						*EXISTING TO REMAIN*						
25	*(E) RECEPT GOV DOC*						*EXISTING TO REMAIN*						
26	*(E) VAV BOXES*						*EXISTING TO REMAIN*						
27	*(E) COPY MACHINE*						*EXISTING TO REMAIN*						
28	*(E) VAV BOXES*						*EXISTING TO REMAIN*						
29	*(E) RECEPT RARE BOOKS*						*EXISTING TO REMAIN*						
30	*(E) RECEPT*						*EXISTING TO REMAIN*						
31	*(E) HEATER STAIR 2*						*EXISTING TO REMAIN*						
32	*(E) RECEPT*						*EXISTING TO REMAIN*						
33	*(E) VAV BOXES*						*EXISTING TO REMAIN*						
34	*(E) FLOOR*						*EXISTING TO REMAIN*						
35	*(E) RECEPT GOV DOC & COLUMN*						*EXISTING TO REMAIN*						
36	*(E) FIRE ALARM*						*EXISTING TO REMAIN*						
37	*(E) RECEPT WORK ROOM*						*EXISTING TO REMAIN*						
38	*(E) LTG CIRCULATION*						*EXISTING TO REMAIN*						
39	*(E) RECEPT CIRCULATION*						*EXISTING TO REMAIN*						
40	*(E) LTG CIRCULATION*						*EXISTING TO REMAIN*						
41	*(E) RECEPT BOOK THEFT*						*EXISTING TO REMAIN*						
42	*(E) LTG CIRCULATION*						*EXISTING TO REMAIN*						
43	*(E) RECEPT LOBBY*						*EXISTING TO REMAIN*						
44	*(E) LTG LOBBY*						*EXISTING TO REMAIN*						
45	*(E) RECEPT WATER COOLER*						*EXISTING TO REMAIN*						
46	*(E) HEATER LOBBY/STAIR 1*						*EXISTING TO REMAIN*						
47	*(E) LTG STAIR 1*						*EXISTING TO REMAIN*						
48	*(E) RECEPT OUTSIDE*						*EXISTING TO REMAIN*						
49	*(E) SPARE*						*EXISTING TO REMAIN*						
50	*(E) RECEPT OUTSIDE*						*EXISTING TO REMAIN*						
51	*(E) SPARE*						*EXISTING TO REMAIN*						
52	*(E) LTG CONTACTOR*						*EXISTING TO REMAIN*						
53	*(E) RECEPT ADULT*						*EXISTING TO REMAIN*						
54	*(E) NEW INFO CENTER*						*EXISTING TO REMAIN*						
55	*(E) FLOOR RECEPT*						*EXISTING TO REMAIN*						
56	*(E) SECURITY SYSTEM*						*EXISTING TO REMAIN*						
57	*(E) RECEPT. COL*						*EXISTING TO REMAIN*						
58	*(E) ELEVATOR CONTROL*						*EXISTING TO REMAIN*						
59	*(E) FLOOR RECEPT*						*EXISTING TO REMAIN*						
60	*(E) FLOOR RECEPT*						*EXISTING TO REMAIN*						
61	*(E) RECEPT. BROWSING*						*EXISTING TO REMAIN*						
62	*(E) AUTO DOORS*						*EXISTING TO REMAIN*						
63	*(E) FLOOR RECEPT*						*EXISTING TO REMAIN*						
64	*(E) PROJ. POWER POLE*						*EXISTING TO REMAIN*						
65	*(E) COMPUTER RECEPT*						*EXISTING TO REMAIN*						
66	*(E) PROJ. POWER POLE*						*EXISTING TO REMAIN*						
67	*(E) STAIRCASE*						*EXISTING TO REMAIN*						
68	*(E) PROJ. POWER POLE*						*EXISTING TO REMAIN*						
69	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
70	*(E) PROJ. POWER POLE*						*EXISTING TO REMAIN*						
71	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
72	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
73	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
74	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
75	*(E) UNKNOWN*						*EXISTING TO REMAIN*						
76/78/80	**(N) EF-3**	**Std**	**3**	**20A**	**(3) 12 ga.**	**none**	**(1) 12 ga.**	**3/4 in. EMT**	**208**	**2.88**	**9.4**	**9.4**	**9.4**
77													
79													
81-84													
								Proposed Connected Loads:			**9.4**	**9.4**	**9.4**

Voltage: 120 / 208
Circuits: 78 / 84
Neutral Buss: Yes
Ground Buss: Yes
Buss Capacity: 200 A
NEMA: Type 1

Main Connection: breaker
Load kVA: 3
OCPD Size: 200A
OCPD Type: Std
Location:
Remarks:

(E) - EXISTING TO REMAIN
(D) - REMOVE EXISTING BREAKER
(N) - PROVIDE AND INSTALL NEW BREAKER IN EXISTING LOCATION



1 E6.01 HVAC Convenience Receptacle/Light Detail

N.T.S.

Date	01/25/24
Checked	MH
Drawn	MH

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ELECTRICAL PANEL SCHEDULES & DETAIL
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