676 WHITE PLAINS ROAD, SCARSDALE, NY
HVAC REPLACEMENT

NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE INCORPORATED TOWN OF EAST CHESTER AND THE N.Y.S. BUILDING CODE 2020. CONTRACTOR IS TO FILE WORKERS' COMPENSATION AND PAY ALL FEES REQUIRED BY ANY LOCAL DEPARTMENT.
2. ALL MATERIALS, ASSEMBLIES, AND METHODS OF CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE N.Y.S. BUILDING CODE.
3. ALL REQUIREMENTS OF LOCAL, STATE, AND FEDERAL CODES PERTAINING TO DISABLED PERSONS SHALL APPLY TO THE CONTRACT WORK.
4. CONTRACTOR SHALL PERFORM ALL NECESSARY PATCHING, REFINISHING, ETC., ARISING FROM THE CONTRACT WORK.
5. CONTRACTOR SHALL PROTECT ALL AREAS WITHIN THE CONTRACT LIMITS.
6. NO WORK SHALL BE DONE BEYOND BUILDING LINES.
7. DO NOT SCALE OFF DRAWINGS.
8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON PLANS IN THE FIELD PRIOR TO COMMENCING WORK. MERRITT ENGINEERING CONSULTANTS, D.P.C. (MEC) SHALL BE NOTIFIED OF ANY DISCREPANCIES.
9. CONTRACTOR SHALL PROVIDE AND MAINTAIN METHODS AND EQUIPMENT FOR PROTECTING THE BUILDING, ALL MATERIALS, AND PERSONNEL FROM FIRE DAMAGE DURING THE WORK.
10. FIRE PROTECTION AND PREVENTION DURING CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED TO, THE LATEST NFPA AND OSHA REGULATIONS AND THE CODES AND RULES OF NEW YORK STATE.
11. THE CONTRACTOR SHALL REVIEW ALL EXISTING CONDITIONS TO IDENTIFY ALL SERVICES (ELECTRICAL AND MECHANICAL) THAT MAY BE AFFECTED BY THE WORK. THE CONTRACTOR SHALL MAKE ANY NECESSARY TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SERVICES TO ALL AREAS OF THE BUILDING(S) OR OTHER AREAS AFFECTED BY THE WORK. CONSTRUCTION OPERATIONS WILL NOT INVOLVE INTERRUPTION OF HEAT, WATER, OR ELECTRICAL SERVICES TO TENANTS OF THE BUILDING. COORDINATE ALL DISRUPTION OF THE MECHANICAL AND ELECTRICAL SYSTEMS WITH BUILDING MANAGEMENT.
12. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS SUBMITTED ALL REQUIRED DOCUMENTS (E.G. CERTIFICATES, PERMITS, ETC.) RELATED TO INSURANCE AND WORK PERMITS.
13. THE CONTRACTOR SHALL PROVIDE AN ALL-INCLUSIVE PROJECT SCHEDULE AND SHALL PROVIDE MEC WITH A PROGRESS SCHEDULE, WHICH COORDINATES ALL PHASES OF THE WORK.
14. IT IS THE INTENT OF THE PLANS TO EXPLAIN THE REQUIREMENTS OF THE PROPOSED ALTERATION(S)/REPAIR(S), HOWEVER, FIELD CONDITIONS MAY ARISE DURING CONSTRUCTION THAT MAY NOT HAVE BEEN FULLY DETAILED.
15. CONTRACTOR TO SUBMIT PROJECT SCHEDULE FOR REVIEW BY MEC PRIOR TO COMMENCEMENT OF THE WORK. CONTRACTOR TO SCHEDULE INSPECTIONS WITH MEC UPON COMPLETION OF PROJECT ACTIVITIES IN ANY WORK AREA.
16. ALLBRANCH SPACES SHALL BE OCCUPIED DURING CONSTRUCTION. CONSTRUCTION WORK WILL BE CONFINED TO THE MER AND ROOF AND WILL NOT CREATE DUST, DIRT, OR OTHER SUCH INCONVENIENCES IN THE OCCUPIED APARTMENT UNITS WITHIN THE BUILDING.
17. ALL EXISTING MEANS OF EGRESS FOR TENANTS OF THE BUILDING SHALL BE MAINTAINED CLEAR AND FREE OF ALL OBSTRUCTIONS, SUCH AS BUILDING MATERIALS, TOOLS, EQUIPMENT, ETC.
18. CONSTRUCTION OPERATIONS WILL BE CONFINED TO AFTER WORKING HOURS, 9 AM TO 5 PM, MONDAY THROUGH FRIDAY. CONTRACTOR SHALL OBTAIN THE WRITTEN CONSENT OF ALL PARTIES AFFECTED BY HIS WORK DURING OTHER THAN REGULAR HOURS.
19. WORK SHALL COMPLY WITH ALL SAFETY AND HEALTH LAWS AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, PROVISIONS AND REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND/OR THE CONSTRUCTION SAFETY ACT OF 1969, AS AMENDED.
20. WORK WILL NOT AFFECT THE STRUCTURAL INTEGRITY OF THE BUILDING.
21. ANY REMOVAL OF ASBESTOS OR LEAD-CONTAINING MATERIALS SHALL BE PERFORMED IN COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
22. CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE BUILDING RELATING TO WORKING HOURS, RUBBISH REMOVAL, DELIVERIES, AND PROTECTION OF AREAS OUTSIDE THE ACTUAL WORK AREA.
23. THE CONSTRUCTION, EQUIPMENT, AND METHODS USED SHALL COMPLY WITH ALL REQUIREMENTS OF THE NEW YORK STATE CONSTRUCTION CODES GENERAL ADMINISTRATIVE PROVISIONS, THE NEW YORK STATE HEALTH CODE, THE NEW YORK STATE ENERGY CONSERVATION CODE, AND OTHER REQUIREMENTS, RULES, AND REGULATIONS OF THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ANY OTHER AGENCIES HAVING JURISDICTION.
24. NOISE LEVELS RELATED TO CONSTRUCTION WORK MUST COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.

NYS ECC NOTE:

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THESE PLANS AND SPECIFICATIONS ARE EXEMPT FROM THE NEW YORK STATE ENERGY CONSERVATION CODE.

GENERAL NOTES:

1. THE CONTRACTOR SHALL VISIT THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR IS TO SATISFY HIMSELF OF ALL CONDITIONS PRIOR TO THE SUBMISSION OF A BID PROPOSAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS AND A BID PROPOSAL SHALL BE CONSTRUED AS EVIDENCE HE HAS DONE SO.
2. ALL HVAC WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
3. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
4. COORDINATE DUCTWORK WITH APPROVED SUBMISSION OF SUPPLY, RETURN & EXHAUST AIR UNIT SIZES AND ASSOCIATED INLET AND OUTLET CONNECTIONS.
5. PROVIDE ACCESS FOR SMOKE DETECTORS IN DUCTWORK.
6. ACCESS DOORS INTO DUCTWORK SHALL NOT BE SMALLER THAN 18"X18" UNLESS DUCT SIZES DO NOT PERMIT. INDICATE SIZE AND LOCATIONS OF ALL ACCESS DOORS.
7. SHEETMETAL SHOP DRAWINGS MUST BE COORDINATED WITH ALL TRADES (MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, ETC.) BEFORE FABRICATION.
8. ALL DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
9. ALL CONDENSATE DRAIN LINES FROM EACH UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH P-TRAP, AND TERMINATED AT THE NEAREST ROOF DRAIN OR SLOP SINK. USE COPPER TYPE "L" TUBING .
10. ALL EQUIPMENT, PIPING, DUCTWORK, ETC. SHALL BE SUPPORTED AS DETAILED AND SPECIFIED. ADDITIONAL SUPPORT SHALL BE PROVIDED AS REQUIRED TO PROVIDE VIBRATION-FREE INSTALLATION.
11. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MOUNTING THE SMOKE DETECTORS IN DUCTWORK AS SHOWN ON PLANS.
12. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND ELECTRICAL PROJECT SPECIFICATIONS.
13. PROVIDE, AS REQUIRED BY CODE (LOCAL OR NATIONAL), ANY ADDITIONAL FIRE DAMPERS, SMOKE DAMPERS, ACCESS PANELS, OR SPECIAL SUPPORTS NOT SHOWN ON PLANS AT NO ADDITIONAL COST TO OWNER.
14. PROVIDE ALL NECESSARY FLASHING AND COUNTER-FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS,CONDUITS AND EQUIPMENT. PROVIDE EQUIPMENT CURBS, RAILS, SUPPLEMENTAL STEEL AND DUNNAGE STEEL AS REQUIRED.
15. FIRE STOPPING SHALL BE INSTALLED AT ALL PENETRATIONS OF FIRE RATED CONSTRUCTION.
16. AFTER FINAL TESTS AND ADJUSTMENTS, FULLY INSTRUCT OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED. A SIGNED RECEIPT WHICH SHALL BE OBTAINED FROM THE OPERATOR SHALL BE CONSTRUED AS EVIDENCE THAT INSTRUCTIONS WERE SATISFACTORY.

ZONING CALCULATIONS:

1. NO CHANGE IN USE, EGRESS OR OCCUPANCY

PROGRESS INSPECTIONS:

1. FINAL INSPECTION

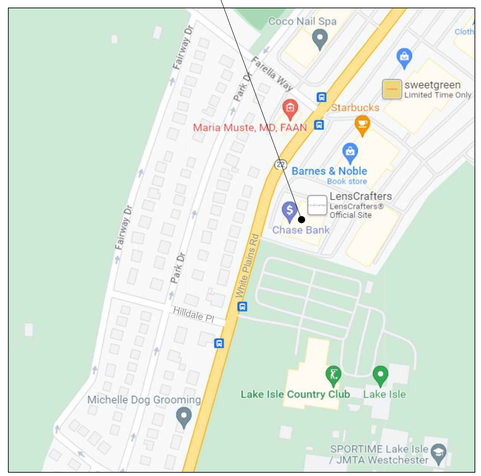
INDEX OF PAGES:

SCOPE OF WORK:

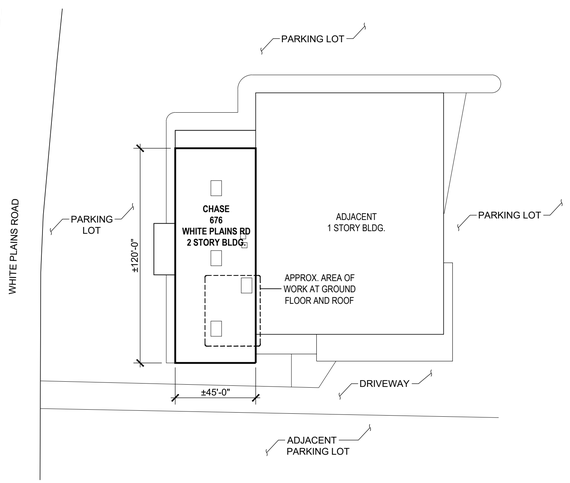
1. GENERAL CONDITIONS: CONTRACTOR SHALL PROVIDE PROTECTION, INSURANCE, CARTING, HOISTING AND ALL REQUIRED LABOR, EQUIPMENT AND TOOLS TO COMPLETE THE REQUIRED WORK.
2. ALL EXISTING EQUIPMENT AND PIPING SCHEDULED TO BE REPLACED AS PART OF THE WORK SHALL BE DISASSEMBLED, REMOVED AND LEGALLY DISPOSED OF OFF-SITE.
3. REPLACE THE EXISTING WATER COOLED 25 TON A.H.U. AND COOLING TOWER. WITH NEW TWO (2) 12 TON VERTICAL AIR-COOLED A.H. THE UNITS SHALL HAVE ALL FRONT ACCESS FOR SERVICE, RETURN AIR AND TOP DISCHARGE.
4. PROVIDE NEW TRANE/MITSUBISHI, AIR COOLED, HEAT PUMP SPLIT SYSTEM CONSISTING OF TWO (2) 12 TON VERTICAL AIR HANDLERS, TO OPERATE IN TANDEM, WITH HOT WATER COIL AND A VRF, AIR COOLED, CONDENSING UNIT IN PLACE OF THE EXISTING ROOF MOUNTED COOLING TOWER. PROVIDE NEW REFRIGERANT PIPING, POWER, CONTROLS AND CONDUITS UP TO ROOF.
5. THE EXISTING OUTDOOR AIR LOUVER ABOVE THE MER EXIT DOOR SHALL REMAIN TO PROVIDE OUTSIDE AIR AND THE NECESSARY AIR-SIDE ECONOMIZER. PROVIDE NEW O.A.I. F/SD DAMPER.
6. PROVIDE AUTOMATIC TEMPERATURE CONTROLS WITH NEW TRANE UC600 CONTROLLER WITH USER INTERFACE AND BACNET GATEWAY TO COMMUNICATE WITH THE CHASE'S DAINTREE SYSTEM.
7. PROVIDE POWER, NEW OVER CURRENT PROTECTION, NEW DISCONNECT SWITCHES AND DUCT MOUNTED SMOKE DETECTORS.
8. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE MISCELLANEOUS SINGLE PHASE POWER CIRCUITS TO CONTROL PANELS, LEVs, AND CONTROL DEVICES AS NECESSARY. THIS CONTROL POWER AND CONTROL WIRING SHALL BE FURNISHED FOR ALL SYSTEMS AND EQUIPMENT AND WHERE SHOWN ON THE CONTRACT DRAWINGS OR APPROVED SHOP DRAWINGS.
9. MECHANICALLY CLEAN ALL EXISTING DUCTWORK.
10. PROVIDE TESTING AND BALANCING REPORTS FOR PRE-CONSTRUCTION AND POST-CONSTRUCTION CONDITIONS.
    - A COMPLETE PRE-CONSTRUCTION AIR TEST (AT EACH AIR OUTLET) AND REPORT SHALL BE PERFORMED BEFORE THE AHU DEMOLITION TO PROVIDE A BASELINE FOR AIR FLOW ANALYSIS.
    - THEN A POST CONSTRUCTION T&B SHALL BE PERFORMED (AT EACH AIR OUTLET) BASED ON MODIFICATIONS TO THE ORIGINAL PRE-CONSTRUCTION TESTING REPORT.
    - NEW UNIT SHALL BE TESTED IN THE ECONOMIZER CYCLE AND A REPORT INCLUDED WITH THE EQUIPMENT'S FACTORY START-UP REPORT AT PROJECT CLOSE-OUT.
11. PROVIDE A NEW INDEPENDENT 1.5 TON MITSUBISHI HEAT PUMP, SPLIT SYSTEM, TO SERVE THE EMPLOYEE LOUNGE/PANTRY. MOUNT CONDENSERS ON THE EXISTING ROOF DUNNAGE. PROVIDE AUXILIARY STEEL AS REQUIRED.
12. PROVIDE NEW STAND ALONE SMOKE DETECTORS FOR LOCAL FAN SHUT-DOWN. PROVIDE AN ADD/ALT TO TIE NEW SMOKE DETECTORS INTO EXISTING FIRE ALARM PANEL.
13. PROVIDE NEW ROOF EQUIPMENT RAILS AND ASSOCIATED ROOF WORK, SPLICE, REPAIR AND PATCH AS REQUIRED.

PARCEL ID	64-1-7.B
PROPERTY CLASS	REGIONAL SHOPPING CENTER
ZONING	DESIGN SHOPPING CENTER
GFA	5,400 SQ-FT

676 WHITE PLAINS ROAD, TOWN OF EASTCHESTER , NY



1 BUILDING LOCATION MAP
SCALE: N.T.S.



2 PLOT PLAN
SCALE: 1" = 40'-0"

0 10' 20' 40' 80'
1" = 40'-0"

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT: CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

DRAWING TITLE:
GENERAL NOTES, BUILDING LOCATION MAP & PLOT PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.: T-100.00
PAGE: 1 OF 11

COMcheck Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code:	2020 New York State Energy Conservation Construction Code
Project Title:	Chase - Vernon Hills
Location:	Scarsdale, New York
Climate Zone:	4a
Project Type:	Alteration

Construction Site:
676 White Plains Road
Scarsdale, New York 10583

Owner/Agent:
New York

Designer/Contractor:
Christopher Krepcio, PE
MERRITT ENGINEERING CONSULTANT, DPC
28-08 Bayside Lane
Flushing, New York 11358
17187674920
ck@merrittengineering.com

Mechanical Systems List

Quantity **System Type & Description**

1 HVAC System (Unknown):
VRF Condensing Unit, Air Cooled Heat Pump
Heating Mode: Capacity = 160 kBtu/h,
No minimum efficiency requirement applies
Cooling Mode: Capacity = 144 kBtu/h,
No minimum efficiency requirement applies
Fan System: None

1 HVAC System (Unknown):
VRF Condensing Unit, Air Cooled Heat Pump
Heating Mode: Capacity = 21 kBtu/h,
No minimum efficiency requirement applies
Cooling Mode: Capacity = 18 kBtu/h,
No minimum efficiency requirement applies
Fan System: None

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2020 New York State Energy Conservation Construction Code requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

COMcheck Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2020 New York State Energy Conservation Construction Code

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.12.2 C403.12.3 [FO9][1]	Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6][1]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C404.6.3 [PL7][1]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C404.7 [PL8][1]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41][1]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.8.1 [ME65][1]	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
C403.8.3 [ME117][2]	Fans have efficiency grade (FEG) >= 67. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.12.1 [ME71][1]	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.2 [ME59][1]	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.7.1 [ME59][1]	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.7.2 [ME115][1]	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.7.6 [ME141][1]	HVAC systems serving guestrooms in Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.7.4 [ME57][1]	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.7.5 [ME116][1]	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.11.1 C403.11.2 [ME60][2]	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.4.3.3.2 [ME121][1]	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop. Open- or closed circuit cooling towers have a separate heat exchanger to isolate the cooling tower from the heat pump loop, and heat loss is controlled by shutting down the circulation pump on the cooling tower loop.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.4.4.1.4 [ME63][2]	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.2.1 [ME53][1]	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.5, C403.5.1, C403.5.2 [ME123][1]	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2..	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.3 [FI8][1]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.2 [FI27][1]	HVAC systems and equipment capacity does not exceed calculated loads.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.4.1 [FI47][1]	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.4.1.1 [FI42][1]	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.4.1.2 [FI38][1]	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.4.1.3 [FI20][1]	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.4.2 [FI39][1]	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.2.4.2.1; C403.2.4.2.2 [FI40][1]	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.1 [FI28][1]	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.1 [FI31][1]	HVAC equipment has been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.2 [FI10][1]	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.4 [FI29][1]	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.2.5.1 [FI7][1]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.5.3 [FI43][1]	An air and/or hydronic system balancing report is provided for HVAC systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.5.4 [FI30][1]	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

ENERGY COMPLIANCE REPORT

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: MA
CHECKED BY: KS/MC
DRAWING NO.: EN-100.00
PAGE: 2 OF 11

MECHANICAL ABBREVIATIONS

AC	AIR CONDITIONING	L	LENGTH
AD	ACCESS DOOR	LAT	LEAVING AIR TEMPERATURE
AFF	ABOVE FINISHED FLOOR	LBS	POUNDS
AP	ACCESS PANEL	LDB	LEAVING DRY BULB TEMPERATURE
BDD	BACK DRAFT DAMPER	LIN FT	LINEAR FEET
BHP	BRAKE HORSEPOWER	LWB	LEAVING WET BULB
BTU	BRITISH THERMAL UNIT	LWT	LEAVING WATER TEMPERATURE
BTUH	BTU PER HOUR	MAX	MAXIMUM
CD	CEILING DIFFUSER	MBH	THOUSAND BTU PER HOUR
CFM	CUBIC FEET PER MINUTE	MCC	MOTOR CONTROL CENTER
CG	CEILING GRILLE	MER	MECHANICAL EQUIPMENT ROOM
CLG	CEILING	MHP	MOTOR HORSEPOWER
CR	CEILING REGISTER	MIN	MINIMUM
CW	CONDENSER WATER	MOT	MOTOR
CU FT	CUBIC FEET	NC	NORMALLY CLOSED
CU IN	CUBIC INCHES	NIC	NOT IN CONTRACT
CV	CONSTANT VOLUME	NO	NORMALLY OPEN
D	DROP	NO.	NUMBER
DB	DRY BULB	NTS	NOT TO SCALE
DIAM	DIAMETER	OAI	OUTSIDE AIR INTAKE
DN	DOWN	OD	OUTSIDE DIAMETER
DWG	DRAWING	OV	OUTLET VELOCITY
DX	DIRECT EXPANSION	PD	PRESSURE DROP
EA	EXHAUST AIR	PHC	PREHEAT COIL
EAT	ENTERING AIR TEMPERATURE	PSIA	PSI ABSOLUTE
EDB	ENTERING DRY BULB TEMPERATURE	PSIG	PSI GAUGE
EF	EXHAUST FAN	R	RISE
ELEC.	ELECTRIC	RA	RETURN AIR
ERC	ELECTRIC REHEAT COIL	RF	RETURN FAN
EQ	EQUAL	RM	ROOM
EWB	ENTERING WET BULB	RPM	REVOLUTION PER MINUTE
EWT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE
F	FILTER	SPEC	SPECIFICATION
°F	DEGREE FAHRENHEIT	TEMP	TEMPERATURE
FC	FLEXIBLE CONNECTION	TG	TOP GRILLE
FD	FIRE DAMPER	TYP	TYPICAL
FA	FREE AREA (SQ. FT.)	TX	TOILET EXHAUST
F.A.	FACE AREA	V	VOLTS
FLA	FULL LOAD AMPERES	W	WIDTH
FPM	FEET PER MINUTE	W/	WITH
F/ SD	FIRE/ SMOKE DAMPER	W/O	WITHOUT
FT	FEET	WB	WET BULB
H	HEIGHT	WC	WATER COLUMN
HC	HEATING COIL	WCCU	WATER-COOLED CONDENSING UNIT
HR	HOUR	WG	WATER GAUGE
HV	HEATING AND VENTILATING	WMS	WIRE MESH SCREEN
HZ	FREQUENCY	VD	VOLUME DAMPER
IN	IN OR INCHES	— D —	DRAIN
KW	KILOWATT		

MECHANICAL SYMBOL LIST

	PIPE UP		FLEX CONNECTION
	PIPE DOWN		FLEX CONNECTION
	PIPE STUB UP	12X12CD 300CFM 1-WAY	CEILING SUPPLY DIFFUSER
	FLOW DIRECTION		DUCT MOUNTED ELECTR. REHEAT COIL
DN UP	PITCH PIPE OR DUCT		SQUARE INCHES
	UNDERCUT DOOR		SQUARE FEET
	EXISTING TO REMAIN	12X12CR 300CFM	CEILING RETURN REGISTER
	EXISTING TO BE REMOVED	24X6BR 300CFM	BOTTOM RETURN REGISTER
	SUPPLY DUCT	T	THERMOSTAT
	RETURN OR EXHAUST DUCT	TS	TEMPERATURE SENSOR
	SQUARE ELBOW WITH VANES		CENTRIFUGAL FAN
	ROUND ELBOW WITH VANES	BDD	BACK DRAFT DAMPER
FD&AD	FIRE DAMPER AND ACCESS DOOR	A.D.	AUTOMATIC DAMPER
FSD&AD	FIRE SMOKE DAMPER AND ACCESS DOOR	℄	CENTER LINE
SD	DUCT SMOKE DETECTOR	OR CFM	CUBIC FEET PER MINUTE
SD	SMOKE DAMPER		VERTICAL DUCT DROP
SP	STATIC PRESSURE SENSOR		VERTICAL DUCT RISE
MD	MOTORIZED DAMPER		DIRECTION OF FLOW
SS	STATIC SENSOR	DN.	DOWN
	ACOUSTICALLY LINED DUCT		POINT OF CONNECTION
			POINT OF DISCONNECTION
		FD	FLOOR DRAIN
	BRANCH TAKE OFF W/ VD	CP	CONDENSATE PUMP

CODES, PERMITS AND INSPECTIONS:

1. ALL WORK SHALL MEET OR EXCEED LATEST REQUIREMENT OF THE LATEST EDITION OF THE NYS BUILDING CODE AND OTHER AUTHORITIES EXERCISING JURISDICTION OF THE WORK OF THIS PROJECT.
2. ANY PORTION OF WORK WHICH IS NOT SUBJECT TO THE APPROVAL OF AN AUTHORITY HAVING JURISDICTION SHALL BE PROVIDED IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIREMENTS.
3. SECURE PERMITS AND INSPECTION CERTIFICATES AND TRANSMIT SAME TO THE OWNER AT THE COMPLETION OF THE WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING ALL DOCUMENTS WITH ALL MUNICIPAL AGENCIES.
5. COORDINATE INSPECTIONS WITH LOCAL CODE ENFORCEMENT UNIT.

MERRITT ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

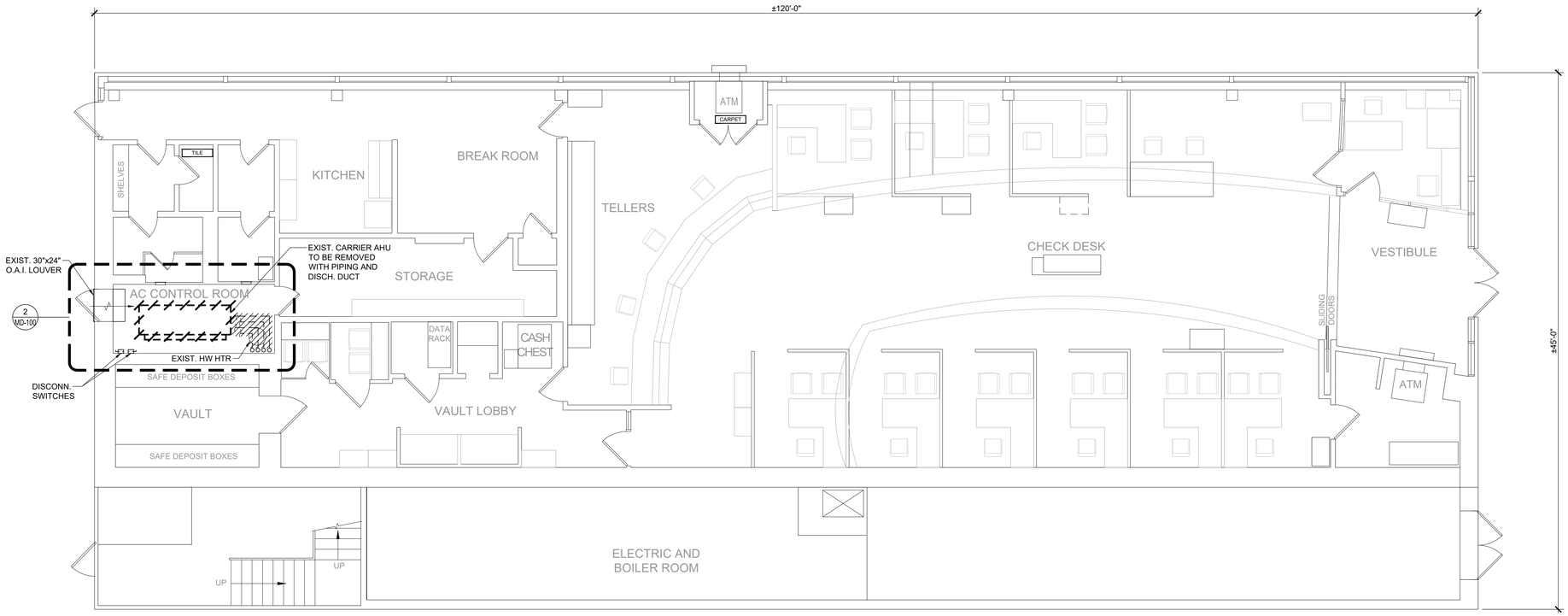
MECHANICAL ABBREVIATIONS AND SYMBOLS

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

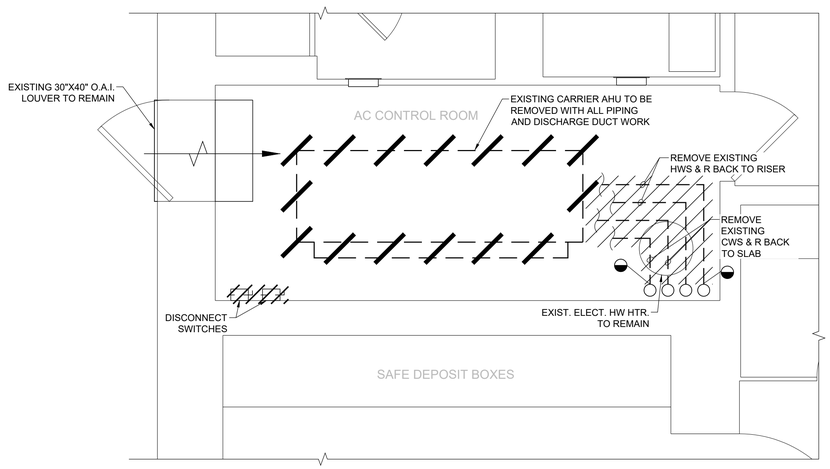
DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM
CHECKED BY: KS/MC
DRAWING NO.: M-001.00
PAGE: 3 OF 11



1 1ST FLOOR MECHANICAL DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

0 2' 4' 6' 12'
3/16" = 1'-0"



2 MER DEMOLITION PARTIAL PLAN

SCALE: 1/2" = 1'-0"

0 6" 1' 2' 4'
1/2" = 1'-0"

DEMO PLAN NOTES

1. EVACUATE AND CAPTURE REFRIGERANT CHARGE PRIOR TO DEMOLITION.
2. DISCONNECT AND MAKE SAFE POWER BEFORE DEMOLITION.
3. ALL REMOVED EQUIPMENT MATERIALS AND DEBRIS SHALL BE LEGALLY DISPOSED BY THE CONTRACTOR
4. DISCONNECT AND REMOVE DUCT "PAIR OF PANTS". COORDINATE WITH MER ELEVATION **DETAIL 8/M-200.**
5. SEE DEMO NOTES ON MD-101

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT: CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

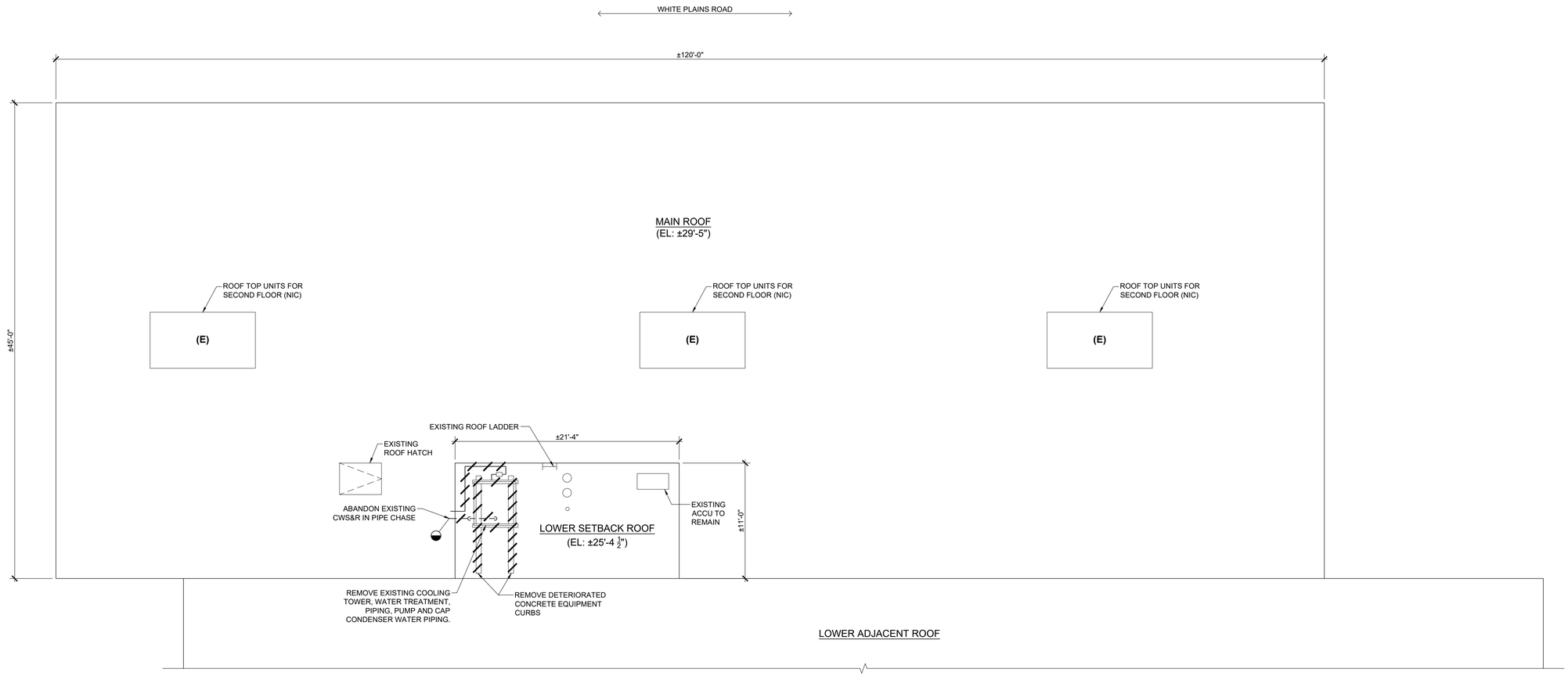
1ST FLOOR MECHANICAL DEMOLITION PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.: MD-100.00
PAGE: 4 OF 11



1 ROOF MECHANICAL DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

N

0 2' 4' 6' 12'

3/16" = 1'-0"

DEMO NOTES

1. REFER TO MECHANICAL DRAWINGS FOR NEW EQUIPMENT LAYOUT AND EXTENT OF EQUIPMENT BEING REPLACE, RELOCATED, OR REMOVED. COORDINATE WITH ALL TRADES AS TO EXTENT OF EQUIPMENT BEING REMOVED OR RELOCATED.
2. EXISTING CONDITIONS, EQUIPMENT, MATERIALS AND SIZES ARE SHOWN FOR REFERENCE ONLY, VERIFY EXISTING CONDITIONS AND BRING ANY DISCREPANCIES TO THE ENGINEERS ATTENTION IN WRITING PRIOR TO BID SUBMISSION.
3. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MECHANICAL DEMOLITION WORK FOR THIS PROJECT WHETHER OR NOT SPECIFICALLY INDICATED ON THIS OR OTHER DEMOLITION PLANS.
4. ALL WORK MUST BE SCHEDULED AND PERFORMED AS NOT TO INTERRUPT NORMAL BUILDING OPERATIONS. REMOVAL OF ITEMS THAT WILL CAUSE ANY TYPE OF TEMPORARY SHUTDOWN SHALL BE PERFORMED DURING PREMIUM TIME OR OFF HOURS AND SHALL BE SCHEDULED WITH OWNER FIELD REPRESENTATIVE.
5. MECHANICAL CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY CONNECTION/DISCONNECTIONS AS NEEDED TO ENSURE ADEQUATE SAFETY AND PROTECTION OF ALL PERSONS AND EQUIPMENT.
6. DISCONNECT, RELOCATE OR REMOVE MECHANICAL EQUIPMENT, ASSOCIATED MOTOR STARTERS AND DISCONNECT SWITCHES AS INDICATED BY PLANS OR AS REQUIRED BY CHANGES IN CONSTRUCTION.
7. DISCONNECT AND RELOCATE ANY MECHANICAL EQUIPMENT THAT MAY BE DISTURBED.
8. DURING THIS RENOVATION, DISPOSE OF ALL MATERIALS AS DIRECTED BY OWNER'S FIELD REPRESENTATIVE.
9. EVACUATE AND CAPTURE REFRIGERANT CHARGE PRIOR TO DEMOLITION.
10. DISCONNECT AND MAKE SAFE POWER BEFORE DEMOLITION.
11. PROTECT ROOF DURING DEMOLITION & NEW WORK.
12. SWEEP ROOF CLEAN DAILY.
13. DRAIN COOLING TOWER AND CWS&R BEFORE DEMOLITION.
14. COORDINATE WITH JLL REMOVAL OF WATER TREATMENT EQUIPMENT.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

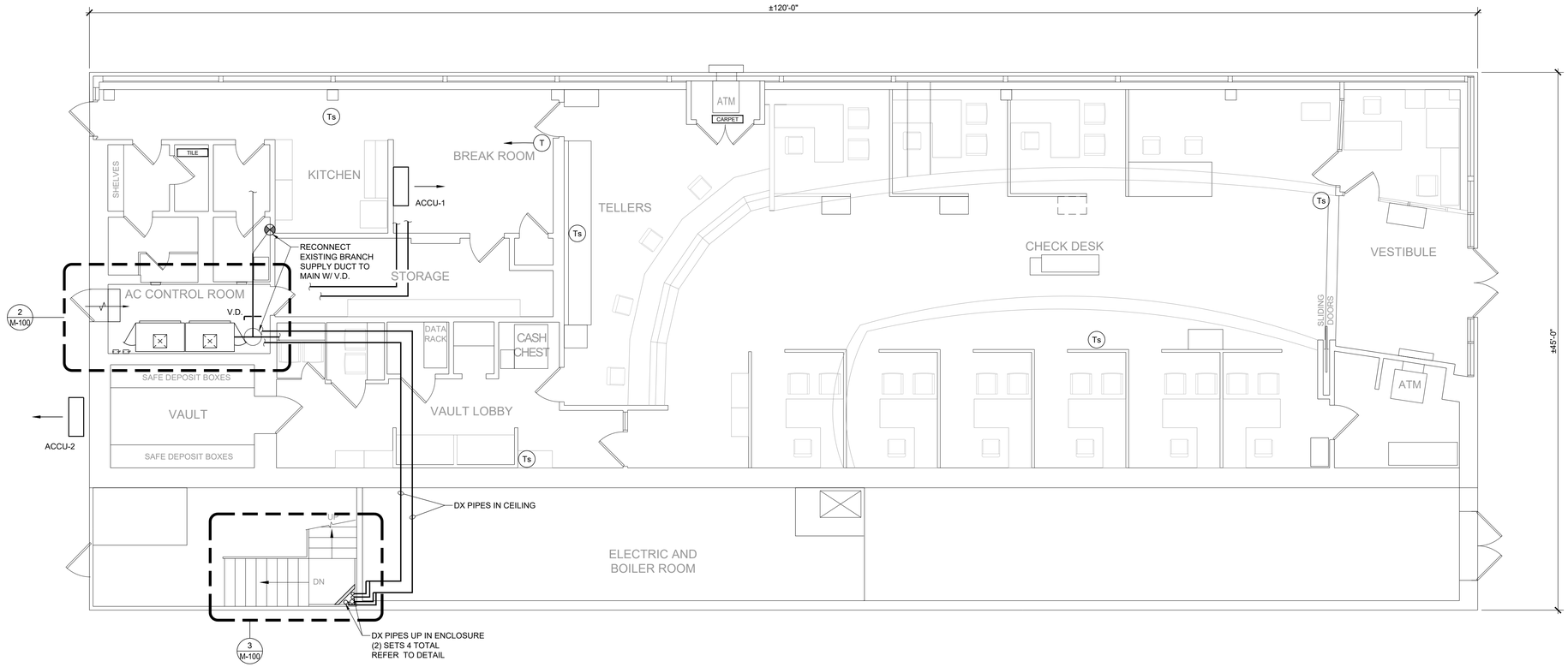
ROOF MECHANICAL DEMOLITION PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

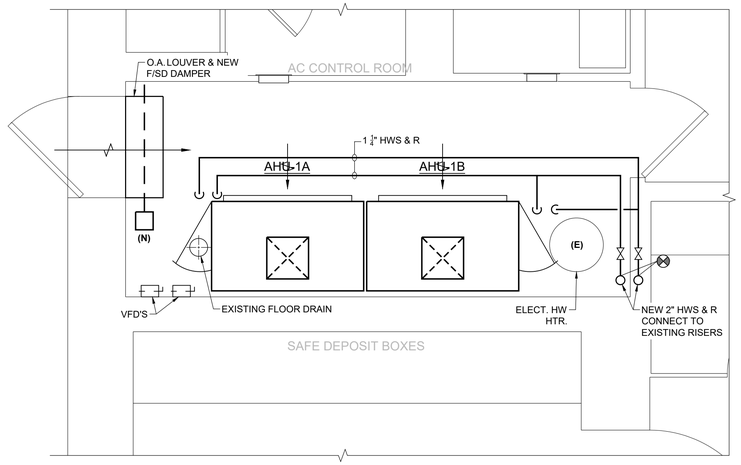
DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM
CHECKED BY: KS/MC
DRAWING NO.: MD-101.00
PAGE: 5 OF 11



1 PROPOSED MECHANICAL 1ST FLOOR PLAN

SCALE: 3/16" = 1'-0"

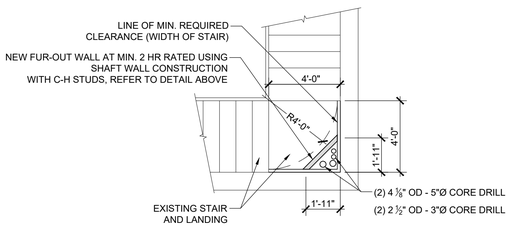
0 2' 4' 6' 12'
3/16" = 1'-0"



2 PROPOSED MER PARTIAL PLAN

SCALE: 1/2" = 1'-0"

0 6" 1' 2' 4'
1/2" = 1'-0"

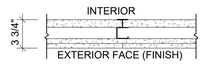


NOTES

1. FIRE STOP ALL PENETRATIONS.
2. MIN. REQUIRED CLEARANCE 4'-0".
3. FOR D.X. PIPE RISER DIAGRAM REFER TO **DRAWING M-200**

3 PARTIAL PLAN AT STAIR LANDING

SCALE: 1/4" = 1'-0"



(1) LAYER 1" GYPSUM LINER TYPE-X
2-1/2" CH STUD, 20 GA
(2) LAYERS 5/8" TYPE-X GWB

4 CH STUD WALL DETAIL UL415 SYSTEM U438

SCALE: N.T.S.

NOTES

1. COORDINATE LOCATIONS OF TEMPERATURE SENSORS WITH FIELD CONDITIONS AND JLL PERSONNEL.
2. REMOVE EXISTING CEILING TO INSTALL NEW PIPING AND CONDUITS, THEN RE-INSTALL CEILING TO MATCH EXISTING CONDITIONS.
3. FIRE STOP ALL PENETRATIONS.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT: CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

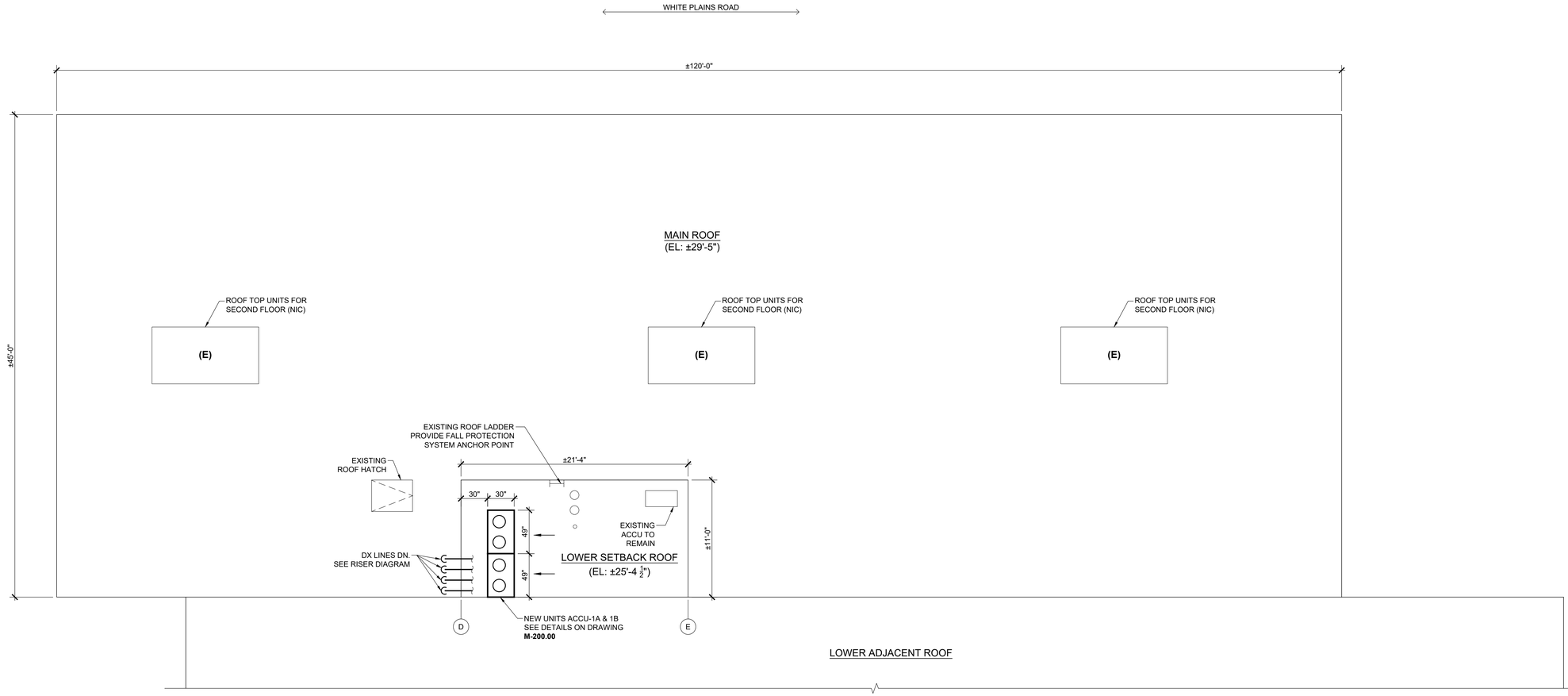
DRAWING TITLE:
PROPOSED MECHANICAL 1ST FLOOR PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.: M-100.00
PAGE: 6 OF 11

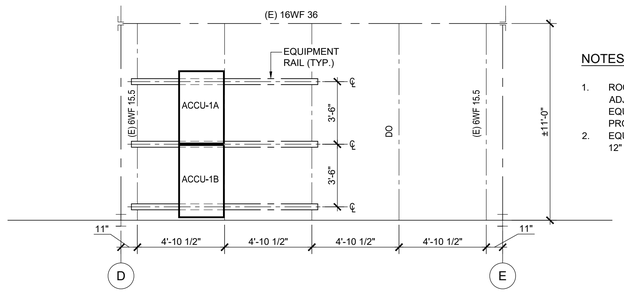


1 PROPOSED MECHANICAL ROOF PLAN

SCALE: 3/16" = 1'-0"

0 2' 4' 6' 12'

3/16" = 1'-0"



NOTES

1. ROOFING MEMBRANE SHALL BE SPLICED/ ADJUSTED TO ACCOMMODATE NEW EQUIPMENT RAILS AND PROPERLY WATER PROOFED.
2. EQUIPMENT RAILS PATE ES-2B 12" HIGH x 11" NAILER WIDTH x 11'-0" L.

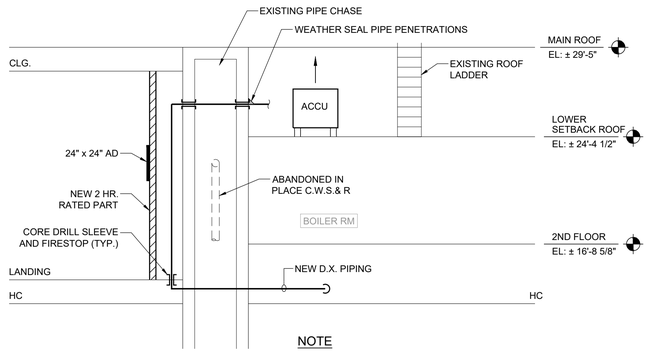
2 LOWER SETBACK ROOF PART PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

1/4" = 1'-0"

ROOF LOADS WEIGHT CHART		
COOLING TOWER EXISTING WEIGHT	PROPOSED WEIGHT UNIT (ACCU-1A & 1B)	REMARK
1420 LBS	1360 LBS (Total)	PROVIDE NEW EQUIPMENT RAILS



NOTE

1. ELEVATIONS ARE TOP OF STEEL HGTS.
2. FIRE STOP ALL PENETRATIONS.

3 D.X. PIPE ROUTING SCHEMATIC

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

1/4" = 1'-0"

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

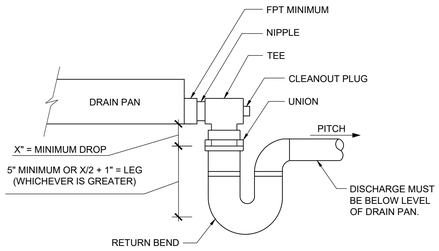
PROPOSED MECHANICAL ROOF PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.:
M-101.00
PAGE: 7 OF 11



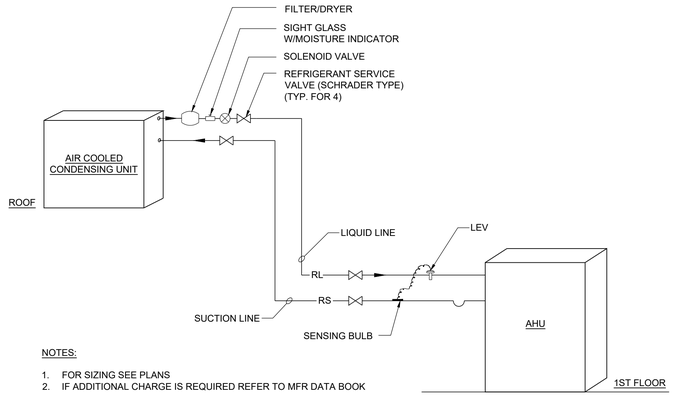
X = NEGATIVE INTERNAL STATIC PRESSURE AT PAN INLET.

DRAW - THRU UNIT

NOTES:

1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAPS.
2. PITCH DRAIN FOR PROPER RUN-OFF.
3. MANUALLY PRIME FILL TRAP BEFORE START UP TO FORM INITIAL DRAIN SEAL.
4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW.
5. INSULATE DRAIN LINE BETWEEN PAN AND FLOOR DRAIN

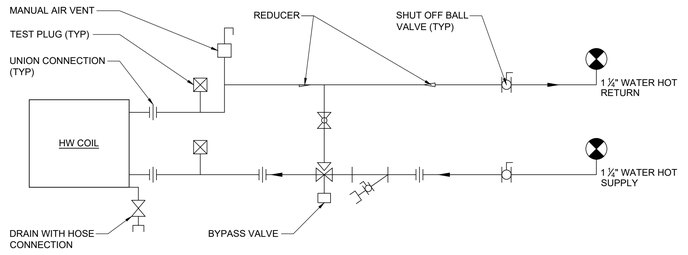
1 DRAIN PAN WATER SEAL PIPING DETAIL
SCALE: N.T.S.



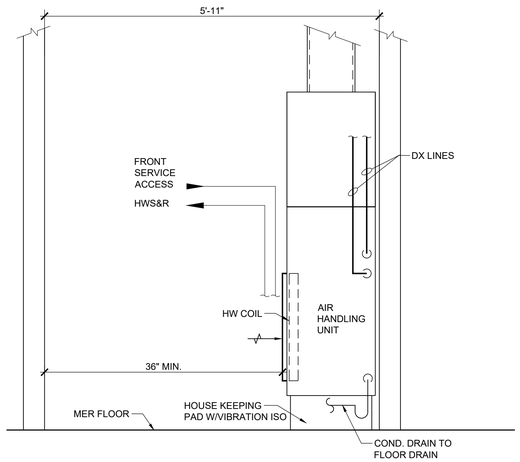
NOTES:

1. FOR SIZING SEE PLANS
2. IF ADDITIONAL CHARGE IS REQUIRED REFER TO MFR DATA BOOK

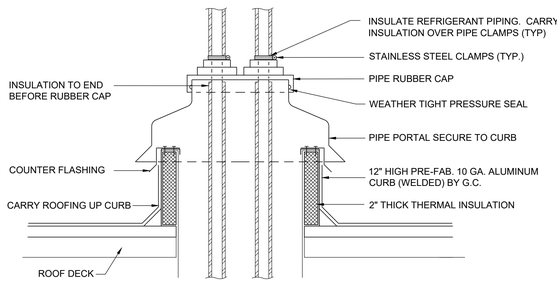
2 REFRIGERANT PIPING DIAGRAM (TYPICAL FOR EACH CIRCUIT)
SCALE: N.T.S.



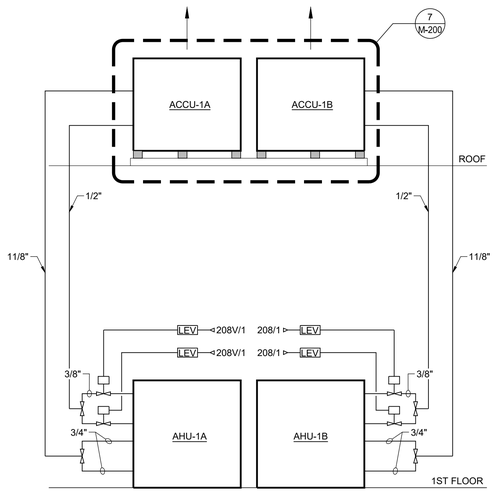
3 HOT WATER COIL PIPING CONNECTIONS (TYPICAL OF TWO)
SCALE: N.T.S.



4 AIR HANDLING UNIT DETAIL
SCALE: N.T.S.



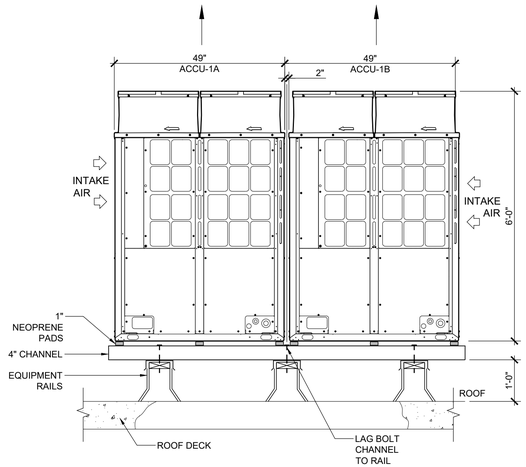
5 PIPING THROUGH ROOF DETAIL
SCALE: N.T.S.



NOTE:

1. PROVIDE 208V/1 POWER TO LEV CONTROLLERS
2. ONE LEV PER DISTRIBUTOR
3. REFRIGERANT LINE SIZES SHALL BE AS PER MFR'S RECOMMENDATIONS. VERIFY WITH MFR BASED ON ACTUAL LENGTH OF RUN.

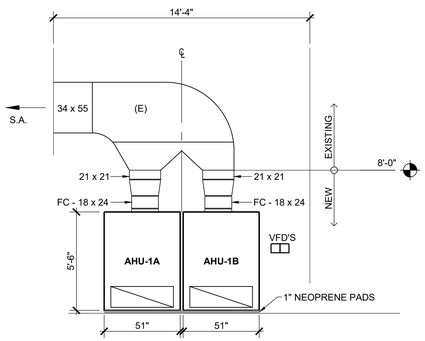
6 D.X. PIPING RISER DIAGRAM
SCALE: N.T.S.



NOTE:

1. TWO PLY NEOPRENE MEMBRANE UNDER EQUIPMENT RAILS
2. EXISTING ROOF MEMBRANE TO REMAIN. MODIFY SPLICE TO ACCOMMODATE NEW EQUIPMENT RAILS AS REQUIRED.

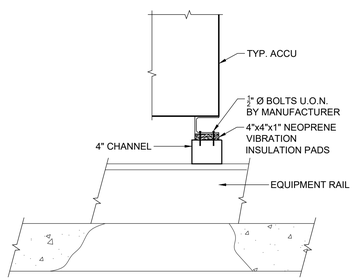
7 ACCU ROOF DUNNAGE DETAIL
SCALE: N.T.S.



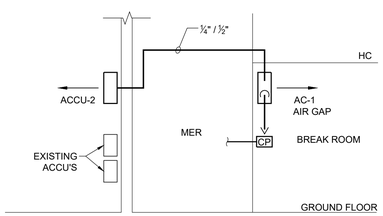
NOTE

1. MOUNT VFD'S REMOTELY ON WALL.

8 MER ELEVATION
SCALE: N.T.S.



9 ACCU MOUNTING DETAIL
SCALE: N.T.S.



NOTE:

PIPE COND DRAIN TO FLOOR DRAIN IN MER.

10 AC-1 / ACCU-2 D.X. PIPING DIAGRAM
SCALE: N.T.S.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

MECHANICAL DETAILS

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.: M-200.00
PAGE: 8 OF 11

AIR COOLED VRF HEAT PUMP UNIT

TRANE/ MITSUBISHI AS STD

AHU SECTION																	REMOTE CONDENSING UNIT									
UNITS No.	SERVICE	MODEL No.	NOMINAL TONS	COOLING DATA			HEATING			SUPPLY FAN DATA				ELECTRIC	HOT WATER COIL			CONDENSER DATA								REMARKS
AHU				TOTAL LOAD MBH	ENTERING AIR (°F)						MIN O,A,I, (CFM)							UNIT No. ACCU	MITSUBISHI MODEL	AIR FLOW RATE (CFM)	NOM. TONS	ELECTRICAL VOLTS/ PHASE/ HZ	MCA	FUSE	OPERATING WEIGHT (LBS)	EER/ COP	TYP. OF 2
					EAT DB/ WB	LAT DB/ WB	EAT	MBH	LAT	CFM		EXT SP	HP	V/ PH/ H2	MBH	GPM	AIR ΔTEMP									
1A & 1B	1st FL	UCCAD08A	12	145.13	80/67	55/53.5F	67	115.8	93	3500	350	5/8"	2 1/2	208/3/60 9MCA	135	14	35	ACCU-1A & 1B	TUHYE1443AN40	9,200	12 EA	208/3/60	47	60	700	12.4/3.75	

NOTES

1. PROVIDE SEISMIC SUPPORT, HANGING MATERIALS WITH VIBRATION ISOLATORS.
2. PROVIDE CONDENSATE PUMP & CONNECT CONDENSATE LINE TO NEAREST DRAINAGE SYSTEM MOP SINK OR FLOOR DRAIN.
3. REFRIGERANT LINES SIZE SHALL BE AS PER MANUFACTURER'S RECOMMENDATION. VERIFY WITH MANUFACTURER BASED ON ACTUAL LENGTH OF RUN.
4. REFRIGERANT SHALL BE R-410A.
5. UC 600 CONTROLLER WITH TRACER TD7 HUMAN INTERFACE.
6. FIVE YEARS COMPRESSOR WARRANTY.
7. ONE YEAR PARTS WARRANTY.
8. MOUNT ON NEOPRENE PADS.
9. AHU-VERTICAL HOUSED FAN W/TOP BACK DISCHARGE.
10. PROVIDE SMOKE DETECTOR, TO AUTOMATICALLY STOP FAN UPON DETECTION OF SMOKE IN RETURN DUCT.
11. PROVIDE FACTORY START-UP AND REPORT.
12. MERV 13 FILTERS & DIRTY FILTER SWITCH.
13. PROVIDE DISCONNECT SWITCHES.

AIR COOLED VRF HEAT PUMP UNIT SCHEDULE

MITSUBISHI AS STD

AHU SECTION													REMOTE AIR COOLED CONDENSING UNIT								
UNIT NO.	SERVICE	MODEL NO.		COOLING DATA		HEATING			SUPPLY FAN DATA			ELECTRIC	CONDENSER DATA								
				TOTAL LOAD	SENS. LOAD						MOTOR	DATA	UNIT NO	MITSUBISHI MODEL	AIRFLOW RATE (CFM)	NOM. TONS	ELECTRICAL VOLTS/PHASE /HZ	MCA	FUSE	OPERATING WEIGHT, LBS	EER/COP
AC		MITSUBISHI ELECTRIC		MBH	MBH	EAT	MBH	LAT	CFM	EXT SP	W	–	ACCU	(ASSEMBLY)							
1	PANTRY	PLA-A18EA7	1 ½	18	-	60	19	90	420	-	50	208/1	-2	PUZA18NKA71600	1600	1 ½	208/1	11	20	110	14.4/4.28

SEQUENCE OF OPERATIONS (AHU-1A&1B / ACCU-1A & 1B)

OPERATION:
THE AIR HANDLERS SHALL RUN SIMULTANEOUSLY AND THE COMPRESSORS SHALL STAGE ON AND OFF TO MAINTAIN SET POINT.

THE HP THERMOSTAT SHALL BE AT A HIGHER HEATING TEMPERATURE (50dF) THAN THE EXISTING H.W. PUMP CONTROLLER (40°F), THE HP WILL ACT AS 1ST STAGE HEATING. INSTALL AN AQUA-STAT ON THE H.W. PIPE TO SHUT DOWN THE COMPRESSORS WHEN H.W. HEATING IS AVAILABLE. THE EXISTING OUTDOOR AIR DAMPER IN MER WILL NEED TO BE TIED INTO THE AIR SIDE ECONOMIZER CONTROLS. PROVIDE NEW DAMPERS AND ACTUATORS AS REQUIRED FOR AIRSIDE ECONOMIZER. SEE SPECIFICATIONS.

UNIT ENABLE:
THERMOSTAT UNIT ENABLE SWITCH IS SET TO OCCUPIED, THE CONTROL SEQUENCE WILL BE ENABLED.

SUPPLY FAN CONTROL:
DURING OCCUPIED MODE, THE VARIABLE SPEED SUPPLY FANS WILL BE STARTED WHEN OCCUPIED AND WILL RUN CONTINUOUSLY. THE SUPPLY FANS WILL CHANGE SPEED AS NEEDED TO SATISFY THE HEATING OR COOLING DEMAND. MULTI SPEED FAN CONTROL AS PER 2013 ENERGY CODE. O.A DAMPER SHALL BE AT MIN. O.A. SETTING.

INTEGRATED ECONOMIZER CONTROL:
WHEN THE ENTHALPY OF THE OUTDOOR AIR IS LESS THAN THE RETURN AIR (ECON-AVAILABLE), THE ECONOMIZER WILL ACT AS THE INITIAL STAGE OF COOLING, AND O.A. DAMPER SHALL BE AT MAX. SETTING. WORKING IN SEQUENCE WITH THE COMPRESSORS IN THE COOLING MODE.

HEAT PUMP CONTROL:
WHEN THE ZONE TEMPERATURE FALLS BELOW THE ZONE TEMPERATURE SETPOINT THE REVERSING VALVE (S) WILL BE INDEXED TO PROVIDE HEATING WHEN THE COMPRESSOR IS RUNNING AND HOT WATER IS NOT AVAILABLE. WHEN THE ZONE TEMPERATURE RISES ABOVE THE ZONE TEMPERATURE SETPOINT THE REVERSING VALVE (S) WILL BE INDEXED TO PROVIDE COOLING WHEN THE COMPRESSOR IS RUNNING, COMPRESSOR SHALL BE LOCKED OUT WHEN BUILDING HOT WATER IS AVAILABLE.

TEMPERATURE CONTROL:
PROVIDE TEMPERATURE AVERAGING SENSORS FOR TEMPERATURE CONTROL.
THE UNIT WILL CYCLE TO MAINTAIN THE TEMPERATURE SETPOINT AS SENSED BY THE TEMPERATURE SENSORS.

OCCUPIED MODE:
OCCUPANCY MODE WILL BE CONTROLLED VIA THERMOSTAT SETBACKS AND O.A. MOTORIZED DAMPER IS MIN. OPEN TO PROVIDE MINIMUM VENTILATION AIR.

UNOCCUPIED MODE:
THE UNIT WILL CYCLE ON TO MAINTAIN UNOCCUPIED ZONE SETPOINTS DURING UNOCCUPIED PERIODS AS SENSED BY THE ZONE THERMOSTAT AND O.A. MOTORIZED DAMPER IS CLOSED.

SUMMER/WINTER:
COOLING
COOLING CALLS ARE HANDLED THE SAME WAY AS NON-HEAT PUMP COOLING UNITS. DURING COOLING, THE CONTROL ENERGIZES THE H1 OUTPUT TO TURN ON THE REVERSING VALVE. THE H1 OUTPUT TO THE REVERSING VALVE REMAINS ENERGIZED BETWEEN CALLS FOR COOLING. IF A HEATING CALL ARISES, THE H1 OUTPUT TURNS OFF.

HEATING
IF FIRST STAGE OF HEATING IS CALLED FOR (THERMOSTAT), AND HOT WATER IS NOT AVAILABLE THEN ALL AVAILABLE COMPRESSORS STAGE ON, WITH A 30 SECOND TIME DELAY BETWEEN COMPRESSORS. WHEN HOT WATER IS AVAILABLE FAN RUNS CONTINUOUSLY TO PROVIDE MINIMUM VENTILATION AIR. O.A. DAMPER IN MIN. SETTING.

DEFROST
THE HEAT PUMP DEFROST CYCLE ONLY APPLIES DURING COMPRESSOR HEATING OPERATION.

SMOKE SHUT DOWN
PROVIDE SMOKE DETECTORS TO SHUT DOWN AHU'S UPON DETECTION OF SMOKE, INTERLOCK OUTDOOR AIR INTAKE DAMPER.

NOTES

1. PROVIDE SEISMIC SUPPORT, HANGING MATERIALS WITH VIBRATION ISOLATORS.
2. PROVIDE CONDENSATE PUMP & RUN CONDENSATE LINE TO NEAREST DRAINAGE SYSTEMS MOP SINK OR FLOOR DRAIN.
3. REFRIGERANT LINES SIZE SHALL BE AS PER MANUFACTURER'S RECOMMENDATION. VERIFY WITH MANUFACTURER BASED ON ACTUAL LENGTH OF RUN.
4. REFRIGERANT SHALL BE R-410A TRANE/MITSUBISHI.
5. FIVE YEARS COMPRESSOR WARRANTY.
6. ONE YEAR PARTS WARRANTY.
7. MOUNT ON NEOPRENE PADS.
8. PROVIDE FACTORY START-UP AND REPORTS
9. PROVIDE DISCONNECT SWITCHES

GENERAL

INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED.
WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES.
ASCERTAIN FROM BUILDING OWNER AND BANK AT WHAT TIME OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS. ALL EQUIPMENT PROVIDED SHALL FIT IN THE AVAILABLE SPACE.

ALL EQUIPMENT PROVIDED SHALL FIT IN THE SPACE AVAILABLE.

INSTALL EQUIPMENT SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR.

IDENTIFICATION

ALL EQUIPMENT SHALL BE STENCILED OR LABELED WITH LAMACOID PLATES

EQUIPMENT SCHEDULE

FURNISH AND INSTALL ALL ITEMS AS HEREIN SPECIFIED OR SHOWN ON DRAWINGS AND THOSE ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATIONS.

ADDITIONAL ITEMS

MECHANICAL CONTRACTOR SHALL FURNISH THE FOLLOWING AS STOCK ITEM TO THE OWNER:

ITEM	QUANTITY
FILTERS (MERV 13)	3 SETS

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:
CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

DRAWING TITLE:
MECHANICAL
SCHEDULES & NOTES

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM
CHECKED BY: KS/MC
DRAWING NO.:
M-300.00
PAGE: 9 OF 11

MECHANICAL SPECIFICATIONS (1)

GENERAL CONDITIONS

1. THE APPLICABLE PROVISIONS OF THE GENERAL CONSTRUCTION SPECIFICATIONS SHALL APPLY.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATIONS.
3. THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED SIMULTANEOUSLY WITH WORK OF OTHER TRADES, SO AS NOT TO DELAY THE OVERALL PROGRESS OF WORK.
4. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF SAME WHICH MAY BE DAMAGED, LOST OR STOLEN, WITHOUT ADDITIONAL COSTS TO THE OWNER.
5. ALL WORK AND MATERIAL TO BE IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND LEASE REQUIREMENT AND TENANT WORK LETTER UNLESS NOTED OTHERWISE ON PLANS.
6. ALL WORK IS TO BE CONDUCTED IN ACCORDANCE WITH THE BUILDING'S RULE AND REGULATIONS. A COPY OF THE REGULATIONS CAN BE OBTAINED AT THE BUILDING OFFICE.
7. ALL EXISTING SUPPLY AND OUTSIDE AIR DUCTWORK WHERE INSULATION IS MISSING OR DAMAGED SHALL BE FULLY INSULATED WITH 2" THICK THERMAL INSULATION WITHIN THE MACHINE ROOM.

OPERATING & MAINTENANCE INSTRUCTIONS

1. AFTER FINAL TESTS AND ADJUSTMENTS, FULLY INSTRUCT OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED.
2. PROVIDE TO THE OWNER OPERATION AND MAINTENANCE MANUALS.
3. GUARANTEE AND SERVICE
   A. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER.
   B. THE CONTRACTOR SHALL DURING THE PERIOD OF GUARANTEE REPLACE OR REPAIR AT HIS OWN EXPENSE ANY PIECE OF EQUIPMENT AND/OR MATERIAL WHICH IS FOUND TO BE DEFECTIVE. THE CONTRACTOR SHALL ALSO REPAIR ALL DAMAGE TO SURROUNDING WORK CAUSED BY THE FAILURE, REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT AT HIS OWN EXPENSE.

SHOP DRAWINGS & EQUIPMENT SUBMISSIONS

1. SIX (6) COPIES OF DUCTWORK AND PIPING AND CERTIFIED EQUIPMENT MANUFACTURER'S DATA SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION, ERECTION OR PURCHASE.
2. PRODUCT DATA - SUBMIT MANUFACTURER'S PRINTED LITERATURE, CATALOG CUTS, CERTIFIED EQUIPMENT PERFORMANCE DATA, WIRING DIAGRAMS AND INSTALLATION INSTRUCTIONS.
3. SHOP DRAWINGS - SUBMIT PLANS, SECTIONS, DETAILS, SCHEDULES AND CALCULATIONS. LAYOUTS SHALL BE DOUBLE LINE, SCALE: 3/8"=1'-0" COORDINATED WITH OTHER TRADES AND WITH BUILDING CONSTRUCTION ELEMENTS. SUBMIT ONE REPRODUCIBLE AND FIVE (5) PRINTS OF EACH DRAWING.
4. SHEET METAL SHOP DRAWINGS CAN BE RELEASED FOR FABRICATION ONLY AFTER SHEET METAL SHOP STANDARDS HAVE BEEN REVIEWED AND APPROVED
5. CLOSE-OUT MATERIALS: - PREPARE OPERATING AND MAINTENANCE MANUAL INCLUDING THE FOLLOWING:
   A. MANUFACTURER'S LITERATURE DESCRIBING EACH PIECE OF EQUIPMENT.
   B. COPIES OF PRODUCT WARRANTIES AND GUARANTIES.
   C. OPERATING AND MAINTENANCE PROCEDURES, SERVICING INSTRUCTIONS.
   D. FACTORY START-UP REPORTS, PIPE PRESSURE TEST REPORTS, T&B REPORTS.
   E. RECORD DRAWINGS.

RECORD DRAWINGS

1. REPRODUCIBLE RECORD DRAWINGS SHALL BE SUPPLIED UPON WHICH CORRECTIONS SHALL BE MADE TO PROVIDE AN ACCURATE AND COMPLETE RECORD OF THE WORK AS INSTALLED.
2. AS-BUILT INFORMATION SHALL BE SUBMITTED AS FOLLOWS:
   A. CAD DRAWING FILES AND PDF ON DISKS. AUTOCAD VERSION 2017 FORMAT OR LATEST.
   B. ONE (1) SET OF REPRODUCIBLE DRAWINGS.
   C. TWO (2) SETS OF BLUEPRINTS.

APPROVALS AND SUBSTITUTIONS

1. IT IS THE INTENT OF THESE SPECIFICATIONS THAT WHEREVER A MANUFACTURER IS SPECIFIED AND SUBSTITUTIONS ARE MADE, THEY SHALL CONFORM IN ALL RESPECTS TO THE SPECIFIED ITEM. CRITERIA AS DELINEATED FOR EQUIPMENT SHALL BE INTERPRETED AS MINIMUM PERFORMANCE REQUIREMENTS. PERFORMANCE REQUIREMENTS.
2. SUBSTITUTED EQUIPMENT WHERE PERMITTED MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY MODIFICATION OF RELATED SYSTEMS OR ADDITIONAL COSTS THAT RESULT FROM SUBSTITUTED EQUIPMENT SHALL BE BORNE BY THIS CONTRACTOR.
3. THE BURDEN OF PROOF SHALL BE ON THE BIDDER TO DEMONSTRATE THE "EQUIVALENCE" OF PROPOSED SUBSTITUTION.

TESTING, ADJUSTMENTS AND BALANCING OF AIR SYSTEM

1. WORK IN THIS SECTION INCLUDES THE PROVIDING OF LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR COMPLETE TESTING, ADJUSTING, AND BALANCING OF ALL HVAC SYSTEMS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, PROCEDURES AND STANDARDS DESCRIBED IN THE LATEST MANUALS AS PUBLISHED BY AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE) AND THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION, INC. (SMACNA) FOR THE FOLLOWING:
   A. ALL OF THE AIR SYSTEMS.
   B. ALL AIR CONDITIONING UNITS.
   C. ALL RETURN, OUTDOOR AIR INTAKE AND EXHAUST AIR SYSTEMS.
   D. HVAC CONTROLS SYSTEM INCLUDING ECONOMIZER OPERATION.
2. THE CONTRACTOR SHALL PROVIDE THE SERVICES OF AN AIR BALANCING TO ENSURE PROPER OPERATION AND TESTING SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS.
3. ALL INSTRUMENTS USED SHALL BE ACCURATELY CALIBRATED AND MAINTAINED IN GOOD WORKING ORDER.
4. THE TESTING SHALL BE PERFORMED IN THE PRESENCE OF A JLL REPRESENTATIVE.
5. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL BALANCING DAMPERS, PRESSURE TAPS, GAUGES AND OTHER SIMILAR APPURTANCES AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AND AT NO ADDITIONAL COST TO THE OWNER.
6. ALL BALANCING WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO THE PROCEDURES AND STANDARDS DESCRIBED IN THE " MANUAL FOR THE BALANCING AND ADJUSTMENT OF THE AIR DISTRIBUTION SYSTEMS" AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION, INC.
7. THE TEST PROCEDURE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   A. PITOT TUBE TRAVERSE READINGS OF MAIN SUPPLY AND RETURN DUCTS;
   B. TEST AND ADJUST SYSTEM FOR THE DESIGN SUPPLY, RETURN AND EXHAUST AIR QUANTITIES;
   C. TEST AND RECORD SUPPLY AIR TEMPERATURES;
   D. TEST AND RECORD ROOM AIR TEMPERATURES;
   E. ADJUST ALL MAIN SUPPLY, EXHAUST AND RETURN AIR DUCTS TO PROPER DESIGN CFM;
   F. ADJUST ALL ZONES TO PROPER DESIGN CFM - SUPPLY, RETURN AND EXHAUST;
   G. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO DESIGN REQUIREMENTS.
8. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS SECTION WITH THE RESPECTIVE MANUFACTURERS OF THE EQUIPMENT INVOLVED. BALANCING WORK SHALL NOT INTERFERE WITH NORMAL JOB PROGRESS SO AS TO PREVENT COMPLETION WITHIN THE SPECIFIED TIME.
9. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST REVIEW HIS WORK WITH THE RESPECTIVE MANUFACTURERS, AND SHALL COORDINATE AND SCHEDULE ALL CORRECTIVE WORK.
10. IN THE EVENT THAT THE EQUIPMENT CANNOT BE PROPERLY BALANCED DUE TO LACK OF FINAL CONNECTION, THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST ADVISE THE ENGINEER, IN WRITING, OF THE OMISSION PRIOR TO THE SUBMISSION OF THE FINAL BALANCING REPORT.
11. ADJUSTMENT OR REPLACEMENT OF PARTS REQUIRED BY THE RESULTS OF THE TESTING AND BALANCING WORK SHALL BE MADE BY THE CONTRACTOR IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
12. UPON COMPLETION OF WORK SPECIFIED ABOVE, ALL INFORMATION SHALL BE INSERTED ON A SHEET LISTING ALL ITEMS REQUIRED TO BE INCLUDED IN THE COMPLETE TESTING AND BALANCING REPORT. ALL SHEETS SHALL BE NEATLY TYPED. THREE (3) COPIES OF THE BALANCING REPORT MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW.
13. ALL OPENING IN DUCTS PLENUMS AND OTHER SIMILAR ITEMS, NECESSARY TO THE BALANCING WORK, SHALL BE REPAIRED BY THE CONTRACTOR IN A SUITABLE MANNER. ALL PATCHING MUST BE SUITABLE TO THE SERVICE OF THE SYSTEM SUCH AS MAINTAINING VAPOR SEALS IN COLD DUCTWORK AND OTHER SIMILAR SERVICES.
14. RECOMMENDATIONS AND RESULTS OF THE TESTING AND BALANCING WORK WHICH ARE NECESSARY FOR THE PROPER OPERATION OF THE SYSTEMS, SHALL BE SUBMITTED IN WRITING TO THE ENGINEER. THE SUBMITTAL SHALL INCLUDE A SCHEMATIC DIAGRAM LOCATING ALL AIR INLETS AND OUTLETS.
15. ALL AIR TERMINAL DEVICES SHALL BE BALANCED TO WITHIN FIVE PERCENT OF THEIR DESIGN REQUIREMENTS.
16. ALL FANS AND AIR HANDLING UNITS SHALL BE BALANCED TO WITHIN TEN PERCENT OF THEIR DESIGN CAPACITIES. ALL TENANT PROPRIETARY HVAC SYSTEMS SHALL BE TESTED AND BALANCED IN ACCORDANCE TO THE AIR BALANCE SCHEDULE SHOWN ON THE DRAWING TO INCLUDE NORMAL, DAY, NIGHT, SUMMER, WINTER, AIR ECONOMIZER CYCLE AND SMOKE PURGE CYCLE.
17. FOR DUCT TESTING, MAKE PITOT TUBE TRAVERSE OF MAIN SUPPLY DUCTS EITHER FROM THE BASE BUILDING SUPPLY SHAFTS OR AT FANS, AND OBTAIN DESIGN AIR QUANTITIES.
18. THE TEMPERATURE CONDITIONS, BOTH D.B. AND W.B. AND SOUND LEVELS SHALL BE READ AND RECORDED.
19. AFTER TESTING AND BALANCING WORK IS COMPLETE, THE CONTRACTOR SHALL INSTALL A NEW SET OF AIR FILTERS.

VERIFYING EXISTING CONDITIONS, REMOVALS & ALTERATIONS

1. THE CONTRACTOR SHALL VISIT THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH DRAWINGS AND SPECIFICATIONS AND SATISFY HIMSELF OF ALL CONDITIONS PRIOR TO THE SUBMISSION OF A BID PROPOSAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS AND A BID PROPOSAL SHALL BE CONSTRUED AS EVIDENCE HE HAS DONE SO.
2. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED BY THE DRAWINGS OR SPECIFICATIONS AND AS MAY BE REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND TO INTERFERE WITH THE COMPLETION OF WORK IN THIS CONTRACT OR OTHER CONTRACT WORK.
3. ALL REMOVED EQUIPMENT AND MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE.
4. PROVIDE SHUTDOWNS, DRAINING AND REFILLING, RECONNECTIONS AND STARTUPS OF EXISTING SYSTEMS NECESSARY IN CONNECTION WITH THE NEW WORK. COORDINATE SHUTDOWNS WITH THE OWNER.
5. TEMPORARY SERVICES: PROVIDE TEMPORARY SERVICES DURING THE INTERRUPTION IN SERVICE CREATED BY THE DEMOLITION OF THE EXISTING FACILITY AND UNTIL THE NEW FACILITY BECOMES OPERATIONAL.
6. VERIFY EQUIPMENT VOLTAGE BEFORE SUBMITTING SHOP DRAWINGS AND SUBMITTALS.

COORDINATION

1. ALL NEW DUCTWORK SHALL BE KEPT AS HIGH AS POSSIBLE TO MAINTAIN CEILING HEIGHTS.
2. MECHANICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES.
3. WHERE PIPING, LIGHTS AND DUCTWORK CONFLICT, DUCTWORK SHALL BE COORDINATED TO SITE CONDITIONS.
4. CONNECT NEW WORK TO EXISTING AS SHOWN ON THE DRAWING.
5. COORDINATE LOCATION OF MECHANICAL EQUIPMENT, PIPING AND DUCTWORK WITH THE WORK OF OTHER TRADES, PROVIDING CLEARANCES FOR INSULATION, SERVICING, REMOVAL OF COMPONENTS AND EQUIPMENT DISASSEMBLY.
6. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENT.
7. SEQUENCE PHASES OF MECHANICAL WORK WITH THE WORK OF OTHER TRADES.
8. ELECTRICAL WIRING FOR POWER, AUTOMATIC TEMPERATURE, SAFETY AND INTERLOCKING CONTROLS FOR MOTORS STARTER AND OTHER ELECTRICAL APPARATUS AND DEVICES SHALL BE PROVIDED BY THE ELECTRICAL SUB-CONTRACTOR UNDER THIS CONTRACT WORK.
9. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE ELECTRICAL INSTALLATION WORK AS REQUIRED INCLUDING ALL WORK RELATED TO THE HVAC REPLACEMENT, BUT NOT LIMITED TO THE FOLLOWING:

- DEMOLITION
- NEW FEEDERS AND BRANCH CIRCUIT WIRING.
- POWER WIRING AND CONNECTIONS FOR NEW HVAC EQUIPMENT.
- PROVIDE DISCONNECTS AS PER CODE.
- CONDUIT AND CONDUIT FITTINGS, OUTLET BOXES, JUNCTION AND PULL BOXES AND ALL APPURTENANCES NECESSARY INSULATED CONDUCTORS AND WIRING.
- TEMPORARY LIGHTING AND POWER, AS REQUIRED.
- GROUNDING AND BONDING.
- HOLES AND SLEEVES, CUTTING AS REQUIRED FOR ELECTRICAL WORK.
- SINGLE PHASE POWER TO CONTROL PANELS, LEV'S AND CONTROL DEVICES AS NECESSARY.

VIBRATION ISOLATION SYSTEMS

1. ALL ROTATING, REVOLVING OR RECIPROCATING EQUIPMENT, SHALL BE FURNISHED WITH SEISMICALLY DESIGNED VIBRATION ISOLATORS, TO PREVENT THE TRANSMISSION OF OBJECTIONABLE NOISES, SOUND OR VIBRATIONS TO THE OCCUPIED SPACES AND TO THE BUILDING STRUCTURES.
2. VIBRATION ISOLATORS FOR CEILING SUPPORTED EQUIPMENT SHALL HAVE A MAXIMUM LATERAL MOTION UNDER EQUIPMENT START-UP OR SHUTDOWN CONDITIONS OF 1/4". MOTIONS IN EXCESS SHALL BE RESTRAINED BY SPRING TYPE MOUNTINGS.
3. VIBRATION ISOLATOR SHALL BE PROVIDED BY EITHER OF THE FOLLOWING MANUFACTURERS:
   A. MASON INDUSTRIES
   B. VIBRATION ELIMINATOR CO.
   C. CONSOLIDATED KINETICS CO.
4. FLOOR MOUNTED AC UNITS:
   A. FLOOR MOUNTED AC UNITS SHALL BE MOUNTED ON 3/4" WAFFLE NEOPRENE PADS WITH SUITABLE TOP BEARING PLATE SIZE FOR 0.08" STACK DEFLECTION.

NOISE CONTROL

1. PROVIDE ACOUSTIC DUCT LINER FOR THE FOLLOWING DUCTS:
   A. ALL DUCTS UPSTREAM AND DOWNSTREAM FROM ALL FANS AND AIR CONDITIONING UNITS FOR A LENGTH OF NOT LESS THAN 15 FT.
   B. ALL AIR TRANSFER DUCTS.
   C. DOWNSTREAM OF ALL VARIABLE AIR VOLUME AND CONSTANT VOLUME BOXES FOR A MINIMUM OF 10 FT.
   D. ALL MIXED AIR PLENUMS, EXCEPT WHERE MOISTURE CARRY OVER FROM OUTDOOR AIR LOUVER WILL OCCUR.
   E. WHERE NOTED ON THE CONTRACT DRAWINGS.
2. MATERIAL SHALL BE FIBERGLASS, MINIMUM 3 LB. DENSITY, 1 IN. THICKNESS, MAXIMUM 0.26 K FACTOR AT 75° F MEAN TEMPERATURE WITH NEOPRENE COATED FINISH AND STENCILED IN ACCORDANCE WITH NFPA 90. MAXIMUM FLAME SPREAD SHALL BE 25, AND MAXIMUM SMOKE DEVELOPED SHALL BE 50. IT SHALL BE SIMILAR TO JOHNS-MANVILLE LINACOUSTIC, OR AN APPROVED EQUAL.
3. ALL SOUND-LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

PIPING SYSTEMS - PIPING AND ACCESSORIES

1. PROVIDE PIPING SYSTEMS SHOWN ON DRAWINGS COMPLETE INCLUDING PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVES OPERATORS, HANGERS, SUPPORTS, SLEEVES, AND ACCESSORIES.
2. HOT WATER AND CONDENSATE DRAIN PIPING SHALL BE COPPER HARD TEMPER TYPE "L", CONFORMING TO ASTM B-88 WITH WROUGHT COPPER PRO-PRESS JOINTS.
3. ALL PIPING CONNECTIONS TO EQUIPMENT SHALL BE INSTALLED WITH UNION FOR EASY REMOVAL. UNIONS FOR 3 IN. OR LESS SHALL BE SIMILAR AND EQUAL TO MALLEABLE IRON WITH BRASS SEATS, CLASS 300, AS MANUFACTURED BY STOCKHAM, GRINNEL, OR AN APPROVED EQUAL.
4. ALL NIPPLES 6 IN. OR LESS SHALL BE EXTRA HEAVY SHOULDER TYPE. CLOSE NIPPLES SHALL NOT BE USED.
5. USE TEFLON TAPE ON MALE THREADS OF SCREWED PIPE.
6. WHERE CHANGES OF SIZE OCCUR IN HORIZONTAL PIPING, PROVIDE ECCENTRIC TYPE REDUCING FITTINGS TO ATTAIN PROPER DRAINAGE AND VENTING OF PIPELINE.
7. PROVIDE DIELECTRIC COUPLINGS AT JUNCTIONS OF COPPER AND STEEL OR GALVANIZED PIPING.
8. PROVIDE FOR EXPANSION AND CONTRACTION OF PIPING SYSTEMS.

REFRIGERANT PIPING

1. ALL REFRIGERANT TUBING SHALL BE TYPE AC&R, CLEANED, DEHYDRATED AND CAPPED COPPER. PIPE SIZES SHOWN ARE OUTSIDE DIAMETERS. ALL FITTINGS ARE TO BE WROUGHT COPPER TYPE, WHICH MEET ANSI B16.22 SPECIFICATIONS AND COMPLY WITH ASTM TEST PROCEDURES. ALL JOINTS ARE TO BE BRAZED WITH SILFOS-5 OR EQUIVALENT.
2. THE COMPLETED PIPING SYSTEM SHALL BE PRESSURE TESTED FOR LEAKS. HIGH SIDE SHALL BE NITROGEN TESTED TO 300PSIG AND THE LOW SIDE TO 150 PSIG. TEST PRESSURES SHALL HOLD FOR 30 MINUTES MINIMUM. ALL INTERCONNECTING REFRIGERANT LINES SHALL BE DEHYDRATED AND EVACUATED TO 500 MICRONS PRIOR TO THE INTRODUCING REFRIGERANT INTO THE SYSTEM.
3. DURING BRAZING, FLOW NITROGEN THROUGH THE PIPING SYSTEM TO PREVENT SCALING AND CONTAMINATION OF INTERNAL PIPING WALLS.
4. TRAPS SHALL BE PROVIDED AT THE BASE OF ALL SUCTION GAS RISERS TO INSURE THE POSITIVE RETURN OF OIL TO THE COMPRESSOR AND INTERMEDIATE TRAPS EVERY 20 FEET.
5. SUCTION LINE: PITCH 1 INCH PER 10 FEET TOWARD EVAPORATOR.
6. ALL REFRIGERANT LINES EXPOSED TO OUTDOOR ELEMENTS AND ALL SUCTION LINES THROUGHOUT SHALL BE WRAPPED WITH 5/8" THICK ARMAFLEX INSULATION. ALL JOINTS SHALL BE MITERED AND TAPED TO ENSURE PROPER VAPOR SEAL. ALL SEAMS SHALL BE GLUED WITH MANUFACTURES RECOMMENDED ADHESIVE. PROVIDE ALUMINUM SERVICE JACKET FOR OUTDOORS.
7. INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE AND PROVIDED WITH SHIELDING FROM SOLAR RADIATION (U.V.).
8. PROVIDE ADEQUATELY SIZED REFRIGERANT LINE FILTER DRIERS AS REQUIRED.
9. REFRIGERANT PIPING TO BE INSTALLED AND SIZED IN ACCORDANCE TO EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
10. COIL CONDENSATE LINES: TYPE "L" COPPER WITH PRO-PRESS JOINTS & FITTINGS INSULATE WITH 1/2" ARMAFLEX INSULATION.

ACCESS DOORS IN FINISHED CONSTRUCTION

1. PROVIDE ACCESS DOORS FOR THE MAINTENANCE AND OPERATION OF ALL CONCEALED EQUIPMENT, CONTROLS, DAMPERS OR WHERE SHOWN ON THE DRAWINGS.
2. PROVIDE 24" x 24", 1-1/2" HOUR RATED STEEL, 20 GAUGE, FILLED WITH 2 INCH THICK FIRE RATED INSULATION, FLUSH KEY LATCH, PRIME COAT WHITE BAKED ON ENAMEL, ACUDOR FW-5050-DW AT PIPE SHAFT WALL.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

MECHANICAL SPECIFICATIONS (1)

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM
CHECKED BY: KS/MC
DRAWING NO.:
M-400.00
PAGE: 10 OF 11

MECHANICAL SPECIFICATIONS (2)

SHEET METAL DUCTWORK

1. ALL DUCTWORK, DAMPERS AND ALL AUXILIARY DEVICES AND WORK NECESSARY TO MAKE THE VARIOUS AIR CONDITIONING AND VENTILATING SYSTEMS COMPLETE AND READY FOR SATISFACTORY OPERATION SHALL BE FURNISHED AND INSTALLED.
2. IN ACCORDANCE WITH SMACNA STANDARDS PROVIDE DUCTWORK CASING ACCESS AIR CONNECTION AND BRANCH DUCT TO AIR OUTLETS FOR BALANCING PURPOSES, DOORS TO ALL CONCEALED CONTROLS, FUSIBLE LINKS OF DAMPERS, ETC.
3. PROVIDE FUSIBLE LINK FIRE DAMPERS/ COMBINATION FIRE SMOKE DAMPERS AT LOCATION SHOWN ON DRAWINGS AND WHERE NECESSARY TO COMPLY WITH LOCAL OR OTHER AGENCIES OR JURISDICTIONS REQUIRING THEIR INSTALLATIONS AND IN COMPLIANCE WITH THEIR CONSTRUCTION REQUIREMENTS.
4. DUCTWORK LAYOUTS AND ROUTES AS SHOWN ON THE DRAWINGS ARE SCHEMATIC THEREFORE CHANGES IN DUCT SIZES AND/OR LOCATIONS SHALL BE MADE WHERE NECESSARY TO CONFORM TO SPACE CONDITIONS OR OBTAIN MAXIMUM HEADROOM CONDITIONS; WITHOUT ADDITIONAL COSTS TO THE OWNER.
5. FLEXIBLE DUCTS SHALL NOT BE ACCEPTED.
6. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTS AND OTHER SHEET METAL WORK SHALL BE PRIME SHEETS OF GALVANIZED STEEL AND SHALL COMPLY WITH NFPA 90A AND ASTM STANDARDS A525 AND A527.
7. DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE. FOR DUCTWORK DOWNSTREAM OF AIR CONDITIONING UNITS A PRESSURE CLASSIFICATION OF 4" W.G. STATIC PRESSURE MAY BE USED. FOR DUCTWORK UPSTREAM OF THE AC UNIT A PRESSURE CLASSIFICATION OF 3" W.G. STATIC PRESSURE MAY BE USED. STANDARD GAUGES FOR DUCTWORK ARE TO CONFORM TO THE FOLLOWING:
   A. UP TO 30" WIDE - 24 GAUGE
   B. 31" TO 48" WIDE - 22 GAUGE
   C. 49" TO 60" WIDE - 20 GAUGE
   D. 61" AND OVER - 18 GAUGE

   PRESSURE CLASSIFICATION REQUIREMENT WILL VARY FOR OTHER TYPE SYSTEMS DEPENDING ON THE APPLICATION.
8. MATERIALS FOR HANGERS & SUPPORTS, INCLUDING FASTENERS, ANCHORS, RODS, STRAPS TRIM AND ANGLES SHALL MATCH THE DUCT FURNISHED. HORIZONTAL DUCTS CAN BE SUPPORTED WITH HANGERS SECURED TO THE EXISTING CONCRETE SLAB ABOVE. THE EXISTING TABS THAT ARE EMBEDDED IN THE CONCRETE ARE TO BE INSPECTED AND USED IN LIEU OF NEW EXPANSION BOLTS WHEREVER POSSIBLE. REFER TO DETAILS SHOWN ON CONTRACT DRAWINGS.
9. ALL DUCTWORK INSTALLED EXPOSED TO VIEW SHALL BE FABRICATED WITH SLIP-ON TRANSVERSE JOINTS AND COMPONENTS CONSTRUCTED USING MANUFACTURER'S GUIDELINES FOR MATERIAL THICKNESS, REINFORCEMENT SIZE AND SPACING, AND JOINT REINFORCEMENT. PROVIDE INTERNAL INSULATION CONFORMING TO SECTION "NOISE CONTROL" OF THIS SPECIFICATION.
10. ALL DUCT SIZES SHOWN ON THE CONTRACT DRAWINGS ARE CLEAR INSIDE DIMENSIONS. WHERE INTERNAL ACOUSTICAL LINING IS REQUIRED, DUCT SIZES SHALL BE CORRESPONDINGLY INCREASED TO ACCOMMODATE THE LINER THICKNESS SO THAT NET CROSS-SECTIONAL AREAS WILL NOT BE REDUCED.
11. RADIUS ELBOWS SHALL HAVE A CENTERLINE RADIUS EQUAL TO 1-1/2 TIMES DUCT WIDTH. PROVIDE SPLITTER VANES IN RADIUS ELBOWS WHERE INDICATED ON DRAWINGS SQUARE ELBOWS SHALL HAVE DOUBLE THICKNESS TURNING VANES MAXIMUM 4 IN. ON CENTER UNLESS SINGLE THICKNESS VANES ARE CLEARLY INDICATED ON THE DRAWINGS.
12. TRANSITIONS IN DUCTWORK SHALL BE MADE WITH A SLOPE NOT TO EXCEED A RATIO OF 1 TO 5. A SLOPE RATIO OF 1 TO 7 IS PREFERRED.
13. FOR DUCTS WITH A CROSS-SECTIONAL AREA 4 SQUARE FEET OR LESS, HANGERS SHALL BE NO MORE THAN 8 FEET APART; FOR DUCTS WITH A CROSS-SECTIONAL AREA OF MORE THAN 4 SQUARE FEET BUT NOT OVER 10 SQUARE FEET; HANGERS SHALL BE NO MORE THAN 6 FEET APART; AND FOR DUCTS WITH A CROSS-SECTIONAL AREA OF MORE THAN 10 FEET, HANGERS SHALL BE NO MORE THAN 4 FEET APART. THE DISTANCES BETWEEN HANGERS SHALL BE MEASURED LINEAL ALONG THE DUCT.
14. ALL BRANCHES, TAKE-OFFS AND TIE-INS TO ALL BASE BUILDING DUCTS SHALL BE EQUIPPED WITH VOLUME CONTROLLING DEVICES. THESE SHALL BE OPPOSED BLADE DAMPERS. SPLITTER DAMPERS SHALL NOT BE ACCEPTED. PROVIDE ADJUSTABLE VOLUME EXTRACTORS WHERE SHOWN ON DRAWINGS OR WHERE REQUIRED BY SHEET METAL CONTRACTOR'S LAYOUT.
15. VOLUME DAMPERS CONSTRUCTION SHALL BE QUADRANT TYPE, MINIMUM 16 GAUGE, GALVANIZED STEEL. IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE SMACNA MANUAL, EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT. INCLUDE APPROVED LEVER OPERATING AND LOCK-SCREW LOCKING DEVICES, MOUNTED AT OTHER END, AND INSTALLED IN ACCESSIBLE LOCATIONS. FOR INSULATED DUCTS, QUADRANTS SHALL BE MOUNTED ON A COLLAR TO CLEAR INSULATION.
16. UNLESS OTHERWISE NOTED, ALL NEW AND EXISTING LOW VELOCITY DUCTS SHALL BE SEALED TO MEET THE DUCT SEALING REQUIREMENT OF SEAL CLASS A4 W.G. OF SMACNA. THE FIRE HAZARD CLASSIFICATION OF THE SEALANT SHALL BE CLASS 1 (MAXIMUM FLAME SPREAD RATE OF 25, MAXIMUM SMOKE DEVELOPED RATE OF 50).
17. ALL ACCESS DOORS SHALL BE AS PER SMACNA STANDARDS. PROVIDE ACCESS DOORS IN INSULATED DUCTS OF INSULATED DOUBLE PANEL CONSTRUCTION, NOT LESS THAN 20 GAUGE, GALVANIZED STEEL. PROVIDE ACCESS DOORS IN UNINSULATED DUCTS OF SINGLE PANEL CONSTRUCTION NOT LESS THAN 18 GAUGE, GALVANIZED STEEL. PROVIDE ALL ACCESS DOORS WITH SPONGE RUBBER GASKETS AROUND THEIR ENTIRE PERIMETER.
18. HARD DUCT CONNECTIONS TO SUPPLY AIR DIFFUSER COLLARS AND DUCTS SHALL BE SEALED WITH 3M CO. 800 SEALANT AND CLAMPED WITH STAINLESS STEEL "IDEAL" TYPE 52 CLAMP.
19. AUTOMATIC DAMPERS SHALL BE PROVIDED COMPLETE WITH DAMPER LINKAGE, OUTSIDE AIR STREAM MOUNTED, AND AN ELECTRIC OPERATOR. OPPOSED BLADE DAMPER, GALVANIZED STEEL WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLED STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO A MAXIMUM 10 CFM PER SQ. FT. AT 1 IN. W.G. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION. DAMPER SHALL BE MOUNTED IN WELDED STEEL CHANNEL FRAME.
20. THE WIRE MESH SCREEN WHERE SHOWN ON DRAWINGS AND WHERE REQUIRED SHALL BE NO. 16 USSG, 3/4" SQUARE MESH, IN ONE IN. WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.
21. FIRE, SMOKE AND FIRE/SMOKE DAMPER SLEEVE SHALL BE 16 GAUGE FOR DAMPERS WITH DIMENSIONS NOT EXCEEDING 24 IN. IN HEIGHT OR 36 IN. IN WIDTH, AND 14 GAUGE FOR LARGER SIZES. SLEEVE THICKNESS MUST NOT BE LESS THAN THE GAUGE OF THE CONNECTING DUCT. FIRE DAMPER SLEEVES THROUGH HOLLOW FIRE-RATED CONSTRUCTION SHALL BE MADE OF AT LEAST 14 GAUGE SHEET METAL.
22. DUCT TO FIRE, SMOKE AND FIRE/SMOKE DAMPER SLEEVE CONNECTIONS SHALL BE BREAKAWAY STYLE. ONE OR MORE OF THE FOLLOWING CONNECTIONS MUST BE USED ON RECTANGULAR DUCTS: "S" SLIP, OR OTHER SLIP TYPE, MODIFIED DUCTMATE TYPES (PLASTIC CLEATS, NO CORNER BOLTS), OR MODIFIED PROPRIETARY TDC BY LOCKFORMER, OR TDF BY EAGLE FLANGE SYSTEM (NO CORNER BOLTS.) ROUND AND OVAL DUCTS MUST USE A 4 IN. WIDE DRAWBAND CONNECTION. ALL THE CONNECTIONS SHALL BE LISTED IN UL 555 AND UL 555S AND DEPICTED IN THE SMACNA FIRE, SMOKE AND COMBINATION DAMPER INSTALLATION GUIDE.
23. DAMPER SLEEVES SHALL NOT EXTEND MORE THAN 6 IN. BEYOND THE FIRE WALL OR PARTITION UNLESS FIRE DAMPER IS EQUIPPED WITH A FACTORY INSTALLED ACCESS DOOR. SLEEVE MAY EXTEND UP TO 16 IN. BEYOND THE FIRE WALL OR PARTITION ON SIDES EQUIPPED WITH A FACTORY INSTALLED.
24. MOUNTING ANGLES SHALL BE A MINIMUM OF 1-1/2" X 1-1/2" X 14 GAUGE AND FASTENED TO SLEEVE WITH NO. 10 SHEET METAL SCREWS, 1/4" BOLTS AND NUTS, 1/2" LONG WELDS, OR 3/16" STEEL POP RIVETS. SECURE SLEEVES BY PERIMETER ANGLES ON FOUR SIDES OF THE SLEEVE ON BOTH SIDES OF OPENING.
25. THE CONTRACTOR SHALL SEAL ALL JOINTS OF THE SLEEVE WITH SEALANT. THE JOINT BETWEEN TAPS AND DUCTS SHALL BE MADE AIRTIGHT AND SECURED BY U.S. NO. 10 SHEET METAL SCREWS (ONE PER SIDE OF RECTANGULAR DUCT, OR THREE PER ROUND DUCT), SEALED WITH SEALANT AND THEN TAPED. FIRE RATED SEALANT SHALL BE DOW-CORNING SILICONE #999, #732 RTV, GE RTV SILICONE RUBBER, OR AN APPROVED EQUAL.
26. PROVIDE ACCESS DOORS ON EITHER SIDE OF THE SLEEVE ONLY TO PERMIT INSPECTING, TESTING AND RESETTING THE DAMPERS.
27. FIRE/ SMOKE DAMPER:
   A. GREENHECK MODEL FSD-211M, MODULATING FIRE SMOKE DAMPER WITH 24-VAC OR 24-VDC MODULATING ACTUATOR AND 120V TO 24V TRANSFORMER.
28. ALL FIRE, SMOKE AND COMBINATION DAMPERS SHALL BEAR THE UNDERWRITERS LABORATORY (UL) LABEL, SHALL BE APPROVED FOR USE IN NEW YORK CITY AND SHALL BEAR THE BOARD OF STANDARDS AND APPEALS (BSA) CATALOG.
29. FIRE DAMPERS
   A. FIRE RESISTANCE RATING OF FIRE DAMPERS SHALL COMPLY WITH NFPA 90A, UL 555. FIRE DAMPERS SHALL BE RATED TO MAINTAIN THE RATING OF THE FIRE SEPARATION.
   B. FIRE DAMPERS MUST BE DYNAMIC RATED TYPE AND THE TEMPERATURE RATING OF THE FUSIBLE LINK SHALL BE 165° F.
   C. FIRE DAMPERS PLACED IN VERTICAL POSITION SHALL BE GRAVITY-OPERATED. FIRE DAMPERS PLACED IN HORIZONTAL POSITION SHALL BE PROVIDED WITH ALL NECESSARY SPRINGS AND LATCHES.
   D. FOR WALL/PARTITIONS HAVING A FIRE RESISTANCE RATING OF LESS THAN 3 HOURS FIRE DAMPERS SHALL BE: RUSKIN MODEL D-IBD2 STYLE A, B, & C; GREENHECK MODEL DFD-150, TYPE A, B, C & CR, DFD-155, TYPE C & CR, IMPERIAL IDL MODEL FD 110, FD 150, TYPE A, B, C & CR, PREFCO/HUGH RICHARDS INC. MODEL UL 75A, OR APPROVED EQUAL. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS.
   E. FOR WALL/PARTITIONS HAVING A FIRE RESISTANCE RATING OF 3 HOURS FIRE DAMPERS SHALL BE: RUSKIN MODEL D-1BD23 STYLE A, B, & C, GREENHECK MODEL DFD-350, TYPE A, B, C & CR, DFD-355, TYPE C & CR, IMPERIAL IDL MODEL FD 310, FD 350, TYPE A, B, C, PREFCO/ HUGH RICHARDS INC. MODEL UL 75L, OR APPROVED EQUAL. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS.

VALVES

1. PROVIDE VALVES AS AND WHERE SHOWN ON THE CONTRACT DRAWINGS. THE SYSTEM SHALL BE SUPPLIED WITH VALVES IN ALL BRANCHES, MAINS AND RISERS, TANKS, REDUCING AND CONTROL ELEMENTS, RADIATION, HEATING AND COOLING SURFACES AND AT APPARATUS; SO LOCATED, ARRANGED AND OPERATED AS TO GIVE COMPLETE CONTROL. EXCEPT WHERE FLANGED VALVES ARE USED, EACH CONNECTION TO EQUIPMENT SHALL INCORPORATE AN UNION ON THE EQUIPMENT SIDE OF THE VALVE.
2. ALL VALVES SHALL BE CAREFULLY SELECTED TO MEET THE PRESSURE OF WORKING AND TESTING (1-1/2 TIMES THE RATED WORKING PRESSURE) REQUIREMENTS IN THAT PARTICULAR APPLICATION IN THE ZONE WHERE THE VALVES ARE SERVED.

INSULATION GENERAL

1. INSULATION SHALL BE APPLIED TO PIPING AND DUCTWORK OF MATERIALS AS SPECIFIED HEREIN AND AS REQUIRED BY THE ENERGY CONSERVATION CODE FOR ALL APPLICABLE SYSTEMS OF THIS PROJECT.
2. HVAC PIPING INSULATED IN ACCORDANCE WITH NYS ECC INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE AND SHALL BE PROVIDED WITH SHIELDING FROM SOLAR RADIATION.
3. EXISTING DUCT AND PIPE INSULATION MISSING OR DAMAGE DURING THE WORK SHALL BE REPAIRED, REPLACED OR PATCH TO MATCH EXISTING.

DUCTWORK INSULATION REQUIREMENTS

1. INSULATION SHALL BE APPLIED TO DUCTWORK AND PIPING OF MATERIAL AS SPECIFIED BELOW.
2. NOTE THAT DUCTWORK THAT IS INTERNALLY AND ACOUSTICALLY LINED MAY NEED TO BE INSULATED ON THE EXTERIOR TO MEET ENERGY CODE.
3. INSULATION/LINING SHALL HAVE COMPOSITE (INSULATION OR FACING AND ADHESIVE USED TO ADHERE THE FACING TO THE INSULATION) FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E.84, NFPA 255 OR UL 723 NOT EXCEEDING:
   FLAME SPREAD 25
   SMOKE DEVELOPED 50
   ACCESSORIES SUCH AS ADHESIVES, MASTICS, CEMENTS AND TAPES FOR FITTINGS SHALL HAVE THE SAME COMPONENT RATING AS LISTED ABOVE. ALL PRODUCTS OR THEIR SHIPPING CARTONS SHALL BEAR A LABEL INDICATING THAT FLAME AND SMOKE RATINGS DO NOT EXCEED REQUIREMENTS. TREATMENT OF FACINGS TO IMPART FLAME AND SMOKE-SAFETY SHALL BE PERMANENT. THE USE OF WATERSOLUBLE TREATMENTS IS PROHIBITED.
4. DUCTWORK INSULATION MATERIAL
   A. INSULATE INDOOR SHEET METAL AS FOLLOWS:
      a. ALL INDOOR AIR CONDITIONED AND/OR HEATED LOW PRESSURE SUPPLY DUCTWORK FROM FAN DISCHARGE AS WELL AS GENERAL EXHAUST, TO DIFFUSERS, GRILLES AND REGISTERS INCLUDING DIFFUSER PLENUMS - 1-1/2" INSULATION.
      b. INDOOR DUCT INSULATION SHALL BE 1-1/2 LB. PER CU. FT. DENSITY GLASS FIBER WITH A MAXIMUM K FACTOR OF 0.25 AT 75F MEAN TEMPERATURE, WITH REINFORCED FOIL-FACED, FLAME RESISTANT KRAFT VAPOR BARRIER.
      c. INSULATION SHALL BE SECURED WITH DUCT ADHESIVE. ALL JOINTS SHALL BE SEALED BY ADHERING A 2" SEALING LAP AT ALL JOINTS WITH VAPOR BARRIER ADHESIVE OR 3" STRIPS OF VAPOR BARRIER JACKET APPLIED WITH VAPOR BARRIER ADHESIVE. INSULATION SHALL THEN BE FASTENED WITH 16 GAUGE COPPER-CLAD WIRE OR FIBERGLASS CORD ON 12" CENTERS. ON DUCTS OVER 24" WIDE, WELDED PINS AND CLIPS SHALL BE USED ON THE UNDERSIDE.
      d. EXPOSED DUCTS SHALL HAVE A WHITE VINYL REINFORCED FOIL VAPOR BARRIER. APPLICATION SAME EXCEPT WIRES SHALL BE OMITTED AND BLANKET SHALL BE SECURED BY STAPLING 2" LONGITUDINAL LAP. STAPLES SHALL BE COATED WITH VAPOR BARRIER COATING.
   B. ACOUSTICAL LINING:
      a. CORNING FIBER GLASS AERO FLEX PLUS
   C. EXTENT OF DUCTWORK INSULATION FOR NEW DUCTWORK
      a. ALL SUPPLY DUCTWORK.
      b. ALL RETURN DUCTWORK.
      c. ALL OUTSIDE AIR DUCTWORK

PIPE INSULATION

1. INSULATE ALL PIPING, FITTINGS AND VALVES IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

   PIPING INSULATION MINIMUM THICKNESS (IN.)

PIPING SYSTEM	FLUID TEMP.	PIPE SIZES (NPS)			
		RUN-OUT UP TO 2"	UP TO 1 ½"	1 ½" TO 4"	OVER 4"
HOT WATER	141° TO 200°F	1.5"	1.5"	2"	2"

2. INSULATION SHALL BE MINIMUM 6 LB DENSITY MOLDED FIBERGLASS INSULATION, MAXIMUM 0.23 K-FACTOR AT 75° F MEAN TEMPERATURE WITH FACTORY-APPLIED ALL PURPOSE (AP) FACING OR ALUMINUM JACKET.
3. FITTINGS, VALVES AND FLANGES SHALL ALSO BE INSULATED WITH COMPRESSED FIBERGLASS AND WIRED IN PLACE WITH 18 GAUGE GALVANIZED STEEL WIRE. PREMOLDED PVC INSULATION COVERS FOR FITTINGS ARE NOT ALLOWED.
4. BEFORE APPLYING INSULATION, ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
5. ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPOR-SEAL ADHESIVE WHERE REQUIRED. STAPLES ARE NOT PERMITTED.
6. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
7. INSULATE CONDENSATE DRAIN LINE WITH 1/2" ARMAFLEX

SLEEVES AND ESCUTCHEONS

1. PIPE PENETRATIONS THROUGH MASONRY/CONCRETE WALLS OR FLOORS AND FRAMED PARTITIONS SHALL HAVE A TRIM OPENING CUT NOT GREATER THAN NECESSARY FOR THE INSTALLATION OF A SLEEVE SECURED THEREIN. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE SHALL NOT EXCEED ONE-HALF INCH.
2. SLEEVES SHALL BE FLUSH WITH THE FINISHED WALL OR PARTITION SURFACE.
3. ANNULAR SPACES BETWEEN PIPING AND SLEEVES OR CORE DRILLED FLOOR OPENINGS SHALL BE PACKED WITH MINERAL WOOL AND SEALED TO RETAIN THE FIRE INTEGRITY OF THE WALLS, PARTITIONS, AND FLOORS WITH A NON-HARDENING COMPOUND SIMILAR TO DUXSEAL AS MANUFACTURED BY THE J.M. CLIPPER CORP.
4. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL CORE DRILLS WITH THE ARCHITECT. CONTRACTOR SHALL X-RAY ALL CORE DRILL LOCATIONS TO DETERMINE THE POSITION OF STRUCTURAL SLAB REINFORCEMENTS.
5. SLEEVES FOR PIPING THROUGH MASONRY WALL SHALL BE SCHEDULE 40, STANDARD GALVANIZED STEEL PIPE; IN FRAMED PARTITIONS SHALL BE 20 GAUGE SHEET METAL. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE SHALL NOT EXCEED ONE-HALF INCH. THE SLEEVE SHALL BE FLUSH WITH THE FINISHED WALL SURFACES.
6. PIPING IN EXPOSED AREAS, PASSING THROUGH WALLS, FLOORS, OR CEILINGS SHALL BE FITTED WITH CHROMIUM-PLATED CAST BRASS ESCUTCHEONS WITH FASTENING SET SCREWS.

HANGERS, SUPPORTS, ANCHORS AND GUIDES

1. ALL REQUIRED SUPPORTS, HANGERS, ANCHORS AND GUIDES SHALL BE PROVIDED AND INSTALLED BY THIS CONTRACTOR AND SHALL BE SEISMICALLY DESIGNED.
2. ALL SUPPORTS AND PARTS SHALL CONFORM TO THE REQUIREMENTS OF ANSI B 31.9 AS APPLICABLE FOR PRESSURE PIPING AND MSS STANDARD PRACTICE SP-58 SP-69.
3. INSTALL HANGERS AND SUPPORTS TO ALLOW CONTROLLED THERMAL AND SEISMIC MOVEMENT OF PIPING SYSTEMS, TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION LOOPS, EXPANSION BENDS, AND SIMILAR UNITS.
4. DO NOT HANG PIPING FROM OTHER PIPING. IN NO CASE SHALL HANGERS BE SUPPORTED BY MEANS OF VERTICAL EXPANSION BOLTS.
5. WHEN REMOVAL OF EXISTING FIRE PROOFING IS REQUIRED FOR NEW INSTALLATION PURPOSES, SUCH REMOVAL SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL BE KEPT TO A MINIMUM. THE CONTRACTOR SHALL REPLACE ALL REMOVED FIREPROOFING WITH NEW FIREPROOFING TO THE SATISFACTION OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE AUTHORITY.
6. SUPPORT HANGERS FROM BUILDING STEEL FRAMING WITH AN APPROVED TYPE CLAMP INSERT. PROVIDE ANY ADDITIONAL STEEL SUPPORTS BETWEEN EXISTING FRAMING MEMBERS AS MAY BE REQUIRED. NO HANGERS SHALL BE SUPPORTED FROM METAL DECK FLOOR. WELDING TO THE BUILDING STRUCTURE MEMBERS WILL NOT BE PERMITTED UNLESS APPROVED BY THE BUILDING MANAGEMENT.
7. PIPE HANGERS RODS, INSERTS AND CLAMPS SHALL BE UL APPROVED FOR THEIR RESPECTIVE USES.
8. UNLESS OTHERWISE SPECIFICALLY APPROVED, HANGER SIZE AND SPACING SHALL BE AS FOLLOWS:
   COPPER TUBING
   PIPE SIZE — MAX. HANGER SPACING — MIN. ROD SIZE
   1/2" TO 1-1/4" — 6 FT. O.C — 1/2"
   THE ABOVE HANGER SPACING APPLY TO STRAIGHT RUNS OF PIPE ONLY.
9. HANGERS AND SUPPORTS SHALL BE MANUFACTURED BY GRINNELL CORP, CARPENTER & PATTERSON INC., MICHIGAN HANGER CO. INC., OR ANAPPROVED EQUAL.

TEMPERATURE AND SAFETY CONTROLS

GENERAL- TEMPERATURE CONTROL SYSTEM

1. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND N.Y.S. CODE REQUIREMENTS.
2. EACH UNIT SHALL REQUIRE A ROOM-MOUNTED THERMOSTAT MOUNTED IN THE CONDITIONED SPACE. THERMOSTAT SHALL BE DIGITAL TYPE AND SHALL HAVE AN INTEGRAL TIME CLOCK. THERMOSTAT SHALL CONTROL FAN OPERATION AND BE CAPABLE OF TURNING UNIT ON AND OFF.
   A. SET BACK TO 55dF (HEAT) AND 85dF (COOL); 7-DAY CLOCK, 2- HOUR OCCUPANT OVERRIDE; 10-HOUR BACK UP.
   B. THERMOSTATS SHALL HAVE 5dF DEADBAND
3. UNITS SHALL HAVE THE FOLLOWING FACTORY- INSTALLED SAFETIES:
   A. HIGH AND LOW-PRESSURE SWITCHES.
   B. MOTOR AND COMPRESSOR OVER TEMPERATURE.
   C. CURRENT LOCKOUT.
   D. INHERENT AUTOMATIC FAN MOTOR OVERLOAD.
4. DUCT MOUNTED SMOKE DETECTOR SHALL BE PROVIDED IN THE SUPPLY DUCT & RETURN OF THIS SYSTEM TO STOP THE AIR CONDITIONING UNIT WHEN SMOKE IS SENSED (FURNISHED BY MECHANICAL CONTRACTOR; WIRED BY ELECTRICAL CONTRACTOR). WHEN SMOKE IS SENSED THE AIR CONDITIONING UNIT SHALL BE SHUT DOWN FROM THE FIRE ALARM PANEL.
5. PROGRAM THE THERMOSTAT WITH JLL TECH DURING TRAINING.
6. NEW THERMOSTAT TO GO IN THE EXISTING THERMOSTAT LOCATION, PULL NEW CABLE AS REQUIRED

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED FOR BID	01/29/24

CLIENT:
CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

DRAWING TITLE:
MECHANICAL SPECIFICATIONS (2)

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 01/29/24
PROJECT NO.: 20733C
DRAWN BY: DM
CHECKED BY: KS/MC
DRAWING NO.:
M-401.00
PAGE: 11 OF 11

SYMBOL LIST

SYMBOL	DESCRIPTION
	LIGHTING SYSTEM
3 A EM a / 3 a A	REFER TO LIGHTING PLAN FOR SYMBOLS, FIXTURE TYPES AND SCHEDULE. NUMBER DENOTES CIRCUIT FROM PANEL, EM - EMERGENCY NIGHT LIGHT CIRCUIT
	BRANCH CIRCUITRY
	NUMERALS SUBSCRIPTS AT EACH ITEM IN SYMBOLS DENOTE CIRCUIT NUMBERS FROM SOURCE PANEL AS INDICATED ON PLAN. RUN MINIMUM 2 # 10, 1 # 10G -3/4" C, OR 3# 10, 1# 10G (FOR 3P CIRCUITS) (U.O.N) FROM SOURCE PANEL OR ADJACENT DEVICE OR EQUIPMENT.
	POWER DISTRIBUTION SYSTEM
	MOTORS
	FUSED DISCONNECT SWITCH. LABEL FDS DENOTES FIRE ALARM DISC PER NYC 3 POLE, 30 AMP, 15 AMP FUSE, UF - UNFUSED
	STARTER
	LIGHTING/APPLIANCE PANELBOARD
CB	
3/30/UF	DISCONNECT SWITCH 3 POLE, 30 AMP, 15 AMP FUSE, UF - UNFUSED
3/15/UF	COMBINATION STARTER/DISCONNECT SWITCH. 3 POLE, 30 AMP, 15 AMP FUSE, UF - UNFUSED, HOA INDICATES HAND-OFF - AUTO
J	JUNCTION BOX
	GROUND PER NEC
CB	ENCLOSED CIRCUIT BREAKER
S S_{2P} S_{3P}	SINGLE, 2P OR 3P THERMAL SWITCH HORSE POWER RATED DISCONNECT SWITCH

ABBREVIATIONS

	DESCRIPTION		DESCRIPTION
A	AMPERE	NIC	NOT-IN-CONTRACT
AC	ABOVE COUNTER TOP	NL	NIGHT LIGHT
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
AFG	ABOVE FINISHED GRADE	PB	PULL BOX
ATS	AUTOMATIC TRANSFER SWITCH	PH	PHASE
AWG	AMERICAN WIRE GAUGE	PNL	PANEL
BLDG	BUILDING	PWR	POWER
		PT	POTENTIAL TRANSFORMER
C	CONDUIT	R	RELOCATED
CB	CIRCUIT BREAKER	RCS	REMOTE CONTROL SWITCH
		RM	ROOM
		RMS	ROOT MEAN SQUARE
CLG	CEILING	SN	SOLID NEUTRAL
CT	CURRENT TRANSFORMER	SP	SINGLE POLE
CU	COPPER	SPECS	SPECIFICATIONS
DISC	DISCONNECT	STD	STANDARD
DN	DOWN	SW	SWITCH
DP	DISTRIBUTION PANELBOARD	SWBD	SWITCHBOARD
DWG	DRAWING	SWGR	SWITCHGEAR
E	EXISTING	SYM	SYMMETRICAL
EC	EMPTY CONDUIT	TB	TERMINAL BLOCK
ELEC	ELECTRICAL	TEL	TELEPHONE
FA	FIRE ALARM	TV	TELEVISION
FDS	FIRE ALARM DISCONNECT	TYP	TYPICAL
FDR	FEEDER	UC	UNDER COUNTER
FT	FEET	UF	UNFUSED
G	WITH WIRE GUARD	UG	UNDERGROUND
GD	GROUND	UON	UNLESS OTHERWISE NOTED
HP	HORSEPOWER	V	VOLT OR VOLTAGE
HZ	HERTZ	VA	VOLT AMPERE
IC	INTERRUPTING CAPACITY	VM	VOLTMETER
JB	JUNCTION BOX	W	WATT
KVA	KILOVOLT AMPERE	WP	WEATHER-PROOF
KW	KILOWATT	XFMR	TRANSFORMER
KWH	KILOWATT HOUR		
MCM	THOUSAND CIRCULAR MILS		
MISC	MISCELLANEOUS		
MTD	MOUNTED		
N	NEUTRAL		

SCOPE OF WORK

1. SCOPE DESCRIPTION IS GENERAL IN NATURE. PROVIDE ALL NECESSARY EQUIPMENT LABOR ETC TO PERFORM TASK IN A NEAT AND WORKMANLIKE MANNER.
2. COORDINATE ALL WORK WITH HVAC, CHASE MANAGEMENT, AND BUILDING OWNER. PROVIDE COORDINATED SCHEDULE WITH GENERAL CONSTRUCTION CONTRACTOR.
3. COORDINATE ALL WORK WITH OTHER TRADES, CHASE MANAGEMENT, BUILDING OWNER AS REQUIRED.
4. UPDATE ALL ELECTRICAL EQUIPMENT AS REQUIRED TO SUPPORT HVAC WORK.
5. COORDINATE ALL DEMOLITION WORK WITH HVAC TRADES. REFER TO HVAC DEMOLITION DRAWINGS. REMOVE ALL ELECTRICAL WIRES & CONDUIT BACK TO SOURCE OF DEMOLISHED HVAC EQUIPMENT.
6. PROVIDE ELECTRICAL EQUIPMENT TO SUPPORT HVAC REPLACEMENT-IN-KIND PROVIDE LOCAL DISCONNECT SWITCHES.
7. GROUND SERVICE SWITCHES TO ELECTRODE SYSTEMS PER NEC.
8. FIRE-STOPPING
9. PROVIDE UPDATED PANELS SCHEDULES
10. PROVIDE AS-BUILT DRAWINGS TO OWNER.
11. COORDINATE WITH MECHANICAL CONTRACTOR TO PROVIDE MISCELLANEOUS SINGLE PHASE POWER CIRCUITS TO CONTROL PANELS AND CONTROL DEVICES AS NECESSARY. THIS CONTROL POWER AND CONTROL WIRING SHALL BE FURNISHED FOR ALL SYSTEMS AND EQUIPMENT AND WHERE SHOWN ON THE DRAWINGS OR APPROVED SHOP DRAWINGS.

GENERAL NOTES

1. THE GENERAL NOTES APPLY TO ALL DRAWINGS UNDER THIS CONTRACT. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL NOTES.
2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS CONSISTENT WITH PROJECT CRITERIA.
3. REPLACE LIGHTING FIXTURES IN MAIN ELECTRICAL AND MECHANICAL ROOMS WITH LED TYPE THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CEILING WORK WITH CEILING CONTRACTOR AND DETERMINE CEILING TYPE PRIOR TO FURNISHING OF LIGHTING FIXTURES MOUNTED ELECTRICAL ELEMENTS. ELECTRICAL WORK SHALL ALSO BE COORDINATED WITH LOCATION OF DIFFUSES, SPRINKLERS AND OTHER MECHANICAL WORK.
4. EXACT LOCATION AND MOUNTING OF LIGHTING FIXTURES IN MECHANICAL AREAS SHALL BE COORDINATED WITH THE MECHANICAL TRADES TO AVOID CONFLICT WITH PIPING, DUCTS AND EQUIPMENT. IN GENERAL, THE FINAL LOCATION OF LIGHTING FIXTURES SHALL BE GOVERNED BY THE NEED OF TASK LIGHTING IN THE VICINITY OF PANEL BOARDS, MOTOR CONTROLS, CONTROLS AND INSTRUMENT PANELS AND GAUGES.
5. JUNCTION AND PULL BOXES SHALL GENERALLY BE LOCATED FOR FLUSH MOUNTING IN FINISHED SPACES. WHERE NECESSARY, CONDUIT SHALL BE REROUTED OR OTHER ARRANGEMENTS SHALL BE MADE FOR CONCEALMENT. PULL BOXES SHALL BE PROVIDED AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE AND COORDINATE LOCATION WITH OTHER TRADES. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE. FOR EMPTY RACEWAY RUNS PULL BOXES SHALL BE PROVIDED EVERY 100 FEET AND AS INDICATED OR NECESSARY.
6. SEPARATE BOXES OR WIRE WAYS SHALL BE PROVIDED FOR EMERGENCY AND NORMAL WIRING.
7. ALL OUTLET BOXES RECEIVING 1-1/4" CONDUIT SHALL BE A MINIMUM OF 2-1/2"DEEP.
8. BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. WALL AND SWITCH OUTLETS SHALL BE ERECTED IN ADVANCE OF FURRING AND FIREPROOFING. BOXES SHALL BE SECURED TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
9. LOCATIONS INDICATED FOR WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS, SWITCH SHALL BE INSTALLED ON SIDE OPPOSITE HINGE (FINAL DOOR HINGE LOCATION SHALL BE VERIFIED IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION).
10. ALL SUPPORTS TO BUILDING STRUCTURE SHALL BE SECURED AS NOTED IN THE SPECIFICATIONS. HORIZONTAL RUNS OF METALLIC CONDUIT SHALL BE SUPPORTED AT INTERVALS OF NOT MORE THAN 10 FEET APART. RACEWAY RISERS SHALL BE SUPPORTED AT EACH FLOOR LEVEL. EXPOSED RACEWAYS SHALL RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
11. PROVIDE PULLBOXES, SPLICE BOXES AS REQUIRED BY NYC ELECTRICAL CODE
12. PANELS, JUNCTION BOXES AND PULL BOXES SHALL BE SUPPORTED INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON CONDUIT.
13. ALL REQUIRED ACCESS DOORS SHALL BE FURNISHED UNDER THE ELECTRICAL SECTION AND INSTALLED UNDER GENERAL CONSTRUCTION. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY THE ARCHITECT PRIOR TO INSTALLATION.
14. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET SHALL BE AS SHOWN IN SPECIFICATIONS OR OTHERWISE DIRECTED BY ARCHITECT.
15. ALL DISCONNECT SWITCHES AND CIRCUIT BREAKERS IN FINISHED PUBLIC AREAS SHALL BE RECESSED IN WALL OR MOUNTED IN ACCESSIBLE CEILING TO THE APPROVAL OF THE ARCHITECT AND/OR ENGINEER.
16. NO ELECTRICAL RACEWAYS SHALL BE INSTALLED WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES, OR APPLIANCES, EXCEPT FOR CROSSINGS WHERE RACEWAYS SHALL BE AT LEAST 1 INCH FROM PIPE COVER.
17. HORIZONTAL OR CROSS RUNS IN PARTITIONS OR WALLS ARE NOT PERMITTED. CONDUIT SHALL NOT RUN IN PRECAST ROOF SLABS OR IN 2 INCHES SLABS.
18. OZ # EXOS EXPANSION FITTINGS WITH BONDING JUMPER SHALL BE PROVIDED WHERE CONDUIT EMBEDDED IN CONCRETE CROSS EXPANSION JOINTS. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR EXACT NUMBER, LENGTHS AND LOCATIONS OF EXPANSION JOINTS.
19. TWO (2) PROTECTIVE COATS OF ASPHALTUM COMPOUND SHALL BE PROVIDED FOR ANY GALVANIZED STEEL CONDUIT DIRECTLY BURIED IN EARTH.
20. CONDUIT ENDS SHALL BE CUT SQUARE AND REAM SMOOTH. MALE THREADS OF FIELD THREADED CONDUIT SHALL BE PAINTED WITH GRAPHITE BASED PIPE COMPOUND AND DRAWN UP TIGHT WITH CONDUIT COUPLINGS.
21. CONDUIT TO MOTOR TERMINAL BOXES SHALL BE CONNECTED WITH "SEALTITE" FLEXIBLE CONDUIT; MINIMUM 18 INCHES IN LENGTHS WITH 50 PERCENT SLACK. RACEWAYS SHALL NOT BE TERMINATED IN, OR FASTENED TO MOTOR FOUNDATION.
22. SUFFICIENTLY LONG WIRE SLACK SHALL BE LEFT IN RUNS TO PERMIT MAKING PROPER FINAL CONNECTIONS. ALL EMPTY CONDUIT SHALL BE PROVIDED WITH # 12 AWG STEEL DRAG WIRE.
23. THE ELECTRICAL CONTRACTOR SHALL NOT INSTALL MORE THAN THE NUMBER OF CIRCUITS SHOWN IN ANY HOMERUN CIRCUIT.
24. WIRE COLOR CODING SHALL CONFORM TO CODE REQUIREMENTS.WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE ESTABLISHED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
25. WIRING FOR ALL LOW VOLTAGE SYSTEMS SHALL BE RUN IN SPACES ABOVE CEILING. CABLE SHALL BE ADEQUATELY HARNESSED, BUNDLED AND TIED AT 4 FOOT INTERVALS BY INDIVIDUAL SYSTEMS AND MARKED WITH IDENTIFICATION TAGS. ALL LOW VOLTAGE SYSTEM WALL OUTLETS SHALL HAVE MIN. 1 1/4" CONDUIT EXTENDED INTO HUNG CEILING (CONFIRM WITH IT DRAWINGS). WHERE WIRING HAS TO BE EXPOSED, IT SHALL BE INSTALLED IN EMT CONDUIT. TERMINATION OF WIRING FIRM HUNG CEILING TO CENTRAL OR MAIN CABINETS SHALL ALSO BE INSTALLED IN EMT CONDUIT. LOW VOLTAGE WIRING IN CEILINGS USED AS AIR PLENUM SHALL BE TEFLON COATED, IN NON-AIR PLENUM CEILINGS IT SHALL BE INSTALLED IN CONDUIT.
26. NO THERMOPLASTIC WIRES SHALL BE PULLED AT TEMPERATURE LOWER THAN 32 DEG. F.
27. ALL EMERGENCY LIGHTING BATTERY BACK-UP UNIT INVERTERS SHALL BE CONNECTED TO UNSWITCHED "HOT" LEGS OF LIGHTING BRANCH CIRCUITS SERVING SAME AREAS.
28. ALL EXIT SIGNS SHALL BE CONNECTED TO DEDICATED CIRCUITS AND CONNECTED TO DESIGNATED PANEL LOCKABLE TYPE CIRCUIT BREAKERS AS DIRECTED ON DRAWINGS.
29. PROVIDE GROUND BONDING JUMPERS FOR ALL MECHANICAL EQUIPMENT METAL PIPING SYSTEM THAT MAY BECOME ENERGIZED. THE BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH NEC REQUIREMENTS.
30. WHERE CIRCUITRY HAS NOT BEEN DELINEATED FOR LIGHTING FIXTURES, RECEPTACLES, SWITCHES AND MISCELLANEOUS ITEMS INTENDED FOR PROTECTION AT 15 AMP, SUCH ITEMS SHALL BE PROVIDED WITH CIRCUITRY CONFORMING TO THE FOLLOWING:

    A. WHEN CIRCUITING UP RECESSED CEILING LIGHTING FIXTURES, CONNECT FIXTURES ON BASIS OF MORE THAN ONE FIXTURE TO A SINGLE OUTLET BOX, IN APPROVED MANNER. EXCEPT WITH SPECIAL PERMISSION, IN NECESSARY LIGHT LOADING SHALL BE UNDERSTOOD TO MEAN LESS THAN 1,000 VA ON 120 VOLT AND 3200 VA ON 277 VOLT CIRCUIT.

    B. THE TOTAL LOAD ON A CIRCUIT SHALL BE COMPUTED BY VA TO INDIVIDUAL ITEMS ON THE BASIS OF THE FOLLOWING:

ITEM	VOLT-AMPS (VA)
ANY LIGHTING FIXTURE	ANY VA AS PER SCHEDULE
ANY OUTLET WITH NO SPECIFIC	180 WATTAGE OR CIRCUITING INSTRUCTION INDICATED
ANY OUTLET WITH WATTAGE	1.15 x INDICATED WATTAGE INDICATED
ANY RESISTANCE HEATING	1.0 x INDICATED WITH WATTAGE INDICATED
ANY FRACTIONAL HP MOTOR	2500 x INDICATED HP INDICATED
ANY OUTLET WITH AMP	120 x INDICATED AMP

    C. NOT MORE THAN 1600 VA SHALL BE APPLIED TO A 15 AMP 120 VOLT BRANCH CIRCUIT. NOT MORE THAN 3500 VA SHALL BE APPLIED TO A 20 AMP 277 (265) VOLT BRANCH CIRCUIT.

    D. A SEPARATE 20 AMP BRANCH CIRCUIT SUPPLYING NO OTHER OUTLETS SHALL BE USED FOR EACH OUTLET INDICATED AS AN "INDIVIDUAL APPLIANCE CIRCUIT" OUTLET.

    E. LIGHTING FIXTURES AND RECEPTACLES SHALL NOT BE CONNECTED TO THE SAME BRANCH CIRCUIT.

    F. CIRCUITS SHALL BE BALANCED ON PHASES AT THE SUPPLY POINT AS EVENLY AS POSSIBLE.

33. FIRESTOPPING:

    ALL FIRESTOPPING PRODUCTS AND SYSTEMS SHALL BE DESIGNED AND INSTALLED SO THAT THE BASIC SEALING SYSTEM WILL ALLOW THE FULL RESTORATION OF THE THERMAL AND FIRE RESISTANCE PROPERTIES OF THE BARRIER BEING PENETRATED WITH MINIMAL REPAIR IF PENETRANTS ARE SUBSEQUENTLY REMOVED.

    PRODUCTS:
    3M; FIRE PROTECTION PRODUCTS DIVISION.
    HILTI FIRESTOP PRODUCTS.
    GRACE CONSTRUCTION PRODUCTS.

34. SUBMIT DESIGN AND AS BUILT DRAWINGS IN HARD COPY AND IN AUTOCAD FORMAT TO LANDLORD.
35. ALL WORK IN OTHER THAN THIS TENANT SPACE SHALL BE PERFORMED AFTER HOURS OR ON WEEKENDS. APPROVAL FOR ALL WORK IN OTHER TENANTS SPACES SHALL BE RECEIVED FROM THE AFFECTED TENANT THROUGH LANDLORD REPRESENTATIVES.
36. ALL WORK SHALL BE PERFORMED BEFORE BUSINESS HOURS IN ACCORDANCE TO BUILDING RUES AND REGULATIONS.
37. ALL DEVICES, EQUIPMENT, ETC LOCATED IN THE EXTERIOR SHALL BE IN WEATHERPROOF ENCLOSURES; RECEPTACLES SHALL BE GFI
38. ALL 120 OR 208V BRANCH CIRCUIT CONDUCTORS SHALL BE MODIFIED TO COMPENSATE VOLTAGE DROP AS FOLLOWS;
    a.. OVER 75 FEET-#12AWG INCREASE TO #10AWG
    b. OVE100 FEET #10 AWG INCREASE TO #8 AWG
    c. OVER 175 FEET #8 INCREASE TO #6 AWG
    d. OVER 300 FEET #6 INCREASE TO #4 AWG
39. ALL 277 OR 480V BRANCH CIRCUIT CONDUCTORS SHALL BE MODIFIED TO COMPENSATE VOLTAGE DROP AS FOLLOWS;
    a.. OVER 150 FEET-#12AWG INCREASE TO #10AWG
    b. OVER 250 FEET #10 AWG INCREASE TO #8 AWG
    c. OVER 425 FEET #8 INCREASE TO #6 AWG
40. PROVIDE TAP BOXES AT CONNECTION POINTS WHERE CONDUCTORS DO NOT MATCH TERMINATIONS DUE TO VOLTAGE DROP COMPENSATION..
41. PROVIDE FOR DELIVERY COORDINATION AND SAFE ROUTING TO FINAL LOCATIONS. DELIVERY OF ELECTRICAL SERVICE ROOM EQUIPMENT SHALL BE RECEIVED FROM THE RUTGERS CHURCH ENTRANCE ON 72ND STREET. THE FREIGHT ELEVATOR ELEVATOR MAY BE USED IF APPROVED BY RUTGERS OR USE STAIR TO CELLAR. PROTECT ALL AREAS IN PATH.
42. REMOVE ALL DEMOLISHED EQUIPMENT IN SAME MANNER AS DELIVERY. COORDINATE WITH CHASE AND RUTGERS CHURCH MANAGEMENT.
43. ALL OUTAGES SHALL BE COORDINATED WITH ALL MANAGEMENT S AFFECTED.
44. LIMIT UTILITY OUTAGES TO MINIMUM TIME NECESSARY TO MAKE NECESSARY CONNECTION.
45. VERIFY ALL FEEDER ROUTING IN FIELD AND COMMUNICATE DIFFICULTIES WITH ENGINEER/OWNER/
46. PROVIDE SUITABLE SUPPORTS FOR EQUIPMENT.
47. PROVIDE EXPANSION FITTING WHERE BUILDING HAS EXPANSION JOINTS.
48. NEATLY RUN CONDUIT BANKS AND SUPPORT IN TRAPEZE MOUNTING.
49. FIRESTOP ALL FLOOR AND FIRE RATED WALLS.
50. SEAL ALL OPENING S CREATED BY THE REMOVAL OF ANY CONDUITS.
51. PATCH AND REPAIR ALL AREAS OF DEMOLITION/
52. TEMPORARY FEEDERS SHALL TYPE MC FLEXIBLE CABLE.
53. EQUIPMENT AND CONNECTIONS ON ROOF SHALL BE WATER, SLEET AND RAIN-TIGHT.
54. COORDINATE ROOF EQUIPMENT WITH ALL TRADES TO INSURE PROPER CLEARANCE FOR MAINTENANCE
55. CONDUIT ON ROOF SHALL BE RUN OFF OF THE ROOF SURFACE TO MEET HEIGHT OF DUNNAGE.
56. TAP EXISTING ELEVATOR RUTGERS FEEDER WITH ENCLOSED 20A/1P ENCLOSED CIRCUIT BREAKER. PROVIDE SPST SWITCH AS REQUIRED FOR ELEVATOR LIGHTING. REMOVE CONDUIT AND WIRE TO CHASE PANEL SOURCE OF THE CAB LIGHTING.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

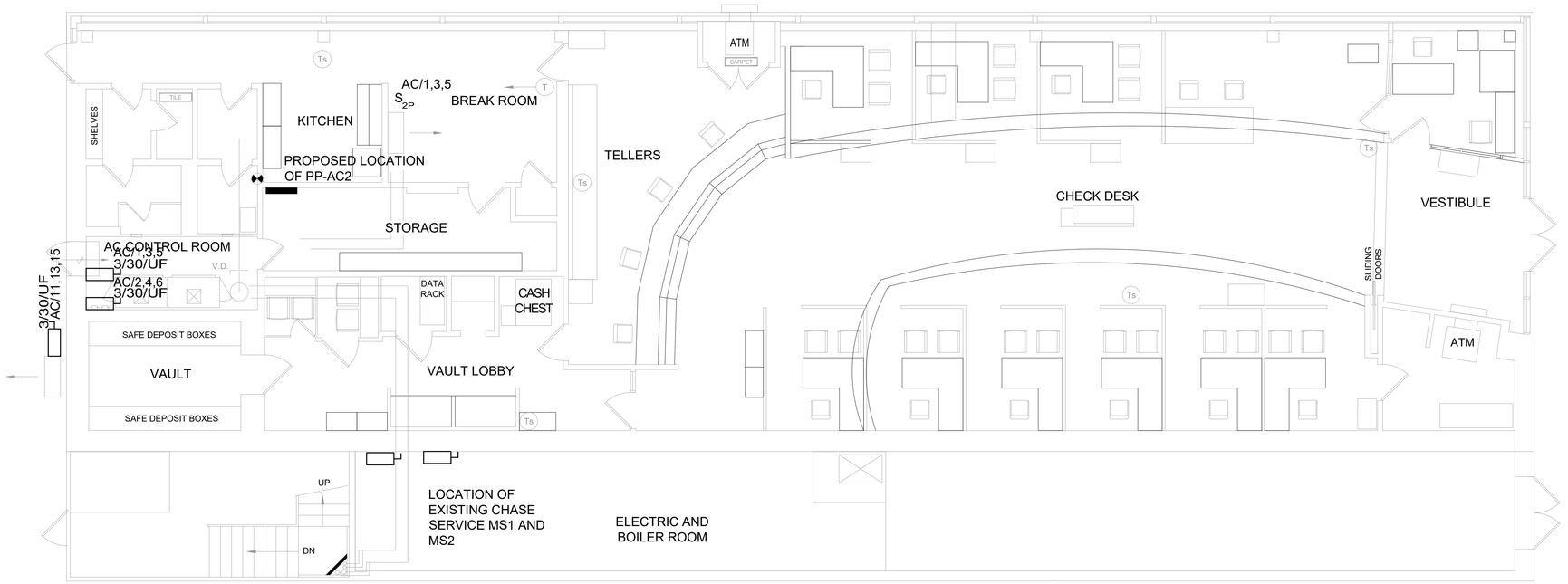
SYMBOLS, NOTES & ABBREVIATIONS

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.:
E-001.00
PAGE: OF 11



1 PROPOSED ELECTRICAL 1ST FLOOR PLAN
SCALE: 3/16" = 1'-0"

N

0 2' 4' 6' 12'
3/16" = 1'-0"

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:
CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

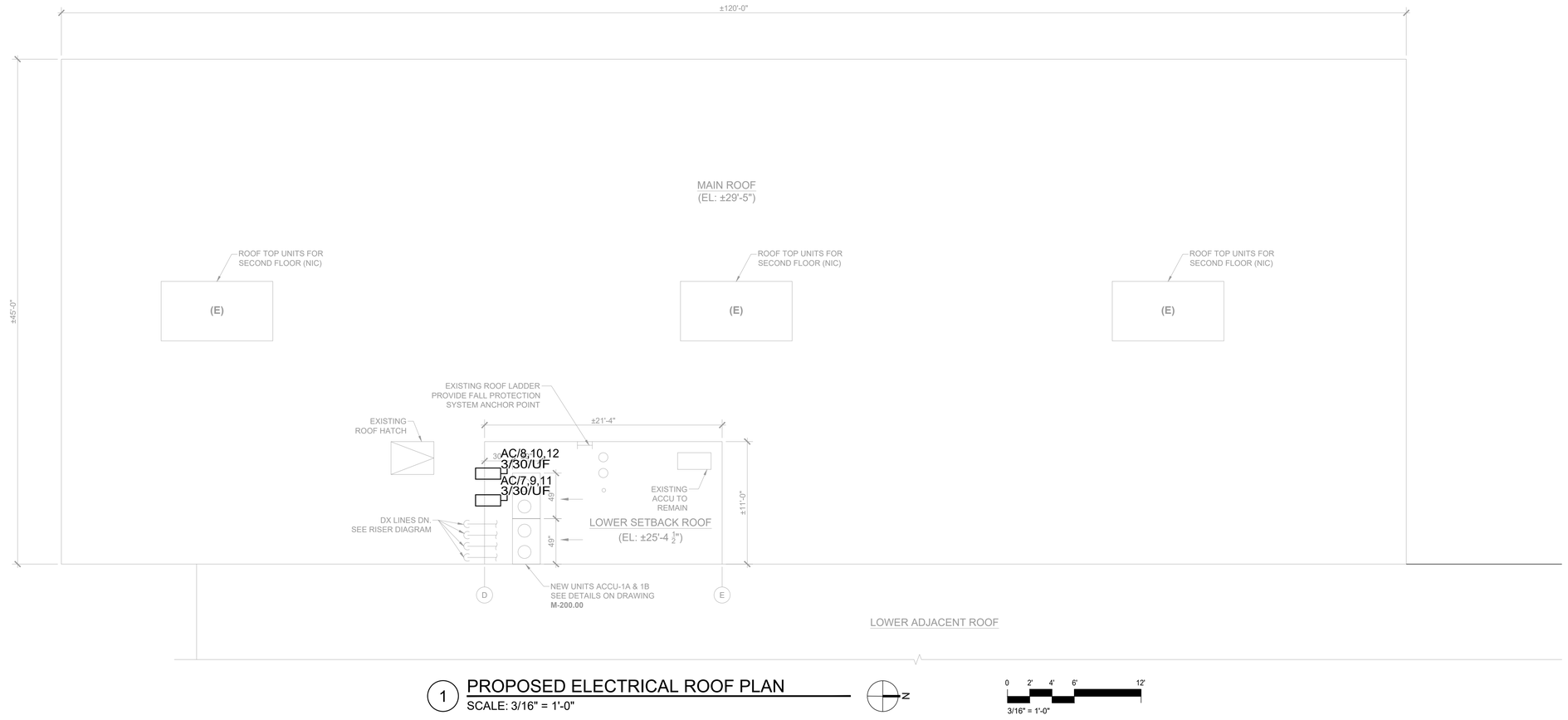
DRAWING TITLE:
PROPOSED ELECTRICAL
1ST FLOOR PLAN

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.:
E-100.00
PAGE: OF 11



1 PROPOSED ELECTRICAL ROOF PLAN
SCALE: 3/16" = 1'-0"

N

0 2' 4' 6' 12'
3/16" = 1'-0"

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:
CHASE

PROJECT ADDRESS:
676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:
HVAC REPLACEMENT

DRAWING TITLE:
PROPOSED ELECTRICAL ROOF PLAN

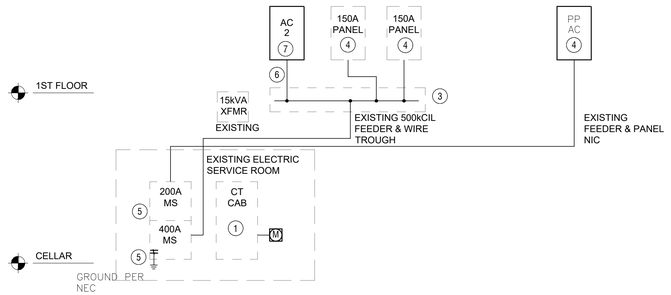
DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.:
E-101.00
PAGE: OF 11

G:\ELECTRICAL SYSTEM DESIGN 2019\2023 PROJECTS\MERRITT\ESD 378 CHASE VERNON HILLS\ESD 378 E-100.DWG / Plot Date - Jan. 26, 2024 - 10:45 AM
Last Saved By: OTORR / Save Date: 1/26/2024 10:39:41 AM



POWER RISER

KEY NOTES

1. EXISTING CT CABINET. CONFIRM TENANT METERING ARRANGEMENT.
2. PROVIDE NEW SERVICE SWITCH GROUND TO MAIN WATER PIPE
3. EXISTING WIRE TROUGH. TAP FEEDER .
4. EXISTING EQUIPMENT TO REMAIN.
5. VERIFY GROUNDED, IF NOT; GROUND SERVICE SWITCH PER NEC 250
6. TAP EXISTING FEEDER IN TROUGH W/ 4#4/0 AND 1 # 6G IN 2 1/2"C
7. NEW 225A PANEL

PANEL: **PP-AC2** | X M.C.B.= 200 | X SURFACE MOUNT | X 100% RATED NEUTRAL BUS | X EQUIPMENT GROUND BUS
FED FROM SS 1 | X M.L.O. | FLUSH MOUNT | FEED THRU PANEL | ISOLATED GROUND BUS
MAIN BUS RATING 225 AMPS | DOUBLE NEUTRAL BUS | MIN AIC 22,000AMPS | 3 PHASE 4 WIRE | **208 /120 VOLTS**
LOCATION SERVICE ROOM

CKT/BKR				kVA/PHASE			FEEDER					FEEDER				kVA/PHASE				CKT/BKR		
#	POLE	TRIP	LOAD DESCRIPTION	A	B	C	No.	SIZE	GRD	CDT	REMARKS	REMARKS	CDT	GRD	SIZE	No.	A	B	C	LOAD DESCRIPTION	TRIP	POLE	#
1	-	-		1.4			-	-	-	-			-	-	-	-	1.4				-	-	2
3	3	20	AHU-1A		1.4		3	#10	#12	3/4			3/4	#12	#10	3		1.4		AHU-1B	20	3	4
5	-	-				1.4	-	-	-	-			-	-	-	-			1.4		-	-	6
7	-	-		5.8			-	-	-	-			-	-	-	-	5.8				-	-	8
9	3	60	ACCU-1A		5.8		3	#6	#10	1 1/4			1 1/4	#12	#6	3		5.8		AHU-1B	60	3	10
11	-	-				5.8	-	-	-	-			-	-	-	-			5.8		-	-	12
13	2	20	ACCU-2	1.4			2	#10	#12	3/4			3/4	#12	#10	2	1.8			AC-1	20	1	14
15	-	-			1.4		-	-	-	-			-	-	-	-		0.0		SPARE	20	1	16
17	1	20	SPARE			0.0	-	-	-	-			-	-	-	-			0.0	SPARE	20	1	18
19	1	20	SPARE	0.0			-	-	-	-			-	-	-	-	0.0			SPARE	20	1	20
21	1	20	SPARE		0.0		-	-	-	-			-	-	-	-		0.0		SPARE	20	1	22
23	1	20	SPARE			0.0	-	-	-	-			-	-	-	-			0.0	SPARE	20	1	24
25	1	20	SPARE	0.0			-	-	-	-			-	-	-	-	0.0			SPARE	20	1	26
27	1	20	SPARE		0.0		-	-	-	-			-	-	-	-		0.0		SPARE	20	1	28
29	1	20	SPARE			0.0	-	-	-	-			3/4	#12	#10	2			0.0	MECH CONTROLS	20	1	30
31	-	-		0.0			-	-	-	-			3/4	#12	#10	2	0.0			MECH CONTROLS	20	1	32
33	-	-			0.0		-	-	-	-			3/4	#12	#10	2		0.0		MECH CONTROLS	20	1	34
35	-	-				0.0	-	-	-	-			3/4	#12	#10	2			0.0	MECH CONTROLS	20	1	36
37	-	-		0.0			-	-	-	-			-	-	-	-	0.0				20	1	38
39	-	-			0.0		-	-	-	-			-	-	-	-		0.0			20	1	40
41	-	-				0.0	-	-	-	-			-	-	-	-			0.0		0	0	42

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

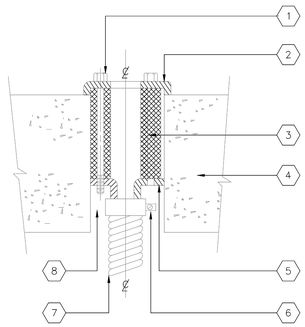
ELECTRICAL POWER
RISER & PANEL SCHEDULE

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: DM/ MA
CHECKED BY: KS/MC
DRAWING NO.:
E-301.00
PAGE: OF 11

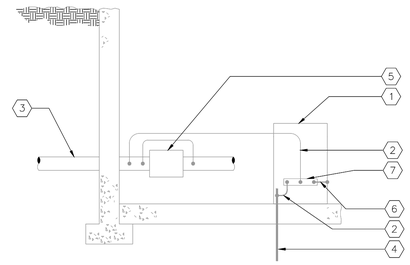


NOTES:

1. STEEL CLAMPING SCREW
2. STEEL UPPER PLATE
3. FIRE – STOP GROMMET
4. CONCRETE FLOOR/WALL
5. STEEL LOWER PLATE
6. STAINLESS STEEL CLAMP
7. FLEXIBLE METAL CONDUIT
8. CORE DRILLED HOLE

FLOOR/WALL FIRE-RATED FITTING

NOT TO SCALE

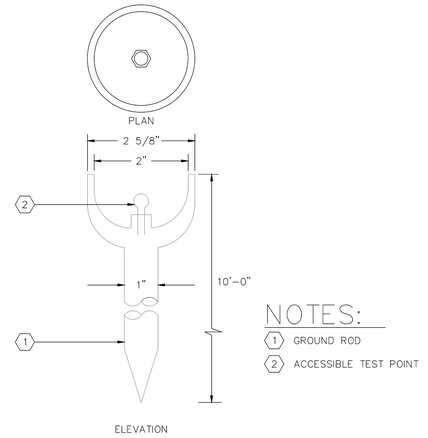


NOTES:

1. SERVICE EQUIPMENT ENCLOSURE
2. GROUNDING ELECTRODE CONDUCTOR
3. GROUNDING ELECTRODE (U.G. METAL PIPE)
4. GROUNDING ELECTRODE (ROD)
5. METER WITH JUMPER
6. BOND TO ENCLOSURE
7. NEUTRAL BUS

GROUNDING ELECTRODE SYSTEM - 1

NOT TO SCALE



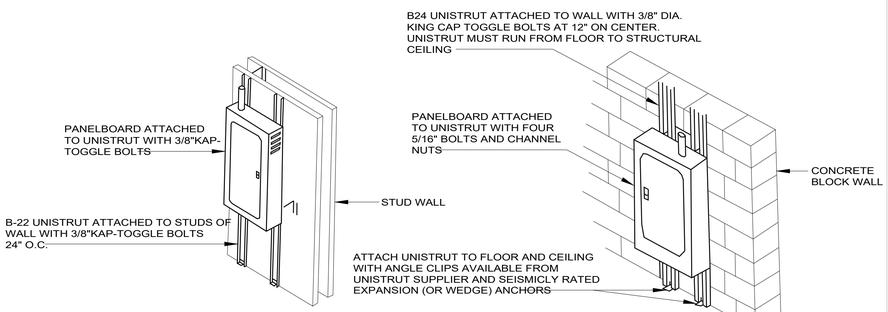
NOTES:

1. GROUND ROD
2. ACCESSIBLE TEST POINT

ELEVATION

ACCESSIBLE GROUND ROD

NOT TO SCALE



DETAILS FOR INSTALLATION OF PANEL

N.T.S.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

ELECTRICAL
DETAILS 1

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.: E501.00
PAGE: OF 11

16.01 GENERAL REQUIREMENTS

A. THIS SPECIFICATION AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS UPON WHICH THE CONTRACTOR SHALL SUBMIT A CONTRACT PRICE FOR MATERIAL AND LABOR PROVISIONS. IT IS NOT INTENDED THAT THE PLANS OR SPECIFICATIONS SHOW OR STATE EVERY DETAILED REQUIREMENT OF THE WORK, BUT RATHER THAT THEY FURNISH ADEQUATE INFORMATION FOR AN EXPERIENCED CONTRACTOR TO MAKE A COMPLETELY ACCEPTABLE INSTALLATION. THE GENERAL CONDITIONS FROM A PART OF THESE SPECIFICATIONS WHETHER ATTACHED HERETO OR NOT, SHALL BE CAREFULLY EXAMINED BEFORE SUBMITTING A PROPOSAL. WHERE GENERAL CONDITIONS CLAUSES ARE REPEATED IN THIS SECTION, IT SHALL BE UNDERSTOOD AS CALLING SPECIAL ATTENTION TO THEM, OR AS A FURTHER QUALIFICATION, AND SHALL NOT BE ASSUMED AS OMITTING ANY OTHER CLAUSES. NO GENERAL CONDITIONS REFERRING TO THE WORK INCLUDED HEREIN SHALL BE CONSIDERED AS WAIVED UNLESS SPECIFICALLY STATED USING APPROVED METHOD TO MAINTAIN THE FIRE RESISTANCE RATING.
B. HEREIN.
C. BEFORE SUBMITTING PROPOSAL, EXAMINE ALL PLANS RELATING TO THIS WORK, VERIFY ALL GOVERNING CONDITIONS AT THE SITE, BECOME FULLY INFORMED AS TO THE EXTEND AND CHARACTER OF THE WORK REQUIRED AND ITS RELATION TO THE WORK OF OTHER TRADES. SUBMISSION OF A COST PROPOSAL (BID) WILL BE JUDGED AS EVIDENCE THAT THE SITE EXAMINATION HAS BEEN MADE. NO CONSIDERATION WILL BE GRANTED FOR ANY ALLEGED MISUNDERSTANDING OF THE MATERIALS TO BE FURNISHED FOR WORK TO BE DONE, IT BEING UNDERSTOOD THAT THE SUBMISSION OF A PROPOSAL IS IN AGREEMENT TO ALL CONDITIONS REFERRED TO HEREIN OR INDICATED ON THE PLANS.
D. PROPOSAL MUST INCLUDE EVERYTHING REQUIRED TO PROVIDE A COMPLETE INSTALLATION AS CONTEMPLATED IN THE SPECIFICATIONS AND ON PLANS, WHETHER SPECIFICALLY SHOWN OR SPECIFIED OR NOT. INCLUDED ARE LABOR, MATERIALS, EQUIPMENT, LIGHTS, TOOLS, SCAFFOLDING, ETC., NECESSARY TO THE COMPLETE INSTALLATION OF EVERYTHING DESCRIBED, SHOWN OR REASONABLY IMPLIED.
E. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE ACCOMPANYING PLANS, OR THESE SPECIFICATIONS AND PLANS AND THE SPECIFICATIONS OF OTHER TRADES, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE SUBMISSION OF THE BID. FAILURE TO COMPLY WITH THE ABOVE SHALL ALLOW THE ARCHITECT TO MAKE A FINAL AND BINDING DECISION AT A LATER DATE AND NO ALLOWANCE WILL BE GIVEN IF THE MORE EXPENSIVE OF THE ITEM IN QUESTION IS SELECTED.
F. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST OR STOLEN, WITHOUT ANY ADDITIONAL COST TO THE OWNER.
G. THE WORK CALLED FOR IN THESE PLANS AND SPECIFICATION SHALL BE COORDINATED WITH THE STRUCTURE, WORK OF ALL RELATED TRADES, AND SHALL BE SO ARRANGED THAT THERE WILL BE NO DELAY IN THE PROPER INSTALLATION AND COMPLETION OF ANY PART OR PARTS OF EACH RESPECTIVE WORK. WHEREIN IT MAY BE INTERRELATED WITH THIS CONTRACT ALL WORK CAN PROCEED IN ITS NATURAL SEQUENCE WITHOUT UNNECESSARY DELAY. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL COST AND DELAYS IN THE WORK RESULTING FROM SUBSTITUTION UNDER THIS DIVISION; INCLUDING, BUT NOT LIMITED TO, ANY CHANGES, IN DECISION, INSTALLATION, OR THE WORK OR OTHER TRADES.
H. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC (EXCEPT WHERE DIMENSIONED) AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW ARCHITECTURAL, STRUCTURAL AND MANUFACTURER'S SHOP DRAWINGS FOR GREATER ACCURACY. CONSULT ENGINEER IN CASE OF DOUBT OR CONFLICT. UNLESS, NOTED, FIXED DIMENSIONS ARE BASED ON THE PRODUCT OF ONE MANUFACTURER, VERIFY DIMENSIONS WITH THE SHOP DRAWINGS OF THE MATERIALS ACTUALLY APPROVED OR PURCHASED.
I. EXACT LOCATION OF ALL EQUIPMENT, PANELS, PULL BOXES, FEEDERS, FIXTURES, ETC., SHALL BE APPROVED BY THE ARCHITECT, AND OWNER PRIOR TO THE INSTALLATION OF THE SAME.
J. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES, REGULATIONS AND THE BEST PRACTICES OF THE TRADE FOR INSTALLATION OF ALL ELECTRICAL WORK.
K. EXPOSED CONDUITS CAN BE INSTALLED BUT IN NO CASE SHALL BE INSTALLED LESS THAN NINE FEET ABOVE THE FINISHED FLOOR OR AS NOTED. CONDUITS INSTALLED IN AREA WHERE HUNG CEILING OR OTHER FURRED SPACES ARE INDICATED SHALL BE INSTALLED CONCEALED. SHOULD ANY WORK REQUIRE SUBSEQUENT MODIFICATION OR RELOCATION TO AVOID INTERFERENCES OR CONFLICTS WITH OTHER WORK, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
L. ANY NECESSARY ELECTRIC SERVICE INTERRUPTIONS SHALL BE AT A TIME CONVENIENT TO THE BUILDING OWNER.
M. ALL PENETRATIONS THROUGH SLABS AND FIRE RATED PARTITIONS SHALL BE FIRE PROOFED USING APPROVED METHOD TO MAINTAIN THE FIRE RESISTANCE RATING.

16.02 SCOPE OF WORK

A. WITHOUT INTENDING TO LIMIT AND/OR RESTRICT THE VOLUME OF WORK REQUIRED AND SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR, THE WORK OF THIS DIVISION SHALL, IN GENERAL COMPRISE THE FOLLOWING:
1. REMOVAL OF ELECTRICAL SYSTEM AS REQUIRED AND AS INDICATED ON PLANS.
2. MODIFICATION TO EXISTING ELECTRICAL SYSTEM, FURNISHING AND INSTALLING PANELBOARDS.
3. FURNISHING AND INSTALLING NEW LIGHTING FIXTURES AND LAMPS.
4. FURNISHING AND INSTALLING NEW CONDUITS, BRANCH CIRCUIT WIRING, ETC.
5. FURNISHING AND INSTALLING NEW RACEWAYS, OUTLET BOXES, WIRING AND CONNECTIONS FOR LIGHTING FIXTURES, SWITCHES, RECEPTACLES AND LOW TENSION OUTLETS.
6. CONNECTIONS TO ALL ELECTRICAL EQUIPMENT FURNISHED BY OTHER TRADES OR BY THE OWNER.
7. POWER WIRING FOR ALL MOTORS, INCLUDING INSTALLING ALL REQUIRED DISCONNECT SWITCHES AND MOUNTING OF STARTERS.
8. FURNISHING AND INSTALLING OF ALL TELEPHONE SYSTEM CONDUITS, SLEEVES AND BOXES.
9. TEMPORARY LIGHT AND POWER.
10. TESTING AND LOAD BALANCING.
11. GROUNDING.
12. REMOVAL AND RESTORATION OF EXISTING WORK.
13. CUTTING, CHANNELING, AND PATCHING.

16.03 WORK NOT INCLUDED

A. FURNISHING MOTORS, MOTOR STARTER AND CONTROL DEVICES CONNECTED TO EQUIPMENT FURNISHED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS. HOWEVER, ELECTRICAL CONTRACTOR WILL ERECT AND WIRE SAME, FURNISH AND INSTALL AUXILIARY MOTOR DISCONNECTS AS REQUIRED BY DRAWINGS OR CODE.
B. FINISH PAINTING.
C. MOTOR CONTROL WIRING AND ELECTRICAL INTERLOCKS (U.O.N.).
D. DATA/TELEPHONE WIRING AND DEVICES.

16.04 CODES PERMITS AND INSPECTIONS

A. ELECTRICAL WORK SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE NEW YORK CITY ELECTRICAL CODES, OSHA CODE, AND OTHER AUTHORITIES EXERCISING JURISDICTION OVER ALL ELECTRICAL CONSTRUCTION WORK AND THE PROJECT.
B. NOTHING CONTAINED IN THESE SPECIFICATIONS OR PLANS SHALL BE SO CONSTRUED AS TO CONFLICT WITH ANY LOCAL, MUNICIPAL, AND NATIONAL BOARD OF THE FIRE UNDERWRITERS REGULATIONS GOVERNING THE INSTALLATION OF WORK SPECIFIED HEREIN. ALL SUCH LAWS, ORDINANCES AND REGULATIONS, WHERE THEY APPLY TO THIS WORK, ARE HEREBY INCORPORATED INTO AND MADE A PART OF THE SPECIFICATIONS. ALL SUCH REQUIREMENTS SHALL BE SATISFIED AT NO ADDITIONAL EXPENSE TO THE OWNER.
C. ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES SHALL BE OBTAINED, PAID FOR, AND MADE AVAILABLE, AT THE COMPLETION OF THE WORK.

16.05 GUARANTEES AND CERTIFICATIONS

A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM DEFECTS. DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ANY/ALL TRADES RESULTING FROM THE SAME, SHALL BE REPLACED OR REPAIRED AS DIRECT FOR THE DURATION OF ONE YEAR, FROM THE DATE OF ACCEPTANCE.
B. THE DATE OF ACCEPTANCE SHALL BE THE DATE OF THE FINAL PAYMENT FOR THE WORK OR THE DATE OF A FORMAL NOTICE OF ACCEPTANCE, WHICHEVER IS EARLIER.
C. NON-DURABLE ITEMS, SUCH AS ELECTRIC LAMPS, SHALL BE REPLACED UP TO THE DATE OF ACCEPTANCE, SUCH THAT THEY SHALL HAVE HAD NO MORE THAT 100 HOURS USE PRIOR TO THIS DATE.

16.06 SHOP DRAWINGS AND EQUIPMENT SUBMISSIONS

A. PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIALS, A LIST OF THEIR MANUFACTURERS SHALL BE SUBMITTED FOR APPROVAL.
B. PRIOR TO ASSEMBLING OR INSTALLING THE WORK, CATALOG INFORMATION AND FACTORY ASSEMBLY DRAWINGS, AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL FIXTURES, DEVICES AND ITEMS OF EQUIPMENT, SHALL BE SUBMITTED FOR APPROVAL.
C. NON-DURABLE ITEMS, SUCH AS ELECTRIC LAMPS, SHALL BE REPLACED UP TO THE DATE OF ACCEPTANCE, SUCH THAT THEY SHALL HAVE HAD NO MORE THAT 100 HOURS USE PRIOR TO THIS DATE.
D. NO EQUIPMENT SHALL BE FABRICATED, DELIVERED, ERECTED OR RECONNECTED THAN FROM DRAWINGS APPROVED BY THE ENGINEER. SHOP DRAWINGS IN THE NUMBER DIRECTED SHALL BE SUBMITTED FOR THE FOLLOWING: 1. PANELBOARDS 2. LIGHTING FIXTURES 3. WIRING DEVICES AND PLATES. 4. FIRE ALARM SYSTEM DEVICES AND RISER DIAGRAM.
E. IT SHALL BE UNDERSTOOD THAT APPROVAL OF DRAWINGS WILL NOT BIND THE ENGINEER OR THE OWNER TO THE FINAL ACCEPTANCE OF SUCH EQUIPMENT AS THE COMPLETED INSTALLATION AND TEST OF EQUIPMENT AS A WHOLE MUST BE PROVIDED AND GUARANTEED HEREIN AS SPECIFIED.

16.07 SAMPLES

A. UPON REQUEST BY ARCHITECT OR OWNER, SUBMIT FOR APPROVAL ONE SAMPLE OF EACH OF THE FOLLOWING:
1. EACH TYPE OF LIGHTING FIXTURE.
2. EACH TYPE OF WIRING DEVICE.
3. EACH TYPE OF WIRING DEVICE PLATE.

16.08 RECORD DRAWINGS

A. REPRODUCIBLE RECORD DRAWINGS SHALL BE SUPPLIED BY THE CONTRACTOR UPON WHICH CORRECTIONS SHALL BE MADE TO PROVIDE AS ACCURATE AND COMPLETE RECORD OF THE WORK AS INSTALLED.

16.09 MOUNTING HEIGHTS

A. HEIGHTS OF WALL MOUNTED OUTLETS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING (UNLESS OTHERWISE NOTED). DIMENSIONS ARE ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED).
1. OUTLETS (RECEPTACLE AND TELEPHONE) IN WALLS, PARTITIONS OR COLUMNS TO CENTER LINE : 1'- 3" IF MOUNTED HORIZONTALLY AND 1'- 6" IF MOUNTED VERTICALLY.
2. SWITCH (TOGGLE) OUTLET IN WALLS, PARTITIONS OR COLUMNS - 3'- 10" TO CENTER LINE.
3. INDIVIDUAL MOTOR STARTER - 5'- 0" TO CENTER LINE.
4. FIRE ALARM PULL STATION - 3'-10" TO CENTER LINE.
5. GROUP MOUNTED (MOTOR STARTERS OR DISTRIBUTION SYSTEM SWITCHING DEVICES) 6'- 6" MAXIMUM TO CENTER LINE OF HIGHEST PUSHBUTTON OR SWITCHING DEVICE HANDLE REQUIRING MANUAL OPERATION, 1'- 0" MINIMUM TO BOTTOM OF LOWEST ENCLOSURE.
6. PANELBOARD - 6'- 6" MAXIMUM TO CENTER LINE TO HIGHEST SWITCHING DEVICE HANDLE.
7. FIRE ALARM STROBE - 6'-8" TO CENTER LINE.
8. MOUNTING HEIGHTS OF PENDANT MOUNTED LIGHTING FIXTURES SHALL BE AS DIRECTED IN THE FIELD BY THE ARCHITECT OR AS INDICATED ON ARCHITECTURAL DRAWINGS

A. DETAILS SHOWN ON ARCHITECTURAL DRAWINGS AND FIELD INSTRUCTIONS ISSUED BY THE ARCHITECT TAKE PRECEDENCE OVER THE ABOVE LIST AND SHALL BE ADHERED TO.

16.11 TESTS

A. BEFORE AN APPLICATION FOR THE FINAL ACCEPTANCE OF THE WORK WILL BE CONSIDERED, ALL TESTS DEEMED NECESSARY BY THE ARCHITECT TO SHOW PROPER EXECUTION OF THE WORK SHALL HAVE BEEN PERFORMED AND COMPLETED IN THE PRESENCE OF AN ARCHITECT'S/ENGINEER REPRESENTATIVE. SCHEDULE OF ALL TESTING PROCEDURES SHALL BE ARRANGED TO SUIT THE CONVENIENCE OF THE ARCHITECT.
B. ANY DEFECTS OR DEFICIENCIES DISCOVERED IN ANY OF THE ELECTRICAL WORK SHALL BE CORRECTED.
C. INSULATION RESISTANCE TESTS SHALL BE PERFORMED ON ALL RE-UTILIZED WIRING AND EQUIPMENT. MEASURED INSULATION RESISTANCE SHALL CONFORM TO REQUIREMENTS OF THE LATEST EDITION OF THE N.Y.C. ELECTRICAL CODE.

16.12 IDENTIFICATION

A. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TYPEWRITTEN DIRECTORIES BEHIND TRANSPARENT PLASTIC COVERS IN METAL FRAMES,IN ALL NEW AND EXISTING PANELS INDICATING TYPE AND LOCATION OF LOAD BEING SERVED BY INDIVIDUAL CIRCUIT BREAKERS.
B. ALL PARTS OF EQUIPMENT, SUCH AS PANELS, JUNCTION BOXES, SAFETY SWITCHES MOTOR STARTER, CIRCUIT BREAKERS, CONDUCTORS AND SIMILAR ITEMS SHALL BE IDENTIFIED BY NAME, AT SUPPLY END, "LOAD SUPPLIED" AND AT LOAD END, "LOAD SUPPLIED FROM".
C. ARC FLASH REQUIREMENTS IN NEC 70E SHALL BE COMPLIED WITH. ALL LABELS SHALL BE PROVIDED FOR ALL EQUIPMENT

16.13 EQUIPMENT AND MATERIALS

A. ALL EQUIPMENT AND MATERIALS FOR PERMANENT INSTALLATION SHALL BE THE PRODUCTS OF RECOGNIZED MANUFACTURERS AND SHALL BE NEW.
B. NEW EQUIPMENT AND MATERIALS SHALL:
1. WHERE NORMALLY SUBJECTED TO UNDERWRITERS LABORATORY INC. LISTING OR LABELING SERVICES, BE SO LISTED OR LABELED.
2. BE WITHOUT BLEMISH OR DEFECT.
3. NOT TO BE USED FOR TEMPORARY LIGHT AND POWER PURPOSES WITHOUT ARCHITECT'S AUTHORIZATION.
4. BE IN ACCORDANCE WITH THE LATEST APPLICABLE N.E.M.A. STANDARD.
5. BE APPROVED BY BUILDING MANAGER OR OWNER.

C. FOR ITEMS WHICH ARE TO BE INSTALLED BUT NOT PURCHASED AS PART OF THE ELECTRICAL WORK, THE ELECTRICAL WORK SHALL INCLUDE:
1. THE COORDINATION OF THEIR DELIVERY.
2. THEIR FIELD MAKE-UP AND INTERNAL WIRING AS MAY BE NECESSARY FOR THEIR OPERATION.

D. ELECTRICAL RACEWAY AND SUPPORTING SYSTEMS SHALL BE FURNISHED AND INSTALLED COMPLETE, WITH ALL MATERIALS, FITTINGS, CONNECTIONS AND ACCESSORIES NECESSARY TO PROVIDE IN EACH INSTANCE, A COMPLETE OPERATING INSTALLATION, AS DESCRIBED HEREIN, AND AS INDICATED ON THE DRAWINGS, AND/OR AS APPROVED BY BUILDING MANAGER OR OWNER.

16.14 WIRING MATERIALS

A. WIRE AND CABLE SHALL BE COPPER, RATED FOR 600 VOLTS, TYPE THHN OR THWN-2
B. WIRE #10 AWG AND SMALLER SHALL BE SOLID, WIRE # 8 AWG AND LARGER SHALL BE SINGLE CONDUCTOR STRANDED.
C. WIRING SHALL BE CONSISTENTLY COLOR CODED THROUGHOUT, RED, BLUE, BLACK FOR LINE (PHASE) CONDUCTORS AND WHITE FOR NEUTRAL CONDUCTOR, SWITCH LEG SHALL BE SEPARATELY IDENTIFIED. GROUND CONDUCTOR WHERE SPECIFIED SHALL BE GREEN.
D. MINIMUM SIZE: 1. LIGHTING AND POWER: #12 AWG, UNLESS OTHERWISE INDICATED. 2. CONTROL: # 14 AWG. 3. CIRCUIT OVER 75 FEET IN LENGTH FROM THE POINT OF SUPPLY TO THE FIRST OUTLET SHALL BE # 10 AWG.
E. SPLICES IN BRANCH CIRCUIT WORK SHALL BE MADE BY MEANS OF TYPE "R" "SCOTCHLOCK" CONNECTORS.
F. FEEDER SPLICES SHALL BE MADE USING 3M 32 AN SERIES RESIN SPLICE UNITS WITH SERIES 1100 CONNECTORS.
G. ELECTRICAL INSULATION TAPE SHALL BE VINYL PLASTIC TYPE WITH PRESSURE ADHESIVE "SCOTCH" ELECTRICAL TYPE.
H. ALL CONDUCTORS SHALL BE COLOR CODED THROUGHOUT AND NUMBERING AND TAGGED AT EACH JUNCTION BOX, PULL BOX, PANEL AND DEVICE WITH SUITABLE FIREPROOF TAGS OR ADHESIVE IDENTIFICATION BANDS.

16.15 CONDUITS AND RACEWAYS

A. EXCEPT AS OTHERWISE INDICATED OR SPECIFIED, ALL WIRING INSIDE AND FOR FOUR FEET (4') BEYOND CONFINES OF ELECTRIC CLOSET SHALL BE INSTALLED IN EMT.
B. LIQUID TIGHT FLEXIBLE, GALVANIZED STEEL CONDUIT, WITH CONTINUOUS COPPER BONDING CONDUCTOR, SHALL BE USED FOR CONNECTIONS, NOT EXCEEDING 18" IN LENGTH, TO MOTORS AND AT OTHER LOCATIONS WHERE VIBRATION, MOVEMENT OR OIL VAPOR ATMOSPHERES ARE ENCOUNTERED.
C. UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL WIRING SHALL BE INSTALLED CONCEALED IN CEILINGS, WALLS, SLABS, PIPE CHASES AND FURRED SPACES WHENEVER POSSIBLE.
D. CONDUIT AND FITTINGS SHALL CONFORM TO LATEST ACCEPTABLE NEW YORK CITY CODE AND ALL OTHER CODES HAVING JURISDICTION.
E. CONDUIT SHALL BE 3/4" TRADE SIZE MINIMUM, UNLESS OTHERWISE INDICATED OR SPECIFIED.
F. ALL CONDUITS WHICH ARE TO REMAIN EMPTY FOR FUTURE INTRODUCTION OF CONDUCTORS SHALL BE PROVIDED WITH A #12 NYLON DRAG WIRE WITH IDENTIFICATION TAG AT BOTH ENDS.
G. METAL CLAD CABLE CAN BE USED FOR LIGHTING AND APPLIANCE BRANCH CIRCUITRY IN VOIDS OF CEILING AND PARTITIONS, PROVIDED THAT THIS TYPE OF WIRING IS ACCEPTABLE TO THE BUILDING OWNER OR HIS REPRESENTATIVE, AND IN COMPLIANCE WITH GOVERNING ELECTRICAL CODE. VERIFY ALL OF THE ABOVE PRIOR TO SUBMITTAL OF BID PROPOSAL.

16.16 JUNCTION BOXES

A. JUNCTION BOX AND PULL BOXES SHALL BE PROVIDED WHERE INDICATED OR SPECIFIED AND WHERE NECESSARY TO FACILITATE THE INSTALLATION OF EQUIPMENT OR WIRING.

6.17 OUTLET BOXES

A. EACH OUTLET FOR LIGHTING FIXTURE, WALL SWITCH, WALL RECEPTACLE, TELEPHONE OR OTHER USE SHALL BE PROVIDED WITH AN OUTLET BOX SUITABLE FOR THE USE FOR WHICH THE OUTLET IS TO BE PUT AND TO THE LOCATION IN WHICH IT OCCURS, SECURED FIRMLY IN PLACE AND SET TRUE AND SQUARE WITH THE FINISHED SURFACE.
B. CONNECTION TO RECESSED CEILING FIXTURES SUPPLIED WITH PIGTAILS MAY BE ARRANGED SO THAT MORE THAN ONE BUT NOT MORE THAN FOUR, SUCH FIXTURES ARE CONNECTED INTO A SINGLE OUTLET BOX. NO FIXTURE SHALL BE SUPPLIED FROM AN OUTLET IN ANOTHER ROOM.
C. THROUGH WALL BOXES FOR BACK TO BACK WIRING NOT PERMITTED.
D. WHERE MORE THAN ONE WIRING DEVICE IS MOUNTED IN THE SAME LOCATION, SUCH DEVICE SHALL BE GANG MOUNTED UNDER A COMMON FACEPLATE.

16.18 FASTENINGS, SUPPORTS, AND HANGERS

A. ALL PARTS OF THE ELECTRICAL INSTALLATION SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING CONSTRUCTION USING APPROVED CLAMP SCREWS WITH THE INSERTS OF EXPANSION ANCHORS, EXPANSION BOLTS AND TOGGLE BOLTS . IN NO CASE SHALL THE HUNG CEILING MEMBERS OR WIRES BE USED TO SUPPORT CONDUIT".
B. ALL FASTENING, SUPPORTS, CLAMPS, ANCHORS, AND SIMILAR ITEMS SHALL BE OF TYPE SUITABLE FOR THE PURPOSE.

16.19 WIRING DEVICES

A. ALL DEVICES SHALL BE SPECIFICATION GRADE, U.L. APPROVED.
B. SINGLE POLE SWITCH, 20 AMP, 125 VOLTS.
C. DUPLEX RECEPTACLE, 20 AMP, 2 POLE, 3 WIRE, 125 VOLT, GROUNDING TYPE.
D. SINGLE RECEPTACLE, 20 AMP, 2 POLE, 3 WIRE, 125 VOLTS, GROUNDING TYPE, GFI WHERE REQUIRED.
E. COLOR AND TYPE OF ALL DEVICE PLATES SHALL BE APPROVED BY ARCHITECT PRIOR TO PURCHASE/ INSTALLATION. RD.

16.20 PANELBOARD AND CABINETS

A. EACH PANELBOARD SHALL BE PLACED IN A SUITABLE CODE GAUGE STEEL ENCLOSED BOX, BONDERIZED AND FINISHED WITH PRIME COAT AND A FINISHED COAT OF LIGHT GRAY BAKED ENAMEL.
B. MAIN BUS BARS INCLUDING FULL CAPACITY NEUTRAL WHERE INDICATED SHALL HAVE AN AMPERE RATING NOT LESS THAN THAT OF THE MAIN BREAKER OR LUGS.
C. DISTRIBUTION EQUIPMENT SHALL BE BRACED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.

16.21 CIRCUIT BREAKERS

A. CIRCUIT BREAKERS FOR PANEL OR INDIVIDUAL MOUNTING SHALL BE MOLDED CASE TYPE, QUICK-MAKE, QUICK-BREAK MANUAL OR AUTOMATIC OPERATION.
B. AMPERE RATING AND NUMBER OF POLES SHALL BE AS INDICATED ON THE DRAWINGS.
C. BREAKERS SHALL BE TYPE "ET" AS MANUFACTURED BY I.T.E. CIRCUIT BREAKER CO., OR APPROVED EQUAL. MINIMUM CIRCUIT BREAKER INTERRUPTING CAPACITY SHALL BE 10,000 SYM RMS AMPERES.

16.22 SAFETY SWITCHES

A. SAFETY SWITCHES SHALL BE OF SIZE NOTED ON THE DRAWING, OR AS REQUIRED, FUSIBLE OR NON FUSIBLE AND EACH CONTAINED IN A GENERAL PURPOSE NEMA 1 ENCLOSURE. ALL SWITCHES SHALL BE HEAVY DUTY TYPE AND SHALL HAVE QUICK-MAKE, QUICK-BREAK MECHANISM.
B. ALL SWITCHES SHALL BE OF PROPER HORSEPOWER RATING AS APPLICABLE AND HAVE DUAL INTERLOCKS DESIGNED TO INTERLOCK THE SWITCH BOX DOOR WITH THE SWITCH OPERATING MECHANISM.

16.23 GROUNDING

A. ALL ENCLOSURES AND OTHER NON CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS AND EQUIPMENT GROUND. BUSES SHALL BE EFFECTIVELY GROUNDED TO THE BUILDING GROUNDING SYSTEMS THROUGH THE SYSTEM GROUND CONDUCTORS. METALLIC CONDUITS AND OTHER RACEWAYS AND ENCLOSURES FOR CONDUCTORS SHALL BE METALLICALLY JOINED TOGETHER INTO A CONTINUOUS ELECTRICAL CONDUCTOR, AS TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
B. EQUIPMENT LOCATED REMOTELY FROM THE GROUND CONDUCTORS SHALL BE ROUNDED TO THE NEAREST AVAILABLE COLD WATER PIPING. MOTOR FRAMES SHALL BE GROUNDED THROUGH THEIR CONDUITS.
C. GROUND CONTINUITY SHALL BE MAINTAINED THROUGHOUT.

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

ELECTRICAL SPECIFICATIONS 1

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.:
E-901.00
PAGE: OF 11

SECTION 262413 - SWITCHBOARDS

PART 1 - GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

1. SERVICE AND DISTRIBUTION SWITCHBOARDS RATED 600 V AND LESS.
2. DISCONNECTING AND OVER-CURRENT PROTECTIVE DEVICES.
3. CONTROL POWER.
4. IDENTIFICATION.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH SWITCHBOARD, OVER-CURRENT PROTECTIVE DEVICE.

B. SHOP DRAWINGS: FOR EACH SWITCHBOARD AND RELATED EQUIPMENT.

1. INCLUDE DIMENSIONED PLANS, ELEVATIONS, SECTIONS, AND DETAILS, INCLUDING REQUIRED CLEARANCES AND SERVICE SPACE AROUND EQUIPMENT. SHOW TABULATIONS OF INSTALLED DEVICES, EQUIPMENT FEATURES, AND RATINGS.
2. DETAIL BUS CONFIGURATION, CURRENT, AND VOLTAGE RATINGS.
3. DETAIL UTILITY COMPANY'S METERING PROVISIONS WITH INDICATION OF APPROVAL BY UTILITY COMPANY.

1..3 INFORMATIONAL SUBMITTALS

SEISMIC QUALIFICATION CERTIFICATES: FOR SWITCHBOARDS, OVERCURRENT PROTECTIVE DEVICES, ACCESSORIES, AND COMPONENTS, FROM MANUFACTURER.

1. DETAILED DESCRIPTION OF EQUIPMENT ANCHORAGE DEVICES ON WHICH THE CERTIFICATION IS BASED AND THEIR INSTALLATION REQUIREMENTS.

C. FIELD QUALITY-CONTROL REPORTS.

1.4 CLOSEOUT SUBMITTALS

A. OPERATION AND MAINTENANCE DATA.

1.5 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: AN EMPLOYER OF WORKERS QUALIFIED AS DEFINED IN NEMA PB 2.1 AND TRAINED IN ELECTRICAL SAFETY AS REQUIRED BY NFPA 70E.

1.6 FIELD CONDITIONS

A. INSTALLATION PATHWAY: REMOVE AND REPLACE ACCESS FENCING, DOORS, LIFT-OUT PANELS, AND STRUCTURES TO PROVIDE PATHWAY FOR MOVING SWITCHBOARDS INTO PLACE.

1.7 WARRANTY

A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE SWITCHBOARD ENCLOSURES, BUSWORK, OVERCURRENT PROTECTIVE DEVICES, ACCESSORIES, AND FACTORY INSTALLED INTERCONNECTION WIRING THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD: THREE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 SWITCHBOARDS

A. SOURCE LIMITATIONS: OBTAIN SWITCHBOARDS, OVERCURRENT PROTECTIVE DEVICES, COMPONENTS, AND ACCESSORIES FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

B. PRODUCT SELECTION FOR RESTRICTED SPACE: DRAWINGS INDICATE MAXIMUM DIMENSIONS FOR SWITCHBOARDS INCLUDING CLEARANCES BETWEEN SWITCHBOARDS AND ADJACENT SURFACES AND OTHER ITEMS. COMPLY WITH INDICATED MAXIMUM DIMENSIONS.

C. BASED ON EATON POWER -R-LINE C FRONT ACCESS SWITCHBOARDS

D. COMPLY WITH NEMA PB 2.

E. COMPLY WITH NFPA 70.

F. COMPLY WITH UL 891.

G. NOMINAL SYSTEM VOLTAGE: 208Y/120 V

H. MAIN-BUS CONTINUOUS: PER DRAWING

I. THE TERM "WITHSTAND" MEANS "THE UNIT WILL REMAIN IN PLACE WITHOUT SEPARATION OF ANY PARTS FROM THE DEVICE WHEN SUBJECTED TO THE SEISMIC FORCES SPECIFIED."

a. THE TERM "WITHSTAND" MEANS "THE UNIT WILL REMAIN IN PLACE WITHOUT SEPARATION OF ANY PARTS FROM THE DEVICE WHEN SUBJECTED TO THE SEISMIC FORCES SPECIFIED AND THE UNIT WILL BE FULLY OPERATIONAL AFTER THE SEISMIC EVENT."

H. INDOOR ENCLOSURES: STEEL, NEMA 250, TYPE 1

A. SERVICE ENTRANCE RATING: SWITCHBOARDS INTENDED FOR USE AS SERVICE ENTRANCE EQUIPMENT SHALL CONTAIN FROM ONE TO SIX SERVICE DISCONNECTING MEANS WITH OVERCURRENT PROTECTION, A NEUTRAL BUS WITH DISCONNECTING LINK, A GROUNDING ELECTRODE CONDUCTOR TERMINAL, AND A MAIN BONDING JUMPER.

B. UTILITY METERING COMPARTMENT: BARRIER COMPARTMENT AND SECTION COMPLYING WITH UTILITY COMPANY'S REQUIREMENTS; HINGED SEALABLE DOOR; BUSES PROVISIONED FOR MOUNTING UTILITY COMPANY'S CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS OR POTENTIAL TAPS AS REQUIRED BY UTILITY COMPANY. IF SEPARATE VERTICAL SECTION IS REQUIRED FOR UTILITY METERING, MATCH AND ALIGN WITH BASIC SWITCHBOARD. PROVIDE SERVICE ENTRANCE LABEL AND NECESSARY APPLICABLE SERVICE ENTRANCE FEATURES.

C. BUS TRANSITION AND INCOMING PULL SECTIONS: MATCHED AND ALIGNED WITH BASIC SWITCHBOARD.

D. HINGED FRONT PANELS: ALLOW ACCESS TO CIRCUIT BREAKER, METERING, ACCESSORY, AND BLANK COMPARTMENTS.

E. SET BACK FROM FRONT TO CLEAR SWITCH REMOVAL MECHANISM.

2. REMOVABLE COVERS SHALL FORM TOP, FRONT, AND SIDES. TOP COVERS AT REAR SHALL BE EASILY REMOVABLE FOR DRILLING AND CUTTING.
3. BOTTOM SHALL BE INSULATING, FIRE-RESISTIVE MATERIAL WITH SEPARATE HOLES FOR CABLE DROPS INTO SWITCHBOARD.
4. CABLE SUPPORTS SHALL BE ARRANGED TO FACILITATE CABLING AND ADEQUATE TO SUPPORT CABLES INDICATED, INCLUDING THOSE FOR FUTURE INSTALLATION.

T. BUSES AND CONNECTIONS: THREE PHASE, FOUR WIRE UNLESS OTHERWISE INDICATED.

1. PROVIDE PHASE BUS ARRANGEMENT A, B, C FROM FRONT TO BACK, TOP TO BOTTOM, AND LEFT TO RIGHT WHEN VIEWED FROM THE FRONT OF THE SWITCHBOARD.
2. PHASE- AND NEUTRAL-BUS MATERIAL: COPPER/TIN-PLATED, HIGH-STRENGTH, ELECTRICAL-GRADE ALUMINUM ALLOY WITH TIN-PLATED ALUMINUM CIRCUIT-BREAKER LINE CONNECTIONS.
3. TIN-PLATED COPPER FEEDER CIRCUIT-BREAKER LINE CONNECTIONS.
4. GROUND BUS: PER MANUFACTURER
5. MAIN-PHASE BUSES AND EQUIPMENT-GROUND BUSES: UNIFORM CAPACITY FOR ENTIRE LENGTH OF SWITCHBOARD'S MAIN AND DISTRIBUTION SECTIONS.
6. DISCONNECT LINKS:
7. ISOLATE NEUTRAL BUS FROM INCOMING NEUTRAL CONDUCTORS.
8. BOND NEUTRAL BUS TO EQUIPMENT-GROUND BUS FOR SWITCHBOARDS UTILIZED AS SERVICE EQUIPMENT .

U. NEUTRAL BUSES: 100 PERCENT OF THE AMPACITY OF PHASE BUSES UNLESS OTHERWISE INDICATED, EQUIPPED WITH [MECHANICAL] COMPRESSION] CONNECTORS FOR OUTGOING CIRCUIT NEUTRAL CABLES. BRACE BUS EXTENSIONS FOR BUSWAY FEEDER NEUTRAL BUS.

V. FUTURE DEVICES: EQUIP COMPARTMENTS WITH MOUNTING BRACKETS, SUPPORTS, BUS CONNECTIONS, AND APPURTENANCES AT FULL RATING OF CIRCUIT-BREAKER OR SWITCH AND FUSE COMPARTMENT.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

1. SWITCH AND FUSE

A. SWITCHBOARDS SUBJECT TO FAULT CURRENTS ABOVE 22 KA, SERIES RATINGS MUST BE USED. CONSIDER RELOCATING THESE TO DOWNSTREAM PANELBOARDS MORE SUITED TO THEIR APPLICATION.

2. STANDARD FRAME SIZES, TRIP RATINGS, AND NUMBER OF POLES.

B. SEE THE EVALUATIONS FOR GUIDANCE ON USING MECHANICAL VERSUS COMPRESSION LUGS.

1. LUGS: COMPRESSION STYLE, SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIAL.

C. BOLTED-PRESSURE CONTACT SWITCH: OPERATING MECHANISM USES ROTARY-MECHANICAL-BOLTING ACTION TO PRODUCE AND MAINTAIN HIGH CLAMPING PRESSURE ON THE SWITCH BLADE AFTER IT ENGAGES THE STATIONARY CONTACTS.

1. BY EATON
2. MAIN-CONTACT INTERRUPTING CAPABILITY: MINIMUM OF 12 TIMES THE SWITCH CURRENT RATING.
3. OPERATING MECHANISM: MANUAL HANDLE OPERATION TO CLOSE SWITCH; STORES ENERGY IN MECHANISM FOR OPENING AND CLOSING.
4. MECHANICAL TRIP: OPERATION OF MECHANICAL LEVER, PUSH BUTTON, OR OTHER DEVICE CAUSES SWITCH TO OPEN.
4. COORDINATE "SERVICE-RATED SWITCHES" SUBPARAGRAPH BELOW WITH DRAWINGS; INCLUDE NOTATION "SUITABLE FOR USE AS SERVICE EQUIPMENT" FOR SWITCHES THAT ARE THE MAIN CONTROL AND MEANS OF DISCONNECTION FOR SEPARATELY DERIVED SYSTEMS OR FOR MAIN DISCONNECT FOR A UTILITY SERVICE.
5. SERVICE-RATED SWITCHES: LABELED FOR USE AS SERVICE EQUIPMENT.
6. SERVICE-RATED SWITCHES: LABELED FOR USE AS SERVICE EQUIPMENT.

D. FUSED SWITCH: NEMA KS 1, TYPE HD; CLIPS TO ACCOMMODATE SPECIFIED FUSES; LOCKABLE HANDLE.

E. CURRENT TRANSFORMERS: PER UTILITY STANDARDS

IDENTIFICATION

A. SERVICE EQUIPMENT LABEL: NRTL LABELED FOR USE AS SERVICE EQUIPMENT FOR SWITCHBOARDS WITH ONE OR MORE SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.

PART 3 - EXECUTION

3.1 INSTALLATION

A. RECEIVE, INSPECT, HANDLE, AND STORE SWITCHBOARDS ACCORDING TO NEMA PB 2.1

B. INSTALL SWITCHBOARDS AND ACCESSORIES ACCORDING TO [NEMA PB 2.1.

C. EQUIPMENT MOUNTING: INSTALL SWITCHBOARDS ON CONCRETE BASE, 4-INCH NOMINAL THICKNESS. COMPLY WITH REQUIREMENTS FOR CONCRETE BASE

D. INSTALL CONDUITS ENTERING UNDERNEATH THE SWITCHBOARD, ENTERING UNDER THE VERTICAL SECTION WHERE THE CONDUCTORS WILL TERMINATE. INSTALL WITH COUPLINGS FLUSH WITH THE CONCRETE BASE. EXTEND 2 INCHES (50-MM) ABOVE CONCRETE BASE AFTER SWITCHBOARD IS ANCHORED IN PLACE.

7. INSTALL DOWEL RODS TO CONNECT CONCRETE BASE TO CONCRETE FLOOR. UNLESS OTHERWISE INDICATED, INSTALL DOWEL RODS ON 18-INCH (450-MM) CENTERS AROUND THE FULL PERIMETER OF CONCRETE BASE.
8. FOR SUPPORTED EQUIPMENT, INSTALL EPOXY-COATED ANCHOR BOLTS THAT EXTEND THROUGH CONCRETE BASE AND ANCHOR INTO STRUCTURAL CONCRETE FLOOR.
9. PLACE AND SECURE ANCHORAGE DEVICES. USE SETTING DRAWINGS, TEMPLATES, DIAGRAMS, INSTRUCTIONS, AND DIRECTIONS FURNISHED WITH ITEMS TO BE EMBEDDED.
10. INSTALL ANCHOR BOLTS TO ELEVATIONS REQUIRED FOR PROPER ATTACHMENT TO SWITCHBOARDS.
11. ANCHOR SWITCHBOARD TO BUILDING STRUCTURE AT THE TOP OF THE SWITCHBOARD IF REQUIRED OR RECOMMENDED BY THE MANUFACTURER.

D. TEMPORARY LIFTING PROVISIONS: REMOVE TEMPORARY LIFTING EYES, CHANNELS, STRAPS AND BRACKETS, AND TEMPORARY BLOCKING OF MOVING PARTS FROM SWITCHBOARD UNITS AND COMPONENTS.

RETAIN FIRST PARAGRAPH BELOW IF SEISMIC CONTROLS ARE REQUIRED FOR PROJECT. COORDINATE WITH DRAWINGS. WHERE SEISMIC MOUNTING IS REQUIRED, BOTTOM CONDUIT ENTRY IS PREFERRED.

E. COMPLY WITH MOUNTING AND ANCHORING REQUIREMENTS SPECIFIED IN SECTION 260548.16 "SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS."

F. OPERATING INSTRUCTIONS: FRAME AND MOUNT THE PRINTED BASIC OPERATING INSTRUCTIONS FOR SWITCHBOARDS, INCLUDING CONTROL AND KEY INTERLOCKING SEQUENCES AND EMERGENCY PROCEDURES. FABRICATE FRAME OF FINISHED WOOD OR METAL AND COVER INSTRUCTIONS WITH CLEAR ACRYLIC PLASTIC. MOUNT ON FRONT OF SWITCHBOARDS.

G. INSTALL FILLER PLATES IN UNUSED SPACES OF PANEL-MOUNTED SECTIONS.

H. INSTALL OVERCURRENT PROTECTIVE DEVICES, SURGE PROTECTION DEVICES, AND INSTRUMENTATION.

SUBPARAGRAPH BELOW ASSUMES THAT SETTINGS ARE INDICATED ON DRAWINGS OR A COORDINATION REPORT IS AVAILABLE FOR CONTRACTOR TO USE.

1. SET FIELD-ADJUSTABLE SWITCHES AND CIRCUIT-BREAKER TRIP RANGES.

RETAIN FIRST PARAGRAPH BELOW IF SPARE-FUSE CABINETS ARE SPECIFIED IN "ACCESSORY COMPONENTS AND FEATURES" ARTICLE.

I. INSTALL SPARE-FUSE CABINET.

J. COMPLY WITH NECA 1.

COORDINATE TWO PARAGRAPHS BELOW WITH DRAWINGS. SHOW LOCATIONS AND TYPES OF GROUNDING CONNECTIONS AVAILABLE AND WHICH ONES ARE USED FOR GROUNDING SWITCHBOARDS.

COORDINATE BUSWAY AND CABLE TRAY INSTALLATIONS AND SPECIALTY ARRANGEMENTS WITH SCHEMATICS ON DRAWINGS AND WITH REQUIREMENTS SPECIFIED FOR BUSWAY AND CABLE TRAY SYSTEMS. ENSURE THAT REFERENCED SECTIONS INCLUDE REQUIRED INTERFACING TERMINATIONS NECESSARY TO ATTACH TO SWITCHBOARDS. IF DRAWINGS ARE EXPLICIT ENOUGH, THESE REQUIREMENTS MAY BE REDUCED OR OMITTED.

K. COMPLY WITH REQUIREMENTS FOR TERMINATING FEEDER BUS SPECIFIED IN SECTION 262500 "ENCLOSED BUS ASSEMBLIES." DRAWINGS INDICATE GENERAL ARRANGEMENT OF BUS, FITTINGS, AND SPECIALTIES.

3.2 IDENTIFICATION

A. IDENTIFY FIELD-INSTALLED CONDUCTORS, INTERCONNECTING WIRING, AND COMPONENTS; PROVIDE WARNING SIGNS COMPLYING WITH REQUIREMENTS FOR IDENTIFICATION

B. SWITCHBOARD NAMEPLATES: LABEL EACH SWITCHBOARD COMPARTMENT WITH A NAMEPLATE COMPLYING WITH REQUIREMENTS FOR IDENTIFICATION SPECIFIED IN SECTION 260553 "IDENTIFICATION FOR ELECTRICAL SYSTEMS."

C. DEVICE NAMEPLATES: LABEL EACH DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICE AND EACH METER AND CONTROL DEVICE MOUNTED IN COMPARTMENT DOORS WITH A NAMEPLATE COMPLYING WITH REQUIREMENTS FOR IDENTIFICATION SPECIFIED IN SECTION 260553 "IDENTIFICATION FOR ELECTRICAL SYSTEMS."

3.3 FIELD QUALITY CONTROL

A. PERFORM THE FOLLOWING TESTS AND INSPECTIONS[WITH THE ASSISTANCE OF A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE]:

1. ACCEPTANCE TESTING:

a. TEST INSULATION RESISTANCE FOR EACH SWITCHBOARD BUS, COMPONENT, CONNECTING SUPPLY, FEEDER, AND CONTROL CIRCUIT. OPEN CONTROL AND METERING CIRCUITS WITHIN THE SWITCHBOARD, AND REMOVE NEUTRAL CONNECTION TO SURGE PROTECTION AND OTHER ELECTRONIC DEVICES PRIOR TO INSULATION TEST. RECONNECT AFTER TEST.

b. TEST CONTINUITY OF EACH CIRCUIT.

2. TEST GROUND-FAULT PROTECTION OF EQUIPMENT FOR SERVICE EQUIPMENT PER NFPA 70.
3. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
4. CORRECT MALFUNCTIONING UNITS ON-SITE WHERE POSSIBLE, AND RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE, REPLACE WITH NEW UNITS AND RETEST.
5. TEST AND ADJUST CONTROLS, REMOTE MONITORING, AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
6. SWITCHBOARD WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
7. PREPARE TEST AND INSPECTION REPORTS, INCLUDING A CERTIFIED REPORT THAT IDENTIFIES SWITCHBOARDS INCLUDED AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

3.4 DEMONSTRATION

A. TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN SWITCHBOARDS, OVERCURRENT PROTECTIVE DEVICES, INSTRUMENTATION, AND ACCESSORIES.

END OF SECTION 262413

A. TESTING

1. COMPLY WITH NETA STANDARDS

B. MEGGERMETER

1. DISCONNECT ALL EXISTING LOADS. DISCONNECT ALL VOLTAGE
2. USE 1000V DC FOR 1 MINUTE MINIMUM
3. DISCHARGE AN Y CAPACITANCE AFTER TESTS.

C. INFRA-RED TESTING

A. PERFORM THE FOLLOWING TESTS AND INSPECTIONS:

1. AFTER INSTALLING CONDUCTORS AND CABLES AND BEFORE ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST [**SERVICE ENTRANCE AND FEEDER CONDUCTORS**] [**AND**] [**CONDUCTORS FEEDING THE FOLLOWING CRITICAL EQUIPMENT AND SERVICES**] FOR COMPLIANCE WITH REQUIREMENTS.
2. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
3. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
4. INFRARED SCANNING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, PERFORM AN INFRARED SCAN OF EACH SPLICE IN CONDUCTORS NO. 3 AWG AND LARGER. REMOVE BOX AND EQUIPMENT COVERS SO SPLICES ARE ACCESSIBLE TO PORTABLE SCANNER. CORRECT DEFICIENCIES DETERMINED DURING THE SCAN.

a. INSTRUMENT: USE AN INFRARED SCANNING DEVICE DESIGNED TO MEASURE TEMPERATURE OR TO DETECT SIGNIFICANT DEVIATIONS FROM NORMAL VALUES. PROVIDE CALIBRATION RECORD FOR DEVICE.

b. RECORD OF INFRARED SCANNING: PREPARE A CERTIFIED REPORT THAT IDENTIFIES SPLICES CHECKED AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

SECTION 260574 - OVERCURRENT PROTECTIVE DEVICE ARC-FLASH STUDY

A. SECTION INCLUDES A COMPUTER-BASED, ARC-FLASH STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR ELECTRICAL EQUIPMENT.

B. PRODUCT CERTIFICATES: FOR ARC-FLASH HAZARD ANALYSIS SOFTWARE, CERTIFYING COMPLIANCE WITH IEEE 1584 AND NFPA 70E.

C. COMPLY WITH IEEE 1584 AND NFPA 70E.

D. INCIDENT ENERGY AND FLASH PROTECTION BOUNDARY CALCULATIONS:

1. ARCING FAULT MAGNITUDE.
2. PROTECTIVE DEVICE CLEARING TIME.
3. DURATION OF ARC.
4. ARC-FLASH BOUNDARY.
5. WORKING DISTANCE.
6. INCIDENT ENERGY.
7. HAZARD RISK CATEGORY.
8. RECOMMENDATIONS FOR ARC-FLASH ENERGY REDUCTION.

E. PROVIDE LABELING FOR ALL EQUIPMENT IN COMPLIANCE WITH NFPA 70E

MERRITT
ENGINEERING CONSULTANT, D.P.C.
28-08 BAYSIDE LANE, BAYSIDE, NY 11358
TEL 718.767.0923 FAX 718.767.4920
WWW.MERRITTENGINEERING.COM

KEY PLAN:

SCALE: N.T.S.

NO.	SUBMISSION / REVISION	DATE
1	REVIEW & QCQA	09/21/23
2	ISSUED TO DOB	11/15/23
3	ISSUED FOR BID	01/29/24

CLIENT:

CHASE

PROJECT ADDRESS:

676 WHITE PLAINS ROAD
SCARSDALE, NY

PROJECT TITLE:

HVAC REPLACEMENT

DRAWING TITLE:

ELECTRICAL
SPECIFICATIONS 2

DOB NOW JOB NUMBER:

DOB STAMP & SIGNATURE:

STAMP & SIGNATURE:

DATE: 08/27/23
PROJECT NO.: 20733C
DRAWN BY: OT
CHECKED BY: KS/MC
DRAWING NO.:
E-902.00
PAGE: OF 11