

1. ALL MECHANICAL WORK SHALL CONFORM TO THE 2022 MECHANICAL CODE OF THE CITY OF NEW YORK.
2. CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF LL 17/95 FOR SEISMIC RESTRAINTS WHERE APPLICABLE.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN 3/8 SCALE MINIMUM INDICATING DUCTWORK DIMENSIONS, HEIGHT ABOVE FLOOR ELEVATIONS, DIFFUSER LOCATIONS AND EXHAUST DUCT FOR ALL FLOORS AND ROOF. DO NOT SCALE FROM THESE PLANS FOR MATERIAL TAKEOFF.
4. CONTRACTOR SHALL SUBMIT EQUIPMENT SPECIFICATIONS PRIOR TO PURCHASE FOR APPROVAL. SUBMITTALS TO INDICATE PERFORMANCE, DIMENSIONS, WEIGHTS, ELECTRIC AND GAS REQUIREMENTS, IN ADDITION TO SCHEDULED ITEMS. EQUIPMENT SUBMITTED THAT DIFFERS FROM SPECIFIED MFR'S SHALL COMPLY WITH CODE REQUIREMENTS, UL LISTINGS AND MEA OR BSA APPROVALS.
5. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW ACTUAL CONDITIONS DURING OR AFTER CONSTRUCTION. CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES IN THE FIELD PRIOR TO SHOP DRAWING SUBMITTAL.
6. CONTRACTOR SHALL OBTAIN ALL WORK PERMITS.
7. CONTRACTOR SHALL GUARANTEE WORKMANSHIP FOR A PERIOD OF ONE YEAR FOR INSTALLATION AND HONOR EQUIPMENT GUARANTEE FOR THE WARRANTY PERIOD.
8. CONTRACTOR SHALL ARRANGE TO SHIP, RECEIVE, SAFELY STORE AGAINST DAMAGE, AND RIG INTO PLACE RECTOR HVAC UNIT.
9. CONTRACTOR SHALL START UP, TEST, BALANCE THE AIR SIDE SYSTEM, AND DELIVER THE SYSTEM FULLY OPERATIONAL TO THE OWNER. TESTING AND BALANCING SHALL BE PERFORMED BY THE CONTRACTOR UNDER THE DIRECTION OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER OR A CERTIFIED AMERICAN AIR BALANCE COUNCIL (OR NEBB) FIRM.

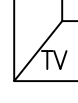
DUCTWORK

- a) RECTANGULAR DUCT
 - i. ALL DUCTWORK SHALL BE GALVANIZED STEEL OF 24 GAGE MARKED PER ASTM A700. SHEETS OR ROLLS SHALL BE OF LOCK FORMING QUALITY FOR LONGITUDINAL SEAMS PER ASTM A 527 AND COATING DESIGNATION G-90.
 - ii. DUCTWORK SHALL CONFORM TO SMACNA PRESSURE CLASSIFICATION 1-INCH W.G.
 - iii. LONGITUDINAL SEAMS SHALL BE STANDING SEAM OR PITTSBURGH LOCK FOR ALL DUCTWORK 24-INCHES AND WIDER.
 - iv. JOINTS SHALL BE REINFORCED PER SMACNA CLASS H WITH FLANGE & BOLT CONNECTIONS SIMILAR TO DUCTMATE WITH DC35 CORNERS.
- b) FLEXIBLE DUCT
 - i. CONSTRUCTED OF 1.25-INCHES OF FIBERGLASS INSULATION WITH GALVANIZED STEEL WIRE HELIX, TWO-PLY POLYESTER INNER CORE, AND BLACK POLYETHYLENE JACKET WITH SCRIM.
 - ii. PERFORMANCE TO MEET UL-181 AND NFPA 90A.
 - iii. FLAME SPREAD RATING 25 MAXIMUM, SMOKE DEVELOPED RATING 50.
 - iv. JOINTS SHALL BE CRIMP AND BEAD WITH MINIMUM 1-INCH CRIMP.
 - v. TO COMPLY WITH NYS 2007 ENERGY CODE, R-VALUE OF 8.0
 - vi. SIMILAR TO HART & COOLEY F118
- c) ACCESSORIES
 - i. SEALANT: SYNTHETIC LATEX SUITABLE FOR SMACNA CLASS A, B, AND C. ASTM D-2202. FDA AND EPA COMPLIANT. SIMILAR TO HARDCAST 321.
 - ii. JOINT GASKET: SELF-ADHESIVE TAPE SIMILAR TO DUCTMATE "ULTRA SEAL"

2. EQUIPMENT

- a) SELF-CONTAINED HEAT PUMP UNITS
 - i. FACTORY ASSEMBLED WITH GALVANIZED STEEL INDOOR & OUTDOOR CABINETS
 - ii. CABINETS INSULATED WITH 0.5-INCH FIBERGLASS
 - iii. ENERGY EFFICIENCY 13.4 SEER2
 - iv. FACTORY INSTALLED ELECTRIC HEATERS
 - v. SELF-CONTAINED 24-VOLT CONTROL CIRCUITS, LOCK-OUT CIRCUIT TO PROVIDE RESET CAPABILITY FROM THE UNIT OR THERMOSTAT AFTER COMPRESSOR TRIP FROM LOW PRESSURE, HIGH PRESSURE OR FREEZESTAT.
 - vi. UL 1995 LISTED, COOLING CAPACITY RATED IN ACCORDANCE WITH AHRI STANDARD 210/240
 - vii. MAGICPAK M-SERIES MHP-11/13
- b) EXHAUST FANS
 - i. LOW NOISE CEILING MOUNTED EXHAUST FAN WITH GRILLE
 - ii. INTERLOCKED WITH AC UNITS WITH MANUAL 120VAC SPST SWITCH SHUTOFF
 - iii. ENERGY STAR QUALIFIED AND COMPLIES WITH ASHRAE 62.2
 - iv. SEE EQUIPMENT SCHEDULES
- c) FIRE DAMPERS
 - i. CURTAIN TYPE UL555 LISTED
 - ii. 1.5 HR RATING
 - iii. SIMILAR TO RUSKIN DIBD20 (WITH OR WITHOUT SLEEVE AS REQUIRED)

NOTE: NOT ALL SYMBOLS USED

	4-WAY DIFFUSER Y = I.D. PER SCHEDULE		POWERED EXHAUST FAN
	RETURN GRILLE		COMBINATION LIGHT & POWERED EXHAUST FAN
	DUCT		FLEXIBLE CONNECTOR
	LINED DUCT		SUPPLY DUCT SMOKE DETECTOR
	SQUARE EL W/TURNING VANES		POWERED SMOKE EXHAUST FAN
	VOLUME DAMPER		FIRE DAMPER (WITH ACCESS DOORS)

CFM	CUBIC FOOT/MINUTE	RG	RETURN GRILLE
CW	CONDENSER WATER	R, RND	ROUND
DN	DOWN	TR	TOP REGISTER
EG	EXHAUST GRILLE	TV	TURNING VANES
ES	EQUAL SIDES	TX	TOILET EXHAUST
FAI	FRESH AIR INTAKE	FD	FIRE DAMPER/ACCESS DOOR
FT	FLAT TOP	">"	GREATER THAN
FV	FLAT OVAL	"<"	LESS THAN
IR	INSIDE RADIUS		
OBD	OPPOSED-BLADE DAMPER		

- c) INDOOR DUCT - EXTERNAL
 - i. FLEXIBLE GLASS FIBER BLANKET BONDED WITH FORMALDEHYDE-FREE RESIN AND ALUMINUM FACING REINFORCED WITH FIBERGLASS SCRIM.
 - ii. 2-INCH THICKNESS, DENSITY 1.0 lb/cuft. R-VALUE 6.0 (INSTALLED)
 - iii. MANVILLE "MICROLITE XG" OR OWENS CORNING "SOFR"®
- b) INTERNAL LINING - ONLY IF AND WHERE INDICATED ON PLAN
 - i. RESIN-BONDED GLASS FIBERS WITH ACRYLIC COATING WITH GLASS COAT REINFORCEMENT.
 - ii. WATER REPELLANT TO 6% MASS GAIN, TREATED TO RESIST BACTERIA, MOLD AND FUNGUS.
 - iii. 1-INCH THICKNESS.
 - iv. MANVILLE LINACOUSTIC RC.
- c) ADHESIVES
 - i. DUCT LINING EDGE SEALER TO BOND FRAYING: MANVILLE "SUPER SEAL EDGE TREATMENT"
 - ii. VAPOR SEAL ADHESIVES FOR INSTALLATION AND REPAIR: MANVILLE "SUPER SEAL HV"

REGISTERS, GRILLES AND DIFFUSERS

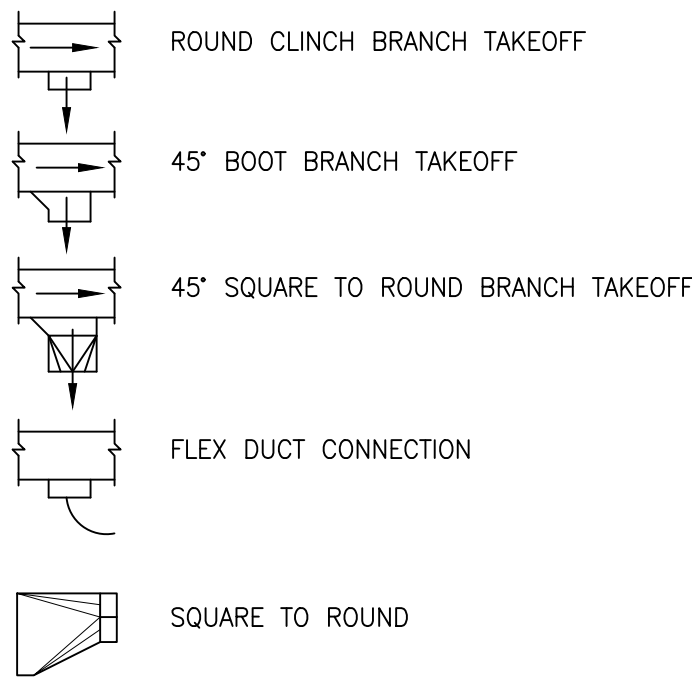
- a) SUPPLY DIFFUSERS
 - i. STAMPED STEEL OR ALUMINUM CONSTRUCTION WITH PAINTED FINISH, SUITABLE FOR INSTALLATION WITH T-BAR CEILING CONSTRUCTION OR GYPSUM BOARD PER PLANS.
 - ii. REFER TO SCHEDULES
- b) RETURN GRILLES
 - i. REFER TO SCHEDULES
- c) EQUIPMENT LOUVERS
 - i. AS FURNISHED BY MAGICPAK
- d) EXHAUST TERMINATION
 - i. 6-INCH ROUND WITH SELF-CLOSING DAMPER
 - ii. SIMILAR TO FANTECH HS6W

o) HVAC UNITS

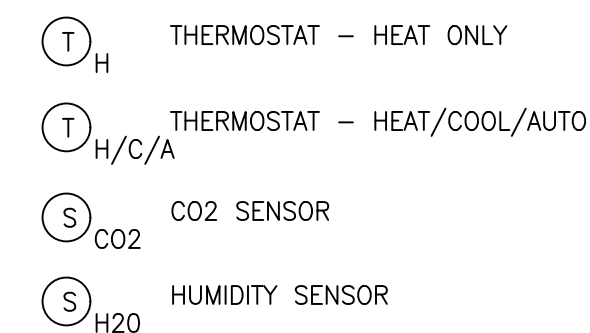
- i. HEAT/COOL/FAN PROGRAMMABLE 5-WIRE THERMOSTAT FOR 1-STAGE COOLING, HEATING AND VENTILATION. PROGRAMMABLE SHALL MEAN AT A MINIMUM: ABILITY TO SET ZONE CONTROL FOR EACH OF THE SEVEN DAYS OF THE WEEK;
- ii. MANUAL AND AUTOMATIC HEATING/COOLING CHANGEOVER.
- iii. SETTINGS AUTOMATICALLY AFTER NO MORE THAN TWO HOURS: ABILITY TO SET BACK COOLING TO 55F AND HEATING TO 55F DURING OFF HOUR BUILDING OPERATION;
- iv. TOUCHSCREEN, SIMILAR TO WHITE ROGERS 1F95-1280. MINIMUM 10" TOUCHSCREEN. ALL REQUIRED ACCESSORIES, I.E. LOCKING COVER, ETC. TEMPORARY OPERATION OR MANUAL OVERRIDE THAT SHALL HAVE THE ABILITY TO SET BACK TO PROGRAMMED SETPOINTS.

- a) HVAC UNIT DRAIN
 - i. ABS PLASTIC FOR CONDENSATE DRAINAGE WITH FITTINGS,
 - ii. FURNISH AND INSTALL ALL CONDENSATE PIPING TO ALL UNITS.

INDOOR UNITS TO BE SUPPORTED WITH ANGLE IRON FRAME SUPPORTED ON 6-INCH CONCRETE BASE.
FRAME HEIGHT PER PLANS.



ME-001	SPECIFICATIONS
ME-120	CELLAR
ME-121	FIRST FLOOR
ME-122	ROOF
ME-200	SCHEDULES AND DETAILS



1. ALL WORK TO CONFORM WITH THE 2022 NYC BUILDING MECHANICAL CODE AND SMACNA.
2. DUCT SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS.
3. LINE ALL RETURN DUCT. SECURE WITH WELD PINS EVERY 12-INCHES WITH TWO ROWS MINIMUM ALONG LENGTH AND 4-INCHES FROM EDGE. LINER TO BE TACK GLUED TO DUCT (90% COVERAGE).
4. INSULATE ALL EXTERIOR DUCTWORK AS INDICATED. LINE SUPPLY DUCT 15'-FEET FROM RTU. LINE ALL RETURN DUCT. EXTERIOR DUCT INSULATION BOARD TO BE SEALED IN BREAKS WITH 3-INCH ALUMINUM TAPE ALONG FACING AND 5-INCH TAPE ALONG CORNERS. ADHERE TAPE WITH VAPOR SEAL ADHESIVE. SECURE WITH WELD PINS ON ALL SIDES. APPLY MASTIC COVERING ON ALL SIDES TO CONTINUOUS FINISH.
6. ENTIRE INTERIOR SUPPLY DUCT TO BE WRAPPED. MINIMUM 2-INCH LAP STRIPS ALONG LONGITUDINAL JOINTS. SECURE SEAMS WITH VAPOR SEAL AND FOIL BARRIER TAPE. BLANKET TO BE TACK GLUED ON DUCT (90% COVERAGE).
7. SUPPORT DUCTWORK AS INDICATED IN DETAIL. MINIMUM HANGER SPACING 8'-FEET ON CENTERS.
8. JOINTS SHALL BE BOLTED WITH 3/8 BOLTS. INSTALL BUTYL GASKET AT FACES. INSTALL FLANGES WITH 5/8" SELF-TAPPING SCREWS ONE AT EACH CORNER FOR DUCT DIMENSION 24-INCHES AND SMALLER AND ADDITIONAL SCREW IN CENTER OF DIMENSION EXCEEDING 24-INCHES.
9. ALL SQUARE SUPPLY ELBOWS SHALL HAVE DOUBLE-THICKNESS TURNING VANES PER DETAIL.
11. MAXIMUM RUN OF FLEXIBLE DUCT SHALL BE 48 INCHES.
12. DUCT BRANCH CONNECTIONS SHALL BE A CLINCHED BOOT PER SMACNA FIG 2-8. ANGLE $\phi = 45^\circ$ L=4 INCHES MIN.
13. ROUND TAPS TO DIFFUSERS SHALL BE CIRCULAR DOVETAIL CLINCHED TO BOTTOM OR SIDE OF DUCT ONLY. SQUARE CORE DIFFUSER CONNECTION: PLENUM BOX WITH CLINCH TOP OR SIDE TAP.
14. CONNECTIONS TO SUPPLY REGISTERS PER DETAILS.
15. LOCATION OF AIR TERMINALS SHALL BE COORDINATED WITH THE ARCHITECT AND THE CEILING INSTALLER. THESE PLANS DO NOT NECESSARILY INDICATE THE ACTUAL CEILING TILE LOCATIONS. ALL DIFFUSERS MUST BE SPACED AS SHOWN TO AVOID CONFLICT WITH SPRINKLERS.
16. FINISH OF AIR TERMINALS TO BE COORDINATED WITH ARCHITECT.
17. ROUTE AC EQPT CONDENSATE DRAIN TO NEAREST ROOF DRAIN. SIZE PIPE ONE NPT SIZE LARGER THAN UNIT CONNECTION. PIPE : ABS WITH CEMENTED JOINTS.
18. ALL DUCTWORK PENETRATING FIRE RATED WALLS OR FIRE DIVISIONS SHALL BE PROVIDED WITH LOW PRESSURE FIRE DAMPERS RATED AT 1-1/2 HOUR. REFER TO ARCH PLANS FOR WALL RATINGS.
19. COORDINATE WITH STEEL CONTRACTOR FOR SETTING SLEAVE SPACING FOR ROOF-TOP UNITS. ALLOW ALL ADEQUATE CLEARANCES FOR UNIT ACCESS AND SERVING.
20. COORDINATE WITH CONTRACTOR FOR FOUNDATION WALL PENETRATIONS.
21. COORDINATE WITH ELECTRICAL CONTRACTOR FOR THERMOSTAT WIRING. CONTRACTOR TO FURNISH WIRE AND ELECTRICAL TRADE TO INSTALL. WIRE IN DUCTWORK NOT PERMITTED.
22. FURNISH AND INSTALL DUCT SMOKE DETECTORS WHERE SHOWN. WIRE PER MANUFACTURERS INSTRUCTIONS TO SHUT DOWN UNITS. MANUAL RESET AFTER SHUTDOWN.
23. ALL WIRING AND PIPING THROUGH MANUFACTURER PROVIDED KNOCKOUTS

1. STARTUP ALL HVAC UNITS AND VERIFY PROPER OPERATION OF FAN, COOLING AND HEATING MODES. CONTRACTOR TO RETAIN MANUFACTURER'S TECHNICAL ASSISTANCE AT HIS EXPENSE DURING STARTUP IF MFR'S RESOURCES ARE NEEDED OR REQUESTED. VERIFY PROPER OPERATION OF ECONOMIZER, POWER EXHAUST AND SAFETY DEVICES.
2. TEST ALL SMOKE DETECTORS FOR RTU SHUTDOWN AND RESET TO START (APPLIES IF DETECTORS SPECIFIED OR REQUIRED BY CODE).
3. CLEAN ALL DUCTWORK PRIOR TO STARTUP. REPLACE ALL RTU AIR FILTERS USED DURING TEST.
4. CHECK AND SET ALL VOLUME DAMPERS IN OPEN POSITION. VERIFY ALL CONNECTIONS SECURED TO DIFFUSERS.
5. SET HVAC UNITS TO PROVIDE FOR REQUIRED OUTDOOR AIR INTAKE TO MEET VENTILATION CODE.
6. PROGRAM ALL THERMOSTATS AND PROVIDE OWNER WITH TRAINING TO THEIR OPERATION.
7. SUPPLY OPERATING & MAINTENANCE MANUALS AND WARRANTY CARDS OF ALL EQUIPMENT TO OWNER.
8. PROVISIONS TO HONOR WARRANTY OF RTU'S SHALL BE FORWARDED TO OWNER.

1. PER TABLE 403.3.1.1 OUTSIDE AIR 10 CFM/PERSON AND 0.12 CFM/SQ FT VENTILATION REQUIREMENTS Vot:

Vb21 = $22(10) + 650(0.12) = 300$ CFM (AC-C.1)

Vb22 = $22(10) + 650(0.12) = 300$ CFM (AC-C.2)

Vb23 = $19(10) + 544(0.12) = 250$ CFM (AC-C.3)

Vb24 = $19(10) + 544(0.12) = 250$ CFM (AC-C.4)

Vb25 = $22(10) + 650(0.12) = 300$ CFM (AC-C.5)

Vb26 = $22(10) + 650(0.12) = 300$ CFM (AC-C.6)

1. MINIMUM SEER OF HVAC EQUIPMENT 13, INSTALLED SEER 13.4
2. ALL DUCTWORK WITHIN THERMAL ENVELOPE
3. ALL HVAC EQUIPMENT EACH SERVE SINGLE ZONE AND CONTROLLED BY ONE THERMOSTAT.
4. ALL HVAC EQUIPMENT DOES NOT REQUIRE PREVENTIVE MAINTENANCE TO MAINTAIN SEER RATING.
5. COOLING LOAD CALCULATED WITH INTERIOR SET POINT AT 75°F COOLING AND 72°F HEATING:
6. HEATING AND COOLING LOADS CALCULATED PER ASHRAE STD 183:
COOLING LOAD 213,766 BTU/HR (115,304 BTU/HR SENSIBLE)
HEATING LOAD 187,086 BTU/HR
7. REFER TO DWG MH-201 FOR TABULAR ANALYSIS

1. INSTALLATION OF 6 MAGICPAK HVAC UNITS, DUCTWORK AND ACCESSORIES
2. INSTALLATION OF 6 EXHAUST FANS
3. RELOCATE EXISTING GREASE DUCT AND FAN TO THIRD FLOOR ROOF
4. ALTER EXISTING MAKE UP AIR SUPPLY DUCT TO AIR INLET FROM NEW GOOSENECK
5. RELOCATION OF EXISTING 10-TON CONDENSER
6. REPLACEMENT OF EXISTING MINI-SPLIT SYSTEM WITH NEW
7. LOW VOLTAGE WIRING

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MECHANICAL - ELECTRICAL - PLUMBING - FIRE PROTECTION

NYC DOB

DRAWING

MECHANICAL
COVER SHEET

This plan is an instrument of service and is the property of the engineer.
IT IS A VIOLATION OF NYS EDUCATION LAW UNDER ARTICLE 145 § 7209 FOR ANY PERSON TO ALTER ANY ITEMS HEREIN UNLESS ACTING UNDER THE DIRECTION OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER

PROJECT: PROPOSED CELLAR CLASSROOM ADDITION

CLINTON AVENUE
STATEN ISLAND, NY 103xx
BLOCK: 92 LOT: 001

MECHANICAL/HVAC INSTALLATION
IN CONJUNCTION WITH XX XXXXXXXXXX

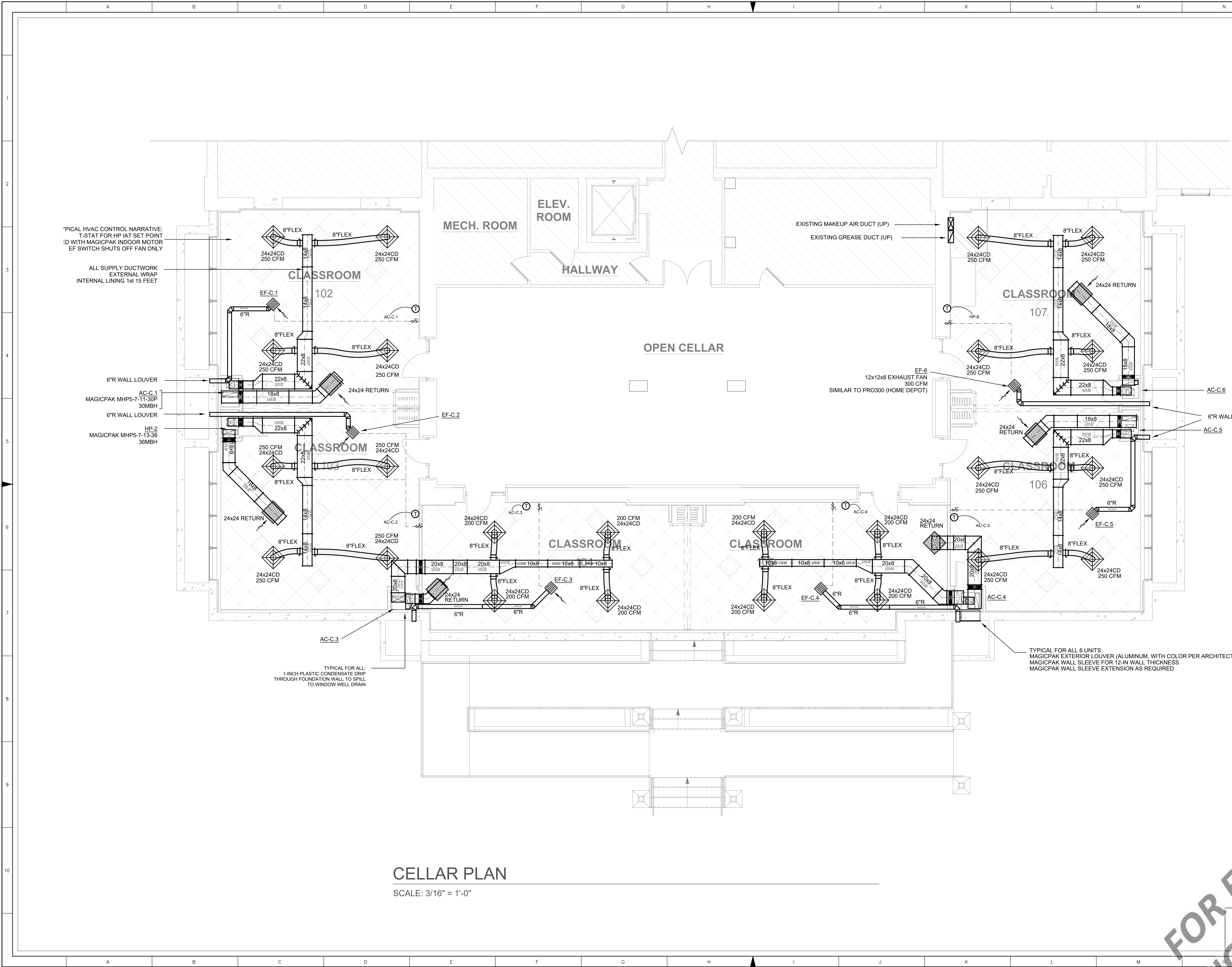
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Date:	
DRAWN BY:	DATE: 11-14-2025
SCALE: AS NOTED	SHEET: 1 OF: 5

S01372896-S1

ME-001.00



*PICAL HVAC CONTROL NARRATIVE:
T-STAT FOR HP (AT SET POINT)
D WITH MAGICPAK INDOOR MOTOR
EF SWITCH SHUTS OFF FAN ONLY

ALL SUPPLY DUCTWORK
EXTERNAL WRAP
INTERNAL LINING 1st 15 FEET

6"R WALL LOUVER
AC-C.1
MAGICPAK MHP5-7-11-30P
30MBH
6"R WALL LOUVER
HP-2
MAGICPAK MHP5-7-13-36
36MBH

TYPICAL FOR ALL:
1-INCH PLASTIC CONDENSATE DRIP
THROUGH FOUNDATION WALL TO SPILL
TO WINDOW WELL DRAIN

CELLAR PLAN

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

MECH. ROOM

ELEV. ROOM

HALLWAY

OPEN CELLAR

EXISTING MAKEUP AIR DUCT (UP)
EXISTING GREASE DUCT (UP)

EF-6
12x12x8 EXHAUST FAN
300 CFM
SIMILAR TO PRO300 (HOME DEPOT)

TYPICAL FOR ALL 6 UNITS:
MAGICPAK EXTERIOR LOUVER (ALUMINUM, WITH COLOR PER ARCHITECT)
MAGICPAK WALL SLEEVE FOR 12-IN WALL THICKNESS
MAGICPAK WALL SLEEVE EXTENSION AS REQUIRED

REVISIONS:		
NO.	DATE	DESCRIPTION

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MECHANICAL
FLOOR PLANS

DRAWING

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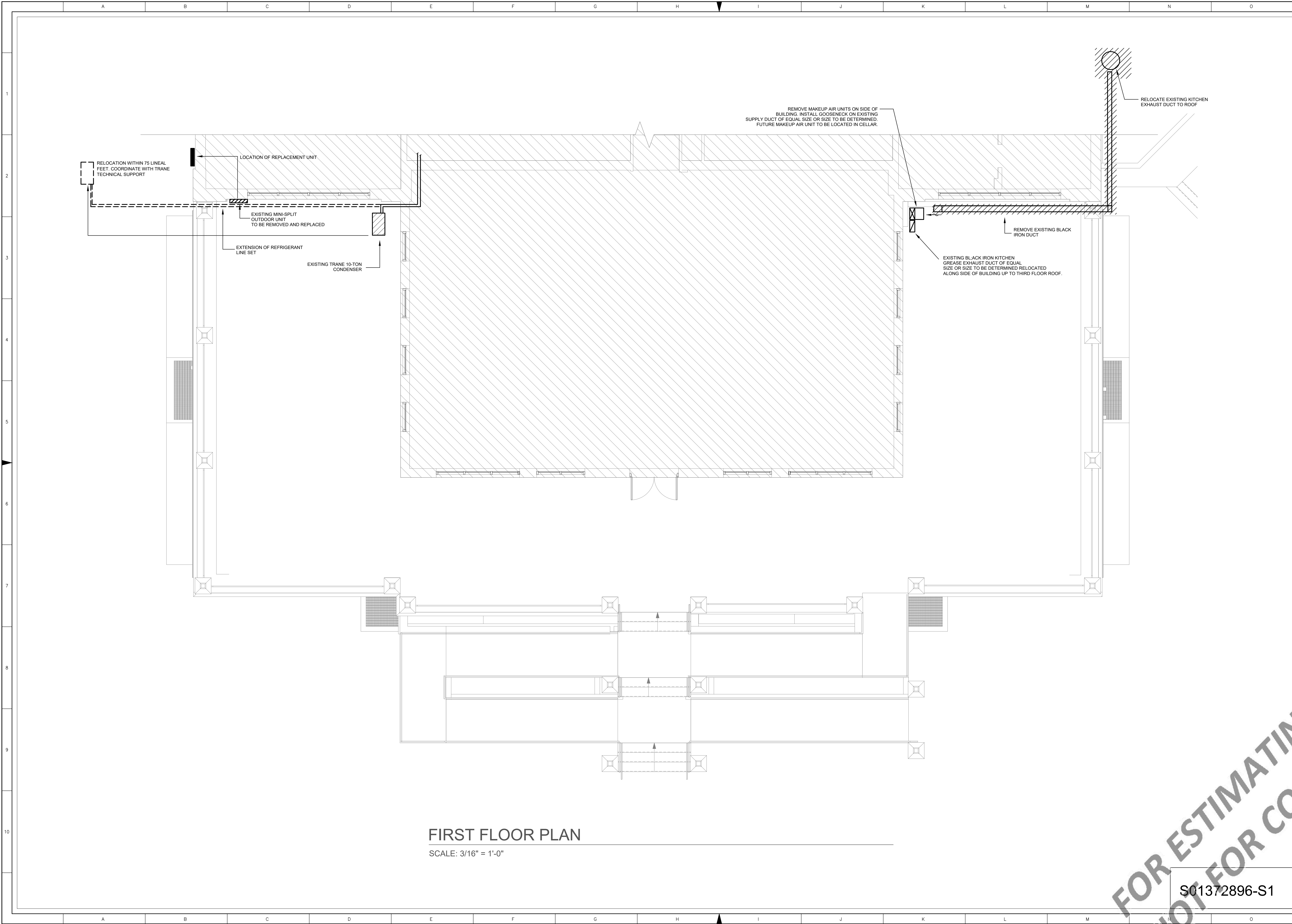
PROJECT: PROPOSED CELLAR CLASSROOM ADDITION
CLINTON AVENUE
STATEN ISLAND, NY 10314
BLOCK: 92 LOT: 001
MECHANICAL/HVAC INSTALLATION
IN CONJUNCTION WITH XX XXXXXXXXX
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Date:
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SCALE: AS NOTED
SHEET: 2 OF 5

DWG No.:
ME-120.00

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FIRST FLOOR PLAN
SCALE: 3/16" = 1'-0"

REVISIONS:

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MECHANICAL
FLOOR PLANS

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PROJECT: PROPOSED CELLAR CLASSROOM ADDITION

CLINTON AVENUE
STATEN ISLAND, NY 10314
BLOCK: 92 LOT: 001

MECHANICAL/HVAC INSTALLATION
IN CONJUNCTION WITH XX XXXXXXXXX

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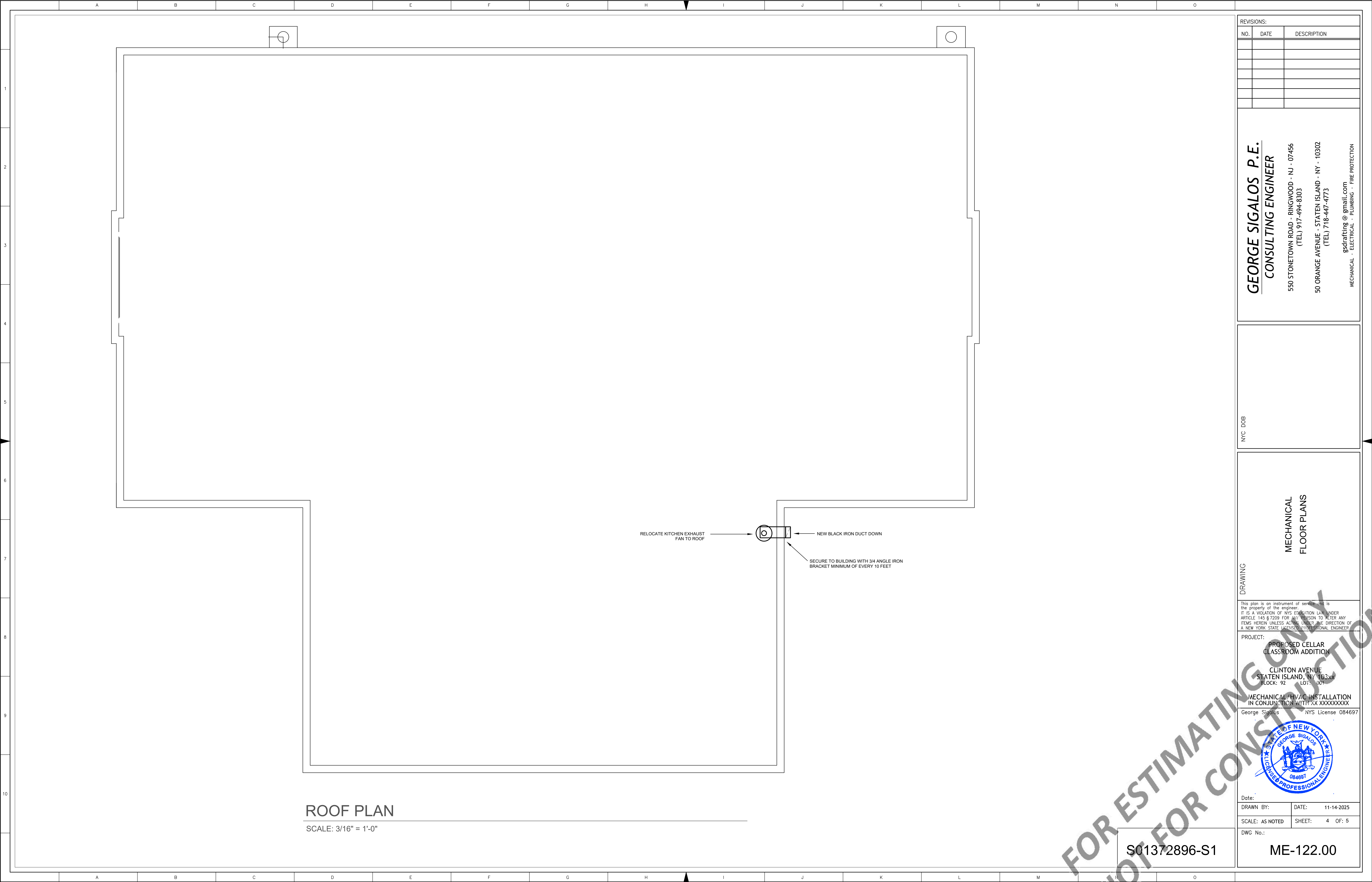
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DRAWN BY: SHEET: 3 OF: 5

SCALE: AS NOTED

DWG No.: S01372896-S1

ME-121.00



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MECHANICAL FLOOR PLANS

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CLINTON AVENUE
STATEN ISLAND, NY 10314
BLOCK: 92 LOT: 001

MECHANICAL/HVAC INSTALLATION IN CONJUNCTION WITH XX XXXXXXXXX
George Sigalos NYS License 084697



Date:	
DRAWN BY:	DATE: 11-14-2025
SCALE: AS NOTED	SHEET: 4 OF: 5

DWG No.:	
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ME-122.00

AIR CONDITIONING UNIT SCHEDULE

UNIT	TYPE	COOLING @95°F						HEATING						POWER		MAKE AND MODEL (OR EQUAL)	HSPF2	OUTDOOR AIR		WEIGHT	NOTES	AHRI REFERENCE #	
		AIR FLOW (CFM)	CAPACITY (BTU/H)	INDOOR BLOWER			AIR FLOW (CFM)	SOURCE	SOURCE DATA			CAPACITY		VOLTAGE	MIN CKT AMP			REQUIRED (CFM)	PCT OF UNIT AIR FLOW (%)				(LBS.)
				STATIC (IN)	RPM	HP			ELECTRIC KW	WATER MBH	PD (in)	INPUT (BTU/H)	OUTPUT (BTU/H)										
AC-C.1	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254	
AC-C.2	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254	
AC-C.3	2.0-TON PACKAGED SELF-CONTAINED HEAT PUMP	830	24,060	0.20	1270	2.00	830	ELEC	5.0	--	--	--	34,700	230/1/60	36.3	MAGICPAK MHP5-3-7-11-24FP	6.3	250	30	278	1,2	216719254	
AC-C.4	2.0-TON PACKAGED SELF-CONTAINED HEAT PUMP	830	24,060	0.20	1270	2.00	830	ELEC	5.0	--	--	--	34,700	230/1/60	36.3	MAGICPAK MHP5-3-7-11-24FP	6.3	250	30	278	1,2	216719254	
AC-C.5	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254	
AC-C.6	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254	

1. FURNISH WITH ACCESSORY WALL SLEEVE (AND EXTENSION IF REQUIRED) AND FACTORY FILTERS
2. FURNISH WITH MAGICPAK LOUVER
3. REMOVE ALL VENTILATION KNOCKOUTS

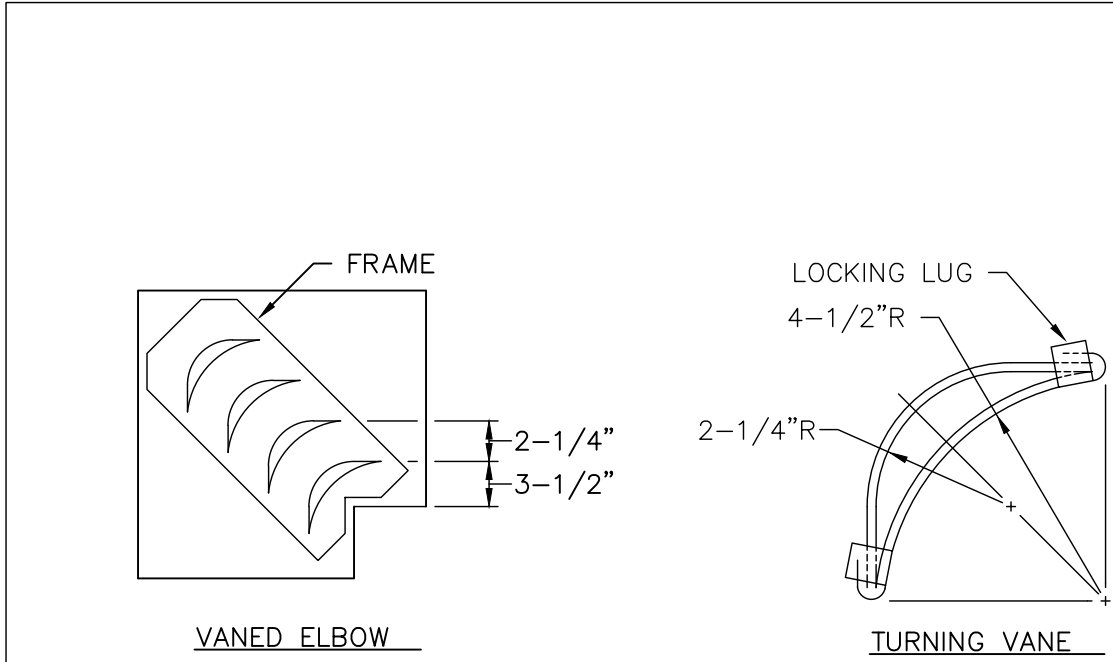
DIFFUSER SCHEDULE

IDENTIFIER	TYPE	SIZE					PERFORMANCE DATA**					MOUNT	MAKE SIMILAR TO
		OVERALL	CORE		NECK	VELOCITY	AIR FLOW	STATIC PRESS	THROW	NC			
			(in x in)	(in x in)							Ak		
A	24x24 LAY-IN	24x24	23.75	0.92	8	600	210	0.04		11	GRID	HART & COOLEY HVS	
B	24x24 EGG CRATE LAY-IN	25.75	22x22	3.14	--	400	1,250	0.02		11	GRID	HART & COOLEY REST	

EXHAUST FAN SCHEDULE

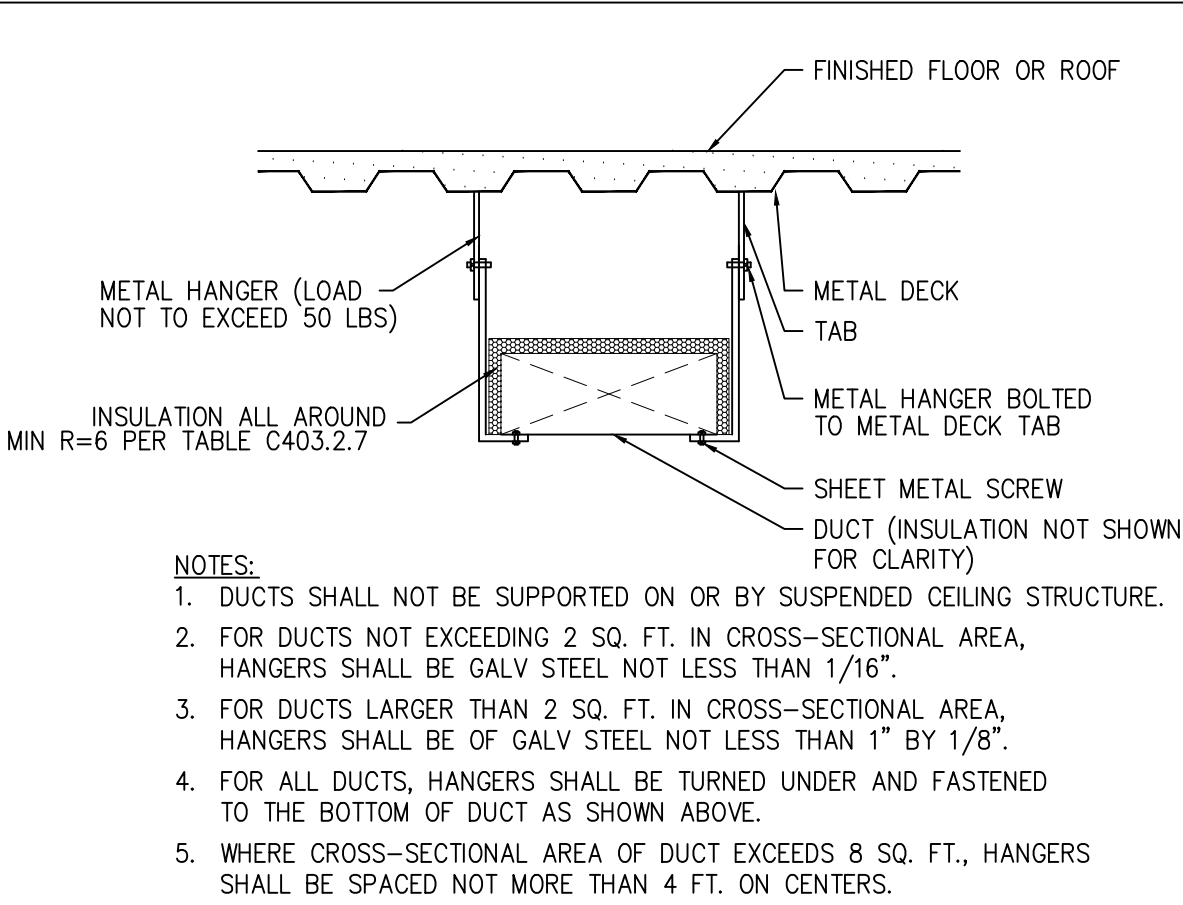
UNIT	TYPE	RELIEF CAPACITY (CFM)	DUCT		STATIC (IN)	VOLT/AMP	MAKE & MODEL
			TYPE	SIZE (IN)			
EF-C.1	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300
EF-C.2	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300
EF-C.3	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300
EF-C.4	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300
EF-C.5	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300
EF-C.6	TOILET EXHAUST	300	ROUND	6	0.125	120/0.75	DELTA BREEZ PRO300

FANS WIRED ON 120V 1P-15A SWITCHED CIRCUIT AND INTERLOCKED TO AC UNITS WITH 24V RELAY



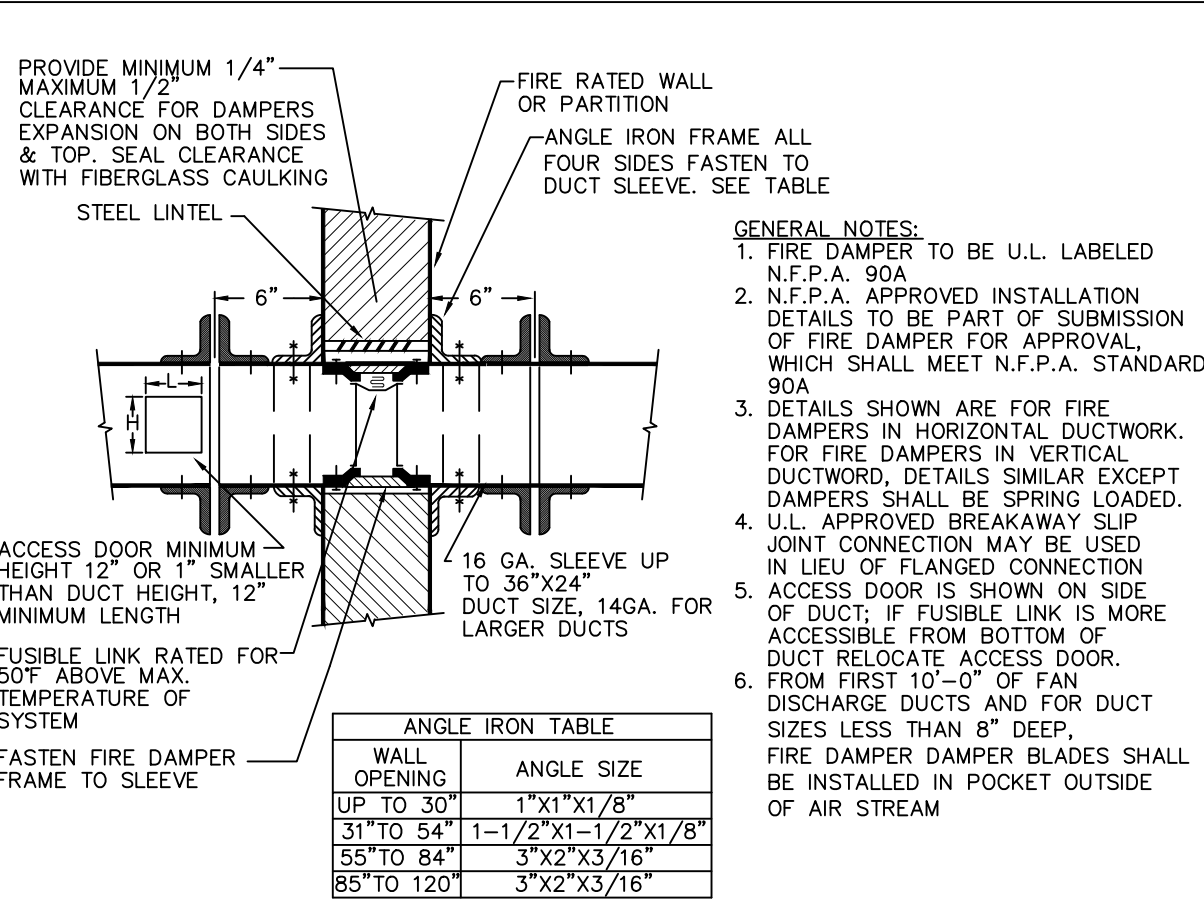
- NOTES:
1. LOCKING LUGS INTEGRAL WITH VANE
2. MAXIMUM UNSUPPORTED VANE LENGTH 30"
3. FRAMES - BOLTED TO ELBOW
4. VANES AND FRAMES - SAME GAUGE AS ELBOW

DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOW



- NOTES:
1. DUCTS SHALL NOT BE SUPPORTED ON OR BY SUSPENDED CEILING STRUCTURE.
2. FOR DUCTS NOT EXCEEDING 2 SQ. FT. IN CROSS-SECTIONAL AREA, HANGERS SHALL BE GALV STEEL NOT LESS THAN 1/16".
3. FOR DUCTS LARGER THAN 2 SQ. FT. IN CROSS-SECTIONAL AREA, HANGERS SHALL BE OF GALV STEEL NOT LESS THAN 1" BY 1/8".
4. FOR ALL DUCTS, HANGERS SHALL BE TURNED UNDER AND FASTENED TO THE BOTTOM OF DUCT AS SHOWN ABOVE.
5. WHERE CROSS-SECTIONAL AREA OF DUCT EXCEEDS 8 SQ. FT., HANGERS SHALL BE SPACED NOT MORE THAN 4 FT. ON CENTERS.

DUCT SUPPORT FROM METAL DECK



LOW PRESSURE FIRE DAMPER DETAIL

REVISIONS:		
NO.	DATE	DESCRIPTION

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MECHANICAL
SCHEDULES & DETAILS

DRAWING

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IT IS A VIOLATION OF NYS EDUCATION LAW UNDER ARTICLE 145 § 209 FOR ANY PERSON TO ALTER ANY ITEMS HEREIN UNLESS ACTING UNDER THE DIRECTION OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER

PROJECT: PROPOSED CELLAR CLASSROOM ADDITION

CLINTON AVENUE
STATEN ISLAND, NY 10314
BLOCK: 92 LOT: 001

MECHANICAL/HVAC INSTALLATION
IN CONJUNCTION WITH XX XXXXXXXXX

George Sigalos NYS License 084697



Date:

DRAWN BY: DATE: 11-14-2025

SCALE: AS NOTED SHEET: 5 OF: 5

DWG No.:

S01372896-S1

ME-200.00

ENERGY SHEET

ENERGY EFFICIENCY NOTES

CODE SECTION	ITEM	DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE	SUPPORTING DOCUMENTS "THIS SHEET"
C403.2.3 HVAC EQUIPMENT PERFORMANCE REQUIREMENTS	AC-C.1 THRU AC-C.6	ELECTRICALLY OPERATED SINGLE-PHASE SPACE CONSTRAINED HEAT PUMP 30MBH AND LESS	6.3 HSPF2	6.1 HSPF2 APPENDIX M1 TO 10 CFR 430 NEW 2023 STANDARDS	MH-120
C403.4.1 THERMOSTATIC CONTROLS	CONTROLS	SINGLE ZONE THERMOSTAT WITH TEMPERATURE HOLD FOR BOTH HEATING AND COOLING			
C403.4.2 OFF-HOUR CONTROLS		NARRATIVE: PROGRAMMABLE TSTAT (5/2 DAYS, 4-PROGRAMS/DAY) WITH 5°F DEADBAND, AUTO CHANGEOVER EACH ZONE AND NIGHT SETBACK TO 55°F		PER DESCRIPTION EACH HVAC UNIT SERVES ONE ZONE, SIMPLE HVAC SYSTEM	
DUCT	CONSTRUCTION C403.11.1	LOW PRESSURE <2" W.G.			
	INSULATION C403.11.2	EXTERNAL PLUS INTERNAL LINING	R-6	R-6	
DAMPERS C403.7.7	EXHAUST	TOILET EXHAUST FAN WITH BUILT-IN DAMPER			NOTE D.7 THIS SHEET
C408.2	COMMISSION	MECHANICAL SYSTEMS COMMISSIONING NOT REQUIRED	158 MBH COOLING 133 MBH HEATING	480MBH COOLING 600MBH HEATING	

PROFESSIONAL STATEMENT:
"TO THE BEST OF MY KNOWLEDGE & BELIEF & PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 NEW YORK CITY ENERGY CONSTRUCTION CODE"

2020 NYCECC TR-8 INSPECTIONS	REQUIRED	NOTES
a. "HVAC AND SERVICE WATER HEATING EQUIPMENT"	YES	
b. "HVAC AND SERVICE WATER SYSTEM CONTROLS"	YES	
c. "HVAC INSULATION AND SEALING"	YES	DUCTWORK
d. "MAINTENANCE INFORMATION"	YES	
e. "ELECTRIC MOTORS"	NO	LESS THAN 5.0 HP
f. "SHUT OFF DAMPERS"	YES	
g. "PERMANENT CERTIFICATE"	NO	NON-RESIDENTIAL
h. "DUCT LEAKAGE TESTING"	NO	ALL DUCTWORK IN OPEN CONDITIONED SPACE

B. SPECIFICATIONS

1. DUCTWORK
- a) RECTANGULAR DUCT
- i. ALL DUCTWORK SHALL BE GALVANIZED STEEL OF 24 GAGE MARKED PER ASTM A700. SHEETS OR ROLLS SHALL BE OF LOCK FORMING QUALITY FOR LONGITUDINAL SEAMS PER ASTM A 527 AND COATING DESIGNATION G-90.
- ii. DUCTWORK SHALL CONFORM TO SMACNA PRESSURE CLASSIFICATION 1-INCH W.G.
- iii. LONGITUDINAL SEAMS SHALL BE STANDING SEAM OR PITTSBURGH LOCK FOR ALL DUCTWORK 24-INCHES AND WIDER.
- iv. JOINTS SHALL BE REINFORCED PER SMACNA CLASS H WITH FLANGE & BOLT CONNECTIONS SIMILAR TO DUCTMATE 35 WITH DC35 CORNERS.
- b) FLEXIBLE DUCT
- i. CONSTRUCTED OF 1.25-INCHES OF FIBERGLASS INSULATION WITH GALVANIZED STEEL WIRE HELIX, TWO-PLY POLYESTER INNER CORE, AND BALCK POLYETHYLENE JACKET WITH SCRIM.
- ii. PERFORMANCE TO MEET UL-181 AND NFPA 90A.
- iii. FLAME SPREAD RATING 25 MAXIMUM, SMOKE DEVELOPED RATING 50.
- iv. JOINTS SHALL BE CRIMP AND BEAD WITH MINIMUM 1-INCH CRIMP.
- v. TO COMPLY WITH NYS 2007 ENERGY CODE, R-VALUE OF 8.0
- vi. SIMILAR TO HART & COOLEY F118
- c) ACCESSORIES
- i. SEALANT: SYNTHETIC LATEX SUITABLE FOR SMACNA CLASS A, B, AND C. ASTM D-2202. FDA AND EPA COMPLIANT. SIMILAR TO HARDCAST 321.
- ii. JOINT GASKET: SELF-ADHESIVE TAPE SIMILAR TO DUCTMATE "ULTRASEAL"
2. EQUIPMENT
- a) SELF-CONTAINED HEAT PUMP UNITS
- i. FACTORY ASSEMBLED WITH GALVANIZED STEEL INDOOR & OUTDOOR CABINETS
- ii. CABINETS INSULATED WITH 0.5-INCH FIBERGLASS
- iii. ENERGY EFFICIENCY 13.4 SEER2
- iv. FACTORY INSTALLED ELECTRIC HEATERS
- v. SELF-CONTAINED 24-VOLT CONTROL CIRCUITS, LOCK-OUT CIRCUIT TO PROVIDE RESET CABABILITY FROM THE UNIT OR THERMOSTAT AFTER COMPRESSOR TRIP FROM LOW PRESSURE, HIGH PRESSURE OR FREEZSTAT.
- vi. UL 1995 LISTED, COOLING CAPACITY RATED IN ACCORDANCE WITH AHRI STANDARD 210/240
- vii. MAGICPAK M-SERIES MHP-11/13
- b) EXHAUST FANS
- i. LOW NOISE CEILING MOUNTED EXHAUST FAN WITH GRILLE
- ii. INTERLOCKED WITH AC UNITS WITH MANUAL 120VAC SPST SWITCH SHUTOFF
- iii. ENERGY STAR QUALIFIED AND COMPLIES WITH ASHRAE 62.2
- iv. SEE EQUIPMENT SCHEDULES
- c) FIRE DAMPERS
- i. CURTAIN TYPE UL555 LISTED
- ii. 1.5 HR RATING
- iii. SIMILAR TO RUSKIN DIBD20 (WITH OR WITHOUT SLEEVE AS REQUIRED)
3. INSULATION
- a) INDOOR DUCT - EXTERNAL
- i. FLEXIBLE GLASS FIBER BLANKET BONDED WITH FORMALDEHYDE-FREE RESIN AND ALUMINUM FACING REINFORCED WITH FIBERGLASS SCRIM.
- ii. 2-INCH THICKNESS, DENSITY 1.0 lb/cuft. R-VALUE 6.0 (INSTALLED)
- iii. MANVILLE "MICROLITE XG" OR OWENS CORMING "SOFTIR"
- b) INTERNAL LINING - ONLY IF AND WHERE INDICATED ON PLAN
- i. RESIN-BONDED GLASS FIBERS WITH ACRYLIC COATING WITH GLASS COAT REINFORCEMENT.
- ii. WATER REPELLANT TO 6% MASS GAIN, TREATED TO RESIST BACTERIA, MOLD AND FUNGUS.
- iii. 1-INCH THICKNESS.
- iv. MANVILLE LINACOUSTIC RC.
- c) ADHESIVES
- i. DUCT LINING EDGE SEALER TO BOND FRAYING: MANVILLE "SUPER SEAL EDGE TREATMENT"
- ii. VAPOR SEAL ADHESIVES FOR INSTALLATION AND REPAIR: MANVILLE "SUPER SEAL HV"
4. REGISTERS, GRILLES AND DIFFUSERS
- a) SUPPLY DIFFUSERS
- i. STAMPED STEEL OR ALUMINUM CONSTRUCTION WITH PAINTED FINISH, SUITABLE FOR INSTALLATION WITH T-BAR CEILING CONSTRUCTION OR GYPSUM BOARD PER PLANS.
- ii. REFER TO SCHEDULES
- b) RETURN GRILLES
- i. REFER TO SCHEDULES
- c) EQUIPMENT LOUVERS
- i. AS FURNISHED BY MAGICPAK
- d) EXHAUST TERMINATION
- i. 6-INCH ROUND WITH SELF-CLOSING DAMPER
- ii. SIMILAR TO FANTECH HS6W
5. THERMOSTATS & CONTROLS
- a) HVAC UNITS
- i. HEAT/COOL/FAN PROGRAMMABLE 5-WIRE THERMOSTAT FOR 1-STAGE COOLING, HEATING AND VENTILATION. PROGRAMMABLE SHALL MEAN AT A MINIMUM: ABILITY TO SET ZONE CONTROL FOR EACH OF THE SEVEN DAYS OF THE WEEK;
- ii. MANUAL AND AUTOMATIC HEATING/COOLING CHANGEOVER.
- iii. SETTINGS AUTOMATICALLY AFTER NO MORE THAT TWO HOURS. ABILITY TO SET BACK COOLING TO 85°F AND HEATING TO 55°F DURING OFF HOUR BUILDING OPERATION;
- iv. TOUCHSCREEN, SIMILAR TO WHITE ROGERS 1F95-1280
COORDINATE W/OWNER FOR MAKE, MODEL AND REQUIRED ACCESSORIES, i.e. LOCKING COVER, ETC.
TEMPORARY OPERATION OR MANUAL OVERRIDE THAT SHALL HAVE THE ABILITY TO SET BACK TO PROGRAMMED

AIR CONDITIONING UNIT SCHEDULE

UNIT	TYPE	COOLING @95°F					HEATING							POWER		MAKE AND MODEL (OR EQUAL)	HSPF2	OUTDOOR AIR		WEIGHT	NOTES	AHRI REFERENCE #
		AIR FLOW (CFM)	CAPACITY (BTU/H)	INDOOR BLOWER			AIR FLOW (CFM)	SOURCE	SOURCE DATA			CAPACITY		VOLTAGE	MIN CKT AMP			REQUIRED (CFM)	PCT. OF UNIT AIR FLOW (%)			
				STATIC (IN)	RPM	HP			ELECTRIC KW	WATER		INPUT (BTU/H)	OUTPUT (BTU/H)									
										PD (in)												
AC-C.1	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254
AC-C.2	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254
AC-C.3	2.0-TON PACKAGED SELF-CONTAINED HEAT PUMP	830	24,060	0.20	1270	2.00	830	ELEC	5.0	--	--	--	34,700	230/1/60	36.3	MAGICPAK MHP5-3-7-11-24FP	6.3	250	30	278	1,2	216719254
AC-C.4	2.0-TON PACKAGED SELF-CONTAINED HEAT PUMP	830	24,060	0.20	1270	2.00	830	ELEC	5.0	--	--	--	34,700	230/1/60	36.3	MAGICPAK MHP5-3-7-11-24FP	6.3	250	30	278	1,2	216719254
AC-C.5	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254
AC-C.6	2.5-TON PACKAGED SELF-CONTAINED HEAT PUMP	1,040	28,060	0.20	1270	2.00	1,040	ELEC	5.0	--	--	--	37,700	230/1/60	43.8	MAGICPAK MHP5-3-7-11-30FP	6.3	300	30	283	1,2	216719254

1. FURNISH WITH ACCESSORY WALL SLEEVE (AND EXTENSION IF REQUIRED) AND FACTORY FILTERS
2. FURNISH WITH MAGICPAK LOUVER
3. REMOVE ALL VENTILATION KNOCKOUTS

REVISIONS:		
NO.	DATE	DESCRIPTION

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PROJECT: PROPOSED CELLAR CLASSROOM ADDITION

CLINTON AVENUE
STATEN ISLAND, NY 10313
BLOCK: 92 LOT: 001

MECHANICAL/HVAC INSTALLATION
IN CONJUNCTION WITH XX XXXXXXXXX

George Sigalos NYS License 084697



Date: 11-14-2025

DRAWN BY: SHEET: 1 OF: 1

DWG No.: S01372896-S1

EN-001.00