

CONDENSATE PIPING SUPPORT INTERVAL	
PVC PIPE NOMINAL SIZE OF PIPE (INCHES)	MAX. SPACING OF SUPPORTS (FEET)
3/4 OR LARGER	4

SHEET NOTES

- 1 FACTORY INSTALLED SMOKE DETECTOR IN MAIN SUPPLY AND RETURN OF EACH ROOF TOP UNIT.
- 2 INSTALL ROOF MOUNTED EXHAUST FAN PER DETAIL ON SHEET M3.0. COORDINATE EXACT LOCATION OF FAN PENETRATION WITH ARCHITECTURAL ROOF PLAN. TRANSITION GALVANIZED DUCT WORK AS NECESSARY FROM FAN INTO CEILING/JOIST SPACE. SEE SHEET M1.0 FOR CONTINUATION.
- 3 PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL DUCT WORK AND MECHANICAL UNITS.
- 4 ROUTE SCH. 40 PVC CONDENSATE DRAIN PIPING ALONG ROOF. SUPPORT PIPING PER DETAIL ON SHEET M3.0.
- 5 MAINTAIN A MINIMUM 1' CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST TERMINATIONS ON ROOF.
- 6 REFER TO REFRIGERATION DRAWINGS FOR ADDITIONAL INFORMATION.
- 7 PROVIDE CONDENSER PANEL IN LOCATION SHOWN. LOCATION SHOULD BE FIELD COORDINATED WITH OTHER TRADES. WHENEVER IT ENCROACHES ANY EQUIPMENT'S MAINTENANCE AND OPERATIONS CLEARANCES, REFER TO STRUCTURAL DRAWINGS FOR MOUNTING PANEL ON UNISTRUT SYSTEM.

GENERAL NOTES

- A. FOR SPECIFIC SEISMIC AND WIND LOADING REQUIREMENTS, SEE STRUCTURAL PLANS AND SPECIFICATIONS.

1 HVAC ROOF PLAN
M2.0 1/4" = 1'-0"

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA, PA 19083

PROJECT NAME
U45FB MIRROR PROTO 2025.01
WAWA STORE #8216
25 STREET PIKE UPPER SOUTHAMPTON TOWNSHIP
BUCKS COUNTY SOUTHAMPTON, PA 18966

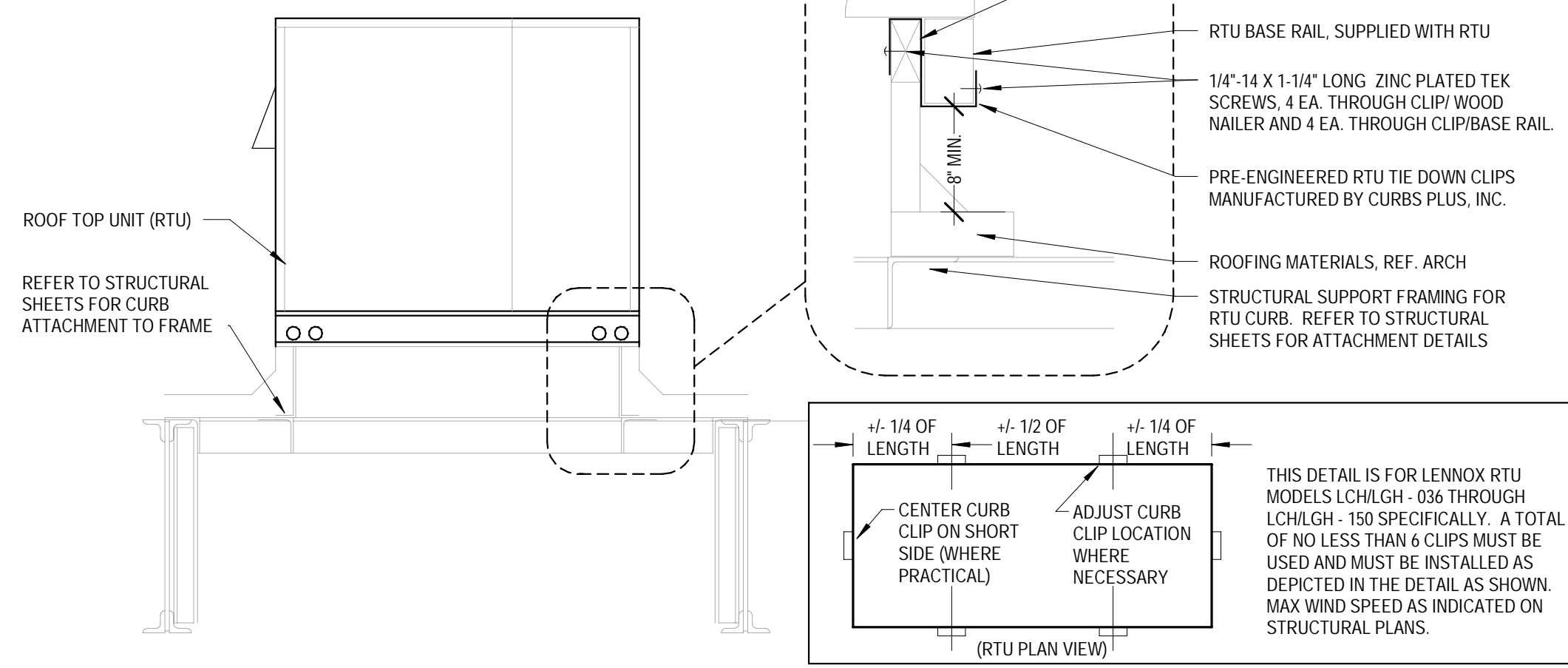
SHEET TITLE
HVAC ROOF PLAN

RELEASE	DATE
ISSUED FOR PERMIT	03/15/2024
REV A - ISSUED FOR BID	09/20/2024
REV B - ISSUED FOR CONSTRUCTION	12/20/2024
REV C - REVISED IFC SET	04/18/2025

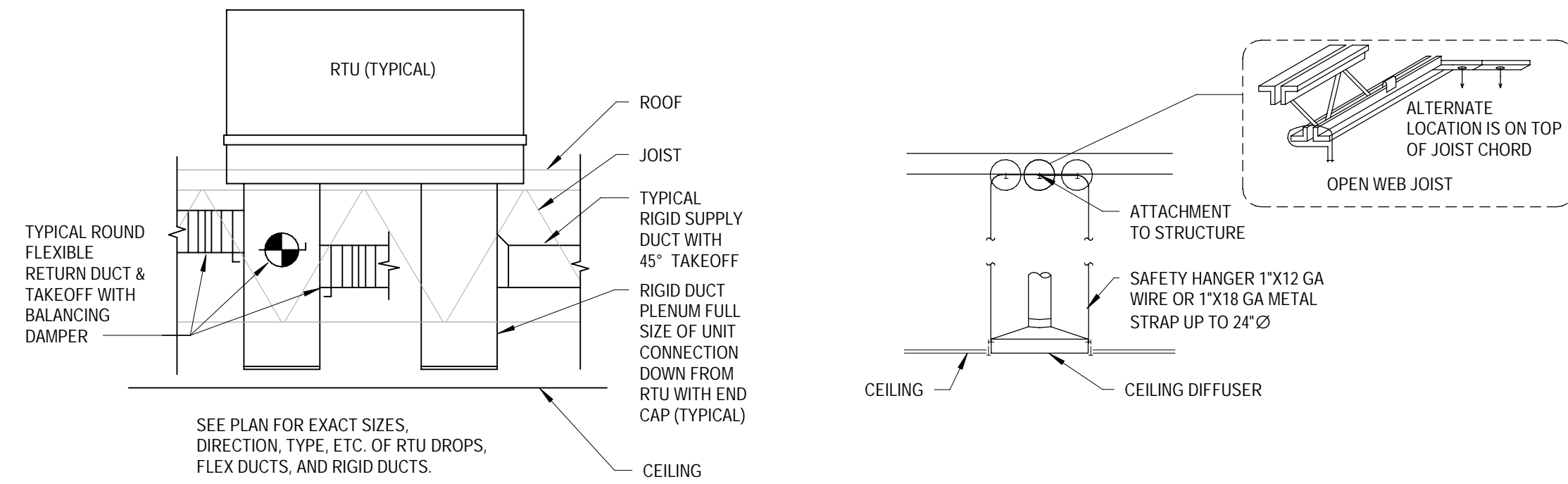
PROTOTYPE	DATE	DRAWN	CHECKED
U45FB MIRROR PROTO 2025.01		DA	FA

8216
UPPER SOUTHAMPTON, PA
Wawa
M2.0

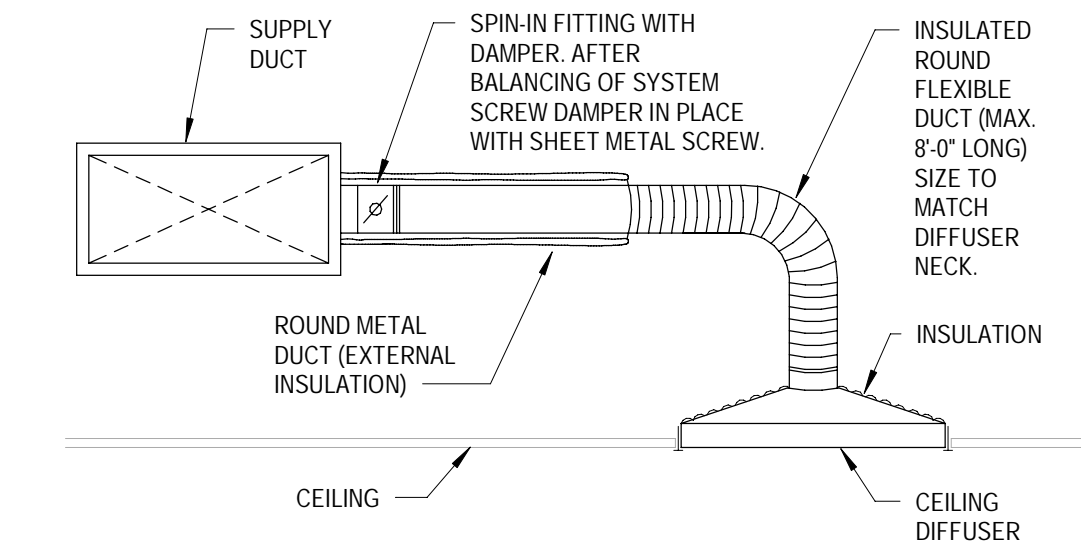
BUILDING LOCATION	WIND SPEED ZONE (IBC FIGURE 1609A)
UPPER SOUTHAMPTON, PA	SEE STRUCTURAL PLANS



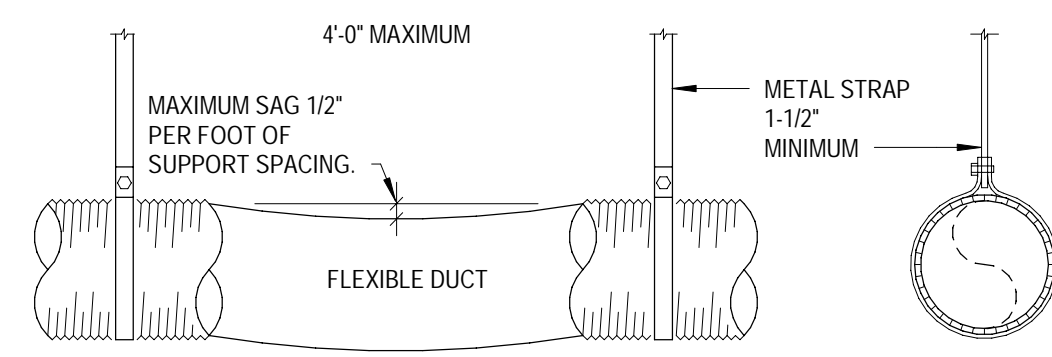
1 HVAC RTU TIE-DOWN DETAIL
M3.0 NOT TO SCALE



2 TYPICAL DUCT PLENUM DETAIL
M3.0 NOT TO SCALE

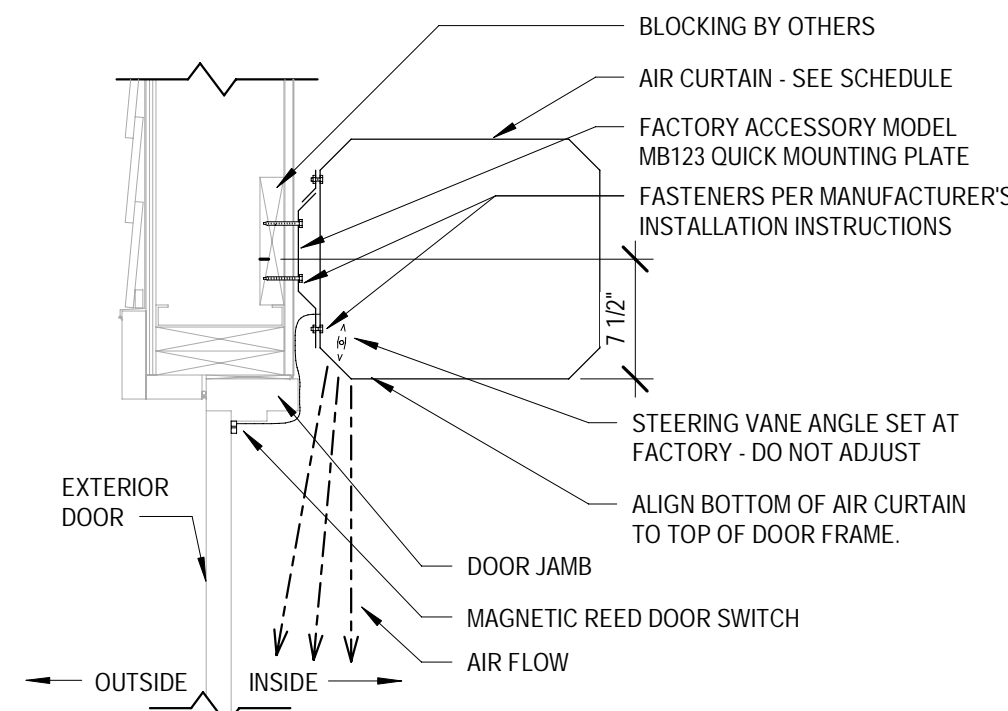


4 HVAC CEILING DIFFUSER RUNOUT DETAIL
M3.0 NOT TO SCALE

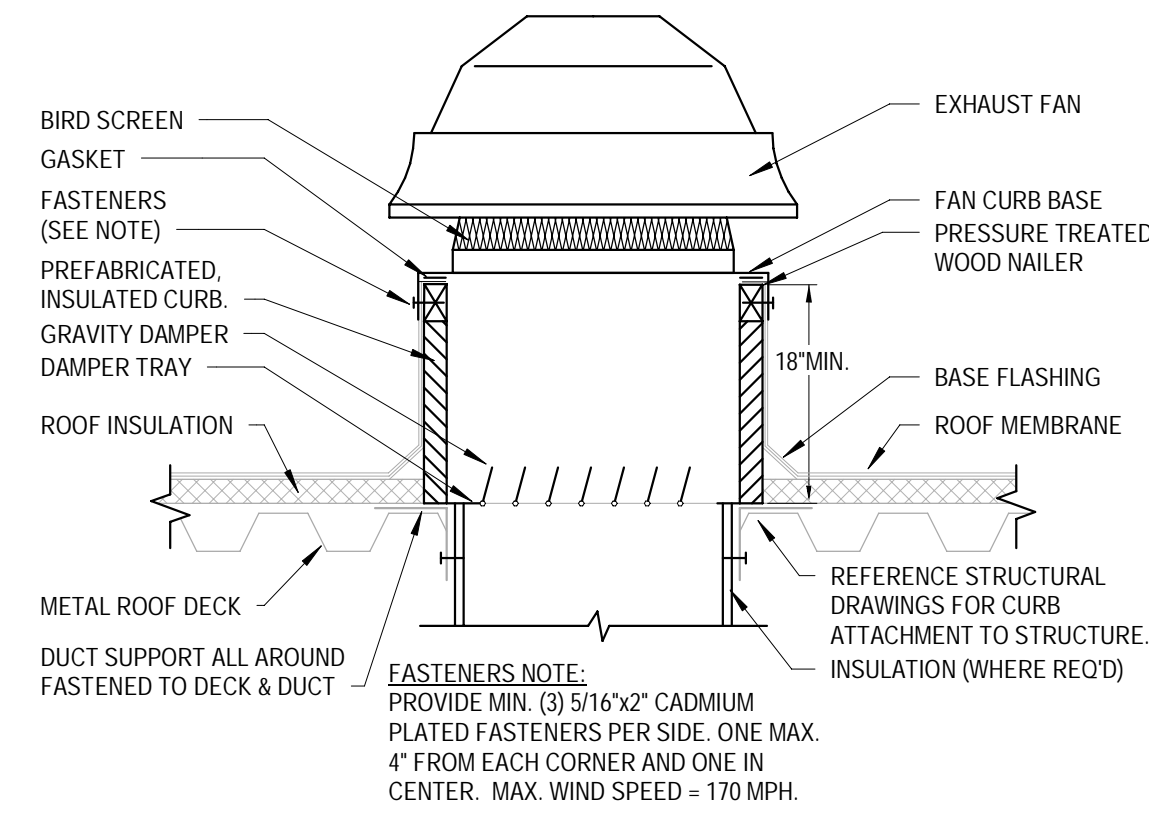


- NOTES:
- DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM A CONNECTION BEFORE BENDING.
 - SUPPORT SYSTEM MUST NOT DAMAGE DUCT OR CAUSE OUT OF ROUND SHAPE.

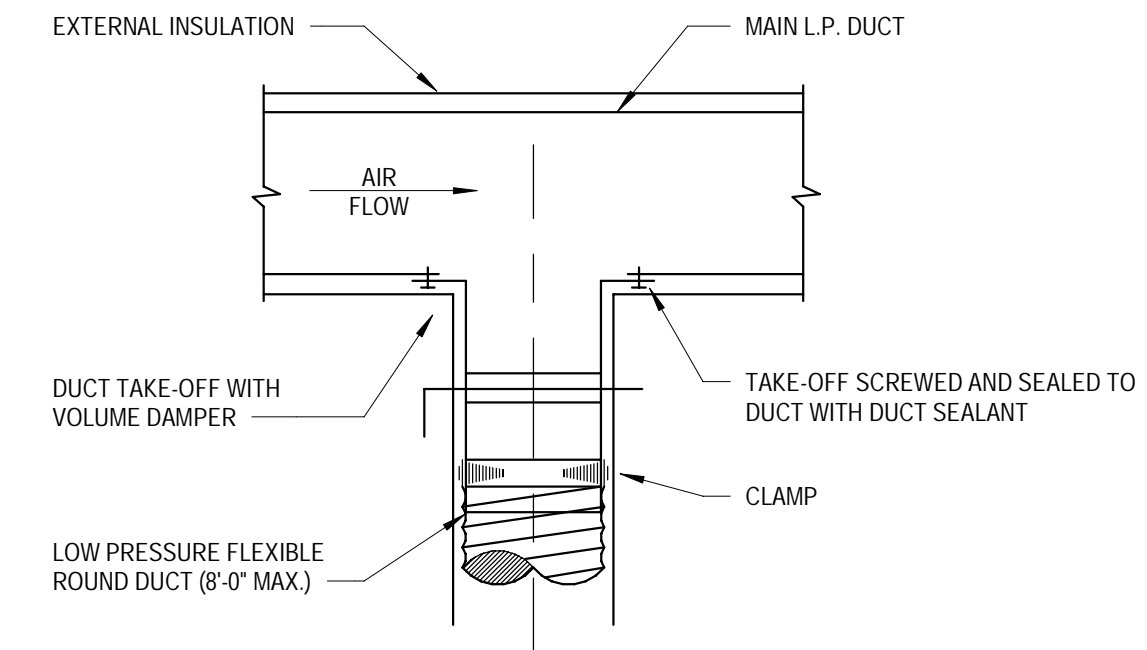
5 HVAC FLEX DUCT SUPPORT DETAIL
M3.0 NOT TO SCALE



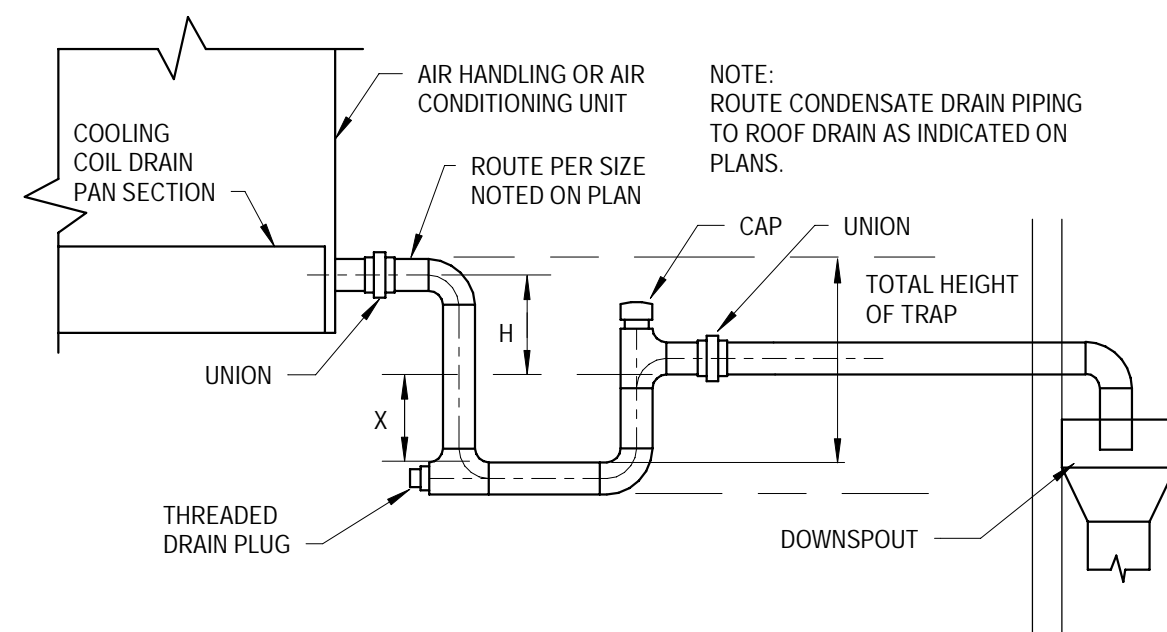
6 AIR CURTAIN INSTALLATION DETAIL
M3.0 NOT TO SCALE



7 ROOF FAN MOUNTING DETAIL
M3.0 NOT TO SCALE



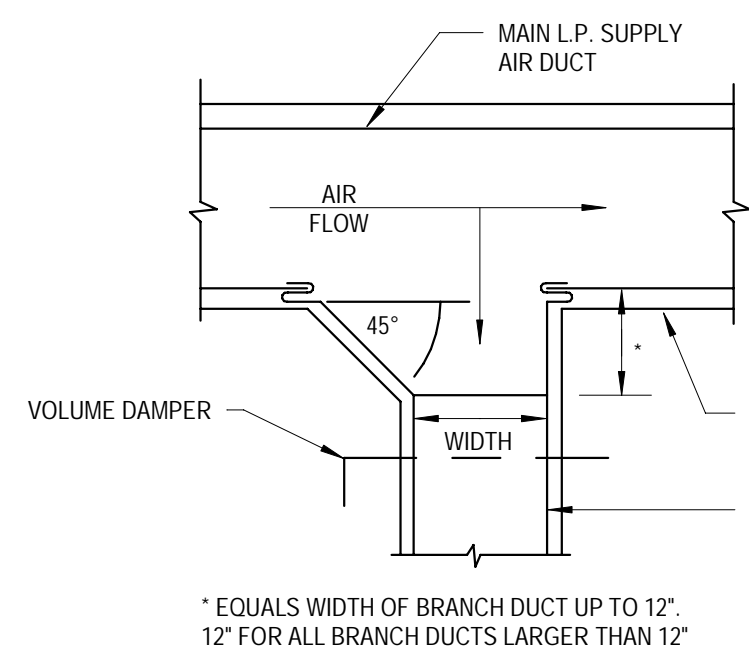
8 HVAC SUPPLY DIFFUSER TAKE OFF DETAIL
M3.0 NOT TO SCALE



DRAIN TRAPPING HEIGHT		
FAN ARRANGEMENT	H	X
BLOW-THRU (POSITIVE STATIC PRESSURE)	A	B
DRAW-THRU (NEGATIVE STATIC PRESSURE)	D	C

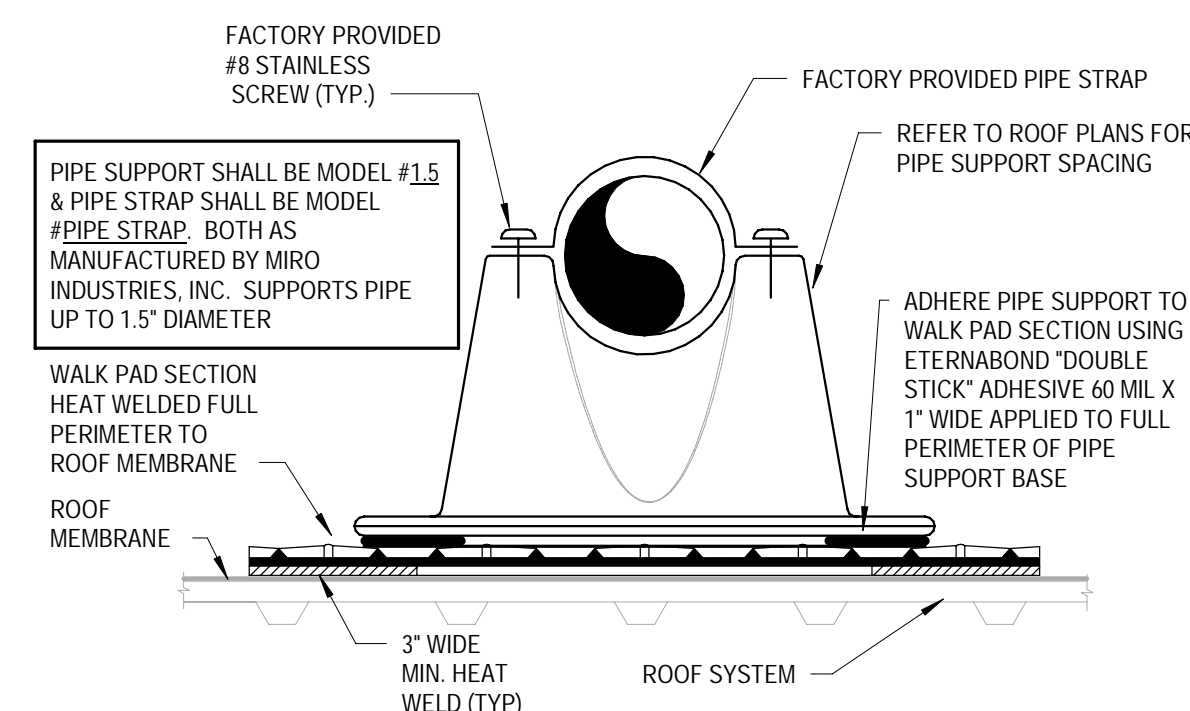
TOTAL HEIGHT OF TRAP = X + H + (1.5 x PIPE DIAMETER) (WITHOUT INSULATION)

9 HVAC CONDENSATE DRAIN DETAIL
M3.0 NOT TO SCALE

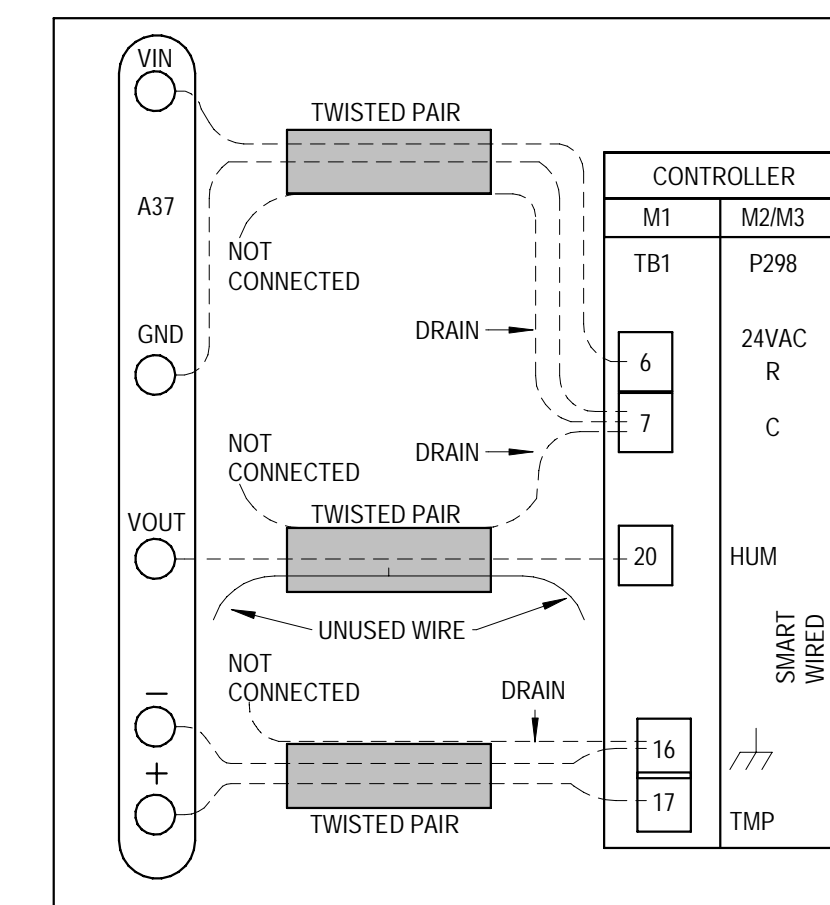


- NOTES:
- GENERAL ARRANGEMENT SHOWN. INSTALL ALL FIRE DAMPERS IN STRICT ACCORDANCE WITH ALL INSTALLATION PROCEDURES REQUIRED BY THE UNDERWRITERS LABORATORY INC. AS FURNISHED BY DAMPER MFR.
 - WHERE FIRE DAMPER IS TO BE MOUNTED WITHIN EXISTING CEILING, WALL OR FLOOR, CUT OPENING AS REQUIRED TO MAINTAIN CLEARANCES STIPULATED BY THE MFR. BETWEEN WALL OR FLOOR AND SLEEVE. GAUGE OF SHEETMETAL SLEEVE, MOUNTING ANGLES, METHODS OF ATTACHMENT, ETC. AS DIRECTED BY FIRE DAMPER MFR.

10 HVAC LOW PRESSURE SUPPLY BRANCH DUCT DETAIL
M3.0 NOT TO SCALE



11 PIPE ROOF SUPPORT DETAIL
M3.0 NOT TO SCALE



WIRE RUNS OF 50' (15m) OR LESS:
USE THREE SEPARATE SHIELDED CABLES CONTAINING 20AWG MINIMUM TWISTED PAIR CONDUCTORS WITH OVERALL SHIELD (BELDEN TYPE 8762 OR 88760 (PLENUM) OR EQUIVALENT). CONNECT CABLE SHIELD DRAIN WIRES AS SHOWN IN DIAGRAM.

WIRE RUNS OF 150' (46m) OR LESS:
USE THREE SEPARATE SHIELDED CABLES CONTAINING 18AWG MINIMUM TWISTED PAIR CONDUCTORS WITH OVERALL SHIELD (BELDEN TYPE 8762 OR 88760 (PLENUM) OR EQUIVALENT). CONNECT CABLE SHIELD DRAIN WIRES AS SHOWN IN DIAGRAM.

12 TEMPERATURE/HUMIDITY SENSOR WIRING DIAGRAM
M3.0 NOT TO SCALE

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HVAC DETAILS

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8216
UPPER SOUTHAMPTON, PA

Wawa

M3.0

OUTSIDE AIR CALCULATION									
AREA SERVED	AREA (SQFT)	PEOPLE / 1000 SQFT	# PEOPLE	CFM / PERSON	PEOPLE O.A. RECD (CFM)	CFM / SOFT	SOFT OUTSIDE AIR (CFM)	TOTAL CFM CALCULATED	CFM SUPPLIED
RETAIL TOP									
RETAIL TOP	843	15	13	7.5	98	0.12	102	200	
SELF BEV.	38	15	1	7.5	8	0.12	5	13	
ASSOCIATES	70	5	1	5	5	0.06	5	10	
WASHROOM	122	20	3	10	30	0.12	15	45	
STAGING	76	2	1	10	10	0.12	10	20	
CORRIDOR	61	-	-	-	-	0.06	4	4	
							RTU-1	292	600
BACKROOM									
BACKROOM	286	20	6	7.5	45	0.12	35	80	
COFFEE	232	20	5	7.5	38	0.12	28	66	
FOOD SVC	330	20	7	7.5	53	0.12	40	93	
							RTU-2	239	950
FRONT RETAIL									
FRONT RETAIL	964	15	15	7.5	113	0.12	112	225	
OFFICE	94	5	1	5	5	0.06	6	11	
FRONT VEST.	110	10	2	5	10	0.06	7	11	
REAR VEST.	110	10	2	5	10	0.06	7	11	
							RTU-3	265	600

HVAC AIR DEVICE SCHEDULE									
TYPE MARK	MANUFACTURER	MODEL	SERVICE	DESCRIPTION	MOUNTING TYPE	MATERIAL	NECK SIZE	FACE SIZE	NOTES
CD-1	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	LAY-IN	ALUMINUM	18"X18"	24"X24"	1.6
CD-2	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	12"X12"	NECK-5"	5.6
CD-3	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	9"X9"	NECK-5"	5.6
CD-4	PRICE	AMD	SUPPLY	LOUVERED FACE DIRECTIONAL DIFFUSER	SURFACE	ALUMINUM	6"X6"	NECK-5"	5.6
G-1	PRICE	630FF	RETURN/TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	LAY-IN	ALUMINUM	20"X20"	NECK-3/34"	--
G-2	PRICE	630FF	RETURN/TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	14"X14"	NECK-3/34"	4.7
G-3	PRICE	630FF	EXHAUST	LOUVERED FACE FILTER RETURN GRILLE	SURFACE	ALUMINUM	8"X8"	NECK-3/34"	4.7
G-5	PRICE	630FF	RETURN/TRANSFER	LOUVERED FACE FILTER RETURN GRILLE	LAY-IN	ALUMINUM	12"X12"	NECK-5"	--
LD-1	PRICE	TBD4	SUPPLY	48" INSULATED PLENUM W/ (4) 1" SLOTS	LAY-IN	ALUMINUM	10" - 12"	N/A	--

NOTES:
 -NO SUBSTITUTIONS PERMITTED--
 1. FOR LAY-IN CEILINGS PROVIDE WITH 18"X18" FULL FACE APPEARANCE DIFFUSER NECK. PROVIDE WITH FACTORY SQUARE TO ROUND NECK ADAPTER MODEL "SR". ROUND NECK SIZE SHALL BE EQUAL TO FLEX SIZE SERVING DIFFUSER.
 2. PROVIDE WITH PLENUM INTERNALLY LINED WITH COATED FIBERBOARD. EXTERNALLY INSULATE PLENUM UPON INSTALLATION WITH DUCT WRAP INSULATION.
 3. PROVIDE WITH CENTER NOTCH OPTION (CN) AS REQUIRED WHEN USED IN 24" T-BAR CEILING.
 4. "OR" STYLE (1/4 TURN FASTENERS ONLY) - OMIT HINGE. FILTER TYPE RETURN GRILLES PROVIDED SOLELY FOR MAINTENANCE PURPOSES. OMIT FILTER UPON INSTALLATION.
 5. PROVIDE WITH TYPE 4 BEVELD SURFACE MOUNT FRAME AND FACTORY SQUARE TO ROUND NECK ADAPTER MODEL "SR".
 6. PROVIDE WITH FACTORY BACKPAN INSULATION.
 7. PROVIDE VOLUME DAMPER AT FACE OF GRILLE

HVAC AIR CURTAIN SCHEDULE									
MARK	AREA SERVED	BASIS OF DESIGN			UNIT POWER		MOUNTING HEIGHT	NOTES	
		MANUFACTURER	MODEL	NOZZLE CFM	HP	VOLTAGE			
ARC-1	STAGING ROOM	POWERED AIRE	BCE-1-48	2155 CFM	0.5	120 V	1	7'-2"	1-4
ARC-2	REAR VESTIBULE	POWERED AIRE	BCE-1-48	2155 CFM	0.5	120 V	1	7'-2"	1-4

HVAC EXHAUST FAN SCHEDULE												
MARK	CFM	E.S.P.(WC)	FAN TYPE	DRIVE TYPE	SONES	MOTOR HP	BASIS OF DESIGN			NOTES		
							MANUFACTURER	MODEL	PHASE			
EF-1	400 CFM	0.250 in-wg	DOWNBLAST	DIRECT	6.5	1/12	1550	120 V	1	DX10R	1-2	
EF-2	1400 CFM	0.250 in-wg	DOWNBLAST	DIRECT	9.5	1/3	1300	120 V	1	PENNBARRY	DX16S	1-2

HVAC ROOFTOP UNIT SCHEDULE																							
MARK	AREA SERVED	NOMINAL TONS	FAN DATA			GAS HEAT			UNIT POWER		MIN. UNIT NET COOLING CAPACITY				BASIS OF DESIGN		NOTES						
			SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	E.S.P. (IN.)	HP	INPUT MBH	OUTPUT MBH	CONTROL STAGES	VOLTAGE	PHASE	MCA	MCCP	WEIGHT (LBS. RTU ONLY)	TOTAL COOLING MBH	SENSIBLE COOLING MBH		EDB (°F)	EWB (°F)	AMBIENT (DB°FW/DB°F)	MANUFACTURER & PRODUCT LINE	MODEL	
RTU-1	RETAIL	7.5	3000 CFM	600	1.0	3.75	130	104	2	208 V	3	46	50	1302	95.1	68.5	80	67	9275	12.3 15.7	LENNOX ENLIGHT	LGT0924HE	1-20
RTU-2	FOOD SERVICE	12.5	5000 CFM	950	1.0	3.75	N/A	N/A	N/A	208 V	3	64	80	1342	146.1	108.1	80	67	9275	11.0 14.6	LENNOX ENLIGHT	LCT1504HE	2-20
RTU-3	RETAIL/CHECKOUT	7.5	3000 CFM	600	1.0	3.75	130	104	2	208 V	3	46	50	1302	95.1	68.5	80	67	9275	12.3 15.7	LENNOX ENLIGHT	LGT0924HE	2-20

NOTES:
 1. PROVIDE CO2 SENSOR FOR INTERLINK WITH BUILDING AUTOMATION SYSTEM.
 2. PROVIDE LENNOX HUMIDITROL HOT GAS HEAT OPTION.
 3. PROVIDE REMOTE WALL MOUNTED COMBINATION TEMPERATURE AND HUMIDITY PACKAGE.
 4. PROVIDE HIGH/LOW PRESSURE SWITCH, OVERLOAD PROTECTION, FREEZE PROTECTION, LOSS OF CHARGE SWITCH AND ANTI-SHORT CYCLE TIMER.
 5. REFER TO CONTROL SYSTEM NOTES FOR CONTROL COMPONENTS REQUIREMENTS.
 6. PROVIDE THRU THE BASE ELECTRICAL AND SINGLE POINT CONNECTION.
 7. PROVIDE WITH FACTORY 2" THROW AWAY PLEATED MERV 8 FILTERS.
 8. PROVIDE WITH 18" ROOF CURB.
 9. PROVIDE FACTORY 15 AMP GFCI SERVICE OUTLET WITH WEATHERPROOF COVER. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE FIELD WIRING TO RECEPTACLE.
 10. PROVIDE WITH FACTORY INSTALLED DISCONNECT.
 11. PROVIDE WITH SINGLE ENTHALPHY ECONOMIZER AND POWERED EXHAUST FAN.
 12. PROVIDE MANUFACTURER'S MOTOR AND DRIVE PACKAGE AS REQUIRED TO MEET SCHEDULED AIR CAPACITIES AND PRESSURE DROP.
 13. PROVIDE CORROSION RESISTANT, REVERSIBLE DRAIN PAN WITH OVERFLOW SWITCH.
 14. PROVIDE BUILDING AUTOMATION SYSTEM (BAS) EQUIPMENT - REFER TO BAS SYSTEM MASTER SPEC FOR SYSTEM DETAILS AND EQUIPMENT PART NUMBERS.
 15. PROVIDE FACTORY INSTALLED BACNET BAS INTERFACE WITH RETURN AIR SENSOR, OUTDOOR AIR SENSOR, DISCHARGE AIR SENSOR.
 16. PROVIDE LENNOX DIRTY FILTER SWITCH.
 17. PROVIDE HINGED ACCESS DOORS.
 18. PROVIDE WITH FACTORY CONDENSATE PAN WATER LEVEL MONITORING DEVICE FOR COMPLIANCE WITH IMC, SECTION 307.2.3.
 19. PROVIDE WITH FACTORY INSTALLED SUPPLY AND RETURN SMOKE DETECTORS. PROVIDE REMOTE TEST STATIONS (RTS).
 20. PROVIDE EQUIPMENT OPERATIONS CHECK (EOC) AND GUIDE SETUP.

AIR BALANCE SCHEDULE	
SYSTEM	CFM
RTU-1	+600
RTU-2	+950
RTU-3	+600
EF-1	-400
EF-2	-1400
BUILDING POSITIVE PRESSURE	+350

MECHANICAL GENERAL NOTES

- REFER TO WRITTEN BOOK SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE WORK TO BE DONE UNDER THESE SPECIFICATIONS AND THE DRAWINGS CONSISTS OF FURNISHING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES, AND PERFORMING ALL OPERATIONS TO COMPLETE THE MECHANICAL CONSTRUCTION WORK FOR THIS PROJECT. ANY WORK NOT SPECIFICALLY COVERED BY THESE SPECIFICATIONS OR INDICATED ON THE MECHANICAL/ELECTRICAL PLUMBING PLANS, BUT NECESSARY TO COMPLETE OR PERFECT ANY PART OF THIS INSTALLATION IN A SUBSTANTIAL MANNER, SHALL BE PROVIDED WITHOUT EXTRA COST TO OWNER.
- THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "MECHANICAL WORK" OR "WORK" SHALL MEAN ALL LABOR, MATERIAL, EQUIPMENT, SCAFFOLDING, RIGGING, TOOLS, SUPERVISION, SERVICES AND OTHER INCIDENTALS NECESSARY FOR COMPLETE AND OPERABLE INSTALLATION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, MATERIALS AND LABOR TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED ON THE DESIGN DOCUMENTS.
- CONTRACTOR SHALL OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS PRIOR TO AND DURING CONSTRUCTION.
- ALL MATERIALS, EQUIPMENT AND INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH JURISDICTION'S LATEST ACCEPTED VERSION OF THE INTERNATIONAL BUILDING CODE - MECHANICAL, SMACNA, UL, STATE CODES, LOCAL CODES, MANUFACTURER'S RECOMMENDATIONS, AND ALL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL PROVIDE ALL ROOFING OPENINGS, FLASHINGS, AUXILIARY STEEL, THREADED RODS, VIBRATION ISOLATORS, TURNBUCKLES, ETC. TO SUPPORT HIS EQUIPMENT ON OR FROM THE STRUCTURE.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND IN FIELD PRIOR TO INSTALLATION OF ANY WORK. REPORT ALL CONFLICTS IMMEDIATELY TO ARCHITECT AND ENGINEER.
- THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT, GENERAL CHARACTER AND LOCATION OF THE WORK INCLUDED. OFFSETS OR CHANGES IN DUCT SHAPE TO AVOID STRUCTURAL OR OTHER INTERFERENCES, AND WORK INDICATED BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED SHALL BE PROVIDED WITHOUT EXTRA COST.
- ANY CHANGES AND/OR MODIFICATIONS MUST BE REVIEWED AND APPROVED BY THE ENGINEER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- REMOVE ALL TRASH, DEBRIS AND DEMOLITION MATERIAL FROM PREMISES AT THE END OF EACH WORK DAY.
- SCHEDULE ALL WORK, CUTTING AND BUILDING SERVICE INTERRUPTIONS WITH BUILDING OWNER AND CONSTRUCTION MANAGER, PRIOR TO COMPLETING WORK.
- ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS.
- THE MAXIMUM FLEXIBLE DUCT LENGTH PERMITTED IS 8'-0". THIS DUCTWORK SHALL BE INSTALLED WITHOUT KINKS OR 90° BENDS.
- ALL FLEXIBLE DUCTWORK SHALL BE FLEX-VENT TYPE KM INSULATED WITH POLYMER INNER FILM AND METALIZED OUTER JACKET, OR APPROVED EQUAL. SIZE SHALL BE SAME AS DIFFUSER NECK SIZE, UNLESS INDICATED OTHERWISE.
- FIELD ADJUST THE DIRECTION OF BLOW FOR ALL SUPPLY AIR DEVICES SO THAT THE DEVICES DO NOT BLOW DIRECTLY INTO SOFFITS, CURTAIN WALLS, REFRIGERATED CASES OR EXHAUST HOODS.
- ALL NEW AND EXISTING PIPES AND DUCTS SHALL HAVE UL FIRE RATED SLEEVES AND/OR FIRE RATED DAMPERS, WHEN PASSING THROUGH FIRE RATED CONSTRUCTION.
- COORDINATE LOCATION OF NEW DUCTWORK, AIR DEVICES AND EQUIPMENT WITH LIGHT FIXTURES, SPRINKLER PIPING AND HYDRONIC PIPING.
- CONTRACTOR SHALL VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER/ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH WORK.
- ALL TEMPERATURE AND HUMIDITY SENSORS SHALL BE INSTALLED 54" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON PLAN. COORDINATE FINAL LOCATIONS WITH EQUIPMENT, FURNITURE, TENANT AND ARCHITECT PRIOR TO INSTALLATION.
- ALL DUCTWORK SHALL BE GALVANIZED STEEL CONSTRUCTED AT 2" PRESSURE CLASS. ALL CONCEALED DUCTWORK BELOW TRUSSES SHALL BE INSULATED WITH 1-1/2" FIBERGLASS DUCT WRAP WITH WIRE SUPPORT BANDS ON 24" CENTERS. ALL CONCEALED DUCTWORK ABOVE THE TRUSSES SHALL BE INSULATED WITH 1-1/2" OF FIBERGLASS DUCT WRAP WITH WIRE SUPPORT BANDS ON 24" CENTERS. ALL INTERIOR EXPOSED DUCTWORK BELOW TRUSSES SHALL BE INSULATED WITH 1" RIGID FIBERGLASS DUCT BOARD WITH FOIL AND SCRIM FACING. ALL EXTERIOR EXPOSED DUCTWORK SHALL BE INSULATED WITH 4" RIGID FIBERGLASS BOARD WITH WEATHERPROOF MEMBRANE.
- VERIFY ALL EQUIPMENT VOLTAGES, WIRING REQUIREMENTS, AND REQUIRED BREAKER SIZES WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
- ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED MECHANICAL EQUIPMENT, VALVES AND OTHER RELATED DEVICES. THE MECHANICAL CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
- AFTER THE HEATING AND AIR CONDITIONING SYSTEM INSTALLATIONS ARE COMPLETE, THE CONTRACTOR SHALL BALANCE THE SYSTEM AND PRESENT OWNER & ARCHITECT WITH A WRITTEN BALANCING REPORT BY A CERTIFIED INDEPENDENT TESTING LAB. DAMPER HANDLES SHALL BE FASTENED INTO DUCTWORK WITH SHEETMETAL SCREWS AFTER BALANCING TO ASSURE CORRECT BALANCED AIRFLOW.
- PROVIDE ELBOWS OR TEES WITH TURNING VANES FOR ALL CHANGES IN SUPPLY DUCT DIRECTION. PROVIDE BRANCH DUCT DAMPERS WITH LOCKING QUADRANTS FOR ALL BRANCHES AND TAKE-OFFS. PROVIDE RAISED QUADRANTS FOR INSULATED DUCTWORK. ALL VOLUME DAMPER HANDLES ARE TO PROTRUDE NEATLY THROUGH DUCT INSULATION AND BE TAGGED SO THAT THEY ARE CLEARLY VISIBLE.
- PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTIONS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
- THE MECHANICAL CONTRACTOR SHALL HAVE A QUALIFIED HVAC TECHNICIAN FROM THE UNIT MANUFACTURER PROVIDE AN EQUIPMENT OPERATION CHECK AFTER UNIT START-UP AND PRIOR TO CERTIFIED AIR BALANCING. THE CERTIFICATION, SIGNED BY THE TECHNICIAN, MUST BE INCLUDED IN THE GENERAL CONTRACTOR CLOSING DOCUMENTS FOR THE STORE.
- PROVIDE CONDENSATE DRAIN PIPING SIZED PER PLAN. PROVIDE TRAP FOR EACH ROOFTOP UNIT PER DETAIL ON PLANS. PIPE DRAIN TO GUTTER OR DOWNSPOUT PER PLAN.

HVAC ELECTRIC HEATING UNIT SCHEDULE									
MARK	CFM	FAN TYPE	VOLTAGE	PHASE	HEATING CAPACITY	BASIS OF DESIGN			NOTES
						MANUFACTURER	MODEL	PHASE	
FFH-1	150 CFM	DOWNBLAST	120 V	1	1500 W	QIMARK	EFF-1500		1-3
FFH-2	150 CFM	DOWNBLAST	120 V	1	1500 W	QIMARK	EFF-1500		1-3
FFH-3	150 CFM	DOWNBLAST	120 V	1	1500 W	QIMARK	EFF-1500		1-3

NOTES:
 -NO SUBSTITUTIONS PERMITTED--
 1. COORDINATE MOUNTING FRAME TYPE WITH ARCHITECTURAL DRAWINGS.
 2. PROVIDE FACTORY ACCESSORIES AS REQUIRED FOR RECESSED CEILING INSTALLATION.
 3. PROVIDE WITH INTERNAL DISCONNECT SWITCH, FACTORY FAN DELAY SWITCH, FACTORY HIGH TEMPERATURE CUTOFF SWITCH, AND INTEGRAL THERMOSTAT (EXCEPT OTHERWISE INDICATED ON PLANS).

HVAC LEGEND	
SYMBOL	DESCRIPTION
	NEW RECTANGULAR OR ROUND DUCT
	FLEXIBLE DUCT
	SUPPLY AIR DUCTWORK UP THROUGH PLAN
	RETURN AIR DUCTWORK UP THROUGH PLAN
	EXHAUST AIR DUCTWORK UP THROUGH PLAN
	90° ELBOW WITH TURNING VANES
	MANUAL AIR VOLUME CONTROL DAMPER
	4 WAY SUPPLY DIFFUSER
	3 WAY SUPPLY DIFFUSER
	2 WAY OPPOSED SUPPLY DIFFUSER
	2 WAY CORNER SUPPLY DIFFUSER
	RETURN AIR DEVICE
	EXHAUST AIR DEVICE
	VAV PLAQUE FACE DIFFUSER
	AIR CURTAIN
	LINEAR SLOT DIFFUSER WITH PLENUM
	TEMPERATURE SENSOR
	COMBINATION TEMPERATURE/HUMIDITY SENSOR
	CO2 SENSOR
	TYPE MARK AIR FLOW (CFM)
	MECHANICAL EQUIPMENT TAG
	CLEAN OUT
	CONDENSATE PIPING
	ROOF MOUNTED EXHAUST FAN
	INLINE EXHAUST FAN
	PACKAGED ROOFTOP AIR CONDITIONER

RTU-1, 2, & 3 SEQUENCE OF OPERATION									
GENERAL: TEMPERATURE SETPOINT: 74°F COOLING, 68°F HEATING HUMIDITY SETPOINT: 50% RELATIVE HUMIDITY.									
SUPPLY AIR BLOWER SPEED									
UNIT HAS FOLLOWING SUPPLY AIR BLOWER SPEED SETTINGS THAT PERTAIN TO THIS INSTALLATION:									
<ul style="list-style-type: none"> COOLING AIR BLOWER SPEED HEATING AIR BLOWER SPEED 									
COOLING MODE									
<ul style="list-style-type: none"> Y1 DEMAND: COMPRESSOR 1 OPERATES AND SUPPLY AIR BLOWER OPERATES AT COOLING SPEED. Y2 DEMAND: ALL COMPRESSORS OPERATE AND SUPPLY AIR BLOWER OPERATES AT COOLING SPEED. 									
DEHUMIDIFICATION MODE									
<ul style="list-style-type: none"> IF THE UNIT RECEIVES A CALL FOR DEHUMIDIFICATION, ECONOMIZER FREE COOLING IS LOCKED OUT (ON UNITS EQUIPPED WITH ECONOMIZER). CALL FOR DEHUMIDIFICATION, NO Y1, Y2 DEMAND: 1ST STAGE COMPRESSOR OPERATES, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED, AND THE REHEAT VALVE IS ENERGIZED. Y1 DEMAND WITH A CALL FOR DEHUMIDIFICATION: ALL COMPRESSORS OPERATE, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED AND THE REHEAT VALVE IS ENERGIZED. Y2 DEMAND WITH A CALL FOR DEHUMIDIFICATION: ALL COMPRESSORS OPERATE, SUPPLY AIR BLOWER OPERATES AT COOLING SPEED, AND THE REHEAT VALVE IS DE-ENERGIZED. 									
HEATING MODE (GAS HEAT)									
<ul style="list-style-type: none"> W1 DEMAND: 1ST STAGE GAS HEAT IS ENERGIZED AND THE SUPPLY AIR BLOWER OPERATES AT HEATING SPEED. W2 DEMAND: 2ND STAGE GAS HEAT IS ENERGIZED AND THE SUPPLY AIR BLOWER OPERATES AT HEATING SPEED. 									
MODULATING OUTDOOR AIR DAMPER									
<ul style="list-style-type: none"> THE MINIMUM DAMPER POSITION FOR "OCCUPIED HIGH BLOWER" IS ADJUSTED DURING UNIT SETUP TO PROVIDE MINIMUM FRESH AIR REQUIREMENTS PER RTU SCHEDULE. WHEN SUPPLY AIR BLOWER IS OFF, THE OUTDOOR AIR DAMPER IS CLOSED. WHEN UNIT IS IN OCCUPIED MODE AND SUPPLY AIR BLOWER IS OPERATING, THE OUTDOOR AIR DAMPER IS AT MINIMUM "HIGH BLOWER" POSITION. 									

ABBREVIATIONS			
DB°F	DRY BULB DEGREES FAHRENHEIT	LD	LINEAR DIFFUSER
A/C	AIR CONDITIONING	L.P.	LOW PRESSURE
AC	AIR CURTAIN	MAX	MAXIMUM
A.F.F.	ABOVE FINISHED FLOOR	MBH	1000 BTU PER HOUR
BAS	BUILDING AUTOMATION SYSTEM	MCA	MINIMUM CIRCUIT AMPACITY
BTU	BRITISH THERMAL UNIT	MIN	MINIMUM
CD	CEILING DIFFUSER	MOC	MAXIMUM OVER CURRENT PROTECTION
CFM	CUBIC FEET PER MINUTE	MPH	MILES PER HOUR
CO2	CARBON DIOXIDE	O.A.	OUTSIDE AIR
D	DIAMETER	O.C.	ON CENTER
EER	ENERGY EFFICIENCY RATIO	PVC	POLYVINYL CHLORIDE
EF	EXHAUST FAN	REOD	REQUIRED
FFH	FAN FORCED HEATER	RTU	PACKAGED ROOF TOP HVAC UNIT
G	GRILLE	SCH	SCHEDULE
G.C.	GENERAL CONTRACTOR	SEF	SEASONAL ENERGY EFFICIENCY RATIO
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SF	SQUARE FOOT
HP	HORSEPOWER	TYP.	TYPICAL
IEER	INTEGRATED ENERGY EFFICIENCY RATIO	V	VOLTS
IN.	INCHES WATER COLUMN	CO	CLEANOUT
LBS.	POUNDS	WB°F	WET BULB DEGREES FAHRENHEIT

RTU-1, 2, & 3 TEST AND BALANCE NOTES	
1.	TEST AND BALANCE CONTRACTOR TO OBTAIN INITIAL BALANCE OF COOLING CFM FOR RTU USING FAN SHEAVE ADJUSTMENT TO WITHIN +/- 5% SCHEDULED SUPPLY AIR CFM. PRODIGY CONTROLLER MAY BE USED FOR FINAL 5% TO OBTAIN SCHEDULED SUPPLY AIR CFM.
2.	SET MINIMUM OUTSIDE AIR DAMPER POSITION FOR COOLING AND VERIFY OUTSIDE AIR CFM PER RTU SCHEDULE.
3.	NOT USED
4.	NOT USED
5.	USING PRODIGY CONTROLLER, VERIFY HEATING CFM EQUALS COOLING CFM.
6.	ALL PRODIGY CONTROLLER SETTINGS OTHER THAN THOSE MENTIONED ABOVE SHALL REMAIN AS THEIR DEFAULT VALUE AS SET FROM THE FACTORY.
7.	VERIFY POSITIVE BUILDING PRESSURE.

LENNOX SETUP PARAMETERS / MID-ATLANTIC STORES (R3)	
UNIT ID CONFIGURATION (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):	
<ul style="list-style-type: none"> BACNET CONFIGURATION: GO TO SETTINGS-GENERAL-CONFIGURATION ID1 POSITION 5 SET TO "B" NETWORK CONFIGURATION: GOT TO SETUP-NETWORK INTEGRATION, SET TO BACNET CONTROL MODE: SET CONTROL MODE TO ROOM SENSOR, CO2, TEMP, & HUMIDITY TO "NO" ENTHALPHY CONFIGURATION: CHANGE CONFIG ID1 POSITION 2 FROM D (DUAL ENTHALPHY) TO S (SINGLE ENTHALPHY) FRESH AIR COOLING: SETUP-TEST & BALANCE-DAMPER. SCROLL TO FRESH AIR COOLING SET TO "NO" FRESH AIR HEAT: SETUP-TEST & BALANCE-DAMPER. SCROLL TO FRESH AIR HEAT SET TO "NO" 	
INDIVIDUAL PARAMETER CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):	
<ul style="list-style-type: none"> PARAMETER 105 DEHUMID MODE: 7 (NO CONDITIONS) PARAMETER 106 DEHUMID SETPOINT: 50. THIS IS A CENTERED SET POINT (+/-) PARAMETER 107 DEHUMID DEADBAND: 3 (DEFAULT) THIS IS THE ACTUAL +/- VALUE PARAMETER 117 CO2 DAMPER MAX OPEN %: 50 PARAMETER 118 CO2 START OPEN PPM: 1200 PARAMETER 119 CO2 FULL OPEN PPM: 1500 PARAMETER 131 FREE COOL MAX DAMPER: 100% PARAMETER 137 OCC HEAT SET POINT: 68 (BACK UP) PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP) PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1 PARAMETER 155 FREE COOL LOCK OUT SET POINT: 29 (DISABLED) PARAMETER 159 FREE COOL SUPPLY SET POINT: 55 (DEFAULT) PARAMETER 160 ECON FREE COOL SET POINT: 55 (DEFAULT) PARAMETER 161 ECON FREE COOL OFFSET: 10 (DEFAULT) PARAMETER 162 FREE COOL ENTHALPHY SET POINT (SINGLE ENTHALPHY): 19 MA (50% HUM + 60F) 	