

1 HVAC PLAN  
1/8" = 1'-0"

**FABRIC DUCT GENERAL NOTES:**  
 PROVIDE FABRIC DUCT THROUGHOUT THE SPACE AS SHOWN ON PLAN. FABRIC DUCT SHALL NOT REPLACE RECTANGULAR DUCT DROPS OR EXHAUST DUCTS. BASIS OF DESIGN SHALL BE "PRIHODA", "NM" NONPOROUS FABRIC WITH "PERFORATIONS" (AIR OPENINGS) WITH ADJUSTABLE FLOW DEVICES (I.E. AFDS) AT OPENINGS, AND ONE ROW GALVANIZED CABLE INTERNAL HOOP SUPPORT SYSTEM SHALL BE PROVIDED ON ALL FABRIC DUCT UNLESS NOTED OTHERWISE. INCLUDE ALL COMPONENTS AND ACCESSORIES REQUIRED TO MAKE A COMPLETE SYSTEM AS RECOMMENDED BY PRIHODA DURING BID PHASE, INCLUDING HANGING STRAPS AND CLIPS, END-CAPS, CONNECTIONS TO METAL DUCTS, ETC. PRIHODA FABRIC DUCT SHALL BE SIZED PER FACTORY RECOMMENDATIONS TO PROVIDE MINIMUM AIRFLOWS IN BRANCH DUCTS AS SHOWN. CONFIRM FABRIC DUCT COLOR WITH ARCHITECT PRIOR TO ORDERING ON ALL PROJECTS. (FOR GLOBAL 3.0 FIXTURE PACKAGE, WHITE IS BASIS OF DESIGN). CONTACT PRIHODA SALES DEPARTMENT (E-MAIL: SALES@PRIHODANA.COM, PHONE: 1-855-774-4632) FOR PRICING INFORMATION.

**FABRIC DUCT DESIGN GUIDELINE:**  
 DISTRIBUTE AIRFLOW EVENLY ALONG FABRIC DUCT IN THE DIRECTION OF FLOW ARROWS. ORIENT AND SIZE FABRIC DUCT DIFFUSER OPENINGS TO PROVIDE A 50 FPM THROW VELOCITY HALF WAY TO THE NEAREST ADJACENT FABRIC DUCT OR TO THE NEAREST PARTITION/DEMISING WALL AS APPLICABLE. VENTS ON FABRIC DUCT SHALL BE LOCATED AT 2.5 DEGREES BELOW HORIZONTAL UNLESS NOTED OTHERWISE.

**FABRIC DUCT COORDINATION NOTE:**  
 DURING THE FIRST WEEK OF THE PROJECT, THE GENERAL CONTRACTOR'S SUPERINTENDENT, MECHANICAL SUB-CONTRACTOR, AND A REPRESENTATIVE FROM "PRIHODA" SHALL MEET AT THE PROJECT SITE FOR CONFIRMATION OF ALL FIELD DIMENSIONS AND POTENTIAL OBSTRUCTIONS. THIS EVENT MUST PRECEDE THE ORDERING OF ANY MATERIALS FROM "PRIHODA". CHANGE ORDERS AND EXPEDITING FEES WILL NOT BE APPROVED DUE TO LACK OF ON-SITE COLLABORATION AND/OR MEASUREMENT DURING SITE MEETING AT PROJECT COMMENCEMENT.

**FABRIC DUCT INSTALLATION NOTE:**  
 INSTALL FABRIC DUCT ABOVE ARCHITECTURAL LIGHTING SYSTEM. COORDINATE FABRIC DUCT INSTALLATION WITH GENERAL CONTRACTOR AND DIVISION 26. GENERAL CONTRACTOR SHALL VERIFY FABRIC DUCT IS INSTALLED SUCH THAT IT DOES NOT CLASH WITH ARCHITECTURAL LIGHTING SYSTEM, INCLUDING LIGHT FIXTURES, ARCHITECTURAL LIGHTING SYSTEM GRID AND SUSPENSION CABLES, OR ANY OTHER SUSPENDED FIXTURES WHEN DEFLATED.

GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING TO ARCHITECT, ENGINEER, LANDLORD, AND BUILDING OFFICIAL/INSPECTOR A FINAL TEST AND BALANCE REPORT PER THE SPECIFICATIONS. PROVIDE TEST AND BALANCE REPORT TO ARCHITECT, ENGINEER, AND LANDLORD PRIOR TO THE FINAL BUILDING INSPECTION.

THE DUCTWORK LAYOUT INDICATED ON THE DRAWINGS IS SCHEMATIC AND SHOWS DESIGNED INTENT ONLY. PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK, DIVISION 23 SHALL HAVE A QUALIFIED EXPERIENCED SKETCHER PREPARE AND SUBMIT SHEET METAL SHOP DRAWINGS. SHOP DRAWINGS SHALL TAKE INTO ACCOUNT ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO, STRUCTURAL MEMBERS, CONDUITS AND PIPING TO REMAIN. SHOP DRAWINGS SHALL ALSO TAKE INTO ACCOUNT ALL NEW DESIGN CONDITIONS, INCLUDING BUT NOT LIMITED TO, STRUCTURAL MEMBERS, PIPING, CEILING, SOFFIT HEIGHTS, AND LIGHT FIXTURES.

SHOP DRAWINGS SHALL INDICATE ALL REVISIONS TO THE LAYOUT REQUIRED TO ACCOMMODATE THE EXISTING CONDITIONS AND/OR MAINTAIN THE CEILING HEIGHTS AND CLEARANCES REQUIRED. NOTIFY THE ARCHITECT AND ENGINEER OF ANY LOCATION WHERE THE DESIGN INTENT CANNOT BE MET PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK. REVISIONS TO DUCTWORK, EQUIPMENT, CONDUIT AND/OR PIPING REQUIRED BY CONTRACTOR'S FAILURE TO SUBMIT PROPERLY PREPARED SHOP DRAWINGS SHALL BE THE RESPONSIBILITY OF DIVISION 23 AT NO ADDITIONAL COST TO THE CLIENT OR DELAY TO THE PROJECT SCHEDULE.

**LANDLORD REQUIREMENTS:**  
 LANDLORD APPROVED ROOFING CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL CUTS THROUGH THE EXISTING ROOF, MODIFYING EXISTING OPENINGS, AND/OR ALTERING CURB FLASHING AT GENERAL CONTRACTOR'S EXPENSE. COORDINATE WITH GENERAL CONTRACTOR.

DOUBLE-D ROOFING, JOSH MILLER, (717) 792-6787

**EMS CONTROLS:**  
 CONTRACTORS ARE RESPONSIBLE FOR COORDINATING ALL EQUIPMENT CONTROLS WITH EMS VENDOR PRIOR TO PURCHASE AND INSTALLATION. CONTRACTORS SHALL COORDINATE WITH EMS VENDOR TO PROVIDE ALL NECESSARY EQUIPMENT AND ACCESSORIES FOR A FULLY FUNCTIONING SYSTEM.

**TEMPERATURE CONTROLS:**  
 FIELD FABRICATE L-BRACKET FOR SUPPORTING END OF FABRIC DUCT. COORDINATE REQUIREMENTS WITH FABRIC DUCT MANUFACTURER.

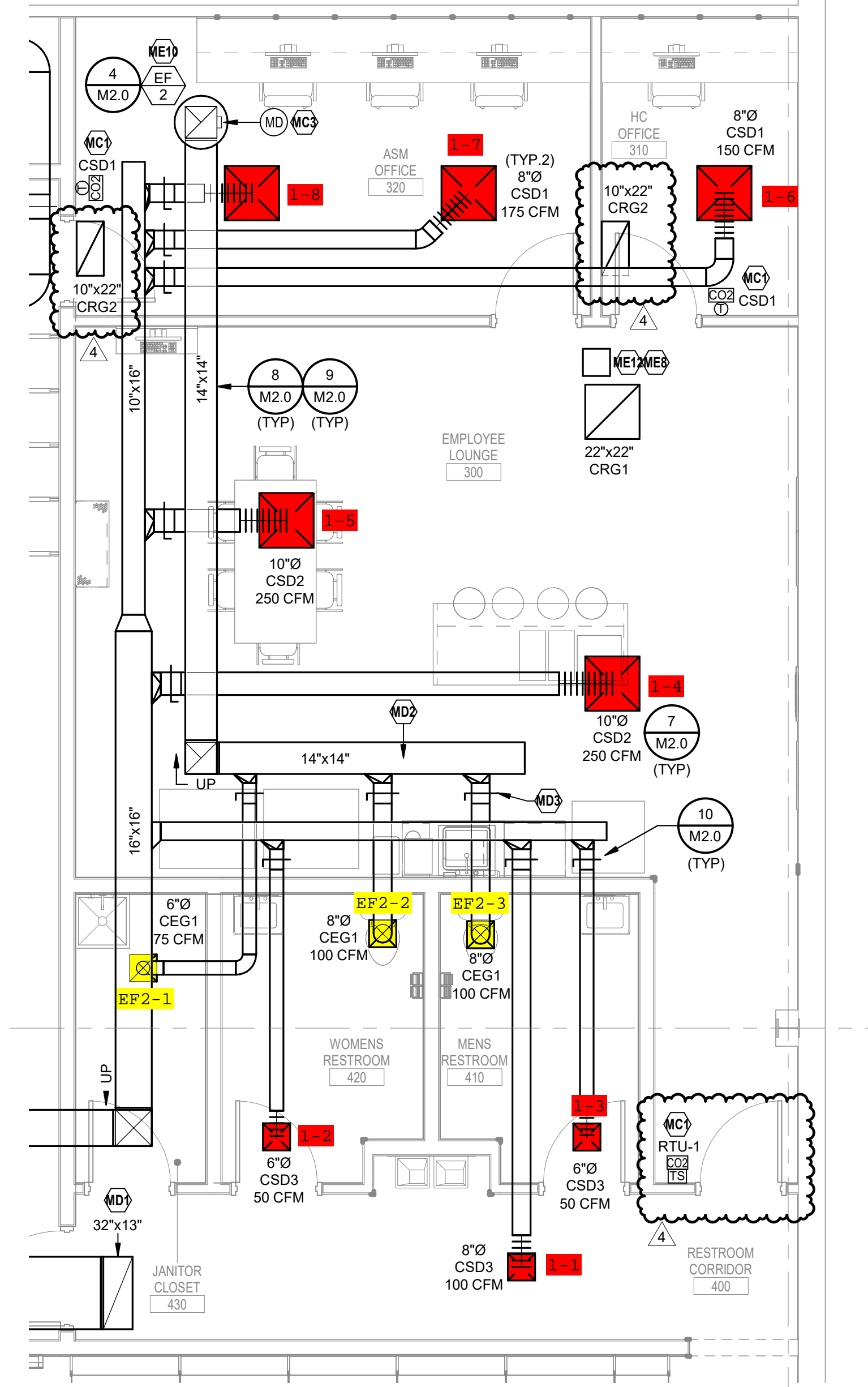
GENERAL CONTRACTOR SHALL INSTALL CARRIER FURNISHED TEMPORARY THERMOSTATS AND FEED THE WIRING DOWN INTO THE SPACE FOR START UP AND CONTROL OF RTU(S) UNTIL THE EMS SYSTEM IS OPERABLE. REFER TO M3.0 FOR CARRIER CONTACT INFORMATION.

**MECHANICAL PLAN NOTES**

- MC1 THERMOSTATS AND SENSORS FURNISHED BY EMS VENDOR AND INSTALLED BY DIVISION 26 UNLESS NOTED OTHERWISE.
- MC2 DO NOT INSTALL SENSORS ON WALL GRAPHICS. CONFIRM LOCATIONS OF SENSORS WITH FM PRIOR TO INSTALL.
- MC3 MOTORIZED DAMPER SHALL BE INTEGRAL TO FAN AND ACCESSIBLE FROM ROOF. SHOW ON PLAN FOR REFERENCE ONLY. REFER TO MECHANICAL SCHEDULES ON M3.0 FOR MORE INFORMATION.
- MC4 INSTALL DAMPER AND ACTUATOR IN LOCATION INDICATED. DAMPER FURNISHED BY DIVISION 23. ACTUATOR FURNISHED BY EMS VENDOR.
- MD1 ROUTE SHEET METAL RETURN AIR DUCT AS SHOWN WITH TERMINATION DIRECTED UPWARD. MINIMUM FULL SIZE OF RETRIEVE DUCT LINE IN RETURN AIR DUCTWORK FOR SOUND ATTENUATION. COVER INLET WITH 1/2"X12" BIRD SCREEN.
- MD2 ROUTE EXHAUST AIR DUCTWORK TO NEW ROOF MOUNTED EXHAUST FAN. COORDINATE EXACT ROUTING WITH STRUCTURE AND OTHER OBSTACLES. ADJUST ROUTING TO MATCH.
- MD3 EXHAUST AIR DAMPERS SHALL BE ACCESSIBLE FROM BACK-OF-HOUSE LAY-IN CEILING. COORDINATE FINAL INSTALLED LOCATION SUCH THAT THE DAMPERS REMAIN ACCESSIBLE.
- MD4 DO NOT ROUTE DUCTWORK OVER ELECTRICAL EQUIPMENT.
- MD5 ROUTE SHEET METAL TRANSFER AIR DUCT AS SHOWN WITH TERMINATION DIRECTED UPWARD. COVER WITH 1/2"X12" BIRD SCREEN.
- MD6 ROUTE DUCTWORK TIGHT TO STRUCTURE.
- MD12 ROUTE DUCTWORK TIGHT TO STRUCTURE AND ABOVE THE STOCKROOM LIGHT FIXTURES.
- MD15 COORDINATE DUCT ROUTING WITH LIGHTS AND STRUCTURE.
- MD16 ROUTE SUPPLY/RETURN DUCTWORK TO ROOF CURB PENETRATIONS. TRANSITION DUCTWORK IN RISER AS NECESSARY.
- MD21 PROVIDE FABRIC DUCT TO GALVANIZED DUCT TO TRANSITION BEFORE WALL PENETRATION. REFER TO SIZES INDICATED ON PLAN AND COORDINATE FITTING WITH FABRIC DUCT MANUFACTURER.
- ME1 PROVIDE NEW ROOFTOP UNIT AS SCHEDULED WITH NEW CURB ADAPTERS FROM NEW UNIT TO EXISTING CURB. PROVIDE NEW SET OF MERV 13 AIR FILTERS IN UNIT BEFORE TURNING SYSTEM OVER TO OWNER.
- ME2 PROVIDE NEW ROOFTOP UNIT AS SCHEDULED WITH NEW ROOF CURB. PROVIDE A NEW SET OF MERV 13 AIR FILTERS IN UNIT BEFORE TURNING SYSTEM OVER TO OWNER.
- ME5 PROVIDE NEW ELECTRIC UNIT HEATER AS SCHEDULED. SUPPORT FROM STRUCTURE ABOVE AT 10'-0". COORDINATE UNIT INSTALLATION WITH EMS FOR 24V RELAY CONNECTION BY EMS VENDOR.
- ME6 PROVIDE NEW ELECTRIC UNIT HEATER AS SCHEDULED. INSTALL WITHIN CEILING PER MANUFACTURER'S REQUIREMENTS. COORDINATE EXACT LOCATION WITH ARCHITECT AND OTHER CEILING DEVICES PRIOR TO INSTALLATION. VERIFY UNIT THERMOSTAT IS FULLY ACCESSIBLE FOR 24V RELAY BY EMS VENDOR.
- ME8 ACCESS TO HVAC EQUIPMENT SHALL BE FROM LAY-IN CEILING. NO CEILING DEVICES SHALL BE PLACED IN THIS LOCATION. COORDINATE FINAL INSTALLED LOCATION SUCH THAT THE HVAC EQUIPMENT REMAINS ACCESSIBLE. VERIFY NO OTHER PIPING, ELECTRICAL CONDUIT, STRUCTURE, AND/OR CEILING SUPPORTS IMPEDS ACCESS IN ANY WAY. INSTALL HVAC EQUIPMENT WITHIN 24" ABOVE CEILING FOR SERVICEABILITY.
- ME9 SMOKE DETECTORS AND WIRING IN SUPPLY AND RETURN AIR DUCTS SHALL BE PROVIDED BY DIVISION 26 CONTRACTOR. SMOKE DETECTORS SHALL SHUT-DOWN UNIT UPON ALARM.
- ME10 PROVIDE NEW ROOF-MOUNTED EXHAUST FAN AS SCHEDULED FOR GENERAL RESTROOM EXHAUST. DEMOLISH EXISTING FAN AND TEMPORARILY CAP DUCT PENETRATION THROUGH ROOF AND REUSE FOR NEW FAN INSTALLATION.
- ME11 EXHAUST FAN SERVES TO PROVIDE TRANSFER AIR ONLY AND SHALL DISCHARGE AIR INTO THE STOCKROOM.
- ME12 INSTALL VAV POWER MODULE FOR CONTROL OF OFFICE VAV DIFFUSERS IN AN ACCESSIBLE LOCATION ABOVE THE CEILING. DIVISION 26 CONTRACTOR SHALL PROVIDE 120V POWER TO MODULE. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
- MF1 INSTALL FABRIC DUCT DIRECTLY ABOVE ARCHITECTURAL LIGHTING GRID. REFER TO BOXED NOTES FOR ADDITIONAL INFORMATION.
- MF2 ARROWS INDICATE DIRECTION OF AIRFLOW. PROVIDE VENTS ON FABRIC DUCT TO DIRECT AIRFLOW AS SHOWN.
- MF3 EXTEND AND TIGHTEN HANGING CABLE TO WALL. GENERAL CONTRACTOR TO PROVIDE 2X WOOD BACKING. COORDINATE REQUIREMENTS WITH FABRIC DUCT MANUFACTURER.
- MF4 FIELD FABRICATE L-BRACKET FOR SUPPORTING END OF FABRIC DUCT. COORDINATE REQUIREMENTS WITH FABRIC DUCT MANUFACTURER.
- MF7 DO NOT INSTALL VENTS ON FABRIC DUCT ADJACENT TO BACKWRAP WALL. DIMENSION SHOWN FOR REFERENCE ONLY.
- MF8 GALVANIZED DUCTWORK SHALL BE ROUTED THROUGH WALL. TRANSITION TO FABRIC DUCT IMMEDIATELY AFTER WALL PENETRATION.
- MF9 PROVIDE ANGLED DUCT TAKEOFF BETWEEN FABRIC DUCTWORK AND GALVANIZED DUCTWORK. TRUNK ANGLE SHALL MATCH ROOF SLOPE. COORDINATE WITH FABRIC DUCTWORK VENDOR PRIOR TO INSTALL.
- MF11 SUPPORT FABRIC DUCTWORK WITH MANUFACTURER'S DOUBLE-CABLE CROSS BRACING SUPPORTS. COORDINATE REQUIREMENTS WITH FABRIC DUCT MANUFACTURER.
- MF12 PROVIDE FABRIC DUCT WITH AIRFLOW PERFORATIONS AT AN ANGLE OF 45° FROM HORIZONTAL TOWARDS THE SALES FLOOR.
- MF13 TRANSITION END OF FABRIC DUCT TO SHEET METAL DUCT. TRANSITION TO RECTANGULAR DUCT DIRECTLY BEFORE WALL PENETRATION. COORDINATE FABRIC DUCT LENGTH PRIOR TO ORDERING.
- MG3 LOUVERED DOOR FOR RELIEF AIR BY GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
- MG4 PROVIDE GRILLE ON WALL FOR TRANSFER AIR. MOUNT AS HIGH AS POSSIBLE WITHIN STRUCTURE.

PROVIDE RFD DUCTWORK MESH OVER TRANSFER GRILLS BELOW 15'-0" AFF BETWEEN THE STOCKROOM AND THE SALES FLOOR, IF APPLICABLE. COORDINATE REQUIREMENTS WITH CONSTRUCTION PROJECT MANAGER.

INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. DO NOT INSTALL DUCTWORK BELOW THE BOTTOM OF THE LIGHT FIXTURES. NOTIFY CONSTRUCTION PROJECT MANAGER OF CONFLICTS.



2 ENLARGED BACK OF HOUSE HVAC PLAN  
1/4" = 1'-0"

**Architect:**  
**brr**  
 ARCHITECT OF RECORD:  
 BRR ARCHITECTURE, INC.  
 8133 METCAL AVENUE  
 OVERLAND PARK, KS 66264  
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 TEL: 913-242-9995  
 FAX: 913-242-9944

**Engineer:**  
**HENDERSON ENGINEERS**  
 8345 LEXENA DRIVE, SUITE 300  
 LEXENA, KS 66214  
 TEL 913.742.5000 FAX 913.742.5011  
 WWW.HENDERSONENGINEERS.COM  
 255004102  
 MD, CORPORATE NO. 07-49999  
 EXPIRES 10/11/2022

**Project Owner:**  
 NIKE, Inc.  
 One Bowser Drive  
 Beaverton, OR 97005  
 (503) 671-6453  
 www.nike.com

**Project Address:**  
 NIKE FACTORY STORE  
 2250 PETRIE LN  
 LANHAM (GLENARDEN), MD  
 20706

**Fixture Package:**  
 UNITE

**Stamp:**  
 JUSTIN M. OLDER  
 PROFESSIONAL ENGINEER  
 STATE OF MARYLAND  
 LICENSE # 52138  
 EXPIRES 08/12/2022

**Issued For:**  
 CONSTRUCTION

**Issue Date:**  
 05/23/2022

Revisions:	NO.	REASON	DATE
	1	ADDENDUM #1	02/10/21
	2	BULLETIN #1	05/23/22
	4	BULLETIN #3	08/15/22

**Project Manager:**  
 BAW

**Checked By:**  
 HB

**Drawn By:**  
 HB

**Project Number:**  
 62301421

**Sheet Title:**  
 MECHANICAL PLAN

**Sheet Number:**  
 M1.0

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 PRINT NAME: JUSTIN M. OLDER  
 LICENSE # 52138  
 EXPIRATION DATE: 1/8/2024

**Project Address:**  
 NIKE FACTORY STORE  
 2250 PETRIE LN  
 LANHAM (GLENARDEN), MD  
 20706

**Template Issue Date:**  
 04/28/2017

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## PROJECT DESIGN CONDITIONS

CLIMATE CONDITIONS				BUILDING OPERATING HOURS:			
WEATHER LOCATION:	ANDREWS AFD, MD, USA			MONDAY - FRIDAY	TBD BY OWNER		
CLIMATE ZONE:	4A			SATURDAY	TBD BY OWNER		
HEATING (DB):	99.6%	15.1	"F	SUNDAY	TBD BY OWNER		
DESIGN HEATING CONDITIONS (DB):	3.5	15.1	"F	HOLIDAY	TBD BY OWNER		
HUMIDIFICATION (DP) HR/ MCBDE:	99.6%	-0.4	"F/ 5.4 gr/b	19.9 "F			
COOLING (DB/MCBW):	0.4%	84.1	"F/ 75.0 "F/				
DESIGN COOLING CONDITIONS (DB/MCBW):		81.8	"F/ 76.8 "F/				
DEHUMIDIFICATION (DP) HR/ MCBDE:	0.4%	75.1	"F/ 133.2 gr/b	81.8 "F			

SPACE / UNIT DESCRIPTION	COOLING / DEHUMIDIFICATION				HEATING				HUMIDIFICATION				ZONE VENTILATION RESET				SPACE OPERATING HOURS OCCUPIED / UNOCCUPIED			NOTES
	OC	UNOC	MAX RH %	MIN RH %	OC	UNOC	MIN	MAX	CONTROL METHOD	BASE PPM	MAXIMUM PPM	M.F.	SAT	SUN	M	TBD	TBD			
RTU-1 BACK OF HOUSE	72	77	60%	NA	70	60	NA	NA	CO2	400	750	TBD	TBD	TBD	A-D					
RTU-2 STOCKROOM	72	77	60%	NA	70	60	NA	NA	CO2	400	750	TBD	TBD	TBD	A-D					
RTU-3 SALES	72	77	60%	NA	70	60	NA	NA	CO2	400	750	TBD	TBD	TBD	A-D					
RTU-4 SALES	72	77	60%	NA	70	60	NA	NA	CO2	400	750	TBD	TBD	TBD	A-D					
RTU-5 SALES	72	77	60%	NA	70	60	NA	NA	CO2	400	750	TBD	TBD	TBD	A-D					
RTU-6 SOLAR ZONE	72	77	60%	NA	70	60	NA	NA	NA	NA	NA	TBD	TBD	TBD	B-D					

- NOTES:
- ZONE LEVEL VENTILATION RESET / DEMAND CONTROL VENTILATION (DCV) CONTROL METHOD: CARBON DIOXIDE SENSOR (CO2).
  - ZONE LEVEL SET POINT CONDITIONS SHALL BE AS SCHEDULED UNLESS OTHERWISE SCHEDULED OR NOTED ON THE DRAWINGS FOR ROOM SPECIFIC SPACE CONDITIONS.
  - ZONE LEVEL OCCUPIED / UNOCCUPIED HOURS SHALL BE AS SCHEDULED UNLESS OTHERWISE SCHEDULED.
  - ZONE LEVEL CONTROLS SHALL BE CAPABLE OF OPERATING WITH INDEPENDENT OCCUPANCY SCHEDULES.

## ROOFTOP UNIT CONTROL MATRIX

CONTROL FEATURE	UNITS	RTU-1	RTU-2	RTU-3	RTU-4	RTU-5	RTU-6	POINT TYPE INTERFACE WITH DDC (READ/WRITE)	NOTES
		SETPOINT OR Y/N	SETPOINT OR Y/N	SETPOINT OR Y/N	SETPOINT OR Y/N	SETPOINT OR Y/N	SETPOINT OR Y/N		
BUILDING AUTOMATION SYSTEM (BAS)									
ENERGY MANAGEMENT SYSTEM INTERFACE									
SETPOINTS									
COOLING - EFFECTIVE OCCUPIED COOLING SETPOINT	"F	72	72	72	72	72	72		READWRITE
COOLING - EFFECTIVE UNOCCUPIED COOLING SETPOINT	"F	72	72	72	72	72	72		READWRITE
COOLING - MINIMUM COOLING SUPPLY AIR TEMPERATURE (SAT) SETPOINT	"F	55	55	55	55	55	55		READWRITE
COOLING - LOCKOUT TEMPERATURE SETPOINT	"F	72	72	72	72	72	72		READWRITE
DEAD BAND - MINIMUM HEATING AND COOLING TEMPERATURE SETPOINT DIFFERENCE	"F	2	2	2	2	2	2		READWRITE
HEATING - EFFECTIVE OCCUPIED HEATING SETPOINT	"F	70	70	70	70	70	70		READWRITE
HEATING - EFFECTIVE UNOCCUPIED HEATING SETPOINT	"F	70	70	70	70	70	70		READWRITE
HEATING - MAXIMUM HEATING SUPPLY AIR TEMPERATURE (SAT) SETPOINT	"F	110	110	110	110	110	110		READWRITE
HEATING - LOCKOUT TEMPERATURE SETPOINT	"F	55	55	55	55	55	55		READWRITE
DEHUMIDIFICATION SETPOINT - HUMIDITY SENSOR FEEDBACK	% RH	55	55	55	55	55	55		READWRITE
ECONOMIZER - HIGH OUTSIDE AIR TEMPERATURE (OAT) LOCKOUT SETPOINT	"F	75	75	75	75	75	75		READWRITE
PROGRAMMED CONTROL FEATURES									
DEMAND CONTROL VENTILATION (DCV) HIGH ALARM SETPOINT - CO2 SENSOR FEEDBACK	PPM	750	750	750	750	750	N/A		READWRITE
EQUIPMENT ACCESSORIES AND CONTROL MODULES									
OUTSIDE AIR DAMPER - MOTOR OPERATED (MODULATING)	Y	Y	Y	Y	Y	Y	Y		READWRITE
INTEGRATED ECONOMIZER - DIFFERENTIAL DRY BULB AND DIFFERENTIAL ENTHALPHY	Y	Y	Y	Y	Y	Y	Y		READWRITE
ECONOMIZER FAULT DETECTION AND DIAGNOSTICS (FDD) SYSTEM	Y	Y	Y	Y	Y	Y	Y		READ
RELIEF - BAROMETRIC DAMPER	Y	Y	Y	Y	Y	Y	Y		READ
COOLING COIL (DX - STAGED)	Y	Y	Y	Y	Y	Y	Y		READ STATUS
DEHUMIDIFICATION - HOT GAS REHEAT	N	N	Y	Y	Y	N	Y		READ STATUS
HEATING COIL (NATURAL GAS)	Y	Y	Y	Y	Y	Y	Y		READ STATUS
SUPPLY FAN CONTROL METHODS									
ON/OFF DURING OCCUPIED HOURS	Y	Y	Y	Y	Y	Y	Y		B
UNIT START AND FAN OFF DELAY	Y	Y	Y	Y	Y	Y	Y		B
OPTIMUM START SEQUENCE	Y	Y	Y	Y	Y	Y	Y		C
VARIABLE VOLUME - 2-SPEED FAN CONTROL	Y	Y	Y	Y	Y	Y	Y		READ STATUS
SAFETIES, INTERLOCKS, AND ALARMS									
SUPPLY AIR SMOKE DETECTOR - FIRE SAFETY SHUTDOWN	Y	Y	Y	Y	Y	Y	Y		READ
RETURN AIR SMOKE DETECTOR - FIRE SAFETY SHUTDOWN	Y	Y	Y	Y	Y	Y	Y		READ
SAFETY CHAIN - SAFETY SHUTDOWN	Y	Y	Y	Y	Y	Y	Y		READ
SAT ALARM - SAFETY SHUTDOWN	Y	Y	Y	Y	Y	Y	Y		READ
SFT ALARM - SAFETY SHUTDOWN	Y	Y	Y	Y	Y	Y	Y		READ
GAS VALVE SAFETY	Y	Y	Y	Y	Y	Y	Y		READ

EMS VENDOR SHALL PROVIDE CONTROL PANEL, RELAYS, THERMOSTATS, TEMPERATURE SENSORS, HUMIDITY SENSORS, AND/OR CO2 SENSORS WHERE SHOWN ON THE DRAWINGS AND AS REQUIRED TO FACILITATE THE SCHEDULED SEQUENCE OF OPERATION. EACH UNIT SHALL CONTROL BASED ON ITS OWN INTERNAL SAFETIES, TIME DELAYS, AND SENSUOUS UNLESS NOTED OTHERWISE. COORDINATE WITH OWNER FINAL BUILDING AND EQUIPMENT SCHEDULES DURING STARTUP.

- NOTES:
- EMS SHALL PROVIDE REMOTE SETPOINT ADJUSTMENT, SCHEDULING, AND MONITORING OF THE POINTS LISTED IN THE SCHEDULE FOR EACH UNIT. THE RTU SHALL BE SCHEDULED WITH A MINIMUM OF AN OCCUPIED AND UNOCCUPIED SCHEDULE. ADDITIONAL UNIT SCHEDULES SHALL BE AVAILABLE FOR REMOTE IMPLEMENTATION IF REQUIRED.
  - THE SUPPLY FAN SHALL RUN CONTINUOUSLY IN UNOCCUPIED MODE AND SHALL CYCLE ON AND OFF IN UNOCCUPIED MODE. A UNIT START DELAY IS USED WHEN TRANSITIONING FROM UNOCCUPIED TO OCCUPIED. FAN OFF DELAY ALLOWS THE SUPPLY FAN TO CONTINUE TO OPERATE AFTER HEATING AND COOLING STOPS.
  - VIA FACTORY VFD, THE CARRIER RTU OPEN BOARD SHALL DETERMINE FAN SPEED REQUIRED FOR HEATING AND COOLING. FACTORY VFD SHALL CONTROL TO 2 FAN SPEEDS. LOW SPEED SHALL NOT EXCEED 66% OF FULL SPEED AND SHALL DRAW NO MORE THAN 40% OF FAN POWER AT FULL SPEED. DURING FAN ONLY OR SINGLE STAGE COOLING, SUPPLY FAN SHALL OPERATE AT LOW SPEED. DURING HEATING, SECO STAGE COOLING, DEHUMIDIFICATION OR FULL ECONOMIZER OPERATION, FAN SHALL OPERATE AT HIGH SPEED. IF A LOCAL UNIT CONTROL ALARM IS ACTIVE, THE SUPPLY FAN TURNS OFF IMMEDIATELY REGARDLESS OF OCCUPANCY STATE OR DEMAND.
  - COOLING STAGES ARE CONTROLLED BY THE CARRIER RTU OPEN COOLING CONTROL PID LOOP AND COOLING STAGES CAPACITY ALGORITHM. THEY CALCULATE THE REQUIRED NUMBER OF STAGES NEEDED TO SATISFY THE SPACE TEMPERATURE TO THE EFFECTIVE OCCUPIED COOLING SETPOINT IN OCCUPIED MODE AND THE EFFECTIVE UNOCCUPIED COOLING SETPOINT IN UNOCCUPIED MODE. THE FOLLOWING CONDITIONS MUST BE TRUE FOR THE COOLING ALGORITHM TO OPERATE:
    - THE OUTDOOR AIR TEMPERATURE IS GREATER THAN THE COOLING LOCKOUT TEMPERATURE SETPOINT.
    - THE SUPPLY FAN HAS BEEN ON FOR AT LEAST 30 SECONDS.
    - THE UNIT HAS A VALID SUPPLY AIR TEMPERATURE INPUT.
    - THE UNIT HAS A VALID SPACE TEMPERATURE INPUT.
    - HEATING MODE IS NOT ACTIVE AND THE TIME GUARD BETWEEN MODES HAS EXPIRED.
    - ECONOMIZER IS UNAVAILABLE OR ECONOMIZER IS ACTIVE AND THE FOLLOWING ARE TRUE: (1) ECONOMIZER IS GREATER THAN 85% OPEN, (2) SUPPLY AIR TEMPERATURE IS GREATER THAN 5 DEGREES ABOVE THE MINIMUM COOLING SAT SETPOINT, AND (3) SPACE TEMPERATURE ABOVE THE EFFECTIVE OCCUPIED TEMPERATURE SETPOINT.
  - WHEN THE COOLING ALGORITHM PRECONDITIONS ARE MET, THE COMPRESSORS ARE ENERGIZED IN STAGES, AS APPLICABLE. ANTI-RECYCLE TIMERS ARE EMPLOYED TO PROTECT THE EQUIPMENT FROM SHORT-CYCLING. THERE ARE FIXED THREE-MINUTE MINIMUM ON-TIMES AND FIVE-MINUTE OFF-TIMES FOR EACH COMPRESSOR OUTPUT. DURING COMPRESSOR OPERATION, THE RTU OPEN CONTROL LOGIC MAY REDUCE THE NUMBER OF ACTIVE STAGES IF THE SUPPLY AIR TEMPERATURE FALLS BELOW THE MINIMUM COOLING SAT SETPOINT. A COMPRESSOR STAGED OFF IN THIS FASHION MAY BE STARTED AGAIN AFTER THE NORMAL, TIME-GUARD PERIOD HAS EXPIRED IF THE SUPPLY AIR TEMPERATURE HAS INCREASED ABOVE THE MINIMUM COOLING SAT SETPOINT.
  - THE SYSTEM SHALL UTILIZE THE FACTORY MODULATING ECONOMIZER FOR FREE COOLING WHEN OUTDOOR AIR CONDITIONS ARE SUITABLE. FOR THE ECONOMIZER TO OPERATE DURING OCCUPIED HOURS, THE FOLLOWING CONDITIONS MUST BE TRUE:
    - OUTDOOR AIR TEMPERATURE IS GREATER THAN THE SPACE TEMPERATURE AND LESS THAN THE ECONOMIZER HIGH OAT LOCKOUT SETPOINT.
    - THE INDOOR FAN HAS BEEN ON FOR AT LEAST 30 SECONDS.
    - THE UNIT HAS A VALID SUPPLY AIR TEMPERATURE INPUT.
    - THE UNIT HAS A VALID SPACE TEMPERATURE INPUT.
    - OUTDOOR AIR ENTHALPHY IS LESS THAN THE SPACE ENTHALPHY. (ENTHALPHY STATUS SHALL READ "LOW")
  - IF ANY OF THE PRECEDING CONDITIONS ARE NOT TRUE AND THE SUPPLY FAN IS ON HIGH SPEED, THE ECONOMIZER SHALL BE SET TO THE DCV MINIMUM OUTDOOR AIR DAMPER POSITION (TBD BY TAB CONTRACTOR). IF ANY OF THE PRECEDING CONDITIONS ARE NOT TRUE AND THE SUPPLY FAN IS ON LOW SPEED, THE ECONOMIZER SHALL BE SET TO THE LOW FAN ECONOMIZER MINIMUM DAMPER POSITION (TBD BY TAB CONTRACTOR). IF ALL OF THE PRECEDING CONDITIONS ARE TRUE, THE ECONOMIZER PID LOOP SHALL MODULATE THE DAMPER. THE ECONOMIZER POSITION SHALL BE REDUCED AS THE SUPPLY AIR TEMPERATURE FALLS TO WITHIN 5 DEGREES OF THE MINIMUM COOLING SAT SETPOINT. BUT SHALL NEVER CROSS BELOW THE MINIMUM COOLING SAT SETPOINT.
  - DURING UNOCCUPIED HOURS, UNOCCUPIED FREE COOLING SHALL BE ENABLED. THE ECONOMIZER SHALL REMAIN CLOSED UNLESS THE FOLLOWING CONDITIONS ARE TRUE:
    - OUTDOOR AIR TEMPERATURE IS BELOW THE ECONOMIZER HIGH OAT LOCKOUT SETPOINT.
    - OUTDOOR AIR TEMPERATURE IS LESS THAN THE SPACE TEMPERATURE.
    - OUTDOOR AIR ENTHALPHY IS LESS THAN THE SPACE ENTHALPHY. (ENTHALPHY STATUS SHALL READ "LOW")
  - IF ALL OF THE PRECEDING CONDITIONS ARE TRUE AND THE SPACE TEMPERATURE RISES 1 DEGREE ABOVE THE EFFECTIVE UNOCCUPIED COOLING SETPOINT, THE SUPPLY FAN SHALL START AND THE ECONOMIZER DAMPER SHALL OPEN AS NECESSARY TO COOL THE SPACE. THE DAMPER SHALL REMAIN OPEN UNTIL THE SPACE IS SATISFIED OR THE PRECEDING CONDITIONS ARE NO LONGER TRUE. IF ANY OF THE PRECEDING CONDITIONS ARE NOT TRUE, THE ECONOMIZER SHALL CLOSE COMPLETELY.
  - HEATING STAGES ARE CONTROLLED BY THE CARRIER RTU OPEN HEATING CONTROL PID LOOP AND HEATING STAGES CAPACITY ALGORITHM. THEY CALCULATE THE REQUIRED NUMBER OF STAGES NEEDED TO SATISFY THE SPACE TEMPERATURE TO THE EFFECTIVE OCCUPIED HEATING SETPOINT IN OCCUPIED MODE AND THE EFFECTIVE UNOCCUPIED HEATING SETPOINT IN UNOCCUPIED MODE. THE FOLLOWING CONDITIONS MUST BE TRUE FOR THE HEATING ALGORITHM TO OPERATE:
    - OUTDOOR AIR TEMPERATURE IS LESS THAN THE HEATING LOCKOUT TEMPERATURE SETPOINT.
    - THE SUPPLY FAN HAS BEEN ON FOR AT LEAST 30 SECONDS.
    - THE UNIT HAS A VALID SUPPLY AIR TEMPERATURE INPUT.
    - THE UNIT HAS A VALID SPACE TEMPERATURE INPUT.
    - HEATING MODE IS NOT ACTIVE AND THE TIME GUARD BETWEEN MODES HAS EXPIRED.
    - COOLING MODE AND ECONOMIZER ARE NOT ACTIVE AND THE TIME GUARD BETWEEN MODES HAS EXPIRED.
  - WHEN THE HEATING ALGORITHM PRECONDITIONS ARE MET, THE HEAT IS ENERGIZED IN STAGES, AS APPLICABLE. ANTI-RECYCLE TIMERS ARE EMPLOYED TO PROTECT THE EQUIPMENT FROM SHORT-CYCLING. THERE ARE FIXED ONE-MINUTE MINIMUM ON AND OFF TIMES FOR EACH HEATING OUTPUT.
  - DURING HEATING OPERATION, THE RTU OPEN CONTROL LOGIC MAY REDUCE THE NUMBER OF ACTIVE STAGES IF THE SUPPLY AIR TEMPERATURE EXCEEDS THE MAXIMUM HEATING SAT SETPOINT. A HEAT STAGE TURNED OFF IN THIS FASHION MAY BE STARTED AGAIN AFTER THE NORMAL, TIME-GUARD PERIOD HAS EXPIRED IF THE SUPPLY AIR TEMPERATURE HAS DECREASED BELOW THE MAXIMUM HEATING SAT SETPOINT.
  - THE SYSTEM SHALL UTILIZE HUMIDITY SENSORS IN THE SALES AREA, STOCKROOM, AND EMPLOYEE LOUNGE. DEHUMIDIFICATION IS CONTROLLED BY THE HUMID-MIDRAMP ADAPTIVE DEHUMIDIFICATION SYSTEM. DURING OCCUPIED AND UNOCCUPIED MODE, THE FOLLOWING CONDITIONS MUST BE TRUE FOR THE HUMID-MIDRAMP SYSTEM TO OPERATE:
    - OUTDOOR AIR TEMPERATURE IS LESS THAN THE SPACE TEMPERATURE.
    - THE INDOOR FAN HAS BEEN ON FOR AT LEAST 30 SECONDS.
    - THE UNIT HAS A VALID SUPPLY AIR TEMPERATURE INPUT.
    - THE UNIT HAS A VALID SPACE TEMPERATURE INPUT.
    - HEAT MODE IS NOT ACTIVE AND THE TIME GUARD BETWEEN MODES HAS EXPIRED.
  - IF ALL OF THE PRECEDING CONDITIONS ARE TRUE AND ANY ZONE RISES ABOVE THE DEHUMIDIFICATION SETPOINT, THE RTU OPEN SHALL ENABLE DEHUMIDIFICATION MODE AND ENERGIZE THE HUMID-MIDRAMP OUTPUT FOR ALL UNITS SERVING THAT ZONE. DEHUMIDIFICATION MODE SHALL CONTINUE UNTIL THE SPACE RELATIVE HUMIDITY DROPS BELOW THE DEHUMIDIFICATION SETPOINT BY A 5% FIXED HYSTERESIS.
  - THE SYSTEM SHALL UTILIZE A CO2 SENSOR FOR THE SALES AREA, FITTING ROOM, STOCKROOM AND EACH OFFICE (HIGHEST READING WILL BE TAKEN FOR OFFICE DCV CONTROL). DCV IS CONTROLLED BY THE INDOOR AIR CO2 ALGORITHM. THE ALGORITHM CALCULATES THE CO2 MINIMUM DAMPER POSITION USING A PID LOOP. THE CALCULATED CO2 MINIMUM DAMPER POSITION IS THEN COMPARED AGAINST THE DCV MINIMUM POSITION AND THE GREATER VALUE BECOMES THE FINAL MINIMUM DAMPER POSITION. DURING OCCUPIED HOURS, THE INDOOR AIR CO2 SEQUENCE SHALL BE ENABLED. THE FOLLOWING CONDITIONS MUST BE TRUE FOR THE INDOOR AIR CO2 SEQUENCE TO OPERATE:
    - THE SUPPLY FAN HAS BEEN ON FOR AT LEAST 30 SECONDS.
    - THE UNIT HAS A VALID CO2 SENSOR READING.
  - IF ALL OF THE PRECEDING CONDITIONS ARE TRUE, THE FACTORY OUTDOOR AIR DAMPER SHALL MODULATE BETWEEN ITS MINIMUM (ABS. MIN. OIA) AND MAXIMUM (MIN. OIA CFM) POSITION (TBD BY TAB CONTRACTOR). THE SYSTEM SHALL UTILIZE THE DAMPER OPEN WHEN CO2 RISES TO 100 PPM (ADJUSTABLE) ABOVE AMBIENT CO2 LEVEL (400 PPM) AND SHALL CONTINUE TO OPEN TO ITS MAXIMUM POSITION AS CO2 LEVEL RISES TO AND ABOVE THE DCV HIGH ALARM SETPOINT. AS THE CO2 LEVEL DROPS, THE DAMPER SHALL START TO MODULATE TO ITS MINIMUM POSITION. DURING UNOCCUPIED HOURS, THE INDOOR AIR CO2 SEQUENCE SHALL BE DISABLED.
  - DEVICE SHALL BE FACTORY MOUNTED AND PRE-WIRED FOR OPERATION SUBJECT TO THE RTU OPEN CONTROLLER.

## OUTSIDE AIR REQUIREMENTS, IMC-2015 (IP)

SYSTEM DESIGNATION	SYSTEM TAB NAME OR LIST SINGLE	SINGLE-ZONE SYSTEMS ONLY			MULTI-ZONE SYSTEMS ONLY			FLOOR AREA SERVED BY SYSTEM (SF)	SYSTEM AVERAGED AREA-BASED OUTDOOR AIR RATE (CFMSF)	SYSTEM POPULATION (PEOPLE)	SYSTEM AVERAGED PEOPLE-BASED OUTDOOR AIR RATE (CFMP)	REQUIRED OIA INTAKE FLOW (VPM)	REQUIRED DCV OIA INTAKE FLOW (VPM)	DESIGN OIA INTAKE FLOW (VPM)	NOTES	
		SINGLE-ZONE SYSTEM ASSOCIATED VENTILATION ZONE	SINGLE ZONE WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS [EA]	SYSTEM VENTILATION EFFICIENCY [EV]	REQUIRED OIA INTAKE FLOW (VPM)	REQUIRED DCV OIA INTAKE FLOW (VPM)	DESIGN OIA INTAKE FLOW (VPM)									
RTU-1	MULTIZONE (RTU-1)	-	-	0.77	1,229	0.050	14	5.00	172	81	190/100					
RTU-2	MULTIZONE (RTU-2)	-	-	0.89	3,724	0.112	0.00001	0.00	468	N/A	575/575					
RTU-3,4,5,6	MULTIZONE (RTU-3,4,5,6)	-	-	0.89	9,372	0.118	137.355	7.50	2,405	1,244	2520/1320					
TOTALS											3,045	1,325	3285/1995			

- GENERAL NOTES:
- VENTILATION CALCULATIONS BASED ON IMC-2015.
  - SYSTEM POPULATIONS BASED ON MAX SEATING AND/OR CODE MAXIMUM VALUES.
  - SINGLE ZONE SYSTEMS (V<sub>av</sub> = V<sub>oz</sub>): SYSTEM VENTILATION EFFICIENCY CALCULATION IS NOT REQUIRED FOR SINGLE ZONE SYSTEMS. WORST CASE AIR DISTRIBUTION EFFECTIVENESS BETWEEN HEATING AND COOLING MODES OF OPERATION IS SHOWN IN TABLE.
  - 100% OIA SYSTEMS (V<sub>av</sub> = V<sub>all</sub> = 200% V<sub>oz</sub>): WHEN ONE AIR HANDLER SUPPLIES ONLY OUTDOOR AIR TO ONE OR MORE ZONES, EACH ZONE IS INDIVIDUALLY CALCULATED WITH ITS WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS (HEATING/COOLING).
  - MULTI-ZONE RECIRCULATING SYSTEMS: CALCULATOR USED TO DETERMINE VENTILATION AIRFLOW IN COMPLIANCE WITH IMC-2015 VRP AND ASHRAE 62-1.2015 APPENDIX A. VENTILATION RATE SHOWN IS ACTUAL CALCULATED WITH CORRECTION FACTORS INCLUDED. EACH ZONE IS CALCULATED WITH ITS WORST CASE ZONE AIR DISTRIBUTION EFFECTIVENESS (HEATING/COOLING) AS PART OF CALCULATIONS TO FIND V<sub>av</sub>.

## ROOFTOP UNIT SCHEDULE (DX COOLING, NATURAL GAS HEAT)

MARK	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN			COOLING COIL				HEAT EXCHANGER				ELECTRICAL			WEIGHT (LBS)	NOTES										
				CFM	ESP (IN)	BHP	TH (MBH)	SH (MBH)	EAT (°F DB)	REFR TYPE	MIN NO STAGES	MIN OUT	NOM INPUT (MBH)	MIN EFF (%)	EAT (°F DB)	LAT (°F DB)	MIN STAGES			MIN OIA CFM	ABS MIN OIA	V/PH	MCA	MOC/P					
RTU-1	CARRIER	48HCDDM4	3	1,200	0.8	0.46	34.9	23.2	76.3	65.5	56.5	52.0	R-410A	16	2	37.0	72	81	58.3	90	2	190	100	480/3	10	15	812	A-M, P-V, Y, Z	
RTU-2	CARRIER	48HCCE08	7.5	2,500	0.8	1.04	89.7	58.7	77.3	65.7	54.4	53.0	R-410A	12	13.8	2	92.1	125	82	53.7	90	2	575	575	480/3	19	25	1338	A-M, O, X
RTU-3	CARRIER	48HCCE08	7.5	2,500	0.8	1.24	91.5	44.0	76.8	69.5	53.6	52.3	R-410A	12	13.8	2	114.3	180	82	47.7	90	2	840	440	480/3	19	25	1444	A-M, P, X
RTU-4	CARRIER	48HCCE08	7.5	2,500	0.8	1.24	91.5	44.0	76.8	69.5	53.6	52.3	R-410A	12	13.8	2	114.3	180	82	47.7	90	2	840	440	480/3	19	25	1444	A-M, P, X
RTU-5	CARRIER	48HCCE08	7.5	2,500	0.8	1.24	91.5	44.0	76.8	69.5	53.6	52.3	R-410A	12	13.8	2	114.3	180	82	47.7	90	2	840	440	480/3	19	25	1444	A-M, P, X
RTU-6	CARRIER	48GCDDM4	3	1,200	0.8	0.38	23.0	23.0	72.0	60.0	54.3	R-410A	-	16	2	32.4	72	81	70.0	95	2	0	0	480/3	10	15	855	A-M, P-U, Y, Z	

MODEL NUMBERS AND NOMINAL TONS LISTED SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER. MODEL NUMBERS, OR NOMINAL TONS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

- NOTES:
- REFER TO ROOFTOP UNIT CONTROL MATRIX FOR CONTROL FEATURES, MODULES, AND ACCESSORIES THAT SHALL BE PROVIDED WITH THE EQUIPMENT.
  - EQUIPMENT SIZED FOR 95°F AMBIENT TEMPERATURE.
  - PROVIDE 2 INCH MERV 13, EFFICIENT PLEATED THROWAWAY AIR FILTERS.
  - PROVIDE FACTORY MOUNTED DISCONNECT INSTALLED ON SERVICE SIDE OF UNIT.
  - STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT.
  - PROVIDE FACTORY MOUNTED VARIABLE FREQUENCY DRIVE OR 2-SPEED MOTOR TO FACILITATE STAGED FAN SPEED CONTROL.
  - PROVIDE SHAFT GROUNDING SYSTEM ON MOTOR. REFER TO MOTOR SPECIFICATION FOR ADDITIONAL INFORMATION.
  - PROVIDE SINGLE POINT POWER CONNECTION.
  - COORDINATE SIZE OF CONDUCTOR TERMINATION LUGS WITH CONDUCTOR SIZES SHOWN ON ELECTRICAL DRAWINGS.
  - PROVIDE 125 VAC, 20 AMP DUPLEX CONVENIENCE RECEPTACLE MOUNTED TO UNIT READY FOR FIELD WIRING WITH A COVER UL LISTED FOR WET AND DAMPER LOCATIONS WHEN IN USE.
  - SPECIFIED FAN ESP ACCOUNTS FOR DUCT LOSSES EXTERNAL TO UNIT.
  - MOTOR MOTOR HORSEPOWER TO OVERCOME INTERNAL UNIT STATIC PRESSURE DROP PLUS SPECIFIED EXTERNAL STATIC PRESSURE DROP. NOMINAL MOTOR HP SHALL BE NO LARGER THAN THE FIRST AVAILABLE NOMINAL MOTOR SIZE GREATER THAN THE REQUIRED BHP.
  - PROVIDE INSULATED ROOF CURB WITH MINIMUM HEIGHT REQUIRED TO MAINTAIN BOTTOM OF EQUIPMENT A MINIMUM OF 8 INCHES ABOVE FINISHED ROOF SURFACE. PROVIDE SLOPED CURB IF NEEDED TO MATCH ROOF SLOPE.
  - COORDINATE WITH ROOF INSULATION THICKNESS AND ROOF TAPE AT INSTALLED LOCATION. COORDINATE CURB TYPE WITH DRAWINGS.
  - PROVIDE INSULATED ROOF CURB ADAPTER WITH MINIMUM HEIGHT REQUIRED TO MAINTAIN BOTTOM OF EQUIPMENT A MINIMUM OF 8 INCHES ABOVE FINISHED ROOF SURFACE. PROVIDE SLOPED CURB IF NEEDED TO MATCH ROOF SLOPE.
  - COORDINATE WITH ROOF INSULATION THICKNESS AND ROOF TAPE AT INSTALLED LOCATION. COORDINATE CURB TYPE WITH DRAWINGS.
  - SCHEDULED WEIGHT IS THE MAXIMUM ALLOWABLE OPERATING WEIGHT OF THE EQUIPMENT AND CURB ADAPTER.
  - COOLING COIL LAT IS LEAVING AIR TEMPERATURE OF COIL.
  - PROVIDE GUARDS TO PROTECT CONDENSER COIL FROM HAIL OR OTHER DAMAGE.
  - PROVIDE HEATER TO MEET OR EXCEED SCHEDULED MINIMUM MBH OUTPUT. NOMINAL INPUT IS BASED ON LISTED MANUFACTURER'S STANDARD PRODUCT. COORDINATE EQUIPMENT GAS LOAD WITH PLUMBING CONTRACTOR IF DIFFERENT FROM THAT SCHEDULED. MEET MINIMUM EFFICIENCY SCHEDULED.
  - SELECT EQUIPMENT FOR OPERATION OF 282 FEET ABOVE SEA LEVEL