PROJECT DESIGN CONDITIONS:

ASHRAE WEATHER STATION: MANCHESTER, NH

SEASON	VALUE	UNITS	DESCRIPTION	SOURCE
WINTER	-5.8	°F	OA TEMP	ASHRAE EXTREME ANNUAL DESIGN CONDITIONS
	72.0	°F	INDOOR TEMP	2009 IECC SETION 302.1
SUMMER	91.2	°F	OA DRY-BULB TEMP	2013 ASHRAE FUNDAMENTALS, CHAPTER 14, COOLING 0.4%
	72.1	°F	OA WET-BULB TEMP	2013 ASHRAE FUNDAMENTALS, CHAPTER 14, COOLING 0.4%
	75.0	°F	INDOOR TEMP	2009 IECC SETION 302.1

PACKAGED ELECTRIC ROOF TOP UNIT (RTU)

EQUIPMENT DATA				AIRFLOW DATA				COOLING PERFORMANCE							HEATING PERFORMANCE						ELECTRICAL DATA					MISCELLANEOUS
MARK	MAKE	MODEL	NOMINAL COOLING (TONS)	SUPPLY AIRFLOW (CFM)	ESP (IN WC)	MIN OA (CFM) [UNOCCUPIED]	MAX OA (CFM) [MAX OCCUP]	TOTAL (MBH)	SENSIBLE (MBH)	EFFICIENCY (SEER)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL @ 47° (MBH)	COP @ 47°	TOTAL @ 17° (MBH)	COP @ 17°	EDB (°F)	LDB (°F)	MOTOR HP	BHP	VOLT/PHASE	MCA	MOCP	NOTES:
RTU-5	CARRIER	50VR-A24---3	2	800	0.3	75	75	21.6	16.9	15.0	76.5	63.4	57.0	54.3	23	3.8	11	2.2	64.7	91.5	1/2	0.17	208-230/1	19.3	30	1, 2, 3

NOTES:
1. PROVIDE LOW AMBIENT KIT, CRANKCASE HEATER, FILTER RACK, AND TIME GUARD RELAY.
2. PROVIDE MICROMETL ECONOMIZER DAMPER/WEATHERHOOD. PROVIDE CAMBRIDGEPORT 24" TALL ROOF CURB WITH VIBRATION ISOLATION.
3. NON-FUSED DISCONNECT TO BE PROVIDED BY E.C. ECONOMIZER SHALL BE CONTROLLED BY BMS IN LIEU OF FACTORY CONTROLLER. PROVIDE SUITABLE MODULATING BELIMO ACTUATOR (OR EQUIV), OUTDOOR ENTHALPY SENSOR AND LAT TEMP SENSOR AS NEEDED.

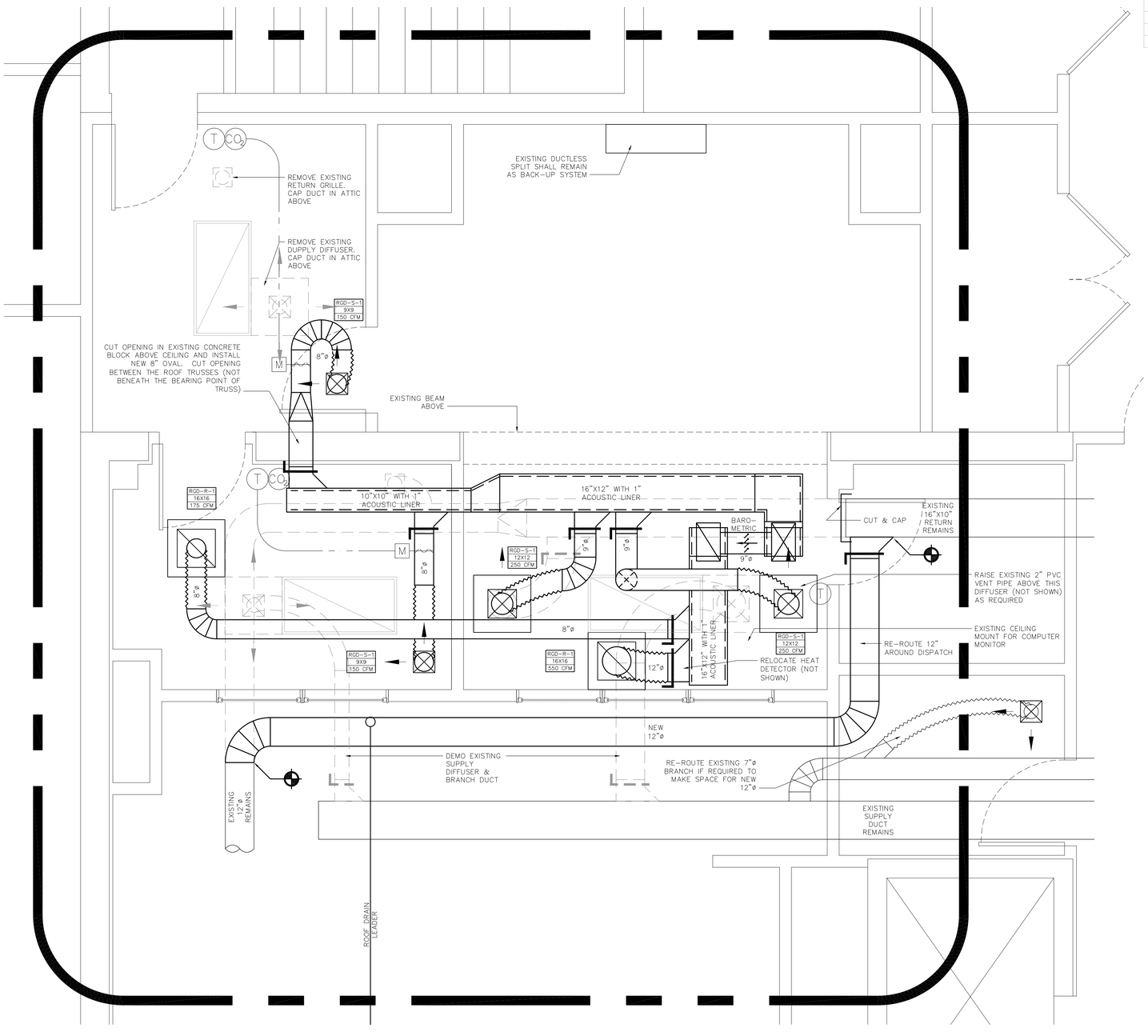
		IMC Requirements								Supply					
	Occupancy	Rp		Pz	Rp*Pz	Ra	Az	Ra*Az	Vbz		Voz	Vpz		Return	Exhaust	
Room Name	Classification	cfm/p	# Occ	cfm	cfm/sf	Ft^2	cfm	cfm	Ez	cfm	cfm	Zp	cfm	cfm	Notes
Dispatch	Office Spaces	5.0	2	10	0.06	300	18	28	0.8	35	500	0.07	550		
Office 1	Office Spaces	5.0	1	5	0.06	100	6	11	0.8	14	150	0.09	175		
Office 2	Office Spaces	5.0	1	5	0.06	100	6	11	0.8	14	150	0.09			
	AC-1 Total		**4**	**20**		**500**	**30**		**0.8**	**63**	**800**	**0.09**	**725**		
Actual Total People At Any One Time			**4**		**IMC Requirements**					**Actual**					
					Ev	**D**	**Vou**	**Vot**		**Min OA**					
					0.9	1.00	63	69		**75**					

DIFFUSER AND GRILLE SCHEDULE

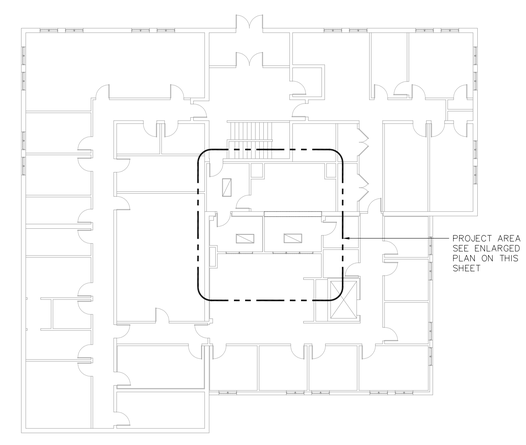
MARK / SIZE / CFM

MARK	MAKE	MODEL	DAMPER	PATTERN	NECK SIZE	TILE SIZE	MATERIAL	DESCRIPTION	NOTES
RGD-S-1	NAILOR	6200	NONE	SEE DRAWINGS	SEE DRAWINGS	24X24	ALUMINUM	SUPPLY	1, 2
RGD-R-1	NAILOR	51FB45	NONE	45° FIXED	SEE DRAWINGS	24X24	ALUMINUM	FILTER GRILLE	1

NOTES:
1. RGD MOUNTED DAMPERS ARE TO BE USED FOR FINAL TRIMMING OF AIRFLOW ONLY. PRIMARY VOLUME DAMPERS ARE TO BE INSTALLED IN EACH BRANCH DUCT FOR BALANCING
2. PROVIDE 24X24 LAY-IN STYLE PANELS FOR ALL RGD INSTALLED IN ACOUSTIC TILE CEILINGS WHERE POSSIBLE. COORDINATE FINAL CEILING DESIGN WITH GENERAL CONTRACTOR



2 / M-1 ENLARGED PLAN AT DISPATCH
1/2"=1'-0"



1 / M-1 FIRST FLOOR KEY PLAN
1/16"=1'-0"

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
PROFESSIONAL ENGINEER

DESIGN DAY MECHANICALS INC

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:

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ADDRESS: 65 OLD CENTER RD, DEERFIELD, NH 03037

PROJECT:
DERRY POLICE DEPARTMENT DISPATCH
1 MUNICIPAL DRIVE
DERRY, NH

FOR:
THE TOWN OF DERRY
DERRY, NH

HVAC PLAN AT DISPATCH

REVISIONS:

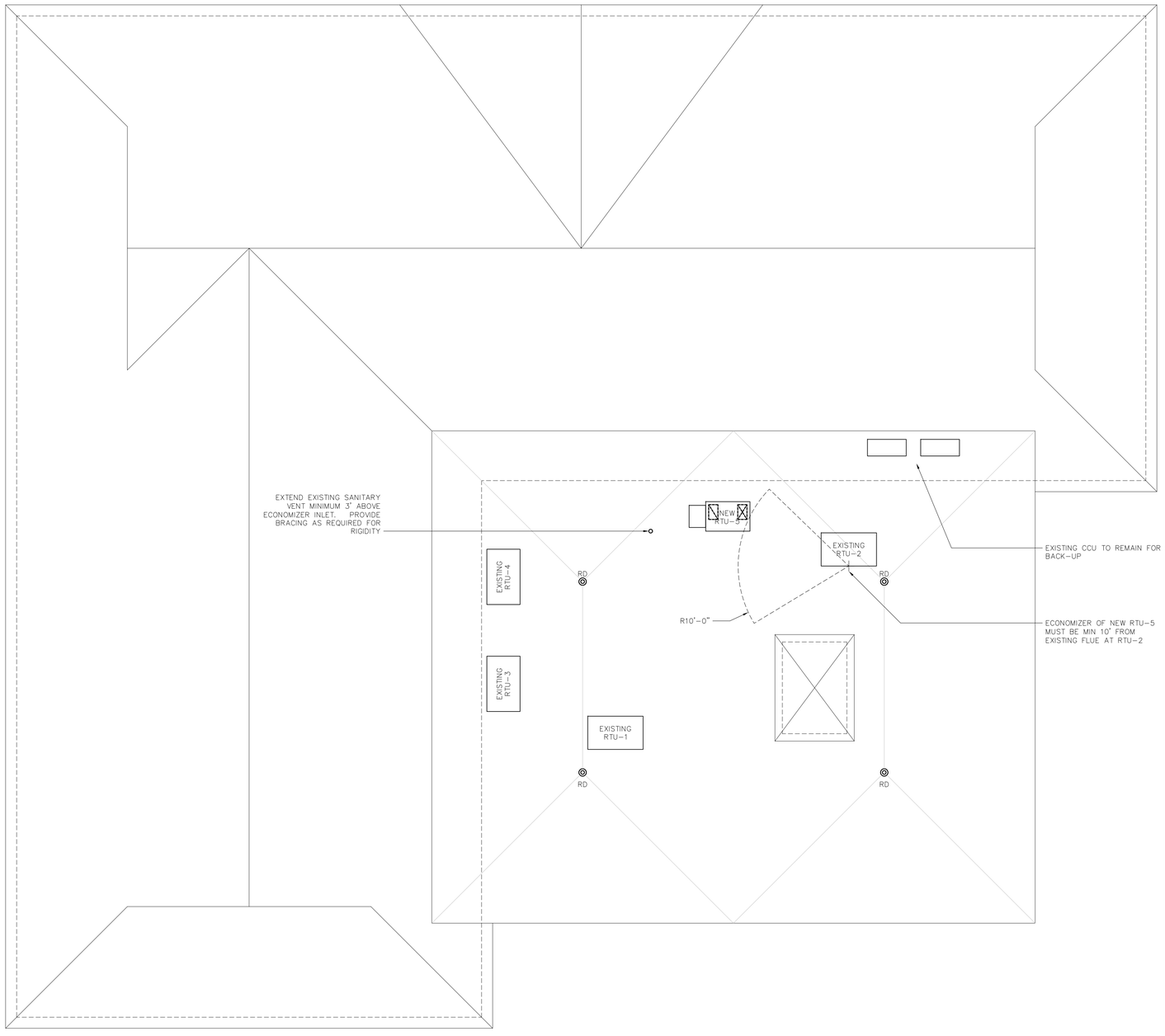
DESIGNED BY: DCM
DRAWN BY: DCM
CHECKED BY: AWA

DDM JOB #: 16008
SCALE: AS NOTED

DATE: 3/14/2016

M-1

SHEET 1 OF 2



1 / M-2 ROOF PLAN

3/16"=1'-0"

SECTION 15500 – HVAC SPECIFICATIONS

I) GENERAL

A) WORK INCLUDED:

1) THESE SPECIFICATIONS INCLUDE GENERAL REQUIREMENTS FOR ALL WORK REPRESENTED ON THESE DRAWINGS. NOT ALL SYSTEMS OR SYSTEM COMPONENTS DESCRIBED IN THESE SPECIFICATIONS ARE NECESSARILY INCLUDED AS A PART OF THIS PROJECT.

2) THE HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) CONTRACTOR SHALL HEREAFTER BE DESCRIBED AS "THE CONTRACTOR" IN THIS HVAC SPECIFICATION. THE CONTRACTOR SHALL PROVIDE, INSTALL, PIPE, DUCT, AND WIRE, AS REQUIRED, HVAC SYSTEMS AS DESCRIBED BELOW, AND SHOWN OR DESCRIBED ON THESE PLANS AND SPECIFICATIONS.

B) QUALITY ASSURANCE:

1) THE INTERNATIONAL MECHANICAL CODE (IMC) 2009, AND THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2009 ARE THE GOVERNING CODES FOR ALL HVAC WORK. THE CODES AND STANDARDS REFERENCED IN THE MECHANICAL CODE SHALL BE CONSIDERED A PART OF THE REQUIREMENTS OF CODE TO THE PRESCRIBED EXTENT OF EACH SUCH REFERENCE. WHERE DIFFERENCES OCCUR BETWEEN PROVISIONS OF THE CODE AND THE REFERENCED STANDARDS, THE PROVISIONS OF THE CODE SHALL APPLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE REQUIREMENTS OF ALL CODES AS THEY HAVE BEEN ADOPTED BY THE STATE OF NEW HAMPSHIRE AND THE LOCAL JURISDICTION.

2) EXCEPT AS SPECIFICALLY DESCRIBED OTHERWISE IN THESE SPECIFICATIONS, ALL COMPONENTS ALLOWED WITHIN THE ABOVE REFERENCED CODES SHALL BE ALLOWED AS A PART OF THE WORK.

3) THE WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS SHALL CONFORM TO ALL ORDINANCES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO, ALL APPLICABLE REGULATIONS OF THE CITY, COUNTY, AND STATE.

4) THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THE CONTRACT, VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

5) DURING THE PROGRESS OF THE WORK, THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE HVAC INSTALLATION FROM THE LAYOUT AND MATERIALS CONTAINED IN THE APPROVED DRAWINGS AND SPECIFICATIONS.

6) DRAWINGS AND CATALOG CUTS, SHOWING ALL HVAC EQUIPMENT AND SYSTEM COMPONENTS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. FIELD MEASURE AND COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS AND ALL OTHER TRADES THE PROPOSED LOCATIONS FOR NEW EQUIPMENT AND COMPONENTS BEFORE PRODUCING SUBMITTALS. NO ITEMS SHALL BE PURCHASED OR ORDERED BEFORE APPROVAL IS GIVEN BY THE ENGINEER IN WRITING.

C) RELATED DOCUMENTS:

1) THE GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTAL GENERAL CONDITIONS OF THE CONTRACT AND DIVISION 1 SPECIFICATION SECTIONS PROVIDED BY THE ARCHITECT, AND ALL OTHER DRAWINGS AND SPECIFICATIONS PROVIDED AS A PART OF THIS PROJECT, APPLY TO THIS DIVISION 15 AND TO ALL CONTRACTORS, SUBCONTRACTORS, OR OTHER PERSONS SUPPLYING MATERIALS AND/OR LABOR, ENTERING INTO THE PROJECT SITE AND/OR PREMISES, DIRECTLY OR INDIRECTLY.

2) THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COMPLEMENTARY. A PARTICULAR SECTION, PARAGRAPH OR HEADING IN A DIVISION MAY NOT DESCRIBE EACH AND EVERY DETAIL CONCERNING WORK TO BE DONE AND MATERIALS TO BE FURNISHED. THE DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL OF THE WORK REQUIRED OR ALL CONSTRUCTION DETAILS. DIMENSIONS ARE SHOWN FOR CRITICAL AREAS ONLY AS AN AID TO THE CONTRACTOR; ALL DIMENSIONS AND ACTUAL PLACEMENTS ARE TO BE VERIFIED IN THE FIELD. IT IS TO BE UNDERSTOOD THAT THE BEST TRADE PRACTICES OF THE DIVISION WILL PREVAIL.

3) ALL TRADE SUBCONTRACTORS ARE TO NOTE THAT THE ORGANIZATION OF SPECIFICATIONS INTO DIVISIONS, AND LIKEWISE THE ARRANGEMENT OF THE DRAWINGS, IS SET UP FOR THE CONVENIENCE OF UNDERSTANDING THE SCOPE OF THE WORK ONLY. THIS STRUCTURING SHALL NOT CONTROL THE GENERAL CONTRACTOR IN DIVIDING THE WORK AMONG TRADE SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT OF THE WORK TO BE PERFORMED BY ANY TRADE. REFER TO GENERAL CONDITIONS.

II) PRODUCTS

A) GENERAL MECHANICAL MATERIALS:

1) FIRESTOPPING/FIRE-RESISTANT SEALANT: WHERE REQUIRED, PROVIDE A FIRESTOP SYSTEM APPROPRIATE FOR THE ASSEMBLY PENETRATED AND THE PENETRATING ELEMENT. USE ONLY FIRESTOP PRODUCTS THAT HAVE BEEN UL 1479 OR ASTM E 814 TESTED FOR SPECIFIC FIRE-RATED CONDITIONS CONFORMING TO CONSTRUCTION ASSEMBLY TYPE, PENETRATING ITEM TYPE, ANNULAR SPACE REQUIREMENT AND FIRE-RATING INVOLVED FOR EACH SEPARATE INSTANCE. SUBMIT MANUFACTUER'S SPECIFIC DETAIL FOR EACH TYPE OF PENETRATION.

2) ACCESS DOORS: WHERE REQUIRED FOR PROPER SERVICE AND MAINTENANCE OF ALL MECHANICAL COMPONENTS, PROVIDE STEEL ACCESS DOORS AND FRAMES, FACTORY-FABRICATED AND ASSEMBLED UNITS, COMPLETE WITH ATTACHMENT DEVICES AND FASTENERS SUITABLE FOR THE SERVICE.

B) ELECTRICAL REQUIREMENTS OF MECHANICAL WORK:

1) BASIC ELECTRICAL COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO ALL REQUIRED STARTERS, DISCONNECT SWITCHES, CONTROL DEVICES, AND MOTORS. IT INCLUDES MOTORS THAT ARE FACTORY-INSTALLED AS PART OF EQUIPMENT AND APPLIANCES AS WELL AS FIELD-INSTALLED MOTORS.

2) STARTERS AND DISCONNECTS: WHERE AVAILABLE, PROVIDE FACTORY MOUNTED DISCONNECTS AND STARTERS, OR, WHEN FACTORY MOUNTED STARTERS AND DISCONNECTS ARE NOT AVAILABLE PROVIDE COMBINATION STARTERS AND DISCONNECT SWITCHES, OR, WHERE COMBINATION STARTERS AND DISCONNECT SWITCHES ARE NOT SUITABLE OR AVAILABLE, PROVIDE SEPARATE STARTERS AND DISCONNECTS FOR ALL HVAC EQUIPMENT, AS REQUIRED FOR PROPER INSTALLATION AND OPERATION OF EQUIPMENT.

C) VIBRATION CONTROL AND SEISMIC RESTRAINTS:

1) FIBERGLASS PADS AND SHAPES, NEOPRENE PADS, VIBRATION ISOLATION SPRINGS, PAD-TYPE ISOLATORS, PLATE-TYPE ISOLATORS, DOUBLE-PLATE-TYPE ISOLATORS, THREADED DOUBLE-PLATE-TYPE ISOLATORS, ALL-DIRECTIONAL ANCHORS, NEOPRENE MOUNTINGS, FREE STANDING SPRING ISOLATORS, HOUSED SPRING ISOLATORS, VERTICALLY-RESTRAINED SPRING ISOLATORS, EARTHQUAKE-RESISTANT SPRING ISOLATORS, SEISMIC SNUBBERS, THRUST RESTRAINTS, EQUIPMENT RAILS, FABRICATED EQUIPMENT BASES, INERTIA BASE FRAMES, ROOF-CURB ISOLATORS, ISOLATION HANGERS, RISER ISOLATORS, FLEXIBLE PIPE CONNECTORS SHALL BE PROVIDED AS REQUIRED AND AS SUITABLE FOR USE AND SERVICE.

2) WHERE SEISMIC RESTRAINTS ARE REQUIRED, THE CONTRACTOR SHALL PROVIDE CALCULATIONS, DETAILS AND LOCATIONS THAT ARE STAMPED BY A PROFESSIONAL ENGINEER.

D) DUCTWORK:

1) UNLESS OTHERWISE SPECIFIED, ALL RIGID DUCTWORK SHALL BE SHEET METAL MATERIALS AS SPECIFIED IN ASTM A700, WITH GALVANIZED SHEET STEEL: LOCK-FORMING QUALITY, ASTM A527, COATING DESIGNATION G90; MILL PHOSPHATIZED FINISH

2) PRESSURE CLASS AND SEAL CLASS (PER SMACNA):

(a) 1" PRESSURE CLASS, SEAL CLASS C.

3) RECTANGULAR DUCT FABRICATION: FABRICATE RECTANGULAR DUCTS WITH GALVANIZED SHEET STEEL, IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", TABLES 1-3 THROUGH 1-19, INCLUDING THEIR ASSOCIATED DETAILS. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.

4) WHERE DUCT SUPPORTS ARE REQUIRED BETWEEN THE BUILDING STRUCTURAL FRAMING, SUITABLE INTERMEDIATE STEEL FRAMING SHALL BE PROVIDED BY THE CONTRACTOR.

5) JOINT AND SEAM SEALANT: WATER BASED LIQUID RUBBER DUCT SEALANT, OR FLANGED JOINT MASTICS: ONE-PART, ACID- CURING, SILICONE ELASTOMERIC JOINT SEALANTS, COMPLYING WITH ASTM C920, TYPE S, GRADE NS, CLASS 25, USE O.

6) FLEXIBLE DUCT CONNECTORS SHALL BE INSTALLED AT POINTS AS CLOSE AS POSSIBLE TO AIR HANDLERS. THE CONNECTOR SHALL BE AT LEAST FOUR (4") INCHES WIDE, AND FABRICATED SPECIFICALLY FOR USE AS A FLEXIBLE CONNECTOR. ALL CONNECTIONS SHALL BE AIR TIGHT AND MADE SO THE CONNECTOR IS UNDAMAGED WHEN THE JOINT IS REMOVED.

7) FLEXIBLE DUCTS: LIMITED TO 6 FEET MAXIMUM STRAIGHT. DO NOT USE FLEX AS AN ELBOW.

(a) NORMAL DUTY (UP TO 2" PRESSURE CLASS): TRILAMINATE OF ALUMINUM FOIL, FIBERGLASS AND ALUMINZED POLYESTER MECHANICALLY LOCKED WITH A HELIX OF GALVANIZED STEEL. UL 181, CLASS 1. EQUIVALENT TO BUCKLEY FABRI-FLEX TYPE 3 (BARE) OR 3M (INSULATED WITH ALUMINUM JACKET).

8) BELLMOUTH OR 45 DEGREE TAKEOFFS SHALL BE USED FOR DUCT TAKEOFFS TO MINIMIZE PRESSURE DROP.

9) MANUAL VOLUME DAMPERS SHALL BE INSTALLED AT ALL DUCT TAKEOFFS AND AS NEEDED ELSEWHERE TO PROPERLY BALANCE THE SYSTEMS.

E) INSULATION:

1) ALL INSULATION SHALL BE UL APPROVED FOR A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPED RATING OF NOT OVER 50.

2) ALL INSULATION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2009.

3) DUCTWORK: ALL INDOOR SUPPLY AND OUTDOOR AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH FIBERGLASS WITH FSK JACKET WITH AN INSTALLED MINIMUM R-6 INSULATION, SIMILAR TO JOHNS MANVILLE MICROLITE EQ TYPE 75, 2" THICK.

(a) ROOF MOUNTED SUPPLY, RETURN AND EXHAUST AIR DUCTS SHALL BE INSULATED WITH AN INSTALLED MINIMUM R-8 INSULATION, SIMILAR TO JOHNS MANVILLE AP FOIL-FACED CLOSED-CELL POLYISOCYANURATE INSULATION BOARD, 1-1/2" THICK. PITCHED TOP AND COVERED WITH VENTURE TAPE 1579CW-E (VENTURECLAD PLUS) OR SIMILAR HEAVY DUTY (68 LBS PUNCTURE RESISTANCE), EMBOSSED COLD WEATHER WATERPROOF COVERING.

(b) EXCEPTIONS:

(1) REFER TO IECC.

III) EXECUTION

A) THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, EQUIPMENT, MATERIAL, MACHINERY, PLANS, RIGGING, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE MECHANICAL SYSTEM. SMALL DETAILS NOT USUALLY INDICATED ON THE DRAWINGS OR SPECIFIED, BUT WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEM SHALL BE INCLUDED IN THE WORK AND IN THE CONTRACTOR'S ESTIMATE THE SAME AS IF HEREIN SPECIFIED OR SHOWN ON THE DRAWINGS.

B) THE CONTRACTOR SHALL INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THIS INCLUDES CHECKING THE MANUFACTURER'S INSTRUCTIONS TO DETERMINE WHAT TYPE OF GLYCOL SYSTEM MAY BE USED WITHI EQUIPMENT SO AS NOT TO VOID THE WARRANTY OR IMPAIR THE OPERATION OF THE EQUIPMENT. WHERE THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH THE MANUFACTURER'S RECOMMENDATIONS, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING THIS TO THE ATTENTION OF THE ENGINEER.

C) THE HVAC EQUIPMENT MAY NOT BE USED FOR TEMPORARY HEAT DURING CONSTRUCTION. THE HVAC EQUIPMENT SHALL NOT BE STARTED AND TESTED UNTIL ALL CONSTRUCTION ACTIVITY THAT HAS THE POTENTIAL OF CREATING AIR BORNE PARTICULATES THAT COULD BE DRAWN INTO THE HVAC EQUIPMENT AND DUCTWORK SYSTEMS HAS BEEN COMPLETED. IN ADDITION, ALL DUTWORK OPENINGS SHALL BE SEALED UNTIL THE TIME WHEN THE HVAC EQUIPMENT IS TO BE STARTED AND TESTED.

D) DUCTWORK AND FITTINGS SHALL HAVE ENDS COVERED WITH PLASTIC AT ALL TIMES.

E) UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN, OIL AND GREASE (UNLESS FACTORY LUBRICATED) ALL FANS, PUMPS, MOTORS, ALL OTHER RUNNING EQUIPMENT AND APPARATUS AND MAKE CERTAIN THAT ALL SUCH APPARATUS AND MECHANISMS ARE IN PROPER WORKING ORDER AND MADE READY FOR TESTING.

F) REPLACE ALL FILTERS USED DURING CONSTRUCTION.

G) EQUIPMENT SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION BY THE CONTRACTOR.

H) THE CONTRACTOR SHALL INSTRUCT OWNER IN THE PROPER OPERATION OF EQUIPMENT, EXPLAIN THE PROPER OPERATING AND MAINTENANCE PROCEDURES AND SHALL FURNISH THE OWNER WITH ALL INSTRUCTION PAMPHLETS, BOOKS AND OTHER MATERIAL FURNISHED BY THE VARIOUS MANUFACTURERS

I) ALL VIBRATING EQUIPMENT NOT MOUNTED ON THE GROUND FLOOR SHALL BE MOUNTED ON OR SUSPENDED FROM VIBRATION ISOLATORS.

J) EQUIPMENT SHALL BE INSTALLED WITH CLEARANCE FOR PROPER MAINTENANCE. FILTERS, COILS, DRIVES, VALVES, AND CONTROLS SHALL BE ACCESSIBLE FOR SERVICING AND/OR REPLACEMENT.

K) EQUIPMENT SHALL BE COVERED FOR ONE YEAR FROM THE REVIEWING ENGINEER'S DATE OF ACCEPTANCE AND/OR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY, WHICH EVER IS LONGER. THE CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEES OR WARRANTIES.

L) THE CONTRACTOR SHALL PROVIDE FOR BALANCING OF THE WATER AND AIR SYSTEMS TO WITHIN 10 PERCENT OF THE GPM AND CFM VALUES SHOWN ON THE APPROVED HVAC PLANS. BALANCING SHALL BE DONE IN ACCORDANCE WITH STANDARDS ESTABLISHED BY THE AABC OR NEBB USING REPORT SHEETS DEVELOPED BY THE AABC NEBB. SUBMIT REPORTS TO THE ENGINEER.

END OF SECTION 15500

SEQUENCE OF OPERATIONS:

1. RTU BLOWER SHALL OPERATE CONTINUOUSLY

2. COMPRESSOR OF RTU SHALL BE CONTROLLED BY THE MAIN THERMOSTAT LOCATED IN THE MAIN DISPATCH ROOM. HEAT PUMP SHALL CYCLE BETWEEN HEATING AND COOLING MODES AND OPERATE THE COMPRESSOR AS REQUIRED BY THIS THERMOSTAT.

3. ZONE DAMPERS AT OFFICES SHALL BE NORMALLY OPEN, POWERED CLOSED.
3.1. IF A ZONE EXCEEDS IT'S TEMPERATURE SET POINT, THE ASSOCIATED DAMPER SHALL CLOSE (OPERATING AS A "HIGH-LIMIT" OR "LOW-LIMIT" DAMPER, DEPENDING ON THE OPERATING MODE OF THE RTU)
3.2. IF CO2 LEVELS RISE ABOVE 700PPM (ADJUSTABLE) THE DAMPER SHALL OPEN UNTIL CO2 LEVELS FALL BACK BELOW SET POINT

4. PROVIDE ECONOMIZER FUNCTION FOR THE RTU THROUGH THE BUILDING MANAGEMENT SYSTEM (NOT VIA AN ON-BOARD CONTROLLER). PROVIDE APPROPRIATE OUTDOOR ENTHALPY SENSOR, MIXED AIR TEMPERATURE SENSOR AND MODULATING DAMPER.
4.1. WHEN THERE IS CALL FOR COOLING MODULATE LEAVING AIR TEMPERATURE TO 55 DEGREES (ADJUSTABLE) BY CONTROLLING OUTDOOR AIR RATIO
4.2. WHEN COOLING DEMAND HAS BEEN MET, MODULATE THE OUTDOOR AIR DAMPER TO THE MINIMUM POSITION REQUIRED FOR VENTILATION AIR (AS NOTED ON RTU SCHEDULE)

END OF SEQUENCE OF OPERATIONS.

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED
PROFESSIONAL ENGINEER

DESIGN DAY MECHANICALS INC

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

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1 MUNICIPAL DRIVE
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THE TOWN OF DERRY
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ROOF HVAC PLAN

REVISIONS:

DESIGNED BY: DCM
DRAWN BY: DCM
CHECKED BY: AWA

DDM JOB #: 16008
SCALE: AS NOTED

DATE: 3/14/2016

M-2

SHEET 2 OF 2