

	TAG	RTU-1	RTU-2	RTU-3		
	LOCATION SERVING	SALES/STOCK	SALES/STOCK	STOCK		
	MANUFACTURER	CARRIER	CARRIER	CARRIER		
	MODEL	48HCRA06	48HCSD08	48HCRA06		
	TONS (NOMINAL)	5	7.5	5		
COO	LING ENERGY EFFICIENCY	15.2 EER	12 EER	15.2 EER		
	REFRIGERANT TYPE	R-410A	R-410A	R-410A		
	CFM	1,500	2,250	1,500		
SUPPLY FAN DATA	ESP (DUCT ONLY)	0.75	0.75	0.75		
	RPM	1173	759	1173		
	ВНР	0.81	0.86	0.81		
COOLING COIL DATA	MBH	59	90	59		
	EAT (DB/WB)	81.5/67	81.5/67	81.5/67		
	COIL LAT (DB/WB)	54.5/54	54.5/53.5	54.5/54		
	UNIT LAT (DB/WB)	56/55	55/54	56/55		
	STAGES	1	2	1		
HEATING	INPUT (MBH) (MAX)	115	125	115		
DATA	OUTPUT (MBH) (MAX)	93	103	93		
(MIN. REQ'D)	STAGES	2	2	2		
HEATING	INPUT (MBH) (MAX)	150	180	150		
DATA	OUTPUT (MBH) (MAX)	120	150	120		
(ALTERNATE)	STAGES	2	2	2		
FLECTRICAL	MCA / MOCP	30/45	41/50	30/45		
ELECTRICAL DATA	VOLT	208	208	208		
5/11/1	PHASE	3	3	3		
OUTDOOR AIR (CFM)		430	640	430		
	UNIT WEIGHT (LBS)	1,000	1,350	1,000		
	REMARKS / ACCESSORIES	1-19, 21	1-20, 21	1-19, 21		

1 NEW

2 CURB

3 DRIVE (BELT)

4 ENTHALPY ECONOMIZER W/BAROMETRIC RELIEF

5 FDD (ECONOMIZER FAULT DETECTION & DIAGNOSTICS) W/ HONEYWELL 7220 CONTROLLER

6 THROWAWAY FILTERS (2")

7 LOUVERED COIL GUARDS

8 STAINLESS STEEL HEAT EXCHANGER

9 SEPARATELY WIRED CONVENIENCE OUTLET

10 CO2 SENSOR WITH LED DISPLAY AND NO OVERRIDE

11 MEDIUM STATIC

12 TENANT PROVIDED AND FIELD INSTALLED ACCESSORIES: NON-FUSED DISCONNECT SWITCH, GRIDPOINT THERMOSTAT

13 RTU RESPONSIBILITIES:

A) ALL HVAC UNITS ARE OWNER SUPPLIED BY O'REILLY AUTOMOTIVE.

B) MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL HVAC UNITS.

C) MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE FIRST YEAR LABOR WARRANTY ON ALL OWNER

D) MECHANICAL CONTRACTOR MUST CALL "CARRIER CORPORATION S NATIONAL ACCOUNTS" DEPARTMENT FOR CONFIRMATION OF ORDERS ONLY! CUSTOMER SERVICE REP, MARIA CAMPANELLO. PH: 315-432-3946, Maria.campanello@carrier.utc.com or StrategicAccounts2@carrier.utc.com

E) MECHANICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, SHIPPING & RECEIVING OF ALL ARRIER UNITS FROM CARRIER NATIONAL ACCOUNTS. CONTACT CUSTOMER SERVICE REF F) VERIFY ALL RESPONSIBILITIES WITH THE G.C.

14 RETURN SMOKE DETECTOR

15 REMOTE TEST/RESET STATION (#SD-TRM4, CRSDTEST001400)

16 ALARM/STROBE (#6536-G5, CRSDHNSB001A00)

17 CONDENSATE OVERFLOW SWITCH 18 THRU THE BOTTOM ELECTRIC AND GAS

19 THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRING AND CONNECTIONS REQUIRED BETWEEN THE SMOKE DETECTOR AND THE UNIT, AND SHALL PROVIDE SMOKE TESTING TO VERIFY PROPER OPERATION AND UNIT SHUT DOWN PRIOR TO OCCUPANCY.

20 2 SPEED FAN CONTROL

21 PROVIDE ALTERNATE HEAT IF ACCEPTABLE BY LOCAL CODE

DIVISION 23 (HVAC)

JOB SPECIFICATIONS ARE AS FOLLOWS

• CODE - CONTRACTOR TO LOCATE, REVIEW AND COMPLY WITH ALL LOCAL, STATE AND/OR NATIONAL CODES. CONTRACTOR TO SPECIFICALLY LOCATE, REVIEW AND COMPLY WITH ALL LOCAL CODE AMENDMENTS.

 WORKMANSHIP/WARRANTY - CONTRACTOR IS RESPONSIBLE FOR ALL MEANS, MATERIALS, METHODS, TECHNIQUES, SEQUENCES AND DETAILS TO PERFORM ITS WORK. ALL MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL BE GUARANTEED FOR A MINIMUM OF ONE (1) YEAR FROM THE DATE THE EQUIPMENT/SYSTEMS ARE PLACED INTO OPERATION AND ACCEPTED BY THE OWNER. WARRANTY TO INCLUDE LABOR & MATERIALS REQUIRED FOR

• EQUIPMENT MANUFACTURER INSTRUCTIONS - CONTRACTOR TO FOLLOW EQUIPMENT MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE (IOM) MANUALS FOR ALL NEW EQUIPMENT. EQUIPMENT MANUFACTURER'S IOM INSTRUCTIONS SUPERSEDE ANY CONFLICTS WITH THESE

• SCHEDULED EQUIPMENT - CONTRACTOR PRICING TO BE BASED ON THE SCHEDULED EQUIPMENT. SUBSTITUTIONS TO BE SUBMITTED AS DEDUCTS (OR ADDS) TO THE BASE CONTRACT ALONG WITH A DESCRIPTION OF THE DIFFERENCES. ALL SUBSTITUTIONS WILL REQUIRE THE CONTRACTOR TO SUBMIT REVISED DIGITAL SHOP DRAWINGS (IN AUTOCAD FORMAT) FOR REVIEW PRIOR TO INSTALLATION. THE REVISED DRAWINGS TO INCLUDE (BUT ARE NOT LIMITED TO) THE REVISED EQUIPMENT SPECIFICATION SCHEDULES, LOCATIONS, WEIGHTS, DUCTWORK, PIPING, WIRING, BREAKERS (ETC.). THE REVISED DRAWINGS TO SHOW THE ENTIRE SYSTEM AS THE SYSTEM WILL BE INSTALLED BY THE CONTRACTOR.

 SUBMITTALS - CONTRACTOR TO COORDINATE SUBMITTAL SCHEDULE WITH OWNER IMMEDIATELY AFTER ACCEPTANCE OF CONTRACT. AS SOON AS POSSIBLE BEFORE CONSTRUCTION, CONTRACTOR TO EMAIL NEW EQUIPMENT, FIXTURES AND/OR SHOP DRAWING SUBMITTALS (INCLUDING ALL

ACCESSORIES). NO NEW EQUIPMENT, FIXTURES AND/OR SHOP DRAWING ITEMS ARE TO BE INSTALLED UNTIL SUBMITTED INFORMATION IS APPROVED. • SHOP DRAWINGS - BEFORE INSTALLATION, PROVIDE 1/4" SCALE 'SHOP DRAWINGS' FOR COORDINATION AND APPROVAL. 'SHOP DRAWINGS' TO SHOW DIMENSIONS, ELEVATIONS AND LOCATIONS OF ALL EQUIPMENT, DUCTWORK, PIPING, WIRING AND CONDUIT. INSTALLATION TO START ONLY AFTER WRITTEN APPROVAL FROM ENGINEER. ALL CONTRACTOR PROVIDED DRAWINGS TO BE MADE WITH 'AUTO CAD' DRAFTING SOFTWARE AND SUBMITTED IN BOTH AUTOCAD AND ADOBE DIGITAL FORMAT. [NOTE - DESIGN DRAWINGS, NOTES AND/OR ADDENDUMS ARE NOT TO BE COPIED OR REPRODUCED IN ANY WAY FOR USE AS CONTRACTOR SUBMITTED DRAWINGS.] PROVIDE (4) PAPER HARD COPIES OF SHOP DRAWINGS.

 AS BUILT DRAWINGS - UPON COMPLETION OF THE INSTALLATION WORK, PROVIDE 'AS BUILT' CHANGES CLEARLY SHOWING THE FINAL DIMENSIONS, ELEVATIONS AND LOCATIONS OF ALL EQUIPMENT, DUCTWORK, PIPING, WIRING AND CONDUIT. ALL AS BUILT DRAWING CHANGES TO BE MADE WITH 'AUTO CAD' DRAFTING SOFTWARE AND SUBMITTED IN BOTH AUTOCAD AND ADOBE DIGITAL FORMAT. [NOTE - DESIGN DRAWINGS, NOTES AND/OR ADDENDUMS ARE NOT TO BE COPIED OR REPRODUCED IN ANY WAY FOR USE AS CONTRACTOR SUBMITTED DRAWINGS.]

 POST CONSTRUCTION DOCUMENTS - CONTRACTOR TO EMAIL A MICROSOFT WINDOWS FORMAT FOLDER INCLUDING ALL REQUIRED PROJECT CLOSE OUT DOCUMENTS. THE WINDOWS FORMAT FOLDER TO INCLUDE SUB-FOLDERS AND TO BE LABELLED AS PER BELOW. [ALSO PROVIDE (3) EXACT PRINTED COPIES IN SEPARATE HARD BINDERS.]

o TRADE NAME 1. WARRANTY - WARRANTY LETTER INCLUDING THE AGREED UPON START DATE

2. EQUIPMENT - COMPLETE LIST OF MODEL NUMBERS AND SERIAL NUMBERS FOR EACH PIECE OF EQUIPMENT

3. IOM - INSTALLATION, OPERATION AND/OR MAINTENANCE (IOM) MANUALS. INCLUDE PARTS LIST FOR EACH PIECE OF EQUIPMENT

4. VENDERS LIST - LIST OF CONTACT INFORMATION INCLUDING CONTACT NAME, PHONE NUMBER AND EMAIL ADDRESS FOR EQUIPMENT.

5. AS BUILT DRAWING - AS BUILT DRAWING INCLUDING FINAL LOCATION FOR EACH PIECE OF EQUIPMENT 6. TEST & BALANCE REPORT - REPORT OF ALL FINAL TESTED AND BALANCED AIR AND WATER SYSTEMS. SEE DIVISION 23 NOTES.

 ACCESS DOORS - CONTRACTOR TO FURNISH AND INSTALL ACCESS DOORS AS REQUIRED. EACH TRADE TO COORDINATE WITH CARPENTRY CONTRACTOR THE LOCATION OF ACCESS DOORS IN ALL CEILINGS, SOFFITS AND WALLS FOR ACCESS TO EQUIPMENT, VALVES, DAMPERS, FIRE DAMPERS, CLEAN OUTS, SWITCHES, CONTROLS, ETC.

 STRUCTURE PROTECTION - THE BUILDING OR STRUCTURE SHALL NOT BE WEAKENED BY THE INSTALLATION OF ANY NEW SYSTEMS. WHERE FLOORS, WALLS, CEILINGS OR ANY OTHER PORTION OF THE BUILDING OR STRUCTURE ARE REQUIRED TO BE ALTERED OR REPLACED IN THE PROCESS OF INSTALLING OR REPAIRING ANY SYSTEM, THE BUILDING OR STRUCTURE SHALL BE LEFT IN A SAFE STRUCTURAL CONDITION IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR NATIONAL CODES

• FIRE RESISTANT ASSEMBLIES - PENETRATIONS OF WALL/FLOOR/CEILING ASSEMBLIES AND ASSEMBLIES REQUIRED TO HAVE A FIRE-RESISTANCE RATING SHALL BE PROTECTED IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR NATIONAL CODES.

 ACCESSIBILITY - MANUAL ACCESSIBLE ITEMS IN OCCUPIED SPACES (SUCH AS CONTROLS, THERMOSTATS, SWITCHES AND ELECTRICAL OUTLETS) TO BE LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" PER THE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. VERIFY LOCAL

ACCESSIBILITY CODE REQUIREMENTS OVER AND ABOVE THE ADA REQUIREMENTS. COORDINATE FINAL MOUNTING HEIGHTS WITH OWNER.

KEEP OUTSIDE AIR INTAKES A MINIMUM OF 10'-0" AWAY FROM CONTAMINANT SOURCES.

• KEEP B-VENTS A MINIMUM OF 3'-0" ABOVE ROOF PENETRATION AND/OR 2'-0" ABOVE ANY PART OF THE BUILDING WITHIN 10'-0". B-VENTS TO CLEAR COMBUSTIBLES BY 3" MIN.

• THERMOSTATS, SENSORS AND CONTROL PANELS FOR HVAC EQUIPMENT SHALL BE LOCATED IN ACCORDANCE WITH THE MECHANICAL PLANS. FURNISH AND INSTALL CLEAR LOCKING COVERS FOR ALL T-STATS. ALL COVERS TO BE KEYED THE SAME.

PROVIDE ENGRAVED TAGS FOR ALL HVAC EQUIPMENT

• PROVIDE FACTORY START UP FOR ALL EQUIPMENT.

ITEM	PROVIDED BY	INSTALLED BY	WIRED BY	NOTES/REMARKS
T-STAT(S)	Ť	Ţ	Т	INSTALLED BY TENANT'S EMS CONTRACTOR (VERIFY)
SPACE SENSOR(S)	MC	MC	MC	INSTALLED BY TENANT'S EMS CONTRACTOR (VERIFY)
SMOKE DETECTOR(S)	MC	MC	MC	PROVIDED WITH UNIT(S)
REMOTE TEST STATION(S)	MC	MC	MC	PROVIDED WITH UNIT(S)
REMOTE ALARM(S)/STROBE(S)	MC	MC	MC	PROVIDED WITH UNIT(S)
EMS (GRIDPOINT)	Т	T	T	INSTALLED BY TENANT'S EMS CONTRACTOR
CO2 SENSOR(S)	MC	MC	MC	RTU'S (PROVIDED WITH UNITS) COORDINATE WITH EMS CONTRACTOR

MC - MECHANICAL CONTRACTOR EC - ELECTRICAL CONTRACTOR

PROJECT NAME:

T - TENANT (MECHANICAL CONTRACTOR AND/OR GENERAL CONTRACTOR TO HIRE TENANT SUGGESTED EMS VENDOR. VERIFY WITH TENANT. SEE EMS SCOPE OF WORK ON TENANT'S PLANS FOR ADDITIONAL INFORMATION.)

O'REILLY - DOLTON

PROJECT NAME	:		O'REILLY - DOLTON		PROJECT	NUMBER:		1957-1								
IMC Ventilation	ROOM INPU	T														
			OCCUPANCY				VEI	NTILATION					EXI	HAUST		
ROOM	AREA	Ref.			PEC	PLE	R	р	R	a			CFM/	CFM/		
NUMBER & NAME	(S.F.)	No.	CLASSIFICATION	P/1000	CODE	ACTUAL	CFM/P	CFM	CFM/SF	CFM	Vbz CFM	FIX	FIX	S.F.	CFM	Equipment Note
100A-VESTIBULE	40	58	PS-CORRIDORS						0.06	2	2					RTU-2
100-PARTS A	2,850	72	RET-SALES	15	42.8	43	7.5	323	0.12	342	665					RTU-1,2
101-PARTS B	2,000	77	RET-STORAGE ROOMS						0.12	240	240					RTU-3
102-OFFICE	85	53	OFF-OFFICE SPACES	5	0.4	1	5	5	0.06	5	10					RTU-3
103-RESTROOM	60	63	PS-TOILET ROOMS (INT) (Jan Clos =1 V	VC)								2	70		140	RTU-3, EF-1
104-RESTROOM	60	63	PS-TOILET ROOMS (INT) (Jan Clos =1 V	VC)			91					1	70		70	RTU-3
105-PARTS C	1,650	77	RET-STORAGE ROOMS						0.12	198	198					RTU-1,2
106-BREAK	90	33	F&B-DINING ROOMS	70	6.3	4	7.5	30	0.18	16	46					RTU-3
			52													
	6,835				49	48	2	358		804	1,161	Vou			210	

		SUPPL	Y (Cfm)			VENTILATION				
ROOM	*	110%	110%	110%	Voz		OA Fraction			
NAME & NUMBER	Base	Target	Adjstd	Vpz	Ez	CFM	Zp=Voz/Vpz	Ventilation Note		
100A-VESTIBULE	101	111	100	100	1	2	2.4%	5		
100-PARTS A	1,943	2,143	2,150	2,150	1	665	30.9%	e		
101-PARTS B	908	1,002	990	990	1	240	24.2%	25		
102-OFFICE	265	292	260	260	1	10	3 9%	я.		
103-RESTROOM	18	20	50	50	1			A		
104-RESTROOM	32	35	50	50	1			25		
105-PARTS C	1,336	1,474	1,470	1,470	1	198	13.5%	5		
106-BREAK	156	172	180	180	1	46	25.7%	ц		
					1			.≅		
	4,759	5,250	5,250	5,250		1,161				
Multiple Zone = 1	4			Max Zp =	30.9%	O/A Percent-	Critical Space			
Single or 100% = 2	1			Ev =	0.8	1,452	Corrected Total O	utdoor Airflow Rate		

 ALL DUCTWORK SHALL MEET S.M.A.C.N A. STANDARDS AS LISTED IN THE INTERNATIONAL MECHANICAL CODE. DUCTWORK TO BE GALVANIZED SHEET METAL UNLESS NOTED OTHERWISE.

ALL RECTANGULAR BRANCH DUCTS TO HAVE OPPOSED BLADE DAMPERS.

 ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK, SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS, OR TAPES. TAPE AND MASTICS USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS

 LOW PRESSURE o RTU S/A & R/A DROPS

- 2" LINER o RECT. DUCT LENGTHS - 59" WITH S&D JOINTS

o DIMENSIONS - OUTSIDE DIMENSIONS SHOWN ON PLANS

- ONE HALF THE DUCT WIDTH (SEE DUCTWORK SYMBOLS LEGEND) o ELBOW RADIUS o SHOE-TAPS

 BALANCING DAMPERS - AT ALL FINAL DIFFUSER & GRILLE TAP LOCATIONS (LOCKING TYPE) - OPPOSED FLAT BLADE, LOCKABLE (RUSKIN CD355-OBD) o RECT. BALANCING o RECT. MIXING - PARALLEL FLAT BLADE, LOCKABLE (RUSKIN CD355-PBD)

o RECT. E/A AND O/A (MOD) - OPPOSED AIRFOIL BLADE, LOW LEAK, CLASS 1 (RUSKIN CD60) o RND. E/A AND O/A (MOD) - LOW LEAK, CLASS 1 (RUSKIN CDRS25)

o BACKDRAFT DAMPER - ALUMINUM MEDIUM DUTY TYPE (RUSKIN BD6)

o BACKDRAFT DAMPER W/CB - ALUMINUM MEDIUM DUTY TYPE WITH COUNTER BALANCE. LOW LEAK BLADE EDGE SEALS (RUSKIN CBD4)

o DUCT PRESSURE CLASS - 1" W.C. (LOW PRESSURE)

o DUCT SEAL CLASS INSULATION & LINER

o MINIMUM R-6 FOR INTERIOR DUCTWORK. MINIMUM R-12 FOR EXTERIOR DUCTWORK.

ADD INSULATION TO LINED DUCTWORK IF NEEDED.

 INSIDE DUCT LINER TO BE KNAUF SONIX XP DUCT LINER (1.5 PCF) OR OWENS CORNING EQUIVALENT. o DUCT WRAP FOR INTERIOR DUCTWORK TO BE KNAUF FRIENDLY FEEL DUCT WRAP (1.5 PCF) OR OWENS CORNING EQUIVALENT.

CURBS TO BE INSULATED AND A MINIMUM 12" HIGH. CURBS TO BE PITCHED TO MATCH SLOPE OF ROOF.

 ALL HVAC PIPING AND PIPE MATERIALS TO MEET ASTM AND ASME STANDARDS AS LISTED IN THE INTERNATIONAL MECHANICAL CODE AND LOCAL CODES. CONTACT THE CITY/TOWNSHIP FOR THE PROPER EDITIONS AND AMENDMENTS OF THE ALL RELATIVE CODE PUBLICATIONS. ALL GAS PIPING AND MATERIALS TO MEET ASTM STANDARDS AS LISTED IN THE INTERNATIONAL FUEL GAS CODE.

 PRESSURE RATINGS - PIPE, FITTING AND VALVE PRESSURE RATINGS TO EXCEED MAXIMUM SYSTEM OPERATING PRESSURE BY A MINIMUM OF 20%. VERIFY EACH PIPE SYSTEM OPERATING PRESSURE BEFORE INSTALLATION.

o all above ground gas piping to be sch. 40 black steel with screwed malleable fittings for 2" and smaller piping and welded for 2

1/2" AND LARGER PIPING. o all gas piping beneath buildings is prohibited unless gas pipe is encased, sealed and vented per code.

ALL DWV PIPING TO BE PLAIN END SCH. 40 DWV PVC WITH SOCKET TYPE DWV PVC FITTINGS.

6) ANCHORING, SUPPORT & ISOLATION (EQUIPMENT, PIPING & DUCTWORK):

o ANCHOR ALL EQUIPMENT, DUCTWORK AND PIPING TO APPROVED STRUCTURES WITH UL LISTED AND FACTORY MUTUAL APPROVED ANCHORING AND

SUPPORT PRODUCTS. APPROVED ANCHORING SYSTEMS INCLUDE CONCRETE DROP IN ANCHORS, TOP CHORD MOUNTED C-CLAMPS AND TOP CHORD MOUNTED BEAM CLIP DUCTWORK STRAP HANGERS. APPROVED SUPPORT SYSTEMS INCLUDE MINIMUM 3/8" THREADED ROD, MINIMUM 1" 20 GAUGE SHEET METAL DUCT STRAPS, U-CHANNEL, ANGLE IRON AND/OR PIPE CLEVIS HANGERS. FOLLOW THE ABOVE REQUIREMENTS UNLESS NOTED OTHERWISE BY EQUIPMENT MANUFACTURER OR STAMPED STRUCTURAL SUPPORT DRAWINGS.

EQUIPMENT VIBRATION ISOLATION:

o FURNISH AND INSTALL VIBRATION ISOLATION TO PREVENT TRANSMISSION OF SOUND AND VIBRATION FROM MOTORIZED AND ROTATING EQUIPMENT TO THE BUILDING STRUCTURE. TYPICAL APPROVED VIBRATION ISOLATION PRODUCTS INCLUDE ISOLATION HANGERS, ISOLATION SPRINGS, ISOLATION PADS AND ISOLATION CURBS. PROVIDE THE ABOVE ISOLATION FOR ALL EQUIPMENT 1/2 HORSEPOWER OR GREATER OR AS PER THE MANUFACTURERS RECOMMENDATIONS. FURNISH AND INSTALL ISOLATION CURBS AND FLEXIBLE PIPING CONNECTIONS ONLY AS SPECIFICALLY NOTED ON PLANS.

 FURNISH AND INSTALL EQUIPMENT DUCTWORK CONNECTIONS WITH SIX INCH (6") LONG DOUBLE THICK, AIR TIGHT, WATER TIGHT AND FIREPROOF FLEXIBLE CONNECTORS. (AIR HANDLING UNITS, INLINE FANS, UTILITY SETS, ROOF MOUNTED UNITS WITH ISOLATION PADS OR ISOLATION CURBS, ETC.)

o PIPING TO BE SUPPORTED WITH CLEVIS HANGERS AND INSULATION PROTECTORS WHERE INSULATED. ALLOW FOR EXPANSION AND DO NOT DIRECTLY ATTACH PIPE BETWEEN ANY TWO FIXED STRUCTURES.

o roof mounted piping support to be closed cell medium density polyethylene foam block pipe pier (tolco by nibco or equal). o MAXIMUM PIPE SUPPORT SPACING SHALL BE AS FOLLOWS.

 STEEL PIPE 12' HORIZONTAL, 15' VERTICAL ◆ COPPER PIPE - 12' HORIZONTAL, 15' VERTICAL

◆ PVC PIPE - 4' HORIZONTAL, 10' VERTICAL (MID-STORY GUIDE)

DUCTWORK SUPPORT:

o DUCTWORK TO BE SUPPORTED IN ACCORDANCE WITH S.M.A.C.N.A. STANDARDS, MAXIMUM OF 12' O.C. SUPPORT INTERVALS.

7) SMOKE DETECTORS AND REMOTE TEST STATIONS:

• SMOKE DETECTORS TO BE PROVIDED AS PER NFPA AND LOCAL CODES. SMOKE DETECTORS SHALL BE INSTALLED IN RETURN AIR SYSTEMS, WITH A DESIGN CAPACITY GREATER THAN 2000 CFM, IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, OUTDOOR AIR CONNECTIONS OR DECONTAMINATION EQUIPMENT AND APPLIANCES, SAMPLING TUBES TO MATCH LONG DIMENSION OF DUCT PLENUM, DUCT SMOKE DETECTOR TO SHUT UNIT(S) DOWN UPON ALARM. SMOKE DETECTORS TO BE 4-WIRE PHOTOELECTRIC TYPE (SYSTEM SENSOR INNOVAIRFLEX SERIES OR EQUAL). REMOTE TEST STATION(S) TO BE EQUAL TO EDWARDS SIGNALING PRODUCTS MODEL SD-TRK4. FINAL MAKE AND MODEL TO BE COORDINATED WITH SMOKE DETECTORS FOR ALL UNITS.

• FIRE DAMPERS TO BE PROVIDED AS PER NFPA AND LOCAL CODES. MINIMUM 18x18 ACCESS DOOR TO BE PROVIDED AT EVERY FIRE DAMPER NOT LOCATED DIRECTLY BEHIND A REMOVABLE GRILLE, REGISTER OR DIFFUSER. FIRE DAMPERS TO BE "B STYLE", U.L. 555 LISTED, 1.5 HOUR DAMPERS (SAFE AIR DOWCO 150 SERIES OR EQUAL) UNLESS NOTED OTHERWISE. 9) TESTING & BALANCING:

 TEST AND BALANCE CONTRACTOR TO BE COMPLETELY INDEPENDENT OF THE MECHANICAL CONTRACTOR AND NOT TO BE A SUB TO THE MECHANICAL CONTRACTOR. BALANCE ALL EQUIPMENT, GRILLES, REGISTERS AND DIFFUSERS TO FLOW RATES SHOWN ON THE PLANS. FURNISH AND INSTALL ALL NECESSARY DRIVES, SHEAVES & BELTS AS REQUIRED TO PROVIDE COMPLETE AND OPERABLE SYSTEMS. VARIABLE FREQUENCY DRIVES NOT TO BE RAISED ABOVE 60 HZ FOR ANY REASON UNLESS APPROVED IN WRITING BY THE ENGINEER. FINAL TEST AND BALANCE REPORT TO INCLUDE FLOWRATES (CFM/GPM/LBS PER HOUR), PRESSURES (FAN STATIC/PUMP HEAD), RPM (FAN/PUMP), MOTOR (RPM/ VOLTS/PHASE/AMPS/POWER FACTOR). ALL TESTING AND BALANCING TO BE PERFORMED BY N.E.B.B. AND/OR A.A.B.C. CERTIFIED TECHNICIANS. PROVIDE 'PDF' FORMAT AND (3) PAPER COPIES OF

DIVISION 23 (HVAC-CONTROLS)

• THE FOLLOWING ARE CONTROL SEQUENCES ONLY. CONTROLS DESIGN AND INSTALLATION TO BE BY LICENSED DESIGN/BUILD CONTROLS CONTRACTOR. CONTROL ACCESSORIES TO BE INSTALLED AND WIRED AS PER THE ORIGINAL EQUIPMENT MANUFACTURERS (OEM) REQUIREMENTS. NON-OEM BUILT UP CONTROL EQUIPMENT TO BE HONEYWELL OR CARRIER. CONTROLS CONTRACTOR TO PROVIDE (4) SETS OF CONTROLS DIAGRAMS AND EQUIPMENT SUBMITTALS FOR APPROVAL PRIOR TO INSTALLATION FOR ALL BUILT UP CONTROL SYSTEMS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR AND TO COORDINATE INSTALLATION OF CONTROLS, CONTROL WIRING AND CONTROLS EQUIPMENT REQUIRED FOR ALL MECHANICAL EQUIPMENT. COORDINATE LOCATION OF ALL NEW CONTROL PANELS AND CONTROLLERS WITH OWNER PRIOR TO INSTALLATION.

2) COMMERCIAL VENTILATION

 PACKAGED ROOFTOP AIR HANDLING UNITS - TO BE CONTROLLED BY GRIDPOINT EMS SYSTEM PROVIDED BY TENANT AND INSTALLED BY TENANT'S SUGGESTED GRIDPOINT EMS CONTRACTOR. MECHANICAL CONTRACTOR OR GENERAL CONTRACTOR TO HIRE EMS CONTRACTOR. MECHANICAL CONTRACTOR TO COORDINATE WITH TENANT'S SUGGESTED EMS CONTRACTOR. SEE TENANT'S "VS SHEETS" FOR MORE INFORMATION.

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REVISIONS

PRIOR TO INSTALLATION, VERIFY ALL DUCTWORK, PIPING, WIRING, CONDUITS AND EQUIPMENT LOCATIONS SHOWN ON DRAWINGS TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE, WALLS. CEILINGS, LIGHTS, ELECTRICAL ITEMS AND/OR OTHER TRADE ITEMS. NOTIFY DESIGN ENGINEER IN WRITING PRIOR TO ANY CHANGES.