

AIR DEVICE SCHEDULE				
MARK	SERVICE	MOUNTING	FINISH	BASIS OF DESIGN
A	SUPPLY	SURFACE / LAY-IN	WHITE	PRICE, SCD - SQUARE CODE DIFFUSER
B	RETURN	LAY-IN	WHITE	PRICE, 80 - EGG CRATE GRILLE
C	EXHAUST	SURFACE / LAY-IN	WHITE	PRICE, RCG
C	EXHAUST	SURFACE	WHITE	PRICE, 735, STAINLESS STEEL LOUVERED GRILLE, W/ ONE SET OF FIXED BLADES AT 45° AT 1/2" SPACING.

NOTES:

- PROVIDE 9" TALL x FULL SIZE OF GRILLE, INTERNALLY LINED RETURN AIR PLENUM ABOVE ALL RETURN AIR GRILLES WITH CONNECTION TO RETURN DUCT SIZE AS INDICATED.

ELECTRIC HEATER SCHEDULE					
MARK	HEATING CAPACITY		ELECTRICAL		BASIS OF DESIGN
	KW	MBH	V / PH	AMPS	
WH-1	3.3	11.2	277 / 1	11.9	MARKEL MODEL G3325TD-RP, WALL HEATER

NOTES:

- PROVIDE FIELD MOUNTED DISCONNECT SWITCH - TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- WALL HEATERS SHALL BE RECESSED IN WALL.

FAN SCHEDULE						
MARK	AIR FLOW (CFM)	ESP	MOTOR HP (WATTS/ AMPS)	V/FREQ./PH	WEIGHT (LBS)	BASIS OF DESIGN (MANUFACTURER,MODEL#)
EF-1	10,200	0.2	1 HP	460/60/3	390	TWIN CITY FAN, WPB-36Z5
EF-2	28, 500	0.2	7.5 HP	460/60/3	8	TWIN CITY FAN, WPB-48L2
EF-3	50-80-100	0.25	(11.0 / 0.23)	115/60/1	8	BROAN, LP510R

NOTES:

- FOR EF-3, PROVIDE WALL MOUNTED ON/OFF SWITCH AT UTILITY CLOSET ENTRANCE.
- PROVIDE EF-1 AND EF-2 WITH: WALL MOUNTED ON/OFF SWITCH, LOCATIONS COORDINATED WITH OWNER. PROVIDE WITH WEATHER HOODS, WITH BIRD SCREENS, AND GRAVITY BACKDRAFT DAMPERS.

AIR HANDLER UNIT SCHEDULE								
MARK	SUPPLY AIR FLOW (CFM)	MIN. OUTSIDE AIR FLOW (CFM)	SUPPLY FAN PERFORMANCE		SUPPLEMENTAL ELECTRIC HEATER SIZE (KW)	AHU ELECTRICAL		BASIS OF DESIGN (MANUFACTURER,MODEL#)
			MIN. ESP IN. WC	FAN HP		V / PH	MCA/MOCP (AMP.)	
AHU-1	1195	235	0.4"	0.5	7.5	208 / 1	39/40	LENNOX, CBK45UHET-036
AHU-2	470	470	0.4"	0.5	5	208 / 1	23/25	LENNOX, CBK45UHPT-018

NOTES:

- PROVIDE COMPLETE HEATING/COOLING SYSTEM INCLUDING ELECTRIC HEATER INTERLOCKED WITH INDOOR HEAT PUMP COIL AND ASSOCIATED OUTDOOR HEAT PUMP UNIT.
- PROVIDE 3/4" CONDENSATE WITH P-TRAP ROUTED TO NEAREST FLOOR DRAIN IN EITHER MECHANICAL ROOM OR WATER HEATER CLOSET.
- FOR AHU-2, PROVIDE SECONDARY DRAINAGE PAN BELOW UNIT WITH WATER SENSOR AND ALARM TO CUT OFF UNIT UPON DETECTION OF WATER.
- PROVIDE REFRIGERANT LINES TO/FROM OUTDOOR HEAT PUMP UNIT SIZED AND ROUTED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- PROVIDE WITH 7-DAY PROGRAMMABLE AUTO-CHANGEOVER HEAT/COOL THERMOSTAT.
- PROVIDE FIELD MOUNTED DISCONNECT SWITCH - TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- PROVIDE FLEXIBLE DUCT CONNECTION TO UNITS.
- PROVIDE MERV 8 FILTER AT UNIT INLET WITH FILTER RACK/ACCESS AS NEEDED.

OUTDOOR HEAT PUMP SCHEDULE								
MARK	ASSOC. INDOOR UNIT TAG	SEER2	COOLING CAPACITY (MBH)	HEATING CAPACITY @ 47°F/17°F (MBH)	ELECTRICAL		WEIGHT (LBS.)	BASIS OF DESIGN (MANUFACTURER,MODEL#)
					V / PH	MCA/MOCP (AMP.)		
HP-1	AHU-1	15.2	36.0	34.4/20.6	208 / 3	15.4 / 25	220	LENNOX, ML14KP1-036-230
HP-2	AHU-2	14.3	18.5	17.9/10.9	208 / 1	10 / 15	215	LENNOX, ML14KP1-018-230

NOTES:

- REFRIGERANT PIPING TO BE SIZED PER THE TOTAL INSTALLED EQUIVALENT LENGTH. PROVIDE LONG LINE REFRIGERANT PIPING KIT (INCLUDING LIQUID LINE SOLENOID VALVES, ACCUMULATOR, ETC.) WHENEVER MANUFACTURER'S RECOMMENDED LENGTHS ARE EXCEEDED. SEE INSTALLATION INSTRUCTIONS FOR MANUFACTURER'S RECOMMENDED EQUIVALENT REFRIGERANT PIPING LENGTHS PRIOR TO PERFORMING ANY WORK.
- PROVIDE FIELD MOUNTED DISCONNECT SWITCH - TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- PROVIDE WITH ANTI SHORT CYCLE TIMER.
- PROVIDE WITH 4" THICK CONCRETE PAD ON GRADE TO MOUNT OUTDOOR UNIT.

ENERGY RECOVERY UNIT SCHEDULE																																						
Unit Tag	Manufacturer	Model	Supply Fan							Exhaust Fan							Energy Recovery Performance												Electrical									
			CFM (MAX)	E.S.P. (IN.W.G.)	RPM	MAX BHP	MOTOR HP	VFD	CFM (MAX)	E.S.P. (IN.W.G.)	RPM	MAX BHP	MOTOR HP	VFD	Energy Recovery Performance																							
															WINTER												SUMMER											
															OUTSIDE *		ROOM AIR		SUPPLY AIR		EFFICIENCY		ENERGY SAVED		OUTSIDE		ROOM AIR		SUPPLY AIR		EFFICIENCY		ENERGY RECOVERED					
DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	Sensible	Total	Sensible (MBH)	Total (MBH)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	Sensible	Total	Sensible (MBH)	Total (MBH)																			
ERV-1	ALDES	H650-FI-EC	470	0.4	994	0.13	2.5	No	525	0.4	1007	0.14	2.5	No	12	11	70	58	41.6	51.1	15	15	90	75	75	62	83.4	68	44	44	3.3	3.3	208	PHASE	HZ	FLA	MCA	MOP

GENERAL MECHANICAL SPECIFICATIONS 1. SCOPE: PROVIDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO INSTALL AND MAKE READY FOR OWNER'S USE COMPLETE SYSTEMS OF HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, FOR THE PROPOSED WORK AND BUILDING RENOVATIONS AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THESE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION WITH OTHER DIVISIONS OF WORK FOR THE FULL EXTENT OF THE SCOPE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS, COMPONENTS, SYSTEMS, ETC. AND ACCOMMODATE THE PERFORMANCE INTENT OF THE CONSTRUCTION DOCUMENTS THROUGHOUT THE PROJECT SCOPE. 2. BIDDERS RESPONSIBILITY: EXAMINE THE DRAWINGS AND SPECIFICATIONS AND VISIT THE WORK SITE. BECOME FAMILIAR WITH THE CHARACTER OF THE WORK, THE CONDITIONS WITH OTHER TRADES REQUIRED, AND ANY OTHER CONDITIONS THAT AFFECT THE COMPLETION OF THIS WORK. GENERAL CONTRACTOR SHALL BE REQUIRED TO COORDINATE WORK WITH TENANT FINISH CONTRACTOR IN A SIDE BY SIDE SCENARIO. 3. PERMITS, CODES AND LAWS: APPLY FOR ALL PERMITS AND PAY ALL FEES. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING RULES AND REGULATIONS, HEREIN REFERRED TO AS "CODES": THE 2021 VIRGINIA BUILDING CODE, UNDERWRITER'S LABORATORIES, INC. (U.I.) NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A) WHERE ANY OF THESE CODES ARE AT VARIANCE WITH THE DRAWINGS AND SPECIFICATIONS, THEIR REQUIREMENTS SHALL TAKE PRECEDENCE, UNLESS THE DRAWINGS AND SPECIFICATIONS REQUIREMENTS EXCEED THESE CODES. INCLUDE ANY COST NECESSARY TO MEET THESE CODES IN THE BID PRICE. 4. MECHANICAL PLANS: THE MECHANICAL PLANS ARE DIAGRAMMATIC AND BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT. VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO BE USED. INSTALLATION SHALL BE WITHIN THE LIMITATIONS IMPOSED BY THE ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, AND PLUMBING REQUIREMENTS WITH ADEQUATE SPACE FOR MAINTENANCE. 5. QUESTIONS AND CLARIFICATIONS OF BID DOCUMENTS: BIDDERS SHALL NOT RELY ON ANY ORAL CLARIFICATION OF THE DRAWINGS OR SPECIFICATIONS. ANY QUESTIONS OR CLARIFICATIONS SHALL BE REFERRED IN WRITING TO THE ARCHITECT. 6. GUARANTEES: ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. WARRANTIES SHALL BE IN WRITING AND SHALL INCLUDE FACTORY WARRANTIES FOR EACH PIECE OF EQUIPMENT. PROVIDE A CERTIFICATE FOR EACH PIECE OF EQUIPMENT. CLEARLY INDICATE ON EACH WARRANTY CERTIFICATE THE MODEL NO., SERIAL NO., LOCATION, AND OWNER'S NAME. 7. COMPLETE SYSTEM: ALL PRODUCTS, MATERIALS AND ACCESSORIES SHALL BE FURNISHED AND INSTALLED AS REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE. 8. WORKMANSHIP: ALL WORK SHALL BE PERFORMED BY COMPETENT MECHANICS USING PROPER TOOLS AND EQUIPMENT TO PRODUCE FIRST QUALITY WORK. ALL WORK SHALL BE NEATLY INSTALLED, ACCESSIBLE FOR MAINTENANCE, AND COMPLETE WITH ALL ACCESSORIES REQUIRED. 9. ACCESSIBILITY: INSTALL ALL EQUIPMENT AND THEIR APPURTENANCES SUCH AS, BUT NOT LIMITED TO, VALVES, COILS, DRAIN PANS, DRAINS, DAMPERS, CONTROLS, MOTORS, CONTROLLERS, ETC., SO THAT THEY CAN BE SERVICED, RESET, REPLACED OR RECALIBRATED, ETC. INSTALL ALL NECESSARY ACCESS PANELS AND BUILDING ACCESS DOORS, AS BELOW, WHERE REQUIRED TO ACCOMPLISH THIS. IF ANY EQUIPMENT OR COMPONENTS DO NOT FIT WHERE INTENDED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING, REQUESTING FURTHER GUIDANCE. PROVIDE BUILDING ACCESS DOORS FOR ALL MECHANICAL EQUIPMENT REQUIRING SERVICE, INCLUDING BUT NOT LIMITED TO, AHU'S, FANS, DAMPERS, DUCT ACCESS PANELS, CONTROLS, PIPING, VALVES, REGULATORS, TRAPS, ETC., INSTALLED ABOVE HARD CEILINGS, BEHIND WALLS AND BELOW FLOORS. FOR INSTALLATION BY OTHER DIVISIONS OF THE WORK. BUILDING ACCESS DOORS ARE NOT REQUIRED WHERE THE MECHANICAL EQUIPMENT IS INSTALLED ABOVE LAY-IN AND ACCESSIBLE SPUNE CEILINGS. OTHER TYPES OF SPUNE CEILINGS REQUIRE BUILDING ACCESS DOORS. SIZE THE BUILDING ACCESS DOORS FOR THE USE INTENDED, BUT NOT LESS THAN 12 INCHES BY 12 INCHES. WHERE HUMAN ACCESS IS REQUIRED, PROVIDE 24 INCHES BY 24 INCHES, OR LARGER. WHERE BUILDING ACCESS DOORS CANNOT BE INSTALLED FOR STRUCTURAL OR ARCHITECTURAL REASONS, NOTIFY THE ARCHITECT. PRIME COAT BUILDING ACCESS DOORS IN PAINTED AREAS WITH FINISH PAINTING AS SPECIFIED IN OTHER DIVISIONS. IN WET AREAS, TOILET ROOMS, OR AREAS WITH CERAMIC TILE FLOORS OR WALLS, PROVIDE STAINLESS STEEL BUILDING ACCESS DOORS. PROVIDE BUILDING ACCESS DOORS WITH A CONCEALED KEY OPERATED LOCK AND CONCEALED HINGES. ALL LOCKS SHALL BE KEYED ALIKE. PROVIDE BUILDING ACCESS DOORS AS SPECIFIED IN OTHER DIVISIONS OF THE WORK OR PROVIDE MILCOR DOORS, OR EQUIVALENT, SUITABLE FOR THE INSTALLATION INTENDED. PROVIDE FIRE RATED DOORS FOR ALL FIRE RATED WALLS, PARTITIONS, AND CEILINGS. 10. WORK BY OTHER TRADES: FURNISH ALL SLEEVE FRAMES, BUILDING ACCESS DOORS, PREFABRICATED EQUIPMENT CURBS, ROOF CURBS, ETC. FOR INSTALLATION BY OTHER TRADES. INSTALL ALL MOTORS AND FURNISH THE STARTING EQUIPMENT AND DISCONNECTS TO THE DIVISION 26000 SUBCONTRACTOR FOR INSTALLATION. CONTROL WIRING, INCLUDING SWITCHES, THERMOSTATS, INTERLOCKS, ETC. SHALL BE FURNISHED BY DIVISION 23000. ENSURE THAT THE ELECTRICAL EQUIPMENT MOUNTED NEAR THE MECHANICAL EQUIPMENT DOES NOT BLOCK ACCESS TO SERVICE AREAS OF THE MECHANICAL EQUIPMENT. DO NOT ALLOW ANY EQUIPMENT TO BE INSTALLED ON THE HVAC EQUIPMENT ENCLOSURES. 11. FIRE STOPPING: ALL PENETRATIONS OF FLOORS AND OTHER FIRE-RATED ASSEMBLIES SHALL BE FIRE AND SMOKE-STOPPED IN STRICT ACCORDANCE WITH THE APPLICABLE CODES. 12. FOUNDATIONS AND SPECIAL SUPPORTS: FURNISH AND INSTALL ALL SPECIAL FOUNDATIONS AND SUPPORTS REQUIRED FOR EQUIPMENT INSTALLED UNDER THIS SECTION, UNLESS THEY ARE A PART OF THE BUILDING STRUCTURE AND ARE SHOWN IN OTHER SECTIONS. 13. CLEANING AND PAINTING: THOROUGHLY CLEAN ALL EQUIPMENT AND REMOVE ALL TRASH, CARTONS, ETC. MAKE ANY NECESSARY CORRECTIONS OR REPAIR/REPLACE ANY DAMAGED MATERIALS OR EQUIPMENT. LEAVE THE ENTIRE SYSTEM IN A THOROUGHLY CLEAN AND ORDERLY MANNER. ANY FINISHED SURFACES THAT HAVE BEEN SCRATCHED OR DISCOLORED SHALL BE TOUCHED-UP OR REPAINTED BREAK A BREAK WITH PAINT TO MATCH THE ORIGINAL COLOR. TOUCH UP PAINTED SURFACES OR REPAINT THE ENTIRE PAINTED SURFACE IF TOUCH UP IS UNACCEPTABLE. SEE ARCHITECTURAL PAINTING SPECIFICATIONS. ALL METAL ITEMS SUBJECT TO RUSTING, INSIDE OR EXPOSED TO WEATHER SHALL BE GIVEN ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER AS SOON AS INSTALLED. APPLY TWO FINISH COATS WITH COLOR TO BE SELECTED BY THE ARCHITECT. FOR ALL INTERIOR OR EXTERIOR STRUCTURAL GALVANIZED STEEL, COLD GALVANIZE ALL EXPOSED METAL CUT ENDS, HOLES, WELDS, SCRATCHES, ETC., OR HOT DIP GALVANIZE THE ENTIRE STRUCTURE OR FRAME AFTER FABRICATION AND MOUNTING HOLES ARE CUT. UPON COMPLETION OF THE INSTALLATION, BUT NOT BEFORE, AND BEFORE ACCEPTANCE, THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, PIPING, DUCTWORK, INSULATION JACKETS, ETC., REMOVING ALL STICKERS, LABELS, MARKING, WRITING, FABRICATION MARKINGS, IDENTIFICATION, ADHESIVE, SEALER, GLUE, RUST, CORROSION, ETC., FROM THEIR EXTERIOR SURFACES. THE CLEANLINESS AND PAINTING ACCEPTABILITY IS AT THE SOLE DISCRETION OF THE ARCHITECT AND MAY REQUIRE ADDITIONAL CLEANING AND COATS OF PAINT BEFORE ANY SURFACE IS ACCEPTED. 14. SUBMITTAL AND SHOP DRAWINGS: SUBMIT MANUFACTURER'S CERTIFIED DATA RELATIVE TO ALL EQUIPMENT, PIPING, CONTROLS, ETC. REQUIRED FOR THE INSTALLATION OF THE HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS. SUBMIT FOR REVIEW ALL NECESSARY ENGINEERING, PRODUCT AND INSTALLATION DATA, SHOP DRAWINGS, SAMPLES ETC. FOR ALL EQUIPMENT, MATERIAL, AND SYSTEMS TO ASCERTAIN COMPLIANCE WITH THE TECHNICAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. SUBMIT SIX (6) COPIES OF ALL NECESSARY DATA, CUTS, MANUFACTURER'S SELECTIONS, CATALOGS, BULLETINS, INSTALLATION INSTRUCTIONS, DRAWINGS, DIAGRAMS, CURVES, ETC. CLEARLY INDICATE ON THE SUBMITTED DATA, THE MANUFACTURER'S NAME, PRODUCT NUMBER(S), OPTIONS, EQUIPMENT CAPACITY, DIMENSIONAL DATA, WEIGHTS, AND OTHER APPLICABLE TECHNICAL DATA FOR THE PROJECT. TRADE NAMES, MANUFACTURERS, AND CATALOGUE NUMBERS ARE MENTIONED HEREIN AND ON THE DRAWINGS SOLELY IN ORDER TO ESTABLISH A STANDARD FOR THE TYPE, GENERAL DESIGN, AND QUALITY OF PRODUCT REQUIRED. OTHER PRODUCTS SIMILAR IN DESIGN OF EQUIVALENT QUALITY CAPABLE OF FITTING WITHIN THE SPACES ALLOCATED AND COMPLYING WITH THE DRAWINGS AND SPECIFICATIONS WILL BE CONSIDERED AFTER THE CONTRACT IS LET UNLESS "PRIOR APPROVAL" REQUIREMENTS ARE SET FORTH IN THESE DOCUMENTS. WHERE TWO OR MORE MANUFACTURERS OR MATERIALS ARE NAMED, THE CONTRACTOR MAY	SUBMIT ANY OF THOSE NAMES, PROVIDED THEY CONFORM TO THE SPECIFICATIONS AND DESIGN INTENT. CONTRACTOR SHALL INCLUDE WITH THE SUBMITTAL A LIST OF ALL COMPARATIVE FEATURES INDICATING COMPLIANCE WITH THE SPECIFICATIONS. THE ARCHITECT AND/OR ENGINEER MAY REQUIRE THE SUBMISSION OF SAMPLES, PARTICULARLY WHEREVER EQUIPMENT OR APPLIANCES ARE VISIBLE IN FINISHED AREAS, SUCH AS CEILINGS, INTERIOR AND EXTERIOR WALLS. THE CONTRACTOR AND SUPPLIER SHALL ARRANGE FOR DEMONSTRATIONS OF THE INSTALLATION OF ANY OF THESE PRODUCTS AND THEIR ABILITY TO PERFORM AS SPECIFIED, IF REQUIRED. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR FITTING THE EQUIPMENT IN THE SPACE ALLOTTED WITH SPACE FOR ALL CONNECTIONS AND SERVICING AND FOR THE COORDINATION OF THE WORK WITH WORK OF OTHER TRADES. THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS AND SHOP DRAWINGS AND INDICATE BY STAMP OR LETTER THAT HE HAS REVIEWED THEM, BEFORE FORWARDING THEM TO THE ARCHITECT AND/OR ENGINEER. SUBMITTALS AND DRAWINGS WILL BE RETURNED AFTER REVIEW INDICATING WHETHER EXCEPTIONS ARE TAKEN, THE SUBMITTAL RETURNED WITH CORRECTIONS, OR IS COMPLETELY REJECTED. RESUBMISSION OF REVISED SUBMITTALS AND SHOP DRAWINGS, IF REQUIRED, SHALL BE DONE BEFORE INSTALLATION AND CONSTRUCTION IS BEGUN. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTALS AND DRAWINGS DURING THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THIS REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES, TECHNIQUES OF CONSTRUCTION, COORDINATING THE WORK WITH THAT OF ALL OTHER TRADES, AND, PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER. REVIEW OF THE SUBMITTALS SHALL NOT PERMIT ANY DEVIATION FROM PLANS AND SPECIFICATIONS. SUBMITTALS FOR A SPECIFIC CLASS OF PRODUCTS, SYSTEMS, INSTALLATION PROCEDURES, SHOP DRAWINGS, ETC. WILL BE REVIEWED BY THE ENGINEER ONE TIME AND ITS RESUBMITTAL ONE TIME, IF NECESSARY, AS ABOVE, AT NO COST TO THE CONTRACTOR. THE CONTRACTOR WILL BEAR THE FULL COST FOR ALL SUBSEQUENT RESUBMITTAL REVIEWS AT THE ENGINEER'S STANDARD HOURLY RATES. PAYMENT WILL BE REQUIRED AT COMPLETION OF RESPECTIVE REVIEW. REQUIRED SHOP DRAWINGS: SUBMIT THE FOLLOWING SHOP DRAWINGS BEFORE ANY MECHANICAL DUCTWORK, PIPING, EQUIPMENT, ETC. IS FABRICATED AND INSTALLED. SUBMIT THESE SHOP DRAWINGS IN 1/4" INCH PER FOOT MINIMUM SCALE WITH NECESSARY PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ISOMETRICS. SUBMIT SIX (6) PAPER COPIES AND ONE (1) CD-ROM WITH ALL THESE DRAWINGS IN AUTOCAD DRAWING DWG FILES, LATEST AUTOCAD FORMAT. SOON AFTER AWARD OF THE CONTRACT, DETERMINE WHERE THERE MAY BE INSTALLATION, SPACE CONCERNS, AND/OR WHERE OTHER CONFLICTS MAY OCCUR. SUBMIT COORDINATION DRAWINGS, RELATING TO THESE CONFLICTS WITH THE MECHANICAL EQUIPMENT, DUCT, PIPING, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL SYSTEMS ETC., SHOWING CLEARANCES AND RELATIONSHIP TO STRUCTURAL MEMBERS, PIPING, LIGHTS, CONDUITS, ELECTRICAL EQUIPMENT, AND BUILDING COMPONENTS. IN PREPARING THESE SHOP DRAWINGS, ESTABLISH LINES AND LEVELS FOR ALL DIVISIONS OF THE WORK IN THE AFFECTED AREA. IMMEDIATELY CALL TO THE ATTENTION OF THE ARCHITECT ANY INTERFERENCE OR CONFLICT FOR CLARIFICATION IN WRITING. SUBMIT SHOP DRAWINGS FOR ALL DUCTWORK. SUBMIT LAYOUT DRAWINGS OF EACH MECHANICAL SYSTEM SHOWING THE LOCATION, ARRANGEMENT, ETC. OF ALL EQUIPMENT, ALL TRADES, ETC. TO BE INSTALLED RELATED TO THE RESPECTIVE SYSTEM. 15. AS-BUILT DRAWINGS: MAINTAIN DAILY UPDATED DRAWINGS SHOWING DEVIATIONS FROM CONSTRUCTION DOCUMENTS. AT THE END OF THE PROJECT, PROFESSIONALLY PREPARE AS-BUILT DRAWINGS AND SUBMIT THREE COPIES, ONE REPRODUCIBLE. 16. OPERATION AND MAINTENANCE MANUALS: UPON COMPLETION OF THE PROJECT, SUBMIT THREE COPIES OF ALL OPERATION AND MAINTENANCE MANUALS, WARRANTIES, SPARE PARTS LIST, AS-BUILT DRAWINGS, TEST AND BALANCE REPORTS, AND LETTER OF GUARANTEE ALL BOUND IN THREE RING BINDERS, CLEARLY SHOWING WHICH EQUIPMENT WAS SUPPLIED TO THE JOB. 17. PROJECT COMPLETION: BEFORE STARTING AND TESTING ANY SYSTEM, HVAC, OR PLUMBING, TO PREVENT INADVERTENT OPERATION OF THE MECHANICAL EQUIPMENT BEFORE THE MANUFACTURER'S INSPECTION AND TESTING, THE CONTRACTOR SHALL: VERIFY THAT ALL ELECTRICAL POWER IS OFF TO ALL MECHANICAL EQUIPMENT, INCLUDING THE AHU'S, ACCU'S, BOOSTER PUMPS, FIRE PUMPS, ETC. LOCK OUT EACH SYSTEM USING SETON MODEL NUMBER 70329; "DO NOT OPERATE" LOCK ON LOCKOUT TAGS, OR EQUIVALENT. INSTALL LOCKOUT TAGS AT EACH PIECE OF EQUIPMENT, ELECTRICAL DISCONNECTS, STARTERS, SWITCHES, ETC. REMOVE THESE TAGS ONLY WHEN THE MANUFACTURER APPROVES OF THE EQUIPMENT INSTALLATION IN WRITING. EACH MANUFACTURER OR THE REPRESENTATIVE SHALL INSPECT THEIR EQUIPMENT FOR COMPLIANCE TO THEIR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS. IN ADDITION, THE COMPRESSOR MANUFACTURER SHALL INSPECT EACH REFRIGERANT PIPING INSTALLATION FOR ADHERENCE TO THE APPROVED REFRIGERANT PIPING DIAGRAMS, ROUTING. EACH MANUFACTURER SHALL PREPARE A PUNCH LIST OF ALL DEFICIENCIES, IN WRITING WITH COPIES TO THE ARCHITECT AND CONTRACTOR. EACH MANUFACTURER SHALL REINSPECT THE EQUIPMENT AFTER THE CONTRACTOR HAS CORRECTED ALL DEFICIENCIES. WHEN THE MANUFACTURER HAS GIVEN THEIR WRITTEN APPROVAL WITH COPIES TO THE ARCHITECT AND CONTRACTOR, THE CONTRACTOR MAY REMOVE THE LOCKOUT TAGS, SAFELY START, AND TEST THE EQUIPMENT, AS REQUIRED HEREIN. CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY DRILLING OF WALL STUDS, CEILING JOISTS, PLATES, FINISHES, ETC. TO ACCOMMODATE ROUTING AND INSTALLATION OF ALL PIPING, DUCT, ETC. HVAC EQUIPMENT, METHODS AND MATERIALS 18. DUCTWORK GENERAL: DUCT SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS AND DO NOT TAKE INTO ACCOUNT LINING THICKNESS. DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH GAUGES, CONSTRUCTION DETAILS AND INSTALLATION ACCORDING TO N.F.P.A. STANDARD 90A, ASHRAE, AND SMACNA DUCT CONSTRUCTION MANUALS AND REQUIREMENTS. PROVIDE FLEXIBLE CONNECTIONS AT AIR HANDLING UNITS AND FANS. PROVIDE SINGLE THICKNESS TURNING VANES IN ELBOWS. PAINT DUCTS, SLEEVES, PLENUMS, ETC., INTERIORS VISIBLE THROUGH AIR DEVICES WITH A MINIMUM OF ONE COAT OF PROPER TYPE RUST PREVENTATIVE PRIMER, SUITABLE FOR GALVANIZED STEEL, AND TWO FINISH COATS OF FLAT BLACK PAINT. 19. DUCT CONSTRUCTION MATERIALS: ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED. FLEXIBLE DUCT. PRE-INSULATED FLEXIBLE DUCT. NO FLEXIBLE DUCT RUNS LONGER THAN 5 FEET. 20. FABRICATION, ERECTION, AND SUPPORT: ALL DUCTWORK SHALL BE FABRICATED, ERECTED, BRACED, AND SUPPORTED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA AND ASHRAE REQUIREMENTS. 21. ACOUSTIC LINED DUCTWORK: ACOUSTICALLY AND THERMALLY LINE RETURN, AND EXHAUST DUCT (WITHIN 10FT OF FANS) AND PLENUMS WITH 1" THICK, 1 1/2 PCF FIBERGLASS DUCT LINER, APPLIED PER THE MANUFACTURER'S AND NAIMA REQUIREMENTS. DUCT LINER SHALL MEET AND/OR EXCEED ASHRAE'S I.A.Q. STANDARD 62. USE WELDED STICK CLIPS, IN LIEU OF ADHESIVE TYPE FASTENERS AND FULL COVERAGE ADHESIVE. PROVIDE EDGE NOSINGS WHERE REQUIRED. COAT ALL EXPOSED FIBERGLASS WITH HARDCAST "LAG-GRIP 671". 22. JOINT SEALING: SEAL ALL DUCT JOINTS AND SEAMS (LONGITUDINAL AND TRANSVERSE) WITH HIGH PRESSURE DUCT SEALER, HARDCAST "IRON-GRIP 601" OR APPROVED EQUIVALENT. REINFORCED FOIL BACKED TAPES, CLOTH OR PLASTIC BACKED TAPES (DUCT TAPE) ARE NOT ACCEPTABLE. 23. FLEXIBLE AIR DUCT: DUCT SHALL BE UL LISTED UL-181, CLASS I AIR DUCT MATERIAL AND SHALL COMPLY WITH N.F.P.A 90A AND 90B AND ALL LOCAL REQUIREMENTS. DUCT SHALL HAVE AN OPERATING AIR PRESSURE OF 6 INCHES WG POSITIVE AND 4 INCHES WG NEGATIVE, ACOUSTICAL DOUBLE LAMINATED INNER FABRIC BONDED TO A STEEL HELIX WIRE. OUTER JACKET FIRE RETARDANT REINFORCED ALUMINIUM MYLAR WITH FIBERGLASS INSULATION. FLEXMASTER TYPE "6M" ACOUSTICAL INSULATED WITH R-VALUE OF 6.0, OR EQUIVALENT. MAKE ALL FLEXIBLE DUCT CONNECTIONS TO HARD DUCT USING STAINLESS STEEL SCREW CLAMPING BANDS AND SEALED AIR TIGHT WITH HIGH PRESSURE DUCT SEALER. PLASTIC BANDS ARE NOT ACCEPTABLE. SEAL FLEXIBLE DUCT VAPOR BARRIER TO HARD DUCT AND/OR ADJACENT INSULATION. NO EXPOSED FIBERGLASS SHALL BE VISIBLE. 24. AIR DISTRIBUTION DEVICES: COORDINATE THE EXACT LOCATIONS OF ALL AIR DEVICE NEEDS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. COORDINATE THE EXACT LOCATION OF EACH OUTLET WITH THE ARCHITECT WITH REGARD TO CEILING AND WALL SPACING, CENTERING ALONG SOFFITS, WALLS, ETC. FURNISH AND INSTALL WHERE SHOWN ON THE DRAWINGS ALL DIFFUSERS, GRILLES, AND REGISTERS OF THE SIZE, TYPE, AND CAPACITY AS INDICATED IN THE AIR DEVICE SCHEDULE. 25. LOUVERS: EXTERIOR WALL LOUVERS SHALL BE STATIONARY TYPE WITH DRAINABLE	BLADES, ALL ALUMINUM CONSTRUCTION AND HAVE A MINIMUM OF 50% FREE AREA. PROVIDE WITH INSECT SCREEN. COORDINATE FINISHES, LOCATIONS, AND FRAMING REQUIREMENTS WITH ARCHITECTURAL PLANS. 26. ELBOWS:TURNING VANES AND SMOOTH RADIUS ELBOW (WITHOUT VANES); AT ALL DUCT TURNS OF 45 DEGREES OR MORE, PROVIDE SINGLE THICKNESS TURNING VANES PER SMACNA REQUIREMENTS. ALTERNATIVELY, USE SMOOTH RADIUS ELBOW (R/W = 1.5). 27. BRANCH TAKEOFF FITTINGS: AT ALL MAIN TO BRANCH DUCT TAPS, TAKEOFFS, OR RUN-OUTS, PROVIDE 45 DEGREE ENTRANCE TAPS, AS DETAILED BY SMACNA STANDARDS. 28. DUCT MOUNTED ACCESS PANELS: INSTALL ACCESS PANELS AS FOLLOWS: AT INLET OF EACH DUCT MOUNTED FIRE AND MOTORIZED DAMPER. FOR DUCT MOUNTED FIRE CONTROLS. AS REQUIRED AND DIRECTED BY THE TEST AND BALANCE CONTRACTOR. WHERE REQUIRED FOR DUCT INSPECTION, MAINTENANCE, AND CLEANING. ACCESS PANELS SHALL BE 18 INCHES X 18 INCHES OR LARGEST DUCT WILL ALLOW. NORMALLY CENTER THE ACCESS PANEL IN THE BOTTOM OF THE DUCT AS CLOSE AS POSSIBLE TO THE DUCT MOUNTED DEVICE. ACCESS PANELS MAY BE INSTALLED ON THE SIDE OF THE DUCT, WHERE NECESSARY. ACCESS PANELS SHALL BE DOUBLE WALL INSULATED HINGED WITH NEOPRENE GASKETS AND CAM LOCKS ON EACH UNHINGED SIDE. WHERE REQUIRED BECAUSE OF PANEL OPENING CLEARANCE, SUBSTITUTE UNHINGED ACCESS PANELS WITH CAM LOCKS ON EACH SIDE AND CAPTIVE CHAIN. ACCESS PANELS SHALL BE FLEXMASTER "TBSM-TAB DOOR" GREENHECK MODEL "HAD-10", OR EQUIVALENT. 29. REFRIGERANT PIPING: REFRIGERANT PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE SAFETY CODES FOR MECHANICAL REFRIGERATION AND REFRIGERANT PIPING AND THE MANUFACTURER REQUIREMENTS. RUN ALL PIPING SQUARE TO BUILDING LINES WHEREVER POSSIBLE. FIELD ROUTE PIPING IN ORDER TO PROVIDE FOR EASE OF ACCESS TO VALVES AND OTHER APPURTENANCES. SUPPORT INTERIOR PIPING FROM THE BUILDING STRUCTURE USING COPPER OR PVC COATED HANGERS. SUPPORT REFRIGERANT PIPING 4 FOOT ON CENTER AND AT EACH CHANGE OF DIRECTION. PROVIDE 4" WIDE INSULATION SADDLES. SUBMIT REFRIGERANT PIPING LAYOUT SHOP DRAWINGS FOR EACH UNIQUE SYSTEM, REVIEWED AND APPROVED BY THE MANUFACTURER, IN WRITING. SHOW ALL FILTERS, DRIERS, SIGHT-GLASSES, VALVES, ETC. AS REQUIRED BY THE MANUFACTURER. USE REFRIGERANT GRADE, TYPE "K" HARD DRAWN COPPER PIPE WITH LONG RADIUS ELBOWS. NO CAST FITTINGS ARE ACCEPTABLE. INSTALL FILTER DRIER EQUIVALENT TO SPORLAN CATCH-ALL. INSTALL SIGHT GLASSES WITH MOISTURE INDICATORS COVERED BY A PROTECTIVE CAP. LOCATE THE SIGHT GLASSES INSIDE THE BUILDINGS, CLOSE TO THE FAN COIL IN THEIR RESPECTIVE MECHANICAL CLOSETS. PROVIDE EXTERNAL FRONT SEATED BRASS SERVICE VALVES WITH SWEAT CONNECTIONS, WITH SERVICE PORTS FOR CHECKING OPERATING REFRIGERANT PRESSURES. COPPER SHALL BE CLEANED AND SHINED BEFORE BRAZING. BRAZE USING J.W. HARRIS "DYNAFLOW" 6% SILVER BRAZING ALLOY. PIPING SHALL BE PURGED WITH DRY NITROGEN WHILE BRAZING TO PREVENT OXIDATION. UPON COMPLETION OF A WELD, THE WELD SHALL BE WIPED WITH A DAMP RAG TO REMOVE FLUX WHILE STILL HOT. ALL PIPING SHALL BE TESTED FOR 24 HOURS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND PROVEN TIGHT: DISCHARGE AND LIQUID REFRIGERANT PIPING--300 PSIG, NITROGEN. SUCTION REFRIGERANT PIPING--150 PSIG NITROGEN. REFRIGERANT PIPING, AFTER PROVEN TIGHT, SHALL BE EVACUATED BY MEANS OF AN APPROVED VACUUM PUMP TO A VACUUM OF 2.5 MM HG ABSOLUTE. SYSTEMS SHALL STAND UNDER VACUUM WITH VACUUM PUMP OFF FOR A MINIMUM OF 12 HOURS. SYSTEMS MAY BE CHARGED WITH PROPER REFRIGERANT AFTER ARCHITECT'S APPROVAL OF VACUUM TEST. A DEHYDRATOR SHALL BE USED IN CHARGING HOSE DURING CHARGING OF SYSTEMS WITH REFRIGERANT. 30. GENERAL THIS SECTION APPLIES TO ALL MECHANICAL WORK. ALL INSULATION SHALL BE IN STRICT ACCORDANCE WITH ASHRAE STANDARDS AND ALL LOCAL AND STATE ENERGY CODES. THE INSULATION WORK SHALL BE PERFORMED BY A FIRM REGULARLY ENGAGED IN THIS TYPE WORK USING MECHANICS SKILLED IN THE TRADE. INSTALL ALL MATERIALS AS RECOMMENDED BY THE MANUFACTURER FOR THE SERVICE INTENDED. ALL INSULATION MATERIAL, INCLUDING SEALER MATERIAL, ADHESIVES, COVERING MATERIAL, FINISH, ETC. SHALL HAVE A U.L. LISTED FLAME SPREAD RATING NOT OVER 24 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING NOT HIGHER THAN 50. ALL COATINGS AND COVERINGS FOR HOT SERVICE SHALL BE BREATHER TYPE AND VAPOR BARRIER TYPE FOR COLD SERVICE. HVAC PIPING: INSULATE REFRIGERANT SUCTION LINES AND ALL CONDENSATE DRAIN LINES WITH 1" THICK CLOSE CELL ELASTOMERIC INSULATION INSTALLED PER THE MANUFACTURERS REQUIREMENTS. PAINT EXTERIOR INSULATION WITH TWO COATS OF PAINT AS REQUIRED BY THE INSULATION MANUFACTURER. EXTERNALLY INSULATED DUCTS: EXTERNALLY INSULATED DUCTWORK TO BE PROVIDED WITH 2" THICK (0.27 BTU"IN./SQ.FT./F"HR. "K" VALUE AT 75°F. WITH MINIMUM INSTALLED R-VALUE OF 6.0) DUCT WRAP WITH ALUMINUM ALL SERVICE JACKET AND VAPOR BARRIER. EXCLUDES PRE-INSULATED FLEXIBLE DUCT. 31. EQUIPMENT: CAPACITY, PERFORMANCE AND CHARACTERISTICS OF EQUIPMENT SHALL BE AS INDICATED ON THE DRAWINGS AND AS SPECIFIED OR IMPLIED HEREIN. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCREASED COST TO HIMSELF OR OTHERS FOR EQUIPMENT WHICH DEVIATES FROM THAT SCHEDULED OR IMPLIED HEREIN. REGARDLESS OF COST AFFECT, THE ARCHITECT MUST APPROVE ANY DEVIATION FROM THE DRAWINGS AND THE SPECIFICATION. 32. MOTORS AND STARTERS: ALL ELECTRIC MOTORS SHALL BE HIGH EFFICIENCY TYPE WITH MAXIMUM OF 1750 RPM WITH OPEN DRIP PROOF OR TEFC ENCLOSURES, UNLESS OTHERWISE NOTED. MOTORS LOCATED ON AIR HANDLING UNITS SHALL BE MOUNTED IN RUBBER SUPPORTS OR THE FAN SHALL BE INDEPENDENTLY SUPPORTED ON SPRING ISOLATORS. MOTORS LOCATED IN THE CONDITIONED SPACE SHALL BE SELECTED FOR QUIET OPERATION AND SHALL NOT PRODUCE AN OBJECTIONABLE "MOTOR NOISE" IN THE SPACE. ELECTRICAL CHARACTERISTICS SHALL BE VERIFIED FROM THE ELECTRICAL DRAWINGS, PRIOR TO BIDDING, AND VERIFIED ON THE JOB WITH THE ELECTRICAL SUB-CONTRACTOR. IF A CONFLICT ARISES, THE ELECTRICAL DRAWINGS SHALL BE THE AUTHORITY. PROVIDE MOTOR STARTERS AND PROPER HEATER ELEMENTS SIZED IN ACCORDANCE WITH NFPA 70. STARTERS SHALL BE SQUARE D OR EQUIVALENT WITH OVERLOAD TRIP ELEMENT IN EACH PHASE. LARGER MOTORS AND THEIR STARTERS SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AS TO INRUSH ALLOWABLE AND THE TYPE OF STARTING PERMITTED. SHOULD ANY MECHANICAL EQUIPMENT REQUIRE EXTRA WORK BY OTHER TRADES, FOR PROPER INSTALLATION, THIS CONTRACTOR SHALL BEAR ALL COSTS, SUCH AS INCREASED ELECTRICAL, STRUCTURAL, ROOFING, ETC. 33. SYSTEMS TEST AND BALANCE: THE REQUIRED TEST & BALANCE OF THE HVAC SYSTEM SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING AGENCY AS SPECIFIED BELOW. AGENCY QUALIFICATIONS: TEST & BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AGENCY ENGAGED SOLELY IN TEST AND BALANCE WORK. AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) AND NATIONAL ENVIRONMENTAL BALANCING BUREAU, (NEBB). SUBMIT A WRITTEN REPORT WITHIN 30 DAYS OF COMMENCING WORK, WITH ANY RECOMMENDED CHANGES TO INSURE BALANCING CAPABILITY. SUBMIT A DETAILED TEST PLAN TO THE ARCHITECT ILLUSTRATING ALL FORMATS, DRAWINGS, AND TEST PROCEDURE TO BE USED FOR TESTING THE COMPLETED SYSTEM. THE APPROVED PLAN WILL BE USED FOR TESTING THE SYSTEMS. PROCEDURES SHALL INCLUDE REQUIREMENTS LISTED IN AABC/NEBB STANDARDS, LATEST EDITION AND ANY SPECIAL REQUIREMENTS FOR THIS PROJECT. MAKE PROJECT VISITS AS REQUIRED DURING CONSTRUCTION PERIOD INSPECTING FOR PROPER INSTALLATION OF THE SYSTEM AND RELATED BALANCING DEVICES. PROJECT VISIT REPORTS SHALL BE MADE TO THE ARCHITECT IN WRITING. CONTRACTORS REQUIREMENTS PRIOR TO TEST & BALANCE: THE CONTRACTOR SHALL PERFORM ALL REQUIRED PRELIMINARY TESTS AND OTHER PREPARATORY WORK, INCLUDING BUT NOT LIMITED TO: MAKE SURE ALL FANS ARE OPERATING, CHECK ROTATION, RPM, AND AMPS. CHECK ALL DAMPERS FOR OPERATION. PUT ALL HVAC EQUIPMENT IN FULL OPERATION INCLUDING AIR UNITS AND FANS. MAKE SURE ALL HVAC CONTROLS ARE INSTALLED AND FULLY OPERATIONAL. CLEAN/REPLACE FILTERS JUST PRIOR TO TESTING. PROVIDE ALL BALANCING DEVICES AND DRIVE CHANGES THAT ARE DEEMED NECESSARY BY T&B AGENCY FOR BALANCE AT NO ADDITIONAL COST TO THE OWNER. TEST & BALANCE AGENCY SHALL BALANCE ALL AIR SYSTEMS FOR OPERATION WITHIN DESIGN CRITERIA. PRIME MOVERS SHALL BE WITHIN 5% OF DESIGN AND TERMINALS WITHIN 10% OF DESIGN.

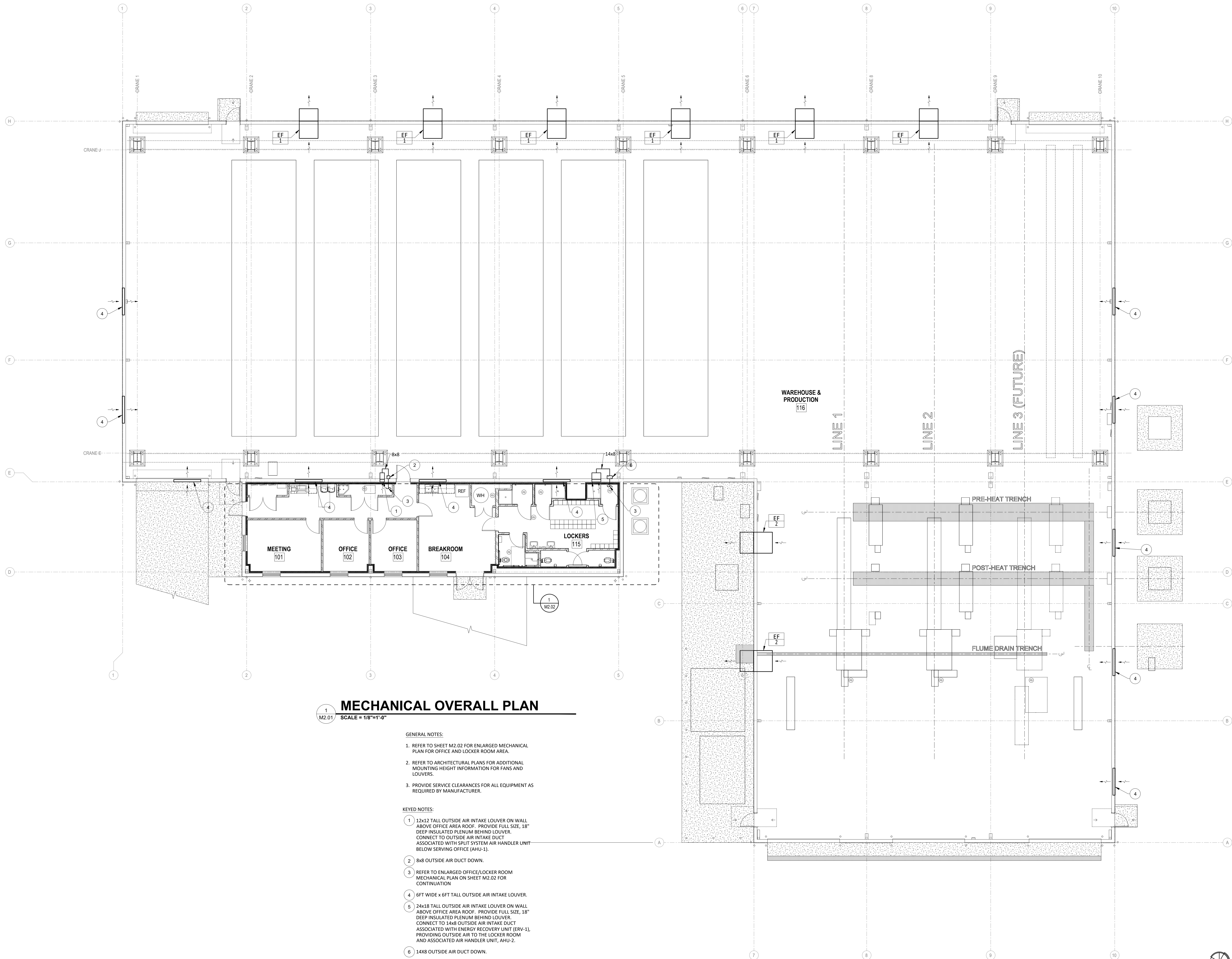
STEEL DYNAMICS RAIL SPIKE BUILDING

CONSTRUCTION DRAWINGS

MECHANICAL SPECIFICATIONS

3302 BAKER AVENUE NW
ROANOKE CITY, VA

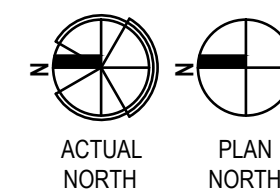
DATE: 2026-07-10
SCALE: As indicated
DESIGNER:
DRAFTER:
CHECKED:
PROJECT NO: 0077490.01
DATE: 2026-07-10
SEAL 2026-07-10 JOHN N. BERG, JR. Lic. No. 051165 PROFESSIONAL ENGINEER
SHEET NUMBER M1.02
MUNICIPALITY PROJECT



MECHANICAL OVERALL PLAN
SCALE = 1/8"=1'-0"

- GENERAL NOTES:
1. REFER TO SHEET M2.02 FOR ENLARGED MECHANICAL PLAN FOR OFFICE AND LOCKER ROOM AREA.
 2. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL MOUNTING HEIGHT INFORMATION FOR FANS AND LOUVERS.
 3. PROVIDE SERVICE CLEARANCES FOR ALL EQUIPMENT AS REQUIRED BY MANUFACTURER.

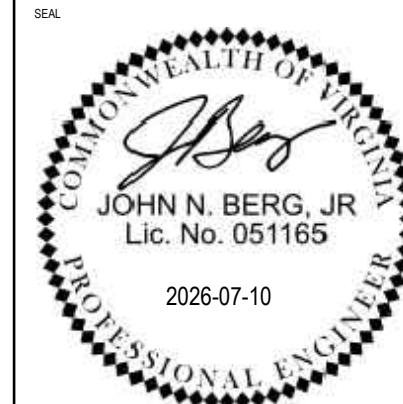
- KEYED NOTES:
- 1 12x12 TALL OUTSIDE AIR INTAKE LOUVER ON WALL ABOVE OFFICE AREA ROOF. PROVIDE FULL SIZE, 18" DEEP INSULATED PLENUM BEHIND LOUVER. CONNECT TO OUTSIDE AIR INTAKE DUCT ASSOCIATED WITH SPLIT SYSTEM AIR HANDLER UNIT BELOW SERVING OFFICE (AHU-1).
 - 2 8x8 OUTSIDE AIR DUCT DOWN.
 - 3 REFER TO ENLARGED OFFICE/LOCKER ROOM MECHANICAL PLAN ON SHEET M2.02 FOR CONTINUATION
 - 4 6FT WIDE x 6FT TALL OUTSIDE AIR INTAKE LOUVER.
 - 5 24x18 TALL OUTSIDE AIR INTAKE LOUVER ON WALL ABOVE OFFICE AREA ROOF. PROVIDE FULL SIZE, 18" DEEP INSULATED PLENUM BEHIND LOUVER. CONNECT TO 14x8 OUTSIDE AIR INTAKE DUCT ASSOCIATED WITH ENERGY RECOVERY UNIT (ERV-1). PROVIDING OUTSIDE AIR TO THE LOCKER ROOM AND ASSOCIATED AIR HANDLER UNIT, AHU-2.
 - 6 14x8 OUTSIDE AIR DUCT DOWN.



STEEL DYNAMICS RAIL SPIKE BUILDING

MECHANICAL OVERALL PLAN

DATE: 2026-07-10
SCALE: As indicated
DESIGNER:
DRAFTER:
CHECKED:
PROJECT NO.
0077490.01



SHEET NUMBER
M2.01
MANUFACTURING PROJECT

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