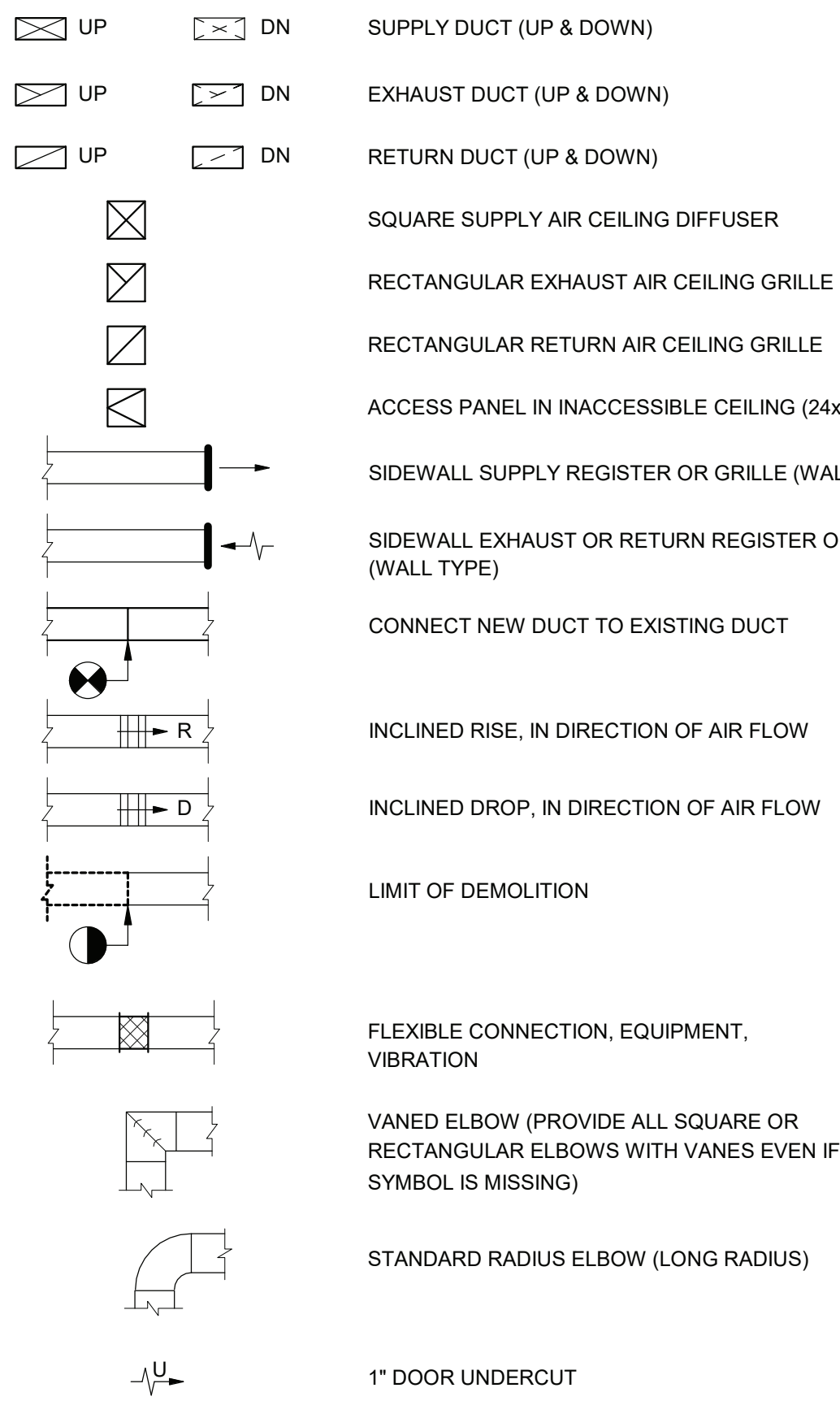
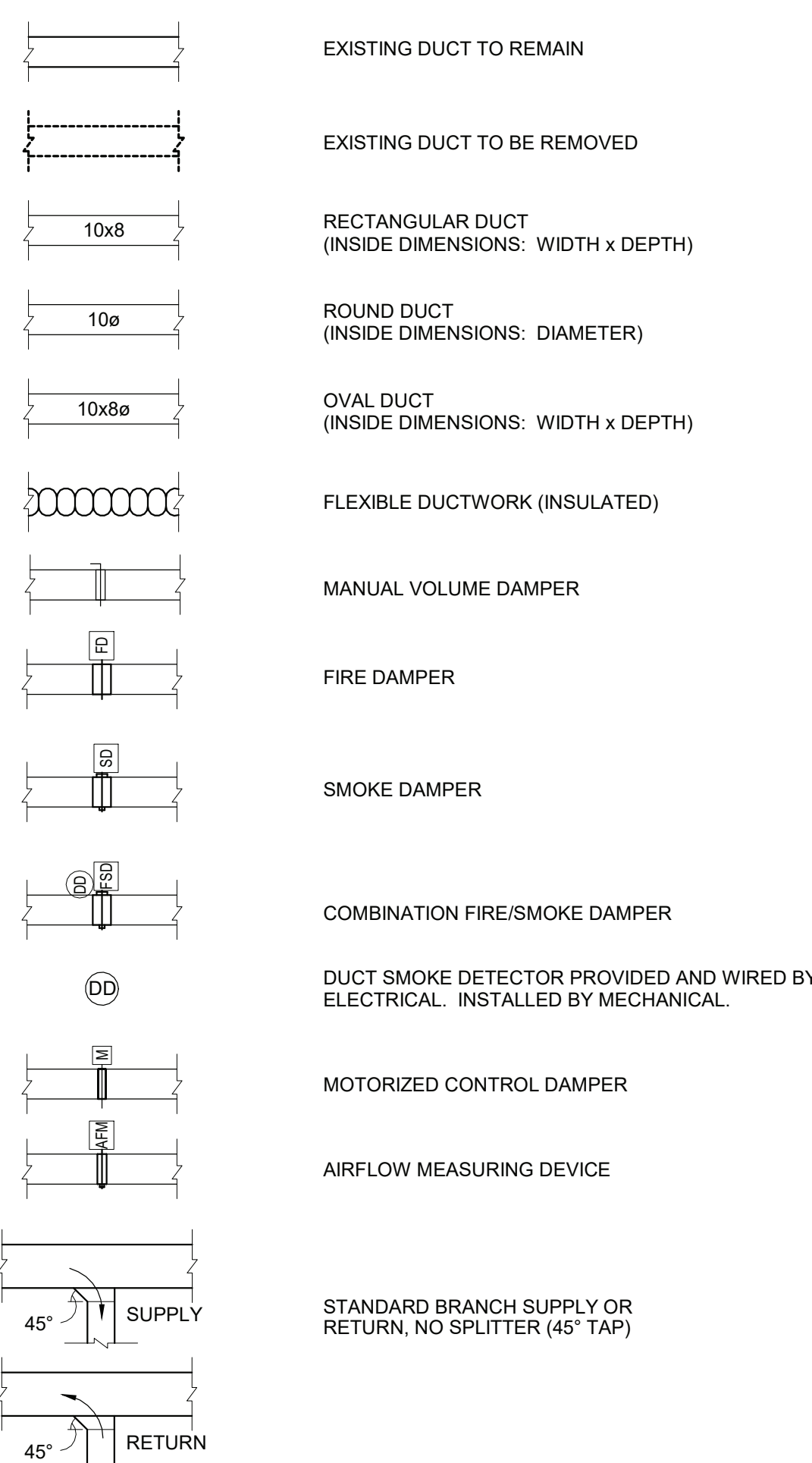


MECHANICAL LEGEND

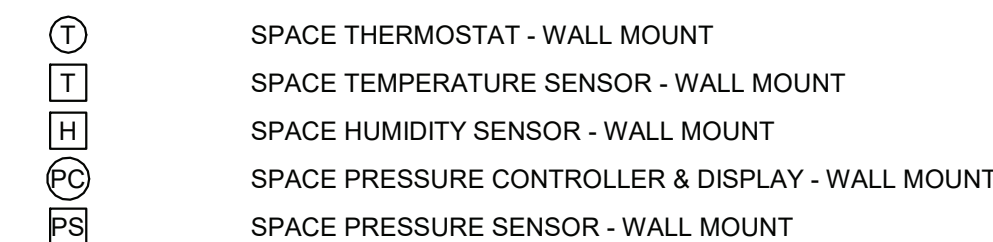
AIR DISTRIBUTION SYMBOLS



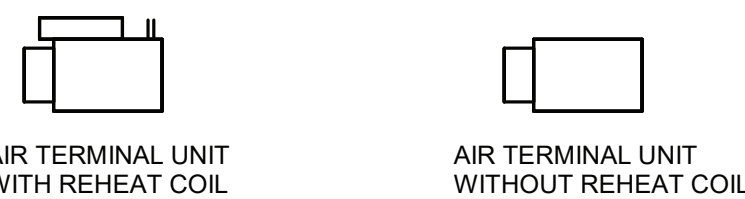
AIR DISTRIBUTION SYMBOLS



CONTROLS DEVICE SYMBOLS



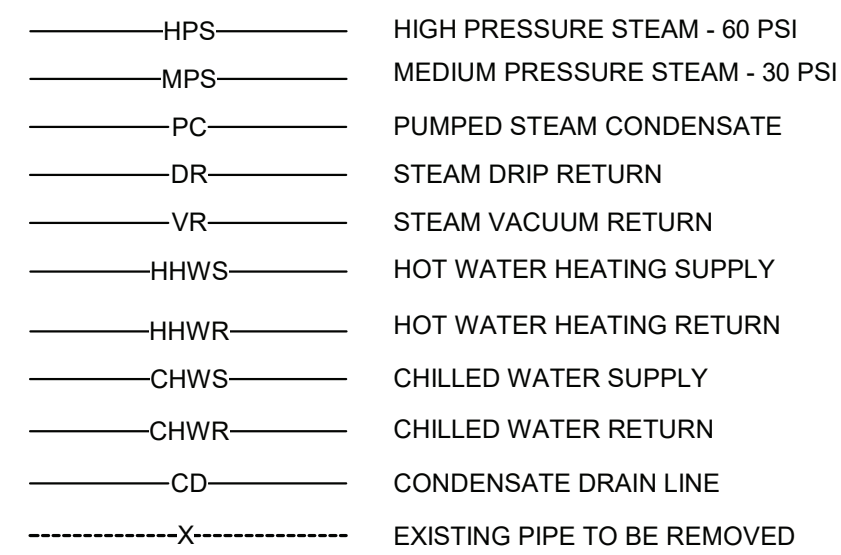
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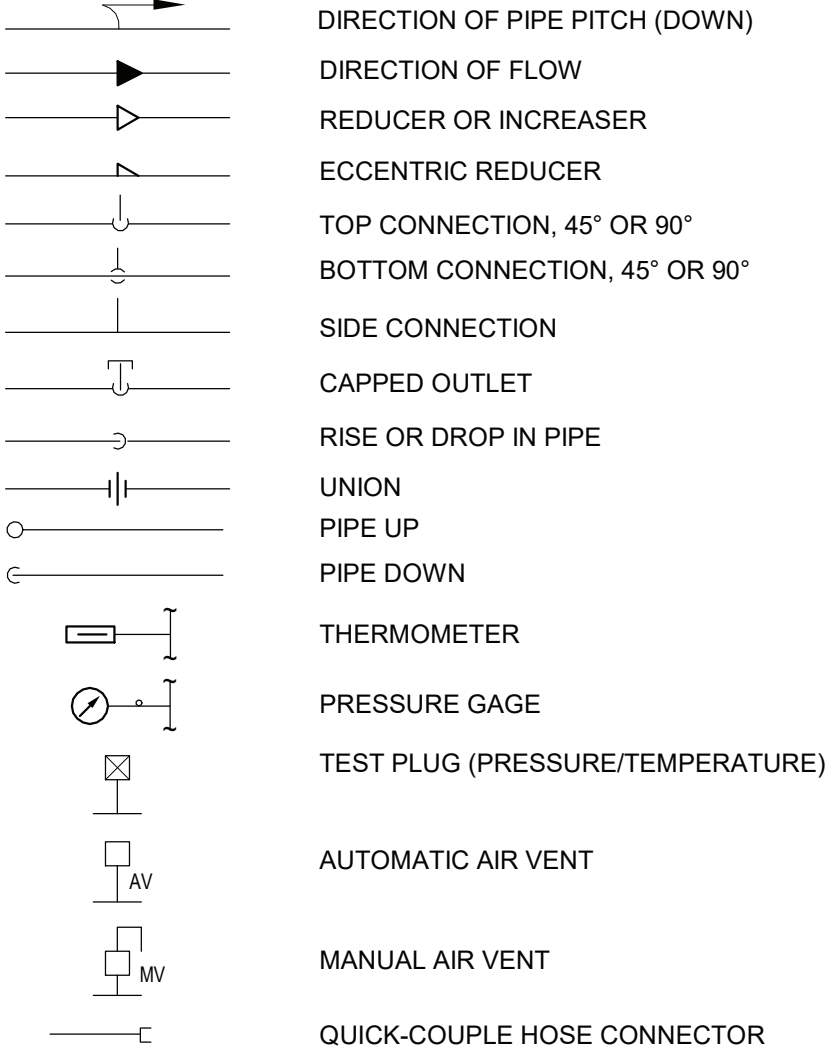
DRAWING SYMBOLS

DRAWING MATCHLINE

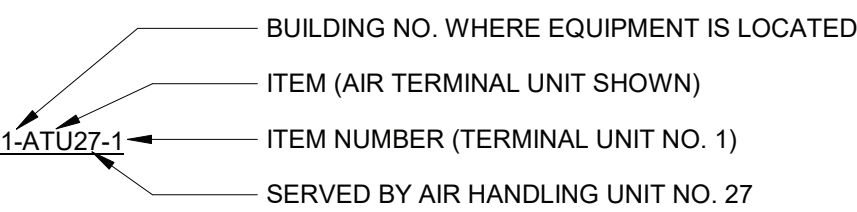
PIPING SYMBOLS



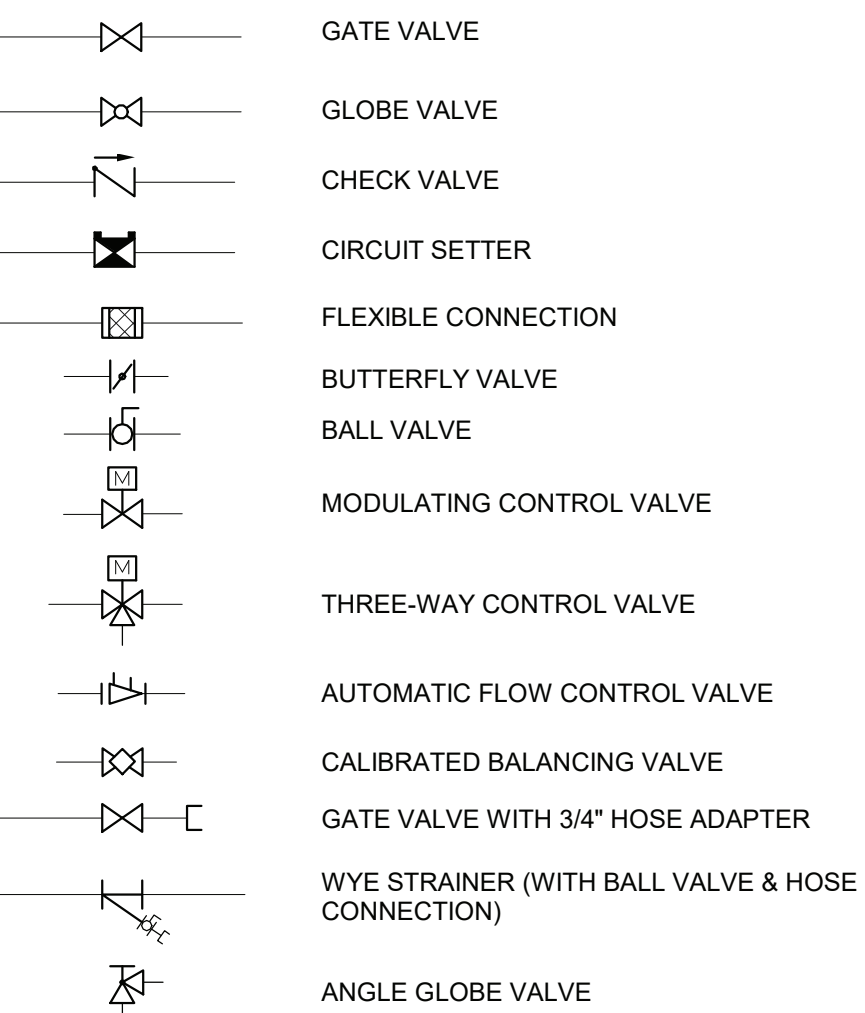
GENERAL PIPING SYMBOLS



EQUIPMENT ANNOTATIONS



VALVE SYMBOLS



MECHANICAL NOTES

- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF FIELD CONDITIONS PRIOR TO BEGINNING WORK AND ORDERING EQUIPMENT, AND FOR COORDINATING NEW EQUIPMENT DIMENSIONS AND MEANS AND METHODS FOR INSTALLATION WITH FIELD CONDITIONS.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SUBMITTED EQUIPMENT TO ENSURE ALL INLET/OUTLET CONNECTIONS COORDINATE WITH FIELD INSTALLED DUCTWORK AND MAKE ANY NECESSARY DUCT MODIFICATIONS TO ENSURE PROPER OPERATION OF MECHANICAL EQUIPMENT.
- SUBMITTALS SHALL MEET SCHEDULED DESIGN CHARACTERISTICS, INCLUDING BUT NOT LIMITED TO CFMS, EAT(DBWB), ESP, CAPACITIES, VOLTAGES/PHASES, MCAMOCOP, SONES, ETC.
- ALL DUCT CONSTRUCTION, INSTALLATION, AND SUPPORTS ARE TO COMPLY WITH LATEST EDITION OF SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE DUCT.
- INSULATE ALL DUCTWORK ACCORDING TO SPECIFICATIONS.
- ALL WALL-MOUNTED THERMOSTATS AND/OR TEMPERATURE SENSORS SHALL BE INSTALLED AT AN ELEVATION OF 48" ABOVE FINISHED FLOOR TO THE TOP UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF WALL-MOUNTED THERMOSTATS SHALL BE COORDINATED WITH OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF THERMOSTATS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER OR REPRESENTATIVE IN THE FIELD.
- ALL SUPPLY AIR DIFFUSERS SHALL BE 4-WAY THROW UNLESS NOTED OTHERWISE. CONTRACTOR SHALL PAINT INSIDE EACH RETURN GRILLE'S PLENUM AND DUCT CONNECTION FLAT BLACK TO CONCEAL CONNECTION. COORDINATE AIR DEVICE LOCATIONS WITH LIGHTING FIXTURES AND FIRE SPRINKLER HEADS. PRIOR TO INSTALLATION, THE CONTRACTOR IS TO REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR ACTUAL FINAL LOCATIONS OF AIR DEVICES.
- DIFFUSERS/GRILLES SHALL NEVER BE INSTALLED ON SURFACE OF ACOUSTICAL LAY-IN TILE. ALL DIFFUSERS/GRILLES IN LAY-IN CEILINGS SHALL BE LAY-IN PANEL MOUNT. REFER TO SCHEDULE. GYPSUM BOARD SURFACE MOUNT DIFFUSERS SHALL NOT BE BEVEL MOUNT.
- CONTRACTOR SHALL COORDINATE DIFFUSER/GRILLE LOCATIONS WITH STRUCTURE IN EXPOSED SITUATIONS IN ORDER TO ENSURE AIR IS NOT DIRECTLY SUPPLIED OR RETURNED OVER STRUCTURE OR OTHER TRADE COMPONENTS SUCH AS FIRE SPRINKLER PIPING, PLUMBING PIPING, ETC., CAUSING DUST ACCUMULATION. DUCTWORK ALONG WITH DIFFUSER/GRILLE LOCATIONS SHALL BE INSTALLED SYMMETRICALLY WITH ANY ADJACENT DUCTWORK/GRILLES. CENTER DIFFUSERS/GRILLES BETWEEN STRUCTURAL MEMBERS WHERE DUCTWORK AND STRUCTURAL MEMBERS ARE EXPOSED. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL INSTALLATION APPEARANCE AND SHALL MAKE APPROPRIATE CHANGES WHERE DIRECTED BY ARCHITECT/ENGINEER AT THEIR OWN EXPENSE WHERE ITEMS ARE NOT INSTALLED PER ABOVE STANDARDS.
- CONTRACTOR SHALL PROVIDE A COPY OF THE TEST AND BALANCE REPORT BY AN AABC OR NEBB CERTIFIED AGENCY. THIS REPORT MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO THE FINAL INSPECTION. THE CONTRACTOR MUST ALSO PROVIDE ALL REPORTS REQUIRED BY THE SPECIFICATION, OUTDOOR TEMPERATURE (DB); OUTSIDE AIR (DBWB & CFM); SUPPLY AIR AT UNIT DISCHARGE (DBWB & CFM); RETURN AIR (MIXED) (DBWB & CFM); LEAVING COIL (DBWB); DIFFUSER/GRILLE (DBWB); EQUIPMENT (EAT/TA/T); EQUIPMENT (GPM); EQUIPMENT (PRESSURES); OUTSIDE AIR CFM SHALL BE MEASURED DIRECTLY AND NOT CALCULATED FROM THE DIFFERENCE BETWEEN SUPPLY AIR CFM AND RETURN AIR CFM.
- CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS DURING TEST AND BALANCE AS REQUIRED TO ENSURE EQUIPMENT IS OPERATING WITHIN 10% OF THE SPECIFIED CRITERIA. THIS INCLUDES, BUT IS NOT LIMITED TO, ADJUSTING BELTS, SHEAVES, PULLEYS, AND IMPELLERS.
- ALL AIR HANDLING UNITS SHALL BE MECHANICALLY ATTACHED TO OTHER AIR DISTRIBUTION SYSTEM COMPONENTS. AIR HANDLING UNITS LOCATED OUTSIDE THE CONDITIONED SPACE SHALL BE SEALED USING APPROVED CLOSURE SYSTEMS CONFORMING TO THE APPROVED CLOSURE AND MECHANICAL APPLICATION REQUIREMENTS OF INTERNATIONAL BUILDING CODE.
- ALL DUCTWORK MUST BE INSTALLED 6" AWAY FROM ANY FIRE RATED WALL TO FACILITATE INSPECTION.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL TRADES INSTALLATION SCHEDULES. FIXED WORK SUCH AS DUCTWORK AND PLUMBING SHALL BE INSTALLED PRIOR TO ANY TRADE WORK THAT CAN BE EASILY RELOCATED OR OFFSET SUCH AS ELECTRICAL CONDUITS, SMALL WATER LINES, ETC. IDEALLY DUCTWORK SHALL BE INSTALLED FIRST. CONTRACTOR TO PROVIDE COORDINATION DRAWINGS TO COR PRIOR TO CONSTRUCTION.
- PROVIDE A FIRE DAMPER AT EVERY DUCT PENETRATION OF A FIRE-RATED WALL OR CEILING, WHETHER SHOWN ON DRAWINGS OR NOT. ALL FIRE DAMPERS SHALL BE DYNAMIC TYPE WITH BLADES OUTSIDE AIRSTREAM, UNLESS NOTED OTHERWISE.
- PROVIDE FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS AT EVERY LOCATION WHERE REQUIRED BY SECTION 607.5 OF THE IBC-MECHANICAL OR VA DESIGN MANUALS, WHETHER SHOWN ON DRAWINGS OR NOT. PROVIDE PROPER DAMPER ACTUATION IN ACCORDANCE WITH SECTION 607.4 OF THE IBC-MECHANICAL.
- WHERE SMOKE OR COMBINATION FIRE/SMOKE DAMPERS ARE REQUIRED, THE ELECTRICAL OR FIRE ALARM CONTRACTOR (MECHANICAL CONTRACTOR TO COORDINATE) SHALL PROVIDE 120V POWER AND ENSURE PROPER OPERATION UPON ACTIVATION. PROVIDE PROPER DAMPER ACTUATION IN ACCORDANCE WITH SECTION 607.3.2 OF THE IBC-MECHANICAL.
- PROVIDE A DUCT SMOKE DETECTOR IN THE SUPPLY AIR DUCT, DOWNSTREAM OF THE AIR FILTERS AND AHEAD OF ANY BRANCH CONNECTIONS, FOR ALL SYSTEMS HAVING A DESIGN CAPACITY GREATER THAN 2,000 CFM. DUCT SMOKE DETECTOR SHALL BE PROVIDED AND WIRED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- PROVIDE DUCT SMOKE DETECTORS WHERE REQUIRED BY SECTION 606.2 AND 607.3.3.2 OF THE IBC-MECHANICAL. LOCATIONS OF DUCT MOUNTED SMOKE DETECTORS SHOWN ON DRAWINGS ARE DIAGRAMMATIC IN LOCATION ONLY. FINAL PLACEMENT OF DETECTORS IN DUCTWORK SHALL MEET THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE A PRESSURE DIFFERENTIAL TEST AND MANUFACTURER'S TEST KIT. A COPY OF ALL TEST DATA SHALL BE MADE AVAILABLE AT FINAL INSPECTION. PROVIDE A READILY ACCESSIBLE DUCT ACCESS DOOR FOR INSPECTING AND SERVICING EACH DETECTOR. PROVIDE CEILINGWALL ACCESS PANELS WHERE INSTALLED IN INACCESSIBLE LOCATIONS. ACCESS PANELS IN RATED CONSTRUCTION SHALL BEAR A U.L. LABEL. ELECTRICAL CONTRACTOR SHALL FURNISH AND WIRE DETECTOR. MECHANICAL CONTRACTOR SHALL INSTALL DETECTOR WITHIN THE DUCTWORK. ELECTRICAL OR FIRE ALARM CONTRACTOR (MECHANICAL CONTRACTOR TO COORDINATE) SHALL PROVIDE 120V POWER AND ENSURE PROPER OPERATION FOR EACH DETECTOR. OTHER THAN IN MECHANICAL SMOKE CONTROL SYSTEMS, UPON ACTIVATION, THE ASSOCIATED AIR DISTRIBUTION SYSTEM SHALL SHUT DOWN AND A SUPERVISORY SIGNAL SHALL BE GENERATED PER SECTION 606.4 OF THE IBC-MECHANICAL.
- PENETRATIONS FOR PIPES, CONDUITS OR OTHER PURPOSES THROUGH ASSEMBLIES (FLOORS, ROOF, WALLS, PARTITIONS, ETC.) WITH A REQUIRED FIRE RESISTANCE RATING SHALL BE SEALED TO THE PENETRATING MEMBER IN AN APPROVED MANNER WHICH MAINTAINS THE REQUIRED FIRE RESISTANCE RATING OF THE ASSEMBLY.
- INTENT OF MECHANICAL NOTES ON DRAWINGS IS TO CLARIFY THE SCOPE OF WORK AND ALERT CONTRACTOR OF EXISTING CONDITIONS. CONTRACTOR IS TO VISIT THE SITE AND VERIFY ALL CLEARANCES BEFORE FABRICATION OR CONSTRUCTION, AND PROVIDE ADDITIONAL OFFSET AND/OR CHANGES IN DUCT SIZES TO MEET FIELD CONDITIONS, AND TO COORDINATE WITH ELECTRICAL, PLUMBING, AND FIRE PROTECTION SUBCONTRACTORS, BEFORE ANY CONSTRUCTION WORK.
- FLEXIBLE AND RIGID ROUND DUCT TAKE-OFFS FOR DIFFUSERS SHALL BE THE SAME SIZE AS DIFFUSER NECK. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'-0".
- INSTALL DUCTWORK AS HIGH AS POSSIBLE, TIGHT TO BOTTOM OF STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE DUCT ELEVATIONS WITH RAIN LEADERS, WATER PIPING, SANITARY DRAINS, AND MAJOR ELECTRICAL CONDUITS.
- CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTARY STEEL, STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES REQUIRED TO INSTALL AND ADEQUATELY SUPPORT MECHANICAL EQUIPMENT AND COMPONENTS IN A MANNER WHICH WILL NOT OVERLOAD BUILDING STRUCTURE. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
- CONTRACTOR SHALL INSTALL MOTORIZED OUTSIDE AIR DAMPERS FOR ALL AIR HANDLING EQUIPMENT. AIR HANDLING UNITS SHALL HAVE AN EQUIVALENT OR BETTER OF RUSKIN "CD50" DAMPER, WHICH SHALL MODULATE PER 24V ACTUATOR MECHANICALLY WIRED. ALL DAMPERS SHALL CLOSE UPON UNIT SHUTDOWN.
- PROVIDE A TRAP IN ALL CONDENSATE PIPING LOCATED AT THE AIR HANDLING EQUIPMENT. INSULATE ALL CONDENSATE LINES WITH 1/2" CLOSED CELL FOAM INSULATION. ALL PIPING EXPOSED TO EXTERNAL ELEMENTS SHALL BE JACKETED WITH UV STABILIZED PVC OR ALUMINUM SHEETING.
- PROVIDE A 4" HIGH CONCRETE HOUSEKEEPING PAD UNDER ALL MECHANICAL EQUIPMENT, UNLESS NOTED OTHERWISE. PADS SHALL BE 6" LARGER THAN EQUIPMENT ON ALL SIDES.
- ALL UNDERGROUND PIPING SHALL HAVE A MINIMUM 3'-0" OF COVER, UNLESS NOTED OTHERWISE.
- IT IS THE RESPONSIBILITY OF THE MECHANICAL INSTALLER TO PATCH AND REPAIR ANY DUCT OPENINGS WHICH RESULT FROM THE RELOCATION OR ELIMINATION OF ANY EXISTING AIR DEVICES. THE PATCH IS TO BE OF A SIMILAR MATERIAL TO THE REPAIRED DUCT AND TO BE SEALED IN ACCORDANCE WITH SMACNA STANDARDS.
- AIR HANDLING EQUIPMENT WARRANTIES SHALL BE EQUAL TO OR EXCEED WARRANTY OF SCHEDULED EQUIPMENT, UNLESS NOTED OTHERWISE.
- PROVIDE SEISMIC RESTRAINTS FOR DUCTWORK AND PIPING CONFORMING TO THE LATEST EDITION OF THE "SMACNA GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS."
- PROVIDE ADDITIONAL DUCTWORK AND PIPING SUPPORTS ON BOTH SIDES AND WITHIN 18" OF EACH FIRE RATED WALL. DUCTWORK OR PIPING SHALL NOT BE SUPPORTED FROM ANY FIRE RATED WALL.
- PROVIDE SINGLE WALL TURNING VANES IN ALL RECTANGULAR DUCT ELBOWS WITH ANGLES FROM 45 DEGREES TO 90 DEGREES, EXCEPT FOR TRANSFER AIR ELBOWS. TURNING VANES SHALL BE PROVIDED ACCORDING TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE.
- DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS (FREE AREA).
- CONTRACTOR SHALL COORDINATE ALL INTAKE/EXHAUST LOCATIONS TO ENSURE MINIMUM 10'-0" DISTANCE BETWEEN ANY INTAKES AND EXHAUSTS, PLUMBING VENTS, RELIEF, ETC.
- ALL HVAC EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS UNLESS INDICATED OTHERWISE.
- MECHANICAL CONTRACTOR SHALL SIZE AND INSTALL REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. REFRIGERANT PIPING SHALL BE TYPE "L" COPPER WITH SOLDERED OR BRAZED JOINTS AND 1" CLOSED CELL INSULATION. ALL PIPING EXPOSED TO EXTERNAL ELEMENTS SHALL BE JACKETED WITH UV STABILIZED PVC OR ALUMINUM SHEETING. PRE-CHARGED LINES AND SOLDER ON SHORT 90'S ARE NOT ACCEPTABLE. CONTRACTOR SHALL USE SWEEPING 90'S AT EVERY BEND WITH EXCEPTION OF EQUIPMENT CONNECTIONS.
- CONTRACTOR SHALL PROVIDE A PERMANENT/PROFESSIONAL LABEL FOR EACH PIECE OF EQUIPMENT, ASSOCIATED THERMOSTAT(S) AND/OR SENSOR(S).
- EQUIPMENT LOCATION IDENTIFICATIONS AT CEILINGS: WHERE VALVES, EQUIPMENT SUCH AS VAV BOXES, FANS, ETC., CIRCUIT BREAKERS, OR OTHER ITEMS SUBJECT TO ROUTINE SERVICE, ARE MOUNTED IN A CONCEALED AREA ABOVE A CEILING, THE CEILING MUST BE MARKED WITH A LABEL UNDER THE SERVICED DEVICE. THE LABEL SHALL CARRY APPROPRIATE IDENTIFICATION TAG.
- DUCTWORK, DIFFUSERS, GRILLES, AND OTHER MECHANICAL SYSTEM COMPONENTS SHALL NOT BE SUPPORTED BY THE CEILING OR CEILING SUSPENSION SYSTEM.
- METAL DUCTWORK SHALL BE CONNECTED TO MECHANICAL EQUIPMENT WITH FLEXIBLE DUCT CONNECTORS EQUAL TO DURO DYNE "SUPER METAL-FAB" WITH EXCELON FABRIC; "GRIP LOC" SEAM; 24 GAGE METAL TABS.
- ALL FLEXIBLE DUCTS SHALL BE LISTED AND LABELED TO UL 181 AND SHALL BE CLASS 0 OR CLASS 1. FLEXIBLE DUCTS SHALL HAVE A MINIMUM RATED AIR VELOCITY OF 4000 FPM, A MINIMUM POSITIVE PRESSURE RATING OF 4 IN. WG, AND A MINIMUM NEGATIVE PRESSURE RATING OF 1 IN. WG.
- CONTRACTOR SHALL SUPPLY PIPE SUPPORTS 4'-0" ON CENTERS FOR REFRIGERANT LINES AND CONDENSATE LINES. SUPPORTS SHALL BE PER DETAILS.
- ALL DOOR UNDERCUTS FOR THE PURPOSE OF BALANCING RETURN AIR SHALL BE MINIMUM 1".
- ALL CONTROL WIRING SHALL BE INCLUDED AS PART OF MECHANICAL WORK; REFER TO ELECTRICAL SPECIFICATIONS FOR CONDUIT AND WIRING REQUIREMENTS. COORDINATE WITH ELECTRICAL CONTRACTOR TO ENSURE THAT REQUIRED INTERFACE DEVICES ARE PROVIDED WITH ELECTRICAL COMPONENTS (I.E. FAN SPEED RHEOSTATS, AUXILIARY CONTACTS, INTERLOCKS, ETC.).
- ALL EQUIPMENT DISCONNECTS, WHETHER INTERNALLY MOUNTED OR EXTERNALLY MOUNTED, SHALL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR. IF EXTERNALLY MOUNTED, PROVIDE DISCONNECTING MEANS AT SAME ELEVATION AS EQUIPMENT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
- MECHANICAL CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE BIDDING/ORDERING AND INSTALLATION.
- WHERE MOTOR SPEED CONTROL IS REQUIRED, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE APPROPRIATE METHOD OF SPEED CONTROL. TYPICALLY, SINGLE PHASE MOTORS REQUIRE SPEED CONTROLLERS, AND THREE PHASE MOTORS REQUIRE VFD'S.
- WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OR NATURE OF WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- PROVIDE COMMISSIONING FOR ALL MECHANICAL EQUIPMENT ACCORDING TO MECHANICAL SYSTEMS COMMISSIONING AND COMPLETION REQUIREMENTS OF VA SPECIFICATION SECTION 019100 AND INTERNATIONAL ENERGY CODE 2017 SECTION C408, INCLUDING BUT NOT LIMITED TO:
A. A COMMISSIONING PLAN IN COMPLIANCE WITH SECTION C408.1.
B. TESTING, ADJUSTING, AND BALANCING OF SYSTEMS ACCORDING TO C408.2.2.
C. CONDUCT FUNCTIONAL PERFORMANCE TESTING ACCORDING TO C408.2.3.
D. PRELIMINARY COMMISSIONING REPORT OF TEST PROCEDURES AND RESULTS PER C408.2.4.
E. PRIOR TO FINAL INSPECTION, PROVIDE RECORD DRAWINGS, OPERATING AND MAINTENANCE MANUALS, SYSTEM BALANCING REPORT, AND FINAL COMMISSIONING REPORT TO THE OWNER ACCORDING TO C408.2.5.

GENERAL NOTES

- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATIVE OF WORK TO BE PROVIDED (FURNISHED AND INSTALLED) UNDER THIS CONTRACT. DRAWINGS SHOULD NOT BE SCALED.
- THE CONTRACTOR IS RESPONSIBLE TO EXAMINE THE EXISTING CONDITIONS UNDER WHICH THEY SHALL OPERATE AND VERIFY THE EXTENT OF WORK REQUIRED TO COMPLETE THE WORK UNDER THIS CONTRACT.
- PRIOR TO ORDERING AND FABRICATING ANY EQUIPMENT, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE PHYSICAL CONDITIONS AT THE PROJECT SITE AND VERIFY SPACE AND SUFFICIENT CLEARANCES ARE AVAILABLE FOR INSTALLING EQUIPMENT, DUCTWORK, PIPING, AND APPURTENANCES, AND TO DETERMINE ANY NECESSARY MODIFICATIONS.
- PERFORM ALL WORK IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, REGULATIONS, AND STANDARDS ADOPTED BY THE AUTHORITY HAVING JURISDICTION. IF CONFLICTS EXIST BETWEEN THESE ENGINEERING DOCUMENTS AND CODES, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
- ALL CONSTRUCTION WORK SHALL ALSO MEET THE FOLLOWING CODE REQUIREMENTS:
 - INTERNATIONAL BUILDING CODE (IBC) 2018
 - INTERNATIONAL EXISTING BUILDING CODE 2018
 - IBC MECHANICAL 2018
 - IBC PLUMBING 2018
 - IBC ENERGY CONSERVATION 2018
 - INTERNATIONAL FIRE CODE 2018
 - NFPA 1-2018, THE UNIFORM FIRE CODE
 - NFPA 101-2018, THE LIFE SAFETY CODE
 - NFPA 518-2019, STANDARD FOR FIRE PREVENTION DURING WELDING, CUTTING AND OTHER HOT WORK
 - NFPA 13-2019, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
 - NFPA 70-2017, NATIONAL ELECTRICAL CODE
 - NFPA 90A-2018, STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTING SYSTEMS
 - NFPA 99-2018, STANDARD FOR HEALTH CARE FACILITIES
 - NFPA 241-2019, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS.
 - ALL APPLICABLE VA DESIGN MANUALS
- CONTRACTOR SHALL COORDINATE AND SEQUENCE DEMOLITION, CLEANING, AND CONSTRUCTION WORK.
- CONTRACTOR SHALL NOTE ANY SPECIAL REQUIREMENTS FOR INSTALLATION OF WORK UNDER THIS CONTRACT. DISMANTLE AND REASSEMBLE EQUIPMENT AS NECESSARY FOR ENTRY INTO THE BUILDING AND THE LOCATION OF INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN A COMPLETE PROJECT SCHEDULE AND SHALL UPDATE THIS SCHEDULE WEEKLY. ANY CHANGES SHALL BE NOTED AND AN UPDATED SCHEDULE SHALL BE PROVIDED TO THE OWNER.
- ALL PERMITS, FEES, TAXES, ETC SHALL BE PAID BY CONTRACTOR AS PART OF THE TOTAL PROJECT COST.
- MAINTAIN THE INTEGRITY OF ALL FIRE AND SMOKE RATED WALLS, PARTITIONS, CEILINGS, AND FLOORS. SEAL ALL PENETRATIONS THROUGH RATED ASSEMBLIES WITH FIRESTOP MATERIAL IN ACCORDANCE WITH U.L. REQUIREMENTS TO MAINTAIN THE ASSEMBLY RATING.
- CONTRACTOR SHALL FURNISH U.L. APPROVED DRAWINGS FOR EACH TYPE OF FIRE AND SMOKE RATED ASSEMBLY PENETRATION BY DUCTS, PIPES, OR CONDUITS, AND SHALL DISPLAY THESE DRAWINGS ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL REFER TO ALL DETAILS FOR PROPER GUIDANCE.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND EQUIPMENT SUBMITTALS FOR ALL PRODUCTS USED ON PROJECT.
- THE COR'S APPROVAL OF SUBMITTAL DATA SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF CONTRACT DOCUMENTS UNLESS THE CONTRACTOR HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER TO THE SPECIFIC DEVIATION. THE ENGINEER'S APPROVAL OF SUBMITTAL DATA SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN HIS OR HER SUBMITTAL DATA.
- THE CONTRACTOR IS REQUIRED TO SUBMIT THREE COMPLETE O&M MANUALS IN THREE RING BINDERS AT SUBSTANTIAL COMPLETION. MANUALS SHALL INCLUDE INSTALLATION AND MAINTENANCE DATA ON ALL NEW EQUIPMENT AND MATERIALS, CERTIFIED TECHNICAL PRODUCT DATA, EQUIPMENT SHOP DRAWINGS, SPARE PARTS DATA, ETC. PROVIDE AN INDEX AND ASSOCIATED VIDEOS.
- CLOSE OUT DOCUMENTS: THE CONTRACTOR IS TO MAINTAIN ONE SET OF CONSTRUCTION DRAWINGS ON SITE AND KEEP CURRENT WITH MARK UP AS-BUILT CONDITIONS DURING CONSTRUCTION OF THE PROJECT. THIS SET IS TO INCLUDE ALL CONTRACT CHANGES, MODIFICATIONS AND CLARIFICATIONS. THIS SET ALONG WITH ALL SHOP DRAWINGS SHALL BE TURNED OVER TO THE ARCHITECT/ENGINEER AFTER CONSTRUCTION COMPLETION.
- IT IS THE RESPONSIBILITY OF ALL BIDDERS TO THOROUGHLY REVIEW AND UNDERSTAND ALL CONSTRUCTION DOCUMENTS. THIS INCLUDES BUT IS NOT LIMITED TO ALL DRAWINGS, SPECIFICATION SECTIONS, ETC. THE DRAWINGS ARE SCHEMATIC IN NATURE. THEREFORE BEFORE STARTING ANY WORK, THE CONTRACTOR SHALL REVIEW ALL OTHER CONSTRUCTION DOCUMENTS, VERIFY FIELD CONDITIONS AND SHALL MAKE ANY REQUIRED MINOR ADJUSTMENTS WITHOUT EXTRA COST TO THE OWNER. ANY MAJOR DISCREPANCIES FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. THE BASE BID SHALL REFLECT THE TOTAL COST OF NEW EQUIPMENT INSTALLATION. THIS INCLUDES LABOR, EQUIPMENT AND MATERIALS. NO CHANGE ORDERS SHALL BE ISSUED WITHOUT WRITTEN CONSENT AND APPROVAL FROM THE CONTRACTING OFFICER.

ABBREVIATIONS

(E)	EXISTING	GPM	GALLONS PER MINUTE
ADJ	ADJUSTABLE	HCV	HEATING CONTROL VALVE
AFF	ABOVE FINISHED FLOOR	HHWR	HEATING HOT WATER RETURN
AFM	AIRFLOW MEASURING DEVICE	HHWS	HEATING HOT WATER SUPPLY
AHJ	AUTHORITY HAVING JURISDICTION	HP	HORSEPOWER
AHU	AIR HANDLING UNIT	HPS	HIGH PRESSURE STEAM (60 PSI)
ATU	AIR TERMINAL UNIT	IBC	INTERNATIONAL BUILDING CODE
BAS	BUILDING AUTOMATION SYSTEM	IN	INCH
BHP	BRAKE HORSEPOWER	KW	KILOWATT
BDU	BOTTOM OF DUCT	LAT	LEAVING AIR TEMPERATURE
BTU	BOTTOM OF STRUCTURE	LMT	LEAVING WATER TEMPERATURE
BTU/H	BRITISH THERMAL UNIT PER HOUR	LPS	LOW PRESSURE STEAM (5 PSI)
CAV	CONSTANT AIR VOLUME	MBTUH	1,000 BTUH
CCV	COOLING CONTROL VALVE	MCA	MINIMUM CIRCUIT AMPACITY
CD	CEILING SUPPLY AIR DIFFUSER	MOCOP	MAXIMUM OVERCURRENT PROTECTION
CF	CUBIC FEET	MPS	MEDIUM PRESSURE STEAM (20 PSI)
CFM	CUBIC FEET PER MINUTE	MUA	MAKE UP AIR
CG	CEILING GRILLE	NC	NEW CONNECTION / NOISE CRITERIA
CHWR	CHILLED WATER RETURN	OA	OUTSIDE AIR
CHWS	CHILLED WATER SUPPLY	ODAL	OUTSIDE AIR LOUVER
COR	CONTRACTING OFFICER'S REPRESENTATIVE	OB	OPPOSED BLADE DAMPER
CTE	CONNECT TO EXISTING	PH	PHASE
CU	CONDENSING UNIT	PSIG	POUNDS PER SQUARE INCH GAGE
CV	CONSTANT AIR VOLUME	RA	RETURN AIR
DD	DUCT MOUNTED SMOKE DETECTOR	REF	REFRIGERANT
DIA	DIAMETER	RG	RETURN AIR GRILLE
DSSI	DUCTLESS SPLIT SYSTEM INDOOR UNIT	RH	RELATIVE HUMIDITY
DSSO	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT	RPM	REVOLUTIONS PER MINUTE
EA	EXHAUST AIR	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SD	SMOKE DAMPER
EDH	ELECTRIC DUCT HEATER	SF	SQUARE FEET
EF	EXHAUST FAN	SR	RETURN AIR REGISTER
EG	EXHAUST AIR GRILLE	TAB	TEST AND BALANCE
EWI	ENTERING WATER TEMPERATURE	TOD	TOP OF DUCT
FCU	FAN COIL UNIT	TYP	TYPICAL
FD	FIRE DAMPER	V	VOLTAGE
FLEX	FLEXIBLE	VAV	VARIABLE AIR VOLUME
FO	FLAT OVAL	VD	VOLUME DAMPER
FPM	FEET PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
FS	COMBINATION FIRE SMOKE DAMPER	WG	WATER GAUGE
FT	FEET		

DRAWING INDEX - HVAC

M-001	NOTES AND LEGEND - HVAC
M-002	SCHEDULES - HVAC
M-003	SCHEDULES - HVAC
MH100	MECHANICAL FLOOR PLAN - BASEMENT
MH101	MECHANICAL OVERALL PLAN - LEVEL 1
MH101A	MECHANICAL FLOOR PLAN - LEVEL 1 - AREA A
MH101B	MECHANICAL FLOOR PLAN - LEVEL 1 - AREA B
MH102	MECHANICAL FLOOR PLAN - PENTHOUSE
MH102A	MECHANICAL FLOOR PLAN - PENTHOUSE - AREA A
MH102B	MECHANICAL FLOOR PLAN - PENTHOUSE - AREA B
MH201A	MECHANICAL AIRFLOWS PLAN - LEVEL 1 - AREA A
MH201B	MECHANICAL AIRFLOWS PLAN - LEVEL 1 - AREA B
MH301	MECHANICAL SECTIONS
MH401	ENLARGED VIEWS - HVAC
MH402	ENLARGED VIEWS - HVAC
MH403	ENLARGED VIEWS - HVAC
MP101	MECHANICAL OVERALL PIPING PLAN - LEVEL 1
MP101A	MECHANICAL PIPING PLAN - LEVEL 1 - AREA A
MP101B	MECHANICAL PIPING PLAN - LEVEL 1 - AREA B
MP102	MECHANICAL PIPING PLAN - PENTHOUSE
M-501	DETAILS - HVAC
M-502	DETAILS - HVAC
M-503	DETAILS - HVAC
M-504	DETAILS - HVAC
M-601	CONTROLS - HVAC
M-602	CONTROLS - HVAC
M-603	CONTROLS - HVAC
M-604	CONTROLS - HVAC

Phaso

ISSUED FOR
CONSTRUCTION

Project Title
NEW COMMUNITY LIVING
CENTER

Project Number
620-334

Building Number
CLC

Drawing Number

M-001

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Checked
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Drawn
NS

CONSULTANT



ARCHITECT/ENGINEER OF RECORD

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Management



U.S. Department
of Veterans Affairs

Drawing Title
NOTES AND LEGEND - HVAC

Approved:

Phaso

FULLY SPRINKLERED