NOTE: NOT EVERY KEYNOTE IS APPLICABLE TO EVERY DRAWING SHEET.

HVAC KEYNOTES - MASTER INDEX

230902	TEMPERATURE CONTROL PANEL. FINAL QUANTITY AND LOCATIONS OF CONTROL PANELS TO BE DETERMINED WITH TEMPERATURE CONTROLS CONTRACTOR. COORDINATE ELECTRICAL REQUIREMENTS.
230903	PROVIDE REFRIGERANT MONITOR FOR REFRIGERANT EXHAUST PER IMC SECTION 1105.6.3.2 REFRIGERANT DETECTOR SHALL CONTAIN AUDIBLE AND VISUAL ALARM PER IFC SECTION 606.8.
230904	PROVIDE WEATHER AND TAMPER PROOF EMERGENCY SHUT-OFF BUTTON FOR CHILLER, MOUNTED AT 4'-6" PER IFC SECTION 606. PROVIDE CONTROLS TO ALLOW FOR EMERGENCY SHUTOFF THROUGH CENTRAL WORKSTATION.
230905	FIRE FIGHTER SMOKE CONTROL PANEL LOCATION.
230906	PROVIDE EMERGENCY SHUT-OFF BUTTON FOR BOILER, MOUNTED AT 4'-6". PROVIDE CONTROLS TO ALLOW FOR EMERGENCY SHUTOFF THROUGH CENTRAL WORKSTATION.
230907	PROVIDE EMERGENCY SHUT-OFF BUTTON FOR CHILLER, MOUNTED AT 4'-6". PROVIDE CONTROLS TO ALLOW FOR EMERGENCY SHUTOFF THROUGH CENTRAL WORKSTATION.
232101	HWS/HWR PIPE CONNECTIONS FOR TEMPORARY FEED. PROVIDE REMOVEABLE BLIND CAPS.
232102	PROVIDE THERMOSTAT WITH METAL, LOCKABLE SECURITY COVER.
232103	TEMPERATURE SENSOR IN EXHAUST AIR DUCT.
232104	3/4" HWS AND HWR LINES SERVING THE VAV BOX.
232105	3/4" CHWS, CHWR, HWS, HWR SERVING FCU FROM ABOVE. 3/4" CONDENSATE LINE ROUTED TO FLOOR DRAIN OR FLOOR SINK IN CHASE. REFER TO SHEET M2.2C FOR CONTINUATION.
232106	PIPE CONNECTIONS FOR TEMPORARY FEED. PROVIDE REMOVABLE BLIND CAPS.
232107	TEMPERATURE SENSOR IN RETURN AIR DUCT.
232108	WATER MAKE-UP LINE. CONNECT TO DOMESTIC COLD WATER LINE. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
232112	INSTALL PIPE HEADER WITH SHUTOFF VALVE FOR FUTURE REMOTE EVAPORATOR.
232113	3/4" HWS, HWR, CWS, CWR TO FCU BELOW. REFER TO SHEET M2.1C FOR ADDITIONAL DETAILS.
232114	3/4" CONDENSATE LINE DOWN TO FLOOR SINK IN THE MECHANICAL ROOM. SLOPE THE LINE IN DIRECTION OF THE DRAIN. COORDINATE ROUTING WITH SECURITY/ELECTRICAL/IT EQUIPMENT IN SPACE.
232116	PROVIDE SHUTOFF VALVE FOR CHILLED WATER SUPPLY AND RETURN LINES.
232118	3/4" HWS, HWR, CWS. CWR SERVING FAN COIL UNIT. ROUTE CONDENSATE LINE TO NEAREST FLOOR DRAIN / FLOOR SINK.
232119	INSTALL PIPE HEADER WITH SHUTOFF VALVE FOR FUTURE BOILER.
232120	SHUTOFF VALVE SERVING BOILER BYPASS DURING TEMPORARY HYDRONIC SERVICE.
232121	SHUTOFF VALVE FOR TEMPORARY HYDRONIC SERVICE CONNECTION.
232122	PROVIDE SHUTOFF VALVE FOR HYDRONIC SERVICE LINE.
232123	3/4" HWS, HWR, CWS, CWR SERVING FAN COIL UNIT.
232124	CONDENSATE LINE DOWN TO WATER CLOSET AS AN INDIRECT CONNECTION. INSULATE SANITARY LINE DOWNSTREAM OF CONDENSATE LINE CONNECTION.
232126	CHILLED WATER PRESSURE DIFFERENTIAL SENSOR. LOCATE IT AT 3/4TH THE DISTANCE OF THE LONGEST RUN.
232127	HOT WATER PRESSURE DIFFERENTIAL SENSOR. LOCATE IT AT 3/4TH THE DISTANCE OF THE LONGEST RUN.
232128	CAP 3" CWS, CWR AND 2" HWS, HWR PIPES FOR FUTURE EXPANSION. PROVIDE SHUT-OFF VALVE WITH BLIND FLANGE.
232129	ALL DUCTWORK AND PIPING LAYOUTS TO BE COORDINATED WITH LADDER TO MEET REQUIRED CLEARANCES FOR PERSONNEL ACCESS (TYP.).
232130	PROVIDE FITTINGS AND SHUTOFF VALVE FOR CONNECTION OF FUTURE EQUIPMENT.
232131	INSTALL PIPE HEADER WITH SHUTOFF VALVE FOR FUTURE BOILER.
232132	3" CHWS/CHWR SERVING AIR HANDLING UNIT.
232133	1-1/4" HWS/HWR SERVING AIR HANDLING UNIT.
232135	PROVIDE EXPANSION V-LOOP IN HOT WATER SUPPLY AND RETURN PIPING AT LOCATION INDICATED. REFER TO SPECIFICATION 230516 FOR DELEGATED DESIGN REQUIREMENTS. PROVIDE ALL GUIDES AND ANCHORS PER MANUFACTURER RECOMMENDATION.
232136	PROVIDE EXPANSION ANCHOR IN HOT WATER SUPPLY AND RETURN PIPING AT LOCATION INDICATED. REFER TO SPECIFICATION 230516 FOR DELEGATED DESIGN REQUIREMENTS. PROVIDE ALL GUIDES AND ANCHORS PER MANUFACTURER RECOMMENDATION.
232138	PROVIDE PIPE GUIDE IN PIPING AT LOCATION INDICATED. REFER TO SPECIFICATION 230516 FOR DELEGATED DESIGN REQUIREMENTS. PROVIDE ALL EXPANSION V-LOOPS AND ANCHORS PER MANUFACTURER RECOMMENDATIONS.
232139	PROVIDE PIPE ACCESSORIES SERVING FAN COIL UNIT ABOVE ACCESSIBLE CEILING. PROVIDE TAG ON THE CEILING PANEL FOR IDENTIFICATION OF THE PIPE ACCESSORIES ABOVE.
232140	REFER TO M2.1B FOR CONTINUATION.
232142	SOLAR THERMAL HEAT EXCHANGER (ALTERNATE BID) SERVING DOMESTIC HOT WATER. REFER TO SHEET P4.3 FOR ADDITIONAL INFORMATION. PROVIDE PIPE BRANCHES WITH SHUTOFF VALVES (BASE BID).
232143	SOLAR THERMAL HEAT EXCHANGER (ALTERNATE BID) SERVING HYDRONIC HOT WATER. REFER TO SHEET M4.4 AND M5.3 FOR ADDITIONAL INFORMATION. PROVIDE PIPE BRANCHES WITH SHUTOFF VALVES (BASE-BID).
232144	PROVIDE DRIP PAN OVER TRANSFORMER LOCATED IN THE CHASE. COORDINATE EXACT LOCATION WITH ELECTRICAL DRAWINGS. ROUTE THE DRAIN LINE TO NEAREST DRAIN IN THE CHASE.

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232145	1" HWS AND HWR LINES SERVING VAV BOX.
232146	COORDINATE DUCTWORK AND PIPE ROUTING WITH ELECTRICAL EQUIPMENT IN SPACE.
232147	PROVIDE OVERFLOW DETECTION FOR CONDENSATE LINES ABOVE INACCSESSIBLE CEILINGS.
232148	CONDENSING UNIT SERVING WALK IN FREEZER LOCATED ON CANOPY. REFER TO FOOD SERVICE DRAWINGS FOR EXACT LOCATION.
232149	CONDENSING UNIT SERVING WALK IN COOLER LOCATED ON CANOPY. REFER TO FOOD SERVICE DRAWINGS FOR EXACT LOCATION.
232150	EXHAUST FANS SERVING KITCHEN HOOD. REFER TO FOOD SERVICE DRAWINGS FOR EXACT LOCATION.
232151	SOLAR WATER LINES SERVING PANELS. SIZE AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
232152	2" SOLAR WATER SUPPLY LINE DOWN TO HEAT EXCHANGER AND EXPANSION TANK SERVING HYDRONIC HOT WATER SYSTEM. REFER TO SHEET 1/M4.5 AND SHEET 2/M4.1 FOR ADDITIONAL INFORMATION ON INSTALLATION AND EQUIPMENT LOCATION.
232153	2" SOLAR WATER SUPPLY LINE DOWN TO HEAT EXCHANGER AND EXPANSION TANK SERVING DOMESTIC HOT WATER SYSTEM. REFER TO SHEET 1/M4.5 AND SHEET P4.1 FOR ADDITIONAL INFORMATION ON INSTALLATION AND EQUIPMENT LOCATION.
232154	2" SOLAR WATER SUPPLY LINE AND RETURN LINE UP TO SOLAR PANELS ON THE ROOF. REFER TO 1/M4.5 AND SHEET M1.3 FOR ADDITIONAL INFORMATION.
232155	SOLAR THERMAL EXPANSION TANK (ALTERNATE BID) SERVING HYDRONIC HOT WATER. REFER TO SHEET M4.4 AND M5.3 FOR ADDITIONAL INFORMATION. PROVIDE PIPE BRANCHES WITH SHUTOFF VALVES (BASE-BID).
232156	REFER TO M2.2C FOR CONTINUATION.
232157	SOLAR THERMAL INLINE PUMP (ALTERNATE BID) SERVING GLYCOL LOOP. REFER TO SHEET M4.4 AND M5.3 FOR ADDITIONAL INFORMATION.
232158	COORDINATE PIPE ROUTING WITH ELECTRICAL EQUIPMENT IN SPACE.
232159	PROVIDE TEMPERATURE SENSORS TO ALLOW FOR MONITORING OF TEMPERATURE VIA BUILDING MANAGEMENT SYSTEM.
232160	REFER TO M2.1C FOR CONTINUATION.
232161	INSTALL PIPE HEADER WITH SHUTOFF VALVE FOR FUTURE HEAT EXCHANGER SERVING SOLAR HOT WATER LOOP.
232301	INSTALL REFRIGERANT LINES ON GROUND MOUNTED PIPE STANDS AS PER MANUFACTURER'S RECOMMENDATIONS. SIZED AND ROUTED AS PER MANUFACTURER'S REQUIREMENTS.
232302	COORDINATE DUCTWORK AND PIPE ROUTING WITH SECURITY/IT/ELECTRICAL EQUIPMENT IN THE ROOM.
232303	COORDINATE PIPE ROUTING WITH SECURITY/ELECTRICAL/IT EQUIPMENT IN PLACE.
233103	LINE OF SKYLIGHT TO BE UNENCUMBERED BY DUCTWORK.
233107	12" EXHAUST AIR DUCT SERVING EXHAUST FAN IN EVIDENCE ROOM. PROVIDE GOOSENECK WITH A BIRD SCREEN.
233110	ADJUST STRUCTURAL FRAMING SPACING TO ACCOMODATE DUCT ROUTING.
233111	REFER TO SHEET M1.2C FOR CONTINUATION.
233112	PROVIDE TRANSITION AND CONNECT 8" EA DUCT TO EXHAUST GRILLE IN CELL. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 200 CFM.
233113	PROVIDE TRANSITION AND CONNECT 8" SA DUCT TO SUPPLY GRILLE IN CELL. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 180 CFM.
233115	PROVIDE REMOTE DAMPER OPERATORS FOR SECURITY DIFFUSERS NOT AVAILABLE WITH INTEGRAL, FRONT OPERATED VOLUME DAMPERS. REMOTE OPERATOR TO BE PROVIDED FOR VOLUME DAMPERS LOCATED ABOVE SECURITY CEILINGS WITHOUT NEARBY ACCESS DOOR. THE OPERATOR SHALL BE PROVIDED WITH A FLUSH CEILING MOUNTED COVERPLATE WITH SECURITY SCREWS.
233116	PROVIDE SECURITY BARS. SEE SPECIFICATION 23 33 00.
233120	PROVIDE CLEANOUTS ON INLET AND OUTLET OF DRYER BOOSTER FAN.
233121	4" INFRARED HEATER INTAKE UP THRU ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE AIR CAP AND BIRDSCREEN.
233122	4" INFRARED HEATER EXHAUST FLUE THROUGH ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE VENT CAP.
233123	4" DRYER EXHAUST VENT THROUGH THE ROOF. PROVIDE GOOSENECK. COORDINATE LOCATION WITH THE EQUIPMENT. PROVIDE CLEANOUT FOR DRYER VENT RISER. CLEANOUT TO BE INSTALLED AT THE BOTTOM OF THE RISER OR 24" ABOVE FINISHED FLOOR.
233124	8" DRYER EXHAUST VENT THROUGH THE ROOF. PROVIDE GOOSENECK. COORDINATE LOCATION WITH THE EQUIPMENT. PROVIDE CLEANOUT FOR DRYER VENT RISER. CLEANOUT TO BE INSTALLED AT THE BOTTOM OF THE RISER OR 24" ABOVE FINISHED FLOOR.
233125	ALL DUCTWORK LAYOUTS TO BE COORDINATED WITH LADDER TO MEET REQUIRED CLEARANCES FOR PERSONNEL ACCESS.
233126	6" BOILER INTAKE UP THRU ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE GOOSENECK AND BIRDSCREEN.
233127	6" BOILER EXHAUST FLUE UP THRU ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE VENT CAP AND BIRDSCREEN.
233128	PROVIDE ROOF CURB FOR FUTURE 6" BOILER INTAKE. CAP AND SEAL WATER TIGHT.
233129	PROVIDE ROOF CURB FOR FUTURE 6" BOILER EXHAUST FLUE. CAP AND SEAL WATER TIGHT.
233130	16" EXHAUST DUCT RISER UP THRU THE ROOF. DUCT OPENING 18" A.F.F. PROVIDE GOOSENECK AND BIRDSCREEN.
233131	PROVIDE TRANSITION AND CONNECT 8" SA DUCT TO SUPPLY CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 110 CFM.

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233132	PROVIDE TRANSITION AND CONNECT 8" EA DUCT TO EXHAUST CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 120 CFM.
233133	PROVIDE TRANSITION AND CONNECT 6" SA DUCT TO SUPPLY CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 90 CFM.
233134	PROVIDE TRANSITION AND CONNECT 6" EA DUCT TO EXHAUST CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 100 CFM.
233135	PROVIDE TRANSITION AND CONNECT 8" SA DUCT TO SUPPLY CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 180 CFM.
233136	PROVIDE TRANSITION AND CONNECT 8" EA DUCT TO EXHAUST CONNECTION PROVIDED BY PREFABRICATED CELL MANUFACTURER. COORDINATE EXACT LOCATION WITH CELL MANUFACTURER. PROVIDE VOLUME DAMPER AND BALANCE TO 200 CFM.
233138	BOTTOM OF GRILLE TO BE LOCATED 8" A.F.F.
233140	6" WATER HEATER INTAKE UP THRU ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE GOOSENECK AND BIRDSCREEN.
233141	6" WATER HEATER EXHAUST FLUE UP THRU ROOF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE VENT CAP.
233142	PROVIDE ROOF CURB FOR FUTURE 6" WATER HEATER INTAKE. CAP AND SEAL WATER TIGHT.
233143	PROVIDE ROOF CURB FOR FUTURE 6" WATER HEATER EXHAUST FLUE. CAP AND SEAL WATER TIGHT.
233144	PROVIDE DUCT TRANSITIONS AS NECESSARY TO CONNECT TO THE EQUIPMENT.
233146	28"X10" MAKE-UP AIR DUCTS SERVING KITCHEN EXHAUST HOOD. COORDINATE DROPS WITH HOOD MAKE UP AIR CONNECTIONS ADJOINING STRUCTURE, PIPING AND DUCTWORK (TYP. 6).
233147	6" EXHAUST AIR DUCT FROM FLOOR ABOVE. CONNECT TO AIR TERMINAL AND BALANCE TO CFM SHOWN ON THE PLANS.
233148	8" SUPPLY AIR DUCT FROM FLOOR ABOVE. CONNECT TO AIR TERMINAL AND BALANCE TO CFM SHOWN ON THE PLANS.
233149	TRANSFER AIR ELBOW WITHOUT TURNING VANES.
233150	PROVIDE RETURN DUCT SMOKE DETECTOR PER DIVISION 28 SPECIFICATIONS.
233151	OUTSIDE AIR INTAKE TO BE MINIMUM 10'-0" AWAY FROM ANY EXHAUST OUTLET.
233152	REFER TO SHEET M1.1B FOR CONTINUATION.
233153	PROVIDE FRONT OPERATED DAMPER TO ALLOW FOR BALANCING AT THE AIR TERMINAL.
233154	16" EXHAUST AIR DUCTS DOWN FROM KITCHEN EXHAUST FAN SERVING KITCHEN EXHAUST HOOD. COORDINATE DROPS WITH HOOD EXHAUST AIR CONNECTIONS, ADJOINING STRUCTURE, PIPING AND DUCTWORK.
233157	8" EA DUCT SERVING EXHAUST FAN BELOW. PROVIDE GOOSENECK WITH BIRD SCREEN.
233159	ELECTRIC WALL HEATER TO BE SURFACE MOUNTED.
233160	CONTRACTOR TO COORDINATE ROUTING IN THE SPACE WITH COLD FORMED STEEL TRUSSES TO AVOID PENETRATIONS THROUGH PRECAST WALLS. ROUTING OF TRADE ELEMENTS SHOWN ON THE PLANS ARE DIAGRAMMATIC AND MUST BE COORDINATED WITH COLD-FORMED STEEL TRUSS SUPPLIER AND THEIR STRUCTURAL TRUSS ELEMENT REQUIREMENTS.
233162	PROVIDE 24" DEEP PLENUM AT THE LOUVER. BOTTOM OF PLENUM TO SLOPE TOWARDS LOUVER.
233163	PROVIDE DRIP PAN AT LOCATIONS WHERE DUCT ROUTING IS ABOVE ELECTRICAL/IT EQUIPMENT IN SPACE. ROUTE CONDENSATE LINE FROM THE PANS TO NEAREST FLOOR SINK OR DRAIN. SLOPE THE PIPING IN DIRECTION OF THE DRAIN. COORDINATE ROUTING WITH ELECTRICAL EQUIPMENT IN SPACE.
233164	EXHAUST FAN SERVING DISHWASHER BELOW. REFER TO FOOD SERVICE DRAWINGS FOR EXACT LOCATION.
233165	UNIT TO BE MOUNTED 10'-6" AFF FLUSH WITH FACE OF VESTIBULE WALL.
233166	10" DUCT SERVING DISHWASHER UPTO THE EXHAUST FAN MOUNTED ON THE ROOF. COORDINATE DUCTWORK LAYOUT AND EQUIPMENT LOCATION WITH FOOD SERVICE DRAWINGS AND EQUIPMENT.
233167	10" EXHAUST AIR DUCT SERVING EXHAUST FAN (EF-2) BELOW. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE GOOSENECK AND BIRD SCREEN.
233168	PROVIDE FIRE DAMPER AS PER DIV 23 SPECIFICATIONS.
233169	PROVIDE SMOKE DAMPER AS PER DIVISION 23 SPECIFICATIONS.
233170	PROVIDE REMOTE DAMPER OPERATORS FOR DIFFUSERS NOT AVAILABLE WITH INTEGRAL, FRONT OPERATED VOLUME DAMPERS. REMOTE OPERATOR TO BE PROVIDED FOR VOLUME DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS WITHOUT NEARBY ACCESS DOOR. THE OPERATOR SHALL BE PROVIDED WITH A FLUSH CEILING MOUNTED COVERPLATE.
233172	PROVIDE SMOKE DAMPER IN SUPPLY DUCT BELOW AS PER DIVISION 23 SPECIFICATIONS.
233173	VENT SERVING LAUNDRY MAKE UP AIR UNIT UP THRU THE ROOF. SIZE AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
233174	VENT SERVING KITCHEN MAKE UP AIR UNIT UP THRU THE ROOF. SIZE AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
233175	VENT SERVING LAUNDRY MAKEUP AIR UNIT ON THE FLOOR BELOW. SIZE AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATION WITH EQUIPMENT BELOW.
233176	VENT SERVING KITCHEN MAKEUP AIR UNIT ON THE FLOOR BELOW. SIZE AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATION WITH EQUIPMENT BELOW.
233177	USE SS-2 IN LIEU EXISTING SUPPLY AIR TERMINAL FOR ALTERNATE BID.
233178	USE TS-2 IN LIEU OF EXISTING TRANSFER AIR TERMINAL FOR ALTERNATE BID.
233179	USE RS-4 IN LIEU EXISTING RETURN AIR TERMINAL FOR ALTERNATE BID.
233180	PROVIDE REMOTE DAMPER OPERATORS FOR SECURITY DIFFUSERS NOT AVAILABLE WITH INTEGRAL, FRONT OPERATED VOLUME DAMPERS. REMOTE OPERATOR TO BE PROVIDED FOR VOLUME DAMPERS LOCATED ABOVE SECURITY CEILINGS WITHOUT NEARBY ACCESS DOOR. THE OPERATOR SHALL BE PROVIDED WITH A FLUSH CEILING MOUNTED COVERPLATE WITH SECURITY SCREWS (ALTERNATE BID). PROVIDE MANUAL VOLUME DAMPERS FOR BASE BID (TECTUM CEILINGS).
233182	REFER TO SHEET M1.1A FOR CONTINUATION.
233183	REFER TO SHEET M4.2 FOR CONTINUATION.

ABBREVIATIONS

AMPS	AMPERES
ADJ	ADJUSTABLE
ATC	AUTOMATIC TEMPERATURE CONTROL
AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ARV	AIR RELIEF VALVE
BD	BACK DRAFT
CFM	CUBIC FEET PER MINUTE
CC	COOLING COIL
CO	COMPANY
COND	CONDENSATE
DN	DOWN
D	DRAIN
DSP	DUCT STATIC PRESSURE
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EWB	ENTERING WET BULB
EF	EXHAUST FAN
EFF	EFFICIENCY
ELECT	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
F	FARENHIET
FD	FIRE DAMPER
FT	FEET
FPM	FEET PER MINUTE
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FFSCP	FIRE FIGHTER SMOKE CONTROL PANEL
GAL	GALLON
GPM	GALLONS PER MINUTE
GC	GENERAL CONTRACTOR
HC	HEATING COIL
HP	HORSE POWER
HR	HOUR
HTG	HEATING
ID	IDENTIFICATION
IH	INTAKE HOOD
IN	INCHES
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LDT	LEAVING DRY BULB
LBS	POUNDS
LWT	LEAVING WET BULB
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MBH	1000 BRITISH THERMAL UNTS PER HOUR
MIN	MINIMUM
MD	MOTORIZED DAMPER
MFR	MANUFACTURER
NC	NOISE CRITERIA
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OC	ON CENTER
PH	PHASE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RF	RELIEF AIR FAN
RH	RELIEF AIR HOOD
RM	ROOM
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SE	SMOKE EXHAUST
SD	SMOKE DAMPER
SENS	SENSIBLE
SP	STATIC PRESSURE
TCP	TEMPERATURE CONTROL PANEL
TCV	TEMPERATURE CONTROL VALVE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TSP	TOTAL STATIC PRESSURE
V	VENT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VOLT	VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
WC	WATER COLUMN
WO	WALL OPENING
WPD	WATER PRESSURE DROP

PIPE ABBREVIATIONS

CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
C	CONDENSATE
HWR	HYDRONIC WATER RETURN
HWS	HYDRONIC WATER SUPPLY
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
SWS	SOLAR WATER SUPPLY
SWR	SOLAR WATER RETURN

HVAC BASIS OF DESIGN

SUMMER	
OUTDOOR	93°F DB, 76.2°F WB
INDOOR	75°F DB, 63°F WB
WINTER	
OUTDOOR	-3°F DB
INDOOR	70°F DB
HEAT ONLY SPACES	55°F DB

GENERAL NOTES

1. ALL MECHANICAL WORK SHALL BE IN ACCORDANCE WITH INDIANA MECHANICAL CODE, LATEST APPLICABLE EDITION, THE AUTHORITY HAVING JURISDICTION AND AS SPECIFIED (WHICHEVER IS MORE STRINGENT).
2. IF NON-DESIGN BASE EQUIPMENT IS SELECTED, THIS CONTRACTOR SHALL BEAR ANY ADDITIONAL COSTS FOR MODIFICATION TO THE PROPOSED BUILDING SYSTEM CAUSED BY SELECTION OF THE NON-DESIGN BASE EQUIPMENT. DEVIATIONS FROM BASIS OF DESIGN THAT AFFECT OTHER TRADES ARE THE RESPONSIBILITY OF THIS CONTRACTOR. ADDITIONAL COSTS TO PROVIDE LARGER ELECTRICAL CIRCUITS, MORE FLOOR SPACE, ADDITIONAL SUPPORTS, ADDITIONAL MATERIALS, ETC. SHALL BE BORNE BY THIS CONTRACTOR. COORDINATE ALL WORK WITH OTHER TRADES.
3. DO NOT SCALE DRAWINGS FOR DIMENSIONS. REFER TO DIMENSIONED DRAWINGS. IF DIMENSIONS CANNOT BE ACCURATELY DETERMINED, REQUEST THE INFORMATION FROM THE ARCHITECT/ENGINEER.
4. KEY NOTES ARE MEANT AS A GENERAL GUIDE FOR TYPICAL LOCATIONS. CONTRACTOR TO PERFORM FULL EXTENT OF WORK REQUIRED TO ACCOMPLISH DESIGN INTENT.
5. CONTRACTOR IS RESPONSIBLE FOR ALL WORK IDENTIFIED ON ALL DRAWINGS AND INFORMATION IN THE PROJECT MANUAL, AS A COMPLETE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE SPECIFIC SCOPE OF WORK FOR ANY SUBCONTRACTORS FOR THIS PROJECT EXCEPT AS SPECIFICALLY NOTED.
6. CONTRACTOR SHALL PROVIDE ACCESS DOORS IN ALL WALLS AND CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING, OR FIRE PROTECTION ITEMS MAY BE REQUIRED WHETHER SPECIFICALLY IDENTIFIED ON THE DRAWINGS OR NOT. ACCESS DOORS SHALL BE OF AN APPROPRIATE SIZE REQUIRED FOR EACH APPLICATION. WHERE APPLICABLE, ACCESS DOORS SHALL MATCH THE FIRE AND SECURITY RATING OF THE CEILING AND WALL ASSEMBLY.
7. DUCT AND PIPING LAYOUTS ARE SCHEMATIC IN NATURE. PROVIDE ADDITIONAL TRANSITIONS, ELBOWS, OFFSETS, AS NECESSARY AND COORDINATE ANY STRUCTURAL SUPPORTS FOR OPENINGS WITH STRUCTURAL TRADES.
8. DUCTWORK:
   A. ALL LISTED DUCTWORK DIMENSIONS ARE CLEAR AIR FLOW DIMENSIONS.
   B. ALL DUCTS IN FINISHED ROOMS AND SPACES SHALL BE CONCEALED IN CHASES OR ABOVE THE CEILINGS, UNLESS OTHERWISE NOTED.
   C. FIELD VERIFY LOCATION OF BEAMS, GENERAL STRUCTURE, LIGHTING, PIPING, ETC., BEFORE FABRICATION AND INSTALLATION OF DUCTWORK. COORDINATE ELEVATIONS, OFFSETS, AND TRANSITIONS AS REQUIRED.
   D. MAXIMUM LENGTH OF FLEX DUCT SHALL BE 5'-0". FLEX DUCT SHALL NOT BE USED WHERE DUCTWORK IS EXPOSED. THE LAST ELBOW BEFORE CONNECTION TO AN AIR DEVICE SHALL BE A HARD DUCT.
   E. VOLUME DAMPERS SHALL BE INSTALLED IN ALL BRANCH DUCTS SERVING REGISTERS, GRILLES AND DIFFUSERS.
   F. THE ELBOWS FOR DUCTWORK SHALL HAVE TURNING VANES UNLESS NOTED OTHERWISE.
   G. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR AIR DEVICE LOCATIONS. ADJUST AIR DEVICE LOCATIONS AS MINIMALLY AS POSSIBLE TO MATCH ARCHITECTURAL PLAN.
   H. THE BOTTOM OF ALL AIR DEVICES IN CMU WALLS SHALL MATCH BLOCK COURSING.
   I. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE RATED WALLS, SMOKE BARRIERS, AND SECURITY WALLS. CONTRACTOR SHALL PROVIDE FIRE DAMPERS, SMOKE DAMPERS, OR SECURITY BARS IN ALL DUCTS PENETRATING SAID WALLS, WHETHER INDICATED ON THE MECHANICAL PLANS OR NOT.
9. ALL STRUCTURAL OPENINGS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWING. COORDINATE ANY STRUCTURAL SUPPORTS FOR OPENINGS WITH STRUCTURAL TRADES.
10. ALL HANGER SYSTEMS FOR PIPING AND EQUIPMENT SHALL BE SECURED TO BUILDING STRUCTURAL SYSTEM.
11. COORDINATE DUCT WITH ELECTRICAL J-BOXES TO PREVENT OBSTRUCTIONS.
12. CONNECTION TO EQUIPMENT SHALL CONFORM TO MANUFACTURER'S SPECIFICATION. IF MANUFACTURER'S SPECIFICATIONS DIFFERS FROM THE DESIGN, NOTIFY ARCHITECT/ENGINEER PRIOR TO PROCEEDING.
13. ALL MECHANICAL EQUIPMENT REQUIRING NATURAL GAS SHALL BE FURNISHED WITH PRESSURE REGULATOR. THE GAS PRESSURE REGULATOR SHALL REGULATE THE GAS PRESSURE BETWEEN THE INLET AND OPERATING PRESSURE OF THE EQUIPMENT. PROVIDE VENT TO OUTDOOR FROM EACH REGULATOR WHERE REQUIRED BY THE MANUFACTURER.
14. ALL HVAC CONTROL WIRING SHALL BE PROVIDED BY DIVISION 23 CONTRACTOR UNLESS OTHERWISE NOTED. EXPOSED CONTROL WIRING SHALL BE IN CONDUIT. TEMPERATURE CONTROL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND LOCATING ANY 24V TRANSFORMERS REQUIRED FOR CONTROL COMPONENTS. COORDINATE WITH DIV 26 CONTRACTOR FOR POWER WIRING.
15. HVAC EQUIPMENT, INCLUDING HEAT TRACE, SHALL BE CONNECTED TO A BUILDING MANAGEMENT SYSTEM.
16. REFER TO DETAIL SHEETS FOR ADDITIONAL INFORMATION ON INSTALLMENT METHODS.
17. TRADE CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL PENETRATIONS WITH STRUCTURAL DRAWING REQUIREMENTS. ADDITIONALLY, THE TRADE CONTRACTORS SHALL COORDINATE ALL PENETRATIONS THROUGH PRECAST CONCRETE UNITS WITH THE PRECAST CONCRETE MANUFACTURER TO PRODUCE A SHOP DRAWING SUBMITTAL NOTING ALL PENETRATIONS AND THEIR SIZES. TRADE CONTRACTORS AND PRECAST MANUFACTURE SHALL PROVIDE DOCUMENTATION WITH THE PRECAST SHOP DRAWING SUBMITTAL INDICATING THAT ALL TRADES HAVE SIGNED OFF ON ALL AFOREMENTIONED COORDINATION.
18. PROVIDE SECURITY BARS ON ALL DUCTWORK GREATER THAN 8"X8" OR 64 SQUARE INCHES WHERE PENETRATIONS OF SECURITY WALL TO DECK OR STRUCTURE ABOVE OCCURS WHETHER INDICATED ON THE PLANS OR NOT. SEE ARCHITECTURAL SECURE WALL PLAN SHEET FOR SECURITY WALL LOCATIONS AND TYPE.
19. CONTRACTOR TO COORDINATE WITH DIVISION 13 SPECIFICATIONS FOR PREFABRICATED CELLS. LOCATIONS AND CONNECTION SIZES TO GRILLES PROVIDED AS PART OF CELLS TO BE COORDINATED WITH PREFABRICATED CELL PROVIDER.
20. ALL REQUIRED SHUT-OFF VALVES AND VAV UNITS IN HOUSING TO BE CLEARLY MARKED.
21. VOLUME DAMPERS, SHUT-OFF VALVES, AND VAV UNITS LOCATED ABOVE CEILINGS THROUGHOUT THE BUILDING SHALL BE WITHIN 24 INCHES OF CEILING.
22. PROVIDE HOUSEKEEPING PADS FOR EQUIPMENT. PAD SIZE SHOWN ARE APPROXIMATE AND ARE BASED ON BASIS OF DESIGN EQUIPMENT. PROPER EQUIPMENT OPERATION AND MAINTENANCE REQUIRES EQUIPMENT PADS SIZED TO SPECIFIC EQUIPMENT. PROVIDE EQUIPMENT PAD SIZES BASED ON ACTUAL SIZE OF FURNISHED EQUIPMENT. SUBMIT COORDINATION DRAWINGS ILLUSTRATING PROPOSED PAD DIMENSIONS BASED ON APPROVED EQUIPMENT. DO NOT PERFORM LAYOUT WORK OR BEGIN FORM WORK FOR PADS PRIOR TO APPROVAL OF COORDINATION DRAWINGS.

A3

23. CONTRACTOR TO COORDINATE COLD-FORMED STEEL TRUSSES WITH THE ROUTING AND HANGER/SUPPORTS OF ALL MECHANICAL, ELECTRICAL, PLUMBING, SECURITY ELECTRONICS AND FIRE PROTECTION THROUGH BIM COORDINATION MODELING PRIOR TO ANY FABRICATION. ROUTING OF TRADES ELEMENTS SHOWN ON PLANS AND ANY TRUSS WEBS SHOWN IN BUILDING SECTIONS ARE DIAGRAMMATIC AND MUST BE COORDINATED WITH COLD-FORMED STEEL TRUSS SUPPLIER AND THEIR STRUCTURAL TRUSS ELEMENT REQUIREMENTS. TRADES TO PROVIDE HANGING LOADS TO TRUSS DELEGATED DESIGNER. MODIFICATION OF HANGER/SUPPORTS FOR TRADES INCLUDE BUT IS NOT LIMITED TO ADJUSTING SPACING OF HANGERS/SUPPORTS AND/OR ADJUSTING SUPPORTS TO EXTEND TO ADJACENT WALL SURFACES. THIS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

SYMBOLS

- AxB — RECTANGULAR DUCT DIMENSION
- A/B — FLAT-OVAL DUCT DIMENSION
- AØ — ROUND DUCT DIMENSION
- RECTANGULAR SUPPLY OR OUTSIDE AIR DUCT - UP OR DOWN
- RECTANGULAR RETURN AIR DUCT - UP OR DOWN
- RECTANGULAR EXHAUST AIR DUCT - UP OR DOWN
- ROUND SUPPLY OR OUTSIDE AIR DUCT - UP OR DOWN.
- ROUND RETURN AIR DUCT - UP OR DOWN.
- ROUND EXHAUST AIR DUCT - UP OR DOWN.
- SUPPLY AIR DIFFUSER (SQUARE)
- RETURN AIR GRILLE (SQUARE)
- RETURN AIR GRILLE OR EXHAUST REGISTER (RECTANGULAR)
- EXHAUST GRILLE (SQUARE)
- S D — DUCT SMOKE DETECTOR
- BD — BACKDRAFT DAMPER
- VOLUME DAMPER
- ROUND DIFFUSER
- SLOT DIFFUSER
- SECURITY BARS
- BALL VALVE
- BUTTERFLY VALVE
- GATE VALVE
- T — THERMOSTAT
- TS — TEMPERATURE SENSOR
- X / X — EQUIPMENT TYPE (SEE ABBREVIATIONS) / SCHEDULE #
- XXXXXX — KEYNOTE
- TMV — THERMOSTATIC MIXING VALVE OUTLET TEMPERATURE SENSOR
- BPS — BUILDING PRESSURE SENSOR
- CO — CARBON MONOXIDE SENSOR
- NO2 — NITROGEN DIOXIDE SENSOR
- CO2 — CARBON DIOXIDE SENSOR
- RL — REFRIGERANT LIQUID
- RG — REFRIGERANT GAS
- HWS — HYDRONIC WATER SUPPLY
- HWR — HYDRONIC WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- COND — CONDENSATE LINE

DLZ
ARCHITECTURE • ENGINEERING • PLANNING
SURVEYING • CONSTRUCTION SERVICES
DLZ INDIANA, LLC

JOSHUA R. APLING REGISTERED PE 10910274 STATE OF INDIANA PROFESSIONAL ENGINEER
2/16/22

NO.	REVISION	DATE
A3	ADDENDUM 3	02/16/22

DRAWN: SSB CHK'D: ESA
DESIGNED: SSB
APPR'D: JRA
DATE: DECEMBER 20, 2021
PROJECT NUMBER 2063-1048-90

SULLIVAN COUNTY SHERIFF'S OFFICE AND CORRECTIONAL FACILITY
2357 NORTH SECTION STREET SULLIVAN, INDIANA 47882

GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

DRAWING NUMBER
M0.1
MECHANICAL

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