MECHANICAL SYMBOLS LEGEND

DUCTWORK

12"Ø	ROUND DUCT, DIAMETER SHOWN
	NEW WORK
	SUPPLY AIR DUCT - SECTION
	RETURN AIR DUCT - SECTION
	EXHAUST AIR DUCT - SECTION SUPPLY DUCT UP THRU ROOF OR
	FLOOR/CEILING ASSEMBLY RETURN DUCT UP THRU ROOF OR FLOOR/CEILING ASSEMBLY
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	TEE WITH DOUBLE THICKNESS
	MITERED ELBOW
	RADIUS ELBOW
	CEILING DIFFUSER - BOTTOM DUCT CONNECTION
	STANDARD BRANCH TAKEOFF
	MANUAL DAMPER
	4-WAY DISCHARGE SQUARE SUPPLY AIR DIFFUSER
	RETURN AIR REGISTER/GRILLE
	EXHAUST AIR REGISTER/GRILLE
	SIDEWALL REGISTER OR GRILLE
	CEILING DIFFUSER - SIDE DUCT CONNECTION

T	THERMOSTAT OR TEMPERATURE SENSOR
1 / M-	SECTION TAG
U/C	UNDERCUT DOOR
CD	CONDENSATE DRAIN LINE

MECHANICAL ABBREVIATIONS

A	AIR
AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR, AIR DRYER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALUM	ALUMINIUM
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ATC	AUTOMATIC TEMPERATURE CONTROL
AV	AIR VENT
BDD	BACK DRAFT DAMPER
BOT	BOTTOM
BFP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
C	CELSIUS, DEGREE CELSIUS
CENT	CENTRIFUGAL
CFM	CUBIC FEET PER MINUTE
CHWS&R	CHILLED WATER SUPPLY & RETURN
CLG	CEILING
CO	CLEAN OUT
COND	CONDENSATE
DB	DRY BULB, DOWN BLOW
DCW	DOMESTIC COLD WATER
DEG	DEGREE
DELIV	DELIVERY
DHW	DOMESTIC HOT WATER
DISC	DISCONNECT
DN	DOWN
EA	EXHAUST AIR, EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEV	ELEVATION
EMS	ENERGY MANAGEMENT SYSTEM
ENT	ENTERING
ERG	EXISTING RETURN GRILLE
EWB	ENTERING WET BULB
F	FAHRENHEIT
FD	FIRE DAMPER, FLOOR DRAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
F/SD	FIRE/SMOKE DAMPER
FT	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HHWS&R	HEATING HOT WATER SUPPLY & RETURN
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER, HEAT PUMP
HR	HOUR
HVAC	HEATING VENTILATING AND AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
ID	INSIDE DIAMETER
IN	INCH
KW	KILOWATT
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
MAX	MAXIMUM
MBC	MASTER BUILDING CONTROLLER
MBH	THOUSAND BTU PER HOUR
MD	MANUAL DAMPER
MIN	MINIMUM
N	NORTH
NA	NOT APPLICABLE
NO OR #	NUMBER, NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OPER	OPERATING
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
REG	REGISTER
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RM	ROOM
SA	SUPPLY AIR
SF	SUPPLY FAN
S/FD	SMOKE/FIRE DAMPER
T	THERMOSTAT
TEC	TERMINAL EQUIPMENT CONTROLLER
TEMP	TEMPERATURE
TYP	TYPICAL
V	VENT, VOLT
VD	VOLUME DAMPER
VERT	VERTICAL
WB	WET BULB
WPD	WATER PRESSURE DROP
1WB	ONE WAY BLOW
2WB	TWO WAY BLOW
3WB	THREE WAY BLOW

MECHANICAL GENERAL NOTES

1. IF, THROUGH ERRORS OR OMISSIONS, THE INTENT OF ARCHITECT/ENGINEER WITH REGARD TO ANY DETAIL IS NOT CLEAR, OR IS CAPABLE OF MORE THAN ONE INTERPRETATION, SUCH MATTERS WILL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING BEFORE THE SUBMISSION OF BIDS, AND THE ARCHITECT/ENGINEER SHALL MAKE CORRECTION OR EXPLANATION IN WRITING, OTHERWISE, NO EXTRA CHARGE WILL BE ALLOWED FOR THE WORK OR MATERIAL WHICH THE ARCHITECT/ENGINEER WILL REQUIRE, PROVIDED THAT IT COMES WITHIN A REASONABLE INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS.
2. THE PLANS AND SPECIFICATIONS ARE INTENDED AS A GENERAL DESCRIPTION OF THE WORK TO BE PERFORMED. ALL ITEMS NOT SPECIFICALLY MENTIONED OR SHOWN, BUT NECESSARY FOR THE COMPLETION OF THE INSTALLATION, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL THOROUGHLY ACQUAINT THEMSELVES WITH THE MECHANICAL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PLANS BEFORE SUBMITTING THEIR FINAL BID, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO THE CONTRACTOR'S FAILURE TO FAMILIARIZE THEMSELVES WITH THE PLANS.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2023 FLORIDA MECHANICAL CODE AND ALL LOCAL CODES.
4. THE SIZE AND LOCATION OF EQUIPMENT INSTALLED UNDER DIVISION 23 - MECHANICAL SHALL BE COORDINATED WITH OTHER TRADES. CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
5. DISCONNECT SWITCHES REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR EXCEPT WHEN INDICATED ON SCHEDULE.
6. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION. SUPPORT ALL OBJECTS FROM STRUCTURE WITHOUT PENETRATING THE CEILING SLAB.
7. SLEEVE & FIRESTOP PENETRATIONS THROUGH FIRE RATED SYSTEMS TO MAINTAIN RATING OF SYSTEM. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PENETRATION DETAILS & INFORMATION.
8. REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.
9. THERE SHALL BE ENOUGH ROOM AROUND THE AIR HANDLERS FOR EASE OF SERVICE AND ACCESSIBILITY. FOLLOW MANUFACTURER'S RECOMMENDATIONS ON EQUIPMENT ACCESS AND MAINTENANCE.
10. CONDENSATE DRAINS FROM ALL MECHANICAL EQUIPMENT SHALL BE COORDINATED FOR PROPER DRAINAGE TO SUIT EQUIPMENT FURNISHED. FOLLOW MANUFACTURER'S RECOMMENDATIONS.
11. ALL CONDENSATE DRAIN LINES SHALL BE INSULATED AND INSTALLED WITH A 'P' TRAP AT THE UNIT WITH A MINIMUM DEPTH OF 2" OR PER MANUFACTURER'S INSTRUCTIONS, WHICHEVER IS GREATER.
12. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND VALVE DRAINS SHALL BE INDEPENDENTLY PIPED FULL SIZE TO THE NEAREST PLUMBING DRAIN.
13. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH NFPA 90A AND 90B.
14. DUCT SIZES SHOWN ARE MINIMUM INSIDE DIMENSIONS.
15. SEE SPECS. FOR GAUGES, THICKNESS, BRACING, REQUIREMENTS, ETC., OF DUCTWORK.
16. BEFORE FABRICATION, VERIFY AND COORDINATE ALL DIMENSIONS IN FIELD. DUCT SIZES AND ALL OPENINGS THRU BUILDING CONSTRUCTION SHALL SUIT EQUIPMENT/MATERIALS FURNISHED.
17. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS AND PIPING (INCLUDING DIVIDING DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST.
18. ALL DUCTWORK AND PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. ALL SPLIT DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES, UPSTREAM OF SPLIT.
19. ACCESS PANELS IN DUCTWORK AND CEILINGS SHALL BE PROVIDED WHERE REQUIRED FOR OPERATION, BALANCING AND MAINTENANCE OF ALL MECHANICAL EQUIPMENT AND FIRE DAMPERS.
20. ALL DUCT BENDS FROM VERTICAL TO THE HORIZONTAL AND ANGLED TURNS OF DUCTWORK SHALL HAVE TURNING VANES INSTALLED.
21. EXHAUST DUCTWORK SHALL BE UNINSULATED GALVANIZED STEEL 26 GA UNLESS OTHERWISE NOTED.
22. EXHAUST FAN OUTLETS SHALL BE INSTALLED A MINIMUM OF 10'-0" FROM FRESH AIR INTAKES.
23. CONTROL DEVICE MOTORS (DAMPERS, ETC.) SHALL BE 24VAC TYPE WITH ALL ELECTRICAL POWER REQUIREMENTS CLEARLY NOTED ON THE CONSTRUCTION DRAWINGS.
24. MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS, TO ALLOW FOR INSPECTIONS OF RATED WALLS.
25. ALL OPERABLE THERMOSTAT PARTS SHALL BE MOUNTED 48" ABOVE FINISHED FLOOR, UNLESS STATED OTHERWISE. THERMOSTATS SHALL BE FURNISHED WITH A FACTORY FURNISHED TRANSPARENT VANDAL PROOF LOCKING COVER IN ALL PUBLIC COMMON AREAS. VOLTAGE SHALL BE 24 VOLT UNLESS OTHERWISE INDICATED.
26. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTS CONNECTING TO EACH FAN, AIR HANDLING UNIT, AND FAN COIL UNIT.
27. DAMPERS AND INSIDES OF DUCTS VISIBLE THROUGH GRILLES, REGISTERS, AND DIFFUSERS SHALL BE PAINTED FLAT BLACK.
28. FIBERGLASS DUCT & DUCT WRAP SHALL BE SEALED WITH GLASS FAB & MASTIC.
29. COORDINATE ALL HVAC SYSTEM DRAWINGS WITH TRUSS/JOIST MANUFACTURER DURING SHOP DRAWING REVIEW TO AVOID INTERFERENCES BETWEEN MECHANICAL SYSTEMS ROOF STRUCTURE. COORDINATE IN ADVANCE: ENGINEER/ARCHITECT WILL NOT BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH TRUSS/JOIST INTERFERENCES THAT OCCUR IN THE FIELD DURING CONSTRUCTION. DUCT SIZES MAY BE REVISED TO FIT TRUSS/JOIST SYSTEM SO LONG AS THE EQUIVALENT INSIDE CROSS-SECTIONAL AREA IS NOT DECREASED.
30. COORDINATE THERMOSTAT LOCATIONS WITH FURNITURE/EQUIPMENT LAYOUTS, WINDOWS, AND DOOR SWING AREAS.
31. ALL CONTROL WIRING AND HARDWARE TO COMPLETE THE HVAC CONTROL SYSTEM SHALL BE FURNISHED BY THE CONTRACTOR OF THESE CONTRACT DOCUMENTS UNLESS INDICATED OTHERWISE ON DRAWINGS.
32. ALL HVAC EQUIPMENT LOCATION & WEIGHT SHALL BE COORDINATED AND APPROVED BY THE ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR, AND OWNER PRIOR TO PURCHASE AND INSTALLATION.
33. PROVIDE ALL MANUFACTURER INSTALLATION AND MAINTENANCE FOR EQUIPMENT INSTALLED FOR ENGINEER REVIEW BEFORE RELEASE TO THE OWNER.
34. AIR FILTERING SHALL BE ACCOMPLISHED USING 2" PLEATED 30% EFFICIENT (MIN.) FILTERS OR EQUAL IN AIR HANDLING EQUIPMENT. NO ELECTROSTATIC OR WASHABLE FILTERS ARE ALLOWED. INSTALL PRIOR TO UNIT START UP, REPLACED A MINIMUM OF ONCE PER MONTH DURING THE CONSTRUCTION PERIOD, REPLACED PRIOR TO TEST AND BALANCE, AND REPLACED MONTHLY UNTIL FINAL COMPLETION.
35. ALL EQUIPMENT SHALL BE FREE OF ANY DAMAGE AT THE TIME OF ACCEPTANCE. ALL DENTS, SCRATCHES, AND ANY OTHER DAMAGES HAVE TO BE REPAIRED PRIOR TO THE INSTALLATION OF THE EQUIPMENT.
36. ALL EXHAUST FANS SHALL BE PROVIDED WITH BACK DRAFT OR MOTORIZED DAMPERS TO MINIMIZE OUTSIDE AIR INFILTRATION WHEN FANS ARE OFF.
37. ALL DUCTWORK ACCESSORIES THAT PENETRATE THE SHEET METAL DUCT SHALL BE PROPERLY FASTENED, SEALED, AND INSULATED.
38. ALL HVAC EQUIPMENT AND IT'S APPURTENANCES TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
39. ALL AIR-HANDLING UNITS SHALL BE FREE OF ANY OBSTRUCTION FOR REMOVAL OF PANELS AND ROUTINE MAINTENANCE. DO NOT ATTACH ANY CONDUIT, JUNCTION BOXES, SENSORS, OR ANYTHING ELSE ON THE ACCESS PANELS OF THE AIR-HANDLING UNITS.
40. PROVIDE 4" HIGH CONCRETE PADS UNDER ALL FLOOR MOUNTED EQUIPMENT, WITH CHAMFERED EDGES AND 6" EXTENSIONS BEYOND EQUIPMENT UNLESS NOTED OTHERWISE.
41. PROVIDE TRANSITIONS AT DIFFUSER NECKS AS REQUIRED TO MATCH SIZES OF FLEX DUCTS TO BE CONNECTED.
42. ALL PIPING BELOW SLAB SHALL BE WITHOUT JOINTS AND RUN IN A PIPING CHASE OR CONDUIT OF SUFFICIENT SIZE TO ALLOW REPLACEMENT OF THE PIPING IN THE FUTURE. EACH END OF THE CHASE SHALL BE SEALED AIR AND WATERTIGHT.
43. ALL REFRIGERANT PIPING AND ASSOCIATED CONTROLS AND ACCESSORIES SHALL BE ROUTED IN A MANNER THAT WOULD NOT HINDER SERVICEABILITY OF THE UNIT AND ACCESS TO THE COMPONENTS THAT REQUIRE PERIODIC MAINTENANCE AND UPKEEP.
44. ALL REFRIGERANT PIPING IN CONCEALED CHASES FOR SPLIT DX UNITS SHALL BE SOFT DRAWN TYPE K COPPER, SERVICE FITTINGS FOR REFRIGERANT LINES SHALL BE SPECIFIED TO BE LOCATED IN A MANNER TO BE INACCESSIBLE FROM THE PUBLIC.
45. FOR ALL COMMONS AREAS: PERFORM A TEST AND BALANCE TO MATCH THE DESIGN CONDITIONS. THE FINAL REPORT SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL.
46. ALL FIBROUS GLASS DUCTBOARD JOINTS, SEAMS AND CONNECTIONS SHALL BE SEALED WITH GLASS FABRIC AND MASTIC. ALL FIBROUS GLASS DUCT BOARD JOINTS, SEAMS & CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LATEST EDITION OF SMACNA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS. FIBERGLASS DUCT & DUCT WRAP SHALL BE SEALED WITH GLASS FAB & MASTIC. ALL DUCTWORK SHALL BE CLASS 1, UL-181 & ALL CLOSURES SHALL MAINTAIN THIS RATING.
47. COORDINATE ALL HVAC SYSTEM DRAWINGS WITH TRUSS/JOIST MANUFACTURER DURING SHOP DRAWING REVIEW TO AVOID INTERFERENCES BETWEEN MECHANICAL SYSTEMS ROOF STRUCTURE. COORDINATE IN ADVANCE: ENGINEER/ARCHITECT WILL NOT BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH TRUSS/JOIST INTERFERENCES THAT OCCUR IN THE FIELD DURING CONSTRUCTION. DUCT SIZES MAY BE REVISED TO FIT TRUSS/JOIST SYSTEM SO LONG AS THE EQUIVALENT INSIDE CROSS-SECTIONAL AREA IS NOT DECREASED.
48. COORDINATE DIFFUSER, GRILLE, AND REGISTER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND EQUIPMENT OF ALL TRADES.
49. COORDINATE WITH ARCHITECT BEFORE PURCHASING GRILLES, REGISTERS, DIFFUSERS, LOUVERS, AND OTHER AIR DISTRIBUTION DEVICES TO VERIFY FINISH.

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REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION

THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS.

ISSUE DATE:	XX/XX/20
DESIGNED BY:	XXX
DRAWN BY:	XXX
CHECKED BY:	XXX

THOMAS F. DONAHUE, P.E.
FLORIDA REG. NO. 60529
(FOR THE FIRM)

CLIENT

VILLAGE OF PINECREST
PINECREST PARKS & RECREATION

PROJECT

SHEET TITLE

MECHANICAL SYMBOLS LEGEND

SHEET NUMBER M001

KEITH PROJECT NUMBER 13861.00

Plotted by: dante On 11/1/2024 10:37 AM

Drawing name: Q:\PROJECT FILES\2024\2024-256 Village of Pinecrest- Gary Metzor Park\Drawings\1550-M001-2024256.dwg

STATUS: PRELIMINARY

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