

MECHANICAL NOTES:

- ALL ELEVATIONS ARE FROM FINISHED FLOOR.
- ALL DUCT AND PIPING DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND CONNECTIONS.
- ALL NEW DUCTWORK TO HAVE 1" DUCT LINING WITH MICROBIAL LAYER. ALL DUCT SIZES SHOWN ARE FREE INTERIOR DIMENSIONS. WRAP LINED DUCT IN ACCORDANCE WITH THE INSULATION SPECIFICATION ON SHEET M0.2.
- PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, INCIDENTALS, METHODS AND SERVICES REQUIRED TO INSTALL ALL WORK INDICATED COMPLETELY AND IN FULL OPERATION.
- PRIOR TO ACCEPTANCE OF THE SPACE, ALL SYSTEMS SHALL BE TESTED, BALANCED, AND COMMISSIONED TO DEMONSTRATE TO THE OWNER OR THEIR DESIGNATED REPRESENTATIVE THAT THE INSTALLATION AND PERFORMANCE OF THESE SYSTEMS AND/OR PARTS THEREOF CONFORM TO DESIGN INTENT.
- UPON COMPLETION OF THE CONTRACT, THE CONTRACTOR SHALL PROVIDE TWO (2) COMPLETE SETS OF MANUFACTURERS' OPERATING, MAINTENANCE, AND PREVENTIVE MAINTENANCE INSTRUCTIONS (IN BOUND BOOK FORM) INCLUDING PARTS LISTS, AND COMPLETE PROCUREMENT INFORMATION INCLUDING EQUIPMENT NUMBERS AND DESCRIPTIONS. ELECTRONIC DIGITAL FORMAT IN TWO (2) VERSIONS: PDF AND NATIVE DIGITAL FORMAT ON PORTABLE USB DEVICES SHALL BE PROVIDED. OPERATING STAFF PERSONS SHALL BE INSTRUCTED IN PROPER OPERATING AND SERVICE REQUIREMENTS OF THE SYSTEMS AND EQUIPMENT.
- EACH CONTRACTOR SHALL REVIEW "ALL" PROJECT DOCUMENTS OF "ALL" TRADES TO UNDERSTAND PROJECT REQUIREMENTS PRIOR TO BIDDING. DISCREPANCIES BETWEEN DOCUMENTS SHALL BE REPORTED AT THE TIME OF BID. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO PREVENT INTERFERENCE BETWEEN BEAMS, STRUCTURES, PIPING, CONDUITS, LIGHTING FIXTURES, FIRE ALARM DEVICES, FIRE SPRINKLERS, ETC.
- VERIFY ALL FIELD CONDITIONS, ACCESS WAYS, DIMENSIONS, AND DETAILS IN THE FIELD PRIOR TO BID AND PRIOR TO FABRICATION. INCLUDE IN BID ALL WORK NECESSARY TO COVER COSTS RESULTING FROM FIELD CONDITIONS.
- ALL WORK AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH MOST CURRENT VERSION OF THE DESIGN MANUAL, FLORIDA BUILDING CODE 2023, FLORIDA MECHANICAL CODE 2023, FLORIDA PLUMBING CODE 2023, FLORIDA FUEL GAS CODE 2023, ENERGY CONSERVATION CODE 2023, AND ANY ADOPTED SUPPLEMENTS.
- THE CONTRACTOR SHALL APPLY FOR, SECURE, AND PAY FOR ALL PERMITS AND/OR CERTIFICATES OF INSPECTION REQUIRED IN THE PERFORMANCE OF THE WORK BY ALL AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR (EXCEPT WHERE EXTENSIONS OF THIS ONE YEAR PERIOD ARE NOTED) FROM THE DATE OF ACCEPTANCE OF THE SYSTEM AS A WHOLE. ANY DEFECTS IN WORKMANSHIP, MATERIALS, MALFUNCTION OF EQUIPMENT OR UNSATISFACTORY PERFORMANCE, AND ALL OTHER WORK OR PARTS OF THE BUILDING DAMAGED THEREBY, SHALL BE REPAIRED, REPLACED OR OTHERWISE REMEDIED WITHOUT EXPENSE TO THE OWNER. SUCH REPAIRS OR REPLACEMENTS SHALL BE MADE IN A TIMELY MANNER AND AT THE CONVENIENCE OF THE OWNER.
- IN ADDITION TO SPECIFICS AS MAY BE DEFINED HEREINAFTER, THE CONTRACTOR SHALL PROTECT THE WORK SITE AND ALL HIS OR HER WORK AGAINST DAMAGE FROM ANY SOURCE (INCLUDING BUT NOT LIMITED TO WATER, DUST, HEAT, FREEZING ETC.) UNTIL FINAL COMPLETION AND ACCEPTANCE BY THE OWNER.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIAL (AND METHODS WHEN SPECIFICALLY REQUESTED) BEING USED IN THE COURSE OF THE WORK. PURCHASE OF OR INSTALLATION OF MATERIALS OR SYSTEM PARTS SHALL NOT PROCEED UNTIL REVIEWED AND APPROVED SHOP DRAWINGS ARE RETURNED TO THE SUBMITTING CONTRACTOR.
- SUBSTITUTIONS MUST BE SUBMITTED TO OWNER FOR REVIEW AND APPROVAL. SUBSTITUTE SUBMISSION SHALL CLEARLY IDENTIFY THE ITEM BEING SUBMITTED AND SHALL STATE SPECIFICALLY THAT THE MATERIAL/EQUIPMENT IS A SUBSTITUTION FOR THAT ITEM. SUBMISSION PROCESS AND REVIEW DURATION ARE DEFINED IN THE PROJECT MANUAL.
- PRODUCTS SUBMITTED AND ACCEPTED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF ANY OR ALL OTHER TRADES' WORK SHALL BE COORDINATED AND PAID FOR BY THE CONTRACTOR MAKING THE CHANGE.
- CONTRACTOR SHALL SUBMIT A SET OF RECORD DRAWINGS SHOWING ALL CHANGES FROM THE CONTRACT DRAWING MADE IN THE INSTALLATION, AND SHOWING DIMENSIONED LOCATIONS OF CONCEALED EQUIPMENT OR PARTS OF THE WORK. REFER TO PROJECT MANUAL FOR RECORD DRAWING REQUIREMENTS.
- PRIOR TO DELIVERY OF MATERIALS TO THE SITE, CONTRACTOR SHALL PROVIDE SAFETY DATA SHEETS FOR ALL ITEMS AND MATERIALS USED IN THE WORK.
- UNLESS OTHERWISE NOTED, ALL PARTS, EQUIPMENT, AND MATERIALS SHALL BE NEW AND SHALL BE ASME AND/OR UL APPROVED.
- ALL PIPING EQUIPMENT AND MISCELLANEOUS ITEMS DEMOLISHED BY THIS PROJECT SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORK SHIFT. AT NO TIME SHALL THE PIPING OR EQUIPMENT DEMOLISHED BY THIS PROJECT BE STORED FOR FUTURE REMOVAL FROM PROJECT SITE.
- DO NOT SCALE THE DRAWINGS FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, DIMENSIONS, ETC. AT THE JOB SITE.
- ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, A SMOKE DEVELOPMENT RATING OF 50 OR LESS, AND A FUEL CONTRIBUTED RATING OF 25 OR LESS. ALL MATERIALS SHALL BE "SELF-EXTINGUISHING".
- ALL PIPING, CONDUIT AND DUCT PENETRATIONS OF "FIRE RATED BUILDING CONSTRUCTION" SHALL BE SLEEVED AND SEALED WITH A FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEMS". REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATING OF BUILDING CONSTRUCTION.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- MECHANICAL CONTRACTOR SHALL LABEL ALL NEW MECHANICAL EQUIPMENT, PIPING, AND VALVES (INDOORS AND OUTDOORS) IN A PERMANENT MANNER. MECHANICAL PIPING SHALL BE LABELED IN ACCORDANCE WITH ASME A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND VIEWING ANGLES OF IDENTIFICATION. DIRECTION OF FLOW SHALL BE IDENTIFIED WITH DIRECTIONAL ARROW TAPE. VALVES SHALL BE IDENTIFIED WITH BRASS VALVE TAGS, ATTACHED WITH SOLID BRASS CHAINS AND "S" HOOKS. VALVE TAGS SHALL BE COORDINATED WITH VALVE SCHEDULE PROVIDED IN OPERATION AND MAINTENANCE MANUAL. MECHANICAL EQUIPMENT SHALL BE LABELED WITH ENGRAVED PLASTIC TAGS WITH MOUNTING HOLES AND STAINLESS STEEL SCREWS. ALL LABELING SHALL HAVE HIGH CONTRAST BETWEEN LETTER AND BACKGROUND COLORS AND SHALL BE LOCATED FOR EASY VISIBILITY.
- ALL MECHANICAL EQUIPMENT AND APPLIANCES INSTALLED SHALL BEAR THE LABEL OF AN APPROVED AGENCY.
- PROVIDE VIBRATION ISOLATION MOUNTINGS FOR ALL MOTOR OPERATED EQUIPMENT AND AS RECOMMENDED BY THE MANUFACTURER.
- ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED AND SEALED WITH A HIGH QUALITY SEALANT TO PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR.
- MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR ALL POWER REQUIREMENTS OF MECHANICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING TO ALL MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL FURNISH LOOSE MOTOR STARTERS AND DISCONNECT SWITCHES FOR INSTALLATION AND WIRING BY THE ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL AND INTERLOCK WIRING AND ALL THERMOSTATS AND ACCESSORIES.
- ROOFTOP GUARDS: CONTRACTOR SHALL PROVIDE MINIMUM 42" HIGH SAFETY GUARDRAILS WHERE APPLIANCES, EQUIPMENT, FANS OR OTHER COMPONENTS THAT REQUIRE SERVE ARE LOCATED WITHIN 10 FEET OF A ROOF EDGE OR OPEN SIDE OF A WALKING SURFACE, AND MORE THAN 30 INCHES ABOVE THE FLOOR, ROOF, OR GRADE BELOW. GUARD LOCATIONS AND CONSTRUCTION SHALL BE AS DESCRIBED PER THE 2023 FLORIDA MECHANICAL CODE, SECTION 304.11, AS ADOPTED BY THE STATE OF FLORIDA.
- PROVIDE BALANCING OF ALL AIR AND WATER SYSTEMS PER AABC, NEBB OR TABB STANDARDS. SUBMIT TEST DATA TO OWNER AND DEMONSTRATE IN FIELD. INCLUDE SOUND TESTING.
- EQUIPMENT ACCESS: CONTRACTOR SHALL PROVIDE ACCESS FOR CONTROL DEVICES, EAT EXCHANGERS AND HVAC SYSTEMS THAT UTILIZE ENERGY AND ARE LOCATED IN CONCEALED PLACES. ACCESS SHALL BE PROVIDED FOR INSPECTION, REPAIR, SERVICE, AND REPLACEMENT WITHOUT THE NEED FOR DISMANTLING ANY PERMANENT CONSTRUCTION INCLUDING WALLS, DUCTS, PIPING, ETC. CONSTRUCTION SHALL BE AS DESCRIBED PER THE 2023 FLORIDA MECHANICAL CODE, SECTION 306 AS ADOPTED BY THE STATE OF FLORIDA.
- SUBMIT 3/8" SCALE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. COORDINATE WITH ALL TRADES. SUBMIT TO THE ARCHITECT FOR APPROVAL, DUPLICATE SPECIFICATION SHEETS OF ALL EQUIPMENT SUPPLIED OR INSTALLED.
- A COMPLETE SET OF "AS-BUILT" DRAWINGS, (1) SET HARD COPY REPRODUCIBLE AND (1) SET ELECTRONIC FILES PRODUCED IN AUTOCAD 2000 FORMAT (MIN.) SHALL BE FURNISHED (1/8"=1'-0" SCALE MIN.) TO THE OWNER AND ENGINEER UPON PROJECT COMPLETION.

ABBREVIATIONS

AC	AIR CONDITIONING
AFI	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BHP	BRAKE HORSEPOWER
BC	BRANCH CONTROLLER (REFRIGERATION)
BLDG	BUILDING
BTUH	BRITISH THERMAL UNITS PER HOUR
C	CEILING
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
COL	COLUMN
CHF	CHEMICAL FEED
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
COND	CONDENSATE
CP	CONDENSATE (REMOVAL) PUMP
CR	CONDENSATE RETURN
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DAT	DISCHARGE AIR TEMPERATURE
DET	DETAIL
DIA/Ø	DIAMETER
DN	DOWN
DOAS	DEDICATED OUTSIDE AIR SYSTEM
DX	DIRECT EXPANSION
DWG	DRAWING
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ENT	ENTHALPY
EPO	EMERGENCY POWER OFF
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
F	FLOOR
FC	FANCOIL (HYDRONIC)
FCU	FANCOIL UNIT (DX)
FD	FIRE DAMPER
FIL	FILTER
FLEX	FLEXIBLE
FLR	FLOOR
FFM	FEET PER MINUTE
FPS	FEET PER SECOND
FT.	FEET
GA	GAUGE
GAL	GALLON
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
H	HUMIDIFIER
HC	HEATING COIL
HD	HEAD
HP	HORSEPOWER
HR	HOUR
HX	HEAT EXCHANGER
HWS	HOT WATER SUPPLY (HEATING)
HWR	HOT WATER RETURN (HEATING)
HZ	HERTZ
ID	INSIDE DIAMETER
INSUL	INSULATION
IN/WG	INCHES WATER GAUGE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LF	LINEAR FEET
LOC	LOCATION
LVL	LEVEL
MAX	MAXIMUM
MBH	1000 BTU PER HOUR
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MVD	MANUAL VOLUME DAMPER
(N)	NEW
NC	NORMALLY CLOSE
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
P	PUMP
PC	PUMP CONDENSATE
PCR	PUMP CONDENSATE RETURN
PD	PRESSURE DIFFERENTIAL
PH	PHASE
PS	PRESSURE SENSOR
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RF	RELIEF FAN
RG	RETURN GRILLE
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
(RE)	EXISTING TO BE RELOCATED
(R)	REMOVE
RPM	REVOLUTIONS PER MINUTE
RWC	RAIN WATER CONDUCTOR
SA	SUPPLY AIR
SF	SUPPLY FAN
SQF	SQUARE FEET
SR	SUPPLY REGISTER
T	THERMOSTAT
TEMP	TEMPERATURE
TS	TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
V.I.F.	VERIFY IN FIELD
VD	VOLUME DAMPER
W/	WITH
W/O	WITHOUT
WB	WET BULB

LEGEND

	UNDERGROUND PIPING		CHILLED WATER SUPPLY
	EQUIPMENT, PIPING OR DUCTWORK TO BE DEMOLISHED		CHILLED WATER RETURN
	EXISTING DUCTWORK OR PIPING TO REMAIN		HOT WATER SUPPLY
	EXISTING PIPING TO REMAIN		HOT WATER RETURN
	NEW PIPING OR DUCTWORK		BALL VALVE
	SUPPLY/OUTSIDE AIR DUCT		GATE VALVE / SHUTOFF VALVE
	RETURN AIR DUCT		BUTTERFLY VALVE
	EXHAUST AIR DUCT		BALANCING VALVE - (SEE SPECIFICATIONS)
	RECTANGULAR SUPPLY DUCT ELBOW (UP & DN.)		CHECK VALVE - (SEE SPECIFICATIONS)
	RECTANGULAR RETURN DUCT ELBOW (UP & DN.)		FLEXIBLE CONNECTION
	RECTANGULAR EXHAUST DUCT ELBOW (UP & DN.)		FLOW METER
	DENOTES RECTANGULAR DUCT SIZE IN INCHES (DIMENSIONS INSIDE CLEAR)		MANUAL AIR VENT
	FLEXIBLE CONNECTION		"Y" TYPE STRAINER (W/HOSE END VALVE)
	MOTOR OPERATED DAMPER (OPPOSED BLADE)		TEMPERATURE SENSOR (WALL-MOUNTED)
	SMOKE DETECTOR (DUCT DETECTOR)		REFRIGERANT SUCTION
	2-HOUR FIRE DAMPER WITH ACCESS DOOR		REFRIGERANT LIQUID
	FIRE SMOKE DAMPER		THERMOSTAT/TEMP SENSOR
	ROOF DRAIN (RD)		HUMIDISTAT
	ROOF PENETRATION (STACK, VENT, FLUE, CONDUIT)		CARBON MONOXIDE SENSOR
	TRAFFIC PAD		NITROGEN DIOXIDE SENSOR

SYMBOLS

	EQUIPMENT DESIGNATOR: "M" DESIGNATES EQUIPMENT TYPE "3" DESIGNATES EQUIPMENT NUMBER
	INDICATES POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	INDICATES POINT OF DISCONNECT BETWEEN EXISTING PIPING OR EQUIPMENT TO REMAIN AND PIPING OR EQUIPMENT TO BE DEMOLISHED
	NUMBER INDICATES DETAIL DESIGNATION SHEET NUMBER WHERE DETAIL IS SHOWN
	KEYNOTE
	LOCATION A = ALL AROUND C = CEILING F = FLOOR W = WALL



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SEAL



PROJECT NAME AND ADDRESS

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ISSUES/REVISIONS

NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

TITLE
MECHANICAL COVER SHEET

PROJECT 24026	SHEET MO.1
SCALE NONE	

DUCTWORK

- UNLESS OTHERWISE NOTED, ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL G90 GRADE PER SMACNA. ALL DUCTS CONSTRUCTED OF GALVANIZED SHEET METAL SHALL HAVE MINIMUM GAGE THICKNESS AS FOLLOWS:

MAXIMUM SIDE (IN.)	GAGE
THROUGH 12	26
13 - 30	24
31 - 54	22
55 - 84	20
OVER 84	16

DIAMETER (IN.)	GAGE
THROUGH 12	26
13 - 18	24
19 - 28	22
29 - 36	20
37 - 52	18

PROVIDE ALL NECESSARY CROSS-BREAKING AND DUCT REINFORCING AS REQUIRED PER SMACNA RECOMMENDATIONS.

- ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS.
- DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR DIMENSIONS.
- ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS, LIQUID SEALANTS OR TAPES. CLOSURE SYSTEMS, TAPES AND MASTICS USED TO SEAL METALLIC AND FLEXIBLE AIR DUCTS AND FLEXIBLE AIR CONNECTORS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B-FX" FOR PRESSURE-SENSITIVE TAPE OR "181B-M" FOR MASTIC. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. MECHANICAL FASTENERS FOR USE WITH FLEXIBLE NONMETALLIC AIR DUCTS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED "181B-C". CLOSURE SYSTEMS USED TO SEAL METAL ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- CHANGE IN DIRECTION ELBOWS SHALL HAVE AN INSIDE RADIUS OF NOT LESS THAN THE WIDTH OF THE DUCT. WHERE SQUARE ELBOWS ARE REQUIRED PROVIDE SINGLE THICKNESS TURNING VANE A MAXIMUM OF 3" ON CENTER.
- COORDINATE LOCATION OF DUCTWORK, PIPING, AND DIFFUSERS WITH ALL OTHER TRADES.
- ALL DUCTWORK AND PIPING ABOVE CEILING AND IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE.
- PROVIDE VOLUME DAMPERS AT ALL DUCT BRANCHES AND RUNOUTS. PROVIDE OPPOSED BLADE VOLUME DAMPERS AT ALL REGISTERS, GRILLES, AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN ON DRAWINGS OR NOT.
- PROVIDE AT MINIMUM 10 GAUGE STEEL SLEEVES FOR ALL DUCT PENETRATIONS THROUGH DIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE PIPE SLEEVES FOR ALL MECHANICAL PIPING PENETRATION THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS. SEAL ALL ANNULAR SPACE BETWEEN SLEEVES AND DUCTWORK OR PIPING WITH FIRE BARRIER MATERIAL EQUAL TO 3M "PENETRATION SEALING SYSTEM".
- THE INSIDE OF ALL DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF MASONRY RETURN AIR OPENINGS AND RECESSED EQUIPMENT WITH THE GENERAL CONTRACTOR.
- ALL RETURN AIR OPENINGS SHALL BE ABOVE CEILING UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL WIRE MESH SCREENS ON ALL OPENINGS.
- ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILING.
- PROVIDE RETURN AIR OPENINGS AS REQUIRED. OPENING SHALL BE SIZED FOR REQUIRED CFM AT A VELOCITY NOT TO EXCEED 400 FEET PER MINUTE. PROVIDE LINTELS AS REQUIRED.
- SUPPORTS FOR DUCTS SHALL BE INSTALLED AT INTERVALS OF NOT MORE THAN 10 FEET.
- FLEXIBLE DUCTWORK CONCEALED ABOVE CEILING SHALL BE EQUAL TO THERMAFLEX PRO SERIES G-KM INSULATED FLEXIBLE DUCT (R-VALUE=4.2) WITH POLYETHYLENE VAPOR BARRIER JACKETING. FLEXIBLE DUCT EXPOSED TO VIEW SHALL BE EQUAL TO THERMAFLEX PRO SERIES M-KE INSULATED FLEXIBLE DUCTWORK WITH REINFORCED METALIZED VAPOR BARRIER JACKETING. FLEX DUCT SHALL BE UL LISTED AND LABELED AS A CLASS 1 DUCT, STANDARD 181. FLEX DUCT SHALL BE CONNECTED TO BRANCHES AND MAINS USING CONICAL FITTINGS SNA SHALL NOT EXCEED 10'-0" IN LENGTH INCLUDING ONE ELBOW. FLEXIBLE DUCTWORK SHALL NOT BE USED AS RETURN AIR OR EXHAUST DUCTWORK.
- ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER SMACNA STANDARDS FOR PRESSURE OF 2" E.S.P. SEAL ALL LONGITUDINAL SEAMS AND TRANSVERSE JOINTS WITH FIRE-PROOF SEALANT FOR "AIR-TIGHT" APPLICATION.
- PROVIDE TYPE "B" DYNAMIC FIRE DAMPERS IN DUCTS WHERE DUCT PENETRATES FIRE-RATED WALLS, FLOORS, CEILINGS, ETC. WHERE SHOWN ON DRAWINGS AND AS REQUIRED BY THE FLORIDA MECHANICAL CODE 2023. FIRE DAMPERS SHALL COMPLY WITH REQUIREMENTS OF UL 555. DAMPER SHALL HAVE A MINIMUM RATING OF 1-1/2 HOURS FOR PENETRATIONS OF LESS THAN 3-HOUR FIRE-RESISTANCE-RATED ASSEMBLIES AND A MINIMUM RATING OF 3 HOURS FOR PENETRATIONS OF 3-HOUR OR GREATER FIRE-RESISTANCE-RATED ASSEMBLIES. PROVIDE ACCESS DOORS FOR ALL DAMPERS OR OTHER APPROVED MEANS OF ACCESS.
- DUCT SMOKE DETECTORS AND ASSOCIATED AUDIO/VISUAL DEVICES SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL ALL DUCT SMOKE DETECTORS AND INSTALL ALL REQUIRED CONTROL WIRING TO AUTOMATICALLY SHUT DOWN FANS UPON DETECTION OF SMOKE AS OUTLINED IN SPECIFICATION.
- COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES AND WITH FLASHING REQUIREMENTS.

- THE CONTRACTOR SHALL ENSURE THAT ALL NEW DUCTWORK DISTRIBUTION SYSTEMS ARE TURNED OVER TO THE CLIENT IN CLEAN NEW CONDITION. SHOULD CONSTRUCTION OF THE HVAC SYSTEMS REQUIRE ANY DUCTWORK INSTALLED TO REQUIRE CLEANING, OR HVAC EQUIPMENT FILTERS TO BE DIRTY, IT SHALL BE THE MECHANICAL CONTRACTORS RESPONSIBILITY TO CLEAN THE DUCTWORK DISTRIBUTION SYSTEM AND REPLACE ALL HVAC EQUIPMENT FILTERS.

INSULATION

- SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH NOT LESS THAN R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH NOT LESS THAN R-6 INSULATION. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY NOT LESS THAN R-6 INSULATION.
- INSULATION MUST BE FIRE RATED FOR FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED FOR 50 OR LESS.
- ALL INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- EXHAUST DUCTWORK SHALL BE UNINSULATED EXCEPT BETWEEN BACKDRAFT DAMPER AND ROOF CURB. EXHAUST DUCTWORK BETWEEN BACKDRAFT DAMPER AND CURB SHALL BE WRAPPED WITH 1-1/2" THICK FIBERGLASS DUCT INSULATION HAVING A CONDUCTIVITY OF 0.26 AT MEAN TEMPERATURE OF 75 DEGREES F. AND A DENSITY OF 1.5 PCF. INSULATION SHALL BE SCHULLER "MICROLITE" OR APPROVED EQUAL.
- "CONCEALED" DUCTS SHALL BE INSULATED WITH DUCT WRAP AS FOLLOWS:

RIGID ROUND DUCTS	1-1/2" THICK
ALL RECTANGULAR SUPPLY AND RETURN DUCTS	1-1/2" THICK

ADDITIONAL CONSTRUCTION REQUIREMENTS

- CONTRACTOR SHALL INSURE THAT EACH AIR HANDLER, HEAT PUMP, VRF SYSTEM, AIR CONDITIONER, ETC. BE INSTALLED WITH INDUSTRY STANDARD CRAFTSMANSHIP TO ENSURE MANUFACTURER'S INSTALLATION REQUIREMENTS BE MET REGARDING REFRIGERANT PRECHARGE. DOCUMENTATION OF REFRIGERANT CHARGING SHALL BE MADE TO MEET ALL INDUSTRY STANDARD PROTOCOL. CONTRACTOR TO RECEIVE BUILDING OWNERSHIP'S APPROVAL FOR FUNCTIONALITY AND INSTALLATION OF EQUIPMENT WITH RESPECT TO REFRIGERANT CHARGE, CONDENSATE PUMPS, FLOAT SWITCHES, ETC. ALL EQUIPMENT IS TO BE CLEAN AND FREE FROM DEBRIS AND DIRT. ALL AIR HANDLERS WILL BE LEFT WITH BRAND NEW AND CLEAN FILTERS. ALL CONTROLS SHALL BE LEFT IN WORKING ORDER AS INTENDED.
- ALL MANUFACTURER'S EQUIPMENT AS LISTED AND INSTALLED FOR THIS PROJECT SHALL BE ENERGY STAR LABEL AS REQUIRED.

CONDENSATE PIPING

- PIPING SHALL BE RIGIDLY SUPPORTED AT INTERVALS OF NOT MORE THAN 10 FEET.
- PROVIDE DIELECTRIC UNIONS IN PIPING WHERE DISSIMILAR METALS ARE JOINED TOGETHER.
- THE SIZE OF ALL PIPING SHALL BE AS SHOWN ON THE DRAWINGS, OR WHERE NOT SHOWN, AS REQUIRED.
- ALL COPPER PIPING SHALL BE AS SHOWN ON THE DRAWINGS, OR WHERE NOT SHOWN, AS REQUIRED.
- ALL COPPER PIPING SHALL BE JOINED USING 95-5 TIN/ANTIMONY SOLDER.
- ALL CONDENSATE DRAIN LINES SHALL BE PIPED TO FULL SIZE OF THE UNITS DRAIN OUTLET AND PROVIDED WITH A "P" TRAP SIZED AT MINIMUM TO EXCEED FAN STATIC PRESSURE. CONNECT CONDENSATE DRAINS TO PLUMBING LINES INDIRECTLY WITH AN AIR GAP.
- CONDENSATE DRAINAGE: DWV COPPER TUBING, PITCHED DOWN A MINIMUM OF 1/8" PER FOOT AWAY FROM UNIT.
- INSULATION SHALL CARRY THROUGH ALL WALL AND FLOOR PENETRATIONS AND PIPE HANGERS.
- PROVIDE GALVANIZED METAL SHIELDS FORMED TO FIT THE INSULATION BETWEEN HANGERS AND FINISHED INSULATIONS.
- INSULATE CONDENSATE PIPING WITH 1/2" THICK "MICRO-LOK" AP INSULATION (PROVIDE ZESTON PVC FITTING COVERS).

REFRIGERANT PIPING

- REFRIGERANT PIPING SHALL BE TYPE "L" OR TYPE "ACR" HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS, JOINED USING 45% SILVER BRAZING SOLDER AND SILVER BRAZING FLUX.
- PROVIDE LIQUID LINE REFRIGERANT SIGHT GLASS/MOISTURE INDICATOR.
- PROVIDE LIQUID AND SUCTION LINE FILTER/DRYERS AS REQUIRED.
- INSULATE REFRIGERANT SUCTION LINE WITH 1/2" THICK ARMAFLEX INSULATION OR TO MANUFACTURER'S WRITTEN REQUIREMENTS, WHICHEVER IS STRICTER. INSULATION INSTALLATION SHALL BE CONTINUOUS WITH NO VOIDS OR BREAKS IN INSULATION.
- REFRIGERANT ACCESS PORTS SHALL BE PROTECTED IN ACCORDANCE WITH FLORIDA MECHANICAL CODE.
- PROVIDE ALL MANUFACTURER RECOMMENDED METERS AND GAUGES FOR A FULLY FUNCTION REFRIGERANT PIPING SYSTEM.

GRILLES, REGISTERS, AND DIFFUSERS

- ALL SIZES OF CEILING DIFFUSERS, EXHAUST GRILLES, AND RETURN GRILLES SHOWN ON DRAWINGS ARE MODULE SIZES, NECK SIZES ARE INDICATED WITH THE ABBREVIATIONS OF "NK".
- ALL CEILING DIFFUSERS SHOWN ON DRAWINGS ARE 4-WAY UNLESS OTHERWISE NOTED.
- ALL CEILING DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS. ALL SIDEWALL MOUNTED SUPPLY GRILLES SHALL BE DOUBLE DEFLECTION UNLESS OTHERWISE NOTED.
- ALL CEILING DIFFUSERS SHALL BE OF ALUMINUM CONSTRUCTION UNLESS OTHERWISE NOTED.
- PROVIDE SQUARE TO ROUND ADAPTORS AS NECESSARY.
- ALL CEILING DIFFUSERS SHALL BE 24"x24" LAY-IN MODULES UNLESS OTHERWISE NOTED.

COORDINATION NOTE

PRIOR TO CONSTRUCTION, MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE ELECTRONIC COORDINATION DRAWINGS FOR ALL TRADES, WHICH SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO MECHANICAL CONTRACTOR ELECTRONIC COPIES OF ALL ELECTRICAL INSTALLATION WORK INCLUDING ALL LAYOUTS AND CUT SHEETS FOR ALL EQUIPMENT, FIXTURES, DEVICES, CONDUITS, APPURTENANCES, ETC., FOR INCORPORATION INTO THE COORDINATION DRAWINGS. ANY CONFLICTS BETWEEN TRADES MUST BE RESOLVED PRIOR TO CONSTRUCTION. COORDINATION SHALL BE INCLUSIVE OF ALL STRUCTURAL MEMBERS.

AIR SYSTEM TESTING, ADJUSTING, AND BALANCING (TAB)

- A CERTIFIED BALANCING CONTRACTOR SHALL PROVIDE BALANCING OF ALL AIR SYSTEMS PER AABC, NEBB OR TABB STANDARDS. SUBMIT TEST DATA AND DEMONSTRATE ANY SYSTEM DEFICIENCIES IN FIELD.
- SUBMIT BALANCING REPORT SIGNED BY A NEBB OR AABC CERTIFIED, STATE LICENSED, TESTING ADJUSTING AND BALANCING CONTRACTOR.
- SYSTEM-WIDE AIR BALANCE: CONTRACTOR SHALL PROVIDE FULL SYSTEM-WIDE TESTING, ADJUSTING AND BALANCING SERVICES FOR THE AHU SYSTEM. WORK INCLUDES ALL AIRFLOW LISTED ON DRAWINGS INCLUDING OUTDOOR AIR AND EXHAUST AIR QUANTITIES, EXHAUST FANS, AND ADJUSTMENTS TO AHU FAN SPEEDS.

MECHANICAL PIPING AND EQUIPMENT IDENTIFICATION

- LETTER AND NUMBER ALL MECHANICAL EQUIPMENT SHOWN ON THE CONTRACT DRAWINGS IDENTIFYING THE EQUIPMENT NUMBER AND SERVICE. NAMEPLATES SHALL BE .020" THICK ALUMINUM WITH PERMANENT 1/2-INCH HIGH WHITE LETTERS ON A BLACK BACKGROUND, MECHANICALLY AFFIXED OR PRESSURE-SENSITIVE ADHERED AND INSTALLED IN A READILY VISIBLE LOCATION ON THE EQUIPMENT. COORDINATE THE FINAL EQUIPMENT DESIGNATIONS WITH THE OWNER.
- IDENTIFY ALL PIPING, EXPOSED AND ACCESSIBLE, AFTER PIPING HAS BEEN TESTED, INSULATED OR PAINTED. IDENTIFY ALL VALVES WITH A TAG.
- PERMANENTLY STAMP AND MARK VALVE TAGS WITH A SERVICE DESIGNATION, NORMAL VALVE POSITION, AND AN IDENTIFYING NUMBER AS LARGE AS POSSIBLE. EACH VALVE SHALL HAVE A UNIQUE NUMBER COORDINATED WITH THE SERVICE DESIGNATIONS SHOWN ON THE CONTRACT DRAWINGS.

COMMISSIONING

- THE MECHANICAL CONTRACTOR SHALL ENGAGE A COMMISSIONING AGENT THAT SHALL ACT AS A REPRESENTATIVE FOR THE OWNER AND BE RESPONSIBLE FOR WITNESSING THE START-UP AND PERFORMING THE COMMISSIONING OF ALL MECHANICAL EQUIPMENT AND SYSTEMS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - EQUIPMENT, CONTROLS, SAFETIES AND INSTRUMENTATION ARE INSTALLED, CALIBRATED, STARTED AND OPERATED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - SIMULATED CONDITION SET POINTS AND OPERATIONS USED TO PERFORM TESTING AND COMMISSIONING
- PRIOR TO THE COMMISSIONING OF ANY SYSTEM, THE COMMISSIONING AGENT SHALL WITNESS AND VERIFY THE TESTING AND BALANCING PROCEDURE.
- THE COMMISSIONING AGENT SHALL PROVIDE A COMMISSIONING REPORT TO THE REVIEWED AND ACCEPTED BY THE OWNER AND ENGINEER OF RECORD PRIOR TO TURNING OVER THE MECHANICAL SYSTEMS TO THE BUILDING OWNER AND OPERATOR. THE COMMISSIONING REPORT SHALL BE INCLUDE:
 - A LIST IDENTIFYING ALL MECHANICAL EQUIPMENT AND SYSTEMS TO BE COMMISSIONED INCLUDING DEVIATIONS FROM THE EQUIPMENT SPECIFIED BY THE DESIGN DRAWINGS.
 - PROCESSES AND SCHEDULE FOR COMPLETING MANUFACTURER'S REQUIRED INSTALLATION, PRESTART CHECKS, AND START-UP PROCEDURES HAVE BEEN COMPLETED.
 - CERTIFICATE OF COMPLETION CERTIFYING THAT ALL HVAC EQUIPMENT, SYSTEMS, SUBSYSTEMS AND ASSOCIATED CONTROLS ARE READY FOR TESTING.
 - TEST AND INSPECTION REPORTS AND CERTIFICATES.
 - CORRECTIVE ACTION PROCEDURES AND DOCUMENTS INCLUDING FAILURE REPORT DETAILING ANY EQUIPMENT AND SYSTEM FAILURES AND METHODS USED TO CORRECT SYSTEM OPERATION FAILURES..
 - VERIFICATION OF TESTING, ADJUSTING AND BALANCING REPORTS.
 - VERIFICATION OF CONTROLS INTEGRATION AND OPERATION.

CONTROLS

- THE MECHANICAL CONTRACTOR SHALL BE THE RESPONSIBLE FOR THE CONTROLS SET UP AND INTEGRATION OF ALL HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO:
 - LOW-VOLTAGE CONTROL WIRING.
 - CONTROLS EQUIPMENT AND INSTRUMENTATION REQUIRED TO PROVIDE A FULLY OPERATIONAL CONTROLS SYSTEM.
 - IMPLEMENTATION OF SEQUENCES OF OPERATION FOR FULLY OPERATIONAL HVAC EQUIPMENT AND SYSTEMS.

SYMBOL	AIR TERMINAL DEVICE SCHEDULE
CD-1	CEILING SUPPLY DIFFUSER EQUAL TO PRICE MODEL AMCD, STEEL WITH 1-1/4" BORDER ON ALL SIDES. GRILLE SHALL HAVE MODULAR DIRECTIONAL CORES THAT ARE INDIVIDUALLY ADJUSTABLE. FRAME 22 WITH COUNTERSUNK SCREW HOLES. PROVIDE WITH REAR GANG OPERATED BLADES THAT HAVE FACE ACCESSIBLE LEVER. FINISH SHALL BE BRITISH WHITE OR AS SELECTED BY ARCHITECT. FACE SHALL BE 24"x24" WITH A 8"NK UNLESS OTHERWISE NOTED ON PLAN.
CD-2	CEILING SUPPLY DIFFUSER EQUAL TO PRICE MODEL AMCD, STEEL WITH 1-1/4" BORDER ON ALL SIDES. GRILLE SHALL HAVE MODULAR DIRECTIONAL CORES THAT ARE INDIVIDUALLY ADJUSTABLE. FRAME 22 WITH COUNTERSUNK SCREW HOLES. PROVIDE WITH REAR GANG OPERATED BLADES THAT HAVE FACE ACCESSIBLE LEVER. FINISH SHALL BE BRITISH WHITE OR AS SELECTED BY ARCHITECT. FACE SHALL BE 24"x24" WITH A 10"NK UNLESS OTHERWISE NOTED ON PLAN.
RG-1	RETURN GRILLE SHALL BE CEILING MOUNTED AS SHOWN, WITH MINIMUM MERV-6 FILTER. GRILLE SHALL BE INSTALLED AS PRICE MODEL 630. ALUMINUM FACE GRILLE WITH 45 DEGREE 3/4" SPACED SINGLE DEFLECTION. NECK SIZE 24X24 UNLESS OTHERWISE NOTED ON PLAN.
SG-1	MULTI DIRECTIONAL DEFLECTION RESIDENTIAL WALL MOUNTED, OR DUCT MOUNTED, SUPPLY GRILLE EQUAL TO PRICE MODEL 540, STEEL WITH 1-1/4" BORDER ON ALL SIDES. FRAME WITH COUNTERSUNK SCREW HOLES. PROVIDE WITH OPPOSED BLADE VOLUME DAMPER WITH EXPOSED OPERATOR BLADES. 0 DEGREE BLADE DEFLECTION. FINISH SHALL BE WHITE OR AS SELECTED BY ARCHITECT. NECK SIZE SHALL BE 12X4 UNLESS OTHERWISE NOTED ON PLAN.
EG-1	CEILING EXHAUST GRILLE EQUAL TO PRICE MODEL 530, ALUMINUM WITH 1-1/4" BORDER ON ALL SIDES AND MINIMUM BORDER THICKNESS OF 0.040 INCHES. GRILLE SHALL BE FIXED 45 DEGREE DEFLECTION WITH 3/4" BLADE SPACING. FRONT BLADES PARALLEL TO LONG DIMENSION. BORDER TYPE AS REQUIRED. PROVIDE WITH OPPOSED BLADE DAMPER. FINISH SHALL BE BAKED ON ACRYLIC PAINT, COLOR AS SELECTED BY ARCHITECT. FACE SHALL BE 12"x12" WITH A 6X6"NK UNLESS OTHERWISE NOTED ON PLAN.

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SEAL



PROJECT NAME AND ADDRESS

PINE ISLAND FIRE STATION
5015 STRINGFELLOW RD, PINE ISLAND, FL 33956

ISSUES/REVISIONS

NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

TITLE
MECHANICAL SPECIFICATIONS

PROJECT
24026
SCALE
NONE

SHEET

MO.2

GENERAL NOTES:

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- REFER TO SCHEDULES AND MECHANICAL DETAILS PERTAINING TO THIS PROJECT.
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- CONTRACTOR SHALL INSTALL ALL NEW EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND SHALL MAINTAIN ALL REQUIRED CLEARANCES (INSTALLATION AND MAINTENANCE) AS NOTED WITHIN THE WRITTEN INSTRUCTIONS.
- HOLD ALL NEW DUCTWORK, HANGERS, PIPING, EQUIPMENT ETC. AS TIGHT TO STRUCTURE ABOVE AS POSSIBLE.
- CONTRACTOR SHALL COORDINATE THE COLORS AND FINISHES OF ALL EXTERIOR WALL CAPS WITH THE ARCHITECT.
- PROVIDE WEATHER PROOF VENT CAP FOR ALL EXTERIOR WALL EXHAUST PENETRATIONS.
- ALL MECHANICAL EXHAUST OUTLETS AND DUCTS DISCHARGING TO THE OUTDOORS MUST BE A MINIMUM OF 3' FROM OPERABLE OPENINGS TO THE BUILDING AS PER FLORIDA MECHANICAL CODE SECTION 501.3.1.
- ANY PEX, PVC, OR NON PLENUM RATED MATERIAL UTILIZED WITHIN THE MECHANICAL CLOSETS SHALL BE FIRE WRAPPED WITH 3M FIRE BARRIER PLENUM WRAP 5A+ (OR APPROVED EQUAL) IN COMPLIANCE WITH THE FLORIDA BUILDING CODE AND ALL CURRENT SUBCODES.
- ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10' SEPARATED FROM ALL EXHAUST VENT TERMINALS.

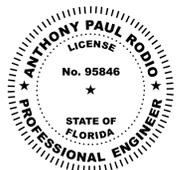
MECHANICAL KEYNOTES:

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- HVAC CONDENSATE SHALL BE PIPED IN 1" PVC PIPE TO APPROVED CONDENSATE DISCHARGE LOCATION (I.E. SUMP PIT, FLOOR DRAIN, FUNNEL DRAIN, ETC.). SEE PLUMBING PLANS, MECHANICAL DETAILS, AND PLUMBING DETAILS FOR ADDITIONAL INFORMATION. CONDENSATE SHALL DISCHARGE WITH A MINIMUM 2" AIR GAP.
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- ENTIRE DRYER EXHAUST SYSTEM SHALL BE INSTALLED AS PER FLORIDA MECHANICAL CODE SECTION 504 AND DRYER MANUFACTURER'S WRITTEN INSTRUCTIONS. SYSTEMS SHALL BE INSTALLED WITH LINT TRAP CLEANOUTS AS REQUIRED. ALL LAUNDRY DUCTS ARE TO BE INSULATED. DRYER EXHAUST DUCTWORK SHALL BE ROUTED TO ENSURE THAT THE TOTAL DEVELOPED LENGTH IS NOT MORE THAN WHAT IS PERMITTED IN FLORIDA MECHANICAL CODE SECTION 504. DRYER EXHAUST BOOSTER FANS ARE NOT PERMITTED PER SECTION 504.6. ENTIRE SYSTEM SHALL BE INSTALLED TO MAINTAIN ALL FIRE RATINGS.
- INTAKE AIR LOUVER LOCATED IN APPARATUS BAY WALL ABOVE LIVING QUARTERS ROOF DECK. SEE ARCHITECTURAL PLANS FOR EXACT MOUNTING HEIGHT AND LOCATION. MECHANICAL CONTRACTOR TO COORDINATE FINAL LOCATION IN FIELD.
- CONTRACTOR SHALL FURNISH AND INSTALL SUPPLY DUCT MOUNTED REFRIGERANT DETECTOR IN ALL UNITS USING A2L REFRIGERANT. UNIT SUPPLY FAN SHALL SHUT DOWN UPON DETECTION OF REFRIGERANT.
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- COORDINATE GENERATOR FUEL TRANSFER PUMP, 1000 GAL. DIESEL TANK, 550 GAL. UNLEADED TANK AND 1000 GAL. BELLY TANK AND ALL ASSOCIATED REQUIREMENTS WITH GENERATOR PROVIDER/INSTALLER.
- CU SHALL BE INSTALLED ON A PLATFORM ABOVE THE LOCAL DESIGN FLOOD PLAIN ELEVATION. PLATFORM SYSTEM SHALL BE DESIGNED BY A CIVIL/STRUCTURAL ENGINEER WITH PILES, POSTS, COLUMNS, CROSS BRACING, SUPPORTS, CONCRETE FOOTINGS, ETC. TO WITHSTAND THE RESISTANCE OF THE PLATFORM WIND AND SEISMIC FORCES.
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- CONTRACTOR SHALL FURNISH AND INSTALL INTEGRAL REFRIGERANT DETECTOR. UNIT SUPPLY FAN SHALL SHUT DOWN UPON DETECTION OF REFRIGERANT.
- CONDENSING UNIT SHALL BE MOUNTED ON EXTERIOR WALL IN A FASHION TO WITHSTAND WIND FORCES, AS REQUIRED BY LOCAL BUILDING CODES. CONDENSING UNIT SHALL BE MOUNTED AS PER MANUFACTURER'S REQUIREMENTS.



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PROJECT NAME AND ADDRESS

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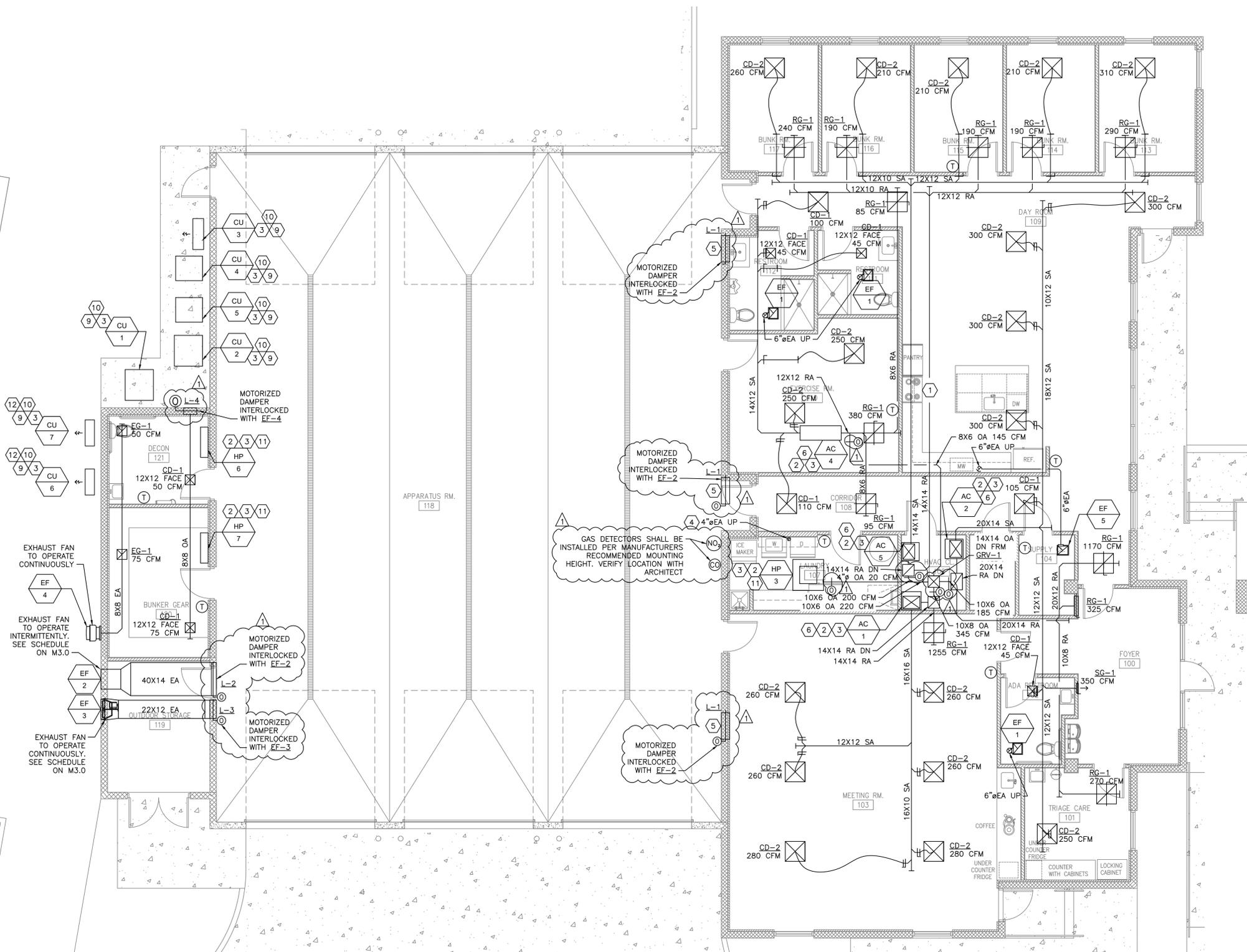
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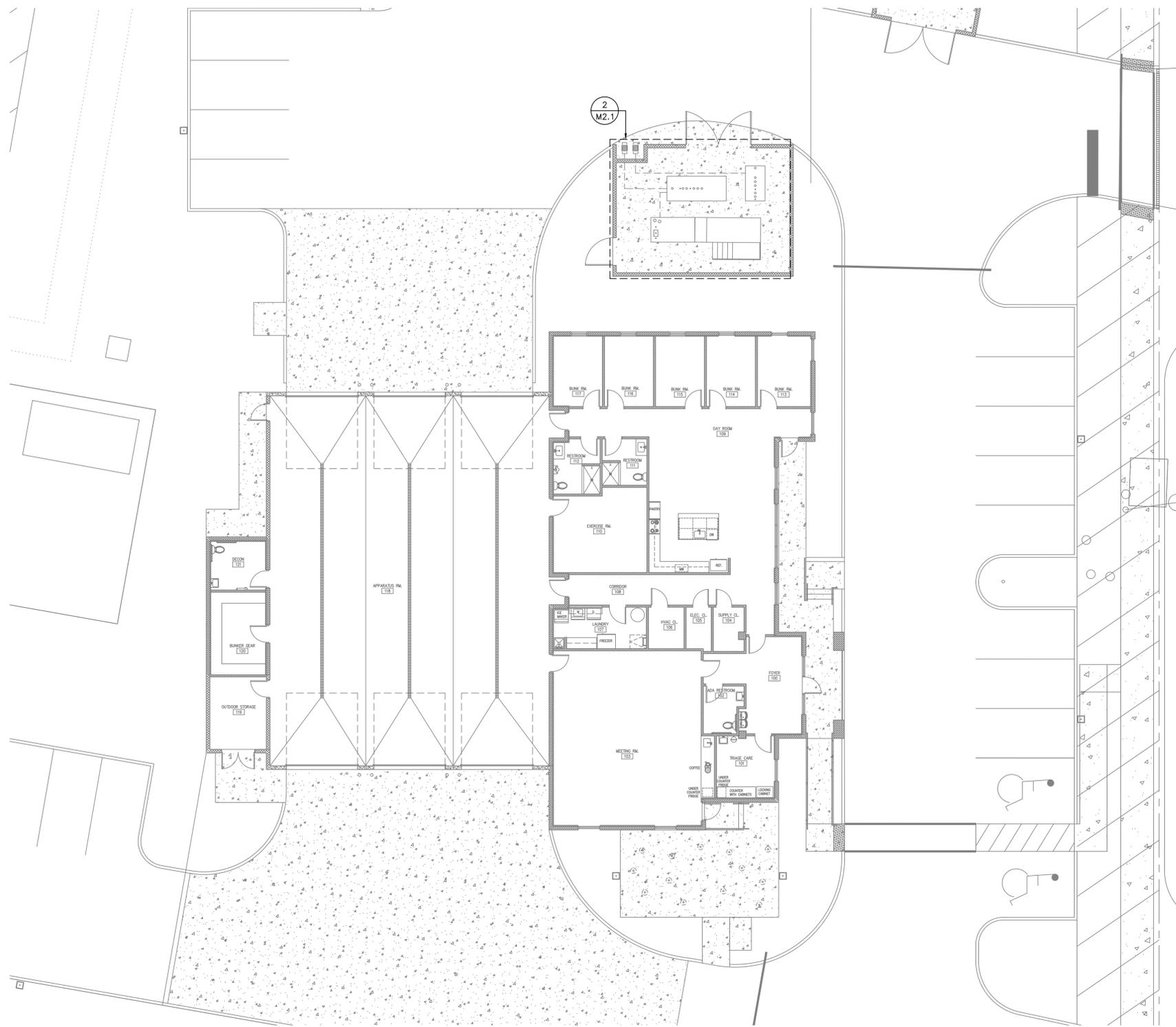
TITLE
MECHANICAL FLOOR PLAN

PROJECT
24026
SCALE
AS SHOWN

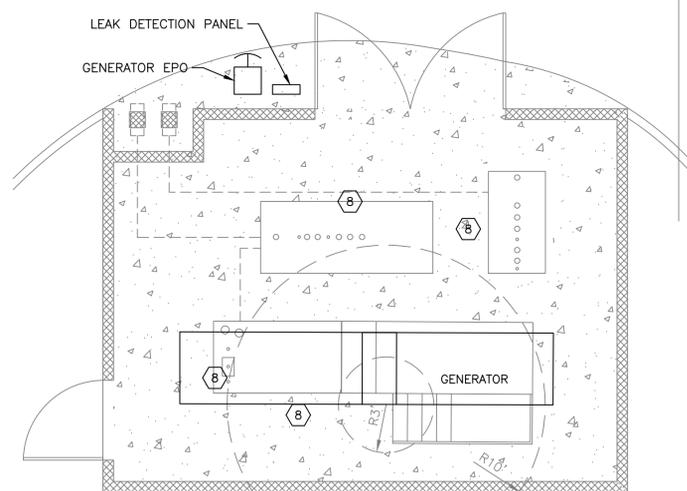
SHEET
M2.0



1 MECHANICAL FLOOR PLAN
M2.0 SCALE: 3/16" = 1' 0"



1 MECHANICAL SITE PLAN
M2.1 SCALE: 3/32" = 1' 0"



2 MECHANICAL GENERATOR PLAN
M2.1 SCALE: 3/16" = 1' 0"

GENERAL NOTES:

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2. REFER TO SCHEDULES AND MECHANICAL DETAILS PERTAINING TO THIS PROJECT.
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7. HOLD ALL NEW DUCTWORK, HANGERS, PIPING, EQUIPMENT ETC. AS TIGHT TO STRUCTURE ABOVE AS POSSIBLE.
8. CONTRACTOR SHALL COORDINATE THE COLORS AND FINISHES OF ALL EXTERIOR WALL CAPS WITH THE ARCHITECT.
9. PROVIDE WEATHER PROOF VENT CAP FOR ALL EXTERIOR WALL EXHAUST PENETRATIONS.
10. ALL MECHANICAL EXHAUST OUTLETS AND DUCTS DISCHARGING TO THE OUTDOORS MUST BE A MINIMUM OF 3' FROM OPERABLE OPENINGS TO THE BUILDING AS PER FLORIDA MECHANICAL CODE SECTION 501.3.1.
11. ANY PEX, PVC, OR NON PLENUM RATED MATERIAL UTILIZED WITHIN THE MECHANICAL CLOSETS SHALL BE FIRE WRAPPED WITH 3M FIRE BARRIER PLENUM WRAP 5A+ (OR APPROVED EQUAL) IN COMPLIANCE WITH THE FLORIDA BUILDING CODE AND ALL CURRENT SUBCODES.
12. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10' SEPARATED FROM ALL EXHAUST VENT TERMINALS.

MECHANICAL KEYNOTES:

1. GREENHECK MODEL GRRS-30-F-G-N, 500 CFM, RECIRCULATION UNIT, SELF CONTAINED FIRE SUPPRESSION SYSTEM, UL300A APPROVED, NFPA1010 APPROVED, WITH AMEREX 660 WET CHEMICAL FIRE EXTINGUISHING AGENT, OR APPROVED EQUAL. LOCATION AND EXACT SELECTION SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
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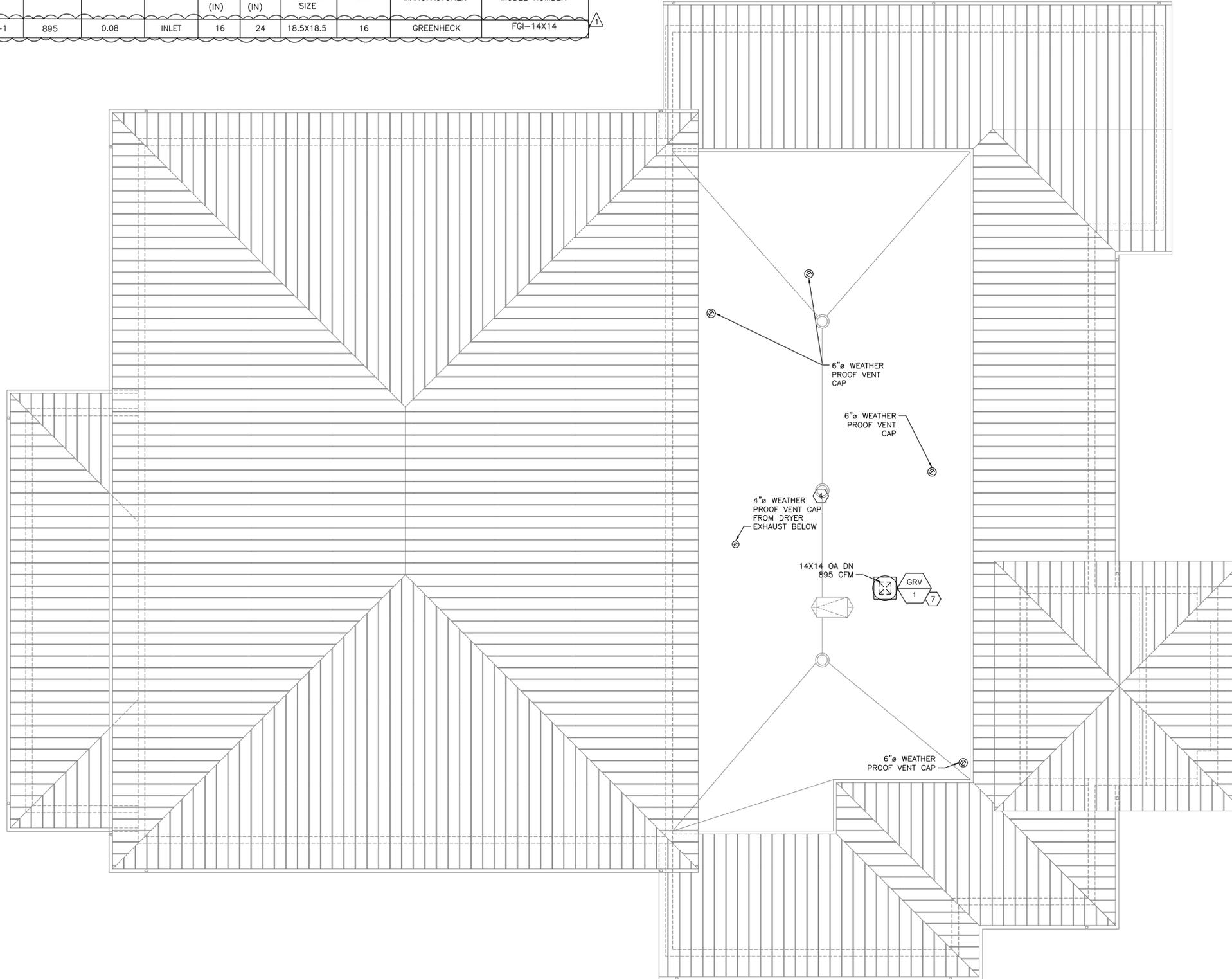
PROJECT NAME AND ADDRESS

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ISSUES/REVISIONS		
NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

TITLE MECHANICAL SITE PLAN	
PROJECT 24026	SHEET M2.1
SCALE AS SHOWN	

ROOF MOUNTED AIR INLET SCHEDULE									
SYMBOL	MAX CFM	ESP (IN WG)	TYPE	UNIT HEIGHT (IN)	UNIT WIDTH (IN)	ROOF OPENING SIZE	OPERATING WEIGHT	BASIS OF DESIGN	
								MANUFACTURER	MODEL NUMBER
GRV-1	895	0.08	INLET	16	24	18.5X18.5	16	GREENHECK	FGI-14X14



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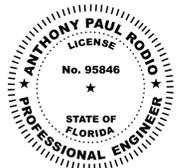
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- ALL EXHAUST OUTLETS, AND PLUMBING VENT LINES DISCHARGING TO THE OUTDOORS MUST BE A MINIMUM OF 10' FROM GRV-1 OUTSIDE AIR INTAKE IN ACCORDANCE WITH FLORIDA MECHANICAL CODE SECTION 501.3.1.
- COORDINATE GENERATOR FUEL TRANSFER PUMP, 1000 GAL DIESEL TANK, 550 GAL UNLEADED TANK AND 1000 GAL. BELLY TANK AND ALL ASSOCIATED REQUIREMENTS WITH GENERATOR PROVIDER/INSTALLER.
- CU SHALL BE INSTALLED ON A PLATFORM ABOVE THE LOCAL DESIGN FLOOD PLAIN ELEVATION. PLATFORM SYSTEM SHALL BE DESIGNED BY A CIVIL/STRUCTURAL ENGINEER WITH PILES, POSTS, COLUMNS, CROSS BRACING, SUPPORTS, CONCRETE FOOTINGS, ETC. TO WITHSTAND THE RESISTANCE OF THE PLATFORM WIND AND SEISMIC FORCES.
- HVAC EQUIPMENT SHALL BE STRAPPED OR BOLTED DOWN IN A FASHION TO WITHSTAND WIND FORCES REQUIRED BY THE LOCAL BUILDING CODES AND ORDINANCES.
- CONTRACTOR SHALL FURNISH AND INSTALL INTEGRAL REFRIGERANT DETECTOR. UNIT SUPPLY FAN SHALL SHUT DOWN UPON DETECTION OF REFRIGERANT.
- CONDENSING UNIT SHALL BE MOUNTED ON EXTERIOR WALL IN A FASHION TO WITHSTAND WIND FORCES, AS REQUIRED BY LOCAL BUILDING CODES. CONDENSING UNIT SHALL BE MOUNTED AS PER MANUFACTURER'S REQUIREMENTS.



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PROJECT NAME AND ADDRESS

PINE ISLAND FIRE STATION
 5015 STRINGFELLOW RD, PINE ISLAND, FL 33956

ISSUES/REVISIONS

NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

1 MECHANICAL ROOF PLAN
 M2.2 SCALE: 3/16" = 1' 0"

TITLE MECHANICAL ROOF PLAN	
PROJECT 24026	SHEET M2.2
SCALE AS SHOWN	

SPLIT SYSTEM HEAT PUMP SCHEDULE

INDOOR UNIT										OUTDOOR UNIT							
UNIT	MANUFACTURER	MODEL	STYLE	SERVING	AIRFLOW RATE (CFM)	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)	TOTAL HEATING (BTUH)	V/PH/HZ	UNIT	MODEL	SEER2	V/PH/HZ	MCA	MOCP	REFRIGERANT	NOTES
HP-3	MITSUBISHI	PLA-AE24NL	CEILING CASSETTE	LAUNDRY ROOM	810	24,500	20,090	29,000	208/1/60	CU-3	PUZ-AH24NL	22.6	208/1/60	22.0	25	R-454B	ALL NOTES
HP-6	MITSUBISHI	MSZ-EX09NLW	WALL MOUNTED	DECON ROOM	391	9,000	8,730	12,000	208/1/60	CU-6	SUZ-AA09NL	21.7	208/1/60	13.0	15	R-454B	ALL NOTES
HP-7	MITSUBISHI	MSZ-EX09NLW	WALL MOUNTED	BUNKER ROOM	391	9,000	8,730	12,000	208/1/60	CU-7	SUZ-AA09NL	21.7	208/1/60	13.0	15	R-454B	ALL NOTES

- NOTES:
- UNIT SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - PROVIDE MANUFACTURER'S PROGRAMMABLE 7-DAY THERMOSTAT.
 - PROVIDE ELECTRICAL DISCONNECT SWITCH FOR OUTDOOR UNITS.
 - ALL INDOOR UNITS SHALL BE POWERED OFF OF THE OUTDOOR UNITS - ELECTRICAL CONTRACTOR TO PROVIDE ALL POWER WIRING BETWEEN INDOOR AND OUTDOOR UNITS.
 - PROVIDE INTERCONNECTING CONTROL WIRE AND REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNITS. CONTRACTOR TO SUBMIT FINAL REFRIGERANT LINE LENGTHS TO ENGINEER & VENDOR FOR APPROVAL.
 - HP-3,6 AND 7 SHALL BE FURNISHED AND INSTALLED WITH AN INTEGRAL REFRIGERANT DETECTOR. UNIT SUPPLY FAN SHALL SHUT DOWN UPON DETECTION OF REFRIGERANT.
 - CU-3,6 & 7 SHALL BE INSTALLED ON A PLATFORM ABOVE THE LOCAL DESIGN FLOOD ELEVATION. PLATFORM SYSTEM SHALL BE DESIGNED BY A CIVIL/STRUCTURAL ENGINEER WITH PILES, POSTS, COLUMNS, CROSS BRACING, SUPPORTS, CONCRETE FOOTINGS, ETC. TO WITHSTAND THE RESISTANCE OF THE PLATFORM WIND AND SEISMIC FORCES.
 - HVAC EQUIPMENT SHALL BE STRAPPED OR BOLTED DOWN IN A FASHION TO WITHSTAND WIND FORCES REQUIRED BY THE LOCAL BUILDING CODES AND ORDINANCES.
 - INTERLOCK OA CONTROL DAMPER WITH HP-3. WHEN HP-3 FAN IS ENABLED, ASSOCIATED OA INTAKE DAMPER SHALL BE OPENED. WHEN HP-3 IS DISABLED, ASSOCIATED OA INTAKE DAMPER SHALL BE CLOSED.

AIR CONDITIONER SCHEDULE

INDOOR UNIT											OUTDOOR UNIT								
UNIT	MANUFACTURER	MODEL	STYLE	SERVING	AIRFLOW RATE (CFM)	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)	ELECTRIC HEATING COIL (KW)	V/PH/HZ	MCA	MOCP	UNIT	MODEL	SEER2	V/PH/HZ	MCA	MOCP	REFRIGERANT	NOTES
AC-1	TRANE	GAM5B0C48M41	VERTICALLY DUCTED	MEETING ROOM	1,600	48,042	36,808	7.20	208/1/60	51.0	60	CU-1	5TTR4048A1000A/B	14.3	208/1/60	23.0	35	R-454B	ALL NOTES
AC-2	TRANE	GAM5B0C60M51	VERTICALLY DUCTED	DAY ROOM, FOYER	1,950	57,426	43,977	5.77	208/1/60	44.0	45	CU-2	5TTR4060A1000A/B	14.3	208/1/60	28.0	50	R-454B	ALL NOTES
AC-4	TRANE	GAM5B0C24M21	HORIZONTALLY DUCTED	EXERCISE ROOM	800	24,140	17,922	7.20	208/1/60	47.0	50	CU-4	5TTR4024A1000A	14.3	208/1/60	14.0	25	R-454B	ALL NOTES
AC-5	TRANE	GAM5B0B36M31	VERTICALLY DUCTED	BUNK ROOMS	1,200	34,300	25,800	5.77	208/1/60	40.0	40	CU-5	5TTR4036A1000A/B	14.3	208/1/60	21.0	30	R-454B	ALL NOTES

- NOTES:
- UNIT SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - PROVIDE MANUFACTURER'S PROGRAMMABLE 7-DAY THERMOSTAT.
 - PROVIDE ELECTRICAL DISCONNECT SWITCH FOR OUTDOOR UNITS.
 - PROVIDE INTERCONNECTING CONTROL WIRE AND REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNITS. CONTRACTOR TO SUBMIT REFRIGERANT LINE LENGTHS TO ENGINEER & VENDOR FOR APPROVAL.
 - AC-1,2,4 & 5 SHALL BE FURNISHED AND INSTALLED WITH SUPPLY DUCT MOUNTED REFRIGERANT DETECTOR. UNIT SUPPLY FAN SHALL SHUT DOWN UPON DETECTION OF REFRIGERANT.
 - CU-1,2,4 & 5 SHALL BE INSTALLED ON A PLATFORM ABOVE THE LOCAL DESIGN FLOOD ELEVATION. PLATFORM SYSTEM SHALL BE DESIGNED BY A CIVIL/STRUCTURAL ENGINEER WITH PILES, POSTS, COLUMNS, CROSS BRACING, SUPPORTS, CONCRETE FOOTINGS, ETC. TO WITHSTAND THE RESISTANCE OF THE PLATFORM WIND AND SEISMIC FORCES.
 - HVAC EQUIPMENT SHALL BE STRAPPED OR BOLTED DOWN IN A FASHION TO WITHSTAND WIND FORCES REQUIRED BY THE LOCAL BUILDING CODES AND ORDINANCES.
 - INTERLOCK OA CONTROL DAMPER WITH AC. WHEN AC FAN IS ENABLED, ASSOCIATED OA INTAKE DAMPER SHALL BE OPENED. WHEN AC IS DISABLED, ASSOCIATED OA INTAKE DAMPER SHALL BE CLOSED.

EXHAUST FAN SCHEDULE

SYMBOL	CFM	ESP (IN WG)	FAN RPM	MOTOR HP	MOTOR WATTS	ELECTRICAL V/PH/HZ	OPERATING WEIGHT	BASIS OF DESIGN		NOTES
								MANUFACTURER	MODEL NUMBER	
EF-1	50	0.25	590	-	12	115/60/1	18	GREENHECK	SP-B90	1,2,3
EF-2	4,830	0.3	1,559	1	-	208/60/3	108	GREENHECK	AER-20-VGD	2,5,6,8
EF-3	350	0.3	707	1/4	-	208/60/1	58	GREENHECK	SBE-1H20	2,5,6,8
EF-4	125	0.25	1,300	1/60	-	115/60/1	40	GREENHECK	CUE-70-VG	1,2,4
EF-5	50	0.25	590	-	12	115/60/1	18	GREENHECK	SP-B90	1,2,7

- NOTES:
- ASSEMBLY THAT IS DUCTED TO A ROUND EXTERIOR WALL CAP.
 - PROVIDE FAN SPEED CONTROLLER FOR BALANCING.
 - EF TO PROVIDE DUAL PURPOSE BATHROOM LIGHT AND EXHAUST; FAN OPERATION SHALL BE TIED TO BATHROOM LIGHT SWITCH.
 - EF TO OPERATE CONTINUOUSLY.
 - PROVIDE INTEGRAL DUCT CONNECTION FLANGES, 45 DEGREE WEATHER HOOD, VIBRATION HANGERS, MANUFACTURER HOUSING AND FAN GAURD, AND MOTOR STARTER WITH INTEGRAL DISCONNECT SWITCH.
 - PROVIDE WITH VERTICAL MOUNT EXHAUST DAMPER.
 - EF SHALL BE CONTROLLED BY THERMOSTAT. EF SHALL ACTIVATE UPON TEMPERATURE RISE ABOVE THERMOSTAT SET POINT. EF SHALL DE-ACTIVATE ONCE THERMOSTAT SET POINT IS MET.
 - THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE GAS DETECTION SENSORS, CONTROL PANEL AND ALL NECESSARY ACCESSORIES FOR A FULLY FUNCTIONING SYSTEM. THE MECHANICAL CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL WIRING FROM THE GAS DETECTION SENSORS TO THE THE CONTROL PANEL AND THE CONTROL PANEL TO EF-2 AND EF-3.

GARAGE EXHAUST SEQUENCE OF OPERATION FOR EF-2 & EF-3:

GARAGE AREA SHALL MAINTAIN NEGATIVE PRESSURE RELATIVE TO ADJACENT SPACES VIA SPACE PRESSURE SENSORS AT DOORWAYS.

STANDBY MODE:

EF-3 SHALL BE ENERGIZED TO OPERATE CONTINUOUSLY. OUTSIDE AIR DAMPERS SHALL OPEN.

UPON CO/NO2 SENSOR ACTIVATION (CARBON MONOXIDE IN THE SPACE ABOVE 35 PPM [ADJUSTABLE]) OR (1.0 PPM [ADJUSTABLE] FOR NITROGEN DIOXIDE) THE GARAGE EXHAUST SYSTEM SHALL ENTER FULL-ON MODE.

PURGE MODE:

EF-2 & EF-3 SHALL BE ENERGIZED TO OPERATE CONTINUOUSLY. IF AFTER 10 MINUTES THE CO/NO2 LEVELS HAVE NOT RETURNED TO ACCEPTABLE LEVELS THE EXHAUST FANS SHALL CONTINUE TO OPERATE, THE OUTSIDE AIR DAMPERS SHALL REMAIN OPEN, AND AN ALARM SHALL SOUND.

LOUVER SCHEDULE

SYMBOL	CFM	ESP (IN WG)	DIMENSIONS				TYPE	BASIS OF DESIGN		NOTES
			HEIGHT(IN)	WIDTH (IN)	MAX VELOCITY (FPM)	MIN. FREE AREA (SF)		MANUFACTURER	MODEL NUMBER	
L-1	1,730	0.13	20	32	919	1.9	INTAKE	GREENHECK	ESD-635	SEE NOTES
L-2	4,830	0.08	40	40	763	6.4	EXHAUST	GREENHECK	ESD-635	SEE NOTES
L-3	350	0.05	14	22	572	0.7	EXHAUST	GREENHECK	ESD-635	SEE NOTES
L-4	340	0.05	14	14	433	0.3	INTAKE	GREENHECK	ESD-635	SEE NOTES

- NOTES:
- PROVIDE VCD-23 PARALLEL BLADE OPERATED CONTROL DAMPERS WITH 120V INTERNAL ACTUATORS AND 1A LEAKAGE CLASS.
 - PROVIDE BIRDSCREEN.
 - CONSULT ARCHITECTURAL PLANS FOR VARIATIONS FROM MANUFACTURER.
 - VERIFY FINISH COLOR AND TYPE WITH ARCHITECT PRIOR TO ORDERING.
 - VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECT.

OUTSIDE AIR INTAKE FOR MULTIZONE RECIRCULATING SYSTEMS (FMC SECTION 403.3.1.1.2.3)

OA SYSTEM	MAX OUTDOOR AIR FRACTION (ZP)	SYSTEM VENTILATION EFFICIENCY (EV) - IMC TABLE 403.3.1.1.2.3.2	OCCUPANT DIVERSITY (D)	UNCORRECTED OA INTAKE FLOW RATE (V _{ou})	OUTDOOR AIR INTAKE FLOW RATE (VOT) = V _{ou} /EV
AC-2	13%	1	1	144	144
AC-4	25%	0.9	1	112	125
AC-5	19%	0.96	1	155	161

VENTILATION SCHEDULE - PINE ISLAND FIRE STATION

ROOM NAME	OA SYSTEM	BREATHING ZONE OA CALCULATION (FMC 2023)				ZONE OA CALCULATION (FMC 2023)		VENTILATION CALCULATION FOR OTHER AREAS			DESIGN AIRFLOWS (CFM)			NOTES
		AZ FLOOR AREA (SF)	RA AREA OA RATE (CFM / SF)	PZ NO. OF PEOPLE (QTY)	RP PEOPLE OA RATE (CFM/PERSON)	VBZ BREATHING ZONE OA (CFM)	EZ ZONE AIR DISTRIBUTION EFFECTIVENESS	VOZ ZONE OUTDOOR AIRFLOW (CFM)	NO. OF FIXTURES	FIXTURE EXHAUST RATE (CFM/FIXTURE)	CALCULATED EXHAUST AIRFLOW (CFM)	OUTDOOR AIRFLOW	SUPPLY AIRFLOW	
BASEMENT														
100 FOYER	AC-2	245	0.06	1	5	20	0.8	25	-	-	-	25	350	-
101 TRIAGE CARE	AC-2	120	0.06	2	5	17	0.8	22	-	-	-	25	250	-
102 ADA-RESTROOM	AC-2	60	-	-	-	-	0.8	0	1	50	50	0	45	50
103 MEETING ROOM	AC-1	890	0.06	45	5	276	0.8	345	-	-	-	345	1600	-
107 LAUNDRY	HP-3	130	0.12	-	-	16	0.8	20	-	-	-	20	800	-
108A CORRIDOR	AC-2	186	0.06	-	-	11	0.8	14	-	-	-	15	105	-
108B CORRIDOR	AC-4	183	0.06	-	-	11	0.8	14	-	-	-	15	110	-
109 DAY ROOM	AC-2	760	0.06	10	5	96	0.8	120	-	-	-	120	1200	-
110 EXERCISE ROOM	AC-4	230	0.18	8	7.5	101	0.8	127	-	-	-	130	500	-
111 RESTROOM	AC-4	70	-	-	-	-	0.8	0	1	50	50	-	45	50
112 RESTROOM	AC-4	90	-	-	-	-	0.8	0	1	50	50	-	45	50
113 BUNK ROOM	AC-5	115	0.06	5	5	32	0.8	40	-	-	-	40	310	-
114 BUNK ROOM	AC-5	115	0.06	5	5	32	0.8	40	-	-	-	40	210	-
115 BUNK ROOM	AC-5	115	0.06	5	5	32	0.8	40	-	-	-	40	210	-
116 BUNK ROOM	AC-5	115	0.06	5	5	32	0.8	40	-	-	-	40	210	-
117 BUNK ROOM	AC-5	115	0.06	5	5	32	0.8	40	-	-	-	40	260	-
118 APPARATUS ROOM	-	3435	-	-	-	-	-	-	-	-	-	-	-	-
120 BUNKER GEAR	HP-7	150	-	-	-	-	0.8	0	-	0.5 CFM/SF	75	0	-	75
121 DECON	HP-6	85	-	-	-	-	0.8	0	1	50	50	0	-	50

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PROJECT NAME AND ADDRESS

PINE ISLAND FIRE STATION
5015 STRINGFELLOW RD, PINE ISLAND, FL 33956

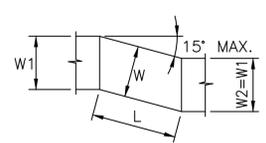
ISSUES/REVISIONS		
NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

TITLE
MECHANICAL SCHEDULES

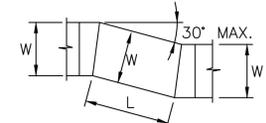
PROJECT
24026

SCALE
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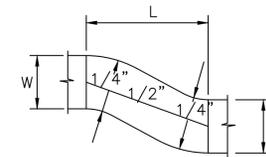
SHEET
M3.0



OFFSET TYPE 1 (ANGLED)

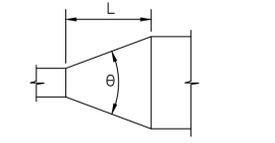


OFFSET TYPE 2 (MITERED)

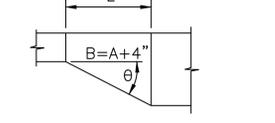


OFFSET TYPE 3 (RADIUSSED OR OGEE)

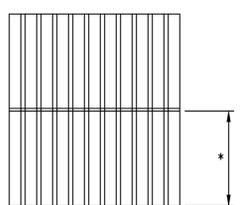
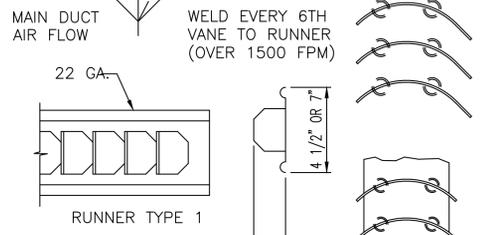
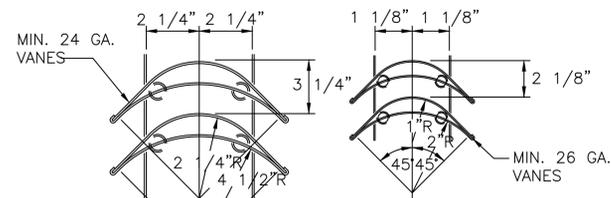
NOTES:
 1. OFFSETS TYPE 2 AND 3 AND TRANSITIONS MAY HAVE EQUAL OR UNEQUAL INLET AND OUTLET AREAS.
 2. TRANSITIONS MAY CONVERT DUCT PROFILES TO ANY COMBINATION RECTANGULAR, ROUND, OR FLAT OVAL SHAPES.



CONCENTRIC TRANSITION O. MAX. 45° DIVERGING, 60° CONVERGING



ECCENTRIC TRANSITION O. MAX. 30° (EXCEPT 45° IS PERMITTED AT ROUND TO FLAT OVAL)



VANES SHALL BE SECURELY FASTENED TO RUNNERS
 ALL VANES SHALL BE SECURE AND STABLE IN INSTALLED OPERATING POSITION.

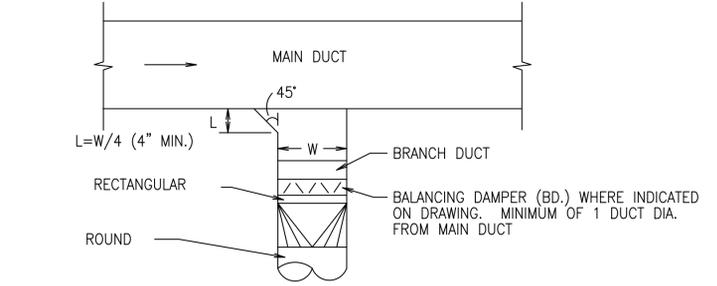
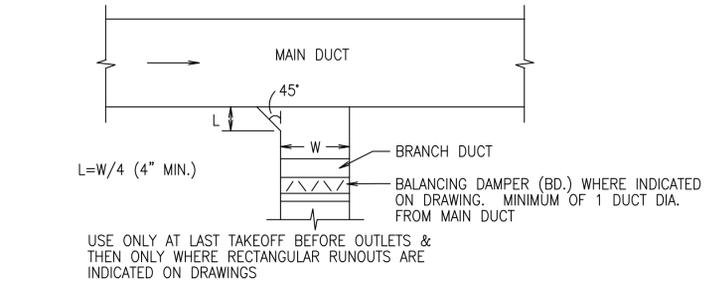
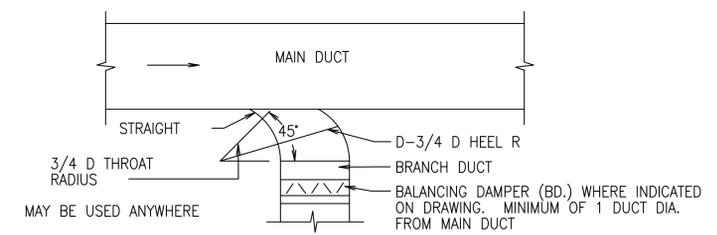
* MAXIMUM UNSUPPORTED VANE LENGTH
 SMALL SINGLE VANE 36"
 LARGE SINGLE VANE 36"
 SMALL DOUBLE VANE 60"
 LARGE DOUBLE VANE 72"

INSTALL VANES IN SECTIONS OR USE TIE RODS TO LIMIT THE UNBRACED VANE LENGTH.

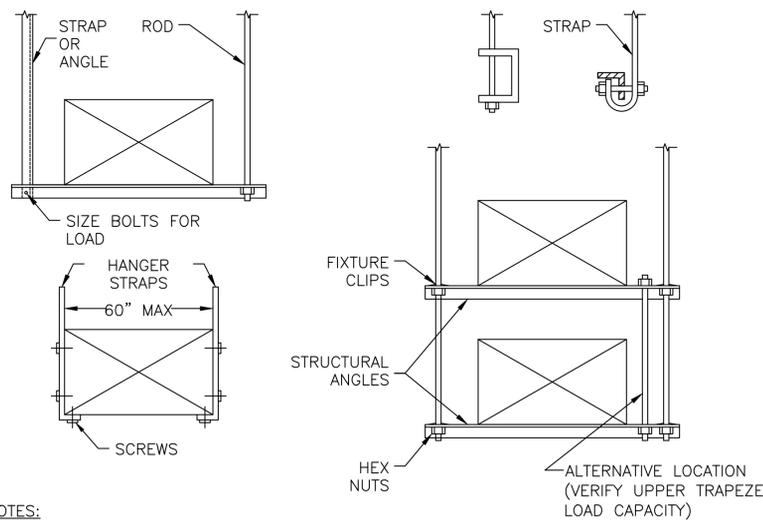
IF W2 DOES NOT EQUAL W1 SPECIAL PROVISIONS MUST BE MADE IN VANE SHAPE OR ANGLE OF ENTRY AND EXIT. APPLIES TO ALL TYPES OF VANES. CONSTRUCT VANE EDGES TO PROJECT TANGENTS PARALLEL TO DUCT SIDES.

2 TURNING VANES, RUNNERS, AND SUPPORTS
 M4.0 SCALE: N.T.S.

1 OFFSETS AND TRANSITIONS
 M4.0 SCALE: N.T.S.

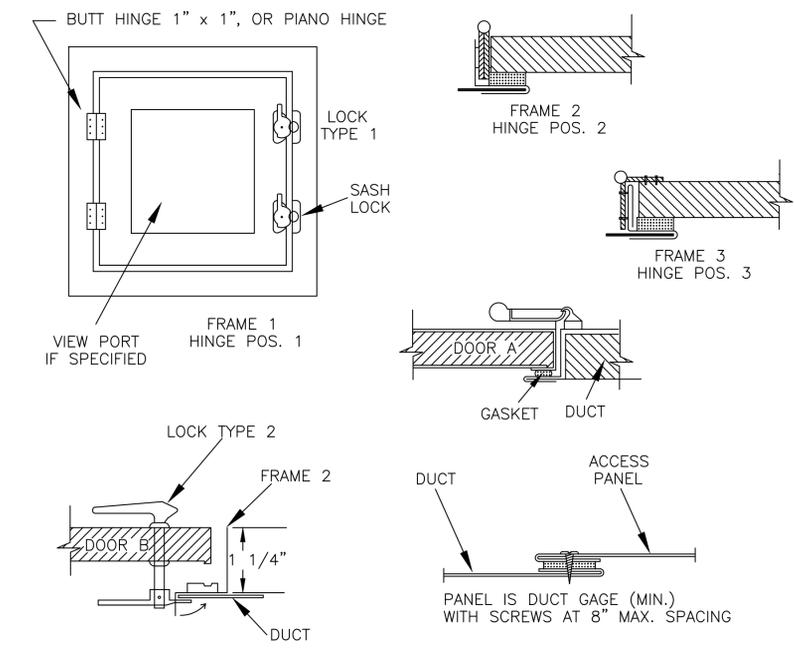


3 BRANCH CONNECTIONS
 M4.0 SCALE: N.T.S.



NOTES:
 1. STRAP AND ROD SIZES: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," TABLE 5-1, "RECTANGULAR DUCT HANGERS MINIMUM SIZE," AND TABLE 5-2, "MINIMUM HANGER SIZES FOR ROUND DUCT."
 2. EACH WALL ANCHOR SHALL SATISFY THE FOLLOWING:
 A. TENSILE LOAD = 3/8 X DUCT WEIGHT; SAFETY FACTOR OF 4.
 B. SHEAR LOAD = 1/2 X DUCT WEIGHT; SAFETY FACTOR OF 4.
 3. SECURE WITH APPROVED ANCHORS TO MATCH WALL CONSTRUCTION.
 4. DO NOT EXCEED ALLOWABLE LOAD LIMITS. MINIMUM HANGER ROD SIZE = 3/8" DIA.
 5. FOLLOW SMACNA CONSTRUCTION STANDARDS FOR SUPPORT ANGLE SIZES.

4 SMACNA DUCT SUPPORT
 M4.0 SCALE: N.T.S.



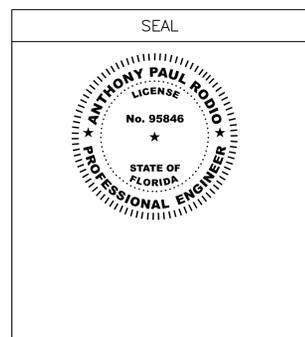
	DOOR SIZE	NO. HINGES	NO. LOCKS	METAL GAGE		
				FRAME	DOOR	BACK
2" W.G. STATIC AND LESS	12" x 12"	2	1-S	24	26	26
	16" x 20"	2	2-S	22	24	26
	24" x 24"	3	2-S	22	22	26
3" W.G. STATIC	12" x 12"	2	1-S	22	22	26
	16" x 20"	2	1-S,1-T,1-B	20	20	26
	24" x 24"	3	2-S,1-T,1-B	20	20	24
4" W.G. TO 10" W.G.	12" x 12"	2	1-S,1-T,1-B	20	20	26
	16" x 20"	3	2-S,1-T,1-B	18	18	24
	24" x 24"	3	2-S,2-T,2-B	18	18	24

S = SIDE OPPOSITE HINGES, T = TOP, B = BOTTOM

5 DUCT ACCESS DOORS
 M4.0 SCALE: N.T.S.

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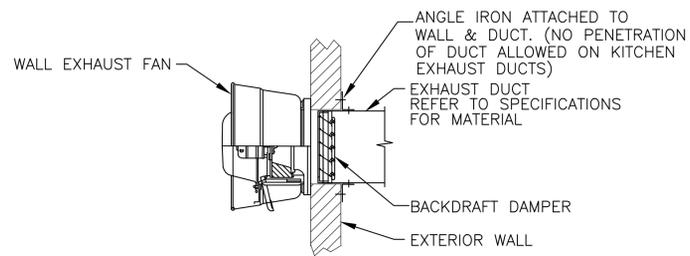
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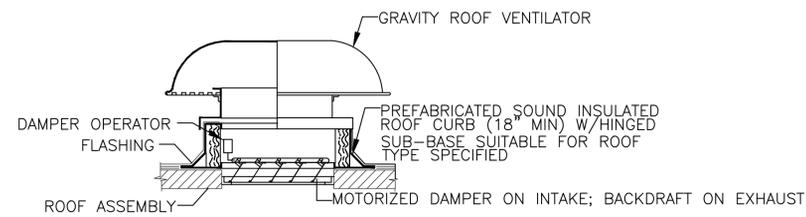
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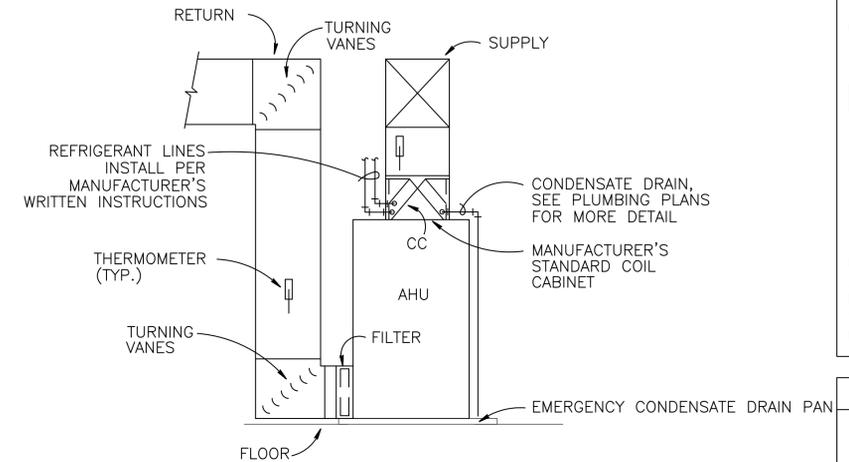
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 PROJECT 24026
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 SCALE NONE



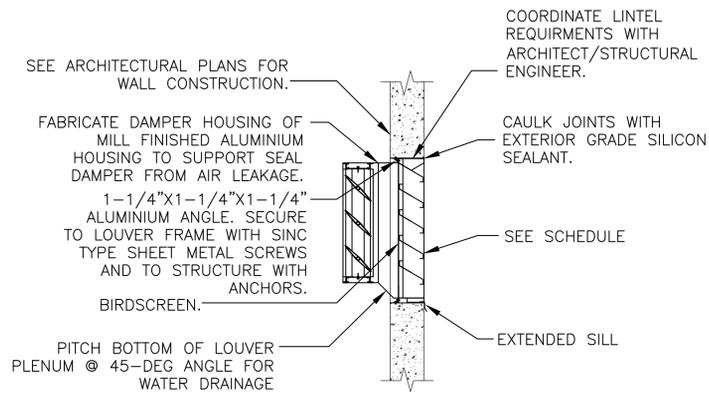
1 CENTRIFUGAL WALL EXHAUST FAN
M4.1 SCALE: N.T.S.



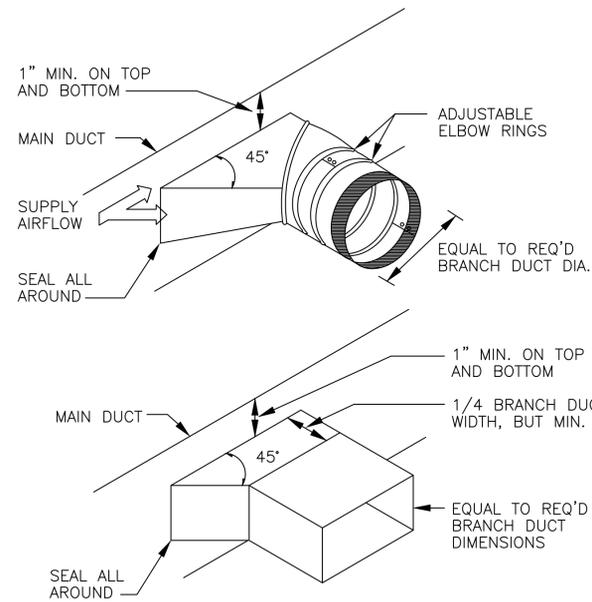
2 GRAVITY ROOF VENTILATOR
M4.1 SCALE: N.T.S.



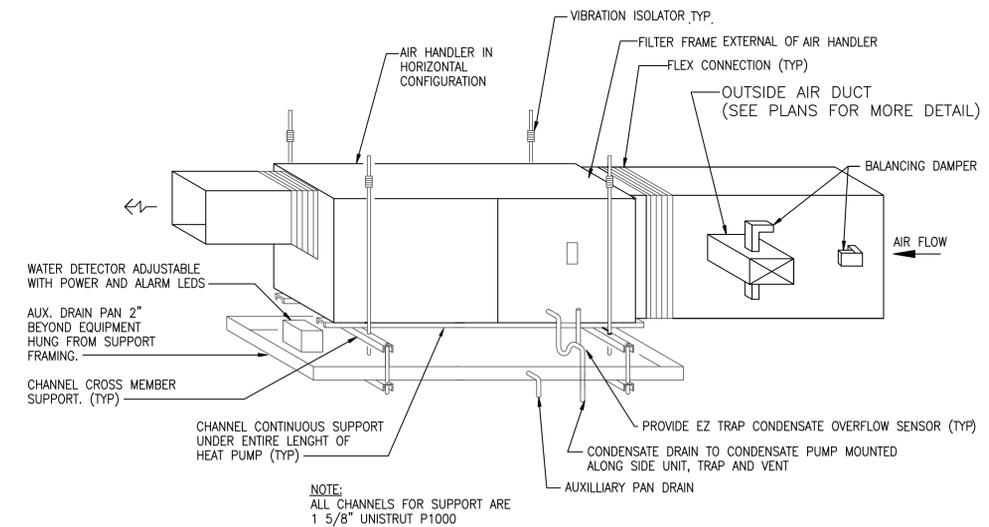
3 DUCTED AIR HANDLER
M4.1 SCALE: N.T.S.



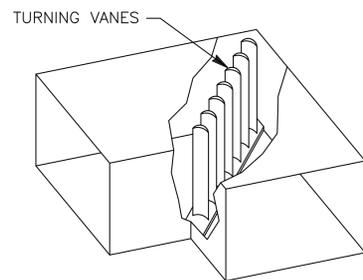
4 WALL LOUVER & DAMPER
M4.1 SCALE: N.T.S.



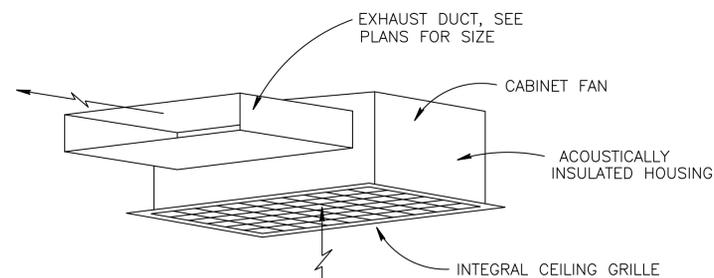
5 BRANCH TAKE-OFF FITTING
M4.1 SCALE: N.T.S.



6 HORIZONTAL AIR HANDLER
M4.1 SCALE: N.T.S.



7 DUCTWORK ELBOW
M4.1 SCALE: N.T.S.

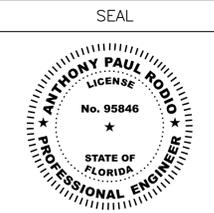


8 CEILING EXHAUST FAN
M4.1 SCALE: N.T.S.

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ISSUES/REVISIONS		
NO.	DESCRIPTION	DATE
-	DESIGN DEVELOPMENT	09/06/24
-	PERMIT/BID SET	03/28/25
1	REVISION 1	07/18/25

TITLE MECHANICAL DETAILS	
PROJECT 24026	SHEET M4.1
SCALE NONE	