LEGEND

EQUIPMENT TAG

DETAIL TAG ("1" INDICATES IDENTIFICATION NUMBER; "M3" INDICATES THE SHEET NUMBER DRAWN ON)

SHEET NOTE

SUPPLY DUCT SECTION POSITIVE PRESSURE

RETURN OR EXHAUST DUCT NEGATIVE PRESSURE

RECTANGULAR DUCT SIZE ("A" INDICATES SIDE SHOWN; "B" INDICATES SIDE NOT SHOWN)

INDICATES RISE IN ELEVATION OF DUCT.

EXTERNALLY INSULATED DUCTWORK OR DUCT BOARD

EXTERNALLY INSULATED ROUND FLEXIBLE DUCTWORK DUCT ELBOW WITH TURNING VANES

RADIUSED DUCT ELBOW

FLEXIBLE DUCT CONNECTION

MANUAL VOLUME BALANCING DAMPER

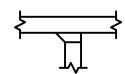
FIRE DAMPER WITH ACCESS DOORS

TEE WITH TURNING VANES

TRANSITION

FLEX DUCT TAKE OFF WITH MVD SIZE EQUALS DIFFUSER NECK SIZE

UNLESS NOTED OTHERWISE



BRANCH DUCT TAKEOFF WITH MVD

DEMOLISHED DUCTWORK

AIR DEVICE TAG. TOP LINE INDICATES TYPE OF DEVICE BOTTOM LINE INDICATES AIRFLOW

TEMPERATURE SUPPLY AIR

RETURN AIR EXHAUST AIR RETURN GRILLE

EXHAUST GRILLE EXHAUST REGISTER FCU FAN COIL UNIT

THERMOSTAT, "1" INDICATES UNIT CONTROLLED

ABOVE FINISHED FLOOR

TRANSFER AIR EXTERNAL STATIC PRESSURE

TESTING, ADJUSTING AND BALANCING

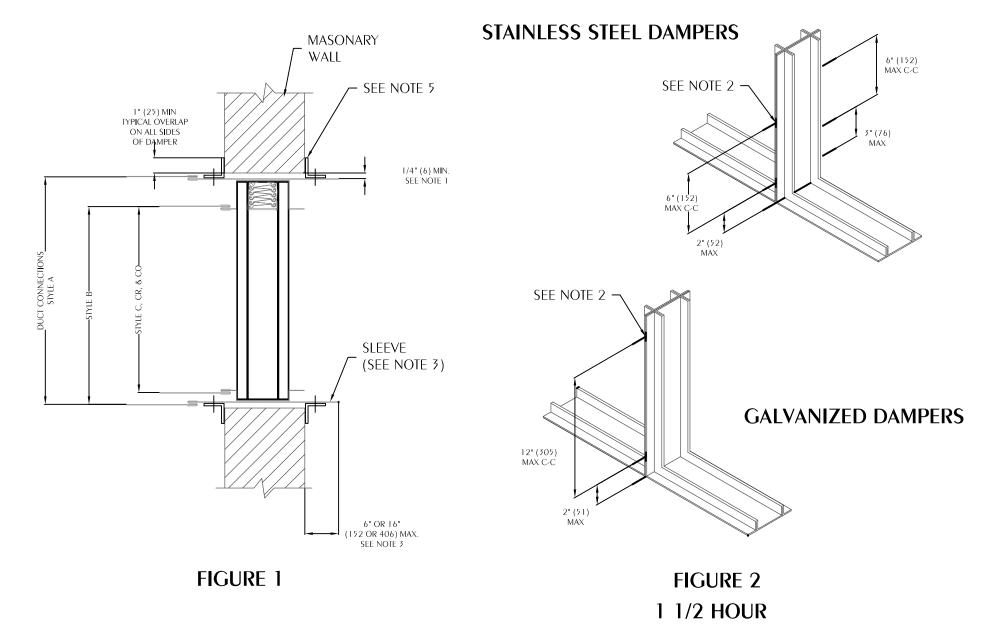
NOMINAL NOM VARIABLE FREQUENCY DRIVE CHILLED WATER PIPING CHW

POINT OF CONNECTION TO **EXISTING**

EQUIPMENT SERVICE CLEARANCE

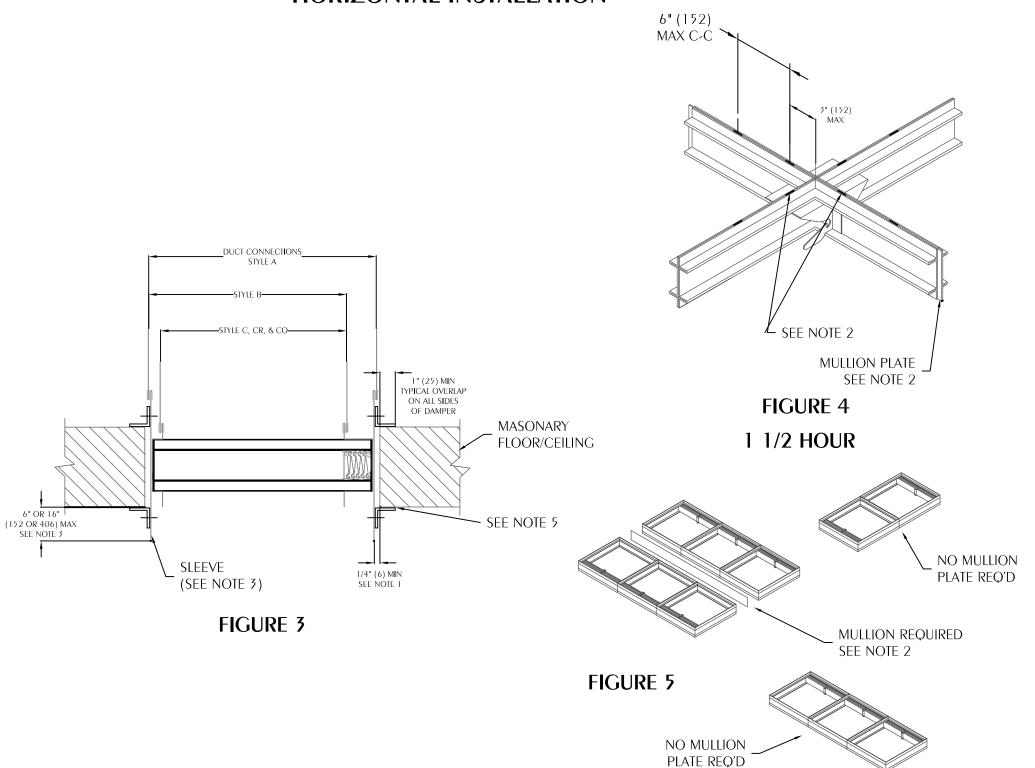
DUCTWORK NOTES

- SEAL ALL DUCT PENETRATIONS OF WALLS AND FLOORS AIRTIGHT, REGARDLESS OF WHETHER WALLS OR FLOORS ARE FIRE RATED OR NOT.
- ALL DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 2" W.G., SEAL CLASS A, EXTERNALLY INSULATED UNLESS OTHERWISE INDICATED. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS
- WHEN ROUTING DUCTWORK OVER LIGHTS, PROVIDE A MINIMUM 6" CLEARANCE BETWEEN DUCT
- 4. CONTRACTOR SHALL SUBMIT COORDINATED DUCTWORK SHOP DRAWINGS INDICATING COORDINATION WITH ELECTRICAL, PLUMBING, AND FIRE PROTECTION, PRIOR TO BEGINNING WORK. SHOP DRAWINGS SHALL INCLUDE LOCATIONS OF THERMOSTATS, ACCESS PANELS, AIR DEVICES, DUCTWORK, ETC.



VERTICAL INSTALLATION

HORIZONTAL INSTALLATION



TYPICAL HORIZONTAL AND VERTICAL FIRE DAMPER DETAIL SCALE: NONE

GENERAL NOTES

- ALL DUCT DIMENSIONS ARE NET INSIDE
- VERIFY COLLAR SIZES ON ALL AIR TERMINALS, EQUIPMENT OUTLETS AND INLETS, TRANSITION DUCTWORK AS NECESSARY. EXTERNALLY INSULATE TRANSITIONS AT EQUIPMENT CONNECTIONS.
- FIELD VERIFY CLEAR SPACE AVAILABLE, ROUTING PATH, AND CONFLICTS WITH STRUCTURE AND THE WORK OF OTHER TRADES PRIOR TO FABRICATING DUCTWORK. PROVIDE OFFSETS IN DUCTWORK AS REQUIRED, WHETHER SPECIFICALLY INDICATED ON DRAWINGS OR NOT. SUBMIT SHOP DRAWINGS ON DUCTWORK LAYOUT PRIOR TO COMMENCING WORK. MAINTAIN CLEARANCE AROUND ALL LIGHT FIXTURES AS REQUIRED TO REMOVE AND SERVICE FIXTURES. COORDINATE WITH ROOF TRUSSES/STRUCTURE. PRESSURE TEST ALL NEW DUCTWORK FOR LEAKS. SEE SPECIFICATIONS.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT, PIPING, AND DUCTWORK SUCH THAT MANUFACTURERS' RECOMMENDED CLEARANCES ARE MET FOR ALL ACCESS PANELS, MOTORS, FANS, BELTS, FILTERS AND AIR INTAKES. CONDENSATE LINES SHALL BE CLEAR OF FILTER RACK ACCESS.
- ALL SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR INTAKE DUCTWORK SHALL BE GALVANIZED SHEET METAL.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATION OF ALL EQUIPMENT AND UTILITIES
- ALL WORK SHALL COMPLY WITH 2020 FLORIDA BUILDING CODE
- COORDINATE CLOSELY WITH OTHER TRADES.

1. Opening Clearance

The opening in the wall or floor shall be larger than the damper/sleeve assembly TO DERMIT INSTALLATION OR EXPANSION. FOR TWO ANGLE INSTALLATIONS THE ODENING shall be a minimum of 1/8" per foot (3 per 305) larger than the overall size of the damper/sleeve assembly. The maximum opening size shall not exceed 1/8" per foot (3 per 305) plus 2" (51), nor shall the opening be less than 1/4" (6) larger than the damper/sleeve assembly. For one angle installations, the opening shall be a minimum of 1/4" (6) to a maximum of 1" (25) larger than the overall size of the damper/sleeve assembly. The opening may be as much as 2'' (51) larger than the damper/sleeve assembly if a 16ga (1.6) mounting angles is

2. Fasteners and Multiple Section Assembly

Use No. 10 (M5) bolts or screws, 3/16" (5) rivets, tack welds or spot welds as depicted in figures 3 and 4 and spaced as follows when joining individual dampers to make multiple section damper assemblies or when fastening damper 6. Duct/Sleeve Connections TO THE SLEEVE:

Vertical Mount (In wall) Galvanized steel dampers 12" (305) spacing 6" (152) spacing Stainless steel dampers

Horizontal Mount (In floor) All dampers 6" (152) spacing Multiple section Horizontal mount dampers require a 14 gage thick x 41/2" (2

x 114) wide steel reinforcing plate sandwiched between the damper frames with 1/2" (13) long welds staggered intermittently and spaced on maximum 6" (152) CENTERS. THE REINFORCING plate must be the same material as the dampers. The length must be equal to the

damper width of two or more adjoining damper sections. Reinforcing plates are NOT REQUIRED FOR ASSEMBLIES CONSISTING OF TWO DAMPERS ATTACHED END-TO-END OR THREE DAMPERS

ATTACHED SIDE-TO-SIDE AS DEPICTED IN FIGURE 5

3. Damper Sleeve

Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gage requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA90A. If a breakaway style duct/sleeve connection

is not used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide by 24" (610) high and 14 gage (1.9) for dampers exceeding 36" (914) wide by 24" (610) High. Damper sleeve shall not extend more than 6" (152) beyond the fire wall or partition unless damper is equipped with a factory installed access door. Sleeve may extend up to 16" (406) beyond the fire wall or partition on sides equipped with a factory installed access door. Sleeve shall terminate at both sides of wall within dimensions shown.

4. Damper Orientation Use "Air Flow" and "Mount with Arrow Up" labels on Dynamic DIBD and DIBDX models for proper damper orientation. For Static IBD models use only "Mount With Arrow Up" label on damper for proper damper orientation.

5. Mounting Angles

Mounting angles shall be a minimum of 11/2" x 11/2" x 20 gage steel (3.8 x 38 x 1.0). For openings in metal stud, wood stud walls or concrete/masonry walls and floors of sizes $90" \times 49"$ or $49" \times 90"$ (2286×1245 or 1245×1245 2286) and less mounting angles are only required on one side of the wall or top side of the floor and must be attached to both the sleeve and the wall or floor. Mounting angles may be installed directly to the metal stud under the wall board on metal stud wall installations only. Larger openings

REQUIRE MOUNTING ANGLES ON both sides of the partition and must be attached only to the sleeve. Mounting angles must overlap the partition a minimum of 1" 90A and local codes. Care should be exercised to ensure that such tests are (25). Do not weld or fasten angles together at corners of dampers. Ruskin fire performed safely and do not cause system damage. dampers may be installed using Ruskin FAST angle for one angle installation or Ruskin PFMA for two angle installations.

A. Mounting Angle Fasteners

Sleeve: #10 bolts or screws, 3/16" (5) steel rivets or 1/2" (13) long

Masonry/Wall or Floor: #10 self-tapping concrete screws. Wood/Steel Stud Wall: #10 screws

b. Mounting Angle Fastener Spacing

For one angle installations the sleeve fasteners shall be spaced at 6" (152) o.c. and the wall or floor fasteners shall be spaced at 12" (305) o.c. with a minimum of 2 fasteners on each side, top and bottom. Screw fasteners used in metal stud must engage the metal stud a minimum of 1/2" (13). Screw fasteners used in wood stud must engage the wood stud a minimum of 3/4" (19). Screw fasteners used in masonry walls or floors must engage the wall A MINIMUM OF 11/2" (38). FOR TWO ANGLE INSTALLATIONS THE FASTENERS SHALL BE spaced at 8" (203) o.c.

A. Break-away Duct/Sleeve Connections

Rectangular ducts must use one or more of the connections: plain "S" slip, HEMMED "S" slip, double "S" slip, inside slip joint, standing S, standing S (ANGLE REINFORCED), STANDING, STANDING S (DAR REINFORCED), STANDING S (ANGLE reinforced, or drive slip joint.

A maximum of two #10 sheet metal screws on each side and THE BOTTOM, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used. Connections using these slip joints on the top and bottom with flat drive slips up to 20" (508) long on the sides may also be used.

b. Round and Oval Break-away Connections Round and flat oval break-away connections must use either A 4" (102) wide drawband or #10 sheet metal screws spaced equally around the circumference of the duct as follows: • Duct diameters 22" (559) and smaller — Maximum 3 screws.

• Duct diameters over 22" (559) and including 36" (914) — Maximum 5 • Duct diameters over 36" (914) and up to and including 191" (4851) total perimeter – Maximum 8 screws. For flat oval ducts, the diameter is

considered the largest (major) dimension of the duct. Note: When optional sealing of these joints is desired, the following sealants may be applied in accordance with the sealant manufacturer's instructions:

Hardcast, Inc. – Iron Grip 601 Precision –PA2084T Eco Duct Seal 44-52 Design Polymerics — DP 1010 c. Flanged Break-away Style Duct Sleeve Connections. Flanged connection systems manufactured by Ductmate, Nexus or Ward are

approved break-away connections when installed as shown on the Flanged System Breakaway Connections Supplement. TDC and TDF roll-formed flanged connections using 3/8" (10) steel bolts and nuts, and metal cleats, as tested by SMACNA, are approved break-away connections when installed as shown ON THE Flanged System Breakaway Connections Supplement.

d. Non-Break-away Duct/Sleeve Connections If other duct sleeve connections are used, the sleeve shall be a minimum of 16 gage (1.6) for dampers up to 36" (914) wide x 24" (610) high and 14 GAGE (2.0) for dampers exceeding 36" (914) wide x 24" (610) high. Installation and Maintenance

To ensure optimum operation and performance, the damper must be installed so it is square and free from racking. Each fire damper should be maintained and tested on a regular basis and in accordance with the latest editions of NFPA

NOTE: ALL SYSTEMS DETAILED ON MECHANICAL PENETRATIONS SHEETS ARE BASED ON THE MANUFACTURERS SPECIFIED AS BASIS OF DESIGN AND APPLY TO MECHANICAL, FIRE PROTECTION, AND PLUMBING. THE CONTRACTOR SHALL SUBMIT A PENETRATIONS PACKAGE DETAILING EACH PENETRATION AND PRODUCTS TO BE USED TO THE PERMITTING AUTHORITY FOR THE ACTUAL SYSTEMS TO BE USED.

PIPING GENERAL NOTES

- 1. ALL PIPING SHALL BE EITHER SCHEDULE 40 BLACK STEEL WITH CLASS 125 CAST-IRON FITTINGS AND THREADED JOINTS OR TYPE L HARD DRAWN TEMPER COPPER WITH WROUGHT-COPPER FITTINGS AND SOLDERED JOINTS.
- 2. ALL CHILLED WATER PIPING SHALL BE INSULATED WITH 1-1/2" THICK CELLULAR GLASS PIPE INSULATION COMPLYING WITH ASTM C552, TYPE II, CLASS I.
- PROVIDE HANGER OR PIPE SUPPORT SHIELDS OF 16 GAUGE GALVANIZED STEEL OVER THE INSULATION, EXTENDING HALFWAY UP PIPE INSULATION COVER AND AT LEAST 4" ON EACH

WATFORD ENGINEERING 4452 Clinton Street Marianna, Florida 32446 311 N. College St. Office 101B Auburn, AL 36830

Keith A. Johnson, PE Florida License Number: 86457 850.526.3447 Project Number: 2022-064



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FITZGERALD COLLABORATIVE GROUP, LLC. AA26001957





PERMIT DOCUMENTS

NORTHWEST FLORIDA BEACHES

INTERNATIONAL



PANAMA CITY AIRPORT NWFBIA:

ESCALATOR ADDITION

6300 WEST BAY PKWY, PANAMA CITY, FL 32409

PROJECT NUMBER

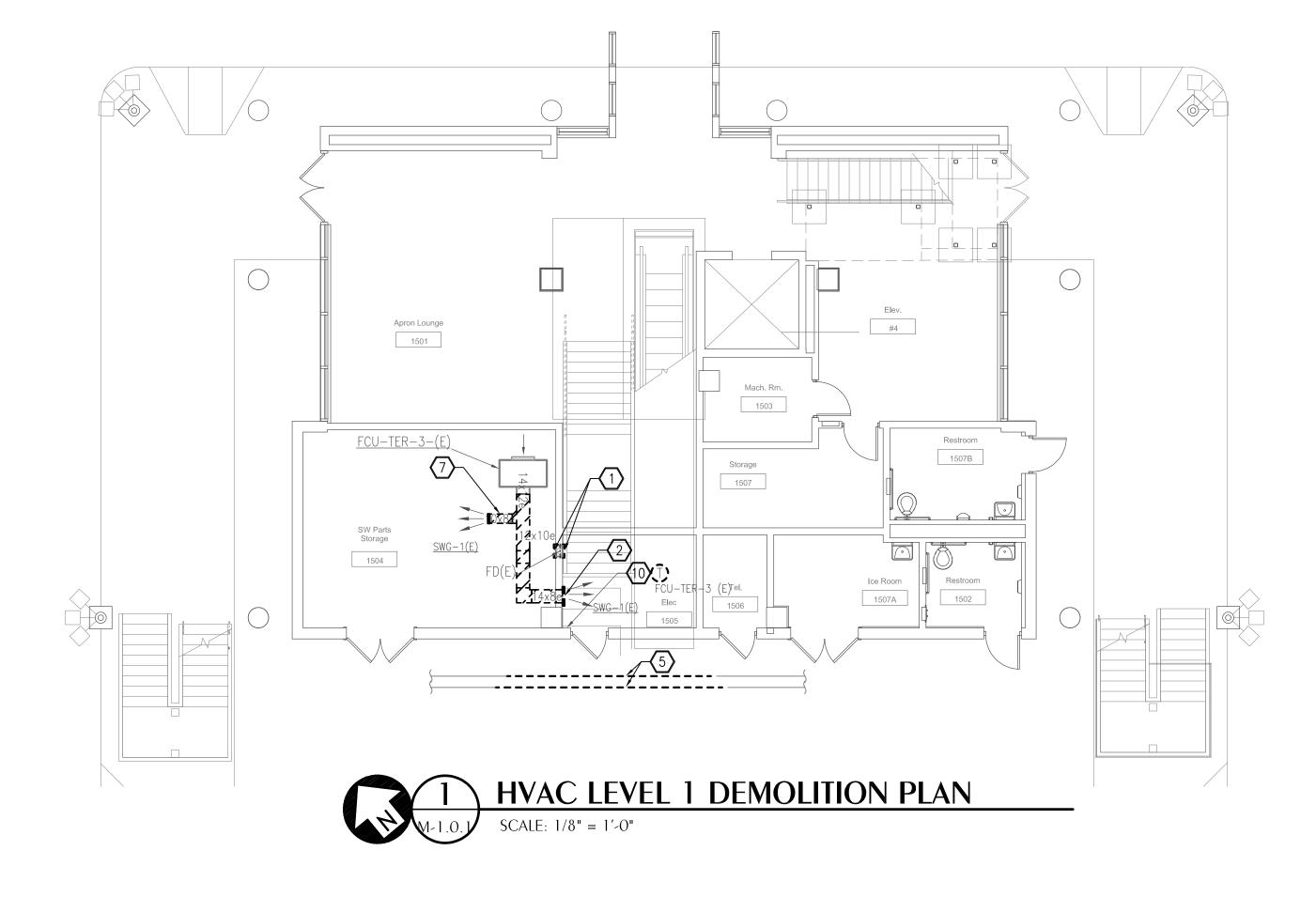
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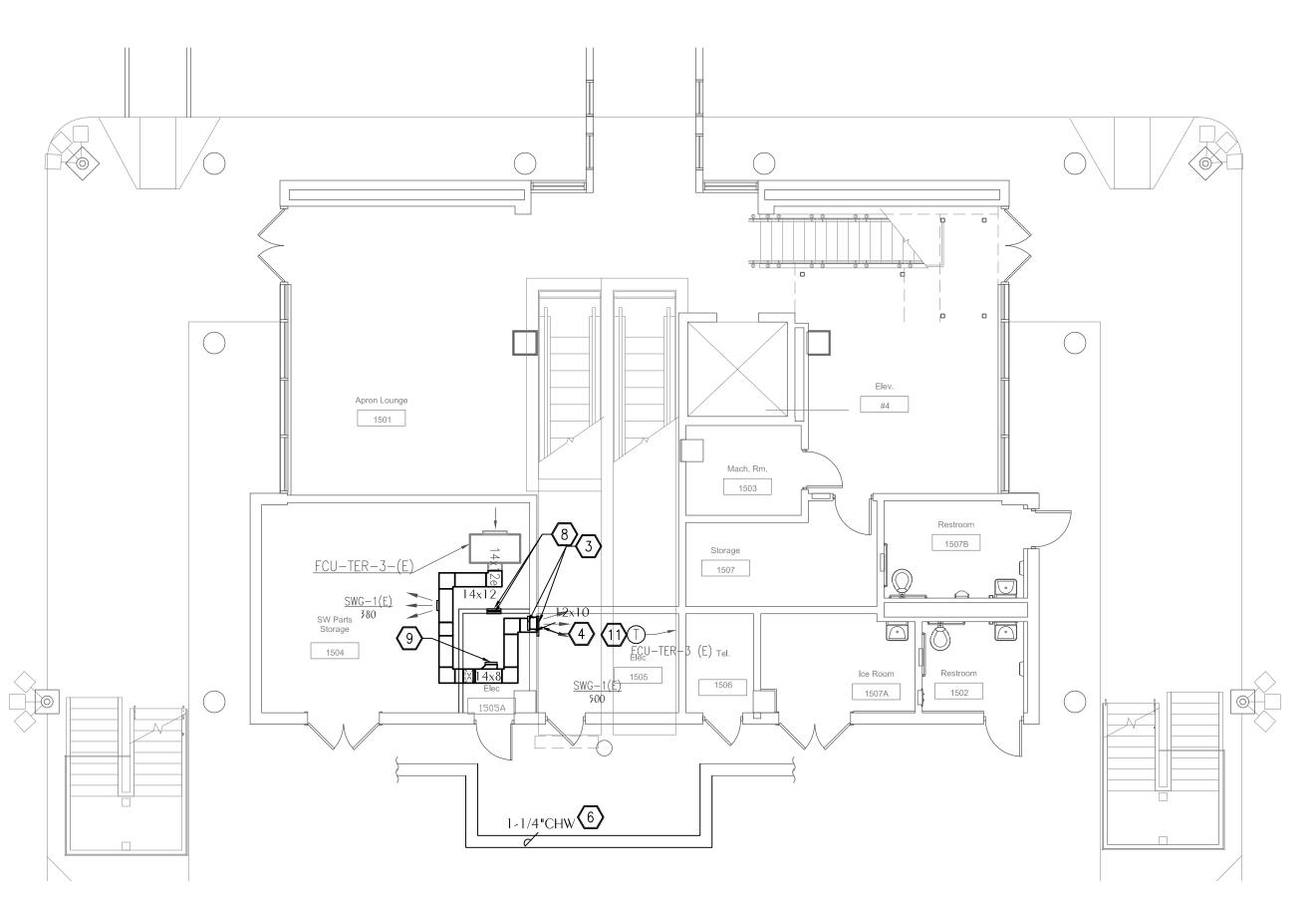
3.15.2023

HVAC LEGEND, NOTES, AND **DETAILS**

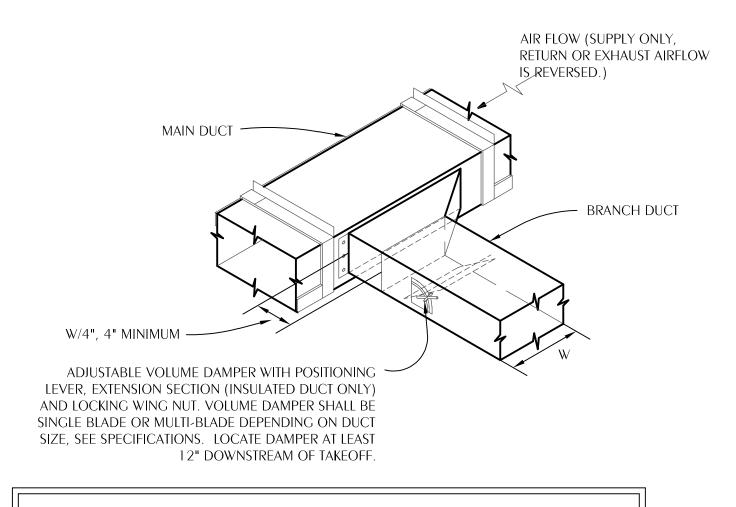
SHEET NOTES

- REMOVE EXISTING TRANSFER GRILLES ON BOTH SIDES OF WALL AS WELL AS FIRE DAMPER. REFER TO ARCHITECTURAL PLANS FOR WALL REPAIR. GRILLES SHALL BE PROTECTED AND REINSTALLED LOWER IN THE WALL.
- REMOVE EXISTING SIDEWALL GRILLE AND DUCTWORK AS SHOWN. GRILLE SHALL BE PROTECTED AND REINSTALLED BELOW NEW CEILING. REFER TO NEW WORK.
- REINSTALL EXISTING TRANSFER GRILLES AT 2'-0" AFF. PROVIDE NEW FIRE DAMPER.
- REINSTALL EXISTING SIDEWALL GRILLE BELOW NEW CEILING OF ROOM 1505.
- REMOVE EXISTING PIPING AS NECESSARY TO INSTALL ESCALATOR.
- INSTALL NEW CHW PIPING AND CONNECT TO EXISTING AS SHOWN. FIELD VERIFY EXISTING SIZE. COORDINATE EXTENT OF OFFSET WITH ALL OTHER TRADES TO ENSURE INSTALLATION OF NEW ESCALATOR WITH NO CONFLICTS.
- REMOVE EXISTING SIDEWALL GRILLE AND DUCTWORK AS SHOWN. SIDEWALL GRILLE SHALL BE PROTECTED AND REINSTALLED IN NEW DUCTWORK.
- PROVIDE 12X10 TRANSFER GRILLE ON EACH SIDE OF WALL, BELOW CEILING. TITUS 300FL OR APPROVED EQUAL.
- PROVIDE 12X6 SIDEWALL GRILLE. TITUS 300FL OR APPROVED EQUAL. BALANCE TO 50 CFM.
- REMOVE EXISTING THERMOSTAT AND CONDUIT INSIDE ELEC ROOM. REROUTE CONDUIT UNDER NEW ESCALATOR TO NEW LOCATION FOR EXISTING THERMOSTAT.
- REINSTALL EXISTING THERMOSTAT IN LOCATION SHOWN. ROUTE CONDUIT UNDER NEW ESCALATOR ENCLOSURE.





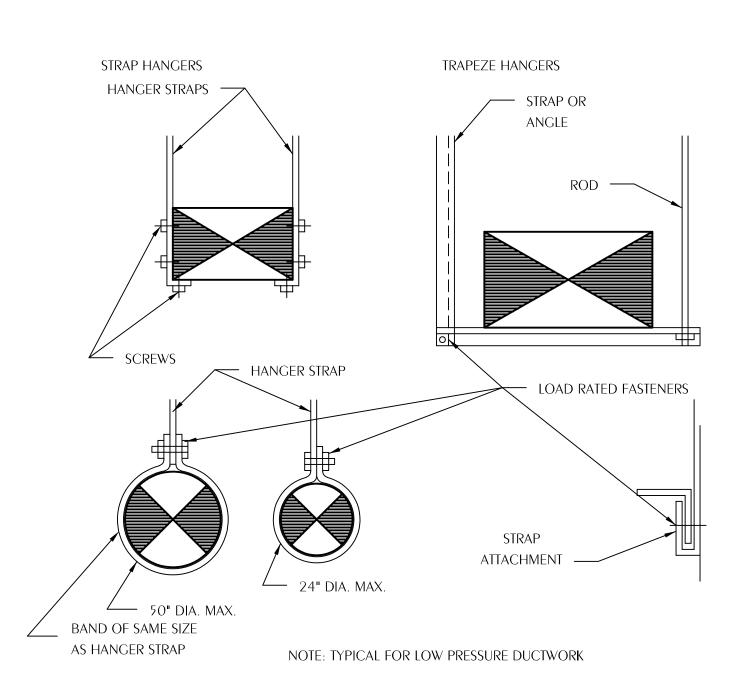




NOTES:
PROVIDE CABLE ACTIVATED DAMPER WITH ADJUSTMENT IN FACE OF AIR DEVICE FOR INACCESSIBLE TAKEOFFS LOCATED ABOVE HARD CEILINGS.

FLEXIBLE INSULATION SHALL BE 2" THICK, ASTM C553, TYPE 1, CLASS B-3 WITH 1 PCF DENSITY AND UL RATED ALUMINUM FOIL VAPOR BARRIER (FSK)











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FITZGERALD COLLABORATIVE GROUP, LLC. AA26001957





REVISION
NO. DESCRIPTION
DATE

PERMIT DOCUMENTS

NORTHWEST
FLORIDA BEACHES
INTERNATIONAL



PANAMA CITY AIRPORT NWFBIA:
ESCALATOR

ADDITION

6300 WEST BAY PKWY, PANAMA CITY, FL 32409

PROJECT NUMBER
NO. 21049

ISSUE DATE

3.15.2023

HVAC PLANS AND DETAILS

SHEET NUMBE

M-1.0.1