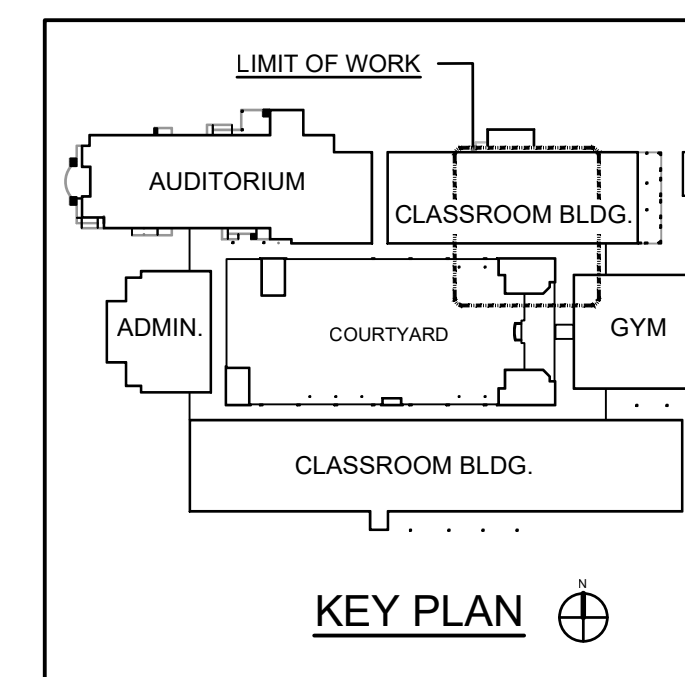


DESIGN CRITERIA	
Location:	MARATHON, FL
Latitude:	24.71°
Longitude:	81.09°
Elevation:	5 ft.
Barometric Pressure:	29.9 in. Hg
DESIGN TEMPERATURES:	
Ambient Summer Design Dry Bulb:	90°F
Ambient Summer Design Wet Bulb:	79°F
Ambient Winter Design Dry Bulb:	70°F
Space Setpoint - cooling:	75°F
Space Setpoint - humidity:	50% RH



GENERAL MECHANICAL NOTES

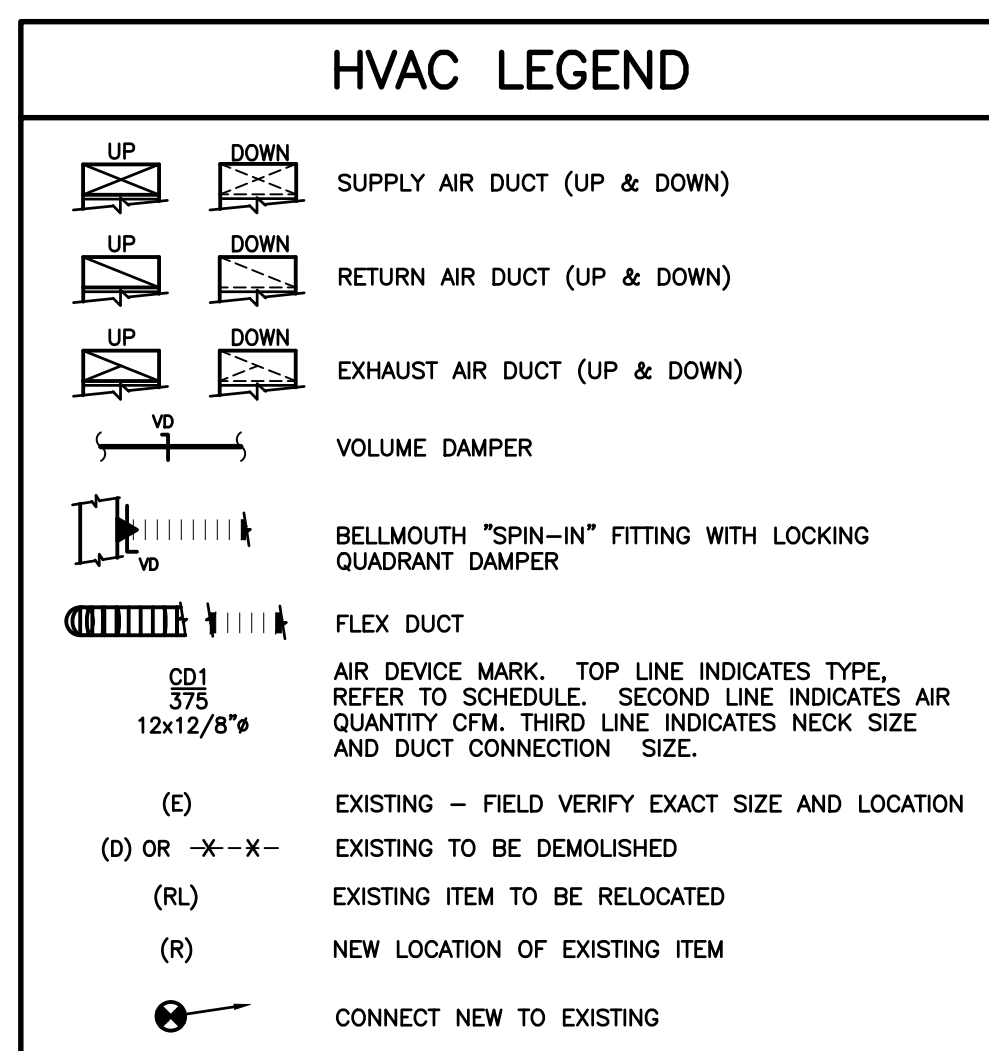
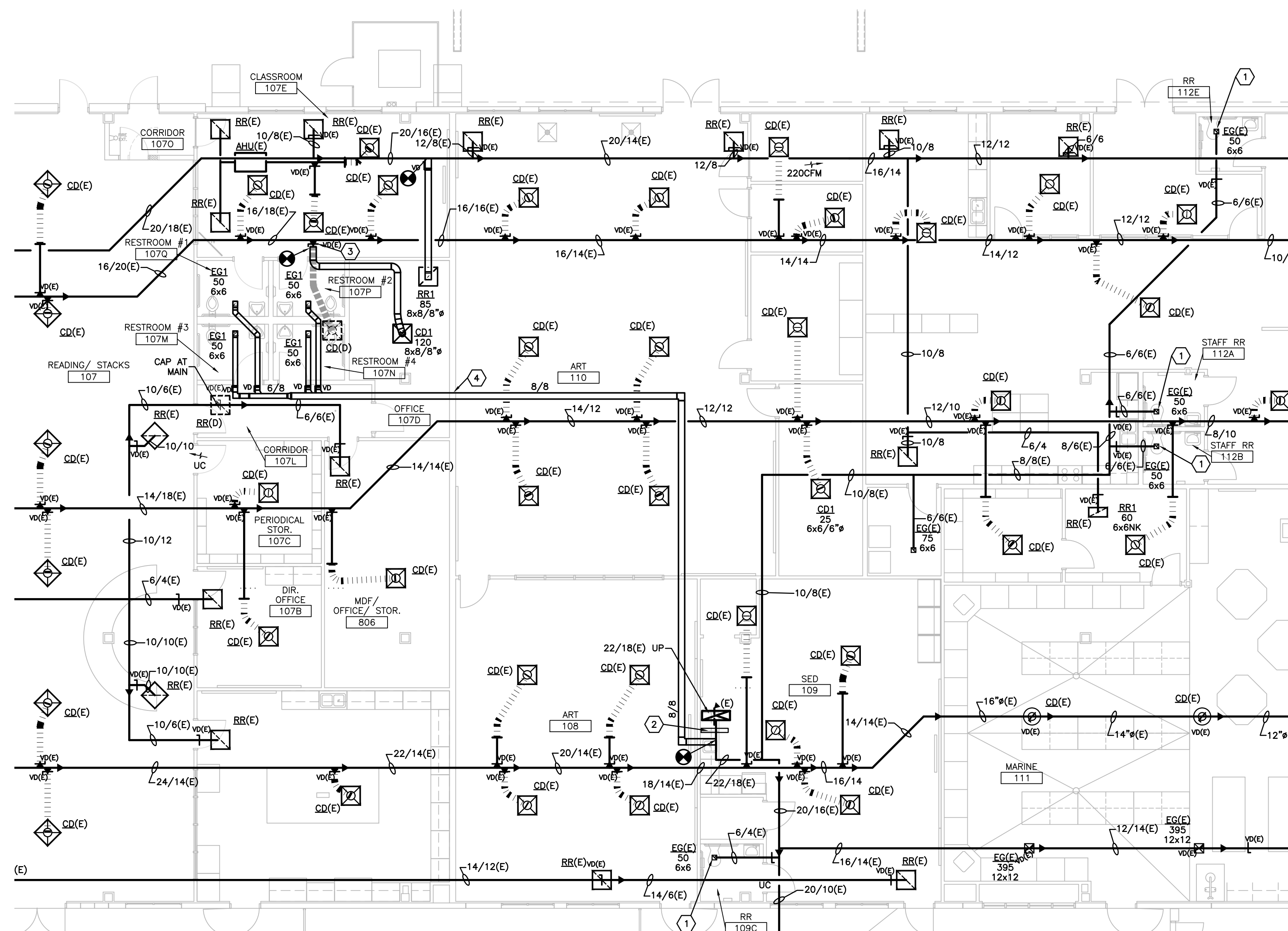
- ALL MECHANICAL WORK SHALL MEET ALL OF THE REQUIREMENTS OF THE FOLLOWING:
 - FLORIDA BUILDING CODE (FBC) 7TH EDITION (2020); THIS CODE INCLUDES THE 2020 FBC BUILDING, MECHANICAL, PLUMBING, ENERGY CONSERVATION, FUEL GAS, ACCESSIBILITY, AND TEST PROTOCOLS VOLUMES. FURTHER, SEE "REFERENCED STANDARDS" IN THE FBC BUILDING CHAPTER 35; FBC MECHANICAL CHAPTER 15; FBC PLUMBING CHAPTER 14; FBC ENERGY CONSERVATION CHAPTER 6; AND FBC FUEL GAS CHAPTER 8 (EFFECTIVE DECEMBER 31, 2020).
 - 7TH EDITION OF THE FLORIDA FIRE PREVENTION CODE (FFPC); (THIS CODE ALSO INCLUDES THE FLORIDA VERSIONS OF NFPA 1 AND NFPA 101.) (EFFECTIVE DECEMBER 31, 2020).
 - 2017 NATIONAL ELECTRIC CODE.
 - 2014 STATE REQUIREMENTS FOR EDUCATIONAL FACILITIES (SREF); - (EFFECTIVE NOVEMBER 4, 2014)
- VERIFY, BY VISITING THE SITE, THE LOCATION OF UTILITIES IN ALL AREAS BEFORE COMMENCING WORK.
- COORDINATE ALL WORK WITH OTHER AFFECTED TRADES. THE MECHANICAL CONTRACTOR SHALL FORWARD TO THE ELECTRICAL CONTRACTOR AN APPROVED COPY OF ALL EQUIPMENT SHOP DRAWINGS FOR ELECTRICAL POWER/CONTROL INTERFACE.
- COVER ALL ELECTRICAL AND MECHANICAL EQUIPMENT TO PROTECT THEM FROM DUST AND DAMAGE DURING CONSTRUCTION. RESTORE ALL FACTORY PAINTED SURFACES TO NEW CONDITION, REPAIR ALL SCRATCHES, DENTS AND ABRASIONS. THOROUGHLY CLEAN ALL SURFACES OF DUST DEBRIS, AND FOREIGN MATTER. THE EQUIPMENT, WHEN TURNED OVER TO THE OWNER, SHALL BE CLEAN AND FREE OF DEFECTS.
- IN GENERAL, PLANS ARE SCHEMATIC ONLY AND SHOULD NOT BE SCALED.
- ALL DUCTWORK SHALL MEET THE STANDARDS SET FORTH BY THE LATEST EDITION OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE FABRICATED FROM SHEET METAL. ALL ROUND DUCT SHALL BE SHEET METAL UNLESS OTHERWISE NOTED. PROVIDE TURNING VANES IN ALL 90° DUCT ELBOWS.
- PROVIDE INSULATION FOR NEW SUPPLY AND RETURN DUCTWORK TO AND FROM THE UNIT WITH GLASS FIBER DUCT INSULATION, FACTORY APPLIED FOIL FACED VAPOR BARRIER, ASTM 518 AND ASTM E84 CERTIFIED TESTING PROCEDURES. JOINT TAPE SHALL BE MINIMUM 3" WIDE FOIL REINFORCED KRAFT TYPE. INSULATION THICKNESS SHALL BE A MINIMUM 2" THICK.
- ALL DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS (FREE AREA).
- VERIFY ALL CLEARANCES AND DIMENSIONS BEFORE FABRICATION OF DUCTWORK AND PROVIDE ADDITIONAL OFFSETS TO MEET FIELD CONDITIONS. ADJUST LOCATIONS OF ALL EQUIPMENT AND DUCTWORK, AS NECESSARY TO AVOID INTERFERENCES WITH STRUCTURAL AND OTHER BUILDING COMPONENTS.
- DUCTWORK, DIFFUSERS, REGISTERS, GRILLES, AND OTHER ITEMS OF THE AIR HANDLING SYSTEM SHALL NOT BE SUPPORTED BY THE CEILING OR CEILING SUSPENSION SYSTEM.
- ALL SUPPLY DUCTWORK SHALL BE 2" W.G. PRESSURE CLASS. ALL OTHER DUCTWORK SHALL BE 1" W.G. ALL SHEET METAL DUCTWORK SHALL HAVE A CLASS C SEAL.
- PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO INSTALL MECHANICAL EQUIPMENT AND MATERIALS.
- REPLACE ANY CEILING TILES OR GRID, DAMAGED DURING CONSTRUCTION IN ANY AREAS WHERE THE CEILING IS REMOVED TO EXECUTE WORK. REPLACEMENT TILES AND TEES SHALL MATCH EXISTING.
- MAINTAIN NEGATIVE PRESSURE IN ALL DESIGNATED CONSTRUCTION AREAS.
- THE OWNER SHALL BE GIVEN ONE WEEK PRIOR NOTICE FOR ALL PERIODS OF HVAC SYSTEMS DOWNTIME. IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE AIR HANDLERS MAY ONLY BE STARTED IF THE FOLLOWING CONDITIONS ARE MET:
 - ALL OPENINGS FROM THE CONDITIONED SPACE DIRECTLY TO THE OUTSIDE MUST BE CLOSED. TEMPORARY CLOSURE METHODS MAY BE USED SUCH AS THE UTILIZATION OF PLASTIC SHEETS AND DUCT TAPE.
 - MOP CLEAN ALL CONSTRUCTION DEBRIS AND DUST FROM THE FLOOR. PROVIDE DOOR MATS AT ALL ENTRANCES INTO THE BUILDING.
 - TEMPORARY BARRIERS ARE TO BE PROVIDED AROUND AREAS THAT WILL HAVE ANY CONCRETE GRINDING OPERATION, DRYWALL WORK, PAINTING OR ANY OTHER PARTICULATE PRODUCING PROCESSES. ALL AIR DISTRIBUTION DEVICES IN THESE AREAS OF CONTAINMENT ARE TO BE COVERED AND SEALED AIR TIGHT.
 - ALL RETURN GRILLES SHALL HAVE MERV-8 FILTER MEDIA TAPED OVER THEM PRIOR TO AIR HANDLER STARTUP AND SHALL REMAIN IN PLACE UNTIL ALL DUST PRODUCING OPERATIONS HAVE BEEN COMPLETED AND PRIOR TO TEST AND BALANCE. CLEAN ALL TAPE RESIDUE FROM THE GRILLES.
 - ONCE THE UNIT IS STARTED, FILTERS IN THE AIR HANDLERS ARE TO BE SHAKEN CLEAN DAILY.
- ALL DUCT MOUNTED MANUAL BALANCING DAMPERS SHALL HAVE A TWO FOOT LONG, YELLOW STRIP OF MATERIAL ATTACHED TO THE DAMPER HANDLE FOR EASY VISUAL IDENTIFICATION.
- ALL REQUIRED BALANCING DAMPERS MAY NOT BE INDICATED HEREIN. ADDITIONAL BALANCING DAMPERS MAY BE REQUIRED BY THE TEST AND BALANCING AGENT. THE TEST AND BALANCE AGENT IS REQUIRED TO REVIEW THE PLANS WITHIN 30 DAYS OF RECEIPT OF CONTRACT AND IDENTIFY DISCREPANCIES AND WHERE ADDITIONAL DAMPERS MAY BE NEEDED. ADDED DAMPERS WILL BE AT NO ADDITIONAL COST TO THE A/E OR THE OWNER.
- ALL DUCT MOUNTED MANUAL BALANCING DAMPERS SHALL HAVE A TWO FOOT LONG, YELLOW STRIP OF MATERIAL ATTACHED TO THE DAMPER HANDLE FOR EASY VISUAL IDENTIFICATION.
- OMIT INSULATION ON TRANSFER DUCT SYSTEM. TRANSFER DUCT SYSTEMS ARE CONNECTED TO "XG" TYPE AIR DISTRIBUTION DEVICES.
- ALL FIRE STOPPING SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S U.L. DETAILS OF THE PRODUCTS USED SPECIFICALLY ON THIS PROJECT. APPLICABLE U.L. DETAILS SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW AND A COPY SHALL BE AVAILABLE ON SITE FOR USE BY THE AUTHORITY HAVING JURISDICTION.
- ROUND FLEX DUCT SHALL BE A MAXIMUM LENGTH OF 6 FEET. ALL RUNS OF FLEX DUCT ARE TO BE SUPPORTED WITH THE APPROPRIATE HANGERS. FLEX DUCT SHALL NOT SAG OR BE CRIMPED.
- ALL EXTERIOR FASTENERS, ANCHORS, SUPPORTS, AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.
- AT THE COMPLETION OF THE INSTALLATION, SUBMIT A COMPLETE CERTIFIED TEST AND BALANCE REPORT FROM AN AGENCY HAVING A MINIMUM OF FIVE YEARS EXPERIENCE AND IS A CURRENT MEMBER OF NEBB OR AIBC. REPORT SHALL ITEMIZE THE PERFORMANCE OF EACH AIR DEVICE AND UNIT WITH REGARD TO CFM, STATIC PRESSURE, AND TEMPERATURE.

DUCTWORK MATERIALS

- FLEX DUCT SHALL BE EQUIVALENT TO FLEXMASTER 1M WITH A POLYETHYLENE FABRIC (PE) CORE AND SHALL HAVE PRESSURE RATINGS OF 10" W.G. POSITIVE, 5" W.G. NEGATIVE THROUGH 16" DIA., AND 1" W.G. NEGATIVE FOR 18" AND 20" DUCTS.
- ALL TRANSFER DUCT SHALL BE UNINSULATED SPIRAL SEAM SHEET METAL DUCTWORK.
- FLEXIBLE DUCT RUNOUTS SHALL NOT EXCEED 6 FEET.
- THE USE OF SNAP LOCK DUCT IS NOT PERMITTED.

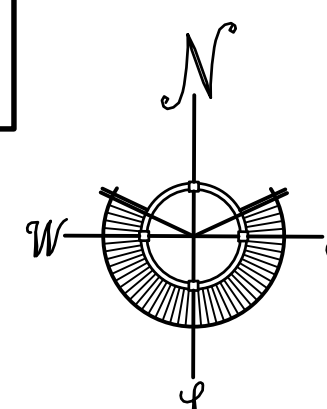
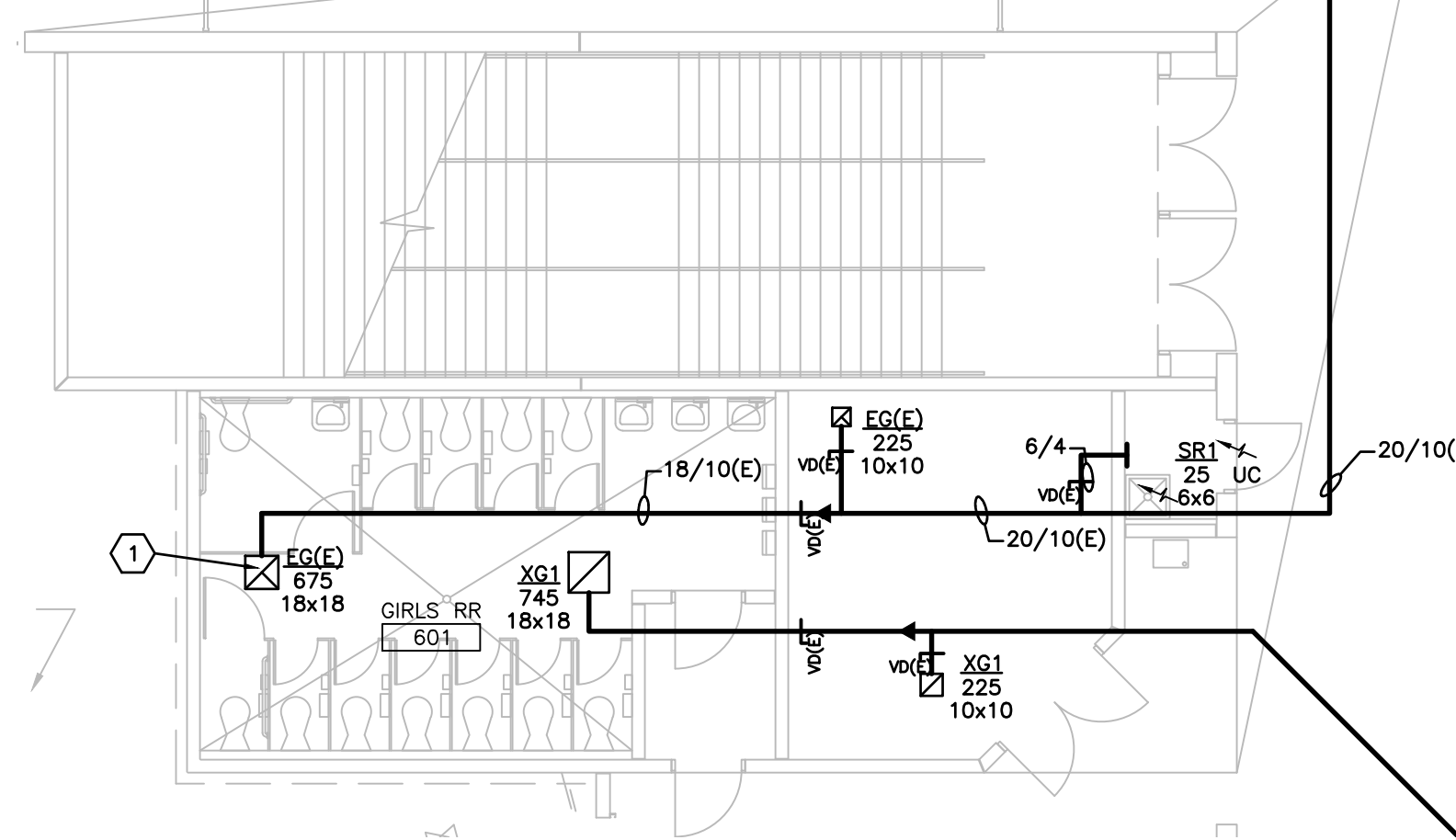
MECHANICAL DRAWING INDEX

- M-1 MECHANICAL LEGEND, GENERAL NOTES, AND HVAC PLAN
M-2 HVAC SCHEDULES AND DETAILS



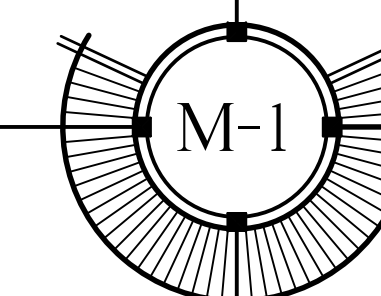
DRAWING KEY NOTES

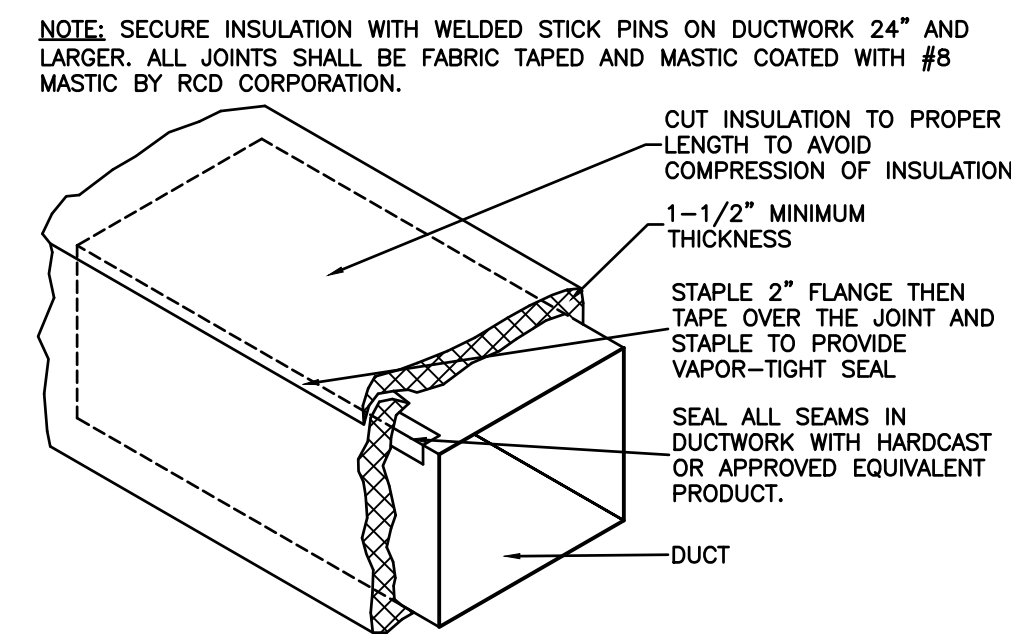
- EXISTING EXHAUST GRILLES IN ROOMS 109C, 112E, 112A, 112B AND 601 SHALL BE REBALANCE TO THE AIRFLOW INDICATED.
- TRAVERSE MAIN EXHAUST DUCT AT THIS LOCATION PRIOR TO START OF CONSTRUCTION. ONCE THE FOUR RESTROOMS ARE ADDED AND THE EXHAUST GRILLES IN NOTE 1 ABOVE ARE REBALANCED, CHECK THE EXHAUST MAIN AGAIN BY TRAVERSE TO CONFIRM THIS VALUE REMAINS THE SAME AS THE INITIAL TEST.
- REMOVE EXISTING FLEX RUNOUT AND REPLACE WITH NEW RIGID DUCT RUNOUT.
- SEAL DUCT PENETRATION THROUGH SMOKE TIGHT PARTITION.



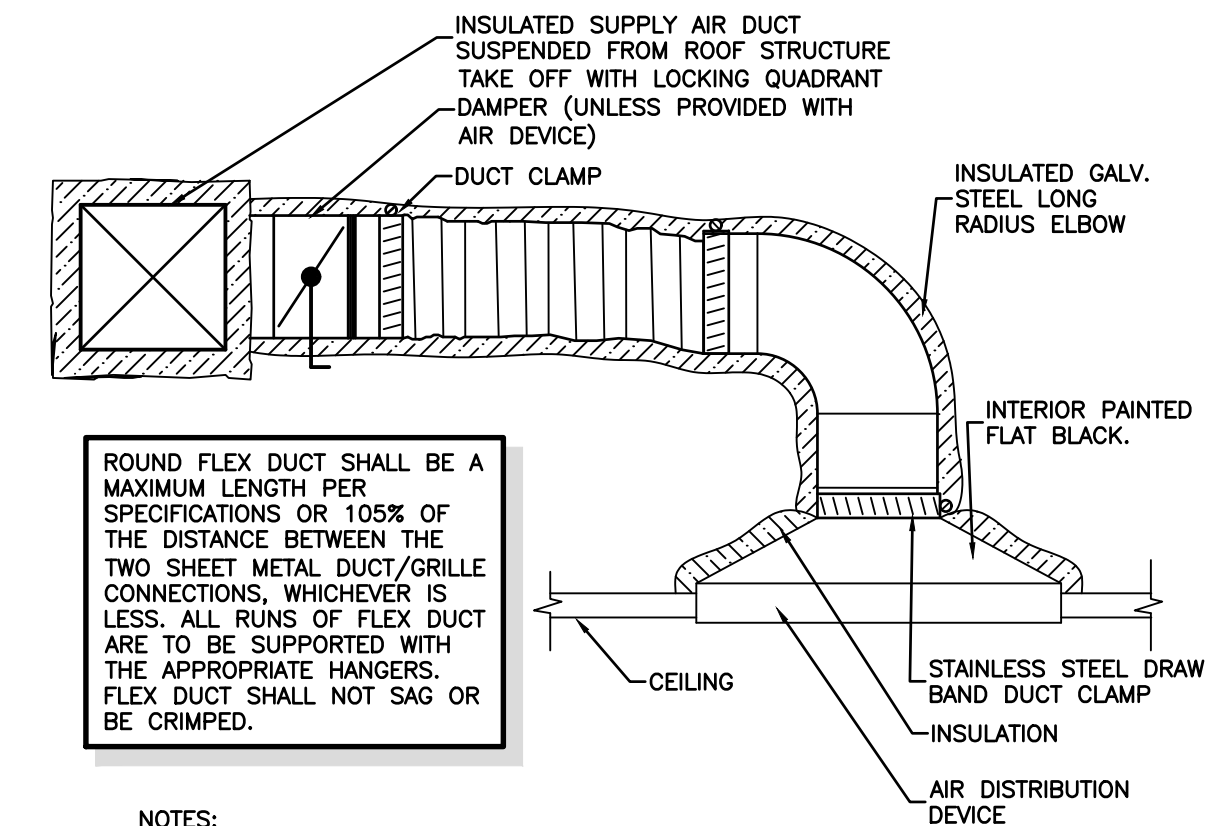
HVAC FLOOR PLAN

SCALE: 1/8"=1'-0"





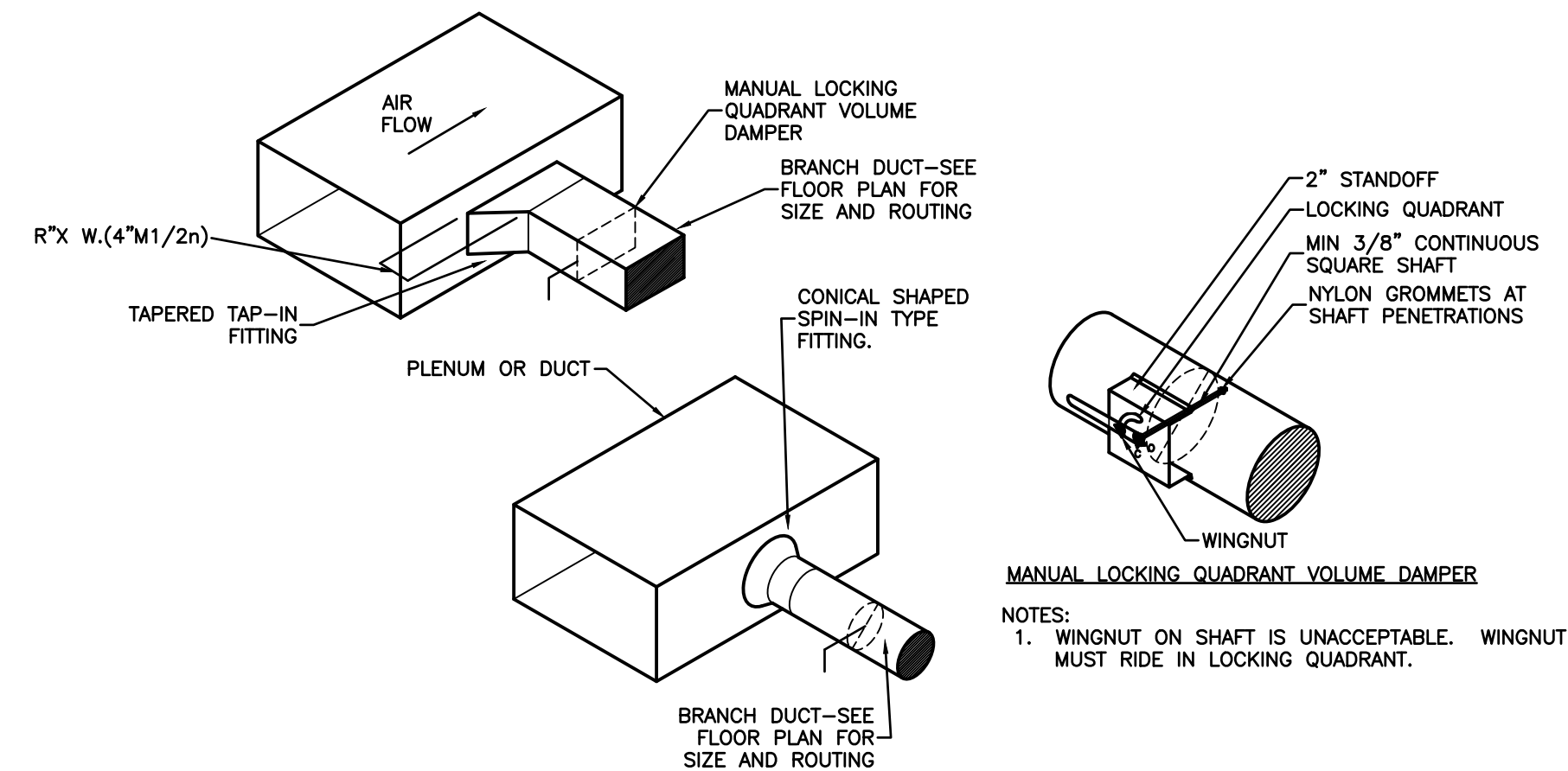
TYPICAL DUCT WRAPPING DETAIL
NOT TO SCALE



ROUND FLEX DUCT SHALL BE A MAXIMUM LENGTH PER SPECIFICATIONS OR 105% OF THE DISTANCE BETWEEN THE TWO SHEET METAL DUCT/GRILLE CONNECTIONS, WHICHEVER IS LESS. ALL RUNS OF FLEX DUCT ARE TO BE SUPPORTED WITH THE APPROPRIATE HANGERS. FLEX DUCT SHALL NOT SAG OR BE CRIMPED.

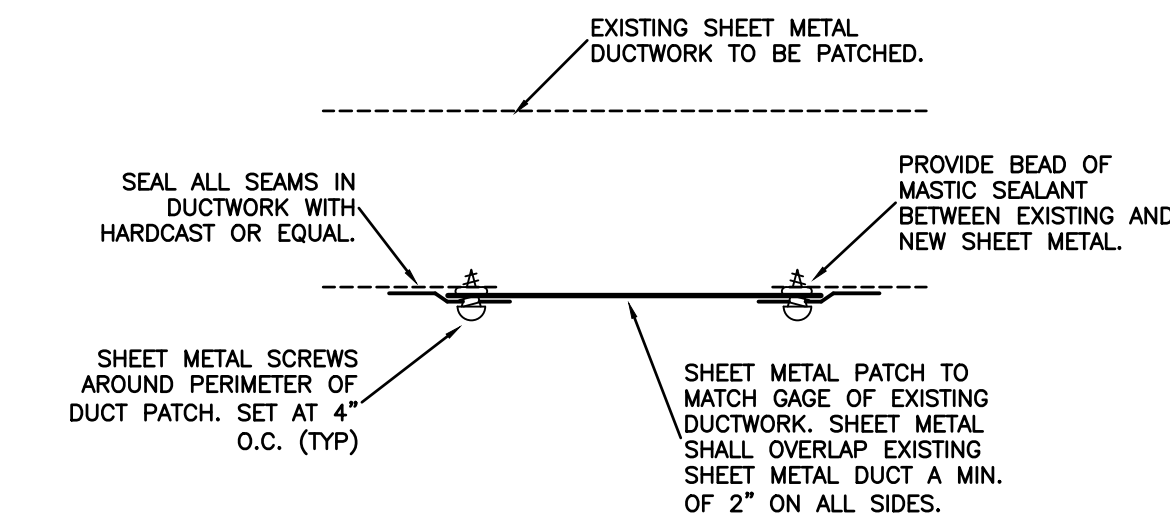
- NOTES:
1. REFER TO THE AIR DISTRIBUTION DEVICE SCHEDULE FOR ADDITIONAL REQUIREMENTS.
2. REFER TO SPECIFICATIONS FOR MAXIMUM FLEXIBLE DUCT LENGTH.
3. SUSPEND AIR DEVICE FROM ABOVE, DO NOT SUPPORT FROM CEILING.
4. INTERIOR OF DEVICE TO BE PAINTED FLAT BLACK.

FLEXIBLE DUCT RUN-OUTS TO AIR DEVICE
NOT TO SCALE



BRANCH DUCT TAKE-OFF DETAIL
NOT TO SCALE

- NOTES:
1. PROVIDE FITTING WITH 1" WIDE FLANGE WITH GASKET.
2. MUST MEET SMACNA GAUGE STANDARDS AND 2"W.G. STATIC PRESSURE.
3. CONTINUOUS WELD LONGITUDINAL SEAM FOR NO LEAKAGE AT 2" W.G. STATIC PRESSURE.



TYPICAL DUCT PATCHING DETAIL
NOT TO SCALE

AIR DISTRIBUTION DEVICE SCHEDULE				
MARK		CD1	RR1	EG1
NECK SIZE	INCH	-	22x22	-
MODULE/FACE SIZE	INCH	24x24/24x24	24x24/23x23	-/-
MANUFACTURER	-	J&J	TITUS	TITUS
MODEL NUMBER	-	AL1444-33-TR	355RL	50F
CONSTRUCTION	-	ALUMINUM	ALUMINUM	ALUMINUM
NOTES	-	1, 2, 3	3, 4, 6	1, 3, 5, 7

- NOTES:
1. NECK SIZE OF DEVICE IS EQUAL TO THE DUCT SIZE INDICATED ON THE DRAWING.
2. PROVIDE WITH SQUARE TO ROUND ADAPTER. REFER TO PLANS FOR SIZE.
3. SEE PLANS FOR SIZE.
4. PROVIDE WITH OPPOSED BLADE DAMPER WITH SCREW ADJ. FROM DIFFUSER FACE WHERE LOCATED ABOVE HARD CEILINGS WHERE INDICATED WITH OBD'S.
5. WHERE GRILLE IS INDICATED TO BE LOCATED IN LAY-IN CEILINGS, PROVIDE 24x24 LAY-IN PANEL BORDER, WHITE IN COLOR.
6. LOUVERED FACE OF GRILLE SHALL BE AS INDICATED IN THE FACE SIZE. THE BLADES SHALL APPEAR ACROSS THE ENTIRE FACE OF THE GRILLE. CONTRACTOR TO FABRICATE INSULATED PLENUM FULL-SIZE OF DEVICE NECK AND CONNECT DUCT TO PLENUM. SIZE OF CONNECTING DUCT TO BE AS SHOWN IN PLAN.
7. PAINT INSIDE OF DUCT & GRILLE FLAT BLACK WHEN CAN BE SEEN THROUGH FACE OF GRILLE.

- REMARKS:
A. REFER TO PLANS FOR EXACT LOCATIONS OF ALL DIFFUSERS, GRILLES AND REGISTERS.
B. COORDINATE FRAME STYLES WITH CEILING SYSTEM ACTUALLY FURNISHED.
C. NC VALUES FOR DIFFUSERS, GRILLES AND REGISTERS SHALL NOT EXCEED 35 WITH A ROOM ABSORPTION RATE OF 10db; 10-12 WATTS
D. REFER TO THE MECHANICAL LEGEND FOR A DESCRIPTION OF THE AIR DEVICE MARK.
E. WHERE THE CONNECTING DUCT OR PLENUM CAN BE OBSERVED THROUGH THE FACE OF THE GRILLE, THE VISIBLE DUCTWORK SHALL BE PAINTED FLAT BLACK.

SEAL

AGI
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Florida Engineering Business Number 9973

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY STEPHEN R. FORNIER, P.E. ON THE DATE/TIME SHOWN BELOW USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES TO THE BEST OF MY KNOWLEDGE. THESE DRAWINGS AND THE PROJECT MANUAL ARE COMPLETE AND COMPLY WITH THE 2010 FLORIDA BUILDING CODE.

DATE
08-03-2021

REVISIONS

DRAWN BY
CWR

PROJECT NUMBER
2112

