

PALMS MEDICAL GROUP EAST H.V.A.C LAYOUT

LOCATION

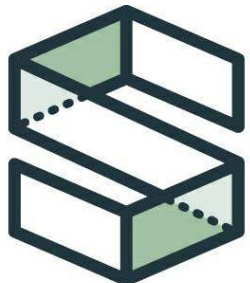
LAKE CITY, COLUMBIA
COUNTY, FLORIDA

DRAWING SHEET INDEX

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M001	MECHANICAL LEGEND, ABBREVIATIONS, NOTES, & DETAILS
M201	MECHANICAL FLOOR PLAN - NEW WORK - H.V.A.C. PLAN NEW OFFICE ADDITION

APPLICABLE CODES

2020 FLORIDA BUILDING CODE INCLUDING ALL REFERENCED SUPPLEMENTS



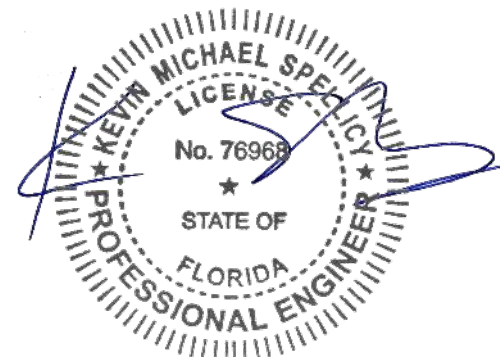
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PALMS MEDICAL GROUP EAST
H.V.A.C LAYOUT
LAKE CITY, COLUMBIA COUNTY, FLORIDA

23010

PERMIT DOCUMENTS

ISSUE DATE: 2/16/2023

DESIGN: CGD
QC: KMS

REVISIONS

NO.	REFERENCE	DATE
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COVER PAGE

G001

MECHANICAL ABBREVIATIONS

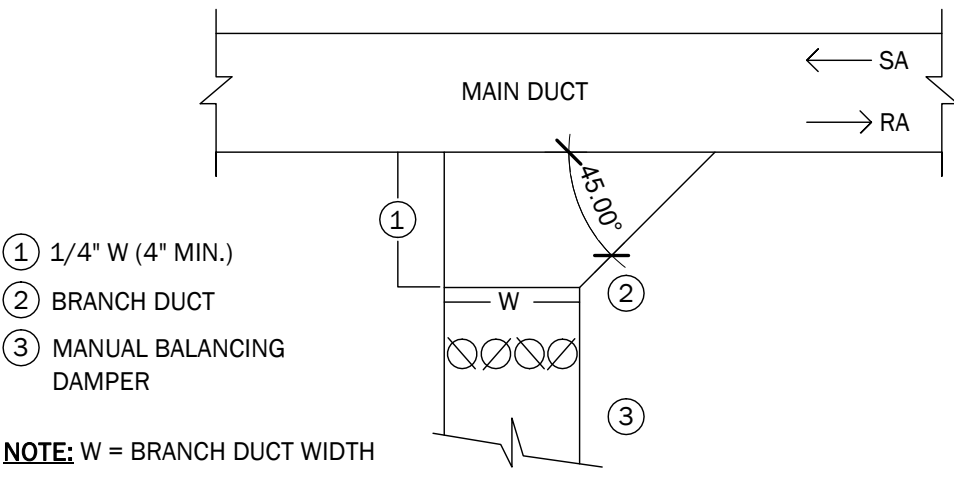
A	AMPS; AREA	KW	KILOWATTS
AAV	AUTOMATIC AIR VENT	KWH	KILOWATT HOUR
ABV	ABOVE	LAT	LEAVING AIR TEMPERATURE
ACU	AIR CONDITIONING UNIT	LBS	POUNDS
AFF	ABOVE FINISHED FLOOR	LVG	LEAVING
AHU	AIR HANDLING UNIT	MA	MIXED AIR
AP	ACCESS PANEL	MAX	MAXIMUM
BD	BALANCING DAMPER	MBH	THOUSANDS OF BTU'S
BTU	BRITISH THERMAL UNITS	MCA	MIN CIRCUIT AMPACITY
BTUH	BTU PER HOUR	MD	MOTORIZED DAMPER
C	CONDENSATE	MIN	MINUTE; MINIMUM
CD	CEILING DIFFUSER	NIC	NOT IN CONTRACT
CFH	CUBIC FEET PER HOUR	NC	NORMALLY CLOSED
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPEN
CFT	CUBIC FEET (FT³)	NTS	NOT TO SCALE
CH	(AIR-COOLED) CHILLER	OA	OUTDOOR AIR
CLG	FINISHED CEILING	OAL	OUTDOOR AIR LOUVER
CU	CONDENSER UNIT	OC	ON CENTER
DB	DRY BULB	OD	OUTSIDE DIAMETER
DEFL.	DEFLECTION	PH	PHASE
DG	DOOR GRILLE	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	PSIA	PSI ABSOLUTE
EA	EACH	R	RADIUS
EAT	ENTERING AIR TEMPERATURE	RA	RETURN AIR
EER	ENERGY EFFICIENCY RATIO	RG	RETURN GRILLE
EF	EXHAUST FAN	RH	RELATIVE HUMIDITY
EG	EXHAUST GRILLE	RPM	REVOLUTIONS PER MINUTE
ENT	ENTERING	RTU	ROOFTOP UNIT
ESP	EXTERNAL STATIC PRESSURE	SA	SUPPLY AIR
EXH	EXHAUST	SP	STATIC PRESSURE
EXIST.	EXISTING	SQ. FT.	SQUARE FEET (FT²)
F	DEGREES FAHRENHEIT	STL	STEEL
FCU	FAN COIL UNIT	TEMP	TEMPERATURE
FD	FLOOR DRAIN	VAV	VAR. AIR VOLUME
FPM	FEET PER MINUTE	TG	TRANSFER GRILLE
FT.	FEET	TSP	TOTAL STATIC PRESSURE
GPM	GALLONS PER MINUTE	TYP	TYPICAL
H ₂ O	WATER	V	VOLTS
HD	HEAD	VAR.	VARIABLE
HP	HORSEPOWER; HEAT PUMP	VAV	VAR. AIR VOLUME
HR	HOUR	VFD	VAR. FREQUENCY DRIVE
ID	INSIDE DIAMETER	VRF	VAR. REFRIGERANT FLOW
IN.	INCHES	WB	WET BULB
IN. WG	INCHES OF WATER, GAUGE	WSHP	WATER-SOURCE HEAT PUMP

AIR DISTRIBUTION NOTES

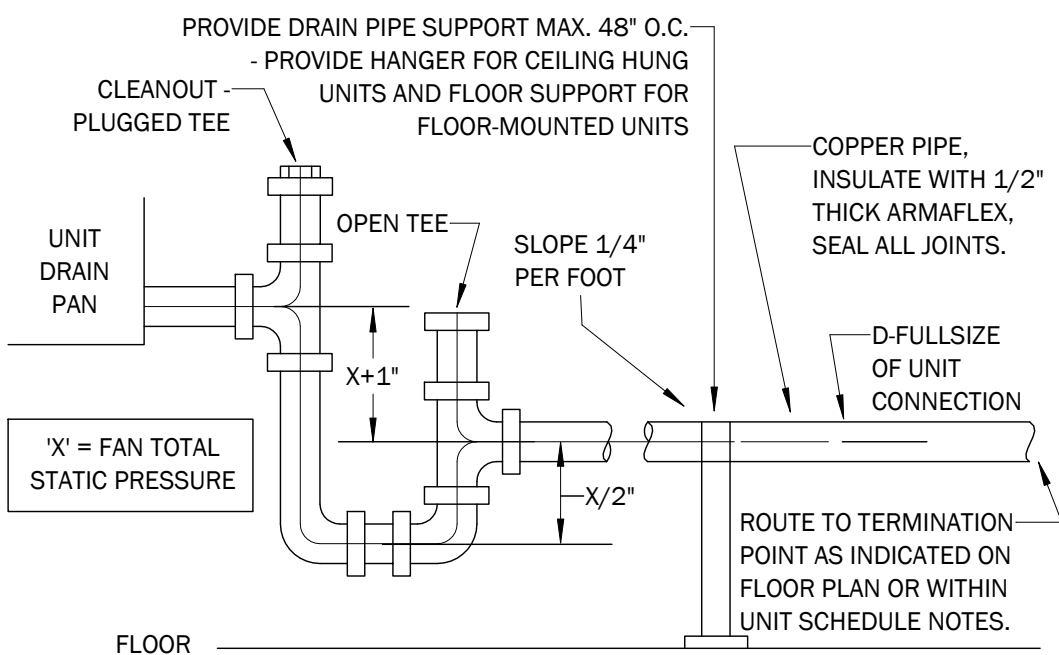
- DUCT SIZES ARE CLEAR INSIDE SHEET METAL SIZES. DUCT SIZES AND LOCATIONS ARE APPROXIMATE. AFTER THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD-VERIFY ROUTING WITH FIELD CONDITIONS AND OTHER TRADES.
- VERIFY COLLAR SIZES ON ALL AIR TERMINALS, EQUIPMENT INLETS AND OUTLETS. TRANSITION DUCTWORK AS NECESSARY. EXTERNALLY INSULATE TRANSITIONS AT EQUIPMENT CONNECTIONS.
- PROVIDE 2" EXTERNAL INSULATION (MINIMUM R-6) FOR ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK. EXHAUST DUCTWORK SHALL BE UNINSULATED.

MECHANICAL LEGEND

	EXISTING DUCTWORK/EQUIPMENT TO REMAIN
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED
	NEW RETURN DUCTWORK (WITH 2" EXTERNAL INSULATION)
	NEW SUPPLY DUCTWORK (WITH 2" EXTERNAL INSULATION)
	NEW SUPPLY CEILING DIFFUSER: "24" = FACE SIZE, "08" = NECK DIAMETER 4-WAY THROW OR AS SHOWN ON PLANS
	NEW THERMALLY POWERED VAV DIFFUSER: "24" = FACE SIZE, "08" = NECK DIAMETER 4-WAY THROW OR AS SHOWN ON PLANS
	CEILING/SIDEWALL SUPPLY GRILLE, 10" LONG X 6" WIDE DOUBLE DEFLECTION GRILLE
	LINEAR SLOT DIFFUSER (WITH LENGTH INDICATED): SEE FLOOR PLAN FOR QUANTITY AND WIDTH OF SLOTS. EQUAL TO PRICE SERIES SDS WITH FACTORY PLENUM
	ROUND PLAQUE DIFFUSER WITH 8" DIAMETER DUCT CONNECTION/NECK.
	NEW CEILING RETURN GRILLE (RG) OR NEW EXHAUST GRILLE (EG): "24" = FACE SIZE, "08" = NECK DIAMETER PROVIDE ADAPTOR/ BLANK OFF PLATE FOR 12"x12" FACE GRILLES
	CEILING/SIDEWALL RETURN GRILLE, 10" LONG X 6" WIDE ADJUSTABLE BLADE, LOUVERED FACE
	DUCT-MOUNTED SMOKE DETECTOR
	ROUND DUCT SYMBOL
	FIRE DAMPER & ACCESS PANEL
	COMBINATION FIRE/ SMOKE DAMPER WITH ACCESS PANEL
	SMOKE DAMPER WITH INTEGRAL DETECTOR AND ACCESS PANEL
	WALL-MOUNTED THERMOSTAT (UNIT NUMBER INDICATED)
	WALL-MOUNTED CO ₂ SENSOR
	CONNECT TO EXISTING
	SPIN-IN WITH DAMPER
	VOLUME-BALANCING DAMPER
	MOTORIZED DAMPER



1 BRANCH DUCT TAKEOFF DETAIL
NOT TO SCALE



2 CONDENSATE DRAIN DETAIL
NOT TO SCALE

EQUIPMENT NOTES

- PROVIDE FULL-SIZE CONDENSATE DRAINS FROM ALL UNITS TO DISPOSAL POINT INDICATED ON THE DRAWINGS.
- PROVIDE A "P" TRAP ON ALL CONDENSATE DRAIN OUTLETS. SLOPE ALL CONDENSATE DRAIN PIPING 1/4" INCH PER FOOT. CONDENSATE DRAINS SHALL BE ROUTED OUTSIDE SERVICE CLEARANCE AREAS OF UNITS. PROVIDE CLEANOUT PLUG AT TRAP PER DETAIL THIS SHEET.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT, PIPING AND DUCTWORK SUCH THAT MANUFACTURER'S RECOMMENDED CLEARANCES ARE MET FOR ALL ACCESS PANELS, MOTORS, FANS, BELTS, FILTERS, AIR INTAKES, ETC.
- PROVIDE ACCESS PANELS IN ALL NON-ACCESSIBLE CONSTRUCTIONS (INCLUDING CEILING, WALLS, ETC) SIZED AND LOCATED AS REQUIRED TO PROVIDE PROPER SERVICE ACCESS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION FOR ALL HVAC EQUIPMENT INCLUDING DAMPERS AND VALVES.

MECHANICAL SPECIFICATIONS

SECTION 230005 / MECHANICAL GENERAL

GENERAL
THE WORK COVERED BY THIS DIVISION CONSISTS OF PROVIDING ALL LABOR, EQUIPMENT AND MATERIALS AND PERFORMING ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF THE MECHANICAL WORK AS HEREIN CALLED FOR AND SHOWN ON THE DRAWINGS.

REVIEW ALL OTHER CONTRACT DOCUMENTS TO BE AWARE OF CONDITIONS AFFECTING WORK HEREIN.

COORDINATE WORK IN THIS DIVISION WITH ALL OTHER TRADES IN PROPER SEQUENCE TO ENSURE THAT THE TOTAL WORK IS COMPLETED WITHIN CONTRACT TIME SCHEDULE AND WITH A MINIMUM CUTTING AND PATCHING.

INSTALL WORK AS REQUIRED TO FIT STRUCTURE, AVOID OBSTRUCTIONS, AND RETAIN CLEARANCE, HEADROOM, OPENINGS AND PASSAGEWAYS. **CUT NO STRUCTURAL MEMBERS. WITHOUT WRITTEN APPROVAL.** PROVIDE SLEEVES AT ALL CONCRETE PENETRATIONS.

CAREFULLY EXAMINE ANY EXISTING CONDITIONS, PIPING, AND PREMISES. COMPARE DRAWINGS WITH EXISTING CONDITIONS. REPORT ANY OBSERVED DISCREPANCIES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY COORDINATE THE WORK AND TO IDENTIFY PROBLEMS IN A TIMELY MANNER. WRITTEN INSTRUCTIONS WILL BE ISSUED TO RESOLVE DISCREPANCIES.

APPROVAL SUBMITTALS:

SUBMITTALS SHALL NOT INCLUDE ITEMS FROM MORE THAN ONE SPECIFICATION SECTION IN THE SAME SUBMITTAL PACKAGE.

SUBMITTALS SHALL BE PROPERLY IDENTIFIED BY A COVER SHEET SHOWING THE PROJECT NAME, ARCHITECT AND ENGINEER NAMES, SUBMITTAL CONTROL NUMBER, SPECIFICATION SECTION, A LIST OF PRODUCTS OR ITEM NAMES WITH MODEL NUMBERS IN THE ORDER THEY APPEAR IN THE PACKAGE, AND SPACES FOR APPROVAL STAMPS. A SAMPLE COVER SHEET IS INCLUDED AT THE END OF THIS SECTION.

SUBMITTALS SHALL HAVE BEEN REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR (OR PRIME CONTRACTOR). EVIDENCE OF THIS REVIEW AND APPROVAL SHALL BE AN "APPROVED" STAMP WITH A SIGNATURE AND DATE.

INTERRUPTION OF SERVICE:

BEFORE ANY EQUIPMENT IS SHUT DOWN FOR DISCONNECTING OR TIE-INS, ARRANGEMENTS SHALL BE MADE WITH THE ARCHITECT/ENGINEER AND THIS WORK SHALL BE DONE AT THE TIME BEST SUITED TO THE OWNER. THIS WILL TYPICALLY BE ON WEEKENDS AND/OR HOLIDAYS AND/OR AFTER NORMAL WORKING HOURS. SERVICES SHALL BE RESTORED THE SAME DAY UNLESS PRIOR ARRANGEMENTS ARE MADE. ALL OVERTIME OR PREMIUM COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE BASE BID.

PAINTING:

TOUCH-UP FACTORY FINISHES ON EQUIPMENT LOCATED INSIDE AND OUTSIDE SHALL BE DONE UNDER DIVISION 23. OBTAIN MATCHED COLOR COATINGS FROM THE MANUFACTURER AND APPLY AS DIRECTED. IF CORROSION IS FOUND DURING INSPECTION ON THE SURFACE OF ANY EQUIPMENT, CLEAN, PRIME, AND PAINT, AS REQUIRED.

CLEAN-UP:

THOROUGHLY CLEAN ALL EXPOSED PARTS OF APPARATUS AND EQUIPMENT OF CEMENT, PLASTER, AND OTHER MATERIALS AND REMOVE ALL OIL AND GREASE SPOTS. REPAINT OR TOUCH UP AS REQUIRED TO LOOK LIKE NEW. DURING PROGRESS OF WORK, CONTRACTOR IS TO CAREFULLY CLEAN UP AND LEAVE PREMISES AND ALL PORTIONS OF BUILDING FREE FROM DEBRIS AND IN A CLEAN AND SAFE CONDITION.

START-UP AND OPERATIONAL TEST:

START EACH ITEM OF EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS; OR WHERE NOTED UNDER EQUIPMENT SPECIFICATION, START-UP SHALL BE DONE BY A QUALIFIED REPRESENTATIVE OF THE MANUFACTURER. ALIGNMENT, LUBRICATION, SAFETY, AND OPERATING CONTROL SHALL BE INCLUDED IN START-UP CHECK.

TEST AND BALANCE REPORT:

THE REPORT SHALL BE SUBMITTED FOR REVIEW PRIOR TO THE SUBSTANTIAL COMPLETION INSPECTION.

RECORD DRAWINGS:

SUBMIT RECORD DRAWINGS.

OPERATION AND MAINTENANCE MANUALS:

FURNISH FOUR COMPLETE MANUALS BOUND IN RING BINDERS WITH TABLE OF CONTENTS, ORGANIZED, AND TABBED BY SPECIFICATION SECTION. MANUALS SHALL CONTAIN:

DETAILED OPERATING INSTRUCTIONS AND INSTRUCTIONS FOR MAKING MINOR ADJUSTMENTS.

COMPLETE WIRING AND CONTROL DIAGRAMS.

ROUTINE MAINTENANCE OPERATIONS.

MANUFACTURER'S CATALOG DATA, SERVICE INSTRUCTIONS, AND PARTS LISTS FOR EACH PIECE OF OPERATING EQUIPMENT.

COPIES OF APPROVED SUBMITTALS.

COPIES OF ALL MANUFACTURER'S WARRANTIES.

COPIES OF TEST REPORTS AND VERIFICATION SUBMITTALS.

SECTION 230855 / DUCTWORK ACCESSORIES

DAMPERS

LOW PRESSURE MANUAL DAMPERS:
PROVIDE 16-GAUGE DAMPERS OF SINGLE-BLADE TYPE (12" MAXIMUM BLADE WIDTH) OR MULTIBLADE TYPE. DAMPER BLADES TO BE GANG-OPERATED FROM A SINGLE SHAFT WITH NYLON OR BALL BEARINGS ON EACH END. PROVIDE INDEXED LOCKING QUADRANT. PARALLEL OR OPPOSED BLADE STYLE IS ACCEPTABLE. PROVIDE 2" STANDOFF ON LOCKING QUADRANT FOR EXTERNALLY INSULATED DUCT. FINAL DAMPER SETTINGS SHALL BE MARKED IN INDELEIBLE INK OR PAINT.

TURNING VANES:

PROVIDE MANUFACTURED OR FABRICATED SINGLE WALL TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".

DUCT ACCESS DOORS

GENERAL:
PROVIDE DUCT ACCESS DOORS OF SIZE INDICATED, OR AS REQUIRED FOR DUTY INDICATED.

CONSTRUCTION:
CONSTRUCT OF SAME OR GREATER GAUGE AS DUCTWORK SERVED. PROVIDE INSULATED DOORS FOR INSULATED DUCTWORK. PROVIDE FLUSH FRAMES FOR UNINSULATED DUCTWORK. EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCT. PROVIDE ONE SIDE HINGED, OTHER SIDE WITH ONE HANDLE-TYPE LATCH FOR DOORS 12" HIGH AND SMALLER, 2 HANDLE-TYPE LATCHES FOR LARGER DOORS.

ACCEPTABLE MANUFACTURERS:
SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ACCESS DOORS BY AIR BALANCE, INC., DURO DYNE CORP., RUSKIN MFG. CO., OR VENTFABRICS, INC.

FLEXIBLE CONNECTIONS

GENERAL:
PROVIDE FLEXIBLE DUCT CONNECTIONS WHEREVER DUCTWORK CONNECTS TO VIBRATION ISOLATED EQUIPMENT. CONSTRUCT FLEXIBLE CONNECTIONS OF NEOPRENE-COATED FLAMEPROOF FABRIC CRIMPED INTO DUCT FLANGES FOR ATTACHMENT TO DUCT AND EQUIPMENT. MAKE AIRTIGHT JOINT. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR THERMAL, AXIAL, TRANSVERSE, AND TORSIONAL MOVEMENT, AND ALSO CAPABLE OF ABSORBING VIBRATIONS OF CONNECTED EQUIPMENT. FLEXIBLE CONNECTIONS SHALL COMPLY WITH NFPA 90A, 90B, AND SPECIFICATION FORM DDFCDD-1.1.

ACCEPTABLE MANUFACTURERS:
SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: DURO DYNE CORP., FLEXAUST (THE) CO., OR VENTFABRICS, INC.

EXECUTION

EXAMINE AREAS AND CONDITIONS UNDER WHICH DUCTWORK ACCESSORIES WILL BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.

INSTALLATION OF DUCTWORK ACCESSORIES:

INSTALL DUCTWORK ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, WITH APPLICABLE PORTIONS OF DETAILS OF CONSTRUCTION AS SHOWN IN SMACNA STANDARDS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE INTENDED FUNCTION.

INSTALL BALANCING DAMPERS AT ALL MAIN DUCTS ADJACENT TO UNITS IN RETURN AIR, OUTSIDE AIR AND WHERE INDICATED.

INSTALL CONTROL DAMPERS WHERE INDICATED ON THE DRAWINGS. DAMPER OPERATOR PROVIDED BY CONTROL CONTRACTOR.

INSTALL TURNING VANES IN SQUARE OR RECTANGULAR 90E ELBOWS IN SUPPLY, RETURN, AND EXHAUST AIR SYSTEMS, AND ELSEWHERE AS INDICATED.

INSTALL FLEXIBLE CONNECTIONS IN DUCTWORK SUCH THAT THE CLEAR LENGTH OF THE CONNECTOR IS APPROXIMATELY TWO INCHES. PROVIDE THRUST RESTRAINTS AS REQUIRED. FLEXIBLE MATERIAL SHALL NOT BE SO SLACK AS TO TAKE A DEFINITE CONCAVE OR CONVEX SHAPE DURING FAN OPERATION.

COORDINATE WITH OTHER WORK, INCLUDING DUCTWORK, AS NECESSARY TO INTERFACE INSTALLATION OF DUCTWORK ACCESSORIES PROPERLY WITH OTHER WORK.

INSTALL FIRE DAMPERS WITHIN FIRE WALLS AND FLOORS AT LOCATIONS SHOWN ON THE MECHANICAL DRAWINGS. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS, NFPA 90A, AND UL 555. BASIS OF DESIGN INSTALLATION IS DETAILED ON THE DRAWINGS.

INSTALL SMOKE DAMPERS ON BOTH SIDES OF AIR HANDLING UNITS (TO INCLUDE FILTERS) IN UNITS OVER 15,000 CFM. INSTALL AT SMOKE PARTITIONS. ALL LOCATIONS ARE SHOWN ON THE MECHANICAL DRAWINGS. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS, NFPA 90A, AND UL 555S. BASIS OF DESIGN INSTALLATION IS DETAILED ON THE DRAWINGS.

FIRE AND SMOKE DAMPERS NOTIFY ENGINEER AT LEAST 24 HOURS IN ADVANCE OF CEILING INSTALLATION OR CHASE CLOSURE SO THAT COMPLETE FIRE AND SMOKE DAMPER INSTALLATION CAN BE OBSERVED. A COPY OF THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE AT THE SITE.

OPERATE INSTALLED DUCTWORK ACCESSORIES TO DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. TEST FOR AIR LEAKAGE WHILE SYSTEM IS OPERATING. REPAIR OR REPLACE FAULTY ACCESSORIES AS REQUIRED TO OBTAIN PROPER OPERATION AND LEAKPROOF PERFORMANCE.

ADJUSTING AND CLEANING

ADJUSTING:

ADJUST DUCTWORK ACCESSORIES FOR PROPER SETTINGS. INSTALL FUSIBLE LINKS IN FIRE DAMPERS AND ADJUST FOR PROPER ACTION.

FINAL POSITIONING OF MANUAL DAMPERS IS SPECIFIED IN DIVISION 23 SECTION "TESTING, ADJUSTING, AND BALANCING". HOWEVER, THE SYSTEM SHALL BE LEFT FUNCTIONAL WITH ALL DAMPERS OPEN OR THROTTLED.

CLEANING:

CLEAN FACTORY-FINISHED SURFACES. REPAIR ANY MARRED OR SCRATCHED SURFACES WITH MANUFACTURER'S TOUCH-UP PAINT. **FURNISH EXTRA FUSIBLE LINKS** TO OWNER, ONE LINK FOR EVERY 10 INSTALLED OF EACH TEMPERATURE RANGE; OBTAIN RECEIPT.

SECTION 230985 / TESTING AND BALANCING OF MECHANICAL SYSTEMS

DESCRIPTION OF WORK:

EXTENT OF TESTING, ADJUSTING, AND BALANCING WORK (TAB) IS INDICATED BY REQUIREMENTS OF THIS SECTION, AND ALSO BY DRAWINGS AND SCHEDULES, AND IS DEFINED TO INCLUDE, BUT IS NOT NECESSARILY LIMITED TO, AIR DISTRIBUTION SYSTEMS, HYDRONIC DISTRIBUTION SYSTEMS AND ASSOCIATED EQUIPMENT AND APPARATUS OF MECHANICAL WORK. THE WORK CONSISTS OF SETTING SPEED AND VOLUME (FLOW) ADJUSTING FACILITIES PROVIDED FOR SYSTEMS, RECORDING DATA, CONDUCTING TESTS, PREPARING AND SUBMITTING REPORTS, AND RECOMMENDING MODIFICATIONS TO WORK AS REQUIRED.

THE WORK OF THIS SECTION IS INTENDED TO BE PERFORMED BY A TEST AND BALANCE CONTRACTOR UNDER A SEPARATE, STAND-ALONE CONTRACT.

PRETESTING:

WHERE REQUIRED BY THE DRAWINGS OR OTHER DIVISION 23 SECTIONS, PRETEST EXISTING HVAC SYSTEMS AS DIRECTED AND REPORT FINDINGS PRIOR TO START OF DEMOLITION WORK OR ANY OTHER MODIFICATIONS TO THE EXISTING SYSTEMS. RESULTS OF PRETESTING SHALL BE REPORTED TO THE ENGINEER IN A TIMELY MANNER. COMPLY WITH STANDARDS FOR FINAL TAB REPORTS DESCRIBED HEREIN.

COORDINATION:

COORDINATE WITH THE GENERAL CONTRACTOR AND MECHANICAL CONTRACTOR RESPONSIBLE FOR THE HVAC SYSTEM INSTALLATION AS REQUIRED TO COMPLETE THE TAB WORK.

THE INTENT OF THIS SPECIFICATION IS TO BALANCE HVAC SYSTEMS WITHIN THE TOLERANCES LISTED, MAINTAINING THE PRESSURE RELATIONSHIPS INDICATED, WITH A MINIMUM OF NOISE.

AIRFLOW TOLERANCES

AIR HANDLING:
THE SUPPLY AIR, RETURN AIR AND OUTDOOR AIR QUANTITIES SHALL BE BALANCED WITHIN ±5% OF DESIGN VALUES.

CEILING DIFFUSERS, SUPPLY, RETURN AND EXHAUST INLETS:

BALANCE TO AN AIR QUANTITY WITHIN ±10% OF THE DESIGN VALUES.

TEMPERATURE TOLERANCES

AIR HANDLING TEMPERATURES:
THE CONTROLLED TEMPERATURES AT AHUS SHALL BE VERIFIED TO BE UNDER CONTROL WITHIN ±1 °F OF DESIGN VALUES.

ROOM TEMPERATURES:

BALANCE SYSTEMS AND CONTROLS WITHIN ±2 °F OF INDICATED SETTINGS.

PRESSURE RELATIONSHIPS:

WHERE CODE OR DESIGN INDICATES A SPECIFIC PRESSURE RELATIONSHIP, THE PRESSURE RELATIONSHIP SHALL TAKE PRECEDENCE OVER AIRFLOW TOLERANCES. AIRFLOW TOLERANCES MAY NEED TO BE HELD TIGHTER THAN ALLOWED TOLERANCES TO MEET PRESSURE RELATIONSHIPS.

QUALITY ASSURANCE:

THE TAB CONTRACTOR SHALL BE CERTIFIED AS FOLLOWS:

TESTER:

A FIRM CERTIFIED BY NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) IN THOSE TESTING AND BALANCING DISCIPLINES REQUIRED FOR THIS PROJECT, WHO IS NOT THE INSTALLER OF THE SYSTEMS TO BE TESTED AND IS OTHERWISE INDEPENDENT OF THE PROJECT. COMPLY WITH NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS" AS APPLICABLE TO THIS WORK.

INDUSTRY STANDARDS:

COMPLY WITH AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC. (ASHRAE) RECOMMENDATIONS PERTAINING TO MEASUREMENTS, INSTRUMENTS AND TESTING, ADJUSTING AND BALANCING, EXCEPT AS OTHERWISE INDICATED.

JOB CONDITIONS:

DO NOT PROCEED WITH TESTING, ADJUSTING, AND BALANCING WORK UNTIL HVAC WORK (INCLUDING CONTROLS) HAS BEEN COMPLETED AND IS OPERABLE. ENSURE THAT THERE IS NO RESIDUAL WORK STILL TO BE COMPLETED.

DO NOT PROCEED UNTIL WORK SCHEDULED FOR TESTING, ADJUSTING, AND BALANCING IS CLEAN AND FREE FROM DEBRIS, DIRT AND DISCARDED BUILDING MATERIALS.

DO NOT PROCEED UNTIL ARCHITECTURAL WORK THAT WOULD AFFECT BALANCING (WALLS, CEILING, WINDOWS, DOORS) HAVE BEEN INSTALLED.

TESTING MAY PROCEED SYSTEM BY SYSTEM, BUT EACH HVAC SYSTEM MUST BE COMPLETE AS DESCRIBE HEREIN.

THE MECHANICAL CONTRACTOR SHALL MAKE ANY CHANGES IN PULLEYS, BELTS, AND DAMPERS, AND/OR ADD DAMPERS AS REQUIRED FOR CORRECT BALANCING.

APPROVAL SUBMITTALS:

SUBMIT THE NAME OF THE PROPOSED TEST AND BALANCE COMPANY FOR THE ENGINEER'S APPROVAL WITHIN THIRTY (30) DAYS AFTER AWARDING OF CONTRACT.

TEST REPORTS AND VERIFICATION SUBMITTALS:

SUBMIT TWO (2) COPIES OF A PRELIMINARY REPORT TWO WEEKS PRIOR TO SUBSTANTIAL COMPLETION LISTING ALL NOTED DEFICIENCIES. SUBMIT FOUR (4) COPIES OF THE DATED TEST AND BALANCE REPORT UPON COMPLETION OF TAB WORK AND BEFORE THE FINAL COMPLETION INSPECTION. THE REPORT SHALL INCLUDE A LIST OF INSTRUMENTS USED FOR THE WORK. THE REPORT SHALL BE SIGNED BY THE SUPERVISOR WHO PERFORMED THE TAB WORK.

PRODUCTS

PATCHING MATERIALS:
EXCEPT AS OTHERWISE INDICATED, USE SAME PRODUCTS AS USED BY ORIGINAL INSTALLER FOR PATCHING HOLES IN INSULATION, DUCTWORK AND HOUSINGS WHICH HAVE BEEN CUT OR DRILLED FOR TEST PURPOSES, INCLUDING ACCESS FOR TEST INSTRUMENTS, ATTACHING JIGS, AND SIMILAR PURPOSES.

TEST INSTRUMENTS:

UTILIZE TEST INSTRUMENTS AND EQUIPMENT OF THE TYPE, PRECISION, AND CAPACITY AS RECOMMENDED IN THE REFERENCED STANDARD. ALL INSTRUMENTS SHALL BE IN GOOD CONDITION AND SHALL HAVE BEEN CALIBRATED WITHIN THE PREVIOUS SIX (6) MONTHS (OR MORE RECENTLY IF REQUIRED BY STANDARD).

EXECUTION

GENERAL:
EXAMINE INSTALLED WORK AND CONDITIONS UNDER WHICH TESTING IS TO BE DONE TO ENSURE THAT WORK HAS BEEN COMPLETED, CLEANED AND IS OPERABLE. DO NOT PROCEED WITH TAB WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO TESTER.

TEST, ADJUST AND BALANCE ENVIRONMENTAL SYSTEMS AND COMPONENTS, AS INDICATED, IN ACCORDANCE WITH PROCEDURES OUTLINED IN APPLICABLE STANDARDS, AND AS MODIFIED OR DETAILED HEREIN. **TEST AND BALANCE SHALL BE PERFORMED PRIOR TO INSTALLATION OF CEILING TILES.**

TEST, ADJUST AND BALANCE SYSTEMS DURING SUMMER SEASON FOR AIR CONDITIONING SYSTEMS AND DURING WINTER SEASON FOR HEATING SYSTEMS, INCLUDING AT LEAST A PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 5 °F WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 10 °F DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION. WHEN SEASONAL OPERATION DOES NOT PERMIT MEASURING FINAL TEMPERATURES, THEN TAKE FINAL TEMPERATURE READINGS WHEN SEASONAL OPERATION DOES PERMIT. THE CONTRACTOR SHALL RETURN FOR A CHANGE OF SEASONS TEST AT NO ADDITIONAL COST TO THE OWNER AND SUBMIT THE REVISED TAB REPORT.

PUNCH LIST:

PREPARE A DEFICIENCY (PUNCH) LIST FOR THE CONTRACTOR WITH A COPY OF THE ENGINEER THAT LISTS ALL ITEMS THAT ARE INCORRECTLY INSTALLED OR ARE FUNCTIONING IMPROPERLY. PROVIDE A RETEST AFTER ALL ITEMS ARE CORRECTED.

AIR BALANCING:

LEAKAGE TESTS ON DUCTWORK MUST HAVE BEEN COMPLETED BEFORE AIR BALANCING.

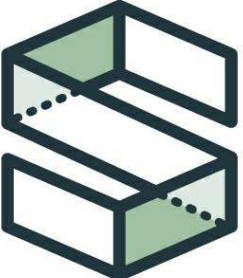
SET DAMPERS, VOLUME CONTROLS AND FAN SPEEDS TO OBTAIN SPECIFIED AIR DELIVERY WITH MINIMUM NOISE LEVEL. REBALANCE AS REQUIRED TO ACCOMPLISH THIS.

SET GRILLE DEFLECTIONS AS NOTED ON PLANS. MODIFY DEFLECTIONS IF REQUIRED TO ELIMINATE DRAFTS OR OBJECTIONABLE AIR MOVEMENT.

RECORD AIR TERMINAL VELOCITY AFTER COMPLETION OF BALANCE WORK.

RECORD FINAL GRILLE AND REGISTER DEFLECTION SETTINGS IF DIFFERENT FROM THAT SPECIFIED ON CONTRACT DRAWINGS.

RECORD ALL FAN SPEEDS.



CAMPBELL SPELLICY

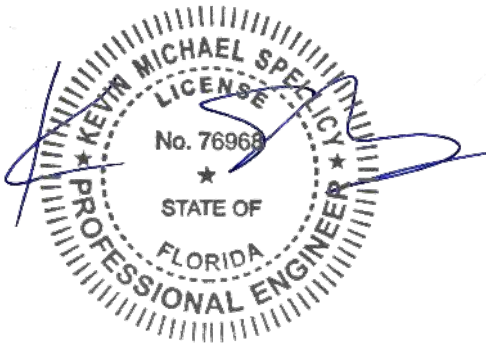
ENGINEERING

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KEVIN M. SPELLICY
PE-0076968

PALMS MEDICAL GROUP EAST
H.V.A.C LAYOUT
LAKE CITY, COLUMBIA COUNTY, FLORIDA

23010

PERMIT DOCUMENTS

ISSUE DATE: 2/16/2023

DESIGN: CGD
QC: KMS

REVISIONS
NO. REFERENCE DATE

MECHANICAL LEGEND,
ABBREVIATIONS, NOTES, &
DETAILS



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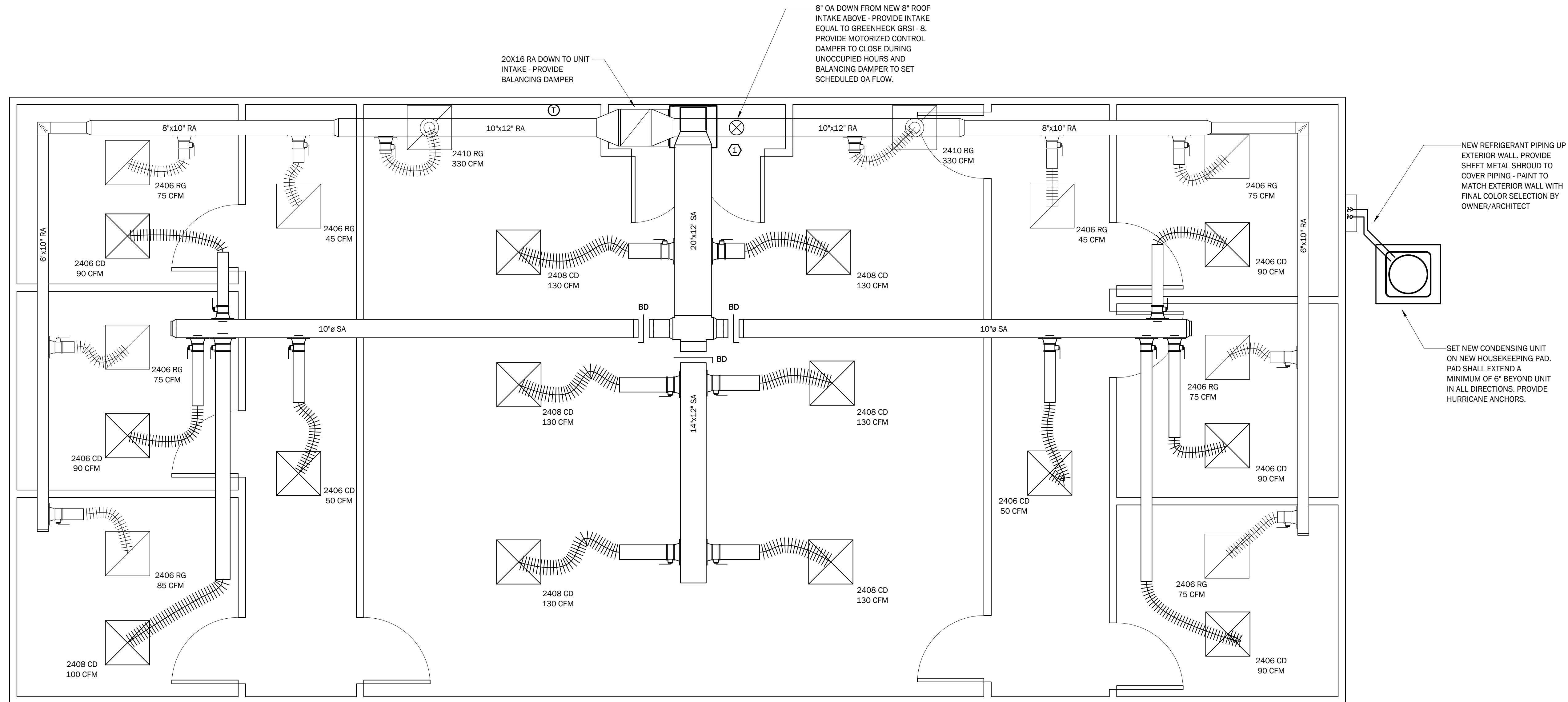
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MECHANICAL FLOOR PLAN -
NEW WORK - H.V.A.C. PLAN
NEW OFFICE ADDITION

M201

CONDITIONED AREA = 1,775 SF
SIZING METHOD USED = BLOCK LOAD
SUMMER OUTDOOR CONDITIONS (DB/WB) = 95F/80F
SUMMER INDOOR CONDITIONS (DB/WB) = 75F/63F
TOTAL SENSIBLE GAIN = 33,200 BTU/H
TOTAL HEAT GAIN = 14,460 BTU/H
SUPPLY AIR REQUIRED = 1,356 CFM
RELATIVE HUMIDITY = 51%
TOTAL COOLING REQUIRED WITH OA: 47,500 BTU/H
WINTER OUTDOOR CONDITIONS (DB/WB) = 25F/20F
SUMMER INDOOR CONDITIONS (DB/WB) = 68F/57F
TOTAL COOLING REQUIRED WITH OA: 47,500 BTU/H

NEW 4-TON SPLIT SYSTEM EQUAL TO TRANE
TAM9A0C48V41DB. BALANCE TO 1430 CFM
SUPPLY, 1210 CFM RETURN, AND 220 CFM OA.
PROVIDE MATCHED CONDENSING UNIT AT NEW
EXTERIOR PAD AS SHOWN, EQUAL TO TRANE
4TWR6048H1000A. PROVIDE ALL REFRIGERANT
PIPING PER MANUFACTURER'S INSTRUCTIONS.



MECHANICAL FLOOR PLAN - NEW WORK - H.V.A.C. PLAN NEW OFFICE ADDITION
SCALE: 3/8" = 1'-0"