HVAC LEGEND

SUPPLY AIR

RETURN AIR
EXHAUST AIR

OUTSIDE AIR

UNIT CONTROLLED
T OR S
AC-1
ROOM THERMOSTAT OR SENSOR

CONSTRUCTION STANDARDS

SYMBOL	DESCRIPTION
	SUPPLY AIR FLOW DIRECTION
	RETURN/EXAUST AIR FLOW DIRECTION
	VOLUME DAMPER
MD	MOTORIZED DAMPER W/ ACTUATOR AND ACCESS DOOR
MD	MOTORIZED DAMPER EXTERNAL TYPE
AFMS	AIRFLOW MONITORING STATION
	ELBOW WITH TURNING VANES
R=W, W	RADIUS ELBOW
6"	RECTANGULAR MAIN WITH RECTANGULAR BRANCH
15° MAX.	CONCENTRIC SQUARE TO ROUND
15° MAX.	EXECUTRIX (RECTANGULAR OR ROUND)
W, D	SQUARE TEE
DOUBLE FORMED TURNING VANES	
	FIRE/SMOKE DAMPER AT FLOOR (HORIZONTAL)
	FIRE DAMPER AT FLOOR (HORIZONTAL)
	FIRE DAMPER (VERTICAL)
	FIRE/SMOKE DAMPER (VERTICAL)

SYMBOL	DESCRIPTION
	RECTANGULAR DUCT RISER
	ROUND DUCT RISER
	RECTANGULAR DUCT DRAP
	ROUND DUCT DROP
	RECTANGULAR OFFSET LESS THAN 15°
	RECTANGULAR OFFSET W/ STANDARD FITTINGS (30,45,60)
	ROUND WYE
	BELLMOUTH
CONICAL TEE, ROUND BRANCH	ROUND MAIN DUCT WITH ROUND BRANCH
15° MAX.	CONCENTRIC ROUND TRANSITION
	FLEXIBLE CONNECTION
ROUND DUCT, BRANCH	LATERAL FITTING
RECTANGULAR DUCT, SIDEWALL GRILLE	RECTANGULAR MAIN WITH SIDEWALL GRD
SQUARE TO ROUND	RECTANGULAR MAIN WITH ROUND BRANCH

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION
ACC	ACCESSORIES
ACCU	AIR-COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
AMP	AMPERE
BTU	BRITISH THERMAL UNITS
CAP	CAPACITY
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
COND	CONDENSER
CR	CEILING RETURN DIFFUSER
CTG	CEILING TRANSFER DIFFUSER
CU	CONDENSING UNIT
	CIRCUIT SETTER
DH	DUCT HEATER
DIA	DIAMETER
DN	DOWN
E	EXISTING
EF	EXHAUST FAN
ELEV	ELEVATION
FC	FAN COIL UNIT
FD	FIRE DAMPER
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FR	FILTER RACK
FSD	FIRE SMOKE DAMPER
HP	HORSE POWER
HTR	HEATER
GA	GAUGE
GAL	GALLONS
GPH	GALLONS PER HOUR
LB	POUNDS
LS	LINEAR SLOT DIFFUSER
LR	LINEAR RETURN DIFFUSER
MBH	BTU PER HOUR (THOUSAND)
MD	MOTORIZED DAMPER
MFG	MANUFACTURER
MT	MOUNT
NEW	N
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OPR	OPERATING
OSA	OUTSIDE AIR
PH	PHASE
PTAC	BELOW WINDOW HEAT PUMP
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RD	ROOF DRAIN
RH	HUMIDITY
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
S	SMOKE DETECTOR
SA	SUPPLY AIR
SWE	SIDEWALL EXHAUST GRILLE
SWS	SIDEWALL SUPPLY REGISTER
SP	STATIC PRESSURE
SQFT	SQUARE FOOT
SURF	SURFACE
SWR	SIDEWALL RETURN GRILLE
SWT	SIDEWALL TRANSFER GRILLE
THRU	THROUGH
	TIE IN POINT
TSTAT	THERMOSTAT
TYP	TYPICAL
VAV	VARIABLE VOLUME
V	VOLTS
UC	UNDER CUT DOOR 1"

APPLICABLE CODES & STNADARDS

1. INTERNATIONAL BUILDING CODE, 2009.
2. INTERNATIONAL FIRE CODE, 2009.
3. INTERNATIONAL MECHANICAL CODE, 2009.
4. INTERNATIONAL ENERGY CONSERVATION CODE, 2018.
5. FACILITY GUIDELINES INSTITUTE (FGI) GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS, 2010.
6. ASHRAE STANDARD 170, VENTILATION OF HEALTH CARE FACILITIES, 2008.
7. ASHRAE STANDARD 62.1, VENTILATION AND ACCEPTABLE INDOOR AIR QUALITY, 2010.
8. ASHRAE STANDARD 90.1, ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS.

GENERAL NOTES

1. DO NOT SCALE DRAWINGS. FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION OF COMPONENTS.
2. DRAWINGS ARE DIAGRAMMATIC ONLY. ACTUAL SIZE AND LOCATION OF EQUIPMENT, DUCT WORK AND PIPING MAY VARY DUE TO MANUFACTURER OR FIELD CONDITIONS. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO PROVIDE ADEQUATE CLEARANCE AND ACCESSIBILITY AS REQUIRED BY MANUFACTURERS.
3. INSTALLATION SHALL COMPLY WITH THE GOVERNING CODES AND REGULATIONS. INSTALLATION SHALL CONFORM TO THE ENERGY CONSERVATION DESIGN MANUAL STANDARDS FOR NEW NONRESIDENTIAL BUILDINGS AND GUAM BUILDING ENERGY CODE.
4. ALL WORK AND MATERIALS SHALL COMPLY WITH GOVERNING CODES, SAFETY ORDERS AND REGULATIONS.
5. OBTAIN AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY GOVERNING AUTHORITIES.
6. ACCESS PANELS IN HARD CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS; CONTROLS ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS. CONCEALED HARD CEILING REGULATORS MAY BE USED IN HARD CEILINGS IN LIEU OF ACCESS PANELS.
7. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE MOST RECENT REVISION OF THESE PLANS AND SUBMITTALS PRIOR TO CONSTRUCTION. ENGINEER SHALL NOT BE RESPONSIBLE FOR CONTRACTOR FAILURE TO REVIEW AND CLARIFY ANY DISCREPANCIES. SEE ELECTRICAL PLANS FOR POWER AND CONTROL REQUIREMENTS.
8. ALL TEMPORARY UTILITY SYSTEM SHUT OFF AND WORK SHALL BE DONE ACCORDING TO THE PHASING PLAN TO AVOID DISCONTINUITY OF SERVICES TO MATERNITY WARD.

EQUIPMENT NOTES

1. LOCATE, CUT AND FRAME ROOF OPENINGS AS SHOWN FOR ALL HVAC EQUIPMENT AND EXHAUST FANS.
2. PROVIDE CONDUIT FOR LINE AND LOW VOLTAGE WIRING, LINE VOLTAGE WIRING SWITCHES, AND FINAL CONNECTIONS.
3. ANY EQUIPMENT THAT IS SUBSTITUTED SHALL FIT IN THE SPACE PROVIDED WITH ADEQUATE ROOM FOR SERVICING, INCLUDING SUBSTITUTE EQUIPMENT NAMED IN THE SPECIFICATIONS. SUBMIT A 1/4" SCALE DRAWING OF ALL EQUIPMENT SUBSTITUTED FOR APPROVAL PRIOR TO INSTALLATION, INCLUDING, BUT NOT LIMITED TO, STRUCTURAL AND ARCHITECTURAL IMPACT, CLEARANCE REQUIREMENTS AND UTILITY REQUIREMENTS.
4. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 15'-0" FROM EXHAUST FANS AND / OR VENTS.
5. HVAC UNITS SHALL BE MOUNTED LEVEL ON FACTORY CURBS OR CONCRETE PADS AND RESTRAINED FOR SEISMIC CATEGORY D AND 170 MPH WIND LOAD.
6. ALL UTILITY PIPING/CONDUIT FOR ROOF MOUNTED EQUIPMENT SHALL RUN UP THROUGH ROOF INSIDE EACH UNIT'S ROOF CURB.
7. OUTDOOR AIR SUPPLY AND EXHAUST SYSTEMS SHALL HAVE MOTORIZED DAMPERS THAT CLOSE WHEN THE SYSTEM IS SHUT OFF, DURING BUILDING WARM-UP, COOL DOWN AND/OR SETBACK.
8. MOTORIZED OUTDOOR AND EXHAUST DAMPERS SHALL HAVE A MAXIMUM LEAK RATE OF 4 CFM PER SQFT @ 1" WG PER AMCA 500-1998, EXCEPT PACKAGED EQUIPMENT SHALL BE 20 CFM/FT @1" WG.

HVAC NOTES

1. CONCEAL ALL DUCTWORK INSIDE WALLS AND/OR ABOVE CEILINGS, UNO.
2. DUCTWORK SHALL BE FABRICATED AND INSTALLED PER SMACNA STANDARDS. SUPPORT DUCT WORK PER CODE. SEAL DUCTWORK PER RS-18, 1/2" SP TO 1" SP SEAL TRANSVERSE JOINTS.
3. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN. DUCT SIZES ARE NET INSIDE DIMENSIONS.
4. DUCTS SHALL BE INSULATED AND SEALED PER GUAM ENERGY CODE. INTERIOR DUCTS SHALL BE INSULATED ABOVE THE BUILDING BARRIER.
5. ALL BRANCH DUCTS FEEDING INDIVIDUAL DIFFUSERS SHALL HAVE DAMPERS AT TAKE-OFFS FOR BALANCING. PROVIDE ACCESS PANELS TO DAMPERS.
6. ALL SUPPLY / RETURN DUCTS SHALL BE RIGID, WITH THE EXCEPTION OF THE LAST 5'-0", WHICH MAY BE FLEX.
7. PROVIDE ANY FRAMING REQUIRED FOR DIFFUSER INSTALLATION IN HARD CEILING.
8. THERMOSTAT TO BE 7 DAY PROGRAMMABLE UNLESS NOTIFIED OTHERWISE. MOUNT THERMOSTAT AT 48" A.F.F..
9. HUMIDITY SENSOR TO BE MOUNTED IN RETURN AIR DUCT OF EACH DUCTED A/C UNIT.
10. SMOKE DETECTORS SHALL BE INSTALLED IN RETURN DROP AND SHALL DEACTIVATE THE EQUIPMENT UPON SENSING SMOKE. SMOKE DETECTOR SHALL BE INSTALLED IN RETURN AIR DUCT, PRIOR TO ANY OUTSIDE AIR CONNECTIONS.SMOKE DETECTORS REQUIRED IN ALL SYSTEMS >2000 CFM. ALL AIR MOVING SYSTEMS >2000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SHUTOFF
11. FINAL HVAC SYSTEM TESTING AND BALANCING SHALL BE PERFORMED BY INDEPENDENT AGENT. A RE-TEST IS MANDATORY FOR A FALSE START (I.E. NO POWER UPON AGENT'S ARRIVAL, EQUIPMENT NOT WIRED, ETC.) AND SHALL BE A COST INCURRED BY THE G.C.

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I CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY RESPONSIBLE CONTROL

WILLIAM P. LEE
CERTIFICATE
No. 1445
MECHANICAL
Exp 30 APR 2025
GUAM
PROFESSIONAL ENGINEER

10-20-24

AS DEFINED IN GUAM PUBLIC LAW 30-35, SECTION 32116

PERMIT SET

MCH RENOVATION PROJECT, GMHA 007-2014
GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

PROJECT TITLE:
OWNER: GUAM MEMORIAL HOSPITAL AUTHORITY
SHEET TITLE: MECHANICAL LEGEND, ABBREVIATIONS, NOTES

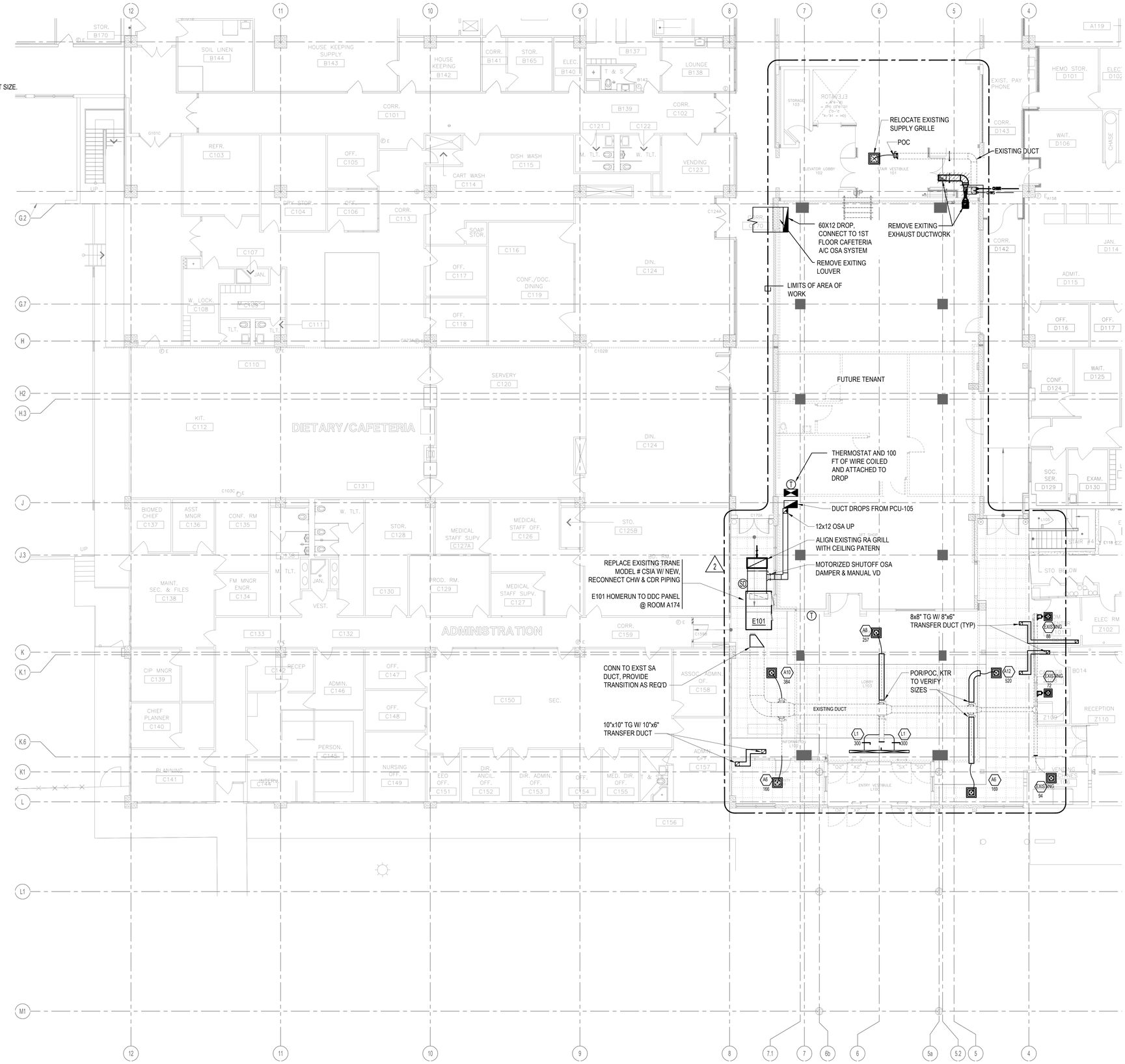
MARK	DATE	DESCRIPTION

DATE	:	2024.10.25
PROJECT NO	:	144052.02
DRAWN BY	:	MRO
CHECKED BY	:	WPL
COPYRIGHT	:	2024 RIM Architects

DWG NO:
M001

CONSTRUCTION NOTES:

1. EXISTING AHU E101 TO BE REPLACED, SEE SCHEDULE FOR EQUIPMENT SIZE.
2. HYGIENICALLY CLEAN EXISTING AHU DUCTWORK NOTED FOR RE-USE, COORDINATE WITH HOSPITAL TO REPLACE EXISTING AHU DUCTING IF NEEDED BY CONSTRUCTION EFFORT.



1 M101 PARTIAL FIRST FLOOR MECHANICAL PLAN
1/8" = 1'-0"

0" 4' 8' 16'

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10-23-24

AS DEFINED IN GUAM PUBLIC LAW 30-35, SECTION 33116

PERMIT SET

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GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

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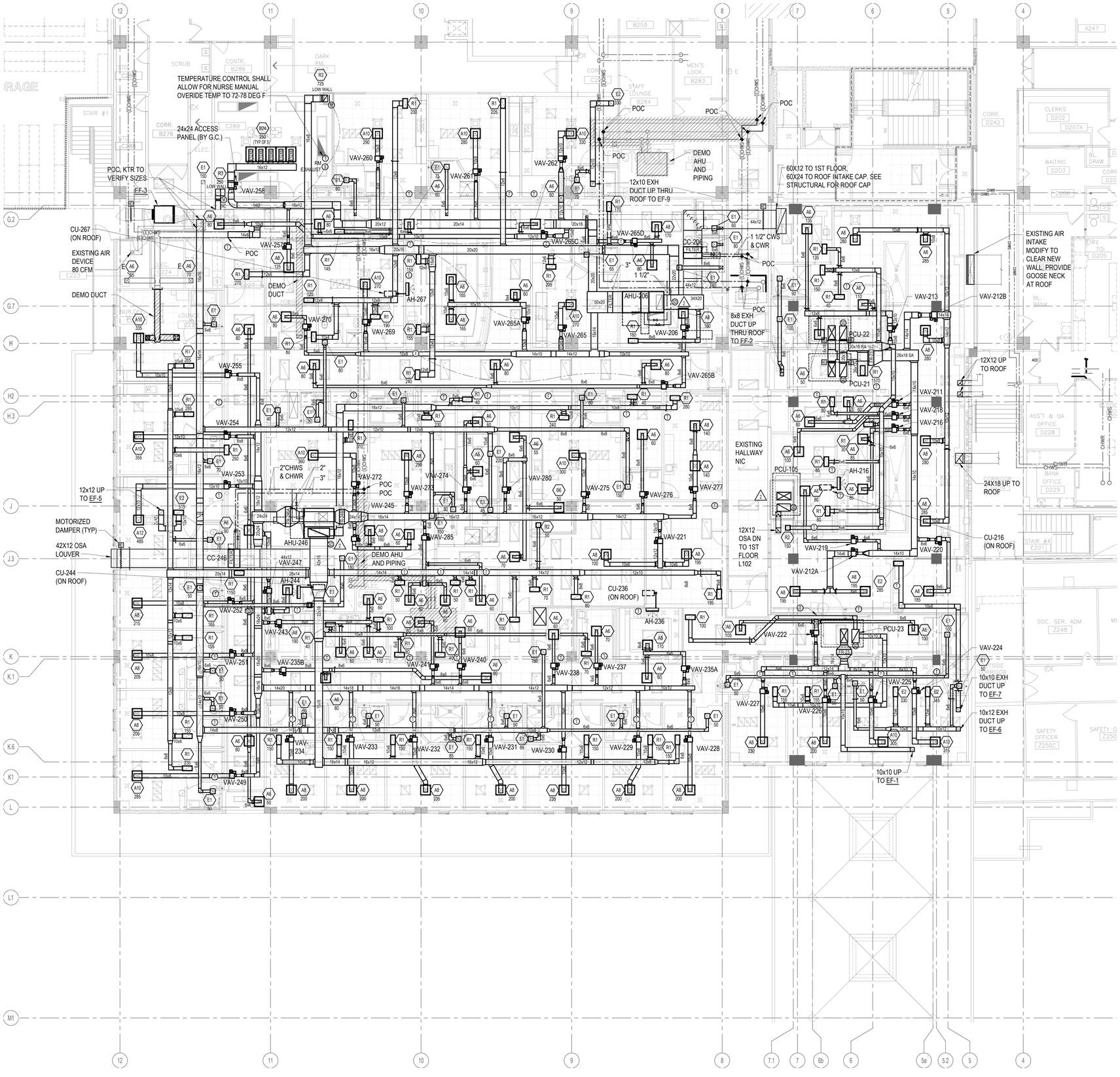

1 M201 PARTIAL SECOND FLOOR MECHANICAL PLAN

1/8" = 1'-0"

0" 4' 8' 16'

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PROJECT TITLE:
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SHEET TITLE: PARTIAL SECOND FLOOR MECHANICAL PLAN

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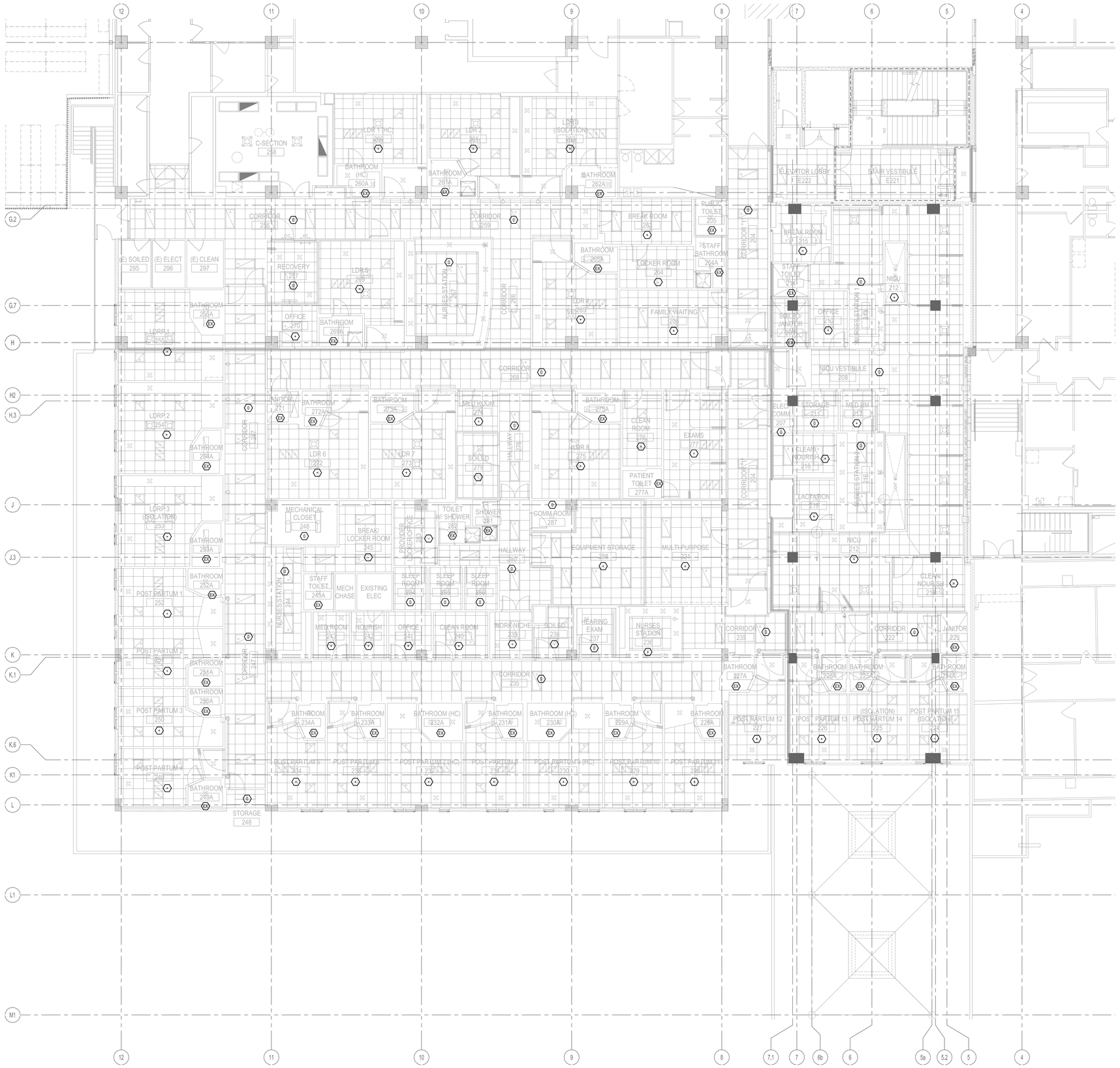

LEGEND

- (++) SUPPLY AIR "HIGHLY" MORE THAN EXHAUST AIR, RETURN AIR, OR BOTH. "HIGHLY" POSITIVE PRESSURE DIFFERENTIAL RELATIVE TO ADJACENT SPACE.
- (+) SUPPLY AIR MORE THAN EXHAUST AIR, RETURN AIR, OR BOTH. POSITIVE PRESSURE DIFFERENTIAL RELATIVE TO ADJACENT SPACE.
- (0) SUPPLY AIR EQUAL TO EXHAUST AIR, RETURN AIR, OR BOTH. NEUTRAL PRESSURE DIFFERENTIAL RELATIVE TO ADJACENT SPACE.
- (-) SUPPLY AIR LESS THAN EXHAUST AIR, RETURN AIR, OR BOTH. NEGATIVE PRESSURE DIFFERENTIAL RELATIVE TO ADJACENT SPACE.
- (--) SUPPLY AIR "HIGHLY" LESS THAN EXHAUST AIR, RETURN AIR, OR BOTH. "HIGHLY" NEGATIVE PRESSURE DIFFERENTIAL RELATIVE TO ADJACENT SPACE.
- (EX) ROOM EXHAUSTED ONLY.

1 / M201A PARTIAL SECOND FLOOR RELATIVE PRESSURIZATION PLAN

1/8" = 1'-0"

0" 4' 8' 16'

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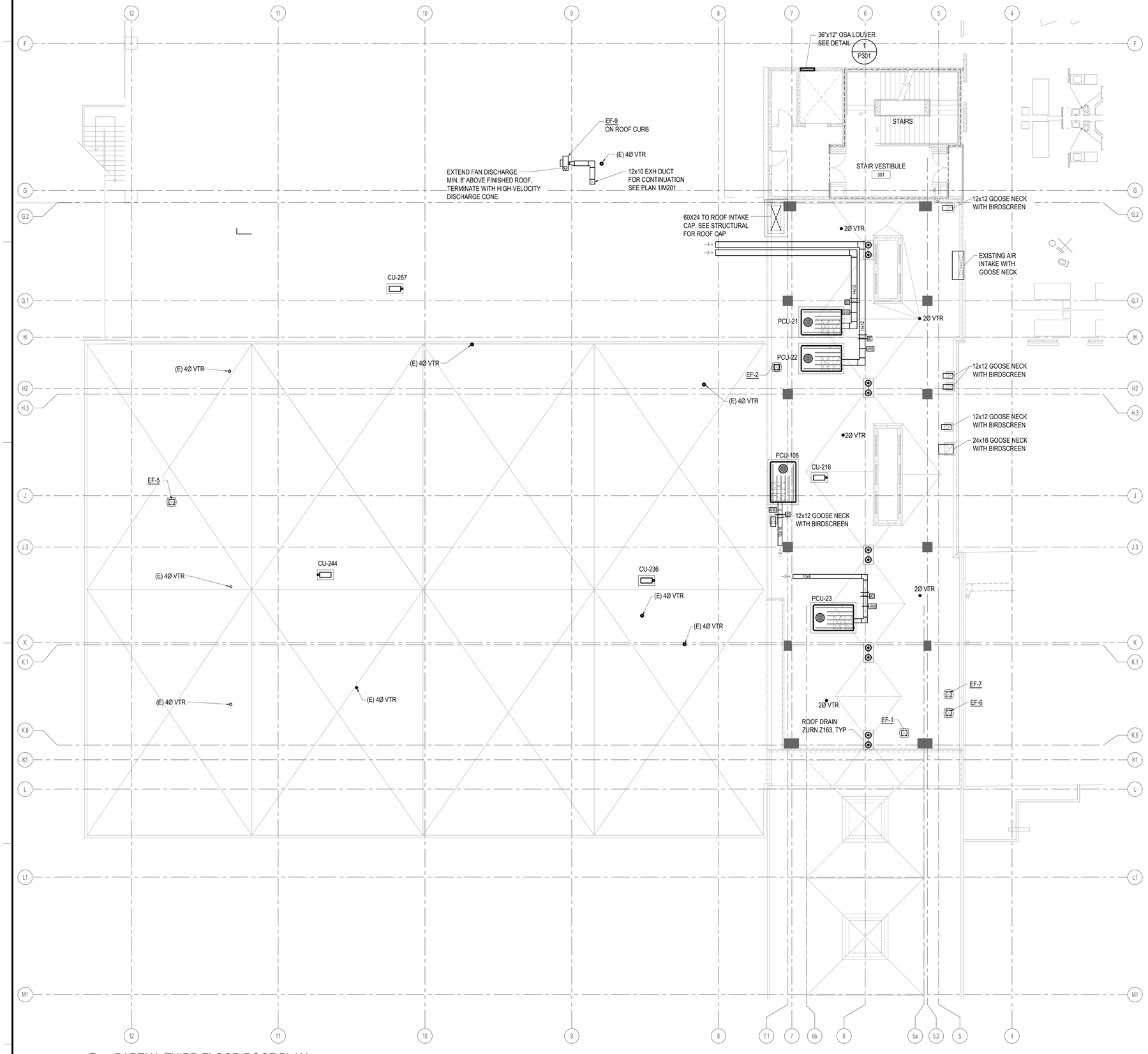
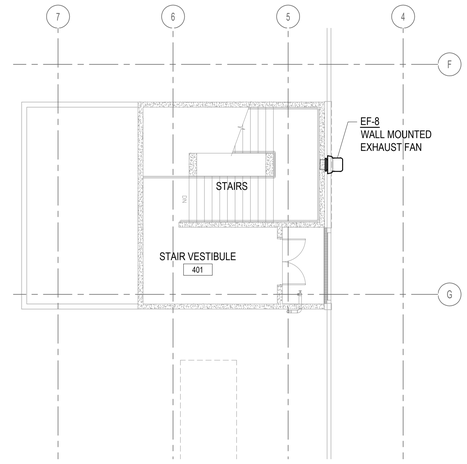


1 M202 — PARTIAL THIRD FLOOR ROOF PLAN
1/8" = 1'-0"

0" 4' 8' 16'



2 M-202 — PARTIAL FIFTH FLOOR MECHANICAL PLAN
1/8" = 1'-0"

0" 4' 8' 16'

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PROJECT TITLE:
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SHEET TITLE: PARTIAL THIRD FLOOR ROOF PLAN

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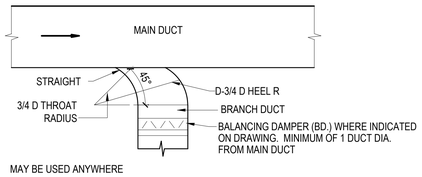
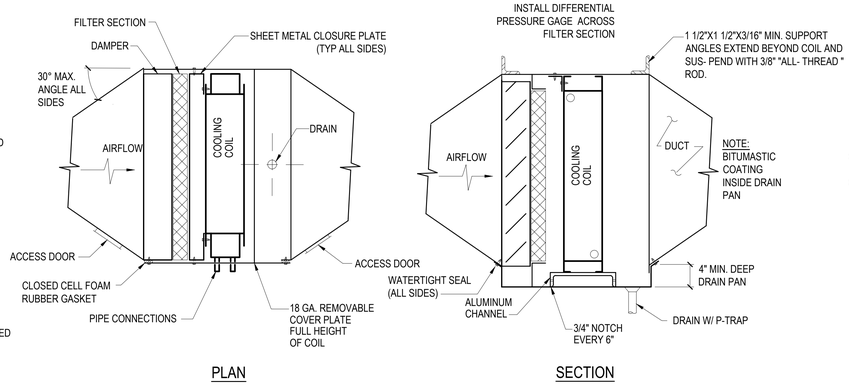
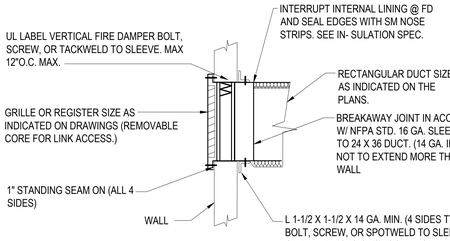


1 M300 BRANCH CONNECTION DETAILS
NOT TO SCALE



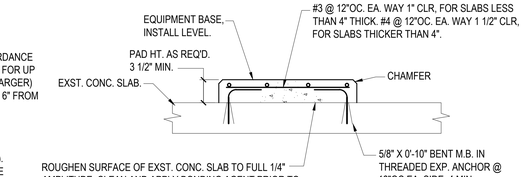
2 M300 DUCT MOUNTED PRE-COOLING COIL DC-1 / DC-2
NOT TO SCALE



NOTES:

1. DAMPER BLADES OUT OF AIRSTREAM.
2. OPENING IN WALL SHALL BE 1/4" MIN. LARGER THAN DAMPER SLEEVE ASSEMBLY.
3. DO NOT SCREW GRILL TO WALL (ATTACH TO SLEEVE).

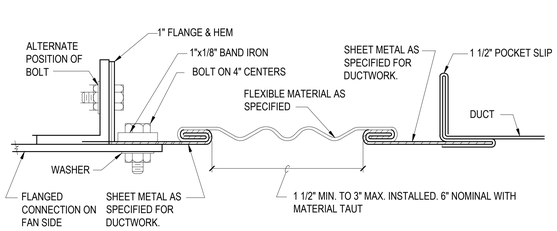
3 M300 FIRE DAMPER DETAIL
NOT TO SCALE



NOTES:

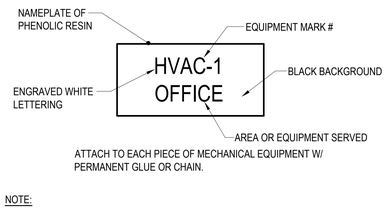
1. PAD SIZE SHALL BE AT LEAST 3" BEYOND THE CENTER OF ALL ANCHOR BOLTS, (OR GREATER) AS SHOWN ON THE PLANS OR AS REQUIRED BY THE MFGR AND APPROVED BY THE ENGINEER.
2. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.

4 M300 EQUIPMENT BASE DETAIL
NOT TO SCALE



RECTANGULAR FLEXIBLE CONNECTION

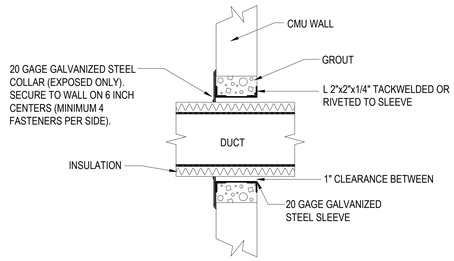
5 M300 AHU DUCT CONNECTION DETAIL
NOT TO SCALE



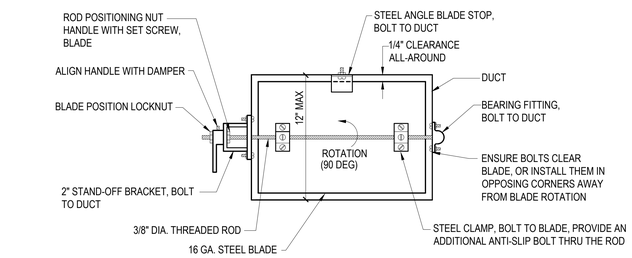
NOTE:

IDENTIFICATION PLATES SHALL BE THREE LAYERS, BLACK-WHITE-BLACK, ENGRAVED TO SHOW WHITE LETTERS ON BLACK BACKGROUND. LETTERS SHALL BE UPPER CASE. IDENTIFICATION PLATES 1 1/2" HIGH AND SMALLER SHALL BE 1/16" THICK, WITH ENGRAVED LETTERING 1/8" HIGH; IDENTIFICATION PLATES LARGER THAN 1 1/2" HIGH SHALL BE 1/8" THICK, WITH ENGRAVED LETTERING OF SUITABLE HEIGHT. IDENTIFICATION PLATES 1 1/2" HIGHER AND LARGER SHALL HAVE BEVELED EDGES.

6 M300 EQUIPMENT NAME PLATE DETAIL
NOT TO SCALE

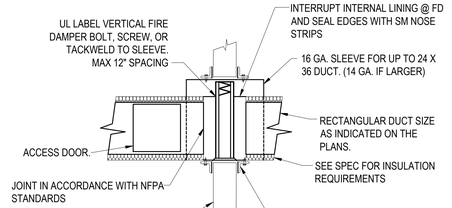


7 M300 DUCT THRU FIRE RATED WALL DETAIL
NOT TO SCALE



NOTES:
1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90° DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12", PROVIDE FACTORY-FABRICATED OPPOSED BLADE DAMPERS

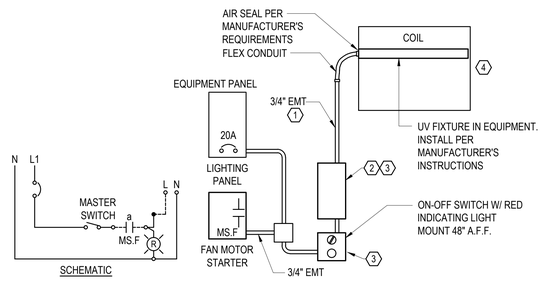
8 M300 MANUAL DAMPER DETAIL
NOT TO SCALE



NOTES:

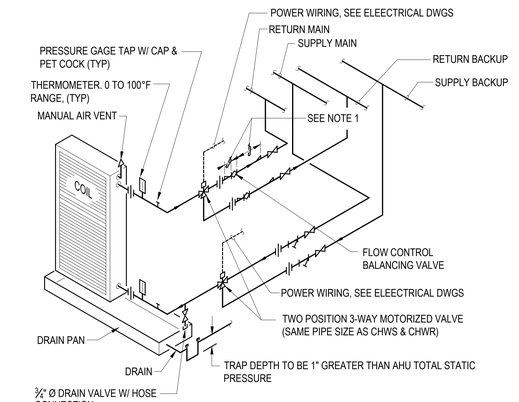
1. DAMPER BLADES OUT OF AIRSTREAM.
2. OPENING IN WALL SHALL BE 1/4" TO 1/2" LARGER THAN DAMPER SLEEVE ASSEMBLY.
3. SLEEVE LENGTH TO EXTEND 3" EACH SIDE OF WALL.

9 M300 FIRE DAMPER DETAIL
NOT TO SCALE



1. CABLE FROM BALLAST BOX TO UV FIXTURE SUPPLIED BY VENDOR (20' LENGTH)
2. MOUNT BALLAST BOX ON WALL
3. LOCATIONS OF DEVICES TO BE DETERMINED IN FIELD.
4. PROVIDE WARNING LABELS ON EQUIPMENT ON THE HAZARD OF UV LIGHTS.

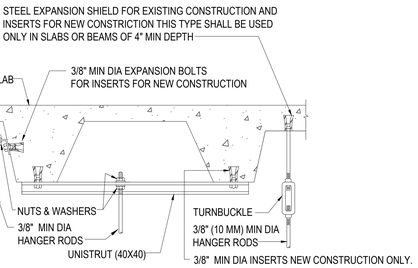
10 M300 UV DISINFECTION UNIT DETAIL
NOT TO SCALE



NOTE:

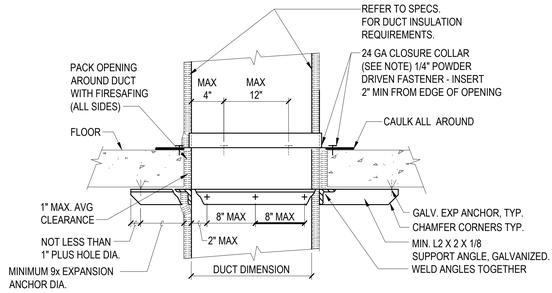
1. THE FLOW CONTROL BALANCING VALVES SHALL BE INSTALLED BY THE CONTRACTOR IN CONFORMANCE WITH VALVE MFGR'S RECOMMENDED SPACING UP/DOWNSTREAM FORM PIPE CHANGES IN DIRECTION AND/OR OTHER VALVES/COMPONENTS IN THE PIPING.
2. FIELD VERIFY LOCATIONS OF MAIN AND BACKUP WATER LINES.
3. FIELD VERIFY CONNECTION SIZE WITH SELECTED COIL

11 M300 CHILLED WATER COIL PIPING DETAIL
NOT TO SCALE — HOSPITAL WITH EMERGENCY BACK-UP SUPPLY APPLICATION

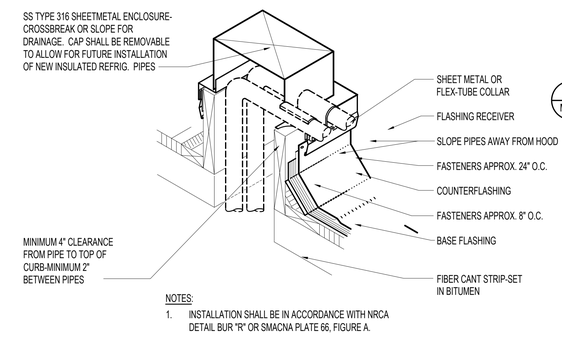


TYPICAL METHOD OF SECURING HANGER RODS IN CONCRETE SLABS AND BEAMS. FOR EQUIPMENT LESS THAN 400 LBS

12 M300 HANGER ATTACHMENT DETAIL
NOT TO SCALE



13 M300 RECTANGULAR DUCT FLOOR PENETRATION
NOT TO SCALE



NOTES:

1. INSTALLATION SHALL BE IN ACCORDANCE WITH NRCA DETAIL BUR "R" OR SMACNA PLATE 66, FIGURE A.

14 M300 REFRIGERANT PIPING THRU ROOF DETAIL
NOT TO SCALE

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WILLIAM P. LEON GUERRERO — CERTIFICATE — No. 1445 — MECHANICAL — Exp 30 APR 2025 — GUAM — PROFESSIONAL ENGINEER

10-20-24

AS DEFINED IN GUAM PUBLIC LAW 30–35, SECTION 32116

PERMIT SET

MCH RENOVATION PROJECT, GMHA 007-2014
GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

PROJECT TITLE: GUAM MEMORIAL HOSPITAL AUTHORITY
OWNER:
SHEET TITLE: MECHANICAL DETAILS

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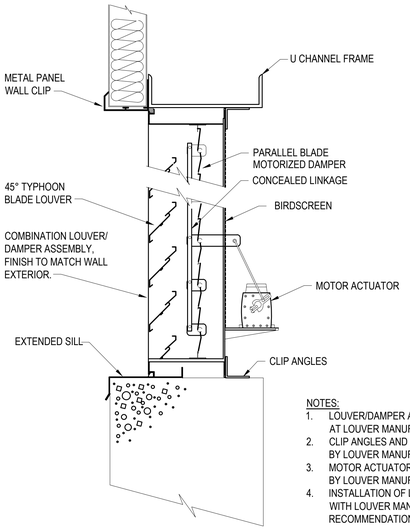
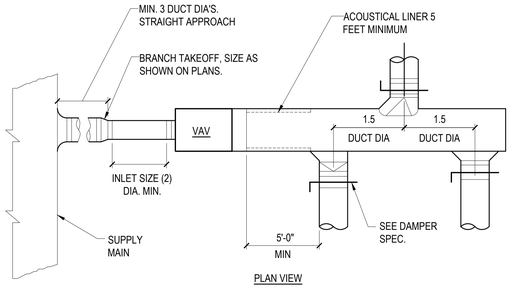
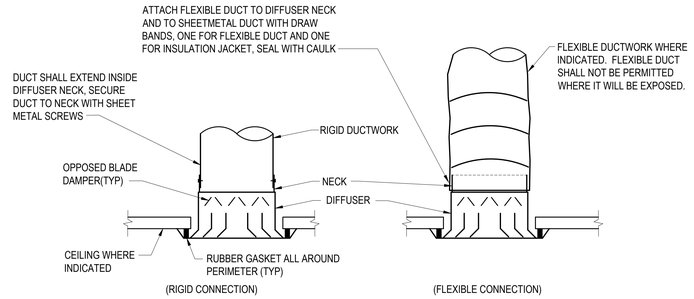


NOTES:
1. LOUVER/DAMPER ASSEMBLIES TO BE ASSEMBLED AT LOUVER MANUFACTURER FACTORY.
2. CLIP ANGLES AND EXTENDED SILL TO BE PROVIDED BY LOUVER MANUFACTURER.
3. MOTOR ACTUATORS TO BE SIZED AND INSTALLED BY LOUVER MANUFACTURER.
4. INSTALLATION OF LOUVER TO BE IN ACCORDANCE WITH LOUVER MANUFACTURER'S RECOMMENDATIONS.

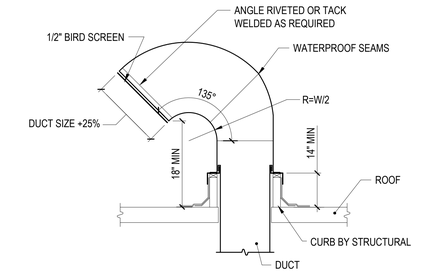
1 M301 OSA LOUVER DETAIL
NOT TO SCALE



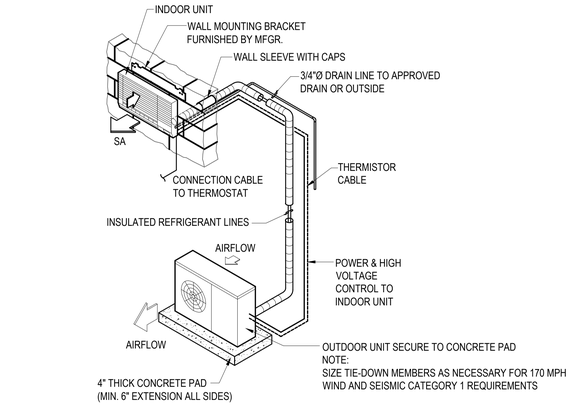
2 M301 VAV INSTALLATION DETAILS
NOT TO SCALE



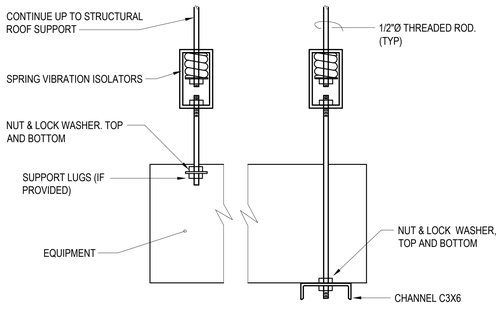
3 M301 DUCT TO DIFFUSER/REGISTER CONNECTION
NOT TO SCALE (TYP. FOR ALL DIFFUSER/REGISTERS)



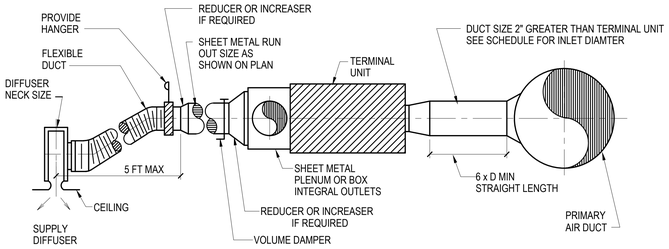
4 M302 GOOSENECK INTAKE EXHAUST DETAIL
NOT TO SCALE



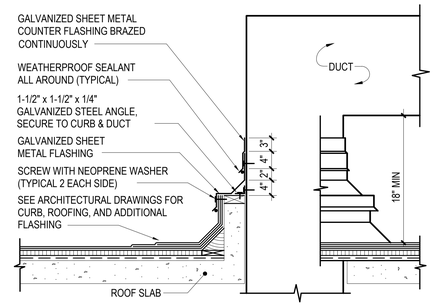
5 M301 DUCTLESS SPLIT SYSTEM DETAIL
NOT TO SCALE



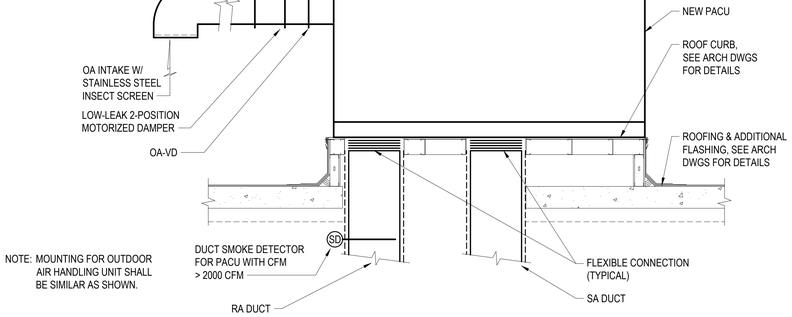
6 M301 SUSPENDED EQUIPMENT SUPPORT DETAIL
NOT TO SCALE



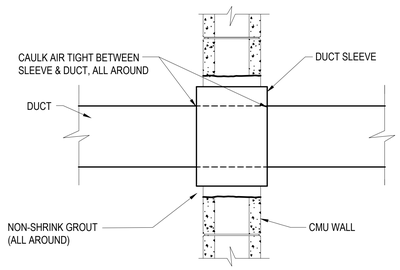
7 M301 TERMINAL UNIT DUCT TAKE-OFF DETAIL
NOT TO SCALE

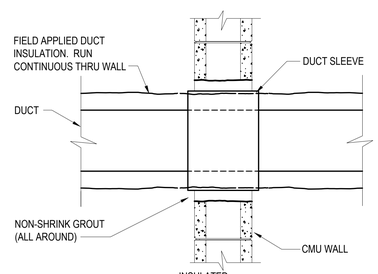


8 M301 DUCT THROUGH ROOF PENETRATION DETAIL
NOT TO SCALE

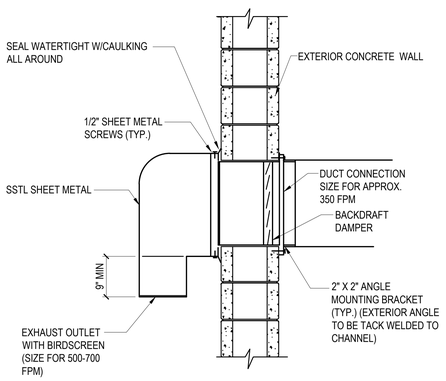


9 M301 PACKAGED AC UNIT ROOFTOP MOUNTING DETAIL
NOT TO SCALE

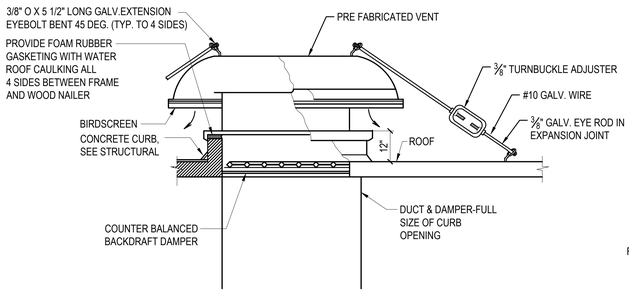




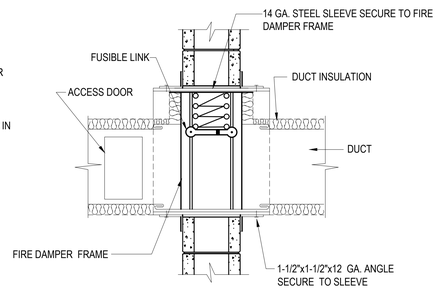
10 M301 DUCT PENETRATION DETAIL
NOT TO SCALE



11 M301 EXHAUST HOOD DETAIL
NOT TO SCALE



12 M301 INTAKE / RELIEF VENT DETAIL
NOT TO SCALE



13 M301 HORIZONTAL AIR FLOW FIRE DAMPER DETAIL
NOT TO SCALE

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AS DEFINED IN GUAM PUBLIC LAW 30-35, SECTION 32116

PERMIT SET

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GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

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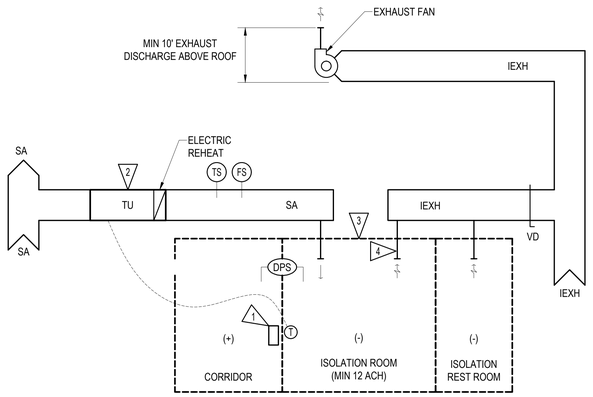
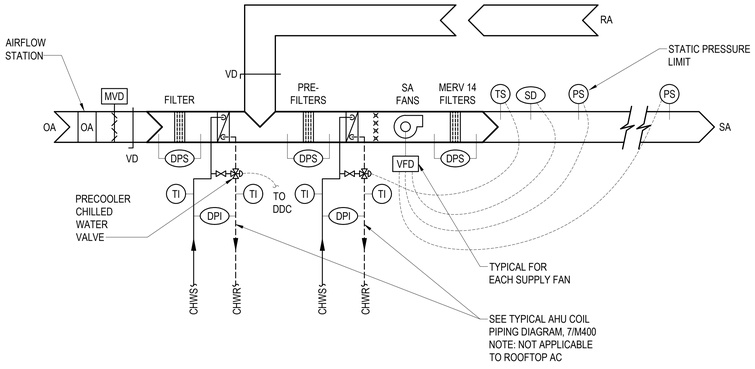


DIAGRAM NOTES:

1. ISOLATION ROOM PRESSURE MONITOR - MINIMUM 0.01" W.C. DIFFERENTIAL.
2. TU WITH HW REHEAT - SET TO MAINTAIN MINIMUM ACH.
3. ISOLATION ROOM ENVELOPE, DOORS, AND PENETRATIONS SHOULD BE SEALED TO LIMIT AIR LEAKAGE (SEE ARCH REQUIREMENTS).
4. EXHAUST GRILLE PLACED OVER PATIENT BED.

1 M400 TYPICAL ISOLATION ROOM DIAGRAM
NOT TO SCALE



2 M400 TYPICAL HOSPITAL AIR HANDLING UNIT AND ROOFTOP A/C DIAGRAM
NOT TO SCALE

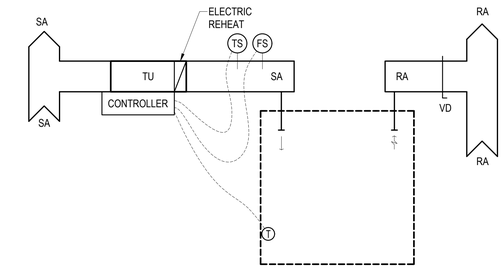


DIAGRAM NOTES:

1. TU SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM SETTINGS TO SATISFY ROOM THERMOSTAT.
2. WHEN TU IS AT MINIMUM DAMPER SETTING AND TEMPERATURE DROPS BELOW SETTING - ROOM THERMOSTAT SHALL CONTROL ELECTRIC REHEAT COIL TO RAISE SUPPLY AIR TEMPERATURE.

3 M400 TYPICAL ZONE WITH TU WITH REHEAT
NOT TO SCALE

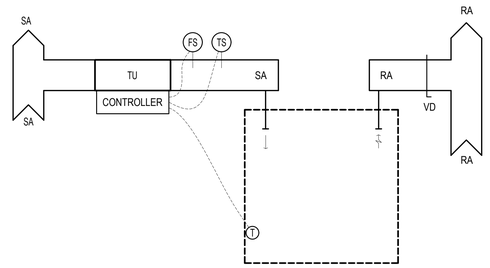
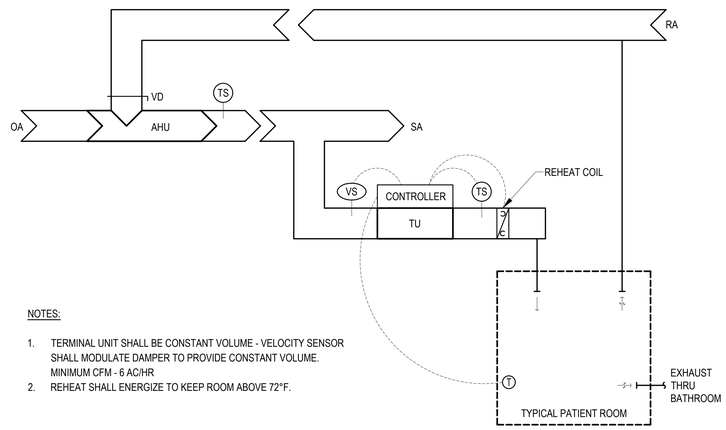


DIAGRAM NOTES:

1. TU SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM SETTINGS TO SATISFY ROOM THERMOSTAT.

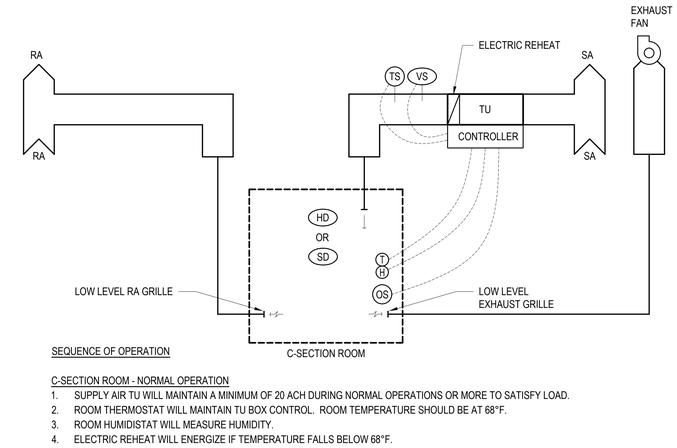
4 M400 TYPICAL ZONE WITH TU
NOT TO SCALE



NOTES:

1. TERMINAL UNIT SHALL BE CONSTANT VOLUME - VELOCITY SENSOR SHALL MODULATE DAMPER TO PROVIDE CONSTANT VOLUME. MINIMUM CFM - 6 AC/HR
2. REHEAT SHALL ENERGIZE TO KEEP ROOM ABOVE 72°F.

5 M400 TYPICAL PATIENT ROOM A/C CONTROL DIAGRAM
NOT TO SCALE

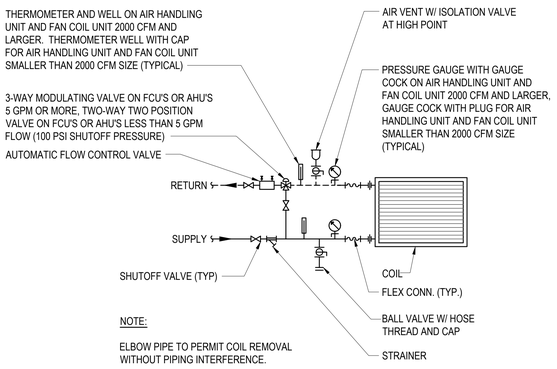


SEQUENCE OF OPERATION

C-SECTION ROOM - NORMAL OPERATION

1. SUPPLY AIR TU WILL MAINTAIN A MINIMUM OF 20 ACH DURING NORMAL OPERATIONS OR MORE TO SATISFY LOAD.
2. ROOM THERMOSTAT WILL MAINTAIN TU BOX CONTROL. ROOM TEMPERATURE SHOULD BE AT 68°F.
3. ROOM HUMIDISTAT WILL MEASURE HUMIDITY.
4. ELECTRIC REHEAT WILL ENERGIZE IF TEMPERATURE FALLS BELOW 68°F.

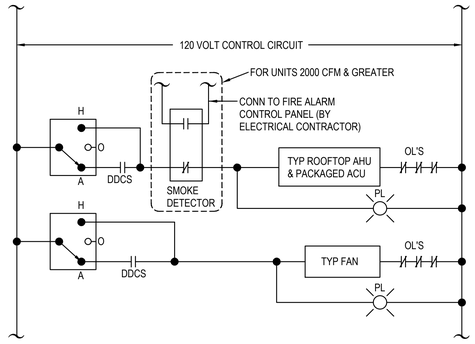
6 M400 OPERATION ROOM A/C CONTROL DIAGRAM
NOT TO SCALE



NOTE:

ELBOW PIPE TO PERMIT COIL REMOVAL WITHOUT PIPING INTERFERENCE.

7 M400 TYPICAL FAN COIL AND AIR HANDLING UNIT COIL PIPING DIAGRAM
NOT TO SCALE



NOTES:

1. ONE-LINE DIAGRAM SHOWN IS SCHEMATIC IN NATURE, CONTRACTOR SHALL INSTALL ADDITIONAL RELAYS/CONTACTS, ETC. AS REQUIRED TO PROVIDE INTERLOCK/SEQUENCE FUNCTIONS INDICATED.
2. INSTALL ALL H-O-A, RELAYS, AND PILOT LIGHTS IN GALVANIZED METAL BOX/PANELS. PILOT LIGHTS SHALL BE GREEN WITH PUSH-TO-TEST FEATURE.
3. LABEL ALL CONTROL COMPONENTS, SWITCHES, RELAYS, ETC. BY NAME AND JUNCTURE.

8 M400 ONE-LINE INTERLOCK DIAGRAM
NOT TO SCALE

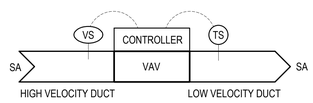
SEQUENCE OF OPERATION

CONTROLLER INFORMATION TO DDCS

1. SUPPLY AIR VELOCITY
2. SUPPLY AIR TEMPERATURE
3. SPACE TEMPERATURE
4. MAXIMUM VELOCITY SET POINT
5. MINIMUM VELOCITY SET POINT
6. COOLING THERMOSTAT SET POINT

CONTROLLER COMMANDS ACCEPTED FROM DDCS

1. COOLING THERMOSTAT SET POINT
2. MAXIMUM VELOCITY SET POINT
3. MINIMUM VELOCITY SET POINT



NOTE:

FOR TERMINAL UNITS DESIGNATED TO BE CONSTANT VOLUME, VELOCITY SENSOR SHALL MODULATE DAMPER TO PROVIDE CONSTANT VOLUME.

9 M400 TYP. VAV AIR TERMINAL UNIT CONTROL DIAGRAM
NOT TO SCALE

CONTROL SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
DPS	DIFFERENTIAL PRESSURE SENSOR		VOLUME DAMPER (VD)
DPS	DIFFERENTIAL PRESSURE INDICATOR (GAUGE)	XXX	DAMPER ACTUATOR & DAMPER
PS	PRESSURE SENSOR		
TS	TEMPERATURE SENSOR		COIL
TI	TEMPERATURE INDICATOR		FILTER BANK
VS	VELOCITY SENSOR		SOUND ATTENUATOR
H	HUMIDISTAT		ULTRAVIOLET LIGHTS
T	ROOM TEMPERATURE SENSOR (T-STAT)		CENTRIFUGAL FAN
HD	HEAT DETECTOR		PROPELLER FAN
SD	SMOKE DETECTOR	VFD	VARIABLE FREQUENCY DRIVE
DSD	DUCT SMOKE DETECTOR		
OS	OCCUPANCY SENSOR		
	3-WAY MOTORIZED VALVE		

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TERMINAL UNIT SCHEDULE

AHU	UNIT NUMBER	TYPE	CV/VAV	AIRFLOW MAX	AIRFLOW MIN	ELECTRICAL VOLTS	ELECTRICAL PHASE	REHEAT (kW)	INLET SIZE (INCHES)	REMARKS
AHU-206	206	SINGLE DUCT, PRESS. IND.	VAV	160	65	277	1	NONE	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	265B	SINGLE DUCT, PRESS. IND.	VAV	240	95	277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	265	SINGLE DUCT, PRESS. IND.	CV	270		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	265A	SINGLE DUCT, PRESS. IND.	VAV	390	155	277	1	NONE	7	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	269	SINGLE DUCT, PRESS. IND.	CV	270		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	270	SINGLE DUCT, PRESS. IND.	VAV	80	30	277	1	NONE	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	265D	SINGLE DUCT, PRESS. IND.	VAV	250	100	277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	262	SINGLE DUCT, PRESS. IND.	CV	330		277	1	2.5	7	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	265C	SINGLE DUCT, PRESS. IND.	VAV	415	165	277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	261	SINGLE DUCT, PRESS. IND.	CV	280		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	260	SINGLE DUCT, PRESS. IND.	CV	290		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	257	SINGLE DUCT, PRESS. IND.	CV	125		277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	258	SINGLE DUCT, PRESS. IND.	CV	1250		277	1	6.5	10	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
AHU-246	255	SINGLE DUCT, PRESS. IND.	CV	335		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	254	SINGLE DUCT, PRESS. IND.	CV	355		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	253	SINGLE DUCT, PRESS. IND.	CV	485		277	1	2.5	7	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	247	SINGLE DUCT, PRESS. IND.	VAV	490	195	277	1	NONE	7	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	252	SINGLE DUCT, PRESS. IND.	VAV	215	85	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	243	SINGLE DUCT, PRESS. IND.	VAV	230	90	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	251	SINGLE DUCT, PRESS. IND.	VAV	205	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	235B	SINGLE DUCT, PRESS. IND.	VAV	160	65	277	1	NONE	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	250	SINGLE DUCT, PRESS. IND.	VAV	205	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	249	SINGLE DUCT, PRESS. IND.	VAV	285	115	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	234	SINGLE DUCT, PRESS. IND.	VAV	200	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	233	SINGLE DUCT, PRESS. IND.	VAV	200	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	232	SINGLE DUCT, PRESS. IND.	VAV	235	95	277	1	1.5	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	231	SINGLE DUCT, PRESS. IND.	VAV	200	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	238	SINGLE DUCT, PRESS. IND.	CV	60		277	1	NONE	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	230	SINGLE DUCT, PRESS. IND.	VAV	235	95	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	237	SINGLE DUCT, PRESS. IND.	CV	70		277	1	NONE	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	229	SINGLE DUCT, PRESS. IND.	VAV	200	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	235A	SINGLE DUCT, PRESS. IND.	VAV	250	100	277	1	NONE	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	228	SINGLE DUCT, PRESS. IND.	VAV	200	80	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	245	SINGLE DUCT, PRESS. IND.	VAV	220	90	277	1	NONE	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	272	SINGLE DUCT, PRESS. IND.	CV	360		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	273	SINGLE DUCT, PRESS. IND.	CV	290		277	1	1.5	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	285	SINGLE DUCT, PRESS. IND.	VAV	180	70	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	274	SINGLE DUCT, PRESS. IND.	CV	120		277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	280	SINGLE DUCT, PRESS. IND.	VAV	175	70	277	1	NONE	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	275	SINGLE DUCT, PRESS. IND.	CV	300		277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	276	SINGLE DUCT, PRESS. IND.	CV	60		277	1	1.0	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	221	SINGLE DUCT, PRESS. IND.	VAV	295	120	277	1	1.5	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	240	SINGLE DUCT, PRESS. IND.	CV	60		277	1	1.0	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	241	SINGLE DUCT, PRESS. IND.	VAV	80	30	277	1	1.5	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	277	SINGLE DUCT, PRESS. IND.	CV	280		277	1	1.5	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
PCU-23	227	SINGLE DUCT, PRESS. IND.	VAV	230	90	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	222	SINGLE DUCT, PRESS. IND.	VAV	205	80	277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	226	SINGLE DUCT, PRESS. IND.	VAV	230	90	277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	225	SINGLE DUCT, PRESS. IND.	CV	305		277	1	1.0	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	224	SINGLE DUCT, PRESS. IND.	CV	315		277	1	1.0	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
PCU-21/ PCU-22	212B	SINGLE DUCT, PRESS. IND.	CV	1410		277	1	5.0	12	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	213	SINGLE DUCT, PRESS. IND.	VAV	295	120	277	1	NONE	6	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	211	SINGLE DUCT, PRESS. IND.	CV	140		277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	216	SINGLE DUCT, PRESS. IND.	CV	170		277	1	1.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	218	SINGLE DUCT, PRESS. IND.	CV	100		277	1	1	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	219	SINGLE DUCT, PRESS. IND.	CV	80		277	1	1	4	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	212A	SINGLE DUCT, PRESS. IND.	CV	390		277	1	2.0	7	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW
	220	SINGLE DUCT, PRESS. IND.	CV	185		277	1	2.0	5	PROVIDE W/ ACCESSORIES 1, 2, 3, 4 NOTED BELOW

ACCESSORIES:
1. DIGITAL CONTROLS
2. NON-POROUS SEALED LINER
3. DISCONNECT SWITCH
4. THERMOSTAT

AIR TERMINAL SCHEDULE

TAG	PURPOSE	NECK SIZE (IN.)	FACE SIZE (IN.)	MAXIMUM CFM	COLOR	BORDER TYPE	REMARKS
A6	SUPPLY	6X6	24X24	200	WHITE	TYPE 3 -LAY IN	T-BAR
A8	SUPPLY	8X8	24X24	300	WHITE	TYPE 3 -LAY IN	T-BAR
A10	SUPPLY	10X10	24X24	400	WHITE	TYPE 3 -LAY IN	T-BAR
A12	SUPPLY	12x12	24x24	600	WHITE	TYPE 3 -LAY IN	T-BAR
A24	SUPPLY	48x24	48x24	300	WHITE	BORDER 1	VERTICAL LAMINAR FLOW
B6	SUPPLY	6x6		100	WHITE	TYPE 1 -SURFACE	
B12	SUPPLY	12x12		650	WHITE	TYPE 1 -SURFACE	
L1	SUPPLY	10	48x5	300	WHITE	BORDER 11	SINGLE SLOT
R1	RETURN	10X22	12x24	2000	WHITE	TYPE 3 -LAY IN	T-BAR
R2	RETURN	12x12	15x15	500	WHITE	TYPE 1 -SURFACE	
R3	RETURN	16X24	16X24	1400	WHITE	BORDER 1	
E1	EXHAUST	8X8	-	200	WHITE	TYPE 1 -SURFACE	
E2	EXHAUST	10X22	12x24	2000	WHITE	TYPE 3 -LAY IN	T-BAR

FAN SCHEDULE

MARK	CFM	ESP	MOTOR DATA HP (W)	MOTOR DATA RPM	MOTOR DATA VOLT/PH	DRIVE TYPE	CONFIGURATION	DAMPER TYPE	DAMPER SIZE	LOCATION	NOTES
EF-1	200	0.5	1/6	1308	120/1	DIRECT	DOWNBLAST	1	10x8	NICU WARD TOILET	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-2	190	0.5	1/6	1307	120/1	DIRECT	DOWNBLAST	1	8x8	POST PARTUM 15	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-3	2965	0.75	1	1245	120/1	BELT	HORIZONTAL	1	22x19	CORRIDOR 256	
~~EF-4~~	~~570~~	~~0.5~~	~~1/8~~	~~806~~	~~120/1~~	~~BELT~~	~~DOWNBLAST~~	~~1~~	~~15x15~~	~~LDR 3~~	
EF-5	585	0.5	1/6	1463	120/1	DIRECT	DOWNBLAST	1	12x12	LDRP 3	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-6	775	0.5	1/6	1520	120/1	DIRECT	DOWNBLAST	1	12x12	POST PARTUM 15	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-7	285	0.5	1/6	1333	120/1	DIRECT	DOWNBLAST	1	12x12	NICU NURSE STATION 2	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-8	1800	0.375	1/2	1000	120/1	DIRECT	SIDEWALL	1	15x15	STAIRWELL	PROVIDE WITH EC MOTOR AND SPEED CONTROLLER
EF-9	400	0.375	1/2	1231	120/1	DIRECT	UTILITY SET, VERTICAL DISCHARGE	1	14x14	ROOF	PROVIDE ON ROOFTOP CURB, COAT W/ HERESITE COATING

DAMPER TYPE:
1. MOTORIZED DAMPER
2. BACKDRAFT DAMPER AND INSECT SCREEN

FILTER RACK SCHEDULE

MARK #	SERVICE	AIRFLOW	FILTER TYPE	PRESS. DROP	SIZE (WxDxH)	OPR WT (LB)	NOTES
FR-246A	AHU-246	5125	6" THK MERV 14	0.8	48"x12"x39.5"	180	1,2
FR-246B	AHU-246	2250	6" THK MERV 14	0.8	36"x12"x27.3"	155	1,2
FR-21/22	PCU-21 PCU-22	2770	6" THK MERV 14	0.8	48"x12"x39.5"	180	1,2
FR-23	PCU-23	1285	6" THK MERV 14	0.8	36"x12"x27.3"	155	1,2

NOTES
1) DIFFERENTIAL PRESSURE SENSOR
2) TYPE 304 STAINLESS STEEL CONSTRUCTION, FACTORY INSULATED

SPLIT SYSTEM PACKAGED SCHEDULE

MARK#	TONNAGE	COOLING CAPACITY (MBTU)	MCA/ MOCP	VOLTAGE /PHASE	OPR WT (LB)	NOTES
CU-244	0.8	9	6/15	208/1	66	2
AH-244					20	1
CU-236	0.8	9	6/15	208/1	66	2
AH-236					20	1
CU-216	0.8	9	6/15	208/1	66	2
AH-216					20	1
CU-267	1.0	12	10/15	208/1	72	2
AH-267					25	1

NOTES
1) REMOTE 7 DAY PROGRAMMABLE THERMOSTAT
2) REFRIGERANT: R-410A

VARIABLE AIR VOLUME (VAV) AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	TOTAL CAPACITY (BUTH)	SENS. CAPACITY (BTUH)	LATENT CAPACITY (BTUH)	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	COIL FACE VELOCITY (FPM)	ENT. AIR TEMP. db (°F)	ENT. AIR TEMP. wb (°F)	CHILLED WATER ENT. (°F)	CHILLED WATER LVG. (°F)	CHILLED WATER GPM	CHILLED WATER P.D. (FT.W.G.)	FILTER TYPE	FILTER MERV	FILTER AREA (SQ.FT.)	TOTAL S.P. (IN. W.G.)	FAN RPM	ELECTRICAL hp	ELECTRICAL VOLTS	ELECTRICAL PHASE	OPER. WEIGHT (LBS)	REMARKS
AHU-206	FAMILY WAITING 206	64,000	40,900	23,100	4350	1530	550 (max)	77.7	67.7	44.0	54.0	12.8	10.0 (max)	2" THK THROWAWAY (PREFILTER SECTION)	8	11.1	4.25	1801	7.5	208	3	1850	PROVIDE WITH DOUBLE-WALL SOLID PANELS, UV LAMPS, DUCT SMOKE DETECTOR, VARIABLE FREQUENCY DRIVE, PREMIUM EFIC. MOTOR, DUCT SMOKE DETECTOR, SPRING ISOLATORS, STARTER & DISCONNECT
AHU-246	MECHANICAL CLOSET 246	125,300	87,800	37,500	7375	2935	550 (max)	78.4	68.6	44.0	54.0	25.1	10.0 (max)	2" THK THROWAWAY (PREFILTER SECTION)	8	28.9	4.25	1765	15	208	3	2250	PROVIDE WITH DOUBLE-WALL SOLID PANELS, UV LAMPS, DUCT SMOKE DETECTOR, VARIABLE FREQUENCY DRIVE, PREMIUM EFIC. MOTOR, DUCT SMOKE DETECTOR, SPRING ISOLATORS, STARTER & DISCONNECT
E101	1ST FLOOR	92,940	62,420	30,520	2350	250	550 (max)	80.0	67.0	44.0	54.0	18.6	10.0 (max)	2" THK THROWAWAY	8	10.04	2.00	--	1	208	3	1600	PROVIDE WITH DOUBLE-WALL SOLID PANELS, UV LAMPS, DUCT SMOKE DETECTOR, VARIABLE FREQUENCY DRIVE, PREMIUM EFIC. MOTOR, DUCT SMOKE DETECTOR, SPRING ISOLATORS, STARTER & DISCONNECT
CC-206	LOCKER ROOM 264	81,600	32,640	48,960	1530	1530	500 (max)	87.2	78.6	44.0	54.0	16.3	10.0 (max)	2" THK THROWAWAY	8	4.44	--	--	--	--	--	650	COIL SHALL BE COATED WITH CORROSION-INHIBITING COATING, UV LAMPS, BLYGOLD POLU-AL OR APPROVED EQUAL
CC-246	CORRIDOR 247	156,500	62,580	93,920	2935	2935	500 (max)	87.2	78.6	44.0	54.0	31.3	10.0 (max)	2" THK THROWAWAY	8	7.84	--	--	--	--	--	850	COIL SHALL BE COATED WITH CORROSION-INHIBITING COATING, UV LAMPS, BLYGOLD POLU-AL OR APPROVED EQUAL

VARIABLE AIR VOLUME (VAV) PACKAGED AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	LOCATION	TOTAL CAPACITY (BUTH)	SENS. CAPACITY (BTUH)	LATENT CAPACITY (BTUH)	AMBIENT AIR TEMP. (°F)	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	ENT. AIR TEMP. db (°F)	ENT. AIR TEMP. wb (°F)	EVAPORATOR FAN Ext. S.P. (IN. W.G.)	EVAPORATOR FAN RPM	EVAPORATOR FAN hp	EVAPORATOR FAN FLA	CONDENSER FAN QTY	CONDENSER FAN AIRFLOW (CFM)	CONDENSER FAN RPM	CONDENSER FAN hp	CONDENSER FAN FLA	COMPRESSOR QTY	COMPRESSOR kW	COMPRESSOR RPM	COMPRESSOR RLA EACH	COMPRESSOR LRA EACH	VOLTS	PHASE	MOCP	EER	FILTER TYPE	FILTER MERV	FILTER AREA (SQ.FT.)	OPER. WEIGHT (LBS)	REMARKS
PCU-105	ROOF	120,000	87,000	33,000	95.0	3200	400	77.0	66.0	1.3	--	3.0	--	3	10,500 (TOTAL)	1050	1/2	--	2	--	--	9.0	70.0	480	3	35	10.8	2" THK THROWAWAY (PREFILTER SECTION)	8			PROVIDE WITH SEISMICALLY SECURED ROOFTOP CURB, UV LAMPS, CORROSION-INHIBITING COATING ON CONDENSER COIL & CABINET, DUCT SMOKE DETECTOR, FUSED DISCONNECT AND STARTER
PCU-21	ROOF	106,700	58,200	48,500	95.0	2770	750	78.3	69.1	1.25	--	2.0	--	2	7000 (TOTAL)	1100	1/4	--	2	--	--	8.3	62.5	480	3	30	11.0	2" THK THROWAWAY (PREFILTER SECTION)	8	11.1	925	PROVIDE WITH SEISMICALLY SECURED ROOFTOP CURB, UV LAMPS, CORROSION-INHIBITING COATING ON CONDENSER COIL & CABINET, DUCT SMOKE DETECTOR, FUSED DISCONNECT AND STARTER
PCU-22	ROOF	106,700	58,200	48,500	95.0	2770	750	78.3	69.1	1.25	--	2.0	--	2	7000 (TOTAL)	1100	1/4	--	2	--	--	8.3	62.5	480	3	30	11.0	2" THK THROWAWAY (PREFILTER SECTION)	8	11.1	925	PROVIDE WITH SEISMICALLY SECURED ROOFTOP CURB, UV LAMPS, CORROSION-INHIBITING COATING ON CONDENSER COIL & CABINET, DUCT SMOKE DETECTOR, FUSED DISCONNECT AND STARTER
PCU-23	ROOF	39,800	24,200	15,600	95.0	1285	925	83.6	74.5	1.25	--	1.0	--	1	3500	825	1/8	--	1	--	--	7.1	45.0	480	3	15	13.0 SEER	2" THK THROWAWAY (PREFILTER SECTION)	8	5.56	475	PROVIDE WITH SEISMICALLY SECURED ROOFTOP CURB, UV LAMPS, CORROSION-INHIBITING COATING ON CONDENSER COIL & CABINET, FUSED DISCONNECT AND STARTER

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I CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY RESPONSIBLE CONTROL

WILLIAM P. LEE
CERTIFICATE No. 1445
MECHANICAL
Exp. 30 APR 2025
GUAM
PROFESSIONAL ENGINEER

10-20-24

AS DEFINED IN GUAM PUBLIC LAW 30-35, SECTION 32116

PERMIT SET

PROJECT TITLE: **MCH RENOVATION PROJECT, GMHA 007-2014**
GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

OWNER: GUAM MEMORIAL HOSPITAL AUTHORITY

SHEET TITLE: MECHANICAL SCHEDULES

MARK	DATE	DESCRIPTION

DATE	:	2024.10.25
PROJECT NO	:	144052.02
DRAWN BY	:	GCK
CHECKED BY	:	WPL
COPYRIGHT	:	

DWG NO:
M401
-

DDCS POINT SCHEDULE

EQUIPMENT DESCRIPTION	LOCATION OR SERVICE	DRAWING REFERENCE	COMMANDS: START/STOP	COMMANDS: RESET	BINARY INPUTS: STATUS	BINARY INPUTS: FIRE STAT	BINARY INPUTS: SMOKE DETECTOR	BINARY INPUTS: ALARM (REMARK 1)	BINARY INPUTS: TEMPERATURE	ANALOG INPUTS: INDIVIDUAL TIME SCHEDULE	ANALOG INPUTS: CWS TEMP RESET	ANALOG INPUTS: CHS TEMP RESET	ANALOG INPUTS: CHS TEMPERATURE	ANALOG INPUTS: CHR TEMPERATURE	ANALOG INPUTS: CWS TEMPERATURE	ANALOG INPUTS: CWR TEMPERATURE	ANALOG INPUTS: CHS PRESSURE	ANALOG INPUTS: CHR PRESSURE	ANALOG INPUTS: CWS PRESSURE	ANALOG INPUTS: CWR PRESSURE	ANALOG INPUTS: AMPERES	ANALOG INPUTS: KILOWATTS DEMAND	ANALOG INPUTS: CHW FMS GPM	ANALOG INPUTS: CDW FMS GPM	ANALOG INPUTS: INLET PRESSURE	ANALOG INPUTS: OUTLET PRESSURE	ANALOG INPUTS: GPM FLOW	ANALOG INPUTS: ROOM TEMPERATURE	ANALOG INPUTS: SA TEMPERATURE	ANALOG INPUTS: RA TEMPERATURE	ANALOG INPUTS: OA WB TEMPERATURE	ANALOG INPUTS: OA DB TEMPERATURE	ANALOG INPUTS: FMS (TURBINE)	ANALOG INPUTS: RELATIVE HUMIDITY %	ANALOG INPUTS: STATIC PRESSURE	ANALOG INPUTS: OA AIR FLOW STATION	ANALOG INPUTS: CHW VALVE INPUT	ANALOG INPUTS: EMERGENCY PUSH-BUTTON	ANALOG INPUTS: LIQUID LEVEL SENSOR	ANALOG INPUTS: STEAM PRESSURE	ANALOG INPUTS: DIFFERENTIAL PRESS GAUGE	ANALOG INPUTS: HW TEMPERATURE	ANALOG INPUTS: HWR TEMPERATURE	ANALOG INPUTS: RHW PRESSURE	ANALOG INPUTS: RHWR PRESSURE	VARIABLE FREQUENCY DRIVE
VFD AIR HANDLER UNITS	VARIES		●	4	●		6	●		●				●	●		2	●			●							●		●	●	●		●	8	●				●						3
UV-C LAMPS	VARIES				●			●																																						
EXHAUST FAN	VARIES		●		●			●		●																																				
FAN COIL UNITS	VARIES		●		●		6	●		●																				●															
REHEAT COILS	VARIES		●	7				●																											●										
VAV TERMINAL UNITS (REMARK 5)	VARIES																																												
ROOFTOP PACKAGED AC	ROOF		●	4	●		6	●		●											●										●	●				●	8					●					3

DDCS NOTES:

1. NEW DDCS SYSTEM SHALL BE FULLY COMPATIBLE AND INTEGRATE EXISTING CARRIER SYSTEM.
2. THE FOLLOWING DDCS FUNCTIONS SHALL BE FULLY FUNCTIONAL AND CONNECTED TO ALL MECHANICAL EQUIPMENT. PROVIDE SENSORS, THERMOSTATS, TRANSDUCERS AND OTHER CONTROL DEVICES AS REQUIRED AND CONNECT TO DDCS:
   - A. ENERGY MANAGEMENT
   - B. LOAD MANAGEMENT
   - C. WEEKLY SCHEDULING
   - D. HVAC MANAGEMENT
   - E. SUPPLY AIR RESET
3. 120V POWER AND CONTROL POWER REQUIRED FOR ALL DDCS EQUIPMENT, CONTROL PANELS, CONTROLLERS, ACTUATORS AND DEVICES ETC., IS THE DDCS SUBCONTRACTOR'S RESPONSIBILITY. COORDINATE WITH ELECTRICAL SUBCONTRACTORS. PROVIDE LOCAL UPS FOR ALL MAJOR CONTROLLERS. VAV TERMINAL UNIT 120 VOLT POWER BY DIVISION 26.
4. NOT ALL CONTROL AND MONITOR POINTS ARE SHOWN ON DDCS POINT LIST. INCORPORATE IN DDCS OTHER MONITORING AND CONTROL POINTS THAT MAY BE SHOWN ELSEWHERE.

REMARKS:

1. ALARM AT WORKSTATION IF STATUS IS DIFFERENT FROM COMMAND. PROVIDE ADDITIONAL ALARM WHERE INDICATED.
2. CHW DIFFERENTIAL PRESSURE AND RESET.
3. ALL OUTPUT AND INPUT OF VFD CONTROL PANEL (SEE SPEC).
4. RESET SA DISCHARGE TEMPERATURE & DUCT STATIC PRESSURE.
5. SEE DETAIL 9/M400.
6. CONNECT TO FIRE ALARM SYSTEM.
7. CONTROL ON/ OFF AND STAGES.
8. AIR FLOW STATION.

1

ROOM PRESSURE MONITOR

MARK	LOCATION	SERVICE	PRESSURE RANGE (IN WG)	SETPOINT (IN WG)	LOW ALARM (IN WG)	HIGH ALARM (IN WG)	VOLTS	PHASE	REMARKS
PM-1, PM-2, PM-3, PM-4	LDR 3 ISOLATION RM (262) POST PARTUM 14 (225) POST PARTUM 15 (224) C-SECTION (258)	ISOLATION (AII) ISOLATION (AII) ISOLATION (AII) OPERATING ROOM	+/- 0.25 IN WG	-0.02 -0.02 -0.02 +0.02	> -0.01 > -0.01 > -0.01 < +0.01	N/A	24	1	WALL MOUNTED DIGITAL DISPLAY WITH VISUAL ALARM IN CRITICAL CARE SPACE AND ALARM INDICATION LIGHT OUTSIDE THE ROOM. +/- 0.5% FULL SCALE ACCURACY, ADJUSTABLE DOOR ALARM DELAY, WHITE WALL MOUNTED PORTRAIT FACEPLATES, ANALOG OUTPUT FOR DDC SYSTEM MONITORING. PROVIDE ALL ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION. 24 VAC / 2 WATTS LOW VOLTAGE POWER TO EACH PRESSURE MONITOR, ELECTRICAL TO PROVIDE 120V/1PH CIRCUITS TO PRESSURE MONITOR AS REQUIRED. SETRA LITE OR EQUAL.

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WILLIAM P. LEE — CERTIFICATE — No. 1445 MECHANICAL — Exp 30 APR 2025 — GUAM — PROFESSIONAL ENGINEER

10-23-24

AS DEFINED IN GUAM PUBLIC LAW 30-35, SECTION 32116

PERMIT SET

MCH RENOVATION PROJECT, GMHA 007-2014
GMHA FAMILY BIRTH CENTER
850 GOVERNOR CAMACHO ROAD, OKA, TAMUNING, GUAM 96913

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OWNER: GUAM MEMORIAL HOSPITAL AUTHORITY
SHEET TITLE: MECHANICAL DDCS POINT SCHEDULE

MARK	DATE	DESCRIPTION
DATE	:	2024.10.25
PROJECT NO	:	144052.02
DRAWN BY	:	GCK
CHECKED BY	:	WPL

DWG NO: M402