EXHIBIT E-7

MECHANICAL PLANS

FOR

SAN BERNARDINO COUNTY

PACIFIC VILLAGE PLATINUM CAMPUS, PACIFIC VILLAGE SUBSTANCE USE DISORDER PROGRAM, AND CDH PACIFIC VILLAGE CAMPUS EXPANSION DESIGN-BUILD PROJECT

PROJECT NUMBER 10.10.1533, 10.10.1380, AND 10.10.1671

MECHANICAL NOTES

SCOPE OF WORK

1. THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, AND FOR THE INSTALLATION OF ALL HEATING AND COOLING EQUIPMENT, PIPING AND ALL DUCTWORK, GRILLES, REGISTERS, ETC.,INCLUDING ALL CONNECTIONS TO EACH SYSTEM AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEM, WHETHER SPECIFICALLY CALLED OUT OR NOT.
2. SPECIAL INSPECTIONS: WHERE THE PLANS INDICATE SPECIAL INSPECTIONS AND REPORT, OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ), THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, HIRE AN INDEPENDENT THIRD PARTY INSPECTOR OR TESTING AGENCY TO PERFORM THE REQUIRED INSPECTIONS FOR THE TYPES OF WORK REQUIRED OR IDENTIFIED ON THE SPECIAL INSPECTION FORM. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE REGISTERED DESIGN PROFESSIONAL ENGINEER, PROVIDING TEST RESULTS AND STATING WHETHER THE ITEMS REQUIRING SPECIAL INSPECTION WERE IN COMPLIANCE WITH THE INSPECTION REQUIREMENTS. PROVIDE ADDITIONAL COST FOR ENGINEER'S SEALED LETTER OF APPROVAL.

COORDINATION

1. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS. COORDINATE WORK WITH ALL TRADES TO AVOID INTERFERENCE. INSTALLED HVAC WORK WHICH INTERFERES WITH THE WORK OF OTHER TRADES DUE TO LACK OF COORDINATION SHALL BE RE-INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF EQUIPMENT, PARTITIONS, WALLS, AND GENERAL CONSTRUCTION.
3. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH OTHER TRADES AFFECTED BY EACH OTHERS WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL FIELD CONDITIONS WHICH MAY AFFECT HIS WORK BEFORE SUBMITTING BIDS.
5. PERFORMANCE OF ALL WORK SHALL BE SCHEDULED AS APPROVED BY THE OWNER. AVOID INTERFERENCE WITH FUNCTIONS IN OTHER PARTS OF THE FACILITY, AND COORDINATE WITH THE WORK OF OTHER TRADES. SERVICES SHALL NOT BE INTERRUPTED WITHOUT WRITTEN PRIOR APPROVAL OF THE OWNER.
6. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM THE ARCHITECT AND THE STRUCTURAL ENGINEER.
7. PROTECT EXISTING BUILDING STRUCTURE AND GROUNDS FROM DAMAGE WHICH MAY OCCUR DURING DEMOLITION WORK. ANY DAMAGE TO THE EXISTING FACILITIES SHALL BE REPAIRED, REPLACED, OR RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
8. SPACE ABOVE CEILINGS IS CRITICAL - THE CONTRACTOR SHALL VERIFY SPACE ABOVE CEILING & COORDINATE WITH PLUMBING, ELECTRICAL, STRUCTURAL, FIRE PROTECTION, ARCHITECTURAL, AND ALL OTHER TRADES INVOLVED BEFORE COMMENCEMENT OF WORK.

CODES AND PERMITS

1. ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH ALL APPLICABLE LAWS, CODES, RULES AND REGULATIONS, REQUIRED BY CITY, COUNTY AND STATE, AS WELL AS FEDERAL REQUIREMENTS.
2. COMBUSTIBLE MATERIALS SHALL NOT BE USED IN A NON-COMBUSTIBLE BUILDING AS DEFINED BY THE BUILDING CODE. COMBUSTIBLE MATERIALS MAY BE PROTECTED AS SPECIFIED BY THE ENGINEER AND ARCHITECT OF RECORD.
3. PERMITS: OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND FEES.
4. INSPECTIONS: FURNISH OWNER WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL WORK MUST BE INSPECTED.

PRODUCTS

1. ALL PRODUCTS SHALL BE NEW AND UNUSED OF ESTABLISHED AND REPUTABLE AMERICAN MANUFACTURERS. ITEMS OF EQUIPMENT USED FOR THE SAME PURPOSE SHALL BE OF THE SAME MANUFACTURER.
2. SYSTEMS SHALL BE COMPLETE AND OPERABLE. ANY ACCESSORIES REQUIRED FOR THE OPERATION OF THE SYSTEM SHALL BE INCLUDED AS THOUGH SPECIFICALLY INDICATED TO BE PROVIDED. SUCH ACCESSORIES INCLUDE BUT ARE NOT LIMITED TO FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION ISOLATORS, ETC. MOTOR STARTERS FOR PREWIRED EQUIPMENT (AND OTHER PROTECTION AND CONTROL DEVICES) ARE ALSO INCLUDED IN THIS SPECIFICATION.
3. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSTRUED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.
4. ACCEPTABLE HVAC EQUIPMENT MANUFACTURERS: AS SPECIFIED ELSEWHERE IN THESE DOCUMENTS.
5. PROVIDE CLEARANCES AS PER MANUFACTURERS RECOMMENDATIONS.

SUBSTITUTIONS

1. SUBSTITUTIONS OF MATERIALS OR PRODUCTS SHOWN HEREIN SHALL BE BY OWNER'S, ARCHITECTS, OR ENGINEER'S WRITTEN APPROVAL. ANY DEVIATION FROM THESE DRAWINGS WILL NOT BE ALLOWED.
2. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ANY SUBSTITUTIONS AND COSTS OF CHANGES INCURRED BY OTHER TRADES DUE TO THE SUBSTITUTIONS. OTHER TRADES INCLUDE: ELECTRICAL, PLUMBING, STRUCTURAL, ROOFING, OR ANY TRADE EFFECTED BY THE SUBSTITUTION.

GENERAL REQUIREMENTS FOR CONTROLS AND CONTROL WIRING

1. ALL CONTROL EQUIPMENT, INTEGRAL STARTERS, INTERLOCKING STARTERS, SMOKE DETECTORS, RELAYS, TRANSFORMERS, PANELS AND OTHER DEVICES SHOWN, SPECIFIED OR NEEDED FOR A COMPLETE CONTROL SYSTEM ARE TO BE PROVIDED AND INSTALLED UNDER THIS MECHANICAL DIVISION. COMPONENTS AND WIRING NOT SHOWN, BUT REQUIRED FOR THE PROPER OPERATION OF EQUIPMENT OR CONTROL SYSTEMS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE PROJECT.
2. POWER WIRING, LOW VOLTAGE WIRING AND RACEWAYS RELATED TO CONTROLS SYSTEMS ARE TO BE PROVIDED AND INSTALLED UNDER THIS MECHANICAL DIVISION.
3. INSTALLATION OF ALL EQUIPMENT, DEVICES AND WIRING SHALL CONFORM TO THE NATIONAL ELECTRIC CODE. ALL CONTROLS SHALL BE FURNISHED AND PROPERLY IDENTIFIED WITH INSTRUCTIONS FOR PROPER CONNECTIONS. RESPONSIBILITY FOR PROPER CONNECTIONS AND OPERATION IS INCLUDED UNDER THE MECHANICAL CONTRACTORS RESPONSIBILITY. VERIFY ALL VOLTAGES, PHASES AND ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT, AND IF DISCREPANCIES OCCUR, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK.
4. ALL TEMPERATURE CONTROLS ARE TO BE TESTED, ADJUSTED, AND CALIBRATED FOR PROPER OPERATION.
5. COORDINATE EXACT THERMOSTAT AND/OR MOUNTING HEIGHT ABOVE FINISHED FLOOR AND FINAL LOCATION WITH THE ARCHITECT.
6. THERMOSTATS LOCATED ON EXTERIOR WALLS SHALL HAVE AN INSULATED SUB-BASE.

DUCT SMOKE DETECTORS

1. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL ALL DUCT SMOKE DETECTORS WHERE INDICATED ON THE DRAWINGS AND AS REQUIRED BY LOCAL ADOPTED CODES, LOCAL AMENDMENTS, THE BUILDING OFFICIAL.
2. SMOKE DETECTORS SHALL BE POWERED BY 24 VOLT POWER. POWER MAY BE TAKEN FROM UNIT CONTROL TRANSFORMER IF APPROVED BY MANUFACTURER WITHOUT VOIDING WARRANTY. IF MANUFACTURER WILL NOT ALLOW ADDITIONAL CONTROL CIRCUIT LOAD, PROVIDE AND INSTALL A SECONDARY 24 VOLT TRANSFORMER POWERED FROM EQUIPMENT POWER SUPPLY TO CONTROL SMOKE DETECTOR. ALTERNATIVE 120 VOLT POWER PROVISIONS ARE ACCEPTABLE. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL COSTS RELATED TO PROVIDING POWER TO SMOKE DETECTORS.
3. UPON ACTIVATION, SMOKE DETECTOR SHALL SHUT DOWN 24 VOLT CONTROL POWER CIRCUIT AND ALL OPERATIONAL CAPABILITIES OF THE AIR DISTRIBUTION SYSTEMS FOR THE CONNECTED UNIT.
4. INTERFACE DETECTORS TO SUPERVISORY CIRCUIT OF FIRE ALARM SYSTEM/FIRE SPRINKLER MONITORING PANEL. IN OCCUPANCIES NOT REQUIRED TO BE EQUIPPED WITH A FIRE ALARM SYSTEM, PROVIDE DUCT DETECTOR WITH A REMOTE LED INDICATOR LIGHT MOUNTED BELOW UNIT IN CEILING PER NFPA 72-5-10.6.08 OR AN APPROVED LOCATION. COORDINATE WITH ELECTRICAL/FIRE ALARM CONTRACTOR PRIOR TO ROUGH-IN.

ACOUSTICAL LINER

1. SUPPLY, RETURN AND PLENUM DUCTS SHALL BE ACOUSTICALLY LINED FOR THE FIRST 15'-0" MINIMUM FROM UNIT CONNECTION POINTS.
2. ALL SHEET METAL SUPPLY, RETURN AND PLENUM DUCTWORK REQUIRING ACOUSTICAL LINER SHALL BE LINED WITH 1" THICK LINER.

RELIEF VENTS

1. ALL RELIEF VENT EXTERIOR PENETRATIONS SHALL BE PROVIDED WITH COUNTERBALANCED BAROMETRIC BACKDRAFT DAMPERS.

EQUIPMENT

1. ALL MECHANICAL EQUIPMENT SHALL BE PROPERLY LISTED AND LABELED BY AN APPROVED AGENCY.
2. ALL EQUIPMENT SHALL BE LABELED WITH STEEL TAGS EMBOSSED WITH 1/4" HIGH LETTERS, PERMANENTLY ATTACHED. TAG SHALL CLEARLY INDICATE THE AREA SERVED BY THE EQUIPMENT.
3. MAINTAIN MANUFACTURER'S RECOMMENDATIONS FOR ALL REQUIRED SERVICE CLEARANCES AND INSTALLATION OF EQUIPMENT.
4. REFER TO ARCHITECTURAL DRAWINGS FOR ACCESS TO ROOF INSTALLED MECHANICAL EQUIPMENT. ROOF ACCESS TO COMPLY WITH THE MECHANICAL CODE ADOPTED BY THE AUTHORITY HAVING JURISDICTION.

CLEANUP

1. REMOVE AS MUCH DIRT, SCRAP MATERIAL AND DEBRIS AS POSSIBLE, AT THE END OF EACH WORKING DAY TO PREVENT HAZARDOUS CONDITIONS AND EXCESS DUST.

FINAL TESTS

1. AN INDEPENDENT AABC, NEBB OR TABB LIFE SAFETY LEVEL 2 CERTIFIED CONTRACTOR SHALL BALANCE AIR DISTRIBUTION TO VALUES LISTED ON DRAWINGS. A FINAL COPY OF THE TEST AND BALANCE REPORT SHALL BE PROVIDED TO THE ENGINEER UPON COMPLETION OF THE REPORT. A PROJECT SHALL NOT BE CONSIDERED IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS UNTIL SUCH A REPORT HAS BEEN PROVIDED TO THE ENGINEER.
2. BEFORE ACCEPTANCE AND FINAL PAYMENT, IT SHALL BE DEMONSTRATED THAT ALL APPARATUS IS FUNCTIONING PROPERLY AND EFFICIENTLY. THE CONTRACTOR SHALL MAKE A THOROUGH TEST OF EACH SUPPLY, RETURN, AND EXHAUST SYSTEMS TO ASSURE THAT EACH DIFFUSER AND REGISTER HAS THE PROPER QUANTITY OF AIR IN ACCORDANCE WITH AABC OR NEBB. PROVIDE ADDITIONAL COMFORT BALANCE ADJUSTMENTS PER OWNER/TENANT REQUIREMENTS TO ADDRESS ANY NEEDED VARIATIONS IN DESIGN AIR FLOWS.
3. THE TEST AND BALANCE CONTRACTOR HAS THE RIGHT TO COMMUNICATE ANY INFORMATION TO THE MECHANICAL ENGINEER.

GUARANTEE

1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FROM DEFECT OF WORKMANSHIP, AND SHALL REPLACE OR REPAIR WITHOUT ADDITIONAL COST TO THE OWNER ALL DEFECTIVE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF (1) YEAR AFTER COMPLETION AND ACCEPTANCE.

CLOSEOUT

1. SUBMIT THE SPECIFIED NUMBER OF COPIES OF SHOP DRAWINGS FOR MATERIALS, FIXTURES AND EQUIPMENT. INDICATE MANUFACTURERS, TRADE NAMES, SPECIFIC MODEL NUMBERS, AND TECHNICAL INFORMATION FOR EACH ITEM BEING FURNISHED.
2. ASSEMBLE OPERATION MANUALS FOR EACH ITEM INSTALLED FURNISH EQUIPMENT CUT SHEET AND CONTROL WIRING DIAGRAMS. SUBMIT COPIES AS DEFINED UNDER GENERAL CONDITIONS.
3. ALL SYSTEMS SHALL BE COMPLETE AND FULLY OPERATIONAL. ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT.
4. ALL MATERIALS, WORKMANSHIP, AND EQUIPMENT SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR AFTER SYSTEM ACCEPTANCE.
5. PROVIDE TYPE WRITTEN OPERATING INSTRUCTIONS AND EQUIPMENT WARRANTIES TO THE OWNERS REPRESENTATIVES.
6. CONTRACTOR SHALL FURNISH RECORD SET DRAWINGS CONSISTING OF REPRODUCIBLE CAD FILES UPON COMPLETION OF WORK FOR OWNER'S USE. MINIMUM SCALE SHALL BE 1/8"= 1'-0". THE COMPLETE SET OF RECORD DOCUMENTS IN SHALL BE IN AN AUTOCAD FORMAT AS REQUIRED BY OWNER, ON COMPACT DISC.
7. CONTRACTOR SHALL MAKE FINAL INSPECTION AND TESTS IN THE PRESENCE OF THE OWNER AND SHALL SUPPLY ALL LABOR, MATERIALS, INSTRUMENTS, AND EQUIPMENT REQUIRED FOR TESTING.

ORDER OF PRECEDENCE OF DOCUMENTS

1. SHOULD A CONFLICT ARISE BETWEEN CONSTRUCTION DOCUMENTS, THE ORDER OF PRECEDENCE SHALL BE:
   - 1.1. SPECIAL PROVISIONS
   - 1.2. GENERAL PROVISIONS
   - 1.3. SPECIFICATIONS
   - 1.4. DETAILS ON DRAWINGS
   - 1.5. PLAN DRAWINGS
2. THE ENGINEER OF RECORD SHALL BE NOTIFIED BEFORE A DECISION IS MADE.

GENERAL NOTES

1. PRIOR TO SUBMITTING BID, MECHANICAL CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH THE CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. INSTALL DUCTWORK AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AT NO EXTRA COST TO THE OWNER.
3. AVOID DAMAGING SURFACES AND EQUIPMENT DURING WORK. REPAIR DAMAGE CAUSED DURING CONSTRUCTION AT NO EXTRA COST TO THE OWNER.
4. ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED. TEMPERATURE SENSORS, HUMIDITY SENSORS AND CARBON DIOXIDE SENSORS SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY BMS CONTRACTOR, UNLESS NOTED OTHERWISE ON DRAWINGS. THERMOSTATS SHALL BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
5. MECHANICAL EQUIPMENT AND DUCTWORK ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
6. RE: ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
7. COORDINATE LOCATION OF ROOF MOUNTED HVAC EQUIPMENT AND ROOF PENETRATIONS WITH THE ARCHITECTURAL AND STRUCTURAL DWGS.
8. INDOOR AIR QUALITY MEASURES: PROTECT INSIDE OF (INSTALLED AND DELIVERED) DUCTWORK AND HVAC UNITS FROM EXPOSURE TO DUST, DIRT, PAINT AND MOISTURE. REPLACE INSULATION THAT HAS GOTTEN WET AT ANY TIME DURING CONSTRUCTION, DRYING THE INSULATION IS NOT ACCEPTABLE. SEAL ANY TEARS OR JOINTS OF INTERNAL FIBERGLASS INSULATION. REMOVE DEBRIS FROM CEILING/RETURN AIR PLENUM INCLUDING DUST. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL VACUUM CLEAN ANY DUCTWORK CONNECTED TO HVAC UNITS THAT WERE OPERATED DURING THE CONSTRUCTION PERIOD BEFORE NEW FILTERS ARE INSTALLED AND PRIOR TO TURNING SYSTEM OVER TO THE OWNER.
9. INSTALL DUCTWORK PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE NOTED.
10. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.
11. COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.
12. SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
13. COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL AND DUCT INSTALLATION REQUIREMENTS.
14. ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
15. LOCATE AND SET TEMPERATURE AND HUMIDITY SENSORS AT LOCATIONS SHOWN ON PLANS. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. INSTALL DEVICES 48" AFF TO MEET ADA REQUIREMENTS UNLESS NOTED OTHERWISE ON DWGS. PROVIDE INSULATED BACKING FOR THERMOSTATS MOUNTED ON EXTERIOR BUILDING WALLS. INSTALL WIRING IN CONDUIT PROVIDED BY DIVISION 26.
16. COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH PRESENTATION BOARDS, DISPLAY CABINETS, SHELVES OR OTHER COMPONENTS SHOWN ON THE ARCHITECTURAL DRAWINGS THAT ARE TO BE INSTALLED UNDER OTHER DIVISIONS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.
17. PROVIDE A MANUAL BALANCING DAMPER IN EACH BRANCH DUCT TAKEOFF FROM MAIN SUPPLY, RETURN, OUTDOOR AND EXHAUST AIR DUCTS.
18. PROVIDE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS AND GRILLES.
19. BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.
20. RIGID DUCTWORK INSULATION: PROVIDE 3/4 LB DENSITY, 3" (R-8) THICK, INSULATION WRAP ON RIGID ROUND, CONCEALED (NON-CONDITIONED SPACE), SUPPLY AND RETURN AIR DUCTS AND ON OUTSIDE AIR DUCTS. FURNISH AND INSTALL 1-1/2 LB DENSITY, 2" (R-8) INTERNAL DUCT LINER ON ROUND SUPPLY AND RETURN AIR DUCTS WITHIN 10'-0" OF ROOFTOP UNIT DUCT DROP LOCATED WITHIN THE MAIN SALES AREA. FURNISH AND INSTALL 1-1/2 LB DENSITY, 2" (R-8) THICK INTERNAL DUCT LINER ON RECTANGULAR CONCEALED (NON-CONDITIONED SPACE), SUPPLY AND RETURN AIR DUCTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS, INCREASE SHEET METAL SIZES ACCORDINGLY.
21. PROVIDE THERMAFLEX TYPE M-KE OR G-KM, FLEXMASTER TYPE 8, OR APPROVED EQUAL FLEXIBLE DUCTWORK. FLEXIBLE DUCTWORK SHALL BE LISTED UNDER UL 181 AS CLASS 1 AIR DUCT AND BE PROVIDED WITH INTEGRAL R-8, 3/4 LB DENSITY FIBERGLASS INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORTED TO AVOID SHARP BENDS AND SAGGING.
22. PROVIDE EQUIPMENT VENTS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND EQUIPMENT SPECIFICATIONS. KEEP PENETRATIONS THROUGH ROOF A MINIMUM OF 10'-0" FROM HVAC EQUIPMENT FRESH AIR INLETS AND 2'-0" FROM ROOF PARAPETS.
23. PROVIDE TYPE-I, GREASE HOOD FABRICATED GREASE EXHAUST DUCT SYSTEM, 2-HR. FIRE RATED, DOUBLE-WALL, INSULATED, ZERO-CLEARANCE TO COMBUSTIBLE AS MANUFACTURED BY METAL-FAB, MODEL 3G WITH LIQUID TIGHT CONNECTIONS AND ACCESS PANELS FOR GREASE CLEANING AS REQUIRED BY NFPA 96 AND LOCAL CODES. INSTALL TYPE I GREASE HOOD AT 84" AFF. SLOPE DUCT BACK TOWARDS HOOD AT MINIMUM OF 1/4" PER LINEAL FOOT MAINTAINING 18" CLEARANCE TO COMBUSTIBLE MATERIALS.
24. PROVIDE A NEW SET OF AIR FILTERS IN UNITS PRIOR TO TESTING, ADJUSTING AND BALANCING, AND BEFORE TURNING SYSTEM(S) OVER TO OWNER.
25. PLACEMENT, DUCTING AND STARTUP OF THE MECHANICAL UNITS SHALL BE BY THE MECHANICAL CONTRACTOR.
26. ALL EXPOSED DUCT WORK SHALL BE INSTALLED AS TIGHT TO ROOF STRUCTURE AS POSSIBLE.
27. EITHER WHEN STORED OR MOVED INTO ROUGH FRAME, HVAC EQUIPMENT OPENINGS AND DUCTS SHALL BE PROTECTED AND PROTECTION MAINTAINED UNTIL FINAL STARTUP OF THE SYSTEM.
28. ALL HVAC UNITS INSTALLED AND OPERATIONAL DURING CONSTRUCTION AND UP TO THE POINT OF OCCUPANCY SHALL BE INSTALLED WITH MERV 13 FILTERS.
29. HOOD MAKE UP AIR SHALL BE PROVIDED BY THE MAIN SALES AREA VENTILATION SYSTEM PROVIDING OUTSIDE AIR TO THE OCCUPIED SPACE DURING OCCUPIED HOURS OF OPERATION. RTU SUPPLY FANS ARE TO RUN CONTINUOUSLY DURING OCCUPIED HOURS TO MAINTAIN AIR BALANCE. EMS CONTRACTOR SHALL SCHEDULE THE SUPPLY FANS SO OPERATION OF THE EXHAUST HOOD/FAN SYSTEMS CAN NOT OPERATE WITHOUT RTU SUPPLY FANS RUNNING.

CODES AND STANDARDS

PART 1 - 2022 CA. BUILDING CODE, TITLE 24 CCR (2018 IBC)
PART 2 - 2022 CA. BUILDING CODE, TITLE 24 CCR (2018 IBC)
PART 3 - 2022 CA. ELECTRICAL CODE, TITLE 24 CCR (2017 NEC OF THE NFPA)
PART 4 - 2022 CA. MECHANICAL CODE, TITLE 24 CCR (2021 UMC OF THE IAPMO)
PART 5 - 2022 CA. PLUMBING CODE, TITLE 24 CCR (2021 UPC OF THE IAPMO)
PART 6 - 2022 CA. ENERGY CODE, TITLE 24 CCR
PART 7 - CURRENTLY VACANT
PART 8 - 2022 CA. HISTORICAL BUILDING CODE, TITLE 24 CCR
PART 9 - 2022CA. FIRE CODE, TITLE 24 CCR (2018 IFC OF THE ICC)
PART 10 - 2022 CA. EXISTING BUILDING CODE, TITLE 24 CCR (2018 INTERNATIONAL EXIST. BLDG. CODE OF THE ICC, WITH AMENDMENTS) PART 11 - 2019 CA. GREEN BUILDING STANDARDS CODE (CALGREEN CODE), TITLE 24 CCR
PART 11 - 2022CA. REFERENCED STANDARDS, TITLE 24 CCR
NFPA 72 EDITION - NATIONAL FIRE ALARM CODE (CALIFORNIA AMENDED) 2013

(NOTE: SEE UL STANDARD 1971 FOR "VISUAL DEVICES")

SHOP DRAWING NOTE

1. CONTRACTOR SHALL PROVIDE FIELD LAYOUT SHOP DRAWINGS FOR ARCHITECT/ENGINEER REVIEW PRIOR TO FABRICATION AND INSTALLATION. SHOP DRAWING SHALL BE INDUSTRY STANDARD SHOWING ELEVATION HEIGHTS OF ALL NEW AND EXISTING EQUIPMENT. SHOP DRAWINGS SHALL BE COORDINATED WITH VARIOUS TRADES INVOLVED IN THE PROJECT.

TITLE 24 MANDATORY NOTES

1. ALL AIR-HANDLING UNITS SHALL BE LOW-LEAKAGE TYPE PER 2022 CALIFORNIA ENERGY STANDARDS SECTION 110.2(f).
2. ALL AIR-DISTRIBUTION SYSTEM DUCTS AND PLENUMS SHALL BE INSTALLED, SEALED, AND INSULATED TO MEET THE REQUIREMENTS OF 2022 CALIFORNIA MECHANICAL CODE SECTIONS 601.0, 602.0, 603.0, 604.0, 605.0 AND "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE" AS PUBLISHED BY SMACNA.
3. MECHANICAL SYSTEMS THAT SUPPLY AIR TO AN OCCUPIABLE SPACE THROUGH DUCTWORK EXCEEDING 10'-0" IN LENGTH AND THROUGH A THERMAL CONDITIONING COMPONENT, EXCEPT EVAPORATIVE COOLERS, SHALL BE PROVIDED WITH AIR FILTER DEVICES IN ACCORDANCE WITH 2022 CALIFORNIA ENERGY CODE SECTION 150.0(m)12.
4. SPACE CONDITIONING SYSTEMS THAT UTILIZE FORCED AIR DUCTS O SUPPLY COOLING TO AN OCCUPIABLE SPACE SHALL CONFORM TO THE REQUIREMENTS OF 2022 CALIFORNIA ENERGY CODE SECTION 150.0(m)13

THERMOSTAT NOTES

THE THERMOSTAT SHALL COMPLY WITH THE FOLLOWING:

1. ALL THERMOSTATS SHALL BE EQUIPPED WITH DIGITAL DISPLAY, TEMPERATURE SET-POINT ADJUSTMENTS AND OVERRIDE CAPABILITY.
2. ALL THERMOSTATS SHALL BE EQUIPPED WITH PASSIVE INFRARED (PIR) MOTION SENSORS FOR OCCUPANCY DETECTION EXCEPT FOR THE MDF ROOMS.
3. WHERE THERMOSTAT HAS TO BE LOCATED ON THE OUTSIDE WALL, THERMAL PADDING SHALL BE PROVIDED.

CALGREEN NOTES

NOTE TO CONTRACTORS: THE NOTES BELOW ARE COMPOSITE AND NOT ALL NOTES MAY APPLY TO THIS PROJECT.

1. DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING & ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING & ADJUSTING SHALL INCLUDE, AS APPLICABLE TO THE PROJECT:
   - 1.1. HVAC SYSTEM & CONTROLS
   - 1.2. INDOOR & OUTDOOR LIGHTING & CONTROLS
   - 1.3. WATER HEATING SYSTEMS
   - 1.4. RENEWABLE ENERGY SYSTEMS
   - 1.5. LANDSCAPE IRRIGATION SYSTEMS
   - 1.6. WATER REUSE SYSTEMS
2. PERFORM TESTING & ADJUSTING PROCEDURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS & APPLICABLE STANDARDS ON EACH SYSTEM.
3. BEFORE A NEW SPACE CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, THE SYSTEM SHOULD BE BALANCED IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS, ETC.
4. AFTER COMPLETION OF TESTING, ADJUST, & BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THESE SERVICES.
5. PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING & MAINTENANCE INSTRUCTIONS & COPIES OF GUARANTEES/ WARRANTIES FOR EACH SYSTEM.
6. INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY.
7. THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, USE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS IMMEDIATELY PRIOR TO OCCUPANCY OR AT CONCLUSION OF CONSTRUCTION.
8. IN MECHANICALLY VENTILATED BUILDINGS, PROVIDE REGULARLY OCCUPIED AREAS OF THE BUILDING WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES AT LEAST A MERV OF 8.
9. FOR BUILDINGS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS & VENTILATION CONTROLS SHALL BE SPECIFIED & INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CALIFORNIA ENERGY CODE, SEC. 121(c).
10. INSTALLATION OF HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SEC. 5.508.1.1 AND 5.508.1.1 AND 5.508.1.2 OF THE CURRENT CALIFORNIA GREEN BUILDING STANDARDS CODE.
11. INSTALL HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN CFC.
12. INSTALL HVAC, REFRIGERATION, & FIRE SUPPRESSION EQUIPMENT THAT DO NOT CONTAIN HALON.

DUCT INSULATION

A. PORTIONS OF SUPPLY-AIR AND RETURN-AIR DUCTS CONVEYING HEATED OR COOLED AIR LOCATED IN ONE OR MORE OF THE FOLLOWING SPACES SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-8:
   1. OUTDOORS; OR
   2. IN A SPACE BETWEEN THE ROOF AND AN INSULATED CEILING;
   3. IN A SPACE DIRECTLY UNDER A ROOF WITH FIXED VENTS OR OPENINGS TO THE OUTSIDE OR UNCONDITIONED SPACES; OR
   4. IN AN UNCONDITIONED CRAWLSPACE; OR
   5. IN OTHER UNCONDITIONED SPACES.

B. PORTIONS OF SUPPLY-AIR DUCTS THAT ARE NOT IN ONE OF THESE SPACES, INCLUDING DUCTS BURIED IN CONCRETE SLAB, SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-4.2 OR BE ENCLOSED IN DIRECTLY CONDITIONED SPACE.

C. OUTSIDE AIR DUCTS LOCATED INSIDE THE BUILDING SHALL BE INSULATED WITH MINIMUM OF 1".

D. DUCT LOCATED OUTDOORS SHALL BE PROVIDED WITH RIGID INSULATION WITH WEATHER PROOF FLEXIBLE JACKETING, ALUMAGUARD OR EQUAL.

MECHANICAL SHEET INDEX

Sheet Number	Sheet Name
M001	MECHANICAL FRONT SHEET
M002	MECHANICAL LEGENDS AND ABBRIVATIONS
M003	MECHANICAL SCHEDULES
M004	MECHANICAL SCHEDULES
M005	MECHANICAL SCHEDULES
MC2.01	MECHANICAL CDH HOUSING FLOOR PLAN
MC2.02	MECHANICAL CDH HOUSING FLOOR PIPING PLAN
MC2.03	MECHANICAL CDH HOUSING ROOF PLAN
MC2.04	MECHANICAL CDH HOUSING ROOF PIPING PLAN
MC4.01	MECHANICAL CDH HOUSING ENLARGED PLAN
MD2.01	MECHANICAL DAAS HOUSING FLOOR PLAN
MD2.02	MECHANICAL DAAS HOUSING FLOOR PIPING PLAN
MD2.03	MECHANICAL DAAS HOUSING ROOF PLAN
MD2.04	MECHANICAL DAAS HOUSING ROOF PIPING PLAN
MD4.01	MECHANICAL DAAS HOUSING ENLARGED PLAN
MS2.01	MECHANICAL SUD FLOOR PLAN
MS2.03	MECHANICAL SUD ROOF PLAN
MDC2.01	MECHANICAL DAAS CAFETERIA FLOOR PLAN
MDR2.01	MECHANICAL DAAS RCC FLOOR PLAN
M501	MECHANICAL CDH HOUSING PIPING DIAGRAM
M502	MECHANICAL DAAS HOUSING PIPING DIAGRAM
M503	MECHANICAL SUD PIPING DIAGRAM
M601	MECHANICAL DETAILS
M602	MECHANICAL DETAILS

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Budlong
Job No. 23-233

Pacific Village Platinum Campus

2626 Pacific Street, Highland, CA 92346

Developed for San Bernardino County

Revision	Date

Submittal	Date
ENTER DESCRIPTION	XX/XX/XXXX

Job Number	31687
Checked By	Checker
Scale	12" = 1'-0"

MECHANICAL FRONT SHEET

M001

MEP COMPONENT ANCHORAGE NOTE

<u>MEP COMPONENT ANCHORAGE NOTE</u>
ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A. 1.18 THROUGH 1616A. 1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS, OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT TO BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM THE ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

<u>PIPING, DUCTWORK, ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE</u>
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A. 1.25 AND 1616A. 1.26.
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

CARBON MONOXIDE DETECTOR NOTES

1. CO SENSORS SHALL BE CERTIFIED BY THE MANUFACTURERS TO BE ACCURATE WITHIN PLUS OR MINUS 5 PERCENT OF MEASUREMENT.
2. CO SENSORS SHALL BE FACTORY CALIBRATED.
3. CERTIFIED BY THE MANUFACTURERS TO DRIFT NO MORE THAN 5 PERCENT PER YEAR.
4. CERTIFIED BY THE MANUFACTURER TO REQUIRE CALIBRATION NO MORE FREQUENTLY THAN ONCE A YEAR.
5. MONITORED BY A CONTROLS SYSTEM. THE SYSTEM SHALL HAVE LOGIC THAT AUTOMATICALLY CHECKS FOR SENSOR FAILURE BY THE FOLLOWING MEANS. UPON DETECTION OF A FAILURE, THE SYSTEM SHALL RESET TO DESIGN VENTILATION RATES AND TRANSMIT AN ALARM TO THE FACILITY OPERATORS.
6. IF ANY SENSOR HAS NOT BEEN CALIBRATED ACCORDING TO THE MANUFACTURERS RECOMMENDATION WITHIN THE SPECIFIED CALIBRATION PERIOD, THE SENSOR HAS FAILED.
7. DURING UNOCCUPIED PERIODS THE SYSTEM COMPARES THE READINGS OF ALL SENSORS. ANY SENSOR IS MORE THAN 15 PPM ABOVE OR BELOW THE AVERAGE OF ALL SENSORS FOR LONGER THAN 4-HOURS, THE SENSOR HAS FAILED.
8. DURING UNOCCUPIED PERIODS THE SYSTEM COMPARES THE READINGS OF SENSORS IN THE SAME PROXIMITY ZONE E.G. IF THE 30-MINUTE ROLLING AVERAGE FOR ANY SENSOR IN A PROXIMITY ZONE IS MORE THAN 15 PPM ABOVE OR BELOW THE 30-MINUTE ROLLING AVERAGE OF OTHER SENSOR(S) IN THAT PROXIMITY ZONE, THE SENSOR HAS FAILED.

POLLUTANT CONTROL

<u>INDOOR AIR QUALITY DURING CONSTRUCTION</u>

TEMPORARY VENTILATION DURING CONSTRUCTION SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING:

1. VENTILATION DURING CONSTRUCTION SHALL BE ACHIEVED THROUGH OPENINGS IN THE BUILDING SHELL USING FANS TO PRODUCE NOT LESS THAN THREE AIR CHANGES PER HOUR.
2. THE SUPPLY AND RETURN HVAC SYSTEM OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST OR DEBRIS THAT CAN COLLECT IN THE SYSTEM.
3. THE BUILDING WILL BE OCCUPIED DURING DEMOLITION AND CONSTRUCTION, VENTILATION SHALL BE PROVIDED IN ACCORDANCE WITH THE CONTROL MEASURES OF THE SMACNA IAQ GUIDELINES FOR OCCUPIED BUILDINGS DURING CONSTRUCTION.
4. THE PERMANENT HVAC SYSTEM SHALL NO BE USED DURING CONSTRUCTION TO CONDITION AND VENTILATE THE BUILDING WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. WHERE REQUIRED, A SUPPLEMENTAL HVAC SYSTEM SHALL BE USED DURING CONSTRUCTION.

COMMISSIONING NOTES

1. A COMMISSIONING PLAN AND REPORT WHICH MEETS THE REQUIREMENTS OF THE CURRENT CEnC CODE SHALL BE PROVIDED FOR ALL NEW MECHANICAL SYSTEMS UNLESS EXEMPT BY CODE EXCEPTIONS.
2. A COMMISSIONING PLAN SHALL BE DEVELOPED BY A CERTIFIED COMMISSIONING PROFESSIONAL (CCP) AND SHALL INCLUDE THE FOLLOWING ITEMS:
   - 2.1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
   - 2.2. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.
   - 2.3. FUNCTIONS TO BE TESTED, INCLUDING, BUT NOT LIMITED TO CALIBRATIONS AND ECONOMIZER CONTROLS.
   - 2.4. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. AT A MINIMUM, TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
   - 2.5. MEASURABLE CRITERIA FOR PERFORMANCE.
3. PROVIDE A "PRELIMINARY COMMISSIONING REPORT" AND A "FINAL COMMISSIONING REPORT" TO THE OWNER AND MAKE AVAILABLE TO THE CODE OFFICIAL UPON REQUEST.

HVAC SYSTEM BALANCING NOTES

CMC SECTION 314.1 :
HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS (INCLUDING HYDRONIC SYSTEMS) SHALL BE BALANCED IN ACCORDANCE WITH ONE OF FOLLOWING METHODS :
1. AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE
2. ACCA MANUAL B
3. ASHRAE 111
4. NEBB PROCEDURAL STANDARDS FOR TESTING ADJUSTING BALANCING OF ENVIRONMENTAL SERVICES
5. SMACNA HVAC SYSTEMS TESTING, ADJUSTING AND BALANCING

CGBSC SECTION 5.410.4.3.1 :
IN ADDITION TO TESTING AND ADJUSTING, BEFORE A NEW SPACE-CONDITIONING SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, BALANCE THE SYSTEM IN ACCORDANCE WITH THE PROCEDURES DEFINED BY BUREAU PROCEDURAL STANDARDS, ASSOCIATED AIR BALANCE COUNCIL NATIONAL STANDARDS OR AS APPROVED BY ENFORCING AGENCY

BUILDING FLUSHOUT

AFTER ALL INTERIOR FINISHES HAVE BEEN INSTALLED, FLUSH OUT THE BUILDING BY SUPPLYING CONTINUOUS VENTILATION WITH ALL AIR HANDLING UNITS AT THEIR MAXIMUM OUTDOOR AIR RATE AND ALL SUPPLY FANS AT THEIR MAXIMUM POSITION AND RATE FOR AT LEAST 14 DAYS.

1. DURING THIS TIME, MAINTAIN AN INTERNAL TEMPERATURE OF AT LEAST 60°F AND RELATIVE HUMIDITY NO HIGHER THAN 60 PERCENT. IF EXTENUATING CIRCUMSTANCES MAKE THESE TEMPERATURE AND HUMIDITY LIMITS UNACHIEVABLE, THE FLUSHOUT MAY BE CONDUCTED UNDER CONDITIONS AS CLOSE AS POSSIBLE TO THESE LIMITS, PROVIDED THAT DOCUMENTATION OF THE EXTENUATING CIRCUMSTANCES IS PROVIDED IN WRITING.
2. OCCUPANCY MAY START AFTER 4 DAYS, PROVIDED FLUSH-OUT CONTINUES FOR THE FULL 14 DAYS. DURING OCCUPIED TIMES, THE THERMAL COMFORT CONDITIONS OF TITLE 24 MUST BE MET.

REFRIGERANT PIPING

1. REFRIGERANT PIPING MATERIALS AND SIZES SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.VENT ALL ENTRAINED AIR FROM PIPING SYSTEM.
2. REFRIGERANT PIPES PENETRATING FRAMING MEMBERS SHALL BE PROTECTED BY STEEL NAIL PLATES NOT LESS THAN NO. 18 GAUGE (0.0478 INCH) IN THICKNESS. THE NAIL PLATE SHALL EXTEND ALONG THE WALL NOT LESS THAN 1-1/2" BEYOND THE OUTSIDE DIAMETER OF THE PIPE.

ROOF MOUNTED EQUIPMENT

1. ACCESS LOCKS, SCREW, AND BOLTS SHALL BE OF CORROSION-RESITANT MATERIAL.
2. ALL EQUIPMENT SHALL BE SHALL BE PERMANENTLY IDENTIFIED AS TO THE AREA OR SPACE SERVED BY THE EQUIPMENT.

DUCT LEAKAGE TEST

1. DUCT SHALL BE LEAK-TESTED IN ACCORDANCE WITH SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL.

LIFE SAFETY CONTROL NOTES

1. COORDINATE WITH LIFE SAFETY CONTRACTOR FOR THE INTERCONNECTING OF HVAC EQUIPMENT WITH THE BUILDING FIRE ALARM SYSTEM FOR SHUT DOWN UPON A SIGNAL FROM THE FIRE ALARM SYSTEM.

DUCT CONSTRUCTION NOTES

1. DUCTS, PLENUMS, OR FITTING OF METAL SHALL COMPLY WITH SMACNA DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.

HVAC ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AH	AIR HANDLING
BDD	BACK DRAFT DAMPER (WEIGHTED)
BFP	BACKFLOW PREVENTER
BT	BYPASS TIMER
BTUh	BRITISH THERMAL UNITS PER HOUR
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CU	CONDENSING UNIT
CV	CONSTANT VOLUME,
CONT.	CONTINUES
CFSD	COMBINATION FIRE/SMOKE DAMPER
DAL	DISCHARGE AIR LOUVER
DB	DECIBELS
DBT	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DN	DOWN
DTR	DOWN THROUGH ROOF
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENRGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EFF	EFFICIENCY
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
EMS	ENERGY MANAGEMENT SYSTEM
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
°F	DEGREES, FAHRENHEIT
FAU	FORCED AIR UNIT
FC	FLEX CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLR	FLOOR
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FT	FEET
FV	FACE VELOCITY
HZ	HERTZ
HPU	HEAT PUMP UNIT
HP	HORSE POWER
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IN	INCHES
IN. W.C.	INCHES OF WATER COLUMN
IFM	INDOOR FAN MOTOR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCKED ROTOR AMPS
MAX	MAXIMUM
MBH	ONE THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPS
MCOP	MAXIMUM CIRCUIT AMPS
MD	MOTORIZED DAMPER
MIN	MINIMUM
MFS	MAXIMUM FUSE SIZE
MVD	MANUAL VOLUME DAMPER
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NK	NECK
NO	NUMBER
NTS	NOT TO SCALE
OFM	OUTDOOR FAN MOTOR
OSA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OAL	OUTSIDE AIR LOUVER
OBD	OPPOSED BLADE DAMPER
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RLA	RATED LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
SA	SUPPLY AIR
SAR	SUPPLY AIR REGISTER
SEER	SEASONAL ENRGY EFFICIENCY RATIO
SF	SUPPLY AIR FAN
SP	STATIC PRESSURE
SPEC	SPECIFICATIONS
SR	SUPPLY REGISTER
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TYP	TYPICAL
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UTR	UP THROUGH ROOF
V	VOLT
VENT	VENTILATION VENT
VERT	VERTICAL
VTR	VENT THROUGH ROOF
W/	WITH
W	WATT
WBT	WET BULB TEMPERATURE
WMS	WIRE MESH SCREEN
ZD	ZONE DAMPER
(ETR)	EXISTING TO REMAIN
(E)	EXISTING
(N)	NEW
(R)	REMOVE
(RL)	RELOCATED
(RS)	REMOVE & SAVE FOR RELOCATION
(DCV)	DEMAND CONTROL VENTILATION (CO2)

DUCTWORK SYMBOLS

ABBREVIATION	DESCRIPTION
	SUPPLY DUCT RISER IN PLAN
	RETURN DUCT RISER IN PLAN
	EXHAUST DUCT RISER
	RECTANGULAR DUCTWORK (WIDTH x DEPTH)
10x8	RECTANGULAR DUCTWORK (WIDTH x DEPTH)
8Ø	ROUND DUCTWORK (SIZE, DIAMETER)
10x8Ø	FLAT OVAL DUCTWORK
(L)	1" ACOUSTICALLY LINED DUCTWORK
	SQUARE-THROATED ELBOW W/TURNING VANES
	RADIUS ELBOW
NK=	RADIUS TEE
NK=	SQUARE-THROATED TEE
R/D	CHANGE IN ELEVATION WITH RELATION TO AIR FLOW
	VOLUME DAMPER
	TRANSITION WITH FLAT SIDE
	TRANSITION ON CENTER
	RECTANGULAR-TO-ROUND TRANSITION
	TAKE-OFF TAP TO RECTANGULAR DUCT AND VOLUME DAMPER
	CONICAL TAP TO RECTANGULAR DUCT AND VOLUME DAMPER
CFSD	COMBINATION FIRE/SMOKE DAMPER (CFSD)
FD	FIRE DAMPER (FD)
	FLEXIBLE CONNECTOR
	EXISTING DUCTWORK TO REMAIN (DASHED)
	EXISTING TO BE REMOVED (HATCHED)
	NEW DUCTWORK (SOLID)
X(L)	(L) NEW LINED DUCTWORK (SOLID)
X(DWL)	(DWL) NEW DOUBLE WALL LINED DUCTWORK (SOLID)
	NEW FLEXIBLE DUCT (MAXIMUM LENGTH 5'-0")
	ACCESS REQUIRED FOR EQUIPMENT SERVICE
	SIDE WALL REGISTER/GRILLE
	RETURN GRILLE WITH ACOUSTICALLY LINED BOOT
	CEILING DIFFUSER 4-WAY THROW
	CEILING DIFFUSER 3-WAY THROW
	CEILING DIFFUSER 2-WAY THROW
	CEILING DIFFUSER 2-WAY THROW
	CEILING DIFFUSER 1-WAY THROW
	RETURN AIR GRILLE
	EXHAUST GRILLE
	LINEAR CEILING DIFFUSER
T	THERMOSTAT (MAX. 48" A.F.F.)
TS	TEMPERATURE SENSOR (MAX. 48" A.F.F.)
CO	CARBON DIOXIDE SENSOR (MAX. 48" A.F.F.)
BT	BYPASS TIMER (MAX. 48" A.F.F.)
	MANUAL VOLUME DAMPER
	WEIGHTED BAROMETRIC DAMPER
FAU D80-1	EQUIPMENT TAG, DESCRIPTION FC ROOM, NUMBER D80 UNIT NUMBER 1
1 M-1	DETAIL REFERENCE, DETAIL 1, SHEET NUMBER M-1
DL	DOOR LOUVER MIN. 12"x12"
DU	DOOR UNDERCUT MAX. 1"
1 M-1	SECTION REFERENCE, SECTION 1 SHEET M-1
SD	DUCT MOUNTED SMOKE DETECTOR
1	CONSTRUCTION NOTE #1
A	DEMOLITION NOTE #A
	POINT OF DISCONNECT
	POINT OF CONNECTION BETWEEN NEW AND EXISTING

ABBREVIATION	DESCRIPTION
	ROOF MOUNTED DUCT SUPPORT
	PUMP
	FLEXIBLE CONNECTION
	ISOLATION BALL VALVE
	2-WAY MODULATING CONTROL VALVE
	DRAIN VALVE W/ HOSE CAP
	CIRCUITE SETTER BALANCE VALVE
	MANUAL BUTTERFLY VALVE
	RISE IN PIPE
	DIRECTION OF FLOW
	DROP IN PIPE
	CAPPED PIPE
—STM—	STEAM PIPNG
—CD—	CONDENSATE DRAIN PIPING
—ECHWS—	EXISTING CHILLED WATER SUPPLY PIPING
—ECHWR—	EXISTING CHILLED WATER RETURN PIPING
—CHWS—	CHILLED WATER SUPPLY PIPING
—CHWR—	CHILLED WATER RETURN PIPING
—HWS—	HEATING HOT WATER SUPPLY PIPING
—HWR—	HEATING HOT WATER RETURN PIPING

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MECHANICAL LEGENDS AND ABBRIVATIONS

M002

DUCTED FAN COIL SCHEDULE (CEILING CONCEALED)

Equipment Tag	Model	Room Name	Outdoor Tag	Type	CFM	Fan Speed Setting	Max Fan ESP Setting 208V/230V (IN WG)	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Refrig Pipe Dim Liquid/Suction (inch)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Capacity (BTU/h)	Electrical Data		Notes
														Voltage / Phase	MCA/ MFS	
FCU-D-1-1	TPEFYP018MA144A		DAAS-01	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-1-2	TPEFYP012MA144A		DAAS-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-1-3	TPEFYP018MA144A		DAAS-01	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-1-4	TPEFYP012MA144A		DAAS-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-1-5	TPEFYP012MA144A		DAAS-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-1-7	TPEFYP012MA144A		DAAS-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-1-6	TPEFYP018MA144A		DAAS-01	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-2-1	TPEFYP018MA144A		DAAS-02	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-2-2	TPEFYP018MA144A		DAAS-02	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-2-3	TPEFYP012MA144A		DAAS-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-2-4	TPEFYP012MA144A		DAAS-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-2-5	TPEFYP012MA144A		DAAS-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-2-6	TPEFYP018MA144A		DAAS-02	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-2-7	TPEFYP018MA144A		DAAS-02	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-D-3-1	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-2	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-3	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-4	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-5	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-6	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-7	TPEFYP012MA144A		DAAS-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,025.2	8,369.9	13,492.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-1	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-2	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-3	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-4	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-5	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-6	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-7	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-8	TPEFYP012MA144A		DAAS-04	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-D-3-9	TPEFYP018MA144A		DAAS-04	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-C-1-1	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-2	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-3	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-4	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-5	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-6	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-7	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-8	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-1-9	TPEFYP012MA144A		CDH-01	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-1	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-2	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-3	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-4	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-5	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-6	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-7	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-8	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-9	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-2-10	TPEFYP012MA144A		CDH-02	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	11,406.0	8,114.9	13,296.7	208/230V/1-phase	2.13/15	1, 2, 3, 4

Notes

1. Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB).
2. Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB).
3. See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities.
4. See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.
5. Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system. Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply. It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.
6. It is recommended to always base heating corrected capacity on full demand.

LPA
ARCHITECTURE ENGINEERING INTERIOR DESIGN
LANDSCAPE ARCHITECTURE PLANNING
949-261-1001 Office
LPADesignStudios.com
5301 California Avenue, Suite 100
Irvine, California 92617

NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION

Budlong
Job No. 23-233

Pacific Village Platinum Campus
2626 Pacific Street, Highland, CA 92346
Developed for San Bernardino County

Revision	Date

Submittal	Date
ENTER DESCRIPTION	XX/XX/XXXX

Job Number	31687
Checked By	Checker
Scale	12" = 1'-0"

MECHANICAL SCHEDULES

M003

DUCTED FAN COIL SCHEDULE (CEILING CONCEALED)

Equipment Tag	Model	Room Name	Outdoor Tag	Type	CFM	Fan Speed Setting	Max Fan ESP Setting 208V/230V (IN WG)	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Refrig Pipe Dim Liquid/Suction (inch)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Capacity (BTU/h)	Electrical Data		Notes
														Voltage / Phase	MCA/ MFS	
FCU-C-3-1	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-2	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-3	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-4	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-5	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-6	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-7	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-8	TPEFYP012MA144A		CDH-03	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12,000	13,500	1/4 / 1/2	12,014.6	8,365.5	13,490.2	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-C-3-9	TPEFYP018MA144A		CDH-03	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18,000	20,000	1/4 / 1/2	18,021.9	13,724.1	19,985.5	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-S-1-1	TPEFYP015MA144A		SUD-01	Ceiling-Concealed (Ducted)	494	HIGH	0.6/0.6	15000	17000	1/4 / 1/2	15031.5	11375.9	16990.3	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-1-2	TPEFYP015MA144A		SUD-01	Ceiling-Concealed (Ducted)	494	HIGH	0.6/0.6	15000	17000	1/4 / 1/2	15031.5	11375.9	16990.3	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-1-3	TPEFYP018MA144A		SUD-01	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18000	20000	1/4 / 1/2	18037.8	13730.4	19988.6	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-S-1-4	TPEFYP018MA144A		SUD-01	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18000	20000	1/4 / 1/2	18037.8	13730.4	19988.6	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-S-2-1	TPEFYP015MA144A		SUD-02	Ceiling-Concealed (Ducted)	494	HIGH	0.6/0.6	15000	17000	1/4 / 1/2	14761	11269.2	16704.9	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-2-2	TPEFYP015MA144A		SUD-02	Ceiling-Concealed (Ducted)	494	HIGH	0.6/0.6	15000	17000	1/4 / 1/2	14761	11269.2	16704.9	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-2-3	TPEFYP018MA144A		SUD-02	Ceiling-Concealed (Ducted)	600	HIGH	0.6/0.6	18000	20000	1/4 / 1/2	17713.2	13602.7	19652.8	208/230V/1-phase	2.94/15	1, 2, 3, 4
FCU-S-2-4	TPEFYP024MA144A		SUD-02	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23617.6	19066.5	26531.3	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-3-1	TPEFYP024MA144A		SUD-03	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23279.4	18936.6	26434.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-3-2	TPEFYP024MA144A		SUD-03	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23279.4	18936.6	26434.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-3-3	TPEFYP024MA144A		SUD-03	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23279.4	18936.6	26434.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-4-1	TPEFYP024MA144A		SUD-04	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	24050.4	19233.2	26984.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-4-2	TPEFYP024MA144A		SUD-04	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	24050.4	19233.2	26984.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-4-3	TPEFYP015MA144A		SUD-04	Ceiling-Concealed (Ducted)	494	HIGH	0.6/0.6	15000	17000	1/4 / 1/2	15031.5	11375.9	16990.3	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-5-1	TPEFYP012MA144A		SUD-05	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12000	13500	1/4 / 1/2	11639.7	8210.7	13217.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-S-5-2	TPEFYP012MA144A		SUD-05	Ceiling-Concealed (Ducted)	371	HIGH	0.6/0.6	12000	13500	1/4 / 1/2	11639.7	8210.7	13217.3	208/230V/1-phase	2.13/15	1, 2, 3, 4
FCU-S-5-3	TPEFYP024MA144A		SUD-05	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23279.4	18936.6	26434.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-5-4	TPEFYP024MA144A		SUD-05	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23279.4	18936.6	26434.6	208/230V/1-phase	2.88/15	1, 2, 3, 4
FCU-S-6-1	TPEFYP048MA144A		SUD-06	Ceiling-Concealed (Ducted)	1306	HIGH	0.6/0.6	48000	54000	3/8 / 5/8	46452.1	32944.7	53455	208/230V/1-phase	4.38/15	1, 2, 3, 4
FCU-S-6-2	TPEFYP048MA144A		SUD-06	Ceiling-Concealed (Ducted)	1306	HIGH	0.6/0.6	48000	54000	3/8 / 5/8	46452.1	32944.7	53455	208/230V/1-phase	4.38/15	1, 2, 3, 4
FCU-S-6-3	TPEFYP024MA144A		SUD-06	Ceiling-Concealed (Ducted)	883	HIGH	0.6/0.6	24000	27000	3/8 / 5/8	23226.1	18916.1	26727.5	208/230V/1-phase	2.88/15	1, 2, 3, 4

Notes
1. Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB).
2. Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB).
3. See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities.
4. See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.
5. Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system.
   Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply.
   It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.
6. It is recommended to always base heating corrected capacity on full demand.

VRF OUTDOOR UNITS

System Tag	Tag Reference	Model Number	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency (I) EER [SEER]	Heating COP @ 47°F [HSPF]	Design Conditions				Compressor Data		Electrical Data			NOTES
							Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Refrig Pipe Dim High/Low Pressure (inch)	Compressor Type	Compressor Quantity	Voltage / Phase	MCA 208/230 or [460V]	MOCP	
CDH-01	CU-01	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	53.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
CDH-02	CU-02	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	83.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
CDH-03	CU-03	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	48.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
DAAS-01	CU-04	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	53.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
DAAS-02	CU-05	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	58.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
DAAS-03	CU--06	TURYH0963AN40AN	96,000	108,000	23.2 / 13.65	4.010	95.0	43.0	52.8	3/4 / 7/8	SCROLL	1	208/230V / 3-phase 3-wire	44/40	70/60	1, 2, 3, 4, 5, 6, 7, 8, 9
DAAS-04	CU-07	TURYE1203AN40AN	120,000	135,000	27.55 / 13.2	3.875	95.0	43.0	48.3	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	41/38	60/60	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-01	SUD-01	TURYP0723AN40AN	72000	80000	26.5 / 13.9	3.925	95	43	32.29999995	5/8 / 3/4	SCROLL	1	208/230V / 3-phase 3-wire	24/22	40/35	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-02	SUD-02	TURYP0723AN40AN	72000	80000	26.5 / 13.9	3.925	95	43	32.29999995	5/8 / 3/4	SCROLL	1	208/230V / 3-phase 3-wire	24/22	40/35	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-03	SUD-02	TURYP0723AN40AN	72000	80000	26.5 / 13.9	3.925	95	43	52.29999995	5/8 / 3/4	SCROLL	1	208/230V / 3-phase 3-wire	24/22	40/35	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-04	SUD-02	TURYP0723AN40AN	72000	80000	26.5 / 13.9	3.925	95	43	32.29999995	5/8 / 3/4	SCROLL	1	208/230V / 3-phase 3-wire	24/22	40/35	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-05	SUD-02	TURYP0723AN40AN	72000	80000	26.5 / 13.9	3.925	95	43	52.29999995	5/8 / 3/4	SCROLL	1	208/230V / 3-phase 3-wire	24/22	40/35	1, 2, 3, 4, 5, 6, 7, 8, 9
SUD-06	SUD-06	TURYP1203AN40AN	120000	135000	26.05 / 12.65	3.81	95	43	53.27999997	3/4 / 1-1/8	SCROLL	1	208/230V / 3-phase 3-wire	43/40	70/60	1, 2, 3, 4, 5, 6, 7, 8, 9

NOTES:
1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.
5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.
6 Factory representatives shall review the project prior to and throughout the installation of CITY MULTI equipment
7 Factory representatives shall startup and commission CITY MULTI equipment upon completion of equipment installations
8 Factory representatives shall provide on-site assistance for the BMS integration of the CITY MULTI equipment
9 Factory representatives shall provide end-user training on the CITY MULTI equipment upon completion of the installation of equipment

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MECHANICAL SCHEDULES

M004

BRANCH CONTROLLER

ODU NO.	UNIT TAG	Model Number	Type (double / Main / Sub)	Number of Ports	Connected Capacity to BC	Electrical Data				Notes
						Voltage / Phase	Power Cooling 208V/230V (kW)	Power Heating 208V/230V (kW)	MCA 208/230	
DAAS-01	BC-D-1	TCMBG0108SJ11N4	Single	8	102,000.0	208/230V / 1-phase	0.122/0.157	0.061/0.078	0.74/0.87	1
DAAS-02	BC-D-2	TCMBG0108SJ11N4	Single	8	108,000.0	208/230V / 1-phase	0.122/0.157	0.061/0.078	0.74/0.87	1
DAAS-03	BC-D-3	TCMBG0108SJ11N4	Single	8	84,000.0	208/230V / 1-phase	0.122/0.157	0.061/0.078	0.74/0.87	1
DAAS-04	BC-D-4	TCMBG1012SJ11N4	Single	12	114,000.0	208/230V / 1-phase	0.182/0.235	0.091/0.118	1.1/1.29	1
CDH-01	BC-C-1	TCMBG1012SJ11N4	Single	12	108,000.0	208/230V / 1-phase	0.182/0.235	0.091/0.118	1.1/1.29	1
CDH-02	BC-C-2	TCMBG1012SJ11N4	Single	12	120,000.0	208/230V / 1-phase	0.182/0.235	0.091/0.118	1.1/1.29	1
CDH-03	BC-C-3	TCMBG1012SJ11N4	Single	12	114,000.0	208/230V / 1-phase	0.182/0.235	0.091/0.118	1.1/1.29	1
SUD-01	BC-S-1	TCMBG0104SJ11N4	Single	4	66000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1
SUD-02	BC-S-2	TCMBG0104SJ11N4	Single	4	72000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1
SUD-03	BC-S-3	TCMBG0104SJ11N4	Single	4	72000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1
SUD-04	BC-S-4	TCMBG0104SJ11N4	Single	4	63000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1
SUD-05	BC-S-5	TCMBG0104SJ11N4	Single	4	72000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1
SUD-06	BC-S-6	TCMBG0104SJ11N4	Single	4	120000	208/230V / 1-phase	0.061/0.078	0.3/0.039	0.38/0.44	1

Notes

1 Include Diamondback Ball Valves BV-Series, 700PSIG working pressure, full port, 410A rated.

2 For sub BC controller CMB-P-NU-GB1 or -GB, the total connectable indoor unit capacity can be 126,000 BTUs or less. If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs. For sub BC controller CMB-P1016NU-HB1 the total connectable indoor unit capacity can be 128,000 BTUs or less. However, if two sub controllers are used, one of them is CMB-1016NU-HB1, the total indoor unit capacity connected to BOTH sub controllers must NOT exceed 168,000 BTUs.

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MECHANICAL SCHEDULES

M005

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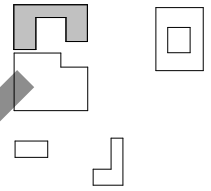

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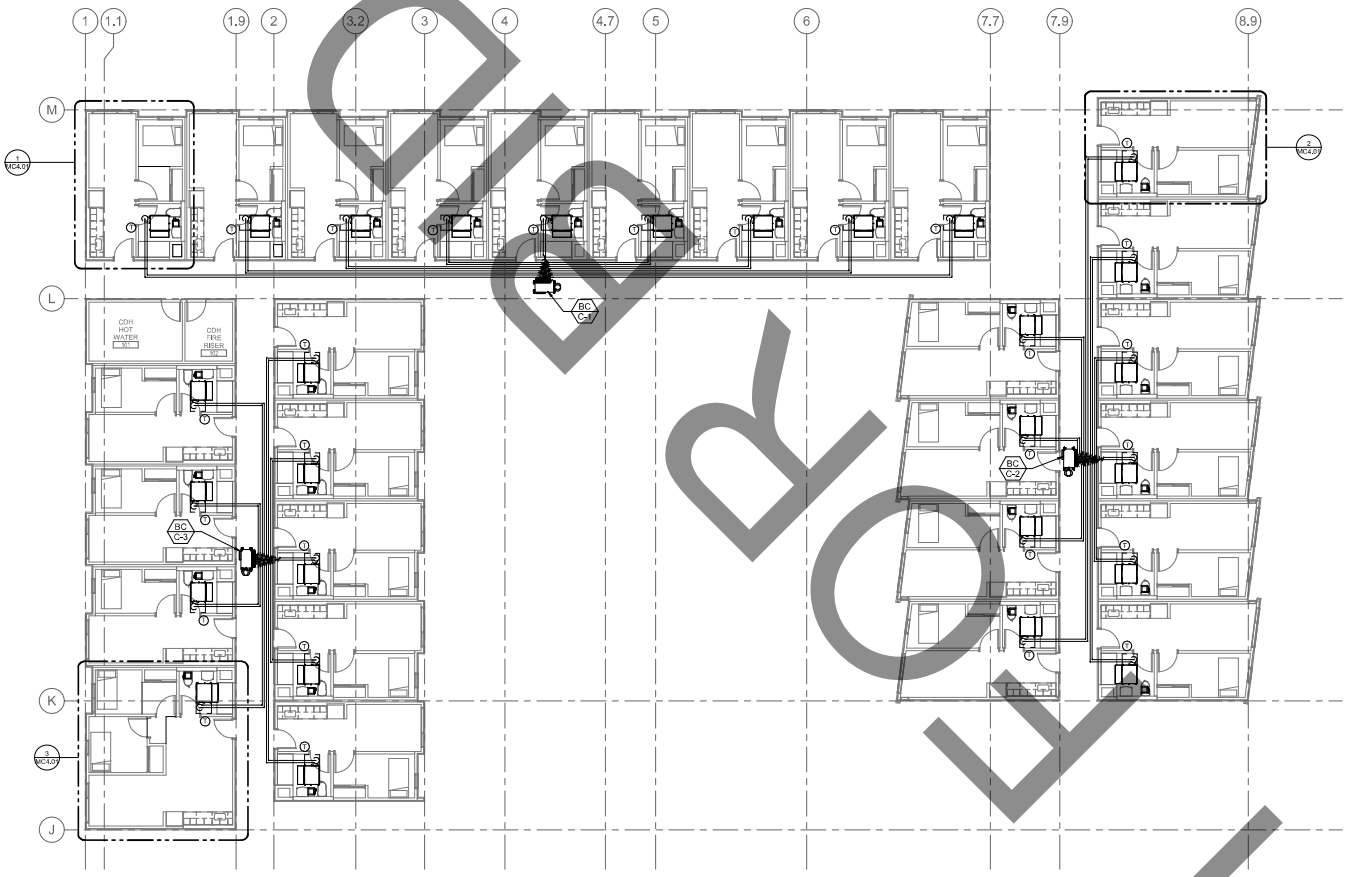
MECHANICAL CDH HOUSING FLOOR PLAN

MC2.01



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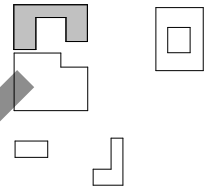

MECHANICAL CDH HOUSING FLOOR PIPING PLAN | SCALE 1/8" = 1'-0" | 1

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MECHANICAL CDH HOUSING FLOOR PIPING PLAN

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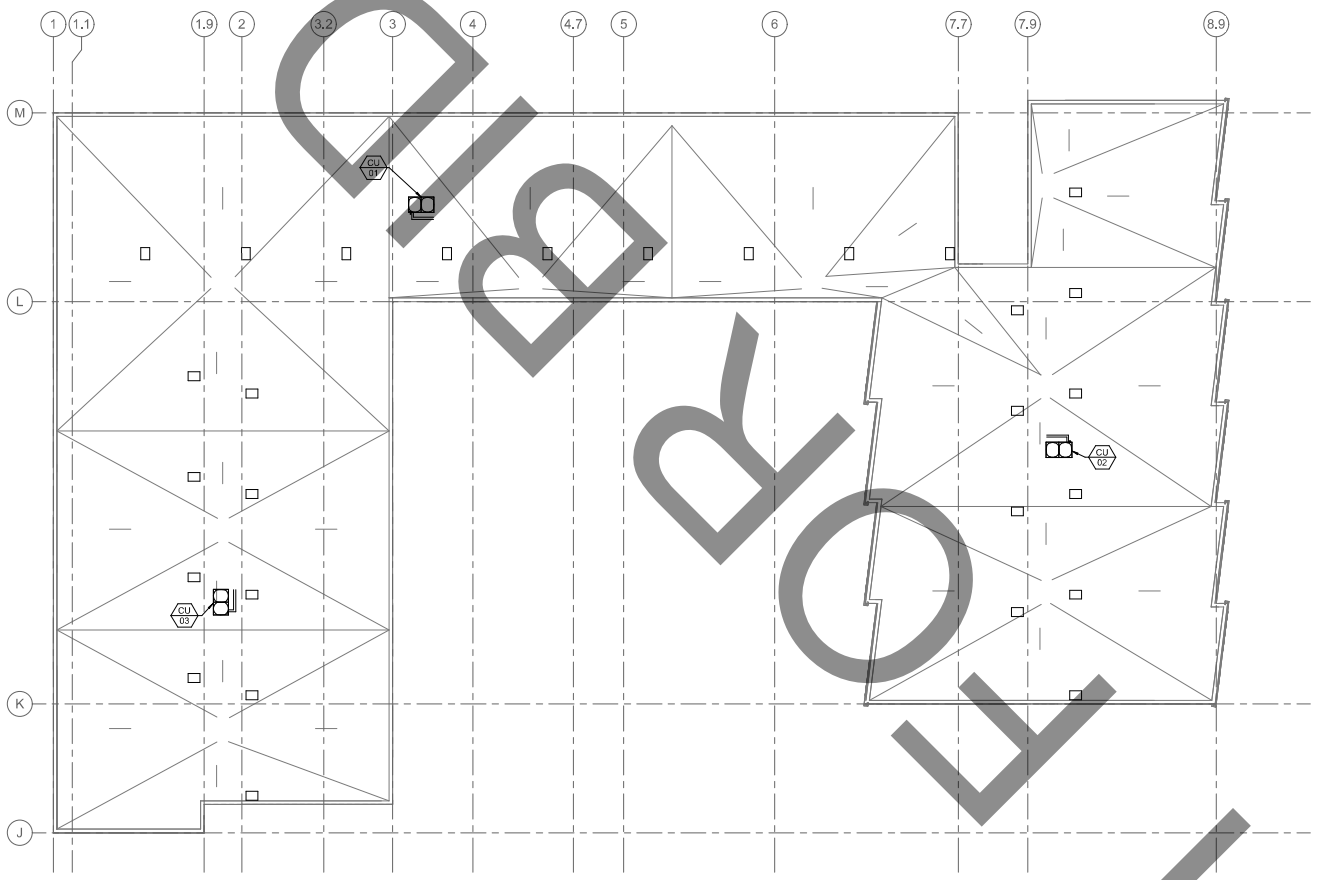

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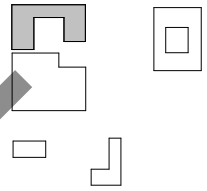

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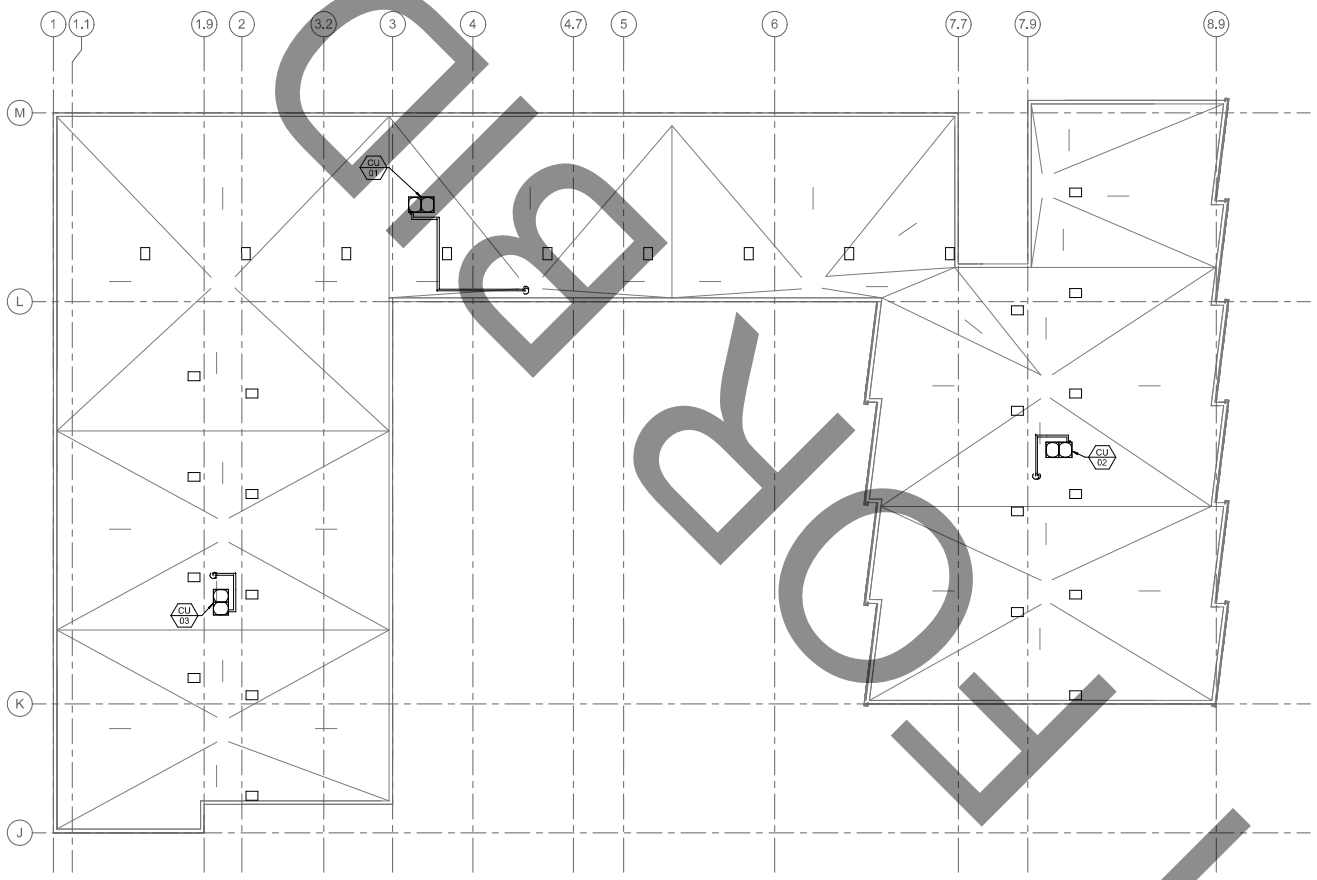
MECHANICAL CDH HOUSING ROOF PLAN

MC2.03



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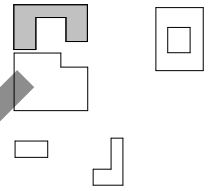

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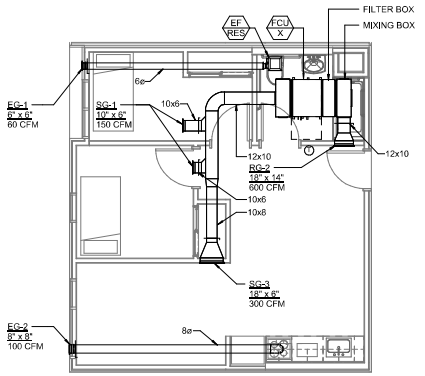
MECHANICAL CDH HOUSING ROOF PIPING PLAN

MC2.04



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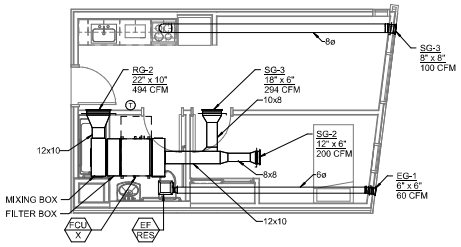

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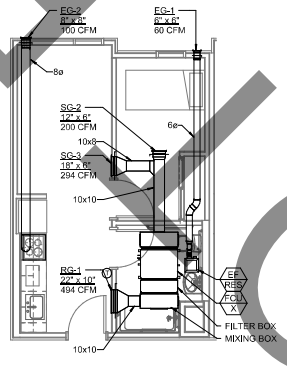

MECHANICAL CDH 1-BEDROOM FLOOR PLAN | SCALE 1/4" = 1'-0" | 1

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MECHANICAL CDH HOUSING ENLARGED PLAN

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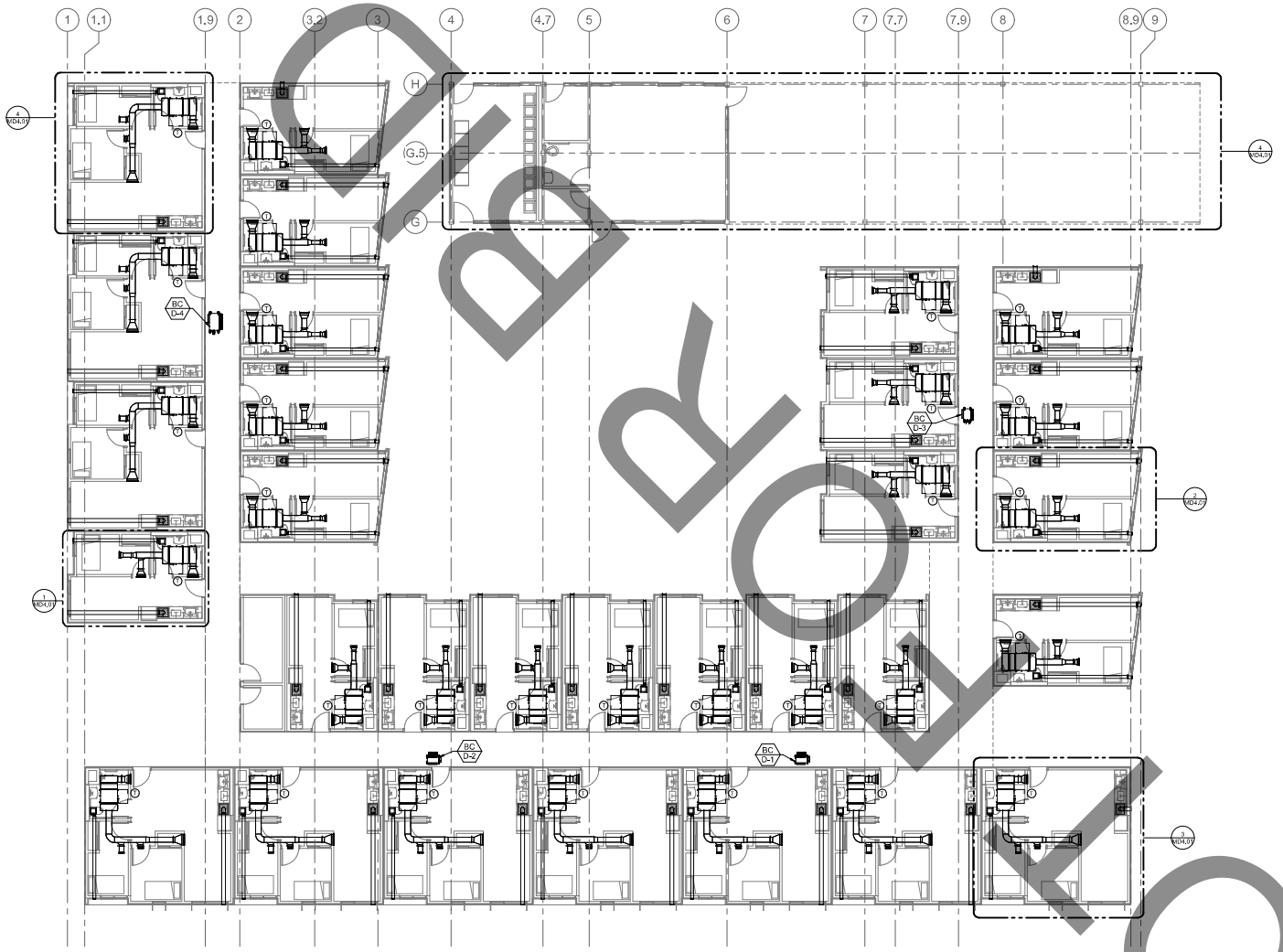

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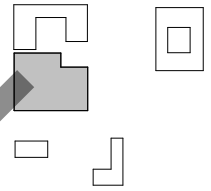

MECHANICAL DAAS HOUSING FLOOR PLAN | SCALE 1/8" = 1'-0" | 1

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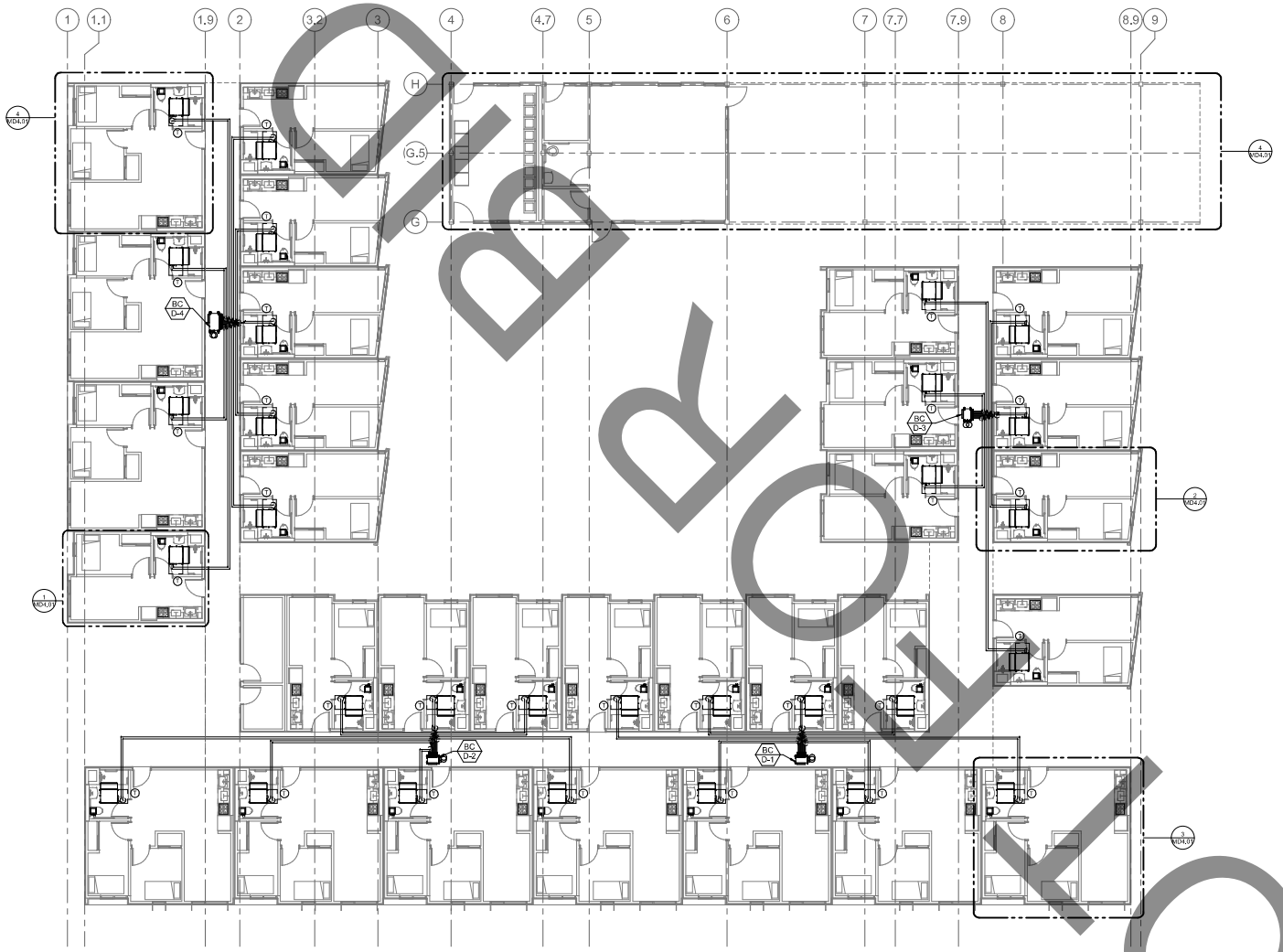
MECHANICAL DAAS HOUSING FLOOR PLAN

MD2.01



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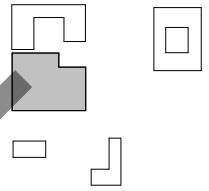

MECHANICAL DAAS HOUSING FLOOR PIPING PLAN | SCALE 1/8" = 1'-0" | 1

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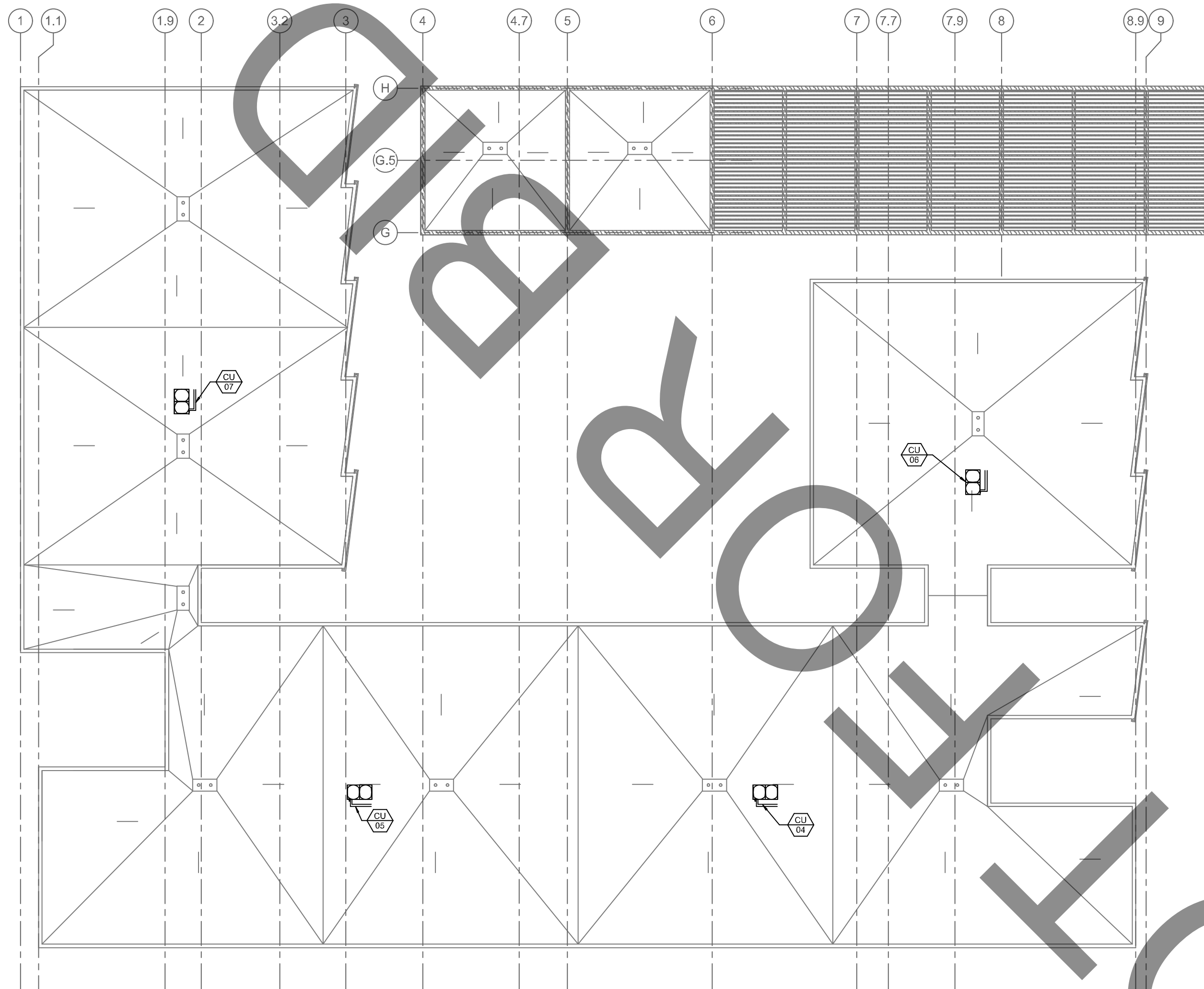
MECHANICAL DAAS HOUSING FLOOR PIPING PLAN

MD2.02



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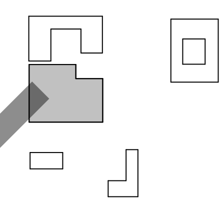

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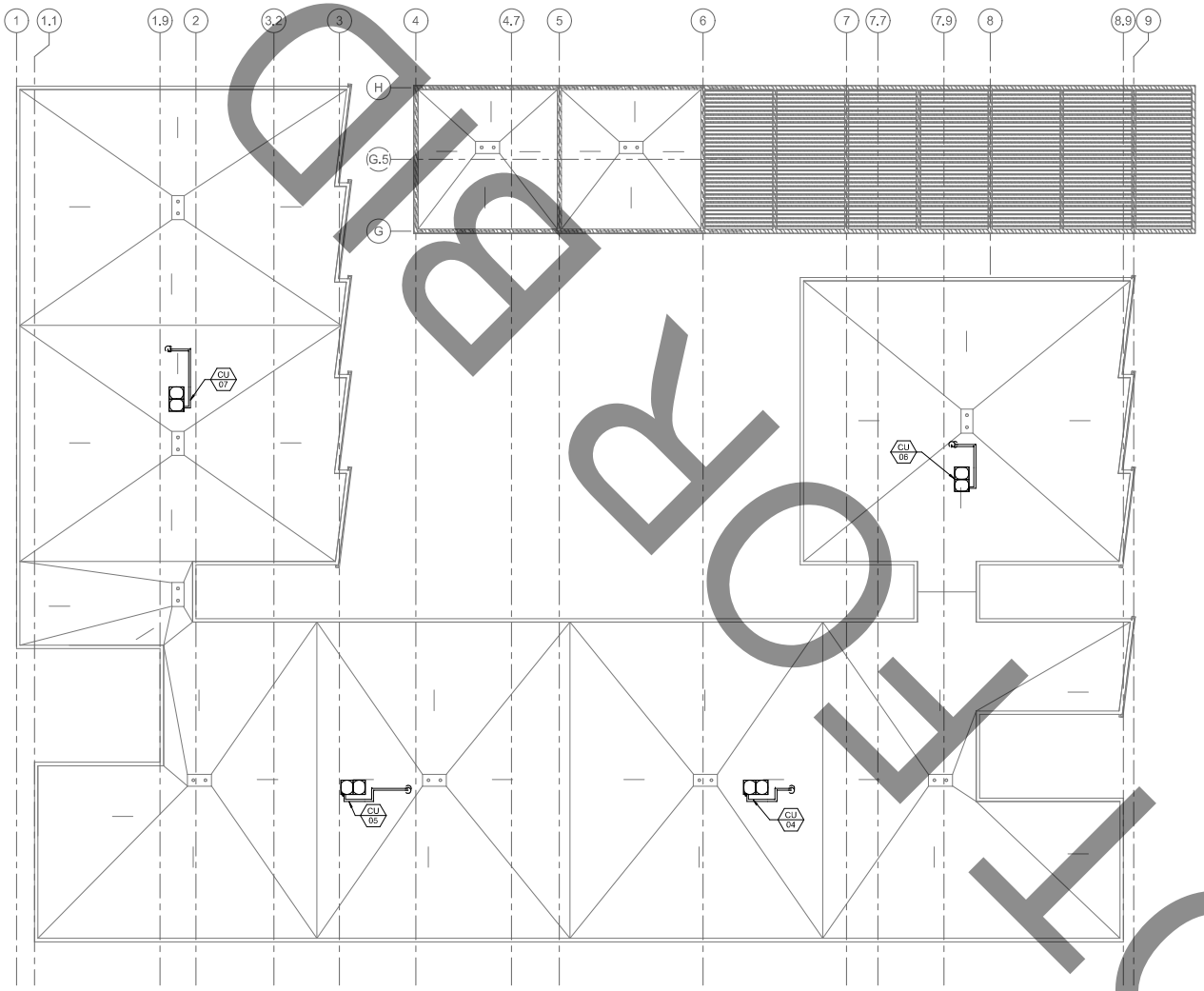
MECHANICAL DAAS
HOUSING ROOF PLAN

MD2.03



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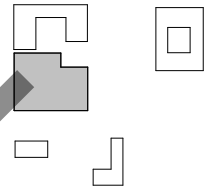

MECHANICAL DAAS HOUSING ROOF PIPING PLAN | SCALE 1/8" = 1'-0" | 1

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Budlong
Job No. 21-233

Pacific Village Platinum Campus
2626 Pacific Street, Highland, CA 92346
Developed for San Bernardino County

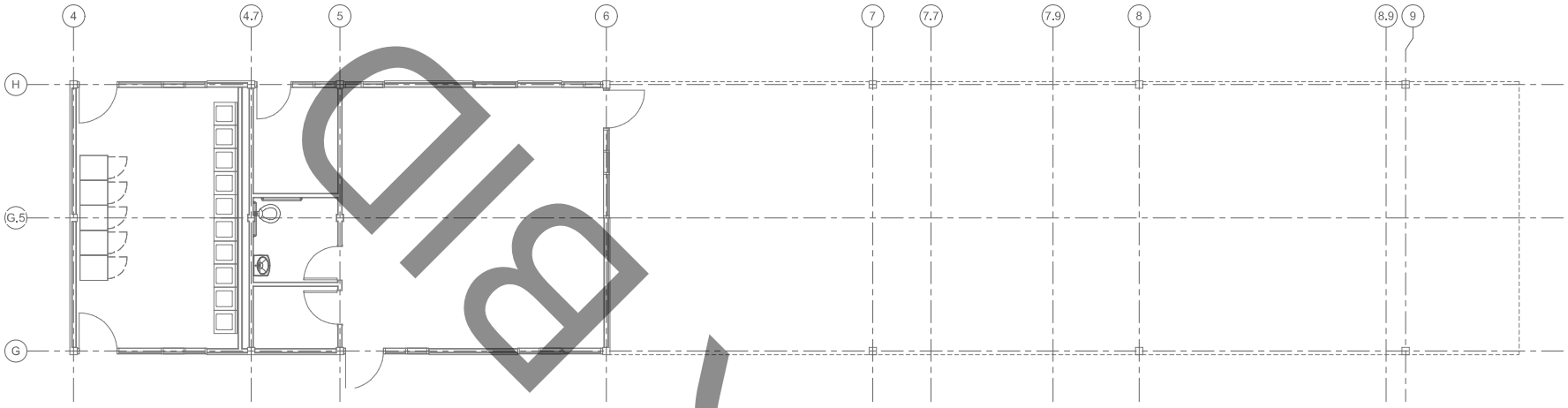
Revision	Date

Submittal	Date
ENTER DESCRIPTION	XX/XX/XXXX

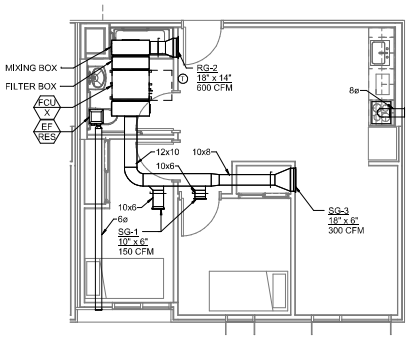
Job Number	31687
Checked By	Checker
Scale	1/8" = 1'-0"

MECHANICAL DAAS HOUSING ROOF PIPING PLAN

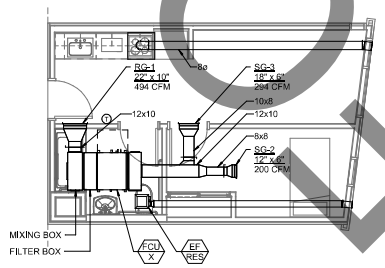
MD2.04



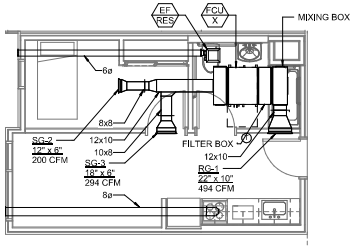
MECHANICAL DAAS ENLARGED COMMUNITY BLDG & TRELLIS FLOOR PLAN | SCALE 1/4" = 1'-0" | 4



MECHANICAL DAAS 2-BEDROOM FLOOR PLAN | SCALE 1/4" = 1'-0" | 3



MECHANICAL DAAS 1-BEDROOM W/ANGLE FLOOR PLAN | SCALE 1/4" = 1'-0" | 2



MECHANICAL DAAS 1-BEDROOM FLOOR PLAN | SCALE 1/4" = 1'-0" | 1

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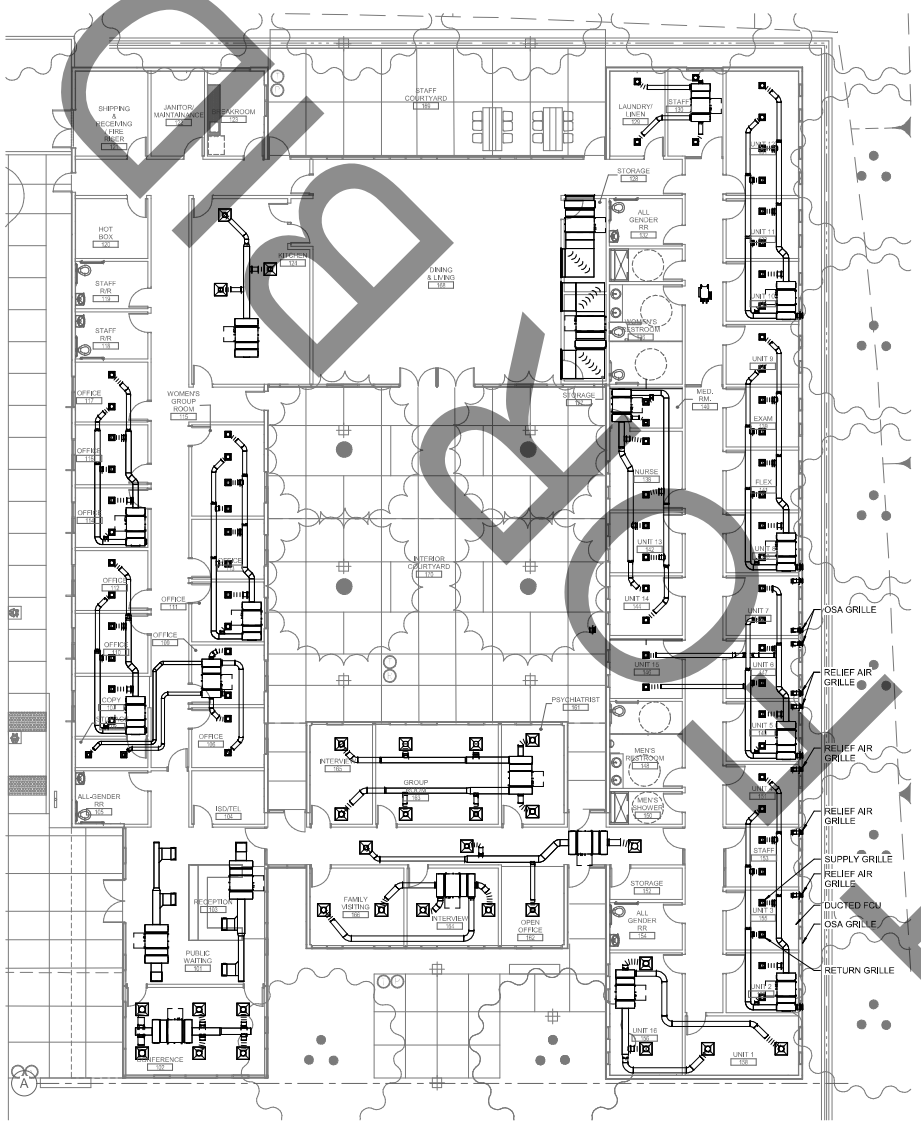
MECHANICAL DAAS HOUSING ENLARGED PLAN

MD4.01



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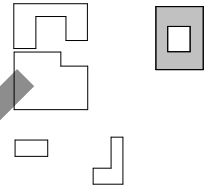

MECHANICAL SUD FLOOR PLAN | SCALE 1/8" = 1'-0" | 1

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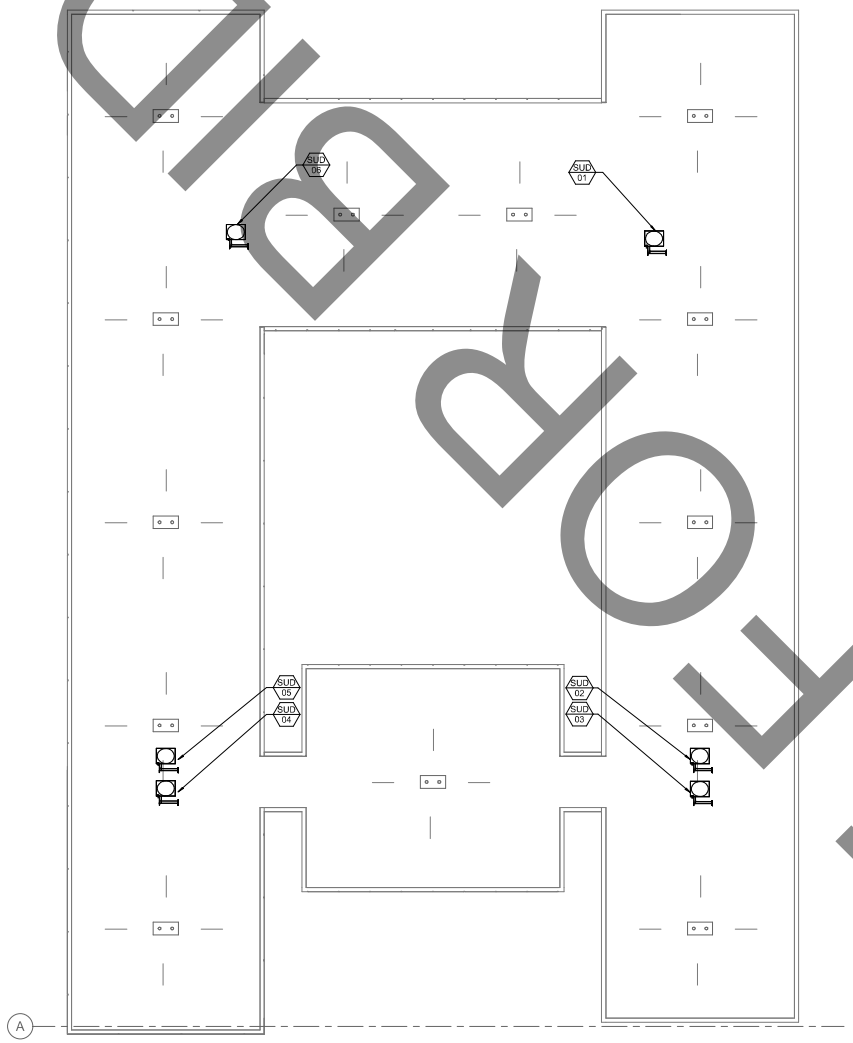
MECHANICAL SUD FLOOR PLAN

MS2.01



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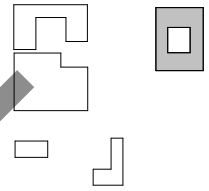

MECHANICAL SUD ROOF PLAN | SCALE 1/8" = 1'-0" | 1

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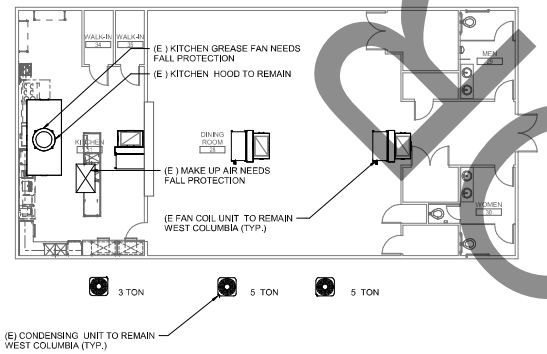
MECHANICAL SUD ROOF PLAN

MS2.03



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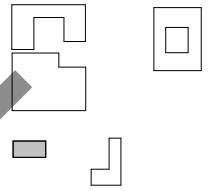

MECHANICAL DAAS CAFETERIA FLOOR PLAN | SCALE 1/8" = 1'-0" | 1

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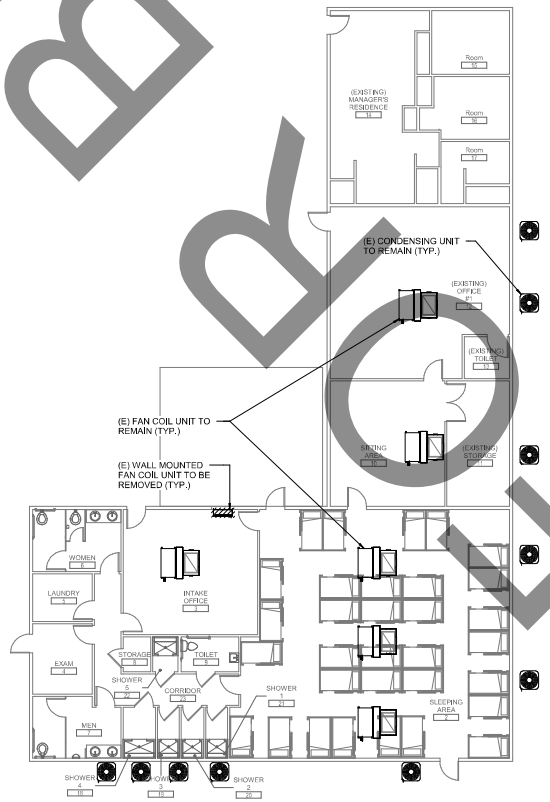
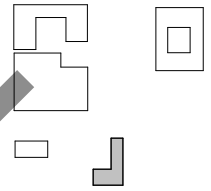
MECHANICAL DAAS CAFETERIA FLOOR PLAN

MDC2.01



KEYPLAN



MECHANICAL DAAS RCC FLOOR PLAN | SCALE 1/8" = 1'-0" | 1

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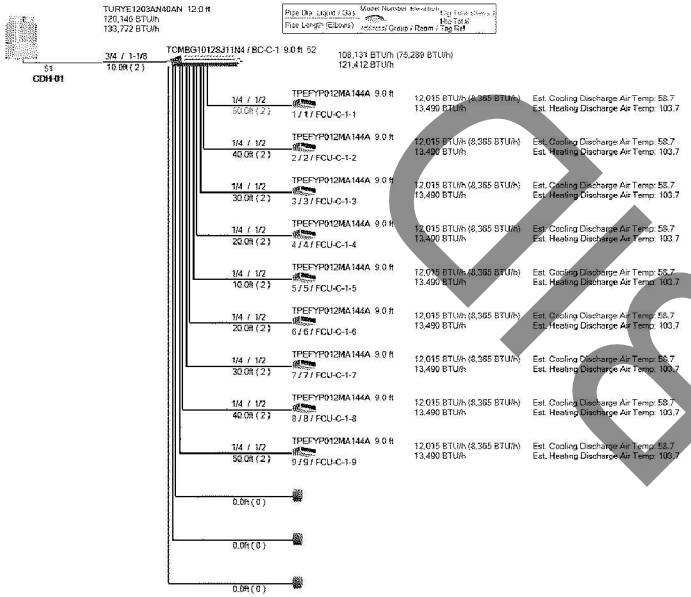
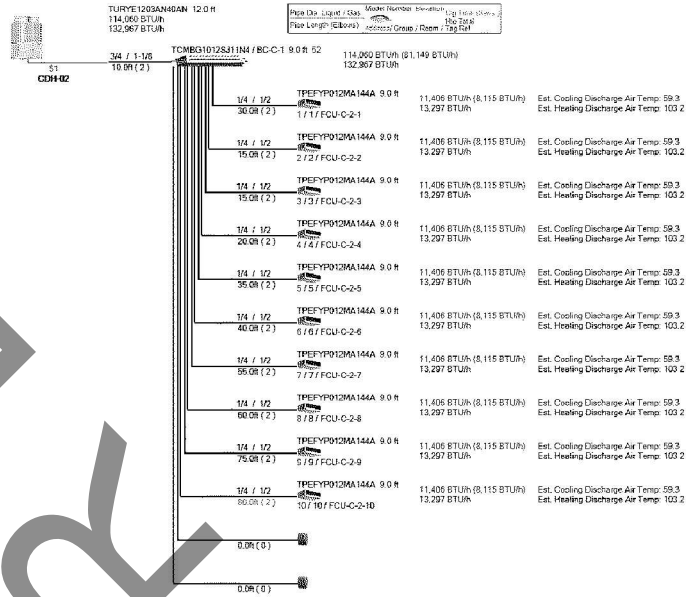
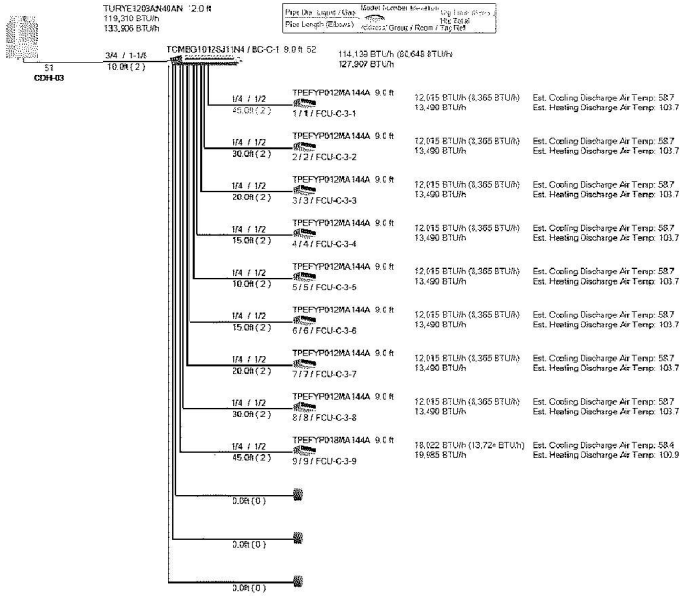
MECHANICAL DAAS RCC FLOOR PLAN

MDR2.01







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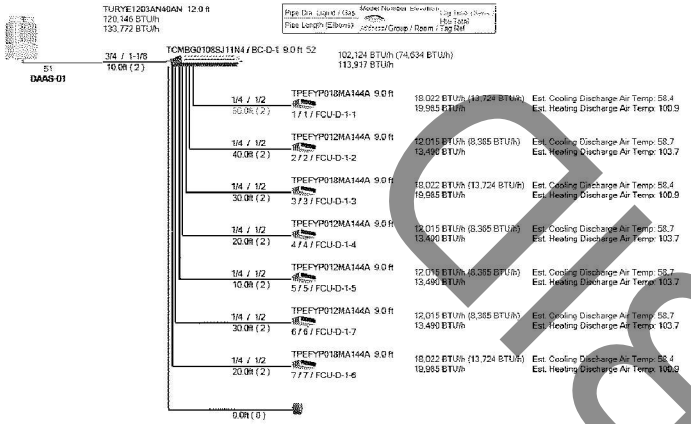
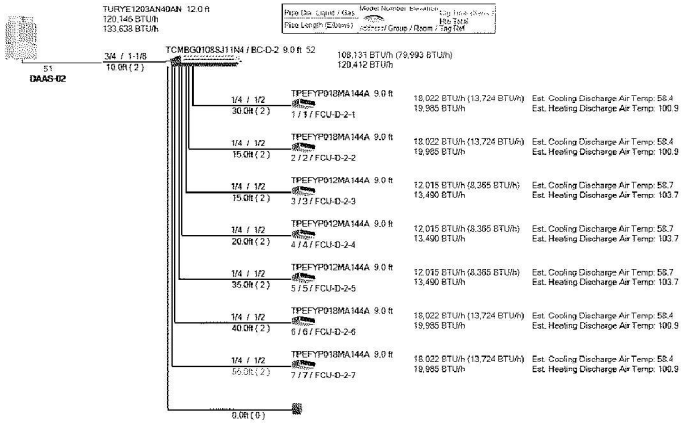
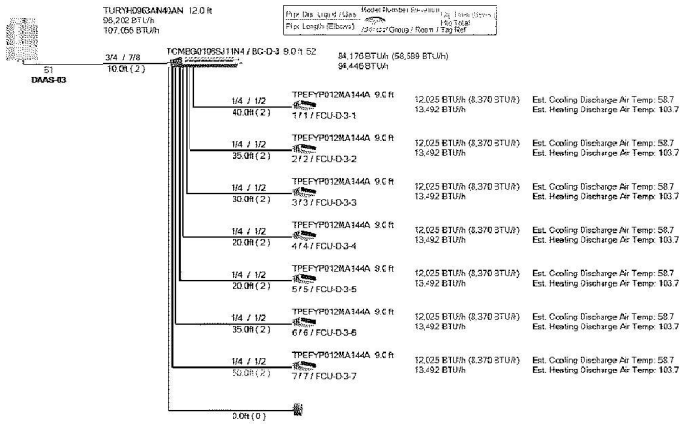
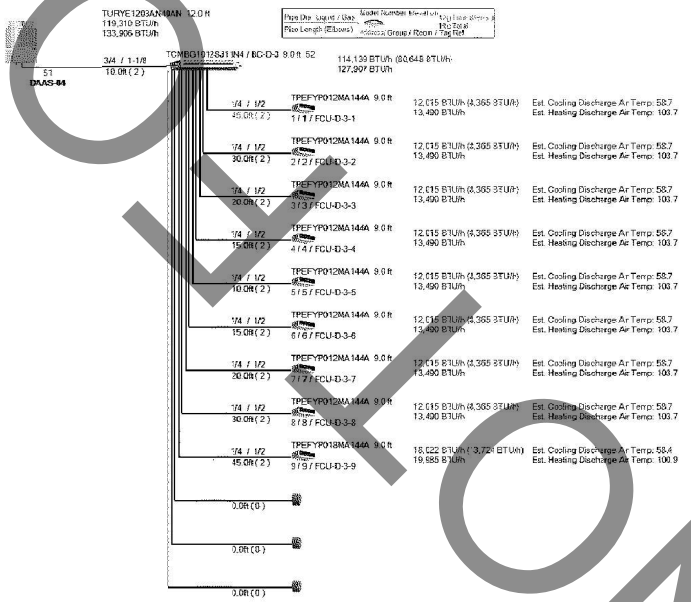
MECHANICAL CDH HOUSING PIPING DIAGRAM

M501









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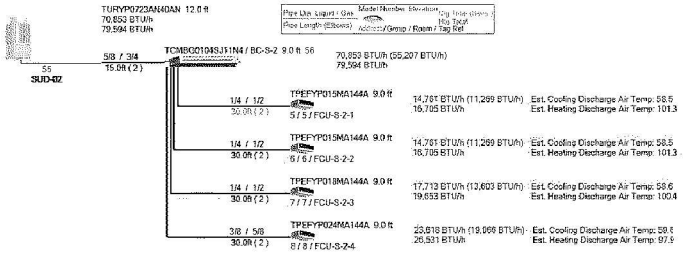
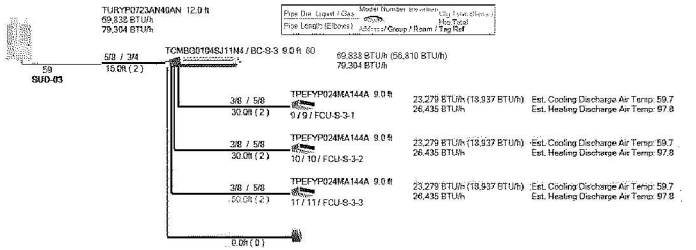
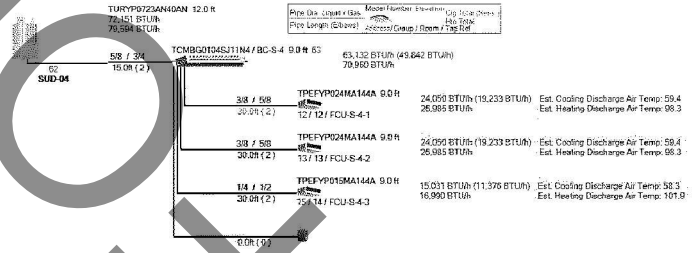
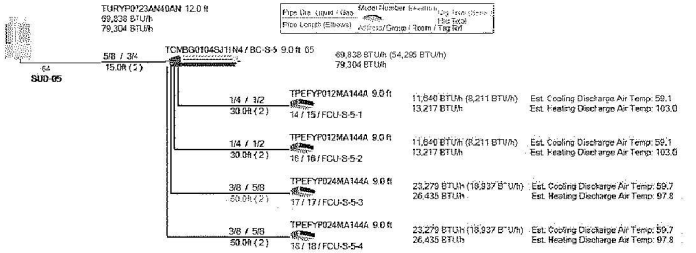
MECHANICAL DAAS HOUSING PIPING DIAGRAM

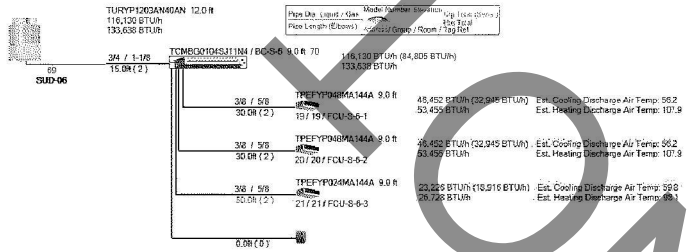
M502











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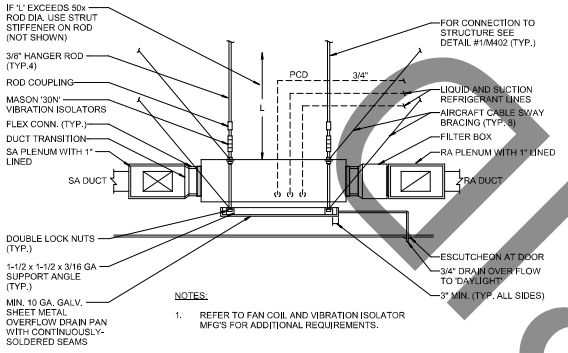
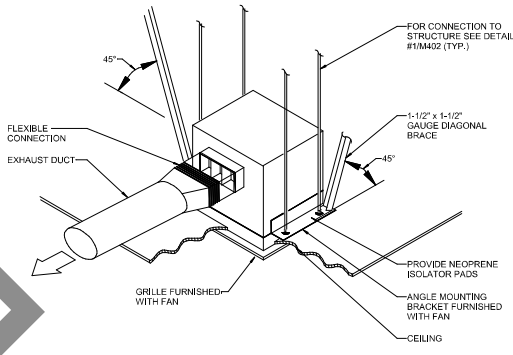
MECHANICAL SUD PIPING DIAGRAM

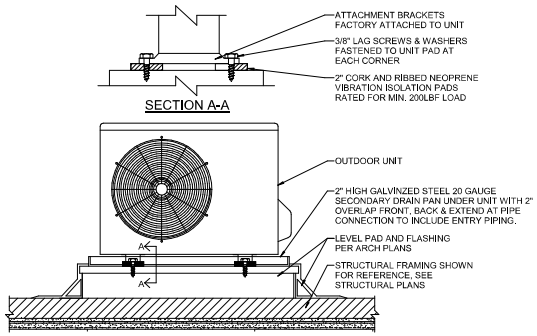
M503



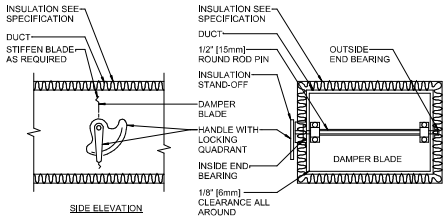
1 **CEILING CONCEALED FAN COIL UNIT**
N.T.S.



2 **CEILING MOUNTED EXHAUST FAN**
N.T.S.

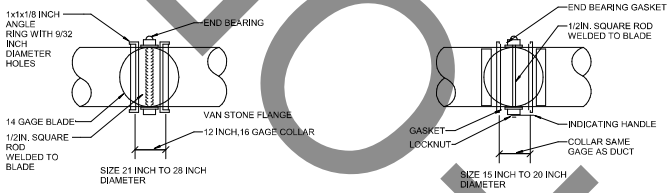


3 **OUTDOOR UNIT ON ROOF**
N.T.S.

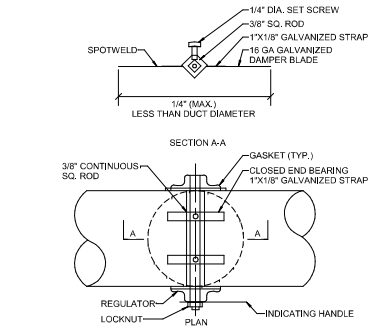


NOTES:
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

4 **RECTANGULER VOLUME DAMPER**
N.T.S.

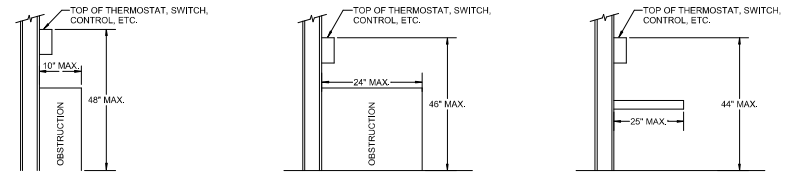


5 **ROUND VOLUME DAMPER LARGER THAN 14"Ø DUCT**
N.T.S.

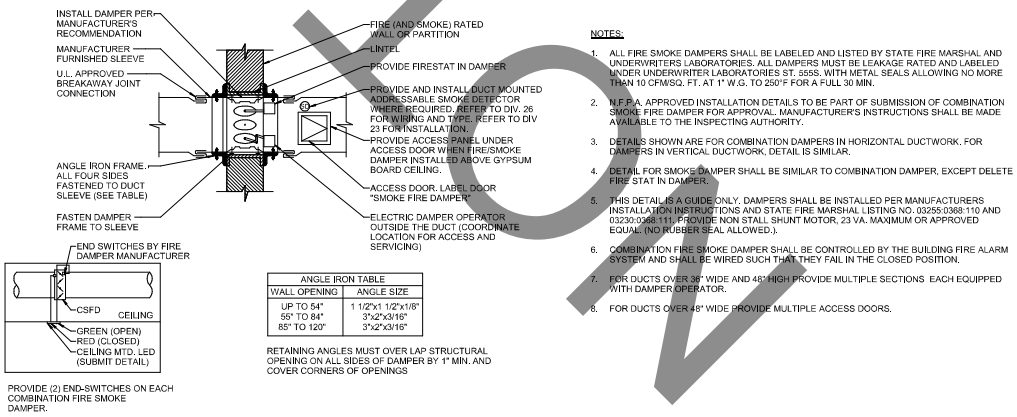


NOTES:
1. LOCK DAMPER DURING AIR BALANCE AND MARK QUADRANT TO RECORD AIR BALANCED DAMPER POSITION POSITION.
2. PROVIDE "HAT" SECTION AT QUADRANT FOR ALL EXTERNALLY INSULATED DUCTWORK.
3. PROVIDE FLUORESCENT COLORED MARKERS AT ALL VOLUME DAMPERS LOCATIONS.

6 **ROUND VOLUME DAMPER UPTO 14"Ø DUCT**
N.T.S.



7 **THERMOSTAT INSTALLATION DIAGRAM**
N.T.S.



PROVIDE (2) END-SWITCHES ON EACH COMBINATION FIRE SMOKE DAMPER.

ANGLE IRON TABLE	
WALL OPENING	ANGLE SIZE
UP TO 54"	1 1/2"x1 1/2"x1/8"
55" TO 84"	3"x2"x3/16"
85" TO 120"	3"x2"x3/16"

RETAINING ANGLES MUST OVER LAP STRUCTURAL OPENING ON ALL SIDES OF DAMPER BY 1" MIN. AND COVER CORNERS OF OPENINGS

NOTES:
1. ALL FIRE SMOKE DAMPERS SHALL BE LABELED AND LISTED BY STATE FIRE MARSHAL AND UNDERWRITERS LABORATORIES. ALL DAMPERS MUST BE LEAKAGE RATED AND LABELED UNDER UNDERWRITER LABORATORIES ST. 555S. WITH METAL SEALS ALLOWING NO MORE THAN 10 CFM/SQ. FT. AT 1" W.G. TO 250°F FOR A FULL 30 MIN.
2. N.F.P.A. APPROVED INSTALLATION DETAILS TO BE PART OF SUBMISSION OF COMBINATION SMOKE FIRE DAMPER FOR APPROVAL. MANUFACTURER'S INSTRUCTIONS SHALL BE MADE AVAILABLE TO THE INSPECTING AUTHORITY.
3. DETAILS SHOWN ARE FOR COMBINATION DAMPERS IN HORIZONTAL DUCTWORK. FOR DAMPERS IN VERTICAL DUCTWORK, DETAIL IS SIMILAR.
4. DETAIL FOR SMOKE DAMPER SHALL BE SIMILAR TO COMBINATION DAMPER, EXCEPT DELETE FIRE STAT IN DAMPER.
5. THIS DETAIL IS A GUIDE ONLY. DAMPERS SHALL BE INSTALLED PER MANUFACTURERS INSTALLATION INSTRUCTIONS AND STATE FIRE MARSHAL LISTING NO. 03255:0368:110 AND 03230:0368:111. PROVIDE NON STALL SHUNT MOTOR, 23 VA. MAXIMUM OR APPROVED EQUAL. (NO RUBBER SEAL ALLOWED.).
6. COMBINATION FIRE SMOKE DAMPER SHALL BE CONTROLLED BY THE BUILDING FIRE ALARM SYSTEM AND SHALL BE WIRED SUCH THAT THEY FAIL IN THE CLOSED POSITION.
7. FOR DUCTS OVER 36" WIDE AND 48" HIGH PROVIDE MULTIPLE SECTIONS EACH EQUIPPED WITH DAMPER OPERATOR.
8. FOR DUCTS OVER 48" WIDE PROVIDE MULTIPLE ACCESS DOORS.

8 **COMBINATION FIRE/SMOKE DAMPER**
N.T.S.

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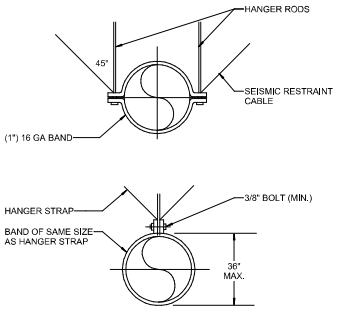
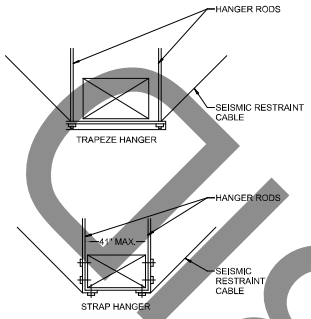
MECHANICAL DETAILS

M601





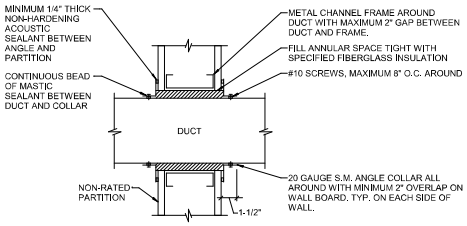
1 DUCT SUPPORT DIAGRAMS
N.T.S.

FOR RECTANGULAR DUCT HANGERS MINIMUM SIZE SEE CALIFORNIA MECHANICAL CODE TABLE # 6-2-A
FOR RECTANGULAR DUCT TRAPEZE ANGLES HANGERS MINIMUM SIZE SEE CALIFORNIA MECHANICAL CODE TABLE # 6-2-B

NOTES:

NO POP RIVETS ALLOWED, USE SELF-TAPPING SHEETMETAL SCREWS ONLY.

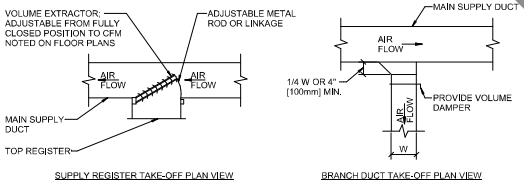
ROUND DUCT HANGERS			
DUCT DIA	MAX. SPACING	ROD	STRAP
10" DOWN	12'-0"	1/4"	1"x0.030 (22 GA)
11" TO 24"	12'-0"	1/4"	1"x0.030 (22 GA)
25" TO 36"	12'-0"	1/4"	1"x0.036 (20 GA)
37" TO 94"	12'-0"	TWO 3/8"	-



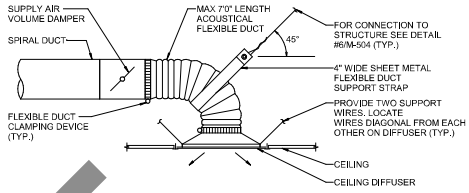
NOTES:

1. DETAIL SIMILAR FOR ALL CONCEALED AND EXPOSED DUCTS THROUGH NON-FIRE-RATED WALLS.
2. DETAIL SIMILAR FOR ROUND DUCTS.

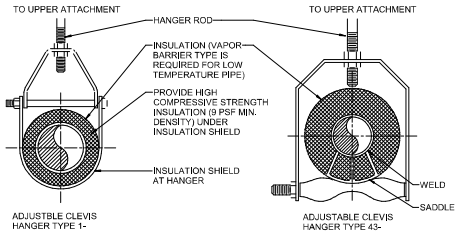
2 DUCT THROUGH NON-RATED PARTITION
N.T.S.



3 DUTWORK TAKE-OFFS
N.T.S.



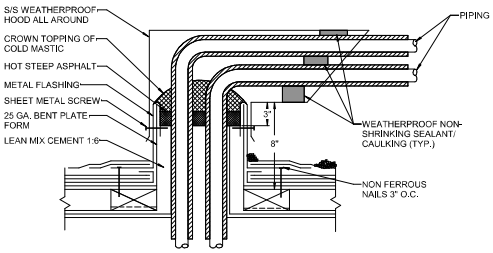
4 FLEX DUCT CONNECTION TO CEILING DIFFUSER
N.T.S.



PIPING SUPPORT UPPER ATTACHMENTS SHALL BE REVIEWED AND APPROVED BY SEOR BEFORE FABRICATION AND INSTALLATION.

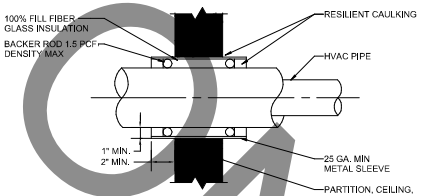
MAXIMUM PIPE TUBING SUPPORT SPACING							
NOM. SIZE [IN]	THRU 3/4"	1	1 1/4	1 1/2	2	2 1/2	3
PIPE [FT]	7	7	7	9	10	11	12
TUBING [FT]	5	6	7	8	8	9	10

5 PIPE HANGERS DETAIL
N.T.S.



NOTE:
SEE ROOFING SPECIFICATIONS FOR THE ROOF CONSTRUCTION. AND ADDITIONAL REQUIREMENTS

6 REFRIGERANT PIPE PENETRATION THROUGH ROOF
N.T.S.



NOTES:

1. PROVIDE PITCH POCKET CONSTRUCTION. ADDITIONAL FLASHING, OR WEATHER CAP AS REQUIRED FOR WATERPROOF CONSTRUCTION. DO NOT MECHANICALLY TIE PIPE TO STRUCTURE IN ANY WAY.
2. SPACE BETWEEN PIPE AND SLEEVE SHALL BE FREE OF ANY FOREIGN MATERIAL.
3. ALL HVAC PIPES SHALL NOT CONTACT STRUCTURE AT ANY TIME. WEDGES SHALL NOT BE USED TO MAINTAIN PIPE IN POSITION.
4. ALL HVAC PIPES MUST BE APPROXIMATELY CENTERED IN OPENING. PROVIDE ADDITIONAL CLEARANCE FOR POSITIONAL CHANGE OF PIPE DUE TO LOADING OF PIPE OR OPERATION OF SYSTEM.
5. ALL FIRE STOPPING AND FILL MATERIALS SHALL BE UL LISTED.

7 REFRIGERANT PIPE PENETRATION THROUGH WALL
N.T.S.

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NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION

Budlong
Job No. 23-233

Pacific Village Platinum Campus
2626 Pacific Street, Highland, CA 92346
Developed for San Bernardino County

Revision	Date

Submittal	Date
ENTER DESCRIPTION	XX/XX/XXXX

Job Number	31687
Checked By	Checker
Scale	N.T.S.

MECHANICAL DETAILS

M602