

MECHANICAL NOTES

GENERAL

- 1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS' WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. CONTRACTOR TO COORDINATE ALL CLEARANCES PRIOR TO INSTALLATION OF EQUIPMENT AND MATERIAL.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO RECEIVE, OFFLOAD AND STORE ALL HVAC MATERIALS WHICH ARRIVE AT THE JOB SITE.
3. GENERAL CONTRACTOR IS TO PROVIDE ANY SCREENING, GUARD RAILS, ETC. FOR ROOF MOUNTED HVAC EQUIPMENT PER B.C. AND LOCAL CODES.
4. OBTAINING ALL REQUIRED PERMITS AND PAYING ALL ASSOCIATED FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS, LOCAL, STATE AND NATIONAL CODES.
5. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS TO PERFORM MECHANICAL WORK AS SHOWN, NOTED OR SCHEDULED FOR A COMPLETE INSTALLATION.
6. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND SHOW THE RELATIONSHIP BETWEEN EQUIPMENT AND CONNECTIONS. DO NOT SCALE THE DRAWINGS FOR EXACT SIZE OR LOCATIONS. BUILDING DIMENSIONS SHALL BE TAKEN FROM ARCH. PLANS AND EQUIPMENT DIMENSIONS SHALL BE TAKEN FROM CERTIFIED EQUIPMENT DATA.
7. CONTRACTOR TO COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT.
8. LOCATION OF ALL EXTERIOR WALL PENETRATIONS SHALL BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
9. TESTING, ADJUSTING AND BALANCING OF MECHANICAL SYSTEM SHALL BE PROVIDED BY CONTRACTOR. THE CONTRACTOR SHALL HIRE AN A.A.B.C. OR N.E.B.B. CERTIFIED, INDEPENDENT TEST AND BALANCE COMPANY TO CONDUCT A COMPLETE, CERTIFIED TEST AND BALANCE OF ALL HVAC EQUIPMENT AND PROVIDE A WRITTEN REPORT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTIONS NECESSARY FOR COMPLETE AND FULLY FUNCTIONING SYSTEM INCLUDING INITIAL START-UP AND INSTALLATION OF NEW FILTERS.
10. ALL CONTRACTORS MUST COORDINATE EACH PIECE OF EQUIPMENT WITH ALL OTHER TRADES (GENERAL CONTRACTOR, PLUMBING CONTRACTOR, MECHANICAL CONTRACTOR, SPRINKLER CONTRACTOR, ELECTRICAL CONTRACTOR, ETC.) AFFECTED BY THAT PIECE OF EQUIPMENT (ROOF OPENINGS, WEIGHTS, POWER REQUIREMENTS, VOLTAGES, ETC.) PRIOR TO ORDERING EQUIPMENT AND AGAIN PRIOR TO INSTALLATION (ROOFTOP EQUIPMENT PRIOR TO LIFTING ONTO ROOF). NO EXTRA COMPENSATION WILL BE APPROVED IF COORDINATION IS NOT PERFORMED BY EACH RESPECTIVE CONTRACTOR AND SUBCONTRACTOR.
11. CONTRACTOR SHALL VISIT SITE BEFORE SUBMITTING BID AND MAKE ALL NECESSARY OBSERVATIONS, MEASUREMENTS, AND NOTE CONDITIONS UNDER WHICH HIS WORK IS TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO DO SO. THIS CONTRACT INVOLVES REMODELING OF EXISTING BUILDING AND THEREFORE SHALL FIELD LOCATE EXISTING DUCTWORK, PIPING, AIR TERMINAL DEVICES, ETC. BEFORE STARTING WORK.
12. ALL OBVIOUS ERRORS AND/OR OMISSIONS IN THE ABOVE MENTIONED DOCUMENTS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT / ENGINEER PRIOR TO CONSTRUCTION.
13. ANY MECHANICAL ITEMS IN QUESTION REGARDING REMOVAL/REUSE SHALL BE BROUGHT TO THE ATTENTION OF ARCHITECT/ENGINEER. CONTRACTOR SHALL SUBMIT A REQUEST FOR INFORMATION TO THE ARCHITECT/ENGINEER IN WRITING PRIOR TO REMOVAL OF ANY MECHANICAL ITEMS.
14. SEE MECHANICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL PATCH HOLES WEATHER TIGHT IN EXISTING WALL DUE TO REMOVAL/ADDITION OF MECHANICAL ITEMS.
16. CONTRACTOR SHALL LOCATE AND INSTALL ALL MECHANICAL EQUIPMENT MINIMUM 10FT FROM ROOF EDGE WHEN MINIMUM 42" HIGH PARAPET/RAILS IS NOT PROVIDED FOR FALL PROTECTION.
17. ALL COSTS INCURRED BY ACCEPTANCE OF SUBSTITUTIONS SHALL BE BORNE BY CONTRACTOR. ANY ADDITIONAL COSTS/SERVICES RESULTING FROM PROPOSED SUBSTITUTE EQUIPMENT SHALL BE PROVIDED AT NO EXTRA COST TO THE OWNER.
18. TO PREVENT DIRT/DEBRIS FROM GETTING INSIDE THE HVAC EQUIPMENT DURING CONSTRUCTION, CONTRACTOR SHALL DUCT TAPE A MINIMUM 1" THICK FOAM FILTER TO THE BOTTOM OF ALL AIR RETURNS IN THE BUILDING. FILTERS SHALL BE CHANGED WEEKLY OR AS NEEDED BASED ON CONDITION UNTIL COMPLETION OF CONSTRUCTION.

DUCTWORK

- 19. DUCT SIZES ARE SHOWN AS CLEAR INSIDE FREE AREA DIMENSIONS. PROVIDE FLEXIBLE CONNECTIONS WHERE DUCTS CONNECT TO UNIT (IN RISER), RUN ALL DUCTWORK AS HIGH AS POSSIBLE TO AVOID INTERFERENCE OF INTERSECTING DUCT. ALL DUCTWORK SHALL BE INDEPENDENTLY HUNG FROM STRUCTURAL MEMBERS. COORDINATE ELEVATION AND LOCATION WITH RAIN LEADERS, WATER PIPING, PLUMBING VENTS, AND MAJOR ELECTRICAL CONDUITS OR CABLE TRAY.
20. PORTIONS OF DUCTWORK VISIBLE THROUGH GRILLES, REGISTERS, AND DIFFUSERS IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
21. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL AND SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS (LATEST ISSUE). DUCT HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA RECOMMENDATIONS.
22. INSULATE ALL SUPPLY AND RETURN DUCT WITH MINIMUM R-4 INSTALLED FIBERGLASS, FOIL BACKED INSULATION OR RIGID BONDED WITH FIRE AND SMOKE RATING [20]-[50] TO PREVENT CONDENSATION. INSTALL IN ACCORDANCE WITH SMACNA DUCT WRAP APPLICATIONS STANDARDS. ADDITIONALLY, INSTALL DUCT LINER IN THE FIRST TEN FEET OF SUPPLY AND FULL LENGTH OF RETURN DUCTS UNLESS NOTED OTHERWISE. ALL EXPOSED SPIRAL AND RECTANGULAR DUCT INSIDE THE BUILDING SHALL BE PRIMED, PAINT GRIP WITH R-0 INSTALLED LINER WITHIN. ALL EXTERIOR DUCT OUTSIDE THE BUILDING SHALL BE PAINT GRIP DOUBLE WALL WITH LINER WITHIN. ALL DUCTWORK DIMENSIONS ARE NET INSIDE DIMENSIONS.
23. ALL FLEX DUCT SHALL BE FOIL-BACKED, R-4 U.L. LISTED, CLASSIFIED AS A CLASS 1 AIR DUCT, AND MEET LOCAL CODE REQUIREMENTS. FLEXIBLE DUCT TAKE-OFF TO BE THERMAFLEX TYPE M KE OR EQUIVALENT.
24. MAXIMUM LENGTH OF FLEXIBLE DUCT IS NOT TO EXCEED 8'-0".

ELECTRICAL

- 25. ALL FANS 1/2 HP AND ABOVE SHALL HAVE FUSED DISCONNECT SWITCHES MOUNTED AT THE FAN IF APPROVED BY LOCAL AUTHORITIES. NON-FUSED DISCONNECT SWITCHES MAY BE USED, DISCONNECTS PROVIDED BY ELECTRICAL CONTRACTOR.
26. ELECTRICAL ROOM: CONTRACTOR SHALL NOT ROUTE DUCTWORK ABOVE ELECTRICAL EQUIPMENT AND PANELS.
27. ALL CONTROL WIRING SHALL BE RUN INSIDE WALLS OR ABOVE CEILINGS. IN UNFINISHED AREAS, ROUTE CONTROL WIRING INSIDE CONDUIT IN JOIST SPACE. CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING FINAL CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING SENSORS, THERMOSTATS, AUDIO-VISUAL ANNUNCIATORS, ROOFTOP UNITS, SMOKE DETECTORS, CONTRACTOR PANEL, AND CONTROL PANEL.

ADDITIONAL NOTES

- 28. PROVIDE DEEP SEAL TRAP AT CONDENSATE DRAIN FROM EACH COIL AT ALL INDUOR DX COIL CONDENSATE DRAIN PIPING INSIDE THE BUILDING WITH MINIMUM 1/2" SAP ANTI-SUCK TYPE INSULATION. ALL CONDENSATE PIPING SHALL BE INSTALLED WITH TIGHT SECURED AND CLAMPED ON SUPPORT FOR THE ENTIRE LENGTH OF RUN ABOVE BELONG TO ROOF. CONDENSATE FROM ALL INDOOR DX COIL UNITS SHALL BE Routed TO EXISTING DRAIN LOCATION. CONDENSATE LINE SIZE SHALL BE FULL SIZE DUCT CONNECTION AND NOT LESS THAN 3/4" INTERNAL DIAMETER. CONDENSATE PIPING SHALL NOT BE OVER 10' IN SIZE FROM THE UNIT CONNECTION TO THE TRAP. CONDENSATE DISPOSED TO THE DRAIN SHALL HAVE AN ADEQUATE AIR SEAL TRAP AT EACH UNIT CONNECTION WITH A VENT DOWNSTREAM OF THE TRAP. CONTRACTOR TO RUN ALL CONDENSATE PIPING IN WALL AND CONCEALED FROM VIEW AS MUCH AS POSSIBLE.
29. CONTRACTOR SHALL INSULATE LIQUID AND SUCTION REFRIGERANT LINES BETWEEN INDOOR EVAPORATOR AND OUTDOOR CONDENSER UNIT. ALL REFRIGERANT PIPING SHALL BE U.L. LISTED FOR THE APPLICATION. PIPING SHALL BE SUPPORTED ADEQUATELY EVERY 10FT TO AVOID SAGGING.

RENOVATION NOTES

- 30. ALL EQUIPMENT SHALL BE CONSIDERED EXISTING UNLESS OTHERWISE NOTED. EXISTING EQUIPMENT NOT SHOWN SHALL REMAIN UNCHANGED.
31. WHERE ANY EQUIPMENT ON ROOF IS DISTURBED, IT IS THE HVAC CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH GENERAL CONTRACTOR FOR REPAIR OF ANY ROOFING ITEMS AFTER THE COMPLETION OF WORK.
32. DAMAGED DIFFUSERS/GRILLES: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AND REPAIR ANY DAMAGED DIFFUSERS/GRILLES.
33. PRE-BID, BIDDING CONTRACTORS TO LOCATE AND ITEMIZE EXPECTED QUANTITY OF DAMAGED DIFFUSERS/GRILLES TO BE REPLACED.
34. EXISTING MATERIALS MAY BE REUSED WHERE PRACTICAL IF PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER. ALL EXISTING DUCTS THAT ARE TO BE REUSED SHALL BE PATCHED AND SEALED WITHOUT LEAKS. DUCTS EXPOSED TO STRUCTURE SHALL BE PAINTED TO MATCH BACKGROUND.
35. DEMOLISHED HVAC EQUIPMENT, DUCTWORK, AND DIFFUSERS SHALL BE TAKEN DOWN AND PROPERLY DISPOSED.

FAN SCHEDULE

Table with columns: MARK, CFM, ESP WG, DRIVE, H.P., TYPE, SOUND (SONES), BASIS OF DESIGN (GREENHECK), LOCATION/SERVICE, NOTES/ACCESSORIES (PROVIDE AS LISTED). Rows include RESTROOMS and STORAGE.

- 1. FANS INSTALLED AND PROVIDED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, RECEIPT, AND COMPLETE INSTALLATION OF FANS. INSTALL PER MANUFACTURERS' WRITTEN INSTRUCTIONS AND MAINTAIN ALL SERVICE CLEARANCES.
2. PROVIDE ALUMINUM CURB CAP FOR FAN AND FOR DUCT PENETRATION THROUGH WALL OR ROOF. COORDINATE LOCATION WITH ARCHITECTURAL PLANS.
3. PROVIDE BACKDRAFT DAMPER AND NEMA DISCONNECT. PROVIDED WITH SPEED CONTROLLER FOR AIR BALANCING FAN TO SPECIFIED EXHAUST CFM.
4. VIBRATION ISOLATION FOR MOTOR/FAN ASSEMBLY.
5. U.L. LISTED AND AMCA SEAL. VERIFY VOLTAGE WITH ELECTRICAL PLANS.
6. FAN TO BE INTERLOCKED WITH LIGHTS FOR OPERATION.
7. VERIFY QUANTITY WITH FLOOR PLAN.
8. FAN TO BE CONTROLLED BY WALL SWITCH.

ELECTRIC HEATER SCHEDULE

Table with columns: MARK, KW, CFM, LOCATION, BASIS OF DESIGN, NOTES. Rows include BUILDING C and RESTROOMS.

- 1. HEATERS INSTALLED AND PROVIDED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, RECEIPT, AND COMPLETE INSTALLATION OF HEATERS. INSTALL PER MANUFACTURERS' GUIDELINES AND WRITTEN INSTALLATION INSTRUCTIONS.
2. PROVIDE MOUNTING BRACKET, HANGER SUPPORT AND INTEGRAL THERMOSTAT SET TO ACTIVATE WHEN TEMPERATURE DROP BELOW 55°F.
3. CONTRACTOR TO COORDINATE VOLTAGE AND PHASE OF HEATER WITH ELECTRICAL BEFORE ORDERING. CONTRACTOR TO FIELD CONVERT HEATER TO HV SIZE INDICATED ON SCHEDULE.
4. CONTRACTOR TO INSTALL HEATER RECESSED IN WALL AND PROVIDE HEAVY DUTY GRILL.
5. VERIFY QUANTITY WITH HVAC FLOOR PLANS.
6. MOUNT WALL HEATER 12" ABOVE FINISH FLOOR.
7. PROVIDE SURFACE MOUNT CEILING HEATER.

PTAC SCHEDULE

Table with columns: MARK, COOLING (EAT/F65, EAT/F70, CAP/MBH), HEATING (CAP/MBH), AUX. HEAT (KW), CFM, O.A. CFM, BASIS OF DESIGN (GREEN), LOCATION, NOTES. Row includes PTAC1.

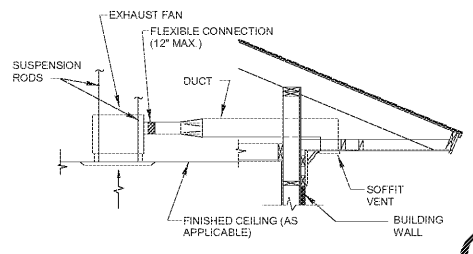
- 1. UNIT PROVIDED AND INSTALLED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, RECEIPT, AND COMPLETE INSTALLATION OF UNIT.
2. PROVIDE WITH WALL SLEEVE, INDOOR TRIM KIT, UNIVERSAL DRAIN KIT AND ARCHITECTURAL EXTRUDED ALUMINUM GRILLE FOR WALL MOUNT INSTALLATION.
3. METAL PER MANUFACTURERS' WRITTEN INSTRUCTIONS AND MAINTAIN ALL SERVICE CLEARANCES.
4. PROVIDE REMOVABLE FRONT PANEL, DISCHARGE GRILLE, AND RETURN AIR FILTERS.
5. EQUAL SUBSTITUTIONS ALLOWED. PROVIDE SUBMITTAL FOR PRIOR APPROVAL.
6. CONTRACTOR TO FIELD VERIFY UNIT WILL FIT IN EXISTING WALL OPENING FOR REPLACEMENT.
7. ROUTE CONDENSATE TO EXISTING DRAIN LOCATIONS.
8. PROVIDE WITH MANUAL FRESH AIR OPTION.
9. VERIFY QUANTITY WITH FLOOR PLAN.

SPLIT SYSTEM HEAT PUMP/ COOLING ONLY UNIT SCHEDULE

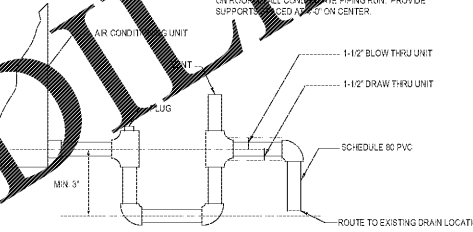
Table with columns: MARK, CFM, O.A. CFM, ESP WG, ELECTRIC STRIP HEATER (KW), LOCATION/SERVE, BASIS OF DESIGN (CARRIER), MARK, MBH HEATING CAPACITY (BTU/H), MBH COOLING CAPACITY, SEER/IEER, BASIS OF DESIGN (CARRIER), NOTES. Rows include EQ11.

- 1. UNIT PROVIDED AND INSTALLED BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING, RECEIPT AND COMPLETE INSTALLATION OF SPLIT SYSTEM UNITS INCLUDING ELECTRICAL CONNECTION AT FAN COIL UNIT AND CONDENSING UNIT.
2. PROVIDE ANTI-SHORT CYCLE TIMER, EVAPORATOR DEFROST CYCLE CONTROL AND LONG LIFE KIT.
3. PROVIDE WITH (2) DEGREE LOW AMBIENT KIT AND WIND BARRIERS TO AVOID REVERSE ROTATION OF CONDENSER FAN WHERE APPLICABLE.
4. ROUTE CONDENSATE FROM UNIT TO EXISTING DRAIN LOCATION. CONTRACTOR TO PROVIDE CONDENSATE PUMP LITTLE GAIN MODEL (MCHA-20) IF NEEDED DUE TO CONDITIONS IN FIELD.
5. CONTRACTOR TO COORDINATE VOLTAGE AND POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
6. CONTRACTOR TO PROVIDE NEW COMMERCIAL GRADE PIPING WITH THERMOSTAT FOR CONDENSING UNIT. INSTALL NEW THERMOSTAT IN EXISTING LOCATION.
7. CONTRACTOR TO FIELD COORDINATE CONNECTION OF EXISTING SUPPLY AND RETURN AND FRESH AIR DUCT TO NEW FAN COIL UNIT. PROVIDE DUCT TRANSITION AND ACCESSORIES FOR COMPLETE OPERATION.
8. CONTRACTOR TO PROVIDE WEIGHTS/BRACKETS FOR EXISTING FAN COIL UNIT ABOVE CEILING FOR STRUCTURAL ANALYSIS TO ENGINEER. NEW FAN COIL UNIT WEIGHT SHALL BE NO MORE THAN 10% HIGHER THAN EXISTING UNIT.
9. FURNISH IZONIZATION UNIT (MSP-204) TO THE RETURN AIR STREAM OF UNIT. INSTALL UNIT BETWEEN FILTER AND COIL.
10. CONTRACTOR TO FIELD VERIFY QUANTITY.

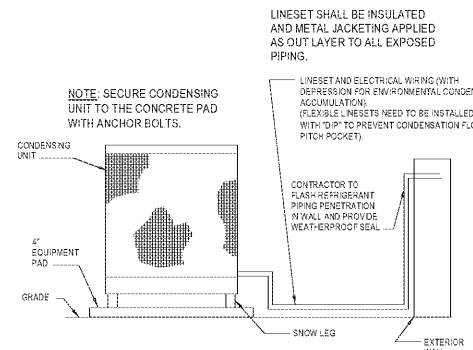
NOTE: PORTIONS OF THIS PROJECT ARE RENOVATIONS OF AN EXISTING FACILITY AND OF NECESSITY, PREVIOUS RECORD DRAWINGS FORM THE BASIS FOR MANY OF THESE DRAWINGS. IT IS THEREFORE EVEN MORE IMPORTANT THAN IN NEW CONSTRUCTION THAT ALL DIMENSIONS SHALL BE FIELD VERIFIED BEFORE FABRICATION OR PURCHASE OF DIMENSION CRITICAL EQUIPMENT, MATERIALS, AND ASSEMBLIES. THERE MAY EXIST FIELD CONDITIONS NOT ACCESSIBLE DURING DESIGN WHICH DIFFER FROM THOSE SHOWN ON THE DRAWINGS. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH ANY CONSTRUCTION, FABRICATION, OR MATERIAL/EQUIPMENT PURCHASES WHICH WOULD BE UNUSABLE UNDER THOSE CIRCUMSTANCES.



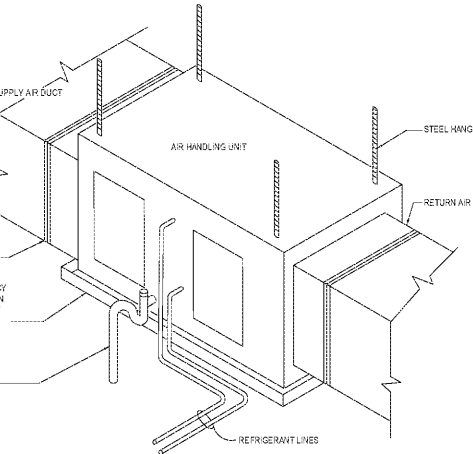
1 EXHAUST FAN THRU SOFFIT DETAIL M6.1 SCALE: NONE



2 CONDENSATE TRAP DETAIL M6.1 SCALE: NONE



3 CONDENSING UNIT DETAIL M6.1 SCALE: NONE



4 HORIZONTAL FAN COIL UNIT DETAIL M6.1 SCALE: NONE

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REVISIONS table with columns for description and date.

SHEET TITLE HVAC SCHEDULES, NOTES AND DETAILS

DATE 08/04/2020

PROJECT NUMBER 19323

SHEET NUMBER

M6.1