MECHANICAL SYMBOLS LIST

AC-1 / TXF-1	EQUIPMENT SYMBOL
AIR DEVICES	
	CEILING DIFFUSER SUPPLY
	CEILING DIFFUSER RETURN
DUCT ACCESSORIES	
BD	BACKDRAFT DAMPER
VD	VOLUME DAMPER W/ ACCESS DOOR
	FIRE DAMPER W/ ACCESS DOOR
	FIRE AND SMOKE DAMPER W/ ACCESS DOOR
CONTROLS AND SENSORS	
T	THERMOSTAT
S	DUCT SMOKE DETECTOR
H	HUMIDISTAT
DUCTWORK	
	AIR DUCT W/ 1.5" ACOUSTICAL LINING
	FLEXIBLE DUCT
FC FC	FLEXIBLE CONNECTION
24X12	RECTANGULAR DUCT (WIDTH X DEPTH)
	SUPPLY AIR RECTANGULAR DUCT CROSS SECTION
	RETURN AIR RECTANGULAR DUCT CROSS SECTION
ø12	ROUND DUCT (DIAMETER)
	ROUND DUCT CROSS SECTION

ABBREVIATIONS

AL	ACOUSTIC LINING
BD	BACKDRAFT DAMPER
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
CFM	CUBIC FEET OF AIR PER MINUTE
CD	CONDENSATE DRAIN PIPE
EG	EXHAUST GRILLE
FC	FLEXIBLE CONNECTION
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
EER	ENERGY EFFICIENCY RATIO
SEER	SEASONAL ENERGY EFFICIENCY RATIO
RTU	ROOF TOP UNIT
DN	DOWN
EF	EXHAUST FAN
VD	VOLUME DAMPER
(N)	NEW
FD	FIRE DAMPER
FSD	FIRE AND SMOKE DAMPER
COP	COEFFICIENT OF PERFORMANCE

MECHANICAL DRAWING LIST

FLORIDA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2020 FBC–BUILDING, 7TH EDITION AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. THE CONTRACTOR SHALL ENGAGE THE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
2. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
3. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2020 FBC–MECHANICAL, 7TH EDITION:
   A. VENTILATION SYSTEM BALANCING MC 403.3.1.5.
   B. SMOKE CONTROL SYSTEMS – MC 513.3
4. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. DUCT CONSTRUCTION AND INSTALLATION– 2020 FBC–MECHANICAL 7TH EDITION, 603
   B. AIR INTAKES, EXHAUSTS AND RELIEF – 2020 FBC–MECHANICAL 7TH EDITION 401.5
   C. STANDARDS OF HEATING – 2020 FBC– MECHANICAL 7TH EDITION 309.1
   D. SMOKE DETECTORS AND FIRE AND SMOKE DAMPERS – 2020 FBC– MECHANICAL 7TH EDITION 606 & 607 RESPECTIVELY
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS – 2020 FBC– MECHANICAL 7TH EDITION 513
5. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
6. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2020 FBC–MECHANICAL,7TH EDITION CHAPTER 4.
7. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2020 FBC–MECHANICAL, 7TH EDITION 403.3
8. HVAC DUCTS AND PLENUMS INSULATED IN ACCORDANCE WITH 2020 FBC– ENERGY CONSERVATION, 7TH EDITION SECTION 403.2.9.1.1 AND CONSTRUCTED IN ACCORDANCE WITH SECTION 403.2.9, VERIFICATION MAY NEED TO OCCUR DURING FOUNDATION INSPECTION.
9. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
10. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
11. SMOKE DETECTOR SHALL MEET UL268A.

GENERAL NOTES

1. CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
2. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
3. BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF–DAYS WITHOUT PRIOR WRITTEN APPROVAL.
4. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
5. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
6. CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION EACH UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
7. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
8. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
9. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.
10. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI–ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
11. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
12. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
13. WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
14. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
15. ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.
16. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
17. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
18. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
19. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
20. ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.
23. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.
24. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
25. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON–SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.
26. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
27. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
28. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
29. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

SCOPE OF WORK

SCOPE OF WORK

1. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS AS DESCRIBED IN THE SPECIFICATIONS, FLOOR PLAN(S) DESIGN, DETAIL DRAWINGS, NOTES, RFI'S, ETC. FOR THIS PROJECT. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
2. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
3. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

GENERAL HVAC NOTES

GENERAL:

1. PROVIDE ALL MATERIAL AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
4. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
5. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
6. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
7. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
8. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND ELECTRICAL DIVISION OF THE SPECIFICATION.
10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
11. LOCATE ALL TEMPERATURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP– AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
12. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.
13. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN THE DETAILS FOR DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
14. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL.
15. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM A METAL DECK.
16. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION–FREE INSTALLATION.
17. ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C–CLAMPS SHALL NOT BE PERMITTED.
18. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
19. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
20. ALL CONDENSATE DRAIN LINES FROM EACH ROOF TOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP AND PIPED TO THE NEAREST DRAIN OR GUTTER OR DOWN SPOUT PROVIDED THAT DOWNSPOUT DOES NOT DISCHARGE ONTO PAVEMENT. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.
21. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
22. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
23. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.

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KEY PLAN:

SEAL:

REVISION SCHEDULE

NO:	DATE:	DESCRIPTION:
00	03/27/2023	PERMIT SET
01	04/12/2023	ADDENDUM 1
03	08/02/2023	REGULATORY COMMENTS
04	09/06/2023	SERVICE UPDATE
05	10/26/2023	BULLETIN 2
06	11/30/2023	PERMIT COMMENT

THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

MECHANICAL GENERAL NOTES & SYMBOL

M1.0

SPECIFICATIONS

SECTION 0001 – NOTICE TO BIDDERS

1.1 BIDDERS REPRESENTATIONS

A. THE BIDDER BY MAKING A BID REPRESENTS THAT:

THE BIDDER HAS READ AND UNDERSTANDS THE BIDDING DOCUMENTS, TO THE EXTENT THAT SUCH DOCUMENTATION RELATES TO THE WORK FOR WHICH THE BID IS SUBMITTED, AND FOR OTHER PORTIONS OF THE PROJECT, IF ANY, BEING BID CONCURRENTLY OR PRESENTLY UNDER CONSTRUCTION.

B. THE BID IS MADE IN COMPLIANCE WITH THE BIDDING DOCUMENTS.

C. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS FOR THE BIDDER TO SUBMIT A CONTRACT PRICE FOR THE MATERIAL AND LABOR.

D. SHOULD CONFLICTS OR DISCREPANCIES OCCUR WITHIN THE BIDDING DOCUMENTS, THE ITEM OR ITEMS IN DISPUTE THAT REPRESENT THE GREATER COST SHALL PREVAIL IN THE FINAL BID.

E. THE BID IS BASED UPON THE MATERIALS, EQUIPMENT AND SYSTEMS REQUIRED BY THE BIDDING DOCUMENTS WITHOUT EXCEPTION.

1.2 EXISTING CONDITIONS AND COORDINATION

A. THE BIDDER HAS VISITED THE SITE, BECOME FAMILIAR WITH LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND HAS CORRELATED THE BIDDER'S PERSONAL OBSERVATIONS WITH THE REQUIREMENTS OF THE PROPOSED BIDDING DOCUMENTS.

B. THE BIDDER SHALL PROPOSE COORDINATION OF WORK SUCH THAT CONFLICTS WITH OTHER TRADES AND SPACE ALLOCATIONS ARE AVOIDED.

1.3 RESPONSIBILITIES

A. THE BIDDER UNDERSTANDS THAT ANY CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE TIMELY COMPLETION AND ACCEPTANCE OF THEIR WORK AND THAT ANY ITEMS DAMAGED, LOST OR STOLEN DURING TIME OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITHOUT ANY ADDITIONAL COST TO THE OWNER.

B. THE BIDDER UNDERSTANDS THAT ANY PROPOSED WORK IN OCCUPIED TENANT SPACES SHALL BE PERFORMED DURING TIMES OF NON-TENANT OCCUPANCY OR AS SCHEDULED OR DIRECTED BY THE BUILDING MANAGER.

C. THE BIDDER UNDERSTANDS THAT ANY PROPOSED SHUT-DOWN OF EXISTING SYSTEMS DURING CONSTRUCTION SHALL BE PRE-ARRANGED WITH THE BUILDING MANAGER AND THAT SUCH SHUT-DOWNS ARE TO BE KEPT TO A MINIMUM.

END OF SECTION 0001

SECTION 0101 – QUALITY OF WORK

1.1 WORKMANSHIP

A. ALL WORK SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.

B. ALL DEFECTS WHICH DEVELOP OR ARE DISCOVERED WITHIN THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT OR BUILDING MANAGER AT NO ADDITIONAL COST TO THE OWNER.

C. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL REMOVE FROM THE SITE, ALL TOOLS, DEMOLISHED APPLIANCES AND ANY SURPLUS MATERIAL.

1.2 CODE COMPLIANCE

A. ALL WORK SHALL MEET ALL STATE AND LOCAL CODES HAVING JURISDICTION.

END OF SECTION 0101

SECTION 0102 –REQUIRED DOCUMENTS

1.1 SHOP DRAWINGS

A. A SET OF PRINTS FOR ANY MECHANICAL WORK INCLUDING BUT NOT LIMITED TO, DUCTWORK AND PIPING LAYOUT SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO CONSTRUCTION OR PURCHASE OF MATERIALS.

1.2 SUBMITTALS

A. EQUIPMENT SUBMITTALS OF ALL PROPOSED MECHANICAL AND ANCILLARY EQUIPMENT INCLUDING ALL ACCESSORIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL PERTINENT MODELS, SIZES, ACCESSORIES AND CHOICES SHALL BE CLEARLY CHECKED, PRINTED OR OTHERWISE INDICATED ON THE SUBMITTALS.

1.3 RECORD DRAWINGS

A. UPON COMPLETION OF THE WORK, A RECORD DRAWING SHALL BE SUBMITTED TO THE OWNER DEPICTING ALL SUBSEQUENT CHANGES, ADDITIONS AND OR CORRECTIONS TO THE CONTRACT DRAWINGS AND OR CONTRACT SCOPE MADE DURING CONSTRUCTION. THIS DRAWING SHALL REPRESENT A COMPLETE RECORD OF THE WORK INSTALLED.

1.4 EQUIPMENT OPERATING INSTRUCTIONS

A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS,EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE ELECTRONIC COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

END OF SECTION 0102

SECTION 230713 – DUCT INSULATION

1.1 QUALITY ASSURANCE

SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTME 84.

1.2 FIELD QUALITY CONTROL

A. FIELD INSPECTIONS: BY OWNER-ENGAGED AGENCY.

1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE;

A. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:

B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET,

MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

	SA PLANUM	RA PLANUM
UNCONDITIONED SPACES:	R-4.2	R-4.2
UNVENTED ATTIC ABOVE INSULATED CEILING:	R-6	R-4.2
EXTERIOR OF BUILDING:	R-6	R-4.2

1.4 ITEMS NOT INSULATED:

1. FIBROUS-GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1.
3. FACTORY-INSULATED FLEXIBLE DUCTS.
4. FACTORY-INSULATED PLENUMS AND CASINGS.
5. FLEXIBLE CONNECTORS.
6. VIBRATION-CONTROL DEVICES.
7. FACTORY-INSULATED ACCESS PANELS AND DOORS.
8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:

1. JOHNS-MANVILLE
2. OWENS-CORNING

1.6 ACOUSTICAL TREATMENT

1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED,

END OF SECTION 230713

SECTION 233113 – METAL DUCTS

1.1 CONSTRUCTION

A. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC SMACNA DUCT PRESSURE CLASSIFICATIONS SHOWN ON THE CONTRACT DRAWINGS. WHERE NO PRESSURE CLASSES ARE SPECIFIED BY THE DESIGNER, THE SMACNA 2-1/2 INCH WG PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THESE STANDARDS, REGARDLESS OF THE VELOCITY IN THE DUCT.

B. ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA 2" WG DESIGN AND NOT LESS THAN THE FOLLOWING STANDARDS:

1. DUCTWORK SHALL BE TRANSVERSELY JOINTED BY CONNECTING SEAMS OF COMPANION ANGLES, FORMED FROM 1-1/2"X1-1/2"X1/8" GALVANIZED ANGLES, TACK-WELDED OR RIVETED TO THE DUCT. THE ANGLE FRAME SHALL BE CONTINUOUSLY FLANGED UP INTO UPRIGHT OF ANGLE AND EACH CORNER SHALL BE FILLED IN AND GROUND SMOOTH. JOINTS SHALL BE GASKETED WITH 1/8" THICK REINFORCED GASKET, OVERLAPPED AT CORNERS, GASKET SIMILAR TO 3M-1202 OR APPROVED EQUAL.
2. RECTANGULAR FITTINGS AND ALL TRANSITION PIECES FROM RECTANGULAR TO ROUND SHALL BE NO. 16 GAUGE ALL WELDED CONSTRUCTION.
3. HORIZONTAL DUCTS SHALL BE SUPPORTED ON NOT MORE THAN 6' CENTERS. VERTICAL RISERS SHALL BE SUPPORTED AT EACH FLOOR.
4. LONGITUDINAL SEAMS FOR RECTANGULAR DUCTWORK SHALL BE PITTSBURGH LOCK SEAMS WITH SEALING COMPOUND, EQUAL TO BENJAMIN FOSTER NO. 30-03 INSERTED INTO SEAM. ALL SEAMS SHALL BE BRUSHED WITH NO. 30-02 AND COVERED WITH APPROVED SEALING TAPE.
5. RECTANGULAR DUCTWORK 18 GAUGE AND HEAVIER, FILLER RODS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR IRON AND STEEL GAS WELDING RODS, ASTM 215; AWG A5.2.
6. ALL FITTINGS SUCH AS ELBOWS, TEES, ETC., SHALL BE NO. 20 GAUGE ZINC COATED STEEL. ELBOWS SHALL BE OF FIVE (5) PIECE WELDED AIRTIGHT CONSTRUCTION.

C. WHERE LATEST EDITION OF SMACNA DOES NOT CLEARLY STATE GAUGES AND/OR STIFFENERS TO BE USED OR, WHERE SMACNA STANDARDS REQUIRE INTERPRETATION, THE FOLLOWING MINIMUM METAL GAUGES AND BRACING SHALL BE USED:

USG	MAX. SIDE INCHES	TRANSVERSE JOINTS AND BRACING
22	UP TO 12	S SLIP, DRIVE SLIP, ONE INCH POCKET LOCK ON 8 FOOT CENTERS
22	13 TO 24	1"X1"X1/8" ANGLES ON 4 FOOT CENTERS
20	25 TO 35	1"X1"X1/8" ANGLES ON 2 FOOT CENTERS

D. PROVIDE TAPPING IN DUCTS FOR THERMOMETERS WHERE SPECIFIED. IN ADDITION, PROVIDE AN AIRTIGHT PLUGGED TAPPING LOCATED AS FOLLOWS:

1. UPSTREAM OF EACH REHEAT COIL AND VAV BOX.
2. DOWNSTREAM OF EACH REHEAT COIL AND VAV BOX.

E. FLAT OVAL OR ROUND DUCTWORK MAY BE PROVIDED IN LIEU RECTANGULAR DUCTWORK WITH THE REINFORCEMENT FOR FLAT SIDES SAME AS SPECIFIED FOR THE RECTANGULAR DUCTWORK, AND AS PER SMACNA FLAT OVAL DUCT CONSTRUCTION STANDARDS SHOWN IN FIG. 3-6 AND AS SHOWN IN FIG. 3-1 AND 3-2 FOR ROUND DUCTWORK.

F. ALL DUCTWORK SHALL BE SEALED TO CLASS "A" AND LEAK TESTED TO MEAT SMACNA CLASS 6 FOR RECTANGULAR AND CLASS 3 FOR ROUND DUCTS.

1.2 MATERIALS

A. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS.

B. SINGLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS.

C. SHEET METAL MATERIALS:

1. GALVANIZED SHEET STEEL.
2. STAINLESS-STEEL SHEETS.
3. ALUMINUM SHEETS.
4. FACTORY-APPLIED ANTI-MICROBIAL COATING.

D. DUCT LINER:

1. FIBROUS GLASS, TYPE I, FLEXIBLE.
   a. WITH ANTI-MICROBIAL EROSION-RESISTANT COATING.
2. FLEXIBLE ELASTOMERIC.
3. NATURAL FIBER.

E. SEALANT MATERIALS:

1. TWO-PART TAPE SEALING SYSTEM.
2. WATER-BASED JOINT AND SEAM SEALANT.
3. SOLVENT-BASED JOINT AND SEAM SEALANT.
4. FLANGED JOINT SEALANT.
5. FLANGE GASKETS.
6. ROUND DUCT JOINT O-RING SEALS.

1.3 DUCT CLEANING

A. CLEAN EXISTING DUCT SYSTEM(S) BEFORE TESTING, ADJUSTING, AND BALANCING.

B. CLEAN THE FOLLOWING ITEMS:

1. AIR OUTLETS AND INLETS.
2. SUPPLY, RETURN, AND EXHAUST FANS.
3. AIR-HANDLING UNITS.
4. COILS AND RELATED COMPONENTS.
5. RETURN-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
6. SUPPLY-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
7. DEDICATED EXHAUST AND VENTILATION COMPONENTS AND MAKEUP AIR SYSTEMS.

1.4 DUCT SCHEDULE

A. ALL DUCTS SHALL BE GALVANIZED STEEL EXCEPT AS FOLLOWS:

8. MOIST ENVIRONMENT DUCT MATERIAL: ALUMINUM.

END OF SECTION 233113

SECTION 233713 – DIFFUSERS AND GRILLES

1.1 PRODUCTS

A. DIFFUSERS AND GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE NOTED IN BAKED WHITE ENAMEL.

B. MANUFACTURERS: TITUS

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:

a. CARNES.
b. HART & COOLEY INC.
c. KRUEGER.
d. METALAIRE, INC.
e. NAILOR INDUSTRIES INC.

C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

END OF SECTION 233713

A. C403.2.4.1 THERMOSTATIC CONTROLS

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, NOT FEWER THAN ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED THAT BOTH OF THE FOLLOWING CONDITIONS ARE MET:

THE PERIMETER SYSTEM INCLUDES NOT FEWER THAN ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ± 45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM).

THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

B. C403.2.4.1.2 DEADBAND

WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LESS THAN 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:

THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.

OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C. C403.2.4.1.3 SETPOINT OVERLAP RESTRICTION

WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.2.4.1.2.

D. C403.2.4.2 OFF-HOUR CONTROLS

EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

EXCEPTIONS:

ZONES THAT WILL BE OPERATED CONTINUOUSLY.

ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.

E. C403.2.4.2.1 THERMOSTATIC SETBACK

THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

F. C403.2.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN

AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

G. C403.2.4.2.3 AUTOMATIC AND OPTIMUM START (MANDATORY)

AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

INDIVIDUAL HEATING AND COOLING SYSTEMS WITH SETBACK CONTROLS AND DIRECT DIGITAL CONTROL SHALL HAVE OPTIMUM START CONTROLS. THE CONTROL ALGORITHM SHALL, AS A MINIMUM, BE A FUNCTION OF THE DIFFERENCE BETWEEN SPACE TEMPERATURE AND OCCUPIED SET POINT, THE OUTDOOR TEMPERATURE, AND THE AMOUNT OF TIME PRIOR TO SCHEDULED OCCUPANCY. MASS RADIANT FLOOR SLAB SYSTEMS SHALL INCORPORATE FLOOR TEMPERATURE INTO THE OPTIMUM START ALGORITHM.

SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY

A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:

1. AIR SYSTEMS: CONSTANT-VOLUME
2. CONDENSING UNITS.

1.2 QUALITY ASSURANCE

A. THE CONTRACTOR SHALL PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB OR TABB CERTIFIED.

1.3 EXECUTION

A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.

1.3 EXECUTION

A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.

B. THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM INDICATING LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.

C. PRIOR TO FINAL INSPECTION OF THE WORK, THE TAB SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.

D. THE CONTRACTOR SHALL HAVE FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.

E. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS SECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.

F. ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.

G. TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN VALUES.

H. INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING REPORT.

I. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

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KEY PLAN:

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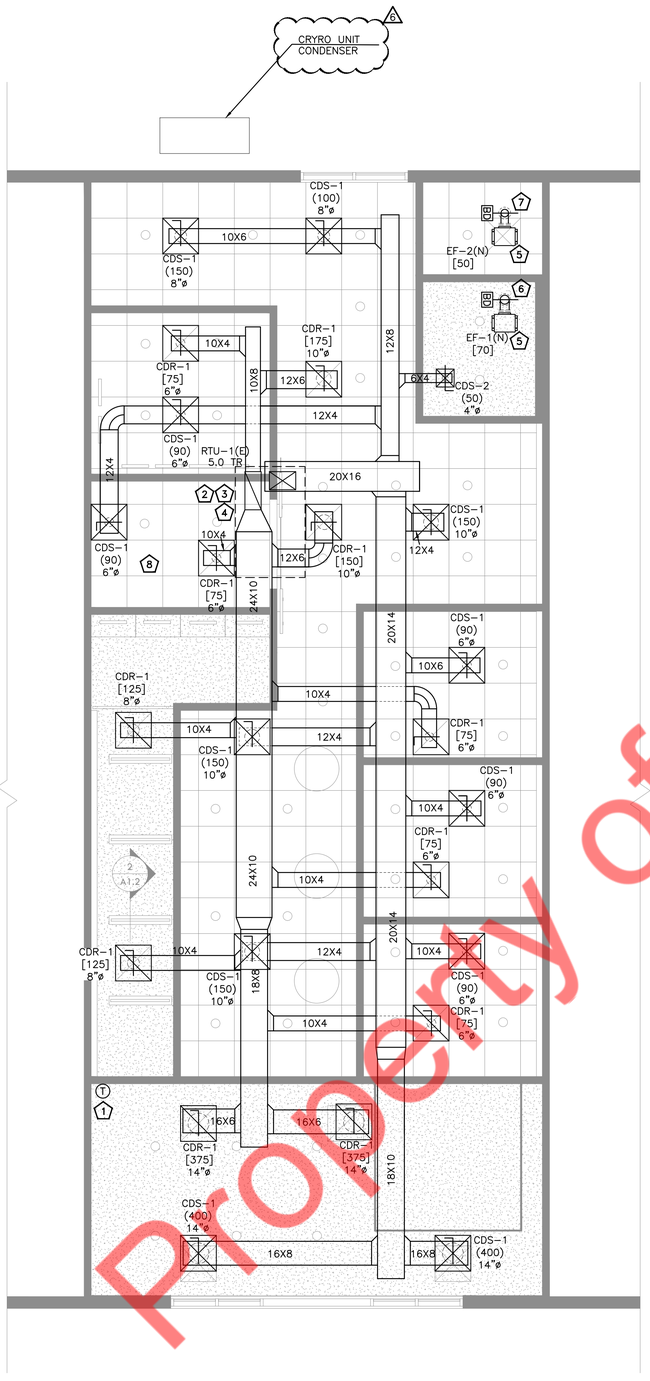
05	10/26/2023	BULLETIN 2
06	11/30/2023	PERMIT COMMENT

RMA PROJECT NO: 21.128.10

MECHANICAL NOTES & SPECIFICATION

M1.1



MECHANICAL FLOOR PLAN KEY NOTES:

1. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT & HUMIDISTAT. COORDINATE FINAL LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
2. EXISTING RTU-1(E) ALONG WITH ACCESSORIES WILL REMAIN SAME AND TO BE REUSED. CONTRACTOR TO FIELD VERIFY BEFORE BID THAT THE RTU-1(E) IS WORKING AT 100% RATED CAPACITY AND IN GOOD CONDITION, AND INFORM TO ARCHITECT/OWNER. IF RTU-1(E) NOT FOUND TO BE OK, PROVIDE NEW AS PER CAPACITY MARKED ON PLANS.
3. CONTRACTOR TO FILED VERIFY THE EXISTING RTU DUCT PENETRATION AND MODIFY AS PER REQUIREMENT.EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM ROOFTOP UNITS TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
4. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR. TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW.
5. CEILING MOUNTED EXHAUST FAN. INTERCONNECT EXHAUST FAN WITH RTU-1(E). REFER TO ELECTRICAL LIGHTING PLAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
6. ø6" RESTROOM EXHAUST DUCT UP THROUGH ROOF.
7. ø5" RESTROOM EXHAUST DUCT UP THROUGH ROOF.
8. REFER TO ARCHITECTURAL DRAWINGS FOR SAUNA INSTALLATION DETAILS.

GENERAL NOTES

1. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN ON PLANS.
2. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING. OFFEST AND RUN DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
3. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
4. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
5. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
6. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
7. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
8. ALL EXPOSED DUCTWORK SHALL BE AS SHOWN, DOUBLE WALL, INSULATED METAL, PRIMED FOR PAINTING. ALL CONCEALED DUCTWORK SHALL BE INSULATED METAL RECTANGULAR UNLESS OTHERWISE ALLOWED IN WRITING BY THE ENGINEER OF RECORD. COORDINATE FINAL FINISH WITH ARCHITECT.
9. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
10. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS.
11. CONTRACTOR TO ENSURE THE CLEARANCES OF EQUIPMENTS KEPT ON PITCH ROOF. PROVIDE A SUITABLE ARRANGEMENTS ON PITCH ROOF FOR SERVICE & MAINTENANCE.
12. SUPPLY AND RETURN AIR DUCTS PROVIDE 1.5" ACOUSTICAL LINING UP TO 10' OF DUCT RUN FROM RTU IN SUPPLY AND RETURN DUCTS. PROVIDE 1.5" THERMAL INSULATION AFTER 10' OF DUCT RUN FROM RTU. PROVIDE R-4.2 INSULATION FOR SUPPLY AIR DUCTS AND R-4.2 FOR RETURN AIR DUCTS.

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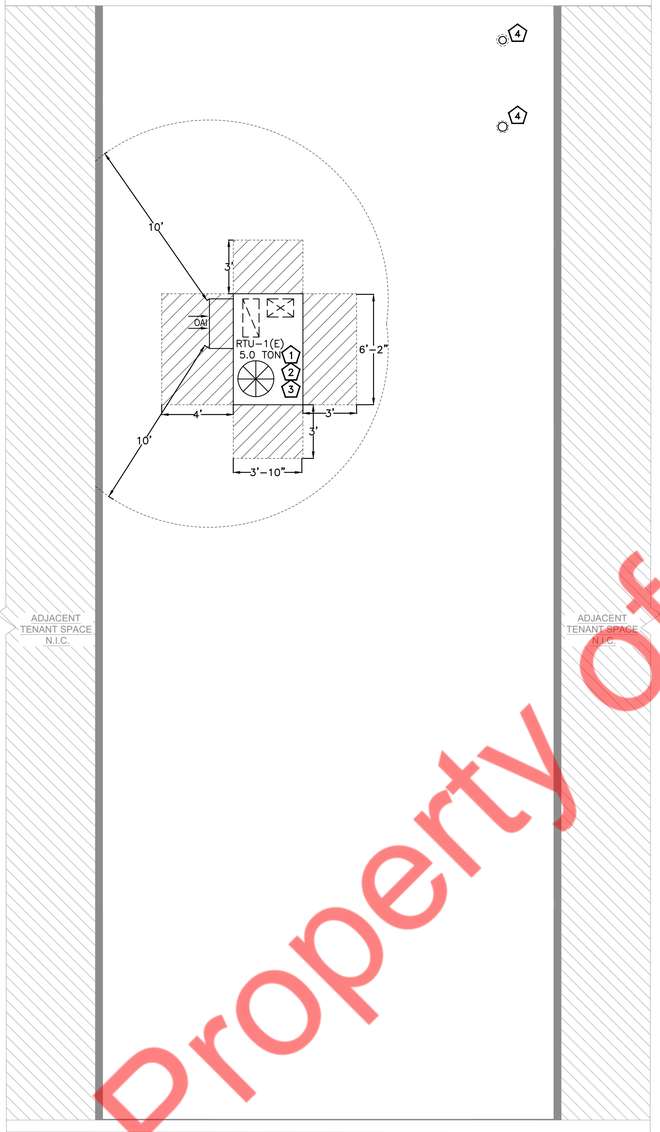
THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

MECHANICAL FLOOR PLAN

M2.0

1 MECHANICAL FLOOR PLAN
1/4"=1'-0"



MECHANICAL ROOF PLAN KEY NOTES:

1. CONNECT AIR DISTRIBUTION DUCT TO ROOF MOUNTED UNIT EQUIPMENT AS NECESSARY. PROVIDE TRANSITION IN CURB AS REQUIRED FOR UNIT CONNECTION. CONTRACTOR TO FIELD VERIFY THE EXISTING ROOF CURB PENETRATION ON ROOF AND REUSE IT. PROVIDE ROOF CURB ADAPTER IF REQUIRED.
2. CONTRACTOR TO RUN CONDENSATE DRAIN FROM RTU'S TO NEAREST ROOF DRAIN OR DOWN SPOUT. COORDINATE IN FIELD.
3. CONTRACTOR TO FIELD VERIFY THAT THE LOCATION OF ANY EXHAUST SOURCE SHOULD BE AT LEAST 10' AWAY FROM THE RTU'S OUTSIDE AIR INTAKE.
4. EXHAUST AIR DUCT UP THROUGH ROOF. TERMINATE ON ROOF WITH MUSHROOM CAP AIR RELIEF VENT WITH INSECT SCREEN. EXHAUST SHALL TERMINATE 3 FEET FROM THE PROPERTY LINE, 3 FEET FROM THE EXTERIOR WALL AND ROOFS, 3 FEET FROM THE OPERABLE OPENING INTO THE BUILDING AND 10 FEET FROM THE OUTSIDE AIR INTAKE OPENINGS.

GENERAL NOTES:

A. ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND ARRANGE ALL REQUIRED INSPECTIONS.

C. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS AND TRADES.

D. THESE DRAWINGS, AS PREPARED, ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS CONSTRUCTION OF THE PROJECT AND THE WORK OF THE TRADES WILL PERMIT. EQUIPMENT LOCATIONS INDICATED ARE APPROXIMATE. COORDINATE EXACT LOCATIONS AND REQUIRED CLEARANCES WITH EQUIPMENT SUPPLIER AND ALL TRADES PRIOR TO INSTALLATION.

E. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL THE EQUIPMENT INDICATED WITHIN THE MECHANICAL DRAWINGS UNLESS OTHERWISE NOTED. ALL EQUIPMENT SHALL BE UL LISTED. VERIFY LOCATION AND DIMENSIONS IN THE FIELD PRIOR TO FABRICATION AND / OR INSTALLATION.

F. EACH UNIT GENERATING CONDENSATE SHALL BE PROVIDED WITH A CONDENSATE DRAIN WITH EXTERNAL, 4" DEEP P-TRAP. EXTEND DRAIN TO A ROOF MOUNTED SPLASH PAD OR AN ACCEPTABLE LOCATION REQUIRED BY CODE.

G. UNLESS OTHERWISE NOTED, ALL SUPPLY TAKEOFFS SHALL HAVE A MANUAL VOLUME CONTROL DAMPER.

H. THE CONTRACTOR IS TO MAKE ALL LOW-VOLTAGE WIRING CONNECTIONS FOR ALL HVAC EQUIPMENT INCLUDING TEMPERATURE CONTROLS, ROOF TOP UNITS, SMOKE DETECTORS AND CONTACTOR PANEL.

I. PROVIDE AND INSTALL SMOKE DUCT DETECTORS IN EACH AIR CONDITIONING UNIT RETURN DUCT GREATER THAN 2000 CFM. CONTRACTOR SHALL PROVIDE INTERCONNECTION AND WIRE TO THE FIRE ALARM CONTROL PANEL IF REQUIRED. DUCT DETECTORS SHALL HAVE REMOTE TEST STATIONS LOCATED IN THE OFFICE NEAR THE RESPECTIVE THERMOSTATS. VERIFY CODE REQUIREMENTS FOR DUCT DETECTORS IN BOTH THE SUPPLY AND RETURN AIR STREAMS.

J. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FREE OF DEFECTS AND CONTRACTOR SHALL REPAIR AND / OR REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT AT NO COST TO THE OWNER FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY ARCHITECT OR ENGINEER.

K. ALL WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE ARCHITECT AND OWNER. THE ARCHITECT SHALL BE NOTIFIED OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. FAILURE OF PROPER NOTIFICATION DOES NOT RELIEVE THE CONTRACTOR. THE CONTRACTOR SHALL CORRECT ANY AND ALL WORK ARISING FROM SUCH FAILURE TO COORDINATE DISCREPANCIES TO THE SATISFACTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.

L. THE CONTRACTOR SHALL, UPON COMPLETION OF PROJECT, PERFORM A COMPLETE TEST AND BALANCE OF ALL EQUIPMENT. PROVIDE A WRITTEN REPORT TO THE ARCHITECT. ALL CAPACITIES MUST BE SET TO WITHIN ±10% OF AMOUNTS INDICATED ON THE FLOOR PLAN AND SCHEDULES.

M. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/ BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.

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1 MECHANICAL ROOF PLAN
1/4"=1'-0"

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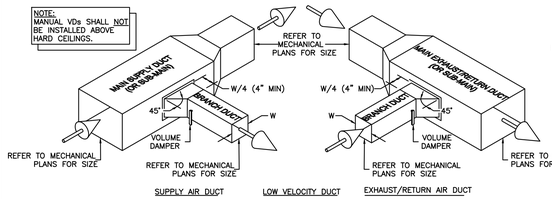
THE COVERY
WELLNESS SPA

RMA PROJECT NO: 21.128.10

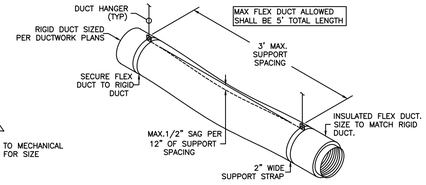
MECHANICAL
ROOF PLAN

M2.1



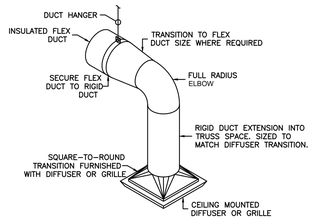
BRANCH DUCT CONNECTIONS

N.T.S.



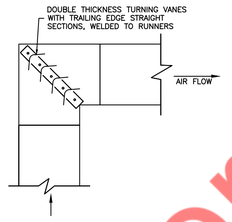
FLEX DUCT SUPPORT DETAIL

N.T.S.



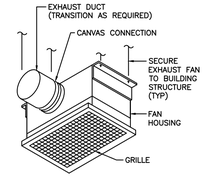
DIFFUSER CONNECTION DETAIL

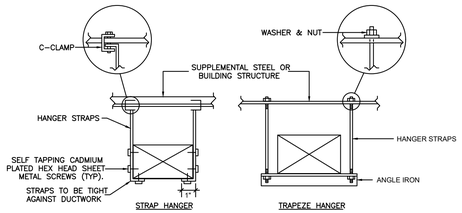
N.T.S.



TYPICAL SQUARE ELBOW CEILING EXHAUST FAN DETAIL

N.T.S.





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

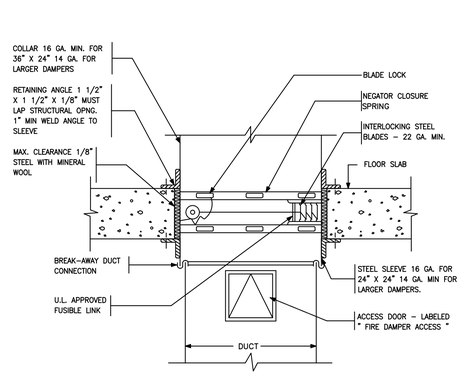
HANGER SIZES*

MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROD	1-1/2"x1-1/2"x1/8"	8'-0"
48"	1/4" ROD	2"x2"x1/8"	8'-0"
60"	5/16" ROD	2"x2"x1/8"	8'-0"
84"	3/8" ROD	2"x2"x1/8"	8'-0"

* FOR RECTANGULAR DUCTS

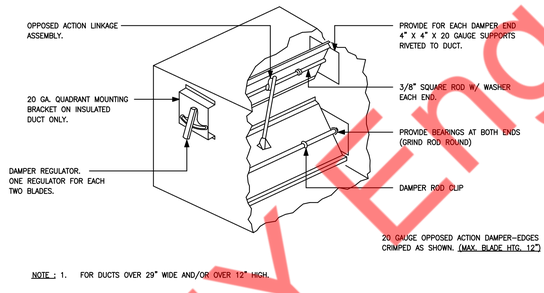
DUCT HANGER DETAIL

N.T.S.



HORIZONTAL FIRE DAMPER DETAILS

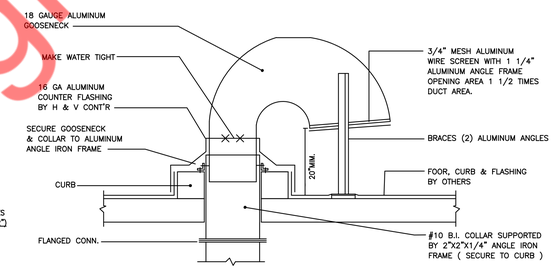
N.T.S.



NOTE : 1. FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH.

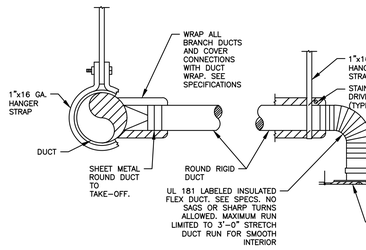
LOW PRESSURE CONTROL DAMPER

N.T.S.



DETAIL OF ROOF GOOSENECK

N.T.S.



TYP. DIFFUSER CONNECTION DETAIL

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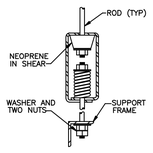
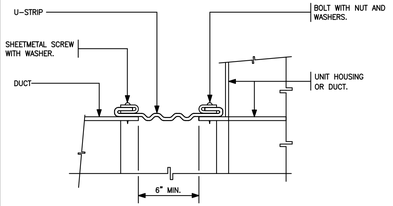


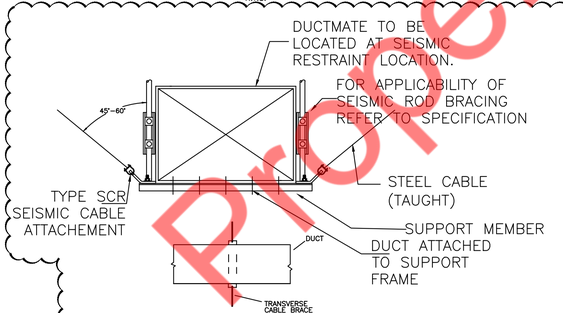
VIBRATION ISOLATOR

N.T.S.



FLEXIBLE CONNECTION DETAIL

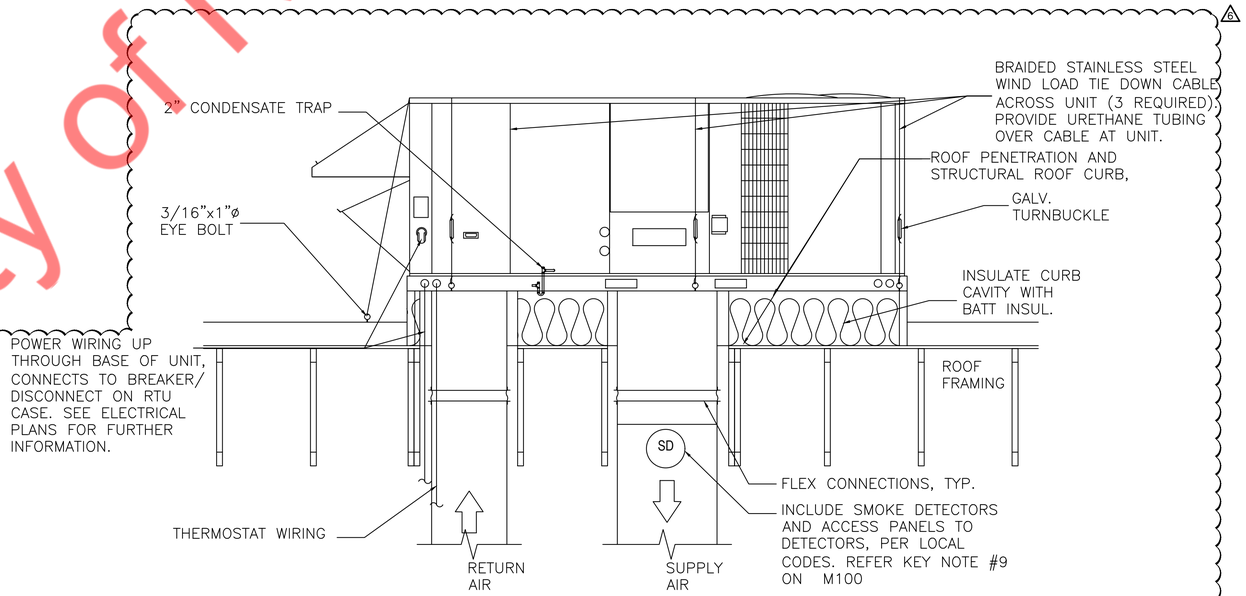
N.T.S.



NOTE: 1. SEE SPECIFICATION FOR CABLE BRACING DISTANCE REQUIREMENTS.

TRANSVERSE CABLE BRACE FOR DUCTWORK

N.T.S.



NOTE: CONTRACTOR TO CHECK THE EXISTING RTU INSTALLATION AT SITE AND PROVIDE NECESSARY TIE CABLES IF NOT PROVIDED.

ROOF TOP UNIT DETAIL

N.T.S.

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MIAMI, FL 33179
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KEY PLAN:

REVISION SCHEDULE

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THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

MECHANICAL DETAILS (1 OF 2)

M3.0

INSTALLATION OF OUTDOOR ENGINE TO BE PROVIDED BY CUSTOMER

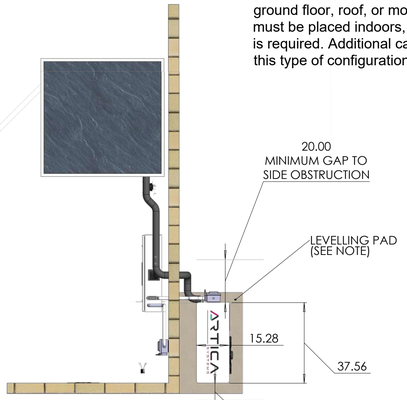
INSTALLATION NOTE: Outdoor engine (OE) must be placed on a level surface. Lineset distance must not exceed 120ft, including rise. OE can be placed on ground floor, roof, or mounted to the side of the building, as necessary. If OE must be placed indoors, suffient air volume or supplemental air conditioning is required. Additional calculations by Artica Systems are needed to facilitate this type of configuration.

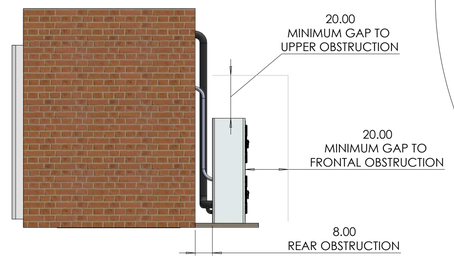
OUTDOOR ENGINE WEIGHT: 341lbs
MINIMUM CIRCUIT AMPACITY: 33.9
SOUND LEVEL @ 6ft: 58-59 dBa

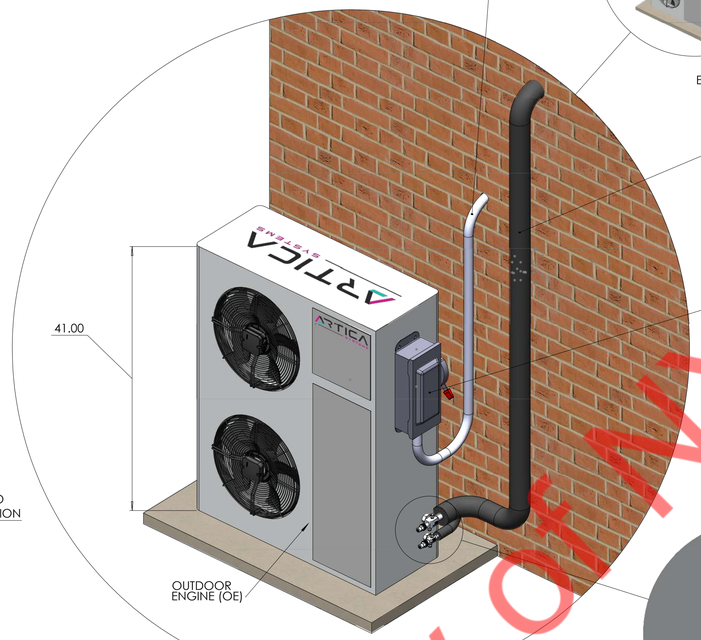
1" CONDUIT TO CONTROL PANEL
3x 8AWG 75C STRANDED -- 3 PHASE
1x 8AWG 75C STRANDED -- GROUND
1x CAT7 SHIELDED DATA CABLE

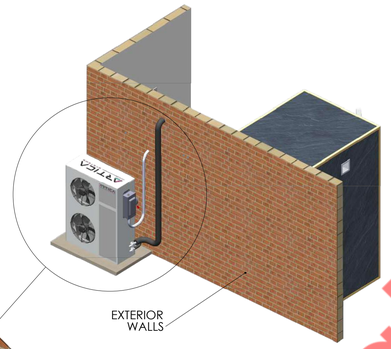
Note: Data cable does not require RJ45 connector. Raw CAT7 cable is all that is necessary.

PROVIDED BY CUSTOMER









PROVIDED BY CUSTOMER

3.25" OD COINSULATED REFRIGERANT LINESET TO TREATMENT CHAMBER

INSULATION: 1 1/8" ID WITH 1" WALL THICKNESS

NOTE: Upon termination at treatment chamber location, sweat lineset shut. Artica Systems personall will finalize all indoor connection.

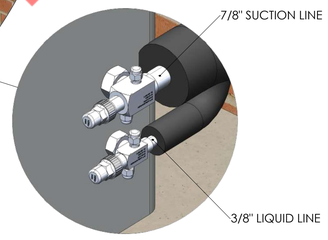
PROVIDED BY CUSTOMER

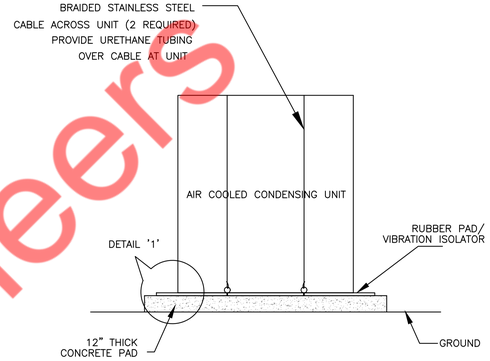
MODEL #: SIEMENS, GNF322RA

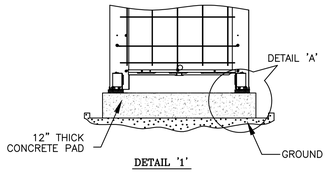
60A NONFUSIBLE DISCONNECT, 3 SWITCHABLE POLES, 1 GROUND

NOTE: Customer is required to provide wiring from the control panel to the outdoor engine switch. All internal **terminations for the outdoor engine will** be made by Artica Systems personell.

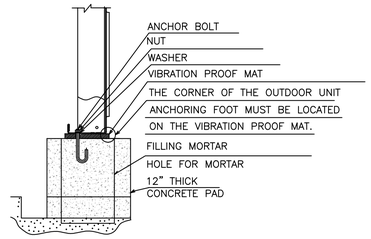
LEAVE 3ft OF CABLE LENGTH, BOTH POWER AND DATA, INSIDE ENGINE TO ALLOW FOR TERMINATION.







DETAIL '1'



NOTE: ANCHOR BOLT SIZE SHALL BE AS PER MANUFACTURER RECOMMENDATION. CIVIL FOUNDATION SHALL BE DONE AS PER STRUCTURAL CONSULTANT DESIGN INLINE OF CONDENSER UNIT WEIGHT.

DETAIL 'A'

ARTICA SYSTEMS | 6-22-2023 | INSTALLATION

PAGE TITLE: OUTDOOR ENGINE

TYPE: VORTEX | REV: A.0 | SHEET 4 OF 4 | DRAWING IS NOT TO SCALE

CONFIDENTIAL INFORMATION
THE INFORMATION CONTAINED IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO ARTICA SYSTEMS. REPRODUCTION OR SHARING OF ANY PART OF THIS DRAWING WITHOUT PRIOR WRITTEN CONSENT IS STRICTLY PROHIBITED.

NOTE: INSTALL THE CONDENSER UNIT AS PER MANUFACTURER GUIDELINES.

CRYO CONDENSING UNIT INSTALLATION DETAIL

N.T.S

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THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

MECHANICAL DETAILS (2 OF 2)

M3.1

ROOF TOP UNIT SCHEDULE

UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			HEATING CAPACITY	COOLING CAPACITY				ELECTRICAL				COP	EER/IEER	WEIGHT (LBS.)
					SUPPLY CFM	OUTSIDE AIR CFM	ESP (IN. OF W.G.)	ELECTRIC HEATING KW	TOTAL MBH	SENSIBLE MBH	AMBIENT TEMP. DB (°F)	ENTERING TEMP. DB / WB (°F)	VOLTS (V)	PHASE	UNIT MCA (A)	UNIT MOCP (A			
RTU-1(E)	CARRIER	50LC0008A2B5	SEE PLAN	5.0	2000	300	S.A.E	12	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E

NOTES:
1. CONTRACTOR TO VERIFY IN FIELD ACTUAL CAPACITY OF UNIT AND IF FOUND ANY DISCREPANCY IN CAPACITY, CONTRACTOR TO INFORM ARCHITECT/OWNER PRIOR TO BID.
2. CONTRACTOR TO FIELD VERIFY BEFORE THE BID PROCESS IF THE RTU IS WORKING AT ITS 100% RATED CAPACITIES/LOADS. INFORM TO ARCHITECT/OWNER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO THE BID PROCESS AND PROVIDE A NEW UNIT AS PER SITE CONDITIONS AND CAPACITIES MENTIONED ABOVE IN THE SCHEDULE.
3. EXISTING UNIT WITH ALL ACCESSORIES TO REMAIN THE SAME AND TO BE REUSED.
4. S.A.E : SAME AS EXISTING.
5. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF UNITS ON SITE.
6. CONTRACTOR TO FIELD VERIFY THE CONDENSATE DRAIN WITH 2" DEEP VENTED TRAP DISCHARGE TO SPLASH BLOCK ON ROOF IS IN GOOD WORKING CONDITION, IF NOT PROVIDE NEW.
7. CONTRACTOR TO FIELD VERIFY THE CABINET IS WITH 1/2" FIBERGLASS INSULATION.
8. IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSORS COMPATIBLE WITH EXISTING UNITS. COORDINATE FINAL LOCATIONS OF T-STAT AND T-SENSORS WITH ARCHITECT/OWNER.
9. CONTRACTOR TO PROVIDE NEW THROWAWAY 2" FILTERS (MERV 8). PROVIDE GALVANIZED STEEL FILTER FRAMES.
10. CONTRACTOR TO FIELD VERIFY THE HOT GAS REHEAT AND ECONOMIZER ARE IN GOOD WORKING CONDITION, IF NOT INFORM TO ARCHITECT/ OWNER FOR THE REPLACEMENT OF SUCH ACCESSORIES.
11. CONTRACTOR TO READJUST & BALANCE THE OUTSIDE AIR DAMPER TO MEET THE ABOVE PRESCRIBED VALUE.

FANS SCHEDULE

TAG	SERVICE	MODEL	E.S.P (IN. W.G.)	CFM	ELEC (V/Hz/Ph.)	POWER (W)	AMPS (A)	WEIGHT(LBS)	MAKE
EF-1(N)	SEE PLAN	SP-B110ES	0.50	70	115/60/1	15	0.27(FLA)	15	GREENHECK
EF-2(N)	SEE PLAN	SP-B110ES	0.50	50	115/60/1	15	0.27(FLA)	10	GREENHECK

NOTES :-
1) INTERCONNECT EF-1& 2 (N) FAN WITH RTU-1(E) IN RESTROOM. REFER TO ELECTRICAL LIGHTING PLAN.
2) REFER TO DETAILS, FAN SHALL BE MOUNTED W/SUPPORT FRAMING BY OTHERS.
3) PROVIDE MOTOR STARTERS, DISCONNECTS, BACKDRAFT DAMPER. ALL EQUIPMENT NORMAL POWER WIRING BY ELECTRICAL CONTRACTOR. COORDINATE POWER REQUIREMENTS.
4) COORDINATE WITH ARCH./G.C. ACCESS DOORS FOR SERVICING ALL FANS WITHIN CEILINGS.

AIR BALANCE

UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR(CFM)
RTU-1(E)	SEE PLAN	2000	300	1700	0
EF-1(N)	SEE PLAN	0	0	0	70
EF-2(N)	SEE PLAN	0	0	0	50
TOTAL:		2000	300	1700	120
BUILDING PRESSURE:			**180**	**POSITIVE**	

NOTES:
1. CONTRACTOR TO ADJUST MOTORIZED DAMPER ON FRESH AIR TAP TO PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.

VENTILATION CALCULATION

ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000sq.ft AS PER FMC 2020	NUMBER OF PEOPLE AS PER FMC 2020	NUMBER OF CHAIR	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER FMC 2020		REQ. OA (CFM)	Provided OA (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR /FIXT.)	TOTAL EXHAUST (CFM)
						CFM/PEOPLE	CFM/SQ.FT				
101 RECEPTION/RETAIL	300	30	9	4	9	5	0.06	63		0	0
103 TREATMENT	85	5	1	1	2	5	0.06	15		0	0
104 TREATMENT	85	5	1	1	2	5	0.06	15		0	0
106 CRYO/SALT THERAPY	150	5	1	1	2	5	0.06	19		0	0
102 IV SUITE	386	10	4	5	6	5	0.06	53		0	0
111 SAUNA/CRYO	80	5	1	3	2	5	0.06	15	**300**	0	0
107 BREAK ROOM	90	5	1	1	2	7.5	0.18	31		0	0
105 RED LIGHT	81	5	1	1	2	5	0.06	15		0	0
109 HYPERBARIC	175	10	1	1	2	5	0.06	21		0	0
108 EXST. RESTROOM	47	0	0	0	0	0	0	0		70	70
							TOTAL	**247**		**-**	**70**

AIR TERMINAL SCHEDULE

BASIS OF DESIGN: TITUS

TAG	TYPE	CFM RANGE	DIMENSION(IN)	MODEL NO.	MAX NC dBA
CDS-1	SUPPLY	98-614	24X24	TMS	20
CDS-2	SUPPLY	48-175	12X12	TMS	20
CDR-1	RETURN	98-614	24X24	TMS	20

NOTES FOR DIFFUSERS
1. ALL GRILLES : CONTRACTOR SHALL COORDINATE WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS PLANS TO ENSURE PROPER AIR DEVICE BORDER SELECTION.
2. COORDINATE COLOR/FINISH WITH ARCHITECT.
15" DIA:536-615 CFM
14" DIA: 396-535 CFM
12" DIA: 276-395 CFM
10" DIA: 176-275 CFM
8" DIA: 101-175 CFM
6" DIA: 0-100 CFM

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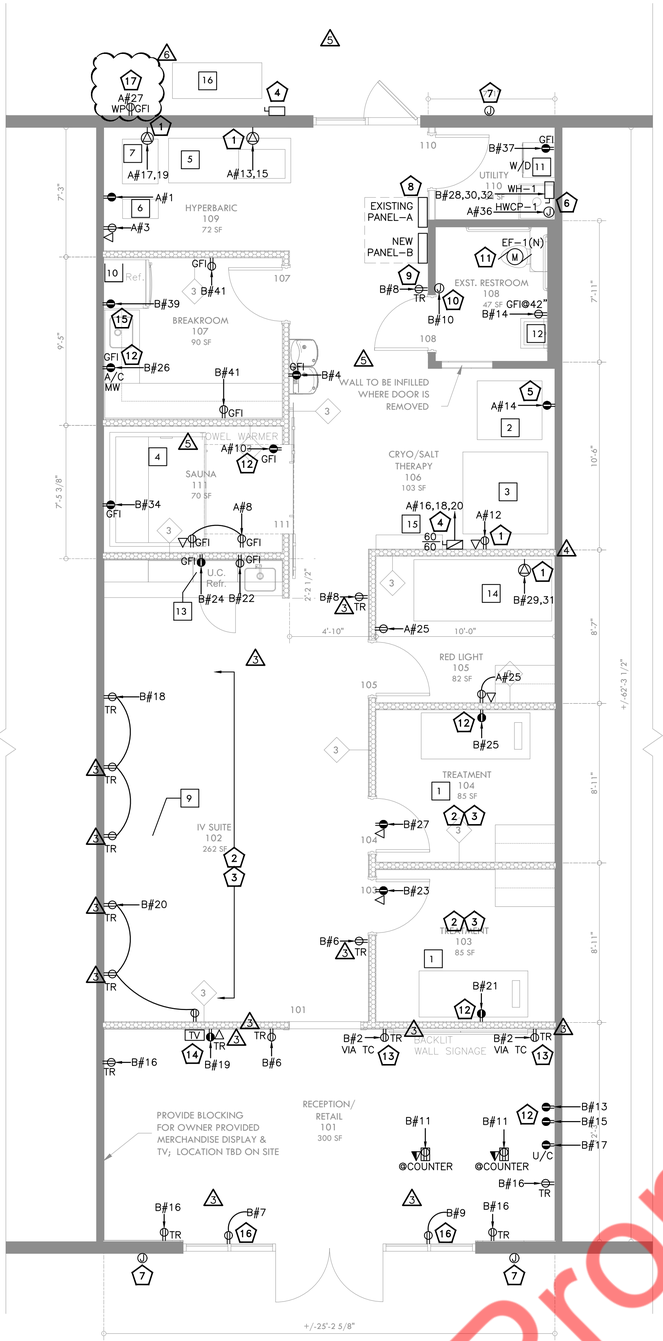
THE COVERY WELLNESS SPA

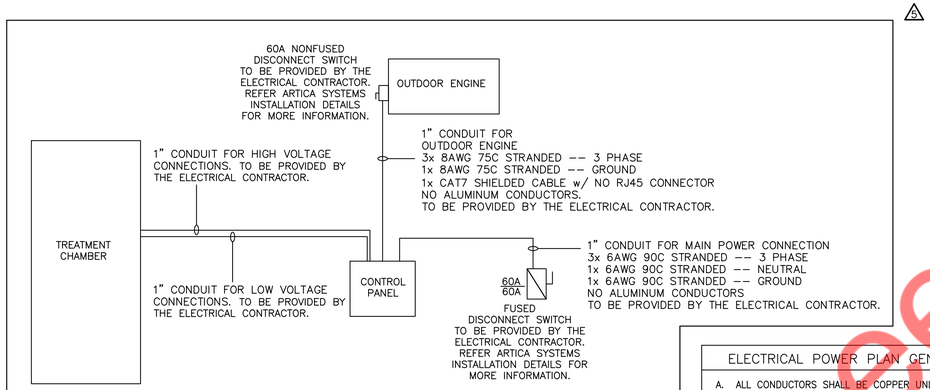
RMA PROJECT NO: 21.128.10

MECHANICAL SCHEDULES

M4.0



1 ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"



NOTE:
ELECTRICAL DETAILS ARE SHOWN FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT MANUFACTURER/VENDOR AND PROVIDE CIRCUIT BREAKERS AND CABLES AS REQUIRED. BASE BID ACCORDINGLY.

1 E3.0 ARTICA SYSTEMS–VORTEX–ELECTRICAL CONNECTION DETAIL
N.T.S

ELECTRICAL EQUIPMENT SCHEDULE

EQIP NO.	DESCRIPTION	VOLTAGE	PHASE	MCA	MOCP	NOTES
1	TREATMENT TABLE	120	1	5	20/1P	1,2
2	SALT BOOTH FLEX	110	1	0.32	20/1P	1,2
3	ARTICA SYSTEMS VORTEX CRYO CHAMBER	-	-	-	-	3
4	CLEARLIGHT SANCTUARY PROFESSIONAL RETREAT SAUNA	120	1	19	20/1P	1,2
5	HYPERBARIC CHAMBER	208	1	14	20/2P	1,2
6	HYPER BARIC COMPRESSOR UNIT	208	1	14	20/2P	1,2
7	HYPERBARIC CHAMBER & AC UNIT	120	1	9	20/1P	1
8	JANITOR'S CABINET, CF/CI	-	-	-	-	-
9	IV CHAIR	-	-	-	-	-
10	REFRIGERATOR	120	1	9	20/1P	1
11	UNDER COUNTER WASHER/DRYER	120	1	9	20/1P	1
12	LED MIRROR	120	1	5	20/1P	1
13	UNDER COUNTER REFRIGERATOR	120	1	9	20/1P	1
14	NEO LIGHT BED	208	1	16.5	30/2P	1,2
15	ARTICA SYSTEMS VORTEX CONTROL PANEL	208	3	44	60/3P	1,2
16	ARTICA SYSTEMS VORTEX OUTDOOR ENGINE	-	-	-	-	3

ABBREVIATIONS:
MCA - MINIMUM CIRCUIT AMPACITY
MOCP - MAXIMUM OVERCURRENT PROTECTION
NOTES:
1. REFER TO THE PANEL SCHEDULE FOR CIRCUIT NUMBER INFORMATION.
2. REFER TO MANUFACTURER INSTALLATION MANUAL FOR CONNECTION REQUIREMENTS
3. NO SEPARATE POWER CONNECTION FROM ELECTRICAL PANEL IS REQUIRED. IT SHALL BE POWERED FROM THE CONTROL PANEL (#15). REFER TO SHEET 1/E-3.0 FOR MORE DETAILS

ELECTRICAL POWER PLAN GENERAL NOTES:

A. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE INDICATED.

B. MOUNT ALL RECEPTACLES AT 18" ABOVE FINISHED FLOOR TO CENTER OF THE COVER PLATE UNLESS OTHERWISE INDICATED.

C. FOR OUTLETS REQUIRING GFCI PROTECTION WHERE THE RECEPTACLE IS CONCEALED SUCH AS IN THE CASE OF A WATER FOUNTAIN OR VENDING MACHINE INSTALLATION, THE CONTRACTOR SHALL PROVIDE A STANDARD RECEPTACLE WITH GFCI CIRCUIT BREAKER IN THE ASSOCIATED PANEL. BLANK FACE GFCI TEST/RESET BUTTONS ARE NOT PERMITTED UNLESS EXPLICITLY LOCATED ON THESE DRAWINGS.

D. FURNISH AND INSTALL ALL EXTERIOR RECEPTACLES WITH WEATHERPROOF COVERS. EXTERIOR RECEPTACLES SHALL BE GFCI TYPE.

E. FOR ALL EXTERIOR ELECTRICAL EQUIPMENT, FURNISH AND INSTALL WITH NEMA 3R ENCLOSURES MINIMUM. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THIS REQUIREMENT AND INFORMATION LOCATED ELSEWHERE IN THE ELECTRICAL DOCUMENTS, THE CONTRACTOR SHALL BID ACCORDING TO THE MOST STRINGENT REQUIREMENT.

F. IN BREAK ROOMS AND SIMILAR SPACES, THE CONTRACTOR SHALL REFER TO ARCHITECTURAL DOCUMENTS AND LOCATE ELECTRICAL DEVICES AT LOCATIONS AND ELEVATIONS TO BEST SERVE EACH DEDICATED APPLIANCE.

G. COORDINATE WITH OTHER DISCIPLINES IN THE FIELD TO ENSURE THAT THE INTEGRITY OF FIRE RATED CONSTRUCTION IS PRESERVED WHERE PENETRATING RATED WALLS AND FLOORS.

H. THE CONTRACTOR SHALL ROUTE ALL EXPOSED CONDUIT NEATLY AND TIGHT TO SUPPORTING SURFACES. IN THE EVENT THAT THE OWNER IS NOT SATISFIED WITH WORKMANSHIP, THE CONTRACTOR SHALL MAKE CORRECTIONS AT NO ADDITIONAL COST TO THE OWNER. MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.

I. FOR ALL CONDUIT RUNS SHOWN ON ELECTRICAL DRAWINGS, THE ROUTING IS APPROXIMATE. THE CONTRACTOR SHALL MAKE ROUTING ADJUSTMENTS AS REQUIRED BASED ON FIELD CONDITIONS AND COORDINATION WITH OTHER DISCIPLINES.

J. IN THE EVENT THAT THERE IS A DISCREPANCY IN THE MINIMUM CIRCUIT AMPACITY (MCA) AND/OR THE MAXIMUM OVERCURRENT PROTECTION (MOCP) BETWEEN THE DIVISION 26 AND DIVISION 22/23 SCHEDULES, THE CONTRACTOR SHALL BID ACCORDING TO THE MORE STRINGENT REQUIREMENTS.

K. MECHANICAL, PLUMBING, AND OTHER EQUIPMENT FURNISHED AND INSTALLED BY OTHER DIVISIONS IS SHOWN ON ELECTRICAL DRAWINGS FOR CIRCUITING PURPOSES ONLY. THE CONTRACTOR SHALL REFER TO OTHER DISCIPLINE CONSTRUCTION DOCUMENTS FOR EXACT LOCATIONS OF EQUIPMENT PRIOR TO ROUGH–IN OF THE ASSOCIATED ELECTRICAL CIRCUITS, DISCONNECTING MEANS, OUTLETS, ETC. AND ADJUST ROUTING AND LOCATIONS ACCORDINGLY.

L. THE RECEPTACLES MARKED AS "GFI" ON THE FLOOR PLAN INDICATES THAT THE RECEPTACLE SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE GFI BREAKER IN PANEL IF GFI RECEPTACLE IS NOT READILY ACCESSIBLE OR FOR THE RECEPTACLES OTHER THAN 20A.

M. TAMPER RESISTANT "TR" RECEPTACLES SHALL BE PROVIDED AS PER THE ARTICLE 406.12 OF NEC.

N. ALL THE RECEPTACLES SHALL BE GFI PROTECTED EITHER AT RECEPTACLE OR AT ELECTRICAL PANEL AS SPECIFIED IN 210.8(B)

O. ELECTRICAL CONTRACTOR SHALL VERIFY AND PROVIDE THE EXACT ELECTRICAL REQUIREMENT INCLUDING RECEPTACLE, PLUG, CORD, CIRCUIT BREAKER AND CABLES FOR ALL THE EQUIPMENT IN COORDINATION WITH THE EQUIPMENT SUPPLIER/MANUFACTURER IN THE FIELD. BASE BID ACCORDINGLY.

ELECTRICAL POWER PLAN KEYED NOTES: (#)

1. E.C. SHALL COORDINATE WITH THE ARCHITECT/VENDOR FOR EXACT POWER REQUIREMENT OF THE EQUIPMENT IN THE FIELD. PROVIDE OUTLETS AND OTHER ELECTRICAL CONNECTIONS AS REQUIRED. BASE BID ACCORDINGLY. 4
2. THIS SPACE IS CLASSIFIED AS A PATIENT CARE AREA PER THE NEC. BRANCH CIRCUITS SHALL BE INSTALLED PER NEC 517.13. ALL BRANCH CIRCUITS IN THIS SPACE SHALL BE INSTALLED IN EMT, RIGID METAL OR IMC WITH AN ADDITIONAL THE CONDUIT SHALL ITSELF SERVE AS AN EQUIPMENT GROUNDING RETURN PATH. PROVIDE HOSPITAL GRADE RECEPTACLES IN THIS SPACE.
3. PROVIDE REDUNDANT GROUNDING PER NEC 517 FOR THE RECEPTACLE OUTLET & FIXED ELECTRICAL EQUIPMENT IN ALL PATIENT CARE LOCATIONS. E.C TO COORDINATE FINAL LOCATION WITH ARCHITECT/OWNER.
4. REFER DIAGRAM (1/E3.0) FOR THE CRYO CONTROL PANEL, CHAMBER AND CONDENSING UNIT ELECTRICAL CONNECTION DETAILS. E.C. SHALL COORDINATE WITH THE ARCHITECT/VENDOR FOR EXACT POWER REQUIREMENT, LOCATION, RATING AND MOUNTING HEIGHT OF ALL ELECTRICAL DEVICES IN THE FIELD.. E.C. SHALL PROVIDE OTHER ELECTRICAL CONNECTIONS AS REQUIRED AND ENSURE IF THE CRYO UNIT IS WORKING PROPERLY. 5
5. E.C. SHALL COORDINATE WITH THE SALT BOOTH FLEX VENDOR FOR EXACT POWER REQUIREMENTS OF THE EQUIPMENT IN THE FIELD. PROVIDE OUTLETS AND OTHER ELECTRICAL CONNECTIONS AS REQUIRED. BASE BID ACCORDINGLY.
6. E.C. SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF THE PLUMBING EQUIPMENT IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
7. DECORATIVE SCONE LIGHT. E.C. SHALL COORDINATE WITH THE LANDLORD/OWNER WHETHER THESE FIXTURES ARE CONNECTED TO THE LANDLORD COMMON PANEL. IF NOT, PROVIDE JUNCTION BOX AND FED IT FROM THE PANEL–B. BASE BID ACCORDINGLY. 3
8. EXISTING ELECTRICAL PANEL–A. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION OF THE PANEL IN THE FIELD. A CLEAR WORKING SPACE SHALL BE PROVIDED PER NEC TABLE 110.26(A)(1).
9. NEW ELECTRICAL PANEL–B. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION OF THE PANEL IN THE FIELD. A CLEAR WORKING SPACE SHALL BE PROVIDED PER NEC TABLE 110.26(A)(1).
10. JUNCTION BOX AND CIRCUIT FOR HAND DRYER. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION OF THE HAND DRYER IN THE FIELD. PROVIDE JUNCTION BOX ACCORDINGLY.
11. INTERLOCK EXHAUST FAN "EF–1(N)" WITH THE "RTU–1(E)" AND CONNECT IT TO THE LIGHTING CIRCUIT IN THE SAME ROOM, AHEAD OF SWITCHING. COORDINATE WITH THE MECHANICAL CONTRACTOR FOR MORE DETAIL.
12. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION OF THE OUTLETS IN THE FIELD. BASE BID ACCORDINGLY.
13. TIME CLOCK CONTROLLED RECEPTACLES FOR WALL SIGN. COORDINATE EXACT LOCATION AND POWER REQUIREMENT IN THE FIELD.
14. RECEPTACLE, DATA AND TV OUTLET FOR WALL MOUNTED TELEVISION. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION OF THE OUTLETS IN THE FIELD.
15. E.C SHALL PROVIDE GFI RATED BREAKER AT ELECTRICAL PANEL FOR THE REFRIGERATOR CIRCUIT AS PER NEC 210.8. REFER TO PANEL SCHEDULE FOR MORE DETAILS. BASE BID ACCORDINGLY.
16. PROVIDE RECEPTACLE OUTLET WITHIN 18" OF THE TOP OF THE SHOW WINDOW AS PER NEC 210.62. CONNECT IT TO THE INDICATED CIRCUIT VIA TIMER. BASE BID ACCORDINGLY.
17. E.C. SHALL PROVIDE WEATHER–PROOF GFI RECEPTACLE FOR EQUIPMENT SERVICE AS PER NEC 210.63. 6

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KEY PLAN:

REVISION SCHEDULE

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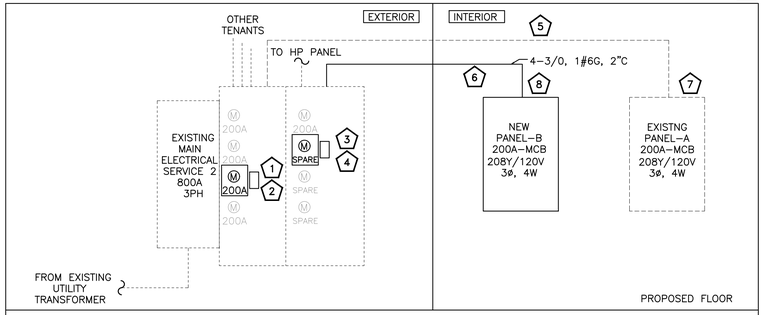
THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

ELECTRICAL POWER PLAN

E3.0

ELECTRICAL RISER DIAGRAM



ELECTRICAL RISER DIAGRAM GENERAL NOTES:

A. E.C. SHALL VERIFY FAULT CURRENT AVAILABLE WITH UTILITY COMPANY AND CALCULATE EXACT A.I.C. RATING REQUIRED. PRIOR TO BID. BASE BID ACCORDINGLY.

B. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

C. E.C. SHALL VERIFY EXACT SCOPE OF WORK WITH THE OWNER/LANDLORD, PRIOR TO BID.

D. E.C. SHALL INFORM ENGINEER ON RECORD IN CASE OF ANY DISCREPANCY OBSERVED.

ELECTRICAL RISER SYMBOL

- NEW
- EXISTING ITEM/FEEDER TO REMAIN
- EXISTING ITEM/FEEDER TO BE DISCONNECTED & REMOVED

RISER DIAGRAM KEYED WORK NOTES: (#)

1. REUSE EXISTING 200A, 208Y/120V, 3ø ELECTRICAL METER FOR THE TENANT SPACE. E.C. SHALL VERIFY THE EXISTING METER IN THE EXISTING METER BANK. PROVIDE NEW, IF INOPERABLE IN COORDINATION WITH UTILITY COMPANY/OWNER. BASE BID ACCORDINGLY.
2. REUSE EXISTING 200A, 208Y/120V, 3ø MAIN BREAKER FOR THE TENANT SPACE. E.C. SHALL VERIFY THE EXISTING BREAKER IN THE EXISTING METER BANK AND PROVIDE NEW, IF INOPERABLE. BASE BID ACCORDINGLY.
3. REUSE EXISTING 200A, 208Y/120V, 3ø SPARE ELECTRICAL METER FOR THE TENANT SPACE. E.C. SHALL VERIFY THE EXISTING SPARE METER IN THE EXISTING METER BANK. PROVIDE NEW, IF INOPERABLE IN COORDINATION WITH UTILITY COMPANY/OWNER. BASE BID ACCORDINGLY.
4. REUSE EXISTING 200A, 208Y/120V, 3ø SPARE MAIN BREAKER FOR THE TENANT SPACE. E.C. SHALL VERIFY THE EXISTING BREAKER IN THE EXISTING METER BANK AND PROVIDE NEW IF NOT AVAILABLE/INOPERABLE. BASE BID ACCORDINGLY.
5. EXISTING 200A, 208Y/120V, 3ø ELECTRICAL FEEDER FROM THE EXISTING METER BANK TO THE TENANT SPACE. E.C. SHALL COORDINATE WITH THE LANDLORD/OWNER/UTILITY FOR MORE DETAILS. BASE BID ACCORDINGLY.
6. NEW 200A, 208Y/120V, 3ø ELECTRICAL FEEDER FROM THE EXISTING METER BANK TO THE TENANT SPACE. E.C. SHALL ROUTE THE FEEDER AS PER SITE REQUIREMENT. BASE BID ACCORDINGLY.
7. EXISTING 200A, 208Y/120V, 3ø, 4W ELECTRICAL PANEL-A FOR THE TENANT SPACE. ALL THE BREAKERS SHALL BE VERIFIED AND SHALL MATCH THE PROJECT REQUIREMENT AS SPECIFIED ON THE PANEL SCHEDULES/AS REQUIRED PER SITE. E.C. SHALL REPORT ON RECORD, IF ANY DISCREPANCIES OBSERVED.
8. NEW 200A, 208Y/120V, 3ø, 4W ELECTRICAL PANEL-B FOR THE TENANT SPACE. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF THE PANEL IN THE FIELD.

PANEL SCHEDULE ABBREVIATIONS:

L = LIGHTING
R = RECEPTACLE
H = HVAC
E = EQUIPMENT
M = MOTOR
O = OTHER

(*) INDICATES GFI RATED BREAKER

PANEL SCHEDULE GENERAL NOTES:

A. E.C. SHALL VERIFY IF THE RATING OF THE BREAKERS AND FEEDER SIZE FOR EACH AND EVERY EQUIPMENT IS CORRECT AND ALL THE EQUIPMENT HAVE BEEN INCLUDED IN THE PANEL SCHEDULE. PRIOR TO BID. INFORM ENGINEER ON RECORD IN CASE OF ANY DISCREPANCY.

B. THE RECEPTACLES MARKED AS "GFI" ON THE FLOOR PLAN INDICATES THAT THE RECEPTACLE SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE GFI BREAKER IN PANEL IF GFI RECEPTACLE IS NOT READILY ACCESSIBLE OR FOR THE RECEPTACLES OTHER THAN 20A.

C. ALL THE RECEPTACLES SHALL BE GFI PROTECTED EITHER AT RECEPTACLE OR AT ELECTRICAL PANEL AS SPECIFIED IN 210.8(B)

D. E.C. SHALL VERIFY THE BREAKER, CABLE, ELECTRICAL LOAD AND CONDUIT REQUIREMENT/SIZES/RATINGS FOR ALL THE EQUIPMENT, WITH THE EQUIPMENT SUPPLIER/MANUFACTURER AND PROVIDE THE ELECTRICAL CONNECTION. BASE BID ACCORDINGLY.

E. E.C SHALL PROVIDE NEW TYPED PANEL DIRECTORIES AS REQUIRED PER CODE FOR ALL THE ELECTRICAL PANELS.

ELECTRICAL PANEL SCHEDULE

PANEL: A (EXISTING) — **MOUNTING:** SURFACE

208Y/120	VOLTS		**3**	PHASE	**4**	WIRE								**PANEL LOCATION:**	EXISTING			
MCB	**200A**		**BUS:**	**200A**	MINIMUM									**FED FROM:**	ELECTRICAL METER			

NOTE: R - RECEPTACLE, E - EQUIPMENTS, H - HVAC.

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	HYPERBARIC -AC UNIT	E	1.00	2#12, 1#12, 3/4"C	1.00						SPARE	20	2
3	20	GENERAL RECEPTACLE - HYPERBARIC	R	0.18	2#12, 1#12, 3/4"C		0.18					SPARE	20	4
5	20	SERVICE RECEPTACLE ON ROOF	R	0.18	2#12, 1#12, 3/4"C			0.18				SPARE	20	6
7	80/3P	RTU-1 (E)	H	6.30	3#4, 1#8, 1"C	6.66			2#12, 1#12, 3/4"C	0.36	R	SAUNA - GENERAL RECEPTACLE	20	8
9			H	6.30			6.50		2#12, 1#12, 3/4"C	0.20	R	SAUNA - TOWEL WARMER	20	10
11			H	6.30				6.48	2#12, 1#12, 3/4"C	0.18	R	CRYO -GENERAL RECEPTACLE	20	12
13	20/2P	HYPERBARIC CHAMBER	E	1.50	2#12, 1#12, 3/4"C	1.54			2#12, 1#12, 3/4"C	0.04	E	SALT BOOTH FLEX	20	14
15			E	1.50			6.78			5.28	E			16
17	20/2P	HYPERBARIC -COMPRESSOR UNIT	E	1.50	2#12, 1#12, 3/4"C			6.78	4#6, 1#6, 1"C	5.28	E	ARTICA SYSTEMS CRYO MAIN POWER	60/3P	18
19			E	1.50		6.78				5.28	E			20
21	20	SPARE					0.00					SPARE	20	22
23	20	SPARE						0.00				SPARE	20	24
25	20	REDLIGHT ROOM - GENERAL RECEPTACLE	R	0.36	2#12, 1#12, 3/4"C	0.36						SPARE	20	26
27	20	EXTERIOR SERVICE RECEPTACLE	R	0.18	2#12, 1#12, 3/4"C		0.18					SPARE	20	28
29	20	SPARE						0.00				SPARE	20	30
31	20	SPARE				0.00						SPARE	20	32
33	20	SPARE					0.00					SPARE	20	34
35	20	SPARE						0.50	2#12, 1#12, 3/4"C	0.50	R	RECIRCULATION PUMP (HWCP-1)	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
						16.34	**13.64**	**13.94**						

PANEL: B (NEW) — **MOUNTING:** SURFACE

208Y/120	VOLTS		**3**	PHASE	**4**	WIRE								**PANEL LOCATION:**	BOH			
MCB	**200A**		**BUS:**	**200A**	MINIMUM									**FED FROM:**	ELECTRICAL METER			

NOTE: L - LIGHTING, R - RECEPTACLE, E - EQUIPMENTS.

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	INTERIOR LIGHTING - FOH	L	1.00	2#12, 1#12, 3/4"C	2.00			2#12, 1#12, 3/4"C	1.00	R	BACKLIT SIGNAGE AT RECEPTION WALL	20	2
3	20	INTERIOR LIGHTING - BOH	L	1.00	2#12, 1#12, 3/4"C		1.36		2#12, 1#12, 3/4"C	0.36	R	DRINKING FOUNTAIN RECEPTACLE	20	4
5	20	EXTERIOR SIGNAGE	L	1.00	2#12, 1#12, 3/4"C			1.36	2#12, 1#12, 3/4"C	0.36	R	GENERAL RECEPTACLES - FOH	20	6
7	20	SHOW WINDOW RECEPTACLE	L	1.50	2#12, 1#12, 3/4"C	1.86			2#12, 1#12, 3/4"C	0.36	R	GENERAL RECEPTACLES - BOH	20	8
9	20	SHOW WINDOW RECEPTACLE	L	1.50	2#12, 1#12, 3/4"C		3.00		2#12, 1#12, 3/4"C	1.50	R	RESTROOM HAND DRYER	20	10
11	20	RECEPTION COUNTER RECEPTACLES	R	0.36	2#12, 1#12, 3/4"C			1.86	2#12, 1#12, 3/4"C	1.50	R	RESTROOM & SHOWER HAND DRYER	20	12
13	20	PAPER SHREDDER - RECEPTION	E	0.20	2#12, 1#12, 3/4"C	0.56			2#12, 1#12, 3/4"C	0.36	R	RESTROOM GFI RECEPTACLE	20	14
15	20	LAMINATION MACHINE - RECEPTION	E	1.50	2#12, 1#12, 3/4"C		1.86		2#12, 1#12, 3/4"C	0.36	R	TR RECEPTACLE - RECEPTION	20	16
17	20	PRINTER - RECEPTION	E	1.00	2#12, 1#12, 3/4"C			1.54	2#12, 1#12, 3/4"C	0.54	R	IV SUITE RECEPTACLES	20	18
19	20	TV RECEPTACLE - RECEPTION/RETAIL	R	0.50	2#12, 1#12, 3/4"C	1.04			2#12, 1#12, 3/4"C	0.54	R	IV SUITE RECEPTACLES	20	20
21	20	TREATMENT BED - TREATMENT ROOM	E	0.50	2#12, 1#12, 3/4"C		0.68		2#12, 1#12, 3/4"C	0.18	R	IV SUITE GENERAL RECEPTACLES	20	22
23	20	BIO CHARGER - TREATMENT ROOM	E	1.10	2#12, 1#12, 3/4"C			2.10	2#12, 1#12, 3/4"C	1.00	E	UC REFRIGERATOR - IV SUITE	20	24
25	20	TREATMENT BED - TREATMENT ROOM	E	0.50	2#12, 1#12, 3/4"C	1.60			2#12, 1#12, 3/4"C	1.10	E	MICROWAVE - BREAKROOM	20	26
27	20	BIO CHARGER - TREATMENT ROOM	E	1.10	2#12, 1#12, 3/4"C		3.76		3#10, 1#10, 3/4"C	2.66	E	WATER HEATER (WH-1)	30/3P	28
29	30/2P	REDLIGHT ROOM -NEO LIGHT BED	E	1.80	2#10, 1#10, 3/4"C			4.46		2.66	E			30
31			E	1.80		4.46				2.66	E			32
33	20	SPARE					1.70		2#12, 1#12, 3/4"C	1.70	E	CLEARLIGHT LIGHT SAUNA	20	34
35	20	SPARE						0.00				SPARE	20	36
37	20	UC_WASHER /DRYER - BREAKROOM	E	1.00	2#12, 1#12, 3/4"C	1.00						SPARE	20	38
39	20*	REFRIGERATOR- BREAKROOM	E	1.00	2#12, 1#12, 3/4"C		1.00					SPARE	20	40
41	20	GENERAL RECEPTACLES - BREAKROOM	R	0.36	2#12, 1#12, 3/4"C			0.36				SPARE	20	42
						12.52	**13.36**	**11.68**						

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THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE

E4.0

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	SANITARY WASTE
	SANITARY SEWER (UNDERFLOOR)
	VENT PIPING
	COLD WATER
	HOT WATER
	RECIRCULATING HOT WATER
	FLOOR SINK WITH HALF GRATE
	FLOOR DRAIN
	PIPE UP OR DOWN
	PIPE UP
	CAP ON END OF PIPE
	CLEANOUT
	SOLENOID VALVE
	POINT OF NEW CONNECTION

PLUMBING ABBREVIATIONS

BFP	BACK FLOW PREVENTER
CO	CLEANOUT
CODP	CLEAN OUT DECK PLATE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DN	DOWN
ET	EXPANSION TANK
EX.	EXISTING
FCO	FLOOR CLEANOUT
FS	FLOOR SINK
HW	HOT WATER
HWCP	HOT WATER CIRCULATION PUMP
HWR	HOT WATER RETURN
LAV	LAVATORY
MS	MOP SINK
SAN	SANITARY
SK	SINK
TMV	THERMOSTATIC MIXING VALVE
TYP.	TYPICAL
WC	WATER CLOSET
WH	HOT WATER HEATER
WMB	WASHING MACHINE BOX

PLUMBING DRAWING LIST

CODE COMPLIANCE

ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:

a. 2020 FLORIDA BUILDING CODE–BUILDING, 7TH EDITION.

b. 2020 FLORIDA BUILDING CODE–MECHANICAL, 7TH EDITION.

c. 2020 FLORIDA BUILDING CODE–PLUMBING, 7TH EDITION.

d. 2020 FLORIDA BUILDING CODE–FUEL GAS, 7TH EDITION.

e. 2020 FLORIDA BUILDING CODE–ENERGY CONSERVATION, 7TH EDITION.

f. NFPA 70, NATIONAL ELECTRICAL CODE–2017 EDITION.

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.

C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.

D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.

G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.

H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.

I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.

J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.

1. PIPE AND FITTINGS
2. VALVES
3. HANGERS AND SUPPORTS
4. PLUMBING PIPING LAYOUT
5. TESTS
6. PLUMBING FIXTURES
7. WATER HEATERS & ACCESSORIES
8. FLOOR DRAINS
9. MIXING VALVES
10. ALL SCHEDULED PLUMBING EQUIPMENT

B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

D. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

E. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

F. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS–BUILT DRAWINGS, INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

G. RECORD AS–BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.04 DEFINITIONS

A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.

C. PROVIDE: TO FURNISH AND INSTALL.

D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

E. REFER TO THE INTERNATIONAL PLUMBING CODE 2015 FOR ADDITIONAL DEFINITIONS.

1.04 DRAWINGS

A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.05 PRODUCTS

A. SANITARY AND VENT PIPING:

1. ABOVE GRADE AND UNDERGROUND PIPING SHALL BE POLYVINYL CHLORIDE (PVC) AS PER ASTM D2665, ASTM F891, ASTM F1488 AND CSA B181.2 STANDARDS ON TABLE P–702.1 AND P–702.2 RESPECTIVELY AS PER 2020 FLORIDA BUILDING CODE–PLUMBING, 7TH EDITION.

2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 3" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.

3. PVC OR OTHER COMBUSTIBLE PLASTIC PIPING SHALL NOT BE INSTALLED IN CEILING PLENUM SPACES.

B. DOMESTIC WATER PIPING:

1. ABOVE GRADE AND UNDERGROUND WATER PIPING SHALL BE CROSS–LINKED POLYETHYLENE (PEX) PLASTIC TUBING AND COMPLY WITH ASTM F876, AWWA C904, CSA B137.5 STANDARDS ON TABLE 605.3 AND 605.4 AS PER 2020 FLORIDA BUILDING CODE–PLUMBING, 7TH EDITION.

2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE CROSS–LINKED POLYETHYLENE (PEX) PLASTIC TUBING AND COMPLY WITH ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F2080, ASTM F2098, ASTM F2159, ASTM F2434, ASTM F2735, CSA B137.5 ON TABLE 605.5 AS PER 2020 FLORIDA BUILDING CODE–PLUMBING, 7TH EDITION.

3. JOINTS SHALL BE MADE AS PER MANUFACTURER'S INSTRUCTIONS AND SHALL CONFIRM TO 2020 FLORIDA PLUMBING CODE.

4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.

5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER–SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.

6. ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE–RETARDANT, FACTORY–APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY–APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY WITH 2020 FLORIDA BUILDING CODE – ENERGY CONSERVATION, 7TH EDITION. REFER BELOW TABLE C403.2.10 FOR MINIMUM PIPE INSULATION THICKNESS.

MINIMUM PIPE INSULATION THICKNESS							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU·IN./(H·FT2·°F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8	≥8
105–140	0.21–0.28	100	1.0	1.0	1.5	1.5	1.5
40–60	0.21–0.27	75	0.5	0.5	1.0	1.0	1.0

7. AS PER 2020 FLORIDA BUILDING CODE – ENERGY CONSERVATION, 7TH EDITION, SECTION 404.6.1, SYSTEMS DESIGNED TO MAINTAIN USAGE TEMPERATURES IN HOT WATER PIPES, SUCH AS RECIRCULATING HOT WATER SYSTEM OR HEAT TRACE, SHALL BE EQUIPPED WITH AUTOMATIC TIME SWITCHES OR OTHER CONTROLS THAT CAN BE SET TO SWITCH OFF THE USAGE TEMPERATURE MAINTENANCE SYSTEM DURING EXTENDED PERIODS WHEN HOT WATER IS NOT REQUIRED.

8. AS PER 2020 FLORIDA BUILDING CODE – ENERGY CONSERVATION, 7TH EDITION, SECTION C404.7, DEMAND RECIRCULATION WATER SYSTEMS HAVE CONTROLS THAT START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE AND LIMITS THE TEMPERATURE OF THE WATER ENTERING THE COLD–WATER PIPING TO 104°F.

C. ELECTRIC WATER HEATER

1. TANKS SHALL BE 40 GALLONS CAPACITY AND SHALL HAVE 150 PSI WORKING PRESSURE AND BE EQUIPPED WITH EXTRUDED HIGH DENSITY ANODE.

2. ALL INTERNAL SURFACES OF THE HEATER(S) EXPOSED TO WATER SHALL BE GLASS–LINED WITH AN ALKALINE BORO SILICATE COMPOSITION THAT HAS BEEN FUSED–TO–STEEL BY FIRING AT A TEMPERATURE RANGE OF 1400°F TO 1600°F.

3. ELECTRIC HEATING ELEMENTS SHALL BE MEDIUM WATT DENSITY WITH ZINC PLATED COPPER SHEATH.

4. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT–OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.

D. MIXING VALVES

1. VALVE BODY SHALL BE MADE OF CAST BRASS. THE INTERNAL COMPONENTS SHALL BE MADE OF BRASS OR STAINLESS STEEL.

2. TYPES A, C & D VALVES: VALVE SHUTS OFF IN FULL COLD POSITION AND MUST PASS THROUGH COLD RANGE BEFORE DELIVERING WARM, AND/OR HOT WATER. TEMPERATURE LIMIT SET AT 105°F MAXIMUM DELIVERY TEMPERATURE. IF ONE SUPPLY SHOULD FAIL, THE OTHER WILL AUTOMATICALLY AND INSTANTLY SHUT DOWN. DELIVERY CAPACITY IS 5GPM @ 45 PSIG DIFFERENTIAL.

3. TYPES OF VALVES: TYPE A– THERMOSTATICALLY OPERATED BY MEANS OF BI–METALLIC STRIP, OR EXPANSION BELLOWS; TYPE B– SINGLE HANDLE MECHANICAL MIXER, OR INDIVIDUAL HOT AND COLD CONTROL VALVES; TYPE C– PRESSURE BALANCING SHOWER VALVE/PISTON OPERATED MIXING VALVE; TYPE D– BALANCED PRESSURE OPERATION, WITH INTEGRAL DIAL THERMOMETER INDICATING DELIVERED WATER TEMPERATURE.

4. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT–OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.

E. HOT WATER RE–CIRCULATING PUMP

1. IN–LINE PUMP: SINGLE STAGE VOLUTE TYPE PUMP SHALL BE MADE OF CAST IRON OR FORGED LEAD–FREE BRONZE IMPELLER.

2. THE PUMP SHALL HAVE A GROUND AND POLISHED STEEL SHAFT WITH A HARDENED INTEGRAL THRUST COLLAR. THE SHAFT SHALL BE SUPPORTED BY TWO HORIZONTAL SLEEVE BEARINGS DESIGNED TO CIRCULATE OIL. THE PUMPS ARE TO BE EQUIPPED WITH A MECHANICAL SEAL WITH CARBON SEAL FACE ROTATING AGAINST CERAMIC SEAT. THE MOTOR SHALL BE NON–OVERLOADING AT ANY POINT ON PUMP CURVE.

3. DIRECT CONNECT PUMP TO ELECTRIC MOTOR WITH FLEXIBLE COUPLING. THE MOTOR SHALL BE OF THE DRIP–PROOF, SLEEVE–BEARING, QUIET OPERATING, RUBBER–MOUNTED CONSTRUCTION. EQUIPMENT MOTOR WITH BUILT–IN THERMAL OVERLOAD PROTECTION.

4. INSTALL IN–LINE CIRCULATING PUMPS BETWEEN PIPE FLANGES IN PIPING SYSTEMS. INSTALL OVERHEAD PIPE SUPPORTS, BOTH SIDES OF IN–LINE PUMPS, INSTALLED IN HORIZONTAL PIPING RUNS.

F. HANGERS AND SUPPORTS:

1. HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.

2. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.

3. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS..

4. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

G. VALVES:

1. PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT–OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT–OFF DUTY.

2. ALL FIXTURES WITH THE EXCEPTION O FLUSHOMETER–EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME–PLATED STOPS WITH CHROME–PLATED ESCUTCHEONS ON PIPING PENETRATIONS.

3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT–OFF VALVES ON SUPPLY LINES.

4. ALL BRANCH LINES TO HAVE SHUT–OFF VALVES.

5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.

6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.

H. SLEEVES AND ESCUTCHEONS:

1. SLEEVES THROUGH STRUCTURAL CONCRETE MEMBERS AND SLEEVES FOR WALLS BELOW GRADE AND FLOORS ON GRADE SHALL BE STANDARD WEIGHT GALVANIZED SCHEDULE 40 STEEL PIPE. SLEEVES THROUGH OTHER THAN STRUCTURAL COMPONENTS OF THE BUILDING SHALL BE 20 GAGE GALVANIZED SHEET METAL WITH LOCK SEAM JOINTS. USG THERMAFIBER SAFING INSULATION SHALL BE INSTALLED BETWEEN PIPE AND SLEEVE.

2. PIPE ESCUTCHEON PLATES SHALL BE INSTALLED WHERE EXPOSED PIPING PASSES THROUGH WALLS, CEILINGS, AND FLOORS AND SHALL BE MINIMUM 20 GAGE STEEL. PROVIDE CHROME PLATED ESCUTCHEON PLATES IN FINISHED AREAS.

I. DRAINAGE ACCESSORIES

1. GENERAL:

a. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.

b. SECURE EXTERNAL COMPONENTS IN PLACE WITH VANDAL RESISTANT FASTENERS OR DEVICES WHICH CANNOT BE REMOVED WITHOUT SPECIAL TOOLS.

Property of NY Engine

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KEY PLAN:

REVISION SCHEDULE

NO:	DATE:	DESCRIPTION:
00	03/27/2023	PERMIT SET
01	04/12/2023	ADDENDUM 1
03	08/02/2023	REGULATORY COMMENTS
04	09/06/2023	SERVICE UPDATE
05	10/26/2023	BULLETIN 2

THE COVERY WELLNESS SPA

RMA PROJECT NO: 21.128.10

PLUMBING SYMBOLS & ABBREVIATIONS

P1.0

2. DEVICES:

a. CLEANOUT & CLEANOUT PLUG

- THREADED PIPE FITTING OR CAST IRON FERRULE WITH GAS TIGHT CLEANOUT PLUG
- PLUG SHOULD BE CAST BRASS OR BRONZE, WITH THREADED END, AND RAISED OR COUNTERSUNK HEAD.
- LUBRICATE THREADS OF CLEANOUT PLUG WITH ANTI–SEIZE LUBRICANT BEFORE FINAL INSTALLATION.

b. CLEANOUT WALL PLATE

- IT SHOULD BE ROUND, STAINLESS STEEL OR POLISHED CHROME PLATED BRONZE COVER PLATE WITH STAINLESS STEEL VANDAL RESISTANT FASTENER TO SECURE TO CLEANOUT PLUG.

c. CLEANOUT DECK PLATE

- IT SHOULD BE STANDARD DUTY FLOOR CLEANOUT FITTING WITH COATED CAST IRON BODY; ROUND, POLISHED NICKEL BRONZE SCORIATED TOP SECURED TO CLEANOUT PLUG WITH STAINLESS STEEL VANDAL RESISTANT FASTENER; THREADED HEIGHT ADJUSTMENT, CAST IRON HEAD, GAS TIGHT CLEANOUT PLUG, AND CONNECTION TO MATCH PIPING OPTION SELECTED.

J. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

K. VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES.

L. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'–0" IN LENGTH.

M. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

N. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. REMOVE PROTECTIVE COATINGS PRIOR TO INSTALLATION.

O. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE–PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

P. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

Q. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

R. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

S. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

T. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

U. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

V. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

W. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

X. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

Y. CONNECT GAS PIPING TO ALL GAS–FIRED EQUIPMENT WITH GAS COCK, DIRT LEG AND UNION.

Z. FOR ALL GAS–FIRED EQUIPMENT, VERIFY INPUT RATING AND PRESSURE REQUIREMENTS. PROVIDE GAS PRESSURE REGULATORS VENTED TO THE BUILDING EXTERIOR ON GAS SUPPLY TO ALL EQUIPMENT REQUIRING LOWER THAN LINE GAS PRESSURE.

AA. ALL PIPING INSTALLED ON THE ROOF SHALL BE SUPPORTED BY "PILLOW BLOCK" PIPE STANDS AS MANUFACTURED BY MIRO INDUSTRIES, OR APPROVED EQUAL. WOOD PIPE SUPPORTS SHALL NOT BE ACCEPTABLE. PROVIDE TRAFFIC/WALK PADS BELOW ALL PIPE STANDS.

AB. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

AC. PROVIDE WATER HAMMER ARRESTERS ON SUPPLY PIPING TO ALL FLUSHOMETER VALVES AND QUICK–CLOSING VALVES.

AD. UNLESS OTHERWISE INDICATED, TRAPS SEALS AT ALL FLOOR DRAINS SHALL BE MAINTAINED BY AN APPROVED TRAP PRIMING DEVICE.

AE. MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES FOR ALL PLUMBING SYSTEM COMPONENTS AND EQUIPMENT.

AF. MAINTAIN MINIMUM 10'–0" CLEARANCE BETWEEN ALL PLUMBING V.T.R.S AND ALL OUTDOOR AIR INTAKES. OFFSET VENT STACKS AND STACK VENTS IF AND AS REQUIRED BELOW ROOF TO MAINTAIN SUCH CLEARANCE WHETHER OR NOT SUCH OFFSET IS INDICATED ON THE DRAWINGS. PROVIDE ALL REQUIRED SEISMIC SUPPORTS.

2. INSTALLATION

2.01 GENERAL

A. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

B. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

C. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

D. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

E. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

F. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

G. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

H. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

I. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

J. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

K. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

L. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT–OFF VALVES AND ALL LOW POINTS IN PIPING.

C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

2.03 INSULATION

COVER ALL HOT WATER AND HOT WATER RECIRCULATION PIPE WITH 1½" THICK FOR PIPE SIZE UP TO 1½" AND 2" THICK FOR PIPE SIZE GREATER THAN 1½". INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL PIPE INSULATION SHALL COMPLY WITH 2020 FLORIDA BUILDING CODE – ENERGY CONSERVATION, 7TH EDITION.

3. TESTING

A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

I. ALL EQUIPMENT WILL BE FACTORY TESTED.

J. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

L. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

M. TESTING REQUIREMENTS

a. TEST ALL DOMESTIC WATER PIPING HYDROSTATICALLY TO 125 PSIG.
b. HYDROSTATIC TEST PRESSURES SHALL REMAIN CONSTANT WITH NO VARIATION FOR 120 MINUTES.
c. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
d. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

N. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

O. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.

4. WARRANTY

A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

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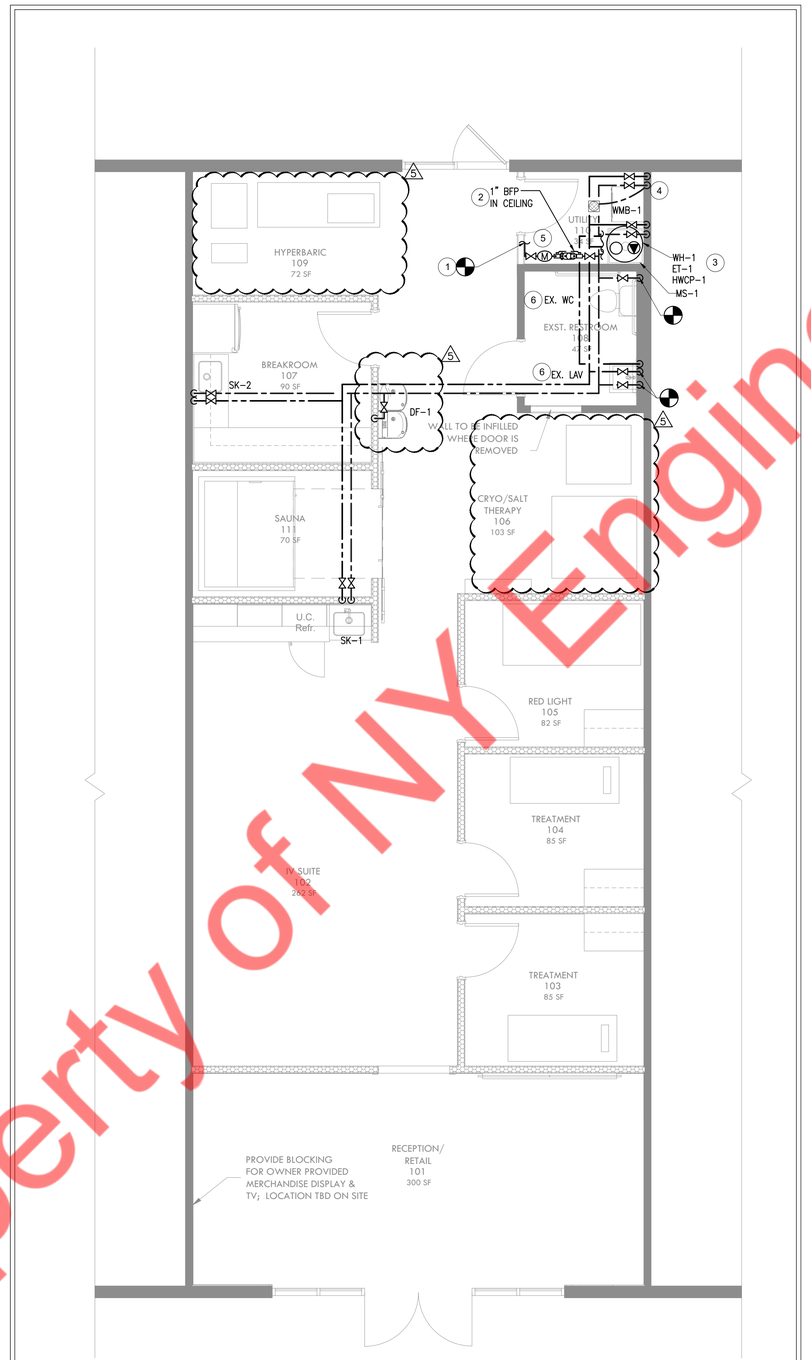
THE COVERY
WELLNESS SPA

RMA PROJECT NO: 21.128.10

PLUMBING
SPECIFICATIONS

P1.1



1 PLUMBING DOMESTIC WATER PIPING PLAN
1/4"=1'-0"

DOMESTIC WATER PIPING PLAN NOTES:

1. ROUTE NEW 1" CW PIPING WITH SHUT OFF VALVE AND TIE-INTO THE EXISTING WATER SERVICE. CONTRACTOR TO FIELD VERIFY THE SIZE, LOCATION, ROUTING, BACKFLOW PREVENTER AND WATER SUB-METER REQUIREMENTS IN FIELD WITH OWNER AND BASE BID ACCORDINGLY.
2. PROVIDE REDUCE PRESSURE ZONE BACKFLOW PREVENTER CONFORMING WITH ASSE1013 OR LOCAL CODE AMENDMENTS. PROVIDE DRAIN PAN & ROUTE DRAIN OUTLET TO THE NEAREST FUNNEL DRAIN.
3. ROUTE T&P RELIEF TO DRAIN IN FUNNEL DRAIN.
4. TRAP PRIMER (TP-1) EXTEND AND CONNECT 1/2" TRAP PRIMER PIPING TO FLOOR DRAINS WITH TRAP PRIMER CONNECTIONS. COORDINATE ROUTING.
5. 1" WATER METER (PROVIDE IF REQUIRED). CONTRACTOR TO VERIFY WITH ARCHITECT/CLIENT PRIOR TO BID.
6. CONTRACTOR TO FILED VERIFY EXACT CONDITION OF EXISTING FIXTURE WITH ASSOCIATED VALVE, BRANCH PIPING AND REUSE IF IN GOOD CONDITION. REPLACE IF REQUIRED. CONFIRM WITH ARCHITECT/CLIENT PRIOR TO BID. REFER TO RISER DIAGRAM P-4.0.

GENERAL NOTES:

1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2020 FLORIDA BUILDING CODE ENERGY CONSERVATION, 7TH EDITION (REFER P1.0).
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR SHUT-OFF VALVES & WATER HEATER AS REQUIRED.
4. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.

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THE COVERY
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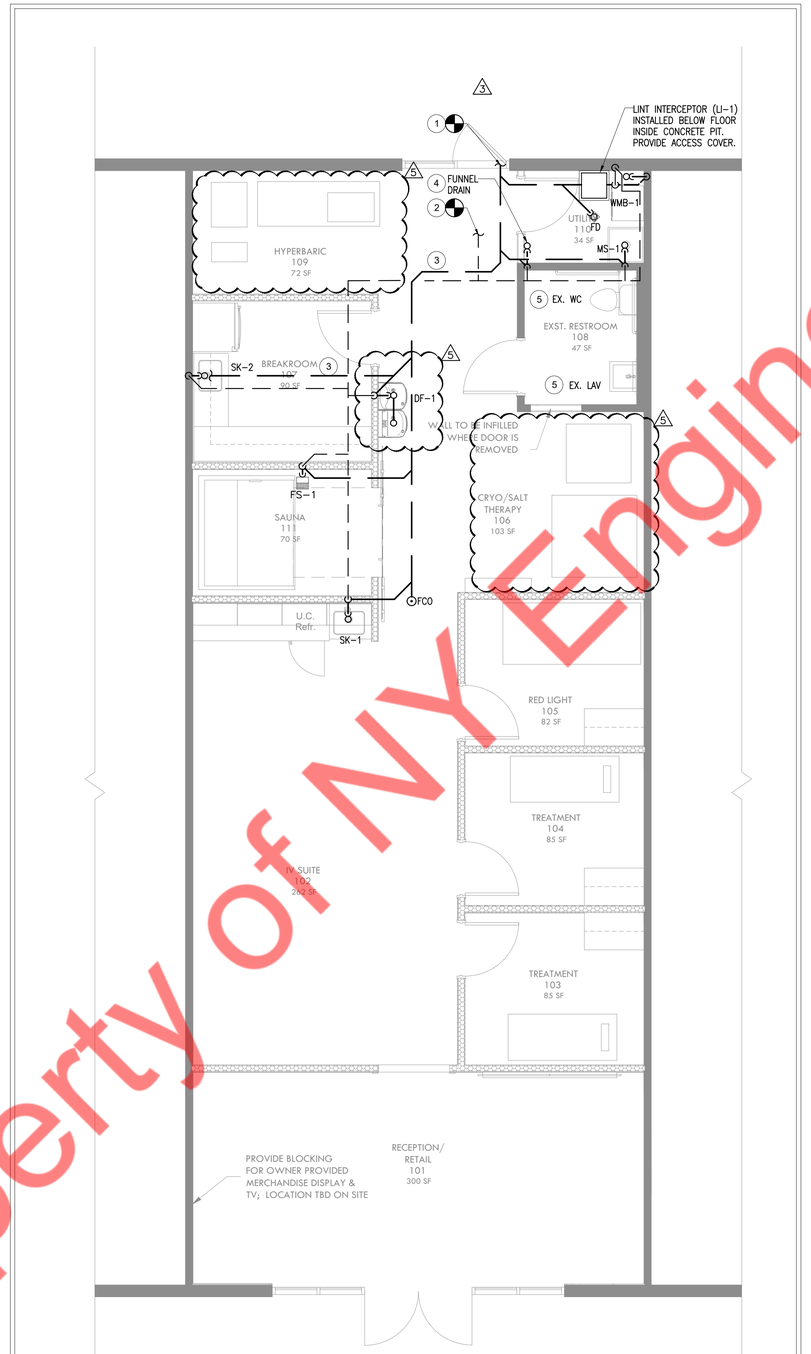
PLUMBING
DOMESTIC WATER
PIPING PLAN

P2.0



1 PLUMBING SANITARY & VENT PIPING PLAN

1/4"=1'-0"

SANITARY & VENT PIPING PLAN NOTES:

1. CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY PIPING. CONTRACTOR TO FIELD VERIFY SIZE, LOCATION, ROUTING AND INVERT OF EXISTING PIPING ON SITE.
2. CONNECT NEW 3" VENT PIPING TO EXISTING VENT PIPING. CONTRACTOR TO FIELD VERIFY SIZE, LOCATION, ROUTING OF EXISTING PIPING ON SITE.
3. SANITARY PIPING RUNNING UNDERGROUND SHOWN FOR REFERENCE. CONTRACTOR TO COORDINATE WITH EXISTING STRUCTURAL AND REROUTE AS REQUIRED TO AVOID ANY CONFLICTS AS PER FILED CONDITIONS.
4. INDIRECT WASTE FROM RPZ BFP AND WATER HEATER TO SPILL INTO THE FUNNEL DRAIN.
5. CONTRACTOR TO FILED VERIFY EXACT CONDITION OF EXISTING FIXTURE WITH ASSOCIATED VALVE, SANITARY PIPING, VENT PIPING AND REUSE IF IN GOOD CONDITION. REPLACE IF REQUIRED. CONFIRM WITH ARCHITECT/CLIENT PRIOR TO BID. REFER TO RISER DIAGRAM P-4.0.

GENERAL NOTES:

1. REFER RISER DIAGRAMS FOR ALL PIPE SIZES.

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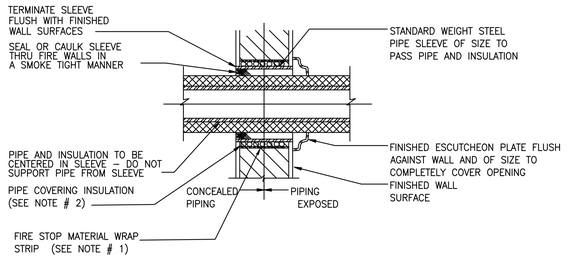
THE COVERY WELLNESS SPA

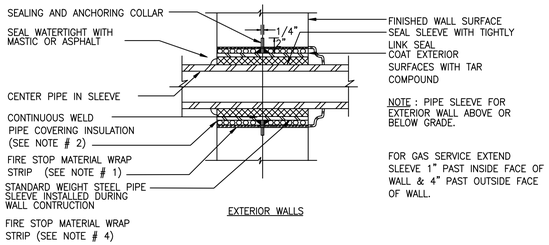
RMA PROJECT NO: 21.128.10

PLUMBING SANITARY & VENT PIPING PLAN

P2.1



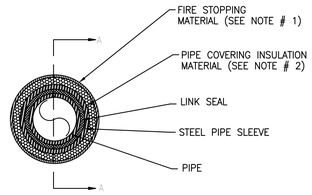
INTERIOR WALLS



EXTERIOR WALLS

NOTE : PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.

FOR GAS SERVICE EXTEND SLEEVE 1" PAST INSIDE FACE OF WALL & 4" PAST OUTSIDE FACE OF WALL.

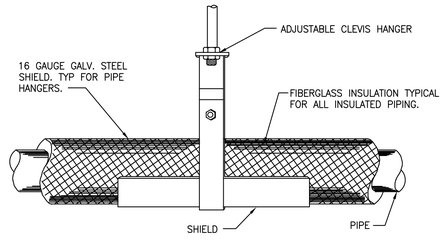


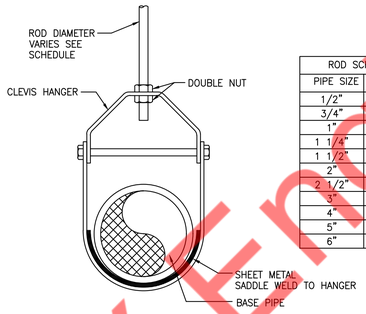
PIPE SLEEVE VIEW

NOT TO SCALE

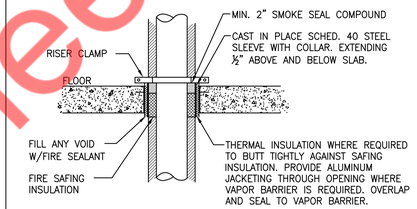
NOTES:

1. FIRESTOP MATERIAL WRAP STRIP SHALL BE ⅛" THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL SUPPLIED IN 2 IN. WIDE STRIPS AND WRAP AROUND THE PIPE AS PER UL MATERIAL LISTED3M COMPANY FS–195+ OR FILL CAVITY WITH CAULK OR SEALANT MIN. ⅛" DIA. CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED OF THE WRAP STRIP LAYER APPROX. 3/4" FROM WALL SURFACE. AS PER UL LISTED 3M COMPANY CP25WB+, IC 15WB+, FIRE DAM 150+CAULK.
2. PIPE COVERING INSULATION SHALL BE 2" THICK HOLLOW CYLINDRICAL HEAVY DENSITY GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKETED. AS PER UL CLASSIFICATION AND MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.





ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"

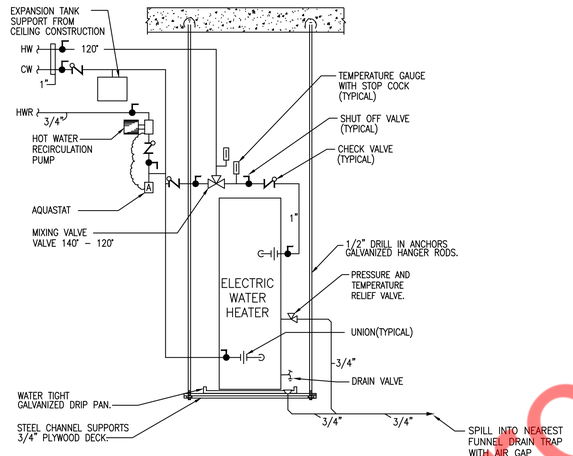


NOTES:
1. SLEEVES TO BE SIZED AS REQUIRED FOR OVERALL PIPE DIAMETER. (INCLUDING INSULATION, WHERE APPLICABLE)
2. PIPE CLAMPS FOR COPPER PIPING SHALL BE COPPER PLATED.

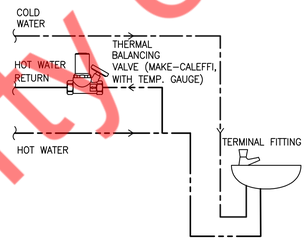
1 P3.0 PIPE SLEEVE THRU WALL SECTION N.T.S

2 P3.0 HANGER DETAIL N.T.S

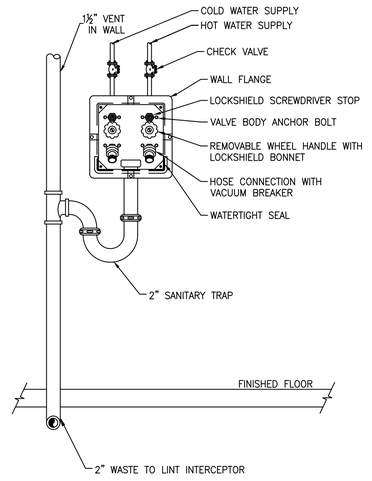
3 P3.0 FLOOR PENETRATION DETAIL N.T.S



4 P3.0 HOT WATER HEATER INSTALLATION ABOVE CEILING DETAIL N.T.S



5 P3.0 BALANCING VALVE PIPING DETAIL N.T.S



6 P3.0 WASHER SUPPLY/ DRAIN BOX DETAIL N.T.S

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THE COVERY WELLNESS SPA

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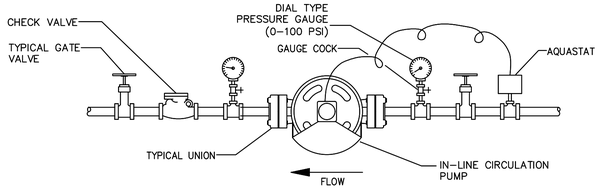
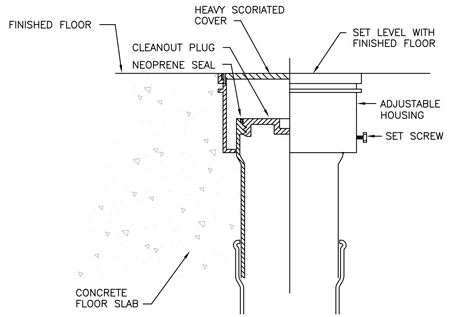
PLUMBING DETAILS(1 OF 2)

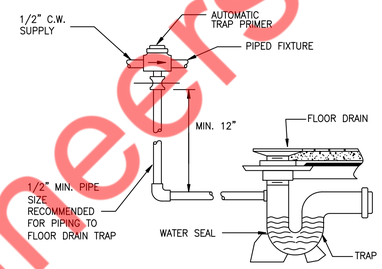
P3.0



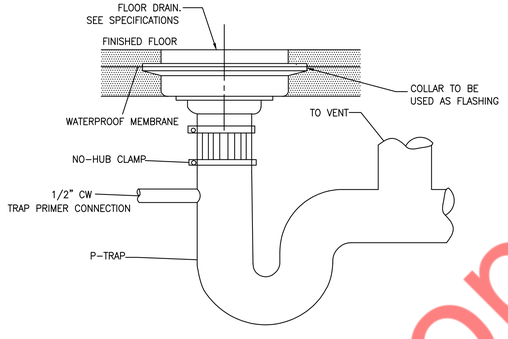
1 P3.1 INLINE RECIRCULATING PUMP DETAIL
N.T.S



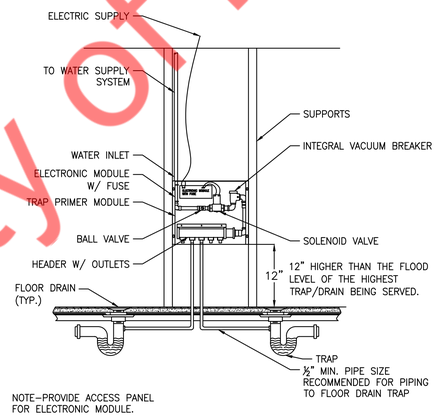
2 P3.1 FLOOR CLEANOUT DETAIL
N.T.S



3 P3.1 FLOW CONTROL TRAP PRIMER DETAIL
N.T.S



4 P3.1 FLOOR DRAIN DETAIL
N.T.S



5 P3.1 ELECTRONIC TRAP PRIMER DETAIL
N.T.S

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PLUMBING DETAILS(2 OF 2)

P3.1

PLUMBING FIXTURES & ROUGHING SIZING SCHEDULE

LEGEND	PLUMBING FIXTURE	CONNECTION SIZE – INCHES									REMARKS
		MANUFACTURER	PRODUCT MODEL	FAUCET MANUFACTURER/MODEL	TRAP	SOIL/WASTE	VENT	COLD WATER	HOT WATER	THERMOSTATIC MIXING VALVE	
EX. WC	WATER CLOSET	EXISTING	EXISTING	EXISTING	–	EXISTING	EXISTING	EXISTING	–	–	FLUSH TANK
EX. LAV	LAVATORY	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	½"	PROVIDE	P–TRAP
DF–1	DRINKING FOUNTAIN	ELKAY	LZSTL8WSLK	–	1½"	1½"	1½"	½"		–	P–TRAP
SK–1	SINK	ELKAY	ECTRU17179TC	LUXART AERRO A2418DE–PUBLM	2"	2"	1½"	½"	½"	PROVIDE	P–TRAP
SK–2	SINK	ELKAY	ECTRU21179TC	LUXART AERRO A137E–BLM	2"	2"	1½"	½"	½"	PROVIDE	P–TRAP
WMB–1	WASHER DRYER	GE APPLIANCES	GFQ14ESSNWW	–	2"	2"	1½"	½"	½"	–	I.W. FROM WM SPILLS INTO 3" FUNNEL DRAIN
MS–1	MOP SINK	DRAINNET TECHNOLOGIES	9–OPC–84 / 9–OCP–84–300	–	3"	3"	2"	¾"	¾"	PROVIDE	P–TRAP
FS–1	FLOOR SINK	–	–	–	3"	3"	2"	–	–	–	P–TRAP

NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR ALL FINAL PLUMBING FIXTURES SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.

THERMOSTATIC MIXING VALVE

ITEM	QUANTITY	LOCATION	CAPACITY (GPM)	PRESSURE DROP (PSI)	MINIMUM FLOW (GPM)	MAKE	CW INLET	HIGH TEMP. INLET	LOW TEMP. OUTLET	REMARKS
TMV–1	1	AS PER PLAN	5	5	0.5	ACORN MV17–1	1/2"	1/2"(140°F)	1/2"(120°F)	–BRONZE BODY AND LEAD FREE CONSTRUCTION –ASSE CERTIFIED

EXPANSION TANK SCHEDULE

ITEM	QUANTITY	LOCATION	SERVICE	GALLONS	MAKE	REMARKS
EXPANSION TANK (ET–1)	1	AS PER PLAN	HOT WATER	2.0	AMTROL ST–5	DIMENSIONS– 13"(H)x8"(DIA.)

LINT INTERCEPTOR SCHEDULE

△3

MARK	MANUFACTURER	MODEL	INLET/OUTLET	FLOW RATE (GPM)	DIMENSIONS IN INCHES		
					LENGTH	WIDTH	HEIGHT
LI–1	WATTS	LI–803–HDC	2"	30	17"	17"	16.5"

HOT WATER HEATER WITH STORAGE

TAG No.	QUANTITY	LOCATION	MAX. INPUT (KW/MBH)	UNIFORM ENERGY FACTOR	STORAGE WATER TEMP (°F)	STOR. CAP (GAL)	RECOVERY CAP. (GPH) @100° RISE	TYPE	ELECT. CHARACTERISTICS CONTROLS	MANUFACTURER & MODEL NO.	REMARKS
WH–1	1	AS PER PLAN	8 KW	0.92	140	38	32	ELECTRIC STORAGE TYPE WATER HEATER (CEILING MOUNTED)	208V/3ø/60Hz	AO SMITH DEL–40	–DIMENSIONS 23"D X 32"H –PROVIDE DRIP PAN –MIN. 4" MUST BE ALLOWED FOR ACCESS TO REPLACEABLE PARTS SUCH AS THERMOSTATS, DRAIN VALVE AND RELIEF VALVE.

PUMP SCHEDULE

TAG	QUANTITY	SERVICE	LOCATION	PERFORMANCE DATA/PUMP			PUMP CONSTRUCTION DATA	MOTOR DATA/PUMP				WEIGHT (LBS)	MFGR MODEL	REMARKS
				GPM	TDH (FT)	WATER TEMP. (°F)	PUMP TYPE	MHP	STARTER TYPE	V/PH/HZ	RPM			
HWCP–1	1	HWR	AS PER PLAN	2	8	120	INLINE, NORYL	39 WATTS	AQUA STAT	115/1/60	2800	9.0	BELL & GOSSETT NBF–8S/LW	–INLINE ON HW RETURN LINE AT WATER HEATER NEMA 1 RATED MOTOR –PUMP SHOULD BE LEAD FREE

DRAIN ACCESSORIES & SCHEDULE

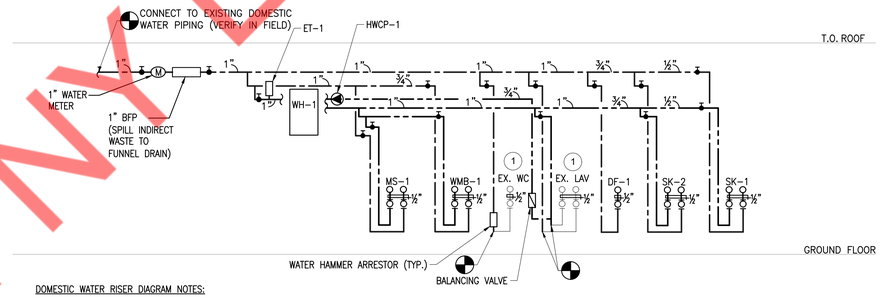
DESIGNATION	REQUIRED	SERIES NO.	BODY: CAST IRON	GALVANIZED	ALL BRONZE	HIGH DENSITY POLYETHYLENE	SECONDARY CLAMP	CLAMPING DEVICE	DECK CLAMP	BACK WATER VALVE	SUMP RECEIVER	FLASHING COLLAR	STRAINER: CAST IRON	GALVANIZED	ALL BRONZE	NICKEL BRONZE (ADJUSTABLE)	CHROME PLATED	SEDIMENT BUCKET	SECONDARY STRAINER	POLISHED FINISH	SATIN FINISH	TRACTOR GRATE	ST. STEEL	FUNNEL TOP	FLAT TOP	DOME	RAISED LIP	EXTENSION (WHERE REQUIRED)	LESS GRATE	BRONZE TOP	IRON GRATE	POLYETHYLENE	SOLID HINGED COVER	REMARKS: LOCATION
		ZURN / WADE / SMITH / JOSAM																																
FD	•	ZURN–Z505	•					•										•																REFER PLANS

NOTES:

1. ALL FLOOR DRAINS IN FINISHED AREAS AND ALL ROOF DRAINS SHALL BE LOCATED AS PER THE ARCHITECTURAL DRAWINGS.
2. ALL FLOOR DRAINS IN MECHANICAL EQUIPMENT, ETC., SHALL BE LOCATED IN COORDINATION WITH THE MECHANICAL CONTRACTOR.
3. THE CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF THE DRAINS WITH THE APPROVED ROOFING AND/OR WATER PROOFING SYSTEMS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. THE TOP OF ALL FLOOR DRAINS SHALL BE FLUSH WITH THE ADJACENT FINISHED FLOOR.
5. PROVIDE ELECTRONIC TRAP PRIMER FOR MECHANICAL/TRASH ROOM FLOOR DRAINS & FUNNEL DRAIN. PROVIDE FLOW CONTROL TRAP PRIMER FOR ALL OTHER ROOM FLOOR DRAINS.

GENERAL NOTES: PLUMBING RISER

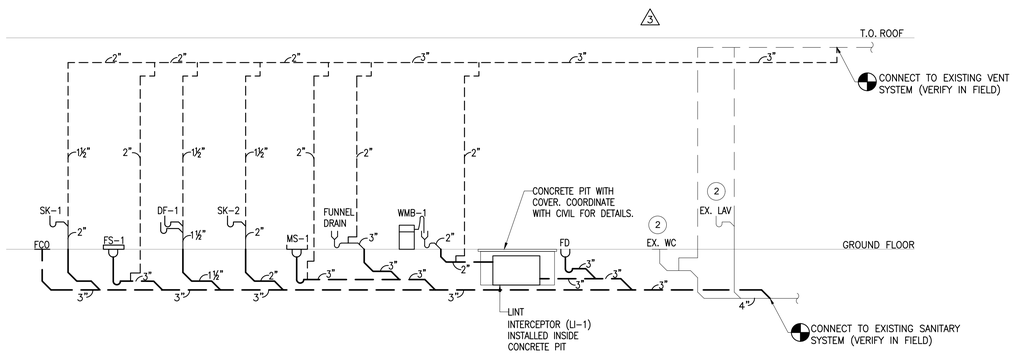
PROVIDE WATER HAMMER ARRESTORS FOR QUICK CLOSING VALVES. PROVIDE ACCESS PANEL WHERE LOCATED IN INACCESSIBLE CEILING OR WALL.



DOMESTIC WATER RISER DIAGRAM NOTES:

1. CONTRACTOR TO FILED VERIFY EXACT CONDITION OF EXISTING FIXTURE WITH ASSOCIATED VALVE, BRANCH PIPING AND REUSE IF IN GOOD CONDITION. REPLACE IF REQUIRED. CONFIRM WITH ARCHITECT/CLIENT PRIOR TO BID.

1 PLUMBING RISER - DOMESTIC WATER
NTS.



SANITARY & VENT RISER DIAGRAM NOTES:

2. CONTRACTOR TO FILED VERIFY EXACT CONDITION OF EXISTING FIXTURE WITH ASSOCIATED VALVE, SANITARY PIPING, VENT PIPING AND REUSE IF IN GOOD CONDITION. REPLACE IF REQUIRED. CONFIRM WITH ARCHITECT/CLIENT PRIOR TO BID. REFER TO RISER DIAGRAM P–4.0.

2 PLUMBING RISER - WASTE AND VENT
NTS.

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PLUMBING SCHEDULES & RISER DIAGRAMS

P4.0