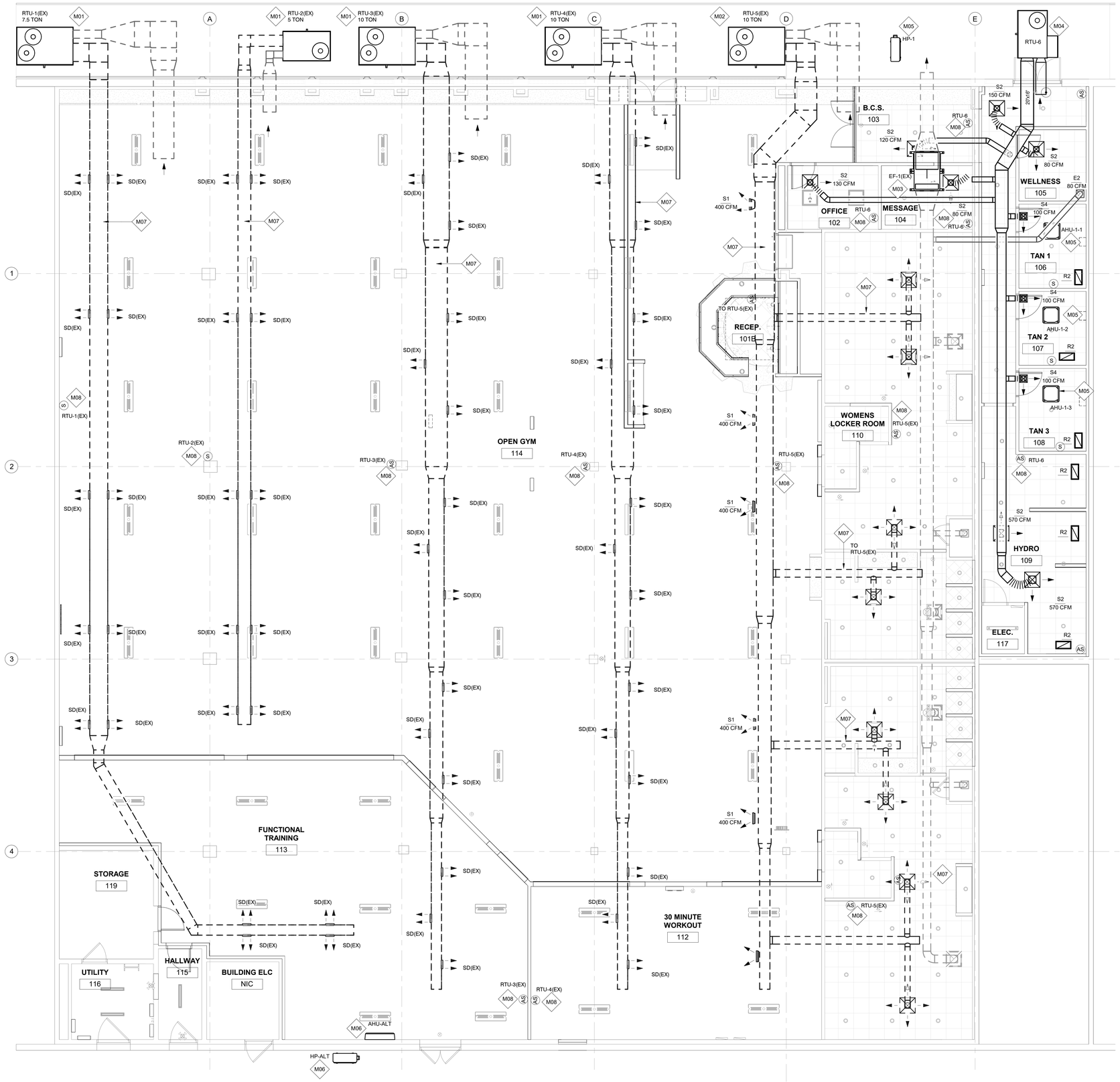

1 MECHANICAL FLOOR PLAN
3/16" = 1'-0"

NORTH

EF-1(EX) EXHAUST FAN REQUIREMENTS	
MENS LOCKER AREA 398 SQFT	= 100 CFM
3 TOILET @ 20 CFM EACH	= 60 CFM
4 SHOWERS @ 20 CFM EACH	= 80 CFM
JAN CLOSET	= 35 CFM
MINIMUM EXHAUST REQUIRED	= 240 CFM
WOMENS LOCKER AREA 450 SQFT	= 113 CFM
3 TOILET @ 20 CFM EACH	= 60 CFM
4 SHOWERS @ 20 CFM EACH	= 80 CFM
JAN CLOSET	= 35 CFM
MINIMUM EXHAUST REQUIRED	= 253 CFM
TOTAL LOCKER/ RESTROOM	= 490 CFM
WELLNESS ROOM ADDED TO SYSTEM	= 80 CFM
TOTAL EXHAUST REQUIRED	= 573 CFM

GENERAL NOTES HVAC

1. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES IN LOCATING DUCTWORK, PIPING AND EQUIPMENT TO AVOID ANY INTERFERENCE.
2. COORDINATE INSTALLATION OF NEW DUCT WITH STRUCTURE.
3. CONTRACTOR TO INSTALL ALL WORK IN STRICT COMPLIANCE WITH LOCAL CODES AND/OR ORDINANCES.
4. MECHANICAL CONTRACTOR SHALL SUBMIT TO ENGINEER SHOP DRAWINGS AND EQUPMENT SUBMITTAL PRIOR TO INSTALLING OR FABRICATING ANY DUCTWORK.
5. PROVIDE ADJUSTABLE VOLUME DAMPER AT ALL BRANCH DUCTWORK.
6. PROVIDE TURNING VANES AT ALL ELBOWS (TYPICAL).
7. MECHANICAL CONTRACTOR TO REPLACE FILTERS UPON COMPLETION OF CONSTRUCTION.
8. PROVIDE INSULATION BLANKETS ATOP ALL SUPPLY DIFFUSERS WITHIN A LAY-IN CEILING.
9. DUCTS SHALL BE PROTECTED FROM FORMING CONDENSATION. PROVIDE INTERIOR LINER OR WRAP. ALL EXPOSED DUCTS SHALL HAVE INTERIOR LINER OR BE DOUBLE WALL.
10. ALL EXPOSED HORIZONTAL SPIRAL DUCTS SHALL BE ROUTED AS HIGH AS POSSIBLE WITHIN JOIST SPACE WHEN POSSIBLE.
11. ALL AIR DEVICES LOCATED IN BLACK CEILINGS SHALL BE BLACK. REFER TO ARCHITECTUAL PLANS.
12. EXPOSED DUCTWORK AND DIFFUSERS SHALL BE PAINTED TO MATCH CEILING. REFER TO ARCHITECTURAL SHEETS FOR COLORS AND REQUIREMENTS.

M# MECHANICAL KEYED NOTES

M01 EXISTING ROOFTOP UNITS RTU-1(EX) THRU RTU-4(EX) AND ASSOCIATED DUCTWORK/ DIFFUSERS CONDITIONING THE OPEN GYM AREA, AB STRETCH AND 30 MIN WORKOUT AREA SHALL REMAIN AND BE REUSED. CONTRACTOR SHALL SERVICE UNITS TO LIKE NEW PERFORMANCE. SEE SERVICE NOTES ON THIS SHEET. VERIFY SUPPLY AND RETURN DUCTS ARE LEAK FREE AND THE AIR DEVICES ARE IN GOOD WORKING ORDER AND CLEAN. SERVICE AS NEEDED TO ENSURE A GOOD WORKING SYSTEM(S). PROVIDE AN FEE TO REPLACE UNIT IF GOOD WORKING ORDER CANNOT BE ACHIEVED. REFER TO ARCHITECTURAL SHEETS FOR REQUIREMENTS. PROVIDE UNIT INSPECTION AND SERVICE RECOMMENDATIONS WITH BID SUBMISSION.

M02 EXISTING ROOFTOP UNIT RTU-5(EX) WITH ASSOCIATED DUCTWORK/ DIFFUSERS SERVING THE LOCKERS, WET AREAS AND OPEN GYM SHALL REMAIN AND BE REUSED. SEE SERVICE NOTES ON THIS SHEET. RETURN DUCT SHALL REMAIN FOR OPEN PLENUM RETURN. MAINTAIN EXISTING CONTROLS.

M03 EXISTING IN-LINE EXHAUST FAN [EF-1(EX)] WITH ASSOCIATED DUCTWORK AND GRILLES SERVING EXISTING LOCKER ROOMS, WET AREAS, JAN CLOSETS TO REMAIN AND BE REUSED. PROVIDE A NEW GRILLE AND ASSOCIATED DUCTWORK FOR WELLNESS 105 AND CONNECT INTO EXISTING SYSTEM. BALANCE FAN TO 573 CFM (MINIMUM) AND EACH ROOM TO AIRFLOWS INDICATED IN EF-1(EX) EXHAUST FAN BOX NOTE ON THIS SHEET. PROVIDE AN ALTERNATE TO REPLACE FAN IF AIRFLOWS A CANNOT BE ACHIEVED. ENSURE OUTLET IS A MINIMUM OF 10'-0" FROM ANY AIR INTAKES.

M04 OWNER PROVIDED AND CONTRACTOR TO INSTALL NEW ROOFTOP UNIT (RTU-6) REPLACING THE EXISTING 3-TON IN LOCATION SHOWN. ROUTE NEW SUPPLY AND RETURN DUCT THRU EXTERIOR SIDE WALL MODIFYING EXISTING PENETRATIONS. PROVIDE R-12 INSULATION (MINIMUM) ON ALL EXTERIOR DUCTS. REFER TO SCHEDULE ON M201 FOR SCHEDULE. EXTEND SUPPLY AND RETURN DUCTS AS INDICATED. INSTALL AN IONIZED SMOKE DETECTOR IN RETURN SHUTTING DOWN FAN UPON ACTIVATION. PROVIDE AN AVERAGING SENSOR IN LOCATIONS SHOWN. PROVIDE WITH BALANCING DAMPERS AT EACH GRILLE. VERIFY RTU INLET IS A MINIMUM OF 10' FROM ALL EXHAUSTS, VENTS AND FLUES.

M05 CEILING CASSETTE AIR HANDLING UNIT (PART OF SUPPLEMENTAL COOLING MULTI SPLIT SYSTEM) TO BE SUSPENDED FROM STRUCTURE WITH VIBRATION ISOLATORS PER MANUFACTURER'S RECOMMENDATIONS. REFER TO SCHEDULES ON SHEET M201. THE ASSOCIATED HEAT PUMP CONDENSING UNIT TO BE MOUNTED ON ROOF. ROUTE CONDENSATE TO NEAREST APPROVED RECEPTACLE. REFER TO PLUMBING SHEETS IN THIS SET FOR LOCATIONS.

M06 AS AN ALTERNATE, CONTRACTOR SHALL PROVIDE A FEE TO PROVIDE AND INSTALL A 3 TON DUCTLESS MINI SPLIT SYSTEM FOR AB STRETCH ROOM. INDOOR UNIT SHALL BE WALL MOUNTED AND OUTDOOR UNIT SHALL BE MOUNTED ON WALL RACK IN DRIVE THRU ALLEY (COORDINATE LOCATION WITH LANDLORD). ALTERNATE SHALL INCLUDE ALL ASSOCIATED COSTS INCLUDING ELECTRICAL AND CONDENSATE DISPOSAL.

M07 EXISTING DUCTWORK (APPROXIMATE). REFERENCE HVAC GENERAL AND SERVICE NOTES.

M08 PROVIDE AND INSTALL 2 PIECE 7 DAY PROGRAMMABLE THERMOSTAT AND CO2 SENSOR. ALL TEMPERATURE SENSORS SHALL BE MOUNTED AT 60" AFF. WHEN LOCATED ON EXTERIOR WALLS THEY SHALL HAVE AN INSULATED BACKING. THERMOSTAT SHALL BE EQUAL TO HONEYWELL 6200 SERIES WITH TEMPERATURE CONTROLLER LOCATED AT 48" ON WALL IN OFFICE 102. REFER TO CONTROL NOTES ON M301 AND COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER. RTU-3(EX), -4(EX), -5(EX) & -5 TO BE CONTROLLED WITH AVERAGING SENSORS LOCATED IN EACH ROOM OF SYSTEM ZONE.

HVAC SERVICE NOTES:

THE EXISTING SYSTEM SHALL REMAIN ESSENTIALLY UNDISTURBED EXCEPT THAT AS PART OF THIS CONTRACT, THE CONTRACTOR SHALL CAREFULLY SURVEY THE EXISTING EQUIPMENT TO INSURE PROPER HEATING/COOLING CAPACITY AND WORKING CONDITION.

PROVIDING EQUIPMENT IS SERVICEABLE, CONTRACTOR SHALL:

- VERIFY EXISTING HEATING AND COOLING CAPACITY
- INSPECT, CLEAN, LUBRICATE, ADJUST AND BALANCE THE ENTIRE SYSTEM
- CHECK ALL THE BELTS AND ADJUST OR REPLACE AS REQUIRED
- CHECK ALL PIPING AND ACCESSORIES FOR LEAKS
- CHECK EVAPORATOR COIL FOR LEAKS AND CLEAN THOROUGHLY
- CHECK AND CLEAN DRAIN PAN AND CONDENSATE TRAP
- CHECK AND CLEAN FANS AND BLADES
- CHECK AND LUBRICATE MOTORS
- REPLACE FILTERS
- ADJUST UNIT RPM FOR NEW AIR QUANTITIES
- CHECK CONTROL SEQUENCE AND THERMOSTAT CALIBRATION
- RESEAL ALL JOINTS OF EXISTING DUCTWORK.

THE CONTRACTOR SHALL REPORT TO THE OWNER ANY MALFUNCTIONS DISCOVERED DURING THE SURVEY, ALONG WITH ANY RECOMMENDATIONS.

Planet Fitness

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Seal / Signature 06/26/2023

△ Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
MECHANICAL PLAN

Scale
NOT TO SCALE

M101

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MECHANICAL SPECIFICATIONS

I. GENERAL PROVISIONS

A. GENERAL CONDITIONS, CODES AND STANDARDS:

1. THIS CONTRACTOR SHALL REVIEW THE ENTIRE SET OF THE CONTRACT DOCUMENTS, INCLUDING, BUT NOT LIMITED TO ELECTRICAL, PLUMBING AND MECHANICAL DRAWINGS, AS WELL AS ALL SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS.

2. THIS CONTRACTOR SHALL VISIT THE SITE AND MAKE DETAILED INSPECTIONS OF THE SPECIFIED WORK TO DEVELOP KNOWLEDGE OF ALL CONDITIONS PERTINENT TO HIS/ HER WORK. SHOULD THE CONTRACTOR FIND DISCREPANCIES, OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS, OR DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS RESULTING IN CHANGES TO HIS/HER WORK OR ANY OTHER DISCIPLINES, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND/OR ENGINEER. ALL WORK SHALL BE PERFORMED AS INDICATED ON DRAWINGS UNLESS FIELD CONDITIONS REQUIRE MINOR CHANGES BE MADE. MINOR CHANGES SHALL BE MADE WITH NO ADDITIONAL COST.

3. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH ALL NATIONAL AND LOCAL GOVERNING CODES. ALL WORK SHALL BE MADE PER THE OWNER'S REQUIREMENTS AS STATED HEREIN OR OTHERWISE INDICATED BY THE OWNER.

4. ALL WORK SHALL BE PERFORMED UNDER APPLICABLE STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION (NFPA), UNDERWRITER LABORATORIES (UL), THE AMERICAN GAS ASSOCIATION (AGA), THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE), SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC (SMACNA) AND OTHER NATIONAL STANDARDS WHERE APPLICABLE.

5. THE MANUFACTURERS' NAMES ON WHICH THIS SPECIFICATION IS BASED INDICATE THE MINIMUM QUALITY OF PRODUCT REQUIRED. SUB-STITUTION MAY BE MADE TO THOSE SPECIFIED IF DEEMED EQUIVALENT BY THE OWNER'S REPRESENTATIVE. ALL WORK AND PRODUCTS SHALL MEET THE REQUIREMENTS OF THE OWNER AND GOVERNING CODES. NOT SUBSTITUTED EQUIPMENT SHALL BE ANY ADDED COSTS TO THE OWNER.

6. ALL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK BY THE OWNER.

7. EQUIPMENT, FIXTURES, AND ACCESSORIES SHALL NOT BE SUPPORTED FROM CEILING, SOFFIT, NEUTRAL PIERS, PIPING, DUCTWORK, METAL ROOF DECK, LATERAL BRACING, BRIDGING OR CONDUIT. ITEMS SHALL ONLY BE SUPPORTED FROM STRUCTURE WHICH HAS BEEN APPROVED BY THE ARCHITECT FOR SUPPORT.

8. ALL ROOF WORK PENETRATIONS AND REPAIRS SHALL BE TOTALLY PERFORMED BY ONLY THOSE ROOFING CONTRACTORS APPROVED BY THE OWNER/LANDLORD.

9. INSTALLATION OF ROOF MOUNTED EQUIPMENT SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER TRADES.

10. DEFICIENCIES AND NON-CONFORMING ITEMS SHALL BE CORRECTED BY THE CONTRACTOR. FAILURE TO CORRECT SUCH ITEMS SHALL PERMIT THE LANDLORD TO CORRECT SAME AT A COST TO THE CONTRACTOR.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL PERMITS AND PAYING FOR SAME. HE SHALL INCLUDE IN HIS BID CHARGES FOR ALL FEES ASSOCIATED WITH THE CONSTRUCTION OF THE SPACE INCLUDING BUT NOT LIMITED TO LOCAL, COUNTY, OR STATE SERVICE CHARGES AND PERMIT FEES, AND UTILITY AND/OR EQUIPMENT CHARGES.

B. SCOPE OF WORK:

1. THIS CONTRACT SHALL INCLUDE THE FURNISHINGS, INSTALLING, CONNECTING, AND OPERATION OF ALL EQUIPMENT WHICH IS A PART OF THE MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY SIMILAR INSTALLATIONS. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK AND WHICH IS USUALLY INCLUDED IN WORK OF A SIMILAR CHARECTER SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED TO PROVIDE THE OWNER A COMPLETE, CODE APPROVED AND OPERATIONAL MECHANICAL SYSTEM.

2. ALL EXISTING UTILITY AND MECHANICAL SERVICES SHALL BE FIELD VERIFIED. CORRECTIONS TO THE DESIGN AND INSTALLATION SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.

3. PROVIDE AND INSTALL ALL:

a. EQUIPMENT, APPLIANCES, CONTROL DEVICES, ACCESSORIES, MATERIAL AND LABOR.

b. ALL DUCTWORK, INSULATION, AIR DEVICES, DUCT ACCESSORIES, MATERIAL AND LABOR.

c. ALL PIPING, FITTINGS, VALVES, INSULATION, ACCESSORIES, MATERIAL AND LABOR.

d. ALL EXHAUST SYSTEM(S) INDICATED.

e. ALL ROOF WORK, INCLUDING EQUIPMENT SUPPORTS, ROOF PENETRATIONS, PATCHING AND WATERPROOFING OF ROOF.

f. ALL EQUIPMENT SUPPORTS AND HANGERS INCLUDING ANY AUXILIARY STEEL REQUIRED. ANY STRUCTURAL MODIFICATION TO THE BUILDING STRUCTURE SHALL BE MADE ONLY WITH THE WRITTEN APPROVAL OF THE LANDLORD.

4. CLEAN, TEST AND PUT INTO SERVICE ALL SYSTEMS SPECIFIED.

5. PROVIDE A BALANCE REPORT PREPARED BY AN INDEPENDENT AABC OR NEBB CERTIFIED AIR BALANCE CONTRACTOR.

6. WARRANTY ALL WORK AND MATERIALS HEREIN SPECIFIED FOR A PERIOD OF NOT LESS THAN ONE YEAR.

7. ALL MATERIALS SHALL BE NEW AND RECOGNIZED COMMERCIAL QUALITY. USED MATERIALS WILL NOT BE PERMITTED.

C. DOCUMENTS:

1. THE DRAWINGS ARE DIAGRAMMATIC, ALL WORK SHALL BE PREFORMED AND INDICATED ON THE DRAWINGS UNLESS EXISTING CONDITIONS OR COORDINATION ISSUES REQUIRE CHANGES. THESE CHANGES SHALL BE MADE WITH NO ADDITIONAL COST TO THE OWNER.

2. ANY INCIDENTAL ITEMS OR LABOR, ETC. NOT INCLUDED IN THE SPECIFICATIONS OR THE DRAWINGS BUT REASONABLY IMPLIED AS NECESSARY FOR THE COMPLETE INSTALLATION OF ALL APPARATUS SHALL BE INCLUDED IN BID.

3. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL AND OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED EVEN THOUGH NOT MENTIONED IN BOTH.

4. IF ERRORS ARE FOUND IN THE DRAWINGS OR SPECIFICATIONS OR DISCREPANCIES OCCUR BETWEEN THE SAME, OR BETWEEN THE FIGURES ON THE DRAWINGS, AND THE SCALE OF SAME OR BETWEEN THE LARGER AND SMALLER DRAWING, OR IN THE DESCRIPTIVE MATTER ON THE DRAWINGS SHALL BE REFERRED TO THE OWNER OR ENGINEER FOR REVIEW AND FINAL DECISION PRIOR TO THE BID DUE DATE.

5. THE BIDDING OF THIS WORK WILL CONTEMPLATE THE USE OF EQUIPMENT AND MATERIALS EXACTLY AS SPECIFIED HEREIN. WHERE MORE THAN ON MANUFACTURE IS MENTIONED ANY ONE MAY BE UTILIZED. SUBSTITUTE MANUFACTURES MAY BE OFFERED ONLY AS AN ALTERNATE TO THE SPECIFIED EQUIPMENT AND MATERIAL MUST BE SUBMITTED AS SPECIFIED IN THE ARCHITECTURAL DOCUMENTS.

6. MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THE SYSTEMS CAN BE OF ANY RECOGNIZED MANUFACTURE PROVIDED THESE ITEMS MEET MINIMUM STANDARDS AS SET IN THESE SPECIFICATIONS. REFER TO EACH SECTION FOR ANY SPECIFIC REQUIREMENTS.

II. INSULATION

A. GENERAL

1. INSTALLATION SHALL CONFORM TO MANUFACTURE'S RECOMMENDATIONS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES.

2. CLEAN AND DRY SURFACES PRIOR TO INSULATING.

3. EXTEND INSULATION WITHOUT INTERRUPTIONS THROUGH WALLS, FLOORS, HANGERS AND SIMILAR PENETRATIONS.

4. INSULATION JACKET AND FITTING COVER MUST BE PLENUM RATED.

5. THE INTEGRITY OF THE VAPOR-BARRIER MUST BE MAINTAINED. SEAL ALL PENETRATIONS OF THE VAPOR-BARRIER BY STAPLES, HANGERS OR WHERE OTHERWISE DAMAGED.

MECHANICAL SPECIFICATIONS

6. MAINTAIN ACCESS TO BALANCING DAMPERS AND VALVES.

7. INSULATION SHALL BE BY CERTAIN TEED, OWENS-CORNING, KNAUF OR MANVILLE.

B. DUCTWORK

1. ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES AND A MINIMUM OF R-8 INSULATION WHEN LOCATED OUTSIDE THE BUILDING. ADDITIONAL INSULATION REQUIREMENTS MAY BE LISTED ON THE PLANS.

2. DUCT LINERS SHALL BE PRE-MANUFACTURED AND APPROVED AS HVAC DUCT LINER. DUCT LINERS INSTALLED IN RESTAURANTS AND FOOD PREPARATION AREAS SHALL HAVE A PROTECTIVE COVERING AND BE LISTED BY AN APPROVED TESTING LABORATORY FOR SAID PURPOSE.

3. ALL DUCT INSULATION SHALL BE UL LABELED FOR FIRE AND SMOKE RATINGS.

4. ALL RESTAURANTS WHICH USE YEAST FOR BAKING PRODUCTS, OR UTILIZE OVENS WHICH COULD RESULT IN MOLD FROM YEAST CONTAINING PRODUCT OR AIR BORN YEAST SHALL HAVE EXTERNALLY WRAPPED INSULATION (NO INTERNAL LINERS ALLOWED).

5. FIRE-RATED BLANKETS SHALL BE HIGH-TEMPERATURE, FLEXIBLE, BLANKET INSULATION WITH FSK JACKET THAT IS TESTED AND CERTIFIED TO PROVIDE THE REQUIRED RATING BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

III. HVAC

A. DUCTWORK AND AIR DISTRIBUTION

1. DUCTWORK (ROUND, RECTANGULAR OR SPIRAL) SHALL BE OF GALVANIZED STEEL CONSTRUCTION AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA MANUAL - "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE".

2. ROUND DUCT AND ELBOWS SHALL BE LONG SWEEP, 1.5 TIMES THE CENTERLINE RADIUS UNLESS CLEARANCE IS NOT AVAILABLE AT WHICH TIME MITERED ELBOWS WITH TURNING VANES SHALL BE UTILIZED.

3. SPIRAL DUCT FITTINGS SHALL BE MANUFACTURED FROM G-60 GALVANIZED STEEL MEETING ASTM-A924 AND A653 REQUIREMENTS.

a. CONSTRUCTION

(1) BRANCH CONNECTIONS SHALL BE MADE WITH 90° CONICAL AND 45° STRAIGHT TAPS.BRANCH CONNECTIONS SHALL BE MADE AS A SEPARATE FITTING. FACTORY OR FIELD INSTALLATION OF TAPS INTO SPIRAL SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

(2) ELBOWS SHALL BE FABRICATED WITH A CENTERLINE RADIUS OF 1.5 TIMES THE DIAMETER. 90 AND 45 DEGREE ELBOWS IN DIAMETERS 3" ROUND THROUGH 12" ROUND SHALL BE STAMPED OR PLEATED ELBOWS. OTHER ELBOWS SHALL BE OF GORED TYPE. CIRCUMFERENTIAL AND LONGITUDINAL SEAMS OF ALL FITTINGS SHALL BE CONTINUOUS WELD OR SPOT WELDED AND SEALED WITH MASTIC. ALL WELDS SHALL BE PAINTED TO PREVENT CORROSION.

(3) FIELD JOINTS FOR ROUND DUCTS UP TO AND INCLUDING 36" DIAMETER AND OVAL DUCTS UP TO AND INCLUDING 41" MAJOR AXIS SHALL BE MADE WITH 2" SLIP-FIT OR SLIP COUPLING. 38" ROUND AND LARGER SHALL BE PROVIDED WITH A FLANGED CONNECTION.FLANGED CONNECTIONS MAY, AT THE CONTRACTORS OPTION, BE USED ON SMALLER SIZES. ACCESS DOORS SHALL BE SUPPLIED BY THE DUCT MANUFACTURER AT ALL FIRE AND/OR SMOKE DAMPERS.

(4) DUCTWORK 18" WIDTH AND LARGER SHALL BE CROSS-BROKEN OR RIBBED AND STIFFENED SO THAT IT WILL NOT "BREATHE", RATTLE, VIBRATE OR SAG.

4. RECTANGULAR ELBOWS SHALL BE BE FURNISHED WITH DOUBLE THICKNESS TURNING VANES. TURNING VANES SHALL BE FASTENED WITH DOUBLE ROW SCREWS.

5. MITERED OFFSETS GREATER THAN 30 DEGREES IN EITHER DIRECTION SHALL NOT BE PERMITTED.

6. CHANGES IN DUCT SIZES SHALL BE MADE BY UNIFORM TAPER SECTION WITH A MAXIMUM INCLUDE ANGLE IF DIVERGENCE OF 15 DEGREES.

7. RECTANGULAR BALANCING DAMPERS SHALL BE (OR EQUAL TO) RUSKIN MD25 SINGLE BLADE UP TO 6" IN HEIGHT AND 36" IN WIDTH, AND RUSKIN MD35 MULTI-BLADE FOR LARGER SIZES. ALL ROUND BALANCING DAMPERS SHALL BE COMMERCIAL GRADE SINGLE BLADE UP 16" DIAMETER AND SHALL INCORPORATE LOCKING TYPE INDICATING ADJUSTMENT. BALANCING DAMPERS SHALL BE INSTALLED IN ALL BRANCH DUCTS OFF MAIN AND ON ALL TAPS OFF DUCTS TO DIFFUSERS UNLESS OTHERWISE NOTED ON THE DRAWINGS.

8. FIRE DAMPERS SHALL BE RUSKIN AND SHALL BE INSTALLED PER MANUFACTURES INSTRUCTIONS AND SMACNA REQUIREMENTS FOR A U.L. APPROVED INSTALLATION. FIRE DAMPERS SHALL BE TYPE "B" (BLADES AND FRAME COMPLETELY OUR OF AIRSTREAM) FOR ALL WALL ASSEMBLIES AND SHALL BE INSTALLED PER UL 555. FIRE DAMPERS SHALL BE INSTALLED IN FIRE RATED WALLS. VERIFY FIRE RATED WALL LOCATIONS AND RATINGS ON THE ARCHITECTURAL DOCUMENTS. FOR ALL FLOOR PENETRATIONS USE TYPE "LR" FIRE DAMPERS.

9. DOUBLE THICKNESS INSULATED ACCESS DOORS SHALL BE PROVIDED AS ALL FIRE DAMPERS FOR ACCESS TO FUSIBLE LINK. DOOR SHALL BE SIZED TO ALLOW FOR EASY SERVICE AND ACCESSIBILITY. ACCESS DOORS SHALL BE A MINIMUM OF 24" IN THE LONGEST DIMENSION.

10. PROVIDE 3" X 3" 1/4" ANGLED FRAMING AROUND THE ROOF OPENING FOR THE SUPPLY AND RETURN DUCTWORK.

11. SUPPORT ALL SHEET METAL AND EQUIPMENT FROM STRUCTURAL STEEL. DO NOT SUSPEND FROM METAL DECK OR JOIST BRIDGING.

12. FIBERGLASS DUCTWORK WILL ONLY BE PERMITTED WITH THE APPROVAL OF THE OWNER, ARCHITECT, AND ENGINEER. NONMETALLIC DUCTS SHALL BE CONSTRUCTED WITH CLASS 0 OR CLASS 1 DUCT MATERIAL AND SHALL COMPLY WITH UL 181. FIBROUS DUCT CONSTRUCTION SHALL CONFORM TO THE SMACNA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS OR NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS. THE AIR TEMPERATURE WITHIN NONMETALLIC DUCTS SHALL NOT EXCEED 250°F (121°C).

13. FLEXIBLE DUCTWORK SHALL CONFORM TO THE FOLLOWING:

a. SHALL HAVE AN IMPERVIOUS INNER CORE WITH WIRE REINFORCEMENT. THE INNER DUCT SHALL BE R-6 FIBERGLASS DUCT INSULATION WITH A POLYETHYLENE VAPOR-PROOF JACKET. FLEXIBLE DUCT SHALL BE UL-181 LISTED, CLASS 1, AND SHALL MEET ALL APPLICABLE CODES AND THE REQUIREMENTS OF THE LANDLORD.

b. FITTINGS TO CONNECT THE FLEX DUCT TO THE TRUNK DUCT SHALL BE OF THE 45° LEAD-IN TYPE PER THE LATEST OF SMACNA STANDARDS AND SHALL HAVE AN OPPOSED BLADE VOLUME DAMPER, SQUARE-TO-ROUND TRANSITION AND SHALL HAVE THE SAME FREE AREA AS THE SPECIFIED FLEX DUCT.

c. FLEX DUCT SHALL BE THE PRODUCT OF AN ESTABLISHED MANUFACTURER OF SUCH PRODUCTS AND EQUIVALENT TO CERTAINTEED MODEL G-25, WIREMOLD WGC, OR PPG GOSSFLEX.

B. PIPING

1. OUTDOOR CONDENSATE PIPING SHALL BE TYPE "L" COPPER CONDENSATE DRAIN FOR THE ROOFTOP MOUNTED AIR CONDITIONING UNIT, INSTALLED PER MANUFACTURES REQUIREMENTS AND DETAILS. DRAIN SHALL DISCHARGE TO A ROOF DRAIN (IF ALLOWED BY AHJ) OR APPROVED RECEPTACLE.

2. WHEN MODIFICATIONS ARE BEING MADE TO TO AN EXISTING SYSTEM THE NEW MATERIAL SHALL MATCH THE EXISTING. IF THE MATERIAL DIFFERS FROM THAT SPECIFIED HEREIN, IT SHALL BE SPECIFIED IN THE BID PROPOSAL.

IV. HVAC EQUIPMENT

A. GENERAL

1. INSTALLATION OF ALL EQUIPMENT SHALL COMPLY WITH THE MANUFACTURER'S INSTALLATION INFORMATION AND INSTRUCTIONS. REQUIREMENTS AND ADDITIONAL GUIDELINES. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL REQUIRED ACCESSORIES TO COMPLETE THE INSTALLATION.

2. HVAC EQUIPMENT SHALL BE "STARTED UP" BY A FACTORY TRAINED AND AUTHORIZED SERVICE TECHNICIAN.

3. ALL FACTORY STARTUP FORMS SHALL BE COMPLETED AND TURNED OVER TO THE OWNER WITH ALL COMPLETED WARRANTY CARDS PRIOR TO FINAL APPROVAL.

V. CONTROLS

MECHANICAL SPECIFICATIONS

A. CONTROL WIRING SHALL BE PLENUM RATED CABLE WITH COLOR CODED 18 AWG WIRES (MINIMUM).

B. CONTRACTOR SHALL PROVIDE ALL WIRING BETWEEN THERMOSTAT AND EQUIPMENT (AIR HANDLER, RTU, CONDENSING UNIT, ETC.).

C. CONTRACTOR SHALL FURNISH AND INSTALL A 120 VOLT DUCT MOUNTED IONIZATION SMOKE DETECTOR (UNLESS NOTED OTHERWISE ON THE DRAWINGS). DETECTOR SHALL BE WIRED BY THE ELECTRICAL CONTRACTOR, TO SHUT DOWN UNIT UPON ACTIVATION.

D. THERMOSTATS (UNLESS NOTED OTHERWISE ON THE DRAWINGS) SHALL BE FURNISHED AND AND BE A 7 DAY PROGRAMMABLE HEATING/COOLING THERMOSTAT WITH 50' OF CONTROL WIRING BETWEEN THE THERMOSTAT AND THE FURNACE/ RTU. COIL WIRE AND SUSPEND FROM STRUCTURE FOR FUTURE INSTALLATION. WIRING SHALL BE MINIMUM 18 AWG.

VI. TESTING AND BALANCING

A. TESTING AND BALANCING SHALL NOT BEGIN UNTIL THE SYSTEM HAS BEEN COMPLETED, IS FULL WORKING ORDER AND ALL EQUIPMENT START-UP HAS BEEN COMPLETED. ALL HVAC SYSTEMS AND EQUIPMENT SHALL BE PUT INTO FULL OPERATION.

B. AN INDEPENDENT "AABC" OR "NEBB" CERTIFIED AIR AND WATER BALANCE CONTRACTOR SHALL TEST AND BALANCE THE SYSTEM AND REPORT RESULTS TO THE OWNER.

1. ALL WORK SHALL BE COMPLETED UNDER DIRECT SUPERVISION OF THE CERTIFIED BALANCING ENGINEER AND BY QUALIFIED BALANCING TECHNICIANS.

2. METHODS AND FORMS SHALL BE IN ACCORDANCE WITH THE CERTIFICATIONS AGENCIES RECOMMENDATIONS AND REQUIREMENTS.

3. COMPLY WITH ASHRAE RECOMMENDATIONS PERTAINING TO MEASUREMENTS, INSTRUMENTS, ADJUSTING AND BALANCING.

4. ALL QUANTITIES SHALL BE WITHIN 10% OF THE DESIGN VALUES.

5. CONTRACTOR SHALL PROVIDE ANY SHEAVE CHANGES REQUIRED ON THE HVAC UNIT(S).

C. PERFORMANCE TEST

1. AFTER ALL HVAC EQUIPMENT IS INSTALLED, TESTED AND BALANCED AS SPECIFIED THEY SHALL BE OPERATED AND OBSERVED FOR A PERIOD OF AT LEAST ONE DAY, THIS MAY INCLUDE STARTUP, TO VERIFY ALL EQUIPMENT IS PRODUCING THE REQUIRED CAPACITY. THE HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR THE OPERATION OF THE EQUIPMENT DURING THE ENTIRE PERIOD.

2. TESTING SHALL BE PERFORMED WITH ALL CONTROLS IN THE AUTOMATIC POSITION AND BUILDING LIGHTS, DAMPERS, ETC. POSITIONED IN SIMULATE NORMAL OPERATION OF THE SYSTEM.

3. DURING THE TEST, CONTROL SETTINGS MAY REQUIRE ADDITIONAL ADJUSTMENTS TO PRODUCE THE BEST BALANCED OPERATION.

4. SHOULD COMPLETION OF THE INSTALLATION OCCUR AT SUCH TIME THAT THE REQUIRED PERFORMANCE TEST MUST BE CONDUCTED DURING A SEASON WHEN THE FULL OPERATION OF EITHER THE HEATING OR COOLING SYSTEM CAN NOT BE CHECKED, THE CONTRACTOR SHALL PERFORM THE TEST AND RECORD ALL SUCH DATA AS IS AVAILABLE WITH THE SYSTEM OPERATING.AUTOMATICALLY UNDER THE PREVAILING WEATHER CONDITIONS. THAT PART OF THE SYSTEM WHICH SHALL BE DELAYED UNTIL THE WEATHER IS APPROPRIATE, AT WHICH TIME THE REMAINING PART OF TESTS SHALL BE CONDUCTED.

BLACK CARD SPA VENTILATION REQUIREMENTS

Ventilation Sizing Summary for BCS (Black Card Spa)

1. Summary

Ventilation Sizing Method	ASHRAE Std 62.1-2013	
Design Condition	Heating operation	
Occupant Diversity (D)	1.000	
Uncorrected Outdoor Air Intake (Vou)	272	CFM
System Ventilation Efficiency (Ev)	0.800	
Outdoor Air Intake (Vot)	340	CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Space Floor Area (ft²) (Az)	Area Outdoor Air Rate (CFM/ft²) (Ra)	Time Averaged Occupancy (Occupants) (Pz)	People Outdoor Air Rate (CFM/person) (Rp)	Air Distribution Effectiveness (Ez)	Space Outdoor Air (CFM) (Voz)	Breathing Zone Outdoor Air (CFM) (Vbz)
102 OFFICE	97.0	0.06	1.0	5.00	0.8	**14**	11
103 B.C.S.	392.0	0.06	2.0	5.00	0.8	**42**	34
104 MESSAGE	97.0	0.06	2.0	20.00	0.8	**57**	46
105 WELLNESS	88.0	0.06	2.0	20.00	0.8	**57**	45
106 TAN 1	95.0	0.06	1.0	20.00	0.8	**32**	26
107 TAN 2	95.0	0.06	1.0	20.00	0.8	**32**	26
108 TAN 3	94.0	0.06	1.0	20.00	0.8	**32**	26
109 HYDRO	338.0	0.00	3.0	20.00	0.8	**75**	60
Total							**272**

CONTROL NOTES

A. MECHANICAL CONTRACTOR TO PULL ALL CONTROL WIRING, INSTALL SENSORS AND CONNECT CABLES TO SENSORS.

B. SAVE ENERGY SYSTEMS TO FURNISH ALL SENSORS AND THERMOSTATS - CONTACT DIRECTLY (SEE NOTE G)

C. ALL UNITS TO HAVE A SUPPLY TEMP SENSOR.PROBE INSTALLED IN MAIN SUPPLY TRUNK PRIOR TO ANY BRANCH TAKE-OFF. WITHIN 5' OF RTU.

D. ALL UNITS TO HAVE REMOTE TEMP SENSORS INSTALLED AS INDICATED ON DRAWINGS.

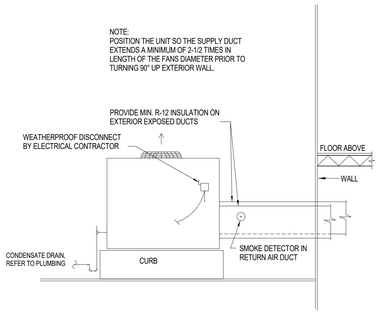
E. RTU-1, 2, 3, 4 TO BE PROVIDED WITH HUMIDITY CONTROLS

F. CONTROL WIRING DETAILS:
   a. 18/8 FROM RTU TO THERMOSTAT
   b. 18/2 FROM REMOTE SENSOR TO THERMOSTAT - CONNECTED AT SENSOR
   c. 18/2 FROM SUPPLY SENSOR TO THERMOSTAT - CONNECTED AT SENSOR
   d. ALL CABLES TO BE LABELED WITH UNIT NUMBER AND FUNCTION (REMOTE, SUPPLY)

G. THERMOSTATS MOUNT VERTICALLY (5"x3") LEAVE 2" SPACE FROM UNIT TO UNIT IN ALL DIRECTIONS.

H. SAVE ENERGY SYSTEMS WILL BE ON SITE TO INSTALL THERMOSTATS AND COMMISSION SYSTEM.
   a. ALL UNITS TO BE STARTED UP AND POWERED PRIOR TO SAVE ENERGY SYSTEMS ARRIVAL.
   b. ALL UNITS TO HAVE 18/8 CABLE LANDED IN RTU, INCLUDING "C"
   c. HVAC CONTRACTOR TO PROVIDE COLOR CODE OF RTU WIRING.

I. CONTACT PAUL LASKOW (PLASKOW@SAVEENERGYSYSTEMS.COM) 617.564.4442 WITH ANY QUESTIONS



1 AIR HANDLING UNIT SECTION
SCALE: NOT TO SCALE

HVAC LEGEND

SYMBOL	DESCRIPTION
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST FAN/ GRILLE
OS	OCCUPANCY SENSOR
S	TEMPERATURE SENSOR
T	THERMOSTAT (CONTROLLER)
AS	TEMPERATURE AVERAGING SENSOR
	DIRECTION OF AIR FLOW
	NEW CONNECTION TO EXISTING

AIR DEVICE SCHEDULE

PLAN MARK	MANUFACTURER/ MODEL NUMBER	MODULE	FRAME
S1	* TITUS S300FL	16x10	DUCT MOUNT
S2	TITUS TMS	24x24	LAY-IN
S3	* TITUS S300FL	16x10	DUCT MOUNT
E1	TITUS 350F	24x24	LAY-IN DRYWALL
E2	TITUS 350F	12x12	DUCT MTD
R1	TITUS PAR-AA	24x24	LAY-IN DRYWALL
R2	TITUS 350F	24X12	LAY-IN

PROVIDE TITUS SECTORIZING BAFFLE AS REQUIRED WHERE DIRECTIONAL ARROWS ARE SHOWN ON PLAN.

ALL DEVICES LOCATED IN BLACK CEILINGS SHALL BE BLACK. REFER TO ARCHITECTURAL PLANS.

* PROVIDE WITH OPTIONAL ASD AIR SCOOP DAMPER.

NOT ALL DEVICES MAY BE USED.

AIR DEVICE LEGEND

RETURN / EXHAUST — R (E) — XXX CFM
TAG # — AIR FLOW
SUPPLY — S — XXX CFM

EXHAUST FAN SCHEDULE

PLAN MARK	QTY	MANUFACTURER	MODEL	TYPE	SP	CFM	ELECTRICAL	REMARKS
EF-1	1	GREENHECK	SQ-160-VG	INLINE	1.0"	1860	120/1/60 1 HP	1,2,3
EF-2	4	GREENHECK	SP-A200	CEILING	0.25"	200	120/1/60 51 W	4
EF-3	1	GREENHECK	SP-A510VG	CEILING	0.25"	400	120/1/60 155 W	4

NOTES:
1. PROVIDE BACKDRAFT DAMPER.
2. RUN CONTINUOUSLY DURING OCCUPIED CYCLE.
3. PROVIDE WITH INSULATED HOUSING.
4. PROVIDE WITH OCCUPANCY SENSOR.

NEW ROOFTOP UNIT SCHEDULE

PLAN MARK	MANUFACTURER MODEL NUMBER	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM) MIN.	EXTERNAL S.P. IN (WC)	MOTOR	COOLING CAPACITY		HEATING CAPACITY			DRY BULB	WET BULB	AMBIENT AIR (DEG F)	FILTER TYPE	HEATING STAGE(S)	COOLING STAGE(S)	T-STAT TYPE	VOLTS	PH	HZ	MCA/MOCP	OPERATING WEIGHT LBS.	NOTES
						MBH TTL/SENS.	(S)EER/IEER	NG INPUT(MBH)	NG OUTPUT (MBH)	ELEC. KW	ENTERING AIR DEGREES F												
RTU-6	CARRIER 48FCFA06A3A5	2000	340	0.5"	0.94 BHP	59.31/ 44.73	(14)/-	150/120	120/96	-	80	67	95°	MERV 8	TWO	ONE	TWO PIECE PROGRAM.	208	3	60	28/40	579	1-4

NOTES
1. PROVIDE WITH HUMIDIMIZER OR RAWAL HOT GAS REHEAT DE-HUMIDIFIER IS NOT AVAILABLE.
2. RETURN DUCT MOUNT IONIZED SMOKE DETECTOR.
3. PROVIDE WITH DISCONNECT.
4. PROVIDE CONVIENANCE OUTLET.

MULTI ZONE DUCTLESS SPLIT SYSTEM EQUIPMENT SCHEDULE

	AIR HANDLING UNIT									HEAT PUMP / CONDENSING UNIT							
PLAN MARK	ROOM #	BASIS OF DESIGN	AHU MODEL NUMBER	TEDB (° F)	TEWB (° F)	CLG CAPACITY Tc / Sc (MBH)	AIRFLOW RATE H/M/L (CFM)	HTG CAPACITY (MBH)	ELECTRICAL	PLAN MARK	HP MODEL NUMBER	COOLING CAPACITY (MBH)	SEER/EER	HSPF @ 47°	WEIGHT (LBS)	V/PH/HZ/MCA/MOCP	NOTES
AHU-1-1, 1-2, 1-3	106, 107 & 108	CARRIER	40MBCQ18A--3	80	67	16.9 / 14.0	290/350/420	11.7	FED FROM OA UNIT	HP-1	38MGRQ48E	48.5	22.4/12.58	10.2	223	208/1/60/35/50	1, 2, 3, 4, 5

1. PROVIDE WITH SUPPORT PAD.
2. PROVIDE WITH VIBRATION ISOLATORS.
3. RUN CONDENSATE LINE TO APPROVED RECEPTACLE - SEE PLUMBING DRAWINGS.
4. SIZE LINES PER MANUFACTURE RECOMMENDATIONS.
5. REFER TO CONTROL NOTES ON THIS SHEET.

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PROFESSIONAL ENGINEER

Seal / Signature 06/26/2023

△ Date Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description MHTXXX
MECHANICAL SCHEDULES & DETAILS

Scale
12" = 1'-0"

M201

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IF UNDERGROUND SANITARY LINES ARE NOT CONFIRMED BY LL AS ACCESSIBLE IN REPRESENTED KNOWN LOCATIONS AND OF NEW CONDITION AND CONFIRMED AND KNOWN BY EXISTING DRAWINGS AND AS BUILT - IF NOT SO THEN THE GC'S SHALL INCLUDE IN THEIR BIDS ALL WORK THAT IS NECESSARY FOR ARCHITECTS DESIGN FOR PF SANITARY PLUMBING. OR ARCHITECTS DOCUMENTS SHALL INCLUDE NECESSARY ALLOWANCE FOR ALL NEW SANITARY DRAINAGE SYSTEMS NECESSARY TO ACCOMPLISH DESIGN FOR PF.

IF NOT THEN THERE SHALL BE A MINIMUM OF $30,000 ALLOWANCE INCLUDED TO COVER ANY DEMOLITION AND ALL DISCIPLINES NECESSARY TO ACCOMPLISH THE SANITARY DRAINAGE DESIGN.

GENERAL NOTES SANITARY

1 ALL PLUMBING WORK SHALL BE PERFORMED IN FULL COMPLIANCE WITH THE LOCAL PLUMBING CODE, HEALTH REGULATIONS, AND LOCAL ORDINANCES.

2 THE PLUMBING CONTRACTOR IS RESPOSIBLE FOR ALL PERMIT FEES, UTILITY TAP FEES, AND INSPECTION FEES AS REQUIRED.

3 THE CONTRACTOR SHALL COORDINATE THE LOCATION OF HIS FLOOR DRAINS AND CONNECTION POINTS WITH THE GENERAL CONTRACTOR. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID.

4 ALL PLUMBING PIPING SHALL BE ROUTED UNDER THE FLOOR, ABOVE THE CEILING, OR LOCATED WITHIN WALLS OR PLUMBING CHASES. EXPOSE PIPING ONLY WHERE NECESSARY TO CONNECT TO EQUIPMENT.

5 SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL PLUMBING FIXTURES NOT MENTIONED IN SCHEDULE ABOVE

6 EACH FIXTURE TRAP SHALL HAVE A LIQUID SEAL IN COMPLIANCE WITH THE VIRGINIA PLUMBING CODE, PLUMBING.

PS# PLUMBING - SANITARY KEYED NOTES

PS01 EXISTING PLUMBING FIXTURE TO REMAIN AND BE REUSED.

PS02 PROVIDE AND INSTALL NEW LAVATORY IN SAME LOCATION AS EXISTING. EXTEND EXISTING WASTE AND VENT ROUGH-INS AS REQUIRED. FIELD VERIFY REQUIREMENTS PRIOR TO COMMENCING WORK.

PS03 TEMPORARILY REMOVE, STORE AND PROTECT RESTROOM FIXTURES TO COORDINATE WITH NEW TILE INSTALLATION. PLUMBING CONTRACTOR SHALL REINSTALL RESTROOM FIXTURES AFTER TILE INSTALLATION.

PS04 ROUTE MINIMUM 1" CONDENSATE FROM NEW AIR HANDLING UNIT TO DRAIN TO MOP SINK. USE 1-1/4" DRAIN TO SERVE MULTIPLE UNITS. VERIFY EXACT ROUTING IN FIELD. PROVIDE CLEANOUTS AT DIRECTIONAL ROUTING CHANGES AS REQUIRED BY CODE. VERIFY ALL REQUIREMENTS PRIOR TO COMMENCING WORK.

PS05 REPLACE SHOWER DRAIN WITH SCHLUTER-KERDI DRAIN AS SPECIFIED IN THE PLUMBING FIXTURE/EQUIPMENT SCHEDULE LOCATED ON SHEET P401. EXTEND ROUGH-INS AS REQUIRED TO MAKE CONNECTION TO EXISTING WASTE PIPING FOR SHOWER.

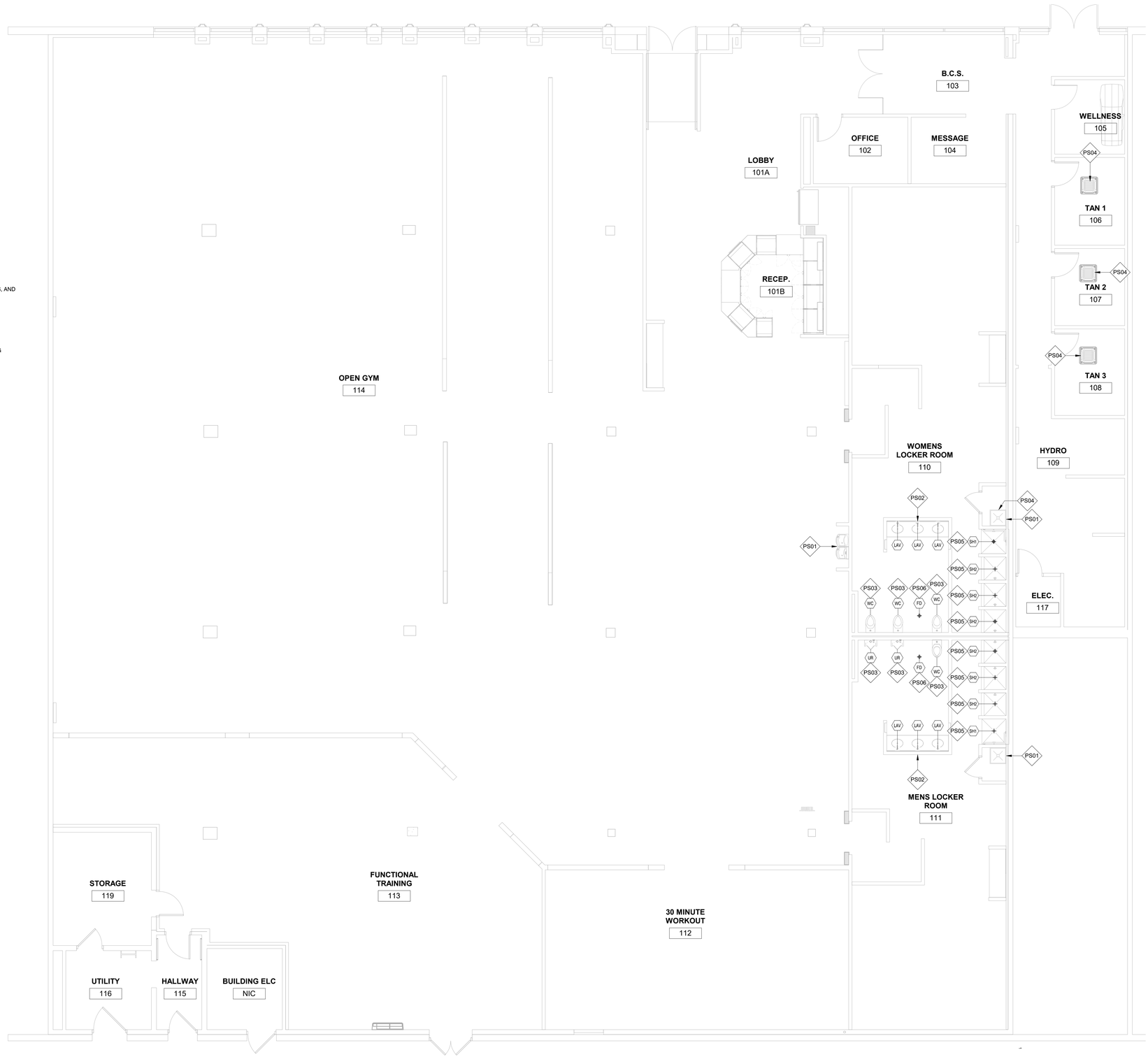
PS06 REPLACE AREA FLOOR DRAINS WITH SCHULTER-KERDI DRAINS AS SPECIFIED IN THE PLUMBING FIXTURE/EQUIPMENT SCHEDULE LOCATED ON SHEET P401. EXTEND ROUGH-INS AS REQUIRED TO CONNECT TO EXISTING WASTE PIPING IN SAME LOCATION.

PLUMBING DEMOLITION NOTES

1. REMOVE ALL UNUSED, ABOVE FLOOR PIPING AND ACCESSORIES AND HANGERS COMPLETELY TO A POINT JUST BEYOND THE DEMISING PARTITIONS - CAP OFF AS INSTRUCTED BY LANDLORD.
2. REMOVE UNUSED FLOOR DRAINS FROM SLAB AND PLUG WASTE ROUGH-IN AT A POINT BELOW THE SLAB WITH GAS-TIGHT PLUG. BELOW SLAB WASTE PIPING SHALL BE ABANDONED IN PLACE TAG ALL ABANDONED PIPING PER LANDLORD'S REQUIREMENTS

   FLOOR PENETRATION SHALL BE PATCHED PER LANDLORD'S REQUIREMENTS AND FINISHED TO RECEIVE NEW FLOOR FINISH
3. REMOVE WASTE ROUGH-IN TO A POINT BELOW THE SLAB AND PLUG WASTE LINE WITH A GAS-TIGHT PLUG. BELOW SLAB WASTE PIPING SHALL BE ABANDONED IN PLACE. TAG ALL ABANDONED PIPING PER LANDLORD'S REQUIREMENTS

   FLOOR PENETRATION SHALL BE PATCHED PER LANDLORD'S REQUIREMENTS AND FINISHED TO RECEIVE NEW FLOOR FINISH
4. REMOVE ALL UNUSED VENT(S)-THRU-ROOF COMPLETELY AND PATCH PER LANDLORD'S REQUIREMENTS



1 SANITARY PLUMBING PLAN
3/16" = 1'-0"

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Seal / Signature 06/26/2023

△	Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
SANITARY PLUMBING PLAN

CLI/CSH

Scale
As indicated

P101

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GENERAL NOTES WATER

1. PLUMBING CONTRACTOR SHALL VERIFY WITH WATER COMPANY AS TO THE METER AND VALVING ARRANGEMENTS OF THE DOMESTIC WATER SERVICE WHICH ENTERS THE BUILDING. IF A BACKFLOW PREVENTER AND/OR PRESSURE REDUCING VALVE IS REQUIRED, THE PLUMBER SHALL FURNISH AND INSTALL SAME PER LOCAL AND STATE REQUIREMENTS.
2. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL STOP VALVES AT FINISHED WALL SURFACE.
3. ALL PIPING SHOWN ON THIS PLAN IS CONCEALED ABOVE THE LAY-IN CEILING, BELOW THE FLOOR AND IN WALLS. EXPOSE PIPING IN SPACE ONLY AT EQUIPMENT AND FIXTURES.
4. SEE ARCHITECTURAL PLANS FOR FINAL EQUIPMENT LOCATIONS. COORDINATE WITH EQUIPMENT SUPPLIER AND THE GENERAL CONTRACTOR FOR FINAL WALL LOCATIONS.
5. PROVIDE WATER CONNECTIONS AS REQUIRED, ANGLE STOP AND ESCUTCHEON PLATE FOR ALL FINAL WATER CONNECTIONS.
6. FURNISH BURST PROOF BRAIDED FLEXIBLE CONNECTORS FOR FINAL CONNECTIONS TO SINKS AND OTHER EQUIPMENT.
7. FURNISH TUBING AND FITTINGS, AS REQUIRED, FOR ALL FINAL CONNECTIONS.
8. PROVIDE PRESSURE REGULATORS AS REQUIRED BY LOCAL CODE ON ALL GAS APPLIANCES.
9. PROVIDE FACTORY MANUFACTURERED WATER HAMMER ARRESTORS OR ACCEPTABLE AIR CHAMBERS AT ALL WATER ROUGH-IN LOCATIONS.
10. ALL COMPONENTS OF THE POTABLE WATER SYSTEM SHALL COMPLY WITH THE LEAD FREEREQUIREMENTS AS NOTED IN SECTION 1417 OF THE SAFE DRINKING WATER ACT.
11 GAS PIPING SHALL BE PROTECTED FROM BEING EXPOSED TO CORROSIVE ACTION BY SOIL CONDITION OR MOISTURE IN AN APPROVED MANNER IN ACCORDANCE WITH PLUMBING AND BUILDING CODES.

PW# PLUMBING - DOMESTIC WATER KEYED NOTES

PW01 PROVIDE AND INSTALL NEW LAVATORY IN SAME LOCATION AS EXISTING. EXTEND EXISTING ROUGH-INS AS REQUIRED. PROVIDE HWR RETURN SYSTEM INCLUDING BALANCING VALVES AND CHECK VALVES FOR LAVATORIES, IF NOT EXISTING. FIELD VERIFY REQUIREMENTS PRIOR TO COMMENCING WORK.

PW02 MIXING VALVE AT EACH LAVATORY TO BE PROVIDED AS INTEGRAL PART OF SPECIFIED LAVATORY FAUCET. SEE PLUMBING FIXTURE/EQUIPMENT SCHEDULE LOCATED ON SHEET P401 FOR MORE INFORMATION.

PW03 EXTEND ROUGH-INS TO MAKE CONNECTION TO EXISTING HW, CW AND HWR PIPING AT SHOWERS AS REQUIRED. EXISTING WATER SUPPLIES TO REMAIN AND BE REUSED.

PW04 PROVIDE AND INSTALL NEW BATTERY OPERATED FLUSH VALVE FOR URINALS AS SPECIFIED IN THE PLUMBING FIXTURE/EQUIPMENT SHCEULDE LOCATED ON SHEET P401.

PW05 EXISITNG WATER HEATER SYSTEM TO REMAIN AND BE REUSED. PROVIDE INSULATION ON ALL WATER PIPING IN WATER HEATER HATCH AREA IN ACCORDANCE WITH CODE REQUIREMENTS.

PW06 REMOVE AND CAP OFF EXISTING WATER SUPPLY FOR TUNNEL AND TURN OFF SUPPLY AT THE STREET. PROVIDE A SHUTOFF VALVE ON EXISTING WATER PIPING INSIDE THE PREMISES.

PW07 TEMPORARILY REMOVE, STORE AND PROTECT RESTROOM FIXTURES TO COORDINATE WITH NEW TILE INSTALLATION. PLUMBING CONTRACTOR SHALL REINSTALL RESTROOM FIXTURES AFTER TILE INSTALLATION.

PW08 REMOVE AND CAP OIF EXISTING WATER SUPPLY ABOVE NEW STORAGE AREA SERVICE FORMER RESTROOM. PROVIDE SHUTOFF VALVE ON EXISTING WATER PIPING AS REQUIRED. COORDINATE SYSTEM REMOVAL WITH CITY REQUIREMENTS.

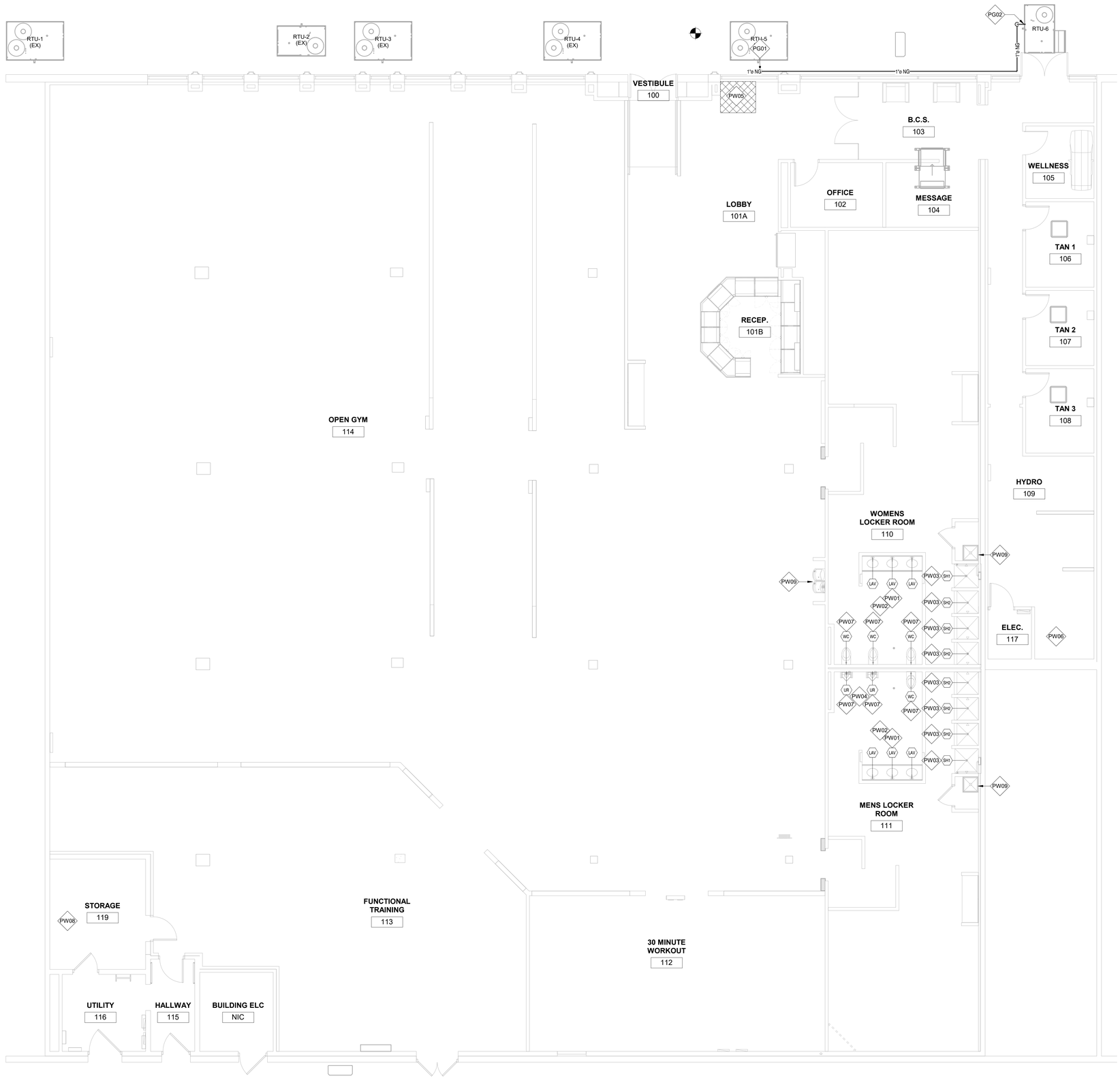
PW09 EXISTING PLUMBING FIXTURE TO REMAIN AND BE REUSED.

PG# PLUMBING - NATURAL GAS KEYED NOTES

PG01 CONTRACTOR TO EXTEND TO MAKE CONNECTION TO EXISITNG GAS LINE SERVING PLANET FITNESS ROOF TOP UNITS AT APPROXINMATE LOCATION SHOWN. FIELD VERIFY EXACT LOCATION OF POINT OF CONNECTION AND ALL REQUIREMENTS PRIOR TO COMMENCING WORK. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH LOCAL CODES. CONTRACTOR SHALL VERIFY GAS PRESSURE PRIOR TO COMMENCEMENT OF WORK AND PROVIDE GAS REGULATOR FOR EQUIPMENT, IF REQUIRED.

PG02 NG CONNECTION TO MECHANICAL UNIT. PROVIDE APPROVDED PRESSURE REGULATOR VLAVE SET TO 7" W.C., DIRT LEG AND SHUTOFF VALVE IN ACCORDANCE WITH LOCAL CODE.

GAS LINE CALCULATIONS			
EQUIPMENT	QTY	MBH	GAS LINE SIZE
RTU-6	1	150	1-1/4"
TOTAL NEW LOAD		150	
ADDITIONAL GAS LOAD = 150 MBH = 150,000 BTU IN ADDITION TO EXISTING DEMAND. GAS PIPING SHOWN IN THE RISER DIAGRAM IS SIZED PER TABLE 402.4(2) OF THE 2018 INTERNATIONAL FUEL GAS CODE FOR A PRESSURE OF LESS THAN 2 PSI. DISTANCE TO FURTHEST FIXTURE FROM METER = 60 FEET.			



1 DOMESTIC WATER & GAS PLUMBING PLAN
3/16" = 1'-0"

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Seal / Signature 06/26/2023

Date	Description

06/19/2023 PERMIT SET

Project Name: PF ROANOKE (TOWERS)
Project Number: 2200-16
Description: DOMESTIC WATER & GAS PLUMBING PLAN
CLI/CSH
Scale: As indicated

P102

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PLUMBING AND GAS SPECIFICATIONS

NOTE: MANUFACTURERS' NAMES ON WHICH THIS SPECIFICATION IS BASED INDICATE THE MINIMUM QUALITY OF PRODUCT REQUIRED. SUBSTITUTION MAY BE MADE TO THOSE SPECIFIED IF DEEMED EQUIVALENT BY THE OWNER'S REPRESENTATIVE. ALL WORK AND PRODUCTS SHALL MEET THE REQUIREMENTS OF THE OWNER.

1. ALL WORK INCLUDING INSTALLATION, EQUIPMENT, FIXTURES AND PIPING SHALL BE PERFORMED IN STRICT CONFORMANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS SET FORTH BY THE AHJ (AUTHORITY HAVING JURISDICTION), AND THE OWNER'S MINIMUM REQUIREMENTS AS STATED HEREIN, OR OTHERWISE INDICATED BY THE OWNER.

2. SEE ARCHITECTURAL GENERAL AND SPECIAL CONDITIONS. CONDITION REQUIREMENTS SHALL APPLY UNLESS OTHERWISE NOTED.

3. ALL WORK SHALL BE PERFORMED AS INDICATED ON DRAWINGS UNLESS FIELD CONDITIONS REQUIRE MINOR CHANGES BE MADE. MINOR CHANGES SHALL BE MADE WITH NO ADDITIONAL COST. ROUTING OF ALL SANITARY PLUMBING, DOMESTIC WATER PIPING AND GAS PIPING AS SHOWN ON THE PLANS IS SHOWN WITH THE INTENTION OF INDICATING THE APPROXIMATE LOCATION OF EXISTING CONDITIONS AND NEW ITEMS. THIS CONTRACTOR SHALL COORDINATE THE INSTALLATION OF HIS WORK WITH THE WORK OF ALL OTHER TRADES TO AVOID INTERFERENCE. CONTRACTORS MAY DEVIATE FROM THE LOCATION OF PIPING SHOWN IF INSTALLATION COMPLIES WITH LOCAL CODES AND INDUSTRY PRACTICES, AND IF THE AHJ AND OWNER'S REPRESENTATIVE APPROVE. ITEMS NOT SHOWN ON THE PLANS OR SHOWN IN CONFLICT WITH ANY CODE, REGULATION OR EXISTING CONDITION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL WORK IN ACCORDANCE WITH LOCAL CODES.

4. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR AFTER ACCEPTANCE OF THE WORK BY OWNER.

5. PRIOR TO SUBMISSION OF THE CONTRACTORS COST ESTIMATE FOR WORK INCLUDED UNDER THIS PROJECT, THE CONTRACTOR SHALL VISIT THE JOBSITE TO EXAMINE ALL EXISTING CONDITIONS RELATED TO HIS WORK, AND UPON FINAL EXAMINATION OF SUCH SHALL SUBMIT A FINAL PROPOSAL AS EVIDENCE THAT THIS CONTRACTOR HAS VISITED SAID SITE AND VERIFIED ALL EXISTING AND PROJECT CONDITIONS. ACTUAL LOCATIONS OF EXISTING SERVICE STUBS MUST BE FIELD VERIFIED. CHANGES TO CONFORM TO ACTUAL POINTS-OF-CONNECTION SHALL BE MADE AT NO ADDITIONAL COST. CLAIMS OF ADDITIONAL WORK OR ADD-ONS DUE TO NON-VERIFICATION OF EXIST. CONDITIONS WILL NOT BE CONSIDERED BY THE OWNER. ALL ADDITIONAL WORK WHICH IS NOT CLEARLY APPROVED PRIOR TO PERFORMANCE OF SUCH WORK WILL BE CHARGED TO THE CONTRACTOR, AND IF NOT SETTLED WILL BE HELD FROM HIS FINAL PAYMENT.

6. EQUIPMENT, FIXTURES, AND ACCESSORIES SHALL NOT BE SUPPORTED FROM CEILING, SOFFIT, PIPING, DUCTWORK, METAL ROOF DECK, LATERAL BRACING, BRIDGING, OR CONDUIT. ITEMS SHALL ONLY BE SUPPORTED FROM STRUCTURE WHICH HAS BEEN APPROVED BY THE ARCHITECT.

7. ALL ROOF WORK, PENETRATIONS, AND REPAIRS SHALL BE TOTALLY PERFORMED BY ONLY THOSE ROOFING CONTRACTORS APPROVED BY THE OWNER AND GENERAL CONTRACTOR.

8. DEFICIENCIES AND NON-CONFORMING ITEMS SHALL BE CORRECTED BY THE CONTRACTOR. FAILURE TO CORRECT SUCH ITEMS SHALL PERMIT THE OWNER TO CORRECT SAME AT A COST TO THE CONTRACTOR.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL PERMITS AND PAYING FOR SAME. THE CONTRACTOR SHALL INCLUDE IN THEIR BID CHARGES FOR ALL FEES ASSOCIATED WITH THE CONSTRUCTION OF THE SPACE INCLUDING BUT NOT LIMITED TO LOCAL, COUNTY, OR STATE SERVICE CHARGES AND PERMIT FEES, AND LANDLORD'S UTILITY, AND/OR EQUIPMENT CHARGES.

10. SCOPE OF WORK:

FURNISH ALL LABOR, MATERIALS, SUPPLIES, EQUIPMENT, AND FEES REQUIRED TO COMPLETELY INSTALL, TEST, AND PLACE THE SPECIFIED EQUIPMENT, COMPONENTS, CONTROLS AND SYSTEMS IN SERVICE.

SOIL, WASTE AND VENT SYSTEM

DOMESTIC WATER SYSTEM

PLUMBING FIXTURES AND TRIM

ROOF DRAINAGE SYSTEM

MISCELLANEOUS STEEL WORK, FLOOR AND WALL SLEEVES, SLOTS AND INSERTS, PLATES, SUPPORTS AND HANGERS

ALL OTHER PLUMBING ITEMS INDICATED ON THE DRAWINGS, SPECIFIED HEREIN, OR NEEDED FOR A COMPLETE AND FUNCTIONAL PLUMBING INSTALLATION IN ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS.

CLEANING AND TESTING OF ALL SYSTEMS

WARRANTY OF ALL WORK FOR A PERIOD OF ONE YEAR

11. MATERIALS

11.1 SANITARY DRAIN, WASTE, AND VENT SHALL BE:

SOIL AND WASTE, UNDERFLOOR - SERVICE WEIGHT CAST IRON, HUB AND SPIGOT SOIL PIPE AND FITTINGS, COATED INSIDE AND OUT.

SOIL, WASTE, AND VENT, ABOVE FLOOR - HUBLESS CAST IRON PIPE AND FITTINGS, COATED INSIDE AND OUT.

ALL CAST IRON SOIL PIPE/FITTINGS BELOW OR ABOVE GROUND SHALL BEAR THE COLLECTIVE TRADEMARK OF CISPI AND/OR BE "NSF INTERNATIONAL".

ALL STANDARD COUPLINGS SHALL BE IN COMPLIANCE TO CISPI 310 (LATEST EDITION), BEARING THE MARK OF NSF INTERNATIONAL.

OR

AT THE CONTRACTOR'S OPTION AND WHERE ALLOWED BY CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION SCHEDULE 40 PVC-DWV MAY BE USED. PVC SHALL NOT BE USED IN RETURN AIR PLENUMS WHERE PROHIBITED BY CODE.

11.2 DOMESTIC WATER PIPING SHALL BE:

UNDERGROUND: TYPE K COPPER, HARD DRAWN

ABOVE GROUND: TYPE L COPPER, HARD DRAWN TYPE M COPPER MAY BE USED WHERE APPROVED BY OWNER AND ENGINEER AND ALLOWED BY ALL AUTHORITIES HAVING JURISDICTION.

LEAD-FREE SOLDER OR SILVER SOLDER SHALL BE USED AT ALL POINTS OF CONNECTION.

ALL COMPONENTS OF THE POTABLE WATER SYSTEM SHALL COMPLY WITH THE LEAD FREE REQUIREMENTS AS NOTED IN SECTION 1417 OF THE SAFE DRINKING WATER ACT.

11.3 INSULATION:

INSULATE ALL DOMESTIC WATER PIPING AND ALL HORIZONTAL WASTE PIPING ABOVE CEILINGS WITH INSULATION WHICH MEETS OR EXCEEDS 25/50 RATINGS.

DOMESTIC COLD WATER PIPING SHALL BE COVERED WITH 1" THICK GLASSFIBER WATER PIPE INSULATION WITH VAPOR BARRIER AND ALL SERVICE JACKET. DOMESTIC HOT WATER PIPING LESS THAN 1-1/2" DIA. SHALL BE COVERED WITH 1" THICK GLASSFIBER WATER PIPE INSULATION WITH VAPOR BARRIER AND ALL SERVICE JACKET. DOMESTIC HOT WATER PIPING 1-1/2" DIA. TO 4" DIA. SHALL BE COVERED WITH 1-1/2" THICK GLASSFIBER WATER PIPE INSULATION WITH VAPOR BARRIER AND ALL SERVICE JACKET.

CONTRACTOR MAY PROVIDE PRE-FORMED PIPE INSULATION OF CLOSED CELL ELASTOMERIC FOAM.

HORIZONTAL WASTE PIPING SHALL BE COVERED WITH 1" THICK GLASSFIBER INSULATION WITH VAPOR BARRIER AND ALL SERVICE JACKET.

GLASSFIBER INSULATION SHALL BE OF THE TYPE HAVING A 4.0 LB DENSITY AND A K-FACTOR OF 0.25.

PLUMBING AND GAS SPECIFICATIONS

ALL EXPOSED AND CONCEALED INSULATED PIPING TO HAVE AN ALL-SERVICE JACKET SIMILAR TO OWENS-CORNING FIBERGLAS ASJ25 WITH SELF SEALING LAP AND JOINT SEALING STRIPS.

11.4 WATERHAMMER ARRESTORS SHALL BE PROVIDED ON ALL HOT AND COLD WATER LINES, AT INDIVIDUAL FIXTURES, AND OTHER SUCH LOCATIONS TO BRING WATER SYSTEM IN CONFORMANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARDS.

IN LIEU OF MANUFACTURED WATERHAMMER ARRESTORS CONTRACTOR MAY PROVIDE 12" HIGH AIR CHAMBERS, IF ALLOWED BY LOCAL CODE.

12. PLUMBING SPECIALTIES

12.1 HUB DRAINS SHALL BE CAST IRON FUNNEL DRAIN WITH STRAINER AS MANUFACTURED BY "WADE" OR APPROVED EQUAL OR PVC WHERE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

12.2 CLEANOUTS: WALL CLEANOUTS SHALL HAVE STAINLESS STEEL COVERS AS MANUFACTURED BY "WADE" OR APPROVED EQUAL. FLOOR CLEANOUTS SHALL HAVE SATIN FINISH NICKEL TOP, IN FINISHED AREAS, AND SATIN BRONZE CAP IN AREAS WHICH ARE NOT FINISHED. CLEANOUTS SHALL BE MAN

12.3 FIXTURES: PLUMBING FIXTURES SHALL BE AS SPECIFIED ON THESE PLANS OR ON THE ARCHITECTURAL PLANS. ALL FIXTURES SHOULD MEET ADA REQUIREMENTS WHERE APPLICABLE. FIXTURES SHOULD BE OF THE HIGHEST QUALITY BY "AMERICAN STANDARD", KOHLER" OR APPROVED EQUAL.

12.4 WATER HEATERS: IF NEW WATER HEATER(S) ARE TO BE INSTALLED THEY SHALL BE AS SPECIFIED ON THE PLANS, AND SHALL BE OF COMMERCIAL GRADE, AND AGA APPROVED IF GAS FIRED AND UL APPROVED IF ELECTRIC. HEATERS SHALL HAVE A 150 PSI WORKING PRESSURE RATING. WATER HEATER INSTALLATION MANUALS SHALL BE GIVEN TO THE OWNER.

13. EXECUTION

13.1 PIPING INSTALLATION:

EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY-FABRICATED HANGER & SUPPORTS COMPLYING WITH MSS SP-58. HANGERS AND SUPPORTS SELECTED BY INSTALLER TO SUIT FIELD CONDITIONS SHALL COMPLY WITH MANUFACTURERS' PUBLISHED PRODUCT INFORMATION.

PIPE TO BE SUPPORTED SECURELY FROM HANGERS AS FOLLOWS:

PIPE HANGERS TO BE SUPPORTED FROM STRUCTURAL STEEL BEAMS BY MEANS OF BEAM CLAMPS. HANGERS ARE NOT TO BE SUPPORTED FROM STEEL FLOOR AND/OR ROOF DECKING.

CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ANY REQUIRED AUXILIARY STEEL FOR SUPPORT OF HANGERS.

13.2 DRAIN, WASTE AND VENT

CAST IRON PIPE MUST HAVE HANGERS THAT ARE 10 FEET ON CENTER MAXIMUM, WITH A MINIMUM OF ONE HANGER FOR EACH SECTION OF PIPE, AND AT CHANGES IN DIRECTION.

PVC PIPE SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE BASE OF EACH RISER OR STACK SHALL BE SUPPORTED AT EACH FLOOR AND AT THE ROOF, IF APPROPRIATE.

ALL HORIZONTAL DRAINAGE AND VENT PIPING SHALL BE RUN AT A MINIMUM OF 1/4" PER LINEAR FOOT IN THE DIRECTION OF FLOW FOR DRAINS AND AGAINST THE FLOW OF VENT GASSES. NO FIXTURE SHALL HAVE AN S-TRAP OR BE DOUBLE TRAPPED.

CHANGES IN DIRECTION OR SIZE OF DRAINAGE PIPING SHALL BE MADE WITH APPROPRIATE FITTINGS HAVING LONG RADIUS.

SLIP JOINT FITTINGS WILL BE PERMITTED ONLY ON TRAP CONNECTIONS.

13.3 DOMESTIC WATER PIPING

HORIZONTAL PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE AS REQUIRED BY LOCAL PLUMBING CODE, OR AT A MINIMUM AS FOLLOW:

1/2" COPPER TUBE - 5'-0"
3/4" & 1" COPPER TUBE - 6'-0"
1-1/2" & 2" COPPER TUBE - 8'-0"

WATER LINES SHALL RUN PARALLEL OR PERPINDICULAR TO THE LINES OF THE BUILDING.

PROVIDE FITTINGS AT EACH CHANGE IN DIRECTION OR CHANGE IN PIPE SIZE.

PROPER ALLOWANCE SHALL BE MADE FOR EXPANSION, AND ALL BRANCHES SHALL BE BLOCKED AS MAY BE NECESSARY TO PREVENT NOISE OR VIBRATION.

RUN ALL DOMESTIC WATER PIPING AS HIGH AS POSSIBLE. DO NOT HANG OR SUPPORT OTHER EQUIPMENT OR PIPING FROM WATER LINES. SEPARATE HOT AND COLD WATER LINES A MINIMUM OF SIX (6) INCHES.

PROVIDE SHUT OFF VALVE AT CONNECTION TO EACH FIXTURE. LOCATE VALVES SO AS TO BE ACCESSIBLE AND SO THAT SEPARATE SUPPORT CAN BE PROVIDED WHEN NECESSARY. DO NOT INSTALL VALVES TO PIPING OF DISSIMILAR COMPOSITION WITHOUT AN APPROVED DIELECTRIC FITTING.

13.4 ALL DRAINS SHALL BE PROVIDED WITH DEEP SEAL TRAP.

13.5 THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED TO PERFORM HIS WORK. STATED CUTTING AND PATCHING SHALL CONFORM TO RELEVANT "GENERAL CONDITIONS" SPECIFICATIONS.

13.6 IF REQUIRED, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION AND BACKFILL OF TRENCHES AND ANY CONCRETE SLAB REPLACEMENT.

13.7 FLASH VENT PIPES PASSING THROUGH ROOF WITH LEAD ROOF FLASHING CONSTRUCTED OF NUMBER 4 SHEET LEAD, WITH BASE EXTENDING NO LESS THAN 12 INCHES ON EACH SIDE OF VENT. THE VERTICAL PORTION OF FLASHING SHALL EXTEND UPWARD THE ENTIRE LENGTH OF THE PIPE AND BE TURNED DOWN INSIDE THE PIPE.

MINIMUM VENT THRU THE ROOF SHALL BE 4".

13.8 THIS CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER AND/OR THE LOCAL UTILITY FOR INSTALLATION OF REQUIRED WATER METER. THIS INCLUDES PURCHASE OF REQUIRED METER, AND INSTALLATION OF SAME IN LOCATION DESIGNATED BY THE OWNER/ARCHITECT/UTILITY.

THIS CONTRACTOR SHALL EXTEND DOMESTIC WATER LINE FROM METER LOCATION TO THE LEASED PREMISE. ROUTING OF WATER LINE THROUGH ANY COMMON AREA IS SUBJECT TO THE APPROVAL OF THE LANDLORD.

THIS CONTRACTOR SHALL PAY ALL FEES REQUIRED, FOR INSTALLATION OF WATER SERVICE AND METER.

14. TEST AND STERILIZE ALL PLUMBING PIPING INCLUDING DRAINS, WASTE VENTS AND WATER PIPING PER LOCAL CODES AND REGULATIONS.

15. MATERIALS, EQUIPMENT, AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR FROM THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE.

FOR THE SAME PERIOD, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THEM.

NATURAL GAS PIPING

PLUMBING AND GAS SPECIFICATIONS

1 ALL WORK INCLUDING INSTALLATION, EQUIPMENT, FIXTURES AND PIPING SHALL BE PERFORMED IN STRICT CONFORMANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS SET FORTH BY THE AHJ (AUTHORITY HAVING JURISDICTION), AND THE OWNER'S MINIMUM REQUIREMENTS AS STATED HEREIN, OR OTHERWISE INDICATED BY THE OWNER.

2. NATURAL GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED JOINTS AND MALLEABLE IRON FITTINGS.

3. PIPE SEALANT SHALL BE APPLIED TO THE MALE THREADS ONLY AND SHALL BE CHEMICALLY RESISTANT TO NATURAL GAS.

4. CONTRACTOR SHALL REMOVE CUTTING AND THREADING BURRS AND SHALL ENSURE THAT THE ENTIRE PIPE IS FREE OF DEBRIS AND BLOCKAGES PRIOR TO PIPING ASSEMBLY.

5. CONTRACTOR SHALL PLUG EACH GAS OUTLET, INCLUDING VALVES, WITH A THREADED PLUG OR CAP IMMEDIATELY UPON INSTALLATION. CAP OR PLUG SHALL REMAIN IN PLACE UNTIL CONTINUING PIPING OR CONNECTIONS ARE MADE TO VALVE(S) OR EQUIPMENT.

6. THE GAS PIPING SYSTEM SHALL BE GROUNDED ELECTRICALLY AND CONTINUOUSLY. BOND PIPING TIGHTLY TO GROUNDING CONNECTORS. GROUNDING OF PIPING SHALL BE PER THE IN COMPLIANCE WITH ALL APPLICABLE CODES.

7. PROVIDE FULL SIZE DIRT LEG, GAS COCK AND UNION IN THE SUPPLY PIPING AT ALL CONNECTIONS TO GAS FIRED EQUIPMENT AND AS INDICATED ON THE DRAWINGS. INSTALL FULL SIZE DIRT LEG AT ALL LOW POINTS IN THE SYSTEM.

8. ROOF MOUNTED GAS PIPING SHALL BE SUPPORTED ON 4" X 4" X 24" LONG WOLMANIZED WOOD BLOCKING WITH 1" GALVANIZED STRAP ANCHOR AND ISOLATION PAD BELOW BLOCKING.

9. GAS PIPING SHALL BE SUPPORTED AT ALL VALVES, FITTINGS, CHANGES IN DIRECTION AND AT 6' O.C.(1/2" PIPE), 8' O.C.(3/4" OR 1" PIPE), 10' O.C.(1-1/4" OR LARGER PIPE) AND SHALL NOT DEFLECT WHEN VALVES ARE OPENED AND CLOSED.

10. CONTRACTOR SHALL INSPECT, TEST AND PURGE THE GAS PIPING SYSTEM IN ACCORDANCE WITH LOCAL CODE AND LOCAL UTILITY REQUIREMENTS PRIOR TO CONNECTION TO THE GAS METER OR THE GAS PIPING SYSTEM.

11. ALL GAS PIPING SHALL BE SIZED IN ACCORDANCE WITH LOCAL CODE, AND SHALL BE INSTALLED IN CONFORMANCE WITH ANY LOCAL CODES WHICH MAY DICTATE PIPE LABELING OR TESTING.

12. BUSHINGS ARE PROHIBITED, BELL REDUCERS SHALL BE INSTALLED IN REDUCTION IN PIPE SIZE. GROUND JOINT UNIONS AND SHUTOFF VALVES SHALL BE INSTALLED AT ALL GAS APPLIANCES. FLEXIBLE GAS LINES ARE PROHIBITED ON STATIONARY APPLIANCES AND SHALL ONLY BE INSTALLED ON FULLY PORTABLE EQUIPMENT. A RESTRAINT CABLE SHALL BE ATTACHED TO ANY FLEXIBLE CONNECTOR AND THE FLOOR SUCH THAT THE FLEXIBLE CONNECTOR CANNOT BE OVER EXTENDED.

13. GAS VALVES:

13.1 GAS COCKS 2" AND SMALLER SHALL BE 150 PSI NON-SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD WITH THREADED ENDS.

13.2 PRESSURE REGULATING VALVES SHALL BE SINGLE STAGE, STEEL JACKETED, CORROSION-RESISTANT, GAS PRESSURE REGULATORS WITH ATMOSPHERIC VENT, ELEVATION COMPENSATOR, THREADED ENDS, PROPER SPRING FOR INLET AND OUTLET GAS PRESSURES AND SIZED FOR SPECIFIC GRAVITY AND VOLUME OF FLOW AS INDICATED AND/OR REQUIRED.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	FIXTURE
○		PIPE UP
◉	FD	FLOOR DRAIN
◔		NEW CONNECTION
∩		PIPE DOWN
⊃		TEE DOWN
◎	FCO	FLOOR CLEANOUT
⊚	WCO	WALL CLEANOUT

CROSS CONNECTION CONTROL SCHEDULE

FIXTURE	MAKE	MODEL	ASSE, ASME OR ANSI STANDARD
LAVATORIES	AIR GAP	-	ASME A112.1.2
URINAL (FLUSH VALVE)	FLUSH VALVE	INTERGRAL VACUUM BREAKER	ASSE 1001

PROVIDE APPROPRIATE BACK FLOW PREVENTER AT OTHER EQUIPMENT AS REQUIRED BY CODE.

PLUMBING FIXTURE/EQUIPMENT SCHEDULE

EQ. TAG	SPECIFICATION
UR	PROVIDE URINAL WITH NEW TOTO (BATTERY OPERATED) FLUSH VALVE - TEU2UA12#SS, INTEGRAL VACUUM BREAKER, 3/4" CW CONNECTTION, 0.125 GPF.
LAV	KOHLER MODEL # K-2609-SU-NA BACHATA17-1/8" SINGLE COMPARTMENT STAINLESS ADA OVAL SUPPLY WITH FAUCET - AMERICAN STANDARD SELECTRONIC 0.5 GPM SINGLE HOLE BATHROOM FAUCET MODEL - 2506155.002.
SH1	ACCESSIBLE TILE BUILT SHOWER. SUPPLY WITH DELTA UNIVERSAL SHOWER TRIM, SCHLUTER KERDI BONDING FLANGE DRAIN WITH 4" SQUARE GRATE, (STAINLESS) AND DELTA MODEL #T13H153 PRESSURE BALANCED SHOWER VALVE WITH BLADE HANDLE, SHOWER HEAD AND HAND HELD SHOWER HEAD ON SLIDE BAR AT 2.0 GPM AND DUAL OULET DIVERTER VALVE, INTEGRAL SERVICE STOPS WITH SHOWER DRAIN. PROVIDE TEMPERATURE MIXING VALVE TO PROVIDE 110 DEG. F. TEMPERED WATER AND INTEGRAL SERVICE STOPS. VERIFY EXACT REQUIREMENTS WITH OWNER.
SH2	SUPPLY WITH DELTA SHOWER TRIM, SCHLUTER KERDI BONDING FLANGE DRAIN WITH 4" SQUARE GRATE, (STAINLESS) AND DELTA MODEL #T13H153 SHOWER HEAD AND R1000-UNWS VALVE. PROVIDE TEMPERATURE MIXING VALVE TO PROVIDE 110 DEG. F. TEMPERED WATER. VERIFY EXACT SPECIFICATION AND REQUIREMENTS WITH OWNER.
WC	EXISTING TOILET FIXTURE WITH FLUSHOMETERS - SLOAN ECOS 111-1.28-HW
FD	SCHLUTER KERDI-DRAIN 4" SQUARE DESIGN (1) E, 3" WASTE OUTLET. PROVIDE TRAP PRIMER ON CW SUPPLY TO NEAREST SINK AND EXTEND SOFT COPPER TUBING TO TRAP PRIMER CONNECTION ON TRAP. VERIFY EXACT SPECIFICATION AND REQUIREMENTS WITH OWNER.
FCO	CLEAN OUT FLUSH WITH FINISHED FLOOR WITH STAINLESS STEEL SCORIATED COVER PLATE.
WCO	CLEAN OUT FLUSH WITH FINISHED WALL SURFACE WITH CHROME-PLATED SCORIATED COVER PLATE.

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Seal / Signature 06/26/2023

△ Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
PLUMBING DETAILS & SPECIFICATIONS

CLL/CSH

Scale
12" = 1'-0"

P401

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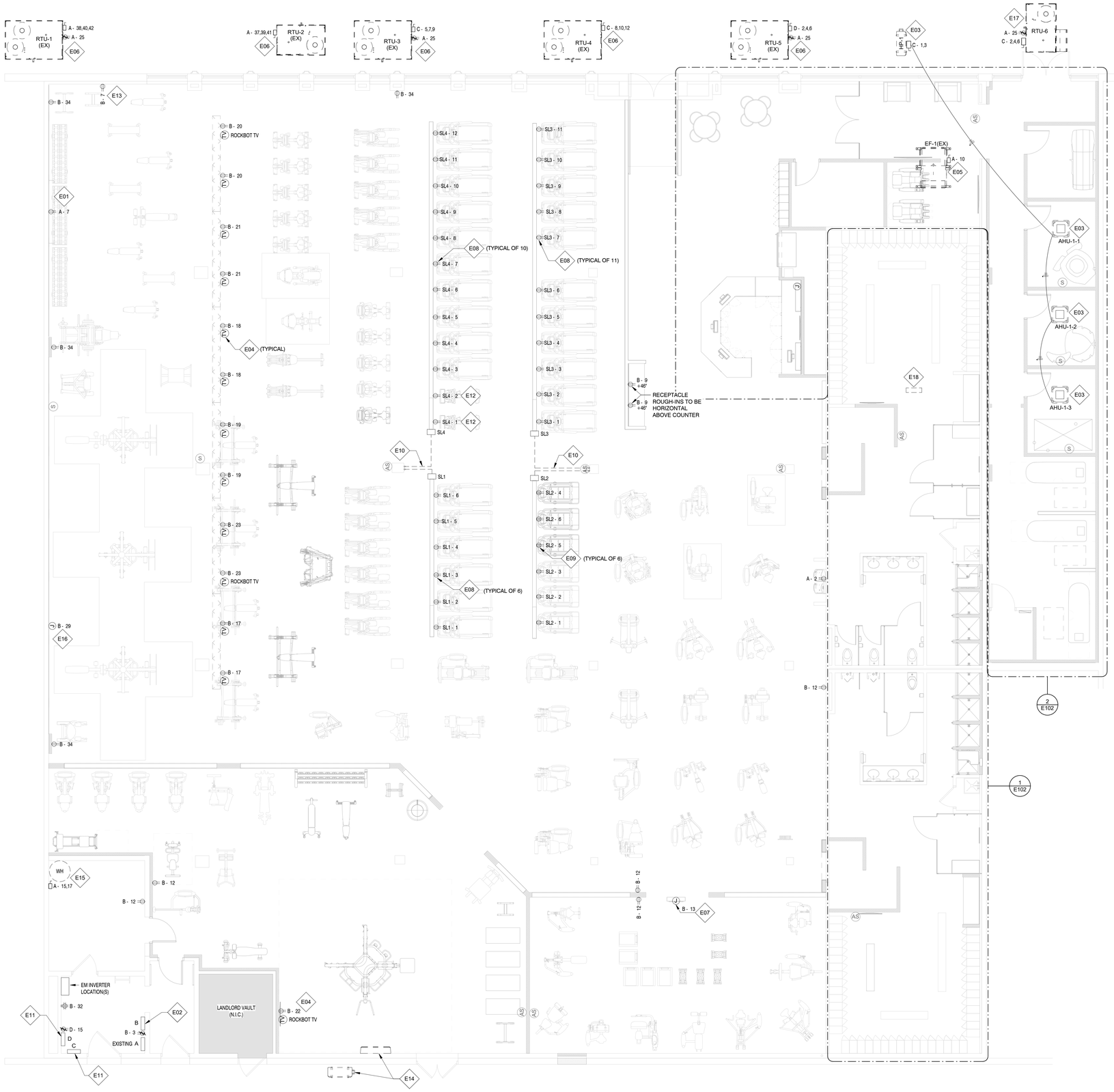

1 ELECTRICAL POWER PLAN

3/16" = 1'-0"

NORTH

GENERAL NOTES POWER

1. ALL WIRES BEING RUN THROUGH THE TRUSSES ARE TO MATCH CEILING UNLESS OTHERWISE REQUIRED BY CODE. COORDINATE WITH OWNER AND ARCHITECTURAL DRAWINGS.
2. ALL FIXTURES, WIRING, ETC. INSTALLED IN PLENUM SHALL BE PLENUM RATED.
3. SPEAKER WIRES SHALL BE RUN BY THE GC. VERIFY EXACT QUANTITIES AND LOCATIONS IN FIELD WITH OWNER. SPEAKERS ARE PROVIDED BY THE OWNER.
4. ALL EXPOSED LINE AND LOW VOLTAGE WIRING TO BE PROPERLY SUPPORTED AND ATTACHED TO THE STRUCTURE.
5. SEE SHEET E301 FOR PANEL SCHEDULES, AND SHEET E301 FOR SERVICE RISER DIAGRAM.
6. ALL DEVICES SHALL BE WHITE UNLESS OTHERWISE NOTED. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FINISH SELECTIONS.
7. DEVICES LOCATED IN METALLIC FINISH WAINSCOT SHALL BE GREY.
8. COUNTERTOP DEVICES IN LOCKER ROOMS SHALL BE GREY WHEN INSTALLED ON A PURPLE WALL.
9. DEVICES ON TILED WALLS SHALL BE GREY.
10. DEVICES LOCATED IN DESK MILLWORK SHALL BE BLACK.
11. E.C. SHALL FIELD VERIFY EXACT REQUIREMENTS FOR FIRE DETECTION/NOTIFICATION/ALARM SYSTEM. REUSE ANY EXISTING DETECTION SYSTEM AND ASSOCIATED COMPONENTS WHERE POSSIBLE, REPLACE ANY DEFECTIVE DEVICES WHERE NECESSARY. IF THERE IS NOT AN EXISTING SYSTEM, E.C. SHALL SUPPLY AN D INSTALL ALL NECESSARY EQUIPMENT (SMOKE AND/OR HEAT DETECTORS, AUDIO/VISUAL ALARMS, FIRE ALARM PANEL, CONDUIT, WIRE, ETC.) FOR A NEW SYSTEM AS REQUIRED BY LANDLORD AND OR THE LOCAL FIRE MARSHALL. INSTALL SMOKE DETECTORS IN SUPPLY OR RETURN DUCTWORK AS REQUIRED. SEE ADDITIONAL FIRE ALARM NOTES ON SHEET E400

E# ELECTRICAL POWER PLAN KEYED NOTES

E01 E.C. TO PROVIDE AND INSTALL RECEPTACLE FOR LUNK ALARM. E.C. TO INSTALL ALL ASSOCIATED EQUIPMENT AND WIRING IN CEILING. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. LUNK ALARM ACTIVATION TOGGLE SWITCH TO BE LOCATED AT FRONT DESK. SWITCHES AT DESK TO BE GROUPED NEATLY, LOCATION VERIFIED WITH OWNER AND OTHER TRADES. SEE LIGHTING PLAN FOR LOCATION OF OTHER SWITCHES. E.C. SHALL COORDINATE EXACT LOCATION WITH OWNER IN FIELD PRIOR TO COMMENCING WORK.

E02 EXISTING ELECTRICAL PANEL SHALL BE REPLACED WITH NEW IN SAME LOCATION. SEE ONE-LINE DIAGRAM ON SHEET E301. ANY/ALL EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO STRUCTURE.

E03 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO MINI-SPLIT SYSTEM. INDOOR AHU SHALL BE FED FROM SINGLE POINT CONNECTION AT OUTDOOR HP UNIT. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR.

E04 E.C. TO PROVIDE AND INSTALL RECEPTACLE AND CABLE FOR TV. COORDINATE ROUGH-IN REQUIREMENTS AND LOCATION WITH ARCHITECT AND OWNER PRIOR TO COMMENCING WORK. VERIFY ROCKBOT LOCATIONS WITH I.T. VENDOR.

E05 EXISTING EXHAUST FAN EF-1 TO REMAIN AND BE REUSED. E.C. SHALL INTERCEPT EXISTING CIRCUITING AND EXTEND TO NEW CIRCUIT AS INDICATED, MAKE FINAL CONNECTION TO EXHAUST FAN. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR.

E06 EXISTING ROOF-TOP UNIT TO REMAIN. E.C. SHALL INTERCEPT EXISTING CIRCUITING AND EXTEND TO NEW CIRCUIT AS INDICATED, WHERE SHOWN. PROVIDE NEW WEATHERPROOF GFI SERVICE RECEPTACLE. IF NOT EXISTING, AND CIRCUIT AS INDICATED. COORDINATE WITH MECHANICAL CONTRACTOR.

E07 E.C. TO PROVIDE ROUGH-N AND FINAL CONNECTION TO STOP LIGHT TIMER. VERIFY EXACT LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO COMMENCING WORK. DEVICE SHALL BE RECESSED SO THAT EQUIPMENT IS MOUNTED JUST BELOW DROP CEILING.

E08 E.C. TO PROVIDE 5-20 NEMA RECEPTACLE AND DEDICATED CIRCUIT FOR EACH TREADMILL. VERIFY EXACT LOCATION OF ROUGH-IN AND POWER REQUIREMENTS WITH MANUFACTURER PRIOR TO COMMENCING WORK.

E09 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO VERTICAL CLIMBER. VERIFY EXACT LOCATION OF ROUGH-IN AND POWER REQUIREMENTS WITH MANUFACTURER PRIOR TO COMMENCING WORK. VERIFY RACEWAY WITH OWNER.

E10 POWER FOR EXERCISE EQUIPMENT SHALL RUN DOWN COLUMN OR FULL HEIGHT PARTITION AND THROUGH SAW CUT FLOOR TRENCH TO EXERCISE EQUIPMENT ELECTRICAL RACEWAY. SEE STAIRLINE DETAILS ON SHEET E400. COORDINATE EXACT LOCATION, DATA REQUIREMENTS, CONDUIT SIZE, QUANTITY, AND REQUIREMENTS IN FIELD PRIOR TO COMMENCING WORK.

E11 RELOCATED ELECTRICAL PANEL. SEE ARCHITECTURAL DEMOLITION PLANS FOR PREVIOUS PANEL LOCATIONS. SEE ONE-LINE DIAGRAM ON SHEET E301. ANY/ALL EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO STRUCTURE.

E12 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO EXERCISE BIKE. VERIFY EXACT LOCATION OF ROUGH-IN AND POWER REQUIREMENTS WITH MANUFACTURER PRIOR TO COMMENCING WORK.

E13 PROVIDE ROUGH-IN AND FINAL CONNECTION TO WALL MOUNTED CLOCK AT 84" A.F.F.

E14 PROVIDE ALTERNATE BID TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO DUCTLESS MINI-SPLIT SYSTEM. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

E15 EXISTING WATER HEATER TO REMAIN AND BE REUSED. ELECTRICAL CONTRACTOR SHALL RECONNECT TO CIRCUITS AS INDICATED.

E16 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO BACKLIT SIGN. SEE ARCHITECTURAL ELEVATIONS FOR ADDITIONAL INFORMATION. VERIFY EXACT SIGN REQUIREMENTS WITH OWNER PRIOR AND SIGN VENDOR TO COMMENCING WORK, AND PROVIDE AS REQUIRED AND DIRECTED BY OWNER. VERIFY EXACT LOCATION WITH OWNER PRIOR TO COMMENCING WORK.

E17 PROVIDE ROUGH-IN AND FINAL CONNECTION TO GRADE MOUNTED ROOFTOP UNIT. ROOFTOP UNIT-MOUNTED DISCONNECTING MEANS SUPPLIED BY EQUIPMENT MANUFACTURER. ELECTRICAL CONTRACTOR TO PROVIDE FINAL CONNECTION TO UNIT-MOUNTED WEATHERPROOF GFI SERVICE RECEPTACLE, SUPPLIED BY MANUFACTURER, AND DUCT MOUNTED SMOKE DETECTOR. SMOKE DETECTOR SHALL SHUT DOWN UNIT UPON ACTIVATION AND SIGNAL TO FIRE ALARM CONTROL PANEL. COORDINATE WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER.

E18 EXISTING ELECTRICAL PANEL AND ASSOCIATED ELECTRICAL SERVICE CONDUIT AND FEEDERS TO BE REMOVED/DEMOLISHED IN ITS ENTIRETY BACK TO THE LANDLORD'S DISCONNECT FEEDING THIS SERVICE. COORDINATE ABANBONMENT WITH LANDLORD PRIOR TO COMMENCING WORK.

CONTROL NOTES

A. MECHANICAL CONTRACTOR TO PULL ALL CONTROL WIRING, INSTALL SENSORS AND CONNECT CABLES TO SENSORS.

B. SAVE ENERGY SYSTEMS TO FURNISH ALL SENSORS AND THERMOSTATS - CONTACT DIRECTLY (SEE NOTE G)

C. ALL UNITS TO HAVE A SUPPLY TEMP SENSOR PROBE INSTALLED IN MAIN SUPPLY TRUNK PRIOR TO ANY BRANCH TAKE-OFF, WITHIN 5' OF RTU.

D. ALL UNITS TO HAVE REMOTE TEMP SENSORS INSTALLED AS INDICATED ON DRAWINGS.

E. RTU-1, 2, 3, 4 TO BE PROVIDED WITH HUMIDITY CONTROLS

F. CONTROL WIRING DETAILS:
   a. 18/8 FROM RTU TO THERMOSTAT
   b. 18/2 FROM REMOTE SENSOR TO THERMOSTAT - CONNECTED AT SENSOR
   c. 18/2 FROM SUPPLY SENSOR TO THERMOSTAT - CONNECTED AT SENSOR
   d. ALL CABLES TO BE LABELED WITH UNIT NUMBER AND FUNCTION (REMOTE, SUPPLY)

G. THERMOSTATS MOUNT VERTICALLY (5"x3") LEAVE 2" SPACE FROM UNIT TO UNIT IN ALL DIRECTIONS.

H. SAVE ENERGY SYSTEMS WILL BE ON SITE TO INSTALL THERMOSTATS AND COMMISSION SYSTEM.
   a. ALL UNITS TO BE STARTED UP AND POWERED PRIOR TO SAVE ENERGY SYSTEMS ARRIVAL.
   b. ALL UNITS TO HAVE 18/8 CABLE LANDED IN RTU, INCLUDING 'C'
   c. HVAC CONTRACTOR TO PROVIDE COLOR CODE OF RTU WIRING.

I. CONTACT PAUL LASKOW (PLASKOW@SAVEENERGYSYSTEMS.COM) 617.564.4442 WITH ANY QUESTIONS

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PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
ELECTRICAL POWER PLAN

Scale
3/16" = 1'-0"

E101

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GENERAL NOTES POWER

1. ALL WIRES BEING RUN THROUGH THE TRUSSES ARE TO MATCH CEILING UNLESS OTHERWISE REQUIRED BY CODE. COORDINATE WITH OWNER AND ARCHITECTURAL DRAWINGS.
2. ALL FIXTURES, WIRING, ETC. INSTALLED IN PLENUM SHALL BE PLENUM RATED.
3. SPEAKER WIRES SHALL BE RUN BY THE GC. VERIFY EXACT QUANTITIES AND LOCATIONS IN FIELD WITH OWNER. SPEAKERS ARE PROVIDED BY THE OWNER.
4. ALL EXPOSED LINE AND LOW VOLTAGE WIRING TO BE PROPERLY SUPPORTED AND ATTACHED TO THE STRUCTURE.
5. SEE SHEET E301 FOR PANEL SCHEDULES, AND SHEET E301 FOR SERVICE RISER DIAGRAM.
6. ALL DEVICES SHALL BE WHITE UNLESS OTHERWISE NOTED. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FINISH SELECTIONS.
7. DEVICES LOCATED IN METALLIC FINISH WAINSCOT SHALL BE GREY.
8. COUNTERTOP DEVICES IN LOCKER ROOMS SHALL BE GREY WHEN INSTALLED ON A PURPLE WALL.
9. DEVICES ON TILED WALLS SHALL BE GREY.
10. DEVICES LOCATED IN DESK MILLWORK SHALL BE BLACK.
11. E.C. SHALL FIELD VERIFY EXACT REQUIREMENTS FOR FIRE DETECTION/NOTIFICATION/ALARM SYSTEM. REUSE ANY EXISTING DETECTION SYSTEM AND ASSOCIATED COMPONENTS WHERE POSSIBLE. REPLACE ANY DEFECTIVE DEVICES WHERE NECESSARY. IF THERE IS NOT AN EXISTING SYSTEM, E.C. SHALL SUPPLY AN D INSTALL ALL NECESSARY EQUIPMENT (SMOKE AND/OR HEAT DETECTORS, AUDIO/VISUAL ALARMS, FIRE ALARM PANEL, CONDUIT, WIRE, ETC.) FOR A NEW SYSTEM AS REQUIRED BY LANDLORD AND OR THE LOCAL FIRE MARSHALL. INSTALL SMOKE DETECTORS IN SUPPLY OR RETURN DUCTWORK AS REQUIRED. SEE ADDITIONAL FIRE ALARM NOTES ON SHEET E400

LR # ELECTRICAL LOCKER ROOM POWER PLAN KEYED NOTES

LR01 E.C. TO PROVIDE AND INSTALL RECEPTACLE AND CABLE FOR TV. COORDINATE ROUGH-IN REQUIREMENTS AND LOCATION WITH ARCHITECT AND OWNER PRIOR TO COMMENCING WORK.

LR02 COUNTER TOP RECEPTACLES. COORDINATE LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO COMMENCING WORK.

LR03 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO XLERATOR HAND DRYER. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. VERIFY EXACT ROUGH-IN AND POWER REQUIREMENTS WITH MANUFACTURER.

LR04 E.C. TO PROVIDE ROUGH-IN AND FINAL CONNECTION TO FLUSH VALVE POWER. VERIFY EXACT REQUIREMENTS WITH EQUIPMENT SPECIFIED AND PROVIDE ALL EQUIPMENT NECESSARY TO DELIVER A FULLY FUNCTIONING SYSTEM.

BC # ELECTRICAL BLACK CARD POWER PLAN KEYED NOTES

BC01 E.C. SHALL EXTEND 40 FEET EXTRA RUN ON THE WIRES AT THE FRONT DESK. QUANTITY, TYPE, AND EXACT LOCATION OF ALL POWER AND TELEPHONE/DATA ROUGH-IN AT FRONT DESK ARE TO BE VERIFIED WITH OWNER PRIOR TO COMMENCING WORK.

BC02 E.C. SHALL PLACE TANNING BED DISCONNECT AND 11 KVA BUCK BOOST TRANSFORMER PER MANUFACTURER'S RECOMMENDATIONS AND STATE AND LOCAL CODES. ALL EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO STRUCTURE. E.C. SHALL PROVIDE ELECTRICAL WHIP FROM DISCONNECT SWITCH TO TANNING BED AND MAKE FINAL CONNECTION TO TANNING BED PER MANUFACTURER'S SPECIFICATIONS AND LOCAL AUTHORITY HAVING JURISDICTION.

BC03 E.C. TO PROVIDE AND INSTALL RECEPTACLE FOR LUNK ALARM. E.C. TO INSTALL ALL ASSOCIATED EQUIPMENT AND WIRING IN CEILING. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. LUNK ALARM ACTIVATION TOGGLE SWITCH TO BE LOCATED AT FRONT DESK. SWITCHES AT DESK TO BE GROUPED NEATLY, LOCATION VERIFIED WITH OWNER AND OTHER TRADES. SEE LIGHTING PLAN FOR LOCATION OF OTHER SWITCHES. E.C. SHALL COORDINATE EXACT LOCATION WITH OWNER IN FIELD PRIOR TO COMMENCING WORK.

BC04 E.C. SHALL PROVIDE AND INSTALL A 110V DUPLEX RECEPTACLE AND A DATA CONNECTION PER MANUFACTURER'S RECOMMENDATIONS. SEE HYRDO MASSAGE ELECTRICAL WIRING DETAILS ON SHEET E400.

BC05 PROVIDE POWER FOR GLASS SHELF LIGHTING AT RECEPTION AREA TO BE SWITCHED ON/OFF WITH LOBBY LIGHTING SWITCH "a". SEE SWITCH BANK DETAIL ON SHEET E201. SWITCHED POWER SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL MANUFACTURER REQUIRED LOW VOLTAGE WIRING, LOW VOLTAGE CONDUIT, LOW VOLTAGE TRANSFORMER(S), BALLAST BOX, AND POWER CORD INSTALLATION. SEE ARCHITECTURAL DRAWINGS AND SHELF LIGHTING INSTALLATION MANUAL FOR ADDITIONAL INFORMATION. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS PRIOR TO COMMENCING WORK.

BC06 DATA CONNECTION AND WIRING TO BE PROVIDED BY E.C. FOR TIMER/DATA SYSTEM. VERIFY ALL ROUGH-IN AND CONNECTION REQUIREMENTS AND LOCATIONS WITH MANUFACTURER AND OWNER'S LOW VOLTAGE CONTRACTOR PRIOR TO COMMENCING WORK. ALL EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO STRUCTURE.

BC07 TANNING CONTROLS: PROVIDE A PHONE JACK AND RECEPTACLE FOR T-MAX MANAGER TANNING BED CONTROL. WIRE TO TIMER AT EACH TANNING ROOM AS REQUIRED. INSTALL PER MANUFACTURER RECOMMENDATIONS.

BC08 RECEPTACLE TO BE MOUNTED BELOW COUNTER TOP. COORDINATE LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO COMMENCING WORK.

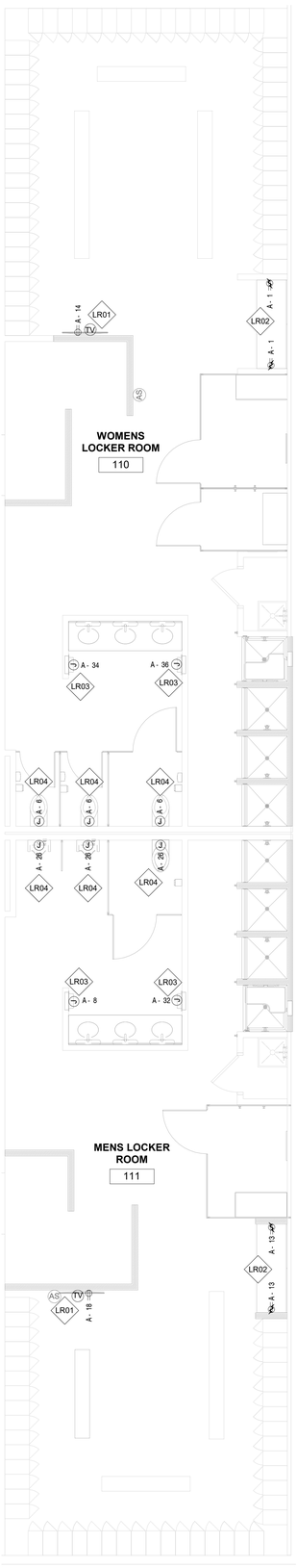
BC09 E.C. TO PROVIDE AND INSTALL RECEPTACLE AND CABLE FOR ROCKBOT TV. COORDINATE ROUGH-IN REQUIREMENTS AND LOCATION WITH ARCHITECT AND OWNER PRIOR TO COMMENCING WORK.

BC10 E.C. TO PROVIDE AND INSTALL RECEPTACLE FOR EQUIPMENT. PROVIDE ROUGH-IN SO THAT CORD AND RECEPTACLE WILL BE CONCEALED.

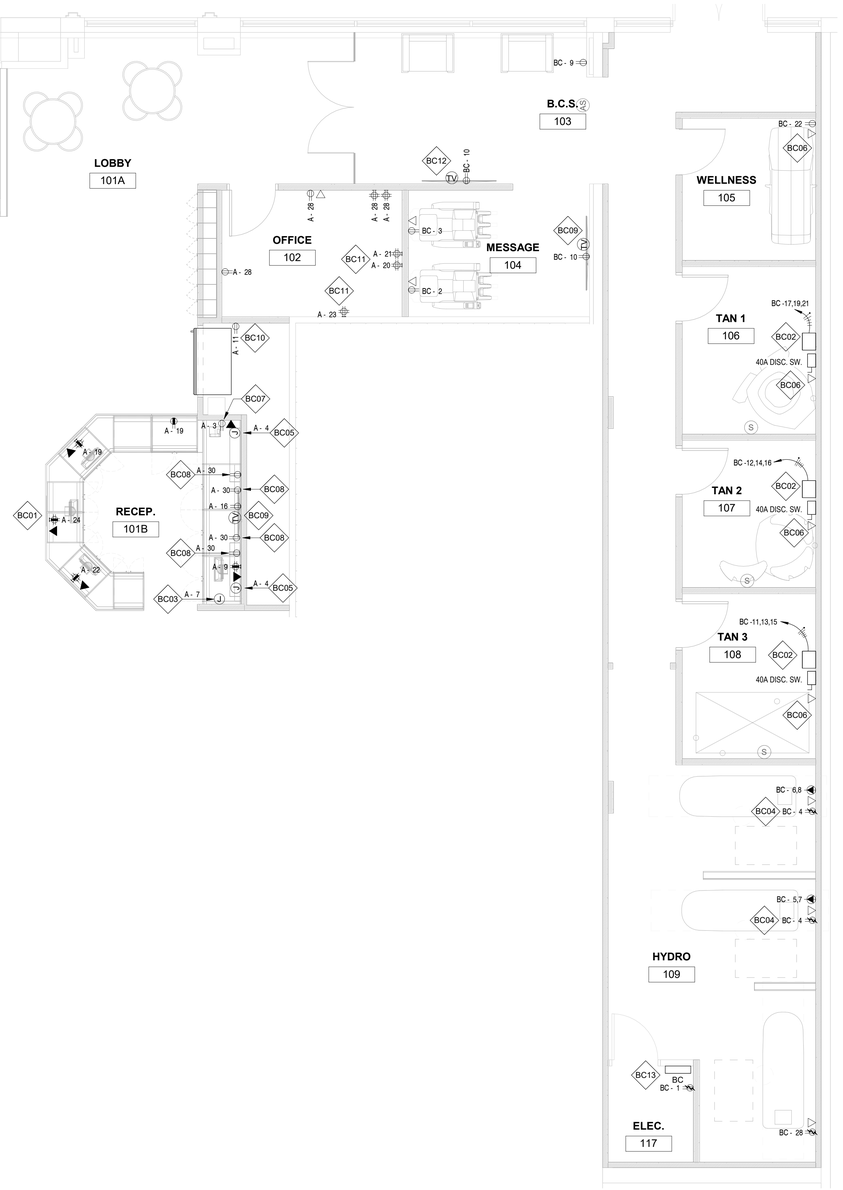
BC11 RELOCATE EXISTING DEMARK LOCATION TO NEW OFFICE AND EXTEND ALL LOW VOLTAGE WIRING WHERE POSSIBLE (PROVIDE NEW AS REQUIRED). REFRENCE ARCHITECTURAL DEMOLITION DRAWINGS FOR LOCATION OF EXISTING DEMARK LOCATION.

BC12 E.C. TO PROVIDE AND INSTALL RECEPTACLE AND CABLE FOR TV. COORDINATE ROUGH-IN REQUIREMENTS AND LOCATION WITH ARCHITECT AND OWNER PRIOR TO COMMENCING WORK.

BC13 EXISTING ELECTRICAL PANEL SHALL BE REPLACED WITH NEW IN SAME LOCATION. SEE ONE-LINE DIAGRAM ON SHEET E301. ANY/ALL EXPOSED CONDUIT SHALL BE INSTALLED TIGHT TO STRUCTURE.



1 ENLARGED LOCKER ROOMS POWER PLAN
1/4" = 1'-0"



2 ENLARGED BLACK CARD POWER PLAN
1/4" = 1'-0"

NORTH

Planet Fitness
672 BRANDON AVE SW, ROANOKE, VA 24015

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PROFESSIONAL ENGINEER

Seal / Signature 06/26/2023

△ Date Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
ELECTRICAL ENLARGED POWER PLANS

Scale
1/4" = 1'-0"

E102

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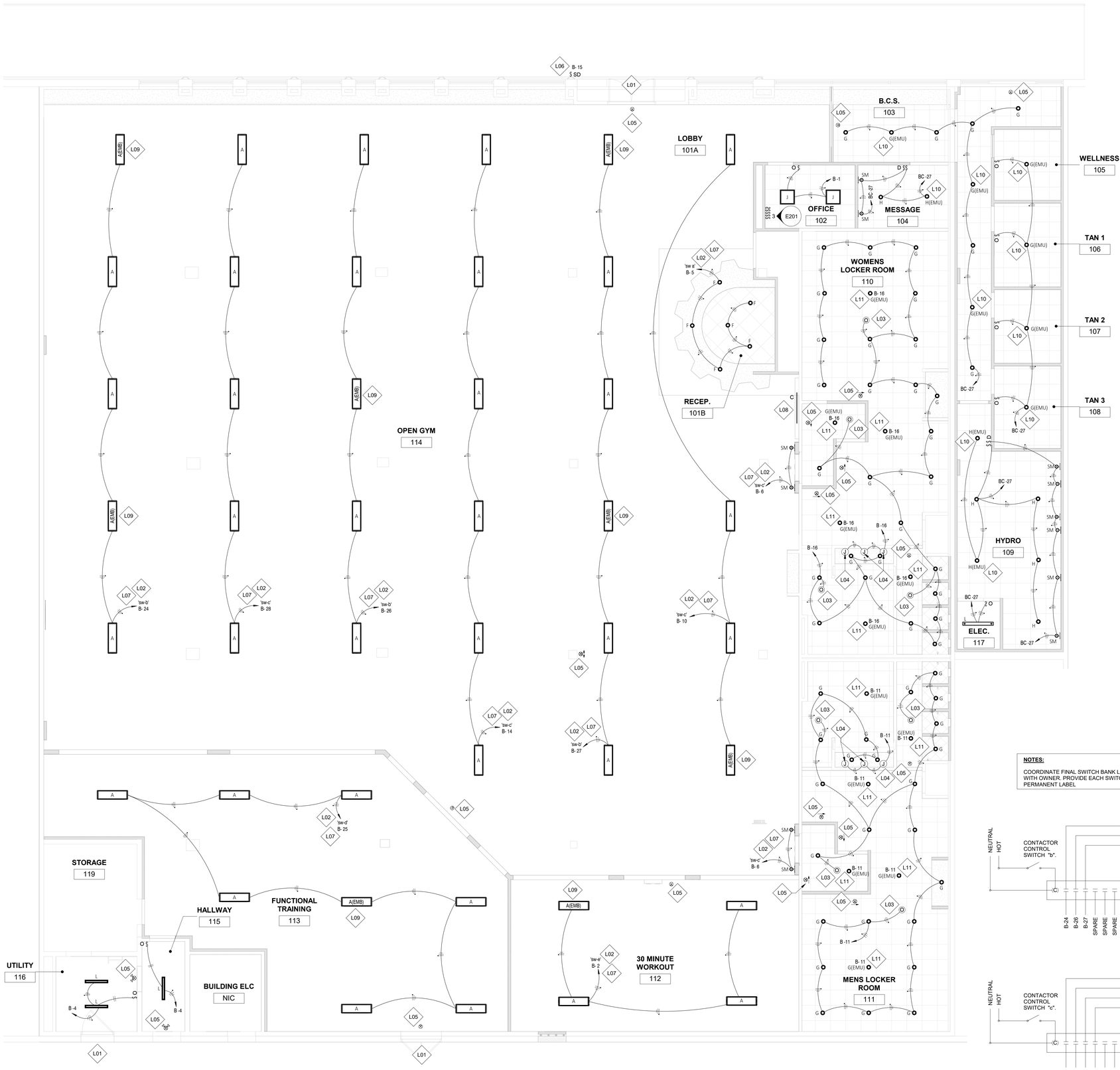


1 ELECTRICAL LIGHTING PLAN
3/16" = 1'-0"

NORTH

GENERAL NOTES LIGHTING

1. INSTALL LIGHT FIXTURES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE LATEST EDITION OF THE NEC.
2. CONCEALED BRANCH CIRCUIT WIRING SHALL BE TYPE MC METAL-CLAD CABLE WITH COPPER CONDUCTORS, MIN. 2#12 AWG + 1#12 GROUND. INTERIOR EXPOSED WIRING SHALL BE EMT WITH COPPER CONDUCTORS. ALL BOXES SHALL BE METAL. PLASTIC BOXES ARE PROHIBITED.
3. EXTERIOR WIRING SHALL BE RUN IN IMC. ALL MOTOR CONNECTION SHALL BE RUN IN FLEXIBLE CONDUIT (NOMINAL 24" L>) AND SHALL BE WATERTIGHT WHEN USED OUTDOORS.
4. ALL WORK SHALL CONFORM TO ALL STATE AND LOCAL CODES AND REQUIREMENTS.
5. THE E.C. SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED FOR THE COMPLETION AND ACCEPTANCE OF HIS WORK.
6. VERIFY LOCATION AND QUANTITY OF ALL EXIT AND EMERGENCY FIXTURES WITH MANUFACTURER PRIOR TO PLACING BID
7. EMERGENCY, NIGHT LIGHT, EXIT, AND REMOTE EMERGENCY LIGHTING TO BE CIRCUITED TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY SWITCHING OR CONTROLS UNLESS NOTED OTHERWISE.
8. EGRESS LIGHTING SHALL PROVIDE A MINIMUM 1 FOOT CANDLE.
9. VERIFY EXACT LIGHT SWITCH REQUIREMENTS WITH LIGHT FIXTURE AND/OR EQUIPMENT MANUFACTURER PRIOR TO COMMENCING WORK.
10. ALL LIGHTING TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR - NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL FROM PLANET FITNESS CORPORATE. FIXTURE SPECIFICATIONS AND LOCATIONS PROVIDED BY ARCHITECT.
11. ALL EXPOSED LINE AND LOW VOLTAGE WIRING TO BE PROPERLY SUPPORTED AND ATTACHED TO THE STRUCTURE.
12. ALL FIXTURES, WIRING, ETC. INSTALLED IN RETURN PLENUM SHALL BE PLENUM RATED.
13. ALL WIRES BEING RUN THROUGH THE TRUSSES TO MATCH CEILING UNLESS OTHERWISE REQUIRED BY CODE. COORDINATE WITH OWNER AND ARCHITECTURAL DRAWINGS.
14. SEE LIGHTING FIXTURE SCHEDULE ON SHEET E400.
15 EMU LIGHT FIXTURE TO BE CIRCUITED THROUGH IOTA EMERGENCY INVERTER TO PROVIDE POWER IN THE EVENT OF POWER LOSS. INVERTER TO BE WIRED PER MANUFACTURERS SPECIFICATIONS FOR A SWITCH CONTROLLED LIGHT FIXTURE. COORDINATE LOCATIONS AND SPECIFICATION OF INVERTER WITH OWNERS REPRESENTATIVE AND ARCHITECT.

L# LIGHTING PLAN KEYED NOTES

L01 PROVIDE AND INSTALL EGRESS LIGHTING IF NOT EXISTING. VERIFY CONDITIONS IN FIELD PRIOR TO COMMENCING WORK.

L02 CIRCUIT TO BE CONTROLLED VIA SWITCH BANK. COORDINATE FINAL SWITCH BANK LOCATION WITH OWNER PRIOR TO INSTALLATION. SEE SWITCH BANK DETAIL ON THIS SHEET FOR MORE INFORMATION.

L03 CEILING MOUNTED OCCUPANCY SENSORS SHALL CONNECT ALL LIGHTING IN LOCKER ROOMS. SENSORS ARE TO BE DUAL TECH FOR BOTH SOUND AND MOTION. MOTION SENSOR TO BE SET FOR 30 MINUTE TIMEOUT.

L04 PROVIDE ROUGH-IN AND FINAL CONNECTION TO VANITY BACK-LIT MIRRORS IN MENS AND WOMENS LOCKER ROOMS. MIRROR PROVIDED WITH 24" LEADS. COORDINATE ELEVATION/HEIGHTS OF ROUGH-IN WITH ARCHITECTURAL PLANS AND EQUIPMENT PROVIDED PRIOR TO COMMENCING WORK.

L05 EXIT SIGNS AND EMERGENCY FIXTURES TO BE INSTALLED IN LOCATION SHOWN. CIRCUIT WITH LOCAL LIGHTING AHEAD OF ANY SWITCHING OR CONTROLS.

L06 E.C. SHALL INTERCEPT EXISTING CIRCUITING AT EXTERIOR BUILDING SIGN AND CONNECT TO CIRCUIT INDICATED. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS. SIGNAGE SHALL BE CONTROLLED VIA TIMECLOCK AND PHOTOCELL.

L07 SEE LIGHTING CONTROL DETAIL #2 THIS SHEET FOR ADDITIONAL INFORMATION.

L08 VENDOR TO PROVIDE LED STRIP LIGHTING FOR BACKLIT MISSION STATEMENT SIGN. SEE SHEET E102 FOR CIRCUITING AND ADDITIONAL INFORMATION.

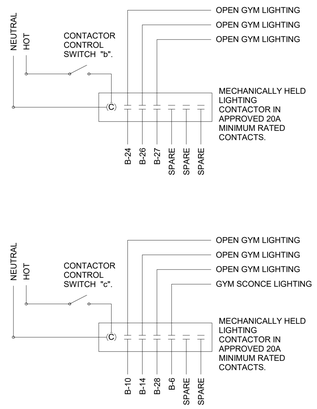
L09 FIXTURE PROVIDED WITH EMERGENCY BATTERY BACK UP (90-MIN), SEE LIGHTING FIXTURE SCHEDULE ON SHEET E400.

L10 PROVIDE ROUGH-IN AND FINAL CONNECTION TO 125W EMERGENCY INVERTER VIA EPC-D-F-ATC MEYERS SHUNT RELAY. COORDINATE EXACT LOCATON OF INVERTER AND SHUNT RELAY IN FIELD PRIOR TO COMMENCING WORK.

L11 PROVIDE ROUGH-IN AND FINAL CONNECTION TO 250W EMERGENCY INVERTER VIA EPC-D-F-ATC MEYERS SHUNT RELAY. COORDINATE EXACT LOCATON OF INVERTER AND SHUNT RELAY IN FIELD PRIOR TO COMMENCING WORK.

NOTES:

COORDINATE FINAL SWITCH BANK LOCATION WITH OWNER. PROVIDE EACH SWITCH WITH PERMANENT LABEL



2 LIGHTING CONTROLS
1/4" = 1'-0"

'sw a' RECEPTION & LOBBY | 'sw-b' OPEN GYM LIGHTING | 'sw-c' OPEN GYM LIGHTING | 'sw-d' ABS AND STRETCHING | 'sw-e' 30 MINUTE WORKOUT

3 SWITCH BANK DETAIL
3" = 1'-0"

Planet Fitness

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WILLIAM J. ALKEMEYER
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PROFESSIONAL ENGINEER

Seal / Signature 06/26/2023

△ Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
ELECTRCIAL LIGHTING PLAN

Scale
As indicated

E201

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Branch Panel: A

EXISTING TO REMAIN AND BE REUSED

A.I.C. Rating: COORDINATE WITH UTILITY
Volts: 120/208 Wye
Mains Type: CU
Phases: 3
Mains Rating: 200 A
Supply From:
Wires: 4
MCB Rating: 200 A
Enclosure: Type 1

CKT	Schedule Circuit Notes	Trip	Poles	A	B	C	Poles	Trip	Schedule Circuit Notes	CKT	
1	WOMEN'S COUNTERTOP GFCI	20 A	1	360 600			1	20 A	WATER FOUNTAIN	2	G
3	T-MAX SYSTEM	20 A	1		180 1000		1	20 A	LED SHELF	4	
5	SPARE	20 A	1			0 540	1	20 A	WOMEN'S FLUSH VALVE POWER	6	
7	LUNK ALARM	20 A	1	1000 1500			1	20 A	MEN'S HAND DRYER	8	
9	REC - BACK COUNTER	20 A	1		360 1920		1	20 A	EF-1 (EX)	10	
11	REACH-IN COOLER	20 A	1			840 0	1	20 A	SPARE	12	
13	MEN'S COUNTERTOP GFCI	20 A	1	360 300			1	20 A	WOMEN'S LOCKER RM TV	14	
15 17	WATER HEATER (EX)	30 A	2		2495 300		1	20 A	FRONT DESK TV	16	
						2495 300	1	20 A	MEN'S LOCKER RM TV	18	
19	REC - FRONT DESK	20 A	1	540 360			1	20 A	SOUND SYSTEM QUAD	20	
21	A/V QUAD	20 A	1		360 360		1	20 A	REC - FRONT DESK	22	
23	TELECOM QUAD	20 A	1			360 360	1	20 A	REC - FRONT DESK	24	
25	REC - HVAC SERVICE	20 A	1	720 540			1	20 A	MEN'S FLUSH VALVE POWER	26	
27					1080		1	20 A	REC - OFFICE	28	
29						720 1	20 A		FRONT DESK BACK COUNTER	30	
31				1500			1	20 A	MEN'S HAND DRYER	32	
33					1500		1	20 A	WOMEN'S HAND DRYER	34	
35	SPARE	20 A	1			0 1500	1	20 A	WOMEN'S HAND DRYER	36	
37				3195 5475						38	
39	RTU-2 (EX)	30 A	3		3195 5475		3	60 A	RTU-1 (EX)	40	
41						3195 5475				42	
	Total Load:			16451 VA	18227 VA	15786 VA					
	Total Amps:			138 A	153 A	132 A					

Legend: G = GFCI Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	26011 VA	100.00%	26011 VA		
Other	8581 VA	100.00%	8581 VA	**Total Conn. Load:**	50465 VA
Receptacle	8960 VA	100.00%	8960 VA	**Total Est. Demand:**	50465 VA
Power	6912 VA	100.00%	6912 VA	**Total Conn.:**	140 A
				Total Est. Demand:	140 A

Branch Panel: B

A.I.C. Rating: COORDINATE WITH UTILITY
Volts: 120/208 Wye
Mains Type: CU
Phases: 3
Mains Rating: 225 A
Supply From:
Wires: 4
MCB Rating: 150 A
Enclosure: Type 1

CKT	Schedule Circuit Notes	Trip	Poles	A	B	C	Poles	Trip	Schedule Circuit Notes	CKT
1	OFFICE LIGHTING	20 A	1	80 400			1	20 A	30 MINUTE WORKOUT LIGHTING	2
3	PANEL GFCI RECEPTACLE	20 A	1		180 190		1	20 A	UTILITY LIGHTING	4
5	RECEPTION LIGHTING	20 A	1			70 210	1	20 A	OPEN GYM SCONCE LIGHTING	6
7	WALL CLOCK	20 A	1	180 500			1	20 A	MISSION STATEMENT SIGN	8
9	ENTRANCE GENERAL POWER	20 A	1		360 400		1	20 A	OPEN GYM LIGHTING	10
11	MEN'S LOCKER RM LIGHTING	20 A	1			660 900	1	20 A	REC - OPEN GYM GENERAL	12
13	STOPLIGHT TIMER	20 A	1	500 600			1	20 A	OPEN GYM LIGHTING	14
15	BUILDING SIGN	20 A	1		500 695		1	20 A	WOMEN'S LOCKER RM LIGHTING	16
17	SUSPENDED TELEVISIONS	20 A	1			600 600	1	20 A	SUSPENDED TELEVISIONS	18
19	SUSPENDED TELEVISIONS	20 A	1	600 600			1	20 A	SUSPENDED TELEVISIONS	20
21	SUSPENDED TELEVISIONS	20 A	1		600 300		1	20 A	SUSPENDED TELEVISIONS	22
23	SUSPENDED TELEVISIONS	20 A	1			600 500	1	20 A	OPEN GYM LIGHTING	24
25	ABD AND STRETCHING LTG	20 A	1	800 500			1	20 A	OPEN GYM LIGHTING	26
27	OPEN GYM LIGHTING	20 A	1		600 500		1	20 A	OPEN GYM LIGHTING	28
29	NO CRITICS SIGN	20 A	1			500 0	1	20 A	SPARE	30
31	SPARE	20 A	1	0 360			1	20 A	REC - UTILITY ROOM	32
33	SPARE	20 A	1		0 720		1	20 A	REC - OPEN GYM GENERAL	34
35	SPARE	20 A	1			0 0	1	20 A	SPARE	36
37	SPACE	--	1	-- --			1	--	SPACE	38
39	SPACE	--	1		-- --		1	--	SPACE	40
41	SPACE	--	1			-- --	1	--	SPACE	42
	Total Load:			5117 VA	5047 VA	4639 VA				
	Total Amps:			43 A	43 A	39 A				

Legend: G = GFCI Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting - General	500 VA	100.00%	500 VA		
Lighting - Dwelling Unit	80 VA	100.00%	80 VA	**Total Conn. Load:**	14803 VA
Other	1693 VA	100.00%	1693 VA	**Total Est. Demand:**	14803 VA
Power - General	598 VA	100.00%	598 VA	**Total Conn.:**	41 A
Receptacle	6600 VA	100.00%	6600 VA	**Total Est. Demand:**	41 A
Lighting	5336 VA	100.00%	5336 VA		

Branch Panel: C

A.I.C. Rating: EXISTING
Volts: 120/208 Wye
Mains Type: CU
Phases: 3
Mains Rating: 200 A
Supply From:
Wires: 4
MCB Rating: 200 A
Enclosure: Type 1

CKT	Schedule Circuit Notes	Trip	Poles	A	B	C	Poles	Trip	Schedule Circuit Notes	CKT
1	HP-1 MINI SPLIT	50 A	2	3860 3360						
3					3860 3360		3	40 A	RTU-6	4
5						6555 3360				6
7	RTU-3 (EX)	70 A	3	6555 6555						8
9					6555 6555		3	70 A	RTU-4 (EX)	10
11	SPARE	20 A	1			0 6555				12
13	SPARE	20 A	1	0 0			1	20 A	SPARE	14
15	SPARE	20 A	1		0 0		1	20 A	SPARE	16
17	SPACE	--	1			-- 0	1	20 A	SPARE	18
19	SPACE	--	1	-- --			1	--	SPACE	20
21	SPACE	--	1		-- --		1	--	SPACE	22
23	SPACE	--	1			-- --	1	--	SPACE	24
25	SPACE	--	1	-- --			1	--	SPACE	26
27	SPACE	--	1		-- --		1	--	SPACE	28
29	SPACE	--	1			-- --	1	--	SPACE	30
31	SPACE	--	1	-- --			1	--	SPACE	32
33	SPACE	--	1		-- --		1	--	SPACE	34
35	SPACE	--	1			-- --	1	--	SPACE	36
37	SPACE	--	1	-- --			1	--	SPACE	38
39	SPACE	--	1		-- --		1	--	SPACE	40
41	SPACE	--	1			-- --	1	--	SPACE	42
	Total Load:			20335 VA	20335 VA	16476 VA				
	Total Amps:			174 A	174 A	137 A				

Legend: G = GFCI Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	47059 VA	100.00%	47059 VA		
Power	10087 VA	100.00%	10087 VA	**Total Conn. Load:**	57146 VA
				Total Est. Demand:	57146 VA
				Total Conn.:	159 A
				Total Est. Demand:	159 A

Branch Panel: D

A.I.C. Rating: EXISTING
Volts: 120/208 Wye
Mains Type: CU
Phases: 3
Mains Rating: 200 A
Supply From:
Wires: 4
MCB Rating: 200 A
Enclosure: Type 1

CKT	Schedule Circuit Notes	Trip	Poles	A	B	C	Poles	Trip	Schedule Circuit Notes	CKT
1	SPACE	--	1	-- 6555						2
3	SPACE	--	1		-- 6555		3	70 A	RTU-5 (EX)	4
5	SPACE	--	1			-- 6555				6
7	SPACE	--	1	-- 2400						8
9					720 2400		3	60 A	SL1 (STARLINE)	10
11	SL2 (STARLINE)	60 A	3			720 2400				12
13				720 4800						14
15	PANEL GFCI RECEPTACLE	20 A	1		180 4800		3	60 A	SL3 (STARLINE)	16
17						3120 3600				18
19	SL4 (STARLINE)	60 A	3	4800 --			1	--	SPACE	20
21					4800 --		1	--	SPACE	22
23	SPACE	--	1			-- --	1	--	SPACE	24
25	SPACE	--	1	-- --			1	--	SPACE	26
27	SPACE	--	1		-- --		1	--	SPACE	28
29	SPACE	--	1			-- --	1	--	SPACE	30
31	SPACE	--	1	-- --			1	--	SPACE	32
33	SPACE	--	1		-- --		1	--	SPACE	34
35	SPACE	--	1			-- --	1	--	SPACE	36
37	SPACE	--	1	-- --			1	--	SPACE	38
39	SPACE	--	1		-- --		1	--	SPACE	40
41	SPACE	--	1			-- --	1	--	SPACE	42
	Total Load:			19277 VA	19457 VA	16397 VA				
	Total Amps:			164 A	166 A	137 A				

Legend: G = GFCI Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	19671 VA	100.00%	19671 VA		
Receptacle	3060 VA	100.00%	3060 VA	**Total Conn. Load:**	55131 VA
Treadmill - General	32400 VA	100.00%	32400 VA	**Total Est. Demand:**	55131 VA
				Total Conn.:	153 A
				Total Est. Demand:	153 A

Branch Panel: BC

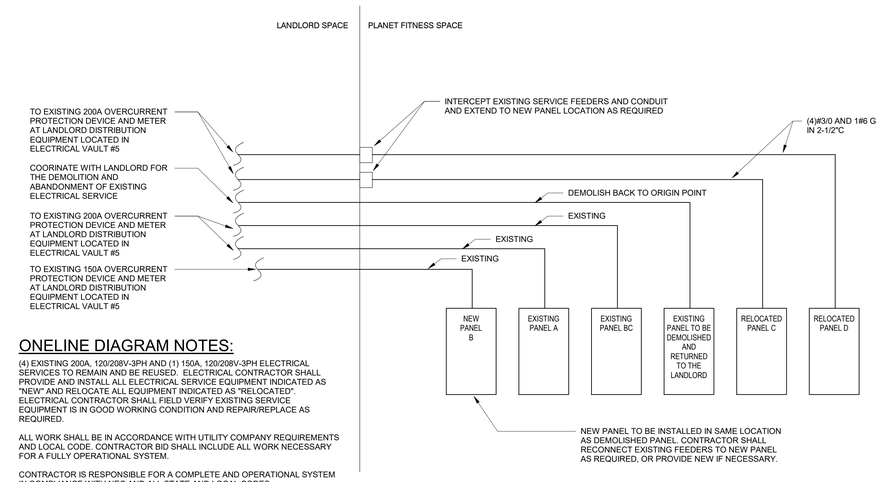
EXISTING TO REMAIN AND BE REUSED

A.I.C. Rating: EXISTING
Volts: 120/208 Wye
Mains Type: CU
Phases: 3
Mains Rating: 200 A
Supply From:
Wires: 4
MCB Rating: 200 A
Enclosure: Type 1

CKT	Schedule Circuit Notes	Trip	Poles	A	B	C	Poles	Trip	Schedule Circuit Notes	CKT
1	PANEL GFCI RECEPTACLE	20 A	1	180 360			1	20 A	MASSAGE CHAIR	2
3	MASSAGE CHAIR	20 A	1		360 1320		1	20 A	HYDRO LOUNGE GENERAL POWER	4
5	HYDRO LOUNGE	30 A	2			2495 2495	2	30 A	HYDRO LOUNGE	6
7				2495 2495						8
9	REC - BLACK CARD GENERAL	20 A	1		180 600		1	20 A	BLACK CARD TV'S	10
11						3740 4295				12
13	PASSION BED	40 A	3	3740 4295			3	40 A	SUNRISE 480	14
15					3740 4295					16
17						3880 --	1	--	SPACE	18
19	HYBRID 7200	40 A	3	3880 --			1	--	SPACE	20
21					3880 600		1	20 A	WELLNESS POD	22
23	SPACE	--	1			-- --	1	--	SPACE	24
25	SPACE	--	1	-- --			1	--	SPACE	26
27	BLACK CARD DOWNLIGHTING	20 A	1		705 660		1	20 A	CRYO BED	28
29	SPACE	--	1			-- --	1	--	SPACE	30
	Total Load:			17449 VA	16343 VA	16909 VA				
	Total Amps:			146 A	136 A	142 A				

Legend: G = GFCI Breaker

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting - General	0 VA	0.00%	0 VA		
Lighting - Dwelling Unit	40 VA	100.00%	40 VA	**Total Conn. Load:**	50700 VA
Receptacle	4260 VA	100.00%	4260 VA	**Total Est. Demand:**	50700 VA
Power	45734 VA	100.00%	45734 VA	**Total Conn.:**	141 A
Lighting	668 VA	100.00%	668 VA	**Total Est. Demand:**	141 A



ONELINE DIAGRAM NOTES:

(4) EXISTING 200A, 120/208V-3PH AND (1) 150A, 120/208V-3PH ELECTRICAL SERVICES TO REMAIN AND BE REUSED. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ELECTRICAL SERVICE EQUIPMENT INDICATED AS "NEW" AND RELOCATE ALL EQUIPMENT INDICATED AS "RELOCATED". ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING SERVICE EQUIPMENT IS IN GOOD WORKING CONDITION AND REPAIR/REPLACE AS REQUIRED.

ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS AND LOCAL CODE. CONTRACTOR BID SHALL INCLUDE ALL WORK NECESSARY FOR A FULLY OPERATIONAL SYSTEM.

CONTRACTOR IS RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM IN COMPLIANCE WITH NEC AND ALL STATE AND LOCAL CODES.

1 ONE-LINE DIAGRAM
12" = 1'-0"

Planet Fitness

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Seal / Signature 06/26/2023

△ Date Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
PANEL SCHEDULES AND ONE-LINE DIAGRAM

Scale
12" = 1'-0"

E301

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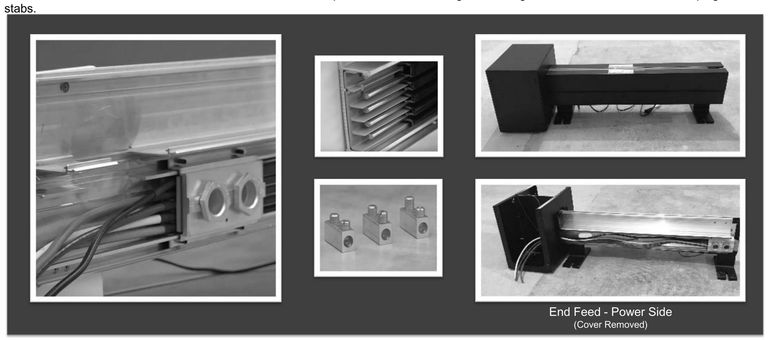
Lighting Fixture Schedule					
Key Name	LIGHT MANDATORY VENDOR	LIGHT SPECIFICATION	LIGHT DESCRIPTION	LIGHT LOCATION	LIGHT NOTES
A	SPECIALTY LIGHTING GROUP	SLG-ARK1HB100DNK30140D	LINEAR LED HIGH BAY, 3500K	OPEN GYM	VENDOR TO VERIFY WATTAGE WITH PHTOMETRIC CALCULATION - VERIFY COLOR WITH CEILING
A EMB	SPECIALTY LIGHTING GROUP	SLG-ARK1HB100DNK30140D	LINEAR LED HIGH BAY, EMERGENCY BATTERY BACK-UP	OPEN GYM	COORDINATE WIRING AS REQUIRED
A EMU	SPECIALTY LIGHTING GROUP	SLG-ARK1HB100DNK30140D	LINEAR LED HIGH BAY, EMERGENCY INVERTER CONNECTION	OPEN GYM	COORDINATE WIRING AS REQUIRED
B	SPECIALTY LIGHTING GROUP	LIGHT; ATTAIN AT-TR-WD-35-35-95-24-BK-J TRACK; CON-TECH LT-LENGTH-B	LINEAR LED TRACK LIGHT AND TRACK, BLACK, 3500K	NO CRITICS HIGHLIGHT	VENDOR TO PROVIDE COMPLETE SYSTEM AS REQUIRED FOR OPERATION
C	SPECIALTY LIGHTING GROUP	ATTAIN LED AT-44-015-35	48" LED STRIP FIXTURE FOR USE AT BACKLIT SIGN BOARDS	BLACKLIT SIGNAGE	VENDOR TO COORDINATE QUANTITY WITH REQUIREMENTS OF BACKLIT SIGNAGE
D	SPECIALTY LIGHTING GROUP	ILLUME IL-2432-0	LED BACKLIT OVAL MIRROR	LOCKER ROOM LAVATORY MIRRORS	
E	SPECIALTY LIGHTING GROUP	DIODE DRIVERLESS! 30K TAPE	3000K LED TAPE LIGHT WITH ALUMINUM SURFACE MOUNT CHANNEL, FROSTED LENS	AS SPECIFIED ON PLANS	
E1	SPECIALTY LIGHTING GROUP	ALLOY LED PRIMALINE AL-01-04-2428(3500K)	3500K LED RAPE LIGHT WITH ALUMINUM SURFACE MOUNT CHANNEL, FROSTED LEN	AS SPECIFIED ON PLANS	EC TO SPECIFY CONNECTION
E2	SPECIALTY LIGHTING GROUP	ALLOY LED RADIALUX RGB AL-02-02--2421 WITH AL-60-03-0003(DMX CONTROLLER) AND WIRELESS RECEIVER (AL-60-03-0004)	RGB LED TAPE LIGHT INSTALLED WITH DMX CONTROLLER (RED/GREEN COLOR SEQUENCE ON TIMER PER OWNER	AS SPECIFIED ON PLANS	EC TO SPECIFY CONNECTION
EM	SPECIALTY LIGHTING GROUP	BEST LIGTHING LEDR-1	EMERGENCY LIGHT FIXTURE	AS SPECIFIED ON PLANS	
EMEX	SPECIALTY LIGHTING GROUP	BEST LIGTHING CXTEU2RW-RC	EMERGENCY LIGHT / EXIT SIGN COMBO	AS SPECIFIED ON PLANS	
EX-A	SPECIALTY LIGHTING GROUP	ASTRA LITE TP-U-R-W-EM	EXIT SIGN	AS SPECIFIED ON PLANS	
EX-B	SPECIALTY LIGHTING GROUP	ACUITY EDGR-1-R	EXIT SIGN	BLACK CARD AREAS WITH GLASS EXIT DOORS	
F	SPECIALTY LIGHTING GROUP	SLG-CR6T-1600L-35K WHITE	14.5 WATT, 1100 LUMEN LED DOWNLIGHT,3500K, WHITE TRIM	WORKOUT AREAS, 30MINUTE, AS SPECIFIED ON PLANS	
G	SPECIALTY LIGHTING GROUP	SLG-CR6T-1100L-30-WHITE	14.5 WATT, 1100 LUMEN LED DOWNLIGHT,3000K, WHITE TRIM	SOFFITS, LOCKER AREAS AND AS SPECIFIED ON PLANS	
H	SPECIALTY LIGHTING GROUP	SLG-CR6T-1100L-30-BLACK	14.5 WATT, 1100 LUMEN LED DOWNLIGHT,3000K, BLACK TRIM	BLACK CARD AREAS, AND AS SPECIFIED ON PLANS	
INV	SPECIALTY LIGHTING GROUP	VENDOR TO COORDINATE SPECIFICATION	EMERGENCY LIGHT INVERTER	AS SPECIFIED ON PLANS	
J	SPECIALTY LIGHTING GROUP	ATTAIN AT-PN-22-30-35-W	2'X2' FLAT PANEL LED	JANITOR, OFFICE AND AS SPECIFIED ON PLANS	
K	SPECIALTY LIGHTING GROUP	ATTAIN AT-PN-24-45-35-W	2'X4' FLAT PANEL LED	OFFICES, AND AS SPECIFIED ON PLANS	
L	SPECIALTY LIGHTING GROUP	TEXAS FLUORESCENT C-2-32-MV	SURFACE MOUNT 48" FLUORESCENT STRIP LIGHT WITH (2) 32 WATT BULBS	ELECTRICAL ROOM, AND AS SPECIFIED ON PLANS	
L1	SPECIALTY LIGHTING GROUP	TEXAS FLUORESCENT C-2-32-MV	SUSPENDED 48" LED STRIP LIGHT	ELECTRICAL ROOM, AND AS SPECIFIED ON PLANS	
SM	SPECIALTY LIGHTING GROUP	AS SPECIFIED ON PLANS	WALL SCONCE WITH CUSTOM PF SIGNAGE	BLACK CARD SPA/LOCKER ROOM AND AS SPECIFIED ON PLANS	REFERENCE PF DCD AND INTERIOR ELEVATIONS FOR FIXTURE DESIGNATIONS

STARLINE PLUG-IN RACEWAY

The Power Side Raceway

The PIRFIT system is powered by 60 amp 3-phase feeds. The power feed connection is made to the 5 wire system using terminal blocks or wirenuts, inside the end feed box. Power is carried to the receptacle from the incoming feed through the busbar / conductors to the plug-in module stabs.



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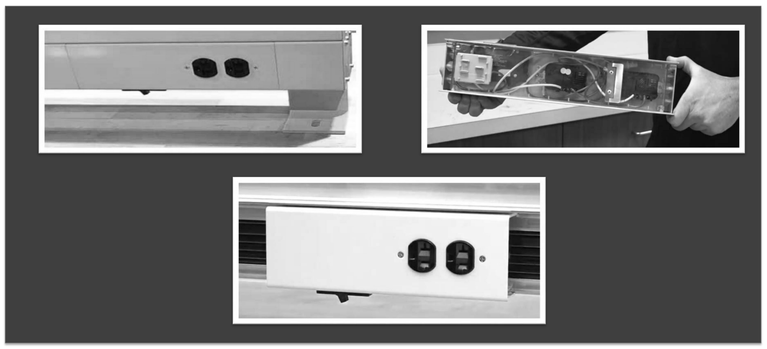
STARLINE PLUG-IN RACEWAY

The plug-in modules contain integrated receptacles. The receptacle is powered by the plug-in module stabs, which contact the powered conductors. The receptacle is also wired to a circuit breaker, providing local protection at the point of use.



6

HYDROMASSAGE

Electrical Requirements – 60 Hz, USA and Canada

TECHNICAL SPECIFICATIONS

MODEL	IMAGE	SPECS	WEIGHT	WATER	VOLTAGE	PHASE	AMPS
440X/450X Series Lounge		90"L x 32" W x 42"H	285lbs w/o water 370lbs with water	12 gal. Distilled Water	208-240 Volts	Single	30 Amps

ELECTRICAL REQUIREMENTS

Series 440x-450x Models* these items are required for the HydroMassage® unit:

A. 208-240 Volt, single-phase dedicated line with a 30 Amp dedicated breaker and 10-guage wire (2 hot legs and a ground*). Install 6" above floor. (A) on diagram.

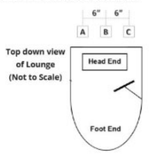
- 30 Amp, 250 Volt NEMA L6-30R Locking Receptacle (three prong plug) as shown below:

NEMA L6-30 LOCKING RECEPTACLE

B. For use with external timer ONLY (Example: T-Max): A 110 Volt outlet required. Install minimum 6" above floor or per local code. (B) on diagram.

C. CAT-5 or CAT-6 terminated network jack (able to connect to network room). (C) on diagram.

ELECTRICAL WIRING DIAGRAM



NOTE: Unique set of items A, B, C required for EACH HydroMassage® unit. If necessary, location of outlets identified on diagram may be moved within +/-5". Contact Technical Support at +1-27-536-5566 for details

HYDROMASSAGE · JTL ENTERPRISES, INC
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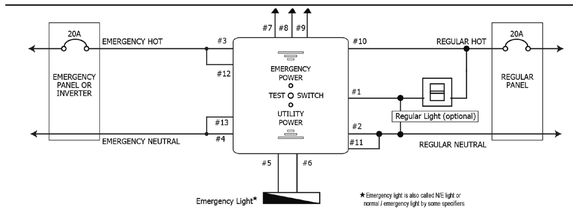
1 HYDRO MASSAGE DETAIL #1



2 MEYERS EPC-D-F-ATS RELAY

12" = 1'-0"

FIRE ALARM NOTES

FURNISH AND INSTALL NEW FIRE ALARM SYSTEM COMPONENTS, WITH A PROPER INTERFACE TO THE EXISTING FIRE ALARM SYSTEM. NEW COMPONENTS SHALL BE UL-LISTED FOR USE AND COMPATIBLE WITH THE BASE BUILDING. FIRE ALARM SYSTEM. THE EXISTING BASE BUILDING FIRE ALARM CONTROL PANEL LOCATED IN RECEIVING AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION PRIOR TO WORK. OBTAIN THE SERVICES OF QUALIFIED FIRE ALARM SYSTEM CONTRACTOR TO CONNECT NEW DEVICES AND MODIFY EXISTING FIRE ALARM SYSTEM TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL PROVIDE NEW PANEL AND/OR EQUIPMENT AS REQUIRED TO ACCOMMODATE NEW WORK. PROVIDE SHOP DRAWINGS FOR APPROVAL INDICATING LOCATIONS OF HORNS, HORN/STROBES, PULLSTATIONS, SMOKE DETECTORS AND DUCT DETECTORS.

NEW FIRE ALARM WIRING SHALL BE EITHER UL-LISTED FIRE ALARM CABLE NEW FIRE ALARM WIRING SHALL BE EITHER UL-LISTED FIRE ALARM CABLE CONDUIT OR UL-LISTED LOW SMOKE PRODUCING PLENUM TYPE FIRE ALARM CABLE INSTALLED WITHOUT CONDUIT, AS REQUIRED TO MATCH BASE BUILDING FIRE ALARM WIRING. FIRE AUR/M WIRING WHICH IS INSTALLED WITHOUT CONDUIT SHALL BE SUSPENDED FROM THE STRUCTURE AND SHALL NOT DEPEND UPON THE CEILING SYSTEM FOR ITS SUPPORT.

MODIFICATIONS AND INTERFACE WITH THE EXISTING BASE BUILDING FIRE ALARM ACTIONS AND INTERFACE WITH THE EXISTING BASE BUILDING FIRE ALARM IONS AND INTERFACE WITH THE EXISTING BASE BUILDING FIRE ALARM SYSTEM AND ANY INTERRUPTIONS IN FIRE ALARM SERVICE MUST BE COORDINATED WITH AND APPROVED BY THE BUILDING OWNER.

PERFORM LOAD CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS TO WHICH NEW DEVICES WILL BE ADDED. PROVIDE A BOOSTER/EXTENDER PANEL IF NECESSARY TO ACCOMMODATE NEW SIGNALS.

PROVIDE SYNC MODULES FOR SIGNAL DEVICES WHERE TWO OR MORE DEVICES ARE LOCATED WITHIN SIGHT OF EACH OTHER.

PROVIDE INTELLIGENT PHOTOELECTRIC TYPE SMOKE DETECTOR HEAD. DETECTOR SHALL BE CONNECTED TO EXISTING FIRE ALARM SYSTEM.

IF AN AREA SMOKE DETECTOR SENSES AN ABNORMAL LEVEL OF SMOKE, THE SYSTEM SHALL AUTOMATICALLY INITIATE A "CHECK" MODE. UPON COMPLETION OF FOUR ATICALLY INITIATE A "CHECK" MODE. UPON COMPLETION OF FOUR CONSECUTIVE SMOKE TROUBLE CONDITIONS, THE DETECTOR IS CONSIDERED "CHECKED" AND ENTERS AN ALARM VERIFICATION MODE. THE SYSTEM SHALL WAIT A FIELD PROGRAMMABLE DELAY OF BETWEEN 0 AND 50 SECONDS AND THE RESAMPLE THE DETECTOR AN ADDITIONAL FOUR TIMES. IF THREE CONSECUTIVE SAMPLES VERIFY AN ALARM CONDITION, THE AUDIBLE ALARMS SHALL SOUND AND THE VISUAL SIGNALS SHALL FLASH THROUGHOUT THE FACILITY, AND AN ALARM SIGNAL SHALL BE TRANSMITTED TO AN OFE-SITE MONITORING COMPANY. LESS THAN THREE CONSECUTIVE SAMPLES SENSING SMOKE WILL NOT RESULT IN A SYSTEM ALARM CONDITION.

PROVIDE INTELLIGENT PHOTOELECTRIC TYPE SMOKE DETECTOR HEAD IN A DUCT DETECTOR HOUSING LOCATED IN THE RETURN AIR PATH TO ALL HVAC UNITS WITH AIRFLOWS EXCEEDING 2000 CFM. PROVIDE SAMPLING TUBE(S) AS REQUIRED FOR THE DUCT SIZE. PROVIDE A KEY-ACTIVATED REMOTE TEST AND RESET SWITCH. DUCT DETECTOR SHALL BE COMPATIBLE AND CONNECT TO EXISTING FIRE ALARM SYSTEM. UPON ACTIVATION OF A DUCT DETECTOR, ALL OF THE ACTIONS DESCRIBED SHALL OCCUR EXCEPT ACTIVATION OF THE GENERAL BUILDING ALARM. IN LIEU OF SOUNDING THE BUILDING ALARM, THE UNIT EQUIPPED WITH THE DETECTOR SHALL BE DE-ENERGIZED, THE REMOTE INDICATOR LIGHT ASSOCIATED WITH THE DETECTOR SHALL BE ILLUMINATED, AND A TROUBLE CONDITION SHALL BE REPORTED AT THE CONTROL PANEL AND TRANSMITTED TO THE OFF-SITE MONITORING COMPANY.

MOUNTING HEIGHTS: MOUNTING HEIGHTS FOR ELECTRICAL DEVICES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE ELECTRICAL OR ARCHITECTURAL DRAWINGS OR REQUIRED TO MATCH EXISTING INSTALLATIONS OR HANDICAPPED CODES:

FIRE ALARM PULL STATIONS: 48" ABOVE FINISHED FLOOR TO CENTER OF DEVICE.

FIRE ALARM WALL SIGNALS: BETWEEN 80" TO BOTTOM AND 96" TO TOP OF UNIT MEASURED TO FINISHED FLOOR, OR 6" BELOW FINISHED CEILING TO TOP OF UNIT, WHICHEVER IS LOWER.

SYMBOL LEGEND	
POWER	
SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
	QUADPLEX RECEPTACLE
	G.F.I. DUPLEX RECEPTACLE
	FLUSH MOUNTED FLOOR DUPLEX RECEPTACLE
	FLUSH MOUNTED FLOOR JUNCTION BOX
	JUNCTION BOX
	DISCONNECT SWITCH
	SINGLE SECTION PANELBOARD
	BRANCH CIRCUIT WIRING CONCEALED ABOVE CEILING OR IN PARTITION
	CIRCUIT HOME RUN
DATA / COMMUNICATIONS	
SYMBOL	DESCRIPTION
	FLUSH MOUNTED FLOOR DATA OUTLET
	ROUGH-IN FOR TELEPHONE DATA LINE OR DATACOM. VERIFY ROUGH-IN HEIGHT.
LIGHTING CONTROL	
SYMBOL	DESCRIPTION
$	WALL MOUNTED TOGGLE SWITCH
$3	3-WAY WALL MOUNTED TOGGLE SWITCH
$O	OCCUPANCY SENSING CONTROL, VERIFY EQUIPMENT SPEC WITH ROOM LAYOUT AND OWNER IN FIELD (LEVITON OR EQUAL)
TC	7 DAY PROGRAMMABLE ASTRONOMICAL TIMECLOCK

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	J-BOX	JUNCTION BOX
A	AMPERE	KW	KILOWATT
AWG	AMERICAN WIRE GAUGE	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	PNL	PANEL
ELEC	ELECTRICAL	SPECS	SPECIFICATIONS
EXIST	EXISTING	SW	SWITCH
EQUIP	EQUIPMENT	TEL	TELEPHONE
FA	FIRE ALARM	TYP	TYPICAL
VIF	VERIFY IN FIELD	V	VOLT
G,GND	GROUND	W	WIRE
GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
HP	HORSEPOWER	PH	PHASE
IG	ISOLATED GROUND	XFMR	TRANSFORMER

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PROFESSIONAL ENGINEER

Seal / Signature 06/26/2023

Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
SYMBOL LEGEND, DETAILS AND NOTES

Scale
12" = 1'-0"

E400

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ELECTRICAL SPECIFICATIONS

I. GENERAL PROVISIONS:

A. THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS SHALL BE CONSIDERED AS PART OF THIS SPECIFICATION.

1. ALL WORK TO BE IN ACCORDANCE WITH THE RULES AND REGULATION OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND THE MOST RECENT EDITION OF NATIONAL ELECTRIC CODE.

2. FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND SERVICES REQUIRED FOR THE INSTALLATION OF ALL ELECTRICAL WORK AND AS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS.

3. MATERIALS SHALL BE NEW W/ MANUFACTURERS NAME PRINTED THEREON AND UNDERWRITERS LABORATORY LISTED. THE SELECTION OF MATERIALS SHALL BE IN STRICT ACCORDANCE W/ THE DRAWINGS AND/OR SPECIFICATIONS.

4. SUBMIT MATERIAL LISTS AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE OWNER'S REPRESENTATIVE FOR REVIEW. SUBMITTALS SHALL BE IN ACCORDANCE WITH GENERAL CONDITIONS AND SHALL BEAR THE STAMP OF THE ELECTRICAL CONTRACTOR SHOWING THAT HE HAS REVIEWED AND APPROVED THEM. LACK OF SUCH CONTRACTOR'S APPROVAL WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY THE OWNER.

5. CONTRACTOR SHALL GUARANTEE WORK INSTALLED UNDER THE CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS, USUAL WEAR EXCEPTED, AND SHOULD ANY SUCH DEFECTS DEVELOP WITH A PERIOD OF ONE YEAR ACCEPTANCE OF THE BUILDING BY THE YEAR, THIS CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DEFECTIVE ITEMS AND DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

6. INCIDENTAL ITEMS NOT INDICATED ON THE DRAWINGS, NOR MENTIONED IN THE SPECIFICATIONS, THAT CAN BE LEGITIMATELY AND REASONABLE BE INFERRED TO BELONG TO THE WORK DESCRIBED OR BE NECESSARY IN GOOD PRACTICE TO PROVIDE A COMPLETE SYSTEM, SHALL BE FURNISHED AND INSTALLED AS THOUGH ITEMIZED HERE IN EVERY DETAIL.

7. NOTIFY ARCHITECT IMMEDIATELY OF POSSIBLE CONFLICTS WITH STRUCTURE, MECHANICAL, OR OTHER FEATURES. WHERE JOB CONDITIONS REQUIRE REASONABLE CHANGES IN LOCATIONS AND ARRANGEMENT OF INDICATED EQUIPMENT, CONDUIT, OUTLETS, OR WIRING, CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT COST TO OWNER.

8. CONTRACTOR SHALL FILE PLANS WITH AND OBTAIN APPROVALS FROM MUNICIPAL AGENCIES. ALL PERMITS AND CERTIFICATES OF INSPECTION SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.

9. PERTINENT CERTIFICATES SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE, PRIOR TO FINAL BILLING.

10. ANY FEES ASSOCIATED WITH CONSTRUCTION AND INSPECTION SHALL BE BORNE BY THE CONTRACTOR IN ORDER TO DELIVER TO THE OWNER A FINISHED BUILDING, READY FOR OCCUPANCY AND 100% OPERATION.

11. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS.

12. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE EXISTING CONDITIONS AND LIMITATIONS THEREOF. THE CONTRACTOR SHALL ASCERTAIN CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED, INCLUDING THE HANDLING OF MATERIALS, SECURITY AND LIMITING FIELD DIMENSIONS. FURTHER, THIS CONTRACTOR SHALL PROVIDE FIELD VERIFICATION OF LOCATION OF POINTS OF CONNECTION TO LANDLORD'S ELECTRICAL AND TELEPHONE EQUIPMENT AND DISTANCE FROM LEASED SPACE.

13. ANY DISCREPANCIES WITH THE CONSTRUCTION DOCUMENTS DISCOVERED AS A RESULT OF THE AFOREMENTIONED FIELD SURVEY, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, PRIOR TO COMMENCING ANY WORK. ANY ADDITIONAL COSTS RESULTING FROM CONTRACTOR'S FAILURE TO DO SO SHALL BE HIS RESPONSIBILITY AND SHALL BE BORNE BY HIM.

14. ANY DEVIATION FROM PLANS WITHOUT PRIOR APPROVAL OF THE ARCHITECT SHALL BE CAUSE FOR THE REJECTION OF MATERIALS AND/OR METHODS, AND ANY COST INCURRED TO CORRECT SUCH DEVIATION TO THE SATISFACTION OF THE ARCHITECT/ENGINEER SHALL BE BORNE BY THE CONTRACTOR.

15. THE SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS FAMILIARIZED HIMSELF WITH THE PLANS AND BUILDING SITE. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND LABOR, BECAUSE OF DIFFICULTIES ENCOUNTERED, WILL NOT BE RECOGNIZED IF THEY COULD HAVE BEEN FORESEEN HAD PROPER EXAMINATION BEEN MADE.

16. ANY COSTS INCURRED DUE TO LACK OF COOPERATION AMONG THE TRADES SHALL BE BORNE BY THE CONTRACTOR.

17. CONTRACTOR SHALL SUBMIT 6 COPIES OF SHOP DRAWINGS TO THE ARCHITECT/ENGINEER FOR APPROVAL FOR ALL EQUIPMENT AND DEVICES INSTALLED. THERE WILL BE NO DRAW UNTIL SHOP DRAWINGS HAVE BEEN SUBMITTED AND REVIEWED BY ARCHITECT/ENGINEER.

18. THE EQUIPMENT ROUGH-INS AS SHOWN ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, IN SOME INSTANCES, THE OWNER OR SUPPLIER MAY SUBSTITUTE OR THE EQUIPMENT MAY VARY FROM WHAT IS SHOWN. THEREFORE, THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS WITH THE OWNER PRIOR TO CONSTRUCTION. FAILURE OF THE CONTRACTOR TO VERIFY THESE DIMENSIONS SHALL PLACE THE RESPONSIBILITY FOR ANY SUB-SEQUENT RELOCATION DIRECTLY UPON THE CONTRACTOR.

19. PLAN AND INSTALL WORK IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.

20. ELECTRICAL CONTRACTOR SHALL RECORD ALL FIELD CHANGES IN HIS WORK AS THE JOB PROGRESSES; KEEP AN ACCURATE RECORD OF ALL WORK AS ACTUALLY INSTALLED.

21. UPON COMPLETION OF THE WORK AND BEFORE FINAL PAYMENT IS AUTHORIZED, THE CONTRACTOR SHALL TURN OVER TO THE OWNER'S REPRESENTATIVE A RECORD SET OF PRINTS SHOWING THESE CHANGES.

22. THIS CONTRACTOR SHALL DO ALL CUTTING, CHASING, CHANNELING, AND PATCHING REQUIRED FOR ANY WORK HEREIN SPECIFIED.

23. ALL OPENINGS THROUGH STRUCTURALLY SUPPORTED SLABS MUST BE COREBORED, SLEEVED, GROUTED, SEALED, AND MADE WATERPROOF. SLEEVES MUST EXTEND AT LEAST 2" AFF.

24. ALL SLEEVES, OPENINGS, ETC., THROUGH FIRE RATED WALLS AND FLOORS, SHALL BE SEALED AFTER CONDUIT INSTALLATION TO RETAIN FIRE RATING.

25. ALL ELECTRICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIR.

26. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL, SUCH AS CHANNELS, RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK AND SHALL BE SECURED TO THE BUILDING STRUCTURE AND NOT TO PIPING OR DUCTWORK.

27. ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. EXPOSED CONDUIT SHALL BE RUN IN STRAIGHT LINES PARALLEL WITH OR AT RIGHT ANGLES TO COLUMN LINES AND SEPARATED AT LEAST 3" FROM WATER LINES WHEREVER THEY RUN ALONG SIDE OR ACROSS SUCH LINES.

28. EVERY PART OF THE INSTALLATION SHALL BE TESTED, OPERATED, AND LEFT IN PERFECT WORKING ORDER.

29. TEST ALL WIRES AND CABLES INSTALLED UNDER THIS CONTRACT WITH A 1,000 VOLT MEGOHM METER. IF ANY READINGS ARE LOWER THAN THAT REQUIRED BY GOOD PRACTICE OR APPLICABLE CODES, PROMPTLY REPLACE THE MATERIALS OR EQUIPMENT INVOLVED.

30. SHOULD TESTING REVEAL ANY OTHER DEFECTS, PROMPTLY CORRECT SUCH DEFECTS AND RERUN TESTS UNTIL THE ENTIRE INSTALLATION IS SATISFACTORY IN ALL RESPECTS.

31. ALL ITEMS IN THE NOTES, SCHEDULES, AND LEGEND MAY NOT NECESSARILY APPEAR ON THESE DRAWINGS.

32. TWO COPIES OF OPERATION AND MAINTENANCE MANUALS FOR THE EQUIPMENT HEREIN INSTALLED SHALL BE GIVEN TO THE OWNER PRIOR TO ACCEPTANCE OF THE BUILDING FOR OCCUPANCY.

II. GUARANTEE:

A. CONTRACTOR IS TO GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR AFTER THE DATE OF ACCEPTANCE OF THE PROJECT BY THE OWNER. IT IS UNDERSTOOD BY HIS ACCEPTANCE OF THE CONTRACT THAT THIS CONTRACTOR WILL MAKE GOOD ANY AND ALL WORK WHICH IN ANY WAY HAS BECOME DEFECTIVE AS TO THE QUALITY OF MATERIALS AND WORKMANSHIP FOR ANY CAUSE OTHER THAN ORDINARY WEAR AND TEAR.

1. FOR THE SAME PERIOD, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

2. THE CONTRACTOR, BEFORE FINAL ACCEPTANCE BY THE OWNER WILL BE GRANTED, SHALL CLEAN ALL LIGHTING FIXTURES, DEVICE PLATES, SERVICE FITTINGS, AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT. HE SHALL INSURE THAT ALL DIRECTORIES ARE IN PLACE WITH COMPLETED OR REVISED SCHEDULES AND ALL IDENTIFICATIONS AND MARKINGS OF EQUIPMENT, CABLES, AND OTHER ITEMS ARE COMPLETED.

3. THIS CONTRACTOR SHALL COORDINATE SEQUENCE OF WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY VOLTAGE OF MECHANICAL EQUIPMENT AND FLUORESCENT FIXTURE BALLASTS, PRIOR COMMENCING ANY WORK.

4. NO REMOVALS SHALL BE MADE WITHOUT OWNER'S APPROVAL. ALL EXISTING EQUIPMENT, MATERIALS, ETC. THAT ARE NOT TO BE REUSED SHALL BE REMOVED COMPLETELY AND DISPOSED OF BY THIS CONTRACTOR.

5. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY, PRIOR TO ANY INDIVIDUAL CIRCUIT'S INSTALLATION, TO VERIFY WITH ALL OTHER TRADES CONCERNED THAT THE CIRCUIT WITH DEVICES AS DRAWN IS ADEQUATE IN SIZE AND MAKE-UP FOR THE MECHANICAL AND/OR KITCHEN EQUIPMENT TO BE INSTALLED. IF ANY CONFLICT IN VOLTAGE, PHASE, OR LOAD IS ENCOUNTERED WHICH WOULD ALTER THE CIRCUIT SIZE, THIS CONTRACTOR SHALL NOTIFY THE ENGINEER OR OWNER IMMEDIATELY. FAILURE TO DO SO SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT CIRCUIT CHANGE DIRECTLY UPON THE CONTRACTOR.

ELECTRICAL SPECIFICATIONS

6. REFER TO THE MECHANICAL DRAWINGS FOR THE LOCATION OF THERMOSTATS, UNITS, AND OTHER SPECIAL EQUIPMENT. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL CONDUITS, JUNCTION BOXES, DISCONNECT SWITCHES, THERMOSTATS, AND CONTROL WIRING.

7. THIS CONTRACTOR SHALL MAKE ARRANGEMENTS FOR TEMPORARY POWER AND SHALL PAY THE COST FOR THE UTILITY CONNECTION AND SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF THE TEMPORARY WORK AND FOR THE REMOVAL OF THE SAME.

8. CONTRACTOR SHALL PAY ALL UTILITY CHARGES IN CONNECTION WITH THE TEMPORARY POWER.

9. CONTRACTOR SHALL PROVIDE GROUND FAULT PROTECTION FOR ALL POWER EQUIPMENT USED ON THE PREMISES DURING CONSTRUCTION.

III. GENERAL SCOPE OF WORK:

A. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, SUPPLIES, EQUIPMENT AND FEES REQUIRED TO COMPLETELY INSTALL, TEST, AND PLACE THE HEREIN SPECIFIED EQUIPMENT, COMPONENTS, CONTROLS, AND SYSTEMS IN SERVICE.

1. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEMS INCLUDING ALL PANELS AND COMPLETE BRANCH CIRCUIT WIRING SYSTEM.

2. TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR CONSTRUCTION.

3. COMPLETE LIGHTING FIXTURE INSTALLATION.

4. COMPLETE UTILITY MOTOR WIRING SYSTEM (EXCEPT AS NOTED).

5. COMPLETE TELEPHONE CONDUIT SYSTEM INCLUDING CONDUIT FROM POINT OF CONNECTION TO UTILITY COMPANY SERVICE AND ALL TERMINAL DEVICES, BOXES, CONDUIT, PLATES, ETC.

6. PROVISIONS FOR FIRE ALARM SYSTEM AS REQUIRED BY CODE.
WIRING AND FINAL CONNECTION TO ALL SIGNS AND GRAPHICS.

7. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.

8. TESTING OF ALL ELECTRICAL EQUIPMENT.

9. WARRANTY OF ALL WORK FOR A PERIOD OF ONE YEAR FROM DATE OF PROJECT CLOSE-OUT.

IV. ELECTRICAL SERVICE:

A. PROVIDE ELECTRICAL AS INDICATED ON THE DRAWING.

1. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD OR THE POWER COMPANY SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

2. CLOSELY COORDINATE ENTIRE INSTALLATION WITH THE POWER COMPANY.

3. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE LOCAL UTILITY FOR INSTALLATION OF METERING.

4. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE AVAILABLE SHORT CIRCUIT CURRENT AT THE SUPPLY TERMINALS FROM THE POWER COMPANY AND/OR MALL/SHOPPING CENTER POWER SOURCE. THE SERVICE EQUIPMENT SHALL MEET OR EXCEED THIS RATING PER THE NATIONAL ELECTRICAL CODE.

B. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE LOCAL TELEPHONE UTILITY COMPANY FOR TELEPHONE SERVICE TO THE SPACE. CONDUIT SYSTEM FOR TELEPHONE DISTRIBUTION TO THE LEASED PREMISES SHALL BE PROVIDED WHERE REQUIRED FOR UTILITY COMPANY WIRES.

1. COORDINATE INSTALLATION OF TELEPHONE WORK AND INSTALL ALL CONDUIT FOR TELEPHONE SYSTEM.

2. OUTLET BOXES SHALL BE 4" SQUARE MINIMUM WITH SINGLE DEVICE COVER AND TELEPHONE PLATE.

3. PROVIDE INTERIOR TYPE 4-D PLYWOOD 24" X 24" TO SERVE AS TELEPHONE TERMINAL BOARD.

C. THIS CONTRACTOR SHALL PROVIDE, INSTALL AND CONNECT A COMPLETE SYSTEM OF GROUNDING FOR ALL EQUIPMENT AND STRUCTURES. A GOOD MECHANICAL AND ELECTRICAL CONNECTION SHALL BE MADE WITH APPROVED GROUNDING CONNECTORS.

1. ELECTRICAL SYSTEM AND EQUIPMENT GROUNDS SHALL COMPLY WITH ALL LOCAL, STATE, AND NATIONAL ELECTRICAL CODES AND REGULATIONS.

2. PANELS, CONDUIT SYSTEMS, MOTOR FRAMES, LIGHTING FIXTURES AND OTHER EQUIPMENT THAT ARE A PART OF THIS INSTALLATION SHALL BE SECURELY GROUNDED BOTH MECHANICALLY AND ELECTRICALLY IN ACCORDANCE WITH ALL CODES.

3. MAIN GROUNDING SYSTEM SHALL BE SIZED TO CONFORM WITH SECTION 250, TABLE 250.66 OF THE NATIONAL ELECTRICAL CODE. PROVIDE CONDUIT TO PROTECT GROUND WIRE FROM DAMAGE TO AN AREA 6 FEET ABOVE THE FLOOR.

4. MAKE ALL JOINTS AND CONNECTIONS OF THE CONDUIT SYSTEM TIGHT TO MAINTAIN CONTINUITY OF MECHANICAL AND ELECTRICAL GROUND THROUGHOUT ENTIRE SYSTEM.

5. GROUND ALL 3 WIRE RECEPTACLES TO THE OUTLET BOXES.

6. GROUND NEUTRAL FROM THE TRANSFORMER CONNECTED TO WATER LINE.

7. GROUND CONDUCTOR SHALL BE SUPPLIED IN ALL NON-METALLIC CONDUIT.

D. IF REQUIRED; PROVIDE DRY-TYPE TRANSFORMER WHICH SHALL BE ENCLOSED, VENTILATED TYPE WITH KVA AND VOLTAGE RATINGS AS CALLED FOR ON THE DRAWING AS MANUFACTURED BY SQUARE-D OR EQUAL.

1. TRANSFORMER SHALL HAVE A MINIMUM OF 150 DEGREE, CLASS H INSULATION AND A MINIMUM OF (4) 2-1/2% TAPS BELOW AND (2) 2-1/2% TAPS ABOVE RATED PRIMARY VOLTAGE.

2. SOUND LEVEL SHALL BE LOW AND INSTALLATION SHALL INCLUDE VIBRATION DAMPENING MOUNTS AND FLEXIBLE STEEL CONDUIT FOR PRIMARY AND SECONDARY.

V. LIGHTING FIXTURES

A. THE CONTRACTOR SHALL PROVIDE A NEW LIGHTING FIXTURE OF THE TYPE SPECIFIED FOR EACH LIGHTING OUTLET SHOWN WITH COMPLETE LAMPS OR TUBES. ALL FIXTURES SHALL BE HUNG AND MOUNTED IN PLACE, PROPERLY WIRED, TESTED AND LEFT READY FOR OPERATION.

B. CONTRACTOR SHALL VERIFY LOCATION OF ALL PARKING LOT LIGHTS, MONUMENT SIGNS, AND PYLON SIGNS ON INDIVIDUAL SITE PLAN.

VI. PANELBOARDS AND BREAKERS:

A. PANELBOARDS AND BREAKERS SHALL BE BY SQUARE-D OR EQUAL.

1. PANEL SHALL BE CIRCUITED SO THAT THE LOAD IS DISTRIBUTED EVENLY ACROSS ALL THREE PHASES.

2. PANELBOARDS SHALL CONTAIN A TYPEWRITTEN DIRECTORY WITH A PLASTIC COVER AFFIXED TO THE INSIDE DOOR.

3. ALL PANELBOARDS AND EMERGENCY LIGHTING DISCONNECT SWITCHES SHALL BE LABELED WITH RESPECT TO THEIR TITLE, VOLTAGE AND PHASE: I.E. PANEL "A" 120/208/3 ::. LABEL SHALL BE PHENOLIC PLASTIC WITH WHITE LETTERS AND BLACK BACKGROUND. LABELS SHALL BE PERMANENTLY FIXED TO THE EQUIPMENT.

4. LIGHTING PANELBOARD SHALL BE 3-PHASE, 4-WIRE DISTRIBUTED PHASE TYPE W/SOLID NEUTRAL GROUND LUG, GROUND BUS AND ALL BREAKERS SHALL BE BOLTED TYPE, THERMAL MAGNETIC WITH ALL TWO OR THREE POLE BREAKERS HAVING COMMON TRIP. CIRCUIT BREAKERS SHALL BE RATED FOR MINIMUM 10,000 AMP SYMMETRICAL SHORT CIRCUIT CURRENT AT 120/208V.

5. CIRCUIT BREAKERS SERVING LIGHTING CIRCUITS SHALL BE RATED FOR SWITCH SERVICE.

VII. WIRING DEVICES:

A. WALL SWITCHES, SINGLE POLE, DOUBLE POLE, AND THREE WAY SHALL BE GENERAL DUTY, FLUSH, TOGGLE SWITCHES; SPECIFICATION GRADE, 20A, 120/277V, WITH SCREW TERMINALS: MANUFACTURES SHALL BE HUBBELL, BRYANT, PASS AND SEYMOUR, OR LEVITON.

B. GENERAL DUTY DUPLEX RECEPTACLES SHALL BE 2-POLE, 3-WIRE GROUNDING TYPE, SPECIFICATION GRADE, 20A, 125V, NEMA 5-20R UNLESS OTHERWISE INDICATED. MANUFACTURES SHALL BE HUBBELL, BRYANT, PASS AND SEYMOUR, OR LEVITON.

ELECTRICAL SPECIFICATIONS

1. GROUND FAULT INTERRUPTER RECEPTACLE SHALL BE GENERAL DUTY, DUPLEX RECEPTACLES, GROUND FAULT CIRCUIT INTERRUPTER, FEED-THROUGH TYPE, CAPABLE OF PROTECTING CONNECTED DOWNSTREAM RECEPTACLES ON A SINGLE CIRCUIT, GROUNDING TYPE UL-RATED CLASS A, GROUP 1, 20A, 120V, 60 HZ, WITH SOLID-STATE GROUND FAULT SENSING AND SIGNALING; WITH 5 MILLIAMPERES GROUND-FAULT TRIP LEVEL; IN NEMA 5-15R CONFIGURATION. MANUFACTURERS SHALL BE HUBBELL, BRYANT, PASS AND SEYMOUR, OR LEVITON.

2. DUPLEX ISOLATED GROUND TYPE RECEPTACLE SHALL BE 2-POLE, 4-WIRE, 15A STRAIGHT BLADE DEVICE WITH SEPARATE ISOLATED GROUND AND BUILDING GROUND CONNECTIONS, IN NEMA 5-15R CONFIGURATION, AS MANUFACTURED BY HUBBELL IG-5362.

3. WIRING DEVICE ACCESSORIES INCLUDING ALL WALL PLATES SHALL BE PROVIDED AT EACH DEVICE. WALL PLATES SHALL BE SAME COLOR AS DEVICE AND MANUFACTURED AS A COMPANION TO THE DEVICE.

C. ANY ELECTRICAL OUTLETS WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED. PROVIDE EITHER INDIVIDUAL GFI DEVICES OR GFI CIRCUIT BREAKERS, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS OR SCHEDULES.

D. PROVIDE A 120 VOLT RECEPTACLE WITHIN 25 FEET OF ALL HVAC EQUIPMENT ON THE ROOF.

E. ALL EXTERIOR RECEPTACLES AND DEVICES SHALL BE WEATHERPROOF.

F. ELECTRICAL DEVICES, DISCONNECT SWITCHES, ETC. SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATIONS.

G. PROVIDE SAFETY AND DISCONNECT SWITCHES, FUSED OR NON-FUSED AS REQUIRED BY CODE OR SHOWN ON DRAWING. SWITCHES SHALL BE HEAVY DUTY, LOAD, AND HORSEPOWER RATED AS MANUFACTURED BY SQUARE-D, GENERAL ELECTRIC, OR EQUAL.

1. FURNISH AND INSTALL DUAL ELEMENT CURRENT LIMITING FUSES OF TYPE AND AMPACITY DESIGNED TO PROTECT SYSTEM AGAINST AVAILABLE SHORT CIRCUIT FAULT CURRENT.

H. COORDINATE ALL EQUIPMENT CONNECTIONS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. PROVIDE ADDITIONAL FUSED DISCONNECT SWITCHES AND CONTROLS IF OVER-CURRENT PROTECTION OR CONTROLS ARE NOT INTEGRAL WITH UNITS.

1. ALL ELECTRICAL EQUIPMENT ON ROOF OR OUTSIDE OF THE BUILDING SHALL BE IN NEMA-3R OR NEMA-4 ENCLOSURES.

2. ALL EQUIPMENT FUSES SHALL BE SIZED PER MANUFACTURERS RECOMMENDATIONS AND U.L. APPROVAL.

3. ALL VIBRATING EQUIPMENT CONNECTIONS SHALL BE SEAL TYPE FLEX, 30" MAX.

4. STARTERS AND RELATED WIRING SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR. OVERLOAD UNITS SHALL BE INSTALLED AS PER NAME PLATE DATA ON EQUIPMENT. EXCEPT FOR SUCH ITEMS AS ARE NORMALLY SUPPLIED WITH STARTERS INSTALLED (HVAC UNITS, DISHWASHERS ETC.), AT THEIR POINT OF MANUFACTURE. ALL STARTERS SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR WILL MOUNT ALL SUCH STARTERS, AS DIRECTED, FURNISHING SUPPORTING STRUCTURES WHERE NECESSARY.

5. ALL REMOTE EQUIPMENT ON ROOF OR GROUNDS SHALL HAVE A DISCONNECT SWITCH AT EACH PIECE OF EQUIPMENT. FURNISH FUSED DISCONNECTS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.

6. FULL LOAD AMPS (FLA) SIZES ARE BASED ON SPECIFIED EQUIPMENT DATA.

7. CONTRACTOR SHALL VERIFY NAMEPLATE FLA OF EQUIPMENT SUPPLIED AND COORDINATE ACCORDINGLY PER EQUIPMENT SUPPLIERS RECOMMENDATIONS.

8. THE LOCATION OF RECEPTACLES AND FIXTURES SHOWN ON THE DRAWING IS APPROXIMATE AND THE OWNER SHALL HAVE THE RIGHT TO RELOCATE ANY DEVICES BEFORE THEY ARE INSTALLED WITHOUT ANY ADDITIONAL COSTS.

I. CONDUIT SHALL BE STANDARD STEEL, RIGID, IMC OR EMT (THIN WALL) ACCORDING TO LOCAL CODE.

1. ALL CONDUIT AND J-BOXES SHOWN SHALL BE CONCEALED WHEN POSSIBLE. WHEN NOT POSSIBLE, CONDUIT AND J-BOXES MAY BE SURFACE MOUNTED WITH PERMISSION OF THE ARCHITECT.

2. INSULATE ALL CONDUIT PASSING THROUGH WALK-IN COOLER. FILL AROUND CONDUIT WITH DUCT-IN SEAL WHERE IT PASSES THROUGH COOLER WALL OR CEILING.

3. ALL EXTERIOR CONDUIT FOR WIRING SHOULD BE MINIMIZED BY ROUTING IN CEILING SPACE. NO EXTERIOR CONDUIT WILL BE ACCEPTED, UNLESS OTHERWISE NOTED.

4. PAINTING OF ELECTRICAL CONDUITS, ETC. IF REQUIRED, WILL BE BY THE GENERAL CONTRACTOR.

J. RACEWAYS SHALL BE SURFACE METAL TYPE OF THE SIZE AND CHANNEL REQUIRED FOR SERVICE, CONSTRUCTED OF GALVANIZED STEEL WITH SNAP-ON COVERS, WITH 1/8" MOUNTING SCREW KNOCKOUTS IN BASE APPROXIMATELY 8" ON CENTER. PROVIDE FITTINGS INDICATED WHICH MATCH AND MATE WITH RACEWAY. FINISH WITH MANUFACTURER'S STANDARD PRIME COATING SUITABLE FOR PAINTING.

K. OUTLET BOXES AND COVERS SHALL BE ONE PIECE, GALVANIZED STEEL.

1. JUNCTION BOXES, PULL BOXES, AND COVERS SHALL BE GALVANIZED STEEL, CODE GAUGE AND SIZE.

L. ALL FEEDERS AND BRANCH CIRCUITS SHALL BE THHN/THWN (75° C). DESIGN IS BASED ON COPPER CONDUCTORS AND ALL BRANCH CIRCUIT WIRING SHALL BE COPPER. ALL WIRING SHALL BE IN CONDUIT OR MC TYPE.

1. ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE BROUGHT TO THE SITE IN UNBROKEN PACKAGES.

2. ADDITIONAL CONDUCTOR SPECIFICATIONS:

- 10 AND SMALLER - SOLID WITH SINGLE BRAID.

- #8 AND LARGER - STRANDED WITH AT LEAST DOUBLE BRAID.

- MINIMUM WIRE SIZE SHALL BE #12 (#14 MAY BE USED FOR CONTROLS).

- WIRES SHALL BE COLOR CODED IN KEEPING WITH NATIONAL ELECTRICAL CODE STANDARDS.

- PROVIDE IMC FOR FEEDER CONDUIT WHERE INSTALLED ABOVE GRADE. FITTINGS SHALL BE STEEL, THREADED, SET SCREW TYPE WITH INSULATED THROATS. FURNISH EMT CONDUIT OR BX OR MC FOR INTERIOR WIRING NOT SUBJECT TO PHYSICAL DAMAGE. MINIMUM CONDUIT SIZE SHALL BE 1/2 UNLESS SPECIFICALLY NOTED OTHERWISE. CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE AND SHALL RUN PARALLEL OR PERPENDICULAR TO BUILDING WALLS OR CEILING. PVC SCHEDULE 40 CONDUIT MAY BE USED FOR UTILITY FEEDERS WHERE BURIED UNDERGROUND. SEE ADDITIONAL RATES ON ELECTRICAL SERVICE SCHEMATIC.

3. A SEPARATE GREEN INSULATED EQUIPMENT GROUNDED CONDUCTOR (BOND) SHALL BE INSTALLED WITHIN EVERY RACEWAY.

4. WIRING SHOWN IN THE PANEL SCHEDULE IS THE MINIMUM REQUIRED. RUNS IN EXCESS OF 90'-0" (ONE WAY) SHALL BE SIZED PER THE NATIONAL ELECTRICAL CODE MAXIMUM 2% VOLTAGE DROP.

IX. TEST ELECTRICAL SYSTEM FOR SHORT CIRCUITS AND MEGGER TEST FEEDERS AND BRANCH CIRCUIT WIRING. ENSURE LOW IMPEDANCE GROUND PATH SYSTEM.

X. FINALLY: IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED.

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Seal / Signature 06/26/2023

△	Date	Description

06/19/2023
PERMIT SET

Project Name
PF ROANOKE (TOWERS)

Project Number
2200-16

Description
ELECTRICAL SPECIFICATIONS

Scale

E401

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