SCOPE OF WORK

REUSE EXISTING ONE 6.0TON GAS HEAT ROOFTOP UNIT. PROVIDE NEW DUCTWORK ALONG WITH NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEM. 3

PROVIDE ONE NEW RESTROOM EXHAUST FAN AND ONE NEW EXHAUST FAN FOR MOP SINK.

COORDINATE WITH GC ANY ADDITIONAL REFRIGERATION WORK REQUIRED AND PLUMBING CONTRACTOR PROVIDING CONDENSATE LINES FOR MECHANICAL EQUIPMENT.

MECHANICAL PLAN NOTES

A. REUSE EXISTING ONE 6.0TON GAS HEAT ROOFTOP UNIT. PROVIDE NEW DUCTWORK ALONG WITH NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEM. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN AIR DUCT CONNECTIONS. TRANSITION TO DUCT SIZES SHOWN. PROVIDE DUCTWORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL REQUIREMENTS.

B. FOR SYSTEM OVER 2,000 CFM CHECK FOR DUCT MOUNTED AIR SMOKE DETECTORS AND THAT MEET THE REQUIREMENTS OF U.L. 268A, INTERLOCKED TO SHUTDOWN A/C UNIT UPON DETECTION OF SMOKE. IF NECESSARY PROVIDE SMOKE DETECTOR WITH AN ANNUNCIATOR, ALARM AND POWER L.E.D.'S FOR VISIBLE AND AUDIBLE ALARM SIGNAL, AND VISIBLE TROUBLE SIGNAL. MOUNT ANNUNCIATOR ON ROOM SIDE OF CEILING.

C. ALL DUCTS WILL MINIMUM 26 GAUGE SHEET METAL WITH EXTERNAL DUCT WRAP INSULATION. ALL DUCTS TO BE MANUFACTURED AND INSTALLED ACCORDING TO ASHRAE AND SMACNA METAL DUCT CONSTRUCTION STANDARD, LATEST EDITION. ALL MATERIALS WILL CONFORM TO NFPA 90A. NO DUCT BOARD ALLOWED.

D. THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE TYPE. MOUNT THERMOSTAT 48" A.F.F. PROVIDE NEW THERMOSTAT WITH LOCKABLE COVER. COORDINATE LOCATION OF THERMOSTAT. PROVIDE REMOTE SENSOR LOCATED 72" ABOVE FINISHED FLOOR NEAR LOCATION INDICATED. SEAL WALL OPENINGS WITH CAULK. COORDINATE LOCATION ON SITE WITH GENERAL CONTRACTOR AND EQUIPMENT.

E. ALL INTERIOR AIR DUCTS WITH INSULATION SHALL HAVE A MINIMUM OF THICKNESS OF 1.5", R-6 INSULATION. EXTERIOR AIR DUCTS TO HAVE R-8 INSULATION ACCORDING TO 2018 NCECC (2015 IECC)

F. FACTORY-MADE FLEXIBLE AIR DUCTS AND CONNECTORS SHALL BE NOT MORE THAN 5 FEET IN LENGTH AND SHALL NOT BE USED IN LIEU OF RIGID ELBOW OR FITTINGS. FLEXIBLE AIR DUCTS SHALL BE PERMITTED TO BE USED AS A CONNECTOR AT A TERMINAL DEVICE.

G. ALL SEAMS, JOINTS, ETC WILL BE SEALED TO MAKE AIR DUCT AIRTIGHT. PRESSURE SENSITIVE MATERIALS AND OTHERS APPROVED BY LATEST SMACNA. SEALING MATERIALS WILL BE USED.

H. ALL EVAPORATOR UNITS SHALL HAVE A FLOAT SWITCH TO CONTROL OVERFLOW THAT WILL AUTOMATICALLY SHUT DOWN THE RTU SYSTEM. THE DEVICE SHALL BE ATTACHED TO THE SECONDARY DRAIN OUTLET ON THE UNIT.

I. ALL CONDENSATE DRAINS WILL BE PVC FULL DIAMETER OF OUTLET AND WILL TERMINATE IN THE NEAREST DRAIN OR INDIRECT WASTE.

J. ALL EQUIPMENT AND MATERIALS WILL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND ACCORDING TO THE BEST PRACTICE.

K. TESTING AND BALANCING SHALL BE DONE ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (N.E.B.B.), THE ASSOCIATED AIR BALANCE COUNCIL (A.A.B.C) NATIONAL STANDARDS OR EQUIVALENT PROCEDURES.

L. HANGER ATTACHMENTS TO THE STEEL STRUCTURE WILL BE RATED POWDER ACTUATED FASTENERS, "C" CLAMPS, WELDED STUDS, CLAMP HANGERS, JOIST CLAMPS OR OTHER METHODS RECOMMENDED BY SMACNA'S "METAL AND FLEXIBLE STANDARDS", CHAPTER 4, AND WILL HAVE A MINIMUM SAFETY MARGIN OF 4:1. SUSPENDED FROM TOP CHORD OF JOISTS, NOTHING FROM DECK OR CROSS BRACING.

M. ALL HVAC CONTROLS AND CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

N. PROVIDE FIRE OR FIRE + SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE / SMOKE RATED WALLS/ BARRIERS/ SLABS/ROOFS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALL/ROOF.

MECHANICAL GENERAL NOTES

A. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET. PAY SPECIAL ATTENTION TO THE RESPONSIBILITY SCHEDULE. WORK DESIGNATED ON SCHEDULE SHALL BE CONSIDERED INCLUDED IN YOUR SCOPE OF WORK AND CONTRACT AMOUNT.

B. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING, OR PROCEEDING WITH WORK.

C. DRAWINGS/DETAILS ARE TO BE CONSIDERED DIAGRAMMATIC, NOT NECESSARILY SHOWING IN DETAIL OR TO SCALE ALL MINOR ITEMS. UNLESS SPECIFIC DIMENSIONS ARE SHOWN, THE STRUCTURAL, ARCHITECTURAL AND SITE CONDITIONS SHALL GOVERN EXACT LOCATIONS. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK, AND CHECK/COORDINATE DRAWINGS OF ALL TRADES.

D. COORDINATE WITH THE WORK OF OTHERS SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE DUCT RISES AND DRIPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

E. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

F. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

G. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN THE RETURN AIR PLENUM. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL EXPOSED WIRING IN THE PLENUM SHALL BE PLENUM RATED.

H. VERIFY LOCATION OF PERMISSIBLE NEW STRUCTURAL ROOF PENETRATIONS AND ADAPT THE REQUIRED DUCTS ACCORDINGLY. THE OPENINGS MUST BE LOCATED USING A REBAR LOCATOR, TRYING TO LEAVE A TRANSVERSE BAR WITHIN 4" FROM THE OPENING. LOCATE OPENINGS AT MID-DISTANCE BETWEEN THE STEMS OF THE DOUBLE TEE AND LONGITUDINAL REINFORCEMENT SHALL NEVER BE CUT. CALL THE ARCHITECT'S OFFICE IN CASE OF UNEXPECTED DIFFICULTIES.

I. ALL A/C AND FRESH AIR ROUND EXPOSED DUCTS WILL BE SPIRAL GALVANIZED AND READY FOR PAINTING. ALL RECTANGULAR DUCTS OVER CEILINGS MAY BE SHEET METAL WITH EXTERNAL INSULATION.

J. G.C. SHALL CONTRACT LANDLORD-APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL ALL ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.

K. REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

L. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE AND PROVIDE COPY TO LL.

M. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.

HUNTERSVILLE, NC BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE (2015 IBC), AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
2. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2018 NCMC (2015 IMC) CHAPTER 4.
3. TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2018 NORTH CAROLINA STATE BUILDING CODE (2015 IBC) REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].
4. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
5. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2018 NCMC (2015 IMC):
   A. VENTILATION SYSTEM BALANCING 2018 NCMC (2015 IMC) - 403.3
8. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - 2018 NCMC (2015 IMC) - 309.1
   B. DUCT CONSTRUCTION AND INSTALLATION- 2018 NCMC (2015 IMC) - 603
   C. AIR INTAKES, EXHAUSTS AND RELIEF - 2018 NCMC (2015 IMC)- 401.5
   D. AIR FILTERS - 2018 NCMC (2015 IMC) - 605
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2018 NCMC (2015 IMC) - 606
   F. GAS FIRED EQUIPMENT - 2018 NCFGC (2015 IFGC)
9. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
10. SMOKE DETECTOR SHALL MEET UL268A
11. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2018 NCMC (2015 IMC) - 403.3
12. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED AND SMOKE WALL/BARRIERS/SLABS/ROOF CONSTRUCTION AND LOCATION.
13. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
14. VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD. CONTRACTOR TO SUBMIT THE AIR BALANCE REPORT TO INSPECTOR OF RESPECTIVE BUILDING DEPARTMENT PRIOR TO FINAL INSPECTION.

3

MECHANICAL SYMBOLS

	EXHAUST FAN		EXHAUST FAN WITH LIGHT
	SUPPLY OR OUTSIDE AIR DUCT		OPPOSED BLADE DAMPER
	RETURN OR EXHAUST AIR DUCT	S	DUCT SMOKE DETECTOR
	INSULATED RIGID DUCTWORK	T	PROGRAMMABLE THERMOSTAT
	DUCT TRANSITION	RS	REMOTE SENSOR
	MANUAL VOLUME DAMPER	T_S	TEMPERATURE SENSOR
	FLEXIBLE DUCTWORK R-6.0	Ø	ROUND DUCT DIAMETER
		CFM	CUBIC FEET/ MINUTE
	ROOF MOUNTED EXHAUST FAN OUTLET	S/A	SUPPLY AIR
		R/A	RETURN AIR
	ROOFTOP UNIT	SG	SUPPLY GRILLE
			CONDENSATE PIPING
M	MOTORIZED DAMPER	BD	BACK DRAFT DAMPER
			FIRE DAMPER
	SUPPLY DIFFUSER REFER TO DIFFUSER SCHEDULE FOR SPECIFICATIONS		RETURN DIFFUSER REFER TO DIFFUSER SCHEDULE FOR SPECIFICATIONS

NOTE: THIS PROJECT MAY NOT USE EVERY SYMBOL OR DEVICE APPEARING ON THIS LEGEND.

MECHANICAL UNIT SCHEDULE

UNIT TAG	RTU-1
UNIT TYPE	GAS HEAT
MANUFACTURER	S.A.E
MODEL	YSK072AS0M (V.I.F)
STATUS	EXISTING
LOCATION	ROOF
TOTAL CAPACITY	6.0 TON (V.I.F)
TOTAL COOLING MBH	82.9 (V.I.F)
TOTAL SENSIBLE MBH	62.2 (V.I.F)
EER	S.A.E
IEER	S.A.E
TOTAL HEATING MBH (INPUT)	120.0 (V.I.F)
TOTAL HEATING MBH (OUTPUT)	97.2 (V.I.F)
THERMAL EFF (%)	S.A.E
SUPPLY AIR (CFM)	2400
OUTDOOR AIR (CFM)	345
VOLTAGE/PHASE/HZ	208/3/60 (V.I.F)
MCA (A)	38.0 (V.I.F)
MOCP (A)	50.0 (V.I.F)
ESP (IN. OF H2O)	1.0 (V.I.F)
WEIGHT (LBS)	S.A.E

INCLUDED SYSTEM OPTIONS FOR NEW RTU:
1. EXISTING RTU WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
2. S.A.E : SAME AS EXISTING.
3. V.I.F : VERIFY IN FIELD.
4. CONTRACTOR TO FIELD VERIFY IF RTU ARE WORKING AT THEIR 100% RATED CAPACITIES/LOADS. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF UNIT ON SITE.
6. IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSOR COMPATIBLE WITH EXISTING RTU. CO-ORDINATE FINAL LOCATION/REQUIREMENT OF T-SENSOR WITH ARCHITECT/OWNER.
7. CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON EXISTING RTU TO MATCH VALUES MENTIONED IN ABOVE TABLE.
8. REPLACE FILTERS, IF REQUIRED.

CONTRACTOR SHALL VERIFY EXACT ELECTRICAL CONNECTIONS, WIRE SIZES, BREAKERS, DISCONNECT ETC. PRIOR CONSTRUCTION AND BID.

3

OCCUPANCY CALCULATIONS

LOBBY/RECEPTION	186 SQ. FT.	3 PEOPLE
DRIP AREA	610 SQ. FT.	8 PEOPLE
MAKE ROOM	95 SQ. FT.	1 PEOPLE
CRYO ROOM	115 SQ. FT.	1 PEOPLE
TREATMENT ROOM	75 SQ. FT.	2 PEOPLE
	TOTAL	15 PEOPLE

REFER TO THE OCCUPANT LOAD CALCULATIONS ON SHEET CS-1 FOR ARCHITECTURAL OCCUPANCY CALCULATION.

VENTILATION REQUIREMENTS PER 2018 NCMC - TABLE 403.3.1.1 3

LOBBY/RECEPTION	186 SQ. FT. X 0.06 CFM/SQ. FT. =	12 CFM
	3 PEOPLE. X 5.0 CFM/PEOPLE. =	15 CFM
DRIP AREA	610 SQ. FT. X 0.18 CFM/SQ. FT. =	110 CFM
	8 PEOPLE X 10 CFM/PEOPLE. =	80 CFM
MAKE ROOM	95 SQ. FT. X 0.18 CFM/SQ. FT. =	17 CFM
	1 PEOPLE X 10 CFM/PEOPLE. =	10 CFM
CRYO ROOM	115 SQ. FT. X 0.18 CFM/SQ. FT. =	21 CFM
	1 PEOPLE. X 10 CFM/PEOPLE. =	10 CFM
TREATMENT ROOM	75 SQ. FT. X 0.18 CFM/SQ. FT. =	14 CFM
	2 PEOPLE. X 10 CFM/PEOPLE. =	20 CFM
STAFF/STORAGE ROOM	102 SQ. FT. X 0.12 CFM/SQ. FT. =	12 CFM
HALLWAY	101 SQ. FT. X 0.06 CFM/SQ. FT. =	6 CFM
OUTSIDE AIR REQUIRED		327 CFM
UNISEX RESTROOM	70 CFM PER FIXTURE	-70 CFM
MOP SINK		-70 CFM
EXHAUST AIR REQUIRED		-140 CFM
AIR BALANCE		
OUTSIDE AIR THROUGH RTU-1		+345 CFM
BEF-1		-70 CFM
EF-1		-70 CFM
BUILDING PRESSURE (BAROMETRIC RELIEF)		+205 CFM

DIFFUSER SCHEDULE

MANUFACTURER	TITUS	TITUS	TITUS
DESIGNATION	A	B	R
USE	SUPPLY	SUPPLY	RETURN
MODEL	TDC-AA	TDC-AA	56FL
MOUNTING	ACOUSTICAL CEILING TILE	ACOUSTICAL CEILING TILE	ACOUSTICAL CEILING TILE
LOCATION	AS SHOWN	AS SHOWN	AS SHOWN
FACE SIZE	24" X 24"	12"X12"	24" X 24"
NECK SIZE	REFER TABLE A	REFER TABLE A	-
FRAME TYPE	LAYIN	FLANGED	LAYIN
NOISE CRITERIA	<30	<30	<30
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

NOTES :
1. MAX. NC LEVEL 30 OR LESS.
2. PROVIDE SQUARE TO ROUND NECK ADAPTOR.
3. CO-ORDINATE WITH ARCHITECT FOR FINAL MOUNTING, FRAME TYPE, PAINT AND FINISH.
4. PROVIDE 4-WAY AIR THROW PATTERN UNLESS NOTED OR INDICATED.
5. PROVIDE INSULATED BACKS ON ALL DIFFUSERS.

FAN SCHEDULE

DESIGNATION	BEF-1	EF-1
STATUS	NEW	NEW
QUANTITY	1	1
MANUFACTURER	GREENHECK (OR EQUIVALENT)	GREENHECK (OR EQUIVALENT)
MODEL	SP-A110 (OR EQUIVALENT)	SP-A110 (OR EQUIVALENT)
CFM	70@0.3" OF W.C. ESP	70@0.3" OF W.C. ESP
FLA AMPS	0.19	0.19
ACCESSORIES	BDD	BDD
WEIGHT (LBS)	20	20
V/PH/Hz	115/1/60	115/1/60

NOTE:
1. PROVIDE FACTORY MOUNTED INSTALLED DISCONNECT SWITCH AND SPEED CONTROLLER.
2. INTERLOCK BEF-1 WITH RTU-1.
3. INTERLOCK EF-1 WITH ROOM LIGHTS.
4. PROVIDE BACK DRAFT DAMPER.

CEILING HEATER SCHEDULE

UNIT TAG	CH-1
STATUS	NEW
QUANTITY	1
LOCATION	AS SHOWN
MANUFACTURER	BROAN-NUTONE
MODEL	MODEL 157
WATTS	1.25 kW
MOUNTING	CEILING
DIMENSIONS (DIA.)	Ø11"
V/PH/HZ	120/1/60
AMPS	10.7

NECK SIZE TABLE - A

NECK SIZE DIA	CFM RANGE
Ø6"	0-100
Ø8"	101-200
Ø10"	201-400
Ø12"	401-600

MECHANICAL SCHEDULES | SCALE N.T.S. | 1

M.E.P. ENGINEER
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MIAMI, FLORIDA 33179
Contact: ANKIT JAVERI
Phone: 914-257-3455

PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:

S. NO.	DETAIL	DATE
01	1 BD COMMENTS	08/18/2025
02	PROJ. COORD	09/15/2025
03	3 REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

MECHANICAL NOTES & SCHEDULES

M-1

MECHANICAL FLOOR PLAN GENERAL NOTES

A. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN PLAN.

B. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.

C. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURE ENGINEERS.

D. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.

E. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.

F. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.

G. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.

H. ALL EXPOSED DUCTWORK SHALL BE AS SHOWN.DOUBLE WALL, INSULATED METAL, PRIMED FOR PAINTING. ALL CONCEALED DUCTWORK SHALL BE INSULATED METAL RECTANGULAR AND CIRCULAR DUCT SHALL BE INSULATED INTERNALLY UNLESS OTHERWISE ALLOWED IN WRITING BY THE ENGINEER OF RECORD. COORDINATE FINAL FINISH WITH ARCHITECT.

I. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.

J. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.

K. COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS.

L. CONTRACTOR SHALL DEMOLISH ALL EXISTING HVAC SYSTEMS INCLUDING EQUIPMENT, DUCTWORK AND ALL ASSOCIATED ACCESSORIES.

M. BEFORE STARTING DEMOLITION, PROVIDE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED AND IN STRICT ACCORDANCE WITH OSHA AND ICRA REGULATIONS.

N. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT MIGRATING TO OCCUPIED AREAS OF THE BUILDING. THIS INCLUDES BLANKING OFF ANY RETURN AIR GRILLES/ DUCTS IN THE WORK AREA. PROVIDE TEMPORARY EXHAUST FANS, DUCTED DIRECTLY TO OUTDOORS, TO MAINTAIN NEGATIVE PRESSURE WITHIN THE WORK AREA.

O. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.

P. ALL DEMOLISHED MATERIALS SHALL BE REMOVED AND DISPOSED OF OFF SITE.

Q. REPAIR/ REPLACE EXISTING EQUIPMENT/ MATERIALS NOT SCHEDULED OR NOTED TO BE DEMOLISHED BUT BECOME DAMAGED DURING THE PROGRESS OF THE WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS, MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITIONS AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.

R. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.

S. MECHANICAL CONTRACTOR TO COORDINATE ALL DUCT WORK, CROSSINGS, OVERLAPPING AND PENETRATIONS WITH SITE CONDITIONS AND AS PER EXISTING JOIST LAYOUT AND SKYLIGHT IN FIELD. MODIFY DUCT WORK WHEREVER REQUIRED.

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

U. PROVIDE CABLE OPERATED VOLUME DAMPERS FOR THE DIFFUSERS AND GRILLES NOT ACCESSIBLE.

THERMOSTATIC NOTES

C403.2.4.1 THERMOSTATIC CONTROLS
THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED:
1. THE PERIMETER SYSTEM INCLUDES AT LEAST ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN +/-45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM); AND
2. THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.2.4.1.2 DEADBAND
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:
1. THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
2. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL.

C403.2.4.1.3 SETPOINT OVERLAP RESTRICTION
WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE , A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE PROVIDED WITH THE CAPABILITY TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.2.4.1.2.

C403.2.4.2 OFF-HOUR CONTROLS
EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

EXCEPTIONS:
1. ZONES THAT WILL BE OPERATED CONTINUOUSLY.
2. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.
3. HVAC SYSTEMS SERVING HOTEL/MOTEL GUESTROOMS OR OTHER RESIDENTIAL UNITS COMPLYING WITH SECTION C403.2.2 REQUIREMENTS.

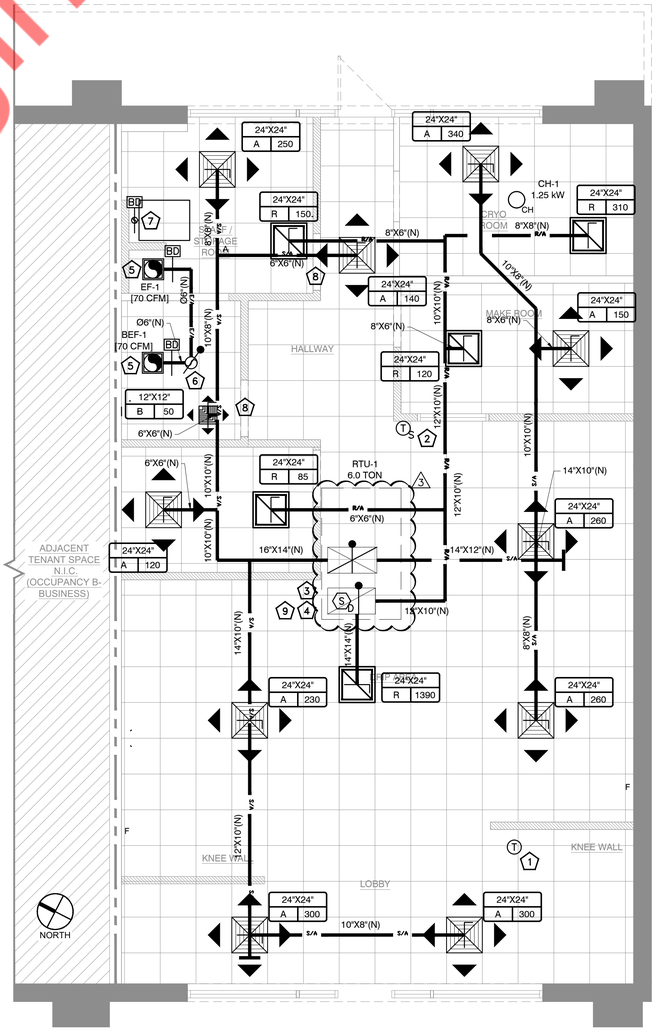
C403.2.4.2.1 THERMOSTATIC SETBACK CAPABILITIES
THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

C403.2.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES
AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.2.4.2.3 AUTOMATIC START CAPABILITIES
AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM PROVIDED WITH SETBACK CONTROLS AND DIRECT DIGITAL CONTROL (DDC) SYSTEM. THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

MECHANICAL FLOOR PLAN KEY NOTES (#)

1. LOCATION OF DIGITAL THERMOSTAT CONTROL FOR RTU-1. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER. VERIFY WORKING CONDITION OF EXISTING T-SATS. REPLACE IF NOT WORKING. COORDINATE WITH THE MANUFACTURERS TO PROVIDE THE THERMOSTAT COMPLYING WITH THE 2018 NCECC (2015 IECC), THERMOSTATIC CONTROL REQUIREMENTS. (3)
2. PROVIDE REMOTE TEMP SENSOR MOUNTED IN SPACE AND WIRE BACK TO T-STAT OF RESPECTIVE RTU. COORDINATE WITH ARCHITECT/ OWNER FOR EXACT REQUIREMENT AND LOCATION.
3. EXTEND FULL SIZE SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNIT TO SPACE, EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
4. EXISTING SMOKE DETECTOR TO REMAIN AND REUSED. IF NOT FOUND OR NOT REUSABLE, PROVIDE SMOKE DETECTOR IN RETURN DUCT TO SHUT DOWN CORRESPONDING UNIT UNDER ALARM CONDITIONS. ALL WIRING SHALL BE IN CONDUIT PER NRC SMOKE DETECTOR SHALL BE SYSTEM SENSOR MODEL DH100ACDCLP.
5. CEILING MOUNTED EXHAUST FAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. SEE FAN SCHEDULE ON SHEET M-1 FOR MORE DETAILS. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
6. Ø8" EXHAUST DUCT UP TO ROOF.
7. Ø4" DRYER EXHAUST VENT UP THROUGH THE ROOF AS PER MANUFACTURER'S RECOMMENDATION. COORDINATE FINAL REQUIREMENT AND LOCATION WITH THE ARCHITECT/OWNER. DRYER/WASHER PROVIDED BY PLUMBING CONTRACTOR. EQUIPMENT SHALL BE PLACED AT LEAST 6" FROM THE WALL FOR DRYER VENTING. CONTRACTOR TO FIELD VERIFY AT SITE. ROUTE DUCTWORK AS PER SITE CONDITIONS WITH MINIMUM BENDS AND VENT LENGTH AS PER DRYER MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE 3/4 " DOOR UNDERCUT.
9. CONTRACTOR TO RUN THE DUCTWORK AS HIGH AS POSSIBLE. COORDINATE WITH THE STRUCTURAL ELEMENT IN THE SPACE AS PER THE SITE CONDITION. IF ANY DISCREPANCIES FOUND, REPORT BACK TO THE ENGINEER PRIOR TO CONSTRUCTION/PROCUREMENT.



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

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PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:

S. NO.	DETAIL	DATE
01	1 BD COMMENTS	08/18/2025
02	PROJ. COORD	09/15/2025
03	3 REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

MECHANICAL FLOOR PLAN

M-2

MECHANICAL ROOF PLAN GENERAL NOTES

A. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURE ENGINEERS.

B. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.

C. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.

D. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.

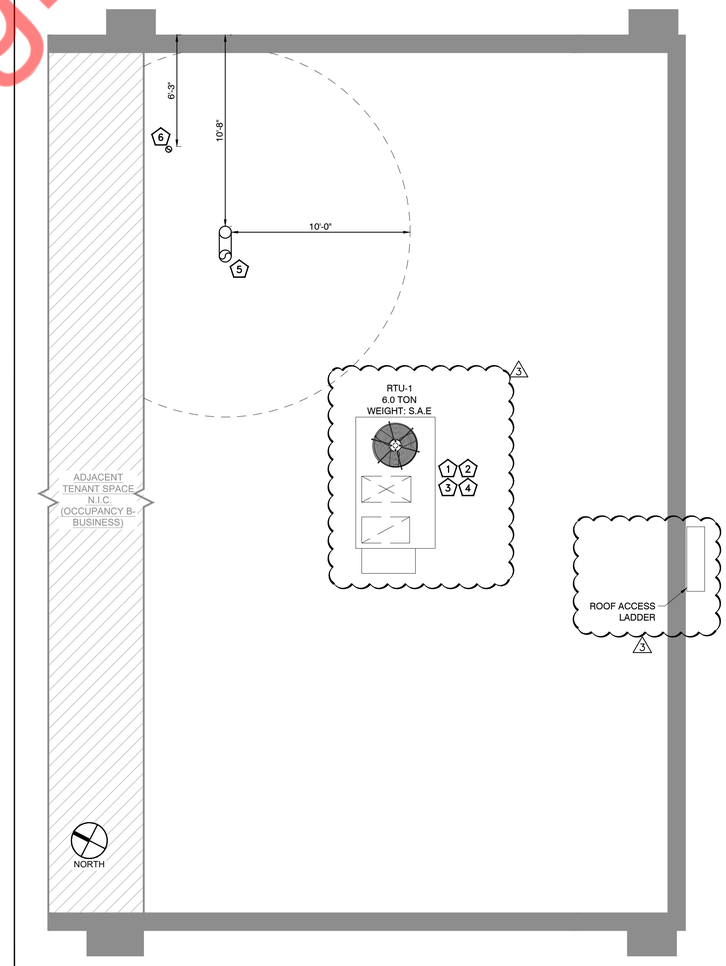
E. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.

F. G.C. TO VERIFY THE CAPACITY AND CONDITION OF THE EXISTING HVAC UNIT BEFORE TO STARTING ANY NEW WORK.

G. CONTRACTOR SHALL NOT COMPROMISE ROOF WARRANTY AND COORDINATE WITH LANDLORD ROOFING CONTRACTOR FOR ANY ROOF PENETRATIONS, MODIFICATIONS, PATCHING, OPENINGS AND REPAIRS.

MECHANICAL ROOF PLAN KEY NOTES (#)

1. EXISTING ROOF TOP UNITS TO REMAIN AND TO BE REUSED. PROVIDE DUCT MODIFICATIONS IF REQUIRED. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW. COORDINATE ROUTING THROUGH STRUCTURAL TRUSSES AND OFFSET AS REQUIRED IN CURB SPACE. (3)
2. CONDENSATE DRAIN LINE FROM THE ROOFTOP UNIT TO REMAIN AS IT IS.
3. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF THE UNIT ON THE ROOF PRIOR BASE BID/ COMMENCING CONSTRUCTION.
4. ALL OUTSIDE AIR INTAKES ON THE ROOF SHALL BE MINIMUM 10 FT. AWAY FROM ANY EXHAUST SOURCE AND 3 FEET FROM ANY OPERABLE OPENING TO THE BUILDING.
5. Ø8" EXHAUST AIR DUCT. TERMINATE WITH GOOSENECK, WEATHER SKIRT AND BIRD SCREEN. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.
6. TERMINATE Ø4" DRYER EXHAUST VENT AS PER MANUFACTURER'S RECOMMENDATIONS. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.



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

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PROJECT

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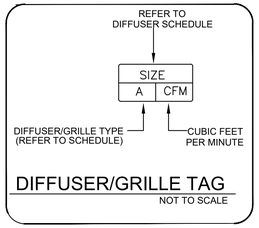
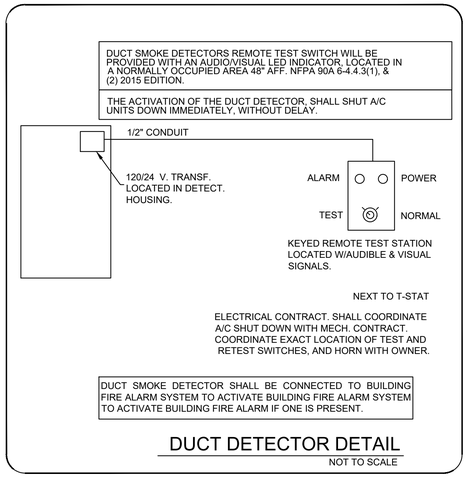
MECHANICAL ROOF PLAN

M-3



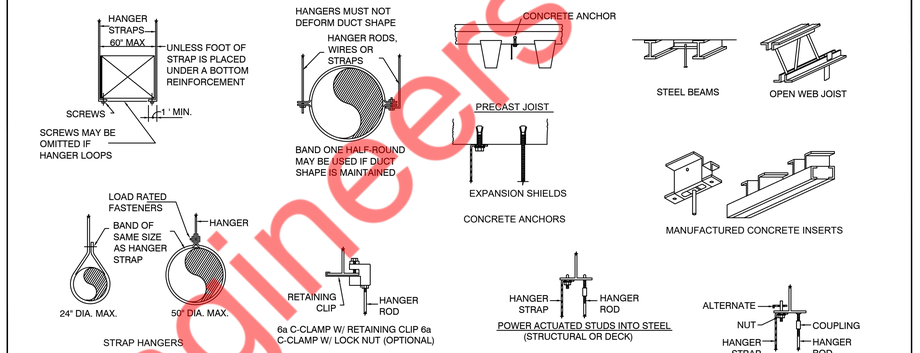
DIFFUSER/GRILLE TAG

NOT TO SCALE



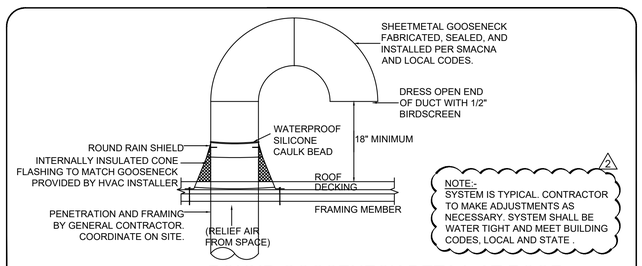
DUCT DETECTOR DETAIL

NOT TO SCALE



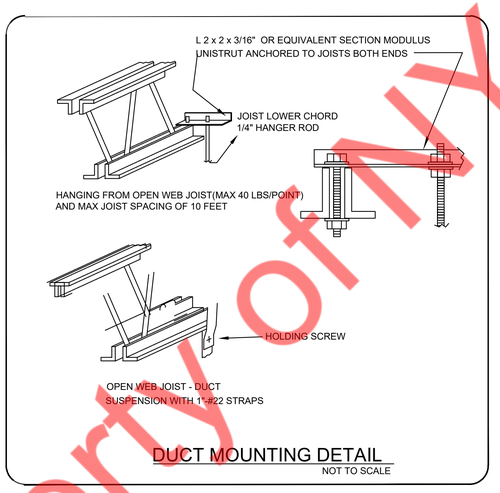
UPPER & LOWER ATTACHMENTS & DEVICES

NOT TO SCALE



ROUND GOOSENECK DETAIL AT ROOF

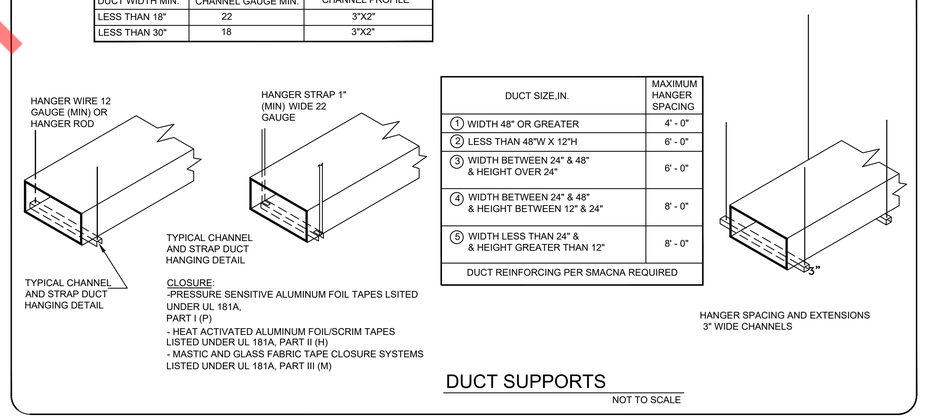
NOT TO SCALE



DUCT MOUNTING DETAIL

NOT TO SCALE

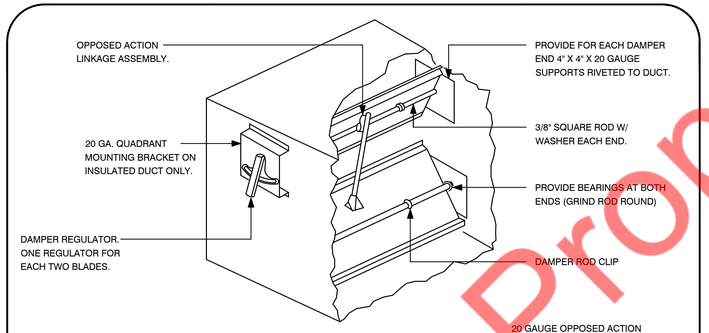
CHANNEL SELECTION		
DUCT WIDTH MIN.	CHANNEL GAUGE MIN.	CHANNEL PROFILE
LESS THAN 18"	22	3"X2"
LESS THAN 30"	18	3"X2"



DUCT SIZE,IN.	MAXIMUM HANGER SPACING
(1) WIDTH 48" OR GREATER	4' - 0"
(2) LESS THAN 48"W X 12"H	6' - 0"
(3) WIDTH BETWEEN 24" & 48" & HEIGHT OVER 24"	6' - 0"
(4) WIDTH BETWEEN 24" & 48" & HEIGHT BETWEEN 12" & 24"	8' - 0"
(5) WIDTH LESS THAN 24" & & HEIGHT GREATER THAN 12"	8' - 0"
DUCT REINFORCING PER SMACNA REQUIRED	

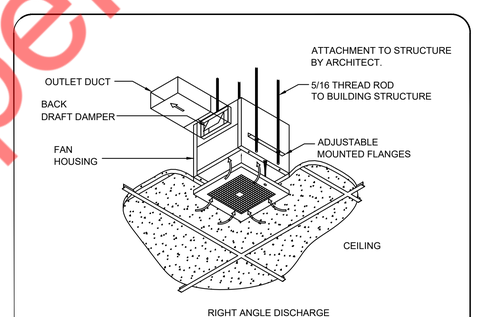
DUCT SUPPORTS

NOT TO SCALE



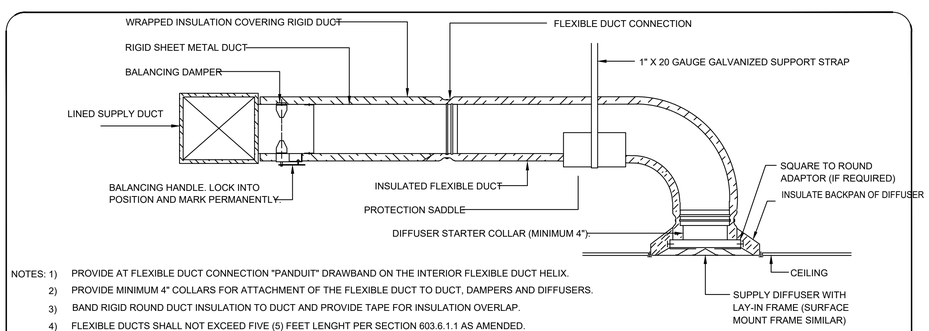
LOW PRESSURE BALANCING DAMPER

NOT TO SCALE



CEILING EXHAUST FAN DETAIL

NOT TO SCALE



NOTES: 1) PROVIDE AT FLEXIBLE DUCT CONNECTION "PANDUIT" DRAWBAND ON THE INTERIOR FLEXIBLE DUCT HELIX.
2) PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEXIBLE DUCT TO DUCT, DAMPERS AND DIFFUSERS.
3) BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.
4) FLEXIBLE DUCTS SHALL NOT EXCEED FIVE (5) FEET LENGHT PER SECTION 603.6.1.1 AS AMENDED.

DIFFUSER CONNECTION DETAIL-FLEX DUCT

NOT TO SCALE

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PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:

S. NO.	DETAIL	DATE
01	1 BD COMMENTS	08/18/2025
02	2 PROJ. COORD	09/15/2025
03	REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

MECHANICAL DETAILS

M-4

SCOPE OF WORK

1. REUSE EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE, ELECTRICAL SERVICE FOR PROJECT SPACE.
2. REUSE EXISTING (1) 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER & DISCONNECT SWITCH FOR THE PROJECT SPACE.
3. REUSE EXISTING (1) 200A (M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" (NAME TO BE VERIFIED AT FIELD) FOR THE PROJECT SPACE.
4. PROVIDE NEW (1) 125A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B" FOR THE PROJECT SPACE.
5. PROVIDE ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE HYDRALIVE THERAPY SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH G.C FOR LOW VOLTAGE WIRING.
6. ELECTRICAL CONTRACTOR TO COORDINATE WITH THE MECHANICAL AND PLUMBING CONTRACTOR FOR THE POWER REQUIREMENTS OF THE RESPECTIVE DEVICES/EQUIPMENT.

ELECTRICAL PLAN NOTES

1. ELECTRICAL CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THIS SET.
2. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT, NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING, OR PROCEEDING WITH WORK.
3. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED. CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL OWNER HAS DIRECTED CORRECTIVE ACTION TO BE TAKEN.
4. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC... THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
5. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2023 EDITION OF THE NATIONAL ELECTRICAL CODE AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION.
6. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION FOR ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.
7. ALL ELECTRICAL NOT BEING REUSED MUST BE REMOVED IN ITS ENTIRETY.
8. ALL CONDUIT IN OR UNDERGROUND OR IN CONCRETE MUST BE RIGID GALVANIZED STEEL.
9. CIRCUIT BREAKERS AND PANELS TO BE PLUG ON TYPE.
10. ALL EQUIPMENT SHALL BE APPROVED BY UL OR OTHER NATIONALLY RECOGNIZED TESTING COMPANY.
11. ALL RECEPTACLES SHALL BE GROUNDED AS REQUIRED BY NEC 250.146
12. ALL LOW VOLTAGE MUST BE IN CONDUIT TO ABOVE THE DROP CEILING. BRIDAL RINGS OR "J" HOOKS REQUIRED.
13. SEPARATE PERMITS ARE REQUIRED FOR ALL LOW VOLTAGE SUCH AS TELEPHONE, DATA, THERMOSTAT, MUSIC, ALARMS ETC.
14. SEPARATE PERMIT REQUIRED FOR SIGNAGE.
15. PRIOR TO ANY CONSTRUCTION WORK BEGINNING AN ON-SITE MEETING WITH GENERAL CONTRACTORS IS REQUIRED.
16. ELECTRICIAN MUST BE ON SITE FOR ALL INSPECTIONS.
17. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER AND UNLESS OTHERWISE NOTED THHN INSULATION.
18. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, PLASTIC AND CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
19. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
20. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE N.E.C. OR LOCAL CODES.
21. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
22. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
23. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
24. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE THAT CERTIFICATE OF OCCUPANCY IS ISSUED. WARRANTY SHALL BE PROVIDED IN WRITING. PROVIDE COPY TO LL.
25. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
26. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
27. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
28. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
29. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
30. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
31. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, DEVICES, ETC. FOR ALL OUTLETS AS INDICATED.
32. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS APPEAR ON THE UL LIST OF APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF N.E.C. NEMA, AND IECE.
33. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
34. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FIRED CAULKING REQUIRED OF HIS WORK.
35. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/TYPE WRITTEN DIRECTORIES.
36. ALL ELECTRICAL AND COMMUNICATIONS OUTLETS TO BE AT 18" A.F.F. UNLESS NOTED OTHERWISE, AND VERTICALLY MOUNTED.
37. ALL LIGHT SWITCHES TO BE AT 42" A.F.F.
38. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING FOR HVAC SYSTEM INCLUDING CONTROLS, THERMOSTATS, POWER, ETC. SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
39. BREAKER AND PANELS -- ALL CURRENT CARRYING BUSSES SHALL BE COPPER. ALL GROUND BUS BARS SHALL BE COPPER. PANEL BOARD ENCLOSURES SHALL BE FURNISHED WITHOUT PRE-PUNCHED CONCENTRIC HOLES. A.I.C. RATINGS SHALL BE AS INDICATED ON PANEL BOARD SCHEDULES OR SHALL BE COORDINATED ON SITE.
40. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
41. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
42. THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS INDICATES THE CONTRACT SHALL FURNISH AND INSTALL.
43. CONTRACTOR SHALL CONFIRM WITH ANY AND ALL REQUIREMENTS SUCH AS: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, TRANSFORMER SIZE, SCHEDULED DOWN TIME FOR OWNERS CONFIRMATION, ETC. ANY CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
44. VOLTAGE DROP FOR ALL BRANCH CONDUCTORS SHALL NOT EXCEED 3%. WHERE VOLTAGE DROP EXCEEDS 3%, CONTRACTOR SHALL INCREASE SIZE OF CONDUCTORS.
45. CONTRACTOR SHALL PROVIDE GFI TYPE BREAKER FOR ALL EXTERIOR 120V CIRCUITS OR GFI PROTECTION -- FOR THE WHOLE CIRCUIT.
46. GAS PIPING SHALL BE BONDED.
47. ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
48. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
49. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.
50. ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS. FLEXIBLE CONDUIT IS PERMITTED FOR SHORT FINAL CONNECTIONS ONLY (6'-0" OR LESS).
51. EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES, PARALLEL OR IN RIGHT ANGLES TO THE BUIDING STRUCTURE. DO NOT LOOP EXCESS FLEXIBLE CONDUIT IN CEILING SPACE OR WALL CAVITY. NO CONDUIT TO BE SUPPORTED FROM THE ROOF DECK.
52. CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED.
53. ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.
54. ALL PANELS TO BE UL LABELED.
55. 7-DAY 24-HOUR TIME CLOCK IS REQUIRED TO CONTROL STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, SHOW WINDOW RECEPTACLES AND STOREFRONT SIGNAGE. ILLUMINATED STOREFRONT SIGNS MUST REMAIN LIT DURING ALL MALL BUSINESS HOURS.
56. TENANT IS REQUIRED TO MAKE A FIELD SURVEY OF THE EXISTING ELECTRICAL SERVICE TO ENSURE THAT THE TOTAL CONNECTED LOAD DOES NOT EXCEED THE ELECTRIC SERVICE. ANY/ALL MODIFICATIONS OR UPGRADES NEEDED ARE SUBJECT TO LANDLORD'S PRIOR APPROVAL AND WILL BE COMPLETED BY TENANT/TENANT'S GC AT TENANT'S SOLE EXPENSE.
57. ALL ELECTRICAL PANELS TO BE MOUNTED ON PLYWOOD BACKER BOARD.
58. PANEL PHASE LOADS TO BE BALANCED WITHIN 10%.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
J	JUNCTION BOX
	BATTERY BACK UP EXIT LIGHT
	BATTERY BACK UP EMERGENCY LIGHT
$	WALL SWITCH (SINGLE)
$D	WALL SWITCH (DIMMER)
$OS	OCCUPANCY SENSOR WALL
USB	DUPLEX RECEPTACLE WITH USB PROVISION.
	DUPLEX RECEPTACLE, 46" TO AFF AT KITCHEN, BATHS AND TOPS
	QUADRUPLEX RECEPTACLE
CL	CEILING MOUNTED DUPLEX RECEPTACLE
	230V RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
TV	TELEVISION OUTLET
T	TELEPHONE/DATA OUTLET
T	TELEPHONE OUTLET
D	DATA OUTLET
CL	CEILING MOUNTED DATA OUTLET
A	30A/240V NON FUSED DISCONNECT SWITCH
B	60A/240V NON FUSED DISCONNECT SWITCH
C	100A/240V FUSED DISCONNECT SWITCH
SM	MOTOR SWITCH

ABBREVIATIONS:

ABOVE FINISH FLOOR= A.F.F.
COUNTER TOP LEVEL= C
GROUND FAULT INTERRUPTER= GFC
VERIFY PRIOR TO INSTALL= VH
WEATHER PROOF= WP
BATHROOM EXHAUST FAN = BEF
ROOF TOP UNIT = RTU
RECIRCULATION PUMP= RCP
BELOW COUNTER= BC
PUSH BUTTON= PB
UNDER CABINET= UC
VAPOR PROOF= VP
ELECTRICAL CONTRACTOR=E.C.
WATER HEATER= WH
AUTHORITY HAVING JURISDICTION= A.H.J.

GENERAL LIGHTING NOTES

A. UPPER CASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE .

B. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR

EXISTING CONDITIONS NOTES

STOP AND READ

THE CONTRACTOR AND SUB-CONTRACTORS **SHALL NOT INITIATE ANY WORK UNTIL EXISTING FIELD CONDITIONS ARE PROPERLY VERIFIED**. THIS SHALL HOLD TRUE FOR FIRST GENERATION AND 2ND GENERATION SPACES. WHEN DEMOLITION IS REQUIRED, THAT WILL BE PERMITTED TO EXPOSE CONDITIONS. THESE VERIFICATIONS SHALL INCLUDE BUT NOT LIMITED TO: DIMENSIONS BOTH HORIZONTALLY AND VERTICAL, ELECTRICAL SERVICE /PANELS LOCATION AND VOLTS/PHASE, LOCATION/QTY OF ROOF MOUNTED HVAC EQUIPMENT, CONFIRM THAT INTERIOR HVAC HUNG UNITS HAVE PROPER SUPPORT CONNECTIONS FOR EXISTING STRUCTURE, FIRE SPRINKLER MAIN RUNS, TOILET ROOM DIMENSIONS, DOOR SWING FOR DOORS TO REMAIN AND ETC. IF NOT VERIFIED AND DISCOVERED AT A LATER TIME, THE CONTRACTOR SHALL REIMBURSE THE ARCHITECT FOR THE REDESIGN FEE. THIS DOES NOT INCLUDE HIDDEN WORK I.E. PITCH OF SANITARY LINES, ACTUAL CONDITIONS OF EXISTING HVAC EQUIPMENT, STRUCTURAL COLUMNS/BEARING WALLS OR CONDITIONS OF GREASE INTERCEPTORS AND ETC.

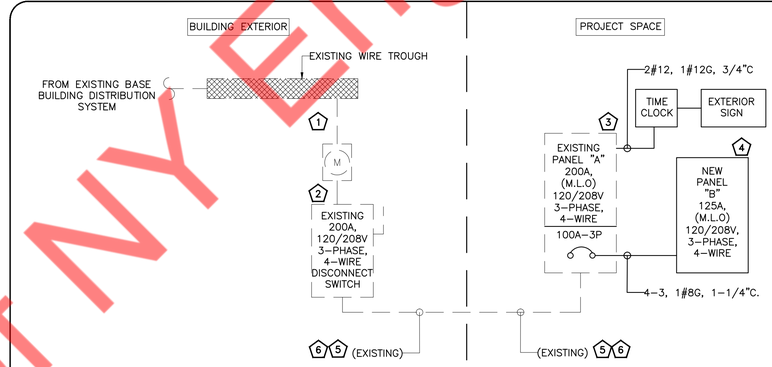
ELECTRICAL DRAWING LIST

E-1 ELECTRICAL PLAN NOTES & RISER DIAGRAM
E-2 ELECTRICAL LIGHTING PLAN
E-3 ELECTRICAL POWER PLAN
E-4 ELECTRICAL ROOF PLAN
E-5 PANEL SCHEDULES EQUIPMENT LIST
E-6 ENERGY ANALYSIS

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	NUMBER OF FIXTURES	LAMP TYPE	TOTAL WATTS	MOUNTING
	A	4" RECESSED LED DOWNLIGHT W/DIMMING	LEVITON	SS4G4DR_L1	120	51	LED	490 WATTS	RECESSED
	B	LED WALL SCONE	VENICE	TBD	120	5	LED	110 WATTS	WALL
	B1	LED WALL SCONE	BREAKWATER BAY	TBD	120	2	LED	120 WATTS (MAX) / FIXTURE	WALL
	D	CHANDELIER	BUNGALOW ROSE	TBD	120	2	LED	300 WATTS (MAX) /FIXTURE	CEILING
	E	CHANDELIER	BUNGALOW ROSE	TBD	120	4	LED	120 WATTS (MAX)/ FIXTURE	CEILING
--------	F	LED ROPE LIGHT	TBD	TBD	120	42	LED	115 WATTS	WALL/ RECESSED
	EU	WALL MOUNTED EMERGENCY LIGHT COMBO	LITHONIA	ELM2	120	6	LED	9.6 WATTS	WALL/CEILING
	XC	EXIT SIGN - EMERGENCY LIGHT COMBO	LITHONIA	LRP-LED	120	3	LED	9 WATTS	CEILING
	XS	EXIT SIGN	TBD	TBD	120	1	LED	TBD	CEILING
$D	D	DIMMER WALL SWITCH	LUTRON/ EQUIVALENT	DVTV-WH/ EQUIVALENT	120	-	-	-	WALL
$OS	OS	OCCUPANCY WALL SWITCH	LEVITON	ODS10	120	-	-	-	WALL
$T	T	TIMER WALL SWITCH	LEVITON	VPT24-1PZ	120	-	-	-	WALL
OS	OS	CEILING OCCUPANCY SENSOR	LUTRON	LOS-CDT-2000	120	-	-	-	CEILING
	(E)	EXISTING LIGHT TO REMAIN	-	-	120	-	-	-	-

NOTE:
1. ALL LIGHT FIXTURES SHOULD BE INSTALLED BASED ON THE MANUFACTURER/ VENDOR INSTALLATION MANUAL. PROVIDE ALL NECESSARY ACCESSORIES REQUIRED.
2. EQUIVALENT LIGHT FIXTURES ARE ACCEPTABLE. FOR DECORATIVE LIGHTS, EQUIVALENT TO BE SUBMITTED TO CORPORATE FOR APPROVAL.
3. E.C SHALL COORDINATE WITH LIGHT FIXTURE VENDOR FOR EXACT COMPATIBILITY OF THE DIMMER REQUIRED FOR RESPECTIVE LIGHT FIXTURE PRIOR BIDING. BASE BID ACCORDINGLY.
4. E.C SHALL VERIFY EXACT MAKE MODEL WITH ARCHITECT/ OWNER PRIOR PURCHASE. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO BID.
5. E.C SHALL COORDINATE WITH OWNER/ ARCHITECT FOR EXACT LIGHTING CONTROL REQUIREMENT. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO BID.



ELECTRICAL RISER KEYED WORK NOTES:

1. EXISTING 200A, 120/208V, 3-PH, 4-W, INCOMING ELECTRICAL SERVICE FOR PROJECT SPACE SHALL REMAIN. E.C. SHALL COORDINATE WITH OWNER/BASE BUILDING FOR EXACT ELECTRICAL POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY
2. EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER & DISCONNECT SWITCH SHALL REMAIN AND REUSE. E.C. TO VERIFY THE EXACT LOCATION & OPERABLE CONDITION OF EXISTING ELECTRICAL METER & DISCONNECT SWITCH IN THE FIELD AND SHALL REPLACE WITH NEW IF FOUND INOPERABLE IN COORDINATION WITH UTILITY COMPANY/OWNER. BASE BID ACCORDINGLY.
3. EXISTING 200A (M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A"(NAME TO BE VERIFIED IN ON FIELD). E.C. TO FIELD VERIFY EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL. REPLACE WITH NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
4. PROVIDE NEW 125A (M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
5. INCOMING EXISTING ELECTRICAL FEEDER SHALL REMAIN. E.C. TO VERIFY THE RATING AND OPERABLE CONDITION OF EXISTING ELECTRICAL FEEDER IN FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
6. E.C TO FIELD VERIFY THE EXACT LENGTH OF THE CABLE AND CHECK THE VOLTAGE DROP IS UNDER LIMIT PER NEC BEFORE INSTALLATION. INFORM ENGINEER ON RECORD IF ANY DISCREPANCIES/ISSUE PRIOR TO BID. BASE BID ACCORDINGLY.

ELECTRICAL RISER DIAGRAM GENERAL NOTES:

A. ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSES ONLY. E.C SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.

B. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

C. E.C SHALL COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.

D. E.C SHALL COORDINATE WITH OWNER/LANDLORD/BASE BUILDING FOR THE EXACT SCOPE OF WORK/LIABILITIES.

E. E.C SHALL VERIFY OPERABLE CONDITIONS OF EXISTING EQUIPMENTS IN FIELD. REPLACE/ RECTIFY IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

ELECTRICAL RISER SYMBOLS

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

ELECTRICAL RISER | SCALE 1/4" = 1'-0" | 1

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PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:

S. NO.	DETAIL	DATE
01	BD COMMENTS	08/18/2025
02	1 PROJ. COORD.	09/15/2025
03	REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

ELECTRICAL PLAN NOTES AND RISER DIAGRAM

E-1

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

1. COORDINATE FINAL FIXTURE MAKE & MODEL WITH ARCHITECT/ OWNER.
2. ALL LIGHT FIXTURES CONSIDERED TO BE AS 120V FIXTURE. E.C SHALL INFORM ENGINEER ON RECORD OTHERWISE.
3. UPPERCASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE.
4. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UN–SWITCHED HOT CONDUCTOR.
5. E.C SHALL COORDINATE WITH ARCHITECT FOR EXACT QUANTITY AND LOCATION EMERGENCY LIGHT PRIOR TO BID.

ELECTRICAL LIGHTING PLAN KEY NOTES:

A. CONNECT ALL EXISTING/NEW EMERGENCY EGRESS LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.

B. E.C SHALL COORDINATE EXACT LOCATION OF TIMER SWITCH BANK WITH OWNER/ ARCHITECT.

C. E.C TO COORDINATE THE BUILDING SIGNAGE CONNECTION REQUIREMENTS WITH SIGN VENDOR. BASE BID ACCORDINGLY.

D. EXISTING LIGHT FIXTURE IN EXTERIOR AREA DENOTED BY (E) SHALL REMAIN CONNECTED TO THE RESPECTIVE EXISTING ELECTRICAL PANEL ALONG WITH THEIR CONTROLS. E.C SHALL VERIFY THE OPERABLE CONDITIONS AND ITS CONTROLS IN FIELD AND REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

E. E.C. SHALL COORDINATE WITH LIGHTING VENDOR/ARCHITECT FOR ANY ACCESSORY OR CONTROL REQUIREMENT FOR THE LIGHT "F" IN FIELD. PROVIDE CIRCUIT & CONTROL AS REQUIRED. BASE BID ACCORDINGLY. VERIFY EXACT LOCATION OF JUNCTION BOX IN FIELD. E.C. SHALL VERIFY THE COMPATIBILITY FOR DIMMER OF LIGHT "F" WITH LIGHTING VENDOR BEFORE COMMENCING ANY WORK, INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY. BASE BID ACCORDINGLY.

F. LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPLIED AS PER NEC 110.26(D).

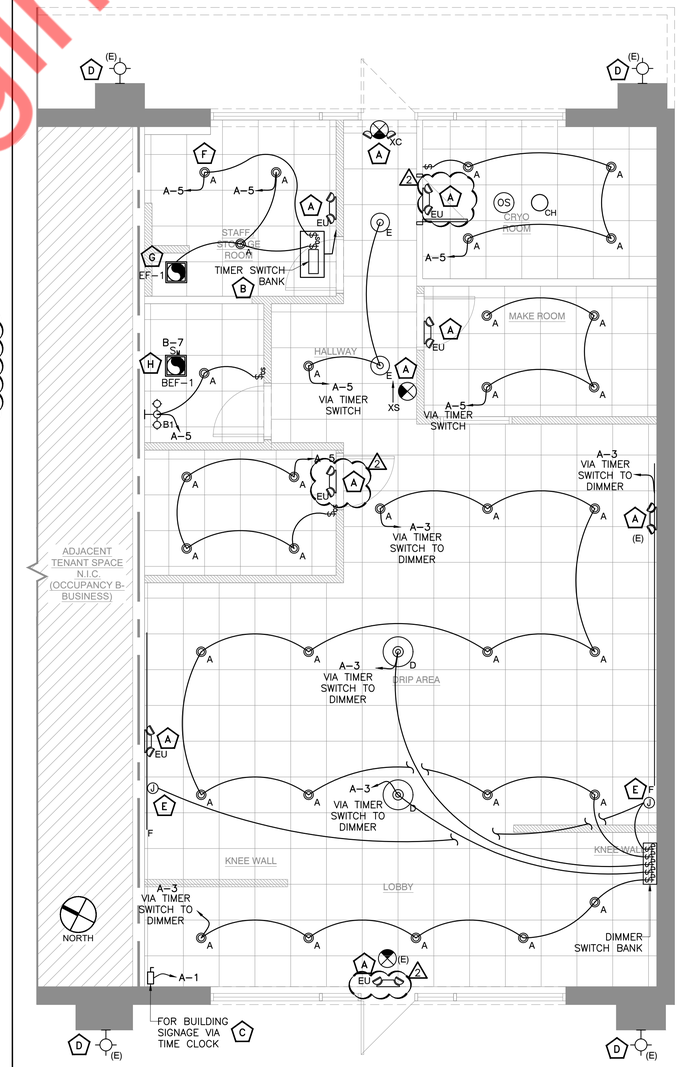
G. INTERCONNECT EF–1 WITH LIGHTS IN THE SAME ROOM. E.C TO COORDINATE WITH MECHANICAL DRAWINGS.

H. INTERCONNECT BEF–1 WITH RTU–1. E.C TO COORDINATE WITH MECHANICAL DRAWINGS.

3

NOTE:

PLEASE LEAVE A NOTE THAT STATES THAT THE TINTING ON THE EXTERIOR WINDOWS WILL BE REMOVED TO FOLLOW THE REQUIREMENTS BELOW:
(STREET LEVEL WINDOWS SHALL BE UNTINTED. TINTED GLASS WITH A MINIMUM VISUAL TRANSMITTANCE FACTOR OF 35 IS PERMITTED. MIRRORED OR REFLECTIVE GLASS IS NOT PERMITTED IN ANY LOCATION. WINDOW SIGNS WITH A TOTAL COPY AREA NOT EXCEEDING 50% OF THE WINDOW OR GLASS DOOR ON WHICH THE SIGN(S) ARE LOCATED ARE PERMITTED.)



ELECTRICAL LIGHTING PLAN | SCALE 1/4" = 1'–0" | 1

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CHECKED BY:	NYE

ELECTRICAL LIGHTING PLAN

E-2

ELECTRICAL FLOOR POWER PLAN GENERAL NOTES:

1. GENERAL USE CABLING SHALL BE OF #12 AWG MINIMUM AT 120V FOR CABLE UPTO 80 FEET. FOR CABLE ABOVE 80 FEET US #10 AWG CABLES. ADJUST WIRE SIZE FOR A MAXIMUM VOLTAGE DROP OF 3%.
2. E.C SHALL COORDINATE WITH ARCHITECT FOR EXACT HEIGHT OF OUTLETS.
3. E.C SHALL VERIFY ANY THIRD PARTY INSPECTION REQUIRED BY THE LOCAL JURISDICTION PRIOR TO BIDDING THIS PROJECT.
4. ALL LOW VOLTAGE WIRING TO BE IN CONDUIT U.N.O BY A.H.J.
5. E.C SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR MECHANICAL EQUIPMENT SENSOR AND THERMOSTAT LOCATION.
6. NO EXPOSED WIRING.
7. ALL WIRING MUST MEET LOCAL ELECTRICAL CODES AS WELL AS NATIONAL ELECTRICAL CODE REQUIREMENTS.

ELECTRICAL FLOOR POWER PLAN KEY NOTES:

(A) ALL 15/20A, 125V AND 250V NON LOCKING TYPE RECEPTACLES IN LOBBY/ RECEPTION/HALLWAY SHALL BE LISTED TAMPER RESISTANCE AS PER NEC 406.12. ACC

(B) PROVIDE SHOW WINDOW RECEPTACLE AS PER NEC 210.62. VERIFY EXACT LOCATION WITH ARCHITECT/OWNER.

(C) E.C. SHALL COORDINATE WITH THE #A20_WASHER & DRYER, OWNER, AND MANUFACTURER FOR EXACT POWER REQUIREMENTS, MOUNTING HEIGHT, AND LOCATION OF THE ELECTRICAL OUTLET AND PROVIDE ACCORDINGLY. BASE BID ACCORDINGLY.

(D) E.C SHALL PROVIDE TWO CAT 6 CABLING FOR DESK. PROVIDE AN ADDITIONAL 6 FEET OF CABLING AT EITHER END OF CONNECTION. E.C. SHALL COORDINATE WITH IT DRAWINGS/SPECIALIST FOR EXACT LOCATION, POWER REQUIREMENTS AND MAKE PROVISIONS ACCORDINGLY. BASE BID ACCORDINGLY.

(E) E.C SHALL COORDINATE WITH #B12 CRYO EQUIPMENT CHAMBER VENDOR/ OWNER/ MANUFACTURER FOR EXACT LOCATION, MOUNTING HEIGHT & POWER REQUIREMENT BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

(F) E.C SHALL VERIFY/PERFORM ALL THE WIRING IN THE PATIENT CARE SPACES IN COMPLIANCE WITH 2023 NEC ARTICLE 517.13(A) & (B) WITH AMENDMENTS, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS AND REGULATIONS.

(A) WIRING METHODS– ALL BRANCH CIRCUITS SERVING PATIENT CARE SPACES SHALL BE PROVIDED WITH AN EFFECTIVE GROUND–FAULT CURRENT PATH BY INSTALLATION IN A METAL RACEWAY SYSTEM, OR A CABLE HAVING A METALLIC ARMOR OR SHEATH ASSEMBLY. THE METAL RACEWAY SYSTEM, METALLIC CABLE ARMOR, OR SHEATH ASSEMBLY SHALL ITSELF QUALIFY AS AN EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH 250.118.

(B) INSULATED EQUIPMENT GROUNDING CONDUCTORS AND INSULATED EQUIPMENT BONDING JUMPERS.

(1) GENERAL– THE FOLLOWING SHALL BE DIRECTLY CONNECTED TO AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR THAT IS CLEARLY IDENTIFIED ALONG ITS ENTIRE LENGTH BY GREEN INSULATION AND INSTALLED WITH THE BRANCH CIRCUIT CONDUCTORS IN THE WIRING METHODS AS PROVIDED IN 517.13(A).

1. THE GROUNDING TERMINALS OF ALL RECEPTACLES OTHER THAN ISOLATED GROUND RECEPTACLES.
2. METAL OUTLET BOXES, METAL DEVICE BOXES, OR METAL ENCLOSURES.
3. ALL NON–CURRENT–CARRYING CONDUCTIVE SURFACES OF FIXED ELECTRICAL EQUIPMENT LIKELY TO BECOME ENERGIZED THAT ARE SUBJECT TO PERSONAL CONTACT, OPERATING AT OVER 100 VOLTS. (SEE CODE FOR EXCEPTIONS)

(1) SIZING. EQUIPMENT GROUNDING CONDUCTORS AND EQUIPMENT BONDING JUMPERS SHALL BE SIZED IN ACCORDANCE WITH 250.122.

(G) EXISTING 200A (M.L.O), 208Y/120V, 3–PHASE, 4–WIRE ELECTRICAL PANEL "A"(NAME TO BE VERIFIED IN ON FIELD). E.C. TO FIELD VERIFY EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL. REPLACE WITH NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

(H) E.C SHALL VERIFY/PERFORM THE INSTALLATION OF ELECTRICAL PANELS IN COMPLIANCE WITH NEC ARTICLE 110.26(A) AND (B). E.C. SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.

(I) ELECTRICAL SUPPLY PROVISION FOR THE RCP–1. E.C SHALL COORDINATE WITH PLUMBING CONTRACTOR FOR EXACT POWER REQUIREMENTS PRIOR TO ROUGH–IN. BASE BID ACCORDINGLY.

(J) TIME CLOCK FOR EXTERIOR SIGNAGE. E.C SHALL COORDINATE WITH ARCHITECT/ OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT IN FIELD. BASE BID ACCORDINGLY.

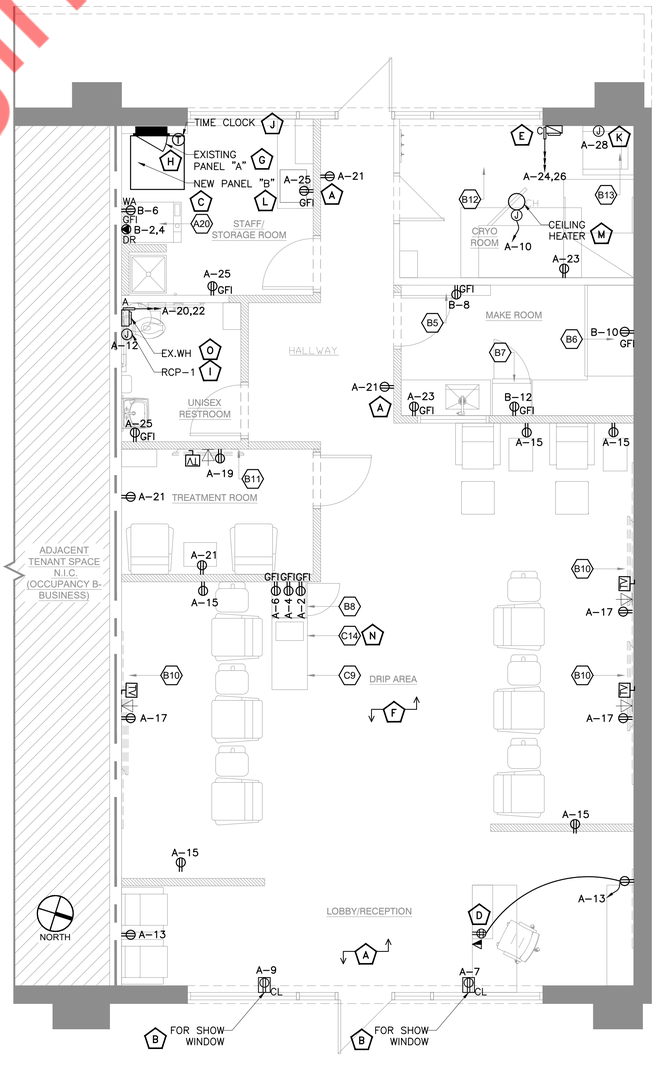
(K) E.C SHALL COORDINATE WITH #B13 CRYO EQUIPMENT BRAIN VENDOR/ OWNER/ MANUFACTURER FOR EXACT LOCATION, MOUNTING HEIGHT, LV WIRING REQUIREMENTS & POWER REQUIREMENT BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

(L) PROVIDE NEW 125A (M.L.O), 120/208V, 3–PHASE, 4–WIRE ELECTRICAL PANEL "B". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

(M) ELECTRICAL SUPPLY FOR CEILING HEATER (CH). E.C SHALL COORDINATE WITH THE OWNER/MANUFACTURER FOR THE EXACT POWER REQUIREMENTS PRIOR TO ROUGH–IN. BASE BID ACCORDINGLY.

(N) E.C. SHALL COORDINATE WITH THE #B8_UNDER COUNTER DRINK REFRIGERATOR, #C9_BEVERAGE COUNTER AND #C14 COUNTERTOP WATER DISPENSER VENDOR, OWNER, AND MANUFACTURER FOR EXACT POWER REQUIREMENTS, MOUNTING HEIGHT, AND LOCATION OF THE ELECTRICAL OUTLET AND PROVIDE ACCORDINGLY. BASE BID ACCORDINGLY.

(O) EXISTING PLUMBING EQUIPMENT (EX.WH) SHALL REMAIN CONNECTED TO EXISTING ELECTRICAL PANEL "A". E.C. SHALL VERIFY THE OPERABLE CONDITION OF THE ELECTRICAL FIXTURE AND CONTROL IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID



ELECTRICAL POWER PLAN | SCALE 1/4" = 1'–0" | 1

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PROJECT

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PROFESSIONAL SEAL

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STATE OF NORTH CAROLINA

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DRAWN BY: NYE
CHECKED BY: NYE

ELECTRICAL POWER PLAN

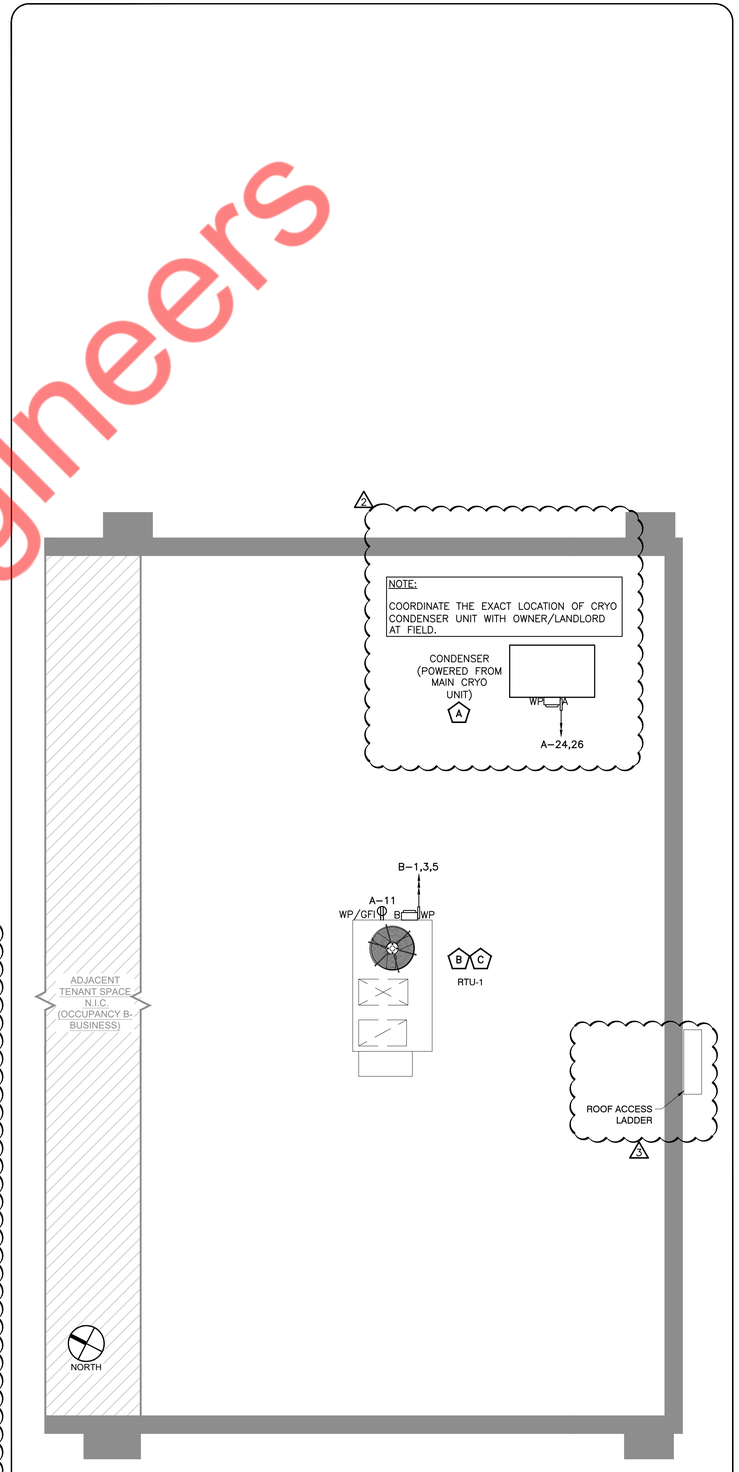
E-3

ELECTRICAL ROOF POWER PLAN KEY NOTES:

(A) E.C SHALL COORDINATE WITH #B12 CRYO EQUIPMENT CHAMBER VENDOR/ OWNER/ MANUFACTURER FOR EXACT LOCATION, MOUNTING HEIGHT & POWER REQUIREMENT BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

(B) ELECTRICAL CONTRACTOR SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.

(C) ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.

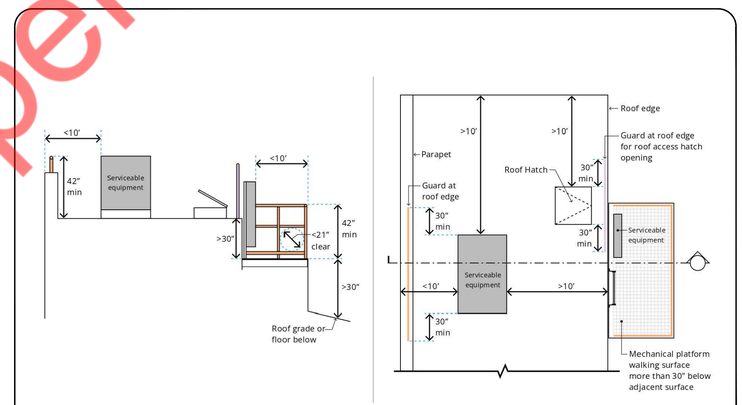


ELECTRICAL ROOF PLAN | SCALE 1/4" = 1'-0" | 1

2

NOTE:

GUARDS SHALL BE PROVIDED WHERE VARIOUS COMPONENTS THAT REQUIRE SERVICE AND ROOF HATCH OPENINGS ARE LOCATED WITHIN 10 FEET (3048 MM) OF A ROOF EDGE OR OPEN SIDE OF A WALKING SURFACE AND SUCH EDGE OR OPEN SIDE IS LOCATED MORE THAN 30 INCHES (762 MM) ABOVE THE FLOOR, ROOF, OR GRADE BELOW. THE GUARD SHALL EXTEND NOT LESS THAN 30 INCHES (762 MM) BEYOND EACH END OF COMPONENTS THAT REQUIRE SERVICE AND EACH END OF THE ROOF HATCH PARALLEL TO THE ROOF EDGE. THE TOP OF THE GUARD SHALL BE LOCATED NOT LESS THAN 42 INCHES (1067 MM) ABOVE THE ELEVATED SURFACE ADJACENT TO THE GUARD. THE GUARD SHALL BE CONSTRUCTED SO AS TO PREVENT THE PASSAGE OF A 21-INCH-DIAMETER (533 MM) SPHERE AND SHALL COMPLY WITH THE LOADING REQUIREMENTS FOR GUARDS SPECIFIED IN THE INTERNATIONAL BUILDING CODE.



SERVICE EQUIPMENT MOUNTING DETAILS | SCALE 1/4" = 1'-0" | 2

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PROFESSIONAL SEAL

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STATE OF NORTH CAROLINA

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DRAWN BY: NYE
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ELECTRICAL ROOF PLAN

E-4

PANEL SCHEDULE:

PANEL:	A (E)											MOUNTING:	REFER TO ELECTRICAL PLAN ON E-3	
208Y/120	VOLTS,	3	PHASE,	4	WIRE							LOCATION:	REFER TO ELECTRICAL PLAN ON E-3	
MAIN CB	200A	M.L.O.	NA	BUS:	EXISTING	MIN,						FED FROM:	REFER TO RISER ON E-1	
NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, E : EQUIPMENT LOAD, O : OTHER/MISC. (TYPICAL)														

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	BUILDING SIGNAGE/ TIME CLOCK	L	1.20	2#12, #12G, 3/4"C	1.33			2#12, #12G, 3/4"C	0.13	E	#B8_UNDERCOUNTER DRINK REFRIGERATOR	20	2
3	20	LIGHTING - LOBBY/ RECPTION, DRIP AREA	L	0.84	2#12, #12G, 3/4"C		0.96		2#12, #12G, 3/4"C	0.13	E	#C9_BEVERAGE COUNTER	20	4
5	20	LIGHTING - HALLWAY, MAKE ROOM, CRYO ROOM, UNISEX RESTROOM, STAFF/STORAGE ROOM, EF-1(N)	L	0.53	2#12, #12G, 3/4"C			2.26	2#12, #12G, 3/4"C	1.73	E	#C14_COUNTER TOP WATER DISPENSER	20	6
7	20	SHOW WINDOW RECEPTACLE	R	1.70	2#12, #12G, 3/4"C	1.70						SPARE	25	8
9	20	SHOW WINDOW RECEPTACLE	R	1.70	2#12, #12G, 3/4"C		2.98		2#12, #12G, 3/4"C	1.28	M	CEILING HEATER	20	10
11	20	RECEPTACLE -ROOF	R	0.18	2#12, #12G, 3/4"C			0.28	2#12, #12G, 3/4"C	0.10	O	RCP-1	20	12
13	20	RECEPTACLE - LOBBY/ RECEPTION	R	0.72	2#12, #12G, 3/4"C	7.75			4-3, 1#8G, 1-1/4"C.	7.03	O	PANEL -B(N)	100-3P	14
15	20	RECEPTACLE - DRIP AREA	R	0.90	2#12, #12G, 3/4"C		7.93			7.03	O			16
17	20	#B10_TV SCREEN	R	0.54	2#12, #12G, 3/4"C			7.57		7.03	O			18
19	20	#B11_TV SCREEN	R	0.18	2#12, #12G, 3/4"C	2.43			EXISTING	2.25	O	EX. WH	30-2P	20
21	20	RECEPTACLE -TREATMENT ROOM, HALLWAY	R	0.72	2#12, #12G, 3/4"C		2.97			2.25	O			22
23	20	RECEPTACLE - MAKE ROOM, CRYO ROOM	R	0.36	2#12, #12G, 3/4"C			8.16	2#3, #8G, 1"C	7.80	O	#B12_CRYO EQUIPMENT CHAMBER	90-2P	24
25	20	RECEPTACLE -STAFF/STORAGE RM, UNISEX REST RM	R	0.54	2#12, #12G, 3/4"C	8.34				7.80	O			26
27	15	SPARE					2.88		2#10, #10G, 3/4"C	2.88	O	#B13_CRYO EQUIPMENT BRAIN	30	28
29	20	SPARE						0.00				SPARE	20	30
TOTAL CONNECTED LOAD (KVA)						21.55	17.73	18.26						

PANEL: B (N) — MOUNTING: REFER TO ELECTRICAL PLAN ON E-3

208Y/120 VOLTS, 3 PHASE, 4 WIRE — LOCATION: REFER TO ELECTRICAL PLAN ON E-3

MAIN CB: NA — M.L.O.: 125A — BUS: 125A — MIN, — FED FROM: REFER TO RISER ON E-1

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, E : EQUIPMENT LOAD, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	50-3P	RTU-1	O	4.56	3#8, #10G, 3/4" C	7.06			2#10, #10G, 3/4"C	2.50	O	#A20_DRYER	30-2P*	2
3			O	4.56			7.06			2.50	O			4
5			O	4.56				6.36	2#12, #12G, 3/4"C	1.80	O	#A20_WASHER	20	6
7	20	BEF-1	M	0.02	2#12, #12G, 3/4"C	0.20			2#12, #12G, 3/4"C	0.18	O	#B5_MOUNTED CABINET DEFRILATOR	20	8
9		SPACE					0.24		2#12, #12G, 3/4"C	0.24	O	#B6_WIDE PORTABL CLEAN ROOM HOOD	20	10
11		SPACE						0.16	2#12, #12G, 3/4"C	0.16	O	#B7_LARGE PHARMACY REFRIGERATOR	20	12
13		SPACE				0.00						SPARE	20	14
15		SPACE					0.00					SPARE	20	16
17		SPACE						0.00				SPARE	20	18
19		SPACE				0.00						SPARE	20	20
21		SPACE					0.00					SPACE		22
23		SPACE						0.00				SPACE		24
25		SPACE				0.00						SPACE		26
27		SPACE					0.00					SPACE		28
29		SPACE						0.00				SPACE		30
TOTAL CONNECTED LOAD (KVA)						7.26	7.30	6.52						

EQUIPMENT SCHEDULE:

ITEM NO.	DESCRIPTION	VOLTAGE	PHASE	AMPS	kW
A20	SMART ELECTRIC DRYER	208	1	24.00	4.99
A20	SMART TOP LOAD WASHER	120	1	15.00	1.80
B5	MOUNTED CABINET DEFRILATOR	120	1	1.50	0.18
B6	WIDE PORTABLE CLEAN ROOM HOOD	120	1	2.00	0.24
B7	LARGE PHARMACY REFRIGERATOR	115	1	1.4	0.16
B8	UNDERCOUNTER DRINK REFRIGERATOR	115	1	1.1	0.13
B9	STAFF ROOM REFRIGERATOR	120	1	0.5	0.06
B10	TV SCREEN	120	1	1.50	0.18
B11	TV SCREEN	120	1	1.50	0.18
B12	CRYO EQUIPMENT CHAMBER	208	1	75	15.60
B13	CRYO EQUIPMENT BRAIN	120	1	24	2.88
C9	BEVERAGE COUNTER	115	1	1.10	0.13
C14	COUNTER TOP WATER DISPENSER	115	1	15.00	1.73

PANEL SCHEDULE KEY NOTES:

A. PROVIDE (1) 125A–3P BREAKER IN PLACE OF (1) 30A–3P.

B. PROVIDE (1) 90A–2P BREAKER IN PLACE OF (2) 20A–1P.

C. PROVIDE (1) 30A–1P BREAKER IN PLACE OF (1) 20A–1P.

PANEL SCHEDULE GENERAL NOTES:

1. ALL THE CIRCUITING SHOWN FOR THE EXISTING PANEL "A" ARE FOR REFERENCE PURPOSE ONLY. E.C SHALL VERIFY CIRCUITING & BREAKER SIZE OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
2. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
3. E.C SHALL VERIFY THE EXISTING EQUIPMENT LOAD & RATING IN FIELD AND ACCORDINGLY CONSIDER THE ELECTRICAL LOAD IN PANEL SCHEDULE
4. E.C SHALL PROVIDE NEW BREAKER IN PLACE OF EXISTING CIRCUIT BREAKER WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE. CHECK COMPATIBILITY OF NEWLY ADDED BREAKER WITH THE EXISTING PANEL BEFORE PURCHASING. BASE BID ACCORDINGLY.
5. '*' INDICATES GFCI CIRCUIT BREAKERS.

M.E.P. ENGINEER
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PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:

S. NO.	DETAIL	DATE
01	BD COMMENTS	08/18/2025
02	PROJ. COORD.	09/15/2025
03	REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

PANEL SCHEDULES
EQUIPMENT LIST

E-5

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title: HYDRALIVE
Project Type: Alteration

Construction Site:

Owner/Agent:

Designer/Contractor:
MICHAEL TOBIAS
MEPENGINEER
382 NE 191ST STREET SUITE 49674
MIAMI, Florida 33179

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Health Care-Clinic	1520	0.90	1368
		Total Allowed Watts =	1368

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Health Care-Clinic (1520 sq.ft.)				
LED: A: Other:	1	33	10	317
LED: B1: Other:	1	1	120	120
LED: E: Other:	1	2	120	240
LED: F: Other:	1	29	3	78
			Total Proposed Watts =	755

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MICHAEL TOBIAS — Name - Title
Signature
07/18/25 — Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 [EL15][1]	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1 [EL18][1]	Occupancy sensors installed in required spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.1, C405.2.2.3 [EL23][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.2.1 [EL22][2]	Automatic controls to shut off all building lighting installed in all buildings.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.3 [EL16][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.3, C405.2.3.1, C405.2.3.2 [EL20][1]	Primary sidelighted areas are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.3, C405.2.3.1, C405.2.3.3 [EL21][1]	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.4 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.2.4 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Select one ENERGY CODE: PRESCRIPTIVE

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
REFER TO LIGHTING FIXTURE SCHEDULE ON SHEET E-1
total interior wattage specified vs. allowed (whole building or space by space) 755WATTS/1368WATTS
total exterior wattage specified vs. allowed N/A

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

- ☐ C406.2 More Efficient HVAC Equipment Performance
- ☐ C406.3 Reduced Lighting Power Density
- ☑ C406.4 Enhanced Digital Lighting Controls
- ☐ C406.5 On-Site Renewable Energy
- ☐ C406.6 Dedicated Outdoor Air System
- ☐ C406.7 Reduced Energy Use in Service Water Heating

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PROJECT

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S. NO.	DETAIL	DATE
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PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

ENERGY ANALYSIS

E-6

PLUMBING NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THIS SET. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING OR PRECEDING WITH WORK.
3. ALL EQUIPMENT WHICH IS TO REMAIN MUST BE REFURBISHED TO A LIKE NEW CONDITION.
4. PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
5. ALL MATERIALS SHALL BE NEW.
6. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
7. REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
8. PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTION AND TESTS. PLUMBING CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR MUST BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
9. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
10. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ENGINEER/ARCHITECT PRIOR TO BEGINNING CONSTRUCTION.
11. VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
12. EXPOSED WATER PIPING SHALL BE TYPE "L" COPPER FOR 2" AND UNDER. WATER PIPING IN WALLS AND UNDERGROUND MAY BE "PEX" TYPE PIPING THAT MEETS ANSI/NSF STANDARD 61.
13. SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE PVC BUT MAY NOT RUN THRU RATED ASSEMBLIES OR IN PLENUMS.
14. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
15. FURNISH AND INSTALL APPROVED AIR CHAMBERS AT EACH PLUMBING FIXTURE GROUP AS PER CODE AND WITH GOOD ENGINEERING PRACTICE.
16. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS; EXCEPT AT WATER HEATER AS PER CODE.
17. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD.
18. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING VOIDS BETWEEN PIPE AND WALL/FLOOR SLEEVES WITH FIRE RATED FOAM, TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS AS PART OF THE PLUMBER'S WORK.
19. PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF CERTIFICATE OF OCCUPANCY. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE WITHIN 72 HOURS OF NOTIFICATION AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED. PROVIDE COPY TO LL.
20. STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY NOT BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF.
21. PROVIDE CHROME PLATED COMBINATION COVER PLATE AND CLEAN OUT PLUG OR ACCESS PANEL FOR ALL CLEANOUTS.
22. NO COMBUSTIBLE MATERIAL TO BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
23. NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
24. WATER PIPING INSULATION SHALL BE 1" THICK ARMAFLEX INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR ALL HOT WATER PIPING. WHERE DOMESTIC WATER TEMPERATURES CAN CAUSE SWEATING, ALL COLD WATER PIPING SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX INSULATION.
25. CONDENSATE DRAIN LINES TO BE RUN UNDER SLAB IN PVC SCH40 PIPE AND STUBBED OUT OF WALL TO UNIT. TIE-IN OF A/C TO BE BY OTHERS. PVC PIPING WITH 1/2" THICK ARMAFLEX INSULATION MAY BE USED IN LOCATIONS WHERE ALLOWED BY LOCAL CODES. SEE PLUMBING DRAWINGS FOR SIZE AND LOCATION OF PIPING. PVC WILL BE MIN. SCHEDULE 40. SCHEDULE 40 FOR SIZE AND LOCATION OF PIPING. PVC WILL BE MIN. SCHEDULE 40.
26. PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
27. NO JOINTS UNDERGROUND FOR COPPER.
28. PLUMBING FIXTURES SHALL COMPLY WITH 2018 NORTH CAROLINA STATE PLUMBING CODE.
29. WATER HAMMER ARRESTORS AS PER 2018 NORTH CAROLINA STATE PLUMBING CODE.
30. PLUMBING CONTRACTOR SHALL REVIEW ALL BID DOCUMENTATION.
31. PLUMBING CONTRACTOR SHALL REVIEW WALL FINISHES @ LOCATION REQUIRING BARRIER-FREE COMPLIANCE (EXAMPLE: CENTER LINE TO TOILET).
32. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
33. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER. PROVIDE A COPY TO LL.

EXISTING CONTIDITONS NOTES

STOP AND READ

THE CONTRACTOR AND SUB-CONTRACTORS **SHALL NOT INITIATE ANY WORK UNTIL EXISTING FIELD CONDITIONS ARE PROPERLY VERIFIED**. THIS SHALL HOLD TRUE FOR FIRST GENERATION AND 2ND GENERATION SPACES. WHEN DEMOLITION IS REQUIRED, THAT WILL BE PERMITTED TO EXPOSE CONDITIONS. THESE VERIFICATIONS SHALL INCLUDE BUT NOT LIMITED TO: DIMENSIONS BOTH HORIZONTALLY AND VERTICAL, ELECTRICAL SERVICE /PANELS LOCATION AND VOLTS/PHASE, LOCATION/QTY OF ROOF MOUNTED HVAC EQUIPMENT, CONFIRM THAT INTERIOR HVAC HUNG UNITS HAVE PROPER SUPPORT CONNECTIONS FOR EXISTING STRUCTURE, FIRE SPRINKLER MAIN RUNS, TOILET ROOM DIMENSIONS, DOOR SWING FOR DOORS TO REMAIN AND ETC. IF NOT VERIFIED AND DISCOVERED AT A LATER TIME, THE CONTRACTOR SHALL REIMBURSE THE ARCHITECT FOR THE REDESIGN FEE. THIS DOES NOT INCLUDE HIDDEN WORK I.E. PITCH OF SANITARY LINES, ACTUAL CONDITIONS OF EXISTING HVAC EQUIPMENT, STRUCTURAL COLUMNS/BEARING WALLS OR CONDITIONS OF GREASE INTERCEPTORS AND ETC.

SCOPE OF WORK

PROVIDE ALL PLUMBING FOR NEW VITAMIN FACILITY INCLUDING ALL WATER, GAS, VENT AND SANITARY LINES AND CONNECT TO EXISTING UTILITIES. REUSE EXISTING ELECTRIC STORAGE WATER HEATER FOR PLUMBING FIXTURES.

COORDINATE WITH GC AND MECHANICAL CONTRACTOR FOR ANY REQUIRED CONDENSATE LINES.

PLUMBING LEGEND

SAN	SANITARY SEWER PIPING
	VENT PIPING
	EXISTING COLD WATER PIPING
	COLD WATER PIPING
	EXISTING HOT WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
G	GAS PIPING
	PIPE RISE
	PIPE DROP
FCO	FLOOR CLEAN OUT
	BALANCING VALVE
	P-TRAP
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
EX.WH	EXISTING WATER HEATER
V.I.F	VERIFY IN FIELD
	ISOLATION VALVE
	WALL CLEANOUT
	POINT OF CONNECTION
	RECIRCULATION PUMP
	EXPANSION TANK
	GAS SHUT-OFF VALVE
	THERMOSTATIC MIXING VALVE

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
WATER CLOSET (TANK)	E	--	E	E
LAVATORY	E	E	E	E
MOP SINK	1/2"	1/2"	3"	2"
MAKE ROOM SINK	1/2"	1/2"	2"	1-1/2"
STAFF ROOM SINK	1/2"	1/2"	2"	1-1/2"
WASHER/DRYER	1/2"	1/2"	3"	2"
WATER DISPENSER	1/2"	--	--	--

ENERGY CONSERVATION NOTES

1. AS PER 2018 NORTH CAROLINA STATE ENERGY CONSERVATION CODE (ADOPTS IECC 2015) C404.4, PIPING FROM A WATER HEATER TO THE TERMINATION OF HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE C403.2.10 OF MINIMUM PIPE INSULATION THICKNESS.

MINIMUM PIPE INSULATION THICKNESS							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU· IN./ (H· FT2· °F)	MEAN RATING TEMPERATURE, °F	<1	1 TO <1½	1½ TO <4	4 TO <8	≥8
141-200	0.25-0.29	125	1.5	1.5	2	2	2
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0

2. HOT WATER SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2018 NORTH CAROLINA STATE ENERGY CONSERVATION CODE (ADOPTS IECC 2015) C404.5.1. THE MAXIMUM ALLOWABLE PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER MAXIMUM PIPING LENGTH TABLE.

NOMINAL PIPE SIZE (INCHES)	MIXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAV.	OTHER FIXTURES
⅜"	3'	50'
½"	2'	43'
¾"	0.5'	21'
1"	0.5'	13'
1¼"	0.5'	8'
1½"	0.5'	6'
2" OR LARGER	0.5'	4'

3. AS PER 2018 NORTH CAROLINA STATE ENERGY CONSERVATION CODE (ADOPTS IECC 2015) C404.6.1, AUTOMATIC CONTROLS SHALL BE INSTALLED THAT LIMITS THE OPERATION OF A RE-CIRCULATING PUMP AND THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.
4. AS PER 2018 NORTH CAROLINA STATE ENERGY CONSERVATION CODE (ADOPTS IECC 2015)C404.7, PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:

A. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE, SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.

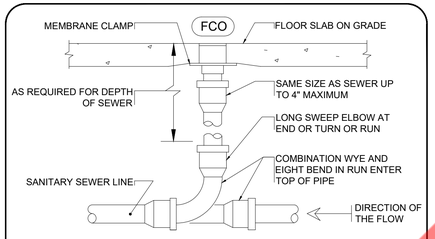
B. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

PLUMBING FIXTURE SCHEDULE

Item No.	Qty.	Description	Manufacturer	Model	WATER Hot	WATER Cold	WASTE Waste
A1	1	LAVATORY	EXISTING TO REMAIN	EXISTING TO REMAIN			E
	1	LAVATORY FAUCET	EXISTING TO REMAIN	EXISTING TO REMAIN	E	E	
	4	THERMAL MIXING VALVES	WATTS	LFMMV	E	E	
	1	INSULATED PLUMBING COVERS	EXISTING TO REMAIN	EXISTING TO REMAIN			
A2	1	WATER CLOSET	EXISTING TO REMAIN	EXISTING TO REMAIN		E	E
A12	1	MOP SINK	ADVANCE TABCO	9-OP-40			3"
	1	MOP SINK FAUCET***	REGENCY	600FM086	1/2"	1/2"	
A14	1	MAKE ROOM SINK***	TBD	TBD	1/2"	1/2"	2"
A17	1	STAFF ROOM SINK***	TBD	TBD	1/2"	1/2"	2"
A20	1	WASHER & DRYER***	TBD	TBD	1/2"	1/2"	3"
C14	1	COUNTERTOP WATER DISPENSER	BRIO	BRIO MODERNA SELF-CLEANING BOTTLELESS COUNTERTOP WATER DISPENSER		1/2"	

***MIXING VALVE REQUIRED.

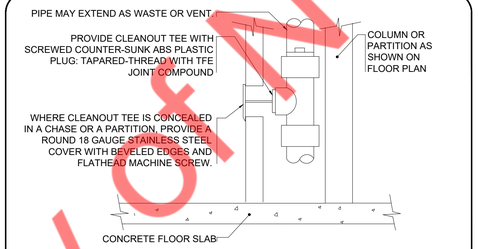
NOTE:
CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURE SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.



FLOOR CLEANOUT
NOT TO SCALE

FLOOR CLEANOUT DETAIL NOTES

1) LOCATE CLEANOUT AT THIS LOCATIONS:
   A) BUILDING EXIT
   B) AT TURNS OF PIPES GREATER THAN 45 DEGREES
   C) AT 90' INTERVALS ON STRAIGHT RUNS
   D) WHERE IS SHOWN ON PLANS
   E) WHERE IS 18" CLEAR AROUND



WALL CLEANOUT
NOT TO SCALE

WALL CLEANOUT DETAIL NOTES

1) PROVIDE WCO WHERE SHOWN ON PLANE, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT.
2) CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.
3) CLEAN OUT FACE SHALL BE WITHIN 4" OF WALL SURFACE. PROVIDE A PIPE EXTENSION IF REQUIRED.

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PROJECT

HYDRALIVE THERAPY

REVISIONS DATES:		
S. NO.	DETAIL	DATE
01	BD COMMENTS	08/18/2025
02	PROJ. COORD	09/15/2025
03	REVISION 1	09/15/2025

PROFESSIONAL SEAL

MICHAEL TOBIAS #054094
PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA

ISSUE DATE: 07.24.25
PROJECT #: 440C.1426C
DRAWN BY: NYE
CHECKED BY: NYE

GENERAL NOTES, SCHEDULES & DETAILS

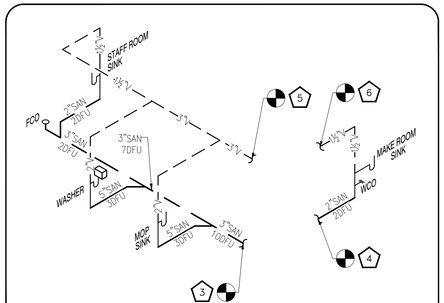
P-1

SANITARY GENERAL NOTES

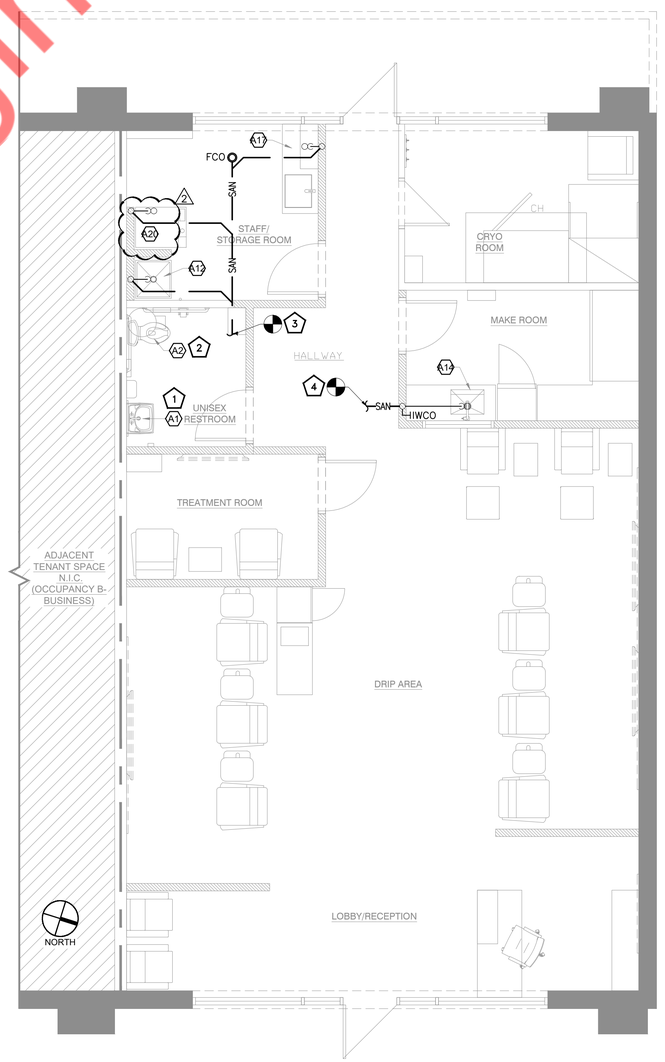
1. SLOPE OF DRAINAGE PIPING SHALL BE 1/8" PER FOOT OF RUN FOR PIPE 3" TO 6" AND 1/4" PER FOOT OF RUN FOR PIPE 2-1/2" AND SMALLER.
2. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
3. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
4. PROVIDE ACCESS PANELS FOR CLEANOUTS AS REQUIRED.
5. REFER SANITARY RISER DIAGRAM FOR ALL PIPE SIZES.
6. CONTRACTOR TO VERIFY THE EXISTING SANITARY AND VENT LOCATION AND ROUTING. MAKE NECESSARY CHANGES TO NEW PIPING AS PER THE EXISTING SITE CONDITION.

SANITARY PLAN & RISER KEY NOTES

1. EXISTING LAVATORY TO REMAIN WITH EXISTING SANITARY AND VENT CONNECTIONS, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
2. EXISTING WATER CLOSET TO REMAIN WITH EXISTING SANITARY AND VENT CONNECTIONS, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
3. CONNECT NEW 3" SANITARY LINE TO EXISTING SANITARY LINE OF ADEQUATE SIZE IN / NEARBY SPACE. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION, SIZE, INVERT AND FLOW DIRECTION OF EXISTING SANITARY LINE AND MAKE NECESSARY CHANGES IF REQUIRED.
4. CONNECT NEW 2" SANITARY LINE TO EXISTING SANITARY LINE OF ADEQUATE SIZE IN / NEARBY SPACE. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION, SIZE, INVERT AND FLOW DIRECTION OF EXISTING SANITARY LINE AND MAKE NECESSARY CHANGES IF REQUIRED.
5. CONNECT NEW 3" VENT PIPE TO EXISTING VENT PIPE OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD FOR EXACT LOCATION AND SIZE OF EXISTING VENT PIPE AND MAKE NECESSARY CHANGES IF REQUIRED.
6. CONNECT NEW 1½" VENT PIPE TO EXISTING VENT PIPE OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD FOR EXACT LOCATION AND SIZE OF EXISTING VENT PIPE AND MAKE NECESSARY CHANGES IF REQUIRED.



SANITARY RISER | SCALE N.T.S. | 2



SANITARY PLAN | SCALE 1/4" = 1'-0" | 1

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SANITARY PLAN AND RISER

P-2

WATER GENERAL NOTES

1. CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 NORTH CAROLINA STATE ENERGY CONSERVATION CODE (REFER SHEET P-1).
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
4. EXISTING WATER HEATER (EX.WH) DRAIN REMAINS AS IT IS.

WATER, GAS PLAN & RISER KEY NOTES

1. EXISTING LAVATORY TO REMAIN WITH EXISTING CW/HW PIPING, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
2. EXTEND AND CONNECT NEW 1/2" CW/HW PIPING TO EXISTING LAVATORY PIPING AND CONNECT NEW 1/2" HW RETURN PIPING TO THE EXISTING HW PIPING AS SHOWN.
3. EXISTING WATER CLOSET TO REMAIN WITH EXISTING CW CONNECTION, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
4. EXTEND AND CONNECT NEW 3/4" CW LINE TO EXISTING WATER CLOSET PIPING.
5. CONNECT NEW 1" CW LINE TO EXISTING CW WATER LINE IN SPACE OF ADEQUATE SIZE WITH EXISTING WATER METER AND BACKFLOW PREVENTER. CONTRACTOR TO FIELD VERIFY THE SIZE AND LOCATION OF EXISTING WATER LINE, WATER METER AND BFP AND UPGRADE IF REQUIRED.
6. EXISTING WATER HEATER (EX.WH) TO REMAIN WITH EXISTING ACCESSORIES AND FITTING. CONTRACTOR TO PROVIDE NEW EXPANSION TANK AND RECIRCULATION PUMP AS PER SCHEDULE IF EXISTING IS NOT THERE OR NOT IN GOOD CONDITION.
7. CONNECT NEW 1" GAS LINE TO EXISTING GAS PIPING WITH EXISTING GAS METER FOR THE PROJECT SPACE. CONTRACTOR TO FIELD VERIFY SIZE, PRESSURE AND LOCATION OF EXISTING GAS PIPING AND GAS METER WITH LANDLORD/UTILITY COMPANY. CONTRACTOR TO MAKE SURE THAT EXISTING METER IS OF MINIMUM 120 MBH AND MAKE NECESSARY CHANGES IF REQUIRED.
8. CONTRACTOR TO FIELD VERIFY EXISTING AVAILABLE PRESSURE AND MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE REQUIRED FOR MECHANICAL EQUIPMENT. PROVIDE PRESSURE REGULATOR IF REQUIRED.

RECIRCULATION PUMP SCHEDULE

MANUFACTURER & MODEL	GRUNDFOS UP-15-18 B5
EQUIPMENT TAG	RCP-1
STATUS	NEW
GPM	2
WATER TEMP.(°F)	140
PUMP TYPE	INLINE
MHP	85 WATTS
V/PH/HZ	115/1/60
RPM	2280
SERVICE FACTOR	1.0

NOTES:

1. PROVIDE AQUA STAT WITH AUTOMATIC TIMER KIT FOR THE TEMPERATURE CONTROL OF HOT WATER SYSTEM. COORDINATE ELECTRICAL REQUIREMENTS FOR TIMER WITH ELECTRICAL CONTRACTOR.
2. CONTRACTOR TO FIELD VERIFY IF EXISTING RCP IS AVAILABLE AND IN WORKING CONDITION. IF NOT AVAILABLE OR NOT IN WORKING CONDITION THEN PROVIDE NEW RCP AS PER ABOVE SCHEDULE.

EXISTING STORAGE ELECTRIC WATER HEATER SCHEDULE

MANUFACTURER	WHIRLPOOL
MODEL	E2F40RD045V
EQUIPMENT TAG	EX.WH
STATUS	EXISTING
CAPACITY	40 GALLONS (V.I.F)
QUANTITY	1
KW	4.5 (V.I.F)
FLOW RATE	20.7 GPH* (V.I.F)
VOLTAGE	208/1/60 (V.I.F)

NOTES:

1. *@ 90° F TEMPERATURE RISE.
2. CONTRACTOR TO REUSE THE EXISTING EXPANSION TANK AND FIELD VERIFY IF EXISTING EXPANSION TANK IS OF 2.0 GALLONS AND IS IN WORKING CONDITION. IF NOT THEN INSTALL NEW EXPANSION TANK AMTROL MODEL THERM-X-TROL ST-5C-DD, 2.0(ET-1) GAL PER LOCAL CODE REQUIREMENTS.

GAS SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	MANUFACTURER	MODEL	SIZE	MBH
RTU-1	1	ROOF TOP UNIT	REFER MECHANICAL SCHEDULE	REFER MECHANICAL SCHEDULE	1"	120
					TOTAL LOAD	120

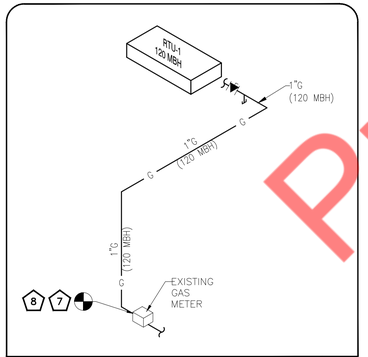
GAS PIPE SIZING PER TABLE 402.4(2) 2018 NORTH CAROLINA FUEL GAS CODE

INLET PRESSURE = <2.0 PSI
PRESSURE DROP = 0.5 IN W.C.
EQUIVALENT LENGTH OF PIPE
= 65 FEET
= 65 FEET + FITTINGS (+40%) = 91 FEET

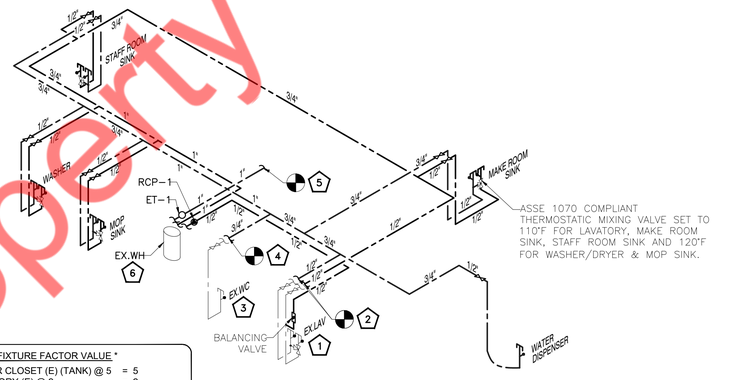
NATURAL GAS PIPING SYSTEM
PROVIDE A COMPLETE GAS PIPING SYSTEM TO SERVE GAS EQUIPMENT FURNISHED BY OTHERS, AS NOTED ON THE DRAWINGS. PROVIDE EITHER THREADED STEEL OR MALLEABLE IRON PIPE WITH MALLEABLE FITTINGS OR WELDED STEEL. PROVIDE ALL UNIONS, SHUT-OFF VALVES AND DIRT LEGS REQUIRED BY NFPA-54 AND GOVERNING LOCAL CODES AND AT EACH GAS APPLIANCE CONNECTION. PROVIDE ALL TESTS, METERS, INSPECTIONS, HANGERS AND EQUIPMENT CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

NOTES:

1. GAS PIPING TO BE SCHEDULE 40 STEEL PIPE W/125 CAST IRON SCREWED FITTINGS.
2. GAS SYSTEM TO BE INSTALLED BY QUALIFIED LICENSED CONTRACTOR.
3. VERIFY ALL EQUIPMENT BTU'S PRIOR TO INSTALLATION. ADJUST PIPE SIZE ACCORDING TABLE 402.4(2) 2018 NORTH CAROLINA FUEL GAS CODE.



GAS RISER | SCALE N.T.S. | 3

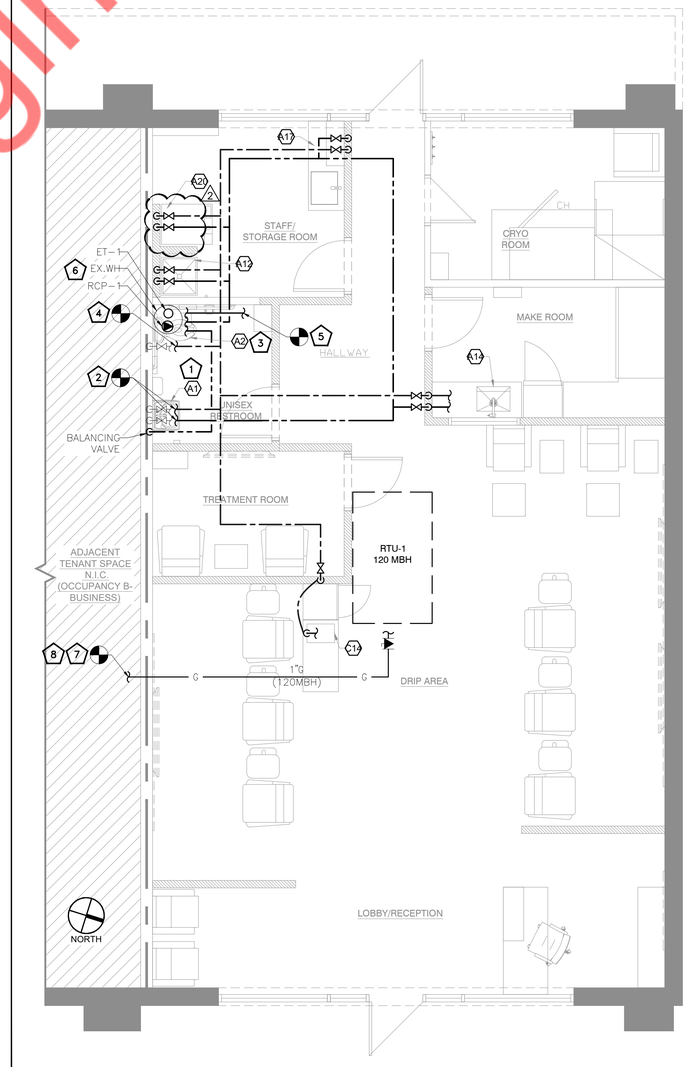


FIXTURE FACTOR VALUE *

1 WATER CLOSET (E) (TANK) @ 5	= 5
1 LAVATORY (E) @ 2	= 2
1 MAKE ROOM SINK @ 1.4	= 1.4
1 STAFF ROOM SINK @ 1.4	= 1.4
1 MOP SINK @ 3	= 3
1 WASHER @ 4	= 4
1 WATER DISPENSER	= 0.25
TOTAL	= 17.05

* TABLE E103.3(2) - 2018 NORTH CAROLINA STATE PLUMBING CODE
1" WATER LINE REQUIRED.

WATER RISER | SCALE N.T.S. | 2



WATER & GAS PLAN | SCALE 1/4" = 1'-0" | 1

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WATER & GAS PLAN & RISERS

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