SCOPE OF WORK

REUSE ONE EXISTING 5.0 TON & ONE EXISTING 4.0 HEAT PUMP ROOF TOP UNIT. CONTRACTOR TO FIELD VERIFY EXACT SIZE & LOCATION OF THE EXISTING DUCTWORK AND REUSE IT IF IN GOOD CONDITION, IF NOT PROVIDE NEW DUCTWORK AS SHOWN IN THE PLAN AND PROVIDE NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEMS.

PROVIDE 1 NEW EXHAUST FANS FOR RESTROOM AND 1 NEW EXHAUST FAN FOR MOP SINK .

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

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.

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. G.C.TO 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 DUCTS OVER CEILINGS MAY BE SHEET METAL WITH EXTERNAL INSULATION AND ALL EXPOSED SHEET METAL DUCTS SHALL BE INTERNALLY INSULATED.

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

K. CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 90 DAYS AFTER THE DATE OF ACCEPTANCE AND PROVIDE COPY TO LL.

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

MECHANICAL PLAN NOTES

A. REUSE ONE EXISTING 5.0 TON & ONE EXISTING 4.0 HEAT PUMP ROOF TOP UNIT. CONTRACTOR TO FIELD VERIFY EXACT SIZE & LOCATION OF THE EXISTING DUCTWORK AND REUSE IT IF IN GOOD CONDITION, IF NOT PROVIDE NEW DUCTWORK AS SHOWN IN THE PLAN AND PROVIDE NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEMS. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AIR DUCT CONNECTIONS. TRANSITION TO DUCT SIZES SHOWN. PROVIDE DUCTWORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. REFER TO A/C UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.

B. FOR SYSTEM OVER 2,000 CFM CHECK FOR DUCT MOUNTED AIR SMOKE DETECTORS IF NOT PROVIDE ONE AND THAT MEET THE REQUIREMENTS OF U.L. 268A, INTERLOCKED TO SHUTDOWN ROOF TOP 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 SHALL BE MINIMUM 26 GAUGE SHEET METAL WITH EXTERNAL DUCT WRAP INSULATION FOR CONCEALED DUCTS AND ALL EXPOSED DUCTS WITH INTERNAL 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.

D. 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 AN ELBOW AT A TERMINAL DEVICE.

E. THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE TYPE. MOUNT THERMOSTAT 48" A.F.F. COORDINATE LOCATION OF THERMOSTAT.

F. 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. AS PER IECC 2018.

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

H. 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.

I. ALL CONDENSATE DRAINS WILL BE PVC FULL DIAMETER OF OUTLET AND WILL TERMINATE IN THE NEAREST APPROVED PLACE OF DISPOSAL.

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 IN ACCORDANCE WITH IECC - 2018, SECTION C408.2.2. BALANCING PROCEDURES SHALL BE IN 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. DUCT DESIGNED TO OPERATE AT STATIC PRESSURE GREATER THAN 3" w.g.(750 PA) SHALL BE INSULATED AND SEALED IN ACCORDANCE WITH IMC 2018 SECTION 603.9 IN ADDITION, SUCH DUCTS AND PLENUMS SHALL BE LEAK TESTED IN ACCORDANCE WITH THE SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL.

MECHANICAL SYMBOLS

EXHAUST FAN	EXHAUST FAN WITH LIGHT
SUPPLY OR OUTSIDE AIR DUCT	OPPOSED BLADE DAMPER
RETURN OR EXHAUST AIR DUCT	DUCT SMOKE DETECTOR
INSULATED RIGID DUCTWORK	PROGRAMMABLE THERMOSTAT
DUCT TRANSITION	HUMIDISTAT
MANUAL VOLUME DAMPER	REMOTE SENSOR
FLEX DUCT	TEMPERATURE SENSOR
	ROUND DUCT DIAMETER
ROOF MOUNTED EXHAUST FAN OUTLET	CUBIC FEET/ MINUTE
	SUPPLY AIR
ROOFTOP UNIT	RETURN AIR
	SUPPLY GRILLE
MOTORIZED DAMPER	CONDENSATE PIPING
FIRE DAMPER	BACK DRAFT DAMPER
	GENERAL CONTRACTOR
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.

EXISTING CONDITION NOTES

STOP AND READ
THE CONTRACTOR AND SUB CONTRACTOR **SHALL NOT INITIATE ANY WORK UNTIL EXISTING FIELD CONDITIONS ARE PROPERLY VERIFIED**. WHEN DEMOLITION IS REQUIRED, THESE VERIFICATIONS SHALL INCLUDE BUT NOT LIMITED TO: DIMENSIONS BOTH HORIZONTAL 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 REMAINED 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.

PHOENIX BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2018 IBC AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. 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.
2. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2018 IMC:
   A. VENTILATION SYSTEM - 2018 IMC - 403.3.
3. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - 2018 IMC - 309.1
   B. DUCT CONSTRUCTION AND INSTALLATION- 2018 IMC - 603
   C. AIR INTAKES, EXHAUSTS AND RELIEF - 2018 IMC - 401.5
   D. AIR FILTERS - 2018 IMC - 605
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2018 IMC - 606
4. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
5. 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 IMC 401.
6. 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.
7. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
8. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2018 INTERNATIONAL MECHANICAL CODE 401.
9. SMOKE DETECTOR SHALL MEET UL268A.
10. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
11. 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. 1
12. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A SPECIAL INSPECTORS/ AGENCIES TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS REPORT FOR THE SMOKE DETECTORS.

RTU SCHEDULE

	RTU-1 (E)	RTU-2 (E)
QUANTITY	1	1
UNIT	HEAT PUMP	HEAT PUMP
MANUFACTURER	CARRIER	CARRIER
MODEL	50HJQ006	50HJQ005
STATUS	EXISTING	EXISTING
MOUNTING	ROOF	ROOF
NOMINAL CAPACITY	5.0 TR	4.0 TR
TOTAL BTUH'S	S.A.E.	S.A.E.
SENSIBLE BTUH'S	S.A.E.	S.A.E.
EER	S.A.E.	S.A.E.
SUPPLY CFM	2000	1600
OUTDOOR AIR CFM	440	380 1
ESP (IN. WC)	S.A.E.	S.A.E.
ELECTRICAL HEATER (KW)	7.9/ 10.5 (V.I.F)	6.5/ 8.7 (V.I.F)
VOLTAGE/PHASE/HZ	208-230/3/60 (V.I.F)	208-230/3/60 (V.I.F)
MCA (A)	56.3/ 60.6 (V.I.F)	43.6/47.2 (V.I.F)
MOCP (A)	60 (V.I.F)	60 (V.I.F)
WEIGHT (LBS) (APPROX.)	S.A.E.	S.A.E.

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

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

FAN SCHEDULE

DESIGNATION	BEF-1(N)	EF-1(N)
STATUS	NEW	NEW
QUANTITY	1	1
MANUFACTURER	GREENHECK	GREENHECK
MODEL	SP-A90	SP-A90
CFM	70CFM @0.3 IN W.C. ESP	70CFM @0.3 IN W.C. ESP
AMPS	0.17	0.17
ACCESSORIES	BDD, LITE KIT	BDD, LITE KIT
WEIGHT (LBS)	21	21
VOLTAGE	115/1/60	115/1/60

NOTES :
1. PROVIDE DISCONNECT SWITCH.
2. BEF-1(N) SHALL INTERLOCK WITH RTU-1(E).
3. EF-1(N) SHALL INTERLOCK WITH ROOM LIGHTS.
4. PROVIDE BACK DRAFT DAMPER.

OCCUPANCY CALCULATION

LOBBY	430 SQ. FT.	17 PEOPLE
FITNESS AREA	1543 SQ. FT.	29 PEOPLE
OFFICE	62 SQ. FT.	1 PEOPLE
	TOTAL	47 PEOPLE

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

VENTILATION REQUIREMENTS PER 2018 INTERNATIONAL MECHANICAL CODE (2018 IMC) TABLE 403.3.1.1

LOBBY	430 SQ. FT. X 0.06 CFM/SQ. FT. =	26 CFM
	17 PEOPLE. X 5 CFM/PEOPLE. =	85 CFM
FITNESS AREA	1543 SQ. FT. X 0.06 CFM/SQ. FT. =	93 CFM
	29 PEOPLE. X 20 CFM/PEOPLE. =	580 CFM
OFFICE	62 SQ. FT. X 0.06 CFM/SQ. FT. =	4 CFM
	1 PEOPLE. X 5 CFM/PEOPLE. =	5 CFM
STORAGE	18 SQ. FT. X 0.12 CFM/SQ. FT. =	3 CFM
JANITORS CLOSET & STORAGE	109 SQ. FT. X 0.12 CFM/SQ. FT. =	14 CFM
OUTSIDE AIR REQUIRED		810 CFM
TOTAL OUTSIDE AIR PROVIDED		820 CFM
UNISEX ACCESSIBLE RESTROOM	70 CFM PER FIXTURE	70 CFM
MOP CLOSET	70 CFM	70 CFM
EXHAUST AIR REQUIRED		140 CFM
OUTSIDE AIR THROUGH RTU-1(E)		440 CFM
OUTSIDE AIR THROUGH RTU-2(E)		380 CFM
AIR BALANCE		
O/A PROVIDED		+820 CFM
BEF-1(N)		-70 CFM
EF-1(N)		-70 CFM
BUILDING PRESSURE (BAROMETRIC RELIEF)		+680 CFM

DIFFUSER SCHEDULE

MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
DESIGNATION	A	B	C	D	R1	R2
USE	SUPPLY	SUPPLY	SUPPLY	SUPPLY	RETURN	RETURN
MODEL	TDC-AA	TDC-AA	TMR-AA	TMR-AA	TDC-AA	56FL
MOUNTING	CEILING	CEILING	DUCT	DUCT	CEILING	WALL
LOCATION	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN
FACE SIZE	24"X24"	12"X12"	Ø18"	Ø22"	24"X24"	REFER PLAN
NECK SIZE	REFER TABLE A	REFER TABLE A	REFER TABLE A	REFER TABLE A	--	--
FRAME TYPE	LAY-IN / FLANGED	LAY-IN / FLANGED	FLANGED	FLANGED	LAY-IN / FLANGED	FLANGED
ACCESSORIES	VOLUME DAMPER	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.

NECK SIZE TABLE - A

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

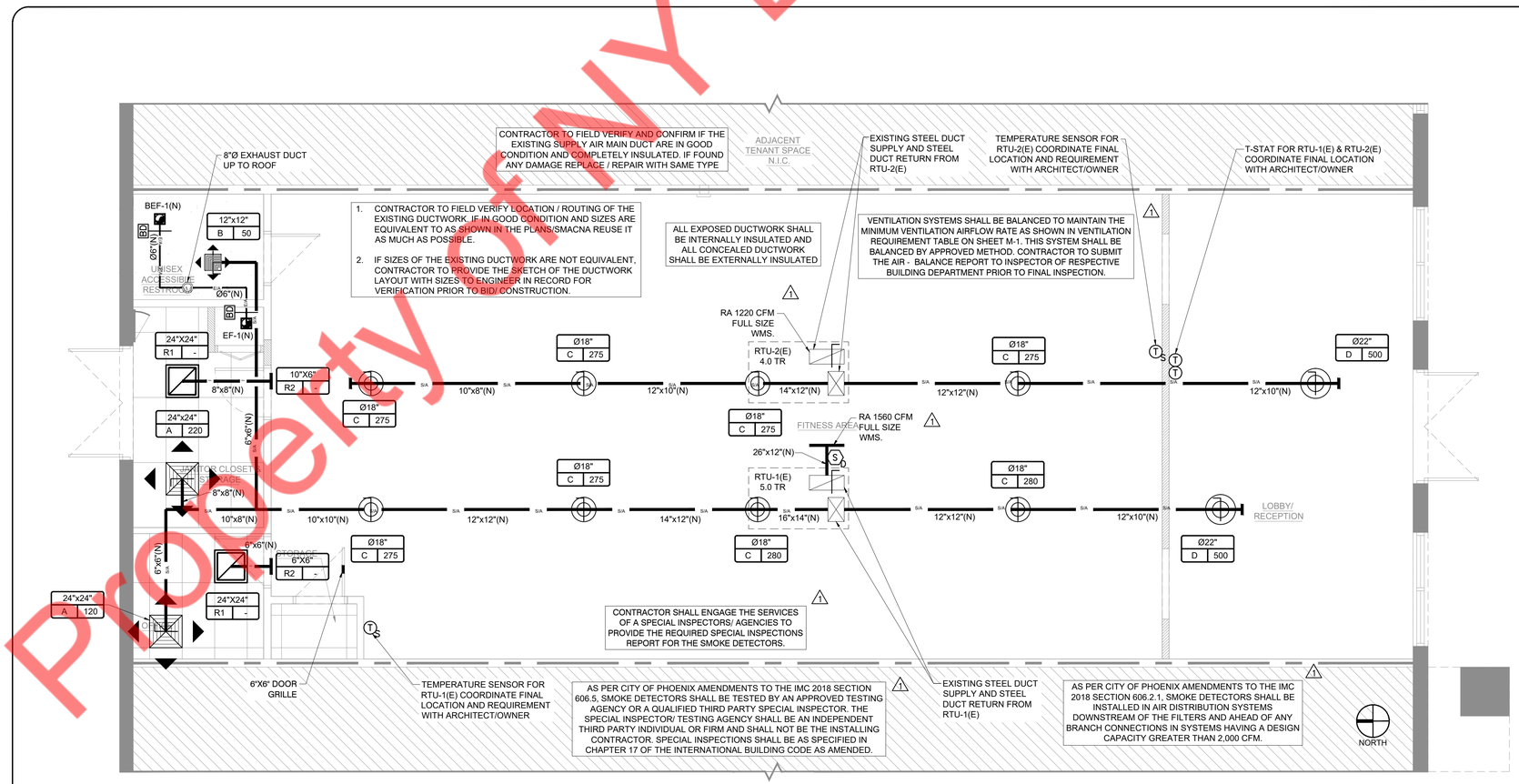
NY ENGINEERS

PROJECT

JABZ BOXING

HVAC NOTES & SCHEDULES

M-1



HVAC FLOOR PLAN | SCALE 1/4" = 1'-0" | 1

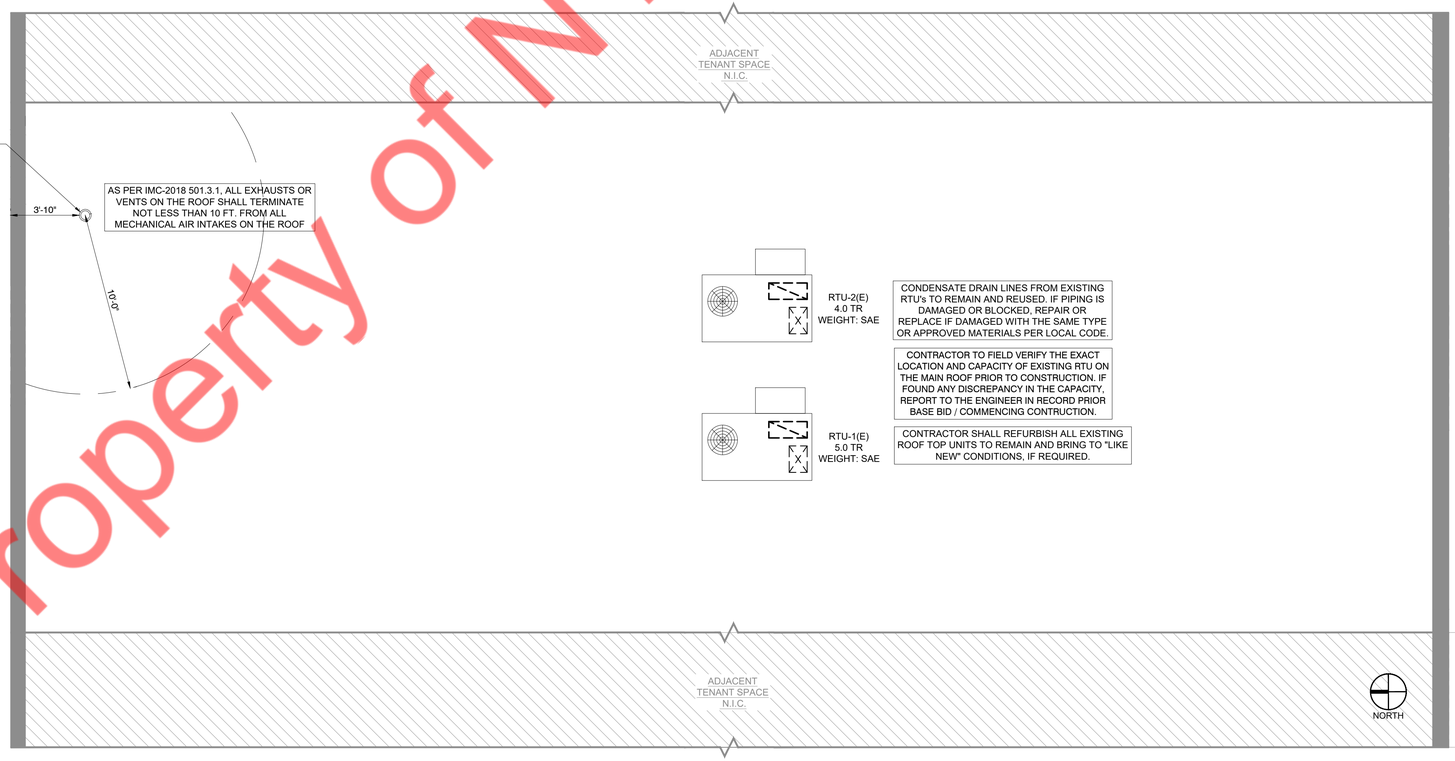
NY ENGINEERS

PROJECT

JABZ BOXING

HVAC FLOOR PLANS

M-2



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

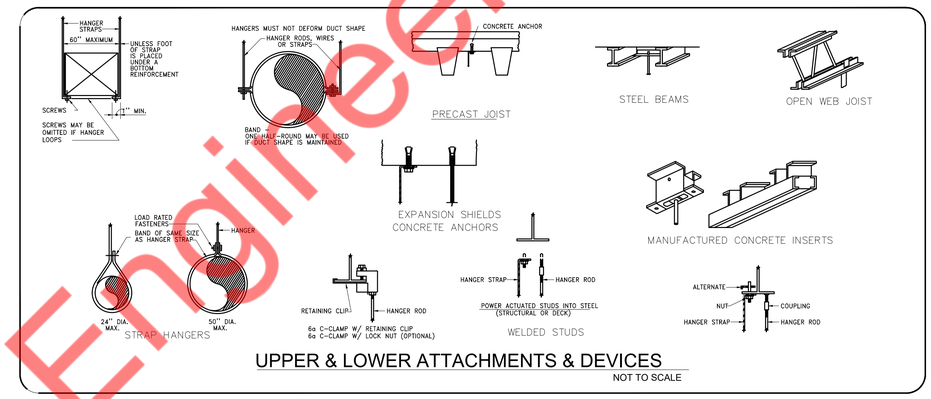
NY ENGINEERS

PROJECT

JABZ BOXING

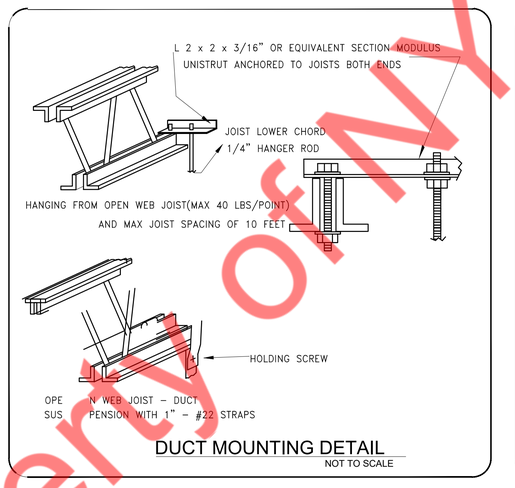
HVAC ROOF PLAN

M-3



UPPER & LOWER ATTACHMENTS & DEVICES

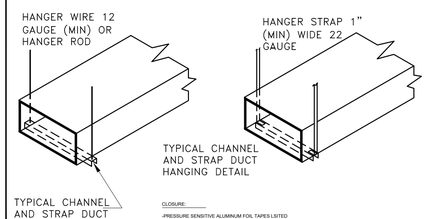
NOT TO SCALE



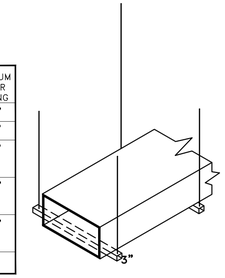
DUCT MOUNTING DETAIL

NOT TO SCALE

CHANNEL SELECTION		
DUCT WIDTH MIN.	CHANNEL GUAGE MIN.	CHANNEL PROFILE
LESS THAN 18"	22 3"x 2"	
LESS THAN 30"	18 3"x 2"	



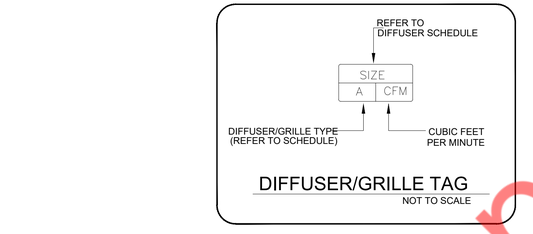
DUCT SIZE,IN.	MAXIMUM HANGER SPACING
① WIDTH 48" OR GREATER	4'–0"
② LESS THEN 48"W X 12"H	6'–0"
③ WIDTH BETWEEN 24" & 48" & HEIGHT OVER 24"	6'–0"
④ WIDTH BETWEEN 24" & 48" & HEIGHT BETWEEN 12" & 24"	8'–0"
⑤ WIDTH LESS THAN 24" & HEIGHT GREATER THAN 12"	8'–0"
DUCT REINFORCING PER SMACNA REQUIRED	



HANGER SPACING AND EXTENSION 3" WIDE CHANNELS

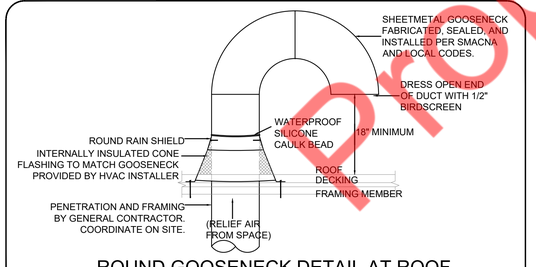
DUCT SUPPORTS

NOT TO SCALE



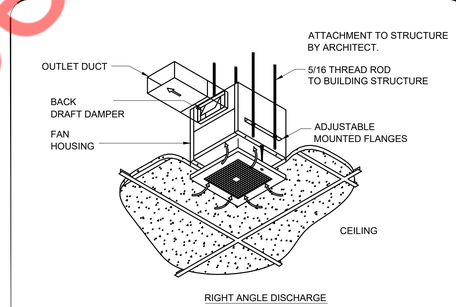
DIFFUSER/GRILLE TAG

NOT TO SCALE



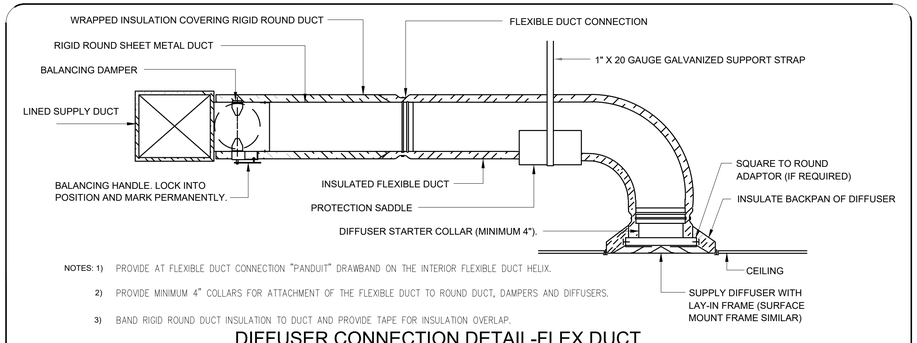
ROUND GOOSENECK DETAIL AT ROOF

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 ROUND DUCT, DAMPERS AND DIFFUSERS.

3) BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

DIFFUSER CONNECTION DETAIL-FLEX DUCT

NOT TO SCALE

NY ENGINEERS

PROJECT

JABZ BOXING

MECHANICAL DETAILS

M-4

SCOPE OF WORK

1. REUSE EXISTING 200A, 120/208V, 3-PHASE ELECTRICAL METER AND BREAKER SWITCH FROM THE EXISTING METER BANK IN THE BASE BUILDING POWER DISTRIBUTION SYSTEM.
2. REUSE EXISTING 200A, 120/208V, 3-PHASE ELECTRICAL FEEDER FROM THE EXISTING METER BANK IN THE BASE BUILDING POWER DISTRIBUTION SYSTEM FOR THE PROJECT SPACE.
3. REUSE EXISTING (1) 200A(M.L.O.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" (NAME TO BE CONFIRMED ON FIELD) FOR THE PROJECT SPACE.
4. PROVIDE ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROJECT SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH G.C FOR LOW VOLTAGE WIRING.

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 2017 NATIONAL ELECTRIC CODE AND ALL CODES 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 BOLT 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. SUBMIT SERVICE ENTRANCE EQUIPMENT FOR SEPARATE APPROVAL.
13. ALL LOW VOLTAGE MUST BE IN CONDUIT TO ABOVE THE DROP CEILING. BRIDAL RINGS OR "J" HOOKS REQUIRED.
14. SEPARATE PERMITS ARE REQUIRED FOR ALL LOW VOLTAGE SUCH AS TELEPHONE, DATA, THERMOSTAT, MUSIC, ALARMS ETC.
15. SEPARATE PERMIT REQUIRED FOR SIGNAGE.
16. PRIOR TO ANY CONSTRUCTION WORK BEGINNING AN ON-SITE MEETING WITH GENERAL CONTRACTORS IS REQUIRED.
17. ELECTRICIAN MUST BE ON SITE FOR ALL INSPECTIONS.
18. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER AND UNLESS OTHERWISE NOTED THHN INSULATION.
19. 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.
20. 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.
21. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE N.E.C. OR LOCAL CODES.
22. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
23. 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.
24. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
25. 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.
26. 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.
27. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
28. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
29. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
30. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
31. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
32. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, DEVICES, ETC. FOR ALL OUTLETS AS INDICATED.
33. 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.
34. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
35. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FIRED CAULKING REQUIRED OF HIS WORK.
36. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/TYPE WRITTEN DIRECTORIES.
37. ALL ELECTRICAL AND COMMUNICATIONS OUTLETS TO BE AT 24" A.F.F. UNLESS NOTED OTHERWISE, AND VERTICALLY MOUNTED.
38. ALL LIGHT SWITCHES TO BE AT 42" A.F.F.
39. 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.
40. 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.
41. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
42. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
43. THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS INDICATES THE CONTRACT SHALL FURNISH AND INSTALL.
44. 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.
45. VOLTAGE DROP FOR ALL BRANCH CONDUCTORS SHALL NOT EXCEED 3%. WHERE VOLTAGE DROP EXCEEDS 3%, CONTRACTOR SHALL INCREASE SIZE OF CONDUCTORS.
46. CONTRACTOR SHALL PROVIDE GFI TYPE BREAKER FOR ALL EXTERIOR 120V CIRCUITS OR GFI PROTECTION -- FOR THE WHOLE CIRCUIT.
47. GAS PIPING SHALL BE BONDED.
48. ELECTRICAL CONTRACTOR SHALL COORDINATE SERVICE ENTRY WITH SERVICE PROVIDER PRIOR TO DETERMINING EXACT LOCATION OF THE METER BOX IN ORDER TO AVOID DISCREPANCIES BETWEEN DRAWINGS AND JOB CONDITIONS.
49. ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
50. 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.
51. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.
52. ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS. FLEXIBLE CONDUIT IS PERMITTED FOR SHORT FINAL CONNECTIONS ONLY (6'-0" OR LESS).
53. 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.
54. CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED.
55. ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.
56. ALL PANELS TO BE UL LABELED WITH BOLT-ON TYPE CIRCUIT BREAKERS.
57. 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.
58. 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.
59. ALL ELECTRICAL PANELS TO BE MOUNTED ON PLYWOOD BACKER BOARD.
60. 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)
$m	MOTOR SWITCH
$T	WALL SWITCH (TIMER)
$D	DIMMER WALL SWITCH
$OS	OCCUPANCY SENSOR WALL
USB	DUPLEX RECEPTACLE WITH USB PROVISION.
	DUPLEX RECEPTACLE, 46" TO AFF AT KITCHEN, BATHS AND TOPS
	QUADRUPLEX RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	230V RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
TV	TELEVISION OUTLET
T	TELEPHONE/DATA OUTLET
T	TELEPHONE OUTLET
D	DATA OUTLET
CL D	CEILING MOUNTED DATA OUTLET
A	30A/240V NON FUSED DISCONNECT SWITCH
B	60A/240V NON FUSED DISCONNECT SWITCH
C	100A/240V NON FUSED DISCONNECT SWITCH

ABBREVIATIONS:

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

GENERAL LIGHTING NOTES

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

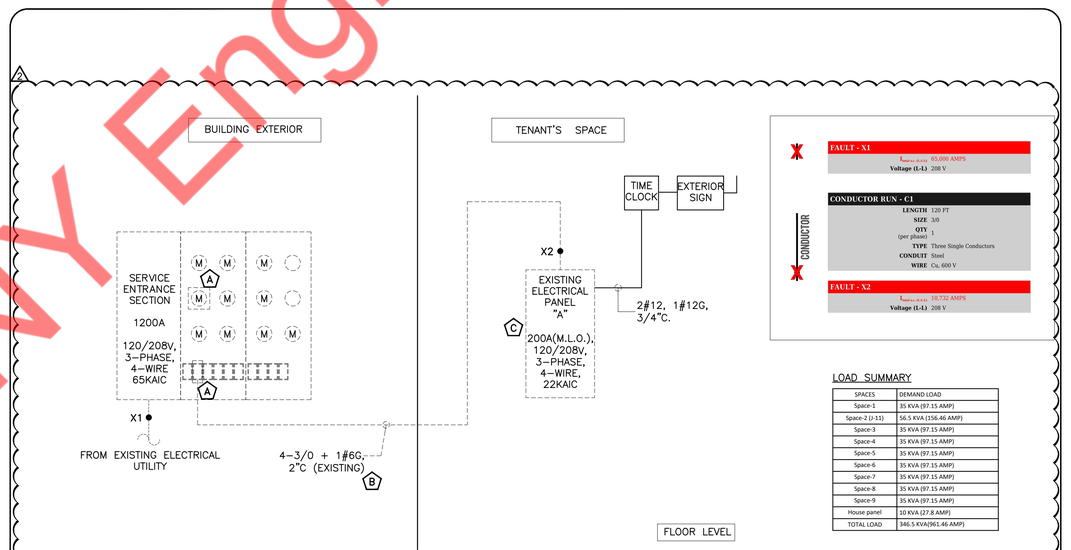
B. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP TYPE	WATTAGES	MOUNTING
	L1	8" LED SUSPENDED FIXTURE	SAYLITE	**L34P-FR-96L-T90W9000L-DMV-40K-BK / HC3015WBK**	120	LED	90 WATTS	PENDANT
	L2	TRACK LIGHTING	NORA LIGHTING	NTE-865L-940-N-B	120	LED	25 WATTS	TRACK
--------	L4	LED STRIP LIGHTING W/2 GANG BOX	NORA LIGHTING	NUTP51-W20LED-942	120	LED	2.7 WATTS/ FEET	RECESSED
	L5	ENVIRO FAN GOLDINE BLACK	ENVIRO FAN	TBD	120	LED	83 WATTS	CEILING
	X2	EXIT/EMERGENCY COMBO LIGHT	NORA LIGHTING	NEX-730-LED-RB	120	LED	2.8 WATTS	WALL
	XB	WALL MOUNTED EMERGENCY LIGHTS	NORA LIGHTING	NE-700-LED-RCB	120	LED	2 WATTS	WALL/CEILING
OS	OS	OCCUPANCY CEILING SENSOR	LUTRON	LOS-CDT-2000-WH	120	-	-	CEILING
$D	D	DIMMER WALL SWITCH	LUTRON	DVTV-WH	120	-	-	WALL
$OS	OS	OCCUPANCY WALL SWITCH	LUTRON	MS-A102-WH	120	-	-	WALL
	(E)	EXISTING LIGHT TO REMAIN	-	-	-	-	-	-

GENERAL NOTES:

1. REFER TO SHEET A-2 - REFLECTED CEILING PLAN IN ARCHITECTURAL DRAWINGS FOR MORE INFORMATION ON COLORS AND TRIMS REQUIRED
2. E.C. SHALL RECEIVE APPROVAL FROM ARCHITECTURE FOR LIGHTING FIXTURE SELECTION BEFORE PURCHASE AND INSTALLATION.



ELECTRICAL RISER DIAGRAM KEYED NOTES:

A. EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER AND BREAKER SWITCH IN THE EXISTING METER BANK FOR THE PROJECT SPACE SHALL REMAIN. E.C SHALL FIELD VERIFY EXACT LOCATION AND OPERABLE CONDITION OF THE METER AND DISCONNECT SWITCH IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

B. EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL FEEDER FOR THE PROJECT SPACE FROM THE EXISTING METER BANK TO REMAIN. E.C. TO VERIFY OPERABLE CONDITION OF FEEDER IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. E.C. SHALL GET INFORMATION ABOUT THE EXISTING POWER DISTRIBUTION PRIOR TO COMMENCING ANY WORK AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.

C. EXISTING 200A, 120/208V, 3-PHASE, 4 WIRE ELECTRICAL PANEL "A" SHALL REMAIN (NAME TO BE CONFIRMED ON FIELD). E.C. TO FIELD VERIFY EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

ELECTRICAL RISER DIAGRAM GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
2. 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.
3. E.C. TO VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD. REPLACE/RECTIFY IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
4. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
5. EXISTING ELECTRICAL DISTRIBUTION TO BE MAINTAINED AND UTILIZED TO SERVE PROJECT SPACE. POWER RISER DIAGRAM INDICATED FOR REFERENCE PURPOSES ONLY.

ELECTRICAL RISER SYMBOLS
NEW
EXISTING ITEM/FEEDER TO REMAIN
EXISTING ITEM/FEEDER TO BE DISCONNECTED & REMOVED

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

NY ENGINEERS

PROJECT

JABZ BOXING

ELECTRICAL PLAN NOTES AND RISER DIAGRAM

E-1

ELECTRICAL LIGHTING CONTROL SCHEDULE:-

$_{OS}$	LUTRON #MS-A102 SINGLE POLE OCCUPANCY SENSOR SWITCH. 120/277V. WHITE. PROVIDE WITH POWER PACK AS REQUIRED.
(OS)	LUTRON #LOS-CDT-2000 DUAL TECHNOLOGY. CEILING MOUNTED. 360 DEGREE FIELD OF VIEW. PROVIDE WITH LUTRON 24V STAND ALONE POWER PACK. 120/277V. WHITE.
$_{D}$	LUTRON #DVTV SINGLE POLE CONTINUOUS DIMMER SWITCH 120/277V. WHITE. PROVIDE WITH POWER PACK AS REQUIRED.
$	STANDARD 120/277V WALL SWITCH AT 48" A.F.F.

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

(A) CONNECT ALL EMERGENCY, EGRESS AND NIGHT LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.

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

(C) EXISTING LIGHT FIXTURE DENOTED BY (E) SHALL REMAIN AS SHOWN. E.C. SHALL VERIFY THE EXACT EXISTING LIGHTING CONTROLS PROVIDED, THEIR OPERATING CONDITIONS IN FIELD. THE EXISTING LIGHTING CONTROLS SHALL BE IN COMPLIANCE WITH IECC CODES. PROVIDE NEW CONTROLS AS SHOWN ON THE PLANS IF REQUIRED. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES/ISSUES BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

(D) LIGHTING CONTROL IN THE ROOM SHALL NOT BE WITH AUTOMATIC MEANS AS PER NEC 110.26(D).

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

(F) CEILING MOUNTED DUAL TECHNOLOGY OCCUPANT SENSOR. SEE LIGHTING CONTROL SCHEDULE ON THIS SHEET FOR ADDITIONAL INFORMATION. SENSOR SHALL SHUT OFF ALL LIGHTING WITHIN 20 MINUTES OF LAST OCCUPANT LEAVING SPACE.

(G) PROVIDE BANK OF SWITCHES AS INDICATED AT 48" A.F.F. E.C. TO COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

(H) PROVIDE 2-GANG BOX ABOVE AND BELOW MIRROR FOR LED ROPE LIGHTS.

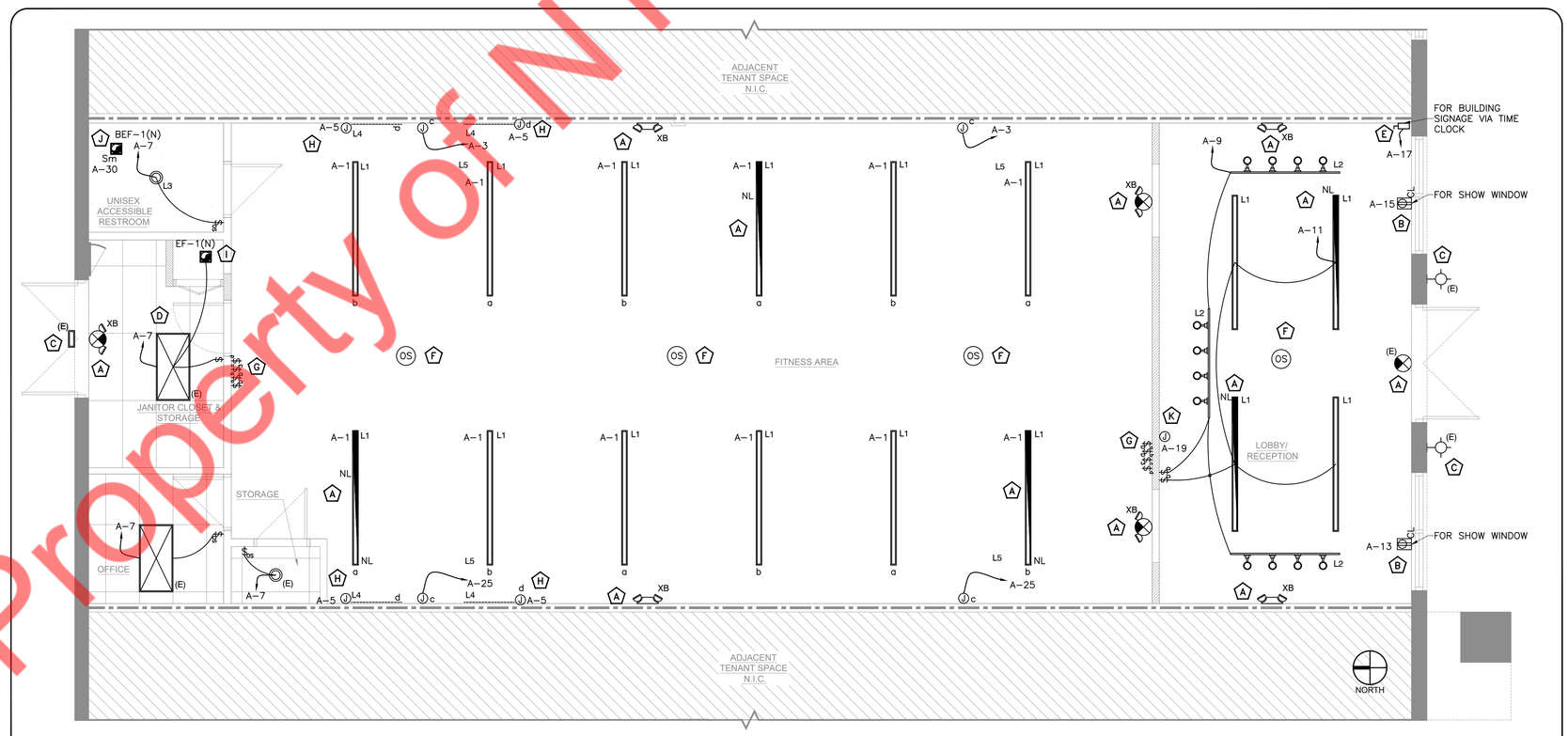
(I) INTERLOCK EXHAUST FAN EF-1(N) WITH THE LIGHTS IN THE SAME ROOM.

(J) INTERLOCK EXHAUST FAN BEF-1(N) WITH THE RTU-1(E). E.C. TO COORDINATE WITH MECHANICAL DRAWINGS.

(K) E.C. SHALL COORDINATE WITH ARCHITECT/OWNER/SIGN VENDOR FOR THE EXACT LOCATION AND POWER REQUIREMENTS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

1. COORDINATE FINAL FIXTURE MAKE & MODEL WITH ARCHITECT/OWNER.
2. ALL LIGHT FIXTURES CONSIDERED TO BE AS 120 VOLT FIXTURE. E.C. SHALL INFORM ENGINEER ON RECORD OTHERWISE.
3. UPPER CASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE AND LOWER CASE LETTER DENOTES THE SWITCH BY WHICH IT IS CONTROLLED.
4. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.
5. G.C. TO VERIFY AND CONFIRM LIGHT FIXTURES HEIGHT AS PER THE ARCHITECTURE PLANS.
6. G.C. TO VERIFY AND CONFIRM LIGHT FIXTURES COLOR AS PER THE CONSTRUCTION DESIGN MANUAL.



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

NY ENGINEERS

PROJECT

JABZ BOXING

LIGHTING PLAN

E-2

ELECTRICAL POWER PLAN KEYED WORK NOTES:

(A) EXISTING 200A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" (NAME TO BE CONFIRMED ON FIELD) TO REMAIN. E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

(B) E.C. SHALL VERIFY/PERFORM THE INSTALLATION OF ELECTRICAL PANELS IN COMPLIANCE WITH 2017 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.

(C) FOR DRINK FRIDGE, ELECTRICAL CONTRACTOR TO CO-ORDINATE WITH MANUFACTURER/VENDOR FOR ITS EXACT LOCATION, POWER REQUIREMENT AND OTHER DETAILS BEFORE COMMENCING AND WORK. BASE BID ACCORDINGLY.

(D) E.C. SHALL COORDINATE WITH THE WATER HEATER MANUFACTURER FOR THE EXACT POWER REQUIREMENTS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.

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

(F) THERMOSTAT FOR RTU-1(E) & RTU-2(E). CONFIRM FINAL LOCATION WITH CLIENT/ARCHITECT.

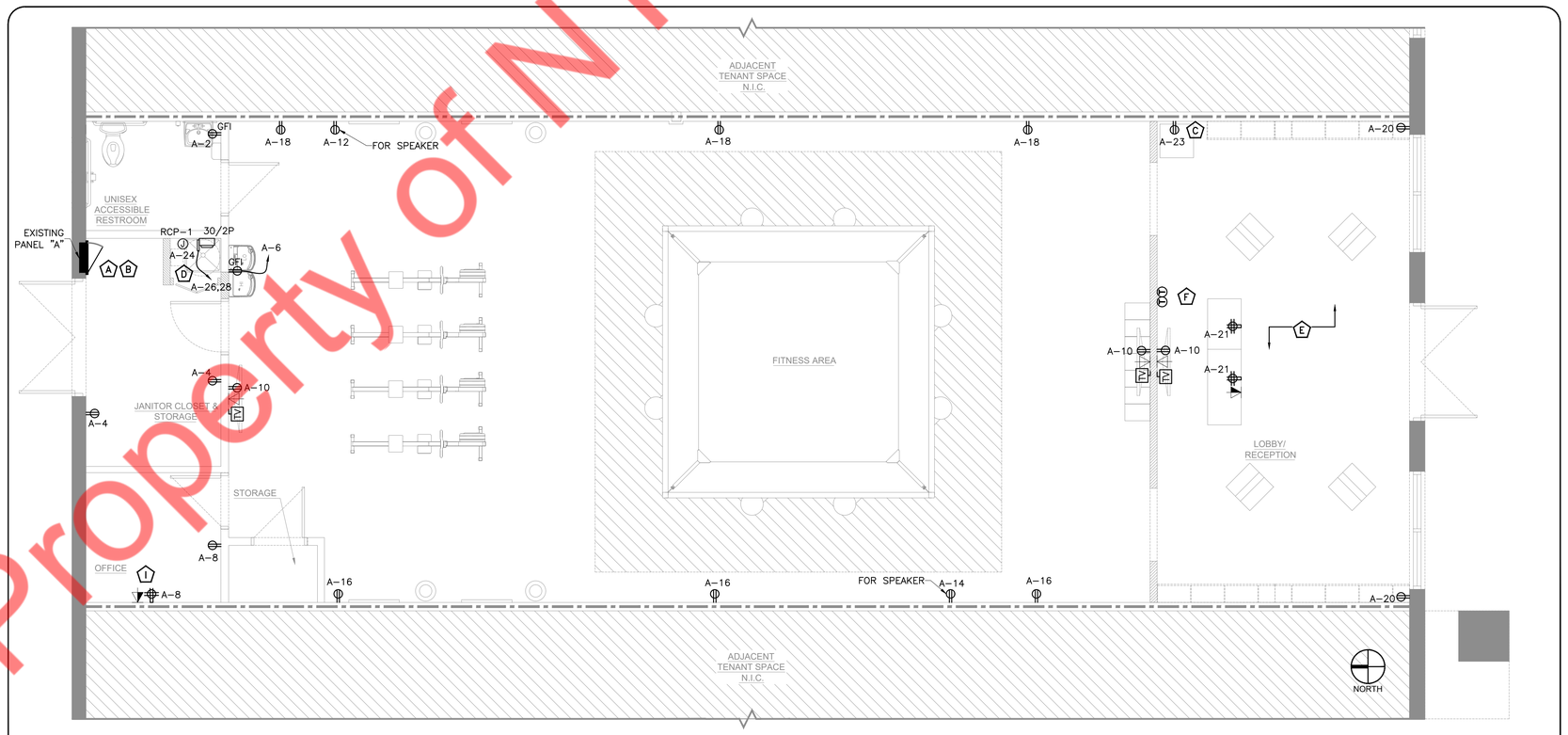
(G) EXISTING MECHANICAL EQUIPMENT WITH ITS ELECTRICAL CONNECTION AND ELECTRICAL FIXTURE TO REMAIN. E.C. SHALL VERIFY OPERABLE CONDITION OF ELECTRICAL CONNECTION AND ELECTRICAL FIXTURE ON FIELD. REPLACE IF INOPERABLE. BASE BID ACCORDINGLY. E.C. SHALL COORDINATE WITH LANDLORD FOR THE EXACT LOCATION OF RTU AND ITS ELECTRICAL CONNECTIONS ON FIELD.

(H) EXISTING ROOF OUTLETS SHALL REMAIN WITH ITS BRANCH CIRCUITS. E.C. SHALL COORDINATE IN FIELD THE OPERABLE CONDITIONS OF THE SAME AND PROVIDE NEW IF FOUND INOPERABLE AS SHOWN ON THE DRAWINGS. BASE BID ACCORDINGLY.

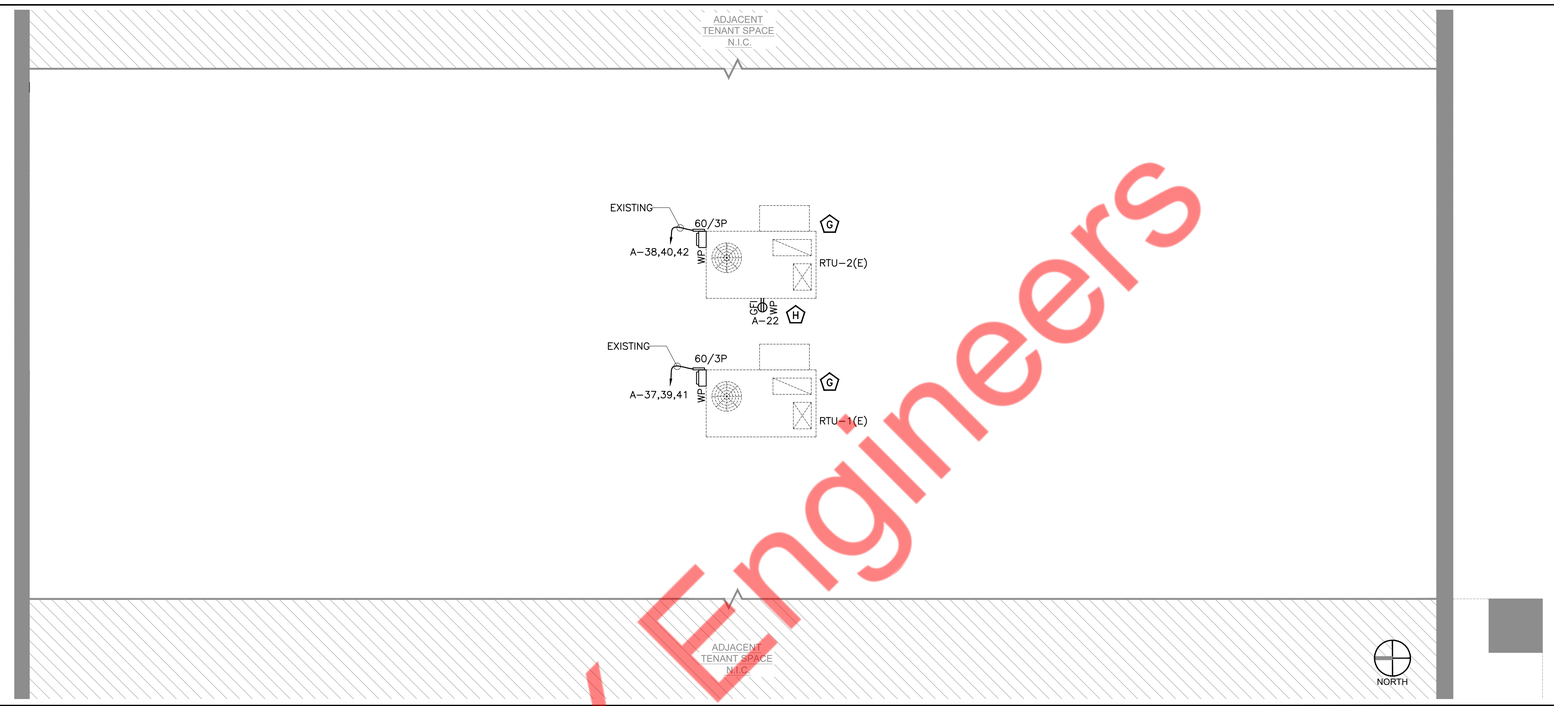
(I) E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT QUANTITY, LOCATION AND POWER REQUIREMENTS OF ELECTRICAL OUTLETS IN OFFICE PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.

ELECTRICAL POWER PLAN GENERAL NOTES:

1. E.C. SHALL COORDINATE WITH THE EQUIPMENT VENDOR FOR EXACT RECEPTACLE REQUIREMENT, EXACT LOCATION AND MOUNTING HEIGHT OF THE RECEPTACLES IN FIELD.
2. CONTRACTOR TO COORDINATE WITH ARCHITECT FOR EXACT HEIGHT OF OUTLETS.
3. E.C. SHALL COORDINATE WITH LOW VOLTAGE VENDOR FOR EXACT QUANTITY AND POWER REQUIREMENTS FOR LOW VOLTAGE EQUIPMENTS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.



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



POWER PLAN - ROOF | SCALE 1/4" = 1'-0" | 2

NY ENGINEERS

PROJECT

JABZ BOXING

POWER & ROOF PLAN

E-3

PANEL SCHEDULE:

PANEL:	**A(E)**									**MOUNTING:**	RECESSED
208Y/120	VOLTS,	**3**	PHASE,	**4**	WIRE			AIC RATING :	22KA	**LOCATION:**	JANITOR CLOSET
MAIN CB	**NA**	**MLO:**	**200A**	**BUS:**	**EXISTING**	MIN,				**FED FROM:**	EXISTING ELECTRICAL UTILITY

NOTE: - L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC.

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	LIGHTING-FITNESS AREA	L	1.10	2#12, #12G, 3/4"C	1.28			2#12, #12G, 3/4"C	0.18	R	RECEPTACLE-RESTROOM	20	2
3	20	FANS-FITNESS AREA	L	0.50	2#12, #12G, 3/4"C		0.68		2#12, #12G, 3/4"C	0.18	R	RECEPTACLES-JANITOR CLOSET & STORAGE	20	4
5	20	LIGHTING-FITNESS AREA	L	0.10	2#12, #12G, 3/4"C			0.64	2#12, #12G, 3/4"C	0.54	R	RECEPTACLES-OFFICE	20	6
7	20	LIGHTING-RESTROOM, STORAGE, JANITOR CLOSET,OFFICE, EF-1(N),BEF-1(N)	L	0.30	2#12, #12G, 3/4"C	0.48			2#12, #12G, 3/4"C	0.18	R	RECEPTACLE-DRINKING FOUNTAIN	20	8
9	20	LIGHTING-LOBBY/RECEPTION	L	0.30	2#12, #12G, 3/4"C		0.84		2#12, #12G, 3/4"C	0.54	R	RECEPTACLES-T.V.	20	10
11	20	LIGHTING-LOBBY/RECEPTION	L	0.35	2#12, #12G, 3/4"C			0.53	2#12, #12G, 3/4"C	0.18	R	RECEPTACLE-SPEAKER	20	12
13	20	RECEPTACLE-SHOW WINDOW	L	1.40	2#12, #12G, 3/4"C	1.58			2#12, #12G, 3/4"C	0.18	R	RECEPTACLE-SPEAKER	20	14
15	20	RECEPTACLE-SHOW WINDOW	L	1.40	2#12, #12G, 3/4"C		1.94		2#12, #12G, 3/4"C	0.54	R	CONVENIENCE RECEPTACLES-FITNESS AREA	20	16
17	20	EXTERIOR SIGNAGE/TIMECLOCK	L	1.20	2#12, #12G, 3/4"C			1.74	2#12, #12G, 3/4"C	0.54	R	CONVENIENCE RECEPTACLES-FITNESS AREA	20	18
19	20	SIGN	L	0.50	2#12, #12G, 3/4"C	0.86			2#12, #12G, 3/4"C	0.36	R	CONVENIENCE RECEPTACLES-LOBBY/RECEPTION	20	20
21	20	RECEPTACLES-RECEPTION DESK	R	0.72	2#12, #12G, 3/4"C		1.08		2#12, #12G, 3/4"C	0.36	R	RECEPTACLE-ROOF	20	22
23	20	RECEPTACLES-DRINK REFRIGERATOR	R	1.80	2#12, #12G, 3/4"C			1.89	2#12, #12G, 3/4"C	0.09	M	RECIRCULATION PUMP(RCP-1)	20	24
25	20	FANS-FITNESS AREA	L	0.50	2#12, #12G, 3/4"C	2.00			2#12, #12G, 3/4"C	1.50	O	WATER HEATER(WH-1)	20/2P	26 (A)
27		SPACE					1.50			1.50	O			28
29		SPACE						0.02	2#12, #12G, 3/4"C	0.02	M	BEF-1(N)	20	30 (B)
31		SPACE				0.00						SPACE		32
33		SPACE					0.00					SPACE		34
35		SPACE						0.00				SPACE		36
37	60/3P	RTU-1(E)	H	6.76	EXISTING	12.43			EXISTING	5.67	H	RTU-2(E)	60/3P	38
39			H	6.76			12.43			5.67	H			40
41			H	6.76				12.43		5.67	H			42
TOTAL CONNECTED LOAD (KVA)						**18.63**	**18.47**	**17.24**						

ELECTRICAL PANEL SCHEDULE GENERAL NOTES:-

A. ALL CIRCUITING SHOWN IN FOR ELECTRICAL PANEL "A" IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
B. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
C. E.C. SHALL PROVIDE NEW CIRCUIT BREAKERS IN PLACE OF EXISTING CIRCUIT BREAKERS WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE.
D. CHECK COMPATIBILITY OF NEWLY ADDED BREAKER WITH THE EXISTING PANEL BEFORE PURCHASING. BASE BID ACCORDINGLY.
E. E.C. TO FILED VERIFY AIC RATING FOR THE EXISTING PANEL AND INFORM ENGINEER ON RECORD PRIOR TO COMMENCING ANY WORK.

ELECTRICAL PANEL SCHEDULE KEYED NOTES:-

(A) PROVIDE (1) 20/2P BREAKER IN PLACE OF (2) SPACES.
(B) PROVIDE (1) 20/1P BREAKER IN PLACE OF (1) SPACE.

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PANEL SCHEDULES
EQUIPMENT LIST

E-4

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 EXERCISE FACILITY INCLUDING ALL WATER & SANITARY LINES AND CONNECT TO EXISTING UTILITIES. PROVIDE NEW ELECTRIC STORAGE WATER HEATER.

COORDINATE WITH GC AND MECH CONTRACTOR FOR ANY REQUIRED CONDENSING WATER LINES.

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
LAVATORY(E)	1/2"	1/2"	2"	1-1/2"
WATER CLOSET(E)	E	-	E	E
MOP SINK	1/2"	1/2"	3"	2"
DRINKING FOUNTAIN	1/2"	-	2"	1-1/2"

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.
20. STUD OR 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 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 UNIFORM PLUMBING CODE.
29. WATER HAMMER ARRESTORS AS PER 2018 UNIFORM 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.
33. OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER. PROVIDE A COPY TO LL.

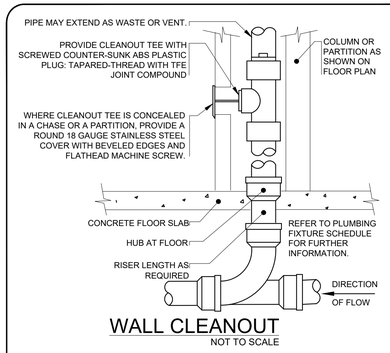
PLUMBING LEGEND

—SAN—	SANITARY SEWER PIPING
—V—	VENT PIPING
	DOMESTIC COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	PIPE UP
	PIPE DOWN
	CAPPED END OF PIPE
FCO	FLOOR CLEAN OUT
	BALANCING VALVE
	P-TRAP
S.O.V.	SHUT-OFF VALVE
CW	DOMESTIC COLD WATER
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
WCO	WALL CLEAN OUT
	ISOLATION VALVE
	CHECK VALVE
	POINT OF CONNECTION
	THERMOSTATIC MIXING VALVE

PLUMBING FIXTURE SCHEDULE

Item No.	Qty.	Description	MANUFACTURER	MODEL	WATER Hot	WATER Cold	WASTE Direct
J	1	WATER CLOSET	EXISTING TO REMAIN	EXISTING TO REMAIN		E	E
K	1	LAVATORY	AMERICAN STANDERD	LUCERNE 0356.421			2"
	1	***LAVATORY FAUCET	KOHLER	VENZA K-R22797-4D	1/2"	1/2"	
	2	THERMAL MIXING VALVES	WATTS	LFMMV	1/2"	1/2"	
	1	INSULATED PLUMBING COVERS	PLUMBEREX	HANDI SHIELD			
L	1	DRINKING FOUNTAIN	ELKAY	LZSTL8WWSSP		1/2"	2"
M	1	MOP SINK	REGENCY	600SM16206	1/2"	1/2"	3"**
WH-1	1	+NEW WATER HEATER	SEE SCHEDULE	SEE SCHEDULE			

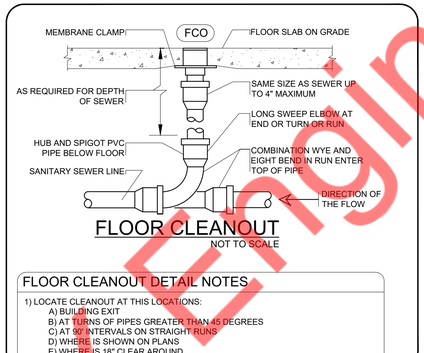
+ HOT WATER 140 DEG.,**ADAPTOR REQUIRED,*LAVATORY FAUCET MAXIMUM HOT WATER TEMPERATURE MUST BE REGULATED TO NOT EXCEED 110°F BY A DEVICE COMPLYING WITH ASSE 1070.



WALL CLEANOUT
NOT TO SCALE

WALL CLEANOUT DETAIL NOTES

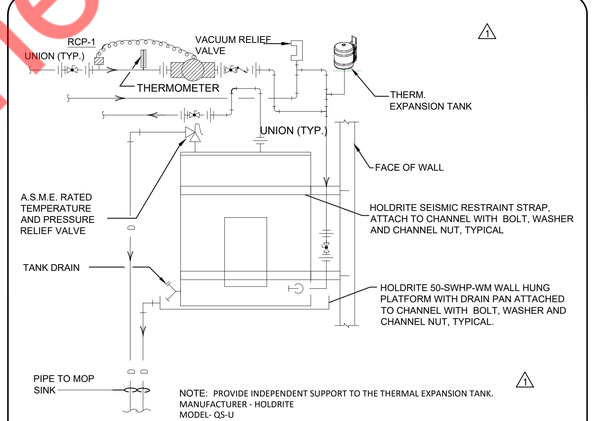
1) PROVIDE WCO WHERE SHOWN ON PLANE, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT
2) LOCATE ABOVE FIXTURE FLOOR RIM WITHIN 4' OF FLOOR.
3) CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.
4) LONG SWEEP AT END OF LINE OR COMBINATION WYE AND EIGHT BEND IN RUN OF LINE
5) CLEAN OUT FACE SHALL BE WITHIN 4" OF WALL SURFACE. PROVIDE A PIPE EXTENSION IF REQUIRED



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



ELECTRIC WATER HEATER
NOT TO SCALE

ENERGY CONSERVATION NOTES

1. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE 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
141-200	0.25-0.29	125	1.5	1.5	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0

2. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.5.1, HOT WATER SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD. THE HOT WATER VOLUME 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 INTERNATIONAL ENERGY CONSERVATION CODE C404.6.1, AUTOMATIC CONTROLS SHALL BE INSTALLED THAT LIMITS THE OPERATION OF A RECIRCULATING PUMP AND THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.

4.AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE 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).

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GENERAL NOTES, SCHEDULES & DETAILS

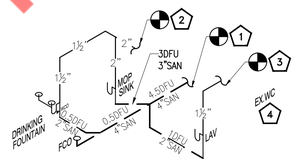
P-1

GENERAL NOTES

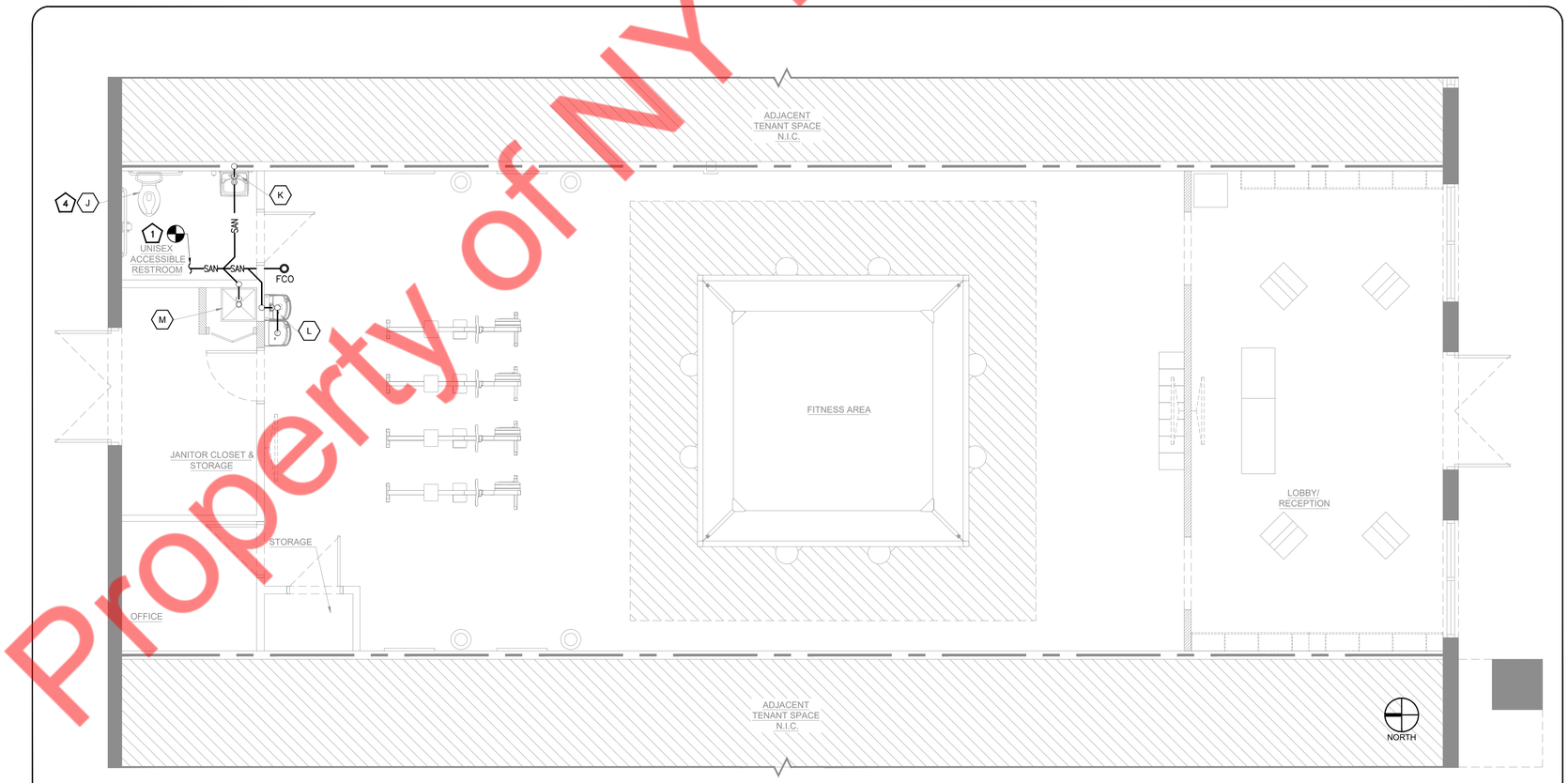
1. UNLESS OTHERWISE NOTED, SLOPE OF DRAINAGE SYSTEM TO BE 1/8" PER FOOT OF RUN FOR PIPE 4" OR LARGER AND 1/4" PER FOOT FOR PIPE SMALLER THAN 4".
2. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
3. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
4. PROVIDE ACCESS PANELS FOR CLEANOUTS AS REQUIRED.

SANITARY PLAN KEY NOTE

1. CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY WASTE LINE OF ADEQUATE SIZE IN SPACE . CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT ON SITE.
2. CONNECT NEW 2" VENT PIPING TO EXISTING VENT PIPING OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT PIPING.
3. CONNECT NEW 1-1/2" VENT PIPING TO EXISTING VENT PIPING OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT PIPING.
4. EXISTING WATER CLOSET TO REMAIN WITH EXISTING SANITARY AND VENT CONNECTION, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.



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



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

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SANITARY PLAN & RISER

P-2

GENERAL NOTES

1. CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL ENERGY CONSERVATION NOTES (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. WATER HEATERS DRAIN SPILLS TO MOP SINK.

HOT WATER RECIRCULATION PUMP	
MANUFACTURER	BELL AND GOSSETT
EQUIPMENT TAG	RCP-1
MODEL	NBF 8S/LW
STATUS	NEW
QUANTITY	1
FLOW RATE	2 GPM
HEAD	8 FT
MHP	39 WATTS
VOLTAGE	115/1/60

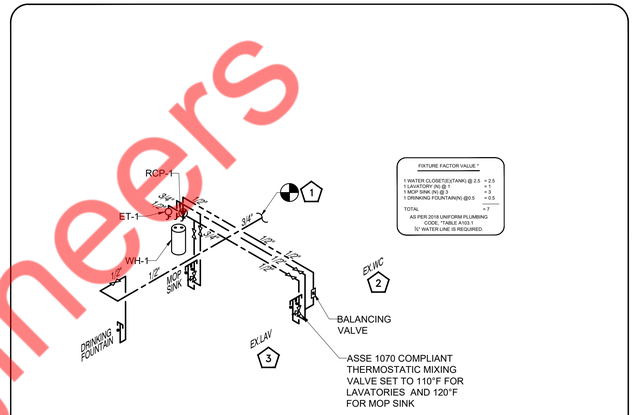
NOTE:
PROVIDE AQUA STAT WITH AUTOMATIC TIMER KIT FOR THE TEMPERATURE CONTROL OF HOT WATER SYSTEM. COORDINATE ELECTRICAL REQUIREMENTS FOR TIMER WITH ELECTRICAL CONTRACTOR.

WATER HEATER SCHEDULE	
MANUFACTURER	AO SMITH
MODEL	DEL-20
EQUIPMENT TAG	WH-1
STATUS	NEW
CAPACITY	19 GALLON
FUEL	ELECTRIC
HEATING ELEMENT	1
KW	3KW*
GPH	17**
EFFICIENCY	N/A
VOLTAGE	208/1/60
AMPERAGE	14.42
WEIGHT (EMPTY)	73 LBS.

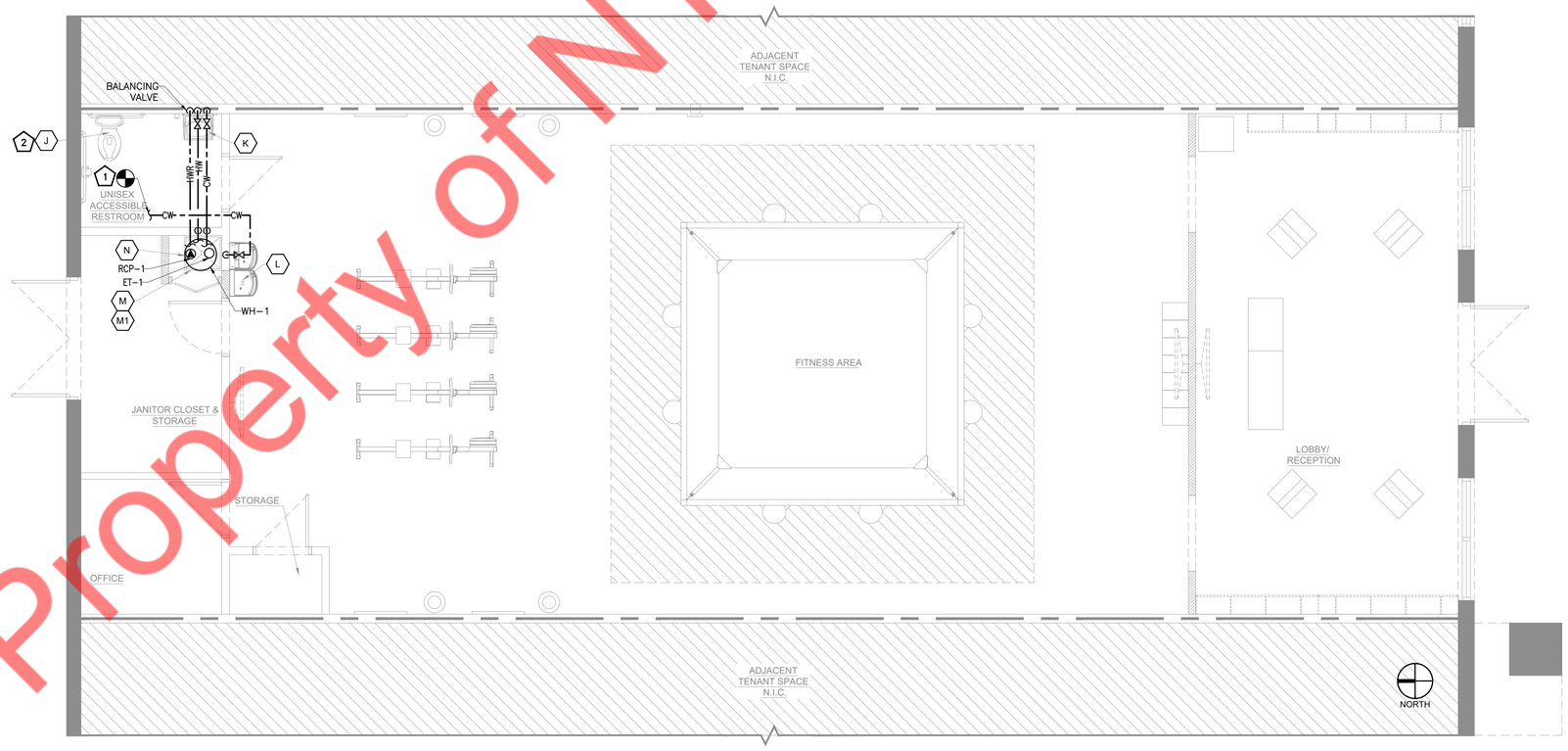
NOTES
1. WATER HEATER SHALL BE WIRED FOR NON-SIMULTANEOUS OPERATIONS
   ** @ 72° F TEMPERATURE RISE
2. INSTALL NEW EXPANSION TANK (ET-1) AMTROL MODEL THERM-X-TROL ST-5.2.0 GAL PER LOCAL CODE REQUIREMENTS.

WATER PIPING KEY NOTE

1. CONNECT NEW ¾" CW LINE TO EXISTING WATER MAIN LINE. CONTRACTOR TO FIELD VERIFY SIZE AND LOCATION OF EXISTING WATER METER AND WATER LINE. PROVIDE RPZ AND WATER METER AS PER LOCAL BUILDING CODE IF NOT PROVIDED.
2. EXISTING WATER CLOSET TO REMAIN WITH ASSOCIATED ACCESSORIES, FITTINGS CW CONNECTION. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.



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



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

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WATER PLAN & RISER

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