

SCOPE OF WORK

REUSE ONE EXISTING 8.5 TON GAS HEAT ROOF TOP UNITS AND PROVIDE ONE NEW 1.5 TON ELECTRIC HEAT SPLIT SYSTEM. PROVIDE NEW DUCTWORK AND NECESSARY ACCESSORIES AS SHOWN IN PLAN.
 PROVIDE TWO NEW BATHROOM EXHAUST FANS AND ONE NEW EXHAUST FAN FOR MOP CLOSET.
 COORDINATE WITH GC ANY ADDITIONAL REFRIGERATION WORK REQUIRED 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 RISERS 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-SECTION BETWEEN THE STEMS OF THE DOUBLE TEE AND LONGITUDINAL REINFORCEMENT SHALL NEVER BE CUT. CALL THE ARCHITECTS OFFICE IN CASE OF UNEXPECTED DIFFICULTIES.
- I. ALL A/C ROUND EXPOSED DUCTS WILL BE SPIRAL GALVANIZED AND READY FOR PAINTING. ALL RECTANGULAR DUCTS OVER CEILINGS MAY BE SHEET METAL WITH EXTERNAL INSULATION AND ALL EXPOSED ROUND 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 8.5 TON GAS HEAT ROOF TOP UNITS AND PROVIDE ONE NEW 1.5 TON ELECTRIC HEAT SPLIT SYSTEM. PROVIDE NEW DUCTWORK AND NECESSARY ACCESSORIES AS SHOWN IN PLAN. 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 RTU 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. 288A, 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 FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA/ANSI-HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION. SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL LATEST EDITION, NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARD AND 2021 INTERNATIONAL MECHANICAL CODE, SECTION 603 THE MORE STRINGENT REQUIREMENT OF ANY CODES SHALL APPLY.
- D. ALL RECTANGULAR OR ROUND SUPPLY AND RETURN DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181 AND INSTALLED IN ACCORDANCE WITH THE TERMS OF THEIR LISTING, THE MANUFACTURER'S INSTRUCTION AND CONTRACTOR TO PROVIDE NECESSARY TEST CERTIFICATE TO INSPECTOR CONFORMING THE MATERIAL STANDARDS AS SPECIFIED ON 2021 INTERNATIONAL MECHANICAL CODE 302.2. FACTORY-MADE AIR DUCTS SHALL BE INSTALLED WITH NOT LESS THAN 4 INCHES OF SEPARATION FROM EARTH, EXCEPT WHERE INSTALLED AS A LINER INSIDE OF CONCRETE, TILE OR METAL PIPE AND SHALL BE PROTECTED FROM PHYSICAL DAMAGE.
- E. 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.
- F. THERMOSTATS AND HUMIDISTAT SHALL BE 7-DAY PROGRAMMABLE TYPE. MOUNT THERMOSTAT 48" A.F.F. COORDINATE LOCATION OF THERMOSTAT.
- G. ALL INTERIOR AIR DUCTS WITH INSULATION SHALL HAVE A MINIMUM OF THICKNESS OF 1.5", R-6 INSULATION AND EXTERIOR DUCTS SHALL HAVE R-8 INSULATION ACCORDING TO ASHRAE 90.1 - 2019, TABLE 6.8.2.
- 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 EQUIPMENT AND MATERIALS WILL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND ACCORDING TO THE BEST PRACTICE.
- J. ALL AIR-HANDLING UNIT CONDENSATE DRAINS WILL BE PVC FULL DIAMETER OF OUTLET AND WILL TERMINATE IN THE NEAREST APPROVED PLACE OF DISPOSAL.
- K. TESTING AND BALANCING SHALL BE DONE IN ACCORDANCE AS PER ASHRAE 90.1 - 2019, 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. PROVIDE FIRE/SMOKE +SMOKE COMBINATION DAMPERS WHEREVER REQUIRED. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR SMOKE/FIRE RATING OF THE WALLS/SLABS/ROOF. COORDINATE ELECTRICAL POWER REQUIREMENT FOR DAMPER ACTUATORS WITH ELECTRICAL CONTRACTOR.

THERMOSTATIC CONTROLS

- A. 6.4.3.1.1 GENERAL
 THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE INDIVIDUALLY CONTROLLED BY THERMOSTATIC CONTROLS RESPONDING TO TEMPERATURE WITHIN THE ZONE. FOR THE PURPOSES OF THIS SECTION, A DWELLING UNIT SHALL BE PERMITTED TO BE CONSIDERED A SINGLE ZONE.
- B. 6.4.3.1.2 DEAD BAND
 WHERE HEATING AND COOLING TO A ZONE ARE CONTROLLED BY SEPARATE ZONE THERMOSTATIC CONTROLS LOCATED WITHIN THE ZONE, MEANS (SUCH AS LIMIT SWITCHES, MECHANICAL STOPS, OR FOR DDC SYSTEMS, SOFTWARE PROGRAMMING) SHALL BE PROVIDED TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT, MINUS ANY APPLICABLE PROPORTIONAL BAND.
- C. 6.4.3.2 SET-POINT OVERLAP RESTRICTION
 WHERE HEATING AND COOLING TO A ZONE ARE CONTROLLED BY SEPARATE ZONE THERMOSTATIC CONTROLS LOCATED WITHIN THE ZONE, MEANS (SUCH AS LIMIT SWITCHES, MECHANICAL STOPS, OR FOR DDC SYSTEMS, SOFTWARE PROGRAMMING) SHALL BE PROVIDED TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT, MINUS ANY APPLICABLE PROPORTIONAL BAND.
- D. 6.4.3.3 OFF-HOUR CONTROLS
 HVAC SYSTEMS SHALL HAVE THE OFF-HOUR CONTROLS REQUIRED BY SECTIONS 6.4.3.3.1 THROUGH 6.4.3.3.5.
- E. 6.4.3.3.1 AUTOMATIC SHUTDOWN
 HVAC SYSTEMS SHALL BE EQUIPPED WITH AT LEAST ONE OF THE FOLLOWING:
 a. CONTROLS THAT CAN START AND STOP THE SYSTEM UNDER DIFFERENT TIME SCHEDULES FOR SEVEN DIFFERENT DAY TYPES PER WEEK ARE CAPABLE OF RETAINING PROGRAMMING AND TIME SETTING DURING LOSS OF POWER FOR A PERIOD OF AT LEAST TEN HOURS, AND INCLUDE AN ACCESSIBLE MANUAL OVERRIDE OR EQUIVALENT FUNCTION THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO TWO HOURS.
 b. AN OCCUPANCY SENSOR THAT IS CAPABLE OF SHUTTING THE SYSTEM OFF WHEN NO OCCUPANT IS DETECTED FOR A PERIOD OF UP TO 90 MINUTES.
 c. A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO TWO HOURS.
 d. AN INTERLOCK TO A SECURITY SYSTEM THAT SHUTS THE SYSTEM OFF WHEN THE SECURITY SYSTEM IS ACTIVATED.
- F. 6.4.3.3.2 SETBACK CONTROLS
 HEATING SYSTEMS SHALL BE EQUIPPED WITH CONTROLS CAPABLE OF AND CONFIGURED TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES ABOVE AN ADJUSTABLE HEATING SET POINT AT LEAST 10°F BELOW THE OCCUPIED HEATING SET POINT. COOLING SYSTEMS SHALL BE EQUIPPED WITH CONTROLS CAPABLE OF AND CONFIGURED TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE MECHANICAL COOLING SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES BELOW AN ADJUSTABLE COOLING SET POINT AT LEAST 5°F ABOVE THE OCCUPIED COOLING SET POINT OR TO PREVENT HIGH SPACE HUMIDITY LEVELS.

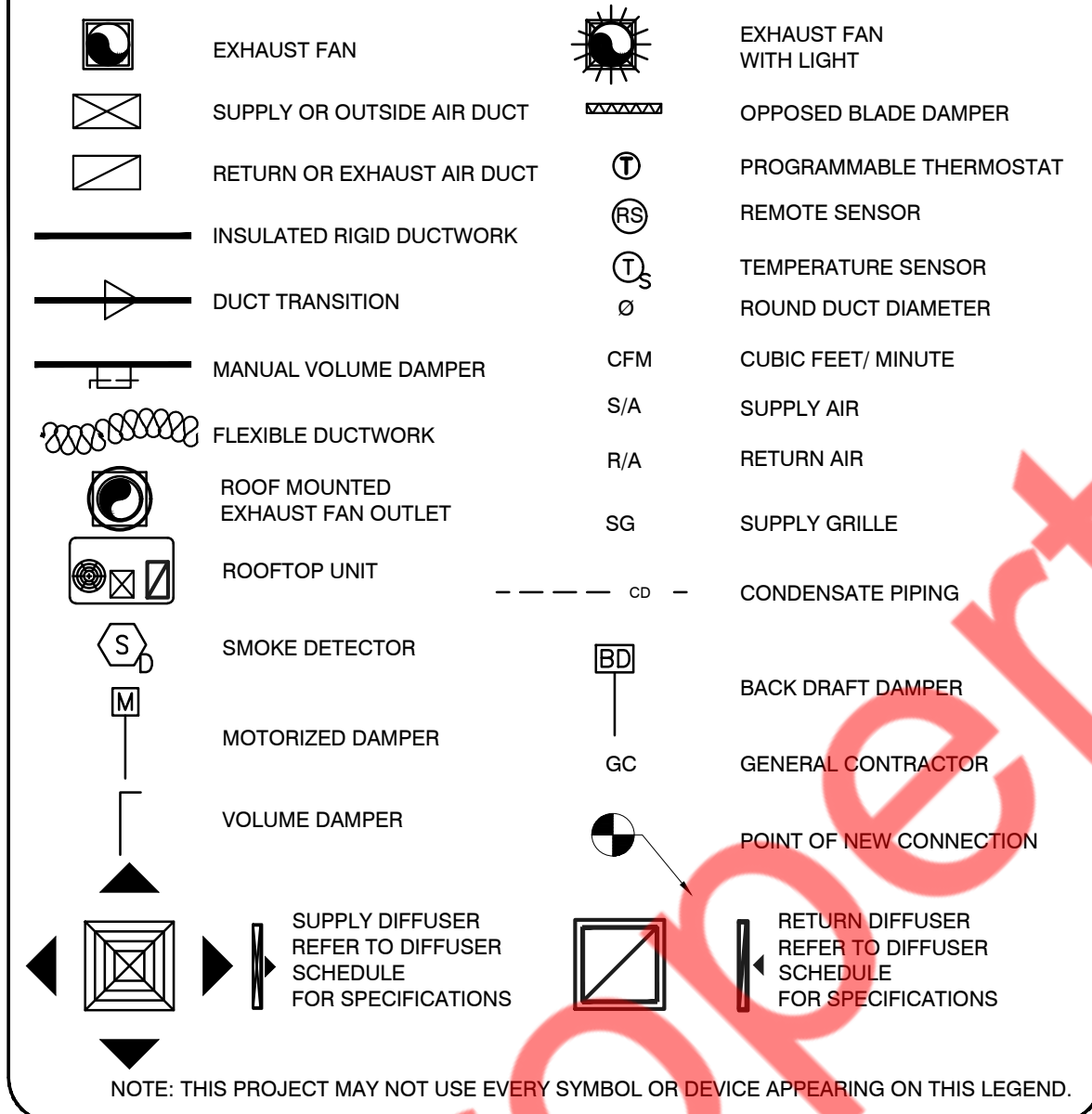
HVAC PIPING INSULATION NOTES

- 1. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
- 2. EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
- 3. CONCEALED: INDOOR PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
- 4. OUTDOOR: PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.

MINIMUM REFRIGERANT PIPE INSULATION THICKNESS (IN.)

FLUID OPERATING TEMP. RANGE & USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (IN.)				
	CONDUCTIVITY BTU·IN./H·FT ² ·°F	MEAN RATING TEMP., °F	1 TO <1	1-1/2 TO <1-1/2	1 TO <4	4 TO <8	≥8
40—60	0.21—0.27	75	0.5	0.5	1.0	1.0	1.0
<40	0.20—0.26	50	0.5	1.0	1.0	1.0	1.5

MECHANICAL SYMBOLS



WEST CALDWELL, NJ BUILDING DEPT. NOTES

- ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2021 INTERNATIONAL BUILDING CODE 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. SMOKE DETECTOR SHALL MEET UL268A.
 3. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2021 IMC:
 - A. VENTILATION SYSTEM- 2021 IMC 403.3.
 4. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - A. DUCT CONSTRUCTION AND INSTALLATION- 2021 INTERNATIONAL MECHANICAL CODE, 603
 - B. STANDARDS OF HEATING 2021 INTERNATIONAL MECHANICAL CODE - 309.1
 - C. AIR INTAKES, EXHAUSTS AND RELIEF - 2021 INTERNATIONAL MECHANICAL CODE 401.5
 - D. AIR FILTERS - 2021 INTERNATIONAL MECHANICAL CODE 605
 - E. GAS FIRED EQUIPMENT - 2021 FUEL & GAS CODE
 - F. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2021 INTERNATIONAL MECHANICAL CODE - 606
 5. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
 6. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2021 INTERNATIONAL MECHANICAL CODE 401.
 7. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2021 INTERNATIONAL MECHANICAL CODE 403.
 8. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
 9. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
 10. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
 11. 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.

ROOF TOP UNIT SCHEDULE

TAG	RTU-1(E)
UNIT TYPE	GAS FIRED
MANUFACTURER	LENNOX (V.I.F.)
MODEL	KGA102S4BM2Y (V.I.F.)
STATUS	EXISTING
MOUNTING	ROOF
NOMINAL CAPACITY	8.5
TOTAL COOLING MBH	S.A.E.
SENSIBLE COOLING MBH	S.A.E.
EER/SEER	S.A.E.
EER2/SEER2	S.A.E.
HEATING INPUT MBH	180.0 (V.I.F.)
HEATING OUTPUT MBH	144.0 (V.I.F.)
SUPPLY CFM	3400
OUTDOOR AIR CFM	855
ESP (IN WG)	S.A.E.
V/PH/Hz	208-230/3/60 (V.I.F.)
MCA (A)	45 (V.I.F.)
MOCOP (A)	50 (V.I.F.)
WEIGHT (LBS)	S.A.E.

- NOTES FOR EXISTING RTUS:
1. EXISTING RTUS 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.

SPLIT SYSTEM SCHEDULE

AIR HANDLER DATA	AHU-1(N)	
	UNIT TAG	REFER PLAN
UNIT TYPE	ELECTRIC HEAT	
AREA SERVED	REFER PLAN	
SUPPLY AIR (CFM)	600	
OUTSIDE AIR (CFM)	190	
STATIC PRESS. (E.S.P INCH OF W.C.)	0.5	
MANUFACTURER	RHEEM (OR EQUIVALENT)	
MODEL NO.	RH2T22417STANN (OR EQUIVALENT)	
WEIGHT, LBS	95	
VOLTS/PH/Hz	208-240/1/60	
ELECTRIC HEATER	5.4 KW	
MCA (A)	35	
MOCOP (A)	40	
UNIT TAG	ACCU-1 (N)	
AIR HANDLER SERVED	AHU-1(N)	
CAPACITY	1.5 TR	
REFRIGERANT	R410A	
TOT. COOLING CAP. (MBH)	17.1	
COOLING SENS. CAP. (MBH)	13.0	
COMPRESSOR RLA	9.0	
OUTDOOR FAN FLA	0.8	
VOLTS/PH/Hz	208-230/1/60	
M.C.A. / MAX. CKT. BRKR. AMPS	12/20	
MANUFACTURER	RHEEM (OR EQUIVALENT)	
MODEL	RA13N218AJ1 (OR EQUIVALENT)	
SEER 2	13.4	
EER2	9.0	
WEIGHT, LBS	150	

SPLIT SYSTEM NOTES:

1. PROVIDE DISCONNECT SWITCH.
2. COORDINATE FINAL LOCATION OF INDOOR AND OUTDOOR UNIT WITH ARCHITECT/OWNER/LANDLORD.
3. SUPPLY AIR CFM BASED ON HIGH SPEED.
4. REFRIGERANT R410A SHALL BE PROVIDED.
5. PROVIDE ALL ASSOCIATED ACCESSORIES.
6. ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
7. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURERS STANDARD RECOMMENDED LENGTH. CONTRACTOR TO FIELD VERIFY THE EXACT TOTAL REFRIGERANT LENGTH AND COORDINATE WITH THE MANUFACTURER PRIOR ORDERING UNIT
8. PROVIDE DRAIN PAN WITH WATER LEAK DETECTOR.
9. VERIFY ALL DATA WITH MANUFACTURER PRIOR TO ORDERING EQUIPMENT.
10. PROVIDE CONDENSATE DRAIN PUMP IF REQUIRED. ROUTE CONDENSATE DRAIN FROM AHU-1(N) TO THE NEAREST APPROVED PLACE OF DISPOSAL. COORDINATE WITH PLUMBING CONTRACTOR.
11. CONDENSING UNIT TO BE SELECTED AT 95°F AMBIENT CONDITION.
12. PROVIDE ACCESS DOOR FOR THE INDOOR UNIT IN COORDINATION WITH ARCHITECT.

OCCUPANCY CALCULATION

LOBBY & GYM WAITING	528 SQ. FT.	26 PEOPLE
GYM	1088 SQ. FT.	22 PEOPLE
STEM CLASSROOM	300 SQ. FT.	15 PEOPLE
		63 PEOPLE

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

VENTILATION REQUIREMENTS PER 2021 IMC, TABLE 403.3.1.1

LOBBY & GYM WAITING	528 SQ. FT. X 0.08 CFM/SQ. FT. = 26 PEOPLE X 5 CFM/PEOPLE =	32 CFM
		130 CFM
GYM	1088 SQ. FT. X 0.18 CFM/SQ. FT. = 22 PEOPLE X 20 CFM/PEOPLE =	196 CFM
		440 CFM
STEM CLASSROOM	300 SQ. FT. X 0.12 CFM/SQ. FT. = 15 PEOPLE X 10 CFM/PEOPLE =	36 CFM
		150 CFM
GYM STORAGE	296 SQ. FT. X 0.12 CFM/SQ. FT. =	36 CFM
HALLWAY	85 SQ. FT. X 0.06 CFM/SQ. FT. =	6 CFM
OUTSIDE AIR REQUIRED		1026 CFM
MENS RESTROOM	70 CFM PER FIXTURE	70 CFM
WOMENS RESTROOM	70 CFM PER FIXTURE	70 CFM
MOP CLOSET	70 CFM	70 CFM
EXHAUST AIR REQUIRED		210 CFM
O/A PROVIDED		1045 CFM
AIR BALANCE		
OUTSIDE AIR THROUGH RTU-1(E)		855 CFM
OUTSIDE AIR THROUGH AHU-1(N)		190 CFM
BEF-1(N) & BEF-2(N) @70 CFM EACH		-140 CFM
EF-1(N)		-70 CFM
BUILDING PRESSURE (BAROMETRIC RELIEF)		+835 CFM

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

FAN SCHEDULE

DESIGNATION	BEF-1(N)	BEF-2(N)	EF-1(N)
STATUS	NEW	NEW	NEW
QUANTITY	1	1	1
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	SP-A90	SP-A90	SP-A90
CFM	70 CFM AT 0.3" W.G. ESP	70 CFM AT 0.3" W.G. ESP	70 CFM AT 0.3" W.G. ESP
NEC FLA (AMPS)	0.17	0.17	0.17
ACCESSORIES	BDD, LITE KIT	BDD, LITE KIT	BDD, LITE KIT
WEIGHT (LBS)	15	15	15
V/PH/Hz	115/1/60	115/1/60	115/1/60

- NOTES:
1. PROVIDE DISCONNECT SWITCH.
 2. PROVIDE BACK DRAFT DAMPER.
 3. INTERCONNECT BEF-1(N) & BEF-2(N) WITH ROOM LIGHT.
 4. EF-1(N) INTERCONNECT WITH RTU-1(E).

DIFFUSER SCHEDULE

MANUFACTURER	TITUS	TITUS	TITUS	TITUS
DESIGNATION	A	B	C	D
MODEL	TDC-AA	300FS	250-AA (2/3 WAY)	350RL
TYPE	SUPPLY	SUPPLY	SUPPLY	RETURN
LOCATION	SAT CEILING	DUCT	BATHROOMS	WALL
CFM	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN
FACE SIZE	24" X 24"	AS SHOWN	12" X 12"	AS SHOWN
NECK SIZE	REFER TABLE A	-	REFER TABLE A	-
FRAME TYPE	LAY IN	FLANGED	FLANGED	FLANGED
FINISH	FIELD PAINTED	FIELD PAINTED	FIELD PAINTED	FIELD PAINTED
NOISE CRITERIA	<30	<30	<30	<30
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

- NOTES:
1. MAX. INC 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
06"	0-100
08"	101-200
010"	201-400
012"	401-600

NY ENGINEERS

PROJECT

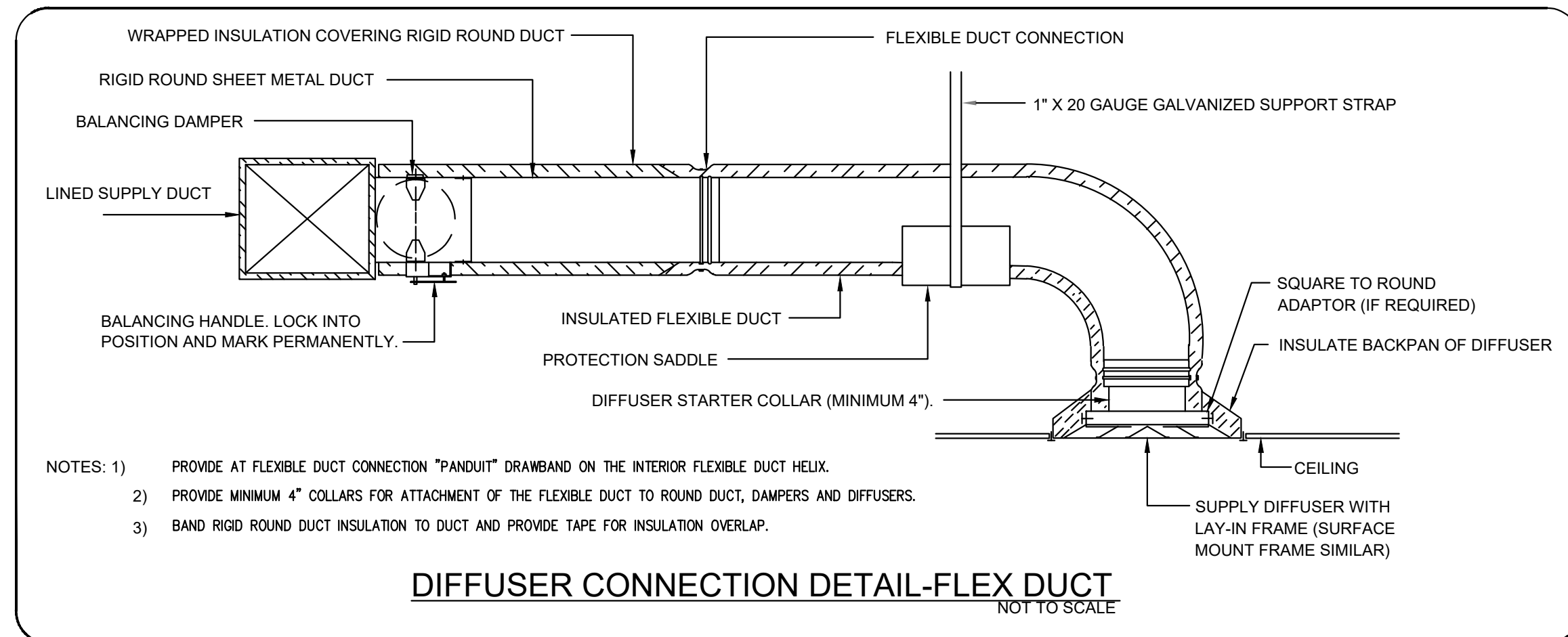
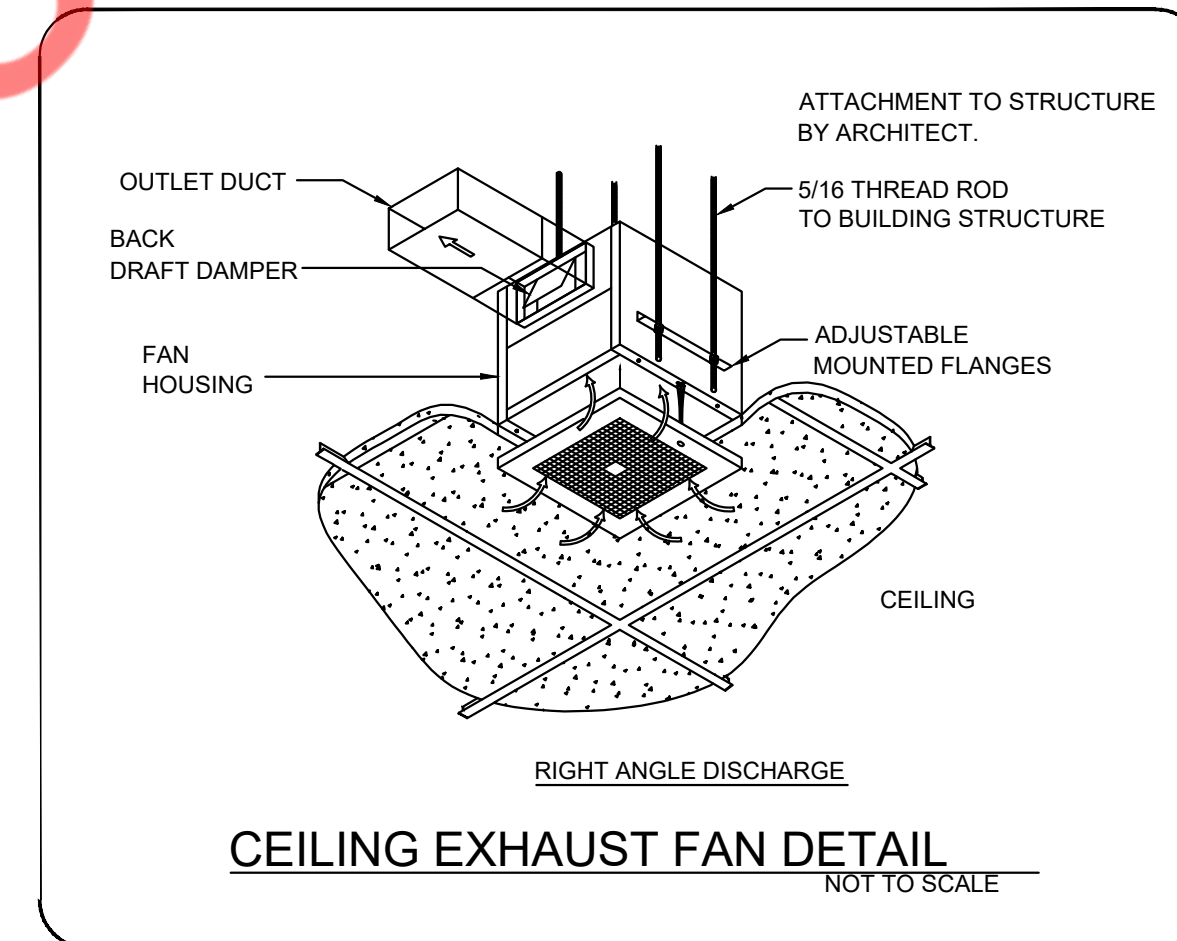
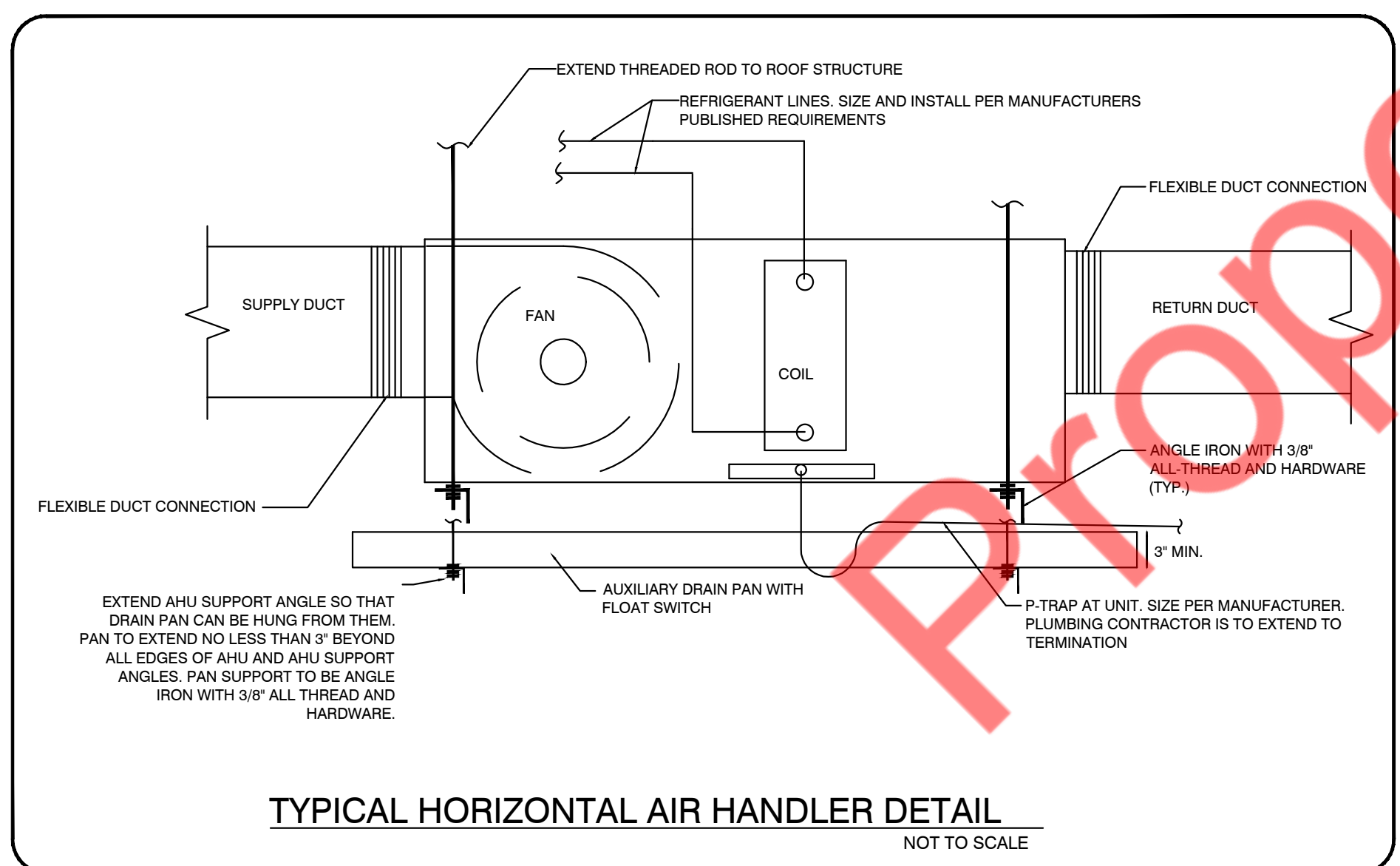
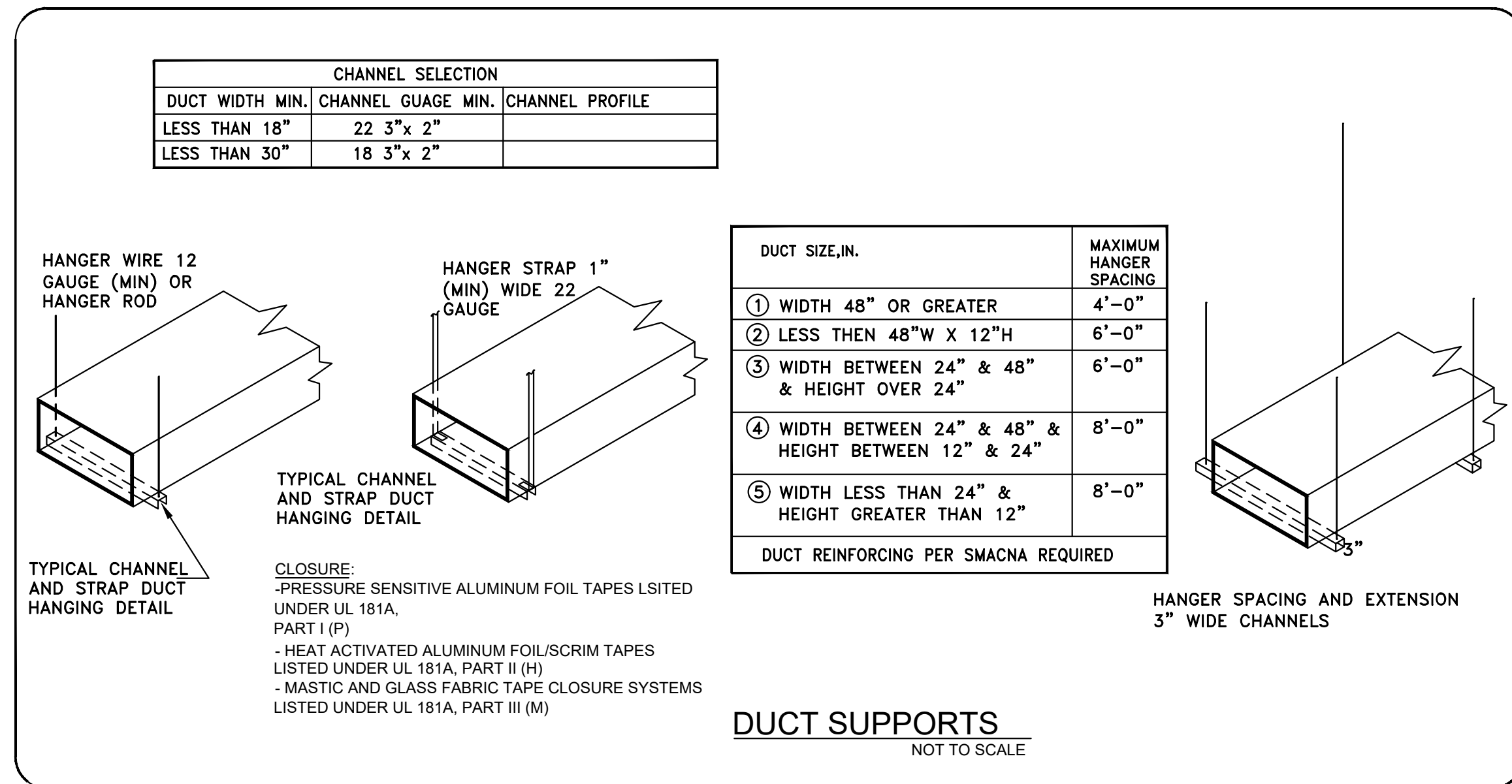
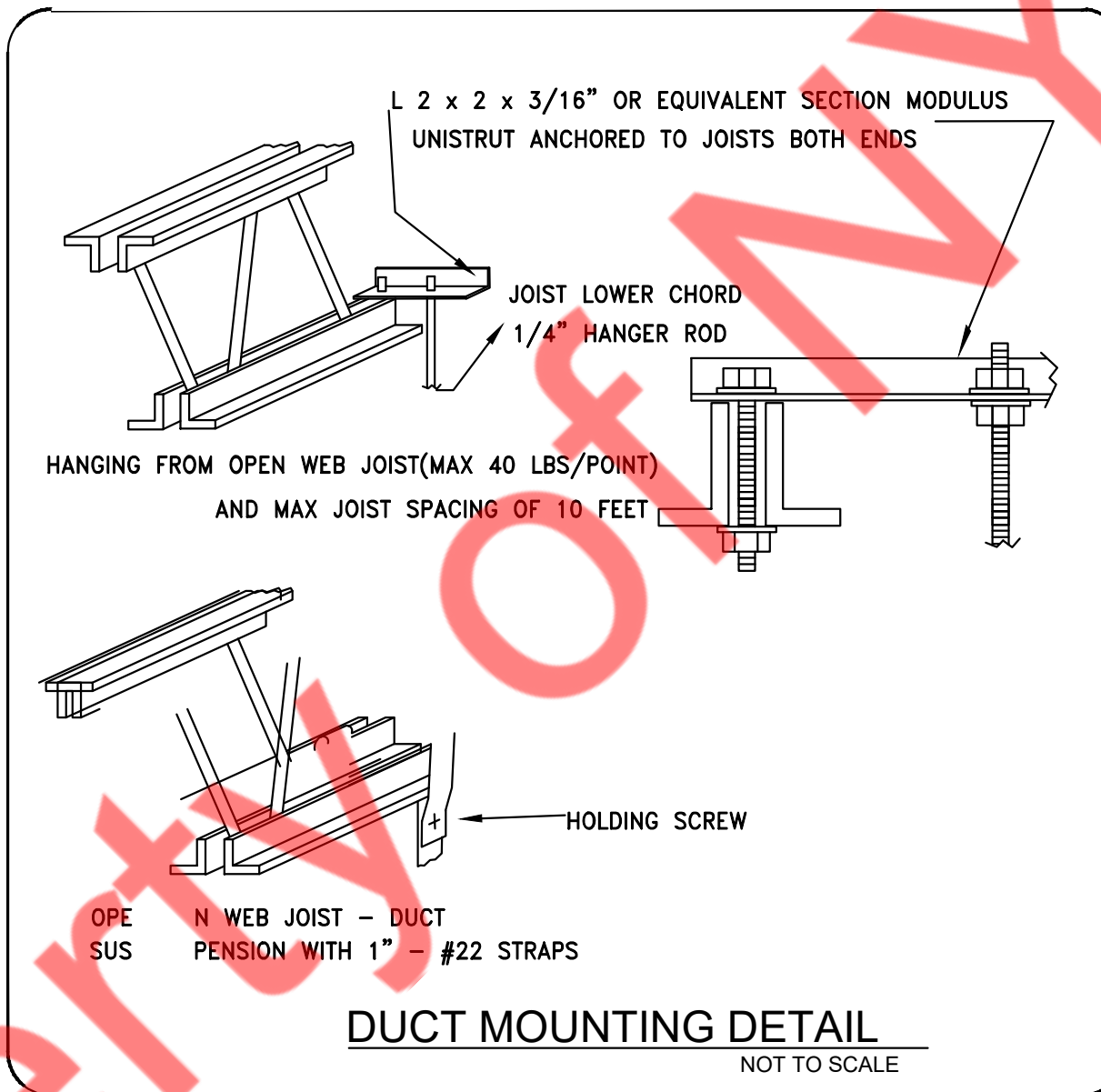
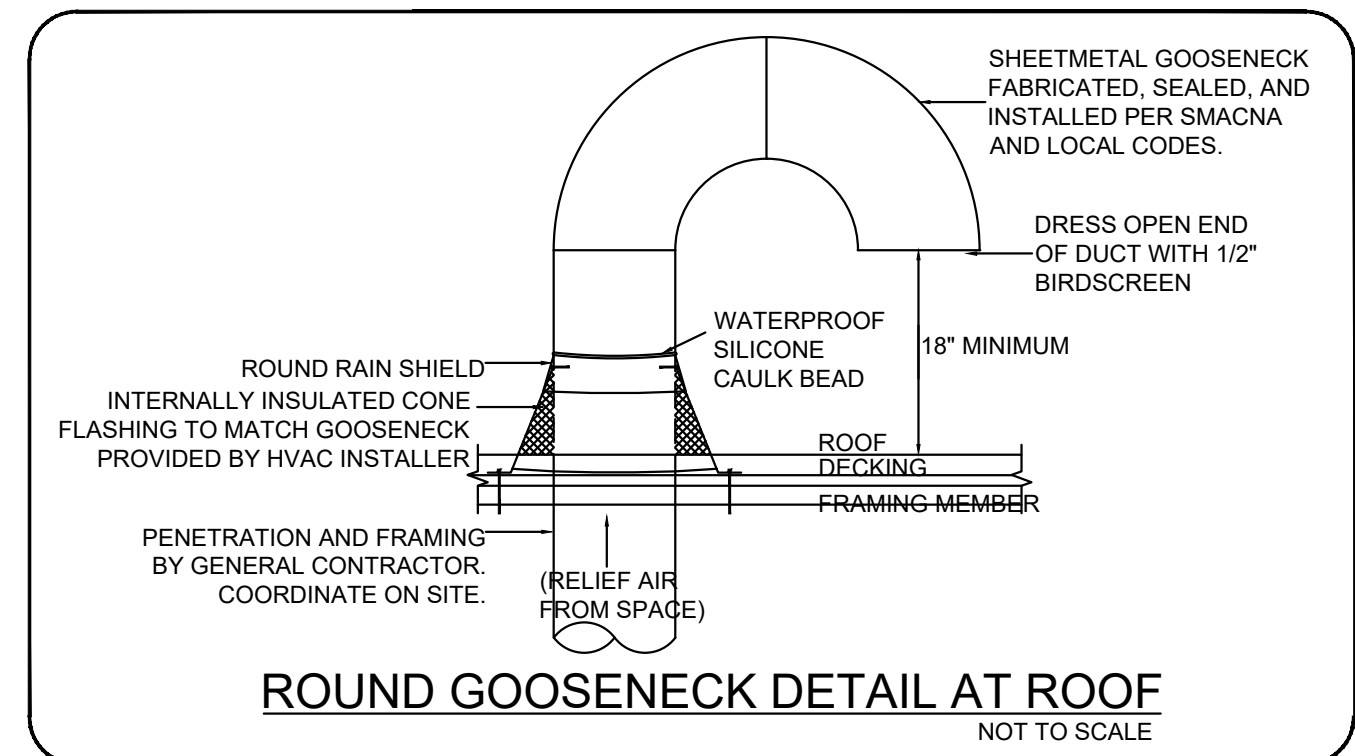
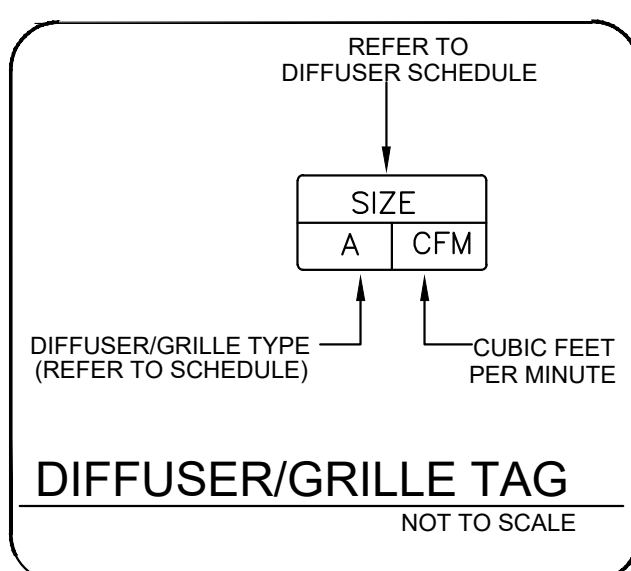
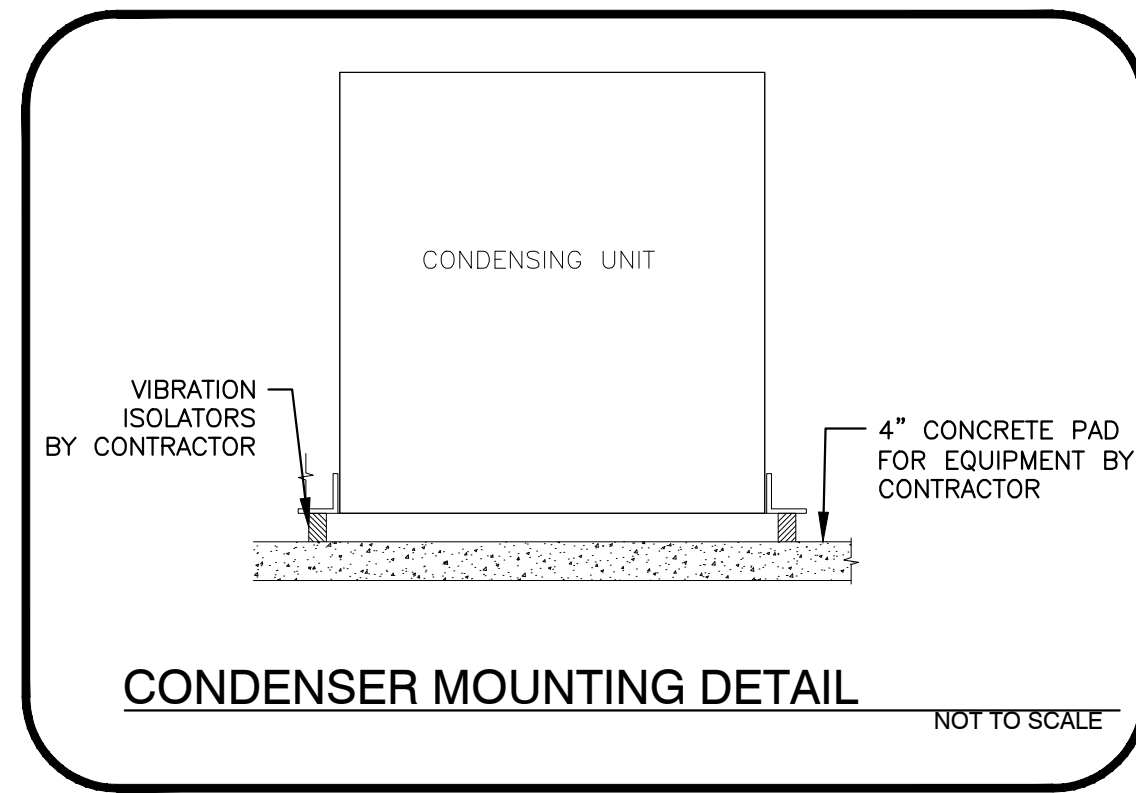
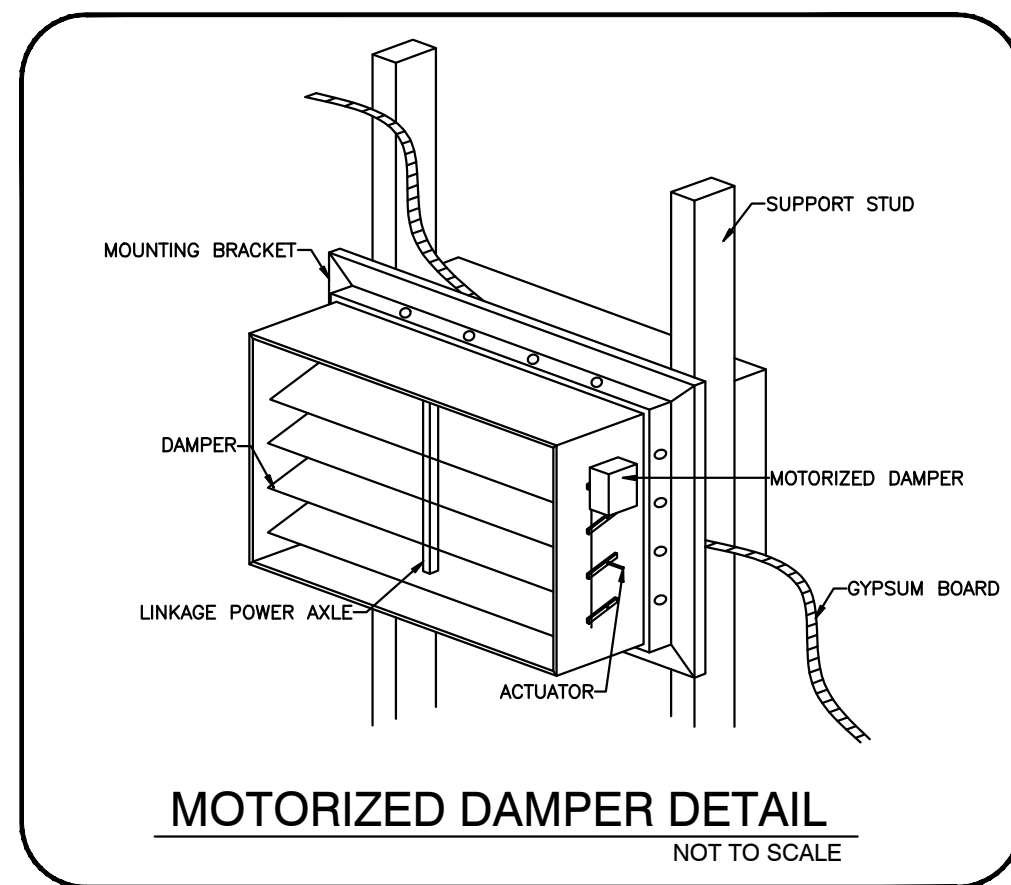
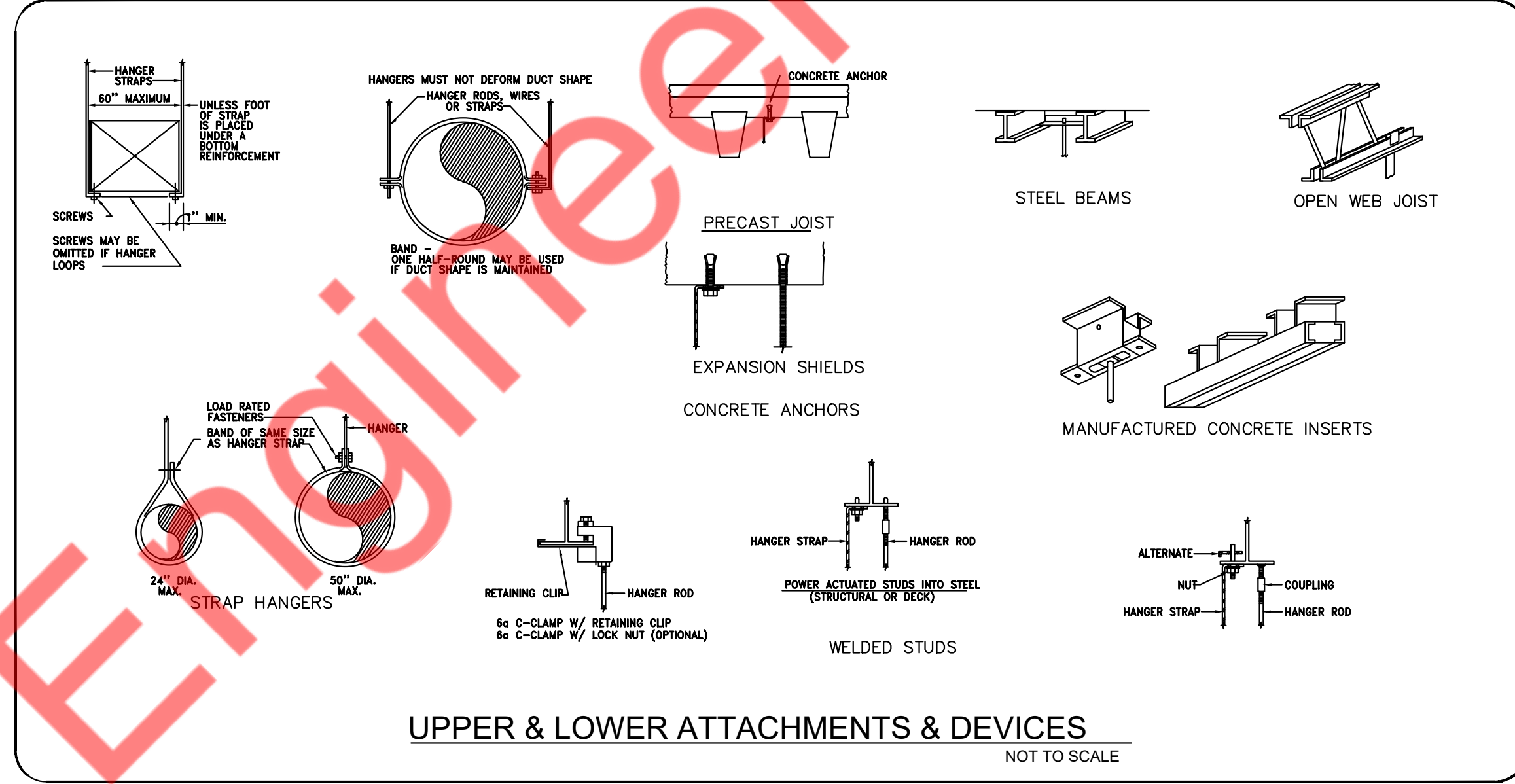
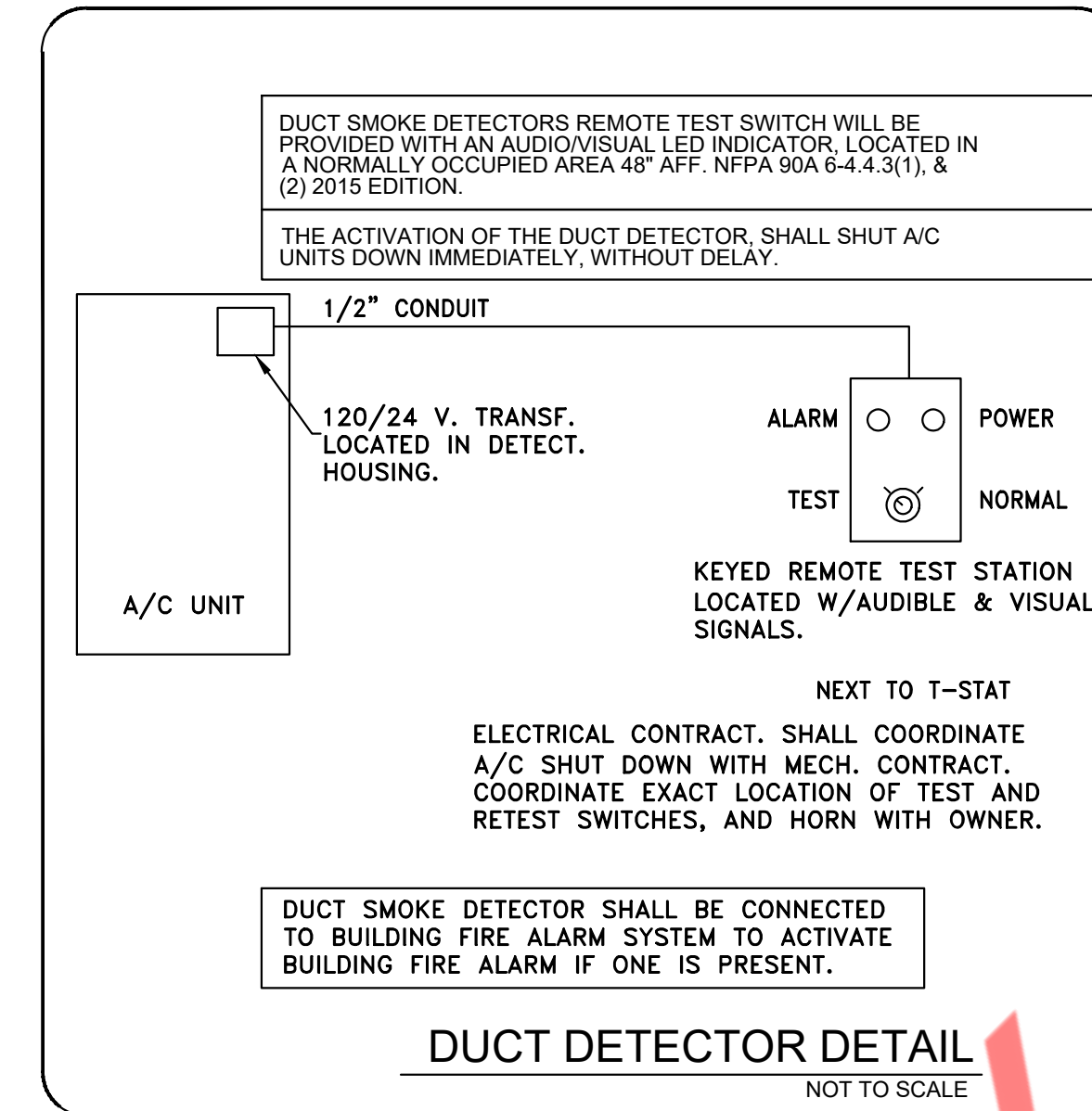
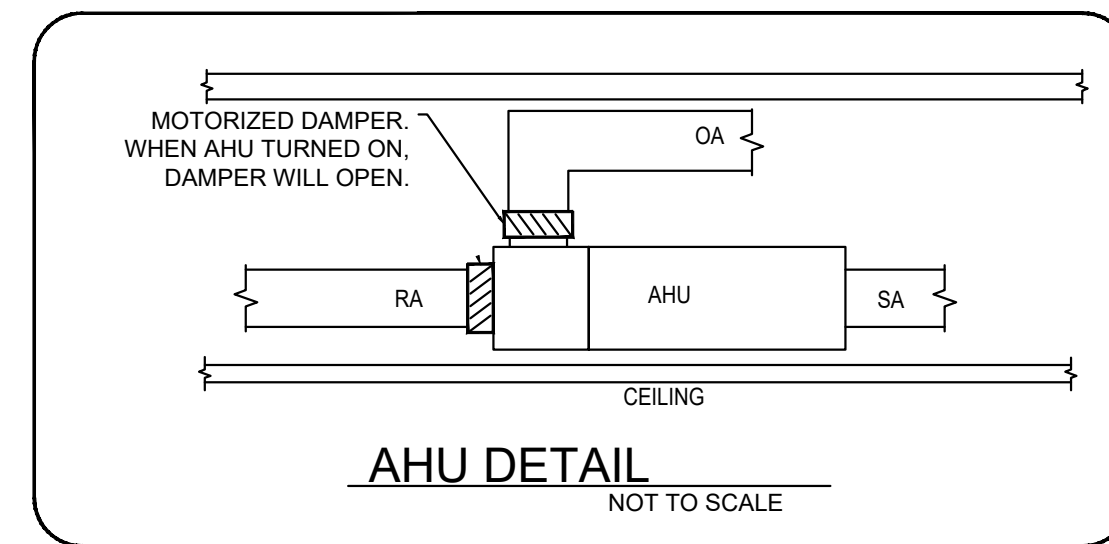
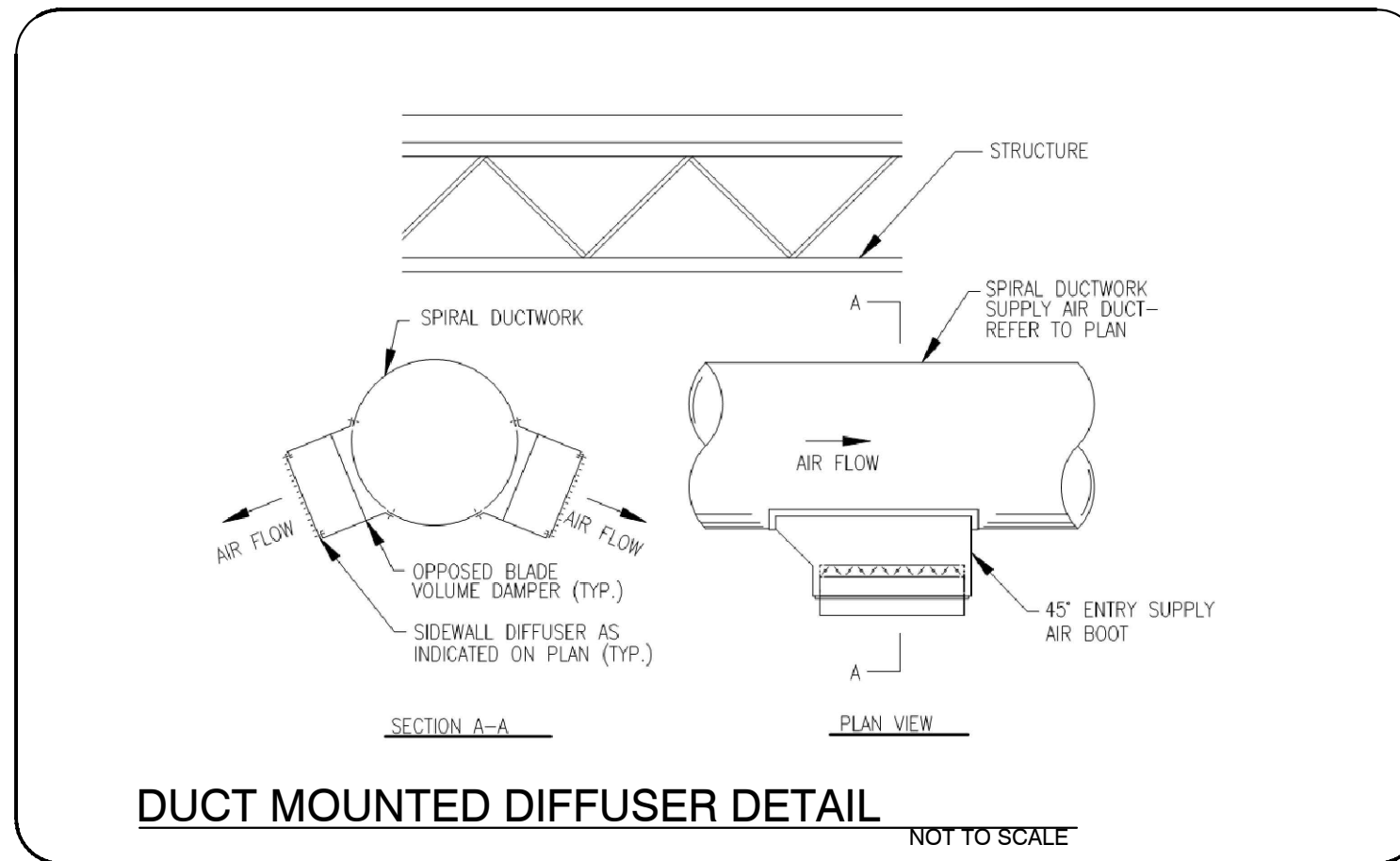
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REVISIONS DATES:

PROFESSIONAL SEAL

ISSUE DATE: _____
 PROJECT #: _____
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MECHANICAL NOTES & SCHEDULES



SCOPE OF WORK

- REUSE EXISTING 200A, 120/208V, 3-PHASE 4-WIRE ELECTRICAL METER IN THE EXISTING METER BANK FOR THE TENANT'S SPACE.
- PROVIDE NEW 200A, 120/208V, 3-PHASE ELECTRICAL BREAKER SWITCH IN PLACE OF 100A, 120/208V, 3-PHASE, ELECTRICAL BREAKER IN THE EXISTING METER BANK FOR THE TENANT'S SPACE.
- PROVIDE NEW (1) 200A, 120/208V, 3-PHASE ELECTRICAL SERVICE FEEDER IN PLACE OF EXISTING 100A, 120/208V, 3-PHASE ELECTRICAL SERVICE FEEDER FOR THE TENANT'S SPACE.
- REUSE THE EXISTING (1) 200A(M.L.O.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A".
- ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROPOSED SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH FOR LOW VOLTAGE WIRING.

ELECTRICAL PLAN NOTES

- ELECTRICAL 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 PROCEEDING WITH WORK.
- 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.
- 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.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2020 EDITION OF THE NATIONAL ELECTRIC CODE ALL CODES AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.
- ALL ELECTRICAL NOT BEING REUSED MUST BE REMOVED IN ITS ENTIRETY.
- ALL CONDUIT IN OR UNDERGROUND OR IN CONCRETE MUST BE RIGID GALVANIZED STEEL.
- CIRCUIT BREAKERS AND PANELS TO BE BOLT ON TYPE.
- ALL EQUIPMENT SHALL BE APPROVED BY UL OR OTHER NATIONALLY RECOGNIZED TESTING COMPANY.
- ALL RECEPTACLES SHALL BE GROUNDED AS REQUIRED BY NEC 250.146.
- SUBMIT SERVICE ENTRANCE EQUIPMENT FOR SEPARATE APPROVAL.
- ALL LOW VOLTAGE MUST BE IN CONDUIT TO ABOVE THE DROP CEILING. BRIDAL RINGS OR "J" HOOKS REQUIRED.
- SEPARATE PERMITS ARE REQUIRED FOR ALL LOW VOLTAGE SUCH AS TELEPHONE, DATA, THERMOSTAT, MUSIC, ALARMS ETC.
- SEPARATE PERMIT REQUIRED FOR SIGNAGE.
- PRIOR TO ANY CONSTRUCTION WORK BEGINNING AN ON-SITE MEETING WITH GENERAL CONTRACTORS IS REQUIRED.
- ELECTRICIAN MUST BE ON SITE FOR ALL INSPECTIONS.
- MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER AND UNLESS OTHERWISE NOTED THIN INSULATION.
- 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.
- 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.
- ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE N.E.C. OR LOCAL CODES.
- ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
- 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.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
- 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.
- 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. UPGRADES NEEDED ARE SUBJECT TO LANDLORD'S PRIOR APPROVAL AND WILL BE COMPLETED BY TENANT/TENANT'S GC AT TENANT'S SOLE EXPENSE.
- ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
- THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
- ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, DEVICES, ETC. FOR ALL OUTLETS AS INDICATED.
- 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 IEC.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FIRED CAULKING REQUIRED OF HIS WORK.
- ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/TYPE WRITTEN DIRECTORIES.
- ALL ELECTRICAL AND COMMUNICATIONS OUTLETS TO BE AT 24" A.F.F. UNLESS NOTED OTHERWISE, AND VERTICALLY MOUNTED.
- ALL LIGHT SWITCHES TO BE AT 42" A.F.F.
- 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.
- BREAKER AND PANELS - ALL CURRENT CARRYING BUSES 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.
- DISCONNECT SWITCHES SHALL BE H.P. RATED. GENERAL DUTY, QUICK-MAKE, QUICK-BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
- MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
- THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS INDICATES THE CONTRACTOR SHALL FURNISH AND INSTALL.
- CONTRACTOR SHALL CONFIRM WITH ANY AND ALL REQUIREMENTS SUCH AS: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, TRANSFORMER SIZE, SCHEDULED DOWN TIME FOR OWNER'S CONFIRMATION, ETC. ANY CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
- VOLTAGE DROP FOR ALL BRANCH CONDUCTORS SHALL NOT EXCEED 3% WHERE VOLTAGE DROP EXCEEDS 3%, CONTRACTOR SHALL INCREASE SIZE OF CONDUCTORS.
- CONTRACTOR SHALL PROVIDE GFI TYPE BREAKER FOR ALL EXTERIOR 120V CIRCUITS OR GFI PROTECTION - FOR THE WHOLE CIRCUIT.
- GAS PIPING SHALL BE BONDED.
- ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
- 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.
- OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.
- ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS. FLEXIBLE CONDUIT IS PERMITTED FOR SHORT FINAL CONNECTIONS ONLY (6" OR LESS).
- EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES, PARALLEL OR IN RIGHT ANGLES TO THE BUILDING STRUCTURE. DO NOT LOOP EXCESS FLEXIBLE CONDUIT IN CEILING SPACE OR WALL CAVITY. NO CONDUIT TO BE SUPPORTED FROM THE ROOF DECK.
- CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED.
- ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.
- ALL PANELS TO BE UL LABELED WITH BOLT-ON TYPE CIRCUIT BREAKERS.
- 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.
- 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.
- ALL ELECTRICAL PANELS TO BE MOUNTED ON PLYWOOD BACKER BOARD.
- PANEL PHASE LOADS TO BE BALANCED WITHIN 10%.

GENERAL LIGHTING NOTES

- WHERE LIGHT FIXTURE IS FOLLOWED BY "NL", THIS FIXTURE IS DESIGNATED AS A NIGHT LIGHT AND SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.
- UPPER CASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE AND LOWER CASE LETTER DENOTES SWITCHING SCHEME.
- ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	JUNCTION BOX
	BATTERY BACK UP EXIT LIGHT
	BATTERY BACK UP EMERGENCY LIGHT
	WALL SWITCH (SINGLE, DOUBLE,)
	WALL SWITCH (TIMER)
	OCCUPANCY SENSOR WALL SWITCH
	DUPLEX RECEPTACLE
	230 VOLT RECEPTACLE
	QUADRUPLX RECEPTACLE
	FLOOR MOUNTED, FLUSH DUPLEX RECEPTACLE
	FLOOR MOUNTED, FLUSH QUAD. RECEPTACLE
	FLOOR MOUNTED, FLUSH 230 VOLT RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	USB CHARGER RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
	TELEVISION OUTLET
	TELEPHONE OUTLET
	TELEPHONE/DATA OUTLET
	DATA OUTLET
	FLOOR MTD, FLUSH TELEPHONE/DATA OUTLET
	QUAD, DATA OUTLET RJ45
	DISCONNECT SWITCH

ABBREVIATIONS:

- | | |
|---------------------------------------|----------------------------|
| ABOVE FINISH FLOOR= A.F.F. | BELOW COUNTER= BC |
| COUNTER TOP LEVEL= C | PUSH BUTTON= PB |
| GROUND FAULT INTERRUPTER= GFCI | UNDER CABINET= UC |
| VERIFY PRIOR TO INSTALL= VH | VAPOR PROOF= VP |
| WEATHER PROOF= WP | ELECTRICAL CONTRACTOR=E.C. |
| EXHAUST FAN = EF | BATHROOM EXHAUST FAN=BEF |
| WATER HEATER= WH | RECIRCULATION PUMP=PCP |
| AUTHORITY HAVING JURISDICTION= A.H.J. | ROOF TOP UNIT=R.T.U |
| AIR COOLED CONDENSING UNIT= ACCU | |
| AIR HANDLING UNIT= AHU | |

EXISTING CONDITIONS NOTES

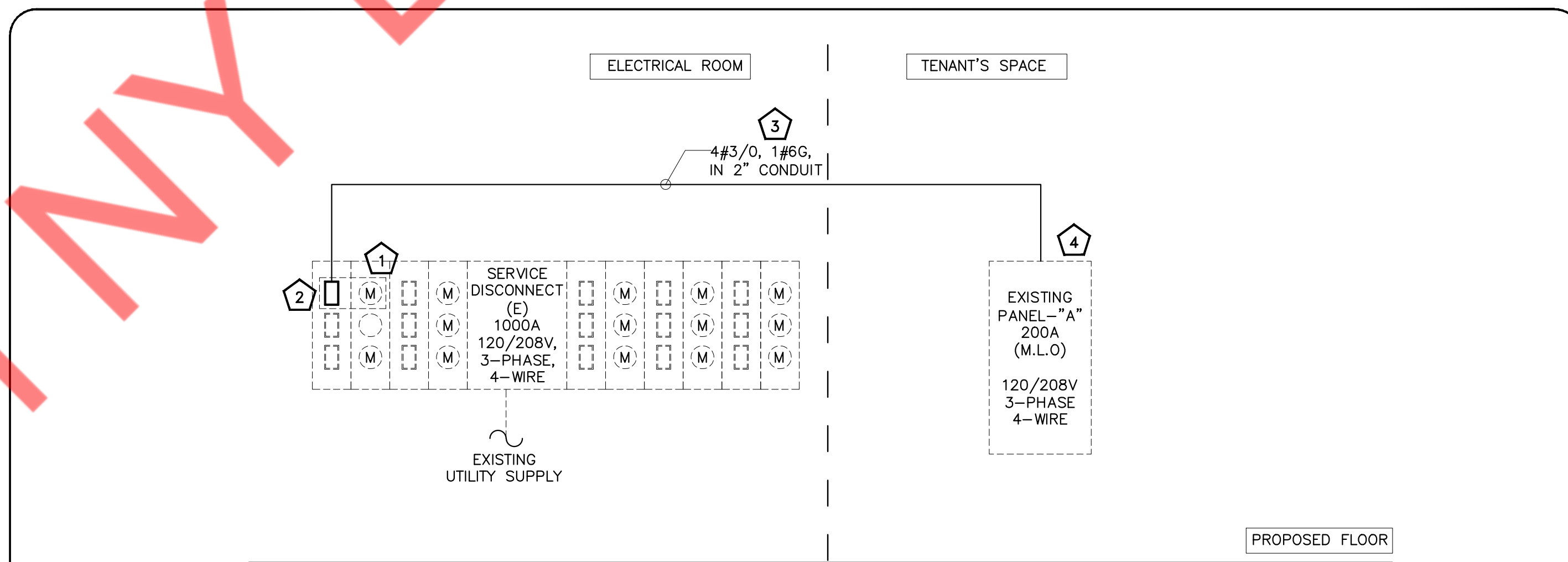
STOP AND READ
THE CONTRACTOR AND SUB-CONTRACTORS SHALL NOT INITIATE ANY WORK UNTIL EXISTING FIELD CONDITIONS ARE PROPERLY VERIFIED. THIS SHALL HOLD TRUE FOR FIRST GENERATION AND 2ND GENERATION SPACES. WHEN DEMOLITION IS REQUIRED, THAT WILL BE PERMITTED TO EXPOSE CONDITIONS. THESE VERIFICATIONS SHALL INCLUDE BUT NOT LIMITED TO: DIMENSIONS BOTH HORIZONTALLY AND VERTICAL, ELECTRICAL SERVICE /PANELS LOCATION AND VOLTS/PHASE, LOCATION/QUANTITY 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.

LIGHTING FIXTURE SCHEDULE

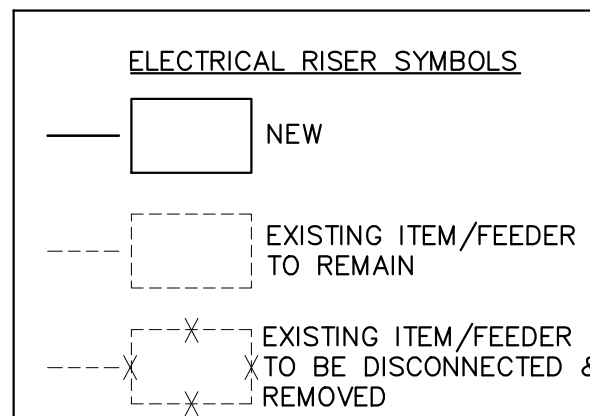
SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP WATTAGE	MOUNTING
	A	2x4 LED PANEL	LITHONIA LIGHTING	CPX 2X4 400LM 40K M2	120	40 WATTS	RECESSED
	Y1	EMERGENCY LIGHT	BEST LIGHTING PRODUCT	LEDR1(B IF BLACK	120	1 WATTS	WALL
	X1	EXIT SIGN-EMERGENCY LIGHT COMBO	BEST LIGHTING PRODUCT	LEDXET2(R/W OR B)	120	4 WATTS	CEILING/WALL
	X2	EXIT SIGNS	LITHONIA LIGHTING	EXR-LED-EL-M6	120	2.1 WATTS	WALL
	DS	DIMMER WALL SWITCH	COMMERCIAL LIGHTING INDUSTRIES	CLLNAROSDS	120	-	WALL
	T	TIMER WALL SWITCH	INTERMATIC	ST700W	120	-	WALL
	OS	OCCUPANCY WALL SWITCH	INTERMATIC	ISO-DDR-WH	120	-	WALL
	OS	CEILING OCCUPANCY SENSOR	INTERMATIC	ISO-CMP-U	120	-	CEILING
(E)		EXISTING FIXTURE TO REMAIN					

- NOTE:**
- E.C. SHALL COORDINATE WITH ARCHITECT FOR FINAL FIXTURE COUNT AND TYPE.
 - COORDINATE EXACT CONTROL REQUIREMENTS WITH OWNER.
 - E.C. SHALL PROVIDE REQUIRED POWER PACKS AND RELAYS SUITABLE FOR THE ABOVE LIGHT FIXTURES IN COORDINATION WITH THE LIGHTING VENDOR. BASE BID ACCORDINGLY.

LIGHT FIXTURE SCHEDULE NOTES:
REFER TO REFLECTED CEILING PLAN IN ARCHITECTURAL DRAWINGS FOR MORE INFORMATION ON COLORS AND TRIMS REQUIRED.
(* EXISTING FIXTURES ARE ACCEPTABLE. IF THEY NEED TO BE REPLACED, REPLACE W/ EXACT MATCH OR MATCH SCHEDULE
SUBSTITUTIONS TO THE ABOVE FIXTURE SCHEDULE MUST BE SUBMITTED 14 DAYS PRIOR TO BID & REVIEWED BY THE ARCHITECT, ENGINEER & OWNER. SUBSTITUTIONS WILL NOT BE REVIEWED AFTER THIS TIME. SUBMITTAL PACKAGES MUST INCLUDE COLOR, CUT SHEETS, ALL PHOTO METRICS & FIXTURE SAMPLES FOR ALL DECORATIVE FIXTURES, LANDSCAPE FIXTURES & OUTDOOR FIXTURES. WITHOUT THIS INFORMATION NO REVIEW WILL BE PROVIDED.



- ELECTRICAL RISER KEYED NOTES:**
- EXISTING 200A, 120/208V, 3-PHASE, 4 WIRE ELECTRICAL METER IN THE EXISTING METER BANK FOR THE TENANT'S SPACE SHALL REMAIN. E.C. SHALL COORDINATE WITH BASE BUILDING FOR THE EXACT LOCATION OF THE EXISTING METER BANK AND EXACT POWER DISTRIBUTION IN THE FIELD. E.C. SHALL VERIFY THE OPERABLE CONDITION OF EXISTING METER, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
 - PROVIDE NEW 200A, 120/208V, 3-PHASE, ELECTRICAL BREAKER SWITCH IN PLACE OF 100A, 120/208V, 3-PHASE, ELECTRICAL BREAKER FOR THE TENANT'S SPACE IN THE EXISTING METER BANK. E.C. SHALL COORDINATE EXACT LOCATION OF THE METER BANK AND SCOPE OF WORK/LIABILITIES WITH ARCHITECT/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
 - PROVIDE NEW 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL FEEDER IN PLACE OF EXISTING 100A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL FEEDER FOR THE TENANT'S SPACE. E.C. SHALL COORDINATE EXACT SCOPE OF WORK/LIABILITIES WITH ARCHITECT/OWNER BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
 - EXISTING 200A(M.L.O.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A"(NAME TO BE VERIFIED IN FIELD). E.C. SHALL VERIFY EXACT SIZE, LOCATION AND OPERABLE CONDITION OF PANEL. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.



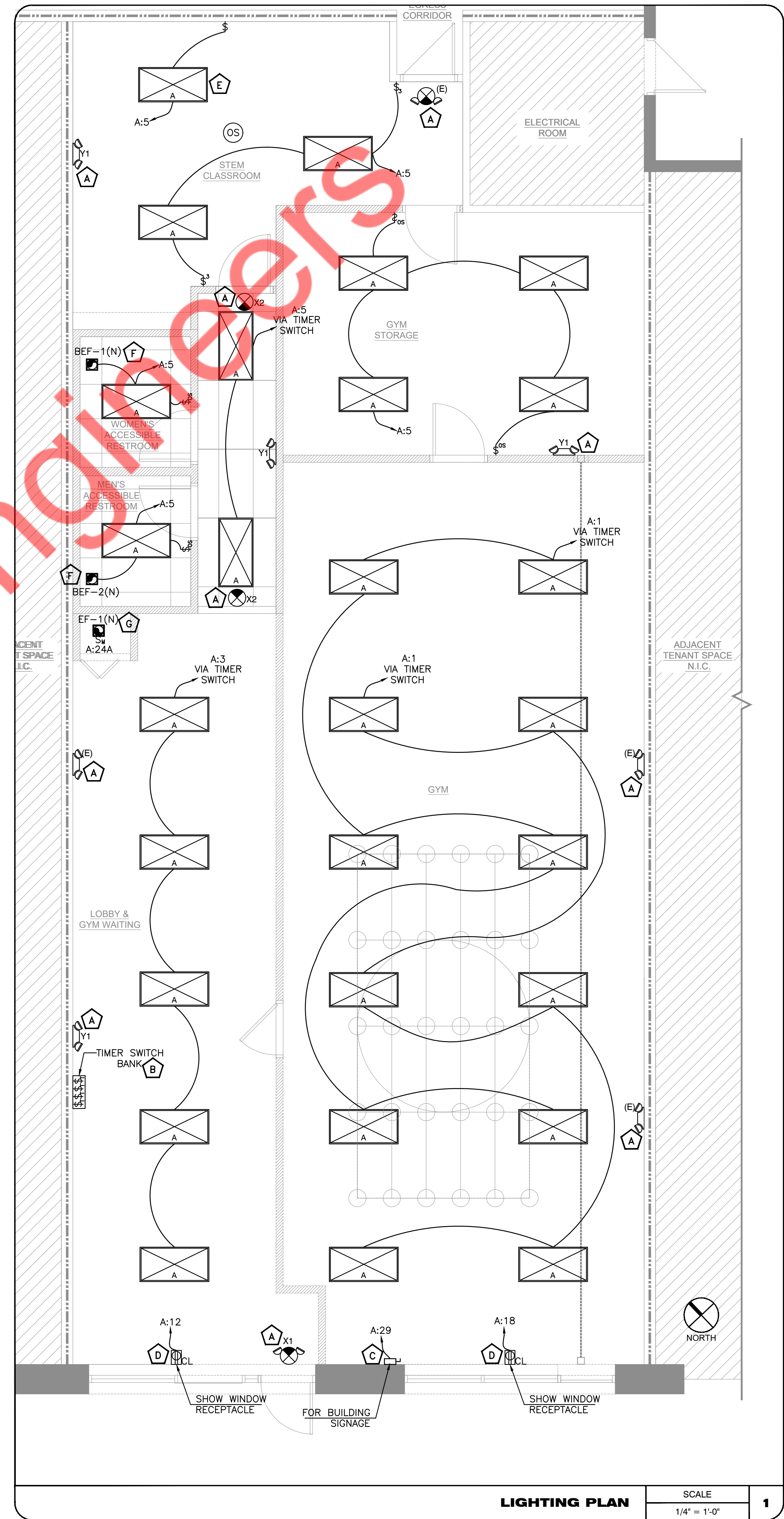
- ELECTRICAL GENERAL NOTE:**
- ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSES ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
 - E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
 - ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
 - E.C. TO VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD. REPLACE/RECTIFY IF FOUND IN OPERABLE. BASE BID ACCORDINGLY.
 - EXISTING ELECTRICAL DISTRIBUTION TO BE MAINTAINED AND UTILIZED TO SERVE PROJECT SPACE. POWER RISER DIAGRAM INDICATED FOR REFERENCE PURPOSES ONLY.

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

- (A)** CONNECT ALL EMERGENCY EGRESS LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
- (B)** COORDINATE EXACT LOCATION OF TIMER SWITCH BANK WITH OWNER/ARCHITECT.
- (C)** EXTERIOR SIGNAGE, E.C SHALL COORDINATE EXACT POWER REQUIREMENT, EXACT LOCATION & MOUNTING DETAILS WITH OWNER & SIGN VENDOR.
- (D)** PROVIDE CEILING MOUNTED RECEPTACLE FOR SHOW WINDOW AS PER NEC 210.62. VERIFY EXACT LOCATION WITH ARCHITECT.
- (E)** LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPLIED AS PER NEC 110.26(D).
- (F)** EXHAUST FAN BEF-1(N), BEF-2(N) SHALL BE INTERCONNECT WITH ROOM LIGHT, E.C. TO COORDINATE WITH MECHANICAL DRAWINGS. COORDINATE FINAL REQUIREMENT AND INTERCONNECTION WITH OWNER.
- (G)** EXHAUST FAN EF-1(N) SHALL BE INTERCONNECT WITH RTU-1(E), E.C. TO COORDINATE WITH MECHANICAL DRAWINGS. COORDINATE FINAL REQUIREMENT AND INTERCONNECTION WITH OWNER.

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

1. CONTRACTOR ADVISED TO UPDATE THE EMERGENCY LIGHT FIXTURES LOCATIONS/QUANTITY PER SITE REQUIREMENT UP ON FINAL INSPECTION OR PER LOCAL AHJ REQUIREMENT.



LIGHTING PLAN

SCALE
1/4" = 1'-0"

PROJECT

TUMBLER

REVISIONS DATES:

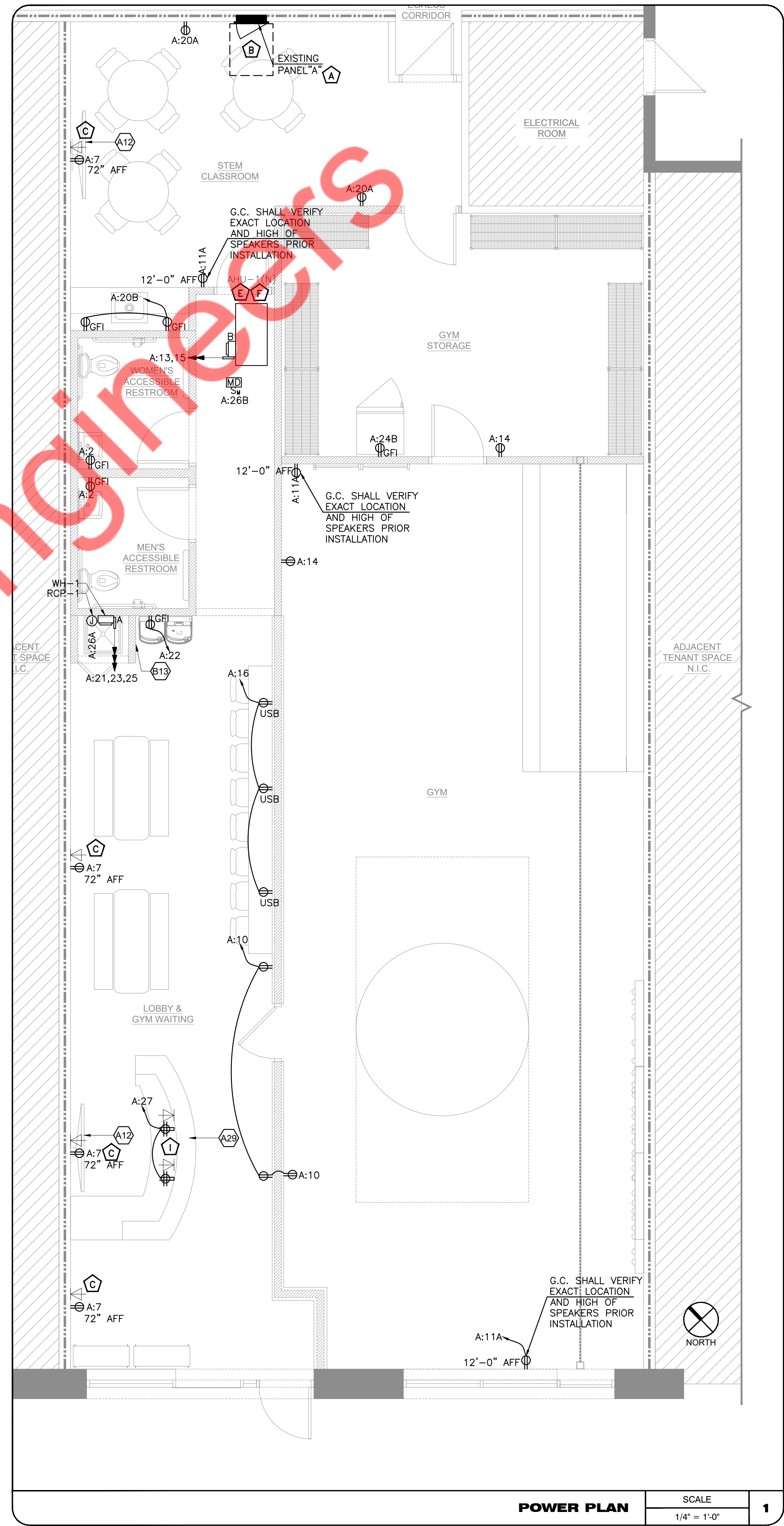
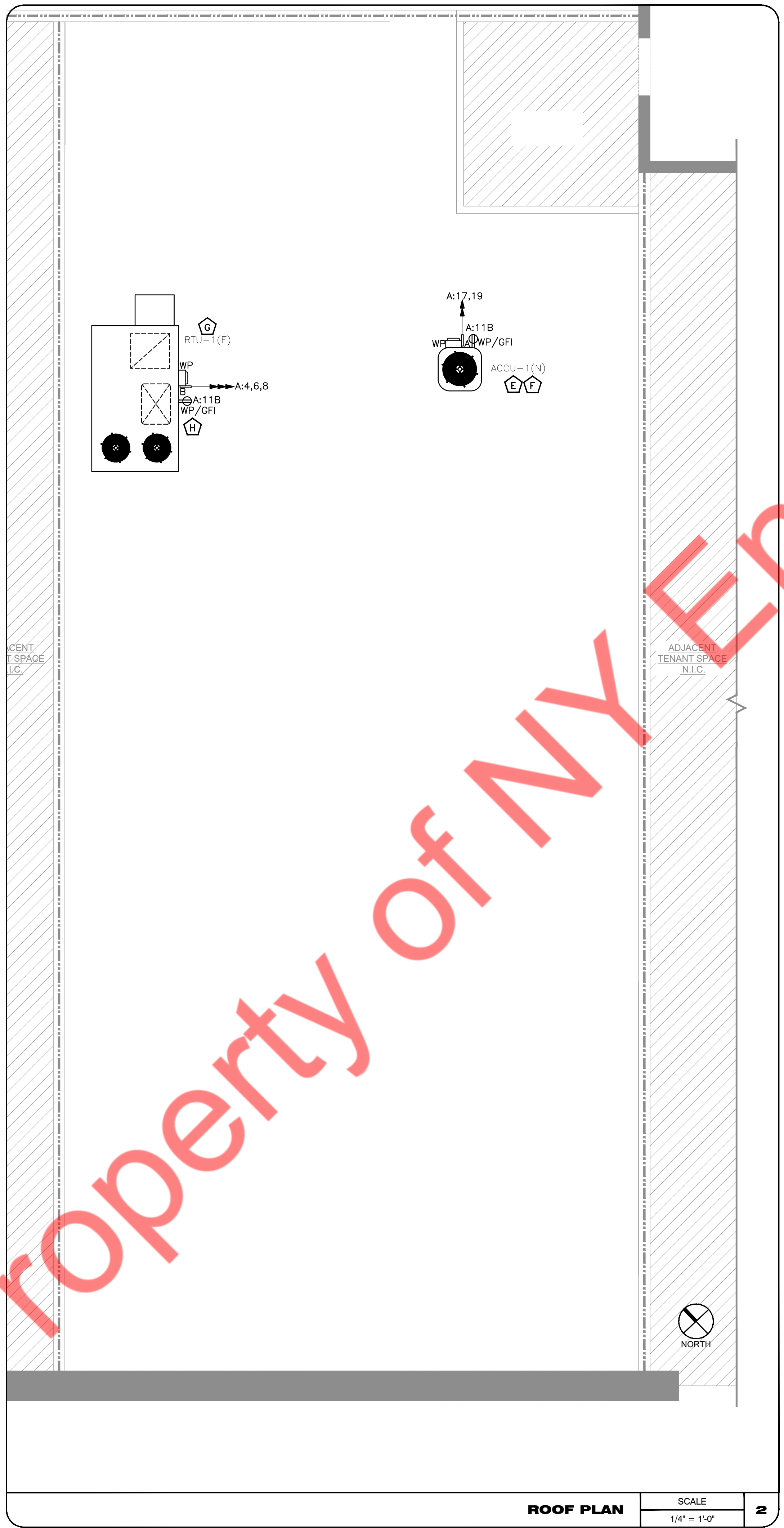
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ISSUE DATE: _____
PROJECT #: _____
DRAWN BY: NYE
CHECKED BY: NYE

LIGHTING PLAN

- POWER PLAN GENERAL NOTES:**
- ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS, INSTALLED IN THE LOCATIONS SPECIFIED IN 210.8(B) SHALL HAVE GFCI PROTECTION. ALL THE KITCHEN EQUIPMENT SHALL HAVE GFI BREAKER IN PANELS.
 - E.C. SHALL COORDINATE WITH THE EQUIPMENT VENDOR FOR EXACT RECEPTACLE REQUIREMENT AND WITH ARCHITECT/OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT OF THE RECEPTACLES IN THE FIELD.
 - ALL NON-DEDICATED RECEPTACLES TO BE TAMPER-RESISTANT USE LEVITON T5820 OR EQUAL.

- POWER PLAN KEYED NOTES:**
- EXISTING 200A(M.L.O.), 208/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" (NAME TO BE VERIFIED AT FIELD). E.C. SHALL VERIFY EXACT SIZE, LOCATION AND OPERABLE CONDITION OF PANEL. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
 - E.C. SHALL VERIFY THE INSTALLATION OF ELECTRICAL EQUIPMENTS ARE IN COMPLIANCE WITH N.E.C. 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.
 - PROVIDE POWER AND DATA CONNECTIONS FOR TELEVISION AS SHOWN IN PLAN. VERIFY EXACT REQUIREMENTS PRIOR TO BID. COORDINATE LOCATION AND MOUNTING HEIGHT WITH ARCHITECT AND OWNER PRIOR TO BID, ROUGH-IN AND INSTALL.
 - ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF THE PLUMBING EQUIPMENT IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
 - ELECTRICAL CONTRACTOR SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.
 - 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.
 - EXISTING MECHANICAL UNIT ALONG WITH ITS ELECTRICAL FIXTURE SHALL REMAIN CONNECTED TO THE EXISTING ELECTRICAL PANEL. E.C. TO COORDINATE WITH MECHANICAL CONTRACTOR FOR ANY REQUIREMENT BASED ON THE FIELD CONDITION. VERIFY THE OPERABLE CONDITION OF EXISTING SWITCH GEAR AND FEEDER. REPLACE IF IN OPERABLE. BASE BID ACCORDINGLY.
 - EXISTING ROOF OUTLETS SHALL REMAIN. 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.
 - E.C. SHALL COORDINATE WITH ARCHITECT/FRONT DESK MANUFACTURER FOR EXACT LOCATION, MOUNTING HEIGHT AND OTHER POWER REQUIREMENTS.



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POWER & ROOF PLAN

E-3

PANEL SCHEDULE:

PANEL:												MOUNTING:		RECESSED	
20BY/120		VOLTS,		3		PHASE,		4		WIRE		LOCATION:		STEM CLASSROOM	
MAIN CB		NA.		MLO		200A		BUS		EXISTING		MIN,		FED FROM: NEW BREAKER SWITCH	
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 GYM	L	0.48	2#12, #12G, 3/4"C	0.84			2#12, #12G, 3/4"C	0.36	R	REST ROOM RECEPTACLE	20	2	
3	20	LIGHTING LOBBY & GYM WAITING	L	0.28	2#12, #12G, 3/4"C		5.68			5.40	H			4	
5	20	LIGHTING STEM CLASSROOM, GYM STORAGE, RESTROOM	L	0.46	2#12, #12G, 3/4"C			5.86	EXISTING	5.40	H	RTU-1(E.)	50-2P	6	
7	20	TV RECEPTACLE	R	0.72	2#12, #12G, 3/4"C	6.12				5.40	H			8	
9	20	SPARE					0.54		2#12, #12G, 3/4"C	0.54	R	CONVENIENCE OUTLET	20	10	
11A	20	SPEAKER RECEPTACLE	R	0.54	2#12, #12G, 3/4"C			1.90							
11B	20	ROOF OUTLET	R	0.36	2#12, #12G, 3/4"C				2#12, #12G, 3/4"C	1.00	R	SHOW WINDOW RECEPTACLE	20	12	
13			H	3.64	2#12, #12G, 3/4"C	4.18			2#12, #12G, 3/4"C	0.54	R	GYM STORAGE	20	14	
15	40-2P	AHU-1(N)	H	3.64	2#8, #10G, 3/4"C		4.18		2#12, #12G, 3/4"C	0.54	R	CHARGING STATION	20	16	
17			H	1.25				2.25	2#12, #12G, 3/4"C	1.00	R	SHOW WINDOW RECEPTACLE	20	18	
19	20-2P	ACCU-1(N)	H	1.25	2#12, #12G, 3/4"C	1.97			2#12, #12G, 3/4"C	0.36	R	STEM CLASS ROMM	20	20A	
									2#12, #12G, 3/4"C	0.36	R	STEM CLASS ROMM	20	20B	
21			O	1.66			2.26		2#12, #12G, 3/4"C	0.60	E	WATER FOUNTAIN	20	22	
23	20-3P	WATER HEATER	O	1.66	3#12, #12G, 3/4"C			2.38	2#12, #12G, 3/4"C	0.02	M	EF-1(N)	20	24A	
									2#12, #12G, 3/4"C	0.70	E	REFRIGERATOR	20	24B	
25			O	1.66		1.86			2#12, #12G, 3/4"C	0.10	O	RCP-1	20	26A	
									2#12, #12G, 3/4"C	0.10	M	MOTORIZED DAMPER	20	26B	
27	20	RECEPTION RECEPTACLE	R	0.72	2#12, #12G, 3/4"C		0.72					SPARE	20	28A	
												SPARE	20	28B	
29	20	EXTERIOR SIGNAGE/TIME CLOCK	L	1.00	2#12, #12G, 3/4"C			1.00				SPARE	20	30A	
												SPARE	20	30B	
TOTAL LOAD (KVA)						14.97	13.38	13.39							

PANEL SCHEDULE GENERAL NOTES:

- ALL CIRCUITING SHOWN IN PANEL "A", FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING & BREAKER SIZE OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
- E.C. SHALL PROVIDE NEW CIRCUIT BREAKERS IN PLACE OF EXISTING CIRCUIT BREAKERS WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE.
- E.C. SHALL VERIFY THE EXISTING EQUIPMENT LOAD & RATINGS IN FIELD AND ACCORDINGLY CONSIDER THE ELECTRICAL LOAD IN PANEL BOARD SCHEDULE.
- E.C. SHALL PROVIDE NEW CIRCUIT BREAKER IN PLACE OF EXISTING CIRCUIT BREAKER WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE. ALSO CHECK COMPATIBILITY OF NEWLY ADDED BREAKERS WITH EXISTING PANEL BEFORE PURCHASE

PANEL SCHEDULE KEY NOTES:

- E. C SHALL PROVIDE (1)20AMP, 3 POLE BREAKER IN THE PLACE OF (6)20AMP, 1 POLE SPLIT BREAKER.
- E. C SHALL PROVIDE (1)40AMP, 2 POLE BREAKER IN THE PLACE OF (1)20AMP, 2 POLE BREAKER.

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PANEL SCHEDULES

PLUMBING FIXTURE SCHEDULE						WATER		WASTE
Item No.	Qty.	Description	MANUFACTURER	MODEL	Hot	Cold	Direct	
B3	2	WATER CLOSET	SALVAGED TO BE REUSED	SALVAGED TO BE REUSED		1/2"	4"	
B1	2	LAVATORY	SALVAGED TO BE REUSED	SALVAGED TO BE REUSED			2"	
B9	2	FAUCET	SALVAGED TO BE REUSED	SALVAGED TO BE REUSED	1/2"	1/2"		
B13	1	HI-LO WATER FOUNTAIN	ELKAY EZH20	WRB384100NG		1/2"	2***	
B14	1	MOP SINK & FAUCET	SALVAGED TO BE REUSED	SALVAGED TO BE REUSED	1/2"	1/2"	3"	
B17	1	SINK	-	-	1/2"	1/2"	2"	
WH-1	1	+NEW WATER HEATER	REFER TO SCHEDULE	REFER TO SCHEDULE				

+ HOT WATER 140 DEG,**ADAPTOR REQUIRED.

SCOPE OF WORK

PROVIDE ALL PLUMBING FOR A NEW KIDS GYM AND ACTIVITY FACILITY INCLUDING ALL WATER, VENT & SANITARY LINES AND CONNECT TO EXISTING UTILITIES. PROVIDE NEW STORAGE WATER HEATER FOR ALL PLUMBING FIXTURES.

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

PLUMBING NOTES

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
- 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.
- ALL EQUIPMENT WHICH IS TO REMAIN MUST BE REFURBISHED TO A LIKE NEW CONDITION.
- PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
- ALL MATERIALS SHALL BE NEW.
- 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.
- REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- 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.
- DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
- 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.
- VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
- 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 ANS/NSF STANDARD 61.
- SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE PVC BUT MAY NOT RUN THRU RATED ASSEMBLIES OR IN PLENUMS.
- ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- FURNISH AND INSTALL APPROVED AIR CHAMBERS AT EACH PLUMBING FIXTURE GROUP AS PER CODE AND WITH GOOD ENGINEERING PRACTICE.
- DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS, EXCEPT AT WATER HEATER AS PER CODE.
- ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PAD.
- 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 WITH FIRE RATED FOAM, TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS AS PART OF THE PLUMBER'S WORK.
- 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.
- STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY NOT BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF.
- PROVIDE CHROME PLATED COMBINATION COVER PLATE AND CLEAN OUT PLUG OR ACCESS PANEL FOR ALL CLEANOUTS.
- NO COMBUSTIBLE MATERIAL TO BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
- NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
- 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.
- 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.
- PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
- NO JOINTS UNDERGROUND FOR COPPER.
- PLUMBING FIXTURES SHALL COMPLY WITH CHAPTER 7, NATIONAL STANDARD PLUMBING CODE 2021, NJ EDITION.
- WATER HAMMER ARRESTORS AS PER SECTION 10.14.7, NATIONAL STANDARD PLUMBING CODE 2021, NJ EDITION.
- PLUMBING CONTRACTOR SHALL REVIEW ALL BID DOCUMENTATION.
- PLUMBING CONTRACTOR SHALL REVIEW WALL FINISHES @ LOCATION REQUIRING BARRIER-FREE COMPLIANCE (EXAMPLE: CENTER LINE TO TOILET).
- 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.
- OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER. PROVIDE A COPY TO LL.

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
LAVATORY	1/2"	1/2"	2"	1 1/2"
WATER CLOSET	1/2"	-	4"	2"
MOP SINK	1/2"	1/2"	3"	2"
HI-LO WATER FOUNTAIN	1/2"	-	2"	1-1/2"
SINK	1/2"	1/2"	2"	1 1/2"

PLUMBING LEGEND

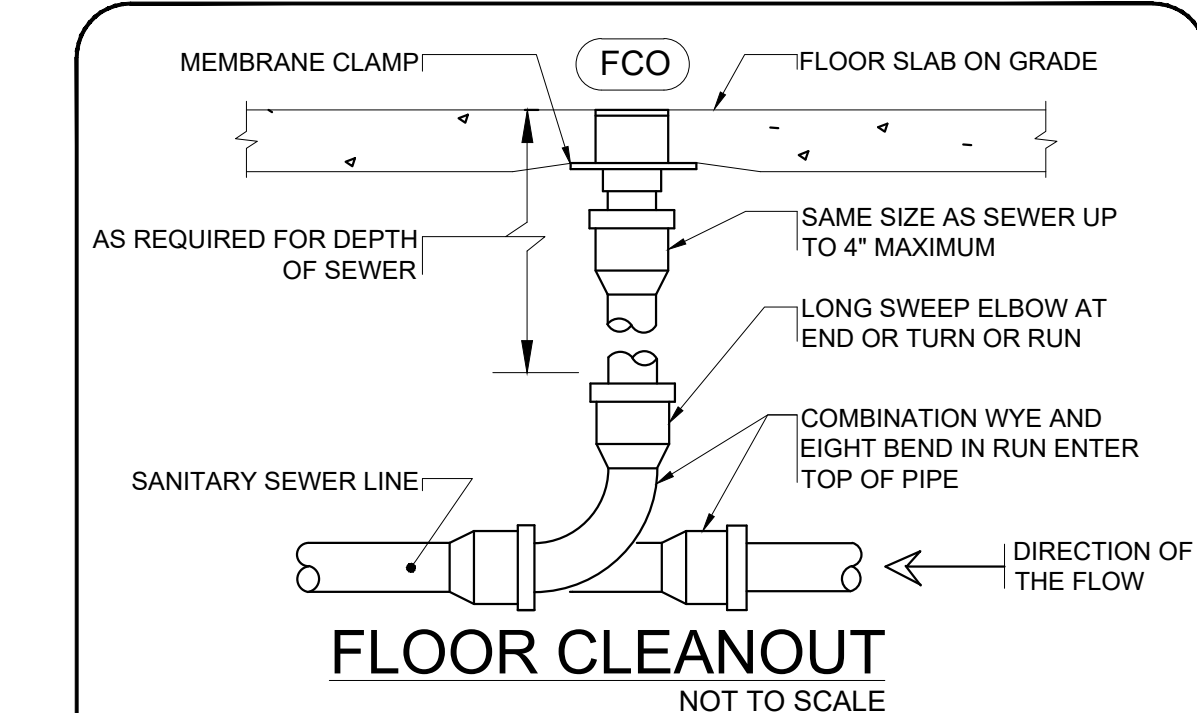
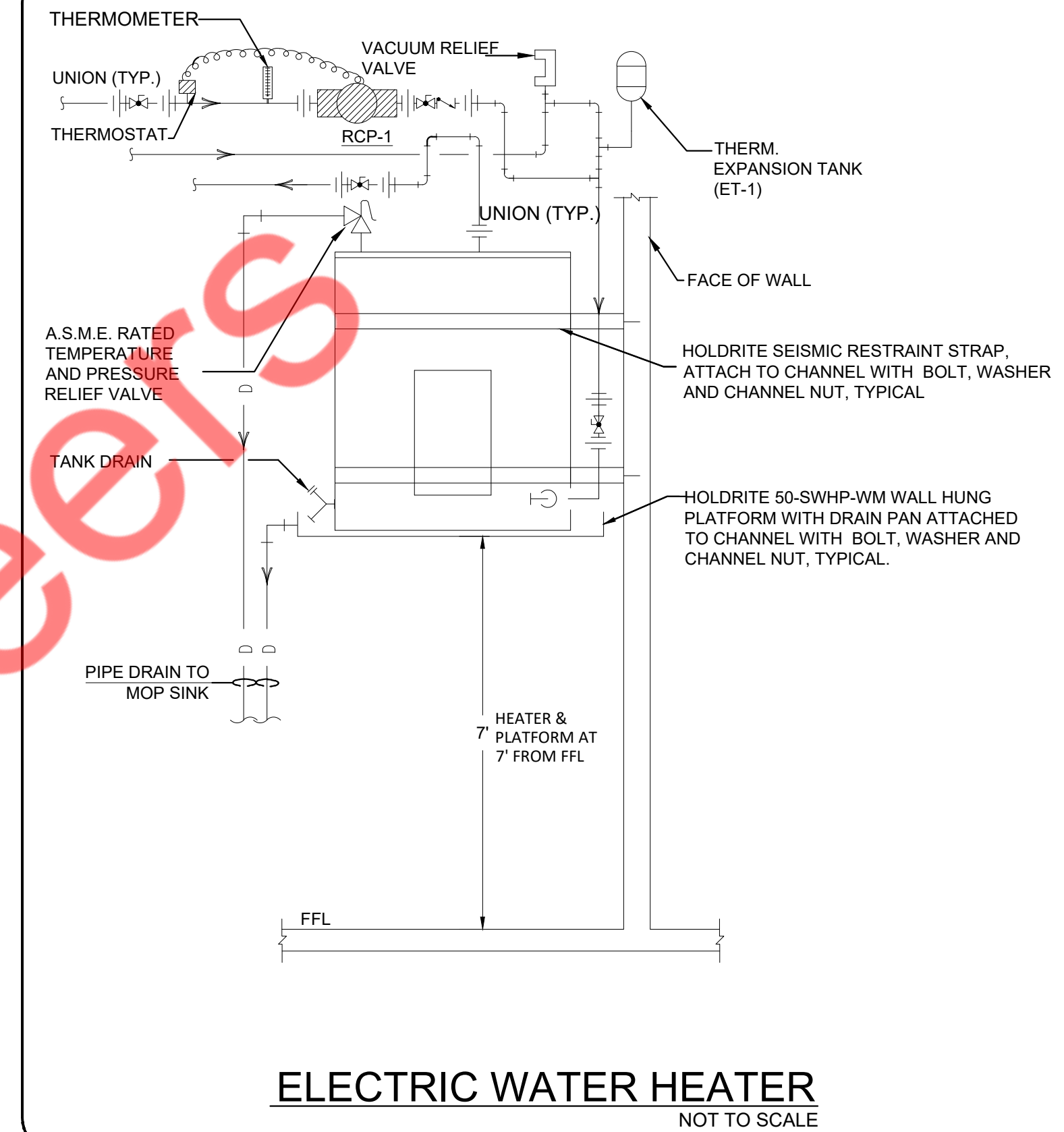
	SANITARY SEWER PIPING
	VENT PIPING
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	PIPE RISE
	PIPE DROP
	FLOOR CLEAN OUT
	P-TRAP
	SHUT-OFF VALVE
	COLD WATER
	HOT WATER
	HOT WATER RETURN
	GATE VALVE
	FLOOR DRAIN
	BALANCING VALVE
	POINT OF CONNECTION
	THERMOSTATIC MIXING VALVE

ENERGY CONSERVATION NOTES

- AS PER ASHRAE 90.1 - 2019 SECTION 7.4.4.2, AUTOMATIC TIME SWITCHES INSTALLED TO AUTOMATICALLY SWITCH OFF THE RECIRCULATING HOT-WATER SYSTEM OR HEAT TRACE.
- AS PER ASHRAE 90.1 - 2019 SECTION 7.4.4.3, PUBLIC LAVATORY FAUCET WATER TEMPERATURE $\leq 110^{\circ}F$.
- AS PER ASHRAE 90.1 - 2019 SECTION 7.4.4.4, CONTROLS ARE INSTALLED THAT LIMIT THE OPERATION OF A RECIRCULATION PUMP INSTALLED TO MAINTAIN TEMPERATURE OF A STORAGE TANK.
- AS PER ASHRAE 90.1 - 2019 SECTION 7.4.2, SERVICE WATER HEATING EQUIPMENT MEETS EFFICIENCY REQUIREMENTS.

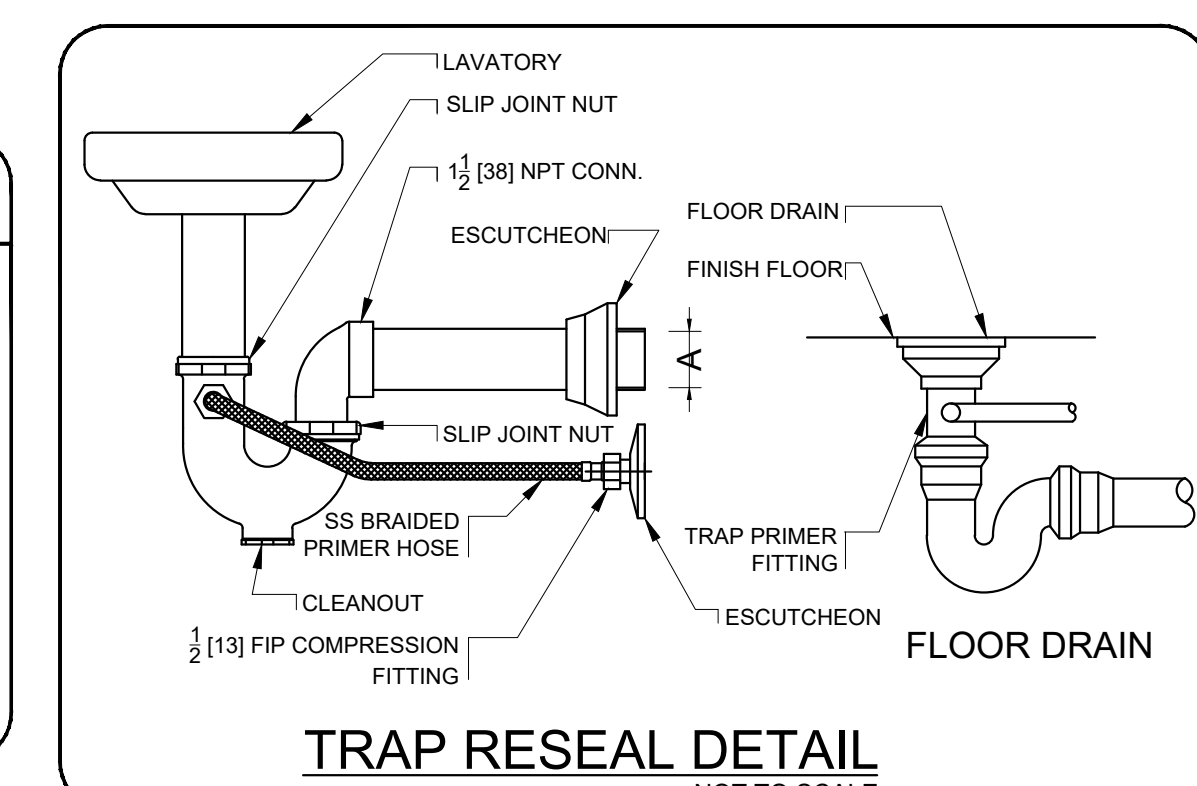
EXISTING CONTIDITONS NOTES

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/QUANTITY 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.



FLOOR CLEANOUT DETAIL NOTES

- LOCATE CLEANOUT AT THIS LOCATION:
 - BUILDING EXIT
 - AT TURNS OF PIPES GREATER THAN 45 DEGREES
 - AT 90° INTERVALS ON STRAIGHT RUNS
 - WHERE IS SHOWN ON PLANS
 - WHERE IS 18" CLEAR AROUND



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PLUMBING
DETAILS, NOTES
& SCHEDULES

P-1

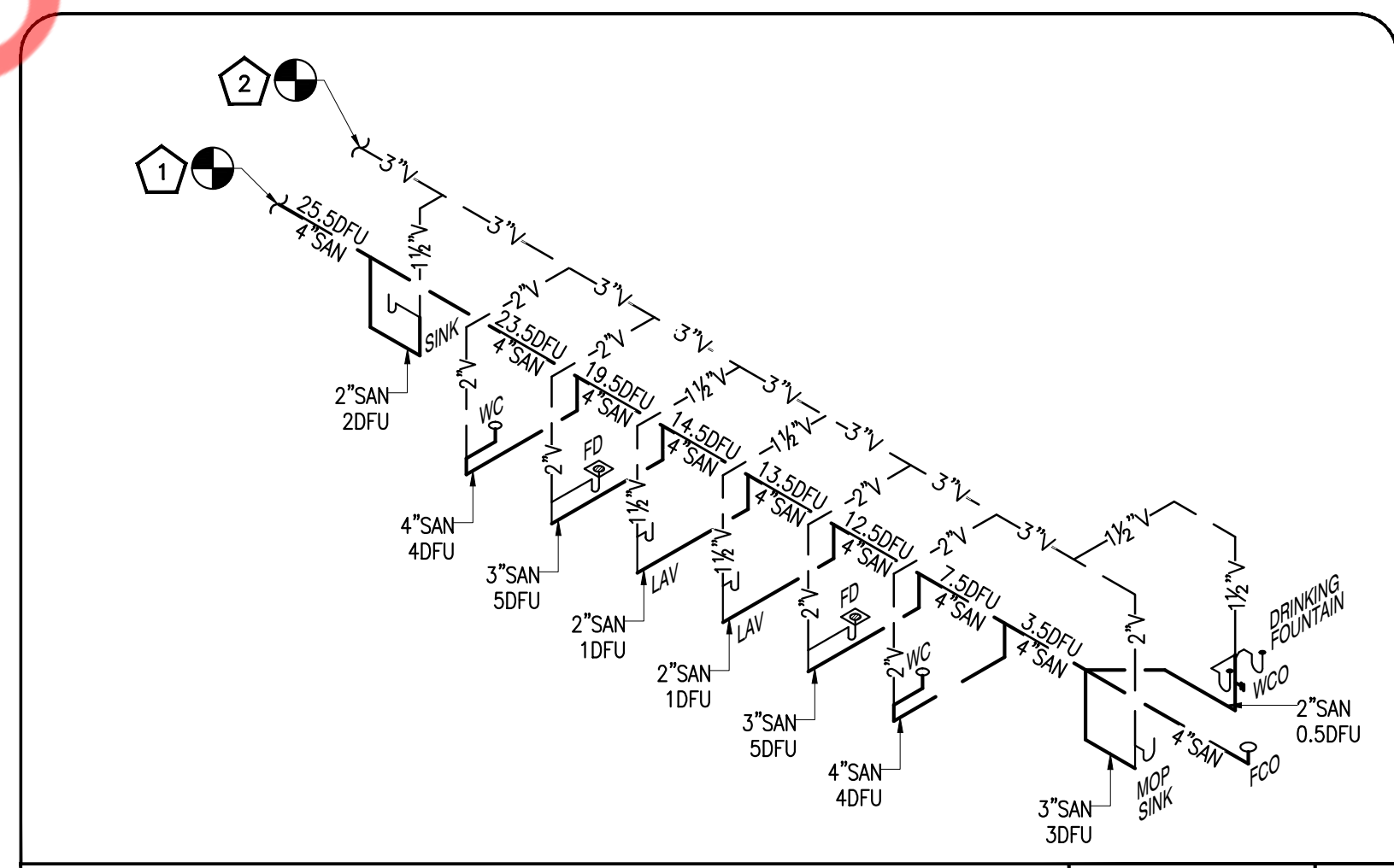
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GENERAL NOTES

1. UNLESS OTHERWISE NOTED, SLOPE OF DRAINAGE SYSTEM TO BE 1/16" PER FOOT OF RUN FOR PIPE 8" AND OVER, 1/8" PER FOOT FOR PIPE 3" TO 6" and 1/4" PER FOOT FOR PIPE 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. 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 KEY NOTE

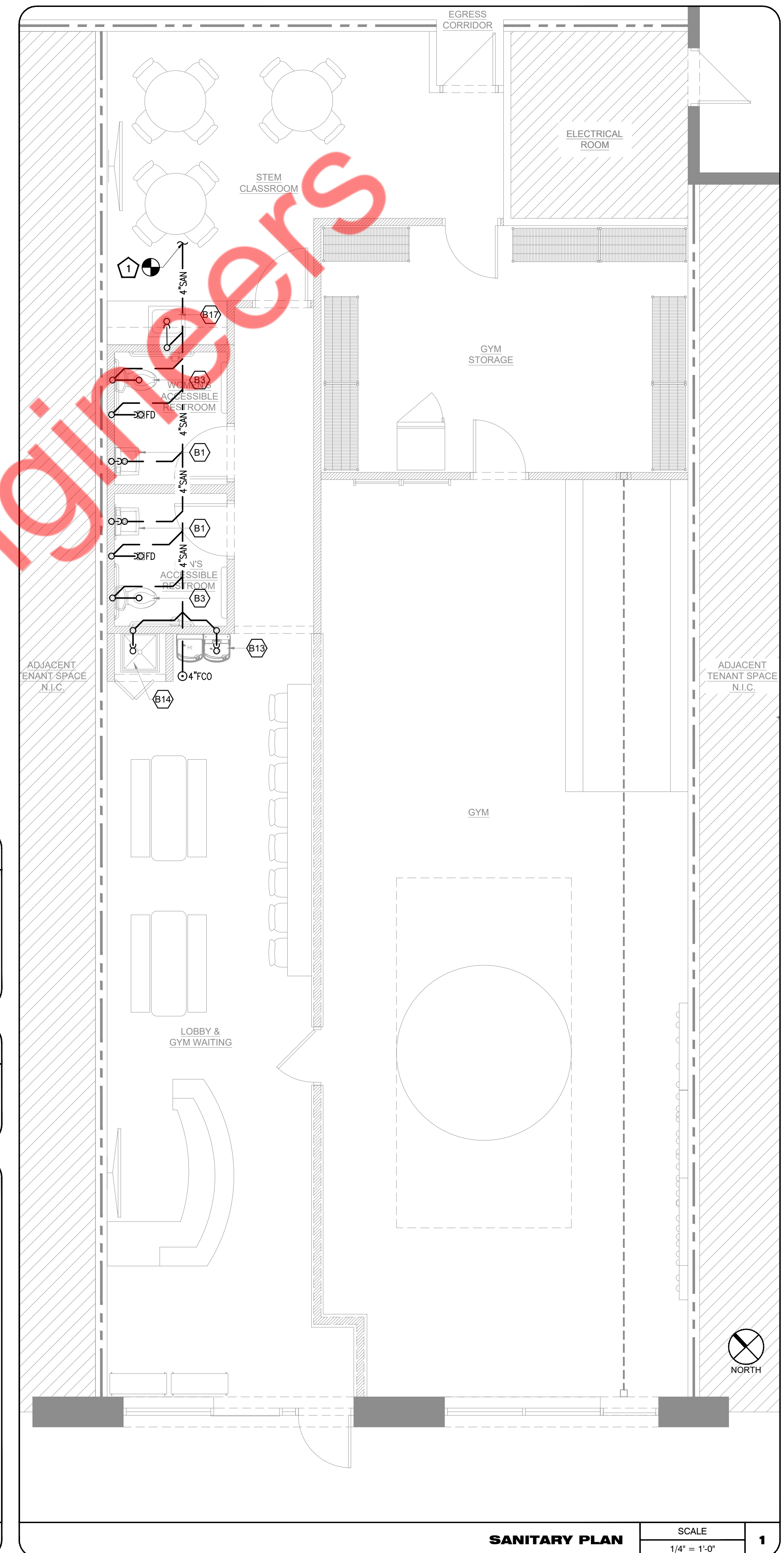
1. CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY WASTE PIPE IN SPACE OF ADEQUATE SIZE. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
2. CONNECT NEW 3" VENT PIPING TO EXISTING VENT PIPING OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT PIPING AND UPGRADE IF REQUIRED.



SANITARY RISER

SCALE
N.T.S.

2



SANITARY PLAN

SCALE
1/4" = 1'-0"

1

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**PLUMBING
SANITARY
PLAN & RISERS**

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TUMBLER

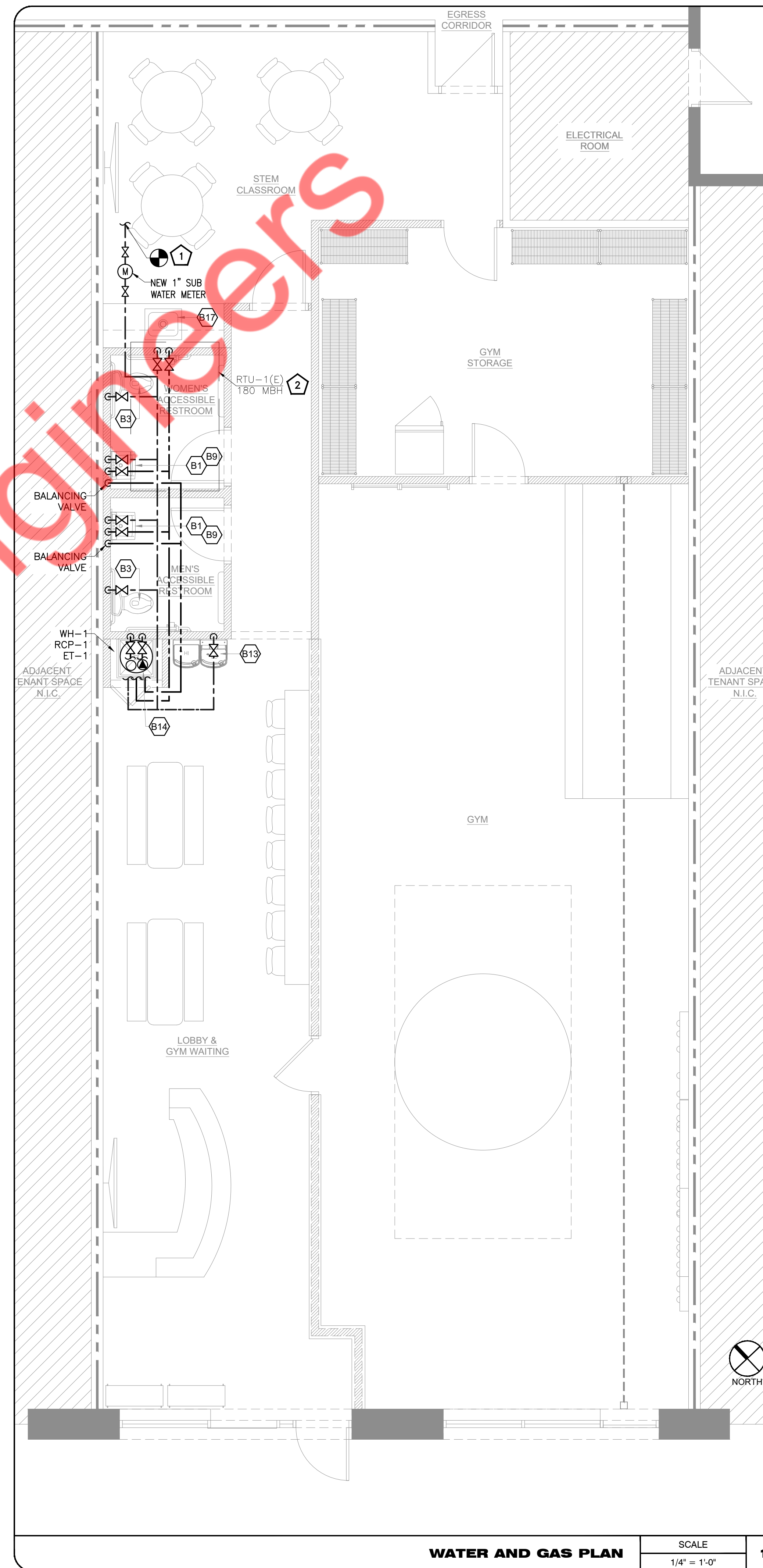
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PLUMBING
 WATER & GAS
 PLAN & WATER
 RISER

P-3



NEW STORAGE WATER HEATER SCHEDULE	
MANUFACTURER	BRADFORD WHITE
MODEL	LE240LN3-3
EQUIPMENT TAG	WH-1
STATUS	NEW
CAPACITY	37 GALLONS
QUANTITY	1
KW	5
RECOVERY	22 GPH*
ENERGY FACTOR	0.92
VOLTAGE	208/3/60
AMPERAGE	13.87
WEIGHT	126 LBS

1. *NON-SIMULTANEOUS ELEMENT OPERATION @ 90° F TEMPERATURE RISE
 2. INSTALL NEW EXPANSION TANK (ET-1) AMTROL MODEL THERM-X-TROL ST-5C-DD, 2.0 GAL PER LOCAL CODE REQUIREMENTS

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/PHHZ	115/1/60
RPM	2280
SERVICE FACTOR	1.0

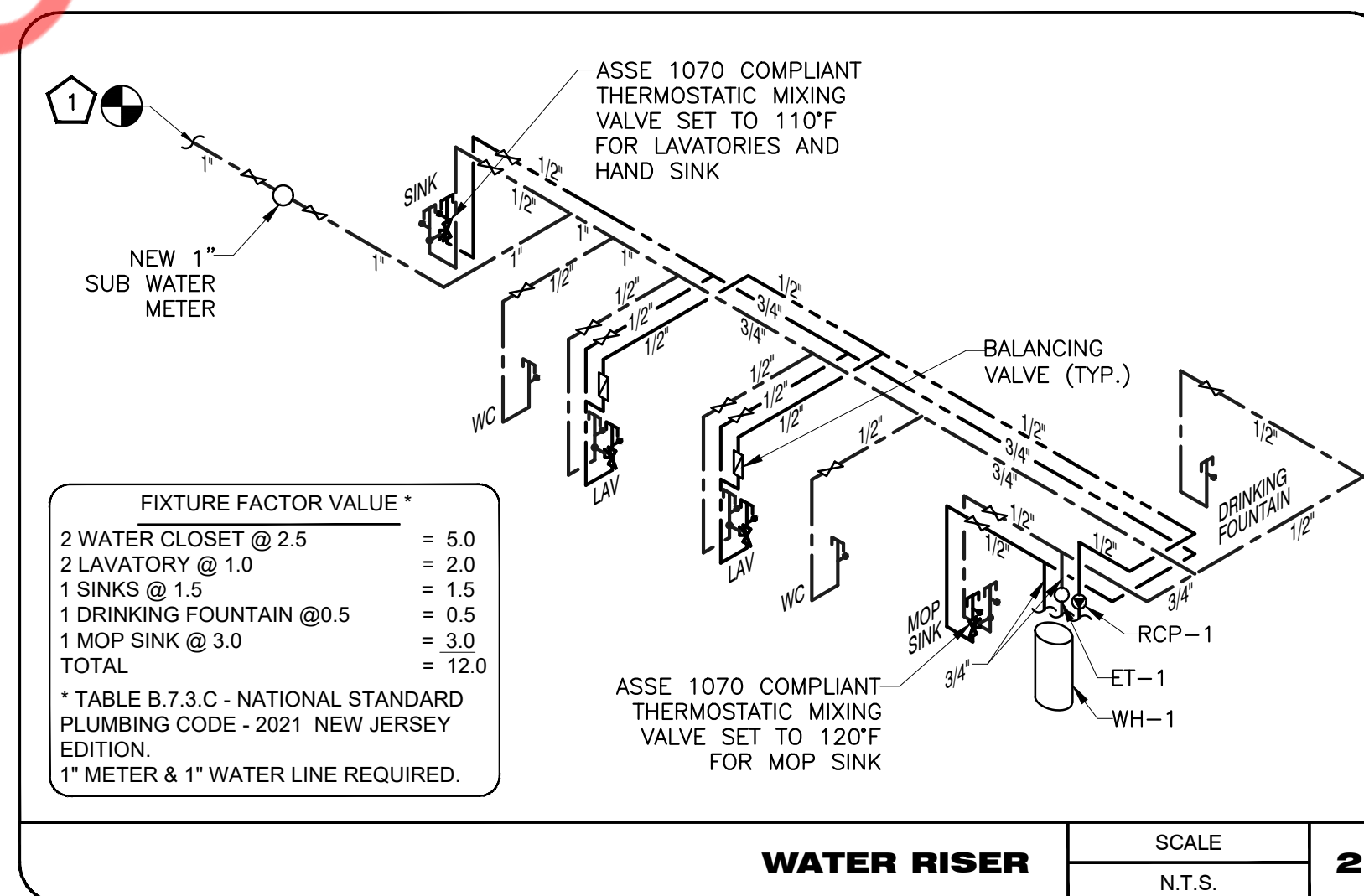
NOTE:
 PROVIDE AQUA STAT WITH AUTOMATIC TIMER KIT FOR THE TEMPERATURE CONTROL OF HOT WATER SYSTEM. COORDINATE ELECTRICAL REQUIREMENTS FOR TIMER WITH ELECTRICAL CONTRACTOR.

GENERAL NOTES

- CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER ASHRAE 90.1-2019 (REFER SHEET P-1)
- PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
- PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
- WATER HEATER (WH-1) DRAIN SPILLS TO THE MOP SINK.

WATER AND GAS PLAN AND WATER RISER KEY NOTES

- CONNECT NEW 1" CW LINE TO EXISTING WATER MAIN LINE WITH NEW 1" WATER SUB METER AND SHUT OFF VALVES. CONTRACTOR TO FIELD VERIFY SIZE AND LOCATION OF EXISTING WATER LINE AND UPGRADE IF REQUIRED.
- EXISTING RTU-1 (E) TO REMAIN WITH EXISTING GAS PIPING, GAS METER, RELATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.



WATER RISER

SCALE
 N.T.S.

2

WATER AND GAS PLAN

SCALE
 1/4" = 1'-0"

1