

**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/QT. 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.

**SCOPE OF WORK**

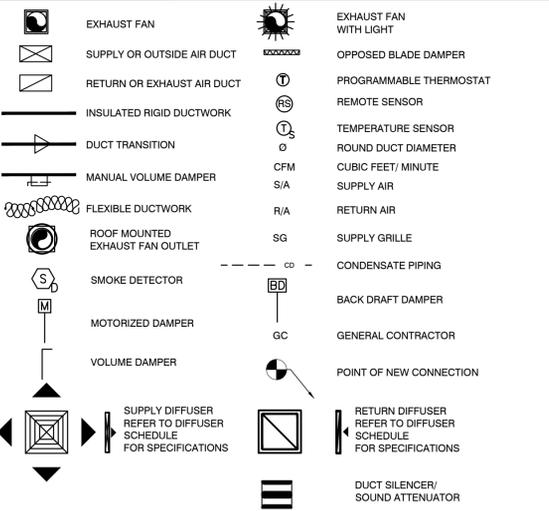
REUSE EXISTING 10TON & 2.5 TON RTU'S, AND 2# 5 TON SPLIT SYSTEM . PROVIDE NEW DUCTWORK AND NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEM.  
 PROVIDE NEW 2#BATHROOM EXHAUST FANS, 2#SHOWER EXHAUST FANS, 1# UTILITY ROOM EXHAUST FAN & 1# LOCKER ROOM EXHAUST FANS.  
 COORDINATE WITH GC ANY ADDITIONAL REFRIGERATION WORK REQUIRED AND PLUMBING CONTRACTOR PROVIDING CONDENSATE LINES FOR MECHANICAL EQUIPMENT.

**INDIANAPOLIS BUILDING DEPARTMENT NOTES**

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2012-IBC AND RULES AND REGULATIONS OF THE INDIANA DEPARTMENT OF BUILDINGS TO DATE.

- THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
- TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2012 INTERNATIONAL BUILDING CODE REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE INTERNATIONAL MECHANICAL CODE 2012:
  - A. VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES - 2012 IMC 506, 507
  - B. REFRIGERATION SYSTEMS -2012 IMC 1108
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
  - A. STANDARDS OF HEATING - 2012 IMC 309.1
  - B. DUCT CONSTRUCTION AND INSTALLATION- 2012 IMC 603
  - C. AIR INTAKES, EXHAUSTS AND RELIEFS - 2012 IMC 401.5
  - D. AIR FILTERS - 2012 IMC 605
  - E. GAS FIRED EQUIPMENT - FUEL GAS CODE
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH 2012 IMC 401.
- 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 2012 IMC 403.3
- REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- 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.
- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- SMOKE DETECTOR SHALL MEET UL268A.

**MECHANICAL SYMBOLS**



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

**GENERAL NOTES**

- 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.
- 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.
- 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.
- 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.
- 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 MANUFACTURERS STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
- 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.
- 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.
- 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.
- 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.
- G.C. SHALL COORDINATE WITH LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL ALL ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.
- 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.
- OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.

**THERMOSTATIC CONTROLS NOTES**

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

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

**C403.2.4.1.1 HEAT PUMP SUPPLEMENTARY HEAT**  
 HEAT PUMPS HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN MEET THE HEATING LOAD.

**C403.2.4.2 SET POINT OVERLAP RESTRICTION**  
 WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL PROVIDE A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.  
 EXCEPTION: THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.

**C403.2.4.3 OFF-HOUR CONTROLS**  
 EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.  
 EXCEPTIONS:  
 1. ZONES THAT WILL BE OPERATED CONTINUOUSLY.  
 2. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.

**C403.2.4.3.1 THERMOSTATIC SETBACK CAPABILITIES**  
 THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

**C403.2.4.3.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES**  
 AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

**C403.2.4.3.3 AUTOMATIC START CAPABILITIES**  
 AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

**C403.2.4.4 SHUTOFF DAMPER CONTROLS**

- BOTH OUTDOOR AIR SUPPLY AND EXHAUST DUCTS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE.  
 EXCEPTIONS:
- GRAVITY DAMPERS SHALL BE PERMITTED IN BUILDINGS LESS THAN THREE STORIES IN HEIGHT.
  - GRAVITY DAMPERS SHALL BE PERMITTED FOR BUILDINGS OF ANY HEIGHT LOCATED IN CLIMATE ZONES 1, 2 AND 3.
  - GRAVITY DAMPERS SHALL BE PERMITTED FOR OUTSIDE AIR INTAKE OR EXHAUST AIRFLOWS OF 300 CFM (0.14 M3/S) OR LESS.

**MECHANICAL GENERAL NOTES**

- REUSE EXISTING 10TON & 2.5 TON RTU'S, AND 2# 5 TON SPLIT SYSTEM . PROVIDE NEW DUCTWORK WITH NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEM. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AIR DUCT CONNECTIONS. INSTALL FIRE DAMPERS IN ANY FIRE WALLS AND BETWEEN FLOORS. 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.
- FOR SYSTEM OVER 2,000 CFM CHECK FOR DUCT MOUNTED AIR SMOKE DETECTORS AND THAT MEET THE REQUIREMENTS OF U.L. 268A, INTERLOCKED TO SHUTDOWN 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.
- 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 2009 INTERNATIONAL MECHANICAL CODE, SECTION 603. THE MORE STRINGENT REQUIREMENT OF ANY CODES SHALL APPLY.
- 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 SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. 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.
- GYPSUM BOARD SHALL BE USED FOR RETURN AIR DUCTS ONLY.
- 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.
- THERMOSTATS AND HUMIDISTAT SHALL BE 7-DAY PROGRAMMABLE TYPE. MOUNT THERMOSTAT 48" A.F.F. COORDINATE LOCATION OF THERMOSTAT IF EXISTING THERMOSTAT AND REMOTE SENSOR ARE NOT REUSABLE THEN PROVIDE NEW THERMOSTAT WITH LOCKABLE COVER. COORDINATE LOCATION OF THERMOSTAT. PROVIDE REMOTE SENSOR LOCATED 72" ABOVE FINISHED FLOOR NEAR LOCATION INDICATED. SEAL WALL OPENING WITH CAULK. COORDINATE LOCATION ON SITE WITH GENERAL CONTRACTOR AND EQUIPMENT.
- 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 AS PER IECC 2012.
- 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.
- CONDENSATE DRAIN LINES FROM EXISTING RTUS TO REMAIN AS IT IS. IF PIPING IS DAMAGED OR BLOCKED, REPAIR OR REPLACE AS/IF DAMAGED. USE SIMILAR MATERIAL OR APPROVED MATERIAL AS PER LOCAL CODE.
- ALL EQUIPMENT AND MATERIALS WILL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND ACCORDING TO THE BEST PRACTICE.
- TESTING AND BALANCING SHALL BE DONE IN ACCORDANCE AS PER IECC 2012, 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.
- 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.
- ALL HVAC CONTROLS AND CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

**SPLIT SYSTEM SCHEDULE**

	SPLIT SYSTEM SCHEDULE	
	AHU-1(E)	AHU-2(E)
UNIT TAG	AHU-1(E)	AHU-2(E)
UNIT TYPE	MULTI-POSITION AHU	MULTI-POSITION AHU
AREA SERVED	SEE PLAN	SEE PLAN
SUPPLY AIR (CFM)	2000 (V.I.F)	2000 (V.I.F)
OUTSIDE AIR (CFM)	150	250
STATIC PRESS. (E.S.P.)	S.A.E	S.A.E
VOLTS/PH/Hz	208-230/1/60 (V.I.F)	208-230/1/60 (V.I.F)
TOT. COOLING CAP. (MBH)	60 (V.I.F)	60 (V.I.F)
MANUFACTURER	S.A.E	S.A.E
MODEL NO.	M4AH3060 (V.I.F)	S.A.E
ELECTRIC HEAT(KW)	S.A.E	S.A.E
WEIGHT, LBS	S.A.E	S.A.E
MAX. UNIT AMPS	48.7(V.I.F)	48.7(V.I.F)
MAX. CKT. BRKR. AMPS	60 (V.I.F)	60 (V.I.F)
UNIT TAG	ACCU-1 (E)	ACCU-2 (E)
AIR HANDLER SERVED	AHU-1 (E)	AHU-2 (E)
NOMINAL CAPACITY	5.0 TR (V.I.F)	5.0 TR (V.I.F)
REFRIGERANT	S.A.E	S.A.E
COMPRESSOR RLA/LRA	S.A.E	S.A.E
OUTDOOR FAN FLA	S.A.E	S.A.E
V/Ph/Hz	208/1/60 (V.I.F)	208/3/60 (V.I.F)
M.C.A. / M.C.B. AMPS	34.7/60 (V.I.F)	21/35 (V.I.F)
MANUFACTURER	S.A.E	TRANE (V.I.F)
MODEL# (CONDENSER)	M4AC3060 (V.I.F)	4TTA3060 (V.I.F)
EER/SEER	S.A.E	S.A.E
WEIGHT, LBS	S.A.E	S.A.E

- SPLIT SYSTEM NOTES:**
- EXISTING SYSTEM WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
  - S.A.E : SAME AS EXISTING & V.I.F. - VERIFY IN FIELD.
  - CONTRACTOR TO FIELD VERIFY IF AHU-1(E) & AHU-2(E) ARE IN WORKING AT THEIR 100% RATED CAPACITIES/LOADS. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
  - CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF UNITS ON SITE PRIOR TO START ANY WORK.
  - IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSORS COMPATIBLE WITH EXISTING AHU-1(E) & AHU-2(E). COORDINATE FINAL LOCATIONS OF T-STAT AND T-SENSORS WITH ARCHITECT/OWNER.
  - CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON EXISTING AHU-1(E) & AHU-2(E) TO MATCH VALUES MENTIONED IN ABOVE TABLE.
  - REPLACE AIR FILTERS WITH NEW FILTERS IF REQUIRED.
  - CONTRACTOR TO PROVIDE CONDENSATE DRAIN PUMP IF REQUIRED.

**OCCUPANCY CALCULATION PER IMC 2012, SECTION 403.3. (AS PER FIXED OCCUPANCY EXCEPTION)**

RECEPTION	292 SQ. FT.	FIXED OCCUPANCY EXCEPTION	4 PEOPLE
WORKOUT AREA	2140 SQ. FT.	FIXED OCCUPANCY EXCEPTION	43 PEOPLE
			47 PEOPLE

**VENTILATION REQUIREMENTS PER IMC 2012 TABLE 403.3.1.1**

RECEPTION	292 SQ. FT. X 0.06 CFM/SQ. FT. =	17 CFM
	4 PEOPLE X 5 CFM/PEOPLE =	20 CFM
WORKOUT AREA	2140 SQ. FT. X 0.06 CFM/SQ. FT. =	128 CFM
	43 PEOPLE X 20 CFM/PEOPLE =	860 CFM
UTILITY ROOM	50 SQ. FT. X 0.12 CFM/SQ. FT. =	6 CFM
HALLWAY	145 SQ. FT. X 0.06 CFM/SQ. FT. =	9 CFM
BREATHING ZONE OUTDOOR AIRFLOW (Vbz)		1040 CFM
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)		0.8
ZONE OUTDOOR AIRFLOW (Voz=Vbz/Ez)		1300 CFM
RESTROOM-1&2	70 CFM PER FIXTURE	140 CFM
UTILITY ROOM(MOP SINK)	70 CFM PER FIXTURE	70 CFM
SHOWER ROOM(1 & 2)	50 CFM PER FIXTURE	100 CFM
LOCKER/CHANGING ROOM	130 SQ. FT. X 0.25 CFM/SQ. FT. =	32.5 CFM
EXHAUST AIR REQUIRED		342.5 CFM
OUTSIDE AIR PROVIDED		1300 CFM
AIR BALANCE		
O/A PROVIDED THROUGH RTU-1(E)		150 CFM
O/A PROVIDED THROUGH RTU-2(E)		750 CFM
O/A PROVIDED THROUGH AHU-1(E)		150 CFM
O/A PROVIDED THROUGH AHU-2(E)		250 CFM
(2)BEF-1(N)		-140 CFM
(2)BEF-2(N)		-200 CFM
EF-1 (N)		-70 CFM
EF-2 (N)		-70 CFM
BUILDING PRESSURE(BAROMETRIC RELIEF)		+820 CFM

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

**NECK SIZE TABLE - A**

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

**ROOFTOP UNIT SCHEDULE**

	ROOFTOP UNIT SCHEDULE	
	RTU-1(E)	RTU-2(E)
UNIT TAG	RTU-1(E)	RTU-2(E)
UNIT TYPE	ELECTRIC (V.I.F)	GAS (V.I.F)
MANUFACTURER	S.A.E	CARRIER (V.I.F)
MODEL	S.A.E	48TF012 (V.I.F)
STATUS	S.A.E	S.A.E
LOCATION	ROOF	ROOF
TOTAL CAPACITY	2.5 TONS (V.I.F)	10.0 TONS (V.I.F)
TOTAL COOLING MBH	S.A.E	S.A.E
TOTAL SENSIBLE MBH	S.A.E	S.A.E
EER	S.A.E	S.A.E
SEER	S.A.E	S.A.E
GAS HEATING INPUT (BTU/H)	-	224,000 (V.I.F)
GAS HEATING OUTPUT (BTU/H)	-	179,200 (V.I.F)
ELECTRIC HEAT(KW)	S.A.E	-
THERMAL EFF (%)	-	S.A.E
SUPPLY AIR (CFM)	1000 (V.I.F)	4000 (V.I.F)
OUTDOOR AIR (CFM)	150	750
VOLTAGE/PHASE/Hz	208/3/60 (V.I.F)	208/3/60 (V.I.F)
MCA (A)	25 (V.I.F)	45.9(V.I.F)
MOCP (A)	30 (V.I.F)	50.0 (V.I.F)
ESP (IN. OF H2O)	S.A.E	S.A.E
WEIGHT (lbs)	S.A.E	S.A.E

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

CONTRACTOR TO FIELD VERIFY AND CONFIRM IF EXISTING RTU & AHUS SERVING TENANT SPACE IS IN OPERABLE CONDITIONS AND HAVING HEATING PROVISION PRIOR TO BASE BID/CONSTRUCTION. IF FOUND ANY DISCREPANCY REPORT TO ENGINEER IN RECORD.

**FAN SCHEDULE**

DESIGNATION	BEF-1(N)	BEF-2(N)	EF-1(N)&EF-2(N)
STATUS	NEW	NEW	NEW
QUANTITY	2	2	2
MANUFACTURER	GREENHECK (OR EQUIVALENT)	GREENHECK (OR EQUIVALENT)	GREENHECK (OR EQUIVALENT)
MODEL	SP-A90 (OR EQUIVALENT)	SP-A200 (OR EQUIVALENT)	SP-A90 (OR EQUIVALENT)
CFM	70@0.3" W.C. ESP	100@0.3" W.C. ESP	70@0.3" W.C. ESP
AMPS	0.17	0.6	0.17
ACCESSORIES	BDD	BDD	BDD
WEIGHT (LBS)	15	25	15
V/PH/Hz	115/1/60	115/1/60	115/1/60

- NOTES:**
- PROVIDE DISCONNECT SWITCH.
  - INTERLOCK BEF-1(N) & BEF-2(N) & EF-2(N) WITH AHU-2(E).
  - PROVIDE BACK DRAFT DAMPER.
  - INTERLOCK EF-1(N) WITH LIGHT SWITCH.

**DIFFUSER SCHEDULE**

MANUFACTURER	TITUS	TITUS	TITUS	TITUS
DESIGNATION	A	B	C	R
USE	SUPPLY	SUPPLY	SUPPLY	RETURN
MODEL	TDC-AA	TDC-AA	S300FS	56 FL
MOUNTING	CEILING	CEILING	DUCT	CEILING/ WALL
LOCATION	AS SHOWN	BATHROOM	BATHROOM	AS SHOWN
FACE SIZE	24" X 24"	12"X12"	-	-
NECK SIZE	REFER TABLE - A	SEE PLAN	SEE PLAN	
FRAME TYPE	LAY IN	LAY IN	-	-
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

- NOTES:**
- MAX. NC LEVEL 30 OR LESS.
  - PROVIDE SQUARE TO ROUND NECK ADAPTOR.
  - COORDINATE WITH ARCHITECT FOR PAINT AND FINISH.
  - PROVIDE 4-WAY AIR THROW PATTERN UNLESS NOTED OR INDICATED.
  - PROVIDE INSULATED BACKS ON ALL DIFFUSERS.



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PROJECT

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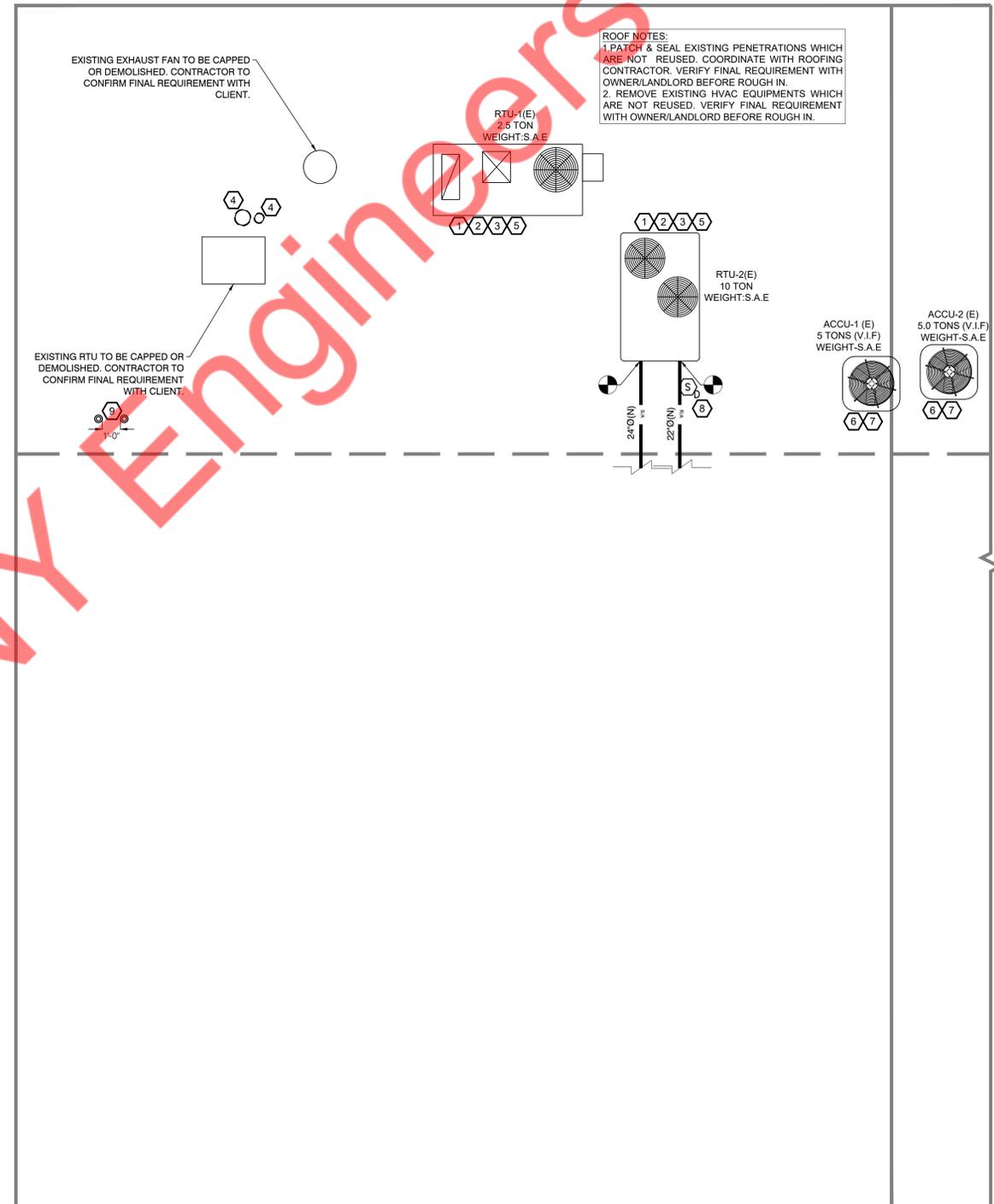
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MECHANICAL NOTES & SCHEDULES

M-1



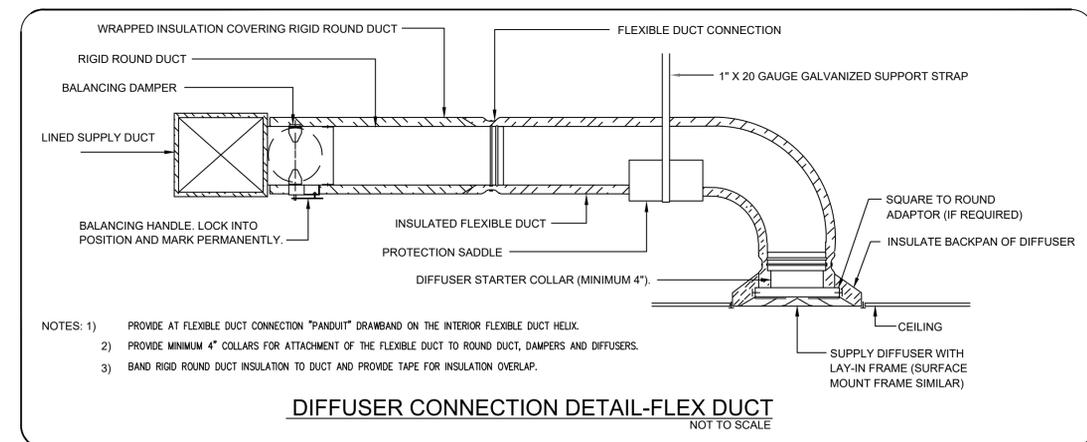
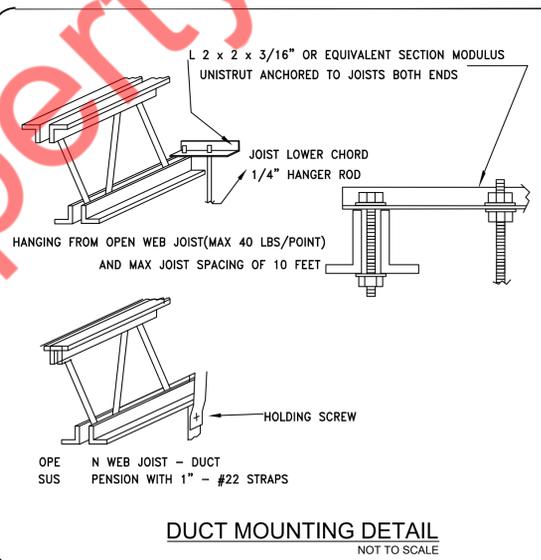
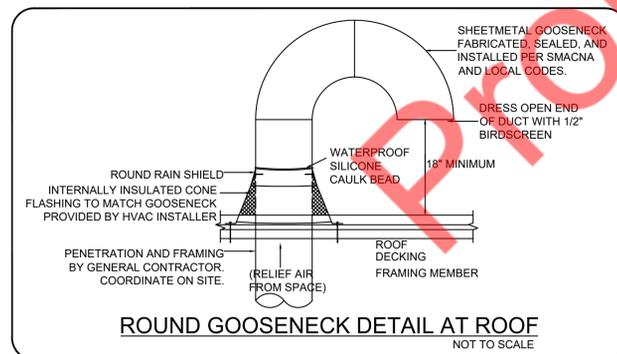
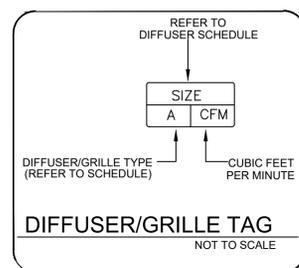
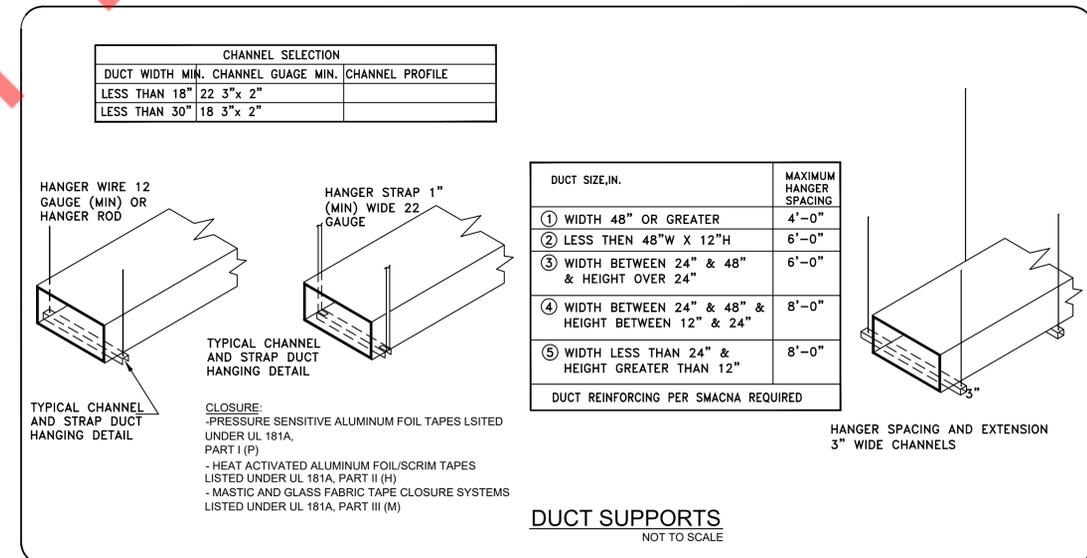
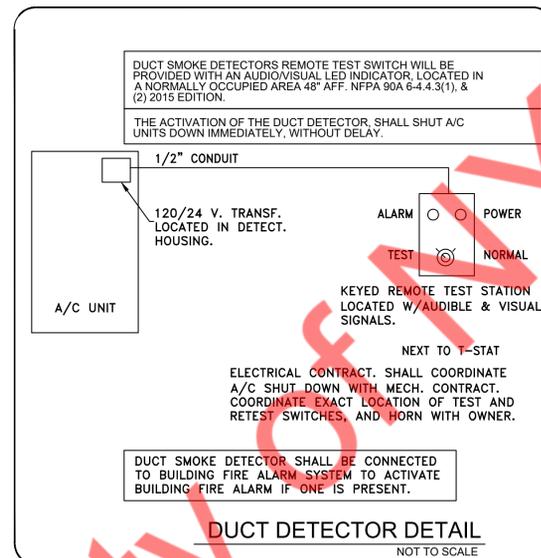
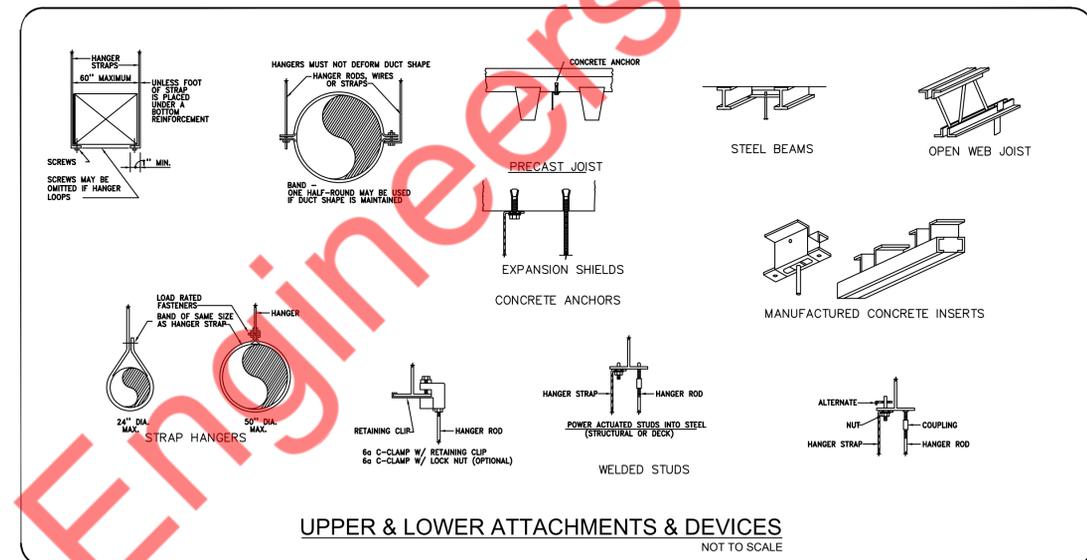
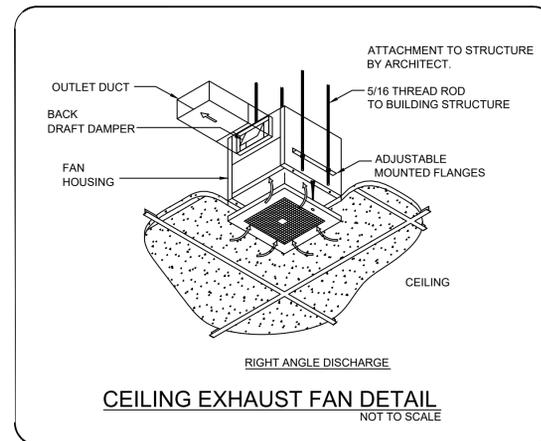


**ROOF PLAN GENERAL NOTES**

- COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
- COORDINATE ALL NEW EQUIPMENT WITH STRUCTURAL.
- MAINTAIN ALL CODE AND MANUFACTURERS RECOMMENDED CLEARANCE AROUND ALL ROOF EQUIPMENT.
- PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR DUCTING AND PIPING.
- G.C. SHALL COORDINATE WITH LANDLORD APPROVED ROOFING CONTRACTOR FOR ROOF PENETRATIONS.
- EXISTING ROOF CURBS TO BE REUSED WHEREVER POSSIBLE. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING CURBS. REPLACE EXISTING CURBS IF NOT IN A GOOD CONDITION.
- IF EXISTING ROOF CURBS ARE DAMAGED OR NOT REUSABLE. REPLACE WITH NEW ROOF CURB REQUIRED AND REDO ROOFING. COORDINATE WITH ROOFING CONTRACTOR.

**ROOF PLAN KEY NOTES**

- EXISTING MECHANICAL ROOFTOP UNIT TO REMAIN & TO BE REUSED. CLEAN AND REFURBISH TO "LIKE-NEW" CONDITION. REPAIR/REPLACE ANY ACCESSORIES AS REQUIRED TO PROVIDE A FULLY FUNCTIONING UNIT. VERIFY IN FIELD PRIOR TO BID. VERIFY FINAL LOCATION & CONFIGURATION ON FILED. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID AND START OF WORK.
- EXISTING CONDENSATE DRAINS TO REMAIN AS IT IS. CONTRACTOR TO FLUSH THE EXISTING DRAIN.
- BALANCE OUTSIDE AIR DAMPER OF RTU TO CFM MENTIONED IN SCHEDULE ON SHEET M-1.
- EXHAUST SHALL TERMINATE 3 FEET FROM THE PROPERTY LINE, 3 FEET FROM THE EXTERIOR WALL AND ROOFS, 3 FEET FROM THE OPERABLE OPENING INTO THE BUILDING AND 10 FEET FROM THE OUTSIDE AIR INTAKE OPENINGS.
- ALL OUTSIDE AIR INTAKES ON THE ROOF SHALL BE MINIMUM 10 FT. AWAY FROM ANY EXHAUST SOURCE.
- CONTRACTOR FIELD VERIFY LOCATION OF EXISTING CONDENSING UNITS.
- CONTRACTOR SHALL REFURBISH ALL EXISTING MECHANICAL EQUIPMENT AND BRING TO "LIKE NEW" CONDITIONS. CONTRACTOR SHALL VERIFY SPECIFICATIONS OF THE EXISTING MECHANICAL EQUIPMENT TO BE REUSED AND NOTIFY THE ENGINEER IF ANY CONFLICT OR DISCREPANCY IS FOUND PRIOR TO CONSTRUCTION.
- RETAIN AND REUSE EXISTING SMOKE DETECTORS. IF EXISTING SMOKE DETECTOR IS NOT IN CONDITION TO REUSE, THEN INSTALL NEW ONE. SMOKE DETECTOR SHALL BE FURNISHED/INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR TO SHUT DOWN CORRESPONDING RTU UNDER ALARM CONDITIONS. ALL WIRING SHALL BE IN CONDUIT PER N.E.C. SMOKE DETECTOR SHALL BE SYSTEM SENSOR MODEL DH100ACDCLP OR EQUAL.
- Ø3"Ø5" PLUMBING HOT WATER HEATER VENT. TERMINATE 3 FEET FROM THE PROPERTY LINE, 3 FEET FROM THE EXTERIOR WALL AND ROOFS, 3 FEET FROM THE OPERABLE OPENING INTO THE BUILDING AND 10 FEET FROM THE OUTSIDE AIR INTAKE OPENINGS



**SCOPE OF WORK**

1. RESUSE EXISTING 200A, 208/120V, 3-PH, 4-W ELECTRICAL SERVICE INCLUDING METER/DISCONNECT SWITCH FOR THE PROJECT SPACE.
2. RESUSE EXISTING (1) 225A(M.C.B.), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A".
3. PROVIDE ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROJECT SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT.
4. 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 2020 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 UNLESS OTHERWISE NOTED THIN 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 ICEE.
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 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.
41. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-BREAK, 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 BUILDING 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%.

**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 EMERGENCY 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 OR PITCH OF SANITARY LINES, ACTUAL CONDITIONS OF EXISTING HVAC EQUIPMENT, STRUCTURAL COLUMNS/BEARING WALLS OR CONDITIONS OF GREASE INTERCEPTORS AND ETC.

**ELECTRICAL LEGEND**

SYMBOL	DESCRIPTION
	EXHAUST FAN
	JUNCTION BOX
	LED EXIT AND EMERGENCY LIGHT COMBO
	BATTERY BACK UP EMERGENCY LIGHT
	WALL SWITCH (SINGLE)
	WALL MOUNTED OCCUPANCY SENSOR
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX GFI RECEPTACLE
	FLOOR MOUNTED DUPLEX RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
	CEILING MOUNTED DUPLEX RECEPTACLE
	TELEPHONE/DATA OUTLET
	30A/240V NON FUSED DISCONNECT SWITCH
	60A/240V NON FUSED DISCONNECT SWITCH
	TIME CLOCK
	CEILING MOUNTED OCCUPANCY SENSOR

**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      DRYER= DR  
 WEATHER PROOF= WP      ELECTRICAL CONTRACTOR=E.C.  
 EXHAUST FAN = EF      ROOF TOP UNIT = RTU  
 WATER HEATER= WH      RECIRCULATION PUMP= RCP  
 AUTHORITY HAVING JURISDICTION= A.H.J.      WASHER=WA  
 BATHROOM EXHAUST FAN= BEF

**GENERAL LIGHTING NOTES**

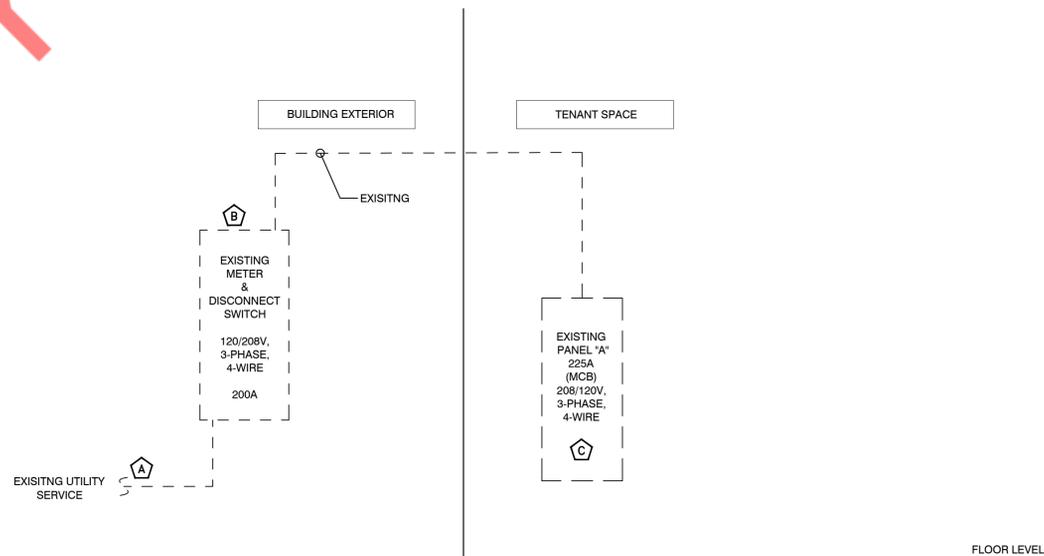
- A. UPPER CASE LETTER NEXT TO LIGHT FIXTURE DENOTES FIXTURE TYPE .
- B. ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.

**LIGHTING SCHEDULE**

SYMBOL	TYPE	DESCRIPTION	REMARKS	VOLT	WATTS
	L1	LINEAR PENDANT	SAYLITE : 4' BLACK LINEAR PENDANT L34P-FR-4BL-T45W4500L-DMV-40K-BK / HC3015WBK	120V	45W
	L2	TRACK LIGHTING	4' BLACK TRACK, NORA NT302B/ NT316B BLACK LIVE END/ NTE-865L-927-N-B BLACK TRACK HEADS	120V	25W (EACH)
	L3	RECESSED LED	NORA NLBC2-65140WW/10LE4 6" RECESSED DOWNLIGHT TRIM, NHIC-6LMPRT4W HOUSING	120V	12W
	L4	LED PENDANT	WESTGATE: UHX-150W-MP-40K NEED TO BE ABLE TO DIM TO VERY LOW. LIGHTS HANG LOWER THAN FAN. WATTAGE SELECTABLE BLACK HIGHBAY @ 50W	120V	50W
	L5	RAIL 1	MAXIM LIGHTING: 52102 - ACRYLIC - 24"W - 16W LED -CRI 90 - 30K - BK - 120V	120V	16W
	F1	CIRCULATION FAN	EPIC FANS, ECF10-05 10' BLACK/ NICKEL HIGH PERFORMANCE FAN	120V	1080W
	X1	WALL-MOUNTED EMERGENCY LIGHTS	DUAL HEAD LED EMERGENCY LIGHT WITH REMOTE CAPABILITY. BLACK NE-700LEDRCB = 2W/200LM	120V	2W
	X2	LED EXIT & EMERGENCY LIGHT	LED EXIT & EMERGENCY LIGHT COMBO WITH ADJUSTABLE HEADS, RED LETTERS / WHITE HOUSING NX-703-LED = BATTERY BACKUP	120V	3.5W
		EXHAUST FAN			
		CEILING SPEAKERS	PACKAGE AVAILABLE THROUGH SONOS		
	(E)	EXISTING FIXTURE SHALL REMAIN			
		WALL PACK			

**NOTES:**

- ALL EMERGENCY LIGHTING TO BE EQUIPPED WITH A 90 MIN. BATTERY BACK-UP.
- ALL LIGHTING AND CONTROL PRODUCTS PROVIDED BY AMERICAN WHOLESALE LIGHTING. CONTACT: CLAYTON GARRET: EMAIL: CMGARRET@AWLIGHTING.COM PHONE: 209.769.3652 AMY JENSEN: EMAIL: AJENSEN@AWLIGHTING.COM PHONE: 510.857.7333



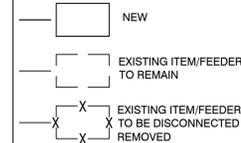
**ELECTRICAL RISER KEYED NOTES:**

- EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FOR THE PROJECT SPACE. E.C. SHALL COORDINATE WITH LANDLORD/UTILITY COMPANY FO THE EXACT LOCATION OF THE SAME.
- EXISTING 200A, 3PH METER & DISCONNECT SWITCH FOR THE PROJECT SPACE. E.C. SHALL COORDINATE WITH OWNER/ARCHITECT FOR THE EXACT LOCATION OF ELECTRICAL DISCONNECT IN FIELD.
- EXISTING 225A (M.C.B.), 120/208V, 3PH, 4-WIRE ELECTRICAL PANEL "A" SHALL REMAIN. E.C. SHALL VERIFY OPERABLE CONDITION OF THE PANEL "A" IN FIELD. REPLACE IF FOUND IN-OPERABLE. BASE BID ACCORDINGLY.

**RISER DIAGRAM GENERAL NOTES:**

1. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
2. E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

**ELECTRICAL RISER SYMBOLS:**



**ELECTRICAL RISER** SCALE N.T.S.

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PROJECT

**MADABOLIC**

REVISIONS DATES:

ISSUE DATE: 05.24.24  
 PROJECT #: 425A.1411A  
 DRAWN BY: NYE  
 CHECKED BY: NYE

**ELECTRICAL PLAN NOTES & RISER DIAGRAM**

E-1

**ENERGY COMPLIANCE:**

1. AN AUTOMATIC TIME CLOCK SHALL BE THE MEANS OF LIGHTING SHUTOFF PER IBC ENERGY CONSERVATION SECTION FOR ALL AREAS WHERE OCCUPANCY SENSORS ARE NOT USED, AND IT SHALL CONTAIN AN ASTRONOMICAL TIMECLOCK TO SHUT THE TENANT SPACE DOWN AT A SCHEDULED TIME OF DAY.
2. ALL LIGHT CIRCUITS THAT ARE NOT WIRED THROUGH THE ASTRONOMICAL TIME CLOCK SHALL BE CONTROLLED BY OCCUPANCY SENSORS WHICH MUST TURN LIGHTS OFF WITHIN 20 MINUTES AFTER AN OCCUPANT LEAVES THE SPACE AND TURN ON AUTOMATICALLY TO NOT MORE THAN 50% OR BE MANUALLY TURNED ON.
3. RECORD DRAWINGS OF INSTALLATION AND OPERATION MANUALS ARE TO BE PROVIDED TO THE OWNER AS SPECIFIED IN INDIANA BUILDING CODE ENERGY CONSERVATION SECTION.

**LIGHTING PLAN GENERAL NOTES:**

1. ALL EXIT AND EMERGENCY FIXTURES TO BE WIRED AHEAD OF CONTROL SWITCH.
2. ALL FIXTURE COUNTS, SELECTIONS, AND EXACT LOCATIONS MUST BE VERIFIED WITH OWNER/ARCHITECT PRIOR TO PURCHASE. CONFIRM ALL LIGHT FIXTURE MODEL NUMBERS, FINISH COLORS AND ELECTRICAL REQUIREMENTS BEFORE ORDERING AND INSTALLATION.
3. ALL FIXTURES TO HAVE U.L. CERTIFICATION.

**LIGHTING PLAN KEYED NOTES:**

**A** LIGHTING FIXTURE NEAR ELECTRICAL PANEL SHALL NOT BE CONTROLLED VIA ANY AUTOMATIC MEANS ONLY AS PER NEC 110.26 (D).

**B** WALL MOUNTED OCCUPANCY SENSOR. SET OFF TIME AS PER AHJ REQUIREMENT FOR UNISEX RESTROOM, JANITOR CLOSET & ADA SHOWER, SET DIP SWITCH TO AUTOMATIC ON.

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

**D** E.C. SHALL COORDINATE EXACT LOCATION OF THE TIME CLOCK IN THE FIELD WITH ARCHITECT/OWNER.

**E** CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR. PROVIDE POWER PACK(S) AS REQUIRED. INTERCONNECT OCCUPANCY SENSORS SO THAT ANY SENSOR WILL TRIGGER ALL LIGHTS. SET OFF TIME AS PER AHJ REQUIREMENT.

**F** INTERCONNECT BEF-1(N) TO BEF-4(N) WITH AHU-1(E). E.C TO COORDINATE WITH MECHANICAL DRAWINGS.

**G** INTERLOCK EF-1(N) WITH LIGHT SWITCH/CONTROL OF UTILITY ROOM.

**H** E.C. SHALL COORDINATE EXACT LOCATION OF THE SWITCH BANK WITH ARCHITECT/OWNER IN THE FIELD.

**TIME CLOCK GENERAL NOTES:**

CONTRACTOR TO COORDINATE TOTAL NUMBER OF ZONES/SCENES /INDIVIDUAL AREAS/RECEPTACLES TO BE CONTROLLED BY TIME CLOCK PRIOR TO BID OR PURCHASE.

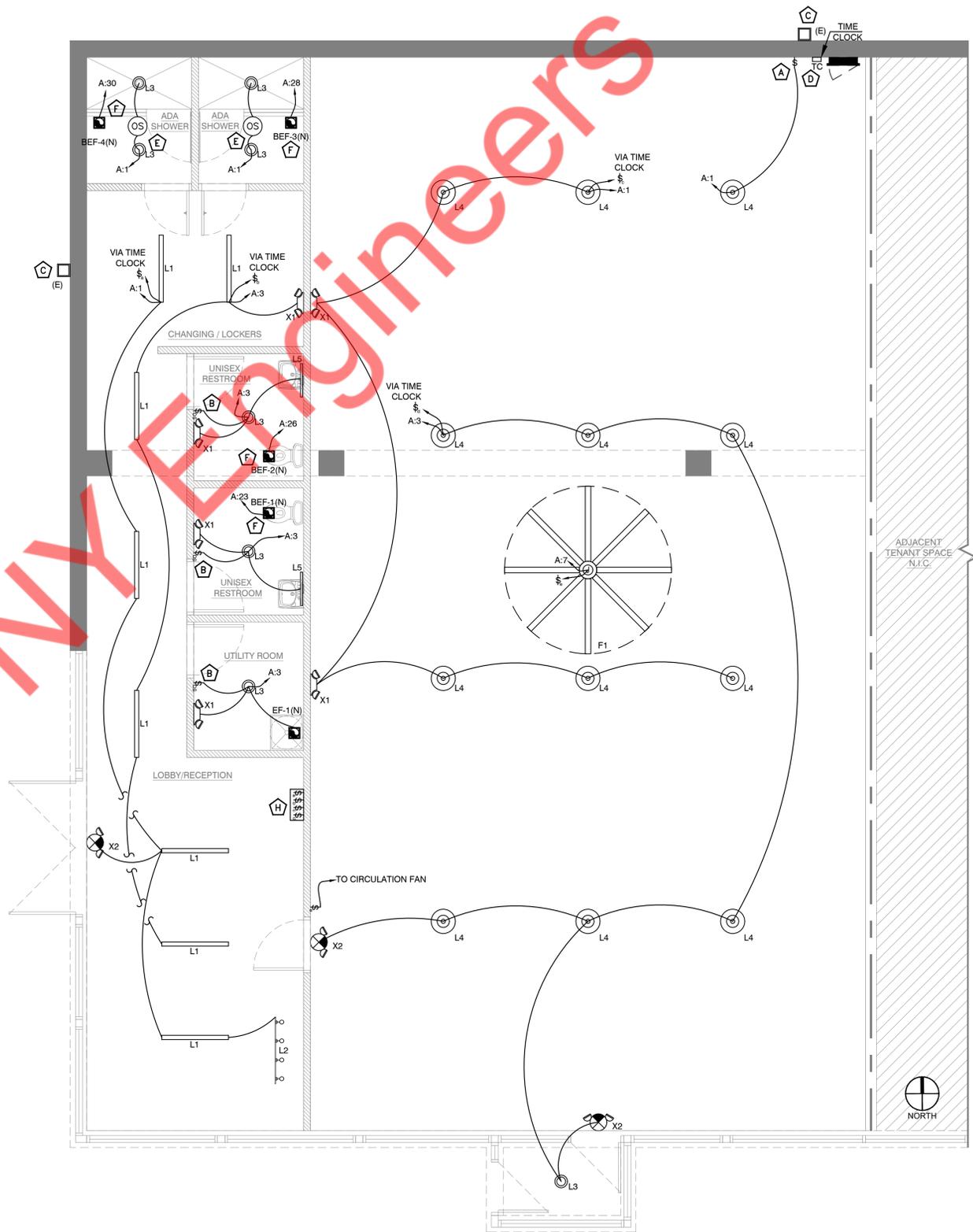
CONTRACTOR/ARCH/ID TO SELECT TIME CLOCK(S) WITH THE CAPACITY TO CONTROL THE TOTAL NUMBER OF INDIVIDUALLY CONTROLLED LIGHTS/ZONES/RECEPTACLES AS REQUESTED BY THE OWNER & THAT MEETS DIMMING REQUIREMENTS.

CONTRACTOR SHALL COORDINATE THE TOTAL QUANTITY OF OVERRIDE SWITCHES AND CONFIRM FINAL LOCATIONS WITH OWNER/ARCH/ID PRIOR TO BID OR PURCHASE.

**LIGHTING SYMBOL LEGEND**

Ⓢ	SWITCH
Ⓢ <sub>w</sub>	WALL MOUNTED OCCUPANCY SWITCH
ⓐ	JUNCTION BOX
Ⓞ <sub>s</sub>	CEILING MOUNTED OCCUPANCY SWITCH

COORDINATE ALL SWITCHING /DIMMING REQUIREMENTS WITH TENANTS



POWER SYMBOL LEGEND	
	DUPLEX RECEPTACLE
	DUPLEX GFI RECEPTACLE
	CEILING/FLOOR MOUNTED DUPLEX RECEPTACLE
	30A/240V NON FUSED DISCONNECT SWITCH
	TEL/DATA COMBINATION
	AC INDOOR UNIT
	MOTOR SWITCH
	JUNCTION BOX
	ELECTRICAL PANEL
	QUAD RECEPTACLE

**POWER PLAN GENERAL NOTES:**

- E.C. SHALL COORDINATE WITH ARCHITECT/OWNER/EQUIPMENT MANUFACTURER FOR FINAL ELECTRICAL REQUIREMENT INCLUDING RECEPTACLE, PLUG, CORD, DIRECT CONNECTION, CABLE BREAKER ETC. OF EQUIPMENTS IN FIELD AND PROVIDE THE ELECTRICAL CONNECTION PER MANUFACTURER RECOMMENDATIONS IN FIELD.
- E.C. SHALL CO-ORDINATE WITH MECHANICAL/PLUMBING CONTRACTOR/EQUIPMENT MANUFACTURER FOR FINAL LOCATION & ELECTRICAL REQUIREMENT OF MECHANICAL/PLUMBING EQUIPMENTS IN FIELD, ACCORDINGLY PROVIDE CONNECTION.
- E.C. SHALL VERIFY MOUNTING HEIGHT FOR ALL DATA/ RECEPTACLES WITH TENANT/ARCH PRIOR TO ROUGH-IN.

**POWER PLAN KEYED NOTES:**

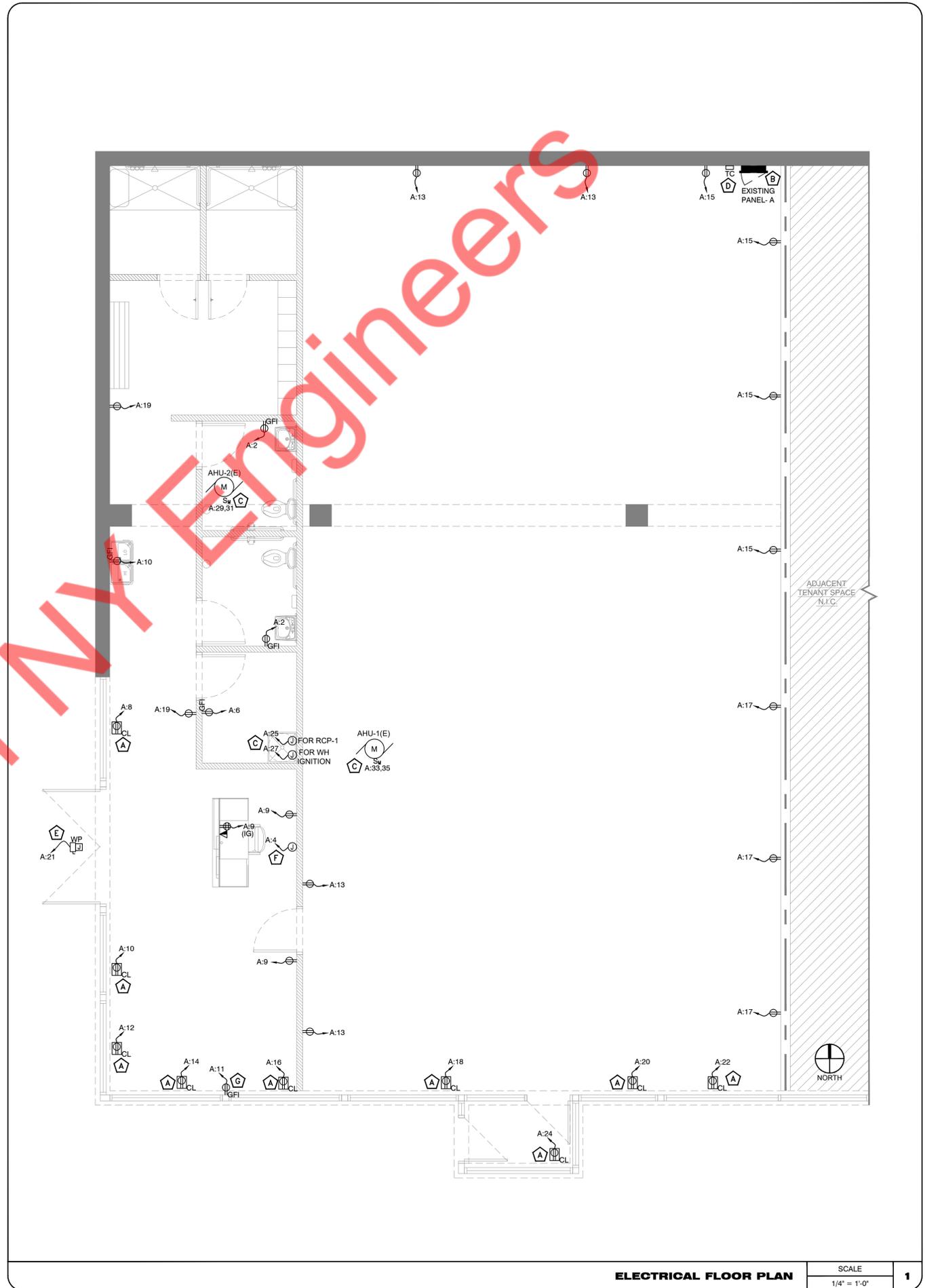
- A** PROVIDE SHOW WINDOW RECEPTACLE AS PER NEC 210.62. VERIFY EXACT LOCATION WITH ARCHITECT/OWNER.
- B** EXISTING 225A, 120/208V, 3PH, 4-WIRE ELECTRICAL PANEL "A". E.C. SHALL VERIFY OPERABLE CONDITION OF THE PANEL "A" IN FIELD. REPLACE IF FOUND IN-OPERABLE. BASE BID ACCORDINGLY.
- C** E.C. TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL/PLUMBING EQUIPMENTS WITH MECHANICAL/PLUMBING CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION ACCORDINGLY.
- D** E.C. SHALL COORDINATE EXACT LOCATION/MANUFACTURER OF THE TIME CLOCK IN THE FIELD WITH ARCHITECT/OWNER.
- E** PROVIDE WP JUNCTION BOX AND 120V 1P DISCONNECT FOR CONNECTION TO EXTERIOR SIGNS. VERIFY LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN. WIRE THROUGH TIME CLOCK.
- F** JUNCTION BOX FOR INTERNAL SIGNAGE. E.C. SHALL VERIFY EXACT LOCATION AND POWER REQUIREMENT IN FIELD.
- G** E.C. SHALL COORDINATE FINAL LOCATION OF RECEPTACLE WITH ARCHITECT/OWNER IN THE FIELD.

**EQUIPMENT DISCONNECTS:**

CONTRACTOR TO MAINTAIN A 30" WIDE AND 3'-0" DEEP CLEARANCE AROUND ALL ELECTRICAL DISCONNECTING MEANS FOR ALL EQUIPMENT. CONTRACTOR SHALL ENSURE THERE IS ADEQUATE MAINTENANCE LIGHTING AND A MAINTENANCE RECEPTACLE WITHIN 25' OF THE EQUIPMENT.

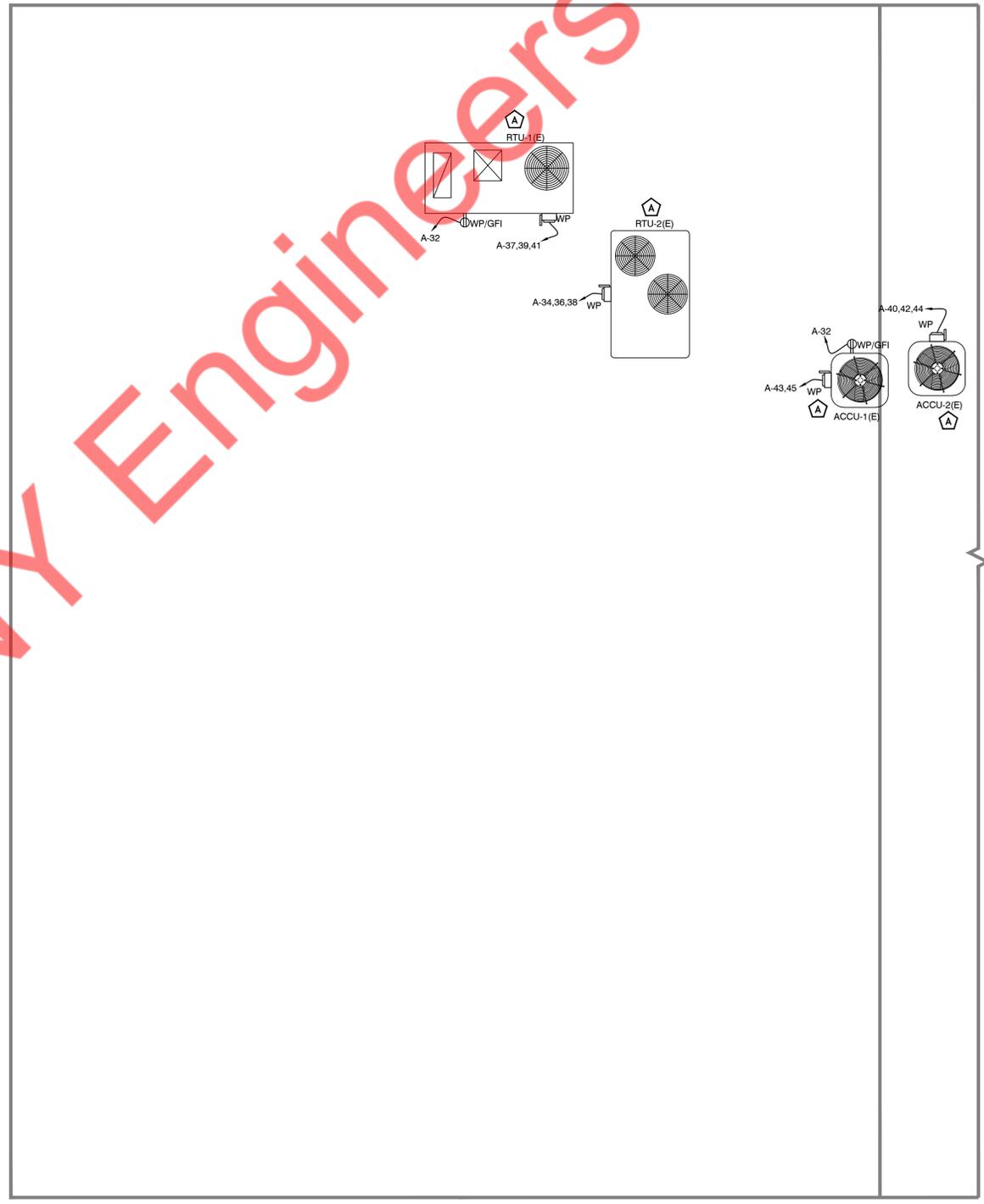
**CONDUIT ROUTING NOTE:**

CONTRACTOR SHALL COORDINATE ALL ROUTING FOR ALL CONDUIT RUNS WITH ARCH/OWNER/EXISTING CONDITIONS PRIOR TO ROUGH-IN/INSTALLATION.



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**ROOF POWER PLAN KEYED NOTES:**  
E.C. SHALL COORDINATE WITH LANDLORD/MANUFACTURER FOR THE EXACT LOCATION & POWER REQUIREMENT OF EXISTING MECHANICAL EQUIPMENT ON FIELD AND PROVIDE CONNECTIONS ACCORDINGLY.



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PROJECT #: 425A.1411A  
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**ROOF ELECTRICAL PLAN**

**E-4**

ELECTRICAL PANEL SCHEDULE:-

PANEL: A (EX)		MOUNTING: SURFACE												
208Y/120	VOLTS,	3	PHASE,	4	WIRE	PANEL LOCATION: GYM AREA								
MAIN CB:	225A	MLO:	NA	BUS:	250A	MIN,	FED FROM: EXISTING EL SERVICE							
NOTE: L : LIGHTING, R : RECEPTACLES, H : HVAC LOAD, M : MOTOR LOAD, E : KITCHEN/EQUIPMENTS, C : REFRIGERATION, O : OTHER/MISC., (TYPICAL)														
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	20	GYM LIGHTING	L	0.68	2#12, #12G, 3/4"C	1.04			2#12, #12G, 3/4"C	0.36	R	RESTROOM RECEPTACLE	20	2
3	20	GYM LIGHTING	L	0.65	2#12, #12G, 3/4"C		1.85		2#12, #12G, 3/4"C	1.20	L	INTERIOR SIGNAGE	20	4
5	20	CIRCULATION FAN	M	1.02	2#12, #12G, 3/4"C			1.20	2#12, #12G, 3/4"C	0.18	R	UTILITY ROOM RECEPTACLE	20	6
7	20	WATER FOUNTAIN	E	1.20	2#12, #12G, 3/4"C	2.40			2#12, #12G, 3/4"C	1.20	R	SHOW WINDOW RECEPTACLE	20	8
9	20	LOBBY/RECEPTION RECEPTACLE	R	0.72	2#12, #12G, 3/4"C		1.97		2#12, #12G, 3/4"C	1.25	R	SHOW WINDOW RECEPTACLE	20	10
11	20	FRIDGE	E	0.90	2#12, #12G, 3/4"C			2.15	2#12, #12G, 3/4"C	1.25	R	SHOW WINDOW RECEPTACLE	20	12
13	20	GYM RECEPTACLES	R	0.72	2#12, #12G, 3/4"C	2.32			2#12, #12G, 3/4"C	1.60	R	SHOW WINDOW RECEPTACLE	20	14
15	20	GYM RECEPTACLES	R	0.72	2#12, #12G, 3/4"C		2.32		2#12, #12G, 3/4"C	1.60	R	SHOW WINDOW RECEPTACLE	20	16
17	20	GYM RECEPTACLES	R	0.54	2#12, #12G, 3/4"C			2.14	2#12, #12G, 3/4"C	1.60	R	SHOW WINDOW RECEPTACLE	20	18
19	20	CONVINIENCE RECEPTACLES	R	0.36	2#12, #12G, 3/4"C	1.56			2#12, #12G, 3/4"C	1.20	R	SHOW WINDOW RECEPTACLE	20	20
21	20	EXTERIOR SIGNAGE	L	1.20	2#12, #12G, 3/4"C		2.40		2#12, #12G, 3/4"C	1.20	R	SHOW WINDOW RECEPTACLE	20	22
23	20	BEF-1	M	0.10	2#12, #12G, 3/4"C			1.90	2#12, #12G, 3/4"C	1.80	R	SHOW WINDOW RECEPTACLE	20	24
25	20	RCP-1	M	0.10	2#12, #12G, 3/4"C	0.20			2#12, #12G, 3/4"C	0.10	M	BEF-2	20	26
27	20	WATER HEATER	R	0.18	2#12, #12G, 3/4"C		0.28		2#12, #12G, 3/4"C	0.10	M	BEF-3	20	28
29			H	5.06				5.16	2#12, #12G, 3/4"C	0.10	M	BEF-4	20	30
31	60/2P	AHU-2	H	5.06	2#6, #10G, 3/4"C	5.42			2#12, #12G, 3/4"C	0.36	R	ROOFTOP RECEPTACLE	20	32
33			H	5.06			10.57							34
35	60/2P	AHU-1	H	5.06	2#6, #10G, 3/4"C			10.57						36
37			H	3.00		8.50			3#8, #10G, 3/4"C	5.51	H	RTU-2	50/3P	38
39	30/3P	RTU-1	H	3.00	3#10, #10G, 3/4"C		5.52			2.52	H			40
41			H	3.00			5.52		3#10, #10G, 3/4"C	2.52	H	ACCU-2	30/3P	42
43			H	3.61		6.13				2.52	H			44
45	40/2P	ACCU-1	H	3.61	2#8, #10G, 3/4"C		3.61					SPARE	20	46
47	20	SPARE					0.00					SPARE	20	48
49							0.00					SPARE	20	50
51	50/3P	SPARE					0.00					SPARE	20	52
53							0.00					SPARE	20	54
TOTAL CONNECTED LOAD (KVA)						27.58	28.51	28.64						

PANEL SCHEDULE GENERAL NOTES:

A. E.C. SHALL VERIFY OPERABLE CONDITION OF EXISTING ELECTRICAL PANEL IN FIELD. REPLACE WITH NEW ONE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

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ELECTRICAL PANEL SCHEDULES

E-5

**PLUMBING SPECIFICATIONS**

- ALL WORK SHALL COMPLY WITH ALL LOCAL AND STATE CODES AND AUTHORITIES HAVING JURISDICTION.
1. ALL WORKMANSHIP & MATERIALS TO BE IN STRICT ACCORDANCE WITH APPLICABLE NATIONAL, STATE, LOCAL CODES, RULES & ORDINANCES.
  2. CONTRACTOR SHALL VISIT THE JOB SITE & THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
  3. ALL MATERIALS TO BE NEW.
  4. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST-CLASS WORK MANNER. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE.
  5. ALL EXCAVATION & BACK FILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
  6. REQUIRED INSURANCE SHALL BE PROVIDED BY THIS CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY & PROPERTY DAMAGE FOR THE DURATION OF WORK.
  7. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS & TEST. SUBSTITUTIONS BY THE CONTRACTOR SHALL HAVE PRIOR APPROVAL. ANY CHANGES MADE WITHOUT APPROVAL WILL BE PAID BY THE CONTRACTOR TO RETURN TO THE ORIGINAL DESIGN.
  8. EXISTING PIPE SIZES TO BE VERIFIED BY THE PLUMBER AND UPGRADED IF NOT LARGE ENOUGH TO ACCOMMODATE LOAD.
  9. ALL WORK TO BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROCESS OF CONSTRUCTION.
  10. THE CONTRACTORS AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR REVIEW OF THE GENERAL NOTES, SPECIFICATIONS AND ALL OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS.
  11. DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. FIELD VERIFY FINAL LOCATIONS FOR EQUIPMENT. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DIMENSIONS AND EXACT LOCATION OF PLUMBING FIXTURES. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS.
  12. DRAWINGS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
  13. VERIFY LOCATION, SIZE, TRAPS, INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES. ANY COST RESULTING FROM DISCREPANCIES NOT REPORTED AT THIS TIME SHALL BE PAID BY THE CONTRACTOR.
  14. INSTALL SIOUX CHIEF 650 SERIES WATER HAMMER ARRESTORS IN PIPING TO QUICK-CLOSING VALVES AS DEFINED IN 2012 INTERNATIONAL PLUMBING CODE.
  15. PROVIDE SHUT-OFF VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE.
  16. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS.
  17. CAP ALL PIPING OPENINGS DURING CONSTRUCTION UNTIL FINAL CONNECTIONS TO EQUIPMENT AND ACCESSORIES ARE MADE.
  18. SANITARY PIPE 2 1/2" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT. SANITARY PIPE 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT. CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT.
  19. WHERE SOIL CONDITIONS REQUIRE THE USE OF PIER, OR PILING SUPPORTED GRADE BEAM CONSTRUCTION OR WHERE SOIL CONDITIONS ARE SUSCEPTIBLE TO WASH OUT DURING HIGH WATER LEVELS, OR IN FILLED GROUND WHERE THE SOIL COMPACTION IS LESS THAN 95% OR AS REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION, THE SANITARY PIPING TO BE INSTALLED BY TRENCHING INTO THE FILL, AND THEN PUTTING HANGERS WITH SUPPORT RODS ON THE PIPES AS THEY ARE INSTALLED. THE HANGER RODS EXTENDING UPWARD TO BE EMBEDDED IN AND ANCHORED IN THE CONCRETE PER ASTM F236-06B AND UNDERGROUND PIPE SHALL BE CAST IRON SCHEDULE 40 PIPING OR SOLID CORE PVC WHICH SHALL CONFORM TO ASTM STANDARD D2665.
  20. DO NOT ROUTE ANY WET PIPING OVER ELECTRICAL EQUIPMENT.
  21. WATER PIPING TO BE TYPE "L" COPPER ABOVE AND TYPE "K" COPPER BELOW GRADE.
  22. SOIL, WASTE, VENT AND STORM PIPING TO BE PVC SCHEDULE #40 DWV CONFORMING TO ASTM D2665 FOR UNDERGROUND AND AS PER 2012 INTERNATIONAL PLUMBING CODE TABLE 702.2 & 702.3. CAST IRON SHALL BE USED IN COMMON PLENUM AREAS.
  23. RAINWATER/STORMWATER TO BE SCHEDULE #40 DWV, INSULATE WITH ARMAFLEX INSULATION WHEN IN COMMON PLENUM.
  24. HOT WATER, TEMPERED WATER AND HOT WATER RETURN PIPES TO BE INSULATED WITH ARMAFLEX INSULATION FROM THE WATER HEATER TO THE FURTHEST FIXTURE PER 2023 FBC PLUMBING 607.2.1.
  25. THE DISCHARGE WATER TEMPERATURE FROM LAVATORIES, BIDETS & GROUP WASH FIXTURES LOCATED IN PUBLIC TOILET FACILITIES PROVIDED FOR CUSTOMERS, PATRONS AND VISITORS SHALL BE LIMITED TO A MAXIMUM TEMPERATURE OF 110°F (43°C) BY A WATER TEMPERATURE LIMITING DEVICE CONFORMING TO ASSE 1070 OR CSA B125.3.
  26. WHERE DISSIMILAR METALS ARE TO BE JOINED, APPROVED INSULATING UNIONS SHALL BE USED.
  27. ALL PLUMBING PIPES PENETRATING FIRE RATED WALLS, CEILINGS AND/OR FLOORS SHALL BE PROVIDED WITH U.L. APPROVED FIRE RATED ASSEMBLY. (EQUAL TO WALL FIRE RATING - SEE ARCHITECTURAL DRAWINGS).
  28. HOT WATER EXPANSION LOOPS SHALL BE INSTALLED AS REQUIRED TO PARTLY ABSORB TENSION OR COMPRESSION PRODUCED DURING ANTICIPATED CHANGE IN TEMPERATURE. INSTALL EXPANSION JOINTS OF SIZES OF PIPING IN WHICH THEY ARE INSTALLED. INSTALL ALIGNMENT GUIDES TO GUIDE EXPANSION AND TO AVOID LOADING STRESS.
  29. NO PVC PIPING TO BE USED IN COMMON PLENUM AREAS.
  30. WHERE CEILING SPACE IS A COMMON PLENUM NO COMBUSTIBLE MATERIALS ALLOWED.
  31. CONDENSATE LINES TO BE COPPER/PVC DEPENDING ON PROJECT REQUIREMENTS. INSULATE WITH ARMAFLEX INSULATION.
  32. FLUSH OUT EXISTING WATER PIPING. STERILIZE THE NEW WATER PIPING LINES BY INTRODUCING IN THEM A SOLUTION OF CALCIUM HYPOCHLORITE OR CHLORINE OF LIME. OPEN AND CLOSE ALL NEW VALVES WHILE SYSTEM IS BEING CHLORINATED. AFTER THE STERILIZING AGENT HAS BEEN APPLIED FOR 24 HOURS, TEST FOR RESIDUAL CHLORINE AT THE ENDS OF LINES. IF LESS THAN 10 PARTS PER MILLION IS INDICATED, REPEAT THE PROCESS. WHEN TESTS SHOW AT LEAST 10 PARTS PER MILLION OF RESIDUAL CHLORINE, FLUSH OUT THE SYSTEM UNTIL ALL TRACES OF THE CHEMICAL USED ARE REMOVED. MAKE NECESSARY CONNECTIONS TO STERILIZE PIPING.
  33. AFTER STERILIZATION HAS BEEN ACCOMPLISHED INITIATE A BACTERIOLOGICAL TEST PERFORMED BY AN APPROVED TESTING LABORATORY. WATER SHALL BE DRAWN FROM THE SYSTEM AT A POINT FURTHEST FROM THE WATER ENTRANCE TO THE BUILDING. A CERTIFIED TEST REPORT OF THESE TESTS RESULTS INDICATING SATISFACTORY COLIFORM COUNT, COLOR AND CHLORINE RESIDUAL SHALL BE PRESENTED TO THE ARCHITECT AND OWNER WHEN THE WATER SUPPLY PIPING SYSTEM IS SUBSTANTIALLY COMPLETED DURING CONSTRUCTION. ANOTHER SIMILAR TEST SHALL BE PERFORMED AT THE TIME OF ISSUANCE OF THE CERTIFICATE OF OCCUPANCY WITH ANOTHER CERTIFIED TEST REPORT PRESENTED TO THE ARCHITECT AND OWNER AT THAT TIME.
  34. FEDERAL LAW MANDATES AS OF JANUARY 4, 2017 THE WETTED SURFACE OF EVERY PIPE, FIXTURE AND FITTING INSTALLED IN POTABLE WATER APPLICATIONS SHALL NOT CONTAIN MORE THAN 0.2% LEAD BY WEIGHT. SOLDER AND FLUX SHALL NOT CONTAIN MORE THAN 0.2% LEAD. NON-COMPLIANCE MAY RESULT IN FINES, INSTALLED PRODUCT REMOVAL COSTS, LAWSUITS BY PRIVATE PARTIES OR GOVERNMENT AGENCY.
  35. CONTRACTOR SHALL GUARANTEE ALL MATERIALS & WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE. 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.
  36. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO BID AND INSTALLATION. INFORM THE ENGINEER OF RECORD OF ANY DISCREPANCY BETWEEN THE DOCUMENTS AND THESE CONDITIONS AND HE SHALL INCLUDE IN HIS BID TO CORRECT THE SAME AS DIRECTED. THE ENGINEER AND THE ARCHITECT ARE NOT RESPONSIBLE FOR ANY ADDITIONAL COSTS RESULTING FROM VERIFIABLE EXISTING CONDITIONS DISCOVERED AFTER THE CONTRACT HAS BEEN AWARDED.
  37. CONTRACTOR SHALL KEEP AS-BUILTS AND SUBMIT TO THE ENGINEER OF RECORD FOR REVIEW. ALL CHANGES SHALL BE FORWARDED TO FINAL INSPECTION. ANY EXPENSES, SUCH AS REVISIONS OR AS-BUILTS, NECESSARY FOR FINAL C.O. SHALL BE AT THE EXPENSE OF THE OWNER.

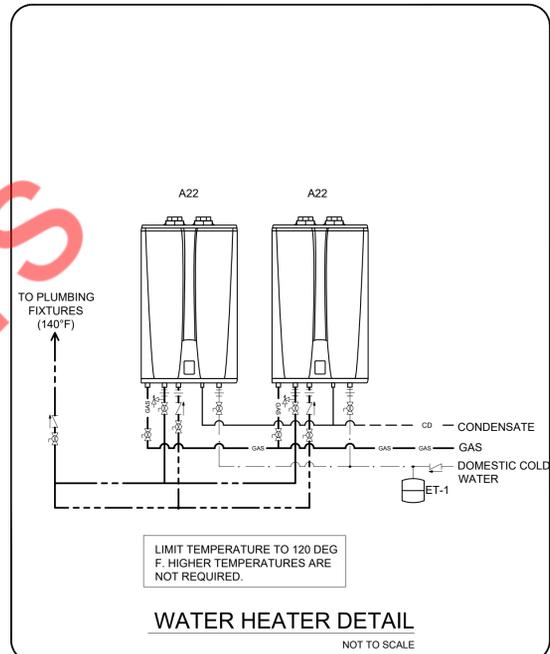
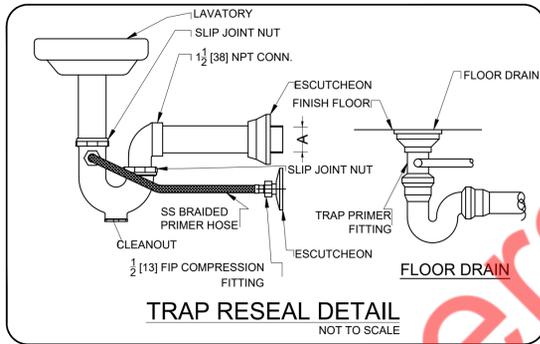
**ENERGY CONSERVATION NOTES**

1. AS PER ASHRAE 90.1-2007, SECTION 7.4.3 PIPING FROM A WATER HEATER TO THE TERMINATION OF HEATED WATER FIXTURE SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE 6.8.3 OF MINIMUM PIPE INSULATION THICKNESS.
 

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	MINIMUM PIPE INSULATION THICKNESS		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU IN/ (H·FT²·°F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1 1/2	1 1/2 to < 4	4 to < 8	>8
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0
2. AS PER ASHRAE 90.1 2007 EDITION, 7.4.4.2, SYSTEMS DESIGNED TO MAINTAIN USAGE TEMPERATURES IN HOT WATER PIPES, SUCH AS RECIRCULATING HOT WATER SYSTEM OR HEAT TRACE, SHALL BE EQUIPPED WITH AUTOMATIC TIME SWITCHES OR OTHER CONTROLS THAT CAN BE SET TO SWITCH OFF THE USAGE TEMPERATURE MAINTENANCE SYSTEM DURING EXTENDED PERIODS WHEN HOT WATER IS NOT REQUIRED.
3. AS PER ASHRAE 90.1 2007 EDITION, 7.4.4.3, TEMPERATURE CONTROLLING MEANS SHALL BE PROVIDED TO LIMIT THE MAXIMUM TEMPERATURE OF WATER DELIVERED FROM LAVATORY FAUCETS IN PUBLIC FACILITY RESTROOMS TO 110°F.
4. AS PER ASHRAE 90.1 2007 EDITION, 7.4.4.4, WHEN USED TO MAINTAIN STORAGE TANK WATER TEMPERATURE, RECIRCULATING PUMPS SHALL BE EQUIPPED WITH CONTROLS LIMITING OPERATION TO A PERIOD FROM THE START OF HEATING CYCLE TO A MAXIMUM OF 5 MINUTES AFTER THE END OF HEATING CYCLE.

**PLUMBING LEGEND**

	SANITARY SEWER PIPING
	VENT PIPING
	DOMESTIC COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	GAS PIPING
	PIPE RISE
	PIPE DROP
	FLOOR CLEAN OUT
	P-TRAP
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	FLOOR CLEAN OUT
	GATE VALVE
	WASHER BOX FOR WASHER/DRYER
	FLOOR DRAIN
	TRENCH DRAIN
	WATER HAMMER ARRESTOR
	BALANCING VALVE
	POINT OF CONNECTION
	GAS PLUG VALVE
	THERMOSTATIC MIXING VALVE



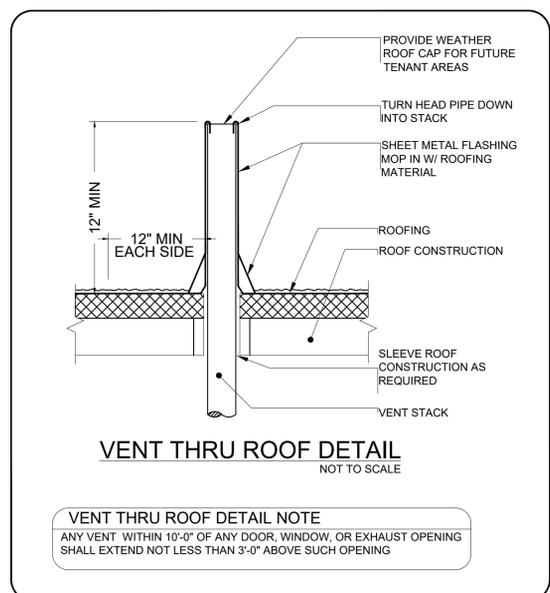
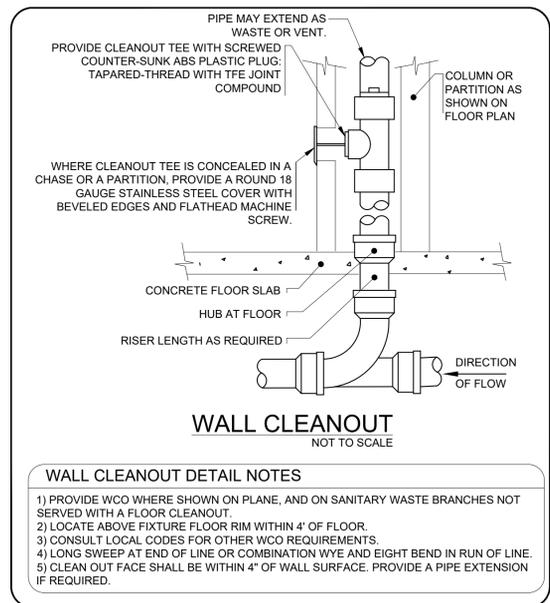
**PLUMBING CALCULATIONS**

Hot & Cold Water Sizing			Table E103.3(2) - Load Values (2012 Indiana Plumbing Code)					
Fixture	Occupancy	Qty.	Load Values, in Water Supply Fixture Units (wsfu)			Total Water Supply Fixture Units for Building		
			Cold	Hot	Total	Cold	Hot	Total
Drinking Fountain	Offices, etc.	1	0.25		0.25	0.25	-	0.25
Lavatory	Public	2	1.5	1.5	2	3	3	4
Mop Sink	Offices, etc.	1	2.25	2.25	3	2.25	2.25	3
Shower Head	Public	2	3	3	4	6	6	8
Water Closet	Public	2	5		5	10	-	10
<b>Total FU.</b>						<b>21.5</b>	<b>11.25</b>	<b>25.25</b>
<b>Min. Pipe Size</b>						<b>1"</b>	<b>1"</b>	<b>1-1/4"</b>

Sanitary Sizing	Table 709.1 - 2012 Indiana Plumbing Code		Total DFU for Building
	TOTAL	Load Values, (DFU)	
Drinking Fountain	2	0.5	1
Lavatory	2	1	2
Mop Sink	1	2	2
Shower Head	2	3	6
Water Closet	2	4	8
Floor Drain	5	2	10
<b>Total FU</b>			<b>29</b>
<b>Min. Pipe Size.</b>			<b>4"</b>

Fixture	Maximum Flow Rates & Consumption
	Max. Flow Rate
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower Head	2.5 gpm at 60 psi
Sink Faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water Closet	1.6 gallon per flushing cycle

PLUMBING FIXTURE SCHEDULE										
TAG	DESCRIPTION	QTY.	Manufacturer	Model No.	CW	HW	WASTE	VENT	P-TRAP	Remarks
A1	ADA TOILET	2	AMERICAN STANDARD	2462.100.020	3/4"		4"	2"		
A2	ADA WALL HUNG LAVATORY	2	AMERICAN STANDARD	LUCERNE 0333.012	1/2"	1/2"	2"	1-1/2"	2"	PROVIDE WITH THERMOSTATIC MIXING VALVE. LIMIT TEMPERATURE OF HOT WATER TO 110 DEG F.
A12	BI-LEVEL DRINKING FOUNTAIN W/ BOTTLE FILLER	2	DELTA	FAUCET: 567LF-SSPP STAINLESS BRUSHED FINISH	1/2"		2"	1-1/2"	2"	
A21	MOP SINK	1	ELKAY	LZSTLDDWSVRLK	3/4"	3/4"	3"	2"	3"	INCLUDE WALL MOUNT KIT & PROFLO FAUCET MODEL #PFLT123W. PROVIDE SOLID BLOCKING
A16	RAINFALL SHOWER	2	DELTA	SHOWER HEAD: 57530 SHOWER CONTROL: T27867	3/4"	3/4"	3"	2"	3"	
FD	FLOOR DRAIN	5	ZURN	Z-415-P			3"	2"	3"	PROVIDE RESTROOM FD WITH TRAP PRIMER.



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REVISIONS DATES:

ISSUE DATE: 05.24.24  
PROJECT #: 425A.1411A  
DRAWN BY: NYE  
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**PLUMBING NOTES & DETAILS**

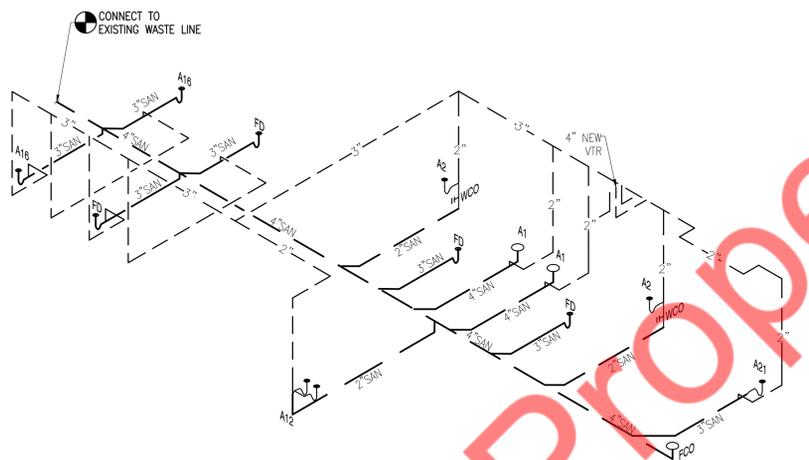
P-1

**SANITARY KEYED NOTES**

- 1. CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY WASTE LINE. CONTRACTOR TO FIELD VERIFY SIZE, LOCATION AND INVERT OF EXISTING SANITARY WASTE LINE.
- 2. ROUTE INDIRECT WASTE FROM BACKFLOW PREVENTER TO FLOOR DRAIN WITH APPROVED AIR GAP.
- 3. ROUTE INDIRECT WASTE FROM WATER HEATER TO MOP SINK WITH APPROVED AIR GAP.

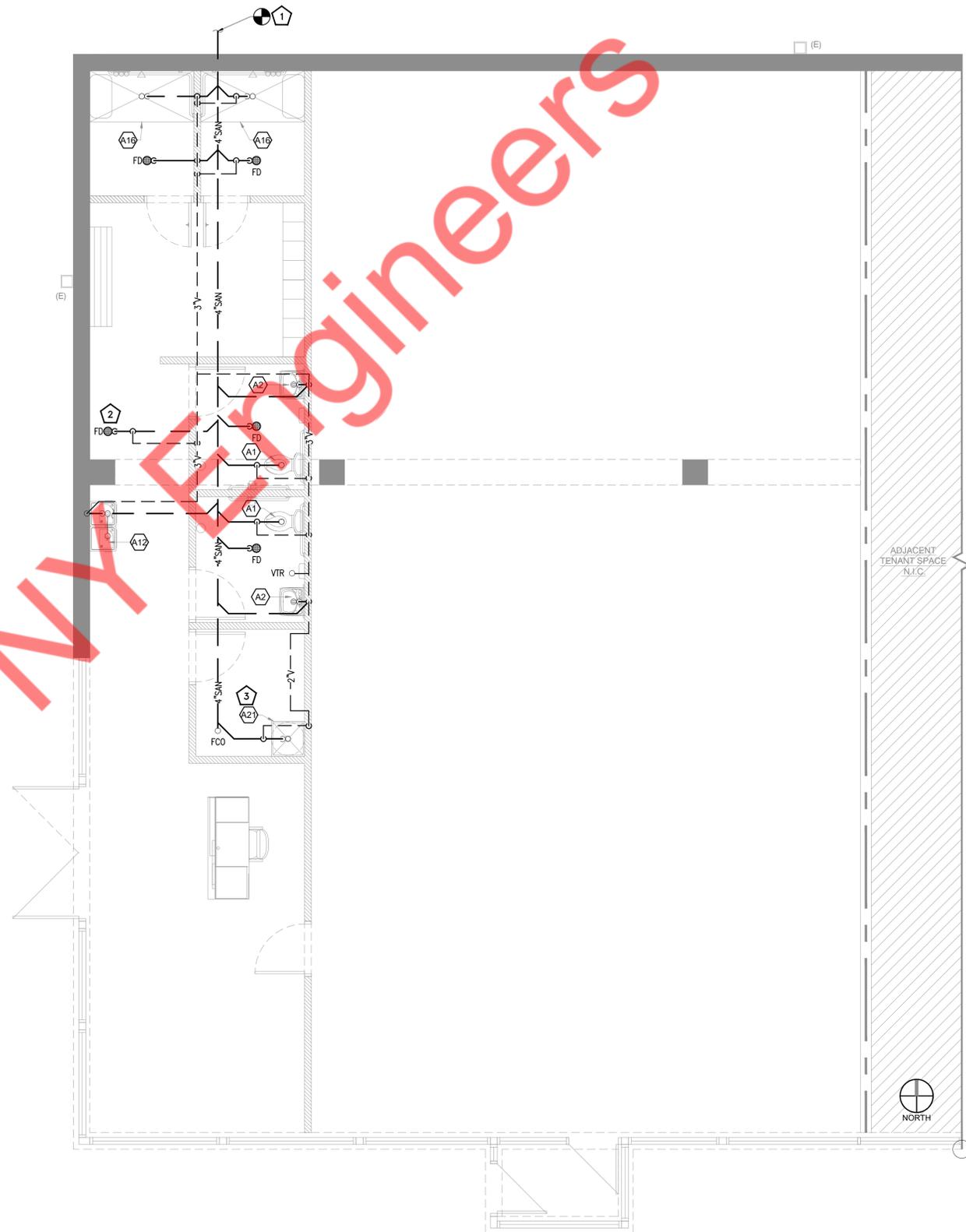
**GENERAL NOTES**

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



**SANITARY RISER**

SCALE  
N.T.S.



**SANITARY FLOOR PLAN**

SCALE  
1/4" = 1'-0"

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**SANITARY FLOOR PLAN & RISER**

WATER HEATER SCHEDULE	
MANUFACTURER	RINNAI
MODEL	CU160I
EQUIPMENT TAG	A22
STATUS	NEW
QUANTITY	2
CAPACITY	TANKLESS
GAS TYPE	NATURAL
BTU/HR	160,000 (EACH)
TOTAL FLOW RATE	8.4 GPM
EFFICIENCY	97%
VOLTAGE	120/1/60
AMPERAGE	4
WEIGHT (EMPTY)	62 LBS
NOTES:	
1. 70°F TEMPERATURE RISE	
2. REFER SHEET P-1 FOR INSTALLATION DETAILS.	

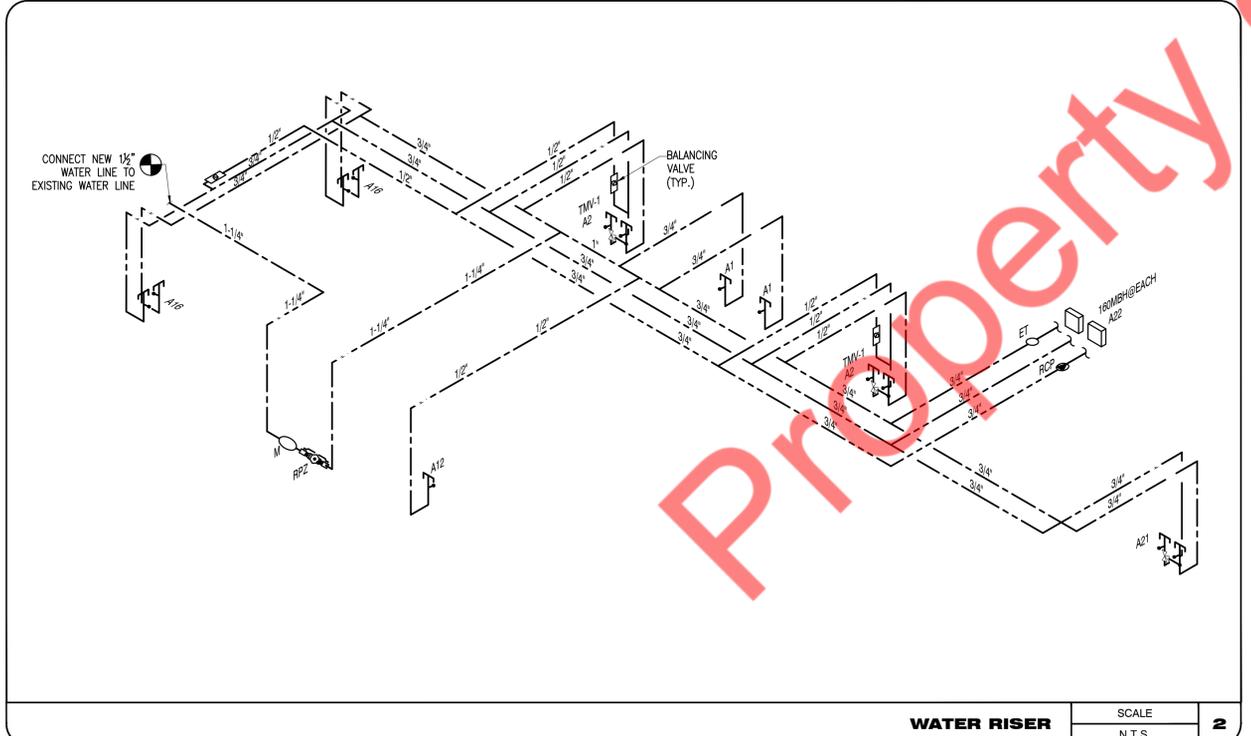
RECIRCULATION PUMP SCHEDULE	
MANUFACTURER & MODEL	GRUNDFOS UP 15-18 BS/TLC
EQUIPMENT TAG	RCP
STATUS	NEW
GPM	2
HEAD	13'
WATER TEMP.(°F)	140
PUMP TYPE	INLINE
MHP	85 WATTS
V/PH/Hz	115/1/60
RPM	2280
SERVICE FACTOR	1.0
NOTES:	
1. PROVIDE AQUA STAT WITH AUTOMATIC TIMER KIT FOR THE TEMPERATURE CONTROL OF HOT WATER SYSTEM.	
2. COORDINATE ELECTRICAL REQUIREMENTS FOR TIMER WITH ELECTRICAL CONTRACTOR.	

EXPANSION TANK SCHEDULE	
MANUFACTURER & MODEL	THERM-X-TROL ST-5
EQUIPMENT TAG	ET
STATUS	NEW
TANK VOLUME	2 GALLONS
DIMENSIONS	8" DIA X 13" H
SHIPPING WEIGHT	5 LBS

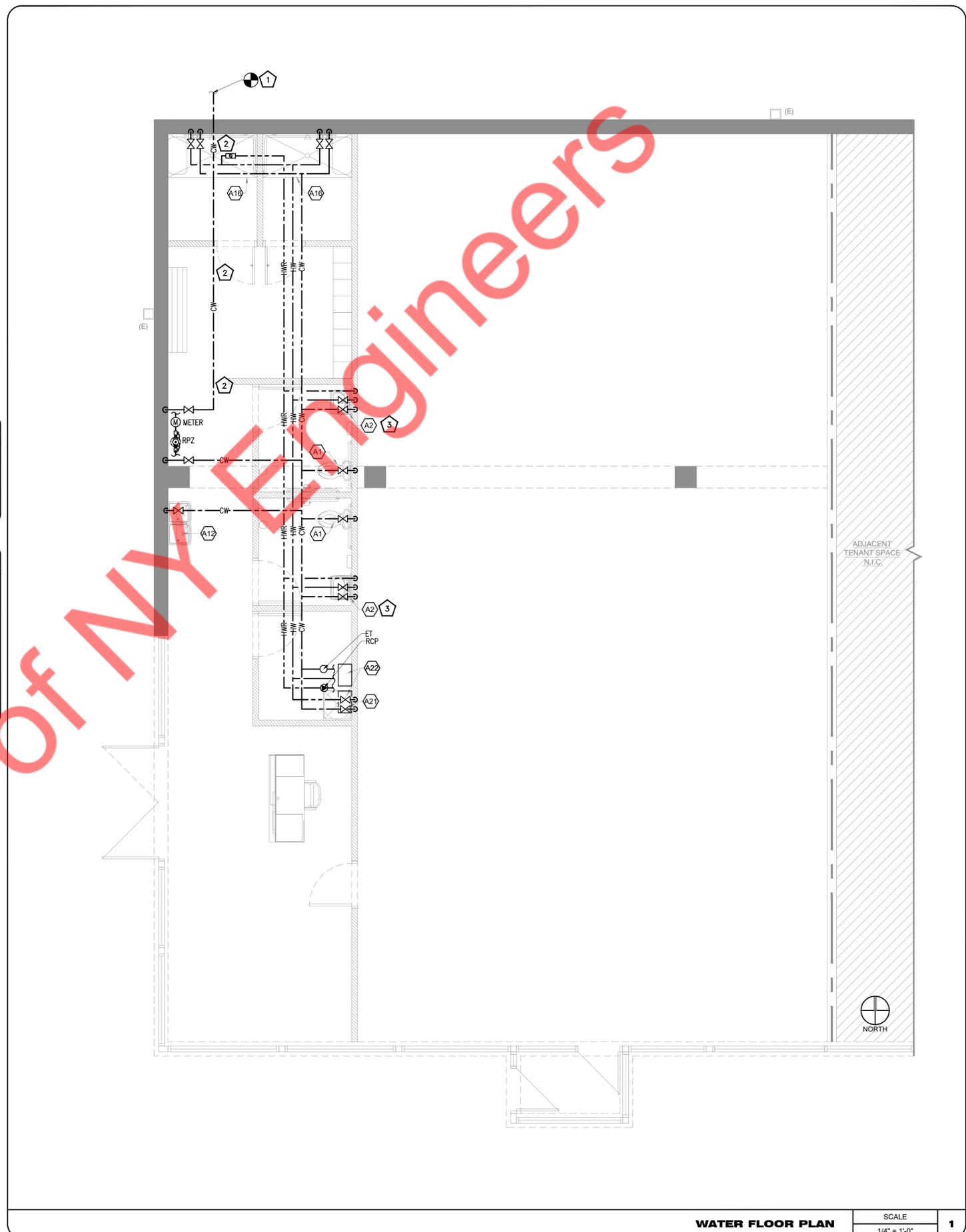
THERMOSTATIC MIXING VALVE SCHEDULE	
MANUFACTURER & MODEL	WATTS USG-M-M2 (ASSE 1070)
EQUIPMENT TAG	TMV-1
PIPE SIZE	1/2"
FLOW RANGE	2.25 GPM
TEMP RANGE	120-180 DEG F
MATERIAL	BRASS

- WATER KEVED NOTES**
- CONNECT NEW 1" COLD WATER LINE TO EXISTING COLD WATER LINE. VERIFY EXACT LOCATION, SIZE & CONNECTION POINT IN FIELD PRIOR TO CONSTRUCTION.
  - NO TAP OFF SHOULD BE TAKEN BEFORE METER & RPZ.
  - PROVIDE LAVATORIES WITH THERMOSTATIC MIXING VALVES (TMV-1). LIMIT TEMPERATURE TO 110 DEG F. ALSO PROVIDE BALANCING VALVE ON HWR LINE LESS THAN 2' AWAY FROM LAVATORY.

- GENERAL NOTES**
- CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2020 INTERNATIONAL ENERGY CONSERVATION CODE (REFER SHEET P-1).
  - PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
  - PROVIDE ACCESS PANELS FOR SHUT-OFF VALVES AS REQUIRED.
  - REFER RISER DIAGRAM FOR ALL PIPE SIZES.
  - CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
  - WATER HEATER DRAIN SPILLS TO THE FLOOR DRAIN.
  - PROVIDE WATER-HAMMER ARRESTOR WHERE QUICK-CLOSING VALVES ARE USED.



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



**WATER FLOOR PLAN** SCALE 1/4" = 1'-0" **1**

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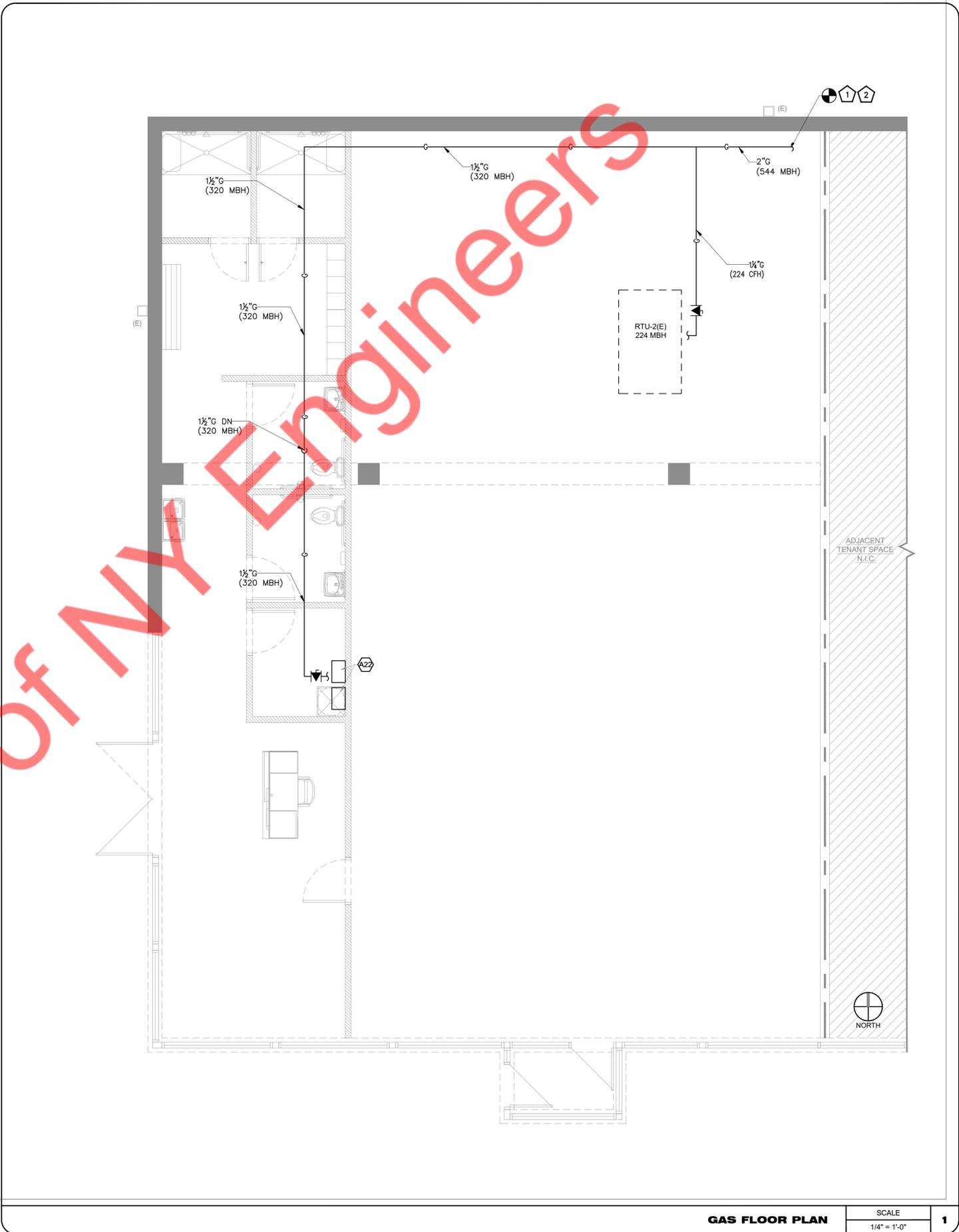
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**WATER FLOOR PLAN & RISER**

P-3



**GAS KEYED NOTES**

- 1 EXTEND AND CONNECT NEW 2" GAS PIPING WITH NEW GAS METER INSTALLED ADJACENT TO EXISTING GAS METER. NEW GAS METER OF MINIMUM 600 MBH CAPACITY AND GAS LINE WITH ASSOCIATED ACCESSORIES TO BE PROVIDED BY LANDLORD. CONTRACTOR TO COORDINATE WITH LANDLORD FOR THE REQUIRED CAPACITY OF GAS METER AND GAS PRESSURE.
- 2 CONTRACTOR TO FIELD VERIFY EXISTING AVAILABLE PRESSURE AND MAKE SURE TO PROVIDE MIN 7" W.C INLET PRESSURE REQUIRED FOR ALL MECHANICAL EQUIPMENTS AND GAS FIRED WATER HEATERS. PROVIDE PRESSURE REGULATOR IF PRESSURE EXCEEDS 10" W.C.

**GAS DEMAND SCHEDULE**

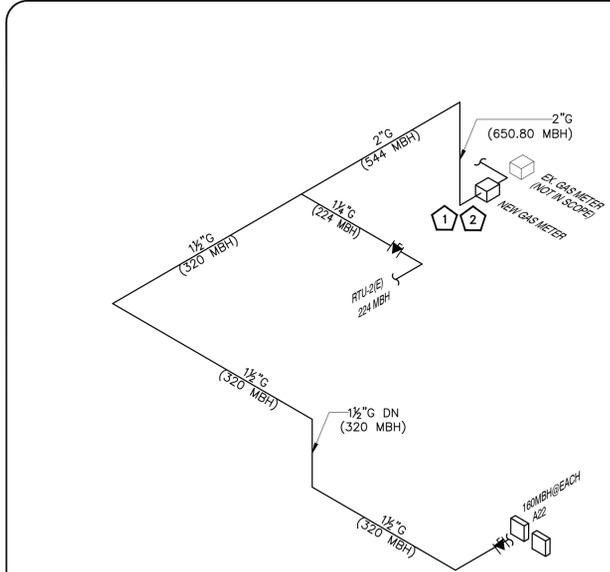
SR. NO.	DESCRIPTION	QTY	MANUFACTURER	MODEL	SIZE	MBH	MBH
01	RTU-2(E)	01	CARRIER	48TFE012	EXISTING	224,000	224,000
02	WATER HEATER	02	RINNAI	CUI1991	NEW	160,000	320,000
<b>TOTAL LOAD</b>						<b>544,000</b>	

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

**NOTES:**

- GAS PIPING TO BE SCHEDULE 40 STEEL PIPE W/125 CAST IRON SCREWED FITTINGS.
- GAS SYSTEM TO BE INSTALLED BY QUALIFIED LICENSED CONTRACTOR.
- VERIFY ALL EQUIPMENT BTU'S PRIOR TO INSTALLATION. ADJUST PIPE SIZE ACCORDING TABLE 402.4(2) 2012 INTERNATIONAL FUEL GAS CODE.

GAS PIPE SIZING PER TABLE 402.4(2) 2012 INTERNATIONAL FUEL GAS CODE  
EQUIVALENT LENGTH OF PIPE = 115 + FITTINGS (+40%) = 161 FEET



**GAS RISER** SCALE N.T.S. **2**

**GAS FLOOR PLAN** SCALE 1/4" = 1'-0" **1**