SCOPE OF WORK

REUSE THE EXISTING TWO 5.0 TON GAS FIRED ROOFTOP UNITS AND KEEP THE EXISTING THIRD ROOFTOP UNIT CAPPED FOR FUTURE USE. PROVIDE NEW DUCTWORK AS SHOWN AND ALL NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEMS.

PROVIDE TWO NEW EXHAUST FANS FOR RESTROOMS, ONE NEW EXHAUST FAN FOR KITCHEN AND ONE NEW EXHAUST FAN FOR MOP SINK.

COORDINATE WITH GC ANY WORK REQUIRED ON KITCHEN EXHAUST SYSTEM AND ADDITIONAL REFRIGERATION WORK REQUIRED AND WITH GC AND PLUMBING CONTRACTOR TO PROVIDE CONDENSATE LINES FOR MECHANICAL EQUIPMENT.

MECHANICAL PLAN NOTES

A. REUSE THE EXISTING TWO 5.0 TON GAS FIRED ROOFTOP UNITS AND KEEP THE OTHER ROOFTOP UNIT CAPPED OFF FOR THE FUTURE USE. PROVIDE NEW DUCTWORK AS SHOWN AND ALL 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 RTU UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.

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

C. ALL DUCTS WILL MINIMUM 26 GAUGE SHEET METAL ALL EXPOSED DUCT WITH INTERNAL INSULATION CONCEALED DUCT MAY BE WITH EXTERNAL DUCT WRAP INSULATION. ALL DUCTS TO BE MANUFACTURED AND INSTALLED ACCORDING TO ASHRAE AND SMACNA METAL DUCT CONSTRUCTION STANDARD, LATEST EDITION. ALL MATERIALS WILL CONFORM TO NFPA 90A. DUCTWORK SHOWN IN THE PLANS ARE CLEAR INSIDE DIMENSIONS.

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

E. ALL INTERIOR AIR DUCT WITH INSULATION SHALL HAVE RATING OF MINIMUM OF R-6. EXTERIOR AIR DUCT TO HAVE R-8 INSULATION ACCORDING TO - 2018 IECC.

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

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

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

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

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

K. TESTING AND BALANCING SHALL BE DONE IN ACCORDANCE WITH 2018-IECC C408.2.2. BALANCING PROCEDURES SHALL BE IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (N.E.B.B.), THE ASSOCIATED AIR BALANCE COUNCIL (A.A.B.C) NATIONAL STANDARDS OR EQUIVALENT PROCEDURES.

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

I. ALL A/C AND FRESH AIR ROUND EXPOSED DUCTS WILL BE SPIRAL GALVANIZED AND READY FOR PAINTING. ALL RECTANGULAR DUCTS OVER CEILINGS MAY BE FIBER DUCTS.ALL SG SUPPLY GRILLS WILL BE DOUBLE DEFLECTION WITH VOLUME CONTROLS.

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

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

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

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

EXISTING CONDITION NOTES

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

BUILDING DEPARTMENT NOTES

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

1. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
2. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2018 IMC WITH AMENDMENTS:
   A. VENTILATION SYSTEM- 2018 IMC 403.3.
3. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2018 IMC CHAPTER 4.
4. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING - INTERNATIONAL MECHANICAL CODE 2018 - 309.1
   B. DUCT CONSTRUCTION AND INSTALLATION - INTERNATIONAL MECHANICAL CODE 2018 - 603
   C. AIR INTAKES, EXHAUSTS AND RELIEF - INTERNATIONAL MECHANICAL CODE 2018 - 401.5
   D. AIR FILTERS - INTERNATIONAL MECHANICAL CODE 2018 - 605
   E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2018 INTERNATIONAL MECHANICAL CODE - 606
   F. GAS AND FIRE EQUIPMENT- INTERNATIONAL FUEL & GAS CODE 2018
5. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
6. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2018 IMC 403.3.
7. 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.
8. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
9. SMOKE DETECTOR SHALL MEET UL268A.
10. 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.

MECHANICAL SYMBOLS

- KITCHEN EXHAUST FAN
- EXHAUST FAN
- SUPPLY OR OUTSIDE AIR DUCT
- RETURN OR EXHAUST AIR DUCT
- INSULATED RIGID DUCTWORK
- DUCT TRANSITION
- MANUAL VOLUME DAMPER
- FLEXIBLE DUCTWORK R-6.0
- SUPPLY DIFFUSER REFER TO DIFFUSER SCHEDULE FOR SPECIFICATIONS
- RETURN DIFFUSER REFER TO DIFFUSER SCHEDULE FOR SPECIFICATIONS
- ROOFTOP UNIT
- OPPOSED BLADE DAMPER
- (S)D DUCT SMOKE DETECTOR
- (T) PROGRAMMABLE THERMOSTAT
- (RS) REMOTE SENSOR
- (TS) TEMPERATURE SENSOR
- Ø ROUND DUCT DIAMETER
- CFM CUBIC FEET/ MINUTE
- S/A SUPPLY AIR
- R/A RETURN AIR
- SG SUPPLY GRILLE
- GC GENERAL CONTRACTOR
- – – – CD – CONDENSATE PIPING

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

ROOFTOP UNIT SCHEDULE

UNIT TAG	RTU-2(E)	RTU-3(E)
UNIT TYPE	GAS FIRED	GAS FIRED
MANUFACTURER	S.A.E	S.A.E
MODEL	S.A.E	S.A.E
STATUS	EXISTING	EXISTING
LOCATION	ROOF	ROOF
TOTAL CAPACITY	5.0 TON	5.0 TON
TOTAL COOLING MBH	S.A.E	S.A.E
TOTAL SENSIBLE MBH	S.A.E	S.A.E
EER/SEER2	S.A.E	S.A.E
IEER	S.A.E	S.A.E
HEATING MBH (INPUT)	115.0(V.I.F)	115.0(V.I.F)
HEATING MBH (OUT.)	92.0(V.I.F)	92.0(V.I.F)
THERMAL EFF (%)	S.A.E	S.A.E
SUPPLY AIR (CFM)	2000 (V.I.F)	2000 (V.I.F)
OUTDOOR AIR (CFM)	350	460
VOLTAGE/PHASE/HZ	208-230/3/60 & (V.I.F)	208-230/3/60 & (V.I.F)
MCA (A)	28.9 (V.I.F)	28.9 (V.I.F)
MOCP (A)	40 (V.I.F)	40 (V.I.F)
ESP (IN. OF H2O)	S.A.E	S.A.E
WEIGHT (LBS)	S.A.E	S.A.E

NOTES:-
SAE: SAME AS EXISTING
VIF: VERIFY IN FIELD
1. EXISTING RTU WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
2. CONTRACTOR TO FIELD VERIFY IF RTU IS WORKING AT THEIR 100% RATED CAPACITY. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF UNIT ON SITE.
4. IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSOR COMPATIBLE WITH EXISTING RTU. CO-ORDINATE FINAL LOCATION OF T-SENSOR WITH ARCHITECT/OWNER.
5. CONTRACTOR TO BALANCE OUTSIDE AIR DAMPER ON EXISTING RTU TO MATCH VALUE MENTIONED IN AIR BALANCE TABLE.
6. REPLACE FILTERS, IF REQUIRED.
7. CONTRACTOR TO REFURBISH EXISTING MECHANICAL EQUIPMENT TO REMAIN AND BRING TO "LIKE NEW" CONDITION.

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

OCCUPANCY CALCULATION

DINING AREA	875 SQ. FT.	27 PEOPLE
FRONT SERVICE	170 SQ. FT.	2 PEOPLE
KITCHEN & BOH	634 SQ. FT.	4 PEOPLE
OFFICE	75 SQ. FT.	1 PEOPLE
	TOTAL	34 PEOPLE

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

VENTILATION REQUIREMENTS PER 2018 IMC - MECHANICAL TABLE 403.3.1.1

DINING AREA	875 SQ. FT. X 0.18 CFM/SQ. FT. =	158 CFM
	27 PEOPLE. X 7.5 CFM/PEOPLE. =	203 CFM
FRONT SERVICE	170 SQ. FT. X 0.12 CFM/SQ. FT. =	20 CFM
	2 PEOPLE. X 7.5 CFM/PEOPLE. =	15 CFM
HALLWAY	60 SQ. FT. X 0.06 CFM/SQ. FT. =	4 CFM
KITCHEN & BOH	634 SQ. FT. X 0.12 CFM/SQ. FT. =	76 CFM
	4 PEOPLE. X 7.5 CFM/PEOPLE. =	30 CFM
OFFICE	75 SQ. FT. X 0.06 CFM/SQ. FT. =	5 CFM
	1 PEOPLE. X 5 CFM/PEOPLE. =	5 CFM
OUTSIDE AIR REQUIRED		516 CFM
EXHAUST AIR REQUIRED		
WOMEN RESTROOM	70 CFM PER FIXTURE	70 CFM
MEN RESTROOM	70 CFM PER FIXTURE	70 CFM
MOP CLOSET		70 CFM
KITCHEN & BOH	634 SQ. FT. X0.7 CFM/SQ. FT.	444 CFM
AIR BALANCE		
O/A PROVIDED RTU-2(E)		+350 CFM
O/A PROVIDED RTU-3(E)		+460 CFM
BEF-1(N),		-70 CFM
BEF-2(N),		-70 CFM
EF-1(N),		-70 CFM
KEF-1(N)		-450 CFM
BUILDING PRESSURE (BAROMETRIC RELIEF)		+150 CFM

FAN SCHEDULE

DESIGNATION	KEF-1(N)	EF-1(N)	BEF-1(N)	BEF-2(N)
STATUS	NEW	NEW	NEW	NEW
QUANTITY	1	1	1	1
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	SP-A710	SP-LP0511-1	SP-LP0511-1	SP-LP0511-1
CFM	450 @0.5 (ESP IN WC)	70 @0.5 (ESP IN WC)	70 @0.5 (ESP IN WC)	70 @0.5 (ESP IN WC)
AMPS	4.9	0.29	0.29	0.29
ACCESSORIES	BDD	BDD	BDD	BDD
WEIGHT (LBS)	40	15	15	15
VOLTAGE	115/1/60	115/1/60	115/1/60	115/1/60

NOTES:
1. PROVIDE DISCONNECT SWITCH.
2. BEF-1(N) AND BEF-2(N) SHALL BE INTERLOCK WITH ROOM LIGHTS.
3. EF-1(N) AND KEF-1(N) SHALL BE INTERLOCK WITH RTU-2(E).
4. PROVIDE BACK DRAFT DAMPER.
5. PROVIDE ACCESS DOOR IN COORDINATION WITH ARCHITECT/OWNER.

DIFFUSER SCHEDULE

MANUFACTURER	TITUS	TITUS	TITUS
DESIGNATION	A	B	R
USE	SUPPLY	SUPPLY	RETURN
MODEL	TDC-AA	250-AA(2/3 WAY)	350 RL
MOUNTING	SAT CEILING	HARD CEILING	SAT CEILING
LOCATION	AS SHOWN	AS SHOWN	AS SHOWN
FACE SIZE	24" X 24"	12" X 12"	24" X 24"
NECK SIZE	REFER TABLE A	REFER TABLE A	REFER TABLE A
FRAME TYPE	LAY IN	FLANGED	LAY IN
NOISE CRITERIA	<30	<30	<30
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

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

TABLE A	
FOR ROUND NECK	
NECK SIZE	CFM RANGE
Ø6"	0-100
Ø8"	101-200
Ø10"	201-400
Ø12"	401-600

NY ENGINEERS

PROJECT

PEACH COBBLER FACTORY

REVISIONS DATES:

SR. NO.	DETAIL	DATE

PROFESSIONAL SEAL

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

HVAC NOTES & SCHEDULES

M-1

GENERAL NOTES

A. CONTRACTOR TO VISIT SITE TO VERIFY ON FIELD CONDITION ALONG WITH THE DRAWINGS & INFORM THE ENGINEER FOR ANY DISCREPANCIES FOUND BEFORE COMMENCING BIDS.

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

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

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

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

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

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

H. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY INSULATED. ALL INTERNAL DUCTWORK SHALL BE EXTERNALLY INSULATED.

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

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

K. COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS.

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

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

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

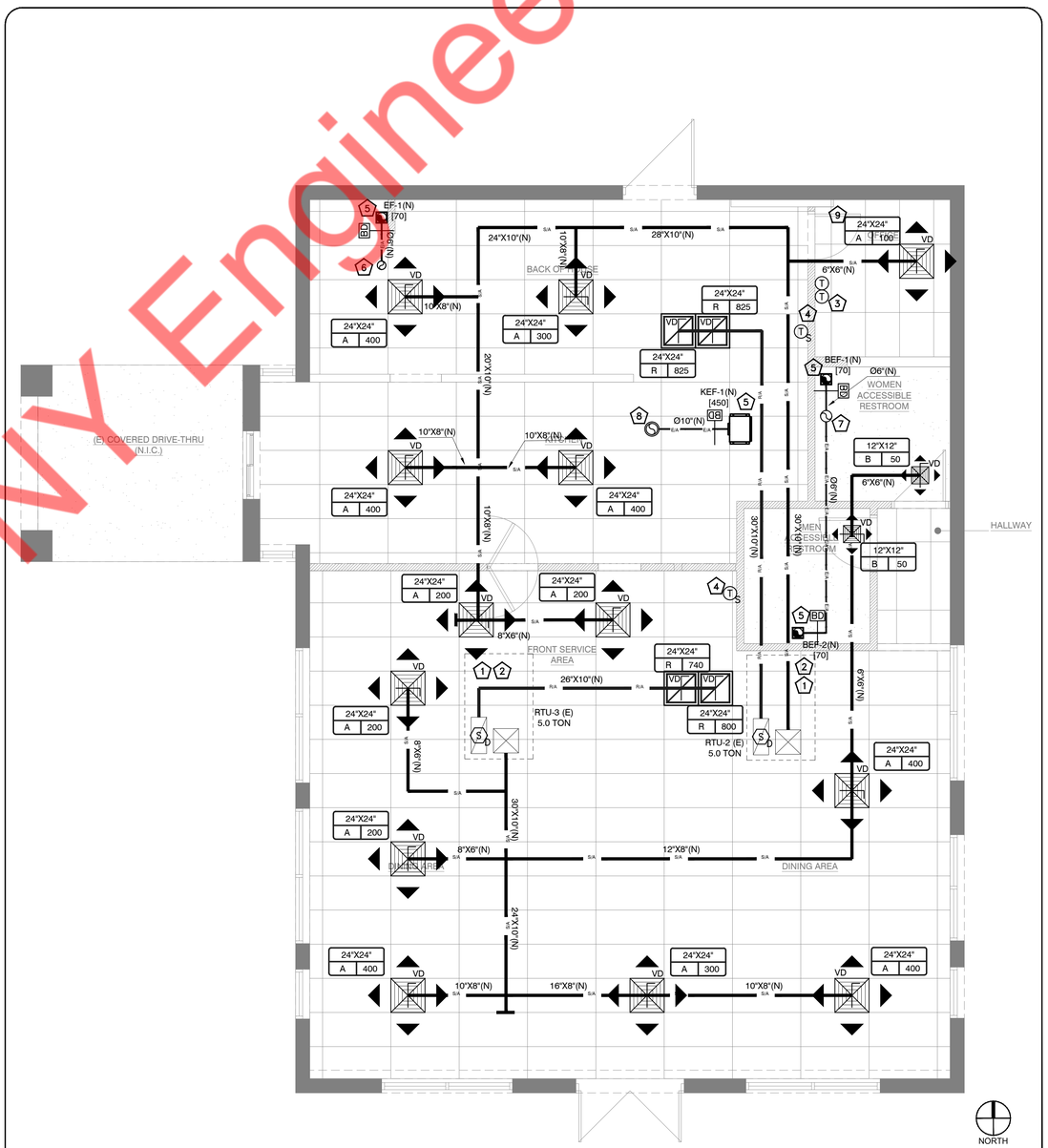
O. CONTRACTOR TO VERIFY ON SITE ALL OUTSIDE AIR & EXHAUST AIR WALL PENETRATION/TERMINATION. INFORM ENGINEER IF ANY DISCREPANCY FOUND.

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

Q. CONTRACTOR TO COORDINATE WITH JOIST BASED ON SITE CONDITIONS AND RUN THE DUCTWORK AS HIGH AS POSSIBLE THROUGH THE JOIST.

KEY NOTES

1. EXTEND FULL SIZE SUPPLY AND RETURN DUCTWORK FROM ROOFTOP UNIT TO SPACE, EXTEND AS SHOWN. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
2. CONTRACTOR TO FIELD VERIFY. EXACT LOCATION OF EXISTING ROOF TOP UNITS ON MAIN ROOF.
3. LOCATION OF DIGITAL T-STAT CONTROL. REUSE EXISTING T-STAT FOR RTU-2(E) & RTU-3(E) IF IN GOOD OPERATING CONDITION. IF NOT, REPLACE WITH SAME KIND. COORDINATE FINAL LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
4. PROVIDE REMOTE TEMP MOUNTED IN THE SPACE AND WIRE BACK TO T-STAT OF RESPECTIVE RTU. CONTRACTOR TO CONFIRM FINAL REQUIREMENT WITH OWNER/ARCHITECT PRIOR INSTALLING.
5. CEILING MOUNTED EXHAUST FAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
6. Ø6" EXHAUST DUCT UP TO ROOF AND TERMINATE WITH GOOSENECK AND BIRD SCREEN.
7. Ø8" EXHAUST DUCT UP TO ROOF AND TERMINATE WITH GOOSENECK AND BIRD SCREEN.
8. Ø10" EXHAUST DUCT UP TO ROOF AND TERMINATE WITH GOOSENECK AND BIRD SCREEN.
9. PROVIDE 10"X8" DOOR GRILLE.



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

NY ENGINEERS

PROJECT

PEACH COBBLER FACTORY

REVISIONS DATES:

SR. NO.	DETAIL	DATE

PROFESSIONAL SEAL

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

HVAC FLOOR PLAN

M-2

GENERAL NOTES

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

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

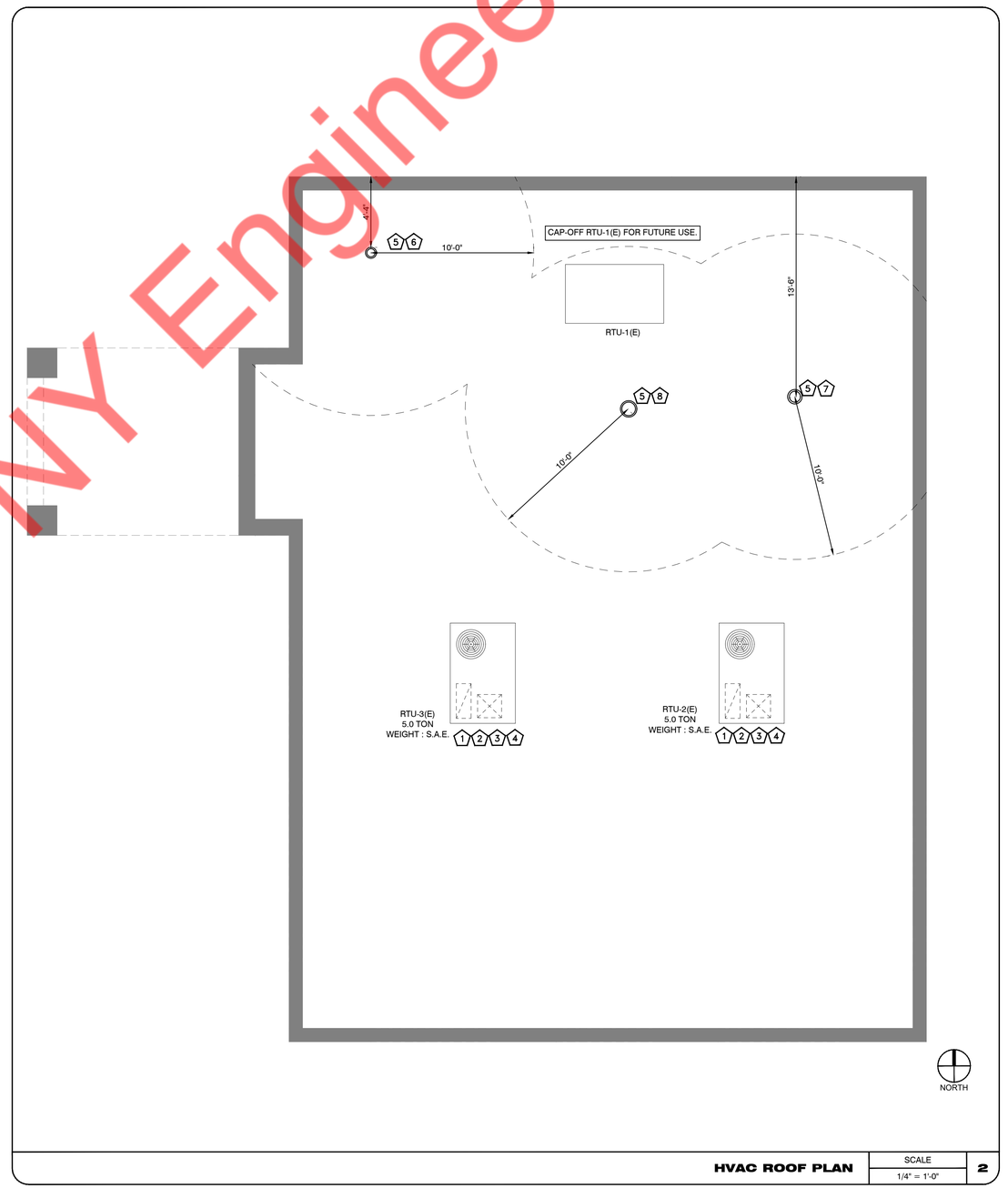
C. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.

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

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

KEY NOTES (#)

1. EXISTING ROOFTOP UNIT WITH ALL ITS ACCESSORIES TO REMAIN AND TO BE REUSED. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING ROOF TOP UNITS ON MAIN ROOF.
2. EXISTING CONDENSATE DRAIN LINES WILL REMAIN AS THEY ARE. IF THE PIPING IS DAMAGED OR BLOCKED, IT WILL BE REPAIRED OR REPLACED USING SIMILAR OR APPROVED MATERIALS AS PER THE LOCAL CODE AND TERMINATE AT THE APPROVED PLACE OF DISPOSAL AS PER THE LOCAL CODES.
3. ALL OUTSIDE AIR INTAKES ON THE ROOF SHALL BE MINIMUM 10 FT. AWAY FROM ANY EXHAUST SOURCE.
4. IF REQUIRED CONTRACTOR TO REFURBISH EXISTING MECHANICAL EQUIPMENT TO REMAIN 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.
5. 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.
6. Ø6" EXHAUST AIR DUCT FROM FIRST FLOOR TERMINATE WITH GOOSENECK AND BIRD SCREEN. MAINTAIN A MINIMUM 10'-0" FROM ALL OUTSIDE AIR INTAKE.
7. Ø8" EXHAUST AIR DUCT FROM FIRST FLOOR TERMINATE WITH GOOSENECK AND BIRD SCREEN. MAINTAIN A MINIMUM 10'-0" FROM ALL OUTSIDE AIR INTAKE.
8. Ø10" EXHAUST AIR DUCT FROM FIRST FLOOR TERMINATE WITH GOOSENECK AND BIRD SCREEN. MAINTAIN A MINIMUM 10'-0" FROM ALL OUTSIDE AIR INTAKE.



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

NY ENGINEERS

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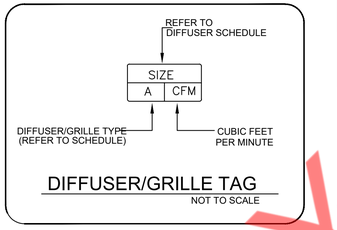
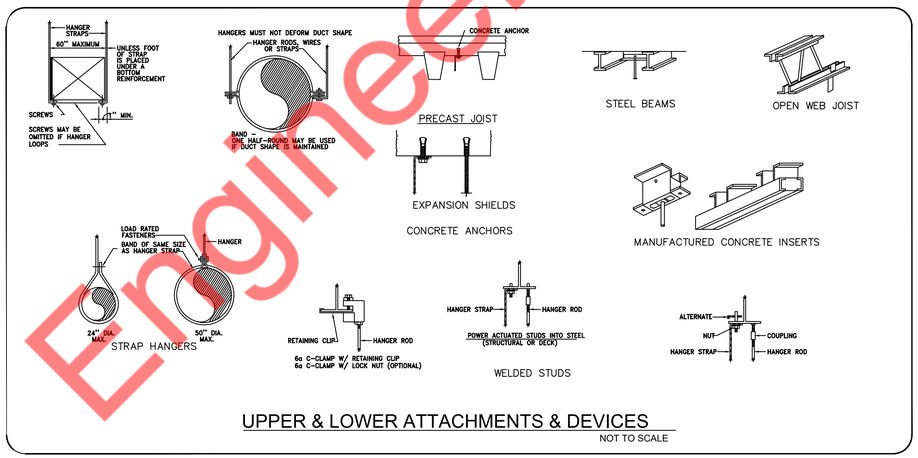
HVAC ROOF PLAN

M-3



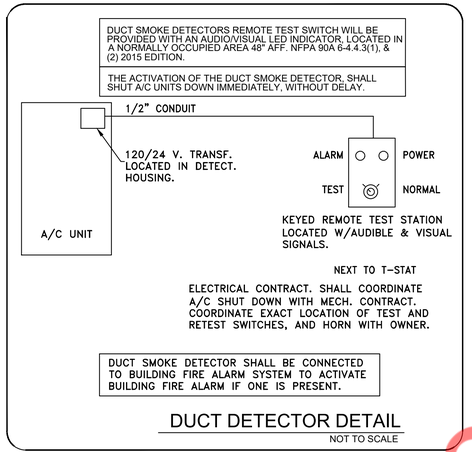
DIFFUSER/GRILLE TAG

NOT TO SCALE



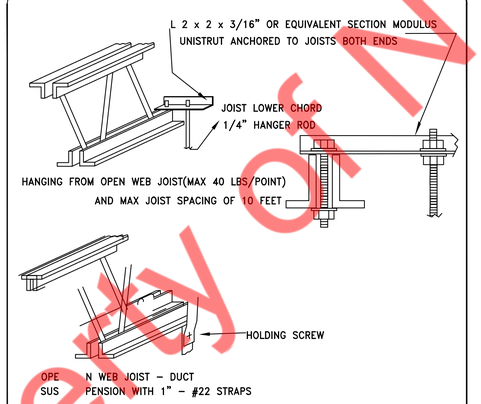
UPPER & LOWER ATTACHMENTS & DEVICES

NOT TO SCALE



DUCT DETECTOR DETAIL

NOT TO SCALE



DUCT MOUNTING DETAIL

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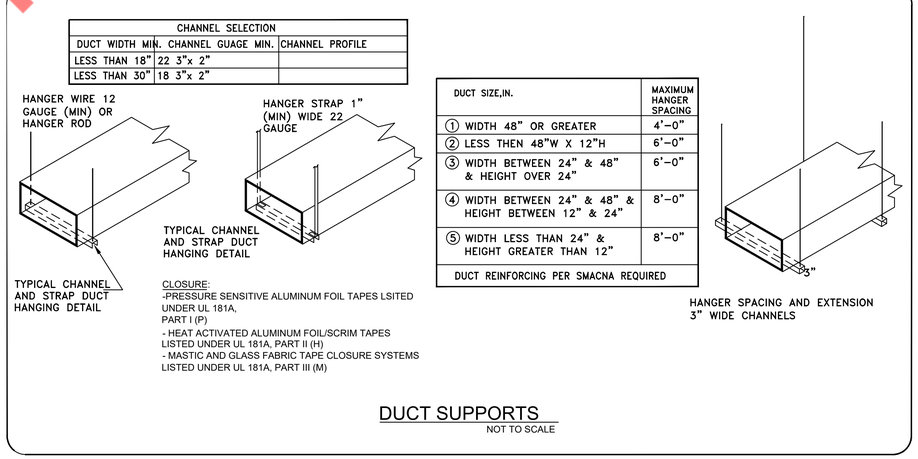
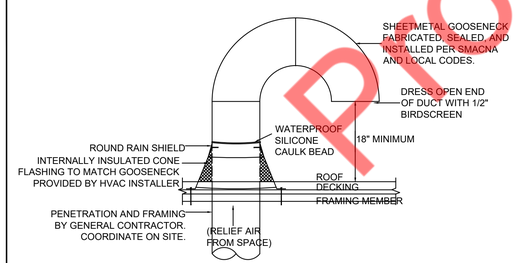


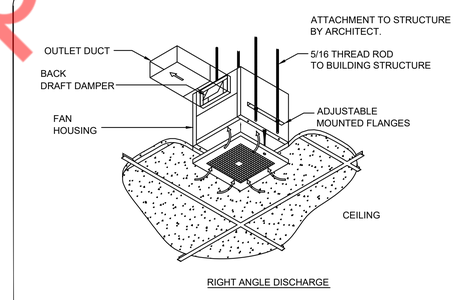
DUCT SUPPORTS

NOT TO SCALE



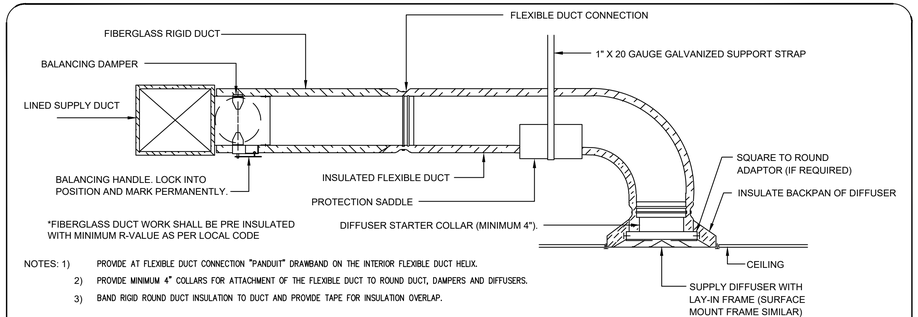
ROUND GOOSENECK DETAIL AT ROOF

NOT TO SCALE



CEILING EXHAUST FAN DETAIL

NOT TO SCALE



DIFFUSER CONNECTION DETAIL-FLEX DUCT

NOT TO SCALE

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MECHANICAL DETAILS

M-4

SCOPE OF WORK

1. REUSE THE EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FOR THE PROJECT SPACE.
2. REUSE EXISTING 200A, 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL METER.
3. PROVIDE NEW 200A, 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL "PANEL A" (M.C.B) FOR THE TENANT'S SPACE.
4. ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROJECT SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH G.C FOR LOW VOLTAGE WIRING.

ELECTRICAL PLAN NOTES

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

EXISTING CONDITIONS NOTES

STOP AND READ

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

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.

C. WHERE LIGHT FIXTURE IS FOLLOWED BY "NL", THIS FIXTURE IS DESIGNATED AS A NIGHT LIGHT AND SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.

GENERAL NOTES

- GC WILL COORDINATE WITH OWNER FINAL LOCATION FOR ALL RECEPTACLES.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	COMBINATION EXHAUST FAN/LIGHT (REFER TO MECHANICAL PLANS)
J	JUNCTION BOX
	BATTERY BACK UP EXIT LIGHT
	BATTERY BACK UP EMERGENCY LIGHT
$	WALL SWITCH (SINGLE, DOUBLE,)
$3	WALL SWITCH (3 WAY, 4 WAY)
$T	WALL SWITCH (TIMER)
$OS	OCCUPANCY SENSOR WALL SWITCH
	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, 46" TO AFF AT KITCHEN, BATHS AND TOPS
	HALF SWITCHED DUPLEX RECEPTACLE
	230 VOLT RECEPTACLE
	QUADRUPLEX RECEPTACLE
	FLOOR MOUNTED. FLUSH DUPLEX RECEPTACLE
	FLOOR MOUNTED. FLUSH QUAD. RECEPTACLE
	FLOOR MOUNTED. FLUSH 230 VOLT RECEPTACLE
CL	CEILING MOUNTED DUPLEX RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
USB	USB CHARGER RECEPTACLE
TV	TELEVISION OUTLET
T	TELEPHONE OUTLET
T/D	TELEPHONE/DATA OUTLET
D	DATA OUTLET
T/D	FLOOR MTD. FLUSH TELEPHONE/DATA OUTLET
CAT6	QUAD. DATA OUTLET RJ45
	NON FUSED DISCONNECT SWITCH
A	30A FUSED DISCONNECT SWITCH
B	40A FUSED DISCONNECT SWITCH
C	60A FUSED DISCONNECT SWITCH
TR	TAMPER RESISTANCE RECEPTACLE

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.
KITCHEN EXHAUST FAN = KEF	BATHROOM EXHAUST FAN=BEF
WATER HEATER= WH	RECIRCULATION PUMP=RCP
AUTHORITY HAVING JURISDICTION= A.H.J.	ROOF TOP UNIT= RTU
MAKE UP AIR UNIT=MUA	EXHAUST FAN=EF
CURRENT LIMITER=CL	TIME CLOCK=TC
SALAVAGED=S	RELOCATED=RL

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	VOLT	LAMP WATTAGE	MOUNTING
	A	2x4 RECESSED LED FLAT PANEL	120	39 WATTS	RECESSED
	B	RECESSED COMPACT	120	13 WATTS	RECESSED
	Y1	EXIT SIGN/EMERGENCY LIGHT COMBO	120	2 WATTS	WALL
	X1	EXIT SIGNS	120	2 WATTS	WALL
$T	T	TIMER WALL SWITCH	120	-	WALL
$OS	OS	OCCUPANCY WALL SWITCH	120	-	WALL
OS	OS	CEILING OCCUPANCY SENSOR	120	-	CEILING
	(E)	EXISTING LIGHTING FIXTURE TO REMAIN	-	-	-

LIGHT FIXTURE SCHEDULE NOTES:

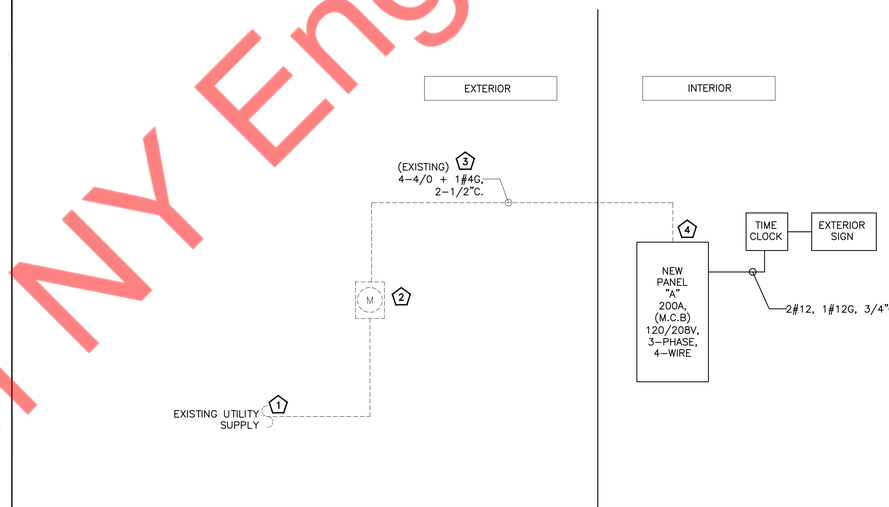
REFER TO SHEET A-2 - REFLECTED CEILING PLAN IN ARCHITECTURAL DRAWINGS FOR MORE INFORMATION ON COLORS AND TRIMS REQUIRED

(*) 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.

CONTRACTOR NOTE:

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



ELECTRICAL RISER KEYED NOTES:

1. EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE INCOMING ELECTRICAL SERVICE FOR THE PROJECT SPACE SHALL REMAIN. E.C. SHALL VERIFY EXACT ELECTRICAL DISTRIBUTION OF EXISTING ELECTRICAL SERVICE/OPERABLE CONDITION OF SERVICE FEEDING THE PROJECT SPACE AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
2. EXISTING 200A, 120/208V, 3-PHASE, 4-WIRE METER SHALL REMAIN AND REUSE. E.C. TO VERIFY THE OPERABLE CONDITION OF EXISTING METER IN THE FIELD AND SHALL REPLACE WITH NEW IF FOUND INOPERABLE IN COORDINATION WITH UTILITY COMPANY/OWNER. BASE BID ACCORDINGLY.
3. EXISTING INCOMING FEEDER TO REMAIN AND REUSE. E.C. TO VERIFY OPERABLE CONDITION OF FEEDER IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. PROVIDE NEW IF NOT SUFFICIENT IN LENGTH. BASE BID ACCORDINGLY.
4. DEMOLISH THE EXITING 225A, (M.C.B), 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL AND PROVIDE NEW 200A (M.C.B), 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" IN THE SAME LOCATION TO MATCH THE EXISTING FEEDER LENGTH FOR THE PROPOSED NEW PANEL. PROVIDE NEW IF NOT SUFFICIENT IN LENGTH. IN FORM ENGINEER ON RECORD FOR ANY DISCREPANCY. BASE BID ACCORDINGLY.

ELECTRICAL RISER SYMBOLS:

NEW

EXISTING ITEM/FEEDER TO REMAIN

RISER DIAGRAM GENERAL NOTES:

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

B. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.

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

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

E. E.C SHALL RECTIFY/PROVIDE BREAKERS AS SHOWN IN THE PANEL SCHEDULE IN COORDINATION WITH EQUIPMENT MANUFACTURER. BASE BID ACCORDINGLY.

ELECTRICAL RISER | SCALE N.T.S. | 1

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ELECTRICAL PLAN NOTES AND RISER DIAGRAM

E-1

LIGHTING PLAN GENERAL NOTES:

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

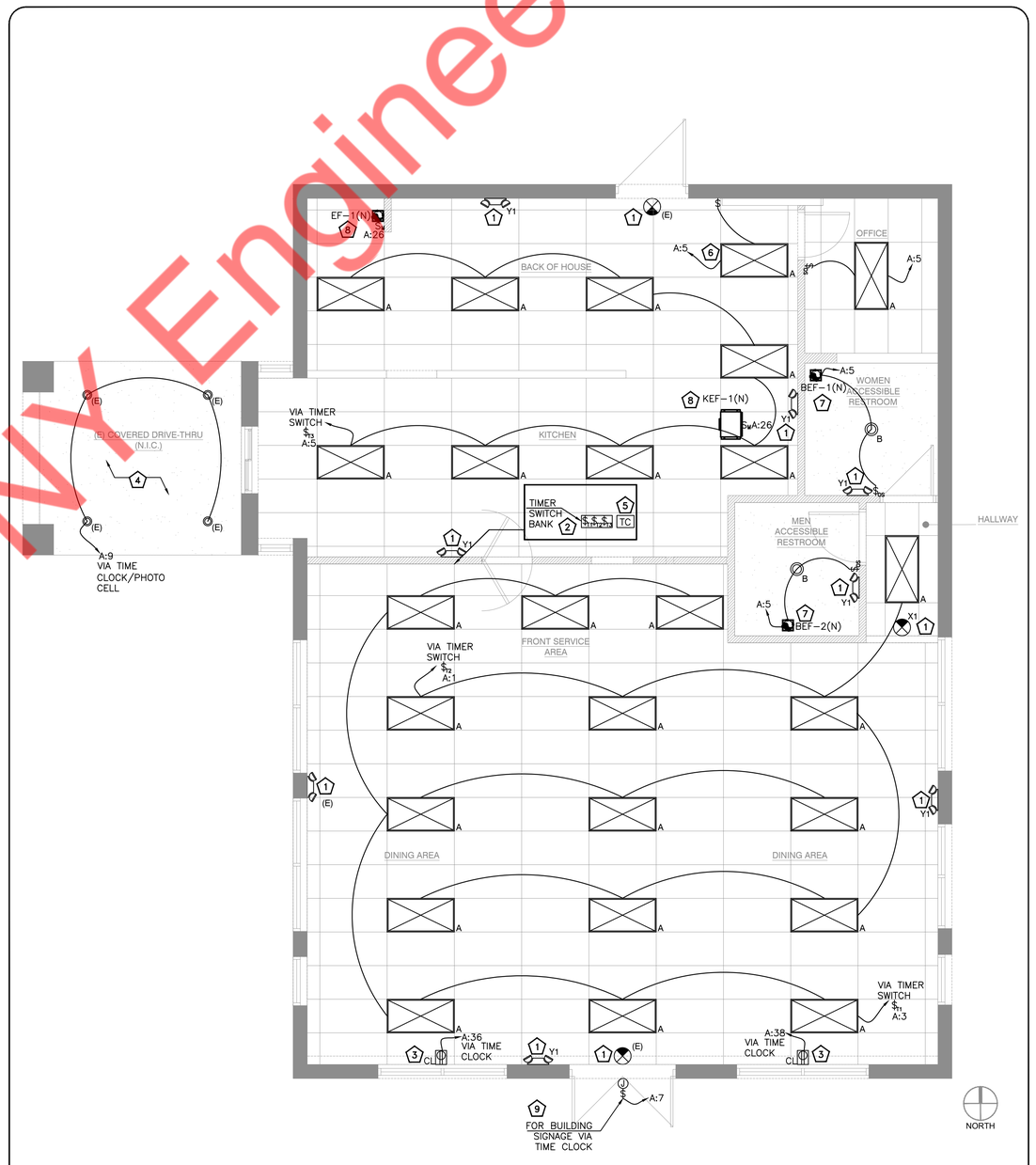
B. PROVIDE MANUAL OVERRIDE SWITCH AS PER IECC C405.2.2.1

C. (E) IN THE PLAN INDICATES EXISTING TO REMAIN.

D. AT LEAST 50 FOOT–CANDLES OF SHIELDED LIGHT SHALL BE REQUIRED ON ALL WORK SURFACES, FOOD PREPARATION AREAS AND UTENSIL WASHING AREAS. ADDITIONALLY, 20 FOOT–CANDLES OF SHIELDED LIGHTING MUST BE PROVIDED FOR ALL WALK–IN COOLERS, STORAGE AREAS, TOILET ROOMS, LOCKER ROOMS, AND IN GARBAGE AND RUBBISH STORAGE AREAS.

(#) LIGHTING PLAN KEYED NOTES:

1. CONNECT EMERGENCY AND EGRESS LIGHTING FIXTURES TO THE NEAREST LIGHTING CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.
2. COORDINATE EXACT LOCATION OF THE TIMER SWITCH BANK WITH OWNER/ARCHITECT.
3. PROVIDE SHOW WINDOW RECEPTACLE AS PER N.E.C. 210.62. VERIFY EXACT LOCATION WITH ARCHITECT.
4. EXISTING LIGHT FIXTURE IN THIS AREA DENOTED BY (E) SHALL REMAIN AS IT IS AND RE–CIRCUITED TO NEW PANEL AS SHOWN IN PLAN. E.C SHALL COORDINATED OWNER/ARCHITECT FOR EXACT CONTROLS.
5. COORDINATE EXACT LOCATION OF THE TIME CLOCK WITH OWNER/ARCHITECT.
6. LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE VIA MANUAL SWITCH AS PER NEC 110.26(D).
7. BEF–1(N), BEF–2(N) SHALL BE INTERLOCKED WITH RESTROOM LIGHT FIXTURE. E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR IN THE FIELD. PRIOR TO ROUGH IN.
8. INTERLOCK EF–1(N),KEF–1(N) WITH RTU–3(E). E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR IN THE FIELD. PRIOR TO ROUGH IN.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE JUNCTION BOX FOR THE EXTERIOR SIGNAGE. E.C. TO COORDINATE WITH THE SIGN VENDOR ON THE QUANTITY AND LOCATION OF THE REQUIRED JUNCTION BOXES. THE CONTRACTOR SHALL PROPERLY SIZE THE JUNCTION BOX BASED ON THE QUANTITY OF CONNECTIONS REQUIRED. VERIFY LOCATION WITH ARCHITECTURAL DRAWINGS AND SIGN VENDOR PRIOR TO INSTALLING. ALL SIGNS SHALL BE CONTROLLED VIA TIME CLOCK/PHOTOCELL.



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

NY ENGINEERS

PROJECT

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ELECTRICAL LIGHTING PLAN

E-2

POWER PLAN GENERAL NOTES:

A. 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.

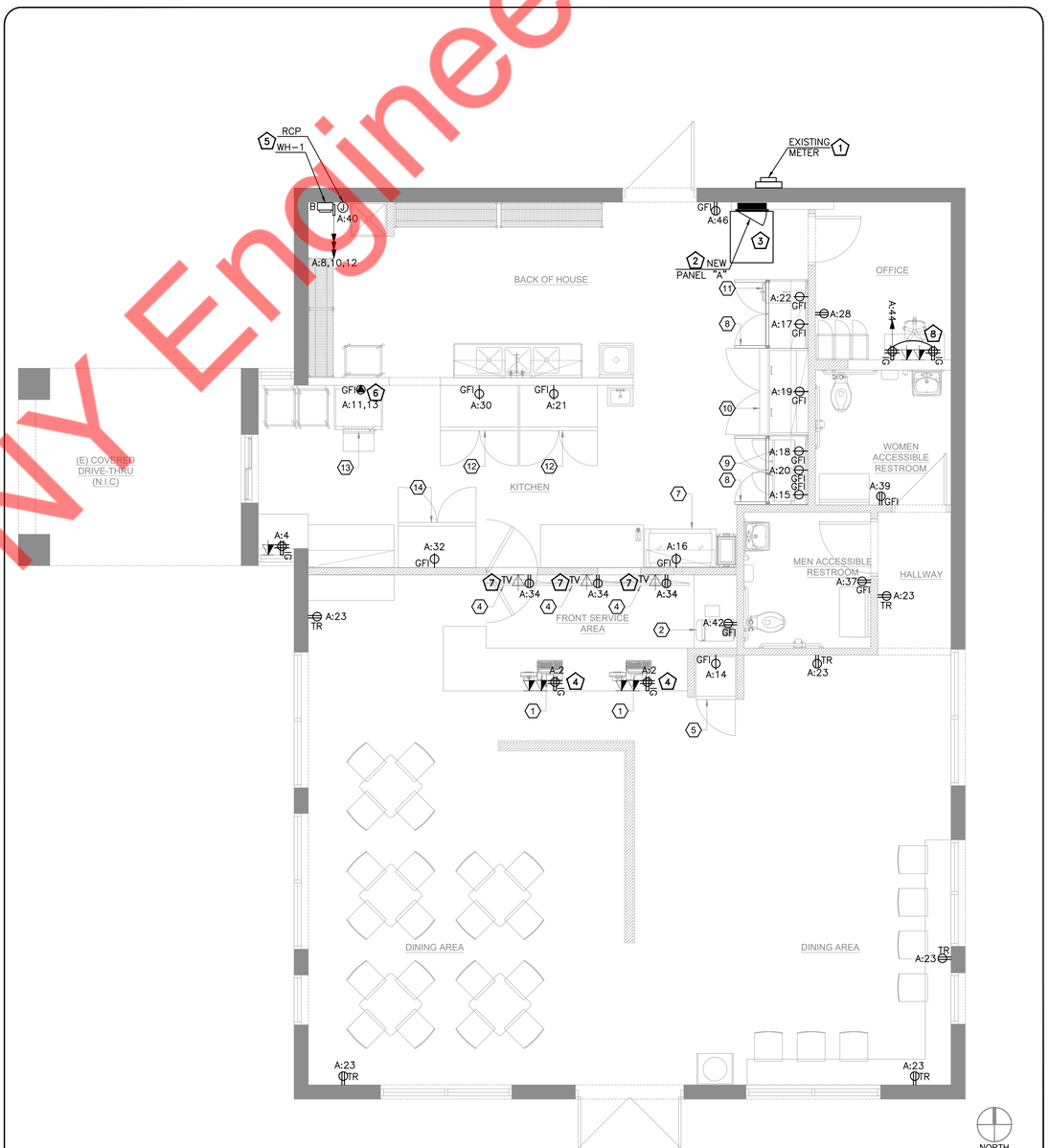
B. E.C. SHALL COORDINATE WITH THE EQUIPMENT VENDOR FOR EXACT RECEPTACLE REQUIREMENT, EXACT LOCATION AND MOUNTING HEIGHT OF THE RECEPTACLES WITH ARCHITECT/OWNER IN THE FIELD.

C. ELECTRICAL CONDUITS AND PLUMBING PIPES ARE TO BE KEPT AS HIGH AS POSSIBLE ABOVE THE FLOOR TO PROVIDE ADEQUATE SPACE FOR CLEANING. PIPING CONDUIT AND SIMILAR CONSTRUCTION LOCATED OUTSIDE A WALL, MUST BE INSTALLED SO THAT THERE IS A MINIMUM OF 3/4 –INCH SPACE BETWEEN IT AND THE WALL. E.C. SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT ROUTING OF CONDUITS IN THE FIELD.

D. ALL THE GFI RECEPTACLES SHALL BE READILY ACCESSIBLE AS PER NEC 422.5.

(#) POWER PLAN KEYED NOTES:

1. EXISTING 200A, 120/208V, 3–PHASE, 4–WIRE METER SHALL REMAIN AND REUSE. E.C. TO VERIFY THE OPERABLE CONDITION OF EXISTING METER IN THE FIELD AND SHALL REPLACE WITH NEW IF FOUND INOPERABLE IN COORDINATION WITH UTILITY COMPANY/OWNER. BASE BID ACCORDINGLY.
2. NEW 200A, 120/208V, 3–PHASE, 4–WIRE ELECTRICAL PANEL "A". E.C. TO COORDINATE THE EXACT LOCATION WITH ARCHITECT/OWNER.
3. 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.
4. PROVIDE (2) CAT 6 HOME RUN TO EACH POS AND ONE (1) QUAD 20 AMPS RECEPTACLE FOR POS. COORDINATE WITH OWNER FOR EXACT HEIGHT BEFORE COMMENCING ANY WORK.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR EXACT LOCATION AND POWER REQUIREMENT OF THE PLUMBING UNITS IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER/ARCHITECT AND #13_ELECRIC CONVECTION OVEN EQUIPMENT MANUFACTURER FOR EXACT POWER REQUIREMENT, MOUNTING HEIGHT & LOCATION BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
7. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER/ARCHITECT/VENDOR OF TV MENU BOARD FOR EXACT POWER REQUIREMENT AND MOUNTING HEIGHT ON SITE PRIOR TO ROUGH–IN AND PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.
8. QUAD RECEPTACLE OUTLET FOR PC/DESK. ELECTRICAL CONTRACTOR TO CO–ORDINATE WITH ARCHITECT/OWNER FOR EXACT POWER REQUIREMENT, LOCATION, MOUNTING HEIGHT OF OUTLET/DATA AND OTHER DETAILS BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.



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

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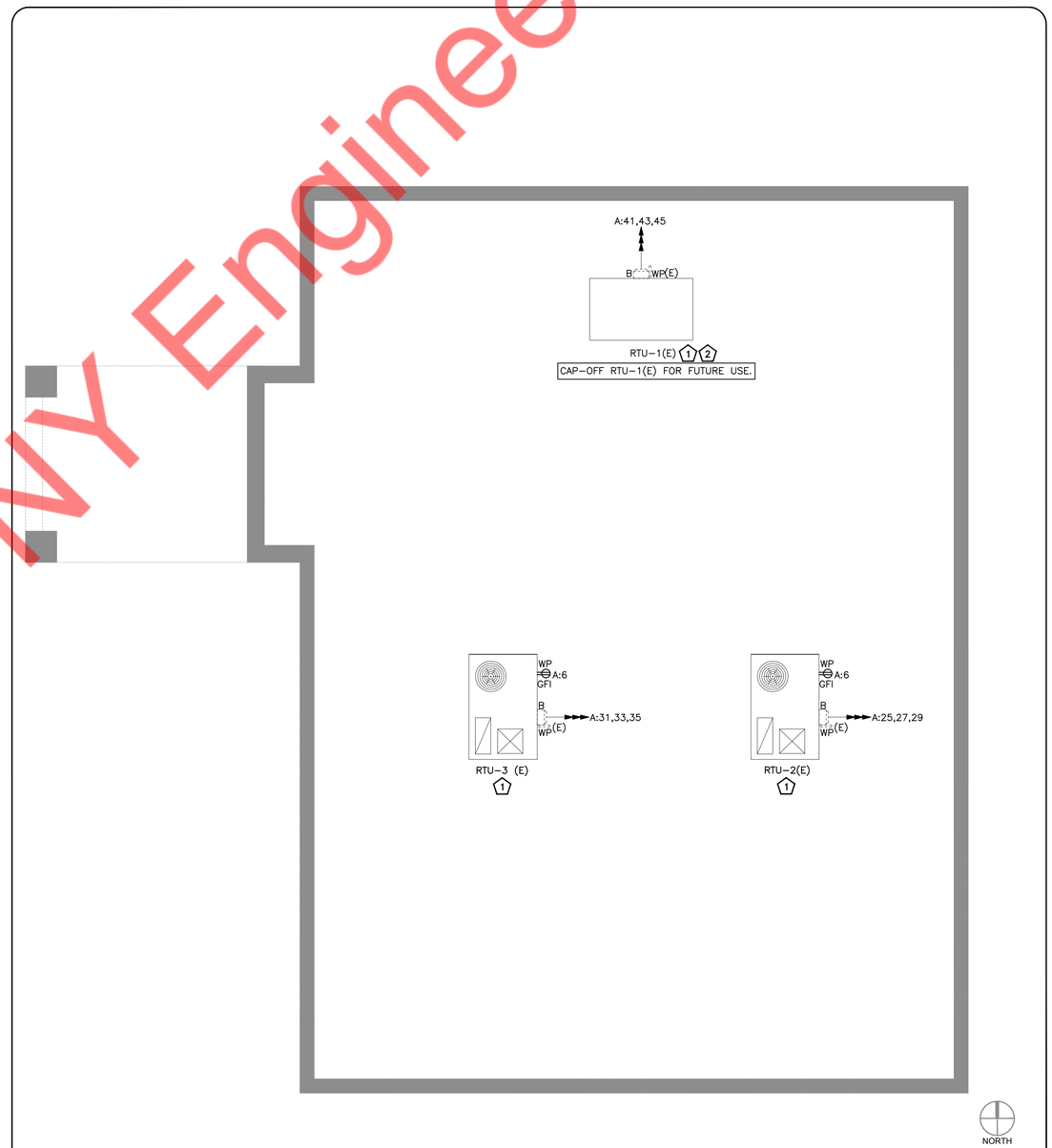
ELECTRICAL FLOOR POWER PLAN

E-3

ROOF POWER PLAN KEYED NOTES:

1. EXISTING DISCONNECTING MEANS FOR EXISTING EQUIPMENTS(RTU-1(E), 2(E), 3(E) SHALL REMAIN AND RE-CIRCUITED TO NEW PANEL "A" AS SHOWN IN PANEL SCHEDULE. E.C. SHALL VERIFY OPERABLE CONDITION OF EXISTING DISCONNECT IN THE FIELD, REPLACE WITH NEW AS SHOWN IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER/ARCHITECT FOR EXACT SCOPE OF WORK OF RTU-1(E) AT FIELD. BASE BID ACCORDINGLY.



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

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ELECTRICAL ROOF POWER PLAN

E-4

ELECTRICAL PANEL SCHEDULE:–

PANEL:	A (N)						MOUNTING:	RECESSED
208Y/120	VOLTS,	3	PHASE,	4	WIRE		LOCATION:	BACK OF HOUSE
MAIN CB	200A	M.L.O.	NA	BUS:	225A	MIN,	FED FROM:	EXISTING METER/DISCONNECT SWITCH

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

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	PER PHASE (KVA) B	PER PHASE (KVA) C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHTING DININGAREA, FRONT SERVICE AREA, HALLWAY	L	0.50	2#12, #12G, 3/4"C	1.22			2#12, #12G, 3/4"C	0.72	R	POS	20	2
3	20	LIGHTING DININGAREA, FRONT SERVICE AREA	L	0.50	2#12, #12G, 3/4"C		0.86		2#12, #12G, 3/4"C	0.36	R	DERIVE THROUGH	20	4
5	20	LIGHTING KITCHEN, BACK OF HOUSE, REST ROOM, OFFICE	L	0.50	2#12, #12G, 3/4"C			0.86	2#12, #12G, 3/4"C	0.36	R	EXTERIOR RECEPTACLE	20	6
7	20	EXTERIOR SIGN/TIME CLOCK	L	1.00	2#12, #12G, 3/4"C	4.33			3#8, #10G, 3/4"C	3.33	O	WH-1(N)	40-3P	8
9	20	LIGHTING UNDER CANOPY	L	0.50	2#12, #12G, 3/4"C		3.83			3.33	O			10
11	30-2P	#13_ELECTRIC CONVECTION OVEN	E	2.1	2#10, 1#10G, 3/4"C			5.43		3.33	O			12
13			E	2.1		2.90			2#12, #12G, 3/4"C	0.80	E	#5_REACH-IN REFRIGERATOR	20	14
15	20	#8_48" WORK TOP FREEZER	E	0.31	2#12, #12G, 3/4"C		0.48		2#12, #12G, 3/4"C	0.17	E	#7_CHEST FREEZER	20	16
17	20	#8_48" WORK TOP FREEZER	E	0.31	2#12, #12G, 3/4"C			1.75	2#12, #12G, 3/4"C	1.44	E	#9_MICROWAVE OVEN	20	18
19	20	#10_60" MEGA TOP SANDWICH / SALAD PERP. REFRIGERATOR	E	0.34	2#12, #12G, 3/4"C	1.78			2#12, #12G, 3/4"C	1.44	E	#9_MICROWAVE OVEN	20	20
21	20	#12_54" REACH-IN FREEZER	E	1.03	2#12, #12G, 3/4"C		2.23		2#12, #12G, 3/4"C	1.20	E	#11_COUNTERTOP SHAKE FREEZER	20	22
23	20	GENERAL PURPOSE RECEPTACLE	R	1.08	2#12, #12G, 3/4"C			2.03	2#12, #12G, 3/4"C	0.95	E	#16_COMMERCIAL POP-UP TOASTER	20	24
25	40-3P	RTU-2(E.)	H	3.47	3#8, #10G, 3/4"C	3.51			2#12, #12G, 3/4"C	0.04	M	EF-1(N), KEF-1(N)	20	26
27			H	3.47			3.65		2#12, #12G, 3/4"C	0.18	R	RECEPTACLE OFFICE	20	28
29			H	3.47				4.50	2#12, #12G, 3/4"C	1.03	E	#12_54" REACH-IN FREEZER	20	30
31	40-3P	RTU-3(E.)	H	3.47	3#8, #10G, 3/4"C	4.50			2#12, #12G, 3/4"C	1.03	E	#14_54" REACH-IN REFRIGERATOR	20	32
33			H	3.47			4.01		2#12, #12G, 3/4"C	0.54	R	TV RECEPTACLE	20	34
35			H	3.47				4.87	2#12, #12G, 3/4"C	1.40	R	SHOW WINDOW	20	36
37	20	RECEPTACLE MEN RESTROOM	R	0.18	2#12, #12G, 3/4"C	1.58			2#12, #12G, 3/4"C	1.40	R	SHOW WINDOW	20	38
39	20	RECEPTACLE WOMEN RESTROOM	R	0.18	2#12, #12G, 3/4"C		1.03		2#12, #12G, 3/4"C	0.85	O	RCP	20	40
41	40-3P	RTU-1(E.)	H	3.47	3#8, #10G, 3/4"C			4.47	2#12, #12G, 3/4"C	1.00	E	#2_JUICE DISPENSER	20	42
43			H	3.47		4.19			2#12, #12G, 3/4"C	0.72	R	RECEPTACLE OFFICE	20	44
45			H	3.47			3.65		2#12, #12G, 3/4"C	0.18	R	GENERAL PURPOSE RECEPTACLE	20	46
47	20	SPARE						0.00				SPACE		48
49	20	SPARE				0.00						SPACE		50
51	20	SPARE					0.00					SPACE		52
53		SPACE						0.00				SPACE		54
TOTAL CONNECTED LOAD (KVA)						24.02	19.75	23.91						

EQUIPMENT SCHEDULE:–

EQUIPMENT SCHEDULE					
ITEM NO.	DESCRIPTION	VOLTAGE	PHASE	AMPS	KVA
2	JUICE DISPENSER	120	1	8.33	1.00
5	REACH-IN REFRIGERATOR	120	1	6.67	0.80
7	CHEST FREEZER	120	1	1.40	0.17
8	48" WORK TOP FREEZER	120	1	2.60	0.31
9	MICROWAVE OVEN	120	1	12.00	1.44
10	60" MEGA TOP SANDWICH / SALAD PERP. REFRIGERATOR	120	1	2.80	0.34
11	COUNTERTOP SHAKE FREEZER	120	1	10.00	1.20
12	54" REACH-IN FREEZER	120	1	8.60	1.03
13	ELECTRIC CONVECTION OVEN	208	1	20.19	4.20
14	54" REACH-IN REFRIGERATOR	120	1	3.07	0.37
16	COMMERCIAL POP-UP TOASTER	120	1	7.92	0.95

PANEL SCHEDULE GENERAL NOTES:

1. E.C. TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK. PROVIDE SERVICE EQUIPMENT AND PANELS SUITABLE FOR THE AVAILABLE FAULT CURRENT IN ACCORDANCE WITH ARTICLE 110.24 NEC 2020.
2. E.C. SHALL LABEL NEW SERVICE EQUIPMENTS IN ACCORDANCE WITH ARTICLE NEC 230.70.

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PANEL SCHEDULES

E-5

SCOPE OF WORK

PROVIDE ALL PLUMBING FOR NEW DESSERT RESTAURANT WITHIN AN EXISTING BUILDING SHELL, INCLUDING ALL WATER, GAS, VENT & SANITARY LINES AND CONNECT TO EXISTING UTILITIES. NEW ELECTRIC STORAGE WATER HEATER & INDOOR GREASE INTERCEPTOR.

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

PLUMBING NOTES

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

EXISTING CONTIDITONS NOTES

STOP AND READ

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

PLUMBING LEGEND

SAN	SANITARY SEWER PIPING
V	VENT PIPING
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	EXISTING COLD WATER PIPING
	EXISTING HOT WATER PIPING
	PIPE RISE
	PIPE DROP
FCO	FLOOR CLEAN OUT
	P-TRAP
WCO	WALL CLEAN OUT
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
	ISOLATION VALVE
FD	FLOOR DRAIN
	BALANCING VALVE
	POINT OF CONNECTION
I.W.	INDIRECT WASTE
FS	FLOOR SINK
	THERMOSTATIC MIXING VALVE

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
WATER CLOSET	3/4"	-	4"	2"
LAVATORY	1/2"	1/2"	2"	1-1/2"
LAVATORY (E)	E	E	E	E
MOP SINK	3/4"	3/4"	3"	2"
3-COMP SINK	3/4"	3/4"	2"	2"
1 COMP. PREP SINK	3/4"	3/4"	2"	2"
HAND SINK	1/2"	1/2"	2"	1-1/2"
FLOOR SINK	--	--	3"	2"
FLOOR DRAIN	--	--	3"/4"	2"

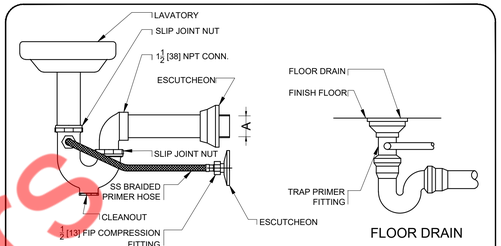
RESTROOM FIXTURE SCHEDULE

Item No.	Qty.	Description	Manufacturer	Model	WATER Hot	WATER Cold	WASTE Waste	Usage	Spec
A	2	WATER CLOSET				3/4"	4"	1.1	GPF
B	1	LAVATORY					2"		
B.2	1	LAVATORY FAUCET			1/2"	1/2"		0.5	GPM
B3	1	LAVATORY (E)			E	E	E		
		INSULATED PLUMBING COVERS							

KITCHEN EQUIPMENT PLUMBING SCHEDULE

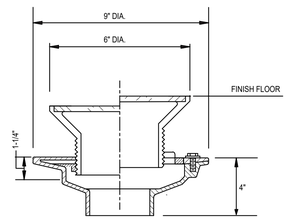
Item No.	Qty.	Description	Manufacturer	Model	WATER Hot	WATER Cold	WASTE Direct	WASTE Indirect
26	1	MOP SINK			3/4"	3/4"	3"	
27	1	3-COMP SINK						2"
27A	1	PRE RINSE FAUCET+			3/4"	3/4"		
27B	1	DRAIN, LEVER TWIST WASTE						2"
28	1	HAND SINK***			1/2"	1/2"	2"	
29	1	1 COMP. PREP SINK					2"	
29A	1	WALL SPLASH MOUNT FAUCET			3/4"	3/4"		
29B	1	DRAIN, LEVER TWIST WASTE						2"
TMV	4	THERMAL MIXING VALVE			1/2"	1/2"		
FD	2	FLOOR DRAIN*					3"/4"	
FS	2	FLOOR SINKS					3"	

+ HOT WATER 140°F, *PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS, ***PROVIDE TMV AS PER SCHEDULE



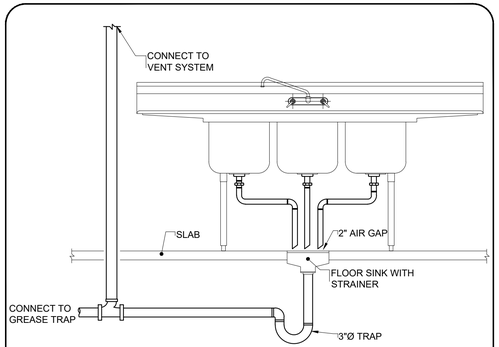
TRAP RESEAL DETAIL

NOT TO SCALE



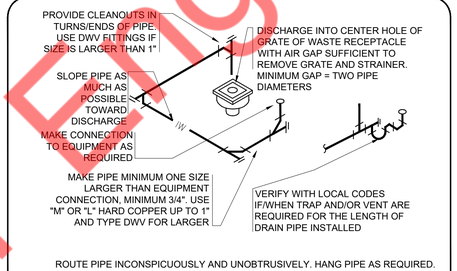
FLOOR DRAIN DETAIL

NOT TO SCALE



RECESSED FLUSH IN FLOOR WITH FLOOR SINK

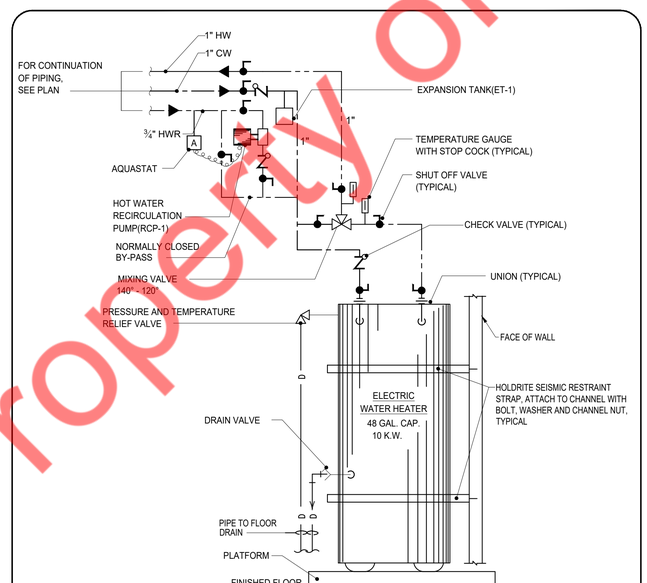
NOT TO SCALE



ROUTE PIPE INCONSPICUOUSLY AND UNOBTRUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR FURTHER INFORMATION.

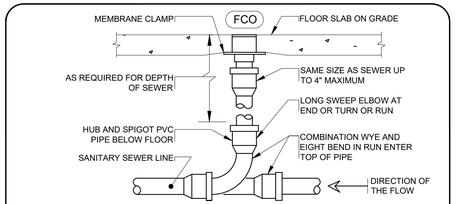
INDIRECT WASTE CONNECTION DETAIL

NOT TO SCALE



ELECTRIC WATER HEATER(WH-1)

NOT TO SCALE

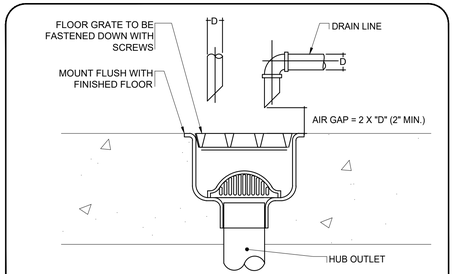


FLOOR CLEANOUT

NOT TO SCALE

FLOOR CLEANOUT DETAIL NOTES

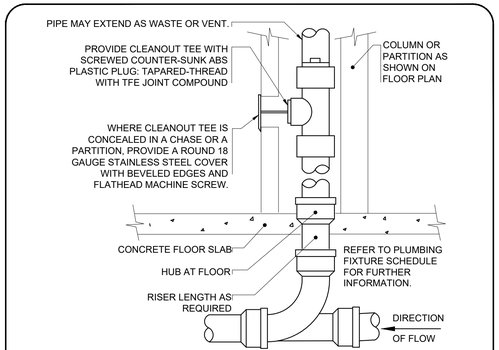
1) LOCATE CLEANOUT AT THIS LOCATIONS:
   A) BUILDING EXIT
   B) AT TURNS OF PIPES GREATER THAN 45 DEGREES
   C) AT 90' INTERVALS ON STRAIGHT RUNS
   D) WHERE IS SHOWN ON PLANS
   E) WHERE IS 18" CLEAR AROUND



FLUSH TO FLOOR SINK DETAIL

NOT TO SCALE

*NOTE- COORDINATE WITH ARCHITECT FOR PATCHING/TRENCHING THE SLAB.



WALL CLEANOUT

NOT TO SCALE

WALL CLEANOUT DETAIL NOTES

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

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PLUMBING LEGENDS, NOTES & DETAILS

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GREASE INTERCEPTOR SIZING

TAG	DESCRIPTION	QTY	DIMENSIONS			VOLUME		%USAGE	GPM	GPM
			LENGTH	WIDTH	DEPTH	CU.IN	GALLONS		1 MIN	2 MIN
29	1 COMP SINK	01	18	18	12	3,888	16.83	0.75	12.62	6.31
28	HAND SINK	01	14	10	5	700	3.03	0.75	2.27	1.14
27	3-COMP SINK	01	18	18	12	11,664	50.49	0.75	37.87	18.94
26	MOP SINK	01	24	20	10	4,800	20.78	0.75	15.58	7.79
FD	FLOOR DRAIN	01	-	-	-	-	3	-	3	1.5
								TOTAL GPM	71.34	35.68
								PROPOSED GREASE INTERCEPTOR (GI) MODEL	SCHIER GB-2	

GREASE INTERCEPTOR SCHEDULE

ITEM	SERVICE	FLOW CAPACITY (GPM)	GREASE CAPACITY (LBS)	
GREASE INTERCEPTOR (GI)	KITCHEN AREA	50	127	

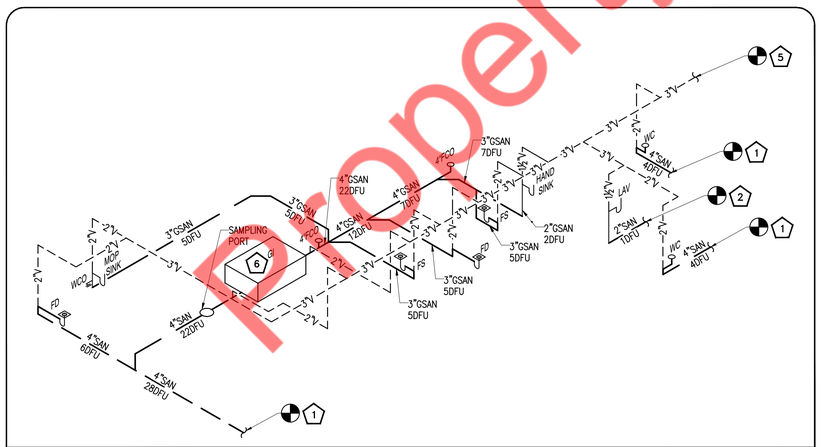
NOTE:-
1. CONTRACTOR TO PROVIDE ALL REQUIRED ACCESSORIES FOR SATISFACTORY WORKING OF GREASE TRAP AS PER SITE CONDITIONS.
2. CONTRACTOR SHALL SUBMIT PROPOSED GREASE INTERCEPTOR INSTALLATION PLANS AND SPECIFICATIONS TO LOCAL AUTHORITIES FOR THEIR APPROVAL BEFORE ACQUISITION.

SANITARY GENERAL NOTES

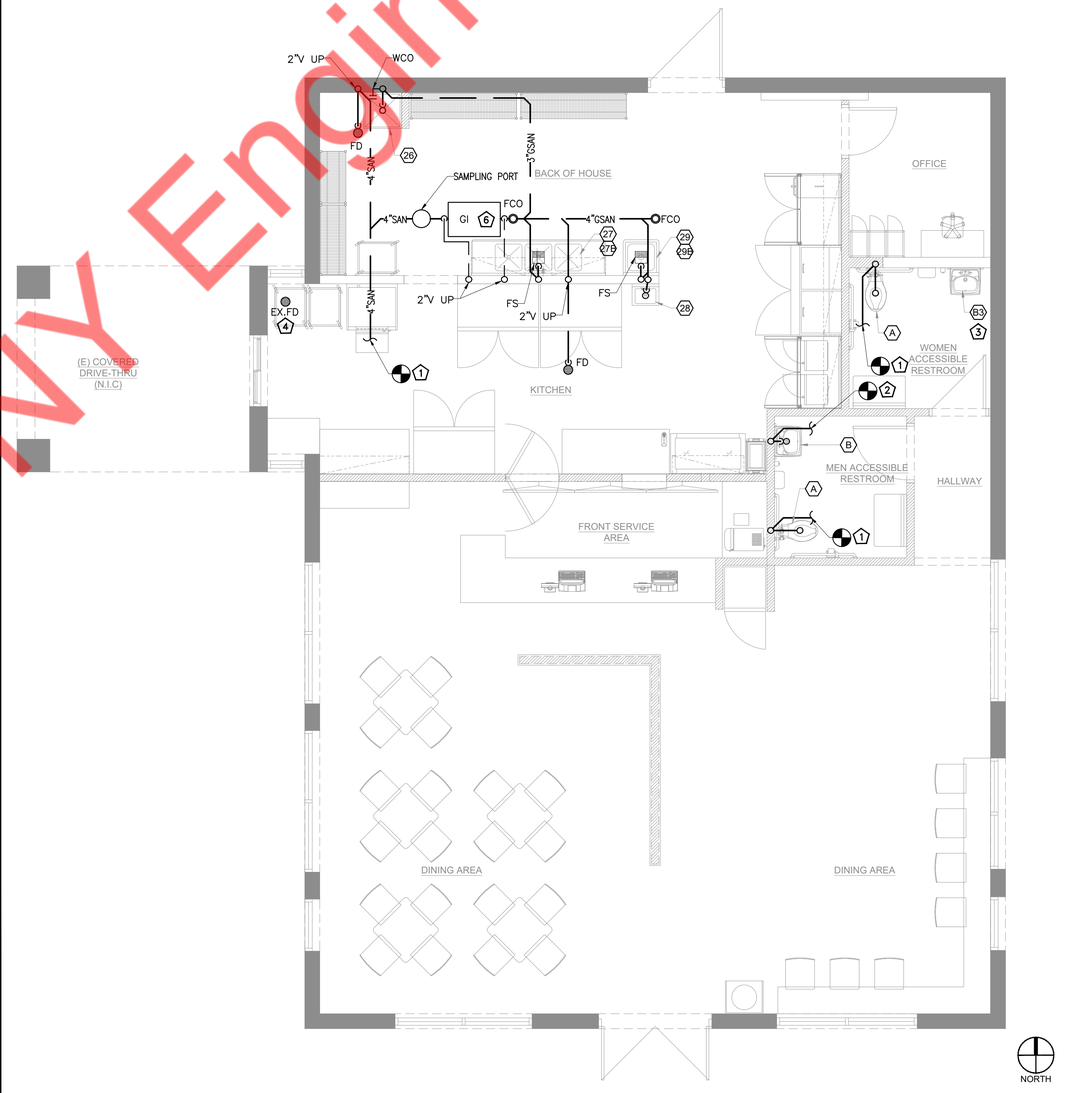
1. SLOPE OF DRAINAGE PIPING SHALL BE 1/8" PER FOOT OF RUN FOR PIPE 3" TO 6" AND 1/4" PER FOOT OF RUN FOR PIPE 2-1/2" AND SMALLER. VENT PIPING SHALL BE PITCHED TO DRAIN.
2. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
3. ALL MATERIAL INDICATED AND IMPLIED ON THESE DRAWINGS SHALL BE NEW UNLESS OTHERWISE NOTED.
4. ALL CLEANOUTS TO BE ACCESSIBLE.
7. CONTRACTOR TO FIELD VERIFY THE EXISTING SANITARY, GREASE SANITARY AND VENT LOCATION AND ROUTING. MAKE NECESSARY CHANGES TO NEW PIPING AS PER THE EXISTING SITE CONDITION.
8. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL NOT BE LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.

SANITARY PLAN & RISER KEY NOTES

1. CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY LINE IN SPACE OF ADEQUATE SIZE. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT OF EXISTING SANITARY LINE ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
2. CONNECT NEW 2" SANITARY WASTE PIPING TO EXISTING SANITARY LINE IN SPACE OF ADEQUATE SIZE. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT OF EXISTING SANITARY LINE ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
3. EXISTING LAVATORY TO REMAIN WITH EXISTING SANITARY & VENT PIPING, CONNECTION, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
4. EXISTING FLOOR DRAIN TO REMAIN WITH EXISTING SANITARY & VENT PIPING, CONNECTION, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
5. CONNECT NEW 3" VENT PIPE TO EXISTING VENT PIPE OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION & SIZE OF EXISTING VENT PIPE AND UPGRADE IF REQUIRED.
6. INSTALL NEW INTERIOR GREASE INTERCEPTOR (GI) (SCHIER GB-2). CONTRACTOR TO FIELD VERIFY THE FINAL LOCATION WITH THE OWNER/LANDLORD. INSTALLATION SHALL BE STRICT ACCORDANCE WITH CITY/COUNTY REGULATIONS.



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



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

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SANITARY PLAN & RISER

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ENERGY CONSERVATION NOTES

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

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

2. HOT WATER SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.5.1. THE MAXIMUM ALLOWABLE PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER MAXIMUM PIPING LENGTH TABLE.

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

3. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.6.1, AUTOMATIC CONTROLS SHALL BE INSTALLED THAT LIMITS THE OPERATION OF A RE-CIRCULATING PUMP AND THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.

4. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.7, PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:

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

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

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

NOTE:

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

NEW STORAGE WATER HEATER SCHEDULE	
MANUFACTURER	
MODEL	
EQUIPMENT TAG	WH-1
STATUS	NEW
CAPACITY	48 GALLONS
QUANTITY	1
KW	10
FLOW RATE	51 GPH*
ENERGY FACTOR	0.92
VOLTAGE	208/3/60
AMPERAGE	27.76
WEIGHT	172 LBS

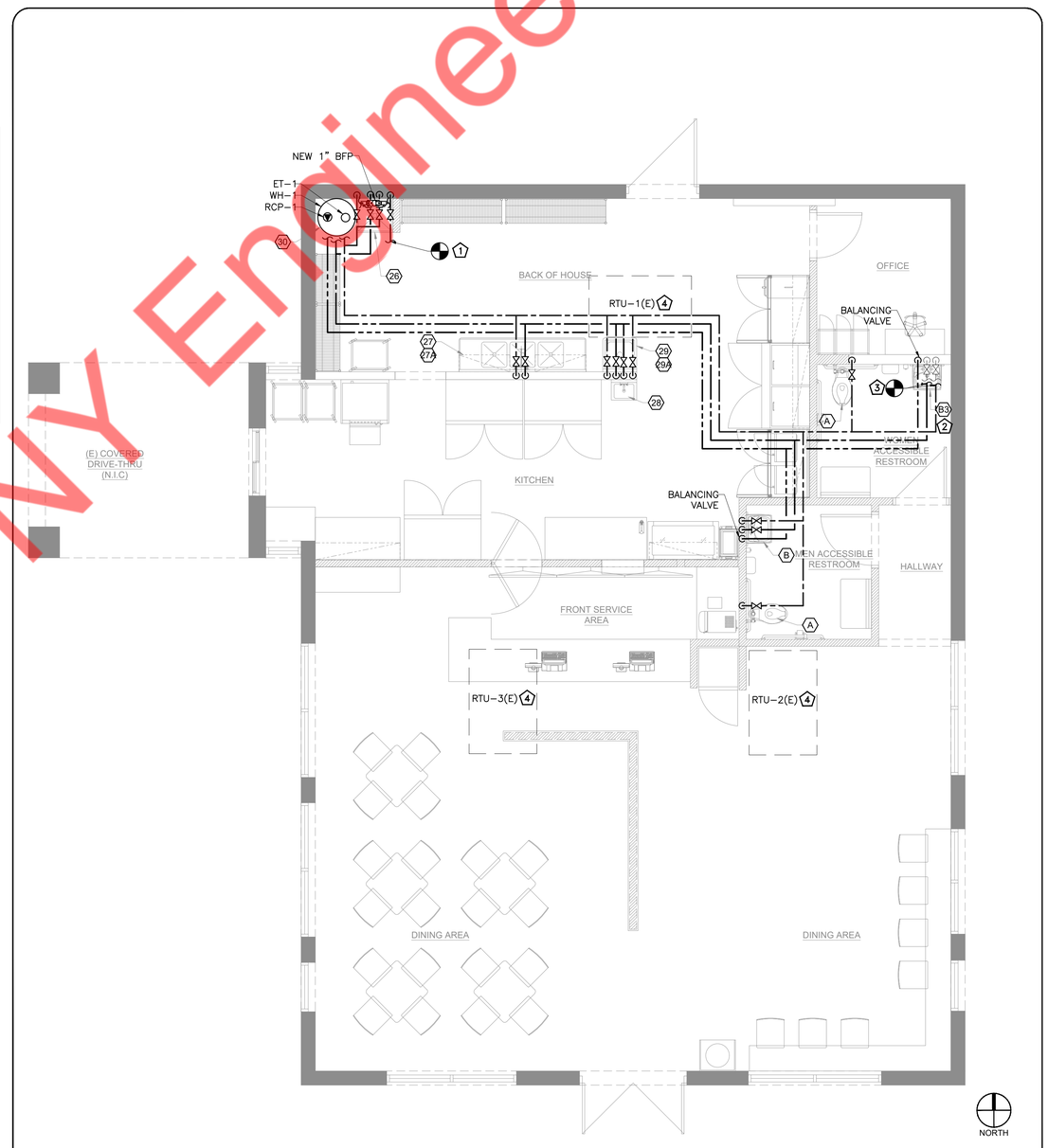
1. *SIMULTANEOUS ELEMENT OPERATION@80° F TEMPERATURE RISE.
2. CONTRACTOR TO REUSE THE EXISTING EXPANSION TANK AND FIELD VERIFY IF EXISTING EXPANSION TANK IS OF 2.0 GALLONS AND IS IN WORKING CONDITION. IF NOT THEN INSTALL NEW EXPANSION TANK AMTROL MODEL THERM-X-TROL ST-5C-DD, 2.0(ET-1) GAL PER LOCAL CODE REQUIREMENTS.

WATER GENERAL NOTES

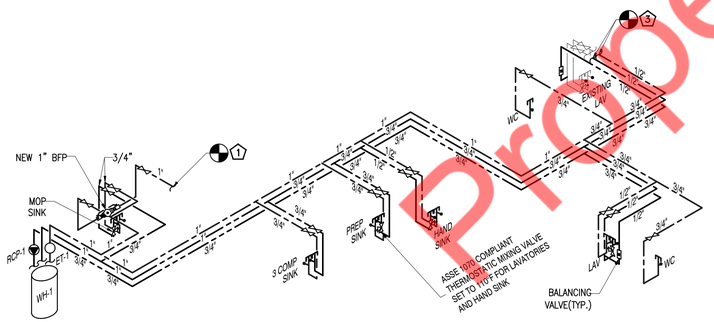
1. CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE.
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
4. T&P RELIEF DRAIN FROM WATER HEATER TO NEARBY FLOOR DRAIN.
5. ROUTE INDIRECT WASTE FROM BFP TO NEARBY FLOOR DRAIN.

WATER, GAS PLAN & RISER KEY NOTES

1. CONNECT NEW 1" CW LINE TO EXISTING CW LINE IN SPACE OF ADEQUATE SIZE. CONTRACTOR TO FIELD VERIFY THE SIZE AND LOCATION OF EXISTING CW LINE AND WATER METER AND UPGRADE IF REQUIRED.
2. EXISTING LAVATORY TO REMAIN WITH EXISTING CW/HW PIPING, ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING PIPING AND REPLACE IF REQUIRED.
3. EXTEND AND CONNECT NEW 1/2" CW/HW PIPING TO EXISTING LAVATORY PIPING AND CONNECT NEW 1/2" HW RETURN PIPING TO THE EXISTING HW PIPING AS SHOWN.
4. EXISTING RTU-1(E), RTU-2(E) & RTU-3(E) TO REMAIN WITH EXISTING GAS PIPING, GAS METER, RELATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY CONDITION OF EXISTING GAS PIPING AND REPLACE IF REQUIRED. CONTRACTOR TO MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE TO THE MECHANICAL EQUIPMENTS.



WATER AND GAS PLAN — SCALE 1/4" = 1'-0" — 1



FIXTURE FACTOR VALUE *	
2 WATER CLOSET @ 5	= 10
1 LAVATORY @ 2	= 2
1 LAVATORY (E) @ 2	= 2
1 MOP SINK @ 3	= 3
1 HAND SINK @ 2	= 2
1 3-COMP SINK @ 4	= 4
1 PREP SINK @ 1.4	= 1.4
TOTAL	= 24.4

* TABLE E103.3(2) OF 2018 INTERNATIONAL PLUMBING CODE
1" WATER DISTRIBUTION LINE SIZE REQUIRED.

WATER RISER — SCALE N.T.S. — 2

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WATER AND GAS PLAN & RISERS

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