

SCOPE OF WORK

REUSE ONE EXISTING 5.0 TON ELECTRIC HEAT SPLIT SYSTEM AND PROVIDE ONE NEW 4.0 TON GAS HEAT SPLIT SYSTEM UNIT. PROVIDE NEW DUCTWORK AND PROVIDE NECESSARY ACCESSORIES FOR COMPLETE HVAC SYSTEMS.

PROVIDE TWO NEW BATHROOM EXHAUST FANS AND ONE NEW GENERAL EXHAUST FAN.

COORDINATE WITH GC ANY ADDITIONAL REFRIGERATION WORK REQUIRED AND WORK REQUIRED ON KITCHEN EXHAUST SYSTEMS AND WITH GC AND PLUMBING CONTRACTOR PROVIDING CONDENSATE LINES FOR MECHANICAL EQUIPMENT AND GAS FLUE FOR WATER HEATERS.

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 RISERS AND DRIPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.
- E. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO MANUFACTURERS STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
- F. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
- G. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN THE RETURN AIR PLENUM. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL EXPOSED WIRING IN THE PLENUM SHALL BE PLENUM RATED.
- H. VERIFY LOCATION OF PERMISSIBLE NEW STRUCTURAL ROOF PENETRATIONS AND ADAPT THE REQUIRED DUCTS ACCORDINGLY. THE OPENINGS MUST BE LOCATED USING A REBAR LOCATOR, TRYING TO LEAVE A TRANSVERSE BAR WITHIN 4" FROM THE OPENING. LOCATE OPENINGS AT MID-DISTANCE BETWEEN THE STEMS OF THE DOUBLE TEE AND LONGITUDINAL REINFORCEMENT SHALL NEVER BE CUT. CALL THE ARCHITECT'S OFFICE IN CASE OF UNEXPECTED DIFFICULTIES.
- I. ALL A/C AND FRESH AIR ROUND EXPOSED DUCTS WILL BE SPIRAL GALVANIZED AND READY FOR PAINTING. ALL RECTANGULAR DUCTS OVER CEILINGS MAY BE SHEET METAL WITH EXTERNAL INSULATION AND ALL EXPOSED ROUND SHEET METAL DUCTS SHALL BE INTERNALLY INSULATED.
- J. IF APPLICABLE CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR KITCHEN VENTILATION SYSTEM INCLUDING TYPE 1 HOOD AND FOR THE WALK-IN COOLER & FREEZER.
- 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.

MECHANICAL PLAN NOTES

- A. REUSE ONE EXISTING 5.0 TON ELECTRIC HEAT SPLIT SYSTEM AND PROVIDE ONE NEW 4.0 TON GAS HEAT SPLIT SYSTEM UNIT. PROVIDE NEW DUCTWORKS AS SHOWN. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN AIR DUCT CONNECTIONS. INSTALL FIRE DAMPERS IN ANY FIRE WALLS AND BETWEEN FLOORS. PROVIDE DUCTWORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. REFER TO ROOF TOP UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.
- B. FOR SYSTEM OVER 2,000 CFM CHECK FOR DUCT MOUNTED AIR SMOKE DETECTORS AND THAT MEET THE REQUIREMENTS OF 2021 IMC SEC. 606.2.1, INTERLOCKED TO SHUTDOWN ROOF TOP UNIT UPON DETECTION OF SMOKE. IF NECESSARY PROVIDE SMOKE DETECTOR WITH AN ANNUNCIATOR, ALARM AND POWER L.E.D.'S FOR VISIBLE AND AUDIBLE ALARM SIGNAL, AND VISIBLE TROUBLE SIGNAL. MOUNT ANNUNCIATOR ON ROOM SIDE OF CEILING.
- C. ALL DUCTS SHALL BE MINIMUM 26 GAUGE SHEET METAL WITH EXTERNAL DUCT WRAP INSULATION FOR CONCEALED DUCTS AND ALL EXPOSED DUCTS WITH INTERNAL INSULATION. ALL DUCTS TO BE MANUFACTURED AND INSTALLED ACCORDING TO ASHRAE AND SMACNA METAL DUCT CONSTRUCTION STANDARD, LATEST EDITION. ALL MATERIALS WILL CONFORM TO NFPA 90A.
- D. THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE TYPE. MOUNT THERMOSTAT 48" A.F.F. COORDINATE LOCATION OF THERMOSTAT.
- E. ALL INTERIOR AIR DUCTS WITH INSULATION SHALL HAVE A MINIMUM OF THICKNESS OF 1.5", R-8 INSULATION. EXTERIOR AIR DUCTS TO HAVE R-8 INSULATION ACCORDING TO INTERNATIONAL ENERGY CONSERVATION CODE - 2015.
- F. 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.
- G. ALL HVAC CONDENSATE DRAINS WILL BE PVC FULL DIAMETER OF OUTLET AND WILL TERMINATE IN THE APPROVED PLACE OF DISPOSAL.
- H. ALL EQUIPMENT AND MATERIALS WILL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND ACCORDING TO THE BEST PRACTICE.
- I. 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.
- J. ALL HVAC CONTROLS AND CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
- K. 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.

THERMOSTATIC CONTROLS

C403.4.1 THERMOSTATIC CONTROLS (MANDATORY)
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, NOT FEWER THAN ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED THAT BOTH OF THE FOLLOWING CONDITIONS ARE MET:

THE PERIMETER SYSTEM INCLUDES NOT FEWER THAN ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ± 45 DEGREES) (0.6 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM). THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.4.1.2 DEADBAND (MANDATORY)
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LESS THAN 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.
EXCEPTIONS:
THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.4.1.3 SETPOINT OVERLAP RESTRICTION (MANDATORY)
WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.4.1.2.

C403.4.2 OFF-HOUR CONTROLS (MANDATORY)
EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.
EXCEPTIONS:
ZONES THAT WILL BE OPERATED CONTINUOUSLY
ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A MANUAL SHUTOFF SWITCH LOCATED WITH READY ACCESS.

C403.4.2.1 THERMOSTATIC SETBACK (MANDATORY)
THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED 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).

C403.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN (MANDATORY)
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 NOT FEWER THAN 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 CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.4.2.3 AUTOMATIC START (MANDATORY)
AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM, THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

CITY OF MOBILE, ALABAMA BUILDING DEP. NOTES

- 1. ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2021 IBC AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.
- 2. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- 3. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2021 IMC 401.
- 4. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
- 5. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
A. STANDARDS OF HEATING 2021 INTERNATIONAL MECHANICAL CODE - 309.1
B. DUCT CONSTRUCTION AND INSTALLATION 2021 INTERNATIONAL MECHANICAL CODE - 603
C. AIR INTAKES, EXHAUSTS AND RELIEF 2021 INTERNATIONAL MECHANICAL CODE - 401.5
D. AIR FILTERS - 2021 INTERNATIONAL MECHANICAL CODE - 605
E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2021 INTERNATIONAL MECHANICAL CODE - 606
F. GAS FIRED EQUIPMENT - 2021 INTERNATIONAL FUEL GAS CODE
- 6. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON 68 DEG. FAHRENHEIT.
- 7. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2021 IMC 403.3
- 8. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- 9. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 10. SMOKE DETECTOR SHALL MEET UL268A.
- 11. VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD - IMC 2021 606.1. CONTRACTOR SHALL SUBMIT THE AIR BALANCE REPORT TO THE INSPECTOR.

SPLIT (GAS HEAT) SYSTEM SCHEDULE

UNIT TAG	AHU-2(N)
UNIT TYPE	GAS HEAT
AREA SERVED	REFER PLAN
SUPPLY AIR (CFM)	1545
OUTSIDE AIR (CFM)	400
STATIC PRESS. (E.S.P INCH OF W.C.)	0.5
MANUFACTURER	CARRIER
MODEL NO.	CAPMP4821A + 58SC0A070E21-16 (OR EQUIVALENT)
WEIGHT, LBS	150
VOLTS/PH/Hz	115/1/60
M.C.A. / MAX. CKT. BRKR. AMPS	10/15
TOTAL COOLING CAPACITY (MBH)	45.5
TOTAL SENSIBLE CAPACITY (MBH)	33.67
NOM. HEATING CAPACITY IN GAS (MBH)	66
NOM. HEATING CAPACITY OF GAS (MBH)	53
AFUE (%)	80
UNIT TAG	ACCU-2(N)
AIR HANDLER SERVED	AHU-2(N)
CAPACITY	4.0 TR
REFRIGERANT	410-A
TOT. COOLING CAP. (MBH)	45.5
COOLING SENS. CAP. (MBH)	33.67
COMPRESSOR RLA/LRA	18.5/124
OUTDOOR FAN FLA	1.4
VOLTS-PH-HZ	208/230-1-60
M.C.A. & MAX. CKT. BRKR. AMPS	24.5 & 40
MANUFACTURER	CARRIER
MODEL	24SCA48N003 (OR EQUIVALENT)
SEER	14
WEIGHT, LBS	SAE

NEW AHU-2(N) NOTES:-
1. PROVIDE LOW/HIGH PRESSURE CONTROL.
2. COORDINATE FINAL LOCATION OF INDOOR AND OUTDOOR UNIT WITH ARCHITECT/OWNER/LANDLORD.
3. SUPPLY AIR CFM BASED ON HIGH SPEED.
4. REFRIGERANT R410A SHALL BE PROVIDED.
5. PROVIDE LOW AMBIENT CONTROL.
6. PROVIDE HOT GAS BYPASS.
7. ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
8. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURERS STANDARD RECOMMENDED LENGTH.
9. PROVIDE DRAIN PAN WITH WATER LEAK DETECTOR.
10. VERIFY ALL DATA WITH MANUFACTURER PRIOR TO ORDERING EQUIPMENT.
11. PROVIDE CONDENSATE DRAIN PUMP IF REQUIRED. ROUTE CONDENSATE DRAIN FROM AHU-2(N) TO THE NEAREST PLUMBING DRAIN POINT WITH APPROVED MANNER. COORDINATE WITH PLUMBING CONTRACTOR.
12. PROVIDE GAS FLUE VENTS AND COMBUSTION AIR INTAKES TO AHUs AS PER MANUFACTURER'S INSTRUCTION.

SPLIT SYSTEM SCHEDULE

UNIT TAG	AHU-1(E)
UNIT TYPE	ELECTRIC
AREA SERVED	REFER PLAN
SUPPLY AIR (CFM)	2000
OUTSIDE AIR (CFM)	325
STATIC PRESS. (E.S.P INCH OF W.C.)	S.A.E.
MANUFACTURER	CARRIER
MODEL NO.	FB4CNP061
ELECTRIC HEATER (KW)	5.0 (V.I.F)
WEIGHT, LBS	S.A.E.
VOLTS/PH/Hz	208-230/1/60 (V.I.F)
M.C.A. / MAX. CKT. BRKR. AMPS	25.6/30.0 (V.I.F)
UNIT TAG	ACCU-1(E)
AIR HANDLER SERVED	AHU-1(E)
CAPACITY	S.A.E.
REFRIGERANT	S.A.E.
TOT. COOLING CAP. (MBH)	S.A.E.
COMPRESSOR (AMPS)	S.A.E.
OUTDOOR FAN FLA	S.A.E.
M.C.A. / MAX. CKT. BRKR. AMPS	S.A.E. 60 (V.I.F)
MANUFACTURER	S.A.E.
MODEL	S.A.E.
SEER	S.A.E.
VOLTS/PH/Hz	S.A.E.
WEIGHT, LBS	S.A.E.

- EXISTING AHU-1(E) NOTES:-
1. EXISTING AHU-1(E) WITH ALL ITS ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
2. CONTRACTOR TO ADJUST FRESH AIR DAMPER TO PROVIDE OUTSIDE AIR AS MENTIONED IN VENTILATION REQUIREMENT TABLE.
3. S.A.E. - SAME AS EXISTING. V.I.F. - VERIFY IN FIELD.
4. CONTRACTOR TO FIELD VERIFY IF AHU-1 (E) IS WORKING AT 100% RATED CAPACITIES/LOADS. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF THE UNIT.
6. IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSORS COMPATIBLE WITH EXISTING AHU-1 (E). COORDINATE FINAL LOCATIONS OF T-STAT AND T-SENSORS WITH ARCHITECT/OWNER.
7. CLEAN/REPLACE RETURN AIR FILTERS.

FAN SCHEDULE

DESIGNATION	EF-1(N)	BEF-1(N)	BEF-2(N)
STATUS	NEW	NEW	NEW
QUANTITY	1	1	1
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	CSP-A700	SP-A90	SP-A90
CFM	530 CFM AT 0.6" W.G. ESP	70 CFM AT 0.3" W.G. ESP	70 CFM AT 0.3" W.G. ESP
AMPS	3.3	0.45	0.45
ACCESSORIES	BDD	BDD	BDD
WEIGHT (LBS)	25	15	15
VOLTAGE	115/1/60	115/1/60	115/1/60
NOTES	1,2,4	1,2,3	1,2,3

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

OCCUPANCY CALCULATION PER 2021 IMC TABLE 403.3.1.1

SEATING AREA	957 SQ. FT.	@70 PEOPLE/1000SQ.FT.	50 PEOPLE
FRONT SERVICE	298 SQ. FT.	@20 PEOPLE/1000SQ.FT.	4 PEOPLE
BOH	452 SQ. FT.	@20 PEOPLE/1000SQ.FT.	4 PEOPLE
			TOTAL 58 PEOPLE

VENTILATION REQUIREMENTS PER 2021 IMC TABLE 403.3.1.1

OUTSIDE AIR CALCULATIONS			
SEATING AREA	957 SQ. FT. X 0.18 CFM/SQ. FT. =	172 CFM	
SEATING AREA	50 PEOPLE X 7.5 CFM/PEOPLE =	375 CFM	
FRONT SERVICE	298 SQ. FT. X 0.12 CFM/SQ. FT. =	36 CFM	
FRONT SERVICE	4 PEOPLE X 7.5 CFM/PEOPLE =	30 CFM	
BOH	452 SQ. FT. X 0.12 CFM/SQ. FT. =	54 CFM	
BOH	4 PEOPLE X 7.5 CFM/PEOPLE =	30 CFM	
HALLWAY	174 SQ. FT. X 0.06 CFM/SQ. FT. =	10 CFM	
OUTSIDE AIR REQUIRED		707 CFM	

EXHAUST AIR CALCULATIONS

FRONT SERVICE AND BOH	750 SQ. FT. X 0.7 CFM/SQ. FT. =	525 CFM
EXHAUST AIR REQUIRED		525 CFM

AIR BALANCE	
AHU-1(E) - O/A PROVIDED	+325 CFM
AHU-2(N) - O/A PROVIDED	+400 CFM
BEF-1(N) & BEF-2(N) @70 CFM EACH	-140 CFM
EF-1(N)	-530 CFM
BUILDING PRESSURE	+55 CFM

NECK SIZE TABLE - A

FLEX DUCT DIA	CFM RANGE
06"	0-100
08"	101-200
010"	201-400
012"	401-600

DIFFUSER SCHEDULE

MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
DESIGNATION	A	A1	B	R	R1	E	E1
USE	SUPPLY	SUPPLY	SUPPLY	RETURN	SUPPLY	EXHAUST	EXHAUST
MODEL	TDC-AA	300 FS	TDC-AA	56FL	56FL	56FL	56FL
MOUNTING	SAT CEILING	DUCT/WALL	HARD CEILING	SAT CEILING	WALL	SAT CEILING	DUCT
LOCATION	ANY	AS SHOWN	ANY	ANY	AS SHOWN	ANY	AS SHOWN
FACE SIZE	24" X 24"	AS SHOWN	12" X 12"	24" X 24"	AS SHOWN	24" X 24"	AS SHOWN
NECK SIZE	REFER TABLE-A	-	REFER TABLE-A	-	-	-	-
FRAME TYPE	LAYIN	FLANGED	FLANGED	LAY IN	FLANGED	LAY IN	FLANGED
NOISE CRITERIA	<30	<30	<30	<30	<30	<30	<30
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

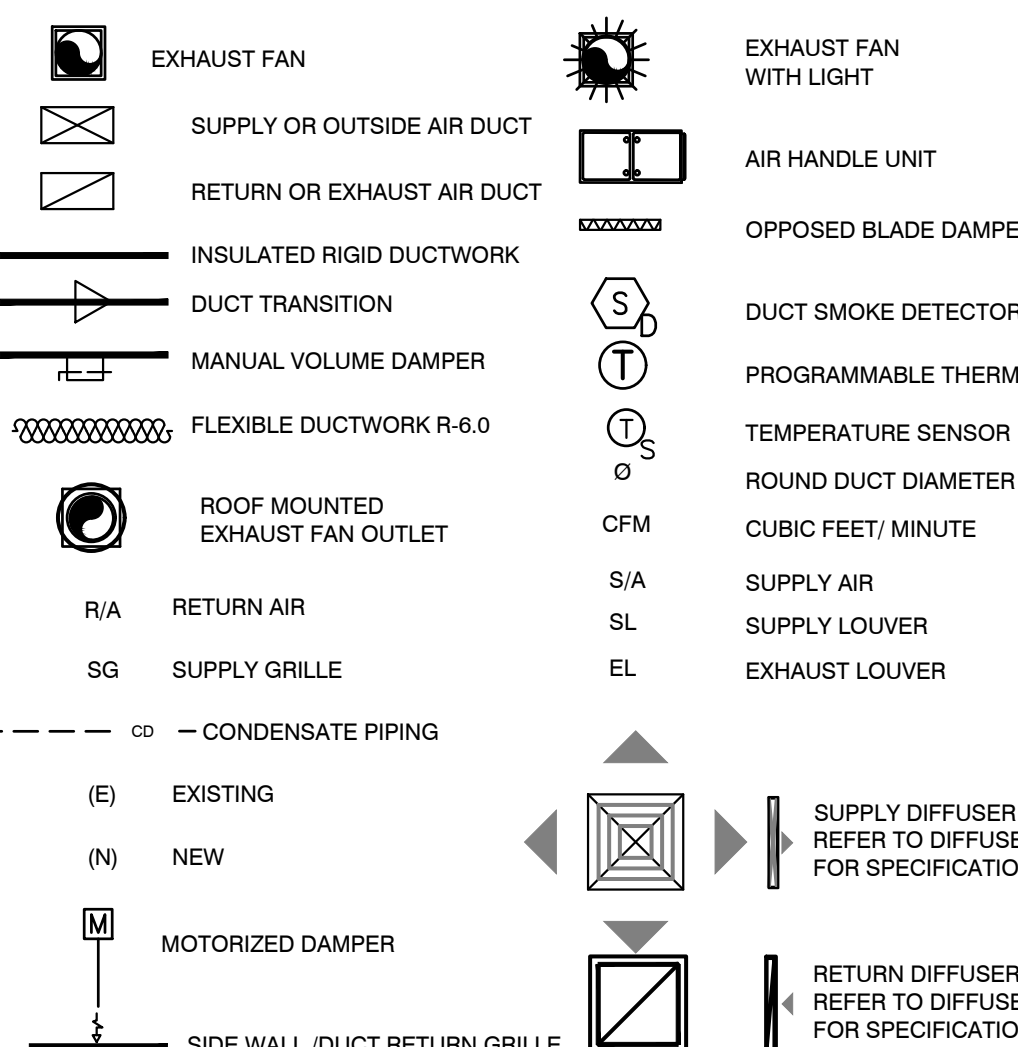
- NOTES:-
1. MAX. NC LEVEL 30 OR LESS.
2. PROVIDE SQUARE TO ROUND NECK ADAPTOR.
3. COORDINATE WITH ARCHITECT FOR PAINT AND FINISH.
4. PROVIDE 4-WAY AIR THROW PATTERN UNLESS NOTED OR INDICATED.
5. PROVIDE INSULATED BACKS ON ALL DIFFUSERS.

WALL LOUVER SCHEDULE

MANUFACTURER	GREENHECK	GREENHECK
TAG	SL-1	EL-1
APPLICATION	INTAKE	EXHAUST
MODEL	EDD-601 (OR EQUIVALENT)	EDJ-401 (OR EQUIVALENT)
VOLUME (CFM)	725	530
PRESSURE DROP	0.07 (IN W.C.)	0.06 (IN W.C.)
WIDTH (IN)	14	24
HEIGHT (IN)	28	14
DEPTH (IN)	6	4
FREE AREA VELOCITY (FT/MIN)	640	656
FREE AREA (SQ.FT.)	1.1	0.8

- NOTES:-
1. PRESSURE DROP ACROSS LOUVER SHALL NOT EXCEEDS THE PRESSURE DROP OF 0.1 (IN. WC)

MECHANICAL SYMBOLS



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

HVAC PIPING INSULATION NOTES

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

MINIMUM REFRIGERANT PIPE INSULATION THICKNESS (IN.)

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

NY ENGINEERS

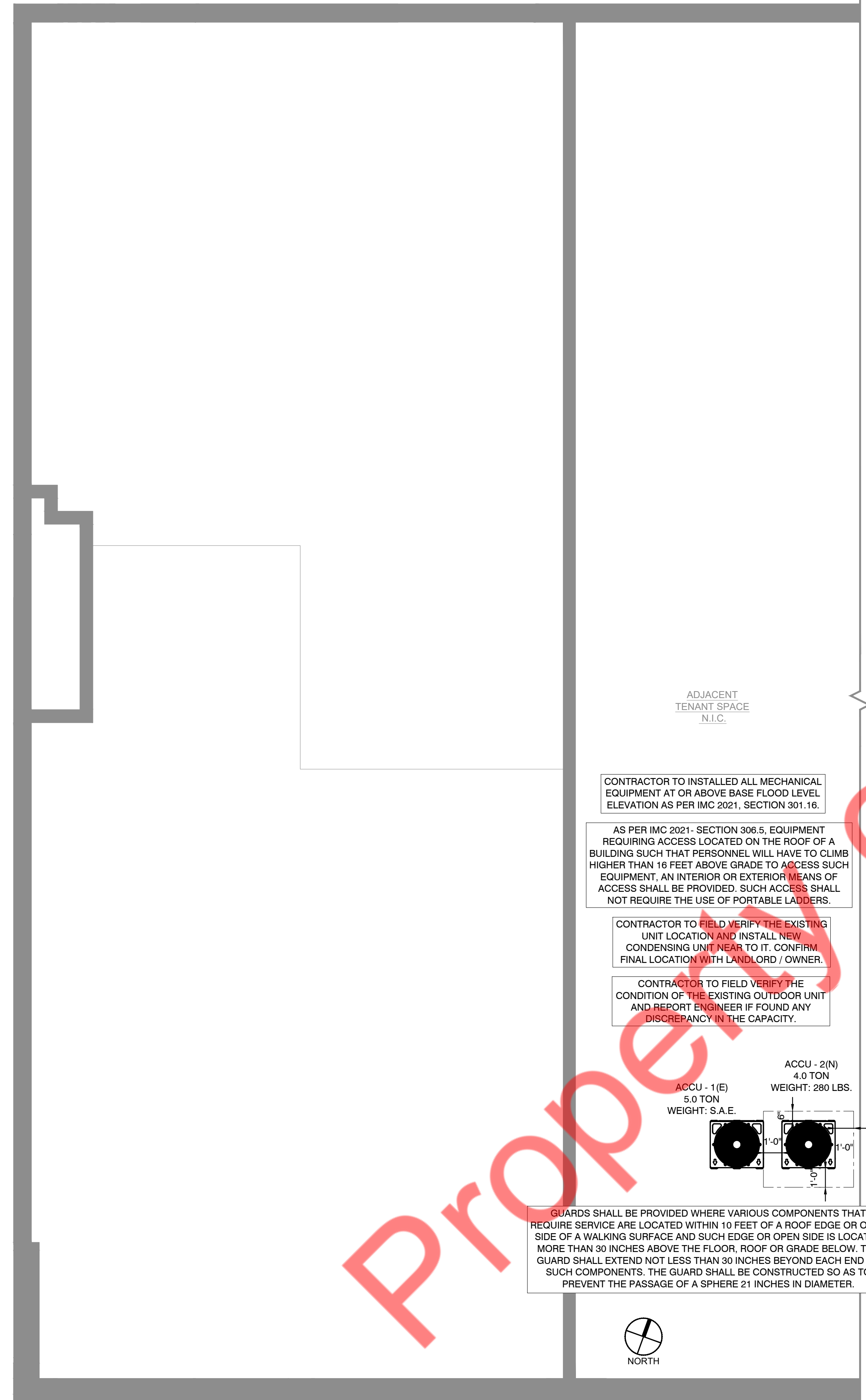
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PROJECT

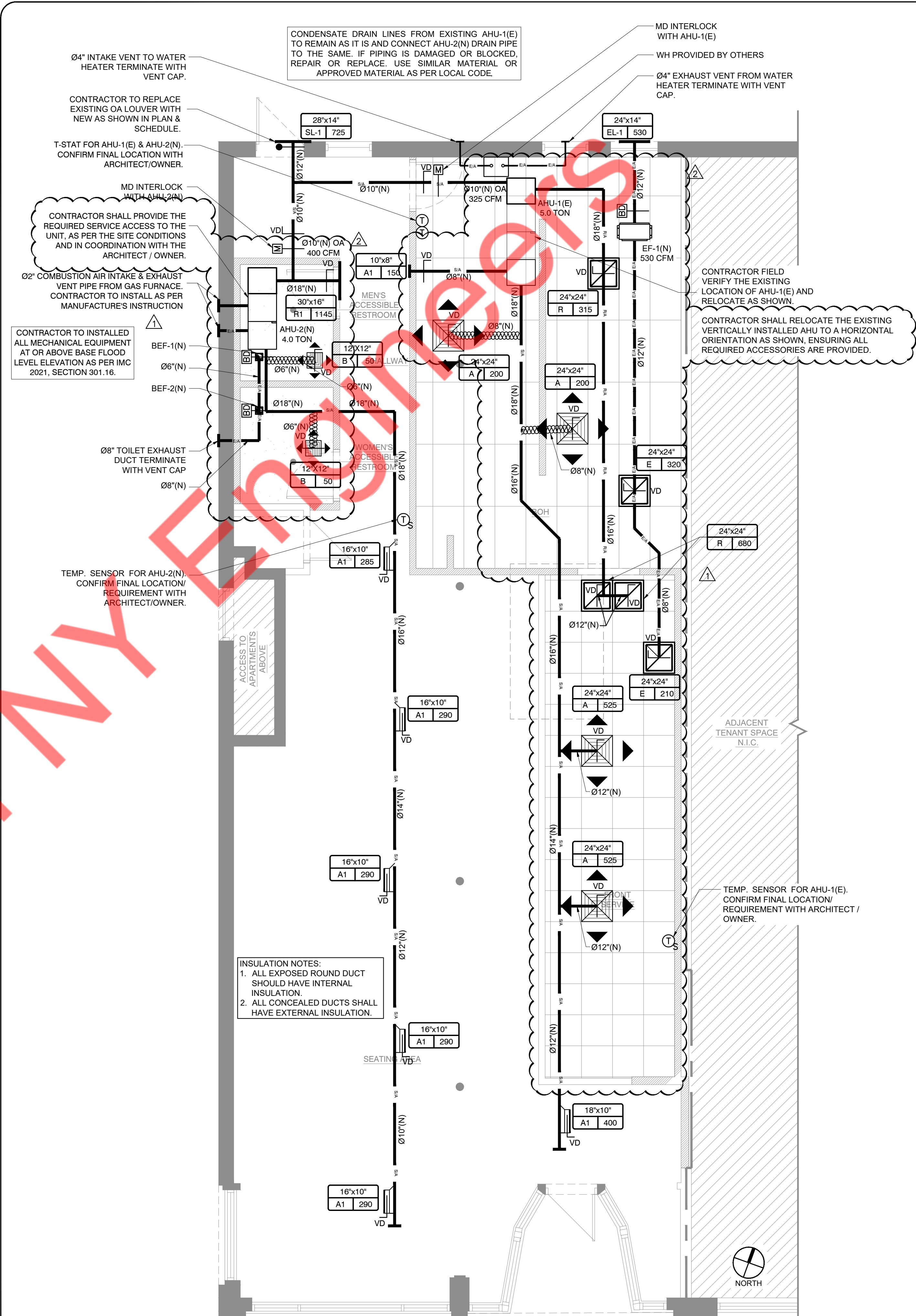
REVISIONS DATES:

04/10/24	BD COMMENTS
12/03/24	PROJECT COORD

PROFESSIONAL SEAL



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



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

NY ENGINEERS

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PROJECT

REVISIONS DATES:

04/10/24	BD COMMENTS
12/03/24	PROJECT COORD.

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HVAC FLOOR PLAN

M-2

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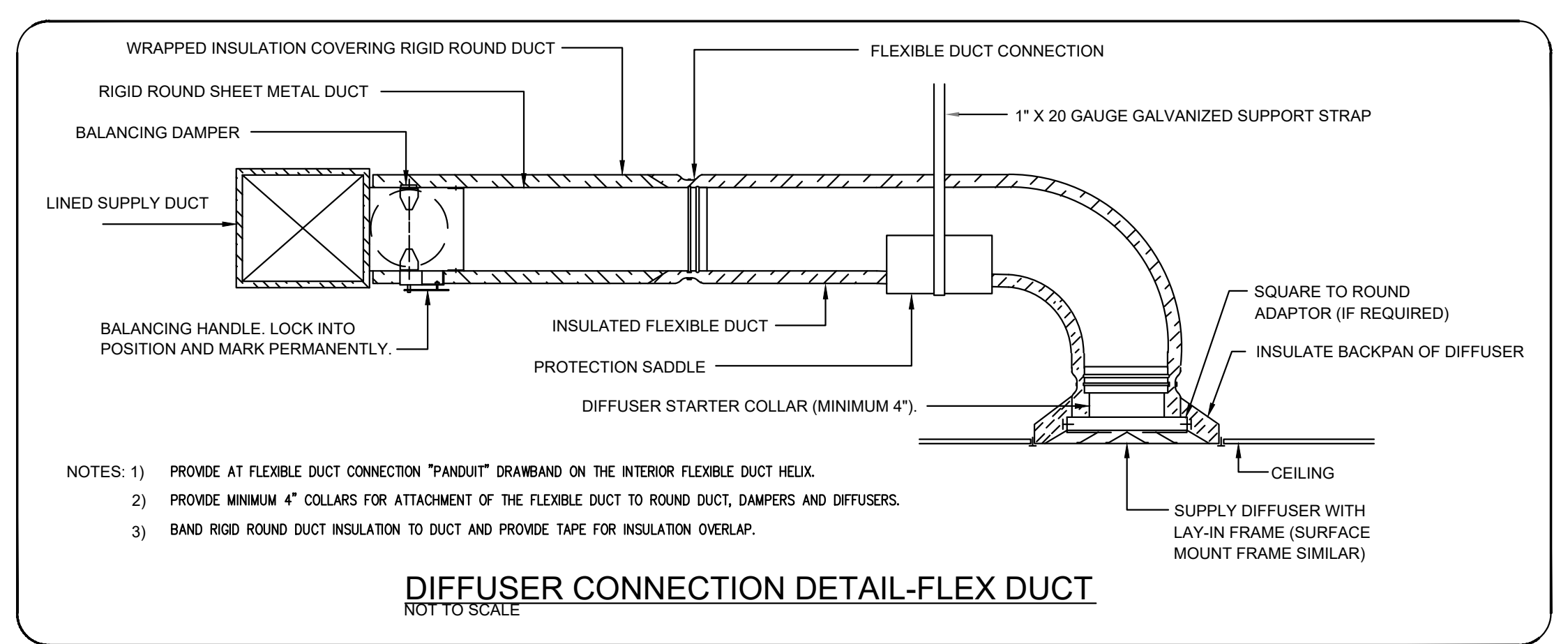
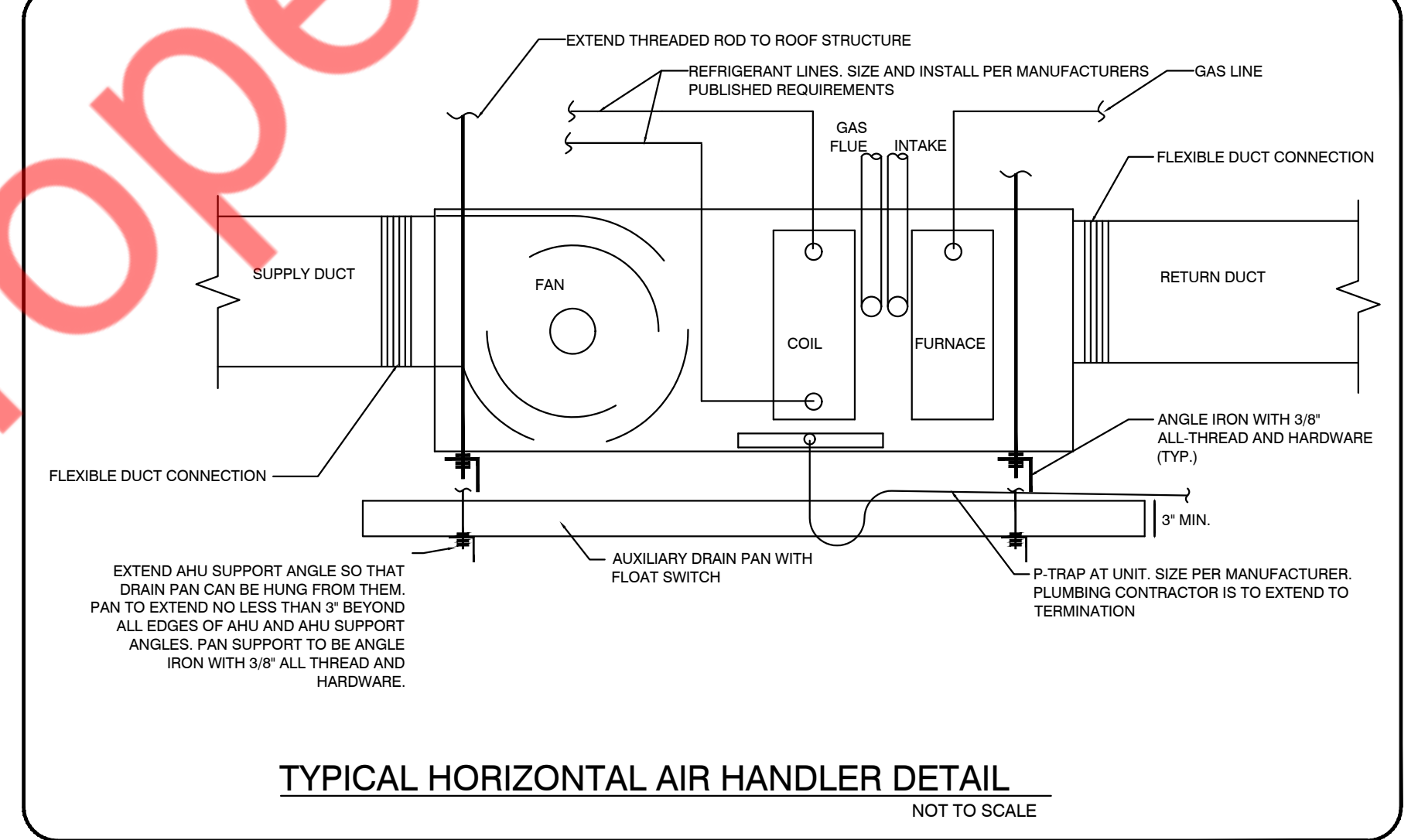
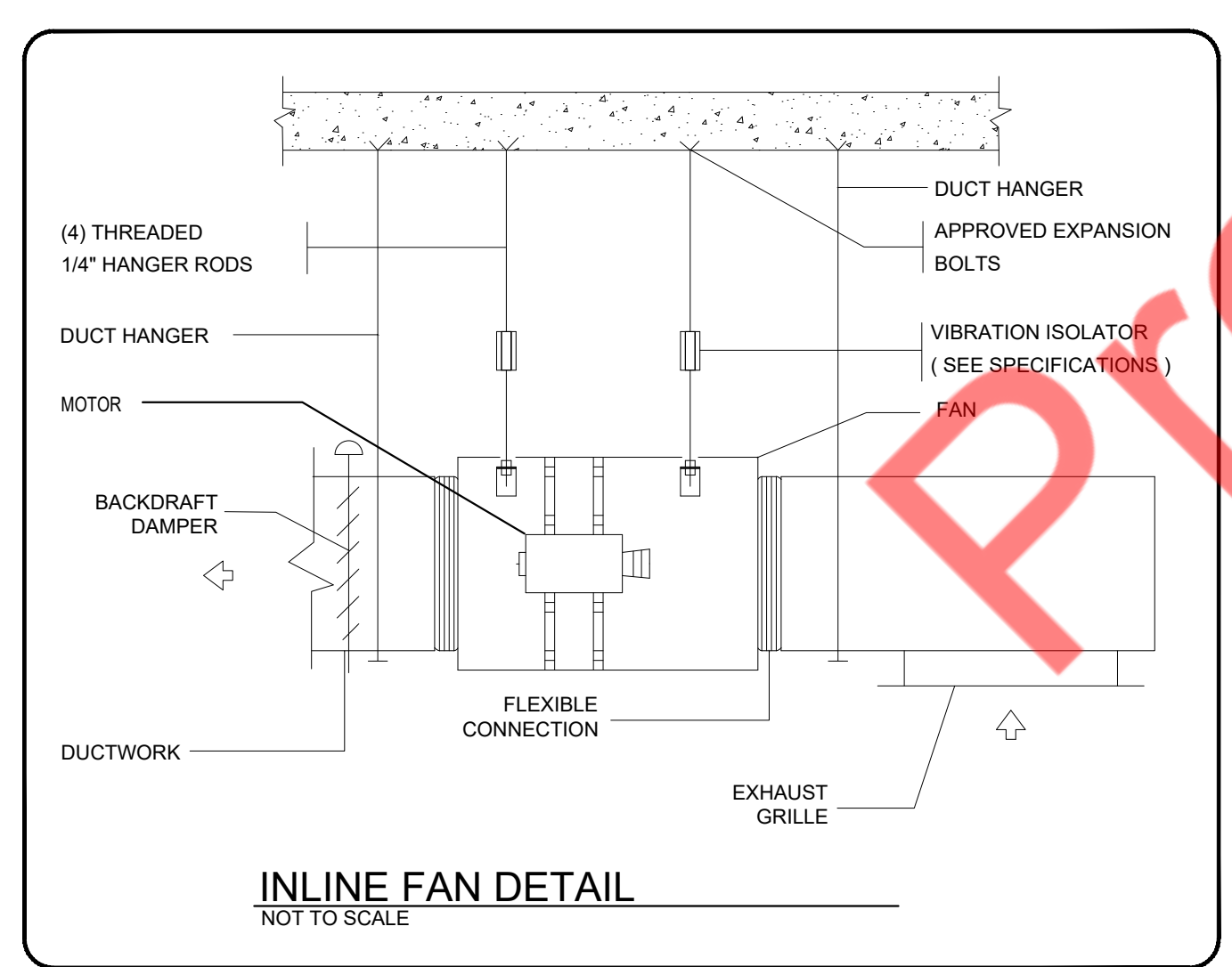
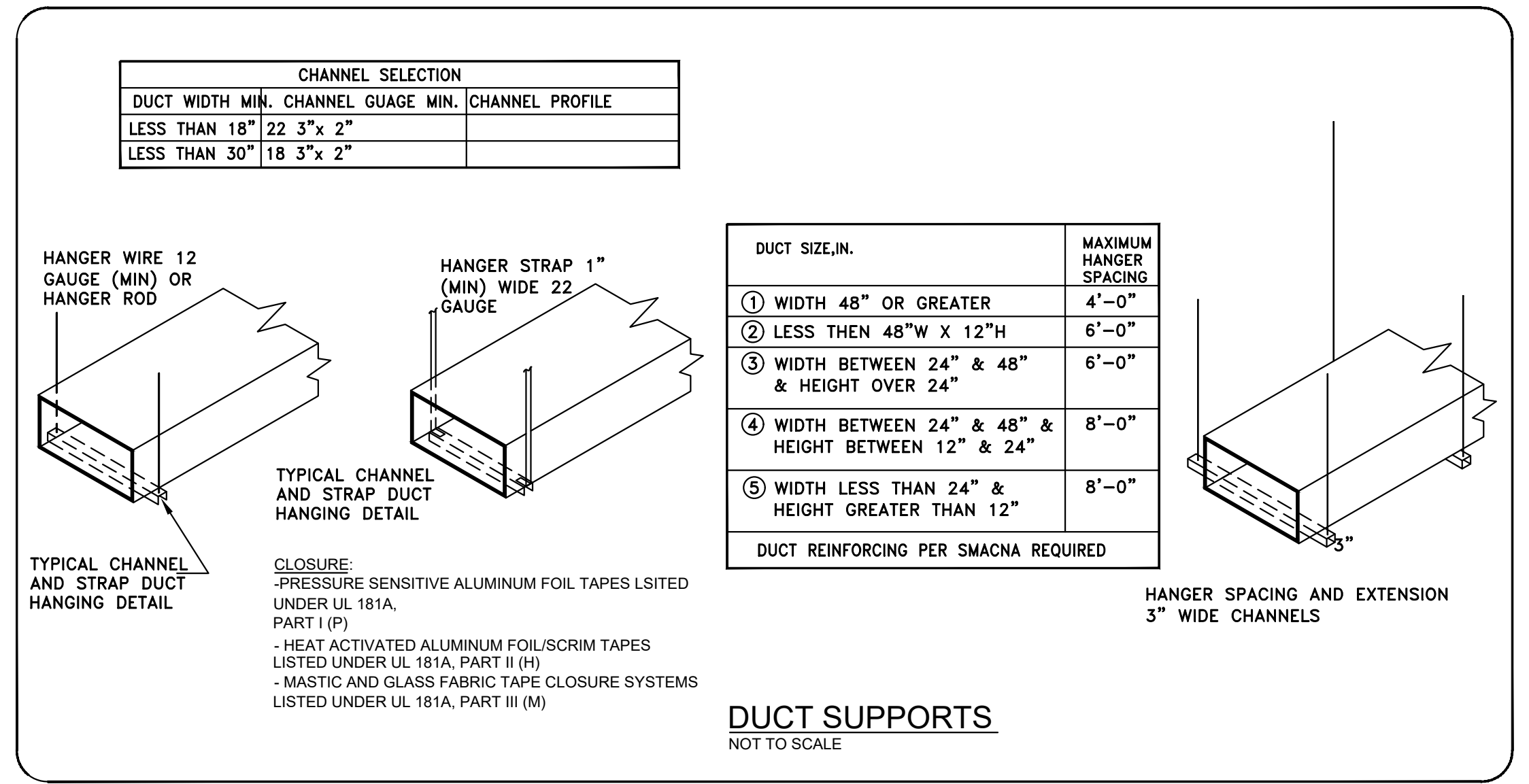
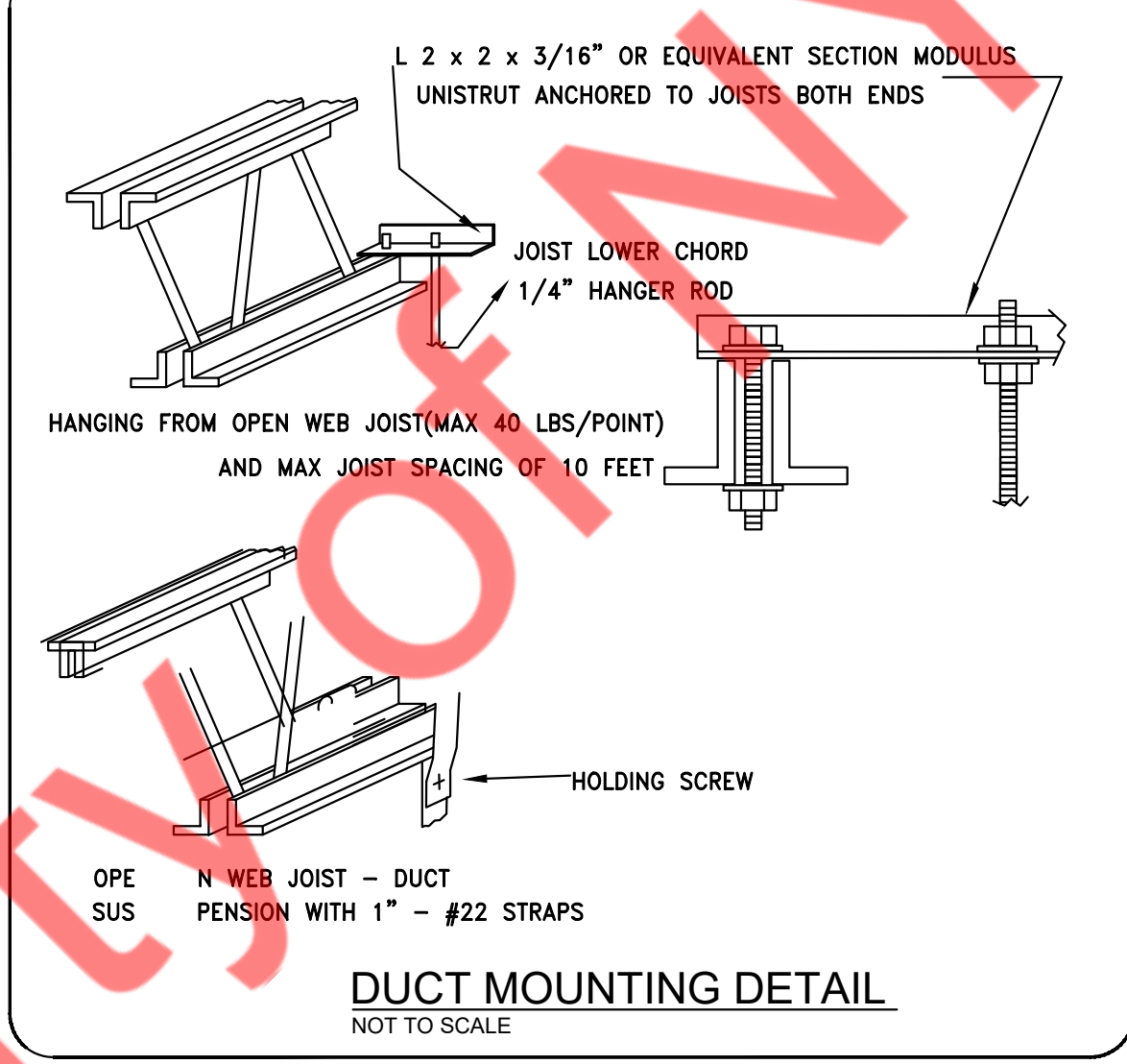
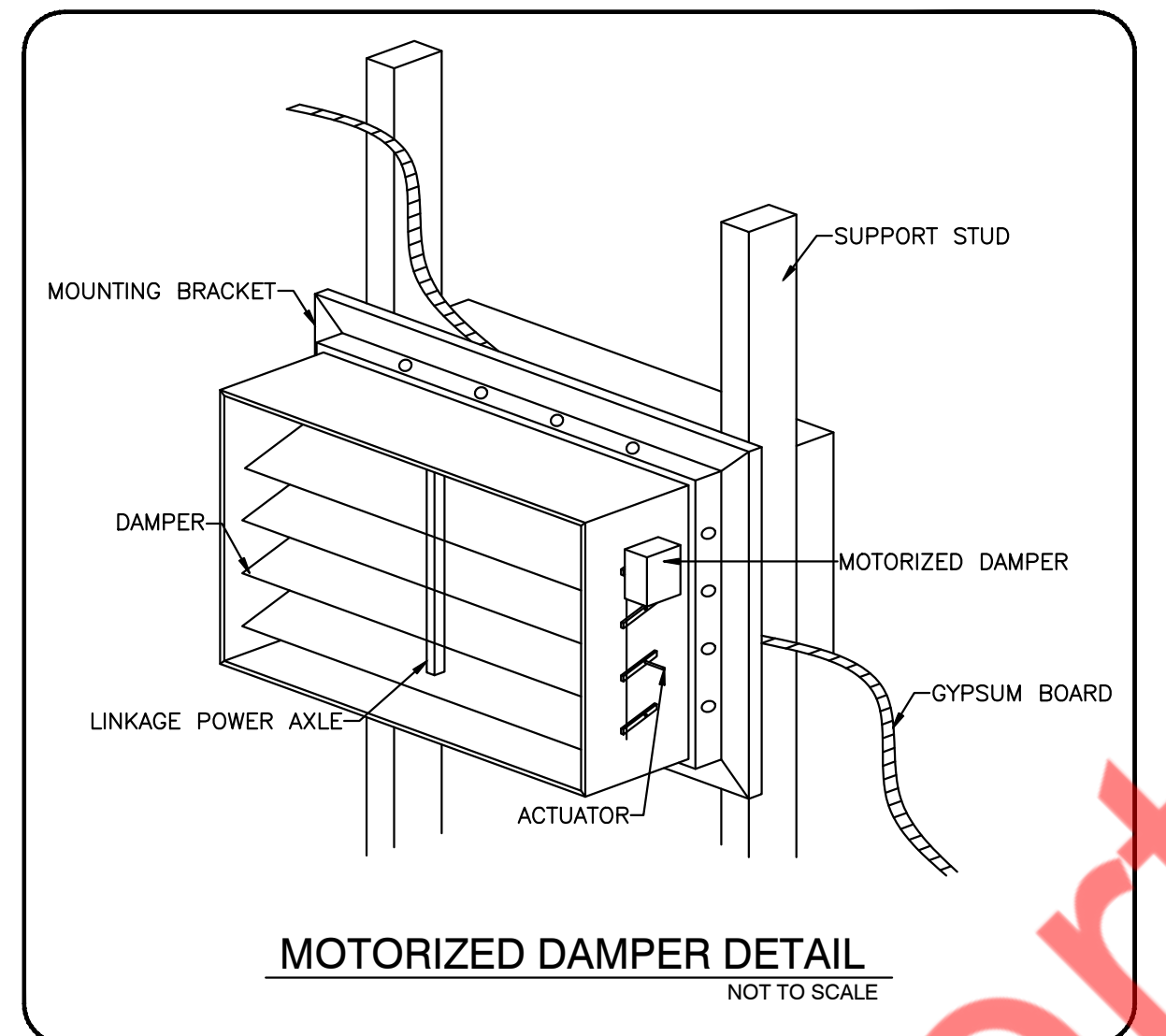
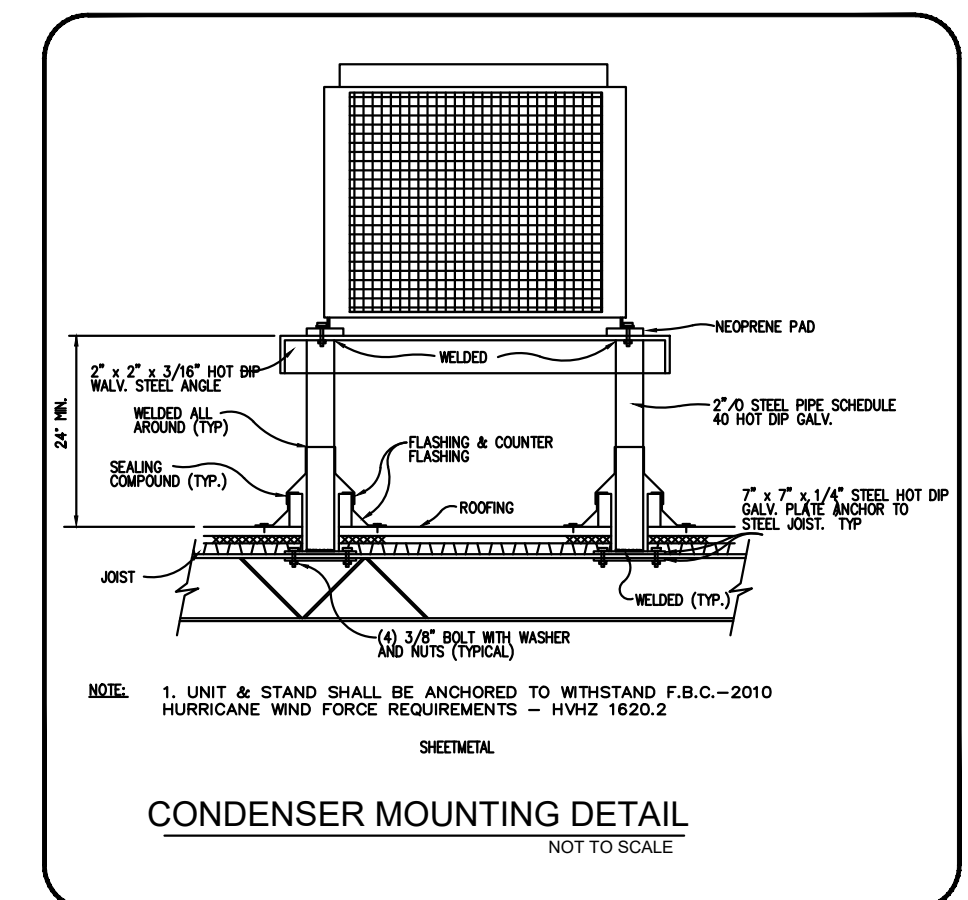
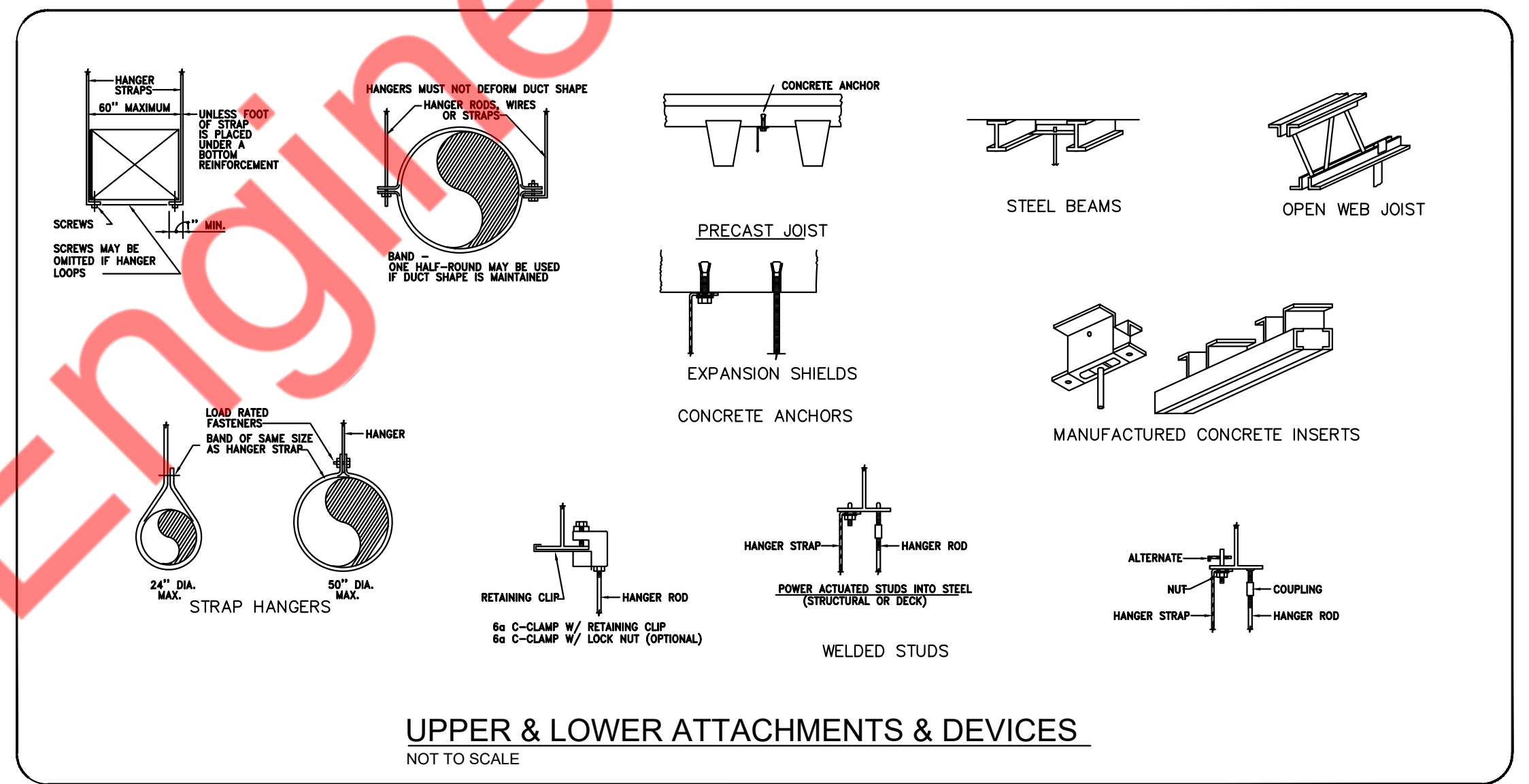
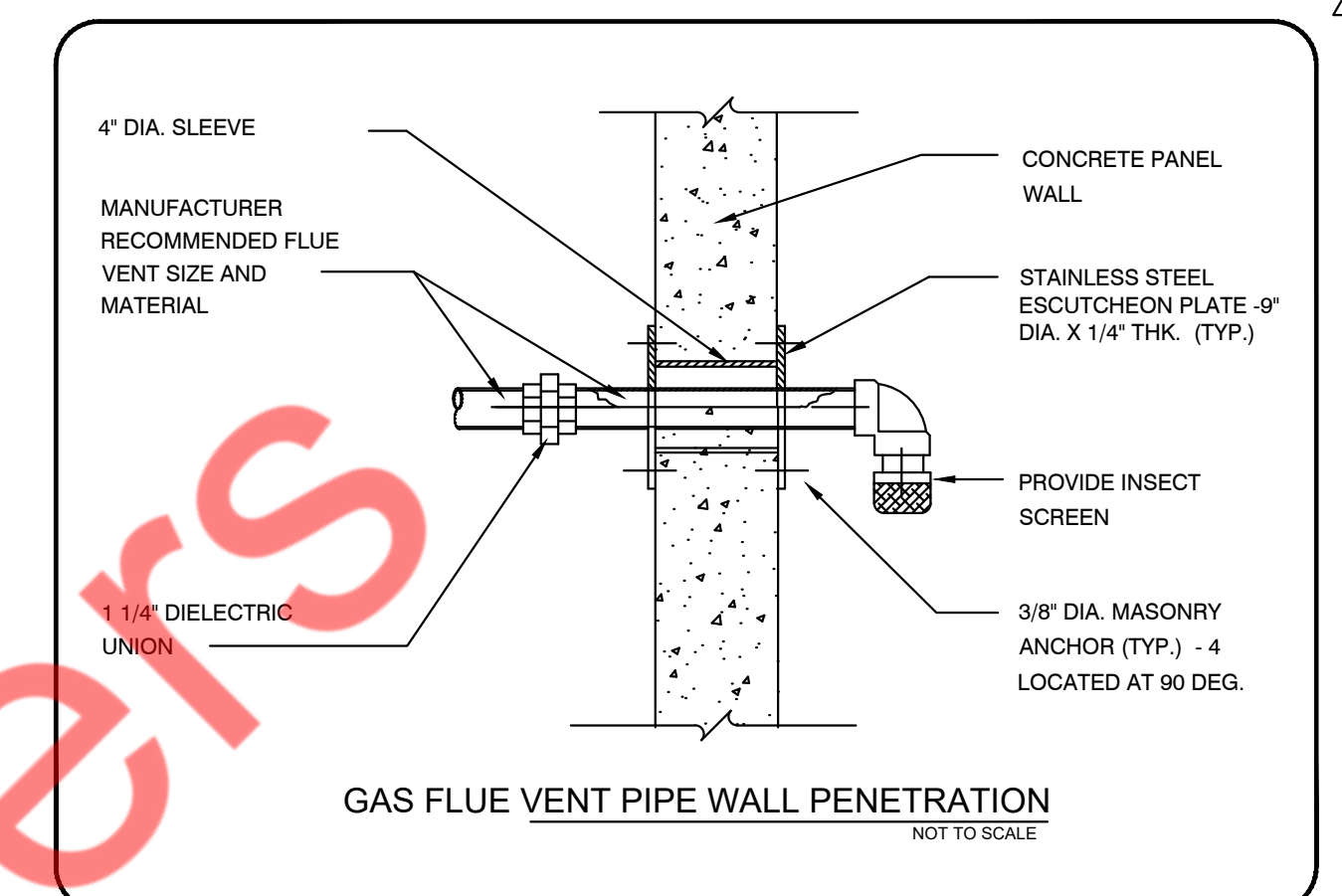
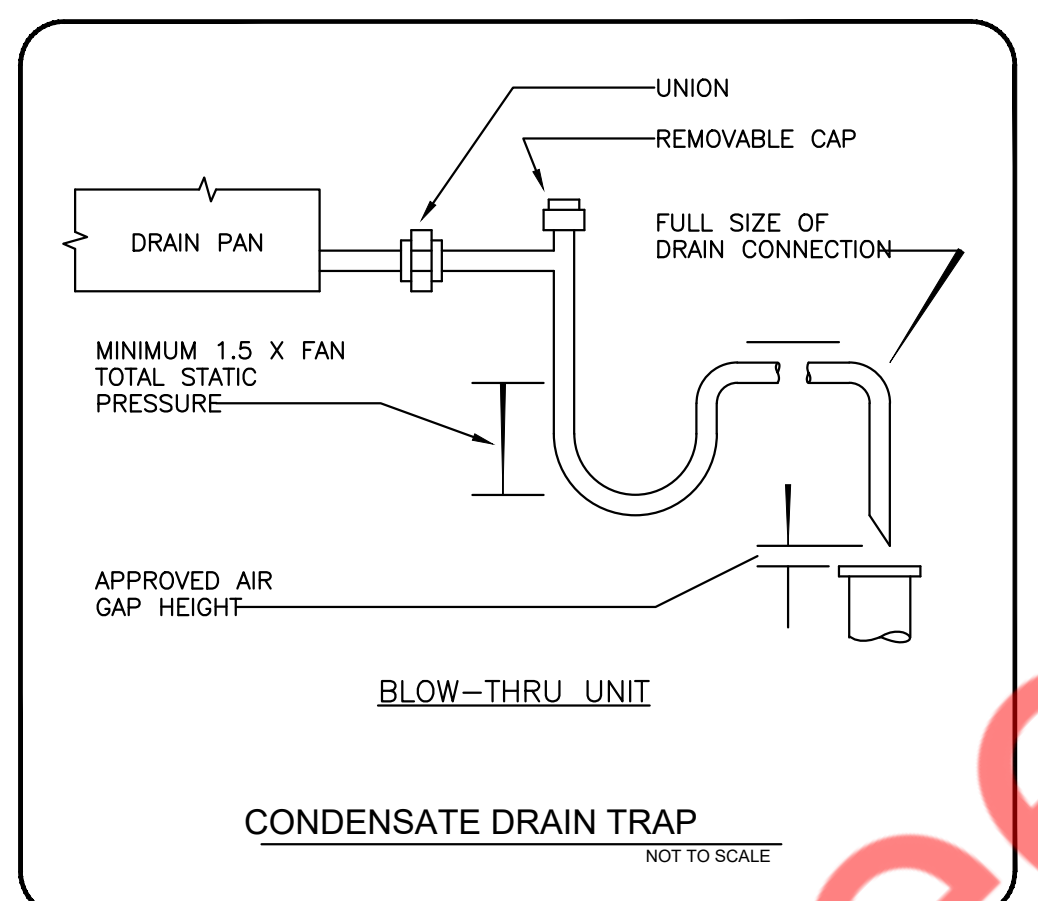
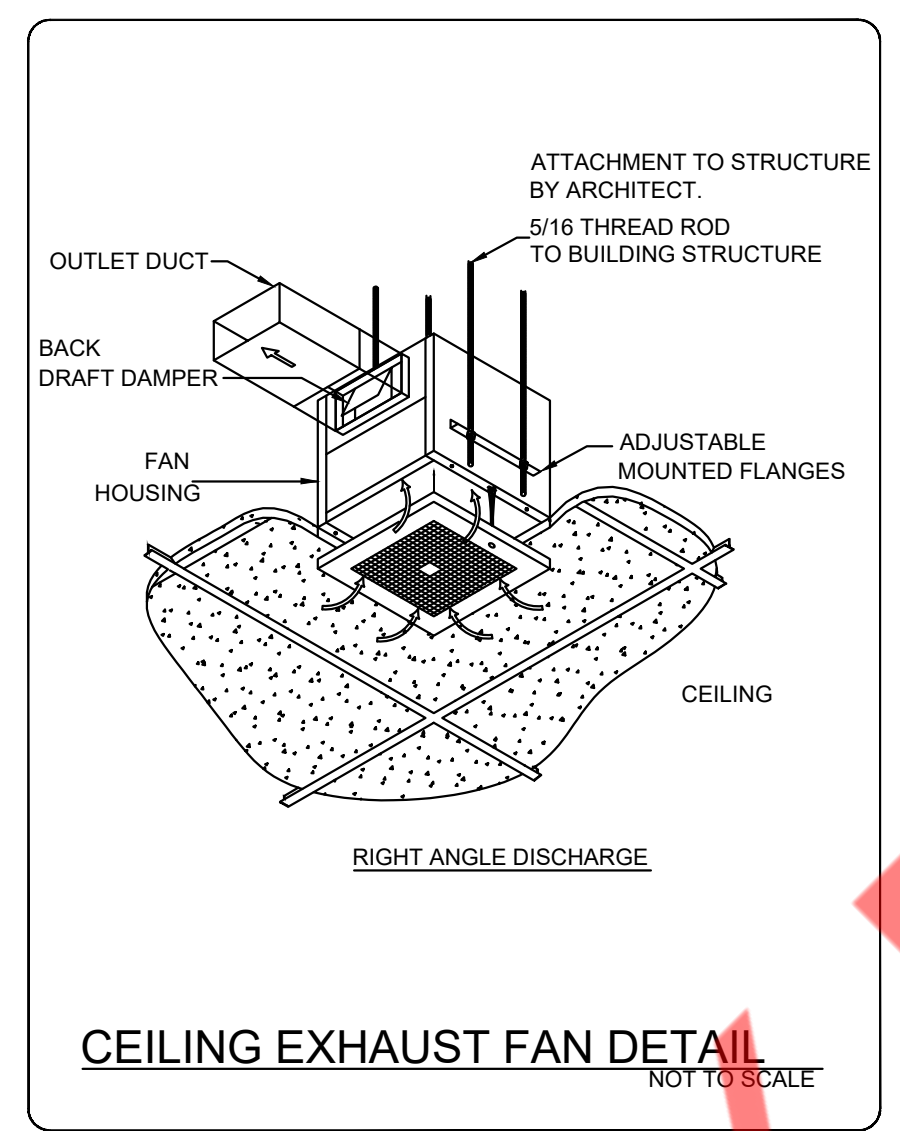
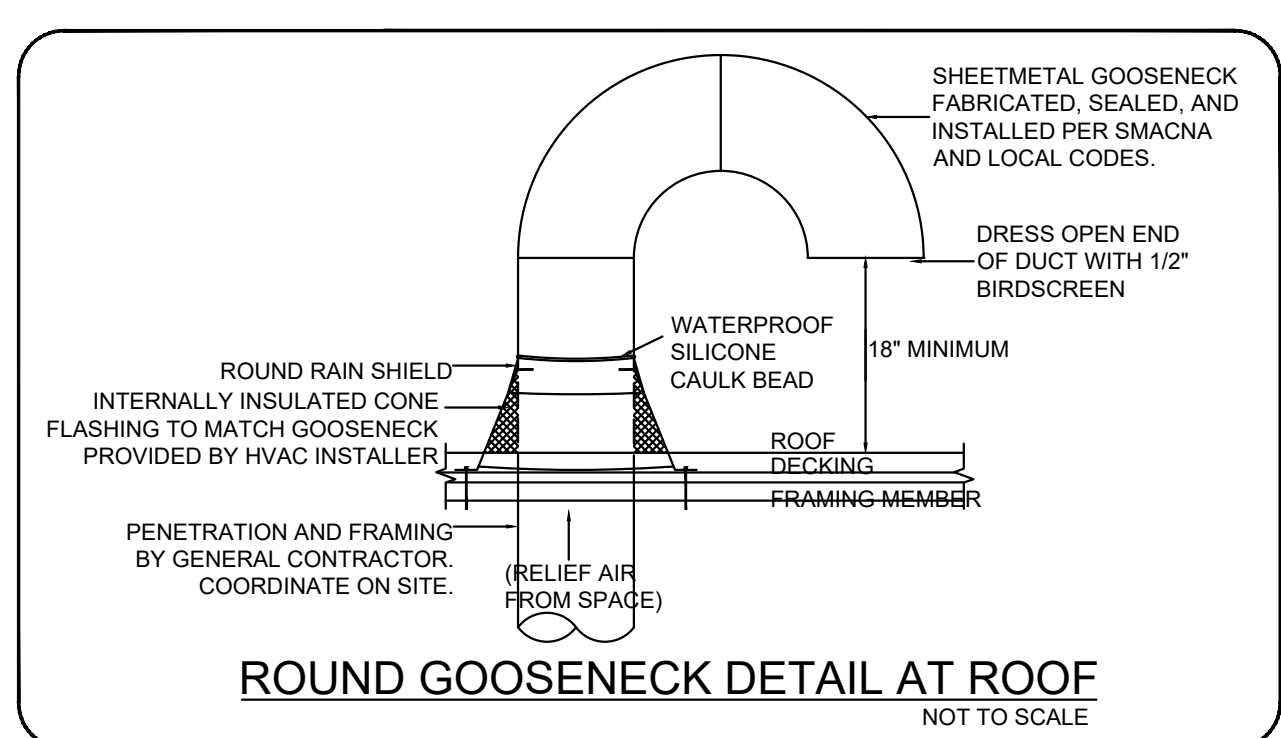
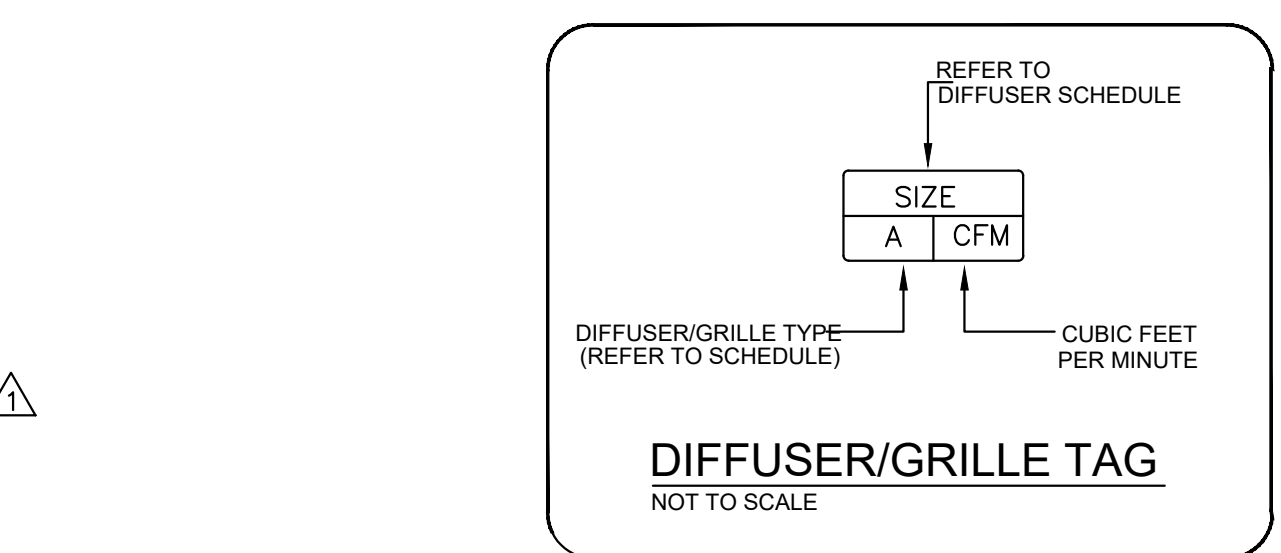
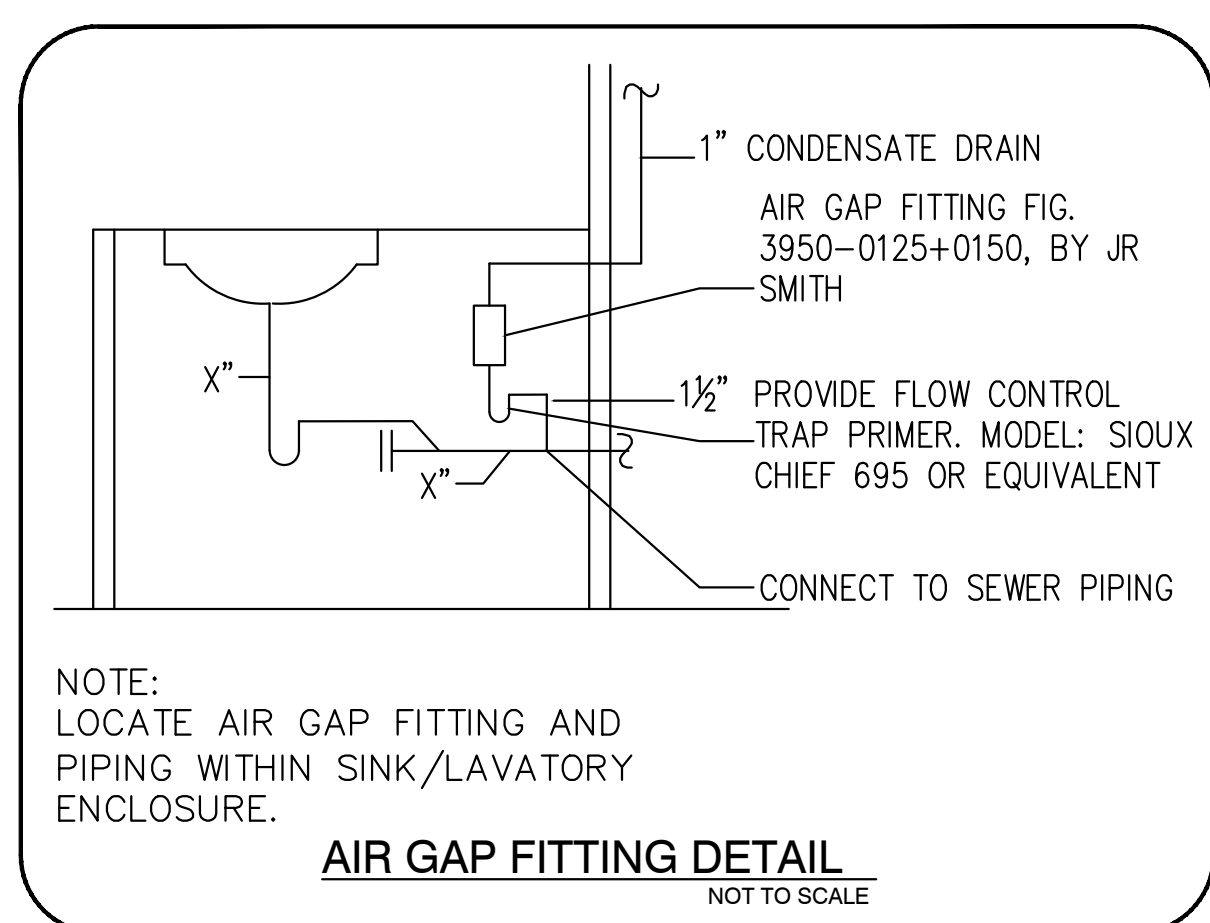
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HVAC DETAILS



- NOTES: 1) PROVIDE AT FLEXIBLE DUCT CONNECTION "PANOUT" DRAMBAND ON THE INTERIOR FLEXIBLE DUCT HELIX.
 2) PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEXIBLE DUCT TO ROUND DUCT, DAMPERS AND DIFFUSERS.
 3) BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

ELECTRICAL PLAN NOTES

- ELECTRICAL CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THIS SET.
- CONTRACTOR TO VERIFY THAT ALL EQUIPMENT SHOWN AS EXISTING MATCHES THE DESCRIPTIONS AND SPECIFICATIONS SHOWN ON DRAWINGS AND SCHEDULES. IF DIFFERENT, NOTIFY ARCHITECT/ENGINEER BEFORE BIDDING, ORDERING, OR PROCEEDING WITH WORK.
- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED. CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL OWNER HAS DIRECTED CORRECTIVE ACTION TO BE TAKEN.
- ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC. THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2020 EDITION OF THE NATIONAL ELECTRIC CODE AND ALL CODES AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION FOR ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.
- ALL ELECTRICAL NOT BEING REUSED MUST BE REMOVED IN ITS ENTIRETY.
- ALL CONDUIT IN OR UNDERGROUND OR IN CONCRETE MUST BE RIGID GALVANIZED STEEL.
- CIRCUIT BREAKERS AND PANELS TO BE BOLT ON TYPE
- ALL EQUIPMENT SHALL BE APPROVED BY UL OR OTHER NATIONALLY RECOGNIZED TESTING COMPANY.
- ALL RECEPTACLES SHALL BE GROUNDED AS REQUIRED BY NEC 250.146
- SUBMIT SERVICE ENTRANCE EQUIPMENT FOR SEPARATE APPROVAL.
- ALL LOW VOLTAGE MUST BE IN CONDUIT TO ABOVE THE DROP CEILING. BRIDAL RINGS OR "J" HOOKS REQUIRED.
- SEPARATE PERMITS ARE REQUIRED FOR ALL LOW VOLTAGE SUCH AS TELEPHONE, DATA, THERMOSTAT, MUSIC, ALARMS ETC.
- SEPARATE PERMIT REQUIRED FOR SIGNAGE.
- PRIOR TO ANY CONSTRUCTION WORK BEGINNING AN ON-SITE MEETING WITH GENERAL CONTRACTORS IS REQUIRED.
- ELECTRICIAN MUST BE ON SITE FOR ALL INSPECTIONS.
- MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED THIN INSULATION.
- OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, PLASTIC AND CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
- IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE N.E.C. OR LOCAL CODES.
- ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
- ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
- ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE THAT CERTIFICATE OF OCCUPANCY IS ISSUED. WARRANTY SHALL BE PROVIDED IN WRITING. PROVIDE COPY TO LL.
- CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.
- ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
- THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES.
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
- ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, DEVICES, ETC. FOR ALL OUTLETS AS INDICATED.
- MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS APPEAR ON THE UL LIST OF APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF N.E.C. NEMA, AND IECE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND FIRED CALKING REQUIRED OF HIS WORK.
- ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/TYPE WRITTEN DIRECTORIES.
- ALL ELECTRICAL OUTLETS SHALL BE AT 18" A.F.F. EXCEPT IN THE REHEARSAL AND MULTI-PURPOSE ROOM SHALL BE AT 24" UNLESS OTHERWISE NOTED.
- ALL LIGHT SWITCHES TO BE AT 42" A.F.F.
- ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING FOR HVAC SYSTEM INCLUDING CONTROLS, THERMOSTATS, POWER, ETC. SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- BREAKER AND PANELS -- ALL CURRENT CARRYING 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.
- DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK ENCLOSURES AS REQUIRED BY EXPOSURE.
- MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC, WITH OVERLOAD RELAYS IN EACH HOT LEG.
- THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS INDICATES THE CONTRACT SHALL FURNISH AND INSTALL.
- CONTRACTOR SHALL CONFIRM WITH ANY AND ALL REQUIREMENTS SUCH AS: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, TRANSFORMER SIZE, SCHEDULED DOWN TIME FOR OWNERS CONFIRMATION, ETC. ANY CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
- VOLTAGE DROP FOR ALL BRANCH CONDUCTORS SHALL NOT EXCEED 3%. WHERE VOLTAGE DROP EXCEEDS 3%, CONTRACTOR SHALL INCREASE SIZE OF CONDUCTORS.
- CONTRACTOR SHALL PROVIDE GFI TYPE BREAKER FOR ALL EXTERIOR 120V CIRCUITS OR GFI PROTECTION -- FOR THE WHOLE CIRCUIT.
- GAS PIPING SHALL BE BONDED.
- 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.
- ALL OUTDOOR EQUIPMENT SHALL BE WEATHERPROOF.
- CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
- OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER.
- ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS. FLEXIBLE CONDUIT IS PERMITTED FOR SHORT FINAL CONNECTIONS ONLY (6'-0" OR LESS).
- EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES, PARALLEL OR IN RIGHT ANGLES TO THE BUILDING STRUCTURE. DO NOT LOOP EXCESS FLEXIBLE CONDUIT IN CEILING SPACE OR WALL CAVITY. NO CONDUIT TO BE SUPPORTED FROM THE ROOF DECK.
- CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED.
- ALL EQUIPMENT, DEVICES AND FIXTURES SHALL BE GROUNDED IN COMPLIANCE WITH NEC AND UL REQUIREMENTS.
- ALL PANELS TO BE UL LABELED WITH BOLT-ON TYPE CIRCUIT BREAKERS.
- 7-DAY 24-HOUR TIME CLOCK IS REQUIRED TO CONTROL STOREFRONT ENTRY LIGHTS, SHOW WINDOW LIGHTS, SHOW WINDOW RECEPTACLES AND STOREFRONT SIGNAGE. ILLUMINATED STOREFRONT SIGNS MUST REMAIN LIT DURING ALL MALL BUSINESS HOURS.
- TENANT IS REQUIRED TO MAKE A FIELD SURVEY OF THE EXISTING ELECTRICAL SERVICE TO ENSURE THAT THE TOTAL CONNECTED LOAD DOES NOT EXCEED THE ELECTRIC SERVICE. ANY ALL MODIFICATIONS OR UPGRADES NEEDED ARE SUBJECT TO LANDLORD'S PRIOR APPROVAL AND WILL BE COMPLETED BY TENANT/TENANT'S GC AT TENANT'S SOLE EXPENSE.
- ALL ELECTRICAL PANELS TO BE MOUNTED ON PLYWOOD BACKER BOARD.
- PANEL PHASE LOADS TO BE BALANCED WITHIN 10%.
- ALL THE ELECTRICAL BOXES SHALL BE SEALED.

GENERAL LIGHTING NOTES

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

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXHAUST FAN
	JUNCTION BOX
	BATTERY BACK UP EXIT LIGHT
	BATTERY BACK UP EMERGENCY LIGHT
	WALL SWITCH (SINGLE, DOUBLE,)
	WALL SWITCH (3 WAY, 4 WAY)
	WALL SWITCH (TIMER)
	DIMMER WALL SWITCH
	OCCUPANCY SENSOR WALL SWITCH
	SIMPLEX RECEPTACLE, +18" AFF OR AS NOTED. SUFFIX DENOTES FOLLOWING: A - NEMA 5-15R B - NEMA 6-15R C - NEMA 14-30R D - NEMA 14-50R E - NEMA L6-30R
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, 46" TO AFF AT KITCHEN, BATHS AND TOPS
	HALF SWITCHED DUPLEX RECEPTACLE
	230 VOLT RECEPTACLE
	QUADRUPLX RECEPTACLE
	FLOOR MOUNTED, FLUSH DUPLEX RECEPTACLE
	FLOOR MOUNTED, FLUSH QUAD. RECEPTACLE
	FLOOR MOUNTED, FLUSH 230 VOLT RECEPTACLE
	USB CHARGER RECEPTACLE
	CEILING MOUNTED DUPLEX RECEPTACLE
	ELECTRICAL PANEL
	DISCONNECT SWITCH
	TELEVISION OUTLET
	TELEPHONE OUTLET
	TELEPHONE/DATA OUTLET
	DATA OUTLET
	FLOOR MTD. FLUSH TELEPHONE/DATA OUTLET
	QUAD. DATA OUTLET RJ45
	NON FUSED DISCONNECT SWITCH AMPERAGE, AND NUMBER OF POLES AS NOTED

ABBREVIATIONS:
 ABOVE FINISH FLOOR= A.F.F.
 COUNTER TOP LEVEL= C
 GROUND FAULT INTERRUPTER= GFCI
 VERIFY PRIOR TO INSTALL= VH
 WEATHER PROOF= WP
 RECIRCULATION PUMP= RCP
 BATHROOM EXHAUST FAN= BEF
 AIR HANDLING UNIT= AHU
 AUTHORITY HAVING JURISDICTION= AHJ
 BELOW COUNTER= BC
 PUSH BUTTON= PB
 UNDER CABINET= UC
 NIGHT LAMP= NL
 WATER HEATER= WH
 EXHAUST FAN= EF
 ELECTRICAL CONTRACTOR= EC
 AIR COOLED CONDENSING UNIT= ACCU

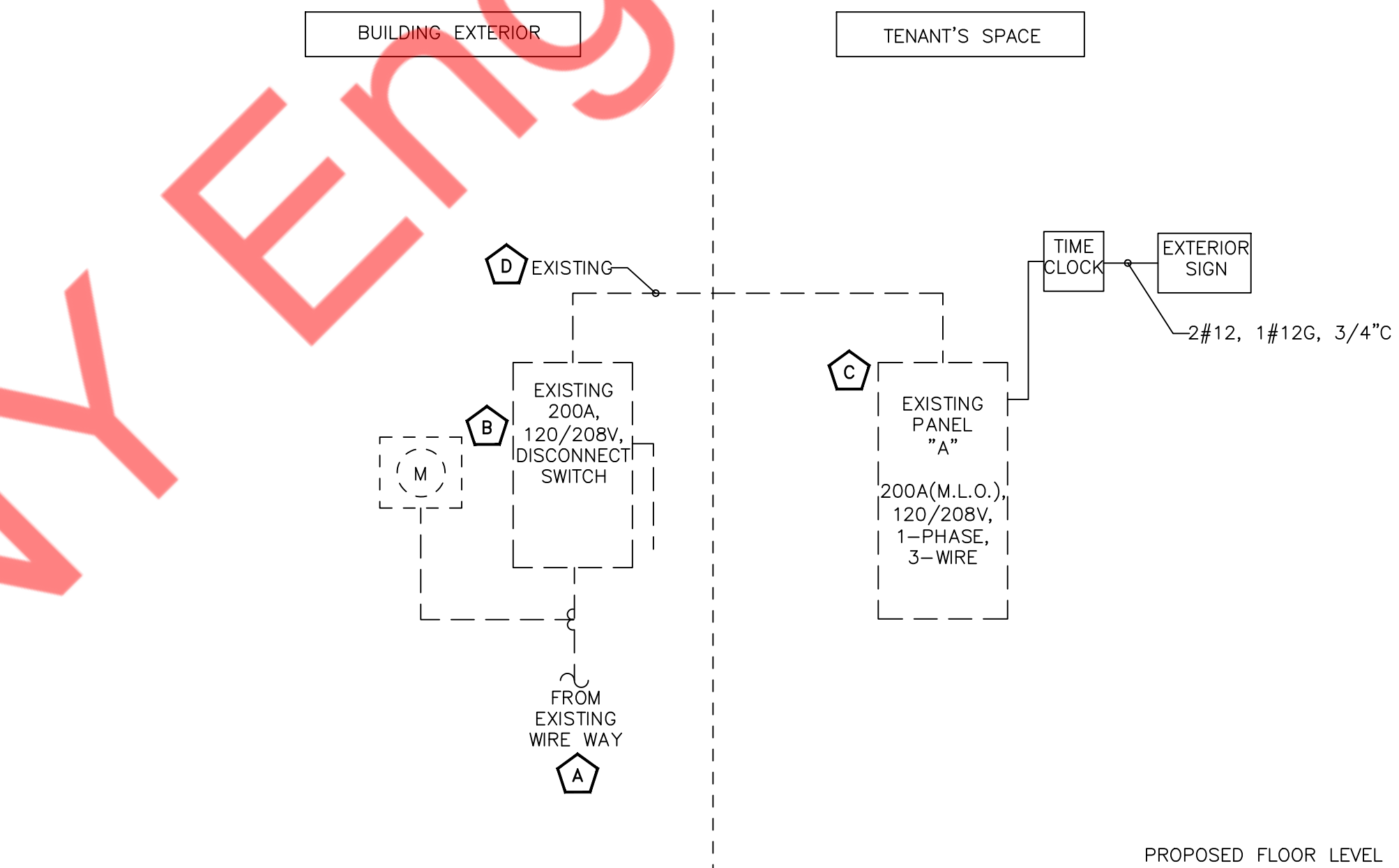
LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	No. LAMPS	LAMP TYPE	TOTAL WATTS	MOUNTING
	2x4 LED	NORA LIGHTING	NPDBL-E24_334W	120	6	45 WATTS LED	270	RECESSED
	6" LED WAFER	NORA LIGHTING	NFLIN-R610-30-WW	120	4	16 WATTS LED	64	RECESSED
	6" LED WAFER	NORA LIGHTING	NFLIN-R610-30-WW	120	13	16 WATTS LED	208	RECESSED
	LED TRACK WITH HEADS	NORA LIGHTING	NTE-800L-030M-10B	120	24	10W PER HEAD	240	TRACK
	TIMER WALL SWITCH	LEVITON	VP124	120				WALL
	EXISTING TO REMAIN							

- GENERAL NOTES:**
- REFER TO SHEET A-2 - REFLECTED CEILING PLAN IN ARCHITECTURAL DRAWINGS FOR MORE INFORMATION ON COLORS AND TRIMS REQUIRED
 - E.C. SHALL RECEIVE APPROVAL FROM ARCHITECTURE FOR LIGHTING FIXTURE SELECTION BEFORE PURCHASE AND INSTALLATION.
 - ALL THE LIGHTING FIXTURE TYPES, QUANTITIES, AND TYPES OF CONTROLS SHALL BE COORDINATED WITH THE OWNER/ARCHITECT BEFORE COMMENCING ANY WORK. INFORM THE ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.

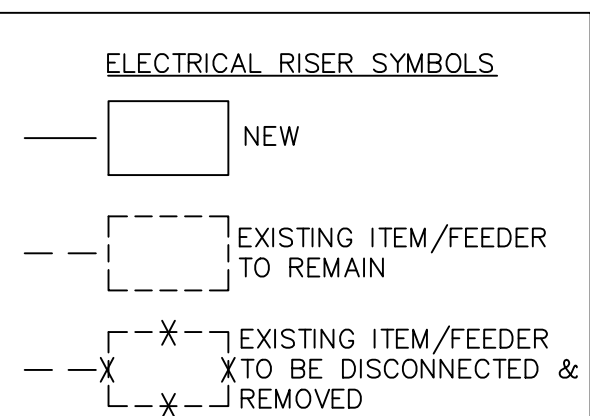
SCOPE OF WORK

REUSE THE EXISTING ELECTRICAL METER AND DISCONNECT SWITCH. REUSE EXISTING 200A, 120/208V, 1-PHASE ELECTRICAL FEEDER FOR THE PROJECT SPACE. REUSE 200A(M.L.O.), 120/208V, 1-PHASE ELECTRICAL PANEL "A". ALL NECESSARY EQUIPMENT, WIRING AND LIGHTING FOR THE PROJECT SPACE INCLUDING WIRING FOR VENTILATION EQUIPMENT. COORDINATE WITH G.C FOR LOW VOLTAGE WIRING.



ELECTRICAL RISER KEYED NOTES:

- EXISTING 200A, 120/208V, 1-PHASE, 3-WIRE ELECTRICAL SERVICE FROM THE EXISTING WIRE WAY TO REMAIN. E.C. SHALL COORDINATE WITH THE BASE BUILDING/LAND LORD/ OWNER FOR EXACT POWER DISTRIBUTION. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCIES.
- EXISTING 200A, 120/208V, 1-PHASE, 3-WIRE ELECTRICAL METER & DISCONNECT SWITCH TO REMAIN. E.C. SHALL COORDINATE WITH BASE BUILDING/LANDLORD/OWNER FOR LOCATION. E.C. TO VERIFY OPERABLE CONDITION OF EXISTING ELECTRICAL METER & DISCONNECT IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING 200A(M.L.O.), 120/208V, 1-PHASE, 3-WIRE ELECTRICAL PANEL "A" TO REMAIN. E.C. TO FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL, REPLACE IF INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING INCOMING FEEDER TO REMAIN. E.C. TO VERIFY OPERABLE CONDITION OF FEEDER IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.



ELECTRICAL GENERAL NOTES:

- E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION IN FILED COORDINATION WITH OWNER/ARCHITECT.
- ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
- RISER DIAGRAM SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD.

ELECTRICAL RISER SCALE N.T.S. 1

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LIGHTING LEGEND, NOTES & RISER DIAGRAM

REVISIONS DATES:

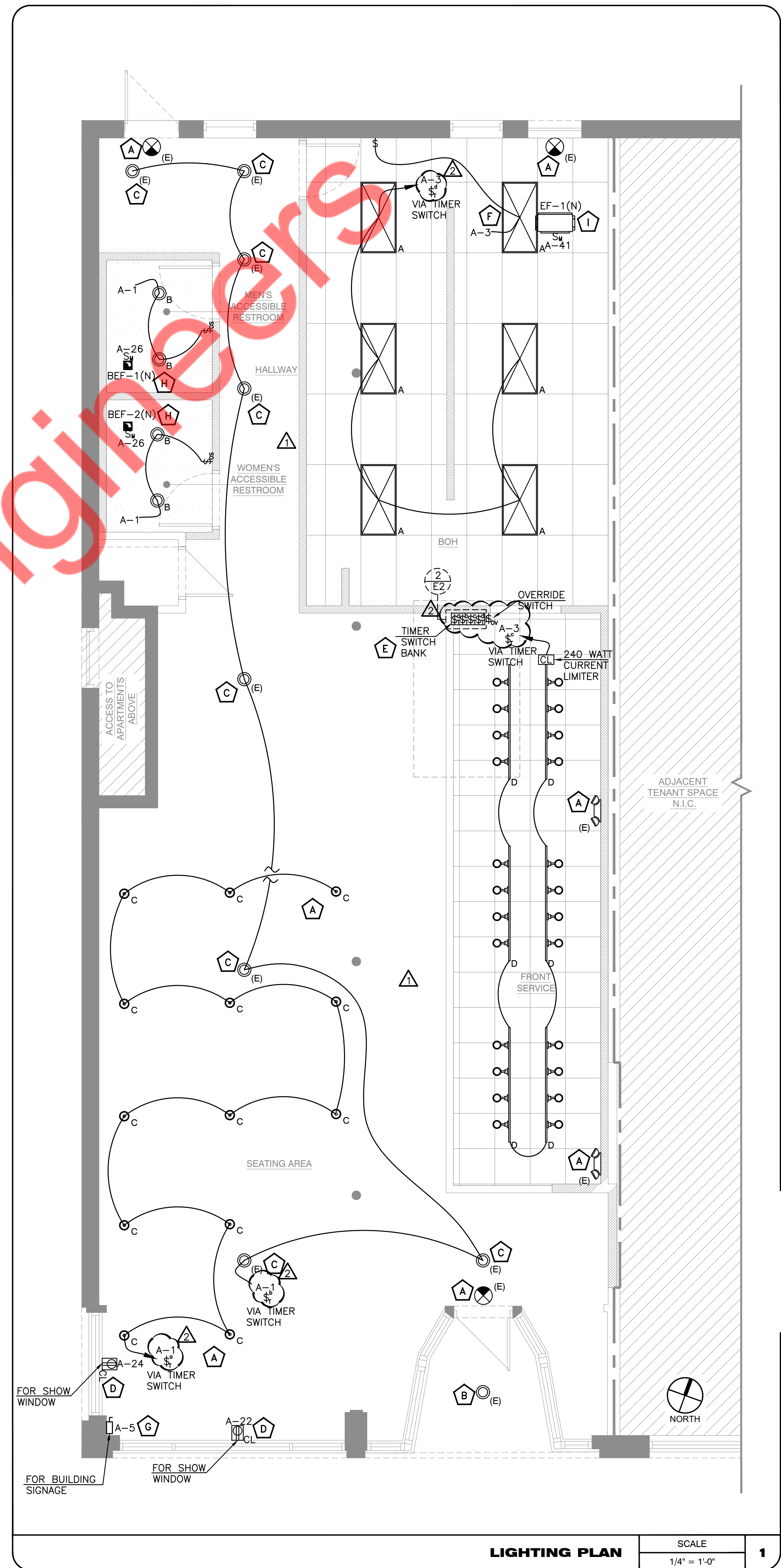
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LIGHTING PLAN

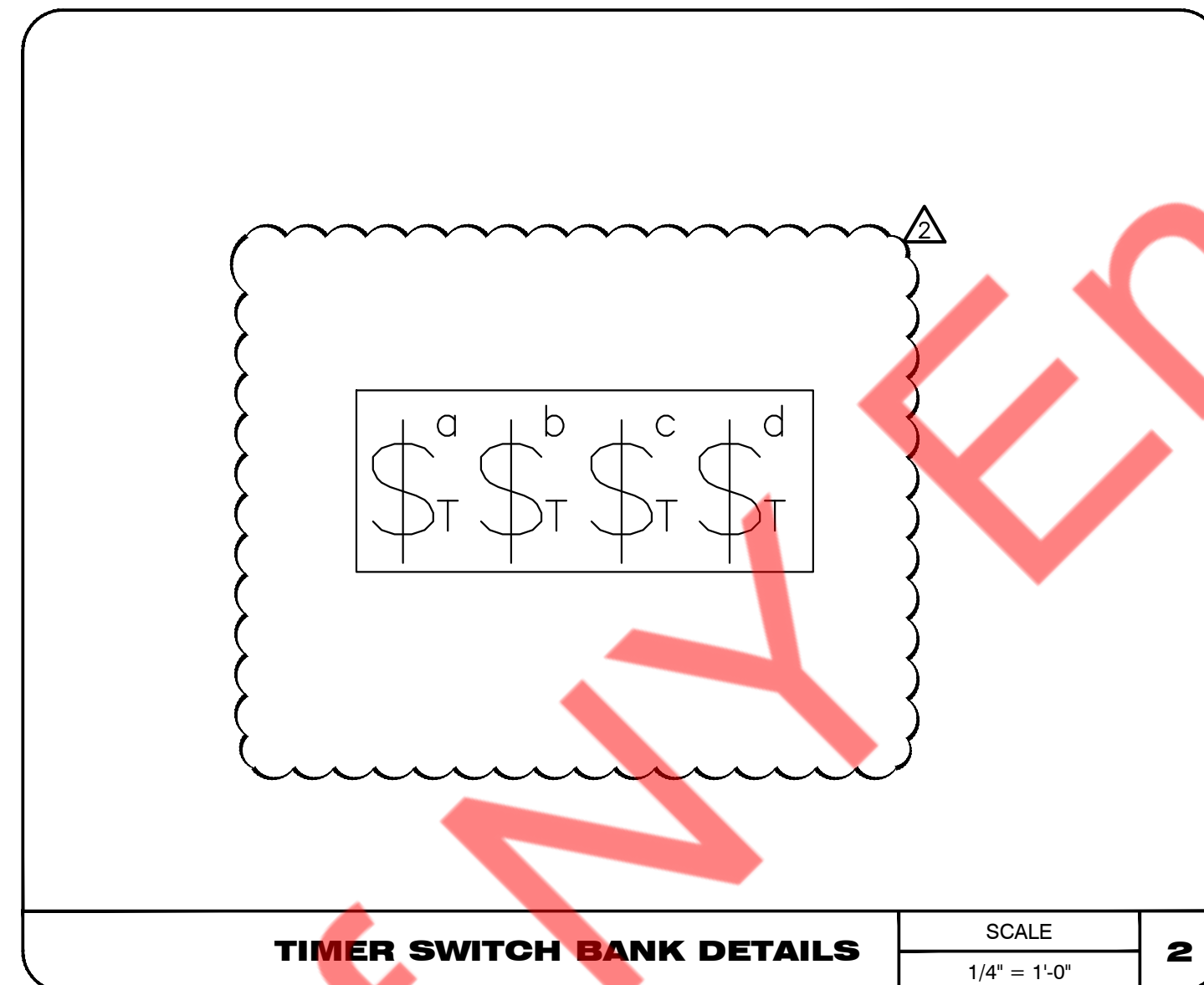
E-2



LIGHTING PLAN

SCALE
1/4" = 1'-0"

1



TIMER SWITCH BANK DETAILS

SCALE
1/4" = 1'-0"

2

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

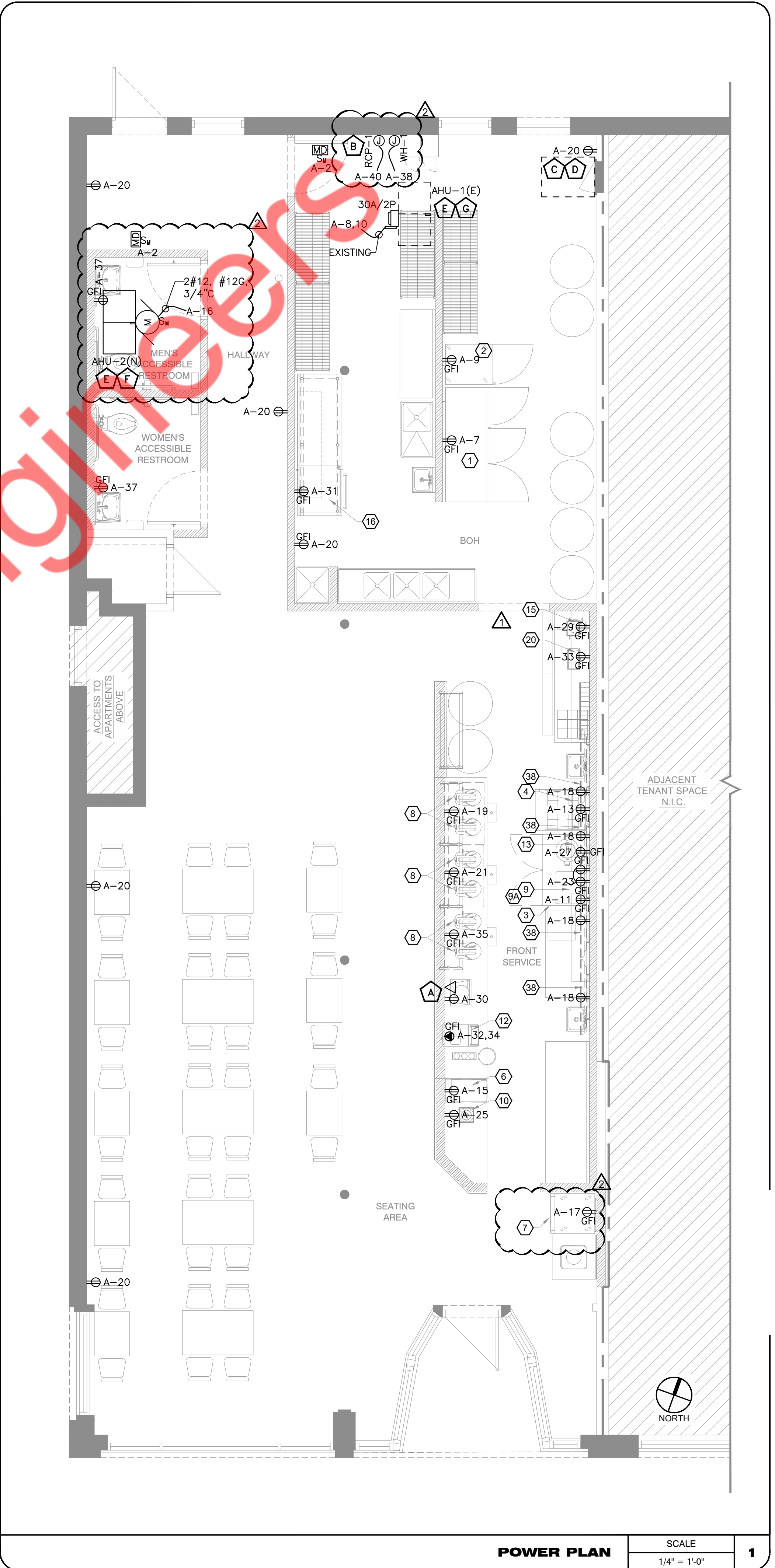
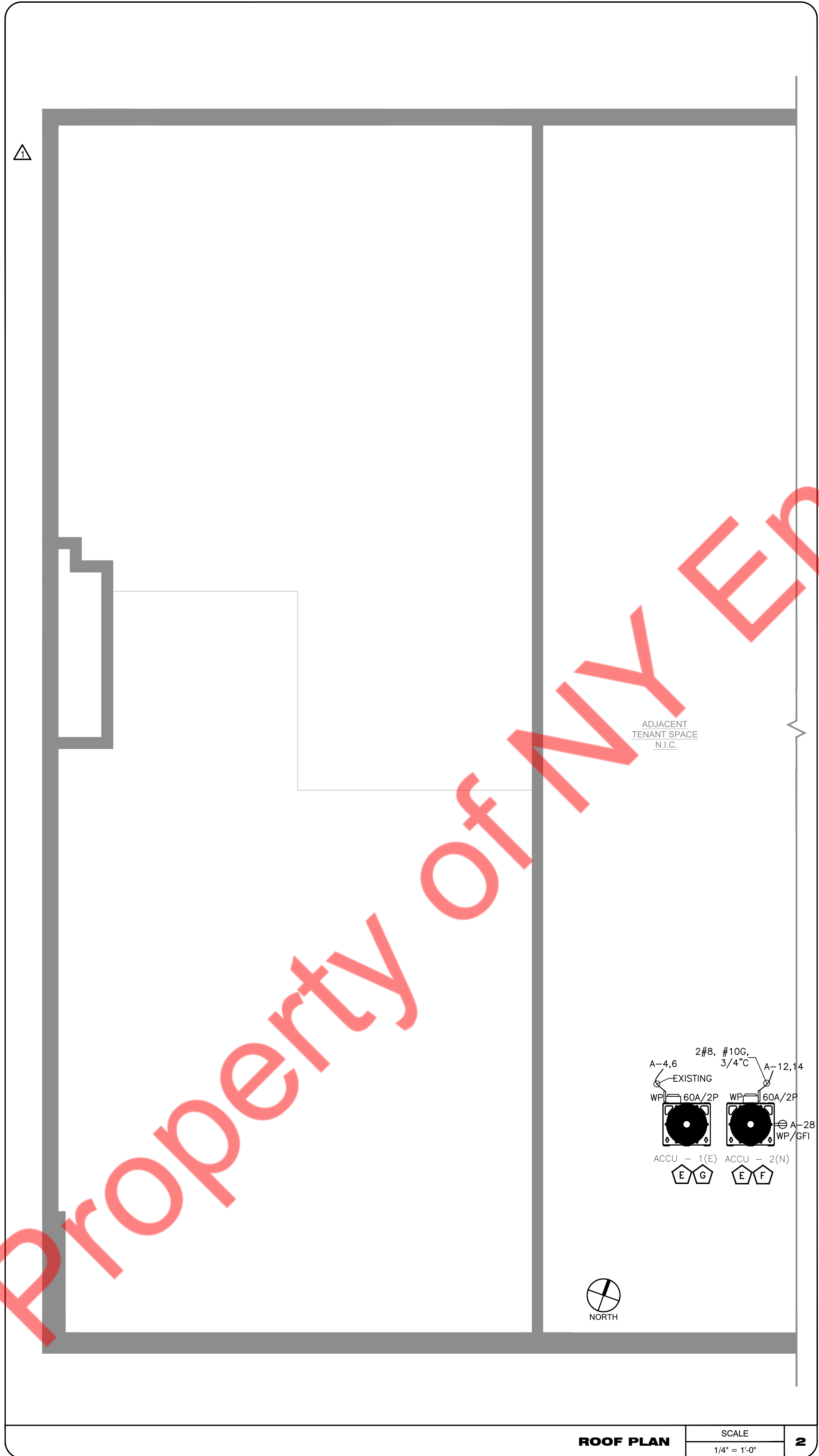
- COORDINATE FINAL FIXTURE MAKE & MODEL WITH ARCHITECT/OWNER.
- ALL LIGHT FIXTURES CONSIDERED TO BE AS 120 VOLT FIXTURE. E.C. SHALL INFORM ENGINEER ON RECORD OTHERWISE.
- ALL EMERGENCY FIXTURES SHALL BE CONNECTED TO AN UNSWITCHED HOT CONDUCTOR.
- ALL THE LIGHTING FIXTURE TYPES, QUANTITIES, AND TYPES OF CONTROLS SHALL BE COORDINATED WITH THE OWNER/ARCHITECT BEFORE COMMENCING ANY WORK. INFORM THE ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
- E.C. TO PROVIDE MANUAL OVERRIDE SWITCH AS PER IECC 2015. E.C. TO COORDINATE THE LOCATION WITH ARCHITECT/OWNER.
- LIGHT FIXTURES SHALL BE SHIELDED OVER THE FOOD PREPARATION, SERVICE AND STORAGE AREAS, AS WELL AS WARE WASHING AND UTENSIL AREAS. E.C SHALL COORDINATE WITH LED LIGHT MANUFACTURER AND PROVIDED SHIELD IF THE LIGHTS ARE NOT MANUFACTURED WITH SHIELD.

ELECTRICAL LIGHTING PLAN KEYED NOTES:

- A** CONNECT ALL EMERGENCY EGRESS FIXTURE, EXIT SIGNS AND NIGHT LAMPS TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS AS PER STATE AND LOCAL CODES.
- B** EXISTING LIGHT FIXTURE DENOTED BY (E) SHALL REMAIN CONNECTED TO THE RESPECTED EXISTING ELECTRICAL PANEL ALONG WITH THEIR CONTROLS. E.C. SHALL VERIFY THE CONTROLS IN FIELD AND REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- C** EXISTING LIGHT FIXTURE IN THIS AREA DENOTED BY (E) SHALL REMAIN AS IT IS. PROVIDE NEW CONTROLS ALONG WITH REVISED CIRCUITING AS SPECIFIED ON DRAWINGS. E.C TO VERIFY LIGHT FIXTURE CONDITION IN FIELD. REPORT TO OWNER/ARCHITECT ON RECORD FOR ANY DISCREPANCIES BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- D** PROVIDE SHOW WINDOW RECEPTACLE AS PER NEC 210.62. VERIFY EXACT LOCATION WITH ARCHITECT/OWNER.
- E** COORDINATE EXACT LOCATION OF TIMER SWITCH BANK WITH OWNER/ ARCHITECT.
- F** LIGHTING CONTROL IN THIS AREA SHALL NOT BE WITH AUTOMATIC MEANS AS PER NEC 110.26(D).
- G** E.C TO COORDINATE THE BUILDING SIGNAGE CONNECTION REQUIREMENTS WITH SIGN VENDOR. BASE BID ACCORDINGLY.
- H** INTERCONNECT EXHAUST FAN BEF-1(N) & BEF-2(N) WITH AHU-2(N). E.C TO COORDINATE WITH MECHANICAL DRAWINGS.
- I** INTERCONNECT EXHAUST FAN EF-1(N) WITH AHU-1(E). E.C TO COORDINATE WITH MECHANICAL DRAWINGS.

- ELECTRICAL POWER PLAN GENERAL NOTES:**
- E.C. SHALL COORDINATE WITH THE EQUIPMENT VENDOR FOR EXACT RECEPTACLE REQUIREMENT AND WITH ARCHITECT/OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT OF THE RECEPTACLES IN THE FIELD.
 - CONTRACTOR TO COORDINATE WITH ARCHITECT FOR EXACT HEIGHT OF OUTLETS.
 - E.C. SHALL VERIFY ANY THIRD PARTY INSPECTION REQUIRED BY THE LOCAL JURISDICTION PRIOR TO BIDDING THIS PROJECT.
 - ALL LOW VOLTAGE WIRING TO BE IN CONDUIT U.N.O BY AHJ.

- ELECTRICAL POWER PLAN KEYED WORK NOTES:**
- A** E.C. SHALL COORDINATE WITH LOW VOLTAGE VENDOR FOR EXACT QUANTITY AND POWER REQUIREMENTS FOR LOW VOLTAGE EQUIPMENTS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
 - B** ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WATER HEATER MANUFACTURER FOR THE EXACT POWER REQUIREMENTS PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
 - C** EXISTING 200A(M.L.O.), 120/208V, 1-PHASE, 3-WIRE ELECTRICAL PANEL "A". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
 - D** E.C. SHALL VERIFY/PERFORM THE INSTALLATION OF ELECTRICAL PANELS IN COMPLIANCE WITH 2020 NEC ARTICLE 110.26(A) AND (B). E.C. SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.
 - E** ELECTRICAL CONTRACTOR SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.
 - F** ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
 - G** EXISTING MECHANICAL UNIT SHALL REMAIN CONNECTED TO THE EXISTING ELECTRICAL PANEL "A". E.C. TO COORDINATE WITH MECHANICAL CONTRACTOR FOR ANY REQUIREMENT BASED ON THE FIELD CONDITION. VERIFY THE OPERABLE CONDITION OF EXISTING SWITCH GEAR AND FEEDER. REPLACE IF IN OPERABLE. BASE BID ACCORDINGLY.



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PROJECT

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ISSUE DATE: 05.31.23
PROJECT #: _____
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POWER & ROOF PLAN

E-3

PANEL SCHEDULE:

PANEL:		A(E)										MOUNTING:		RECESSED					
208Y/120		VOLTS,			1			PHASE,			3			WIRE		LOCATION:		BOH	
MAIN CB		NA		MLO:		200A		BUS:		EXISTING		MIN,		FED FROM:		EXISTING METER/DISCONNECT			
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												
1	20	LIGHTING-SEATING AREA & RESTROOMS	L	0.42	2#12, #12G, 3/4" C	0.44		2#12, #12G, 3/4" C	0.02	H	MOTORISED DAMPER	20	2						
3	20	LIGHTING-SERVICE AREA, KITCHEN	L	0.50	2#12, #12G, 3/4" C		4.60	EXISTING	4.10	H	ACCU-1 (E)	50/2P	4						
5	20	EXTERIOR BUILDING SIGNAGE./TIMECLOCK	L	1.20	2#12, #12G, 3/4" C	5.30			4.10	H			6						
7	20	#1_3 DOOR REFRIGERATOR	E	0.64	2#12, #12G, 3/4" C		3.14	EXISTING	2.50	H	AHU-1 (E)	30/2P	8						
9	20	#2_SINGLE DOOR FREEZER	E	0.52	2#12, #12G, 3/4" C	3.02			2.50	H			10						
11	20	#3_2 DOOR UNDERCOUNTER REFRIGERATOR	E	0.29	2#12, #12G, 3/4" C		2.84		2.55	H	ACCU-2 (N)	40/2P	12						
13	20	#4_27" SANDWICH PREP.-MEGA TOP	E	0.44	2#12, #12G, 3/4" C	2.99		2#8, #10G, 3/4" C	2.55	H			14						
15	20	#6_ICE MACHINE AIR COOLED UNDERCOUNTER	E	1.38	2#12, #12G, 3/4" C		2.53	2#12, #12G, 3/4" C	1.15	H	AHU-2 (N)	20	16						
17	20	#7_SINGLE REACH-IN GLASS DOOR FREEZER	E	0.71	2#12, #12G, 3/4" C	1.51		2#12, #12G, 3/4" C	0.80	R	#38_RECEPTACLE-MENU TV	20	18						
19	20	#8_KITCHEN AID PRO600 MIXER	E	1.15	2#12, #12G, 3/4" C		2.23	2#12, #12G, 3/4" C	1.08	R	RECEPTACLE-GENERAL	20	20						
21	20	#8_KITCHEN AID PRO600 MIXER	E	1.15	2#12, #12G, 3/4" C	2.95		2#12, #12G, 3/4" C	1.80	R	RECEPTACLE-SHOW WINDOW	20	22						
23	20	#9_JUICE DISPENSER & #9A_ BEVERAGE BUBBLER	E	1.64	2#12, #12G, 3/4" C		2.64	2#12, #12G, 3/4" C	1.00	R	RECEPTACLE-SHOW WINDOW	20	24						
25	20	#10_VITAMIX	E	1.80	2#12, #12G, 3/4" C	1.90		2#12, #12G, 3/4" C	0.10	M	BEF-1(N) & BEF-2(N)	20	26						
27	20	#13_PERCOLATOR	E	0.14	2#12, #12G, 3/4" C		0.32	2#12, #12G, 3/4" C	0.18	R	RECEPTACLE-ROOF	20	28						
29	20	#15_WAFFLE MAKER	E	0.14	2#12, #12G, 3/4" C	0.94		2#12, #12G, 3/4" C	0.80	R	RECEPTACLE-POS	20	30						
31	20	#16_CONVECTION OVEN	E	1.60	2#12, #12G, 3/4" C		4.10		2.50	E	#12_ESPRESSO MACHINE	30/2P	32						
33	20	#20_CONE DIP WARMER	E	0.12	2#12, #12G, 3/4" C	2.62		2#10, #10G, 3/4" C	2.50	E			34						
35	20	#8_KITCHEN AID PRO600 MIXER	E	1.15	2#12, #12G, 3/4" C		1.15				SPARE	20	36						
37	20	RECEPTACLE-RESTROOM	R	0.36	2#12, #12G, 3/4" C	0.84		2#12, #12G, 3/4" C	0.48	O	WH-1	20	38						
39	20	SPARE					0.09	2#12, #12G, 3/4" C	0.09	O	RCP-1	20	40						
41	20	EF-1(N)	M	0.38	2#12, #12G, 3/4" C	0.38					SPARE	20	42						
TOTAL LOAD (KVA)						22.89	23.64												

PANEL SCHEDULE GENERAL NOTES:

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

PANEL SCHEDULE KEY NOTES:

- A PROVIDE (1) 20A/1P BREAKER IN PLACE OF (1) SPACES.
- B PROVIDE (1) 40A/2P BREAKER IN PLACE OF (2) SPACES.
- C PROVIDE (1) 30A/2P BREAKER IN PLACE OF (2) SPACES.

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PANEL SCHEDULE

SCOPE OF WORK

PROVIDE ALL PLUMBING FOR NEW CREAMERY SHOP WITHIN AN EXISTING BUILDING SHELL, INCLUDING ALL WATER, GAS, GREASE & SANITARY LINES AND CONNECT TO EXISTING UTILITIES. PROVIDE NEW GAS INSTANTANEOUS WATER HEATER. COORDINATE WITH G.C. AND MECHANICAL CONTRACTOR FOR ANY REQUIRED CONDENSING WATER LINES.

PLUMBING NOTES

- ALL WORK SHALL COMPLY WITH ALL NATIONAL, STATE, LOCAL CODES AND ORDINANCES PERTAINING TO THE WORK IN THIS PROJECT.
- DO NOT SCALE THESE DRAWINGS. REFER TO ARCHITECTURAL FLOOR PLAN FOR BUILDING DIMENSIONS.
- ALL WATER LINES SHALL BE INSULATED AND SUSPENDED BENEATH THE ROOF JOISTS AND THE CEILING.
- ALL PLUMBING FIXTURES SHALL BE SUPPLIED WITH INDIVIDUAL WATER SUPPLY STOPS AND CODE APPROVED TRAPS. EXPOSED PIPING SHALL BE CHROME PLATED.
- CONTRACTOR SHALL VERIFY ROUGH-IN LOCATIONS OF ALL EQUIPMENT WITH TENANT OR EQUIPMENT SUPPLIER PRIOR TO ROUGH-INS. FAILURE OF CONTRACTOR TO VERIFY ROUGH-INS OR LOCATIONS SHALL MAKE THE CONTRACTOR RESPONSIBLE FOR ANY RELOCATIONS AND / OR ADDITIONAL ROUGH-INS.
- ALL EQUIPMENT WHICH IS TO REMAIN MUST BE REFURBISHED TO A LIKE NEW CONDITION.
- INSULATE DOMESTIC WATER PIPING WITH 1/2" ARMAFLEX II OR RUBATEX R-180-F6 OR EQUAL. DOMESTIC WATER PIPING BELOW GRADE SHALL BE TYPE "K". WATER PIPING ABOVE SLAB TO BE PLASTIC PEX OR EQ. TUBING AS ALTERNATE.
- ALL SANITARY WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC, OR HUBLESS CAST IRON AS PER LOCAL CODES.
- ALL PLUMBING FIXTURES SHALL BE INSTALLED WITH APPROVED BACKFLOW PREVENTION DEVICES.
- NO PIPING SHALL PASS DIRECTLY OVER ELECTRICAL POWER DISTRIBUTION CABINETS. CONTRACTOR TO COORDINATE PANEL LOCATIONS PRIOR TO PIPING INSTALLATION.
- CONCEALED GAS PIPING SHALL BE CONSTRUCTED IN ACCORDANCE WITH CODE WITHOUT UNIONS, TUBING FITTINGS OR RUNNING THREADS.
- INSULATE ALL EXPOSED SUPPLY AND DRAIN LINES. (TYPICAL AT ALL TOILET ROOM AND HAND WASH SINKS THAT DON'T HAVE A BASE CABINET)
- THE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF THE SYSTEMS AND ARE TO BE FOLLOWED INsofar AS POSSIBLE. IF DEVIATIONS FROM THE LAYOUTS ARE NECESSITATED BY FIELD CONDITIONS, DETAILED LAYOUTS OF THE PROPOSED DEPARTURES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT FOR REVIEW BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE 2021 INTERNATIONAL PLUMBING CODES AND WITH THE REQUIREMENTS OF ALL GOVERNMENTAL AGENCIES OR DEPARTMENTS HAVING JURISDICTION.
- THE CONTRACTOR SHALL INSURE THAT HIS WORK IS ACCOMPLISHED IN ACCORDANCE WITH OSHA STANDARDS AND ANY OTHER APPLICABLE GOVERNMENT REQUIREMENTS.
- REFER TO ISOMETRIC DIAGRAM FOR ALL PIPING SIZES.
- THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS FAMILIARIZED HIMSELF WITH THE PLANS AND BUILDING SITE, CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND LABOR BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED IF THEY COULD HAVE BEEN FORESEEN HAD PROPER EXAMINATION BEEN MADE.
- ALL VENT PIPE TO BE COMPATIBLE WITH STRUCTURE AND O.A. INTAKES.
- VERIFY SERVICE POINTS AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITIES AND / OR LANDLORD (DOMESTIC WATER, SANITARY SEWER, GAS, ETC.)
- THE CONTRACTOR SHALL MAKE AN ON-SITE INSPECTION OF THE BUILDING SITE BEFORE SUBMITTING A BID. ANY ALTERNATE METHODS OF INSTALLATION OF "AS EQUAL" EQUIPMENT SHALL BE VERIFIED WITH THE TENANT PRIOR TO INSTALLATION.
- THE PLUMBING CONTRACTOR SHALL REVIEW ALL DRAWINGS IN DETAIL AS THEY MAY RELATE TO THEIR WORK.
- STUDDOR MINIMAXI AIR ADMITTANCE VALVES MAY NOT BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF.
- EACH CONTRACTOR SHALL INSPECT THE SITE ON WHICH THE WORK IS TO BE PERFORMED, AND THE OBSTACLES THAT MAY BE ENCOUNTERED, AND ALL RELEVANT MATTERS CONCERNING THE WORK.
- PLUMBING CONTRACTOR SHALL VERIFY WITH THE LOCAL HEALTH AND WATER DEPT. AGENCIES AS TO THE METER AND VALVING ARRANGEMENTS OF THE DOMESTIC WATER SERVICE LINE WHICH IS TO ENTER THE BUILDING. SHOULD A BACKFLOW ASSEMBLY AND/OR PRESSURE REDUCING VALVE ASSEMBLY BE REQUIRED, THE PLUMBING CONTRACTOR IS TO FURNISH AND INSTALL SAME PER LOCAL AND STATE REQUIREMENTS. THE BACKFLOW ASSEMBLY SHALL BE A "WATTS" SERIES LF009 OR APPROVED EQUAL MEETING ASSE STANDARDS 1013. IF WATER PRESSURE IS MORE THAN 80 PSI THE PRESSURE REDUCING VALVE ASSEMBLY SHALL BE USED.
- THE CONTRACTOR SHALL FILE ALL NECESSARY NOTICES, OBTAIN AND PAY FOR ALL PERMITS, FEES, AND OTHER COSTS INCLUDING UTILITY CONNECTIONS OR EXTENSIONS, IN CONNECTION WITH HIS WORK AS NECESSARY. HE SHALL FILE ALL REQUIRED PLANS, PREPARE ALL DOCUMENTS, AND OBTAIN ALL NECESSARY APPROVALS OF ALL UTILITY AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
- IGNORANCE OF CODES, RULES, AND REGULATIONS, UTILITY COMPANY REGULATIONS, LAWS, ETC. SHALL NOT DIMINISH OR ABSOLVE CONTRACTOR'S RESPONSIBILITIES TO PROVIDE AND COMPLETE ALL WORK IN COMPLIANCE WITH SUCH.
- ALL ROOF PENETRATIONS FOR ROOF DRAINS AND PLUMBING/GAS/REFRIGERANT PIPING SHALL BE MADE IN ACCORDANCE WITH ROOF SYSTEM MANUFACTURER'S GUIDELINES. COORDINATE WITH ARCHITECTURAL DETAILS AND/OR LANDLORD REPRESENTATIVE FOR ROOF SYSTEM USED.
- THE POTABLE WATER SUPPLY SHALL BE PROTECTED AGAINST BACKFLOW AND SYPHONAGE BOTH NATURAL AND INDUCED. ALL EQUIPMENT CONNECTED TO THE POTABLE WATER SYSTEM BEING CAPABLE OF POLLUTING OR CONTAMINATING THE POTABLE WATER DISTRIBUTION SYSTEM OR ANY PART THEREOF BY MEANS OF A REVERSAL OF FLOW, PRESSURE DROP, PRESSURE LOSS, INDUCED VACUUM OR BY INJECTION BECAUSE OF ANY PRIMARY OR AUXILIARY PUMPING SYSTEM CONNECTED THERETO MUST BE ISOLATED AND CONTAINED BY MEANS OF APPROVED BACKFLOW DEVICES SUCH AS CHECK VALVES AND/OR VACUUM BREAKERS. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL THESE DEVICES PER LOCAL CODE REQUIREMENTS.
- PLUMBING EQUIPMENT SPECIFIED ON THE PLUMBING FIXTURE SCHEDULE IS FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR, INCLUDING ALL FITTINGS, STOPS, ESCUTCHEONS, ETC.
- CONTRACTOR SHALL PROVIDE TRAP PRIMERS, PIPING TO TRAP PRIMER CONNECTIONS DOWN IN WALL & BELOW FLOOR & CONNECTION TO DEVICE WHERE REQUIRED BY CODE.
- CONSTRUCTION "AS BUILT" DRAWINGS AND DOCUMENTS SHALL BE PROVIDED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF ACCEPTANCE. PROVIDE A COPY TO LL.
- OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER. PROVIDE A COPY TO LL.

PLUMBING LEGEND

	SANITARY SEWER PIPING (UNDERGROUND)
	GREASE SANITARY SEWER PIPING (UNDERGROUND)
	GREASE SANITARY SEWER PIPING (ABOVEGROUND)
	VENT PIPING
	DOMESTIC COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	GAS PIPING
	PIPE RISE
	PIPE DROP
	CAPPED END OF PIPE
	FLOOR CLEAN OUT
	P-TRAP
	SHUT - OFF VALVE
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	WALL CLEAN OUT
	GATE VALVE
	GAS COCK
	WATER HAMMER ARRESTER
	FLOOR DRAIN
	INDIRECT WASTE
	FLOOR SINK
	THERMOSTATIC MIXING VALVE

FIXTURE BRANCH SCHEDULES

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
FLOOR DRAIN	--	--	3/4"	2"
MOP SINK	3/4"	3/4"	3"	2"
3-COMP SINK	3/4"	3/4"	1W.	--
1-COMP SINK	1/2"	1/2"	1W.	--
HAND SINK	1/2"	1/2"	2"	2"
FLOOR SINK	--	--	3"	--

FOOD SERVICE EQUIPMENT CONTRACTOR

FOOD SERVICE EQUIPMENT CONTRACTORS SHALL FURNISH ALL FAUCETS & DRAINS WITH TAILPIECES FOR ALL FOOD SERVICE EQUIPMENT.

PLUMBING CONTRACTOR

PLUMBING CONTRACTOR SHALL FURNISH ALL VALVES, TRAPS, STOPS, GREASE TRAPS, SHUT-OFFS, PIPING OR OTHER MATERIALS REQUIRED FOR ROUGH-IN AND FINAL CONNECTION TO FOOD SERVICE EQUIPMENT. THIS CONTRACTOR TO MAKE ALL FINAL CONNECTIONS TO EQUIPMENT & INSTALL ALL INDIRECT WASTE FROM EQUIPMENT TO FUNNEL DRAIN OR FLOOR SINK. ALL PIPING TO BE CONCEALED IN PARTITIONS OR PIPE CHASES.

ENERGY CONSERVATION NOTES

- AS PER 2015 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 OF MINIMUM PIPE INSULATION THICKNESS TABLE C403.2.10

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)		
	CONDUCTIVITY BTU x IN / (H x FT² x °F)	MEAN RATING TEMPERATURE °F	<1	1 to < 1 1/2	1 1/2 to < 4
141-200	0.25-0.29	125	1.5	1.5	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0

- HOT WATER SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE C404.5.1. THE HOT WATER VOLUME FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER MAXIMUM PIPING LENGTH TABLE.

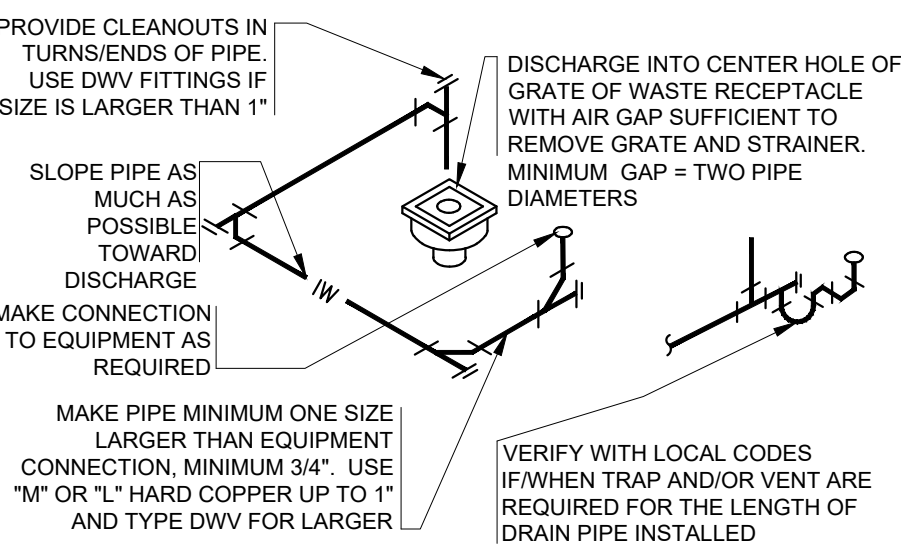
NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAV	OTHER FIXTURES
3/8"	3'	50'
1/2"	2'	43'
3/4"	0.5'	21'
1"	0.5'	13'
1 1/4"	0.5'	8'
1 1/2"	0.5'	6'
2" OR LARGER	0.5'	4'

- AS PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE C404.6.1, AUTOMATIC CONTROLS SHALL BE INSTALLED THAT LIMITS THE OPERATION OF A RECIRCULATING PUMP AND THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.

- AS PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE C404.7, PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:
 - 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.
 - THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

GREASE INTERCEPTOR SIZING

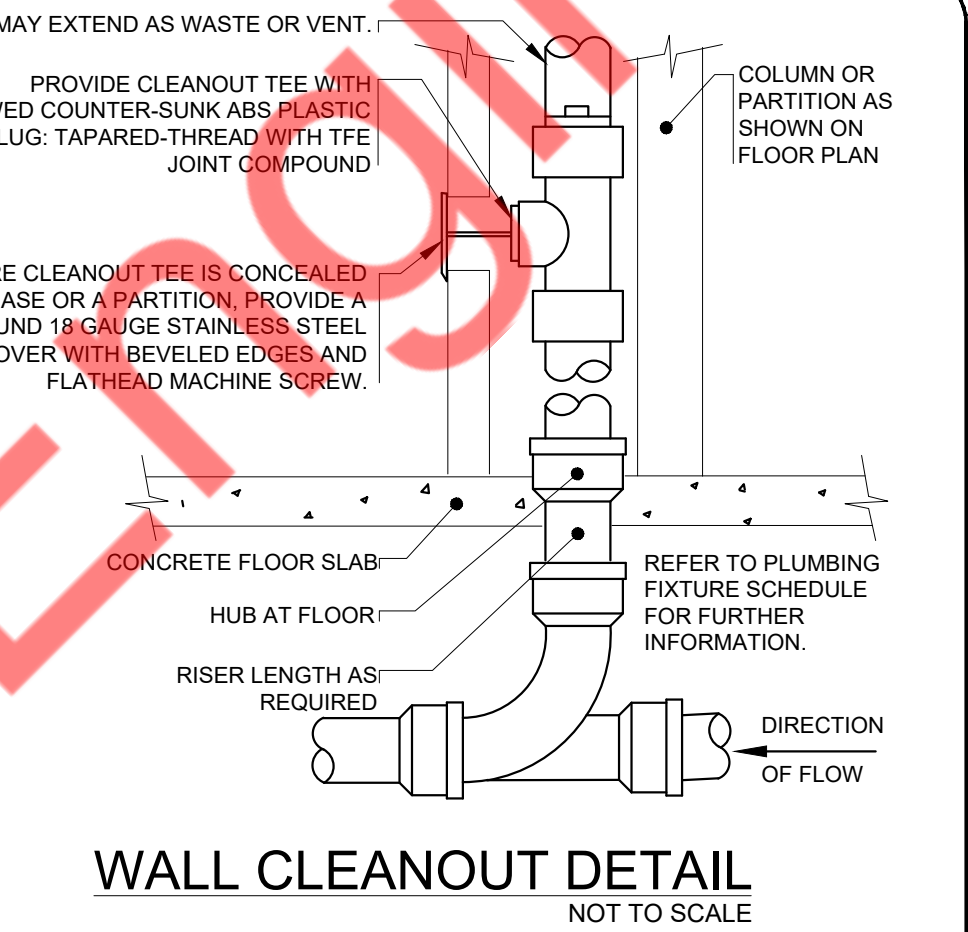
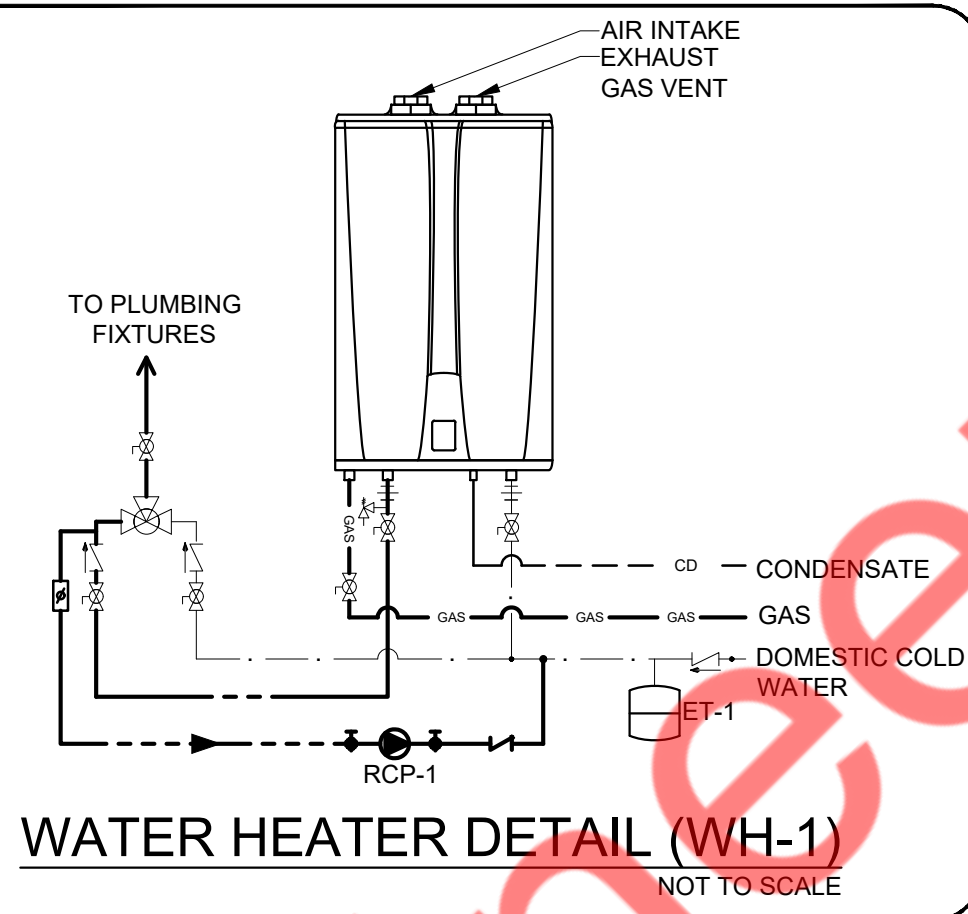
TAG	DESCRIPTION	QTY	DIMENSIONS			VOLUME CU. IN.	GALLONS	%USAGE	GPM	
			LENGTH	WIDTH	DEPTH				1 MIN	2 MIN
33	MOP SINK	01	22	24	6	3168	13.71	0.75	10.28	5.14
29	3 COMP SINK	01	18	24	14	18144	78.55	0.75	58.91	29.45
30	1 COMP SINK	01	20	16	12	3840	16.62	0.75	12.46	6.23
32	DIPPER WELL	03	12.75	6.75	4	344.25	1.49	0.75	3.36	1.68
FD	FLOOR DRAIN (EMERGENCY)	01	--	--	--	--	--	--	--	--
31	HAND SINK	03	14	10	5	700	3.03	0.75	6.81	3.4
FS	FLOOR SINK	01	--	--	--	--	3	--	3	1.5
TOTAL GPM									94.82	47.4



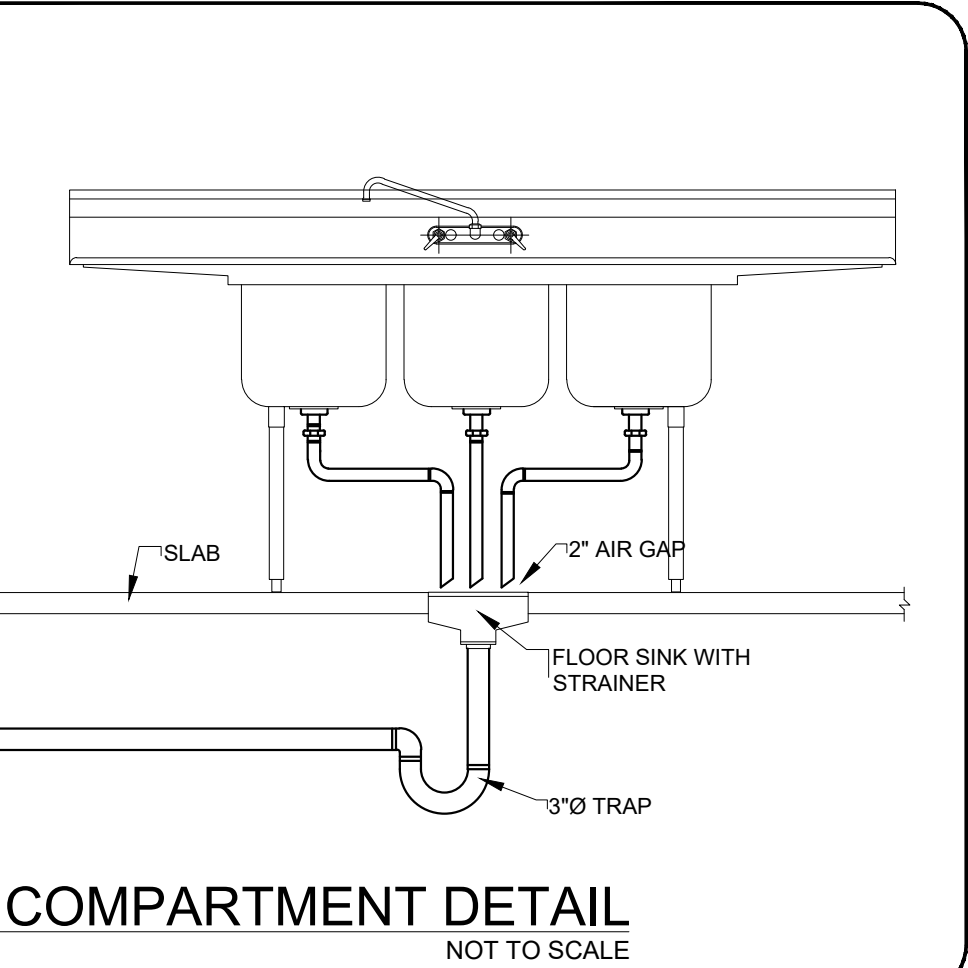
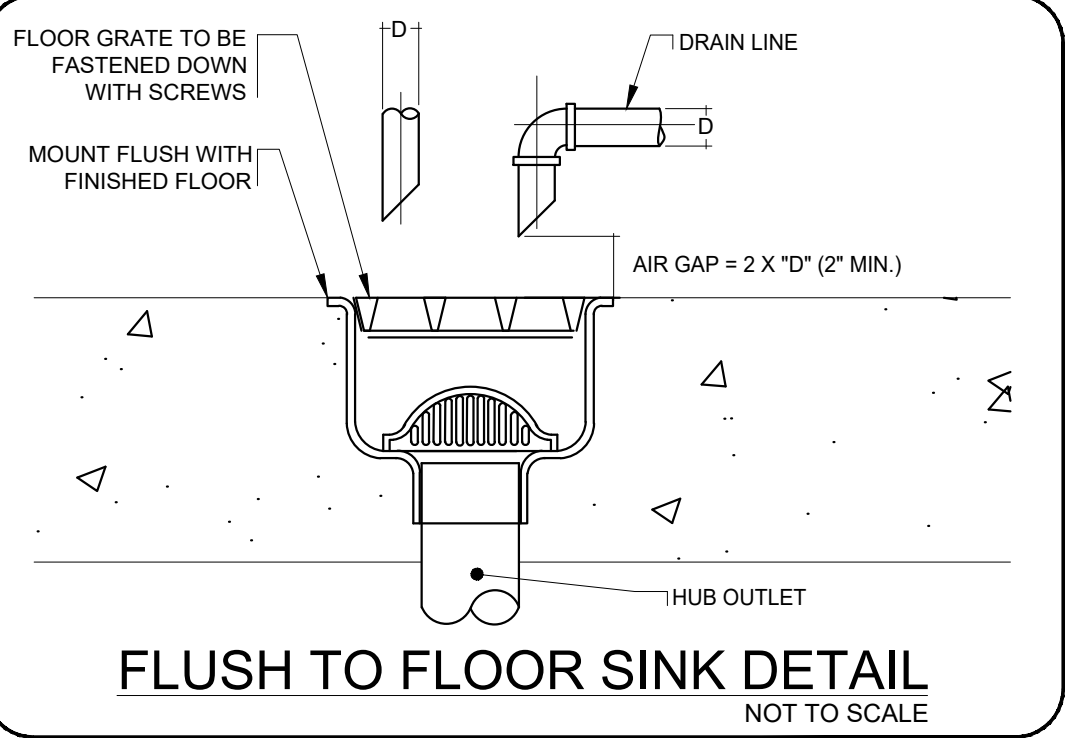
INDIRECT WASTE DETAIL
NOT TO SCALE

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

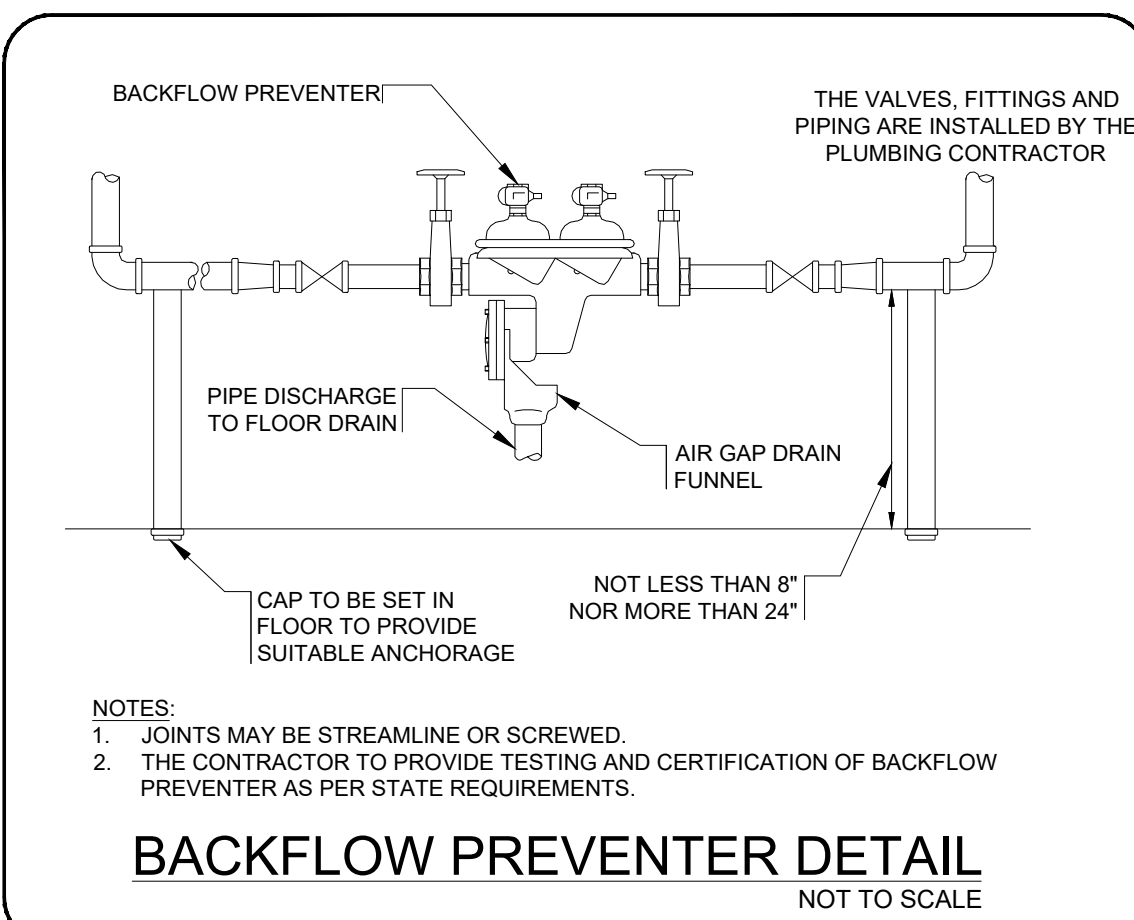
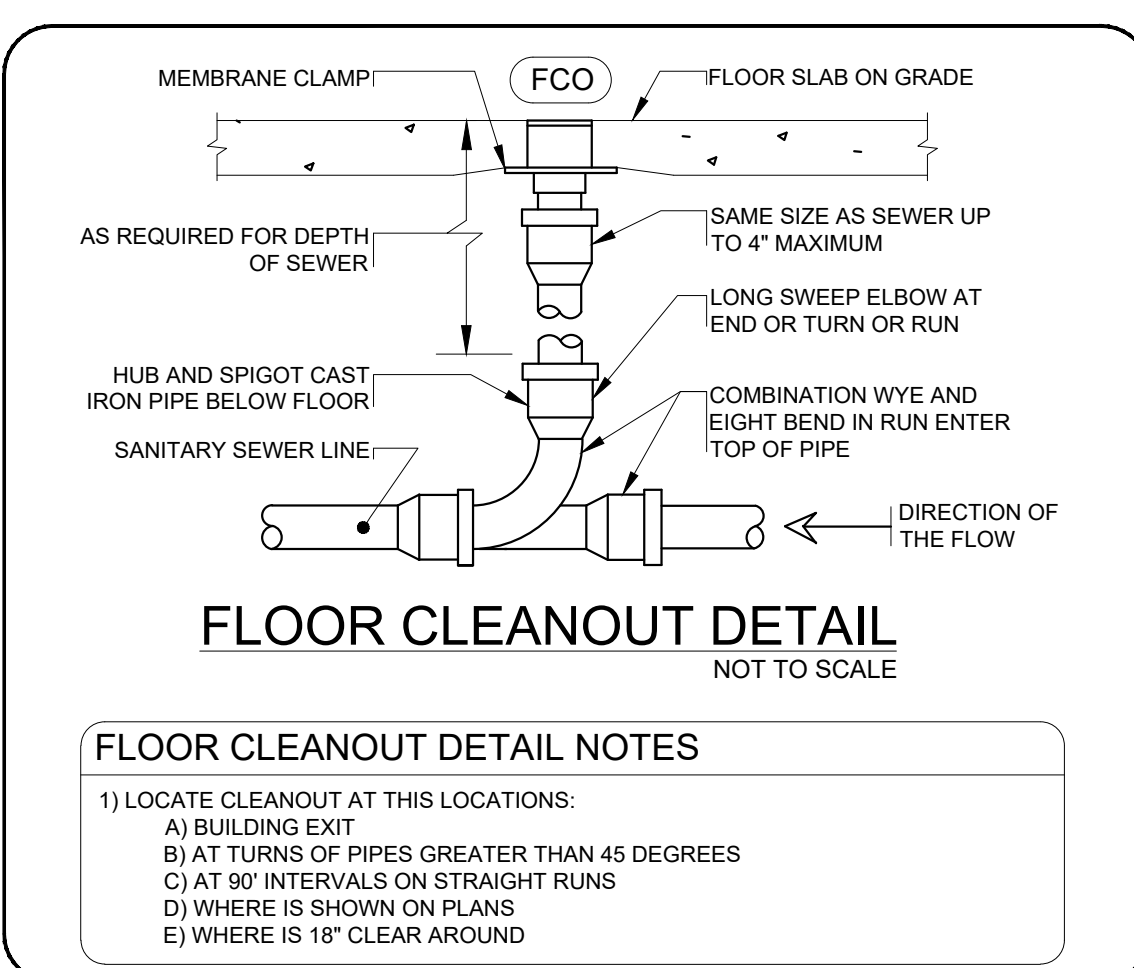
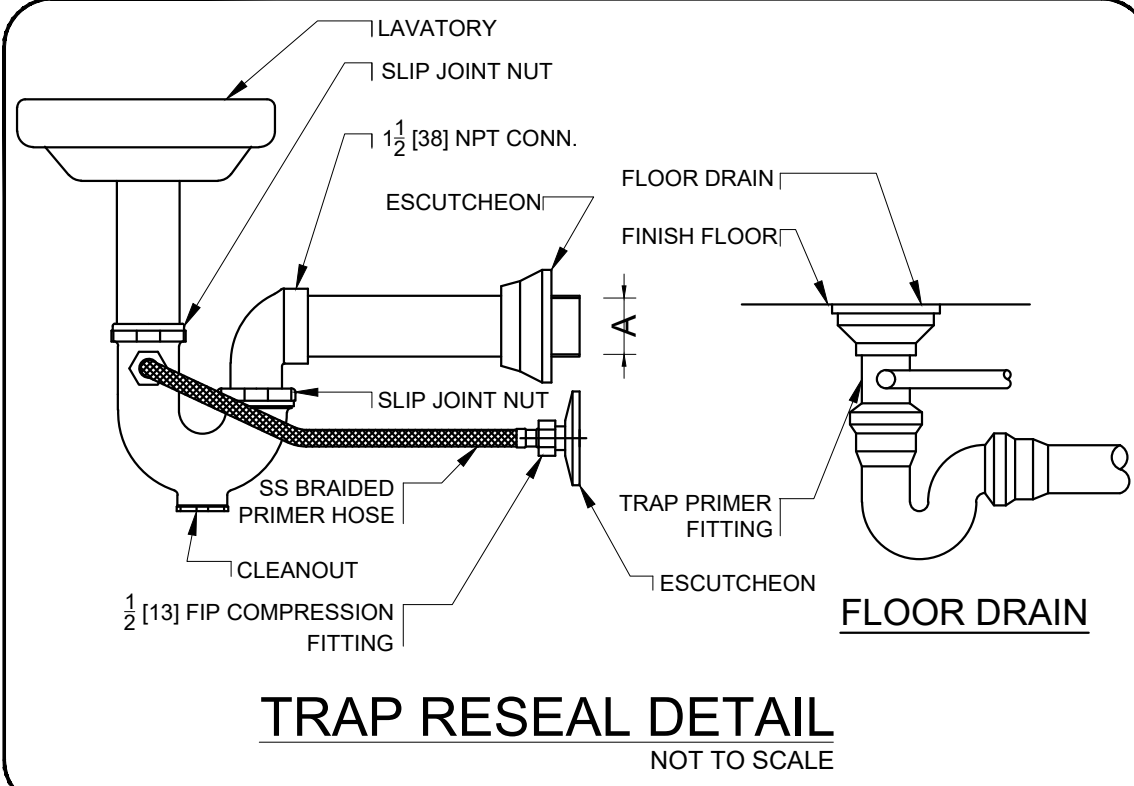
VERIFY WITH LOCAL CODES IF WHEN TRAP AND/OR VENT ARE REQUIRED FOR THE LENGTH OF DRAIN PIPE INSTALLED



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



3 COMPARTMENT DETAIL
NOT TO SCALE



- NOTES:**
- JOINTS MAY BE STREAMLINE OR SEWED.
 - THE CONTRACTOR TO PROVIDE TESTING AND CERTIFICATION OF BACKFLOW PREVENTER AS PER STATE REQUIREMENTS.

Item No.	Qty.	Description	Manufacturer	Model	WATER		WASTE	
					Hot	Cold	Direct	Indirect
6	1	ICE MACHINE	SCOTSMAN			1/4"	3/4"	
12	1	ESPRESSO MACHINE	SCHAERER	COFFEE ART PLUS		3/8"	1-1/2"	
29	1	3 COMPARTMENT SINK**	REGENCY	600S31824218	3/4"+	3/4"	1-1/2"	
30	1	1 COMPARTMENT SINK					1-1/2"	
30A	1	FAUCET FOR PREP SINK	REGENCY	600FW88LL	1/2"+	1/2"	1-1/2"	
31	3	HAND SINK			1/2"+	1/2"	2"	
32	3	DIPPER WELL	NEMCO	77316-13		3/8"	1-1/2"	
33	1	MOP SINK**			3/4"+	3/4"	3"	
FS	6	FLOOR SINKS	ZURN	Z1900-23-31 (ZS1900 IF IN EXPOSED AREAS)			3"	
FD	4	FLOOR DRAINS*	ZURN	ZS415 W/ TYPE BS STRAINER			3/4"	
TMV	3	THERMAL MIXING VALVE	WATTS	LFMMV	1/2"	1/2"		

* HOT WATER 140°F, ** PROVIDE TMV AS PER SCHEDULE, *PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS, **ADAPTOR REQUIRED, ***LEVER WASTE VALVE REQUIRED

Item No.	Qty.	Description	Manufacturer	Model	WATER		WASTE		
					Hot	Cold	Waste	Usage	Spec
A	2	LAVATORY	AMERICAN STANDARD	LUCERNE 0355.012			2"		
	2	LAVATORY FAUCET	DELTA	B2510LF-SS	1/2"	1/2"		1.2	GPM
B	2	WATER CLOSET	AMERICAN STANDARD	MADERA 2857.016		1"	4"	1.6	GPF
TMV	2	THERMAL MIXING VALVE	WATTS	LFMMV	1/2"	1/2"			

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12/03/24	PROJECT COORD.

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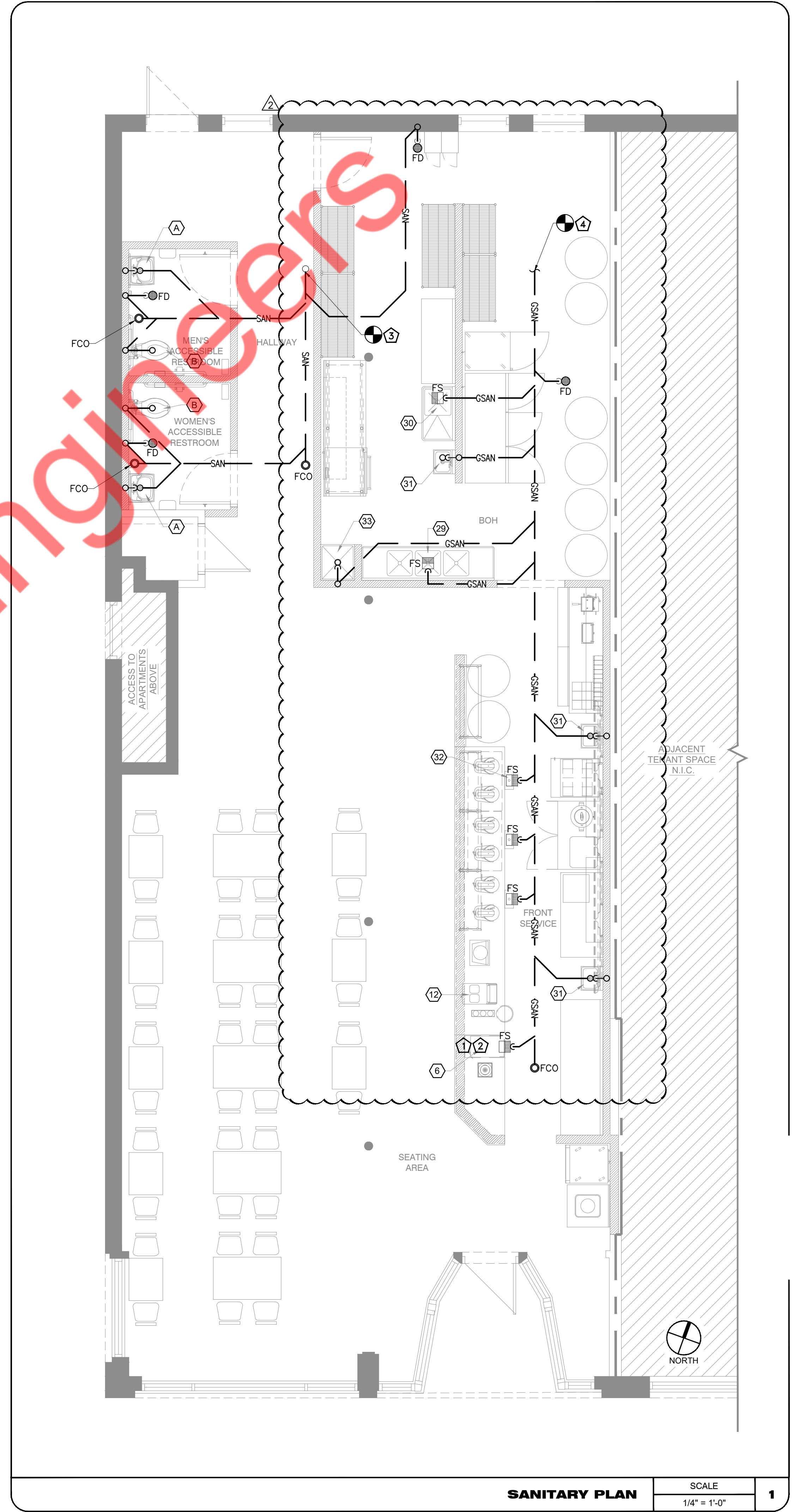
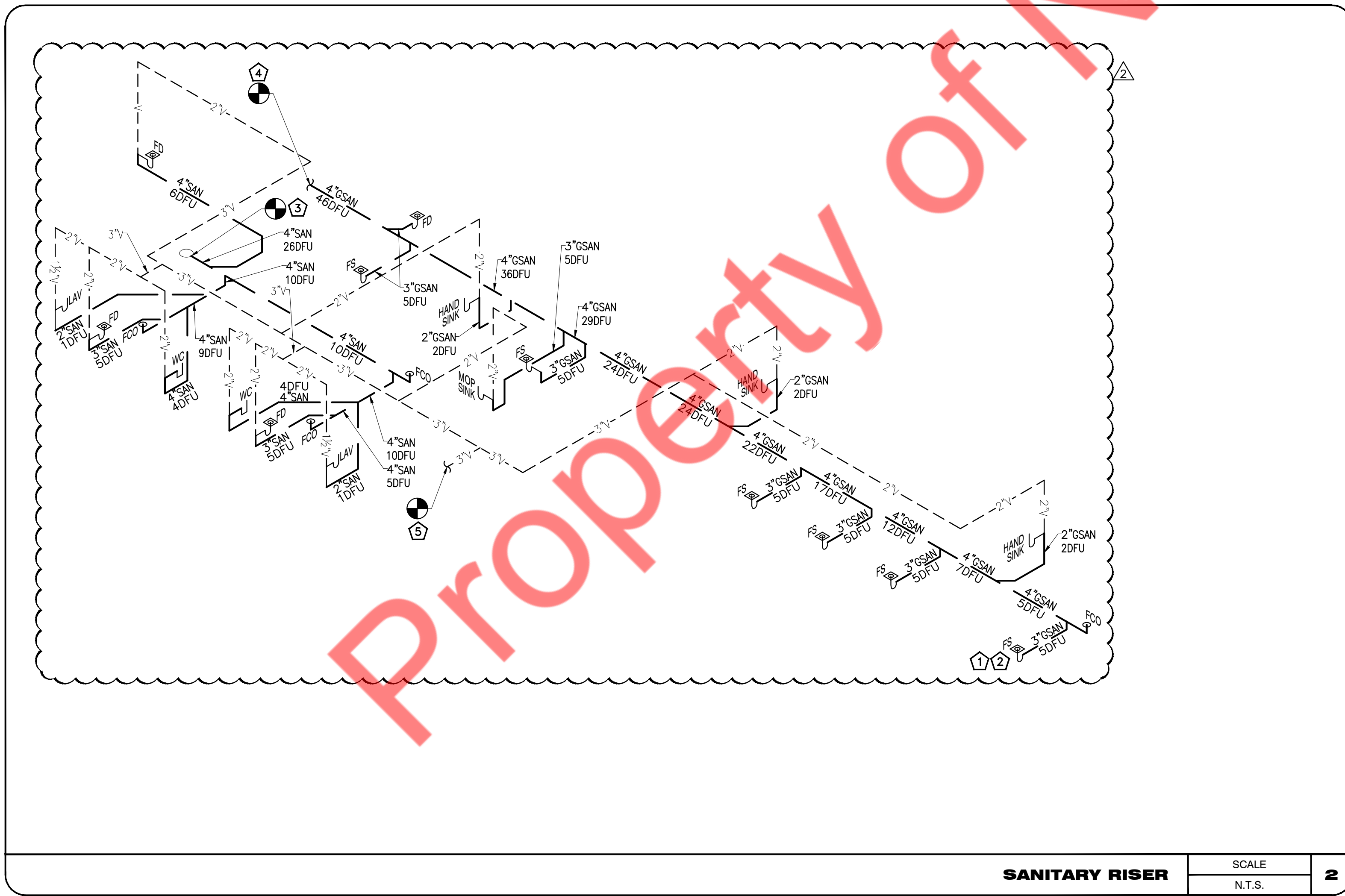
PLUMBING LEGENDS, NOTES & DETAILS

SANITARY PLAN & RISER KEY NOTE

- 1 ROUTE INDIRECT WASTE FROM ICE MACHINE TO FLOOR SINK WITH APPROVED AIR GAP.
- 2 ROUTE INDIRECT WASTE FROM ESPRESSO MACHINE TO FLOOR SINK WITH APPROVED AIR GAP.
- 3 EXTEND & CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY MAIN STUB UP IN AREA. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT OF EXISTING SANITARY LINE AND MAKE NECESSARY CHANGES IF REQUIRED.
- 4 EXTEND & CONNECT NEW 4" GREASE SANITARY WASTE PIPING TO EXISTING GREASE SANITARY MAIN LINE OF ADEQUATE SIZE IN AREA WITH EXISTING GREASE INTERCEPTOR. CONTRACTOR TO FIELD VERIFY EXACT SIZE, LOCATION, ROUTING AND INVERT OF EXISTING GREASE SANITARY LINE AND UPGRADE IF REQUIRED. ALSO, CONTRACTOR TO CLEAN & FIELD VERIFY THE CONDITION & LOCATION OF EXISTING GREASE INTERCEPTOR AND REPLACE IF REQUIRED.
- 5 EXTEND & CONNECT NEW 3" VENT PIPING TO EXISTING VENT LINE OF ADEQUATE SIZE IN AREA. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT LINE AND UPGRADE IF REQUIRED. PROVIDE NEW VTR IF NOT EXISTING.

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. EXCEPT THAT WHERE THE DRAINAGE PIPING IS UPSTREAM OF A GREASE INTERCEPTOR, THE SLOPE OF THE PIPING SHALL NOT BE LESS THAN 1/4" PER FOOT OF RUN.
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.
5. COORDINATE ALL WASTE CONNECTIONS TO KITCHEN EQUIPMENT WITH KITCHEN EQUIPMENT SUPPLIER.
6. COORDINATE FINAL KITCHEN EQUIPMENT LOCATIONS WITH KITCHEN EQUIPMENT SUPPLIER.
7. PLUMBING PIPES ENCLOSED IN THE WALL OR CEILING NEED TO BE INSTALLED IN SUCH A WAY THAT DOES NOT OBSTRUCT OR PREVENT THE CLEANING OF THE FLOORS, WALLS, AND CEILINGS. DISTANCE HORIZONTAL LINES AND PIPES AWAY FROM THE WALL BY USING BRACKETS DESIGNED TO PROVIDE A SPACE FOR CLEANING THE SURFACE BEHIND THEM OR CAULK THE TOP OF THE PIPE OR LINE AT THE WALL TO REMOVE ANY HARD TO CLEAN GAPS. NO LINES OR PIPES CAN RUN ALONG THE FLOOR.



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SANITARY PLAN & RISER

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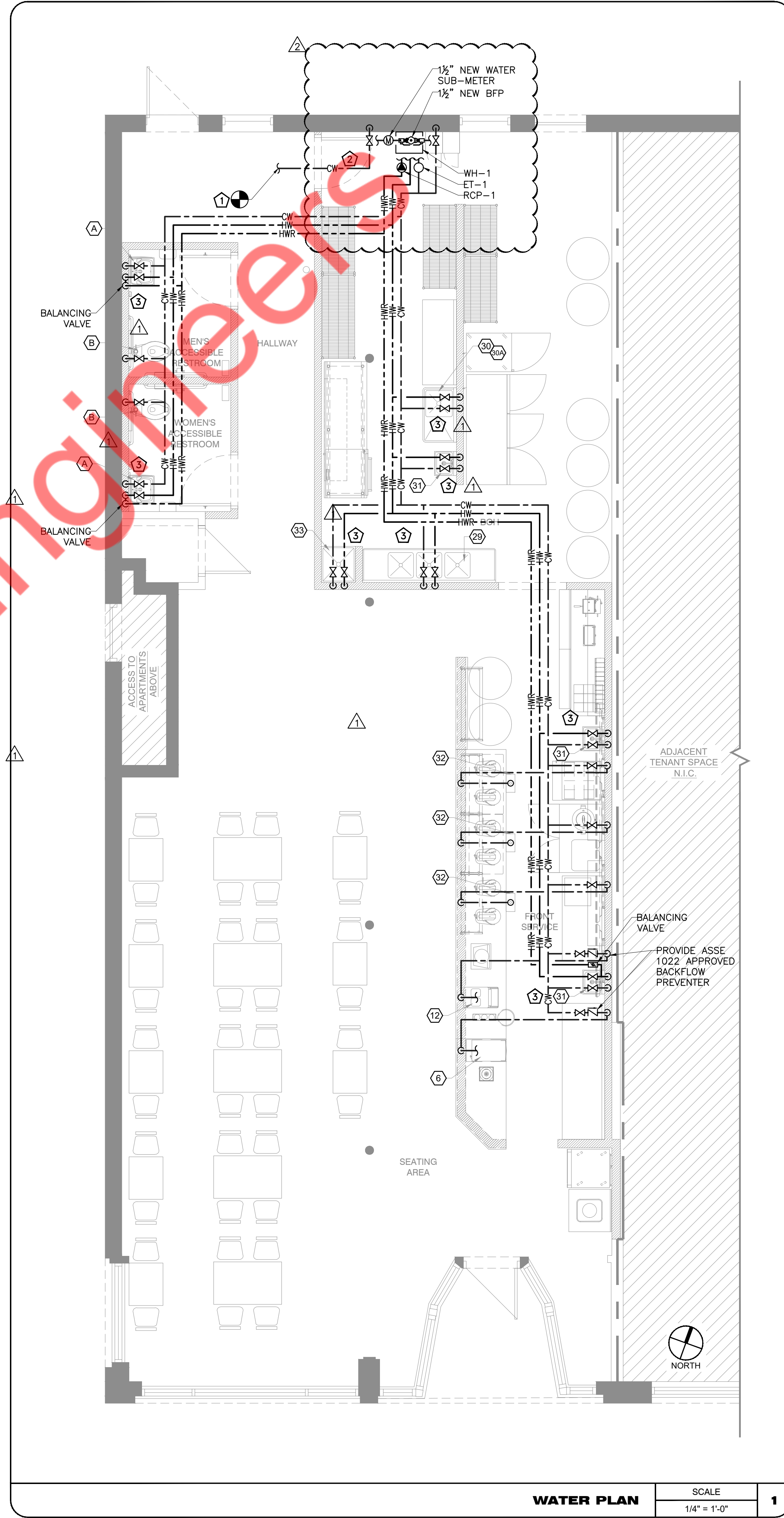
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WATER PLAN & RISER



WATER PLAN & RISER KEY NOTE

- 1 EXTEND & CONNECT NEW 1-1/2" CW LINE TO EXISTING WATER MAIN LINE IN SPACE. PROVIDE NEW SHUT OFF VALVE IN NEW CW LINE AT THE POINT OF CONNECTION. CONTRACTOR TO FIELD VERIFY SIZE AND LOCATION OF EXISTING CW PIPING AND UPGRADE IF REQUIRED.
- 2 NO TAP OFF TO BE TAKEN BEFORE BFP.
- 3 ALL HAND SINKS WATER TEMPERATURE MUST BE AT LEAST 100 °F. PROVIDED THROUGH A MIXING VALVE OR A COMBINATION FAUCET. THE WATER FOR THE WASH SOLUTION AT THE THREE-COMPARTMENT SINK. MOP SINK MUST BE AT A TEMPERATURE OF 110 °F OR MORE.

GENERAL NOTES

1. CWIHW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE (REFER NOTES ON SHEET P-1).
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
4. NEW WATER HEATER DRAIN SPILLS TO FLOOR DRAIN.
5. COORDINATE ALL WATER CONNECTIONS TO KITCHEN EQUIPMENT WITH KITCHEN EQUIPMENT SUPPLIER.
6. COORDINATE FINAL KITCHEN EQUIPMENT LOCATIONS WITH KITCHEN EQUIPMENT SUPPLIER.
7. PLUMBING PIPES ENCLOSED IN THE WALL OR CEILING NEED TO BE INSTALLED IN SUCH A WAY THAT DOES NOT OBSTRUCT OR PREVENT THE CLEANING OF THE FLOORS, WALLS, AND CEILINGS. DISTANCE HORIZONTAL LINES AND PIPES AWAY FROM THE WALL BY USING BRACKETS DESIGNED TO PROVIDE A SPACE FOR CLEANING THE SURFACE BEHIND THEM OR CAULK THE TOP OF THE PIPE OR LINE AT THE WALL TO REMOVE ANY HARD TO CLEAN GAPS. NO LINES OR PIPES CAN RUN ALONG THE FLOOR.

WATER HEATER SCHEDULE

MANUFACTURER	NORITZ
MODEL	NCC300DV
EQUIPMENT TAG	WH-1
STATUS	NEW
QUANTITY	1
CAPACITY	TANKLESS
FUEL	GAS
BTU/HR	300,000
FLOW RATE	7.3 GPM*
THERMAL EFFICIENCY	97%
AIR INTAKE / EXHAUST VENT	4"Ø / 4"Ø
VOLTAGE	120/1/60
AMPERAGE	4
WEIGHT (EMPTY)	110 LBS.

- NOTES:
1. * @ 80°F TEMPERATURE RISE.
 2. INSTALL NEW EXPANSION TANK (ET-1) AMTROL MODEL THERM-X-TROL ST-1, PER LOCAL CODE REQUIREMENTS.

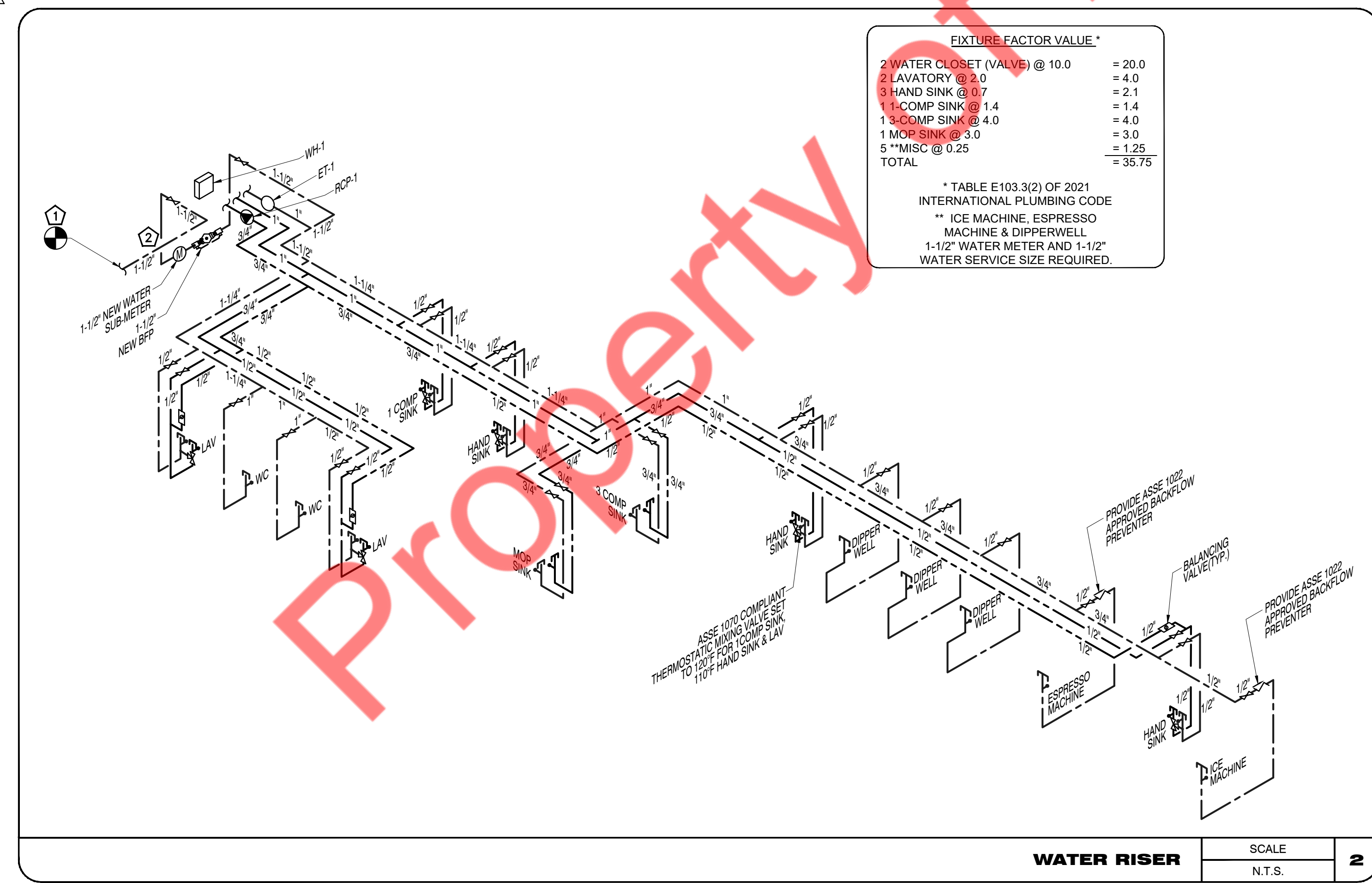
RECIRCULATION PUMP SCHEDULE

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

FIXTURE FACTOR VALUE *

2 WATER CLOSET (VALVE) @ 10.0	= 20.0
2 LAVATORY @ 2.0	= 4.0
3 HAND SINK @ 0.7	= 2.1
1 1-COMP SINK @ 1.4	= 1.4
1 3-COMP SINK @ 4.0	= 4.0
1 MOP SINK @ 3.0	= 3.0
5 **MISC @ 0.25	= 1.25
TOTAL	= 35.75

* TABLE E103.3(2) OF 2021 INTERNATIONAL PLUMBING CODE
 ** ICE MACHINE, ESPRESSO MACHINE & DIPPERWELL
 1-1/2" WATER METER AND 1-1/2" WATER SERVICE SIZE REQUIRED.



WATER RISER SCALE N.T.S. 2

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

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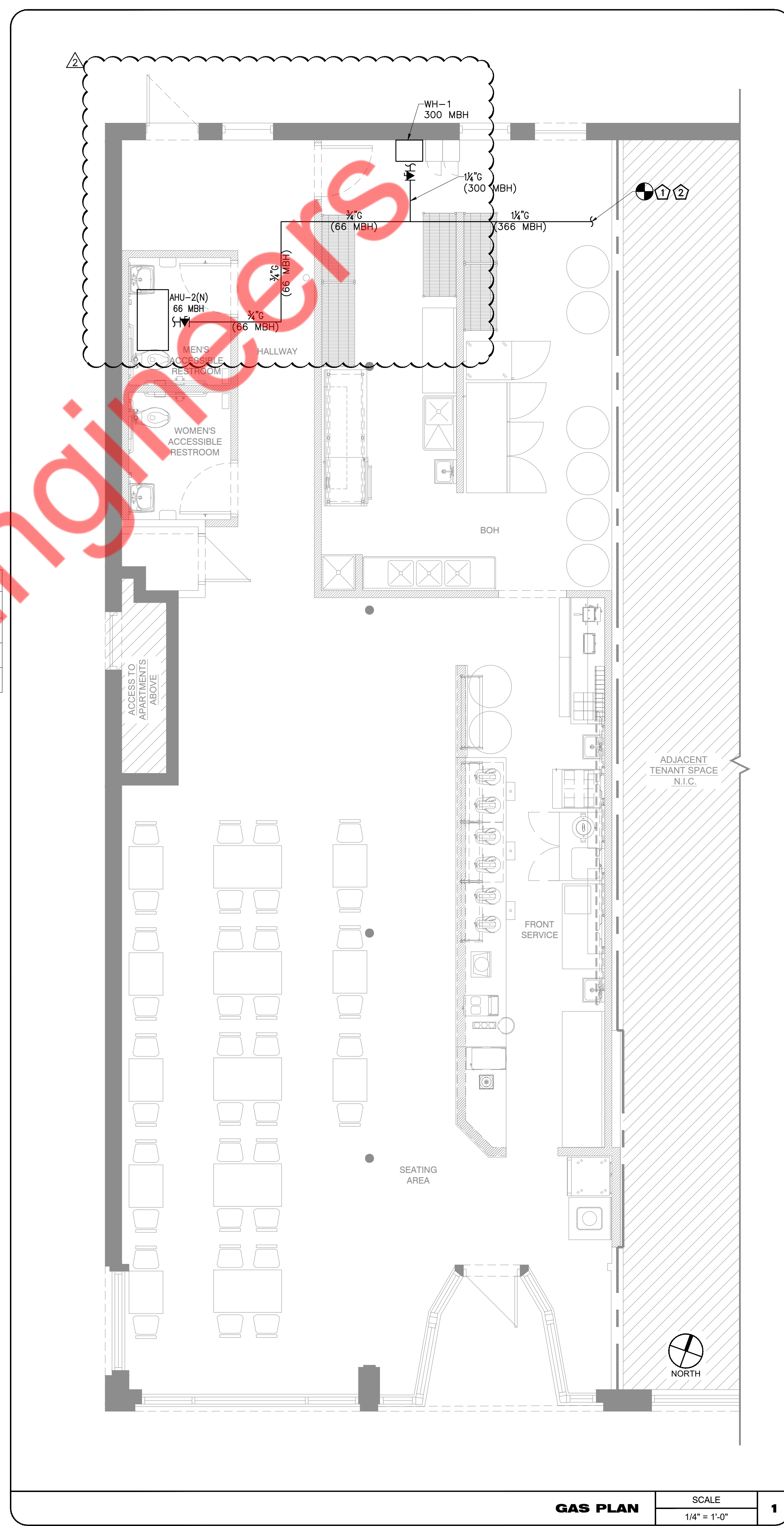
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GAS PLAN & RISER

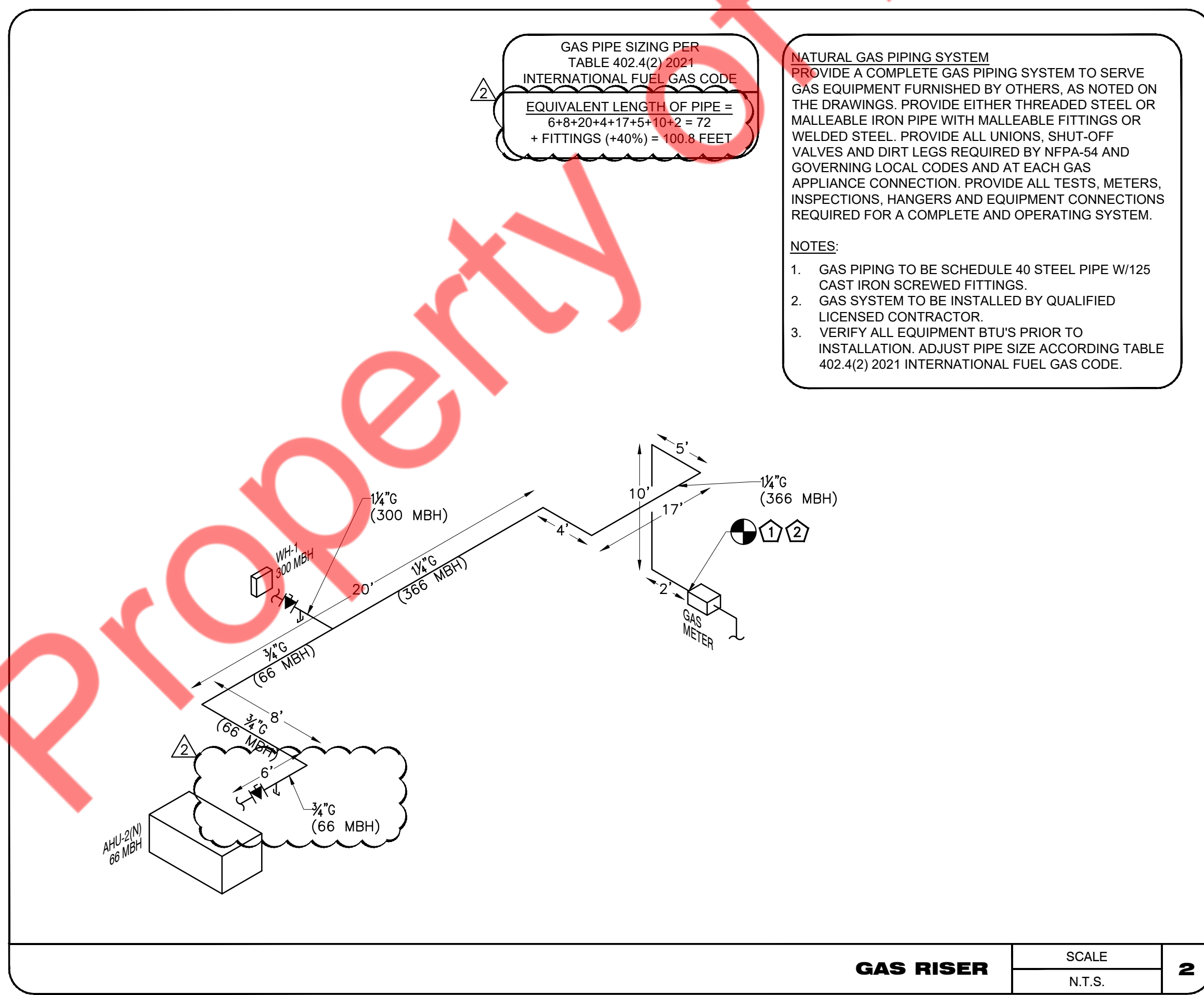


GAS SCHEDULE						
ITEM NO.	QTY.	DESCRIPTION	MANUFACTURER	MODEL	SIZE	BTU/HR.
WH-1	1	WATER HEATER	NORITZ	NCC300DV	1-1/4"	300,000
	1	AHU-2(N)	REFER MECHANICAL SCHEDULE	REFER MECHANICAL SCHEDULE	3/4"	66,000
TOTAL LOAD						366,000

GAS PLAN & RISER KEY NOTE

1 EXTEND & CONNECT NEW 1-1/4" GAS LINE TO GAS METER. CONTRACTOR TO FIELD VERIFY SIZE, PRESSURE AND LOCATION OF GAS METER WITH OWNER/LANDLORD/UTILITY COMPANY AND UPGRADE IF REQUIRED. ALSO CONTRACTOR TO COORDINATE WITH LANDLORD AND PROVIDE NEW GAS METER AT LOCATION OF EXISTING GAS METER BANK IF NOT EXISTING.

2 CONTRACTOR TO FIELD VERIFY EXISTING AVAILABLE PRESSURE AND MAKE SURE TO PROVIDE ADEQUATE INLET PRESSURE TO GAS FIRED WATER HEATERS & MECHANICAL EQUIPMENT. PROVIDE PRESSURE REGULATOR IF REQUIRED.



GAS RISER SCALE N.T.S. 2

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