

MECHANICAL SYMBOLS LIST

	EQUIPMENT SYMBOL
	CEILING DIFFUSER SUPPLY
	CEILING DIFFUSER RETURN
	VOLUME DAMPER W/ ACCESS DOOR
	BACKDRAFT DAMPER
	FIRE SMOKE DAMPER W/ ACCESS DOOR
	THERMOSTAT
	TEMPERATURE SENSOR
	MANUAL PULL STATION
	CO2 DETECTOR
	RECTANGULAR DUCT (WIDTH X DEPTH)
	RECTANGULAR DUCT (WIDTH X DEPTH)
	AIR DUCT W/ 1.5" ACOUSTICAL LINING
	FLEXIBLE CONNECTION
	RECTANGULAR DUCT CROSS SECTION SUPPLY
	RECTANGULAR DUCT CROSS SECTION RETURN
	ROUND DUCT CROSS SECTION
	POINT OF NEW CONNECTION

MECHANICAL DRAWING LIST

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M-002	MECHANICAL SPECIFICATIONS (1 OF 2)
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APPLICABLE CODES

- A. 2018 INTERNATIONAL BUILDING CODE
- B. 2018 INTERNATIONAL MECHANICAL CODE
- C. 2018 INTERNATIONAL PLUMBING CODE
- D. 2018 INTERNATIONAL FUEL GAS CODE
- E. 2013 ASHRAE 90.1

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AL	ACOUSTIC LINING
BD	GRAVITY DAMPER
CD	CONDENSATE DRAIN
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
E	EXISTING
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
FD/AD	FIRE DAMPER W/ACCESS DOOR
FD	FIRE DAMPER W/FUSIBLE LINK
FSD	FIRE SMOKE DAMPER
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
KEF	KITCHEN EXHAUST FAN
MAU	MAKE UP AIR UNIT
MD	MOTORIZED DAMPER
N	NEW
RA	RETURN AIR
RAD	RETURN AIR DUCT
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAD	SUPPLY AIR DUCT
SEER	SEASONAL ENERGY EFFICIENCY RATIO
VD	VOLUME CONTROL DAMPER

ST. MARY BUILDING DEPARTMENT NOTES

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

- THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
- TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2018 IBC REQUIREMENTS AS OUTLINED IN SECTION [IBC 1704].
- 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.
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - A. STANDARDS OF HEATING - 2018 IMC - 309.1
 - B. DUCT CONSTRUCTION AND INSTALLATION - 2018 IMC - 603
 - C. AIR INTAKES, EXHAUSTS AND RELIEF - 2018 IMC - 401.5
 - D. AIR FILTERS - 2018 IMC - 605
 - E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS - 2018 IMC - 606
 - F. GAS FIRED EQUIPMENT - 2018 FUEL GAS CODE.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH 2018 IMC - 401
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- 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.
- REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- SMOKE DETECTOR SHALL MEET UL268A.
- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- 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. HVAC SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS AS REQUIRED.
- AIR BALANCING REPORT SHOULD BE PROVIDED IN ACCORDANCE WITH 2018 IMC 403.3.1.5.

GENERAL NOTES

- CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
- ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF-DAYS WITHOUT PRIOR WRITTEN APPROVAL.
- THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL MAKE ALLOWANCE IN PRICING FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE OTHER TRADES IS REQUIRED.
- SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
- PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
- SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
- WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.
- REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
- THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE
- ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.

21. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.

22. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

23. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATIONS OF INSPECTION AND APPROVAL.

24. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES, WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

25. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:

- "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

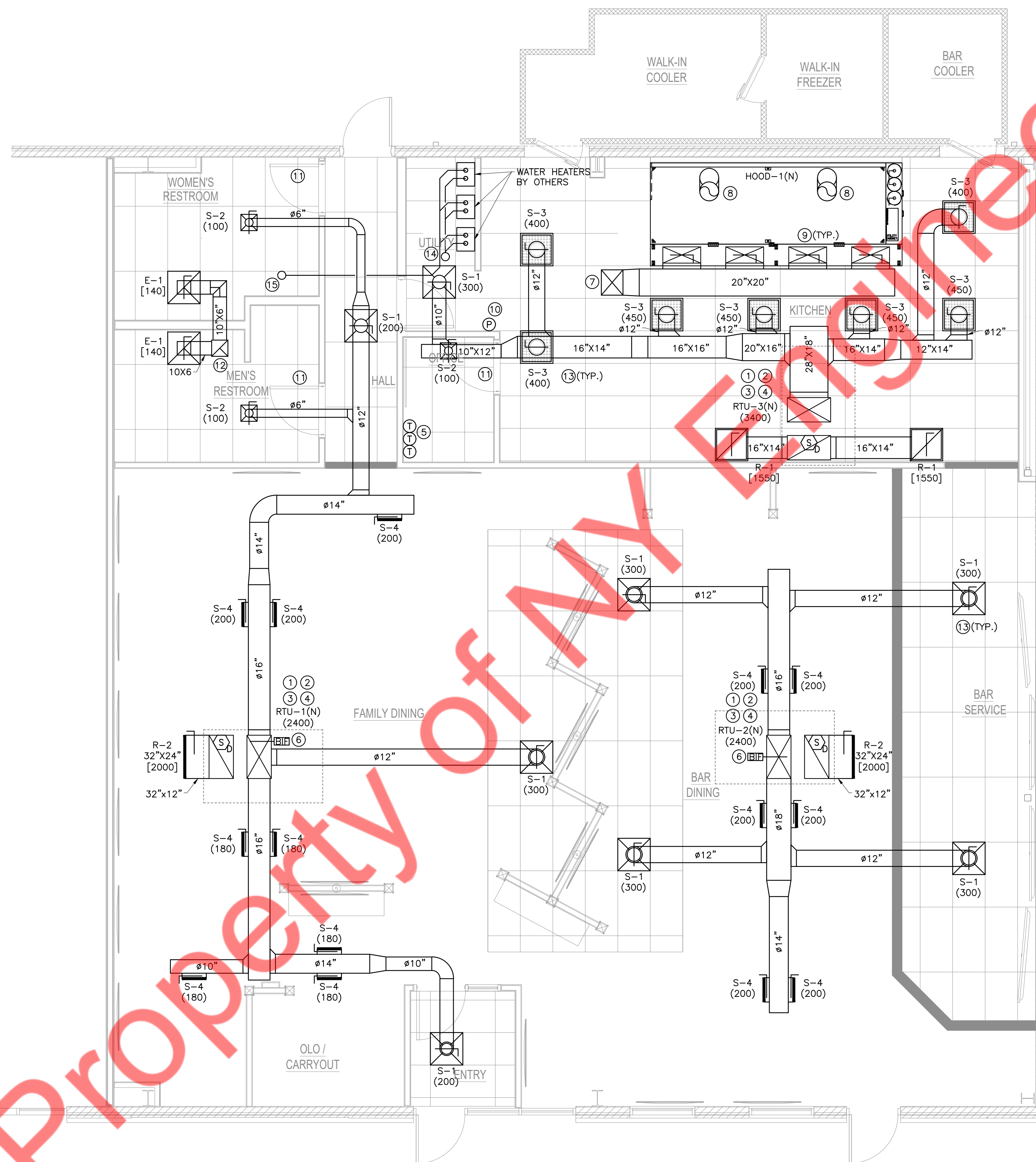
SCOPE OF WORK

SCOPE OF WORK

- THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS AS DESCRIBED IN THE SPECIFICATIONS, FLOOR PLAN(S) DESIGN, DETAIL DRAWINGS, NOTES, RFI'S, ETC. FOR THIS PROJECT. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
- THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

KEYED NOTES (1)

1. CONNECT AIR DISTRIBUTION DUCT TO AIR CONDITIONING UNITS AS NECESSARY.
2. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
3. PROVIDE REMOTE TEMP SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
4. PROVIDE DUCT MOUNTED SMOKE DETECTOR UPON DETECTION OF SMOKE, RTU WILL SHUTDOWN AND ACTIVATE ALARM. COORDINATE INSTALLATION LOCATION WITH ACCESS REQUIREMENT.
5. PROVIDE PROGRAMMABLE THERMOSTAT WITH LOCKING COVER FOR NEW RTUS. COORDINATE LOCATION ON SITE WITH ARCHITECT / OWNER. SEAL WALL OPENINGS WITH CAULK. COORDINATE LOCATION ON SITE WITH GENERAL CONTRACTOR AND EQUIPMENT.
6. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL BI-POLAR IONIZATION FILTER (BIF) DEVICE IN SA DUCT AS INDICATED. BI-POLAR IONIZATION FILTER DEVICE SHALL BE EQUAL TO PLASMA AIR "7000" SERIES. SIZE AND INSTALL PER THE MANUFACTURER'S RECOMMENDATION.
7. 18"x16" SUPPLY DUCT FROM MAU-1(N).
8. 14" GREASE EXHAUST DUCT UP TO ROOF. PROVIDE TRANSITIONS AND SUPPORTS AS REQUIRED. PROVIDE FACTORY FABRICATED UL LISTED EXHAUST DUCT BY ECON-AIR (OR EQUAL).
9. 28"x12" SUPPLY AIR DUCT TO HOOD COLLAR REFER HOOD SHEETS.
10. PROVIDE MANUAL PULL STATION FOR KITCHEN HOOD EXHAUST AND MAKE-UP AIR SYSTEM, FILED VERIFY EXACT LOCATION. INTERLOCK WITH KITCHEN HOODS TO DE-ENERGIZE HOOD SIMULTANEOUSLY UPON ACTIVATION OF EMERGENCY SWITCH.
11. PROVIDE 1/2" DOOR UNDER CUT.
12. 12"x12" EXHAUST DUCT UP TO EF-1(N).
13. ALL DIFFUSER LOCATED WITHIN KITCHEN AND BAR AREA SHALL BE CONSTRUCTED OF PLASTIC MATERIAL TO ELIMINATE RUST POTENTIAL.
14. #6" COMMON COMBUSTION AIR INTAKE FOR WATER HEATERS UP TO ROOF. CONNECT #3" VENT PIPE TO EACH WATER HEATER. ROUTE PIPING WITH MINIMAL AMOUNT OF BEND AND LENGTH AS REQUIRED BY RESPECTIVE UNIT MANUFACTURERS'S REQUIREMENT.
15. #6" COMMON FLUE VENT PIPE FOR WATER HEATERS UP TO ROOF. CONNECT #3" VENT PIPE TO EACH WATER HEATER. ROUTE PIPING WITH MINIMAL AMOUNT OF BEND AND LENGTH AS REQUIRED BY RESPECTIVE UNIT MANUFACTURERS'S REQUIREMENT.



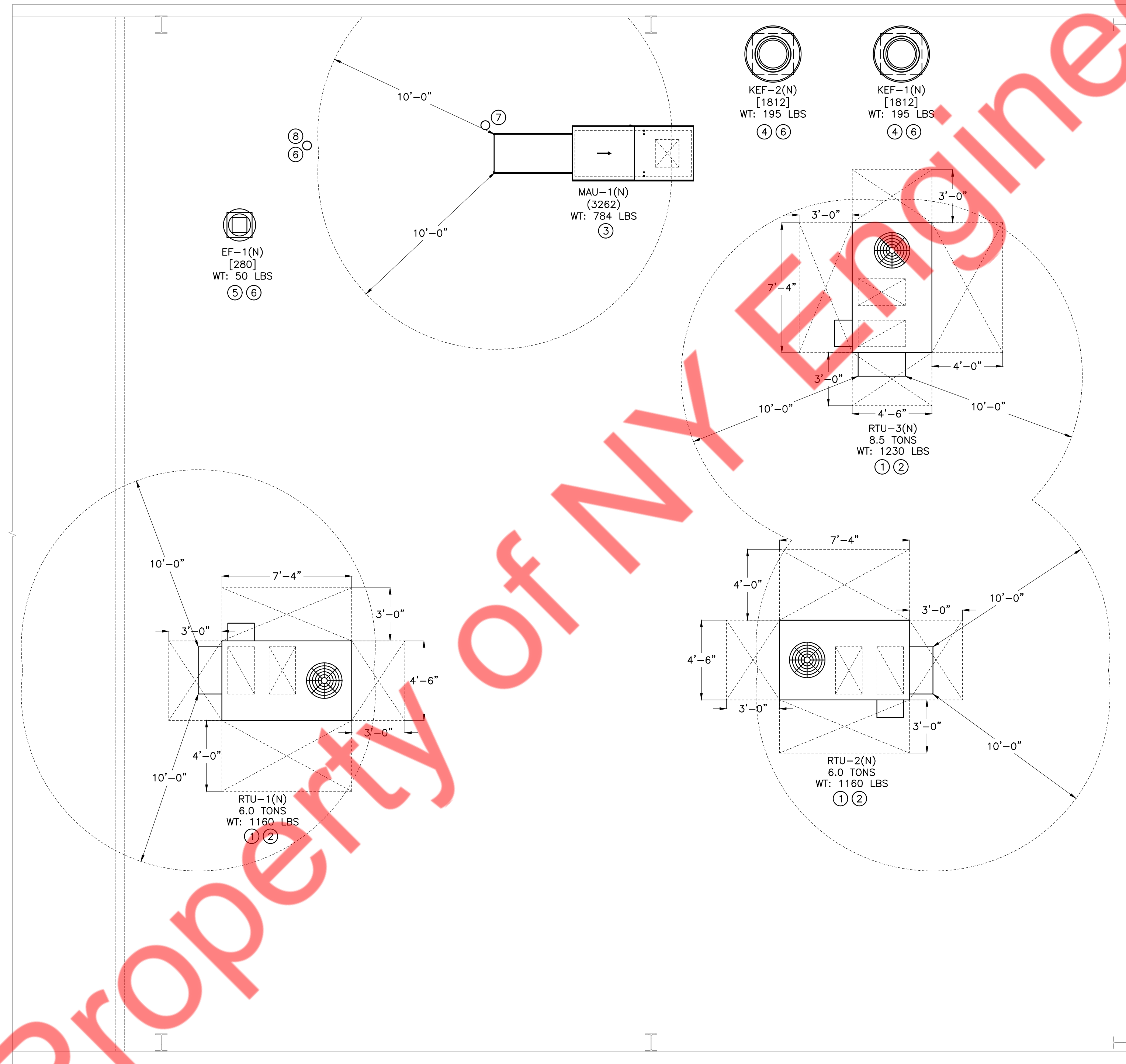
GENERAL NOTES

- A. CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN ON PLAN.
- B. NEW DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA PIPING, DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
- C. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- D. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
- E. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- F. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
- G. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
- H. NEW DUCTWORK IN CONCEALED AREAS MAY BE RECTANGULAR WITH EQUIVALENT CROSS SECTIONAL FLOW AREA.
- I. PROVIDE R-8 INSULATION FOR OAI DUCT AND R-6 INSULATION FOR SUPPLY AND RETURN DUCT. PROVIDE 2 LAYER OF 1.5" FIRE WRAP AROUND KITCHEN EXHAUST GREASE DUCTS.
- J. FOR EXPOSED DUCTWORK, PROVIDE INTERNAL INSULATION. FOR CONCEALED DUCTWORK PROVIDE EXTERNAL INSULATION.
- K. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS COORDINATE WITH ELECTRICAL ENGINEER FOR POWER REQUIREMENT FOR FSD.
- L. PROVIDE CHORD OPERATED DAMPERS IN INACCESSIBLE CEILING.
- M. OUTDOOR AIR INTAKE, EXHAUST OPENINGS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS.
- N. ALL EQUIPMENT SHALL MAINTAIN MINIMUM CLEARANCE FROM THE COMBUSTIBLE MATERIAL AS PER MANUFACTURE RECOMMENDATION.
- O. PROVIDE CLEAN OUT AT ALL ELBOWS AND BOTTOM OF RISER AND EVERY 15 FEET HORIZONTAL KITCHEN EXHAUST DUCT.
- P. COMMERCIAL KITCHEN GREASE DUCTS SHALL BE DESIGNED FOR THE TYPE-1 OF COOKING APPLIANCE AND HOOD SERVED.
- Q. IF NOT PROVIDED FACTORY FABRICATED THEN KITCHEN EXHAUST DUCT SHALL BE CONSTRUCTED OF 0.1046-INCH NO.16 GAUGE STEEL OR 0.0450-INCH NO. 18 STAINLESS STEEL.
- R. JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS SHALL BE MADE WITH A CONTINUOUS LIQUID TIGHT WELD OR BRAZE MADE IN THE EXTERNAL SURFACE IF THE DUCT SYSTEMS.
- S. DUCT TO EXHAUST FAN CONNECTIONS SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET OF THE FAN FOR SIDE-INLET UTILITY FANS APPROVED FLEXIBLE CONNECTIONS MAY BE PROVIDED.
- T. A VIBRATION ISOLATION CONNECTOR FOR CONNECTING A DUCT TO A FAN SHALL CONSIST OF NON-COMBUSTIBLE PACKING IN A METAL SLEEVE JOINT OF APPROVED DESIGN OR SHALL BE A COATED-FABRIC FLEXIBLE DUCT CONNECTOR LISTED AND LABELED FOR THE APPLICATION. VIBRATION ISOLATION CONNECTORS SHALL BE INSTALLED ONLY AT THE CONNECTION OF A DUCT TO A FAN INLET OR OUTLET.
- U. GREASE DUCT BRACING AND SUPPORTS SHALL BE OF NON-COMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE AND DESIGNED TO CARRY GRAVITY AND SEISMIC LOADS WITHIN THE STREET LIMITATIONS OF THE NEW YORK CITY BUILDING CODE. BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS.
- V. THE CLEANOUTS FOR HORIZONTAL GREASE DUCT SHALL BE LOCATED ON THE SIDE OF THE DUCT WITH THE OPENING NOT LESS THAN 1.5" ABOVE THE BOTTOM OF THE DUCT AND NOT LESS THAN 1" BELOW THE TOP OF THE DUCT.
- W. FLEXIBLE CONNECTOR LENGTH SHALL BE LIMITED UP TO 14 FEET.

1 MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

KEYED NOTES ⑦

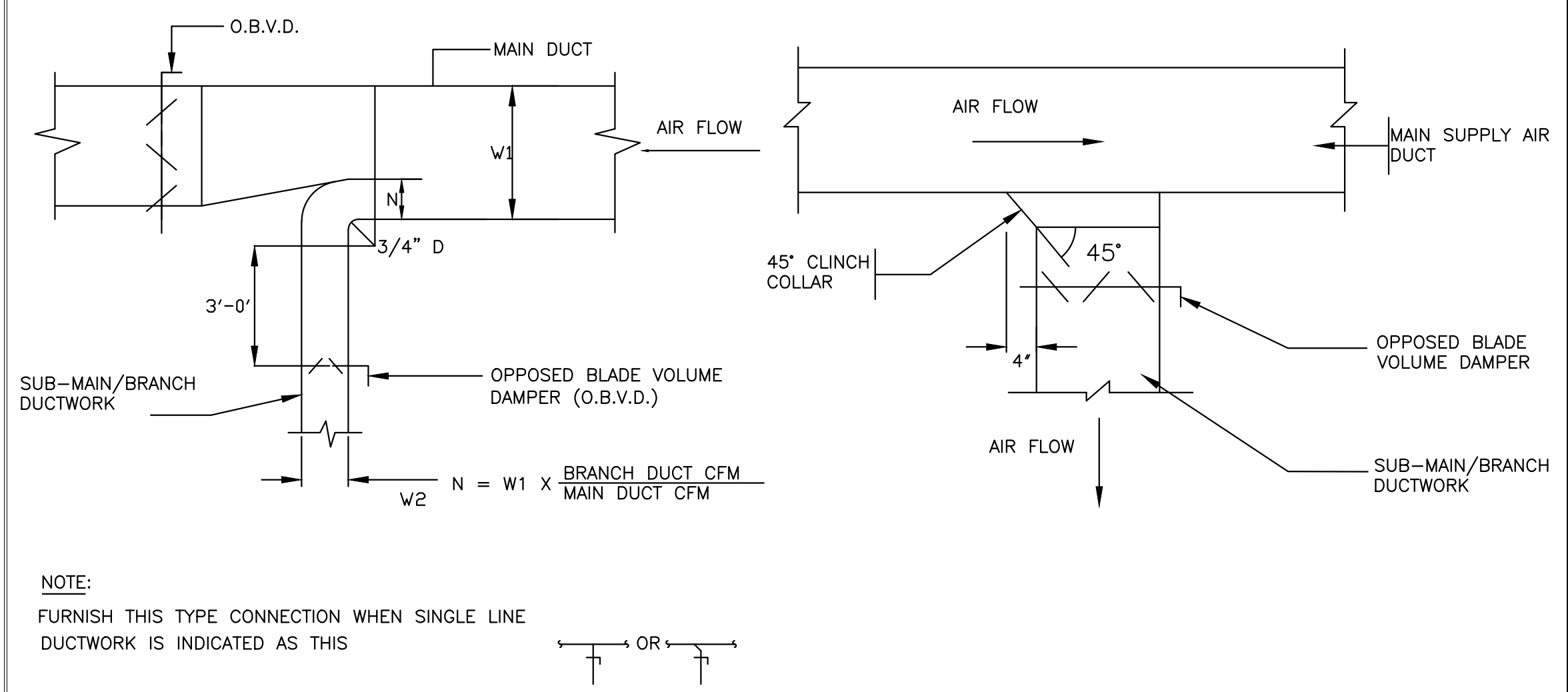
1. PROVIDE NEW GAS FIRED ROOFTOP UNIT. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR. TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW. COORDINATE ROUTING THROUGH STRUCTURAL TRUSSES AND OFFSET AS REQUIRED IN CURB SPACE.
2. CONDENSATE DRAIN FROM UNIT SHALL BE CONVEYED TO AN APPROVED PLACE OF DISPOSAL. SUCH PIPING SHALL MAINTAIN A MINIMUM HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF NOT LESS THAN THE 1/8TH UNIT VERTICAL IN 12 UNITS HORIZONTAL (1% SLOPE). CONDENSATE SHALL NOT DISCHARGE INTO A STREET, ALLEY OR OTHER AREAS SO AS TO CAUSE A NUISANCE.
3. CONTRACTOR TO INSTALL MAKE-UP AIR UNIT ON CURB PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. FILED VERIFY EXACT LOCATION. INSTALL AS PER MANUFACTURERS RECOMMENDATION WITH REQUIRED STRUCTURAL SUPPORT.
4. CONTRACTOR TO INSTALL NEW EXHAUST FAN AS PER MANUFACTURER'S RECOMMENDATION. EXHAUST FAN AND ROOF CURB PROVIDED BY THE KITCHEN EQUIPMENT SUPPLIER AND INSTALLED MECHANICAL CONTRACTOR. COORDINATE THE INSTALLATION OF ANY NEW STRUCTURAL SUPPORT AS REQUIRED. CONNECT EXHAUST DUCT FROM BELOW. MAINTAIN MIN 10'-0" DISTANCE FROM ANY OUTSIDE AIR INTAKE SOURCE ON ROOF.
5. CONTRACTOR TO INSTALL EXHAUST FAN AS PER MANUFACTURERS RECOMMENDATION. PROVIDED ROOF CURB. FILED VERIFY EXACT LOCATION.
6. CONTRACTOR TO ENSURE THAT EXHAUST OUTLETS SHALL MAINTAIN MINIMUM 10' HORIZONTALLY DISTANCE FROM OUTSIDE AIR INTAKE SOURCE ON ROOF.
7. $\phi 6"$ COMMON COMBUSTION INTAKE AIR VENT FROM WATER HEATER BELOW. TERMINATE AS PER MANUFACTURER RECOMMENDATION.
8. $\phi 6"$ COMMON FLUE AIR VENT FROM WATER HEATER BELOW. TERMINATE AS PER MANUFACTURER RECOMMENDATION.



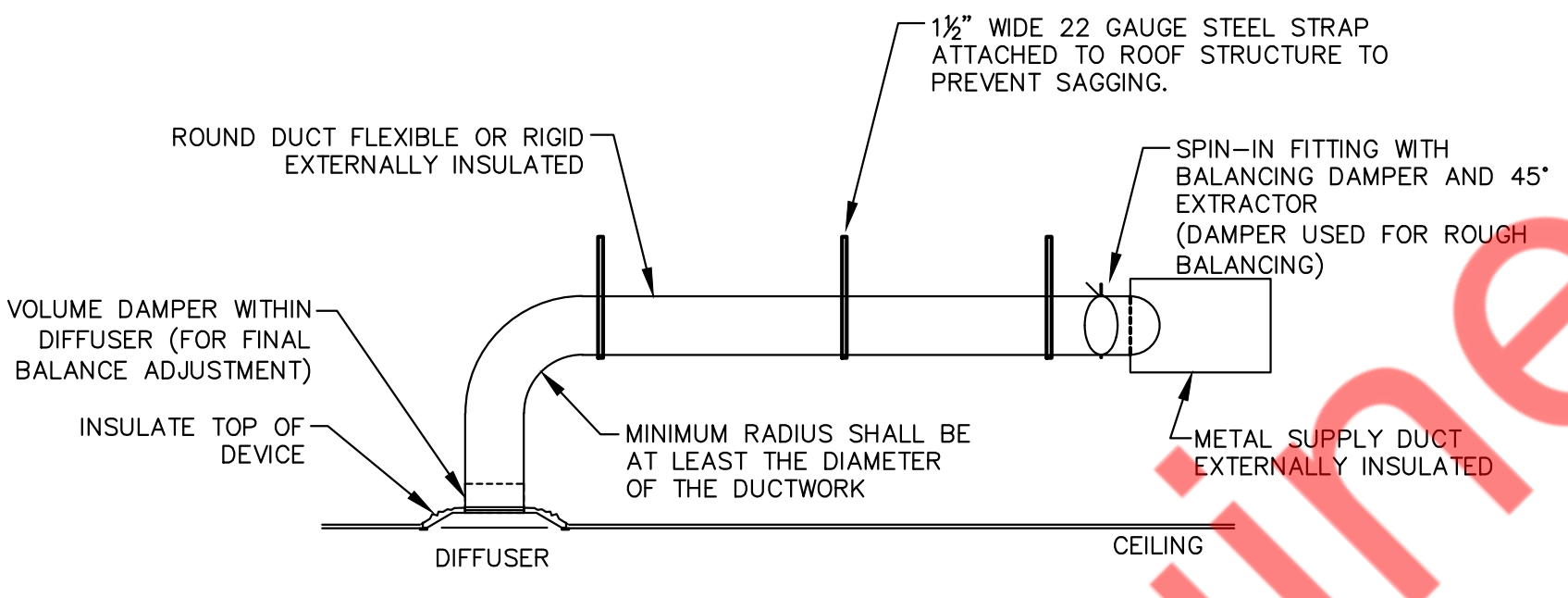
GENERAL NOTES

- A. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND LL ROOFING CONTRACTOR. PROVIDE NEW OPENING IF REQUIRED AND CLOSE USED OPENINGS.
- B. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS AND SITE 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. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- E. COORDINATE ALL EQUIPMENT WITH STRUCTURAL DRAWING.
- F. MAINTAIN ALL CODE AND MANUFACTURERS RECOMMENDED CLEARANCE AROUND ALL ROOF EQUIPMENT.
- G. ALL ROOF PENETRATION AND MEMBRANE ROOF REPAIRS ARE TO BE ACCOMPLISHED BY THE LANDLORD'S ROOFING CONTRACTOR FOR WARRANTY PURPOSES.
- H. ROOF REPAIR UNIT PRICES SHOULD BE SUBMITTED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- I. CONTRACTOR SHALL ENSURE THAT ALL NEW ROOFTOP MOUNTED EQUIPMENT IS INSTALLED WITHIN ANY EXISTING REINFORCED STRUCTURAL AREAS OR ZONE THAT ARE DESIGNATED FOR FUTURE MECHANICAL EQUIPMENT. COORDINATE WITH ALL EXISTING STRUCTURAL CONDITIONS PRIOR TO BEGINNING ANY WORK. GENERAL CONTRACTOR NEEDS TO COORDINATE WITH STRUCTURAL ENGINEER/ARCHITECT FOR ADDITIONAL BRACING OR SUPPORTS FOR NEW UNITS.
- J. CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER AND ADD BLOCKING TO ENSURE PROPER LOAD DISTRIBUTION ON EXISTING TRUSSES.

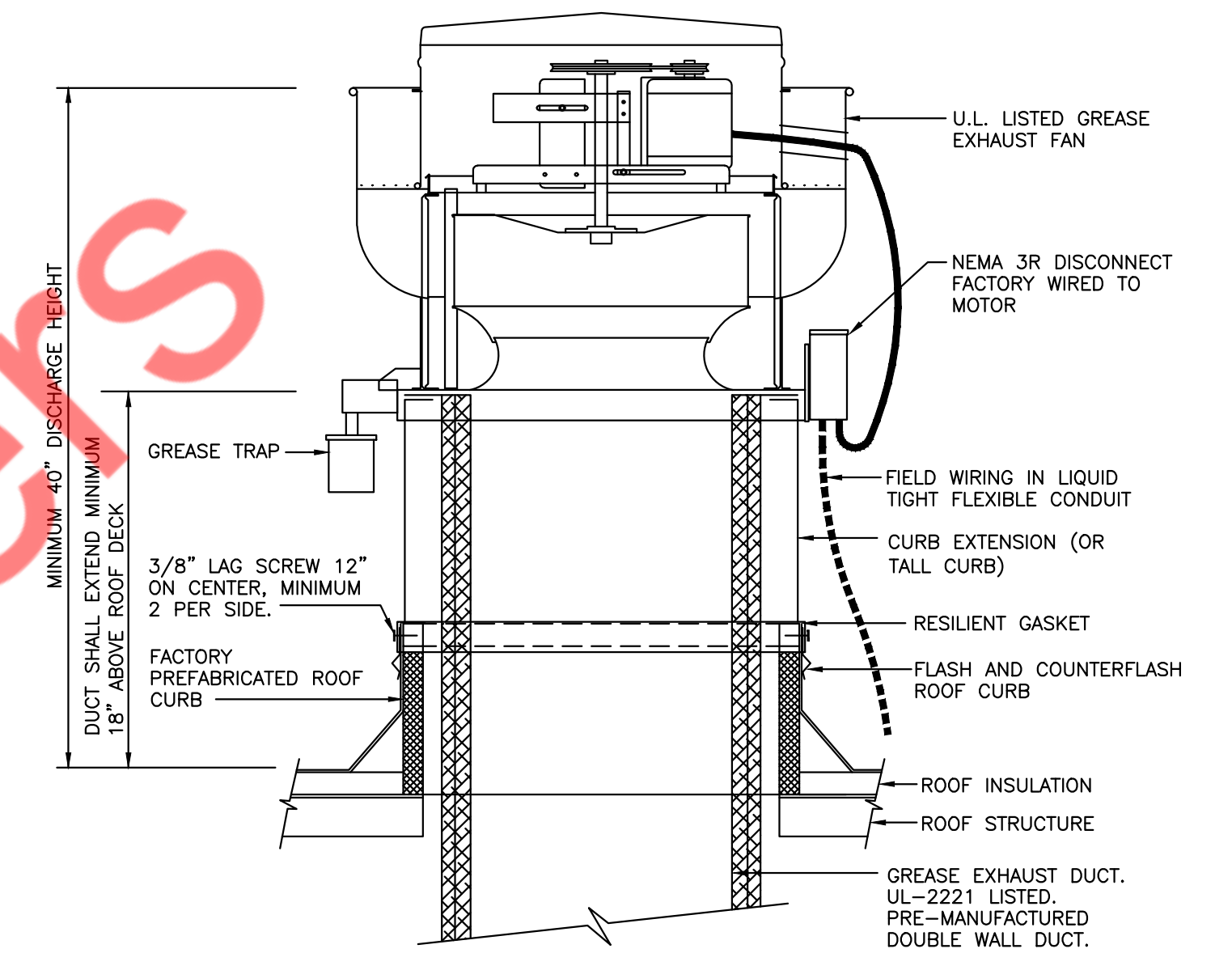
① MECHANICAL ROOF PLAN
SCALE: 1/4" = 1'-0"



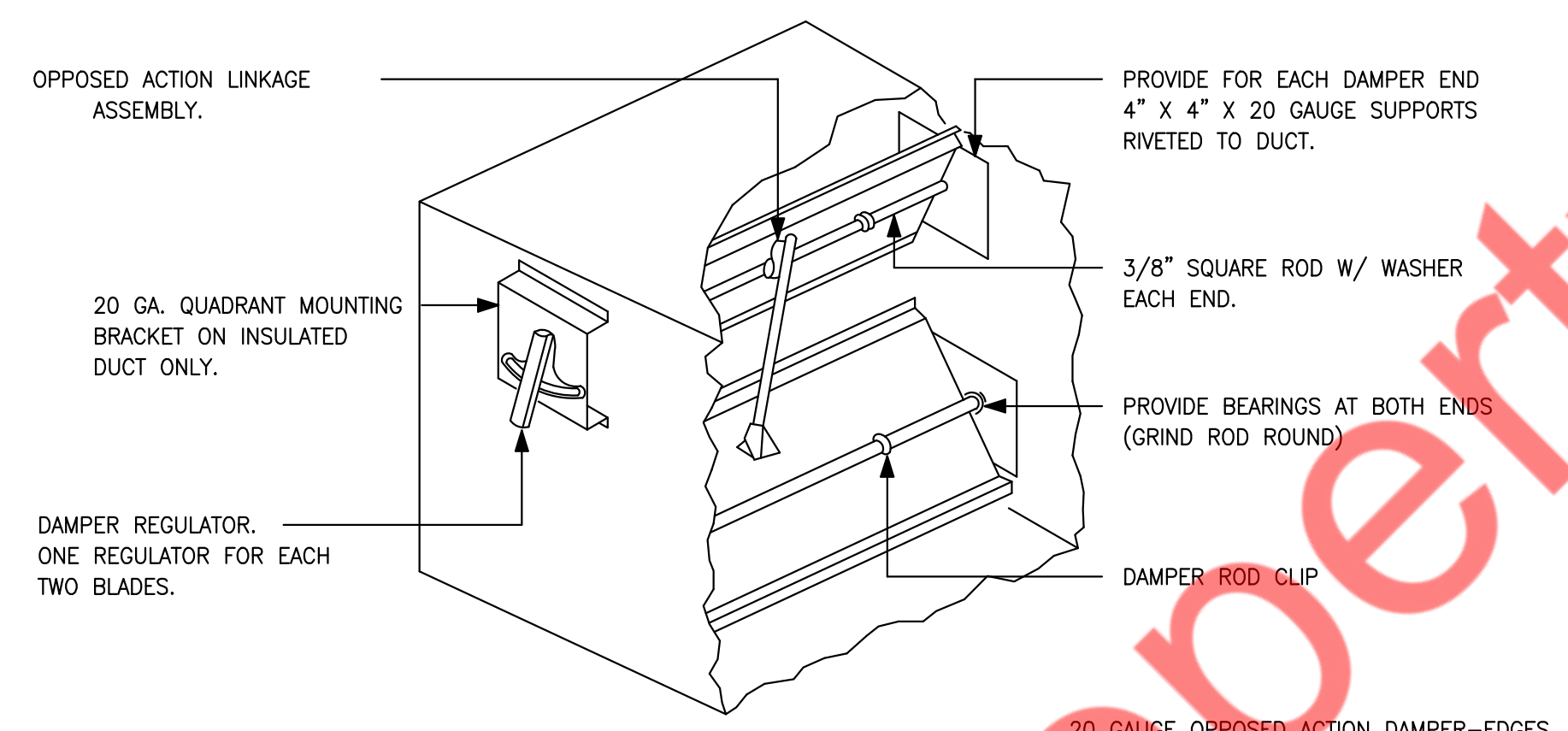
① DUCTWORK SUB-MAIN/BRANCH TAKE-OFF DETAIL



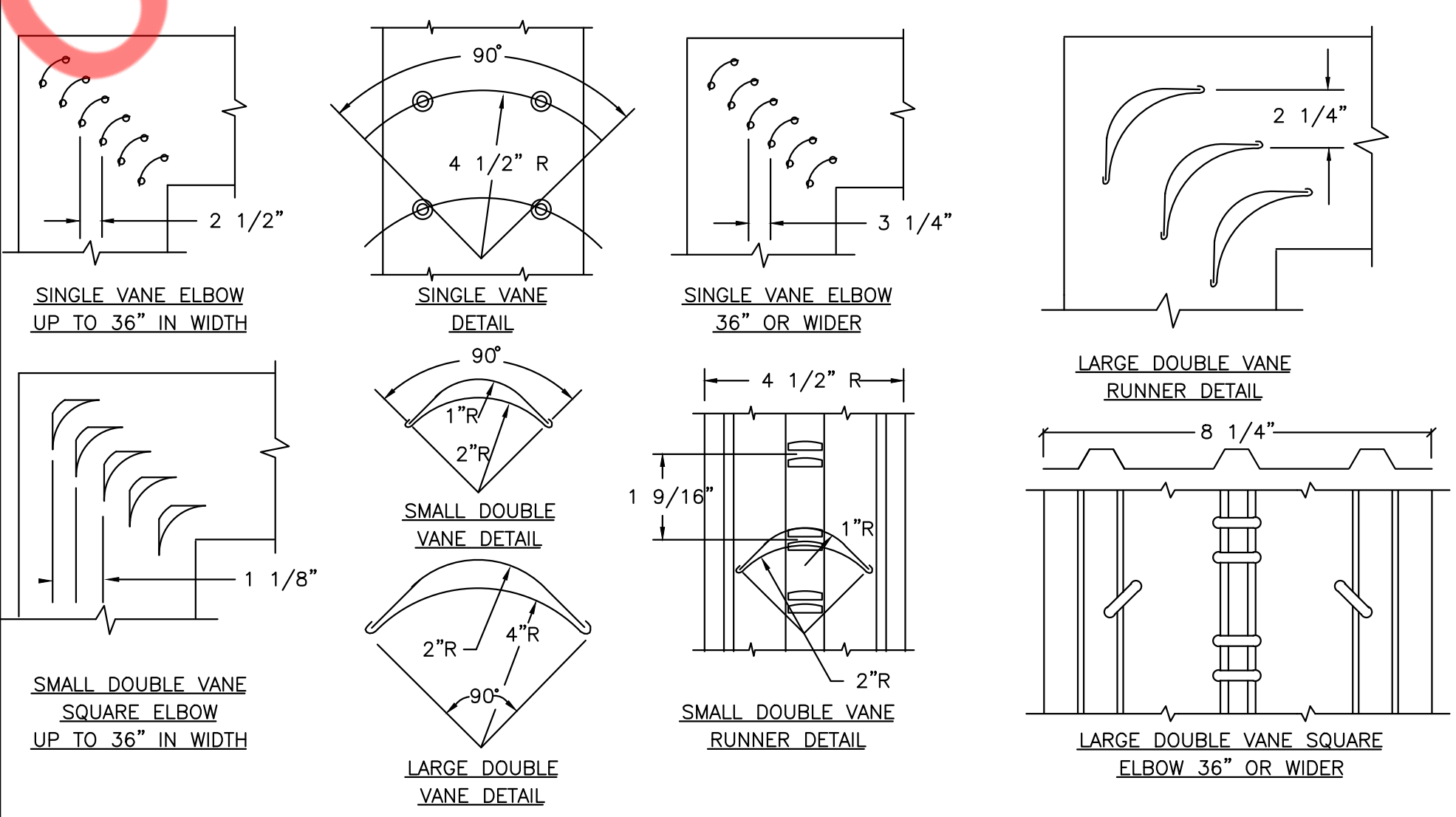
② TYPICAL DIFFUSER CONNECTION DETAIL



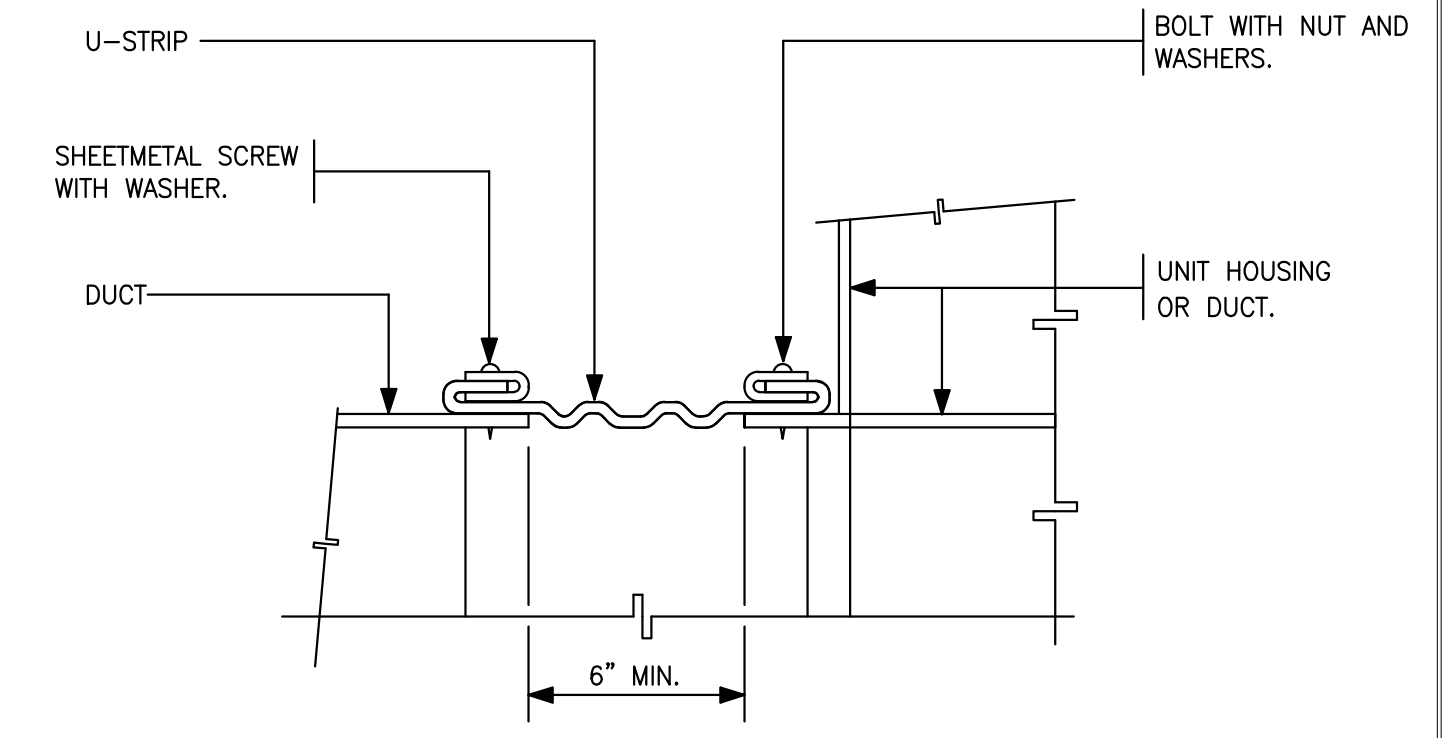
③ ROOF MOUNTED KITCHEN EXHAUST FAN DETAIL



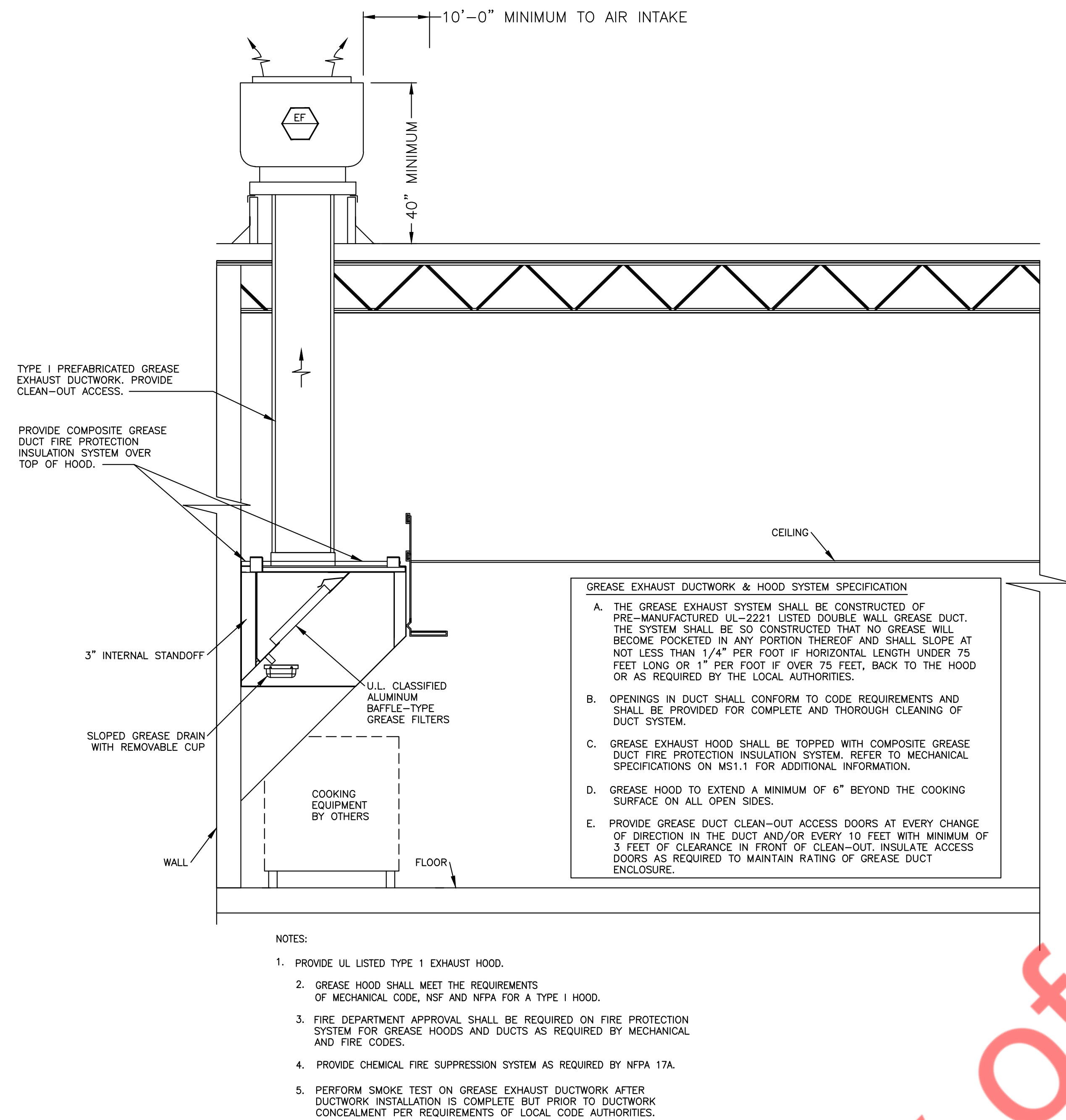
④ LOW PRESSURE BALANCING DAMPER



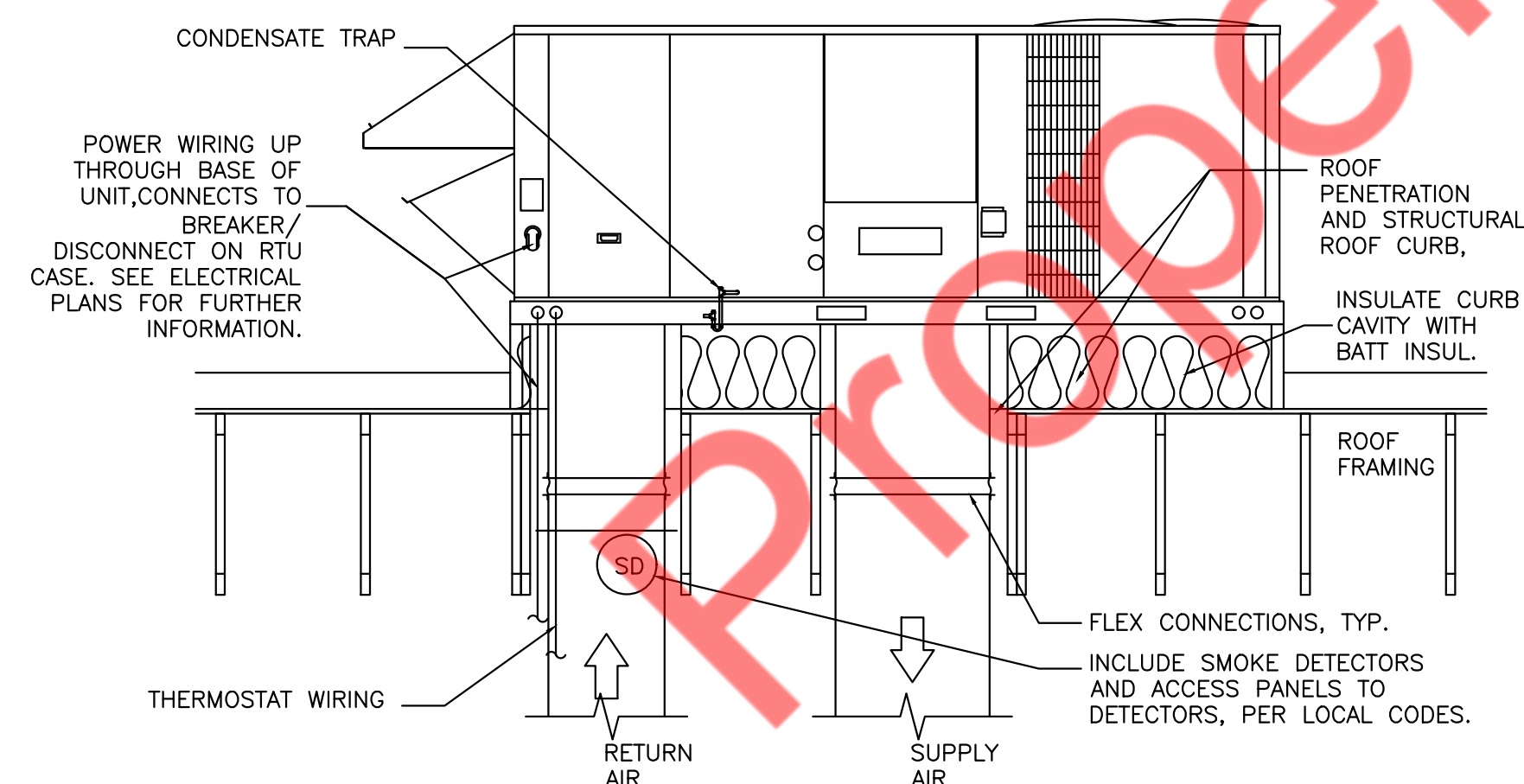
⑤ LOW VELOCITY DUCTWORK ELBOWS



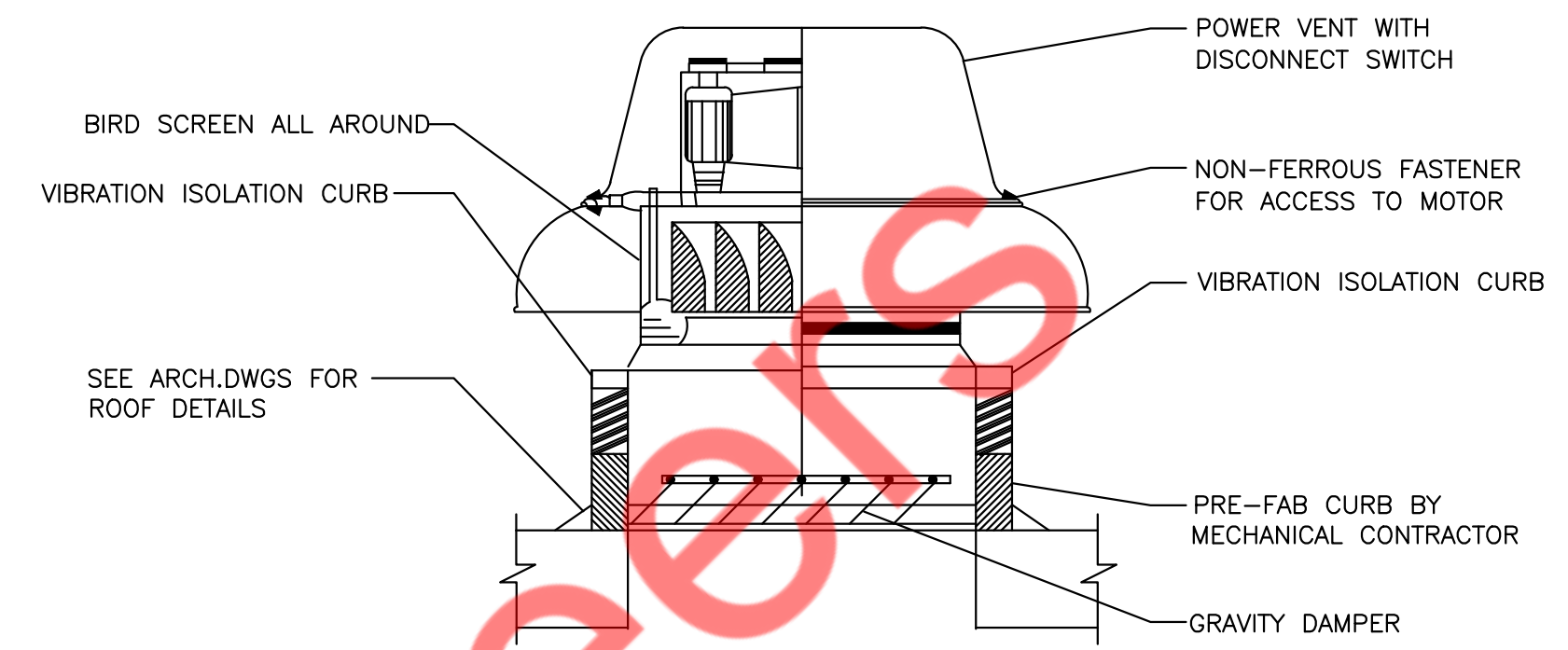
⑥ FLEXIBLE CONNECTION DETAIL



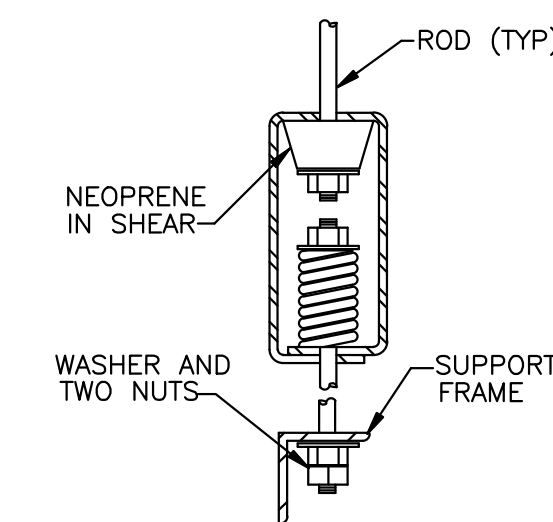
1 KITCHEN HOOD SCHEMATICS



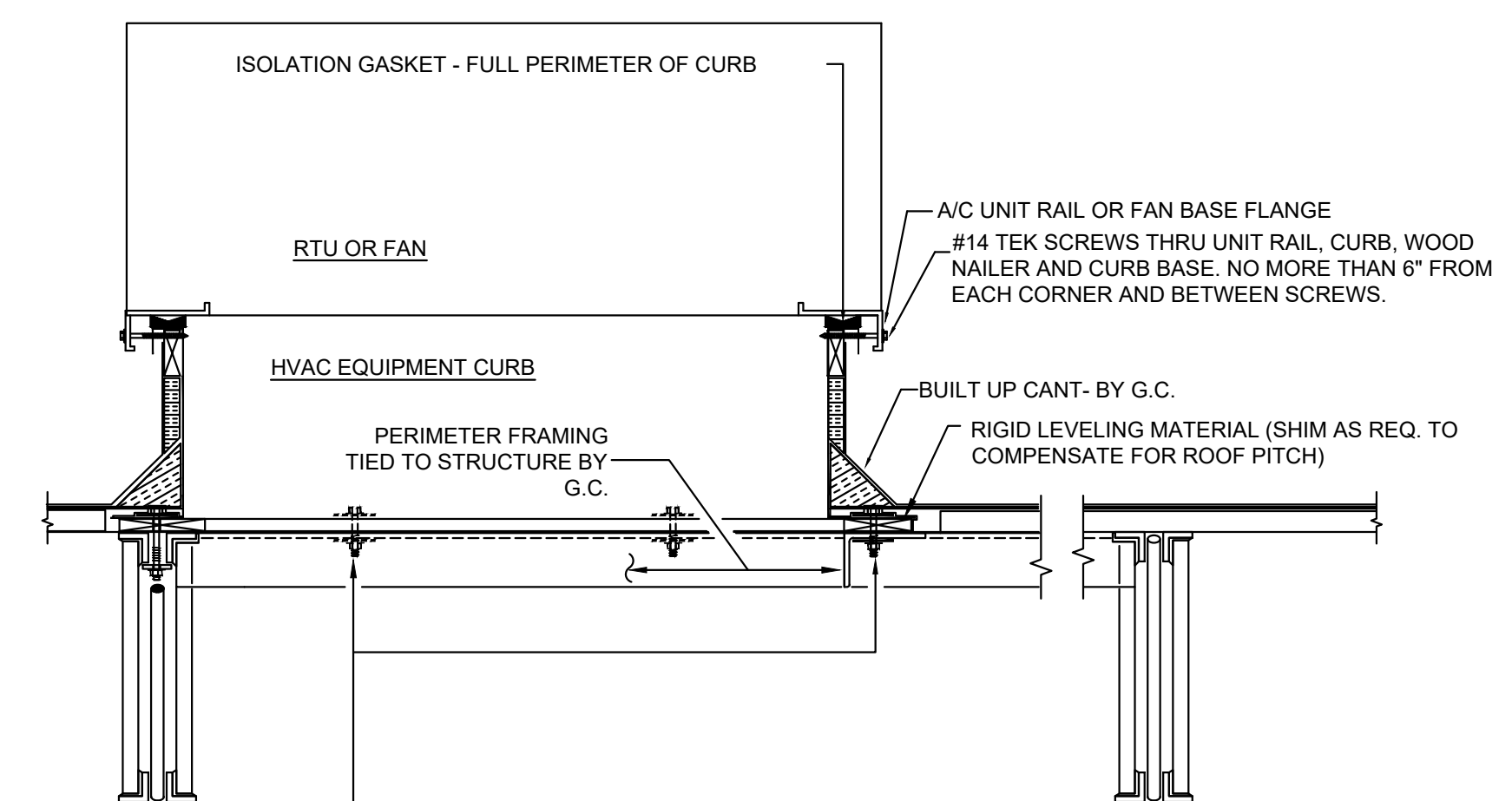
2 ROOF TOP UNIT SCHEMATICS



3 ROOF MOUNTED EXHAUST FAN



4 VIBRATION ISOLATOR DETAIL



ACCEPTABLE FOR 170 MPH ZONE

VERIFY ON SITE WITH GENERAL CONTRACTOR

5 RTU INSTALLATION DETAIL

SECURE CURB TO MIN. 3 X 3 X 1/2 ANGLE IRON WITH MIN. 3/8" BOLTS BY REQUIRED LENGTH WITH FENDER WASHERS, LOCK WASHERS & NUTS @ EA. SIDE OF FAN CURBS & 4 PER LONG SIDE OF ROOF TOP CURBS & 2 AT EA. SHORT END EQUALLY SPACED - START FROM CORNER A MIN. OF 6". ON ROOF TOP A/C CURBS. GENERAL CONTRACTOR SHALL PROVIDE STRUCTURAL PERIMETER FRAMING FOR EDGE SUPPORT OF CURB AS ILLUSTRATED IN THIS DETAIL FOR HURRICANE FASTENING

ROOF TOP UNIT SCHEDULE																				
UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			GAS HEAT		COOLING				ELECTRICAL				EER	IEER	OPERATING WEIGHT (LBS)
					TOTAL CFM	OUTSIDE AIR CFM	EXTERNAL STATIC PRESSURE(IN. W.G.)	INPUT MBH	OUTPUT MBH	TOTAL MBH	SENSIBLE MBH	AMBIENT DB (°F)	ENTERING DB / WB(°F)	VOLTS	PHASE	MCA(A)	MOC(P(A)			
RTU-1(N)	TRANE (OR EQUIVALENT)	YSK072A350M	SEE PLAN	6	2400	400	0.8	120	97.2	83.06	62.51	95	80/67	208-230	3	38	50	11	14.6	1160
RTU-2(N)	TRANE (OR EQUIVALENT)	YSK072A350M	SEE PLAN	6	2400	400	0.8	120	97.2	83.06	62.51	95	80/67	208-230	3	38	50	11	14.6	1160
RTU-3(N)	TRANE (OR EQUIVALENT)	YSK102A350M	SEE PLAN	8.5	3400	300	1	150	121.5	113.19	85.61	95	80/67	208-230	3	53	70	11	14.6	1230

HOOD SCHEDULE										
UNIT ID	MANUFACTURER	LENGTH (FEET-INCH)	MODEL	TYPE	COOKING		EXHAUST			CONSTRUCTION
					TEMPERATURE (DEG F)	AIR (CFM)	COLLAR (INCH)	S.P (IN. W.G.)		
HOOD-1(N)	ECON-AIR	14' 6"	6030 EX-2-PSP-F	1	600	3625	14"	-0.785		430 STAINLESS STEEL

KITCHEN MAKEUP AIR UNIT														
UNIT TAG	SERVICE	AIR FLOW CFM	E.S.P. (IN. OF WG)	MOTOR (HP)	HEATING			ELECTRIC DETAILS			BASIS OF DESIGN			
					GAS TYPE	INPUT (MBH)	OUTPUT (MBH)	EFFICIENCY (%)	ELECT. (V/Hz/PH)	MCA	MOC(P)	WEIGHT (LBS)	MANUFACTURER	MODEL NO.
MAU-1(N)	HOOD	3262	0.5	2	NATURAL	256.72	236.182	92	208/60/3	11.6	15	784	ECON AIR	EA2-D.500-20D

FAN SCHEDULE										
UNIT ID	MANUFACTURER	CFM	ESP(IN W.G.)	RPM	HP	VOLTS/PH	FLA(A)	WEIGHT (LBS)	MODEL	NOTES
KEF-1(N)	ECON-AIR	1812	1.1	1020	1.00	208/3	3.8	200	EADU180H	1
KEF-2(N)	ECON-AIR	1812	1.1	1020	1.00	208/3	3.8	200	EADU180H	1
EF-1(N)	GREENHECK	280	0.5	1341	1/6	115/1	2.8	50	G-095-VG	2,3,4,5

AIR TERMINAL SCHEDULE							
TAG	TYPE	CFM RANGE	DIMENSION(IN)	MANUFACTURER	MATERIAL	MODEL NO.	MAX NC dBA
S-1	SUPPLY	98-614	24X24	GRAINGER/PRICE	POLYMER/ALUMINUM	STR-C/SPD	20
S-2	SUPPLY	30-175	12X12	PRICE	ALUMINUM	SPD	20
S-3	SUPPLY	98-614	24X24	GRAINGER/PRICE	POLYMER/ALUMINUM	STR-PERF/PDN	20
S-4	SUPPLY	60-340	18X6	PRICE	ALUMINUM	SDGE	20
R-1	RETURN	50-1570	24X24	GRAINGER/PRICE	POLYMER/ALUMINUM	STR-ERFG-W-FR/PDDR	20
R-2	RETURN	1800-2800	SEE PLAN	PRICE	ALUMINUM	530 D	20
E-1	EXHAUST	50-1500	24X24	PRICE	ALUMINUM	PDDR	20

AIR BALANCE					
UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR(CFM)
RTU-1(N)	SEE PLAN	2400	400	2000	0
RTU-2(N)	SEE PLAN	2400	400	2000	0
RTU-3(N)	SEE PLAN	3400	300	3100	0
MAU-1(N)	SEE PLAN	3262	3262	0	0
KEF-1(N)	SEE PLAN	0	0	0	1812
KEF-2(N)	SEE PLAN	0	0	0	1812
EF-1(N)	SEE PLAN	0	0	0	280
TOTAL		11462	4362	7100	3904

NOTES:
 1. CONTRACTOR TO ADJUST MOTORIZED DAMPER ON OUTSIDE AIR TAP TO PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.

VENTILATION CALCULATION													
ROOM NAME	AREA (SQ.FT.)	NO. OF PEOPLE/1000sq.ft AS PER IMC 2018	NO. OF PEOPLE AS PER IMC 2018	NO. OF CHAIR	FINAL PEOPLE	MIN OUTSIDE AIR AS PER IMC 2018 CFM/PERSON	CFM/SQ.FT	EFFECTIVENESS	REQ. OSA	PROVIDED OSA	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR CFM/FIXT.)	TOTAL EXHAUST (CFM)	TOTAL EXHAUST (CFM)
FAMILY DINING	1930	70	136	114	136	7.5	0.18	0.8	1709		0	0	0
BAR SERVICE	295	15	5	0	5	7.5	0.12	0.8	91		0	0	0
KITCHEN	660	20	14	0	6	7.5	0.12	0.8	155		0.7	462	3625
MENS RESTROOM	110	0	0	0	0	0	0	0.8	0	4362	70	140	140
WOMEN RESTROOM	120	0	0	0	0	0	0	0.8	0		70	140	140
OFFICE	45	5	1	1	1	5	0.06	0.8	10		0	0	0
HALLWAY	85	0	0	0	0	0	0.06	0.8	6		0	0	0
TOTAL									1972	4362	-	-	3905

WINGS ETC. GRILL & PUB - FAMILY DINING, BAR DINING & BAR SERVICE

PlasmaSoft calculations are exclusively for Plasma Air products and should not be used for any other manufacturer.

ASHRAE 62.1 2013-2019
 Space Contamination Calculations Using Appendix D Equations

USER INPUT FIELDS

Green colored fields need user input. Yellow colored fields are constants provided by Plasma Air. Pink fields are auto-calculated based on user selection. Grey values are auto-calculated but also editable.

ASHRAE Equation: Equation 5 - Filter return air and outside air, Constant Volume Supply Air, Constant Volume Outside Air

Space Type: Restaurant dining rooms

Ez: 0.8 - Ceiling supply of warm air 15°F above space Temp and ceiling return

Area (Sq.Ft.): 2225

Number of People: 706

Supply Air (CFM): 4200

Emission Rate/Person (µg/m³): 260

Calculation of Space Contaminants Using Ventilation Rate Procedure (VRP) OA				Calculation of Space Contaminants Using IAQ Procedure (IAQP) OA					
VRP Outside Air Rate per Person	CFM	IAQP Outside Air Rate per Person	CFM	Space Airflows	CFM	L/Min	Space Airflows	CFM	L/Min
2.58	10,740	5.00	21,000	Supply Air	4,200	118,944	Supply Air	4,200	118,944
				Outside Air	1,963.13	55,595.70	Outside Air	1,960	55,080.00
				Return Air	2,236.87	63,348.30	Return Air	2,240.00	63,864.00

Variable	Description	Value	Units	Variable	Description	Value	Units
N	Contaminant Generation Rate	40,560	µg/min	N	Contaminant Generation Rate	40,560	µg/min
Ez	Zone Air Distribution Effectiveness	0.8		Ez	Zone Air Distribution Effectiveness	0.8	
Vo2	Outdoor Air Flow Rate	55,595.70	L/min	Vo2	Outdoor Air Flow Rate	22,089.60	L/min
EF	Filter Efficiency	0.99		EF	Filter Efficiency	0.99	
Co	Contaminant Concentration, OA	0.2	µg/m³	Co	Contaminant Concentration, OA	0.2	µg/m³
R	Recirculation Flow Variable -VRP(0.4)	0.53		R	Recirculation Flow Variable -IAQP(0.4)	0.81	
Vr	Return Air Flow Rate	63,348.30	L/min	Vr	Return Air Flow Rate	66,854.40	L/min
Cbz	Contaminant Concentration, zone	1.313	ppm	Cbz	Contaminant Concentration, zone	0.963	ppm

Is the Cbz for the IAQP equal or less than Cbz for the VRP? Yes

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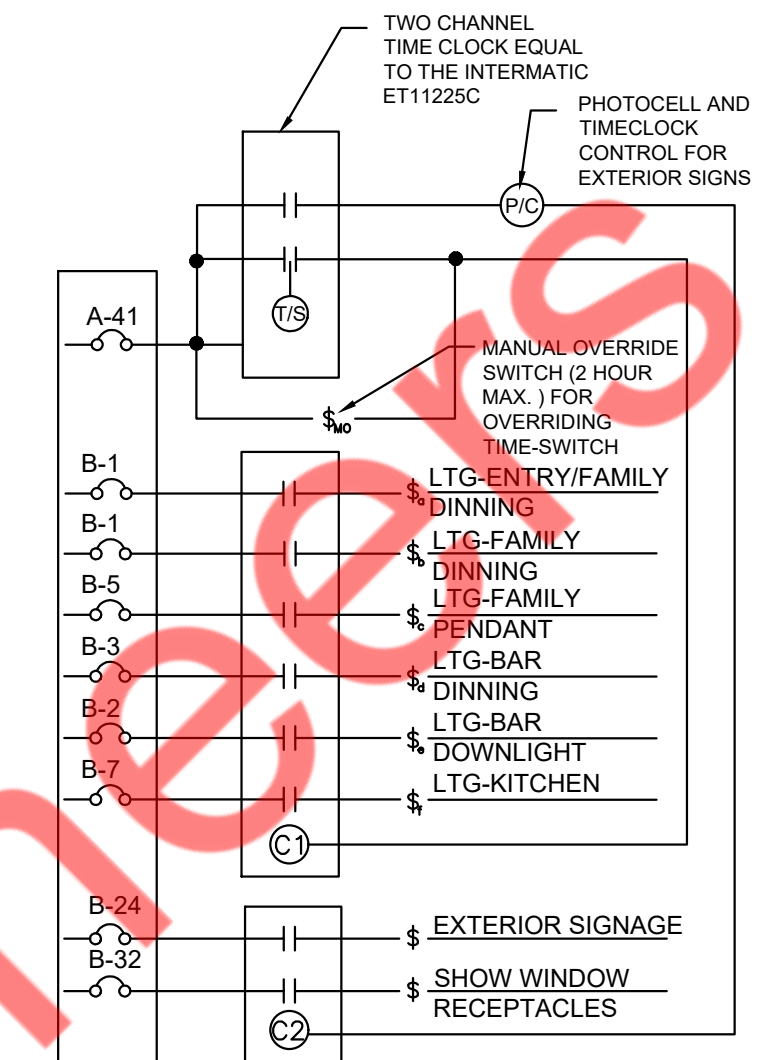
LIGHTING CONTACTOR SCHEDULE						
TYPE ELECTRICALLY OPERATED ELECTRICALLY HELD. 600VOLTS RATED, UL LISTED FOR LIGHTING CONTROL						
SYMBOL	AMPERE	POLES/CONTACTS	ENCLOSURE	CONTROL VOLTAGE	USED TO CONTROL	CONTROLLED BY
Ⓢ	20	8	NEMA-1	120	WINGS ETC. LIGHTING	DIGITAL TIMER CLOCK

- LIGHTING PLAN KEYED NOTES: #**
1. WIRE ALL EMERGENCY, EXIT LIGHT AND NIGHT LAMP TO THE NEAREST CIRCUIT AHEAD OF ALL CONTROLS & SWITCHING FOR CONTINUOUS OPERATION.
 2. WALL MOUNTED OCCUPANCY SWITCH SENSOR. SET OFF TIME TO 20 MINUTES. SET DIP SWITCH TO AUTOMATIC ON.
 3. PROVIDE DIGITAL 7-DAY PROGRAMMABLE TIME CLOCK AND MANUAL OVERRIDE CONTROL FOR MAXIMUM 2 HOURS. COORDINATE EXACT MAKE/MODEL/LOCATION WITH ARCHITECT/OWNER IN THE FIELD. ADJUST TO ON/OFF SCHEDULE TO ILLUMINATE ALL LIGHT FIXTURES IN THIS SPACE.
 4. LOW VOLTAGE OCCUPANCY SENSOR. PROVIDE LOW VOLTAGE OCCUPANCY SENSOR. PROVIDE WATTSTOPPER BZ POWER PACK(S) AS REQUIRED. SET OFF TIME FOR 20 MINUTES.
 5. UNDER HOOD LIGHT FIXTURES TO BE FURNISHED WITH EQUIPMENT, CONNECT AS REQUIRED.
 6. LIGHT IN THIS AREA SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPLIED AS PER NEC 110.26(D).
 7. LIGHTING PROVIDED BY WALK-IN SUPPLIER. PROVIDE FINAL CONNECTION TO LIGHTING IN WALK-IN COOLER/FREEZER. COORDINATE ALL REQUIREMENT WITH MANUFACTURER PRIOR TO ROUGH-IN. CONNECT TO CIRCUIT B-7.
 8. LIGHTING PROVIDED BY BAR COOLER SUPPLIER. PROVIDE FINAL CONNECTION TO LIGHTING IN WALK-IN BAR COOLER. COORDINATE ALL REQUIREMENT WITH MANUFACTURER PRIOR TO ROUGH-IN. CONNECT TO CIRCUIT B-7.
 9. LIGHT FIXTURE CONTROL STATION WITH DIMMERS FOR AREA LIGHTING CONTROL SEE DETAILS 3 /E101. CONFIRM SWITCH BANK WILL FIT WITHIN THIS DESIGNATED AREA AND STACK MULTIPLE SWITCH BANK WILL NOT FIT WITHIN THIS DESIGNATED AREA. COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH-IN.
 10. TOGGLE SWITCH FOR UNDER BAR ROPE LIGHTS. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.

- LIGHTING PLAN GENERAL NOTES:**
1. CONTRACTOR IS ADVISED THAT ADJUSTMENTS TO EMERGENCY AND EXIT LIGHT FIXTURE LOCATIONS/QUANTITIES MAY BE REQUIRED BY AHJ UPON FINAL INSPECTION.
 2. ALL EMERGENCY AND EXIT LIGHT AND NIGHT LAMP FIXTURES SHALL BE CONNECTED AHEAD OF SWITCHED LIGHTING CIRCUIT.
 3. ALL EXTERIOR LIGHTS/ SIGNS SHALL BE CONTROLLED VIA PHOTOCELL/TIME-CLOCK. E.C. SHALL PROVIDE ALL THE LIGHTING CONTROL COMPLYING WITH 2015 INTERNATIONAL ENERGY CONSERVATION CODE AND LOCAL AHJ REQUIREMENTS.
 4. REFER TO DWG. E-001 FOR ELECTRICAL GENERAL NOTES, SYMBOL LIST, ABBREVIATIONS AND E-002 AND E-003 FOR ADDITIONAL SPECIFICATIONS.
 5. FINAL CONDUIT/CABLE ROUTING SHALL BE DETERMINED IN-FIELD, AND PRIOR TO THE COMMENCEMENT OF WORK, COORDINATED WITH OTHER TRADE CONTRACTORS AND THE TENANT.
 6. SWITCHES LOCATIONS SHOWN IN THE DRAWINGS ARE DIAGRAMMATIC, FOR ACTUAL LOCATION AND MOUNTING HEIGHTS REFER TO ARCHITECTURAL PLANS.
 7. THE LIGHTING FIXTURE CATALOG NUMBERS IDENTIFY THE SERIES OF LIGHTING FIXTURE ONLY. PROVIDE ALL FIELD FABRICATION, MOUNTING HARDWARE, ACCESSORIES AND OPTIONS REQUIRED TO ADAPT TO THE CONDITIONS AND MEET THE INTENT OF THE FIXTURE DESCRIPTION.
 8. LED DRIVERS MUST LIMIT THE INRUSH CURRENT AND MEET OR EXCEED THE "NEMA 410" DRIVER INRUSH STANDARDS. MUST BE ABLE TO WITHSTAND UP TO A 1,000 VOLT SURGE WITHOUT IMPAIRMENT OF PERFORMANCE. HAVE LESS THAN 20% HARMONIC DISTORTION AND BE "UL" RECOGNIZED. DRIVERS SHALL HAVE A FIVE YEAR WARRANTY PERIOD FROM DATE OF INSTALLATION.
 9. BALLASTS & DRIVERS SHALL BE CONSTANT CURRENT TYPE DESIGNED TO START AND MAINTAIN PROPER OPERATION OF THE LAMP(S) OR DIODES IN THE ENVIRONMENTAL AND TEMPERATURE CONDITIONS IN WHICH THE FIXTURES ARE APPLIED.
 10. LAY-IN TYPE FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT FROM THE CEILING SYSTEM AND BE CLIPPED TO THE GRID WITH EARTHQUAKE/HURRICANE CLIPS.
 11. ALL BATTERY UNITS IN EXIT AND EMERGENCY EGRESS LIGHT FIXTURES SHALL BE CONNECTED FOR UNSWITCHED OPERATION. UON.

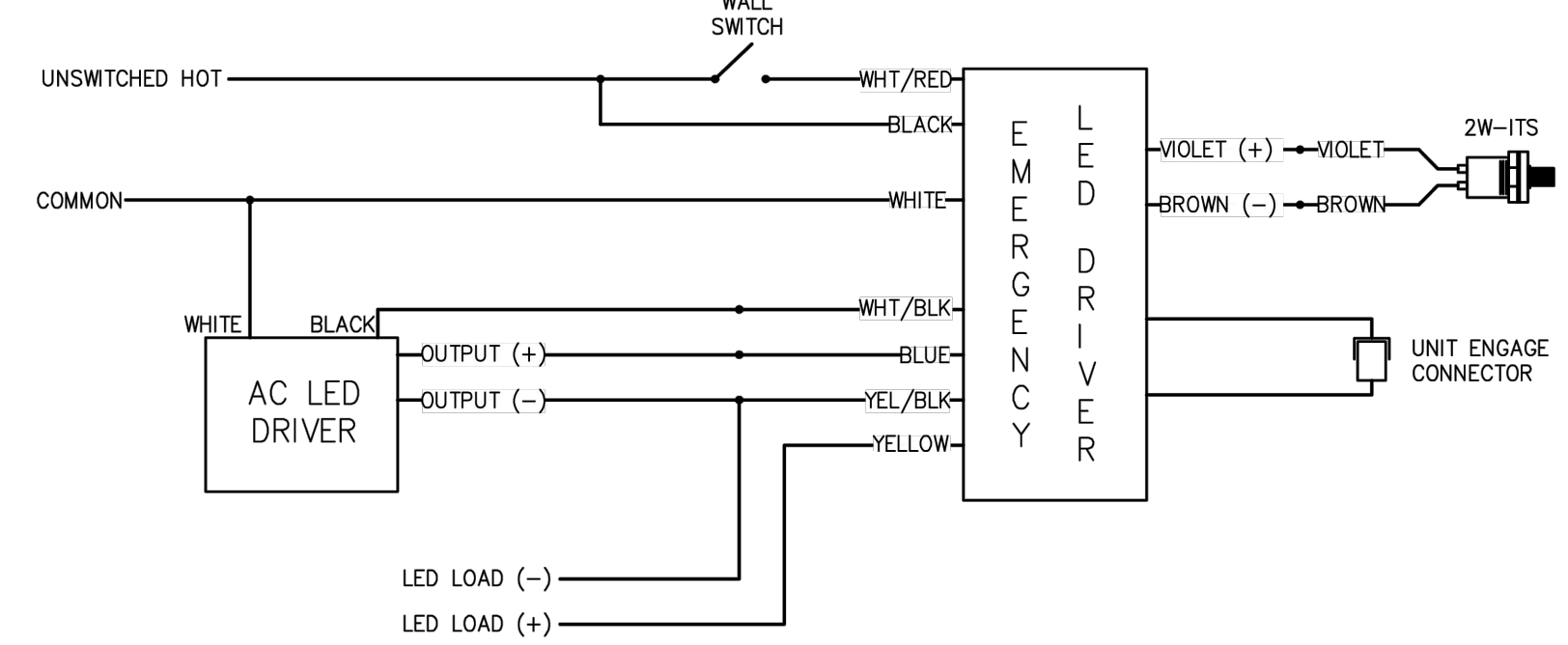


1 LIGHTING PLAN
SCALE: 1/4" = 1'-0"



Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
B-1	B-1	B-5	B-3	B-2	B-7	TIME CLOCK OVER RIDE SWITCH
ENTRANCE	FAMILY DINING	FAMILY DINING-CENTER	BAR DINING	BAR SERVICE	KITCHEN	

3 TIME CLOCK DETAILS



2 EMERGENCY LED DRIVER

LIGHTING FIXTURE SCHEDULE						
SYMBOL & TYPE	MANUFACTURER & CATALOG NUMBER	DESCRIPTION	LAMP TYPE & QUANTITY	VOLTS/BALLAST	MOUNTING	INPUT WATTS
Ⓢ	PRESCOTE HOUSING #L30AL-350K	6" RECESSED LED DOWNLIGHT. SUITABLE FOR WET LOCATIONS. COORDINATE FINAL FINISHES WITH OWNER/ARCHITECT.	LED 2375 LUMENS 3500K	120	RECESSED	42
A/NL	SAME AS "A", CONNECT AS NIGHT LIGHT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.					
Ⓢ	BASELITE #BUC-10-49-127BLC-INC	DECORATIVE PENDANT MOUNTED FIXTURE. CENTER FIXTURE ON TABLE. COORDINATE FINAL FINISHES WITH OWNER/ARCHITECT.	LED 1775 LUMENS 3500K	120	PENDANT	19
Ⓢ	SPECTRUM LIGHTING #C0811AT-30L-35K-MD-DS10X-M	6" ROUND DIRECT FOCUSED LED PENDANT. COORDINATE FINAL PENDANT LENGTH (XX) WITH OWNER/ARCHITECT. "BSE" SAME AS "B2" WITH A 90 MINUTE MINIMUM EMERGENCY BATTERY. SHADED FIXTURES "BSE", CONNECT NIGHT/EMERGENCY LIGHT FOR UNSWITCHED OPERATION. UON.	LED 2149 LUMENS 3500K	120	PENDANT	33
Ⓢ	GENLED ACOLYTE LIGHTING #R86824-4.4-AS3	UNDER BAR ROPE LIGHT. VERIFY FINISH, COLOR TEMPERATURE AND MOUNTING WITH OWNER/ARCHITECT PRIOR TO ORDERING. WET LOCATION LISTED.	LED 904 LUMENS	24V	SURFACE	4.4 PER FOOT
Ⓢ	COLUMBIA LIGHTING #J724-35MLG-FSA12F-EU	2'x4' LED TROFFER, RECESSED, LIGHTING FIXTURE WITH FROSTED ACRYLIC LENS. CONNECT "NL" AS NIGHT LIGHT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.	LED 4718 LUMENS 3500K	120-277V	RECESSED	38
Ⓢ	SAME AS "L" WITH A 90 MINUTE MINIMUM EMERGENCY BATTERY. SHADED FIXTURES "LE", CONNECT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY LIGHTING CONTROLS FOR UNSWITCHED OPERATION.					
Ⓢ	DUAL-LITE #L2 SERIES	REMOTE DUAL-HEAD EMERGENCY FIXTURE. THERMOPLASTIC HOUSING. POWERS VIA EXIT SIGN WITH REMOTE CAPABILITY AND 90 MINUTE EMERGENCY BACKUP. CONNECT EMERGENCY LIGHT FOR UNSWITCHED OPERATION.	TWO (2) LED	UNIVERSAL	UNIVERSAL	<5
Ⓢ	COMPASS LIGHTING #CS SERIES	SURFACE MOUNTED EDGE LIT LED EXIT SIGN. 90 MINUTE MINIMUM BATTERY BACKUP. RED LETTERS. PROVIDE AS A CEILING OR WALL MOUNT AS REQUIRED. CONNECT EXIT LIGHT FOR UNSWITCHED OPERATION.	LED	UNIVERSAL	UNIVERSAL	<5
Ⓢ	COMPASS LIGHTING #CC SERIES	COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN. WHITE THERMOPLASTIC HOUSING. 90 MINUTE MINIMUM BATTERY BACKUP WITH ADDITIONAL CAPACITY FOR REMOTE HEADS. RED LETTERS. CONNECT EXIT LIGHT FOR UNSWITCHED OPERATION.	TWO (2) LED	UNIVERSAL	UNIVERSAL	<5
Ⓢ	DUAL-LITE #PG-TMNSH-HTR	ARCHITECTURAL EMERGENCY UNIT FIXTURE. VERIFY FINISH WITH OWNER/ARCHITECT AND INCLUDE BATTERY HEATER FOR COLD TEMPERATURE OPERATION. WET LOCATION LISTED. 90 MINUTE EMERGENCY BACKUP. CONNECT EMERGENCY LIGHT FOR UNSWITCHED OPERATION.	TWO (2) LED	UNIVERSAL	UNIVERSAL	<25
Ⓢ	COMPASS LIGHTING #CRD	RECESSED REMOTE EXTERIOR EGRESS LIGHT. CONNECT NIGHT/EMERGENCY LIGHT FOR UNSWITCHED OPERATION. WET LOCATION LISTED.	LED	-	SURFACE	<10

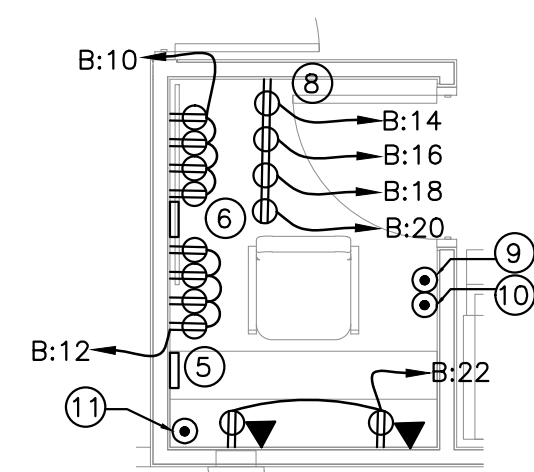
- LIGHTING FIXTURE SCHEDULE KEYED NOTES: #**
1. TYPE "A" TYPE LIGHT FIXTURE SHOULD HAVE BLACK TRIM.
 2. THIS LIGHT FIXTURE COLOR SHOULD BE BLACK.

FLOOR POWER PLAN KEYED NOTES: ①

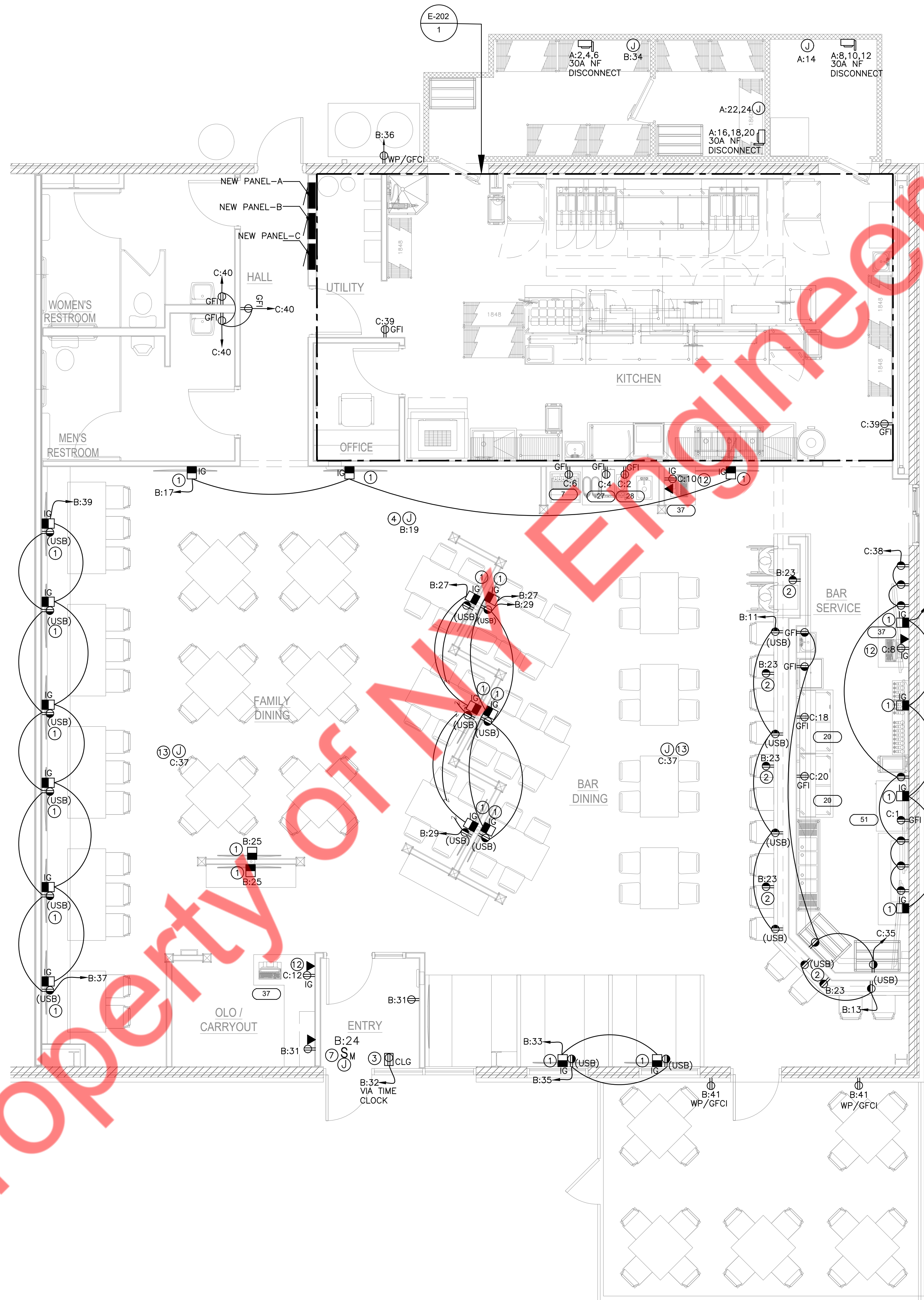
- RECEPTACLES AND DATA FOR WALL MOUNTED FLAT SCREEN TV MONITOR. COORDINATE EXACT MOUNTING HEIGHT/LOCATION WITH OWNER/ARCHITECT FOR TV.
- RECEPTACLE MOUNTED IN BULKHEAD FOR BEER SIGNAGE. COORDINATE EXACT MOUNTING HEIGHT/LOCATION WITH OWNER PRIOR TO INSTALLING.
- E.C. TO INSTALL SHOW WINDOW RECEPTACLES AS PER NEC 210.62.
- RECEPTACLES FLUSH IN CEILING FOR CAMERA, VERIFY EXACT LOCATION WITH OWNERS SECURITY VENDOR. CIRCUIT TO B-41
- PROVIDE PATCH PANEL FOR POS SYSTEM. FURNISH AND INSTALL A ROCKMOUNT SOLUTIONS 96 PORT PATCH PANEL, PART #RS-UP-96811A ON WALL MOUNTED TO 3' X 3' WHITE PAINTED PLYWOOD BOARD ADJACENT TO QUANTITY (4) DUPLEX RECEPTACLES FOR POS SYSTEM.
- PROVIDE PATCH PANEL FOR DIRECT TV SYSTEM. FURNISH AND INSTALL A ROCKMOUNT SOLUTIONS 96 PORT PATCH PANEL, PART #RS-UP-96811A ON WALL MOUNTED TO 3' X 3' WHITE PAINTED PLYWOOD BOARD ADJACENT TO QUANTITY (4) DUPLEX RECEPTACLES FOR DIRECT TV SYSTEM.
- JUNCTION BOX WITH TOGGLE DISCONNECT PER NEC FOR CONNECTION TO BUILDING MOUNTED SIGNAGE. VERIFY EXACT LOCATION AND CONNECT TO SIGN PER MANUFACTURE'S INSTRUCTION. ROUTE CIRCUIT TO EXTERIOR LIGHTING/SIGNAGE VIA TIME CLOCK
- STACKED DEDICATED RECEPTACLES ON DEMARK BOARD IN MANAGER OFFICE, AT 18", 48", 78", AND 108" FOR EQUIPMENT. ROUTE ALL LOW VOLTAGE DATA, VOICE, AND TV TO MANAGERS OFFICE EQUIPMENT RACK, VERIFY EXACT LOCATION IN MANAGER OFFICE WITH OWNER.
- PROVIDE 2" CONDUIT STUBBED UP 6" ABOVE FINISHED FLOOR AND EXTEND OUT OF BUILDING FOR PHONE/FIBER SERVICE. COORDINATE WITH LOCAL PHONE/FIBER UTILITY COMPANY PRIOR TO ROUTING CONDUIT. PROVIDE PULL STRING IN CONDUIT. PROVIDE 1" CONDUIT WITH PULL STRING FROM THIS LOCATION TO MANAGERS OFFICE PHONE/DATA RACK LOCATION.
- PROVIDE 2" CONDUIT WITH PULL STRING STUBBED UP THRU ROOF FOR SATELLITE, CAP END.
- PROVIDE 1" CONDUIT WITH PULL STRING FROM POS RACK TO NORTH END OF BAR.
- E.C. SHALL COORDINATE EXACT MOUNTING DETAILS FOR ELECTRICAL/DATA OUTLET WITH THE ARCHITECT/OWNER ON THE FIELD AS PER THE EXACT.
- E.C. TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD.

WINGS EQUIPMENT CONNECTION SCHEDULE							
ITEM	DESCRIPTION	Manufacturer	MODEL NO	AMPS	KW	HP	VOLTS
7	PEPSI DISPENSER WITH ICE BIN	T.B.D			0.5		120/1
20	FROSTER/CHILLER, GLASS/MUG/PLATE	TURBO-AIR	TBC-505B-GF-N	9	1	0.5	115/1
27	COFFEE/TEA MAKER	BUNN-O-MATIC	36700.0009	14.8	1.7		120/1
28	COFFEE MAKER, AUTOMATIC	BUNN-O-MATIC	12950.0213	15	1.8		120/1
37	POS			1			120/1
40	TANKLESS WATER HEATER	NAVEIN			0.35		120/1
51	DISPLAY CASE, REFRIGERATED	TRUE MFG-GENERAL FOOD SERVICE	IGDM-33CPT-LD	4.1	0.5		115/1

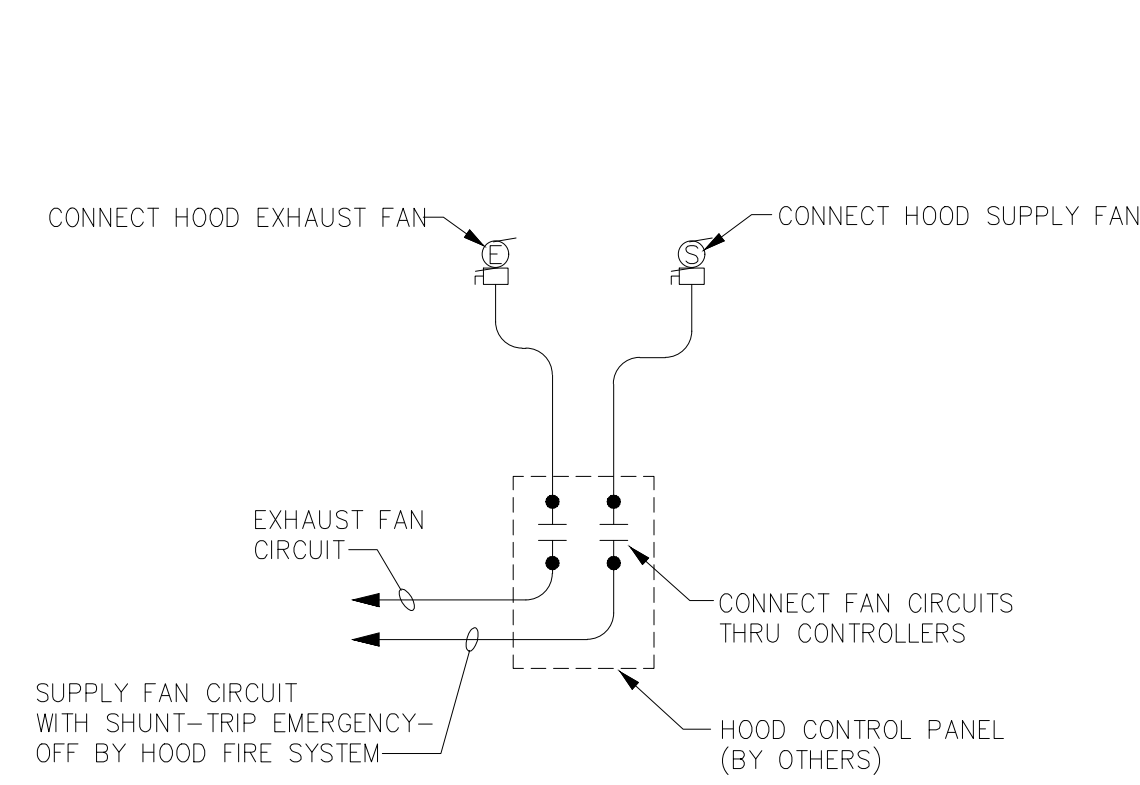
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL DISCONNECT SWITCHES, RECEPTACLE, ETC. TO MECHANICAL/PLUMBING AND KITCHEN EQUIPMENT AS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL ALSO PROVIDE ALL CORDS, PLUGS, CABLES, ETC. FOR EQUIPMENT AS REQUIRED.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL CONNECTIONS TO ALL MECHANICAL/PLUMBING AND KITCHEN EQUIPMENT AS REQUIRED.
- VERIFY MOUNTING HEIGHTS OF DISCONNECT SWITCHES, STARTERS, ETC. VERIFY LOCATIONS OF ALL KITCHEN EQUIPMENT WITH FOOD SERVICE CONTRACTOR.
- ALL DISCONNECT SWITCHES, FUSE SIZES, PLUG CONFIGURATIONS, BREAKER SIZES, ETC., SHALL BE COORDINATED WITH FOOD SERVICE SHOP DRAWINGS PRIOR TO ORDERING EQUIPMENT AND ROUGHING-IN. ELECTRICAL CHARACTERISTICS SCHEDULED ABOVE ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF DESIGN. ELECTRICAL CONTRACTOR SHALL VERIFY AND ADJUST IF NECESSARY TO MATCH THE REQUIREMENTS OF EQUIPMENT TO BE INSTALLED. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE ELECTRICAL CONTRACTOR'S EXPENSE.
- ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN THE KITCHEN/FOOD PREP AREA SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL PER THE REQUIREMENTS OF NEC ARTICLE 210.8(B) FOR EACH CIRCUIT SHOWING "GFCI" THE E.C. SHALL PROVIDE EITHER GFCI CIRCUIT BREAKERS OR RECEPTACLES THAT WILL MEET THE "READILY ACCESSIBLE" REQUIREMENT.
- EXTEND FOUR 1" EC FROM KITCHEN PANEL TO ABOVE ACCESSIBLE CEILING FOR FUTURE.
- SEE KITCHEN EQUIPMENT SHUTDOWN DETAIL FOR CONTROL OF ITEMS LOCATED UNDER KITCHEN HOOD.
- PROVIDE A POWER FAILURE ALARM MODULE IN LINE WITH GFCI FOR MONITORING LOCATE ALARM MODULE IN KITCHEN SPACE ADJACENT TO FREEZER



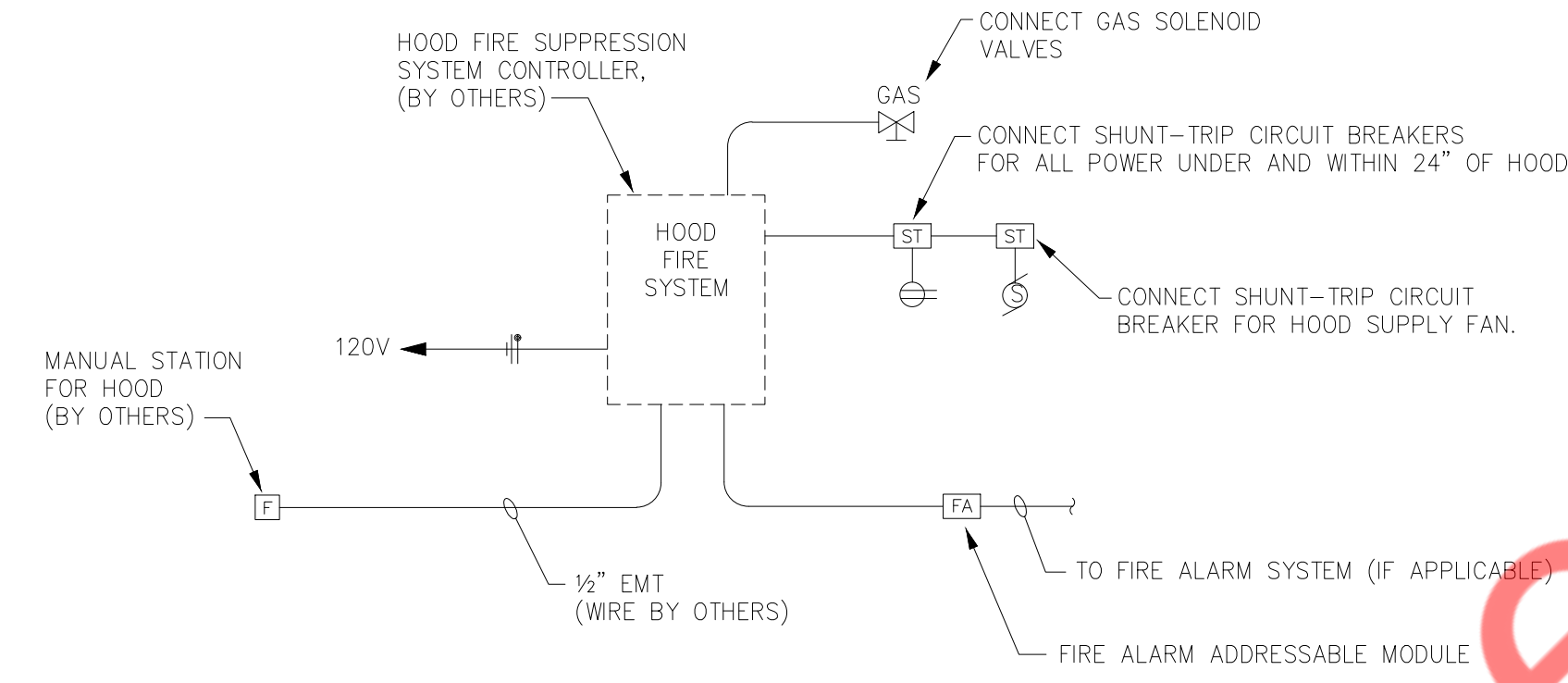
② ENLARGED OFFICE PLAN
SCALE 1/4" = 1'-0"



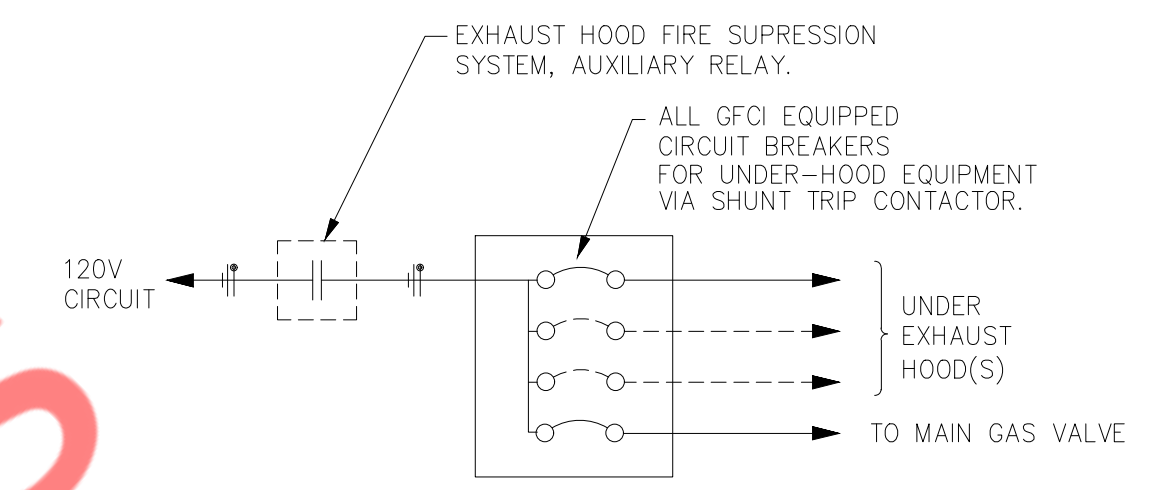
① POWER PLAN
SCALE: 1/4" = 1'-0"



② HOOD FANS
DIAGRAMMATIC

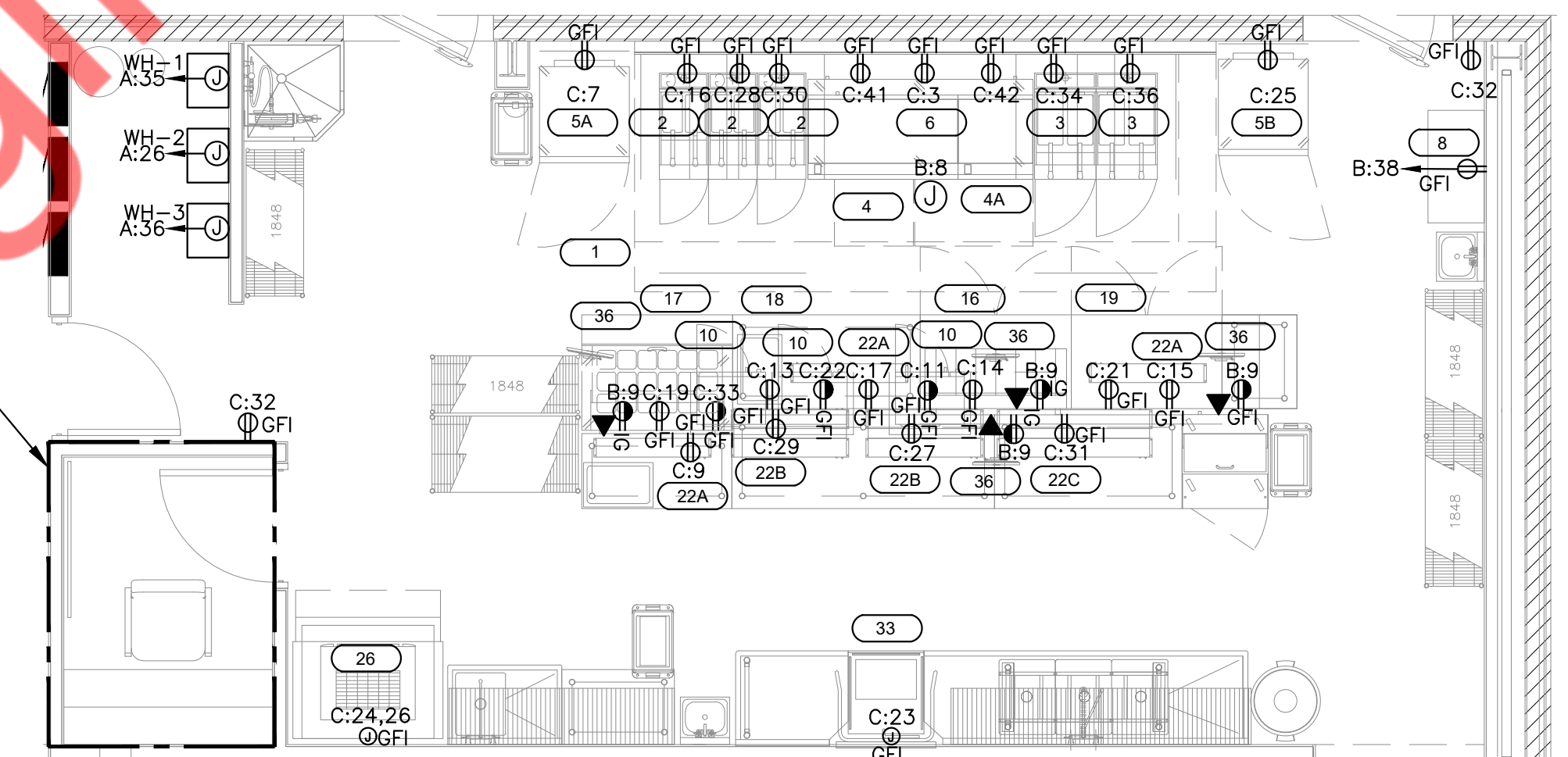


③ HOOD FIRE SYSTEM
DIAGRAMMATIC



④ HOOD EQUIPMENT AUTO-SHUTDOWN
DIAGRAMMATIC

ACTIVATION OF THE EXHAUST HOOD FIRE SUPPRESSION SYSTEM SHALL OPERATE THE SHUNT-TRIP EQUIPPED CIRCUIT BREAKERS SERVING ALL EQUIPMENT LOCATED UNDER THE HOOD. SEE PLANS FOR CIRCUIT NUMBERS.



① ENLARGED FLOOR PLAN-KITCHEN
SCALE 1/4" = 1'0"

WINGS EQUIPMENT CONNECTION SCHEDULE							
ITEM	DESCRIPTION	Manufacturer	MODEL NO	AMPS.	KW	HP	VOLTS
2	FRYER,DEEP FAT GAS	PITCO	SSH60-C	1	0.115		115
3	FRYER,DEEP FAT GAS	PITCO	SSH60WR-D	0.7	0.081		115
4	GRIDDLE GAS	VULCAN	VCRG48M	1			115
4A	GRIDDLE GAS	VULCAN	VCRG24M	1			115
5A	FREEZER,REACH-IN	TURBO-AIR	M3F24-1-N	4.4	0.506	0.375	115
5B	REFRIGERATOR,REACH-IN	TURBO-AIR	M3R24-1-N	5.5	0.633	0.2	115
6	CHEF BASE	TURBO-AIR	TCBE-72SDR-N	4.5	0.518	0.2	115
10	OVEN MICROOVEN	ACP,Inc	RCS10DSE	13	1.56		120
16	REFRIGERATOR,SANDWICH/SALAD PREP	TURBO-AIR	MST-48-N	6.5	0.748	0.3	115
17	REFRIGERATOR,SANDWICH/SALAD PREP	TURBO-AIR	MST-48-18-N	6.5	0.748	0.3	115
18	WARMER, FOOD,ELECTRIC	EAGLE GROUP/METAL MASTERS	1220FWD-120T	10	1.2		120
19	FREEZER UNDER COUNTER	TURBO-AIR	MUF-48-N	8.3	0.955	0.5	115
22A	WARMER,FOOD OVERHEAD	APW WYATT	FD-36H	7.7	0.924		120
22B	WARMER,FOOD OVERHEAD	APW WYATT	FDD-48H	15.3	1.836		120
22C	WARMER,FOOD OVERHEAD	APW WYATT	FDD-48H	21.1	2.532		120
26	ICE MAKER	ICE-O-MATIC	CIM0836A	11.8	2.454		208
36	KITCHEN DISPLAY MONITOR		17" LCD	1	0.12		120

- THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL DISCONNECT SWITCHES, RECEPTACLE, ETC. TO MECHANICAL/PLUMBING AND KITCHEN EQUIPMENT AS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL ALSO PROVIDE ALL CORDS, PLUGS, CABLES, ETC. FOR EQUIPMENT AS REQUIRED.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL CONNECTIONS TO ALL MECHANICAL/PLUMBING AND KITCHEN EQUIPMENT AS REQUIRED.
- VERIFY MOUNTING HEIGHTS OF DISCONNECT SWITCHES, STARTERS, ETC. VERIFY LOCATIONS OF ALL KITCHEN EQUIPMENT WITH FOOD SERVICE CONTRACTOR.
- ALL DISCONNECT SWITCHES, FUSE SIZES, PLUG CONFIGURATIONS, BREAKER SIZES, ETC., SHALL BE COORDINATED WITH FOOD SERVICE SHOP DRAWINGS PRIOR TO ORDERING EQUIPMENT AND ROUGHING-IN. ELECTRICAL CHARACTERISTICS SCHEDULED ABOVE ARE BASED ON INFORMATION AVAILABLE AT THE TIME OF ELECTRICAL CONTRACTOR SHALL VERIFY AND ADJUST IF NECESSARY TO MATCH THE REQUIREMENTS. OF EQUIPMENT TO BE INSTALLED. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE ELECTRICAL CONTRACTOR'S EXPENSE.
- ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN THE KITCHEN/FOOD PREP AREA SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. PER THE REQUIREMENTS OF NEC ARTICLE 210.8(B). FOR EACH CIRCUIT SHOWING "GFCI" THE E.C. SHALL PROVIDE EITHER GFCI CIRCUIT BREAKERS OR RECEPTACLES THAT WILL MEET THE "READILY ACCESSIBLE" REQUIREMENT.
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- SEE KITCHEN EQUIPMENT SHUTDOWN DETAIL FOR CONTROL OF ITEMS LOCATED UNDER KITCHEN HOOD.
- PROVIDE A POWER FAILURE ALARM MODULE INLINE WITH GFCI FOR MONITORING. LOCATE ALARM MODULE IN KITCHEN SPACE ADJACENT TO FREEZER.

NOTES THIS SHEET

- ALL ITEMS UNDER HOOD TO BE SHUNT-TRIP, EXTENDING TO ITEMS THAT ARE WITHIN 24" ON EACH SIDE.
- E.C. SHALL VERIFY EXACT ELECTRICAL REQUIREMENT OF EQUIPMENT 4 & 4A IN FIELD WITH EQUIPMENT MANUFACTURER AND MAKE POWER PROVISION ACCORDINGLY. BASE BID ACCORDINGLY.
- E.C. TO COORDINATE EXACT POWER AND ELECTRICAL OUTLET REQUIREMENT OF WATER HEATER IN FIELD WITH EQUIPMENT MANUFACTURER. BASE BID ACCORDINGLY.

FOOD SERVICE NOTES

CONNECT ALL KITCHEN EQUIPMENT COMPLETELY.

KITCHEN EQUIPMENT ELECTRICAL CHARACTERISTICS WERE TAKEN FROM EQUIPMENT CUT SHEETS. ALLOWANCES WERE MADE WHERE NO ELECTRICAL CHARACTERISTICS WERE AVAILABLE. COORDINATE EQUIPMENT DRAWINGS AND NAMEPLATE RATINGS WITH CIRCUIT SIZES. NOTIFY ARCHITECT OF CONFLICTS.

PROVIDE ALL CORDS, CAPS, RECEPTACLES, DISCONNECT SWITCHES, CONDUIT AND FITTINGS REQUIRED TO MAKE POWER AND CONTROLS CONNECTIONS TO EQUIPMENT. COORDINATE ROUGH-IN LOCATIONS WITH THE KITCHEN EQUIPMENT SHOP DRAWINGS. DO NOT SCALE DRAWINGS.

ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN THE KITCHEN/FOOD PREP AREA SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. PER THE REQUIREMENTS OF NEC ARTICLE 210.8(B). FOR EACH CIRCUIT SHOWING "GFCI" THE E.C. SHALL PROVIDE EITHER GFCI CIRCUIT BREAKERS OR RECEPTACLES THAT WILL MEET THE "READILY ACCESSIBLE" REQUIREMENT.

PROVIDE EQUIPMENT GROUNDING CONDUCTOR WITH ALL KITCHEN EQUIPMENT CIRCUITS. ALL EQUIPMENT SHALL BE SOLIDLY GROUNDING.

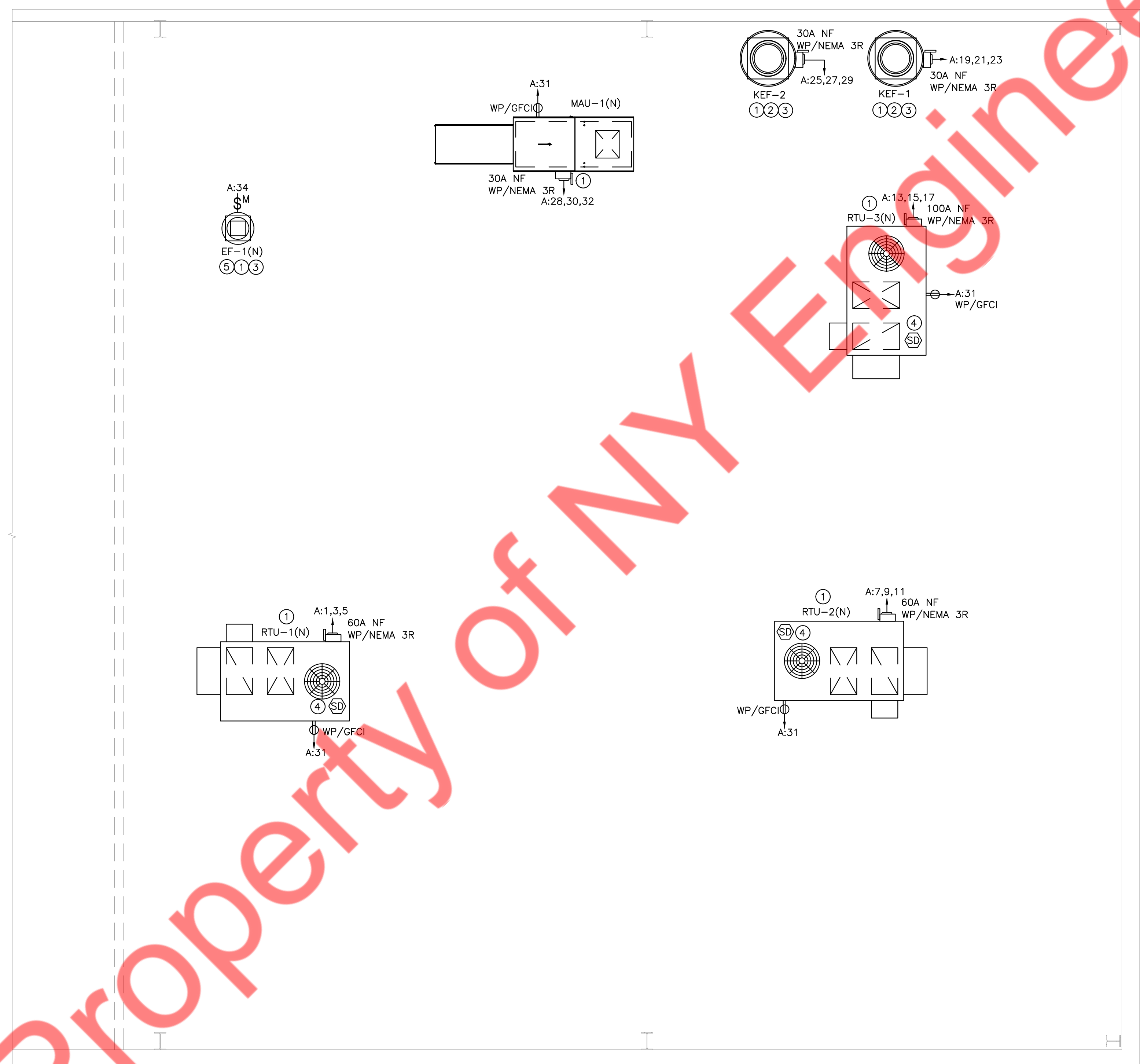
ALL FLEX CONDUIT CONNECTIONS SHALL BE WITH SEAL-TITE FLEX WITH GROUNDING JUMPER.. ALL CONDUITS STUBBED UP IN FLOORS SHALL HAVE A RIGID STEEL COUPLING FLUSH WITH FINISHED FLOOR.

MAKE ALL REQUIRED CONNECTIONS THROUGH EQUIPMENT CONTROLLERS WHERE CONTROLS ARE REMOTE FROM EQUIPMENT.

ALL CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED.

WHERE SAFETY SWITCHES AND RECEPTACLES ARE SHOWN FOR A DISCONNECT MEANS, LOCATE SWITCHES NEAR THE CONNECTION POINT IN AN ACCESSIBLE LOCATION. COORDINATE CONNECTION POINTS WITH EQUIPMENT DRAWINGS.

ALL LIGHTING FIXTURES IN KITCHEN/FOOD PREP AREAS SHALL HAVE APPROVED LAMP SHIELDING. IN AREAS WHERE FOOD IS HANDLED/PREPARED OR UTENSILS/EQUIPMENT ARE WASHED, A MINIMUM OF 50 FOOTCANDLES ILLUMINATION IS PROVIDED AT WORK LEVEL.



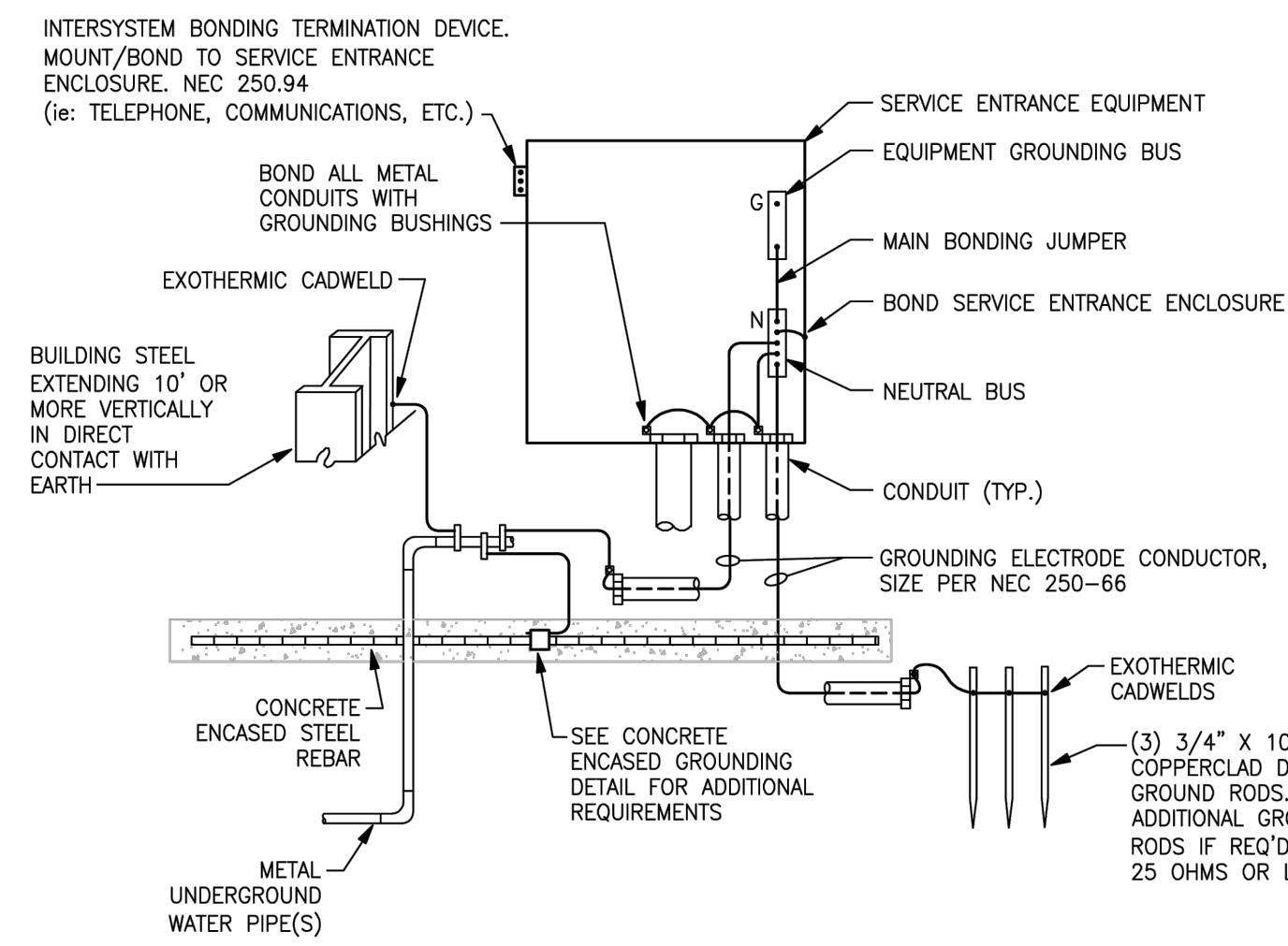
ROOF POWER PLAN GENERAL NOTES:

- A. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS ON ROOF WITH MECHANICAL CONTRACTOR.
- B. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH-IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.

ROOF POWER PLAN KEYED NOTES: (1)

1. E.C. TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD.
2. E.C. TO ROUTE ROOF MOUNTED EQUIPMENT TROUGH TERMINAL BLOCK AT HOOD CONTROL PANEL. REFER HOOD DRAWING FOR WIRING DIAGRAM.
3. EXHAUST FANS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. E.C. SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR SWITCHING & CONTROLS AND PROVIDE ALL NECESSARY WIRING REQUIRED.
4. NEW DUCT-MOUNTED SMOKE DETECTOR PROVIDED BY MECHANICAL CONTRACTOR. WIRED BY ELECTRICAL CONTRACTOR TO SHUT UNIT DOWN UPON DETECTION OF SMOKE IN AIRSTREAM. TIE SMOKE DETECTORS TO BUILDING HVAC AND SPRINKLER MONITORING PANEL, LOCATED IN LANDLORD'S ROOM. FIELD VERIFY AND COORDINATE ALL WORK INVOLVED.
5. EXHAUST FAN EF-1(N) SHALL BE INTERLOCKED WITH RTU-1(N). E.C TO COORDINATE WITH MECHANICAL CONTRACTOR IN FIELD. PRIOR TO ROUGH-IN.

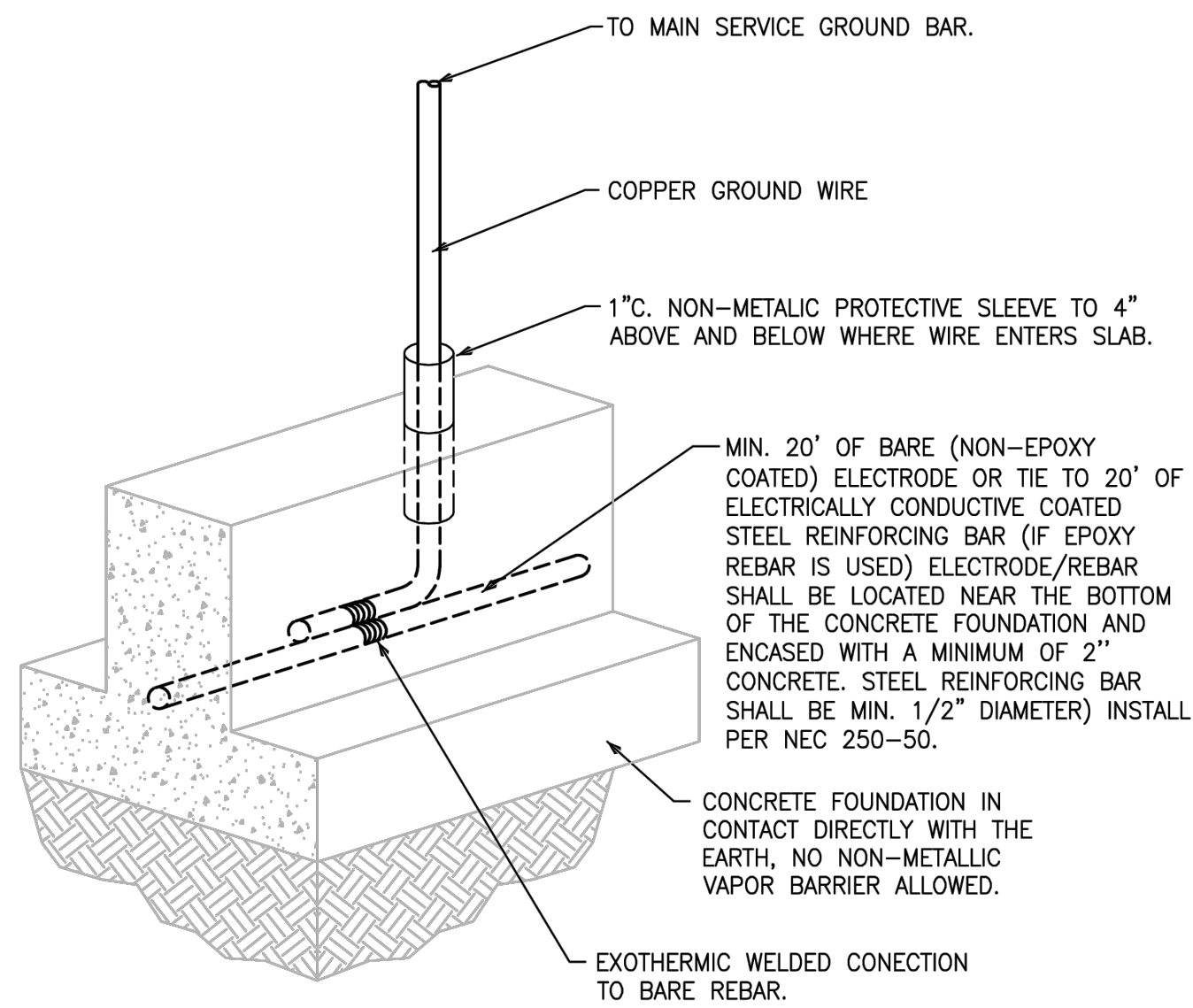
1 ROOF POWER PLAN
SCALE: 1/4" = 1'-0"



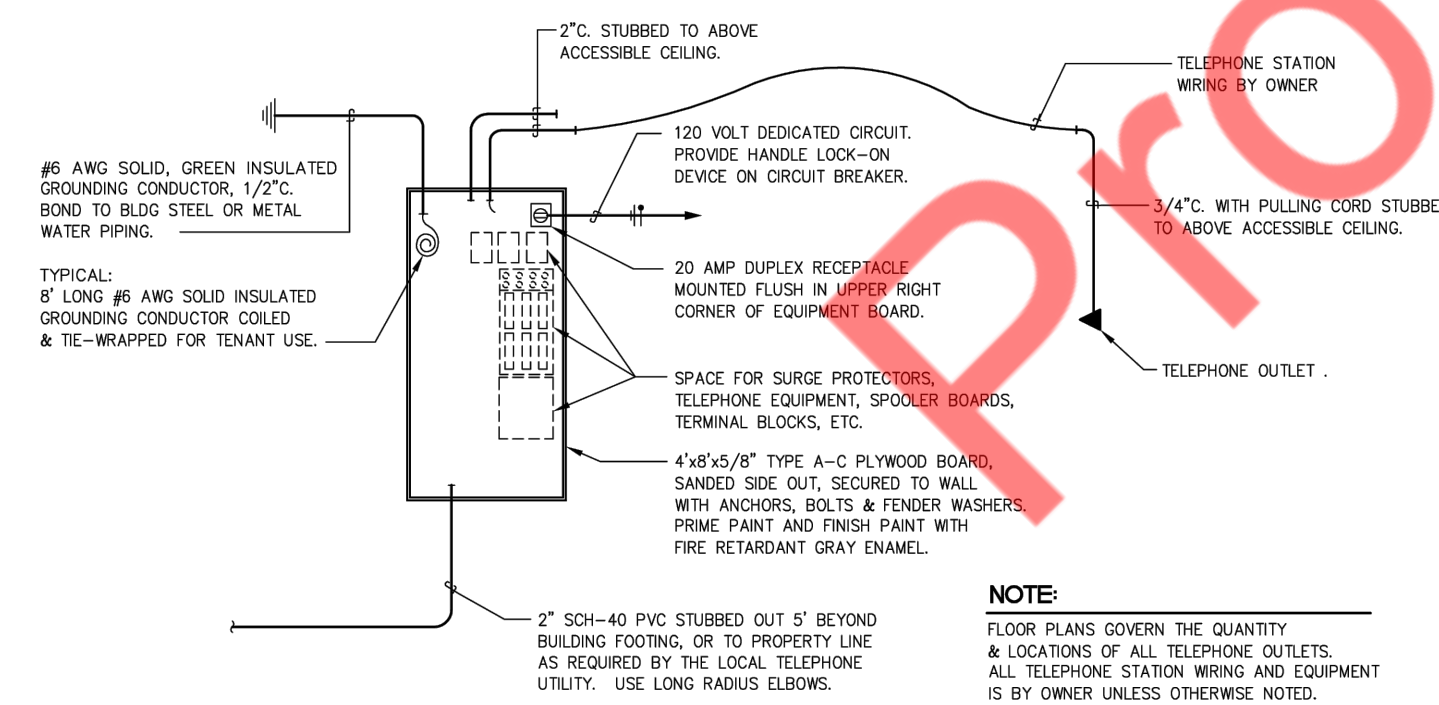
NOTES:

- GROUNDING ELECTRODE CONDUCTOR SHALL BE ENCLOSED FULL LENGTH BY CONDUIT (RMC OR EMT).
- GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS (UNBROKEN) FROM THE NEUTRAL BUS TO THE GROUNDING ELECTRODE. SPLICES AND/OR JOINTS ARE PROHIBITED, EXCEPTIONS AS ALLOWED PER NEC 250.64(C) IRREVERSIBLE COMPRESSION TYPE CONNECTORS OR BY EXOTHERMIC WELDING WILL BE ACCEPTABLE FOR REMODEL WORK ONLY.
- GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER.
- CONNECTION TO THE METAL COLD WATER PIPE SHALL BE MADE WITHIN 5' OF THE POINT OF ENTRANCE INTO THE BUILDING.
- GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPER CONNECTIONS TO BUILDING STEEL, CONCRETE ENCASED STEEL REBAR, AND DRIVEN GROUND RODS SHALL BE CONNECTED BY EXOTHERMIC CADWELDS.
- ALL GROUNDING BUSHINGS, CLAMPS, JUMPERS, FASTENERS, ETC. SHALL BE APPROVED AND LISTED FOR THE PURPOSE.

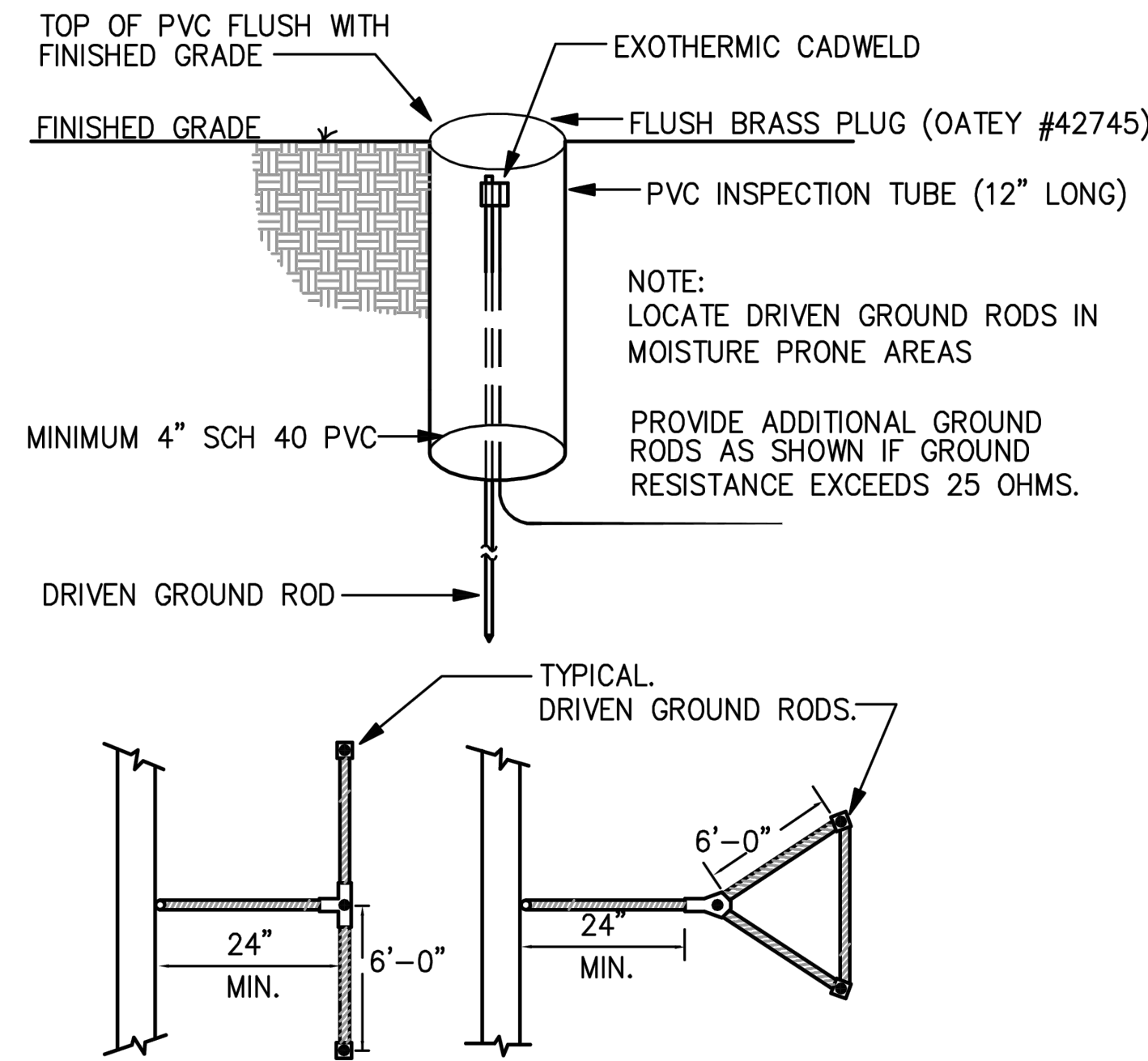
4 SERVICE GROUND DETAIL
NTS



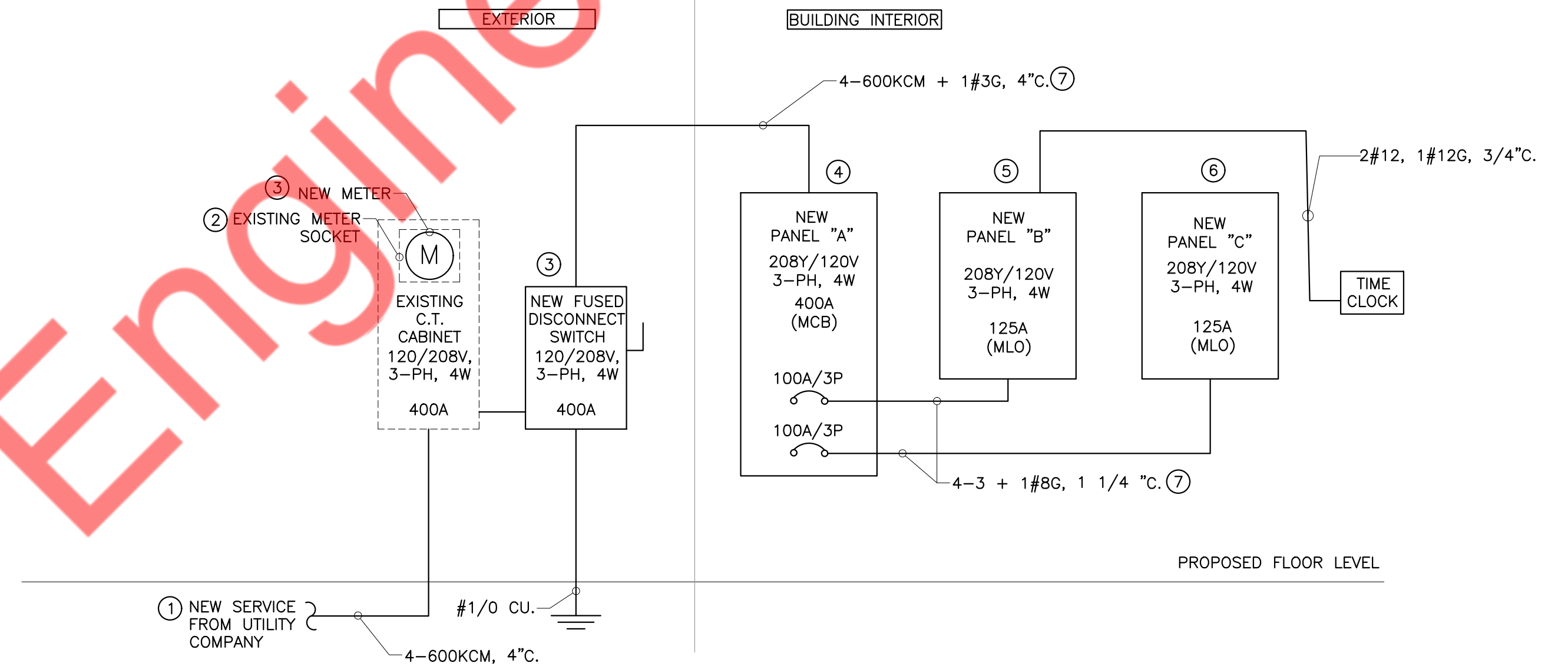
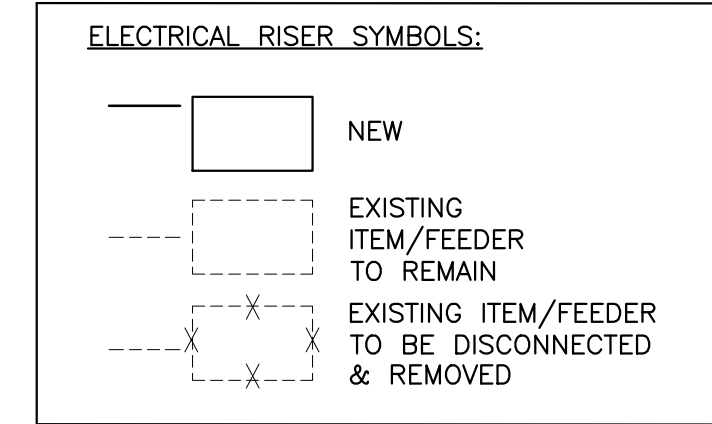
3 CONCRETE ENCASED GROUNDING DETAILS
NTS



2 TELEPHONE RAISER DIAGRAM
NTS



5 DRIVEN GROUND DETAILS
NTS



RISER DIAGRAM KEYED WORK NOTES: ①

- NEW 400A, 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE FOR THE SPACE. E.C. SHALL COORDINATE WITH OWNER/UTILITY COMPANY FOR EXACT LOCATION OF INCOMING ELECTRICAL SERVICE IN FIELD. E.C. SHALL APPLY TO UTILITY COMPANY FOR NEW 200A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE.
- EXISTING 400A, 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL METER SOCKET AND C.T. CABINET FOR THE SPACE. E.C. SHALL COORDINATE WITH OWNER/LANDLORD FOR EXACT LOCATION OF EXISTING ELECTRICAL METER SOCKET AND C.T. CABINET IN FIELD. E.C. SHALL ALSO VERIFY OPERABLE CONDITION OF EXISTING METER SOCKET AND C.T. CABINET IN FIELD, REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- NEW 400A, 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL METER AND FUSED DISCONNECT SWITCH FOR THE PROJECT SPACE. E.C. SHALL COORDINATE WITH ARCHITECT/OWNER/UTILITY FOR THE EXACT LOCATION OF THE NEW ELECTRICAL METER AND FUSED DISCONNECT SWITCH IN FIELD.
- NEW 400A (MCB), 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "A" FOR THE SPACE. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF NEW ELECTRICAL PANEL "A" IN FIELD.
- NEW 125A(MLO), 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B" FOR THE SPACE. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF NEW ELECTRICAL PANEL "B" IN FIELD.
- NEW 125A(MLO), 208Y/120V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C" FOR THE SPACE. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF NEW ELECTRICAL PANEL "C" IN FIELD.
- E.C. TO FIELD VERIFY THE EXACT LENGTH OF THE CABLE AND CHECK THE VOLTAGE DROP IS UNDER LIMIT PER NEC BEFORE INSTALLATION.

RISER DIAGRAM GENERAL NOTES:

- ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSE ONLY. E.C. TO VERIFY EXACT POWER DISTRIBUTION & OPERABLE CONDITION OF EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR ANY DISCREPANCY.
- E.C. SHALL VERIFY THE RATING, SIZE, LOCATION AND OPERABLE CONDITION OF ALL THE EXISTING ELECTRICAL EQUIPMENTS AND ELECTRICAL CONNECTION IN FIELD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND BEFORE COMMENCING ANY WORK.
- E.C. SHALL VERIFY THE INCOMING SERVICE AMPERAGE, VOLTAGE, NUMBER OF PHASES, WIRE SIZE AND DISTRIBUTION IN FIELD.
- E.C. TO COORDINATE FAULT CURRENT (ISC) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
- E.C. SHALL VERIFY THE EXACT POWER DISTRIBUTION & INCOMING CONNECTION TO ALL PANELS IN FIELD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND.
- E.C. TO VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD. REPLACE/RECTIFY IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING ELECTRICAL EQUIPMENTS TO BE MAINTAINED AND UTILIZED TO SERVE PROJECT SPACE. POWER RISER DIAGRAM INDICATED FOR REFERENCE PURPOSE ONLY.

1 POWER RISER DIAGRAM
NTS

4. WARRANTY

A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

E. GAS TANKLESS WATER HEATER(WH-1)

1. THE TANKLESS WATER HEATER SHALL BE UL LISTED FOR THE US AND NSF CERTIFIED.
2. UNIT SHALL BE PROTECTED BY A SHEET METAL HOUSING. HEAT EXCHANGER SHALL BE RATED FOR MAXIMUM WORKING PRESSURE NOT LESS THAN 150 PSIG.
3. ALL ASPECTS OF INSTALLATION OF WATER HEATER PLANT SHALL BE IN STRICT ACCORDANCE WITH NFPA 54, NFPA 211 AND MANUFACTURER RECOMMENDATIONS. MATERIALS SHALL CONFORM TO ALL MANUFACTURER RECOMMENDATION INCLUDING ELECTRICAL CONNECTIONS AND WIRING.
4. WATER HEATER PIPING SHALL BE FIELD CONSTRUCTED OF MATERIALS AS SPECIFIED. WATER HEATER SHALL BE INSTALLED WITH INDIVIDUAL ISOLATING SHUTOFF VALVES FOR SERVICE AND MAINTENANCE.
5. BURNER SHALL BE ALUMINIZED STEEL OR CAST IRON, ADJUSTABLE, OR SELF-ADJUSTING AIR-GAS MIXTURE CONTROL.

F. HOT WATER RE-CIRCULATING PUMP

1. IN-LINE PUMP: SINGLE STAGE VOLUTE TYPE PUMP SHALL BE MADE OF CAST IRON OR FORGED LEAD-FREE BRONZE IMPELLER.
2. THE PUMP SHALL HAVE A GROUND AND POLISHED STEEL SHAFT WITH A HARDENED INTEGRAL THRUST COLLAR. THE SHAFT SHALL BE SUPPORTED BY TWO HORIZONTAL SLEEVE BEARINGS DESIGNED TO CIRCULATE OIL. THE PUMPS ARE TO BE EQUIPPED WITH A MECHANICAL SEAL WITH CARBON SEAL FACE ROTATING AGAINST CERAMIC SEAT. THE MOTOR SHALL BE NON-OVERLOADING AT ANY POINT ON PUMP CURVE.
3. DIRECT CONNECT PUMP TO ELECTRIC MOTOR WITH FLEXIBLE COUPLING. THE MOTOR SHALL BE OF THE DRIP-PROOF, SLEEVE-BEARING, QUIET OPERATING, RUBBER-MOUNTED CONSTRUCTION. EQUIPMENT MOTOR WITH BUILT-IN THERMAL OVERLOAD PROTECTION.
4. INSTALL IN-LINE CIRCULATING PUMPS BETWEEN PIPE FLANGES IN PIPING SYSTEMS. INSTALL OVERHEAD PIPE SUPPORTS, BOTH SIDES OF IN-LINE PUMPS, INSTALLED IN HORIZONTAL PIPING RUNS.

G. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

H. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.

I. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

J. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

K. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

L. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN. PRV CONFIRMING TO ASSE 1003 OR CSA B356 WITH STRAINER SHALL BE INSTALLED TO REDUCE THE PRESSURE.

M. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

N. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

O. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

P. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

Q. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

R. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

S. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

T. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

U. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

V. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

W. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

X. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

Y. ALL EQUIPMENT WILL BE FACTORY TESTED.

Z. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

AA. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

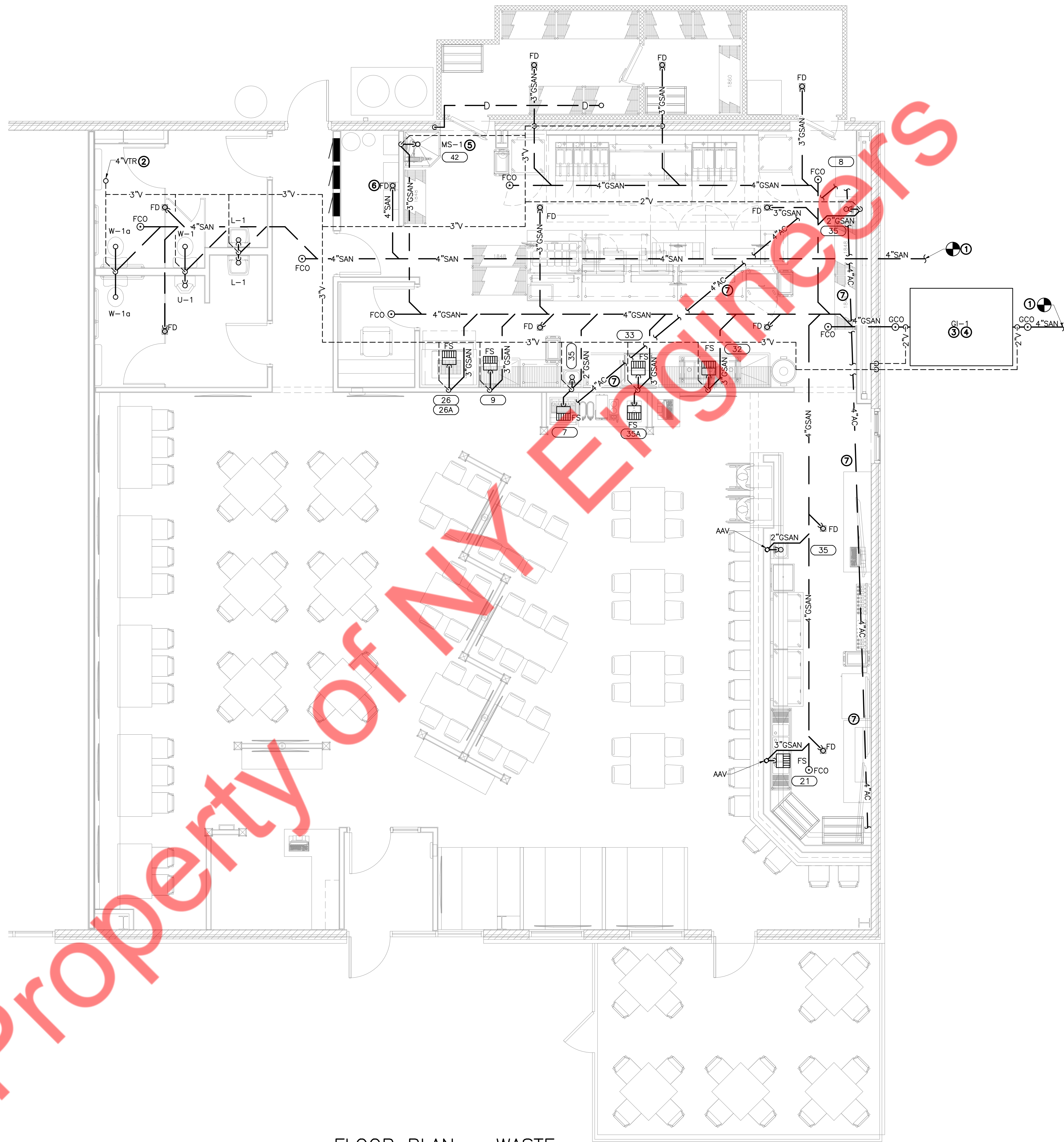
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- SANITARY GENERAL NOTES:**
- CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
 - THE VENT SHALL RISE 6 INCHES VERTICALLY ABOVE THE FLOOR RIM LEVEL OF THE FIXTURE BEING VENTED BEFORE OFFSETTING HORIZONTALLY OR VERTICALLY DOWNWARD BEFORE CONNECTING TO THE OUTSIDE VENT TERMINAL.
 - PROVIDE ACCESS PANEL FOR ALL CLEANOUTS AS REQUIRED.

- SANITARY AND VENT KEY NOTES:** ①
- CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING SANITARY. CONTRACTOR TO FIELD VERIFY EXACT SIZE, ROUTING AND INVERT OF EXISTING PIPE ON SITE.
 - NEW 4" VTR. CONTRACTOR TO MAINTAIN 10' DISTANCE FROM OUTSIDE AIR INTAKE.
 - GREASE INTERCEPTOR, PROVIDE H2O TRAFFIC RATED CONCRETE RELIEVING SLAB. COORDINATE MANHOLE TOPS WITH FINISHED GRADE. COORDINATE MANHOLE TOPS WITH FINISHED GRADE. VENT PER MANUFACTURER'S REQUIREMENTS. FIELD VERIFY EXACT FIELD VERIFY EXACT LOCATION. SPECIFIED INTERCEPTOR IS MANUFACTURED WITH AN INTERNAL FLOW CONTROL SYSTEM. THEY DO NOT REQUIRE AN EXTERNAL FLOW CONTROL SYSTEM OR AIR INTAKE VENT.
 - EXTERIOR GREASE INTERCEPTOR MODEL SCHIER GB-1000 OR SIMILAR. CONTRACTOR TO FIELD VERIFY THE FINAL LOCATION WITH THE CIVIL UTILITY PLAN. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH CITY/COUNTY REGULATIONS.
 - CONTRACTOR SHALL ROUTE EVAPORATOR DRAINS TO MOP SINK. DISCHARGE WITH CODE APPROVED AIR GAP. FIELD VERIFY EXACT LOCATIONS. PLUMBING CONTRACTOR SHALL PROVIDE INSULATION AND HEAT TRACE ON CONDENSATE PIPING.
 - DRAIN WATER HEATER CONDENSATE TO FLOOR DRAIN. DISCHARGE WITH CODE APPROVED AIR GAP.
 - PROVIDE 4" PVC CONDUIT FOR BEVERAGE LINES. CONDUIT TO RUN UP IN WALL TO BUILDING CEILING SPACE, THROUGH TO BAG IN THE BOX SHELF, TURN DN & TERMINATE 18" AFF.

WASTE DFU CALCULATIONS

MARK	FIXTURE	QTY.	DFU	TOTAL
9	1 COMPARTMENT SINK	1	5	5
21	BAR 4 COMPARTMENT SINK	1	5	5
26	ICE MAKER	1	5	5
33	DISHWASHER	1	5	5
35	HAND SINK	3	2	6
35A	UNDERBAR SINK, DROP IN	1	5	5
W-1	WATER CLOSET	3	4	12
U-1	URINAL	1	3	3
L-1	LAVATORY	2	2	4
MS-1	MOP SINK	1	3	3
FD	FLOOR DRAIN	12	5	60
FS	FLOOR SINK	5	5	25
TOTAL				138



① FLOOR PLAN – WASTE
SCALE: 1/4" = 1'-0"

WATER GENERAL NOTES:

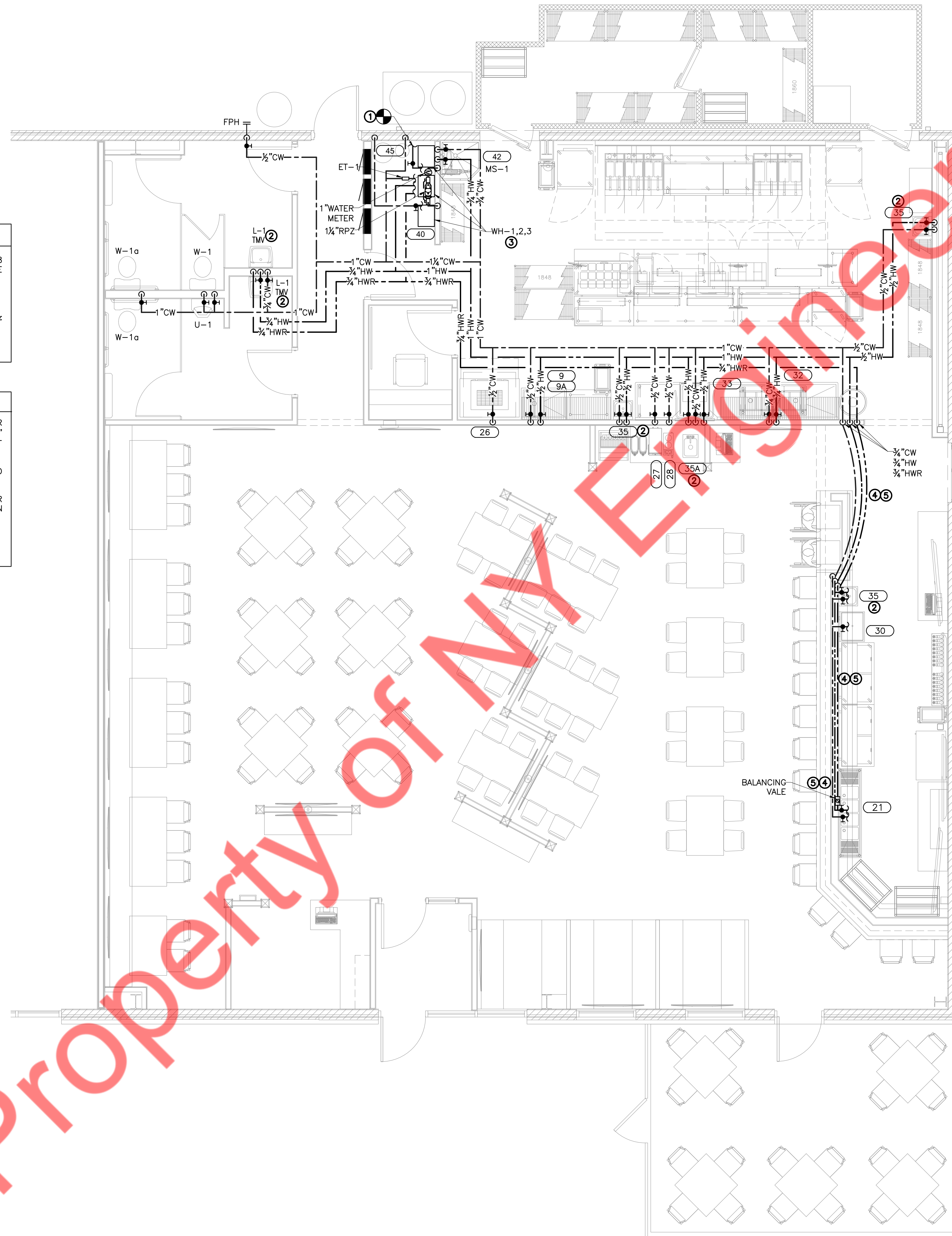
1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL PLUMBING CODE: ENERGY CONSERVATION CODE (REFER SHEET P-001)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR & SHUT-OFF VALVES AS REQUIRED.
4. WATER HEATER DRAIN SPILLS TO THE FLOOR DRAIN.

WATER KEY NOTES: ①

1. CONNECT NEW 1-1/4" CW PIPING TO THE EXISTING COLD WATER LINE IN SPACE. PROVIDE NEW 1-1/4" BACKFLOW PREVENTER AND 1" WATER METER AS PER PLAN. CONTRACTOR TO FIELD VERIFY EXACT SIZE, PRESSURE AND LOCATION OF EXISTING CW LINE.
2. PROVIDE A TEMPERATURE MIXING VALVE FOR LAVATORY AND HAND SINK. SET TEMPERATURE TO A MAXIMUM OF 110° F.
3. MOUNT WATER HEATER ON WALL. PROVIDE PIPING MANIFOLD PER MANUFACTURER REQUIREMENTS. ROUTE CONDENSATE TO FLOOR DRAIN WITH APPROVED AIR GAP.
4. 130°F HW LINE ROUTED IN LOW WALL TO BAR EQUIPMENT.
5. 3/4" CW/HW/HWR LINE ROUTED IN LOW WALL TO BAR EQUIPMENT.

TANKLESS WATER HEATER CALCULATIONS

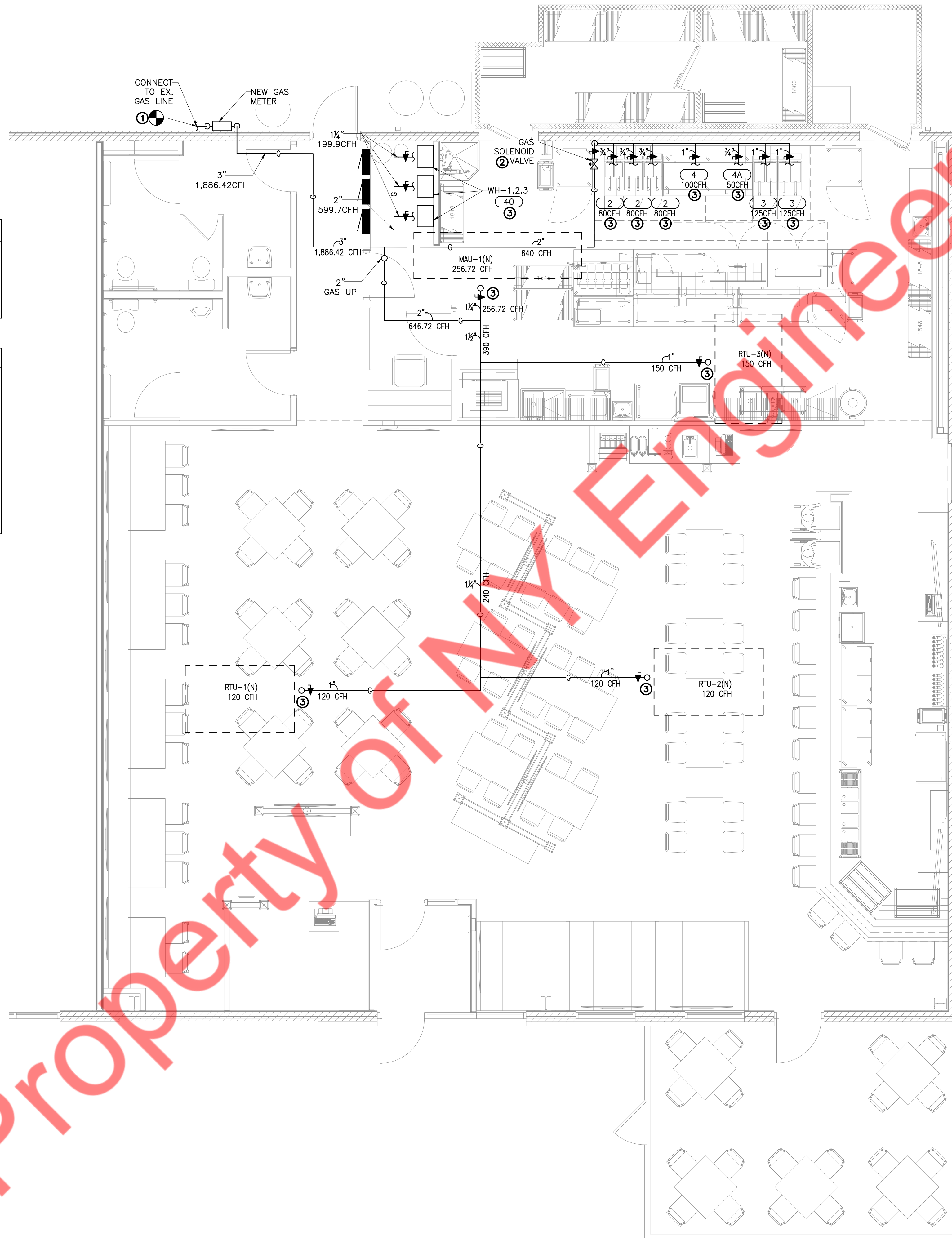
SR. NO.	FIXTURE	QUANTITY	FLOW RATE (GPM)	
			PER FIXTURE	TOTAL
01	3 COMPARTMENT SINK	1	2	2
02	4 COMPARTMENT SINK	1	2	2
03	HAND SINK	4	0.5	2
04	MOP SINK	1	1.5	1.5
05	LAVATORY	2	0.5	1.0
06	ONE COMPARTMENT	1	1.5	1.5
07	DISHWASHER	1	2	2
TOTAL FLOW RATE (GPM)				12



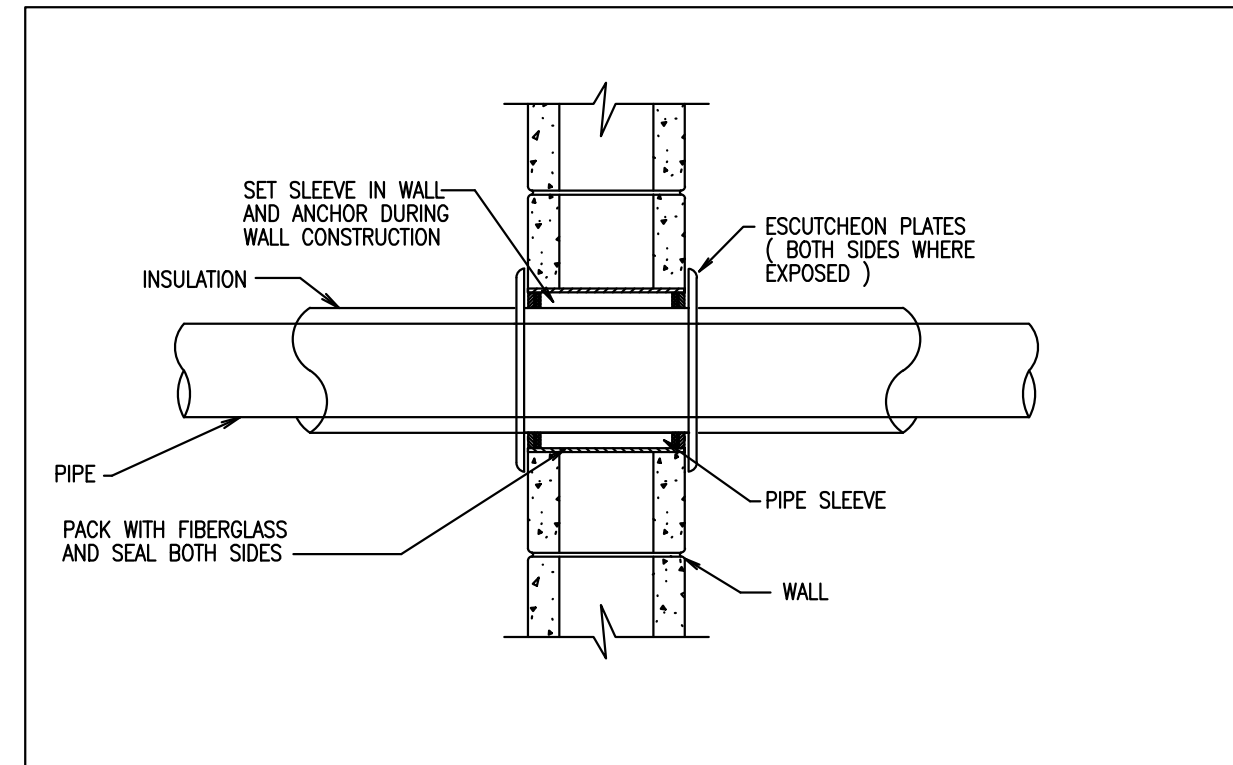
① FLOOR PLAN - WATER
SCALE: 1/4" = 1'-0"

- GAS GENERAL NOTES:**
1. GAS PIPING TO BE SCHEDULE 40 STEEL PIPE W/125 CAST IRON SCREWED FITTINGS.
 2. GAS PIPING TO BE INSTALLED BY QUALIFIED LICENSED CONTRACTOR.
 3. VERIFY ALL EQUIPMENT BTU'S PRIOR TO INSTALLATION. ADJUST PIPE SIZE ACCORDING TO 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(2).

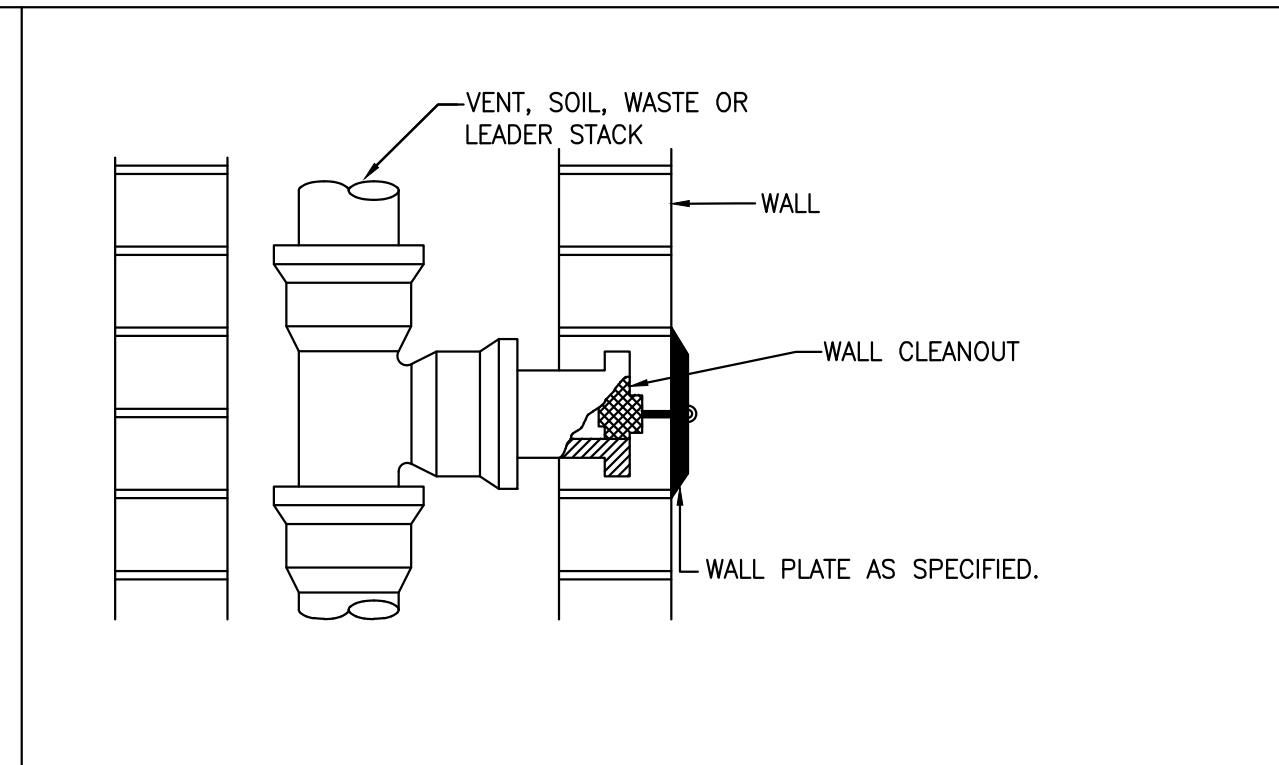
- GAS KEY NOTES:** ①
1. CONNECT NEW 3" GAS LINE TO EXISTING GAS SERVICE IN SPACE. SEE GAS LOAD SCHEDULE ON SHEET P-301 FOR NEW GAS DEMAND. PLUMBING CONTRACTOR SHALL COORDINATE THE METER LOCATION AND PRESSURE WITH THE LOCAL UTILITY COMPANY. IF THE DELIVERY PRESSURE INDICATED IS NOT AVAILABLE, THE PLUMBING CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY.
 2. PLUMBING CONTRACTOR SHALL INSTALL GAS SOLENOID VALVE ABOVE CEILING. TIE VALVE INTO HOOD FIRE SUPPRESSION SYSTEM. VALVE SHALL CLOSE UPON HOOD SUPPRESSION ACTIVATION. PROVIDE MANUAL RESET.
 3. CONTRACTOR TO PROVIDE ADEQUATE INLET PRESSURE REQUIRED GAS FIRED WH-1, WH-2, WH-3, RTU-1(N), RTU-2(N), RTU-3(N), MAU-(N) AND KITCHEN EQUIPMENTS. PROVIDE GAS SHUT OFF VALVE, UNION AND DIRTLEG.



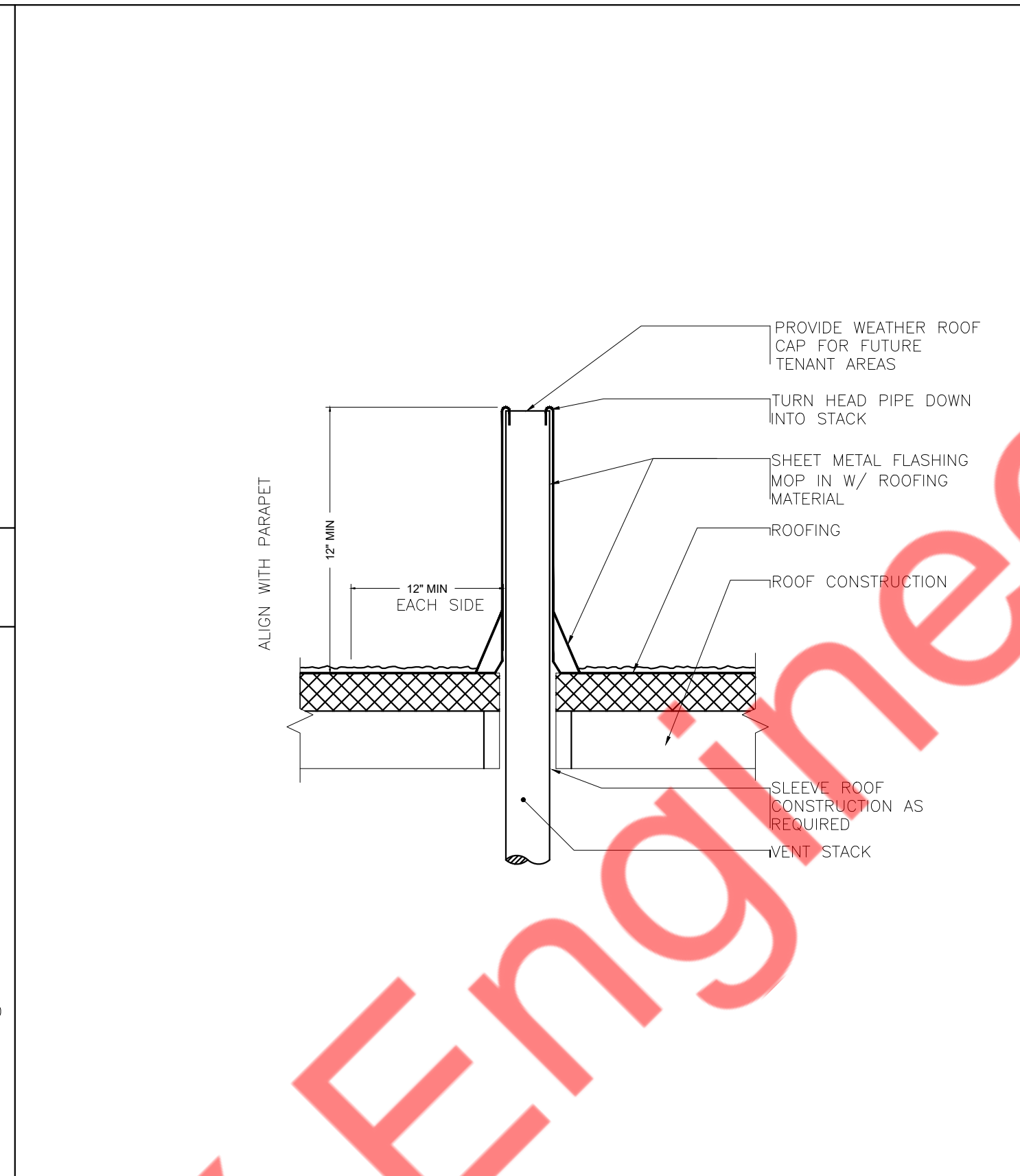
① FLOOR PLAN - GAS
SCALE: 1/4" = 1'-0"



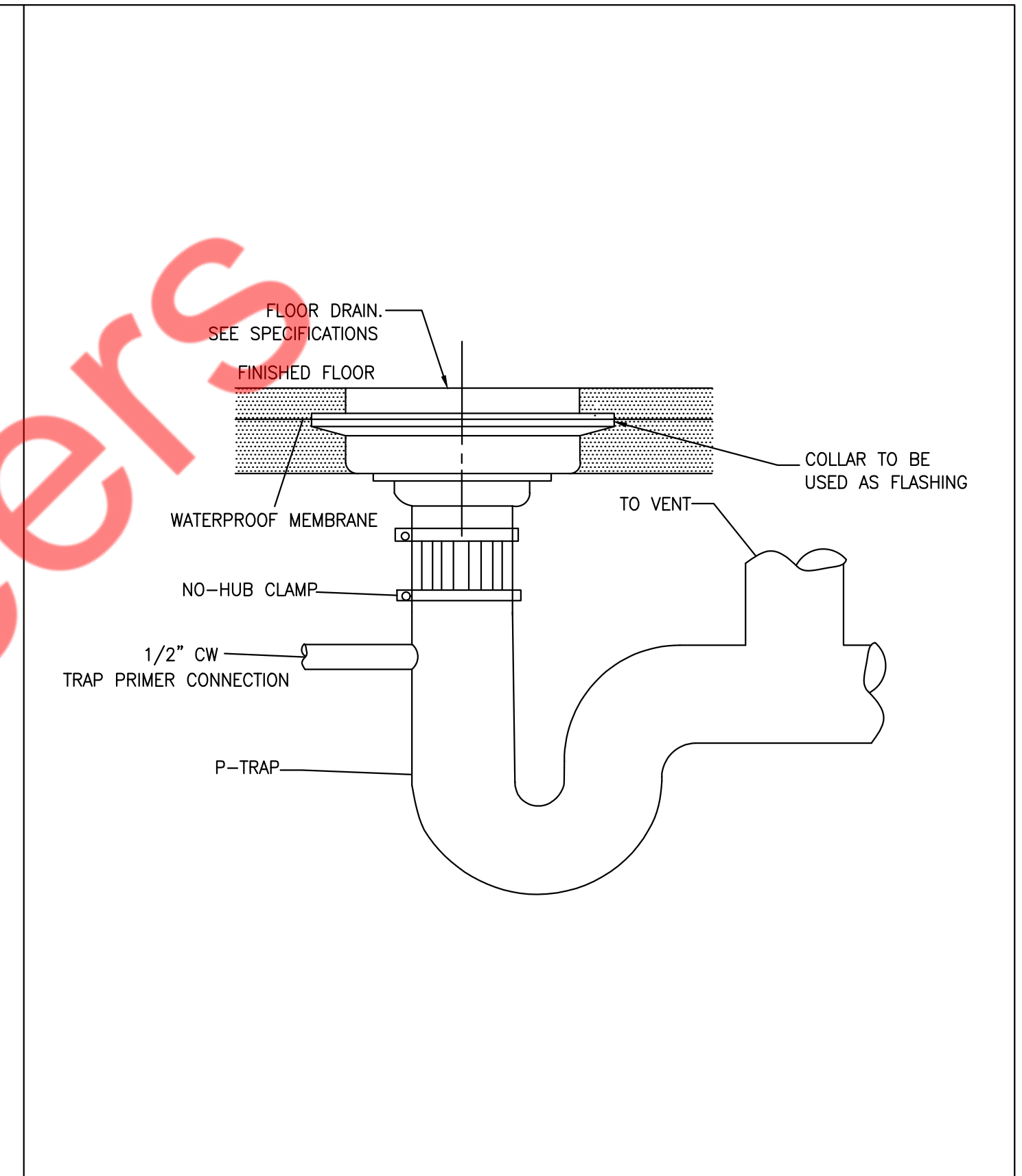
① PIPE SLEEVE THRU WALL SECTION
NTS



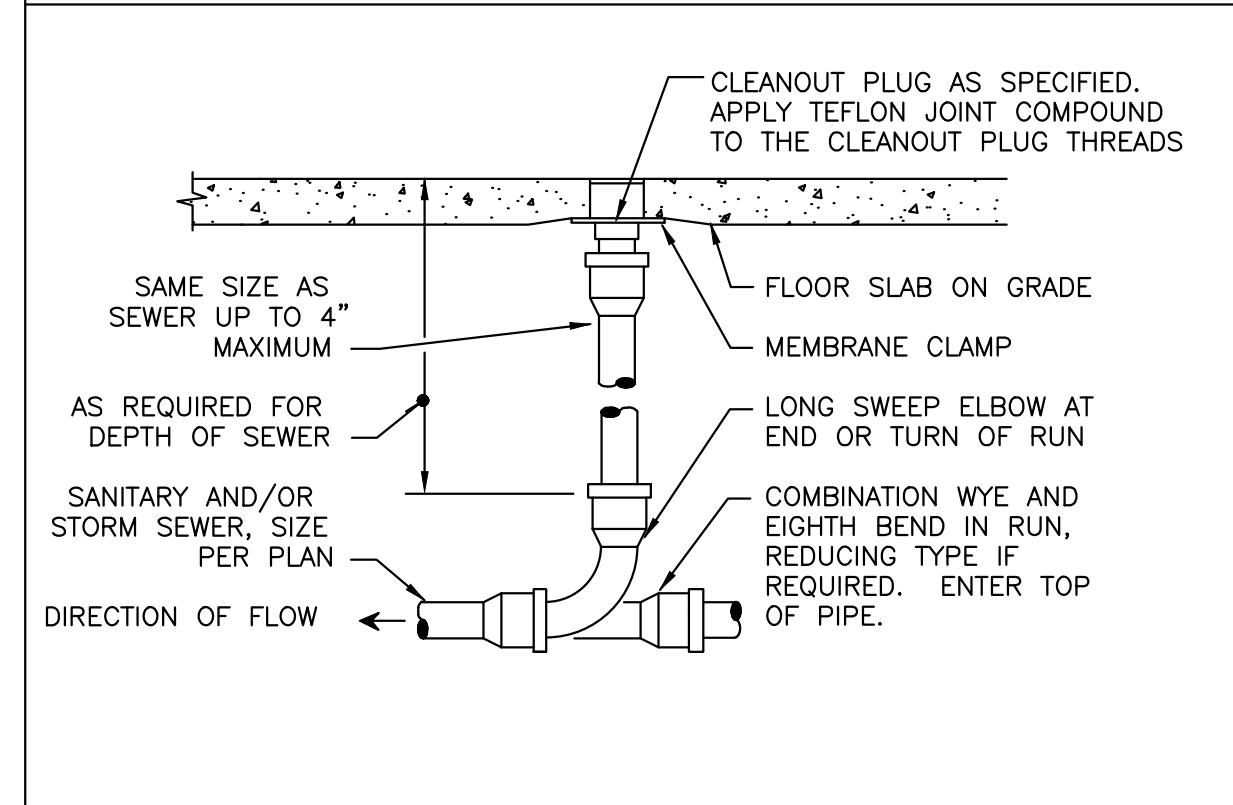
③ WALL CLEANOUT DETAILS
NTS



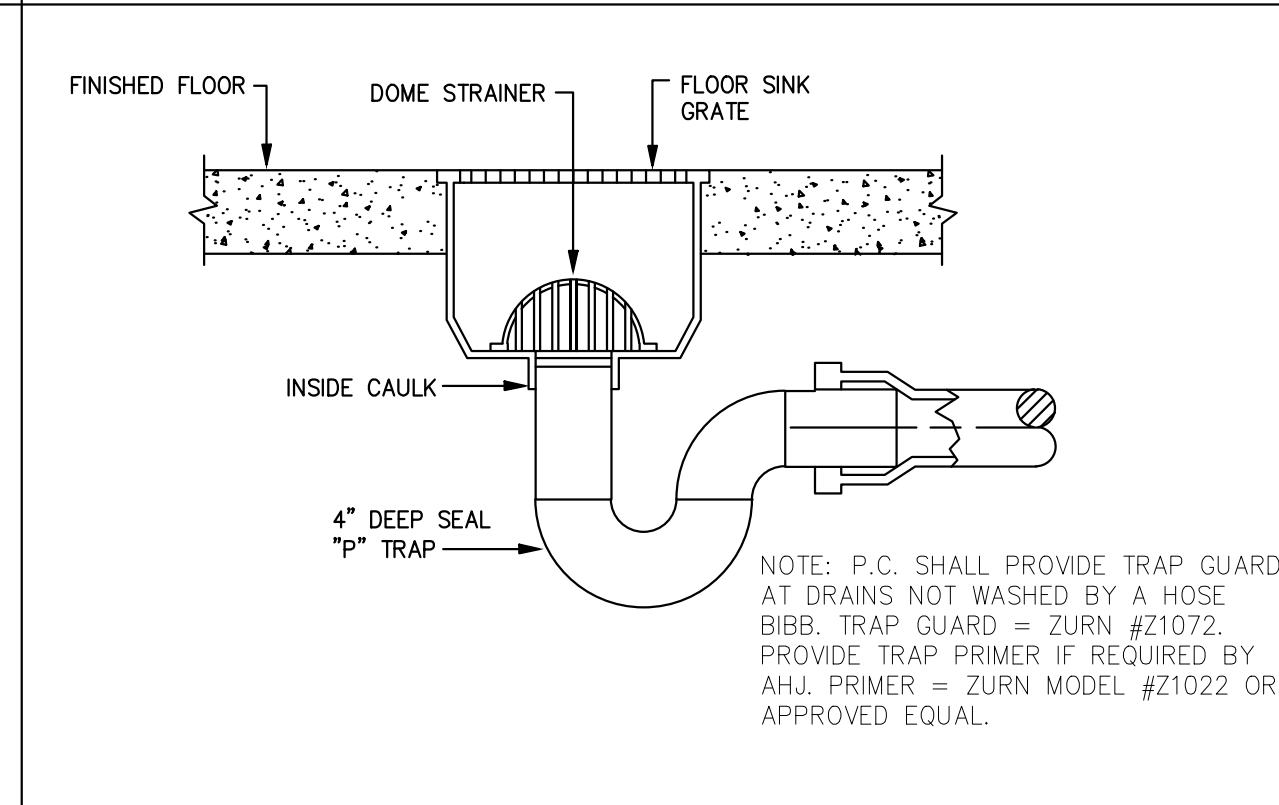
⑤ TRAP PRIMER DETAILS
NTS



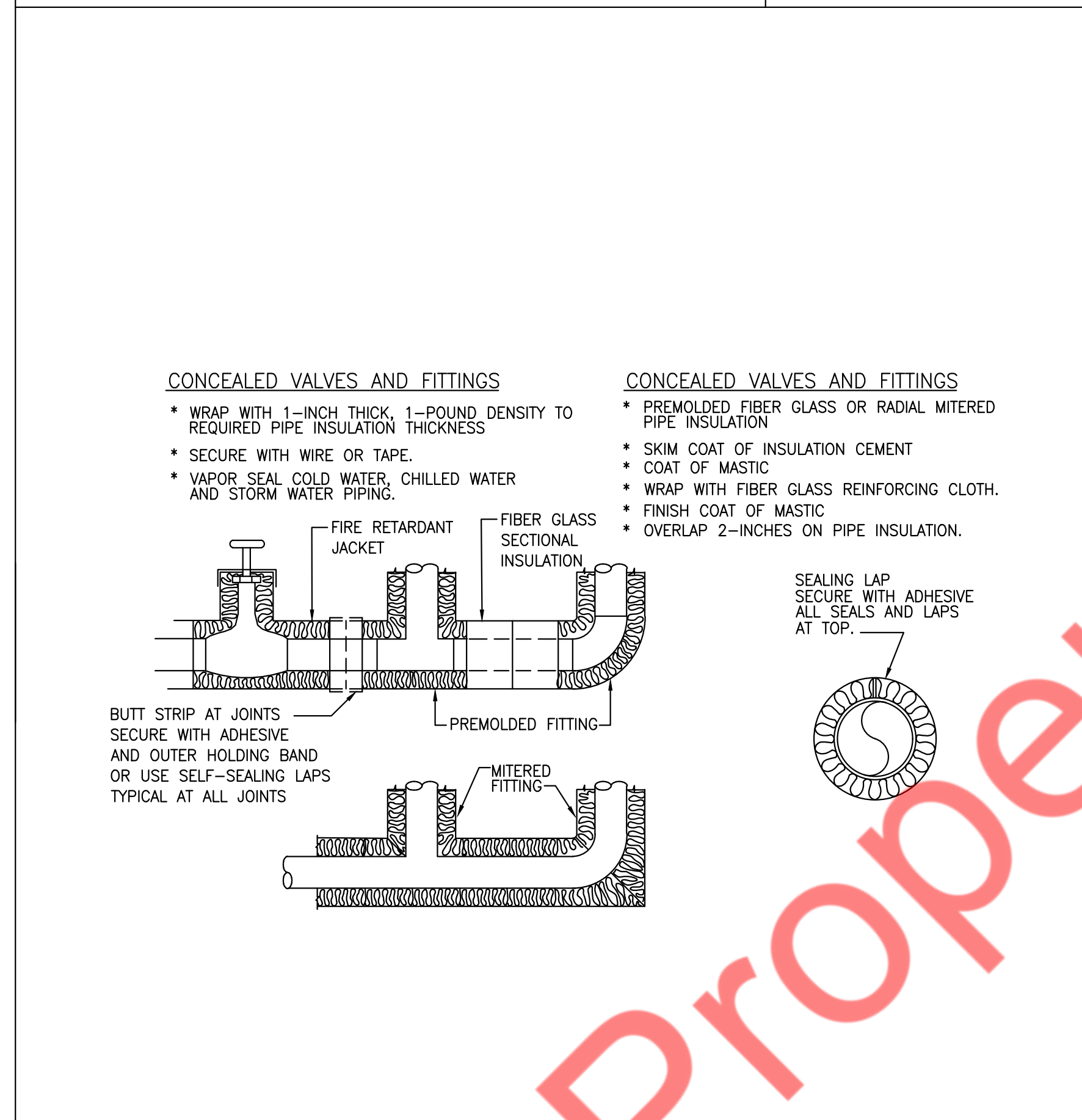
⑥ FLOOR DRAIN DETAILS
NTS



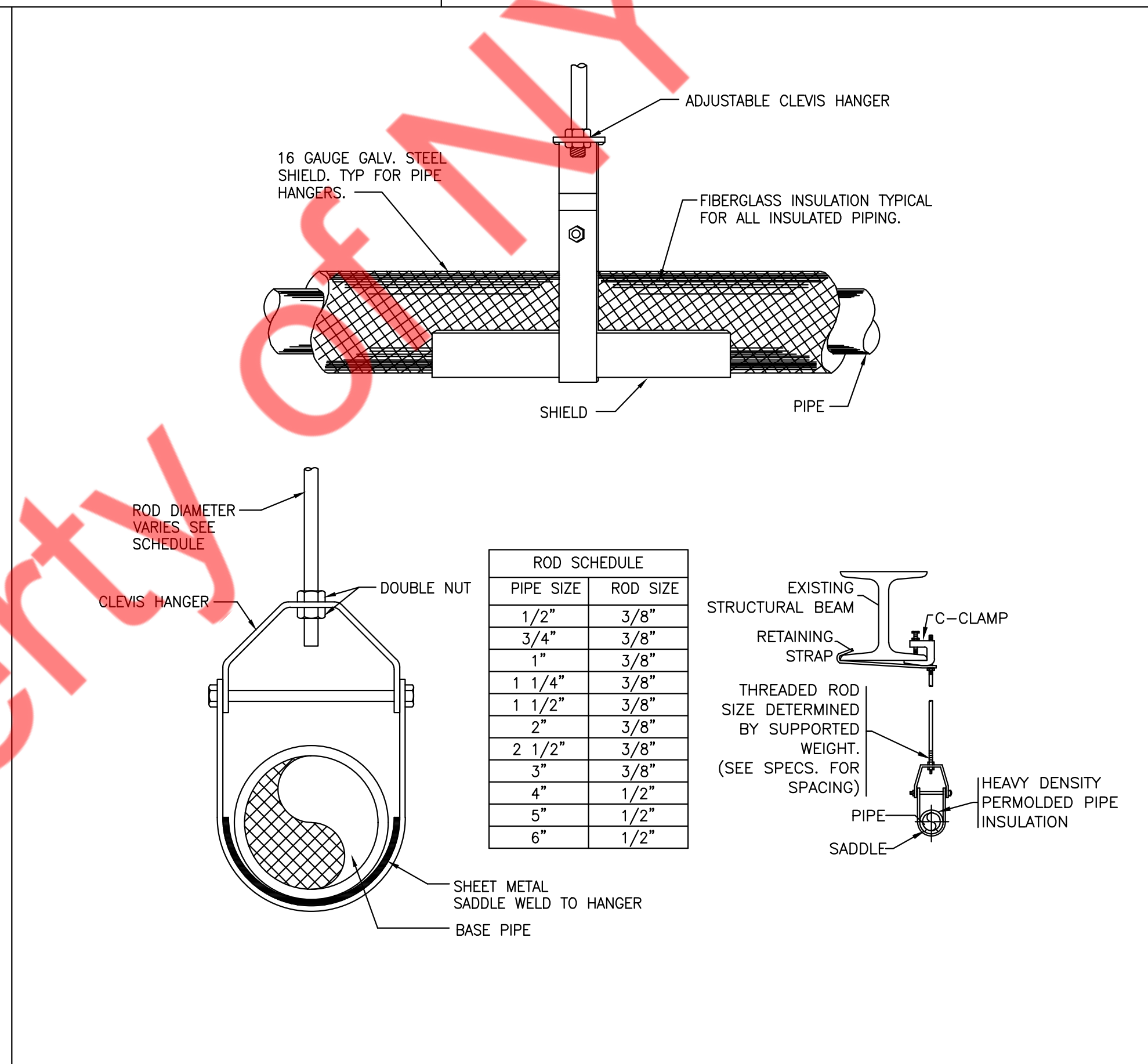
② FLOOR CLEANOUT DETAILS
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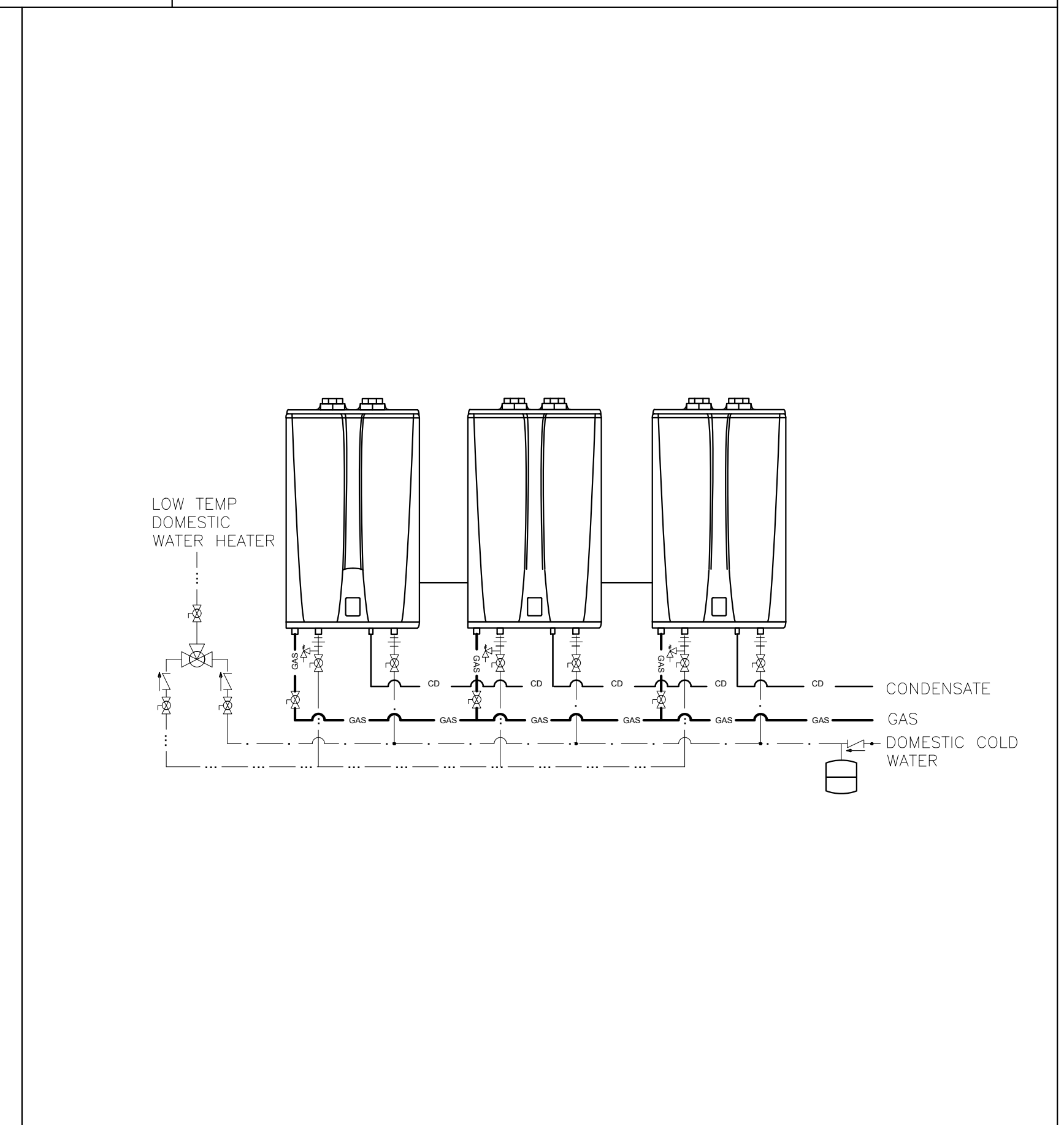
④ FLOOR SINK DETAILS
NTS



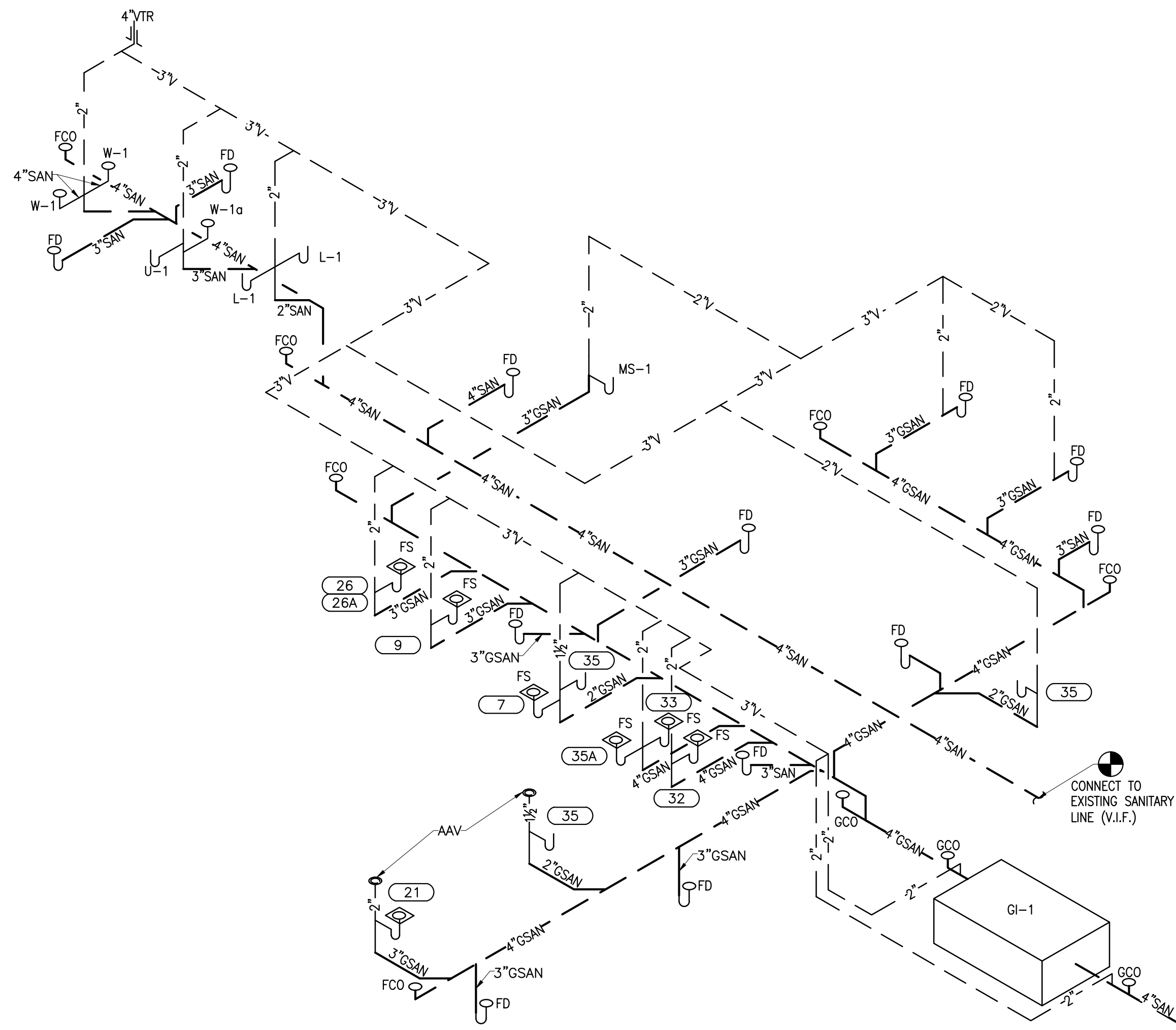
⑦ INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS
NTS



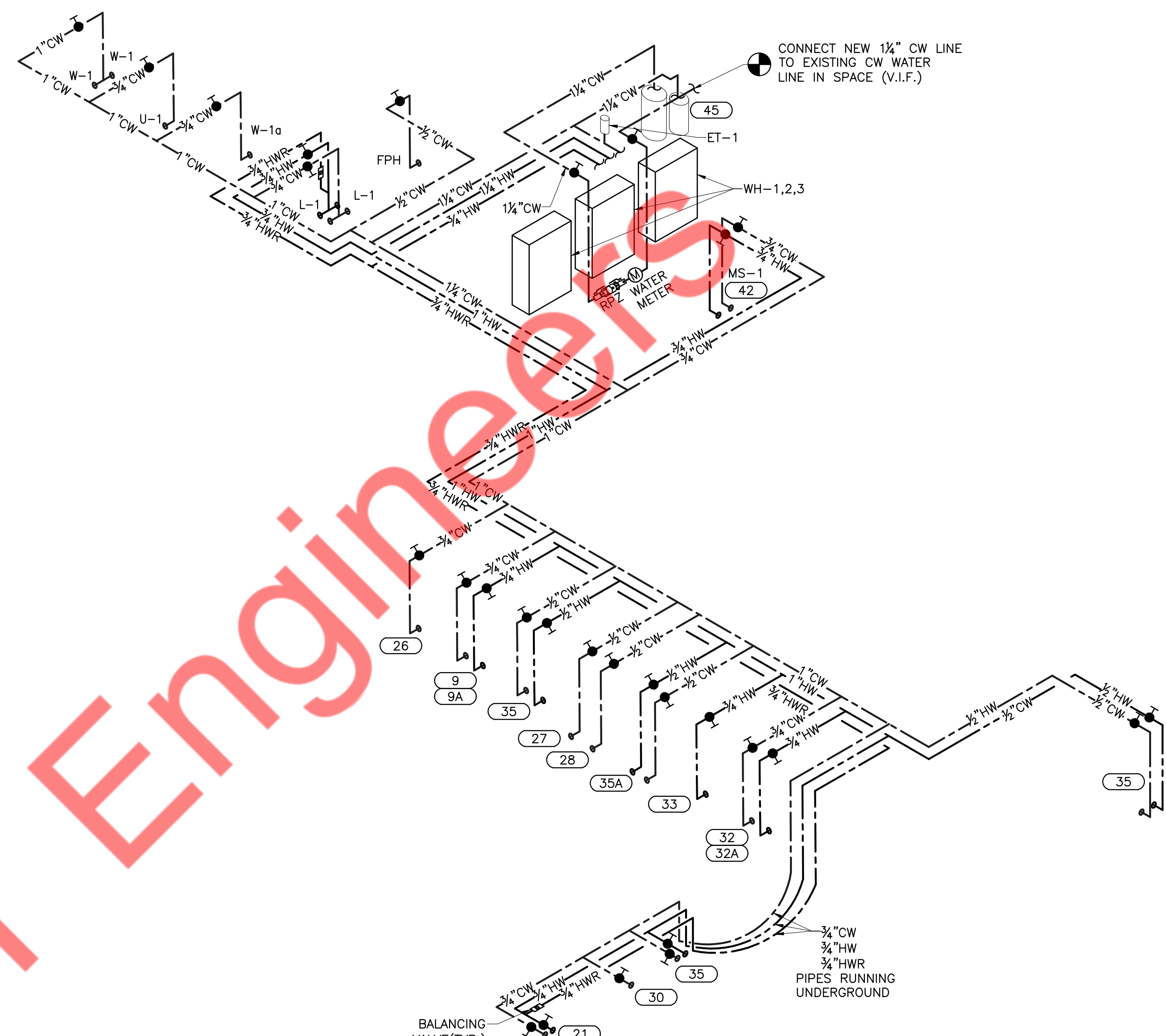
⑧ HANGER DETAILS
NTS



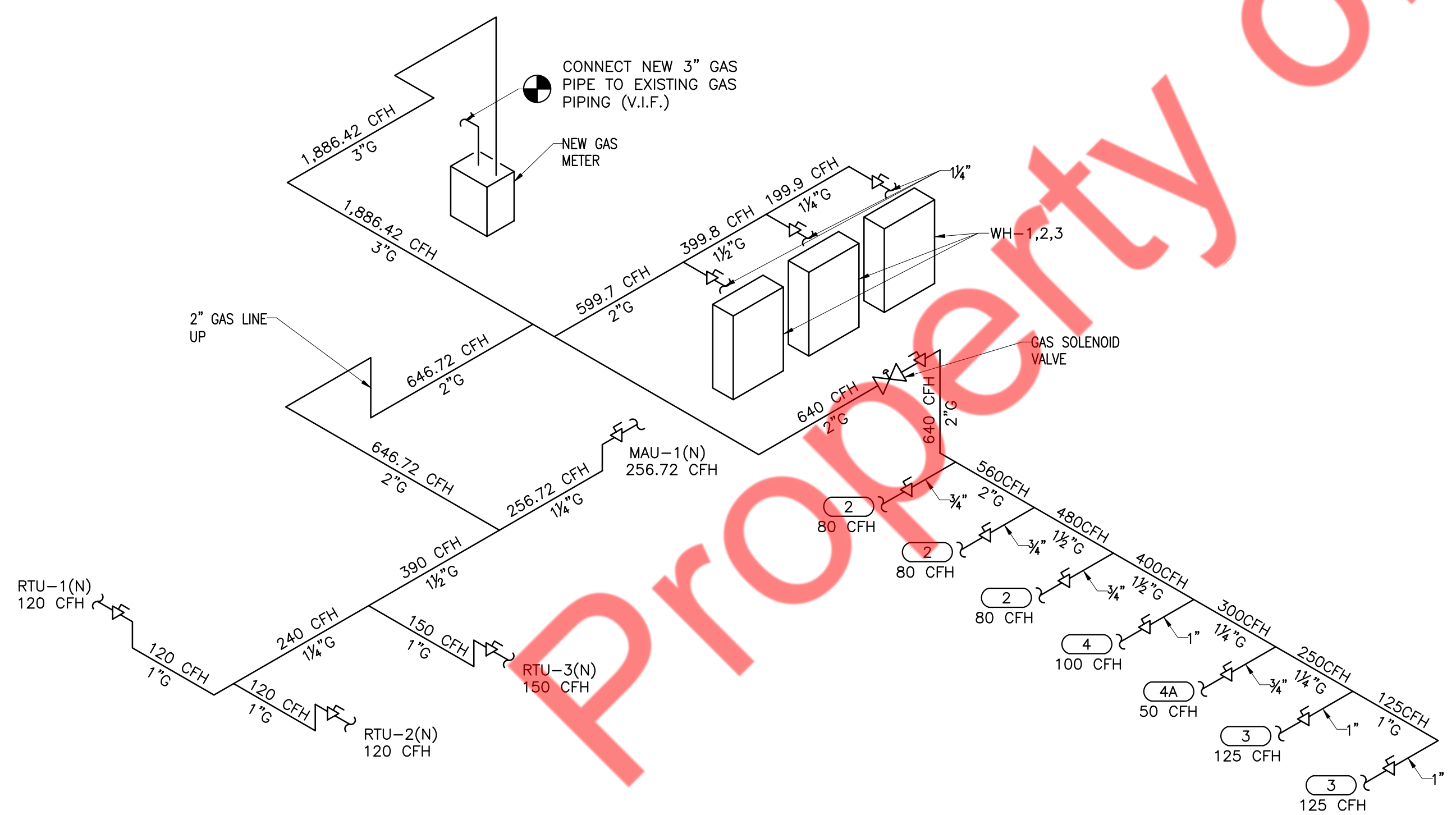
⑨ TANKLESS WATER HEATER DETAILS
NTS



1 SANITARY RISER DIAGRAM



2 WATER RISER DIAGRAM



3 GAS RISER DIAGRAM

- ### GAS PIPING NOTES
- GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ISSUE OF THE INTERNATIONAL OR STATE FUEL GAS CODE AND NFPA STANDARD NO. 54 WHICH APPLY.
 - GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA NO. 54. ANY OTHER TEST AS REQUIRED BY THE LOCAL GAS INSPECTION DEPARTMENT OR GAS COMPANY SHALL ALSO BE PERFORMED.
 - MINIMUM GAS PIPING SIZING SHALL BE 1/2".
 - GAS PIPING COLOR/LABELS:
 EXTERIOR:
 A. LABEL ALL GAS PIPING "GAS/PRESSURE" ON PIPE AT 5'-0" CENTERS.
 B. COLOR: ON ROOF PAINT WITH TWO COATS OF YELLOW ENAMEL, ON VERTICAL WALLS PAINT TO MATCH WALL COLOR.
 INTERIOR:
 A. LABEL ALL GAS PIPING "GAS/PRESSURE", SPACING AND COLOR PER ANSI/ASME A13.1 CODE REQUIREMENTS.
 - GAS PIPING SUPPORTS:
 EXTERIOR:
 A. PIPING ROUTED ON ROOF SHALL BE STRAPPED TO MANUFACTURED SUPPORTS "QUICK-BLOCK" OR EQUAL. GAS SUPPORTS SPACED PER NFPA 54 7.2.5.2.
 INTERIOR:
 A. PIPING TO BE SUPPORTED BY CLEVIS HANGERS W/ THREADED ROD OR UNI-STRUT SYSTEM. GAS SUPPORTS SPACED PER NFPA 54 7.2.5.2.
 - GAS VALVES SHALL BE ANSI/CSA APPROVED, 125 PSI RATED, 2 PIECE, FULL PORT, BALL VALVES W/BRASS BODY AND BALL. PROVIDE W/ LEVER HANDLE.
 - PROVIDE UNIONS, FLANGES OR COUPLINGS AT CONNECTION TO ALL VALVES AND EQUIPMENT. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS.
 - PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
 - PROVIDE DIRT LEG, GAS VALVE AND GAS REGULATOR (IF GAS PRESSURE REQUIRED IS BELOW 14"WC) AT EACH PIECE OF EQUIPMENT INSTALLED IN ACCESSIBLE LOCATION WITH-IN 36" OF EQUIPMENT. USE VENT-LESS REGULATORS INDOORS WHEN POSSIBLE. ROUTE VENTED REGULATOR VENTS TO EXTERIOR.

GAS LOAD REQUIREMENTS

TAG	DESCRIPTION	QTY	INPUT CFH	TOTAL CFH
WH-1,2,3	WATER HEATER	3	199.9	599.7
-	KITCHEN EQUIPMENT	-	640	640
RTU-1(N)	ROOFTOP UNIT	1	120	120
RTU-2(N)	ROOFTOP UNIT	1	120	120
RTU-3(N)	ROOFTOP UNIT	1	150	150
MAU-1(N)	MAKEUP AIR UNIT	1	256.72	256.72
TOTAL BUILDING LOAD MBH				1,886.42

GAS PIPE SIZING

• TABLE: 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(2)

- TOTAL GAS INPUT: 1,886.42 MBH
- INLET PRESSURE: LESS THAN 2 PSI
- PRESSURE DROP: 0.5 IN/WC
- FITTINGS FACTOR: 40%
- TOTAL EQUIVALENT LENGTH: 125 LN/FT

PIPE SIZE (INCHES)	CAPACITY (CFH)
1/2	44
3/4	92
1	173
1-1/4	355
1-1/2	532
2	1,020
2-1/2	1,630
3	2,890

