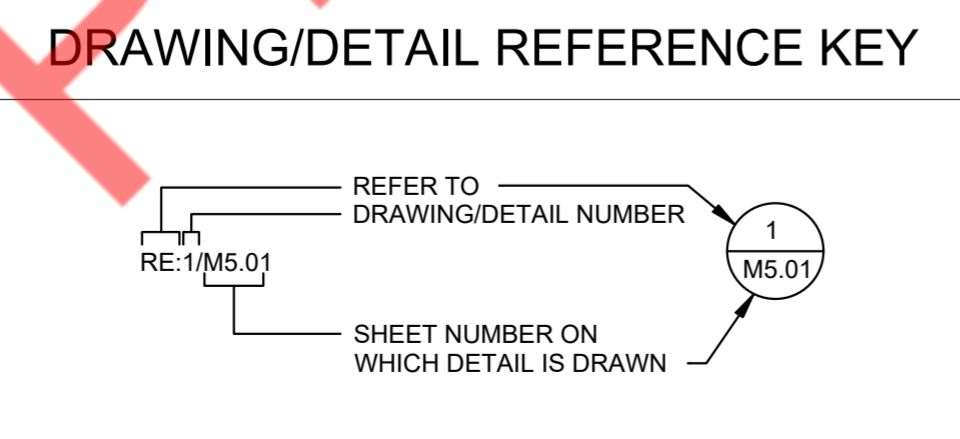


ABBREVIATIONS

Table with columns A, B, C, D, E, F, G, H, I, K. Abbreviations include ABV, AC, A/C, AFC, AFF, AFG, AG, AHAP, AHU, ALT, AMB, AMP, APPROX, ARCH, AVG, B, B.G., BMS, BRD, BTU, BLDG, CD, CFH, CFM, CH, CHEM, CHP, CKT, CLG, CMPR, CT, CWP, CU, CW, DB, DEF, DEF, DET, DD, DIA, DISC, DIM, DWG, DC, DCO, EA, EDB, EDH, EF, ELEC, ELEV, EMCS, E.S.P., EWB, EWT, EXH, EWC, EWH, EX, FA, FAAP, FACP, F/A, FCU, FHP, FLA, FLR, FPI, FPM, FPS, FT, FD, GFI, GPM, GCO, HD, HOA, HP, HPU, HR, HT, HTG, HTR, HVAC, HWP, HW, HWR, HX, HZ, ID, IN, KW, KWH.

Table with columns L, M, N, O, P, R, S, T, U, V, W, X. Abbreviations include L, LTG, LAT, LWT, MAX, MCA, MOCP, MBH, MECH, MFR, MIN, MVD, MS, N/A, NC, NEC, NIC, NK, NO, NTS, OA, OAR, OBD, OD, ORIG, P.D., PH, PNB, PLBG, PNL, PRESS., RA, RAG, RAD, REF, RPM, RTU, S/S, S/S/S, SA, SAG, SDC, SEER, SENS, SP, SQ, STR, SS, S, TEMP, T.S.P., TYP, UG, UH, UL, UNO, V, VAV, VEL, VFD, VTR, W, W/O, W.G., WB, WP, WPD, WC, W, XFMR.



MECHANICAL SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

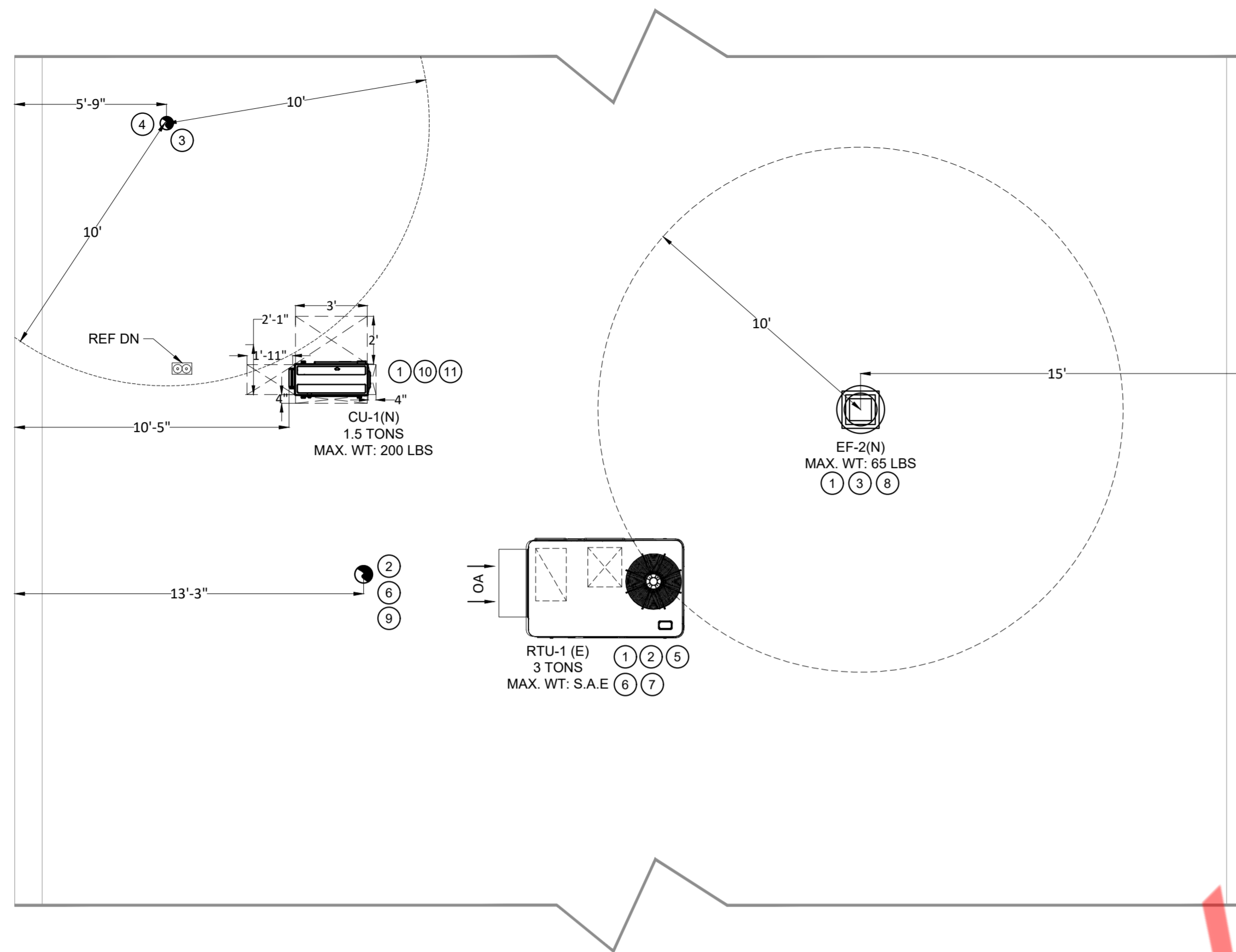
Table of mechanical symbols with descriptions and schematic drawings. Includes: 90° ELBOW DOWN, 90° ELBOW UP, OFFSET TO CHANGE ELEVATION, ROUND RADIUS ELBOW, 45° ELBOW, 90° STRAIGHT TEE, 90° CONICAL TEE, 45° BRANCH, 45° CONICAL TEE, SIZE TRANSITION, SHAPE TRANSITION, ROUND FLEXIBLE DUCT, 90° ELBOW DOWN W/ TURNING VANES, 90° ELBOW UP W/ TURNING VANES, TEE WITH SPLITTER & TURNING VANES, OFFSET TO CHANGE ELEVATION, RECTANGULAR RADIUS ELBOW, RECTANGULAR ELBOW WITH TURNING VANES, SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW AND SPLITTER DAMPER, SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW AND SPLITTER DAMPER, BRANCH TAKE-OFF WITHOUT AIR BALANCING DAMPER, BRANCH TAKE-OFF WITH AIR BALANCING DAMPER, TEE WITH SPLITTER DAMPER, SPIN-IN TAP WITH DAMPER, SQUARE NECK CLG. DIFFUSER 4-WAY DIRECTIONAL THROW, SQUARE NECK CLG. DIFFUSER 4-WAY DIRECTIONAL THROW, SIDEWALL SUPPLY GRILLE OR REGISTER, SUPPLY DUCT RISER, RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER, CEILING RETURN AIR GRILLE OR REGISTER, CEILING EXHAUST AIR GRILLE OR REGISTER, CEILING SUPPLY AIR DIFFUSER.

MECHANICAL FITTINGS AND VALVES

Table of mechanical fittings and valves with descriptions and schematic drawings. Includes: CHILLED WATER SUPPLY/RETURN, PRODUCTION CHILLED WATER SUPPLY/RETURN, HOT WATER SUPPLY/RETURN, CONDENSER WATER SUPPLY/RETURN, REFRIGERANT SUCTION AND LIQUID LINES, CONDENSATE DRAIN LINE, LOW PRESSURE STEAM CONDENSATE, MEDIUM PRESSURE STEAM CONDENSATE, HIGH PRESSURE STEAM CONDENSATE, LOW PRESSURE STEAM SUPPLY (0 TO 15 PSIG), MEDIUM PRESSURE STEAM SUPPLY (15 TO 100 PSIG), HIGH PRESSURE STEAM (ABOVE 100 PSIG), FLOAT AND THERM. TRAP, BUCKET STEAM TRAP, GATE VALVE, BALANCING VALVE, CHECK VALVE, OS & Y VALVE, GLOBE VALVE, BUTTERFLY VALVE, BALL VALVE, SOLENOID VALVE, PRESSURE REDUCING VALVE, PRESSURE RELIEF VALVE, CONTROL, 2 WAY VALVE, CONTROL, 3 WAY VALVE, STRAINER & BLOW OFF VALVE, PRESSURE GAUGE & COCK, UNION OR COMPANION FLANGES, PLUG VALVE, THERMOMETER, PRESSURE & TEMPERATURE TAP (PETES PLUG), FLOW METER, ANCHOR (PIPE), EXPANSION JOINT, MANUAL AIR VENT, AUTOMATIC AIR VENT, HOSE END DRAIN, HOSE BIBB, THERMOMETER & WELL, TEMPERATURE SENSOR, FLOW SWITCH, PRESSURE SENSOR.

GENERAL NOTES

- 1. COORDINATE ALL WORK INDICATED WITH ALL OTHER TRADES INVOLVED IN THIS PROJECT. AS NECESSARY, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY DIMENSIONS, WORKING CLEARANCES, AND THE WORKING ARRANGEMENT OF EQUIPMENT, AS WELL AS THE LOCATIONS OF THE EQUIPMENT, AND ASSOCIATED DUCTWORK, PIPING, ETC., AND TO COORDINATE THE INSTALLATION ACCORDINGLY.
2. HVAC WORK SHALL INCLUDE FURNISHING (EXCEPT WHERE NOTED), INSTALLING, AND TESTING ALL HVAC SYSTEMS FOR A COMPLETE, FULLY OPERATIONAL, AND CODE COMPLIANT INSTALLATION INCLUDING, BUT NOT LIMITED TO:
2.1. MANUFACTURER'S STANDARD ROOF CURBS OR AS SPECIFIED.
2.2. ROOF OPENINGS.
2.3. COPPER CONDENSATE DRAINS WITH MINIMUM 3" TRAP DEPTH (U.N.O.) AND PROPER SLOPE, GAS PIPING SUPPORTED EVERY 10 FEET, AND OTHER PIPING AND FITTINGS.
2.4. DUCTWORK, TURNING VANES, SPLITTERS, DAMPERS, SPIN-INS, ETC. IN ACCORDANCE WITH SMACNA STANDARDS FOR LOCATION, THICKNESS, AND CONSTRUCTION.
2.5. DIFFUSERS, SUPPLY AND RETURN GRILLES.
2.6. LINE SETS, AUXILIARY DRAIN PANS AND PIPING, AND FRESH AIR INTAKE FOR EACH AIR HANDLER IN SPLIT SYSTEMS (IF USED).
2.7. CONTROLS, SENSORS, AND LOW VOLTAGE WIRING (E.G. 8-STRAND, 18 AWG. NON-SHIELDED CABLE).
2.8. SHIMS AND MISCELLANEOUS STEEL FOR LEVEL INSTALLATION AND PROPER CONDENSATE DRAINAGE.
2.9. SMOKE DETECTORS IN RETURN AIR DUCTS OR SUPPLY DUCTS AS REQUIRED BY LOCAL CODE OFFICIALS.
2.10. WEATHER-PROOF ROOF AND WALL PENETRATIONS FOR COPPER PIPING, MAKE-UP AIR, PADS.
3. UNLESS OTHERWISE SPECIFIED, ALL REQUIRED CUTTING AND PATCHING OF FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE BUILDING IS TO BE INCLUDED IN THE SCOPE. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION UPON COMPLETION. ALL PENETRATIONS OF WALLS, CEILINGS, OR FLOORS SHALL BE CORE-DRILLED, SLEEVED, AND SEALED TO COMPLY WITH RESPECTIVE BUILDING CODE REQUIREMENTS. ALL PENETRATIONS THROUGH FIRE RATED WALL SHALL COMPLY WITH UL LISTED SLEEVE ASSEMBLY REQUIREMENTS.
4. 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.
5. ALL CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
6. DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH OTHER TRADES IS REQUIRED.
7. ALL DUCT SIZES SHOWN ARE INSIDE. FREE AREA DIMENSIONS REQUIRED FOR PROPER AIRFLOW. UNLESS SPECIFICALLY INDICATED, ALL DUCT TRANSITIONS SHALL BE SMOOTH AND GRADUAL WITH MAXIMUM DIVERGENT ANGLE OF 15°.
8. SUPPORT ALL DUCTWORK FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSTALL DUCTWORK AS HIGH AND TIGHT TO THE STRUCTURE AS POSSIBLE.
9. PROVIDE VOLUME DAMPER AT CONNECTION OF DIFFUSER BRANCH INCLUDING THOSE CONNECTING TO THE BOTTOM OF MAIN TRUNK.
10. PROVIDE TURNING VANES IN ALL ELBOWS IN SUPPLY AIR DUCT.
11. ALL FLEXIBLE DUCTWORK SHALL BE STRETCHED AND SUSPENDED IN ACCORDANCE WITH LOCAL CODE. SUPPORT EVERY 3' WITH 2" WIDE GALVANIZED STEEL BANDS (MAX. SAG 1/2" BETWEEN SUPPORTS). MAX. LENGTH OF DUCT SHALL BE FIVE (5) FEET.
12. COVER ALL HVAC UNITS. ALL RELATED DISTRIBUTION EQUIPMENT AND ALL DUCT OPENINGS DURING STORAGE AT CONSTRUCTION SITE AND AT THE TIME OF ROUGH INSTALLATION UNTIL FINAL STARTUP TO PREVENT DIRT, DEBRIS, CONSTRUCTION DUST, AND MOISTURE FROM ENTERING.
13. DO NOT OPERATE A/C UNITS WITHOUT CONSTRUCTION FILTERS IN PLACE. REPLACE ALL FILTERS AFTER CONSTRUCTION AND BEFORE REQUESTING FINAL PAYMENT WITH MINIMUM MERV 8 FILTERS.
14. REMOVABLE ACCESS TILES AND/OR ACCESS DOORS ARE REQUIRED IN SUSPENDED CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME DAMPERS, 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 DAMPERS AND EQUIPMENT.
15. PROVIDE THERMOSTATS AND REMOTE SENSORS FOR NEW COOLING AND HEATING EQUIPMENT. DO NOT INSTALL THERMOSTATS OR SENSORS CLOSE TO HEAT AND/OR STEAM PRODUCING APPLIANCES. COORDINATE FINAL LOCATIONS WITH ARCHITECT/TENANT.
16. INSULATE SUPPLY GRILLES/DIFFUSERS IN THE PLENUM SIDE TO PREVENT CONDENSATION OR PROVIDE INSULATED SUPPLY GRILLES/DIFFUSERS.
17. PAINT ALL SUPPLY AND RETURN AIR DEVICES AS REQUIRED BY THE OWNER.
18. ALL DUCTWORK SHALL BE SEALED FOR SEAL CLASS B AND LEAK TESTED AT THE RATED PRESSURE.
19. TIE BACK, TO BAR JOISTS, ALL DIFFUSERS AS REQUIRED BY LOCAL GOVERNING CODES.
20. FIRE DAMPERS MUST BE INSTALLED AT ALL LOCATIONS WHERE DUCT PENETRATES A FIRE RATED WALL. PROVIDE SMOKE/FIRE DAMPERS FOR AN EGRESS. PROVIDE ACCESS DOORS AS REQUIRED. FIRE DAMPERS TO BE OF TYPE APPROVED BY THE AGENCIES HAVING JURISDICTION.
21. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH NON-RATED PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.
22. PERFORM TESTING, ADJUSTING, AND BALANCING (T.A.B.) OF ALL AIR SYSTEMS. CONTRACTOR SHALL ALSO PERFORM T.A.B. OF ALL CHILLED OR CONDENSER WATER SYSTEMS (WHERE SHOWN OR SPECIFIED). USE A.A.B.C. OR N.E.B.B. CERTIFIED TECHNICIANS AND PROVIDE A WRITTEN REPORT OF RESULTS TO TENANT (AND LL IF APPLICABLE) PRIOR TO REQUEST FOR FINAL PAYMENT. THE TAB AGENCY SHALL SUBMIT TO THE OWNER (6) COPIES OF A WRITTEN REPORT WITHIN 10 DAYS AFTER THE INSPECTION IS COMPLETE.
23. DEVELOP AND MAINTAIN A SET OF RED-LINED "AS BUILT" DRAWINGS AT THE PROJECT CONSTRUCTION SITE AND MAKE AVAILABLE TO THE ARCHITECT/ENGINEER UPON REQUEST. RED-LINED DRAWINGS MUST BE KEPT CURRENT AND REFLECT ALL ACTUAL ASPECTS OF THE INSTALLATION THAT DEVIATE FROM RECORD DESIGN DRAWINGS. RED-LINED DRAWINGS SHALL INCLUDE ALL PUNCH-LIST ITEMS AND TESTING, AND SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER AT THE COMPLETION OF THE PROJECT.
24. PROVIDE A RETURN AIR OPENING THROUGH ANY PARTITION EXTENDED TO ROOF DECK, SIZED AT ONE SQUARE FOOT PER 500 CFM.
25. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR ALL CEILING DEVICE LOCATIONS.
26. COORDINATE THE INSTALLATION OF THE DUCTWORK WITH EXISTING STRUCTURE.
27. ALL ROOF PENETRATIONS SHALL BE INSTALLED AND FLASHED BY THE OWNER'S ROOFING CONTRACTOR.
28. MAINTAIN A MINIMUM OF 10 FEET BETWEEN OA INTAKE AND ANY EXHAUST DISCHARGE OR PLUMBING VENT.



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

MECHANICAL GENERAL NOTES

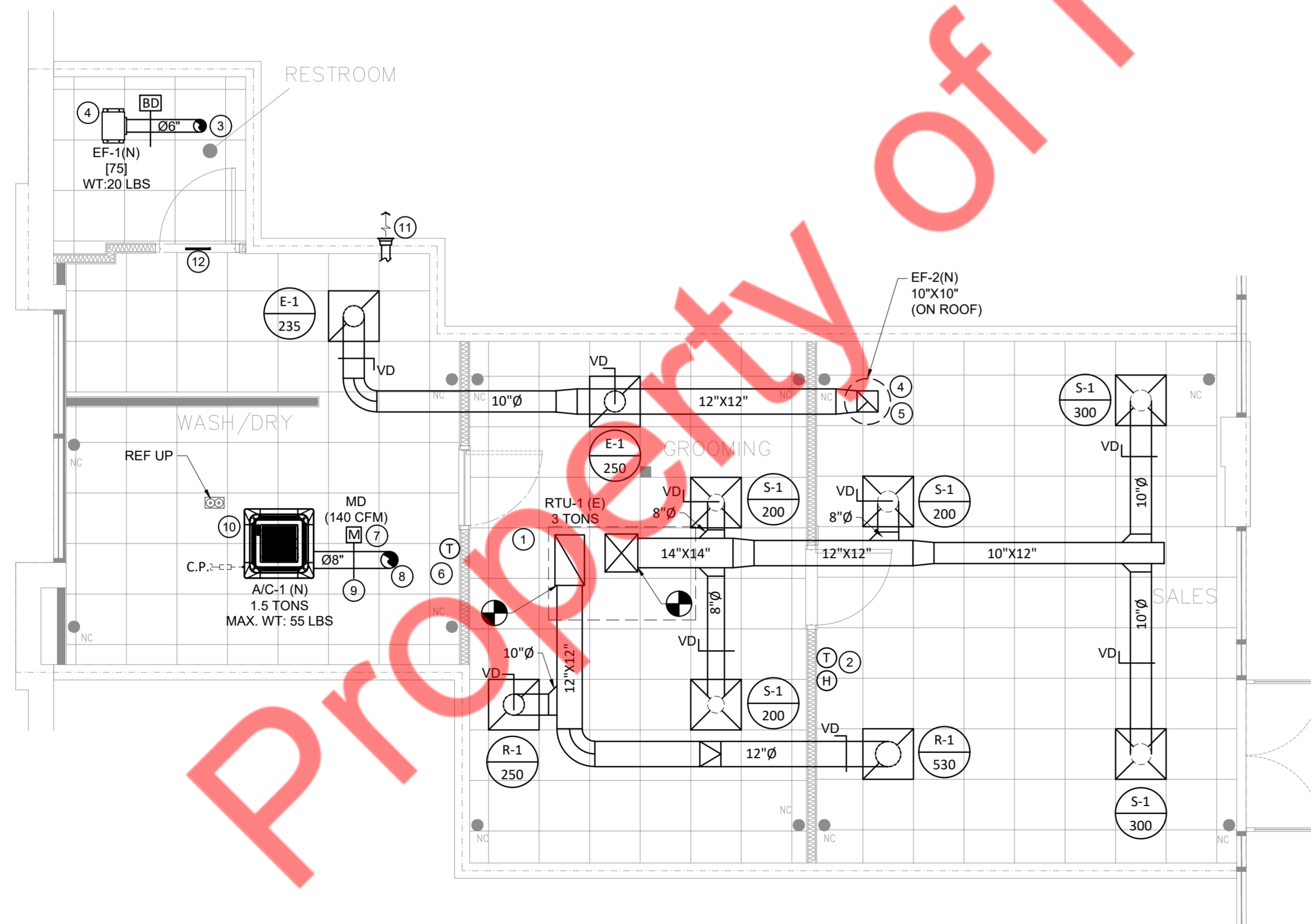
- A. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
- B. ALL ITEMS TO BE RE-USED OR RELOCATED SHALL BE CLEANED, REPAIRED, AND RESTORED TO LIKE NEW CONDITION PRIOR TO RE-USE.
- C. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- D. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- E. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- F. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
- G. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.

MECHANICAL ROOF PLAN KEY NOTES

- 1) COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS/ENGINEER OR LANDLORD/CLIENT.
- 2) CONTRACTOR TO FIELD VERIFY THAT THE LOCATION OF ANY EXHAUST SOURCE FROM ADJACENT TENANTS SHOULD BE AT LEAST 10' AWAY FROM RTU-1(E).
- 3) CONTRACTOR TO FIELD VERIFY THAT THE LOCATION OF ANY INTAKE SOURCE FROM ADJACENT TENANTS SHOULD BE AT LEAST 10' AWAY FROM THE EXHAUST DUCT TERMINATING ON ROOF.
- 4) 6" TOILET EXHAUST DUCT UP THROUGH ROOF WITH TALL CONE FLASHING, WEATHER SKIRT, BIRDSCREEN & ROOF CAP. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.
- 5) EXISTING RTU-1(E) TO REMAIN AS IS AND TO BE REUSED WITH ALL ITS EXISTING ACCESSORIES. CONTRACTOR TO FIELD VERIFY LOCATION OF THE EQUIPMENT ON SITE & INFORM TO ARCHITECT IF ANY ACCESSORIES NOT WORKING OR NOT IN GOOD CONDITION.
- 6) MAINTAIN 10 FEET DISTANCE BETWEEN ANY EXHAUST AIR SOURCE AND ANY OUTSIDE AIR INTAKE SOURCE FROM ADJACENT TENANTS.
- 7) EXISTING CONDENSATE DRAIN FROM RTU-1(E) TO REMAIN AS IT IS. CONTRACTOR TO FLUSH THE EXISTING DRAIN LINES. REPLACE AS/IF REQUIRED.
- 8) PROVIDE ROOF MOUNTED EXHAUST FAN. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES.
- 9) 8" OUTSIDE AIR INTAKE DUCT UP THROUGH ROOF WITH TALL CONE FLASHING, WEATHER SKIRT, BIRDSCREEN & ROOF CAP. MAINTAIN A MINIMUM OF 10'-0" FROM ANY EXHAUST AIR SOURCE.
- 10) PROVIDE NEW CONDENSING UNIT CU-1(N), COORDINATE FINAL LOCATION OF THE UNIT WITH LANDLORD/ARCHITECT PRIOR TO INSTALLATION. UNIT TO BE INSTALLED WITH MANUFACTURER'S RECOMMENDED CLEARANCES. CONDENSING UNIT SHALL BE PROVIDED WITH STANDARD SUPPORTING STAND. REFER MOUNTING DETAIL ON SHEET M3.01.
- 11) PIPING SHOULD RUN ABOVE FINISHED FLOOR.

G.C. TO VERIFY WITH OWNER OR LANDLORD ANY REQUIREMENT TO USE THEIR PREFERRED ROOFING CONTRACTOR. ROOFING SUB-CONTRACTOR SHALL NOT PERFORM ANY NEW WORK WITHOUT PERMISSION FROM THE OWNER / LANDLORD AS TO AVOID INVALIDATING ANY EXISTING ROOFING WARRANTY WHICH MAY CURRENTLY BE IN PLACE.

GENERAL NOTE FOR ALL DISCIPLINES AND TRADES
MATERIALS (DUCTWORK/PIPING/CONDUIT) ABOVE CEILINGS THAT ARE VISIBLE SHALL BE RIGID TYPE AND INSTALLED PARALLEL OR PERPENDICULAR TO STRUCTURE AND BUILDING LINES. NO FLEXIBLE MATERIAL ALLOWED IN VISIBLE AREAS.
ALL VISIBLE MATERIALS SHALL BE PAINTED IN FIELD. COORDINATE ALL FINISHES WITH ARCHITECT.



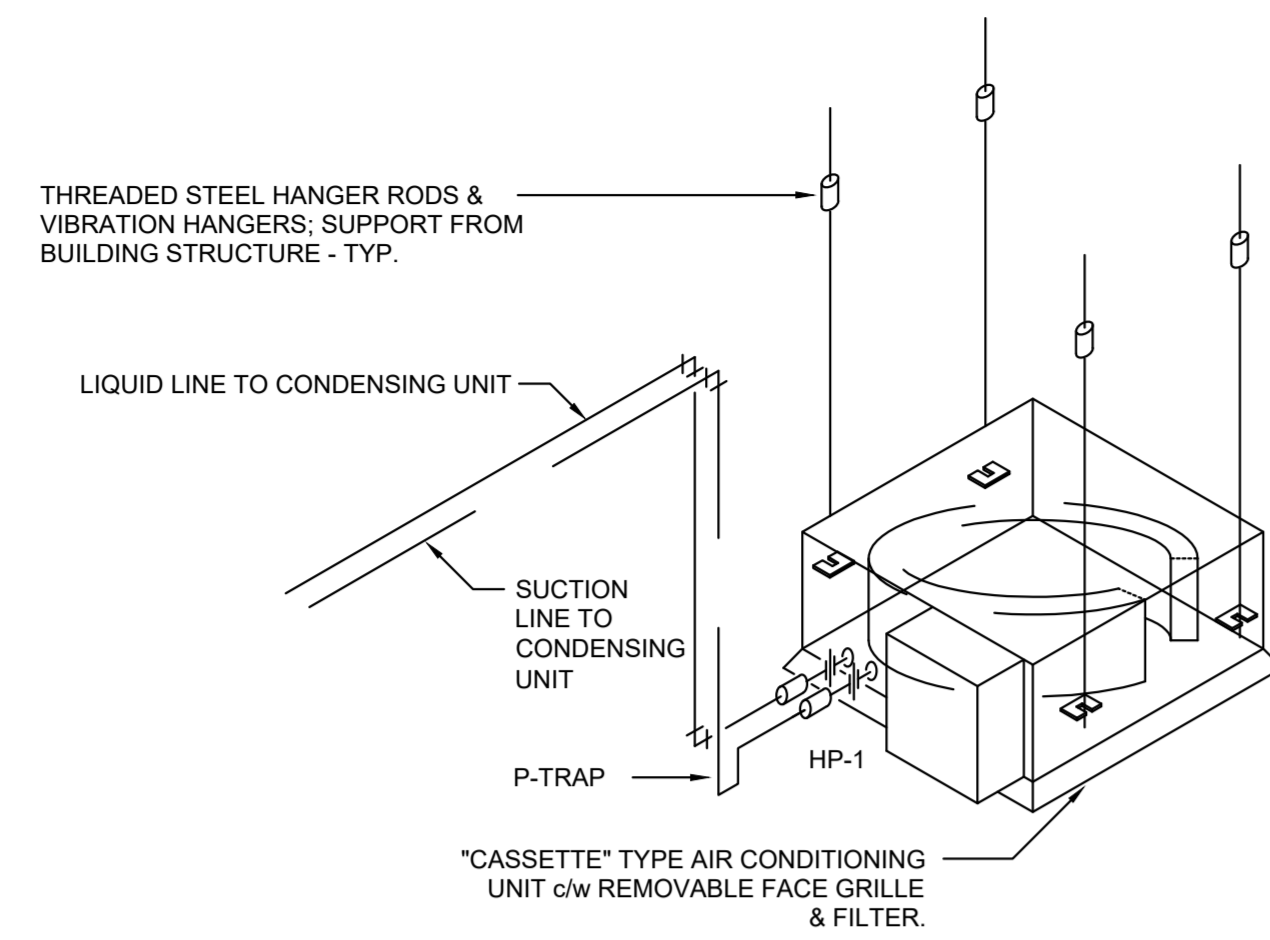
01 FLOOR PLAN - MECHANICAL
SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

- A. CONTRACTOR SHALL BALANCE EACH AIR DIFFUSER WITH THE CFM SHOWN ON PLANS.
- B. DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR DUCTWORK ROUTING, OFFSET AND RUN DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
- 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. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- G. ALL EXPOSED DUCTWORK SHALL BE AS SHOWN, DOUBLE WALL, INSULATED METAL, PRIMED FOR PAINTING. ALL CONCEALED DUCTWORK SHALL BE INSULATED METAL RECTANGULAR UNLESS OTHERWISE ALLOWED IN WRITING BY THE ENGINEER OF RECORD. COORDINATE FINAL FINISH WITH ARCHITECT.
- H. ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS NEEDED.
- I. FOR EXPOSED DUCTWORK, PROVIDE INTERNAL INSULATION. FOR CONCEALED DUCTWORK PROVIDE EXTERNAL INSULATION.
- J. 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.
- K. RETURN AIR GRILLES ARE TO BE LOCATED BESIDE BULKHEAD-NOT ABOVE POWDER TABLE.
- L. DIFFUSERS IN THE BLACK CEILING AREA MUST BE OF TYPE SO THAT DIFFUSER GRILLE DOES NOT HANG BELOW CEILING GRID.
- M. ANY DIFFUSERS LOCATED IN THE BLACK CEILING AREA ARE TO BE PAINTED TO MATCH.

MECHANICAL FLOOR PLAN KEY NOTES

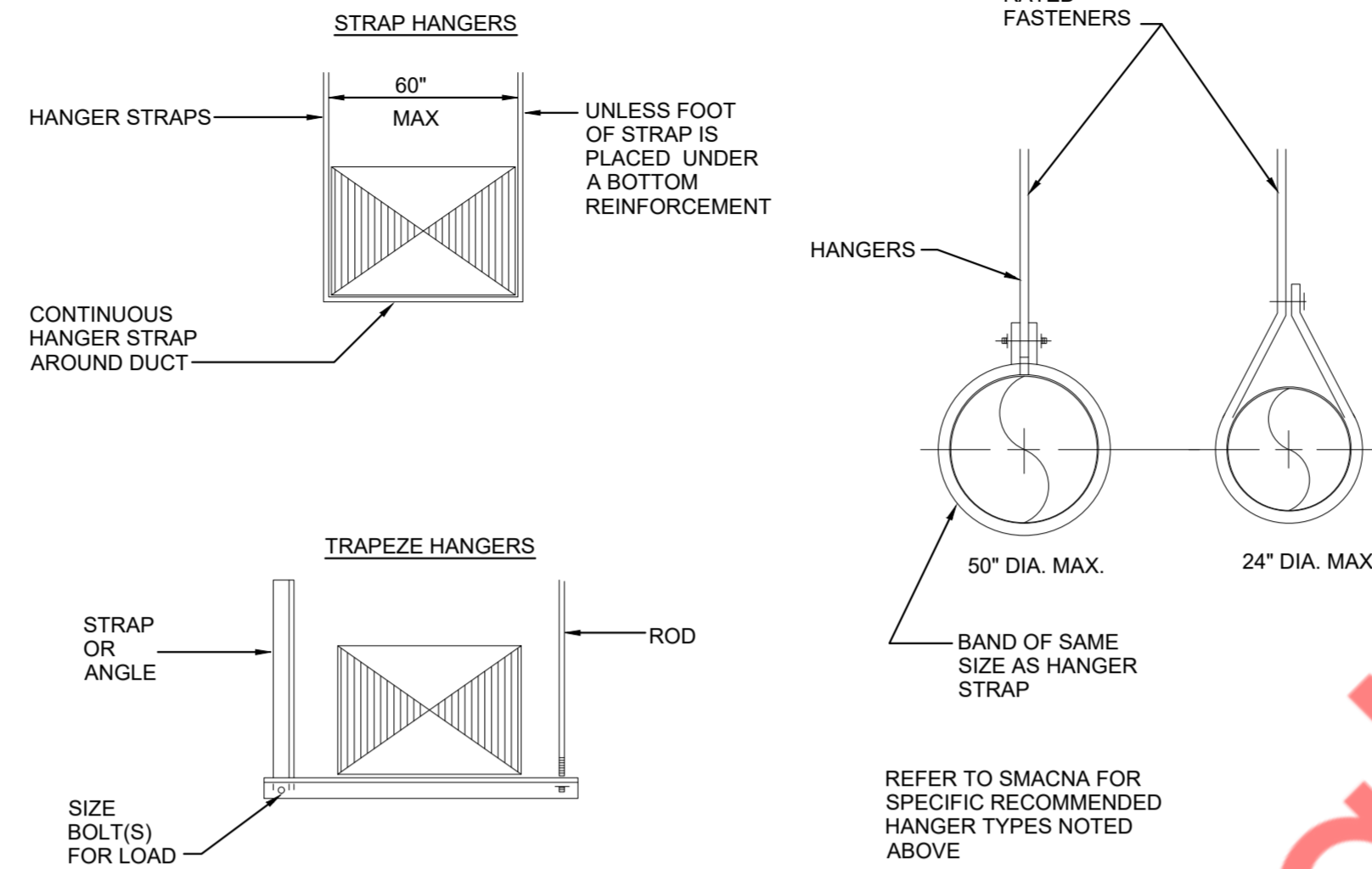
- 1) EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM EXISTING ROOFTOP UNIT TO SPACE. EXTEND AS SHOWN. ACOUSTICALLY LINE. THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
- 2) RELOCATE AND REUSE EXISTING THERMOSTAT/HUMIDISTAT. IF EXISTING THERMOSTAT IS NOT IN GOOD CONDITION TO REUSE, THEN INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- 3) ROUTE 6" EXHAUST DUCT UP THROUGH ROOF WITH TALL CONE FLASHING, WEATHER CAP, BIRDSCREEN & ROOF CAP. MAINTAIN A MINIMUM OF 10'-0" FROM ALL OUTSIDE AIR INTAKES AND TERMINATES.
- 4) INTERLOCK EXHAUST FAN EF-1 (N) & EF-2 (N) WITH RTU-1(E). COORDINATE WITH ELECTRICAL CONTRACTOR.
- 5) 10"x10" EXHAUST DUCT UP TO FAN ON ROOF.
- 6) INSTALL AND WIRE A NEW 7-DAY PROGRAMMABLE THERMOSTAT FOR A/C-1(N). MOUNT THERMOSTAT 48" A.F.F. PROVIDE LOCKING CLEAR PLASTIC COVER FOR THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- 7) FURNISH & INSTALL MOTORIZED DAMPER IN OUTSIDE AIR DUCT FOR CONTROL OF OUTSIDE AIR & INTERLOCK WITH RESPECTIVE AC FOR CONTROL OF OUTSIDE AIR.
- 8) ROUTE 8" OUTSIDE AIR INTAKE DUCT UP THROUGH ROOF.
- 9) INTERLOCK MOTORIZED DAMPER WITH A/C-1(N).
- 10) ROUTE CONDENSATE DRAIN LINE FROM A/C-1(N) TO NEAREST DRAIN POINT. PROVIDE HORIZONTAL SLOPE IN THE DIRECTION OF DISCHARGE OF NOT LESS THAN 1/8" UNITS VERTICAL IN 12 UNITS HORIZONTAL.
- 11) 4" DRYER EXHAUST WALL CAP. COORDINATE LOCATION, COLOR & FINISH WITH BASE BUILDING.
- 12) PROVIDE 12"x6" DOOR GRILLE FOR AIR TRANSFER.



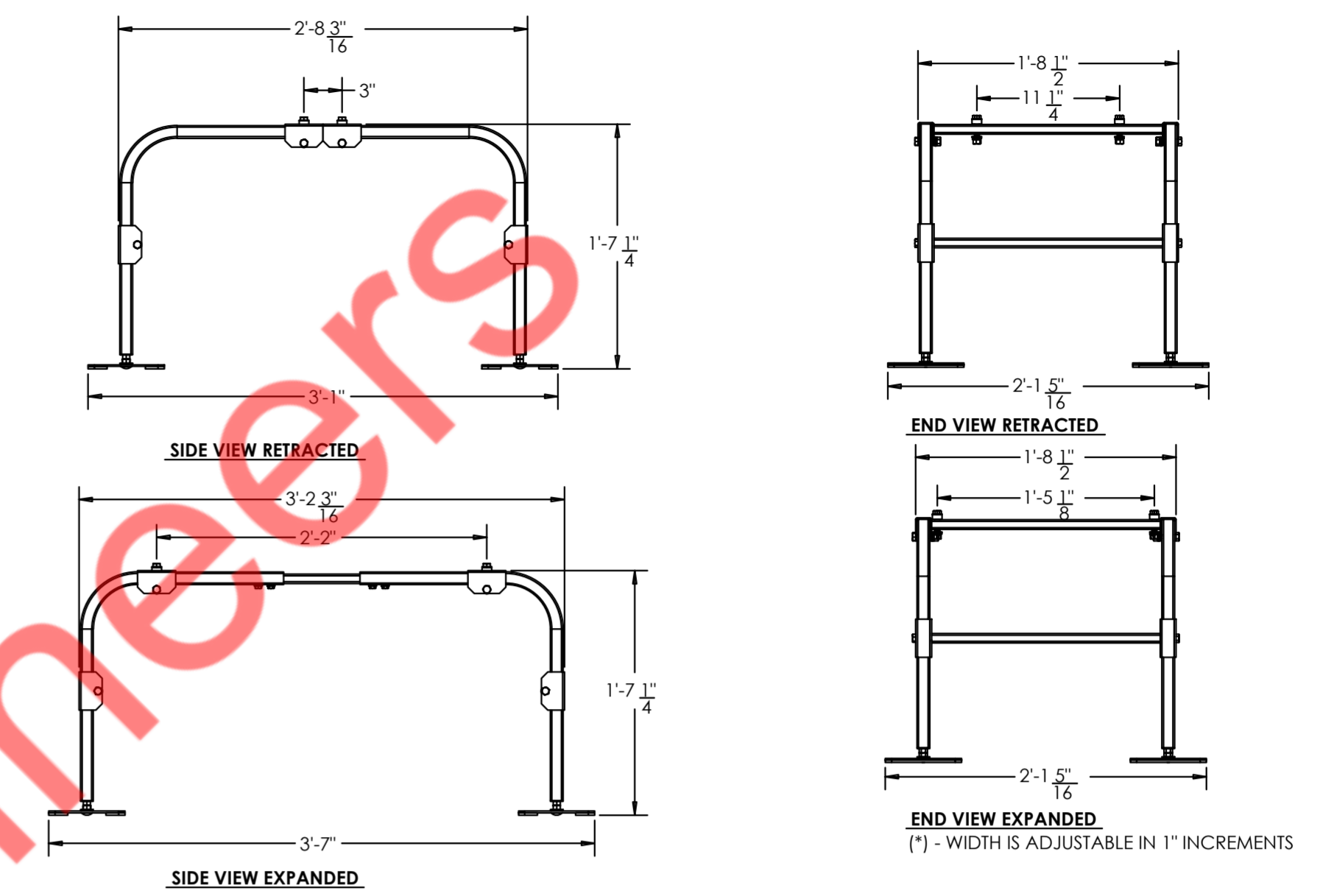
NOTES -

- 1.) THIS DIAGRAM IS SCHEMATIC ONLY. EXACT ROUTING OF PIPING AND MOUNTING OF UNITS TO BE DETERMINED ON-SITE.
- 2.) REFRIGERANT TUBING & FITTINGS SHALL BE PROCESSED TUBING SUITABLE FOR THIS APPLICATION: DEOXIDIZED, DEHYDRATED & SEALED, TYPE ACR w BRAZED JOINTS. INSULATED SUCTION LINE w 25mm thk ELASTOMER PIPE INSULATION.

1 CASSETTE SPLIT HEAT PUMP UNIT DETAIL
M3.01 N.T.S

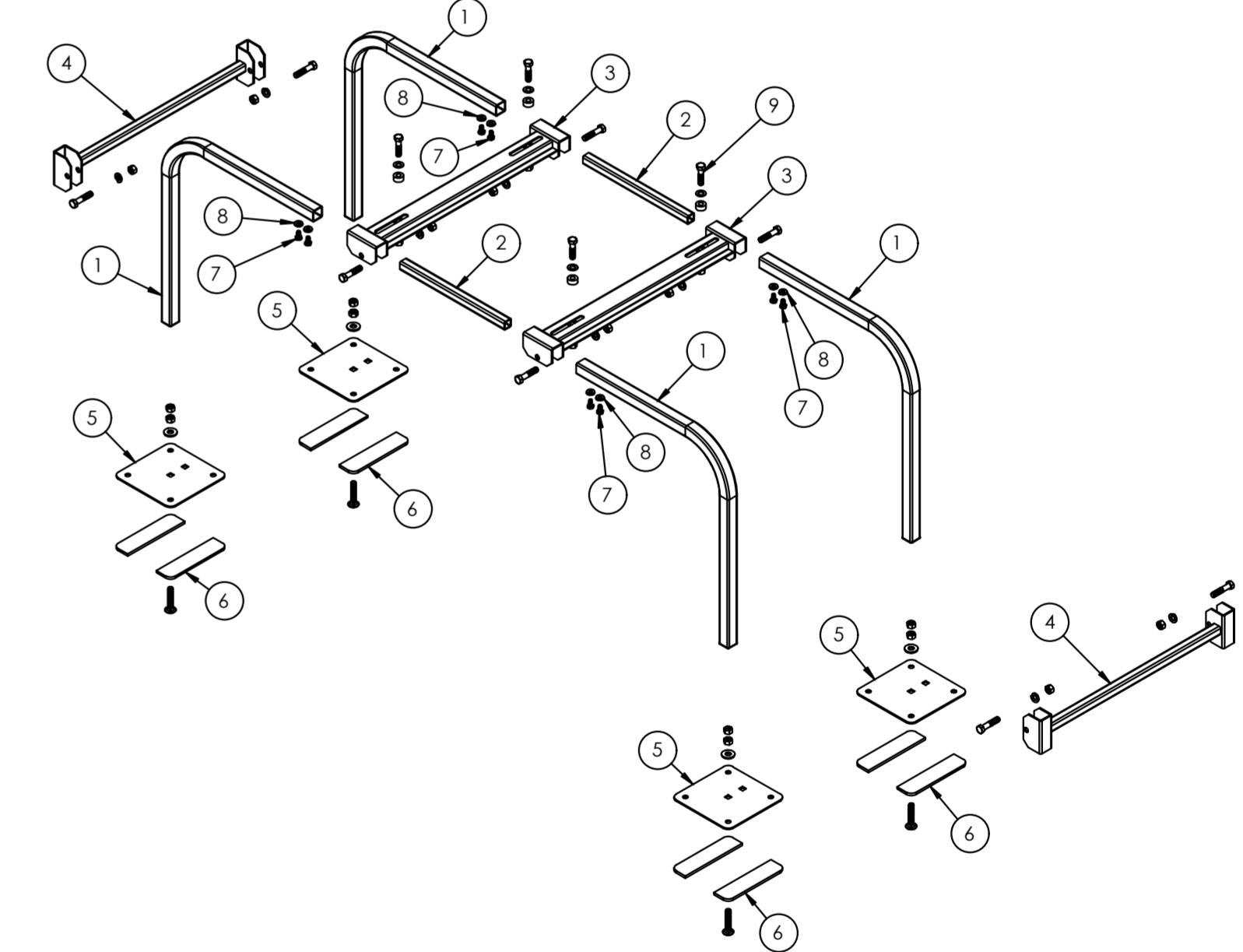


4 DUCT HANGER DETAILS
M3.01 N.T.S

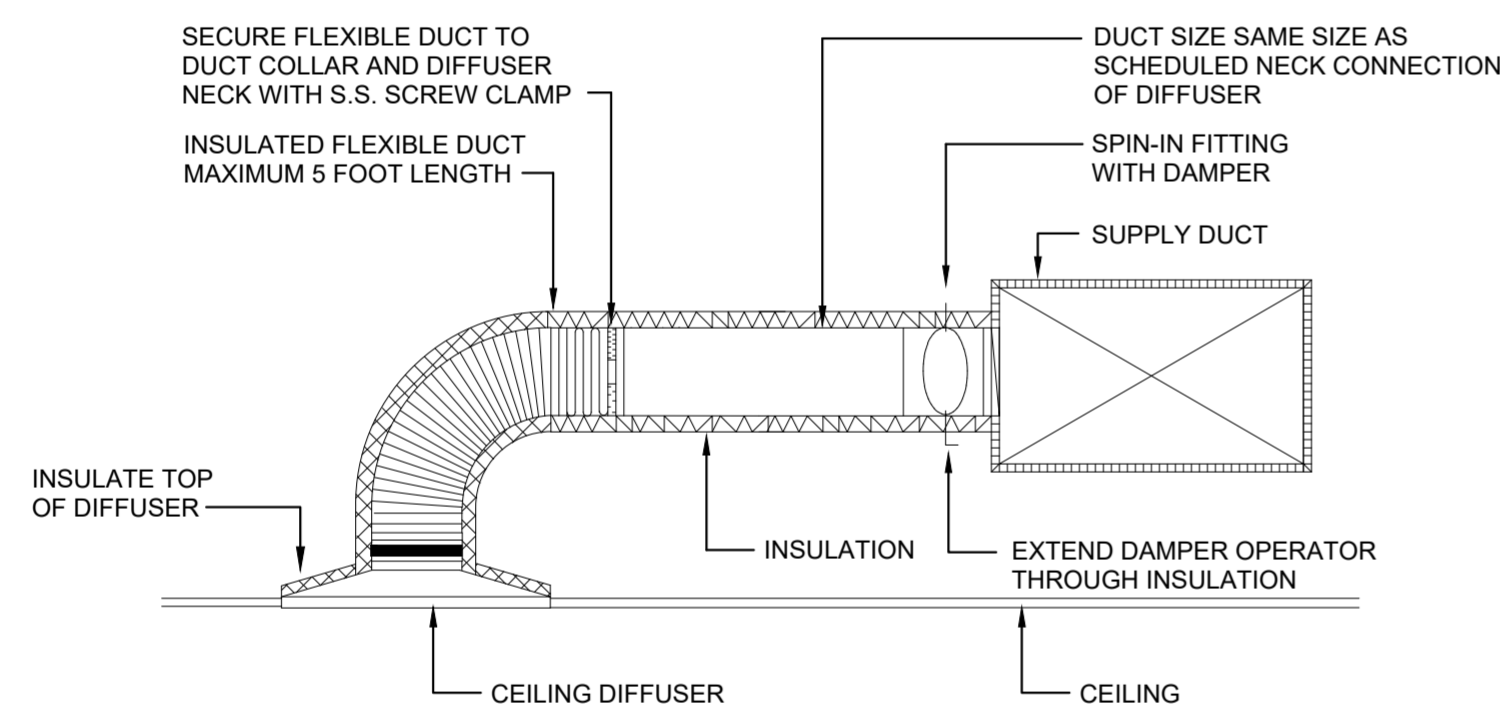


ITEM NO.	PART NUMBER	DESCRIPTION	Default Qty.
1	MS110	Mini Split 18in J-Bar	4
2	MS106	Mini Split Extension Bar	2
3	MS119	Mini Split Long Saddle Arm	2
4	MS114	Mini Split Wide Stability Arm	2
5	MS105	Mini Split 6x6 Feet	4
6	QSR042	Mini Split Rubber Foot	8
7	QSR008	1/4-20x1/2in Zinc Hex Bolt	8
8	QSR015	1/4in Bonded Washers	8
9	HDKMS05	Hardware kit for QSMS1802, 2402	1

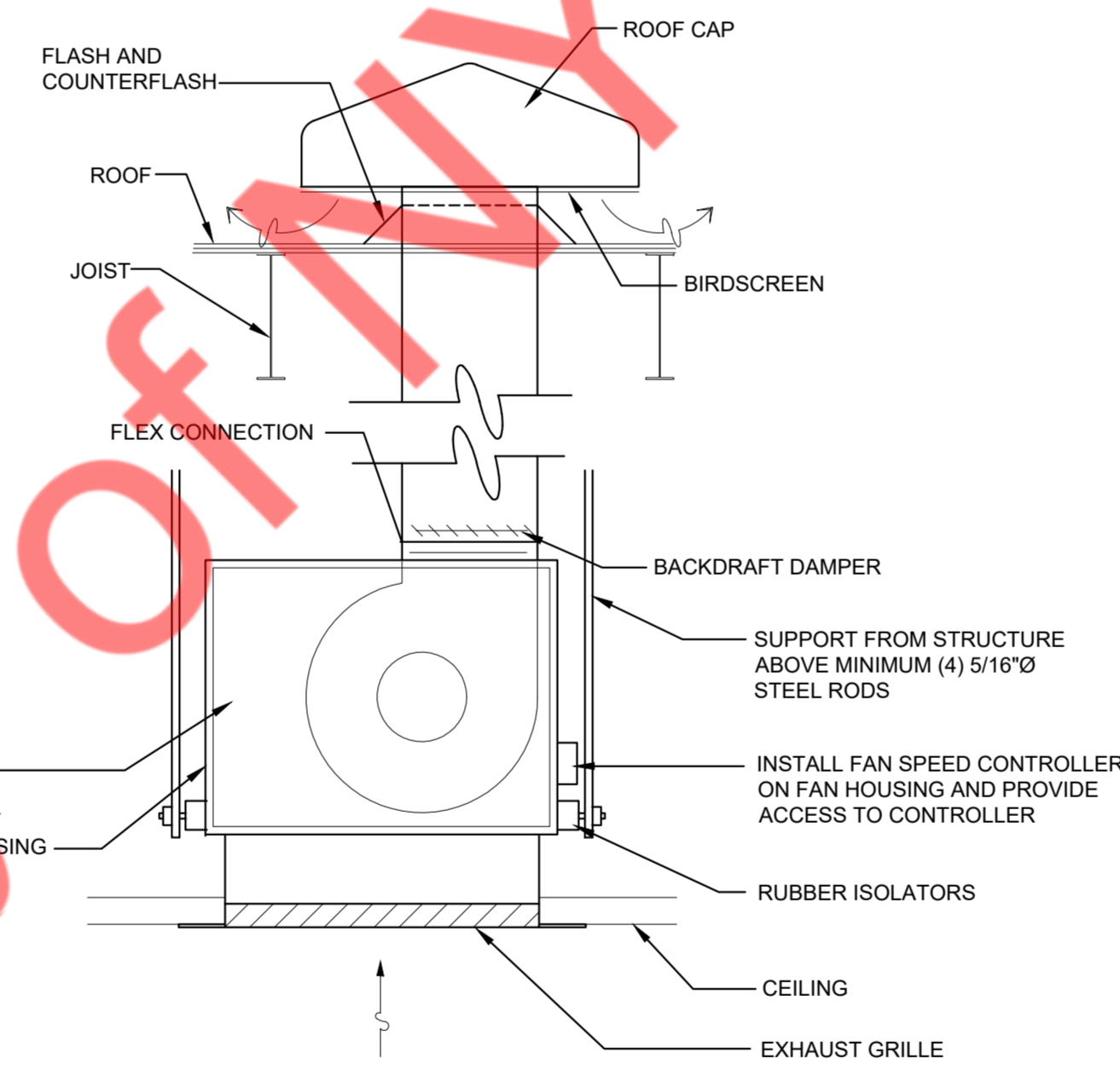
NOTE - ALL ASSEMBLY HARDWARE IS INCLUDED UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES (MILLIMETERS)



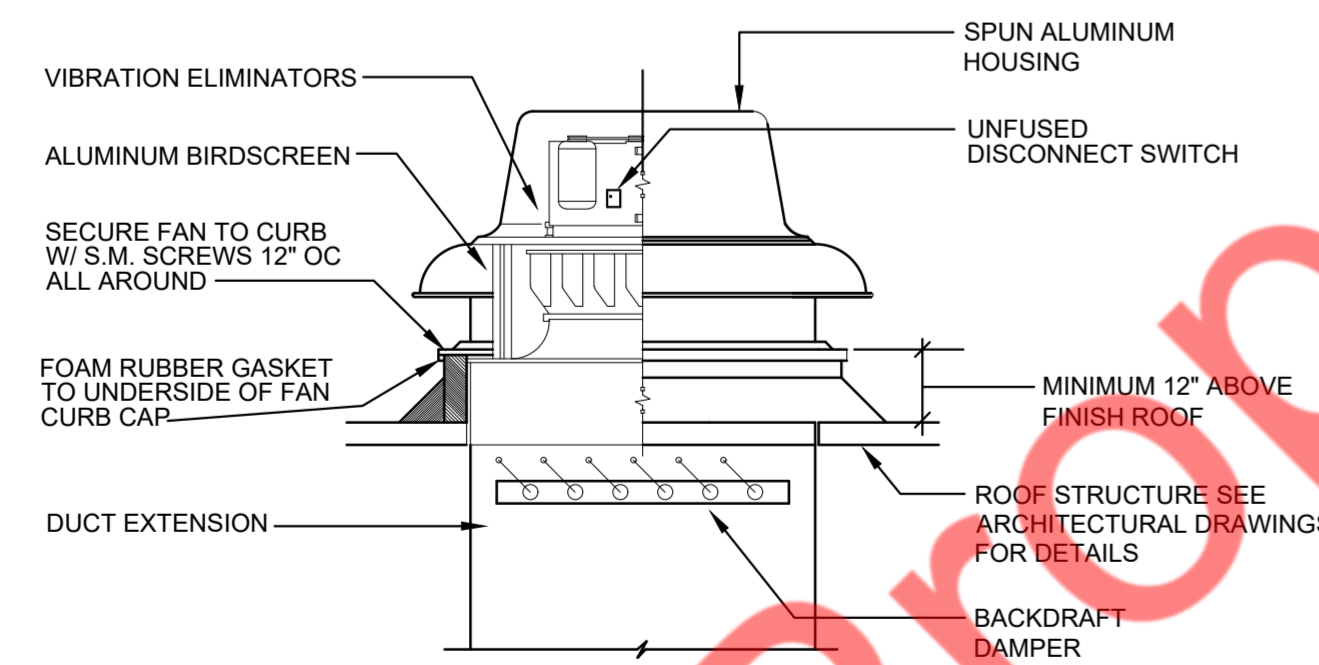
6 CONDENSER UNIT STAND DETAIL
M3.01 N.T.S



2 SUPPLY DIFFUSER DETAIL
M3.01 N.T.S



5 CEILING EXHAUST FAN DETAIL
M3.01 N.T.S



NOTE: CURBS AND FANS SHALL BE FROM SAME MANUFACTURER

3 ROOF MOUNTED FAN DETAIL
M3.01 N.T.S

EXISTING ROOF TOP UNIT SCHEDULE																						
UNIT ID	MANUFACTURER	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			COOLING CAPACITY				GAS HEATING CAPACITY		ELECTRICAL DATA						THERMAL EFFICIENCY (%)	EER	OPERATING WEIGHT (LBS.)
					SUPPLY AIR CFM	OUTSIDE AIR CFM	MAX. ESP (IN. OF W.G.)	TOTAL MBH	SENSIBLE MBH	AMBIENT TEMP. DB (°F)	ENTERING TEMP. DB / WB (°F)	INPUT MBH	OUTPUT MBH	VOLTS	PH	HZ	MCA (A)	MOCP (A)	3(VIF)			
RTU-1 (E)	TRANE (V.I.F)	YSC036E3EMA1NA0000 (V.I.F)	SEE PLAN	3.0 (V.I.F)	1200 (V.I.F)	420	S.A.E	S.A.E	S.A.E	S.A.E	100 (V.I.F)	81 (V.I.F)	208-230(VIF)	3(VIF)	60(VIF)	20(VIF)	30(VIF)	S.A.E	S.A.E	S.A.E		

NOTES:
1) S.A.E - SAME AS EXISTING, V.I.F - VERIFY IN FIELD
2) EXISTING RTU WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
3) CONTRACTOR TO CONFIRM IF EXISTING RTU IS WORKING AT ITS 100% RATED CAPACITY.
4) CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF RTU ON SITE.
5) CONTRACTOR TO REBALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON EXISTING RTU TO MATCH VALUES MENTIONED IN ABOVE TABLE.

HEAT PUMP INDOOR UNIT SCHEDULE													BASIS OF DESIGN: DAIKIN OR EQUIVALENT				
TAG	AREA SERVED	TYPE	TON	TOTAL COOLING CAP. (MBH)	NOMINAL HEATING CAP. (MBH)	SUPPLY AIRFLOW (CFM)	OUTSIDE AIR (CFM)	ELECTRICAL DATA			DIMENSIONS (HxWxD) (IN.)	REFRIGERANT PIPE SIZE (IN.)			SOUND RATING (dBA)	WEIGHT (LBS.)	MODEL NO.
								PH/VOLT/Hz	MCA (A)	MOCP (A)		LIQ.(IN.)	GAS (IN.)	DRAIN (ID)(IN.)			
A/C-1(N)	SEE PLAN	ROUND FLOW CASSETTE	1.5	18	20	742	140	1/208-230/60	0.50	15	9-11/16x33-1/16x33-1/16	3/8	5/8	1	38	55	FCQ18AAVJU

NOTES:-
1) SUPPLY AIR CFM BASED ON HIGH SPEED. PROVIDE VARIABLE AIRFLOW ADJUSTMENT CONTROL FOR ALL UNITS.
2) REFRIGERANT R410A SHALL BE PROVIDED.
3) PROVIDE MOUNTING BRACKETS AND ALL ASSOCIATED ACCESSORIES.
4) ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
5) PROVIDE FILTER BASE WITH 2" FILTER.
6) CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
7) PROVIDE DISCONNECT SWITCH & NON-POWERED GFI OUTLET.
8) A/C TO BE INSTALLED WITH VIBRATION ISOLATION (RESILIENTLY SUPPORTED) TO MINIMIZE SOUND AND VIBRATION INTO THE SPACE.
9) PROVIDE FRESH AIR INTAKE KIT FOR OUTSIDE AIR INTERGRATION.

HEAT PUMP OUTDOOR CONDENSING UNIT SCHEDULE															BASIS OF DESIGN: DAIKIN OR EQUIVALENT				
TAG	LOCATION	INDOOR UNITS SERVED	CAP. (TON)	MAX. COOLING CAP. (MBH)	MAX. HEATING CAP. (MBH)	UNIT DIMENSIONS IN.(HxWxD)	WEIGHT (LBS)	REF. PIPING SIZE (IN.)			ELECTRICAL DATA			SOUND RATING (dBA)	EER2	SEER2	HSPF2	HEATING COP	MODEL NO.
								LIQ.	GAS	PH./V/Hz	MCA (A)	MOCP (A)							
CU-1(N)	ROOF	A/C-1(N)	1.5	18	20	39x37x12-5/8	200	3/8	5/8	1/208-230/60	16.5	20	61	13	18.5	9.2	4.3	RZQ181BVJUA	

NOTES:-
1) UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.
2) PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -4°F.
3) PROVIDE COMPRESSOR CYCLE PROTECTOR.
4) CONDENSING UNIT TO BE MOUNTED ON ROOD WITH VIBRATION ISOLATORS AND MOUNTING STAND.
5) OUTDOOR REFRIGERANT LINESET TO BE WRAPPED IN UV RESISTANT, FIRE RATED, AND ANTI-MICROBIAL INSULATION PROTECTION BASED ON AIREX-FLEX GUARD OR EQUAL.
6) REFRIGERANT LINESET PENETRATION THROUGH BUILDING EXTERIOR TO BE PROPERLY SEALED WITH FIRE RESISTANT SEALANT DEPENDING UPON WALL CONSTRUCTION.
7) OUTDOOR CONDENSING UNIT TO BE LOCATED WITH PROPER CLEARANCES AND MUST PREVENT RE-CIRCULATION OF AIR. COORDINATE WITH MANUFACTURER AND ARCHITECT.

EXHAUST FAN SCHEDULE												
TAG	QUANTITY	FLOW RATE CFM	EXTERNAL STATIC PRESSURE IN W.G.	SPEED RPM	ELECTRIC DATA			MAXIMUM LOUDNESS DBA	BASIS OF DESIGN		WEIGHTS (LBS)	REMARK
					V/PH/Hz	MCA (AMPS)	MOCP (AMPS)		MANUFACTURER	MODEL		
EF-1 (N)	1	75	0.25	950	115/1/60	0.2	15	35	GREENHECK	SP-A110 (OR EQUIVALENT)	20	1, 2, 5, 6, 8, 10
EF-2 (N)	1	485	0.5	1446	115/1/60	3.5	15	55	GREENHECK	G-095-VG (OR EQUIVALENT)	65	1, 2, 3, 4, 5, 7, 9, 10

NOTES:
1) FIELD INSTALLED DISCONNECT PROVIDED BY OTHERS. (COORDINATE WITH W/E.C.).
2) FACTORY BACKDRAFT DAMPER.
3) PROVIDE ROOF CURB & THERMAL OVERLOAD PROTECTION.
4) FACTORY BRIDSCREEN.
5) INSTALL PER MANUFACTURER'S INSTRUCTIONS/RECOMMENDATIONS.
6) CONTROL WITH LIGHTS (COORDINATE W/E.C.).
7) CONTROL VIA TIMECLOCK (OPERATIONAL DURING OCCUPIED HOURS).
8) FACTORY ISOLATION KIT, ALUMINIUM ENAMEL GRILLE, SPEED CTRL.
9) FACTORY CORROSION RESISTANCE (WITHIN 20 MILES OF OCEAN COAST).
10) REFERENCE SEQUENCE OF OPERATIONS.

AIR TERMINAL DEVICES SCHEDULE						
TAG	SIZE (IN.)	DESCRIPTION	CONSTRUCTION	BASIS OF DESIGN		NOTES
				MANUFACTURER	MODEL	
S1	24X24	SQUARE CONE DIFFUSER	ALUMINUM	TITUS (OR EQUIVALENT)	TMS-AA	1,2,3,4,5
R1	24X24	ALUMINUM EGGRATE RETURN	ALUMINUM	TITUS (OR EQUIVALENT)	50F	1,2,3,4,5
E1	24X24	ALUMINUM EGGRATE RETURN	ALUMINUM	TITUS (OR EQUIVALENT)	50F	1,2,3,4,5

NOTES:-
1) PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILINGS, PROVIDE FRAMES FOR SURFACE MOUNTING.
2) UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
3) COORDINATE FINAL COLOR/FINISH WITH ARCHITECT/OWNER.
4) MAXIMUM NOISE CRITERION RATING < 30 DBA.
5) FOR ROUND NECK DIFFUSERS: NECK SIZES SHALL BE:-
16" DIA: 901-1100 CFM
14" DIA: 601-900 CFM
12" DIA: 401-600 CFM
10" DIA: 201-400 CFM
8" DIA: 101-200 CFM
6" DIA: 0-100 CFM

VENTILATION CALCULATION											
ROOM NAME	AREA (SQ FT)	NUMBER OF PEOPLE/1000sq.ft AS PER IMC-2021	NUMBER OF PEOPLE AS PER IMC-2021	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER IMC-2021		REQUIRED OUTSIDE AIR CFM AS PER IMC-2021	PROVIDED OUTSIDE AIR (CFM)	EXHAUST (CFM/SQFT) OR PER FIXTURE AS PER IMC-2021	REQUIRED EXHAUST (CFM)	PROVIDED EXHAUST (CFM)
					CFM/ PEOPLE	CFM/ SQ.FT					
RETAIL	345	15	6	6	7.5	0.12	86	560	0	0	560
GROOMING	275	10	3	3	7.5	0.18	72		0.9	248	
WASH/DRY	260	10	3	3	7.5	0.18	69		0.9	234	
RESTROOM	50	0	0	0	0	0	0		70	75	
TOTAL	930	-	-	12	-	-	228	560	-	557	560

AIR BALANCE					
UNIT	AREA SERVED	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
RTU-1 (E)	SEE PLAN	1200 CFM	420 CFM	780 CFM	0 CFM
A/C-1 (N)	SEE PLAN	742 CFM	140 CFM	602 CFM	0 CFM
EF-1 (N)	RESTROOM	-	-	-	75 CFM
EF-2 (N)	ROOF	-	-	-	485 CFM
TOTAL:		1942 CFM	560 CFM	1382 CFM	560 CFM
BUILDING PRESSURE:				0 CFM	POSITIVE

1) CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON RTU & A/C TO MATCH VALUES MENTIONED IN ABOVE TABLE.

SEQUENCE OF OPERATIONS

1. SINGLE ZONE ROOFTOP UNIT

A PROGRAMMABLE THERMOSTAT/HUMIDITY SENSOR (**WHEN REQUIRED**) CONTROLS THE OPERATION OF THE ROOFTOP UNIT. DESIRED OCCUPIED AND UNOCCUPIED HEATING, COOLING, AND RELATIVE HUMIDITY SETPOINTS ARE PROGRAMMED VIA THE THERMOSTAT. FAN OPERATION IS DETERMINED BY THE POSITION OF THE FAN "ON-AUTO" SWITCH, AS WELL AS BY THE MODE OF OCCUPANCY.

HEATING AND COOLING OPERATION AS DESCRIBED HEREIN ASSUMES THAT THE SYSTEM "HEAT-AUTO-COOL-OFF" SWITCH IS IN THE "AUTO" POSITION.

OCCUPIED MODE

PROGRAMMABLE THERMOSTAT SIGNIFIES OCCUPIED MODE. SUPPLY FAN RUNS CONTINUOUSLY. OUTSIDE AIR DAMPER OPENS TO ITS MINIMUM POSITION (REFERENCE SCHEDULE FOR OA REQUIREMENT) WHEN THE SUPPLY FAN IS IN OPERATION.

UPON A RISE IN SPACE TEMPERATURE ABOVE THE OCCUPIED COOLING SETPOINT OF 75°F, ROOFTOP UNIT COOLING IS INITIATED.

UPON A DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED HEATING SETPOINT OF 70°F, ROOFTOP UNIT HEATING IS INITIATED. OUTSIDE AIR DAMPER REMAINS AT MINIMUM POSITION, AND ELECTRIC HEATING IS ENGAGED.

UNOCCUPIED MODE

PROGRAMMABLE THERMOSTAT SIGNIFIES UNOCCUPIED MODE. SUPPLY FAN CYCLES UPON A CALL FOR HEATING OR COOLING.

OUTSIDE AIR DAMPER OPENS TO MINIMUM POSITION UPON A CALL FOR HEATING OR COOLING. UNOCCUPIED HEATING SETPOINT IS 60°F (ADJ.). UNOCCUPIED COOLING SETPOINT IS 80°F (ADJ.).

ROOFTOP UNIT HEATING AND COOLING OPERATE AS DESCRIBED ABOVE IN OCCUPIED MODE, EXCEPT AS TO MAINTAIN UNOCCUPIED HEATING AND COOLING SETPOINTS.

2. EXHAUST FANS

EF - 2: EXHAUST FAN WILL BE CONTROLLED VIA TIMECLOCK. FAN SHALL START ONE HOUR PRIOR TO AND AFTER OCCUPANCY SCHEDULE, 7 AM – 9 PM (ADJ.). FAN IS OFF DURING UNOCCUPIED HOURS.

EF - 1: CONTROL WITH LIGHTS.

3. INTERLOCK

INTERLOCK RTU-1 AND EF-2 FOR SIMULTANEOUS OPERATION. RTU-1 IS THE MAKE-UP AIR FOR EF-2. FAN SET TO RUN CONTINUOUSLY WHILE SPACE IS OCCUPIED.

RTU AND FAN SHALL BE POWERED BY ELECTRICAL CONTRACTOR. ALL INTERLOCK WIRING BETWEEN THE CONTROLLERS, FAN, AND RTU IS THE RESPONSIBILITY OF THE GENERAL CONTRACT.

ABBREVIATIONS

GENERAL NOTES

Table with 2 columns: Abbreviation (A-AWG) and Description (AMPERE(S), ALTERNATING CURRENT, etc.)

Table with 2 columns: Abbreviation (MAX-MLO) and Description (MAXIMUM, MAIN CIRCUIT BREAKER, etc.)

Table with 2 columns: Abbreviation (BFC-BLDG) and Description (BELOW FINISHED CEILING, BELOW FINISHED GRADE, etc.)

Table with 2 columns: Abbreviation (N-NEMA) and Description (NEUTRAL OR NORMAL POWER, NORMALLY CLOSED, etc.)

Table with 2 columns: Abbreviation (C-CT) and Description (CONDUIT, CIRCUIT BREAKER, CLOSED CIRCUIT TELEVISION, etc.)

Table with 2 columns: Abbreviation (NIC-NTS) and Description (NOT IN CONTRACT, NORMALLY OPEN, NOT TO SCALE, etc.)

Table with 2 columns: Abbreviation (DC-DWG) and Description (DIRECT CURRENT, DRAWING)

Table with 2 columns: Abbreviation (OC-OCP) and Description (ON CENTER, OVERCURRENT PROTECTION)

Table with 2 columns: Abbreviation (ECB-EX) and Description (ENCLOSED CIRCUIT BREAKER, ELECTRIC DUCT HEATER, EXHAUST FAN, etc.)

Table with 2 columns: Abbreviation (P-PWR) and Description (POLE(S), PUBLIC ADDRESS, PUSHBUTTON, etc.)

Table with 2 columns: Abbreviation (F-FO) and Description (FUSE, FIRE ALARM, FIRE ALARM ANNUNCIATION PANEL, etc.)

Table with 2 columns: Abbreviation (REC-RTU) and Description (RECEPTACLE(S), RIGID GALVANIZED STEEL, ROOFTOP UNIT)

Table with 2 columns: Abbreviation (GFI-G) and Description (GROUND FAULT CIRCUIT INTERRUPTER, GROUND)

Table with 2 columns: Abbreviation (TTB-TYP) and Description (TELEPHONE TERMINAL BOARD, TELEPHONE TERMINAL CABINET, TYPICAL)

Table with 2 columns: Abbreviation (HID-HOA-HP) and Description (HIGH INTENSITY DISCHARGE, HAND-OFF-AUTOMATIC, HORSEPOWER)

Table with 2 columns: Abbreviation (UG-UPS) and Description (UNDERGROUND UNIT HEATER, UNDERWRITERS LABORATORIES, UNLESS NOTED OTHERWISE, UNINTERRUPTIBLE POWER SUPPLY)

Table with 2 columns: Abbreviation (IG-INCAND) and Description (ISOLATED GROUND, INTERMEDIATE METALLIC CONDUIT, INCANDESCENT, etc.)

Table with 2 columns: Abbreviation (V-VFD) and Description (VOLTS, VOLT-AMPERE(S), VOLTS, ALTERNATING CURRENT, VOLTS, DIRECT CURRENT, VARIABLE FREQUENCY DRIVE)

Table with 2 columns: Abbreviation (J) and Description (JUNCTION BOX)

Table with 2 columns: Abbreviation (W-WP) and Description (WATT(S), WITH, WEATHERPROOF)

Table with 2 columns: Abbreviation (KCMIL-KV-KVA-KW) and Description (THOUSANDS OF CIRCULAR MILS, KILOVOLTS, KILOVOLT-AMPERE(S), KILOWATT(S))

Table with 2 columns: Abbreviation (XFMR-XP) and Description (TRANSFORMER, EXPLOSION-PROOF)

Table with 2 columns: Abbreviation (LED-LI-LIG-LSI-LSIG-LTFMC-LTG) and Description (LIGHT-EMITTING DIODE, LONG TIME, INSTANTANEOUS, LONG TIME, INSTANTANEOUS, GROUND FAULT, etc.)

ELECTRICAL SYMBOLS

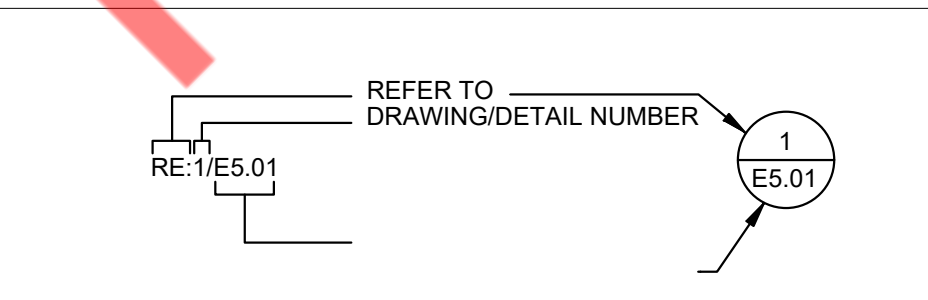
ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

Table of electrical symbols with descriptions: WHERE SHOWN, INDICATES HOMERUN TO PANEL WITH CIRCUIT NUMBER(S) AS INDICATED; CONDUIT RUN UNDERFLOOR OR BELOW GRADE; CONDUIT STUB UP; 0-10V DIMMING CIRCUIT 2# 14 CONTROL WIRES AND POWER CIRCUIT AS INDICATED IN SCHEDULES. (3) - 110 MIN.; DMX LIGHTING CONTROL CIRCUIT; PANELBOARD TO BE REMOVED; PANELBOARD, 208Y/120V; PANELBOARD, 480Y/277V; DISTRIBUTION PANELBOARD; SURGE PROTECTION DEVICE; TRANSFORMER; GROUNDING BAR; TRANSFORMER, DESIGNATION AND RATINGS AS NOTED (DELTA, CONNECTED PRIMARY AND WYE-CONECTED SECONDARY) UNLESS OTHERWISE NOTED; CIRCUIT BREAKER, TRIP RATING AS SHOWN, 3 POLE UNLESS OTHERWISE NOTED; SWITCH, TRIP RATING AS SHOWN, 3 POLE UNLESS OTHERWISE NOTED; SHUNT TRIP CIRCUIT BREAKER; DENOTES CIRCUIT BREAKER WITH ADJUSTABLE TRIP SETTINGS: L = LONG, S = SHORT, I = INSTANTANEOUS, G = GROUND FAULT PROTECTION, GI = GROUND FAULT; FUSE; GROUND; AUTOMATIC TRANSFER SWITCH; NON-FUSIBLE SAFETY SWITCH. '200/3/150' DENOTES AMPERES/POLE/FUSE. 'NF' DENOTES NON-FUSED. PROVIDE 30/3NF UNLESS OTHERWISE NOTED. PROVIDE NEMA 3R FOR ALL OUTDOOR INSTALLATIONS.; FUSIBLE SAFETY SWITCH; COMBINATION STARTER AND NON-FUSIBLE SAFETY SWITCH; CONTROL PANEL WITH INTEGRAL DISCONNECT SWITCH, FURNISHED WITH EQUIPMENT; MOTOR CONNECTION; VARIABLE FREQUENCY DRIVE, FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR; PUSH BUTTON; 2' x 4' FIXTURE, FIXTURE TYPE AS NOTED; 4' INDUSTRIAL STRIP FIXTURE, FIXTURE TYPE AS NOTED; WALL-MOUNTED FIXTURE, FIXTURE TYPE AS NOTED; CEILING-MOUNTED FIXTURE, FIXTURE TYPE AS NOTED; HATCH DENOTES FIXTURE WITH BATTERY BACK UP OR ON EMERGENCY GENERATOR. 'NL' DENOTES NIGHT LIGHT. 'E' DENOTES EMERGENCY. FIXTURE TYPE AS NOTED.

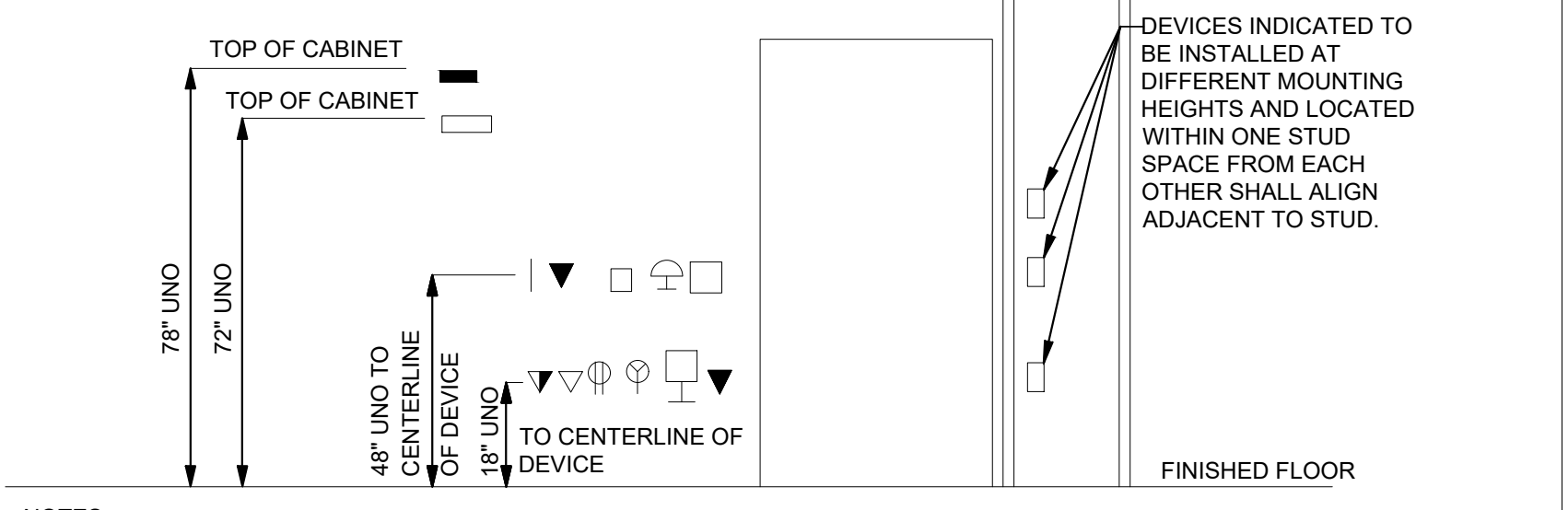
Table of electrical symbols with descriptions: CEILING MOUNTED EXIT SIGN, ARROWS AS INDICATED, DARKENED AREA DENOTES LIGHTED FACE; WALL MOUNTED EXIT SIGN, ARROWS AS INDICATED, DARKENED AREA DENOTES LIGHTED FACE, WHERE SHOWN OVER DOORS, MOUNT 6" ABOVE DOOR FRAME, 7'-8" AFF OTHERWISE; EMERGENCY LIGHTING UNIT WITH INTEGRAL BATTERY. SEE LIGHTING FIXTURE SCHEDULE; SINGLE POLE TOGGLE SWITCH; THREE-WAY TOGGLE SWITCH; FOUR-WAY TOGGLE SWITCH; MOTOR RATED SWITCH; WALL MOUNTED OCCUPANCY SENSOR SWITCH; THREE POSITION KEY SWITCH; SINGLE POLE PRESET FAN SPEED CONTROL SWITCH; CEILING MOUNTED OCCUPANCY SENSOR; LED LIGHTING CONTROL DRIVER 75W TYPICAL. ALPHANUMERIC CHARACTER(S) INDICATE NUMBER OF DRIVERS; CONTROL RELAY DESIGNATED R1; PHOTO ELECTRIC CELL; TIMECLOCK; WALL MOUNTED SIMPLEX RECEPTACLE (NEMA 5-20R, UON); WALL MOUNTED DUPLEX RECEPTACLE (NEMA 5-20R); WALL MOUNTED QUADRAPLEX RECEPTACLE (NEMA 5-20R); CEILING MOUNTED DUPLEX RECEPTACLE (NEMA 5-20R); WALL MOUNTED DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING RECEPTACLE (NEMA 5-20R). 'WP' DENOTES WEATHERPROOF IN USE COVER, SHADED CENTER DENOTES GROUND FAULT INTERRUPTING; RECEPTACLE FOR TELEVISION (NEMA 5-20R). VERIFY EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.; WALL MOUNTED DUPLEX RECEPTACLE, SHADED CENTER DENOTES (GFI) GROUND FAULT INTERRUPTING RECEPTACLE.; RECEPTACLE MOUNTED AT 6" ABOVE COUNTER TOP OR BACKSPASH; DUPLEX RECEPTACLE (U - COMBINATION TYPE W/ (2) USB PORTS); FLOOR MOUNTED RECEPTACLE (NEMA 5-20R). FLOOR MOUNTED RECEPTACLE WITH DATA/COMMUNICATIONS.; FLOOR POKE-THRU RECEPTACLE (NEMA 5-20R). FLOOR MOUNTED RECEPTACLE WITH DATA/COMMUNICATIONS.; SPECIAL PURPOSE RECEPTACLE; JUNCTION BOX; RECESSED JUNCTION BOXES MOUNTED ADJACENT TO EACH OTHER, ONE FOR POWER AND ONE FOR DATA. IF FIELD CONDITIONS WILL NOT ACCOMMODATE THE TWO BOXES, USE A TWO-GANG BOX OR LARGER WITH AN NEC APPROVED DIVIDER.; TWO VOICE AND TWO DATA OUTLETS-SINGLE-GANG OUTLET BOX WITH 1" C TO ABOVE NEAREST ACCESSIBLE CEILING UON; TELEPHONE OUTLET-SINGLE-GANG OUTLET BOX WITH 3/4" C TO ABOVE NEAREST ACCESSIBLE CEILING UON; TELEPHONE OUTLET - SINGLE - GANG OUTLET BOX WITH EMPTY 3/4" C TO ABOVE NEAREST ACCESSIBLE CEILING, UON. 'W' DENOTES WALL MOUNTED.; CABLE TV OUTLET SINGLE-GANG OUTLET BOX WITH 3/4" C. TO ABOVE NEAREST ACCESSIBLE CEILING, UONO; INTERCOM STATION; WALL MOUNTED HORN

- 1. GENERAL NOTES APPLY TO ENTIRE DRAWING SET.
2. DO NOT SCALE OR DIMENSION FROM THESE DRAWINGS.
3. 'FURNISH' SHALL MEAN TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION AND SIMILAR OPERATION.
4. 'INSTALL' SHALL MEAN OPERATIONS AT PROJECT SITE, INCLUDING UNLOADING, TEMPORARY STORING, UNPACKING, ASSEMBLING, ERECTING, PLACING, CONNECTING, ANCHORING, WORKING TO DIMENSION, FINISHING, PROTECTING, CLEANING, AND SIMILAR OPERATION. 'PROVIDE' SHALL MEAN TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.
5. REFER TO ELECTRICAL AND MECHANICAL PLANS, ELEVATIONS, AND DETAILS FOR LOCATIONS OF CEILING ELEMENTS (LIGHTING FIXTURES, DIFFUSERS, ETC.) AND OTHER WALL MOUNTED DEVICES. IF LOCATION FOR ITEM IS NOT SHOWN ON ABOVE LISTED DRAWINGS, VERIFY CRITICAL AREAS WITH FIELD PROJECT MANAGER.
6. ELECTRICAL SYSTEMS INDICATED ON DRAWINGS ARE DIAGRAMMATIC AND REQUIRES ADDITIONAL UNFORESEEN WORK TO COMPLY WITH APPLICABLE LOCAL CODES AND AMENDMENTS, AND WITH ASSOCIATED WORK OF OTHER TRADES, INCLUDING NECESSARY CIRCUITRY, SHALL BE PROVIDED TO MAKE SYSTEMS COMPLETE AND IN SAFE WORKING ORDER. COORDINATE WORK WITH OTHER TRADES.
7. INDICATED CIRCUIT RUNS ARE DIAGRAMMATIC. SIZE AND LOCATE PULL BOXES PER NEC AND COORDINATE OTHER DISCIPLINES. BUILDING CONDITIONS SHALL DETERMINE ACTUAL CONDUIT RUNS. PVC SHALL NOT BE USED IN INTERIOR EXPOSED SPACES. 8. UNLESS OTHERWISE INDICATED, BRANCH CIRCUITS SHALL BE #12, #12G, 3/4" C.
8. UNLESS NOTED OTHERWISE, 120-VOLT, 20A CIRCUIT WIRING INSTALLED OVER 90 FEET LONG SHALL BE 10 AWG, OVER 140 FEET LONG SHALL BE 8 AWG, OVER 220 FEET LONG SHALL BE 6 AWG. SIZE RACEWAY ACCORDING TO THE NATIONAL ELECTRICAL CODE. (ALL LENGTHS GIVEN ARE FOR TOTAL LENGTH OF BRANCH CIRCUIT).
9. CIRCUIT EMERGENCY AND EXIT LIGHTS TO NON-SWITCHED LEG OF NEAREST LIGHTING CIRCUIT.
10. REFER TO ARCHITECTURAL PLANS AND COORDINATE WITH OWNER FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL FIXTURES AND DEVICES PRIOR TO ROUGH-IN. ALL DEVICE MOUNTING HEIGHTS NOTED ARE APPROXIMATE. FINAL MOUNTING HEIGHTS MUST BE VERIFIED WITH ASSOCIATED EQUIPMENT PRIOR TO ROUGH-IN.
11. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND REQUIREMENTS FOR HVAC EQUIPMENT. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR.
12. LIGHT FIXTURES ARE CONTROLLED BY SWITCHING DEVICE WITHIN THE SAME ROOM OR AREA UNLESS OTHERWISE NOTED. LOWER CASE LETTER ADJACENT TO LIGHT FIXTURE INDICATES LIGHT FIXTURE OPERATED BY A SWITCH WITH THE SAME DESIGNATION.
13. OCCUPANCY SENSOR LOCATIONS ARE SHOWN FOR GENERAL REFERENCE ONLY. COORDINATE SENSOR LOCATIONS AND QUANTITIES WITH MANUFACTURER'S RECOMMENDATIONS FOR PROPER OPERATION.
14. LIGHTING CIRCUIT INDICATED ADJACENT TO SWITCHING DEVICE, POWER PACK OR LIGHT FIXTURE.
15. UNLESS OTHERWISE NOTED, UTILIZE COMBINED POWER & CONTROL CABLE, SOUTH WIRE #MCPPCS DUO (OR EQUAL) WHERE 0-10V DIMMING CONTROLS ARE INDICATED.
16. ALL CIRCUIT FEEDERS AND DISCONNECTS SHALL BE SIZED PER NEC.
17. CONTRACTOR SHALL VERIFY CIRCUIT BREAKER, DISCONNECT SWITCH, AND FUSE SIZES WITH SELECTED EQUIPMENT MANUFACTURER'S SHOP DRAWINGS PRIOR TO PLACING ORDER AND PROVIDE ALL APPURTENANCES AS REQUIRED.
18. ELECTRICAL EQUIPMENT ENCLOSURES RATING SHALL BE NEMA 1 FOR INTERIOR AND NEMA 3R FOR EXTERIOR. IN COASTAL REGIONS, THE STANDARD RATING FOR EXTERIOR ENCLOSURES SHALL BE NEMA-4X.
19. LOW VOLTAGE AND SECURITY REQUIREMENTS BY OTHERS.
20. FIRE-STOP ALL CONDUIT PENETRATIONS AT RATED WALLS TO MAINTAIN FIRE RATING.
21. PROVIDE A COMPLETE, OPERATIVE FIRE ALARM SYSTEM INCLUDING BUT NOT LIMITED TO ALARM INITIATING DEVICES, ALARM NOTIFICATIONS APPLIANCES, CONTROL PANEL, AUXILIARY CONTROL DEVICES, DUCT DETECTORS, ANNUNCIATORS, POWER SUPPLIES AND WIRING PER SPECIFICATIONS. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A LICENSED FIRE ALARM INSTALLATION COMPANY TO DESIGN, INSTALL AND TEST THE FIRE ALARM SYSTEM. THE SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND IN COMPLIANCE WITH NFPA 72 AND MEET LOCALLY ENFORCED CODE AND ADA REQUIREMENTS.

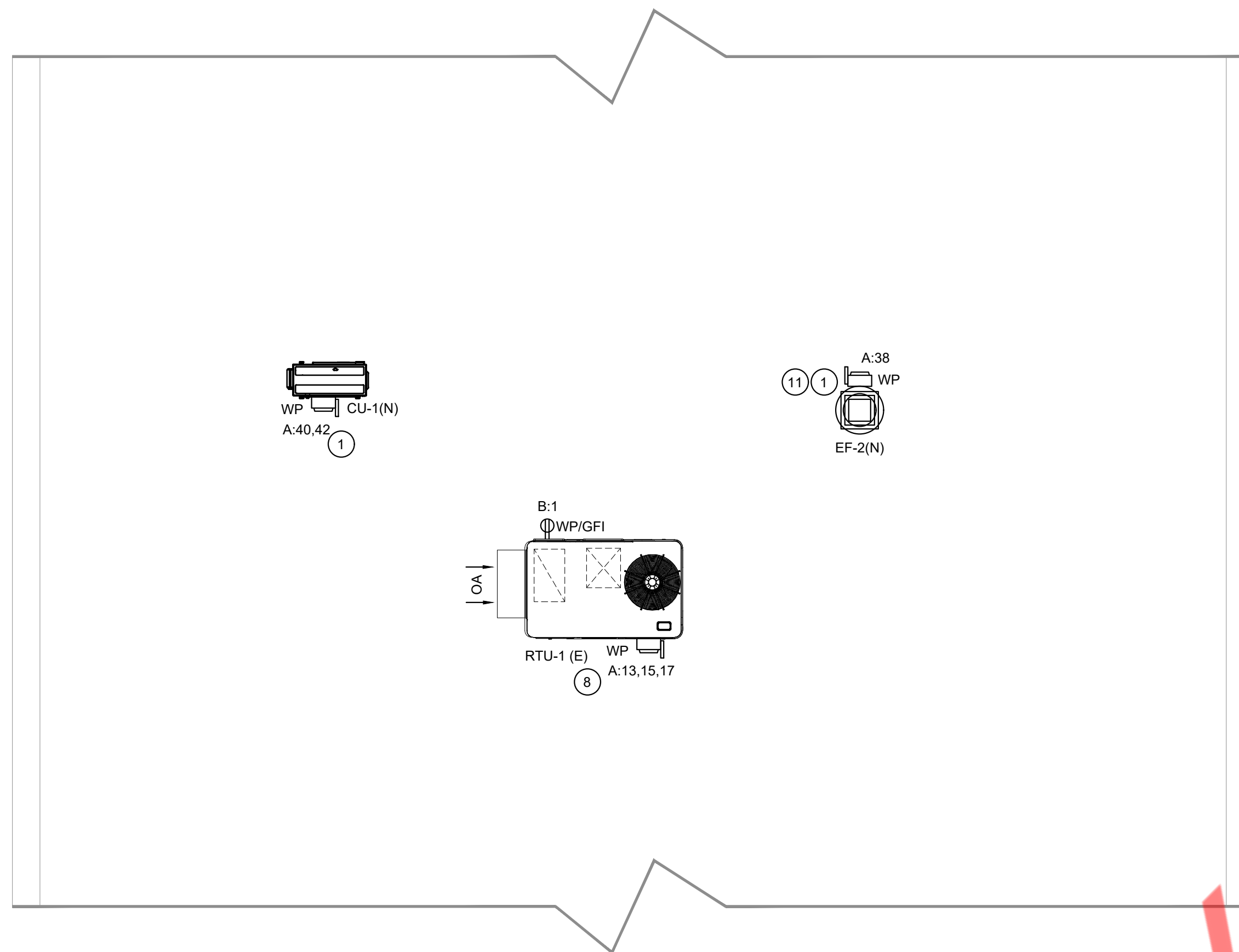
DRAWING/DETAIL REFERENCE KEY



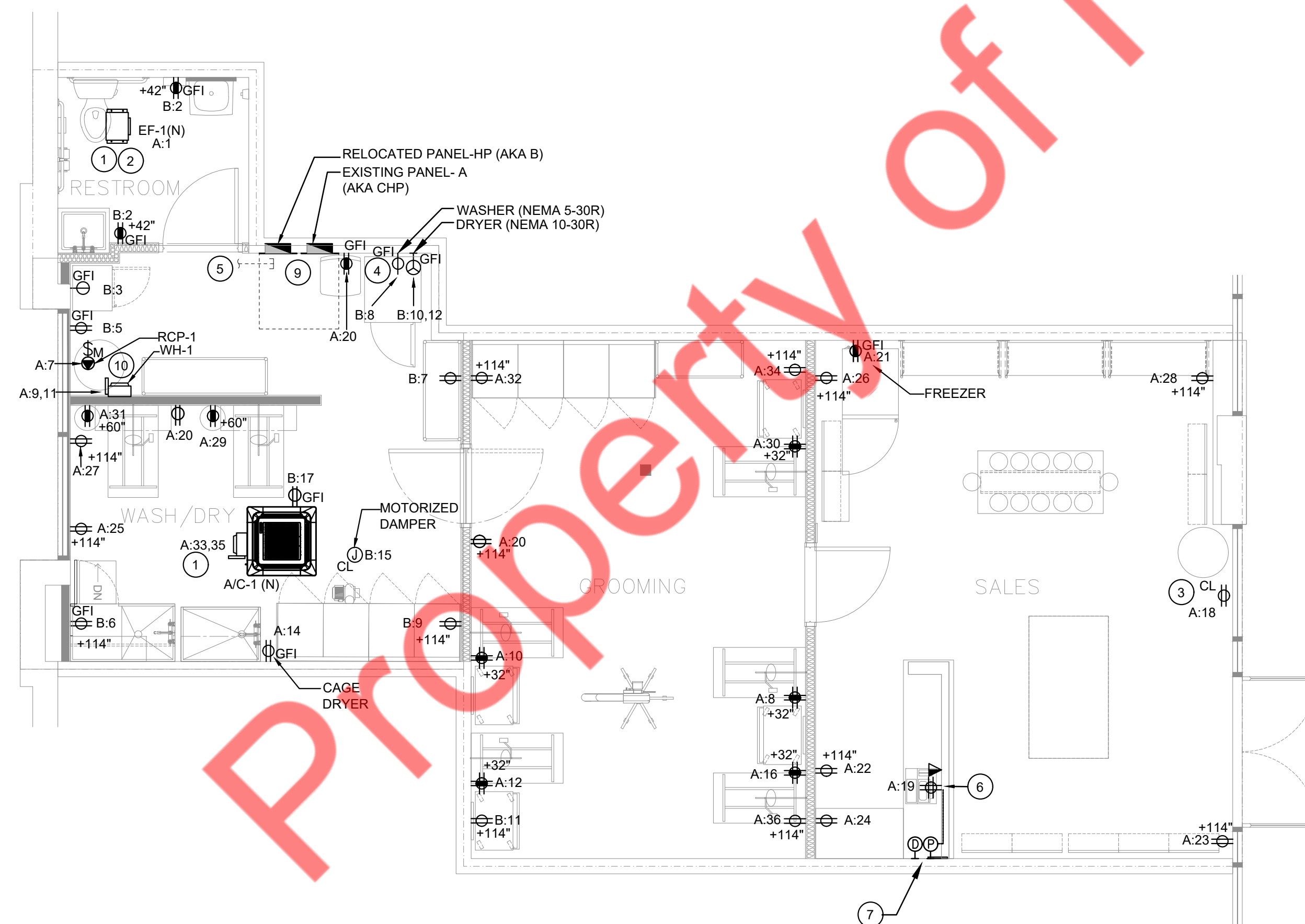
TYPICAL DEVICE MOUNTING HEIGHTS



- NOTES:
1. RECEPTACLES, SWITCHES, AND OUTLETS SHALL BE LABELED WITH PANELBOARD AND CIRCUIT NUMBER.
2. DUPLEX RECEPTACLES SHALL BE MOUNTED VERTICALLY U.N.O.
3. DEVICES INDICATED TO BE ABOVE DOORS SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND FINISHED CEILING.
4. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.



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



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

POWER PLAN KEY NOTES

1. E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENT OF THE MECHANICAL UNIT IN THE FIELD. PROVIDE CIRCUIT AND CONTROLS AS REQUIRED.
2. INTERLOCK EXHAUST FAN TO LIGHT SWITCH IN RESTROOM. REFER TO LIGHTING PLAN FOR CIRCUITING INFORMATION. REFER TO MECHANICAL FOR EXACT LOCATION AND REQUIREMENTS.
3. SHOW WINDOW RECEPTACLE. INSTALL WITHIN 18 INCHES OF TOP OF WINDOW, CIRCUIT AS INDICATED.
4. VERIFY NEMA RECEPTACLE TYPE FOR WASHER AND DRYER CONNECTIONS WITH SUPPLIED EQUIPMENT PRIOR TO ROUGH-IN.
5. ROUTE (1) 3" CONDUIT FROM TELECOM DEMARCATION AND STUB INTO TENANT SPACE ABOVE CEILING FOR CABLING REQUIREMENTS. COORDINATE EXACT LOCATION AND ROUTING IN FIELD PER SPECIFIC SITE. FIRE-STOP ALL CONDUIT PENETRATIONS AT RATED WALLS TO MAINTAIN FIRE RATING.
6. SURFACE MOUNT POWER AND DATA RECEPTACLES BELOW FRONT COUNTER FOR CONNECTION TO POS AND TECHNOLOGY DEVICES. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH MILLWORK VENDOR AND ARCHITECT PRIOR TO ROUGH-IN.
7. RECESSED JUNCTION BOXES FOR POWER, COMMUNICATIONS, AND SECURITY CABLING REQUIREMENTS. PROVIDE A 3/4" CONDUIT FOR POWER AND A 2" CONDUIT FOR DATA WITH PULL-STRING TO ABOVE ACCESSIBLE CEILING SPACE. COORDINATE LOW VOLTAGE REQUIREMENTS WITH TECHNOLOGY CONTRACTOR.
8. EXISTING (E) MECHANICAL UNITS SHALL REMAIN CONNECTED TO THE EXISTING CIRCUIT. E.C. TO VERIFY THE OPERABLE CONDITION OF THE ELECTRICAL CIRCUIT AND CONTROLS IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
9. E.C. SHALL VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION OF EXISTING, RELOCATED AND NEW PANEL IN THE FIELD. ALSO, ENSURE CLEAR WORKING AND DEDICATED SPACE HAVE BEEN PROVIDED AS PER NEC 110.26. INFORM THE ENGINEER OF RECORD OF ANY DISCREPANCY, BEFORE BIDDING.
10. E.C. SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENT OF THE UNIT IN THE FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED.
11. EXHAUST FAN CONTROL WITH TIMECLOCK (OPERATIONAL DURING OCCUPIED HOURS).

POWER PLAN GENERAL NOTES

- A. ALL THE BRANCH WIRING SHALL BE COPPER. THE INSULATION SHALL BE RATED FOR THE AREA OF THE USE.
- B. THE LOCATION OF ALL ELECTRICAL EQUIPMENT (NOT PROVIDED IN THE ARCHITECTURAL PLAN) SHALL BE VERIFIED WITH THE ARCHITECT/OWNER BEFORE BID.
- C. POWER AND LOCATION OF ALL THE MECHANICAL AND PLUMBING UNITS SHALL BE COORDINATED WITH THE RESPECTIVE CONTACTORS BEFORE BID.
- D. ELECTRICAL OUTLETS PLACED ON BOTH SIDES OF THE WALL PARTITION TO BE LOCATED OFFSET OF EACH OTHER.
- E. THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.
- F. ALL 125V-250V RECEPTACLES SUPPLIED BY SINGLE-PHASE CIRCUITS RATED 150V OR LESS TO GROUND, 50A OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE PHASE BRANCH CIRCUIT RATED 150V OR LESS TO GROUND, 100A OR LESS INSTALLED IN THE LOCATIONS SPECIFIED IN NEC 210.8(B)(1) THROUGH (12) SHALL HAVE GFCI PROTECTION.
- G. GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI RECEPTACLE DISCONNECT IN THE READILY ACCESSIBLE LOCATION. PROVIDE GFI BREAKER IN THE PANEL IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE WHEN INSTALLED IN THE DESIRED LOCATION.
- H. COORDINATE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENTS OF THE MOTORIZED DAMPERS AND THERMOSTATS IN THE FIELD. PROVIDE WIRING AS REQUIRED.
- I. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR THE EXACT LOCATION AND MOUNTING HEIGHT OF THE ELECTRICAL OUTLET IN THE FIELD. MAKE PROVISION ACCORDINGLY.
- J. E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR THE EXACT LOCATION OF THE EQUIPMENT IN THE FIELD BEFORE ROUGH-IN. PROVIDE ELECTRICAL PROVISION AS REQUIRED.
- K. E.C. SHALL COORDINATE WITH THE ARCHITECT/EQUIPMENT VENDOR FOR THE EXACT ELECTRICAL CONNECTION REQUIREMENT OF THE EQUIPMENT IN THE FIELD. PROVIDE ELECTRICAL OUTLET, BRANCH CIRCUIT AND BREAKER AS REQUIRED.
- L. ALL THE ELECTRICAL ELEMENT VIZ. CONDUITS, WIRING, AND DISCONNECT SWITCHES SHALL BE RATED FOR THE EXTERIOR USE.
- M. A 125-VOLT, SINGLE-PHASE, 15- OR 20-AMPERE-RATED RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION WITHIN 7.5 M (25 FT) OF THE EQUIPMENT AS SPECIFIED IN 210.63(A) AND (B) AS PER NEC 210.63.

CONTROLS SYMBOL LEGEND

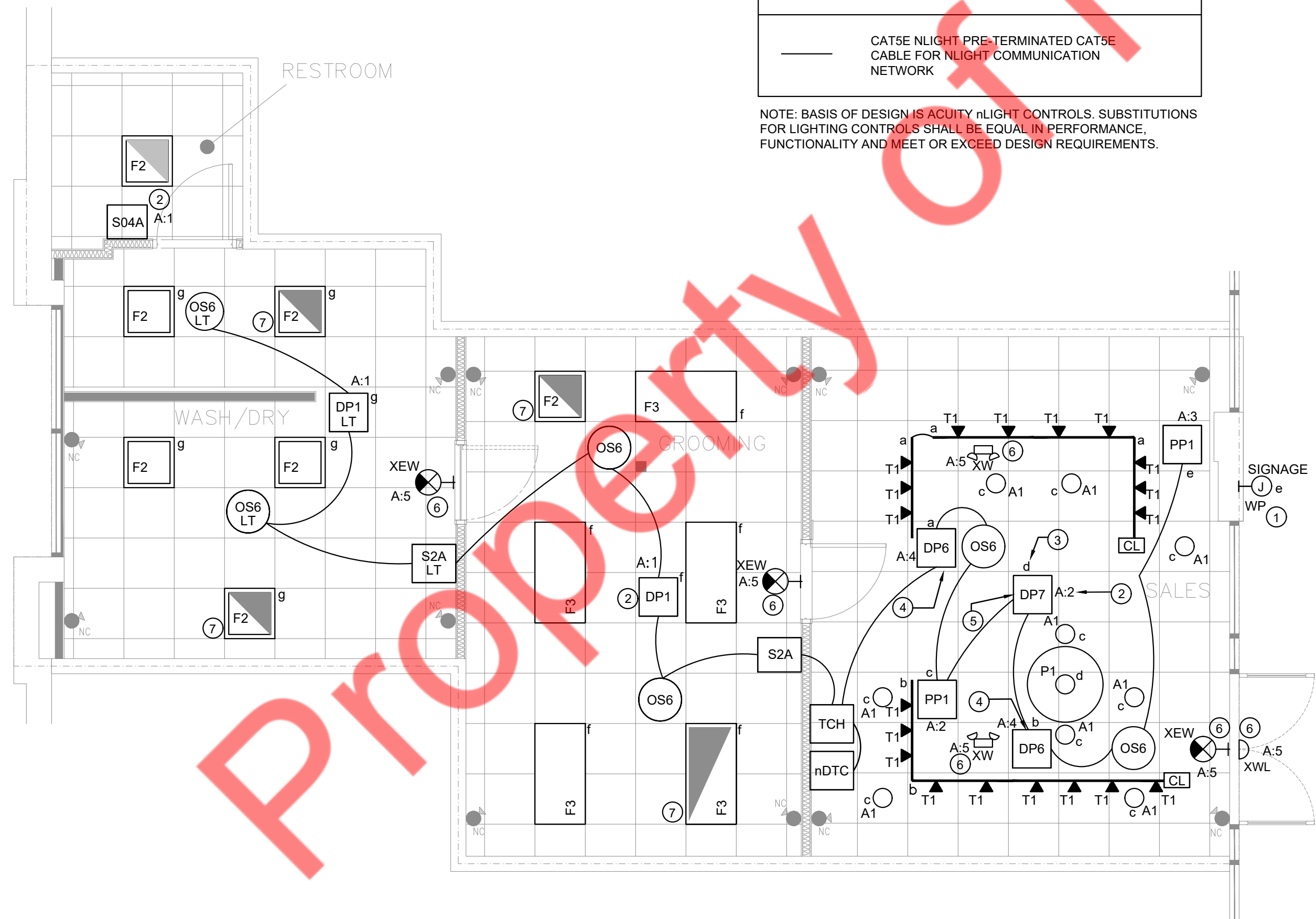
	#NPP16 D EFP POWER/RELAY PACK, OCCUPANCY CONTROLLED DIMMING, EXTERNAL FAULT PROTECTION
	#NPP16 D EFP LT POWER/RELAY PACK, DIMMING, EXTERNAL FAULT PROTECTION, LOW TEMPERATURE / HIGH HUMIDITY
	#NSP5 PCD ELV 120 SECONDARY RELAY PACK, PHASE CONTROL DIMMING, ELECTRONIC LOW VOLTAGE, 120 VAC
	#NSP5 PCD 2W SECONDARY RELAY PACK, PHASE CONTROL DIMMING, TWO WIRE DIMMING
	#NDTC XX NIGHT DIGITAL TIME CLOCK
	#NCM PDT 10 LOW VOLTAGE CEILING MOUNT SENSOR, PASSIVE DUAL TECHNOLOGY, LARGE MOTION / EXTENDED RANGE 360° LENS
	#NCM PDT 10 LT RJB LOW VOLTAGE CEILING MOUNT SENSOR, PASSIVE DUAL TECHNOLOGY, LARGE MOTION / EXTENDED RANGE 360° LENS, LOW TEMPERATURE / HIGH HUMIDITY, REAR RJ-45 PORTS
	#NPODMA DX XX NIGHT WIRED AESTHETIC WALLPOD, RAISE/LOWER DIMMING WITHOUT WIRES
	#NPODMA DX XX LT NIGHT WIRED AESTHETIC WALLPOD, RAISE/LOWER DIMMING, LOW TEMPERATURE /HIGH HUMIDITY
	#WSXA PDT XX WALL SWITCH SENSOR, PASSIVE DUAL TECHNOLOGY
	#NPOD TOUCH XX LOW VOLTAGE WALLPOD, TOUCHSCREEN WALL CONTROL
	#NPP16 EFP POWER/RELAY PACK, EXTERNAL FAULT PROTECTION
	CAT5E NLIGHT PRE-TERMINATED CAT5E CABLE FOR NLIGHT COMMUNICATION NETWORK

NOTE: BASIS OF DESIGN IS ACUITY nLIGHT CONTROLS. SUBSTITUTIONS FOR LIGHTING CONTROLS SHALL BE EQUAL IN PERFORMANCE, FUNCTIONALITY AND MEET OR EXCEED DESIGN REQUIREMENTS.

LIGHT FIXTURE SCHEDULE

SYMBOL	MFG. / MODEL	LAMP	VOLT.	DIMMABLE	WATT.	REMARKS
	ELITE: BL4-20W-E-120-AT-B1401-W-CL-SN	SORAA: SM16-09-36D-930-03, 3000K	120 V	YES	20W MAX	RECESSED LED DOWNLIGHT - DROP CEILING.
	SAYLITE: BFP-22L-30M3300L-DMV-MCT-EM20	5000K INTEGRATED LED	120 V	YES	40W	2x2 FLAT LED PANEL WITH 90 MINUTE EMERGENCY BATTERY BACKUP
	SAYLITE: BFP-24L-40M4400L-DMV-MCT	5000K INTEGRATED LED	120 V	YES	40W	2x4 FLAT LED PANEL
	LIVEX LIGHTING: WILLIAMSBURGH 12 26" INCH WHITE CHANDELIER	EIGHT (8) 4.5W 3000K B11 E12 LED BULBS (60W MAX CANDELABRA BASE BULBS)	120 V	YES	27W	CHANDELIER OVER TREAT TABLE. VERIFY MOUNTING HEIGHT PER ARCH. RCP.
	JUNO CYLINDRA: T254L-TEK-G2-30K-90CRI-PDIM-NFL-WH TRACK: TEK (WHITE)	INTEGRATED LED TRACK HEAD 30 DEG NARROW FLOOD, 3000K	120 V	YES	15W	TRACK COUPLERS AND ALL CONNECTORS BY VENDOR, WHITE FINISH. VERIFY MOUNTING HEIGHT PER ARCH. RCP.
	CARPENTER: AWEL2-BR-E-PC	INTEGRAL LED	120 V	NO	9W	WET LOCATION LISTED WALL MOUNTED EMERGENCY EGRESS LIGHT WITH PHOTOCELL CONTROL AND 90-MINUTE EMERGENCY BACKUP BATTERY.
	CARPENTER: CSEL80	INTEGRAL LED	120 V	NO	5W	EMERGENCY EGRESS LIGHT WITH 90-MINUTE BATTERY BACKUP, CEILING MOUNT ALTERNATE: FOR OPEN CEILING CONFIGURATION, EMERGENCY FIXTURES SHALL BE WALL MOUNTED AT 7'-6" AFF.
	CARPENTER: CEW-XLD-R-1-6-P-W-E	INTEGRAL LED	120 V	NO	5W	EXIT SIGN WITH 90-MINUTE BATTERY BACKUP

NOTES:
 1. FIXTURES SUBSTITUTIONS SHALL BE EQUAL IN ALL RESPECTS OF PERFORMANCE, QUALITY OF CONSTRUCTION, SUITABILITY TO PROJECT CONDITIONS AND APPEARANCE OF THE SPECIFIED FIXTURE. SUBSTITUTIONS SHALL BE SUBMITTED FOR APPROVAL IN THE FORM OF CATALOG CUTS OR DETAIL DRAWINGS TO THE ARCHITECT.
 2. FURNISH AND INSTALL ALL MATERIALS, ACCESSORIES AND OTHER EQUIPMENT NECESSARY FOR THE COMPLETE AND PROPER INSTALLATION OF ALL LIGHTING FIXTURES INCLUDED IN THIS CONTRACT. PROVIDE ALL NECESSARY ACCESSORIES TO PROVIDE A COMPLETE LIGHTING SYSTEM.
 3. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LIGHTING FIXTURE INSTALLATION WITH THE DETAILS OF THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND OTHER RELATED TRADES TO ASSURE AN EFFICIENT INSTALLATION.



④ LIGHTING PLAN KEY NOTES

- PROVIDE WEATHER TIGHT JUNCTION BOX (DISCONNECT SWITCH) AND CIRCUIT FOR EXTERIOR SIGNAGE TO BE CONTROLLED VIA TIMECLOCK FOR DUSK TO DAWN OPERATION. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ARCHITECT AND SIGN VENDOR.
- BRANCH LIGHTING CIRCUIT INDICATED ADJACENT TO SWITCHING DEVICE OR POWER PACK, TYPICAL.
- LOWER CASE LETTER ADJACENT TO POWER PACK INDICATES CONTROL OF LIGHT FIXTURES WITH SAME DESIGNATION, TYPICAL.
- PROVIDE A 3-AMP CURRENT LIMITING DEVICE FOR TRACK LIGHTING CIRCUIT.
- LOCATE ALL LIGHTING CONTROL POWER PACKS ABOVE ACCESSIBLE CEILING, TYPICAL.
- LOOP ALL EMERGENCY LIGHT FIXTURES AND EXIT SIGNS AND WIRE THEM BACK TO THE EMERGENCY LIGHTING CIRCUIT IN THE PANEL BOARD. THE CIRCUIT BREAKER SHALL HAVE A LOCKOUT.
- CONNECT EMERGENCY LIGHT FIXTURE TO ADJACENT LIGHTING CIRCUIT.

LIGHTING PLAN GENERAL NOTES

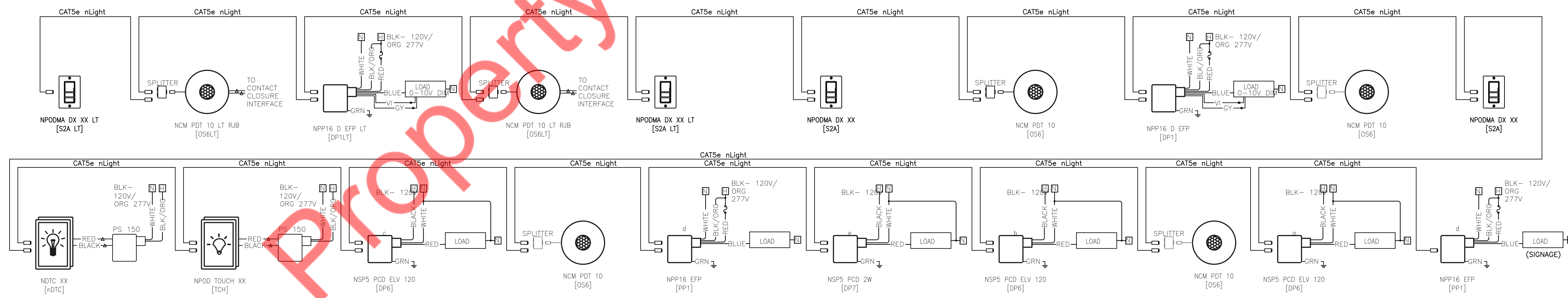
- EMERGENCY LIGHT FIXTURES SHALL TURN ON DURING POWER FAILURE WHEREAS ALL EXIT SIGNS SHALL BE PERMANENTLY ON. E.C. TO WIRE THE EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS ACCORDINGLY.
- THE OCCUPANCY SENSOR, TIMERS, AND OTHER APPROVED LIGHTING CONTROLS SHALL MATCH THE CONTROL FUNCTION REQUIREMENT SPECIFIED IN THE IECC C405.2.
- PROVIDE LINE VOLTAGE (UNLESS SPECIFIED) LIGHTING CONTROLS AND, SENSORS, OR POWER PACK AS REQUIRED.
- THE OCCUPANCY SHALL BE SET TO TURN OFF THE LIGHTS WITHIN 15 MINUTES AFTER ALL OCCUPANTS LEAVE THE SPACE.
- THE TIME CLOCK SHALL BE SET AS PER THE REQUIREMENT OF THE PROJECT SPACE.
- COORDINATE SCOPE AND POWER REQUIREMENT OF THE CAMERA WITH THE OWNER AND VENDOR RESPECTIVELY.

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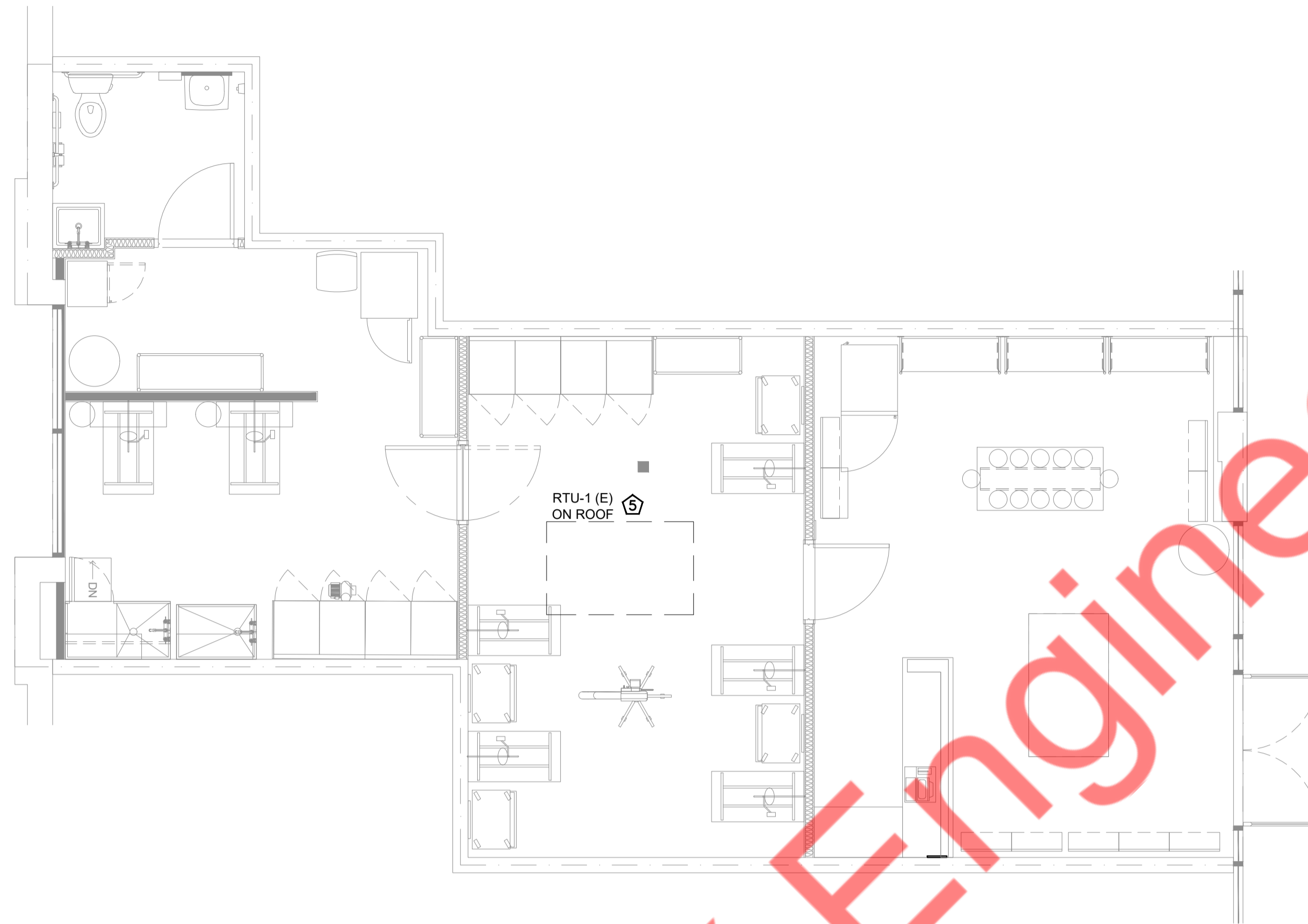
	OCCUPANCY SENSOR				TIME CLOCK			WALL SWITCH			DAYLIGHT SENSOR		OTHER		NOTES				
	VACANCY MODE (MANUAL ON)	OCCUPANCY MODE (AUTO ON)	SENSOR TIME OUT PERIOD (MINUTES)	DUAL TECHNOLOGY	SCHEDULE ON TIME	SCHEDULE OFF TIME	SCHEDULE OVERRIDE SWITCH	MANUAL (ON/OFF)	MANUAL DIMMING	KEY SWITCH	SCENE CONTROL	GRAPHIC TOUCHSCREEN	SWITCHING (ON/OFF)	DIMMING		TARGET LIGHTING LEVELS (FC)	EXTERIOR LOCATION	PLUG LOAD CONTROL	NETWORKED
A		X	10	X	TBD	TBD						X						X	1
B		X	10	X	TBD	TBD			X									X	1
C		X	10	X	TBD	TBD			X									X	1
D		X	10	X				X										X	1
E					DUSK	DAWN												X	

NOTES: 1. LIGHTING SHALL BE CONTROLLED BY TIME CLOCK AND SENSORS, COORDINATE SCHEDULE WITH OWNER AT STARTUP.
OCCUPANCY SENSORS USED FOR AFTER HOURS OPERATION.

2 SEQUENCE OF OPERATIONS
SCALE: NONE



(ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)				
<p>A</p> <p>A/C AIR CONDITIONING ABV ABOVE AC ALTERNATING CURRENT ACC AIR COOLED CHILLER ACCU AIR COOLED CONDENSING UNIT ADJ ADJUSTABLE AF AMPERE FUSE AFC ABOVE FINISHED CEILING AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AIC AMPS INTERRUPT CURRENT AL ALUMINUM AMPS AMPERES ANSI AMERICAN NATIONAL STANDARDS INSTITUTE ARCH ARCHITECT, ARCHITECTURAL, ARCHITECTURE ARI AIR CONDITIONING AND REFRIGERATION INSTITUTE ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS ASPE AMERICAN SOCIETY OF PLUMBING ENGINEERS ASTM AMERICAN SOCIETY OF TESTING AND MATERIALS AUX AUXILIARY AV AIR VENT AWG AMERICAN WIRE GAUGE AWS AMERICAN WELDING SOCIETY AWWA AMERICAN WATER WORKS ASSOCIATION</p> <p>B</p> <p>BD BACKDRAFT DAMPER BFF BELOW FINISHED FLOOR BFW BOILER FEED WATER BKR BREAKER BLDG BUILDING BOD BOTTOM OF DUCT BOP BOTTOM OF PIPE BOS BOTTOM OF STRUCTURE BTU BRITISH THERMAL UNIT</p> <p>C</p> <p>C CONDUIT °C DEGREES CELCIUS CATV CABLE TELEVISION SYSTEM CCTV CLOSED CIRCUIT TELEVISION SYSTEM CFH CUBIC FEET PER HOUR CFM CUBIC FEET PER MINUTE CFS CUBIC FEET PER SECOND CI CAST IRON CISPI CAST IRON SOIL PIPE INSTITUTE CIRC CIRCULATING CL CENTER LINE CLG CEILING CMU CONCRETE MASONRY UNIT CO CLEANOUT COLL COLUMN CPVC CHLORINATED POLYVINYL CHLORIDE CU COPPER CW COLD WATER</p> <p>D</p> <p>D DEPTH DB DRY BULB dB DECIBEL DC DIRECT CURRENT DEG DEGREES DESIG DESIGNATION DIA DIAMETER DIM DIMENSION DISC DISCONNECT DN DOWN DPDT DOUBLE-POLE, DOUBLE-THROW DPST DOUBLE-POLE, SINGLE-THROW DSN DOWNSPOUT NOZZLE DWG DRAWING DX DIRECT EXPANSION</p> <p>E</p> <p>EA EACH EAT ENTERING AIR TEMPERATURE ECC ECCENTRIC EDB ENTERING DRY BULB EF EXHAUST FAN ELEC ELECTRIC, ELECTRICAL ELEV ELEVATION ENCL ENCLOSURE EQUIP EQUIPMENT ESP EXTERNAL STATIC PRESSURE EWB ENTERING WEB BULB EWC ELECTRIC WATER COOLER EWT ENTERING WATER TEMPERATURE EXH EXHAUST EXIST EXISTING</p> <p>F</p> <p>*F DEGREES FAHRENHEIT FA FIRE ALARM FACP FIRE ALARM CONTROL PANEL FCO FLOOR CLEANOUT FL FLOW LINE FLA FULL LOAD AMPS FLEX FLEXIBLE FPM FEET PER MINUTE FPS FEET PER SECOND FT FOOT, FEET FVNR FULL-VOLTAGE, NON-REVERSING</p>	<p>G</p> <p>G, GND GROUND GA GAUGE GAL GALVANIZED GC GENERAL CONTRACTOR GF1 GROUND FAULT INTERRUPTER GFR GROUND FAULT RELAY GPD GALLONS PER DAY GPH GALLONS PER HOUR GPM GALLONS PER MINUTE GT GREASE TRAP, GREASE INTERCEPTOR GW GREASE WASTE</p> <p>H</p> <p>H HEIGHT; HIGH HD HEAD; HUB DRAIN HID HIGH INTENSITY DISCHARGE HOA HAND-OFF-AUTOMATIC HORIZ HORIZONTAL HP HORSEPOWER HSTAT HUMIDISTAT HSTM HIGH PRESSURE STEAM HTG HEATING HTR HEATER HVAC HEATING, VENTILATION AND AIR CONDITIONING HW HOT WATER HWR HOT WATER RETURN HYD HYDRANT HZ HERTZ</p> <p>I</p> <p>ID INSIDE DIAMETER IE INVERT ELEVATION IEEE INSTITUTE OF ELECTRICAL ELECTRONIC ENGINEERS IES ILLUMINATING ENGINEERING SOCIETY IG ISOLATED GROUND IN INCH IN WC INCHES OF WATER COLUMN</p> <p>K</p> <p>KCMIL 1000 CIRCULAR MILS KV KILOVOLT KVA KILOVOLT-AMP KW KILOWATT KWH KILOWATT-HOUR</p> <p>L</p> <p>L LENGTH; LONG LAT LEAVING AIR TEMPERATURE LB, # POUND LDB LEAVING DRY BULB LF LINEAR FEET LP LOW PRESSURE LRA LOCKED ROTOR AMPS LSTM LOW PRESSURE STEAM (15-PSIG) LTG LIGHTING LWB LEAVING WET BULB LWT LEAVING WATER TEMPERATURE</p> <p>M</p> <p>MAX MAXIMUM MBH 1000 BTU PER HOUR MCA MINIMUM CIRCUIT AMPACITY MCB MAIN CIRCUIT BREAKER MCC MOTOR CONTROL CENTER MD MOTORIZED DAMPER MECH MECHANICAL MFGR MANUFACTURER MG MOTOR GENERATOR MH MANHOLE; METAL HALIDE MIN MINIMUM MLO MAIN LUGS ONLY MTD MOUNTED</p> <p>N</p> <p>N/A NOT APPLICABLE NC NOISE CRITERIA; NORMALLY CLOSED NEC NATIONAL ELECTRIC CODE NEMA NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION NFPA NATIONAL FIRE PROTECTION ASSOCIATION NIC NOT IN CONTRACT N.O. NORMALLY OPEN NTS NOT TO SCALE</p> <p>O</p> <p>OA OUTSIDE AIR OAT OUTSIDE AIR TEMPERATURE OBD OPPOSED BLADE DAMPER OC ON CENTER OD OVERFLOW DRAIN, OUTSIDE DIAMETER OH OVERHEAD OPG OPENING OS&Y OUTSIDE STEM & YOKE OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OWS OIL-WATER SEPARATOR</p>	<p>P</p> <p>PD PRESSURE DROP PF POWER FACTOR PH PHASE PIV POST INDICATOR VALVE PLBG PLUMBING PNL PANEL PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PSIA POUNDS PER SQUARE INCH ABSOLUTE PSIG POUNDS PER SQUARE INCH GAUGE PRV PRESSURE REGULATING VALVE PSV PRESSURE SAFETY RELIEF VALVE PV PLUG VALVE PVC POLYVINYL CHLORIDE</p> <p>Q</p> <p>QTY QUANTITY</p> <p>R</p> <p>RA RETURN AIR RCP REFLECTED CEILING PLAN; REINFORCED CONCRETE PIPE RD ROOF DRAIN RE REFER; REFERENCE RECIRC RECIRCULATE REINF REINFORCING REQD REQUIRED REV REVISION; REVISE RGS RIGID GALVANIZED STEEL RH RELATIVE HUMIDITY RHG REFRIGERANT HOT GAS RL REFRIGERANT LIQUID RLA RUNNING LOAD AMPS RM ROOM RPM REVOLUTIONS PER MINUTE RS REFRIGERANT SUCTION</p> <p>S</p> <p>SA SUPPLY AIR SAN SANITARY SD, STM STORM DRAIN SECTION SF SQUARE FEET SH SHOWER SHT SHEET SIM SIMILAR SMT MTL SHEET METAL SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION SP STATIC PRESSURE SPEC SPECIFICATION SQ SQUARE SS STAINLESS STEEL; SANITARY SEWER SSD SUB-SOIL DRAIN ST SOUND TRAP; STEAM TRAP STD STANDARD STL STEEL SURF SURFACE SUSP SUSPEND</p> <p>T</p> <p>TDH TOTAL DYNAMIC HEAD THRU THROUGH TP TOTAL PRESSURE TSP TOTAL STATIC PRESSURE TSTAT THERMOSTAT TYP TYPICAL</p> <p>U</p> <p>UF UNDERFLOOR UG UNDERGROUND US UNDERSLAB UL UNDERWRITERS LABORATORIES, INC. UNLESS OTHERWISE NOTED UON UNINTERRUPTABLE POWER SUPPLY UPS</p> <p>V</p> <p>V VENT; VOLT VA VOLT-AMPERE VAC VACUUM VAV VARIABLE AIR VOLUME VCP VITRIFIED CLAY PIPE VD VOLUME DAMPER VEL VELOCITY VERT VERTICAL VTR VENT THROUGH ROOF</p> <p>W</p> <p>W WATT; WIDE; WIDTH W/ WITH W/O WITHOUT WB WET BULB WC WATER CLOSET; WATER COLUMN WG WATER GONG WPD WATER PRESSURE DROP WP WEATHER-PROOF WT WATERTIGHT; WEIGHT</p> <p>X</p> <p>XFMR TRANSFORMER</p>	<p>(SINGLE LINE DIAGRAM SYMBOLS)</p> <p>— SAN — SANITARY SEWER — V — SANITARY VENT — GW — GREASE WASTE (KITCHEN) — OW — OIL / WATER WASTE — CD — CONDENSATE DRAIN — D — DRAIN — SSD — SUB-SOIL DRAIN (GROUND WATER) — SD — STORM DRAIN (STORM PRIMARY DRAIN) — OD — OVERFLOW DRAIN (STORM SECONDARY DRAIN) — CW — COLD WATER (DOMESTIC - POTABLE) — HW — HOT WATER (DOMESTIC - POTABLE) — HW (XXX °F) — HOT WATER (DOMESTIC - POTABLE), WHERE "XXX" = TEMPERATURE OF SERVICE — HWR — HOT WATER RETURN (DOMESTIC - POTABLE) — HWR (XXX °F) — HOT WATER RETURN (DOMESTIC - POTABLE), WHERE "XXX" = TEMPERATURE OF SERVICE — NPW — NON-POTABLE WATER — TP — TRAP PRIMER SUPPLY — F — FIRE SUPPRESSION WATER — G — NATURAL GAS — A — COMPRESSED AIR — (EX) — EXISTING PIPE — (E)X — EXISTING PIPE, WHERE "X" DENOTES SERVICE OR PIPING SYSTEM — DEMO — EXISTING PIPE TO BE DEMOLISHED</p> <p>ELBOW DOWN ELBOW UP TEE OUTLET UP TEE OUTLET DOWN VALVE IN DROP VALVE IN RISE VALVE IN CENTER DROP CONCENTRIC INCREASER / REDUCER ECCENTRIC INCREASER / REDUCER GATE VALVE GLOBE VALVE OUTSIDE STEM AND YOKE (OSS&Y) VALVE BUTTERFLY VALVE BALANCING VALVE WITH DIFFERENTIAL PRESSURE TAPS PRESSURE REGULATING VALVE TWO-WAY SELF OPERATING VALVE THREE-WAY SELF OPERATING VALVE MOTOR OPERATED VALVE PNEUMATIC OPERATED VALVE SOLENOID OPERATED VALVE FLOW SWITCH PRESSURE SWITCH CHECK VALVE DOUBLE CHECK BACKFLOW PREVENTER REDUCED PRESSURE BACKFLOW PREVENTER STRAINER STRAINER WITH BLOWDOWN VALVE BALL VALVE GAS VALVE MANUAL AIR VENT AUTOMATIC AIR VENT TEMPERATURE AND PRESSURE RELIEF VALVE VACUUM BREAKER DIELECTRIC UNION CLEANOUT (FLOOR OR SLAB) TWO-WAY CLEANOUT (FLOOR OR SLAB) LINE CLEANOUT PIPE SLOPE DIRECTION OF FLOW (PUMPED MEDIUM) PIPE ANCHOR PIPE EXPANSION FITTING PIPE GUIDE FLEXIBLE PIPE CONNECTION GAUGE COCK PRESSURE GAUGE WITH GAUGE COCK THERMOMETER THERMOMETER WELL METER GAS PRESSURE REGULATOR</p>	<ol style="list-style-type: none"> DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO ONE ANOTHER. EACH DOCUMENT IS NOT COMPLETE WITHOUT THE OTHER. THE DRAWINGS CONTAINED HEREIN ARE DIAGRAMMATIC IN NATURE AND CONVEY GENERAL INTENT. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS AND DEVELOPED DETAILED PIPING INSTALLATION SHOP DRAWINGS, FOR DESIGN TEAM REVIEW AND APPROVAL, WHICH DELINEATE COORDINATION WITH ALL TRADES AND BUILDING ELEMENTS. OBTAIN APPROVALS PRIOR TO ACTUAL CONSTRUCTION. INFORMATION ABOUT EXISTING FACILITIES AND SYSTEMS DELINEATED HEREIN IS BASED ON RECORD DRAWINGS FURNISHED TO THE DESIGN TEAM AND IS INCLUDED FOR INFORMATION ONLY. FIELD VERIFY LOCATIONS AND CONFIGURATIONS OF EXISTING SYSTEMS AND CONDITIONS PRIOR TO START OF ANY WORK. NOTIFY DESIGN TEAM IMMEDIATELY OF ANY DIFFERING CONDITIONS DISCOVERED. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR CONSTRUCTION. PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES, OR REGULATIONS OF FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED. ALL APPLICABLE STANDARDS REFERENCED IN THE INTERNATIONAL PLUMBING CODE (IPC), 2018 EDITION, ARE HEREBY INCORPORATED INTO THE REQUIREMENTS FOR FABRICATION, CONSTRUCTION AND INSTALLATION OF THE WORK. REFER IN THE 2018 IPC TO CHAPTER 1, "SCOPE AND ADMINISTRATION" AND TO CHAPTER 14, "REFERENCED STANDARDS". DO NOT SCALE OR MAKE PHYSICAL MEASUREMENTS FROM THESE DRAWINGS FOR CONSTRUCTION PURPOSES. VERIFY EXACT LOCATIONS OF ALL PIPING PENETRATIONS THROUGH SLABS AND WALLS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS AND ACTUAL JOBSITE CONDITIONS. COORDINATE ALL SLAB PENETRATIONS AND SLEEVES PRIOR TO EACH CONCRETE POUR. COORDINATE WORK WITH ARCHITECTURAL FEATURES AND OTHER WORK SUCH THAT INTERFERENCES BETWEEN PIPING AND PLUMBING WORK, MECHANICAL WORK, ELECTRICAL WORK AND BUILDING STRUCTURE WILL BE AVOIDED. INSTALL PIPING TO PROVIDE MAXIMUM CLEAR HEIGHT UNDERNEATH. IN ABOVE CEILING SPACES, MAINTAIN 12" MINIMUM CLEARANCE BELOW PIPING TO ALLOW FOR LIGHT FIXTURES. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ANY FRAMING REQUIRED AROUND PIPES PENETRATING ROOFS, WALLS AND FLOORS. REFER TO ARCHITECTURAL DRAWINGS AND ELEVATIONS, WHERE AVAILABLE, FOR THE LOCATION OF ALL WALL MOUNTED DEVICES. COORDINATE LOCATIONS OF TRENCH DRAINS, AREA DRAINS, FLOOR DRAINS AND ROOF DRAINS WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO INSTALLATION TO ENSURE PROPER AND UNIFORM SLOPE OF FINISHED SURFACES TOWARDS DRAIN. INSTALL ALL DRAINS AND GRATES. ACCESS COVERS AND MANHOLES. FLUSH WITH FINISHED SLAB LEVELS AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS. PROVIDE FINISHED INSTALLATIONS TRUE TO FINISHED SLAB ELEVATIONS AND EXHIBITING NO RISES, BUMPS, HUMPS, CROWNS, DIPS, VALLEYS, DROPS, OR STEPS. PROVIDE ALL NECESSARY MEASURES TO PROTECT DRAINAGE SYSTEM(S) AND COMPONENTS FROM DAMAGE DUE TO CONSTRUCTION ACTIVITIES. PREVENT FROM ENTERING DRAINS AND DRAINAGE SYSTEMS (EXISTING AND NEW) ALL MATERIALS WHICH UNDER NORMAL DRAIN SYSTEM USE WOULD BE CONSIDERED FOREIGN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: EXCESS CONCRETE AND CEMENT INCLUDING THAT FROM OVERPOWERING OR SPILLAGE; SOILS AND AGGREGATES; WASTED CONSTRUCTION RUN-OFF; DEBRIS AND MATERIALS IN GENERAL. REFER ALSO TO THE SPECIFICATIONS. PROVIDE COVERS AND CAPS TO SEAL OFF DRAIN BODIES AND RECEIVERS DURING CONSTRUCTION ACTIVITIES AND PREVENT RUN-OFF FROM ENTERING DRAINAGE SYSTEM OR DRAIN BODY INTERIORS. PROVIDE ALL AREA DRAINS AND FLOOR DRAINS WITH HEEL-PROOF GRATES. REPLACE WITH NEW, ALL GRATES WITH BROKEN, BENT OR DAMAGED TINES. PROVIDE ALL SANITARY FLOOR DRAINS AND FLOOR SINKS WITH IN-LINE TRAP SEAL PROTECTION DEVICES. BASIS OF DESIGN: SURE SEAL MANUFACTURING. DO NOT PENETRATE STRUCTURAL ELEMENTS (BEAMS, GRADE BEAMS, PRETENSION SLABS, ETC.) WITHOUT PRIOR CONSENT OF STRUCTURAL ENGINEER. MAINTAIN A MINIMUM OF 24" COVER ABOVE ALL PIPING INDICATED TO BE ROUTED BELOW GRADE AND OUTSIDE OF BUILDING FOOTPRINT. PROVIDE CONDENSATE DRAINAGE FOR HVAC EQUIPMENT AND DISCHARGE INTO NEAREST APPROVED FLOOR SINK OR MOP SINK. ROUTE ALL PIPING IN ABOVE CEILING LEVEL SPACE, EXCEPT WHERE OTHERWISE INDICATED. COORDINATE ROUTING WITH OTHER TRADES. SLOPED PIPING ELEVATIONS TAKE PRIORITY OVER ALL OTHER SYSTEMS AND TRADES. <p>MISCELLANEOUS</p> <p>SD 1 RISER DESIGNATION DENOTES SYSTEM TYPE DW: DOMESTIC WATER SAN: SANITARY SD: STORM F: FIRE DENOTES RISER NUMBER CORRELATION</p> <p>1 NOTE BY SYMBOL REFERENCE POINT OF CONNECTION, NEW PIPING TO EXISTING PIPING</p> <p>DRAIN BODY FLOOR OR SLAB CLEANOUT HOSE BIBB / WALL HYDRANT HB: HOSE BIBB WH: WALL HYDRANT (MILD CLIMATE) NFWH: NON-FREEZE WALL HYDRANT COMPRESSED AIR OUTLET</p>



01 FLOOR PLAN - RTU PLUMBING
SCALE: 1/4" = 1'-0"

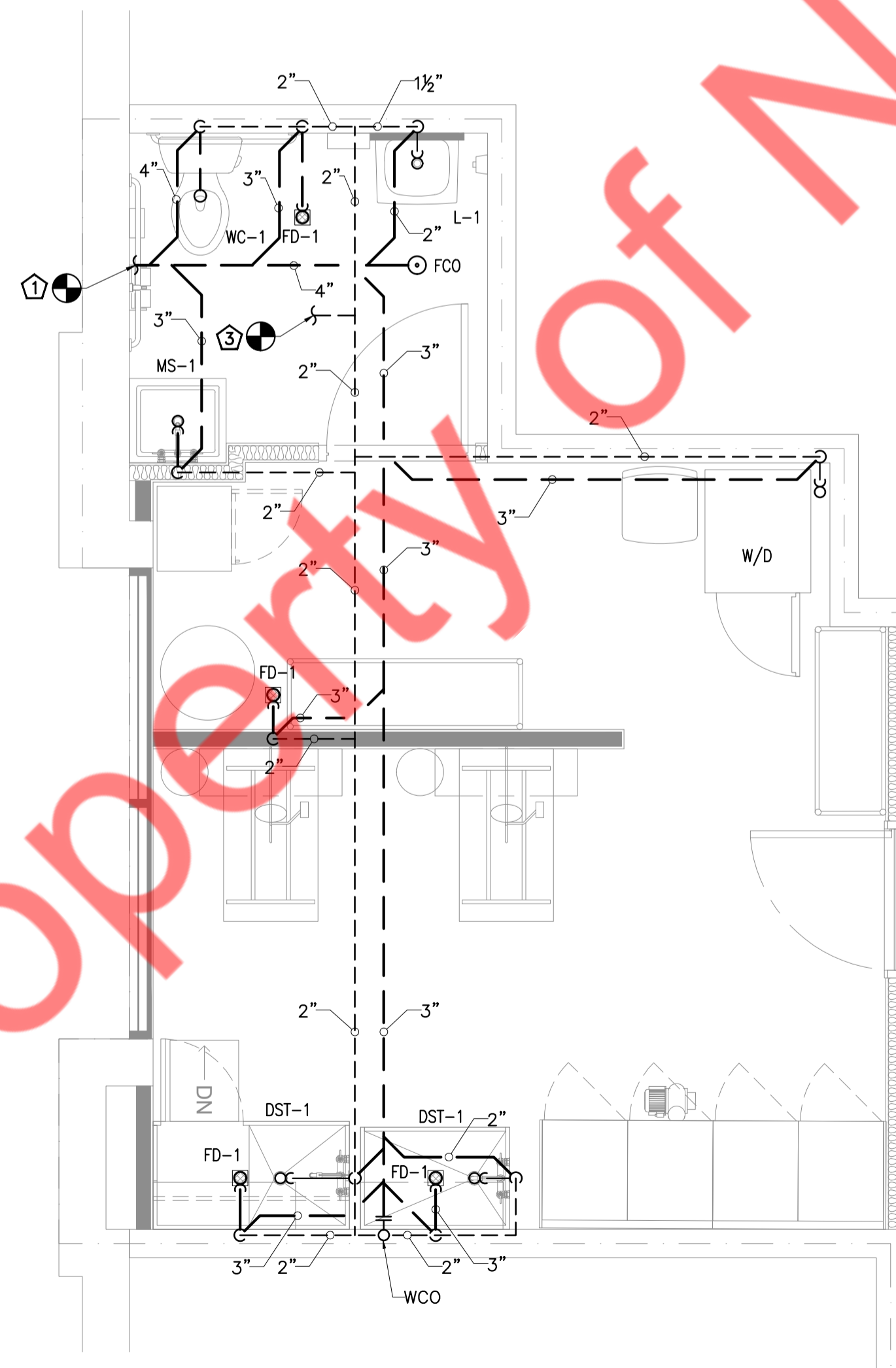
PLUMBING KEYNOTES

- ① CONNECT NEW 4" SANITARY LINE TO EXISTING SANITARY LINE IN SPACE. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY SIZE, ROUTING AND INVERT ON SITE.
- ② EXTEND AND CONNECT NEW 1" CW PIPING TO EXISTING CW LINE IN SPACE. CONTRACTOR CONFIRM WATER METER, BACKFLOW PREVENTOR REQUIREMENT WITH LANDLORD. CONTRACTOR TO FIELD VERIFY EXACT SIZE, ROUTING AND LOCATION OF EXISTING CW LINE IN SPACE PRIOR TO BID.
- ③ CONNECT NEW 3" VENT TO EXISTING VENT LINE IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT IN SPACE.
- ④ 1/2" TRAP PRIMER PIPING TO IP. 1/2" TRAP PRIMER PIPING DN. IP BEHIND RECESSED ACCESS PANEL.
- ⑤ EXISTING RTU TO REMAIN WITH EXISTING GAS PIPING. CONTRACTOR TO FIELD VERIFY THE GAS PIPING FOR RTU-1(E) AND ENSURE GAS PIPING IN A GOOD WORKING CONDITION, REPAIR AND REPLACE IF REQUIRED.
- ⑥ PROVIDE HOT WATER MIXING VALVE (TMV-1). SET MAX. OUTLET TEMP. AT 110°F

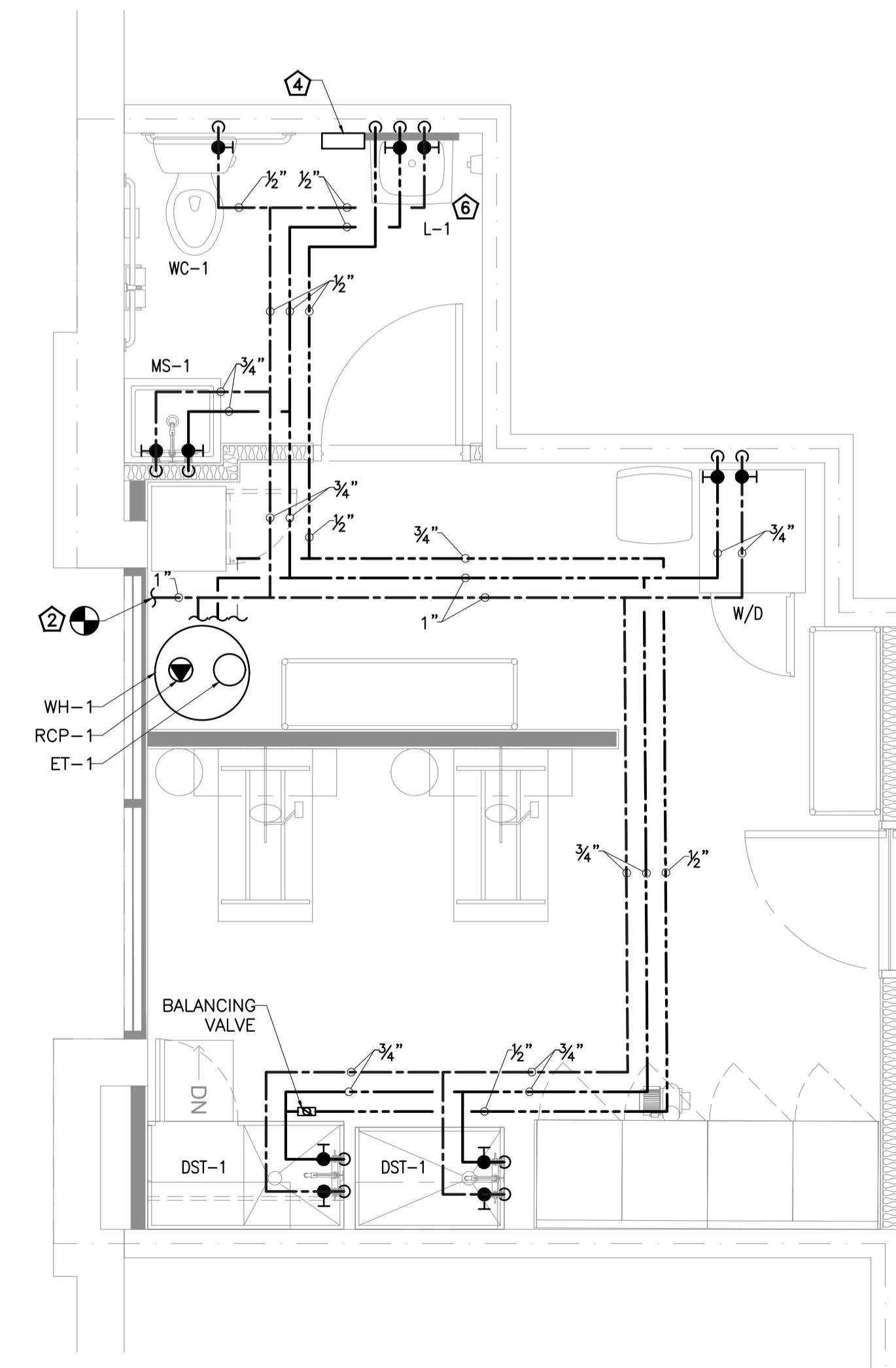
DRAWING NOTES

- 1. ALL SANITARY DRAINAGE (SS) PIPING IS LOCATED BELOW SLAB, UNLESS OTHERWISE NOTED.
- 3. ROUTE ALL PIPING INTENDED FOR ABOVE CEILING LEVEL INSTALLATION AS HIGH AS POSSIBLE. COORDINATE ROUTING WITH OTHER TRADES. SLOPED PIPING ELEVATIONS TAKE PRIORITY OVER ALL OTHER SYSTEMS AND TRADES.
- 4. PROVIDE SLEEVED AND WATERTIGHT PENETRATIONS AT ALL PIPE PENETRATIONS THROUGH SLAB.
- 5. PROVIDE WATERTIGHT INSTALLATIONS OF ALL FLOOR EMBEDDED DEVICES INCLUDING BUT NOT LIMITED TO: FLOOR DRAINS, FLOOR SINKS, SHOWER DRAINS, HUB DRAINS, FLOOR RECESSED CLEANOUTS AND, FLUSH TO FLOOR ACCESS HOUSINGS.
- 6. COORDINATE WITH ARCHITECT TO MAINTAIN THE WATERTIGHT INTEGRITY OF THE BUILDING ENVELOPE AND FLOOR SLABS.
- 7. PROVIDE BALL VALVE FOR ISOLATION OF ALL DOMESTIC WATER BRANCH LINES. TYPICAL UNLESS OTHERWISE NOTED.
- 8. CONTRACTOR TO FIELD VERIFY AND SPILL WATER HEATER INDIRECT WASTE TO NEAREST FLOOR DRAIN.

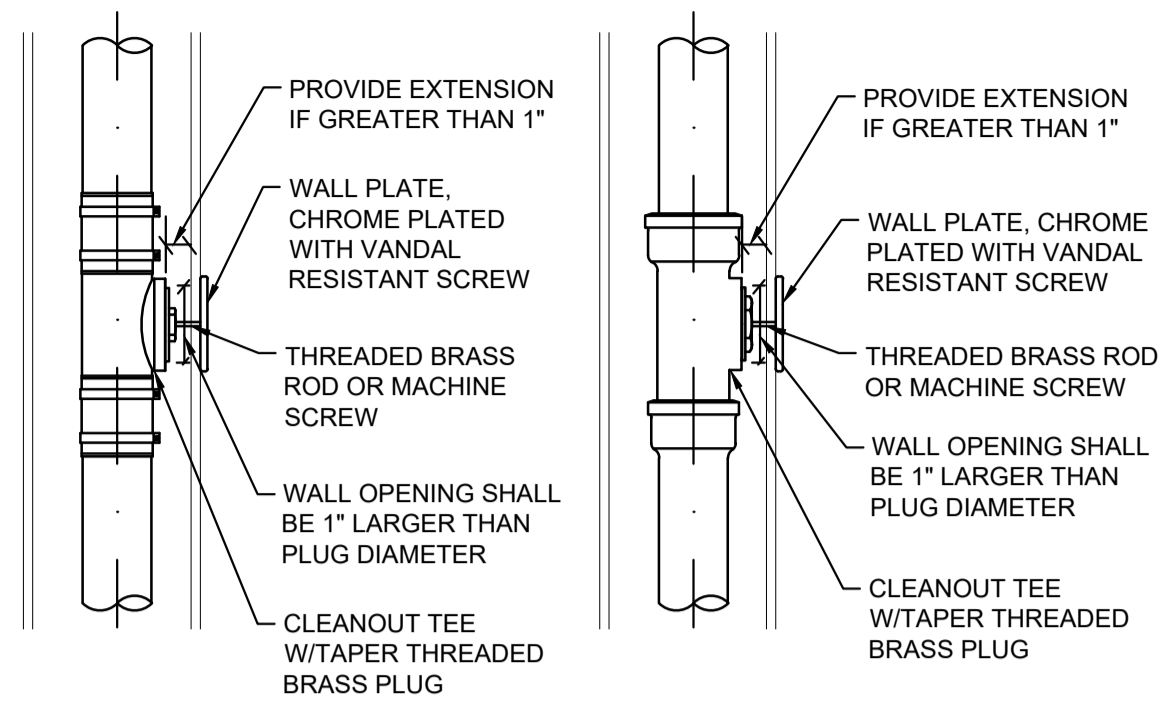
NOTE:
REFER TO P4.01 FOR PLUMBING EQUIPMENT SCHEDULES



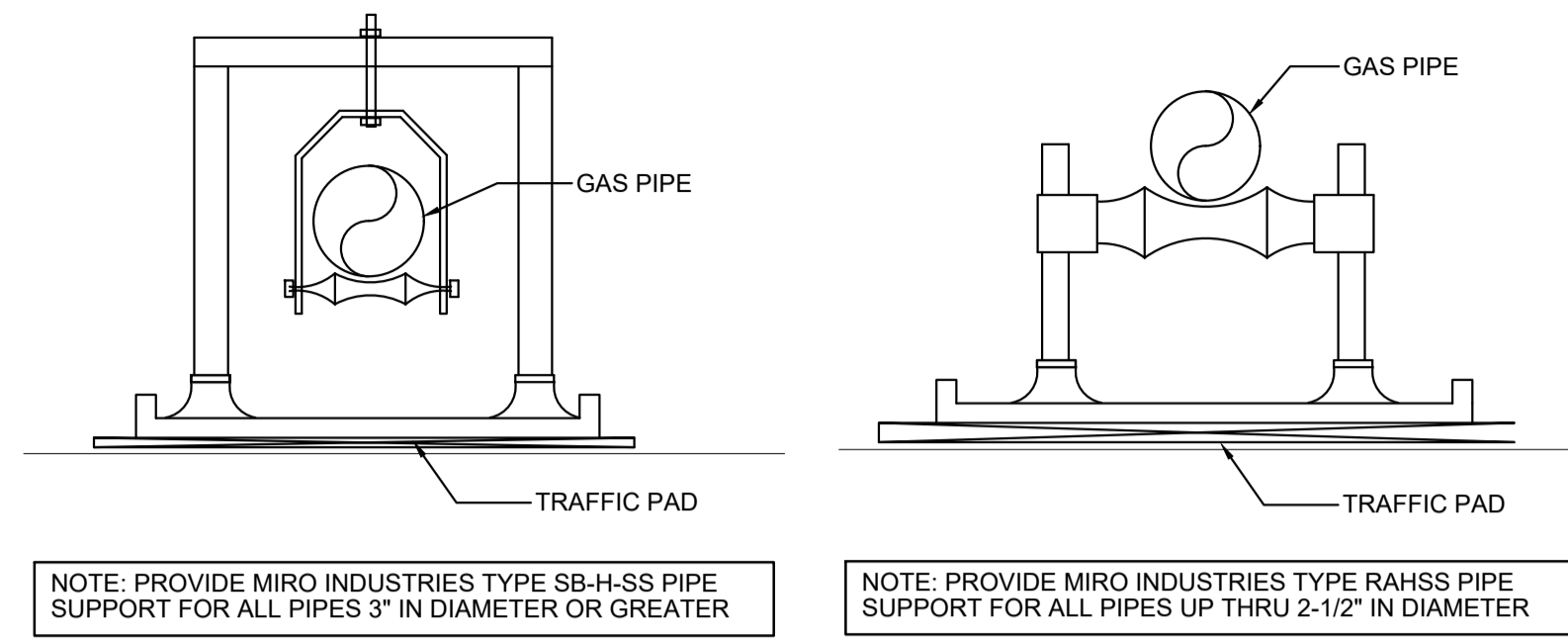
02 ENLARGED FLOOR PLAN - PLUMBING SANITARY AND VENT
SCALE: 3/8" = 1'-0"



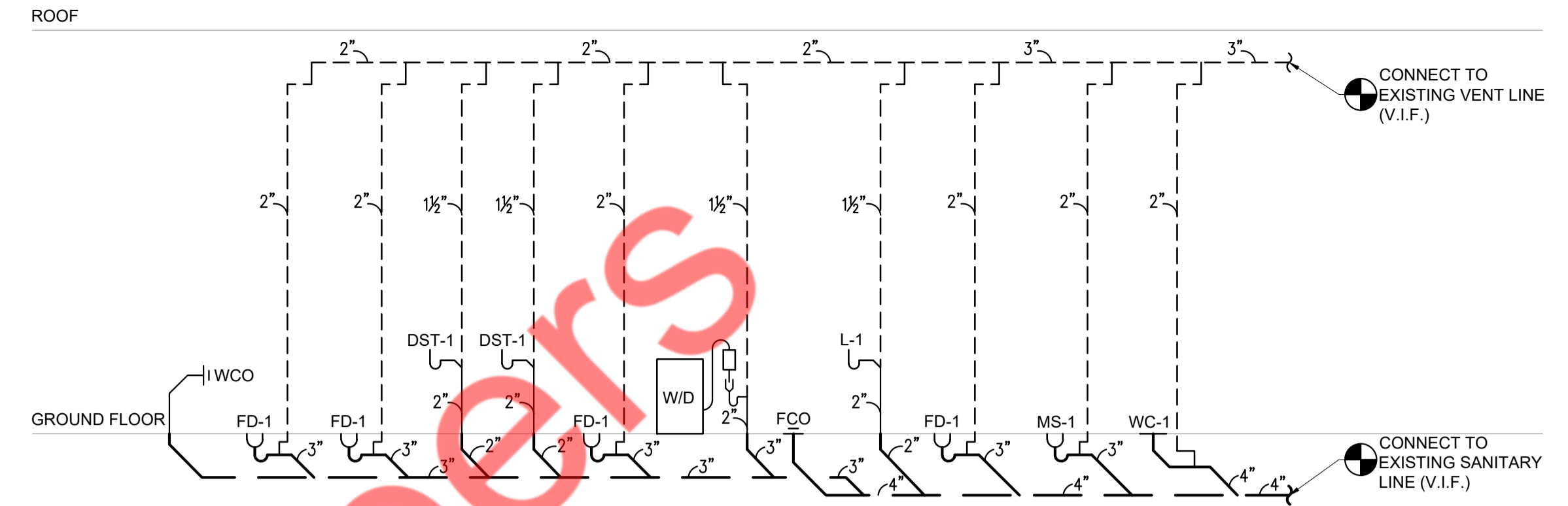
03 ENLARGED FLOOR PLAN - PLUMBING WATER SUPPLY
SCALE: 3/8" = 1'-0"



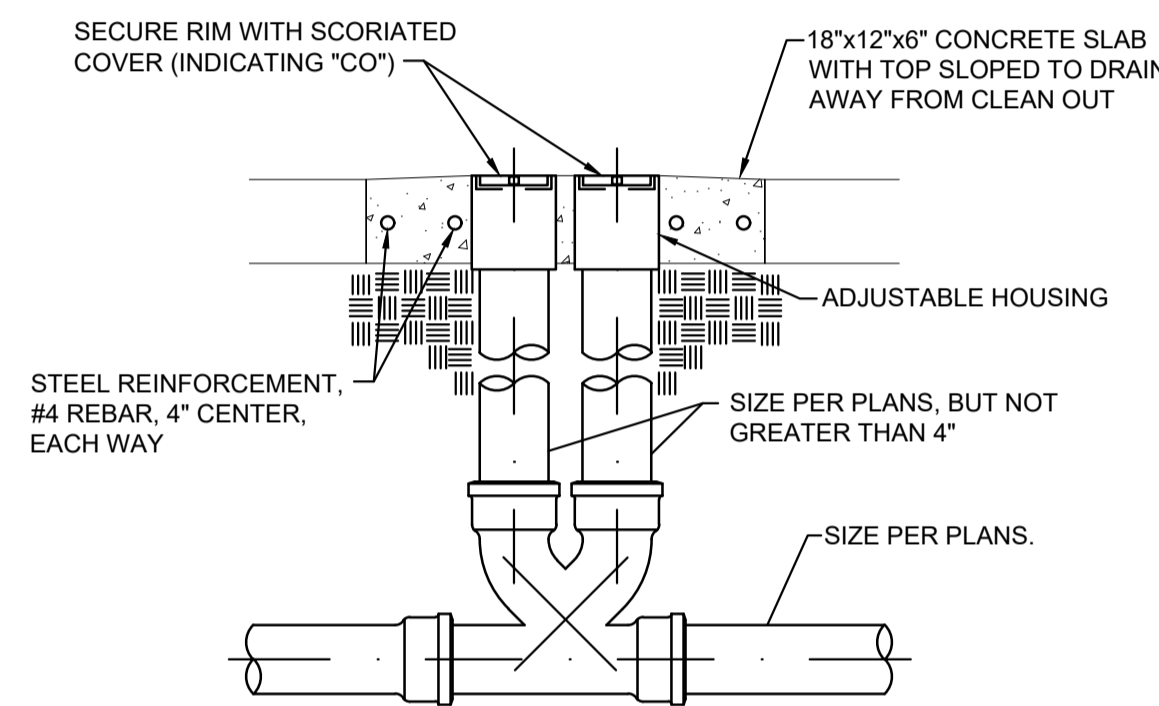
04 WALL CLEANOUT DETAIL
SCALE: NONE



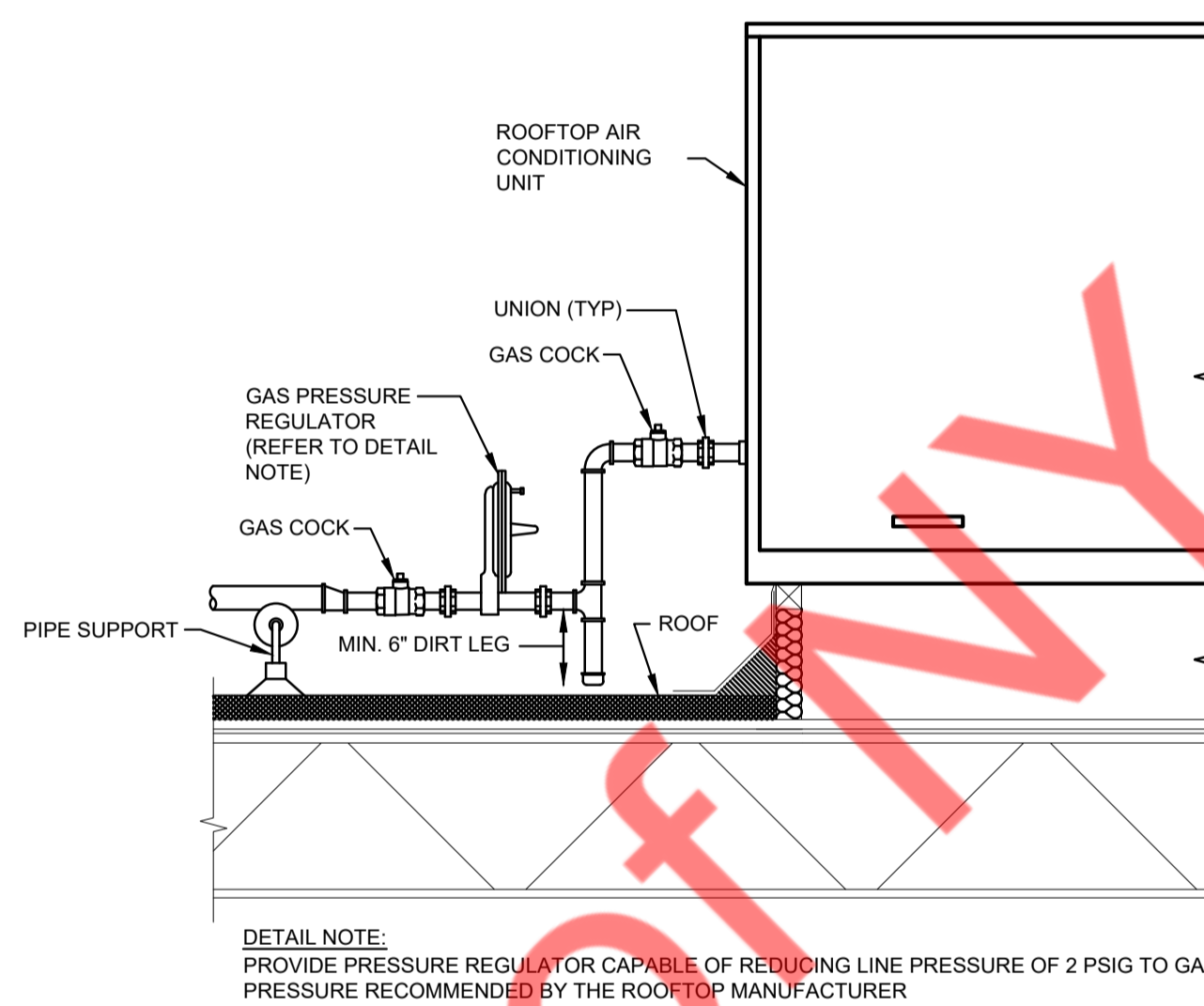
07 RTU - GAS CONNECTION DETAIL
SCALE: NONE



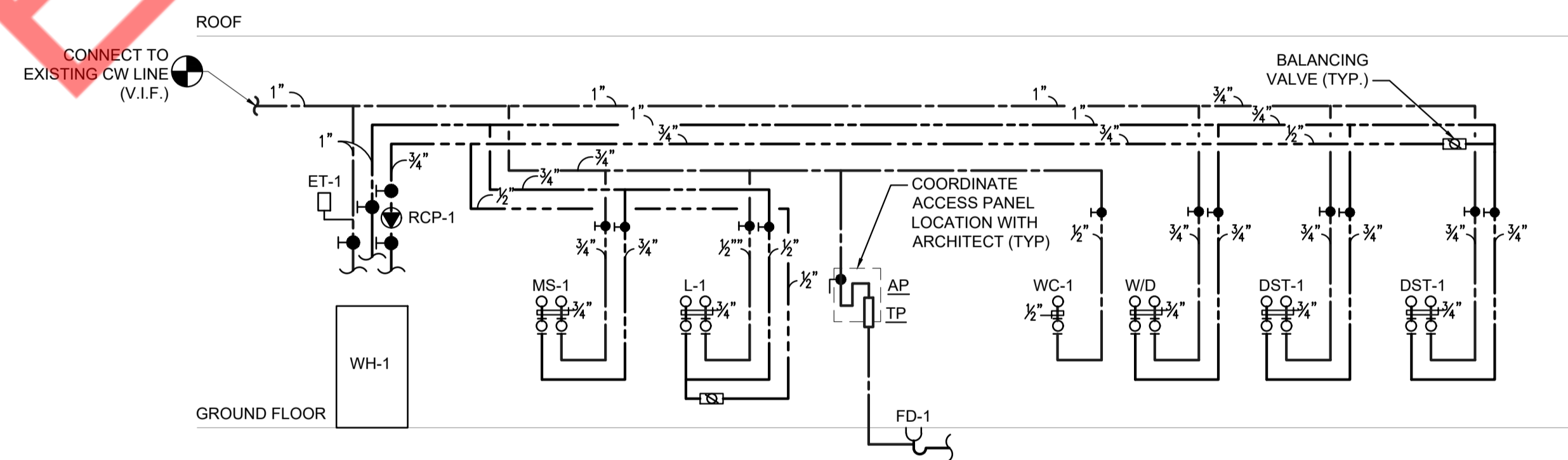
10 PLUMBING SANITARY RISER DIAGRAM
SCALE: NONE



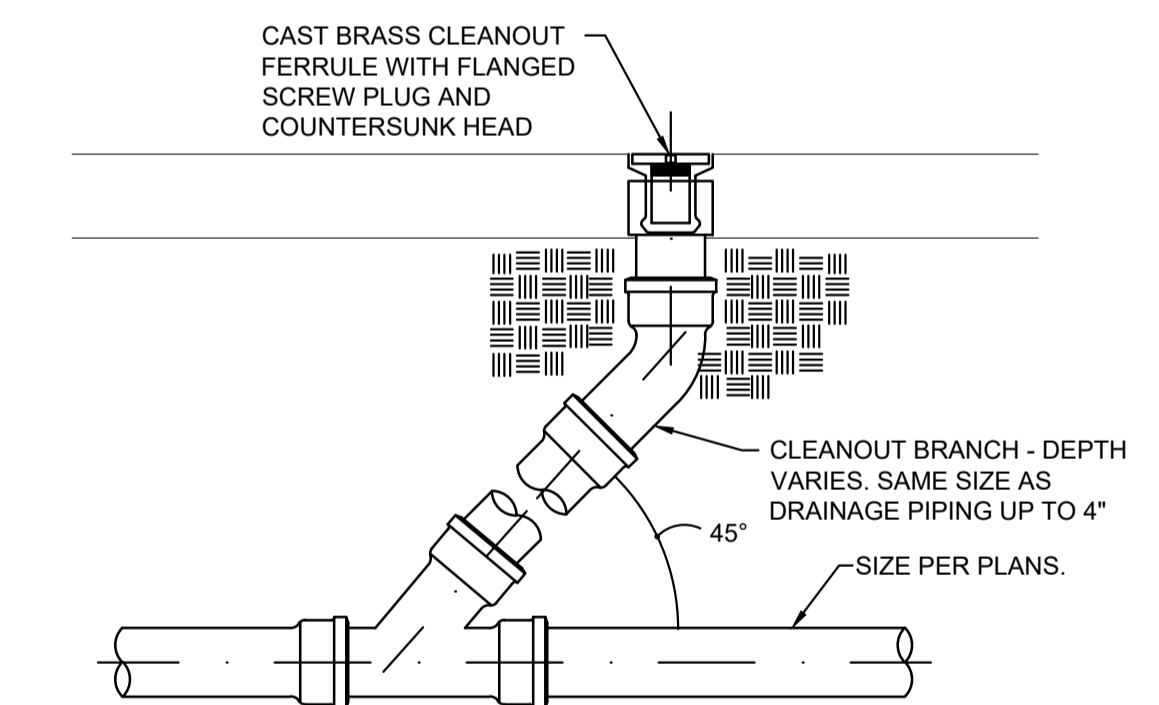
03 TWO-WAY GRADE CLEANOUT DETAIL
SCALE: NONE



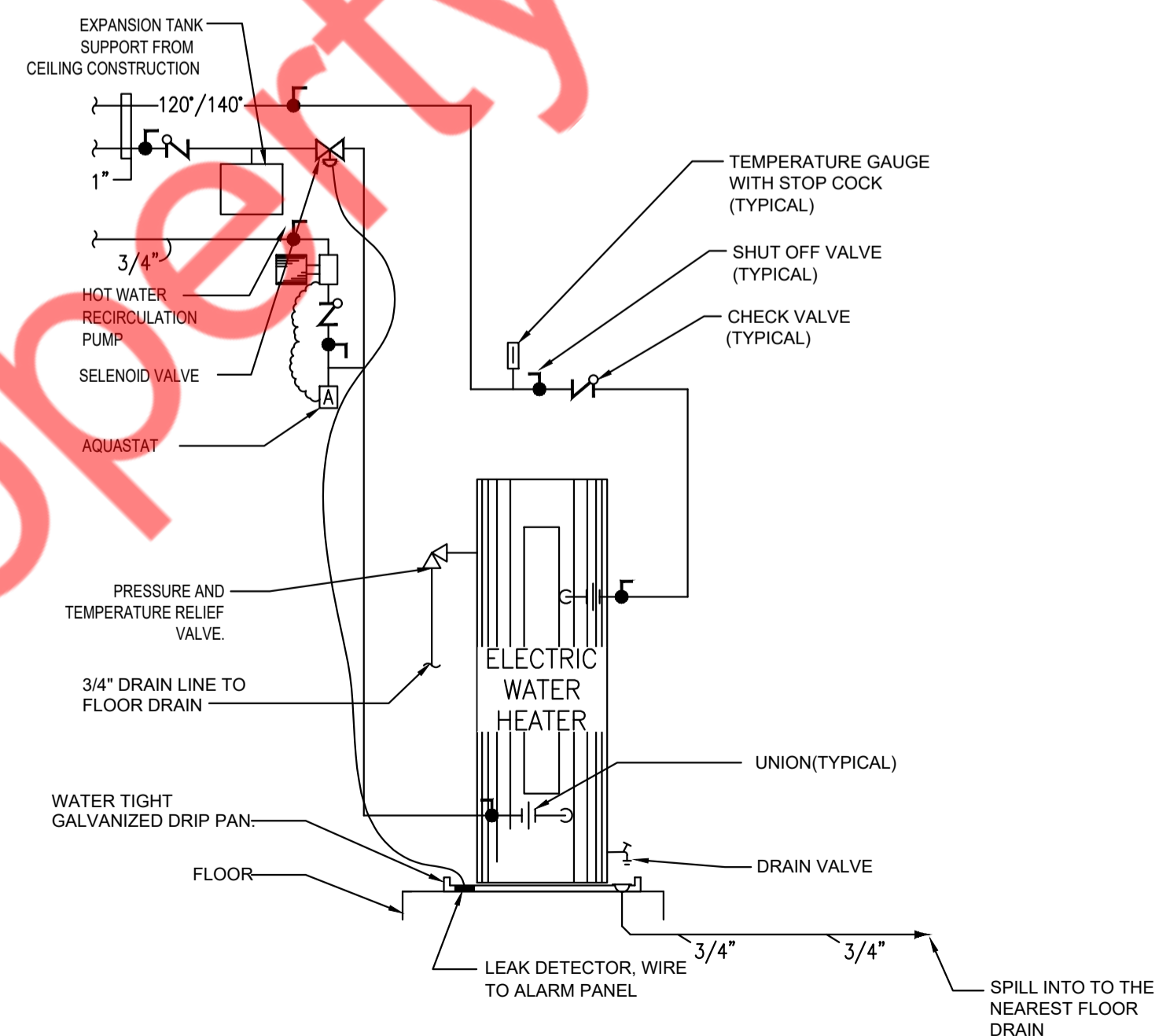
06 RTU - GAS CONNECTION DETAIL
SCALE: NONE



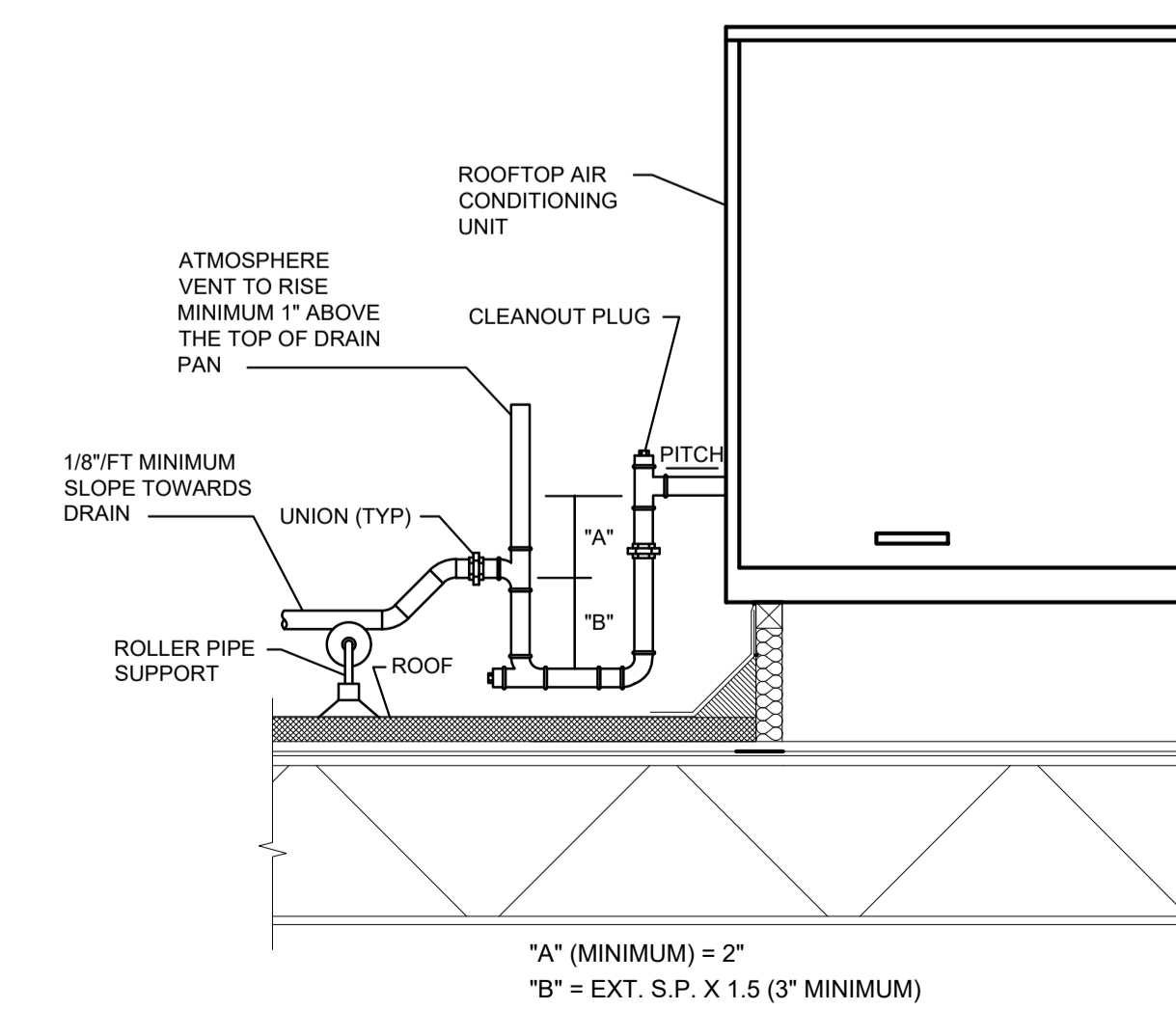
09 PLUMBING WATER RISER DIAGRAM
SCALE: NONE



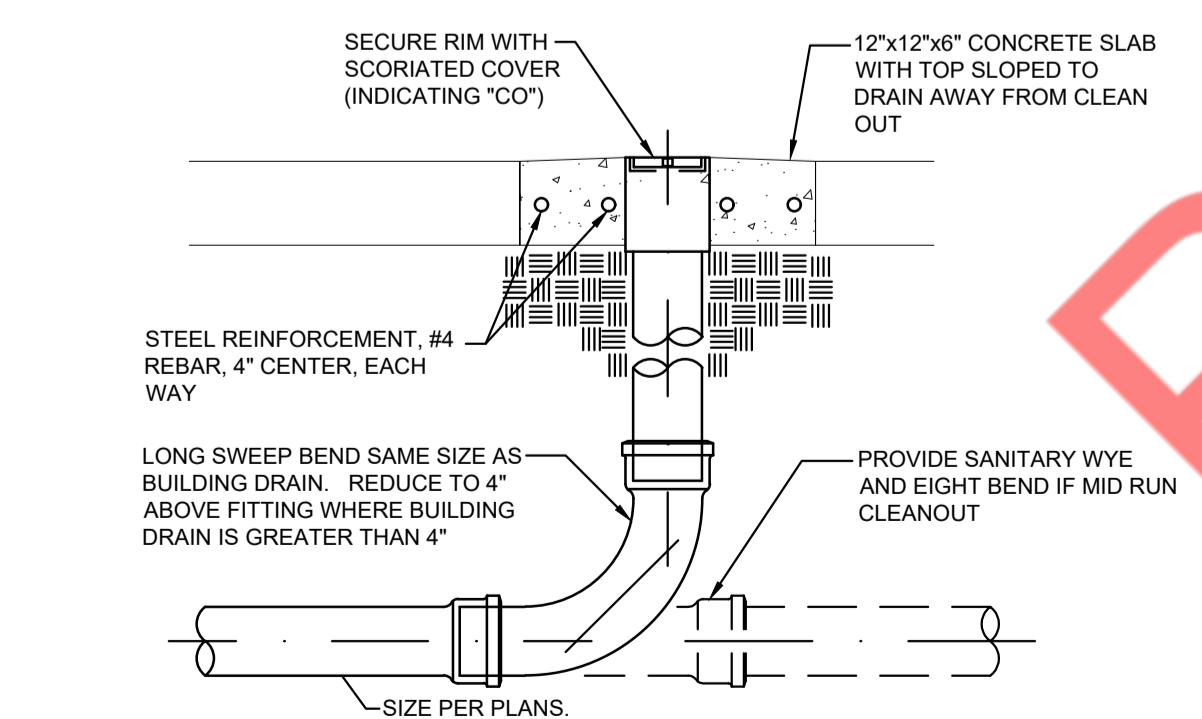
02 FLOOR CLEANOUT DETAIL
SCALE: NONE



05 WATER HEATER DETAIL
SCALE: NONE



08 RTU - CONDENSATE DRAINAGE DETAIL
SCALE: NONE



01 GRADE CLEANOUT DETAIL
SCALE: NONE

WATER HEATER SCHEDULE (OPTIONAL)							
MARK	AREA SERVED	MANUFACTURE	INPUT	ELECTRICAL	STORAGE	RECOVERY	
WH-1	RESTROOM/ DOG TUBS	A.O.SMITH	9 KW	208/1/60	50 GAL.	41 GPH @ 90°F RISE	BASIS OF DESIGN: MODEL A.O.SMITH DEL-50-9 UP TO 98% THERMAL EFFICIENCY.

* MAINTAIN PROPER CLEARANCE AROUND UNIT TO COMPLY WITH APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS FOR SERVICE ACCESS.

CIRCULATION PUMP SCHEDULE											
MARK	LOCATION	SERVES	TYPE	GPM (EACH)	TDH (FT)	HP (EACH)	RPM	VOLTS/PHASE	CYCLE	MANUFACTURER/ MODEL NUMBER	REMARKS
RCP-1	NEAR WATER HEATER	DOMESTIC HOT WATER	IN-LINE	1	10	1/12	2800	120/1	60	ARMSTRONG H20-20 SS	BRONZE CASING, STAINLESS STEEL IMPELLER, AQUASTAT CONTROLLED, FLANGED CONNECTIONS, RATED FOR HOT WATER SERVICE

PLUMBING ACCESSORIES SCHEDULE			
DESIGNATION	FIXTURE	MANUFACTURER & MODEL NO.	DESCRIPTION, TRIM & NOTES
WCO	WALL CLEANOUT	JOSAM SERIES 58600-COT	COATED CAST IRON CLEANOUT TEE WITH RECESSED, TAPPED PLUG AND POLISHED STAINLESS STEEL.
FCO	FLOOR CLEANOUT	JOSAM SERIES 57000-Z-SQ	CAST IRON BODY WITH POLISHED BRASS COVER
TMV-L	THERMOSTATIC MIXING VALVE (LAVATORIES)	LEONARD MODEL 270-USW-BRKT-BV	ASSE 1070 CERTIFIED, CAPABLE OF 0.5 GPM MINIMUM FLOW, COMPLETE WITH UNIONS, MOUNTING BRACKET AND BALL VALVES ON INLETS. SET FOR 105 DEG. F. OUTLET TEMP.

PLUMBING FIXTURE CONNECTION SCHEDULE					
TYPE OF FIXTURE	WASTE	VENT	CW	HW	
WATER CLOSET (TANK TYPE)	4"	2"	1/2"	-	
LAVATORY	2"	2"	1/2"	1/2"	
MOP SINK	3"	2"	3/4"	3/4"	

PLUMBING FIXTURE SCHEDULE		
MARK	FIXTURE	REMARKS
WC-1 (ADA)	AMERICAN STANDARD CADET PRO RIGHT HEIGHT ROUND FRONT TOILET MODEL 215BA.104, VITREOUS CHINA, HIGH EFFICIENCY TOILET, ULTRA-LOW CONSUMPTION (1.28GPM), POWERWASH RIM SCRUBS BOWL WITH EACH FLUSH, 16 1/2" RIM HEIGHT FOR ACCESSIBLE APPLICATIONS, CHROME FINISH TRIP LEVER IS SUPPLIED.	(OR EQUAL AS APPROVED BY OWNER)
L-1	KOHLER CHESAPEAKE K-1728 19 1/4"x17 1/4" WALL MOUNTED WHITE VITREOUS CHINA, FAUCET - KOHLER CORALAI MODEL K-15241-4DRA, 1.2GPM MAXIMUM FLOW RATE, MCGUIRE 2165 SUPPLIES AND STOPS, MCGUIRE 8872 TRAP TRUEBRO LAV GUARD2 TRAP/RISE INSULATION KIT THERMOSTATIC MIXING VALVE - WATTS LFUSG-M2.	(OR EQUAL AS APPROVED BY OWNER)
MS-1	EAGLE GROUP MODEL F2820-12, OVERALL SIZE 25 1/2" x 32 5/8" x 19 1/2", 4-POLE MOP HOLDER, 24" x 4", PROJECTS OUT 1", MODEL 321561, HOSE AND BRACKET, 30", MODEL 312689, SERVICE FAUCET, 8" CENTER, 1/2" NPT FEMALE INLETS, MODEL 312690.	(OR EQUAL AS APPROVED BY OWNER)
FD-1	JOSAM 30000-A-4-50 CAST IRON DRAIN WITH SATIN NIKALOY STRAINER, CAST IRON FLASHING COLLAR AND TRAP PRIMER CONNECTION.	(OR EQUAL AS APPROVED BY OWNER)
HT-1	JOSAM 61000 SERIES NIKALOY SOLIDS INTERCEPTOR, BOTTOM ACCESS FIXTURE TRAP TYPE, SLIP JOINT INLET AND THREADED OUTLET CONNECTIONS, GASKETED COVER AND REMOVABLE PERFORATED STAINLESS STEEL BASKET.	(OR EQUAL AS APPROVED BY AHJ)
TP	PRECISION PLUMBING PRODUCTS PR-500 THE PR-500 AUTOMATIC PRESSURE DROP ACTIVATED TRAP PRIMER VALVE. SYSTEM OPERATING RANGE IS 20 PSI MINIMUM TO 80 PSI MAXIMUM. THE VALVE REQUIRES A 3 PSI PRESSURE DROP ACROSS THE VALVE TO ACTIVATE AND WILL DELIVER A METERED AMOUNT OF WATER TO THE FLOOR DRAIN. TRAP PRIMER IS TO BE CONNECTED TO A COLD WATER SUPPLY ONLY CONSTRUCTED OF 693 BRASS, EPDM E70 O-RINGS, DOW #7 SILICONE, #60 STAINLESS STEEL MESH SCREEN SURFACE WALL MOUNTED STEEL CABINET.	(OR EQUAL AS APPROVED BY OWNER)
DST-1	FLYING PIG GROOMING: 50" PROFESSIONAL STAINLESS STEEL PET GROOMING BATH TUB WITH RAMP. PRODUCT CODE: <i>FP701</i> W/ DELUXE COMPLETE FAUCET PACKAGE. PRODUCT CODE: <i>FPKIT02</i>	(OR EQUAL AS APPROVED BY OWNER)
DST-2	FLYING PIG GROOMING: 38" PROFESSIONAL STAINLESS STEEL PET GROOMING BATH TUB WITH RAMP. PRODUCT CODE: <i>FP301</i> W/ DELUXE COMPLETE FAUCET PACKAGE. PRODUCT CODE: <i>FPKIT02</i>	(OR EQUAL AS APPROVED BY OWNER)
WB-1	WASHING MACHINE DRAIN BOX, 16 GAUGE STEEL BOX WITH EPOXY FINISH, MALE IRON PIPE WATER SUPPLY CONNECTIONS AND DRAIN FITTING. PROVIDE SIOUX CHIEF LAUNDRY MINI WATER HAMMER ARRESTOR NO. 660-H AT BOTH HOT AND COLD WATER HOSE THREADS. GUY GRAY B-200.	(OR EQUAL AS APPROVED BY OWNER)
NOTES: 1. VERIFY MOUNTING LOCATIONS AND HEIGHTS. 2. ALL P-TRAPS SHALL HAVE CLEAN-OUT PLUGS 3. ALL PLUMBING FIXTURES MUST CONFORM TO CURRENT WATER CONSERVATION REGULATIONS. 4. FLOOR SINK TRAP AND DISCHARGED PIPING SHALL BE CAST IRON APPROX. 2'-0" FROM BASE OF FLOOR SINK. THEN CONTRACTOR TO TRANSITION TO PVC MATERIAL. 5. ALL SINKS AND LAVATORIES THAT ARE ACCESSIBLE TO THE PUBLIC SHALL BE "TO PROVIDE TEMPERED WATER, THROUGH A POINT-OF -USE DEVICE THAT IS ASSE 1070/ASME A112.1070/CSA B125.70. COMPLIANT, (REF. SECTION 412.7 IN IPC 2018		

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