

GENERAL NOTES

- GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
- THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, STANDARDS, ORDINANCES, RULES AND REGULATIONS OF ALL FEDERAL AND STATE GOVERNMENTAL AUTHORITIES, THE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), THE NATIONAL ELECTRIC CODE (NEC) AND ASHRAE AS INTERPRETED BY THE GOVERNMENTAL AUTHORITY AND PUBLIC UTILITIES HAVING JURISDICTION OVER ANY OF THE SYSTEMS HEREINAFTER SPECIFIED.
- DRAWINGS ARE NOT TO BE CONSTRUED AS PRECISELY DEFINING LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK (IF ANY) THAT INTERFERES WITH WORK OF THIS CONTRACT AS APPROPRIATE.
- ALL PERMIT AND INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- IN CASE OF A CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MOST STRINGENT SHALL APPLY AS DETERMINED BY THE DESIGN ENGINEER.
- DEFINITIONS:**
 - a. "PROVIDE": FURNISH AND INSTALL
 - b. "PROVIDE": SUPPLY & DELIVER TO THE PROJECT SITE
 - c. "INSTALL": ERECT IN PLACE
 - d. "CONCEALED": HIDDEN BY ARCHITECTURAL WALLS AND CEILINGS
 - e. "EXPOSED": VISIBLE TO VIEW
 - f. "INDICATED": SHOWN IN THE CONTRACT DOCUMENTS
- THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE BEST ENGINEERING PRACTICE. UNLESS OTHERWISE SHOWN SPECIFIED, FOLLOW THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND PROVIDED REQUIRE AUXILIARY ITEMS.
- ALL EQUIPMENT PROVIDED SHALL BE EQUAL TO OR BETTER THAN THE EQUIPMENT INDICATED (WHEN NOT INDICATED OTHERWISE) AND THE CURRENT MODEL FOR WHICH REPLACEMENT PARTS ARE AVAILABLE. SUBSTITUTIONS SHALL ONLY BE ACCOMPLISHED AT THE DISCRETION OF THE DESIGN ENGINEER.
- SHOP DRAWINGS ARE TO BE SUBMITTED AND APPROVED BEFORE THE EQUIPMENT IS INSTALLED. SUBMIT SIX (6) COPIES OF SHOP DRAWINGS TO THE ARCHITECT OR THE FOLLOWING AS APPLICABLE: A. GAS FURNACE B. WATER HEATER C. WALL HEATER D. FAN E. PLUMBING FIXTURES OR ANY OTHER EQUIPMENT SHOP DRAWINGS AS REQUESTED BY THE ARCHITECT.
- COORDINATE ALL WORK WITH OTHER TRADES.
- DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL, EXCEPT IN WAY OF STRUCTURAL STEEL. DIMENSIONS ARE MEASURED PERPENDICULAR TO PLANE OF DRAWING.
- NET AREA ACCURATE AT COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERT CAUTION AND DEMONSTRATE CARE OF UNMARKED LINES AS NECESSARY TO ENSURE WORK OF THIS SECTION.
- MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
- PRODUCTS PROVIDED SHALL BE SUBJECT TO THE MANUFACTURERS' RECOMMENDATIONS.
- PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
- STRUCTURE SHALL NOT BE CUT OR PENETRATED TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
- COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING ROOFING.
- RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
- INSTALL THERMALS 4"-6" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY THE ARCHITECT.
- STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.
- THE ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL HE BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF DUCTWORK, PIPING AND CONDUIT. REPAIR ALL WALLS, CEILINGS AND FLOORS, PENETRATED. THE REPAIRS SHALL BE WITH MATERIALS AND FINISHES THAT COMPLY WITH LOCAL CODES. REPAIRS TO EXISTING PIPING, DUCTS AND FLOOR JOISTS SHALL BE SEALED WITH SUITABLE MATERIALS TO PRESERVE FIREWALL INTEGRITY. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL. ALL PENETRATIONS THROUGH THE ROOF SHALL BE BY THE GENERAL CONTRACTORS. THE CONTRACTOR SHALL NOT PENETRATE THE ROOF, EXCEPT FOR STRUCTURAL INTEGRITY OF THE BUILDING FOR OPENINGS MADE THROUGHOUT THE BUILDING SYSTEM FOR THE INSTALLATION OF MECHANICAL SYSTEM.
- THE CONTRACTOR SHALL TEST ALL EQUIPMENT PROVIDED UNDER THE CONTRACT AND DEMONSTRATE TO THE OWNER ITS PROPER OPERATION.

AIR SYSTEMS

- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES (IF PROVIDED).
- INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE IF NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
- USE TRANSVERSE SECTION FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
- DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
- PROVIDE DIFFUSER NECKS AT DUCT CONNECTIONS AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
- PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
- INSTALL AUTO GRAVITY DAMPERS IN ALL AIR INTAKES AND EXHAUST VENTS.

MECHANICAL KEYNOTES: (1, 2, 3, 4)

- COORDINATE 4" EXHAUST DUCT ROUTED IN WALL CAVITY CONTINUOUSLY TO ROOF WITH PLUMBING CONTRACTOR.
- 4" EXHAUST DUCT UP THROUGH ROOF, TERMINATE WITH WEATHER CAP 24" ABOVE ROOF SURFACE.
- 8" FRESH AIR DUCT ALL THROUGH ROOF.
- DUCT CONNECTION TO PENTHOUSE SUPPLY DIFFUSER AND RETURN GRILLES PLACED AT FLOOR OF PENTHOUSE.

PIPEING SYSTEM

- CONDENSATE DRAIN PIPING: TYPE DW COPPER INSTALLED WITH A SLOPE OF 1/8" PER LINEAR FT AND TRENCH AT EACH DRAWDOWN UNIT. ROUTE CONDENSATE PIPING FROM GAS THERMALS AND CONDENSATE PIPING OUTDOORS AND TRENCHING ON GRADE.
- DRAIN VALVES: NIBCO 555-70 600 LBS. W.G., TWO PIECE BODY, FULL PORT, MIL SPEC MSS SP-110, WITH "NIB-SEAL" EXTENDED HANDLE AND DRAIN CAP.
- UNIONS: BRONZE BODY, SOLDERED ENDS, 125# - THREADED GROUND JOINT TYPE.
- PROVIDE DI-ELECTRIC BREAKS BETWEEN PIPING OF DISSIMILAR MATERIALS.
- PIPE HANGER: ALL PIPING SHALL BE OF SAME MATERIAL AS ASSOCIATED PIPING. PIPE HANGERS SHALL BE INSTALLED AT 3 FOOT INTERVALS AND AT BOTH SEGMENTS OF ALL DIRECTION CHANGES.
- PITCH PIPING 1" IN 20" IN DIRECTION OF FLOW.
- HVAC LINE-SET PIPING INSTALLATION SHALL COMPLY WITH CURRENT DCRA MECHANICAL/PLUMBING CODE

INSULATION

- ALL INTERIOR DUCTWORK ON THE TOP LEVEL SHALL BE INSULATED WITH 1-1/2" THICK FIBERGLASS INSULATION WITH VAPOR BARRIER WITH A "K" VALUE OF 30 AT 75 DEGREES F.
- ALL EXTERIOR DUCTWORK AND DUCTWORK IN / ABOVE UNCONDITIONED SPACE SHALL BE INSULATED WITH 2-1/2" THICK, 3 PC FIBERGLASS DUCT BOARD WITH LAMINATED LAYER OF FOIL FACED VAPOR BARRIER AND SEALED WITH TWO (2) COATS OF INSULATION FABRIC CLOTH AND WATERPROOF TAPE.
- DUCT INSULATION SHALL BE CONTINUOUS THROUGH WALLS AND FLOORS.
- SOUND (ACOUSTICAL) LINING: 1" THICK, 1-1/2 LB. PER SF OF DENSITY AND BE TESTED IN ACCORDANCE WITH NFPA 90A AND UNDERWITERS LABORATORIES TEST UL-723.
- ALL INSULATION AND SOUND LINING SHALL BE INSTALLED IN ACCORDANCE WITH ASTM-84 AND HAVE A FLAME SPREAD RATING OF LESS THAN 25 AND A SMOKE RATING OF LESS THAN 50.
- HEAT TRACE SHALL BE EQUAL TO RAYCHEM XL-TRACE SELF REGULATING HEATING CABLES SYSTEM. PROVIDE 1" THICK FIBERGLASS PIPE INSULATION. INSTALL PER MANUFACTURER REQUIREMENTS.
- HVAC LINE-SET PIPING SHALL HAVE AT LEAST INSULATION RATING OF R3. OUTSIDE HVAC LINE-SET PIPING INSULATION WILL BE SHIELDED FROM THE EFFECTS OF WEATHER BY INSTALLATION OF TPO LINE SET INSULATION WRAP BY (WWW.CARLISLEHVAC.COM) OR EQUIVALENT.

CONTROLS

- APPLIED MANUAL RESET SMOKE & HEAT DETECTION DEVICES SHALL BE PROVIDED IN DUCTWORK OF ALL FAN/AVG/CONDITIONING SYSTEMS ACCORDING TO 2012 INTERNATIONAL MECHANICAL CODE, SECTION 606 "SYSTEMS CONTROLS" AND WITH 16.1. NEPA STANDARDS 72, 72E AND 90A AND SHALL BE TIED INTO THE BUILDING FIRE ALARM SYSTEM. COORDINATE ALL CONNECTIONS TO FIRE ALARM SYSTEM WITH THE ELECTRICAL CONTRACTOR. PROVIDE COMPONENTS COMPATIBLE WITH THE BUILDING'S FIRE ALARM SYSTEM.
- CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER. PROVIDE ANY ADDITIONAL CONTROLS AS REQUIRED TO ACHIEVE SPECIFIED CONTROL SEQUENCE BELOW.
- IF PROVIDED, THE GAS FURNACE, CASED COIL AND CONDENSING UNIT, GAS FURNACE CASED COIL AND CONDENSING UNIT SHALL BE CONTROLLED BY A SINGLE, WALL MOUNTED, ELECTRONIC THERMOSTAT LOCATED AS SHOWN ON THE PLANS. THE THERMOSTAT SHALL ENERGIZE THE HEATING IN THE GAS FURNACE AND MODULATE ITS SP. POINT. THE THERMOSTAT SHALL BE EQUIPPED WITH "HEAT", "COOL", "ON", "OFF" AND FAN SETTINGS.
- TOILET FAN: TOILET FAN SHALL OPERATE WHENEVER THE LIGHT IN THE CORRESPONDING TOILET IS ON.
- CONTROL WIRING SHALL BE CONCEALED AND RUN IN CONDUIT. CONDUIT & FITTINGS, EXPOSED TO WEATHER, SHALL BE WEATHERPROOF TYPE.
- ALL SWITCHES/CONTROLS HAVE TO BE INSTALLED 54" ABOVE FINISHED FLOOR.
1. THERMOSTATE SHALL BE PROGRAMMABLE PER DC BUILDING CODE.
- IF MANUFACTURER'S NAMEPLATE OF SUPPLIED EQUIPMENT REQUIRES FUSE PROTECTION, CONTRACTOR SHALL PROVIDE FUSE PROTECTION AT NO ADDITIONAL COST. COORDINATE ALL ELECTRICAL WORK WITH ELECTRICAL DRAWINGS.

EXHAUST CONNECTION NOTES:

- EXHAUST CONNECTIONS UP TO THE MACHINE CONNECTION POINT TO BE DONE BY MEP CONTRACTOR.
- ALL INSULATION & ALUMINUM CLADDING FOR EXHAUST DUCTS UP TO THE MACHINE CONNECTION POINT TO BE PROVIDED BY MEP/CIVIL CONTRACTOR.
- DETAILED DUCTING DRAWING FOR EXHAUST TO BE PROVIDED BY MEP CONTRACTOR.
- ACCESSORIES FOR EXHAUST UP TO THE MACHINE CONNECTION POINT TO BE PROVIDED BY THE CONTRACTOR.
- MATERIAL FOR EXHAUST DUCT FOR ITEM DRYER SHOULD WITHSTAND A TEMPERATURE OF 150 DEG. CELSIUS.
- THERE WILL BE NO VCF'S PROVIDED SEPARATELY FOR THE DRYER AS THESE DRYERS HAVE A VCF THAT CLOSES WHEN THE MACHINE IS NOT IN OPERATION.
- ALL THE DUCTS AND PIPES IN THE LAUNDRY AREA SHALL BE RUN AT A HEIGHT OF 16 INCH FROM FFL.
- FINAL CONNECTION FOR THE EQUIPMENTS SHOULD BE DONE BY MEP CONTRACTOR UNDER THE LAUNDRY SUPPLIER SUPERVISION.
- CLOTHES DRYER EXHAUST SHALL COMPLY WITH SECTION M1502 OF THE 2012 INTERNATIONAL RESIDENTIAL CODE AS AMENDED BY THE 2013 DCMR B RESIDENTIAL CODE SUPPLEMENT.
- PROVIDE MECHANICAL WORK SHALL NOT CREATE A NON-COMPLIANCE WITH AN ADJACENT PROPERTY. CONTRACTOR SHALL REQUIRE ENGINEER'S APPROVAL IF ANY CHANGES ON THE MECHANICAL VENTS.

HVAC SYSTEM NOTES:

- ALL MATERIALS, EQUIPMENT AND INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH 2012 INTERNATIONAL MECHANICAL CODE, SMACNA, UL, MANUFACTURER'S RECOMMENDATION & LOCAL TOWNSHIP REQUIREMENTS. COMPLY WITH THE REQUIREMENTS OF THE AIR QUALITY ACT, LOCAL CODES, AND ALL AUTHORITIES HAVING JURISDICTION.
- PLANS ARE NOT SCALED, THESE PLANS ARE INTENDED TO BE DIAGRAMMATIC OUTLINE. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT AND MATERIALS LISTED IN THE EQUIPMENT LIST.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING ASSOCIATED WITH THE MECHANICAL WORK, AND FIRE STOPPING OF ALL PENETRATION OF FIRE RATED PARTITIONS ASSOCIATED WITH THE MECHANICAL WORK.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, MATERIALS AND LABOR TO PROVIDE COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DESIGN DOCUMENTS.
- THE CONTRACTOR SHOULD MAINTAIN BALANCE, SO AIR QUANTITIES TO BE DELIVERED FOR EQUAL AIR DISTRIBUTION.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND FILED PRIOR TO INSTALLATION OF ANY WORK. REPORT ALL CONFLICTS IMMEDIATELY TO THE ENGINEER.
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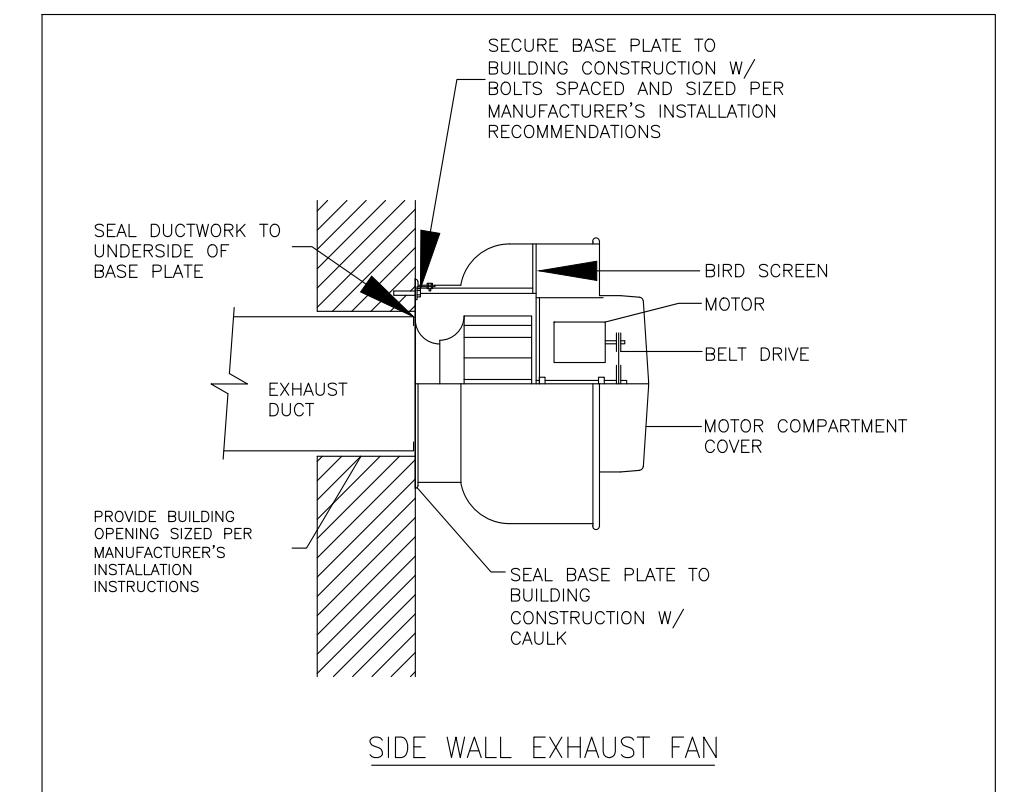
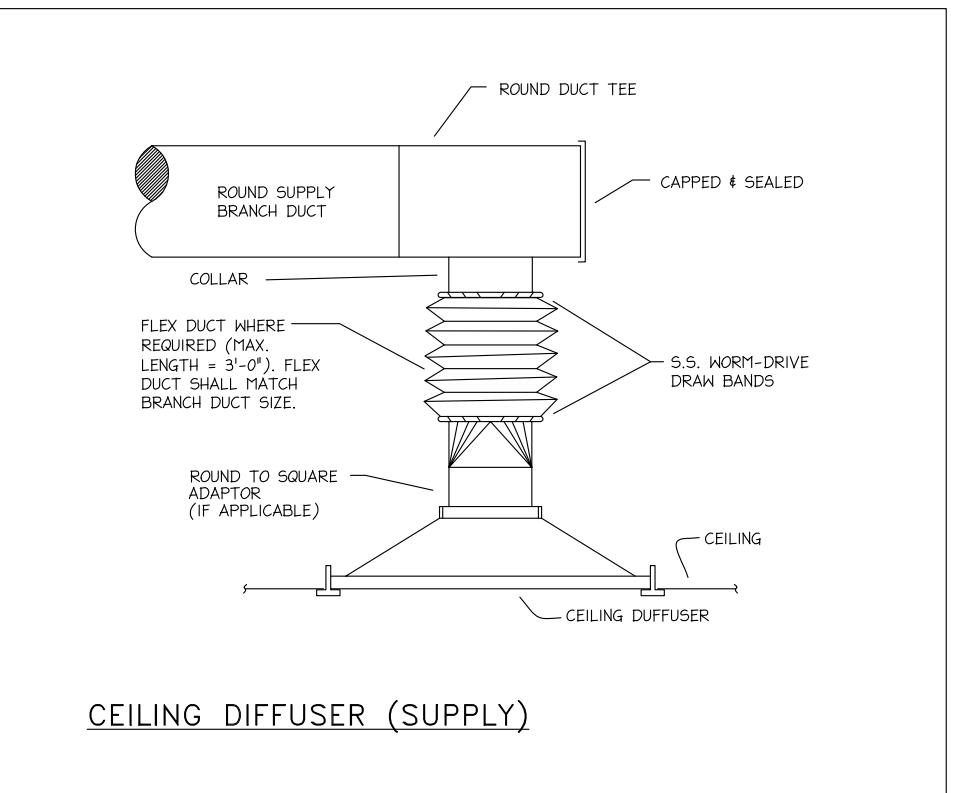
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- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT, MATERIALS AND LABOR

DIFFUSERS, REGISTERS, AND GRILLES								
MARK	SERVICE	RANGE (CFM)	NECK SIZE (IN)	FACE SIZE (IN)	FACE TYPE	NC	PRESSURE DROP (IN.W.C)	BASIS OF DESIGN
SD	SUPPLY	0 - 150	6x6	8x8	NOTE 3 < 14		0.02	TITUS LOUVERED SUPPLY REGISTER, DOUBLE DEFLECTION, 112RL
SD	SUPPLY	150-300	8x8	12x12	NOTE 3 < 14		0.02	TITUS LOUVERED SUPPLY REGISTER, DOUBLE DEFLECTION, 112RL
TG	TRANSFER GRILLE	0 - 130	8x6	10x8	NOTE 3 < 10		0.03	TITUS RETURN GRILLE, 350 ZR
TG-1	TRANSFER GRILLE	150-300	12x6	14x8	NOTE 3 < 10		0.03	TITUS RETURN GRILLE, 350 ZR
RG	RETURN GRILLE (AHU)	0 - 950	18x18	20x20	NOTE 3 < 12		0.03	TITUS RETURN GRILLE, 350 ZR

NOTES:

1. CONTRACTOR TO COORDINATE AIR DEVICES BORDER TYPE AND COLOR W/ ARCH.DRAWINGS PRIOR TO ORDERING DIFFUSERS AND REGISTERS.
2. PROVIDE OPPOSED BLADE DAMPER WITH SCREW DRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE.
3. COORDINATE SURFACE TYPE WITH ARCHITECTURAL PLANS.
4. RG WILL BE INSTALLED AT RETURN AIR PLENUM BOX UNDERNEATH OF AHU.



HEAT PUMP UNIT SCHEDULE # TRANE MODEL																								
LOCATION	SERVE	QUANTITY	INDOOR AIR HANDLING UNIT								OUTDOOR CONDENSING UNIT													
			TAG NAME	CFM	OA (CFM)	ESP (IN W.C)	MOTOR				WATTAGE	HEAT (DB/WB °F)	TOTAL (MBH)	SENSIBLE (MBH)	ELECTRIC HEAT (kW)	BASIS OF DESIGN	TAG NAME	PH	VOLT	AMB. TEMP (°F)	WEIGHT (LB)	SEER	WATTAGE	BASIS OF DESIGN
CEILING SLAB	UNIT - 1	1	AHU-1	600	60	0.5	1-1/5	1	208-230	1.2	895	75/65	18.0	16.2	5.76	TRANE MODEL# TEM4A0B18S21SA	HP-1	60	240	85	161	16	3242	TRANE MODEL# 4TWR5018G
CEILING SLAB	UNIT - 2	1	AHU-2	600	60	0.5	1-1/5	1	208-230	1.2	895	75/65	18.0	16.2	5.76	TRANE MODEL# TEM4A0B18S21SA	HP-1	60	240	85	161	16	3242	TRANE MODEL# 4TWR5018G
CEILING SLAB	UNIT - 3	1	AHU-3	600	60	0.5	1-1/5	1	208-230	1.2	895	75/65	18.0	16.2	5.76	TRANE MODEL# TEM4A0B18S21SA	HP-1	60	240	85	161	16	3242	TRANE MODEL# 4TWR5018G

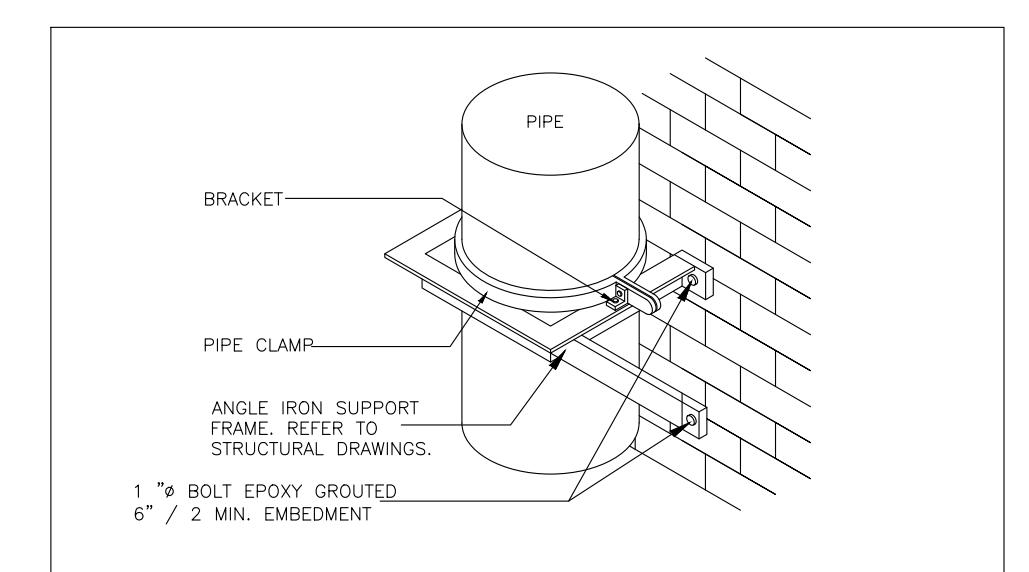
PROGRAMMABLE HEAT PUMP THERMOSTAT SHALL BE HONEYWELL FOCUSPRO 6000 2H/2C 5-1-1 OR APPROVED ALTERNATE

NOTES:

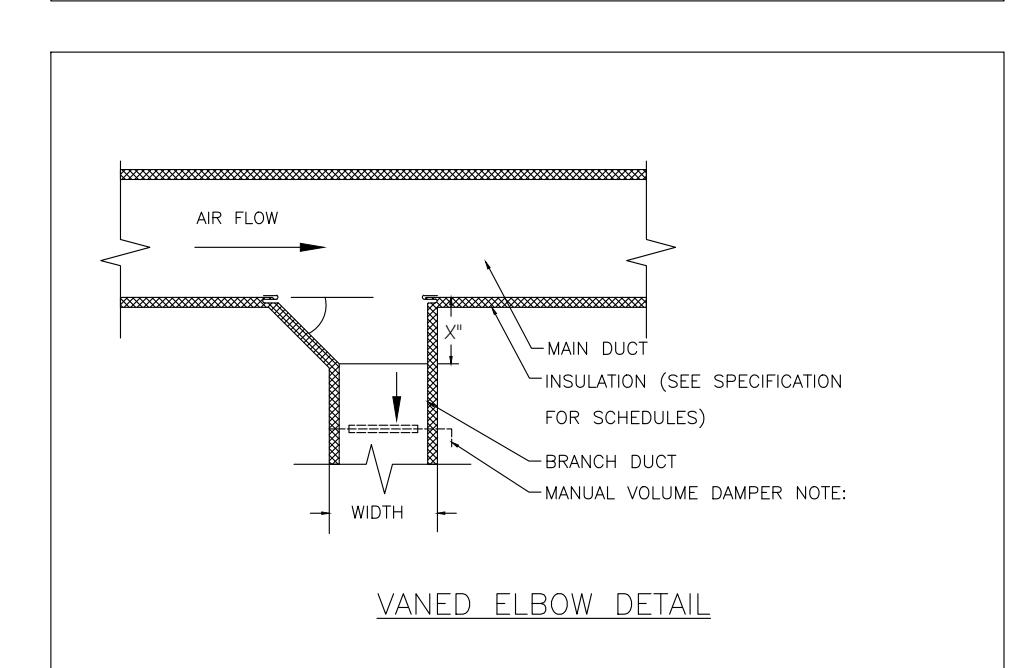
1. INDOOR AND OUTDOOR UNITS SHALL BE SELECTED FROM SAME MANUFACTURER.
2. CONTRACTOR SHALL VERIFY WITH HEAT PUMP MANUFACTURER TO MAKE SURE THAT THE MAX. REFRIGERANT PIPE LENGTH DOES NOT PASS THE MAXIMUM ACCEPTABLE LENGTH. TOTAL EQUIVALENT RUN SHALL BE TAKEN INTO CONSIDERATION INCLUDING ALL ELBOWS FOR THE ACTUAL PIPE RUN. CONTRACTOR SHALL VERIFY WITH UNIT MANUFACTURER TO PROVIDE ALL REQUIRED ACCESSORIES TO PROVIDE PROPERLY OPERATIONAL SYSTEM.
4. PROVIDE PROGRAMMABLE THERMOSTAT FOR THE INDOOR UNIT.
5. ALL PIPING CONNECTIONS THRU THE BUILDING ENVELOPE (WALLS & ROOF) SHALL BE SEALED AND WATER TIGHT.
6. ALL REFRIGERANT PIPE SIZES SHALL FOLLOW MANUFACTURER'S INSTRUCTION. MAX. PIPE LENGTH SHALL BE TAKEN INTO CONSIDERATION.
7. CONTRACTOR SHALL SUBMIT ALL WARRANTY INFO INCLUDING O & M MANUALS FOR THE NEW EQUIPMENT TO THE OWNER.
8. REFRIGERANT R-22 SHALL NOT BE USED.
9. CONTRACTOR TO VERIFY WITH UNIT MANUFACTURER THAT HEAT PUMP CAN OPERATE PROPERLY WITH 100 CFM OF OUTSIDE AIR.
10. PROVIDE ANTI SHORT CYCLE TIMER, EVAPORATOR DEFROST CONTROL, RUBBER ISOLATORS AND EXTREME CONDITION MOUNT KIT.

ABBREVIATION	
EXHAUST FAN	EF
KITCHEN EXHAUST FAN	KEF
VOLUME CONTROL DAMPER(VMD)	VD
EXHAUST GRILLE	EG

LEGEND	
SUPPLY REGISTER	SAD
TOILET EXHAUST GRILLE	
KITCHEN EXHAUST GRILLE	
MANUAL VOLUME DAMPER(VMD)	
SIDE GRILL	
SUPPLY AIR DUCT	
EXHAUST AIR DUCT	
SUPPLY PIPE	
RETURN PIPE	
DRAIN PIPE	



WALL MOUNTED PIPE SUPPORT DETAIL

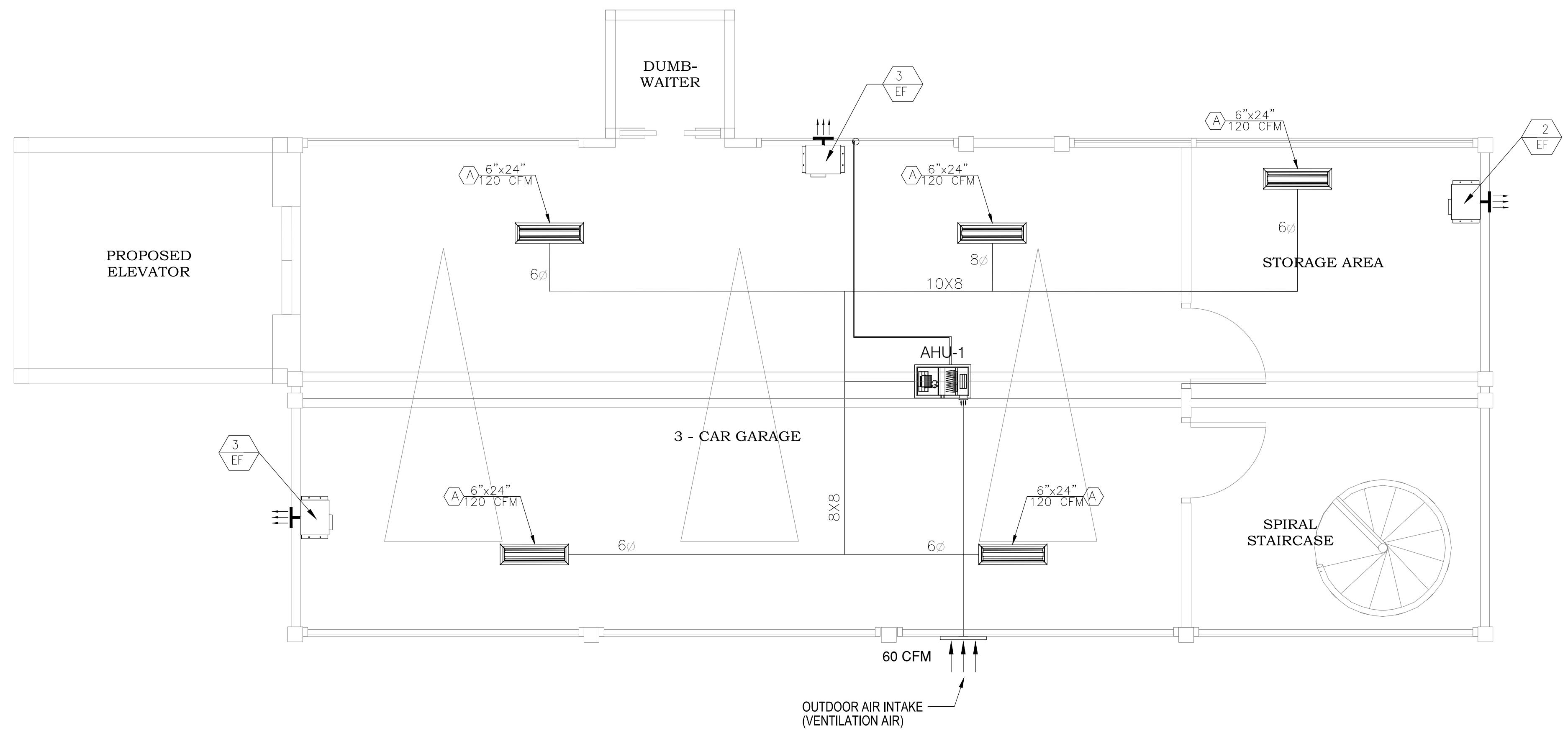


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EQUIPMENT SCHEDULES
INSTALLATION DETAILS

SHIPPING
CONTAINER HOME

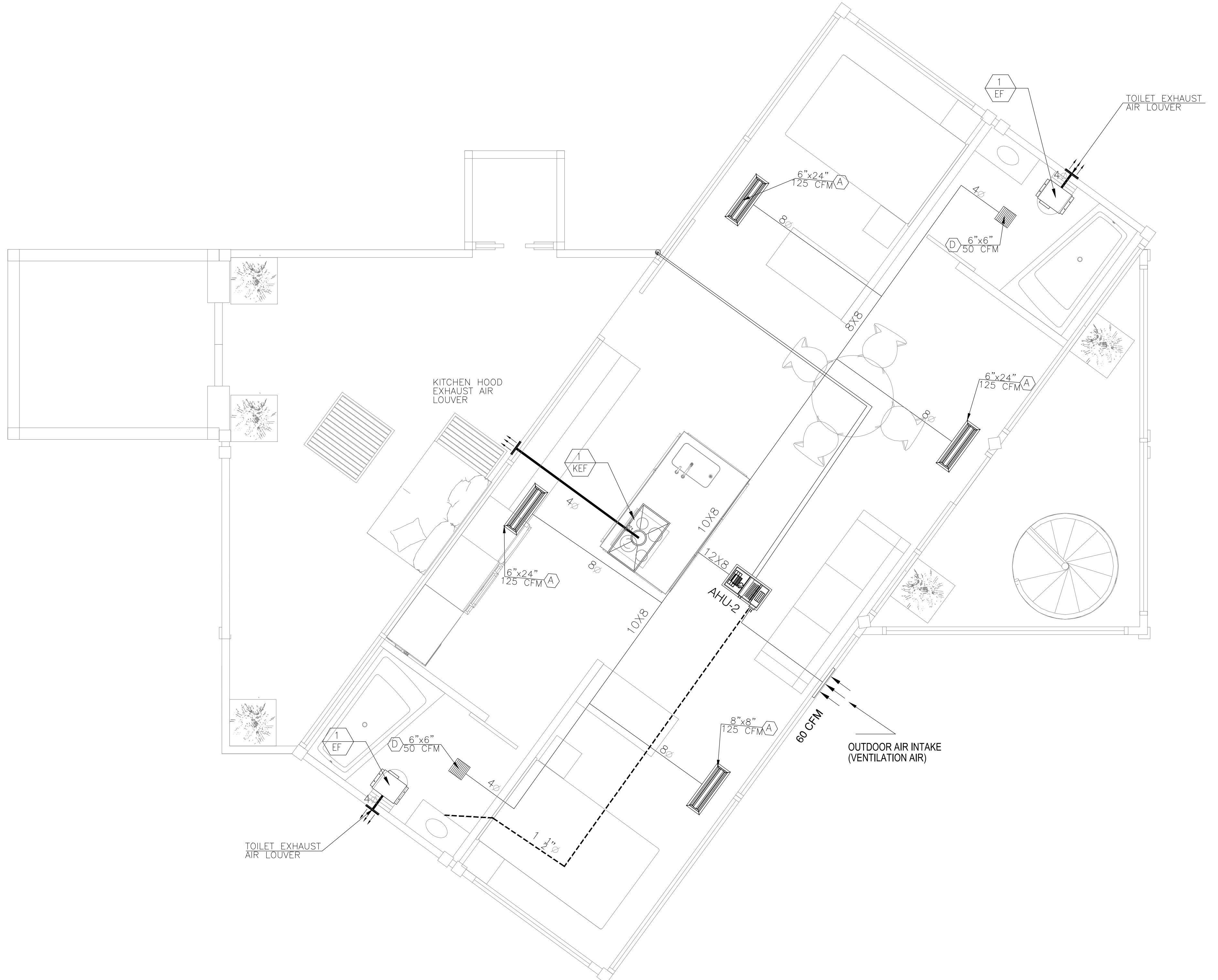
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01 FIRST LEVEL PLAN

SCALE 3/8" = 1'-0"

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12345 BEACH BLVD. STANTON, CA 90680 (714) 363-1287		
HVAC PLAN		
SHIPPING CONTAINER HOME		
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02 | SECOND LEVEL PLAN

SCALE 3/8" = 1'-0"

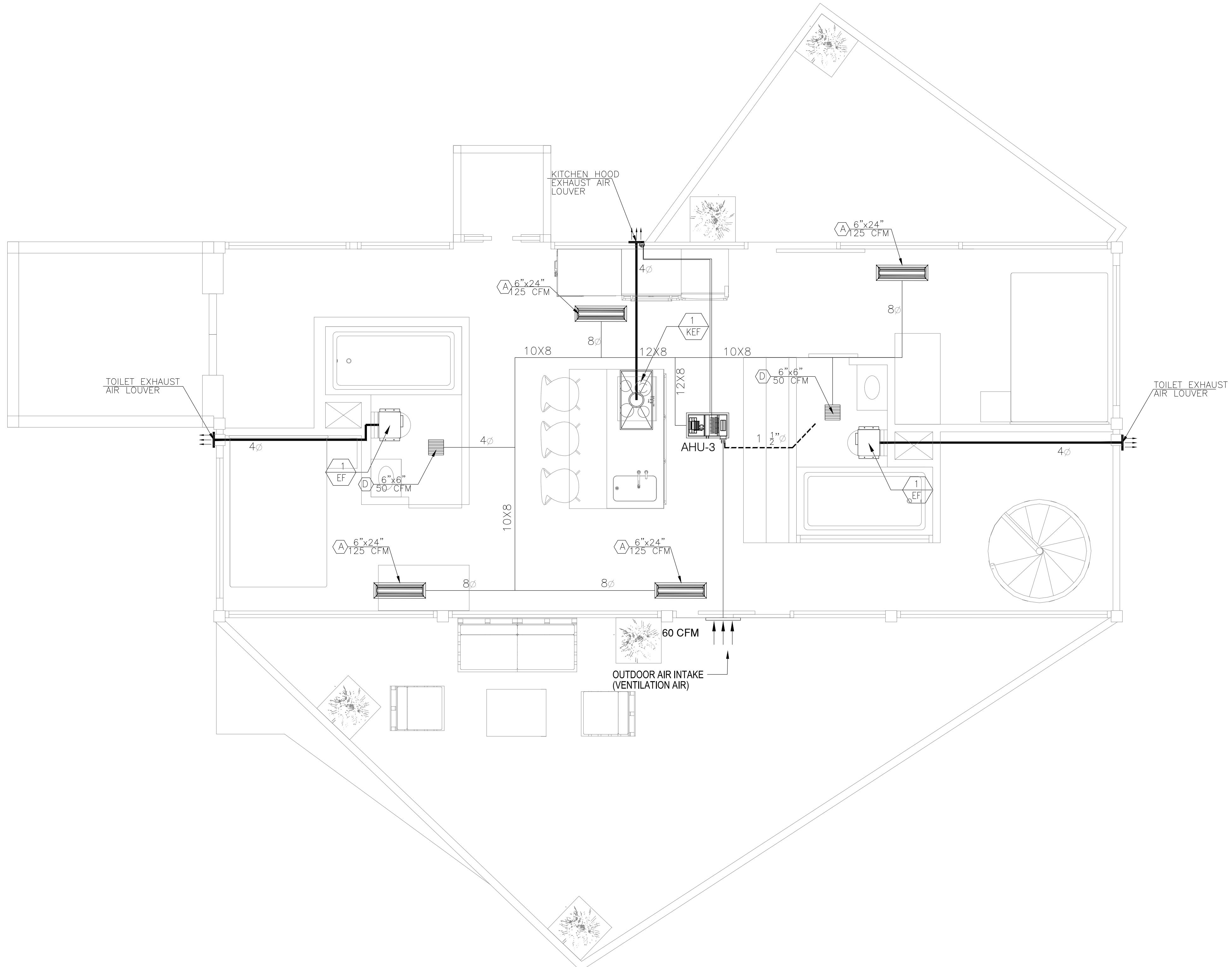
SCALE 3/8" = 1'-0"

HVAC PLANS SHIPPING CONTAINER HOME

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03 | THIRD LEVEL PLAN

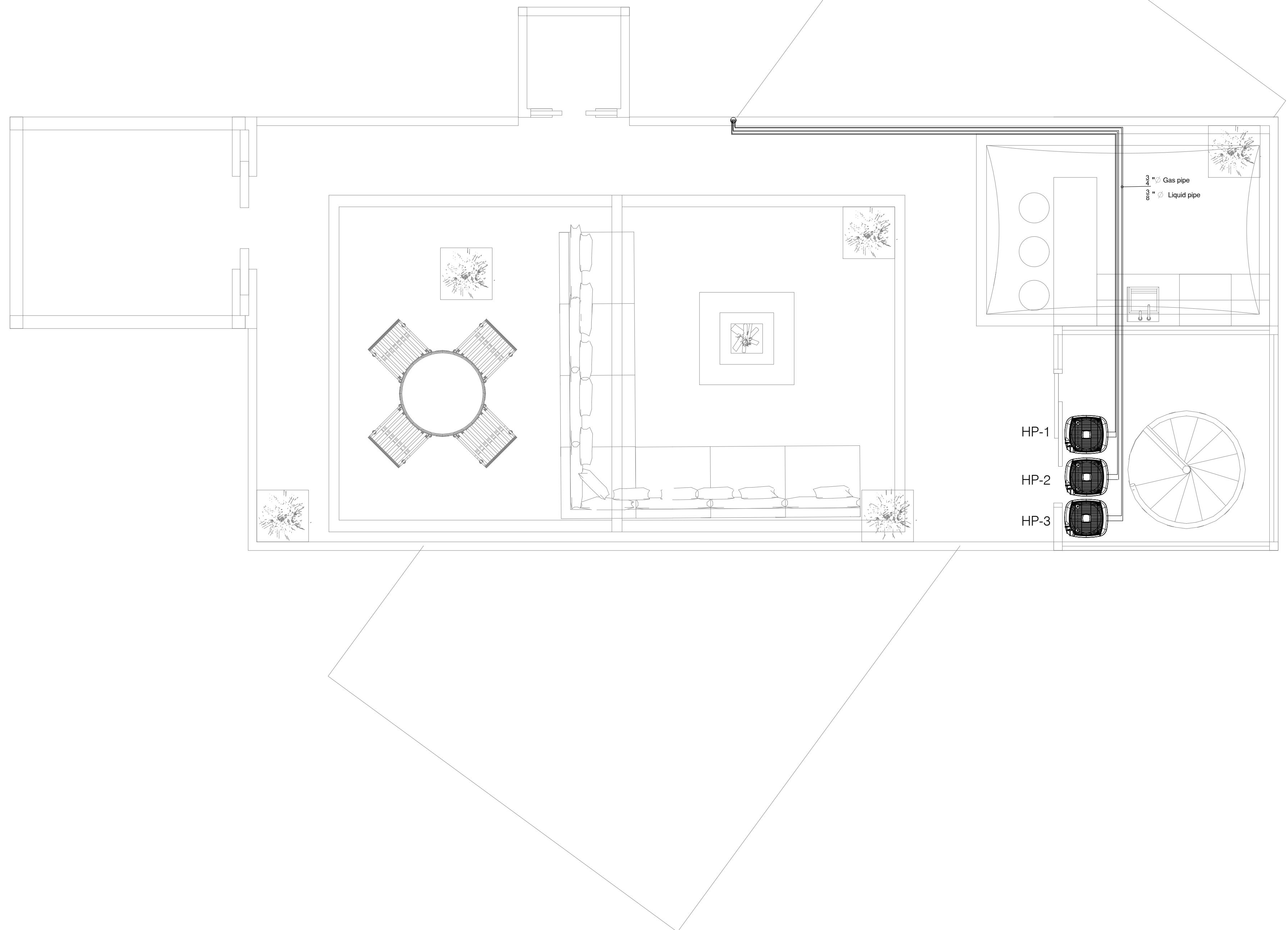
03 | THIR

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04 ROOF LEVEL PLAN
SCALE 3/8" = 1'-0"

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SCALE:	3/8" = 1'-0"
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NO. DATE.	DESCRIPTION
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REVISIONS M0115

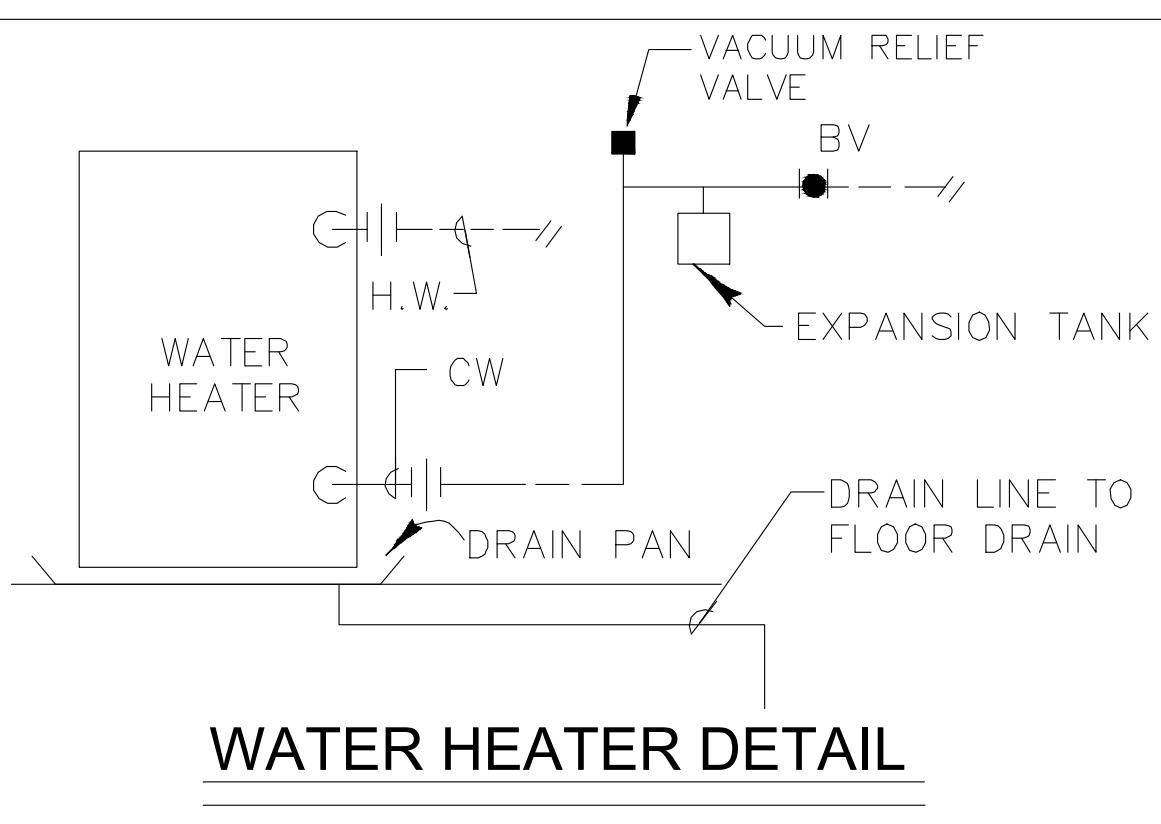
HVAC PLANS
SHIPPING
CONTAINER HOME

PROFESSIONAL SEAL

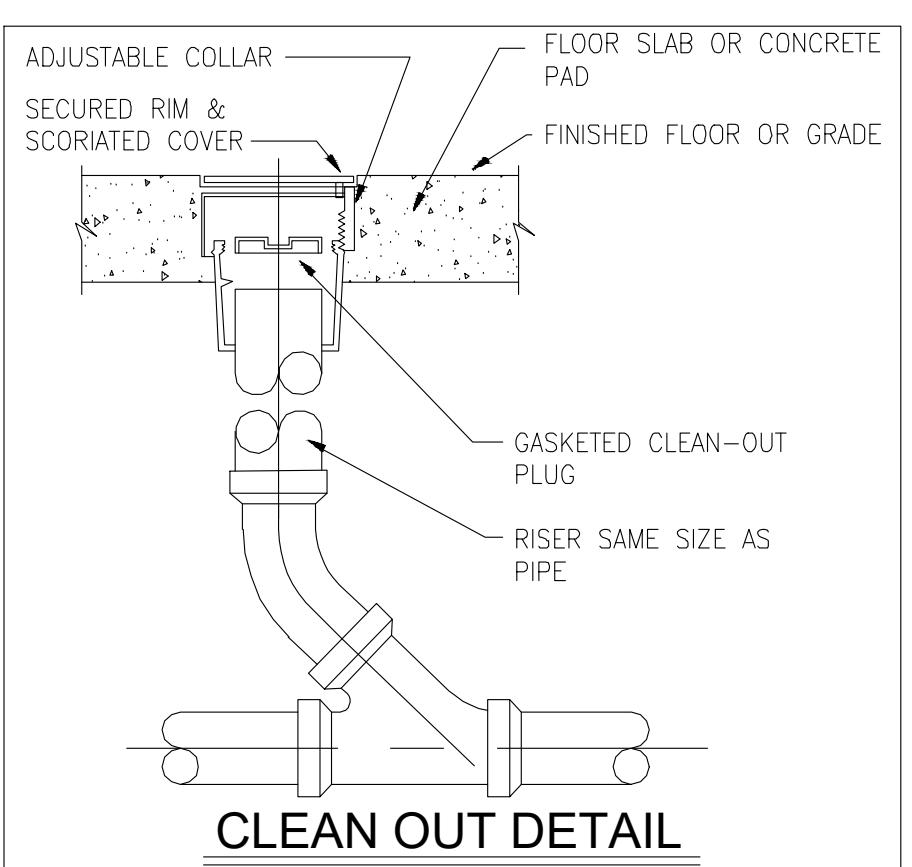
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SEWAGE PACKAGE SYSTEM SCHEDULE

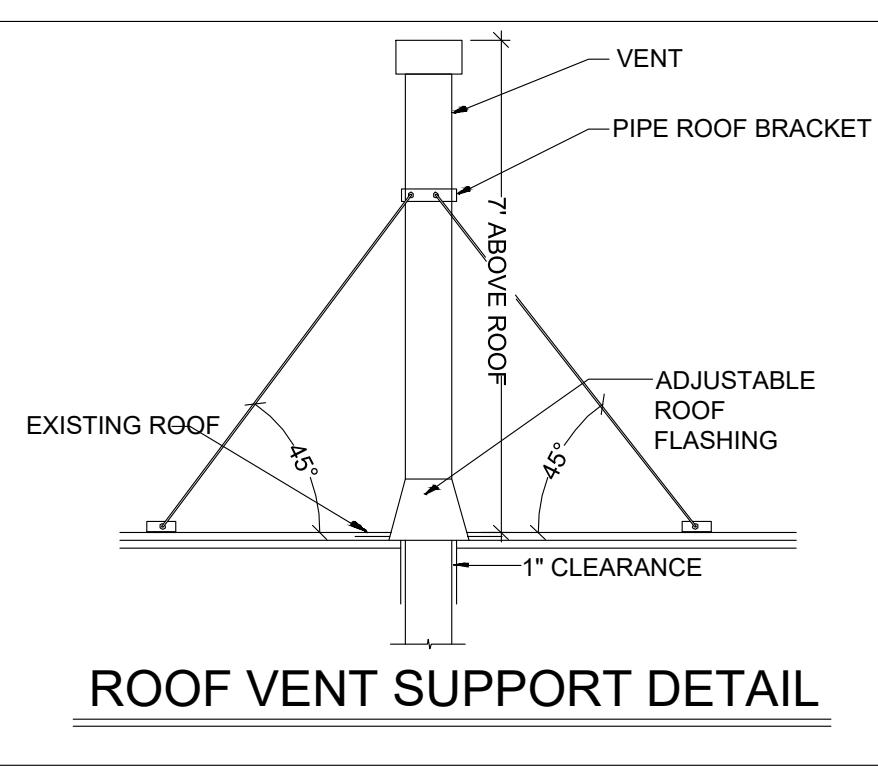
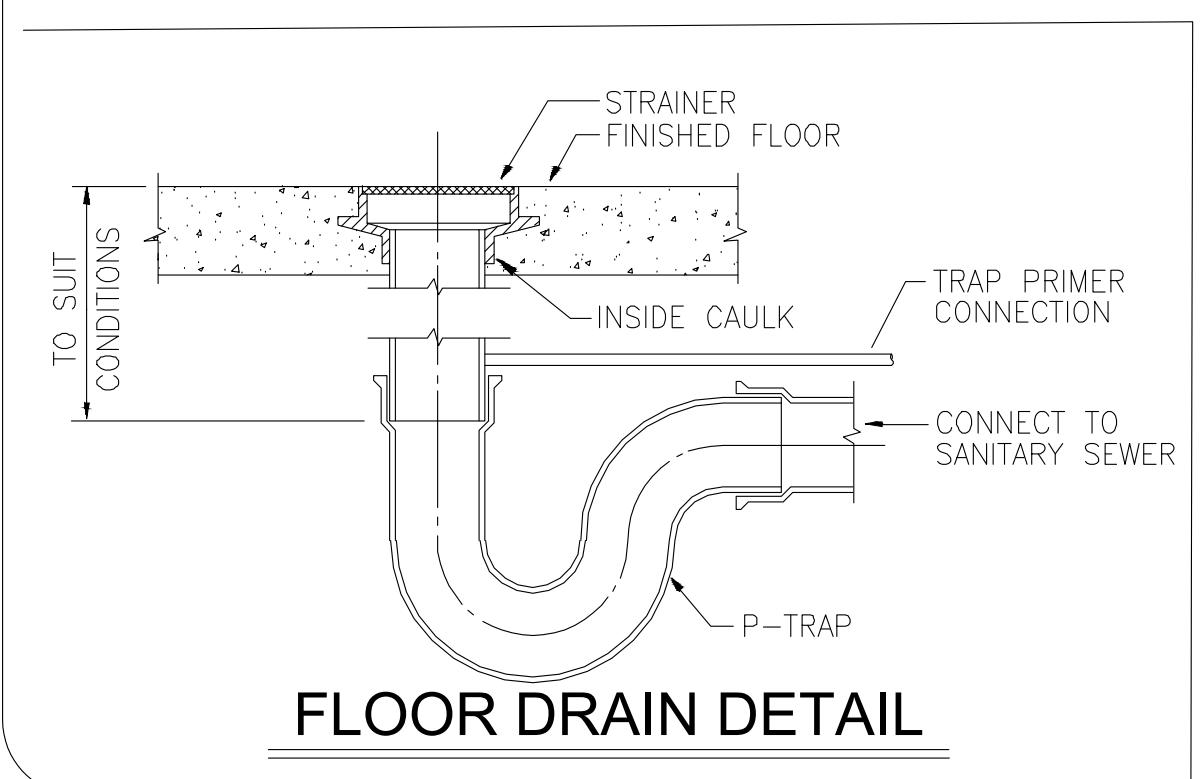
Fixture Symbol	Manuf.	Model Number	Type of Pump	Flow Rate (GPM)	Head (ft)	Discharge Pipe Size (Inch)	HP	Volt/Ph/Hz	Dimension	Weight
SP-1	ZOELLER	211	SUBMERSIBLE	53	10	2"	1/2	120/1/60	24"X24"	54 LBS



DRAWING LIST	
SHEET NO.	SHEET NAME
PLUMBING	
P0110	GENERAL NOTES, LEGEND & ABBREVIATIONS
P0111	1ST LEVEL - PLUMBING
P0112	2ND LEVEL - PLUMBING
P0113	3RD LEVEL - PLUMBING
P0114	ROOF DECK - PLUMBING
P0115	TERRACE - PLUMBING
P0116	SANITARY SCHEMATIC - PLUMBING
P0117	WATER SUPPLY SCHEMATIC - PLUMBING
P0118	GAS RISER DIAGRAM



PLUMBING FIXTURE SCHEDULE							
Fixture Name	WSFU	CWFU	HWFU	DFU	Min Pipe Size of CW/HW	Max Flow	Remarks
WATER CLOSET	2.5	2.5	—	3	1/2"	1.2 GALLONS PER FLUSHING CYCLE	WATERSENSE LABELED
LAVATORY	1	0.5	0.5	1	1/2"	2 GPM AT 80 PSI	WATERSENSE LABELED
KITCHEN SINK	1.5	1	1	2	1/2"	—	WATERSENSE LABELED
SHOW HEAD	1.4	1	1	2	1/2"	2 GPM AT 80 PSI	WATERSENSE LABELED
BATHTUB	2	1	1	2	1/2"	4 GPM AT 20 PSI	WATERSENSE LABELED
DISH WASHER	1.5	1.5	1.5	3	1/2"	1.5 GPM AT 60 PSI	WATER SUPPLY AND DRAIN
DOUBLE SINK	1.5	1	1	2	1/2"	—	WATERSENSE LABELED
LAUNDRY	1.5	1.5	1.5	2	1/2"	4 GPM AT 8 PSI	WATER SUPPLY AND DRAIN



WATER HEATER SCHEDULE

Fixture Symbol	Manufacturer	Model Number	Capacity Gallons	Electrical Data			Dimensions	
				Volt	Ph.	Recovery Efficiency	KW	Dia.
WH-1	AO SMITH	EJCS-55	55.0	120	1	98%	5.5	24"
WH-2	AO SMITH	EJCS-55	55.0	120	1	98%	5.5	56-6"

ABBREVIATIONS

WATER CLOSET – WC
 LAVORATORY – LV
 BATHTUB – BT
 KITCHEN SINK – KS
 DISH WASHER – DW
 DOUBLE SINK – DS
 SHOWER HEAD – SH
 FLOOR DRAIN – FD
 WATER HEATER – WH
 CLEAN OUT – CO
 LAUNDRY – LN

PLUMBING NOTES:-

1. THIS CONTRACTOR IS RESPONSIBLE FOR A COMPLETE INSTALLATION INCLUDE: EXCAVATION, REPAIR OF WALLS AND FLOOR AS REQUIRED. FITTINGS, VALVES, ESCULENT PLATES, ETC. AS NECESSARY.
2. INSTALLATION SHALL CONFIRM TO THE LOCAL CODES AND REQUIREMENTS IN EFFECT AT THE TIME OF COMPLETION.
3. WATER PIPING SHALL BE TYPE "L" COPPER WITH COPPER FITTINGS AND HANGERS. IF APPROVED BY LOCAL AUTHORITY HAVING JURISDICTION. CPVC OR PEX PIPING MAY BE USED.
4. SOIL WASTE AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON WITH LEAD AND OAKUM OR MECHANICAL JOINTS AS APPROVED BY LOCAL CODES. PVC MAY BE USED IF APPROVED BY LOCAL OFFICIALS.
5. WATER PIPING SHALL BE INSULATED WITH 1" ARMAFLEX OR EQUAL.
6. INSTALL CLEANOUTS AS NECESSARY.
7. SUBMIT SHOP DRAWINGS FOR FIXTURES TO ARCHITECT FOR APPROVAL PRIOR TO ORDERING.
8. FLOOR DRAINS, CLEANOUTS AND LAVATORY CARRIERS SHALL BE AS MANUFACTURED BY J.R.SMITH, JOSAM, ZURN OR COMPARABLE.
9. ALL VENTS SHALL BE CONNECTED TO EXISTING VENT PIPING UP THRU ROOF.
10. FIELD VERIFY EXACT LOCATION OF EXISTING PIPING.
11. ALL PLUMBING FIXTURES SHALL BE HIGH EFFICIENT.
12. THE CONTRACTOR SHALL REPORT TO THE ARCHITECT ANY ERROR, INCONSISTENCY, OR OMISSION DISCOVERED AND SHALL VERIFY ALL DIMENSIONS, EXISTING AND NEW PRIOR TO PROCEEDING WITH WORK. THE CONTRACTOR IS RESPONSIBLE FOR REFERRING ANY ISSUES TO THE ARCHITECT IMMEDIATELY FOR DETERMINATION ON HOW TO PROCEED.
13. LOCATION AND SIZES OF ALL EXISTING SERVICES ARE APPROXIMATE. VERIFY ALL UTILITIES PRIOR TO COMMENCING WORK.
14. FOR EXACT LOCATIONS OF PLUMBING FIXTURES, DRAINS AND EQUIPMENT REFER TO ARCHITECTURAL DRAWINGS
15. ALL HORIZONTAL WATER SUPPLY AND VENT PIPING SHOWN TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
16. ALL HORIZONTAL SANITARY PIPING SHOWN TO BE RUN BELOW CEILING UNLESS OTHERWISE NOTED.
17. DOMESTIC WATER PIPING MATERIAL: AS PER SWEETWATER AUTHORITY STANDARD.
18. HOT WATER PIPES SHALL BE INSULATED TO AT LEAST RATING R3.
19. THE DISCHARGE FROM A CLOTHES WASHING MACHINE SHALL BE THROUGH AN AIR BREAK.

WATER FILTRATION SYSTEM

Symbol	Manufacturer	Model Number	Flow Rate GPM	Connection Size	Operating Pressure (PSI)	Dimensions	
						Dia.	Height
FL-1	SPRINGWELL	CF+	17	1 INCH	20-80	13"	58"

PUMPS

Symbol	Manufacturer	Model Number	Flow Rate GPM	Head (M)	Operating Pressure (PSI)	Dimensions		Electrical Data		
						Dia.	Height	Volt	Ph.	HP
P-1	GROUNDFOS	CRE3-06	40	35	20-80	13"	58"	208-230	1	1

THE FLOAT VALVE/CONTROLLER SHALL BE INSTALLED IN TANK. PUMP SHALL START WHEN WATER LEVEL IS LOW AND STOPS WHEN TANK IS FULL

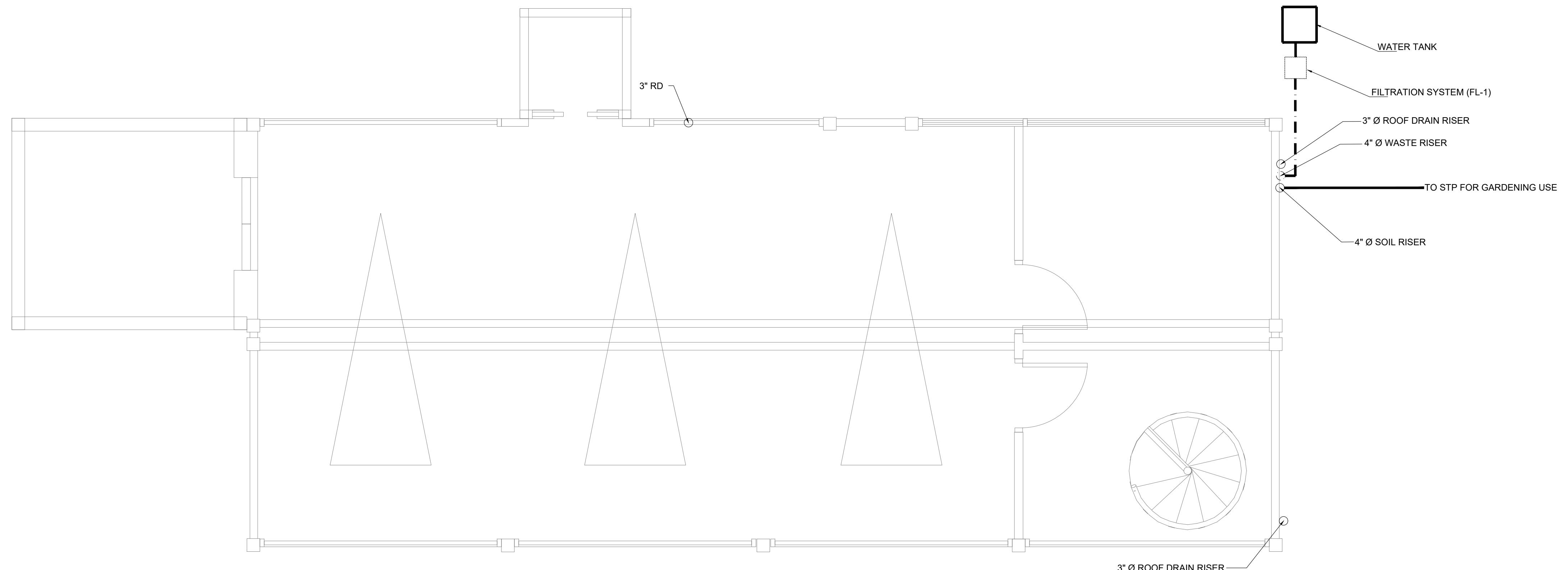
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GENERAL NOTES

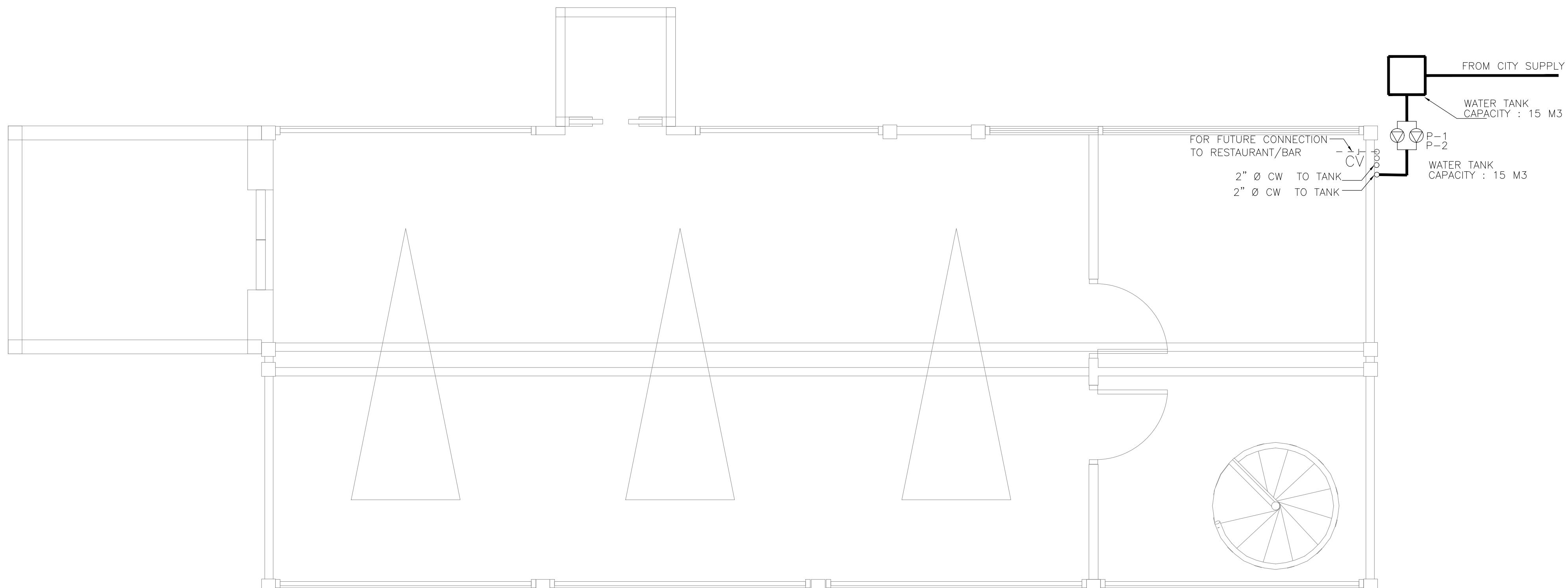
SHIPPING CONTAINER HOME

PROFESSIONAL SEAL



01 SANITARY FIRST LEVEL

SCALE: 3/8"=1'-0"



01 WATER SUPPLY FIRST LEVEL

SCALE: 3/8"=1'-0"

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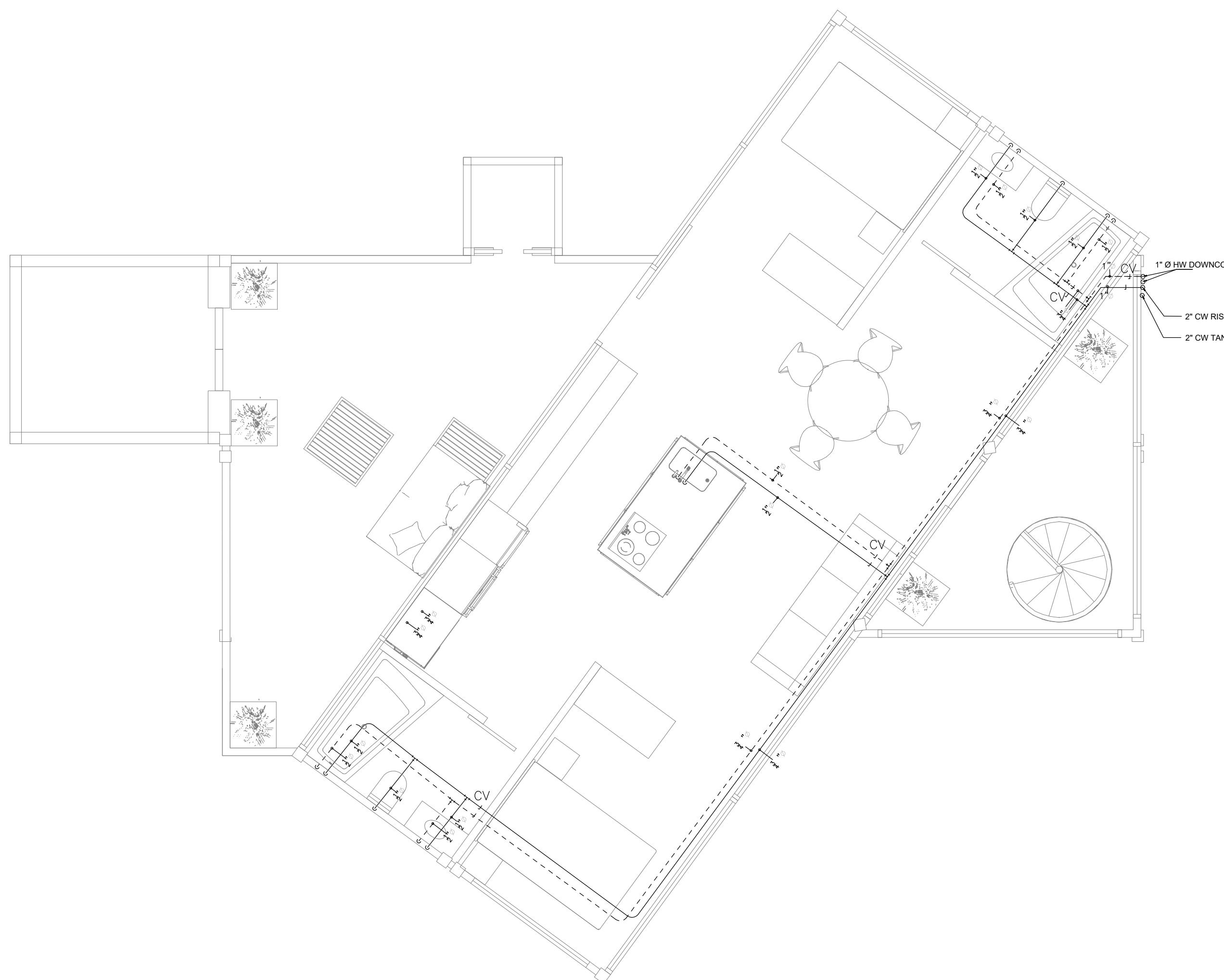
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PLUMBING PLANS

SHIPPING CONTAINER
HOME

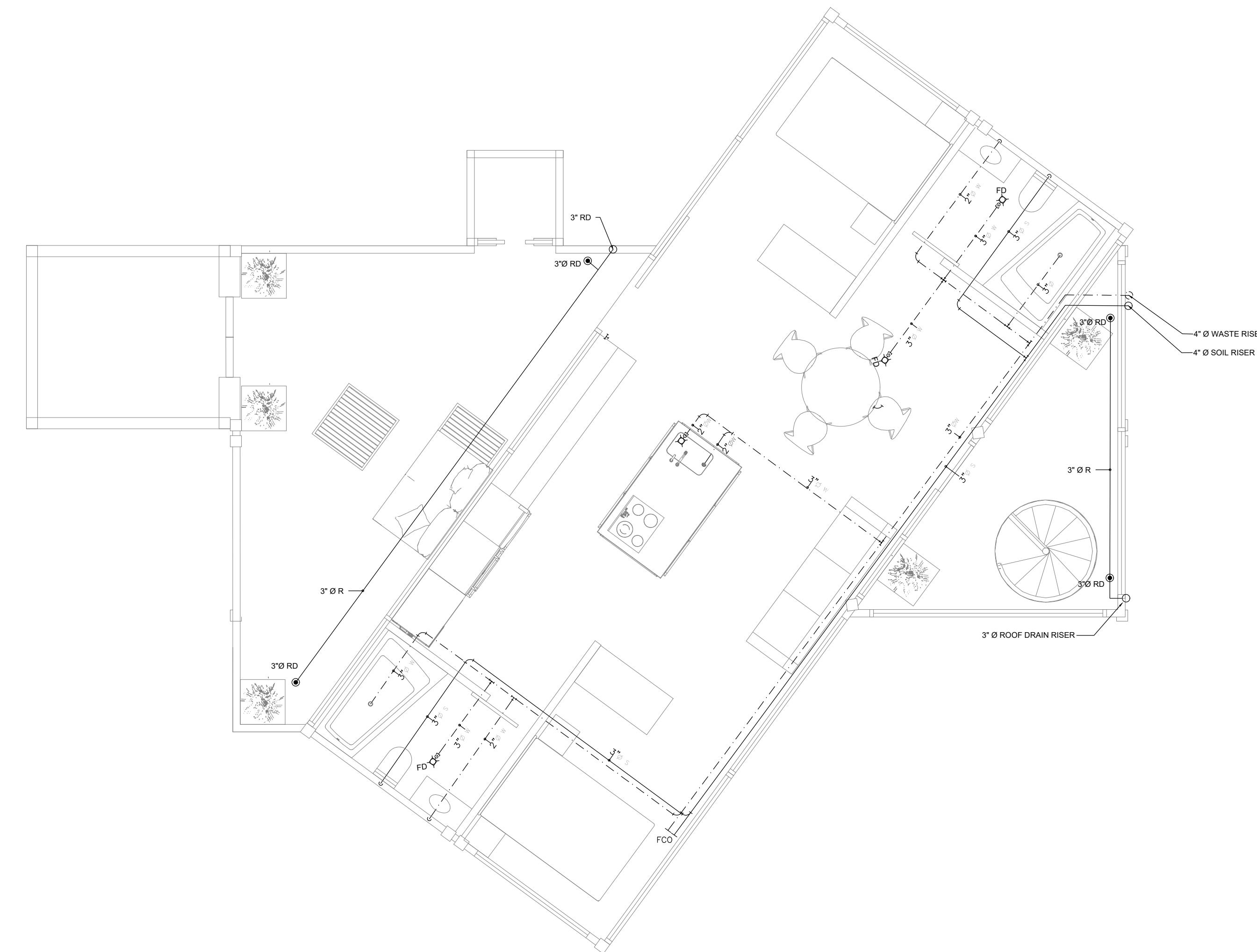
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02 WATER SUPPLY SECOND LEVEL

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

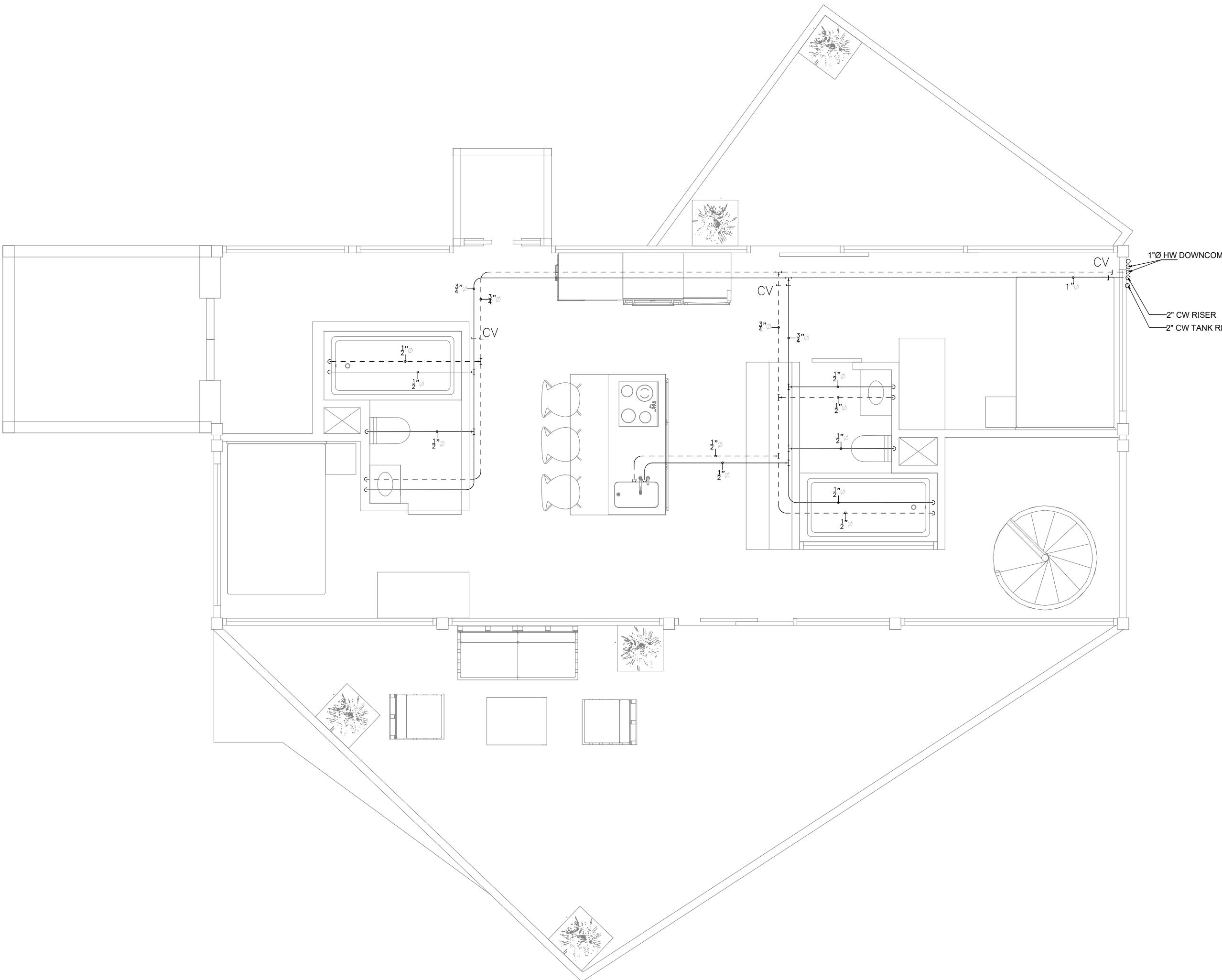


02 SANITARY SECOND LEVEL

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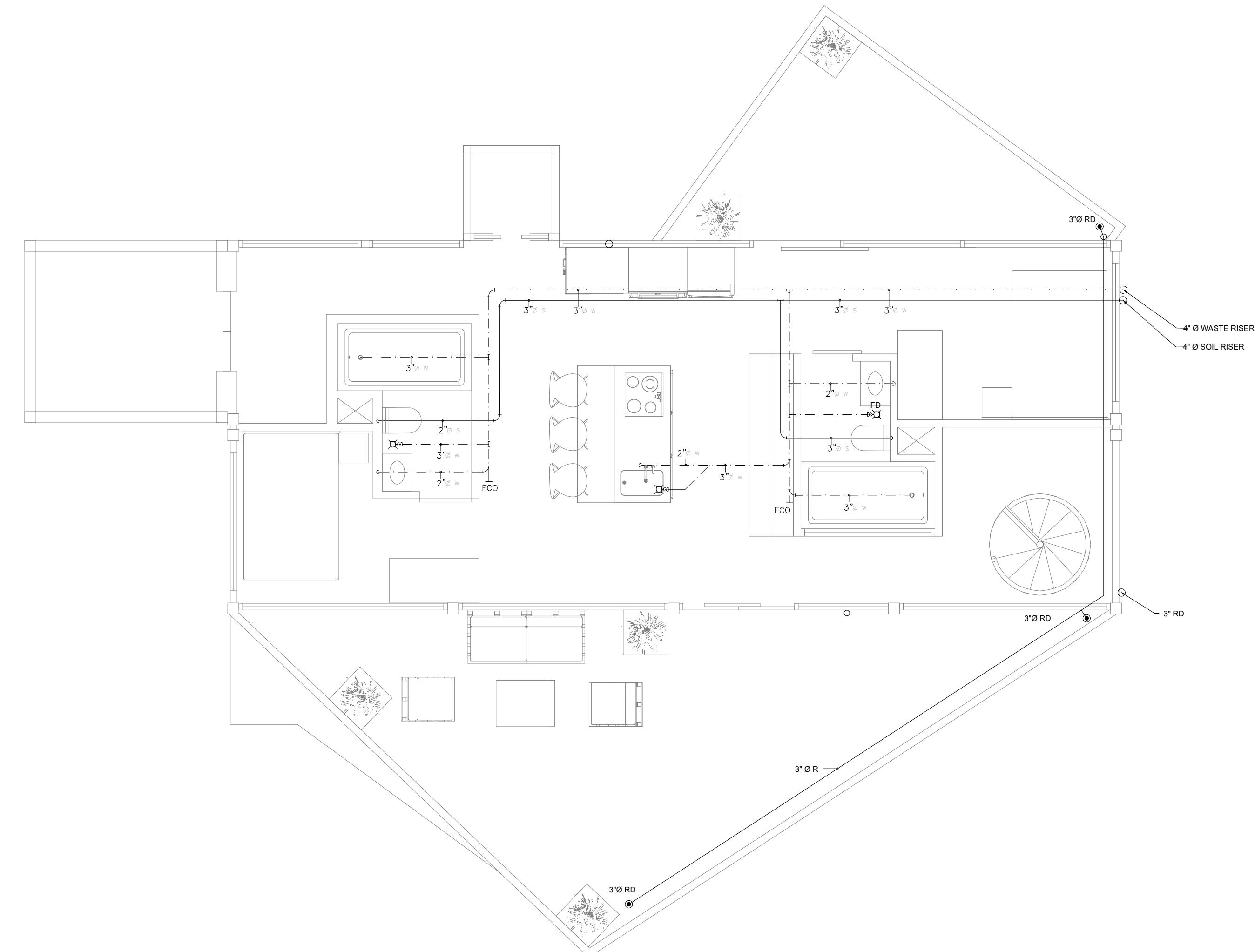
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PLUMBING PLANS



03 WATER SUPPLY THIRD LEVEL

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



03 SANITARY THIRD LEVEL

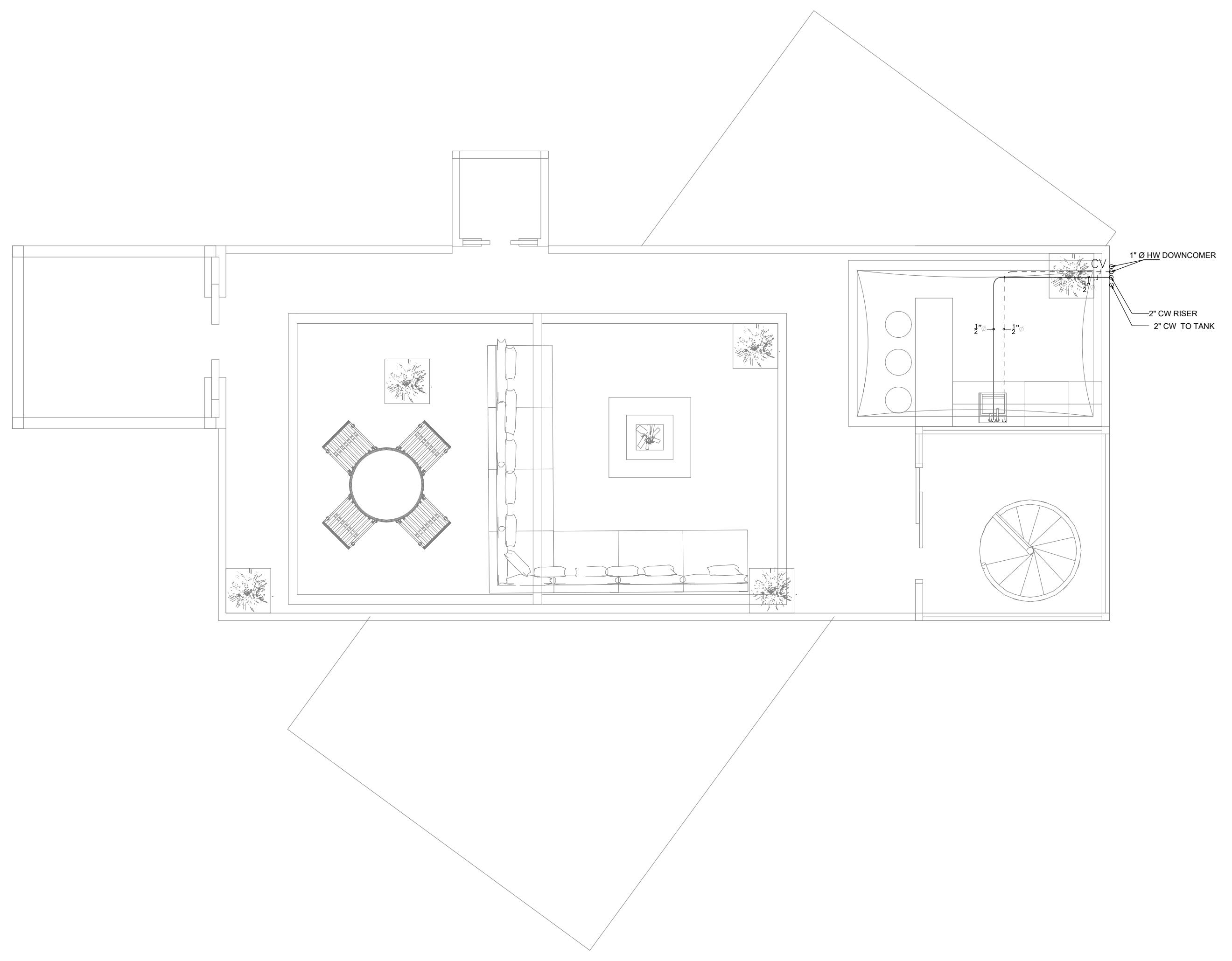
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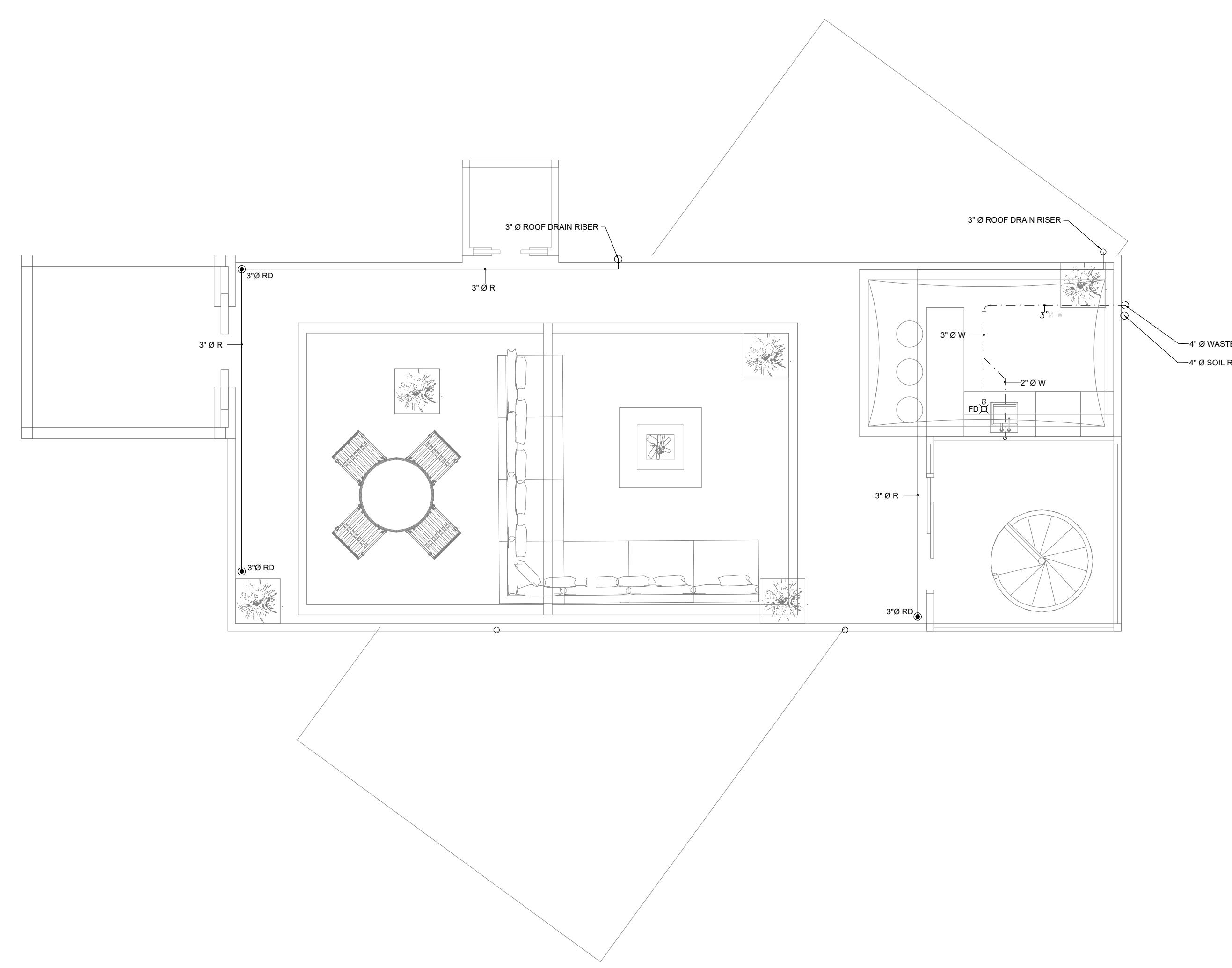
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04 WATER SUPPLY ROOF
SCALE: 1/4"=1'-0"



04 SANITARY ROOF
SCALE: 1/4"=1'-0"

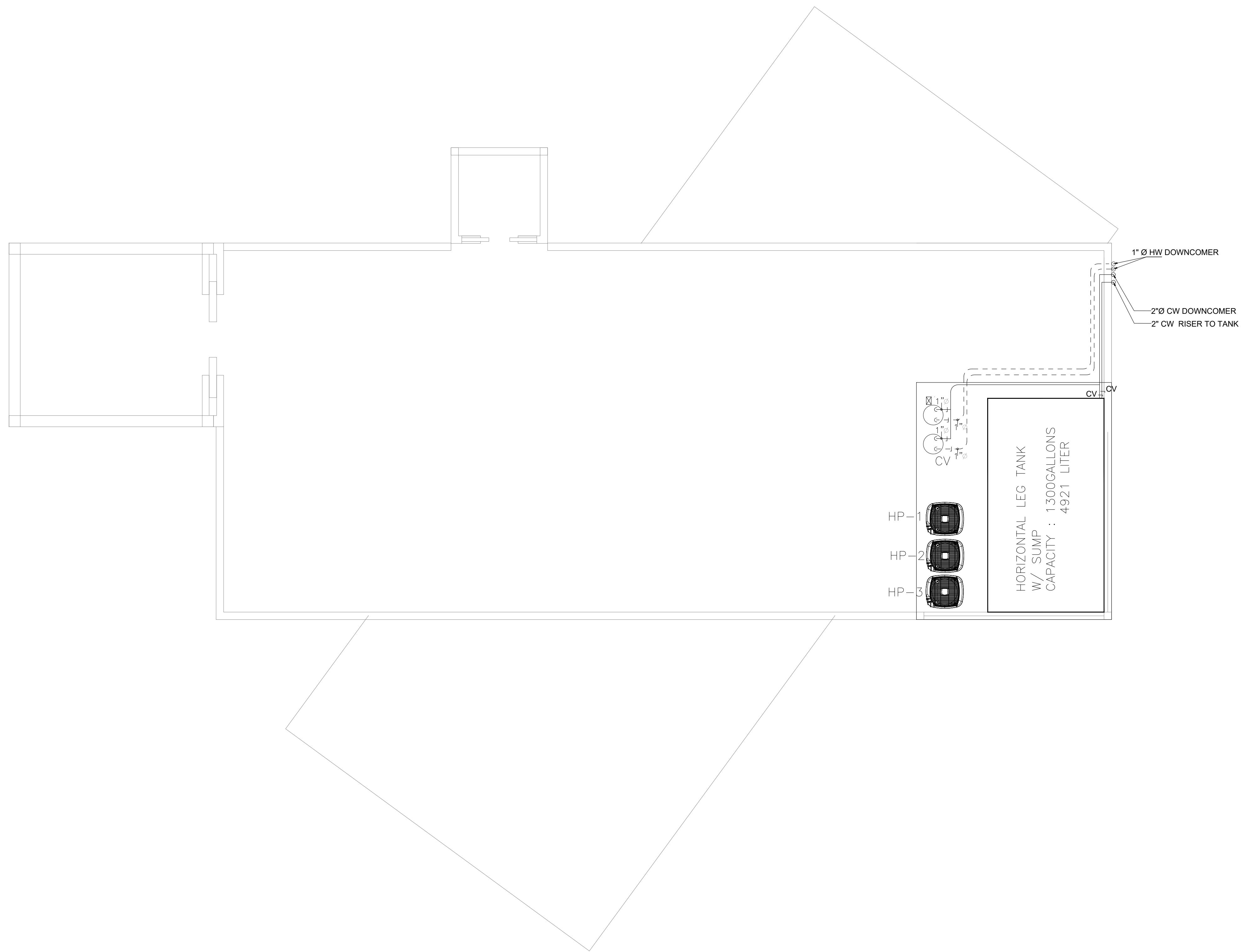
**PLUMBING PLANS
SHIPPING CONTAINER
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05 WATER SUPPLY TERRACE

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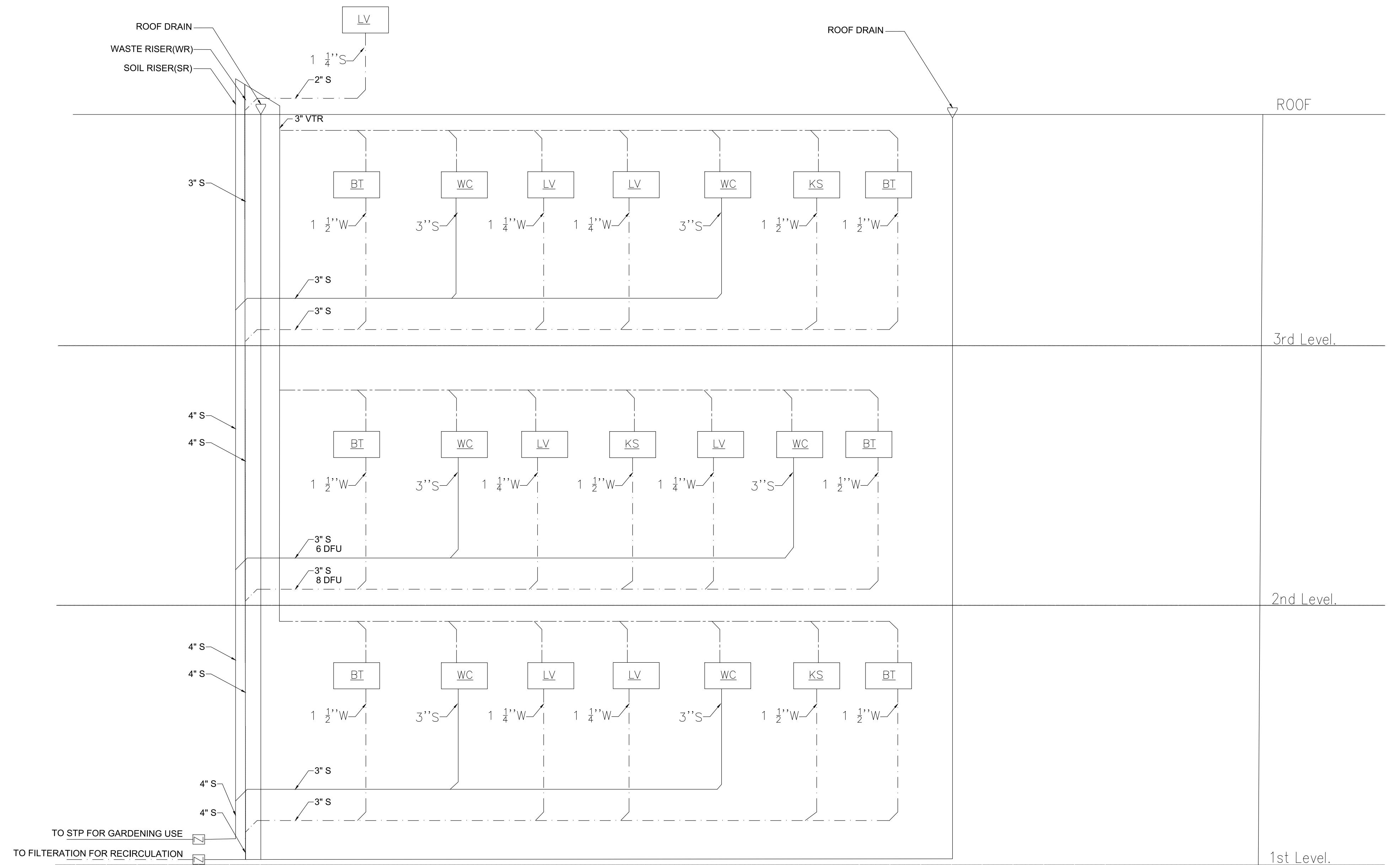
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				BY	

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PLUMBING PLANS
SHIPPING CONTAINER
HOME

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SANITARY SCHEMATIC
SHIPPING CONTAINER HOME

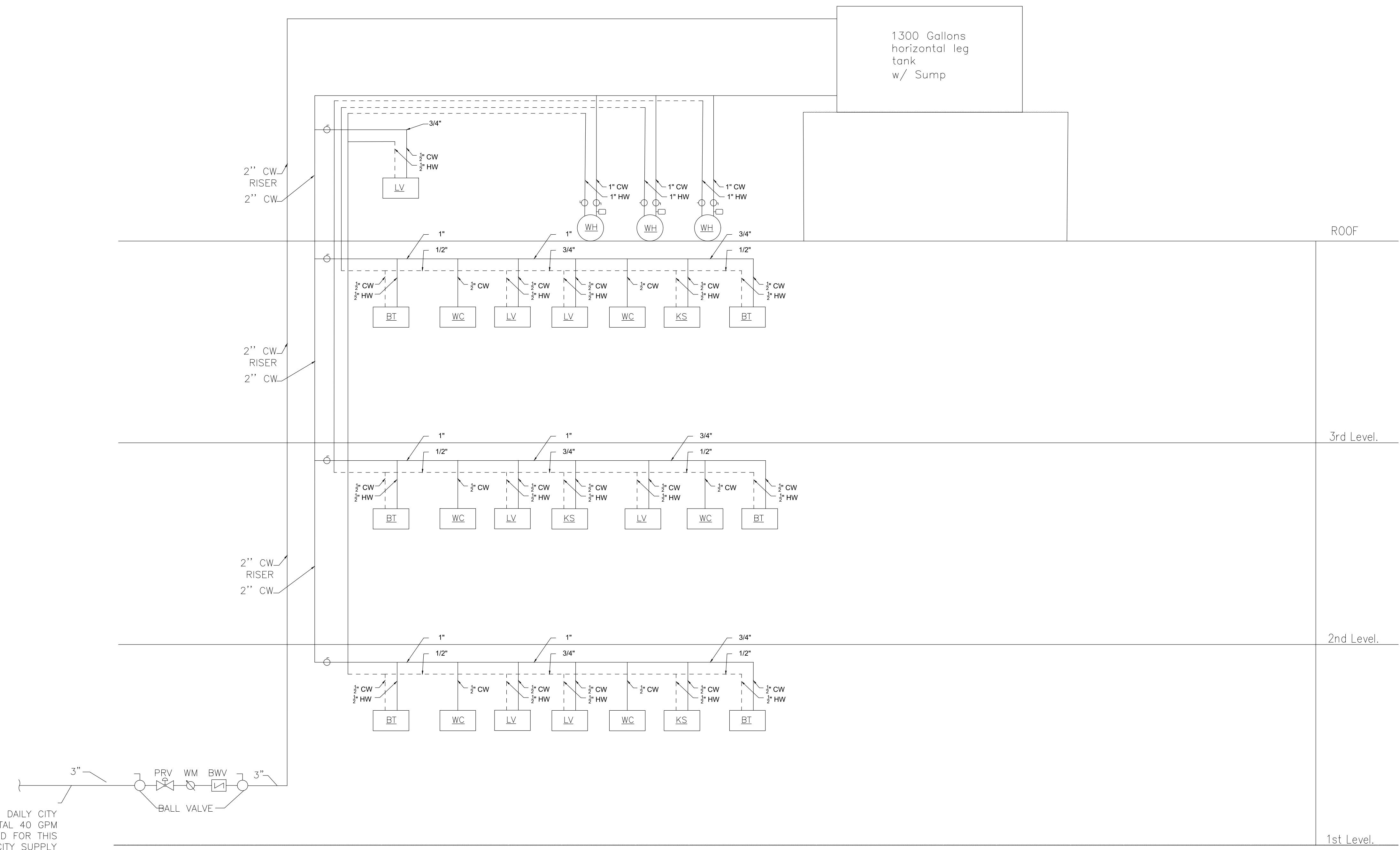
PROFESSIONAL SEAL

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06 SANITARY SCHEMATIC

SCALE: NTS

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SCALE:	NTS
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WATER SUPPLY SCHEMATIC
SHIPPING CONTAINER HOME

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07 WATER SUPPLY SCHEMATIC

SCALE: NTS

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GAS PIPE SIZING ASSUMPTIONS:

SUPPLY PRESSURE TO RANGE AFTER GAS METER: TO BE DETERMINED BY THE RANGE SUPPLIER AND THE CONTRACTOR · FUEL GAS CODE TABLE 402.4, METALLIC PIPE SCHEDULE 40, PRESSURE DROP 3" W.C · MAX LENGTH 60 FEET (LONGEST RUN)

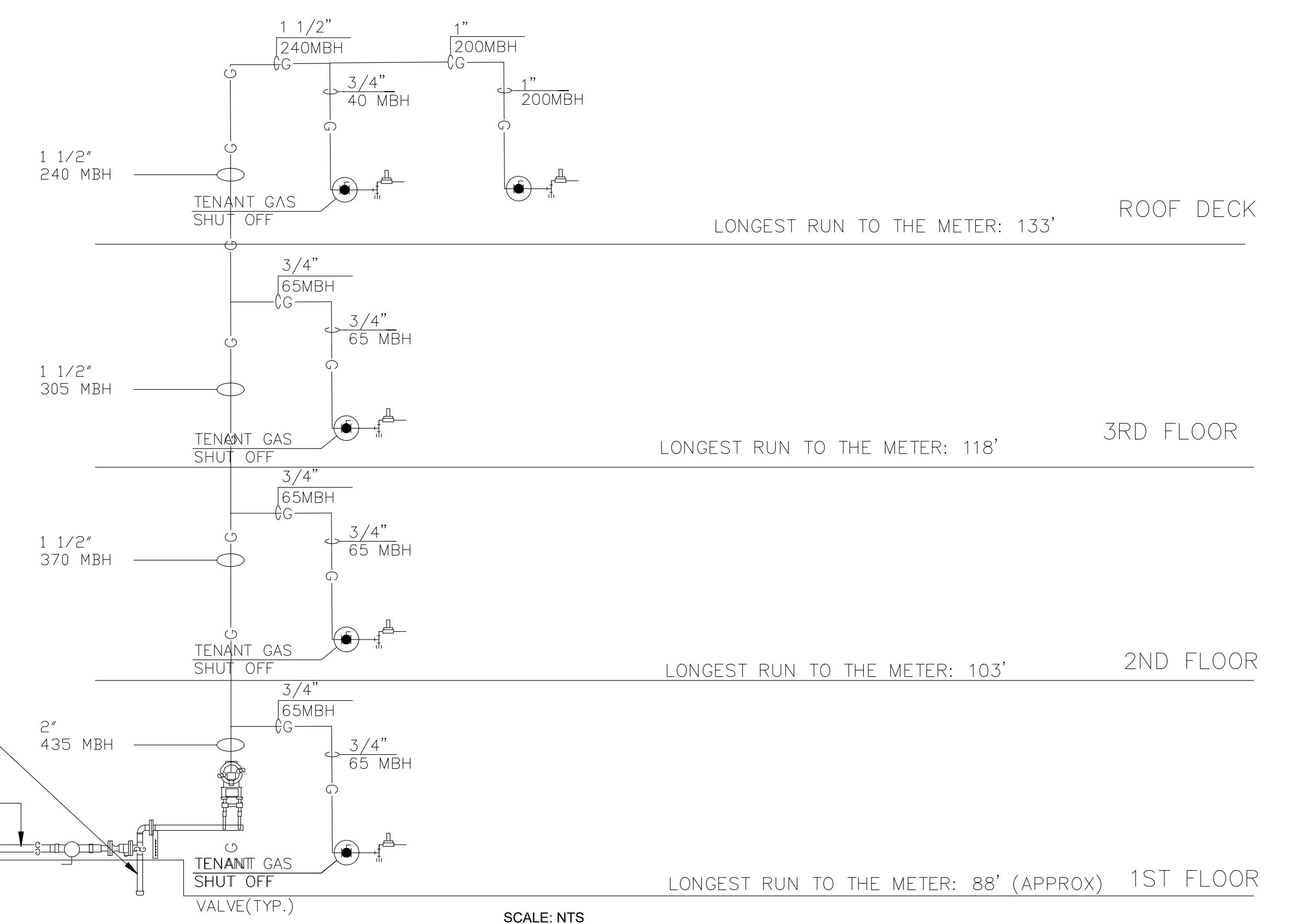
GAS PIPING MATERIAL/JOINTS:

SCHEDULE 40 STEEL PIPE COMPLY WITH ONE OF THE FOLLOWING

WORK PLAN NOTES

1. PROVIDE EASY ACCESS GAS SHUT OFF VALVE CLOSE TO GENERATOR, CONTRACTOR SHALL COORDINATE THE EXACT LOCATION
2. CONTRACTOR TO VERIFY THAT EXISTING METER IS WORKING PROPERLY AND OPERATIONAL, COORDINATE WITH OWNER UPGRADE AS NEEDED METER SHALL MATCH THE REQUIRED LOAD, THE SUPPLY SHALL BE SIZED PER 20kVA LOAD REQUIREMENT AND SUPPLY LINE SHALL BE SIZED ACCORDINGLY BY A PROFESSIONAL ENGINEER.
3. CONTRACTOR TO VERIFY WITH GENERATOR MANUFACTURER INSTALLATION GUIDE TO PROVIDE REQUIRED PRESSURE REGULATOR.
4. CONCEALED GAS PIPE RISER SHALL NOT BE INSTALLED INSIDE SOLID WALLS OR PARTITIONS.
5. PIPE JOINTS CONNECTION FOR THE GAS RISER SHALL BE ONLY WELDED OR BRAZED.

APPLIANCES GAS PIPE:
GAS PIPE SIZE BASED ON APPROXIMATELY 155 FT TOTAL EQUIVALENT PIPE RUN FROM GAS METER TO MOST REMOTE NEW EQUIPMENT CONNECTION.
SPECIFIC GRAVITY :0.6
PRESSURE DROP:0.5 INCH WC
GASS PRESSURE: LESS THAN 2 PSI TABLE 402.4(2)
GAS METER , SERVICE AND REGULATOR BY UTILITY COMPANY
TOTAL LOAD: 650 MBH
NOTE THE CALCULATION PERFORMED IN ACCORDANCE WITH TABLE 402.4-2 IN THE INTERNATIONAL GAS FUEL CODE.



08 GAS RISER DIAGRAM

SCALE: NTS

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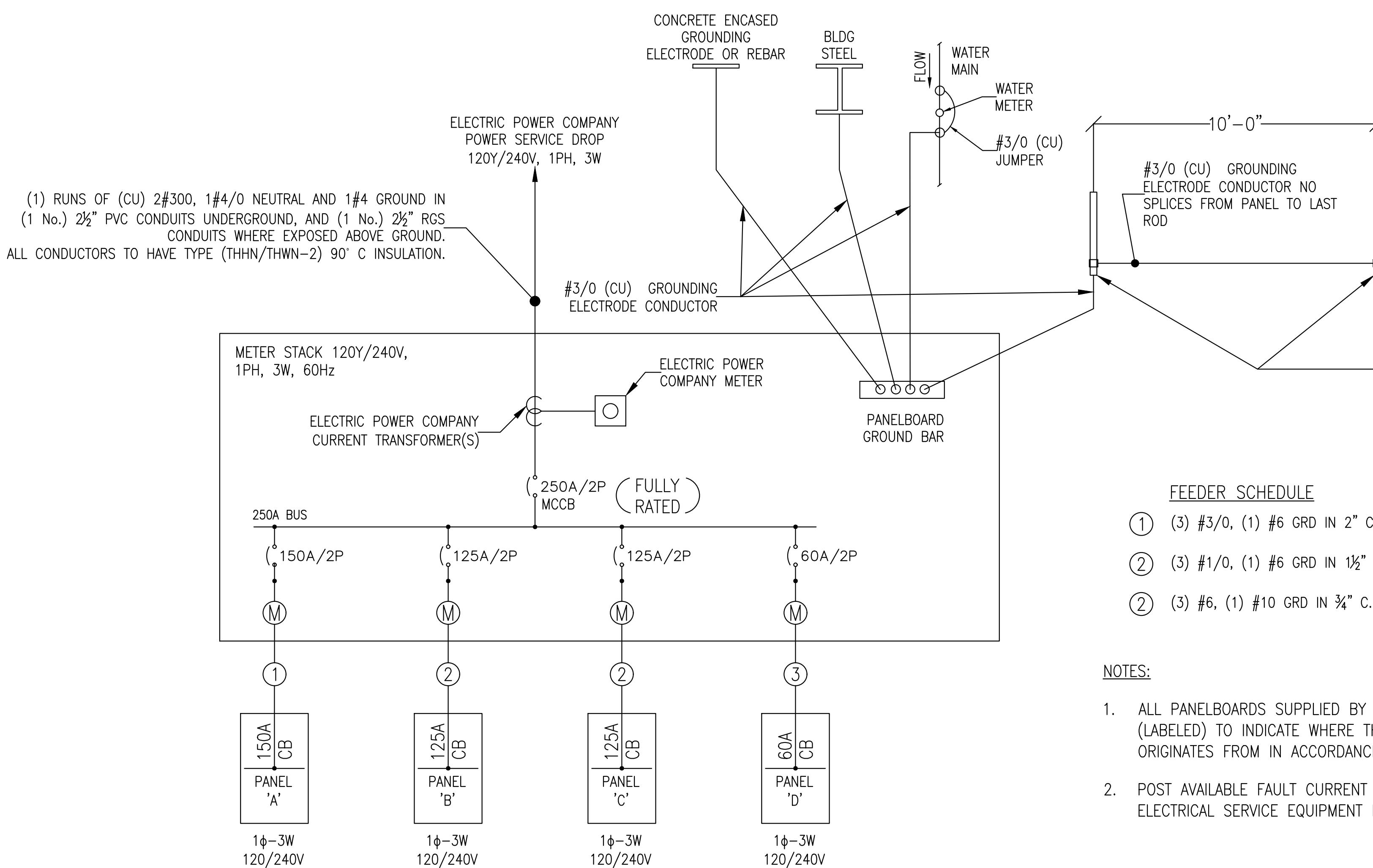
GAS RISER DIAGRAM
SHIPPING CONTAINER HOME

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GENERAL NOTES

1. INSTALL LIGHT CONTROL ON STRIKE SIDE OF DOOR (UNLESS OTHERWISE NOTED).
2. COMBINE NO MORE THAN 6 CURRENT CARRYING CONDUCTORS IN ANY SINGLE HOME RUN FROM A PANEL.
3. PROVIDE CIRCUIT BREAKER FILLER, BLANK COVER PLATE, FOR ALL THE EMPTY SPACES WITHIN THE PANELBOARD.
4. PROVIDE BLANK COVER PLATE FOR ALL THE UNUSED JUNCTION OR DEVICE BOXES.
5. EACH SINGLE PHASE BRANCH CIRCUIT SHALL BE PROVIDED WITH PHASE, DEDICATED NEUTRAL AND GROUND CONDUCTOR.
6. ALL MOUNTING HEIGHTS INDICATED ARE TO BE CENTERLINE OF THE DEVICE BOX UNLESS OTHERWISE INDICATED.
7. COORDINATE WITH ARCHITECTURAL ELEVATION FOR EXACT MOUNTING HEIGHT.
8. ADJUST CIRCUITING AS NECESSARY TO BALANCE PANELBOARD CONNECTED LOADS WITHIN $\pm 10\%$.
9. FINAL CONNECTION TO ALL MOTORS OR VIBRATING EQUIPMENT SHALL BE WITH FLEXIBLE CONDUIT.
10. CONSULT LIGHTING FIXTURE TYPE WITH ARCHITECT OR THE INTERIOR DESIGNER BEFORE ANY INSTALLATION.
11. ALL SWITCHING TO BE CONVENTIONAL UNLESS OTHERWISE NOTED.
12. ANY EXTERIOR OUTLET LOCATION TO BE CONFIRMED WITH ARCHITECT OR LANDSCAPE CONTRACTOR.
13. DIMENSIONS ARE TAKEN FROM THE CENTER OF THE OUTLET UNLESS OTHERWISE IS NOTED.
14. CONTRACTOR TO PROVIDE INDIVIDUAL METERING FOR EACH DWELLING UNITS PER IECC SECTION 405.7
15. CONTRACTOR TO COORDINATE WITH ARCHITECT TO PROVIDE CLOSED (LOCKABLE DOOR) UTILITY ROOM FOR ELECTRICAL PANELS PER NEC 240.24(B). ALSO VERIFY REQUIRED ELECTRICAL CLEARANCE FOR MDP PER NEC110.26



FEEDER SCHEDULE

- ① (3) #3/0, (1) #6 GRD IN 2" C.
- ② (3) #1/0, (1) #6 GRD IN 1½" C.
- ② (3) #6, (1) #10 GRD IN ¾" C.

NOTES:

1. ALL PANELBOARDS SUPPLIED BY A FEEDER CONDUCTOR SHALL BE MARKED (LABELED) TO INDICATE WHERE THE POWER SUPPLY FOR THE PANELBOARD ORIGINATES FROM IN ACCORDANCE WITH THE NEC 408.4(B).
2. POST AVAILABLE FAULT CURRENT RATINGS SHALL BE FIELD MARKED ON THE ELECTRICAL SERVICE EQUIPMENT IN THE FIELD PER NEC 110.24(A).

FIRST FLOOR LIGHTING LAYOUT
Scale: NTS

LIGHTING LEGEND:	
\$	1 WAY SWITCH
\$ ^s	SWITCH WITH OCCUPANCY SENSOR
O ^D	W/P RECESSED LED DOWNLIGHT
O ^A	SURFACE/RECESSED LED LIGHT - 13W LED, 120V VOLTAGE
V	VANITY LED LIGHT
4FT SURFACE MOUNT LIGHT	
EXTERIOR WALL LIGHT	

ELECTRICAL SYMBOLS:	
∅	SINGLE RECEPTACLE OUTLET
∅	DUPLEX WALL OUTLET
○	240V OUTLET
▼	DUAL DATA AND TELEPHONE WALL OUTLET
□	EXHAUST FAN
Fixture Subscript Legend: GFI GROUND FAULT CIRCUIT INTERRUPTER WP WEATHER PROOF	

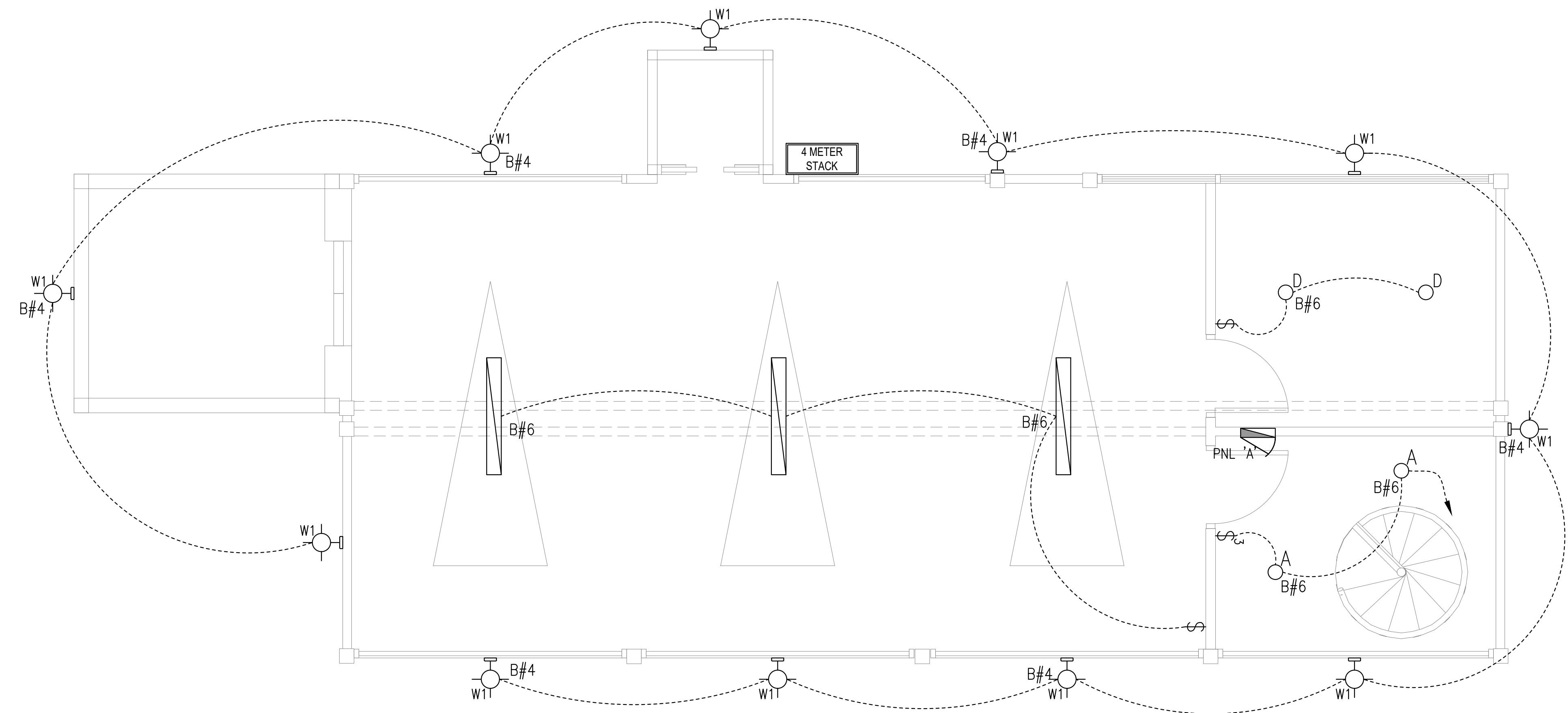
ARCHITECT:		
PROJECT/ADDRESS:		
CLIENT:		
ISSUE	DATE	DESCRIPTION
PROJECT INFORMATION BLOCK		
JOB #	20-Aug-19	
DATE:	20-Aug-19	
DRAWN BY:	E.M.	
CHECKED BY:		
SCALE:	3/8"=1'-0"	
SHEET TITLE		
ELECTRICAL NOTES, LEGEND & SINGLE LINE DIAGRAM		
SHEET NUMBER		

EO.1

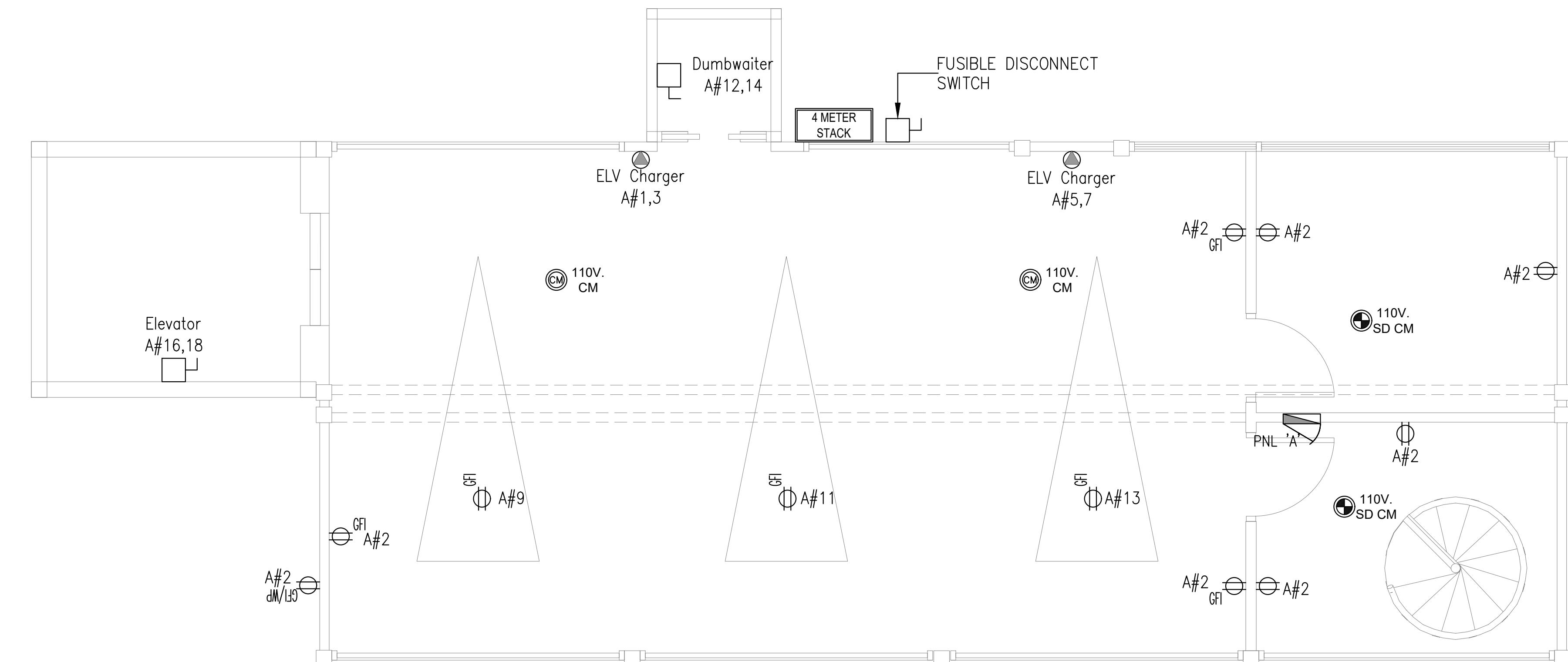
PANEL 'A' SCHEDULE FIRST FLOOR				RATING: 150A														
LOAD DESCRIPTION	POLES /AMPS	Wire	CONT.	LOAD, VA				CIRCUIT #	PHASE	CIRCUIT #	LOAD, VA				Wire	POLES /AMPS	LOAD DESCRIPTION	
				KITCHEN	MOTOR	AC	HEATING				KITCHEN	MOTOR	HVAC	OTHER				
ELECTRIC CAR CHARGER	2/20	#12						4000	1	5440	2		1440		#12	1/20	GENERAL RECEPT*	
ELECTRIC CAR CHARGER	2/20	#12						4000	3	4660	4		660		#12	1/20	LIGHTING	
GARAGE DOOR OPENER	1/20	#12			600			4000	5	4420	6		420		#12	1/20	LIGHTING	
GARAGE DOOR OPENER	1/20	#12			600			11	7	5100	8			1100	#12	1/20	WASHER/DRYER	
GARAGE DOOR OPENER	1/20	#12			600			13	1800	12			1200		#12	2/20	DUMB WAITER	
SMOKE DETECTORS	1/20	#12	120					15	3470	16			1200		#8	2/40	ELEVATOR	
SPACE								17	3350	18			3350				SPACE	
"								19	0	20							"	
"								21	0	22							"	
"								23	0	24							"	
"								25	0	26							"	
"								27	0	28							"	
"								29	0	30							"	
"								31	0	32							"	
"								33	0	34							"	
"								35	0	36							"	
Totals				120	0	0	1800	0	0	16000	16710	15030	0	2520	0	0	0	11300
CATEGORY	CONN. LOAD	CODE	CODE LOAD	KVA	AMPS	FACTOR	KVA	AMPS										
CONTINUOUS:	0.12	0.50	125%	0.15	0.63													
RECEPTACLE:	2.52	10.50	>10KVA at 50%	2.52	10.50													
MOTORS:	1.80	7.50	100%	1.80	7.50													
KITCHEN EQUIPMENT:	0.00	0.00	75%	0.00	0.00													
AIR CONDITIONING:	0.00	0.00	100%	0.00	0.00													
HEAT (ELECTRIC):	0.00	0.00	100%	0.00	0.00													
OTHER LOAD:	27.30	113.75	100%	27.30	113.75													
LARGEST MOTOR:	0.60	2.50	125%	0.75	3.13													
TOTAL:	32.34	134.75	-	32.52	135.50													

PANEL 'B' SCHEDULE SECOND FLOOR				RATING: 125A															
LOAD DESCRIPTION	POLES /AMPS	Wire	CONT.	LOAD, VA				CIRCUIT #	PHASE	CIRCUIT #	LOAD, VA				Wire	POLES /AMPS	LOAD DESCRIPTION		
				KITCHEN	MOTOR	HVAC	OTHER				CONT.	RECPT.	KITCHEN	MOTOR	HVAC	OTHER			
INDUCTION STOVE	2/20	#12		2000				1	2300	2	300		1200		1000		#12	1/20	EXHAUST HOOD
OVEN	2/20	#12		2000				3	3000	4			1200		1440		#12	1/20	WASTE DISPOSAL
REFRIGERATOR	1/20	#12		1000				5	2640	6			1000		1080		#12	1/20	GENERAL RECEPT*
DISHWASHER	1/20	#12		1200				9	1360	10			1200		1360		#12	1/20	BATH RECEPT
AHU	2/20	#12		850	13	1630		14	780				850	13	1690	14	840	1/20	LIGHTING
CU	2/20	#12		1300	17	2800		18					1300	19	4800	20		2/20	WATER HEATER
SMOKE DETECTORS	1/20	#12	120	850	15	2350	16	360					850	15	2350	16		2/40	FLOOR HEATING
SPACE				1300	17	2800	18	1500					1300	19	4800	20			SPACE
"				1300	19	4800	20	1500					1300	19	4800	20			"
"				1300	19	4800	20	1500					1300	19	4800	20			"
"				1300	19	4800	20	1500					1300	19	4800	20			"
"				1300	19	4800	20	1500					1300	19	4800	20			"
Totals				120	0	8600	0	4300	14230	14650	1800	3180	1000	0	10000				
CATEGORY	CONN. LOAD	CODE	CODE LOAD	KVA	AMPS	FACTOR	KVA	AMPS											
CONTINUOUS:	1.80	7.50	125%	2.25	9.38														
RECEPTACLE:	3.18	13.25	>10KVA at 50%	3.18	13.25														
MOTORS:	0.00	0.00	100%	0.00	0.00														
KITCHEN EQUIPMENT:	9.60	40.00	75%	7.20	30.00														
AIR CONDITIONING:	4.30	17.92	100%	4.30	17.92														
HEAT (ELECTRIC):	0.00	0.00	100%	0.00	0.00														
OTHER LOAD:	10.00	41.67	100%	10.00	41.67														
TOTAL:	28.88	120.33	-	26.93	112.21														

PANEL 'D' SCHEDULE ROOF FLOOR				RATING: 60A															
<tr

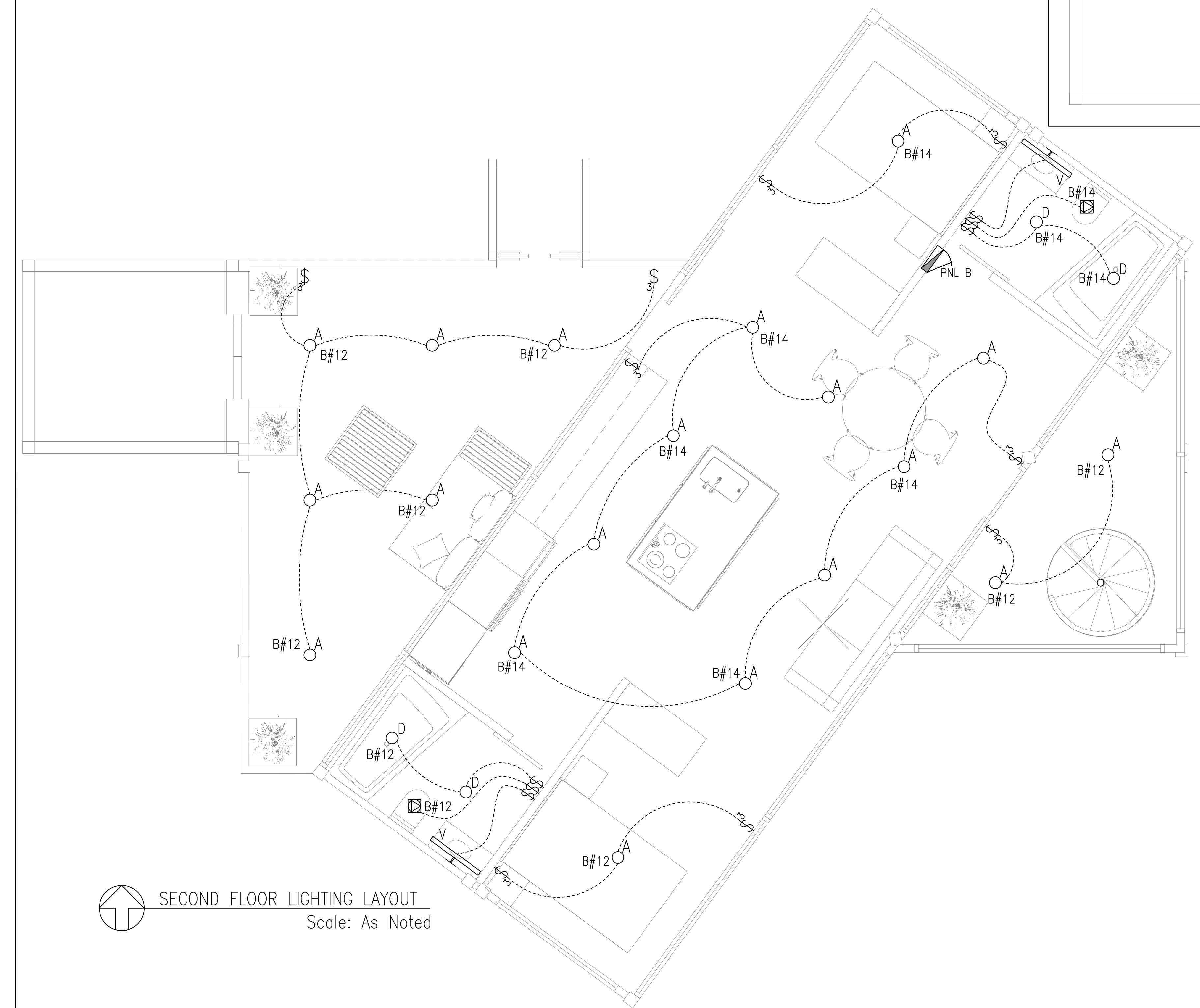


FIRST FLOOR LIGHTING LAYOUT
Scale: As Noted



FIRST FLOOR POWER LAYOUT
Scale: As Noted

ARCHITECT:		
PROJECT/ADDRESS:		
CLIENT:		
ISSUE	DATE	DESCRIPTION
PROJECT INFORMATION BLOCK		
JOB #		
DATE:	20-Aug-19	
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CHECKED BY:		
SCALE:	3/8"=1'-0"	
SHEET TITLE		
FIRST FLOOR ELECTRICAL LAYOUT		
SHEET NUMBER		
E1.1		



ARCHITECT:		
PROJECT/ADDRESS:		
CLIENT:		
ISSUE	DATE	DESCRIPTION
PROJECT INFORMATION BLOCK		
JOB #	20-Aug-19	
DATE:	20-Aug-19	
DRAWN BY:	E.M.	
CHECKED BY:		
SCALE:	3/8"=1'-0"	
SHEET TITLE		
SECOND FLOOR ELECTRICAL LAYOUT		
SHEET NUMBER		

E1.2

