

GDI ENGINEERING



Blunt Residence

Residencial

Vero Beach, Florida

MECHANICAL SPECIFICATIONS

PROVIDE EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM DEFINITIONS:

1. **FURNISH** MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION.

2. **INSTALL** MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE.

3. **PROVIDE** MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

4. **WARRANTY:** PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT.

5. PROVIDE OPERATION MANUALS, MAINTENANCE MANUALS AND SCHEMATICS FOR ALL MECHANICAL EQUIPMENT INSTALLED.

6. **COORDINATION:** COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

7. ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOF WARRANTY.

8. DUCT DIMENSIONS: UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

9. **SHEET METAL DUCTWORK:**
9.1. PROVIDE SHEET METAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 1" W.G. PRESSURE CLASS, SEAL CLASS "A".

9.2. SHEET METAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G90 ZINC COATING. SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR SHEET, METALLIC-COATED BY THE HOT DIP PROCESS.

9.3. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED.

9.4. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING.

9.5. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT.

9.6. PROVIDE TURNING VANES AT ALL 90° ELBOWS.

9.10. TRAPEZE DUCT HANGERS: PROVIDE MINIMUM 1" X 2" X 1" X 18 GAUGE CHANNELS WITH MINIMUM 1" X 18 GAUGE STRAPS TO STRUCTURAL SUPPORT.

9.11. ROUND SHEET METAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (DUCT SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS.

9.12. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1.

9.13. FIBER GLASS DUCT BOARD IS AN ACCEPTABLE ALTERNATIVE IF APPROVED BY OWNER AND THE LOCAL BUILDING CODE OFFICIAL.

9.14. EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL BE CLEANED OF DEBRIS AND OIL, THEN WIPED DOWN WITH VINEGAR OR OTHER SURFACE PREPARING CHEMICAL TO PREPARE DUCT FOR PAINT.

9.15. DUCT SEALANT: PROVIDE POLYMERIC RUBBER TYPE SEALANT FOR USE ON BOTH INTERIOR LOCATED DUCTWORK AND DUCTWORK EXPOSED TO OUTDOOR CONDITIONS. SEALER SHALL HAVE HIGH BONDING STRENGTH FOR SURE, FIRST TIME SEALING OF JOINTS IN LOW, MEDIUM, AND HIGH PRESSURE DUCT SYSTEMS. SEALER SHALL BE HIGH IN SOLID CONTENT.

9.16. PROVIDE A TWO PART TAPE SEALING SYSTEM, CONSISTING OF WOVEN FIBER TAPE IMPREGNATED WITH A GYPSUM MINERAL COMPOUND, AND A MODIFIED ACRYLIC/SILICONE ACTIVATOR THAT REACTS EXOTHERMICALLY WITH THE TAPE. TWO PART TAPE SEALING SYSTEM MUST BE RATED FOR BOTH INDOOR AND OUTDOOR APPLICATION. TAPE SHALL NOT CONTAIN ASBESTOS.

9.20. DUCT INSULATION: MATERIAL FOR SUPPLY AND RETURN AIR DUCT ABOVE CEILING INSIDE THE BUILDING SHALL HAVE THE EQUIVALENT THERMAL RESISTANCE OF MINIMUM R-6. THE REQUIRED R VALUES ARE FOR INSTALLED INSULATION WITH 25% COMPRESSION AT THE CORNERS.

9.21. PROVIDE PINS AND WASHERS IN ACCORDANCE WITH SMACNA REQUIREMENTS AND AS REQUIRED TO PREVENT INSULATION FROM SAGGING.

9.22. PROVIDE ADEQUATE INSULATION AT THE SUPPLY AIR DIFFUSERS TO PREVENT CONDENSATION.

9.23. FLEXIBLE DUCT - UL #181 LISTED, CLASS 1, AND CONTAIN A 0.1 PERM RATED POLYETHYLENE INNER LINER, WITH R-8 FIBERGLASS INSULATION. FLEXIBLE DUCTS SHALL BE SECURED TO RIGID SHEET METAL COLLARS AND AIR DIFFUSERS WITH NYLON TIES OR STAINLESS STEEL WORM GEAR STRAPS.

9.24. SEAL ALL CONNECTIONS AND JOINTS AIRTIGHT.

9.25. SUPPORT FLEXIBLE DUCTS FROM THE BUILDINGS STRUCTURE WITH MINIMUM 1" WIDE, 18 GAUGE, GALVANIZED STEEL STRAP AT MAXIMUM 4'-0" CENTERS. PROVIDE 4" WIDE SHEET METAL SADDLES AT EACH SUPPORT EACH STRAP. SAG OF FLEXIBLE DUCT BETWEEN HANGERS SHALL NOT EXCEED 1/2" PER FOOT OF SUPPORT SPACING. 9.26. RADIUS FOR TURNS OF FLEXIBLE DUCTS SHALL BE A MINIMUM OF ONE DUCT DIAMETER.

9.27. FLEXIBLE DUCT RUNS SHALL NOT EXCEED 10'-0" IN LENGTH AND SHALL BE THE SAME SIZE AS THE DIFFUSER NECK CONNECTION.

9.28. ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE. MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEET METAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION, AS REQUIRED.

9.29. RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM 1/2" HEXAGONAL AXLE, BOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN THE FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

9.30. DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

9.31. FLEXIBLE DUCT CONNECTORS: PROVIDE U.L. LABELED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS. DUCT ACCESS DOORS: PROVIDE HINGED ACCESS DOORS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT.

9.32. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEET METAL AS DUCT IN WHICH IT IS INSTALLED.

9.33. PROVIDE FLUSH FRAMES FOR UN-INSULATED DUCTS, AND EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTS.

9.34. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER, AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCESS DOORS.

10. HVAC CONTROL SYSTEM: PROVIDE ALL THE NECESSARY CONTROLS AND CONTROL WIRING IN CONDUIT COMPATIBLE TO SYSTEMS SHOWN ON EQUIPMENT SCHEDULE.

11. PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM SHALL ENABLE THE SUPPLY FAN AND CYCLE THE COOLING AND HEATING STAGES TO MAINTAIN SPACE SET-POINT.

12. SUPPLY FAN RUNS CONTINUOUSLY DURING THE OCCUPIED MODE. EACH THERMOSTAT SHALL HAVE A DEAD BAND OF AT LEAST 5 DEGREES (ADJ) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF, EACH THERMOSTAT SHALL HAVE SETBACK AND SET-UP CAPABILITY DURING THE UNOCCUPIED MODE. FOR SETBACK, THE HEATING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE DOWN TO 55 DEGREES. FOR SET-UP, THE COOLING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE UP TO 85 DEGREES OR TO PREVENT HIGH SPACE HUMIDITY LEVELS.

13. WHERE DEMAND CONTROLLED VENTILATION IS SPECIFIED ON PLANS, EACH SYSTEM SHALL BE PROVIDED WITH A MOTORIZED OUTSIDE AIR DAMPER THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEM OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY CLOSING DURING PREOCCUPANCY BUILDING WARM-UP, COOL DOWN, AND SETBACK, EXCEPT WHEN VENTILATION REDUCES ENERGY COSTS (e.g., NIGHT PURGE) OR WHEN VENTILATION MUST BE SUPPLIED TO MEET CODE REQUIREMENTS.

14. COMMISSIONING / VERIFICATION: HVAC CONTROL SYSTEM SHALL BE TESTED TO ENSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING CONDITION, AND THAT THE SYSTEM MEETS THE DESIGN REQUIREMENTS.

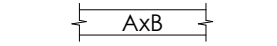
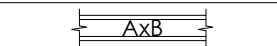
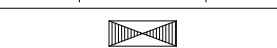



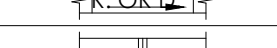
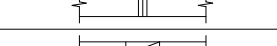

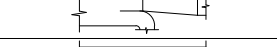

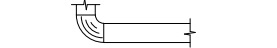
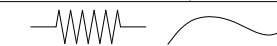

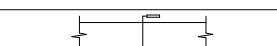
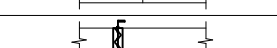
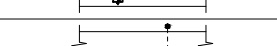
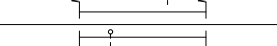
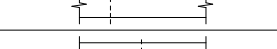
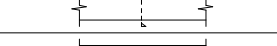
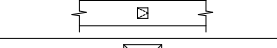

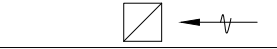




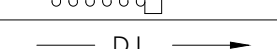
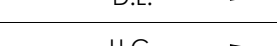
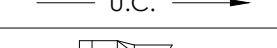

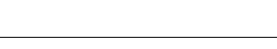

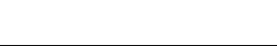


15. TEST AND BALANCE: CONTRACT DIRECTLY A THIRD PARTY TO PROVIDE TEST AND BALANCE OF THE HVAC SYSTEM. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING. TEST AND ADJUST ALL MECHANICAL SYSTEM AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB PROCEDURAL STANDARDS-1999 OR AABC 2002, AND ASHRAE STANDARD 111. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. SUBMIT COMPLETED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCING CONTRACTOR SHALL BE INDEPENDENT AND CERTIFIED WITH NEBB OR AABC. BALANCE ALL SYSTEMS WITHIN 5% OF AIR FLOW INDICATED ON DRAWINGS, AND REPORT ALL DISCREPANCIES TO THE HVAC CONTRACTOR FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

16. COMPLETION REQUIREMENTS: THE CONTRACTOR SHALL PROVIDE, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS AND AN OPERATING AND MAINTENANCE MANUAL TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE OWNER. THE RECORD DRAWING SHALL BE OF THE ACTUAL INSTALLATION AND INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES. THE OPERATING AND MAINTENANCE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
(A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE;
(B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED;
(C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY;
(D) HVAC CONTROLS SYSTEMS MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SYSTEM SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS;
(E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SET-POINTS.

HVAC GENERAL NOTES

1. SEE ARCHITECTURAL PLANS FOR TYPE OF CEILING TO MATCH THE AIR DEVICES SELECTION.
2. DO NOT OPERATE AIR HANDLERS OR EXHAUST FANS UNTIL ALL INTERIOR CLEANING AND PAINTING IS COMPLETE. THE CLEANING OF FOULED COILS OR FAN ASSEMBLIES DUE TO PAINT OR CONSTRUCTION DEBRIS WILL BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR.
3. RECTANGULAR DUCT SIZES INDICATED ARE ACTUAL SHEET METAL DIMENSIONS IN INCHES. ALL ROUND DUCT SIZES INDICATE NET FREE INSIDE DIAMETER AND DO NOT ACCOUNT FOR ANY INSULATION. ROUND DUCTS ARE EXTERNALLY INSULATED.
4. MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATION. VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTIONS IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED IN COORDINATION WITH ARCHITECTURAL SPACES.
5. REFER TO DETAILS FOR SUPPORTS. ANCHOR BOLTS AND HANGERS FOR ALL EQUIPMENT, OTHER MISCELLANEOUS STEEL BRACING, SUPPORTS, AND REINFORCEMENT STEEL REQUIRED TO SUPPORT EQUIPMENT SHALL BE FURNISHED AS PART OF THE SCOPE.
6. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, AND AUTHORITIES HAVING JURISDICTION.
7. DUCTWORK AND PLENUMS SHALL BE SEALED IN ACCORDANCE WITH THE MECHANICAL CODE AND SMACNA METHOD AND COMMERCIAL ENERGY CONSERVATION CODE. SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS. SEAL ALL PENETRATIONS OF FLOORS, SMOKE WALLS, FIRE WALLS, AND EXTERIOR WALLS.
8. DO NOT RUN DUCT ON PIPE OVER ELECTRICAL PANELS. COORDINATE LOCATION OF DUCTS AND EQUIPMENT IN MECHANICAL ROOMS WITH THE ELECTRICAL AND PLUMBING CONTRACTOR BEFORE ANY INSTALLATION.
9. ALL DUCT RUN-OUTS TO SUPPLY AND EXHAUST AND DIFFUSERS AND RECEPTORS SHALL HAVE NORMAL BALANCING DAMPERS. PROVIDE YOUNG REGULATORS WITH REMOTE ADJUSTMENT WHERE CEILING IS INACCESSIBLE.
10. ALL DUCTWORK SHALL BE INSTALLED AND MANUFACTURED IN ACCORDANCE WITH LATEST SMACNA STANDARDS.
11. SECURE ALL PERMITS AND PROVIDE ANY REQUIRED TEMPORARY UTILITIES.
12. ALL FLEXIBLE DUCT SHALL BE UL 181, CLASS 1 AIR DUCT BLACK LINER. PROVIDE RIGID ROUND INSULATED AIR DUCT, ROUNDOUT AS REQUIRED. FLEXIBLE DUCT SHALL HAVE THE EQUIVALENT OF ONLY TWO 90 DEGREE ELBOWS. MAXIMUM FLEX DUCTS ARE SAME SIZE AS DIFFUSER NECK.
13. THE AIR QUANTITIES SHOWN ON THE DRAWINGS FOR INDIVIDUAL OUTLETS MAY BE CHANGED TO OBTAIN UNIFORM TEMPERATURE WITH EACH ZONE, BUT THE TOTAL AIR QUANTITY SHOWN FOR EACH ZONE MUST BE OBTAINED.
14. INSTALL SMOKE DETECTOR FOR ALL UNITS WITH THE CAPACITY OF 2,000 CFM AND HIGHER AS REQUIRED BY CODE. FIRE ALARM CONTRACTOR TO FURNISH AND TERMINATE.
15. ALL SUPPLY AND RETURN AIR DUCTS LOCATED IN UNCONDITIONED ATTICS OUTSIDE THE ENVELOPE OR OUTSIDE THE BUILDING SHALL BE INSULATED USING R-8 INSULATION. EXTERNALLY INSULATED DUCT SHALL BE R-8 (INSTALLED) OR MINIMUM REQUIRED BY CURRENT ADOPTED COMMERCIAL ENERGY CONSERVATION CODE.
16. ALL SUPPLY AND RETURN DUCTS LOCATED IN A CONDITIONED SPACE OR INSIDE THE ENVELOPE SHALL BE INSULATED USING MINIMUM R-6 INSULATION (INSTALLED R-VALUE). EXTERNALLY INSULATED DUCT SHALL BE R-6 OR MINIMUM REQUIRED BY THE CURRENT ADOPTED ENERGY CONSERVATION CODE.
17. PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
18. PROVIDE OPERATING AND MAINTENANCE MANUALS TO THE BUILDING OWNER OR DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
D) HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS, AND DESIRED OR FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET POINTS.
19. DUCTWORK THAT IS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 IN W.G. SHALL BE LEAK TESTED ACCORDING TO INDUSTRY-ACCEPTED TEST PROCEDURES. REPRESENTATIVE SECTIONS TOTALING NO LESS THAN 25% OF THE TOTAL INSTALLED DUCT AREA FOR THE DESIGNATED PRESSURE CLASS SHALL BE TESTED. DUCT SYSTEMS WITH PRESSURE RATINGS IN EXCESS OF 3 IN W.G SHALL BE IDENTIFIED ON THE DRAWINGS. THE MAXIMUM PERMITTED DUCT LEAKAGE SHALL BE NO MORE THAN 1% OF THE TOTAL AIRFLOW IN THE SECTION TESTED OR AS REQUIRED BY CURRENT COMMERCIAL ENERGY CONSERVATION CODE.
20. ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. A WRITTEN BALANCE REPORT SHALL BE PROVIDED TO THE OWNER OF DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER.
21. HVAC CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND PROPER WORKING CONDITION AS REQUIRED BY COMMERCIAL ENERGY CONSERVATION CODE.
22. PROVIDE AND INSTALL 7-DAY PROGRAMMABLE THERMOSTAT.

LEGEND & ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
		DUCT WORK (WIDTHxDEPTH)
		LINED DUCT WORK (WIDTHxDEPTH DIMENSIONS ARE FOR I.D.)
		SUPPLY DUCT, SECTION
		RETURN DUCT, SECTION
		EXHAUST DUCT, SECTION
		RISE OR DROP IN DIRECTION OF AIR FLOW
	FLEX. CONN.	FLEXIBLE CONNECTION
		DUCT TRANSITION, ROUND AND RECTANGULAR
		SPLITTER DAMPER
		EXTRACTOR AT BRANCH DUCT
		TURNING VANES
		FLEXIBLE DUCT
		SINGLE LINE DUCT WORK
	AVD	AUTOMATIC VOLUME DAMPER
	VD	MANUAL VOLUME DAMPER
	BDD	BACKDRAFT DAMPER
	MD	MODULATING DAMPER
	FSD-1.5	FIRE SMOKE DAMPER - FIRE RATING IN HOURS
	AD	ACCESS DOOR
	SD	SUPPLY DIFFUSER
	RR	RETURN REGISTER
	ER	EXHAUST REGISTER
	SWR	SIDE WALL SUPPLY REGISTER
	SWE	SIDE WALL RETURN OR EXHAUST
	LD	LINEAR DIFFUSER
	DL	DOOR LOUVER
	UC	UNDER CUT DOOR
	VAV	VARIABLE AIR VOLUME
	T/B	TO BELOW
	F/B	FROM BELOW
	T/A	TO ABOVE
	F/A	FROM ABOVE
	TS	TEMPERATURE SENSOR
	SD	DUCT SMOKE DETECTOR
	TGS	TOGGLE SWITCH
	TH	THERMOSTAT



BLUNT RENOVATION
261 RIVERWAY DRIVE
VERO BEACH, FL 32963

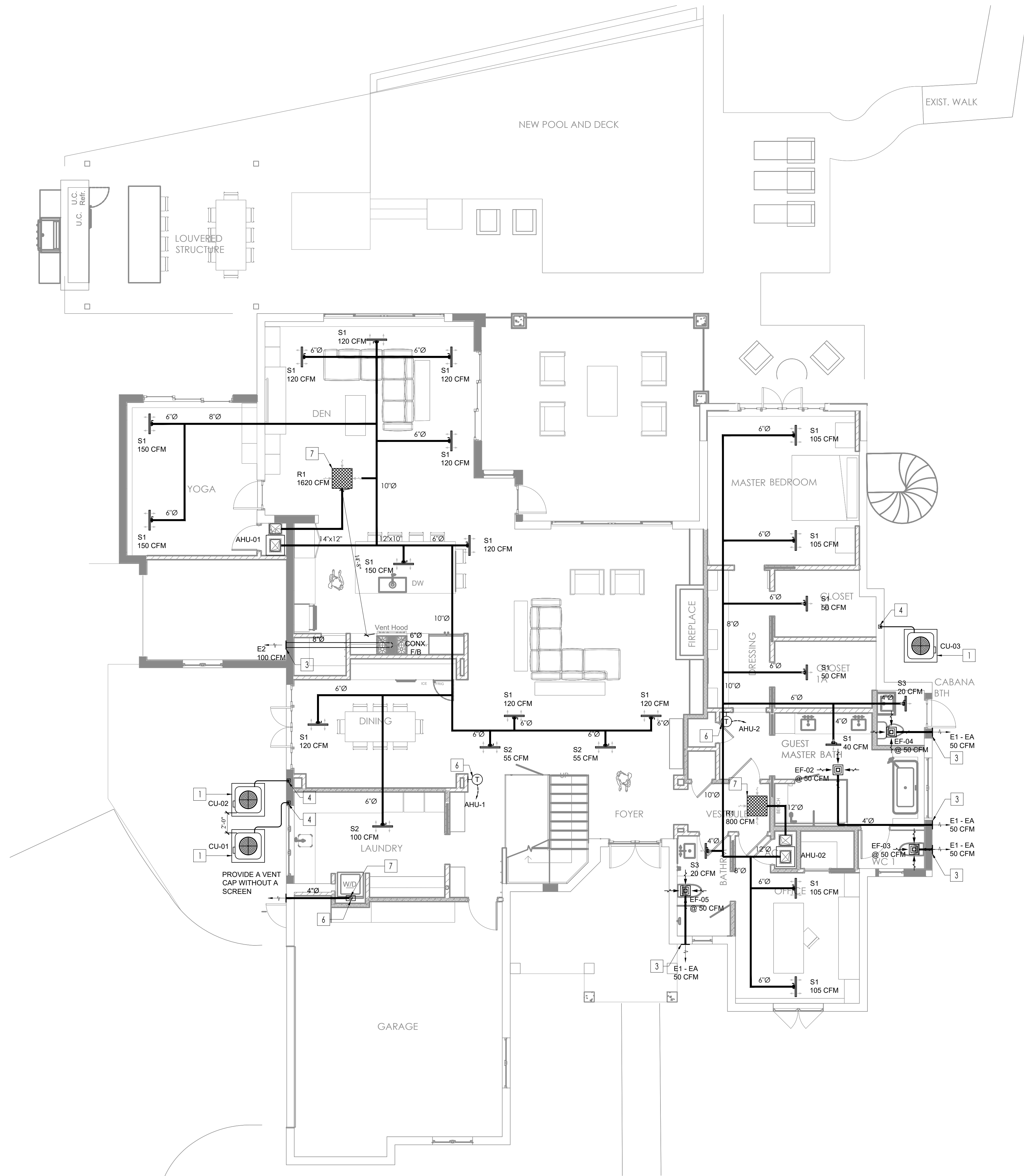
27 MAY 2024

REVISIONS

SPECIAL NOTICE TO CONTRACTORS

1. ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.
2. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.
3. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. NO WORK SHALL BE DONE ON ANY PART OF THE BUILDING BEYOND THE POINT INDICATED IN EACH SUCCESSIVE INSPECTION WITHOUT FIRST OBTAINING THE WRITTEN APPROVAL OF THE CODE OFFICIAL. NO CONSTRUCTION SHALL BE CONCEALED WITHOUT BEING INSPECTED AND APPROVED.

SHEET
M1.00



- MECHANICAL KEYED NOTES:**
- 1 → OUTDOOR CONDENSING UNIT CONCRETE SLAB - INSTALL UNIT ON VIBRATION ISOLATORS.
 - 2 → ROOF DUCT TRAVERSE CONNECTION / PROVIDE FLASHING PLATE AND COORDINATE WITH WATERPROOFING AND PROVIDE ANY NECESSARY CONNECTIONS / ACCESSORIES.
 - 3 → EXHAUST DUCT TERMINATION TO OUTDOORS TO BE SPACED FROM ANY OPERABLE WINDOW BY >3'. THE LOCATIONS PROVIDED ARE WITHIN THE 3' LIMIT FROM THE PROPERTY LINE.
 - 4 → EXTERIOR WALL SEAL PENETRATION OUTLET WITH ELASTOMETRIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC. & REFRIGERANT PIPE LINES TO ABOVE IN WALL.
 - 5 → GAS FURNACE 4" AIR INTAKE & 4" COMBUSTION VENT FROM UNIT VENT TO ROOF / EXTERIOR.
 - 6 → PROVIDE A/C THERMOSTATS AT MIN. +48" ABOVE FLOOR LEVEL, COORDINATE WITH THE ARCHITECT FOR FINAL INSTALLATION POSITION PRIOR TO CABLE PULLING AND FIXATION.
 - 7 → RETURN AIR GRILL WITH MERV13 THROWAWAY FILTER WITH HOUSING ACCESSIBLE FOR MAINTENANCE AND REPLACEMENT FROM THE HOUSE FLOOR - KEEP AWAY FROM THE KITCHEN RANGE BY MIN. OF 10'.
 - 8 → DRYER VENT BOX MODEL DB-480.
DRY WALL VENT ABOVE TOWARD THE OUTDOORS MODEL DWV4 / COLOR AS PER CLIENT'S CHOICE.
4" DUCT TO ABOVE.
 - 9 → RETURN AIR VERTICAL DUCT CONNECTION FROM SIDE MACHINE CONNECTION TO CEILING LEVEL HORIZONTAL DUCT.



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BLUNT RENOVATION
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 VERO BEACH, FL 32963

27 MAY 2024

REVISIONS

FIRST FLOOR MECHANICAL PLAN SCALE 3/16"=1'-0" 1

SHEET M3.00

SCHEDULE No. 1

AIR HANDLING UNITS

TAG	AHU-1	AHU-2	AHU-3
SERVING	SEE PLANS	SEE PLANS	SEE PLANS
MANUFACTURER	CARRIER	CARRIER	CARRIER
MODEL	FG4ANBD60L	FG4ANBD24L	FG4ANBD60L
POWER SUPPLY	208-230V / 1Ø / 60Hz	208-230V / 1Ø / 60Hz	208-230V / 1Ø / 60Hz
MCA (A)	46.5	44.4	46.5
MOCP (A)	50	50	50
AIR FLOW (CFM)	1600	600	1600
EXTERNAL STATIC PRESSURE (INCHES OF WATER)	0.3	0.3	0.3
FAN MOTOR HP	3/4	1/2	3/4
EVAPORATOR COOLING CAPACITY (BTU/H)	48,000	18,000	48,000
ELECTRIC HEATER (kW)	8.0	5.0	8.0
HEATER PART NO* / CARRIER	KFEH0801N08	KFEH0501N05	KFEH0801N08
APPROX. WEIGHT W/O HEATER (lbs)	205	130	205
DIMENSIONS WxDxH	25" x 22.25" x 59.25"	17.75" x 22.5" x 43"	25" x 22.25" x 59.25"

NOTES:

1. PROVIDE CONDENSATE PUMP, IF REQUIRED.
2. PROVIDE DISCONNECT SWITCH.
3. PROVIDE 2" MERV 8 THROWAWAY FILTER.
4. PROVIDE VIBRATION ISOLATION.

SCHEDULE No.

3FAN SCHEDULE

TAG	EF-01 TO 08
LOCATION	TOILETS & BATHROOMS
SELECTED FLOW (CFM)	50
SELECTED PRESSURE DROP (IN. H2O)	0.25"
ELECTRICAL (V / PH / HZ)	120 / 1 / 60
POWER / Amps	25 W
MOTOR SPEED (RPS)	MULTI SPEED
FAN TYPE	CEILING FANS
MANUFACTURER	PANASONIC
MODEL	WHISPER FV-0511VK52

NOTES:

1. PROVIDE UL LISTING.
2. PROVIDE ENERGY STAR COMPLIANCE.
3. INTERLOCK WITH WALL SWITCH.
4. PROVIDE MOTOR WITH THERMAL OVERLOADS.

SCHEDULE No. 4

AIR OUTLETS & VENT CAPS

TAG	DESCRIPTION & MODEL NUMBER	MANUFACTURER	SIZE	MOUNTING
S1	SUPPLY LINEAR SLOT DIFFUSER FLOWBAR FL10 - 1 SLOT - 1" SLOT WIDTH	TITUS	4' LENGTH	CEILING WITH PLENUM BOX & ROUND INLET
S2	SUPPLY LINEAR SLOT DIFFUSER FLOWBAR FL10 - 1 SLOT - 1" SLOT WIDTH	TITUS	2' LENGTH	CEILING WITH PLENUM BOX & ROUND INLET
S3	SUPPLY LINEAR BAR GRILL CT-481 / 1/8" THICK BARS / 15° DEFLECTION / 1/2" SPACING WIDTH	TITUS	2' LENGTH	CEILING WITH PLENUM BOX & ROUND INLET
R1	RETURN DIFFUSER WITH FILTER RACK, CONCEALED FRAME & VISIBLE CORE CTRA-FF	TITUS	36" x 24"	CEILING MOUNTED WITH PLENUM BOX AND RECTANGULAR INLET
R2	RETURN DIFFUSER WITH FILTER RACK, CONCEALED FRAME & VISIBLE CORE CTRA-FF	TITUS	40" x 24"	CEILING MOUNTED WITH PLENUM BOX AND RECTANGULAR INLET
E1	EXHAUST AIR VENT CAP	BROAN-885BL	4"	WALL MOUNTED
E2	EXHAUST AIR VENT CAP	BROAN-843BL	6"	WALL MOUNTED

NOTES:

1. COORDINATE FINISH, COLOR, BORDER AND EXACT LOCATION WITH OWNER PRIOR TO ORDERING.
2. PROVIDE OPPOSED BLADE DAMPER ACCESSIBLE THROUGH DIFFUSER FACE FOR GYP BD. CEILING INSTALLATIONS.
3. PROVIDE DUCT TRANSITIONS AS REQUIRED.
4. RETURNS R1 & R2 ARE PROVIDED WITH MERV 13 FILTERS.
5. RETURNS R1 & R2 ARE PROVIDED WITH MOUNTING LATCHES THAT ALLOW FILTER ACCESS FROM THE GRILL CORE FROM THE ROOM VOLUME.

SCHEDULE No. 2

CONDENSER SCHEDULE

TAG	CU-1	CU-2	CU-3
MANUFACTURER	CARRIER	CARRIER	CARRIER
OUTDOOR MODEL	4SCA548W00300	4SCA518W00300	4SCA548W00300
CONNECTED INDOOR UNIT	AHU-1	AHU-1	AHU-1
POWER SUPPLY	208-230V / 1Ø / 60Hz	208-230V / 1Ø / 60Hz	208-230V / 1Ø / 60Hz
SEER2	16.0	16.0	16.0
MINIMUM CIRCUIT AMPACITY	32.8 A	11.4 A	32.8 A
COMPRESSOR RLA	25 A	8.8 A	25 A
MAX OVERCURRENT DEVICE	50 A	20 A	50 A
COOLING CAPACITY (BTU/H)	48,000	18,000	48,000
APPROXIMATE WEIGHT (lbs.)	185	120	185
OUTDOOR DIMENSIONS (H x W x D) (inch)	32 1/16" x 31 3/16" x 31 3/16"	28 11/16" x 25 3/4" x 25 3/4"	32 3/16" x 31 3/16" x 31 3/16"

NOTES:

1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE VIBRATION ISOLATION.
3. PROVIDE FREEZE THERMOSTAT.
4. PROVIDE CONCRETE BASE SLAB.



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NOTES FOR BIDDERS:

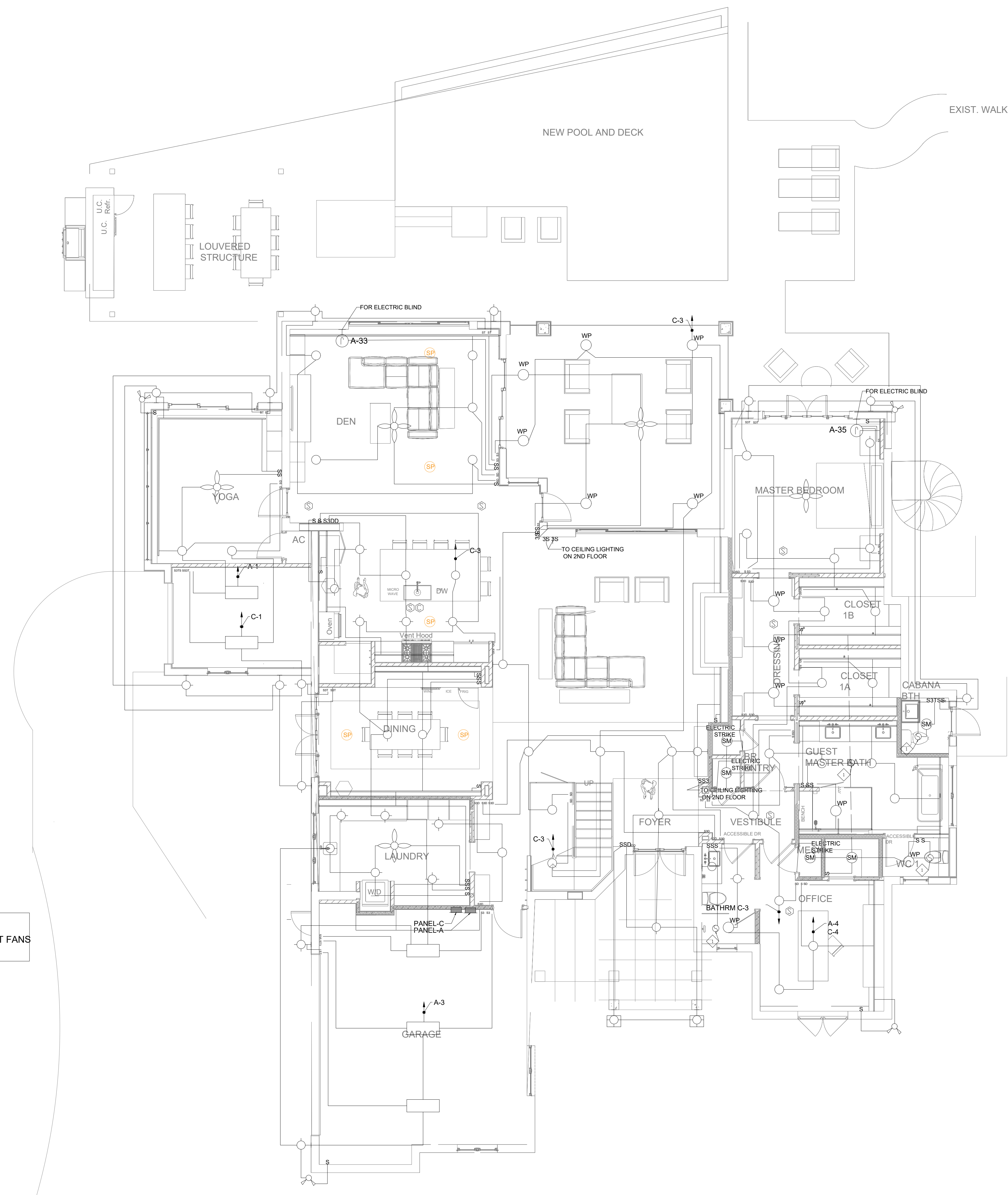
1. MECHANICAL CONTRACTOR SHALL EXAMINE ALL OTHER SPECIFICATIONS, DRAWINGS AND ALL FEATURES OF BUILDING CONSTRUCTION WHICH MAY AFFECT HIS WORK AND SHALL BE GOVERNED BY THESE AND OTHER SPECIFICATIONS, INCLUDING THE GENERAL CONDITIONS AND PARTICULAR INSTRUCTIONS T ALL BIDDER AND SUPPLIERS.
2. ALL WORK SHALL BE EXECUTED AND INSPECTED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND/OR STATE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THIS PARTICULAR CLASS OF WORK, AND EACH CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL APPLICABLE SERVICE CHARGES, FEES, PERMITS, TAXES, AND OTHER SIMILAR COSTS IN CONNECTION THEREWITH.
3. PRIOR TO FABRICATION OF DUCTWORK, THE MECHANICAL CONTRACTOR SHALL EXAMINE AND VERIFY ALL CONDITIONS ABOVE AND BELOW THE CEILING WHICH MAY INTERFERE WITH THE DUCT SYSTEM AND NOTIFY THE ARCHITECT OF ANY CONFLICT ENCOUNTERED. CONTRACTOR SHALL PROVIDE ALL OFFSETS, ETC WHICH MAY BE REQUIRED, WITHOUT ADDITIONAL COST TO THE OWNER.
4. ALL SHEET METAL DUCT CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH "SMACNA" LOW PRESSURE DUCT CONSTRUCTION STANDARD.
5. TURNING VANES SHALL BE INSTALLED IN ALL BENDS IN RECTANGULAR DUCT EXCEEDING 30°.
6. ALL DUCTS SHALL BE SUPPORTED WITH 1" WIDE, 16 GAUGE, GALVANIZED STEEL BANDS.
7. ALL RECTANGULAR DUCT SHALL BE INSULATED WITH A MIN OF 1" INTERNAL LINER, 2 LBS DENSITY R-60 ALL ROUND DUCTS AND DIFFUSER TOPS SHALL HAVE A MIN 2" THICK OF FOIL BACKED BLANKET TYPE INSULATION R=4-4.2, WITH ALL JOINTS BUTTED AND TAPED.
8. ALL DUCT DIMENSIONS SHOWN ON PLANS ARE INTERNAL.
9. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF SUPPLY AND RETURN AIR REGISTERS, DUCTS, GRILLES AND DIFFUSERS WITH LIGHTING AND CEILING PATTERNS.
10. PROVIDE LATERAL BRACING OF ALL DUCTS AND PIPES AS REQUIRED BY CODE.
11. INSULATE AND SEAL ALL DUCTWORK PER THE STATE MECHANICAL CODE.
12. MOUNT ALL THERMOSTATS AT 48" ABOVE FINISHED FLOOR.
13. ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES.
14. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND THE MECHANICAL ENGINEER.
15. DUCT SMOKE DETECTOR SHALL BE INSTALLED BELOW THE ROOF.
16. ALL MECHANICAL EQUIPMENT AND SYSTEMS INSTALLED AS PART OF PROJECT SHALL COMPLY WITH ALL REQUIREMENTS OF THE STATE MECHANICAL CODE AND THE STATE BUILDING CODE AND THE STATE BUILDING ENERGY EFFICIENCY STANDARDS. SEE APPLICABLE CODES IN ANALYSIS SECTION ON THIS SHEET.
17. OUTSIDE AIR FOR A HEATING OR COOLING SYSTEM SHALL NOT BE TAKEN FROM CLOSER THAN 10 FEET FROM AN APPLIANCE VENT OUTLET, VENT OPENING OF A PLUMBING SYSTEM, OR THE DISCHARGE OUTLET OF EXHAUST FAN, UNLESS THE OUTLET IS 3 FT ABOVE THE OUTSIDE AIR INLET.
18. PROVIDE 120 VOLT ELECTRICAL OUTLETS WITHIN 25 FT OF ALL MECH EQUIPT.
19. HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS IN ACCORDANCE WITH:
 - A. AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE
 - B. ACCA MANUAL B
 - C. ASHRAE 111
 - D. NEBB PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS
 - E. SMACNA HVAC TESTING, ADJUSTING, AND BALANCING
20. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL BE NON COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DEVELOPED INDEX NOT TO EXCEED 50 WHERE TESTED AS A COMPOSITE PRODUCT IN ACCORDANCE WITH ASTM E84 OR UL 723.

SHEET
M5.00

LIGHTING LEGEND		WATT	QUANTITY
	4" DIM TO WARM RECESSED FIXTURE WITH DIMMER	15W	46
	4" RECESSED FIXTURE	15W	15
	4" VAPOR PROOF/ WET RATED	12W	15
	2"x4" LED SURFACE MOUNT	50W	5
	SURFACE MOUNT	10W	9
	PENDANT LIGHT	40W	8
	EXIT WALL MOUNTED @80" A.F.F	15W	11
	WALL MOUNTED	18W	14
	FAN	60W	8
	INDIRECT LIGHT	3W/M	-
	FLOOR LIGHT MOTION SENSOR	10W	4
	GAS LATERNS	5W	2
	HARDWIRED "SONOS" SPEAKER	--	9

ELECTRICAL LEGEND	
	JUNCTION BOX FOR EXHAUST FANS
	DIMMER
	OCCUPANCY SENSOR
	ONE WAY LIGHTING SWITCH
	TWO WAYS LIGHTING SWITCH
	SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED
	SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED

SHEET NOTES:
 PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR EXHAUST FANS



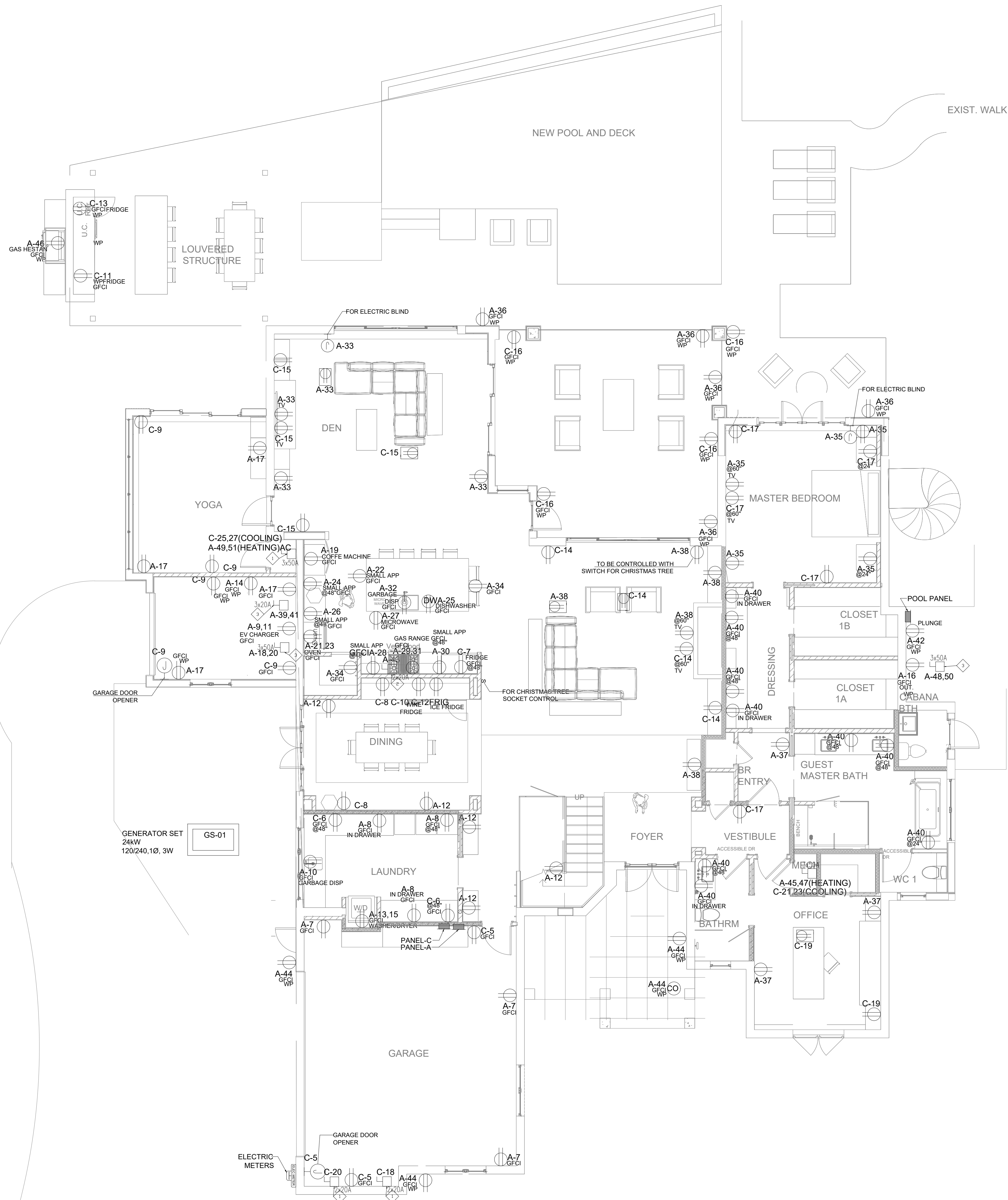
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REVISIONS

FIRST FLOOR-LIGHTING PLAN
 SHEET E2-01



1. REMOVE ALL LIGHTING AND OUTLETS, CONNECT ALL NEW PER LAYOUT INTO EXISTING CIRCUITS.
2. COORDINATE EXACT PLACEMENT OF RELOCATED OUTLETS, LIGHTS, AND APPLIANCES WITH HOMEOWNER PRIOR TO INSTALLATION.
3. ALL ELECTRIC BLINDS SHOULD BE HARDWIRED ABOVE THE OPENING. SEE PLAN FOR POWER LOCATION. SWITCHES CONNECTED TO THE ELECTRIC BLINDS SHOULD ACCOMMODATE THE "UP", "STOP", AND "DOWN" ACTION OF THE BLINDS.
4. ALL/ANY EXTERIOR SOFFIT VENTS ARE TO BE CLOSED, AND NEW SPRAY INSULATION ADDED IN ATTIC, SEE SECTION A6.00.
5. THIS PLAN DENOTES PRELIMINARY LIGHTING PLACEMENT. ALL LIGHTING TO BE COORDINATED WITH FINAL CABINET SHOP DRAWINGS. ALL GLASS FRONT CABINETS TO HAVE INTERNAL LIGHTING. ALL UPPER CABINETS TO HAVE UNDER-COUNTER LIGHTING.
6. SEE NEW MECHANICAL FOR NEW AC LAYOUT AND COORDINATE WITH EXISTING TRUSS LOCATIONS AND LIGHTING, NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.

LIGHTING LEGEND		WATT	QUANTITY
	4" DIM TO WARM RECESSED FIXTURE WITH DIMMER	15W	46
	4" RECESSED FIXTURE	15W	15
	4" VAPOR PROOF/ WET RATED	12W	15
	2"x4" LED SURFACE MOUNT	50W	5
	SURFACE MOUNT	10W	9
	PENDANT LIGHT	40W	8
	EXIT WALL MOUNTED @80" A.F.F	15W	11
	WALL MOUNTED	18W	14
	FAN	60W	8
	INDIRECT LIGHT	3W/M	--
	FLOOR LIGHT MOTION SENSOR	10W	4
	GAS LATERNS	5W	2
	HARDWIRED "SONOS" SPEAKER	--	9

ELECTRICAL LEGEND	
	JUNCTION BOX FOR EXHAUST FANS
SD	DIMMER
SM	OCCUPANCY SENSOR
S	ONE WAY LIGHTING SWITCH
S3	TWO WAYS LIGHTING SWITCH

SHEET NOTES:
 PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR EXHAUST FANS

27 MAY 2024

REVISIONS

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PANEL A PANELBOARD DESIGNATION. Location: GARAGE. Table with columns: * LOAD SUMMARY, CL, DF, A, B, DEMAND TOTAL. Includes details for lighting, HVAC, and kitchen loads. Total Demand Load (KVA) is 78.57.

PANEL C PANELBOARD DESIGNATION. Location: GARAGE. Table with columns: * LOAD SUMMARY, CL, DF, A, B, DEMAND TOTAL. Includes details for lighting, HVAC, and kitchen loads. Total Demand Load (KVA) is 17.95.

PANEL B PANELBOARD DESIGNATION. Location: CORRIDOR. Table with columns: * LOAD SUMMARY, CL, DF, A, B, DEMAND TOTAL. Includes details for lighting, HVAC, and kitchen loads. Total Demand Load (KVA) is 23.07.

LOAD CALCULATIONS FOR BLUNT RESIDENCE. Sections include: 1. LIGHTING & GENERAL USE RECEPTACLES: 220.82(B)(1) - 17,664 va; 2. SMALL APPLIANCES & LAUNDRY CIRCUITS: 220.82(B)(2) - 7,500 va; 3. APPLIANCES & MOTOR LOADS: 220.82(B)(3) & (4) - 78,344 va; 4. HEATING & AIR CONDITIONING LOADS: 220.82(C) - 68,344 va. Final calculated service load is 88,748 va at 208 volts, resulting in 427 amps.



BLUNT RENOVATION
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REVISIONS

SCHEDULE No. 1
UNDERGROUND PROPANE TANK SCHEDULE

TAG	PT-01
LOCATION	UNDERGROUND - SEE PLAN
SERVES	SEE GAS TABLE
NOMINAL CAPACITY (GAL)	250
DIAMETER x LENGTH	32" x 7'3"
APPROX. EMPTY WEIGHT (lbs)	500
INSTALLATION	UNDERGROUND

NOTES:

1. PROVIDE 30" WIDE, 30" DEEP AND 6' LONG DITCH FOR INSTALLING THE TANK.
2. COORDINATE WITH CIVIL ENGINEER FOR EXACT DITCH LOCATION AND EXCAVATION, BACK-FILLING AND TANK BASE.
3. PROVIDE SEISMIC SHUT-OFF VALVE, GAS CHECK VALVE, AND MANUAL SHUT-OFF VALVE AT THE OUTLET CONNECTION TOWARDS CONSUMPTION.
4. PROVIDE ASME TANK.
5. PROVIDE PRESSURE REGULATOR STATION AS PER LOCAL CODES, COORDINATE WITH AUTHORITIES, ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.

GAS PIPES SIZING:

ITEM	INPUT - MBH	PIPE SIZE
GWH-01 / GAS WATER HEATER	199	1"
GWH-02 / GAS WATER HEATER	199	1"
INDOOR RANGE	91	3/4"
OUTDOOR GRILL	89	3/4"
GS-01 / GENERATOR	142	3/4"
DRYER	35	1/2"
LANTER	15	1/2"
LANTER	15	1/2"
TOTAL =	785	2"

GAS: PROPANE
INLET PRESSURE: LESS THAN 11" W.C
PRESSURE DROP: 0.5" WC
PIPE: SCHEDULE 40 / METALLIC & PLASTIC PIPE SDR11
AS PER FBC - FUEL GAS 8th ED. TABLE 402.4(35) & TABLE 402.4(28)
FOR PIPE LENGTH OF < 175'.

GAS PIPES MATERIAL:

1. UNDERGROUND GAS PIPES IN PE PLASTIC.
2. ABOVE GROUND GAS PIPES IN SCHEDULE 40 STEEL.
3. TERMINATION TO APPLIANCES / EQUIPMENT IN CORRUGATED STAINLESS STEEL PIPES.
4. PROVIDE GROUNDING / BONDING AS REQUIRED BY THE CODE.

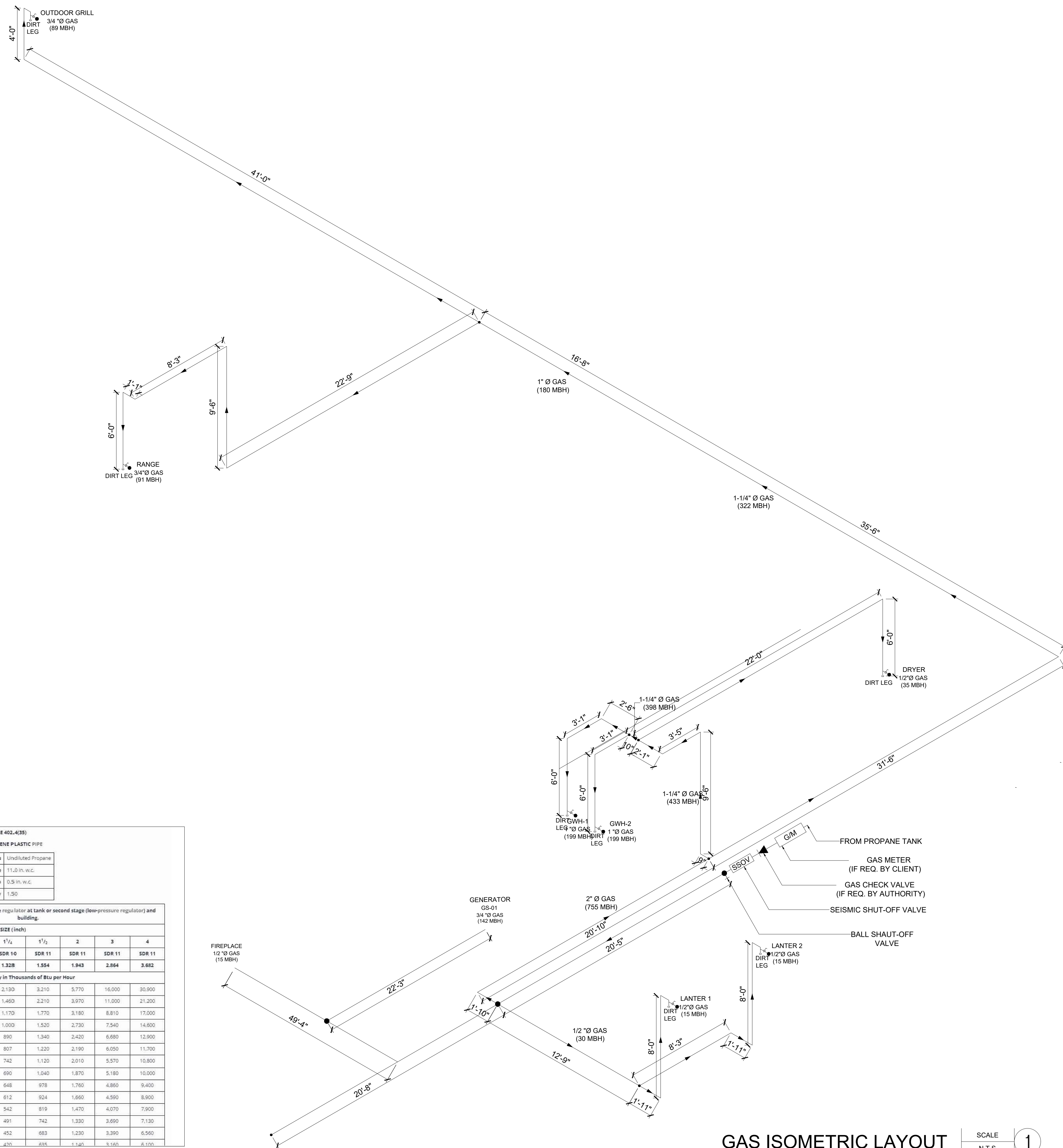


TABLE 402.4(28)
SCHEDULE 40 METALLIC PIPE

INTENDED USE	PIPE SIZING BETWEEN SINGLE- OR SECOND-STAGE (LOW PRESSURE) REGULATOR AND APPLIANCES.									
	PIPE SIZE (inch)									
Nominal	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	
Actual ID	0.622	0.824	1.049	1.380	1.610	2.067	2.469	3.068	4.026	
Length (ft)	Capacity in Thousands of Btu per Hour									
10	291	608	1,150	2,350	3,520	6,790	10,800	19,100	39,000	
20	200	418	787	1,620	2,420	4,660	7,430	13,100	26,800	
30	160	336	632	1,300	1,940	3,750	5,970	10,600	21,500	
40	137	287	541	1,110	1,660	3,210	5,110	9,030	18,400	
50	122	255	480	985	1,480	2,840	4,530	8,000	16,300	
60	110	231	434	892	1,340	2,570	4,100	7,250	14,800	
80	101	212	400	821	1,230	2,370	3,770	6,670	13,600	
100	94	197	372	763	1,140	2,200	3,510	6,210	12,700	
125	89	185	349	716	1,070	2,070	3,290	5,820	11,900	
150	84	175	330	677	1,010	1,950	3,110	5,500	11,200	
175	74	155	292	600	899	1,730	2,760	4,880	9,950	
200	67	140	265	543	814	1,570	2,500	4,420	9,010	

TABLE 402.4(35)
POLYETHYLENE PLASTIC PIPE

INTENDED USE	PIPE SIZING BETWEEN INTEGRAL TWO-STAGE REGULATOR AT TANK OR SECOND STAGE (LOW-PRESSURE REGULATOR) AND BUILDING.							
	PIPE SIZE (inch)							
Nominal OD	1/2	3/4	1	1 1/4	1 1/2	2	3	4
Designation	SDR 9	SDR 11	SDR 11	SDR 10	SDR 11	SDR 11	SDR 11	SDR 11
Actual ID	0.660	0.860	1.077	1.328	1.554	1.943	2.864	3.682
Length (ft)	Capacity in Thousands of Btu per Hour							
10	340	680	1,230	2,130	3,210	5,770	16,000	30,900
20	233	468	844	1,460	2,210	3,970	11,000	21,200
30	187	375	677	1,170	1,770	3,180	8,810	17,000
40	160	321	580	1,000	1,520	2,730	7,540	14,800
50	142	285	514	890	1,340	2,420	6,680	12,900
60	129	258	466	807	1,220	2,190	6,050	11,700
70	119	237	428	742	1,120	2,010	5,570	10,800
80	110	221	398	690	1,040	1,870	5,180	10,000
90	103	207	374	648	978	1,760	4,860	9,400
100	98	196	353	612	924	1,660	4,590	8,900
125	87	173	313	542	819	1,470	4,070	7,900
150	78	157	284	491	742	1,330	3,690	7,130
175	72	145	261	452	683	1,230	3,390	6,590
200	67	135	243	420	635	1,140	3,100	6,100

GAS ISOMETRIC LAYOUT

SCALE
N.T.S. **1**

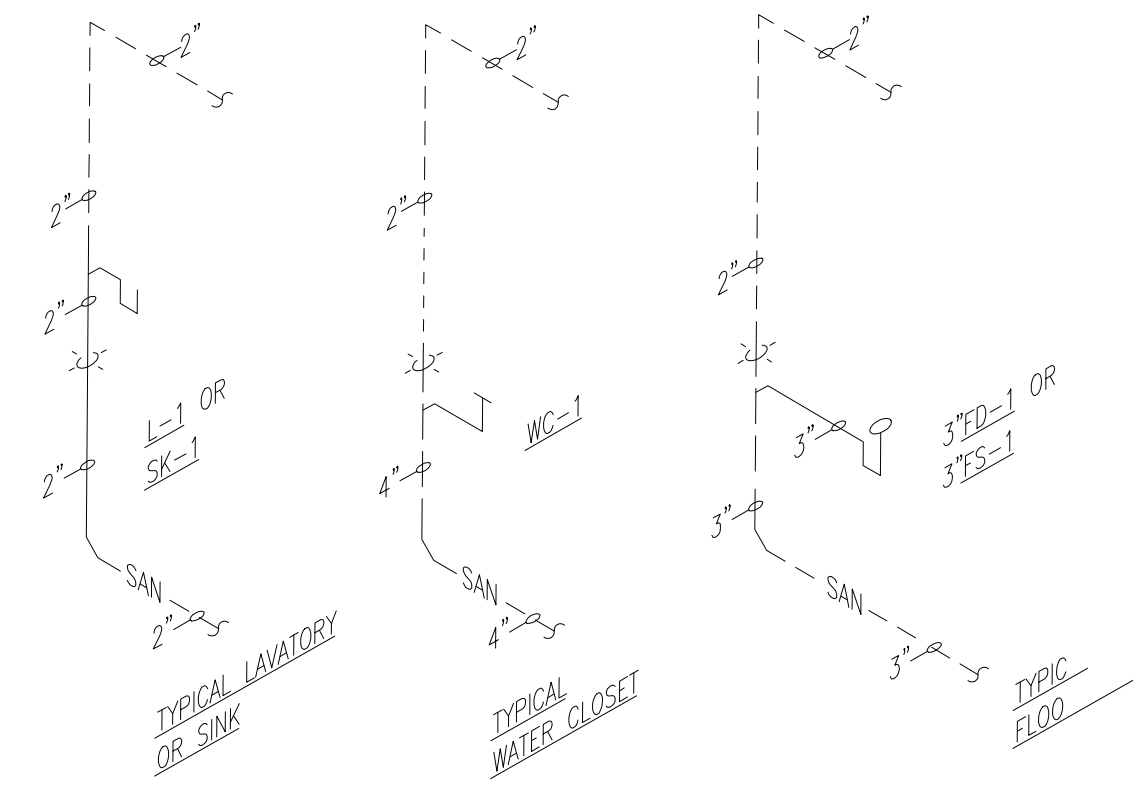
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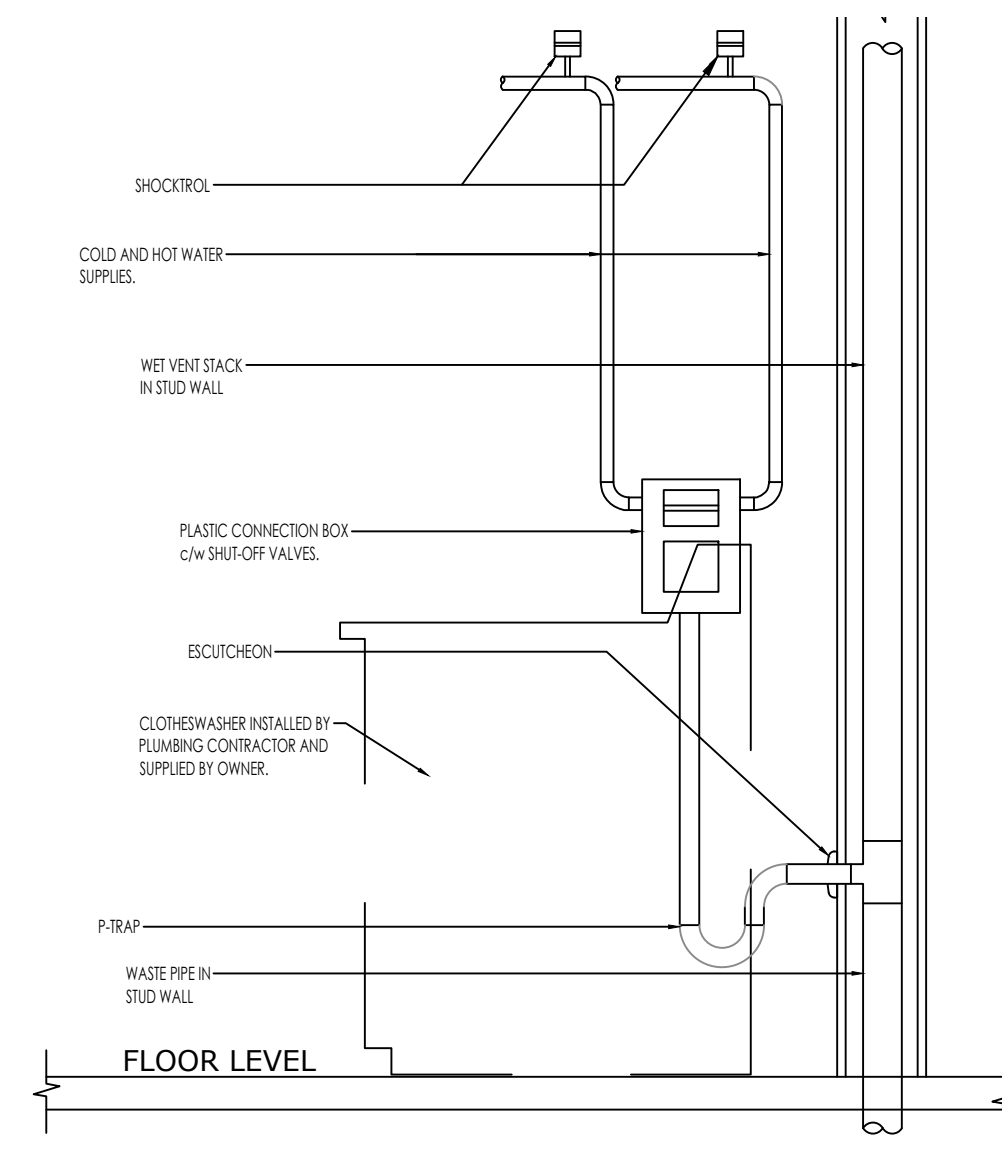
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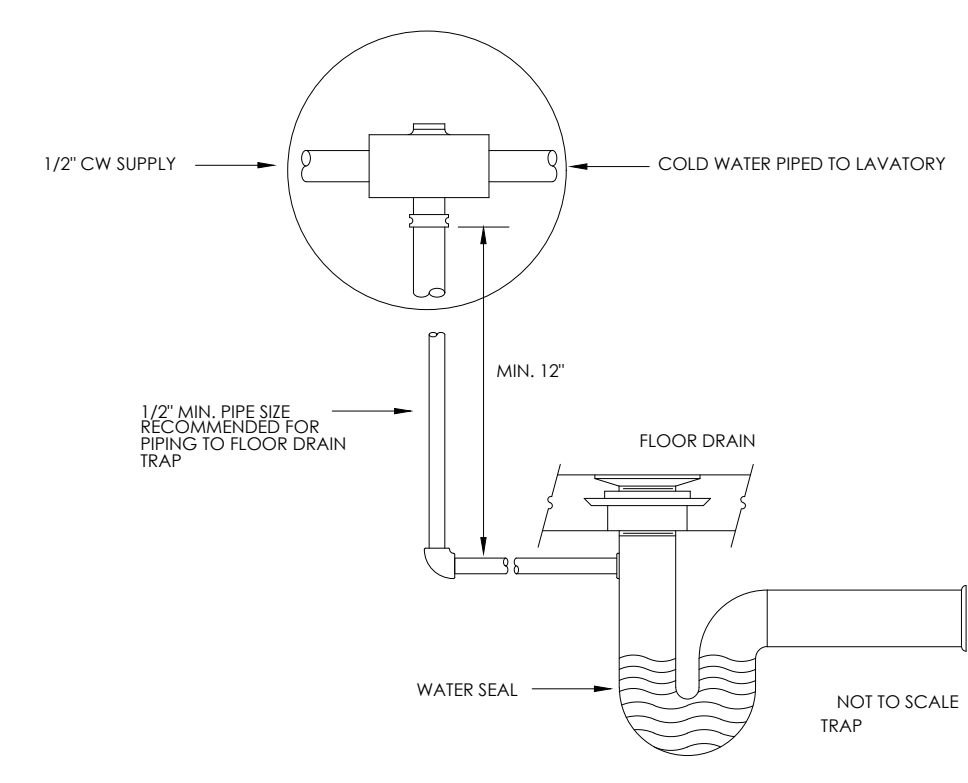
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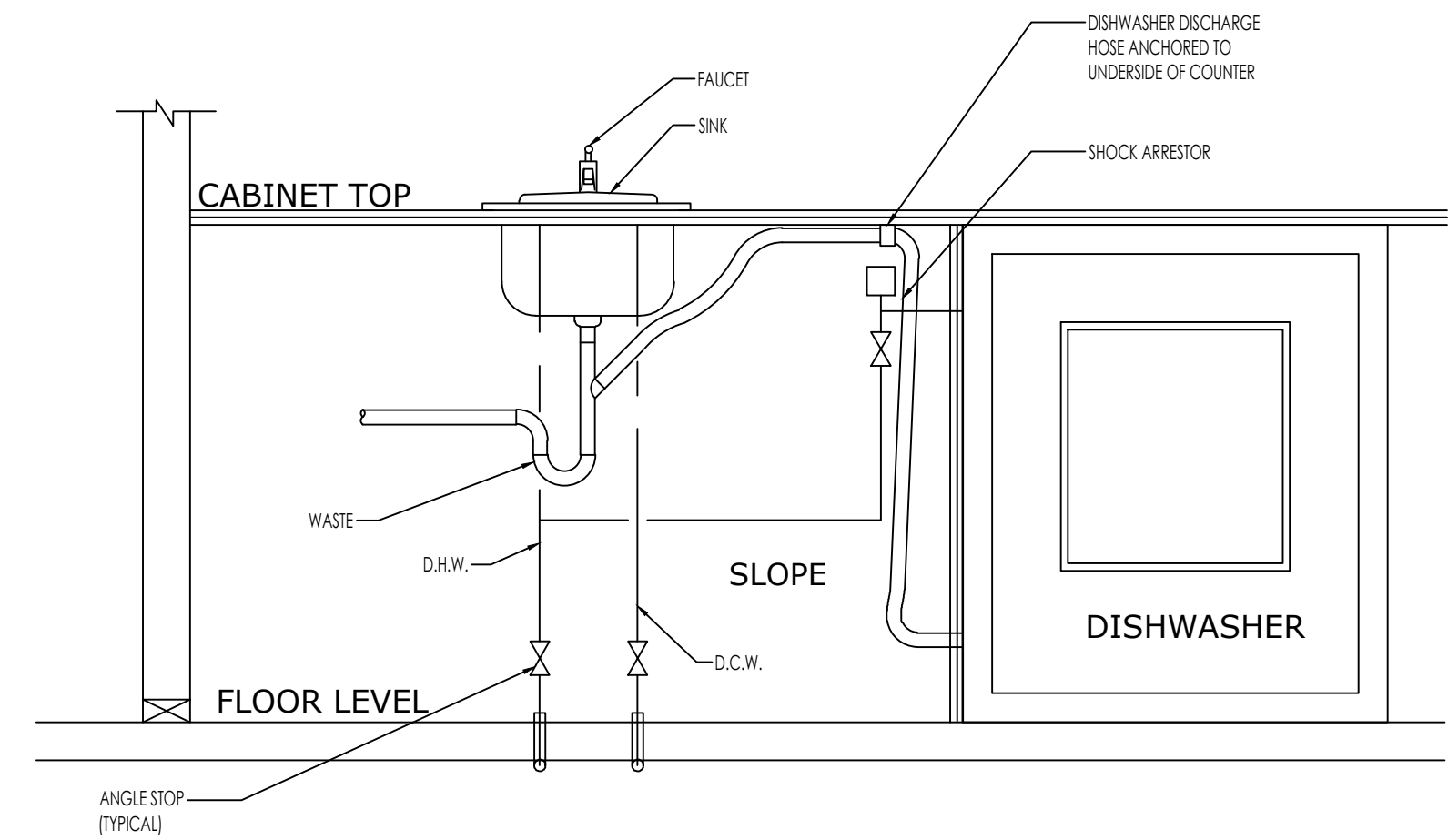
1 TYPICAL WASTE & VENT RISERS
SCALE: N.T.S.



2 CLOTHES WASHER CONNECTION DETAIL
SCALE: N.T.S.



3 TRAP PRIMER DETAIL
SCALE: N.T.S.



4 DISHWASHER CONNECTION DETAIL
SCALE: N.T.S.

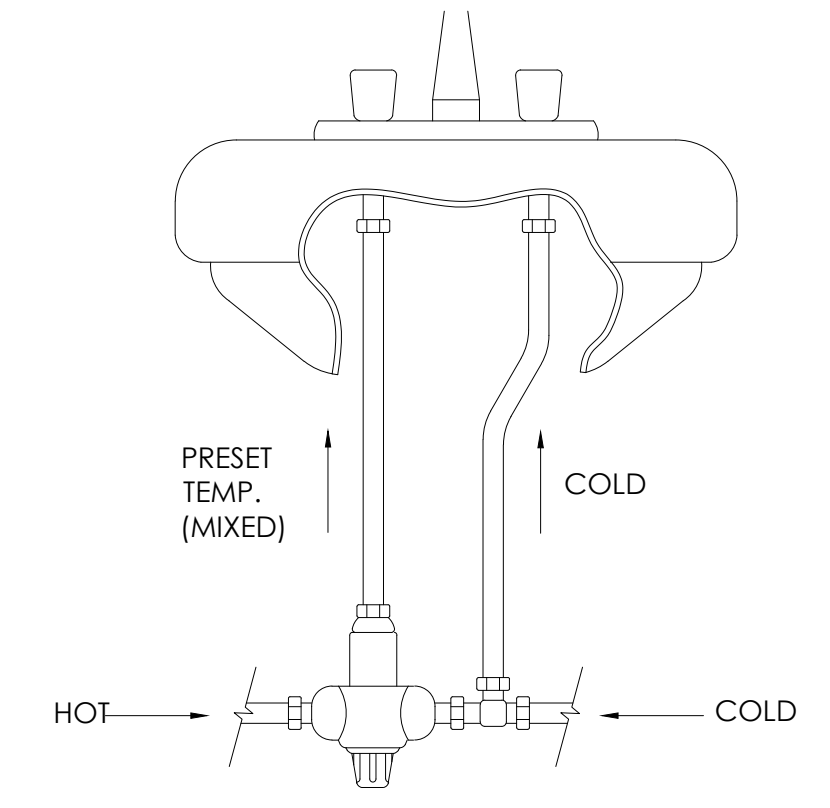


GDI ENGINEERING
3707 Cypress Creek Parkway, Suite 310
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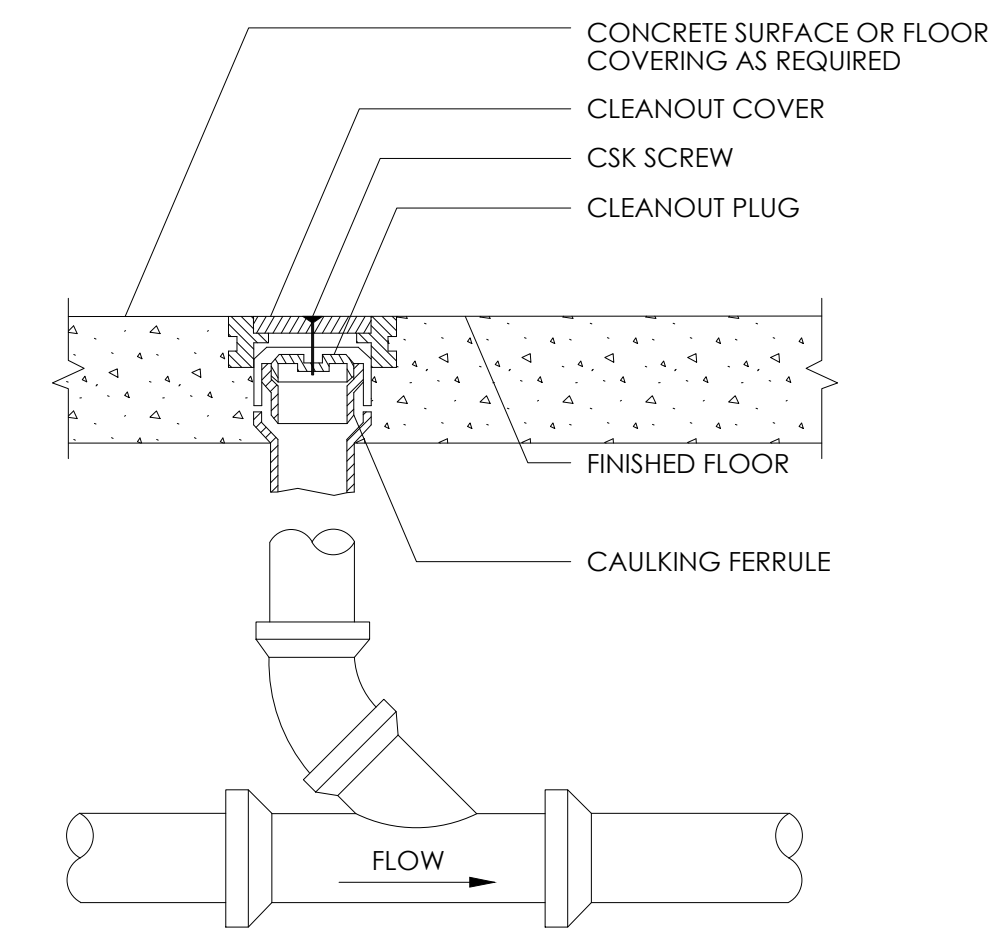
BLUNT RENOVATION
261 RIVERWAY DRIVE
VERO BEACH, FL 32963

27 MAY 2024

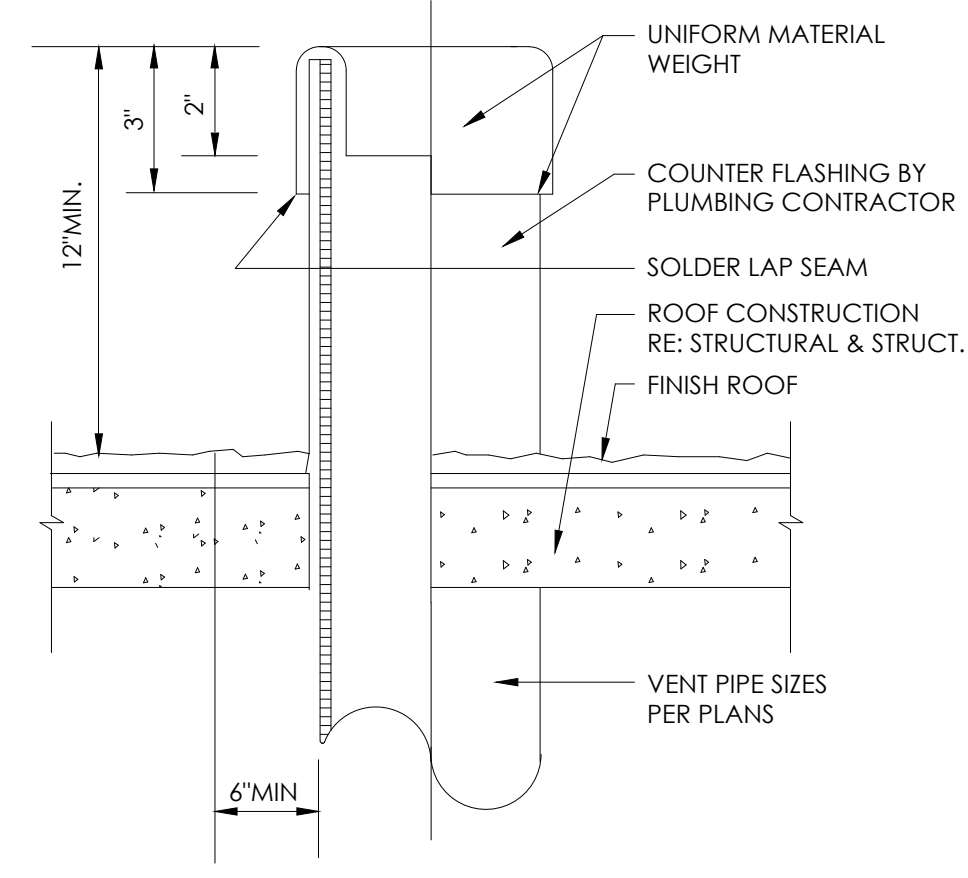
REVISIONS



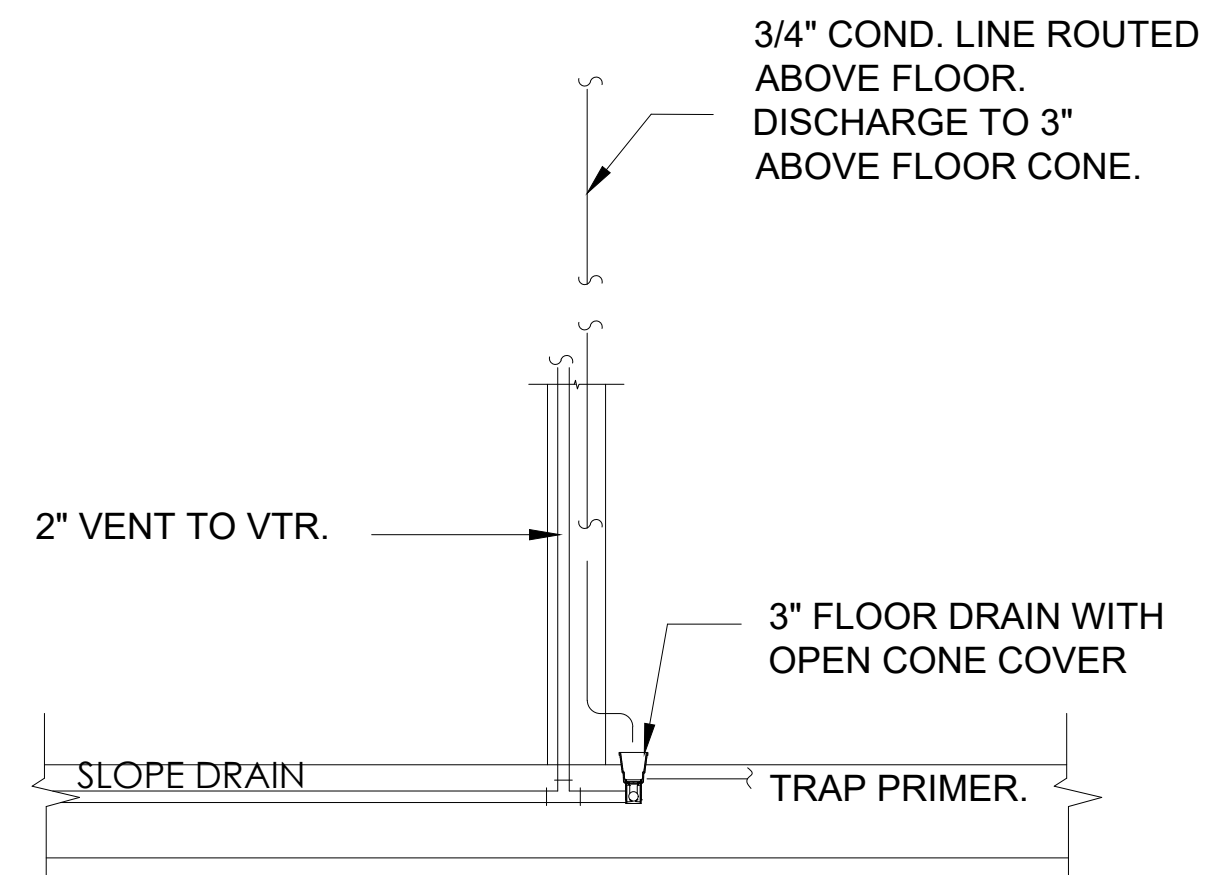
5 PRESSURE / TEMPERATURE BALANCING VALVE DETAIL
SCALE: N.T.S.



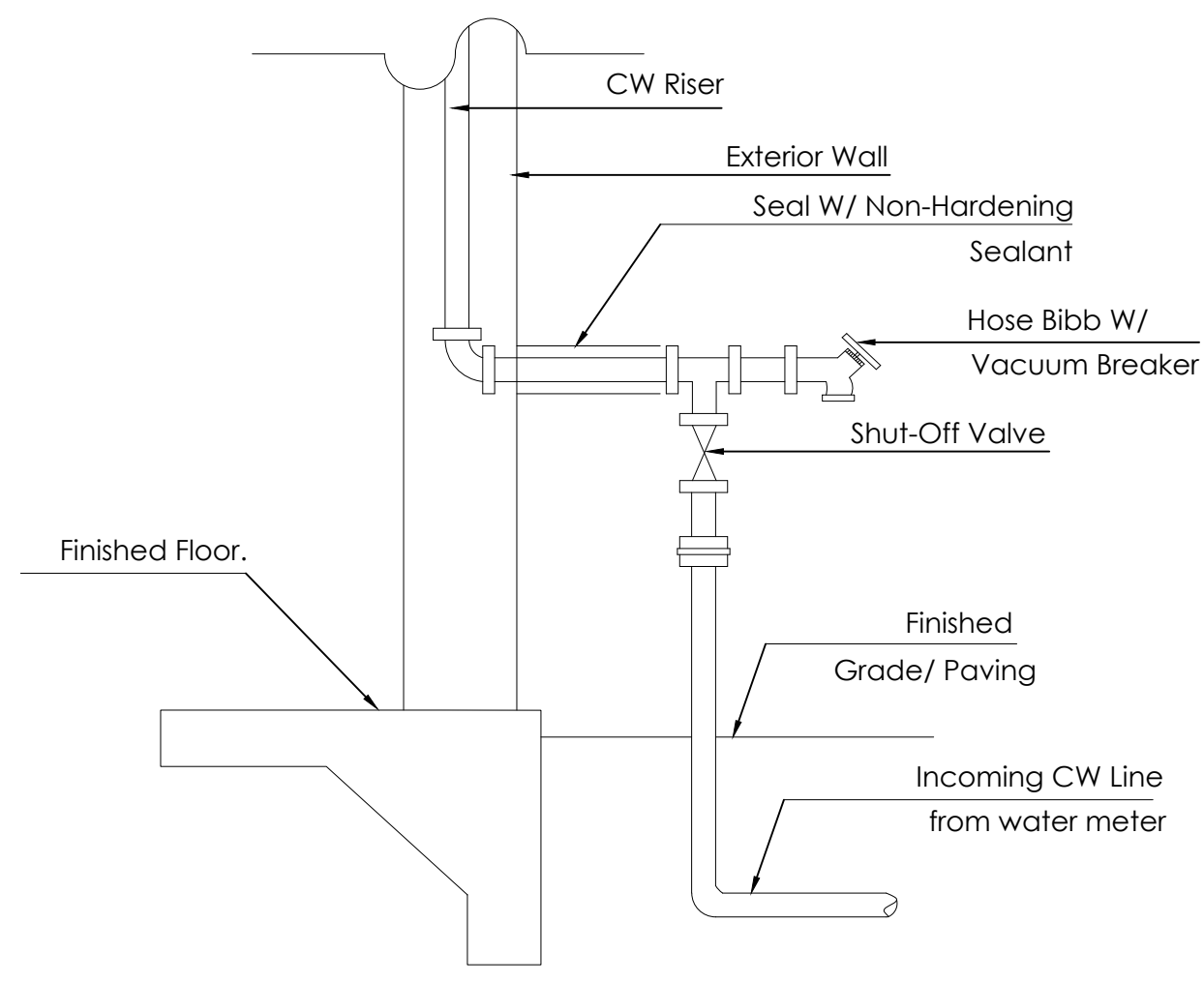
6 FLOOR CLEAN-OUT DETAIL
SCALE: N.T.S.



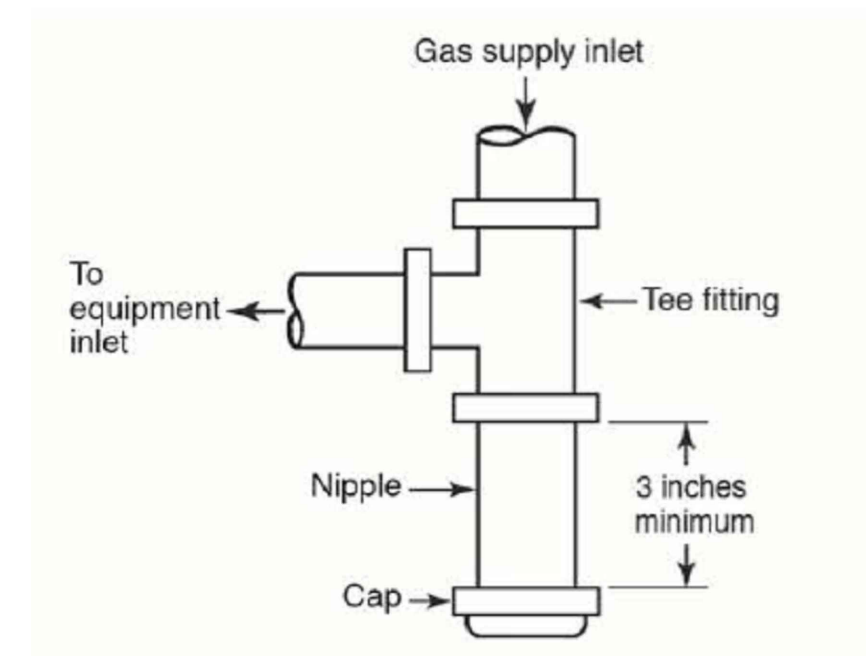
7 VENT THRU ROOF DETAIL
SCALE: N.T.S.



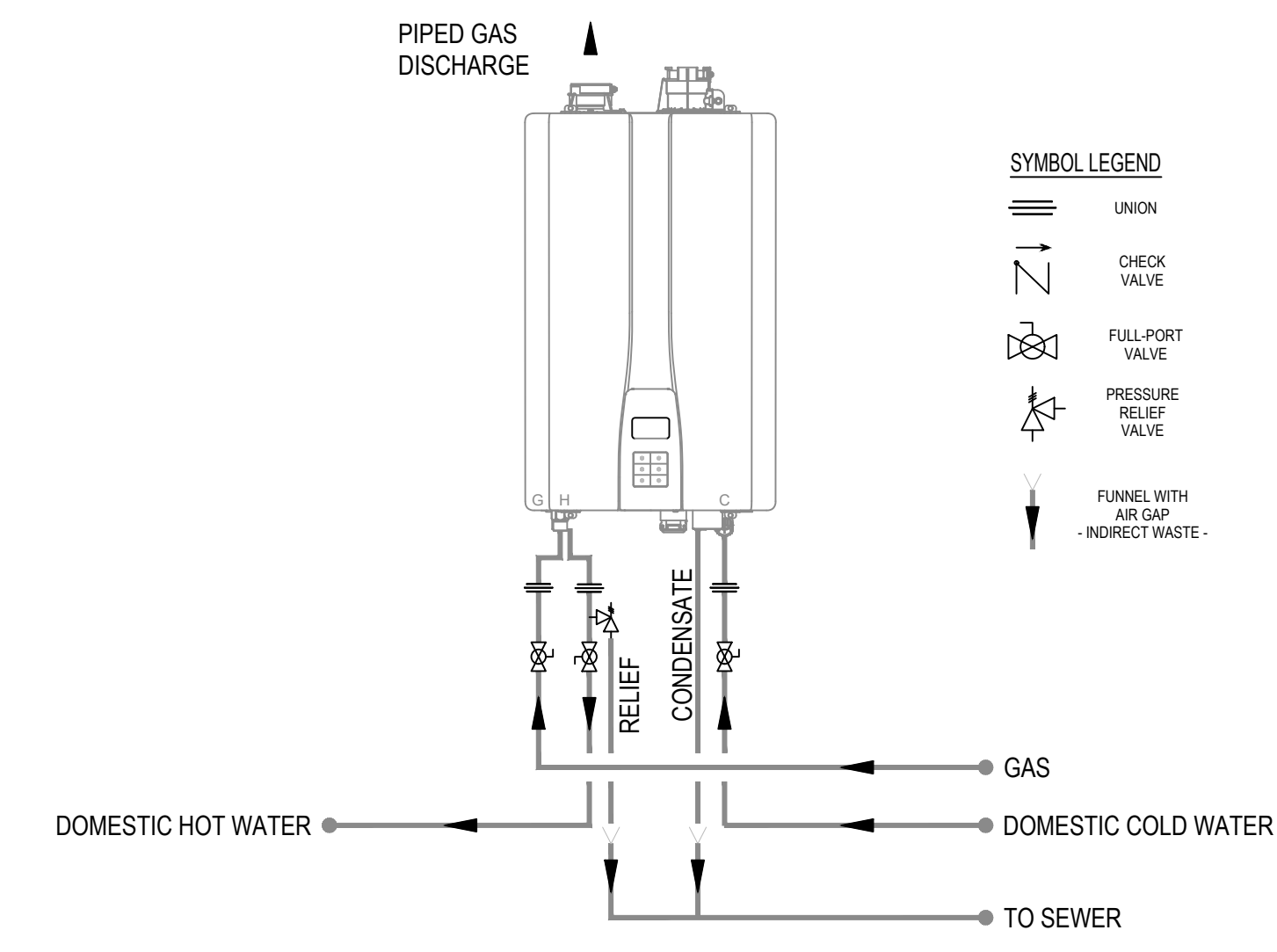
9 CONDENSATE DRAIN TERMINATION DETAIL
SCALE: N.T.S.



10 WATER ENTRY DETAIL
SCALE: N.T.S.



11 SEDIMENT TRAP - DIRT LEG DETAIL
SCALE: N.T.S.



12 GAS WATER HEATER DETAIL
SCALE: N.T.S.