

AIR COMPRESSOR SCHEDULE

DRAWING CODE	LOCATION	COMPRESSOR TYPE	AIRFLOW @ 175 MAX. PRES. PSIG (ACFM)	MAX. PRES. (PSIG)	MOTOR HP	POWER (V/PH/Hz)	NOTE S
AC01	MECH ROOM	TANK MOUNTED RECIPROCATING, DUPLEX	24	175	7.5	460/3/60	1-11
NOTES:	1	REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.					
	2	BASIS OF DESIGN: QUINCY COMPRESSOR QT-7.5 AND LISTED ACCESSORIES.					
	3	SUPPLY COMPRESSOR WITH 120 GAL. HORIZONTAL RECEIVER, WITH ELECTRIC DRAIN VALVE QTD 115..					
	4	SUPPLY WITH PRE-FILTER - QMF 25					
	5	SUPPLY WITH POST FILTER - QWS 25.					
	6	SUPPLY WITH OIL/WATER SEPARATOR - QOCS 53					
	7	SUPPLY WITH ODP MOTOR WITH MOTOR OVERLOAD PROTECTION					
	8	SUPPLY WITH AUTOMATIC START-STOP					
	9	SUPPLY WITH LOW OIL CUT-OFF.					
	10	SUPPLY WITH VIBRATION ISOLATORS.					
	11	SET COMPRESSOR TO SUPPLY AIR AT 120 PSIG.					

HIGH TEMPERATURE REFRIGERATED AIR DRYER SCHEDULE

DRAWING CODE	LOCATION	AIRFLOW @ 100 PSIG (ACFM)	MAX. PRES. (PSIG)	POWER CONSUMPTION Kw	POWER (V/PH/Hz)	NOTES
RAD-1	MECH. ROOM	50	232	0.8	120/1/60	1-3
NOTES:	1	REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.				
	2	BASIS OF DESIGN - QUINCY QRHT 25.				
	3	INSTRUMENTATION TO INCLUDE ON/OFF SWITCH, REFERERIGERANT SUCTION PRESSURE GAUGE AND DRAIN TEST BUTTON COALESCING FILTER.				

PLUMBING SUMMARY WORKSHEET

FIXTURE	OCCUPANCY	TYPE OF CONTROL	QUANTITY	DOMESTIC WATER SYSTEM (W.S.F.U.)						WASTE & VENT SYSTEM (D.F.U.)	
				INDIVIDUAL FIXTURE UNITS			TOTAL FIXTURE UNITS			EACH	TOTAL
				COLD	HOT	TOTAL	COLD	HOT	TOTAL		
DRINKING FOUNTAIN	OFFICES, ETC.	3/8" VALVE	1	0.25	0.0	0.25	0.3	0.0	0.3	0.5	0.5
CLASSROOM SINK	PRIVATE	FAUCET	10	1.0	1.0	1.4	10.0	10.0	14.0	2.0	20.0
LAVATORY	PUBLIC	FAUCET	6	1.5	1.5	2.0	9.0	9.0	12.0	1.0	6.0
URINAL	PUBLIC	3/4"FLUSH VALVE	1	5.00	0.00	5.00	5.0	0.0	5.0	2.0	2.0
WATER CLOSET	PUBLIC	FLUSH VALVE	5	10.00	0.00	10.00	50.0	0.0	50.0	4.0	20.0
TOTALS							74.3	19.0	93.3		48.5

BASED ON AN ESTIMATED DEMAND OF 77.1 W.S.F.U.(60 GPM), PROVIDE A 2" INCOMING WATER LINE.
BASED ON A WASTE COUNT OF 42.5 D.F.U., PROVIDE A 4" OUTGOING WASTE LINE.

GAS LOAD SCHEDULE

FIXTURE	DESCRIPTION	BTUH	QUANTITY	TOTAL
GW1	GAS-FIRED WATER HEATER	199,000	1	199,000
	SCIENCE TABLE GAS OUTLET	6,000	8	48,000
	FUME HOOD GAS OUTLET	6,000	2	12,000
	EWOD LAB 127 (FUTURE LOAD)	200,000	1	200,000
	EWOD LAB 127 (FUTURE LOAD)	200,000	1	200,000
TOTAL LOAD				659,000
BUILDING SERVICE GAS PRESSURE				<2 psig

PUMP SCHEDULE

DRAWING CODE	DESCRIPTION	MANUFACTURER	MODEL	FLOW GPM@FT. HD	WATTS	POWER (V/PH/Hz)	PIPE CONNECTION (INCHES)	NOTES
CP1	DOMESTIC HOT WATER CIRCULATION, IN-LINE WET ROTOR, STAINLESS STEEL VOLUME, 3-SPEED, BUILT IN THERMAL PROTECTION	GRUNDFOS	UPS-15-35/SFC	5 @ 9FT	125	115/1/60	3/4"	1
NOTES:	1.	PROVIDE AQUASTAT TO CONTROL PUMP.						

GAS-FIRED STORAGE TANK WATER HEATER SCHEDULE

DRAWING CODE	DESCRIPTION	MANUFACTURER - MODEL	ALTERNATE APPROVED MANUFACTURERS	PIPE SIZE	RECOVERY (GPH) @ 100°F RISE	FUEL SOURCE	GAS INPUT BTU/H	ELECTRICAL VOLTAGE PHASE Hz	AMPS	NOTES
GW1	100 GALLON CONDENSING, MODULATING BURNER	A.O. SMITH - BTH-198A	BRADFORD-WHITE, STATE	DCW 1-1/2" DHW 1-1/2" GAS 3/4"	235	PROPANE	199,900	120 1 60	5 1-5	
NOTES:	1.	MINIMUM GAS INLET FLOW PRESSURE 3.5"W.C. MAXIMUM STATIC PRESSURE 14.0"W.C.								
	2.	PROVIDE CONDENSATE NEUTRALIZATION KIT.								
	3.	PROVIDE 4" THICK CONCRETE HOUSEKEEPING PAD.								
	4.	VENT WATER HEATER IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTALLATION MANUAL								
	5.	TEMPERATURE SETPOINT 140°F								

PLUMBING FIXTURE SCHEDULE

DRAWING CODE	FIXTURE		DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	NOTES PIPE SIZE			
							DCW	DHW	WASTE	VENT
WC1	HANDS FREE FLUSH VALVE. WATER CLOSET FLOOR MTD., 1.28GPF, ADA	BOWL	16.5" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	KOHLER	K-4405	ZURN, AMERICAN STANDARD				
		FLUSH VALVE	11.5" BATTERY POWERED, PISTON OPERATION, 1.28GPF, FLUSH TUBE TRAP PRIMER CONNECTION WHERE REQUIRED	ZURN	ZTR6200EV	SLOAN, KOHLER	1"	-	4"	2"
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE; HEIGHT 17-19" AFF	KOHLER	K-4731	CHURCH, OLSONITE				
WC2	HANDS FREE FLUSH VALVE WATER CLOSET, FLOOR MTD., 1.28GPF	BOWL	15" HIGH BOWL, ELONGATED, V.C., 2-1/8" TRAPWAY; TOP SPUD; MADERA	KOHLER	K-4406	ZURN, AMERICAN STANDARD				
		FLUSH VALVE	11.5" BATTERY POWERED, PISTON OPERATION, 1.28GPF, FLUSH TUBE TRAP PRIMER CONNECTION WHERE REQUIRED	ZURN	ZTR6200EV	SLOAN, KOHLER	1"	-	4"	2"
		SEAT	OFLC w/ SELF-SUSTAINING S.S. CHECK HINGE	KOHLER	K-4731	CHURCH, OLSONITE				
UR1	HANDS FREE URINAL WALL HUNG, 0.125GPF, ADA	BOWL	WASHOUT, TOP SPUD, VITREOUS CHINA, RIM HEIGHT 17"MAX. AFF	KOHLER	K-4914-ET	ZURN, AMERICAN STANDARD	1	3/4"	-	2"
		FLUSH VALVE	11.5" HIGH, EXPOSED, BATTERY POWERED, PISTON OPERATION, POLISHED CHROME, SENSOR OPERATED	ZURN	ZTR6203-ULF	SLOAN, KOHLER				
		BOWL	20"x18" ENAMELED CAST IRON, GLOSSY PORCELAIN FINISH, FRONT OVERFLOW, 4" CENTERS, RIM 34" AFF MAX.	KOHLER	K-2812	ZURN, AMERICAN STANDARD				
LAV1	LAVATORY, HANDS FREE, WALL HUNG, 0.5GPM, ADA	FAUCET	BATTERY POWERED, SENSOR ACTIVATED, CHROME PLATED BRASS, 4" CENTERSET, VANDAL RESISTANT SPRAY HEAD, BATTERIES INCLUDED	SLOAN	EBF-650	ZURN, MOEN	1,2,3,6	1/2"	1/2"	2"
		DRAIN	CAST BRASS, CHROME PLATED, OPEN GRID STRAINER P.O. PLUG WITH BRASS TAILPIECE	MCGUIRE	155A	DEARBORN, DELTA				
		MIXING VALVE	LEAD FREE, CHROME PLATED, THERMOSTATIC MIXING VALVE - SETPOINT = 105°F INSTALL ON HOT WATER SUPPLY, ASSE 1070	CASH ACME	HG-135	LEONARD, WATTS				
SK1	LAB SINK	BOWL	INTEGRAL TO COUNTERTOP	-	-	-				
		FAUCET	RIGID GOOSENECK, TWO HANDLE, 3 HOLE, 1.5GPM, SOLID BRASS CONSTRUCTION, BLACK FINISH PROVIDED WITH CASEWORK	-	-	-	4,8	1/2"	1/2"	2"
		AAV	CHEMICAL VENT AIR ADMITTANCE VALVE MEETING ASSE 1049	-	-	-				
			PROVIDED WITH CASEWORK	-	-	-				
		DRAIN								
ANT1	ACID NEUTRALIZATION TANK	FIXT	POLYETHELENE, 57 GALLON HOLDING CAPACITY, LIMESTONE, HIGH WATER HOLD DOWN KIT, EXTENSION RISER	STRIEM	LB-50	SPEARS, MIFAB				
DS1	COMBINATION EYE/FACE WASH DRENCH SHOWER	FIXT	GALVANIZED STEEL PIPE WITH SAFETY YELLOW COATING, STAY OPEN BALL VALVE, SHOWER MIN. 20GPM@30PSI; EYE/FACE WASH MIN. 3.0GPM@30PSI; PLASTIC SHOWER HEAD, STAINLESS BOWL W/ DUST COVER, BARRIER FREE	BRADLEY	S19314DCBF	GUARDIAN, ACORN	1/2"	1/2"	-	-
EW1	FAUCET MOUNT EYE WASH	FIXT	CHROME PLATED BRASS, THREADED TO MATCH FAUCET OUTLET	BRADLEY	S19-200	GUARDIAN, ACORN	1/2"	1/2"	-	-
EW1	WALL HUNG WATER COOLER, ADA	FIXT	SPLIT LEVEL, S.S. TOP, LIGHT GREY BODY, BOTTLE FILLING STATION, 8 GPH @ 50/80/90, 120V/1PH WITH FILTER	ELKAY	LZSTLBWSLK	HALSEY TAYLOR, OASIS	1,7	1/2"	-	2"
DS1	COMBINATION EYE/FACE WASH DRENCH SHOWER	FIXT	GALVANIZED STEEL PIPE WITH SAFETY YELLOW COATING, STAY OPEN BALL VALVE, SHOWER MIN. 20GPM@30PSI; EYE/FACE WASH MIN. 3.0GPM@30PSI; PLASTIC SHOWER HEAD, STAINLESS BOWL W/ DUST COVER, BARRIER FREE	BRADLEY	S19314DCBF	GUARDIAN, ACORN	9	1/2"	1/2"	-
FCO	FLOOR CLEANOUT	FIXT	4"SCH. 40 HUB, PVC BASE ADAPTER, ROUND NICKEL-BRONZE COVER, VANDAL RESISTANT SCREWS	SIoux CHIEF	834-4PNRV	ZURN, SMITH	-	-	-	MATCH
GCO	GRADE CLEANOUT	FIXT	4"SCH. 40 HUB, PVC BASE ADAPTER, ROUND NICKEL-BRONZE COVER, VANDAL RESISTANT SCREWS	SIoux CHIEF	851-44NV	ZURN, SMITH	-	-	-	MATCH
WCO	WALL CLEANOUT	FIXT	ROUND S/S ACCESS COVER & SCREW, RECESS BRONZE THRD. PLUG	SIoux CHIEF	870	ZURN, SMITH	-	-	-	MATCH
FD1	FLOOR DRAIN	FIXT	FINISHLINE ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTER, SQUARE NICKEL BRONZE STRAINER, TRAP PRIMER CONNECTION	SIoux CHIEF	832	ZURN, SMITH	5	-	-	MATCH
FD2	FLOOR DRAIN	FIXT	FINISHLINE ADJUSTABLE, SCH. 40 HUB CONNECTION, ABS/PVC BASE ADAPTER, SQUARE NICKEL BRONZE STRAINER, TRAP PRIMER CONNECTION	SIoux CHIEF	832	ZURN, SMITH	10	-	-	MATCH
FS1	FLOOR SINK	FIXT	PVC BODY, 14"x14" PLASTIC TOP w/ 1/2 GRATE, BEEHIVE STRAINER	SIoux CHIEF	861	ZURN, SMITH	-	-	-	MATCH
WH1	WALL HYDRANT	FIXT	CHROME PLATED BRASS, ANTI-SIPHON, VACUUM BREAKER, REMOVABLE TEE HANDLE, 3/4" HOSE THREAD	WOODFORD	65	ZURN, WATTS	3/4"	-	-	-
RH1	ROOF HYDRANT	FIXT	FREEZELESS, ANTI-SIPHON, VACUUM BREAKER, 3/4" HOSE THREAD	WOODFORD	SRH	ZURN, WATTS	1"	-	1/8"	-
NOTES	1. PROVIDE MATCHING CAST IRON AND STEEL FLOOR SUPPORT CARRIER WITH BEARING PLATE AND WALL HANGER. 2. PROVIDE BRASS 1-1/2" TAILPIECE, CAST BRASS SLIP JOINT P-TRAP WITH CLEANOUT; PROVIDE ADA OFFSET ARRANGEMENT WHERE REQUIRED. 3. PROVIDE ADA INSULATION KIT 4. PROVIDE 1/2" IPS X 3/8" OD STRAIGHT BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED. 5. TRAP TO BE PRIMED VIA WATER CLOSET FLUSH TUBE TRAP PRIMER CONNECTION. 6. PROVIDE 1/2" IPS X 3/8" OD ANGLE BRASS STOP(S) WITH RIGID COPPER RISERS. ALL EXPOSED PIPING SHALL BE CHROME PLATED. 7. PROVIDE 1/2"IPS x 3/8" O.D. BRASS STOP CONCEALED BEHIND CABINET. 8. CHEMICAL VENT AIR ADMITTANCE VALVE REQUIRED AT ISLAND SINKS ONLY. 9. PROVIDE WITH THERMOSTATIC MIXING VALVE MEETING ASSE 1071, TEMPERATURE SETPOINT TO BE 90°F 10.TRAP TO BE PRIMED VIA PRESSURE TYPE TRAP PRIMING DEVICE LOCATED ABOVE CEILING. REFER TO DOMESTIC WATER PLAN.									

GENERAL PLUMBING NOTES:

- SCOPE OF WORK: THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS DESCRIBE SCOPE OF WORK REQUIRED FOR PLUMBING SYSTEMS. LABOR AND MATERIAL SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE, WORKMANLIKE INSTALLATION OF ALL SYSTEMS SHOWN ON DIAGRAMMATIC DRAWINGS AND/OR AS SPECIFIED HEREIN.
- CONTRACTOR: THE WORD "CONTRACTOR", "PLUMBING CONTRACTOR", AND "P.C." AS USED HEREIN SHALL MEAN THE PLUMBING INSTALLER UNLESS OTHERWISE QUALIFIED.
- DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED EQUIPMENT AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING PLUMBING SYSTEMS.
- CODE COMPLIANCE: COMPLY WITH THE 2018 EDITIONS OF THE FOLLOWING STANDARDS AND CODES, INsofar AS THEY APPLY:

NORTH CAROLINA STATE BUILDING CODE (CODE), 2018 EDITION AND REVISIONS.

LOCAL JURISDICTION REQUIREMENTS.
- PERMITS AND INSPECTIONS: OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK AND PAY FOR SAME. FURNISH A FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.
- SUPERVISION: PROVIDE SKILLED SUPERINTENDENTS TO SUPERVISE THE WORK FROM THE BEGINNING TO COMPLETION AND FINAL INSPECTION.
- PROGRESS OF WORK: PERFORM WORK IN ACCORDANCE WITH SCHEDULE AND REQUIREMENTS OF THE GENERAL CONTRACTOR. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR DELAY THE OVERALL PROJECT SCHEDULE.
- COORDINATION: COORDINATE PLUMBING WORK WITH THE WORK OF OTHER TRADES. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE UNLESS SPECIFICALLY DIMENSIONED. ARRANGE PLUMBING SO AS NOT TO INTERFERE WITH THE WORK OF OTHER TRADES. VERIFY ACTUAL BUILDING STRUCTURE PRIOR TO DUCT FABRICATION AND ADJUST LAYOUT AS REQUIRED. INCLUDE ALL OFFSETS IN DUCTS, FITTINGS, PIPING, ETC. AS REQUIRED TO PROPERLY INSTALL EQUIPMENT.
- EQUIPMENT LOCATIONS: DETERMINE EXACT EQUIPMENT AND MATERIALS LOCATIONS TO PROVIDE BEST ARRANGEMENT AND TO FACILITATE PROPER MAINTENANCE AND SERVICING OF EQUIPMENT.
- LISTING AND LABELING: ALL EQUIPMENT SHALL BE LABELED OR LISTED BY UL OR OTHER APPROVED TESTING AGENCY WHERE REQUIRED.
- STORAGE SPACE: CONSULT WITH THE GENERAL CONTRACTOR REGARDING JOB SITE STORAGE FOR PLUMBING MATERIALS TO BE INSTALLED UNDER THIS PROJECT. STORAGE SPACE MUST BE SECURED AND CONTRACTOR'S REPRESENTATIVE MUST BE ON JOB BEFORE ANY MATERIAL MAY BE RECEIVED.
- CLEANUP: REMOVE ALL DEBRIS GENERATED IN THE ACCOMPLISHMENT OF WORK UNDER THIS PROJECT. CLEAN, REPLACE OR REPAIR ALL SURFACES SOILED OR DAMAGED DURING THE COURSE OF THE WORK. REMOVE DEBRIS DAILY SO TO MAINTAIN SAFE WORKING CONDITIONS.
- RECORD DRAWINGS: MAINTAIN ONE SET OF "RED-LINED" RECORD DRAWINGS ON SITE AT ALL TIMES AND PROVIDE DRAWINGS TO ARCHITECT/ENGINEER PRIOR TO FINAL INSPECTION.

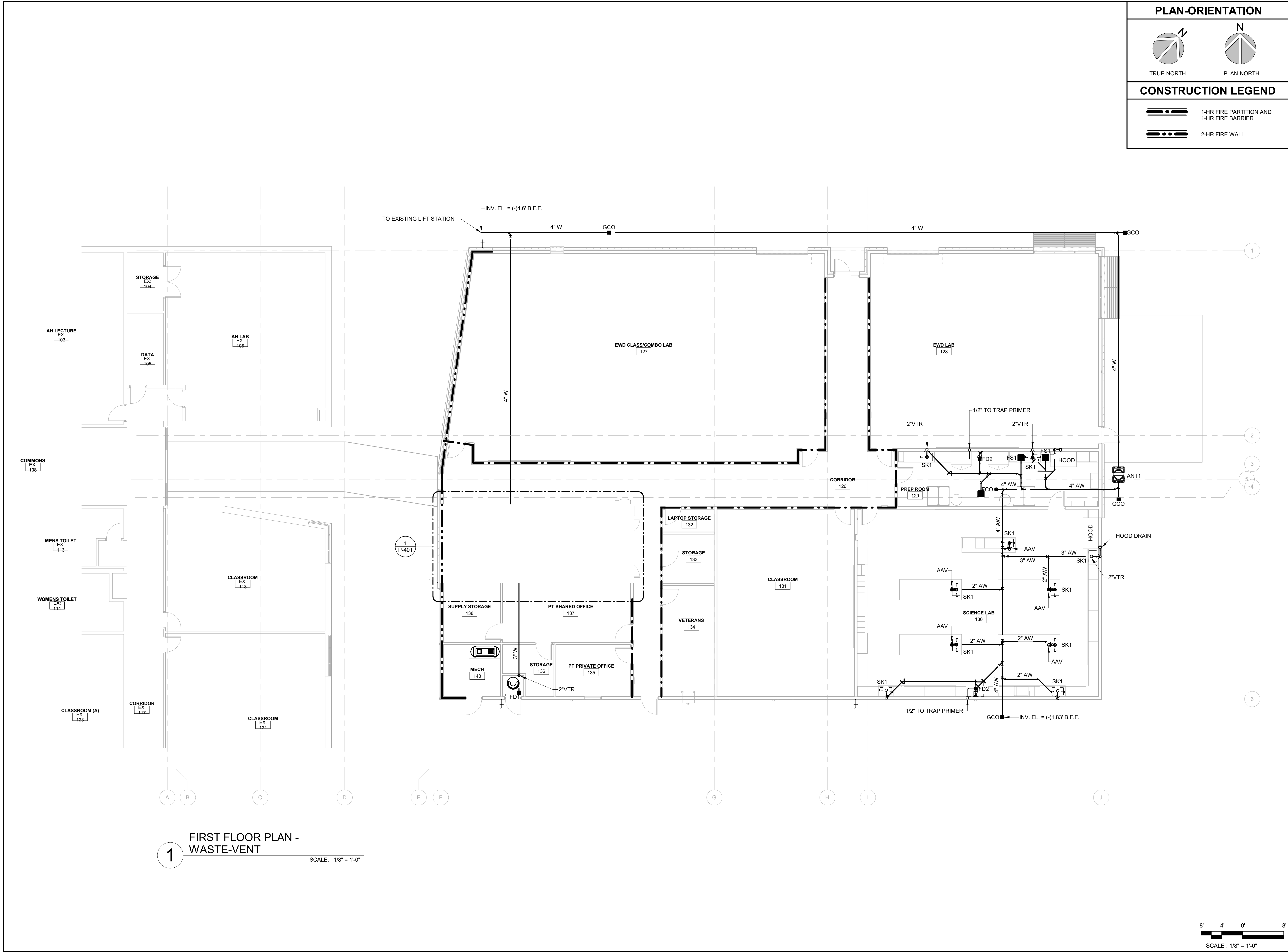
PLUMBING ABBREVIATIONS

(X)	EXISTING
AAV	AIR ADMITTANCE VALVE
A.F.F.	ABOVE FINISHED FLOOR
A.R.C.I.	ACID RESISTANT CAST IRON
ADA	AMERICANS WITH DISABILITIES ACT
AW	ACID WASTE PIPING
AV	ACID VENT PIPING
BRZ	BRONZE
BT	BATHTUB
C.I.	CAST IRON
CO	CLEANOUT
CONC.	CONCRETE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
E.C.I.	ENAMELED CAST IRON
EC	ELECTRICAL CONTRACTOR
EWIC	ELECTRIC WATER COOLER
EWI	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GIWH	GAS-FIRED WATER HEATER
HB	HOSE BIBB
INCL.	INCLUDED
KS	KITCHEN SINK
LAV	LAVATORY
LP	LIQUID PROPANE
MS	MOP SERVICE BASIN
NAT.	NATURAL GAS
NKL	NICKEL
NON SIMULT.	NON SIMULTANEOUS
O.F.L.C.	OPEN FRONT LESS COVER
OB	OUTLET BOX
OC	ON CENTER
ORDL	OVERFLOW ROOF DRAIN LEADER
PC	PLUMBING CONTRACTOR
PRESS. BAL.	PRESSURE BALANCED
RCOV.	RECOVERY
RDL	ROOF DRAIN LEADER
SA	WATER HAMMER ARRESTOR
SH	SHOWER
SK	SINK
SLD.	SLIDE
SS	STAINLESS STEEL
TDH	TOTAL DYNAMIC HEAD
TP	TRAP PRIMER
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VC	VITREOUS CHINA
VR	VANDAL RESISTANT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT

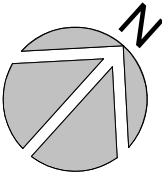
NOTE: ALL ABBREVIATIONS MAY NOT BE USED IN PROJECT.

PLUMBING LEGEND

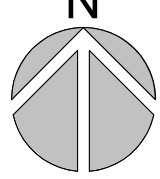
	COMPRESSED AIR PIPING
	CONDENSATE PIPING
	DOMESTIC 140°F WATER PIPING
	DOMESTIC 140°F RETURN WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
	DOMESTIC HOT WATER PIPING
	FILTERED WATER PIPING
	FIRE SPRINKLER PIPING
	FORCE MAIN PIPING
	NATURAL GAS PIPING
	LP GAS PIPING
	GREASE WASTE PIPING
	MEDICAL COMPRESSED AIR PIPING
	NITROUS OXIDE PIPING
	O2 (OXYGEN) PIPING
	OVERFLOW ROOF DRAIN PIPING
	ROOF DRAIN PIPING
	STORM DRAIN PIPING
	SANITARY VENT PIPING
	SANITARY WASTE PIPING
	TEPID WATER PIPING
	TRAP PRIMER PIPING
	VACUUM PIPING
	NON-POTABLE WATER
	BACKFLOW PREVENTION DEVICE
	BALL VALVE
	CHECK VALVE
	CIRCUIT SETTER (BALANCING VALVE)
	CIRCULATION PUMP
	CONTROL VALVE
	EXTENT OF DEMOLITION
	FLOOR CLEANOUT
	FLOOR DRAIN
	FLOOR SINK
	GAS-REGULATOR VALVE
	GATE VALVE
	GATE VALVE IN RISER
	GRADE CLEANOUT
	HOSE BIBB
	PIPE CAP
	PIPE ELBOW
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	PIPE TEE
	PIPE TEE DOWN
	PIPE TEE UP
	SUMP PUMP
	DEMOLITION KEYED NOTE TAG
	NEW WORK KEYED NOTE
	POINT OF CONNECTION - NEW TO EXISTING
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
	THERMOSTATIC MIXING VALVE
	WALL CLEANOUT
	WALL HYDRANT
	WASHING MACHINE BOX
	WATER HAMMER ARRESTOR



PLAN-ORIENTATION



TRUE-NORTH



PLAN-NORTH

CONSTRUCTION LEGEND



1-HR FIRE PARTITION AND
1-HR FIRE BARRIER



2-HR FIRE WALL

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CAPE FEAR
COMMUNITY
COLLEGE



02/17/2025

PROJECT TITLE

CFCC Surf City
Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

FIRST FLOOR PLAN -
WASTE-VENT

ISSUE BLOCK

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02.12.2025

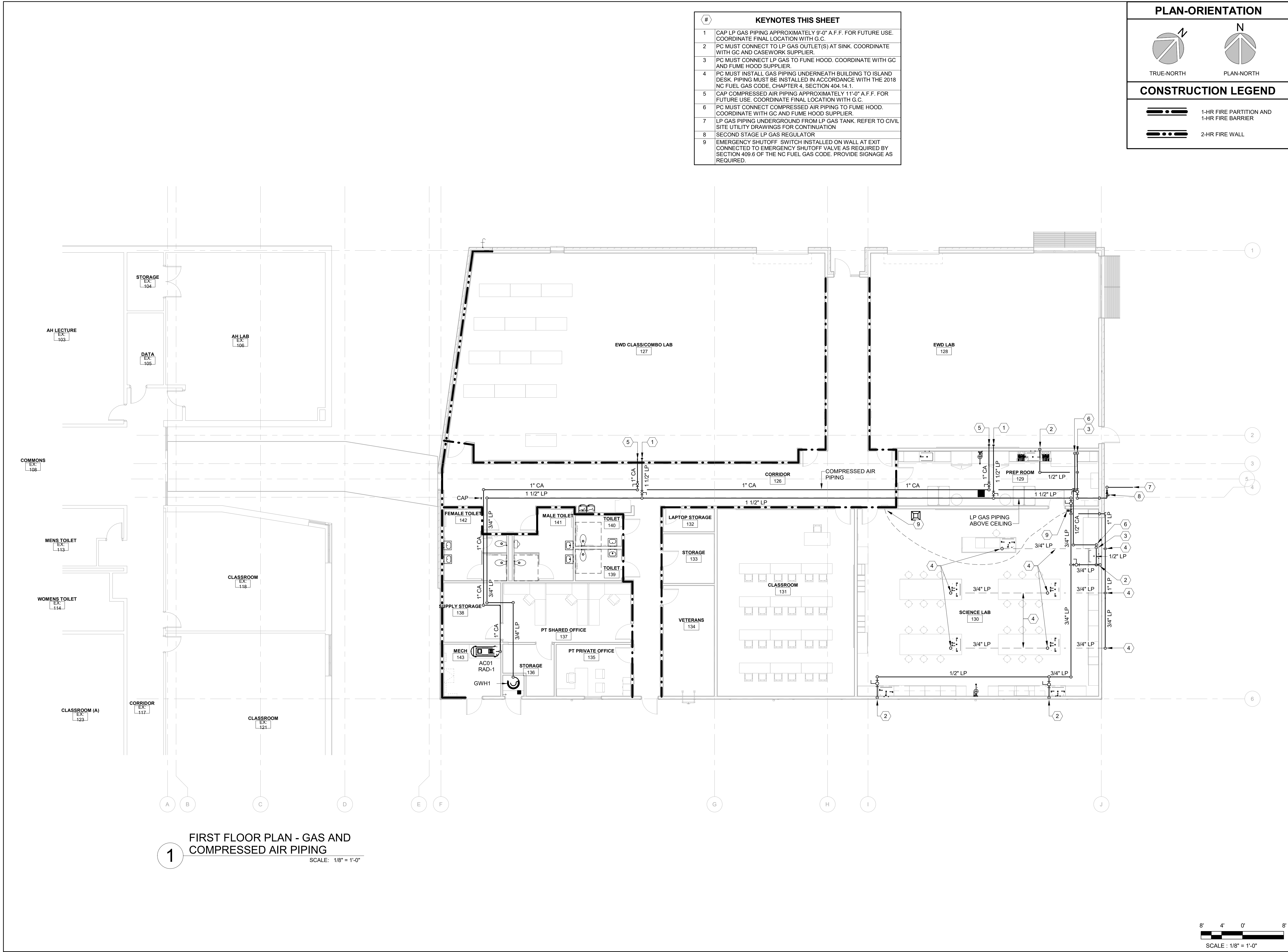
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CAPE FEAR COMMUNITY COLLEGE

NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 23551
DAVID M. HAIN
02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC
SCO ID# 24-28220-01A

SHEET TITLE

FIRST FLOOR PLAN - LP GAS AND COMPRESSED AIR PIPING PLAN

ISSUE BLOCK

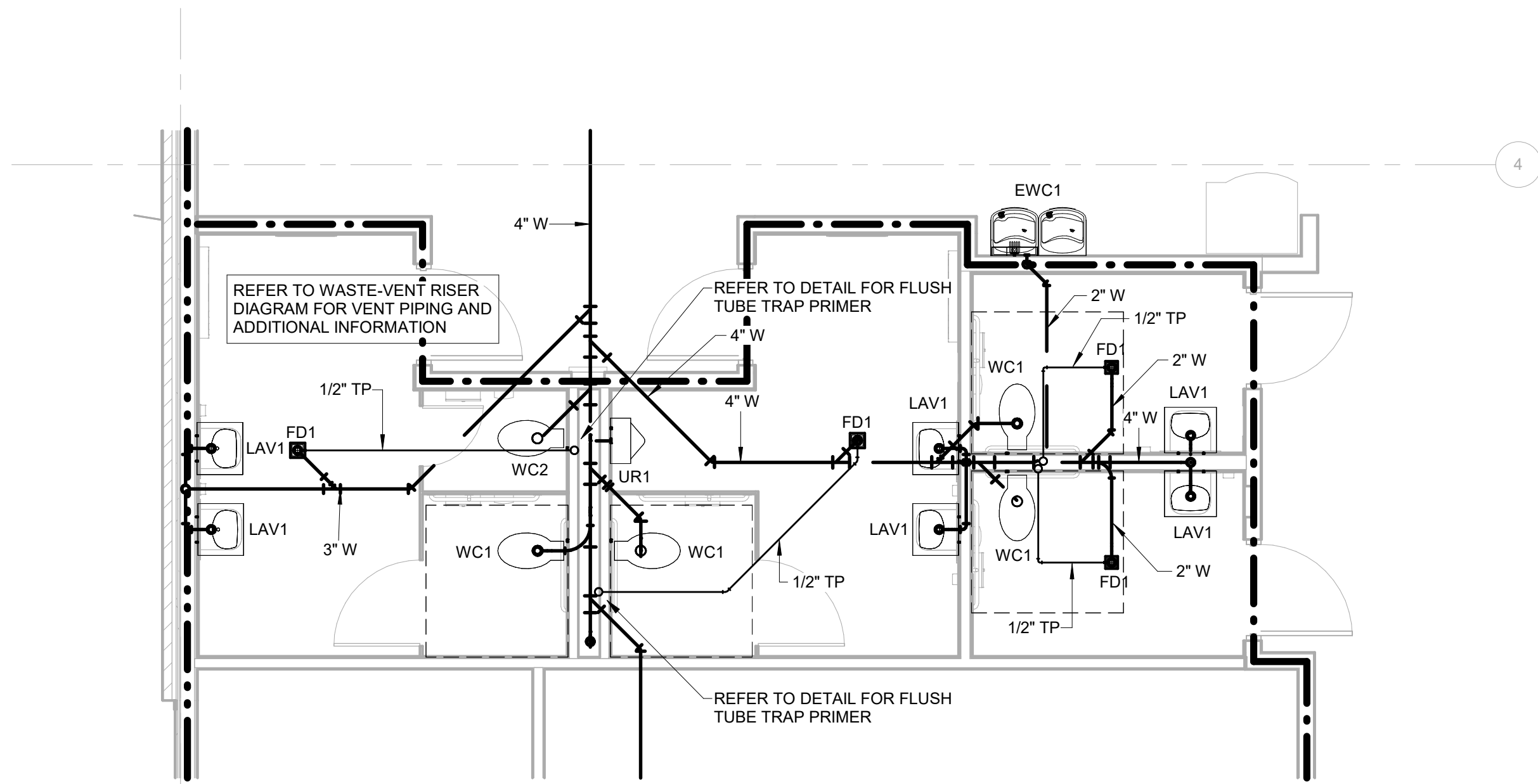
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Mark Date Description

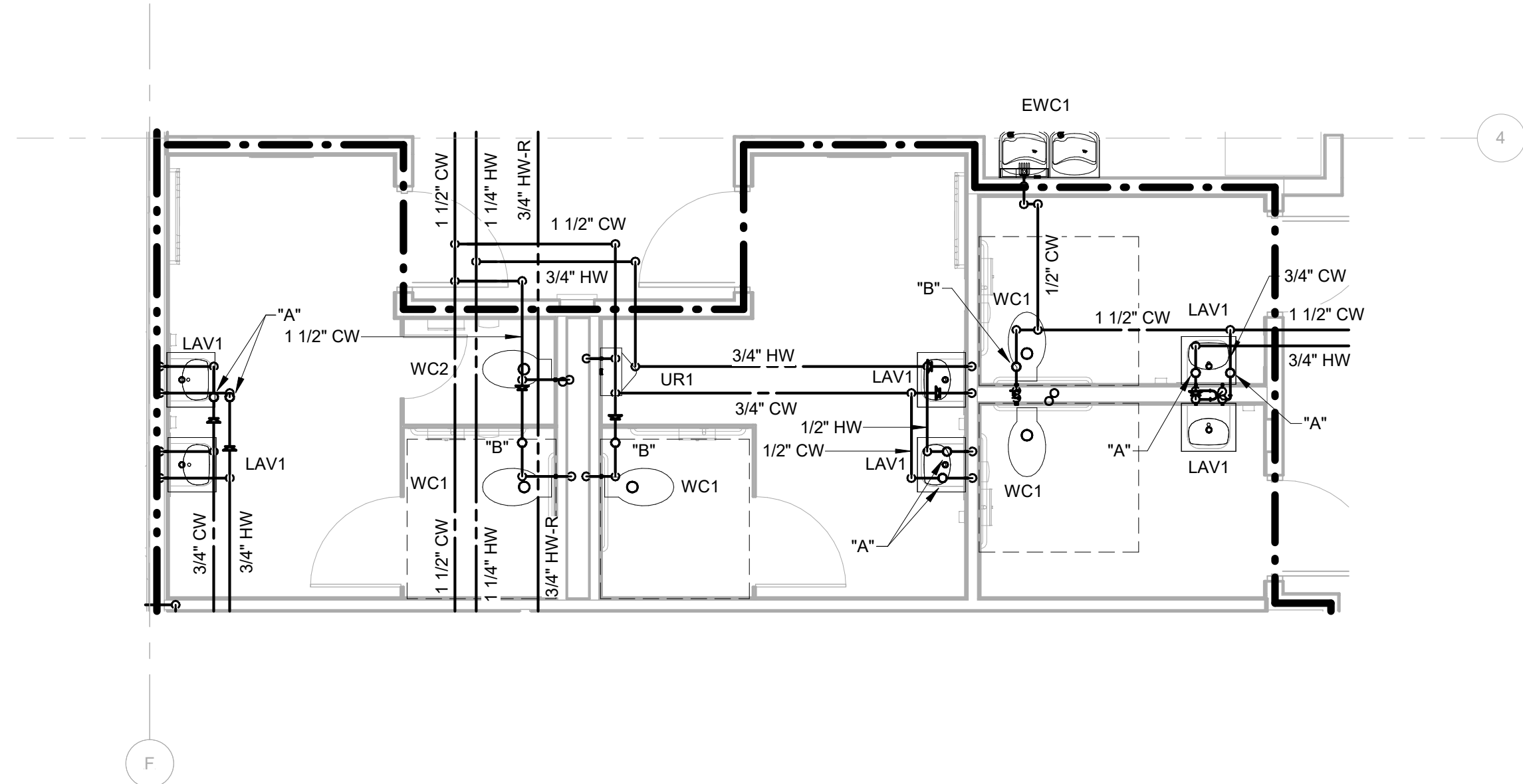
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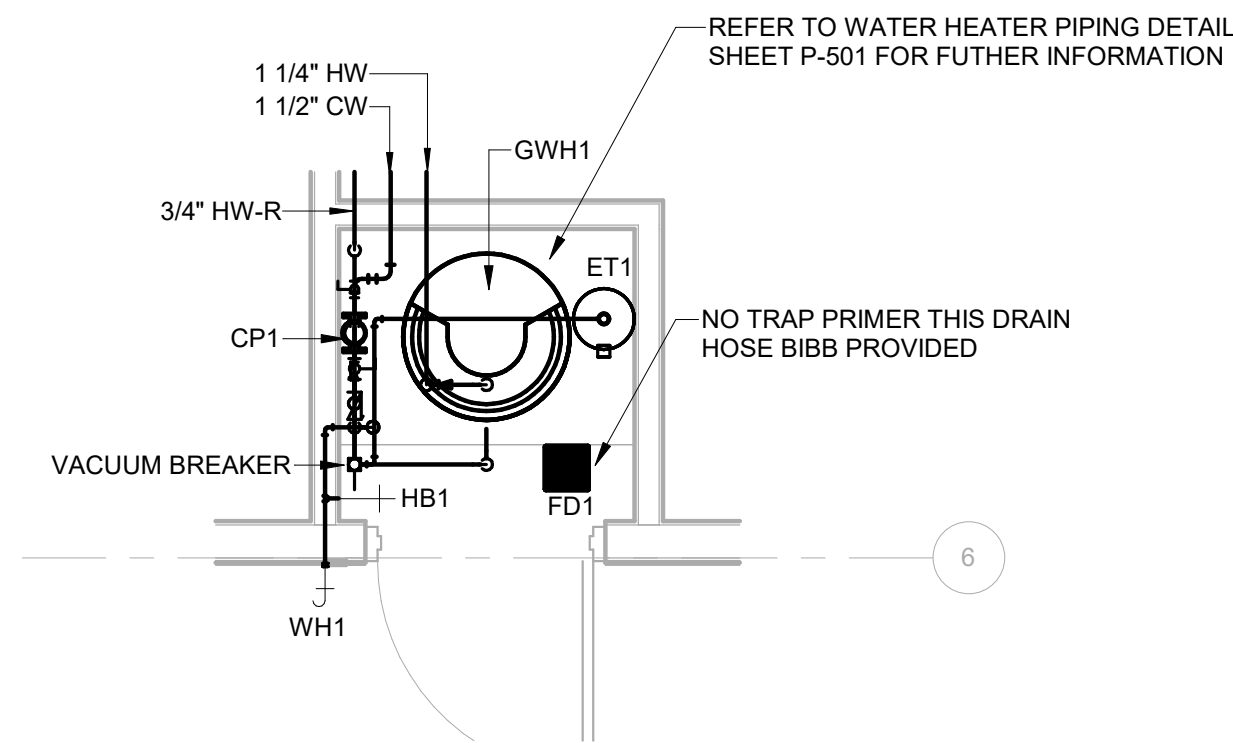
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1 ENLARGED WASTE-VENT
TOILET PLAN
SCALE: 1/4" = 1'-0"



2 ENLARGED DOMESTIC WATER
TOILET PLAN
SCALE: 1/4" = 1'-0"



3 ENLARGED WATER HEATER
ROOM PLAN
SCALE: 3/8" = 1'-0"

Mark	Date	Description
4	02.12.2025	ISSUED FOR PERMIT
3	02.12.2025	SCO CD COMMENTS
2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

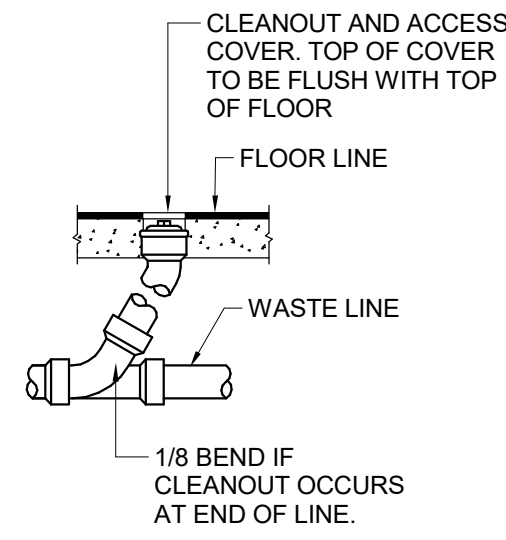
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PROJECT NO: 2024077.00

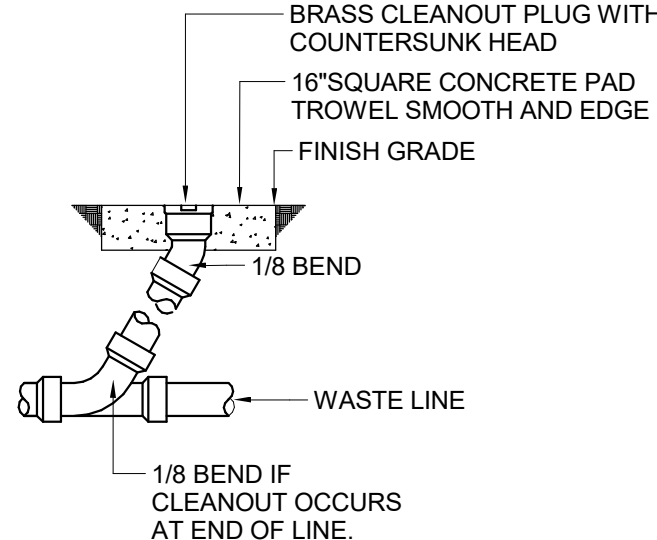
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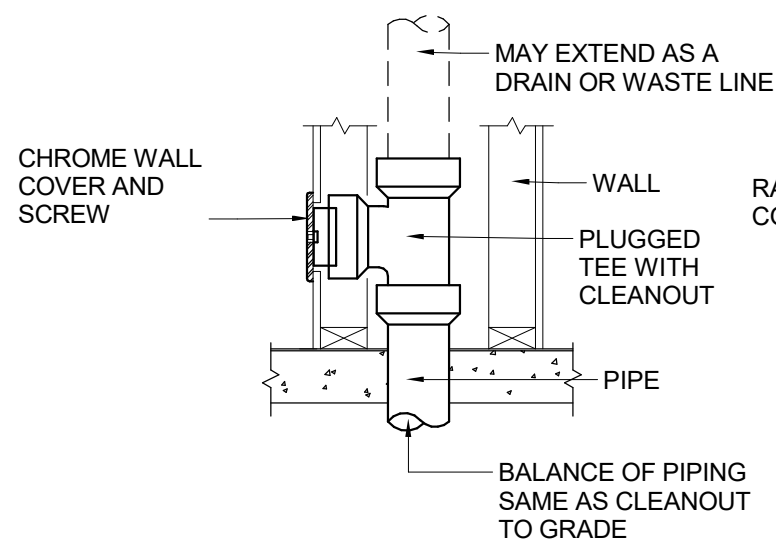
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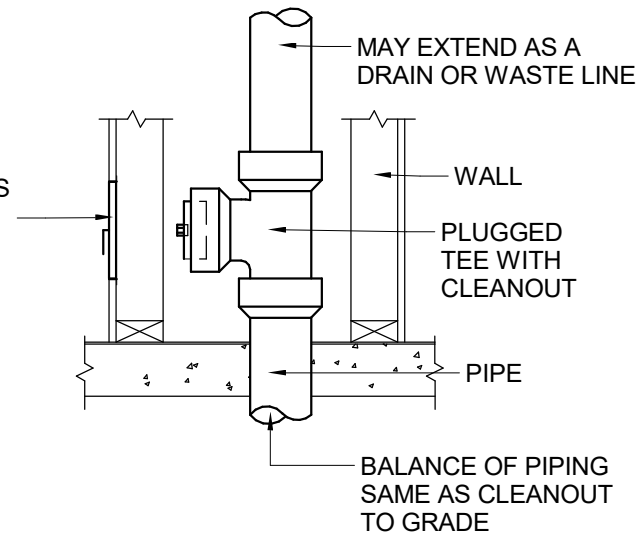
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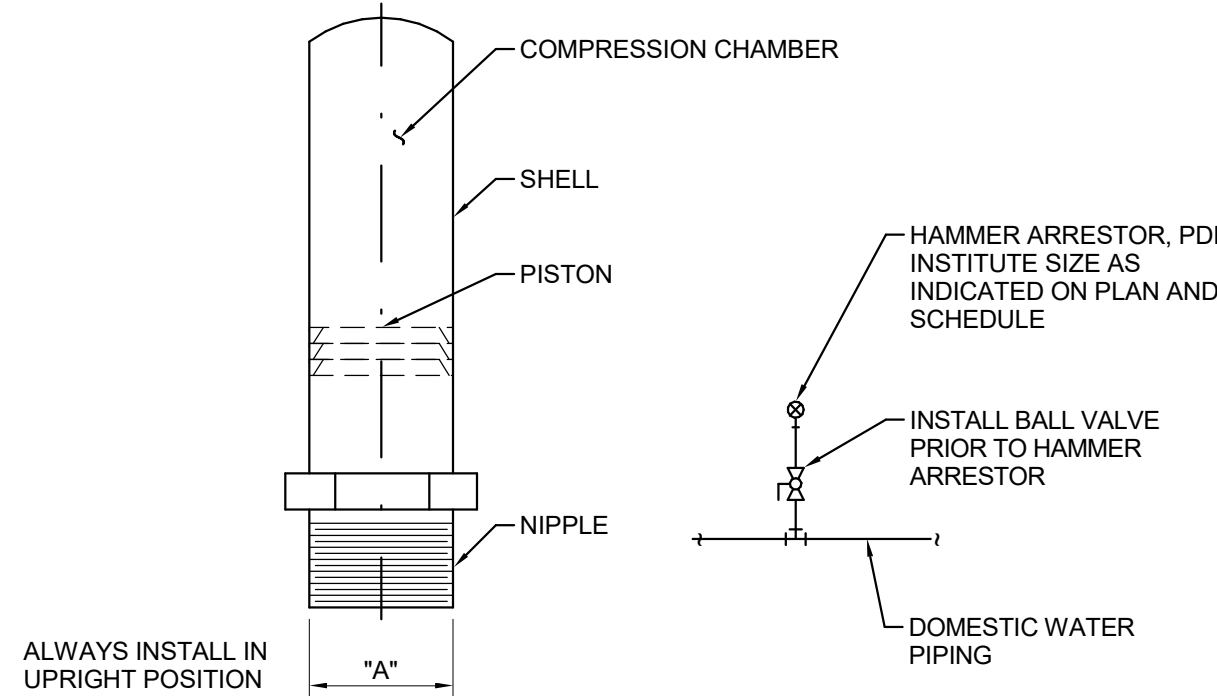
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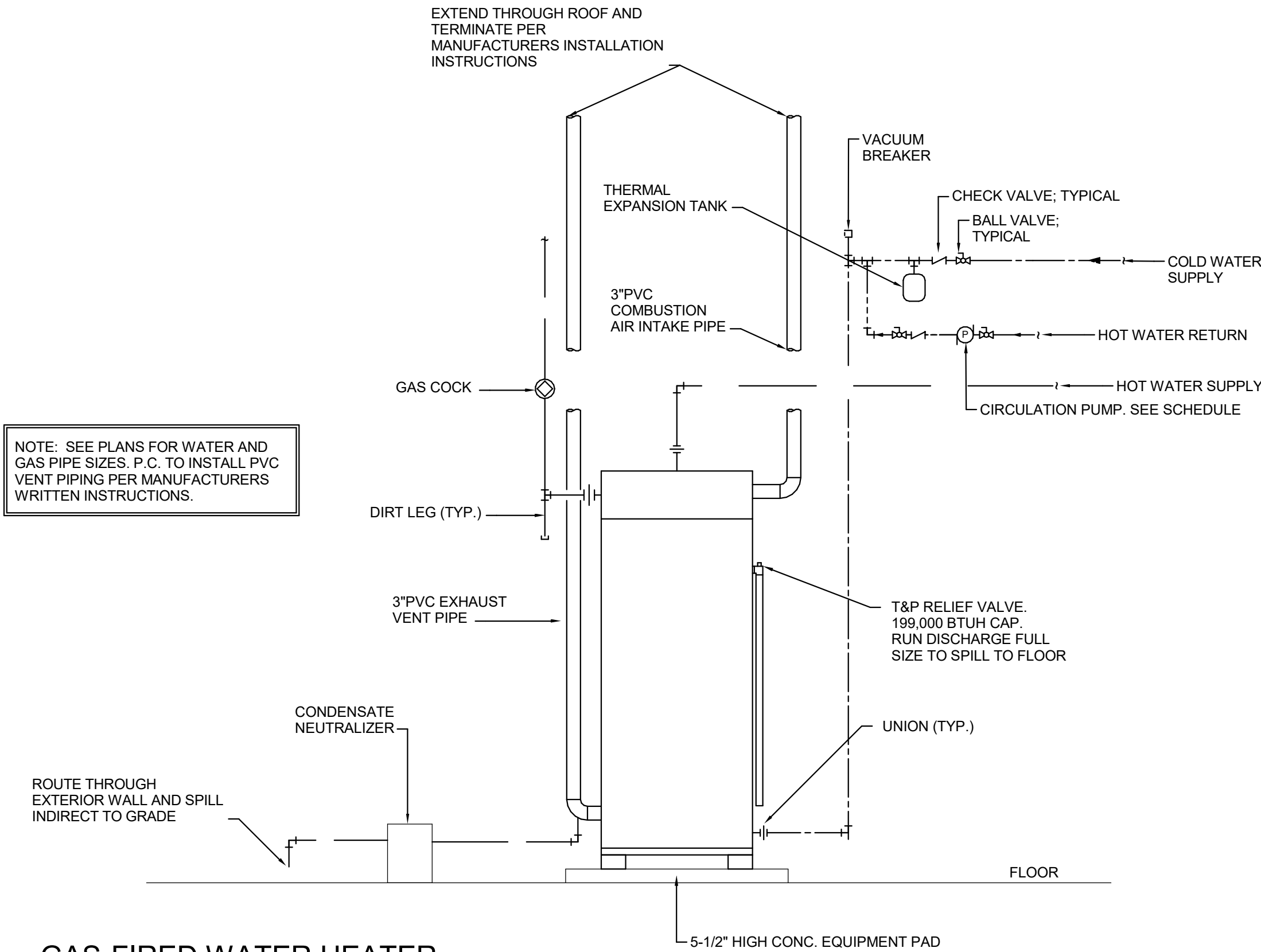
WALL CLEANOUT (WCO)



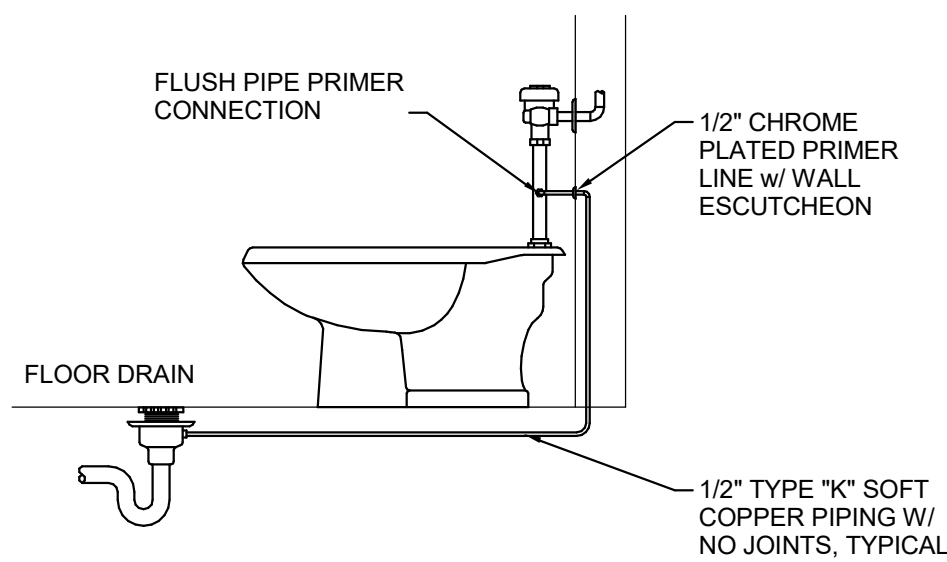
WALL CLEANOUT (WCO) RATED WALL



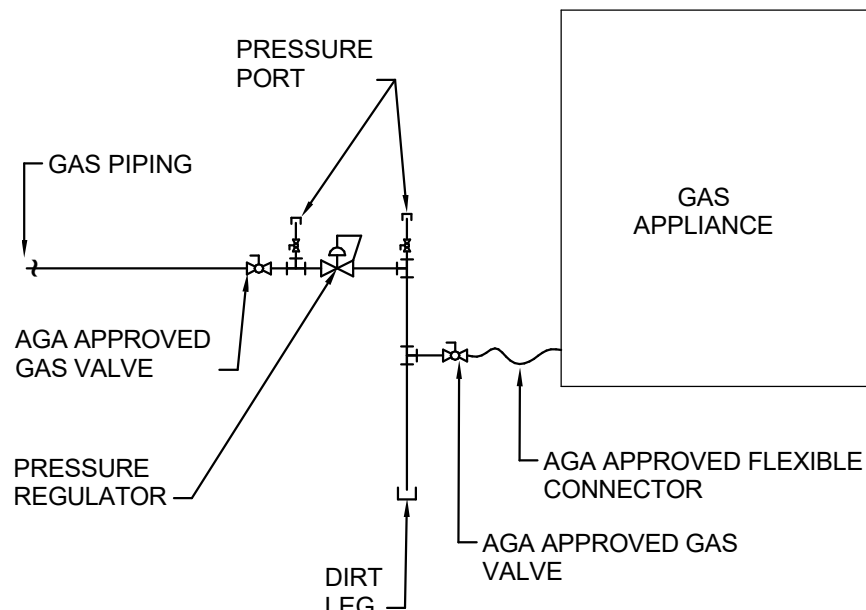
P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
A	1-11	1/2"
B	12-32	3/4"
C	33-60	1"
D	61-113	1"
E	114-154	1"
F	155-330	1"



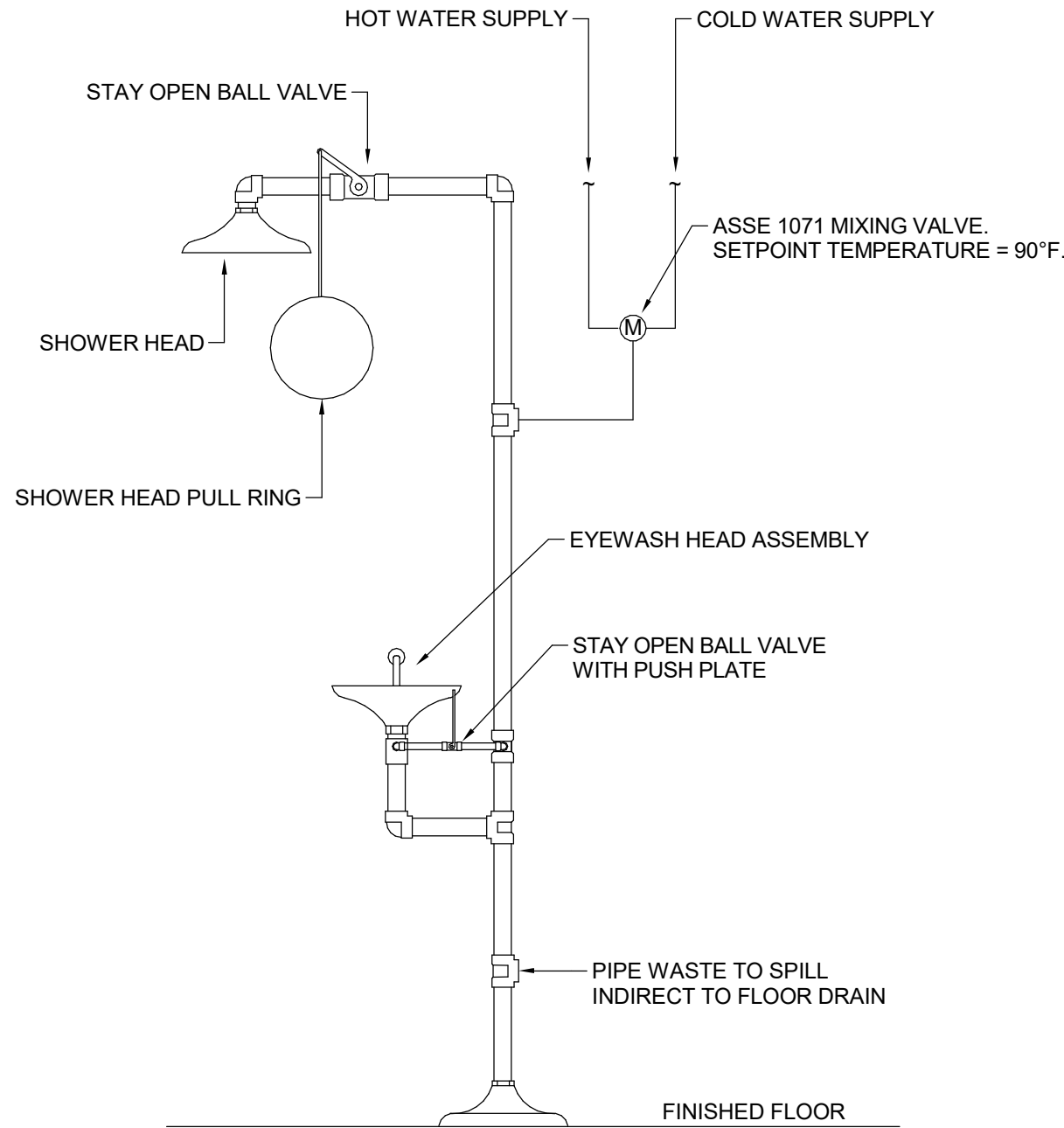
GAS-FIRED WATER HEATER DETAIL



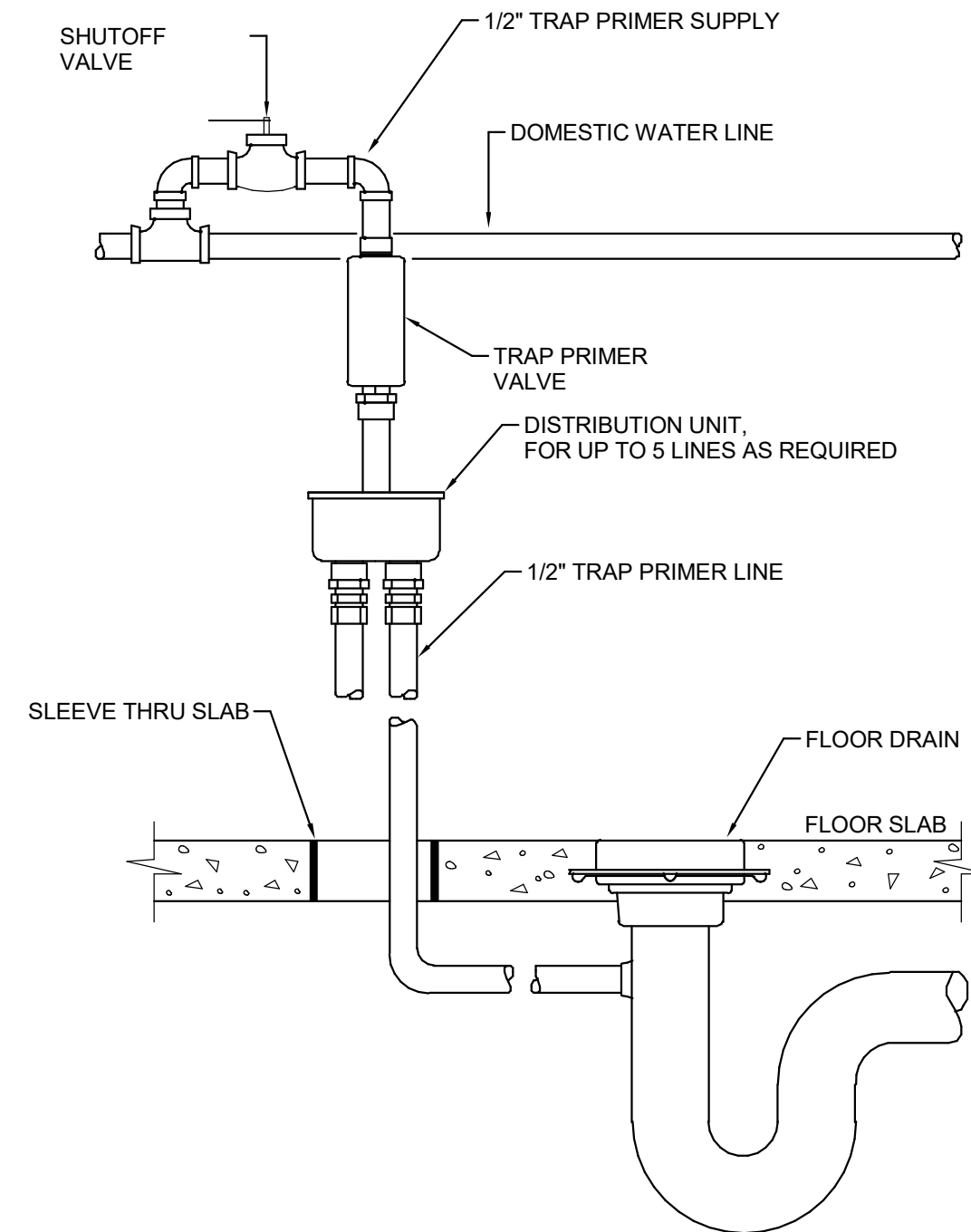
TRAP PRIMER DETAIL



GAS APPLIANCE CONNECTION DETAIL

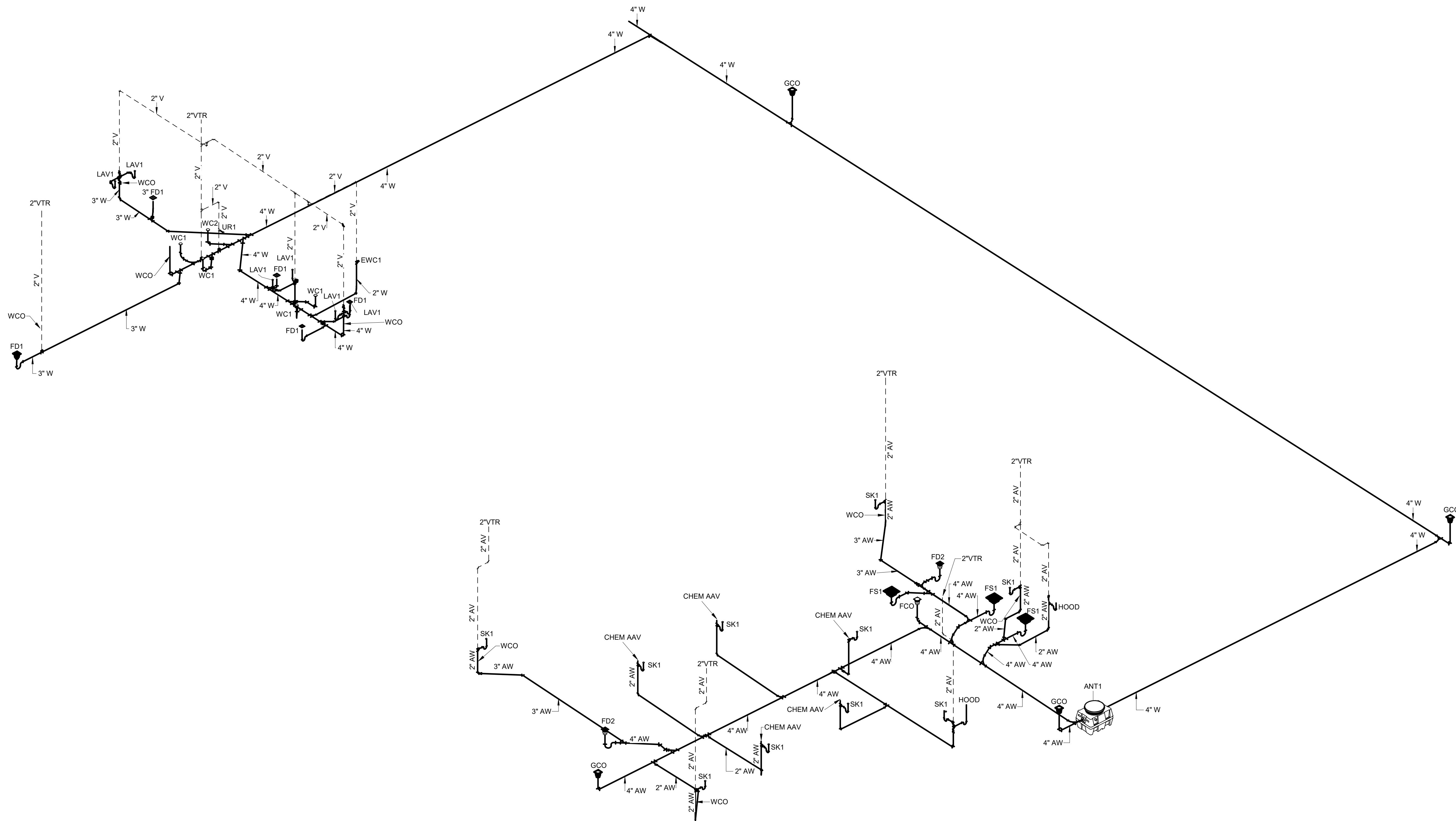


DRENCH SHOWER DETAIL



PRESSURE TYPE TRAP PRIMER DETAIL

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1 WASTE-VENT RISER DIAGRAM
NO SCALE



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302.369.3700

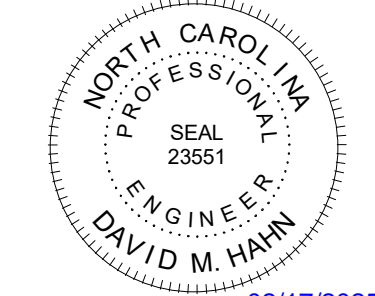
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02/17/2025

PROJECT TITLE

**CFCC Surf City
Bldg SA Addition**

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

**WASTE & VENT
RISER DIAGRAM**

ISSUE BLOCK

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DATE: 02.12.2025

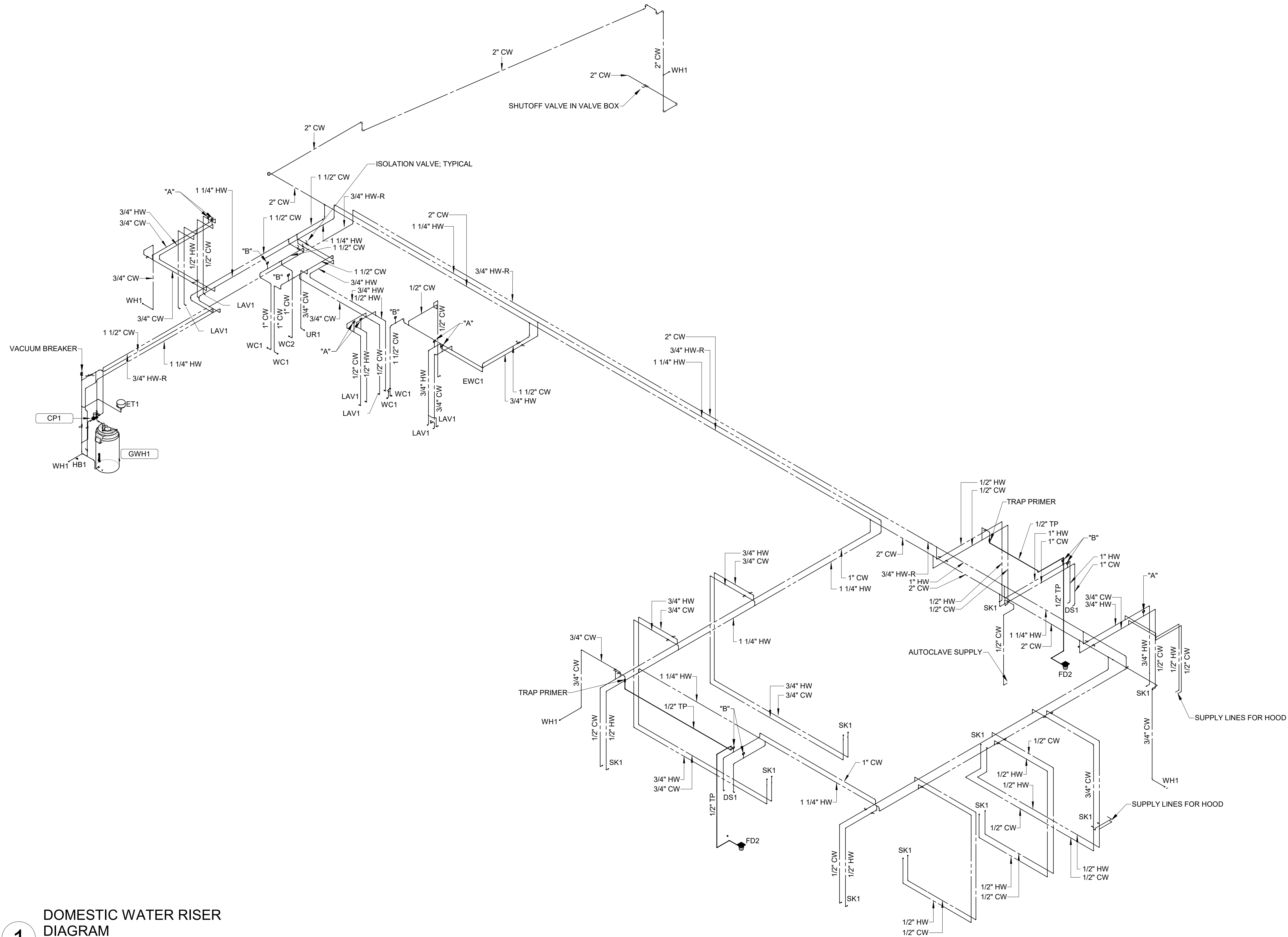
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1 DOMESTIC WATER RISER DIAGRAM
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02/17/2025

PROJECT TITLE

**CFCC Surf City
Bldg SA Addition**

621 NC HWY 210E,
HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

**DOMESTIC WATER
RISER DIAGRAM**

ISSUE BLOCK

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1	11.11.2024	GMP PRICING

PROJECT NO: 2024077.00

DATE: 02.12.2025

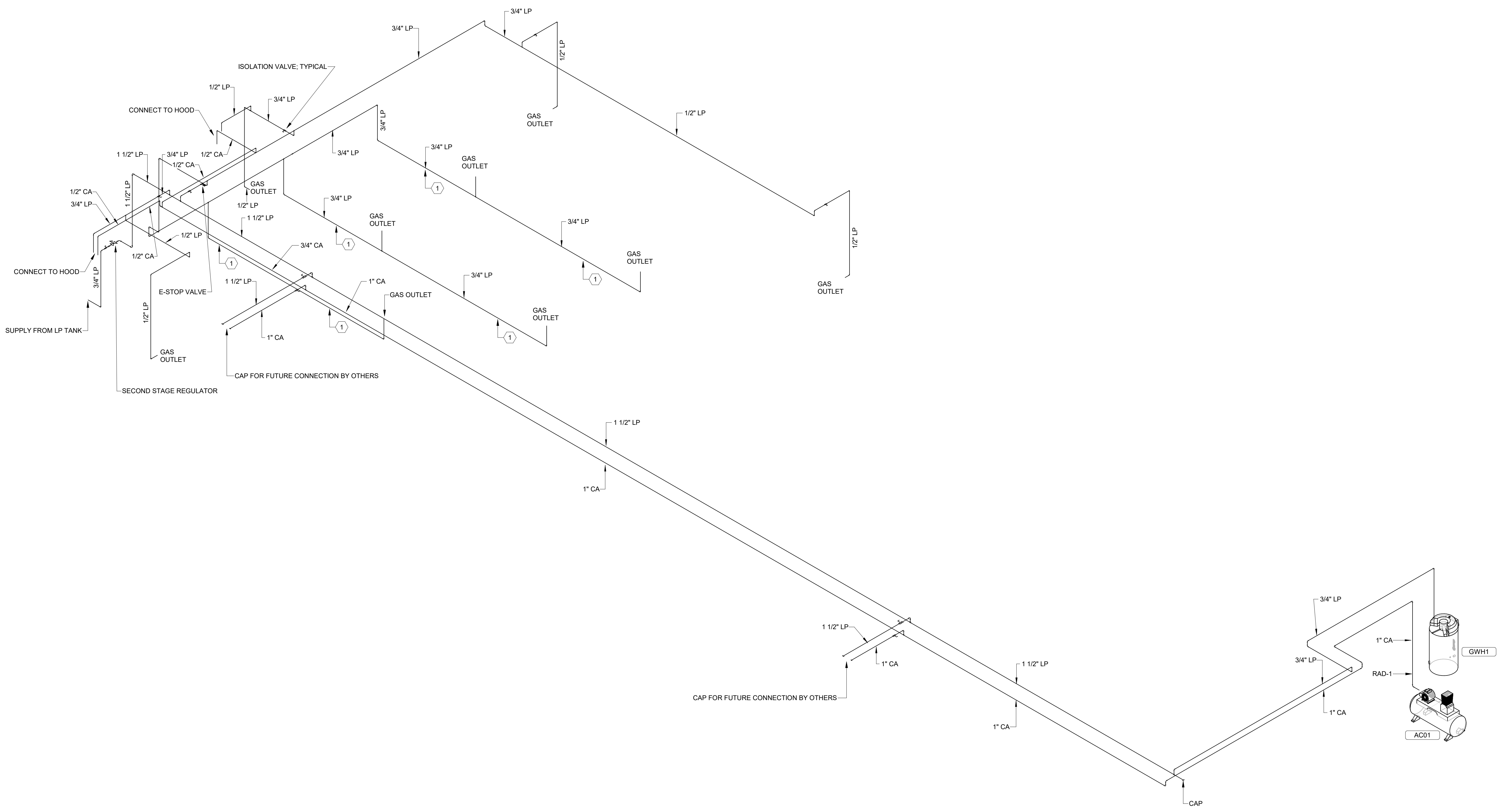
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1
COMPRESEED AIR AND LP GAS
PIPING RISER DIAGRAM
NO SCALE

KEYNOTES THIS SHEET	
1	PC MUST INSTALL GAS PIPING UNDERNEATH BUILDING TO ISLAND DESK. PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE 2018 NC FUEL GAS CODE, CHAPTER 4, SECTION 404.14.1.

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23551
ENGINEER
DAVID M. HAHN

02/17/2025

PROJECT TITLE

CFCC Surf City
Bldg SA Addition

621 NC HWY 210E,
HAMPSTEAD, NC
SCO ID# 24-28220-01A

SHEET TITLE

COMPRESSED AIR
AND LP GAS PIPING
RISER DIAGRAM

ISSUE BLOCK

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2	11.26.2024	SCO CONSTRUCTION DOCUMENTS
1	11.11.2024	GMP PRICING

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to UL 1479 and CANULC-S115

System No. W-L-1054

ANSI/UL1479 (ASTM E814)	CANULC S115
F Ratings — 1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating (Without Movement) at Ambient — Less Than 1 CFM/sq ft	FH Ratings — 1 and 2 Hr (See Items 1 and 3)
L Rating (Without Movement) at 400°F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
M Rating (Movement) — See Table 1	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 5.1 L/s/m2
	L Rating at 204°C — Less Than 5.1 L/s/m2

A

3

2

1A

1B

SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. For M Rating, steel studs to be min 3-5/8 in. (92 mm) wide. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly. The M Rating is applicable only to 1 hr rated walls.

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Hilti Firestop Systems

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to UL 1479

System No. W-L-2128

F Rating — 1 and 2 Hr (See Item 1)
T Rating — 0 Hr

A

2

4

1

2

SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3-1/2 in. (89 mm).

2. Metallic Sleeve Optional — Nom 3-1/2 in. (89 mm) (or smaller) cylindrical sleeve fabricated from min 0.016 in. thick (28 gauge) galv sheet steel and having a min 1-1/4 in. (32 mm) lap along longitudinal seam. Length of sleeve to be installed flush with wall surfaces.

3. Through Penetrants — One nonmetallic pipe installed within the firestop system. Pipe may be installed at an angle not greater than 45 degrees from perpendicular. Pipe to be rigidly supported on both sides of wall assembly. The space between pipe and periphery of opening shall be min 1/4 in. (6 mm) to max 1 1/16 in. (17.5 mm). The following types and sizes of nonmetallic pipes may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

4. Fill, Void or Cavity Materials* — Sealant — For 1 hr F Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 2 hr F Rating, min 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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to UL 1479 and CANULC-S115

System No. W-L-5029

ANSI/UL1479 (ASTM E814)	CANULC S115
F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)	F Ratings — 1, 2 and 3 Hr (See Items 1, 3 and 4)
T Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)	FT Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
L Rating At Ambient — 4 CFM/Sq Ft	FH Ratings — 1, 2 and 3 Hr (See Items 1, 2 and 4)
L Rating At 400 F — Less Than 1 CFM/Sq Ft	FTH Ratings — 0, 1/2, 1 and 1-1/4 Hr (See Item 3)
	L Rating At Ambient — 4 CFM/Sq Ft
	L Rating At 400 F — Less Than 1 CFM/Sq Ft

A

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2

SECTION A-A

1. Wall Assembly — The 1, 2 or 3 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide for 1 and 2 hr F and FH rating and 3-1/2 in. (89 mm) wide for 3 hr F and FH rating and spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 18-5/8 in. (473 mm). The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants — One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.

C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper tube shall not exceed 4 in. (102 mm).

D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When the hourly F or FH Rating of the firestop system is 3 hr, the nom diam of copper pipe shall not exceed 4 in. (102 mm).

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System No. W-L-1054

A

3

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1A

1B

SECTION A-A

2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) . diam steel conduit.

D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.

3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

Movement Direction	Penetrant Item	Nominal Penetrant Diameter	Annular Space	Movement	Sealant Depth	F-Rating	L Rating with Movement
Y	2A, 2C*	2 in.	Max 2-1/4 in.	5%	5/8 in.	1 hr	N/A
Z	2A, 2C*	2 in.	2-1/4 in.	0.25 in.	5/8 in.	1 hr	N/A

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System No. W-L-5029

A

4

3

2

SECTION A-A

3. Pipe Covering* — Nom 1, 1-1/2 or 2 in. (25, 38 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m3) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. For 1 and 2 hr F and FH Ratings, the annular space between insulated penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. (48 mm). For 3 hr F and FH Ratings, the annular space shall be min 0 in. (point contact) to max 1-1/4 in. (32 mm).

See Pipe and Equipment Covering — Materials (BRGU) category in the Building Material Directory for the names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

The hourly T, FT, FTH Ratings of the firestop system are 1/2 hr for 1 hr rated walls and 1 hr for 2 hr rated walls. For 3 hr rated walls, the hourly T, FT and FTH Ratings when steel and iron pipes are used are 1 hr. For 3 hr rated walls, the hourly T, FT and FTH Ratings when copper penetrants are used are 1-1/4 hr for 2 in. (51 mm) thick pipe covering and 0 hr for pipe covering thickness less than 2 in. (51 mm).

3A. Pipe Covering* — (Not Shown) — As an alternate to item 3, max 2 in. (51 mm) thick cylindrical calcium silicate (min 14 pcf) units sized to the outside diam of the pipe or tube may be used. Pipe insulation secured with stainless steel bands or min 18 AWG stainless steel wire spaced max 12 in. (305 mm) OC. When the alternate pipe covering is used, the T and FT Rating shall be as specified in item 3 above.

See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4. Fill, Void or Cavity Material* — Sealant — For 1 and 2 hr F and FH Rating, min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. For 3 hr F and FH Rating, min 1 in. (25 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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ENGINEER

DAVID M. HAIN

02/17/2025

PROJECT TITLE

CFCC Surf City Bldg SA Addition

621 NC HWY 210E, HAMPSTEAD, NC

SCO ID# 24-28220-01A

SHEET TITLE

UL PENETRATION DETAILS

ISSUE BLOCK

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PROJECT NO:

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