

PIPE MATERIAL SCHEDULE				
	PIPE MATERIAL	FITTINGS	JOINTS	WORKING PRESSURE
SANITARY ABOVE GROUND	HUBLESS CAST IRON (SEE NOTE NO. 1)	HUBLESS CAST IRON – PLAIN END (SEE NOTE NO. 1)	C.I.S.P.I. STAINLESS STEEL BAND CLAMP WITH NEOPRENE GASKET	10 FEET STATIC HEAD
SANITARY BELOW GROUND	BELL AND SPIGOT CAST IRON	HUBLESS CAST IRON	NEOPRENE COMPRESSION	25 FEET STATIC HEAD
COLD WATER ABOVE GROUND	TYPE "L" HARD DRAWN COPPER TUBING	WROT COPPER WITH SWEAT SOLDER ENDS	95 % TIN– 5% ANTIMONY SOLDER	125 PSIG. HYDROSTATIC
DOMESTIC HOT WATER & HOT WATER CIRCULATION	TYPE "L" HARD DRAWN COPPER TUBING	WROT COPPER WITH SWEAT SOLDER ENDS	95 % TIN– 5% ANTIMONY SOLDER	125 PSIG. HYDROSTATIC
NOTES: 1. HUBLESS CAST IRON PIPE SHALL NOT BE USED. A) IN EXPOSED AREAS B) FOR HOUSE DRAINS. FOR THESE CONDITIONS EXTRA HEAVY CAST IRON PIPE SHALL BE USED. 2. FOR THE CONDITIONS LISTED IN NOTE 1 EXTRA HEAVY CAST IRON SHALL BE USED.				

GAS–FIRED WATER HEATERS											
DESIGNATION		MANUFACTURER AND MODEL No.	GAS INPUT (MBH)	TANK DATA		RECOVERY IN GPH AT 90°F TEMP RISE FOR A 140° OUTLET TEMP.	ELECTRICAL DATA			REMARKS	
				STORAGE CAP., GALS.	WEIGHT, LB.		RATING IN AMPS	VOLTS	PHASE		
WH–1	1	A.O. SMITH BTX–80	76	50	225	95	5	120	1	IN MECHANICAL MEZZANINE. PROVIDE SUPPORTS, EXPANSION TANK, ETC.	
WH–2	1	A.O. SMITH BTXL–100	100	75	382	129	5	120	1	IN MECHANICAL MEZZANINE. PROVIDE SUPPORTS, EXPANSION TANK, ETC.	
WH–3	1	A.O. SMITH BTH–150A	150	100	523	198	5	120	1	IN MECHANICAL MEZZANINE. PROVIDE SUPPORTS, EXPANSION TANK, ETC.	

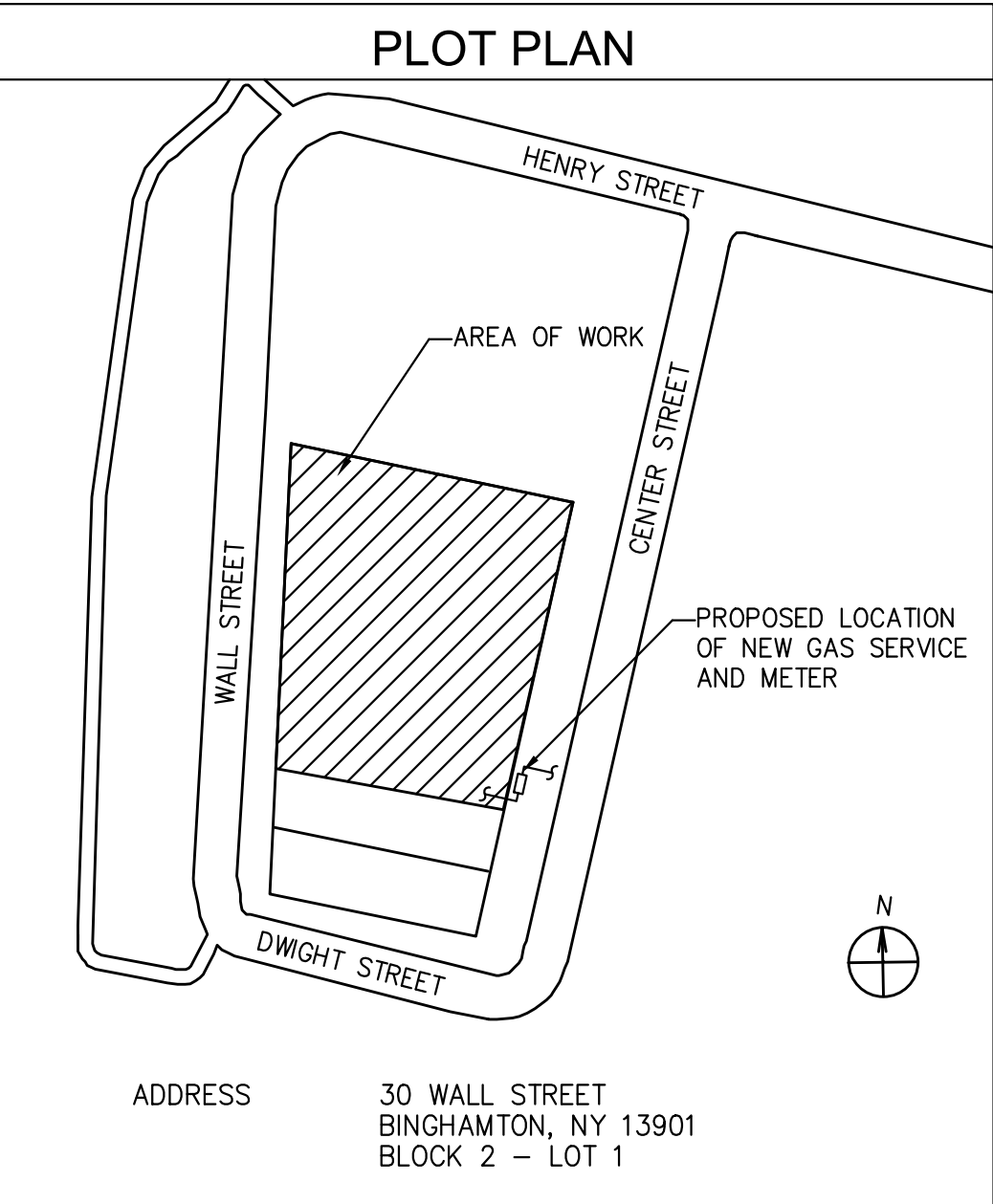
- NOTES:
- INSTALL AS PER MANUFACTURER RECOMMENDATIONS.
 - COORDINATE ALL POWER REQUIREMENTS, CONTROLS & CONTROL WIRING WITH THE ELECTRICAL CONTRACTOR.
 - PROVIDE DRIP PAN WITH LEAK DETECTION BELOW WATER HEATER.
 - TEMPERATURE SHALL BE SET TO 140 DEGREES. POINT OF USE TMV SHALL BE SET TO 105 DEGREES.

PUMPS SCHEDULE																	
TAG	DESIGNATION	No. REQUIRED	GPM EACH PUMP	TOT. FEET	GAS PRESSURE, "W.C.	MODEL NO. (BASED ON)	SUSPENDED WET PIT	VERT. CLOSE-COUPLED	HORIZ. SPLIT	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	EFFICIENCY	FACTORY PACKAGE	REMARKS
RCP-1,2,3	H.W. RECIRCULATION PUMP	1	15	25	-	B&G SERIES PR			●	1/6	1725	115	1	60	80%	●	FOR LOCATION SEE DETAILS

- PUMPS SHALL BE MAINTENANCE FREE/SELF LUBRICATED TYPE WITH LEAD FREE/BRONZE FITTED CONSTRUCTION.
- COORDINATE ALL POWER REQUIREMENTS, CONTROLS & CONTROL WIRING OF AQUASTAT WITH THE ELECTRICAL CONTRACTOR.
- INSTALL AS PER MANUFACTURER RECOMMENDATIONS.
- ALL CONTROL WIRING – BY PLUMBING CONTRACTOR.
- PROVIDE TIME CLOCK FOR RE–CIRCULATION PUMP OPERATION.

PLUMBING FIXTURE CONNECTION SCHEDULE (TYPICAL)							
ID. #	FIXTURE	COLD WATER	HOT WATER	WASTE	VENT	MODEL #	REMARKS
WC	WATER CLOSET	½"	---	4"	2"	SPECIFIED BY ARCHITECT	FLOOR MOUNTED, FLOOR OUTLET, TANK TYPE
LAV	LAVATORY	½"	½"	1½"	1½"	SPECIFIED BY ARCHITECT	
UR	URINAL	½"	---	4"	2"	SPECIFIED BY ARCHITECT	
SK	SINK	½"	½"	2"	1½"	SPECIFIED BY ARCHITECT	
DF	DRINKING FOUNTAIN	½"	---	1½"	1½"	SPECIFIED BY ARCHITECT	
ED	FLOOR DRAIN	½"	---	3"	2"		PROVIDE WITH GREEN DRAIN TRAP SEAL

- NOTES:
- PIPE SIZES SHOWN ARE MINIMUM. PIPE SIZES AS PER APPROVED EQUIPMENT SUBMITTALS
 - ALL FIXTURES SHALL COMPLY WITH NYS PLUMBING CODE REQUIREMENTS.
 - PLUMBING CONTRACTOR SHALL VERIFY SPECIFICATIONS OF ACTUAL FIXTURES FROM ARCHITECT/OWNER AND OBTAIN CUT–SHEET APPROVAL FROM ARCHITECT/OWNER BEFORE INSTALLATION.
CV – CHECK VALVE, AG – AIR GAP, VB – VACUUM BREAKER, DCV – DOUBLE CHECK VALVE



- GENERAL PLUMBING NOTES
- THE PLUMBING SYSTEM AND ALL ASSOCIATED EQUIPMENT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH ALL REQUIREMENTS OF ALL STATE AND LOCAL AUTHORITIES HAVING JURISDICTION.
 - DO NOT SCALE FROM THESE DRAWINGS.
 - DO NOT MAKE ANY CHANGES OR SUBSTITUTIONS WITHOUT SPECIFIC WRITTEN APPROVAL FROM THE ARCHITECT AND/OR ENGINEER.
 - ALL INDICATED WORK SHALL BE PERFORMED BY THE PLUMBING CONTRACTOR UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR FOR THIS WORK SHALL CAREFULLY INSPECT AND ACQUAINT HIMSELF WITH SITE CONDITIONS IN ORDER THAT HE FULLY UNDERSTANDS THE WORK REQUIRED. HE SHALL FIELD MEASURE AND VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH THE WORK. LACK OF THOROUGH UNDERSTANDING OF THE PROJECT SCOPE AND CONDITIONS SHALL NOT CONSTITUTE AN EXCUSE FOR ERRORS OR OMISSIONS, NOR FOR A REQUEST FOR EXTRA COMPENSATION.
 - PIPING LAYOUTS ARE DIAGRAMMATIC AND INTEND TO SHOW GENERAL ARRANGEMENT, SIZE AND CAPACITY. ALL OFFSETS ARE NOT NECESSARILY SHOWN. CONTRACTOR SHALL ARRANGE AND COORDINATE THE WORK, FURNISH NECESSARY OFFSETS, VALVES, VENTS AND FITTINGS TO AVOID CONFLICTS WITH OTHER MECHANICAL AND ELECTRICAL SERVICES AND WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.
 - ANY DISCREPANCIES OR INADEQUACIES WITHIN THESE BID DOCUMENTS OR BETWEEN THESE BID DOCUMENTS AND THE RELATED HVAC, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, ARCHITECTURAL, AND INTERIOR DECOR DRAWINGS OR BETWEEN THESE BID DOCUMENTS AND FIELD CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE OWNER, ARCHITECT AND ENGINEER PRIOR TO BID SUBMISSION.
 - ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO NATIONAL, STATE AND LOCAL CODES ALONG WITH ORDINANCES WHICH MAY BE IN AFFECT. ALL PLUMBING MATERIALS, INSTALLATION PROCEDURES AND SYSTEM LAYOUTS SHALL BE APPROVED BY ALL APPLICABLE CODE ENFORCEMENT AUTHORITIES HAVING JURISDICTION AND IT SHALL BE THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FOR THIS INSTALLATION.
 - THE PLUMBING CONTRACTOR SHALL PROVIDE A COMPLETE SET OF RECORD "AS–BUILT" DRAWINGS INDICATING THE PRECISE LOCATION OF ALL NEW SYSTEMS, EQUIPMENT CONCEALED OR EMBEDDED PIPING AND PIPING CONNECTIONS. THESE DRAWINGS SHALL ALSO INCLUDE ALL CHANGES AND DEVIATIONS FROM BID DOCUMENTS.
 - ALL PLUMBING FIXTURES SHALL HAVE THEIR OWN INDEPENDENT SHUT–OFF VALVES, INSTALLED IN AN EASILY ACCESSIBLE AND CONVENIENT LOCATION.
 - ALL PLUMBING FIXTURES SHALL BE A.D.A. COMPLIANT.

LEAD-FREE NOTES

ALL PIPES, PIPE FITTINGS, PLUMBING FITTINGS AND FIXTURES SHALL HAVE 0.25% WEIGHTED LEADED CONTENT OF METTED COMPONENTS. IN COMPLIANCE WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT, PIPES, PIPE FITTINGS, PLUMBING FITTINGS OR FIXTURES USED EXCLUSIVELY FOR NON–POTABLE SERVICES ARE EXCLUDED FROM THIS LEAD CONTENT REQUIREMENT. TOILETS, BIDETS, URINALS, FILL VALVES, FLUSHOMETER VALVES, TUB FILLERS, SHOWER VALVES, SERVICE SADDLES, OR WATER DISTRIBUTION MAIN GATE VALVES THAT ARE 2 INCHES IN DIAMETER OR LARGER ARE ALSO EXCLUDED FROM THIS REQUIREMENT.

- CONNECTION TO EXISTING WORK
- PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT AND CLIENT. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY PIPING CONNECTIONS AS REQUIRED TO MINIMIZE SHUTDOWN TIME.
 - CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT AND BUILDING MANAGER.
 - MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES.

THERMOSTATIC MIXING VALVE SCHEDULE												
TAG	DESCRIPTION	LOCATION	CONNECTION (inches)			TEMPERATURE (F°)			MAXIMUM FLOW RATE (GPM)	PRESSURE DROP AT LISTED FLOW (PSI)	MIN. FLOW (GPM)	REMARKS
			CW	HW	TW	HW IN	CW IN	TW OUT				
TMV	THERMOSTATIC MIXING VALVE	UNDER HAND SINK AND LAVATORY AS NEEDED	1/2	1/2	1/2	140	40	105	N/A	5	0.5	SIMILAR TO POWERS LFG480

PLUMBING SCHEDULE	
WHA	WATER HAMMER ARRESTER: PRECISION PLUMBING PRODUCTS OR SIOUX CHIEF, WITH PISTON AND O–RING CONSTRUCTION, HAVING PDI AND ASSE CERTIFICATION. PROVIDE PDI SIZES AS REQUIRED BY PDI STANDARDS AND SHOWN ON PLANS, SIZES "A" THROUGH "F".
WCO	WALL CLEANOUT SIMILAR TO J.R. SMITH MODEL 4402 DUCO CAST IRON WITH ROUND ADJUSTABLE SCORIATED NICKEL BRONZE TOP. VANDAL PROOF.
FD	3" J.R.SMITH # 9700 WITH STAINLESS STEEL BODY, 7" ADJUSTABLE STRAINER HEAD AND FLASHING CLAMP. AND POLISH GRATE AFTER INSULATION. USE A CAULK JOINT OUTLET. PROVIDE A DEEP SEAL P–TRAP. SIZE OF TRAP AND WASTE ARM AS SHOWN ON DRAWINGS.
FFD	3" J.R.SMITH # 3710 WITH DUCO CAST IRON FLANGED RECEPTOR, BAR GRATE, 6" FUNNEL & 8–1/2" STRAINER. USE A CAULK JOINT OUTLET. PROVIDE A DEEP SEAL P–TRAP. SIZE OF TRAP AND WASTE ARM AS SHOWN ON DRAWINGS.
MTMV	MASTER THERMOSTATIC MIXING VALVES: WATTS LEAD FREE SERIES LFN170 MODEL # LFN170–M3 OR EQUAL THERMOSTATIC TYPE WITH BRASS BODY CONSTRUCTION, SET TEMPERATURE AT 110°F FOR HAND WASHING. PROVIDE ON HW SUPPLY AT EACH WATER HEATER.
TMV	THERMOSTATIC MIXING VALVES: POWERS LEAD FREE #LFG–480 OR EQUAL THERMOSTATIC TYPE WITH BRASS BODY CONSTRUCTION W/ CHECKS, SET TEMPERATURE AT 105°F FOR HAND WASHING UNDER THE SINKS AND LAVS SET AWAY FROM ADA CLEARANCES AND ADA COVERS.
ET	EXPANSION TANK: AMTROL THERM–X–TROL ASME MODEL ST–12C WITH AMTROL AIR PURGE TEE.THERMAL EXPANSION ABSORBER FOR DOMESTIC WATER SYSTEM. 150 PSIG MAXIMUM WORKING PRESSURE. 6.4 GALLON CAPACITY. 3/4" PIPE CONNECTION SIZE. SET AIR CHARGE PRESSURE TO MATCH EXISTING WATER SYSTEM PRESSURE. INSTALL AND TEST PER MANUFACTURER'S INSTRUCTIONS. REFER TO DETAIL ON DRAWINGS.
HD	3" J.R.SMITH # 9654BW03 STAINLESS STEEL BODY, HUB DRAIN
TP	FLOOR DRAIN TRAP PRIMER: PRECISION PLUMBING PRODUCTS PRIME–RITE WITH CORROSION RESISTANT BRASS BODY AND INTEGRAL VACUUM BREAKER. MODEL PR–500. PROVIDE DISTRIBUTION UNIT WHERE MORE THAN ONE TRAP IS INDICATED ON DRAWINGS.
VACUUM BREAKER	ANTI–SIPHON PRESSURE VACUUM BREAKER SHALL BE WATTS SERIES 800M4QT. INSTALL 12" ABOVE HIGHEST POINT OF DOWNSTREAM PIPING. DEVICE MUST BE INSTALLED IN EXPOSED LOCATION.
RD	J.R.SMITH # 1010–C–CID WITH DUCO CAST IRON BODY, ALUMINUM UNDERDECK CLAMP, CAST IRON DOME AND FLASHING CLAMP.
AD	J.R.SMITH # 1410–C–NBM–U WITH DUCO CAST IRON BODY, ALUMINUM UNDERDECK CLAMP, NICKEL–BRONZE TOP, VANDAL PROOF GRATE AND FLASHING CLAMP.

PLUMBING DRAWING LIST	
DRAWING NO.	DRAWING TITLE
P–001.00	PLUMBING COVER SHEET
P–199.00	PLUMBING CELLAR FLOOR PLAN
P–200.00	PLUMBING FIRST FLOOR PLAN
P–201.00	PLUMBING ROOF PLAN
P–500.00	PLUMBING RISER DIAGRAMS
P–600.00	PLUMBING SCHEDULES
P–700.00	PLUMBING DETAILS I
P–701.00	PLUMBING DETAILS II
P–800.00	PLUMBING SPECIFICATIONS I
P–801.00	PLUMBING SPECIFICATIONS II
P–802.00	PLUMBING SPECIFICATIONS III

SYMBOL LIST/LEGEND		
SYMBOLS	ABBREV.	DESCRIPTION
-----		EXISTING PIPING TO REMAIN
=====	S. OR W.	SOIL OR WASTE (SANITARY) PIPING ABOVE FLOOR
-----	S. OR W.	SOIL OR WASTE (SANITARY) PIPING BELOW FLOOR
-----	V	VENT PIPING
-----	C.W.	COLD WATER PIPING
-----	H.W.	HOT WATER PIPING
-----	H.W.R.	HOT WATER RETURN PIPING
=====	CO/WCO	CLEANOUT/WALL CLEANOUT
=====	CODP	CLEANOUT DECK PLATE
=====		VACUUM BREAKER
=====	WHA	WATER HAMMER ARRESTER
=====		CHECK VALVE
=====		GATE (SHUT OFF) VALVE
=====		GAS COCK
=====		CAPPED OUTLET
=====	FD	FLOOR DRAIN
=====	FD/TR	FLOOR DRAIN WITH TRAP PRIMER
=====	FS	FLOOR SINK
=====		ROOF DRAIN
=====		TRAP
=====		STRAINER
=====		PIPING DROP OR DOWN
=====		PIPING RISE OR UP
=====		PIPING CONNECTION BELOW
=====		PIPING CONNECTION ABOVE
=====		FLUSH VALVE
=====		CONNECT TO EXISTING PIPING
=====		WATER METER
=====		GAS METER
=====		BALANCING VALVE
=====	TD	TRENCH DRAIN

NOTE: SYMBOLS APPLY ONLY WHERE INDICATED ON PLANS

NOTE: ALL ABBREVIATIONS ARE NOT NECESSARILY SHOWN ON DRAWINGS.				PLUMBING ABBREVIATIONS			
%	PERCENT	EA	EACH	NTS	NOT TO SCALE		
&	AND	EQUIP	EQUIPMENT	PC	PLUMBING CONTRACTOR		
⊙	AT	EXIST,	EXISTING	PD	PUMP DISCHARGE		
AFF	ABOVE FINISHED FLOOR	(E)		PLBG	PLUMBING QUANTITY		
AM. STD.	AMERICAN STANDARD	FD	FLOOR DRAIN	REQ	REQUIRED		
APP	APPROVED	FFE	FINISH FLOOR ELEVATION	RG	RANGE		
APPROX	APPROXIMATE	FT	FEET	RM	ROOM		
ARCH	ARCHITECTURAL	FUD	FUNNEL DRAIN	RPZ	REDUCED PRESSURE ZONE		
BFF	BELOW FINISHED FLOOR	G	NATURAL GAS	SFU	SUPPLY FIXTURE UNIT		
BLOG	BUILDING	GC	GENERAL CONTRACTOR	SHT	SHEET		
BSMT	BASEMENT	HGT	HEIGHT	SPEC	SPECIFICATION		
CFH	CUBIC FEET PER HOUR	HW	HOT WATER	SQ FT	SQUARE FOOT		
CLG	CEILING	H&CW	HOT WATER RECIRCULATING HOT & COLD WATER	SRV	SAFETY RELIEF VALVE		
CO	CLEANOUT	I.E.	INVERT ELEVATION	ST	STOVE		
CODP	CLEANOUT W/DECK PLATE	MFR	MANUFACTURER	TYP	TYPICAL		
CONN	CONNECTION	MIN	MINIMUM	VIF	VERIFY IN FIELD		
CONT	CONTINUATION	MTG	MOUNTING	VTR	VENT THRU ROOF		
CW	COLD WATER	NIC	NOT IN CONTRACT	W/	WITH		
DF	DRINKING FOUNTAIN	NO., #	NUMBER	WCO	WALL CLEANOUT		
DFU	DRAINAGE FIXTURE UNIT						
DIA. ~	DIA. ~						
DN	DOWN						
DWG	DRAWING						
DCV	DOUBLE CHECK VALVE						

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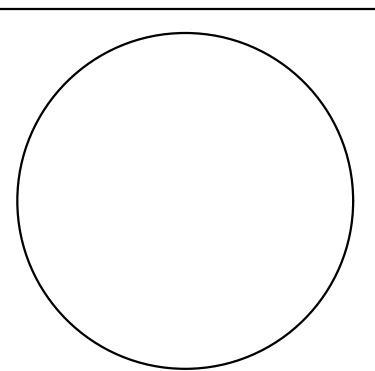
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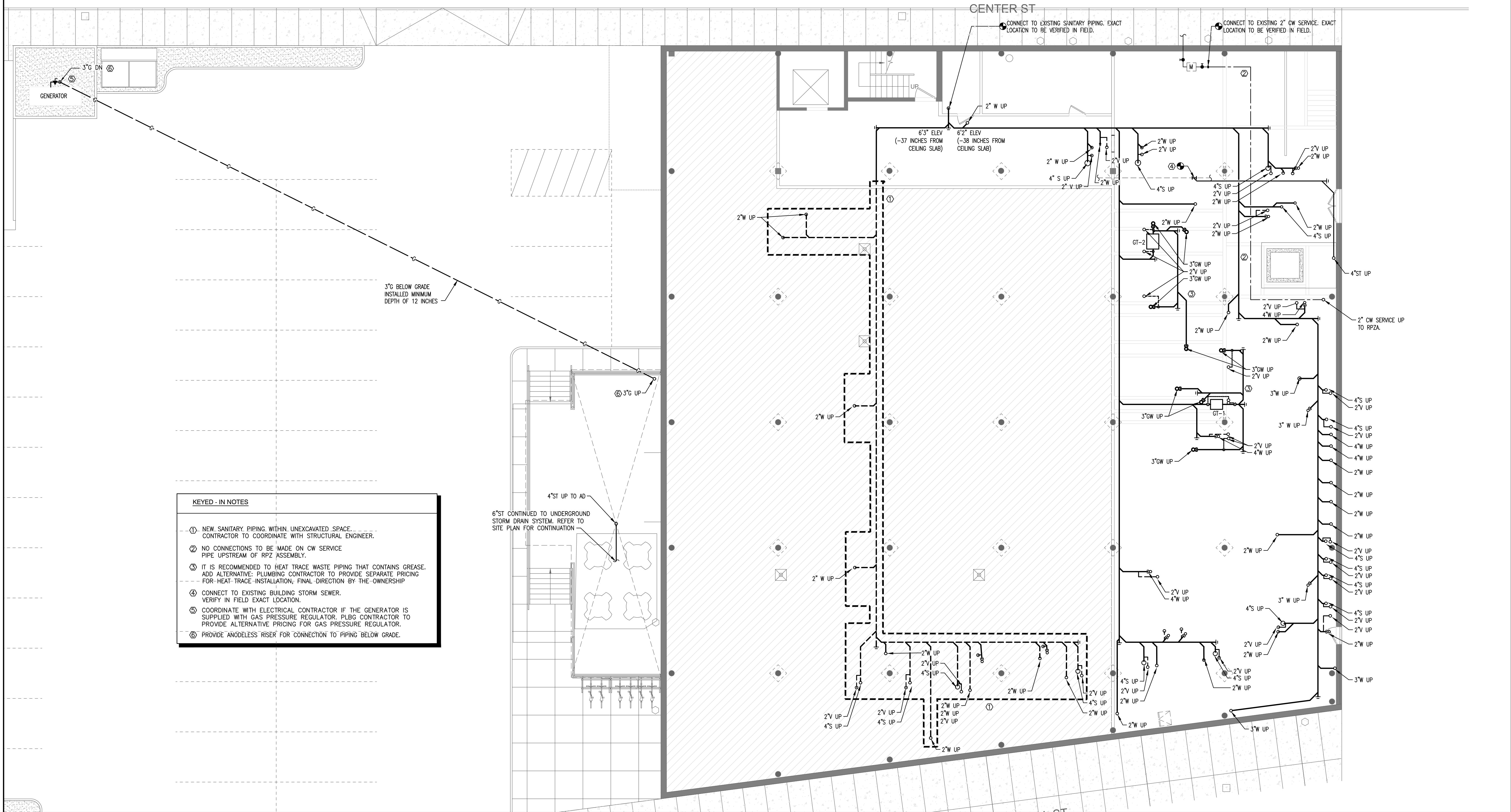
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PLUMBING COVER SHEET



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- KEYED - IN NOTES
- ① NEW SANITARY PIPING WITHIN UNEXCAVATED SPACE. CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER.
 - ② NO CONNECTIONS TO BE MADE ON CW SERVICE PIPE UPSTREAM OF RPZ ASSEMBLY.
 - ③ IT IS RECOMMENDED TO HEAT TRACE WASTE PIPING THAT CONTAINS GREASE. ADD ALTERNATIVE: PLUMBING CONTRACTOR TO PROVIDE SEPARATE PRICING FOR HEAT TRACE INSTALLATION; FINAL DIRECTION BY THE OWNERSHIP
 - ④ CONNECT TO EXISTING BUILDING STORM SEWER. VERIFY IN FIELD EXACT LOCATION.
 - ⑤ COORDINATE WITH ELECTRICAL CONTRACTOR IF THE GENERATOR IS SUPPLIED WITH GAS PRESSURE REGULATOR. PLBG CONTRACTOR TO PROVIDE ALTERNATIVE PRICING FOR GAS PRESSURE REGULATOR.
 - ⑥ PROVIDE ANODELESS RISER FOR CONNECTION TO PIPING BELOW GRADE.

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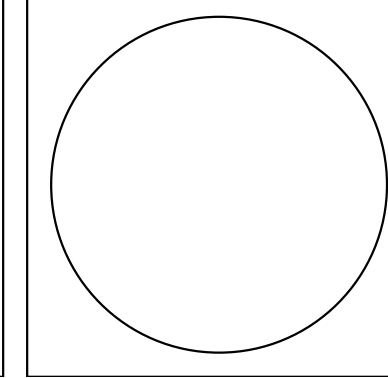
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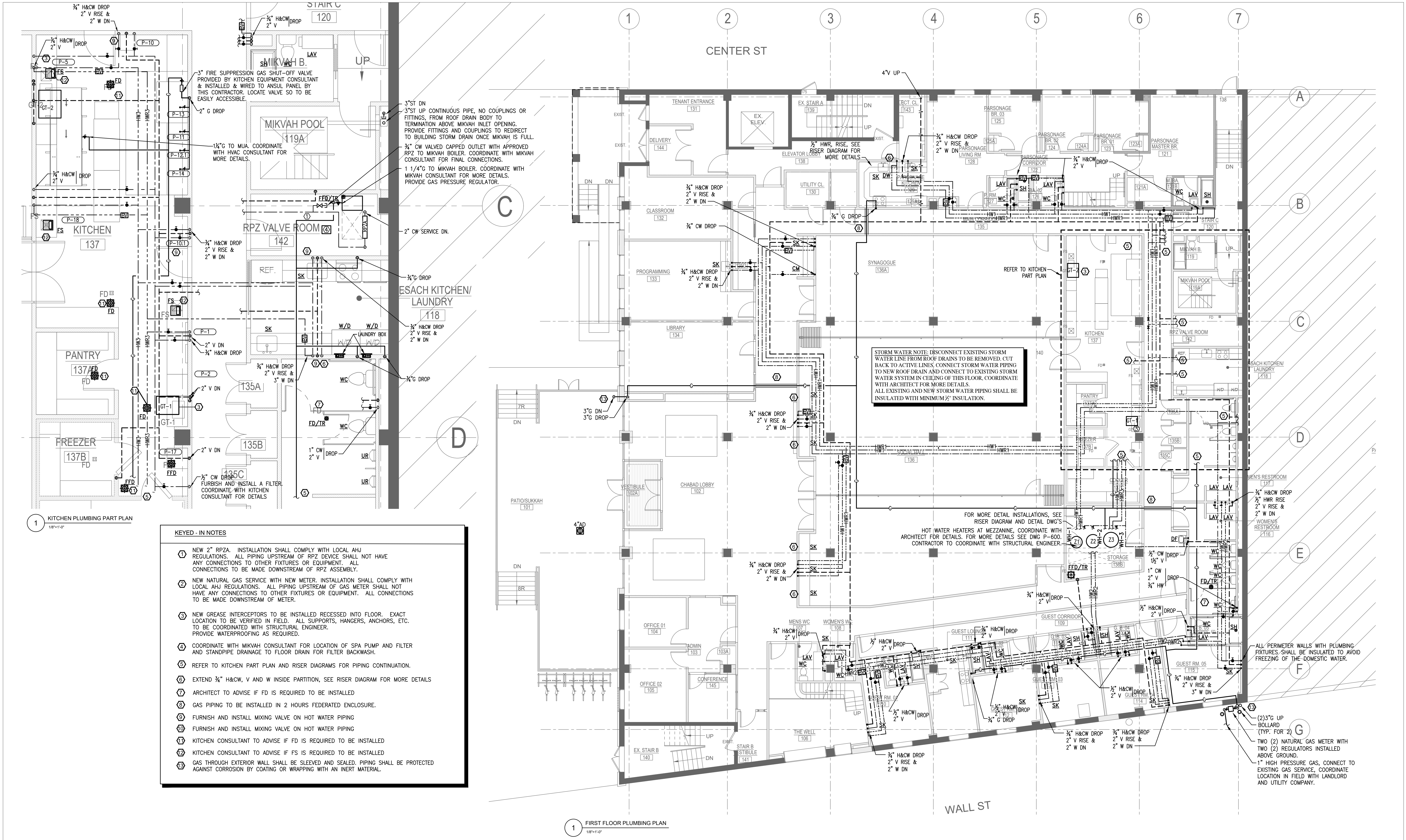
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PLUMBING CELLAR FLOOR PLAN



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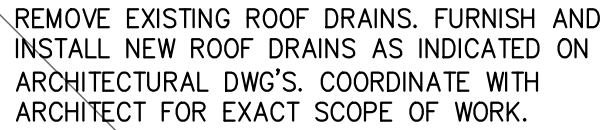
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PLUMBING FIRST FLOOR PLAN

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- ① COORDINATE WITH HVAC CONTRACTOR IF THE UNIT IS SUPPLIED WITH GAS PRESSURE REGULATOR. PLGB CONTRACTOR TO PROVIDE ALTERNATIVE PRICING FOR GAS PRESSURE REGULATOR.
- ② ROOFTOP UNITS ARE BEING PROVIDED AND INSTALLED BY HVAC CONTRACTOR (NIC)
- ③ REMOVE ALL EXISTING GAS PIPING ON ROOF PRIOR TO ROOF REPLACEMENT. PROVIDE NEW GAS PIPING WITH SUPPORTS. COORDINATE WITH ROOF REPLACEMENT.
- ④ PROVIDE NEW GAS FROM METER TO ROOF ALONG BUILDING EXTERIOR.
- ⑤ REMOVE ALL EXISTING ROOF DRAINS PRIOR TO ROOF REPLACEMENT. PROVIDE NEW ROOF DRAINS TO MATCH EXISTING SIZE AND LOCATION. COORDINATE REMOVAL AND CONNECTION TO EXISTING LEADERS IN 2ND FLOOR TENANT SPACE. COORDINATE WITH ROOF REPLACEMENT.
- ⑥ PROVIDE NEW 3" ROOF DRAIN CONNECTED TO SINGLE EXISTING PIPING, NO COUPLINGS OR FITTINGS. REFER TO FIRST FLOOR PLAN FOR CONTINUATION. COORDINATE INSTALLATION OF LEADER THROUGH 2ND FLOOR TENANT SPACE.
- ⑦ CONTRACTOR TO VERIFY IN FIELD IF RTU HAS EXISTING GAS CONNECTION. PROVIDE NEW GAS CONNECTION TO REPLACE ANY EXISTING GAS CONNECTION.



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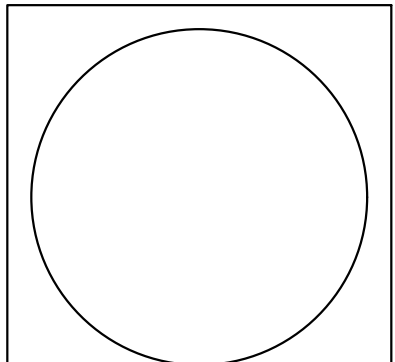
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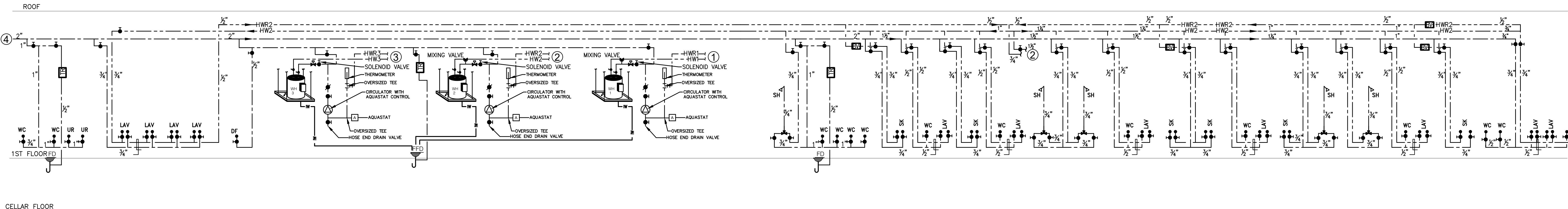
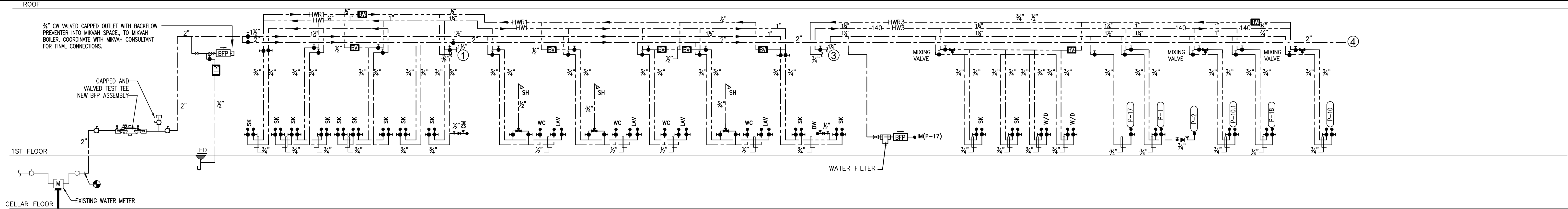
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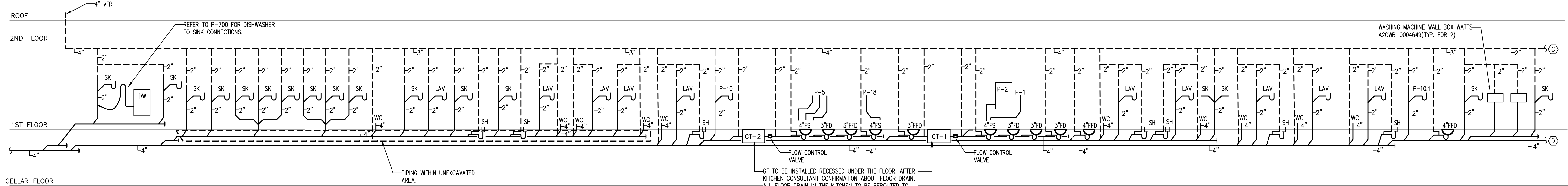
PLUMBING ROOF PLAN



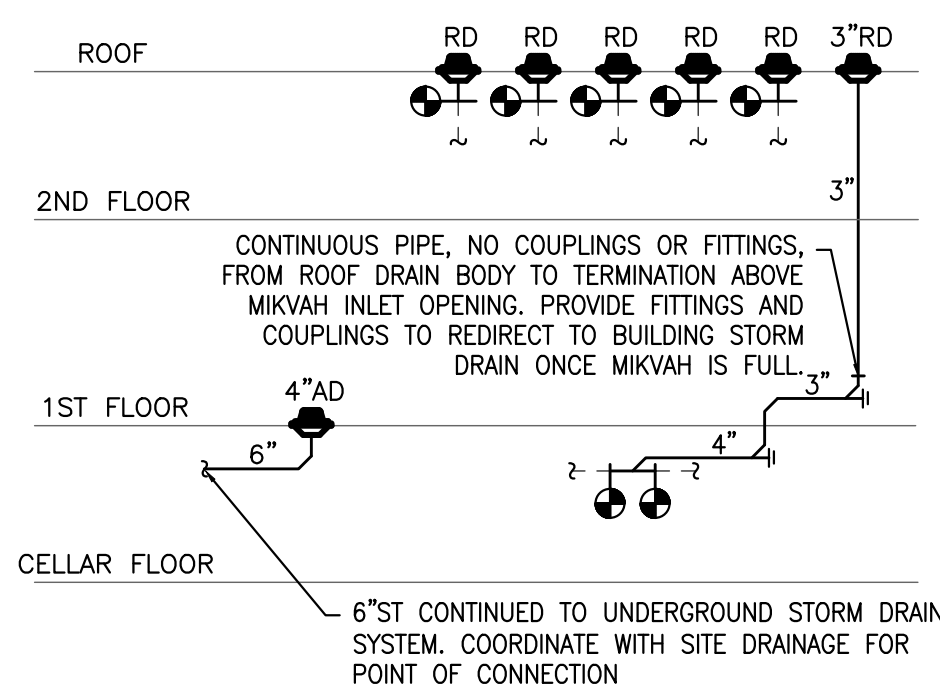
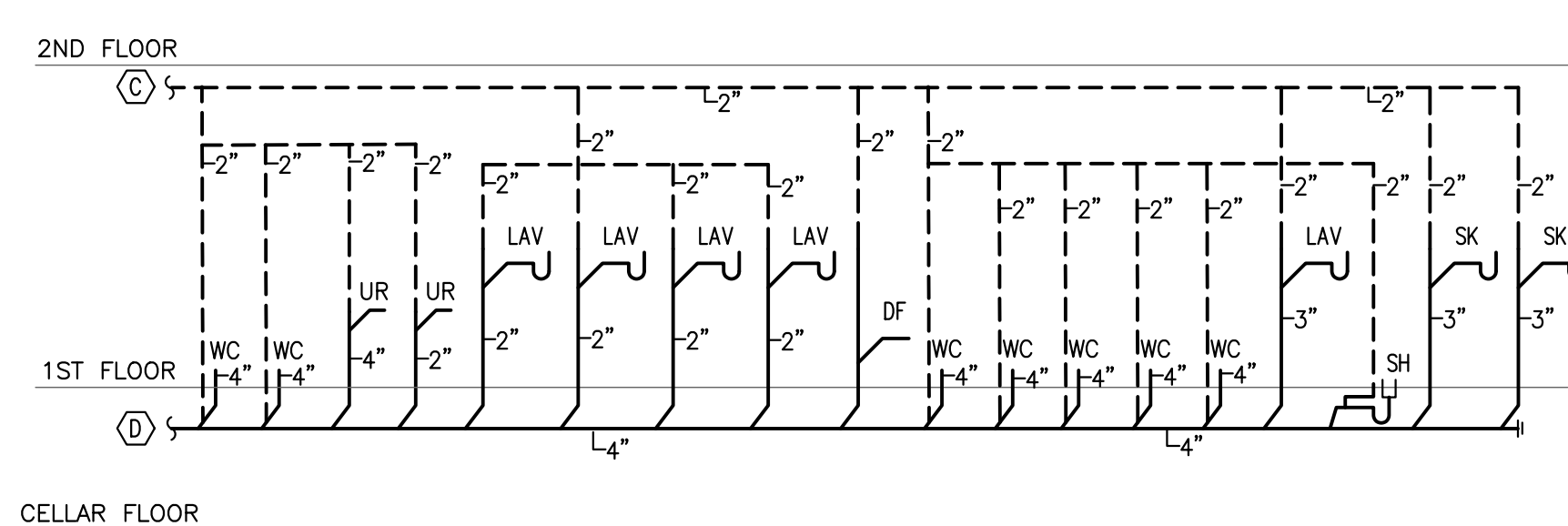
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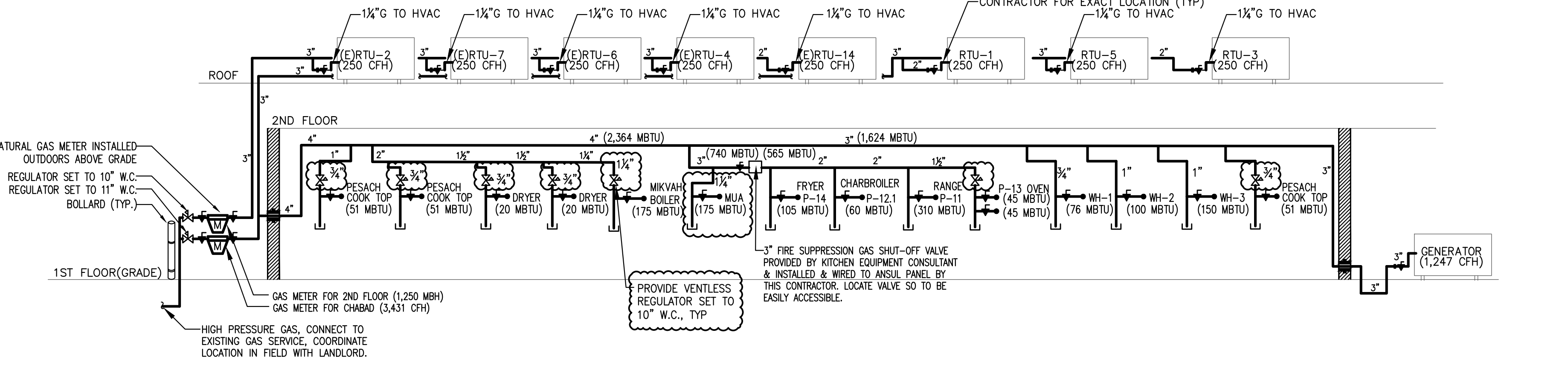
DOMESTIC WATER RISER DIAGRAM
SCALE: NTS



SANITARY RISER DIAGRAM
SCALE: NTS



STORM WATER RISER DIAGRAM
SCALE: NTS



NATURAL GAS RISER DIAGRAM
SCALE: NTS

PLUMBING SCHEDULE										
ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	COLD WATER SIZE (IN)	HOT WATER SIZE (IN)	DIRECT DRAIN SIZE (IN)	INDIR DRAIN SIZE (IN)	GAS SIZE (IN)	PLUMBING REMARKS
1	1	SOILED DISHTABLE	BK RESOURCES	BKSDT-48-L-SS-P-G	-	-	-	1.5		
2	1	DISHWASHER, DOOR TYPE	JACKSON WWS	CONSERVER XL-E-LTH	0.5	0.75	-	2		WATER TEMP: 140 DEGREES; PROVIDE 1/2" DRAINWATER TEMPERING VALVE W/ CW FEED AND BFP
3	1	CLEAN DISHTABLE	BK RESOURCES	BKCDT-48-RR-SS	-	-	-	1		
3.1	1	GREASE TRAP	BK RESOURCES	BK-GT-20	-	-	-	-		
5	1	THREE COMPARTMENT SINK	BK RESOURCES	BKS-3-20-12-18T	0.5	0.5	-	(3)1.5		WATER TEMP: 140 DEGREES
5.1	1	GREASE TRAP	BK RESOURCES	BK-GT-40	-	-	-	-		
10	1	HAND SINK	SERV-WARE	HS10-CWP-SSR	-	-	1.5	-		WATER TEMP: 105 DEGREES
11	1	RANGE, 48", 8 OPEN BURNERS	AMERICAN RANGE	AR-B	-	-	-	-	0.75	
12.1	1	CHARBROILER, GAS, COUNTERTOP	SERV-WARE	SCBS-24	-	-	-	-		
13	1	CONVECTION OVEN, GAS	BLODGETT	ZEPH-100-G-ES DBL	-	-	-	-	(2)0.75	
14	1	GAS FLOOR FRYER	ASBER	AEF-4050-S-E	-	-	-	-		
17	1	ICE MAKER WITH BIN, CUBE STYLE	HOSHIZAKI	KM-231BAJ	0.5	-	-	0.75		

*DEP CHAPTER 19 USE PUBLIC SEWERS, PARAGRAPH 19-11 (RCNY TITLE 15)					
GREASE INTERCEPTOR GI-2 TABLE I (1ST FLOOR)					
ITEM	QUAN	DESCRIPTION	VOL CUBIC IN	TOTAL CU.IN	
P-5	1	THREE COMP. SINK (20"x20"x12")	4,800x3	14,400	TABLE I
18	1	WORK TABLE W/SINK (20"x16"x10")	3,200	3,200	TABLE I
FD	2	3" FLOOR DRAIN	1,540	3,040	TABLE I
TOTAL VOLUME: (TABLE I) = 2x(TABLE II)				20,040	
TOTAL GREASE LBS:				70 LBS	
ZURN GT2700-35, W/ EXTENSION, 35 GPM FLOW RATE, 70 LBS GREASE CAPACITY. DIMENSIONS WIDTH 23", LENGTH 29", HEIGHT 19" WITH 4" INLET AND OUTLET SIZE EXTENSION DIMENSIONS: WIDTH 23", LENGTH 26", HEIGHT AS REQUIRED. NOTES: 1. PROVIDE WITH ACID RESISTANT COATING INSIDE AND OUTSIDE. 2. PROVIDE WITH DOUBLE WALL CONSTRUCTION. 3. PROVIDE EXTENSION LENGTH REQUIRED FOR PROPER INSTALLATION. COORDINATE FLOOR OPENING WITH STRUCTURAL CONTRACT.					

*DEP CHAPTER 19 USE PUBLIC SEWERS, PARAGRAPH 19-11 (RCNY TITLE 15)					
GREASE INTERCEPTOR GI-1 TABLE II (1ST FLOOR)					
ITEM	QUAN	DESCRIPTION	VOL CUBIC IN	TOTAL CU.IN	
P-1	1	(20"x20"x8") SOILED DISH	3,200	3,200	TABLE I
P-1	1	DISHWASHER	1,100	1,100	TABLE II
FD	3	3" FLOOR DRAIN	1,540	4,620	TABLE I
TOTAL VOLUME: (TABLE I) + 2x(TABLE II)				10,020	
TOTAL GREASE LBS:				40 LBS	
ZURN LOW BOY Z2700-20, W/ EXTENSION, 20 GPM FLOW RATE, 40 LBS GREASE CAPACITY. DIMENSIONS WIDTH 18", LENGTH 25", HEIGHT 15" WITH 3" INLET AND OUTLET SIZE EXTENSION DIMENSIONS: WIDTH 22", LENGTH 17", HEIGHT AS REQUIRED. NOTES: 1. PROVIDE WITH ACID RESISTANT COATING INSIDE AND OUTSIDE. 2. PROVIDE WITH DOUBLE WALL CONSTRUCTION. 3. PROVIDE EXTENSION LENGTH REQUIRED FOR PROPER INSTALLATION. COORDINATE FLOOR OPENING WITH STRUCTURAL CONTRACT.					

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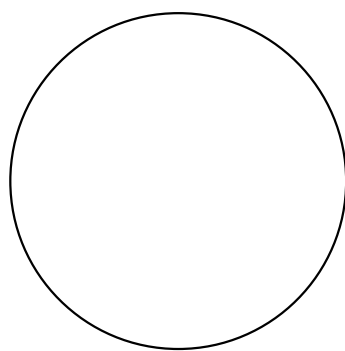
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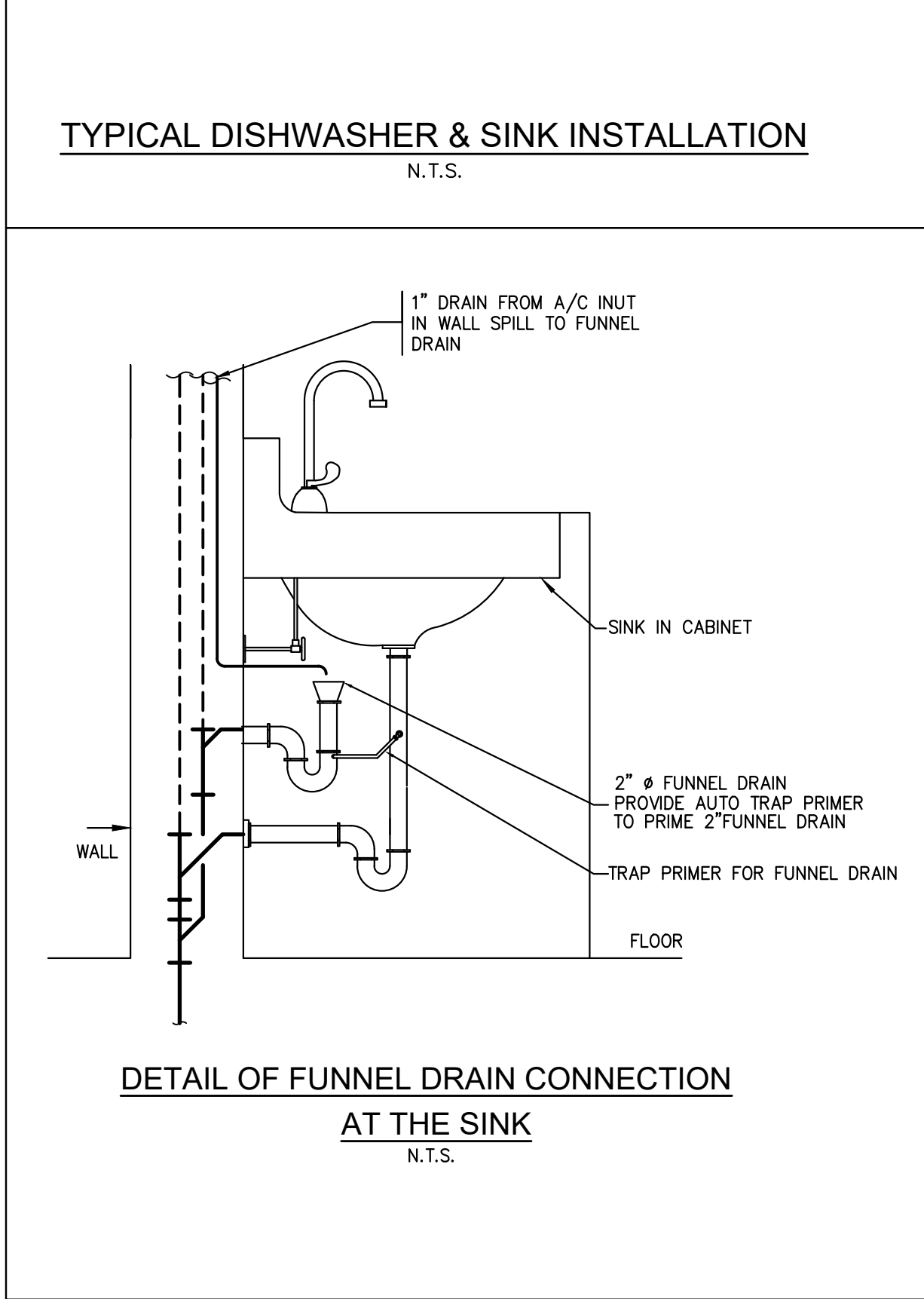
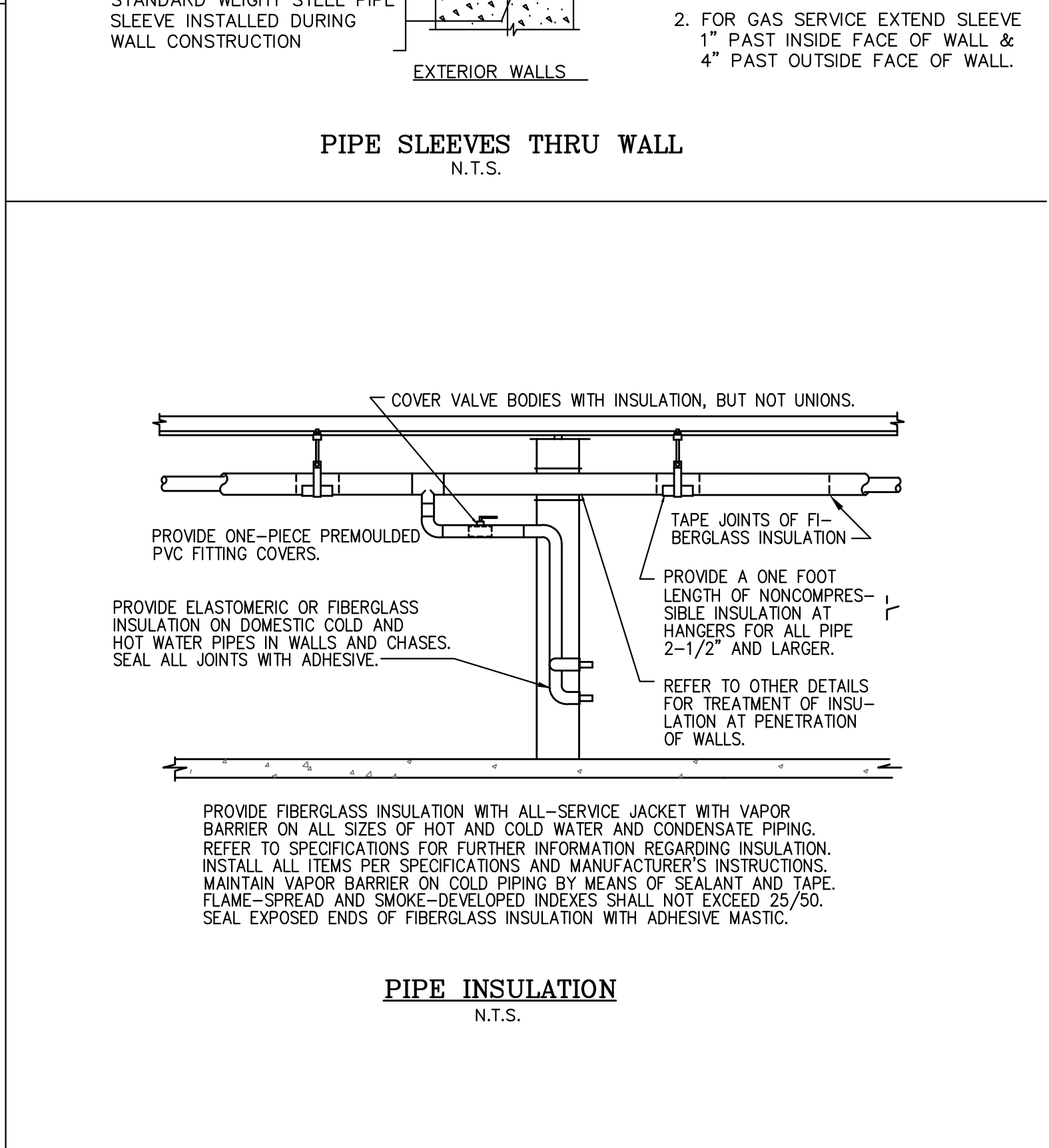
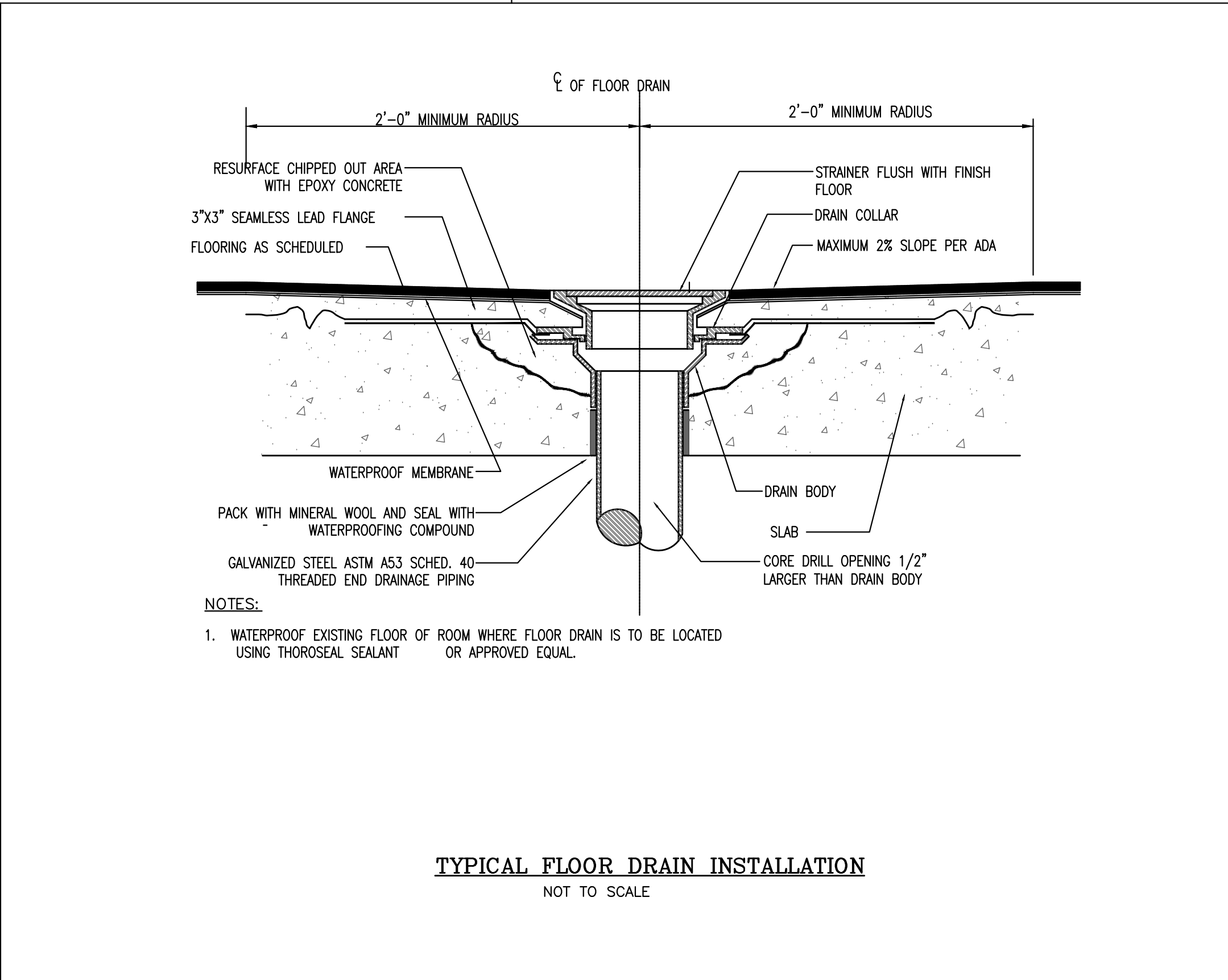
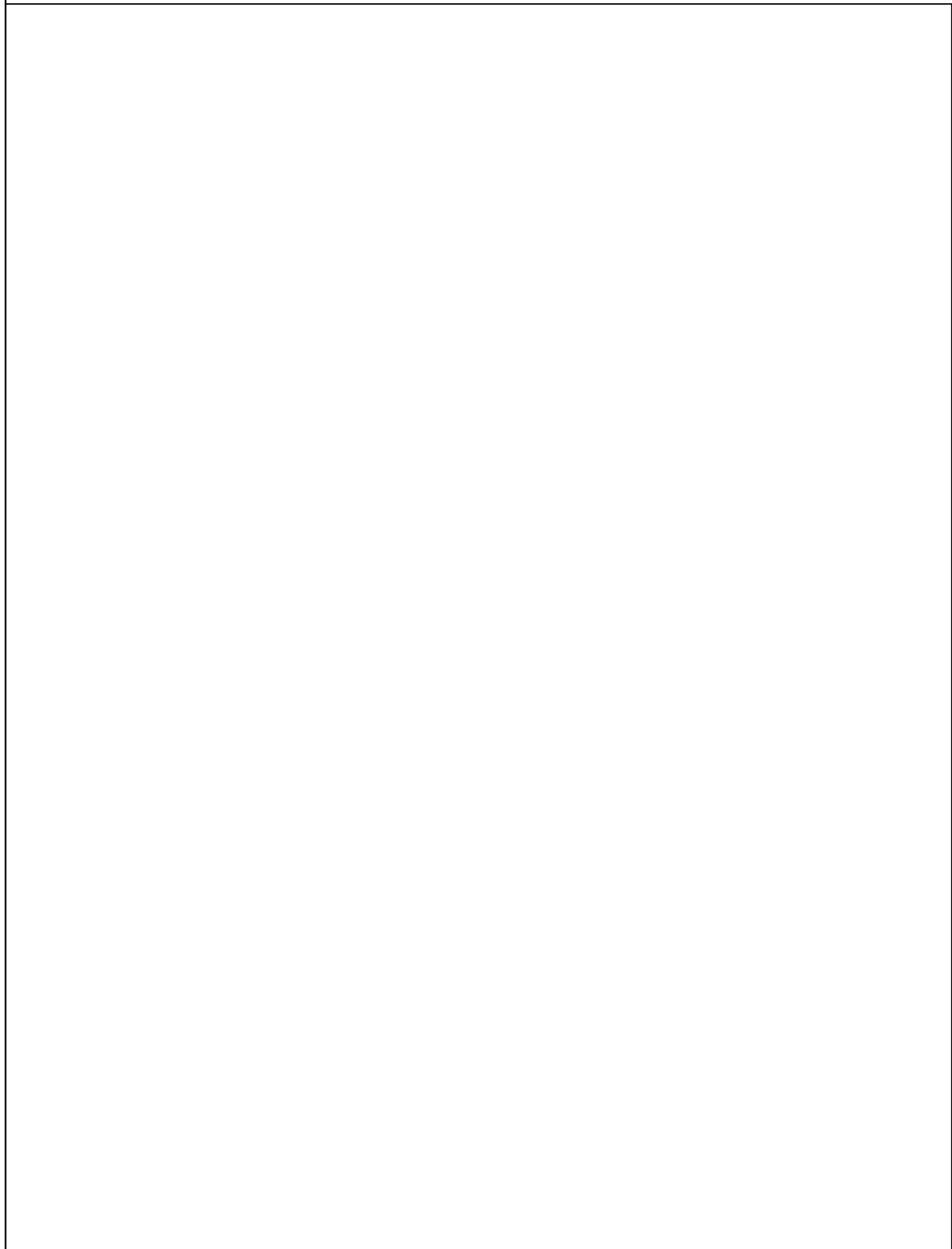
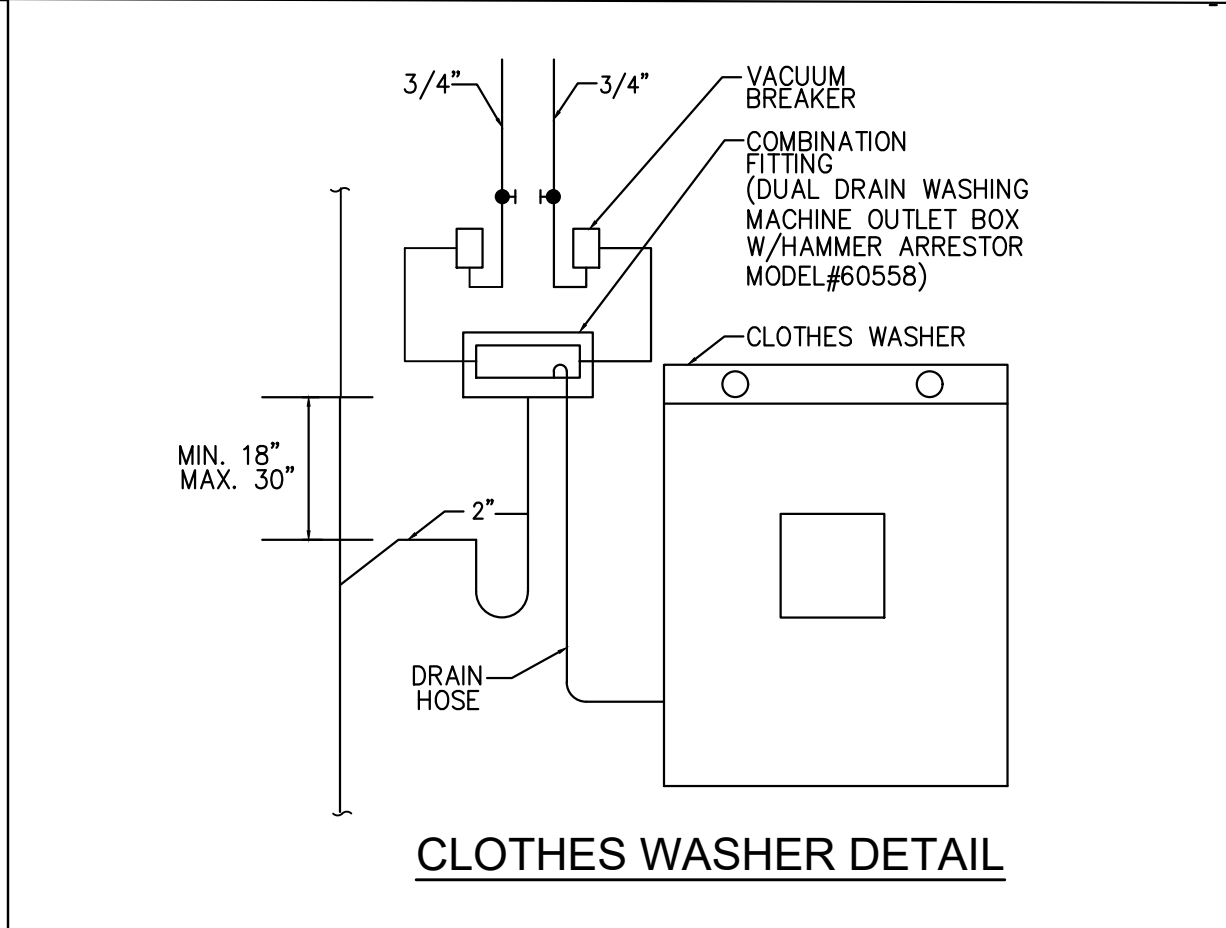
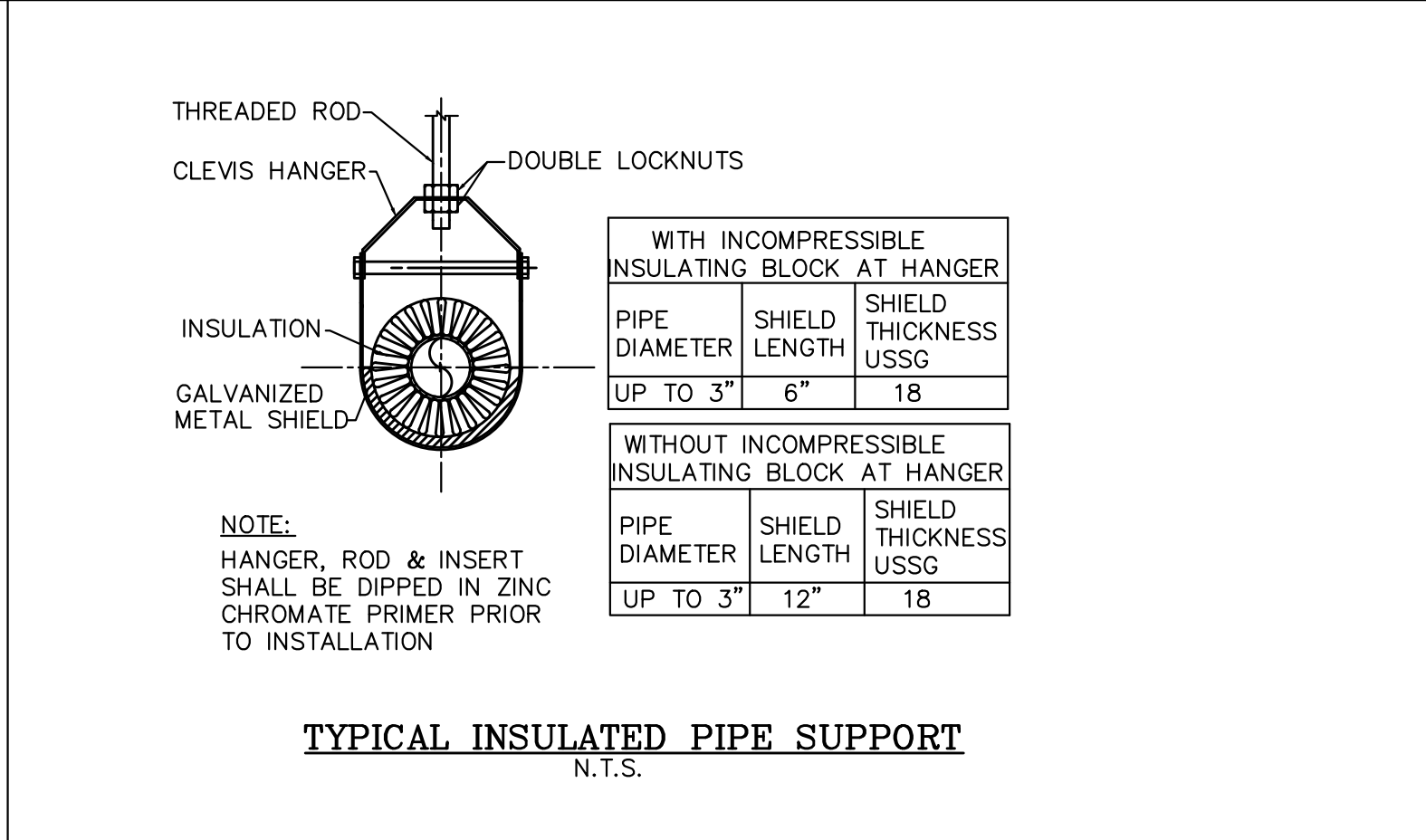
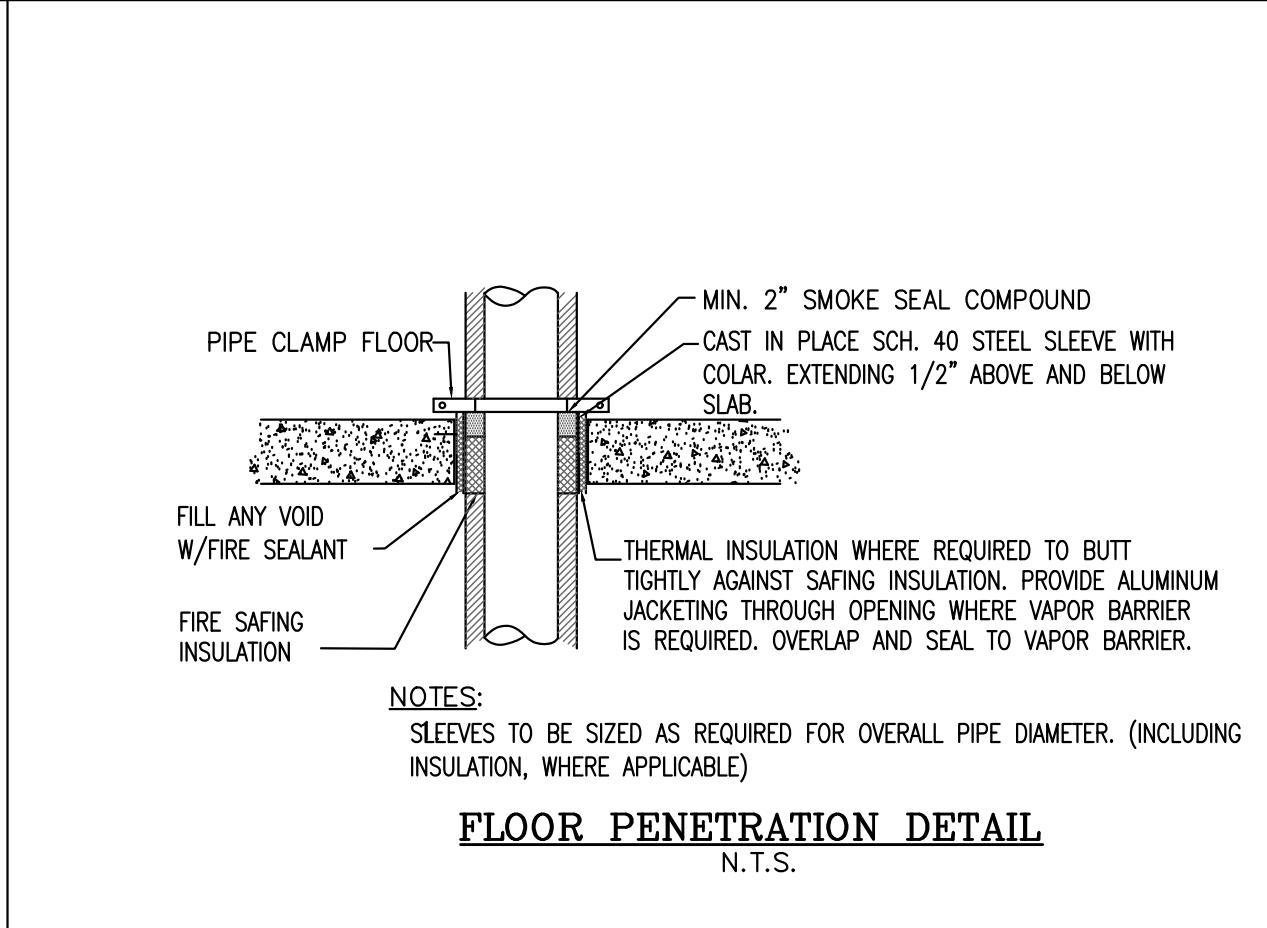
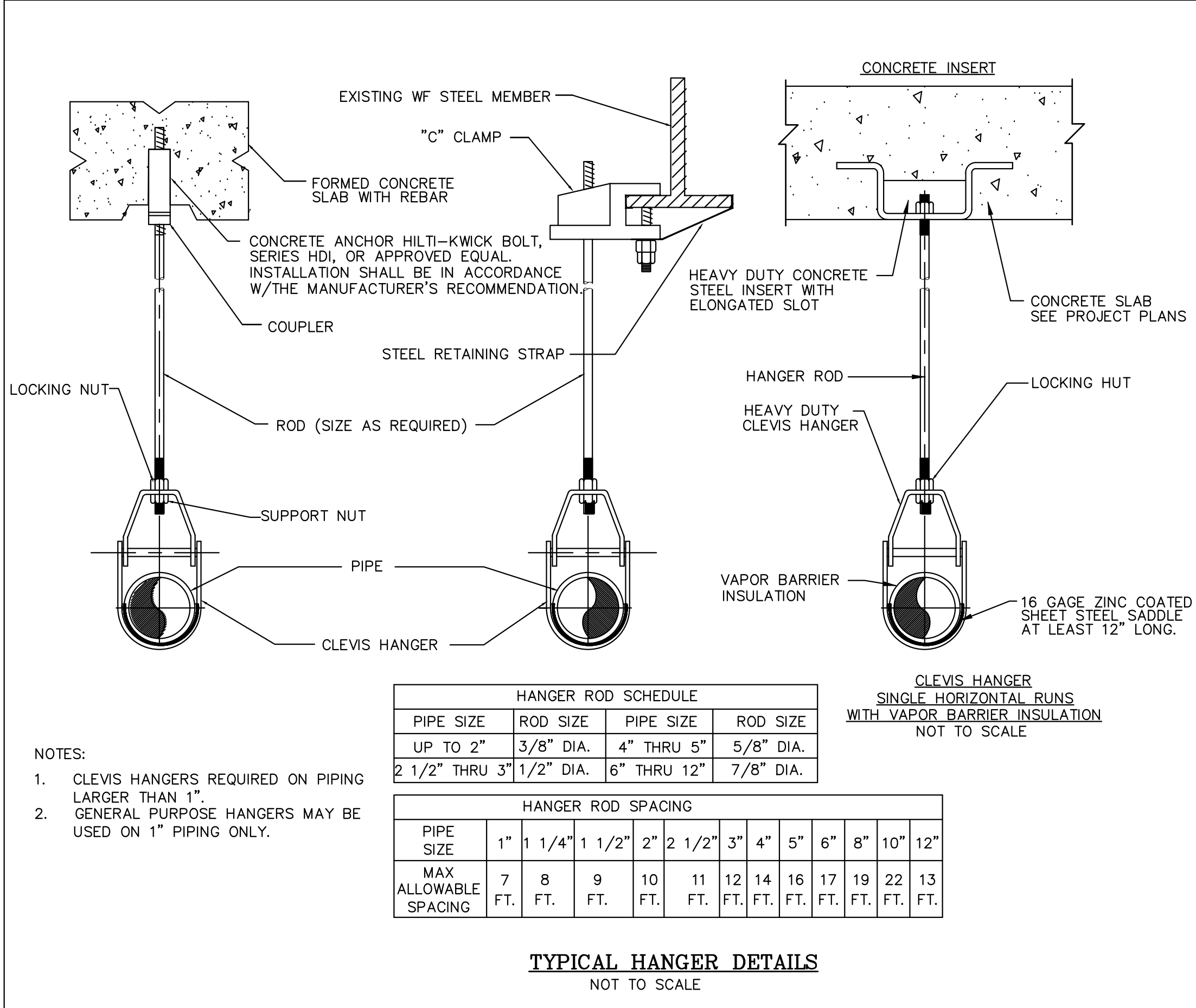
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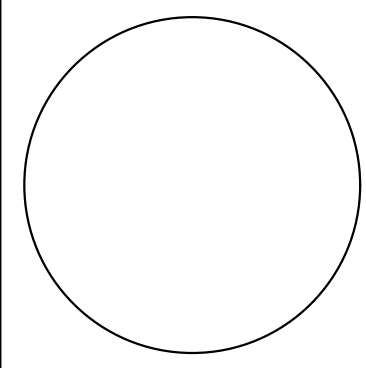
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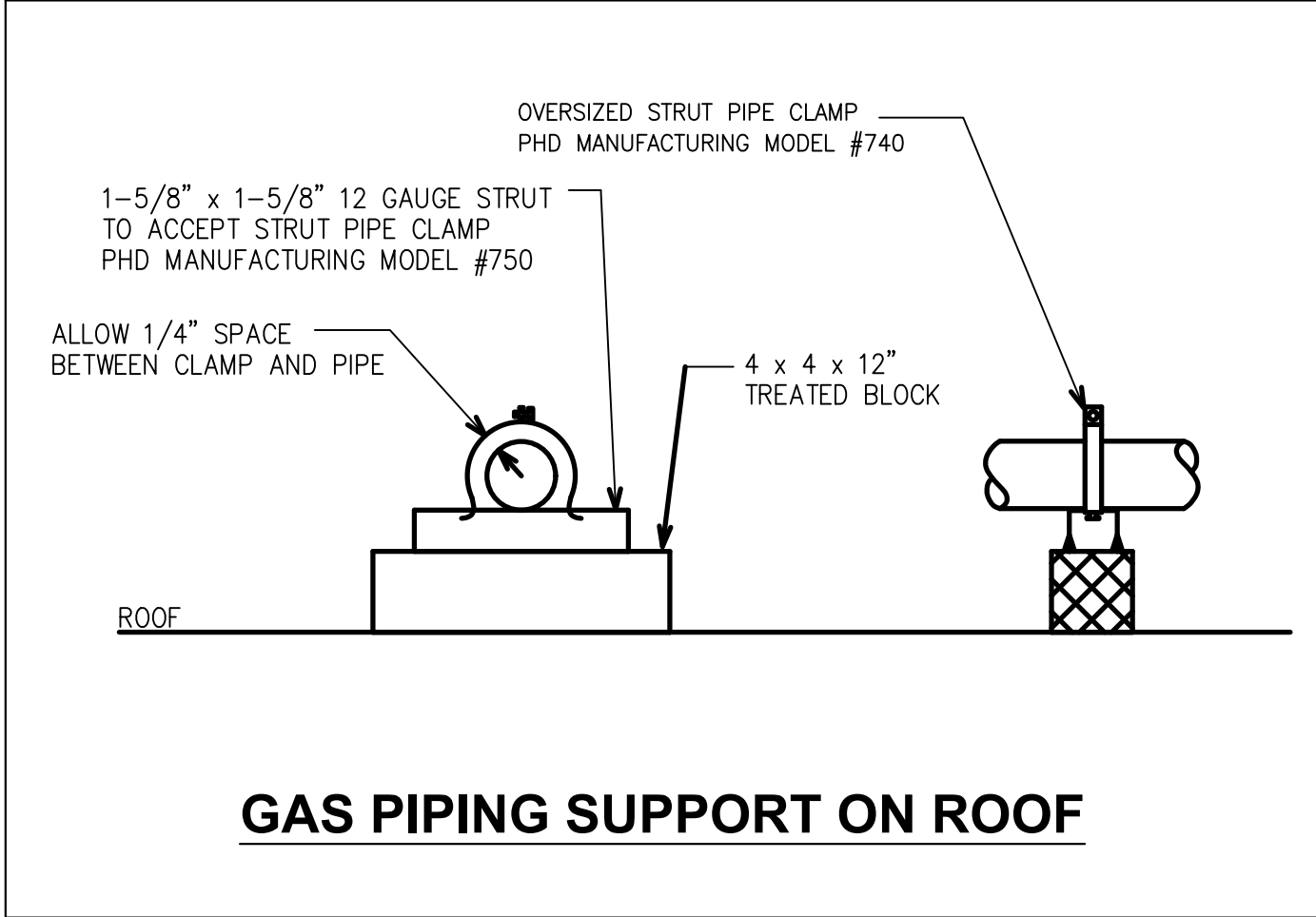
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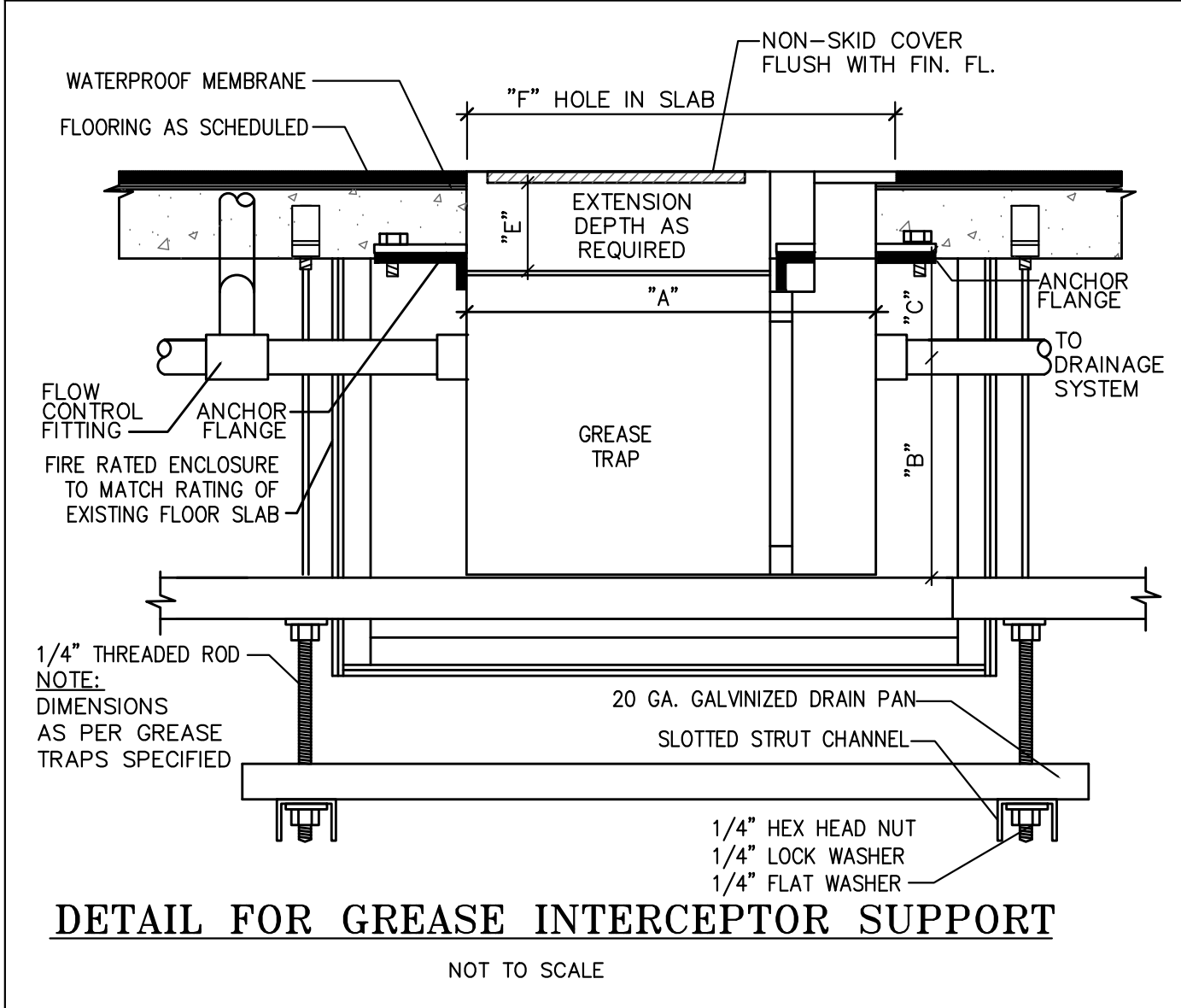
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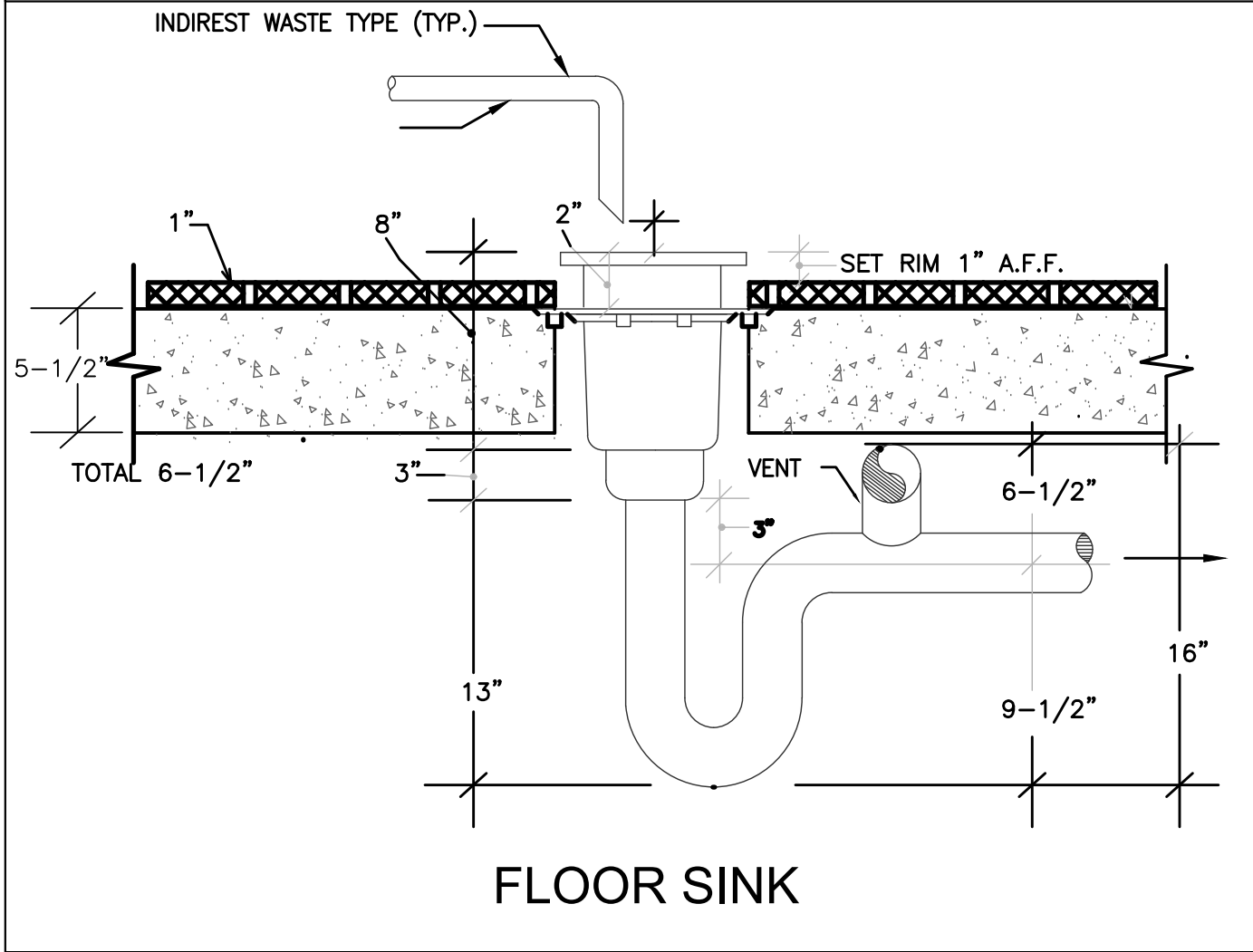
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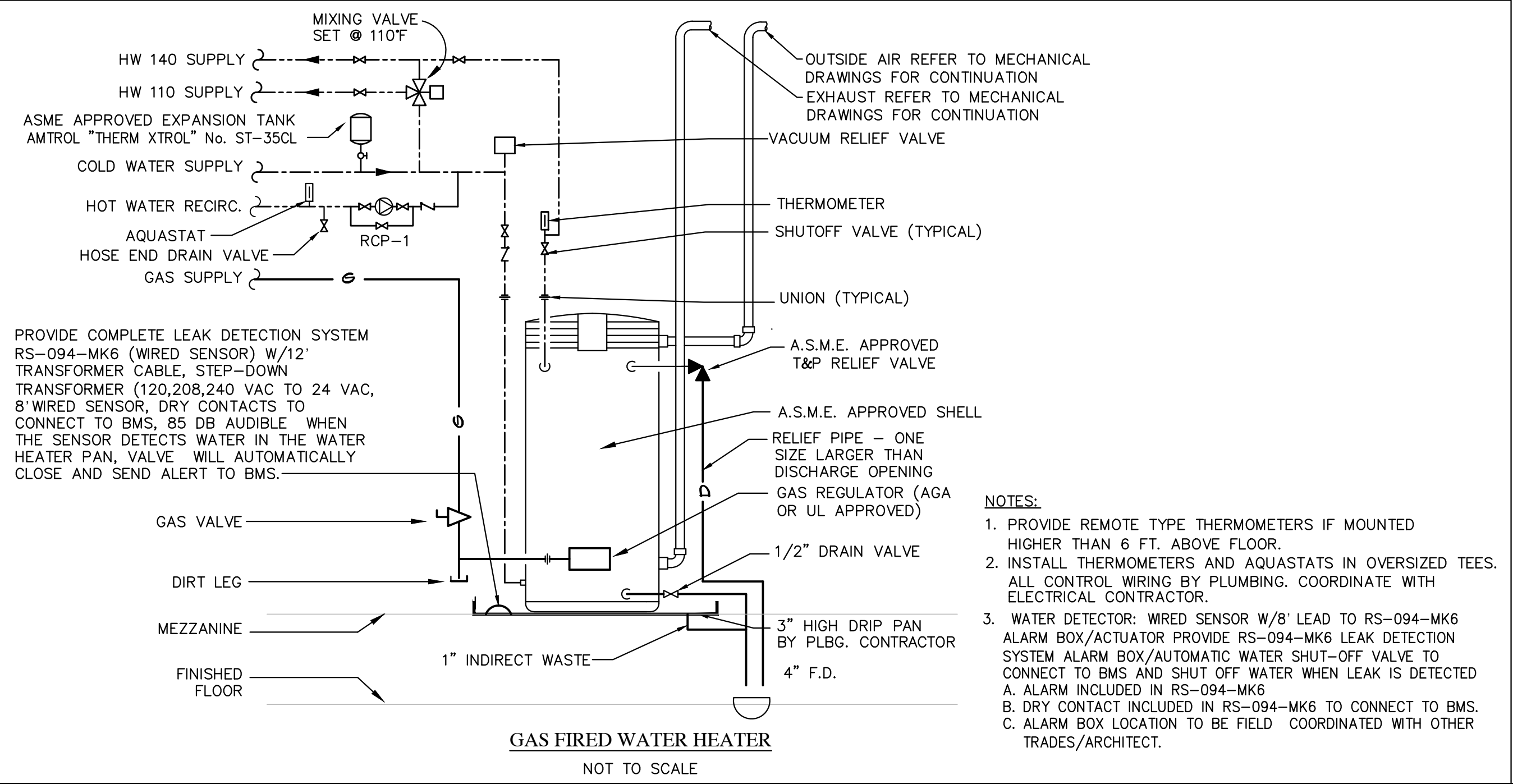
GAS PIPING SUPPORT ON ROOF



DETAIL FOR GREASE INTERCEPTOR SUPPORT

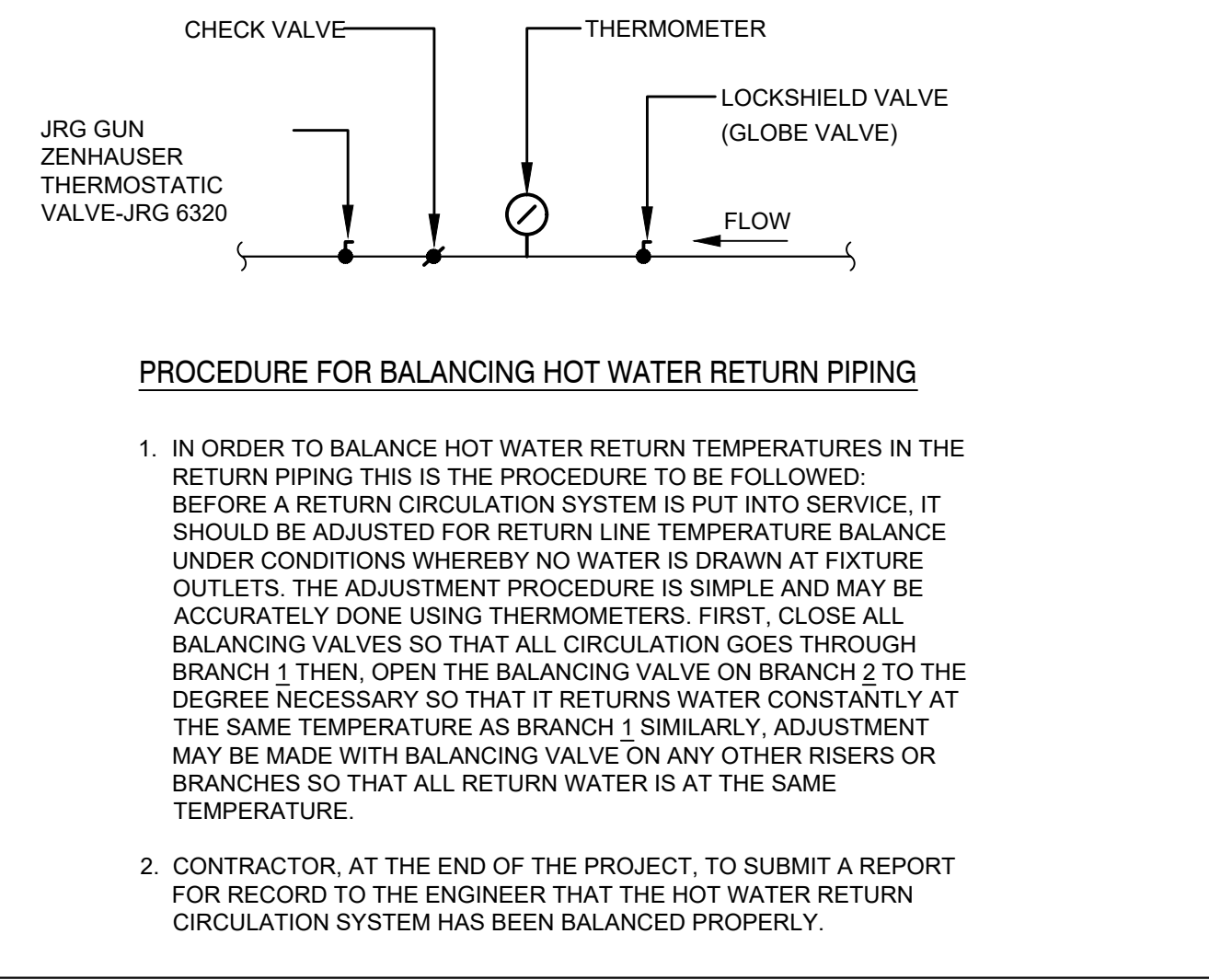


FLOOR SINK



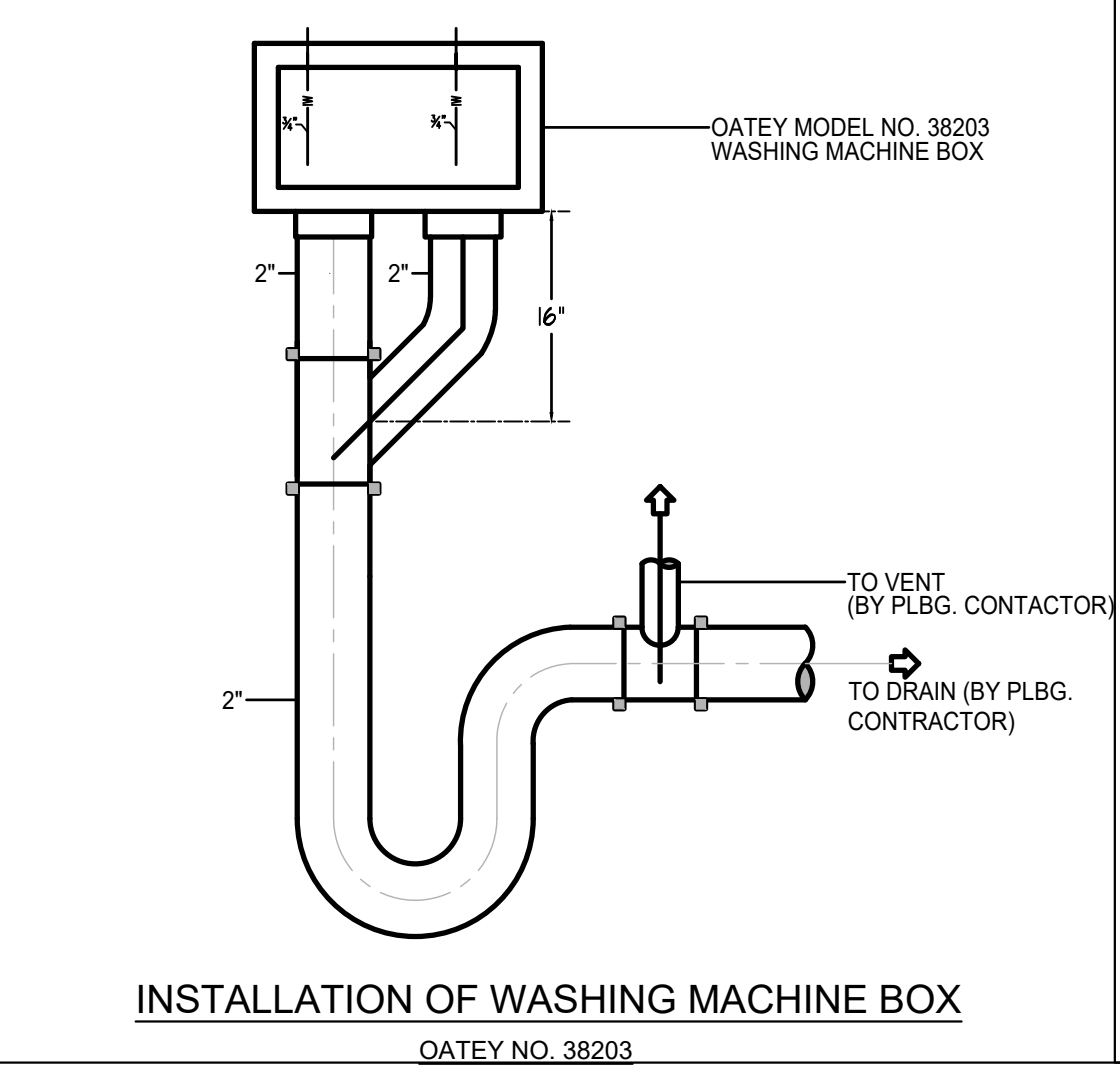
GAS FIRED WATER HEATER

NOT TO SCALE



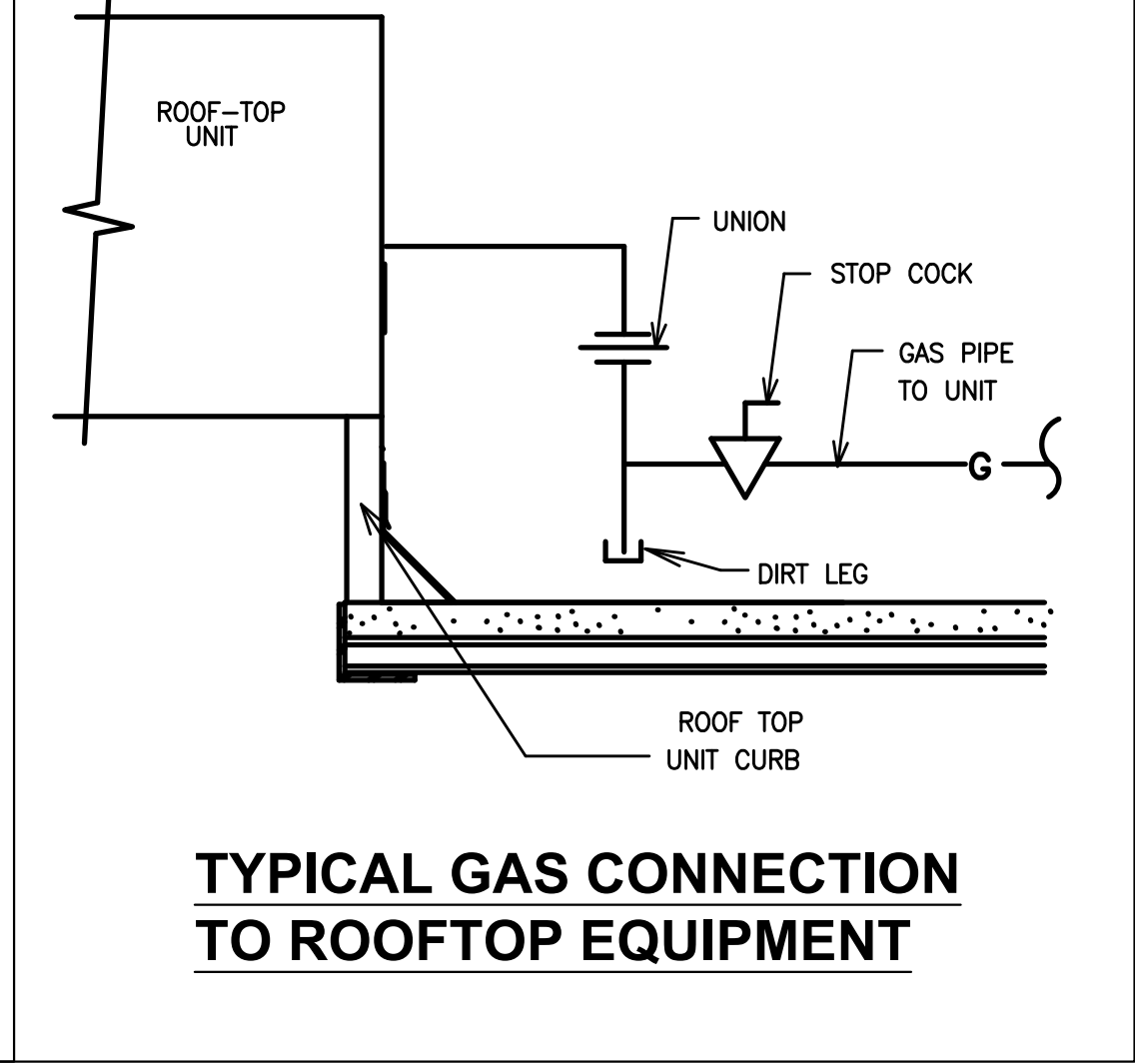
PROCEDURE FOR BALANCING HOT WATER RETURN PIPING

1. IN ORDER TO BALANCE HOT WATER RETURN TEMPERATURES IN THE RETURN PIPING THIS IS THE PROCEDURE TO BE FOLLOWED: BEFORE A RETURN CIRCULATION SYSTEM IS PUT INTO SERVICE, IT SHOULD BE ADJUSTED FOR RETURN LINE TEMPERATURE BALANCE UNDER CONDITIONS WHEREBY NO WATER IS DRAWN AT FIXTURE OUTLETS. THE ADJUSTMENT PROCEDURE IS SIMPLE AND MAY BE ACCURATELY DONE USING THERMOMETERS. FIRST, CLOSE ALL BALANCING VALVES SO THAT ALL CIRCULATION GOES THROUGH BRANCH 1 THEN, OPEN THE BALANCING VALVE ON BRANCH 2 TO THE DEGREE NECESSARY SO THAT IT RETURNS WATER CONSTANTLY AT THE SAME TEMPERATURE AS BRANCH 1 SIMILARLY, ADJUSTMENT MAY BE MADE WITH BALANCING VALVE ON ANY OTHER RISERS OR BRANCHES SO THAT ALL RETURN WATER IS AT THE SAME TEMPERATURE.
2. CONTRACTOR, AT THE END OF THE PROJECT, TO SUBMIT A REPORT FOR RECORD TO THE ENGINEER THAT THE HOT WATER RETURN CIRCULATION SYSTEM HAS BEEN BALANCED PROPERLY.



INSTALLATION OF WASHING MACHINE BOX

OATEY NO. 38203



TYPICAL GAS CONNECTION TO ROOFTOP EQUIPMENT

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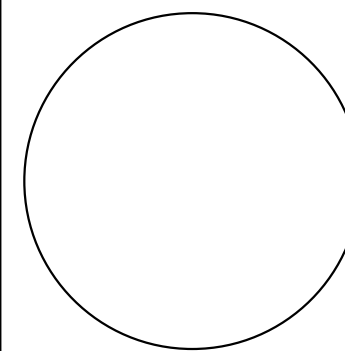
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4. BOLT SLEEVES: PHENOLIC OR POLYETHYLENE. 5. WASHERS: PHENOLIC WITH STEEL BACKING WASHERS. 2.6 VACUUM BREAKERS A. PIPE-APPLIED, ATMOSPHERIC-TYPE VACUUM BREAKERS: 1. STANDARD: ASSE 1001. 2. SIZE: NPS 1/4 TO NPS 3, AS REQUIRED TO MATCH CONNECTED PIPING. 3. BODY: BRONZE. 4. INLET AND OUTLET CONNECTIONS: THREADED. 5. FINISH: ROUGH BRONZE. B. HOSE-CONNECTION VACUUM BREAKERS: 1. STANDARD: ASSE 1011. 2. BODY: BRONZE, NON-REMOVABLE, WITH MANUAL DRAIN. 3. OUTLET CONNECTION: GARDEN-HOSE THREADED COMPLYING WITH ASME B1.20.7. 4. FINISH: ROUGH BRONZE.
--

2.7 STRAINERS FOR DOMESTIC WATER PIPING

A. Y-PATTERN STRAINERS:

1. PRESSURE RATING: 125 PSIG MINIMUM UNLESS OTHERWISE INDICATED.

2. BODY: BRONZE FOR NPS 2 AND SMALLER; CAST IRON WITH INTERIOR LINING THAT COMPLIES WITH AWWA C550 OR THAT IS FDA APPROVED, EPOXY COATED AND FOR NPS 2½ AND LARGER.

3. END CONNECTIONS: THREADED FOR NPS 2 AND SMALLER; FLANGED FOR NPS 2½ AND LARGER.

4. SCREEN: STAINLESS STEEL WITH ROUND PERFORATIONS UNLESS OTHERWISE INDICATED.

5. PERFORATION SIZE:

a. STRAINERS NPS AND SMALLER: 0.020 INCH.

b. STRAINERS NPS 2½ TO NPS 4: 0.045 INCH.

6. DRAIN: FACTORY-INSTALLED, HOSE-END DRAIN VALVE.

2.8 HOSE BIBBS

A. MANUFACTURERS:

1. CHICAGO MFG. -952

2. T&S BRASS WORKS -720

a. STANDARD: ASME A112.18.1 FOR SEDIMENT FAUCETS.

b. BODY MATERIAL: BRONZE.

c. SEAT: BRONZE, REPLACEABLE.

d. SUPPLY CONNECTIONS: NPS 1/2 OR NPS 3/4 THREADED OR SOLDER-JOINT INLET.

e. OUTLET CONNECTION: GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7.

f. PRESSURE RATING: 125 PSIG.

g. VACUUM BREAKER: INTEGRAL, NONREMOVABLE, DRAINABLE, HOSE-CONNECTION VACUUM BREAKER COMPLYING WITH ASSE 1011.

h. FINISH FOR EQUIPMENT ROOMS: ROUGH BRONZE, OR CHROME OR NICKEL PLATED.

i. FINISH FOR SERVICE AREAS: ROUGH BRONZE.

j. FINISH FOR FINISHED ROOMS: POLISHED CHROME PLATED.

k. OPERATION FOR EQUIPMENT ROOMS: WHEEL HANDLE OR OPERATING KEY.

l. OPERATION FOR SERVICE AREAS: WHEEL HANDLE.

m. OPERATION FOR FINISHED ROOMS: REMOVABLE TEE HANDLE.

n. INCLUDE OPERATING KEY WITH EACH OPERATING-KEY HOSE BIBB.

o. INCLUDE INTEGRAL WALL FLANGE WITH EACH CHROME-PLATED HOSE BIBB.

2.9 DRAIN VALVES

A. BALL-VALVE-TYPE, HOSE-END DRAIN VALVES:

1. STANDARD: MSS SP-110 FOR STANDARD-PORT, TWO-PIECE BALL VALVES.

2. PRESSURE RATING: 125-PSIG MINIMUM CWP.

3. SIZE: NPS 3/4.

4. BODY: COPPER ALLOY.

5. BALL: CHROME-PLATED BRASS.

6. SEATS AND SEALS: REPLACEABLE.

7. HANDLE: VINYL-COVERED STEEL.

8. INLET: THREADED OR SOLDER JOINT.

9. OUTLET: THREADED, SHORT NIPPLE WITH GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7 AND CAP WITH BRASS CHAIN.

2.10 WATER-HAMMER ARRESTERS

1. STANDARD: ASSE 1010 OR PDI-WH 201.

2. TYPE: COPPER TUBE WITH PISTON.

3. SIZE: ASSE 1010, SIZES AA AND A THROUGH F, OR PDI-WH 201, SIZES A THROUGH F.

2.11 TRAP-SEAL PRIMER DEVICE

1. PRECISION PLUMBING PRODUCTS CO. MODEL NO. P-2; JOSAM, J.R. SMITH, ZURN, OR APPROVED EQUAL.

2. STANDARD: ASSE 1018.

3. PRESSURE RATING: 125 PSIG MINIMUM.

4. BODY: BRONZE.

5. INLET AND OUTLET CONNECTIONS: NPS 1/2 THREADED, UNION, OR SOLDER JOINT.

6. GRAVITY DRAIN OUTLET CONNECTION: NPS 1/2 THREADED OR SOLDER JOINT.

7. FINISH: CHROME PLATED, OR ROUGH BRONZE FOR UNITS USED WITH PIPE OR TUBE

a. THAT IS NOT CHROME FINISHED.

8. AUTOMATIC TYPE.

9. INTEGRAL VACUUM BREAKER.

10. STRAINER.

2.12 WASTE PIPING MATERIALS

A. HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS:

1. SYSTEMS: ALL SOIL, WASTE, AND VENT PIPING 8" AND LARGER THROUGHOUT THE BUILDING.

2. PIPE AND FITTINGS: ASTM A 74, 72 CLASS.

3. GASKETS: ONE PIECE ELECTROMETRIC COMPRESSION TYPE GASKET; ASTM C-564-76.

B. HUBLESS, CAST-IRON SOIL PIPE AND FITTING:

1. SYSTEMS: SOIL, WASTE, AND VENT PIPING ABOVE GRADE THROUGHOUT THE BUILDING, 8" AND SMALLER.

2. PIPE AND FITTINGS: ASTM A 888 OR CISPI 301 78.

2.13 SPECIALTY PIPE FITTINGS

A. TRANSITION COUPLINGS:

1. GENERAL REQUIREMENTS: FITTING OR DEVICE FOR JOINING PIPING WITH SMALL DIFFERENCES IN OD'S OR OF DIFFERENT MATERIALS. INCLUDE END CONNECTIONS SAME SIZE AS AND COMPATIBLE WITH PIPES TO BE JOINED.

2. FITTING-TYPE TRANSITION COUPLINGS: MANUFACTURED PIPING COUPLING OR SPECIFIED PIPING SYSTEM FITTING.

3. UNSHIELDED, NONPRESSURE TRANSITION COUPLINGS: HUSKY HEAVY WEIGHT COUPLINGS.

4. SLEEVE MATERIALS: FOR CAST-IRON SOIL PIPES: ASTM C 564, RUBBER.

5. SHIELDED, NONPRESSURE TRANSITION COUPLINGS: HUSKY HEAVY WEIGHT COUPLINGS.

2.14 PIPING INSULATION MATERIALS AND SCHEDULES

A. INSULATION FOR HOT WATER PIPING, HOT WATER CIRCULATION MAINS AND RISERS. MINIMUM PIPE INSULATION THICKNESS:

1. PIPE SIZES: <1½" - 1"INSULATION. 2½"AND LARGER -1.5"INSULATION.

B. COMPLY WITH REQUIREMENTS IN "PIPING INSULATION SCHEDULE, GENERAL", "INDOOR PIPING INSULATION SCHEDULE", AND "OUTDOOR, ABOVEGROUND PIPING INSULATION SCHEDULE" ARTICLES FOR WHERE INSULATING MATERIALS SHALL BE APPLIED.

C. PRODUCTS SHALL NOT CONTAIN ASBESTOS, LEAD, MERCURY, OR MERCURY COMPOUNDS.

D. PRODUCTS THAT COME IN CONTACT WITH STAINLESS STEEL SHALL HAVE A LEACHABLE CHLORIDE CONTENT OF LESS THAN 50 PPM WHEN TESTED ACCORDING TO ASTM C 871.

E. INSULATION SHALL BE ONE-PIECE FIBROUS GLASS SECTIONAL PIPE INSULATION WITH FACTORY APPLIED GLASS REINFORCED ALUMINUM FOIL AND WHITE KRAFT PAPER FLAME RETARDANT VAPOR BARRIER JACKET. LONGITUDINAL JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING. INSULATION SHALL HAVE AN AVERAGE THERMAL CONDUCTIVITY NOT TO EXCEED 0.23 BTU-IN PER SQUARE FOOT, PER °F, PER HOUR, AT A MEAN TEMPERATURE OF 75°F. INSULATION SHALL BE:

1. JOHNS-MANVILLE FLAME SAFE AP-T.

2. OWENS-CORNING FIBERGLASS 25 ASJ/SSL.

3. CERTAIN TEED FIBERGLASS 500" SNAP-ON ASJ/SSL.

F. ACCEPTABLE PREFORMED PIPE AND TUBULAR INSULATION MATERIALS AND THICKNESSES ARE IDENTIFIED FOR EACH PIPING SYSTEM AND PIPE SIZE RANGE. IF MORE THAN ONE MATERIAL IS LISTED FOR A PIPING SYSTEM, SELECTION FROM MATERIALS LISTED IS CONTRACTOR'S OPTION.

G. ITEMS NOT INSULATED: UNLESS OTHERWISE INDICATED, DO NOT INSTALL INSULATION ON THE FOLLOWING:

1. UNIONS SHALL NOT BE INSULATED

2.15 SANITARY WASTE PIPING SPECIALTIES

A. PROVIDE CLEANOUTS IN SOIL AND WASTE LINES AS SHOWN, AS REQUIRED BY THE GOVERNING CODE AS FOLLOWS:

1. AT THE BOTTOM OF EACH EXPOSED FIXTURE TRAP WHICH IS NOT INTEGRAL WITH THE FIXTURE.

2. AT THE END OF EACH BRANCH DRAINAGE LINE.

3. AT EACH CHANGE OF HORIZONTAL DIRECTION GREATER THAN 45°.

4. IN HORIZONTAL DRAIN LINES AT INTERVALS OF NOT MORE THAN 75' FOR INSIDE PIPING.

B. FOR WALL: CLEANOUTS SHALL BE EXTRA HEAVY CLEANOUT TEE WITH COUNTERSUNK BRONZE PLUG TAPPED FOR MACHINE SCREW, SHALLOW STAINLESS STEEL FACE-OF-WALL ACCESS COVER, SECURING SCREW. CLEANOUTS SHALL BE:

1. J.R. SMITH 4531

2. JOSAM 58790-25

3. ZURN Z-1445-1

4. WADE W-8460-R

C. FOR PIPING CONCEALED IN PIPE CHASE OR SHAFT: CLEANOUT SHALL HAVE CAST IRON FERRULE, BRONZE PLUG TRAPPED FOR MACHINE SCREW, SHALL STAINLESS STEEL FACE-OF-WALL ACCESS COVER, AND SECURING SCREW. CLEANOUTS SHALL BE:

1. J.R. SMITH 4402

2. JOSAM 58710

3. ZURN ZN-1440-1

4. WADE W-8550-R

D. FOR CONCRETE FLOORS: CLEANOUTS SHALL HAVE CAST IRON BODY, ADJUSTABLE ROUND SCORIATED NICKEL BRONZE COVER AND RIM, SECURING SCREW, AND COUNTERSUNK PLUG. CLEANOUTS SHALL BE:

1. J.R. SMITH 4245

2. JOSAM 56040

3. ZURN Z-1415-2

4. WADE W-6010-Z

2.17 SHUTOFF VALVES

A. VALVES OF THE SAME TYPE ON THE PROJECT SHALL OF ONE

B. VALVES SHALL HAVE THE NAME OR TRADEMARK OF THE MANUFACTURER AND THE WORKING PRESSURE STAMPED OR CAST ON THE VALVE BODY.

C. VALVE HAND WHEELS SHALL BE ORIENTED, WHEN INSTALLED, TO PROVIDE MAXIMUM ACCESSIBILITY FOR OPERATION.

D. PLUG VALVES 3"IN SIZE AND LARGER SHALL BE THE SEMI-STEEL TYPE WITH CAST IRON BODY, LUBRICATED CAST IRON PLUG, FLANGED ENDS, AND WRENCH OPERATED FOR #175 W.O.G. VALVES SHALL BE: ROCKWELL NORDSTROM NO. 143 WALWORTH 1797 F

E. PLUG VALVES 2½" IN SIZE AND SMALLER SHALL HAVE BRONZE BODY AND PLUG, THREADED ENDS, AND SQUARE HEAD FOR #125 W.O.G. VALVES SHALL BE: CRANE NO. 250 WALWORTH 554

F. LUBRICATED PLUG VALVES SHALL BE LUBRICATED AT THE FACTORY AND SEALANT SHALL BE SUITABLE FOR NATURAL GAS. PROVIDE SIX (6) STICKS OR TUBES OF SEALANT UTILIZED AND TURN SUCH OVER TO THE OWNERS REPRESENTATIVE.

G. PROVIDE ONE (1) VALVE WRENCH FOR EACH SIZE AND TYPE OF VALVE HEAD AND TURN SUCH WRENCHES OVER TO THE OWNERS REPRESENTATIVE.

H. MILWAUKEE "BUTTERBALL" VALVE NO. BB1-100 MAY BE SUBSTITUTED FOR PLUG VALVES 2" AND SMALLER.

I. GAS COCKS: PROVIDE A GAS COCK IN AN EASILY ACCESSIBLE LOCATION, IN EACH BRANCH LINE, AND AT EACH INDIVIDUAL PIECE OF GAS CONSUMING EQUIPMENT. FOR SIZE 2" AND SMALLER, COCK SHALL BE AN ALL BRASS, LEVER HANDLE GAS COCK. FOR SIZE LAMER THAN 2", IT SHALL BE A LUBRICATED SEMI-STEEL PLUG VALVE WITH HANDLE.

3.2 HANGER AND SUPPORT INSTALLATION

A. COMPLY WITH REQUIREMENTS FOR PIPE HANGER, SUPPORT PRODUCTS, AND INSTALLATION IN SECTION 220529 "HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT."

1. VERTICAL PIPING: MSS TYPE 8 OR 42, CLAMPS.

2. INDIVIDUAL, STRAIGHT, HORIZONTAL PIPING RUNS:

a. 100 FEET AND LESS: MSS TYPE 1, ADJUSTABLE, STEEL CLEVIS HANGERS.

b. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS.

B. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR

C. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

D. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

1. NPS 3/4 AND SMALLER: 60 INCHES WITH 3/8-INCH ROD.

2. NPS 1 AND NPS 1¼: 72 INCHES WITH 3/8-INCH ROD.

3. NPS 1½ AND NPS 2: 96 INCHES WITH 3/8-INCH ROD.

4. NPS 2½: 108 INCHES WITH ½ INCH ROD.

5. NPS 3 TO NPS 5: 10 FEET WITH ½ INCH ROD.

E. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET.

F. INSTALL HANGERS FOR STEEL PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

1. NPS 1¼ AND SMALLER: 84 INCHES WITH 3/8-INCH ROD.

2. NPS 1½: 108 INCHES WITH 3/8-INCH ROD.

3. NPS 2: 10 FEET WITH 3/8-INCH ROD.

4. NPS 2½: 11 FEET WITH ½ INCH ROD.

5. NPS 3 AND NPS 3½: 12 FEET WITH ½ INCH ROD.

G. INSTALL SUPPORTS FOR VERTICAL STEEL PIPING EVERY 15 FEET.

H. SUPPORT PIPING AND TUBING NOT LISTED IN THIS ARTICLE ACCORDING TO MSS SP-69 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

I. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALITIES.

J. WHEN INSTALLING PIPING ADJACENT TO EQUIPMENT AND MACHINES, ALLOW SPACE FOR SERVICE AND MAINTENANCE.

M. IDENTIFY SYSTEM COMPONENTS. COMPLY WITH REQUIREMENTS FOR IDENTIFICATION MATERIALS AND INSTALLATION IN SECTION 220553 "IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT."

N. LABEL PRESSURE PIPING WITH SYSTEM OPERATING PRESSURE.

O. PERFORM THE TESTS AND INSPECTIONS AS REQUIRED BY PLUMBING CODE:

1. PIPING INSPECTIONS:

a. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

b. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST ONE DAY BEFORE INSPECTION MUST BE MADE. CHECK WITH LOCAL AUTHORITIES. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.

c. ARRANGE FOR ROUGHING-IN INSPECTION OF PIPING BEFORE CONCEALING OR CLOSING IN AFTER ROUGHING IN AND BEFORE SETTING FIXTURES.

d. ARRANGE FINAL INSPECTION FOR AUTHORITIES HAVING JURISDICTION TO OBSERVE TESTS SPECIFIED IN "PIPING TESTS" SUBPARAGRAPH BELOW AND TO ENSURE COMPLIANCE WITH REQUIREMENTS.

e. ARRANGE RE-INSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TESTS OR INSPECTIONS, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR RE-INSPECTION.

f. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.

2. PIPING TESTS:

a. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.

b. TEST FOR LEAKS AND DEFECTS IN PIPING. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.

c. LEAVE DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.

d. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.

e. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.

f. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

g. DOMESTIC WATER PIPING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

h. PREPARE TEST AND INSPECTION REPORTS.

3.1 DOMESTIC WATER PIPING INSTALLATION

A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DOMESTIC WATER PIPING. INDICATED LOCATIONS AND ARRANGEMENTS ARE USED TO SIZE PIPE AND CALCULATE FRICTION LOSS, EXPANSION, AND OTHER DESIGN CONSIDERATIONS. INSTALL PIPING AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED ON COORDINATION DRAWINGS.

B. INSTALL SHUTOFF VALVE, HOSE-END DRAIN VALVE, STRAINER, PRESSURE GAGE, AND TEST TEE WITH VALVE INSIDE THE BUILDING AT EACH DOMESTIC WATER-SERVICE ENTRANCE. COMPLY WITH REQUIREMENTS FOR DRAIN VALVES AND STRAINERS.

C. INSTALL SHUTOFF VALVE IMMEDIATELY UPSTREAM OF EACH DIELECTRIC FITTING.

D. INSTALL DOMESTIC WATER PIPING LEVEL WITH 0.25 PERCENT SLOPE DOWNWARD TOWARD DRAIN.

E. ROUGH-IN DOMESTIC WATER PIPING FOR WATER-METER INSTALLATION ACCORDING TO UTILITY COMPANY'S REQUIREMENTS.

F. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.

G. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL, AND COORDINATE WITH OTHER SERVICES OCCUPYING THAT SPACE.

H. INSTALL PIPING TO PERMIT VALVE SERVICING.

I. INSTALL NIPPLES, UNIONS, SPECIAL FITTINGS, AND VALVES WITH PRESSURE RATINGS THE SAME AS OR HIGHER THAN THE SYSTEM PRESSURE RATING USED IN APPLICATIONS BELOW UNLESS OTHERWISE INDICATED.

J. INSTALL PIPING FREE OF SAGS AND BENDS

K. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS. INSTALL UNIONS IN COPPER TUBING AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT, MACHINE, AND SPECIALTY.

L. INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

M. INSTALL SLEEVE SEALS FOR PIPING PENETRATIONS OF CONCRETE WALLS AND SLABS.

N. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS. COMPLY WITH REQUIREMENTS FOR ESCUTCHEONS SPECIFIED IN SECTION 220518 "EscUTCheONS FOR PLUMBING PIPING."

O. REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. BEVEL PLAIN ENDS OF STEEL PIPE.

P. REMOVE SCALE, SLAG, DIRT, AND DEBRIS FROM INSIDE AND OUTSIDE OF PIPES, TUBES, AND FITTINGS BEFORE ASSEMBLY

Q. TREADED JOINTS:

1. THREAD PIPE WITH TAPERED PIPE THREADS ACCORDING TO ASME B1.20.1. CUT THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED PIPE ENDS TO REMOVE BURRS AND RESTORE FULL ID. JOIN PIPE FITTINGS AND VALVES AS FOLLOWS:

a. APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS.

b. DAMAGED THREADS: DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR DAMAGED.

S. BRAZED JOINTS FOR COPPER TUBING: COMPLY WITH CDA'S "COPPER TUBE HANDBOOK," "BRAZED JOINTS" CHAPTER.

T. SOLDERED JOINTS FOR COPPER TUBING: APPLY ASTM B 813, WATER-FLUSHABLE FLUX TO END OF TUBE. JOIN COPPER TUBE AND FITTINGS ACCORDING TO ASTM B 828 OR CDA'S "COPPER TUBE HANDBOOK."

3.2 HANGER AND SUPPORT INSTALLATION

A. COMPLY WITH REQUIREMENTS FOR PIPE HANGER, SUPPORT PRODUCTS, AND INSTALLATION IN SECTION 220529 "HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT."

1. VERTICAL PIPING: MSS TYPE 8 OR 42, CLAMPS.

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a. 100 FEET AND LESS: MSS TYPE 1, ADJUSTABLE, STEEL CLEVIS HANGERS.

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B. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR

C. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

D. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

1. NPS 3/4 AND SMALLER: 60 INCHES WITH 3/8-INCH ROD.

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4. NPS 2½: 108 INCHES WITH ½ INCH ROD.

5. NPS 3 TO NPS 5: 10 FEET WITH ½ INCH ROD.

E. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET.

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G. INSTALL SUPPORTS FOR VERTICAL STEEL PIPING EVERY 15 FEET.

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2. PIPING TESTS:

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C. INSTALL SHUTOFF VALVE IMMEDIATELY UPSTREAM OF EACH DIELECTRIC FITTING.

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a. APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS.

b. DAMAGED THREADS: DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR DAMAGED.

S. BRAZED JOINTS FOR COPPER TUBING: COMPLY WITH CDA'S "COPPER TUBE HANDBOOK," "BRAZED JOINTS" CHAPTER.

T. SOLDERED JOINTS FOR COPPER TUBING: APPLY ASTM B 813, WATER-FLUSHABLE FLUX TO END OF TUBE. JOIN COPPER TUBE AND FITTINGS ACCORDING TO ASTM B 828 OR CDA'S "COPPER TUBE HANDBOOK."

3.2 HANGER AND SUPPORT INSTALLATION

A. COMPLY WITH REQUIREMENTS FOR PIPE HANGER, SUPPORT PRODUCTS, AND INSTALLATION IN SECTION 220529 "HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT."

1. VERTICAL PIPING: MSS TYPE 8 OR 42, CLAMPS.

2. INDIVIDUAL, STRAIGHT, HORIZONTAL PIPING RUNS:

a. 100 FEET AND LESS: MSS TYPE 1, ADJUSTABLE, STEEL CLEVIS HANGERS.

b. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS.

B. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR

C. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

D. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

1. NPS 3/4 AND SMALLER: 60 INCHES WITH 3/8-INCH ROD.

2. NPS 1 AND NPS 1¼: 72 INCHES WITH 3/8-INCH ROD.

3. NPS 1½ AND NPS 2: 96 INCHES WITH 3/8-INCH ROD.

4. NPS 2½: 108 INCHES WITH ½ INCH ROD.

5. NPS 3 TO NPS 5: 10 FEET WITH ½ INCH ROD.

E. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET.

F. INSTALL HANGERS FOR STEEL PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS:

1. NPS 1¼ AND SMALLER: 84 INCHES WITH 3/8-INCH ROD.

2. NPS 1½: 108 INCHES WITH 3/8-INCH ROD.

3. NPS 2: 10 FEET WITH 3/8-INCH ROD.

4. NPS 2½: 11 FEET WITH ½ INCH ROD.

5. NPS 3 AND NPS 3½: 12 FEET WITH ½ INCH ROD.

G. INSTALL SUPPORTS FOR VERTICAL STEEL PIPING EVERY 15 FEET.

H. SUPPORT PIPING AND TUBING NOT LISTED IN THIS ARTICLE ACCORDING TO MSS SP-69 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

I. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALITIES.

J. WHEN INSTALLING PIPING ADJACENT TO EQUIPMENT AND MACHINES, ALLOW SPACE FOR SERVICE AND MAINTENANCE.

M. IDENTIFY SYSTEM COMPONENTS. COMPLY WITH REQUIREMENTS FOR IDENTIFICATION MATERIALS AND INSTALLATION IN SECTION 220553 "IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT."

N. LABEL PRESSURE PIPING WITH SYSTEM OPERATING PRESSURE.

O. PERFORM THE TESTS AND INSPECTIONS AS REQUIRED BY PLUMBING CODE:

1. PIPING INSPECTIONS:

a. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

b. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST ONE DAY BEFORE INSPECTION MUST BE MADE. CHECK WITH LOCAL AUTHORITIES. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION.

c. ARRANGE FOR ROUGHING-IN INSPECTION OF PIPING BEFORE CONCEALING OR CLOSING IN AFTER ROUGHING IN AND BEFORE SETTING FIXTURES.

d. ARRANGE FINAL INSPECTION FOR AUTHORITIES HAVING JURISDICTION TO OBSERVE TESTS SPECIFIED IN "PIPING TESTS" SUBPARAGRAPH BELOW AND TO ENSURE COMPLIANCE WITH REQUIREMENTS.

e. ARRANGE RE-INSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TESTS OR INSPECTIONS, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR RE-INSPECTION.

f. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.

2. PIPING TESTS:

a. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.

b. TEST FOR LEAKS AND DEFECTS IN PIPING. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.

c. LEAVE DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.

d. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.

e. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.

f. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

g. DOMESTIC WATER PIPING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

h. PREPARE TEST AND INSPECTION REPORTS.

3.1 DOMESTIC WATER PIPING INSTALLATION

A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DOMESTIC WATER PIPING. INDICATED LOCATIONS AND ARRANGEMENTS ARE USED TO SIZE PIPE AND CALCULATE FRICTION LOSS, EXPANSION, AND OTHER DESIGN CONSIDERATIONS. INSTALL PIPING AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED ON COORDINATION DRAWINGS.

B. INSTALL SHUTOFF VALVE, HOSE-END DRAIN VALVE, STRAINER, PRESSURE GAGE, AND TEST TEE WITH VALVE INS

3. PERFORM THE FOLLOWING ADJUSTMENTS BEFORE OPERATION: a. CLOSE DRAIN VALVES, HYDRANTS, AND HOSE BIBBS. b. OPEN SHUTOFF VALVES TO FULLY OPEN POSITION. c. OPEN THROTTLING VALVES TO PROPER SETTING. d. REMOVE PLUGS USED DURING TESTING OF PIPING AND FOR TEMPORARY SEALING OF PIPING DURING INSTALLATION. e. REMOVE AND CLEAN STRAINER SCREENS. CLOSE DRAIN VALVES AND REPLACE DRAIN PLUGS. f. REMOVE FILTER CARTRIDGES FROM HOUSINGS AND VERIFY THAT CARTRIDGES ARE AS SPECIFIED FOR APPLICATION WHERE USED AND ARE CLEAN AND READY FOR USE. g. CHECK PLUMBING SPECIALTIES AND VERIFY PROPER SETTINGS, ADJUSTMENTS, AND OPERATION. 4. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING. 5. INSTALL BACKFLOW PREVENTERS TO EQUIPMENT AND WATER SYSTEMS THAT MAY BE SOURCES OF CONTAMINATION. COMPLY WITH AUTHORITIES HAVING JURISDICTION. a. LOCATE BACKFLOW PREVENTERS IN SAME ROOM AS CONNECTED EQUIPMENT OR SYSTEM. b. ALL DRAIN FOR BACKFLOW PREVENTERS WITH ATMOSPHERIC-VENT DRAIN CONNECTION WITH AIR-GAP FITTING, FIXED AIR-GAP FITTING, OR EQUIVALENT POSITIVE PIPE SEPARATION AT LEAST TWO PIPE DIAMETERS IN DRAIN PIPING AND PIPE-TO-FLOOR DRAIN. LOCATE AIR-GAP DEVICE ATTACHED TO OR UNDER BACKFLOW PREVENTER. SIMPLE AIR BREAKS ARE UNACCEPTABLE FOR THIS APPLICATION. c. DO NOT INSTALL BYPASS PIPING AROUND BACKFLOW PREVENTERS. 6. INSTALL BALANCING VALVES IN LOCATIONS WHERE THEY CAN EASILY BE ADJUSTED. 7. INSTALL WATER-HAMMER ARRESTERS IN WATER PIPING ACCORDING TO PDI-WH 201. 8. INSTALL SUPPLY-TYPE, TRAP-SEAL PRIMER VALVES WITH OUTLET PIPING PITCHED DOWN TOWARD DRAIN TRAP A MINIMUM OF 1 PERCENT, AND CONNECT TO FLOOR-DRAIN BODY, TRAP OR INLET FITTING. ADJUST VALVE FOR PROPER FLOW. PROVIDE A TRAP PRIMER FOR EACH FLOOR DRAIN AND EACH HUB DRAIN THAT IS ATTACHED TO THE SANITARY SEWER. 9. PERFORM THE FOLLOWING TESTS AND INSPECTIONS: 10. TEST EACH PRESSURE VACUUM BREAKER, ACCORDING TO AUTHORITIES HAVING JURISDICTION AND THE DEVICE'S REFERENCE STANDARD. 11. DOMESTIC WATER PIPING SPECIALTIES WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS. 12. PREPARE TEST AND INSPECTION REPORTS. 13. SET FIELD-ADJUSTABLE FLOW SET POINTS OF BALANCING VALVES. 3.3 INSULATION A. PREPARATION: 1. SURFACE PREPARATION: CLEAN AND DRY SURFACES TO RECEIVE INSULATION. REMOVE MATERIALS THAT WILL ADVERSELY AFFECT INSULATION APPLICATION. 2. COORDINATE INSULATION INSTALLATION WITH THE TRADE INSTALLING HEAT TRACING. COMPLY WITH REQUIREMENTS FOR HEAT TRACING WHICH APPLY TO INSULATION. 3. EAK INSULATING CEMENTS WITH CLEAN POTABLE WATER; IF INSULATING CEMENTS ARE TO BE IN CONTACT WITH STAINLESS-STEEL SURFACES, USE DE-MINERALIZED WATER. B. GENERAL INSTALLATION REQUIREMENTS: 1. INSTALL INSULATION MATERIALS, ACCESSORIES, AND FINISHES WITH SMOOTH, STRAIGHT, AND EVEN SURFACES; FREE OF VOIDS THROUGHOUT THE LENGTH OF PIPING INCLUDING FITTINGS, VALVES, AND SPECIALTIES. 2. INSTALL INSULATION MATERIALS, FORMS, VAPOR BARRIERS OR RETARDERS, JACKETS, AND THICKNESSES REQUIRED FOR EACH ITEM OF PIPE SYSTEM AS SPECIFIED IN INSULATION SYSTEM SCHEDULES. 3. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE. INSTALL ACCESSORIES THAT DO NOT CORRODE, SOFTEN, OR OTHERWISE ATTACK INSULATION OR JACKET IN EITHER WET OR DRY STATE. 4. INSTALL INSULATION WITH LONGITUDINAL SEAMS AT TOP AND BOTTOM OF HORIZONTAL RUNS. 5. DO NOT WELD BRACKETS, CLIPS, OR OTHER ATTACHMENT DEVICES TO PIPING, FITTINGS, AND SPECIALTIES. 6. KEEP INSULATION MATERIALS DRY DURING APPLICATION AND FINISHING. 7. INSTALL INSULATION WITH TIGHT LONGITUDINAL SEAMS AND END JOINTS. BOND SEAMS AND JOINTS WITH ADHESIVE RECOMMENDED BY INSULATION MATERIAL MANUFACTURER. 8. INSTALL INSULATION WITH LEAST NUMBER OF JOINTS PRACTICAL. 9. WHERE VAPOR BARRIER IS INDICATED, SEAL JOINTS, SEAMS, AND PENETRATIONS IN INSULATION AT HANGERS, SUPPORTS, ANCHORS, AND OTHER PROJECTIONS WITH VAPOR-BARRIER MASTIC. 10. INSTALL INSULATION CONTINUOUSLY THROUGH HANGERS AND AROUND ANCHOR ATTACHMENTS. 11. FOR INSULATION APPLICATION WHERE VAPOR BARRIERS ARE INDICATED, EXTEND INSULATION ON ANCHOR LEGS FROM POINT OF ATTACHMENT TO SUPPORTED ITEM TO POINT OF ATTACHMENT TO STRUCTURE. TAPER AND SEAL ENDS AT ATTACHMENT TO STRUCTURE WITH VAPOR-BARRIER MASTIC. 12. INSTALL INSERT MATERIALS AND INSTALL INSULATION TO TIGHTLY JOIN THE INSERT. SEAL INSULATION TO INSULATION INSERTS WITH ADHESIVE OR SEALING COMPOUND RECOMMENDED BY INSULATION MATERIAL MANUFACTURER. COVER INSERTS WITH JACKET MATERIAL MATCHING ADJACENT PIPE INSULATION. 13. INSTALL SHIELDS OVER JACKET, ARRANGED TO PROTECT JACKET FROM TEAR OR PUNCTURE BY HANGER, SUPPORT, AND SHIELD. 14. APPLY ADHESIVES, MASTICS, AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE AND WET AND DRY FILM THICKNESSES. 20. SUPPORT HORIZONTAL PIPING AND TUBING WITHIN 12 INCHES OF EACH FITTING, VALVE, AND COUPLING. 21. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR. 22. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, WITH 3/8-INCH MINIMUM RODS.		E. FIELD QUALITY CONTROL: 1. PERFORM TESTS AND INSPECTIONS. 2. TESTS AND INSPECTIONS: a. INSPECT PIPE, FITTINGS, STRAINERS, AND VALVES, RANDOMLY SELECTED BY ARCHITECT, BY REMOVING FIELD-APPLIED JACKET AND INSULATION IN LAYERS IN REVERSE ORDER OF THEIR INSTALLATION. 3. ALL INSULATION APPLICATIONS WILL BE CONSIDERED DEFECTIVE WORK IF SAMPLE INSPECTION REVEALS NONCOMPLIANCE WITH REQUIREMENTS 3.4 WASTE PIPING INSTALLATION A. DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING SYSTEMS. INDICATED LOCATIONS AND ARRANGEMENTS WERE USED TO SIZE PIPE AND CALCULATE FRICTION LOSS AND OTHER DESIGN CONSIDERATIONS. INSTALL PIPING AS INDICATED UNLESS DEVIATIONS TO LAYOUT ARE APPROVED ON COORDINATION DRAWINGS. B. INSTALL PIPING IN CONCEALED LOCATIONS UNLESS OTHERWISE INDICATED AND EXCEPT IN EQUIPMENT ROOMS AND SERVICE AREAS: 1. INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE. 2. INSTALL PIPING ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL. 3. INSTALL PIPING AT INDICATED SLOPES. 4. INSTALL PIPING FREE OF SAGS AND BENDS. 5. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS. 6. MAKE CHANGES IN DIRECTION FOR SOIL AND WASTE DRAINAGE AND VENT PIPING USING APPROPRIATE BRANCHES, BENDS, AND LONG-SWEEP BENDS. SANITARY TEES AND SHORT-SWEEP 1/4 BENDS MAY BE USED ON VERTICAL STACKS IF CHANGE IN DIRECTION OF FLOW IS FROM HORIZONTAL TO VERTICAL. USE LONG-TURN, DOUBLE Y-BRANCH AND 1/8-BEND FITTINGS IF TWO FIXTURES ARE INSTALLED BACK TO BACK OR SIDE BY SIDE WITH COMMON DRAIN PIPE, STRAIGHT TEES, ELBOWS, AND CROSSES MAY BE USED ON VENT LINES. DO NOT CHANGE DIRECTION OF FLOW MORE THAN 90 DEGREES. USE PROPER SIZE OF STANDARD INCREASERS AND REDUCERS IF PIPES OF DIFFERENT SIZES ARE CONNECTED. REDUCING SIZE OF DRAINAGE PIPING IN DIRECTION OF FLOW IS PROHIBITED. 7. INSTALL SOIL AND WASTE DRAINAGE AND VENT PIPING AT THE FOLLOWING MINIMUM SLOPES UNLESS OTHERWISE INDICATED: a. BUILDING SANITARY DRAIN: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 3 AND SMALLER; 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 4 AND LARGER. b. HORIZONTAL SANITARY DRAINAGE PIPING: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW. c. VENT PIPING: 1 PERCENT DOWN TOWARD VERTICAL FIXTURE VENT OR TOWARD VENT STACK. 8. INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS." 9. INSTALL ABOVEGROUND COPPER TUBING ACCORDING TO CDA'S "COPPER TUBE HANDBOOK." 10. INSTALL ABOVEGROUND ABS PIPING ACCORDING TO ASTM D 2861. 11. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION. 12. INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS. COMPLY WITH REQUIREMENTS FOR SLEEVES SPECIFIED IN SECTION 220517 "SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING." 13. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS. COMPLY WITH REQUIREMENTS FOR ESCUTCHEONS SPECIFIED IN SECTION 220518 "ESCUTCHEONS FOR PLUMBING PIPING." 14. JOIN HUB-AND-SPIGOT, CAST-IRON SOIL PIPING WITH GASKET JOINTS ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR COMPRESSION JOINTS. 15. JOIN HUBLESS, CAST-IRON SOIL PIPING ACCORDING TO CISPI 310 AND CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR HUBLESS-PIPING COUPLING JOINTS. 16. JOIN COPPER TUBE AND FITTINGS WITH SOLDERED JOINTS ACCORDING TO ASTM B 828. USE ASTM B 813, WATER-FLUSHABLE, LEAD-FREE FLUX AND ASTM B 32, LEAD-FREE-ALLOY SOLDER. 17. FLANGED JOINTS: ALIGN BOLT HOLES. SELECT APPROPRIATE GASKET MATERIAL, SIZE, TYPE, AND THICKNESS. INSTALL GASKET CONCENTRICALLY POSITIONED. USE SUITABLE LUBRICANTS ON BOLT THREADS. TORQUE BOLTS IN CROSS PATTERN. 18. TRANSITION COUPLINGS: a. INSTALL TRANSITION COUPLINGS AT JOINTS OF PIPING WITH SMALL DIFFERENCES IN OD'S. b. IN DRAINAGE PIPING: SHIELDED, NONPRESSURE TRANSITION COUPLINGS. 19. PIPE HANGERS AND SUPPORT DEVICES INSTALLATION a. INSTALL CARBON-STEEL PIPE HANGERS FOR HORIZONTAL PIPING IN NONCORROSIVE ENVIRONMENTS. b. INSTALL STAINLESS-STEEL PIPE HANGERS FOR HORIZONTAL PIPING IN CORROSIVE ENVIRONMENTS. c. INSTALL CARBON-STEEL PIPE SUPPORT CLAMPS FOR VERTICAL PIPING IN NONCORROSIVE ENVIRONMENTS. 23. INSTALL HANGERS FOR CAST-IRON SOIL PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1½ AND NPS 2: 60 INCHES WITH 3/8-INCH ROD. b. NPS 3: 60 INCHES WITH 1/2-INCH ROD. c. NPS 4 AND NPS 5: 60 INCHES WITH 5/8-INCH ROD. d. NPS 6 AND NPS 8: 60 INCHES WITH 3/4-INCH ROD. e. SPACING FOR 10-FOOT LENGTHS MAY BE INCREASED TO 10 FEET. SPACING FOR FITTINGS IS LIMITED TO 60 INCHES. 27. INSTALL SUPPORTS FOR VERTICAL CAST-IRON SOIL PIPING EVERY 15 FEET. 28. INSTALL HANGERS FOR COPPER TUBING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1½: 72 INCHES WITH 3/8-INCH ROD. b. NPS 1½ AND NPS 2: 96 INCHES WITH 3/8-INCH ROD. c. NPS 2½: 108 INCHES WITH 1/2-INCH ROD. d. NPS 3 AND NPS 5: 10 FEET WITH 1/2-INCH ROD. 29. INSTALL SUPPORTS FOR VERTICAL COPPER TUBING EVERY 10 FEET. 30. INSTALL HANGERS FOR ABS PIPING WITH THE FOLLOWING MAXIMUM HORIZONTAL SPACING AND MINIMUM ROD DIAMETERS: a. NPS 1½ AND NPS 2: 48 INCHES WITH 3/8-INCH ROD. b. NPS 3: 48 INCHES WITH 1/2-INCH ROD. c. NPS 4 AND NPS 5: 48 INCHES WITH 5/8-INCH ROD. d. NPS 6 AND NPS 8: 48 INCHES WITH 3/4-INCH ROD. 31. INSTALL SUPPORTS FOR VERTICAL ABS PIPING EVERY 48 INCHES. 32. SUPPORT PIPING AND TUBING NOT LISTED ABOVE ACCORDING TO MSS SP-68 AND MANUFACTURER'S WRITTEN INSTRUCTIONS. 33. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES. 34. CONNECT SOIL AND WASTE PIPING TO BUILDING SEWERAGE PIPING. USE TRANSITION FITTING TO JOIN DISSIMILAR PIPING MATERIALS. 35. CONNECT DRAINAGE AND VENT PIPING TO THE FOLLOWING: a. PLUMBING FIXTURES: CONNECT DRAINAGE PIPING IN SIZES INDICATED, BUT NOT SMALLER THAN REQUIRED BY PLUMBING CODE. b. PLUMBING FIXTURES AND EQUIPMENT: CONNECT ATMOSPHERIC VENT PIPING IN SIZES INDICATED, BUT NOT SMALLER THAN REQUIRED BY AUTHORITIES HAVING JURISDICTION. c. PLUMBING SPECIALTIES: CONNECT DRAINAGE AND VENT PIPING IN SIZES INDICATED, BUT NOT SMALLER THAN REQUIRED BY PLUMBING CODE. d. INSTALL TEST TEES (WALL CLEANOUTS) IN CONDUCTORS NEAR FLOOR AND FLOOR CLEANOUTS WITH COVER FLUSH WITH FLOOR. e. INSTALL HORIZONTAL BACKWATER VALVES WITH CLEANOUT COVER FLUSH WITH FLOOR, WHERE SPECIFIED. f. COMPLY WITH REQUIREMENTS FOR BACKWATER VALVES, CLEANOUTS, AND DRAINS SPECIFIED IN SECTION 221319 "SANITARY WASTE PIPING SPECIALTIES." g. EQUIPMENT: CONNECT DRAINAGE PIPING AS INDICATED. PROVIDE SHUTOFF VALVE IF INDICATED AND UNION FOR EACH CONNECTION. USE FLANGES INSTEAD OF UNIONS FOR CONNECTIONS NPS 2½ AND LARGER. 36. WHERE INSTALLING PIPING ADJACENT TO EQUIPMENT, ALLOW SPACE FOR SERVICE AND MAINTENANCE OF EQUIPMENT. 37. MAKE CONNECTIONS ACCORDING TO THE FOLLOWING UNLESS OTHERWISE INDICATED: a. INSTALL UNIONS, IN PIPING NPS 2 AND SMALLER, ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. b. INSTALL FLANGES, IN PIPING NPS 2½ AND LARGER, ADJACENT TO DRAIN VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT. 38. INSTALL CLEANOUTS IN ABOVEGROUND PIPING AND BUILDING DRAIN PIPING ACCORDING TO THE FOLLOWING, UNLESS OTHERWISE INDICATED: a. SIZE SAME AS DRAINAGE PIPING UP TO NPS 4. USE NPS 4 FOR LARGER DRAINAGE PIPING UNLESS LARGER CLEANOUT IS INDICATED. b. LOCATE AT EACH CHANGE IN DIRECTION OF PIPING GREATER THAN 45 DEGREES. c. LOCATE AT MINIMUM INTERVALS OF 50 FEET FOR PIPING NPS 4 AND SMALLER AND 100 FEET FOR LARGER PIPING. d. LOCATE AT BASE OF EACH VERTICAL SOIL AND WASTE STACK. 39. FOR FLOOR CLEANOUTS FOR PIPING BELOW FLOORS, INSTALL CLEANOUT DECK PLATES WITH TOP FLUSH WITH FINISHED FLOOR. 40. FOR CLEANOUTS LOCATED IN CONCEALED PIPING, INSTALL CLEANOUT WALL ACCESS COVERS, OF TYPES INDICATED, WITH FRAME AND COVER FLUSH WITH FINISHED WALL. 41. INSTALL FLOOR DRAINS AT LOW POINTS OF SURFACE AREAS TO BE DRAINED. SET GRATES OF DRAINS FLUSH WITH FINISHED FLOOR, UNLESS OTHERWISE INDICATED: a. POSITION FLOOR DRAINS FOR EASY ACCESS AND MAINTENANCE. b. SET FLOOR DRAINS BELOW ELEVATION OF SURROUNDING FINISHED FLOOR TO ALLOW FLOOR DRAINAGE. c. INSTALL FLOOR-DRAIN FLASHING COLLAR OR FLANGE SO NO LEAKAGE OCCURS BETWEEN DRAIN AND ADJOINING FLOORING. MAINTAIN INTEGRITY OF WATERPROOF MEMBRANES WHERE PENETRATED. d. INSTALL INDIVIDUAL TRAPS FOR FLOOR DRAINS CONNECTED TO SANITARY BUILDING DRAIN, UNLESS OTHERWISE INDICATED. 42. INSTALL ROOF FLASHING ASSEMBLIES ON SANITARY STACK VENTS AND VENT STACKS THAT EXTEND THROUGH ROOF. 43. INSTALL FLASHING FITTINGS ON SANITARY STACK VENTS AND VENT STACKS THAT EXTEND THROUGH ROOF. 44. ASSEMBLE OPEN DRAIN FITTINGS AND INSTALL WITH TOP OF HUB 2 INCHES ABOVE FLOOR. 45. INSTALL DEEP-SEAL TRAPS ON FLOOR DRAINS AND OTHER WASTE OUTLETS, IF INDICATED. 46. INSTALL FLOOR-DRAIN, TRAP-SEAL PRIMER FITTINGS ON INLET TO FLOOR DRAINS THAT REQUIRE TRAP-SEAL PRIMER CONNECTION: a. EXCEPTION: FITTING MAY BE OMITTED IF TRAP HAS TRAP-SEAL PRIMER CONNECTION. b. SIZE: SAME AS FLOOR DRAIN INLET.		47. INSTALL AIR-GAP FITTINGS ON DRAINING-TYPE BACKFLOW PREVENTERS AND ON INDIRECT-WASTE PIPING DISCHARGE INTO SANITARY DRAINAGE SYSTEMS. 48. INSTALL SLEEVE FLASHING DEVICE WITH EACH RISER AND STACK PASSING THROUGH FLOORS WITH WATERPROOF MEMBRANE. 49. INSTALL VENT CAPS ON EACH VENT PIPE PASSING THROUGH ROOF. 50. INSTALL GREASE INTERCEPTORS, INCLUDING TRAPPING, VENTING, AND FLOW-CONTROL FITTING, ACCORDING TO AUTHORITIES HAVING JURISDICTION AND WITH CLEAR SPACE FOR SERVICING. 51. INSTALL TRAPS ON PLUMBING SPECIALTY DRAIN OUTLETS. OMIT TRAPS ON INDIRECT WASTES UNLESS TRAP IS INDICATED. 52. INSTALL PIPING ADJACENT TO EQUIPMENT TO ALLOW SERVICE AND MAINTENANCE. 53. GREASE INTERCEPTORS: CONNECT INLET AND OUTLET TO UNIT, AND CONNECT FLOW-CONTROL FITTING AND VENT TO UNIT INLET PIPING. INSTALL VALVE ON OUTLET OF AUTOMATIC DRAFFOFF-TYPE UNIT. 54. FABRICATE FLASHING FROM SINGLE PIECE UNLESS LARGE PANS, SUMPS, OR OTHER DRAINAGE SHAPES ARE REQUIRED. JOIN FLASHING ACCORDING TO THE FOLLOWING IF REQUIRED: a. LEAD SHEETS: BURN JOINTS OF LEAD SHEETS 6.0-LB/SQ. FT., 0.0938-INCH THICKNESS OR THICKER. SOLDER JOINTS OF LEAD SHEETS 4.0-LB/SQ. FT., 0.0625-INCH THICKNESS OR THINNER. 55. INSTALL SHEET FLASHING ON PIPES, SLEEVES, AND SPECIALTIES PASSING THROUGH OR EMBEDDED IN FLOORS AND ROOFS WITH WATERPROOF MEMBRANE. a. PIPE FLASHING: SLEEVE TYPE, MATCHING PIPE SIZE, WITH MINIMUM LENGTH OF 10 INCHES, AND SKIRT OR FLANGE EXTENDING AT LEAST 8 INCHES AROUND PIPE. b. SLEEVE FLASHING: FLAT SHEET WITH SKIRT OR FLANGE EXTENDING AT LEAST 8 INCHES AROUND SLEEVE. c. EMBEDDED SPECIALTY FLASHING: FLAT SHEET, WITH SKIRT OR FLANGE EXTENDING AT LEAST 8 INCHES AROUND SPECIALTY. 56. SET FLASHING ON FLOORS AND ROOFS IN SOLID COATING OF BITUMINOUS CEMENT. 57. SECURE FLASHING INTO SLEEVE AND SPECIALTY CLAMPING RING OR DEVICE. 58. INSTALL FLASHING FOR PIPING PASSING THROUGH ROOFS WITH COUNTERFLASHING OR COMMERCIALY MADE FLASHING FITTINGS, ACCORDING TO SECTION 076200 "SHEET METAL FLASHING AND TRIM." 59. EXTEND FLASHING UP VENT PIPE PASSING THROUGH ROOFS AND TURN DOWN INTO PIPE, OR SECURE FLASHING INTO CAST-IRON SLEEVE HAVING CALKING RECESS. 60. EQUIPMENT NAMEPLATES AND SIGNS: INSTALL ENGRAVED PLASTIC-LAMINATE EQUIPMENT NAMEPLATE OR SIGN ON OR NEAR EACH GREASE INTERCEPTOR. 61. DISTINGUISH AMONG MULTIPLE UNITS. INFORM OPERATOR OF OPERATIONAL REQUIREMENTS, INDICATE SAFETY AND EMERGENCY PRECAUTIONS, AND WARN OF HAZARDS AND IMPROPER OPERATIONS, IN ADDITION TO IDENTIFYING UNIT. NAMEPLATES AND SIGNS ARE SPECIFIED IN SECTION 220553 "IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT." 62. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD TO AVOID CLOGGING WITH DIRT OR DEBRIS AND TO PREVENT DAMAGE FROM TRAFFIC OR CONSTRUCTION WORK. 63. PLACE PLUGS IN ENDS OF UNCOMPLETED PIPING AT END OF EACH DAY OR WHEN WORK STOP. 64. IDENTIFY EXPOSED SANITARY WASTE AND VENT PIPING. COMPLY WITH REQUIREMENTS FOR IDENTIFICATION SPECIFIED IN SECTION 220553 "IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT." 65. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS (CHECK WITH LOCAL AUTHORITIES) BEFORE INSPECTION MUST BE MADE. PERFORM TESTS SPECIFIED BELOW IN PRESENCE OF AUTHORITIES HAVING JURISDICTION: a. ROUGHING-IN INSPECTION: ARRANGE FOR INSPECTION OF PIPING BEFORE CONCEALING OR CLOSING-IN AFTER ROUGHING-IN AND BEFORE SETTING FIXTURES. b. FINAL INSPECTION: ARRANGE FOR FINAL INSPECTION BY AUTHORITIES HAVING JURISDICTION TO OBSERVE TESTS SPECIFIED BELOW AND TO ENSURE COMPLIANCE WITH REQUIREMENTS. 66. RE-INSPECTION: IF AUTHORITIES HAVING JURISDICTION FIND THAT PIPING WILL NOT PASS TEST OR INSPECTION, MAKE REQUIRED CORRECTIONS AND ARRANGE FOR RE-INSPECTION. REPORTS: PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION. 68. TEST SANITARY DRAINAGE AND VENT PIPING ACCORDING TO PROCEDURES OF AUTHORITIES HAVING JURISDICTION OR, IN ABSENCE OF PUBLISHED PROCEDURES, AS FOLLOWS: a. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED. b. LEAVE UNCOVERED AND UNCONCEALED NEW, ALTERED, EXTENDED, OR REPLACED DRAINAGE AND VENT PIPING UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED. c. ROUGHING-IN PLUMBING TEST PROCEDURE: TEST DRAINAGE AND VENT PIPING EXCEPT OUTSIDE LEADERS ON COMPLETION OF ROUGHING-IN. CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER. FROM 15 MINUTES BEFORE INSPECTION STARTS TO COMPLETION OF INSPECTION, WATER LEVEL MUST NOT DROP. INSPECT JOINTS FOR LEAKS. d. FINISHED PLUMBING TEST PROCEDURE: AFTER PLUMBING FIXTURES HAVE BEEN SET AND TRAPS FILLED WITH WATER, TEST CONNECTIONS AND PROVE THEY ARE GASTIGHT AND WATERTIGHT. PLUG VENT-STACK OPENINGS ON ROOF AND BUILDING DRAINS WHERE THEY LEAVE BUILDING. INTRODUCE AIR INTO PIPING SYSTEM EQUAL TO PRESSURE OF 1-INCH WG. USE U-TUBE OR MANOMETER INSERTED IN TRAP OF WATER CLOSET TO MEASURE THIS PRESSURE. AIR PRESSURE MUST REMAIN CONSTANT WITHOUT INTRODUCING ADDITIONAL AIR THROUGHOUT PERIOD OF INSPECTION. INSPECT PLUMBING FIXTURE CONNECTIONS FOR GAS AND WATER LEAKS. e. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY RESULTS ARE OBTAINED. f. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.	
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06	100% CD SET / BID AND PERMIT	08/19/25	
05	100% REVIEW SET	06/16/25	
04	95% CD SET	01/20/25	
03	80% COORDINATION SET	08/07/24	
02	ISSUED FOR PROGRESS	12/01/23	
01	ISSUED FOR REVIEW	10/05/23	
No:	Description:	Date:	
Revisions:			

Job No: 10015

Scale: AS SHOWN

Date: 10/02/23

Drawn: SC

Sheet Title:

PLUMBING SPECIFICATIONS III

Drawing No.:

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