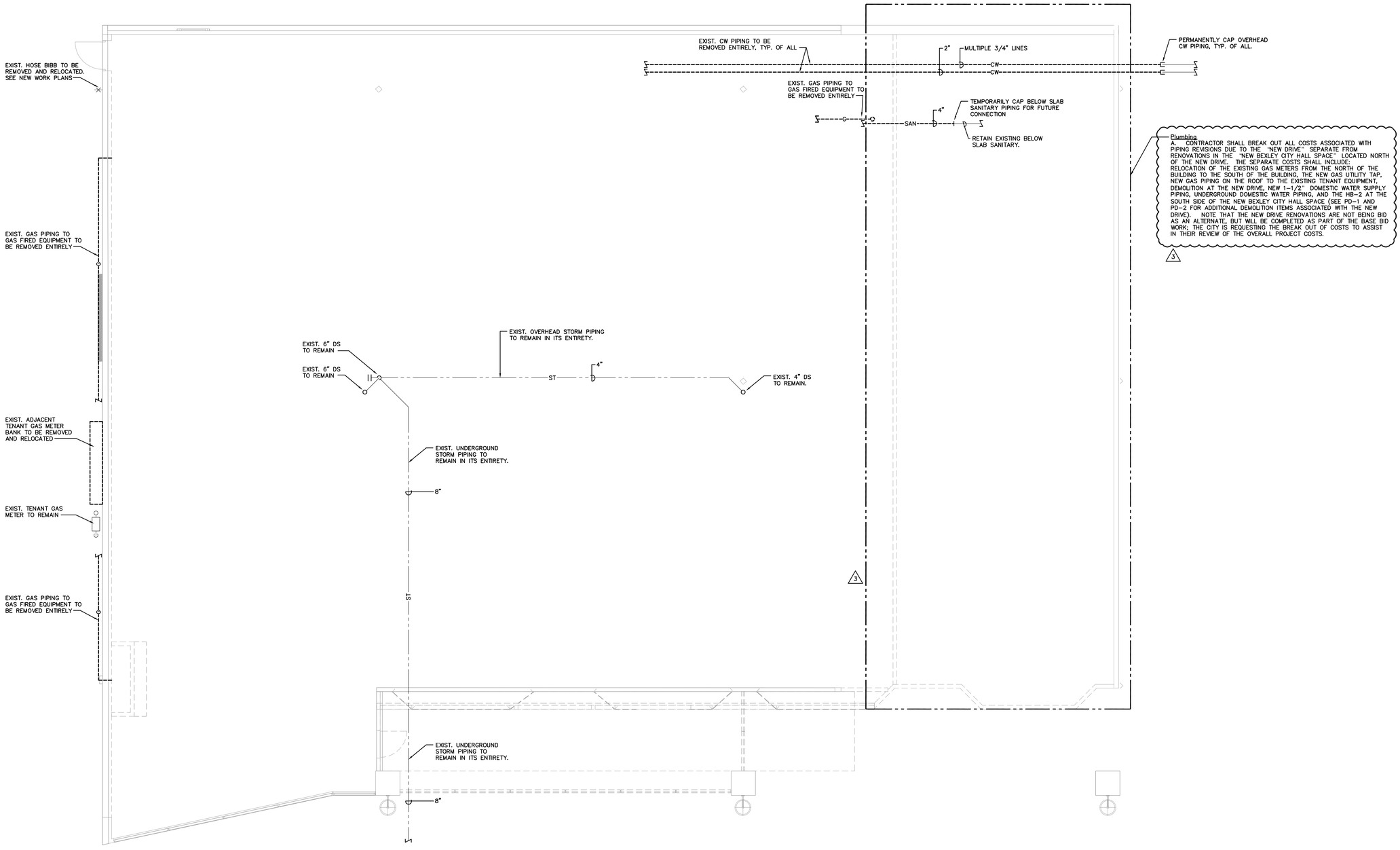
GENERAL NOTES

1. ALL PLUMBING ITEMS IN THIS BUILDING ARE TO BE REMOVED IN THEIR ENTIRETY, EXCEPT FOR THE ROOF & STORM DRAIN PIPING SYSTEM & THE VENT THROUGH ROOFS. THIS INCLUDES, BUT IS NOT LIMITED TO, DOMESTIC WATER PIPING, GAS PIPING, SANITARY WASTE AND VENT PIPING, HANGERS & SUPPORTS, VALVES, FLOOR DRAINS, WASTE RECEPTORS, GREASE INTERCEPTORS, WATER HEATERS & PLUMBING FIXTURES. ABANDON ANY UNDERSLAB PIPING IN PLACE. PROPERLY CUT & PATCH, TO MATCH EXISTING, AS NECESSARY FOR REMOVAL. THIS CONTRACTOR SHALL FIELD VERIFY EXTENT OF DEMOLITION WORK PRIOR TO BIDDING. MOST PIPING, EQUIPMENT & FIXTURES NOT SHOWN.



FIRST FLOOR PLUMBING DEMOLITION PLAN

SCALE: 3/16"=1'-0"

PD-1-14105.DWG

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Bexley Square
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Bexley, Ohio
43209

MARK	DATE	DESCRIPTION
3	08.03.14	Addendum 3
2	07.09.14	Addendum 2
1	07.07.14	Addendum 1	
	05.01.14	Bid Set
	02.01.14	Commission Review

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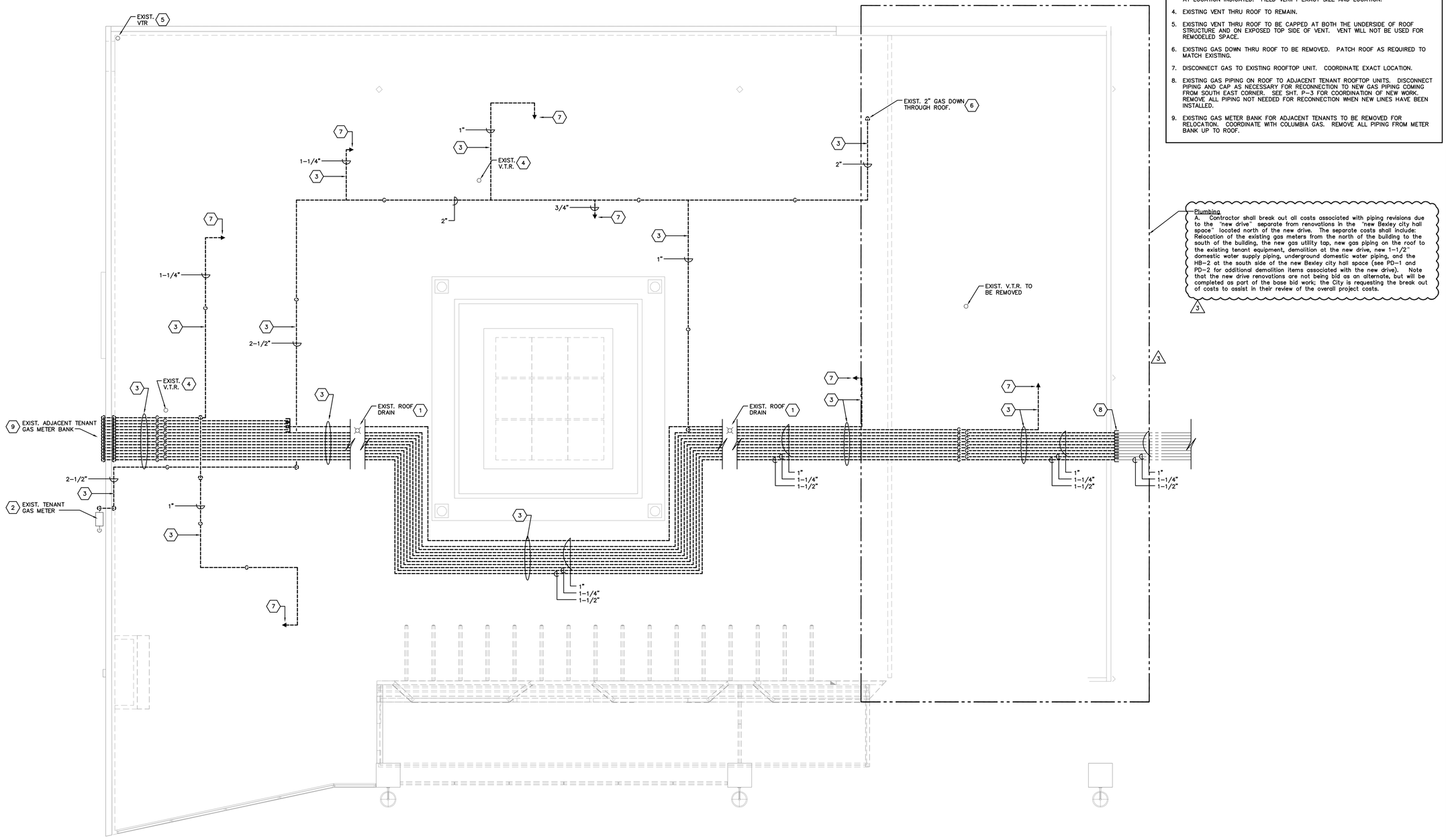
FIRST FLOOR
PLUMBING
DEMOLITION PLAN

PD-1



ROOF PLUMBING DEMOLITION PLAN

SCALE: 3/16"=1'-0"

CODED NOTES

1. EXISTING ROOF DRAIN TO REMAIN. PROVIDE NEW POLYPROPYLENE DOME. CLEAN OUT DRAIN ENTIRELY FROM ROOF LEVEL TO 5' OUTSIDE THE EXTERIOR BUILDING WALL TO ENSURE PROPER FULL DRAIN CAPACITY.
2. EXISTING GAS SERVICE WITH METER BANK TO REMAIN IN ITS ENTIRETY.
3. EXISTING GAS PIPING ON ROOF TO BE REMOVED INCLUDING PIPING SUPPORTS. CAP AT LOCATION INDICATED. FIELD VERIFY EXACT SIZE AND LOCATION.
4. EXISTING VENT THRU ROOF TO REMAIN.
5. EXISTING VENT THRU ROOF TO BE CAPPED AT BOTH THE UNDERSIDE OF ROOF STRUCTURE AND ON EXPOSED TOP SIDE OF VENT. VENT WILL NOT BE USED FOR REMODELED SPACE.
6. EXISTING GAS DOWN THRU ROOF TO BE REMOVED. PATCH ROOF AS REQUIRED TO MATCH EXISTING.
7. DISCONNECT GAS TO EXISTING ROOFTOP UNIT. COORDINATE EXACT LOCATION.
8. EXISTING GAS PIPING ON ROOF TO ADJACENT TENANT ROOFTOP UNITS. DISCONNECT PIPING AND CAP AS NECESSARY FOR RECONNECTION TO NEW GAS PIPING COMING FROM SOUTH EAST CORNER. SEE SHT. P-3 FOR COORDINATION OF NEW WORK. REMOVE ALL PIPING NOT NEEDED FOR RECONNECTION WHEN NEW LINES HAVE BEEN INSTALLED.
9. EXISTING GAS METER BANK FOR ADJACENT TENANTS TO BE REMOVED FOR RELOCATION. COORDINATE WITH COLUMBIA GAS. REMOVE ALL PIPING FROM METER BANK UP TO ROOF.

Plumbing
A. Contractor shall break out all costs associated with piping revisions due to the "new drive" separate from renovations in the "new Bexley city hall space" located north of the new drive. The separate costs shall include: Relocation of the existing gas meters from the north of the building to the south of the building, the new gas utility tap, new gas piping on the roof to the existing tenant equipment, demolition at the new drive, new 1-1/2" domestic water supply piping, underground domestic water piping, and the HB-2 at the south side of the new Bexley city hall space (see PD-1 and PD-2 for additional demolition items associated with the new drive). Note that the new drive renovations are not being bid as an alternate, but will be completed as part of the base bid work; the City is requesting the break out of costs to assist in their review of the overall project costs.

3

PD-2-14105.DWG

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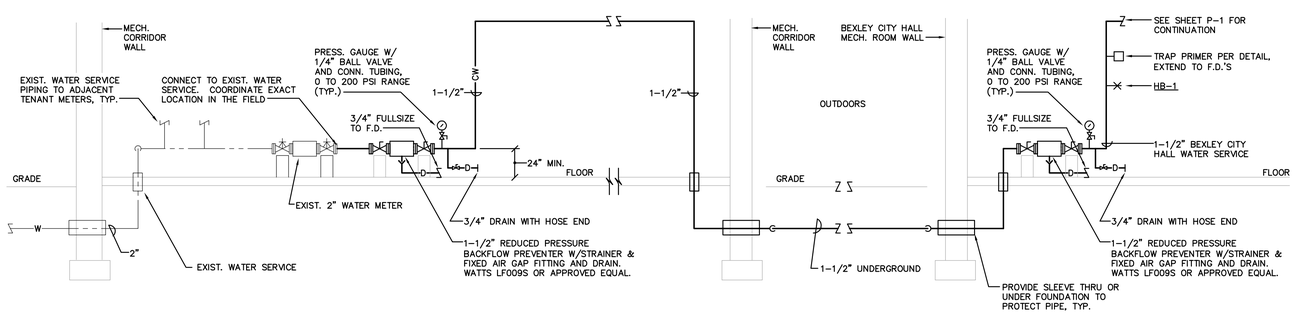
ROOF PLUMBING DEMOLITION PLAN

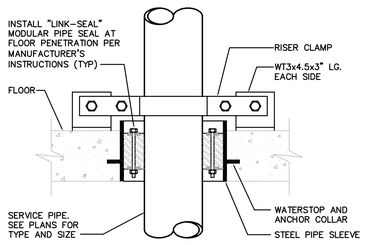
PD-2

WATER SERVICE NOTES:

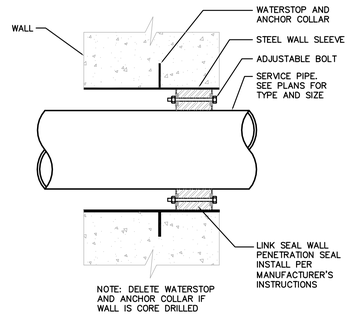
1. WATER SERVICE ENTRANCE MATERIALS, INSTALLATION, AND ALL COMPONENTS (INCL'G. BUT NOT LIMITED TO METERS AND BACKFLOW PREVENTORS) TO BE IN ACCORDANCE WITH THE RQMT'S. OF THE LOCAL WATER DEPT., VERIFIED IN ADVANCE OF ANY WORK.
2. ALL REDUCED PRESS. PRINCIPLE BACKFLOW PREVENTORS TO BE COMPLETE APPROVED ASSBY'S., INCL'G., BUT NOT LIMITED TO TEST COCKS AND AIR GAP FITTING AT VENT/DRAIN CONN. POINT. ASSBY'S. TO BE AS LISTED IN ASSE 1013, APPROVED BY THE LOCAL BACK-FLOW PREVENTION AUTHORITY.
3. PROVIDE FLR. AND WALL SUPPORT ASSBY'S. AS REQ'D. TO SECURE AND SUPPORT ITEMS INDICATED AT STRUCT., PIPE STANDS EQUAL TO GRINNELL FIG. 62, WALL BRACKETS EQUAL TO GRINNELL FIG. 199.
4. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 3 COPIES OF A DETAILED ROUGH-IN WITH DIMENSIONS OF THE INSTALLATION OF THE METER AND BACKFLOW PREVENTER. COPIES TO BE GIVEN TO THE BEXLEY DIVISION OF WATER FOR REVIEW AND COMMENT. ALL COMMENTS FROM THE DIVISION OF WATER MUST BE INCORPORATED IN THE INSTALLATION.



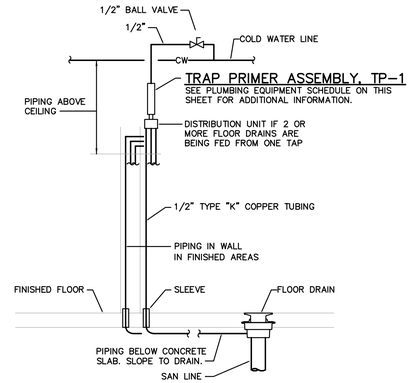
DOMESTIC WATER SERVICE ENTRANCE DIAGRAM
NOT TO SCALE



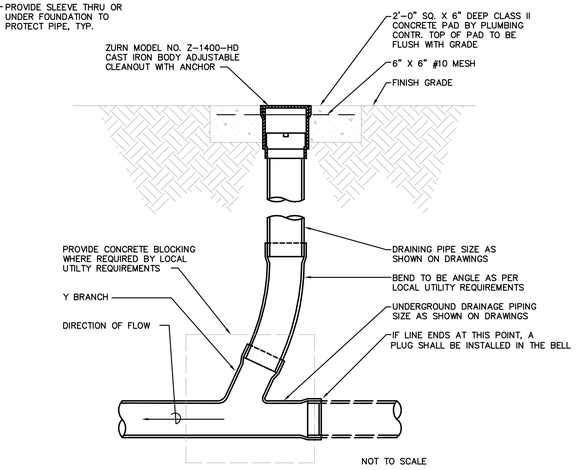
WATERTIGHT FLOOR PENETRATION FOR PIPES
NOT TO SCALE



WATERTIGHT WALL PENETRATION FOR PIPES
NOT TO SCALE

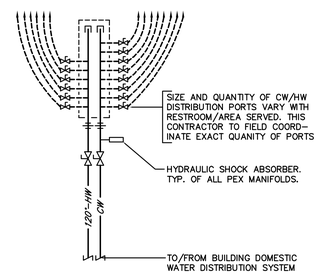


TRAP PRIMER PIPING DIAGRAM
NOT TO SCALE

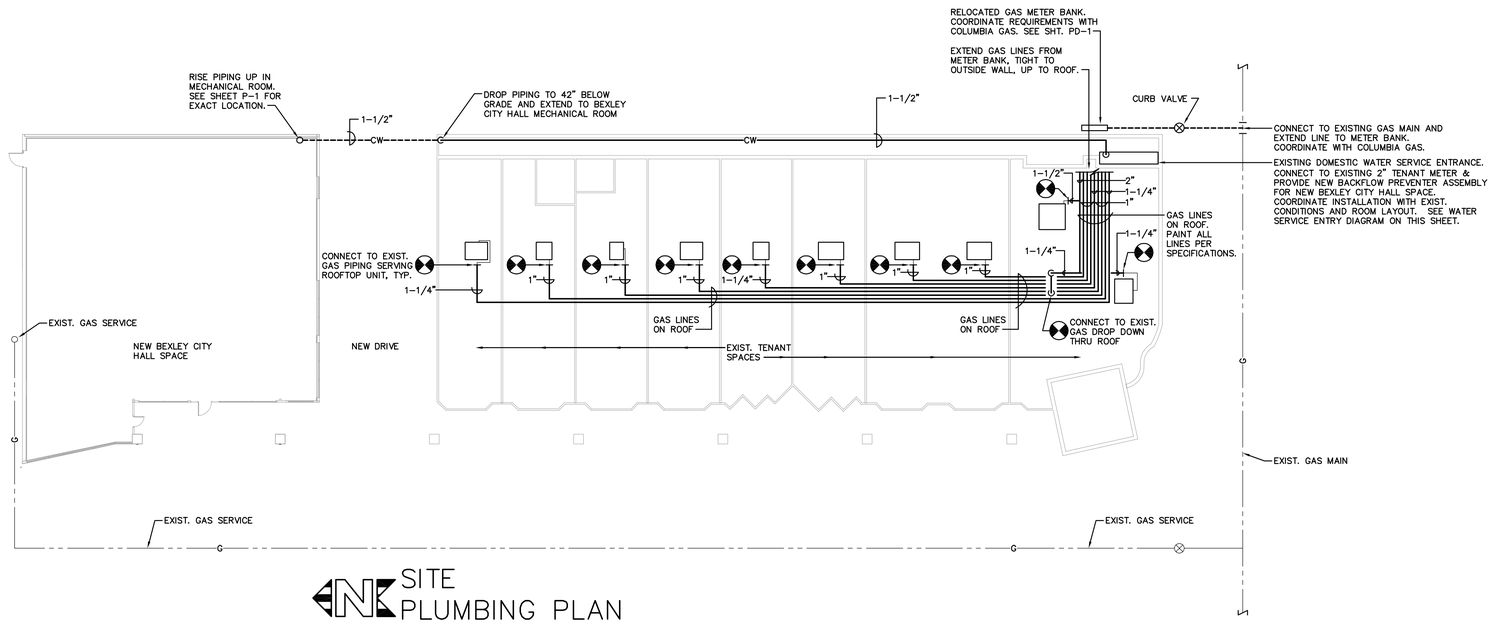


CO; OUTSIDE CLEANOUT DETAIL
NOT TO SCALE

FIXTURE SUPPLY SIZES		
FIXTURE	PEX PIPE SIZE	
	CW	HW
WATER CLOSET	1"	--
LAVATORY	1/2"	1/2"
WATER COOLER	1/2"	--
WALL HYDRANTS	3/4"	--



TYPICAL PEX MANIFOLD PIPING DIAGRAM
NOT TO SCALE



SITE PLUMBING PLAN
SCALE: 1"= 20'-0"

P-0-14105.DWG

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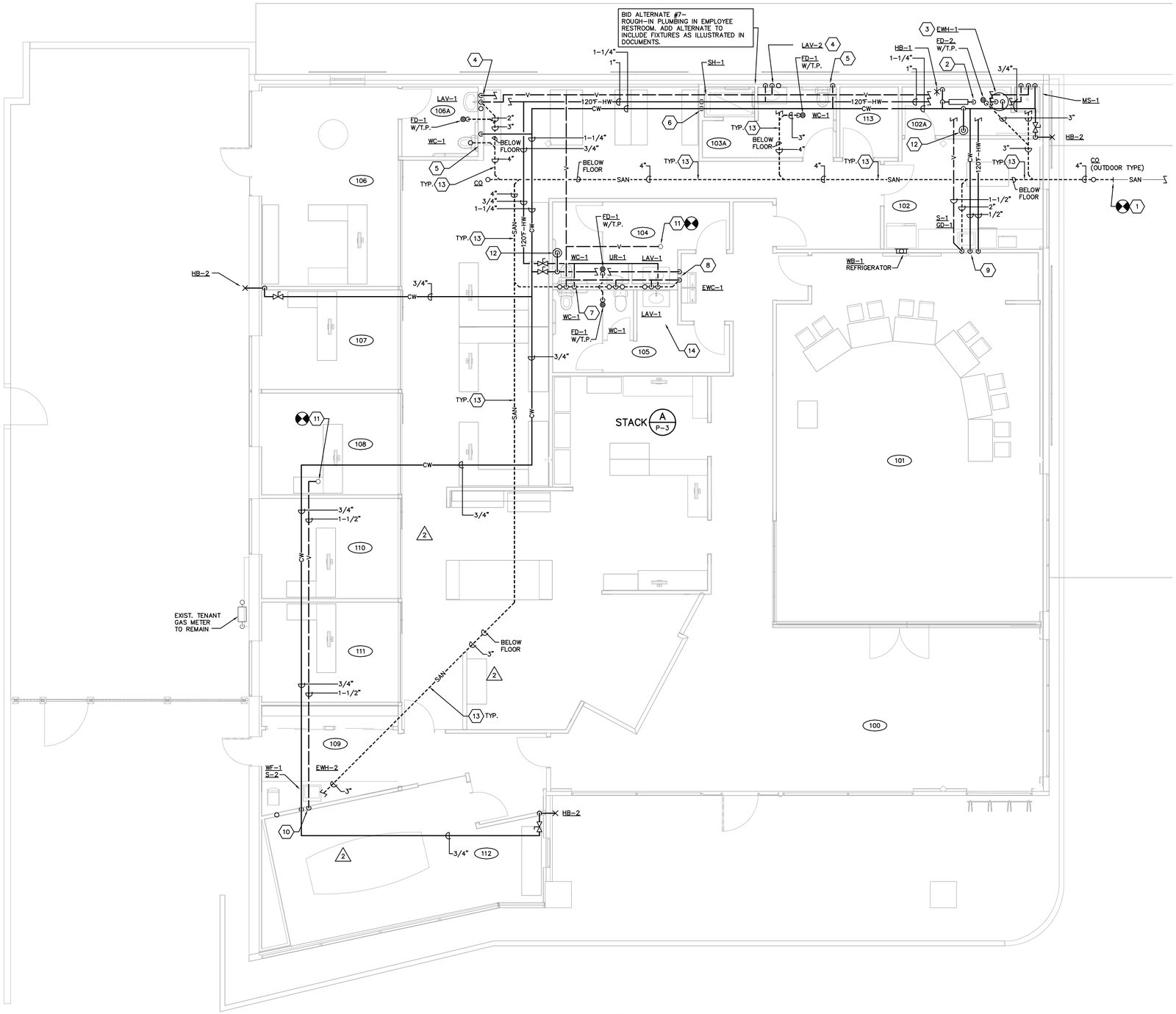
SHEET TITLE
SITE PLUMBING PLAN

P-0



FIRST FLOOR PLUMBING PLAN

SCALE: 3/16"=1'-0"

PLUMBING LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CW	DOMESTIC COLD WATER LINE		P-TRAP (PLAN VIEW)
D	DRAIN LINE		CAPPED LINE
G	GAS LINE (NATURAL)		HOSE BIBB
HW	HOT WATER LINE (DOMESTIC)		PIPE BRANCH TOP CONNECTION
HWR	HOT WATER RETURN (DOMESTIC)		PIPE BRANCH BOTTOM CONNECTION
IND	INDIRECT WASTE LINE		PIPE UNION
SAN	SANITARY LINE		Y-TYPE STRAINER
STM	STORM LINE		COMB. BALANCE & STOP VALVE
TP	TRAP PRIMER LINE		BALL VALVE
TW	TEMPERED WATER (DOMESTIC)		GATE VALVE (SCREWED BODY)
V	VENT LINE		DRAIN VALVE WITH HOSE END
W	WATER SERVICE LINE		CHECK VALVE
180°	180°F WATER (DOMESTIC)		FLOOR OR AREA DRAIN
	EXISTING WORK TO REMAIN		THERMOMETER
	EXISTING WORK TO BE REMOVED		CONNECT TO EXISTING
			THRU FLOOR AS SHOWN
			JANITOR OR SHOWER FAUCET/HEAD LOCATION

PLUMBING ABBREVIATIONS

AB.	ABOVE	GEN.	GENERAL
A.F.F.	ABOVE FINISHED FLOOR	H.B.	HOSE BIBB
APPROX.	APPROXIMATELY	HTR.	HEATER
BTM.	BOTTOM	HTG.	HEATING
BLDG.	BUILDING	INV. ELEV.	INVERT ELEVATION
C.I.	CAST IRON	INT.	INTERIOR
CLG.	CEILING	LAV.	LAVATORY
CONC.	CONCRETE	MFR.	MANUFACTURER
C.O.	CLEAN OUT	MECH.	MECHANICAL
CONN.	CONNECT	PLBG.	PLUMBING
CONTR.	CONTRACTOR	PRESS.	PRESSURE
DTL.	DETAIL	REQD.	REQUIRED
DIA.	DIAMETER	R.D.	ROOF DRAIN
D.F.	DRINKING FOUNTAIN	RM.	ROOM
DN.	DOWN	S.D.	SHOWER DRAIN
D.S.	DOWNSPOUT	SH.	SHOWER
ELEC.	ELECTRICAL	S.S.	SERVICE SINK
E.W.C.	ELECTRIC WATER COOLER	T.P.	TRAP PRIMER
EXIST.	EXISTING	TYP.	TYPICAL
EXT.	EXTERIOR	UR.	URINAL
FLR.	FLOOR	V.T.R.	VENT THRU ROOF
F.D.	FLOOR DRAIN	W.	WASTE
FURN.	FURNISH	W/	WITH
F.V.	FLUSH VALVE	WC	WATER CLOSET

CODED NOTES ⬡

1. 4" BUILDING SANITARY DRAIN TO 5'-0" BEYOND BUILDING PERIMETER FOR CONNECTION TO EXIST. UNDERGROUND SANITARY. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION OF EXIST. SANITARY PRIOR TO BEGINNING UNDERGROUND WORK.
2. 1-1/2" CW SERVICE UP FROM BELOW SLAB. PROVIDE ASSE 1013, RPZ BACKFLOW PREVENTER, WATTS LF-009S. INSTALL PER OHIO PLUMBING CODE AND LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS. SEE DIAGRAM ON SHEET P-0.
3. ELECTRIC WATER HEATER, EWH-1. INSTALL PER WATER HEATER DIAGRAM ON SHEET P-3.
4. 1/2" CW, 1/2" HW, 2" SAN & 1-1/2" VENT TO LAV.
5. 1/2" & 4" SAN TO WATER CLOSET.
6. 1/2" CW & 1/2" HW TO SHOWER VALVE.
7. 1-1/4" CW DOWN IN WALL. EXTEND CW HEADER IN WALL AND PROVIDE 1/2" CONNECTIONS TO WATER CLOSETS & LAVS AND 3/4" CW TO URINAL. PROVIDE PDI SIZED "B" SHOCK ABSORBER PER PDI GUIDELINES.
8. 1/2" CW, 2" SAN & 1-1/2" VENT TO ELECTRIC WATER COOLER.
9. 1/2" CW, 1/2" HW, 2" SAN & 1-1/2" VENT TO SINK. EXTEND 1/2" CW BRANCH, WITH SEPARATE SHUTOFF VALVE, TO ICE MAKER BACKFLOW PREVENTER, EQUAL TO WATTS 007, EXPOSED IN CASEWORK. EXTEND BACK IN WALL AND RUN HORIZONTALLY TO WALL BOX.
10. 3/4" CW DOWN IN WALL. EXTEND 1/2" CW TO ELECTRIC WATER HEATER, EWH-2. EXTEND 1/2" CW & 1/2" HW TO SINK. PROVIDE 1/2" CW BRANCH, WITH SEPARATE SHUTOFF VALVE & BACKFLOW PREVENTER (EQUAL TO WATTS SD-3) TO WATER FILTER ASSEMBLY, WF-1, UNDER SINK. ENSURE FILTERS CAN BE SERVICED AND INSTALL TO MAXIMIZE USABLE SPACE WITHIN CASEWORK. EXTEND CW LINE BACK IN WALL AND RUN HORIZONTALLY TO COFFEE MAKER. COORDINATE LOCATION WITH OWNER/ARCHITECT. INDIRECT BACKFLOW PREVENTER DRAIN PORT, FULL SIZE, TO HUB DRAIN IN CASEWORK WITH AIR BREAK. SEE DIAGRAMS ON SHEET P-3 FOR FURTHER DETAIL. (2)
11. CONNECT TO EXISTING VENT THROUGH ROOF AS HIGH AS POSSIBLE. VERIFY EXACT LOCATION IN FIELD. MAKE NECESSARY ADJUSTMENTS.
12. PROVIDE TRAP PRIMER VALVE, TP-1, ABOVE CEILING IN THIS APPROXIMATE LOCATION. PROVIDE 1/2" CW TO INLET & EXTEND 1/2" TP SUPPLY TO DRAINS INDICATED ON PLANS. TP SUPPLY TO RUN CONCEALED IN STRUCTURE OR CASEWORK FOR EXTENSION & DISCHARGE TO DRAIN INLET.
13. PROVIDE ALL SAW CUTTING FOR INSTALLATION OF UNDERSLAB SANITARY PIPING. PATCH TO MATCH EXISTING CONDITIONS.
14. AT CONTRACTOR'S OPTION, PROVIDE PEX PIPING MANIFOLD ABOVE CEILING IN RESTROOM 104, AND EXTEND LINES TO EACH FIXTURE PER PEX MANIFOLD PIPING DIAGRAM ON SHEET P-0.

P-1-14105.DWG

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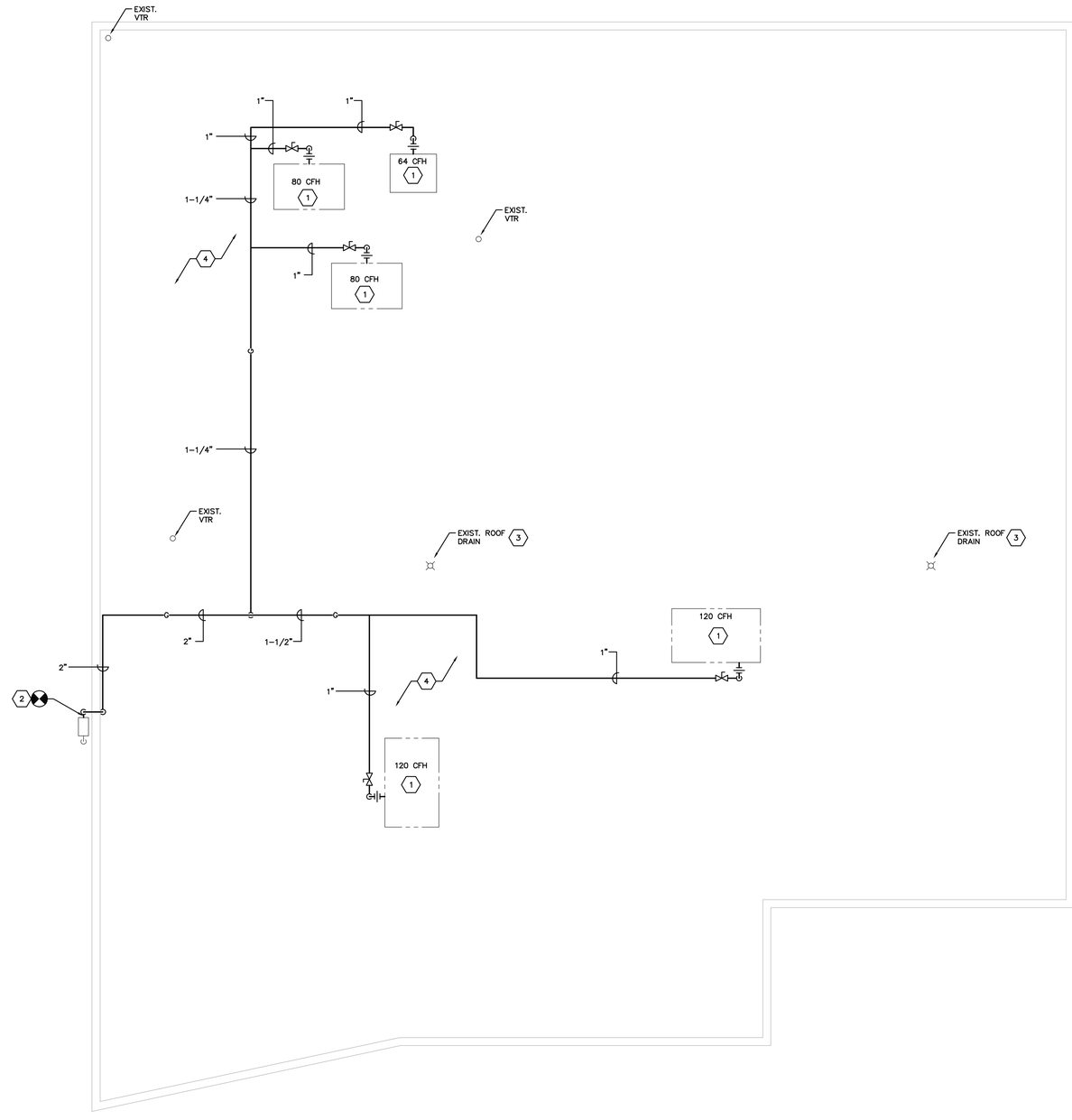
FIRST FLOOR PLUMBING PLAN

P-1

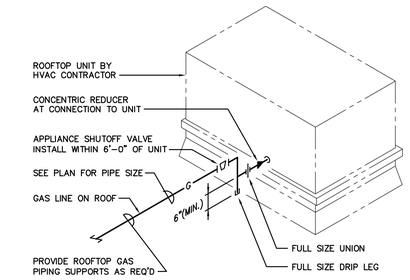


ROOF PLUMBING PLAN

SCALE: 3/16"=1'-0"

CODED NOTES

1. NEW ROOFTOP UNIT BY OTHERS. PROVIDE NATURAL GAS CONNECTION AS INDICATED, WITH SHUTOFF VALVE, 6" MINIMUM DIRT LEG, UNION AND REDUCER (AS REQ'D). COORDINATE EXACT EQUIPMENT LOCATION, PRESSURE REQUIREMENTS AND GAS LOAD WITH EQUIPMENT PROVIDER. SEE PIPING DIAGRAM ON THIS SHEET.
2. CONNECT TO EXISTING GAS METER. EXTEND NEW PIPING UP TIGHT TO WALL TO ROOF.
3. EXISTING ROOF DRAIN TO REMAIN. CLEAN OUT DRAIN TO ENSURE PROPER FULL DRAIN CAPACITY.
4. PAINT GAS PIPING PER SPECIFICATIONS.



R.T.U. GAS CONNECTION DIAGRAM

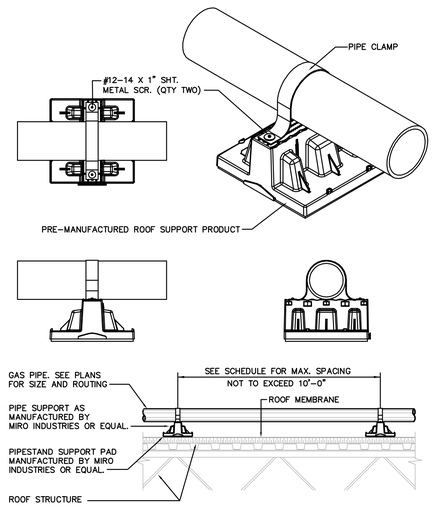
GAS PIPING SUPPORT SPACING SCHEDULE

PIPING TO BE SUPPORTED ACCORDING TO THE FOLLOWING SCHEDULE. SUPPORT AT INTERVALS NOT TO EXCEED SPACING LISTED OR ELSEWHERE AS REQUIRED IN ACCORDANCE WITH 2010 NFPA 54 AND 2006 INTERNATIONAL FUAL GAS CODE (IFGC).

Steel Pipe		Steel Pipe	
Pipe Size	Spacing	Pipe Size	Spacing
1/2"	6'-0"	2"	10'-0"
3/4"	8'-0"	2-1/2"	10'-0"
1"	8'-0"	3"	10'-0"
1-1/4"	10'-0"	4"	10'-0"
1-1/2"	10'-0"		

INSTALLATION NOTE

UTILIZE PRE-MANUFACTURED ROOF SUPPORT PRODUCT FOR PIPING. REMOVE ANY/ALL GRAVEL FROM UNDER SUPPORT. INSTALL SUPPORT AT SPACING PER ROOF SUPPORT SPACING SCHEDULE. SPACING OF SUPPORTS SHALL NOT EXCEED 10'-0". LONG PIPING RUNS MAY REQUIRE OVERSIZED CLAMPS OR ROLLERS TO ALLOW FOR EXPANSION AND CONTRACTION. INSTALL PER LOCAL CODES. INSTALL GAS PIPING LEVEL. PRESSURE TREATED WOOD IS NOT PERMITTED.



ROOFTOP GAS PIPE SUPPORT DETAILS

NOT TO SCALE

EQUAL MANUFACTURERS: E-Z SLEEPER, MIRO INDUSTRIES, ROOFTOP BLOX

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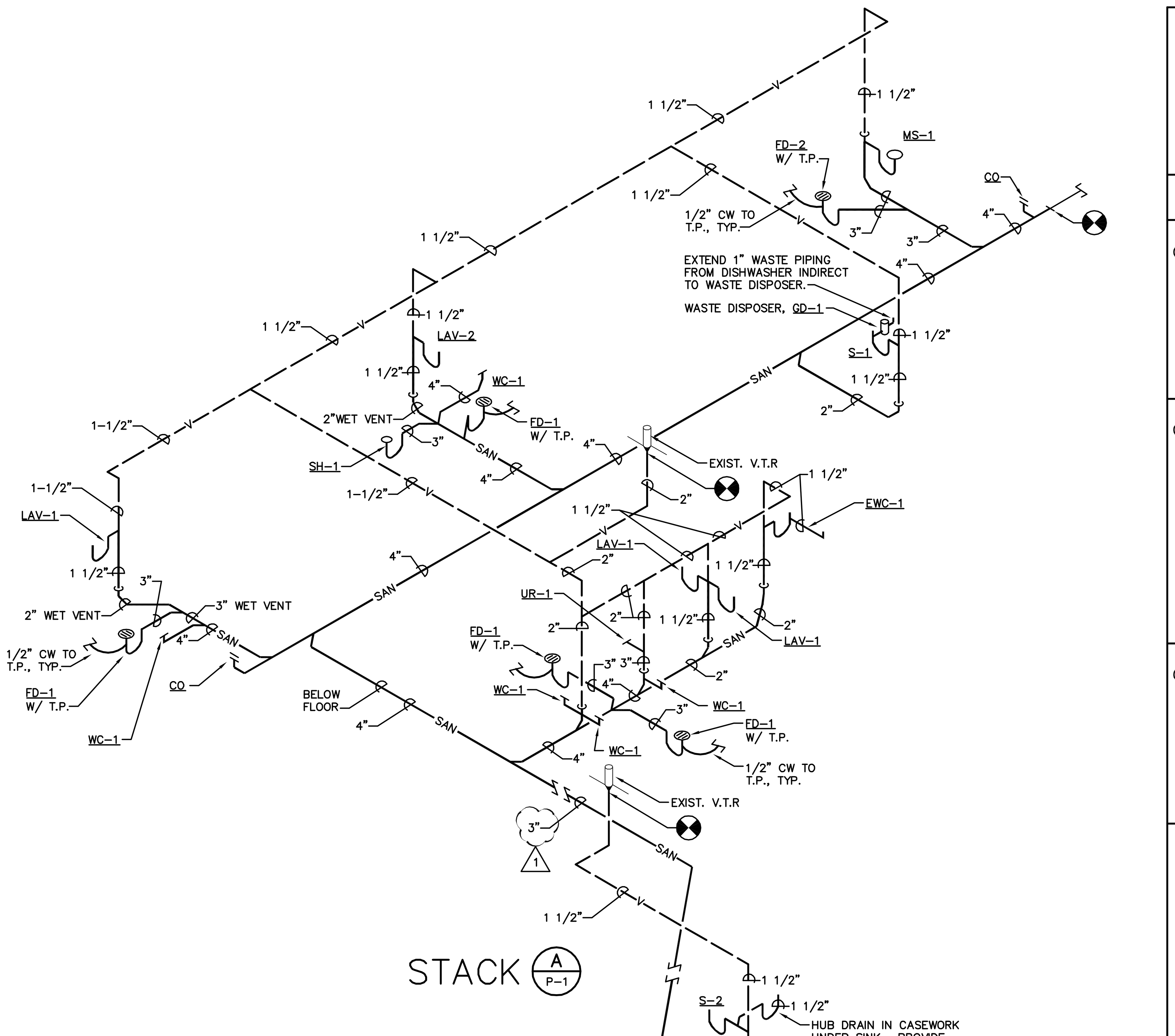
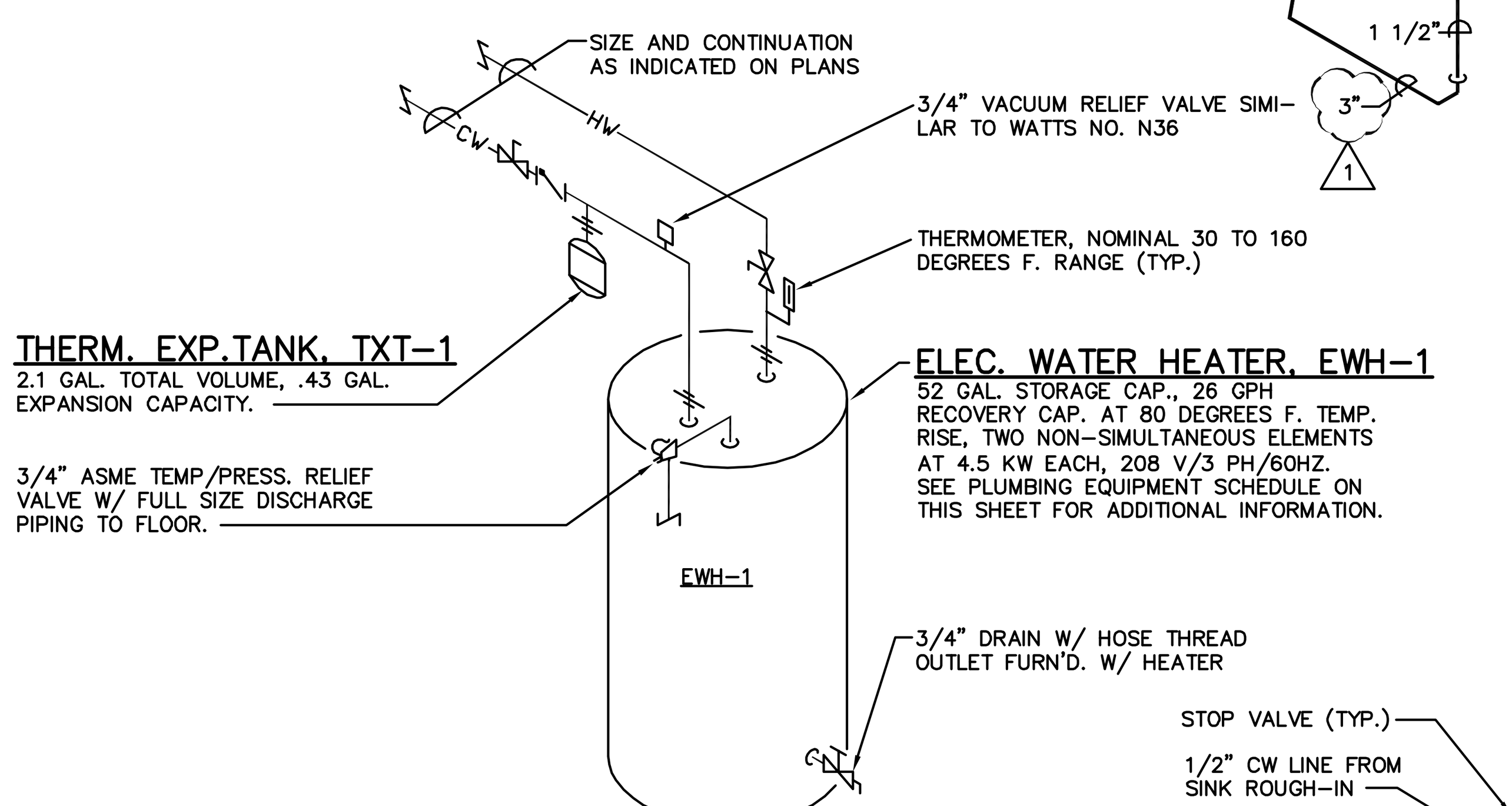
ROOF PLUMBING PLAN

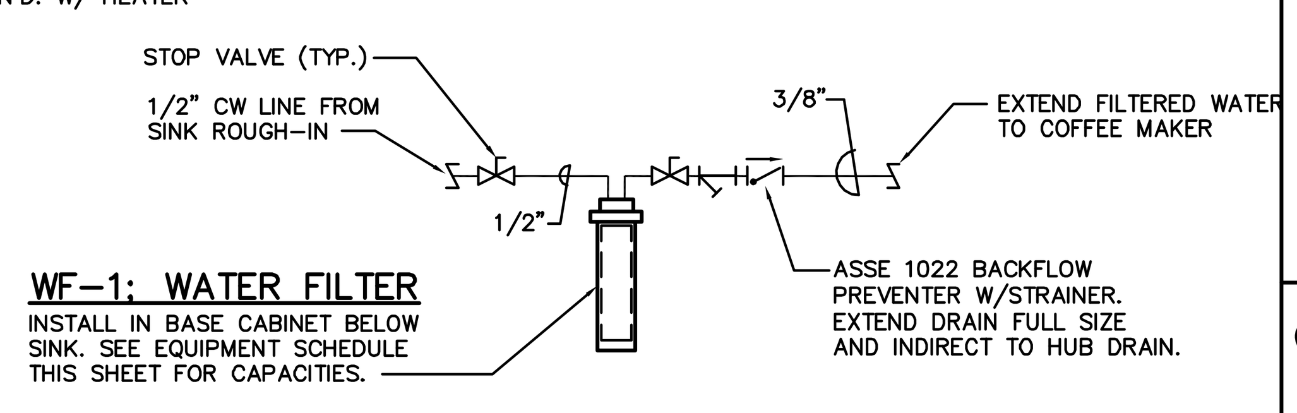
P-2



STACK A/P-1

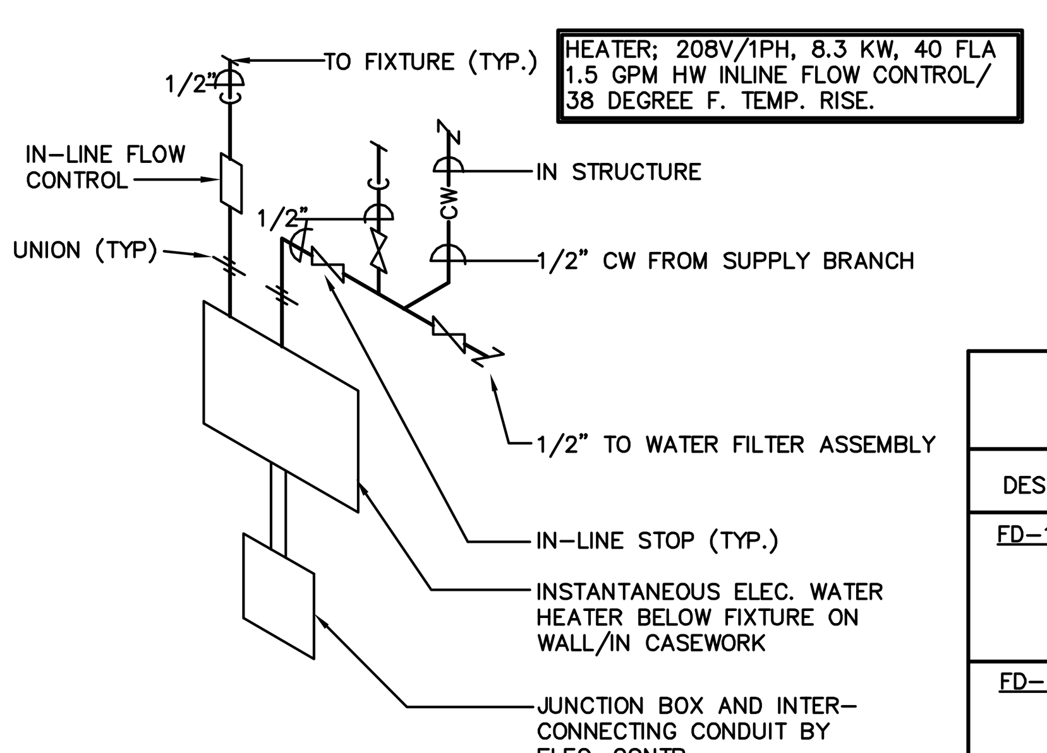


EWH-1; ELECTRIC WATER HEATER DIAGRAM
NOT TO SCALE



NOTES:
1. WATER FILTER HOUSING, FILTER AND ALL PIPING AND VALVES SHALL BE PROVIDED BY THIS CONTRACTOR.
2. PROVIDE SPACE UNDER UNIT TO ALLOW THE REMOVAL OF FILTER HOUSING TO REPLACE FILTER.

WATER FILTER STATION DIAGRAM
NOT TO SCALE



EWH-2; ELECTRIC WATER HEATER DIAGRAM

DRAIN & CLEANOUT SCHEDULE

DES.	LOCATION	DESCRIPTION
FD-1	FINISHED FLOOR F.D.	ZURN MODEL NO. ZN-415 CAST IRON FLOOR DRAIN WITH SECONDARY DRAINAGE/ANCHOR FLANGE, WEEPHOLES, ADJUSTABLE FRAME AND GRATE WITH POLISHED NICKEL BRONZE FINISH, 6" DIAMETER ROUND TOP WITH SQUARE OPENINGS AND BOTTOM GASKET CONNECTION OUTLET. DRAINS IN STRUCTURES ABOVE GRADE TO BE FURNISHED WITH CLAMPING COLLAR.
FD-2	MECHANICAL/ UTILITY AREAS	ZURN MODEL NO. Z-610 CAST IRON FLOOR DRAIN WITH SECONDARY DRAINAGE/ANCHOR FLANGE, WEEPHOLES, COATED FRAME & GRATE, 12" SQUARE TOP WITH SLOTTED OPENINGS, REMOVABLE SEDIMENT BUCKET & BOTTOM GASKET CONNECTION OUTLET. DRAINS IN STRUCTURES ABOVE GRADE TO BE FURNISHED WITH CLAMPING COLLAR.
CO	CONCEALING WALL	USE CLEANOUT TEE AND PROVIDE CLEANOUT AND ACCESS COVER SIMILAR TO ZURN ZANB-1468 WITH ROUND POLISHED STAINLESS STEEL ACCESS COVER, SECURING SCREW, AND BRONZE TAPER THREADED PLUG.
CO	FLOOR IN FINISH AREAS	ZURN MODEL NO.ZN-1400 CAST IRON BODY ADJUSTABLE CLEANOUT WITH ANCHOR FLANGE, POLISHED NICKEL BRONZE ROUND SCORIATED FRAME AND TOP, AND BOTTOM GASKET CONNECTION OUTLET. CLEANOUTS IN STRUCTURES ABOVE GRADE TO BE FURNISHED WITH CLAMPING COLLAR.
CO	FLOOR IN MECHANICAL/UTILITY AREAS; AT EXTERIOR AREAS	ZURN MODEL NO. Z-1400-HD CAST IRON BODY ADJUSTABLE CLEANOUT WITH ANCHOR FLANGE, COATED ROUND SCORIATED FRAME AND TOP, AND BOTTOM GASKET CONNECTION OUTLET. CLEANOUTS IN STRUCTURES ABOVE GRADE TO BE FURNISHED WITH CLAMPING COLLAR.

PLUMBING FIXTURE SCHEDULE

PLUMBING FIXTURE NOTES:
1. UNLESS INDICATED OTHERWISE, THE ARCHITECT SHALL SELECT THE FIXTURE COLOR/FINISH FROM THE MANUFACTURER'S FULL RANGE OF STANDARD OPTIONS.
2. UNLESS INDICATED OTHERWISE, ALL EXPOSED METALLIC COMPONENTS TO BE FURNISHED WITH POLISHED CHROME FINISH, INCLUDING FAUCETS, TRAPS, STOPS, PIPING, ETC.
3. UNLESS INDICATED OTHERWISE, ALL EXPOSED PIPING SHALL BE FURNISHED WITH POLISHED CHROME FINISH BRASS ESCUTCHEONS AT ALL WALL/CABINET PENETRATIONS AND FIXTURE CONNECTIONS.

FIXTURE	MANUFACTURER	REMARKS	PIPE SIZE	
			CW	HW
WC-1 (HANDICAP ACCESSIBLE)	AMERICAN STANDARD, McGUIRE, BEMIS	FIXTURE; AMERICAN STANDARD CADET 3 RIGHT HEIGHT ELONGATED CHINA TOILET MODEL NO. 215AA.004 FLOOR MOUNTED TANK TYPE, 1.6 GPF, 16.50" RIM HEIGHT, 2-1/8" GLAZED TRAPWAY. PROVIDE FLOOR BOLTS, WAX RING, BOLT COVERS. CHROME METAL SIDE MOUNTED TRIP LEVER. HANDLE ON WIDE SIDE OF ROOM. STOP(S); McGUIRE MODEL 2169LK 1/2" CLOSET SUPPLY W/ LOOSE KEY BRASS ANGLE STOP & COPPER FLEX RISER. ALL CHROME PLATED. SEAT; BEMIS MODEL NO. 1655/SSC (SELF-SUSTAINING CHECK HINGE) FIXTURE ASSEMBLY TO COMPLY WITH HANDICAP ACCESS REQUIREMENTS.	1/2"	---
LAV-1 (HANDICAP ACCESSIBLE)	AMERICAN STANDARD McGUIRE POWERS	FIXTURE; AMERICAN STANDARD WALL HUNG; LUCERNE NO. 0355.012 VITREOUS CHINA, 4" CENTERS, D-SHAPED BOWL, BACK & SIDE SHIELDS, FRONT OVERFLOW, FOR CONCEALED ARM CARRIER. CONTROLS; AMERICAN STD. SINGLE HANDLE MIXER; RELIANT PLUS NO. 7385.003 (.5 GPM VANDAL P.) WITH GRID DRAIN INCLUDED. TRAP; McGUIRE MODEL 8902 1 1/4"x1 1/2" 17 GA. P-TRAP, CHROME PLATED STOP(S); McGUIRE MODEL 2165LK 1/2" LAVATORY SUPPLIES W/ LOOSE KEY BRASS ANGLE STOPS & COPPER FLEX TUBE RISERS. ALL CHROME PLATED CARRIER; ZURN SERIES 1231 FLOOR MOUNTED RECTANGULAR TUBING CARRIER, ADJUSTABLE CAST IRON HEADERS. COVER; McGUIRE PRO-WRAP SERIES FOR EXPOSED SUPPLY AND DRAIN PROVIDE ASSE 1070 MIXING VALVE, MOUNTED ON WALL, SET AT 105°F. FIXTURE ASSEMBLY TO COMPLY WITH HANDICAP ACCESS REQUIREMENTS.	1/2"	1/2"
LAV-2 (HANDICAP ACCESSIBLE)	WS BATH COLLECTIONS, McGUIRE, KOHLER, LEONARD	FIXTURE; WS BATH COLLECTIONS, MODEL LVQ803, WALL MOUNTED. CONTROLS; AMERICAN STD. SINGLE HANDLE MIXER; 2506.101 (.5 GPM VANDAL P.) WITH GRID DRAIN INCLUDED. TW MIXER; SIMILAR. TO LEONARD NO. 170 THERM. MIXER FOR SGL. FAUCET. PROVIDE W/ INLET CHECK/STOPS & ASSE 1070 LISTING. INSTALL MIXER IN ACCESSIBLE CASEWORK BELOW FIXTURE & ADJUST FOR 105 DEGREES F TW SUPPLY TO FAUCET. TRAP; McGUIRE MODEL 8902 1 1/4"x1 1/2" 17 GA. P-TRAP, CHROME PLATED STOP(S); McGUIRE MODEL 2165LK 1/2" LAVATORY SUPPLIES W/ LOOSE KEY BRASS ANGLE STOPS & COPPER FLEX TUBE RISERS. ALL CHROME PLATED	1/2"	1/2"
S-1	ELKAY, AMERICAN STANDARD, McGUIRE	FIXTURE; SINGLE COMPARTMENT; ELKAY MODEL NO. ELUH1814PD UNDERMOUNT SINK, INSIDE BOWL SIZE OF 18" x 14" x 7-7/8" DEEP. 3.5" DRAIN OUTLET. 18 GAUGE TYPE 304 (18-8) NICKEL BEARING STAINLESS STEEL. PROVIDE 4 FAUCET HOLES ON 4" CENTERS. FULLY UNDERCOATED. LUSTROUS HIGHLIGHTED SATIN FINISH. CONTROLS; AMERICAN STANDARD MODEL NO. 6114.301 SINGLE CONTROL FAUCET W/ LEVER HANDLE 6-1/2"" HIGH GOOSENECK SPOUT WITH 4-3/4" REACH. 1.5 GPM LAMINAR FLOW, CHROME PLATED. DRAIN; ELKAY MODEL NO. LKD-35 DISPOSAL STOPPER. TRAP; McGUIRE MODEL 8912 1 1/2"x1 1/2" 17 GA. P-TRAP, CHROME PLATED STOP(S); McGUIRE MODEL 2165 1/2" LAVATORY SUPPLIES W/ WHEEL HANDLE BRASS ANGLE STOPS & COPPER FLEX TUBE RISERS. ALL CHROME PLATED DISPOSAL; GD-1, SEE PLUMBING EQUIPMENT ON THIS SHEET.	1/2"	1/2"
S-2	ELKAY, AMERICAN STANDARD, McGUIRE	FIXTURE; SINGLE COMPARTMENT; ELKAY MODEL NO. ELU1316 UNDERMOUNT SINK, INSIDE BOWL SIZE OF 13.5" x 16" x 7-7/8" DEEP. 3.5" DRAIN OUTLET. 18 GAUGE TYPE 304 (18-8) NICKEL BEARING STAINLESS STEEL. PROVIDE 4 FAUCET HOLES ON 4" CENTERS. FULLY UNDERCOATED. LUSTROUS HIGHLIGHTED SATIN FINISH. CONTROLS; AMERICAN STANDARD MODEL NO. 7100.271H W/ WRIST BLADE HANDLE 9-3/8" HIGH GOOSENECK SPOUT WITH 5" REACH. 1.5 GPM LAMINAR FLOW, CHROME PLATED. DRAIN; ELKAY MODEL NO. LK-35 BASKET STRAINER TRAP; McGUIRE MODEL 8912 1 1/2"x1 1/2" 17 GA. P-TRAP, CHROME PLATED STOP(S); McGUIRE MODEL 2165 1/2" LAVATORY SUPPLIES W/ WHEEL HANDLE BRASS ANGLE STOPS & COPPER FLEX TUBE RISERS. ALL CHROME PLATED		
MS-1	FIAT, SPEAKMAN FAUCET.	FIXTURE; FIAT MODEL NO. MSB-2424 (MOLDED STONE) WITH INTEGRAL DRAIN AND STRAINER. OTHER; FIAT MODEL NO. E-88-AA STAINLESS STEEL BUMPER GUARDS; FIAT MODEL NO. MSG-2424 STAINLESS STEEL WALL GUARDS FIAT MODEL NO. 889-CC STAINLESS STEEL MOP HANGER FIAT MODEL NO. 832-AA HOSE AND BRACKET FIAT MODEL NO. 1453-BB FLAT STAINLESS STEEL STRAINER CONTROLS; SPEAKMAN FAUCET MODEL SC-5812-CK-RCP, VANDAL RESISTANT LEVER HANDLES WITH COLOR-CODED INDEXES, INTEGRATED VACUUM BREAKER, PAIL HOOK, 3/4" HOSE THREAD OUTLET, INTEGRATED CHECK VALVES IN SWIVEL ASSEMBLY. BRASS TOP BRACE ASSEMBLY WITH WALL FLANGE. UNIT TO BE ADA COMPLIANT. TRAP; CAST IRON OR COPPER 3" P-TRAP	1/2"	1/2"
EWC-1 (HANDICAP ACCESSIBLE)	ELKAY, ZURN, McGUIRE	FIXTURE; ELKAY PF8ACSL SURFACE MOUNTED ADA SPLIT LEVEL WATER COOLER. CAPACITY IS 8 GPH OF 50 °F WATER AT 90 °F ROOM TEMPERATURE. PROVIDE STAINLESS STEEL BASIN AND STAINLESS STEEL LOWER SHROUD. CARRIER; ZURN SERIES 1225 TRAP; McGUIRE MODEL 8902 1-1/4" x 1 1/2" 17 GA. P-TRAP, CHROME PLATED. STOP(S); McGUIRE MODEL 2166 1/2" CLOSET SUPPLY W/ WHEEL HANDLE BRASS ANGLE STOP AND COPPER FLEX TUBE RISER. ALL CHROME PLATED MOUNT AT HEIGHT AS DIRECTED BY ARCHITECT. FIXTURE ASSEMBLY TO COMPLY WITH HANDICAP ACCESS REQUIREMENTS.	1/2"	---
SH-1 (HANDICAP ACCESSIBLE)	AQUARIUS/ MOEN	ENCLOSURE; STERLING MODEL NO. 62070115 FOUR-PIECE VIKRELL, 63.5" x 39-3/8" x 72" OVERALL SIZE UNIT WITH TEXTURED BOTTOM. UNIT SHALL REQUIRE COUNTERSINKING INTO FLOOR. PROVIDE CENTER DRAIN OUTLET, COLOR AS SELECTED BY THE ARCHITECT. INCLUDE ADA STAINLESS STEEL GRAB BARS AND SEAT. MOUNTING OF VALVE TO BE ON SHORT WALL OF UNIT. PROVIDE NO-CAULK DRAIN WITH CHROME ESCUTCHEON. CONTROLS; MOEN MODEL 8370 SERIES ADA PRESSURE BALANCING SHOWER VALVE. ADJUSTABLE TEMPERATURE LIMIT STOP, INTEGRAL CHECKS, 4 PORT, ASSE 1016 LABELED. VOLUME CONTROL, CHROME PLATED METAL ESCUTCHEON, SET TEMPERATURE LIMIT AT 120 DEGREES F. DIVERTER; MOEN MODEL 8360 CHROME PLATED DIVERTER. CHROME METAL HANDLE, CERAMIC DISK CARTRIDGE. FIXED HEAD; MOEN MODEL 52716EP15 CHROME PLATED VANDAL RESISTANT METAL CONSTRUCTION SHOWER HEAD WITH BRASS SWIVEL BALL ASSEMBLY. 36 SELF CLEANING SPRAY FORMERS. 1.5 GPM FLOW. MOEN 6" CHROME PLATED BRASS SHOWER ARM AND WALL FLANGE. 1/2" IPS CONNECTIONS. ADA COMPLIANT MEETING ASME A112.18.1 REQUIREMENTS. SLIDE; HAND SHOWER; MOEN COMMERCIAL MODEL 52236GBM15CSS-36" STAINLESS STEEL 1-1/2" DIAMETER CONSTRUCTION. INCLUDE S.S. ESCUTCHEONS. UNIT SHALL BE AN ADA COMPLIANT GRAB BAR. HAND HELD SHOWER HEAD WITH 1.5 GPM FLOW. INCLUDE A 69" LONG METAL HOSE WITH MOUNTING HARDWARE AND VACUUM BREAKER DROP ELBOW. PROVIDE SUPPORT ON BACK OF SHOWER STALL TO PROVIDE EXTRA MOUNTING SUPPORT. MOUNT AT PROPER ADA HEIGHT. 5 YEAR WARRANTY. MEETS ASME A112.18.1. FIXTURE ASSEMBLY TO COMPLY WITH HANDICAP ACCESS REQUIREMENTS.	1/2"	---

PLUMBING NOTES

1. DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL CONTACT THE OWNER'S REP OR ARCHITECT PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE OWNER'S REP. AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.
3. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT OWNER'S REP. OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.
4. NOTE THAT EXISTING CONDITIONS SHOWN ON PLANS ARE FROM PREVIOUS ENGINEERING DOCUMENTATION AND FIELD OBSERVATION. ACTUAL CONDITIONS MAY VARY, AND MUST BE FIELD VERIFIED BY THIS CONTRACTOR (WHETHER SHOWN OR NOT). THIS CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS AS NECESSITATED BY ACTUAL CONDITIONS, REQUIRED TO COMPLETE INSTALLATION OF NEW ELEMENTS. IF EXISTING CONDITIONS PROHIBIT INSTALLATION OF NEW ELEMENTS, NOTIFY THE ARCHITECT FOR REDIRECTION AS REQUIRED.
5. REFER TO ARCHITECTURAL DOCUMENTATION FOR ADDITIONAL SCOPE/INFORMATION REGARDING DEMOLITION/REMODELIING WORK, INCLUDING IDENTIFICATION OF AREAS AND ITEMS/ELEMENTS INVOLVED, AS WELL AS INFORMATION OF BOTH A GENERAL AND SPECIFIC NATURE.
6. UNLESS DIRECTED OTHERWISE, WHEN EXISTING PLUMBING ITEMS/ELEMENTS THAT ARE IN USE/SERVICE/OPERATION PRIOR TO START OF THIS PROJECT DO NOT OBSTRUCT NEW WORK, THE ITEM/ELEMENT SHALL REMAIN IN USE/SERVICE/OPERATION DURING THE EXECUTION OF NEW WORK AND AFTER PROJECT COMPLETION. EXISTING PLUMBING ITEMS/ELEMENTS THAT OBSTRUCT NEW WORK, AND/OR ARE IN EXPOSED LOCATIONS IN REVISED/REMODELED AREAS WHERE NEW CONCEALING/FINISH STRUCTURE IS PROVIDED UNDER SEPARATE CONTRACT, SHALL BE REVISED/RELOCATED AS REQUIRED TO CLEAR NEW WORK, AND/OR BE IN A CONCEALED LOCATION.
7. UNLESS INDICATED OTHERWISE, WHEN EXISTING PLUMBING ITEMS/ELEMENTS ARE INDICATED TO BE REMOVED, OR ARE NOT TO REMAIN IN USE/SERVICE/OPERATION AFTER PROJECT COMPLETION AND OBSTRUCT NEW WORK, THE ITEM/ELEMENT (WHETHER SHOWN ON PLANS OR NOT) AND ALL ASSOCIATED ACCESSORIES AND APPURTENANCES SHALL BE REMOVED. THIS INCLUDES ANY ITEMS/ELEMENTS ENCOUNTERED IN FIELD TO WHICH THESE DESCRIPTIVE CONDITIONS APPLY. THE FOLLOWING SHALL APPLY TO ITEMS/ELEMENTS REMOVAL:
   - A. PIPING (IF ANY) TO BE REMOVED BACK TO NEAREST ACTIVE MAIN/BRANCH REMAINING IN SERVICE AFTER PROJECT COMPLETION, AND OUTSIDE OF ALL EXPOSED LOCATIONS, OR TO WITHIN NEW CONCEALING/FINISH STRUCTURE PROVIDED UNDER SEPARATE CONTRACT, AND CAPPED/PLUGGED (AS APPROPRIATE) AT THAT POINT.
   - B. WHEN AN ISOLATION VALVE OCCURS IN REMOVED ITEMS/ELEMENTS SUPPLY PIPING AT THE ACTIVE MAIN/BRANCH TIE-IN POINT. THE VALVE SHALL REMAIN, AND THE CAP/PLUG SHALL BE ON THE SIDE OF THE VALVE ASSOCIATED WITH THE ITEM/ ELEMENT BEING REMOVED, IN THE VALVE OUTLET PIPING.
   - C. UNDERSLAB PORTIONS OF PIPING ASSOCIATED WITH ITEMS/ELEMENTS BEING REMOVED SHALL BE REMOVED TO/FROM ENTIRELY BELOW THE FLOOR SLAB AT EACH END OF UNDERSLAB RUN AND TERMINATED (CAPPED/PLUGGED IN AN APPROVED MANNER) AT EACH POINT. UNDERSLAB PIPING BETWEEN TERMINATION POINTS SHALL BE ABANDONED IN PLACE, UNLESS REMOVAL IS REQUIRED BY NEW WORK, EITHER IN THIS CONTRACT, OR UNDER SEPARATE CONTRACT. WHERE THE PIPING BEING ABANDONED IN PLACE CONNECTS TO AN ACTIVE MAIN REMAINING IN SERVICE BELOW SLAB AFTER PROJECT COMPLETION, IT SHALL ALSO BE TERMINATED BELOW SLAB AT THE ACTIVE MAIN CONNECTION POINT, UNLESS THE LENGTH OF ABANDONED PIPE RUN IS TWO (2) LINEAR FEET OR LESS.
8. UNLESS DIRECTED OTHERWISE, WHERE CONCEALING/FINISH STRUCTURE IS PROVIDED, ALL WORK IN THE PLUMBING CONTRACT NOT SPECIFICALLY INTENDED TO OR IDENTIFIED FOR EXPOSED/VISIBLE INSTALLATION SHALL BE INSTALLED WITHIN THE CONCEALING STRUCTURE.
9. CUTTING/REMOVAL AND REPAIR/REPLACEMENT OF EXISTING STRUCTURES AND/OR SURFACES REQUIRED BY WORK IN THE PLUMBING CONTRACT IS BY THE PLUMBING CONTRACTOR, UNLESS INDICATED OTHERWISE. REPAIR/REPLACEMENT TO BE TO ORIGINAL CONDITION, AND TO MATCH ADJACENT SURFACES IN TYPE, KIND AND FINISH. THIS INCLUDES CEILINGS, PARTITIONS, FLOORS, SOFFITS, ETC., BOTH WITHIN AND OUTSIDE THE REVISED/REMODELED AREA(S) THAT ARE AFFECTED BY WORK IN THE PLUMBING CONTRACT. THIS CONDITION DOES NOT APPLY IF EXISTING STRUCTURES AND/OR SURFACES ARE BEING REVISED/REMOVED/REPLACED UNDER SEPARATE CONTRACT.
10. ALL PIPING SHOWN IS ABOVE CEILING IN AREAS WITH DROPPED CEILINGS, OR AT BOTTOM OF OVERHEAD SUPPORT STRUCTURE IN EXPOSED STRUCTURE AREAS, UNLESS INDICATED OTHERWISE.
11. THE PLUMBING CONTRACTOR IS TO SECURE AND VERIFY ALL MEASUREMENTS AND CONDITIONS AT THE PROJECT IN ADVANCE OF WORK (INCLUDING FABRICATION).
12. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR FIRESTOPPING AT ALL PLUMBING RELATED PENETRATIONS OF FIRE, SMOKE AND OTHER RATED STRUCTURES, INCLUDING FLOORS, WALLS, PARTITIONS, ETC.. REFER TO ARCHITECTURAL DOCUMENTATION FOR LOCATIONS OF ALL RATED STRUCTURES, AND SPECIFIC INFORMATION AND REQUIREMENTS PERTAINING TO SAME.
13. LAYOUT AND INSTALLATION OF PLUMBING CONTRACT PIPING, EQUIPMENT, ITEMS AND ELEMENTS INDICATED ON PLAN IS SCHEMATIC IN NATURE. EXACT LOCATION, ROUTING AND INSTALLATION TO BE COORDINATED WITH BUILDING STRUCTURE AND ALL OTHER WORK PROVIDED UNDER SEPARATE CONTRACT.
14. COORDINATE EXACT LOCATION AND INSTALLATION OF ALL PLUMBING UTILITIES REQUIRED AND PROVIDED FOR WORK UNDER SEPARATE CONTRACT WITH THE APPROPRIATE CONTRACTOR(S) IN ADVANCE OF WORK. THIS INCLUDES SUPPLY AND DRAIN ELEMENTS, FOR DIRECT (PIPED) AND/OR INDIRECT (FLOOR/HUB DRAIN, AIR GAP, ETC.) CONNECTION/SERVICE.
15. RUN ALL WATER & GAS LINES LEVEL.
16. ROUGH IN ALL PIPING (SUPPLY, RETURN, WASTE, DRAIN, ETC.) FOR FIXTURES/EQUIPMENT INSTALLATION THRU OR ON FACE OF WALL (AS APPLICABLE), AND TERMINATE WITH SHORT PIPE NIPPLE AND CAP. ROUGH INS AT EXTERIOR WALLS (IF ANY) TO BE ON "WARM" SIDE OF INSULATION ASSEMBLY, AS REQUIRED FOR NON-FREEZE INSTALLATION.
17. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BEXLEY/ STATE OF OHIO BUILDING CODE, INCLUDING APPLICABLE PLUMBING, MECHANICAL AND HANDICAP ACCESSIBILITY PROVISIONS.
18. PROVIDE CLEANOUTS AS FOLLOWS:
   - A. AT THE BASE OF ALL STORM DOWNSPOUTS AND SANITARY STACKS.
   - B. IN ALL HORIZONTAL STORM AND SANITARY PIPING AT INTERVALS NOT TO EXCEED 100 L.F. IN LENGTH.
   - C. AT EACH CHANGE OF DIRECTION BY STORM AND SANITARY PIPING BELOW GRADE OR AT THE LOWEST POINT OF THE HORIZONTAL DRAINAGE SYSTEM GREATER THAN 45 DEGREES, UNLESS ANOTHER CLEANOUT IS WITHIN 40 FT. DEVELOPED LENGTH.
   - D. AT ALL STORM AND SANITARY PIPING BUILDING EXIT POINTS, AND/OR BUILDING SEWER CONNECTIONS FOR SITE UTILITY TIE-IN.
   - E. AT CONNECTION POINTS TO EXISTING STORM, SANITARY AND VENT PIPING (TEST TYPE CLEANOUTS).
19. UNLESS INDICATED OTHERWISE, ALL FIXTURES AND EQUIPMENT PROVIDED WITH PLUMBING SUPPLY PIPING TO BE FURNISHED WITH APPROVED/LISTED STOPS IN ACCESSIBLE LOCATIONS.
20. UNLESS INDICATED OTHERWISE BY THE ARCHITECTURAL DOCUMENTATION (WHICH SHALL TAKE PRECEDENCE), FIXTURES AND EQUIPMENT MOUNTING HEIGHTS SHALL BE AS FOLLOWS:
   - A. RIM HEIGHT OF WALL HUNG LAV'S; 31" A.F.F. (HANDICAP; 34").
   - B. LIP HEIGHT OF WALL HUNG URINALS; 24" A.F.F. (HANDICAP; 17").
   - C. SPOUT CENTERLINE HEIGHT OF ALL EWC'S; 42" A.F.F. (HANDICAP; 36").
   - D. RIM HEIGHT OF WALL HUNG WATER CLOSETS; 15" A.F.F. (HANDICAP; 17").
   - E. WALL SUPPLY HEIGHT FOR FIXED LOCATION SHOWER HEADS; 72" A.F.F.
   - F. SHOWER OPERATOR VALVE CENTERLINE HEIGHT; 42" A.F.F.
   - G. EXTERIOR HOSE BIBBS OUTLET CENTERLINE AT APPROX. 20" ABOVE GRADE.
   - H. INTERIOR HOSE BIBBS OUTLET CENTERLINE AT APPROX. 30" A.F.F.
   - I. MOP SINK FAUCET SPOUT OUTLET AT 36" A.F.F.

PLUMBING NOTES CONT'D

21. SEE ARCHITECTURAL DRAWINGS FOR DETAILS OF CASEWORK, EQUIPMENT AND OTHER ITEMS/ELEMENTS PROVIDED UNDER SEPARATE CONTRACT, INCLUDING EXACT LOCATIONS AND UTILITY CONNECTION REQUIREMENTS. COORDINATE PLUMBING UTILITY WORK AS REQUIRED IN ADVANCE, INCLUDING PLACEMENT OF FITTINGS, ACCESSORIES, APPURTENANCES, DRAINS, ETC.
22. VERIFY THE EXACT LOCATION AND INSTALLATION REQUIREMENTS FOR ALL DRAINS WITH THE ARCHITECTURAL AND STRUCTURAL DOCUMENTATION FOR PROPER PLACEMENT IN RESPECT TO SLOPES AND STRUCTURE AT EACH DRAIN. COORDINATE INSTALLATION WITH THE APPROPRIATE CONTRACTOR. FINAL INSTALLATION AND LOCATION SUBJECT TO APPROVAL.
23. UNLESS INDICATED OTHERWISE, THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING DOMESTIC WATER SUPPLY PIPING IN CHASES, STRUCTURE, ETC., TO INDIVIDUAL FIXTURES. WHEN PIPING SERVES FLUSH VALVES AND/OR OTHER QUICK CLOSING DEVICES, THE ASSOCIATED SUPPLY PIPING SHALL EXTEND FULL SIZE TO END OF CHASE/STRUCTURE, AND HAVE A LISTED/APPROVED SHOCK ABSORBER INSTALLED. WHEN SUPPLY PIPE IS 2" SIZE OR LARGER, AND SERVES FLUSH VALVES AND/OR OTHER QUICK CLOSING DEVICES, THE PIPE MAIN IN CHASE/STRUCTURE CAN ONLY BE REDUCED TO 1 1/2" SIZE. 1/2" HOT & COLD WATER SUPPLY PIPING SHALL SERVE UP TO FOUR (4) LAV'S. OTHER PIPE SIZING CRITERIA SHALL BE AS OUTLINED IN THE LATEST EDITION OF THE "ASHRAE FUNDAMENTALS HANDBOOK".
24. PLUMBING PIPING IS NOT PERMITTED TO RUN ABOVE ANY ELECTRICAL SWITCHGEAR, MOTOR CONTROL CENTERS OR PANELS (INCLUDING ACCESS/CLEARANCE SPACE 42" IN FRONT OF THESE ITEMS, AND MIN. 30" WIDE), UNDER ANY CIRCUMSTANCES.
   - A. LOCATION OF NEW ITEMS OF THESE TYPES TO BE DETERMINED AND CONFIRMED FROM INDICATION BY THE PROJECT ELECTRICAL DOCUMENTATION, AND ACTUAL INSTALLATION CONFIRMED WITH THE ELECTRICAL CONTRACTOR PRIOR TO START OF WORK.

PLUMBING EQUIPMENT

EWH-1; ELECTRIC WATER HEATER (DUAL ELEMENTS)
WATER HEATER SHALL BE OF GLASS-LINED DESIGN, ELECTRICALLY HEATED, AND APPROVED BY THE UNDERWRITERS LABORATORY (UL). THE HEATER SHALL MEET ALL APPLICABLE ENERGY CODES, WITH TWO (2) 4.5 KW NON-SIMULTANEOUS HEATING ELEMENTS AND A RECOVERY CAP. OF 23 GALLONS PER HOUR AT A TEMPERATURE RISE OF 80 DEGREES F., STORAGE CAPACITY OF 50 GALLONS. HEATER SHALL HAVE A WORKING PRESSURE OF 150 PSIG AND BE EQUIPPED WITH AN EXTRUDED HIGH DENSITY ANODE ROD. ALL INTERNAL SURFACES OF THE HEATER EXPOSED TO THE WATER SHALL BE GLASS LINED. ELECTRIC HEATING ELEMENTS SHALL BE MEDIUM WATT DENSITY ZINC PLATED WITH A COPPER SHEATH, 208 VOLT, 3 PHASE. ELEMENTS SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND INDIVIDUAL TEMPERATURE CUT-OFF SWITCHES. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH WITH HINGED FRONT ACCESS PANEL OVER FOAM INSULATION OVER ELECTRICAL JUNCTION BOX WITH A HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. PROVIDE WITH ASME RATED TEMPERATURE AND PRESSURE RELIEF VALVE. WATER HEATER BASED ON A.O. SMITH DEN-52. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SEE DIAGRAM ON THIS SHEET.

TXT-1; THERMAL EXPANSION TANK
AMTROL ST-C SERIES WITH STEEL SHELL, RIGID POLYPROPYLENE LINER AND HEAVY DUTY RUBBER DIAPHRAGM. LINER AND DIAPHRAGM MECHANICALLY BONDED TO SHELL TO FORM A SEPARATE AIR CHAMBER AND NON-CORROSIVE WATER RESERVOIR. AIR CHAMBER PRE-CHARGED TO 55 PSIG, AND PROVIDED WITH A STANDARD AIR VALVE FITTING. SIMILAR TO AMTROL ST-5 WITH 2.1 GALLON TOTAL CAPACITY.

EWH-2; ELECTRIC INSTANTANEOUS WATER HEATER
TANKLESS INSTANT FLOW WATER HEATER SIMILAR TO EEMAX "FLOW CONTROLLED" SERIES WITH FLOW SWITCH ACTUATOR, STAINLESS STEEL COILS AND HIGH WATER TEMPERATURE (140° F.) CUTOUT. ASSEMBLY TO BE U.L. LISTED, RATED FOR OPERATION AT NOMINAL 20 PSIG WATER PRESSURE AND PROVIDED WITH INTEGRAL FLOW CONTROL. INSTANTANEOUS WATER HEATER TO BE SIMILAR TO EEMAX MODEL SP-8208. INSTALLATION TO BE PER MFG'S RECOMMENDATIONS AND COORDINATED WITH THE ELECTRICAL CONTRACTOR IN ADVANCE. SEE THIS SHEET FOR DIAGRAM AND FURTHER DETAIL OF WORK, INCLUDING RATINGS AND CAPACITIES.

TV-1; MIXING VALVE
SIMILAR TO POWERS HYDROGUARD SERIES E480 UNDER THE COUNTER THERMOSTATIC TEMPERING VALVE. UNIT SHALL BE ASSE 1070 LABELED FOR POINT OF USE TEMPERING. UNIT TO BE CHROME PLATED BRASS CONSTRUCTION, ADJUSTABLE TEMPERATURE SETTING AND HAVE INTEGRAL CHECKS. PROVIDE ONE UNIT PER LAVATORY. SET OUTLET AT 109.9°F. INSTALL UNIT PER MANUFACTUR'S RECOMMENDATIONS.

GD-1; GARBAGE DISPOSER
IN-SINK-ERATOR BADGER 5XL MODEL, 3/4 HP, 120V/1PH. W/ 3/4" DISHWASHER DRAIN INLET. 3 YEAR WARRANTY, GALVANIZED STEEL GRINDING ELEMENTS, STAINLESS STEEL SWIVEL LUGS.

TP-1; TRAP PRIMER VALVE ASSEMBLY
SIMILAR TO PPP MODEL NO. P1 PISTON OPERATED TYPE WITH INTEGRAL VACUUM BREAKER & SEDIMENT SCREEN. PROVIDE WYE SPLITTER & DISTRIBUTION MANIFOLDS AS REQUIRED FOR INDIVIDUAL TP SUPPLY TO A MAXIMUM OF FOUR (4) DRAINS. ASSEMBLY TO BE RATED FOR 125 PSIG WORKING PRESSURE. INSTALLATION TO BE PER MANUFACTURER'S RECOMMENDATIONS. SEE DIAGRAM ON SHEET P-0.

WB-1; WALL BOX
PROVIDE A GUY GRAY MFG. WALL BOX, MODEL BIM875 CW HOOK-UP WALL BOX WITH SHUT OFF VALVE. 1/2" FIP INLET x 1/4" OD OUTLET COMPRESSION ANGLE VALVE. SUPPLY CONNECTION IS 1/2" SWEAT CONNECTION. PAINTED ENAMEL STEEL WALL BOX WITH FLANGE AND OPEN FRONT. MOUNT AT 42" ABOVE THE FLOOR. PLUMBING CONTRACTOR TO FURNISH PROPER LENGTH OF 1/4" TYPE K FLEXIBLE COPPER SUPPLY LINE WITH PROPER FITTINGS AND MAKE FINAL CONNECTION. COORDINATE EXACT LOCATION WITH EQUIPMENT SUPPLIER AND ARCHITECT/OWNER IN ADVANCE OF INSTALLATION.

HB-1; INTERIOR HOSE BIBB
SIMILAR TO WOODFORD NO. 24 EXPOSED ANGLE BODY WALL HYDRANT WITH BRASS CONSTRUCTION, MOUNTING FLANGE, WHEEL HANDLE OPERATOR AND INTEGRAL VACUUM BREAKER OUTLET. PROVIDE PRESSURE TREATED WOOD BLOCKING AS REQUIRED FOR INSTALLATION WITH EXPOSED SUPPLY PIPING.

HB-2; EXTERIOR HOSE BIBB
SIMILAR TO ZURN NO. Z-1320 WITH CONCEALED SURFACE MOUNTING, INTEGRAL BACKFLOW PRE- VENTOR, AUTOMATIC DRAIN, BRONZE FITTINGS, CERAMIC DISC CARTRIDGE, 3/4" HOSE THREAD OUTLET, LOOSE KEY OPERATOR AND STAINLESS STEEL FACE.

WF-1; WATER FILTER HEAD AND CARTRIDGE
EVERPURE QCP SINGLE FILTER HEAD WITH SHUTOFF. MODEL EV910721. PROVIDE REPLACEABLE FILTER MODEL EVERPURE QC10-TSGAC CARTRIDGE (PART NO. EV9107-03). LOCATE FILTER UNDER SINK. ROUTE COFFEE WATER SUPPLY THRU FILTER. PROVIDE SPACE ENOUGH TO REMOVE FILTER FOR REPLACEMENT. FLUSH CARTRIDGE BY RUNNING WATER THROUGH SYSTEM FOR FIVE MINUTES AT FULL FLOW.

P-3-14105.DWG

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MARK	DATE	DESCRIPTION
3	08.03.14	Addendum 3
2	07.09.14	Addendum 2
1	07.07.14	Addendum 1
	05.01.14	Bid Set
	02.01.14	Commission Review

PROJECT NO: 1014-0001
CAD FILE NAME: .
DESIGNED BY: .
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SHEET TITLE
PLUMBING NOTES, SCHEDULES & DETAILS

P-3

SPECIFICATIONS

GENERAL CONDITIONS

A. GENERAL
1. EXCEPT AS SPECIFIED TO THE CONTRARY, THIS CONTRACTOR SHALL INCLUDE FURNISHING, INSTALLING, CONNECTING AND OPERATION OF ALL EQUIPMENT WHICH IS PART OF PLUMBING SYSTEMS.
2. GENERAL AND SPECIAL CONDITIONS OF AIA (AMERICAN INSTITUTE OF ARCHITECTS) AND OWNER'S GENERAL REQUIREMENTS SHALL APPLY UNLESS NOTED OTHERWISE.
3. THE REQUIREMENTS SET FORTH UNDER "GENERAL CONDITIONS". "MODIFICATIONS TO GENERAL CONDITIONS" AND "SPECIAL CONDITIONS" ARE PART OF THIS CONTRACT.
4. THIS CONTRACT SHALL INCLUDE A VISIT TO THE JOB SITE AND TAKE INTO CONSIDERATION MECHANICAL, ELECTRICAL AND GENERAL TRADE WORK IN PLACE AND WORK TO BE PUT INTO PLACE PRIOR TO BIDDING. REROUTING OF DUCTWORK, PIPING, AND EQUIPMENT, AS REQUIRED TO MISS THIS WORK SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE OWNER.
5. ALL MOTORS FOR SUCH EQUIPMENT (IF AND WHERE SPECIFIED ON THE DRAWINGS) SHALL BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT. CONTROLS FOR SUCH MOTORS SHALL BE FURNISHED UNDER THIS CONTRACT AND INSTALLATION OF CONTROLS AND ALL ELECTRICAL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS, SHALL BE PERFORMED UNDER THIS CONTRACT.

B. SUBSTITUTIONS AND MISCELLANEOUS EQUIPMENT
1. THE BIDDING OF THIS WORK WILL CONTEMPLATE THE USE OF EQUIPMENT AND MATERIALS EXACTLY AS SPECIFIED HEREIN. WHERE ONE OR MORE NAMES OF MANUFACTURERS ARE MENTIONED ANY ONE MAY BE UTILIZED.
2. ALTERNATE EQUIPMENT MAY BE BID AS A SUBSTITUTION TO THAT SPECIFIED WITH THE APPROPRIATE DEDUCT NOTED. HOWEVER; THE EQUIPMENT SUBSTITUTED SHALL MEET ALL SPECIFICATIONS IN DESIGN AND BE SUBJECT TO OWNER AND/OR ENGINEER APPROVAL. ANY ADDITIONAL COST INCURRED DUE TO SUBSTITUTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
3. MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THE PIPING SYSTEMS SUCH AS FITTING, HANGERS, ETC., CAN BE OF ANY RECOGNIZED MANUFACTURER PROVIDED THESE ITEMS MEET MINIMUM STANDARDS AS SET BY THE ENGINEER.

C. ORDINANCES, PERMIT CERTIFICATES AND OWNER REQUIREMENTS.
1. ALL WORK UNDER THIS CONTRACT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE OWNER'S REQUIREMENTS, ALL LAWS, ORDINANCES AND ALL REGULATIONS OF THE STATE, COUNTY, AND MUNICIPALITY WHICH IN ANY WAY AFFECTS THIS WORK. THE ARCHITECT WILL OBTAIN THE GENERAL BUILDING, MECHANICAL, ELECTRICAL AND PLUMBING PERMITS. ANY OTHER PERMITS AND CERTIFICATES OF INSPECTION REQUIRED FOR THE PROJECT WILL BE OBTAINED BY THE CONTRACTOR PERFORMING THE WORK. FEES WILL BE INCLUDED IN THE BID PRICE. ALL WORK SHALL ALSO BE INSTALLED IN ACCORDANCE WITH REGULATIONS OF THE FIRE UNDERWRITERS HAVING JURISDICTION AND LOCAL UTILITIES. CONTRACTOR SHALL ALSO SECURE ANY PERMITS OR PAY ANY FEES TO THE LOCAL UTILITY COMPANIES FOR THE WORK REQUIRED.

D. DRAWINGS.
1. MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE APPROXIMATE LOCATION OF OUTLETS, EQUIPMENT AND PIPING.
2. THE EXACT LOCATION OF OUTLETS, EQUIPMENT AND PIPING MAY BE CHANGED FROM TIME TO TIME AS WORK PROGRESSES. UNDER THIS CONTRACT ALL LOCATIONS SHALL BE VERIFIED WITH ALL TRADES AND THAT THEY ARE ACCORDING TO THE LATEST INFORMATION AVAILABLE. SHOULD THIS NOT BE DONE THE WORK WILL BE CHANGED AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. THE OWNER RESERVES THE RIGHT TO MAKE MINOR CHANGES IN LOCATION OF EQUIPMENT OF PIPING ARRANGEMENTS UP TO THE TIME OF ROUGH-IN WITHOUT ADDITIONAL COSTS TO THE OWNER.
4. THE DRAWINGS AND SPECIFICATION ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIALS OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED EVEN THOUGH NO MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK AND WHICH IS USUALLY INCLUDED IN WORK OF A SIMILAR CHARACTER SHALL BE FURNISHED UNDER THIS CONTRACT.
5. AS PART OF THIS WORK THE CONTRACTOR SHALL SUBMIT ONE (1) RED LINE SET OF AS BUILT DRAWINGS INDICATION THE EXACT LOCATION OF ALL WORK INSTALLED. ACCEPTANCE SHALL NOT OCCUR UNTIL RECEIPT OF THESE DRAWINGS IS OBTAINED BY THE OWNER.

E. SHOP DRAWINGS.
1. AS PART OF THIS WORK INCLUDING UNDER EACH MECHANICAL SECTION, WITHOUT CAUSING ANY DELAY IN WORK, SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIAL SHALL BE SUBMITTED FOR ENGINEER'S REVIEW.
2. SUBMITTAL SHALL INCLUDE WIRING DIAGRAMS, PERFORMANCE CURVES AND DATA SPECIFIC TO THIS PROJECT AND BEAR CONTRACTOR'S APPROVAL STAMP CERTIFYING THAT HE HAS VERIFIED CONFORMANCE TO THE CONTRACTUAL DOCUMENTS.
3. IN THE ENGINEER'S REVIEW IF SHOP DRAWINGS, REVIEW IS FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND ARRANGEMENT ONLY. COMMENTS, CORRECTIONS OR MARKING SO NOT CONSTITUTE WAIVER OF THE CONTRACT DOCUMENTS REQUIREMENTS. DIMENSIONS, QUANTITIES AND COORDINATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.

F. CLEANING UP
1. UNLESS OTHERWISE NOTED, ALL EXCESS MATERIALS AND DEBRIS CAUSED BY THIS WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND PROMPTLY BE REMOVED FROM THE SITE. ALL FIXTURES AND EQUIPMENT INSTALLED SHALL BE THOROUGHLY CLEANED WEEKLY. ALL MOTORS AND EQUIPMENT SHALL BE COVERED OR OTHERWISE PROTECTED FROM CONSTRUCTION DUST AND DEBRIS. NO EQUIPMENT OTHER THAN THOSE DESIGNED TO ARE TO BE EXPOSED TO INCLEMENT WEATHER. TOUCH UP ALL SCRATCHES AND REPAIR ANY DENTS IN EQUIPMENT.

G. CUTTING AND PATCHING
1. CUTTING FOR OPENINGS, WHEN NECESSARY, SHALL BE DONE BY THIS CONTRACTOR WITH SUCH TOOLS AND METHODS AS TO PREVENT UNNECESSARY DAMAGE TO SURROUNDING AREAS OR EQUIPMENT.
2. FILL SPACE IN ALL AREAS PACKING WHERE REQUIRED TO MAINTAIN FIRE RATING, OPENINGS SHALL BE TEMPORARILY FIRE STOPPED UNTIL PERMANENT FIRE STOPPING IS DONE. THIS INCLUDES HOLES LEFT DUE TO REMOVAL OF PIPING.
3. PATCHING SHALL MATCH EXISTING SURFACES IN KIND AND FINISH, AND SHALL BE DONE BY THE GENERAL CONTRACTOR.
4. NO STRUCTURAL MEMBER WILL BE CUT INTO WITHOUT THE EXPRESSED PERMISSION THE OWNER'S REPRESENTATIVE.

H. FIRESTOPPING
1. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FIRESTOPPING AROUND ALL OPENINGS FOR PIPES, DUCTS, CONDUITS ETC., INSTALLED BY HIM AT ALL FIRE WALLS. FIRESTOPPING SHALL BE PERFORMED BY AN INSTALLER WHO HAS BEEN TRAINED BY THE MANUFACTURER, OR MANUFACTURER'S REPRESENTATIVE, IN THE INSTALLATION PROCEDURES BASED ON PUBLISHED UL TESTED FIRE STOP SYSTEMS.
2. FIRESTOPPING SHALL MEET THE REQUIREMENTS OF ASTM E-814 OR UL 1479 FIRE TESTS BY A RECOGNIZED TESTING AGENCY. FIRESTOPPING SHALL ALSO CONFORM TO THE FOLLOWING GOVERNING CODES: OHIO BASIC BUILDING CODE, NFPA 101- LIFE SAFETY CODE & NFPA 70 – NATIONAL ELECTRIC CODE.
3. PENETRATION
   a. CLEAN PENETRATION HOLES OF DIRT, LOOSE MATERIALS AND FOREIGN MATTER WHICH MAY AFFECT BOND OR INSTALLATION.
   b. REMOVE COATINGS SUCH AS PAINT, CURING COMPOUNDS, WATER REPELLENT & SEALERS AS REQUIRED.
   c. INSTALL BACKING MATERIALS TO PREVENT LIQUID MATERIAL LEAKAGE.
4. APPLICATION
   a. PREPARE AND APPLY PENETRATION SEALING SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
   b. EMPLOY INSTALLATION TECHNIQUES WHICH WILL ENSURE THAT FIRESTOPPING IS DEPOSITED TO FILL AND SEAL HOLES AND OPENINGS.
   c. TOOL EXPOSED SURFACES OF APPLIED SEALANT TO SMOOTH FINISH.
   d. PROTECT MATERIALS FROM DAMAGE ON SURFACES SUBJECTED TO TRAFFIC.
5. PROVIDE INTUMESCENT SEALANT AND COLLARS AT OPENINGS INVOLVING PLASTIC OR INSULATED PIPE SIMILAR TO THE METACAULK SERIES 880 AND 950.
6. FIRESTOPPING BY HILTI, DOW CORNING, 3M, OR METACAULK MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

I. GUARANTEE
1. ALL LABOR AND MATERIALS FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FORM THE DATE OF FINAL ACCEPTANCE BY THE OWNER WHICH WILL COMMENCE UPON THE FINAL INSPECTION BY THE ENGINEER. DURING THIS TIME, ALL LEAKS, CORRECTION OF ALL THE FAILURES TO SUCH MATERIAL AND THE CORRECTION OF ALL DISCREPANCIES WITH THE PLUMBING CODE, THE CONTRACT DRAWINGS, AND THE PROJECT SPECIFICATIONS SHALL BE DONE UNDER THIS CONTRACT AT NO ADDITIONAL EXPENSE TO THE OWNER.

J. EXCAVATION AND BACKFILL
1. THIS CONTRACTOR SHALL EXCAVATE AND BACKFILL ALL TRENCHES AND OTHER EXCAVATIONS REQUIRED FOR LAYING DRAINS, SEWERS, APPURTENANCES AND OTHER EXCAVATIONS REQUIRED FOR HIS WORK.
2. EARTH FILL: SOIL AS APPROVED BY THE OWNER'S REPRESENTATIVE, FREE OF ORGANIC SOIL, SOD, ROOTS, WOOD, METAL, RUBBISH, DEBRIS, LUMPS OR EXCESSIVE AMOUNTS OF CLAY AND ROCKS GREATER THAN 2" IN DIAMETER; CAPABLE OF BEING COMPACTED INTO DENSE AND STABLE CONDITIONS AS SPECIFIED.
3. ALL UNDERGROUND PIPING SHALL BE INSTALLED ON A MINIMUM OF A 3" BED OF COMPACTED SAND. ALL UNDERGROUND PIPING SHALL BE BACKFILLED BY HAND TO A LEVEL OF 6" ABOVE THE PIPE WITH CLEAN SAND. ALL BACKFILL SHALL BE MADE IN LIFTS NOT TO EXCEED 12". EACH LIFT SHALL BE MECHANICALLY COMPACTED TO A MINIMUM OF 92% MODIFIED PROCTOR.
4. PROTECT ALL UTILITIES SHOWN ON DRAWINGS OR ENCOUNTERED IN THE CONSTRUCTION WORK. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED BY THIS CONTRACTOR TO OWNER'S SATISFACTION, WITHOUT COST TO THE OWNER.
5. THIS CONTRACTOR SHALL REMOVE ANY UNUSABLE OF SURPLUS EXCAVATED MATERIAL FROM THE SITE.

K. RECORD DRAWINGS
1. THIS CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL DEVIATIONS FROM CONTRACT DRAWINGS AND SPECIFICATIONS. HE SHALL NEATLY AND CORRECTLY ENTER IN COLORED PENCIL ANY DEVIATIONS ON THE DRAWINGS. AT COMPLETION OF THE PROJECT DELIVER DRAWINGS TO OWNER'S REPRESENTATIVE.

L. CONCRETE HOUSEKEEPING PAD
1. CONCRETE HOUSEKEEPING AND SUPPORT PADS FOR EQUIPMENT IN THE PLUMBING CONTRACT ARE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR. CONCRETE PAD CONSTRUCTION TO BE IN ACCORDANCE WITH SPECIFICATIONS PROVIDE IN THE GENERAL CONTRACT.

PLUMBING REFERENCES

A. APPLICABLE CONSTRUCTION CODES, STANDARDS AND GUIDELINES FOR ALL PLUMBING CONTRACT ELEMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. STATE OF OHIO, OHIO STATE BUILDING CODE, INCLUDING THE STATE OF OHIO PLUMBING CODE.
2. CITY OF BEXLEY BUILDING CODE, INCLUDING PLUMBING, FUEL GAS, MECHANICAL, HANDICAP ACCESSIBILITY AND ENERGY CONSERVATION PORTIONS THEREOF.
3. LOCAL BOARD OF HEALTH.
4. STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY (E.P.A.).
5. NFPA PAMPHLET NO. 54, NATIONAL FUEL GAS CODE.
6. NFPA PAMPHLET NO. 70, NATIONAL ELECTRIC CODE.
7. CITY OF BEXLEY PUBLIC WORKS, UTILITIES DIVISION.
8. LOCAL GAS UTILITY PROVIDER.
9. AMERICAN GAS ASSOCIATION (AGA) STANDARDS FOR MATERIALS AND CONSTRUCTION.
10. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) STANDARDS FOR MATERIALS AND CONSTRUCTION.
11. AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS FOR PERFORMANCE AND TESTING.
12. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARDS FOR MATERIALS, CONSTRUCTION AND TESTING.
13. NATIONAL SANITATION FOUNDATION (NSF) STANDARDS FOR MATERIALS AND CONSTRUCTION.
14. CAST IRON SOIL PIPE INSTITUTE (CISPI) STANDARDS FOR MATERIAL AND CONSTRUCTION.
15. UNDERWRITER'S LABORATORIES (UL) STANDARDS FOR MATERIALS AND CONSTRUCTION.
16. THE MANUFACTURER'S INSTALLATION GUIDELINES AND RECOMMENDATIONS FOR INDIVIDUAL ITEMS, ELEMENTS AND/OR SYSTEM INDICATED HEREIN.

SCOPE OF WORK

A. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, INCIDENTALS, DETAILS, ETC. NECESSARY TO PROVIDE A COMPLETE, OPERATIONAL AND APPROVED PLUMBING SYSTEM, INCLUDING BUT NOT LIMITED TO ALL ITEMS AND ELEMENTS DESCRIBED IN THE PLUMBING SPECIFICATION AND SHOWN ON THE PLUMBING DRAWINGS, AND AS REQUIRED FOR COORDINATION AND/OR INTERFACE WITH WORK UNDER SEPARATE CONTRACT AS INDICATED BY COMPLETE CONSTRICTION DOCUMENTATION PACKAGE.
B. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SATISFACTORILY ADDRESSING ALL REVIEW AND INSPECTION AUTHORITIES REQUIREMENTS AND DIRECTIVES IN REGARD TO METHODS OF INSTALLATION NECESSARY FOR FINAL APPROVAL.

PERMITS AND FEES

A. UNLESS DIRECTED OTHERWISE BY THE GENERAL CONDITIONS PORTION OF PROJECT DOCUMENTATION, THE PLUMBING CONTRACTOR SHALL APPLY FOR AND PAY ANY REVIEW INSPECTION, PERMIT, LICENSE, TESTING AND/OR OTHER SERVICE FEES REQUIRED BY ALL REVIEW/INSPECTION/APPROVAL AUTHORITIES IN CONNECTION WITH THE WORK UNDER THIS CONTRACT.

PLUMBING UTILITY CONNECTIONS

A. PROVIDE PLUMBING SUPPLY, WASTE, DRAIN, VENT, AND ANY OTHER PIPED UTILITIES INCLUDED FOR THE PROJECT AS REQUIRED, AS LISTED HEREIN, AND/OR AS SHOWN ON THE PLUMBING DRAWINGS FOR ITEMS FURNISHED AND/OR INSTALLED UNDER SEPARATE CONTRACT REQUIRING SAME. THESE ITEMS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING.
1. HVAC EQUIPMENT; FINAL CONNECTION (WHERE APPLICALBE) BY THE HVAC CONTRACTOR.
2. EQUIPMENT FINAL CONNECTION (WHERE APPLICABLE) AS INDICATED BY PLAN NOTES.
3. OWNER PROVIDED ITEMS; FINAL CONNECTION (WHERE APPLICALBE) BY THE PLUMBING CONTRACTOR.
B. ROUGH-IN PLUMBING SUPPLY, WASTE, DRAIN, VENT, AND ANY OTHER PIPED UTILITIES INCLUDED FOR THE PROJECT AS REQUIRED, AS LISTED HEREIN, AND/OR AS SHOWN ON THE PLUMBING DRAWINGS FOR ALL FUTURE ITEMS REQUIRING SAME.

VALVE TAGGING AND CODING

A. PROVIDE BRASS TAGS ON ALL VALVES. TAGS SHALL STATE TYPE OF LINE IN WHICH THE VALVE IS INSTALLED (HOT WATER SUPPLY, STEAM, ETC.) AND NUMBER OF VALVE. FURNISH A SCHEDULE OR SCHEDULES OF ALL VALVES TAGGED WITH NUMBER, LOCATION AND PURPOSE OF EACH VALVE AND MOUNT SCHEDULES UNDER GLASS ON EQUIPMENT ROOM WALL, OR ELSEWHERE AS REQUIRED. SCHEDULES SHALL BE LOCATED NEAR AND CONVENIENT TO THE VALVES ON THE SCHEDULE.
B. PIPE LINE STENCIL AND VALVE TAG SCHEDULE AS FOLLOWS:

SERVICE	STENCIL DESIGNATION
DOMESTIC COLD WATER	D.C.W.
DOMESTIC HOT WATER	D.H.W.
DOMESTIC HOT WATER RETURN	D.H.W.R.
NATURAL GAS	GAS
BUILDING SANITARY	SAN
BUILDING STORM	STM

C. IN THE CASE OF REMODELING WORK WHEN A VALVE IDENTIFICATION SYSTEM ALREADY EXISTS, NUMBERING SHALL START WITH THE NEXT NUMBER AFTER THE HIGHEST EXISTING NUMBER.
D. AFTER EXPOSED PIPING AND INSULATION IS PAINTED, THIS CONTRACTOR SHALL APPLY A STENCILED LEGEND, LETTERED WITH THE NAME OF CONTENTS OF PIPING. FLOW DIRECTION ARROWS OF THE SAME COLORS ARE TO BE LOCATED ADJACENT TO THE IDENTIFICATION LEGENDS. SPACING NOT OVER 20' APART AND AT LEAST ONCE IN EACH ROOM. DO NOT USE ADHESIVE MARKERS. TYPE AND COLOR TO MATCH EXISTING, TYPE AND COLOR TO BE APPROVED BY ENGINEER.
E. VALVE TAGS SHALL BE BRASS, MINIMUM 2" DIAMETER, 16 GAUGE.

PRODUCTS GENERAL

A. WHERE ITEMS/ELEMENTS ARE INDICATED HEREIN TO BE LISTED/APPROVED. THE INTENT OF THE SPECIFICATION IS THAT SAID ITEM/ELEMENT SHALL BE LISTED BY ALL APPLICABLE MATERIAL/CONSTRUCTION STANDARDS, AND SUBJECT TO FINAL APPROVAL (INCLUDING METHODS OF INSTALLATION) BY ALL REVIEW/INSPECTION/APPROVAL AUTHORITIES.
B. UNLESS INDICATED OTHERWISE, ALL PLUMBING CONTRACT ITEMS/ELEMENTS (PIPE, FITTINGS, VALVES, SPECIALTIES, FIXTURES, EQUIPMENT, ETC.) MATERIALS, CONSTRUCTION, PERFORMANCE, TESTING AND METHODS OF INSTALLATION TO BE AS LISTED/APPROVED BY ALL APPLICABLE MATERIAL/ CONSTRUCTION/ INSTALLATION STANDARDS FOR SAME, AND BE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL REVIEW/INSPECTION/ APPROVAL AUTHORITIES. THIS INCLUDES, BUT IS NOT LIMITED TO, THE STANDARDS AND AUTHORITIES REFERENCED IN THIS SPECIFICATION. IN THE ABSENCE OF SUCH STANDARDS AND/OR REQUIREMENTS, THE ITEM/ELEMENTMANUFACTURER'S RECOMMENDATIONS, AS CONFIRMED BY THE PLUMBING CONTRACTOR IN ADVANCE, SHALL BE FOLLOWED.
C. UNLESS INDICATED OTHERWISE, ALL PLUMBING PIPING SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN REGARD TO MATERIALS, CONSTRUCTION, DIMENSIONS/TOLERANCES, TYPE OF SERVICE/TRANSMISSION MEDIUM (WATER, AIR, GAS, ETC.) AND METHODS OF INSTALLATION (AS APPLICABLE), AND SHALL BE SO LISTED. FINAL APPROVAL FOR USE IS SUBJECT TO THE REQUIREMENTS OF THE REVIEW AND INSPECTION AUTHORITIES:
1. STEEL PIPE, STEEL MALLEABLE AND CAST IRON FITTINGS AND JOINING METHODS; PER APPLICABLE ASTM/ANSI/ASME STANDARDS. IN ADDITION, WHERE UTILIZED FOR POTABLE WATER SERVICE, ALL ELEMENTS SHALL BE PER APPLICABLE NSF AND ASTM A53 (FOR CARBON STEEL STANDARDS.
2. PLASTIC PIPE, FITTINGS AND JOINING METHODS; PER APPLICABLE ASTM/ANSI/ASME/NSF STANDARDS.
3. CAST IRON PIPE, FITTINGS AND JOINING METHODS; PER APPLICABLE ASTM/ANSI/ASME/CISPI STANDARDS.
4. COPPER/COPPER ALLOY/BRASS PIPE/TUBE, FITTINGS AND JOINING METHODS; PER APPLICABLE ASTM/ANSI/ASME STANDARDS. IN ADDITION, WHERE UTILIZED FOR POTABLE WATER SERVICE, ALL ELEMENTS SHALL BE PER APPLICABLE NSF STANDARDS.
D. ALL PLUMBING CONTRACT ITEMS/ELEMENTS SHALL HAVE THE MANUFACTURER'S MARK OF NAME AND THE QUALITY OF THE PRODUCT OR IDENTIFICATION OF SAME CAST, EMBOSSED, STAMPED OR INDELIBLY MARKED ON EACH ITEM/ELEMENT IN ACCORDANCE WITH THE STANDARDS UNDER WHICH THEY ARE ACCEPTED AND APPROVED PER APPLICABLE CODE(S).
E. PLUMBING UTILITY CONNECTIONS PROVIDE FOR ITEMS OR ELEMENTS NOT INCLUDED IN THE PLUMBING CONTRACT.
1. UNLESS INDICATED OTHERWISE, THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAPS AND STOPS (AS APPLICABLE) AS REQUIRED FOR ITEMS FURNISHED UNDER SEPARATE CONTRACT. THIS INCLUDES ITEMS WITH CONNECTIONS BY THE PLUMBING CONTRACTOR OR WITH CONNECTIONS UNDER SEPARATE CONTRACT.
2. UNLESS INDICATED OTHERWISE, FIXTURE TRAPS ABOVE FLOOR SLAB CONNECTED TO THE SANITARY WASTE SYSTEM SHALL BE CAST BRASS P-TRAPS WITH INTEGRAL CLEANOUT. P-TRAPS BELOW FLOOR SLAB TO BE CAST IRON, LESS CLEANOUT. SEE DRAWINGS FOR SIZES.
3. UNLESS INDICATED OTHERWISE, FIXTURE TRAPS CONNECTED TO WASTE OR DRAIN SYSTEMS OTHER THAN THE SANITARY WASTE SYSTEM SHALL BE OF THE SAME MATERIAL AND CONSTRUCTION TYPE AS THE ASSOCIATED PIPING SYSTEM. P-TRAPS OR S-TRAP TO BE PROVIDED AS INDICATED ON THE DRAWINGS.
4. UNLESS INDICATED OTHERWISE, ALL WASTE AND DRAIN ROUGH-INS FOR FUTURE SHALL TERMINATE WITH A SHORT NIPPLE AND CAP AND NO TRAP.
5. UNLESS INDICATED OTHERWISE, SUPPLY ROUGH-INS TO BE FURNISHED WITH ACCESSIBLE SHUT OFFS AT CONNECTIONS POINTS. SHUT OFFS AT SUPPLY ROUGH-INS FOR FIXTURES (SINKS, LAVATORIES, ETC.) TO BE ANGLES TYPE COMPRESSION STOPS. SHUT OFFS AT SUPPLY ROUGH-INS FOR EQUIPMENT OF OTHER ELEMENTS (HVAC, DENTAL EQUIPMENT, ETC.) TO BE IN-LINE VALVES AS SPECIFIED FOR INDIVIDUAL SERVICES. ALL SUPPLY ROUGH-INS FOR FUTURE SHALL TERMINATE WITH A SHORT NIPPLE AND CAP IMMEDIATELY DOWNSTREAM OF THE SHUT OFF.
6. UNLESS INDICATED OTHERWISE, WHERE CONNECTION ELEMENTS DESCRIBE HEREIN ARE EXPOSED IN LOCATIONS OTHER THAN THE RESTRICTED ACCESS UTILITY OR MAINTENANCE AREAS, ALL METALLIC COMPONENTS TO BE FURNISHED WITH A POLISHED CHROME FINISH. WALL OR OTHER STRUCTURE PIPING PENETRATIONS AT THESE LOCATION TO BE PROVIDED WITH POLISHED CHROME FINISH ESCUTCHEONS.

EXECUTION GENERAL

A. WHERE STANDARDS, CODES OR GUIDELINES ARE REFERENCED HERIN AND THROUGHOUT THE PLUMBING CONTRACT DOCUMENTATION, INCLUDING PLANS AND SPECIFICATIONS, THE LATEST VERSION/EDITION SHALL BE APPLIED, UNLESS THE BUILDING CODE REFERENCES ANOTHER VERSION/EDDITION, WHICH SHALL TAKE PRECEDENCE.
B. REFER TO PROJECT DOCUMENTATION FURNISHED WITH THE COMPLETE CONSTRUCTION PACKAGE IN ADVANCE OF WORK FOR OVERALL COORDINATION AND VERIFICATION OF REQUIREMENTS AT WORK OF OTHER TRADES RELATING TO, INTERFACING WITH, AND/OR IMPACTING WORK IN THE PLUMBING CONTRACT. THIS INCLUDES EXACT LOCATIONS, QUANTITIES, PHYSICAL SIZES, ROUGH-IN DETAILS, PIPE ROUTING, CONNECTION SIZES, ETC., FOR ITEMS INCLUDING BOTH IN THE PLUMBING CONTRACT AND UNDER SEPARATE CONTRACT. COORDINATE INSTALLATION AND INTERFACE REQUIREMENTS WITH THE APPROPRIATE CONTRACTOR(S) IN ADVANCE OF WORK.
C. INCLUDE ANY MINOR DETAILS, ITEMS AND/OR ELEMENTS ESSENTIAL TO NECESSARY APPROVALS AND SUCCESSFUL OPERATION IN ADDITION TO THE ITEMS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS.
D. SEE GENERAL "PLUMBING NOTES" ON DRAWINGS FOR ADDITIONAL CONDITIONS AND REQUIREMENTS RELATIVE TO THE PLUMBING CONTRACT.
E. PLUMBING ITEMS AND ELEMENTS SHALL BE INSTALLED WITH DUE REGARD TO PRESERVATION OF THE STRENGTH OF STRUCTURAL MEMBERS AND PREVENTION OF DAMAGE TO WALLS, SURFACES AND OTHER STRUCTURES THROUGH INSTALLATION, BEARING SUPPORT OF SUBSEQUENT USAGE OF PLUMBING ITEMS AND ELEMENTS. NO FRAMING OR OTHER SUPPORT STRUCTURE SHALL BE CUT, NOTCHED OR BORED IN EXCESS OF LIMITATIONS SPECIFIED IN THE BUILDING CODE, OR BY THE MANUFACTURER OF THE FRAMING OR OTHER SUPPORT STRUCTURE, AS CONFIRMED IN ADVANCE OF WORK BY THE PLUMBING CONTRACTOR.
F. ALL PIPING THAT SUPPLIES A FLUSH VALVE, SOLENOID VALVE (OTHER THAN SLOW-CLOSING TYPE), FOOT PEDAL OPERATOR, SPRING RETURN OPERATOR OR OTHER QUICK CLOSING TYPE DEVICE SHALL HAVE A SHOCK ABSORBER INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. UNLESS INDICATED OTHERWISE, WHERE MULTIPLE FIXTURES OR EQUIPMENT IN ADJACENT LOCATIONS (SUCH AS WITHIN A CHASE OR OTHER ENCLOSURE) ARE SUPPLIED BY COMMON PIPING MANIFOLD, A PROPERLY SIZED AND INSTALLED SHOCK ABSORBER MAY BE UTILIZED.
G. BRANCHES TO FIXTURES WITH THE FOLLOWING SIZES UNLESS OTHERWISE INDICATED.
1. WATER CLOSETS, TANK – 1/2 INCH
2. ELECTRIC WATER COOLERS – 1/2 INCH
3. LAVATORIES – 1/2 INCH HW AND CW
4. SINKS/SHOWERS – 1/2 INCH HW AND CW
5. MOP SINKS – 1/2 INCH HW AND CW
H. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING DOMESTIC WATER PIPING IN CHASES, ETC. TO INDIVIDUAL FIXTURES. WHERE PIPING SERVES FLUSH VALVES, COLD WATER PIPE SHALL BE RUN FULL SIZE TO END OF PIPE CHASE RUN AND A LISTED SHOCK ABSORBER INSTALLED. WHEN COLD WATER PIPE IS 2" OR ABOVE AND SERVES FLUSH VALVES, THE PIPE MAIN IN THE CHASE CAN ONLY BE REDUCED TO 1-1/2" SIZE. 1/2" HOT WATER PIPE SHALL SERVE UP TO FOUR (4) LAVATORIES. OTHER PIPE SIZING CRITERIA SHALL BE S OUTLINED IN THE CURRENT EDITION OF "ASHRAE FUNDAMENTALS HANDBOOK".
I. RUN ALL WATER PIPING LEVEL AND CONCEAL WHEREVER POSSIBLE. PIPING TO BE INSTALLED TO ALLOW COMPLETE DRAIN DOWN OF SYSTEM BACK TO THE MAIN RISER(S). AT BASE OF SYSTEM WHENEVER POSSIBLE. PROVIDE 3/4" DRAINS AT BASE OF RISER(S), AND ANY OTHER TRAPPED OR LOW POINTS WHEN SUCH ARE UNAVOIDABLE DUE TO PROJECT CONDITIONS. 3/4" DRAINS TO CONSIST OF BALL VALVE WITH OUTLET CONNECTION VACUUM BREAKER AS SPECIFIED HEREIN.
J. INSTALL AN IN-LINE PRESSURE TYPE VACUUM BREAKER AS SPECIFIED HEREIN IN THE INDIVIDUAL/DEDICATED SUPPLY PIPING FOR ALL VALVES, FITTINGS, TRIM OR OTHER ELEMENTS WITH SERRATED ENDS OR OTHER OUTLETS CAPABLE OF HOSE CONNECTION THAT DO NOT INCLUDE AN INTEGRAL LISTED/APPROVED BACKFLOW PREVENTION DEVICE.
K. BALANCE RECIRCULATING BRANCH LINE FLOW AS REQUIRED FOR PROPER OPERATION OF SYSTEMS. PROVIDE COMBINATION BALANCE/SHUT OFF VALVES, CHECK VALVES, THERMOMETERS, AND PETE'S PLUGS FOR EACH BRANCH RECIRCULATING LINE.
L. COORDINATE INSTALLATION WITH STRUCTURE, AND WORK OF OTHER TRADES AT AND ADJACENT TO DOMESTIC WATER SERVICE PIPING INSTALLATION.

SLEEVES

A. SLEEVE MATERIAL: BLACK STEEL PIPE, MACHINE CUT, LARGE ENOUGHT TO ALLOW 1/4" CLEARANCE ALL AROUND PIPE AND PIPE COVERING. USE MACHINE CUT COPPER SLEEVES FOR UNINSULATED COPPER PIPE.
B. SLEEVES IN PARTITIONS TO HAVE LENGTH EQUAL TO THE THICKNESS OF FINISHED PARTITIONS. SLEEVES IN FLOORS OF FINISHED AREAS TO PROJECT 2" ABOVE THE FINISHED FLOOR. SLEEVES IN FLOORS OF NON-FINISHED AREAS TO PROJECT 2" ABOVE THE FINISHED FLOOR. FILL SPACE BETWEEN PIPE AND SLEEVES INTO EXPOSED AREAS WITH SEALING COMPOUND. REAM ALL SLEEVES BEFORE INSTALLING.
C. WHERE PIPES PASS THROUGH FIRE RATED WALLS OF FLOORS, THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE FILLED WITH THE PROPER FIRE RATED SEALANT OR PACKING.

PLUMBING INSULATION

A. GENERAL
1. PROVIDE LISTED INSULATION COVER FOR ALL ITEMS/ELEMENTS AS SPECIFIED HEREIN, AS SHOWN ON DRAWINGS, AND FOR ANY OTHER ITEMS/ELEMENTS REQUIRING SAME.
2. INSULATE PIPING AND ASSOCIATED ACCESSORIES AND APPURTENANCES INCLUDING IN THE FOLLOWING SYSTEMS:
   a. DOMESTIC HOT AND COLD WATER AND HOT WATER RETURN.
   b. BUILDING HORIZONTAL STORM PIPING.
3. PROVIDE A PRE-MANUFACTURED INSULATION COVERS ON ALL EXPOSED LAVATORY WASTE PIPING AND LAVATORY SUPPLY PIPING. PRODUCT TO BE SIMILAR TO HANDIWRAP, PRO-WRAP, AND TRUBRO MANUFACTURES.

B. PRODUCTS
1. ALL INSULATING MATERIALS, INCLUDING JACKETS, CEMENTS, ADHESIVES, VAPOR BARRIERS, ETC., SHALL BE U.L. LISTED, WITH A FLAME SPREAD RATING NOT TO EXCEED 25, AND A SMOKE DEVELOPMENT RATING NOT TO EXCEED 50. ALL EXTERIOR FINISHES SHALL HAVE A MINIMUM SERVICE TEMPERATURE LIMIT (FSTM 70) OF MINUS 50 TO 220 DEGREES F.
2. MOLDED PLASTIC FITTING COVERS SHALL BE U.L. LISTED WITH A FLAME SPREAD RATING NOT TO EXCEED 25, AND A SMOKE DEVELOPMENT RATING NOT TO EXCEED 50.
3. INSULATED THICKNESS' ARE BASED ON INSULATION HAVING THERMAL RESISTANCE IN THE RANGE OF 4.0 HR F. FT2/BTU TO 4.6 HR F. FT2/BTU PER INCH OF THICKNESS ON A FLAT SURFACE AT A MEAN TEMPERATURE OF 75 DEGREES F. MINIMUM INSULATION THICKNESS SHALL BE INCREASED FOR MATERIALS HAVING R VALUES LESS THAN 4.0 OR MAY BE REDUCED FOR MATERIALS HAVING R VALUES GREATER THAN 4.6 TO GIVE EQUIVALENT "R" VALUES.
4. PIPE COVERS SHALL BE SIMILAR TO JOHNS MANVILLE "MICRO-LOK" GLASS FIBER INSULATION, RATED FOR 850 DEGREES F. WITH A FACTORY APPLIED AP-T ALL-PURPOSE SELF-SEALING VAPOR BARRIER JACKET. BUTT STRIPS SHALL BE MINIMUM 3" WIDE, AND OF SAME MATERIAL AS JACKET. EQUAL MATERIALS, INCLUDING THICKNESS AND CONDUCTIVITY RATINGS/LISTINGS. AS MANUFACTURED BY OWENS CORNING, KNAUF OR MANSON MAY BE FURNISHED, AT THE CONTRACTOR'S OPTION. WHERE INSULATION THICKNESS IS INDICATED FOR COVER HEREIN. IT IS NOMINAL THICKNESS REQUIRED THICKNESS.
5. ALL CEMENTS, ADHESIVES, FINISHES, AND ASSOCIATED MATERIALS SHALL BE SIMILAR TO THAT PROVIDED BY FOSTER. EQUAL MATERIALS AS PROVIDED BY CHILDERS OR VIMASCO MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
6. LONGITUDINAL LAP JOINTS AND BUTT STRIPS FOR GLASS FIBER PIPING INSULATION SHALL BE SECURED WITH STAPLES ON THREE (3) INCH CENTERS, AND SEALED WITH AN APPROVED VAPOR BARRIER ADHESIVE WHERE APPLICABLE. STAPLES ARE NOT REQUIRED WHEN INSULATION UTILIZES A "DOUBLE" ADHESIVE SELF-SEALING SYSTEM.

C. EXECUTION
1. COVER COLD WATER, HOT WATER, AND HORIZONTAL STORM PIPING AS FOLLOWS:
2. COVER COLD WATER, HOT WATER AND HOT WATER RETURN PIPING WITH 1" THICKNESS GLASS FIBER PIPE INSULATION.
3. COVER HORIZONTAL STORM PIPING WITH 1/2" THICKNESS GLASS FIBER PIPE INSULATION.
4. PROVIDE INSULATION ON THE BOTTOM OF ALL ROOF DRAIN ASSEMBLIES.
5. ALL APPURTENANCES AND ACCESSORIES SUCH AS VALVES, FLANGES, UNIONS, ETC. INSTALLED IN REFERENCED PIPING (WITH THE EXCEPTION OF BACKFLOW PREVENTION ASSEMBLIES LISTED AT THE END OF THIS PARAGRAPH) SHALL BE WRAPPED WITH FULL THICKNESS INSULATION AND COVERED WITH A LISTED MOLDED PLASTIC FITTING COVER, OR AN OPEN MESH GLASS CLOTH SHALL BE FIRE RESISTANT MASTIC. BACKFLOW PREVENTION ASSEMBLIES WHICH REQUIRE PERIODIC INSPECTION/TENSTIN/MANITENANCE SHALL NO BE PROVIDED WITH INSULATION COVER, UNLESS THESE ASSEMBLIES ARE IN WATER SENSITIVE LOCATIONS. SUCH AS ABOVE LAY-IN CEILINGS. IF LISTED BACKFLOW PREVENTION ASSEMBLIES ARE IN WATER SENSITIVE LOCATIONS, FURNISH COVER COMPLYING WITH THIS SPECIFICATION THAT ALLOWS REMOVAL AND REPLACEMENT AS NECESSARY FOR REQUIRED ACCESS.
6. USE 12" LONG SECTIONS OF CALCIUM SILICATE RIGID INSULATION, WITH JACKET SAME AS ADJACENT PIPE COVERING FOR TRANSFER OF SUPPORT TO PIPING AT EACH HANGER, WITHOUT STRESS TO THE PIPE COVERING ASSEMBLY. AT THE CONTRACTOR'S OPTION, AN APPROVED WOOD OR HIGH-DENSITY (20 LB./CU. FT.) FIBERGLASS BLOCK MAY BE SUBSTITUTED FOR THE RIGID INSULATION SECTION. VAPOR BARRIER TO BE MAINTAINED THROUGHOUT.
7. ALL APPLICATIONS SHALL BE MADE ON CLEAN, DRY SURFACES WITH ALL JOINTS BUTTED FIRMLY TOGETHER.
8. INSULATION MUST RUN CONTINUOUS THROUGH HANGERS, SLEEVES AND WALL FOR ALL COLD WATER, HOT WATER, HOT WATER RETURN, VACUUM PUMP EXHAUST AND AIR COMPRESSOR INTAKE PIPING.
9. ON ALL PIPING 1-1/4" DIAMETER AND LARGER WITH INSULATION COVER SPECIFIED TO RUN CONTINUOUS THROUGH HANGER ASSEMBLIES, PROVIDE A LISTED/APPROVED SHEET METAL PROTECTIVE INSULATION SHIELD AT EACH HANGER.
10. INSULATION SHALL NOT BE APPLIED UNTIL GENERAL CONSTRUCTION HAS PROGRESSED SUFFICIENTLY TO MINIMIZE POTENTIAL FOR PHYSICAL OR MOISTURE DAMAGE TO THE COVER ASSEMBLY. ALL DAMAGED COVER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
11. INSTALL PROTECTIVE SLEEVE ON ALL INSULATED, EXPOSED PIPES PENETRATING THE FLOOR STRUCTURE.
12. HANGER RODS MUST BE PERPENDICULAR BEFORE INSULATION IS INSTALLED.

HOUSE LINES – GAS

A. GENERAL
1. PROVIDE UNDERGROUND BUILDING SERVICE PIPING, METER AND REGULATOR AND EXTEND HOUSE LINE GAS PIPING SYSTEM TO ALL ITEMS/ELEMENTS INDICATED ON PLANS, AND ANY OTHER POINTS REQUIRING SAME.
2. PROVIDE GAS COCK, 6" LONG DIRT LEG, AND APPROVED UNION CONNECTION IN ACCESSIBLE LOCATION ADJACENT TO CONNECTION POINT FOR EACH ITEM/ELEMENT (WITH THE EXCEPTION OF INDIVIDUAL DENTAL OUTLET TERMINALS). ALL CONNECTION POINTS TO BE CONFIRMED IN FIELD WITH ITEMS/ELEMEMTS AS ACTUALLY INSTALLED.
3. UNLESS INDICATED OTHERWISE, FINAL CONNECTION TO ALL ITEMS IS BY THE PLUMBING CONTRACTOR, WHETHER ITEMS ARE FURNISHED AND/OR INSTALLED IN THE PLUMBING CONTRACT OR NOT.
4. INSTALLATION OF ALL ELEMENTS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE GAS PROVIDER, THE REFERENCED STANDARDS, AND ALL REVIEW, INSPECTION AND APPROVAL AUTHORITIES.

B. PRODUCTS
1. PIPE AND FITTINGS
   a. PIPE SIZES 1/2" TO 1-1/4"; MAXIMUM 14" W.C. (1/2 PSIG) WORKING PRESSURE GAS PIPE IN EXPOSED LOCATIONS TO BE STANDARD WEIGHT BLACK STEEL PIPE: ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B WITH MALLEABLE- IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN.
   b. UNLESS INDICATED OTHERWISE, GAS SYSTEM PIPING IN ACCORDANCE WITH ANY OF THE FOLLOWING CRITERIA SHALL BE STANDARD WEIGHT BLACK STEEL PIPE: ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B WITH WROUGHT-STEEL WELDING FITTINGS: ASTM A 234/A 234M FOR BUTT WELDING AND SOCKET WELDING. PIPING IN CONCEALED LOCATIONS (INCLUDES ABOVE ACCESSIBLE CEILINGS, AND WITHIN ACCESSIBLE STRUCTURES/CHASES WHERE NOT NORMALLY VISIBLE). ALL PIPING 2-1/2" SIZE AND LARGER. ALL PIPING IN AIR PLENUMS, AS CONFIRMED FROM PROJECT HVAC DOCUMENTATION.
   c. UNIONS: ASME B16.39, CLASS 150, MALLEABLE IRON WITH BRASS-TO-IRON SEAT, GROUND JOINT, AND THREADED ENDS.
   d. FORGED-STEEL FLANGES AND FLANGED FITTINGS: ASME B16.5, MINIMUM CLASS 150, INCLUDING BOLTS, NUTS, AND GASKETS OF THE FOLLOWING MATERIAL GROUP, END CONNECTIONS, AND FACINGS:
   e. END CONNECTIONS: THREADED OR BUTT WELDING TO MATCH PIPE.
   f. LAPPED FACE: NOT PERMITTED UNDERGROUND.
   g. GASKET MATERIALS: ASME B16.20, METALLIC, FLAT, ASBESTOS FREE, ALUMINUM O-RINGS, AND SPIRAL-WOUND METAL GASKETS.
   h. BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL ABOVEGROUND AND STAINLESS STEEL UNDERGROUND.
   i. VALVES, FITTINGS AND ANY OTHER ELEMENTS NOT AVAILABLE WITH WELDED CONNECTIONS INDICATED TO BE INSTALLED IN WELDED GAS PIPING SHALL BE FURNINSHED WITH LISTED/APPROVED WELDING ADAPTERS OR LISTED/APPROVED CLASS 125 FLANGES AND GASKETS.
   j. ALL PIPING IN CONCEALED LOCATIONS (INCLUDES ABOVE ACCESSIBLE CEILINGS, AND WITHIN ACCESSIBLE STRUCTURES/CHASES WHERE NOT NORMALLY VISIBLE) SHALL NOT HAVE VALVES, UNIONS, TUBING FITTINGS OR RUNNING THREADS.
   k. INDIVIDUAL PIPING DROPS IN HOLLOW PARTITIONS OR CASEWORK TO ITEMS/ELEMENTS INDICATED ON THE DRAWINGS AS 1" SIZE AND SMALLER, AND CONNECTED TO SYSTEMS WITH 14" W.C. OR LESS WORKING PRESSURE MAY BE TYPE L COPPER TUBING IN A SINGLE CONTINUOUS LENGTH WITH NO JOINTS OR FITTINGS. PIPING TO RUN DIRECT TO ELEMENT CONNECTION POINT WITH AS FEW CHANGES OF DIRECTION AS POSSIBLE. PROVIDE A PROTECTION STRIKE BARRIER PER NFPA PAMPHLET NO 54 REQUIREMENTS AT ALL PIPING PENETRATION OF STRUCTURAL ELEMENTS, INCLUDING STUDS, PLATES, ETC., AND DO NOT RIGIDLY SECURE PIPING. PROVIDE CROSS MEMBER IN STRUCTURE AT INSTALLATION OF WALL MOUNTED OUTLET TERMINALS OR OTHER ELEMENTS FOR PROPER SUPPORT.
   l. PIPING WITHIN LAST TEN (10) FEET OF APPLIANCE MAY BE SCREWED IF APPROVED BY CODE AUTHORITIES FOR SPECIFIC CONDITIONS.

C. EXECUTION
1. USE LISTED/APPROVED DIELECTRIC FITTING FOR CONNECTION OF COPPER PIPE AND BLACK STEEL PIPING.
2. INSTALL LISTED/APPROVED TAPERED LUBRICATED PLUG VALVE ON INCOMING PIPING IMMEDIATELY INSIDE THE BUILDING WALL.
3. ALL GAS PIPING SHALL BE INSTALLED LEVEL. INSPECT, TEST AND PURGE ALL GAS LINES TO OUTSIDE AS REQUIRED BY THE GAS PROVIDER, REFERENCED STANDARDS AND THE REVIEW/INSPECTION/APPROVAL AUTHORITIES.
4. INSTALL LISTED/APPROVED PIPE SLEEVES ON GAS PIPING AT ALL STRUCTURAL PENETRATIONS.
5. ALL BRANCH CONNECTIONS SHALL BE MADE ON THE TOP OR SIDE OF HORIZONTAL PIPING.
6. BEFORE THE GAS SERVICE IS TURNED ON, THE HOUSE LINES SHALL BE SUBJECTED TO A 24 HOUR CHARTED PRESSURE TEST, UNLESS ANOTHER TEST IS REQUESTED BY THE GAS PROVIDER. PRESSURES AS INDICATED BELOW. THE TEST SHALL BE PERFORMED BY THIS CONTRACTOR AND WITNESSED BY THE GAS PROVIDER. THIS CONTRACTOR TO INITIALLY PRESSURIZE SYSTEM. TEST REQUIREMENTS (INCLUDING REQUIRED EQUIPMENT AND METHODS) TO BE CONFIRMED WITH THE GAS PROVIDER IN ADVANCE. THE GAS PROVIDER TO RULE ON ACCEPTABILITY OF THE PIPING SYSTEM AFTER THE TEST IS COMPLETED.
7. PRESSURE REGULATION VALVES (INCLUDING THOSE PROVIDED LOOSE OR INSTALLED WITH PACKAGED EQUIPMENT ASSEMBLIES) INSTALLED WITHIN THE BUILDING STRUCTURE ARE TO BE INDIVIDUALLY VENTED TO OUTSIDE OF THE BUILDING IN COMPLIANCE WITH THE GAS PROVIDER, REFERENCED STANDARDS AND THE REVIEW/INSPECTION/APPROVAL AUTHORITIES.
8. SYSTEMS 2 PSIG OR LESS SHALL BE TESTED WITH 5 PSI OF AIR.

BUILDING SOIL, WASTE AND VENT SYSTEM

A. APPLICATIONS FOR SANITARY AND VENT SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
1. SANITARY AND VENT PIPING FROM DESIGNATED POINTS WITH ALL CONNECTIONS.
2. DRAINAGE AND VENT PIPING FOR ALL OTHER MISCELLANEOUS SYSTEMS OR EQUIPMENT AS INDICATED ON DOCUMENTS AND AS REQUIRED.
3. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SANITARY PIPING FINAL CONNECTIONS AND ALL INDIRECT PIPING FROM EQUIPMENT TO DRAIN TO COMPLETE THE SANITARY WASTE AND VENT PIPING SYSTEM AND TO COMPLETE THE INDIRECT DRAINAGE PIPING SYSTEM TO OPERATE ALL EQUIPMENT AND FIXTURES PROPERLY.

B. SCOPE
1. FURNISH A COMPLETE SYSTEM OF INTERIOR SOIL WASTE DRAINAGE (INCLUDES SANITARY AND VENT PIPING) FROM BUILDING FIXTURES, EQUIPMENT, AND ANY OTHER ELEMENTS REQUIRING THE SAME.

C. PRODUCTS
1. SOIL (SANITARY) WASTE AND VENT PIPING TO BE AS FOLLOWS:
   a. STANDARD WEIGHT CAST IRON DWV PIPE AND FITTINGS WITH NEOPRENE GASKET HUB AND SPIGOT OR NO-HUB MECHANICAL COUPLING JOINTS AND CONNECTIONS. NO-HUB MECHANICAL COUPLINGS TO BE INSTALLED ABOVE GRADE ONLY.
   b. STANDARD WEIGHT COPPER DWV PIPE AND FITTINGS WITH SOCKET SOLDER JOINTS AND CONNECTIONS. FOR USE ABOVE GRADE ONLY.
   c. SCHEDULE 40 ASTM A53 GALVANIZED STEEL PIPE AND GALVANIZED CAST IRON DWV FITTINGS WITH THREADED JOINTS AND CONNECTIONS. OPTIONAL JOINTS AND CONNECTIONS MAY BE GROOVED PIPE SIMILAR TO VICTAULLIC STYLES 75 AND 77. FOR USE ABOVE GRADE ONLY.
   d. SCHEDULE 40 TYPE 1, GRADE 1 PVC DWV PIPE AND FITTINGS WITH SOCKET SOLVENT SOLDER JOINTS AND CONNECTIONS. PLASTIC PIPING NOT PERMITTED FOR INSTALLATION IN RETURN AIR PLENUMS OR EXPOSED LOCATIONS.

D. EXECUTION
1. FURNISH AND INSTALL A CLEANOUT AT THE BASE OF EACH STACK AND ELSEWHERE AS REQUIRED BY THE PLUMBING CODE.
2. ALL CAST IRON SOIL PIPE SHALL BE BITUMASTIC COATED INSIDE AND OUTSIDE. ALL CAST IRON PIPING (INCLUDING JOINTS AND CONNECTIONS) SHALL BE INSTALLED IN ACCORDANCE WITH STANDARDS AS SET FORTH BY THE CAST IRON SOIL PIPE INSTITUTE (CSPI).
3. AT THE CONTRACTOR'S OPTION, HUBLESS CAST IRON SOIL PIPE MAY BE JOINED BY USING HEAVY DUTY "CLAMP ALL" COUPLINGS IN LIEU OF "NO-HUB" COUPLINGS. COUPLINGS ARE TO BE MADE OF 24 GAUGE TYPE 304 STAINLESS STEEL WITH HI-TORQUE CLAMPS AND NEOPRENE GASKETS. COUPLINGS SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS.
4. PLASTIC PIPING SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS, WITH PARTICULAR ATTENTION TO REQUIREMENTS FOR JOINING METHODS, SUPPORT, AND ALLOWANCES FOR EXPANSION AND CONTRACTION. PLASTIC PIPING SHALL NOT BE INSTALLED IN ANY RETURN AIR PLENUM OR CHASE THAT IS USED FOR RETURN AIR.
5. COORDINATE INSTALLATION WITH STRUCTURE, EXISTING CONDITIONS AND WORK OF OTHER TRADES AT AND ADJACENT TO SOIL, WASTE AND VENT SERVICE PIPING INSTALLATION.

DOMESTIC WATER PIPING SYSTEMS

A. GENERAL
1. PROVIDE A COMPLETE DOMESTIC WATER SUPPLY PIPING SYTEM AS SHOWN ON THE DRAWINGS, AND AS NECESSARY TO SERVE ALL ITEMS REQUIRING SAME.
2. THE DOMESTIC WATER PIPING SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   a. COLD WATER SUPPLY, HOT WATER SUPPLY, AND HOT WATER RETURN.
   b. TEMPERED WATER SUPPLY (FULL TEMPERATURE RANGE).
   c. TRAP PRIMER SUPPLY.

B. PIPE AND FITTINGS
1. ABOVE GROUND
   a. HARD COPPER TUBE: ASTM B88, TYPE L WATER TUBE, DRAWN TEMPER
   a.a. CAST COPPER SOLDER FITTINGS: ASME B16.18, PRESSURE FITTINGS
   a.b. WROUGHT COPPER SOLDER JOINT FITTINGS: ASME B16.22, WROUGHT COPPER PRESSURE FITTINGS.
   a.c. WROUGHT COPPER PRESSURE SEAL JOINT FITTINGS WITH EPDM RUBBER O-RING SEAL IN EACH END; MANUFACTURER'S SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: CERRO FLOW PRODUCTS, LLC. ELKHART PRODUCTS CORPORATION, VIEGA.
   b. PLENUM RATED ASTM & NSF LISTED SCHEDULE 80 CPVC PIPE WITH SOCKET SOLVENT WELD PRESSURE FITTINGS.
   b.a. HANGERS AND SUPPORTS FOR ALL CPVC TUBING SHALL BE SPACED AT 1/2 THE MANUFACTURER'S RECOMMENDED SPACING TO PROVIDE GREATER SUPPORT AND RESTRICT SAGGING/SETTLING OF PIPING AFTER INSTALLATION.
   c. CROSS LINKED POLYETHYLENE PEX-A TUBING AS MANUFACTURED BY UPONOR OR EQUAL CONFORMING TO ASTM F876 AND ASTM F877 AND TESTED IN COMPLIANCE BY A MANUFACTURER APPROVED INDEPENDENT PARTY.
   c.a. PROVIDE MANUFACTURER RECOMMENDED BEND SUPPORTS AND FITTINGS FOR ALL TUBING INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
   c.b. ALL SUPPORTS, FITTINGS, AND JOINTS SHALL BE APPROVED BY THE MANUFACTURER AND BE ASTM F1960 LISTED.
   c.c. PEX MANIFOLDS SHALL CONSIST OF A TYPE L COPPER BODY WITH BRASS PROPEX OUTLET CONNECTIONS. BODY TO BE OF AN ENGINEERED PLASTIC DESIGN WITH PROPEX OUTLET CONNECTIONS. ALL MANIFOLDS TO BE PROVIDED WITH INLET CONNECTIONS CONFORMING TO SUPPLY SIZES SHOWN ON DRAWINGS. EXACT QUANTITY OF COLD AND HOT WATER OUTLET PORTS TO BE COORDINATED IN-FIELD IN ADVANCE OF WORK BY THIS CONTRACTOR.
   c.d. ALL MANIFOLDS AND OUTLET PORTS SHALL BE LABELED BY THE SPECIFIC ROOM AND FIXTURE SERVED.
   c.e. HANGERS AND SUPPORTS FOR ALL PEX-A TUBING SHALL BE SPACED AT 1/2 THE MANUFACTURER RECOMMENDED SPACING TO PROVIDE GREATER SUPPORT AND RESTRICT SAGGING/SETTLING OF PIPING AFTER INSTALLATION.
   d. COMPLETED INSTALLATION TO BE RATED FOR 125 PSIG WORKING PRESSURE AT MAXIMUM OF 140 DEGREES F WATER TEMPERATURE.
2. BELOW GROUND PIPING
   a. PIPING BELOW GRADE 2" DIAMETER AND SMALLER SHALL BE LISTED/APPROVED TYPE K SOFT COPPER TUBING IN A SINGLE LENGTH WITH NO IN-LINE COUPLINGS OR JOINTS. COMPLETED INSTALLATION TO BE RATED 135 S.W.P AND 400 W.O.G.
   b. UNDER GROUND PIPING UP TO AND INCLUDING 1-1/2" SIZE, SDR-9, ASTM D 2737, CSA B 137.1 POLYETHYLENE (PE) PLASTIC TUBING. TUBING SHALL BE RATED FOR 200 PSI WORKING PRESSURE. TUBING SHALL BE PURCHASED IN ROLL FORM IN A SINGLE LENGTH WITH MINIMAL IN-LINE COUPLINGS OR JOINTS, AND MINIMUM NUMBER OF FITTINGS UNLESS INDICATED OTHERWISE. FITTINGS IF REQUIRED TO BE COMPATIBLE WITH THE PIPING.
   c. PLASTIC PIPING WHICH CONFORMS TO ASTM D 2737 SHALL BE FURNISHED WITH #12 COPPER TRACE ALONG ENTIRE LENGTH OF UNDERGROUND INSTALLATION. PLASTIC PIPING SHALL BE USED FOR UNDERGROUND INSTALLATION ONLY. JOINTS TO BE KEPT TO MINIMUM QUANTITY POSSIBLE.
3. 2-1/2" SIZE AND SMALLER MAY BE TWO-PIECE BRONZE BODY BALL VALVE, SCREWED CONNECTIONS, UNION CONNECTION BODY, TEFLON SEATS, FULL PORT WITH BLOW OUT PROOF STEM, ADJUSTABLE PACKING GLAND, CHROME PLATED BRONZE BALL AND LEVER HANDLE LABELED FOR THE SERVICE CONTROLLED. DESIGN FOR 150 S.W.P. AND 400 W.O.G. EQUAL TO APOLLO 70 SERIES.
4. CHECK VALVES TO BE ALL BRONZE HORIZONTAL SWING WITH BRONZE DISC RATED FOR 125 S.W.P. 3" AND LARGER TO BE FLANGED.
5. VALVES BY CRANE, HAMMOND, NIBCO OR JENKINS MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
6. ALL DOMESTIC WATER PIPING SHALL BE CLEAN, FLUSHED AND TESTED PER STATE AND LOCAL HEALTH DEPARTMENT REQUIREMENTS.
7. ALL DOMESTIC WATER PIPING SHALL BE CERTIFIED SAFE FOR HUMAN CONSUMPTION BY A CERTIFIED PROFESSIONAL BY THE STATE OF OHIO (BACTERIAL CERTIFICATION NUMBER) EMPLOYED BY A TESTING LABORATORY THAT STATES THE SYSTEM MEETS THE DEPARTMENT OF HEALTH REQUIREMENTS AND IS APPROVED FOR HUMAN CONSUMPTION.
8. SOLDER AND FLUX MATERIAL SHALL BE CERTIFIED "LEAD FREE" AND LISTED FOR USE WITH POTABLE WATER SYSTEMS.

C. EXECUTION
1. ALL PIPING THAT SUPPLIES A FLUSH VALVE, SOLENOID VALVE (OTHER THAN SLOW-CLOSING TYPE) FOOT PEDAL OPERATOR, SPRING RETURN OPERATOR OR OTHER QUICK CLOSING TYPE DEVICE SHALL HAVE A SHOCK ABSORBER INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. UNLESS INDICATED OTHERWISE, WHERE MULTIPLE FIXTURES OR EQUIPMENT IN ADJACENT LOCATIONS (SUCH AS WITHIN A CHASE OR OTHER ENCLOSURE) ARE SUPPLIED BY COMMON PIPING MANIFOLD, A PROPERLY SIZED AND INSTALLED SHOCK ABSORBER MAY BE UTILIZED.
2. RUN ALL WATER PIPING LEVEL AND CONCEAL WHENEVER POSSIBLE. PIPING TO BE INSTALLED TO ALLOW COMPLETE DRAIN DOWN OF SYSTEM BACK TO MAIN RISER AT BASE OF SYSTEM WHENEVER POSSIBLE. PROVIDE 3/4" DRAINS AT BASE OF RISER, AND ANY OTHER TRAPPED OR LOW POINTS WHEN SUCH ARE UNAVOIDABLE DUE TO PROJECT CONDITIONS. 3/4" DRAINS TO CONSIST OF BALL VALVE WITH OUTLET CONNECTION VACUUM BREAKER.
3. INSTALL AN IN-LINE PRESSURE TYPE VACUUM BREAKER AS SPECIFIED HEREIN IN THE INDIVIDUAL/DEDICATED SUPPLY PIPING FOR ALL VALVES, FITTINGS, TRIM, OR OTHER ELEMENTS WITH SERRATED ENDS OR OTHER OUTLETS CAPABLE OF HOSE CONNECTIONS THAT DO NOT INCLUDE AN INTEGRAL LISTED/APPROVED BACKFLOW PREVENTER DEVICE.
4. BALANCE RECIRCULATION BRANCH LINE FLOW AS REQUIRED FOR PROPER OPERATION OF SYSTEMS. PROVIDE COMBINATION BALANCE/SHUTOFF VALVE, CHECK VALVE, THERMOMETER ND PETE'S PLUG FOR EACH BRANCH RECIRCULATING LINE.
5. HORIZONTAL SUPPLY PIPING BELOW SLABS ON GRADE TO BE INSTALLED ENTIRELY BELOW THE SLAB STRUCTURE, INCLUDING CONDUIT SLEEVE WHEN PROVIDED. UNDER SLAB PIPING AND/OR CONDUIT SHALL NOT BE EMBEDDED OR SUPPORT SLAB STRUCTURES.
6. COORDINATE INSTALLATION WITH STRUCTURE, SITE CONDITIONS AND WORK OF OTHER TRADES AT AND ADJACENT OT DOMESTIC WATER SERVICE PIPING INSTALLATIONS.
7. MAINTAIN NECESSARY CLEARANCE FORM STRUCTURAL SUPPORT ELEMENTS AS REQUIRED FOR INSTALLATION OF DOMESTIC WATER SERVICE PIPING OUTSIDE OF SUPPORT/BEARING ZONES.
8. INSTALL PEX PIPING WITH LOOP AT EACH CHANGE OF DIRECTION OF MORE THAN 90 DEGREES.

D. FLUSHING AND STERILIZATION
1. FLUSH OUT ALL DOMESTIC WATER PIPING SYSTEMS TO REMOVE ALL DIRT AND GREASE FROM PIPING AND EQUIPMENT BEFORE SYSTEMS ARE PLACED INTO OPERATION. CLEAN STRAINERS AFTER EACH FLUSHING UNTIL THE STRAINER REMAINS CLEAN.
2. AFTER DOMESTIC WATER LINES ARE ALL INSTALLED, STERILIZE LINES AS PRESCRIBED BY AWWA-C-651. STERILIZATION SHALL BE DONE UNDER IMMEDIATE-ON-THE-JOB SUPERVISION OF A WATER TESTING LABORATORY REGULARLY ENGAGED IN THE SERVICE AND SHALL BE DONE PER THEIR INSTRUCTIONS. ALL FEES FOR TESTING AND TEST EQUIPMENT SHALL BE PAID BY THIS CONTRACTOR.
3. FURNISH A CERTIFICATE OF STERILIZATION AND APPROVAL FOR HUMAN CONSUMPTION SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO REGULARLY IN THE EMPLOY OF THE TESTING LABORATORY. CERTIFICATION SHALL BE FURNISHED TO THE ARCHITECT/ENGINEER PRIOR TO ANY PAYMENT IS MADE.
4. STERILIZATION: CHLORINATING MATERIAL EITHER LIQUID CHLORINE MEETING AWWA STANDARD B301, SODIUM OR CALCIUM HYPOCHLORITE MEETING AWWA STANDARD B300.

E. EXECUTION
1. WITH ALL OUTLETS CLOSED, FILL SYSTEM TO WORKING PRESSURE AND CLOSE VALVE AT SUPPLY MAIN.
2. A CLEANING SOLUTION CONTAINING NOT LESS THAN 150 PARTS PER MILLION OF CHLORINE SHALL BE INTRODUCED INTO THE SYSTEM.
3. EACH OUTLET, HOT AND COLD, SHALL BE TESTED DURING FILL TO PROVE THE PRESENCE OF CHLORINE AT THAT OUTLET AND VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES DURING THE DISINFECTING TIME PERIOD.
4. WATER PIPING SYSTEMS SHALL REMAIN FILLED FOR A PERIOD OF 24 HOURS AND EACH OUTLET SHALL BE AGAIN TESTED AND SHALL PRODUCE NOT LESS THAN 100 PARTS PER MILLION OF CHLORINE AT THE END OF THE RETENTION PERIOD.
5. ALL OUTLETS SHALL BE OPENED WIDE AND THE MAIN SUPPLY VALVES OPENED. FLUSHING SYSTEM WITH WATER UNTIL THE CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION OR UNTIL APPROVED BY THE HEALTH DEPARTMENT. FLUSH DRAIN VALVES.
6. AFTER FINAL FLUSHING ALL AERATORS ON PLUMBING BRASS SHALL BE REMOVED, CLEANED AND REINSTALLED.
7. STERILIZATION TEST MAY BE PERFORMED AT THE SAME TIME THE PRESSURE TEST IS PLACED ON THE SYSTEM.

P-4-14105.DWG

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3	08.03.14	Addendum 3
2	07.09.14	Addendum 2
1	07.07.14	Addendum 1
	05.01.14	Bid Set
	02.01.14	Commission Review

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SHEET TITLE
PLUMBING SPECIFICATIONS

P-4

PLUMBING FIXTURE SCHEDULE

PLUMBING FIXTURE NOTES:

1. UNLESS INDICATED OTHERWISE, THE ARCHITECT SHALL SELECT THE FIXTURE COLOR/FINISH FROM THE MANUFACTURER'S FULL RANGE OF STANDARD OPTIONS.
2. UNLESS INDICATED OTHERWISE, ALL EXPOSED METALLIC COMPONENTS TO BE FURNISHED WITH POLISHED CHROME FINISH, INCLUDING FAUCETS, TRAPS, STOPS, PIPING, ETC.
3. UNLESS INDICATED OTHERWISE, ALL EXPOSED PIPING SHALL BE FURNISHED WITH POLISHED CHROME FINISH BRASS ESCUTCHEONS AT ALL WALL/CABINET PENETRATIONS AND FIXTURE CONNECTIONS.

UR-1	AMERICAN STANDARD, SLOAN, ZURN	FIXTURE;	AMERICAN STANDARD WALL HUNG; WASHBROOK FLOWISE ULTRA HIGH EFFICIENCY, MODEL NO. 6590.001 (0.125 GPF). EXPOSED TOP SPUD.	3/4" ---
		CONTROLS;	SLOAN MANUAL OPERATED FLUSH VALVE, MODEL 186-0.125 GPF, 3/4" TOP SPUD INLET.	
		CARRIER;	ZURN SERIES 1221	

2

SPECIFICATIONS

SHOCK ABSORBERS
A. SIMILAR TO ZURN SHOCKTROL SERIES Z-1700, SIZED AND INSTALLED AS RECOMMENDED BY THE MANUFACTURER FOR SPECIFIC CONDITIONS AT EACH LOCATION.
B. EQUAL SHOCK ABSORBERS AS MANUFACTURED BY J.R. SMITH, JOSAM, SIOUX CHIEF OR PRECISION PLUMBING PRODUCTS MAY BE PROVIDED AT THE CONTRACTOR'S OPTION.

TRAP PRIMER ASSEMBLIES
A. SIMILAR TO SIOUX CHIEF PRODUCTS PRIME PERFECT SERIES 695 WITH BRASS BODY AND WORKING PRESSURE OF 250 PSIG. PROVIDE WITH DISTRIBUTION UNIT AS REQUIRED FOR MULTIPLE SUPPLIES TO FLOOR DRAIN. PROVIDE COPPER PIPING FROM TRAP PRIMER UNIT TO FLOOR DRAIN TRAP PRIMER INLET.
B. EQUAL TRAP PRIMER ASSEMBLIES AS MANUFACTURED BY ZURN, J.R. SMITH, JOSAM, PRECISION PLUMBING PRODUCTS, WADE, SLOAN, MIFAB OR SIOUX CHIEF MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

PIPE ANCHORS, HANGERS AND SUPPORTS
A. ALL PIPING SHALL BE SEPARATELY HUNG AND SUPPORTED FROM APPROVED STRUCTURAL MEMBERS OR CONCRETE OVERHEAD STRUCTURE ONLY. NO PIPE SHALL BE HUNG FROM ROOF DECK, PIPE DUCTS, OR OTHER COMPONENTS OR EQUIPMENT OF OTHER TRADES.
B. PROVIDE LISTED/APPROVED ADJUSTABLE HANGERS, INSERTS, BRACKETS, CLAMPS, SUPPLEMENTAL STEEL AND OTHER DEVICES REQUIRED FOR PROPER SUPPORT OF ALL PIPE LINES.
C. HANGERS SHALL BE DESIGNED TO ALLOW FOR EXPANSION AND CONTRACTION AND TO ALLOW INSULATION (WHERE APPLICABLE) TO RUN CONTINUOUSLY THROUGH HANGERS.
D. WIRE OR STRAP HANGERS ARE NOT PERMITTED. ADJUST HANGERS SO AS TO DISTRIBUTE WEIGHT LOAD EQUALLY ON ATTACHMENTS.
E. USE OF TRAPEZE HANGERS DO NOT PERMIT THE ELIMINATION OF THE PIPING INSULATION TO NOT BE CONTINUOUS THRU THE HANGER.
F. PIPING TO BE SUPPORTED ACCORDING TO THE FOLLOWING SCHEDULE. SUPPORT AT INTERVALS NOT TO EXCEED SPACING LISTED OR ELSEWHERE AS REQUIRED IN ACCORDANCE WITH GOOD WORKMANSHIP. NO PIPE SHALL BE SUPPORTED FROM ANOTHER PIPE. ALL HANGERS SHALL BE PLUMBED BEFORE INSULATION IS APPLIED AND ALL HANGERS SHALL BE DOUBLE NUTTED. ALL HANGERS SHALL MEET THE OHIO PLUMBING CODE REQUIREMENTS.

(1) Steel Pipe

Pipe Size	Rod	Spacing
Thru 1"	3/8"	7'0"
1-1/4"	3/8"	9'0"
1-1/2"	3/8"	9'0"
2"	3/8"	10'0"
2-1/2"	1/2"	11'0"
3"	1/2"	12'0"
4"	5/8"	14'0"
6"	3/4"	17'0"
8"	7/8"	19'0"

(2) Copper Pipe

Pipe Size	Spacing
Thru 3/4"	6'0"
1"	7'0"
1-1/4"	9'0"
2"	9'0"
2-1/2"	11'0"
3"	11'0"
4"	11'0"
6"	14'0"
8"	14'0"

DRAINS, CLEANOUTS, AND DRAINAGE SPECIALTIES
A. GENERAL
1. FURNISH AND INSTALL DRAINS, CLEANOUTS AND DRAINAGE SPECIALTIES AS INDICTED ON THE DRAWINGS, AND ELSEWHERE AS REQUIRED FOR COMPLETE DRAINAGE, ACCESS AND SPECIAL FUNCTION/OPERATION AT ALL ITEMS/ELEMENTS AND AREAS REQUIRING SAME AND FOR PROPER INTEGRATION WITH THE BUILDING DRAINAGE SYSTEM.
2. UNLESS INDICATED OTHERWISE, ALL ITEMS/ELEMENTS AND THEIR COMPONENT PARTS DESCRIBED HEREIN TO BE OF METALLIC CONSTRUCTION WHEN SUCH IS AVAILABLE FOR THE BASE SPECIFIED ITEM/ELEMENT. USE OF PLASTIC, COMPOSITE, OR OTHER NON-METALIC COMPONENTS AND/OR MATERIALS BY LISTED ALTERNATE ITEMS/ELEMENTS IS PROHIBITED.

B. PRODUCTS
1. HUB DRAINS TO CONSIST OF STRAIGHT SECTION OF HUB OR SOCKET TYPE CONNECTION WASTE PIPE INSTALLED IN THE VERTICAL POSITION, WITH THE HUB OR SOCKET PORTION EXPOSED ABOVE THE FLOOR. THE HUB INLET SHALL BE A MINIMUM OF 3" ABOVE THE FLOOR SURFACE. HUB OR SOCKET WASTE PIPE MATERIAL TO MATCH THAT OF THE SYSTEM IT IS CONNECTED TO.
2. FURNISH AND INSTALL A P-TRAP FOR EACH SANITARY DRAIN INLET TERMINAL (FLOOR DRAIN, HUB DRAIN, FLOOR SINK, ETC.,) OF THE SAME MATERIAL AND CONNECTION TYPE AS THE PIPING SYSTEM CONNECTED TO, UNLESS INDICATED OTHERWISE.
3. THIS CONTRACTOR MAY, AT THEIR OPTION, USE ABS PLASTIC PLUGS IN LIEU OF BRONZE PLUGS WHERE SPECIFIED, EXCEPT ABS PLUGS SHALL NOT BE PERMITTED IN RETURN AIR PLENUMS OR AT EXPOSED LOCATIONS. LOCATION OF THE RETURN AIR PLENUM TO BE CONFIRMED WITH THE HVAC CONTRACTOR.
4. ALL CLEANOUTS INSTALLED IN CARPETED AREAS TO BE PROVIDED WITH APPROVED VANDALPROOF CARPET MARKERS. CARPETED AREAS TO BE AS INDICATED BY ARCHITECTURAL DOCUMENTATION, AND CONFIRMED WITH THE GENERAL CONTRACTOR.
5. CLEANOUTS IN TILE, MARBLE, TERRAZZO, PARQUET OR OTHER "SPECIAL" FLOOR TREATMENT AREAS TO BE PROVIDED WITH RECESSED TOPS TO ALLOW THE INTEGRATION WITH THE FLOOR TREATMENT. "SPECIAL" FLOOR TREATMENT AREAS TO BE AS INDICATED BY ARCHITECTURAL DOCUMENTATION, AND CONFIRMED WITH THE GENERAL CONTRACTOR.
6. EQUAL DRAINS, DRAINAGE SPECIALTIES AND CLEANOUTS AS MANUFACTURED BY ZURN, JOSAM, WADE, WATTS OR J.R. SMITH MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

C. EXECUTION
1. WHEN TRAP PRIMER WATER SUPPLY IS INDICATED ON PLANS FOR DRAIN ASSEMBLIES, THE CONTRACTOR HAS THE OPTION TO CONNECT TO A FITTING ON EITHER THE DRAIN ASSEMBLY OR THE P-TRAP INLET ABOVE THE WATER SEAL, IN ACCORDANCE WITH INSPECTION/APPROVAL AUTHORITIES. PROVIDE A DIELECTRIC UNION AT TRAP PRIMER SUPPLY CONNECTION POINTS. WHEN DRAIN BODY PRIMER CONNECTIONS OCCUR WITHIN THE SLAB/FLOOR STRUCTURE, PROVIDE AN OFFSET IMMEDIATELY ADJACENT TO THE DRAIN LOCATION TO ALLOW INSTALLATION OF SUPPLY PIPING ENTIRELY BELOW THE SLAB/FLOOR STRUCTURE, INCLUDING THE CONDUIT SLEEVE REQUIRED FOR TRAP PRIMER SUPPLY PIPING UNDER SLAB ON GRADE.
2. PROVIDE A COMPATIBLE FASTENING ASSEMBLY WITH INTERNAL SECONDARY DRAINAGE FLANGE AND WEEPHOLES FOR ALL ITEMS SPECIFIED HEREIN BEING INSTALLED IN STRUCTURES HAVING A WATER PROOF MEMBRANE, FLASHING, VAPOR BARRIER, OR SIMILAR ELEMENT PROVIDED UNDER SEPARATE CONTRACT. INSTALLATION CONDITIONS TO BE VERIFIED FROM ARCHITECTURAL DOCUMENTATION AND COORDINATED WITH THE APPROPRIATE CONTRACTOR.
3. COUNTER FLASHING (WHEN REQUIRED) FOR ITEMS SPECIFIED HEREIN IS TO BE COMPATIBLE WITH WATERPROOF MEMBRANE, VAPOR BARRIER, FLASHING, OR SIMILAR ELEMENTS PROVIDED UNDER SEPARATE CONTRACT AT THE INTERFACE POINT. COUNTER FLASHING TO BE PROVIDED AND SET IN PLACE BY THE PLUMBING CONTRACTOR. BUT WILL BE MADE WATERTIGHT BY THE CONTRACTOR INSTALLING THE MEMBRANE, VAPOR BARRIER, FLASHING OR SIMILAR ELEMENTS PROVIDED UNDER SEPARATE CONTRACT. INSTALLATION CONDITIONS TO BE VERIFIED FROM ARCHITECTURAL DOCUMENTATION AND COORDINATED WITH THE APPROPRIATE CONTRACTOR.
4. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ALL DRAINS, CLEANOUTS AND OTHER ITEMS SO NOTED INSTALLED FLUSH AND LEVEL WITH FINISH WALL, FLOOR OR OTHER STRUCTURE AS APPLIES. COORDINATE INSTALLATION WITH CONTRACTOR'S PROVIDING ASSOCIATED STRUCTURE, INCLUDING REQUIRED ELEVATIONS AND DIMENSIONAL LOCATIONS. ITEMS NOT PROPERLY INSTALLED SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE OWNERS' ON-SITE REPRESENTATIVE.
5. ALL ITEMS AND ACCESSORIES SPECIFIED HEREIN ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE THE THE REQUIREMENTS OF THE INSPECTION/APPROVAL AUTHORITIES.
6. COORDINATE LOCATION OF ALL DRAINS AS REQUIRED FOR PROPER OPERATION WHEN ASSOCIATED WITH SLOPED FLOORS, DECKS OR OTHER STRUCTURES PROVIDED UNDER SEPARATE CONTRACT.
7. VERIFY EXACT LOCATIONS OF DRAINS FURNISHED FOR ITEMS UNDER SEPARATE CONTRACT WITH THE EQUIPMENT AS ACTUALLY PROVIDED AND INSTALLED BY THE APPROPRIATE CONTRACTOR. COORDINATE INSTALLATION IN ADVANCE OF WORK.
8. WITH THE EXCEPTION OF CLEANOUTS, ALL ITEMS SPECIFIED ARE TO HAVE CONNECTION SIZE SAME AS CONNECTED PIPING SIZE SHOWN ON THE DRAWINGS, UNLESS DIRECTED OTHERWISE.
9. CLEANOUTS ARE TO HAVE OUTLET SIZE, CONNECTION PIPE AND FITTINGS OF SAME SIZE AS SHOWN ON PLANS FOR WASTE/DRAIN PIPING BEING SERVED, UP TO AND INCLUDING 3" SIZE. CLEANOUTS ARE TO HAVE OUTLET SIZE, CONNECTING PIPE AND FITTINGS OF 4" SIZE WHEN SHOWN ON THE DRAWINGS SERVING WASTE/DRAIN PIPING 4" SIZE AND LARGER.
10. WHERE INDIVIDUAL SINK SOLIDS INTERCEPTORS ARE INDICATED ON THE DRAWINGS, THEY ARE TO BE PROVIDED IN LIEU OF P-TRAP FOR SINK IF SO SPECIFIED. INSTALL INTERCEPTOR TO ALLOW PROPER ACCESS FOR CLEANING AND SERVICE. INTERCEPTOR TO BE SUPPORTED FROM FLOOR BELOW SO AS NOT TO BEAR ON SINK, PIPING OR ASSOCIATED CASEWORK SUPERSTRUCTURE. PROVIDE ADDITIONAL APPROVED BLOCKING/BASE/STAND AS REQUIRED FOR SUPPORT FROM BASE OF CASEWORK OR FLOOR BELOW AS APPLICABLE.
11. COORDINATE LOCATIONS OF ITEMS SPECIFIED HEREIN, AND INSTALLED IN OR AT STRUCTURE PROVIDED UNDER SEPARATE CONTRACT, RELATIVE TO FOUNDATIONS, BEAMS AND OTHER STRUCTURE ELEMENTS TO AVOID CONFLICTS. MAKE MINOR ADJUSTMENTS AS REQUIRED FOR PROPER INSTALLATION, CLEARANCE AND ACCESSIBILITY. REFER TO ARCHITECTURAL/STRUCTURAL DOCUMENTATION IN ADVANCE OF WORK AND COORDINATE INSTALLATION WITH THE APPROPRIATE CONTRACTOR.
12. ALL ITEMS/ELEMENTS SPECIFIED THAT AE TO BE INTEGRATED INTO ABOVE GRADE STRUCTURES SHALL BE FURNISHED WITH AN ANCHOR FLANGE. WHEN SUCH IS AVAILABLE. SECONDARY DRAINAGE FLANGE AT DRAIN ASSEMBLIES MAY ALSO SERVE AS AN ANCHORING FLANGE, SUBJECT TO APPROVAL.

PLUMBING FIXTURES
A. GENERAL
1. FURNISH AND INSTALL ALL PLUMBING FIXTURES AND ASSOCIATED ACCESSORIES AS SPECIFIED HEREIN AT LOCATIONS INDICATED ON THE DRAWINGS. FIXTURES TO BE PROVIDED FREE OF DEFECTS AND SET IN A NEAT, FINISHED AND UNIFORM MANNER.
2. WHERE FIXTURES ARE INDICATED TO BE HANDICAP ACCESSIBLE, INSTALL AS DIRECTED HEREIN AND IN COMPLIANCE WITH THE CODES AND GUIDELINES REFERENCED.

B. PRODUCTS
1. PLUMBING FIXTURES, TRIM, FITTINGS, ACCESSORIES, APPURTENANCES, ETC. NOT INCLUDED HEREIN ARE AS SPECIFIED ON PLAN.
2. CHINA PLUMBING FIXTURES AND ACCESSORIES AS MANUFACTURED BY AMERICAN STANDARD, KOHLER, ELJER, CRANE OR ZURN MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
3. STAINLESS STEEL SINKS AND ACCESSORIES AS MANUFACTURED BY ELKAY, KOHLER, OR JUST MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
4. EQUAL MANUAL OPERATION FAUCETS AND ACCESSORIES AS MANUFACTURED BY AMERICAN STANDARD, ELKAY, DELTA (COMMERCIAL), KOHLER, CHICAGO FAUCET, SPEAKMAN, ZURN OR T&S BRASS MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
5. SEATS FOR WATER CLOSETS AS MANUFACTURED BY BEMIS, CHURCH, OLSONITE, BENEKE OR CENTACO MAY BE FURNISHED AT THE CONTRACTOR'S OPTION. ALL SEATS ARE TO BE FURNISHED WITH SELF-SUSTAINING STAINLESS STEEL CHECK HINGES UNLESS NOTED OTHERWISE.
6. EQUIVALENT PRECAST MOLDED STONE MOP SINK RECEPTORS AS MANUFACTURED BY FIAT, MUSTEE, SWAN, OR ZURN LC MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
7. EQUIVALENT DISPOSERS/GARBAGE GRINDERS AS MANUFACTURED BY IN-SINK-ERATOR, WASTE KING, BUS BOY, EMERSON OR HOBART MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
8. UNLESS INDICATED OTHERWISE, ALL EXPOSED METALLIC PARTS, PIPING, TRIM, FITTINGS, ACCESSORIES, APPURTENANCES, ETC. ASSOCIATED WITH PLUMBING FIXTURES SHALL BE POLISHED CHROME FINISH WHEN AVAILABLE. PROVIDE POLISHED CHROME PLATED BRASS ESCUTCHEONS ON PIPING AT ALL EXPOSED STRUCTURE PENETRATIONS (WALLS, FLOORS, CEILINGS, CASEWORK, ETC.) AND AT ALL FIXTURE CONNECTIONS.
9. AT ALL HANDICAP ACCESS LAVATORIES AND/OR SINKS WITH EXPOSED SUPPLY AND DRAIN PIPING BELOW, PROVIDE PRE-FABRICATED CLOSED CELL VINYL INSULATION/COVER ASSEMBLIES WITH SEAMLESS PVC JACKET FOR ALL SUPPLY (FULL RANGE OF HOT, COLD AND TEMPERED) AND DRAIN PIPING. ASSEMBLY TO BE SIMILAR TO MCGUIRE PRO-WRAP SERIES, OFFSET DRAINS (IF USED) TO BE PROVIDED WITH COVER ASSEMBLIES SPECIFICALLY DESIGNED FOR SAME. ASSEMBLIES TO BE LISTED BY MANUFACTURER AS HANDICAP ACCESS COMPLIANT.

C. EXECUTION
1. PROVIDE INDIVIDUAL ACCESSIBLE STOP VALVES ON ALL FIXTURES AND EQUIPMENT SUPPLY PIPING.
2. INSTALL ALL FIXTURES ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
3. MOUNTING HEIGHTS OF FIXTURES AS ASSOCIATED EQUIPMENT AS INDICATED ON DRAWINGS.
4. INSTALL VANDAL RESISTANT 0.5 GPM FLOW RESTRICTIONS ON ALL LAVATORY FAUCETS IN PUBLIC ACCESS AREAS, SIMILAR TO CHICAGO FAUCET MODEL NUMBER E-2805.
5. UNLESS NOTED OTHERWISE ALL WALL HUNG LAVATORIES SHALL BE SUPPORTED WITH A FLOOR MOUNTED CONCEALED ARM CARRIER. BOLT UNIT TO FLOOR.
6. ALL EXPOSED PORTIONS OF SUPPLY AND DRAIN PIPING, INCLUDING FITTINGS, ACCESSORIES AND APPURTENANCES, BELOW HANDICAP ACCESS LAVATORIES AND SINKS (WITH THE EXCEPTION OF WALL ESCUTCHEONS) TO BE PROVIDED WITH COVER BY COMPLETED INSTALLATION SPECIFIED HEREIN, IN ACCORDANCE WITH HANDICAP ACCESSIBILITY REQUIREMENTS.
7. AT ALL COUNTERTOP OR OTHER CASEWORK CONDITIONS, VERIFY EXACT LOCATION AND INSTALLATION OF ALL ITEMS WITH ARCHITECTURAL DOCUMENTATION BEFORE ANY WORK IS PERFORMED. COORDINATE INSTALLATION WITH THE GENERAL CONTRACTOR. WHERE PLUMBING FIXTURES ARE INSTALLED IN CASEWORK AND INDICATED TO BE "HANDICAP ACCESSIBLE", COORDINATE INSTALLATION WITH GENERAL CONTRACTOR TO PROVIDE CLEARANCES AND MOUNTING HEIGHTS AS REQUIRED.
8. ALL HANDICAP ACCESS FIXTURE CONTROLS, INCLUDING FAUCETS AND FLUSH VALVES, TO BE PROVIDED WITH OPERATORS REQUIRING 5 POUND PRESSURE OR LESS FOR OPERATION.
9. WHERE INDIVIDUAL FIXTURE SOUDS INTERCEPTORS OR NEUTRALIZATION/DILUTION BASINS ARE INDICATED AT SINK LOCATIONS, INSTALL IN LIEU OF P-TRAPS SPECIFIED HEREIN, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. WHERE ACCESSORIES SUCH AS GRAB BARS, SEATS, ETC., ARE PROVIDED BY THE GENERAL CONTRACTOR AT PLUMBING FIXTURE OR EQUIPMENT LOCATIONS (I.E. TOILET STALLS), COORDINATE INSTALLATION OF PLUMBING EQUIPMENT TO AVOID CONFLICTS, AND ALLOW PROPER OPERATION OF AND ACCESSIBILITY TO ALL ITEMS. VERIFY LOCATION OF ALL ITEMS PROVIDED BY THE GENERAL CONTRACTOR FROM ARCHITECTURAL DOCUMENTATION IN ADVANCE OF PLUMBING WORK BEING PERFORMED.
11. WHEN SINKS ARE INDICATED ON THE DRAWINGS TO BE PROVIDED WITH DISPOSERS OR GARBAGE GRINDERS, DELETE SINK DRAIN ASSEMBLY SPECIFIED HEREIN, AS REQUIRED FOR DISPOSER/GRINDER INSTALLATION.
12. SENSOR FAUCET TRANSFORMERS AND INTERCONNECTING FIXTURE WIRING AND ACCESSORIES TO BE LOCATED IN SECURE, RESTRICTED ACCESS AREAS/LOCATIONS (I.E. AND ACCESSIBLE CHASE, CASEWORK SUPERSTRUCTURE, ETC.). COORDINATE INSTALLATION WITH THE GENERAL CONTRACTOR.
13. UNLESS INDICATED OTHERWISE, WHEN UNDER COUNTER TYPE DISHWASHERS ARE INSTALLED ADJACENT TO SINKS SPECIFIED HEREIN, PROVIDE 1/2" HOT WATER SUPPLY TO DISHWASHER FROM SINK SUPPLY UPSTREAM OF FIXTURE STOP, AND FURNISH P-TRAP WITH 1" DRAIN CONNECTION FITTING ON FIXTURE SIDE OF TRAP FOR DISHWASHER CONNECTION. DISHWASHER SUPPLY PIPING TO INCLUDE IN-LINE STOP, DUAL CHECK BACKFLOW PREVENTER (SIMILAR TO WATTS NO. 7) AND SHOCK ABSORBER. DISHWASHER PIPING BELOW COUNTER IN CASEWORK, IN A CONCEALED, ACCESSIBLE LOCATION. THE BACKFLOW PREVENTER IN THE SUPPLY PIPING MAY BE DELETED IF AN APPROVED BACKFLOW PREVENTION DEVICE IS CONFIRMED TO BE PROVIDED AS AN INTEGRAL COMPONENT OF THE DISHWASHER ASSEMBLY.
14. JOINTS FORMED WHERE FIXTURES COME INTO CONTACT WITH WALLS OF FLOORS SHALL BE SEALED WATERTIGHT WITH AND APPROVED SEALING COMPOUND, COORDINATE INSTALLATION AND COLOR WITH THE GENERAL CONTRACTOR.

P-5-14105.DWG

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PLUMBING SPECIFICATIONS CONTINUED

P-5