

PLUMBING FIXTURE SCHEDULE								
NO.	TYPE OF FIXTURE	W	V	CW	HW	MANUFACTURER/MODEL NO.	FAUCET / FLUSH VALVE	ACCESSORIES
L	LAVATORY (ADA COMPLIANT)	1-1/2"	1-1/2"	1/2"	1/2"	KOHLER MODEL NO. K-2210-G, "CAXTON OVAL", UNDER-MOUNT, VITREOUS CHINA, (WHITE).	KOHLER MODEL NO. K-13463, SINGLE HOLE, SENSOR OPERATED, 0.5 GPM, CHROME FINISH. PROVIDE KOHLER NO. K-13480-A (SINGLE FAUCET) OR 13481-A (MULTIPLE FAUCETS) AC POWER SUPPLY.	1-1/4" GRID DRAIN (POLISHED NICKEL) 1-1/4" X 1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS. TRAP AND SUPPLY SCALD GUARD BY TRU-BRO.
L1	LAVATORY (ADA COMPLIANT)	1-1/2"	1-1/2"	1/2"	1/2"	KOHLER MODEL NO. K-2031, "GREENWICH", WALL MOUNTED, SINGLE HOLE, VITREOUS CHINA, (WHITE).	KOHLER MODEL NO. K-13463, SINGLE HOLE, SENSOR OPERATED, 0.5 GPM, CHROME FINISH. PROVIDE KOHLER NO. K-13480-A (SINGLE FAUCET) AC POWER SUPPLY.	1-1/4" GRID DRAIN (POLISHED NICKEL) 1-1/4" X 1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS. TRAP AND SUPPLY SCALD GUARD BY TRU-BRO.
WC1	WATER CLOSET	4"	2"	1/2"	-	KOHLER MODEL NO. K-3505, "WELLWORTH", TANK TYPE, PRESSURE ASSISTED, ELONGATED BOWL, VITREOUS CHINA (WHITE), 1.6 GPF.		SEAT: KOHLER MODEL NO. K-4679-CA ELONGATED, OPEN FRONT (WHITE). CHROME PLATED SUPPLY AND LOOSE KEY STOP.
WC11	WATER CLOSET (ADA COMPLIANT)	4"	2"	1"	-	KOHLER MODEL NO. K-3493-SS, "HIGHLINE COMFORT HEIGHT", TANK TYPE, PRESSURE ASSISTED ELONGATED BOWL, VITREOUS CHINA (WHITE), 1.6 GPF.		SEAT: KOHLER MODEL NO. K-4679-CA ELONGATED, OPEN FRONT (WHITE). CHROME PLATED SUPPLY AND LOOSE KEY STOP.
UR	URINAL	2"	1-1/2"	3/4"	-	KOHLER MODEL NO. K-4991-ET (BARDON), WHITE, VITREOUS CHINA, WALL MOUNTED, TOP SPUD, 0.125 GPF. FURNISHED WITH WALL HANGERS.	SLOAN MODEL NO. 8186-0.125, FLUSH VALVE, 0.125 GPF, BATTERY, SENSOR OPERATED, CHROME FINISH.	UR1 SHALL BE MOUNTED 17" A.F.F. TO LIP.
UR1	URINAL (ADA COMPLIANT)	2"	1-1/2"	3/4"	-			
SH	SHOWER (ADA COMPLIANT)	2"	1-1/2"	1/2"	1/2"	FREEDOM SHOWERS MODEL NO. APF3838BF4P.5, TRANSFER SHOWER WITH 0.5" THRESHOLD, SLIP RESISTANT FLOOR, FOLDING SHOWER SEAT, CAULKLESS DRAIN AND GRAB BARS.	FREEDOM SHOWERS MODEL NO. APFVMS PRESSURE BALANCED MIXING VALVE, CHROME FINISH. FREEDOM SHOWERS MODEL NO. APFHGSKIT, 2.5 GPM HANDSHOWER, 6" SHOWER ARM, HANDSHOWER MOUNT, 63" METAL HOSE, CHROME FINISH.	
MB	MOP BASIN	3"	1-1/2"	1/2"	1/2"	FIAT MODEL NO. MSB2424, "MOLDED-STONE", 24" x 24" x 10", WITH STAINLESS STEEL DRAIN BODY.		ELKAY MODEL NO. LK-99 STRAINER AND TAILPIECE. 1-1/2"x1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.
SK	SINK (ADA COMPLIANT)	1-1/2"	1-1/2"	1/2"	1/2"	ELKAY MODEL NO. LRAD191955, "LUSTERTONE", RECTANGULAR, COUNTER MOUNT, SINGLE HOLE, STAINLESS STEEL FINISH.	ELKAY MODEL NO. LK1500CR, "EVERYDAY", SINGLE LEVER, SWING SPOUT, DECK MOUNTED, SINGLE HOLE, 1.5 GPM, CHROME FINISH.	KOHLER K-8801 STRAINER AND TAILPIECE. 1-1/2"x1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.
EW1	ELECTRIC WATER COOLER	1-1/2"	1-1/2"	1/2"	-	HALSEY TALOR MODEL NO. HTHB-HAC8BL, BI-LEVEL, BARRIER FREE, WITH BOTTLE FILLER, 1.1-1.5 GPM. STAINLESS STEEL TOP, PLATINUM VINYL FINISH.		1-1/4"x1-1/2" CAST BRASS "P" TRAP. BRASS SUPPLY AND LOOSE KEY STOP.

NOTES:

MISCELLANEOUS FIXTURE SCHEDULE			
MARK	ITEM	MANUFACTURER / MODEL NO.	NOTES
FD	FLOOR DRAIN	ZURN MODEL NO. ZN415H-P-Y, CAST IRON BODY, MEMBRANE CLAMP, ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, POLISHED NICKEL BRONZE TOP, 1/2" TRAP PRIMER CONNECTION, SEDIMENT BUCKET OR APPROVED EQUAL.	-
FS	FLOOR SINK	ZURN MODEL NO. Z1755-P-2, 12" x 12" x 6" DEEP, STAINLESS STEEL BODY, LIGHT-DUTY 1/2 GRATE, INTERIOR DOME STRAINER AND INTEGRAL FLOOR CLAMPING FRAME OR APPROVED EQUAL.	-
FCO/GCO	FLOOR/GRADE CLEANOUT	ZURN ZN1400-K-BP, CAST IRON BODY, ANCHOR FLANGE, ADJUSTABLE WITH POLISHED NICKEL BRONZE TOP AND BRONZE PLUG OR APPROVED EQUAL.	-
WC10	WALL CLEANOUT	ZURN Z1445, CAST IRON BODY WITH Z1468-ZS WITH BRONZE PLUG AND STAINLESS STEEL COVER OR APPROVED EQUAL.	-
WH	WALL HYDRANT	WOODFORD MODEL NO. 65, NON FREEZE, ANTI-SIPHON, WALL HYDRANT, WITH INTEGRAL VACUUM BREAKER, CHROME BOX WITH CHROME PLATE FACE OR APPROVED EQUAL.	-
RH	ROOF HYDRANT	WOODFORD MODEL NO. RHY2-1-MS NON FREEZE, ROOF HYDRANT, WITH DUAL CHECK BACKFLOW PREVENTER (ASSE 1052) OR APPROVED EQUAL.	-
RD & SRD	ROOF DRAIN & SECONDARY ROOF DRAIN	ZURN MODEL NO. Z164-Z-SC, CAST IRON BODY, WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARDS, DECK PLATE, LOW SILHOUETTE CAST IRON DOME, UNDERDECK CLAMP. DRAIN RECEIVER OR APPROVED EQUAL.	-
DSN	DOWNSPOUT NOZZLE	ZURN ZF199-SGR, (SATIN GREY), ALUMINUM BODY, DOWNSPOUT GASKET, OUTLET NOZZLE AND PERFORATED HINGED FLAPPER OR APPROVED EQUAL.	-

NOTES:

GAS WATER HEATER SCHEDULE										
MARK	MANUFACTURE & MODEL NO.	LOCATION	GALLONS STORAGE	G.P.H. RECOVERY		ELECT.	B.T.U. PER HOUR	EXHAUST OUTLET	AIR INLET	NOTES
				80°F RISE	100°F RISE					
GW1	A. O. SMITH BTH-199 Mxi CYCLONE	JAN. CLOSET 154	100	294	235	115/1/60	199,000	3"	3"	1, 2, 3

NOTES:  
1. ALL VENTING FOR GW1 SHALL BE PROVIDED AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. PROVIDE WITH SIDE WALL TERMINATION KITS  
2. WATER HEATER SHALL BE SEALED COMBUSTION CHAMBER, 94% MINIMUM THERMAL EFFICIENCY, ASME CERTIFIED AND WATER SENSE CERTIFIED.  
3. PROVIDE WITH CONDENSATION NEUTRALIZATION SYSTEM.

PUMP SCHEDULE											
MARK	MANUFACTURE & MODEL NO.	LOCATION	TYPE	MINIMUM CONNECTION		CAPACITY		MOTOR		NOTES	
				SUCTION	DISCH	GPM	FT. H.D.	H.P.	R.P.M.		ELECT.
HWCP	BELL & GOSSETT LR-15BWR	JAN. CLOSET 154	IN-LINE	3/4"	3/4"	8	10	1/6	1726	115/1/60	1

NOTES:  
1. PROVIDE RECIRCULATING PUMPS IN ALL BRONZE CONSTRUCTION. PROVIDE DEMAND CONTROLLER PER IECC 604.1.  
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

EXPANSION TANK SCHEDULE						
MARK	MANUFACTURE & MODEL NO.	LOCATION	TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	INITIAL CHARGE (PSI)	NOTES
ET	AMTROL MODEL NO. ST-12C	JAN. CLOSET 154	6.4	3.2	MATCH CW SUPPLY PRESSURE	1, 2

NOTES:  
1. PROVIDE 3/4" DRAIN, VALVE HOSE CONNECTION AND CAP.  
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

GREASE INTERCEPTOR SCHEDULE					
MARK	DESCRIPTION	MANUFACTURER	MODEL NO.	GREASE CAPACITY (GALLONS)	FLOW RATE (GPM)
GI	GREASE INTERCEPTOR	MAYER BRO. INC.	1000 WSSC	1000	-

GREASE INTERCEPTOR SIZING CALCULATION			
ITEM NO.	DISCRIPTION	QUANTITY	DFUS
1	3" FLOOR SINK (THREE COMPARTMENT SINK)	1	5
10	2 COMPARTMENT SINK	1	2
K4	3" FLOOR SINK (DISHWASHERS)	1	5
-	2" FLOOR DRAIN	2	6
TOTAL DFUS = 18			

NOTE:  
SIZING BASED ON WSSC PLUMBING CODE.

BACKFLOW PREVENTER SCHEDULE							
MARK	MANUFACTURE & MODEL NO.	LOCATION	GPM	HEAD (PSI)	SIZE	QUANTITY	NOTES
BFP	WATTS MODEL NO. SD3	KITCHEN/BAR	-	-	1/2"	SEE RISERS	1, 4
BFP1	WATTS MODEL NO. LF0909T	WATER RM.	100	10	3"	1	2, 4
DDCV	WATTS MODEL NO. LF757DCDA	WATER RM.	500	8	4"	1	3, 4

NOTES:  
1. DUAL CHECK TYPE (ASSE 1022). LEAD FREE.  
2. REDUCED PRESSURE ZONE TYPE (ASSE 1013). LEAD FREE.  
3. DOUBLE DETECTOR CHECK VALVE TYPE (ASSE 1048). LEAD FREE.  
4. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

TEMPERATURE MIXING VALVE SCHEDULE						
MARK	MANUFACTURE & MODEL NO.	LOCATION	MINIMUM FLOW (GPM)	FLOW (AT 10 PSIG PRESSURE DROP)	QUANTITY	NOTES
TMV1	LEONARD 270-LF	TOILET ROOMS	.25	5.5	SEE RISERS	1, 2
TMV2	LEONARD 170-LF	TOILET ROOMS	.25	2.3	SEE RISERS	1, 2

NOTES:  
1. ASSE 1070. SET BETWEEN 105°F AND 110°F.  
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

### GENERAL NOTES

- ALL PLUMBING WORK SHALL CONFORM WITH ALL STATE AND LOCAL CODES, RULES AND REGULATIONS.
- THESE DRAWINGS ARE DIAGRAMMATIC, REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS OF THE BUILDING AND EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.
- ALL SLOPES AND INVERT ELEVATIONS SHALL BE CHECKED BEFORE ANY PIPING IS INSTALLED, IN ORDER THAT PROPER SLOPES WITH BE MAINTAINED.
- MAKE PROPER WASTE, VENT, GAS, HOT AND COLD WATER CONNECTIONS TO ALL FIXTURES, AND EQUIPMENT, EVEN THOUGH ALL BRANCH MAINS, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
- ALL PLUMBING WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID ANY INTERFERENCE.
- ALL HOSE BIBBS SHALL BE EQUIPPED WITH APPROVED TYPE BACK FLOW PREVENTERS.
- CONTRACTOR SHALL INSTALL ALL FIXTURES AND EQUIPMENT PROVIDED BY OWNER, MAKE ALL FINAL CONNECTIONS PER PLUMBING FIXTURE CONNECTION SCHEDULE.
- PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR PLUMBING PERMITS, ALL OTHER FEES AND TAXES SHALL NOT BE INCLUDED IN PLUMBING CONTRACT.
- PLUMBING CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE REQUIRED FOR ACCESS TO VALVES IN CEILINGS AND WALLS. ACCESS PANELS SHALL BE INSTALLED BY THE APPROPRIATE SUBCONTRACTOR.
- FOR ALL SIZES OF WASTE, VENT, HOT AND COLD WATER PIPING TO FIXTURES AND EQUIPMENT, SEE SANITARY WASTE AND WATER RISER DIAGRAMS.
- ALL COLD AND HOT WATER PIPING SHALL BE INSULATED, AND ALL PIPING SHALL BE INSTALLED ON THE INSIDE OF THE BUILDING INSULATION ENVELOPE.
- INSTALL WATER PIPING WITH A UNIFORM PITCH TO LOW POINT.
- CONTRACTOR SHALL PROVIDE ADDITIONAL WATER LINE DROPS IN WALL WHEN HORIZONTAL RUN IN WALL CONFLICTS WITH VENT PIPE IN WALL.
- PROVIDE BACK FLOW PREVENTION ON COLD WATER MAKE UP AND EQUIPMENT CONNECTIONS AS REQUIRED BY CODE.
- ALL SANITARY PIPING SMALLER THAN 3" SHALL BE SLOPED AT 1/4" PER FOOT, UNLESS OTHERWISE NOTED.
- ALL SANITARY WASTE PIPING 3" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS OTHERWISE NOTED.
- THE AIR GAP BETWEEN INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE NOT LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
- ALL VENT PIPES THROUGH ROOF MUST BE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKES AND MINIMUM OF 5'-0" FROM ANY EXHAUST FANS.
- ALL PIPING, FIXTURES, EQUIPMENT, VALVES, ETC. SHOWN SHALL BE NEW, UNLESS NOTED OTHERWISE.
- PROVIDE PERMANENT LABEL ON CEILING GRID BELOW ALL SERVICE VALVES, THERMOSTATIC MIXING VALVES PROVIDED UNDER THIS CONTRACT. LABEL TO BE ENGRAVED WHITE PLASTIC WITH BLACK LETTERS AND BE ATTACHED TO CEILING GRID AS DIRECTED BY THE OWNER.
- REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT OF ALL FIXTURES.
- MAKE CONNECTIONS TO ALL PLUMBING FIXTURES AND EQUIPMENT.
- PIPE PENETRATIONS BELOW SINKS MUST BE SEALED.
- ALL HAND WASH FIXTURES TO BE PROVIDED WITH ASSE 1070 MIXING VALVE SET DISCHARGE TEMPERATURE BETWEEN 85°F AND 95°F.
- ALL HANDICAPPED SINKS AND LAVATORIES SHALL BE PROVIDED WITH TRU-BRO INSULATION KIT FOR WASTE AND WATER PIPING.
- MAINTAIN REQUIRED AIR GAP AT ALL OPEN SIGHT DRAINS AND FLOOR SINKS, AS REQUIRED BY CODE.

### LEGEND

- SANITARY PIPE
- SANITARY PIPE BELOW SLAB
- VENT PIPE
- COLD WATER PIPE
- 131°F HOT WATER PIPE
- 131°F HOT WATER RE-CIRCULATION PIPE
- 7"-11" WC1 GAS PIPE
- 2 PSI GAS PIPE
- STORM PIPE
- STORM PIPE BELOW SLAB
- SECONDARY STORM PIPE
- FIRE PROTECTION PIPE
- INDIRECT DRAIN PIPE
- TRAP PRIMER PIPE
- PIPE UP
- PIPE DOWN
- FLOOR DRAIN (FD)
- OPEN SITE DRAIN (OSD)
- FLOOR SINK (FS)
- UNION
- WALL HYDRANT (WH)
- HOSE BIBB (HB)
- BALL VALVE 1/4" TURN
- GATE VALVE
- BALANCING VALVE
- CHECK VALVE
- PRESSURE REDUCING VALVE
- SOLENOID VALVE
- GAS VALVE (AGA APPROVED)
- GAS REGULATOR 2 PSI TO 7"-11" WC1
- BACKFLOW PREVENTER (BFP)
- REDUCED PRESSURE ZONE BACKFLOW PREVENTER (RPZBFP)
- PRESSURE GAUGE
- FLOOR/GRADE CLEANOUT
- CLEANOUT
- NEW TO EXISTING CONNECTION
- WATER RISER DESIGNATION
- SANITARY RISER DESIGNATION
- STORM RISER DESIGNATION
- SECONDARY STORM RISER DESIGNATION
- GAS RISER DESIGNATION
- ABOVE
- BELOW
- BACKFLOW PREVENTER
- CEILING
- COLD WATER
- CLEANOUT
- DOWN
- EXISTING ELEVATION
- FLOOR CLEANOUT
- FLOOR DRAIN
- FINISH FLOOR
- FLOOR
- FLOOR SINK
- GRADE CLEANOUT
- HOT WATER
- HOT WATER RE-CIRCULATION
- OPEN SITE DRAIN
- ROOF DRAIN
- RAIN LEADER
- SECONDARY ROOF DRAIN
- SECONDARY RAIN LEADER
- NEW WORK PLAN NOTE DESIGNATION
- EQUIPMENT DESIGNATION

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Project #: 19161

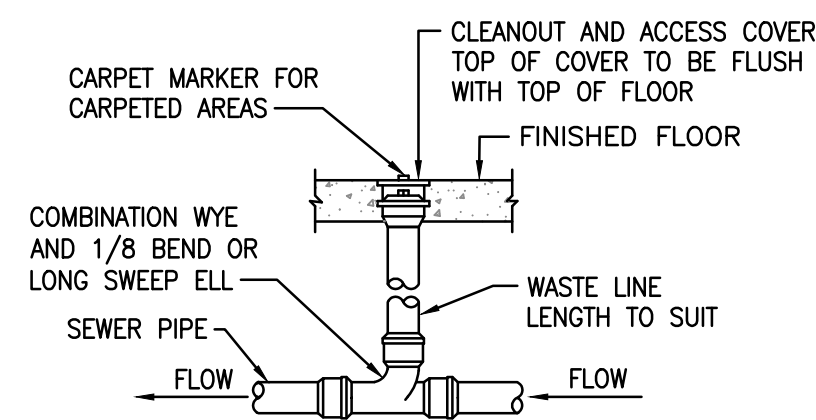
NEW BUILDING FOR:  
**GALILEE BAPTIST CHURCH**  
6300 WOODYARD ROAD,  
UPPER MARLBORO, MD 20772

DRAWING	DATE
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<input type="checkbox"/> DD MEETING #2	09/06/2019
<input type="checkbox"/> DD MEETING #3	10/06/2023
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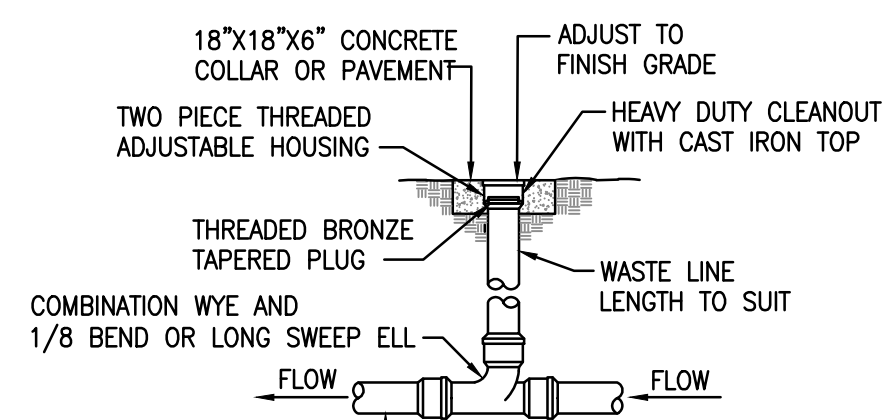
REVISIONS/ADDENDUMS

### LEGEND, NOTES & SCHEDULES

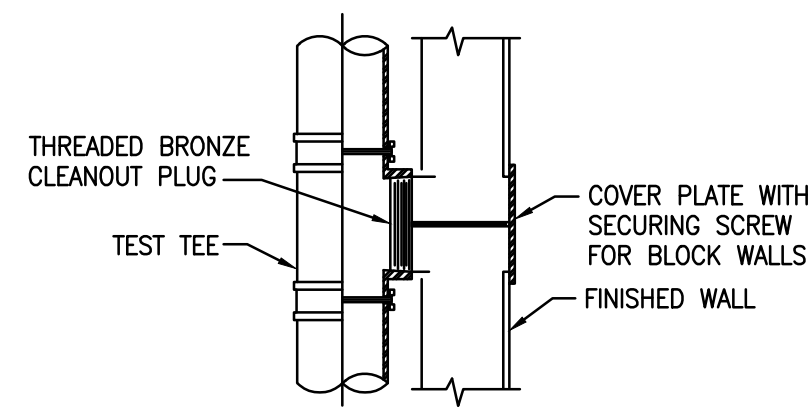
**P001**  
1 OF 13 SHEETS



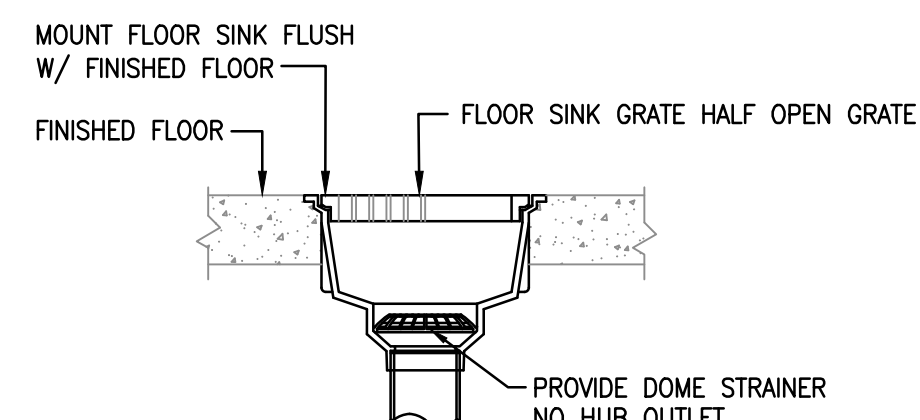
**FLOOR CLEANOUT DETAIL**  
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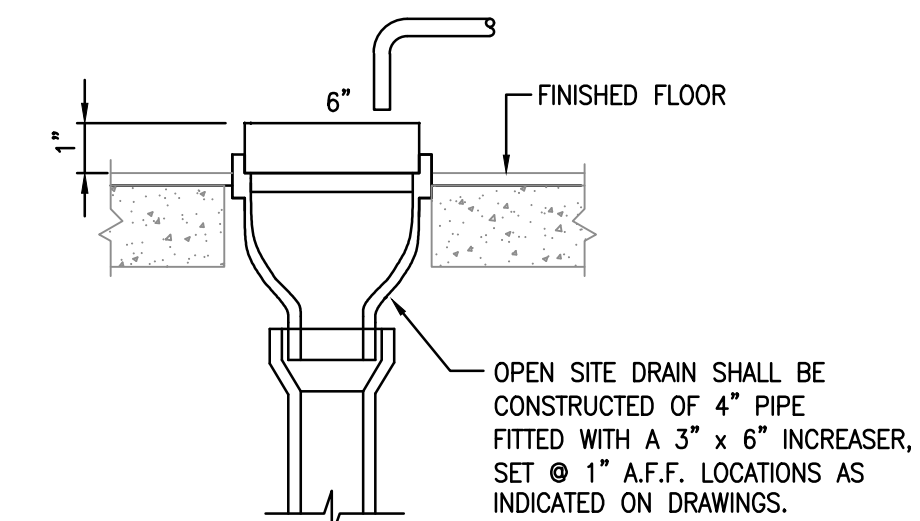
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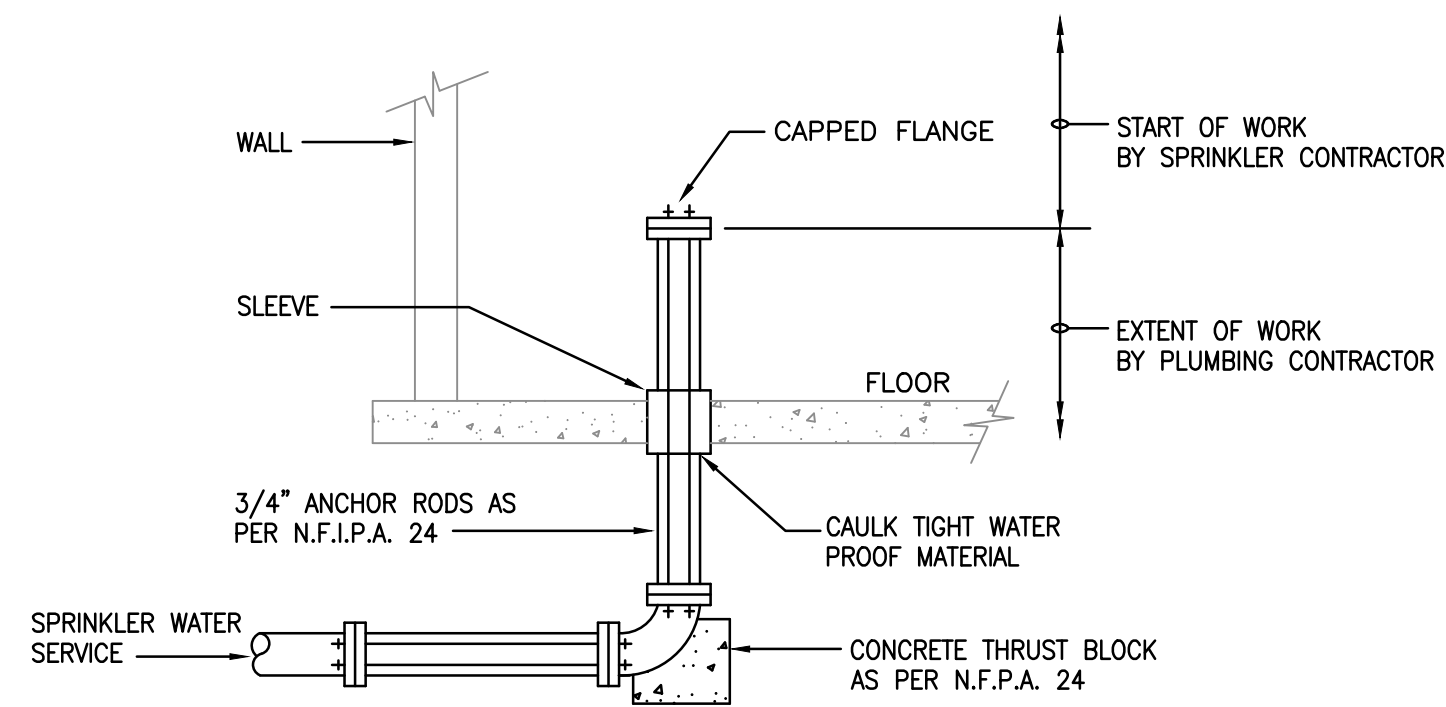
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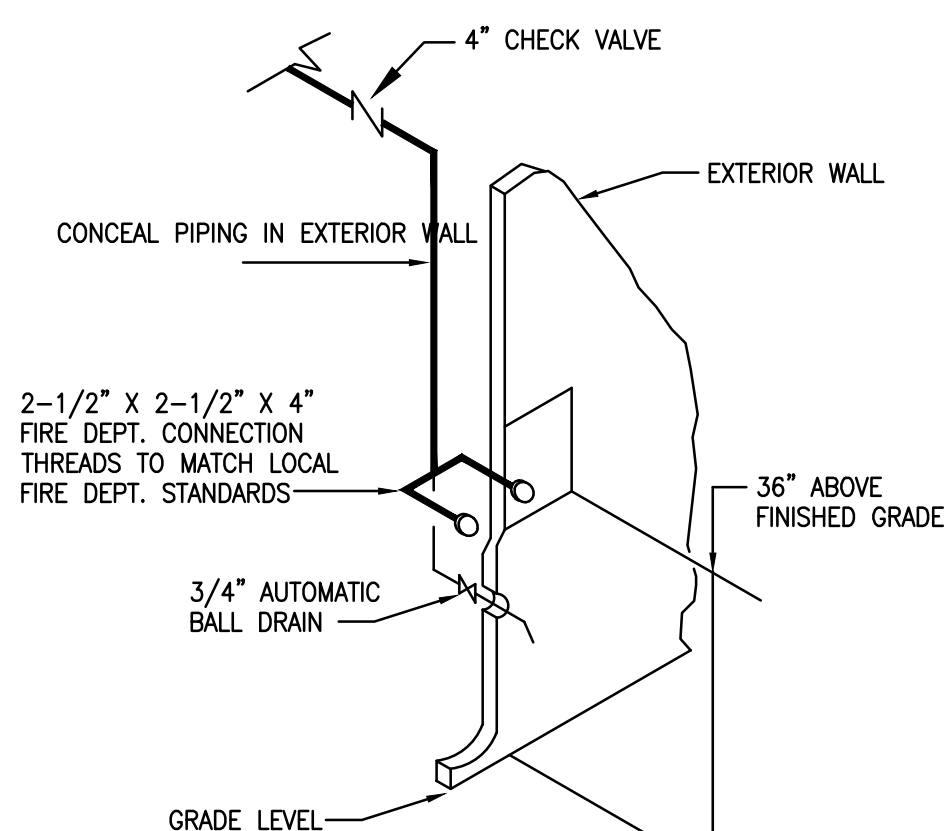
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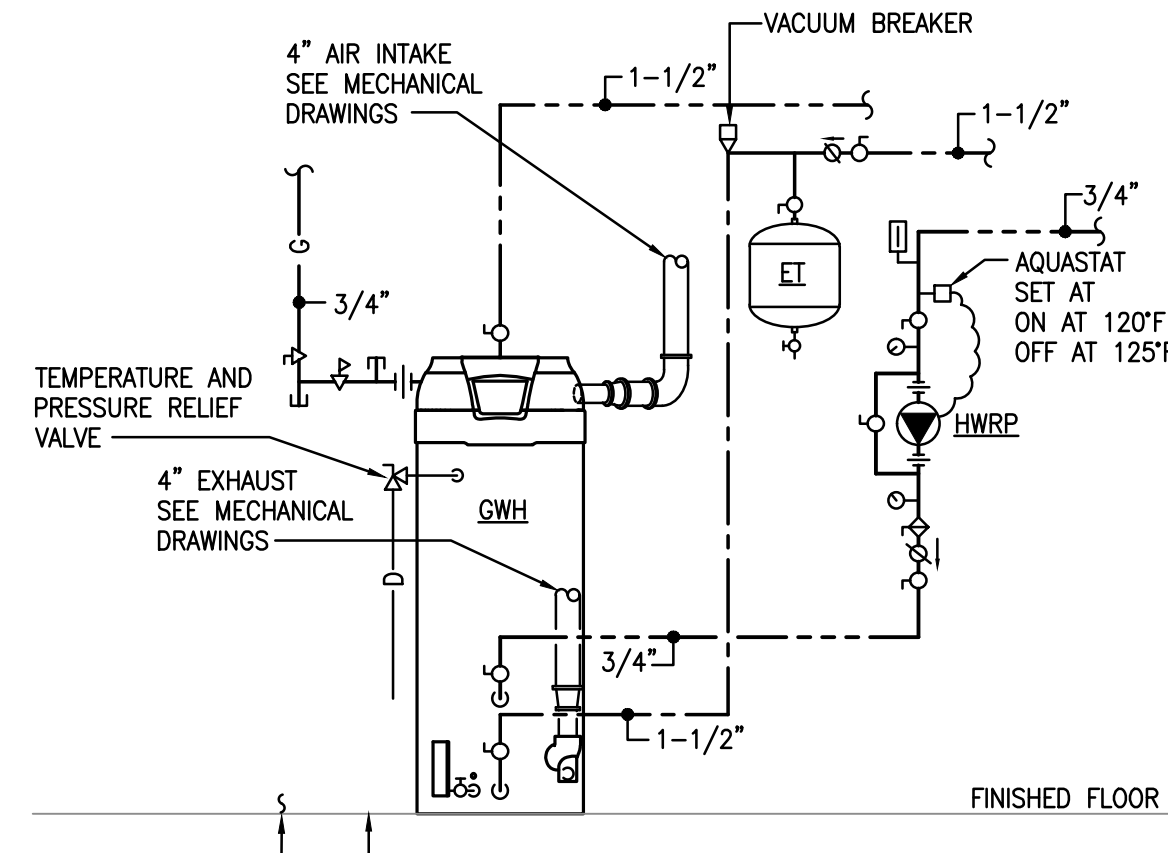
**OPEN SITE DRAIN (OSD) DETAIL**  
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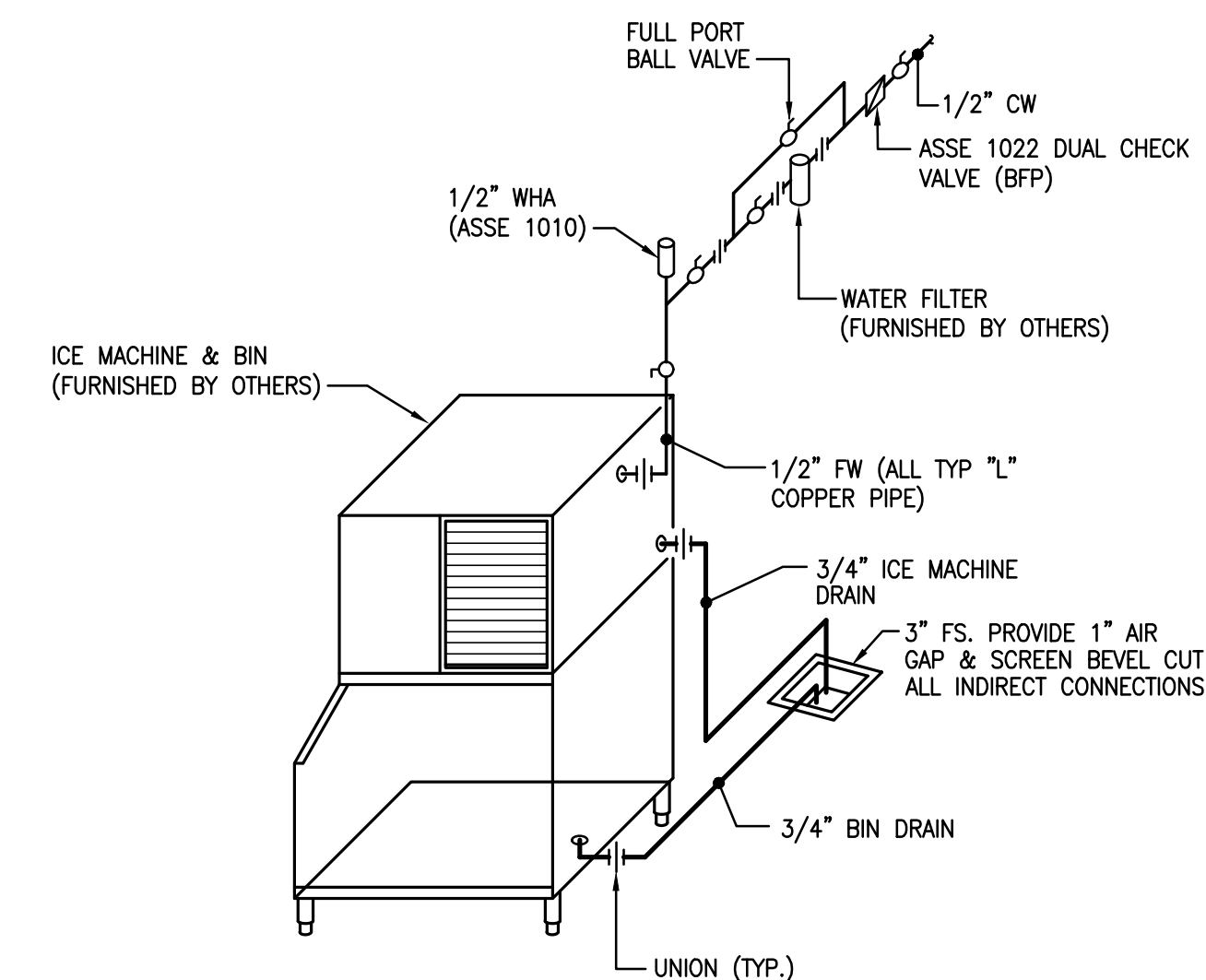
**SPRINKLER SERVICE DETAIL**  
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**FIRE DEPARTMENT CONNECTION DETAIL**  
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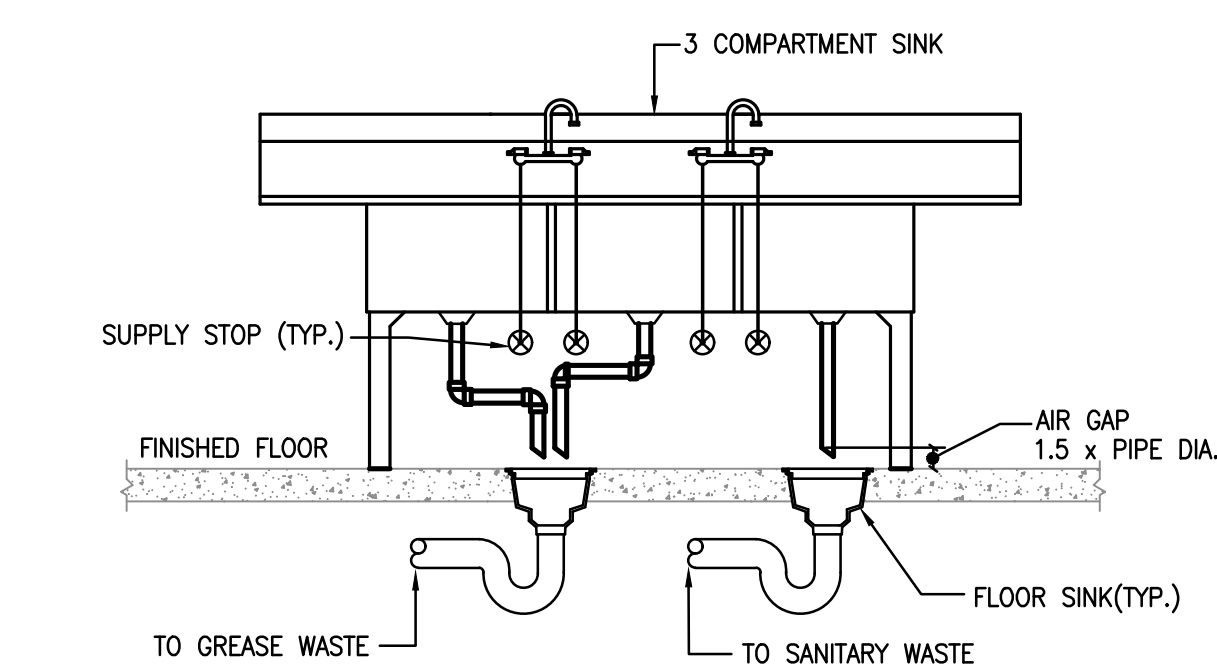


**GAS WATER HEATER (GWH) PIPING DETAIL**  
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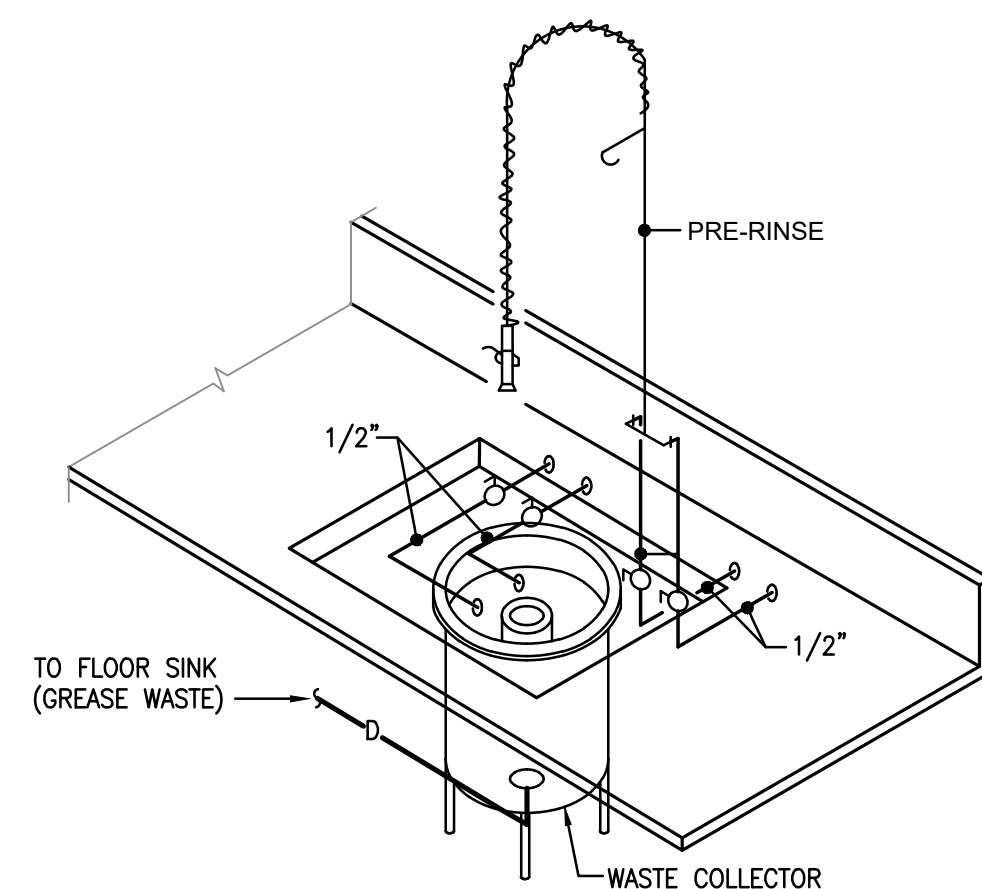


**NOTES:**  
1. ALL EXPOSED PIPING AND FITTING SHALL BE CONCEALED OR RUN A MIN. OF 3/4" OFF THE SURFACE OF WALLS.  
2. THE CONTRACTOR SHALL CONFIRM THE PIPING & COMPONENTS ARE TO CODE AND MEET HEALTH DEPT. REQUIREMENTS.  
3. SEE FOOD SERVICE DRAWING FOR RECOMMENDED WATER FILTER INSTALLATION DIAGRAM.

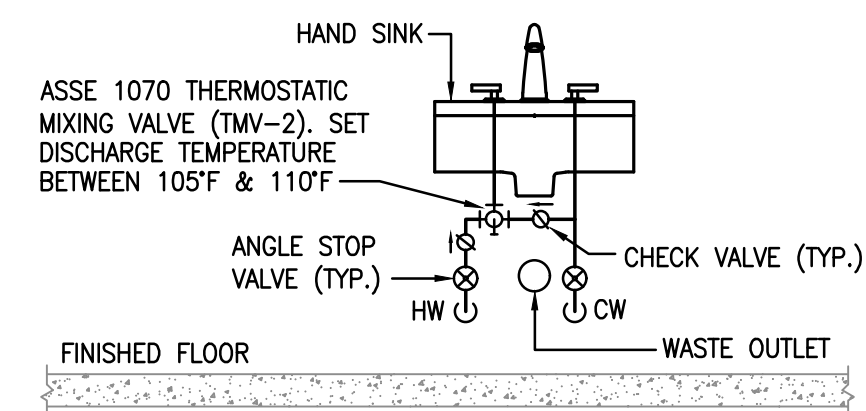
**ICE MACHINE PIPING DETAIL**  
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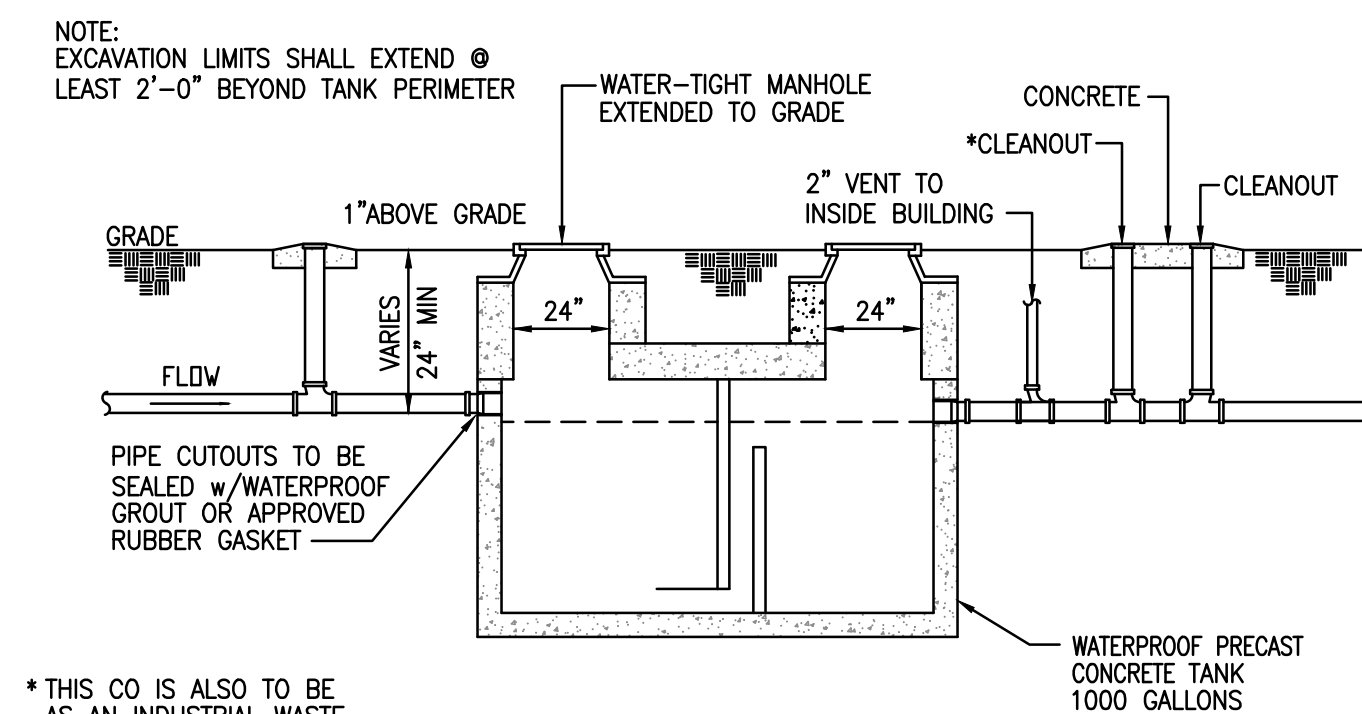
**3 COMPARTMENT SINK CONNECTION DETAIL**  
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**PRE-RINSE PIPING DETAIL**  
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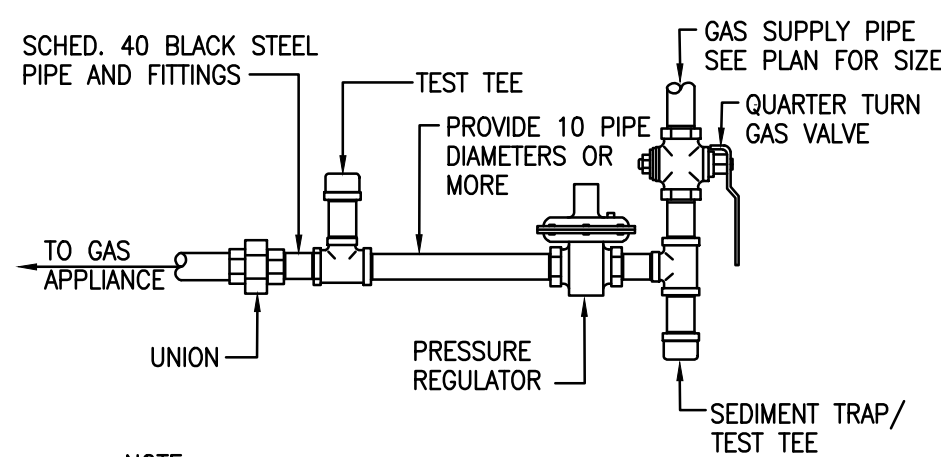


**HAND WASH FIXTURE MIXING VALVE DETAIL**  
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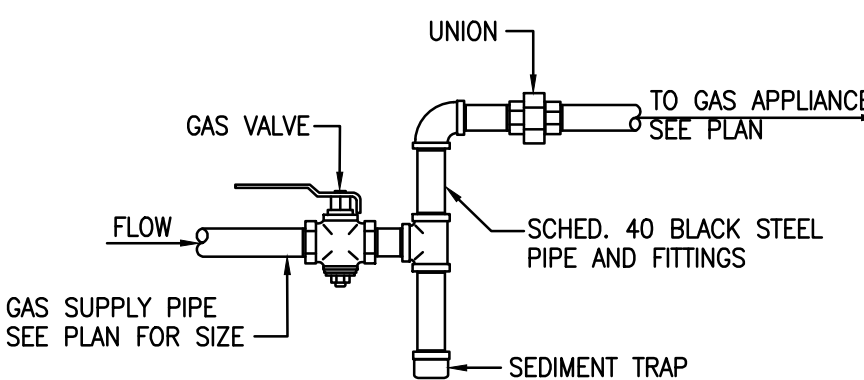


**DESIGN DATA & GENERAL NOTES**  
1. CONCRETE STRENGTH F'c=8,000 P.S.I. @ 28 DAYS. DENSITY = 150 PCF.  
2. CEMENT - PORTLAND TYPE I/II PER ASTM C 150-92  
3. ADMIXTURES & PLASTICIZERS PER ASTM 260-86 & C 494-92.  
4. REINFORCING PER ASTM A615, GRADE 60, DOMESTIC. MIN. 1-1/2" COVER. WALLS, BASE, & TOP SLAB DESIGNED FOR HS-20 LOADING.  
5. TOP SLAB CAST ON TO BASE AND INTERNALLY SEALED WITH BUTYL ROPE MASTIC.  
6. MAXIMUM 5' OF EARTH COVER TOP SLAB.  
7. EXTERIOR DAMPROOF COATED.  
8. APPROVED BY WSSC.

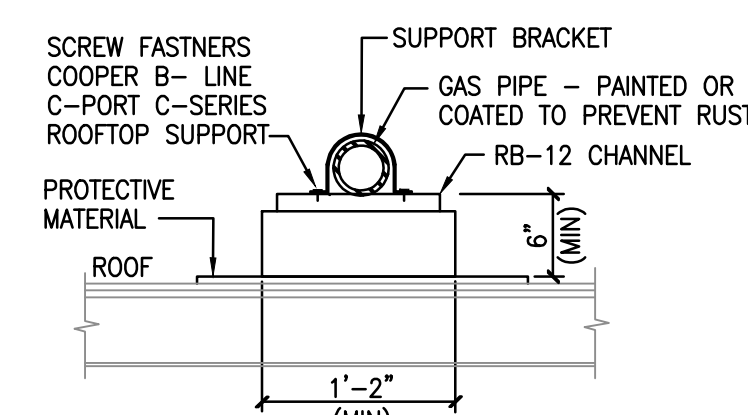
**GREASE INTERCEPTOR DETAIL**  
NO SCALE



**GAS VALVE & PRESSURE REGULATOR DETAIL**  
NO SCALE



**GAS VALVE DETAIL**  
NO SCALE



**GAS PIPING ON ROOF SUPPORT DETAIL**  
NO SCALE

PIPE SUPPORT SPACING	
PIPE SIZE	GAS (STEEL)
3/4"	6'-0" O.C.
1-1/4"	7'-0" O.C.
1-1/2"	8'-0" O.C.
2"	10'-0" O.C.
3"	12'-0" O.C.

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Project #: 19161

NEW BUILDING FOR:  
**GALILEE BAPTIST CHURCH**  
6300 WOODYARD ROAD,  
UPPER MARLBORO, MD 20772

DRAWING	DATE
<input type="checkbox"/> DD MEETING #1	07/16/2019
<input type="checkbox"/> DD MEETING #2	09/06/2019
<input type="checkbox"/> DD MEETING #3	10/06/2023
<input type="checkbox"/> BID SET	11/15/2023
<input checked="" type="checkbox"/> AVL COORD / BID SET	12/08/2023
<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

**DETAILS & SCHEDULES**

**P002**  
2 OF 13 SHEETS

PLUMBING SPECIFICATIONS

**PIPE AND PIPE FITTINGS**

SCOPE:

A. THE WORK COVERED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE THE FURNISHING OF THE PIPING SYSTEMS AND PERFORM ALL OPERATIONS REQUIRED FOR COMPLETE INSTALLATION.

QUALITY ASSURANCE:

A. CODES AND STANDARDS: PROVIDE AND INSTALL ALL PIPING AND ACCESSORIES IN ACCORDANCE WITH THE PROVISIONS OF THE FOLLOWING:  
 CISPI CAST IRON PIPE INSTITUTE  
 ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS  
 ANSI AMERICAN NATIONAL STANDARDS INSTITUTE  
 AWWA AMERICAN WATER WORKS ASSOCIATION

PRODUCTS:

PLUMBING PIPING:

A. SANITARY WASTE, VENT AND STORM PIPING:

- ALL BELOW GRADE DRAINAGE PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, BELL AND SPIGOT WITH NEOPRENE GASKETS OR POURED LEAD JOINTS, OR SCHEDULE 40 SOLID CORE PVC AND FITTINGS (NO FOAM CORE PVC PIPING TO BE USED). EXTEND TO SANITARY SEWER AND CONNECT AS INDICATED ON THE PLANS.
- ALL ABOVE GRADE DRAINAGE AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, DWV COPPER TUBING AND FITTINGS, NO HUB CAST IRON PIPE AND FITTINGS WITH STAINLESS STEEL BANDS, OR SCHEDULE 40 SOLID CORE PVC AND FITTINGS (NO FOAM CORE PVC PIPING TO BE USED). NO PVC PIPING IN AIR PLENUMS.

B. DOMESTIC WATER PIPING:

- ALL BELOW GRADE WATER PIPING WITHIN THE BUILDING SHALL BE TYPE "K" SOFT DRAIN COPPER TUBING WITH 125 PSI WROUGHT COPPER SILVER SOLDER SWEAT FITTINGS.
- ALL ABOVE GRADE WATER PIPING WITHIN THE BUILDING SHALL BE TYPE "L" COPPER PIPE WITH 125 PSI WROUGHT COPPER 95/5 SOLDER SWEAT FITTINGS.

C. GAS PIPING:

- ALL GAS AND GAS VENT PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH 125 PSI BLACK MALLEABLE IRON FITTINGS.
- ALL GAS PIPING BELOW GRADE SHALL BE SCHEDULE 40 FACTORY WRAPPED BLACK STEEL PIPE WITH WELDED FITTINGS.
- GAS PIPING 2-1/2" AND LARGER SHALL BE WELDED AND 2" AND SMALLER SHALL BE SCREWED. INSTALLATION OF ALL MAINS SHALL BE CONSISTENT.
- ALL EXPOSED EXTERIOR GAS PIPING SHALL BE COATED WITH TWO COATS OF EXTERIOR RUSTPROOF PAINT. COLOR TO BE DETERMINED BY ARCHITECT.

EXECUTION

INSTALLATION:

A. PIPE AND FITTINGS:

- INSTALLATION: PIPING SHALL BE INSTALLED COMPLETE. ALL PIPING SHALL BE CUT ACCURATELY FROM DIMENSIONS ESTABLISHED AT THE PROJECT SITE AND ALLOWANCES SHALL BE MADE FOR THE CLEARANCE OF WINDOWS, DOORS, AND OTHER OPENINGS. NO PART OF THE BUILDING STRUCTURE MAY BE CUT TO ALLOW FOR THE INSTALLATION OF PIPING.
- ALL PIPING SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE BUILDING CONSTRUCTION AND SHALL BE INSTALLED SO AS TO ALLOW FOR EXPANSION AND DRAINAGE. DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO SHOW ALL ELBOWS AND SWING JOINTS REQUIRED TO ALLOW FOR EXPANSION. HOWEVER, THE CONTRACTOR SHALL INSTALL SWING JOINTS AT ALL RUNOUTS, AND OTHER CONNECTIONS TO MAINS.
- ALL PIPING SHALL BE RUN INSIDE OF THE BUILDING INSULATION ENVELOPE. THAT IS, PIPING SHALL BE RUN WITHIN THE HEATED PORTION OF THE BUILDING AND SHALL NOT BE EXPOSED TO FREEZING TEMPERATURES. ANY WATER PIPING EXPOSED TO OUTSIDE AMBIENT SHALL HAVE ELECTRIC HEAT TAPE APPLIED BETWEEN INSULATION AND PIPING.

B. SCREWED JOINTS SHALL BE MADE WITH STANDARD PIPE THREAD WITH ENDS OF PIPE REAMED TO FULL DIAMETER, NO MORE THAN THREE THREADS SHALL BE LEFT EXPOSED AT EACH FITTING, AND AN APPROVED COMPOUND APPLIED TO THE MALE THREAD ONLY.

- ALL SCREW JOINTS SHALL BE MADE WITH THE BEST QUALITY PIPE JOINT COMPOUND, CAREFULLY PLACED ON THE THREADS OF THE PIPE AND NOT ON THE FITTINGS.
- ALL CUT THREAD PIPE SHALL HAVE CUTTING BURRS AND SHARP EDGES REAMED OUT.
- ALL CONNECTIONS BETWEEN GALVANIZED STEEL AND C.I. PIPE SHALL BE CAULKED WITH OAKUM AND LEAD. THE END OF THE GALVANIZED STEEL PIPE SHALL BE FITTED WITH A RING OR PART OF A COUPLING SCREWED ON TO FORM A SPIGOT.
- PROVIDE DIELECTRIC FITTINGS AT ANY CONNECTION OF DISSIMILAR METALS.

C. WELDED JOINTS SHALL BE MADE IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE A.S.A. PIPING CODE AND BEFORE ASSIGNING ANY WELDER TO WORK COVERED. THE CONTRACTOR SHALL PROVIDE FOR THE APPROVAL OF THE NAME OF THE PIPE WELDERS TO BE EMPLOYED IN THE WORK, TOGETHER WITH CERTIFICATION THAT EACH OF THESE WELDERS HAS PASSED QUALIFICATION TESTS AS PRESCRIBED BY THE NATIONAL CERTIFIED PIPE WELDING BUREAU, OR BY OTHER REPUTABLE TESTING LABORATORY OR AGENCY USING PROCEDURES APPROVED BY THE ASME OR THE AWS. THE CONTRACTOR SHALL USE ONLY APPROVED FACTORY MANUFACTURED WELDING TYPE FITTING, FOR THE INTERSECTION WELDING OR BRANCHING TO MAINS. VALVES AND SPECIALTIES SHALL HAVE SCREWED OR FLANGED JOINTS.

- WELDING TEES, ELLS, REDUCERS AND CAPS SHALL BE OF WROUGHT OR FORGED CONSTRUCTION SIMILAR TO THOSE MANUFACTURED BY TUBE TURNS, INC. IN LIEU OF WROUGHT OR FORGED WELDING TEES FOR BRANCH OUTLETS, WELDOLETS OR WELDING NIPPLES THAT ARE ACCURATELY COPIED IN THE SHOP TO FIT THE PIPES AND LEVELED FOR FIELD WELDING MAY BE USED, PROVIDED THAT OPENINGS IN THE WALLS OF PIPES ARE CUT TO FULL INSIDE DIAMETER OF THE NIPPLES, AND THAT THE OUTLET DIAMETER SHALL BE LESS THAN THREE-QUARTERS THE DIAMETER OF THE MAIN.
- FOR CONNECTIONS ON WELDED PIPING TO VALVES 2-1/2" AND OVER AND OF OTHER ACCESSORIES REQUIRED TO BE FLANGED, STANDARD FORGED WELDING NECK FLANGES SHALL BE USED. THE FLANGE FACE SHALL BE IN EVERY CASE PERPENDICULAR TO THE AXIS OF THE PIPE OR VALVE.
- NO DIRECT WELDED CONNECTIONS SHALL BE MADE TO VALVES, STRAINERS, APPARATUS AND ASSOCIATED EQUIPMENT.

D. ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS MUST BE INSTALLED TO BRING TOPS OF MAINS IN LINE AND PREVENT AIR POCKETS. ECCENTRIC FITTINGS WILL NOT BE REQUIRED ON WATER MAINS. ENDS OF PIPES SHALL BE REAMED OUT BEFORE BEING MADE UP. NECESSARY FITTINGS OR BANDS MUST BE USED AS SPRINGING OF PIPES WILL NOT BE PERMITTED. SCREWED PIPES AND FITTINGS ARE TO BE PUT TOGETHER WITH RED LEAD OR AN APPROVED COMPOUND APPLIED TO THE PIPES AND NOT TO FITTINGS.

E. ALL PIPES WHICH PASS THROUGH SLEEVES IN FIRE RATED ASSEMBLIES SHALL HAVE THE SPACE BETWEEN THE PIPES AND SLEEVES FIRESTOPPED AND SMOKESTOPPED WITH A FIREPROOF MATERIAL.

F. THE INSTALLATION OF ALL PIPES MUST BE SUCH AS TO ALLOW FOR EXPANSION USING OFFSETS, SWING JOINTS, ETC., AS MAY BE NECESSARY TO PREVENT UNDUE STRAIN ON PIPING. TAKE-OFF FROM MAINS SHALL HAVE NOT LESS THAN A THREE-ELBOW SWING.

G. PIPING FITTINGS AND APPURTENANCES IN GENERAL, SHALL CONFORM TO THE AMERICAN STANDARD CODE FOR PRESSURE PIPING 125 PSIG CLASS.

H. COPPER OR TUBING JOINTS SHALL BE MADE WITH 95/5 SOLDER AND APPROVED FLUX, EXCEPT REFRIGERANT AND BELOW GRADE PIPING WHICH SHALL BE MADE WITH SILVER SOLDER. CONDENSATE DRAIN PIPING JOINTS SHALL BE MADE WITH 95/5 SOLDER AND APPROVED FLUX IF COPPER PIPING IS USED.

I. C.I. CLEANOUT WITH STRAIGHT BODY FOR CAULKING INTO PIPE HUB AND FITTED WITH A BRASS COUNTER-SUNK PLUG SHALL BE PROVIDED AND INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS.

PIPING TESTS AND FILLING:

A. THE FOLLOWING TESTS WILL BE CONDUCTED BY THE CONTRACTOR AND ALL PIPING SHALL BE PROVEN TIGHT IN THE PRESENCE OF THE OWNER. THESE TESTS SHALL BE CONDUCTED BEFORE ANY INSULATION IS INSTALLED AND ANY INSULATION INSTALLED PRIOR TO TESTS SHALL BE REMOVED. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT REQUIRED AND TESTS SHALL BE FOR AT LEAST 24 HOURS IN DURATION AS FOLLOWS:

1. ALL WATER SYSTEMS SHALL BE HYDROSTATICALLY TESTED TO 100 PSI. ALL OPENINGS IN THE WATER PIPING SHALL BE PLUGGED; THE SYSTEM OR PORTION THEREOF SHALL BE FILLED WITH WATER AND TESTED.
2. THE ENTIRE WASTE AND VENT SYSTEM SHALL BE HYDROSTATICALLY TESTED. THE TEST SHALL COMPRISE THE PLUGGING OF ALL OPENINGS IN THE SOIL, WASTE AND VENT LINES, FILLING THE SYSTEM OR A PORTION THEREOF WITH WATER TO THE ROOF LEVEL UNTIL ALL JOINTS ARE PROVEN TIGHT.

PIPING SPECIALTIES

SCOPE:

A. THE WORK COVERED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF THE PIPING SPECIALTIES AND ASSOCIATED ITEMS SPECIFIED AND/OR INDICATED AND ALL NECESSARY PIPING CONNECTIONS REQUIRED FOR A COMPLETE SYSTEM.

QUALITY ASSURANCE:

A. EACH PIPING SPECIALTY ITEM SHALL BE DESIGNED, CONSTRUCTED AND TESTED IN ACCORDANCE WITH ALL RECOGNIZED CODES AND TESTING LABORATORIES.

B. EACH PIPING SPECIALTY ITEM SHALL BE FURNISHED AND INSTALLED IN QUANTITIES AS INDICATED ON THE DRAWINGS, OR AS REQUIRED FOR A COMPLETE SYSTEM.

PRODUCTS:

PIPING SPECIALTIES:

A. GASKETS: THE GASKETS USED IN PIPING SYSTEMS SHALL BE BEST GRADE FOR TYPE OF SERVICE REQUIRED. GASKETS SHALL BE COMPRESSED NON-ASBESTOS TYPE, JOHNS-MANVILLE, CARLOCK OR ANCHOR PACKING. FLANGED GASKETS SHALL BE ONE-PIECE 1/16" THICK OF THE RING TYPE FOR RAISED FACE FLANGES AND OF FULL-FACE TYPE FOR FLAT-FACED FLANGES. GASKETS SHALL BE SUITABLE FOR TEMPERATURE, PRESSURE AND SERVICE RATING OF THE RESPECTIVE SYSTEMS.

B. UNIONS: PROVIDE UNIONS WHERE REQUIRED FOR THE REMOVAL OF COILS, SHELL HEADS, GAS EQUIPMENT, ETC.

1. STEEL PIPE 2" AND SMALLER SHALL BE MALLEABLE IRON, WITH BRONZE IRON GROUND JOINT AND THREADED ENDS FOR SCREWED JOINTS.
2. STEEL PIPE 2-1/2" AND LARGER SHALL BE OF THE WELDING NECK FLANGED TYPE.
- UNIONS FOR COPPER TUBING SHALL BE EIGHTY-FIVE (85) PERCENT COPPER CAST BRASS ALLOY WITH GROUND JOINTS AND THREADED NUT, AND RECESSED ENDS FOR SOLDERED JOINTS.
- DIELECTRIC UNIONS SHALL BE PROVIDED AT ALL CONNECTIONS OF DISSIMILAR METALS.

C. ANCHORS: ALL PIPING SYSTEMS SHALL BE ANCHORED WHERE REQUIRED TO PREVENT UNCONTROLLED MOVEMENT BY REASON OF THERMAL EXPANSION OR CONTRACTION, WATER FLOW OR WATER HAMMER.

1. ANCHORS SHALL PREVENT BOTH AXIAL AND LATERAL MOVEMENT OF THE PIPE.
2. ANCHORS SHALL BE CONSTRUCTED OF STEEL SECTIONS AND PLATES, ASSEMBLED BY WELDING OR BOLTING AND SECURED TO THE BUILDING STRUCTURE BY WELDING, BOLTING OR OTHER APPROVED METHOD. ANCHORS SHALL BE WELDED TO STEEL PIPE AND IN NO CASE SHALL ANCHORS BE ATTACHED TO PIPES BY CLAMPS WHICH DEPEND UPON FRICTION TO SECURE PIPE.
- AUXILIARY STEEL REQUIRED FOR THE PROPER INSTALLATION OF PIPE ANCHORS ATTACHED TO THE BUILDING STRUCTURAL MEMBERS SHALL BE PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS.

D. HANGERS AND SUPPORTS: PIPE HANGERS SHALL BE FEE & MASON, B-LINE OR GRINNELL STEEL OR COPPER CLAD CLEVIS HANGERS SUPPORTED FROM ROUND STEEL ROD AND SELECTED WITH MANUFACTURER'S PUBLISHED LOAD RATINGS, ACCURATELY ADJUSTED TO MAINTAIN SPECIFIED PIPE GRADES AND SECURELY ATTACHED TO THE BUILDING BY MEANS OF CONCRETE INSERTS, CLAMPS, BRACKETS, EXPANSION SHIELDS, ETC., AS APPLICABLE.

1. GROUP HANGERS OR BRACKETS CONSTRUCTED OF CHANNEL IRON OR PIPE MAY BE INSTALLED.
- RODS FOR TRAPEZOID HANGERS SUPPORTING SEVERAL PIPES SHALL BE SIZED FOR THE EQUIVALENT LOAD.
- WHERE THE LINES ARE SUBJECT TO EXPANSION, THE SUPPORTS SHALL BE CAREFULLY WORKED OUT TO ALLOW THE PIPE TO EXPAND WITHOUT RESTRICTION. WHERE NECESSARY, ROLLER OF FLEXIBLE HANGERS OR BASE SUPPORTS SHALL BE INSTALLED.
- HANGER RODS SHALL BE ATTACHED TO SUFFICIENTLY RIGID STRUCTURAL MEMBERS OF THE BUILDING. DO NOT ATTACH HANGERS TO BOTTOM CHORDS OF STRUCTURAL MEMBERS, UNLESS APPROVED BY ARCHITECT.
- PROVIDE HANGERS WITHIN 2'-0" OF EACH VERTICAL AND HORIZONTAL CHANGE IN DIRECTION OF PIPING.
- PROVIDE ADDITIONAL HANGERS OR ANCHORING DEVICES NECESSARY FOR PROPER SUPPORT OF PIPING AT CORNERS, TOP OF RISERS, ETC.
- SUPPORT RISERS AT EACH FLOOR LEVEL BY MEANS OF APPROVED RISER CLAMPS.
- WHERE PIPING PENETRATES WALLS THRU SLEEVES, THE PIPING SHALL BE SUPPORTED ON EACH SIDE OF SLEEVE NOT MORE THAN 18" FROM SLEEVE.
- HANGERS FOR UNINSULATED COPPER PIPE SHALL BE EITHER COPPER PLATED TYPE OR A MANUFACTURED PRODUCT SPECIFICALLY DESIGNED TO PREVENT DIRECT CONTACT TO A STEEL HANGER OR SUPPORT.
- SUPPORTS FOR PIPES WITH VAPOR BARRIER TYPE COVERING SHALL NOT CONTACT THE PIPE BUT SHALL SURROUND THE UNBROKEN COVERING. PROVIDE GALVANIZED STEEL SHIELDS PROPERLY FORMED TO THE JACKET O.D. BETWEEN HANGER CLEVIS AND THE LOWER 1/3 OF THE CIRCUMFERENCE. SIZE SHIELDS AS FOLLOWS:  
 PIPE TO 1": 26 GA. X 8" LONG  
 1-1/2" TO 2": 20 GA. X 12" LONG  
 2-1/2" TO 6": 20 GA. X 12" LONG.
- HANGER SPACING FOR HORIZONTAL PIPE SHALL NOT EXCEED:  
 CAST IRON SOIL PIPE: 5'-0"  
 1/2" TO 1" PIPE: 6'-0"  
 1-1/4" TO 2" PIPE: 8'-0"  
 2-1/2" TO 4" PIPE: 10'-0"
- HANGER SPACING FOR VERTICAL PIPE SHALL BE LOCATED:  
 CAST IRON SOIL PIPE AT THE BASE AND AT EACH STORY  
 THREADED PIPE AT EACH STORY  
 NO HUB SOIL PIPE AT EACH STORY AND AT MID-POINT BETWEEN FLOORS  
 COPPER TUBE AT EACH STORY.
- HANGER RODS SHALL BE AT LEAST:  
 PIPE TO 2": 3/8" DIAMETER  
 2-1/2" TO 3": 1/2" DIAMETER  
 4" TO 5": 5/8" DIAMETER
- ALL HORIZONTAL AND VERTICAL WATER PIPING IN PIPE CHASES BEHIND FIXTURE WALL SHALL BE SUPPORTED FROM THE WASTE AND VENT PIPES. SUPPORTS SHALL HAVE PRECISELY DIMENSIONED SLOTS AND GROOVES FOR EXACT CENTERING. PROVIDE STRENGTH AND RIGIDITY TO ASSURE OUTLETS ARE IN PROPER POSITION FOR FIXTURE SETTING, AND PROVIDE ELECTROLYTIC ISOLATION. THE SUPPORTS SHALL BE AS MANUFACTURED BY ADJUSTO-SYSTEM OR SUMNER SYSTEM.

E. THERMOMETERS AND GAUGES:

1. THERMOMETERS:

a. PIPING: THERMOMETERS SHALL BE THE SEPARABLE SOCKET, ADJUSTABLE ANGLE TYPE, NOT LESS THAN 1" SCALE V-SHAPED, MERCURY FILLED, RED READING COLUMN. RANGE SHALL BE APPLICABLE FOR THE SERVICE. THERMOMETERS SHALL BE APPLICABLE FOR SERVICE. THERMOMETERS SHALL BE ADJUSTABLE TYPE TO PERMIT EASY READING FROM FLOOR AND OUTSIDE OF INSULATION AS MANUFACTURED BY WEKSLER, TAYLOR, OR TRECCE.

2. PRESSURE GAUGES:

a. PRESSURE GAUGES SHALL BE OF THE BOURBON-TUBE TYPE WITH DIAL DIAMETER NOT LESS THAN 4-1/2" AND OPERATING RANGE 0-100 PSIG. A SHUT-OFF COCK IN LINE TO EACH GAUGE. GAUGES AS MANUFACTURED BY WEKSLER, TAYLOR OR TRECCE. GAUGES SHALL BE INSTALLED ON THE SUCTION AND DISCHARGE OF ALL PUMPS.

3. THERMOMETERS SHALL BE INSTALLED ON BOTH THE ENTERING AND LEAVING SIDE OF THE FOLLOWING EQUIPMENT:

a. DOMESTIC WATER HEATER: LEAVING SIDE ONLY DOMESTIC WATER TO SYSTEM.  
 b. DOMESTIC THERMOSTATIC MIXING VALVE (MIXTURE WATER ONLY).

F. DRAIN VALVES:

1. DRAIN VALVES SHALL BE PROVIDED AT ALL LOW POINTS IN PIPING SYSTEMS. VALVES SHALL BE BRONZE WITH THREADED HOSE CONNECTION. VALVES SHALL BE STOCKHAM, MILWAUKEE OR HAMMOND.

EXECUTION

A. INSTALLATION:

1. PROVIDE AND INSTALL EACH PIPING SPECIALTY ITEM AS REQUIRED FOR A COMPLETE SYSTEM.
2. COMPLY WITH THE MANUFACTURER'S PRINTED INSTRUCTION.
3. BEFORE INSTALLATION, ALL PIPING SPECIALTY ITEMS SHALL BE COORDINATED WITH ALL ASSOCIATED TRADES.

VALVES

SCOPE:

A. THE WORK COVERED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL VALVES SPECIFIED AND ALL NECESSARY PIPING CONNECTIONS REQUIRED FOR A COMPLETE SYSTEM.

QUALITY ASSURANCE:

A. EACH VALVE SHALL BE DESIGNED, CONSTRUCTED AND TESTED IN ACCORDANCE WITH ALL RECOGNIZED CODES AND TESTING LABORATORIES.

B. EACH VALVE SHALL BE FURNISHED AND INSTALLED IN QUANTITIES REQUIRED. ALL VALVES OF THE SAME TYPE AND SERVICE SHALL BE THE PRODUCTS OF A SINGLE MANUFACTURER.

C. VALVE ENDS SHALL BE AS FOLLOWS:

1. SCREWED JOINTS SHALL HAVE THREADED ENDS FOR SIZES 2" AND SMALLER IN STEEL PIPING, EXCEPT WHERE OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS.
2. WELDED JOINTS SHALL HAVE SOCKET ENDS FOR SIZES 2" AND LARGER IN STEEL PIPING.
3. SOLDERED JOINTS SHALL HAVE RECESSED ENDS, FOR SIZES 2" AND SMALLER IN COPPER TUBING.

ALL VALVES 2-1/2" AND LARGER SHALL HAVE FLANGED ENDS. PRODUCTS:

A. GATE, BUTTERFLY, BALL AND STOP VALVES:

GENERAL: VALVES SHALL BE STOCKHAM, NIBCO, MILWAUKEE, OR HAMMOND. THE NAMING OF A MODEL NUMBER OF ONE MANUFACTURER IS INTENDED TO IDENTIFY THE QUALITY AND STYLE REQUIRED.

1. GATE VALVES:
  - a. GATE VALVES 2" AND SMALLER IN COPPER PIPING SHALL BE CLASS 125 (200 LB. WOG), ALL BRONZE, SOLID WEDGE DISC, RISING STEM WITH SOLDERED STOCKHAM NO. B-109.
  - b. GATE VALVES 2" AND SMALLER IN STEEL PIPE SHALL BE CLASS 125 (200 LB. WOG), ALL BRONZE, SOLID WEDGE DISC, RISING STEM WITH THREADED ENDS. STOCKHAM NO. B107.
  - c. GATE VALVES 2-1/2" AND LARGER SHALL BE CLASS 125 (200 LB. WOG) IRON BODY, SOLID WEDGE DISC, BRONZE TRIM, NON-RISING STEM, WITH FLANGED ENDS. STOCKHAM NO. G-612.
2. BUTTERFLY VALVES 2-1/2" AND LARGER MAY BE USED IN LIEU OF GATE VALVES FOR WATER SYSTEMS. THESE VALVES SHALL BE RATED AT NOT LESS THAN CLASS 150 AND SUITABLE FOR USE WITH 180°F WATER. VALVES SHALL BE LUG TYPE FOR PIPE REMOVAL ON EITHER SIDE AND SHALL HAVE STAINLESS STEEL SHAFTS, STOCKHAM NO. LD7110D3B.
3. BALL VALVES 2" AND SMALLER MAY BE USED IN LIEU OF GATE VALVES FOR WATER SYSTEMS. THESE VALVES SHALL BE RATED AT NOT LESS THAN CLASS 150 AND SUITABLE FOR USE WITH 180°F WATER, STOCKHAM NO. S216RR WITH EXTENDED HANDLES FOR INSULATED PIPING.

B. STOP VALVES:

1. STOP VALVES SHALL BE ALL BRONZE FOR USE WITH GAS, AND WATER. VALVES SHALL BE ROCKFORD ECLIPSE BRASS PRODUCTS, AMERICAN VALVE, MCDONALD OR EUGENE ERNST PRODUCTS. THE NAMING OF A MODEL NUMBER OF ONE MANUFACTURER IS INTENDED TO IDENTIFY THE QUALITY AND STYLE REQUIRED.
2. GAS STOP VALVES: MCDONALD, ALL BRONZE, MODEL NO. 10701 WITH LEVER HANDLES. GAS VALVE TO BE APPROVED BY LOCAL AUTHORITY HAVING JURISDICTION AND THE VALVE TO BE A.G.A. APPROVED AND HAVE A.G.A. STAMP ON VALVE BODY.

C. CHECK VALVES:

1. VALVES SHALL BE ROCKFORD ECLIPSE BRASS PRODUCTS, NIBCO, MILWAUKEE OR HAMMOND. THE NAMING OF A MODEL NUMBER OF ONE MANUFACTURER IS INTENDED TO IDENTIFY THE QUALITY AND STYLE REQUIRED.
2. SWING CHECK VALVES 2" AND SMALLER: BRONZE BODY, SCREWED OR SWEAT END, BRONZE DISK, 200 PSI WOG, MILWAUKEE 509 OR 1509.
3. SWING CHECK VALVES 2-1/2" AND LARGER: IRON BODY, FLANGED ENDS, BRONZE MOUNTED, 200 PSI WOG, MILWAUKEE F-2974.
4. SILENT (VERTICAL) CHECK VALVES 2-1/2" AND LARGER: IRON BODY, WAFER STYLE, BRONZE TRIM, CLASS 125, MILWAUKEE.
5. HORIZONTAL LIFT CHECK VALVE: ROCKFORD ECLIPSE BRASS PRODUCTS NO. 833.
6. BALL CHECK VALVE: SPRING LOADED, STAINLESS STEEL, BALL ROCKFORD ECLIPSE BRASS PRODUCTS 1352.

EXECUTION

INSTALLATION:

A. PROVIDE VALVES WHERE REQUIRED FOR ADEQUATE CONTROL OF THE SYSTEM. VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS AND ALLOW ISOLATION FOR INSPECTION, MAINTENANCE AND REPAIR OF EACH PIECE OF EQUIPMENT AND EACH MAIN SERVICE LOOP.

TAG AND VALVE CHART:

A. FURNISH AND INSTALL ON EACH VALVE A BRASS TAG WITH NUMBER EMBOSSED IN THE BRASS TAG FOR EACH VALVE AND SECURELY FASTENED TO EACH VALVE WHEEL WITH BEADED CHAIN OR BRASS WIRE.

B. PROVIDE A CHART ENCLOSED IN A GLASS COVERED FRAME IN MAIN MECHANICAL ROOM, SHOWING THE LOCATION AND USE OF EACH VALVE. TWO CHARTS SHALL BE PROVIDED, ONE FOR THE PLUMBING VALVES AND ONE FOR THE HEATING AND COOLING VALVES. THE PLUMBING VALVES SHALL START WITH THE NUMBER ONE AND CONTINUE CONSECUTIVELY UNTIL ALL HEATING AND COOLING VALVES ARE NUMBERED.

PIPE INSULATION:

A. THE FOLLOWING SHALL BE INSULATED:

4. ALL DOMESTIC COLD WATER PIPING ABOVE GRADE.
5. ALL HOT WATER AND HOT WATER RETURN PIPING.
6. ALL HORIZONTAL STORM DRAIN PIPING AND ROOF DRAIN BODIES.

B. DOMESTIC HOT, COLD, HOT WATER RECIRCULATION, PRIMARY STORM DRAINAGE, AND WASTE DRAINAGE PIPING SHALL BE INSULATED WITH A LB. DENSITY SECTIONAL FIBERGLASS INSULATION WITH A THERMAL CONDUCTIVITY NOT TO EXCEED 0.24 WITH WHITE ALL SERVICE JACKET AND VAPOR BARRIER. ALL JOINTS AND SEAMS SHALL BE SEALED VAPOR TIGHT. ALL SEAMS AND STAPLES SHALL THEN BE COVERED WITH "ALL SERVICE JACKET" THREE-INCH WIDE TAPE.

C. ALL INTERIOR HORIZONTAL STORM DRAINAGE PIPING SYSTEMS AND ROOF DRAIN BODIES ARE TO BE INSULATED WITH BLANKET TYPE GLASS FIBER BONDED WITH THERMOSETTING RESIN WITH WHITE VINYL VAPOR RETARDING FACING, 2" WIDE STAPLING/TAPING TAB.

D. MATERIALS AS SPECIFIED IN THIS SECTION SHALL BE MANUFACTURED BY CERTAINTED, JOHNS MANVILLE, KNAUF, OWENS CORNING OR EQUAL. INSULATION THICKNESSES SHALL BE AS SHOWN IN THE FOLLOWING TABLE:

PIPING SYSTEM	FLUID TEMPERATURE RANGE (°F)	PIPE SIZE				
		1" AND LESS	1-1/4" TO 2"	2-1/2" TO 4"	5" & 6"	8" AND LARGER
INSULATION THICKNESS						
DOMESTIC COLD WATER	AMBIENT	1/2"	1"	1"	1"	-
DOMESTIC HOT WATER AND HOT WATER RECIRCULATION	110° - 160°	1"	1"	1-1/2"	1-1/2"	-
ABOVE GRADE DRAINS AND PIPING RECEIVING CONDENSATE OR ICE MACHINE DISCHARGE	40° - 60°	1/2"	1"	1"	1-1/2"	-
HORIZONTAL STORM DRAINAGE	AMBIENT	-	-	1"	1"	1"

D

Architect is not responsible for any dimensions scaled from drawings. Dimensions noted take precedence.

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 Project #: 19161

NEW BUILDING FOR:  
**GALILEE BAPTIST CHURCH**  
 6300 WOODYARD ROAD,  
 UPPER MARLBORO, MD 20772

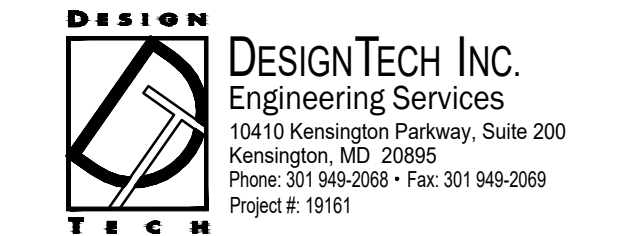
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<input type="checkbox"/> BID SET	11/15/2023
<input checked="" type="checkbox"/> AVL COORD / BID SET	12/08/2023
<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

A

**PLUMBING SPECIFICATIONS**

**P003**  
 3 OF 13 SHEETS



NEW BUILDING FOR:  
**GALILEE BAPTIST CHURCH**  
 6300 WOODYARD ROAD,  
 UPPER MARLBORO, MD 20772

DRAWING	DATE
<input type="checkbox"/> DD MEETING #1	07/16/2019
<input type="checkbox"/> DD MEETING #2	09/06/2019
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<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

**PLUMBING SPECIFICATIONS**

**P003**  
 3 OF 13 SHEETS

FIRE PROTECTION SPECIFICATIONS

GENERAL

RELATED DOCUMENTS

- A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
- B. ALL WORK SHALL CONFORM WITH "NFPA 13 AND ALL STATE AND LOCAL CODES"

SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING FIRE-SUPPRESSION PIPING INSIDE THE BUILDING:
  1. WET SPRINKLER SYSTEMS

PERFORMANCE REQUIREMENTS

- A. STANDARD PIPING SYSTEM COMPONENT WORKING PRESSURE: LISTED FOR AT LEAST 175 PSIG.
- B. FIRE-SUPPRESSION SPRINKLER SYSTEM DESIGN SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION AND FACTORY MUTUAL.

- 1. SYSTEMS SHALL BE DESIGNED TO PROVIDE A MARGIN OF SAFETY FOR AVAILABLE WATER FLOW AND PRESSURE OF 10 PERCENT, INCLUDING LOSSES THROUGH WATER-SERVICE PIPING, VALVES, AND BACKFLOW PREVENTERS.

- 2. SPRINKLER OCCUPANCY HAZARD CLASSIFICATIONS:
  - a. ELECTRICAL EQUIPMENT ROOMS, : SPECIAL HAZARD 1.

- 3. MINIMUM DENSITY FOR AUTOMATIC-SPRINKLER PIPING DESIGN:
  - a. LIGHT HAZARD OCCUPANCY: 0.1 GPM OVER 1500-SQ. FT. AREA.

WHERE A SPACE IS NOT LARGE ENOUGH TO INCLUDE THE FULL PROTECTION AREA IN HYDRAULIC CALCULATIONS, ADJACENT AREAS SHALL BE INCLUDED AT APPROPRIATE DENSITY TO MAKE UP THE REQUIRED COVERAGE AREA.

- 4. MAXIMUM PROTECTION AREA PER SPRINKLER: PER UL LISTING .

- 5. MAXIMUM PROTECTION AREA PER SPRINKLER:
  - a. OFFICE SPACES: 225 SQ. FT.
  - b. STORAGE AREAS: 130 SQ. FT.
  - c. MECHANICAL EQUIPMENT ROOMS: 130 SQ. FT.
  - d. ELECTRICAL EQUIPMENT ROOMS: 130 SQ. FT.
  - e. CONCEALED COMBUSTIBLE CONSTRUCTION (I.E. BETWEEN SUSPENDED CEILING AND STRUCTURE ABOVE.
  - f. OTHER AREAS: ACCORDING TO NFPA 13 UNLESS OTHERWISE INDICATED.

- 6. TOTAL COMBINED HOSE-STREAM DEMAND REQUIREMENT: A MINIMUM OUTSIDE HOSE STREAM OF 100 GPM SHALL BE PROVIDED FOR ALL SYSTEMS.

- C. SEISMIC PERFORMANCE: FIRE-SUPPRESSION PIPING SHALL BE CAPABLE OF WITHSTANDING THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO NFPA 13 AND FM DATA SHEET 2-BN.

SUBMITTALS

- A. PRODUCT DATA: FOR THE FOLLOWING:
  1. PIPING MATERIALS, INCLUDING SPRINKLER SPECIALTY FITTINGS.
  2. PIPE HANGERS AND SUPPORTS, INCLUDING SEISMIC RESTRAINTS.
  3. VALVES, INCLUDING LISTED FIRE-PROTECTION VALVES, UNLISTED GENERAL-DUTY VALVES, AND SPECIALTY VALVES AND TRIM.
  4. SPRINKLERS, ESCUTCHEONS, AND GUARDS. INCLUDE SPRINKLER FLOW CHARACTERISTICS, MOUNTING, FINISH, AND OTHER PERTINENT DATA.
  5. ALARM DEVICES, INCLUDING ELECTRICAL DATA.

- B. SHOP DRAWINGS: DIAGRAM POWER, SIGNAL, AND CONTROL WIRING.

- C. FIRE-HYDRANT FLOW TEST REPORT.

- D. APPROVED SPRINKLER PIPING DRAWINGS: WORKING PLANS, PREPARED ACCORDING TO NFPA 13, THAT HAVE BEEN APPROVED BY AUTHORITIES HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS.

- E. FIELD TEST REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND AS DESCRIBED IN NFPA 13. INCLUDE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING."

- F. FIELD QUALITY-CONTROL TEST REPORTS.

- G. OPERATION AND MAINTENANCE DATA: FOR SPRINKLER SPECIALTIES TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

- 1.5 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS:
  1. INSTALLER'S RESPONSIBILITIES INCLUDE DESIGNING, FABRICATING, AND INSTALLING FIRE-SUPPRESSION SYSTEMS AND PROVIDING PROFESSIONAL ENGINEERING SERVICES NEEDED TO ASSUME ENGINEERING RESPONSIBILITY. BASE CALCULATIONS ON RESULTS OF A CURRENT FIRE-HYDRANT FLOW TEST.
    - a. ENGINEERING RESPONSIBILITY: PREPARATION OF WORKING PLANS, CALCULATIONS, AND FIELD TEST REPORTS BY A QUALIFIED PROFESSIONAL ENGINEER, OR, IF ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, A NICET LEVEL IV SPRINKLER DESIGNER.
  2. WELDING: QUALIFY PROCESSES AND OPERATORS ACCORDING TO ASME BOILER AND PRESSURE VESSEL CODE: SECTION IX.

- C. NFPA AND FACTORY MUTUAL GLOBAL (FMG) STANDARDS: FIRE-SUPPRESSION-SYSTEM EQUIPMENT, SPECIALTIES, ACCESSORIES, INSTALLATION, AND TESTING SHALL COMPLY WITH THE FOLLOWING:
  1. NFPA 13, "INSTALLATION OF SPRINKLER SYSTEMS."
  2. FM DATA SHEET 2-BN, "INSTALLATION OF SPRINKLER SYSTEMS"

- COORDINATION

- A. COORDINATE LAYOUT AND INSTALLATION OF SPRINKLERS WITH OTHER CONSTRUCTION THAT PENETRATES CEILING, INCLUDING LIGHT FIXTURES, HVAC EQUIPMENT, AND PARTITION ASSEMBLIES.

- EXTRA MATERIALS

- A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
  1. SPRINKLER CABINETS: FINISHED, WALL-MOUNTING, STEEL CABINET WITH HINGED COVER, WITH SPACE FOR MINIMUM OF SIX SPARE SPRINKLERS PLUS SPRINKLER WRENCH. INCLUDE NUMBER OF SPRINKLERS REQUIRED BY NFPA 13 AND SPRINKLER WRENCH. INCLUDE SEPARATE CABINET WITH SPRINKLERS AND WRENCH FOR EACH TYPE OF SPRINKLER ON PROJECT.

- PRODUCTS

- MANUFACTURERS

- A. PRODUCTS AND MANUFACTURERS SHALL BE UL LISTED AND FACTORY MUTUAL GLOBAL (FMG) APPROVED FOR USE ON FIRE PROTECTION SYSTEMS.

- STEEL PIPE AND FITTINGS

- A. THREADED-END, STANDARD-WEIGHT STEEL PIPE: ASTM A 53/A 53M, ASTM A 135, OR ASTM A 795, HOT-DIP GALVANIZED WITH FACTORY- OR FIELD-FORMED THREADED ENDS.
  1. MALLEABLE-IRON THREADED FITTINGS: ASME B16.3.
  2. STEEL THREADED PIPE NIPPLES: ASTM A 733, MADE OF ASTM A 53/A 53M OR ASTM A 106, SCHEDULE 40, SEAMLESS STEEL PIPE HOT-DIP GALVANIZED. INCLUDE ENDS MATCHING JOINING METHOD.
  3. STEEL THREADED COUPLINGS: ASTM A 865.

- B. GROOVED-END, STANDARD-WEIGHT STEEL PIPE: ASTM A 53/A 53M, ASTM A 135, OR ASTM A 795, HOT-DIP GALVANIZED WITH FACTORY- OR FIELD-FORMED, SQUARE-CUT- OR ROLL-GROOVED ENDS.
  1. GROOVED-JOINT PIPING SYSTEMS:
    - a. GROOVED-END FITTINGS: UL-LISTED AND FMG APPROVED, ASTM A 536, DUCTILE-IRON CASTING WITH OD MATCHING STEEL-PIPE OD.
    - b. GROOVED-END-PIPE COUPLINGS: UL 213 AND ANMA C606, RIGID PATTERN, UNLESS OTHERWISE INDICATED; GASKETED FITTING MATCHING STEEL-PIPE OD. INCLUDE DUCTILE-IRON HOUSING WITH KEYS MATCHING STEEL-PIPE AND FITTING GROOVES, PRELUBRICATED RUBBER GASKET LISTED FOR USE WITH HOUSING, AND STEEL BOLTS AND NUTS.
  2. GROOVED-END, SCHEDULE 10 STEEL PIPE: ASTM A 135 OR ASTM A 795, SCHEDULE 10 IN NPS 5 AND SMALLER; AND NFPA 13-SPECIFIED WALL THICKNESS IN NPS 6 TO NPS 10; WITH FACTORY- OR FIELD-FORMED, ROLL-GROOVED ENDS.

- 1. GROOVED-JOINT PIPING SYSTEMS:
  - a. GROOVED-END FITTINGS: UL-LISTED, ASTM A 536, DUCTILE-IRON CASTING WITH OD MATCHING STEEL-PIPE OD.
  - b. GROOVED-END-PIPE COUPLINGS: UL 213 AND ANMA C606, RIGID PATTERN, UNLESS OTHERWISE INDICATED; GASKETED FITTING MATCHING STEEL-PIPE OD. INCLUDE DUCTILE-IRON HOUSING WITH KEYS MATCHING STEEL-PIPE AND FITTING GROOVES, PRELUBRICATED RUBBER GASKET LISTED FOR USE WITH HOUSING, AND STEEL BOLTS AND NUTS.

- SPRINKLER SPECIALTY FITTINGS

- A. SPRINKLER SPECIALTY FITTINGS SHALL BE UL LISTED WITH 175-PSIG MINIMUM WORKING-PRESSURE RATINGS, AND MADE OF MATERIALS COMPATIBLE WITH PIPING.

- B. OUTLET SPECIALTY FITTINGS:
  1. MECHANICAL-T AND -CROSS FITTINGS: UL 213, DUCTILE-IRON HOUSING WITH GASKETS, BOLTS AND NUTS, AND THREADED, LOCKING-LUG, OR GROOVED OUTLETS. FITTING SHALL PROVIDE STRAP THAT FULLY SURROUNDS THE PIPE BEING TAPPED. STRAPLESS FITTINGS SHALL NOT BE USED.
  2. SPRINKLER DRAIN AND ALARM TEST FITTINGS: CAST- OR DUCTILE-IRON BODY; WITH THREADED OR LOCKING-LUG INLET AND OUTLET, TEST VALVE, AND ORIFICE AND SIGHT GLASS.
  3. SPRINKLER BRANCH-LINE TEST FITTINGS: BRASS BODY WITH THREADED INLET, CAPPED DRAIN OUTLET, AND THREADED OUTLET FOR SPRINKLER.

- E. SPRINKLER INSPECTOR'S TEST FITTING: CAST- OR DUCTILE-IRON HOUSING WITH THREADED INLET AND DRAIN OUTLET AND SIGHT GLASS.

- LISTED FIRE-PROTECTION VALVES

- A. VALVES SHALL BE UL LISTED WITH 175-PSIG MINIMUM PRESSURE RATING.
- B. BALL VALVES: COMPLY WITH UL 1091, EXCEPT WITH BALL INSTEAD OF DISC.
  1. NPS 1-1/2 AND SMALLER: BRONZE BODY WITH THREADED ENDS.
  2. NPS 2 AND NPS 2-1/2: BRONZE BODY WITH THREADED ENDS OR DUCTILE-IRON BODY WITH GROOVED ENDS.
  3. NPS 3: DUCTILE-IRON BODY WITH GROOVED ENDS.

- C. BUTTERFLY VALVES: UL 1091.
  1. NPS 2 AND SMALLER: BRONZE BODY WITH THREADED ENDS.
  2. NPS 2-1/2 AND LARGER: BRONZE, CAST-IRON, OR DUCTILE-IRON BODY; WAFER TYPE OR WITH FLANGED OR GROOVED ENDS.

- D. CHECK VALVES NPS 2 AND LARGER: UL 312, SWING TYPE, CAST-IRON BODY WITH FLANGED OR GROOVED ENDS.

- E. GATE VALVES: UL 262, OS&Y TYPE.
  1. NPS 2 AND SMALLER: BRONZE BODY WITH THREADED ENDS.
  2. NPS 2-1/2 AND LARGER: CAST-IRON BODY WITH FLANGED ENDS.

- F. INDICATING VALVES: UL 1091, WITH INTEGRAL INDICATING DEVICE AND ENDS MATCHING CONNECTING PIPING.
  1. INDICATOR: ELECTRICAL, 115-V AC, PREWIRED, 2-CIRCUIT, SUPERVISORY SWITCH.
  2. NPS 2 AND SMALLER: BALL OR BUTTERFLY VALVE WITH BRONZE BODY AND THREADED ENDS.
  3. NPS 2-1/2 AND LARGER: BUTTERFLY VALVE WITH CAST- OR DUCTILE-IRON BODY; WAFER TYPE OR WITH FLANGED OR GROOVED ENDS.

- UNLISTED GENERAL-DUTY VALVES

- A. BALL VALVES NPS 2 AND SMALLER: MSS SP-110, 2-PIECE COPPER-ALLOY BODY WITH CHROME-PLATED BRASS BALL, 600-PSIG MINIMUM CWP RATING, BLOWOUT-PROOF STEM, AND THREADED ENDS.

- B. CHECK VALVES NPS 2 AND SMALLER: MSS SP-80, TYPE 4, CLASS 125 MINIMUM, SWING TYPE WITH BRONZE BODY, NONMETALLIC DISC, AND THREADED ENDS.

- C. GATE VALVES NPS 2 AND SMALLER: MSS SP-80, TYPE 2, CLASS 125 MINIMUM, WITH BRONZE BODY, SOLID WEDGE, AND THREADED ENDS.

- D. GLOBE VALVES NPS 2 AND SMALLER: MSS SP-80, TYPE 2, CLASS 125 MINIMUM, WITH BRONZE BODY, NONMETALLIC DISC, AND THREADED ENDS.

- SPECIALTY VALVES

- A. SPRINKLER SYSTEM CONTROL VALVES: UL LISTED AND FMG APPROVED, CAST- OR DUCTILE-IRON BODY WITH FLANGED OR GROOVED ENDS, AND 175-PSIG MINIMUM PRESSURE RATINGS.

- MANUAL CONTROL STATIONS

- A. MANUAL CONTROL STATIONS: UL LISTED HYDRAULIC OPERATION, WITH UNION, NPS 1/2 PIPE NIPPLE, AND BRONZE BALL VALVE. INCLUDE METAL ENCLOSURE LABELED "MANUAL CONTROL STATION" WITH OPERATING INSTRUCTIONS AND COVER HELD CLOSED BY BREAKABLE STRUT TO PREVENT ACCIDENTAL OPENING.

- CONTROL PANELS

- A. REFER TO ELECTRICAL DRAWINGS FOR AUTOMATIC FIRE DETECTION, ALARM, AND RELEASING PANELS.

- SPRINKLERS

- A. SPRINKLERS SHALL BE UL LISTED WITH 175-PSIG MINIMUM PRESSURE RATING.

- B. AUTOMATIC SPRINKLERS: WITH HEAT-RESPONSIVE ELEMENT COMPLYING WITH THE FOLLOWING:
  1. UL 199, FOR NONRESIDENTIAL APPLICATIONS.
  2. SPRINKLER TYPES AND CATEGORIES: NOMINAL 1/2-INCH ORIFICE FOR "ORDINARY" TEMPERATURE CLASSIFICATION RATINGS, UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION.

- C. SPRINKLER TYPES, FEATURES, AND OPTIONS AS FOLLOWS:
  1. PENDENT SPRINKLERS.
  2. QUICK-RESPONSE SPRINKLERS.
  3. RECESSED SPRINKLERS, INCLUDING ESCUTCHEON.
  4. SIDEWALL SPRINKLERS.
  5. UPRIGHT SPRINKLERS.

- D. SPRINKLER FINISHES: CHROME PLATED, BRONZE, AND PAINTED.

- E. SPRINKLER ESCUTCHEONS: MATERIALS, TYPES, AND FINISHES FOR THE FOLLOWING SPRINKLER MOUNTING APPLICATIONS.
  1. CEILING MOUNTING: CHROME-PLATED STEEL, ONE PIECE, FLAT.
  2. SIDEWALL MOUNTING: CHROME-PLATED STEEL, ONE PIECE, FLAT.

- F. SPRINKLER GUARDS: WIRE-CAGE TYPE, INCLUDING FASTENING DEVICE FOR ATTACHING TO SPRINKLER. (IN ALL MECHANICAL AND STORAGE AREAS).

- PREPARATION

- A. FIRE HYDRANT FLOW TEST DATA THAT IS PROVIDED ON THE CONTRACT DRAWINGS ARE FOR PRELIMINARY INFORMATION ONLY. PERFORM FIRE-HYDRANT FLOW TEST ACCORDING TO NFPA 13 AND NFPA 291. USE RESULTS FOR SYSTEM DESIGN CALCULATIONS REQUIRED IN PART 1 "QUALITY ASSURANCE" ARTICLE.

- B. REPORT TEST RESULTS PROMPTLY AND IN WRITING.

- PIPING APPLICATIONS, GENERAL

- A. DO NOT USE WELDED JOINTS FOR GALVANIZED-STEEL PIPE.

- B. FLANGES, FLANGED FITTINGS, UNIONS, NIPPLES, AND TRANSITION AND SPECIAL FITTINGS WITH FINISH AND PRESSURE RATINGS SAME AS OR HIGHER THAN SYSTEM'S PRESSURE RATING MAY BE USED IN ABOVEGROUND APPLICATIONS, UNLESS OTHERWISE INDICATED.

- C. PIPING BETWEEN FIRE DEPARTMENT CONNECTIONS AND CHECK VALVES: GALVANIZED, STANDARD-WEIGHT STEEL PIPE WITH GROOVED ENDS; GROOVED-END FITTINGS; GROOVED-END-PIPE COUPLINGS; AND GROOVED JOINTS.

- D. XL OR PLAN END PIPING WILL NOT BE ACCEPTED.

- SPRINKLER SYSTEM PIPING APPLICATIONS

- A. STANDARD-PRESSURE, SPRINKLER SYSTEM, 175-PSIG MAXIMUM WORKING PRESSURE:
  1. SPRINKLER-PIPING FITTING OPTION: SPECIALTY SPRINKLER FITTINGS, NPS 2" AND SMALLER, INCLUDING MECHANICAL-T AND -CROSS FITTINGS, MAY BE USED DOWNSTREAM FROM SPRINKLER ZONE VALVES.
  2. NPS 2" AND SMALLER: THREADED-END, STANDARD-WEIGHT STEEL PIPE; MALLEABLE-IRON THREADED FITTINGS; AND THREADED JOINTS.
  3. NPS 2-1/2" TO NPS 6": GROOVED-END, GALVANIZED, SCHEDULE 10 STEEL PIPE; GROOVED-END FITTINGS; GROOVED-END-PIPE COUPLINGS; AND GROOVED JOINTS.

- VALVE APPLICATIONS

- A. DRAWINGS INDICATE VALVE TYPES TO BE USED. WHERE SPECIFIC VALVE TYPES ARE NOT INDICATED, THE FOLLOWING REQUIREMENTS APPLY:
  1. LISTED FIRE-PROTECTION VALVES: UL LISTED AND FMG APPROVED FOR APPLICATIONS WHERE REQUIRED BY NFPA 13.
    - a. SHUTOFF DUTY: USE BUTTERFLY OR GATE VALVES, OR OS&Y.
  2. UNLISTED GENERAL-DUTY VALVES: FOR APPLICATIONS WHERE UL-LISTED ARE NOT REQUIRED BY NFPA 13.
    - a. SHUTOFF DUTY: USE BALL, BUTTERFLY, OR GATE VALVES.
    - b. THROTTLING DUTY: USE BALL OR GLOBE VALVES.

- JOINT CONSTRUCTION

- A. THREADED JOINTS: COMPLY WITH NFPA 13 FOR PIPE THICKNESS AND THREADS. DO NOT THREAD PIPE SMALLER THAN NPS 8" WITH WALL THICKNESS LESS THAN SCHEDULE 40 UNLESS APPROVED BY AUTHORITIES HAVING JURISDICTION AND THREADS ARE CHECKED BY A RING GAGE AND COMPLY WITH ASME B1.20.1.

- B. GROOVED JOINTS: ASSEMBLE JOINTS WITH LISTED COUPLING AND GASKET, LUBRICANT, AND BOLTS.
  1. STEEL PIPE: SQUARE-CUT OR ROLL-GROOVE PIPING AS INDICATED. USE GROOVED-END FITTINGS AND RIGID, GROOVED-END-PIPE COUPLINGS, UNLESS OTHERWISE INDICATED.

- PIPING INSTALLATION

- A. LOCATIONS AND ARRANGEMENTS: DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING. INSTALL PIPING AS INDICATED, AS FAR AS PRACTICAL.
  1. DEVIATIONS FROM APPROVED WORKING PLANS FOR PIPING REQUIRE WRITTEN APPROVAL FROM AUTHORITIES HAVING JURISDICTION. FILE WRITTEN APPROVAL WITH ARCHITECT BEFORE DEVIATING FROM APPROVED WORKING PLANS.

- B. USE APPROVED FITTINGS TO MAKE CHANGES IN DIRECTION, BRANCH TAKEOFFS FROM MAINS, AND REDUCTIONS IN PIPE SIZES.

- C. INSTALL UNIONS ADJACENT TO EACH VALVE IN PIPES NPS 2" AND SMALLER. UNIONS ARE NOT REQUIRED ON FLANGED DEVICES OR IN PIPING INSTALLATIONS USING GROOVED JOINTS.

- D. INSTALL FLANGES OR FLANGE ADAPTERS ON VALVES, APPARATUS, AND EQUIPMENT HAVING NPS 2-1/2" AND LARGER CONNECTIONS.

- E. INSTALL "INSPECTOR'S TEST CONNECTIONS" IN SPRINKLER SYSTEM PIPING, COMPLETE WITH SHUTOFF VALVE, SIZED AND LOCATED ACCORDING TO NFPA 13 AND FM DATA SHEET 2-BN.

- F. INSTALL SPRINKLER PIPING WITH DRAINS FOR COMPLETE SYSTEM DRAINAGE.

- G. INSTALL BALL DRIP VALVES TO DRAIN PIPING BETWEEN FIRE DEPARTMENT CONNECTIONS AND CHECK VALVES. DRAIN TO FLOOR DRAIN OR OUTSIDE BUILDING.

- H. INSTALL ALARM DEVICES IN PIPING SYSTEMS.

- I. HANGERS AND SUPPORTS: COMPLY WITH NFPA 13 FOR HANGER MATERIALS.
  1. INSTALL SPRINKLER SYSTEM PIPING ACCORDING TO NFPA 13 .

- J. INSTALL PRESSURE GAGES ON BOTH SIDES OF ALL SYSTEM CHECK VALVES (EXCEPTION: FDC CHECK VALVE), AND AT EACH SPRINKLER TEST CONNECTION. INCLUDE PRESSURE GAGES WITH CONNECTION NOT LESS THAN NPS 1/4 AND WITH SOFT METAL SEATED GLOBE VALVE. ARRANGED FOR DRAINING PIPE BETWEEN GAGE AND VALVE. INSTALL GAGES TO PERMIT REMOVAL, AND INSTALL WHERE THEY WILL NOT BE SUBJECT TO FREEZING.

- 3.8 VALVE INSTALLATION

- A. INSTALL LISTED FIRE-PROTECTION VALVES, UNLISTED GENERAL-DUTY VALVES, SPECIALTY VALVES AND TRIM, CONTROLS, AND SPECIALTIES ACCORDING TO NFPA 13 AND AUTHORITIES HAVING JURISDICTION.

- B. INSTALL LISTED FIRE-PROTECTION SHUTOFF VALVES SUPERVISED-OPEN, LOCATED TO CONTROL SOURCES OF WATER SUPPLY EXCEPT FROM FIRE DEPARTMENT CONNECTIONS. INSTALL PERMANENT IDENTIFICATION SIGNS INDICATING PORTION OF SYSTEM CONTROLLED BY EACH VALVE.

- C. INSTALL CHECK VALVE IN EACH WATER-SUPPLY CONNECTION.

- SPRINKLER APPLICATIONS

- A. USE THE FOLLOWING SPRINKLER TYPES FOR NEW SYSTEMS:
  1. ROOMS WITHOUT CEILING: UPRIGHT SPRINKLERS.
  2. ROOMS WITH SUSPENDED CEILING: FLUSH CONCEALED SPRINKLERS WITH COVER PLATE.
  3. WALL MOUNTING: SIDEWALL SPRINKLERS.
  4. SPECIAL APPLICATIONS: QUICK RESPONSE SPRINKLERS SHALL BE INSTALLED IN ALL AREAS.
  5. ORDINARY TEMPERATURE SPRINKLERS SHALL BE USED THROUGHOUT PROVIDE TEMPERATURE RATING AS REQUIRED BY NFPA 13 FOR SPRINKLERS ADJACENT TO HEAT SOURCES.
  6. SPRINKLER FINISHES:
    - a. UPRIGHT, PENDENT, AND SIDEWALL SPRINKLERS: CHROME PLATED IN FINISHED SPACES EXPOSED TO VIEW; ROUGH BRONZE IN UNFINISHED SPACES.

- SPRINKLER INSTALLATION

- A. INSTALL SPRINKLERS IN SUSPENDED CEILING IN CENTER OF ACOUSTICAL CEILING PANELS AND TILES.

- B. INSTALL PENDENT SPRINKLERS ON RETURN BENDS CONNECTED TO BRANCH LINES AT THE TOP OF THE BRANCH LINE.

- C. INSTALL BALL DRIP VALVES AT EACH CHECK VALVE FOR FIRE DEPARTMENT CONNECTION. DRAIN TO FLOOR DRAIN OR OUTSIDE BUILDING.

- D. CONNECT PIPING TO SPECIALTY VALVES, HOSE VALVES, SPECIALTIES, FIRE DEPARTMENT CONNECTIONS, AND ACCESSORIES.

- E. ELECTRICAL CONNECTIONS: POWER WIRING IS SPECIFIED IN DIVISION 16.

- F. FIRE ALARM DEVICES MONITORING SPRINKLER SYSTEM SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR BUT WIRED BY THE FIRE ALARM CONTRACTOR.

- LABELING AND IDENTIFICATION

- A. INSTALL LABELING AND PIPE MARKERS ON EQUIPMENT AND PIPING ACCORDING TO REQUIREMENTS IN NFPA 13.

- FIELD QUALITY CONTROL

- A. PERFORM THE FOLLOWING FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS:
  1. LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEM AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
  2. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
  3. FLUSH, TEST, AND INSPECT SPRINKLER SYSTEMS ACCORDING TO NFPA 13, "SYSTEMS ACCEPTANCE" CHAPTER.
  4. COORDINATE WITH FIRE ALARM TESTS. OPERATE AS REQUIRED.
  5. VERIFY THAT EQUIPMENT HOSE THREADS ARE SAME AS LOCAL FIRE DEPARTMENT EQUIPMENT.

- B. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO ARCHITECT AND AUTHORITIES HAVING JURISDICTION.

- CLEANING AND PROTECTION

- A. CLEAN DIRT AND DEBRIS FROM SPRINKLERS.

- B. PROTECT SPRINKLERS FROM DAMAGE UNTIL SUBSTANTIAL COMPLETION.

**The McKnight Group**  
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Architect is not responsible for any dimensions scaled from drawings. Dimensions noted take precedence.

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 Project #: 19161

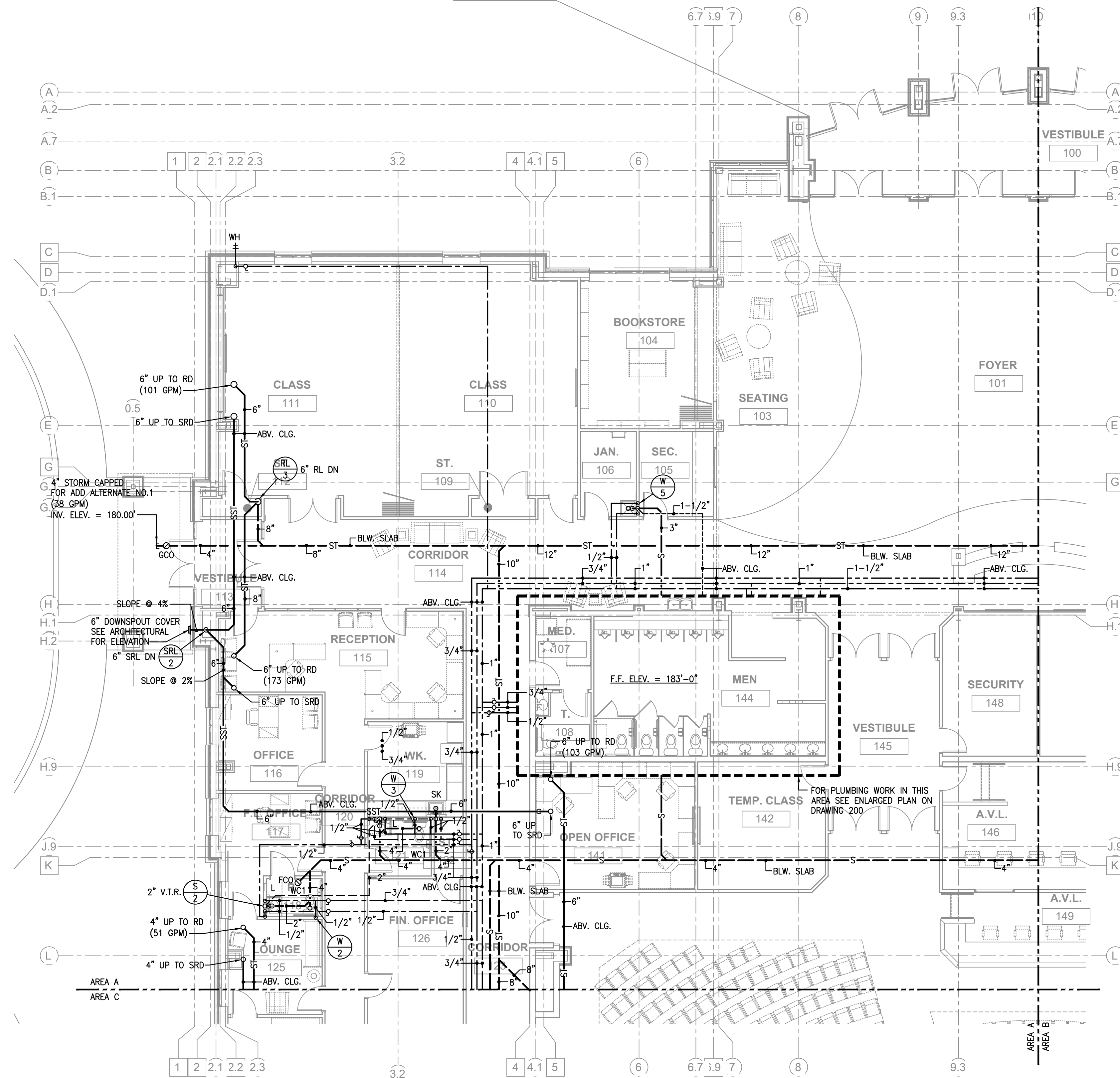
NEW BUILDING FOR:  
**GALILEE BAPTIST CHURCH**  
 6300 WOODYARD ROAD,  
 UPPER MARLBORO, MD 20772

DRAWING	DATE
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<input type="checkbox"/> DD MEETING #2	09/06/2019
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<input type="checkbox"/> PERMIT SET	

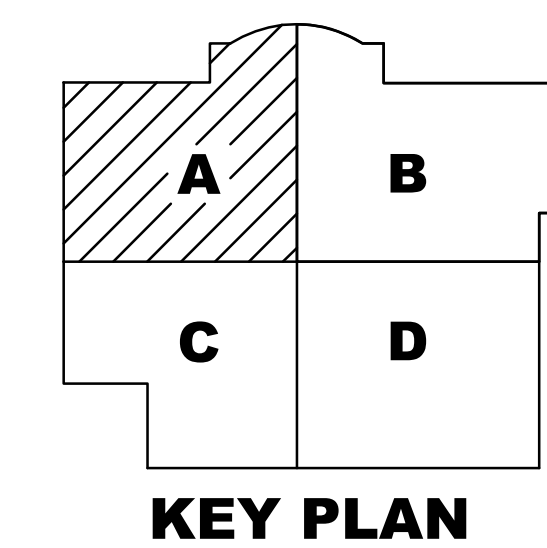
REVISIONS/ADDENDUMS

**AREA A FLOOR PLAN**

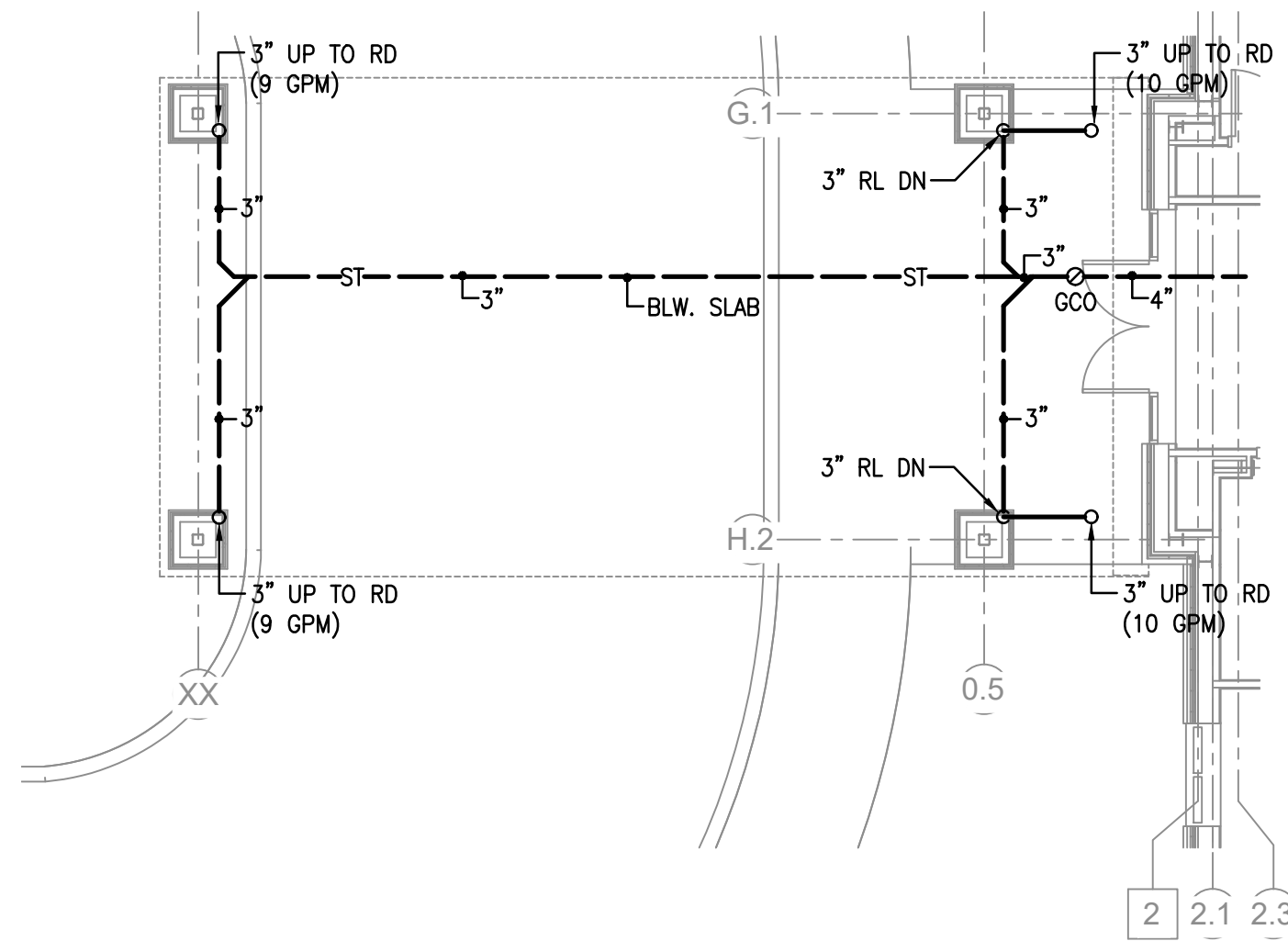
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 5 OF 13 SHEETS



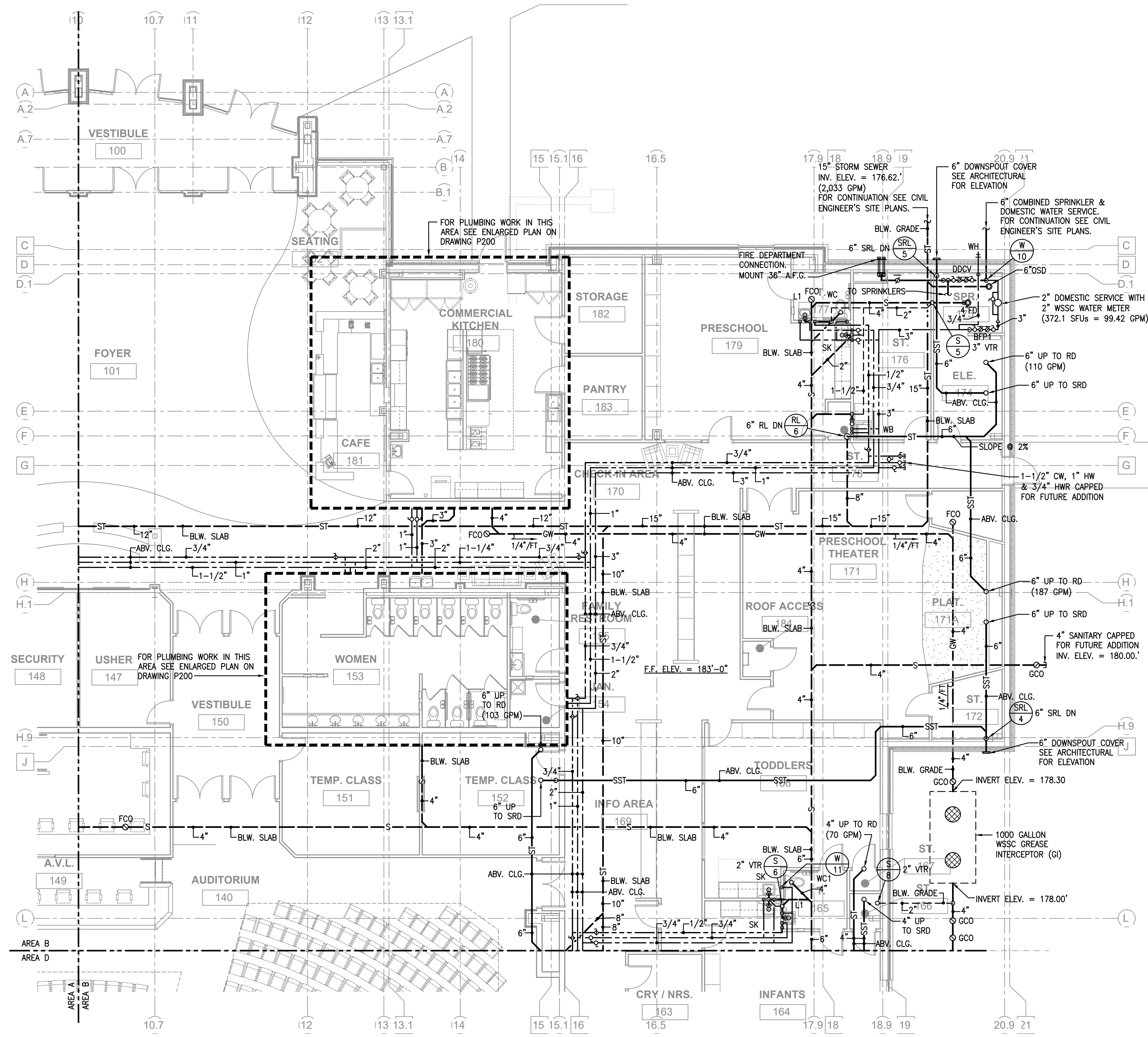
**AREA A FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"



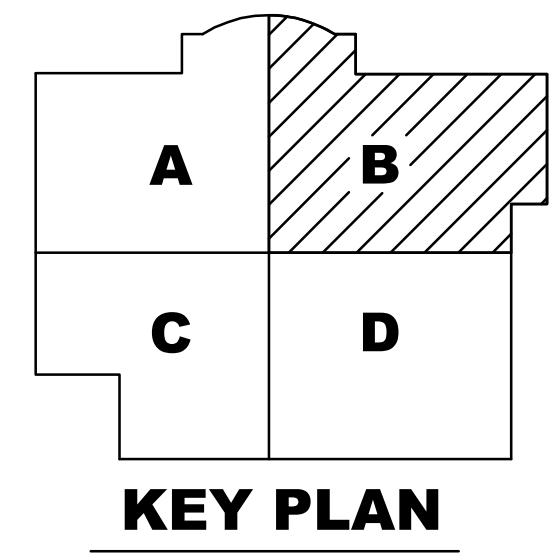
**KEY PLAN**



**ADD ALTERNATE NO.1 - FLOOR PLAN**  
 SCALE: 1/8" = 1'-0"



**AREA B FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**KEY PLAN**

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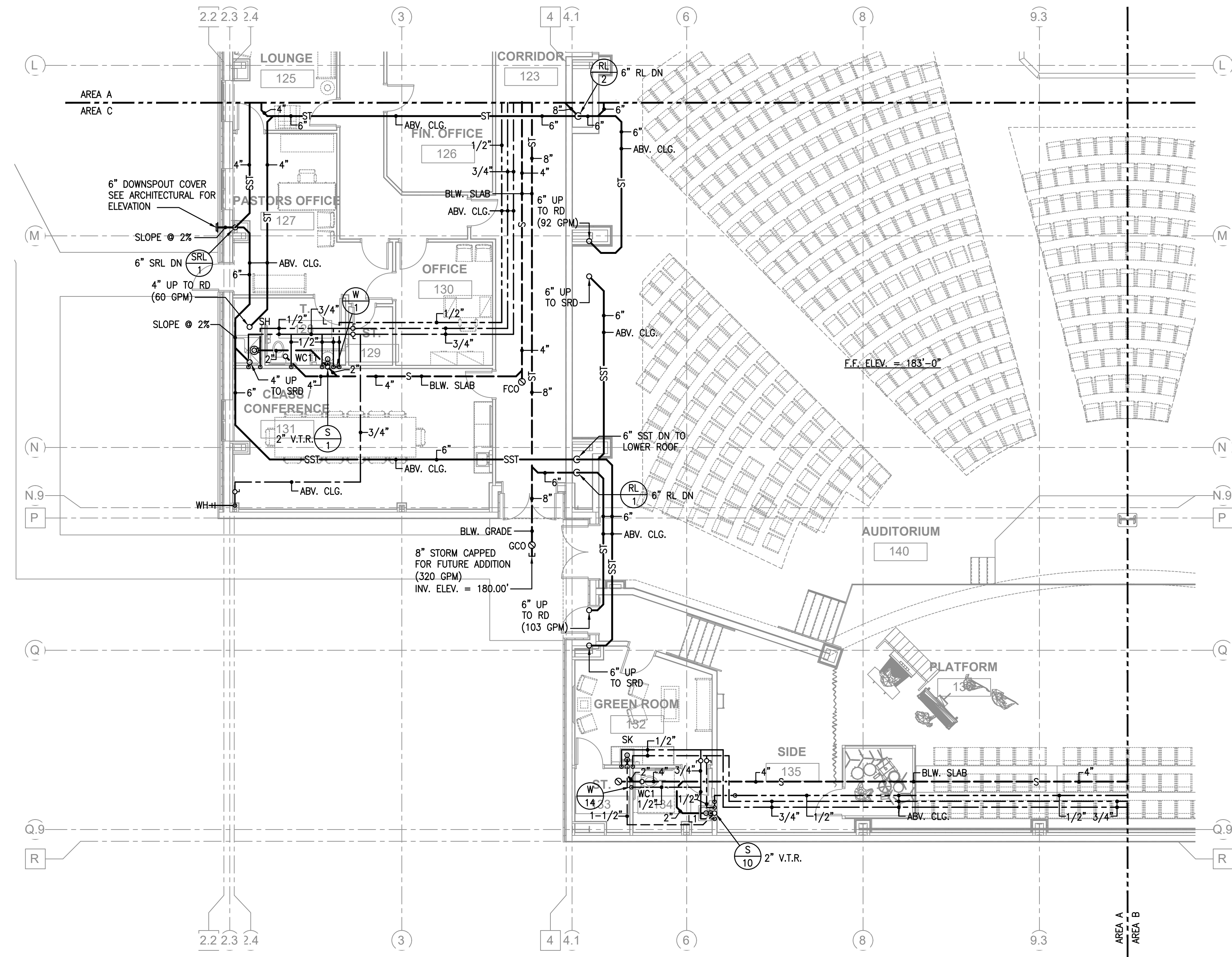
**NEW BUILDING FOR:**  
**GALILEE BAPTIST CHURCH**  
 6300 WOODYARD ROAD,  
 UPPER MARLBORO, MD 20772

DRAWING	DATE
<input type="checkbox"/> DD MEETING #1	07/16/2019
<input type="checkbox"/> DD MEETING #2	09/06/2019
<input type="checkbox"/> DD MEETING #3	10/06/2023
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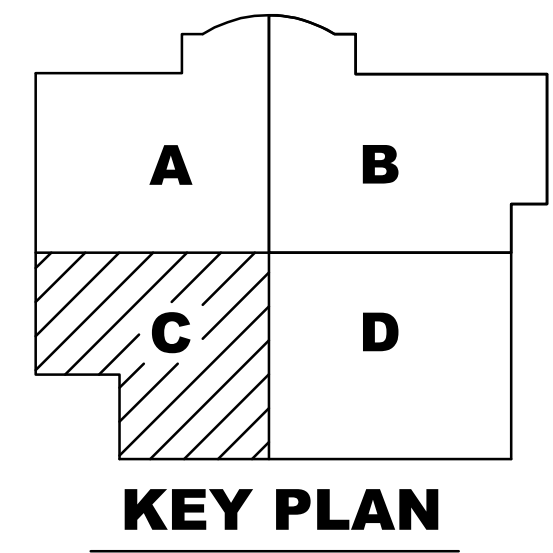
REVISIONS/ADDENDUMS

**AREA B FLOOR PLAN**

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6 OF 13 SHEETS



**AREA C FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



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Engineering Services  
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Kensington, MD 20895  
Phone: 301 949-2068 • Fax: 301 949-2069  
Project #: 19161

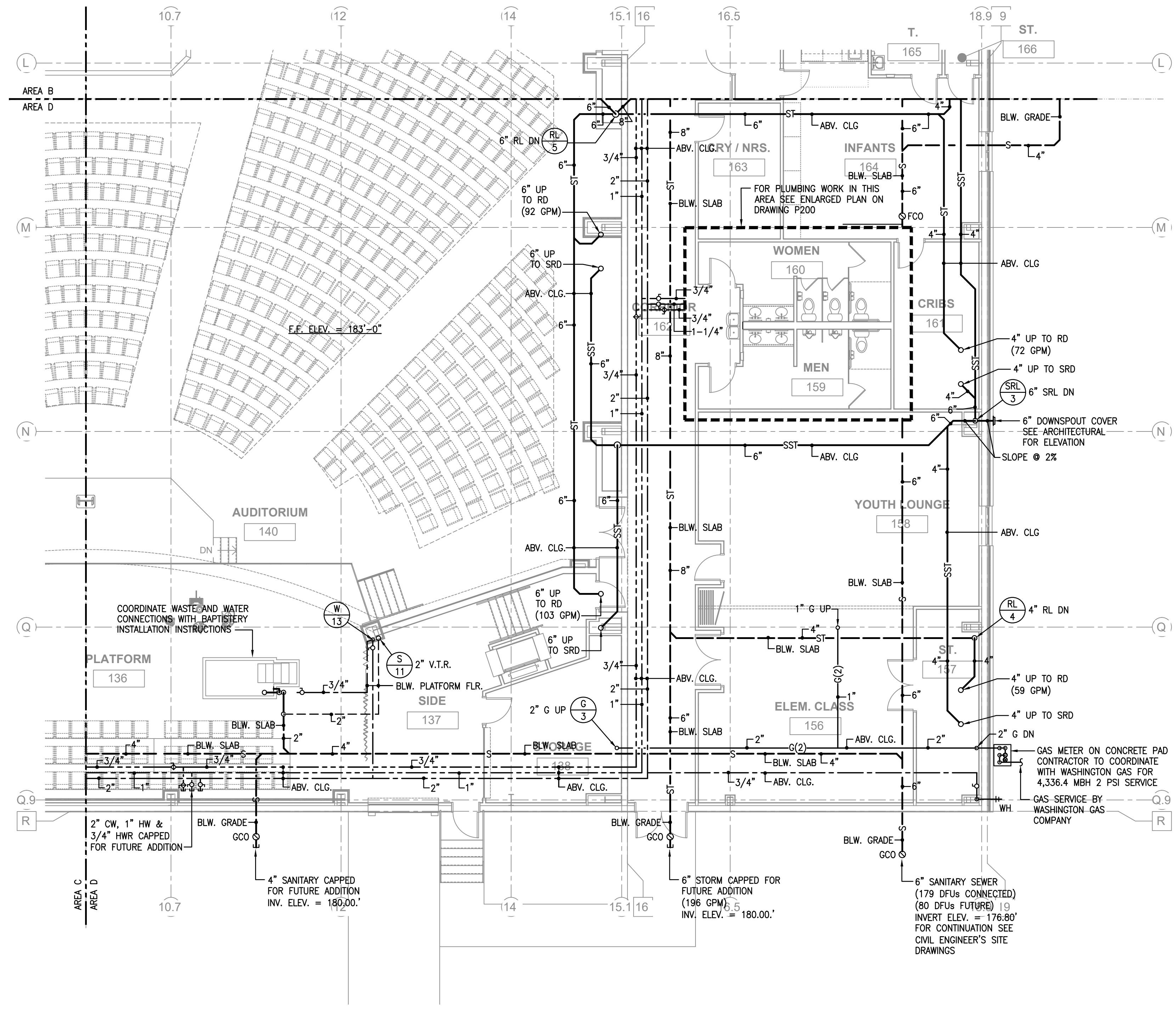
NEW BUILDING FOR:  
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6300 WOODYARD ROAD,  
UPPER MARLBORO, MD 20772

DRAWING	DATE
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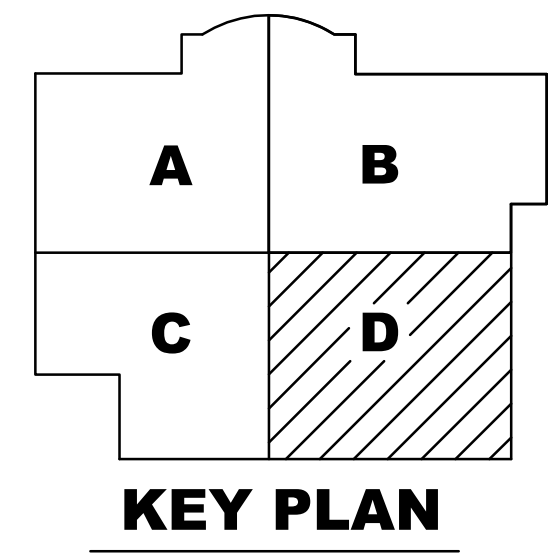
REVISIONS/ADDENDUMS

**AREA C FLOOR PLAN**

**P102**  
7 OF 13 SHEETS



**AREA D FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**KEY PLAN**

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<input type="checkbox"/> DD MEETING #3	10/06/2023
<input type="checkbox"/> BID SET	11/15/2023
<input checked="" type="checkbox"/> AVL COORD / BID SET	12/08/2023
<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

**AREA D FLOOR PLAN**

**P103**  
8 OF 13 SHEETS



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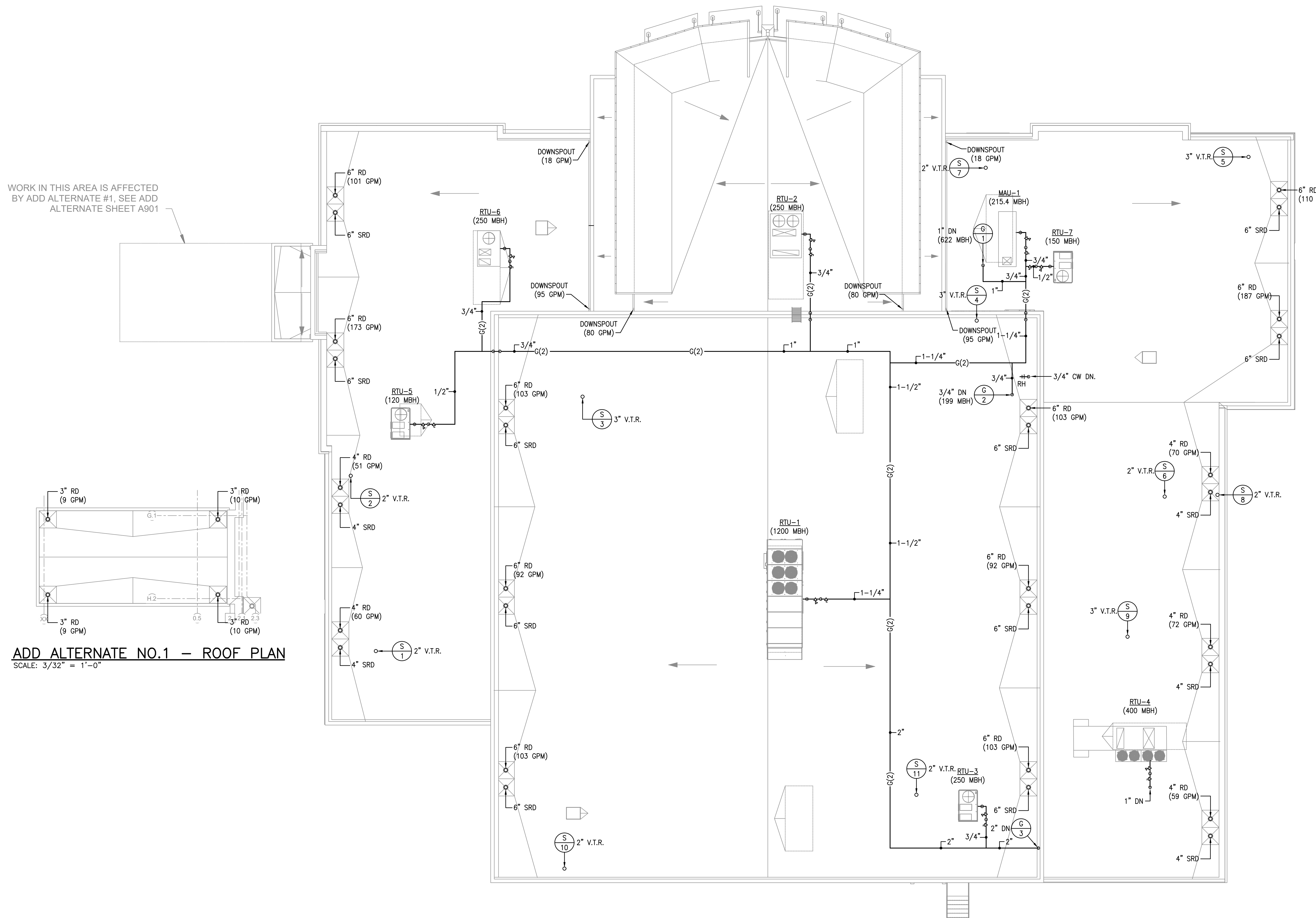
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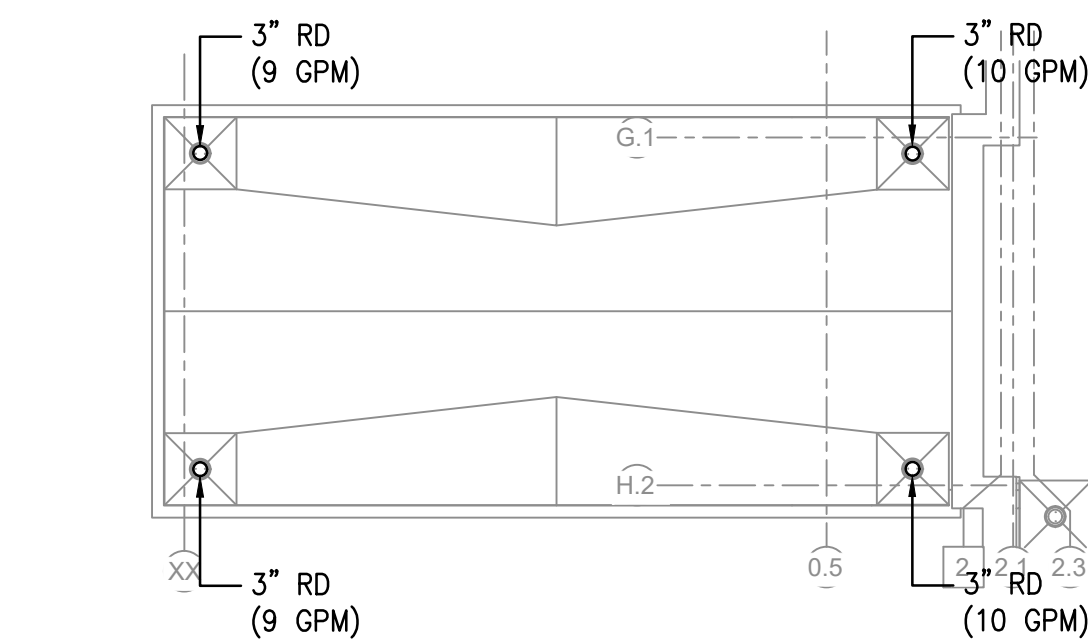
REVISIONS/ADDENDUMS

**ROOF PLAN**

**P104**  
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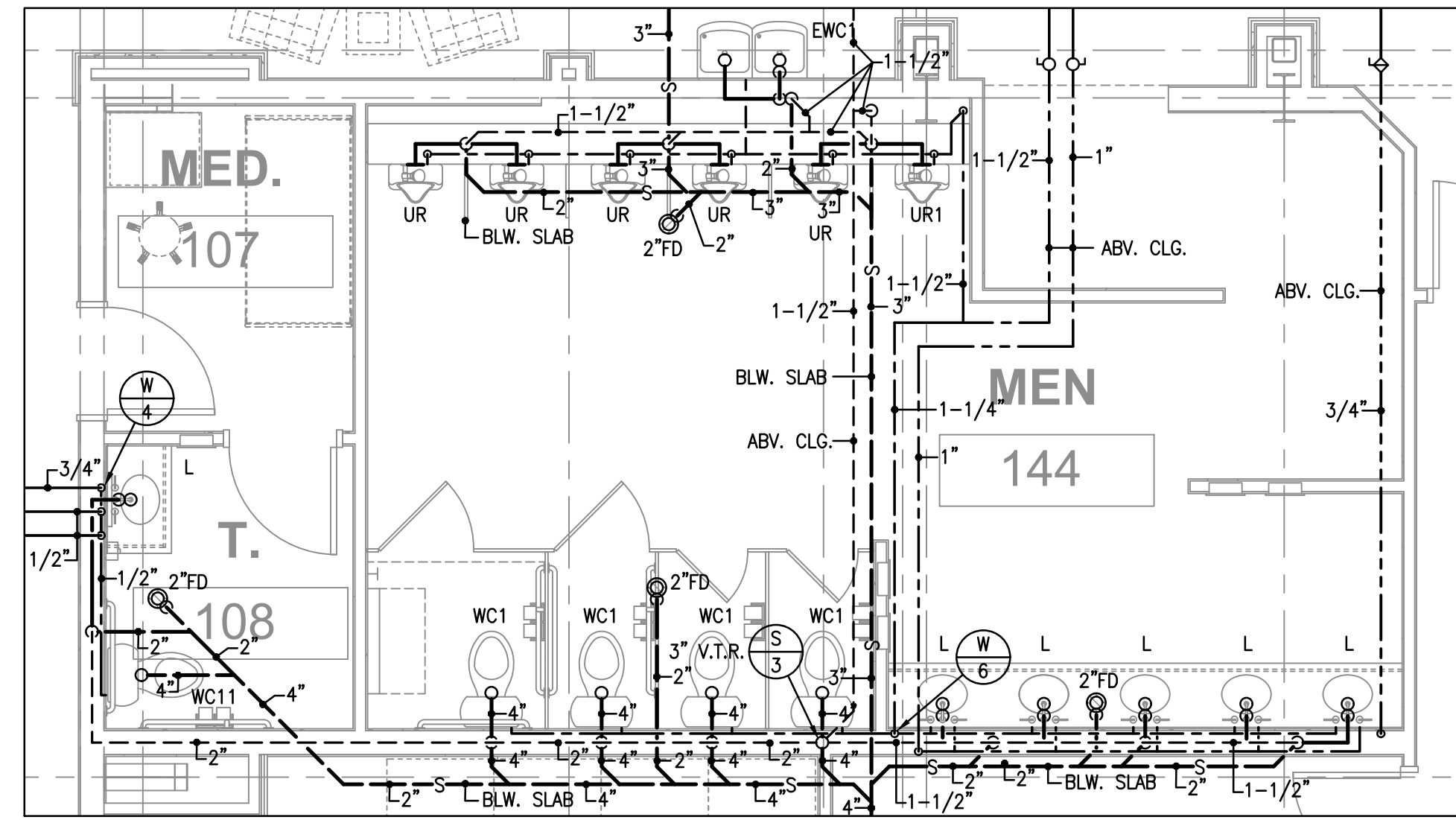


WORK IN THIS AREA IS AFFECTED BY ADD ALTERNATE #1, SEE ADD ALTERNATE SHEET A901

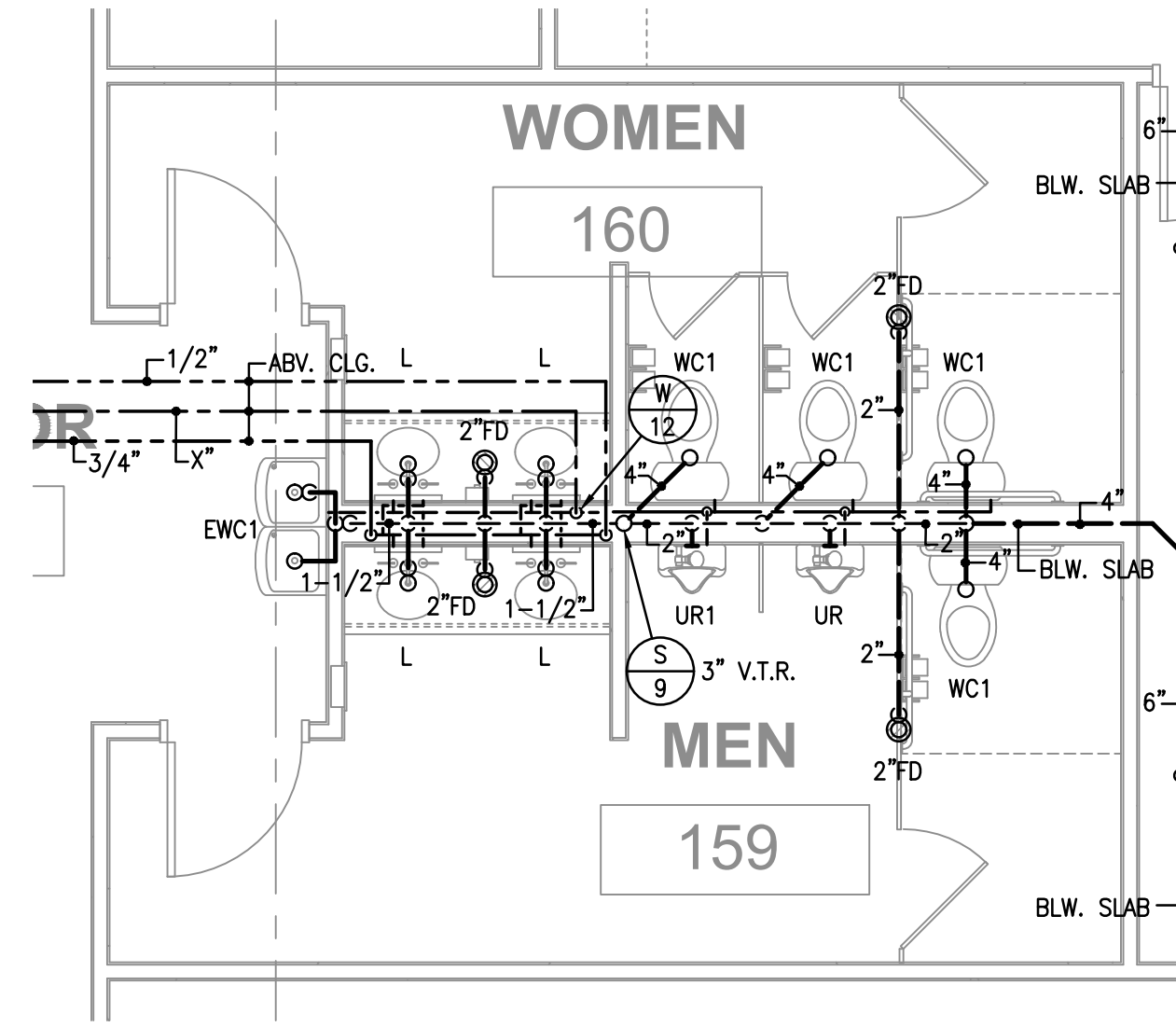


**ADD ALTERNATE NO.1 - ROOF PLAN**  
 SCALE: 3/32" = 1'-0"

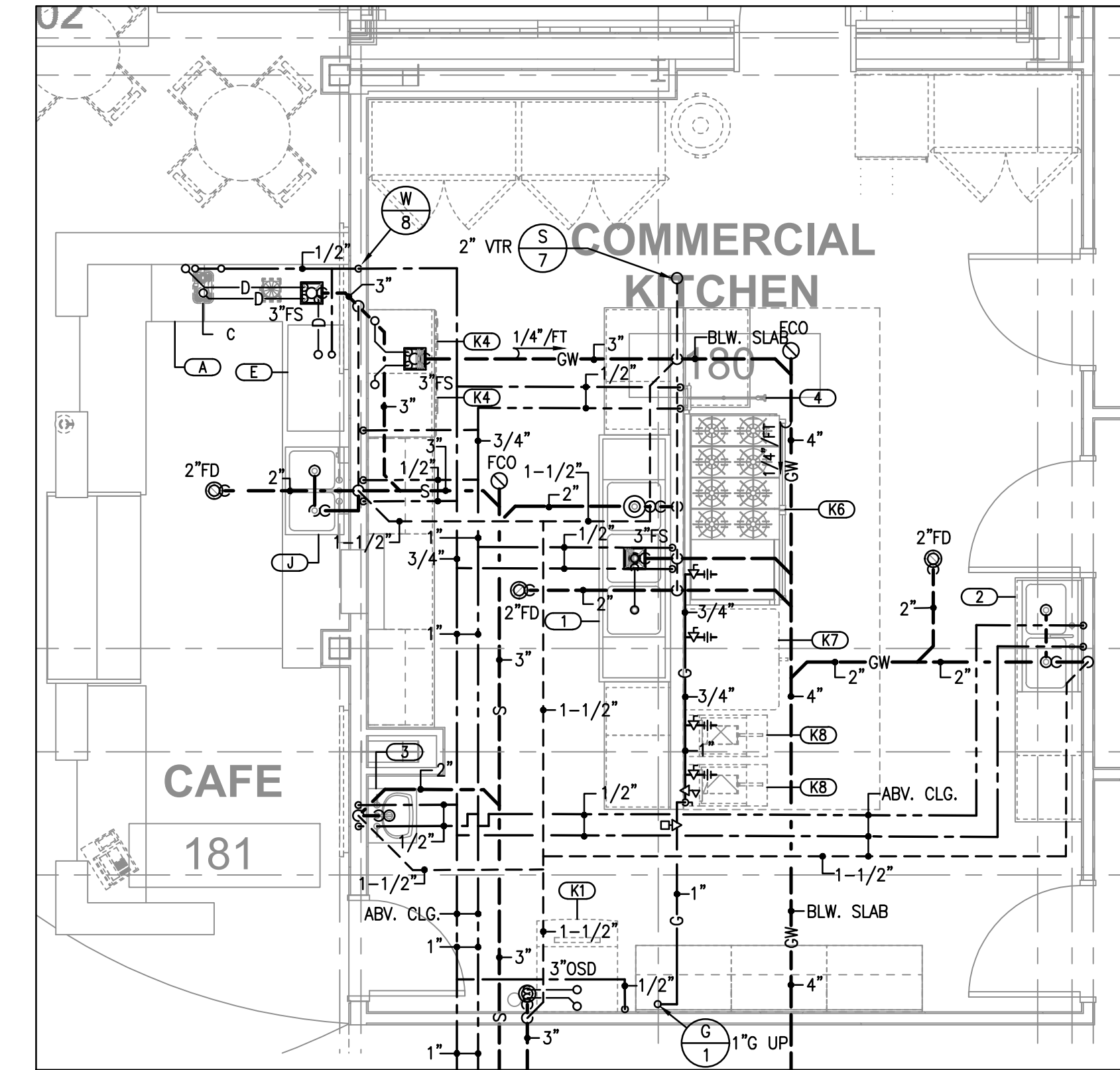
**ROOF PLAN**  
 SCALE: 3/32" = 1'-0"



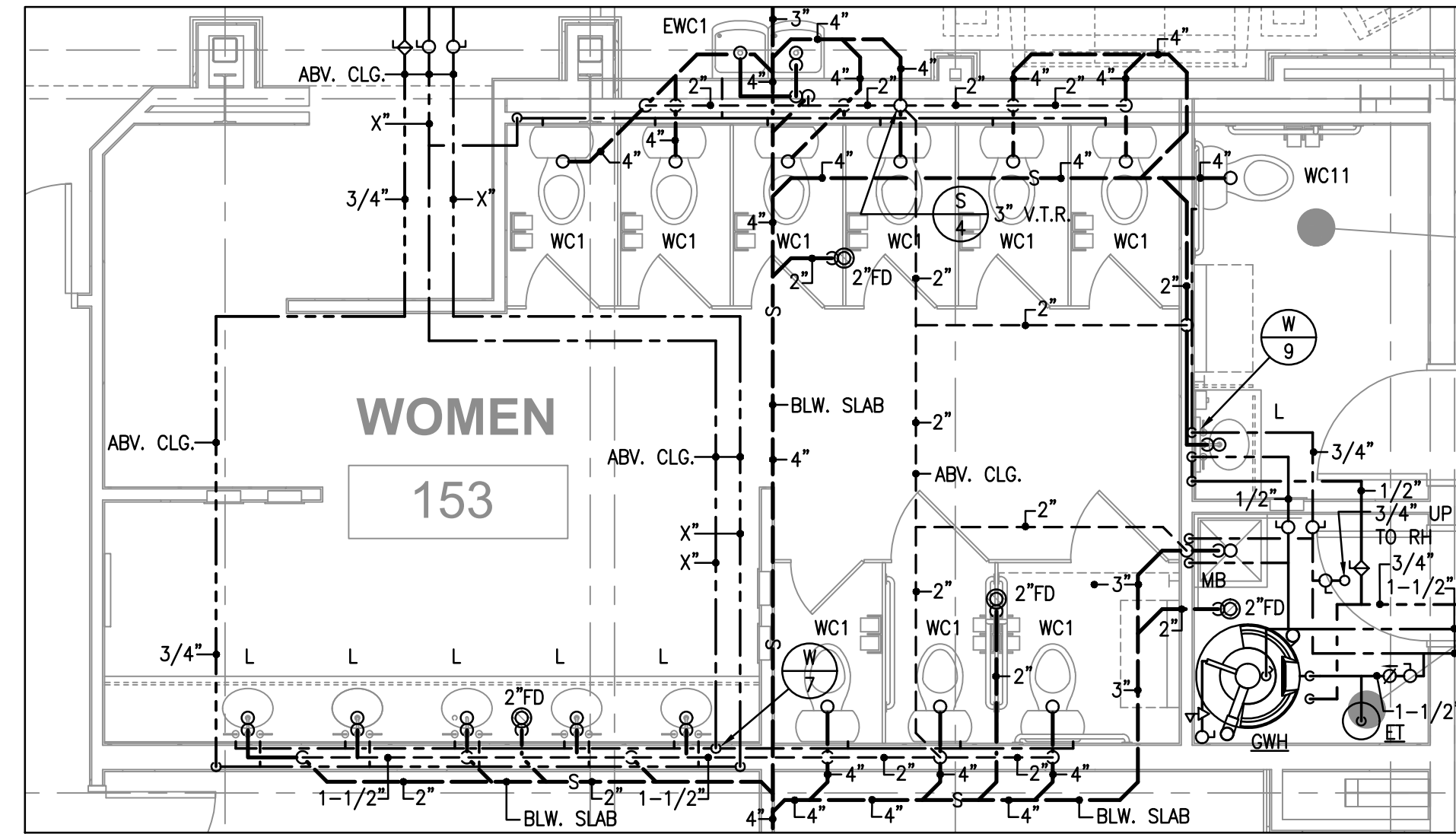
**MEN 144 / TOILET 108 FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**MEN 159 / WOMEN 160 FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**KITCHEN / CAFE FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**WOMEN 153 FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

KITCHEN PLUMBING FIXTURE SCHEDULE				
NO.	TYPE OF FIXTURE	MANUFACTURER/MODEL NO.	FAUCET / FLUSH VALVE	ACCESSORIES
1	THREE COMPARTMENT SINK	ADVANCE TABCO MODEL NO. 9-3-54-18RL, REGALINE SINK WITH 3-16"x20" BOWLS, 2-18" DRAINBOARDS, 18 GAUGE STAINLESS STEEL.	KROWNE MODEL NO. K-17-109WL, 8" CENTER, WALL MOUNTED, PRE-RINSE, STAINLESS STEEL HOSE, 3/4 HP, 120V POWER SERIES HIGH, 15" OVERHANG WITH ADD ON FAUCET WITH 12" SPOUT, 1.2 GPM.	IN-SINK-ERATOR MODEL POWER SERIES NO. 80019-ISE, 3/4 HP, 120V POWER SERIES CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.
2	TWO COMPARTMENT SINK	ELKAY MODEL NO. LRAD291865, "LUSTERTONE", RECTANGULAR, COUNTER MOUNT, SINGLE HOLE, STAINLESS STEEL FINISH, FURNISH WITH DRAINS AND STRAINERS.	ELKAY MODEL NO. LK6000, "EVERYDAY", PULL DOWN SPRAY, SINGLE LEVER, SWING SPOUT, DECK MOUNTED, SINGLE HOLE, 1.5 GPM, CHROME	1-1/4" X 1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.
3	HAND SINK	ADVANCE TABCO MODEL NO. 7-PS-40, STAINLESS STEEL, WITH SIDE SPLASH, BASKET DRAIN, AND GOOSENECK FAUCET.	FURNISHED WITH SINK.	1-1/4" X 1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.
4	POT FILLER FAUCET	FISHER MODEL NO. 57614, ADJUSTABLE WALL FAUCET WITH 12" CONTROL SWING SPOUT, 7" DJ WITH WRIST HANDLES.		
J	TWO COMPARTMENT SINK	ELKAY MODEL NO. LRAD332255, "LUSTERTONE", RECTANGULAR, COUNTER MOUNT, SINGLE HOLE, STAINLESS STEEL FINISH. FURNISH WITH DRAINS AND STRAINERS.	ELKAY MODEL NO. LK6000, "EVERYDAY", PULL DOWN SPRAY, SINGLE LEVER, SWING SPOUT, DECK MOUNTED, SINGLE HOLE, 1.5 GPM, CHROME	1-1/4" X 1-1/2" CHROME PLATED "P" TRAP. CHROME PLATED SUPPLIES AND LOOSE KEY STOPS.

NOTES:

KITCHEN AND CAFE EQUIPMENT CONNECTION SCHEDULE														
ITEM NO.	QTY.	EQUIPMENT CATEGORY	COLD WATER SIZE (IN)	COLD WATER AFF. (IN)	HOT WATER SIZE (IN)	HOT WATER AFF. (IN)	DIRECT DRAIN SIZE (IN)	DIRECT DRAIN AFF. (IN)	INDIRECT DRAIN SIZE (IN)	INDIRECT DRAIN AFF. (IN)	GAS SIZE (IN)	MBH	GAS AFF. (IN)	REMARKS
K1	1	ICE MACHINE W/ BIN	1/2"	80"					(2) 3/4"	TO FS				PROVIDED BY OWNER, CONTRACTOR INSTALLED
K4	2	DISHWASHER	1/2"	18"	1/2"	18"			2"	TO FS				PROVIDED BY OWNER, CONTRACTOR INSTALLED
K6	1	RANGE WITH GRIDDLE AND 2 OVENS									1"	278	18"	PROVIDED BY OWNER, CONTRACTOR INSTALLED
K7	1	DOUBLE DECK CONVECTION OVEN									3/4"	50	18"	PROVIDED BY OWNER, CONTRACTOR INSTALLED
K8	2	FRYER									3/4"	122	18"	PROVIDED BY OWNER, CONTRACTOR INSTALLED
1	1	THREE COMPARTMENT SINK	(2) 1/2"	18"	(2) 1/2"	18"			(3) 1-1/2"	TO (2) FS				CONTRACTOR FURNISHED & INSTALLED
2	1	TWO COMPARTMENT SINK	1/2"	18"	1/2"	18"	1-1/2"							CONTRACTOR FURNISHED & INSTALLED
3	1	HAND SINK	1/2"	18"	1/2"	18"	1-1/2"							CONTRACTOR FURNISHED & INSTALLED PROVIDE TEMPERING VALVE SET @ 95°F
4	1	POT FILLER FAUCET	1/2"	48"	1/2"	48"								CONTRACTOR FURNISHED & INSTALLED
A	1	UNDERCOUNTER ICE MACHINE	1/2"	80"					3/4"	TO FS				PROVIDED BY OWNER, CONTRACTOR INSTALLED
C	1	COFFEE MAKER	1/2"	48"										PROVIDED BY OWNER, CONTRACTOR INSTALLED
E	1	ESPRESSO MACHINE	1/2"	48"					3/4"	TO FS				PROVIDED BY OWNER, CONTRACTOR INSTALLED
J	1	TWO COMPARTMENT SINK	1/2"	18"	1/2"	18"	1-1/2"							CONTRACTOR FURNISHED & INSTALLED

NOTES:

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Project #: 19161

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<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

**ENLARGED FLOOR PLANS**

**P200**  
10 OF 13 SHEETS

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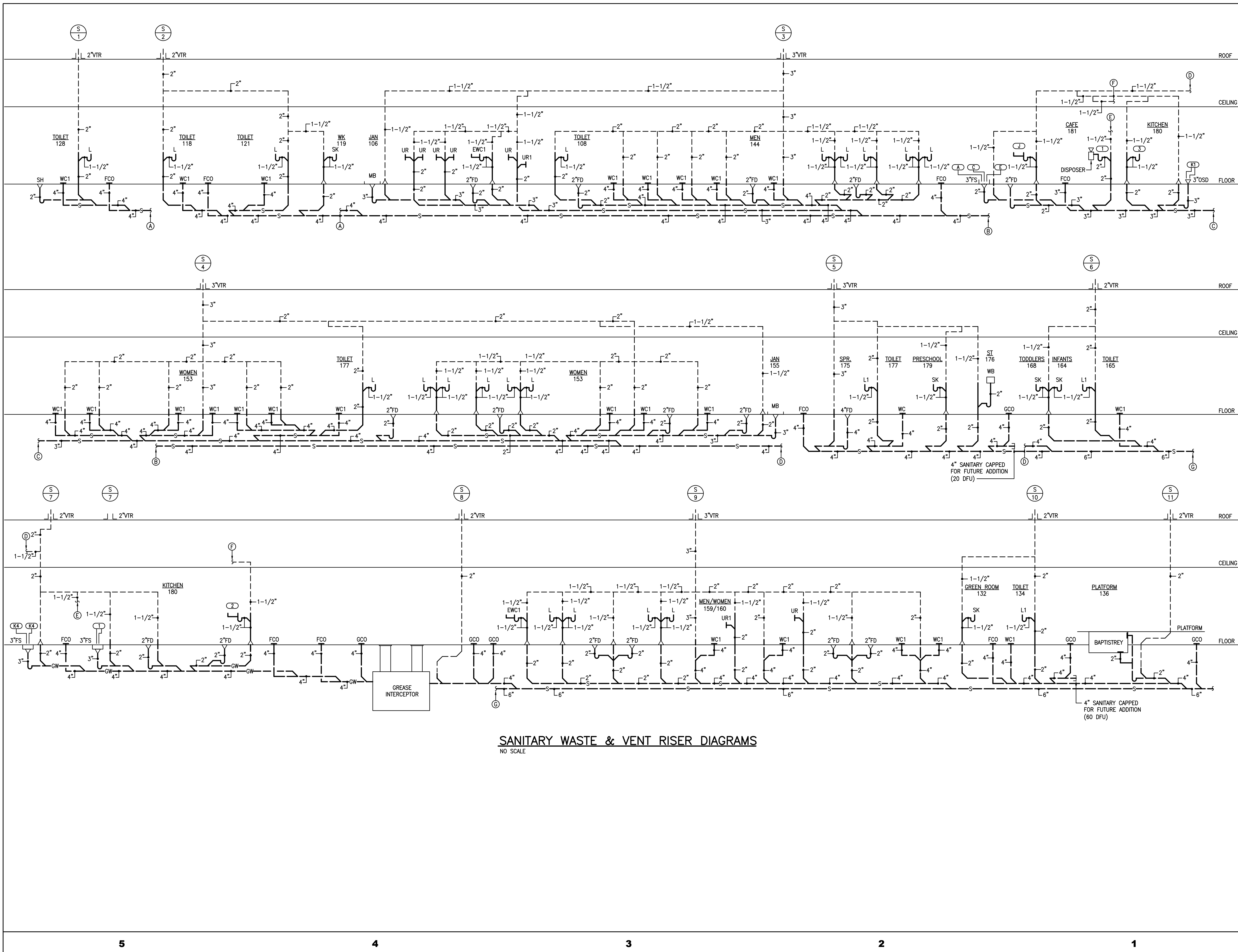
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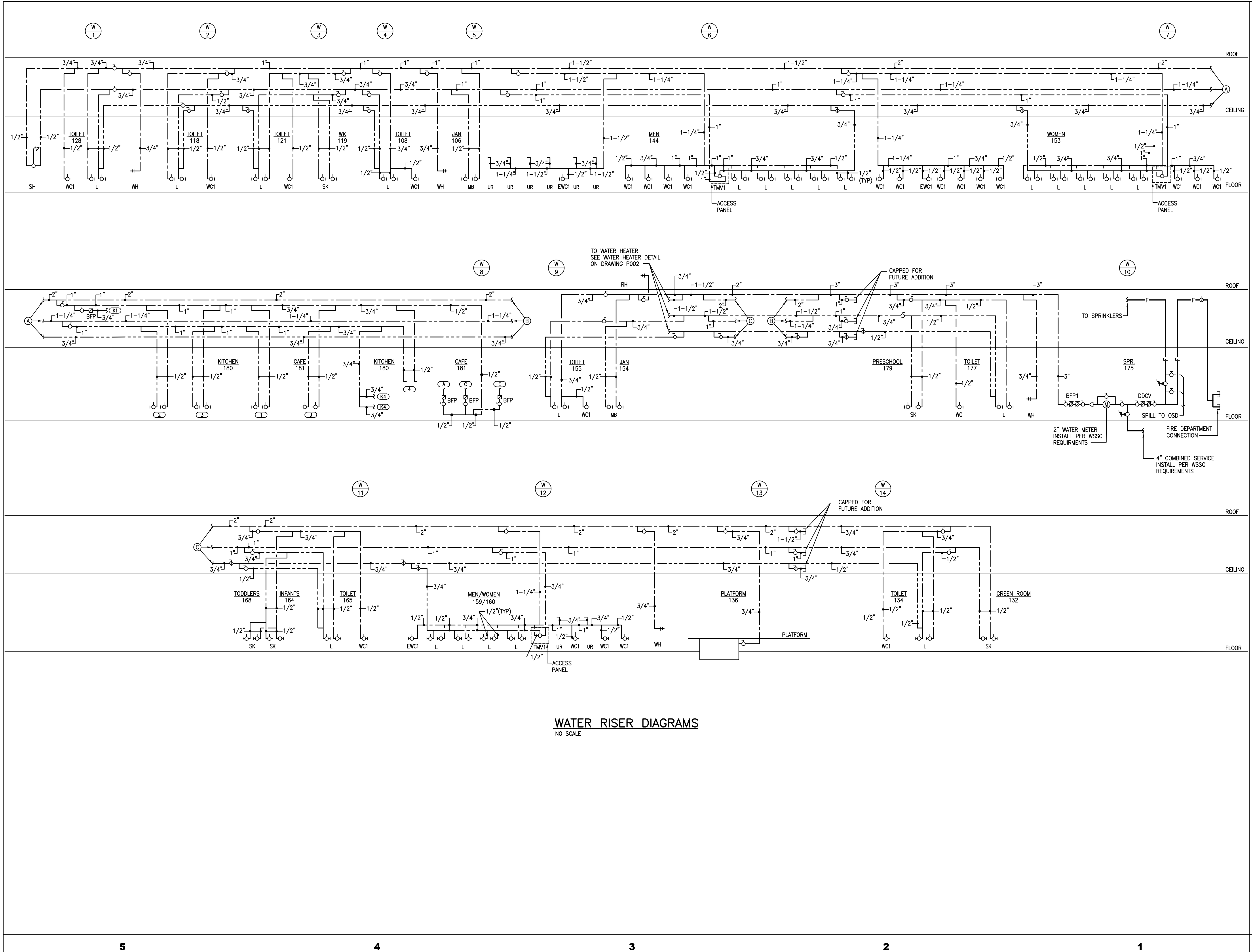
REVISIONS/ADDENDUMS

**SANITARY WASTE & VENT RISER DIAGRAMS**

**P300**  
 11 OF 13 SHEETS



**SANITARY WASTE & VENT RISER DIAGRAMS**  
 NO SCALE



**WATER RISER DIAGRAMS**  
NO SCALE

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**GALILEE BAPTIST CHURCH**  
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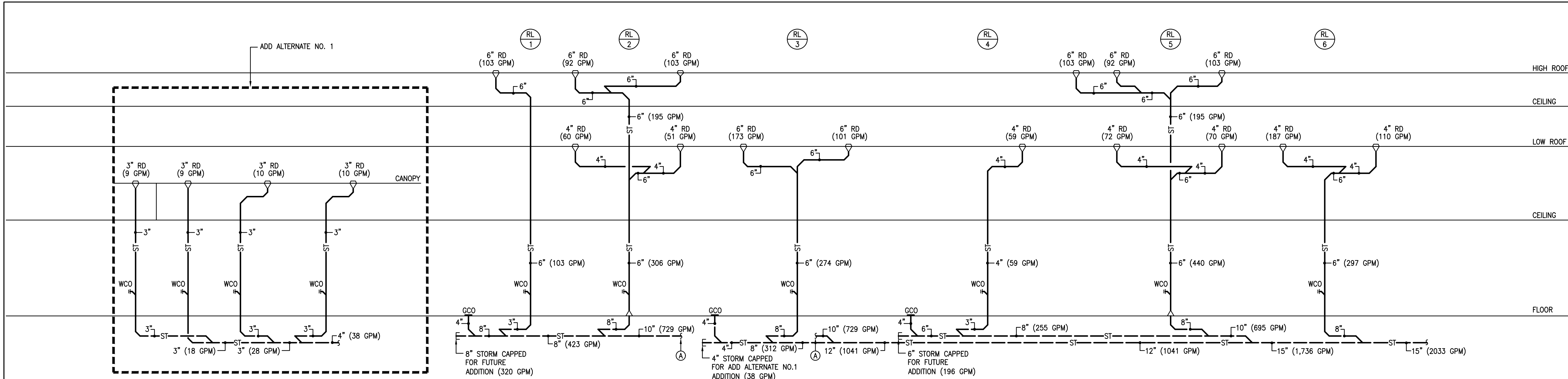
REVISIONS/ADDENDUMS

**WATER RISER DIAGRAMS**

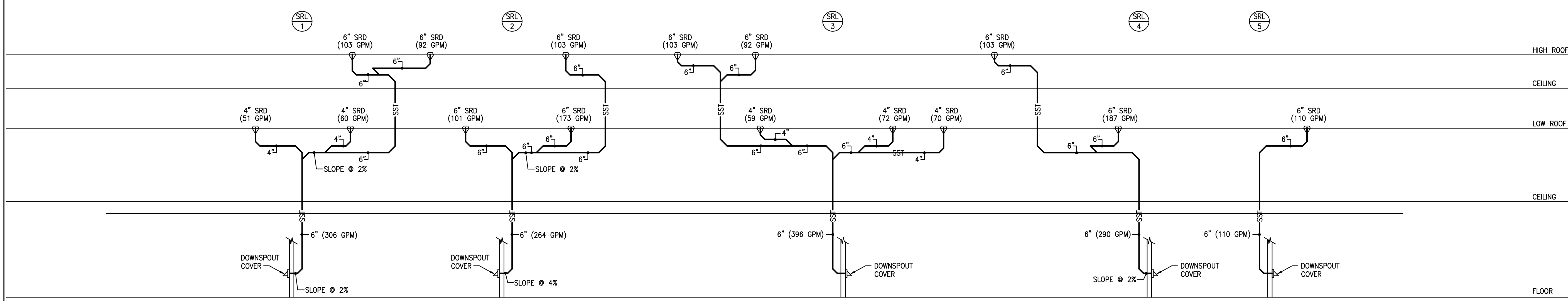
**P301**  
12 OF 13 SHEETS

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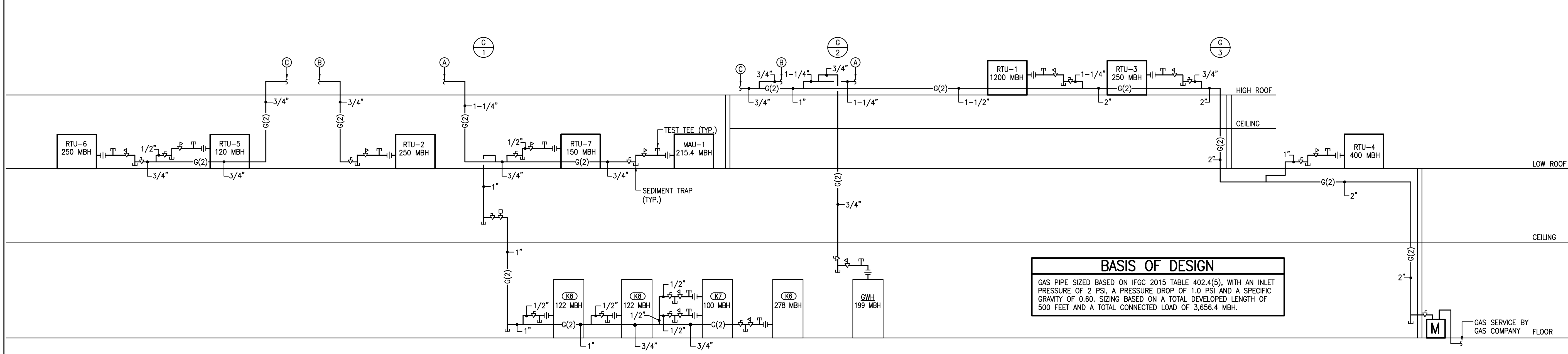
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 6300 WOODYARD ROAD,  
 UPPER MARLBORO, MD 20772



**STORM RISER DIAGRAMS**  
 NO SCALE



**SECONDARY STORM RISER DIAGRAMS**  
 NO SCALE



**BASIS OF DESIGN**  
 GAS PIPE SIZED BASED ON IFGC 2015 TABLE 402.4(S), WITH AN INLET PRESSURE OF 2 PSI, A PRESSURE DROP OF 1.0 PSI AND A SPECIFIC GRAVITY OF 0.60. SIZING BASED ON A TOTAL DEVELOPED LENGTH OF 500 FEET AND A TOTAL CONNECTED LOAD OF 3,656.4 MBH.

**NATURAL GAS RISER DIAGRAMS**  
 NO SCALE

DRAWING	DATE
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<input type="checkbox"/> DD MEETING #2	09/06/2019
<input type="checkbox"/> DD MEETING #3	10/06/2023
<input type="checkbox"/> BID SET	11/15/2023
<input checked="" type="checkbox"/> AVL COORD / BID SET	12/08/2023
<input type="checkbox"/> PERMIT SET	

REVISIONS/ADDENDUMS

**STORM AND NATURAL GAS RISER DIAGRAMS**

**P302**  
 13 OF 13 SHEETS