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PROJECT NO.	DRAWN BY
AS286-211 NY131	ZPC

**SHEET TITLE  
PLUMBING  
DIAGRAMS,  
SCHEDULE &  
SPECIFICATION**

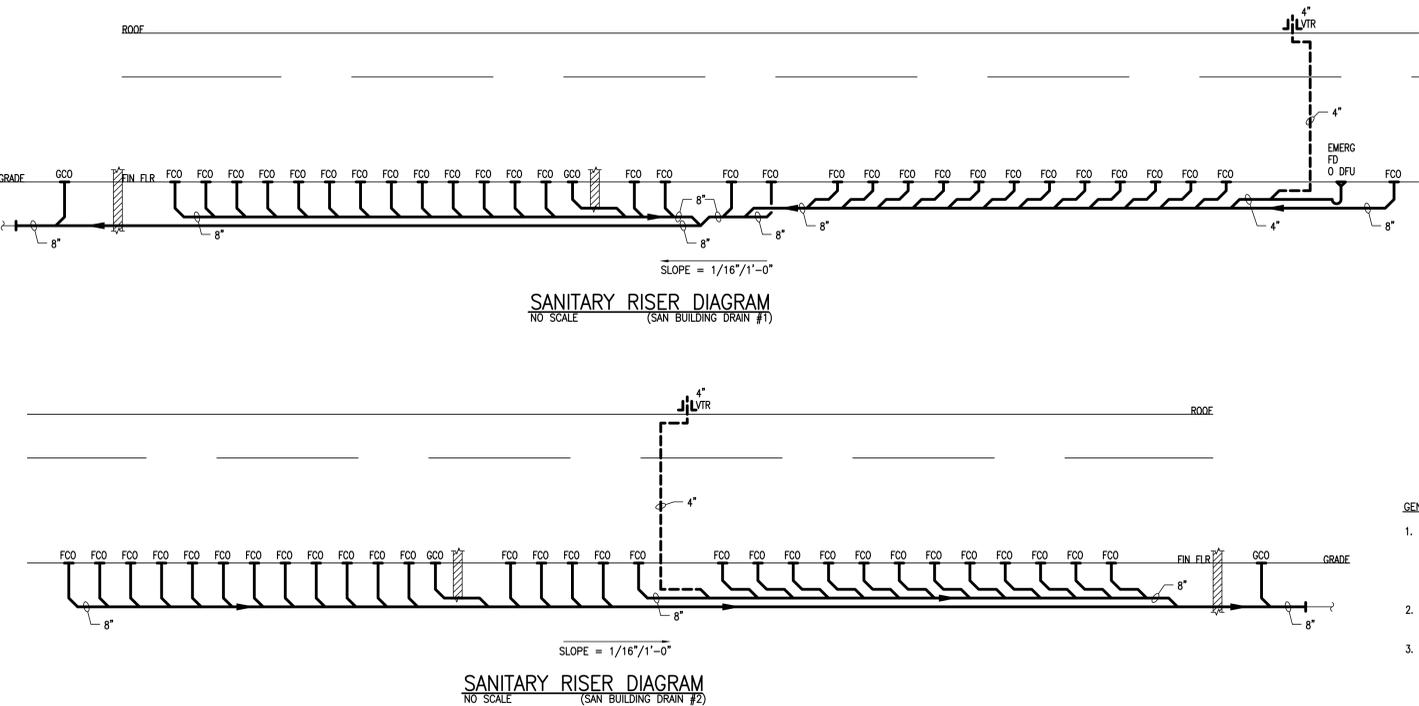
**PLUMBING SPECIFICATIONS:**

- 1.1 THE ARCHITECTURAL GENERAL CONDITIONS SHALL APPLY TO AND FORM A PART OF THIS SECTION OF THESE SPECIFICATIONS.
- 1.2 PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND SUPERVISION AND PERFORM ALL OPERATIONS NECESSARY FOR THE PROPER AND COMPLETE EXECUTION OF ALL PLUMBING WORK IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
- 1.3 ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE NEW YORK BUILDING AND PLUMBING CODES, NATIONAL FIRE PROTECTION ASSOCIATION, NATIONAL ELECTRIC CODE, OSHA, ALL OTHER STATE AND LOCAL AUTHORITIES HAVING JURISDICTION AND APPLICABLE MANUFACTURER'S RECOMMENDATIONS.
- 1.4 THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE ALL CONDITIONS, AND MAKE ALLOWANCES FOR DIFFICULTIES AND CONTINGENCIES AFFECTING THE PROPER EXECUTION OF THIS CONTRACT.
- 1.5 THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES NECESSARY FOR PERMITS AND INSPECTIONS REQUIRED WITH THIS WORK.
- 1.6 THE CONTRACTOR SHALL VERIFY ALL UTILITY SERVICE INFORMATION SHOWN ON THE DRAWINGS WITH THE LOCAL UTILITY COMPANY PRIOR TO SUBMITTING A BID. ANY CHANGES OR SERVICE CHARGES IMPOSED BY THE UTILITY COMPANY SHALL BE QUALIFIED AND INCLUDED IN THE BID.
- 1.7 ALL EQUIPMENT SHALL BE TESTED, LISTED AND LABELED BY AN APPROVED AUTHORITY (UL, AGA, ETL) AND SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING.
- 1.8 ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.
- 1.9 WHERE PRODUCTS ARE SPECIFIED BY BRAND NAME, CATALOG NUMBERS OR BY NAMES OF MANUFACTURERS, THE REFERENCE IS INTENDED TO BE DESCRIPTIVE AND NOT RESTRICTIVE AND IS SOLELY FOR THE PURPOSE OF INDICATING THE TYPE OF QUALITY OF ITEM THAT WILL BE ACCEPTABLE. AN APPROVED EQUAL WILL BE CONSIDERED UNLESS INDICATED OTHERWISE.
- 1.10 SUBMIT SHOP DRAWINGS REVIEW AND APPROVAL PRIOR TO ORDERING ANY MATERIALS OR EQUIPMENT.
- 1.11 THE CONTRACTOR RESPONSIBLE FOR WORK COVERED BY THESE SPECIFICATIONS SHALL COORDINATE AND COOPERATE WITH ALL OTHER TRADES. TRADES THAT HAVE WORK CONNECTED WITH THE PLUMBING WORK SHALL BE NOTIFIED FOR INSTALLATION REQUIREMENTS AND SCHEDULING. THE CONTRACTOR SHALL SCHEDULE HIS WORK TO AVOID ANY INTERRUPTION OF ANY UTILITY SERVICES TO THE OPERATION AREAS OF THE BUILDING DURING NORMAL WORKING HOURS. INTERRUPTION OF SERVICES SHALL BE DONE DURING OFF HOURS AT NO ADDITIONAL COST TO THE OWNER.
- 1.12 ALL CUTTING AND PATCHING OF EVERY NATURE REQUIRED IN CONNECTION WITH THIS CONTRACT SHALL BE DONE BY THIS CONTRACTOR WITH MECHANICS EXPERIENCED IN THEIR RESPECTIVE TRADES. ALL PATCHING SHALL MATCH ADJACENT FINISHES. ALL WORK SHALL BE COORDINATED TO AVOID CUTTING OF WORK IN PLACE AND INTERFERING WITH OTHER OPERATIONS.
- 1.13 IN COMPLIANCE WITH ACT 38, CONTACT INDIVIDUAL COMPANIES TO HAVE UTILITY LOCATIONS MARKED IN THE FIELD AND TO OTHERWISE LOCATE UNDERGROUND OBJECTS AS MAY BE NECESSARY PRIOR TO THE START OF CONSTRUCTION. CALL DIG SAFELY NEW YORK, INC. ONE CALL (1-800-962-7962, AS OF THIS WRITING).
- 1.14 ALL EXCAVATIONS REQUIRED FOR INSTALLATION OF PIPE SHALL HAVE SOLID, UNDISTURBED BOTTOMS, AND SHALL BE SUBJECT TO APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PIPING PLACEMENT. SHOULD BOTTOMS BECOME SOFT OR WET BEFORE PIPING IS PLACED, ALL SUCH UNSUITABLE BOTTOMS SHALL BE REMOVED AT NO COST TO THE OWNER AND FILLED WITH CONCRETE.
- 1.15 BACKFILL ALL EXCAVATIONS PERFORMED UNDER THIS CONTRACT AS REQUIRED TO SATISFY FINISHED GRADE REQUIREMENTS.

- 1.16 FURNISH AND INSTALL ALL NECESSARY HANGERS, INSERTS, SUPPORTS SUPPLEMENTARY STEEL, ETC., TO PROPERLY SUPPORT ALL EQUIPMENT AND PIPING IN AN APPROVED MANNER AND IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 1.17 ALL DOMESTIC COLD WATER PIPING WITHIN THE BUILDING SHALL BE HARD DRAWN TYPE "L" COPPER TUBING IN ACCORDANCE WITH ASTM-B88. FITTINGS SHALL BE WROUGHT COPPER OR CAST BRASS. VALVES SHALL BE CAST BRASS UNLESS NOTED OTHERWISE. HANGERS FOR SUPPORTING COPPER TUBING SHALL BE COPPERIZED. HANGER SPACING SHALL BE MAXIMUM OF 6 FEET HORIZONTAL FOR SIZES 1-1/4" AND LESS, 10 FEET HORIZONTAL FOR SIZES 1-1/2" AND GREATER AND 10 FEET VERTICAL FOR ALL SIZES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PLUMBING CODE.
  - A. WHERE INDICATED ON THE DRAWINGS, ALTERNATIVE MATERIAL OF CONSTRUCTION FOR DOMESTIC WATER PIPING SHALL BE SCHEDULE 40 OR SCHEDULE 80, CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE CONFORMING TO NSF61, IN ACCORDANCE WITH ASTM F441. FITTINGS SHALL BE APPROVED FOR INSTALLATION WITH THE PIPING MATERIAL IN ACCORDANCE WITH ASTM F437, F438, F439 OR F441. JOINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, ASTM D2846, ASTM F493. CPVC PIPE SHALL NOT BE USED WITHOUT WRITTEN AUTHORIZATION FROM THE AUTHORITY HAVING JURISDICTION AND THE LOCAL FIRE MARSHAL. PIPING SHALL MEET UL 84C SMOKE AND FLAME SPREAD RATINGS FOR USE IN RETURN AIR PLENUM CEILINGS OR FIRE-RATED CEILING ASSEMBLIES. INSTALLATION OF THE CPVC PIPING MATERIAL SHALL INCLUDE APPROPRIATE PIPING SUPPORTS AND HANGER SPACING (MAXIMUM OF 6 FEET) IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PLUMBING CODE.
    1. CPVC SHALL ONLY BE ALLOWED FOR MAINS. ALL DROPS AND PIPING OUTSIDE OF THE ROOF JOISTS ARE TO BE TYPE "L" COPPER.
  - B. PROVIDE PIPE GUIDES, ANCHORS AND EXPANSION LOOPS WHERE INDICATED ON THE DRAWINGS AND WHERE REQUIRED TO MINIMIZE STRESS IN PIPING SYSTEM. EXPANSION LOOPS SHALL BE FIELD FABRICATED. PIPE GUIDES SHALL BE METAFLEX STYLE IV SIZE 25, APPROVED FITTINGS AND JOINTS SHALL BE UTILIZED FOR PIPING LOOP CONSTRUCTION FROM PIPING SYSTEM MATERIALS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE PIPE AND FITTING MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
  - C. ALL STORM WATER, SANITARY AND VENT PIPING ABOVE THE FINISHED FLOOR SHALL BE NO-HUB SERVICE WEIGHT CAST IRON IN ACCORDANCE WITH ASTM A74. JOINTS SHALL BE A NEOPRENE GASKET WITH STAINLESS STEEL CLAMP AND SHIELD ASSEMBLY, INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. STORM WATER, SANITARY AND VENT PIPING LOCATED BELOW THE FLOOR SHALL BE SERVICE WEIGHT CAST IRON WITH HUB AND SPOUT ENDS. JOINTS SHALL BE CONNECTED WITH NEOPRENE PUSH-ON COMPRESSION GASKETS, INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. HANGER AND SUPPORT SPACING SHALL BE MAXIMUM OF 5 FEET HORIZONTAL FOR PIPE SECTIONS LESS THAN 10 FEET IN LENGTH, 10 FEET VERTICAL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PLUMBING CODE.
    - A. WHERE PERMITTED BY THE LOCAL AUTHORITY ALL SANITARY AND VENT PIPING SHALL BE SCHEDULE 40 PVC, ASTM D2865, D2848, WITH PVC FITTINGS (DWV TYPE) AND SOLVENT WELD JOINTS. PVC PIPING SHALL NOT BE USED IN RETURN AIR PLENUM TYPE CEILINGS OR IN FIRE-RATED CEILING ASSEMBLIES (CONTRACTOR TO VERIFY THESE AREAS WITH ARCHITECT). PVC PIPING SHALL NOT BE USED WITHOUT WRITTEN AUTHORIZATION FROM THE LOCAL AUTHORITY HAVING JURISDICTION AND THE LOCAL FIRE MARSHAL.
- 1.20 WHERE PIPING PASSES THROUGH FIRE RESISTING PORTIONS OF THE STRUCTURE, AN APPROVED FIRE-STOPPING DEVICE SHALL BE INSTALLED TO MAINTAIN THE FIRE RATING OF THAT PORTION OF THE STRUCTURE. ALL FIRE STOPPING DEVICES USED SHALL BE LISTED INTUMESCENT MATERIALS SUCH AS A CAULK, SEALANT, PUTTY, WRAP STRIPS, ETC. AS REQUIRED TO PROPERLY FIRE STOP ALL VOIDS. FIRE STOPPING MATERIAL SHALL BE AS MANUFACTURED BY 3M, HILTI, PRO-SET SYSTEMS OR EQUAL.

- 1.21 INSTALL CLEANOUT FITTINGS WHERE INDICATED AND AS REQUIRED. CLEANOUTS SHALL BE MADE BY MEANS OF LONG SWEEP ELL OR Y AND BEND. CLEANOUTS SHALL BE THE SAME SIZE AS PIPING UP TO AND INCLUDING 4-INCH LINE SIZE, AND IN 8 INCH LINE SIZE OR ABOVE CLEANOUTS SHALL BE 6 INCH. CLEANOUTS IN FLOORS FOR CONCEALED PIPING SHALL BE ADJUSTABLE GALVANIZED CAST IRON BODY WITH ABS PLUG (GASKET SEAL), EXTRA HEAVY-DUTY SCORLATED CAST IRON TOP WITH VANDALPROOF SCREWS AND FLANGE WITH FLASHING CLAMP. FLOOR CLEANOUTS SHALL BE JAY R SMITH SERIES 42205 OR 42255, RATED FOR HEAVY LOAD TRAFFIC. CLEANOUTS IN WALLS FOR CONCEALED PIPING SHALL BE CAST IRON T BRANCH CLEANOUT WITH BRONZE RAISED HEAD PLUG, LEAD SEAL AND VANDALPROOF POLISHED STAINLESS-STEEL ROUND ACCESS COVER.
- 1.22 ROOF DRAINS
  - A. PRIMARY ROOF DRAINS (RD): ANSI A112.21.2; LACQUERED CAST IRON BODY WITH SUMP RECEIVER, REMOVABLE CAST IRON DOME STRAINER, MEMBRANE FLANGE AND MEMBRANE CLAMP WITH INTEGRAL GRAVEL STOP, WITH ADJUSTABLE UNDERDECK CLAMP, ADJUSTABLE EXTENSION SLEEVE FOR INSULATION, OUTLET SIZE TO MATCH PIPE SIZE INDICATED ON THE DRAWINGS; MODEL Z100, MANUFACTURED BY ZURN.
  - B. EMERGENCY (SECONDARY) ROOF DRAINS (OD): ANSI A112.21.2; LACQUERED CAST IRON BODY WITH SUMP RECEIVER, REMOVABLE CAST IRON DOME STRAINER, MEMBRANE FLANGE AND MEMBRANE CLAMP WITH INTEGRAL GRAVEL STOP, WITH ADJUSTABLE UNDERDECK CLAMP, ADJUSTABLE EXTENSION SLEEVE FOR INSULATION, TWO INCH WATER DAM, OUTLET SIZE TO MATCH PIPE SIZE INDICATED ON THE DRAWINGS; MODEL Z100-W2, MANUFACTURED BY ZURN.
- 1.23 ALL SHUTOFF VALVES SHALL BE BALL VALVES. ALL BALL AND CHECK VALVES SHALL BE ALL BRONZE, SWEATED PATTERN SUITABLE FOR 125-PSI WORKING PRESSURE.
- 1.24 ALL BACKFLOW PREVENTERS SHALL BE AS REQUIRED BY THE LOCAL AUTHORITY.
  - A. REDUCED PRESSURE BACKFLOW PREVENTERS: ANSI/ASSE 1013; BRONZE BODY WITH BRONZE AND PLASTIC INTERNAL PARTS AND STAINLESS STEEL SPRINGS; TWO INDEPENDENTLY OPERATING, SPRING LOADED CHECK VALVES; DIAPHRAGM TYPE DIFFERENTIAL PRESSURE RELIEF VALVE LOCATED BETWEEN CHECK VALVES; THIRD CHECK VALVE WHICH OPENS UNDER BACK PRESSURE IN CASE OF DIAPHRAGM FAILURE; NON-THREADED VENT OUTLET; ASSEMBLED WITH TWO GATE VALVES, STRAINER AND FOUR TEST COCKS; MODEL 905, MANUFACTURED BY WATTS. BACKFLOW PREVENTER SHALL BE INSTALLED WITH AN AIR GAP DRAIN ASSEMBLY, WATTS MODEL 909AC. EXTEND DRAIN LINE TO NEAREST FLOOR DRAIN.
- 1.25 INSULATION
  - A. INSTALL INSULATION ON ALL COLD-WATER PIPING, ROOF DRAIN BODIES (SUMPS), HORIZONTAL STORM WATER PIPING, FITTINGS, VALVES AND STRAINERS WITH MATERIALS HAVING A "K" FACTOR OF 0.27 AT 75 DEGREES F MEAN TEMPERATURE. A FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS.
  - B. ALL INSULATION SHALL COMPLY WITH THE REQUIREMENTS OF ASTM E-84. ALL INSULATION SHALL BE CONTINUOUS AT HANGERS AND SUPPORTS (THE PIPE SHALL NOT CONTACT THE HANGER OR SUPPORT) EXCEPT WHERE PIPE ANCHORS AND GUIDES ARE INSTALLED. AT THESE LOCATIONS, COMPLETELY INSULATE THE ANCHOR AND/OR GUIDE BACK TO A DISTANCE THAT IS AT LEAST FOUR PIPE DIAMETERS OF THE PIPE. PROVIDE INSULATION SHIELDS ON ALL WATER SUPPLY DISTRIBUTION MAINS TO KEEP THE INSULATION FROM COMPRESSING SIGNIFICANTLY UNDER THE WEIGHT OF THE PIPE.

- HORIZONTAL STORM WATER = 1/2 INCH THICK
- ROOF DRAIN BODIES (SUMPS) = 1/2 INCH THICK
2. MATERIALS:
  - VAPOR BARRIER ALL SERVICE JACKETED FIBERGLASS WITH FITTINGS COVERED WITH PRE-SHAPED PLASTIC COVERS.
3. MANUFACTURERS - CERTAINTED, MANVILLE, OWENS CORNING, KNAUF, ARMSTRONG OR APPROVED EQUAL.
- 1.26 TRAP SEALING COMPONENT
  - A. PROVIDE TRAP SEALING COMPONENT AT ALL FLOOR DRAINS AND FUNNEL DRAINS. THE INSTALLATION OF A SEALING COMPONENT ON THE FIXTURE DRAIN OUTLET TO REDUCE TRAP SEAL LOSS SHALL BE PERMITTED IN LIEU OF A TRAP PRIMER WHERE APPROVED BY THE LOCAL AUTHORITY.
  - B. TRAP SEALING COMPONENT SHALL BE PROSECT TRAP GUARD, MANUFACTURED BY PRO SYSTEMS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 1.27 FIXTURES AND FIXTURE TRIMMINGS SHALL BE FURNISHED AND INSTALLED AS SPECIFIED HEREIN. FIXTURES SHALL BE COMPLETE WITH ALL NECESSARY WALL HANGERS AND SUPPORTS, SUPPLY STOP VALVES (LOOSE-KEY STOPS FOR EXPOSED PIPING IN PUBLIC TOILET ROOMS), 17-GAUGE CHROME-PLATED BRASS DRAINAGE FITTINGS/P-TRAPS AND ONE-PIECE CHROME-PLATED ESCUTCHEONS. ALL PIPING EXPOSED TO VIEW SHALL BE CHROME-PLATED BRASS. THE FOLLOWING ITEM NUMBERS CORRESPOND WITH THE "P" NUMBERS NOTED ON THE PLUMBING FIXTURE SCHEDULE AND ON THE DRAWINGS.
  - P-1 FLOOR DRAIN, ASME A112.6.3 - TWELVE INCH ROUND STRAINER HEAVY DUTY DRAIN WITH CAST IRON TRAP GRATE, DUOCO CAST IRON DEEP BODY AND FLASHING COLLAR AND A FOUR INCH BOTTOM OUTLET; MODEL 2141Y, MANUFACTURED BY JAY R. SMITH MFG. CO.
  - P-2 WALL HYDRANT - SHALL BE ZURN MODEL Z-1310; EXPOSED, NON-FREEZE HYDRANT WITH STAINLESS STEEL FACE AND LOOSE KEY OPERATOR.
- 1.28 STERILIZATION OF DOMESTIC WATER SYSTEM
  - A. BEFORE BEING PLACED IN SERVICE, ALL DOMESTIC WATER LINES SHALL BE CHLORINATED USING A METHOD THAT IS SATISFACTORY TO THE WATER AUTHORITY OR THE AUTHORITY HAVING JURISDICTION. IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE LISTED IN AWWA C651 OR AWWA C652 OR AS DESCRIBED BELOW SHALL BE USED.
  - B. PRIOR TO CHLORINATION, ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED BY A THOROUGH FLUSHING. THIS SHALL BE DONE AFTER THE PRESSURE TEST AND LEAKAGE TEST.
  - C. A CHLORINE HYPOCHLORITE SOLUTION SHALL BE APPLIED BY MEANS OF A SOLUTION FEED DEVICE OR THE SOLUTION SHALL BE FED DIRECTLY FROM A CHLORINE CYLINDER EQUIPPED WITH PROPER DEVICES FOR REGULATING THE RATE OF FLOW AND THE EFFECTIVE DIFFUSE OF GAS WITHIN THE PIPE.
  - D. WATER SHALL BE CONTROLLED TO FLOW SLOWLY INTO THE SYSTEM DURING THE APPLICATION OF CHLORINE IN SUCH PROPORTIONS THAT THE CHLORINE DOSE APPLIED TO THE WATER ENTERING THE PIPE SHALL BE AT LEAST 50 PARTS PER MILLION.
  - E. TREATED WATER SHALL BE RETAINED IN THE SYSTEM LONG ENOUGH TO DESTROY ALL NON-SPORE FORMING BACTERIA. THIS PERIOD SHALL BE AT LEAST TWENTY-FOUR HOURS. A LONGER CHLORINE CONTACT TIME MAY BE REQUESTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
  - F. AFTER THE CHLORINE TREATED WATER HAS BEEN RETAINED FOR THE REQUIRED TIME, THE CHLORINE RESIDUAL AT THE PIPE EXTREMITIES AND AT OTHER REPRESENTATIVE POINTS SHALL BE AT LEAST FIVE PARTS PER MILLION.



PLUMBING FIXTURE SCHEDULE							REMARKS
REF NO	FIXTURE	CW (IN)	HW (IN)	SAN (IN)	TRAP (IN)	VENT (IN)	
P-1	FLOOR DRAIN			4	4	2	WITH TRAP SEAL PROTECTION, SEE NOTE 1
P-2	WALL HYDRANT	3/4					WALL MOUNT, EXPOSED, NON-FREEZE, ANTI-SIPHON, AUTOMATIC DRAINING. SEE NOTE 2

NOTES:  
1. PROVIDE WITH BARRIER TYPE FLOOR DRAIN TRAP SEAL PROTECTION DEVICE COMPLYING WITH ASSE 1072.  
2. COORDINATE WALL THICKNESS FOR EACH LOCATION WITH THE GENERAL CONTRACTOR.

- GENERAL SANITARY RISER NOTES:**
1. ALL SANITARY PIPING LESS THAN 3" SHALL BE SLOPED AT 1/4"/1'-0". ALL SANITARY PIPING LARGER THAN 3" BUT LESS THAN 8" SHALL BE AT 1/8"/1'-0". ALL SANITARY PIPING 8" OR LARGER SHALL BE SLOPED AT 1/16"/1'-0" (IN ACCORDANCE WITH THE PLUMBING CODE AND ALL LOCAL REQUIREMENTS).
  2. ALL SANITARY PIPING LOCATED BELOW THE FLOOR SLAB SHALL BE NO LESS THAN 2".
  3. ALL VENT THROUGH THE ROOF PENETRATIONS (VTR'S) SHALL BE LOCATED NO LESS THAN 30'-0" FROM ALL EXISTING OR NEW OUTSIDE AIR INTAKES. COORDINATE WITH MECHANICAL CONTRACTOR IN THE FIELD.

