

**GENERAL PLUMBING NOTES**

- GENERAL:**
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH FBC-2017 AND ALL APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
  2. WORK UNDER THIS SECTION INCLUDES FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, SUPPLIES AND COMPONENTS AS PERFORMING ALL OPERATIONS AS NECESSARY FOR THE INSTALLATION OF THE COMPLETE PLUMBING SYSTEM.
  3. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  4. SUBMIT MANUFACTURER'S DATA AND SHOP DRAWINGS ON ALL EQUIPMENT FOR REVIEW BEFORE INSTALLATION.
  5. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER.
  6. ALL DIMENSIONS AND ACTUAL CONSTRUCTION CONDITIONS MUST BE VERIFIED AT THE JOB SITE.
  7. THE CONTRACTOR PERFORMING THE WORK SHALL COORDINATE ALL HIS WORK WITH OTHER TRADES AND FIELD CONDITIONS.
  8. PLUMBER SHALL NOT DEVIATE FROM THE SANITARY CONNECTION FORMAT WITHOUT ENGINEER'S APPROVAL.
  9. THE CONTRACTOR PERFORMING THE WORK, PRIOR TO SUBMITTING HIS BID PRICE, SHALL VISIT THE SITE, FAMILIARIZE HIMSELF WITH ALL FIELD CONDITIONS AND SHALL OBTAIN ALL REQUIRED INFORMATION NECESSARY TO COMPLETE THE JOB. ANY DISCREPANCIES BETWEEN WHAT IS SHOWN ON THE DRAWINGS AND ACTUAL WORK REQUIRED TO COMPLETE THE JOB SHALL BE TAKEN INTO ACCOUNT IN THE BID PRICE.
  10. CONTRACTOR SHALL PROVIDE AND PAY FOR ALL PERMITS, FEES, TAXES, TESTING, INSURANCE, SCAFFOLDING AND OTHER ITEMS NECESSARY TO PROVIDE A COMPLETE AND CODE ACCEPTABLE OPERATING SYSTEM.
  11. ALL WORK SHALL BE INSTALLED IN A NEAT AND ORDERLY MANNER WITH CAREFUL CONSIDERATION GIVEN TO SUPPORTING AND PITCHING OF LINES.
  12. ALL FIXTURES AND MATERIALS MUST BE NEW. ALL PLUMBING FIXTURES SHALL MEET STATE AND LOCAL CODES.
  13. THE PLUMBING PLANS ARE DIAGRAMMATIC AND DO NOT SHOW EVERY ITEM REQUIRED. DO NOT SCALE FOR EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
  14. FULLY COORDINATE ALL MOUNTING HEIGHTS, LOCATIONS AND REQUIREMENTS WITH ALL PROJECT PLANS AND TRADES BEFORE INSTALLATIONS.
  15. NOTIFY THE ARCHITECT OR ENGINEER OF ANY DISCREPANCIES BETWEEN THE PROJECT DOCUMENTS AND THE ACTUAL CONDITIONS PRIOR TO CONTINUING CONSTRUCTION.
  16. VERIFY LOCATION, SIZE AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. PROVIDE ACCURATE LAUNCH, GRADES AND ELEVATIONS. SET SLEEVES AND OPENINGS IN ADEQUATE TIME. PROTECT ALL WORK AND EQUIPMENT FROM DAMAGE.
  17. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
  18. DO NOT COMPROMISE THE INTEGRITY OF ARCHITECTURAL FEATURES AND STRUCTURAL ELEMENTS WHEN INSTALLING PIPES AND FIXTURES.
  19. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING VOIDS BETWEEN PIPE & WALL/FLOOR SLEEVES WITH U.L. APPROVED FIRE/SMOKE/WATER SEALANT.
  20. NO COMBUSTIBLE MATERIAL TO BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
  21. NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL ROOMS.
  22. ALL FIRE MAINS, HOT & COLD WATER PIPES, HOT WATER RETURN PIPING, STORM DRAIN, CONDENSATE AND GAS PIPING SHALL HAVE IDENTIFICATION & FLOW DIRECTION BANDS.
  23. CONTRACTOR SHALL KEEP A SET OF AS-BUILT DRAWINGS ON THE JOB SITE AT ALL TIMES AND DELIVER A SET OF UP TO DATE AS-BUILTS TO THE ENGINEER & OWNER AT THE COMPLETION OF THE PROJECT.
  24. ALL EXPOSED INTERIOR PIPING, FAUCETS, CLEAN-OUT COVERS, ETC. SHALL BE CHROME PLATED UNLESS OTHERWISE NOTED (U.O.N.).
  25. ALL METALLIC PIPING EXPOSED TO WEATHER SHALL BE PAINTED WITH 2 COATS OF RUST RESISTANT PAINT.
  26. OTHER THAN CAST-IRON OR GALVANIZED STEEL, CONCEALED PIPING RUNNING THROUGH STUDS, JOISTS, ETC. SHALL BE PROTECTED BY MIN. 16 GAGE STEEL SHEET PLATES IF WITHIN 1-1/2" OF THE FACE OF THE MEMBER.
  27. OTHER THAN CPVC, ALL PIPES PASSING THROUGH CONCRETE OR CINDER SHALL BE WRAPPED OR SLEAVED WITH A MINIMUM 0.01" THICK CORROSION RESISTANT MATERIAL. REFER TO FBC PLUMBING 305.1.2 IF PASSING THROUGH SLAB-ON-GRADE.

- SANITARY WASTE AND VENT PIPING:**
1. PIPING SHALL BE SCHEDULE 40 PVC-DWV PIPE ABOVE GROUND INDOORS AND SCHEDULE 40 PVC-DWV BELOW GRADE. FITTINGS SHALL MATCH THE PIPING MATERIAL.
  2. PIPING IN THE FOLLOWING AREAS SHALL BE SCHEDULE 40 PVC-DWV PIPE WITH EPOXY COATING ON BOTH INSIDE AND OUTSIDE SURFACES COMPLYING WITH STANDARD EN 877: 2.1 ABOVE GRADE OUTDOORS
  - 2.2 EXPOSED (I.E. OPEN OR CLOSED PARKING GARAGES, MECHANICAL ROOMS, ETC)
  - 2.3 ALL COMMERCIAL KITCHEN DRAIN PIPING UP TO THE GREASE TRAP
  3. ALL PIPING AND FITTINGS SHALL COMPLY WITH THE STANDARDS LISTED IN FBC PLUMBING TABLES 702.1-702.4, AS APPROPRIATE.
  4. PIPING FITTINGS USED FOR CHANGES IN DIRECTION SHALL COMPLY WITH FBC PLUMBING TABLE 706.3.
  5. ALL SANITARY HORIZONTAL PIPING SHALL BE UNIFORMLY SLOPED 1/4" PER LINEAR FOOT FOR DIAMETERS OF 2-1/2" & LESS, AND 1/8" PER LINEAR FOOT FOR DIAMETERS OF 3" & OVER. STORM DRAIN PIPING SLOPE SHALL BE AS NOTED IN CALCULATIONS.
  6. EXTENSION OF VENT PIPES THROUGH THE ROOF SHALL BE TERMINATED AT LEAST 12" ABOVE IT.
  7. A CONNECTION BETWEEN A VENT PIPE AND A VENT STACK SHALL BE AT LEAST 6" ABOVE THE FLOOR RIM OF THE HIGHEST FIXTURE SERVED BY THE VENT.
  8. ALL VENT AND VENT BRANCH PIPE SHALL BE SO GRADED AND CONNECTED AS TO DRAIN DRY.
  9. THE JOINTURE OF EACH VENT PIPE WITH THE ROOF LINE SHALL BE MADE WATER TIGHT BY PROPER FLASHING.
  10. ALL SINKS AND LAVATORIES WITH EXPOSED DRAIN PIPES SHALL BE CHROME PLATED COPPER TUBE. ALL BRANCH WASTE PIPING IN WALLS TO BE PLAIN COPPER TUBE.

- DOMESTIC WATER PIPING:**
1. NO WATER LINES SHALL RUN INSIDE CONCRETE SLABS.
  2. WATER PIPING SHALL BE CROSSLINK POLYETHYLENE (PEX). JOINTS WITH 95/5 LEAD-FREE SOLDER, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
  3. ALL PIPING AND FITTINGS SHALL COMPLY WITH THE STANDARDS LISTED IN FBC PLUMBING TABLES 605.3-605.5, AS APPROPRIATE.
  4. INSTALL CAPPED WATER HAMMER ARRESTOR AND MECHANICAL SHOCK ABSORBERS NOT LESS THAN 3/4" AND 18" HIGH WHERE SHOWN ON WATER RISER AND AT ALL WASHING MACHINES, BATH TUBS AND SHOWERS; WITHIN 12" ON THE SUPPLY SIDE OF THE VALVE WHERE TUB SHOWER HEAD OR FILLSPOUT EXCEEDS 6 FEET FROM THE VALVE; AND AT EACH GROUP OF FIXTURES IN COMMERCIAL BUILDINGS.
  5. PROVIDE DIELECTRIC ISOLATION BETWEEN CONTACT OF DISSIMILAR METALS INCLUDING EQUIPMENT CONNECTIONS.
  6. POLISHED CHROME ESCUTCHEON PLATES REQUIRED ON ALL WALL PENETRATIONS.
  7. EACH FIXTURE AND PIECE OF EQUIPMENT SHALL PROVIDED WITH SHUT OFF VALVES FOR BOTH HOT AND COLD WATER.
  8. THE WATER DISTRIBUTION SYSTEM SHALL BE PROTECTED AGAINST BACKFLOW. PROVIDE INCOMING WATER BACKFLOW PREVENTION DEVICES AS SPECIFIED IN FBC PLUMBING SECTIONS 608.13-16.
  9. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES. ACCESS PANELS IN RATED WALLS MUST MAINTAIN THE SAME RATING & MUST MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED. COORDINATE LOCATION OF ACCESS PANELS WITH ARCHITECT PRIOR TO INSTALLATION.
  10. INSTALL AN APPROVED WATER PRESSURE REGULATOR WITH STRAINER WHERE WATER PRESSURE WITHIN A BUILDING EXCEEDS 80 PSI STATIC.
  11. ALL SHOWER VALVES SHALL BE ANTI-SCALD/PRESSURE BALANCING.
  12. PROVIDE THE WATER HEATED DRAIN PAN WITH GALVANIZED DRAIN PAN WITH MINIMUM OF 2" HIGH SIDES THE DRAIN PAN SHALL BE EQUIPPED WITH 1/4" MINIMUM DRAIN OUTLET LOCATED 1/2" ABOVE THE BOTTOM OF THE PAN.
  13. PRESSURE AND TEMPERATURE RELIEF VALVES SHALL BE INSTALLED FOR ALL WATER HEATERS (TANK-TYPE AND TANKLESS), AND AN EXPANSION TANK BE REQUIRED.
  14. THE HOT WATER SUPPLY TO ANY FIXTURE REQUIRING HOT WATER SHALL BE LEFT SIDE OF THE FIXTURE UNLESS OTHERWISE SPECIFIED.
  15. ALL WATER HEATERS (TANK-TYPE AND TANKLESS) SHALL HAVE THERMOSTATIC CONTROL SETPOINTS IN ACCORDANCE WITH FBC.

- CONDENSATE PIPING:**
1. A/C CONDENSATE PIPES AND FITTINGS SHALL BE COPPER TYPE DRAIN, WASTE AND VENT (DWV) ABOVE GRADE AND PVC SCHEDULE 40 BELOW GRADE.
  2. ALL CONDENSATE PIPING RUNNING INSIDE UNCONDITIONED SPACE SHALL BE INSULATED WITH 3/4" CLOSED CELL FLEXIBLE ELASTOMERIC WITH FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF NO GREATER THAN 25/50.

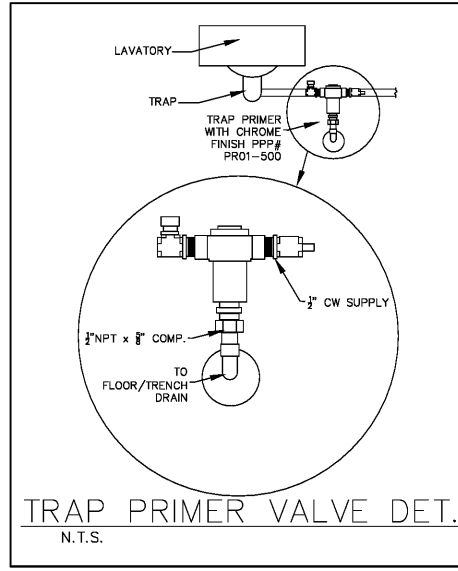
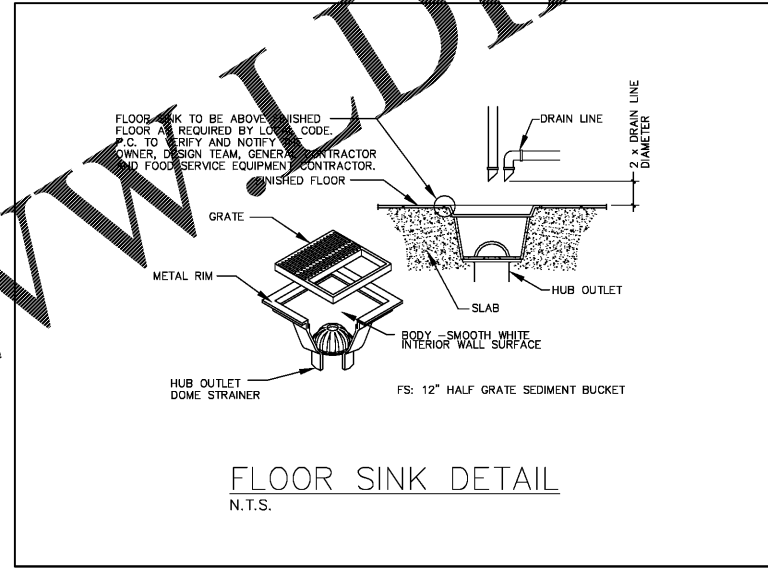
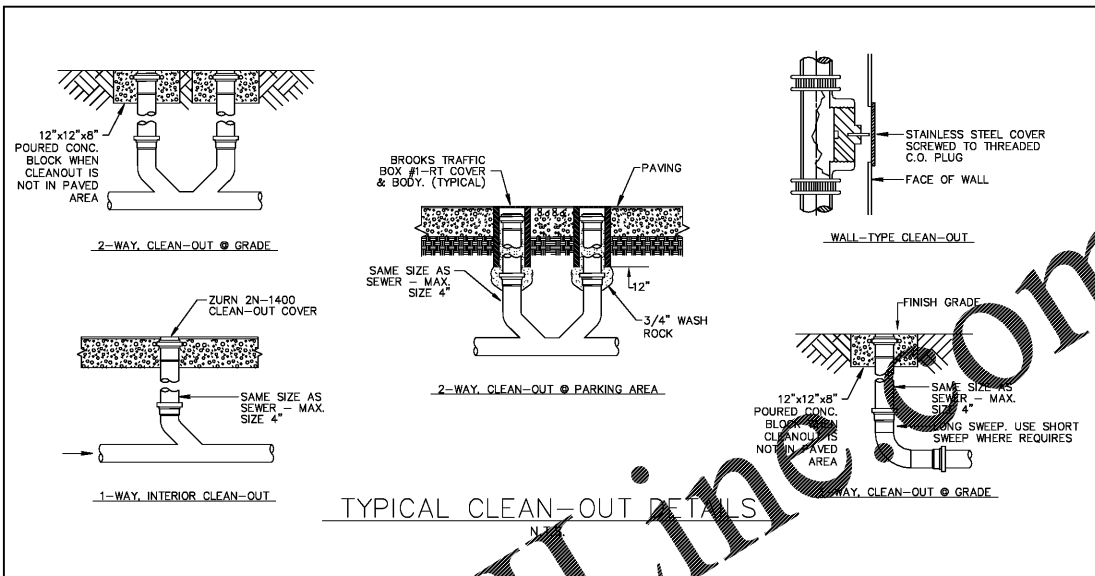
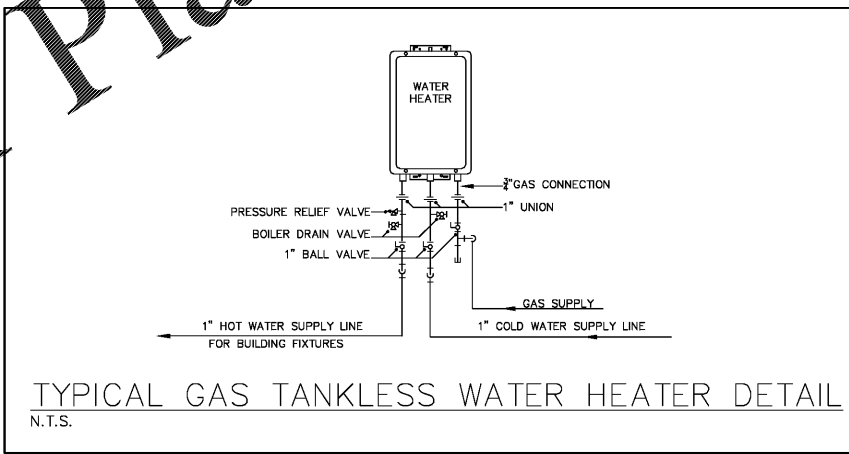
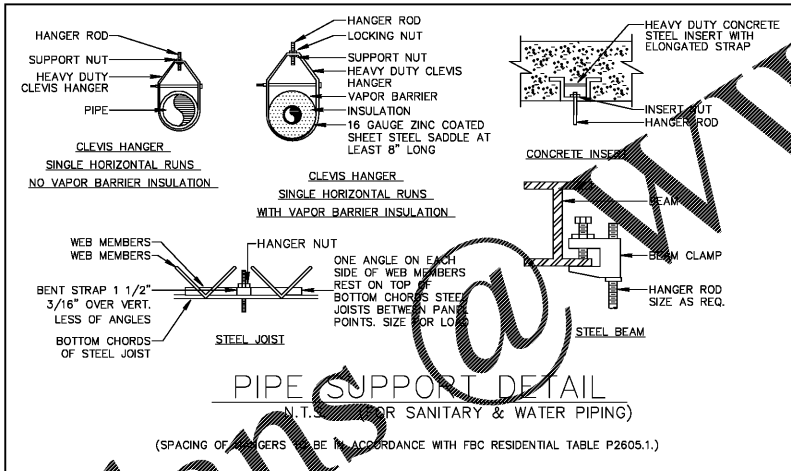
- GAS PIPING:**
1. ALL GAS PIPING SHALL BE AS NOTED ON THE RISER DIAGRAM. ALL PIPING MATERIALS SHALL COMPLY WITH THE STANDARDS IN FBC FUEL GAS SECTION 403 AND SHALL BE LISTED FOR THEIR INTENDED PURPOSE.
  2. NO MECHANICAL JOINTS, VALVES OR FITTINGS ARE ALLOWED TO BE CONCEALED.
  3. PROVIDE DIELECTRIC UNIONS AT ALL JUNCTIONS.

- HANGERS AND SUPPORTS:**
1. PROVIDE ADJUSTABLE HANGERS, INSERTS AND SUPPLEMENTARY STEEL AS REQUIRED FOR PROPER SUPPORT OF PIPE LINES.
  2. ALL HANGERS FOR COPPER PIPES TO BE COPPER PLATED.
  3. PROVIDE ISOLATOR PADS ON ALL WATER PIPING HANGERS.
  4. HANGER SPACING SHALL BE IN ACCORDANCE WITH FBC PLUMBING TABLE 308.5.

**GENERAL PLUMBING NOTES**

- CLEANOUTS:**
1. CLEANOUTS SHALL BE PROVIDED AND INSTALLED AT POINTS INDICATED BY 'C.O.' AND 'F.C.O.' ON DRAWINGS AND AS PER FBC PLUMBING SECTION 708.
  2. CLEANOUT COVERS: WALLS: JOSAM 58800-SS RESILIENT FLOORS: JOSAM 58360 FERRULE WITH 8640 AND NIKALOY TOP CONCRETE FLOORS: JOSAM 58360 WITH NIKALOY TOP TILE FLOORS: JOSAM 58480 FERRULE WITH NIKALOY COVER.
  3. PROVIDE ACCESS PANEL TO ANY NON-ACCESSIBLE CLEANOUT AS NECESSARY.
- MISCELLANEOUS PRODUCTS:**
1. FLOOR DRAINS: JOSAM MODEL 30002-WT-5A WITH NIKALOY TOP, ADJUSTABLE STRAINER AND BACKWATER VALVE. EQUIPMENT ROOMS: JOSAM 30004-8A WITH NIKALOY TOP AND 1/2" PRIMER TAP. KITCHEN: JOSAM 31120 WITH NIKALOY TOP AND BASKET STRAINER 1/2" PRIMER TAP. TRENCH DRAINS: ZURN FLO-THRU MODEL 812 WITH 2001 AND 2002 CHANNELS, END CAPS, END OUTLETS AND CG CAST IRON GRATE/FRAME. INSTALL PER MANUFACTURER'S DIRECTIONS.
  2. AREA DRAINS (A.D.) -- JOSAM 23000 SERIES 14" SQ. PROMENADE DRAIN WITH HEEPLROOF, NICKEL-ALLOY GRATE.
  3. ROOF DRAINS (R.D.) -- JOSAM 21000 SERIES ROOF DRAIN.
  4. PLANTER DRAINS (P.D.) -- JOSAM 39800 SERIES PLANTER DRAIN WITH S.S. MESH SCREEN OVER DOME.
  5. GARAGE DRAINS (G.D.) -- JOSAM 31220 SERIES WITH SEDIMENT BUCKET WITH 67100 SERIES BALL-FLOAT ADAPTER.
  6. PARAPET DRAINS (P.P.D.) -- JOSAM 24710 SERIES PARAPET DRAIN.
  7. SPA DRAIN (A.D.): JOSAM 30000 SERIES WITH H SERIES ROUND STRAINER WITH HINGED COVER IN NIKALOY FINISH.
  8. FLOOR SINK IN KITCHEN -- ZURN 1900-3-2
  9. TRAP PRIMERS SHALL CONFORM TO ASSE 1018 OR ASSE 1044.

- INSULATION:**
1. HOT WATER AND HOT WATER RETURN PIPING SHALL BE INSULATED WITH 1" OF INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H·FT²·°F (1.53 W PER 25 MM/M²·K). THE FIRST 8 FEET (2438 MM) OF HOT WATER PIPING FROM A HOT WATER SOURCE THAT DOES NOT HAVE HEAT TRAPS SHALL BE INSULATED WITH 0.5" (12.7 MM) OF MATERIAL HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H·FT²·°F (1.53 W PER 25 MM/M²·K).
  2. CONDENSATE RUNS ABOVE GROUND MUST BE INSULATED WITH INSULATED WITH 3/4" CLOSED CELL FLEXIBLE ELASTOMERIC WITH FLAME SPREAD AND SMOKE DEVELOPED RATINGS OF NO GREATER THAN 25/50.
  3. STORM DRAIN WITHIN THE CONDITIONED SPACE SHALL USE 3/4" THICK MOLDED FIBERGLASS PIPE INSULATION WITH FACTORY JACKET.
  4. COLD WATER PIPE ENTERING A WATER HEATER (FIRST 8 FEET) MUST BE INSULATED WITH 1/2" ARMAFLEX.
  5. ALL EXPOSED HANDICAP LAVATORIES DRAIN PIPING AND HOT & COLD WATER STOPS AND SUPPLIES SHALL BE INSULATED AS PER ADA REQUIREMENTS WITH A UPC APPROVED SOFT COVER.



**PLUMBING FIXTURE CONNECTION SCHEDULE**

NOTE: COORDINATE FIXTURE SELECTION WITH OWNER BEFORE BIDDING. FIXTURE UNITS VALUES BASED ON FBC 2014

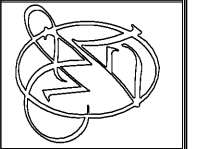
MARK	DESCRIPTION	C.W.	H.W.	WASTE	FIXTURE UNIT	MAXIMUM WATER FLOW	CONFORMANCE STANDARD	ADDITIONAL NOTES
LV	LAVATORY (COMMERCIAL)	3/8"	3/8"	1 1/2"	1	0.5 GPM @ 60 PSI; SENSOR REQUIRED IN RESTROOMS	ASME A112.19.1M, 2M, 3M, 4M, OR 9M; OR ANSI Z124.3	ASSE 1070 DEVICE FOR TEMPERED WATER
WC	FLUSH TANK WATER CLOSET	3/8"	-	3"	4	1.28 GALLONS PER FLUSH	ASME A112.19.6; AND: ASME A112.19.2M OR ANSI Z124.4	TANKS MUST ALSO COMPLY WITH ASME A112.19.2, 9M, OR ANSI Z124.4
SK	SINK	1/2"	1/2"	1 1/2"	2	1.5 GPM @ 60 PSI	ASME A112.19.1M, 2M, 3M, 4M, OR 9M; OR ANSI Z124.6	-
FD	FLOOR DRAIN	-	-	*	2	-	ASME A112.3.1 OR A112.6.3	* SIZE PER FLOOR PLANS, MIN. 2" PROVIDE REMOVABLE STRAINER

COORDINATE FIXTURE SELECTION WITH OWNER AND ARCHITECT, AND SUBMIT TO ENGINEER PRIOR TO PURCHASE.

DATE: 03/15/19

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REVISION:

PLUMBING NOTES AND DETAILS  
DRAWING NUMBER

P4

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