## PLUMBING CALCULATIONS BASED ON 2000 LPC:

| WATER | | WASTE |
|---|---|---|
| **PETSMART FIXTURES** | | |
| WASHING MACHINE | 1 x 1.0 WSFU = 1.0 WSFU | 1 x 3 DFU = 3 DFU |
| SPRAY HOSE | 3 x 4 WSFU = 12 WSFU | ____ |
| WATER CLOSET (F.T.) | 3 x 2.2 WSFU = 6.6 WSFU | 3 x 3 DFU = 9 DFU |
| DRINKING FOUNTAIN | 2 x 0.25 WSFU = 0.5 WSFU | 2 x 0.5 DFU = 1 DFU |
| LAVATORY | 2 x 2 WSFU = 4 WSFU | 2 x 2 DFU = 4 DFU |
| SINK | 10 x 3 WSFU = 30 WSFU | 10 x 2 DFU = 20 DFU |
| MOP / SERVICE SINK | 2 x 3 WSFU = 6 WSFU | 2 x 3 DFU = 6 DFU |
| URNIAL | 1 x 5 WSFU = 5 WSFU | 1 x 4 DFU = 4 DFU |
| HOSE BIBB (FIRST) | 1 x 3 WSFU = 3 WSFU | ____ |
| HOSE BIBB (EACH ADDITIONAL) | 2 x 3 WSFU = 6 WSFU | ____ |
| FLOOR OR TRENCH DRAIN, 3" | ____ | 7 x 5 DFU = 35 DFU |
| TRENCH DRAIN, 4" | ____ | 2 x 6 DFU = 12 DFU |
| **TOTAL PETSMART FIXTURE UNITS** | = 74.1 WSFU | = 94 DFU |

TOTAL WATER CONSUMPTION = 74.1 WSFU (37 GPM)

**HIGHEST ELEVATION** ____ 22 FEET

(22 FT.) x 0.43 = 9.46 PSI STATIC LOSS

**HORIZ. PIPE LENGTH TAP TO METER** ____ 25 FEET
**HORIZ. PIPE LENGTH METER TO BUILDING (PRV) *** ____ 5 FEET
**HORIZ. PIPE LENGTH BLDG. (PRV) TO LAST FIXTURE** ____ 300 FEET
**VERT. PIPE LENGTH BLDG. RISE TO HIGHEST FIXTURE** ____ 18 FEET
**TOTAL PIPE LENGTH (FROM PRV TO LAST FIXTURE)** ____ 318 FEET

(318 FT.) x 1.25 (FITTING LOSS) = 398 FEET TOTAL DEVELOPED LENGTH

| SIZE | DEVICE | PSI LOSS |
|---|---|---|
| 1-1/2" | BACKFLOW PREVENTOR | 9.0 |
| 1-1/2" | METER | 3.0 ** |
| | STATIC | 9.46 |
| | FIXTURE | 20.00 |
| | **TOTAL BUILDING LOSS** | 41.46 PSI |

**PRESSURE AT BLDG.** ____ 65.00 PSI
**PRESSURE REGULATOR SETTING** ____ 60.00 PSI
**BUILDING LOSS** ____ 41.46 PSI
**DIFFERENCE** ____ 18.54 PSI

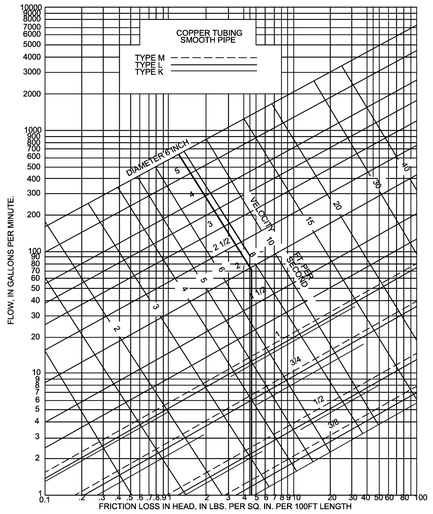
(18.54/398) x 100 = 4.7 **MAX. PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH**

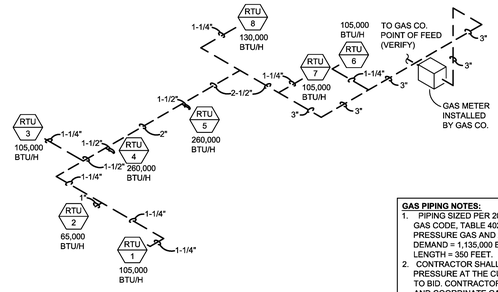
**BRANCH PIPE SIZING CHART - PSI LOSS**

| PIPE SIZE | 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|---|---|
| GPM | 2 | 6 | 13 | 22 | 37 | 75 |
| FU (F.T.) | 1 | 3 | 8 | 26 | 75 | 250 |

* THIS PIPE LENGTH SHALL NOT BE INCLUDED WHEN/IF PRESSURE REGULATOR IS PROVIDED/REQUIRED.

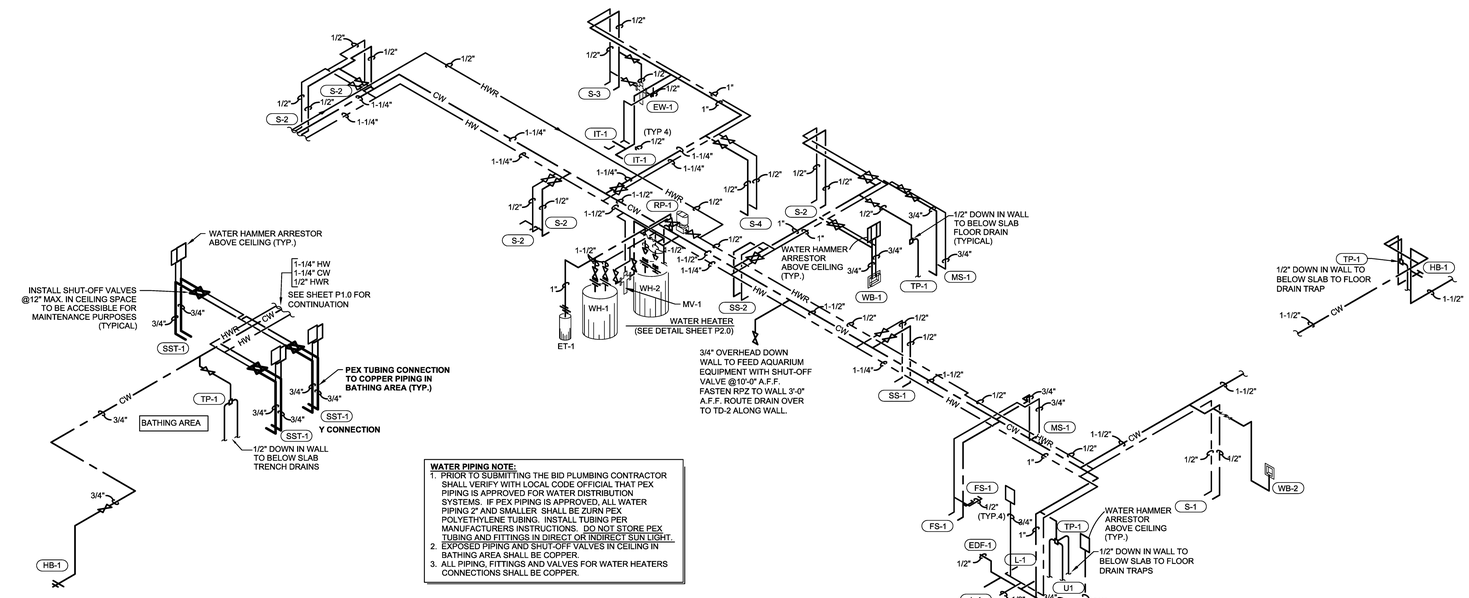
** METER LOSSES SHALL NOT BE INCLUDED WHEN/IF PRESSURE REGULATOR IS PROVIDED/REQUIRED AND METER IS INSTALLED OUTSIDE THE BLDG.



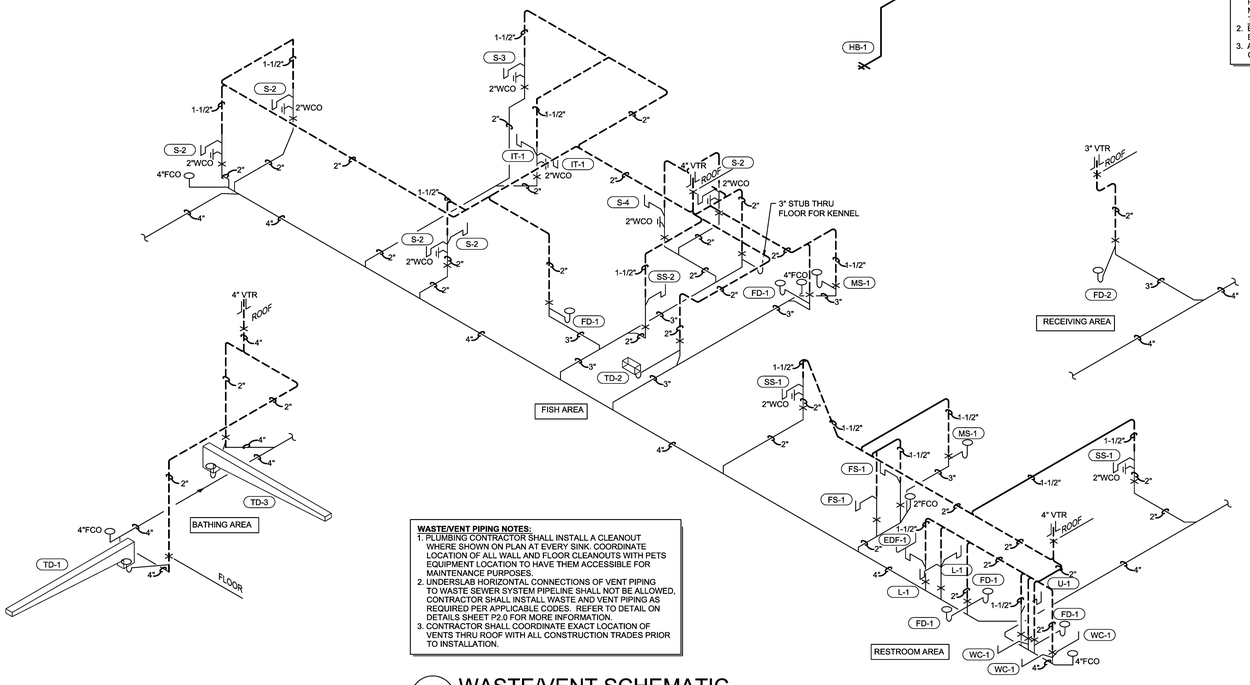

2 P3.0 GAS SCHEMATIC
SCALE: N.T.S

**GAS PIPING NOTES:**
1. PIPING SIZED PER 2009 INTERNATIONAL FUEL AND GAS CODE, TABLE 402.4(2), (LESS THAN 2 LBS) PRESSURE GAS AND A .5 W.C. DROP. TOTAL GAS DEMAND = 1,135,000 BTU/H & TOTAL DEVELOPED LENGTH = 350 FEET.
2. CONTRACTOR SHALL VERIFY EXACT GAS DELIVERY PRESSURE AT THE CUSTOMER SIDE OF METER PRIOR TO BID. CONTRACTOR SHALL APPLY FOR GAS SERVICE AND COORDINATE GAS SERVICE IN A TIMELY MANNER. IF PRESSURE IS HIGHER THAN THE GAS PRESSURE USED TO SIZE THE GAS PIPING, CONTRACTOR SHALL PROVIDE A PRESSURE REGULATOR, IF LOWER, CONTACT THE PROFESSIONAL OF RECORD IMMEDIATELY FOR DIRECTION. IF THE PROFESSIONAL OF RECORD IS NOT CONTACTED, IT IS ASSUMED GAS PRESSURE IS VERIFIED AND ADEQUATE FOR THE SYSTEM DESIGNED ON THE DRAWINGS.




**WATER PIPING NOTE:**
1. PRIOR TO SUBMITTING THE BID PLUMBING CONTRACTOR SHALL VERIFY WITH LOCAL CODE OFFICIAL THAT PEX PIPING IS APPROVED FOR WATER DISTRIBUTION SYSTEMS. IF PEX PIPING IS APPROVED, ALL WATER PIPING 2" AND SMALLER SHALL BE ZURN PEX POLYETHYLENE TUBING. INSTALL TUBING PER MANUFACTURERS INSTRUCTIONS. DO NOT STORE PEX TUBING AND FITTINGS IN DIRECT OR INDIRECT SUN LIGHT.
2. EXPOSED PIPING AND SHUT-OFF VALVES IN CEILING IN BATHING AREA SHALL BE COPPER.
3. ALL PIPING, FITTINGS AND VALVES FOR WATER HEATERS CONNECTIONS SHALL BE COPPER.

1 P3.0 WATER SCHEMATIC
SCALE: N.T.S



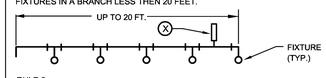

**WASTE/VENT PIPING NOTES:**
1. PLUMBING CONTRACTOR SHALL INSTALL A CLEANOUT WHERE SHOWN ON PLANS AT EVERY SINK. COORDINATE LOCATION OF ALL WALL AND FLOOR CLEANOUTS WITH PETS EQUIPMENT LOCATION TO HAVE THEM ACCESSIBLE FOR MAINTENANCE PURPOSES.
2. UNDERSLAB HORIZONTAL CONNECTIONS OF VENT PIPING TO WASTE SEWER SYSTEM PIPELINE SHALL NOT BE ALLOWED, CONTRACTOR SHALL INSTALL WASTE AND VENT PIPING AS REQUIRED PER APPLICABLE CODES. REFER TO DETAIL ON DETAILS SHEET P2.0 FOR MORE INFORMATION.
3. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF VENTS THRU ROOF WITH ALL CONSTRUCTION TRADES PRIOR TO INSTALLATION.

3 P3.0 WASTE/VENT SCHEMATIC
SCALE: N.T.S

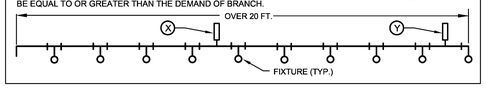
## WATER HAMMER ARRESTER SCHEDULE

| P.D.I. SYMBOL | MANUFACTURE | MODEL NO. | CONNECTION SIZE | FIXTURE UNIT RATING | REMARKS |
|---|---|---|---|---|---|
| "A" | J.R. SMITH | 5005 | 3/4" | 1-11 | THREADED NIPPLE CONNECTION |
| "B" | J.R. SMITH | 5010 | 1" | 12-32 | THREADED NIPPLE CONNECTION |
| "C" | J.R. SMITH | 5020 | 1" | 33-60 | THREADED NIPPLE CONNECTION |

RULE 1:
THE PREFERRED PLACEMENT LOCATION IS AT THE END OF THE BRANCH LINE BETWEEN THE LAST TWO FIXTURES IN A BRANCH LESS THEN 20 FEET.




RULE 2:
IN LINES THAT EXCEED 20 FT. IN LENGTH, THE SUM OF THE FIXTURE UNIT RATINGS OF UNITS X & Y SHALL BE EQUAL TO OR GREATER THAN THE DEMAND OF BRANCH.

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SCHEMATICS AND SCHEDULES

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