216 E A ST (Lew) Water Meter Relocation

- Residence is part of ‘A’ Street Reconstruction Project
- City is going to replace water meters and water mains. **I want to relocate my meter and water main to ~30’ east for the following reasons:**
  - I replaced clay main sewer line to sidewalk under permit BLD2024-0550. My main sewer line and water line are parallel to a failing railroad tie retaining wall. Existing ¾” PE water line has at least 3 splices and is not below frost.
  - The existing water line is close to a railroad tie retaining wall that I’m currently replacing with a 4’ concrete block retaining wall. I don’t want to disturbed the soils to bury get the existing line below frost.
  - Physical separation from sewer will make the city’s reconstruction easier and will make future maintenance easier for city and home
  - I have engaged with City Engineering regarding this request.
  - I request the City waive Water Meter installation fees since they are already intending on replacing the meter.
- **Bury 1” NSF 160 PSI PE > 30” deep sleeved in 2” PVC conduit.** (~40ft from meter box location to house)

2024 Projects:

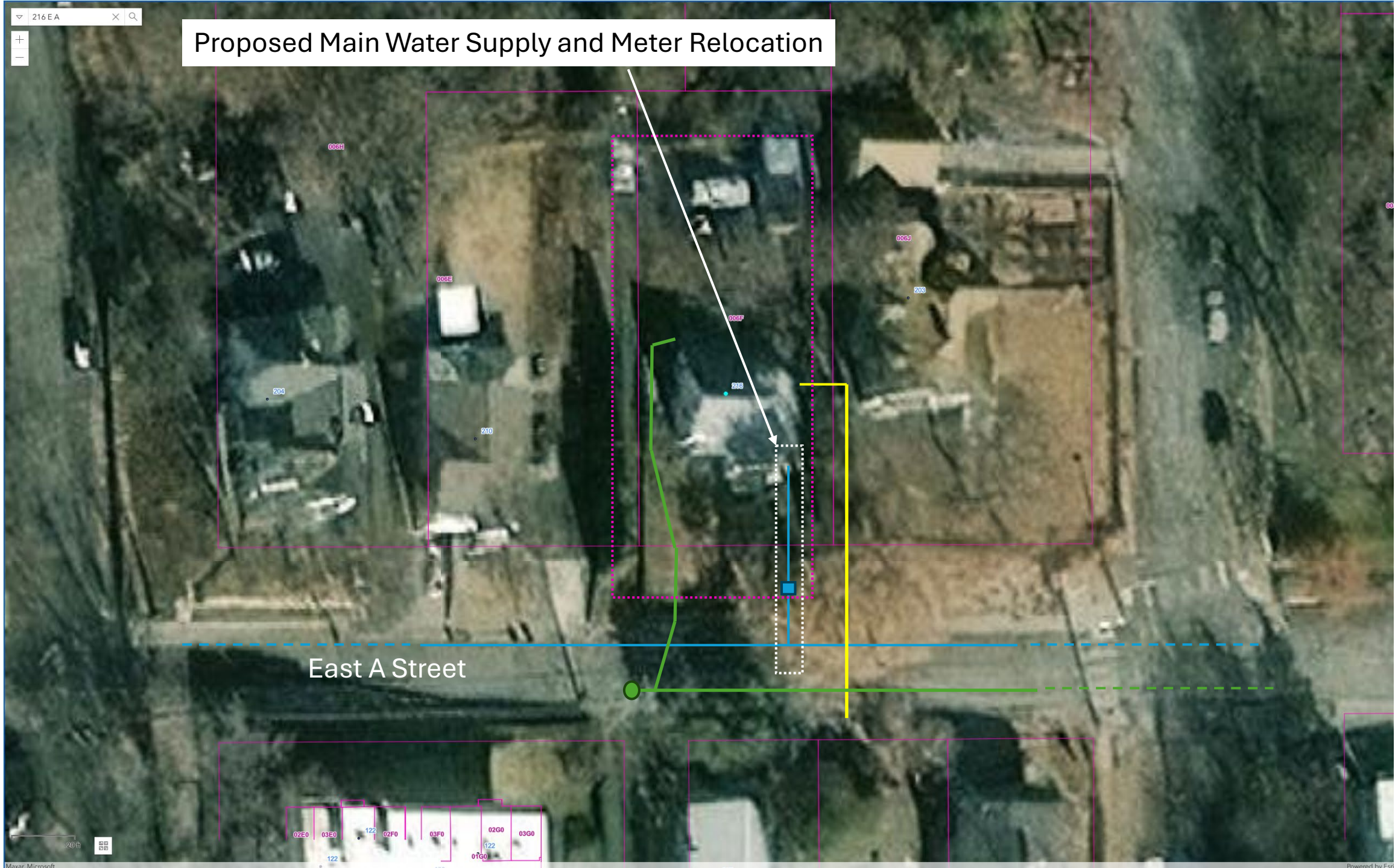
- **'A' Street Reconstruction Project**

  The 'A' Street Reconstruction Project consists of the abandonment of existing sanitary sewer and storm sewer mains and the installation of new 8” PVC sewer mains, as well as the abandonment of existing water mains and the installation of new 8” C900 water mains, within two blocks on 'A' Street. The project also includes the complete reconstruction of road base and asphalt surface along with some curb and sidewalk work within the two blocks on “A” Street from Washington Street to Adams Street.

Design Standards & Adopted Construction Codes

Design Element	*Minimum Requirement*
Ground Snow Load	64 PSF
Roof Snow Load	40 PSF
Wind Speed (3-second gust)	115 mph-Res., 115 mph Ultimate-Comm.
Seismic Design Category	B
Weathering Damage	Severe
Frost Line Depth	30 inches
Termite Infestation Probability	Slight to Moderate
Winter Design Temperature	10 degrees F
Ice Barrier Underlayment Required (roofs)	Yes
Flood Hazards FEMA map dates	February 1980, Revised April 2002
Air Freezing Index	960
Mean Annual Temperature	47 degrees F
Wind Exposure	B

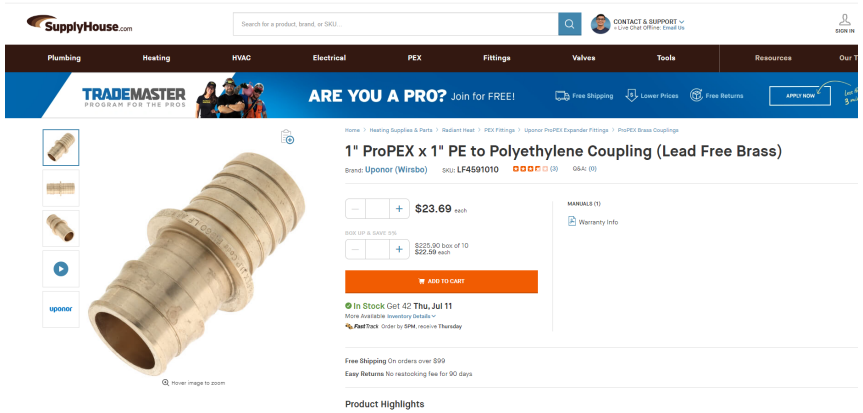

216 E A
Existing Utilities
Sewer installed 2024
East A Street
006E
006F
006J
204
210
216
203
02E0
03E0
02F0
03F0
02G0
03G0
01G0
122


216 E A
Proposed Main Water Supply and Meter Relocation
East A Street
006H
006E
006F
006J
204
210
216
203
02E0
03E0
02F0
03F0
02G0
03G0
01G0
122
20 ft

216 E A ST (Lew) Main Level Water Supply Line Replacement

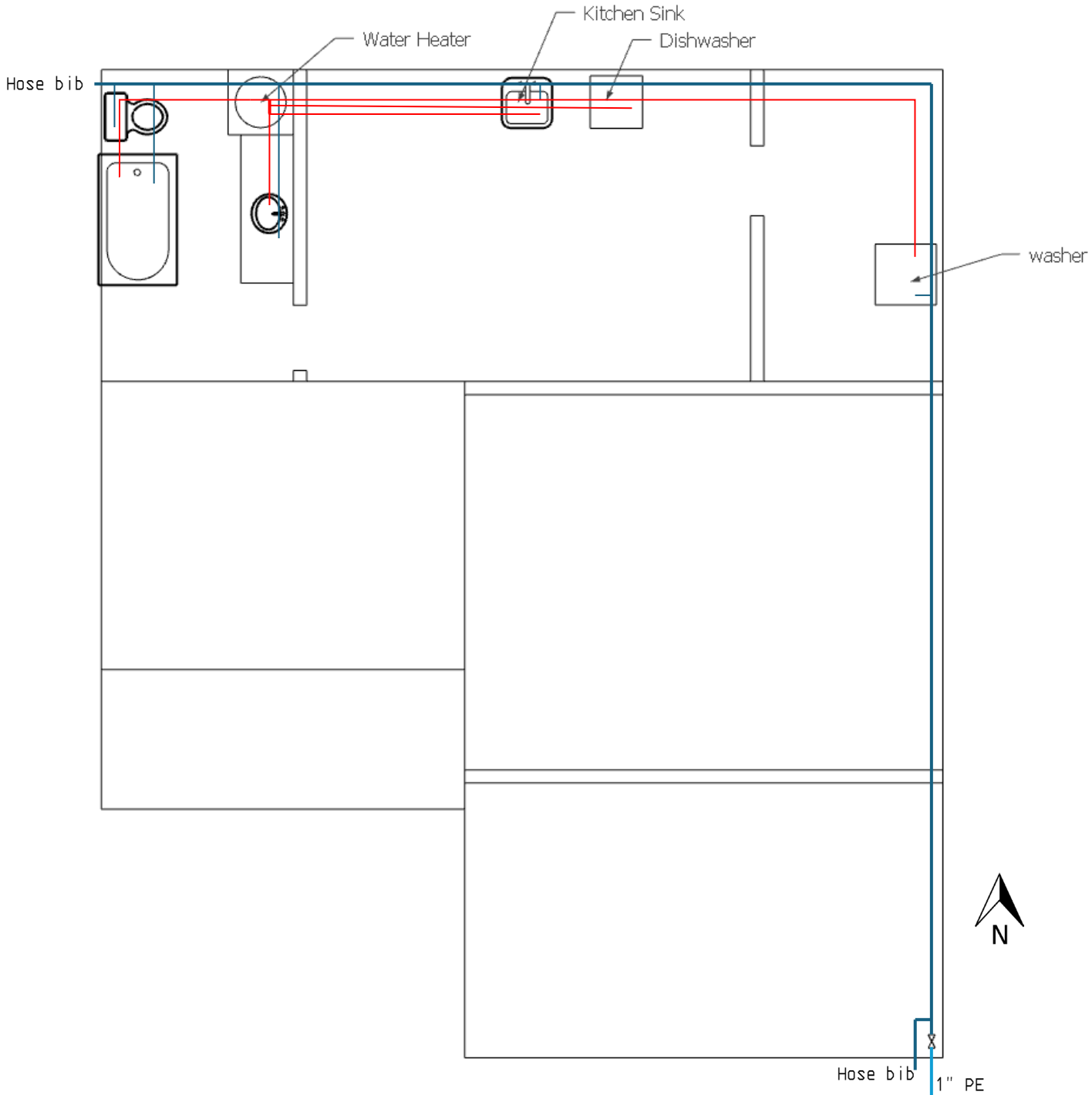
- Relocate main supply from northwest corner of home to southeast corner.
- Replace galvanized and CPVC supply lines (hot and cold) for main level fixtures with PEX-A (1” supply, 36 fixture units) with insulation in unventilated crawlspace.
- Transition 1” PE to 1” PEX-A with < 24” exposed PE in crawl space (amended ISAPA 07, Title 02, Chapter 06, Section 604.1) with metal fitting.

IDAPA 07, Title 02, Chapter 06, Section 604.1 shall be amended by replacing the language “within a building (above ground and below ground) with one (1) joint” with “a maximum of 24 inches exposed within a crawlspace”.[4, 5.]



216 E A ST (Lew)
Main Level Fixtures

- Supply Lines PEX-A (1” branch)
- Cold on branch
- Hot on manifold
- Old Supply lines removed
- Second story has powder bath and master bath with: tub, shower (2 heads), toilet, 1 sink. All PEX-A/B plumbed from Water Heater Closed.



Fixture Counts Calculator

Fixture Type	Number Of Fixtures	Multiply By Fixtures Unit	Fixtures unit
Bar Sink	0	x 1	0
Bath Tub or combinationbath/shower	1	x 4	4
Bathroom Sink	3	x 1	3
Shower Head(Each Head)	2	x 2	4
Bidet	0	x 1	0
Clothes Washing Machine	1	x 4	4
Dishwasher	1	x 1.5	1.5
Hose bib or sill cock(standard type)	2	x 2.5	5
Kichen sink	1	x 1.5	1.5
Laundry sink	0	x 2	0
Whirlpool bath or combination bath/shower	1	x 4	4
Toilet (gravity tank)	3	x 3	9
Supply outlets not listed above shall be computed at their maximum demand	0		0
3/8 inches outlets	0	x 1	0
1/2 inches outlets	0	x 2	0
3/4 inches outlets	0	x 3	0
Total Fixture Units:	36	Calculate Now!	Reset

TABLE 610.3
WATER SUPPLY FIXTURE UNITS (WSFU) AND MINIMUM FIXTURE BRANCH PIPE SIZES[3]

APPLIANCES, APPURTENANCES OR FIXTURES[2]	MINIMUM FIXTURE BRANCH PIPE SIZE[1,4] (inches)	PRIVATE	PUBLIC	ASSEMBLY[6]
Bathtub or Combination Bath/Shower (fill)	½	4.0	4.0	—
¾ inch Bathtub Fill Valve	¾	10.0	10.0	—
Bidet	½	1.0	—	—
Clothes Washer	½	4.0	4.0	—
Dental Unit, cuspidor	½	—	1.0	—
Dishwasher, domestic	½	1.5	1.5	—
Drinking Fountain or Water Cooler	½	0.5	0.5	0.75
Hose Bibb	½	2.5	2.5	—
Hose Bibb, each additional[8]	½	1.0	1.0	—
Lavatory	½	1.0	1.0	1.0
Lawn Sprinkler, each head[5]	—	1.0	1.0	—
Mobile Home, each (minimum)	—	12.0	—	—
Sinks	—	—	—	—
Bar	½	1.0	2.0	—
Clinical Faucet	½	—	3.0	—
Clinical Flushometer Valve with or without faucet	1	—	8.0	—
Kitchen, domestic with or without dishwasher	½	1.5	1.5	—
Laundry	½	1.5	1.5	—
Service or Mop Basin	½	1.5	3.0	—
Washup, each set of faucets	½	—	2.0	—
Shower, per head	½	2.0	2.0	—
Urinal, 1.0 GPF Flushometer Valve	¾	See Footnote[7]		—
Urinal, greater than 1.0 GPF Flushometer Valve	¾	See Footnote[7]		—
Urinal, flush tank	½	2.0	2.0	3.0
Wash Fountain, circular spray	¾	—	4.0	—
Water Closet, 1.6 GPF Gravity Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	½	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	See Footnote[7]		—
Water Closet, greater than 1.6 GPF Gravity Tank	½	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	See Footnote[7]		—

For SI units: 1 inch = 25 mm

Notes:

[1] Size of the cold branch pipe, or both the hot and cold branch pipes.

[2] Appliances, appurtenances, or fixtures not referenced in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency of use.

[3] The listed fixture unit values represent their load on the cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both hot and cold water connections shall be permitted to be each taken as three-quarter of the listed total value of the fixture.

[4] The listed minimum supply branch pipe sizes for individual fixtures are the nominal (I.D.) pipe size.

[5] For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (gpm) (L/s), and add it separately to the demand in gpm (L/s) for the distribution system or portions thereof.

[6] Assembly [Public Use (See Table 422.1)].

[7] Where sizing flushometer systems, see Section 610.10.

[8] Reduced fixture unit loading for additional hose bibbs is to be used where sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water distribution pipe. The fixture branch to each hose bibb shall be sized on the basis of 2.5 fixture units.

TABLE 610.4
FIXTURE UNIT TABLE FOR DETERMINING WATER PIPE AND METER SIZES

METER AND STREET SERVICE (inches)	BUILDING SUPPLY AND BRANCHES (inches)	MAXIMUM ALLOWABLE LENGTH (feet) 40	60	80	100	150	200	250	300	400	500	600	700	800	900	1000
PRESSURE RANGE – 30 to 45 psi[1]																
¾	½[2]	6	5	4	3	2	1	1	1	0	0	0	0	0	0	0
¾	¾	16	16	14	12	9	6	5	5	4	4	3	2	2	2	1
¾	1	29	25	23	21	17	15	13	12	10	8	6	6	6	6	6
1	1	36	31	27	25	20	17	15	13	12	10	8	6	6	6	6
¾	1¼	36	33	31	28	24	23	21	19	17	16	13	12	12	11	11
1	1¼	54	47	42	38	32	28	25	23	19	17	14	12	12	11	11
1½	1¼	78	68	57	48	38	32	28	25	21	18	15	12	12	11	11
1	1½	85	84	79	65	56	48	43	38	32	28	26	22	21	20	20
1½	1½	150	124	105	91	70	57	49	45	36	31	26	23	21	20	20
2	1½	151	129	129	110	80	64	53	46	38	32	27	23	21	20	20
1	2	85	85	85	85	85	85	82	80	66	61	57	52	49	46	43
1½	2	220	205	190	176	155	138	127	120	104	85	70	61	57	54	51
2	2	370	327	292	265	217	185	164	147	124	96	70	61	57	54	51
2	2½	445	418	390	370	330	300	280	265	240	220	198	175	158	143	133
PRESSURE RANGE – 46 to 60 psi[1]																
¾	½[2]	7	7	6	5	4	3	2	2	1	1	1	0	0	0	0
¾	¾	20	20	19	17	14	11	9	8	6	5	4	4	3	3	3
¾	1	39	39	36	33	28	23	21	19	17	14	12	10	9	8	8
1	1	39	39	39	36	30	25	23	20	18	15	12	10	9	8	8
¾	1¼	39	39	39	39	39	39	34	32	27	25	22	19	19	17	16
1	1¼	78	78	76	67	52	44	39	36	30	27	24	20	19	17	16
1½	1¼	78	78	78	78	66	52	44	39	33	29	24	20	19	17	16
1	1½	85	85	85	85	85	85	80	67	55	49	41	37	34	32	30
1½	1½	151	151	151	151	128	105	90	78	62	52	42	38	35	32	30
2	1½	151	151	151	151	150	117	98	84	67	55	42	38	35	32	30
1	2	85	85	85	85	85	85	85	85	85	85	85	85	85	83	80
1½	2	370	370	340	318	272	240	220	198	170	150	135	123	110	102	94
2	2	370	370	370	370	368	318	280	250	205	165	142	123	110	102	94
2	2½	654	640	610	580	535	500	470	440	400	365	335	315	285	267	250
PRESSURE RANGE – Over 60 psi[1]																
¾	½[2]	7	7	7	6	5	4	3	3	2	1	1	1	1	1	0
¾	¾	20	20	20	20	17	13	11	10	8	7	6	6	5	4	4
¾	1	39	39	39	39	35	30	27	24	21	17	14	13	12	12	11
1	1	39	39	39	39	38	32	29	26	22	18	14	13	12	12	11
¾	1¼	39	39	39	39	39	39	39	39	34	28	26	25	23	22	21
1	1¼	78	78	78	78	74	62	53	47	39	31	26	25	23	22	21
1½	1¼	78	78	78	78	78	74	65	54	43	34	26	25	23	22	21
1	1½	85	85	85	85	85	85	85	85	81	64	51	48	46	43	40
1½	1½	151	151	151	151	151	151	130	113	88	73	51	51	46	43	40
2	1½	151	151	151	151	151	151	142	122	98	82	64	51	46	43	40
1	2	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
1½	2	370	370	370	370	360	335	305	282	244	212	187	172	153	141	129
2	2	370	370	370	370	370	370	370	340	288	245	204	172	153	141	129
2	2½	654	654	654	654	654	650	610	570	510	460	430	404	380	356	329

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm, 1 pound-force per square inch = 6.8947 kPa

Notes:

[1] Available static pressure after head loss.

[2] Building supply, not less than ¾ of an inch (20 mm) nominal size.