

- WATER MAIN**
- Thrust blocking shall be installed on water mains at all bends, tees, elbows, etc. except as noted below.
 - Thrust blocks not permitted with 45° vertical bends in water main. These shall be restrained with (Mega-Lug) or equivalent.
 - Water main shall be ductile iron pipe, Class 52 conforming to A.N.S.I. A-21.51 or AWWA C-151.
 - Gaskets and cast iron fittings shall conform to A.N.S.I. A-21.11 or AWWA C-110 and C-111 water main shall be cement lined in conformance with A.N.S.I. A-21.4 or AWWA C-104.
 - Minimum cover from finished grade to top of water main shall be six (6) feet. Maximum cover shall be eight (8) feet.
 - Water Main Taps: an Illinois licensed plumber is required for any water main tap.
 - All water mains shall be subjected to a pressure test and a separate leakage test at system pressure for 24 hours by the Contractor. Hydrostatic pressure test and leakage shall be based on 125 psi for two (2) hours. Water mains shall be chlorinated in accordance with the Standard Specifications.
 - The Underground Contractor shall consider incidental to the contract any chlorination and testing of existing water main where connections to and condition of such mains is indicated on the drawings. In the event that the pressure attributable to defective original workmanship and material, then the Contractor shall be entitled to additional payment for correcting the deficiencies.

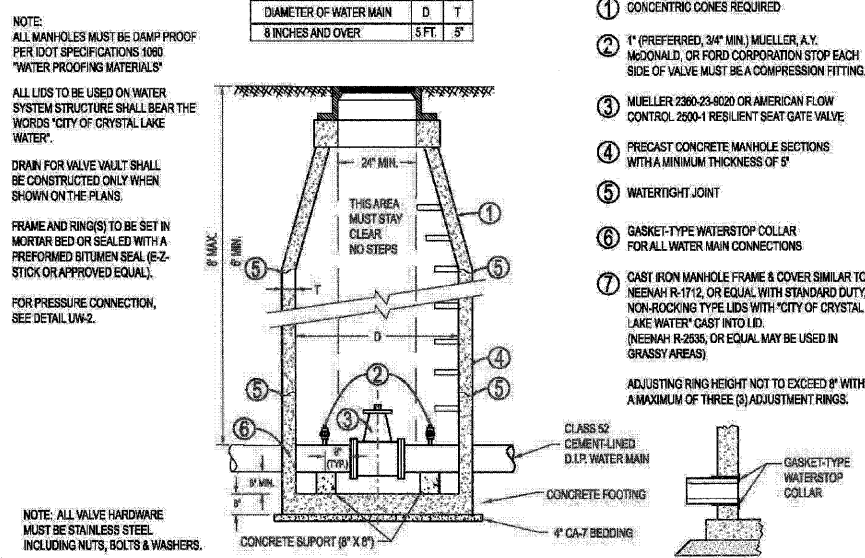
- PAVING**
- All subgrade and bases shall be proof-rolled and approved by the Engineering Division prior to base or binder installation.
 - Subgrade and proposed pavements shall be finished by the Excavation Contractor to within 0.1 foot plus or minus, of plan elevation.
 - The Paving Contractor shall ensure that the subgrade has been properly prepared and that the finished top of subgrade elevation has been graded within the tolerances allowed in these specifications. Unless the Paving Contractor advises the owner and engineer in writing prior to fine grading for base course construction, it is understood that the Contractor has approved and accepts responsibility for the subgrade.
 - For the purpose of providing handicap accessibility and complying with the American Disability Act and City Standards, curbs shall be depressed at locations where public walks or pedestrian paths intersect curb lines at street intersections and other locations as directed.
 - ¾ inch thick precast concrete curb and gutter shall be installed at all designated intervals in the curb. The cost of these joints shall be considered as incidental to the cost of the contract.
 - ¾ inch thick fibre expansion joints shall be used in every case where the sidewalk crosses the curb and gutter. Contraction joints shall be saw cut at designated intervals in the curb. The cost of these joints shall be considered as incidental to the cost of the contract.
 - All poured in place concrete curb and gutter shall incorporate two (2) No. 4 reinforcing bars installed wherever the curb and gutter crosses utility service lines, the cost of which shall be considered incidental to the cost of concrete curb and gutter.
 - Sidewalks (where required) shall be of the thickness and dimensions as shown in the construction plans. All sidewalk concrete shall be a minimum of 6.1 bag mix (or DOT class SI concrete) and shall develop a minimum of 3,500 psi compressive strength at twenty eight (28) days. Contraction joints shall be set at four (4) foot centers, and one-half inch (½ inch) precast fibre expansion joints at forty (40) foot centers and where the sidewalk meets the curb or another sidewalk, or at the end of each pour. All sidewalks constructed over utility trenches and/or abutting driveway aprons shall be reinforced with three (3) No. 4 reinforcing bars (10 foot minimum length).

Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **STANDARD NOTES AND SPECIFICATIONS**

Drawing Number: **GE-02d**
 Date: 6/1/2007
 Drawn: EM Checked: LZ

CRYSTAL LAKE ILLINOIS Engineering Division

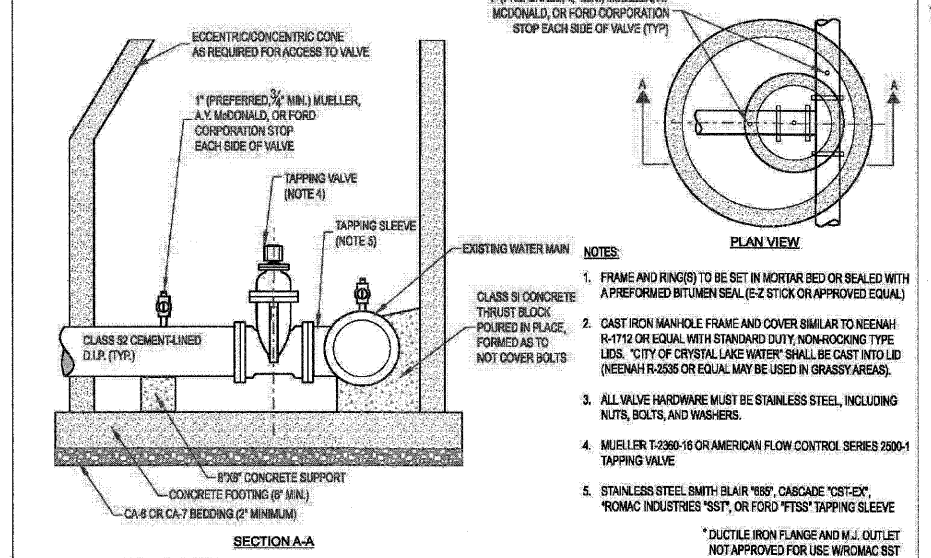


Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **STANDARD VALVE VAULT**

Drawing Number: **UW-01**
 Date: 4/15/2007
 Drawn: EM Checked: JN

CRYSTAL LAKE ILLINOIS Engineering Division



Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **WATER MAIN PRESSURE CONNECTION**

Drawing Number: **UW-02**
 Date: 6/1/2007
 Drawn: EM Checked: JNLZ

CRYSTAL LAKE ILLINOIS Engineering Division

BEARING AREA (SQ. FT.)					
PIPE SIZE	TEE/PLUG	90°	45°	2 1/2"	1 1/4"
6	4	2	1	1	1
8	6	4	3	1	1
10	7	5	3	2	1
12	8	6	4	3	2
14	12	9	6	4	3
16	15	12	7	5	3
18	18	15	9	5	4
24	40	30	15	10	5

NOTES:

ALL BLOCKING SHALL BE POURED CLASS SI CONCRETE AGAINST UNDISTURBED EARTH.

ALL BENDS OR ELBOWS GREATER THAN 11 1/4" SHALL HAVE THRUST BLOCKING. FORM AS TO NOT COVER BOLTS.

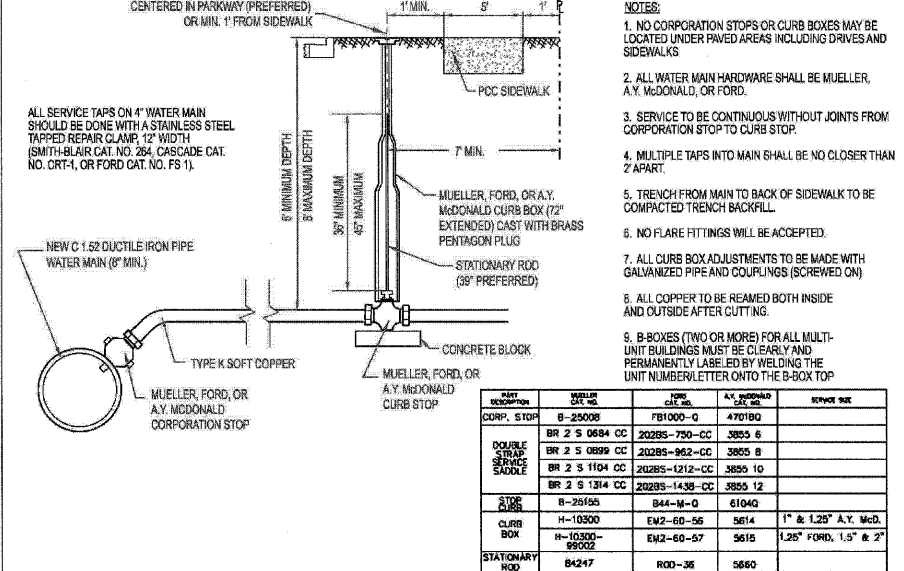
IN LIEU OF THRUST BLOCKING "MEGA LUG" (EBA) JOINT RESTRAINTS OR APPROVED EQUAL CAN BE USED AS APPROVED BY THE ENGINEER.

Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **THRUST BLOCK INSTALLATION**

Drawing Number: **UW-03**
 Date: 4/15/2007
 Drawn: EM Checked: JN

CRYSTAL LAKE ILLINOIS Engineering Division

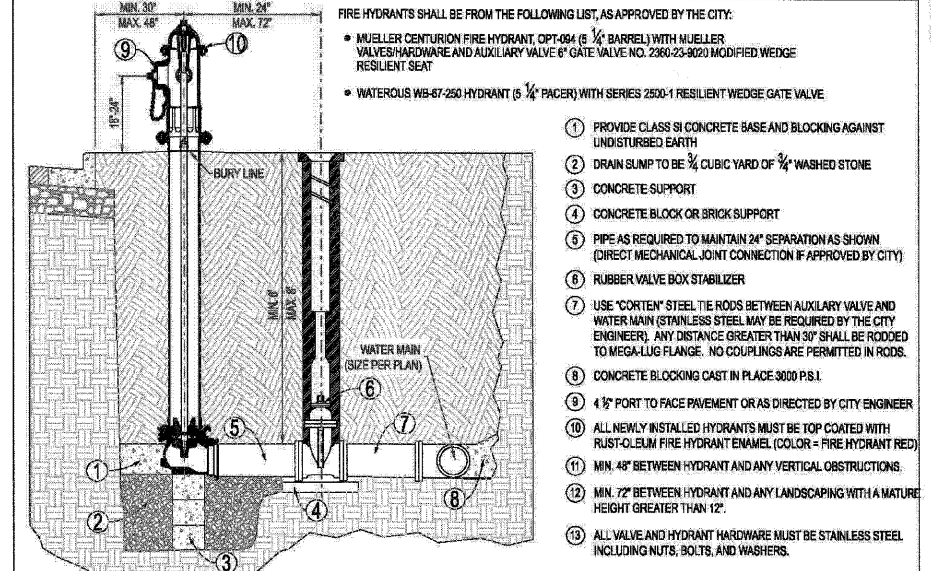


Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **WATER SERVICE INSTALLATION**

Drawing Number: **UW-04**
 Date: 4/15/2007
 Drawn: EM Checked: JN

CRYSTAL LAKE ILLINOIS Engineering Division



Approved: City Engineer *Victor C. Ramirez, P.E.*
 Director of Engineering and Building

Drawing Name: **FIRE HYDRANT**

Drawing Number: **UW-06**
 Date: 11/2/2007
 Drawn: EM Checked: JN

CRYSTAL LAKE ILLINOIS Engineering Division

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.P. ROUTE 336
 IL RTE 31 AND IL RTE 176

WATER MAIN & SANITARY SEWER DETAILS

SCALE: NTS
 DATE: 02/10/2012

DRAWN BY: BCD
 CHECKED BY: BOH