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## CAPITAL REGION/HUDSON VALLEY

# Are you contemplating subdividing a land parcel?



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*Part four continued from the February 10, 2009 Upstate edition of the New York Real Estate Journal.*

Before the pipes are fully backfilled, they must be tested to ensure that they do not leak (10-States Standards: section 8.7.6; town of Carmel Town Code: section 151-4{A}). You should confer with the authorities as to what procedures are to be followed prior to, and during the performance of, testing. In Carmel, all of the pipe joints are

required to be left exposed prior to the conducting of any pressure tests. The mid-section of each length of pipe must be backfilled to ensure that the pipes do not lift-up during the test. The pipes must be disinfected before they can be placed into service (10-States Standards: section 8.7.7; town of Carmel: section 151-4{B}). Where soil conditions are corrosive, encasement of the water mains in polyethylene or cathodic protection must be installed; or the water mains must be corrosion resistant (10-States Standards: section 8.7.8; Linsley & Franzini: Water Resources Engineering, 3<sup>rd</sup> Edition, pg. 308 - 309).

The water mains must be designed such that their final depth will be great enough to prevent freezing (10-States Standards: section 8.7.3). Some texts advocate that the top of the pipe be just

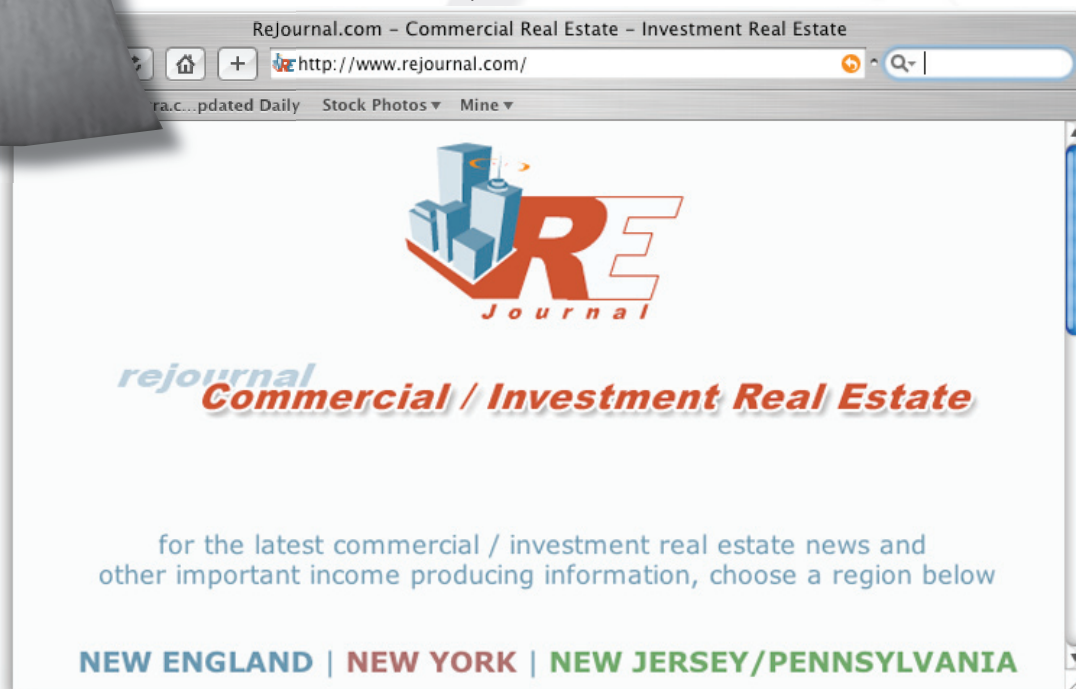
below the maximum known depth of frost penetration (Cast Iron Research Association: Handbook of Cast Iron Pipe (1967), Section 3, pg. 3). Other texts indicate that the "top of all water pipes should be at least 6" below the maximum recorded depth of frost penetration in the area of installation," with the "minimum depth of water mains (being) 5 ft. from the ground surface to the top of the pipe" (HDR Engineering, Inc.: Handbook of Public Water Systems, 2<sup>nd</sup> Edition, 2001 by John Wiley & Sons, pg. 980). The frost depth will vary from place to place and some texts provide charts which show the maximum known depth of frost penetration in different areas of the country (Sowers and Sowers: Introductory Soil Mechanics and Foundations, 3<sup>rd</sup> Edition, 1970 by Macmillan Publishing Co., Inc., pg. 195: figure 4.22).

When water mains are laid, they must be kept certain distances from the sanitary and storm drainage lines. The minimum required separation distance is 10 ft. minimum, measured from the outside of pipe to the outside of pipe (10-States Standards: sections 8.8.2 and 8.8.5). Where the pipes of the water supply system must cross over, or beneath, the pipes of these other systems, the pipes must be separated by an 18" minimum vertical distance (10-State Standards: sections 8.8.3 and 8.8.5). It is helpful if the water distribution system has blow-off valves at its low points. One text indicates that "drain or blow-off valves are necessary at the low points of a pipeline to permit the pipe to be drained for inspection and repair" (Linsley & Franzini: Water Resources Engineering: 3<sup>rd</sup> Edition, pg. 313; Handbook of Cast Iron Pipe: 1979 by McGraw-Hill, Inc., pg. 13). The system should contain a generous amount of shutoff valves. Such valves are "installed in a distribution system to isolate pipe sections for maintenance or to repair a break" (Hammer: Water and Wastewater Technology, 2<sup>nd</sup> Edition, 1986 by John Wiley and Son, Inc., pg. 313). At each point where water mains intersect, each branch coming off of that intersection should have a valve. Values should also be placed along long lengths of pipes and at hydrant branches. Protecting the public is serious business. That is the reason why NYS grants licenses to professional engineers, registered architects, and licensed land surveyors. By ensuring that your site engineer follows these requirements, you can be assured that those who buy into your subdivision will have a water system which will be safe to use for many years to come. It will be easier to maintain and repair, should a mishap develop after the system has been installed and placed into service. So go forth, and subdivide.

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