

313 DRAINAGE

- 1) When the subdivision causes a requirement for drainage improvements outside its area, the subdivider shall be required to secure the necessary approvals and provide such improvements in the public interest.
- 2) Appropriate storm drainage installations, including drains, gutters, manholes, culverts and related installations shall be required, if in the Board's opinion such installations are necessary, to permit the unobstructed flow of all natural water courses, to insure adequate drainage of all low points along streets, and to provide a proper means for stormwater run-off from the streets and area being drained. Sizes, spacing, and materials of drainage installations shall be determined by a registered professional engineer, and shall be subject to the Board's approval.
- 3) New drainage systems shall be properly connected to any existing storm drains in adjacent street, provided indicating that the existing storm drains are capable of accepting the additional loading, or easements which may exist. Where no adequate storm drainage system exists, or where it is inadequate, it shall be the responsibility of the subdivider to extend the system outside the subdivision in such a manner specified or approved by the Board to dispose properly of all the drainage from the proposed subdivision.
- 4) Where the adjacent property is not subdivided, adequate provision shall be made for the extension of the drainage system beyond the boundaries of the subdivision, and for it to carry the additional load that may be placed on the system. This shall be done by providing drains of adequate size and at proper slopes as specified by the boundaries and the proper connection of those of future subdivisions in the adjacent area.
- 5) Storm drains and culverts shall be a minimum of 12" inside diameter, and shall be greater when required by the Board.
- 6) All drainage must comply with the Massachusetts Department of Environmental Protection's stormwater regulations

314 DESIGN ANALYSIS

A design analysis shall be submitted with each definitive plan submitted for approval. The design analysis shall include at least the following information:

- 1) Storm drainage system: The data shall include consideration of the entire watershed and the calculations used in designing the drainage system, including area calculations, intensity of rainfall, coefficient of run-off, time of concentration, discharge, pipe coefficients of roughness and quantity, and velocity of flow under design conditions. Design sketches showing the hydraulic gradient and the energy gradient for each run of drain pipe shall be included.
- 2) Storm drains shall be designed on a basis of ten (10) year storm, and shall be such as to insure a rate of flow of not less than three (3) feet per second, nor more than eight (8) feet per second under design conditions.
- 3) Catch basins shall be located at both sides of roadway not more than three hundred (300) feet apart, and/or, wherever necessary for proper interception of water.

4) Any areas designated as drainage areas shall be tested for adequate percolation.

315 SANITARY SEWERS

1) Sanitary sewers, including all appurtenances, shall be designed to serve as many lots in subdivision as possible, and to provide connection to municipal sewerage system, as approved by the Sewer Supervisor.

2) Sewers shall extend to adjacent undeveloped land, if future continuation into such land is feasible.

3) No portion of sewerage system shall be approved if it requires a connection to municipal system over land of other owners, unless appropriate easements are first obtained.

4) The calculations used in designing the sewerage system, including the method of estimating average flows (including infiltration allowances) not to exceed the rate of one hundred and twenty-five (125) gallons per inch of diameter of pipe per mile of pipe per twenty-four (24) hour period, the peaking factor used, the hydraulic design of the system, including quantity and velocity of flow under both average and peak flow conditions, shall be included.

5) Minimum sewer pipe size shall be eight (8) inches, and sanitary sewers shall be such as to insure the flow of not less than two (2) feet per second, not more than ten (10) feet per second, except that house connections shall be at least six (6) inches in diameter, and shall maintain a minimum slope of 0.01 feet per foot.

6) Manholes shall be no more than three hundred (300) feet apart.

316 WATER SUPPLY

Installation and materials for water main construction shall be in accordance with the Taunton Water Division "Guide to Materials and Installation for Water Main Construction", referred to as TWD standards. These standards are subject to revision from time to time and may be obtained at the Taunton Water Division Office, City Hall, 15 Summer Street.

"Guide to Materials and Installation for Water Main Construction".

1) The minimum main size approved for new construction is 8-inch. Water mains must be installed on the same side of the street for the entire length of the street. The size of the water mains inside of a new development must be able to provide a minimum pressure of 35 psi at the house side of the meter during maximum day demand, as projected for the year 2010. In addition, the water supply system must be designed to provide the Insurance Services Office (ISO) required fire flow while maintaining 20 psi domestic pressure.

2) All lots on streets in which a water main is to be installed shall be provided with an approved service connection at the property line, with the location of said service connection accurately shown on an approved plan.

3) The maximum distance allowed between valves is 1,000 feet. Three valves at each tee and four at each cross must be installed. These gate valves should line up with adjacent property lines.

- 4) The maximum distance between hydrants is 500 feet. Wherever possible, hydrants should be installed on the same side of the street as the water main and should be located on the lot line between adjacent lots and on the property line which defines the front of the lots.
- 5) New water mains shall not be placed into service until all pressure testing and chlorination has been successfully completed and certified results as submitted to the Taunton Water Division must be satisfied that the water main construction has been in accordance with the TWD standards. As built drawings are required, detailing the locations of all water main appurtenances, prior to acceptance of the new water main. These must be submitted to the Water Division Supervisor.
- 6) Only new materials shall be incorporated in the work. All materials furnished by the Constructor shall be subject to the inspection and approval of the Water Division Supervisor.
- 7) Prior to beginning the work, the Contractor shall submit to the Engineer data relating to materials and equipment proposed to be furnished for the work. Such data shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the TWD standards.
- 8) The Contractor shall submit data sufficiently early to permit consideration and approval before materials are necessary for incorporation in the work.
- 9) The City shall have the final approval of all pipe, valves, hydrants and appurtenances, method of installation, and the size and location of all water works material.

The following notices *must be included on the final Definitive Plans:*

1. Prior to beginning the work, the Contractor must notify the Water Division and submit data relating to the materials proposed to be furnished for the work. Construction on the proposed water system shall not begin until specific permission from the Water Superintendent is granted.
2. This plan is subject to final approval by the Taunton Water Division with regards to the size and location of all water mains, valves, hydrants, and services.
3. At the completion of construction and prior to the acceptance, the contractor must submit to the Water Division a set of as-built record drawings. They must show the location of all water mains, valves, hydrants, and services. The developer must also submit stamped professional engineered plans certifying the depth of the new water main.

316.A FIRE PROTECTION REQUIREMENTS

- 1) Water mains shall be extended if any entrance; right of way, easement or property line of the proposed subdivision is within 2,640 feet of an adequate City of Taunton Water Supply.
Note: Some water mains may be very old cast pipes with severe interior diameter restrictions, or other mains such as six (6) inch mains, may not be able to deliver 500 gallons per minute at 20 psi required by the Taunton Fire Department
- 2) Fire Tanks (underground or aboveground) and fire ponds shall not be considered an adequate means of providing adequate fire protection

- 3) All residential units shall be serviced by a water supply that provides a minimum flow in gallons per minute of 500 gallons per minute at 20 psi or current ISO and NFPA standards (whichever is more restrictive)
- 4) All non-residential units shall be serviced by a water supply that provides a minimum flow in gallons per minute that meets current ISO and NFPA standards (whichever is more restrictive)
- 5) All hydrant locations shall be approved by the Fire Department (Article 1000, 1.1. Bldg. Code). Hydrants outlets shall be 18" to 24" above finish grade and no more than 8' from the roadway.
- 6) All hydrants shall be operated and flowed by the Water Department and the Fire Prevention Bureau notified before a Certificate of Compliance is issued by the Fire Department.
- 7) An alternative method of providing adequate fire protection may be permitted by the Board if, as determined by the Fire Chief, the proposed alternative fire protection is sufficient.

Note: The Taunton Water Distribution System is designed to meet or exceed American Water Works Association Standards for domestic and fire protection and any proposed alternative method of providing fire protection including hydrants, booster pumps, gate valves, pipes or water storage tanks which are not physically connected to the Taunton Water Distribution System shall not at any time become the responsibility of the Taunton Water Division. Any alternative method for fire protection due to liability reasons alone should be denied.

317 BANK GRAVEL

Bank Gravel shall consist of inert material that is hard, durable stone and coarse sand fill free from loam and clay, and having no stones larger than six (6) inches. The grading of material shall conform to the following:

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| Passing ½ inch sieve | 50 | 85% Maximum |
| Passing No. 4 sieve | 40 | 75% Maximum |
| Passing No. 40 sieve | 10 | 35% Maximum |
| Passing No.200 sieve | 0 | 10% Maximum |

318 SELECT GRAVEL

Material - Select Gravel base course material shall consist of approved, hard, durable stone and course sand, bankrun or blended, practically free from loam and clay, uniformly graded, and containing no stone having any dimension greater than 1 ½ inches. When spread and rolled, it shall form a firm foundation. The grading of the material shall conform to the following requirements:

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| Passing 3/8 inch sieve | 70% Maximum |
| Passing No. 10 sieve | 50% Maximum |
| Passing No. 200 sieve | 5% Maximum |

319 FLOOD HAZARD AREA REQUIRMENTS

All subdivision plans and other proposed new developments subject to Planning Board review and/or approval shall be reviewed to determine whether such proposals will be reasonably safe from flooding. If any part of the proposed subdivision or other development is located within the 100 year floodplain or the special flood hazard district established under the Taunton Zoning Ordinance, it shall be further reviewed to assure that:

- 1) The proposal is designed consistent with the need to minimize flood damage;

- 2) All public utilities and services such as sewer, gas, electrical, and water systems shall be located and constructed to eliminate or minimize flood damage;
- 3) Adequate drainage system will be provided to reduce exposure to flood hazards;
- 4) Base flood elevation (100 year floor level) data is provided for that portion within the floodplain or special flood hazard district.