

## **ARTICLE 6: CONSTRUCTION STANDARDS**

### **SECTION 6.00      APPLICABILITY**

- A. All subdivision construction shall conform to the standards and requirements noted herein. Failure to comply with these standards, without the benefit of a waiver granted by the Board pursuant to Section 4.00 of these regulations, shall be a reason to consider one of the following: the use of the performance guarantee to correctly complete the work, a return of released lots to a covenant or the rescission of the approval of the definitive plan.
- B. Construction standards not specifically addressed herein, shall comply with the standards set forth in the most recent edition of the "State Specs".
- C. A Street Opening Permit must be obtained prior to the cutting in of any new roads. An excavator licensed with the Foxborough Highway Department must obtain this Street Opening Permit prior to any excavation work occurring on the site.

### **SECTION 6.01      EXCAVATION FOR STREET AND UTILITIES**

- A. All unsuitable material such as; topsoil, spongy soil, clay, tree stumps, or other unsuitable material, shall be removed from the full width of the street plus two (2) feet on both sides. All ledge encountered shall be removed and sloped as shown in Appendix B. Ledge or stone greater than 12 inches largest dimension shall not be allowed within 24 inches of the finished grade within the width of the paved street or sidewalk.
- B. Pipe trenches for drainage lines, water mains, of other utilities shall be excavated after the street is brought to subgrade and before the installation of the gravel base (See Appendix B for locations). All drainage shall be installed in the presence of the Board or its Inspector.
- C. Utility trenches in rock or ledge shall be of sufficient width and depth to provide a minimum of six (6) inches of gravel below and on both sides of the pipe. They shall be backfilled and compacted by methods acceptable by the Board or its Inspector.
- D. Low spots shall be filled with suitable material capable of compaction and drainage and the entire street width plus two (2) feet on both sides shall be rolled to form the true subgrade with the proper crown. Clay or other unsuitable materials, as referred to in paragraph A. above, shall not be used.
- E. The Board may require that calcium chloride be used for dust control when necessary.
- F. All blasting shall be completed per the requirements of the Fire Department. The Board or Fire Chief reserves the right to require the developer or its agents to perform a pre-blast survey of structures within the vicinity of the blast site.
- G. Best Management Practices in conformance with the State of Massachusetts Department of Environmental Protection Storm Water Management Handbook Volume 1 & 2 shall be used to prevent the tracking of dirt and other debris onto existing roadways.

## **SECTION 6.02 ROAD BASE AND PAVING REQUIREMENTS**

- A. Before the roadway base is spread, the subgrade shall be shaped and rolled to a true surface and approved by the Board or its Inspector. All rolling shall be done with a roller of not less than ten (10) tons.

The roadway base shall consist of two layers of material and shall conform in type, quality and manner of grading, rolling, and finishing to standards as noted in the State Specs. Roadway base shall consist of eight inches of gravel borrow, (stones three inches largest dimension, M1.03.0 Type b), and four inches of dense graded crushed stone (M2.01.7). In non-residential subdivision streets, roadway base shall be twelve inches of gravel borrow and four inches of processed or crusher run gravel (See Appendix B). *(adopted 1/6/06)*

B. Paving -

1. The bituminous concrete shall be installed in two courses on the prepared processed of crusher-run gravel base. The first course shall have a minimum compacted thickness of two and one half inches. In non-residential subdivision streets, this shall be increased to three and one half inches.
2. The road shall be swept and a tack coat shall be applied by a mechanical sprayer prior to the installation of the top course of asphalt. *(adopted 1/6/06)*
3. The top course, or wearing course, shall have a minimum compacted thickness of one and one half inches. All materials and construction shall conform to State specifications.
4. No subdivision street or sidewalk shall be paved from November 1st through April 1st of each calendar year.
5. All bituminous concrete shall be applied using paving machines which are designed for street paving. They shall be to the satisfaction of the Board or its Inspector.
6. The Board shall be notified of all construction work 48 hours prior to commencement at (508) 543-1250 or facsimile at (508)-543-1235.
7. Once the base course of asphalt is installed the roadway and/or cul-de-sac areas shall not be used for the storing or processing of materials. Roads and cul-de-sacs shall be kept clear to allow the free flow of vehicles and emergency vehicles.
8. The top course shall be installed after the driveways are finished so that they are properly graded and curbing adjustments are corrected. If a lot is undeveloped when the top course is installed, the applicant shall curb the frontage of the lot until such time as the lot owner obtains a Street Opening Permit from the Foxborough Highway Department.
9. Street Opening Permits from the Foxborough Highway Department are required for any work on ALL streets (accepted or not) after the top course of pavement is installed.

## **SECTION 6.03 SIDEWALK & DRIVEWAY APRON PAVING REQUIREMENTS**

- A. All topsoil shall be removed from the full width of the sidewalk to the subgrade eleven and one half (11 ½”) inches below the finish grade. All undesirable material below the subgrade shall be replaced with an acceptable binding material and rolled. *(adopted 1/6/06)*

- B. The gravel base shall consist of eight inch gravel borrow (stones three inch largest dimension, M1.03.0, Type b). *(adopted 1/6/06)*
- C. The prepared areas shall be paved with three and one half inches of bituminous concrete applied in two courses and rolled. The first base course shall be two inches thick while the top coat shall be one and one half inch.
- D. The sidewalk shall be installed after the driveways are finished so that it is properly graded.

**SECTION 6.04      STORM DRAINAGE SYSTEMS** *(changes adopted 1/6/06)*

- A. This work shall consist of all excavating and backfilling operations for the construction of detention/retention facilities, pre-treatment marshes, manholes, the installation and jointing of all pipe and waterproofing, and the backfilling of all other storm sewer structures other than pipe; such as catch basins, manholes and culverts.
  - 1. Retention/detention facilities or pre-treatment marshes shall be completed prior to receiving storm water flows from the drainage system. The intent is to ensure satisfactory vegetation growth and proper functioning of the facility and to provide for storm-water storage during construction.
  - 2. Unsuitable material encountered at the bottom of trenches shall be removed as directed by the Board or its Inspector.
  - 3. All swales shall be fully stabilized prior to an occupancy permit being issued for any structure. The Board may require that grass swales be sodded.
- B. Structures -
  - 1. Catch basins or leaching catch basins shall be constructed of pre-cast concrete sections. (See Appendix B).
    - a. Granite gutter inlets and transition curbs shall be provided at all catch basins located along curbs.
  - 2. All catch basins shall be designed to accommodate the “Snout” oil/water separator manufactured by Best Management Products, Inc. or a comparable product approved by the Board. If a catch basin design cannot accommodate this “snout” oil/water separator than an oil/grease trap shall be installed as shown in Appendix B.
    - a. Oil/water separators shall be installed in accordance with the manufactures specifications or if oil/grease traps are installed as specified by Appendix B they shall be fully mortared into place.
  - 3. Mortar shall be composed of Portland cement and sand, with sufficient water to form a workable mixture. The volume of sand shall not exceed three times the volume of cement. Cement and sand shall conform to the requirements of ASTM Designations C150, Type II, and C144.
  - 4. Pre-cast sections, where used, shall be set so as to be vertical and in true alignment, and all joints shall be sealed with "O" ring gaskets or butyl rubber based sealant.
    - a. Frames shall be set in full mortar beds true to the lines and grades. All voids beneath the bottom flange shall be completely filled to make a watertight fit. A ring of mortar at least 1 inch thick shall be placed around the outside of the bottom flange extending to the outer edge of the masonry all around the circumference.
    - b. All castings shall be set level with the binder pavement. This is to provide for drainage during construction and to allow snowplows to operate without being damaged.

- c. Catch basin frames and grates shall be LeBarron foundry Type LF 248-2 or equal.
  5. Manhole Structures shall be of standard pre-cast concrete. Steps shall be provided (See Appendix B).
    - a. Pre-cast manhole sections shall be set so as to be vertical and in true alignment.
    - b. The inverts of pre-cast manholes shall be shaped with brick and mortar and/or cement concrete to provide channels conforming to the details attached hereto.
    - c. Castings shall be placed in accordance with the requirements specified above under catch basins.
    - d. Adjustments of frame and cover of pre-cast manholes to the lines and grades shall be made with brick and mortar as required.
    - e. Manhole frames and covers shall be equal to LeBarron Foundry Type LK 110-A with the word, "DRAIN" cast in three inch letters and shall have a minimum 24 inch clear opening.
    - f. All drainage structures shall have cement collars installed (see Appendix B) prior to the installation of the wearing course of pavement. If the wearing course is not installed prior to the winter, all drainage structures shall be at the grade of the base course of asphalt.
  6. All storm sewer pipe within roadway areas shall be reinforced concrete pipe. There shall be a minimum cover of thirty-six (36) inches over all pipe. Pipe for storm drains in trenches and as drop connections at manholes shall be installed in accordance with Appendix B and the following:
    - a. The ends of reinforced concrete pipe sections shall be of such design that when properly laid, they shall have a smooth and uniform interior surface. Each joint shall be sealed with "O" ring gaskets to prevent leakage and infiltration.
    - b. Laying and jointing operations shall be performed in accordance with state specs. Whenever the work ceases for any reason, the end of the pipe shall be securely closed with a tight fitting plug or cover.
    - c. Necessary facilities shall be provided for lowering and properly placing the section of pipe in the trench. The pipe shall be laid to the lines and grades established and the sections closely jointed. All pipe shall be laid upgrade.
    - d. A construction laser or combination of transit and stringline shall be employed during installation.
    - e. Protective grating or screening shall be installed over or within all exposed pipe openings to prevent access.
  7. Crushed stone bedding shall be placed beneath all drainage structures and shall be used to replace all overdepth excavation performed in storm sewer and water trenches (see Appendix B). Crushed stone shall be clean and free from decomposed materials, vegetable matter and other deleterious substances.
    - a. The bedding shall consist of six inches of three quarter inch crushed stone (Mass. Highway Material Specification M2.01.4) installed below the pipe barrel and extended  $\frac{1}{4}$  of the pipe diameter above the bedding; and shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the pipe; and shall be placed in accordance with these regulations.
  8. No storm sewer structure including pipe shall be backfilled until inspected by the Board or its Inspector. Backfill shall be placed around and above the drain pipe to a height of twelve inches.
    - a. In general, backfill shall consist of suitable material from the excavation, substantially free of clay, roots, loam or other organic matter. Frozen material and asphalt shall not be allowed in the backfill nor stones greater than three (3) inches largest dimension. When the material from excavation is unsuitable

for use as backfill, it shall be disposed of and gravel borrow shall be furnished for the backfill.

- b. Backfill material shall not exceed three inches in greatest diameter and shall be placed in horizontal, uniform layers not exceeding twelve inches in thickness before compaction. It shall be brought up uniformly on all sides of the pipe to a height of twelve inches above the top of the pipe. Each layer of backfill shall be compacted to a relative compaction of not less than 90 percent, as determined by AASHTO Test Designation T-99, Method C.
  - c. Compaction equipment or methods that produce horizontal or vertical earth pressures which may cause excessive displacement or any damage to the structure shall not be used.
  - d. Compaction of structure backfill by jetting will be permitted by the Board or its Inspector when; the backfill material is of such character that it will be self-draining when compacted, foundation materials will not soften or be otherwise damaged by the applied water, and no damage from hydrostatic pressure will result to the structure. The jetting shall be performed in such a manner that water will not be impounded. Jetting methods shall be approved by the Board or its Inspector and may be supplemented by the use of vibratory or other compaction equipment when necessary to obtain the required compaction. Water used for jetting shall be furnished or paid for by the developer.
9. Basin Outlet Structures -
- a. Basin outlet structures, where required, shall be precast concrete to dimensions meeting design requirements.
  - b. Structures shall either have:
    1. Covers set flush with the top of the structure and shall have a hinged clear access opening 24" x 24" with a hasp and lock. This grating shall be designed for a uniform load of 100 pounds per square foot, shall be supported on angle frame with fasteners and shall be aluminum or light duty steel that is hot dipped galvanized after fabrication.
      - a. Aluminum: grating ASTM-B221, Angle Frames 6063-T6.
      - b. Light Duty Steel: grating ASTM-A1011 and ASTM-A510, angle frame ASTM-A36
    - Or
    2. Covers shall have a Type S cast iron frame(s) with a 24" diameter clear opening and flat grate(s) installed flush with the top of the structure at time of manufacture.

## **SECTION 6.05 LOAM AND SEEDING**

- A. The developer shall maintain clean haul vehicles to insure against depositing loam on any public ways. Loam or dirt spilled upon public ways shall be removed promptly and thoroughly before it becomes compacted by traffic.
- B. Any existing vegetation on areas to be loamed shall be cut to a maximum height of two inches prior to loam spreading. After the loam has been spread, it shall be carefully raked, with all large lumps, stones, brush, roots, stumps, litter and other foreign materials being removed and satisfactorily disposed of.
- C. The developer shall not commence seeding operations from October 1st through April 15th of each calendar year.
  1. All grass seed mixtures shall conform to the state specs and shall be of a variety approved by the Board.

2. All areas which fail to show a uniform stand of grass shall be re-seeded until all areas are covered with a satisfactory growth of grass.
3. The developer shall care for all of the seeded areas until conveyance, or until release from the terms of the agreement between the developer and the Board. Care shall include any watering, re-grading, re-fertilizing, re-seeding or mowing as required.