



# 1 General

## 1.1 Preamble

- A. These Construction Standards are hereby established by the City of Framingham Department of Public Works (DPW). Their purpose is to provide a consistent policy under which the controlling requirements for construction of physical aspects of infrastructure system improvements within the City limits will be implemented. These aspects include streets, sidewalks, street lighting, storm drains, water supply and distribution, and sewer lines.
- B. These Design and Construction Standards and Construction Details are herein after referred to as the Standards. The Design and Construction Standards are provided as minimum requirements for performing work relative to the City of Framingham's infrastructure systems. The Construction Details are provided to graphically depict and to help illustrate key elements outlined within the written portion of these Standards.
- C. Most of the elements contained in this document are related to public improvements and City of Framingham contract projects; however, it is intended that they apply to both public and private work designated herein. For private work that does not fall within the regulatory jurisdiction of City ordinances or regulations, DPW strongly recommends that these standards be used as a basis for construction. These Standards address the more typical infrastructure components. Accordingly, these Standards are intended to assist but not to substitute for competent work by design professionals by providing basic information. It is expected that engineers will bring to each project the best of skills from their respective disciplines, and design professionals shall contact the DPW for clarification and direction regarding designs not covered by these Standards.
- D. These Standards are also not intended to unreasonably limit any innovative or creative effort which could result in better quality, cost savings, or both. However, any proposed departure from the Standards will be judged on the likelihood that such variance will produce a long-term compensating or comparable result, in every way adequate for the user and City resident. Any variances from these Standards must be approved by the DPW. Further, these Standards are not intended to restrict the DPW in its effort to obtain the maximum benefits for the City in any construction project.
- E. These Standards are supplemented by regulations and fee structures. Reference to the pertinent regulations and fee structures is provided within each section of this document. In some cases, the regulations, fee structures, and forms are provided as Appendices to these Standards.

## 1.2 Regulatory Framework

- A. These Standards are provided to outline the DPW minimum criteria for construction of infrastructure within City limits. It is the responsibility of the property owner to verify and obtain all applicable permits.
- B. These standards are supplemental to the standards in the *City of Framingham Zoning By-Law* regulations and the *Rules and Regulations Governing the Subdivision of Land in Framingham*. Please refer to these documents for design requirements.
- C. All work shall conform to the current versions of the City of Framingham Water and Sewer regulations.
- D. All construction materials and methods shall conform to the requirements contained in the latest version of the Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges as amended, unless otherwise specified herein or approved by the City of Framingham DPW.



- E. DIG SAFE shall be contacted to determine the location of all existing underground utilities prior to any excavation. Call the Framingham Fire Department to mark out their lines.

### **1.3 Plan Review**

- A. No person shall uncover, excavate over, block access to, make any connection with or opening into, alter, or disturb the City's water, wastewater, stormwater, or roadway system without prior authorization from the DPW.
- B. Proposed construction must be approved by the DPW. The approval must be by the City Engineer, or designee. Proposed work shall be submitted as an Engineering Plan stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. The DPW will provide the Applicant or Contractor with written correspondence indicating approval of the plan, or required changes. See Appendix A for Plan content requirements.
- C. In addition to plan review approval, it is the responsibility of the property owner to verify and obtain all written permits from appropriate agencies and pay all permit fees before construction begins.
- D. DPW Inspector of Construction and Utilities may approve field changes, or allowances, that differ from submitted plans or City standards. No changes are allowed without prior approval by the Inspector and operations manager of the appropriate Division.

### **1.4 Submittals**

- A. The Owner/Contractor shall be required to submit the following to the City's Engineering Department.

#### **1.4.1 Materials List and Shop Drawings**

- A. Materials list of materials proposed shall be submitted to the City.
- B. Approved shop drawings for all materials and structures shall be submitted to the City.

#### **1.4.2 Bypass and Testing Plans**

- A. Plans for chlorination, dechlorination, pressure test, and water bypass construction shall be submitted to and approved by the City.
- B. All testing shall be performed by a qualified third party approved by the City.
- C. All testing must be in conformance to a written plan submitted to, and approved by, the City. Results of testing and inspections shall be submitted to the City.

#### **1.4.3 Temporary Water or Sewer Bypass Plans**

- A. Temporary Bypass Plans shall be prepared by a registered professional engineer and submitted to DPW for review and approval prior to installation.
- B. Bypass plans shall include a proposed schedule for installing, testing, disinfecting, operating, restoring flows to normal conditions, and removing the temporary bypass.
- C. Plans shall include details of the materials, size, and location of temporary facilities including piping layout, bypass pumps, bypass mains, valves, connections, laterals, services, fire hydrants, upstream suction manhole and downstream discharge manhole locations.
- D. Plans shall include sewer plugging location(s) and method, type, and quantity of plugs.



- E. Temporary stone sump systems are not allowed as a temporary wastewater disposal method for service connection flows
- F. Calculations of flow rate, static head, friction losses, total dynamic head, flow velocity, and pump curves indicating operating range shall be submitted with plans
- G. Plans shall include primary and backup bypass pump sizes, capacity, and number to be on site, power requirements, and power supply.
- H. Method of noise control for pumps and generators shall be submitted with plans.
- I. All plans shall include provision of twenty-four/seven contact information for operation and maintenance of the bypass system.

#### **1.4.4 Erosion and Sediment Control Plans**

- A. The Erosion and Sediment Control Plan shall be designed to ensure compliance with these standards and the NPDES General Permit for Storm Water Discharges from Construction Activities. In addition, the plan shall ensure that the Massachusetts Surface Water Quality Standards (314 CMR 4.00) are met in all seasons.
- B. If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges from Construction Activities, then the permittee is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter) to the Conservation Commission. If the SWPPP meets the requirements of the NPDES General Permit, it will be considered equivalent to the Erosion and Sediment Control Plan described in this section. The SWPPP shall be made available to the DPW, if requested.

#### **1.4.5 Traffic Management Plans**

- A. The DPW requires that a traffic management plan be prepared and submitted for review and approval. All traffic management plans shall be approved by the Engineering Division before construction may begin. Contractor shall be responsible for all traffic management for the construction work zone.
- B. The plan shall show the routing of traffic during construction. The plan shall show the area and dimensions of the roadway pavement available for traffic during each stage of the work. The plan shall include all temporary barriers, signs, pavement markings, drums and other traffic control devices required to maintain traffic together with the limits of temporary pavement and necessary steel plates.
- C. Traffic management plans shall meet the requirements and guidance set forth in the MassDOT Work Zone Safety Guidelines, the ATSSA Guide to Temporary Traffic Control, the MUTCD guidelines, and all federal and state regulations.
- D. Contractor shall be responsible for all traffic management for the construction work zone.

#### **1.4.6 Long-term Operation and Maintenance Plans**

- A. A long-term operation and maintenance plan (O&M Plan) shall be designed to ensure compliance with performance standards throughout the life of the system(s).
- B. The O&M Plan shall remain on file with the City and shall be an ongoing requirement. The City may require that a covenant referencing the O&M plan be recorded at the Middlesex Registry of Deeds for the record deed of the parcel in which work is approved.
- C. Operation and maintenance records shall be made available to the DPW, if requested.



### 1.4.7 Easements

- A. The Developer shall process and record permanent easements.
- B. Easements for Water, Sewer, or Drainage on or across lots or centered on rear lot lines or side lines shall be provided where necessary and shall be at least 30 feet wide. Major easements (i.e., over three hundred feet (300 feet) long) for sewer, water and drainage must be at least forty 40 feet wide. Easements for infrastructure over 15 feet deep must be at least forty 40 feet wide.
- C. Where a subdivision is traversed by a water course, drainage way, channel, or stream, the DPW may require a stormwater easement or drainage right of way be provided of adequate width to conform substantially to the lines of such water course, drainage way, channel, or stream and the necessary width for access.
- D. Easements for street lighting facilities located on private property shall be sufficient in size to allow for City forces to access and maintain these facilities in the future.
- E. Signed copies of easements and agreements affecting land not within a subdivision, but necessary for provision of utilities shall be submitted to the DPW before a plan can be approved.

### 1.4.8 As-built Drawings

- A. The Contractor shall be responsible for the preparation and submittal of one (1) copy of As-Built Drawings to the DPW upon completion and acceptance of work, as well as an electronic version of the drawings in both AutoCAD and Acrobat (PDF) format. Contact the DPW to determine the current acceptable electronic format.
- B. Record drawings shall be a full set of drawings showing all details of the construction, along with any specifications or design reports. As-Built Drawings shall be complete and shall indicate the true measurement and location, horizontal and vertical, of all new construction. This plan shall include all drain lines and structures with rim and invert elevations; all water lines, gates and dwelling service shut offs; all sewer lines and structures with rim and invert elevations; all service wyes with distances to the nearest structures and all relevant easements. As-Built Drawings shall include a minimum of three (3) ties to each valve cover and curb stop from fixed permanent objects. Three (3) ties shall also be provided for each bend or other unanticipated field change. As-Built drawings shall also contain any additional information required by the municipality. See Appendix A for complete list of As-built Plan content requirements.
- C. Record drawings and reports shall be certified (signed and stamped) true and correct by a Professional Engineer registered in the Commonwealth of Massachusetts and/or Professional Land Surveyor registered in the Commonwealth of Massachusetts, as applicable.
- D. As-Built Drawings shall be filed or stored on property and available for use by DPW for all commercial, industrial, and institutional properties and large residential properties, such as apartment or condominium complexes and assisted or congregate living facilities.
- E. Certificates of Occupancy will not be signed by DPW until payments of the required fees are confirmed and a final site inspection is concluded to validate completeness and accuracy of the submitted as-built plan documents. The DPW requires a minimum of five business days following the delivery of as-built documents package (turnaround time subject to document package completeness) to provide Occupancy Certificate Sign-off.

## 1.5 Inspections

- A. All work shall be inspected by the City's Inspector of Construction and Utilities or designated representative. The City of Framingham DPW and Engineering Department shall be notified 48 hours in advance of any roadway or municipal service construction.



- B. Boring or test pits may be required, as determined by the DPW. These shall show soil strata and high ground water elevations. Drought conditions shall be noted.
- C. Inspections by the City's Inspector of Construction and Utilities or designated representative are required at the following milestones before proceeding with work:
  - 1. Prior to backfill. Backfilling shall not occur without DPW approval.
  - 2. Prior to laying hot mix asphalt.
  - 3. Disinfection Testing
  - 4. Tightness Testing
- D. Inspection of materials shall be made after delivery. Materials shall be subject to rejection at any time on account of failure to meet any of the specification requirements, even though samples may have been accepted as satisfactory at the place of manufacture.
- E. All materials shall be inspected before placement in the work and any found to be defective from any cause, including damage caused by handling, and determined by the City to be unreparable, shall be replaced at no cost to the City.
- F. All televised inspections or other third party inspections results shall be provided to the City, in digital format.
- G. Completed inspections do not constitute acceptance of the utilities by the City of Framingham.

## **1.6 Other Requirements**

### **1.6.1 Brand Name or Equal**

- A. If an item in these Standards is identified as "brand name or an approved equal," the product will reflect the characteristics and level of quality that will satisfy the City's needs. The City will evaluate "equal" products on the basis of information furnished by the Applicant or Contractor. All "or Equal" submissions must be approved during the Plan review process and will be judged consistent with MGL 30 §39M. All technical information submitted must be as provided by the manufacturer. The City is not responsible for locating or obtaining any information not identified.

### **1.6.2 Protection of Private Utilities**

- A. Electric, telephone, cable television and fire alarm cables and ducts shall be placed in the grass strip or sidewalk outside of the traveled way, on the opposite side of the centerline of the street as the water main.
- B. The Contractor shall protect all utilities and appurtenances from any and all damage during construction. Any damage to utilities and appurtenances prior to acceptance by the City shall be repaired in a manner satisfactory to the DPW and the full cost of such repair shall be paid by the Owner. Any material used which does not meet the standards of the DPW shall be replaced by the Owner at no cost to the City.

### **1.6.3 Construction Site Maintenance**

- A. At the completion of each working day, all areas affected by work shall be brought to a reasonably clean, safe, and usable condition as determined by the City or its designee.



## 1.6.4 Waste Management

- A. Disposal of demolition debris, removed pavement, concrete, soil, or other construction materials shall comply with all local, state and federal laws and guidelines. Construction sites must have controls for other wastes including, but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes.
- B. If either asbestos cement pipe (ACP) or asbestos containing material (ACM) in soil is encountered, notification shall be immediately provided to the DPW Engineering and Transportation Division.
  - 1. Handling of any ACP or ACM shall be according to federal and state regulations, specifically but not limited to EPA's *National Emission Standards for Hazardous Air Pollutants* (NESHAP) Title 40, Part 61; EPA's *Guide to Respiratory Protection for the Asbestos Abatement Industry* OSHA 29 CFR part 1926.1101; OSHA 29 CFR 1010.1001; USDOT 49 CFR 100-185; Massachusetts Division of Labor Standards 453 CMR 6; MassDEP 310 CMR 7.00, 7.09, 7.15; and MassDEP *Asbestos Cement Pipe Guidance Document*.
  - 2. Handling, management, storage and disposal of any ACP or ACM generated from a City right-of-way or easement shall comply with Framingham's Standard Operating Procedures for ACM.
  - 3. Any connection to a public main of asbestos cement material type shall require coordination with DPW staff. For any City-owned pipe, DPW will remove and dispose of asbestos material.
  - 4. The U.S. EPA determined that "the pumping of grout into buried lines is not a process which, in and of itself, would cause asbestos cement pipe to become regulated asbestos containing material" (guidance letter dated July 17, 1991, Identified as Control # C99 within the Agency Applicability Determination Index). Therefore when abandoning asbestos cement pipe, care shall be used to prevent pipe material from becoming friable, thereby rendering it as regulated asbestos containing material.
  - 5. No ACP or ACM shall be abandoned or stored in the City right-of-way.

## 1.7 Items Not Covered in This Document

- A. Items not covered in this document include the following:
  - 1. Complex and specialty items such as bridges, culverts, siphons, pump stations, proprietary products, and backflow prevention. Plans for these items are to be provided for individual review by the DPW.
  - 2. Street Opening Permit (SOP) requirements for any facility installation that may occur within the City Right or Way limits. For SOP policy details please refer to City of Framingham Web site link as follows: [http://www.framinghamma.gov/public\\_works/sop/default.htm](http://www.framinghamma.gov/public_works/sop/default.htm).
  - 3. Trench Opening Permit (TOP) requirements for any excavation that meets the definition of a trench as per MGL Chapter 82A Unattended Open Trenches Safety Hazards Rules, Regulations and Fines, and regulated under 520 CMR 14.00 Excavation and Trench Safety Regulations.
  - 4. Water and Wastewater Regulations, the current edition is available at <http://https://www.framinghamma.gov/>.