

**MAJOR PRE-CONSTRUCTION ITEM LIST
FOR PROJECTS INVOLVING
THE PUBLIC SERVICES DEPARTMENT -ENGINEERING DIVISION**

The following is a list of certain major, highlighted items which are described in detail in the Public Services Department Standard Specifications; these items relate to construction within the City of Ann Arbor involving the Public Services Department - Engineering Division. This list is not intended to be all inclusive, and receipt of this list does not relieve any party from any requirements, responsibilities or other obligations specified in the Standard Specifications, or General Conditions of any City Contract Documents, that are not included in this list.

GENERAL

1. All necessary permits must be obtained and all required easement and right-of-way dedications granted prior to construction. (See **Division I, Section 1D. Permits**, and **Division II, Section 1C. Easements**).
2. All work is to be inspected as required by the Standard Specifications. (See **Division I, Section 1E. Inspections and City Departments Involvement**).
3. The Contractors shall abide by the State of Michigan Miss-Dig Law. Miss-Dig is to be notified (1-800-482-7171) at least three working days (not calendar days) prior to excavation. (See **Division I, Section 1H. Work in Right-of-Way**).
4. The Contractor shall provide the Engineering Division with a minimum of two working days notice prior to the start of any construction activity, including mobilization, material delivery, etc.. Once construction begins, it is the Contractor's responsibility to schedule further work with the Engineering Technician on a daily basis. If no work is performed for more than two consecutive working days, two working days notice is again required prior to restarting the work. If work is proposed to take place on a Saturday, Engineering shall be notified at least 48 hours but no more than five days in advance of the proposed work.

For Private Development Projects, if the Contractor schedules an inspection but does not arrive on-site as scheduled, and has not cancelled the inspection by contacting Engineering, the Contractor will be charged a "no-show fee" for each occurrence. (See **Division I, Section 1E. Inspections and City Department Involvement - The Engineering Division**).

5. The Contractor shall provide the Engineering Division with a minimum of one full working days notice prior to receipt of materials at the site. Engineering shall also be notified by the Contractor when any materials have arrived at the site. All pipe is to be stored off of the ground surface, and stacked neatly. The ends of all water main pipe shall be immediately covered by approved means to prevent the intrusion of animals or debris into the pipe. All pipe, fittings and other materials are to be accompanied by the manufacturer's certificate of test verifying that they conform to the Standard Specifications. (See **Division I, Section 1J. Material Delivery and Handling**, and **Section 2G. Certification**, and **Division IV, Section 1B. Material Handling**).
6. For each day of work, the Engineering Technician will document all work performed that day on a City of Ann Arbor Daily Inspection Report form. The Contractor is to review and sign the report. The Contractor shall receive a copy of the report. (See **Division I, Section 1BB. Daily Reports**).
7. Sieve and proctor analyses shall be performed on all granular material and dense-graded aggregates prior to their introduction to the site. The results of these analyses shall be forwarded to the Engineering Division prior to the commencement of construction. Additional sieve and analyses will be required whenever, in the opinion of the Engineering Technician, the character of the material differs from that previously tested and approved. Copies of all testing reports which relate to the construction shall be submitted to Engineering. (See **Division I, Section 2B. Basis for Acceptance or Rejection of Materials**).
8. Cut sheets for all proposed utility construction which is to be inspected by the Engineering Division must be approved by Engineering prior to construction. Construction will be allowed only for the portions of the proposed work for which cut sheets have been approved.

A minimum of one full working day is required for the review and approval of the cut sheets. Should any portion of the construction staking become damaged, buried, or in any other way become unusable, the Contractor's construction activities shall be halted until the staking has been reestablished by the Engineer. (See **Division I, Section 1Q. Elevations, Lines and Grades**).

9. The Contractor shall maintain local vehicular and pedestrian traffic and access to all properties, private drives, etc.. Traffic control shall meet or exceed all MDOT minimum requirements, and be in accordance with Part VI of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), 1981 revised edition. (See **Division I, Section 1I. Traffic and Pedestrian Control and Access**).

10. All water mains and fire hydrants must be preliminarily accepted and placed into service, and a hard-surfaced road must be in place (for emergency vehicle access to the site) prior to the placement of any combustible materials on the site. (See **Division II, Section 5D. Hydrants**).

UTILITIES

General

1. Pavement shall be cut by a tool leaving a square, neat cut. The pavement shall be cut back so that the pavement opening is twelve inches wider on each side than the width of the trench. All pavement cuts shall be perpendicular to, or parallel with the pavement centerline. For final patches, the existing pavement shall be removed to provide for a replacement of not less than one foot wider and longer than the utility trench on each side. If this removal will result in existing pavement of less than five feet wide from the patch to either a lane line, gutter (edge-of-metal), or another existing patch, this existing pavement shall also be removed to that lane line, gutter (edge-of-metal), or existing patch. (See **Division IV, Section 1C. Pavement Removal**, and **Division V, Section 2A. Bituminous Pavement Removal**).
2. No more than 50 feet of trench shall be open at one time in advance of the pipe laying. At no time shall more than 200 feet of trench be opened and incompletely backfilled. At the end of each day, no more than 25 feet of trench may be left open, and access to all drives shall be restored. Any trench to be left open and unattended shall either be surrounded by approved fencing and lighted barricades, or shall be properly plated. (See **Division IV, Section 1D. Excavation - Trench Opening**).
3. At times when pipe laying is not in progress, the open ends of the pipe shall be sealed by a watertight plug. This provision shall apply during the noon hours as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry. (See **Division IV, Section 1E. Laying Pipe**).
4. All utilities are to be bedded and backfilled in accordance with the Standard Specifications. It is strongly recommended that on Private Development Projects, all trenches under or within the one-on-one influence of private drives and parking areas be backfilled from one foot above the top of the utility to the pavement subgrade with Class II granular material. This will be required by the Engineering Division unless a written waiver from this requirement is received from the Owner or Developer accepting responsibility for any future settlement in, or adjacent to, the trench areas. (See

Division IV, Section 1G. Backfilling).

5. The Engineering Division shall be notified prior to the final paving of all private roads and parking lots over City utilities so as to allow inspection of the final casting adjustments for all City utility structures. (See **Division IV, Section 1H. Manholes, Inlets, Gate Wells and Structures**).

Sewer Construction

1. New sewer construction shall be plugged at all downstream outlets, so as to not be connected to the existing system until it has been tested and accepted. (See **Division IV, Section 1E. Laying Pipe**).
2. Whenever service lead pipes are to be connected to sewer mains of differing material, the connection shall be made using an adaptor. This adaptor shall be a style "CB" gasketed sewer saddle manufactured by Romac Industries, Inc. or approved equal, or a flexible neoprene rubber boot. Service connections with riser pipes are to be made with tee fittings, not wye fittings. (See **Division III, Sewer Service Leads, Risers and Fittings**, and **Division IV, Section 2D. Service Lead Connections and Fittings**).
3. All sewers must pass television inspection. All sanitary sewers, including leads, 36 inches and smaller in diameter must pass air testing. All sanitary sewers greater than 36 inches in diameter must pass infiltration or exfiltration testing. All PVC and HDP sewers must pass mandrel testing, which shall be performed at least 30 days after the installation and backfill of the sewer pipe. The Contractor shall provide the necessary labor, equipment and materials necessary to complete this testing to the satisfaction of Engineering. (See **Division IV, Section 2H. Sewer Testing**).

Water Main Construction

1. For any water main shutdown, residential customers must receive a minimum of 24 hours notice prior to the shutdown, and all other customers must receive a minimum of two full working days notice. Therefore, the Engineering Division must receive a minimum of three working days notice prior to the shutdown. No water main shutdown will take place after 12:00 noon. No water main will be shutdown until the main has been exposed and cleaned, and is ready to be cut. The Contractor shall have all pipe, fittings and appurtenances required to complete the water main connection on-site prior to the excavation for the connection, or the work will not be allowed to commence. City personnel shall locate and operate, or direct the operation of, all necessary valves for the shutdown. The Contractor shall provide the necessary

personnel to assist in valve operations, but shall not operate valves without the direction of the City. (See **Division IV, Section 3A. Connection to Existing Water Mains - Dry Tap**).

2. The use of a tapping sleeve and valve will be permitted and may be required by the Public Services Director or Utilities Director under specific circumstances. (See **Division II, Section 5H. Tapping Sleeves and Valves**). Tapping sleeves and valves shall be manufactured of cast iron and designed for water service with a minimum working pressure of 150 psi. The sleeve shall be a full-bodied split sleeve design, approved manufacturers as specified. (See **Division III, Section 2I. Tapping Sleeves and Valves**). Prior to tapping, the assembly shall be tested using the test plug tap in the sleeve with the valve closed, or by placing a tapped plug on the outlet of the valve with the valve open. The assembly shall be pressurized to 150 psi and hold fifteen minutes. (See **Division IV, Section 3A. Connection to Existing Water Mains - Wet Tap**).
3. All plugs, caps, tees, hydrants, and bends shall be provided with a Class A concrete thrust block. (See **Division IV, Section 3F. Anchorage for Water Main Fittings and Accessories**). Exceptions to the use of a thrust block shall be for vertical bend fittings for mains up to 12" in size, which shall be restrained with the use of restrained, push-on joint pipe. The number of joints to be restrained shall be as indicated on the plans. (See **Division I, Section 5A. Water Main Design - General**, and **Division III, Section 2F. Cast Ductile Iron Pipe & Fittings**).
4. All water main joints shall be push-on joints, with the exception of fire hydrants and solid sleeves which shall be mechanical joints with Mega-Lug joint systems. (See **Division III, Section 2F. Cast Ductile Iron Pipe & Fittings - Joints**).
5. All water mains are to be swabbed using a polypig, and all must pass both pressure and bacteriological testing. The Contractor shall provide all necessary labor, equipment and materials to complete all testing. The City will obtain all samples for bacteriological testing. All hoses and other appurtenances needed to direct water from blow-offs and/or hydrants during water main testing are to be supplied by the Contractor. (See **Division IV, Section 3H. Water Main Testing**).

ROAD CONSTRUCTION

1. The inspection of public road construction associated with a private development project will be as specified in the Standard Specifications. (See **Division I, Section 1E. Inspections and City Department Involvement - The Engineering Division**).

2. The use of rubber-tired equipment is restricted to areas of work at elevations which are at least two feet higher than the proposed subgrade elevations. In cut sections, when the grade has been cut to two feet above the proposed subgrade elevations, all proposed utilities and edgedrains within the 1:1 influence of the pavement section shall then be immediately installed. Following these installations, all remaining cutting shall be performed using only tracked equipment. The entire subgrade shall then be compacted to not less than 95% of the maximum unit weight, per AASHTO T-180, to a depth of at least 9 inches. The finished subgrade elevations shall be no more than 3/4-inch above or 1-inch below the specified grade. The Contractor shall maintain access to all drives and sidestreets at all times. Upon completion of the grading and compacting of the subgrade, the Contractor shall promptly notify and allow the Engineer to inspect the subgrade. The Contractor shall "proof-roll" the grade or other surfaces as directed by the Public Services Director, and as specified. (See **Division V, Section 3B. Machine Grading**).
3. Except for the use of vibratory rollers, the granular subbase shall be placed and finished with the use of tracked equipment. The finished granular subbase elevations shall be no more than 1/2-inch above nor 1/2-inch below the specified grade, and shall be compacted to 95% of its maximum unit weight, per AASHTO T-180.

The aggregate base shall be placed and rough-graded with the use of tracked equipment. Fine grading may be performed with either tracked equipment or a rubber-tired blade grader. The finished aggregate base shall be no more than 1/4-inch above nor 1/2-inch below the specified grade. (See **Division V, Section 3D. Construction of Subbase and Base Courses**).

4. The installation, testing, and acceptance of all utilities, edgedrains, streetlight and traffic signal crossing conduits, etc., are to be completed prior to any paving of public streets. The job mix formula must be submitted to, and approved by, the Public Services Director prior to the commencement of paving operations. The Contractor is not permitted to place bond coat or pave when, in the opinion of the Public Services Director, rain is threatening or the moisture on the existing surface may prevent satisfactory bonding. The Contractor shall pave the primary road's through-traffic lanes first, from point-of-beginning to the point-of-ending. All other paving shall be paved following the completion of this "main-line" paving. The Contractor shall have, at all times, a 10 foot long straight edge on each and every paver. Complete automation is required on all main-line pavers. In addition, the Engineer may require the use of two, 30-foot grade referencing "skis" during main-line paving. The rate of speed of the paver shall never exceed 50 feet per

minute. Each layer of bituminous mixture shall be compacted to at least 97% of the control density, as determined by using the MODIFIED MDOT MARSHALL TEST. (See **Division V, Section 5B. Bituminous Placement**).

5. All utility structures and monument boxes within the pavement area shall have their covers and castings removed and the structures plated prior to the placement of the leveling course(s). This plate is to be removed and the structure adjusted after the completion of all leveling courses, but prior to the placement of the wearing course(s). All structures shall be adjusted to their proposed finished elevations using Class A high-early strength (9-sack) concrete, and each shall be checked for proper elevation by the use of a 10-foot straight edge parallel with the pavement centerline. (See **Division V, Section 5D. Structure Adjustment**).