

WATER MAIN CONSTRUCTION

GENERAL

- 1. The water main contractor shall perform a complete investigation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the project engineer.
- 2. Before water main construction begins, the owner shall employ a competent, licensed surveyor to establish the lines and grades of the mains being constructed.
- 3. The contractor shall notify the City of O'Fallon at least two days in advance of the start of construction. Contact City of O'Fallon at telephone (314) 240-2000.

SPECIFICATIONS

- 1. All materials used shall meet the following specifications:
 - Polyvinyl Chloride (PVC) Pipe: PVC pipe shall be furnished in accordance with AWWA Standard C200 (latest revision). All PVC pipe shall be Class 200 SDR 21.

- 2. All water main construction performed shall be in accordance with the requirements of the City of O'Fallon Water Main Construction.

STREET PAVEMENT CONSTRUCTION

GENERAL

- 1. The paving contractor shall perform a complete investigation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the project engineer.

- 2. Before street paving begins, the owner shall employ a competent, licensed surveyor to establish the lines and grades of the street pavement being constructed.

- 3. The contractor shall notify the City Engineer at least two days in advance of the start of construction. Contact City of O'Fallon at telephone (314) 272-6244.

SPECIFICATIONS

- 1. All materials used shall meet the following specifications:
 - Roller-Compacted Bitum: Roller-Compacted Bitum used shall meet the requirements for Type III Aggregate as specified in Section 1007 of the "Missouri Standard Specifications for Highway Construction, 1985".

- 2. All areas to receive paving shall first have the earth subgrade prepared in accordance with the requirements of Section 209 of the "Missouri Standard Specifications for Highway Construction, 1985".

- 3. Areas within the City Street rights-of-way shall have P.C. Concrete pavement installed in the earth subgrade in accordance with the requirements of the City of O'Fallon Standard Specifications for Highway Construction.

- 4. All paving work shall be performed in accordance with the City of O'Fallon specifications. The contractor shall assist City personnel or City representatives in the inspection and testing of the paving work.

- 5. All storm sewer construction shall be performed in accordance with the City of O'Fallon specifications. The contractor shall assist City personnel or representatives in the inspection of the storm sewers.

- 6. All storm manholes, drop inlets and curb inlet tops shall be built to the elevations shown on the plans. If no elevation is shown, contact the engineer for such information.

- 7. Valve boxes: Valve boxes shall be of cast iron, extension sleeve type suitable for a depth of cover of at least 4 feet. Valve boxes shall be not less than 5 inches in diameter, shall have a minimum thickness of any part of 3/8 inch, and shall be provided with suitable cast iron bases and covers. Covers shall have the word "Water" cast thereon. All parts of the valve boxes, bases and covers shall be coated by dipping in bituminous varnish. Valve boxes to be screw external sleeve type.

- 8. Locating Wire: No. 8 coated solid copper wire and with 3 pig-tail to be looped into valve boxes.

SANITARY SEWER CONSTRUCTION

GENERAL

- 1. No area shall be cleared without authorization from the project engineer.
- 2. The sanitary sewer contractor shall perform a complete investigation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the project engineer.
- 3. Before sewer construction begins, the owner shall employ a competent, licensed surveyor to establish the lines and grades of the sanitary sewers being constructed. The contractor shall pick up the cut sheets at the office of the surveyor.
- 4. The contractor shall notify the City of O'Fallon at least two days in advance of the start of construction. Contact City of O'Fallon at telephone (314) 240-2000.

SPECIFICATIONS

- 1. All materials used shall meet the following specifications:
 - Manhole Frames and Covers: Gray Iron Castings conforming to the requirements of the specifications for Gray Iron Castings, ASTM A48. All castings shall be clean and free of scale, drosses or inclusions. They shall be fabricated of Class 30B cast iron. Bearing surfaces between manhole frames and covers shall be sanded to the cover shall seat in any position onto the frame without rocking.

- 2. The interior of the pipe shall be thoroughly cleaned of foreign material before being lowered into the trench, and shall be kept clean during construction operations. When work is not in progress, the open ends of pipe shall be securely closed so that no foreign materials will enter the pipe. Any section of pipe found to be defective before or after laying shall be replaced with sound pipe, or repaired in a satisfactory manner.

- 3. Pipe shall be laid to line and grade as shown on the plans and as stated in the field. When connections are to be made to any existing manhole, pipe, or other improvement, the actual elevation or position of which cannot be determined without excavation, the contractor shall excavate for and expose the existing improvement before laying the connecting pipe or conduit. When existing underground improvements may reasonably be expected to conflict with the line or grade established for the new sewer line, the contractor shall excavate as necessary to expose and locate such potentially conflicting underground improvements prior to laying the new pipe. Any adjustment in line or grade which may be necessary to accomplish the intent of the plans shall be made.

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- 5. All PVC Sanitary Sewer Pipe shall be bedded with Bedding Aggregate. The bedding aggregate shall extend from 6 inches below the pipe to the pipe springline. All PVC Sanitary Sewer Pipe shall be bedded with Aggregate Backfill for non-paved areas. The Aggregate Backfill shall extend from spring line of pipe to 6 inches over the pipe, for paved areas the Aggregate Backfill shall extend from spring line of pipe to the ground surface. Rate for detail "PIPE BEDDING CLASS 'C'" (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE).

- 6. All pipe shall be Class II unless otherwise shown on Project Plans. The interior surfaces of the pipe shall be a smooth, true cylindrical surface free from undulations or corrugations. Lifting holes, when provided, shall be cast in the wall of the pipe to receive a pre-cast, truncated conical concrete plug of such sizes as will allow 1/8 inch cementing material on the sides of the joining surfaces of the plug and will fill at least 50% of the lifting hole depth. Cement shall meet the requirements of the Specifications for Portland Cement, ASTM C150, Type II. Cut pipe for curved alignments shall be of uniform cut and length along the curve, and otherwise meet the same requirements as for straight pipe.

- 7. Storm Manholes: Storm Manholes shall be precast reinforced concrete manholes conforming to the standard specifications for precast reinforced concrete manholes sections, ASTM-C478. The Portland cement used shall be Type II. Manhole covers shall be concrete and base sections shall have the base ring, vertical integral with the floor. Manhole steps shall be cast into the full depth of the wall section. Connections for inlet and outlet pipes shall be of an approved patented compression type connection. The inside diameter for river sections shall be 42 inches for pipe sizes 8 inch through 15 inch and be 48 inches for pipe sizes larger and for inside drop manholes.

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GENERAL NOTES PERTINENT TO ALL CONSTRUCTION OPERATIONS

- 1. Underground utilities shown on these plans have been plotted from available records and information, and their locations shall be considered approximate only. The verification of the actual location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor, and the verification of the actual location shall be performed prior to beginning work.

- 2. Easements and right-of-ways will be provided for streets, sanitary sewers, storm sewers, water mains and private utilities on the subdivision plot (record plat). See the subdivision and record plat for location and size of easements and right-of-ways.

- 3. All construction shall be performed in accordance with the specifications, ordinances, rules, regulations, guidelines and/or policies of the local governing jurisdictional authority.

GRADING NOTES

- 1. No area shall be cleared without authorization from the project engineer.

- 2. All grading work performed shall be within a 0.2 foot tolerance of the grades shown on the grading plan.

- 3. A Geotechnical Engineer shall be employed by the owner and be on site during grading operations.

- 4. The grading contractor shall perform a complete grading and construction operation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.

- 5. Before the grading begins, the owner shall employ a competent, licensed surveyor to establish all lines and grades.

- 6. The contractor shall notify the Geotechnical Engineer at least two days in advance of the start of the grading operation.

SPECIFICATIONS

- 1. Site preparation includes the clearing of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any non-masonry structures. The unsuitable material shall be buried (after securing permits) and/or properly disposed of on site. Topsoil and grass in the fill areas shall be thoroughly diced prior to the placement of any fill. The Geotechnical Engineer shall approve the dicing operation.

- 2. Compaction equipment shall consist of tandem rollers, pneumatic-tired rollers, vibratory rollers or high speed impact type drum rollers acceptable to the Geotechnical Engineer. The roller shall be designed so as to avoid the creation of a water seal without proper blending of successive fill layers.

- 3. Observation and Testing: The Geotechnical Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Inform reports showing fill quality will be made to the owner at regular intervals.

- 4. The Geotechnical Engineer shall notify the contractor of rejection of a lift of fill or portion thereof. The contractor shall rework the rejected portion of fill and obtain notification from the Geotechnical Engineer of its acceptance prior to the placement of additional fill.

- 5. Paving and Compaction of Fill: All areas to receive fill shall be compacted to a depth of not less than 6 inches and then compacted to at least 85 percent of the maximum dry density as determined from the modified Proctor compaction test (ASTM-D-1557). Natural slopes steeper than 1 vertical to 5 horizontal to receive fill will have horizontal benches, with minimum width of 12 feet and maximum height of 5 feet, cut into the slopes before the placement of any fill. The fill shall be loosely placed in horizontal layers not exceeding 6 inches in thickness and compacted in accordance with the specifications given below. The Geotechnical Engineer shall be responsible for determining the acceptability of the soils placed. Any unacceptable soils placed shall be removed at the contractor's expense.

- 6. The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture contents during the filling operation in the remaining procedure from 2 to 8 percent above the optimum moisture control.

- 7. The surface of the fill shall be finished so that it will not pond water. If at the end of a day's work, it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill should not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.

- 8. All fill shall be compacted to 90% of maximum density as determined by the Modified A