



CONTRACT TECHNICAL SPECIFICATIONS

Street Related Water and Storm Improvements, Bid No. 24-12

These Technical Specifications are intended to supplement Division 1 through Division 9 of the 2023 Standard Specifications for Road, Bridge, and Municipal Construction, prepared by the Washington State Department of Transportation (WSDOT) and the American Public Works Associations, Washington State Chapter and amendments thereto, herein referred to as Standard Specifications. In case of conflict, these Technical Specifications shall take precedence over the Standard Specifications.

2-02.3(3)2 Sawcutting

(Special Provision) New Section

All pavements, curbs, gutters, sidewalks, and other surfacing materials to be removed shall be sawcut where removals abut other pavement areas to remain.

The Contractor shall include in the various other bid items all costs necessary to provide sawcutting as required by the Standard Specifications and these Special Provisions.

The Contractor shall be responsible for ensuring that special precautions are undertaken so that no concrete or concrete by-products, or products and by-products used in the sawcut of asphalt or concrete, are discharged into any storm drain or surface water system.

In accordance with the Department of Ecology guidelines, wastewater from Portland Cement Concrete, masonry, and asphalt concrete cutting operations shall not be discharged to storm drainage systems or surface waters. Cutting operations increase the pH of wastewater; therefore filtering prior to discharge is not acceptable.

To thoroughly clean sawcuts where necessary, the Contractor may use high pressure water (high pressure water is considered greater than 1400 psi).

All wastewater shall be collected using a wet-dry vacuum or pumped into drums for disposal. Disposal of the waste liquid may be to soil or other porous surfaces away from storm drains and surface water, only if the Contractor collects and disposes of remaining sediment after water has filtered into soil or evaporated. Impervious surfaces contaminated with sediment and grit from cutting, planing or pulverizing operations shall be cleaned by sweepers to prevent contaminants from entering the storm drainage system or surface waters when it rains.

2-02.5 Payment

All costs associated with sawcutting shall be considered incidental to and included in the unit contract price for the type of material to be removed or improvement to be installed. Collection of wasted water with vacuum system and pollution control shall be considered incidental to and included in the unit contract price for associated removal or improvement bid items which require sawcutting.

7-00.1 General

The Contractor is advised that the locations of various existing utilities including but not limited to: gas, water, telephone, cable service lines, and other obstructions are not necessarily shown on the Plans. Locations, if shown, are approximate and have been obtained from records and cannot be guaranteed accurate. The Contractor shall diligently check for interferences with existing utilities ahead of his or her work including exploration in advance of excavation. It will be the Contractor's responsibility to coordinate with franchise utilities so that services are maintained per City standards. This will include coordination and making necessary arrangements with service providers for the reconnection or relocation of service lines away from the proposed storm drainage system.

The Contractor is further alerted to the provisions of RCW 19.122 and his or her responsibilities by performing excavation required by the Contractor Documents and Standard Specifications.

Potholing

In general, the Contractor shall pothole ahead of excavation operations at locations indicated on the Plans or as approved by the Engineer, noting the depth, location, size and material of the underground utilities exposed. Any necessary design modifications resulting from potholing shall be returned to the Contractor within three (3) calendar days and shall constitute no basis for delay.

Potholing shall be done by hydro excavation, a.k.a. "vactoring", to minimize the risk of damage to existing utilities unless another method is discussed and agreed to with the Engineer.

Any utilities damaged during potholing shall be immediately reported to the Engineer and repairs made immediately as required by the Standard Specifications and these Special Provisions.

Records of the location, elevation, and dimensions of all utilities and improvements verified or discovered by potholing shall be submitted to the Engineer within two (2) working days after the completion of potholing in each area.

Upon completion of potholing in each area, potholes shall be immediately backfilled and compacted as required by the Standard Specifications and these Special Provisions or restored as directed by the Engineer.

Measurement

"Pothole Existing Utility" shall be measured per each. A single pothole shall be up to three feet in any horizontal direction, regardless of depth. For example, if a water meter and service tap are within three feet of each other, exposing both shall be measured as a single pothole.

Payment

Payment will be made for the following bid item(s):

"Pothole Existing Utility", per each.

The unit Contract price for "Pothole Existing Utility" shall be full pay for all work to hydro excavate and expose the utility, including but not limited to sawcutting, removing pavement, excavating, disposing of displaced material, and placing and removing temporary asphalt and steel plating. Backfilling and permanent asphalt restoration shall be paid under the items "Crushed Surfacing Top Course" and "HMA Cl. 1/2" for Trench Patch", respectively.

7-04.5 Payment

(Special Provision) Supplement

The second paragraph of Section 7-04.5 is revised to read as follows:

The unit contract price per linear foot for storm sewer pipe of the kind and size specified shall be full pay for furnishing, hauling, and assembling in place the completed installation including trenching, trench waste, coupling bands, fittings, elbows, bends, tees, and adjustment of inverts to catch basins and manholes for the completion of the installation to the required lines and grades. All costs for bedding and backfill material will be paid for under separate bid items.

Payment will be made for the following bid item(s):

"Ductile Iron Storm Sewer Pipe, ____ In. Diam.", per linear foot.

7-05.1 Description

(Special Provision) Supplement

The Work consists of furnishing and installing inlets, catch basins, and manholes of the type and size shown on the Plans in reasonably close conformity with the lines and grades shown on the Plans.

7-05.2 Materials

(Special Provision) Supplement

All new catch basin frames and grates or solid locking lids shall be the 18" x 24" size unless noted otherwise.

Concrete adjustment risers shall conform to the ASTM C-32, Grade MA.

7-05.5 Payment

(Special Provision) Supplement

Utility-related Clearing & Grubbing outside of shoulder widening limits shall be incidental to the utility.

Structure Excavation Class B shall be considered incidental to and included in the price for the structure being installed.

Connection to drainage structures shall be considered incidental to the pipe or structure being installed.

All costs associated with temporarily plugging existing storm drainpipes so that new drainage structures can be installed shall be considered incidental to and included in the unit contract price for the type and size of structure installed.

All work necessary to intercept existing storm drain lines for the installation of catch basins, inlets, or manholes as shown on the Plans or as directed by the Engineer, shall be considered incidental to the type and size of drainage structure installed.

Removal and cleaning of pavement and tack from lids and grates shall be incidental to related Bid items.

Included in the cost for new drainage structures shall be furnishing, installing, and adjusting to final grade the frame and grate of the type specified.

A Concrete Inlet may be used in lieu of a Catch Basin Type 1, at the same unit price, if a Catch Basin Type 1 cannot be installed due to a conflict. The resulting change in quantities will not be grounds for renegotiating the unit price.

Payment will be made for the following bid item(s):

“Shoring or Extra Excavation Class B”, per lump sum.

The contract bid price above, including all incidental work, shall be full compensation for all labor, material, tools, and equipment necessary to satisfactorily complete the Work as defined in the Standard Specifications and these Special Provisions.

7-08.3 Construction Requirements

7-08.3(1)A Trenches

(Special Provision) Supplement

Pipe zone bedding and backfill shall be Crushed Surfacing Top Course.

Material excavated shall not be used as backfill and shall be hauled away to an approved waste site.

Trench shall be excavated to a sufficient width to allow for pipe installation, compaction equipment, and shoring when necessary. Paving width shall be as shown on the City Standard Detail Trench Section W-3. No additional payment will be made for excavation and backfill of additional trench widths beyond the maximum trench width (nor for related quantities such as bedding, paving, imported backfill, rock excavation, etc.) unless extra trench width has been specifically directed by the Engineer.

Temporary HMA patching is required if the surface becomes difficult to maintain as determined by the Engineer.

7-08.5 Payment

(Special Provision) Supplement

Trench excavation shall be considered incidental to and included in the unit contract price for pipe. Pipe bedding material, pipe backfill material, and structure backfill material will be paid for by the ton under a separate bid item.

Connection of new or existing pipes to a new drainage structure shall be considered incidental and included in the various unit bid prices for catch basins and concrete inlets.

7-14 HYDRANTS

7-14.1 Description

(Special Provision) Supplement

This Work shall also consist of removing existing fire hydrants.

7-14.2 Materials

(Special Provision) Supplement

Pipe and Fittings

Unless otherwise indicated, all pipe and fittings shall be ductile iron in conformance with Sections 9-30.1(1) and 9-30.2(1) of the Standard Specifications, except that the thickness for other than restrained mechanical joint pipe shall be Standard Thickness Class 52. Pipe and fittings shall be double-thickness cement-mortar lined and seal coated with bituminous material conforming to ANSI A21.4 or AWWA C 104 and shall have exterior bituminous coating conforming to ANSI A21.4 or AWWA C 104. US Pipe Ductile Iron Tyton Pipe or approved equal will be accepted.

Pipe joints shall be push-on joints unless otherwise shown or required. The pipe manufacturer shall supply a sufficient quantity of a non-toxic vegetable soap lubricant for installing the pipe.

Mechanical joints shall conform to ANSI A21.11 or AWWA C111. Bolts for mechanical joints shall be Dresserloy or Cor-Ten high strength, low-alloy steel conforming to ASTM A242 and A558. Sigma Mechanical Joint Bolts or approved equal will be accepted.

In situations where a hydrant gate valve is to be installed on a sloped roadway, a MJxMJ adapter, Infact Foster Adapter, shall be used to keep gate valve plum with the tee.

Flanged joints shall conform to ANSI A21.10 or AWWA C110, or ANSI A21.12 or AWWA C115. Flanges shall be ductile iron. Gaskets for flanged joints shall be 1/8-inch thick, cloth-inserted rubber, conforming to applicable parts of ANSI B16.21 and AWWA C207. Gasket material shall be free from corrosive alkali or acid ingredients and suitable for use in potable water lines. Gaskets shall be one-piece, full-face with holes to pass bolts.

Mechanical joint long-pattern solid-sleeve cast iron fittings shall conform to ANSI A21.10 or AWWA C110. Solid sleeve minimum length shall be twelve (12) inches. Restrained joints shall conform to Section 9-30.2(6) of the Standard Specifications. For special water main connections where blocking is not viable as determined by the Engineer, the Contractor may use mechanical joint restraints such as Romac Romagrip or approved equal. Coat all bolts and parts with coal tar epoxy.

Hydrants

Unless otherwise indicated on the plans, all hydrants shall be new. Hydrants shall conform to AWWA C502. Hydrants shall be break-flange or safety-top type. The inlet connection shall be mechanical joint. Nominal 5¼-inch compression type main valve opening with 6-inch bottom connections. Equip with two 2½-inch hose nozzles with American National Standard threads and one 4 ½ -inch pumper port, Storz Seattle style thread, model number HPHA 40-40-004/CAP, size 4.875-inch by 6-inch. Operating nut shall be 1½-inch National Standard Pentagon nut. The main valve shall be equipped with O-ring seals and shall open when turned counterclockwise. Acceptable hydrant models are Mueller Superior Centurion or approved equal.

Hydrant paint shall be Farwest #250 High Gloss White paint or approved equal.

7-14.3 Construction Requirements

7-14.3(1) Setting Hydrants

(Special Provision) Supplement

Installation of hydrants shall conform to the provisions of AWWA C600. Locate hydrants to provide complete accessibility and to minimize the possibility of damage from vehicles or injury to pedestrians. A minimum three (3) foot radius unobstructed working area shall be provided around all hydrants.

Set hydrants plumb and nozzles parallel with, or at right angles, to the curb or roadway, with the pumper nozzle facing the curb or roadway. Set hydrant so that the safety flange is two (2) inches above finished grade and bolts can be removed.

If the hydrant lead is longer than one full length of pipe Field Lok gaskets shall be used.

Place concrete block on firm, level sub-base to assure uniform support. Carefully place hydrant on base block to prevent the base block from breaking. Jointing procedures shall conform to AWWA C600. Strapping lugs shall not be used. After hydrant is in place and connected to the pipeline, place temporary blocks to maintain the hydrant in a plumb position during subsequent work.

Place 1-1/2" washed rock and filter fabric around base block and hydrant bottom after hydrant has been blocked in place. Top of the washed rock shall not be less than six (6) inches above hydrant drain opening.

After all installation and testing is complete, the exposed portion of the hydrant shall be thoroughly cleaned and be painted two coats of paint.

7-14.3(7) Removing Existing Hydrants

(Special Provision) New Section

Existing hydrants to be removed on existing water mains that will remain active shall be removed to the hydrant tee at the existing main or to the existing gate valve as shown on the plans. A water main shutdown will be required for this work. The hydrant tee shall be capped or plugged and completed with a permanent blocking. If the hydrant valve is not flanged to the existing tee connection, then the tee shall be cut out and the contractor shall install spools and sleeves in place of the removed pipe and fittings.

The Contractor shall provide three (3) weeks' notice to the City when the water main shutdown is scheduled. The Contractor is to have both four (4) inch and six (6) inch flanged and mechanical joint caps and plugs onsite prior to shutting down the water system.

The City will notify affected residents in advance, conduct the shutdown and recharge the water main.

7-14.5 Payment

(Special Provision) Supplement

"Fire Hydrant Assembly", per each.

The unit price per each for "Fire Hydrant Assembly" shall be full compensation for furnishing all labor, materials, tools, and equipment to remove the existing fire hydrant assembly and install the new fire hydrant assembly. This price includes but is not limited to clearing and grubbing, sawcutting, excavating, disposing of displaced material, 6-inch valve, valve box, pipe, vertical bends as required, thrust restraints, fire hydrant, pipe sterilization, dechlorination, pipe flushing, concrete bearing block, washed rock and filter fabric, miscellaneous parts and materials, testing, painting, temporary pavement patching, adjustment of valve box to finished grade, and clean up. The cost of the disassembly and removal of the existing fire hydrant, capping or plugging of old tee location, and concrete blocking shall be included in this bid item. Backfill material and pavement restoration shall be paid separately. Supporting existing utilities to remove or install a fire hydrant shall be incidental to the fire hydrant bid item.

7-15 SERVICE CONNECTIONS

7-15.2 Materials

(Special Provision) Supplement

Repair bands shall be Romac SS1 or an approved equal.

7-15.3 Construction Requirements

(Special Provision) Supplement

Backfill for relocated service connections and abandoned services shall be Crushed Surfacing Top Course.

Designated Service Replacements

The Contractor shall first hydro excavate and expose the service line on the City side of the meter so the Engineer may verify service line material and the Contractor may verify parts necessary for replacement.

The Contractor shall then hydro excavate and expose the existing direct tap or service saddle at the main to verify location and condition.

Install new service saddles at the water main with a tapping machine operated by experienced workers using tools with proper adapters for the size of the main being tapped. The Contractor shall thoroughly clean the area on the water main covered by the new saddle before installation. Do not place any service tap within two (2) feet of a pipe joint, bell, spigot, or another service tap. All services saddles tapped on an existing water main shall use a Romac double strap stainless steel saddle or approved equal.

Services with Unknown Material Types and Not Designated for Replacement

The Contractor shall first hydro excavate and expose the service line for the first five feet on the City side of the meter so the Engineer may verify service line material. Copper services in good condition will not be replaced.

If a galvanized iron or plastic service is discovered, the Contractor shall then excavate and expose the water main, direct tap or service saddle, and service line for three feet from the main. Galvanized iron services will be replaced. Full length plastic services in good condition will not be replaced. Services repaired with a section of plastic pipe will be replaced. Service taps and service saddles in poor condition will be removed and abandoned.

General Service Replacements

Maintain existing services until the new service connections (completed up to the curb stop) are tested, disinfected, and flushed.

In cases where the existing water service is located across an adjacent property, the new service will be installed in front of the served property.

The preferred method for abandoning existing taps is to install a Romac SS1 repair band. The Contractor shall thoroughly clean the area on the water main covered by the abandonment sleeve before installation.

Water main shutdowns to the same group of residents shall be minimized. Due to limited staffing within the water department: no more than thirty-five (35) homes may be on a single shutdown, no more than two (2) shutdowns are allowed per week, shutdowns are not allowed on Mondays and Fridays, and shutdowns require two to three (2-3) weeks' notice. The Contractor may have multiple service taps exposed for replacement and abandonment on a single water main shutdown for more than 24 hours (but not more than one (1) night). A service covered by a steel sheet is considered "exposed".

Steel sheets shall not be allowed to be placed within an arterial lane for more than one (1) night, shall be pinned, and have temporary asphalt placed around the edges to create a smooth transition

onto the sheet. Steel sheets shall not be left in any location over weekends and holidays. The Contractor shall provide a sufficient number of steel plates, traffic control, and warning signs to ensure the openings are covered and public safety is well addressed. Steel plates shall be orange, have a non-skid surface, be planar, match the roadway surface, edges must be perpendicular to the direction of travel, and be rammed with asphalt all the way around the edges to ensure no movement or rocking occurs when driven over by vehicles and to provide a smooth transition from the road to the sheet.

While trench details for water services show open cuts, the City will allow long services to be bored if the Contractor chooses to do so. If the Contractor elects to bore long services, the Contractor will be required to pothole prior to boring. The Contractor is responsible for verifying underground utilities, avoiding conflicts or other concerns, and repairing any damaged utilities at the Contractor's expense. The City is not responsible for any damage caused by the Contractor's boring operations. All other provisions of the specifications shall apply.

The minimum depth of cover to the installed water service connection shall be thirty (30) inches from the finished grade.

In landscaped areas set new water meter boxes on firm, compacted gravel backfill and adjust to finished grade. In traffic areas set new meter boxes on concrete blocks that bear on compacted gravel. The meter dial must be centered under the reading lid. Boxes must be perpendicular to the street.

7-15.5 Payment

(Special Provision) Supplement

Excavation and raising or lowering of an existing water service to avoid a conflict with a new utility shall be incidental to related Bid items. If an existing service cannot be adjusted, it shall be replaced and paid for separately. Backfilling and permanent asphalt restoration shall be paid separately.

Payment will be made for the following bid item(s):

“Installation/Relocation of 1 In. Water Service and Meter”, per each.

The unit Contract price for “Installation/Relocation of 1 In. Water Service and Meter” shall be full pay for all Work to replace the service connection complete and operational, including but not limited to clearing and grubbing, excavating and/or boring, disposing of displaced material, providing a temporary water service if necessary, removing the existing water service pipe, placing and removing temporary asphalt and steel plating, assessing the condition of the existing service, tapping the main, furnishing and installing all pipe, fittings, saddles, repair bands, temporary and permanent valves, appurtenances, miscellaneous parts and materials, testing, flushing, and disinfecting the service connection, connecting to the existing customer service line, and adjustment of individual PRVs if required. Backfilling, and permanent asphalt restoration shall be paid separately. Removal and/or abandonment of existing services is considered incidental to this Bid item. Removal of existing water meters and meter boxes is considered incidental to this Bid item. No additional payment shall be made for services which are bored at the Contractor's option.