



CITY OF WESTERVILLE

Department of Planning and Development
64 E. Walnut Street, Westerville, Ohio 43081-2308
PO Box 6107, Westerville, Ohio 43086-6107
Phone: (614) 901-6650

Note to consultant: Notes shall apply to All Private Development plans set within the City of Westerville, not all notes apply to the project. For the City's Capital Improvement Projects (CIP), please reach out to the City for those CIP General Notes.

General Notes

The City of Westerville requirements, as adopted by Ordinance 2023-05, the 2018 edition of the City of Columbus Construction and Materials Specifications (Cols) and the 2023 edition of the State of Ohio Department of Transportation Construction and Material Specifications (ODOT), [consultant to define which specification governs the work] including all supplements, shall govern all materials and workmanship involved in the improvements shown on this plan.

Any modifications to the work as shown on these approved plans shall have prior written approval of the City Engineer.

A preconstruction conference shall be scheduled with the Engineering Division prior to the beginning of any construction. Information pertaining to the preconstruction conference can be obtained by calling (614) 901-6650.

All public improvement items within the Public Right of Way and or Public Easement require inspection from the City of Westerville Engineering Division, work including, but not limited to: storm sewers, sanitary sewers, water mains, water taps, electrical and communication conduit systems, street lighting, concrete work and asphalt work. Inspection is also required for all private erosion and sediment control measures. For next-day inspection call (614) 901-6650 by noon (12 p.m.). Calls received after noon (12 p.m.) will result in a one (1) day delay. When scheduling an inspection, specify: name of project, address, permit number, type of inspection, contact name and telephone number.

The developer, design engineer, and contractor shall cooperate in providing information necessary to develop a complete As-Built plan for this project (see Project Closeout Requirement). As-built plans shall be certified by the plan preparer as including all field changes that occurred during construction. As-built surveys shall verify all utilities have been constructed to the lines and grades shown on the approved plans. Such surveys shall be conducted by a professional surveyor registered in the State of Ohio and shall employ standard survey techniques. The developer shall rectify all discrepancies revealed by this survey, and the as-built survey re-performed in order to demonstrate conformance. A complete As-Built set, final design calculations and base file in DWG format shall be provided to the Engineering Division as a condition of final compliance.

Work hours shall be in accordance with City of Columbus Construction and Material Specifications Item 108.04, A & B (No work shall commence prior to 7AM). No work on Sundays without City Approval.

The contractor shall be solely responsible for complying with all federal, state, and local safety requirements. The contractor shall also exercise precautions at all times for the protection of all persons, including employees, as well as property.

All signs, fences, drainage structures, lawns, pavements, sidewalks, curbs, etc. disturbed during the construction of this project shall be restored by the contractor.

The contractor shall maintain a neat, clean, and dust free work site, including adjacent public roadways, as determined by the City Engineer. Where contractor's methods to provide a clean and dust free environment are inadequate, the contractor shall employ other means such as washing or power vacuuming to achieve results satisfactory to the City Engineer.

Trees denoted as "save" on the plans shall be preserved. Trees located within the construction limits in general shall also be preserved unless they directly interfere with the contractor's operations. Proper protection shall be provided for trees subject to damage through the contractor's operations. The contractor will be responsible for any claim for damage to trees beyond the construction limits and in cases where trees are required or designated to be preserved. All trees, other than those specifically noted on the plans to be removed, require the approval of the City Engineer prior to removal.

The contractor shall reference all iron pins and monuments before excavation. If any pins or monuments are disturbed, a surveyor registered in the State of Ohio, shall accurately reset them at the contractor's expense.

At the completion of operations, survey monuments shall be installed as specified on the plat and or survey by a surveyor registered in the State of Ohio.

The contractor shall confine all activities to the project work limits and shall not trespass upon private property without written permission of the owner.

All roadway trenches shall be backfilled or securely plated during non-working hours. All street plates shall be secured with asphalt placed around the perimeter. The contractor shall maintain the plates in a secure, safe condition. The City may require the contractor to provide a milled recess around the perimeter of the excavation in order to better secure the plate. The milled recess shall be the same depth as the plate thickness and provide a smooth transition between the asphalt surface and steel plate.

No wells are permitted without written approval of the City Engineer.

The contractor shall furnish and maintain sanitary convenience facilities for the employees and inspectors for the duration of the work.

It's the responsibility of the developer/designer/contractor to relocate any and all private utilities that are affected by proposed improvements.

All Public Improvement items shall follow Cols. Item 623 - Construction Layout Stakes.

All private electric, secondary electric, private water lines and services, fire services and sanitary sewer lateral/services require a separate permit through the Building Division, (614) 901-6650.

If private electric, secondary electric, water services, private fire lines and sanitary service laterals are shown on these plans, they are for reference only and are not considered a part of these plans.

All public pre-cast concrete shall be inspected and stamped by City of Columbus.

Earthwork Notes

Site clearing and excavation for the project shall not proceed until authorized by the City Engineer. Surplus excavation (clean fill dirt) can be disposed of onsite to the extent permitted by the approved grading plan. All trees, stumps, and other unacceptable material, as determined by the City Engineer, shall be disposed of offsite.

Any fill placed outside of the construction limits yet within Westerville corporation limits requires the submission of a proposed grading and erosion control plan sealed by a professional engineer registered in the State of Ohio. The contractor shall submit the proposed grading and erosion control plans to the City Engineer for review and approval prior to the placement of any fill. The coordination and execution of this work shall be considered a private matter between the contractor and the property owner.

Grading shown on the approved grading plan necessary to provide surface drainage of the proposed development shall be maintained during construction. Grading for drainage easements, swales and other project storm water management features shall occur prior to the granting of any compliance for this project by the City of Westerville.

During construction the contractor shall provide temporary and permanent soil erosion and sediment control as shown on these plans and in accordance with the standards and specifications of the "Rainwater and Land Development Manual", Ohio's standards for stormwater management land development and urban stream protection, of the Soil Conservation Service.

General Utility Notes

Investigation, support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the contractor. The flow of all sewers, drains, and water courses disturbed during the prosecution of the work shall be restored by the contractor to a condition equal to, or better than, it's original condition and be satisfactory to the City Engineer. The contractor shall digital video record all repairs and submit this video to the City Engineer for review and approval. All video shall be reviewed and approved by the City Engineer prior to any pavement operation commencing and as condition of obtaining final compliance for the project.

The location of the utilities shown on the plans has been obtained through information provided by the utility companies and by field survey. The following list is of known utility companies with facilities within the construction area:

Gas

Columbia Gas of Ohio, Inc.
1600 Dublin Rd.
Columbus, Ohio 43215
(614) 481-1000

Sanitary, Storm, Water

City of Westerville
21 S. State St.
Westerville, Ohio 43081
(614) 901-6740

Del-Co Water Co.
6658 Olentangy River Rd.
Delaware, Ohio 43015

Electric

City of Westerville
Electric Division
139 E. Broadway Ave.
Westerville, Ohio 43081
(614) 901-6700

American Electric Power
850 Tech Center Dr.
Gahanna, Ohio 43230
(614) 883-6817

Communications

Spectrum
1015 Olentangy River Rd.
Columbus, Ohio 43212
(614) 481-5263

Level 3 Communications
250 W Old Wilson Bridge Rd
Worthington, Ohio
(614) 347-3263

City of Westerville
WeConnect
35 Collegeview Road
Westerville, Ohio 43081
(614) 349-6390

AT&T
111 N 4th. St.
Columbus, Ohio 43215
(614) 648-4495

Breezeline
3675 Corporate Dr.
Columbus, Ohio 43231
(614) 648-4495

The backfill under any Public pavement or within the pavement influence line (as shown in City of Columbus Standard Drawing 2179) shall be compacted the full width of the trench by means of approved mechanical devices to meet the requirements of COLS Item 912. All other backfill shall meet the requirements of COLS Item 911. The Item 912 backfill shall extend from the bottom of the trench to the top of the pavement subgrade for trenches under pavements or to the top of the pavement influence line for trenches not under pavements.

The City requires density testing on all public improvement items to verify contractor conformance with the 2018 City Columbus Construction and Materials Specifications specified compaction requirements. All testing shall be performed by a testing laboratory chosen by the developer/contractor.

The contractor shall provide minimum clearances of 1.5 feet vertically and 3 feet horizontally between all underground utilities and 5 feet horizontally from all utility poles, street lights and traffic signal poles. No utility facility shall be installed with less than these minimum clearances without the written approval of the owners of the facilities involved. The contractor shall expose all utilities or structures prior to construction to verify the vertical and horizontal clearances with proposed construction.

The separation between water lines and all sewers shall conform to the requirements of the "Recommended Standards for Wastewater Facilities & Recommended Standards for Water Works". The backfill between all points of crossing shall follow City of Westerville Standard Construction Drawing "Anti Infiltration & Inflow Barrier Detail".

Crossings and Connections to Existing Pipes

The location of existing utilities and structures shown on the plans are based on available records at the time of survey. They are shown as accurately as possible and the design engineer and the owner assume no responsibility as to the accuracy of the underground facilities shown on the plans.

The contractor is responsible, prior to construction, to determine the actual location and elevation of all existing utilities whether shown on the plans or not. The contractor shall call OUPS at (800) 362-2764 two full working days prior to the start of construction.

Where plans provide for a proposed conduit to be connected to or cross over or under an existing sewer or underground utility, the contractor shall locate the existing pipes or utilities both as to line and grade before starting to lay the proposed conduit.

If it is determined that the elevation of the existing conduit or existing appurtenance to be connected differs from the plan elevation or results in a change in the plan conduit slope, the City Engineer shall be notified before starting construction of any portion of the proposed conduit which will be affected by the variance in the existing elevations.

If it is determined that the proposed conduit will intersect an existing sewer or underground utility if constructed as shown on the plan, the City Engineer shall be notified before starting construction of any portion of the proposed conduit which would be affected by the interference with an existing facility.

Sanitary Sewer Notes

All sanitary manholes shall be precast concrete. Polypropylene grade rings shall be used for adjustments. Bricks shall not be permitted.

All new sanitary manholes and or existing sanitary manholes that are adjusted to grade shall the City of Westerville Standard Drawing SS-03.

The use of any material other than PSM PolyVinyl Chloride (PVC) Sewer Pipe meeting the requirements of ASTM D3034, requires the prior written authorization of the City Engineer prior to its installation.

Provide pipe joints conforming to the requirements of ASTM D3212 for PVC Pipe Material.

Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited.

The contractor shall furnish and place wye poles made of 2"x 2" lumber at the end of extended services. Wye poles shall extend 3' above grade.

All manhole covers shall be the self-sealing type.

Manhole lids shall be labeled "SEWER". City of Columbus logo shall not be permitted.

All private sanitary sewers/laterals require a separate permit and inspection through the Building Division, (614) 901-6650.

The contractor shall video all constructed public sanitary sewer(s) and submit to the City Engineer for review and approval. This requirement shall be met prior to the commencement of any roadway paving operations and as a condition of obtaining final compliance for the project.

The contractor shall furnish all labor, equipment and material required to maintain the flow in existing sanitary sewers until the proposed sanitary sewer installation is complete, tested, and accepted by the City. The contractor shall be required to maintain the flow continuously.

The contractor shall submit the proposed procedure to maintain the existing sewer flow to the City Engineer for review and approval at least 14 days prior to the start of construction. As a minimum, the contractor shall provide all pertinent information such as pump size, power supply, back-up generators (if used), alarm system, and emergency contact names and telephone numbers. The pump and the temporary bypass sewer shall be of adequate capacity and size to handle the peak sewage flow.

This sanitary sewer design meets or exceeds the City of Columbus and City of Westerville design standards (including per capita flow, peaking factor and I/I allowance) and material specifications.

The contractor's specific attention is directed to the requirements of either the infiltration / exfiltration or air test as specified by the City. Leakage through the joints of the sewer shall not exceed the following allowable limits: 100 gallons per inch of diameter per 24 hours per mile of length or the computed equivalent for shorter lengths and shorter periods of time. All sanitary sewers, manholes and services shall be tested in accordance with the City of Columbus Construction and Materials Specifications, Item 901.20.

All sanitary sewer line installed on this project using PVC pipe will be subject to deflection testing by pulling an approved mandrel equal in diameter to 95% of the pipe diameter through the pipe after backfilling and sufficient amount of time is allowed for weight transfer of the backfill to the pipe and bedding. All sanitary sewers shall be deflection tested in accordance with the City of Columbus Construction and Materials Specifications, Item 901.21.

Storm Water Management Notes

All public drainage structures shall be precast concrete. Polypropylene grade rings shall be used for adjustments. Bricks shall not be permitted.

Manhole lids shall be labeled "SEWER". City of Columbus logo shall not be permitted.

All public storm sewers shall be reinforced concrete pipe conforming to ASTM designation C76 Class II (at a minimum), Wall B, unless otherwise approved by the City Engineer.

All roadway underdrains shall be discharged into the nearest storm water management facility available along the line of flow.

Existing roof, footing or yard drains disturbed by the work shall be provided with unobstructed outlets by connecting to a storm water management facility.

All catch basin and curb inlet castings shall be labeled/stamped with "No Dumping, Drains to Rivers".

Provide 1" performed expansion joint filler in curb and gutter 5' from each side of inlet.

The storm water management system on-site is delineated as private, including ponding, detention, and water quality components. It is the responsibility of the developer or property owner of this private system to maintain the capacity of the storm water storage and water quality function. If the developer or property owner does not maintain the storage capacity or water quality functionality, this plan becomes void and the City will plug the outlet(s) of the private storm water management system.

Water management plan for the detention storage:

Design year storm frequency: _____
Volume of storage required: _____ C.F.
Volume of storage to be provided: _____ C.F.
Maximum depth of ponding: _____ decimal feet or inches

Post construction storm water management requirements must meet or exceed the requirements described in Part III.G.2.E of Ohio EPA's NPDES construction storm water general permit.

The water quality volume provides for ___ acres for a volume of ___ C.F.

Blind taps are not permitted on the public storm sewers.

Water Distribution

Any mainline valve installed at a "dead end" shall be secured to water line by way of all thread (length and number to be determined in the field) and friction clamps.

The water line shall have a minimum cover of 4.5 feet from finish grade to top of pipe.

The contractor shall close all openings in the water mains with watertight plugs when pipe laying is not in progress.

Water distribution and service valves and hydrants shall be operated by City personnel only. Requests for valve operations shall be made to the Department of Public Service (614) 901-6740 twenty-four hours in advance of the need for such operation.

Time and duration of any water line shutdown shall be determined by the City Engineer.

The contractor is responsible for providing written notice to all City of Westerville water service customers a minimum of twenty-four hours in advance of any water distribution operations or construction that affects any customer's water service.

Water main blowoffs (typically 2") necessary for testing per AWWA standards shall be provided at locations determined by the City Engineer. The contractor shall utilize soft K copper tubing for blow-offs between October 1 and April 30.

The contractor shall store all water line materials in a manner to prevent contamination of the material prior to installation. Material shall not be stored, temporarily stored, or laid out in preparation for installation in such a manner as to allow surface water to flow into the material except where protective caps have been installed by the manufacturer. Where the City determines that water line material is not stored or handled in accordance with these provisions and the contract documents, the contractor shall relocate or remove and replace the material as directed by the City at no cost to the owner.

All waterlines shall be AWWA approved.

Water line construction shall meet or exceed AWWA Standards.

Pressure testing shall be in accordance with AWWA C-600.

Disinfection of water mains shall be in accordance with AWWA C-651.

The separation between water mains and all sewers shall be in accordance with 10 States Standards. Ten foot horizontal separation and 18 inch vertical separation, measured outside-to-outside, is required between all water mains and storm or sanitary sewers.

All water mains, including those not designed to provide fire protection, shall be sized following an analysis based on flow demands, and pressure requirements. The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all design flow conditions. Normal working pressure in the distribution system shall not be less than 35 psi.

Booster pumps are not allowed for any individual service.

All Fire Hydrants shall be covered/bagged until the system is accepted by the City.

All private fire services, private water lines and private domestic water lines require a separate permit and inspection through the Building Division, (614) 901-6650.

Public fire hydrant coverage must be provided to the satisfactory of the Fire Department before vertical construction can begin on a building(s).

12800 WATER LINE DISTRIBUTION

12800.01 General. All water line construction shall meet or exceed the 2018 City of Columbus Construction and Material Specifications (hereafter COLS), "800 Water Supply & Distribution" with the following exceptions or additions. Where the Division of Water, or Administrator, Division of Water, is referenced, the City Engineer shall be substituted.

801 - FURNISHING AND LAYING PIPE AND FITTINGS

801.01 Exception to COLS: All water line testing and chlorination shall be completed by City of Westerville personnel.

Exception to Columbus: A City of Columbus Contractor's License is not required.

801.02 Addition to COLS: Item 9.A, Pipe Markings shall include the word "Zinc" in the pipe markings or label required by AWWA C-151 and/or other markings as deemed appropriate by the manufacturer.

Exception to COLS: Item 10.A, all external nuts and bolts shall be stainless steel.

801.03 Addition to COLS: The exterior of ductile iron pipe shall be manufacturer-coated with a layer of arc-applied or paint applied zinc per ISO 8179-1:2017, External Zinc-Based Coating Part 1, Metallic Zinc with Finishing Layer. The mass of

the zinc applied shall be 200 grams per square meter of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils.

Addition to COLS: Uniformity of the coating shall be checked by visual inspection. Damage to coating where the area of total removal of metallic zinc has a width or area that exceeds the manufacturer's recommendations shall be repaired following approved manufacturer's recommendations.

Exception to COLS: Polyethylene encasement shall be V-Bio Enhanced Polyethylene Encasement, installed per manufacturer's recommendations. The contractor shall submit an affidavit stating compliance with the manufacturer's specifications for installation.

801.04 Exception to COLS: All fittings shall be manufactured of ductile iron unless noted otherwise within these specifications or within the contract documents. **All nuts and bolts in all packing glands shall be stainless steel, (Type 304). All mechanical joints shall be made using stainless steel nuts and bolts (Type 304).**

801.07 Exception to COLS: **All external nuts and bolts shall be stainless steel (Type 304).**

801.09 Exception to COLS: **All external nuts and bolts shall be stainless steel (Type 304).**

801.10 Exception to COLS: Unless otherwise shown or approved, the water line shall be installed with a minimum of 4 ½ feet of cover from the existing ground or the top of the existing or proposed curb grade to the top of the water line for waterlines 16 inches and less in diameter. For water lines 20-inches and larger, 6 feet of cover shall be provided.

801.11 Exception to COLS: Pavement influence shall apply to all streets, parking lots, driveways, sidewalks and bike paths. In addition backfill shall be provided in accordance with Item 912 where specified on the approved plans regardless of the surface condition.

801.14 Exception to COLS: Hydrostatic tests shall be performed by City of Westerville personnel.

801.15 Addition to COLS: Water main blow-offs (typically 2") shall be provided at locations determined by the City Engineer. The CONTRACTOR shall utilize Soft K Copper Tubing for blow-offs between October 1 and April 30.

801.16 Replaces COLS: All valves that affect the flow of water through water lines in service are to be operated by City of Westerville personnel per Chapter 931 of the City of Westerville Codified Ordinances. Requests for valve operation shall be made a minimum of 24 hours in advance of the operation.

802 VALVES

802.01 Exception to COLS: **All external nuts and bolts shall be stainless steel (Type 304).**

802.02 Exception to COLS: All gate valves 3" and larger shall be City of Westerville approved resilient seated water valves. **All nuts and bolts on the valve bonnet and packing gland shall be stainless steel (Type 304). All mechanical joints shall be made using stainless steel nuts and bolts (Type 304).** Other valve types are not acceptable for use in the City of Westerville without written approval of the City Engineer.

802.03 Replaces COLS: Butterfly valves shall not be used on City of Westerville water lines without written approval of the City Engineer.

802.08 Addition to COLS: All valve box lids shall be painted with two coats of a rust preventative paint such as Sherwin Williams Safety Blue SW4086, or approved equal. All surfaces shall be free of rust prior to painting.

802.10 Replaces COLS: All valves that affect the flow of water through water lines in service are to be operated by City of Westerville personnel per Chapter 931 of the City of Westerville Codified Ordinances. Requests for valve operation shall be made to the City Engineer a minimum of 24 hours in advance of the operation. The City will not guarantee water tight valve shuts.

803 - TAPPING SLEEVES AND VALVES

803.02 Addition to COLS: Tapping sleeves shall be stainless steel. Other materials shall only be used with written approval of the City Engineer. **All nuts and bolts on the valve bonnet and packing gland shall be stainless steel (Type 304). All mechanical joints shall be made using stainless steel nuts and bolts (Type 304).**

805 - WATER SERVICE TAPS

805.01 Exception to COLS: Tap permits are not required within the City of Westerville.

805.02 Replaces corresponding paragraph in COLS: Tapping saddles for 2-inch and smaller water lines shall be double strap design, Mueller H-10519 or equal.

805.03 Exception to COLS: Federal Specification WW-T-799 tubing is not permitted.

805.04 Addition to COLS: On private developments, the CONTRACTOR shall install 2" x 2" wooden poles adjacent to the curb boxes at the locations shown on the plans. The wooden poles shall extend at least 1-1/2 feet into the ground and 3 feet above the finished grade.

Curb stop depth shall be a minimum depth of 42" and a maximum depth of 60" from final grade. **An extension in the curb box is not permitted.**

All valve box lids shall be painted with two coats of a rust preventative paint such as Sherwin Williams Safety Blue SW4086, or approved equal. All surfaces shall be free of rust prior to painting.

Exception to COLS: All water services 2" and smaller in pavement areas shall have a heavy duty frame and cover (General Foundries Inc. Item #11081, Sigma item VB2276 or approved equal) with a concrete collar over the curb box. **A Ferrule Valve Box will not be permitted.**

805.05 Exception to COLS: The pipe from the water main connection to the control valve shall be installed to the grade and elevations shown on the plans, but in no case shall less than four feet of cover be provided. Curb boxes shall be located 1.0 foot from the edge of the sidewalk, between the sidewalk and the right of way unless otherwise directed by the City Engineer.

809 -FURNISHING AND INSTALLING FIRE HYDRANTS

809.02 Replaces COLS: Fire hydrants furnished shall be first line hydrants and shall conform to the requirements of the latest specifications adopted by the American Water Works Association. Fire hydrants shall be of the compression type with the valve opening against pressure. Hydrants shall be Kennedy Valve Guardian K-81D, Mueller Company Super Centurion 250 or American-Darling B-84-B-5 with the following amplifications: Each hydrant shall have a mechanical joint connection for a six inch (6") service pipe. The main valve opening shall be at least five inches (5") in diameter and the hydrants shall have two, 2 ½ inch hose nozzles N. S., 7-1/2 T/in. and a 4" steamer nozzle, Columbus, Ohio Standard, 6 T/in., higbee cut. The operating nut shall be National Standard 1¼" pentagon, measured from point to opposite flat. **All nuts and bolts used to assemble the fire hydrant that will be below grade shall be stainless steel (Type 304).** The hydrants shall be provided in lengths to meet the depth requirements of the established grade line.

New hydrants shall be factory painted Red, Federal Standard 595C Color #11105. The hydrant shall be touched-up with the manufacturer's paint as needed after the final installation. All surfaces shall be rust free prior to painting.

Existing hydrants on the project shall be painted with rust preventative paints as manufactured by Sherwin Williams, or approved equal. The barrel, caps, and bonnet shall first be primed with B66W00310 Pro Industrial Pro-Cryl Universal Acrylic Primer, Off White and tinted with 4 oz B1-Black per gallon. Surface topcoat shall be B54R00158 Pro Industrial Urethane Alkyd Enamel Safety Red. All surfaces shall be rust free prior to painting.

The direction of opening shall be the same as the existing City hydrants. The hydrant opening direction shall be counter clockwise. One hydrant wrench shall be furnished with each five (5) hydrants, or fraction thereof.

809.03 Addition to COLS: Valve stem extensions shall be manufactured by Mueller, Clow, or approved equal, and shall be pinned.

Hydrants shall be placed on blocking and set in sufficient broken stone or gravel (size No. 2) as shown on Table 703.01-1 to provide drainage for the barrel. Unless specifically directed by the City, the hydrant weep hole shall be open and the hydrant bedded in 3/4 inch washed gravel. Filter fabric or other approved covering shall be used to prevent soil from migrating into the gravel. A minimum 5 cubic feet of stone or gravel shall be used for each hydrant, with a minimum gravel depth of 18" placed

below the weep hole elevation. The hydrants shall be installed so that the steamer nozzle is 18 inches above grade.

The hydrant watch valve shall be anchored to the hydrant tee by using anchoring tee and gland equal to Clow F-1217 and F-1051.

Valve and valve boxes shall be provided and meet the requirements of 802 except the valve box lids shall be painted with two coats of red rust preventative paint, such as Sherwin Williams Safety Red SW4081, or approved equal.

Exception to COLS: Install fire hydrants with hardwood backing against Class "C" concrete backing poured against undisturbed earth, as approved by the City Engineer even if wedge action retainer glands are utilized.

809.04 Replaces COLS: Backfill shall consist of granular material conforming to 304.02 or approved suitable excavated material, power tamped in layers not exceeding 4 inches in thickness, loose measurement. This granular backfill shall extend from the top of washed gravel to 6" below the existing or proposed surface of the surrounding area.

809.07 Exception to COLS: All abandoned hydrants shall be delivered to the City Service Department, 350 Park Meadow Road, Westerville, Ohio, unless otherwise directed by the City Engineer.

12800.02 **Temporary Storage.** In addition to other requirements of the CONTRACT DOCUMENTS, the CONTRACTOR shall store all water line materials in a manner to prevent contamination of the material prior to installation. Material shall not be stored, temporarily stored, or laid out in preparation for installation in such a manner as to allow surface water to flow into the material except where protective caps have been installed by the manufacturer. Where the ENGINEER determines that water line material is not stored or handled in accordance with these provisions and the CONTRACT DOCUMENTS, the CONTRACTOR shall relocate or remove and replace the material as directed by the City Engineer at no cost to the OWNER.

12800.03 **Conflicts with Existing Utilities.** The CONTRACTOR shall install the water main and services in accordance with the minimum cover requirements identified in the CONTRACT DOCUMENTS. Should installation of these items at the specified minimum depths result in conflicts with existing utilities, the CONTRACTOR shall confer with the City Engineer as to an appropriate course of action. If the City Engineer determines the proposed water item shall be lowered, the following contingency items have been included to be used only as directed by the City Engineer and shall include all costs associated with this WORK:

Street Light and Conduit Crossing Notes [consultant to verify with Westerville Electric Division]

On all public streets the developer/contractor shall provide the street lighting luminaires, street lighting poles, and street lighting screw-in foundations, 1" Schedule 40 PVC conduits, #6 AWG copper conductors in accordance with Cols Item 1000, and the requirements of the Westerville Electric Division (W.E.D.). The developer/contractor shall install the street lighting screw-in foundations (including conduit elbows). The City shall install the street lighting luminaires and street lighting poles. The City shall provide and install the wiring harnesses, and street lighting services and make all final connections. The developer/contractor shall provide and install all remaining items.

Four-inch diameter Rigid Schedule 40 PVC street crossing conduits shall be installed by the developer per the following specifications:

- Conduits shall extend from right-of-way to right-of-way at a minimum depth of 36" below top of curb.
- Pull wire shall be placed in conduits. String shall not be used.
- Provide compacted granular backfill, Cols 912 or control density fill, Cols 636 type 2, for entire length of conduits.
- All conduit ends shall be capped and marked with standard wye poles.
- Concrete curbs shall be marked with a scratched "E" at the location of electric crossings at time curb is installed.
- All conduit joints shall be glued.
- Conduits required in locations other than the right-of-way shall be provided by the developer. See URD contract

The developer/contractor shall provide construction staking by a surveyor registered in the State of Ohio for all W.E.D. conduit, trenching, underground cable, street lights, transformers, poles, pedestals, etc.

All work done by W.E.D. shall be paid by the developer/contractor in accordance with Ordinance 80-27.

Public Street light fixtures shall be delivered to Westerville Electric Division, 139 E. Broadway, Westerville, Ohio, for W.E.D. personnel to install.

General Electric & Communication Conduit Notes

For clarity, "duct", "conduit", and "conduit system" are used as defined in NESC Section 30.

The Contractor shall obtain written permission from Westerville Electric Division, and or WeConnect and any other utility installing duct and/or associated facilities to classify the proposed installation as a joint conduit system as defined in NESC Section 32. If all parties do not consent, the installation shall be treated as separate conduits that are not part of a conduit system as defined in NESC Section 35. Once classified, the proposed installation shall be governed by the rules defined in the applicable section.

Electric and Communication conduit shall be Rigid Schedule 40 PVC conduit, 90 degrees C rated, and conforming to NEMA TC 2 and UL 651, unless otherwise required/approved. Fittings shall be Rigid Schedule 40 PVC conduit conforming to NEMA TC 3 and UL 514 which mate and match conduit, unless otherwise required/approved. The conduits shall carry a UL label on each 10-foot length. The conduits shall be identified for type and manufacturer and shall be traceable to location of plant and date manufactured. The markings shall be legible and permanent.

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Communication and Electric conduit systems shall be installed in accordance with the National Electrical Safety Code (NESC), National Electrical Code (NEC), manufacturer's written instructions and the City of Westerville requirements.

The contractor shall join each conduit section and conduit fitting together with solvent cement. The conduit ends and conduit fittings shall be clean and dry before applying the solvent cement. Follow the conduit manufacturer's recommendations for using the solvent cement. All conduit joints shall provide a watertight seal capable of sustaining a hydrostatic pressure of 25 pounds per square inch (psi) for 12 hours.

All conduits shall have a minimum depth of 48 inches from final grade. Maintain a minimum clearance of 1.5 feet vertically and 3 feet horizontally between all underground utilities. No utility facility shall be installed with less than these minimum clearances without the written approval of the owners of the facilities involved.

Backfill under any public roadway or within the public roadway/pavement influence line (as shown in City of Columbus Standard Drawing 2179) shall be compacted the full width of the trench by means of approved mechanical devices meeting the requirements of COLS Item 912. All other backfill shall meet the requirements of COLS Item 911 and or as required. The contractor shall excavate trenches to uniform width, sufficiently wide to install the conduit(s). Where rock is encountered, carry excavation 6 inches below required elevation and backfill with a 6 inch layer of crushed stone or gravel prior to installation of the conduit(s). Bedding around all public electric and communication conduits and or ductbank as required by the City.

Electric Notes

Install a pull tape with each conduit, the pull tape shall be a 2500 pound strength flat woven pull tape with foot distance markings. Provide a minimum of 10 feet additional pull tape at each end.

Electrical Transformer pad(s) will be sized by the City Electric Division. Electrical transformer pad(s) shall be furnished and installed by the developer/contractor per the City's requirements. The rotation and conduits coming into the transformer pads shall be per the City requirements and shown on the site/utility plans.

Communication Notes

Communication conduit(s) run between two structures (manhole/utility box/building) and shall contain no more than two sweeps or a total of 180° of sweeps. If additional conduit sweeps are required, place additional manholes/utility boxes as required. Communication conduit(s) sweeps shall be a minimum 36 inches radius.

Install a pull tape with each conduit, the pull tape shall be a 2500 pound strength polyester flat woven pull tape, provide a minimum of 10 feet additional pull tape at each end. The pull tape shall be manufactured by Maxcell Group/TVC Communications, there are no equals.

Install orange tracer wire in each communication conduit run. The tracer wire shall be #10 AWG copper clad steel with orange 45 MIL High Density Polyethylene insulation with RHW/USE Type insulation for installation there are no equals.

All tracer wire shall be tested by the contractor for continuity in the presence of the City of Westerville prior to placing the pavement section and or final grading. Any tracer wire found not

to be continuous after testing shall be repaired or replaced at the contactors expense prior to acceptance and placing the pavement section and or finished grade.

Conduit Proving Requirements

The contractor shall remove debris, dirt and obstructions from each conduit run in each conduit bank by passing a wire brush (sized per the conduit manufacturer's recommendations) followed by a flexible mandrel with rigid disks [NA4] (sized at 95 percent of the nominal inside diameter of the conduit) through each conduit run prior to placing the pavement section and or final grading. The wire brush shall be pulled a second time through each conduit run after the mandrel has been pulled through, prior to placing the pavement section and or final grading. Where there is a possibility of moisture or water entering the pipe, the conduit shall be thoroughly swabbed out immediately before the pull. All processes shall be witnessed by the City and prior to placing the pavement section and or final grading. If the mandrel process fails, the conduit shall be inspected by camera and repaired or replaced at the discretion of the City. Immediately following this, each conduit end shall be capped to keep out all debris, dirt and obstructions. Any repairs and/or replacements to sections of the conduits deemed necessary by the City shall be at the contractor's expense. The City reserves the right to require additional testing (including videotaping the inside of the conduits) and uncovering of work to verify that the conduits are installed per City. The contractor shall bear the entire cost of the additional testing and uncovering of work if the City determines that the conduit(s) were not installed per City requirements.

Traffic Notes

All traffic control devices shall be furnished, erected, maintained, and removed by the contractor in accordance with the City of Columbus Standards and or Ohio Manual of Uniform Traffic Control Devices for Streets and Highways (OMUTCD), Current Edition.

If existing traffic control signs conflict with the proposed maintenance of traffic signs they can only be removed with the written approval of the City Engineer. These signs shall be reinstalled at proper height and at approximately the same locations or as directed by the City Engineer. Any existing signs or posts that are damaged, as determined by the City Engineer, as a result of the contractor's operations shall be replaced at the contractor's expense.

All traffic sign material, permanent or for maintenance of traffic, shall be Type G, High Intensity, as made by the 3M Company.

Should the City Engineer determine additional signs are necessary for traffic maintenance, they shall be installed by the contractor within 24 hours.

All traffic lanes are intended to be fully open to traffic. Any lane closures deemed necessary for the construction shall be authorized by the City Engineer (614) 901-6650 as part of an approved traffic maintenance plan prior to closing and or approved Plans. Lane closures on arterial streets shall only occur between the hours of 9AM and 3PM. Other restrictions may apply.

Construction signs shall neither conflict with nor obstruct existing traffic control signs. Signage shall be installed with proper spacing between signs and shall be 100% visible for an adequate distance, (150' for 25 mph streets, 225' for 35 mph streets and 325' for 45 mph streets). Construction signs shall be mounted on their own posts. All construction signs shall be installed, covered and approved by the City Engineer prior to commencing work on this project.

Curb Ramp/ Sidewalk / Pathway / Curb / Approach

Curb ramps, sidewalks, and pathways shall be constructed in accordance with the guidelines proposed by the United States access board (architectural and transportation barriers compliance board) as published in the "proposed guidelines for pedestrian facilities in the public right-of-way" and the "accessibility guidelines for pedestrian facilities in the public right-of-way; shared use paths".

The contractor shall reference the latest edition of the City of Columbus curb ramp standard drawings for additional details and material requirements. Final acceptance and compliance with the above referenced guidelines shall be the sole responsibility of the contractor.

All curb ramps, sidewalks, pathways, curbs, aprons and/or associated concrete work found to be non-compliant with these guidelines shall be removed and reconstructed by the contractor to meet the above guidelines.

Any work removing sidewalk, the sidewalk shall be removed to the nearest joint.

The following items shall apply to all concrete within the Public Right-of-Way and or easement:

All concrete shall be Cons. Class 5, 4500 PSI.

All sawcutting shall be performed using water.

Concrete curing membrane shall be clear. Use of pigmented curing membranes shall result in the removal and replacement of any concrete so cured at the Contractor's expense.

Where residential driveways cross the sidewalk, the concrete shall be a minimum of 6" thick. See City of Westerville Residential Drive Approach Standard Drawing.

All concrete shall be placed in one course and finished according to specifications.

ODOT No. 57 stone under the curb and gutter section shall be 2" deeper than all paving and undercut materials to allow subsurface drainage to flow to the roadway underdrains.

The contractor shall properly protect the work area during construction and shall not remove the protection until the work area is 100% complete and accessible.

All new concrete and asphalt shall have positive drainage. Any areas holding water shall be replaced by the contractor.

Fill material, if required, shall be earth compacted in layers not exceeding 2 inches, or Item 304 aggregate base compacted in layers not exceeding 4 inches.

Expansion joints shall be placed at 30' intervals, property lines and wherever new concrete abuts existing concrete, foundations, castings, etc. Expansion joints shall also be installed in the concrete curb 5-foot on each side of a curb inlet.

Adjust manholes, water and gas valve boxes in the sidewalk to the proper grade.

Extend roof drains under the sidewalk and through the curb. (See City of Westerville Standard Drawing STM-01.). Place/space control joints to line up over drain crossing.

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Forms shall consist of lumber (2" nominal thickness) or metal of equal strength. Full depth formwork shall be used.

A minimum of 48 hours before concrete is to be placed, call 614-901-6650 to schedule a formwork inspection. In no case shall concrete be placed without approval of form work by the City inspector.

Cold weather concrete protection shall be provided in accordance with Cols. Item 451.071.

Immediately after finishing, concrete shall be cured and sealed in an approved manner.

Detectable warnings shall be Type "E", dark grey in color.

12705 CONCRETE INCIDENTALS

12705.00 General. This WORK shall be performed in accordance with COLS Item 705 except as noted herein.

12705.03 Preformed filler shall be rubber equal or similar to REFLEX, meeting or exceeding ASTM D1751-04 and ASTM D1752-04a, Type 1. Fillers shall be provided in widths as noted below (the use of multiple fillers of small widths to accomplish the specified widths below will not be accepted):

- For Items 12451, 12452, and 12608 the filler shall be 1/2" thick
- For Item 12609 the filler shall be 1" thick

12705.07 Concrete curing membrane shall be clear. Use of pigmented curing membranes shall result in the removal and replacement of any concrete so cured at the CONTRACTOR'S expense.

Landscaping within Public Right of Way

Prior to installation, the landscape contractor shall inspect the general site conditions and verify the subgrade, elevations, utility locations and topsoil provided by general contractor. The landscape contractor shall notify the general contractor of any unsatisfactory conditions and work shall not proceed until such conditions have been corrected and are acceptable to the landscape contractor.

Confirm location of all utilities and subsurface drain lines prior to plant installation.

Contractor shall repair all lawn areas disturbed during construction with seed and warrant a healthy, weed free lawn prior to project acceptance. Seeding shall not begin until area has received topsoil and finished grade. Seeding shall be per Item 12659.

Any item or areas damaged during construction shall be repaired or replaced to its original condition at the contractor expense.

Mulch planting beds with triple shredded hardwood mulch of uniform brown color without dye. It shall be free of twigs, leaves, disease, pest or other material unsightly or injurious to plants. Average applied thickness shall be 3" depth. Mulch shrubs in a continuous bed.

Planting beds shall be covered with pre-emergent herbicide applied at product specified rate unless otherwise noted.

Bed edge shall be smooth, consistent, hand trenched 6" deep and "V" shaped unless otherwise noted. All excavated material shall be removed from the bed edge and planting bed.

All planting bed edges shall be smooth flowing arcs or straight lines as shown on plan. Layout of plants and planting beds shall be located by contractor and approved by city prior to planting.

Contractor shall field stake each tree for approval by city prior to planting. Clearly label each stake with a letter code corresponding to the tree species shown on the plan.

Install all plants in accordance with planting details and Cols Item 661 except that backfill mix (Item 661.11) shall be blended, manufactured soil and consist of one part topsoil, one part soil amendment, and one part sand. Topsoil shall be ASTM D5268, pH range of 5.5 to 7, 4 percent organic matter minimum and free of stones 1 inch and larger. Soil amendment shall be EPA rated class IV compost or Com-Til compost. Sand shall be per Item 703.02. Proprietary manufactured soil such as Kurtz Bros. professional blend shall be used. Submit product data for review by city.

Street tree shall be centered between the back of curb and edge of walk or path.

Planting beds, including mulch, shall be flush with adjacent grade. Finished planting beds shall be graded to provide positive drainage.

Notify city if subsoil or subgrade conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

Contractor shall determine plant list quantities from the plan. Graphic representation on plan supersedes in case of discrepancy with quantities on general summary.

Limit sources of tree to the states of Ohio, Pennsylvania, Kentucky, West Virginia, Illinois, Indiana, New York and Michigan and to USDA zones 5a, 5b and 6a.

Water all trees and plants per Item 662 during the period of establishment. Maintain plants per Item 661.17. Payment for watering and maintenance shall be included in the Item 661 bid price for each plant. No separate payment will be made for water or maintenance during the establishment period.

12653 Processed Topsoil Furnished and Placed within Public Right of Way

12653.01 General. The furnishing and spreading of all topsoil and the preparation of the subgrade shall meet or exceed COLS Item 653 – TOPSOIL FURNISHED AND PLACED, with the following exceptions or additions:

653.02 Topsoil. The following paragraph shall govern in lieu of the existing section in the specification:

The material shall be pulverized topsoil with no additives (i.e. sand, compost, etc.) as manufactured at a processing plant. Existing topsoil from another project or source other than a processing plant will only be acceptable with the written permission of the ENGINEER.

653.04 Preparation of Subgrade. The following paragraph shall govern in lieu of the existing section in the specification:

The CONTRACTOR shall complete all subgrading within the areas to be covered with topsoil under this item necessary to bring the surface of the proposed subgrade to the lines indicated on the plans, and parallel to the proposed finished grade. These areas are to be free of rock or other foreign material. The surface of the subgrade immediately prior to being covered with topsoil shall be raked or otherwise loosened to a depth of 1-inch.

653.05 Placing and Spreading Topsoil. In addition, under no circumstances shall there be less than 3 inches of topsoil after natural settlement has occurred. Should it be determined that after natural settlement has occurred, less than 3 inches of topsoil is in place, the CONTRACTOR shall, at no additional cost to the OWNER, re-install topsoil to the proper depth to obtain an “after settlement” depth of 3 inches.

12659 Seeding and Mulching within Public Right of Way

12659.01 General. All seeding and mulching shall meet or exceed COLS ITEM 659 SEEDING AND MULCHING with the following exceptions or additions:

659.01 Description. In addition, topsoil shall be included in this section where not called for separately in the CONTRACT DOCUMENTS.

659.04 Commercial Fertilizer. Exception to CMS: fertilizer applied at time of seeding shall be slow release 18-24-12.

659.07 Seeds. Exception to CMS: All areas to be seeded shall be seeded with the following mixture:

<u>Kind of Seed</u>	<u>% by Weight</u>	<u>% by Purity</u>	<u>% by Germination</u>	<u>% Pure Live Seed</u>
Standard Mix:*				
Perennial Ryegrass **	50	98	85	82
Kentucky Bluegrass**	50	98	85	82

*Seed mix shall be Poa Annua, Bent Grass, and noxious weed seed free. Apply at a rate of 8 pounds per 1,000 square feet.

** To be a blend of a minimum of three (3) cultivars.

Grass seed shall be fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts “Rules for Testing Seeds” for purity and

germination tolerances. Grass seed shall be furnished from a grass seed dealer or grower whose brands are registered or licensed by the State of Ohio, Department of Agriculture or from the approved list of grass seed dealers or growers on file with the Department. Seed older than one (1) year will not be acceptable.

659.12 Seeding Methods. In addition, the CONTRACTOR shall use a Certified Nursery Technician (OCNT) to complete all seeding and mulching. All areas to be seeded, regardless of the slope or location, shall be free of rock as specifically delineated in the CONTRACT DOCUMENTS. All areas with 2 to 1 slopes or steeper, shall have jute matting installed in accordance with ITEM 667 SEEDING AND JUTE MATTING and shall be included in the price bid for various related items.

659.13-659.16 Mulching Material. Exception to CMS: mulching material shall be wood cellulose fiber mulch, degradable green dyed wood cellulose fiber or 100% recycled long fiber pulp, free from weeds and weed seeds (or other foreign matter toxic to seed germination) and be suitable for hydro-mulching. Tackifier shall be a non-asphaltic colloidal tackifier recommended by fiber-mulch manufacturer for slurry application, nontoxic and free of plant growth or germination inhibitors. Weeds that germinate and grow during the growing process of the sown seed shall be completely removed before final acceptance of the item.

659.17 Watering. Exception to CMS: unless otherwise directed by the City ENGINEER, the CONTRACTOR shall water the seedbed daily to maintain adequate soil moisture for proper seed germination and continue daily watering for not less than 30 days. Thereafter, the CONTRACTOR shall apply 1/2" of water twice weekly until accepted.