



Engineering Plan Requirements for Private Development

The applicant shall follow The City of Westerville requirements, as adopted by ordinance 2019-01, the 2019 edition of the State of Ohio Department of Transportation Construction and Materials Specifications (ODOT), and the 2018 edition of the City of Columbus Construction and Materials Specifications (COLS) where specified, including all supplements, shall govern all materials and workmanship involved in the improvements shown on this plan.

And the requirements of Codified Ordinance Chapter 1171 Off-Street Parking and Loading Facilities and Chapter 1201 – Subdivision and Development Regulations, as adopted by Ordinance, in conjunction with these requirements as established by the Engineering Division.

General Requirements

- All plans and calculations submitted for approval shall be prepared, signed and sealed by a professional engineer registered in the State of Ohio.
- All plans submitted (including landscape plans) shall use the City of Westerville title block. The templates are available in DWG format on the City's website. All plans including landscaping plans shall measure 22" x 34".
- Landscape Plans and details are required with all Site Plans and Roadway Plans.
- Public Electric and Communication improvements shall be shown on all Site and Roadway Plans for commercial, multi-family and industrial projects.
- The City's General Notes shall be part of the submitted plans and set in capitalized text. The General Notes are available on the City's website.
- The standard minimum text height on all plan sheets shall be L100 or .01 X (scale). There shall be clear delineation between text describing existing conditions and text describing proposed features (bold vs. standard, existing italicized vs. proposed standard, or similar).
- In general, formatting shall be similar to City of Columbus CC Plan Requirements; however the plans do not need to be separate. Subdivisions plans shall be similar to City of Columbus Street Construction (E-Plan) Requirements (Subdivisions). Minimum scale of 1" = 40' horizontal and 1" = 5' vertical for plan and profile sheets. Cross sections are required.

- Public Streets shall meet the requirements the Street Improvement Standards (Chapter 1201.07).
- “Estimate of Quantities for Public Improvements” shall be shown on all submitted plans.
- Plans shall be titled “Public Sanitary Sewer Improvements for <Project Name><Project Address>”, “Site Improvement Plans for <Project Name> <Project Address>”.
- Engineering plan approval cannot occur until Planning Commission approval (where applicable).
- It is the responsibility of the developer/applicant to obtain all applicable approvals from the City of Columbus and/or Delaware County for sanitary plans, Army Corps, the Ohio Environmental Protection Agency for earth disturbance (over 1 acre), wetland modification, sanitary sewer and water distribution plans. All related fees are the responsibility of the developer/applicant. Provide a copy of the approvals to the City Engineer.
- All off-street parking and loading areas including parking lots, driveways, aisles, circulation drives and other vehicular maneuvering areas shall have concrete curbing unless the storm drainage management system is utilizing green infrastructure which would require locations where this curbing be not be installed.
- All sidewalks within the development shall have a minimum width of 5-ft.
- Engineering Plans shall provide the following: existing and proposed work and features which will be impacted by proposed development (building footprints, streets, walks, utilities, profiles, contours, landscaping, tree preservation areas, lighting, erosion and sediment control, signage, etc.) labeled and clearly delineated as existing and proposed. Existing and proposed survey line work (rights of way, property lines, easements, setbacks, parcel dimensions, etc.) labeled and clearly delineated.
- All existing and proposed easements shall be shown on the plans. Existing easements shall be called out by the plat book and page number, or official record number of the deed.
- All required CAD files shall be in Ohio South State Plane Coordinates.

- All public improvements shall be within a public right of way and or public easement(s). The public right of way and or easement(s) shall be provided to the City at no cost to the City. It is the responsibility of the developer/applicant to provide all public right of way and or easements necessary for construction of the project.
 - All public water, sanitary sewer and storm sewer facilities shall have a minimum easement width of 15-ft or 5-ft beyond the minimum trench limits on either side of the trench (as specified in City of Columbus Standard Construction Drawings L-6309, AA-S149, AA-S151, AA-S153) whichever is greater.
 - All public electric and communication facilities shall have a minimum width of 10-ft or 5-ft beyond the minimum trench limits on either side of the trench.
 - All legal descriptions and exhibits shall be provided by the developer/applicant/consultant in an approved format and meet the highest surveying standards.
 - All public easements shall be executed/signed and delivered to the City **prior** to the City approving the Engineering Plans. The City will record all public easements at the County Recorder's Office.
 - The developer/applicant shall record all private easements.

Maintenance of Traffic (MOT) Plans

- Work within the public right-of-way may require a detailed MOT plan, the City Engineer will determine if required. The plan will be determined by the type of work performed and must be specific to that work.
- The MOT plans shall be scalable, dimensioned and the spacing between barrels, cones, signs, etc shall be noted. Interruptions to normal traffic signal operations and/or bike path or pedestrian routes shall be identified and proposed temporary maintenance or relocation of these facilities shall be included on the MOT plan.
- All traffic control devices shall be furnished, erected, maintained, and removed by the contractor in accordance with the "Ohio Manual of Uniform Traffic Control Devices for Streets and Highways" (OMUTCD), Current Edition.
- The MOT plan shall be prepared by a professional engineer registered in the State of Ohio and shall be submitted as a part of the engineering submittal.

Public Recreational Path/Trails Requirements

- The City of Westerville follows the "Guide for the Development of Bicycle Facilities, 2012 Fourth Edition"
- The path shall be constructed to the City Standard Construction Drawing, 10 feet wide with 4 foot safety zones on each side.
- Provide a yield sign and yield line at intersection per the City requirements. If there isn't adequate sight distance at unsignalized intersections a stop condition will be required.
- Crosswalk markings on public roadways shall be bar pair style.
- Provide a minimum 15 feet wide public easement to the City at no cost to the City.
- Bridges shall be designed for a live load of 85 PSF for pedestrian loading, a 35 PSF wind load, and a vehicle design load of 10,000 pounds.

Landscape Plans

- The developer/applicant shall follow the requirements of Codified Ordinance Chapter 1173 – Landscaping, as adopted by Ordinance, in conjunction with these requirements.
- Landscape Plans submitted for approval shall be prepared by a registered professional.
- Landscape Plans shall be detailed and must include all existing and proposed plant materials. Show a table showing quantities, species, and sizes of all landscape materials.
- The Landscape plans shall include shaded line work of existing and proposed utilities.
- The landscape improvements shall not block drainage.
- Landscaping items at drives/intersection should be lower than 30-inches in height when within 15-feet of intersection sight triangle.
- All public street trees shall be centered in the tree lawn and recommended to be planted 30 feet apart. This distance may be increased or decreased based on the specific species used. Street trees should be planted 30 feet away from street intersections, traffic signals and street lights. Additionally street trees should be planted 10 feet away from other items of infrastructure including fire hydrants, water and gas valves, driveways and drain pipes running from the house to the curb.
- The City requires a Tree Clearing Plan either a part of the Site Engineering/Landscape Plan or a separate Tree Clearing Plan submittal. A Storm Water Pollution Prevention Plan (SWP3) Manual is required with Tree Clearing Plans over one acre.

Building Division Notes

- Private walls (retaining, masonry, etc., higher than 4-ft from the bottom of the footing to top of wall), private lighting, and private dumpster enclosures that are associated with a building may be required to submit plans to the Building Division. Contact the Building Division to verify, (614) 901-6650. If private walls, lighting and dumpster's enclosures are shown on Engineering Division Plans, they shall be labeled "For Reference Only, See Building Division Plans" and shall contain no construction notes, details or labels.
- All private fire lines/services, private water lines/services, private domestic water lines and sanitary sewer services require a separate permit and inspection through the Building Division, (614) 901-6650.
- All plans submitted to the Building Division shall have a certified address. To request an address complete the "Address Request Form" posted on-line on the Engineering Division web page.
- Grading Plans showing ADA parking spaces and Accessible Routes shall be labeled "For Reference Only, See Building Division Plans".
- A Plot Plan, Foundation Certificate and Grading Certificate shall be submitted to the Building Division for the Engineering Division to review for all single and multi-family buildings.



Storm Sewer Drainage Requirements and Criteria

The requirements of Chapter 1201 – Subdivision and Development Regulations, as adopted by Ordinance No. 92-78, in conjunction with the design requirements and criteria noted below shall govern the design of the storm water management system. The construction of the storm sewer system shall be in accordance with, as adopted by ordinance 2019-01, the 2018 edition of the City of Columbus Construction and Materials Specifications (COLS) where specified, including all supplements, shall govern all materials and workmanship involved in the improvements shown on this plan.

These storm water drainage requirements and criteria do not provide solutions to all drainage issues, nor is the engineer restricted to these designs or procedures exclusively. Although the guidelines as stated will hold true for most development work, the City realizes that there may be individual projects involving special or unusual drainage design problems that should be reviewed prior to completing the design. The City may grant exceptions to these requirements and criteria in such cases when engineering studies show the guidelines to be inapplicable or where the use of innovation or experimental post-construction storm water management technologies may be beneficial.

Storm water drainage shall meet the standards outlined in the current edition of the *City of Columbus Stormwater Drainage Manual*.

Copies of this manual may be obtained from:

City of Columbus Division of Sewerage and Drainage
910 Dublin Road
Columbus, Ohio 43215
(614) 645-7175

<https://www.columbus.gov/utilities/contractors/Stormwater-Drainage-Manual/>

Other additions and/or exceptions to the *City of Columbus Stormwater Drainage Manual* are as follows:

The following substitutions should be made when referencing this document:

<u>Reference</u>	<u>Substitute</u>
City of Columbus	City of Westerville
Division of Sewerage and Drainage	Engineering Division
Division of Engineering Construction	Engineering Division
Administrator	City Engineer
City of Columbus, Water Division	Engineering Division
Director of the Department of Public Utilities	City Engineer

Design Control Guidelines

- A Master Drainage Plan may be required and approved by the Engineering Division.

Roadway Culverts

- Maximum Allowable Headwater
Diameter or rise plus 4" or 2D, whichever is lower, in deep ravines
- Minimum Cover
30" to pavement subgrade, or as approved by the City Engineer
- End Protection
12" culverts – half-height headwall
15" through 36" culverts – full-height headwall

Storm Sewers

- All public storm sewer shall be reinforced concrete pipe conforming to ASTM designation C76 Class II (at a minimum, Wall B, unless otherwise approved by the City Engineer.
- Within the limits of existing or proposed rights-of-ways, where maximum cover during construction or proposed cover over the outside top of the pipe is 30" or less for pipe size 12" to 27" diameter inclusive, concrete encasement will be required. Trench backfill shall be as per the requirements of the *City of Columbus Construction and Materials Specifications* Item 912 as directed by the City Engineer.
- Storm Sewer Manhole castings shall be labeled "Storm Sewer".

Curb Inlets

- Pavement Spread calculations are required on all public streets on curb inlets with a maximum spacing of 400' maximum a part.
- Provide 1" performed expansion joint filler in curb and gutter 5' from each side of inlet.
- Double curb inlet; provide one frame casting and two gates.
- All catch basins and curb inlets casting shall be labeled/stamped with "No Dumping, Drains to Rivers".

Detention or Retention

- The Engineering Division does not allow dry extended detention basin, unless otherwise approved by the City Engineer.

Storm Water Runoff Quality Control

To ensure the receiving stream's chemical and biological characteristics are protected and stream functions are maintained, pre and post-construction storm water practices shall provide perpetual management of runoff quality. Detail drawings and maintenance plans must be provided for all pre and post-construction best management practices. Pre and Post-construction storm water management must meet or exceed the requirements described in the latest Ohio EPA's *NPDES Construction Storm Water General Permit*. A stand-alone SWP3 manual shall be per the Ohio EPA NPDES Construction General Permit. This permit applies statewide to disturbances of one acre or greater and can be viewed at the following website: <https://epa.ohio.gov/dsw/storm/index>

Stormwater Operations and Maintenance Plan

The stand-alone Stormwater Operations and Maintenance plan (8 ½ X 11 format) shall be per Ohio EPA and City of Columbus Stormwater Drainage Manual Section 4. A copy of the Maintenance Inspection Log for all BMP's shall be submitted annually by December 31st of each year to the City of Westerville Service Department:

City of Westerville
Department of Public Service
350 Park Meadow Road
Westerville, Ohio 43081



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
 Fax: (614) 901-6666

Sanitary Sewer Design Standards and Criteria

In conjunction with the design requirements and criteria noted below, the construction of storm sanitary sewer system shall be in accordance with, as adopted by ordinance 2019-01, the 2018 edition of the City of Columbus Construction and Materials Specifications (COLS) where specified, including all supplements, shall govern all materials and workmanship involved in the improvements shown on this plan.

Sanitary sewer design shall meet the standards outlined in the current edition of the *City of Columbus Sanitary Sewer Design Manual Design Requirements and Criteria* with the exceptions noted as follows. Copies of this manual may be obtained from: City of Columbus Division of Sewerage and Drainage, 910 Dublin Road Columbus, Ohio 43215 (614)645-7175

Additions and/or exceptions to the *Sanitary Sewer Design Manual Design Requirements and Criteria*:

The following substitutions should be made when referencing this document:

<u>Reference</u>	<u>Substitute</u>
City of Columbus	City of Westerville
Division of Sewerage and Drainage Administrator	Engineering Division City Engineer
City of Columbus, Water Division	Engineering Division
Director of the Department of Public Utilities	City Engineer

III.2.a Sanitary sewer pipe material shall be Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe (ASTM D3034) and meet the requirements of CMS Item 706. Other pipe materials may only be used with the written approval of the City Engineer.

III.3.c Sanitary Sewer Manhole castings shall be labeled “Sanitary Sewer”.

III.3.d Proposed sewers entering existing manholes two feet (2’) or more above the invert of the manhole shall have an outside drop constructed as per Standard Drawing AA-S110. Inside drops may only be used with written approval of the City Engineer.

III.6. Direct sewer taps into existing sanitary sewers is prohibited except with the written approval of the City Engineer.

All assisted living facilities, daycares and other facilities determined by City Staff require a screening device such as a grinding unit (“Muffin Monster” or approved equal) or screens (opening not exceeding 2 ½”) in a private sampling sanitary sewer manhole before outletting the sanitary sewage into the public sanitary sewer main.



Project Closeout Requirements

The following outlines the process used to close out the project and determine that construction complies with designed construction plans and specifications.

The applicant/developer shall maintain the public improvements until the final inspection and Letter of Compliance has been issued by the City.

Project Compliance:

1. The developer/applicant shall submit a Request for Project Compliance Letter (template provided) and a draft set of the Record Plans (As-Built's) to the City's Online Plan Submission Portal. The As-Built submission shall also include final design calculations, base file in DWG format (State Plane South coordinate system) and supporting documents. The draft As-Built's and Request for Project Compliance letter shall be provided within 60 days after the improvements are completed (as determined by the City Engineer) or 60 days after building occupancy is issued for commercial or multi-family building(s). Once the Record Plans (As-Built's) are completed and acceptable to the City the As-Built Cash Escrow will be return to the payee.
2. Should a timetable for the Record Plans (As-Built's) completion not be reached, the City will hire a private consultant to complete the Record Plans (As-Built's) with the escrow funds held by the City that the City received from the developer/applicant.
3. Typically within two weeks from the date the City receives the Request for Project Compliance Letter and a draft set of the As-Built's, the City will conduct an inspection of the improvements and, if satisfactory, will issue a Letter of Compliance accepting the improvements. The City will then reduce the bond, letter of credit, or cash escrow to 3% (\$1000 minimum retention) of the cost of all public improvements for the one year warranty period. The City will complete a final inspection 10 months from the date of the Letter of Compliance; if satisfactory will release the bond, letter of credit, or cash escrow back to the developer/applicant and issue a Letter of Final Acceptance.

Record (As-Built) Plan Requirements:

The developer/applicant is responsible for providing a complete set of record plans (As-Built) on the completion of the project. These plans shall be certified by an engineer, registered in the State of Ohio and must include all field changes which occurred during construction. Do not develop record plans solely from coordinates. Additional sheets may be added to clarify the As-Built condition. The sheets should be labeled accordingly (i.e. Sheet 7A, & 7B etc.).

Record plans shall specifically note (with a check mark) that engineering plan items listed below are within acceptable construction tolerances for field practice in civil engineering or are revised

per the as-built field data obtained. Plan changes approved by the City Engineer during the construction are to be incorporated into the record plans at this time. Any variation from field conditions to proposed plans shall be shown by:

- Lining through plan data (do not delete original proposed plan data)
- The field change text located next to lined out information

Provide Ohio South Zone state plane coordinates for each public storm structure, sanitary structure, sanitary sewer service line (end of service), fire hydrant, water valve, waterline bend (Vert. & Horiz), waterline tee, waterline fitting, waterline tapping sleeve & valve, waterline plug, waterline service (corporation stop & curb stop). Provide elevations based on the North American Vertical Datum of 1988 (NAVD88) for storm and sanitary top of casting, centerline of waterline pipe, fire hydrant, water valve, waterline bend (Vert. & Horiz), waterline tee, waterline fitting, waterline tapping sleeve & valve, waterline plug, waterline service (corporation stop & curb stop). Provide blank columns for as-built coordinates and elevations.

The following items shall be confirmed or revised as constructed (as applicable):

Sanitary Sewer System:

- Structure locations
- Top of casting elevations
- Invert elevations
- Wye locations
- End of Service locations
- Pipe grades
- Pipe material

Stormwater Management System:

- Structure locations
- Top of casting elevations
- Invert elevations
- Pipe grades
- Pipe material
- Orifice plates (location, elevation and size of opening)
- Proof surveys verifying detention/retention facilities location and capacity
- Channel modifications or improvements

Water Distribution System:

- Fire Hydrant, water valve, waterline bend (Vert. & Horiz), tee, fitting, tapping sleeve & valve, plug and waterline service (corporation stop & curb stop).
- Hydrant and watch valve locations
- Hydrant manufacturer
- Pipe size and class
- Size of service taps and location of water service boxes

Grading:

Grading features necessary for project compliance:

- Top of Curb/Pavement /Sidewalk
- All rear yard swales (as applicable)

- Major flood routing path
- Other major grading elements significant to the project

Record plan submission by the design engineer as part of the formal request for project compliance serves as verification that non-roadway storm sewer casting elevations are within 0.1 foot of approved plan data and all grades are within 0.1 foot of approved grade elevations.

Projects whose site grading will be effected by ongoing building construction, which will generate additional fill, must dispose of excess fill offsite unless prior approval is granted by the City.



Shop Drawing and Submittal Requirements

The Applicant/Developer/Consultant/Contractor shall submit to the City Engineering Division Shop Drawings and or Submittals on all public improvement items/materials that will be left on-site after construction.

When submitting to the City Engineering Division, each public improvement Shop Drawing and or Submittal shall bear the Consulting Design Engineer's written certification that the Consulting Design Engineer has reviewed, checked, and approved the Shop Drawings and or Submittal and that they are in conformance with the requirements of the Construction Documents.

The City Engineering Division will review all public improvement Shop Drawings and or Submittals for the limited purpose of checking conformance to the construction drawings.

The City Engineering Division disposition shall not relieve the Applicant/Developer/Consultant /Contractor of responsibility to complete the work according to the Construction Documents, including but not limited to, the accuracy and reliability of Shop Drawings and or Submittals furnished by the Applicant/Developer/Consultant/Contractor.

The Applicant/Developer/Consultant/Contractor is responsible for quantities and dimensions to be confirmed and correlated at the job; for information that pertains solely to the fabrication processes or techniques of construction; and for coordination of the work of all trades. The City Engineering Division acceptance of any shop drawing and or submittal shall not release the Applicant/Developer/Consultant/Contractor from responsibility for deviations from the construction drawings. The acceptance of any Shop Drawing and or Submittal which substantially deviates from the requirement of the Construction Documents will not be valid unless correspondingly documented in a revision.

Work requiring a Shop Drawing and or Submittal shall not begin until the Shop Drawing and or Submittals has been accepted by the City Engineering Division. A copy of each accepted Shop Drawing and or Submittal shall be kept in good order by the Contractor at the site and shall be available to the City and or the City's inspector.

Shop Drawings shall be submitted electronically to City staff and inspectors as determined in the City's Pre-Construction meeting.

Private improvement Shop Drawings shall not be included in the submissions to the City.