



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

Engineering Division
Plan Review Application

Project Type: Residential Multi-Family Industrial Commercial

Submission Type: Site Plan Sanitary Plan Mass Excavation Plan Street Plan

Other:

Project Name:

Project Location:

Planning Commission No: Planning Commission Approval Date:

Applicant Information:

Company Name: Contact:

Address: City: State:

ZIP: Phone: Fax:

Email:

Owner Information:

Company Name: Contact:

Address: City: State:

ZIP: Phone: Fax:

Email:

Please submit the following documents for each INITIAL REVIEW package. Incomplete submittals will not be processed.

Initial Review Package Checklist

Five (5) complete sets of plans (unless otherwise noted) consisting of the following

- Engineering Plans Landscape Plan(s) & Details Sanitary Sewer Calculations (2 Sets)
- Storm Water Management Plan and Storm Sewer Design Calculations (2 Sets)
- Exhibit of turning movements using a 105' Heavy Duty Ladder truck
- \$500.00 check for Initial Engineering Plan Review Fee (required for each titled plan submittal)
- 30 Year Pavement Design Calculations (2 Sets - Public Streets Only)

The Building Division and the Zoning Division each require their own submittals. For Building and Zoning questions, call (614) 901-6650.

In filing this application for a development plan review with the City of Westerville, I acknowledge incurring the applicable plan review costs and payment of same as part of the review process for these plans.

(Signature of Applicant)

(Date)



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Engineering Fees for Development

Project Name: _____

Project Location: _____

Project Number: _____

Planning Commission Number: _____

Planning Commission Approval Date: _____

Calculation:

Public Use (Site Development)	<u>\$ 1,500</u> x _____ Acres	<u>\$ -</u>
Public Use (Residential)	<u>\$ 500</u> x _____ Residential Lots or Units	<u>\$ -</u>
Plan Review	<u>\$ 500</u> + <u>\$ 100</u> x _____ Acre/Lot/Unit - \$500 (Initial Fee)	<u>\$ -</u>
Recording Fees	_____ x _____ (\$ 30 / Pages 1 & 2; \$ 15 / Each Addtl Page)	<u>\$ -</u>
Total Plan Review Fees		<u>\$ -</u>
Initial Plan Review Fee Receipt Number _____		
Tree Replacement Fee	<u>\$ 300</u> x _____ Number of Trees	<u>\$ -</u>
As-Built Cash Escrow	<u>\$ 2,500</u> + <u>\$ 100</u> x _____ Acres or Lots or Units	_____
TOTAL		<u>\$ -</u>



Engineering Division **Plan Review and Approval Process**

Pre-submission meeting:

A pre-submission meeting is encouraged to discuss specific site issues, plan review fee structure, as well as the plan review process. Plans submitted for residential subdivisions shall be for areas receiving final plat approval only.

Initial Submissions:

- Engineering Division Plan Review Application
- Initial Engineering Plan Review Fee of \$500 for each titled plan set. Balance of fees shall be paid before final approval.
- Five (5) complete sets of the Engineering Plans (full size hard copies, 22x34). Landscape Plans and Details are required with all Site Plans and Street Plans.
- Sanitary Sewer Calculations (2 sets)
- Stormwater Management Plan and Storm Sewer Design Calculations (2 sets, spiral bound, no binders)
- 30 Year Pavement Design Calculations (2 Sets - Public Streets Only)
- An exhibit of turning movements thru the site using a 105' Heavy Duty Ladder Truck

A CD containing PDF of the set, PDFs of all storm and sanitary calculations and base file in DWG format must also be submitted.

Plan sets are to have individual sheets for each type of plan (i.e. separate sheets for erosion control, landscaping, utility plan, grading, etc.). Partial or incomplete submissions will not be accepted unless authorized by the City Engineer. The review process will begin after all materials are submitted. All departments within the City review the plans. Comments generated by reviews are typically provided to the applicant for response and inclusion in the revised plans. Review comments will be returned approximately fifteen (15) business days from the received submission date. Complexity of the plans may influence the amount of time needed to complete the review. Final Engineering Plans cannot be approved until Planning Commission approval (where applicable).

Final Approval Submission Requirements:

- Mylar title sheet
- One set of plans addressing the City's review comments on bond paper.
- Engineer's estimated construction cost of all public improvements.
- Copies of all state or federal permits required for the development of the site with associated documentation.
- Copy of the stand-alone SWP3 manual (8 ½ x 11 format) per Ohio EPA NPDES Construction General Permit Part III (2 copies, spiral bound, no binders).

- Stand-alone Stormwater Operations and Maintenance Plan (8 ½ x 11 format) per Ohio EPA NPDES Construction General Permit and City of Columbus Stormwater Drainage Manual Section 4 (2 Copies, spiral bound, no binders).
- All easements necessary for construction of the project. Easements for public improvements are to be in a format approved by the City, signed by the owner, and ready to record.
- Executed subdivision agreement.
- Balance of engineering fees.
- As-built cash escrow per calculation based on improvement cost.
- Letter of credit, bond, or cash must be provided for the cost of all public improvements. A minimum credit, bond, or cash of \$1000 is required regardless of the public improvement cost with no expiration date.

Release of Engineering Plans for Construction:

Upon the City's approval of the final plans, the applicant shall provide the following:

- A full set of approved (signed) plans on Mylar (for projects dated 2016 and older), five (5) full size paper copies and three (3) 11x17 copies.
- A CD containing
 - Plans in DWG format (**State Plane South coordinate system**),
 - PDF file of the approved set
 - PDF files of all calculations
 - All bulleted items under **Final Approval Submission Requirements**.

Pre-construction meeting:

A pre-construction meeting shall be held prior to any construction. The developer, design engineer and contractor are to be in attendance to review proposed construction plans, the City's requirements during construction, and requirements once construction is complete. Prior to a pre-construction meeting, the applicant shall have all approvals from the City of Columbus regarding sanitary sewer plans and the Ohio Environmental Protection Agency for sanitary sewer and water distribution plans. All related fees are the responsibility of the applicant. The applicant shall provide a copy of associated documentations and a construction schedule at the meeting. To schedule the pre-construction meeting or to discuss questions related to construction, call **(614) 901-6650**.



Engineering Plan Requirements

The applicant shall follow 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 Street Plans.
- 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 when widening.
- Public Streets shall meet the requirements the Street Improvement Standards (Chapter 1201.07).
- “Estimate of Quantities for Public Improvements” shall be shown on the submitted plans.
- Plans shall be titled “Public Sanitary Sewer Improvements for <Project Name><Project Address>”, “Site Improvements for <Project Name> <Project Address>”.

- Engineering plan approval cannot occur until Planning Commission approval (where applicable).
- It is the responsibility of the applicant to obtain approval from the City of Columbus and/or Delaware County for sanitary plans and the Ohio Environmental Protection Agency for sanitary sewer and water distribution plans. All related fees are the responsibility of the applicant. Confirmation of these approvals shall be provided to the office of 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.
- All public water, sanitary and storm shall be provided a public easement with a minimum 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 AA-S149, AA-S151, AA-S153) whichever is greater.
- 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 easements shall be identified by the plat book and page number, or official record number of the deed. All easements shall be designated on the plans as platted or deeded, existing or proposed. It is the responsibility of the applicant to provide all easements necessary for construction of the project. All descriptions and drawings involving City owned property rights must meet the highest surveying standards. Easements shall be in an approved format, signed, and ready to be recorded prior to engineering approval.

Maintenance of Traffic (MOT) Plan

- 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.

Recreational Trails Requirements

- The City of Westerville follows the "Guide for the Development of Bicycle Facilities, 2012 Fourth Edition"
- The path shall be constructed to City standards: 10 feet wide with 4 foot safety zones on each side.
- Provide a stop sign and stop line (12", Type 2 ODOT 642) at unsignalized intersections per the City's requirements.
- Provide 4-inch Centerline, Dashed Yellow, Type 2 per ODOT 642 from beginning to end (3' long dash line with 9' spacing).
- A minimum 15 feet wide easement shall be dedicated 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 Plan

- The 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.
- The Landscape Plans shall contain a table showing quantities, species, and sizes of all landscape materials.
- The Landscape plans shall include shaded line work of existing and proposed utilities.
- 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 services, private water lines, 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 and Foundation Certificate shall be submitted to the Building Division for Engineering Division 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 storm sewer systems shall be in accordance with the latest edition of the *Ohio Department of Transportation Construction and Material Specifications* and/or the *City of Columbus Construction and Material Specifications* except as modified by these requirements.

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

http://utilities.ci.columbus.oh.us/sewers_drains/DOSDweb_files/pdf/Stormwater%20Drainage%20Manual.pdf

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

- The Master Drainage Plan shall be reviewed and approved by the Engineering Division as part of the preliminary engineering plan submittal.

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

- The storm sewer material for City maintained sewers shall be concrete. The minimum pipe size shall be 12" diameter for City sewers. 8" through 15" PVC may be used on privately maintained sewers. Other material may be used for special design with prior written approval 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.

Open Watercourse

Open channels (natural or manmade) are typically enclosed when an area develops. Open watercourses located on a property line or those channels receiving no direct discharge from the development may be required to be enclosed. This requirement will be made on a case-by-case basis at the discretion of the City Engineer. The City encourages the use of well-designed open channels for storm sewer drainage. Open channel design shall be approved by the City Engineer prior to initiating detailed engineering design.

Rock channel protection (RCP) shall be located at all potential erosion locations at the discretion of the City Engineer.

- Minimum Grade
All improved channels and other open watercourses which have a gradient of less than 0.50% shall be lined with rock channel protection or other approved erosion control material.

Curb Inlets

- General policy for spacing will be 400' maximum for curbed public streets.
- 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.

Site Development Criteria

All off-street parking and loading areas including parking lots, driveways, aisles, circulation drives and other vehicular maneuvering areas shall have concrete curbing.

Detention or Retention

- Surface Basins or Ponds/ Wet Ponds or Retention Basins

The type and size of fence required where a wet pond or retention basin is to be constructed adjacent to an existing single family development shall be determined by the City Engineer during the preliminary engineering design review.

The Engineering Division recommends wet extended detention basins for all detention basins.

Storm Water Runoff Quality Control

To ensure the receiving stream's chemical and biological characteristics are protected and stream functions are maintained, post-construction storm water practices shall provide perpetual management of runoff quality. Detail drawings and maintenance plans must be provided for all post-construction best management practices. Post-construction storm water management must meet or exceed the requirements described in Part III.G.2.e of Ohio EPA's *NPDES Construction Storm Water General Permit*. This permit applies statewide to disturbances of one acre or greater and can be viewed at the following website: http://www.epa.state.oh.us/dsw/permits/CGP_renewal_final_s.pdf

Stormwater Operations and Maintenance Plan

The stand-alone Stormwater Operations and Maintenance plan (8 ½ X 11 format, spiral bound, no binders) 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

Attn: Cheryl Denman

Department of Public Service

350 Park Meadow Road

Westerville, Ohio 43081



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Sanitary Sewer Design Standards and Criteria

In conjunction with the design requirements and criteria noted below, the construction of sewer pipe shall be in accordance with the City of Columbus Construction and Material Specifications, Section 900 – Sewerage Work.

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	Engineering Division
Administrator	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.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 the 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.

For Assistance Living Facilities, Daycare and other facilities determined by City Staff a screening device such as grinding unit ("Muffin Monster or approved equal) or screens (opening not exceeding 2 1/2") will be required in a private sampling 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 applicant submits a Request of Project Compliance Letter (template provided) and two paper sets of the Record Plans, see Record (As-Built) Plan Requirements below.
2. Typically within two weeks 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% 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 letter, if satisfactory will release the bond, letter of credit, or cash escrow back to the developer/applicate and issue a Letter of Final Acceptance.
3. The applicant submits a complete set of record plans (As-Built) on Mylar, a CD containing a PDF file of the complete set of records plans and base file in DWG format (State Plane South coordinate system). The City will then return the As-Built Cash Escrow to the applicant.

Record (As-Built) Plan Requirements:

The 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 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.



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Shop Drawing (Submittal) Requirements

The Applicant/Developer shall submit to the City Engineering Division Shop Drawings on all public improvement items.

The City Engineering Division will review all Shop Drawings only for general conformance with the design concept of the project and for compliance with the information given in the construction drawings. The Applicant/Developer is responsible for quantities and dimensions to be confirmed and correlated at the job site prior to the submittal of Shop Drawings; 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 approval of any shop drawing shall not release the Applicant/Developer from responsibility for deviations from the construction drawings. The approval of any Shop Drawing which substantially deviates from the requirement of the Construction Documents will not be valid unless correspondingly documented in a revision.

When submitting for City Engineering review, each Shop Drawing shall bear the Consulting Engineer's written certification that the Consulting Engineer has reviewed, checked, and approved the Shop Drawings and that they are in conformance with the requirements of the Construction Documents.

Portions of the Work requiring a Shop Drawing or sample submission shall not begin until the Shop Drawing or sample submission has been approved by the City Engineering Division. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the City.

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



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Note to consultants – not all notes are applicable to all projects. Please use only the notes that pertain to the project currently under design.

General Notes

The City of Westerville requirements, as adopted by Ordinance 92-78, the 2012 edition of the City of Columbus Construction and Materials Specifications (Cols) and the 2013 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. The contractor shall notify the Engineering Division (614) 901-6650 at least two working days in advance of the anticipated start of construction. Inspection is required for all public work, sedimentation and erosion control and any work occurring within the right-of-way.

The developer, design engineer, and contractor shall cooperate in providing information necessary to develop as-built plans for this project. 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. As-built plan mylars and electronic files on compact disc (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).

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 surfaces including lawns, pavements, sidewalks, curbs, berms, and other surfaces 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 paving operations, survey monuments shall be installed as specified on the plat 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 milled a 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.

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

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, in DVD format, to the City Engineer for review and approval. All DVD's 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

AT&T
111 N 4th. St.
Columbus, Ohio 43215
(614) 223-5780

Sanitary, Storm, Water

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

Wide Open West
3675 Corporate Dr.
Columbus, Ohio 43231
(614) 948-4600

Del-Co Water Co.
6658 Olentangy River Rd.
Delaware, Ohio 43015
(740) 548-7746

Electric

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

Communications

Time Warner Cable - Spectrum
1015 Olentangy River Rd.
Columbus, Ohio 43212
(614) 481-5000

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

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

City of Westerville
21 S State Street
Westerville, Ohio 43081
(330) 259-4945

The backfill under any 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.

For backfill only, the use of Recycled Portland Cement Concrete (RPCC) is acceptable as outlined in the most recent revision of the 2012 City Columbus Construction and Materials Specifications. In addition to the requirements outlined by the City of Columbus, the City of Westerville requires the Contractor provide laboratory results certifying the gradation from the stockpile that is supplying this project.

The City requires density testing to verify contractor conformance with the specified compaction requirements. All testing shall be performed by a testing laboratory chosen by the City. The City shall invoice the developer monthly for the costs associated with this testing.

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 utilities, 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

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.

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

The contractor shall televise all constructed sanitary sewer and submit to the City Engineer, in DVD format, 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 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 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 grates 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.

All water line construction shall meet or exceed the 2012 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.

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

12801 - Furnishing and Laying Pipe and Fittings

12801.01 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 Exception to Cols: Item 10.A, all external nuts and bolts shall be stainless steel.

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).**

Addition to Cols: Compensation for any fitting changes ordered by the engineer may be adjusted to reflect an increase or decrease in payment equal to the weight difference between the fitting shown and the fitting ordered.

801.07 Exception to Cols: All external nuts and bolts shall be stainless steel.

801.08 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.

801.09 Exception to Cols: All external nuts and bolts shall be stainless steel.

801.10 Exception to Cols: Unless otherwise shown or approved waterlines 16-inch diameter and smaller shall be installed with a minimum of 4 ½ feet of cover.

801.11 Exception to Cols: Pavement influence shall apply to all streets, parking lots, driveways 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 engineer. The cost of this work shall be included in the price bid for various related items. 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.

12802 Valves

802.01 Exception to Cols: All external nuts and bolts shall be stainless steel.

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 engineer.

802.03 Replaces Cols: Butterfly valves shall not be used on City of Westerville water lines without written approval of the 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 a minimum of 24 hours in advance of the operation. The City will not guarantee water tight valve shuts.

12803 - 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 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).**

12805 - Water Service Taps

805.01 Exception to Cols: tap permits are not required within the City of Westerville.

Addition to cols: payment for water service tap complete shall also include connection to existing service line, abandonment Of the existing service tap, along with supply and installation of new control valve and box.

805.02 Replaces corresponding paragraph in cols: service clamps or 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.

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.

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.

12809 - 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 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 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 a 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: the hydrants shall be set on blocking and shall be 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 ¾ inch washed gravel. Filter paper or other covering shall be used to prevent soil from migrating into the gravel. Not less than 5 cubic feet of the stone or gravel, with a minimum depth of 18" below the weep hole elevation, shall be used for each hydrant. The hydrants shall be installed so that the streamer 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.

As an alternate, hydrant watch valves may be strapped to the hydrant tees with eyebolts and 5/8" diameter rods on each side of the horizontal axis. The eye bolts and rods shall be coated with bitumastic paint. The bitumastic paint shall be applied in two (2) coats, one coat before installation and one coat after installation.

The valve stem extensions shall be manufactured by Mueller, CLOW, or approved equal, and shall be pinned.

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. The cost of furnishing and placing this backfill shall be included in the price bid per fire hydrant.

809.05 Exception to Cols: all hydrants shall be delivered to the City Service Department, 350 Park Meadow Road, Westerville, Ohio, unless otherwise directed by the City Engineer.

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.

12816 - Water Lines and Water Service Taps Relocated or Abandoned - 2 Inch (51mm) and under

816.02 Addition to Cols: all water customers shall be given a minimum of 24 hours advance notice prior to closing an existing curb stop.

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 City 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 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 1" Schedule 40 PVC conduits, #6 AWG copper conductors, wiring harnesses, and street lighting services and make all final connections. The developer/contractor shall provide and install all remaining items.

Four inch diameter Schedule 40 PVC street crossing conduits shall be provided by the prime utility company and installed by the developer per the following specifications:

- Conduits shall extend from right-of-way to right-of-way at a minimum depth of 46" 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
- Electric conduits shall be inspected by W.E.D. personnel prior to backfilling. Call (614) 901-6700 to schedule inspections.

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.

Traffic Notes

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.

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.

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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. Any authorized two-way, one-lane; traffic operations shall be in accordance with Part 6, Temporary Traffic Control of the OMUTCD. Lane closures on arterial streets shall only occur between the hours of 9AM and 3PM. Other restrictions may apply.

A uniformed police officer(s) shall be substituted for each flagman described on Figure 6E-1, of the OMUTCD and the officer(s) shall be present whenever two-way, one-lane, operations are in effect. Manual control of traffic by anyone other than a police officer is not permitted.

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 Ramps/ Sidewalks / Pathways / Curbing

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 and/or associated concrete work found to be non-compliant with the above guidelines shall be removed and reconstructed by the contractor to meet the above guidelines.

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

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:

All concrete shall be Class S, 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 the City of Westerville Residential Driveway Detail.

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

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 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 Columbus Ohio Standard Construction and Materials Specification Standard Drawing 2320 Dr. A.). Place/space control joints to line up over drain crossing.

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 may concrete be placed without approval of form work by the inspector.

Cold weather concrete protection shall be provided in accordance with item 451.061.

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

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

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 may 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:

Kind of Seed	% by Weight	% by Purity	% by Germination	% Pure Live Seed
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.