

General Notes

Not all notes are applicable to each project, and some projects may have supplemental notes not shown herein.

1. The Canal Winchester requirements, together with the latest edition of the City of Columbus Construction and Material Specifications (2012 CCMS) and ODOT specifications (2013 CMS), shall govern all construction items that are a part of the plans, unless otherwise noted. If there are any discrepancies, the Canal Winchester requirements shall govern.
2. The contractor shall contact the municipal Construction Services Administrator, 614-834-5109, at least three working days prior to the commencement of any construction to schedule the meeting.
3. The contractor and subcontractor shall be solely responsible for complying with all federal, state and local safety requirements, together with exercising precautions at all times for the protection of persons (including employees) and property. It is also the sole responsibility of the contractor and subcontractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work.
4. Any modification to the specifications or changes to the work as shown on the drawings must have prior written approval of the Municipal Engineer and, when applicable, the Urban Forester
5. The contractor shall obtain all necessary permits prior to construction.
6. Existing utilities shown are from best available records and field investigation, and are not necessarily complete or exact. The contractor is responsible for the investigation, location, support, protection and restoration of all existing utilities and appurtenances whether shown on these plans or not. The contractor shall expose all utilities or structures prior to construction to verify the vertical and horizontal effect on the proposed construction, and shall make adjustments in elevations as directed by the Municipal Engineer to provide sufficient clearance between the proposed and existing utilities. The contractor shall call the Ohio Utilities Protection Service (OUPS) at 1-800-362-2764 three (3) working days prior to work in the vicinity of their underground lines.
7. The following public utilities (614-834-5111) are located within the work limits of this project:
 - Canal Winchester Division of Water
 - Canal Winchester Division of Water Reclamation
 - Canal Winchester Division of Street
 - Canal Winchester Division of Storm Water
8. Minimum Pavement Composition – All street pavement shall be determined by existing soil conditions and an ASHTO pavement design. The design engineer shall also consider future construction traffic.
9. Any property corner pins or permanent survey markings disturbed during construction shall be reset by a registered surveyor at the contractor's expense.
10. The tracking of spillage of mud, dirt or debris upon municipal streets is prohibited and any such occurrence shall be cleaned up immediately by the contractor.

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11. No nonrubber tire vehicle shall be moved on municipal streets. Exceptions may be granted by an authorized municipal official where short distances and special circumstances are involved. Granting of exceptions must be in writing and any resulting damage must be repaired to the satisfaction of the municipality.
12. The contractor shall be responsible for maintaining mail service in the construction area including any temporary mailboxes.
13. All items of work called for on the plans for which no specific method of payment is provided shall be performed by the contractor and the cost of same shall be included in the price bid for the various related items.
14. The contractor shall exercise extreme caution when excavating in the vicinity of existing trees, taking all measures possible to protect and preserve them. The contractor shall be governed by the provisions of Chapter 1191 of the Canal Winchester Zoning Code.
15. All field tile broken during excavation shall be replaced to its original condition or connected to the storm sewer system as directed by the Municipal Engineer.
16. Approval of the improvements is contingent on all easements required for the construction of the work being secured, recorded and submitted to the municipality prior to commencement of the work, and, no work that requires an easement will be allowed to proceed without authorization from the municipality.
17. All traffic control devices shall be furnished, erected, maintained and removed by the contractor in accordance with the *Ohio Manual of Traffic Control Services for Construction and Maintenance Operations* (current edition), copies of which are available from the Ohio Department of Transportation, Bureau of Traffic. LEO's shall be used in lieu of flaggers on Arterial and collector streets.
18. Steady burning Type "C" lights shall be required on all barricades, drums and similar traffic devices in use at night. Cones are not permitted to be used for night work.
19. All traffic lanes shall be fully open to traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., unless otherwise approved by the municipality. Normal working hours shall be 7:00 a.m. to 6:00 p.m. Monday through Saturday. Work on Sundays may only be permitted with the express written permission of the municipality.
20. All trenches in the roadway shall be backfilled or securely plated during nonworking hours.
21. Access to all adjoining properties shall be maintained at all times, unless otherwise shown on the drawings.
22. All site clearing shall be performed by the developer/contractor, at his expense, prior to construction of this project subject to compliance with Chapter 1191 of the Canal Winchester Zoning Code.

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23. All areas within the public right-of-way that are disturbed by this project shall be restored to the original or better condition per item CW 205, topsoil and CW 210, seeding or other applicable specifications.
24. At all utility crossings, the backfill shall consist of compacted granular material in accordance with Canal Winchester Item 164 or C.C.M.S. Item 912 between the deeper and shallower pipe. Where proposed utilities or services cross proposed or existing pavement areas, backfill shall be compacted granular material in accordance with Canal Winchester Item 164 or C.C.M.S. Item 912 extending at least three (3) feet beyond the back of curb or edge of pavement and at a 1:1 line of influence from this point. The cost is to be included in the price bid for related pipe, C.C.M.S. item 613 maybe substituted.
25. In the event excavation for the street is from zero (0) inches to twelve (12) inches below what is called for on the plans the contractor shall replace this excess excavated material as directed by the Municipality's Geotechnical Engineer.
26. The contractor shall provide two (2) roof drain openings in the curb for each lot, each opening located not more than four (4) feet in from each lot line, or connection into a storm sewer as approved by the City.
27. The developer shall enter into an agreement with Canal Winchester prior to constructing any utility extensions.
28. Where necessary to disturb existing pavement or drives, the pavement shall be saw cut in neat, straight lines. The depth of saw cut shall be the full depth of the pavement.
29. In the event that it becomes necessary, Canal Winchester shall perform work of an immediate nature required of the contractor by this contract because of the failure or refusal of the contractor to perform such work, the contractor shall reimburse Canal Winchester at the rate of 2.5 times the actual cost of labor, materials and equipment necessary to perform such work. Canal Winchester shall be required to notify or attempt to notify the designated representative of the contractor of the necessity to perform such work. In the event of an emergency, no notification is required. If the contractor refuses or fails, within a reasonable time, to perform or cause the performance of such work, Canal Winchester shall be reimbursed by the contractor in the amount provided herein. Reasonable time for all streets involved on this contract is one (1) hour from the time of notification by Canal Winchester.
30. Prior to the construction of the streets, soil tests shall be made on all trenches which cross the proposed pavements or which lie such that the proposed pavements are located within any part of the influence line of said trench. Where said results indicated that the trench backfill does not meet the compaction requirements of 912.03 of the C.C.M.S., all backfill material shall be removed, replaced and retested until compaction meets requirements of 912.03.
31. Erosion control measures in accordance with the requirements of the Soil Conservation handbook *Water Management and Sediment Control for Urbanizing Areas* are required. All sites shall comply with the OEPA general permit.
32. All sidewalks, and curb ramps, and curbs and gutters shall meet A.D.A (Americans with Disabilities Act) requirements, latest edition.

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33. Any existing pavement removed for utility, sanitary sewer, storm sewer or waterline placement repair shall be backfilled with Controlled Density Fill (C.D.F.) reference C.C.M.S. Item 912 or 613.
34. Any tunneling or boring of any pipelines shall be in accordance with plans reviewed and approved by the Municipality.
35. The Canal Winchester Standard Drawings shall govern all work unless otherwise noted.
36. Utility Sleeves
 - A. 36" depth from top of concrete curb & gutter to top of sleeve.
 - B. 42" depth from top of 18" straight curb to top of sleeve.
 - C. All sleeves shall be located a minimum of 6" below proposed underdrains.
 - D. All sleeves shall extend a minimum of 4 feet beyond back of curb.
 - E. All sleeves shall be installed prior to the construction of the pavement, curbs and underdrains.
 - F. Backfill shall be compacted granular material as per the City of Columbus Construction and Materials Specifications, Item 912.

Sanitary Sewer Notes

Not all notes are applicable to each project, and some projects may have supplemental notes not shown herein.

1. Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited on this project.
2. All sanitary sewers constructed under this plan shall meet the requirements of Canal Winchester. The Canal Winchester Standard Drawings shall govern all projects unless otherwise noted. The Canal Winchester supplemental specifications shall take precedence when applicable.
3. The construction of new sanitary sewers shall not begin without an approved and current Ohio Environmental Protection Agency Permit to Install (PTI). A copy of the approved PTI shall be filed with Canal Winchester.
4. The minimum requirements for sanitary sewer pipe shall be PVC sewer pipe ASTM D-3034, SDR 35 and ASTM F-679.
5. The minimum requirements for sanitary sewer force main shall be PVC pressure pipe C-900 DR-18, PR 150, or HDPE, DR 11, rating as per design.
6. The contractor's specific attention is directed to the requirements of the leakage test. Tests shall be infiltration, ex-filtration or low pressure air test in accordance with the item for Testing of Pipe Lines and Sewers, Canal Winchester Item 1600.
7. Pipe for all six (6) inch house services shall be PVC sewer pipe, ASTM D-3034, SDR 35. All service extensions shall be laid at a minimum grade of one (1) percent and shall be constructed at the time of construction of the main sewer, unless otherwise directed by the Municipal Engineer.
8. Approved 30-inch by 5/8-inch steel rebar and a wye pole made of 4" by 4" lumber shall be furnished and placed at all Y- branches and at the end of extended service. The cost of this work shall be included in the price bid for the sewer items.
9. Service risers shall be installed where depths from wyes to the existing or proposed elevations exceed twelve (12) feet. The tops of the risers shall be (9) feet below the existing or proposed surface elevation, whichever is higher.
10. The Wye locations shown on the plans are approximate and shall be field located during construction to serve the individual structures.
11. Manhole covers for sanitary sewers shall conform to standard drawings SAN-01-01 and SAN-09-02.
12. Manhole tops shall be built or subsequently adjusted to meet surface grades established for the development. Cost of this work is to be included in the price bid for the various sewer items.

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13. All new sanitary sewer manholes installed in the Canal Winchester Sanitary Sewer Systems shall be as follows:
 - (a) Pre-cast concrete
 - (b) Four (4) foot diameter, minimum
 - (c) Installed with formed channels
 - (d) Installed with ground water test pipes in accordance with Canal Winchester standard drawing SAN-01-01 (sanitary sewer manholes only)
14. All new sanitary sewer manholes installed and existing sanitary manholes adjusted to grade shall be constructed with chimney seals in accordance with Canal Winchester Supplemental Specifications and Standard Drawing SAN-01-01.
15. All new and adjusted to grade manholes located in pavement shall have concrete collars. See Standard Drawing No. SAN-01-01.
16. All sanitary sewer lines installed using flexible pipe will be subject to deflection testing by pulling an approved mandrel equal in diameter to 95% of the pipe diameter through the pipe no less than thirty (30) days after the pipe is final backfilled.
17. The maximum trench width shall not be greater than the outside diameter of the pipe plus two (2) feet.
18. All sanitary sewers shall be recorded in DVD format after construction prior to acceptance of the sewers by Canal Winchester. The DVD shall remain the property of Canal Winchester. The DVD shall clearly identify the location of the camera within the sewer, date and time of the DVD, and be of sufficient quality to determine the condition of the sanitary sewers. An additional DVD taping shall be performed just prior to the expiration of the one (1) year guarantee.
19. The maximum velocity in any new sanitary sewer shall not exceed ten feet per second (10 fps).
20. Testing of lateral connections shall be adhered to.
21. The contractor shall submit to the Construction Services Administrator for review, five copies of shop drawings for all materials, structures, gradation certifications and equipment before any of the said materials, structures and equipment are ordered. The owner bears no responsibility to accept any of the above-mentioned items without a completed review of said shop drawings.

Storm Sewer Notes

Not all notes are applicable to each project, and some projects may have supplemental notes not shown herein.

1. Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited on this project.
2. The minimum requirement for storm drain pipe shall be: 12" through 36" HDPE N-12 or equal HDPE with smooth interior wall. Storm pipe larger than 36" shall meet the requirements of AASHTO M-294-S.
3. Manhole tops shall be built or subsequently adjusted to meet surface grades established for the development. Cost of this work is to be included in the price bid for the various sewer items.
4. All new storm drain manholes installed in the Canal Winchester Storm Drain Systems shall be as follows:
 - a. Pre-cast concrete
 - b. Four (4) foot diameter, minimum
 - c. Installed with formed channels
5. All storm sewers constructed under this plan shall meet the requirements of Canal Winchester. The Canal Winchester Standard Drawings shall govern all projects unless otherwise noted. The Canal Winchester supplemental specifications shall take precedence when applicable.
6. Curb inlets, manholes and catch basins shall be channeled.
7. Frames and covers for storm sewer structures shall conform to standard drawings ST-01-01, ST-02-01, ST-03-01, ST-03A-01, ST-04-01, ST-05-01, and ST-05-02.
8. All new and adjusted to grade manholes located in pavement shall have concrete collars. See Standard Drawing No. ST-01-01.
9. All storm sewer lines installed using flexible pipe will be subject to deflection testing by pulling an approved mandrel equal in diameter to 95% of the pipe diameter through the pipe no less than thirty (30) days after the pipe is final backfilled.
10. The maximum trench width shall not be greater than the outside diameter of the pipe plus two (2) feet.
11. The contractor shall submit to the Construction Services Administrator for review, five copies of shop drawings for all materials, structures, gradation certifications and equipment before any of the said materials, structures and equipment are ordered. The owner bears no responsibility to accept any of the above-mentioned items without a completed review of said shop drawings.

Water Line Notes

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1. All water mains shall be AWWA C-900, AWWA C-909 CL-150, DR 18 or AWWA C-906, HDPE, DIPS, DR-11 minimum, rating as per design. All bends, joint deflection and fittings shall be backed with concrete where and as directed. Where water mains or services cross proposed or existing streets, backfill shall be compacted granular material as per Canal Winchester Item 164 or C.M.S.C. Item 912 or 613, extending at least three (3) feet beyond the back of curb or edge of pavement.
2. All water service lines shall be sized by the design engineer and be HDPE 4710 ASTM-D3350, cell classification 445574E. ASTM D-2239 or D-2737 AWWA C-901 DR-9.
3. All waterline service saddles shall be double bolt stainless steel style 306 as manufactured by ROMAC, or equal.
4. Corporation stops and curb stops shall be ball valve style, Mueller 300 series – No Lead or equal.
5. All waterline materials and installations shall be in accordance with the current rules and regulations of Canal Winchester. The Canal Winchester Standard Drawings shall govern all projects unless otherwise noted. The Canal Winchester supplemental specifications shall take precedence when applicable; however, in no case shall these standards be less than the minimum AWWA requirements.
6. Water mains shall be laid with a minimum of four (4) feet six (6) inches from the top of finished grade to the top of the water main.
7. In case of conflict in grade between water mains and sewers, the water mains shall be lowered during construction.
8. Minimum clearance between sanitary sewer, storm sewer and water lines shall be ten (10) feet horizontal or one (1) foot - six (6) inches vertical outside of each pipe.
9. All waterline bedding shall meet ASTM D-2321, Class 1-A (Angular, crushed open graded aggregate) (Standard Drawing W-07-02).
10. Water mains shall, where possible, be deflected around structures without the use of special fittings and without exceeding the manufacture's allowable deflection.
11. If the top of the operating nut for any valve is more than thirty-six (36) inches below the finished grade, an extension stem shall be provided to place the operating nut between twenty-four (24) inches and thirty-six (36) inches of the finished grade.
12. The contractor shall thoroughly clean and flush the water mains prior to any testing. Hydrostatic tests shall be performed in accordance with CCMS 801.14 (CCMS 2012) and in accordance with AWWA C-605-05. The minimum test time shall be two hours. The contractor shall provide all equipment, materials, gauges and labor necessary. Proposed water mains shall not be connected

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to existing water mains prior to the completion of a successful hydrostatic test.

13. All water mains shall be disinfected in accordance with CW 1700. Special attention is directed to applicable sections of A.W.W.A. C-601 and C-651 particularly for Flushing Section 5 and for Chlorinating Valves and Hydrants Section 7. In no event shall the requirements be less than the AWWA minimum requirements. The contractor shall provide all equipment, materials and labor required. The contractor shall submit in writing, to the City's Division of Water, the proposed disinfection method and a sketch indicating the location of filling points, blow offs and sampling locations for the purpose of testing the water main.
14. All costs to plug and block the ends of water mains at locations shown in the plan shall be included in the price bid for pipe.
15. A tap permit for each water main service tap must be obtained from Canal Winchester before the taps are made into the water line. No water taps shall be sold until the waterlines have been disinfected by the contractor and approved by the Canal Winchester Water Department.
16. Water service boxes shall be located twelve (12) inches from the edge of proposed sidewalks between the sidewalk and the curb, unless otherwise authorized by the Municipal Engineer.
17. On dead end water mains in cul-de-sacs, a fire hydrant shall be installed at the end of the main.
18. Fire hydrants provided shall conform to specifications of Canal Winchester. Fire hydrants shall conform to AWWA C-502 and shall be American B84B fire hydrants. The hydrants shall have a six (6) inch mechanical joint inlet connection, a 5¼ inch main valve opening, two 2½ inch hose nozzles, and one 4-inch pumper nozzle with coarse thread (4 per inch). All fire hydrants shall be equipped with a five (5) inch 30° Stortz Fittings on the steamer connection. All outlet nozzles shall have National Standard threads. Hydrants shall be furnished with a five (5) foot bury depth unless otherwise shown on plans. Hydrants shall be self-draining. A drainage sump two (2) feet in diameter and two (2) feet deep shall be excavated below each hydrant and filled with coarse gravel or stone, compacted in place, under and around the shoe of the hydrant and to a level of six (6) inches above the waste opening. No drainage sump shall be connected to a sanitary sewer. The opening nut shall be pentagon, 1-1/2" point to flat. All fire hydrants shall be AWWA approved. A hydrant wrench shall be furnished with each fire (5) hydrants or less furnished. Hydrants shall be factory painted white with maroon caps and bonnet with the exception of private fire hydrants which shall be factory painted red. All hydrants shall receive a field coat of paint prior to acceptance.
19. Water service curb boxes for services two (2) inch diameter and smaller shall be 3-7/16" screw type service boxes, General Foundries 37094E or approved equal. Boxes shall be provided with a stainless steel rod and centering ring. Furnish covers that have the word "WATER" cast in raised letters. Securely fasten covers with a bronze or brass bolt.

Curb Stops shall be supported on a Vadle Curb Stop Lock, manufactured by JRC Supplies, Inc.
20. A copper clad steel trace wire shall be installed with all water mains and services. Tracer wire for open cut installations shall be #14 AWG with 30 mil coating by Copperhead Industries or equal. Tracer Wire shall be #8 AWG with 45 mil coating by Copperhead Industries or equal for directional bore installations. Tracer wire materials and installation shall be per CW SS-W1 supplemental specification for Waterline Trace Wire. All costs associated with tracer wire shall be included with

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the associated waterline pipe item.

21. The Contractor shall submit to the Construction Services Administrator for review, five copies of shop drawings for all materials, structures, gradation certifications, and equipment before any of the said materials, structures, and equipment are ordered. The owner bears no responsibility to accept any of the above-mentioned items without a completed review of said shop drawings.
22. Existing valves shall only be operated by the municipal water department. Requests to schedule a valve operation shall be made in writing to the Canal Winchester Water Department a minimum of 24 hrs in advance of the anticipated operation time. The Water Superintendent may authorize the contractor to operate an existing valve under special circumstances.
23. The normal working pressure in the waterlines shall not be less than 35psi.
24. Individual booster pumps shall not be allowed for any individual service.