

GENERAL NOTES

Legislation, Regulation and Codes		Original Data Source		General TTC Notes (Only show when TTC work is involved)		Watermains		Watermain - Fill Areas <Contract administrator to decide whether to use>		Sanitary and Storm Sewers	
<p>1 All work within the City right-of-way shall be constructed according to the latest City of Toronto standard drawings and specifications. Ontario Provincial Standard drawings and specifications may, subject to approval of the City of Toronto, be used where no City standard or specification is available.</p> <p>2 All work shall be completed according to the current <i>Occupational Health and Safety Act</i> and <i>Regulations for Construction Projects</i>. The general contractor shall be deemed to be the contractor as defined in the act.</p> <p>3 All temporary traffic control and signage during construction shall be according to the current <i>Ontario Traffic Manual Book 7: Temporary Conditions Field Editors</i>.</p> <p>4 Any person authorized to carry out work on watermains, shall comply with the Quality Management System (QMS) and the current "City of Toronto Drinking Water Works Permit (DWWP) and Municipal Drinking Water Licence (MDWL) Conditions specific to Watermain Preauthorized Alteration" document.</p>		<p>1 Planimetric mapping data obtained from aerial photography dated Month, Year.</p> <p>2 Survey data updated Month, Day, Year.</p> <p>3 Legal boundary obtained from Surveys and Mapping SSARA Month, Day, Year.</p>		<p>1 Contractor to exercise extreme caution while excavating in the vicinity of the twin 500 MCM bonding cables located on _____ Ave and _____ Rd. These cables are not to be disturbed and hand digging may be required. Each cable consists of an 18 mm diameter copper wire encased in a 25 mm black plastic protective casing. Approximate depth of cover is 600 mm.</p> <p>2 Note that overhead wires for Toronto Transit Commission (TTC) street cars are present throughout scope of project.</p> <p>3 TTC tracks in service on _____ Ave. Track allowance consists of rails on wood or steel ties set in concrete on 225 mm concrete foundation slab, with granite sets or asphalt paving between rails. Top of rail to underside of slab is +/- 660 mm.</p> <p>4 Existing buried track drain chambers may be present in the track allowance and are to be removed completely.</p> <p>5 Remove and dispose of offsite existing track drain, supply and install new track drain where indicated. Include making good connection to existing outlet. See TTC standard drawing No. W05-2558 and City drawing No. DT-1012.</p>		<p>1 PVC watermains shall be minimum DR 18 Class 235 (AWWA C900-07 or molecularly oriented polyvinyl chloride (PVC)) pipes ranging in size from 100 mm to 300 mm in diameter Pressure Class 235 AWWA C900-06. PVC pipes ranging in size from 350 mm through 600 mm in diameter, shall be pressure rating 235, DR 18, according to AWWA C905-10.</p> <p>2 Embedment material for flexible pipe shall be according to OPSD 802.010 and using Granular A according to TS 1010 and compacted to minimum 98% of maximum dry density.</p> <p>3 Minimum cover on watermains shall be 1.8 m.</p> <p>4 All hydrants shall be constructed according to T-1105.01.</p> <p>5 Hydrant leads shall be minimum DR 18 Class 235 (AWWA) C900-07 or Pressure Class 235 AWWA C900-06.</p> <p>6 All service connections shall be constructed according to T-1104.01, T-1104.02-1, T-1104.02-3, T-1105.02-1 and T-1105.02-2.</p> <p>7 Single water service connections shall be a minimum of 18 mm dia. Type "K" soft copes according to T-1104.01. When service length exceeds 30 m, the diameter shall be 25 mm dia.</p> <p>8 All curb and valve boxes to be located at street line.</p>		<p>1 Pipes are not to be laid on fill until the field density test reports have been submitted and approved by the engineer.</p> <p>2 Fill to be placed to a minimum of 600 mm above the watermain grades and to 3 m minimum on each side prior to watermain laying compacted to a minimum of 100 % of maximum dry density in 300 mm lifts.</p> <p>3 Soil density tests shall be taken along centreline of the watermain and on lines 1.5 m on either side of same at a maximum interval of 30 m. Tests to be taken at each 600 mm lift.</p> <p>4 All hydrants, tees, valves, bends, plugs and each pipe joint are to be mechanically restrained.</p> <p>5 Pipe joint deflections are not allowed.</p>		<p>1 Main line PVC pipe shall be DR 35.</p> <p>2 Sanitary service connections shall be single, 150 mm diameter minimum. PVC DR 28 installed at 2 percent and the colour shall be green, for single residential dwellings.</p> <p>3 Embedment material for flexible pipe shall be according to OPSD 802.010 and using Granular A Native or Granular A RCM bedding material according to TS 1010 and compacted to minimum 98% of maximum dry density.</p> <p>4 Bedding for rigid pipe shall be Class B bedding material according to OPSD 802.031 and using Granular A Native or Granular A RCM bedding material according to TS 1010 and compacted to minimum 98 % of maximum dry density.</p> <p>5 Ultra-tb pipe is not permitted within the municipal right-of-way.</p> <p>6 Maintenance holes shall be according to T-701.010 (1200 mm), T-701.011 (1500 mm) or T-701.012-1 (1800 mm) or T-701.013 (2400 mm). Frame and cover shall be according to OPSD 401.010 Type A closed (sanitary and storm).</p> <p>7 Maintenance hole chamber openings must be located on the upstream side of the maintenance hole.</p> <p>8 Benching details shall be according to T-701.021 or as shown on the drawings.</p> <p>9 Drop structures shall be according to T-1003.01 (external) and T-1003.01-2 (internal).</p> <p>10 Sanitary maintenance holes shall have watertight frames and covers in ponding areas according to OPSD 401.030.</p> <p>11 Reinforced concrete pipe shall be minimum 65-D. Height of fill to be verified using OPSD tables 807.010 and 807.030.</p> <p>12 Non-reinforced concrete pipe 150 mm to 250 mm shall be Class 3. Height of fill to be verified using OPSD table 807.040.</p> <p>13 Single catchbasins shall be according to T-705.010 complete with goss trap, where specified. Frame and cover shall be according to OPSD 400.070.</p> <p>14 Double catchbasins shall be according to T-705.020 complete with goss trap, where specified.</p> <p>15 Catchbasin leads to be 250 mm PVC DR 35 for single catchbasins and 300 mm PVC DR 35 for double catchbasins.</p> <p>16 Connection detail for sewer pipe at catchbasins and maintenance holes shall be according to T-708.020.</p>	
Construction Notes (Delete or append construction notes as required)				Road Reconstruction				Erosion and Sediment Control			
<p>1 All areas disturbed during construction within the City's right-of-way shall be restored to original or better condition and to the satisfaction of the contract administrator. Grass areas shall be treated with 100 mm of topsoil and shall be sodded according to TS 5.00 and TS 5.10.</p> <p>2 All existing utilities shown on drawings (plan and profile) are for reference purposes only. The contractor shall satisfy themselves as to the actual location and depth of any utility and shall be liable for all or any damage.</p> <p>3 Any discrepancies between site conditions and construction drawings must be reported to the City prior to commencement of construction and appropriate action taken to the satisfaction of the contract administrator.</p> <p>4 All survey stake layout points shall be verified in the field by the contractor prior to construction. Any discrepancies between the drawings and the layout shall be immediately reported to the City.</p> <p>5 Attention is directed to the possibility of existing private sprinklers and lighting systems within the right-of-way, which are not shown on the plans. Locating, working around and protecting these systems shall be completed at no extra cost to the City.</p> <p>6 All dimensions are expressed in metres (m) and pipe sizes are expressed in millimetres (mm) unless otherwise noted.</p> <p>7 All material for sewer, forcemain, watermain, hydrants and appurtenances, shall be according to City of Toronto material/manufacturer specifications as required by Chapter 6, <i>Material Specifications from Design Criteria for Sewers and Watermain</i> manual.</p> <p>8 Utility separation shall be according to Appendix 12 of the City of Toronto Design Criteria for Sewers and Watermain Manual.</p> <p>9 Service connections and utility cuts made in road pavements shall be backfilled with unshrinkable fill according to TS 4.60.</p> <p>10 At all locations where the proposed watermain crosses under or above the existing sewers, or utilities, Granular A bedding material is to extend from the lower pipe to the top of the upper pipe. Granular A to be compacted to minimum 98% of maximum dry density.</p> <p>11 Contractor to provide adequate support during construction between the new watermain and existing gas mains. Maintain 300 mm minimum vertical clearance between the new watermain and existing gas mains less than 300 mm in diameter. Maintain 600 mm minimum vertical clearance between the new watermain and existing gas mains equal to or greater than 300 mm in diameter.</p> <p>12 All existing watermains and sewer pipes larger than 300 mm diameter shall be supported according to drawing T-1007.01-4.</p>				<p>1 Reconstruction of driveway entrances shall be according to T-310.050-3.</p> <p>2 Limits of sidewalk / curb reconstruction are approximate, actual limits are to be confirmed in the field by the contract administrator.</p> <p>3 Chaining is established from the centreline of construction and gutter grades are calculated along the gutter line.</p> <p>4 Height of curb faces may vary along length of gutter, as shown on profile, or to be confirmed in the field.</p> <p>5 Adjust all structures (maintenance holes, catch basins, etc.) to suit new design elevations including breaking down and removal of portion of top of structures to allow for minimum 150 mm adjustments.</p> <p>6 All curb shall be constructed with a ledge at the back of the curb to facilitate future sidewalk construction.</p> <p>7 Full depth saw-cuts are required at construction limits of existing curb, sidewalk and pavement unless otherwise shown.</p> <p>8 Saw out existing pavement, sidewalk, curb, gutter, driveways, walkways, etc. at construction limits to provide a clean joint for the proposed work.</p> <p>9 Construct pedestrian sidewalk ramps with tactile walking surface indicators according to T-310.030-7, T-310.030-8, T-310.030-9, T-310.030-10 and T-310.030-11.</p> <p>10 Existing entrance ramps to be re-installed. Vehicular sidewalk ramp shall be according to T-310.050-1.</p> <p>11 Adjustment of approaches, walkways, and steps may be required. Limits are to be determined in the field by the contract administrator.</p> <p>12 Existing asphalt thickness may vary, taper to match existing at construction limits (minimum 2.0 m).</p> <p>13 Filter fabric to be placed under grates on all catchbasins to trap sediment. Silt traps are to be cleaned regularly and are not to be removed until such time as the curbs are constructed and the boulevards are sodded or backyards graded and sodded. Filter fabric for silt control to be Terra Fx 270R or approved equivalent.</p>		<p>10 All tees, plugs, horizontal, vertical bends, reducers and hydrants to have concrete thrust blocks according to T-1103.01 and T-1103.020.</p> <p>11 Watermains must follow the Ontario Ministry of the Environment procedure T-6-1 that govern the separation of sewers and watermains. A minimum vertical clearance of 0.30 m when crossing over and 0.5 m when crossing under sewers and all other utilities is required. Must also maintain 2.5 m horizontal separation with sewers.</p> <p>12 All valves less than 400 mm will be in a valve and box according to T-1101.02-2. All valves 400 mm and larger shall be in a chamber.</p> <p>13 Sacrificial anodes shall be installed on all metallic pipes and appurtenances, water services and fittings according to T-1106.04, T-1106.05, T-1106.06 and TS 7.22.</p> <p>14 Tracer wire installation shall be according to TS 7.40.</p> <p>15 Hydrostatic pressure test and leakage testing of the watermain shall be according to TS 441.</p> <p>16 The new watermain shall be isolated according to T-1104.05-3 or T-1104.05-4 until bacteriological tests are satisfactorily completed.</p> <p>17 Provisions for flushing the water main prior to testing and so forth must be provided with at least a 50 mm outlet on 100 mm and larger lines according to T-1104.05-1. Copper water services shall have flushing points at the end, the same size as the line. On the line, flushing outlet to be 50 mm diameter minimum or a hydrant.</p> <p>18 Disinfection of the watermain shall be according to TS 7.30 and shall include all new water services 100 mm dia and larger.</p> <p>19 Toronto Water requires that the new distribution system remain isolated until satisfactory bacteriological sample results are received. ECS Contract Administrator shall notify Toronto Water when sample results have passed in order to proceed with removal of the blow-off and back filling of the access pit.</p> <p>20 After satisfactory disinfection of the new watermain is achieved, permanent connections to the existing watermain(s) with a filler piece shall be made according to TS 7.10.</p> <p>21 City in-service water valves, curb stops, fire hydrants can only be operated by Toronto Water staff.</p> <p>22 All new watermains shall be insulated where the cover is less than 1.65 m according to T-708.01-4.</p> <p>23 The contractor shall connect or reconnect all stray current drainage cables connected to the TTC electrified rail system encountered during watermain construction.</p>		<p>1 Erosion and Sediment Control (ESC) measures will be implemented prior to, and maintained during construction phases, to prevent entry of sediment into the water. All damaged erosion and sediment control measures should be repaired or replaced within 48 hours of inspection or both.</p> <p>2 All disturbed areas will be minimized to the extent possible, and temporarily or permanently stabilized or restored as the work progresses.</p> <p>3 The erosion and sediment control strategies outlined on the plans are not static and may need to be upgraded/amended as site conditions change to minimize sediment faster runoff from leaving the work area. If the prescribed measures on the plans are not effective in preventing the release of a deleterious substance, then alternative measures must be implemented immediately to minimize potential ecological impacts and a Toronto Region Conservation Authority enforcement office should be immediately contacted. Additional ESC measures to be kept on site and used as necessary.</p> <p>4 All activities, including maintenance procedures, will be controlled to prevent the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the water. vehicular refuelling and maintenance and refuelling will be conducted a minimum of 30 m from the water.</p> <p>5 All grades within the regulatory flood plan will be maintained or matched.</p>			
Contact Information (Delete or append contact information as required)											
<p>1 Prior to commencing any work within the municipal right-of-way, the contractor shall apply for a road occupancy permit from the City's right-of-way management unit district office.</p> <p>2 All TTC traffic is to be maintained during construction of this (watermain, sewer or road). In order to co-ordinate all disruptions in service, contractor to contact Mr. Emily Assurance 416-393-3302 at least 48 hours prior to commencing construction.</p> <p>3 Notify Toronto Water, Water Treatment and Supply at 416-397-0187 or send an e-mail message to trunkwater@toronto.ca two weeks prior to excavation near any transmission watermain so that a Toronto Water inspector may be present.</p> <p>4 During the construction of (watermain / services or sewer / laterals) close to an existing transmission watermain, contractor to notify Toronto Water at 416-397-0187 at least 48 hours prior to construction.</p>											