# SERVICES NOTES

## 8. GENERAL

8.1. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation Authorities, the municipal standard specifications and drawings, and all other governing authorities as they apply.

8.2. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.

8.3. The boreholes and test pits shown on the plan are for information purposes only. Their location on the plan is approximate. The Contractor must refer to the boreholes and test pit records to obtain information about observed stratigraphy on site.

8.4. The location of existing underground municipal services and public utilities as shown on the plans are approximate. The Contractor must determine the exact location, size, material and elevation of all existing utilities (on-site and off-site) prior to any excavation work. Damage to any existing services and/or existing utilities during construction, whether or not shown on the drawings must be repaired by the Contractor at their own expense.

8.5. The Contractor is responsible for obtaining all permits required to complete all works and bear the cost.

8.6. The Contractor is responsible for the coordination of their activities with others on-site.

8.7. Terminate and plug all service connections at 1.0 meter from edge of the building.

8.8. The Contractor must complete compaction as per OPSS.MUNI 501 and note the following requirements for service trenching:

| MATERIALS | COMPACTION |
|---|---|
| Pipe bedding | 95% Standard Proctor Maximum Dry Density |
| Trench backfill and pipe cover | 95% Standard Proctor Maximum Dry Density |

8.9. The Contractor is responsible for making or arranging all connections to the existing sewers as per municipal requirements. Prior to connection, the Contractor must provide, to the Engineer and the City for approval, all test results performed on the internal services. Test results must include C.C.T.V. inspection of sewers, infiltration/exfiltration tests for sewers and manholes, deformation tests of sewers, watermain hydrostatic leakage test, flushing and disinfecting operations, and bacteriological water analysis.

8.10. The Contractor must determine the exact invert (geodetic elevation), diameter and construction material of the existing conduits at the proposed connections. The contractor must also carry out, if necessary, exploratory excavations in order to determine the exact location and inverts of existing duct banks. This information must immediately be provided to the Engineer prior to start undertaking any municipal services work and a 48 hour period must be allocated to the Engineer for design review.

8.11. The Contractor is responsible for all excavation, backfill and reinstatement of all areas disturbed during construction to existing conditions or better and all associated works to the satisfaction of the Engineer and municipal authorities.

- Asphalt reinstatement must be in accordance with OPSS.MUNI 310.
- Landscape areas to be reinstated with 150 mm of topsoil and sod in accordance with OPSS.MUNI 802 and OPSS.MUNI 803.

8.12. It is recommended that a trench box be used at all times to protect personnel working in trenches with steep or vertical sides. Services are expected to be installed by "cut and cover" methods and excavations should not remain open for extended periods of time.

8.13. The pipe bedding for sewer and water pipes must consist of at least 150 mm of OPSS Granular A material The material must be placed in maximum 300 mm thick lifts and compacted to a minimum of 95% of its SPMDD. The bedding material should extend at least to the spring line of the pipe.

If the bedding foundation is unsuitable, it must be removed to a minimum depth of 150mm and replaced with appropriate material. The top 300mm below subgrade must be compacted to 98% Standard Proctor Density.

8.14. The cover material, which must consist of OPSS Granular A, will extend from the spring line of the pipe to at least 300 mm above the obvert of the pipe. The material must be placed in maximum 300 mm thick loose lifts and compacted to a minimum of 95% of its SPMDD.

8.15. Where hard surface areas are considered above the trench backfill, the trench backfill material within the frost zone (about 1.8 m below finished grade) must match the soils exposed at the trench walls to minimize differential frost heaving. The trench backfill must be placed in maximum 300 mm thick loose lifts and compacted to a minimum of 95% of the material's SPMDD..

8.16. Dewatering of pipeline, utility and associated structure in rock excavations to be completed as per OPSS.MUNI 403.

8.17. Trenching, backfilling and compacting must conform to OPSS.MUNI 401.

## 9. WATERMAIN

9.1 Watermain, water service connections and associated appurtenances must be constructed in accordance with the Ontario Provincial Standard Specifications. Specifically watermains must conform to OPSS.MUNI 441.

9.2 Watermain must be constructed as per OPSS.MUNI 441 and specifically OPSD 802.010 for earth excavations and 802.013 for rock excavation. Bedding and cover material to be OPSS Granular 'A' compacted to 95% Standard Proctor Maximum Dry Density.

9.3 Watermain pipe materials must be class 150 PVC DR 18 or approved equivalent, unless otherwise shown on the Drawings. Materials must conform to OPSS 441.

9.4 All watermain must be installed with a minimum of 2.40 meters cover from finished grade. Where a minimum of 2.40 meters cover is not reached, thermal insulation is required as per City of Ottawa Details W22 and W23.

9.5 Watermain service connections must be installed a minimum of 2.40 meters from any catchbasin, manhole or object that may contribute to freezing. Thermal insulation must be installed as per City of Ottawa Details W22 and W23 where 2.40 meters of separation cannot be achieved.

9.6. Cathodic protection (if required) must be installed as per City of Ottawa Details W40 and W42.

9.7. Restraints must be as per City of Ottawa Details W25.5 and W25.6.

9.8. Valves to be installed as per OPSS 441 and conform to the following:

- All valves must open in a counter clockwise direction;
- Designed for cold water working pressure of 1035 kPa;
- Types must be one of the following:
- Valves less than 75 mm to be brass or bronze gate valves;
- Valves greater than or equal to 75 mm, and less than or equal to 300 mm, to be cast or ductile iron gate valves;
- Valves greater than 300 mm up to and including 500 mm to be gate or butterfly valves;
- Valves greater than 500 mm to be butterfly valves.

9.9. A continuous 12 gauge copper tracer wire must be installed over all watermains. Tracer wire must be tied to all fire hydrants.

9.10. Valve box assembly to be as per City of Ottawa Detail W24.

9.11. When a watermain pipe crosses a sewer pipe, installation must be as per City of Ottawa Detail W25.2.

9.12. Watermains must be thoroughly flushed and cleaned to remove all dirt and debris prior to the disinfection process.

9.13. All watermains must be hydrostatically and bacteriologically tested as per provincial and municipal regulations. It is the Contractor's responsibility to ensure that all requirements are followed.

9.14. Hydrostatic testing to be completed as per OPSS 441.07.24. Testing must be completed under the supervision of the Contract Administrator. The test section will be either a section between valves or the completed watermain. Test pressure to be 1035 kPa.

9.15. Flushing and Disinfecting to be completed as per OPSS 441.07.25 under the supervision of the Contract Administrator.

9.16. Contractor must coordinate the supply and installation of water meter and remote water meter for the building with the mechanical engineer.

## 10. STORM SEWER

10.1. Storm sewers, laterals and storm service connections must be constructed in accordance with the Ontario Provincial Standard Specifications. Specifically storm sewers must conform to OPSS.MUNI 410.

10.2. PVC storm sewer material to conform to OPSS.MUNI 1841. PVC storm sewers to be installed as per OPSD 802.010 for earth excavation and 802.013 for rock excavation. Bedding and cover material to be OPSS Granular 'A'.

10.3. The allowable deflected pipe diameter when using flexible pipe is as follows:

- Pipes 100 to 750 mm: 7.5% of the base inside diameter of the pipe
- Greater than 750 mm: 5.0% of the base inside diameter of the pipe

10.4. Final backfill material for storm sewers must be approved native material or select subgrade material in conformance with OPSS.MUNI 212.

10.5. Storm sewer pipes must be type PVC SDR-35, unless noted otherwise on the drawings.

10.6. Culverts, when double barreled, must be spaced laterally by 300mm between each barrel.

10.7. All storm sewers to be C.C.T.V. inspected by the Contractor as per OPSS.MUNI 409. Report must be provided to the Engineer in two (2) copies and the C.C.T.V. inspection in DVD format only.

10.8. Storm manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be installed as per OPSS 407.

10.9. Adjustment or rebuilding of manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be completed as per OPSS 408.

10.10. Excavating, backfilling, and compacting for manholes, manhole/catchbasins, catchbasins, ditch inlets and valve chambers to be completed as per OPSS 402.

10.11. Storm manhole, manhole/catchbasin and catchbasin excavations to be backfilled with OPSS Granular 'B' compacted to 99% Standard Proctor Maximum Dry Density (SPMDD). Joints between sections must be wrapped in a non-woven geotextile.

10.12. Storm manholes and manhole/catchbasins to be as per OPSD 701.010 and must be equipped with safety platform as per OPSD 404.020 when exceeding 5.0 m to the lowest invert.

10.13. Storm manhole frame and cover to be as per OPSD 401.010 Type "A" closed cover.

10.14. When a minimum cover of 1.5 meters is not reached, frost protection is required.

10.15. For building roof drain sizes and location refer to architectural and mechanical drawings.

## 11. SANITARY SEWER

11.1. Sanitary sewers, laterals and service connections must be constructed in accordance with the Ontario Provincial Standard Specifications. Specifically sanitary sewers must conform to OPSS.MUNI 410.

11.2. PVC sanitary sewer pipe material to type PVC SDR-35, conforming to OPSS.MUNI 1841. PVC sanitary sewers to be installed as per OPSD 802.010 for earth excavation and 802.013 for rock excavation. Bedding and cover material to be OPSS Granular 'A'.

11.3. The allowable deflected pipe diameter when using flexible pipe is as follows:

- Pipes 100 to 750 mm: 7.5% of the base inside diameter of the pipe
- Greater than 750 mm: 5.0% of the base inside diameter of the pipe

11.4. Final backfill material for sanitary sewers must be approved native material or select subgrade material in conformance with OPSS.MUNI 212.

11.5. All sanitary sewers to be C.C.T.V. inspected by the Contractor as per OPSS.MUNI 409. Report must be provided to the Engineer in two (2) copies and the C.C.T.V. inspection in DVD format only.

11.6. Sanitary manholes to be installed as per OPSS 407.

11.7. Adjustment or rebuilding of sanitary manholes to be completed as per OPSS 408.

11.8. Excavating, backfilling, and compacting for sanitary manholes to be completed as per OPSS.MUNI 402.

11.9. Sanitary manholes to be backfilled with OPSS Granular 'B' compacted to 99% Standard Proctor Maximum Dry Density (SPMDD). Joints between sections must be wrapped in a non-woven geotextile.

11.10. Sanitary manholes to be as per OPSD 701.010 and must be equipped with safety platform as per OPSD 404.020 when exceeding 5.0 m to the lowest invert.

11.11. Sanitary manhole frame and cover to be as per OPSD 401.010 Type "A" closed cover.

11.12. A maintenance hole drop structure tee is to be used as per OPSD 1003.010 when the drop from the inlet invert to the outlet invert is greater than 600 mm and less than 1200 mm. A drop structure wye is to be used as per OPSD 1003.020 when the drop exceeds 1200 mm.

11.13. Sanitary service connections to rigid main sewer pipe to be as per City of Ottawa Detail S11. Connections to flexible main sewer pipe to be as per City of Ottawa Detail S11.1.

11.14. When a minimum cover of 1.8 meters is not reached, frost protection is required.

11.15. Benching is required inside the concrete bottom of sanitary manholes as per OPSD 701.021.

# SEDIMENT AND EROSION CONTROL

## 12. GENERAL NOTES

12.1. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation authorities, the municipal standard specifications and drawings, and all other governing authorities as they apply.

12.2. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.

12.3. Specifically, sediment and erosion control measures to be constructed as per OPSS.MUNI 805.

12.4. The Contractor must implement best management practices and provide adequate sediment and erosion control measures during construction:

12.5
- Prevent soil erosion which can result from stormwater runoff or wind erosion during construction;
- Prevent sediment deposits in the storm sewer and/or collecting streams and;
- Prevent air pollution from dust and particulate matter.

12.6. Provisions must be made for sediment and erosion control measures prior to stripping the site of vegetation and other deleterious materials. Measures such as phase stripping, vegetation buffer zones, silt fences, straw bales, sediment traps/basins, rock checks, etc. must be constructed and maintained in order to control sediment, as required by the provincial and municipal governing authorities.

12.7. The Contractor must set up the measures shown on the plan, inspect them frequently and clean and repair or replace the deteriorated structures.

12.8. When the sediment and erosion control measures have to be removed in order to complete a portion of the work, these same measures must be reinstated.

12.9. When storing soil on site in piles the Contractor must cover each pile with tarps, straw or a geotextile fabric to avoid fine particle transport by wind and/or streaming rain water.

12.10. The light duty silt fence barrier must be installed as per OPSD 219.110.

12.11. At all times the Contractor must maintain the municipal access roads clean and free of sediments. When cleaning the access roads, the Contractor must take the necessary precautions to clear the surfaces covered with sediment prior to cleaning with water.

12.12. For dust control, Contractor to apply calcium chloride (Type I - OPSS 2501 and CAN/CGSB-15-1) and water with equipment approved by the Owner's representative at rate in accordance to OPSS.MUNI 506 when directed by Owner's representative.

12.13. At the end of the construction period, the Contractor is responsible for removal of the temporary sediment and erosion control measures and reconditioning the affected areas.

12.14. This plan is a "Living Document" which may be revised in the event that the control measures are not sufficient.

12.15. Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials to within the required parameters of the receiving body before discharging to storm sewers, watercourses or drainage areas.

## 13. INSPECTIONS & MAINTENANCE

13.1 Using Schedule E1 - ESC Inspection and Photograph Checklist for reference, inspect all erosion and sedimentation control measures at least once each week and following any significant storm event (0.5 inches of precipitation or greater).

13.1.1. Using the checklist for reference, conduct an inspection of all erosion and sedimentation control measures implemented onsite each week and following any significant storm event (0.5 inches of precipitation or greater).

13.1.2. Inspections shall commence when the site is "disturbed" (i.e. when site work begins) and carry through until final landscaping is complete.

13.1.3. Provide a minimum of three (3) digital photographs of each ESC measure implemented on-site. Record the date each photograph was taken in the checklist. Photographs are required at the following occasions:

- Immediately following installation,
- In-situ and,
- At the end of construction or prior to removal, whichever comes first
- Coordinate photo requirements with the Engineer.
- Submit the completed checklist and accompanying photos to the Consultant after construction and prior to Contractor demobilization.

13.2. All erosion and sedimentation control measures must be maintained in good working order. If maintenance or repairs are identified they must be completed within 24 hours.

13.3. Schedule E2 - ESC Inspection Log must be completed for each inspection

13.3.1. Complete the log on a weekly basis. The log shall commence when the site is "disturbed" (i.e. when site work begins) and carry through until final landscaping is complete.

13.3.2. The inspection log shall be completed for each inspection and must document:

13.3.3. Deficiencies related to the measures listed in Schedule E1 - ESC Inspection and Photograph Checklist and,

13.3.3. Corrective actions taken to remedy the deficiencies

13.4. Inspection procedures specified below shall be followed in conjunction with details, drawings, and Contract requirements.

13.4.1. Stabilized Construction Entrance: Apply additional gravel as required, remove sediments and other materials from all areas to minimize clogging. Keep adjacent public roadway(s) free of sediment.

13.4.2. Material Stockpile: Inspect for effective prevention of runoff and erosion.

13.4.3. Temporary Seeding: If plants do not grow quickly or thick enough to prevent erosion, reseed the area as soon as possible. Keep seeded areas adequately moist. If irrigation is required, over-watering shall be avoided. Phosphorus-containing fertilizers are not to be used.

13.4.4. Permanent Seeding: Inspect for sufficient growth and water conditions. Replant areas if cover does not provide erosion control.

13.4.5. Silt Fence: Silt fence to be inspected for depth of sediment, tears, loose fabric attachment at the fence posts, channel erosion beneath fence, sagging or collapse and to ensure the fence posts are firmly in the ground. Built up sediment is to be removed from silt fence when it has reached one-third the height of the fence. Repair such that fence is in original installation condition.

13.4.6. Outlet Protection: Inspect outlet for erosion and pooling of water. Necessary repairs to be made as required to reduce exit velocity of runoff. If a riprap apron is used, inspect for riprap displacement and damage to filter fabric.

13.4.7. Inlet Protection: Inspect that measures are in original installed condition. Ensure measures are effectively trapping sediment. Remove accumulated sediment and debris when it reaches ½ the design depth of the trap. Repair protection measures as required.

13.4.8. Surface Roughening: Inspect for small eroded watercourses, as little as a few inches deep, or washout of roughened grading. Fill, regrade, and reseed immediately.

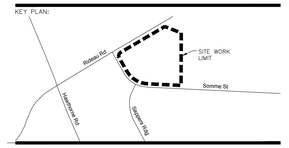
13.5. Erosion and sedimentation control measures shall be maintained and inspected until final landscaping is complete.

CLIENT LOGO:

FASTFRATE

CBRE

KEY PLAN:

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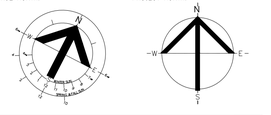


RECORD OF REVISIONS:

| NUMBER: | REVISION: | DATE: (MM/DD/YYYY) |
|---|---|---|
| 6 | | |
| 5 | | |
| 4 | | |
| 3 | | |
| 2 | ISSUED FOR SITE PLAN CONTROL REV. 2 | JUNE 7, 2022 |
| 1 | ISSUED FOR SITE PLAN APPROVAL | DECEMBER 16, 2021 |

ISSUE:

**PRELIMINARY 33%**
NOT FOR CONSTRUCTION

PROFESSIONAL STAMP:


PROFESSIONAL STAMP:

CIVITAS GROUP
ARCHITECTURE & LANDSCAPE ARCHITECTURE


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CONSULTANT LOGO:

PROJECT TITLE:

FASTFRATE OTTAWA WAREHOUSE AND DISTRIBUTION FACILITY

**SCALE: NONE**

SOMME ST.
OTTAWA, ON

DRAWING TITLE:

# NOTES PLAN

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DATE:
REVIEWED BY: J.SAUVE **C005B**
APPROVED BY:
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ISSUED DATE: NOVEMBER 26, 2021

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