

## 1. GENERAL

- 1.1. The General Contractor, herein referred to as “Contractor” is responsible for all work described in these documents. All work performed by its sub-contractors remains the responsibility of the Contractor. The Contractor must conform to all laws, codes, ordinances, and regulations adopted by federal, provincial, or municipal government councils and government agencies.
- 1.2. Unless otherwise indicated, all materials and construction methods to be in accordance with the requirements of the latest specification edition of the Ontario Ministry of Environment, Conservation and Parks (MECP), applicable Conservation Authorities, and all other governing authorities as they apply.
- 1.3. Wherever standards, laws and/or regulations are mentioned they refer to their current versions.
- 1.4. For any roadway closure, a bilingual (i.e. French and English) traffic warning bulletin must be submitted to Departmental Representative for approval prior to commencing work in that area.
- 1.5. Independent Quality Control Firm:
  - 1.5.1. An independent geotechnical firm will be hired by the Departmental Representative for the purpose of material testing, inspection, and quality control services.
  - 1.5.2. The geotechnical firm to review asphalt and concrete mix designs as requested by the Departmental Representative.
  - 1.5.3. If defects are revealed during inspection and/or testing, appointed geotechnical firm will request additional inspection and/or testing from the Departmental Representative to ascertain full degree of defect.
- 1.6. The location of existing underground services and public utilities as shown on the drawings 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.

- 1.7. Site preparation includes clearing, grubbing, stripping of topsoil, demolition, removal of unsuitable materials, cut, fill and rough grading of all areas to receive finished surfaces.
- 1.8. All material must be approved by the Departmental Representative prior to delivery to the site.
- 1.9. Compaction must conform to the following requirements:
  - Exposed subgrade:  
95% Standard Proctor maximum dry density (SPMDD)
  - Granular Base foundations:  
100% Standard Proctor maximum dry density (SPMDD)
  - Asphalt pavement:  
As per OPSS.MUNI 310 Nov. 2017
  - Subgrade fill (pavement areas - OPSS Select Subgrade Material):  
95% Standard Proctor Maximum Dry Density (SPMDD)
- 1.10. It is unlikely that groundwater is encountered during construction. If encountered, dewatering of excavations to be performed as per OPSS.MUNI 517 Nov. 2021. It is assumed that groundwater may be controlled by sump and pumping methods.
- 1.11. The Contractor must maintain benchmarks and landmark references as is. Otherwise, the Contractor must have them repositioned by a certified land surveyor.
- 1.12. The Contractor is the only person in charge of safety within the work site boundaries. The Contractor is responsible for providing adequate protection of the workers, other personnel and the general public, protection of materials, as well as maintaining in good condition the completed works and works to be completed. The Contractor must supply, install and maintain an appropriate safety fence along the work perimeter until the work is complete, and this as per the satisfaction of the Departmental Representative. The Contractor must provide at all times a sufficient number of barriers and others to ensure safety. For these purposes, the Contractor must submit a work safety plan to the Departmental Representative for approval prior to commencing work.
- 1.13. Temporary excavations in the overburden must be completed as per the requirements of the Occupational Health and Safety Act (OHSA), O. Reg. 213/91, Part III - Excavations.

- 1.14. The Contractor must pace deliveries and removals to minimize and control stockpiles.
- 1.15. Cleanliness on the site:
  - 1.15.1. The Contractor must clean roadways as directed by the Departmental Representative.
  - 1.15.2. All site roads and walkways to and from the construction zone must be kept clean at all times, from mud, dirt, granular material, and debris.
  - 1.15.3. The Contractor must leave the work area clean at the end of each day.
  - 1.15.4. Materials and equipment must be laid out in an organized and safe manner.
  - 1.15.5. All material, equipment and temporary structures which are no longer necessary for the execution of the Contract must be removed from the site.
- 1.16. During the construction period the Contractor is responsible for installing and maintaining temporary traffic signage, including traffic signs, traffic markings and temporary traffic lights, and flagmen, as required by the Departmental Representative and other governing authorities.
- 1.17. The Contractor must control surface rainwater runoff during construction.
- 1.18. The Contractor must ensure the following measures are implemented regarding the handling of concrete:
  - 1.18.1. Concrete should either be mixed away from the site or should be prepared on paved surfaces if only small quantities are required (i.e., minor repairs). Paved surfaces used for this purpose are to be cleaned afterwards.
  - 1.18.2. Excess concrete must be disposed off-site at a location that meets all regulatory requirements.
  - 1.18.3. The washing of concrete trucks and other equipment used for mixing concrete should not be carried out within 30 m of a watercourse or wetland and should take place outside of the work site.

1.18.4. All concrete trucks should collect their wash water and recycle it back into their trucks for disposal off-site at a location meeting all regulatory requirements.

1.19. Protection and removal of existing trees:

Where trees and naturalized areas are to be retained, the following best management practices as outlined in the City of Ottawa Tree Protection – By-law No. 2020-340 (City of Ottawa 2021b) should be followed when construction activities occur near trees. These protection measures must be in place prior to any work and maintained until the work is complete.

- a) Establish a buffer (i.e., fencing, stakes) around the critical root zone (CRZ) of trees as per TREE PROTECTION SPECIFICATION detail of drawing C-4.2.
- b) Do not attach any signs, notices, or posters to any tree.
- c) Do not damage the root system, trunk, or branches of any tree.
- d) Do not place any material or equipment within the CRZ of the tree.
- e) Do not raise or lower the existing grade within the CRZ.
- f) Do not direct exhaust fumes from equipment towards any tree's canopy.
- g) Construction equipment and heavy equipment should arrive at the site clean and free of mud and debris to prevent the spread of additional noxious weeds species to the site. Upon completion of work, the equipment should be cleaned to prevent the spread of weeds to the next work area.
- h) Prune tree branches as needed to complete the work. Inspect all branches to ensure there are no nesting bird habitats immediately before trimming.
- i) The Contractor must perform any tree removal as per recommendations of Environmental Effects Determination (EED) report issued by CIMA+. The Contractor must get a tree specific sign off from the Departmental Representative before any trees are removed.

1.20. The Contractor must ensure the following mitigation measures are implemented to reduce the risk of ground contamination from petroleum products:

- 1.20.1. The list of persons and agencies to contact in the event of an emergency must be posted in plain sight on the work site for the duration of the construction period.
- 1.20.2. Machinery must be clean and kept clean to limit any grease or oil deposits inside the work area.
- 1.20.3. Frequent inspections must be performed to detect any oil, fuel, grease or other leaks. If a leak is detected, the necessary corrective action must be taken immediately.
- 1.20.4. An emergency kit for the recovery of petroleum products must be kept within the work site boundaries at all times. The kit must include at least 30 m of absorbent booms, a box of absorbent pads and solid absorbent material (powder or granules). The kit must be stored near the location of work and machinery and kept within easy reach at all times to ensure a rapid response.
- 1.20.5. In the event of a spill the Contractor must immediately report to the Spills Action Centre of the MECP at 1-800-268-6060 and the Departmental Representative. Hydrocarbons and contaminated soils will be recovered by a specialized firm.

## 2. SEDIMENT AND EROSION CONTROL

- 2.1. Specifically, sediment and erosion control measures to be constructed as per OPSS.MUNI 805 Nov. 2021.
- 2.2. The Contractor must implement best management practices and provide adequate sediment and erosion control measures during construction:
  - 2.2.1. Prevent soil erosion which can result from stormwater runoff or wind erosion during construction.
  - 2.2.2. Prevent sediment deposits in the storm sewer and/or collecting streams.
  - 2.2.3. Prevent air pollution from dust and particulate matter.
- 2.3. 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, silt fences, etc. must be constructed and maintained to control sediment, as required by the Departmental Representative.

- 2.4. The Contractor must set up the measures, inspect them frequently and clean and repair or replace the deteriorated structures.
- 2.5. When the sediment and erosion control measures must be removed in order to complete a portion of the work, these same measures must be reinstated.
- 2.6. When storing soil within the work site boundaries 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 rainwater.
- 2.7. During the construction period, sediment capture silt sacks or filter cloths must be installed and maintained between the frame and cover of all catchbasins and catchbasin/manholes adjacent to the construction zone to minimize sediments entering the storm sewer system. All landscaping areas must be completed prior to the removal of the silt sacks or filter cloths.
- 2.8. The light duty silt fence barrier must be installed as per OPSD 219.110 Nov. 2021.
- 2.9. At all times, the Contractor must maintain the access roads clean and free of sediments.
- 2.10. 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.
- 2.11. This sediment and erosion control section is a "Living Document" which may be revised if the control measures are not sufficient.

### 3. DEMOLITION AND REMOVALS

- 3.1. The Contractor must protect and maintain in service all existing works which must remain in place. Any damage cause by the work will be the Contractor's responsibility to repair or replacement to the satisfaction of the Departmental Representative.
- 3.2. The Contractor must perform the necessary clearing and grubbing in accordance with OPSS.MUNI 201 April 2019.

- 3.3. The Contractor must carry out the necessary saw cuts even if they are not shown on the drawings.
- 3.4. The Contractor must entirely remove the demolition wreckage from the construction site in accordance with the requirements of the MECP and in accordance with OPSS.MUNI 180 Nov. 2021 and OPSS.MUNI 510 Nov. 2018. Demolition materials must be disposed off-site at authorized licensed landfills and in conformity with the applicable laws and regulations. The Contractor must be able to provide, upon request, copies of the disposal tickets.
- 3.5. The Contractor is responsible for locating all existing utilities.
- 3.6. The Contractor must conduct all removals required to make the work complete.
- 3.7. Unless otherwise specified, all materials, products and others coming from the demolition belong to the Contractor.
- 3.8. Surfaces and works located outside of the construction work limit must be reinstated as they were before the beginning of work.

#### 4. GENERAL SUBGRADE PREPARATION

- 4.1. Earth removal must be inspected by the Departmental Representative to ensure that all unsuitable materials are removed prior to the placement of fill, including concrete and/or others, and to confirm the compaction degree and condition of the founding soils. All unsuitable materials must be hauled off site and disposed as per provincial and municipal regulations.
- 4.2. Subgrade must be approved by the Departmental Representative before proceeding with placement of fill.
- 4.3. All soft, wet or disturbed areas revealed under surface compaction must be removed to a minimum depth of 500 mm and replaced with compacted suitable subgrade fill as directed by the Departmental Representative, and/or an approved non-woven Class 1 geotextile, as per OPSS 1860.MUNI Nov. 2018. Transition around sub-excavation, where backfill and native material are not of similar nature, must be sloped at 3 horizontal to 1 vertical.
- 4.4. All granular fill must be placed in maximum 200 mm thick loose lifts and compacted using suitable methods as per the requirements.

4.5. All heavy equipment must not operate directly on the subgrade. Subgrade surfaces will be prone to disturbance by weather and traffic, therefore preparation of the subgrade must be scheduled such that the granular materials are placed as quickly as possible.

4.6 The Contractor must reuse excess soil material on-site as much as possible.

4.7 The anticipated volume of excess soils generated on this project should be minimal as the new pathway structure will generally be constructed on top of the stripped topsoil layer. Excess soils excavated under the topsoil layer may be reused on-site as much as possible (refer to Note 5.5). Any excess soils hauled offsite must be managed in accordance O.Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, c.E19 (EPA) and the adopted by reference "Rules for Soil Management and Excess Soil Quality Standards" (the 'Soil Rules') as well as other regulatory amendments related to the management of excess soil. Excess soil is defined as non-hazardous soil, or soil mixed with rock, that has been excavated as part of a project and removed from the project area for the project. As it relates to this Contract, the Project Leader as per the definition under O.Reg. 406/19 is represented by the Departmental Representative.

- 4.7.1. A Soil Management Plan is to be developed by the Contractor for submission to the Departmental Representative. Where applicable, the Soil Management Plan is to be prepared in accordance with the MECP Management of Excess Soil - A Guide for Best Management Practices and in accordance with O.Reg. 406/19.
- 4.7.2. The Contractor is responsible for retaining a Qualified Person (QPESA, as per the definition under O.Reg. 153/04) to evaluate and provide all the necessary services required in accordance with O.Reg. 406/19. The services may include but not be limited to an Assessment of Past Uses, Sampling and Analysis Plan, Soil Characterization Report, and Excess Soil Destination Assessment Report, collectively described as the 'Planning Documents', as specified within the Soil Rules. The Contractor is responsible to finalize any preliminary Planning Document reports required, identify proposed soil destination site(s) for the Departmental Representative's approval, and satisfy all associated requirements specified by the selected destination site.
- 4.7.3. The Contractor is responsible to notify the Departmental Representative if actual construction activities and/or site conditions encountered are not consistent, or appear not to be consistent, with the information presented within the Planning Documents.
- 4.7.4. The Contractor is responsible to develop and implement a tracking system in accordance with O.Reg. 406/19, to track each load of excess



soil during its transportation and deposit at the approved destination site (i.e., reuse site, Class 1 soil management site, local waste transfer facility, landfilling site or dump, and any transportation to and from a Class 2 soil management site).

- 4.8. Contaminated material is not expected to be encountered during the work. However, if encountered, the Contractor must dispose off-site all materials from the contaminated area in accordance with the requirements of the MECP and OPSS.MUNI 180 Nov. 2021. Prior to the start of work, the Contractor must provide the name and location of landfill(s) where the contaminated materials will be disposed to the Departmental Representative. The Contractor must obtain from the landfill Owner documents confirming that he has the right to accept the contaminated material. During the work, the Contractor must provide the Departmental Representative copies of all check-in receipts issued by the landfill Owner.
- 4.9 The Contractor is responsible for providing a confirmation that the imported material used as subgrade fill is free of any contaminants, as per O.Reg 153/04, such as Petroleum Hydrocarbons (C<sub>10</sub>-C<sub>50</sub>), Polycyclic Aromatic Hydrocarbons (PAH), MAH (Monocyclic Aromatic Hydrocarbons) and metals like mercury, silver, arsenic, cadmium, cobalt, chromium, copper, tin, manganese, molybdenum, nickel, lead and zinc.

## 5. EXCAVATION AND BACKFILL

- 5.1. The asphalt multi-use pathway subgrade preparation must be completed as per Section "4.0 General Subgrade Preparation".
- 5.2. The management of excess materials to comply with OPSS.MUNI 180 Nov. 2021 and any excess soils with O.Reg 406/19.
- 5.3. Beneath the proposed pavement areas, all surface vegetation, surface water, rootmat, organics, underlying topsoil, frozen soils, debris, soft drainage ditch sediments, test pits backfill, and other deleterious material must be removed.

- 5.4. Subgrade fill used for grading beneath asphalt or concrete pavement structures must consist of OPSS Select Subgrade Material (OPSS.MUNI 1010 Nov. 2013) or earth borrow (OPSS.MUNI 206 April 2019 / 212 Nov. 2019) approved by the Departmental Representative prior to delivery to the site. Alternatively, if the Contractor deems it more efficient, he can choose to simply thicken the granular base foundation in shallow fill areas instead of using subgrade fill.
- 5.5. On-site excavated soils may be reused as backfill provided that the soil has a suitable moisture content to achieve the required compaction at the time of construction. The compatibility of the subsurface soils should be reviewed by the Departmental Representative. None of the excavated materials can be reused as pavement structure base or subbase materials. In landscaped areas the fill must be spread in thin lifts and compacted by the tracks of spreading equipment to minimize voids.
- 5.6. It is expected that some bedrock/rockface removal may be required (especially between STA. 1+225 to 1+255). Consideration should be given to line-drilling in conjunction with hoe-ramming. Recognizing that vibrations will need to be carefully controlled to prevent damage to existing structures and buried utilities. Blasting must not be used for this project due to the close proximity of existing structures and given the small quantities and limited depth of rock excavation that may be required.
- 5.7. Rock excavation must conform to OPSS 403.MUNI Nov. 2016 and to all laws, codes, ordinances and regulations adopted by federal, provincial and municipal government councils and government agencies, applying to the work to be carried out.

## 6. PAVEMENT STRUCTURES AND CURBS

- 6.1. Construction of granular foundation must conform to OPSS.MUNI 314 Nov. 2019.
- 6.2. Granular materials used must conform to the requirements of OPSS.MUNI 1010 Nov. 2013.
- 6.3. Light-duty multi-use asphalt pathway to be constructed as per Detail #118A and heavy-duty multi-use asphalt pathway to be constructed as per Detail #118B.

- 6.4. Construction of asphalt must conform to OPSS.MUNI 310 Nov. 2017 and OPSS.MUNI 311 Nov. 2018.
  - 6.4.1. Paving must not be carried out if the granular foundation is frozen or wet.
  - 6.4.2. The granular grade must be free of standing water at the time of hot mix asphalt placement. The surface of a pavement upon which hot mix asphalt is to be placed must be dry at the time of hot mix asphalt placement.
  - 6.4.3. As per OPSS.310.07.06.02 Nov. 2017, the asphalt must not be placed unless the air temperature at the surface of the road is a minimum of 7°C and rising.
- 6.5. Asphalt concrete material must conform to OPSS.MUNI 1150 Nov. 2020 for Hot Mix Asphalt. Minimum Performance Graded (PG) 58-34 asphalt cement must be used for this project.
- 6.6. Where the new walkway abuts the existing roadway and driveway entrances, a butt joint can be used at the extents of the new pavement. A tack coat should be utilized between all vertical faces. The tack coat should consist of SS-1 emulsified asphalt diluted with an appropriate amount of water as per supplier's recommendations. The undiluted and emulsified asphalt should be in conformance with OPSS.MUNI 1103 Nov. 2019. All milled surfaces should be thoroughly cleaned prior to the placement of a tack coat.
- 6.7. Asphalt mix design must be reviewed and approved by a Departmental Representative before paving.
- 6.8. Concrete curbs must conform to OPSS 353.MUNI Nov. 2021.
- 6.9. Concrete curbs to be constructed as per Details 112A and 109.
- 6.10. Elevation at top of concrete curbs to be 150 mm above the asphalt, unless otherwise indicated on the drawings.
- 6.11. For all concrete placement during cold weather Contractor must place material in accordance to OPSS.904.MUNI Nov. 2012.
  - 6.11.1. When ambient air temperature is 5°C or less, forms for concrete work must be left in place for the duration of the curing period;

- 6.11.2. When the ambient air temperature is below 0°C at the time of placing, components must be cured with moisture vapour barrier;
- 6.11.3. Contractor must conform to OPSS.MUNI 904.07.11 Nov. 2012 for Control of Temperature when subjected to cold weather.

## 7. MISCELLANEOUS

- 7.1. Bollard to be constructed as per Detail 403C.
- 7.2. Pavement markings to be "Organic Solvent Based" as per OPSS 710 Nov. 2021 and OPSS 1712 Nov. 2021.
- 7.3. Rip-Rap as per OPSD 810.010 Nov. 2018.
- 7.4. Grassed areas to be reinstated with 150mm of topsoil as per OPSS.MUNI 802 Nov. 2019 and topped with seed mix as per OPSS.MUNI 804 Nov. 2014.

- 7.4.1. OPSS.MUNI 804 Nov. 2014, section 804.05.01 is amended by the addition of the following:

Any of the following varieties or suitable alternatives licensed for sale in Canada by Agriculture Canada is acceptable.

Canada Bluegrass:	Reubens, Canon
Creeping Red Fescue:	Dawson
White Clover:	Sacramento, Sonja
Perennial Ryegrass:	Common
Legume Seed:	Birdsfoot Trefoil - Leo Crown Vetch - Penngift

Alternative varieties must be scientifically demonstrated for salt tolerance and cold hardiness equal or greater than the varieties specified above.

- 7.4.2. OPSS.MUNI 804 Nov. 2014, section 804.07.01 is amended by the addition of the following:

On any given year, Seeding operations shall only be carried out between May 1st to October 31<sup>st</sup>.

- 7.5. Free-standing signs to comply with Detail 401.

- 7.6 Tactile Walking Surface Indicators (TWSI) to be constructed as per detail SC7.3. Product shall be from the following list or approved equivalent:

<b>Manufacturer</b>	<b>Specific Model (when applicable)</b>
ADA Solutions	Irondome
Advantage Cast Iron	
Bibby Ste. Croix	Safety Detection System
East Jordan	Duralast
Ironped	
Neenah	
Star Pipe Products	

**END OF SECTION**