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Special Provisions – General

There will be no payment items for any General Special Provisions. Payment for all General Special Provisions shall be included in the Item Specific pay items.

Operational Constraints – General

Night and Weekend Working Restrictions

If the Contractor intends to undertake work at night or on a Saturday or Sunday, the Contractor is also required to inform the Contract Administrator in writing at least five (5) working days prior to the planned night or weekend works. The Contract Administrator will make every effort to approve, or deny, this request in writing within 48 hours of receiving this request. If the Contractor does not receive an approval by this time, then the Contractor is to assume that the request has been denied. The Contractor is also reminded that construction activities must conform to local Noise By-Law current at the time of the work. Night will be considered to be between one half hour before sunset and one half hour after sunrise.

Mailboxes, Newspaper Boxes, Address Posts and 911 Markers

All mailboxes, newspaper boxes, address posts, 911 number signs and Road Signs shall be protected from damage during construction. Those that require temporary removal and relocation to accommodate construction activities shall be removed, salvaged and reinstalled at no additional cost to the Owner. There shall be no interruption to use of mailboxes, newspaper boxes, address posts and 911 number signs. All costs borne by these requirements are to be included in the various associated Tender Items.

The Contractor shall be responsible for adjusting all mailboxes for changes in elevation as a result of grading changes to the shoulders/sideslopes.

Existing Commercial and Private Entrances

Construction operations shall be scheduled such that all commercial and private entrances are maintained open and usable by the owner/occupant, emergency vehicles and clients at all times, unless arrangements have been made with the property owner/occupant. The Contractor shall provide written documentation of all arrangements made with the property owner/occupant to the Contract Administrator 48 hours in advance of any closures being implemented.

It shall be the Contractor's responsibility to temporarily ramp all entrances during the construction process. Commercial, residential, and agricultural entrances shall be temporarily ramped to provide full access to the roadway and shall be installed immediately. Failure in applying temporary ramping will result in a \$1,000.00 per day penalty.

Surplus Material

All surplus material (concrete, asphalt, culverts, pipes, etc.) generated from the construction will be disposed of off-site at the Contractor's expense.

Utility Protection, Coordination and Relocations

The Contractor is responsible for consulting the municipal authorities and utility companies concerned and determining the exact location of the utilities.

The Contractor is solely and fully responsible for contacting all applicable utility companies for locates and operational constraints, and for providing such utility companies with details of the proposed work. The Contractor is also responsible for coordination with Hydro as required for any remaining pole relocations. Existing Hydro Poles within the work zone may require temporary support during construction. The Contractor shall be responsible for confirming and coordinating all temporary support requirements.

The Contractor shall devise methodology of work and carry out the work in a manner as not to affect utilities and shall be fully responsible for adequate protection of utilities from damage during construction.

The Contractor shall protect all utility poles and lines in accordance with the Utility company requirements. Payment for protection, temporary bracing, standby and associated work shall be deemed to be included in the Contract Price for the Item associated with the protection requirements.

Utility companies, including but not limited to, Enbridge Gas, Bell, Rogers-Ontario East, and Hydro One may be required to work within the Contract Limits during construction to relocate their respective underground and/or overhead infrastructure during this Contract. The Contractor shall account for and coordinate with the utility companies to allow for completion of the identified utility work.

The Contractor is responsible for contacting and coordinating their work with the utility companies including, but not limited to, those listed in this Special Provision. The Contractor shall protect and support existing utilities to the satisfaction of the utility companies when work is adjacent to and/or crosses any utilities.

The Contractor is advised that HydroOne will be relocating the majority of their aerial plant replacing poles at an offset of approximately 6 m from the north edge of the west travelled lane of the County Road. In addition, guy poles will be replaced where required. The work of Hydro One may be undertaken following the award of this contract. The contractor shall accommodate time and space for HydroOne personnel, or their agents, subcontractors or Contractor's personnel to place new poles, pull new wiring or any other components of their work. At no time shall both our contractor or HydroOne's personnel, or their agents, subcontractors or contractors be occupying the site. It will be the Contractor's responsibility to coordinate scheduling of independent

works. The Contractor shall include the cost of coordination and meetings with Hydro One if required.

The Contractor is to account for this work in their schedule and construction methodologies. The cost of this work shall be deemed to be included in the overall Contract price and shall not be measured for payment.

An exception to this general condition is there will be a special provision item and payment for Bell protection and support Bell Fibre Optics at Station 16+120.

The Contractor is advised that where there is a change in grade at a Bell pedestal i.e. additional fill, the Contractor shall provide a concrete collar.

Survey and Layout Information

The Contractor acknowledges that the survey layout and grading information listed herein will be provided, if requested by the Contractor, within five (5) working days following the issuance of the Commence Work Order, provided that the Contractor confirms in writing the acceptance of the following conditions:

- a) The electronic files and hardcopy formats are provided as “information only” and do not form part of the Contract.
- b) The electronic files will be provided in AutoCAD format, unless otherwise indicated below.
- c) Any discrepancies shall be immediately disclosed to the Contract Administrator for interpretation.
- d) This request is limited to this contract and is not precedent setting or considered to be County policy.
- e) The information provided on the electronic files will not form a basis for a claim.
- f) The use of the electronic files will not supersede the requirements of the Contract Documents regarding survey layout (stakes) and any additional survey requested by the County for the required inspection of the work.
- g) The files will not be released to other parties without the written consent from the County.
- h) The tender hardcopy of the Contract Drawings shall be considered the official document unless superseded by other hardcopy drawings issued by the Contract Administrator.

Items that are not included in the following list are not anticipated to be provided to the Contractor with this Contract.

- Survey Control Points – to be provided by the County
- CAD Files (2-Dimensional Components to be provided in CAD are listed below):
 - Alignment
 - Roadway Geometry
 - Grading Limits

- Pavement Elevations
- Roadway Cross Sections

Operational Constraints – Environmental

Prevention of Wildlife Harassment

The Contractor shall not harm, harass or kill any wildlife encountered during construction.

The Contractor shall not block or prohibit wildlife access to culverts. Passage for wildlife through culverts must be maintained throughout construction.

No additional compensation shall be made for work delays as a result of encounters with wildlife.

Protection of Fish Habitat

The contractor shall, in compliance with the Fisheries Act and all other applicable regulations, assess and protect fish habitat during the culvert work. This includes establishing buffer zones, implementing erosion and sediment control measures for culvert installations, adhering to timing restrictions for construction near sensitive periods, relocating fish if necessary, during culvert work, and monitoring and reporting on the status of fish habitat. An emergency response plan shall be maintained. The Contractor shall also restore disturbed areas to a condition consistent with the Contract Drawings. This provision may be review and amended as required to address changing project conditions.

Works in area identified with fish habitat shall be restricted to be completed only within the dates of July 15 to March 15. The delineation of areas of Fish Habitat are included in **Appendix B**.

Construction Activities around Trees

1. Throughout the complete duration of the project, the Contractor shall ensure that all equipment stays within the confines of the work area so as not to disrupt any turf or tree roots. The storage of equipment and vehicles around any trees within the right of way is prohibited.
2. The Contractor shall remove all excavated material immediately and not place it on grass or near trees for any length of time. This also applies to imported material; i.e., topsoil, granulars, trench boxes, or any construction related materials.
3. The Contractor shall reinstate all disturbed turf to its original state immediately upon completion of work.
4. The Contractor shall not damage or remove any trees within the work area other than as strictly required to complete the work; trees shall only be removed upon direction from the Contract Administrator.
5. The Contractor shall not store fuel within the dripline of any tree, and exhaust fumes from all equipment must NOT be directed towards any tree's canopy.

6. The Contractor shall take all steps necessary to avoid mechanical damage when operating raised dump boxes or large excavating equipment in proximity to trees which overhang the road allowance.
7. The Contractor shall protect the exposed tree roots. Wet filter cloth shall be used to temporarily cover and protect the exposed tree roots. Filter cloth shall be installed immediately following root exposure and shall be held in place with approved pins or spikes until backfilling occurs. Exposed roots shall be kept continuously moist while exposed during construction activities.

Identification of Local Regulatory Authorities

The following is provided for information only, to facilitate contact with and notification to regulatory authorities as specified in the Contract Documents:

Regulatory Authority Notification Requirement	
MOE: Spills Action Centre (SAC) 1-800-268-6060	For notification of a spill to the environment under the Environmental Protection Act
South Nation Conservation Authority 613-984-2948	For notification of timing of work on municipal drains
Township of North Stormont: Drainage Superintendent, Sean MacDonald 613-362-1006	For notification of timing of work on municipal drains
Municipality: Municipal Office Township of North Glengarry 3720 County Road 34, R.R. 2, Alexandria, ON K0C 1A0 Phone: 613-525-1110 Fax: 613-525-1649	For notification of a spill to the environment under the Environmental Protection Act
Municipality: Municipal Office Township of South Stormont 2 Mille Roches Road, PO Box 84 Long Sault ON K0C 1P0 Phone: 613-534-8889 Fax: 613-534-2280	For notification of a spill to the environment under the Environmental Protection Act
MECP: District Office Cornwall Area Office 113 Amelia St. Cornwall ON K6H 3P1 Toll free: 1-800-860-2760	For Waste Management Approval under the Environmental Protection Act
MNRF: District Office 10 Campus Drive, Postal Bag 2002, Concession Road, Kemptonville, ON K0G 1J0	For notification of the release of a deleterious substance to a watercourse under the Fisheries Act

Telephone: 613-258-8204	
DFO: District Office Fisheries and Oceans Canada 520 Exmouth Street Sarnia, ON N7T 8B1 Telephone: 519-383-1813	For notification of the release of a deleterious substance to a watercourse under the Fisheries Act
Local Police: P.O. Box 430 4 Mille Roches Road Long Sault, ON K0C 1P0 Telephone: 613-534-2223	For notification of a Dangerous Occurrence involving dangerous goods under the Transportation of Dangerous Goods Act

Management of Excess Earth with Salt Impacts

The Contractor shall note that excess earth from roadway construction projects may contain elevated concentrations of chloride and sodium and may have elevated values for Electrical Conductivity and Sodium Adsorption Ratio. For the purpose of this Contract, excess earth with salt impacts is not considered to be “contaminated” within the meaning of Table A in OPSS 180.

Where the Contractor manages excess earth as disposable fill, the Contractor shall take into account the possibility of salt impacts and ensure that the material is managed responsibly and in an environmentally appropriate manner. Where the Contractor intends to manage the excess earth that may be salt impacted on private property, the Contractor shall make the Property Owner aware that it may be salt impacted by using the attached Property Owner’s Release in place of OPSF 180-3.

The Contractor is responsible for conducting such sampling and testing as may be necessary to comply with any requirements imposed by the Property Owner as a condition of accepting the excess earth.

Use of Private Lands

The Contractor is responsible for negotiating and securing permission for use of any private lands. The Contractor shall provide the Contract Administrator with documentation of the permission and the release following the use of these lands. The following letter shall be used for the release.

PROPERTY OWNER'S RELEASE

Contract No: _____

Work Description: _____

I/We _____ being the owner(s) of Lot, _____
Concession _____, Township of _____, and County of _____, verify that the Contractor for the above noted work has placed excess material from the above noted Contract on my/our property with my/our permission. I/We have signed together with the Contractor OPS Forms 180-1, Site Selection Notification for Stockpiling Materials Managed Through Re-Use, or 180-2, Site Selection Notification for Material Managed as Disposable Fill, or both, that describe Conditions on Management, and have been assured by the Contractor that these conditions have been met.

Quantity and Type of Excess Material used as fill:

Where materials are managed as disposable fill, I/we agree to be responsible for any subsequent relocation and management of the material so placed.

Quantity and Type of Excess Material stockpiled:

Where materials are to be stockpiled, I/We agree that the stockpile(s) will be removed by the date(s) herein noted.

I/We state that I/we are the registered owner (s) of the property identified above and I/we hereby release the Owner and the Contractor in respect of the activities of the Contractor carried out in accordance with this release.

Dated this _____ day of _____ 20____

Print Registered Property Owner's Name (s)

Registered Property Owner's Signature(s)

Print Contractor's Name & Field Representative's Name

Contractor's Field Representative Signature

cc: Contract Administrator, Property Owner(s), Contractor

Operational Constraints – Quality Control

Contractor Quality Control

1.0 SCOPE

This Specification describes the Contractor's quality control obligations under this Contract. The Contractor is responsible for all quality control activities required to ensure the level of quality for all aspects of the Work specified elsewhere in this Contract. The Contractor shall provide the individuals, the management of such individuals and resources necessary to implement a quality control process which meets the requirements detailed in the Contract Documents.

2.0 REFERENCES

MTO Laboratory Testing Manual:

LS-100 Method for Rounding-Off of Test Data and Other Numbers

3.0 DEFINITIONS

Acceptance Test Results: means the test results that are used for the final assessment of compliance with the specification for the material. Depending on the specification for the material, the final assessment of compliance is based on one of the following: quality control, quality assurance, owner acceptance, or referee test results.

Deficient Materials: means, for quality control purposes, materials which have an attribute, property or characteristic that does not meet the requirements of the Contract Documents.

Deficient Workmanship: means, for quality control purposes, the final product does not meet the requirements of the Contract Documents due to the Contractor's construction activities including but not limited to incorrect elevations, dimensions, alignment, appearance and/or crossfall of individual elements, products and finished construction (for example: incorrect pavement crossfall, segregation of asphalt pavement or honeycombing of concrete).

Quality Control (QC): means a system or series of activities carried out by the Contractor to ensure that the final product and materials supplied to the Owner meet the specified requirements.

Quality Control Administrator (QC Administrator): means the Contractor's representative responsible for monitoring and ensuring quality control compliance and submission of QC documentation.

Notification of Non-Conformance: means a formal notification by the Contract Administrator to the Contractor identifying aspects of the work, which do not conform to the Contract requirements and which have not been adequately identified by the Contractor to the Contract Administrator.

Non-Conformance Report: means a report issued by the Contractor to the Contract Administrator which identifies the Quality Control Performance Measure that was not met, will not be met, or may not be met. This report will include a proposal for corrective or mitigating action and must be approved by the Contract Administrator.

4.0 DECLARATIONS OF QUALIFICATIONS

4.1. Submissions

The Contractor shall submit a Declaration of Qualifications, identifying the Quality Control Administrator, other quality control personnel and/or firms to the Contract Administrator prior to commencing work on the project. If, for any reason, the Contractor decides to substitute the named quality control individual(s) or firm(s) a Declaration of Qualifications accompanied by proof of experience shall be submitted to the Contract Administrator five days prior to the changed quality control personnel and/or firms providing services to the Contractor.

The Contract Administrator will respond in writing with an acknowledgement of receipt. Submissions that are incomplete or otherwise do not meet the requirements of this Special Provision will be returned for re-submission at no additional cost to the Owner.

4.2. Audit of Qualifications

For audit purposes, the Contractor shall submit supporting documentation demonstrating that the specified qualifications have been met for any quality control personnel or firm upon request at any time up to 30 calendar days after the date of certification of Completion of the Work. This shall include detailed resume(s) and copies of certificates where applicable and shall be submitted within 3 business days of the request.

5.0 QUALITY CONTROL PERFORMANCE MEASURES

5.1. General

The Contractor is responsible for all quality control activities on the Contract, and shall provide the staff and resources necessary to implement quality control processes that result in compliance to the quality control performance measures detailed in subsections 5.2 to 5.7 inclusive.

5.1.1 Applicability of the Quality Control Performance Measures

The Contract Administrator will assess the Contractor's compliance to the performance measures related to:

- a. The production and supply of Engineering Materials,
- b. The removal, rehabilitation, modification or construction of temporary or permanent elements of work that are comprised of Engineering Materials, and
- c. Inspection, sampling, testing and QC records associated with a) and b) above.

For the purposes of this special provision, Engineering Materials includes, but not limited to:

- Granular Base & Sub-Base Materials
- Bituminous Materials
- Concrete Materials
- Grading, Drainage and Backfill Materials
- Structures and Foundations Materials
- Trees and Plantings
- Mailboxes and sign poles
- Pavement Markings Materials, and
- Sewer Infrastructure Materials

5.2. Quality Control Personnel/Firms

The Contractor shall ensure that:

- a. The name of the QC Administrator is identified to the Contract Administrator, in writing when specified, before they carry out the positions' responsibilities;
- b. If the Contractor divides the QC Administrator's responsibilities between more than one person, the Contract Administrator is provided with their names and a written explanation of the responsibilities of each person before any of them carries out the position's responsibilities;
- c. The QC Administrator, not a designee, shall attend all contract meetings unless otherwise permitted by the Contract Administrator;
- d. The QC Administrator shall only undertake quality related responsibilities as described within this Special Provision. The QC Administrator shall not assume any responsibilities normally associated with production;
- e. Submissions of declarations for firms and personnel performing QC functions are accurate, complete and submitted in accordance with the timeframes as detailed in Section 4.1 Submissions;
- f. The Contract Administrator is provided with proof of the identity of personnel listed in 5.2 (e) upon request;
- g. Only the personnel/firms identified in submitted declarations, or in other forms of communication when permitted by the Contract Documents, shall be utilized for the indicated certifications, Interim Inspections, permissions to proceed and other quality control activities; and
- h. Personnel and firms meet the qualifications as specified in the Contract Documents and maintain these qualifications for the duration of their participation in the work.

5.3. Sampling, Testing and Submission of Results

The Contractor shall ensure that QC test results are recorded on the day on which the tests were performed and are submitted to the Contract Administrator under the signature of the QC

Administrator, and that each of the following is performed in accordance with the Contract Documents:

- a. quality control and quality assurance material sampling, preparation, handling, delivery and storage,
- b. quality control testing and the timing for the testing, and
- c. timing for the submission of results for all quality control testing

5.4. Construction Materials and Mix Designs

The Contractor shall ensure:

1. Each of the following complies with and is supplied in accordance with the Contract Documents:
 - a. materials from approved/designated sources,
 - b. mix design submission, including all supporting documentation, and
 - c. submission of certification for all materials that require certification.
2. Each of the following is performed in accordance with the Contract Documents:
 - a. mix designs,
 - b. materials testing and/or inspection prior to incorporation into the work, and
 - c. checking that materials meet the applicable specifications,
 - d. materials handling and/or storage, and
3. That no materials are used that are identified as deficient prior to incorporation into the work. The Contractor shall ensure that no materials are used that would have been identified as deficient prior to incorporation into the work if QC test results had been available when specified.

5.5. Other Quality Control Responsibilities

The Contractor shall ensure that all QC inspection activities and associated records are completed in accordance with the quality control requirements of the Contract Documents and that each of the following is in accordance with the Contract Documents:

- a. submission of materials-related documentation prior to proceeding with construction of particular elements of work;
- b. the existing condition of substrate, formwork or other locations against which material is to be placed;
- c. environmental conditions for material placement, including but not limited to temperature and weather constraints and placement restrictions;
- d. equipment;
- e. construction methods for material placement and/or removal; and
- f. provision of environmental protection of materials and elements of work and/or maintenance of environmental conditions after material placement (for example; curing of concrete, cold weather protection).

5.6. Certifications, Permission to Proceed and Submission of Drawings/Documents

The Contractor shall ensure that:

- a. All specified inspections have been carried out prior to certification;
- b. All certifications are correct, completed accurately, submitted on time in accordance with the Contract Documents and submitted prior to proceeding with the next phase of the work where specified; and
- c. All drawings and other documents sealed and signed by an Engineer or signed by an Ontario Land Surveyor are submitted on time in accordance with the Contract Documents.

5.7. Disposition of Deficient Materials and Workmanship

For each occurrence of deficient materials and/or workmanship the Contractor shall:

- a. Immediately identify and notify the Contract Administrator of the deficiency prior to the Contract Administrator bringing it to the Contractor's attention,
- b. Implement preventative measures prior to continuing with the operation and shall not proceed with subsequent operations that would prevent or impede corrective work on the deficiency,
- c. Record a brief description of the deficiency in a daily diary immediately after identifying the deficiency and the complete details within one business day of each occurrence,
- d. Within 3 business days, unless otherwise mutually agreed in writing, submit a Deficiency Report to the Contract Administrator containing the following:
 - i) the cause and extent of the identified deficiency,
 - ii) a proposal for corrective work
 - iii) for information purposes, a description of preventative measures to be undertaken that will effectively prevent reoccurrence of the event, and
 - iv) a testing and/or inspection proposal for the written approval of the Contract Administrator and undertake the approved testing and/or inspection to demonstrate that the corrective action has been effective and the resulting material or elements of work are acceptable, and
- e. Implement the corrective work, testing and/or inspection in accordance with the approved proposals.

6.0 COMPLIANCE WITH QUALITY CONTROL PERFORMANCE MEASURES

6.1. Assessment of Compliance

During the course of construction and within 30 calendar days after the date of certification of Completion of the Work, the Contract Administrator will assess compliance to the quality control performance measures.

The Contract Administrator's assessment of compliance may consist of random or milestone inspections, continuous inspection, sampling and testing for audit purposes, audits of the quality control documentation specified in the Contract Documents or any combination of the preceding actions, at the discretion of the Contract Administrator. In addition, the Contract Administrator may perform audits to assess compliance.

For workmanship, if the Contract Documents do not specify a test method or tolerance for a specified property or measurement of a final product and the Contract Administrator identifies deficient workmanship in the final product that the Contractor did not identify, the Contract Administrator will provide the Contractor with a description of the deficiency in writing within three business days of its identification. The Contractor shall use the Contract Administrator's assessment of compliance of that particular aspect of workmanship for inspection of work already completed and for future work.

6.2. Non-Conformances to Quality Control Performance Measures Identified by the Contractor

A non-conformance to a quality control performance measure occurs when the Contractor does not comply with that quality control performance measure.

When a non-conformance occurs the Contractor shall:

- a. immediately notify the Contract Administrator verbally or in writing.
- b. within 24 hours of the non-conformance, submit a Non-Conformance Report containing a description of the quality control performance measure that was not met together with a proposal for corrective or mitigating action to the Contract Administrator for approval, and
- c. carry out corrective or mitigating action in accordance with the approved proposal.

6.3. Non-Conformances to Quality Control Performance Measures Identified by the Contract Administrator

A non-conformance to a quality control performance measure occurs when the Contractor does not comply with that quality control performance measure. When a Notification of Non-Conformance is issued to the Contractor, the Contractor shall:

- a. within 24 hours of the non-conformance, submit a Non-Conformance Report containing a description of the quality control performance measure that was not met together with a proposal for corrective or mitigating action to the Contract Administrator for approval, and
- b. carry out corrective or mitigating action in accordance with the approved proposal
- c. within 24 hours after a non-conformance has been assessed, the Contractor shall comply with the requirements of the Contract Documents that were the subject of the non-conformance. The non-conformance will not be waived regardless of the Contractor's subsequent compliance.

6.4. Financial Penalties

For each non-conformance report issued to the Contractor by the Contract Administrator, or for each failure of the Contractor to follow the requirements of clause 6.2 a \$1,000.00 deduction shall be made from the Contractor's final progress payment. The final decision on the application of a penalty shall be at the sole discretion of the Contract Administrator.

7.0 ACCESS TO RECORDS AND FACILITIES

The Contract Administrator shall be given access to obtain samples for testing and perform survey work, as necessary in order to monitor the Contractor's adherence to the requirements of the Contract.

The Contractor shall be required to retain and provide access to all inspection records and test results for a period of at least six years after the date of certification of Completion of the Work. This clause shall survive after the date of certification of Completion of the Work.

Operational Constraints – Sequence of Works

Any night work shall limit the disruption on local businesses and motorists.

The Contractor shall facilitate agricultural operations which have seasonal peak periods. Seasonal operations may be related to: spring planting, an early cut of hay (June/July), and Fall harvest.

The Contractor shall install all culverts by maintaining traffic on a single lane following OTM Book 7. No full road closures will be allowed.

Operational Constraints – Traffic

Construction operations shall be carried out in such a manner as to maximize safety and minimize disruption to traffic flows and roadway operations.

Maintenance of Traffic

Traffic shall be restored to one lane in each direction at the end of every day's operations to, as a minimum, the original lane widths.

Construction operations shall be scheduled such that all commercial and private entrances are maintained open and usable by the owner/occupant, emergency vehicles and clients at all times, unless arrangements have been made with the property owner/occupant. The Contractor shall provide written documentation of all arrangements made with the property owner/occupant to the Contract Administrator in 48 hours in advance of any closures being implemented.

The Contractor shall notify the Contractor Administrator, as well as all Emergency Response Services including the O.P.P., local Fire Departments, Ambulance, 911 Service Centre and local

School Boards prior to start of work. The Contractor shall also provide the residents with a notice letter stating the proposed start and completion dates, Contractor contact information and how the construction will affect the residents (i.e. driveway transition and temporary ramp measures). A copy of the notice letters shall be provided to the County for review and approval prior to delivery.

Traffic on Granular Surfaces

The Contractor shall be permitted to run traffic on a milled or granular surface; however work shall be staged to minimize the total amount of time public traffic must travel on the granular surface.

The Contractor shall be responsible for maintaining the milled or granular surface at no additional cost to the owner. The condition of the surfaces shall be monitored by the Contract Administrator, and they will have the authority to determine if the riding surface is acceptable. Where milled or granular surfaces are to remain unpaved over weekends or holidays, it shall be the responsibility of the Contractor to ensure the milled or granular surface is suitable prior to vacating the site and to ensure a suitable riding surface at all times at no additional cost to the owner.

Shoulder Construction

Prior to opening any roadway to traffic, granular material shall be placed level with the top edge of pavement grade, sloped to final crossfall across the entire shoulder width.

Operational Constraints – Dust Control and Compaction

Dust Control

The Contractor shall take such steps as may be necessary as deemed by the Contract Administrator, to prevent dust nuisance resulting from their operation either within right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a road through the work. The Contractor shall provide a minimum of 4 dust suppression treatments with water per day (2 in am and 2 in pm). Additional treatments above and beyond the four required per day shall be provided when requested by the Contract Administrator.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

Water, calcium chloride flake or calcium chloride solution may be used for dust suppression and shall conform to OPSS 506.

Water for Compaction

Water shall be used for compaction and shall conform to OPSS 501.

Operational Constraints – Contract Documents

The Contractor shall base all works on the Issued for Construction Contract Documents and Drawings. No work shall be based on the Issued for Tender Package.

Special Provisions – Item Specific

A.1 Mobilization/Demobilization

Scope of Work

Payment at the Contract Price for the above tender item shall be full compensation for all labour, equipment, and material required to do the following work:

- Mobilization including set-up of appropriate sanitary facilities, secure work areas, and transportation of equipment;
- Providing an initial construction schedule and updating it on a bi-weekly basis;
- Site security;
- Stakeout of existing utilities and services;
- Provide project layout based on survey data provided by Contract Administrator;
- Communications with property owners;
- Attendance at preconstruction and subsequent site meetings; and
- Demobilization and removal of equipment, materials etc.

The Contractor shall be responsible for the protection of all utilities and municipal services at the job site during the time of construction. It is the Contractor's responsibility to contact the appropriate agencies for further information regarding the exact location of all utilities, to exercise the necessary care in construction operations and to take such other precautions as are necessary to safeguard utilities from damage. The Authority will be responsible for the relocation of utilities where required (as shown on the contract drawings). However, no claims will be considered which are based on delays or inconveniences resulting from the relocation not being completed before the start of this contract.

All costs associated with complying with this item shall be borne by the Contractor. The Contractor is advised that they must thoroughly review all contract documents and other pertinent information in advance of compulsory attendance at the design turnover meeting.

Measurement of Payment

The measurement of payment for this item will be a lump sum price.

Basis for Payment

Partial payments will be made on the following basis:

- 60% of the tender amount will be paid upon set-up of the construction laydown area, mobilization and providing an initial construction schedule.
- 40% of the tender amount will be paid upon demobilization.

A.2 Bonding and Insurance

Payment under this item shall include all requirements contained within the contract including insurance and the coverage for additional parties listed elsewhere in the contract.

The value of the Bond shall be based on the tendered amount with no subsequent adjustment due to extra work.

Measurement of Payment

The measurement of payment for this item will be a lump sum price.

Basis for Payment

Payment for this item shall include all labour, equipment and materials necessary to complete the work. Payment shall be made upon submission of satisfactory proof of bonds and insurance to the Contract Administrator.

A.3 As-Built Drawings and Data

The Contractor shall provide a lump sum price for all labour, material and equipment for the installation of the works including, but not limited to:

As-built information for all infrastructure shall include the following minimum requirements:

- Final sewer inverts and manhole and catch basin locations.
- Final culvert locations, diameters and inverts.
- Final locations of all relocated existing utilities and services.
- Final location of all municipal streetlights.
- Final location of all regulatory and warning signs within the right-of way.
- Final location of all sections of guiderail.
- Final location of the centreline of relocated municipal drains.
- Any vacuum excavation data, including horizontal and vertical data of the exposed utilities.
- All horizontal data shall be in the form of X, Y, Z coordinates tied into the project coordinate system. All vertical data shall be tied into the project Benchmarks.
- Data shall also be delivered in acceptable hard copy and digital AutoCAD and GIS Shapefile formats

The Contractor shall also provide as-built information for any other works that were revised from the issued for construction drawings and not captured through a site instruction or change order. This includes both changes to the roadworks or any of the sub-disciplines (electrical, landscaping etc.).

Measurement of Payment

Measurement for payment shall be lump sum.

Basis for Payment

Payment for this item shall be made at the lump sum price bid and shall include all labour, equipment and materials necessary to completely layout the work. Payment shall be made only upon submission to the Engineer of complete and satisfactory as-constructed data files.

A.4 Contractor Layout

The Contractor shall provide a lump sum price for all labour, material and equipment for the layout of the works:

The Contractor shall be responsible for performing all survey layout of the construction work including verification of Benchmarks, elevations at tie-in points, etc.

All layout of line and grades, and preparation of as-built data shall be the responsibility of the Contractor. The Contractor shall demonstrate that they have experience specializing in such surveys and shall submit credentials and experience of the individuals to be assigned to this project. The County has the right to reject the specific individuals for any reason, in which case the Contractor shall retain other individuals for the work.

Prior to construction, the Contractor's survey personnel shall check benchmarks and horizontal control points provided in the contract drawings and report any discrepancies. Construction layout shall be carried out by persons trained in this type of work. Where PI's are not provided (e.g. sewers, manholes), such works shall be laid out by the Contractor utilizing dimensions and other information on the Drawings, and such layout shall be approved by the Engineer prior to commencing construction. No layout shall be done using offsets from centreline (chainage line), or from existing features, unless approved by the Engineer.

Copies of all layout data and grade sheets shall be provided to the Engineer upon request.

The Contractor's construction layout work for the roadworks shall include standard 50 mm x 50 mm stakes placed left and right of centreline at or near the right-of-way limits. The stakes shall be placed at a maximum of 20 metre intervals, with 10 metre intervals or less where the Contract Administrator deems appropriate, and in areas where additional staking is required, such as at intersections or horizontal and vertical curves.

The Contractor shall submit to the Owner, control grade checks indicating that the horizontal and vertical grading tolerances are being met on all earth and granular surfaces.

The Contractor shall provide a check of the box culvert bedding elevations prior to installation of the precast concrete box.

Measurement of Payment

The measurement of payment for this item will be a lump sum price.

Basis for Payment

Payment for this item shall be made at the lump sum price tendered and shall include all labour, equipment and materials necessary to completely layout for all the works, including all measurements and calculations of quantities for payment purposes. Payment shall be made on each payment certificate based on the percentage of the entire work in this Contract completed.

A.5 Field Office for Contract Administrator

Under this tender item, the Contractor shall supply and maintain a field office and its associated items for the sole use of the Contract Administrator and staff.

Location

Prior to the commencement of work on this tender item, the Contractor shall receive approval from the Contract Administrator for the location of the field office and shall have the field office installed and operational.

Field Office Dimensions and Condition

- Floor area 20 m²
- Inside minimum clearance of 2 vertical metres
- 1 desk
- 1 drafting table (2 m² each)
- 1 lockable filing cabinet (3-drawer)
- 2 stools
- 8 chairs
- Wooden board table for site meetings
- First aid kit
- Eye wash station
- Fire extinguisher

All doors shall be solid and capable of being locked with a 25 mm dead bolt lock, and two sets of keys will be supplied to the Contract Administrator.

The inside of the office shall be moisture tight and capable of being lit to a level that is satisfactory to the Contract Administrator. It shall have adequate windows, heating and ventilating equipment capable of maintaining the working area at 21°C during both summer and winter weather conditions.

The Contractor shall supply or arrange to supply a water cooler capable of maintaining a water supply at 7°C. Water shall be potable and supplied at a rate as dictated by the Contract Administrator.

Sanitary Facilities

It is the Contractor's responsibility to provide and maintain adequate sanitary facilities in accordance with Sections 28 and 29 of the Ontario Regulation 145/00 under the Operational Health and Safety Act.

It is the responsibility of the Contractor to provide and maintain adequate sanitary facilities for the exclusive use by County staff and its consultants.

Hydro Services

The Contractor shall provide within the floor area of the field office hydro facilities for the sole use of the Contract Administrator.

Measurement of Payment

The measurement of payment for this item will be by month.

Basis for Payment

Payment at the Contract Lump Sum price shall be full compensation for supplying, servicing, maintaining and removal, including labour, equipment and material to do the work for the duration of the Contract. Maintaining includes the cost for all servicing, rental fees, permitting, hydro and insurances. Payment shall be made as follows:

- 40% upon initial setup
- 50% for maintenance over the duration of the Contract (prorated)
- 10% upon removal

A.6 Traffic Management Plan and Traffic Control Including Regulatory Signage

All traffic control and signing must conform to OPSS 706 and the Ontario Traffic Manual, Temporary Conditions (current edition).

General

The Contractor shall at all times carry on the work in a manner that will create the least interferences with traffic, consistent with the faithful performance of the work. Ensure that vehicles and equipment employed in connection with this project on public roads do not endanger or hinder vehicular traffic. Notify and obtain permission from the County prior to crossing any roadway.

The Contractor shall submit to the Contract Administrator, at least three weeks prior to commencement of construction activities and material deliveries, a comprehensive Traffic

Management Plan (TMP), prepared by a Professional Engineer licensed in the Province of Ontario, which includes full details of the proposed staging/sequencing of the work, the proposed traffic management and traffic control measures and any associated reinstatement work.

The traffic management plan must be prepared and submitted by the Contractor to the Engineer for review and approval prior to the pre-construction meeting. The Contractor shall also supply a detailed proposal of traffic control to the Engineer, the OPP - SDG Detachment, the local Fire Department, the local ambulance service, the local school bus company (if applicable) and the local utility companies. No work shall commence until the Contractor's proposal has been approved by the Engineer.

The TMP shall include both a narrative description of the Contractor's proposed construction staging and clear, concise, dimensioned drawings showing the layout of traffic management and traffic control measures and how the Contractor intends to maintain traffic flow in accordance with the conditions and provisions set out herein and the latest edition of the Ontario Traffic Manual (OTM) Book 7.

The TMP shall also consider the movement of vehicular, commercial truck, bus, emergency service, and the impacts on abutting properties. The plan shall ensure that properties with more than one entrance shall always have one entrance maintained unless express approval is obtained from both the property owner and the Contract Administrator.

Any and all changes to those staging plans and/or TMP must be approved by the Contract Administrator. Proposed alterations or deviations shall be presented to the Contract Administrator in enough detail so as to facilitate a full review by the Contract Administrator who shall have a minimum of five (5) working days for each iteration submitted by the Contractor to review and comment on any proposed changes.

The Contractor is not to begin construction until an approved TMP is in place. In addition, one copy of the TMP is always to be kept posted in plain view on site.

Traffic Management Plan (TMP)

The TMP shall address the following issues and requirements:

1. Traffic Control shall:

- a. Satisfy the minimum requirements of the County of SDG, MTO, Ontario Traffic Manual Book 7 (Temporary Conditions), Ontario Provincial Standard Drawings and Contract Documents.
- b. Always provide EMS, police, fire, vehicular, and pedestrian access to all properties.
- c. Always provide access to existing hydrants along the alignment for fire emergency service use.
- d. Not include night work, unless authorized by the Contract Administrator.
- e. Minimize construction impacts to intersections (i.e. minimize work through intersections and maximize available lanes) and construction sequencing.

- f. Completely enclose, using approved and appropriate barricades and signings, all open excavations during non-working hours.

2. Drawings:

- a. The TMP shall include drawings and sketches as necessary to adequately describe all phases of construction proposed in the various locations of the Contract.
- b. The TMP shall include drawings and sketches dimensioned as necessary to clearly show the full intent of the details.
- c. The TMP shall provide Traffic Plans and proposed haul routes for truck and material deliveries as well as daily Sign Inspection Logs.
- d. The TMP shall provide a proposed construction lay down area including proposed ingress and egress.

3. Construction Signs and Barriers:

- a. The Contractor will be responsible for providing in their TMP a composite document showing the proposed signing and the appropriate wordings along the alignment so the motoring public will be appraised of where temporary property entrances are present. Additionally, the Contractor will be responsible to ensure that such a global and composite signage plan is approved by the Contract Administrator prior to printing and erection and that the placement of the signage meets the County of SDG requirements for advance notice of such restrictions.
- b. To accommodate the Contractor's TMP it will be necessary to amend, alter, change, relocate the construction signs, barriers, etc. on an ongoing basis throughout the duration of the contract. The cost of amending, altering, changing, relocation of the construction signage, barriers detours shall be included in the Contractor's price bid for the work.
- c. All construction delineators and signage shall be provided by the Contractor in accordance with OTM Book 7, Temporary Conditions. Any proposed detour signing and/or closure signing (including advanced warning and closure signs) which the Contractor may have proposed in their TMP shall be installed, maintained and removed by the Contractor to the satisfaction of the Contract Administrator. The unit price shall include the cost of detour and advanced warning signage.
- d. In the case of an approved temporary detour, route signage associated with Local Traffic Only restrictions, roadway closing information signs and supplemental TC-10 Detour Designation Tab Signs must be erected at strategically selected locations at least one week in advance of the actual closing.
- e. All construction fencing shall be supplied, installed, maintained, and relocated by the Contractor. All fencing shall be a minimum of 1.8 metres high "Fast Fence" or approved alternative.
- f. All signs, flashers, barricades and delineators shall be cleaned and maintained throughout the duration of the Contract. The Contractor shall use either flexible drums (TC-54) or construction markers (TC-52) with flashers for delineation.
- g. Additional signs, fencing, and TC-54 barrels shall be provided by the Contractor to ensure that, as required, traffic routes are obvious and clear, and that the traffic is always directed and controlled through the site for the duration of the Contract.

- h. All Reflective sheeting used in the manufacture of temporary or permanent traffic signs shall be as specified in the latest Ontario Traffic Manual.
- i. All screening inks and/or vinyl sheeting used shall be compatible with the above reflectivity standards. They shall depict the same colour by day as by night as outlined in the Ontario Traffic Manuals. They shall not reduce the expected life of the recommended reflective sheeting by their use.

4. Temporary Line Painting

- a. The Contractor will be responsible for all temporary line painting.
- b. Temporary line paint and symbols shall be in accordance with OPSS 710 and with the Ontario Traffic Manual (OTM), Book 11- Pavement, Hazard and Delineation Markings. References to the MUTCD in OPSS 710 shall be replaced with OTM, Book 11.
 - This unit price shall include placement of new temporary paint lane markings for the TMP as required and as directed by the Contract Administrator. The unit price bid shall include the removal of the existing pavement markings or symbols and the supply, application and removal of the temporary paint. For the unit price bid, the Contractor will be required to waterblast existing pavement markings within the staging limits for the construction traffic management.

5. Emergency Vehicles:

- a. The Contractor shall comply with Municipal, Fire, Ambulance and Police regulations relating to notification for road or lane closures that may be used by emergency vehicles.

6. Construction Delivery and Trucking:

- a. The Contractor shall plan and schedule the routes of vehicles transporting all materials to, from or within the job, so that vehicular movements are accomplished with minimum interference and interruptions to traffic.
- b. Parking, waiting, loading or unloading of construction vehicles within and effectively blocking the travelled lanes will not be permitted unless the express approval of the Contract Administrator is provided 48 hours in advance.

7. Winter Conditions:

- a. It is not expected that winter conditions may be encountered for this project. However, if work occurs during winter months, the Contractor shall be responsible for all snow and ice removal within their work zone. Snow and ice shall be removed to the satisfaction of the County.
- b. At the periphery of the Contractor's work zone, County snowplows occasionally displace temporary traffic markers such as TC-54 barrels, delineators, barriers, fences, and signage. The Contractor shall provide a contingency plan included in their price whereby the construction site will be inspected after each snowfall, including during nights and weekends, so that signs are cleaned, and displaced markers and barriers are reinstated.
- c. The Contractor shall coordinate work with the County Operations department to ensure that County clearing routes and winter maintenance operations are not adversely affected. This may include provisions to allow County plows to pass through the Contractor's work zone.

8. General Operation Constraints:

- a. During working hours a single lane of alternating traffic controlled by competent flag-persons. Temporary traffic signals will not be accepted. No full closure of the county road will be accepted.
- b. Outside of working hours two lanes of traffic (one lane in each direction)
- c. Where the Contractor may propose temporary widening to facilitate maintaining two-way traffic, they shall discuss their proposed construction method of widening with the Contract Administrator such that excavation, sub-base and base granulars may be considered suitable for the actual future roadway in these areas.
- d. For the purpose of this Contact working hours are defined as follows:
 - i. 7:00 a.m. to 6:00 p.m. (Monday through Friday);
 - ii. Construction will not be permitted on the weekends or statutory holidays, without prior written approval from the Contract Administrator.
- e. Open excavations within 3.0m of a travelled edge of existing pavement or edge of temporary access route shall always be adequately protected by the Contractor.
- f. Any route closed to the public shall be barricaded using 1.8m high Fast Fence (or approved alternative) with appropriate signage to prevent use of the route, and signage for alternative points of egress and ingress.

9. Other Items to be included:

- a. The Contractor shall notify the SDG Counties ten (10) business days prior to initiating any road closures not previously identified in their original TMP.
- b. Notify the SDG Counties Transit a minimum of ten (10) business days ahead of any construction which may impact their bus routes.
- c. All necessary eradication of existing lane markings, and all temporary pavement markings and their removal prior to repainting.
- d. Erect suitable concrete barricades, fences, signage and lights along travelled (pedestrian and/or vehicular) lanes, if construction is proceeding adjacent to the traveled lanes.
- e. Construction and warning signs shall be well lit at night with battery operated flashing amber lights or other means approved by the Contract Administrator.
- f. Employ properly qualified and trained TCP's in accordance with OTM Book 7 and OHSAA. All TCP's must be given written and oral instructions regarding their duties in a language they can understand. They must also have complete knowledge of the TMP.
- g. Provide watchmen, labourers, equipment operators or other qualified employees as required to inspect and maintain construction signs, barricades, ramps and road cuts on weekends, holidays, rain days and other days when the Contractor is not working.
- h. Provide signage where existing signs are not visible due to construction activities.
- i. The Contractor will be required to maintain residential access to all driveways and entrances throughout construction. Temporary entrances should meet the following minimum standards: 150 mm compacted Granular 'A', minimum width of 3 m, maximum gradient of 7%, graded smooth as required. If a driveway or entrance is to be temporarily blocked, the timing is to be coordinated with the property owner at least 48 hours in advance and with the approval of the Engineer. Local traffic for all residents and local businesses is always to be maintained.

- j. Traffic control devices and signs are to be maintained and cleaned to the Engineer and/or SDG Counties satisfaction.
- k. The Contractor shall be required to coordinate garbage/recycling pick-up with adjacent property owners. Each property owner may have a different collection standard (i.e. street side garbage cans, dumpsters etc.) and the Contractor shall coordinate its pick-up on designated SDG Counties collection days as required and at no extra cost to the contract.
- l. The cost of adjustments to ironwork purely to accommodate traffic staging and to allow general traffic to travel on asphalt surfaces free from such obstructions shall be included with this item.
- m. Submission of TMP shall be accompanied by a check list ensuring all the requirements have been addressed.
- n. Night work shall be permitted without additional compensation.
- o. TMP shall take into account constructability issues i.e., trench widths, pipe lengths etc.
- p. All signage shall be compliant with OTM requirements no handmade signs.

Measurement of Payment

Measurement for payment shall be lump sum.

Basis of Payment

The cost of all labour, equipment and materials required to supply, erect, maintain, relocate and remove the traffic control measures during all stages for this project, including detouring, signs, lights, barricades, watching, permits, fees and other charges to the satisfaction of the SDG Counties shall be included in the appropriate lump sum Tender Item. No additional costs or extension of time for completion will be allowed due to traffic control requirements.

The lump sum price for this item shall be full compensation for all labour, equipment and materials necessary to prepare, secure approval of and implement, maintain, amend as required and remove the Contractor's Traffic Management Plan (TMP).

The lump sum for this item shall also include full compensation for all labour, equipment and materials required to carry out the work in accordance with all sections of this Special Provision, as well as meet the other traffic management restrictions and requirements which may be set forth in the Contract.

The lump sum price for this item shall also include an allowance for alteration and amendment of traffic control signage, barricades, warning devices, etc. related to their TMP and regulatory signs requirements as may become necessary throughout the course of this contract.

Costs associated with working at night, Saturdays, and Sundays shall be included in this bid item and no additional payment for increased premiums shall be made.

Payment shall be made on each payment certificate based on the completed percentage of all payable work in the Contract.

A.7 Environmental Protection Plan

The Contractor Shall:

1. Do not remove any trees, bushes or shrubs, except where required and only with the prior consent of the Engineer.
2. Do not burn wood, brush, trash or debris. Haul away and dispose of all construction materials and equipment immediately after completion of the work.
3. Limit hours of work between 7:00 a.m. and 6:00 p.m. local time, Monday to Saturday. Do not work on Sundays or legal holidays.
4. Provide proper vehicles and equipment at all times. Keep all vehicles in a good state of repair with properly functioning mufflers, exhaust pipes and factory equipment in good operating condition.
5. Avoid damage to property and environmental destruction in all locations.
6. Do not kill or injure any wildlife species of any kind.
7. Provide for ongoing flow of water in the drains at all times. Do not stop up or close off any portion of the drains for any reason unless proper bypass or pumping facilities have been provided to ensure its ongoing operation. Approval from the Engineer must be obtained before stopping or closing off any portion of the drain.

The Contractor shall be advised that inspectors from the Ministry of the Environment, Conservation and Parks (MECP) and other authorities may make periodic visits to the site during construction. They have the power to order the Contractor to stop work if the work, in their opinion is not being done to ensure compliance with environmental objectives. The Engineer's acceptance of the work may be withheld until the Ministry or other authorities concerned have issued their approval.

The Contractor shall submit to the Contract Administrator a project specific Environmental Protection Plan those addresses, to the full extent, the Contractor's environmental protection obligations contained under the environmental reference documents, prior to commencing with any work on this Contract. This shall include an Erosion and Sediment Control Plan and a Spill Prevention/Response Contingency Plan.

Submissions that are incomplete or otherwise do not meet the requirements under the environmental reference documents shall be returned to the Contractor for resubmission.

The Contractor shall implement all Workplace environmental protection obligations in accordance with the Environmental Protection Act, the Ontario Water Resources Act, the Fisheries Act, and the Fisheries Authorizations, and the Local Environmental Protection Bylaws shall take precedence over any other environmental requirement contained in the Contract Documents.

During the course of construction, and until Completion of the Work, the Contract Administrator will assess the Contractor's compliance to the environmental protection obligations as set forth under the environmental reference documents.

The Contract Administrator's assessment of environmental protection requirements will be undertaken through random inspection audits of the Contractor's environmental protective procedures specified under the environmental reference documents.

The Contract Administrator will first provide immediate verbal notification of any non-compliance of environmental protection to the Contractor's Site Superintendent and shall follow up with a written notification of such non-compliance within three (3) business days.

Spill Prevention and Response Contingency Plan

The Contractor shall prepare and submit to the Contract Administrator a Spill Prevention and Response Contingency Plan. Their submission must address procedures for preventing and responding to spills (including immediate contact with the MECP Spills Action Centre), and equipment and resources that will be available to prevent and/or respond to all potential discharges resulting from the Contractor's operations in this contract.

The Contractor shall be responsible for any and all cleanup of contamination resulting from its operations. All spills to the natural environment resulting from actions or inaction on the part of the Contractor or its Subcontractors shall be the responsibility of the Contractor. All testing required by the Contractor, the Contract Administrator, MNRF, or other regulatory agency in connection with a spill shall be the responsibility of the Contractor.

Emergency spill kit requirements shall be detailed as part of this Plan.

This plan shall be submitted as part of the Contractor's Environmental Protection Plan.

Measurement of Payment

Measurement for payment shall be lump sum.

Basis of Payment

Payment shall be based upon the following schedule:

- 25% upon satisfactory submission of the Environmental Protection Plan and installation of the control measures;
- 50% pro-rated into equal payments over the term of the contract; and
- 25% upon successful completion and removal of the protection measures.

This payment schedule may only be modified as agreed upon in writing between the Contractor and the Contract Administrator.

B.1 Ditch Cleanout

All in accordance with OPSS 201 and OPSS 510, except as amended below:

The Contractor shall clean out existing ditches of all vegetation, sediment and other material that prevents positive drainage and remove offsite.

Measurement of Payment

Payment will be by measured linear metres in the field.

Basis of Payment

The bid price shall include disposal of all unsuitable materials offsite, grading the existing ditch and ditch side slopes to match adjacent ground and adjustments as needed to ensure positive drainage to the main cross culverts and entrance culverts. The unit price tendered shall include all costs for labour, material and equipment required to construct the ditches and move any excavated material offsite.

B.2 Stripping of Topsoil (100 mm depth)

The contractor shall strip existing topsoil as per OPSS 206 for the areas shown on Contract Drawings.

The topsoil shall be salvaged, screened and utilized for the placement of topsoil on the project. Stockpiling topsoil offsite shall be the responsibility of the Contractor and should follow OPSS 802. Prior to commencing the work, the Contractor should secure and submit a Property Owner Release Form to the Contract Administrator, if required. The payment for the placement of salvaged topsoil will be paid under a separate item.

Measurement for Payment

The measurement for payment shall be by squares metres.

Basis of Payment

The basis of payment will be for the labour and equipment to remove the organic materials from 100 to 150 mm. Payment shall include the stockpiling and screening of the material and disposal of unacceptable materials.

B.3 Removal of Trees (Provisional)

The requirements of OPSS 201 shall apply unless noted otherwise. Subsection 201.07.01 is amended by the addition of following:

All tree removals shall be completed by a qualified Arborist or approved tree care professional and in accordance with good arboricultural practices.

Measurement for Payment

Measurement for payment will be each based on the number (each) of trees removed.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work including the disposal of all materials off site to an approved location.

B.4 Removal of Asphalt (Full Depth)

OPSS 180 and OPSS 510 shall apply. Under this item and for the unit price bid per square metre, the Contractor shall sawcut, remove and dispose of the existing asphalt pavement full depth at the removal limits indicated on the drawings. Sawcuts shall be full depth and plumb to provide a clean, vertical edge.

The cutting shall be made by means of suitable mechanical sawing equipment that is equipped with own water supply to control nuisance dust. The equipment shall be capable of making a clear cut and leaving a clean straight edge up to a maximum depth of 250 mm.

The contractor shall assume the overall depth of material and all costs associated with the varying pavement thicknesses shall be included within the unit price for this item, regardless of the removal method.

As per OPSS 301 and 510, the contractor shall also include minor grading of the existing sub-base upon removal. Granular ramping of existing driveways and all roadway limits at the end of each working day is also to be included within the unit price for the item.

The contractor shall include within the unit price all necessary hand operated removals around all manholes, valve boxes and catch basins as required including any saw cutting as required.

Measurement of Payment

Measurement for payment shall be by the square metre (m²).

Basis of Payment

Payment at the contract price for this item shall be per square metre and shall include all labour, equipment and material required for sawcutting, removal, trucking and disposal of existing pavement and to complete the work as specified.

B.5 In-Place Full Depth Reclamation (200 mm) of Asphalt Pavement and Underlying Granular

OPSS 330 shall apply. The Contractor will be required to pulverize the existing asphalt, RAP and granular shoulders, including tapers, radii, widenings, shoulder, etc. as noted in the Contract Drawings.

Any cost associated with stockpiling and/or blading the material beyond the shoulders and subsequent placing, grading and compacting the pulverized material shall be included in the unit price of this item.

The Contractor is solely responsible for the location and management of stockpiles on-site as they relate to traffic management, construction staging, and the effective management of construction productivity. The Contractor is responsible for the management and handling of excess soil in temporary stockpile areas, including all temporary erosion and sediment control and dust control measures. Stockpiling and storage of soil shall be according to the Soil Rules referenced by O.Reg. 406/19.

It is stressed that any and all stockpiling and maintenance of material shall be the sole responsibility of the Contractor and the cost of which is included in this item. The Contractor shall be responsible for any soils that mix during operations. If this occurs, the Contractor shall take full responsibility for the proper management of the materials at no additional cost to the contract and to the satisfaction of the Contract Administrator.

Measurement of Payment

Measurement for payment is based on the final actual pulverized area in square metres per OPSS 330.09.

Basis of Payment

This item shall also include the compaction of the pulverized material before placement of new Granular A or B Type II materials.

The benching of the side slopes shall be completed before pulverizing operations and will be paid a separate item.

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work including preparation of surfaces.

B.6 Earth Excavation and Grading (Incl. Removals and Road Granulars) – Cut to Reuse, and

B.7 Earth Excavation and Grading (Incl. Removals and Road Granulars) – Cut to Dispose, and

B.8 Earth Excavation and Grading (Incl. Removals and Road Granulars) – Cut to Dispose at a Third-Party Location

General

The Contractor shall comply with Ontario Regulation 406/19 On-Site and Excess Soil Management (O.Reg 406/19, the “Excess Soil Regulation”), as amended, made under the Environmental Protection Act, R.S.O. 1990, c. E.19 (the “EPA”) and all other documents applicable to the Excess Soil Regulation including, but not limited to:

1. The Rules for Soil Management and Excess Soil Quality Standards (the “Soil Rules”).
2. The Contractor shall also comply with R.R.O. 1990, Regulation 347 General — Waste Management (Reg. 347, the “Waste Regulation”), as amended, made under the EPA.

If there are discrepancies between OPSS.MUNI 180 and either O.Reg. 406/19 or Reg. 347, the requirements of O.Reg. 406/19 and Reg. 347 take precedence.

Any material disposed of off-site at a suitable reuse site shall be in accordance with O.Reg 406/19 to receive such material. Any materials that cannot be used onsite are to be disposed of offsite.

Excavation and re-use of existing on-site suitable material shall be in accordance with OPSS.MUNI 206 and 501. The Contractor shall be responsible for the management of all soil and crushed rock (including both dry and liquid soil, and topsoil) associated with this project, including but not limited to excavation, handling, storage, placement, and documentation, including when it is reused on-site.

For this project all materials will be reused on site or disposed as excess materials in areas identified in the area of the back-to-back curves.

Should the County or the Contractor identify a third-party recipient of the material the excess material may be diverted to the site and paid under the Earth Excavation and Grading (Incl. Removals and Road Granulars) – Cut to Dispose at a Third-Party Location item.

Scope of Work

Under this Item and for the Contract unit price, the Contractor shall excavate all materials of whatever nature that may be encountered for the roadworks excavation, including all loose material and/or organic materials, to the lines and grades shown on the Drawings or set by the Contract Administrator. If, after excavating to the lines and elevations shown on the Drawings and prior to granular placement, the material encountered should prove to be unacceptable to the Contract Administrator as material to be a foundation for the road base, then the limits of excavation shall be increased as defined by the Contract Administrator. The Contractor shall perform additional excavation as directed by the Contract Administrator, payment for which will be made under this Item.

The limits of excavation shall include excavation for benching where the existing granular materials will be salvaged and placed on the new side slopes.

The slide slope on all driveways shall be 3:1 except for the driveway located at Sta. 11+716 which will use a 2:1 side slopes.

The Contractor shall schedule their construction operations in such a manner that a storm drainage outlet will always be available. This is to ensure that the exposed sub-grade or granular base will not be subjected to flooding or ponding. The price bid under the appropriate item shall allow for this requirement. Silt fences will also be required to ensure that sediment from runoff will not enter downstream watercourses.

Where applicable and if required, a water truck shall be used to proof roll the subgrade prior to placing granulars. Make sufficient passes with the truck to subject every point on the surface to three separate passes of the full load of the truck. Where the proof rolling reveals a defective subgrade:

- Remove subgrade material to a depth and extent as directed by the Contract Administrator;
- Backfill excavated subgrade with approved imported or salvaged material and compact in accordance with this section; and
- The work shall be performed in general compliance with the plan, OPSS 206, the Contract Drawings, as specified in this item and as directed by the Contract Administrator.

Excavation shall include removal of hard pan, frost, boulders, rock, concrete, quicksand, ice or any obstacle encountered.

All sub-grade surfaces shall be properly crowned and compacted prior to placing of granular materials.

Soil Classification and Characterization

It is advised that there have been no Environmental, Soil Characterization and Assessment of Past Uses Reports completed for this project.

It is noted that the existing roadway is salted during de-icing operations and as such, for bidding purposes it is assumed that all excavated material will be salt contaminated per Category 2 soils.

Preservation and Protection of Existing Facilities

All watermains, sewers or drains, conduits, cables, services pipes, sidewalks, curbs, and all other structures or property in the vicinity of the work whether above or underground shall be sustained in place and protected from damage. If any utility is broken or damaged, the Contract Administrator and the utility company shall be immediately notified. All sewers and drains that are broken or damaged shall be repaired immediately.

Management of Excavated Materials Cut-Reuse

It is advised that fill is required (quantity per the Schedule of Prices) for the new construction and per the generated plan quantities. As such and to be included in this item the Contractor shall salvage and place excavated material for reuse as fill materials as native and/or SSM backfill for the road base and linear infrastructure works This includes all costs associated with the salvage, stockpiling (if required), placement to the final lines and grades and compaction of the fill materials. The reused material shall be compacted to 98% standard proctor density.

Stockpiling of Materials for Reuse

The Contractor is solely responsible for the location and management of stockpiles on-site as they relate to traffic management, construction staging, and the effective management of construction productivity.

The Contractor is responsible for the management and handling of excess soil in temporary stockpile areas, including all temporary erosion and sediment control and dust control measures. Stockpiling and storage of soil shall be according to the Soil Rules referenced by O.Reg 406/19, including, but not limited to, the following:

1. Managed in such a way as to prevent adverse effects relating to noise, dust, mud tracking, leaching, run-off and erosion, and odour or other air impacts.
2. Soil of different quality, or from different areas, that is directed to be segregated for sampling as directed by the Environmental Engineer.
3. Stored in a manner that prevents leaching of contaminants into the groundwater.

It is stressed that any and all stockpiling and maintenance of material shall be the sole responsibility of the Contractor and the cost of which is included in this item. The County will not provide a designated stockpile area for material removed as part of this item. The Contractor will be able to use any lands within the County right-of-way for temporary stockpiling, including the roadside environment, as well as four approximately 0.75 acre triangular areas on either side of the Cameron Road and Cumming Road intersections.

The Contractor shall be responsible for any soils that mix during operations. If this occurs, the Contractor shall take full responsibility for the proper management of the materials at no additional cost to the contract and to the satisfaction of the Contract Administrator.

Excess materials from all excavation activities, except for stripping, shall be assessed by the Engineer at the time of excavation. If the material is deemed suitable for earth fill elsewhere on the contract, the Contractor will be required to stockpile the material at a location approved by the Engineer and the County so that it will be available for reuse as directed. Any use of private lands for stockpiling will require a written release from the property owner.

Measurement of Payment

Estimated quantities have been provided in the Schedule of Items and Prices as plan quantity measurement. As per OPSS 206, quantities have been provided as in-situ measurements and the Contractor shall make their own assumptions as to bulking factor of the material. The Contractor will be paid the plan quantity measurement of the in-situ material and no additional payments will be paid to the Contractor to account for bulking of the material.

The measurement of payment for this item will be by cubic metre of material excavated to the neat plan dimensions. If additional excavation is directed by the Contract Administrator, it shall be paid by the cubic metre as measured and agreed upon in field by the Contract Administrator and Contractor authorized representative at the time of the work.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work including the re-use of material.

Only that excavation to the neat plan dimensions as shown on the Drawings or to such additional depth as directed by the Contract Administrator will be paid under this Item.

The cost for storing and reuse of any excavated material is deemed to be included in this item.

Separation and handling of different classified soils will be the sole responsibility of the Contractor and no additional payment shall be made if the Contractor mixes materials.

No additional payment will be allowed for proof rolling this work as the cost of such work is deemed to be included in the unit price bid for this item. The proof rolling shall be included and water required for compaction.

No additional payment will be allowed for dealing with frost penetration within the soils.

If the Contractor deems water is required to be applied to assist in the proof rolling operation the use of it shall be at the Contractor's own expense. Earth fill shall be compacted at 98% Standard Proctor Density.

The unit price per cubic metre for earth excavation and reuse shall include grading of the sub-grade to the proper elevation by cutting and filling where necessary and compaction and placement of the material as earth fill. There is no earth fill item.

The unit price per cubic metre for earth excavation and disposal shall include transportation to a stockpile location at the reverse curves as identified on the contract drawings. Should adjacent property owners ask for the material it shall be diverted for disposal on their property for material that was excavated for the municipal drain across their frontage.

B.9 Allowance for Disposal of Contaminated Material Exceeding Table 3.1 (Provisional)

This item shall apply should the Contract Administrator identify material for testing and removal from the site.

Measurement of Payment

Measurement for payment shall be paid on a time and materials basis.

Basis of Payment

This item shall only used as directed by the Contract Administrator. Contractors will be paid for the testing and transportation of materials to an approved waste disposal facility. All Contractors will carry a lump sum allowance of \$25,000.00 for this provisional item.

B.10 Removal of Existing Centreline Culverts, and

B.11 Removal of Existing Driveway Culverts

This special provision covers the requirements for the removal of existing culverts, all types and sizes, as indicated on the Contract Drawings.

The Contractor shall be advised that there will be a longer duration for removal of centreline culverts.

The requirements of OPSS 510 shall apply, except as modified below:

Property owners are to be notified in advance (48 hours) of culvert removals. The Contractor shall coordinate the work with property owner to ensure minimal disruption.

Measurement of Payment

Measurement for payment shall be by the linear metre (m).

Basis of Payment

For the unit price bid, the Contractor shall remove all existing culverts, regardless of size and type, as indicated on the Contract Drawings. The unit price shall include full compensation for all labour, equipment, materials, and incidentals, including the disposal of surplus materials off site, and the supply, placement, and compaction of Granular 'B' for the backfill of the excavated area, if required, to future grading limits. Granular 'B' used under this item shall be included in the unit price bid for this item.

B.12 Removal of Existing Guiderail:

The requirements of OPSS 510 shall apply. Removal of any associated appurtenances shall be removed for the per metre price.

Measurement of Payment

The measurement of payment for this item will be by linear metre removed.

Basis of Payment

The unit price bid for this Item shall be compensation in full for all labour, material and equipment required to complete the work.

B.13 Remove, Salvage and Relocate Existing Signage

This special provision covers the requirements for the removal, salvage and relocation of existing regulatory signs as indicated on the Contract Drawings (see notes on the Contract Drawings), including new posts and hardware.

New signposts and hardware shall be hot dip galvanized steel using a non-breakaway u-flange post system per OPSD 990.110.

The requirements of OPSS 510 shall apply, except as modified below:

All existing signs relocated to accommodate construction shall be kept operational by placement of temporary support, and shall be kept at the same height, offset and basic location from traffic as before the relocation. Signs shall be reinstated to their permanent location in accordance with the Ontario Traffic Manuals 5, 7, and 1B.

Salvaged signage shall be stored on site by the Contractor until such a time that it can be permanently relocated per the Contract Drawings. For the time that the signage is stored it shall become the responsibility of the Contractor and if the signs are damaged it shall be the responsibility of the Contractor to replace the sign at no extra cost to the contract. The cost to store the signage shall be included in the unit price of this item.

Measurement for Payment

Measurement for payment shall be by count (each) for the items listed above, regardless of the number of times the sign is relocated.

Basis of Payment

Payment at the unit price bid shall include all labour, equipment, material, and incidental items required to do the work. All relocated signs shall include new posts and hardware.

B.14 Protection of Existing Trees

Work under this item shall conform to OPSS 801. For the unit price bid per metre, the Contractor shall install tree protection fencing.

All tree protection fencing as identified on the Contract drawings shall be in place before any construction activities start. There will be no exceptions to this requirement. The protective fencing will remain in place until the end of the Contract unless the Contractor is authorized by the Consultant or the Owner to work within the fenced area.

Trees to be retained shall be protected from the Contractor's operations by, but not restricted to, the following:

- Where possible, fencing should be placed twice the distance from the trunk that the dripline of the canopy extends from the trunk.
- If a hard surface (path/sidewalk) travels under the canopy, and access must be maintained along the surface, construction fencing shall be placed 300mm from the edge of the hard surface on both sides and extend under the dripline of the tree.
- No excavated soil, waste material, construction trailers, storage areas, construction materials of any kind, chemical, or washout water shall be stored or deposited within the fenced area.
- Equipment or vehicles shall not be parked, repaired or refuelled, construction materials shall not be stored, and earth materials shall not be stockpiled within the dripline area of any tree not designated for removal.
- The existing grade around a tree shall not be raised or lowered, unless approved by the Contract Administrator.
- No signs shall be attached to any tree.
- Utmost care shall be taken at all times to avoid damage to roots, trunks, or branches of any tree.

The Contractor shall ensure that their operations do not cause flooding or sediment deposition on areas where trees not designated for removal are located.

Measurement for Payment

Payment for this item shall be lump sum.

Basis of Payment:

Compensation shall be in full for all labour, materials and equipment associated with this Item. Payment will be made on each Payment Certificate based on the following rates:

- 20% to install the tree protection;
- 70% to monitor and maintain the tree protection and repair damaged branches or roots, prorated on a monthly basis for the duration of the Contract; and,
- 10% to remove the tree protection and restore the area after the tree protection is removed.

B.15 Tree Root Protection

Scope

Where indicated on the Contract Drawings the excavation, pruning and placement of sealant on any exposed root shall be completed by a licensed Arborist. The Contract Administrator shall be advised of the time periods the Arborist is on site to complete these works.

Measurement for Payment

Payment for this item shall be for each tree (each).

Basis of Payment:

Compensation shall be in full for all labour, materials and equipment associated with this Item.

B.16 Support Bell Fibre Optics at Station 16+120

The Contractor shall ensure support of the Bell Fibre Optic located at Station 16+120 and includes submission of shop drawings (6) for the proposed support during construction. The shop drawings will be submitted to Bell Canada for review and comment. The contractor shall complete all excavation in proximity to the fibre optic cable by hand and be responsible for hydrovac test pits in advance of any excavation.

The Contractor shall base the pricing for this item by including an allowance for exposing up to 60 m of the fibre optic cable to allow a change in the profile to go over or under the new pipe.

Measurement for Payment

Payment for this item shall be lump sum.

Basis of Payment:

Compensation shall be in full for all labour, materials and equipment associated with this Item.

B.18 Remove, Salvage and Relocate Mailboxes and Landscaping Features at 17335 County Road 22, 17504 County Road 22 (Villeneuve Milk Transport) and 17996 County Road 22

This special provision covers the requirements for removing, salvaging and relocating mailboxes, interlocking paving stones, plantings and landscaping features. The landscaping features extend across the frontage of these properties.

The Contractor shall complete the removal, salvaging, relocation and reinstatement of the identified items to facilitate construction work. Property owners are to be notified in advance (48 hours) of mailboxes removal.

The Contractor shall carefully remove and salvage the interlocking paving stones, mailboxes and landscaping features, preserving their integrity to the best extent possible. Salvaged materials shall be stored safely and protected from damage during project construction. Any excess interlocking paving stones shall be returned to the property owners. The contractor will be responsible for hand work for the transition between the paved shoulder and the interlocking paving stones ensuring no asphalt spillage on the paving stones.

Upon completion of the work, the Contractor shall restore the site, including any disturbed landscaping areas, to a condition consistent with the original features. Damaged or lost features replacement will be the responsibility of the Contractor at no additional cost to the County. The property owner will be consulted during these works.

Measurement for Payment

Measurement for payment for the above item shall be by count (each).

Basis of Payment

Payment at the contract price shall be for full compensation for all labour, equipment and materials required to complete the work.

B.19 Remove, Salvage, Relocate and Reinstall Mailboxes

Under this item the Contractor shall remove and relocate existing mailboxes that are impact by the limits of construction or as identified by the Contract Administrator.

The requirements of OPSS.MUNI 510 shall apply on this Contract with the following special provisions:

Work under this item shall consist of adjusting, removing, and reinstating mailboxes as directed by the County:

- 1) Post - Support post material shall be a maximum 100 x 100mm (4x4") square, pressure treated or other material as deemed suitable by the County. The new post shall be driven into the fore slope to a depth of 1.20m (Fence post spikes are not acceptable). The mailbox installation shall be a minimum of 5.0 m (16'-6") from the centerline of the road with the bottom of the

mailbox set 1.07m -1.14m (42" - 45") above the roadway. The mailbox post shall be located at the rounding of the shoulder area so that the opening of the mailbox is at the outside edge of the shoulder.

Measurement for Payment

Payment for this item shall be by each.

Basis of Payment:

Measurement shall be each mailbox adjustment. Payment shall be for full compensation for all labour, materials and equipment required to complete the work including the supply of specified support post and fastening hardware.

B.20 Remove, Salvage, Relocate and Reinstall School Bus Shelter

At Sta. 15848 the Contractor shall remove and relocate the existing school bus shelter impacted by the limits of construction as identified by the Contract Drawings

Work under this item shall consist of adjusting, removing, and reinstating the school bus shelter.

The work shall include excavation of topsoil at the new relocated location and the placement of 200 mm Granular A bedding.

Measurement for Payment

Payment for this item shall be by each.

Basis of Payment:

Payment at the contract price shall be for full compensation for all labour, equipment and materials required to complete the work.

The Contractor shall be responsible for notifying the property owner in advance of relocation. If requested by the owner the location shall be adjusted accordingly.

C.1 Supply and Install SP-12.5 Hot Mix Surface Course Asphalt 40mm, and,

C.2 Supply and Install SP-19.0 Hot Mix Base Course Asphalt 60mm

Scope of Work

All in accordance with OPSS 310 except as amended below:

Materials

For the unit price bid per tonne, the Contractor shall supply, place and compact surface course asphalt. This item covers the requirements for SP12.5 and SP19.0 asphalt mixes. Asphalt cement for this project shall be PG 58-34 using a minimum 5.2% for the surface course and 5% for the binder course.

The Contractor shall submit an asphalt mix design for the Engineer's review in advance of paving operations. All sources of aggregate shall be from a source on MTO's designated sources list unless the Contractor provides testing result to the County demonstrating meeting requirements for reactivity and expansiveness.

The Contractor shall be responsible for the provision of current mix designs for all hot mix asphalt required for the work, or for having the necessary mix designs prepared by a certified laboratory. The mix designs proposed for use by the Contractor shall be submitted in writing to the Engineer for their review. No asphalt shall be placed until the design mixes are approved. All costs associated with the provision of approved mix designs shall be borne by the Contractor.

The Contractor shall supply all materials required for the proper execution of the paving work in accordance with OPSS Form 310. All asphaltic material shall be in accordance with OPSS Form 1150.

Equipment and Construction Practices

The unit prices bid shall include for the following:

- Construction of step joints at limits of construction.
- Forming temporary ramps at limits of construction.
- Ramping at step joints at limits of construction until surface paving is complete and as directed.
- Cleaning base course asphalt with a power sweeper or other means capable of leaving a clean, dry surface prior to placement of the surface course asphalt.

If any segregation is found in the final placed asphalt pavement, as determined by the Contract Administrator, the Contractor shall cease operations until the cause of the defective work has been remedied.

Asphalt shall be placed to the depths indicated on the typical cross sections and as per the Contract Drawings and maintain design crossfall of 2% and/or design superelevation. If the Contractor does not place the material to the depths and grades indicated on the Contract Drawings the asphalt will be considered unacceptable, and action taken per the Repairing and Re-defining section of this special provision.

A Material Transfer Vehicle (MTV) shall be used on the paving operations.

Surface course asphalt shall NOT be placed on base course asphalt on the same day.

Per OPSS 310.06.01, pavers shall be equipped with automatic grade and slope controls for use throughout the contract and at the discretion of the County.

Temporary asphalt ramping shall be provided at the limits when the partial depth removal is \geq 40mm.

General

Payment Adjustment for Changes in Performance Graded Asphalt Cement Price Index

Payment adjustment for asphalt cement shall be completed in accordance with OPSS.MUNI 310 Appendix B.

Payment adjustments will only be paid after completion of the Contract unless otherwise agreed by the County.

Construction Joints Surface Asphalt:

Unless required due to construction staging requirements, at the end of each working day, longitudinal cold joints are not permitted. Only transverse joints shall be permitted, and the Contractor is to ensure they have sufficient time and material to eliminate longitudinal joints. The Contractor will only be permitted maximum length longitudinal joint of 500 m. After 500 m, the Contractor is expected to complete compaction, modify traffic control as required and start the next pass or passes. This requirement does not apply to echelon paving.

Longitudinal joints will not be permitted to be located within the wheel track of vehicles under any circumstance.

Quality Control (QC)

Testing shall be conducted by the Contractor to ensure HMA meets the requirements of the Contract Documents. The Contractor shall be responsible for the interpretation of the test results and the determination of any action to be taken to ensure that all materials and work are according to the requirements of the Contract Documents. Testing documentation shall be

made available to the Contract Administrator upon request. Sampling and testing methods shall be included in the documentation.

A laboratory that has current CCIL Type B Certification or AMRL equivalent certification or another equivalent certified laboratory acceptable to the Contract Administrator shall be used. Testing of the samples shall be conducted under the direction and constant supervision of technicians certified to perform the tests according to CCIL or equivalent certification. Any additional testing required by the County at the time of the works will be deemed to be included in the Contractor's scope and rate.

Quality Assurance (QA)

The Owner may complete and pay for random asphalt sampling testing (quality assurance testing) at a frequency deemed acceptable at the sole discretion of the Owner.

All areas which do not meet the acceptable criteria based on the random sampling testing done by the Owner will be considered deficient and will be deducted from payment, until additional sampling testing confirms compliance with the specifications or confirms that the HMA should be rejected as noted in OPSS 310. When a random sample is considered to be deficient, the referee sample will be tested according to OPSD.MUNI 1101 and all costs associated with the referee sample testing will be the responsibility of the Successful Bidder, regardless of the results. If the referee sample testing fails, the HMA represented by the test results shall not be accepted. The Successful Bidder shall remove the HMA from the Work at no cost to the Owner. The Successful Bidder may request a reduced price in-lieu of removal of rejected HMA produced. Irrespective of the negotiation of a reduced-price payment, a warranty provision shall apply.

Last paragraph of Subsection 1101.08.06 of OPSS.MUNI 1101 shall be deleted in its entirety and replaced with the following: The Successful Bidder shall be responsible for all costs associated with any HMA sampling testing above and beyond the random quality assurance sampling testing which will be completed and paid for by the Owner.

Repairing and Re-defining

The onus shall be on the asphalt suppliers and Contractors to ensure, through their own Quality Control methods, that their product meets the basic standards with no exceptions for "borderline" test results permitted. Any reference to "borderline" or to taking "immediate corrective action" based on notification of laboratory test results shall be deleted and the product deemed unacceptable. Unacceptable work shall be immediately removed.

When the Contract Administrator requires a rejected lot to be repaired or the Successful Bidder elects to carry out repairs instead of accepting a payment adjustment, the Contract Administrator shall determine what areas of asphalt in a lot are to be repaired. These areas shall be repaired prior to re-defining. The material to be repaired shall be removed and replaced, or where permitted by the Contract Administrator the material may be overlaid.

However, the minimum width of repair shall be the width of a lane and the minimum length shall be 20 metres. A paver shall be used in carrying out the repair.

When repairs are made to all or part(s) of any lot, the lot will be re-defined. The repaired locations shall be considered as one lot with three sub-lots and the remainder of the original lot which was not repaired shall be considered as one lot with three sub-lots. Only test results from the redefined lot will apply. The test results from the original lot are no longer valid for acceptance purposes. The two redefined lots will be accepted at the full contract price, subjected to a payment adjustment or rejected as defined by this special provision.

When a lot of asphalt has been repaired, the Contract Administrator will determine the random sample locations and the Successful Bidder shall obtain samples in conformance with the sampling requirements for asphalt specified in the Contract, except that samples from the area(s) not repaired shall be obtained by coring and the sample size shall have a minimum mass of 1.4 kg.

Measurement of Payment

The measurement of payment shall be by tonne of material placed in field.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials testing and equipment required to complete the work including preparation of surfaces. The unit price submitted for surface asphalt shall include removal of temporary asphalt ramps, cleaning the existing surface. Adjustment of structure frames and grates, valve boxes, etc. shall be considered incidental to the placement of surface course asphalt.

C.3 Remove and Replace Driveways

- A) Gravel Driveways**
- B) Residential Asphalt Driveways**
- C) Commercial Asphalt Driveways**

All in accordance with OPSS 311 and 314 except as amended below:

For the unit price bid per square metre, the Contractor will provide all labour, equipment and materials required remove and dispose of existing driveways and excavate for and supply, spread and compact granular and asphalt for driveways specified on the Contract drawings.

Residential Asphalt driveways shall be restored with 150 mm granular 'A' base and 50 mm of SP12.5 surface course.

Commercial Asphalt driveway at 17504 County Road 22 shall include the following:

- In areas where the driveway is raised it shall include milling of 40 mm and pavement depth to the elevation of the proposed grading as shown on the contract drawings
- In areas where the existing pavement elevation is unchanged to scope shall include milling 40 mm and resurfaced with 50 mm SP12.5 surface course
- In areas of new construction where paving occurs over the new storm sewer the pavement structure shall include 3 lifts of pavement totaling 150 mm including a 300 mm step joint at the limit of paving.

Gravel driveways shall be restored with 150 mm granular 'A' base compacted to specifications noted.

Measurement of Payment

The measurement of payment for these items will be by square metre.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work.

C.4 Granular A, and

C.5 Granular B Type II

Granular 'A' crushed quarried limestone material shall be used for all road base, granular driveway base, shouldering work, and appurtenances all in accordance with OPSS 314 and Contract Documents.

Granular 'B' material shall be used for granular road base and where the Contractor is directed by the Contract Administrator for use as select sub-grade material for use to replace unsuitable material from the sub grade, all in accordance with OPSS 314 and the Contract Drawings.

The Contractor shall provide Proctor testing data of the supplied material (Granular A and Granular B) and be responsible for compaction testing. The material shall meet 100% Proctor Standard Density. The County will complete independent Quality Assurance testing to validate the compaction of the material. Non-conforming materials shall be removed until acceptance is obtained at no cost to the County.

The minimum depth of granular layer shall be 150 mm.

Measurement of Payment

The measurement of payment for this item will be by tonne measured by tickets collected on site. It will exclude any temporary works paid under separate items.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work including the sweetening of the existing granular and water required for compaction of Granular 'A' and 'B' shall be deemed to be included in the respective Items for Granular 'A' and 'B' material. Granular materials shall be compacted at 98% Standard Proctor Density.

C.6 Supply and Install 150 mm Perforated Pipe Subdrain including Outlets per OPSD 206.050

The unit price bid under this Item shall be all inclusive and shall include all labour, material and equipment to install sub drains c/w geotextile fabric covering and 19mm clear stone as noted on the Contract Drawings and with a proper sealed connection to the outlet structures as required.

All work for this Item shall conform to OPSS.MUNI 405, OPSD 207.044, and the Contract Drawings.

Measurement for Payment

The measurement of payment for this item will be by linear metre.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work, including the connection of the subdrain to new or existing storm drainage structures.

C.7 Relocate Field Drain Outlet to Proposed Ditch

Scope

Under this item the Contractor shall provide a connection from existing pipe subdrains from adjacent farm fields and provide an extension to outlet in the new Municipal Drain or ditch. At the outlet the subdrain will include a rodent grate. The location of the field drains will be identified by the Contract Administrator in consultation with each farm owner. The Contractor shall expect that each location will require exploratory investigations to find the existing subdrain. The length of an individual farm drain extension will be no longer than 15 metres.

Each Field Drain Outlet shall have 0.25 cubic metres of rip-rap stone.

Measurement for Payment

The measurement of payment for this item will be by each.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work.

C.8 Relocate Existing Ditch Inlet (Station 16+280)

Scope

The Contractor shall salvage and relocate the existing ditch inlet located at Sta. 16+280 including the supply of the additional storm sewer leads.

Measurement for Payment

The measurement of payment for this item will be by lump sum.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work.

C.9 Cast Iron Grate with Soleno Tee Connection

OPSS 402, 404 and 407 shall apply to this item. For the unit price bid per each structure identified in the Schedule of Items and Prices, the Contractor shall supply, excavate for and construct manufactured landscaping catchbasins as specified.

Landscaping catchbasin assemblies shall be provided by Soleno or an approved equivalent and include the following:

- 450mm x 300mm (18 in x 12 in) reducing tee.
- 300mm (12 in) frame and grate kit.
- Any necessary collars and/or connection devices to connect the reducing tee to the adjacent storm sewer.

Bedding and Backfill

Bedding shall be in accordance with OPSS 402 read in conjunction with OPSS 1010. Bedding material for maintenance hole and catchbasin installation shall be a Granular 'A' material.

Backfill from the structure bedding to 300mm above the top of the pipe shall be Granular 'A'. Backfill material above the pipe to the proposed subgrade shall be select native material unless otherwise specified. Granular material above the proposed sub-grade shall be paid for under the appropriate Contract item.

Adjustments

As part of the work, it is expected that adjustments will need to be made to the 600mm x 300mm reducing tee assemblies to adjust the frame and grate to grade. This work is to be included in the unit price of this item. Please refer to the structure table for further information.

Measure of Payment

Payment for this item shall be per each structure supplied and installed.

Basis of Payment

Payment shall include all labour, materials and equipment required to complete the work as specified. All excess/surplus material generated through the performance of this contract item and which is deemed unsuitable for re-use within the construction zone shall be disposed of off-site by the Contractor.

C.10 Salvage and Reinstall 600 x 600 Catch Basin Frame and Grate

For the unit price bid, the Contractor shall excavate and salvage the existing catch basins and reinstall including any ancillary works surrounding the catch basins.

The Contractor shall contact the property owner to arrange to schedule the works.

Bedding and Backfill:

Bedding shall be in accordance with OPSS 402 read in conjunction with OPSS 1010. Bedding material for the ditch inlet catch basins installation shall be a Granular 'A' material.

Backfill from the structure bedding to 300mm above the top of the pipe shall be with Granular 'A'. Backfill material above the pipe to the proposed subgrade shall Granular 'A' within the roadway and native materials outside the roadway.

Siltation Control:

As part of the unit price, the Contractor shall supply and install filter cloth in the proposed frame and grate to control siltation. Filter cloth must be in place after the structure is installed and will be maintained on a weekly basis for the duration of the Contract. The Contractor will be required to remove and dispose of the existing filter cloth and replace with new filter cloth on a

weekly basis. Filter cloth is also to be removed and disposed of at the completion of the Contract or as directed by the Contract Administrator.

Measurement for Payment

Measurement for payment for the above item shall be by count (each).

Basis of Payment

Payment shall be made at the contract price for each unit regardless of depth. Payment at the contract prices shall be full compensation for all labour, materials and equipment required to complete:

- Salvage existing catch basins;
- Earth excavation and disposal of surplus excavated materials as directed by the Contract Administrator;
- Placement and compaction of granular bedding and backfill;
- Construction or installation of the precast unit;
- Materials testing; and
- All other items of work necessary to complete the structure in accordance with the Contract requirements.

C.11 Hickenbottom Drain Relocation

Scope

Under this item the Contractor shall salvage, relocate and install the extension of the storm sewer lead to the new location for the Hickenbottom Drain.

Measurement for Payment

Measurement for payment for the above item shall be by count (each).

Basis of Payment

Payment shall be made at the contract price for each unit regardless of depth. Payment at the contract prices shall be full compensation for all labour, materials and equipment required to complete the work.

C.12 Supply and Install 400mm DIA CSP Culvert, and

C.13 Supply and Install 450mm DIA CSP Culvert, and

C.14 Supply and Install 500mm DIA CSP Culvert, and

C.15 Supply and Install 525mm DIA HDPE Culvert, and

C.16 Supply and Install 600mm DIA CSP Culvert, and

C.17 Supply and Install 700mm DIA CSP Culvert, and

C.18 Supply and Install 900mm DIA CSP Culvert, and

C.19 Supply and Install 1000mm DIA CSP Culvert, and

C.20 Supply and Install 1100mm DIA CSP Culvert, and

C.21 Supply and Install 1200mm DIA CSP Culvert, and

C.22 Supply and Install 1400mm DIA CSP Culvert, and

C.23 Supply and Install 600mm DIA CSP Cross Culvert, and

C.24 Supply and Install 1000mm DIA CSP Cross Culvert, and

C.25 Supply and Install 1200mm DIA CSP Cross Culvert

This specification shall apply to all culverts and storm sewer installations. All in accordance with OPSS 401 and 421, except as amended below:

For the unit price bid, the Contractor shall complete the following scope of works:

- All excavation and preparation of subgrade as required to install the new culverts and frost tapers OPSD 803.030 and / or OPSD 803.031;
- Installation of the culverts to the lines shown on the Contract Drawings; and
- Placement and compaction of all granular materials.

All culverts, including any necessary hardware and collars, shall be purchased by the Contractor. The Contractor will be responsible for delivering the culverts to the project site. All culverts shall have a minimum 25 mm embedment. Culverts over 500 mm dia. shall have a minimum embedment of 10% of the diameter.

All HDPE pipes shall be HDPE 320kpa Boss 2000.

All CSP culverts shall have a thickness of 1.6 mm except the 1400 and 1600 shall have a thickness of 2.0 mm.

Product data sheet shall be provided by the manufacturer of the pipes.

Bedding and cover shall conform to OPSD 802.010. Granular 'A' shall be used for the bedding and cover. Backfill material and frost taper shall be Granular 'B'. The granulars used for the installation of the culverts shall be included in the unit price per metre.

In the event that soft spots are encountered in the subgrade, the Contractor shall perform additional excavation as directed by the Contract Administrator. The Contractor is advised that all culverts will be field verified to ensure that positive drainage is achieved, and existing drainage outlets are maintained.

Any surplus or unacceptable material and debris generated under this item shall be disposed of offsite, by an approved location provided by the Contractor at their expense.

Measurement for Payment

Measurement of payment will be made by linear metre.

Basis of Payment

The per metre unit price tendered shall include all costs for labour, material, and equipment to complete the work under these items to the satisfaction of the Engineer including all environmental requirements, removal of unsuitable materials and debris, and installing the new culvert. Payment for rip-rap at culvert ends is paid under the rip-rap.

C.26 Supply and Install 1200mm DIA Aluminized Type 2 Cross Culvert, and

C.27 Supply and Install 1600mm DIA Aluminized Type 2 Cross Culvert, and

Scope

Under this item the Contractor shall supply a corrugated aluminum pipe supplied by Atlantic Industries with a design services life of 75 years. It shall include an aluminum alloy core clad on both sides with alloy 7072. All culverts shall have a minimum 75mm embedment.

All Aluminized Type 2 culverts shall have a thickness of 1.6 mm except the 1600 shall have a thickness of 2.0 mm.

Product data sheet shall be provided by the manufacturer of the pipes.

Measurement for Payment

Measurement of payment will be made by linear metre.

Basis of Payment

The per metre unit price tendered shall include all costs for labour, material, and equipment to complete the work.

C.28 Supply and Install 1200 x 1200 mm Precast Concrete Box Culvert

OPSS.MUNI 422, 1821 and Contract Drawing shall apply to this item. The specified precast box culvert shall be supplied from MCON, Power Precast, or an approved equal, and be submitted with shop drawings stamped by a Professional Engineer in the Province of Ontario. It shall meet the requirements of OPSD 3920.100.

This item shall include all labour, equipment and materials to supply, transport and place the precast concrete box culvert as per the Contract Drawings. Specific design requirements are as follows:

General specifications:

- Ontario provincial standard specification Division 9
- Design according to Canadian Highway Bridge Design Code (CHBDC) CAN/CSA-S6-14
- Live load CHBDC CL-625-ONT

Class of concrete:

Concrete strength at 28 days 35 MPa Minimum exposure Class C1 Maximum aggregate size 19 mm.

Reinforcing steel:

Reinforcing steel bars should be in accordance with CSA G30.18 grade 400W, unless otherwise noted. Clear cover to reinforcing bars in precast units 50 mm ± 10 mm for the precast units, welded wire fabric reinforcement may be accepted as an alternative to steel reinforcing bars, in which case the Contractor shall submit a design for review and general acceptance.

Fabrication:

All exposed concrete edges to have a minimum of 20 mm chamfer unless otherwise noted. Haunch bars shall be provided at all four corners of the culvert units. Lifting hooks must be provided for all precast units.

Shop drawings for the precast concrete box culvert shall be provided to the Contract Administrator a minimum of three (3) weeks prior to construction for review and general acceptance. Shop drawings shall carry the stamp of approval by a registered practicing Professional Engineer qualified to practice in the Province of Ontario.

As part of the work, the Contractor shall prepare and provide a detailed lifting and/or construction methodology for the installation of the precast culvert units for review and general acceptance. These documents shall be supplied to the Contract Administrator a minimum of two (2) weeks prior to construction. It is noted that the lifting and/or construction methodology should account for all existing site conditions including third party utilities and their clearance requirements.

Upon completion of the work, the Contractor shall submit a certificate of conformance stating compliance with the design and installation. In addition to the certificate, supporting documentation shall be provided, as necessary, to demonstrate conformance. The certificate shall carry the stamp of approval by a registered practicing Professional Engineer qualified to practice in the province of Ontario.

Also include:

- 75mm exterior wall drains per OPSD 3190.100 and wrapped granular backfill.
- Waterproofing protection board with 75 mm sand cushion.
- Provide 25 mm diameter butyl gaskets and 1.0 m wide Class I (light duty), non-woven geotextile filter fabric (Terrafix 270R, Mirafi 140NL or Armtec 160) around each joint between precast concrete culvert sections.

Measurement for Payment

Measurement of payment will be made by linear metre.

Basis of Payment

Payment at the Contract price for the above tender item shall be full compensation for all labour, equipment and materials to do the work. This shall include wall drains, gaskets, waterproofing, and protective sand bedding. Payment shall also include supply and placement of the 300 mm stream bed substrate composition for the entire length of the box culverts.

C.29 Calcium Chloride Solid

This special provision covers the requirements for the supply of calcium chloride solid (flake) for dust suppression for the duration of the contract. The requirements of OPSS 506 shall apply.

Measurement of Payment

The measurement of payment for this item will be by kilograms (kg).

Basis of Payment

Payment at the contract price shall be for full compensation for all labour, equipment and materials required to supply calcium chloride solid for dust suppression.

C.30 Supply and Install 300 mm DIA Rip-Rap Including Geotextile

OPSS 511 shall apply to this item. For the unit price bid per square metre, the constructor shall construct rip-rap treatments complete with geotextile. Rip-rap shall be installed at locations shown on the contract drawings.

Rip-Rap shall be in accordance with OPSS 1004 and be Rip-Rap R-50. Rip-Rap shall be placed in a uniform layer and shall be 300 mm thick. Care shall be taken when placing Rip-Rap to ensure that it does not damage or rip the underlying geotextile. The Contractor is not permitted to dump a load of Rip-Rap from the dump truck directly onto the geotextile.

Geotextile shall be nonwoven, Class II according to OPSS 1860, with an FOS of 75-150 μm . Geotextile must be stitched at the seams in advance of rock placement.

This item shall include the placement of a 2 m wide channel bottom from Sta. 15+600 to Sta. 15+676.

Measurement of Payment

Measurement of payment shall be in square metres.

Basis of Payment

Payment at the contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work.

Payment shall include the over excavation for the Rip-Rap material under this item.

C.31 Erosion and Sediment Control

All erosion and sediment control work shall be completed in accordance with OPSS 805 except as amended below.

Erosion and Sediment Control/Environmental Plan

Fourteen (14) calendar days before commencing Work, the Contractor shall submit to the Contract Administrator five (5) copies of an Environmental Plan.

Note that the SNCA permits will be contingent on satisfactory ESC plans by the contractor. The Contractor shall extend the 14 day requirement before initiating construction should additional time be required to respond to SNCA requirements.

The Environmental Plan shall be comprehensive and shall document how the environmental requirements of the Contract will be met. The plan shall include but will not be limited to the following:

- Detail all environmental protection measures to be undertaken as part of the work. In particular, this Plan must outline the Contractor's approach for controlling sediment for the duration of the project. This shall include consideration of local weather conditions, duration of in-water activities and other measures to be taken to ensure sedimentation is controlled to acceptable levels.
- Detail the Contractor's approach to equipment refuelling, maintenance and washing.
- Detail the Contractor's proposed area for stockpiling of acceptable material.
- Notification to adjacent property owners.
- Detail the Contractor's spill prevention and response plan for dealing with all potential discharges relating to the Contractor's actions and operations.

- Detail the Contractor's approach to maintaining a clean work site in order to ensure that any contamination of the watercourses within the project limits is prevented.
- Detail the Contractor's contingency plan an environmental or public safety emergency occur.
- Describe education/training measures that will be implemented to ensure all of the Contractor's (including sub-contractors) staff are informed of and adhere to the environmental plan and other environmental requirements contained in the contract and as required by Federal, Provincial and Municipal legislation.
- Detail the inspection, monitoring and supervision activities that the Contractor will undertake on a minimal weekly basis to keep the Contract Administrator appraised of current environmental conditions.

Equipment and Refueling, Maintenance and Washing

Equipment refueling, maintenance and washing shall be addressed as part of the Contractor's Environmental Plan. All activities, including equipment maintenance and refueling shall be controlled to prevent entry of petroleum products (e.g. gasoline, oils, and lubricants), primers, and grout, bonding adhesives or other hazardous or deleterious substances into nearby watercourses.

Substances are to be stored and mixed on protected surfaces away from the watercourses within the project limits in order to prevent contamination in the soils and waters. Any such material which inadvertently enters the watercourse or water bodies within the project limits shall be removed by the Contractor, at their own expense, in a manner satisfactory to the Contract Administrator.

For mobile equipment and vehicles, maintenance, refuelling and truck washing shall be conducted no closer than 30 metres from any waterway in order to prevent water contamination due to accidental spills.

All large equipment working in or near the water within the project limits shall be well maintained to avoid contaminant leakage, shall be free of excess surface oil or grease and shall be equipped with spill kits deemed acceptable by the Contract Administrator.

Submittals

The Contractor shall not commence construction operations in and around the water until such time as the Contract Administrator and approval agencies having jurisdiction have approved the Contractor's Erosion and Sediment Control Plan/Environmental Plan (ESCP/EP) in writing.

Measurement of Payment

Measurement for payment shall be lump sum.

Basis of Payment

Payment at the Contract price for the tender item “Erosion and Sediment Control Measures” shall be full compensation for the preparation and implementation of the Erosion and Sediment Control Plan, Environmental Plan, and Health and Safety Plan, and shall include all labour, equipment and materials to supply, construct, monitor, maintain and remove all erosion and sediment control measures and adhere to the requirements of the Environmental Plan.

Payment shall be based upon the following schedule:

- 25% upon satisfactory submission of the ESCP/EP, Environmental, and Health and Safety Plan and installation of the control measures;
- 50% pro-rated into equal payments over the term of the contract; and
- 25% upon successful completion and removal of the ESCP/EP, Environmental, and Health and Safety Plan protection measures.

This payment schedule may only be modified as agreed upon in writing between the Contractor and the Contract Administrator.

C.32 Dewatering

OPSS.MUNI 517, 805 and all requirements shown on the contract drawings shall govern except as amended and extended herein:

Scope

Under this Item the Contractor will design, erect, maintain, and remove upon completion of works a dewatering scheme as necessary for carrying out the entire construction in the dry.

This item shall include the design, supply, placement, relocation, maintenance, and removal of all dewatering features as required to complete the Contract works.

The Contractor shall prepare and provide a detailed dewatering plan for review and general acceptance. These documents shall be supplied to the Contract Administrator a minimum of two (2) weeks prior to construction.

As part of this item the Contractor will be required to complete the following for the duration of construction:

1. Weekly inspection and provision of reports to the Contract Administrator for the dewatering assemblies noting any deficiencies and how they will be rectified.
2. Restore disturbed areas as to the satisfaction of the Contract Administrator.
3. Please note the following additional information provides minimum requirements related to dewatering:

- Any meter bags used shall be Terrafix Meter Bag or approved equivalent.
 - Upstream and downstream blockages shall be erected using meter bag assemblies (or other approved methodologies) such that the work area is sufficiently sealed from flow as shown on the Contract Drawings.
 - Water shall not be pumped from within the work area directly into any waterway without proper sediment and erosion controls in place using a sediment basin to capture water before being released to a watercourse. Water from within the work area shall be pumped into a sediment basin (to be paid for under this item located at minimum 30 m from the watercourse as shown on the Contract Drawings, beyond the downstream cofferdam). Water from the sediment basin shall be allowed to gradually seep back into the wetland/waterway. Pumping will continue as required throughout the length of the in-water work to ensure a dry work area.
4. The Contractor will be solely responsible for dealing with the water levels at the time of construction.

The acceptance of the dewatering plan will be subject to the review and comments of SNCA.

Measurement for Payment

Measurement of payment shall be by lump sum for all works.

Basis of Payment

Payment at the Contract price for the above tender item shall be full compensation for all labour, equipment and materials to do the work.

C.33 Pavement Markings

- A. Solid Yellow – 10 cm
- B. 363 Broken Yellow – 10 cm
- C. Solid White – 10 cm

All pavement markings shall be accurately spaced and present a clean-cut, uniform appearance during either the day or night.

Line width, thickness, the nature of edges and uniformity in appearance will be assessed by the County or designate.

Random visual observations will be conducted to assess glass bead embedment and coverage using a magnifier. Glass beads shall be buried in the paint, depending on the size of bead from 60 to 100%.

If the work completed does not meet Ontario Provincial Standard Specifications or the requirements set out in the preceding paragraph, the Contractor will be required to correct the work at no extra cost to the County.

All painting shall be applied in the same direction as traffic flow. No painting whatsoever shall be performed against the flow of traffic.

Surface Preparation

The pavement must be clean and dry. Contaminants such as dirt, loose asphalt particles and oily residues shall be removed prior to application of pavement markings.

Pre-marking

The Contractor shall provide the necessary measurements required to establish the position of all pavement markings if existing lines are not visible.

Glass Beads

All glass beads supplied by the Contractor shall meet the specifications as outlined in OPSS 1750, as amended by the Ministry of Transportation of Ontario.

The spheres shall be coated with a dual coating. The coating shall have both a moisture resistance silicone coating, and an adhesion promoting silane coating. The spheres shall pass the moisture resistance test and the adherence coating test.

Only materials and glass beads from manufacturers and their products listed on the MTO Designated Sources of Material List shall be accepted by the Corporation for the duration of this contract.

Measurement for Payment

Measure for payment shall be by linear metres for lines (excluding spaces).

Basis of Payment

Payment at the contract price shall include full compensation for all labour, equipment and material required to complete the work. Any additional traffic control or cleaning required to complete permanent pavement markings or lines shall be included in this scope of work and will not be an extra. Payment shall be made on horizontal length in metres of 10cm wide line, excluding gaps.

C.34 Steel Beam Guiderail per OPSD 912.186

This item provides for the construction of the guide rail.

The requirements of OPSS 721 shall apply. The Contract Drawings indicate the guiderail type and corresponding OPSD or MTOD for each segment of the guide rail.

Measurement of Payment

The measurement of payment for this item will be by linear metre.

Basis of Payment

The unit price bid for this Item shall be compensation in full for all labour, material and equipment required to complete the work.

C.35 Energy Attenuator End Treatment per OPSD 922.186, and

C.36 Rounded Terminal Steel Beam Treatment per OPSD 912.256 (Provisional)

The requirements of OPSS 723 and OPSS 732 shall apply. The Contract Drawings indicate the guide rail end treatment type and corresponding OPSD or MTOD.

Measurement of Payment

The measurement of payment for this item will be by count (each).

Basis for Payment

Payment at the Contract price under the item shall be full compensation for all labour, materials and equipment required to complete the work.

C.38 Supply and Install Stockpiled Topsoil (100 mm Depth), and

C.39 Supply and Install Imported Topsoil (100 mm Depth)

All in accordance with OPSS 802 except as amended below:

The topsoil shall be supplied from stockpiles.

The work shall include fine grading and raking minimum 100 mm depth topsoil.

The unit price for this item shall include all labour, materials and equipment for the supply and placement of topsoil. The topsoil shall be placed at 100 mm minimum depth. Prior to placement

of the topsoil, the surface soil shall be loosened to a depth of 25mm. Only Screened topsoil is permitted to be used.

The Contractor shall reuse stripped topsoil including screening before importing any topsoil. All imported topsoil, if required, shall have a PH range of 6.5 to 7.5 and shall contain 4-6% organic matter. Prior to the delivery of the topsoil the Contractor shall provide the Contract Administrator the name and location of the topsoil supplier so that the topsoil can be tested in advance of installation. The Contractor shall provide certification of testing and compliance of all imported material prior to the material arriving on site. Topsoil shall be tested for the presence of ATRAZINE, the potential for sodium contamination and any other chemicals which may inhibit seed germination and growth.

The topsoil shall be rolled with a 50 kg roller for compaction. The finished topsoil surface shall be smooth and firm against footprints.

The topsoil shall be free of weeds and debris prior to the installation of seed and mulch.

Measurement of Payment

Measure for payment for topsoil shall be in square metres.

Basis of Payment

The square metre price bid shall include all labour, equipment, and materials to supply and place topsoil for location identified on the Contract Drawings. Payment for stockpiling of any salvaged topsoil is paid under a separate item.

C.40 Roadside Seeding, Hydroseeded

This work shall be completed in accordance with OPSS 804.

The Contractor shall perform roadside seeding with hydroseeding methods in the areas shown in the Contract Drawings. The Contractor should proceed with hydroseeding only after final grade has been approved by Contract Administrator. No hydroseeding shall be performed on roadsides covered in snow, ice or standing water.

Seed shall be packaged in individual sealed bags for each species. Seed bags shall be marked to show species, weight and provenance. Fertilizer shall be applied in accordance with the Drawings. If not specified in the Drawings, fertilizer shall be complete organic liquid applied in accordance with the manufacturer's instructions and recommended rates.

Hydroseeding mix shall be applied using mobile plant with tank(s) having a built-in continuous agitator and recirculation system of sufficient operating capacity to produce and maintain a homogenous mix. The discharge system shall be capable of spraying the slurry continuously at a

uniform rate over the specified area. A hose extension for the hydraulic seeder shall be on site and available for use for areas outside of the range of the gun nozzle.

The Contractor shall reseed areas which have not been evenly seeded or have achieved poor germination.

Measurement of Payment

The measurement of payment for this item will be by square metre.

Basis of Payment

The unit price bid for this Item shall be compensation in full for all labour, material and equipment required to complete the work.

C.41 Hydrovac Test Pits

This special provision covers the daylighting of underground utilities and/or existing linear infrastructure on site to confirm their location during construction operations including the provision of traffic control to complete the operations.

The Contractor will undertake hydrovac investigations of existing Bell infrastructure with the area of the proposed Municipal Drain relocation from Station 11+380 to 11+550. This is Bell "Toll Fibre" (major transport fibre connection between Bell offices). The Contractor is advised that this infrastructure may be located at a deep depth (3 - 4 metres). Bell Canada should be advised of the day and time of the test pits to allow their staff to be present.

Daylighting shall be completed as required by the utility owner and/or as directed by the Contract Administrator. Test pits do not relieve the Contractor from undertaking the identification of underground utilities using Ontario One Call or hand test pits.

Daylighting excavation shall be completed using Hydrovac technology or approved equivalent and should include all aspects of the work including but not limited to:

- Disposal of all excavated materials, which are deemed unsuitable for or in excess of the fill requirements under this Contract to an approved and licensed facility.
- Backfill of the daylight utility as dictated by the utility company or Contract Administrator.
- Provision of any utility or material required to complete the work. It is noted that water will not be permitted to be taken from a Township/County or County source.

Measurement of Payment

The measurement of payment for this item will be by each.

Basis of Payment

Payment at the contract price shall be full compensation for all labour, materials and equipment required to complete the work.

- D.1 Japanese Tree Lilac, *Syringa amurensis japonica* 'Ivory Silk' – 50mm cal.
- D.2 Thornless Cockspur Hawthorn, *Craetaegus cusgally* 'Inermis' – 50mm cal.
- D.3 Common Lilac, *Syringa vulgaris*, 60 cm ht.
- D.4 Sugar Maple, *Acer saccharum* - 50 mm cal.
- D.5 Blue Spruce, *Picea pungens* - 200 cm ht
- D.6 White Spruce *Picea glauca* - 200 cm ht
- D.7 Red Pine, *Pinus resinosa* - 200 cm ht

Scope of Work

Supply and Install Landscaping

The following sections outline the procedures required to complete the landscaping for the Project. The requirements of OPSS 206, 802, 803, and 801 shall apply to these items.

The Contractor shall include all labour, materials, equipment, and services required to provide and plant all trees, shrubs, and groundcover to the extent indicated on the Contract Drawings and as specified hereafter.

The work shall be carried out by a pre-qualified, established, and reputable firm that is a member in good standing of Landscape Ontario for a minimum of three years.

The work shall be carried out by qualified personnel with a minimum of five years' experience engaged in the type of work specified and under the direction of a skilled foreman.

General Materials

Substitutions for the specified plants will not be accepted unless approved in writing by the Contract Administrator.

All plants shall be No. 1 Grade, nursery grown, under proper cultural practices with respect to fertile soil, ample spacing, regular cultivation, weed, pest and disease control, adequate moisture, and pruning in accordance with good horticultural practices as advocated by the Canadian Nursery Landscape Association. All such plants shall have been transplanted and / or root pruned regularly, but not later than nine months prior to arrival on the site.

Plants dug from native stands, woodlots, orchards, or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Landscape Association shall be designated as "Collected Plants" and will not be permitted.

Plants shall be freshly dug and shall be in a healthy, vigorous condition at arrival on the site. Heeled-in plants or plants from cold storage will not be accepted. Whenever practical, trees

shall be supplied from nurseries located within the same plant hardiness zone and having the same soil conditions and types of soils as the area of the project site. Plants, specified "B & B", shall be moved with solid root balls, wrapped burlap, or approved equivalent. Root balls shall be not cracked or broken at time of planting.

Nomenclature of specified plants shall conform to the International Code of Nomenclature for Cultivated Plants and the latest edition of Standardized Plant Names.

Plant Materials

All plant material shall be delivered in the condition indicated on the plant list. Plant material grown in more moderate hardiness zones than those in this contract area will not be accepted.

Container-grown material is acceptable providing that plants have been grown in the container for at least one growing season, but not longer than two. Containers must be large enough to permit proper root development. Balled and burlapped: coniferous and broad-leaved evergreens over 50cm tall must be dug with soil ball; under 50cm must be potted. Deciduous trees must have been dug with large firm ball. Root balls must include 75 per cent of the fibrous and feeder root system. This excludes use of native trees grown in light sandy or rocky soil. Secure root balls with burlap, heavy twine, and rope. For large trees, over 100cm in height, wrap ball in layer of heavy burlap and drum lace with minimum 10mm diameter rope. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

Plants shall be sound, healthy, vigorous, well branched, and densely foliated when in leaf. They shall be free of disease, insect pests, eggs, or larvae and shall have healthy, well developed root systems. All shrubs and trees shall possess all characteristics of the specified kind with all the leaders intact, undamaged, and uncut, growing from an intact root system. The stems shall be free from sunscalds, frost cracks, abrasions, fire and crust. All old injuries shall be completely callused over. Pruning wounds must be flush and show vigorous bark on all edges and all parts show live, green cambium tissue when cut.

All plants shall conform to the measurements specified except that plants larger than specified may be used if approved by the Contract Administrator. Use of such plants shall not increase the contract price. If larger plants are approved, the ball of earth shall be increased in proportion to the size of the plant. Plant material must conform to the following standards;

- Caliper:** Diameter of the trunk measured 150mm above the normal grade around the plant.
- Height:** Measured from the normal grade around the plant to the top of the stem of nursery stock, measured in its natural position.
- Spread:** The diameter of the main foliage mass at its widest point.

Other Plant Material

Topsoil	As specified in OPSS 570 and supplemental specification (for site specific projects).
Fertilizer	A complete synthetic, slow release commercial, approved super phosphate with a minimum 35 percent water soluble nitrogen, and the recommended analysis determined by the soil tests completed in advance of construction by the Contractor.
Peat Moss	Partially decomposed fibrous form of cellular stems and leaves of sphagnum moss, free of woody substances and harmful mineral matter, having a pH range of 4.5 to 6.0 and furnished in an air dry state packed in standard bags or bales showing the volume and name of the supplier.
Tree Stem	225g burlap supplied in strips 150mm minimum to 250mm Wraps Maximum, heavy gauge waterproof cardboard paper, “Kraft Wrap” or “Foylon”.
Anchor Stakes	Caliper Trees – New Metal T-bar stakes, painted green, 2500mm length, 40mm x 40mm x 5mm. Deciduous Trees (200cm – 30cm height) – Pressure treated wooden stake with a pointed end (2000mm x 50mm x 50mm). Coniferous Trees – New Metal T-bar stake or acceptable wooden stakes, painted green, 40mm x 40mm x 5mm, 2400 mm length. Wire New, #9 gauge galvanized wire free from bends or kinks or of sufficient strength to withstand wind loading.
Hose	Two-ply, reinforced, 13mm diameter, new, green rubber garden hose of sufficient length to loosely encircle the tree trunk. Black hose will not be accepted.
Turnbuckle	Spanfix, Langer, or approved equivalent galvanized wire tightener.
Safety Flagging	Guy wires to be marked at their midpoints and immediately above the stakes with cold crack resistant, orange survey tape.
Mulch	Shredded bark mulch where indicated on the planting plan, free of soil, weeds, pieces larger than 50mm and any other deleterious (i.e. disease and pests) and foreign material, finely shredded. Recycled lumber is not acceptable as a wood chip mulch source. Submit sample for approval by the Contract Administrator.
Rodent Protection	White plastic spiral, 12mm square wire mesh tree guard or split corrugated drain collar (i.e. Big “O” pipe) of a diameter that fits loosely around the tree stem.
Anti-Desiccant	Anti-desiccant emulsion shall be a product specifically manufactured to provide a flexible surface film to reduce transpiration yet not impede the passage of carbon dioxide and oxygen.

The material shall be applied on a mild day in late fall or early winter using a pressure sprayer to prevent desiccation and winter browning. The applied material shall be subject to the approval of the Contract Administrator.

Planting Medium

Provide standard planting soil mix as follows: five parts topsoil to one part peat moss or hydrogels and specified fertilizers per soil test results; for heavy soils, mix one part topsoil to one part sand to improve aeration. Mix immediately before planting in a dry state.

Add superphosphate at the rate of 0.75kg per cubic metre and mix thoroughly for each tree or planting bed. Adjust per soil analysis and recommendations. Topsoil shall be a fertile, friable, natural loam containing no less than five per cent organic matter.

Topsoil shall be free of stones, subsoil, refuse or other extraneous material and be capable of sustaining healthy plant growth. The Contractor shall not use topsoil that is in a frozen or muddy condition.

Product Delivery, Storage, and Handling

Supply manufactured items such as super phosphate, fertilizer, mulch, peat moss, etc. in standard containers clearly indicating contents, weight and / or volume, component analysis, and the name of the manufacturer.

Store manufactured materials, subject to deterioration, in a waterproof place on-site and in such a manner that their effectiveness is not impaired.

Provide rootballs of the minimum sizes to meet the requirements as specified in the Guide Specifications for Nursery Stock. Provide all material, specified Balled and Burlapped (B&B) on the plant list, with a solid earth rootball wrapped in burlap and secured with rope.

Cut all roots cleanly when digging plants. Splitroots are not acceptable. Cut roots even with the edges of the rootball.

Protect all plant material from damage and breakage. Protect all parts of the plant material from drying out from the time of digging until they are installed.

Do not transport plant material in an open truck unless it is adequately protected to ensure that injury and drying out do not occur. Carefully tie all branches before transporting. Pad all joints of contact between plant material and equipment.

Keep all roots and rootballs moist prior to planting. Balled and burlapped material or material in fibre pots shall not be stored on the site in excess of 48 hours without permission from the Contract Administrator. If storage is necessary, the plant material shall be protected from damage and thoroughly watered to prevent drying out until it is planted. Excess material should

be stored in a cool, shaded area until planted. The Contractor is to heel in any bare root plants that cannot be planted during the current day's operations.

Inspections

All of the plant material is to be reserved at the source and set aside for inspection and approval by the Contract Administrator. All plant material shall be clearly identified by labels indicating species, size and supplier.

Approval of the plant material at the source will not impair the right of the Contract Administrator to inspect the plants upon arrival on the site or during the course of construction and to reject plants which have been damaged or which in any way do not conform to the specifications. Rejected plants shall be removed from the site within 24 hours of notification of the same.

Give timely notice to the Contract Administrator when inspections are required.

Planting of plant materials, prior to inspection by the Contract Administrator will be the Contractor's responsibility. The Contract Administrator reserves the right to reject any plants, whether planted or not, which do not conform to the specifications and / or Contract Drawings. All rejected materials to be removed from the site within 24 hours of notification of the same.

Protect plants from damage and drying out from the time of digging until planting.

At time of final inspection, all plants and trees shall be completely free of diseases and / or insect infestations. Tree guys shall be taut and all accessories in good condition as specified. All planting beds and tree saucers shall be freshly cultivated and free of all weeds and debris.

All materials and workmanship is to be guaranteed for 24 months after substantial completion unless otherwise noted.

Submit written guarantee to the effect that all:

- Plants accepted during the period from January 1st to July 15th shall be guaranteed until July 15th the second following year;
- Plants accepted during the period from July 15th to December 31st shall be guaranteed for a period of 24 months from the date of acceptance; and
- The guarantee periods, listed above, shall apply to all "nursery-grown plants".

During the guarantee period, make periodic inspections and replace all plants which are dead, missing, or which are not in a healthy, vigorous growing condition, and do all maintenance.

Preparation

Commencement of work denotes acceptance of the site.

Obtain the approval of the Contract Administrator for all planting excavations as outlined in OPSS Form-206.

The Contractor must stake the location of all trees and shrub planting beds for inspection and approval by the Contract Administrator, prior to excavation and installation.

The Contractor shall be responsible for locating all underground utilities and services prior to digging.

Excavation

Excavate the planting pits to the width and depth as shown on the Contract Drawings to accommodate the rootball of the specified plant material. The width of each planting pit must be over-excavated by at least 300mm.

Shrub beds are to be excavated to a minimum depth of 500 mm.

Surplus excavated material shall be disposed of off the construction site. The bottom and the sides of the planting pit shall be scarified so that water and roots may penetrate readily.

Installation of Plant Material

Installation shall be performed to manufacturer's specifications and guaranteed.

Notify the Contract Administrator, in writing, of any corrective or preventative measures necessary to safeguard plants.

Stake out all tree locations and planting beds and obtain approval from the Contract Administrator before excavating. Cooperate with the Contract Administrator where minor adjustments to such locations are necessary.

The locations of trees and planting areas, where shown on Contract Drawings, are approximate only and may require adjustment due to site conditions.

The outline of all planting beds shall be staked out on site and finalized to the Contract Administrator's approval.

Provide drainage for planting holes in heavy soil if natural drainage does not exist. Have method approved by Contract Administrator.

Remove water that enters excavations prior to planting. Ensure source of water is not groundwater.

Excavate planting pits for trees to the following minimum diameters unless detailed otherwise:

- 0.6m larger for trees with rootball diameter from 0.6m to 0.9m inclusive.
- 0.9m larger for trees with rootball diameter from 1m to 1.4m inclusive.

Excavate shrub planting beds to the following minimum depth:

- Shrubs– 500mm minimum.
- Ground Cover and Perennials – 300mm minimum.

Scarify sub-grade under planting beds and tree pits to a minimum depth of 150mm.

Obtain approval of finished sub-grade from Contract Administrator before placing topsoil or planting.

Add bonemeal to the soil mixture at the rate of 0.6kg per m³.

Mix topsoil, peat moss, and other additives thoroughly on the site, not more than two days before backfilling.

Do not mix or backfill when topsoil or soil mixture is in a muddy or frozen condition.

The Contractor shall backfill topsoil to a height above finished grade sufficient to allow for normal, natural settlement.

Planting shall be done during periods suitable with respect to weather conditions and local conditions.

Plants shall be installed in the center of the pit at the same relation to grade as originally grown, after settlement has taken place.

Trees and other plant materials shall be faced to give the best appearance or relationship to adjacent structures, and to the approval of the Contract Administrator.

Set bare root plants so that their roots lie in their natural position. Constantly tamp soil around root ball to eliminate air pockets.

Assume full responsibility for protection of all planted areas until all project work has been completed, approved, and accepted.

Erect protective fencing and post signs where necessary and maintain such works until acceptance and remove these items after acceptance of work, unless directed otherwise.

Remove and dispose of any root base wraps, ropes, or wire baskets which may girdle and impede tree growth. Plants delivered with pressure-treated burlap must have all of the burlap removed from the rootball. The top third of all wire baskets must be removed with wire cutters; the remainder of the basket is to be folded down into the planting pit. Shrubs delivered in fibre pots shall have the sides of the pot slit vertically and the pot removed from the rootball of the plant. All plastic containers must be removed and disposed of off-site.

The planting pits shall be backfilled with topsoil in 150mm layers which are firmly tamped as applied to ensure the orientation of the plant is maintained. Air pockets shall not be allowed to form when backfilling.

All plant material shall be thoroughly watered with a root probe when the planting pit is half full of tamped soil and again when the operation is complete. The Contractor shall be responsible for the supply, delivery and applications of the water.

Except for plants in planting bed, the final backfill layers shall be applied to form a 100mm deep earth saucer around each plant and over the entire planting area to retain water over the root area. If the pit is on a slope, the lower edge shall be built up to catch and hold water.

Installation of Planting Accessories

Wrap all deciduous trees 50mm caliper and larger. Apply wrapping in a spiral manner from grade to above the second branch. Secure the wrapping with suitable cord.

Immediately after planting, stake or guy all trees as outlined on the planting details. All stems are to be protected with a sufficient length of garden hose to loosely encircle the trunk. Install turnbuckle and safety flagging as required.

Install rodent protection around the base of all trees; guards to extend a minimum 600mm from base of tree.

Pruning

Prune plants according to good arboricultural practices after planting to remove dead or broken branches. Remove objectionable branches that may pose a potential hazard to pedestrians and automobiles in the future. If the plant material does not meet the standards of the specifications after pruning, then the plant material will be rejected by the Contract Administrator and the plant must be replaced by the Contractor at no additional cost to the Agency. Pruning shall be performed to the satisfaction of the Contract Administrator.

Mulching

Immediately following planting and initial watering, shredded cedar mulch shall be applied to all of the plant material installed. A uniform continuous blanket of mulch shall be spread to a depth of 100mm as identified on the planting details.

Clean-Up

At the completion of the planting operations, the Contractor must remove all surplus and extraneous material from the site and repair all damage resulting from the planting operations at no additional cost to the Agency.

Warranty

All trees and shrubs planted shall be under warranty for a period of 24 months commencing on the date of final, written acceptance. All plant material will be inspected by the Contract Administrator and the Agency at the end of the first year and again at the end of the specified warranty period. Plants which are not in a healthy vigorous growing condition, to the approval of the Contract Administrator and the Agency, shall be replaced at no extra charge by the Contractor. The Agency reserves the right to extend the Contractor's warranty responsibilities for an additional year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

Plants accepted during the period from January 1st to July 15th shall be under warranty until July 15th the second following year. Plants accepted during the period from July 15th to December 1st shall be under warranty for a period of 24 months from the date of acceptance.

All plant materials used as a replacement for unacceptable plant material shall be of the same quality and requirements prescribed for the original material.

A plant shall be assumed to be acceptable when it is structurally sound, when it is well furnished with living foliage, when it has normal colour, when it shows adequate annual growth and formation of buds, and when it is free from blight of any description. Plant material which has severely "died back" and has re-grown from a bud or shoot shall be considered dead and unacceptable.

Plants which have died during the period of warranty shall be replaced at no cost to the Agency as soon as possible consistent with the allowable planting season. Dead plant material replaced under warranty shall be removed from the contract site at the Contractor's expense. The Contract Administrator shall be notified in writing when replacements are to be planted. Plant material replaced under warranty shall conform to all specifications of the original Contract including the warranty of 24 months from the date of planting. The Contractor will continue such replacement and warranty until plant material is acceptable.

Replacement of materials broken or damaged due to circumstances beyond the Contractor's control after completion shall not be an obligation under this warranty. The Contractor is responsible for watering and will be considered as being within the control of the Contractor during the warranty period.

Maintenance

The Contractor shall provide maintenance immediately after the plants are installed and continue throughout the entire warranty period. Maintenance requirements shall include all procedures consistent with proper horticultural practices to ensure normal, vigorous, and healthy growth of all material planted including seeding and sodding. Maintenance shall include, but not be limited to, the following:

- Cultivating and weeding planting beds and tree pits. Remove all debris, broken branches, etc. and maintain planting beds in neat conditions at all times. The use of herbicides and pesticides is prohibited.
- Water a minimum of once a week with a root probe for the first four weeks, and when required thereafter, and in sufficient quantities to saturate the root system and to ensure sufficient moisture for vigorous plant material growth. Ensure adequate moisture in the rootball at time of first frost.
- Pruning, including the removal and disposal of dead or broken branches.
- Disease and insect control when required. Use chemical methods in accordance with the manufacturer's directions. Make good any damage at no additional cost to the Agency.
- Keep all accessories in good condition and properly adjusted. Repair or replace accessories as required at no additional cost to the Agency.
- At the time of final warranty acceptance, all material must be in a healthy vigorous condition. Beds and tree pits must be freshly cultivated and free of weeds, rubbish, and debris. All stakes, wire, hose and other accessories must be removed upon final acceptance.

Maintenance Holdback

The Agency shall retain a maintenance holdback in the amount of 10 per cent of the Contract value for supply and installation of all plant material. The Agency's staff or their representative will review the planting on or about 12 months and 24 months from the date of completion. At the end of each review, the Agency will either release, reduce or retain the maintenance holdback depending on the status of the repair of the deficiencies and verification that the Contractor is maintaining the plants. The maintenance holdback will be in addition to any other holdbacks retained. No interest on monies held back by the Agency will be paid to the Contractor.

Measurement of Payment

Measurement for payment of the above items shall be by count (each).

Basis of Payment

The contract unit price for the various tender items shall be used for full compensation for all labour, equipment, and materials to supply, install, and maintain plant material including the restoration and clean-up of the work site in accordance with the plans and the requirements of the specifications. All work and materials described in this specification are deemed to be

included in the contract price for the work. Work is to be paid on the basis of the number and type of plants installed.

Payment for maintenance shall be made from the 10 percent Maintenance Holdback as follows: 50 percent at the 12 month inspection; and, remaining 50 percent at the 24 month inspection.