

SPECIAL PROVISIONS

CITY OF GUELPH
CONTRACT NO. 2-1018
SPECIAL PROVISIONS

SPECIAL PROVISIONS

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The following listed documents and or drawings form part of this contract and it is the responsibility of the contractor to obtain all relevant current copies.

- 1. City of Guelph Part “B” Standard Contract Specifications, March 2010 as amended
Located on the City’s website at
<http://guelph.ca/business.cfm?subCatID=981&smocid=1566>**
- 2. Region of Waterloo and Area Municipal Design Guidelines and Supplemental Specifications for Municipal Services (DGSSMS)**
- 3. Ontario Provincial Standard Specifications**

It will be the Contractor’s responsibility to obtain current copies of the Ontario Provincial Standard Specification (OPS) Forms listed below, which form part of this Contract. The Contract shall include the latest (most recent) edition of the Specification unless otherwise noted.

TITLE	SPEC. NO. OPSS.MUNI	DATE
OPS General Conditions of Contract	100	November 2006
Weighing of Materials	102	October 1992
Electrical Work	106	November 2004
Schedule of Rental Rates for Construction Equipment Including Model and Specification Reference	127	April 2009
Supply of Pre-Qualified Material and Products	128	April 2006
Management of Excess Material	180	November 2005
Clearing, Close Cut Clearing, Grubbing, and Removal of Surface and Piled Boulders	201	November 2007
Grading	206	November 2000
Stockpiling of Patching Materials and Patching of Asphalt Pavement	307	November 2007
Cold Mixed, Cold Laid, Open and Dense Graded Bituminous Mix	309	November 2006
Hot Mix Asphalt	310	November 2008
Asphalt Sidewalk, Driveway, and Boulevard and for Sidewalk Resurfacing	311	April 2004
Asphalt Curb and Gutter Systems	312	April 2004
Untreated Granular, Subbase, Base, Surface, Shoulder, and Stockpiling	314	November 2004
Maintenance Hole, Catch Basin, Ditch Inlet, and Valve Chamber Installation	407	November 2007
Adjusting or Rebuilding Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers	408	November 2007
Closed Circuit Television Inspection of Pipelines	409	November 2005
Pipe Sewer Installation in Open Cut	410	April 2008
Compacting	501	November 2005
Site Preparation for Pipelines, Utilities, and Associated Structures	503	November 2005
Preservation, Protection, and Reconstruction of Existing Facilities	504	November 2005
Dust Suppressants	506	November 2005
Site Restoration Following Installation of Pipelines, Utilities, and Associated Structures	507	November 2005

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TITLE	SPEC. NO. OPSS.MUNI	DATE
Removal	510	November 2006
Trenching, Backfilling, and Compacting	514	April 2008
Rock Excavation for Pipelines, Utilities, and Associated Structures in Open Cut	515	November 2005
Excavating, Backfilling, and Compacting for Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers	516	November 2005
Dewatering of Pipeline, Utility, and Associated Structure Excavation	517	November 2005
Control of Water from Dewatering Operations	518	November 2006
Pavement Marking	532	June 1991
Traffic Control Signing	543	December 1990
The Protection of Trees	565	November 2007
Sodding	571	November 2007
Electrical Work - General	601	November 2004
Installation of Electrical Chambers	602	November 2008
Installation of Ducts	603	November 2008
Installation of Cable	604	November 2008
Grounding	609	November 2008
Removal of Electrical Equipment and Materials	610	November 2008
Installation of Underpass Luminaires	611	November 2008
Installation of Power Supply Equipment	614	November 2008
Erection of Poles	615	November 2008
Footings and Pads for Electrical Equipment	616	November 2008
Installation of Roadway Luminaires	617	November 2008
Traffic Signal Equipment and Electrical Traffic Control Devices	620	November 2007
Traffic Signal Interconnection Equipment	624	November 2007
Construction Specification for Excavation and Backfilling Structures	902	November 2009
Construction Specification for Concrete Structures	904	November 2008
Construction Specification for Steel Reinforcing for Concrete	905	April 2007
Construction Specification for Structural Wood Systems	907	April 2009
Construction Specification for Metal Traffic Barriers and Metal Railings for Structures	908	November 2009
Construction Specification for Prestressed Concrete – Precast Members	909	February 1993
Construction Specification for Formwork and False Work	919	November 2009
Construction Specification for Installation of Bearings	922	November 2008

1. Ontario Provincial Standard Drawings

It will be the Contractor's responsibility to obtain current copies of the Ontario Provincial Standard Drawings listed below, which form part of this Contract.

TITLE	OPSD NO.	DATE	REV.
Minimum Vertical Clearances for Aerial Cable Systems	217.030	2004 11	0
Barrier for Tree Protection	220.010	2007 11	0
Pavement Reinstatement for Utility Cuts	509.010	2006 11	1
Concrete Barrier Curb with Standard Gutter	600.040	2006 11	1
Concrete Barrier Curb	600.110	2006 11	1
Asphalt Curb and Asphalt Gutter	601.010	2007 11	1
Catch Basin Frame with Grate Installation at Curb and Gutter	610.010	2000 11	0
Catch Basin Frame with Grate Shoulder Installation at Concrete	610.020	2006 11	2

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TITLE	OPSD NO.	DATE	REV.
Barrier			
Frame with Grate Installation for Inlet Type Catch Basins	610.030	2000 11	0
Catch Basin Connection for Rigid Main Pipe Sewer	708.010	2006 11	1
Support for Pipe at Catch Basin or Maintenance Hole	708.020	2006 11	2
Catch Basin Connection for Flexible Main Pipe Sewer	708.030	2006 11	1
Flexible Pipe Embedment and Backfill, Rock Excavation	802.013	2005 11	1
Rigid Pipe Bedding, Cover, and Backfill, Rock Excavation	802.033	2005 11	1
Rigid Pipe Bedding and Cover in Embankment, Original Ground: Earth or Rock	802.034	2005 11	1
Sewer Service Connections for Flexible Main Pipe Sewer	1006.020	2005 11	1
Cable Installation in Trenches	2100.010	92 12 15	1
Cable and Duct Protection and Marking	2100.050	92 12 15	1
Rigid Ducts Encased in Concrete	2100.060	92 12 15	1
Duct Installation in Trenches	2101.010	92 12 15	-
Underground Rigid Duct Connection at Concrete Structure	2102.010	90 01 15	-
Duct Installation Profiles	2103.020	92 12 15	-
Rigid Duct Installation in Existing Paved Area - Granular Backfill Method	2103.040	90 06 04	-
Duct Installation at Utility Crossings	2103.050	92 12 15	-
Pole Mounting Details for Base Mounted Metal Pole	2215.030	98 03 01	2
Sectional Steel Pole with Brackets, Luminaire, and Traffic Signal Head	2232.010	2006 11	0
Pole Guying Details	2235.010	88 07 04	1
Wood Pole in Earth	2238.010	85 04 15	-
Installation of Aerial Cable Systems	2245.010	2004 11	2
Minimum Vertical Clearances for Aerial Cable Systems	2245.020	2004 11	0
Aluminum Tapered Elliptical Brackets on Metal and Concrete Poles, Mounting Details	2250.010	2006 11	5
Pole Wiring Diagram - 120 V System	2255.010	96 09 15	-
1.8 m and 2.7 m Aluminum Tapered Elliptical Bracket	2420.010	2007 04	4
Single Member Arm and Signal Head	2501.010	93 12 15	1
Pole Mounted Controller Cabinet	2510.010	90 01 15	1
Mounting Bracket for Pole Mounted Controller Cabinet	2510.020	85 04 15	-
Traffic Signal - Bracket for Mounting Pedestrian Instruction Sign on Pole	2526.010	85 04 15	-
Signal Wiring Using 19/C Cable and 4/C Cables per Quadrant, 2 to 8 Phase	2529.100	91 10 30	-
Splices for Traffic Signal Cable and Extra Low Voltage Cable	2530.010	85 04 15	-
Controller Cabinet Grounding System	2547.010	89 07 03	-

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1. GENERAL INFORMATION

Scheduling of the Work

The work is to be carried out in one construction season.

The Contractor will be ordered to commence work on or before **September 9, 2010**. The City reserves the right to defer the start date to accommodate agency approvals, execution of documents. The Contractor shall complete the work within 30 working days.

It is the responsibility of the Contractor to augment additional daylight shifts as required to complete the work within the specified time. There will be no additional payment made thereof.

Hours of Work

The Contractor shall be prohibited from the operation of construction equipment during the following times:

7:00 p.m. to 7:00 a.m. (to 9:00 a.m. Saturdays) and at all times on Sundays and holidays, for the exception of the scheduled isolation water valve installation on Sunday(s). The Contractor and City Water Works Department shall determine the schedule for the installation of isolation valves at the preconstruction meeting. Special consideration will be given to the Contractor for working during nights and weekends to minimize disruption of daytime (Monday to Saturday) traffic.

Superintendence

The Contractor shall at all times provide a site superintendent or supervisor who is well qualified to direct the work being performed and who exhibits a high standard of integrity, co-operation and professionalism during performance of the Work. In addition, the Contractor, through his superintendent and workers shall present and maintain a positive image of the Contractor and the City of Guelph, as befits the Contractor's relationship working for the City of Guelph on a City funded project.

Where the City Engineer deems the site superintendent or supervisor directing this Work to not be performing to the above standards of conduct, the Contractor shall replace this site superintendent or supervisor with another supervisor forthwith. This decision by the City Engineer will be final and will not be grounds for any additional compensation cost or schedule adjustment claims.

Liquidated Damages

It is agreed by the parties of the Contract that if all the work called for under the Contract is not completed within the number of working days specified aforementioned or as extended in accordance with subsection GC3.07 Extension of Contract Time, of OPS General Conditions of Contract, November, 2006. A loss or damage will be sustained by the Corporation. Since it is and will be impracticable and extremely difficult to ascertain and determine the actual loss or damage which the Corporation will suffer in the event of and by reason of such delay, the parties hereto agree that the Contractor will pay to the Corporation, the sum of **one thousand dollars (\$1,000.00)** as liquidated damages for each and every calendar day's delay in finishing the work beyond the number of working days prescribed. It is agreed that this amount is an estimate of the actual loss or damage to the Corporation which will accrue during the period in excess of the prescribed date of completion.

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The Corporation may deduct any amount due under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Corporation.

The Contractor shall co-ordinate their work and co-operate fully with other contractors and utilities working on the site. The Contractor shall co-ordinate with Guelph Hydro, Bell Canada, Union Gas and Rogers Cable for their relocations where applicable and required within the limits of the contract.

Restriction on Open Burning

Open fires will not be permitted within the limits of this contract. Brush and debris may, as an alternative to burning, be disposed of outside the contract limits and in compliance with the requirements specified elsewhere for Management and Disposal of Excess Material.

Shop Drawings and Working Drawings

For the portions of the work to be done under this Contract where detail drawings are to be supplied by the Contractor, six (6) copies of same, together with specifications plus such additional copies as the Contractor and their subcontractors may require, plus design calculations where specified, shall be submitted to the Engineer for review.

The Contractor or their subcontractor shall check and initial all shop drawings before submission to the Engineer so as to intercept and correct any major errors or omissions. Shop drawings will not be reviewed by the Engineer unless they have been previously checked by the Contractor.

The review of the Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Engineer approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of their responsibility for errors or omissions in the shop drawings or of the Contractor's responsibility for meeting all requirements of the Contract Documents.

The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all subtrades.

Work which relates to the shop drawings shall not be carried out before the Engineer's review of the shop drawings is complete. Unless otherwise specified, the Contractor shall submit shop drawings at least 14 days in advance of the subject and/or related work.

Contractor's Schedule of Work and Constraints

Within seven (7) days after Award of the Contract, the Contractor shall submit, for the approval of the Engineer, a more detailed schedule showing the starting and completion dates of each section of the following major items for each stage of the work. They shall include as a minimum:

- number of crews
- listing of equipment
- mobilization and preparation of the site
- installation of erosion control measures

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- traffic management and related staging
- temporary traffic signals
- general removals
- coordination of works by others
- earth excavation
- installation of sanitary sewers, storm sewers and catchbasins
- installation of watermain
- granular base and sub-base
- concrete curb & gutter and peripheral curbs
- concrete sidewalks
- traffic signal underground and above ground works
- hot mix paving of base and surface courses
- line markings and sign installations
- topsoil placement and sodding
- demobilization and site restoration

This schedule shall take into account the sequence of construction and the completion dates contained in the Special Provisions.

The Contractor shall consult his sub-contractors to obtain realistic data for the preparation of his schedules.

The Contractor shall be required to provide the Engineer with updated / revised schedules at intervals of two weeks for the duration of the contract. Site meetings shall be scheduled every two weeks.

Private Property

The Contractor is responsible for keeping the property owners, who may be inconvenienced in any way by construction, informed prior to commencing the operation.

This requirement applies to, but is not limited to, cutting off of driveways, disrupting services, removing mail boxes or in any way disrupting mail service, temporary drainage problems and encroachment on private property. (The Contractor shall also advise the City of any removal of mail boxes or disruption of mail service to permit the City to so notify the Postmaster.)

Any damage to private property is to be brought to the attention of the property owner and the City with an outline of when and how the damage will be repaired.

Property Restrictions

The City owns sufficient road right of way to accommodate the proposed works. As such the process of acquiring road widening from adjacent properties within the limits of this project shall not be a concern.

It is however, possible that Guelph Hydro may require guy anchor locations for staged works and permanent works from one or more adjacent property owners. If this is the case the Contractor will be notified in advance of the works to make all necessary arrangements to avoid impacts on installations by Hydro on lands requiring guying easements.

The Contractor shall work around these properties until such time as an agreement is reached with the land owner.

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The City will not accept any claims for damages or for any costs arising from any delays or change in operation.

Other Contractors within or Adjacent to the Limits of the Contract

The Contractor is responsible for the co-ordination and scheduling of their work with the adjacent projects and utility companies and shall work around their respective schedules to the extent possible. No additional payment will be made for delays due to coordination and maintaining access for adjacent development, railway and utility work within this contract.

Utility work which will be in progress during this contract is as follows:

Coaxial Cable Companies (Atria Networks, Rogers, etc.)

Coaxial Cable Companies shall undertake the following work during construction:

1. Provide locates for existing and new plant.

The Contractor shall be responsible for the following:

1. Provide access to the site for all works and alter methods of operation and sequence of work to avoid interference with utility installation.
2. Co-ordinate with Coaxial Cable Companies the relocation of their plant where required.
3. Arrange for Coaxial Cable Companies to verify the location of all services and duct structure within the construction limits.
4. Protection of existing plant. There will be no separate payment for protection of existing cables or for delays due to relocation.

Bell Canada

Bell Canada shall undertake the following work during construction:

1. Provide locates for existing and new plant.

The Contractor shall be responsible for the following:

1. Provide access to the site for all works and alter methods of operation and sequence of work to avoid interference with utility installation.
2. Co-ordinate with Bell Canada the relocation of their plant where required.
3. Arrange for Bell Canada to verify the location of all services and duct structure within the construction limits.
4. Protection of existing plant. There will be no separate payment for protection of existing Bell cables or for delays due to Bell relocation.

Guelph Hydro

Guelph Hydro shall undertake the following work during construction:

1. Provide locates for existing and new plant.

The Contractor shall be responsible for the following:

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1. Provide access to the site for all works and alter methods of operation and sequence of work to avoid interference with utility installation.
2. Co-ordinate with Guelph Hydro the relocation of their plant where required.
3. Arrange for Guelph Hydro to verify the location of all services and duct structure within the construction limits.
4. Protection of existing plant. There will be no separate payment for protection of existing Guelph Hydro cables or for delays due to Guelph Hydro relocation.

Union Gas

Union Gas shall provide third party inspection services as required.
The Contractor shall be responsible for the following:

1. Arrange for Union Gas to verify all services and main locations within construction limits.
2. Protection of existing plant.
3. Contact Union Gas for third party inspection.
4. Follow Union Gas representative's direction and construction guidelines.

Operational Constraints

The following operational constraints shall apply to this project and shall restrict / limit the Contractor's work methods, procedures and scheduling. All of these shall be considered by the Bidders in the preparation of their tenders.

Payment

All payments will be made in accordance with provisions of the Construction Lien Act, 1990. The Contractor shall note that release of holdback funds will only be made when all work is completed to the satisfaction of the Engineer and 45 days have elapsed from the date of publication of substantial completion certificate.

2. SITE PREPARATION & MOBILIZATION

The work under this item includes, without limitation, the following:

Mobilization and Demobilization

The work shall include the cost of mobilizing onto the site, demobilization, and final clean up upon completion of the work. The Contractor shall bear all costs associated with the provision of temporary facilities for construction.

Bonds and Insurance

The Contractor shall bear all costs associated with providing all bonds and insurance in accordance with the Contract Documents.

Pre-Condition Survey

The Contractor shall hire an Independent Vibration Specialist for this section of the work. A company with a minimum of ten (10) years experience in loss control for heavy construction in urban areas. The Independent Vibration Specialist shall provide professional Errors and

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Omissions Liability Insurance certificate for a minimum of one million dollars. The certificate of insurance shall be filed with the City of Guelph before commencement of work.

The specialist shall conduct a Pre-Condition Survey which shall include, at a minimum, all structures immediately adjacent to the work area.

This will include all structures considered to be of potential risk, including, but not limited to buildings, driveways, sidewalks, swimming pools, patios, etc. The Pre-Condition Survey report shall include as a minimum the following information and shall be made available to the City of Guelph at the Pre-Condition meeting.

- 1) Type of structure, including type of construction, and the date, if possible, when built.
- 2) Any differential settlements: visible cracks in walls, floors and ceilings shall be identified and described, including a diagram, if applicable, room by room.
- 3) Any other apparent structural, water or cosmetic damage or defect must also be noted.
- 4) The report shall use positive dimensions whenever practical to do so, instead of general terms, e.g. "sagging 1 to 2 inches" as opposed to "sagging badly".
- 5) Clear quality photographs, as deemed necessary for proper recording of significant concerns.
- 6) Video, including pictures, in menu driven CD or DVD format of the completed inspection.

The standard inspection procedure will include the provision of an explanatory letter to the building owner with a formal request for permission to carry out an inspection.

The Contractor shall provide, prior to construction, at no expense, two copies of the Pre-Condition Survey Report to the Engineer. The survey report shall indicate the address of each of the properties inspected, the refusals received, and an evaluation of any evident or potential hazards that exist.

Claims - Follow-Up Procedure

The Contractor shall retain an independent adjuster who will determine the Contractor's liability for all third party claims and advise the claimants in writing of the determination of liability within thirty (30) days of service of the claim on the Contractor.

If the Contractor's independent adjuster fails to determine the liability for any of the third party claims as noted above, the City of Guelph reserves the right to have an independent adjuster review the claim and determine liability therefore. Any monies paid by the City of Guelph in satisfaction of any third party claim determined to be the Contractor's liability plus all associated costs will be deducted from monies owing to the Contractor by the City of Guelph.

Site Preparation and Utility Preservation

The requirements of OPSS 503 and OPSS 504 shall apply to this Contract and the Supplemental General Conditions.

The Contractor shall confirm the location of buried utilities in advance of the work. Should the location of utilities shown on the Contract Drawings be found to be incorrect, incomplete or omitted, the Contractor shall have no claim for any damages or delay caused to them on this account. It is the duty of the Contractor to notify all local utility companies requesting the staking or marking of cable, conduit, etc. before the start of construction.

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The Contractor shall exercise extreme caution while working in areas where utilities are located. The Contractor shall co-ordinate their work with the appropriate Utility Company in order to facilitate the safeguard and protection of the utilities during construction.

The Contractor shall also provide protection to property bars and monuments as required.

The Contractor shall arrange with the Utilities where guy wires have to be relocated or disconnected. The City will pay the Utility Company directly. **If required by Guelph Hydro or Bell Canada, the Contractor will be responsible to brace and support poles and other facilities as directed. This will be considered to be incidental to watermain, sewer, road traffic signal underground, and other related construction and no extra payment will be made therefore.**

The Contractor shall carefully note the requirements of Section 7.12 of the Supplemental General conditions of Contract. In addition to these requirements, the Contractor shall, prior to excavating within 1.5 metres of any utility pole, notify Guelph Hydro at 822-3017. Guelph Hydro will then investigate and provide instructions to the Contractor regarding the type of support required for this pole.

Environmental Considerations

It is intended that the works proposed, are executed in such a manner which, to the fullest possible extent, minimizes any adverse effects on the natural environment of the project area.

The environmental conditions of the contract stated herein must be complied with in all respects. It is a responsibility of the Contractor that all his personnel be sufficiently instructed so that the work is carried out in a manner consistent with minimizing environmental insult. Contractors are informed that the City will assign a part-time on-site inspector, as the City deems appropriate, whose sole responsibility will be to ensure compliance with environmental objectives.

Refuelling and Maintenance Areas

The Contractor shall undertake a detailed review of his proposed routes and fuelling areas. Refuelling and maintenance of equipment shall not be undertaken in or adjacent to watercourses storm sewers and or related inlet or outlet features. Suitable fuelling and maintenance areas shall be established and all maintenance and fuelling conducted in these areas. The locations of such areas are subject to approval and acceptance by the Engineer.

Procedures for the interception and rapid clean-up and disposal of spills that do occur shall be submitted to the Engineer for review prior to starting work. All materials required for clean-up of fuel spills shall be maintained readily accessible on-site.

The exception to this fuelling location requirement shall be generators, cranes, backhoes or shovels which may be fuelled at other than the designated fuelling areas. However, no fuelling of backhoes shall be carried out within thirty (30) metres of any watercourse including railway swales and/or ditches unless authorized by the Engineer.

Tree Protection

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Trees not designated for removal shall be protected from damage in accordance with OPSS 565. All trees within the limits of the project impacted by construction activities shall be protected with construction fencing.

Snow fencing shall be provided at the drip lines where practical.

Where fill is placed over tree roots, and as directed by the Engineer, a layer of clear stone shall be placed on the existing ground underneath the new fill.

Equipment or vehicles shall not be parked, repaired or re-fuelled within the dripline, nor shall any construction materials be stored within the dripline of any tree not designated for removal.

Repair work to trees not designated for removal shall be performed in accordance with approved horticultural practices. Bark that is damaged by the Contractor's operations shall be neatly trimmed back to uninjured bark, without causing further injury, within five calendar days of damage. Branches 25 mm or larger in diameter that are broken by the Contractor's operations, shall be cut back to a neat surface within five calendar days of breakage. Branches to be removed completely shall be cut back to within 10 mm of their bases. Roots 25 mm or larger in diameter that are exposed by the Contractor's operations, shall be cut back cleanly to the soil surface within five calendar days of exposure. All exposed roots shall be kept moist at all times to avoid desiccation and permanent injury to the root system and /or tree.

Dewatering and Pumping

Dewatering where specified and/or required shall be carried out in accordance with OPSS 517 and OPSS 518. Dewatering shall not be paid for separately unless otherwise noted, but shall be included in the contract price for the tender items.

The Contractor is responsible for the supply, design, labour, materials, equipment and services necessary for dewatering systems for the removal and control of water within excavation during construction. This shall include supply, design, labour, materials, equipment and services necessary for the installation and removal of temporary dewatering systems, including all pumping required to isolate work areas for the installation of the work in the dry and to prevent silt sediment from entering any sewer, watercourse, river, lake, or pond. Temporary shoring system, cofferdams and dewatering where required shall be designed in accordance with the latest edition of the Canadian Foundation manual.

Shop drawings for the dewatering and shoring systems shall be submitted to the Engineer for review by Approval Authorities (i.e. Grand River Conservation Authority, Municipality, etc.). This shall include drawings, calculations, details of the type of dewatering system, complete with equipment and materials to be used, installation procedures, discharge locations, etc.

The Contractor shall adhere to provincial and federal requirements related to the protection of the environment and safety of construction and protection of workers.

The Contractor shall control their operations in such a way as to minimize erosion and discharge of sediment-laden water. Disturbed areas are to be stabilized as soon as possible. The operation of construction equipment and the placement of temporary material stockpiles are to be done so as to prevent the tracking or erosion of mud onto the adjacent roadway and properties.

Dust and Mud Control

SPECIAL PROVISIONS

The Contractor shall carefully note the requirements of Section 7.05 of the Supplemental General Conditions of Contract.

Sediment and Erosion Control

The Contractor shall be solely responsible for the preparation and implementation of an erosion and sediment control strategy utilizing, in part, the elements indicated on the Contract Drawings, and/or other suitable techniques and construction practices in order to control erosion and prevent silt and sediments from entering sewers or water courses, to meet the requirements of the authorities having jurisdiction.

Prior to commencement of construction, submit for review an overall “Sediment and Erosion Control Implementation Plan” in combination with the Contractor’s construction practices and staging, to describe the overall erosion and sediment control strategy to meet all requirements. The “Sediment and Erosion Control Implementation Plan” shall be acceptable to the Engineer and the authorities having jurisdiction.

The Contractor will be paid under the appropriate tender items within the “Schedule of Unit Prices” for temporary works. All other works shall be included in the unit price bid for items requiring the control, dewatering, etc.

Temporary Fences, Silt Fences, etc.

All temporary fences, silt fence, silt barriers and/or traps must be in place before construction commences. The Engineer may request additional measures supplementary to that shown on the drawings to protect significant trees or other vegetation. The Contractor shall maintain fences erect and in good condition throughout the construction period. Fence(s) shall be removed only when instructed by the Engineer at the completion of work.

Engineer’s Field Office

The Contractor shall provide, service and maintain a weatherproof site office for the sole use of the Engineer and his staff for the duration of the Contract. The field office shall incorporate the following:

- i) A minimum floor area of 12 square metres
- ii) Three opening windows
- iii) Fluorescent light fixtures to provide a 650 lux (60 ft. candle) level
- iv) Heating and Air conditioning unit
- v) A door with a proper lock set and two keys
- vi) A desk and plan table and six standard office chairs
- vii) A temporary sanitary facility adjacent to the site trailer
- viii) A first aid box as required by the WSIB
- ix) Service, maintain and carry insurance on the site office and it’s contents

The location of the field office shall be determined by the Engineer at a location to be made available by the Contractor.

The office shall be cleaned weekly and the sanitary facilities checked and cleaned as necessary on a daily basis at the Contractor’s expense.

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The field office and the sanitary facilities shall be provided and maintained on the site by the Contractor, and may not be removed until the Engineer has notified the Contractor that all calculations are complete, up to a maximum of 60 days after acceptance of the work.

Street Signs and Mail Boxes

The work shall include the removal, salvage, and re-installation of mailboxes, signs and other items as required. All existing traffic signs shall be delivered to the City's Operations Yard at 45 Municipal Street for safekeeping. Signs to be reinstalled shall be installed on new posts by the Contractor along with the specified new road signs to be supplied and installed by the Contractor.

PROJECT MEETINGS

Preconstruction Meeting

The Contractor shall attend a preconstruction meeting at the offices of the Owner or other location as determined by the Owner to review the approach to the project, introduce the various contact personnel involved in the project and to discuss the start up procedure, coordination details, specific project scheduling issues, and other related coordination requirements.

The Contractor shall also coordinate and organize attendance at the Preconstruction Meeting representatives of major Subcontractors. The Engineer will arrange the attendance of other interested parties not responsible to the Contractor.

The Engineer will distribute copies of the meeting agenda prior to the meeting. The agenda will include but will not be limited to the following topics, as they pertain to the Contract:

1. Introduction of Project Personnel
2. Lines of Communication
3. Working Hours
4. Contractor's Schedule and Staging
5. Public Notifications
6. Contractor's Submittals/Documentation
7. Contractor's Traffic Management Plan
8. Contractor's Erosion and Control Plan
9. Work by Others/Adjacent Contracts
10. Contractor's Safety Program and documents
11. Pre-Construction Survey
12. Contractor's Temporary Facilities
 - i. Site Office
13. Unique Contract Requirements
 - i. Traffic Control and Signage
 - ii. Pedestrian Access
 - iii. Driveway Access
 - iv. Temporary Potable Water Supply
 - v. Garbage and Recycling Collection
14. Contract Change Control
15. Progress Payments
16. Progress Meetings

The Engineer shall provide specific information relative to agenda items as they pertain to the Contract.

SPECIAL PROVISIONS

The Engineer will minute the meeting and distribute a copy of the meeting minutes to all attendees.

Project Progress Meetings

The Engineer shall call and chair the project progress meetings, anticipated to be held approximately bi-weekly at a pre-arranged location, preferably in the project site office or other mutually convenient location. The time and date of the site meetings will be determined at the initial pre-construction meeting and may be updated from time to time to suit the requirements of project progress.

The Contractor shall attend, coordinate and organize attendance of individual Subcontractors and material suppliers where and when requested by the Engineer. Relationships and discussions between Subcontractor participants are not the responsibility of the Engineer and do not regularly form part of the meeting content.

The Contractor shall ensure that Contractor representatives in attendance at meetings have knowledge of the Work and the required authority to commit the Contractor to actions agreed upon. The Owner, Contractor and the Engineer shall endeavour to assign the same persons to attend such meetings throughout the Contract duration and shall supplement attendance with specialist representatives as required throughout the course of the Project.

The agenda will include but will not be limited to the following topics, as they pertain to the Contract:

1. Review and agreement on previous minutes
2. Review of Work progress since previous meeting
3. Construction Safety
 - i. Traffic Management
 - ii. Pedestrian Access/Protection
4. Coordination
 - i. Public Notification
 - ii. Garbage and Recycling Collection
 - iii. Work by Others
5. Environmental Protection
6. Status of Submittals
7. Quality Control
8. Coordination
 - i. Public Notification
 - ii. Utility Coordination
9. Work Plan for Next Two Weeks
10. Contract Construction Schedule Review, (Progress [Percentage Complete] problems, corrective measures and revisions)
 - i. Update Progress Schedules
 - ii. Update Working Days
11. Requests for Information/Clarification
12. Contemplated Changes
13. Changes Completed
14. Other business

The Contractor shall provide specific information relative to the agenda items at each meeting, as they pertain to the Contract.

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The Engineer will minute each project progress meeting and distribute a copy of the meeting minutes to all attendees.

Pre-Pave Meeting

The Engineer may call and chair pre-pave meetings prior to placement of any asphalt on the Contract to establish the lot testing and inspection procedures.

The Contractor shall attend all such meetings with appropriate subcontractors and asphalt suppliers, and ensure the Contractor's representative has the required authority to commit the Contractor to actions agreed upon.

The pre-pave meeting will include but not limited to the following topics, as they pertain to the Work:

1. Review required submissions (i.e. Mix designs)
2. Review all applicable special provisions and specifications, including asphalt acceptance
3. Review drawings/Extent of the Work
4. Review Quality Control and Quality Assurance issues
5. Discuss distribution of test results
6. Establish persons in charge and representatives required at placement
7. Determine the date and time of placement, expected duration of placement and weather forecast
1. Discuss:
 - Equipment requirements
 - Surface finishing
 - Protection of the work
 - **Traffic control**
 - Etc.

The Engineer will minute the pre-pave meetings and distribute a copy of the meeting minutes to all attendees.

Emergency Meetings

Emergency meetings may be held as required, and will be attended by the Contractor, as requested by the Engineer.

Payment for Meetings

All costs for the Contractor to organize, participate in, and follow up on any meetings in accordance with the foregoing requirements shall be considered incidental to the Work.

PROJECT SCHEDULE

Submittal and Review Process

The Contractor shall prepare and update as required, a construction schedule indicating the timing of the major and critical activities of the Work. The schedule shall confirm and illustrate key dates, milestones and phasing of the Work as outlined in the Contract Documents and ensure conformity with the specified Contract Time. The Contractor's schedule shall be submitted to the Engineer within seven (7) calendar days from the date of Contract Award. This schedule once

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reviewed by the Engineer and if it meets the Contract requirements, will become the Contract Construction Schedule against which progress will be measured.

The proposed Contract Construction Schedule shall be submitted for acceptance in its optimum levelled form. This presentation should be in bar (Gantt) chart form. The schedule shall be created using Microsoft Project or approved equal and submitted in electronic format and six (6) hardcopies shall be delivered to the Engineer. The Contractor's schedule shall be subdivided into work areas, as applicable, including mobilization and demobilization activities.

Payment

All costs for providing Contract Construction Schedules in accordance with the foregoing requirements shall be considered incidental to the Work.

Costs associated with seasonal weather conditions and any requirements that work be performed on weekends, after normal working hours, on statutory/civic holidays, or in multi-shifts, and other incidental costs shall be borne by the Contractor, including any directions by the Engineer for the Contractor to work extra hours if the Work falls behind.

Submission of Contract Construction Schedules and subsequent updates will be considered as a condition for validation of applications for payment.

Lay-out by Contractor

Layout will be provided by the Contractor.

Line Painting

The Contractor shall be responsible for pre-marking the lane widths and tapers and shall complete all permanent pavement markings as shown on the Contract Drawings. The Contractor shall contact the Traffic Services Department to arrange for inspection of the pre-marking prior to painting lane markings.

The Contractor shall lay-out all other information necessary for the construction of the complete project in accordance with the Contract Drawings.

Daily Work Records

The Contractor shall maintain and keep accurate Daily Work Records in accordance with GC 8.02.07. Daily Work Records shall be signed by the Contractor's representative and shall be submitted to the Engineer on a weekly basis.

Payment

Payment on a lump sum basis for the above work shall be full compensation for all labour, equipment and material required to do the work. Forty per cent (40%) of the tendered price will be paid under the first payment certificate. The balance will be paid under subsequent progress certificates in increments proportionate to the value of the work completed relative to the total estimated value of the contract.

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3. TRAFFIC AND PEDESTRIAN CONTROL

Scope of Work

The Contractor shall supply and maintain all construction signing in accordance with OPSS 543, the Manual of Uniform Traffic Control Devices (MUTCD Temporary Conditions), and the Occupational Health and Safety Act (OHSA). The Contractor shall conform to the Ontario Traffic Manual (OTM) Book 7 (Temporary Conditions).

Lane Restrictions and Road Closures

The Contractor shall maintain two (2) lanes of through traffic on York Road and Wyndham Street. The cost of the temporary works where required, including excavation, granular base and asphalt shall be paid at the unit price bid for the appropriate tender item. The Contractor will be permitted a **10 Working Day Closure** of the York –Wyndham Intersection for the complete installation of the sanitary manholes at the intersection and the complete installation of the storm sewer to MH3.

For single lane operation, traffic shall be controlled by flagperson(s). Where traffic delays impede the safety operation at the Wyndham Street and Carden Street and Wyndham Street and Farquhar Street intersections, off duty police shall be required to control traffic. No additional payment will be paid to the Contractor for off-duty police.

Partial Entrance Closures

In the event that a road closure and/or partial entrance closure is required, the Contractor shall coordinate the road closure and/or partial entrance closure with the affected property owners and occupants and with the City of Guelph Traffic Services Division. The Contract shall provide a minimum of two (2) weeks notice to the City of Guelph Traffic Services Division prior to any closures. The Contractor shall provide two weeks advance notice to the Engineer and City of Guelph.

Entrance Signage and Traffic Control

The Contractor shall be responsible for the supply, installation, maintenance and removal of all signs required for entrance detours and restrictions, including signs on private property, exit only signs, entrance only signs, barricades and construction fencing.

Reflectivity Requirements

The Contractor's attention is drawn to the new requirements of OHSA Reg. 213/91 Section 67, 68 and 69, regarding Traffic Control Measures. TC-22 Stop/Slow paddles, Traffic Control Persons and Worker Clothing requirements. Nylon vests must have front and side tear away feature. Night-time retroreflective silver stripes around each arm and leg shall be used if required.

Traffic Protection Plan

Prior to commencement of the work, the Contractor will provide the Engineer a written Traffic Protection Plan, including the identification of all hazards and all measures necessary to adequately protect the workers on site. The Plan shall protect all agents of the City of Guelph, including but not limited to the Inspectors, Supervisors, Surveyors, Operations Traffic personnel and the Engineer. The work zone design must be consistent, uniform and predictable. Traffic safety must be designed into work zones and provide for safety, mobility, advanced warning and

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positive guidance. The Traffic Protection Plan must be kept on site at all times for inspection by the Ministry of Labour.

Pedestrian Passage

Pedestrian facilities (footpaths) and access shall be maintained along Farquhar Street at all times and shall be controlled throughout the length of the project. Construction fencing shall be provided as required to prevent pedestrians from crossing into the work zone. Access to pedestrian push buttons shall be provided at all times. If construction traffic is required to cross a temporary or permanent pathway, the Contractor shall provide a full time flagperson.

A level compacted gravel surface (50 mm of Granular 'A') shall be maintained for pedestrian traffic at all times.

Open Excavation

The Contractor shall schedule the work so that there will be no open excavation adjacent to a lane carrying traffic overnight and on non-working days. Excavations within 4 m of lanes carrying traffic shall be backfilled with the specified material up to profile grade and compacted prior to closing down operations.

Location and Storage of Materials and Equipment

Materials shall not be stored within 4 m of the travelled portion of any roadway. Equipment shall not be stored within 4 m of the travelled portion of any roadway.

Notwithstanding the foregoing, the Contractor shall, at the Contractor's expense, remove any equipment or material which, in the opinion of the Engineer, constitutes a traffic hazard.

Delivery and Trucking

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. This will necessitate vehicles to "slip on" in the direction of traffic in order to merge with and thereby avoid crossing traffic lanes.

The Contractor shall obtain the Engineer's approval for the location of any "slip-off" or "slip-ons".

The Engineer reserves the right to alter, reject or close same as considered necessary. The Contractor shall notify suppliers of materials and equipment of the above requirements.

Traffic Control Plan

The Contractor shall provide the Engineer a written Traffic Control Plan for motorist safety and motorist mobility.

The Contractor may provide advisory speed signing as deemed necessary. The advisory speed must not reduce the posted regulatory speed by more than 20 km/hr. The Contractor must cover all regulatory speed signs within the limits of construction.

Included in this item shall be the supply, installation and removal of all barriers, barricades, delineators, lane control devices, warning signs, flashing lights, flares, traffic control devices,

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sign trucks, crash trucks, blocker trucks, and speed control devices, as required to complete the work.

The work may include traffic control persons and Police Constables as required to safely control traffic, particularly when construction activities encroach the intersection. The Contractor is reminded that Police Constables are the only mechanisms for controlling traffic at the intersection.

It will be the Contractor's responsibility to determine the Duration of the Work as described in the OTM.

The Contractor will provide written and oral instructions to all workers setting up and removing traffic control on the roadway or shoulder. The Contractor will provide a copy of the written instructions to the Engineer prior to commencement of the work.

Daily Records and Audits

The Contractor is advised that the Engineer may conduct regular inspections and video recording of the Contractor's traffic and pedestrian control activities. It will be the Contractor's responsibility to audit and maintain a daily record of the application of the Traffic Protection Plan and the Traffic Control Plan, and these records shall be made available to the Engineer immediately upon request.

Payment

Payment on a lump sum basis for the above work shall be full compensation for all labour, equipment and material required to do the work.

Payment shall be made on a prorated basis per month for the term of the contract.

4. SUPPLY, PLACE AND MAINTAIN TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

Scope of Work

Work under this item shall be completed in accordance with OPSS 510 and as amended herein.

Erosion and sediment control measures shall be incorporated in the work to ensure sediment discharge to watercourses and/or lands in or adjacent to the working area is minimized for the entire duration of the contract.

Payment at the contract price bid shall be full compensation for supplying all labour equipment and materials for the installation of temporary silt fencing, check dams, sediment traps/basin, for all excavation and disposal of related surplus material; for supplying and placing filter berms, sandbags, concrete barriers, rip rap and sewer pipe, etc. as required; for pumping water to sediment basin; for carrying out all maintenance; for removal of temporary measures at completion of work and for all other works necessary to properly control the movement of sediment from excavations and disturbed areas.

Measurement and Payment

Measurement will be made on a pro rated basis of the percentage of the total contract works completed. Payment for this item of work shall be made as follows:

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- 50% for supply and installation
- 30% for maintenance
- 20% for removal

The payment for maintenance will be made upon satisfactory condition of the works and removal of any accumulated sediment at the time of payment.

5. TEMPORARY FENCE

Scope of Work

Work under this item shall include the supply, installation, maintenance and subsequent removal of 1.8 m high temporary fence for delineation of pedestrian walkway areas from areas of active construction, and to separate contractor work and staging areas. New or salvaged material may be used for the temporary fence provided it is free of holes or missing segments. If salvaged material is used, it shall be in reasonable condition prior to erection and acceptable to the Engineer.

Fencing shall be adjusted to suit the work progress and shall be installed so as to direct pedestrians and others away from open excavations and/or toward crossings of the construction site.

All temporary fencing placed on the project will be the property of the Contractor at the completion of construction.

Measurement for Payment

Measurement shall be in linear metres of construction fencing erected.

Basis of Payment

Payment at the Contract price for the above item shall be full compensation for all Labour, Equipment and Material to supply, erect, maintain and remove fencing as directed by the Engineer and where required for the duration of the Contract.

Partial payment for this work shall be on a pro-rated basis as follows:

- 60% - Supply and installation;
- 30% - Maintenance and adjustment of the limits as required (pro-rated on the progress of the work); and
- 10% - Ultimate Removal

6. SAWCUTTING – GENERAL

Scope of Work

The Contractor is advised there will be no separate payment for saw cutting of materials of any kind on this Contract.

All saw cutting shall be made by means of suitable mechanical sawing equipment capable of making a clear cut and leaving a perfect edge.

SPECIAL PROVISIONS

Payment for all saw cutting will be incidental to the Work.

Saw cuts shall be made in the existing pavement where noted on the plans, or where directed by the Engineer. All saw cutting for removals shall be clearly marked in the field by non-permanent means (Chalk line, keel or other removable/erasable markings) and reviewed with Engineer's on-site representative prior to undertaking saw-cutting and removal activities.

7. REMOVAL OF CONCRETE CURB & GUTTER (ALL TYPES AND SIZES)

Scope of Work

Work under this item shall be completed in accordance with City of Guelph standard specifications, OPSS 510, and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

Concrete curb and gutters shall be saw cut at the limits of removal and removed as required to complete the Work and as noted on the Contract Drawings for the construction of new roadway and related infrastructure.

Additions and deletions (Adjusted Plan Quantity) of Removal and Disposal of Existing Concrete Curb and Gutters, where and if necessary, shall be calculated from field tape measurements agreed to by the Engineer and the Contractor and adjust the Plan Quantity accordingly.

All removed material is to be disposed of off-site, unless otherwise directed by the Engineer.

Measurement for Payment

Measurement shall be by Plan Quantity of linear metres as noted on the Contract Drawings and will not be measured directly but will be based on pro-rated progress of the Work.

Measurement may be revised by Adjusted Plan Quantity as specified in the Contract.

Basis of Payment

Payment at the Contract price shall be full compensation for all Labour, Equipment and Material to do the Work

8. REMOVAL OF BITUMINOUS PAVEMENT AND CONCRETE SIDEWALK OR CONCRETE SLAB

Scope of Work

Work under this item shall be completed in accordance with City of Guelph standard specifications, OPSS 510, and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

The work of this item includes saw-cutting, excavating, breaking, loading, haulage, and disposal of all bituminous pavement and concrete road base material exposed and encountered during the Work and includes but not limited to road construction, storm sewer, sanitary sewer and watermain installation. Evidence of backfilling of trenches with broken pavement/concrete or containing broken concrete or boulders will result in non-payment for the removal item and non-payment for the pipe installation. In no case shall broken concrete (or boulders) be left in

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excavations for any reason whatsoever, unless delivered as part of an approved construction material meeting all quality and gradation specifications applicable to the work.

The Contractor shall refer to the Geotechnical Investigation report and borehole logs to ascertain the scope of work required under this item.

All removed material is to be disposed of off-site, unless otherwise directed by the Engineer.

Measurement for Payment

Measurement for Payment and Basis of Payment shall per OPSS 510.

9. REMOVAL OF SEWERS & APPURTENANCES

Scope of Work

Work under this item shall be completed in accordance with OPSS 510 and as amended herein.

All existing storm and sanitary structure frames and covers/grates to be replaced shall be salvaged and delivered by the Contractor to the City of Guelph works yard.

Excavation within existing or future pavement limits shall be backfilled with Granular 'B' Type I.

Granular material shall be compacted to 100% of maximum dry density.

Excavation outside of existing or future pavement limits shall be backfilled with select suitable native material.

Native material shall be compacted to 95% of maximum dry density.

The requirements of OPSS 510 shall apply except that where concrete, masonry, timber or metal headwalls are encountered (either buried or exposed) in association with pipe culvert to be removed, the removal of the headwall will be included in the unit price bid for removal of the pipe culvert.

Where culverts are to be removed and no new culvert is to be placed at the same location, the Contractor shall supply and place Granular 'B' to backfill the excavation. The cost of this material shall be included in the cost for removal of pipe culverts and sewers, and will not be included for payment under the Granular 'B' item.

Measurement for Payment

Section 510.09.01.06 – Removal of Pipes and Culverts is replaced by the following:

Measurement for payment shall be lump sum.

Basis of Payment

Payment at the price bid in the Form of Tender for the above item shall be compensation in full for all labour, equipment and materials required to complete the work as specified.

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10. REMOVAL OF WATERMAIN & APPURTENANCES

Scope of Work

Work under this item shall be completed in accordance with the City of Guelph Standard Specifications, OPSS 510 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

The work under these items shall include but not limited to the removal of pipes, fittings, valves of all types and sizes, concrete thrust blocks, chambers, and hydrants.

All removed material is to be disposed of off-site, unless otherwise directed by the Engineer.

Measurement for Payment

Section 510.09.01.06 – Removal of Pipes and Culverts is replaced by the following:

Measurement for payment shall be lump sum.

Basis of Payment

Payment at the price bid in the Form of Tender for the above item shall be compensation in full for all labour, equipment and materials required to complete the work as specified.

11. EXCAVATION OF MATERIALS

Work under this item shall be completed in accordance with City of Guelph, “*Specifications for Earth Excavation*” SS-2, OPSS 206 and as amended herein.

The Contractor shall employ suitable means of earth moving on the project so as not to compromise public safety, integrity of the Work, or protection of the environment. Where work near, or at, adjacent public roadways is undertaken, protection schemes acceptable to the City of Guelph and the Engineer shall be employed.

The area of the excavation was based upon the area of the proposed work from 0.5m behind the existing or proposed curb, whichever is wider.

In accordance with OPSS 206.07.11 – Quality Control, the Contractor is responsible for carrying out all quality control grade checks to ensure that horizontal and vertical grading tolerances as specified in the Contract Documents are met on all finished earth and rock grade surfaces. Submission of all Contractor grade checks shall be in accordance with OPSS 206.07.11.02.

The Engineer’s on-site personnel may conduct random quality assurance (QA) grade checks. When requested in accordance with GC 7.01.10, the Contractor shall provide a person to assist the Engineer’s on-site personnel in checking the grade.

If the Contractor believes that a cross-section is in error, the Contractor shall advise the Engineer who will section the area in question. If the Contractor believes such an error has been made, the Contractor must bring it to the attention of the Engineer in sufficient time to permit the Engineer’s on-site personnel to take cross-sections before the next operation begins, otherwise no additional payment will be considered.

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Excavation additions or deletion (Adjusted Plan Quantity), where and if necessary, shall be calculated from the field tape measurements/elevations agreed to by the Engineer and the Contractor and the Plan Quantity adjusted accordingly.

The excavation of existing topsoil for cutting new topsoil & sod into the boulevards shall be included in this item. The excavation of topsoil shall be considered incidental to the excavation work and will not be paid by measured quantity.

All surplus excavation material shall be hauled to the City's stockpile area near the corner of Stone Road and Watson Parkway. The square metre price for this item includes clearing the topsoil from the stockpile area where the surplus material is to be placed and maintaining the stockpile area (i.e. grading the "piles" so that the stockpile area can be built vertically).

Unless specified otherwise, all unsuitable material excavated materials become the property of the Contractor, and accordingly shall be disposed of off-site and not at the City's stockpile area.

If excavation is carried out beyond the design slopes, without the approval of the Engineer, no payment will be made for the additional excavation.

The Contractor shall perform all excavation operations in such a manner as to avoid ponding of water or the saturation by flooding of embankment materials. No separate payment will be made for pumping, installation of temporary storm sewers, etc.

Wherever roots are cut during excavation work, the cut ends shall be neatly trimmed and painted with tree dressing, as directed by the Engineer.

Roadway sub-grades shall be maintained to the grades, tolerances and specified density until the surfaces are covered with granular materials. Any marks, ruts or indentations in the subgrade caused by vehicles, equipment or any other cause shall be removed prior to placing granular materials at no additional cost to the Owner. Damaged sub-grade materials shall be excavated and removed to a firmer sub-grade level, acceptable to the Engineer and the excavated sub-grade materials disposed of and replaced with Granular 'B' Type II/suitable select native material as determined by the Engineer. The cost associated with the additional excavation, disposal and additional granular road base shall be borne by the Contractor.

When directed by the Engineer, the Contractor shall proof roll the subgrade with a heavy non-vibratory compaction unit and the cost of this Work shall be included in the Contract price for "Excavation of Materials (Grading)".

Select native fill material shall be placed in accordance with City of Guelph, Standard Specification SS-2, OPSS 206.07.07.02, Layer Compaction Method, and compacted to a minimum of 95% of Maximum Dry Density.

Removal of Drains, Abandoned Utilities, Boulders, Etc.

Where items of the type listed above, or underground utilities to be abandoned, conflict with the line and grade of construction, or wherever directed by the Engineer, the Contractor shall remove these installations and dispose of them off-site. No separate payment will be made for this work.

Excavation on Widening

Payment for temporary or permanent excavation on widening shall be paid under this item.

SPECIAL PROVISIONS

Roots Cut During Excavation

Wherever roots are cut during excavation work, the cut ends shall be neatly trimmed and painted with tree dressing, as directed by the Engineer.

Adjust Existing Service Boxes

The unit price bid for Earth Excavation shall include protecting and adjusting, as often as necessary, all existing water service boxes at the curb stops, to suit the final grade of the new pavement, sidewalk and/or boulevards.

Dewatering Excavation

For the unit price bid for “Excavation of Materials (Grading)”, the Contractor shall perform all excavation operations in such a manner as to avoid ponding of water or the saturation by flooding of earth and/or soil materials. No separate payment will be made for pumping, installation of temporary storm sewers, etc.

Measurement for Payment

Measurement shall be by Plan Quantity of cubic metres of material excavated and will not be measured directly, but will be based on the pro-rated progress of Work and the checking of sub-grade elevations and plan measurement of the length of roadway cut to sub-grade.

Measurement may be revised by Adjusted Plan Quantity as specified in the Contract.

Basis of Payment

Payment at the Contract price shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to additional traffic control, protection schemes, haulage and disposal of material off-site.

12. ROCK EXCAVATION

Scope of Work

The requirements of SS-2, OPSS 120 and 206 shall apply to this item except as modified herein. GC 8.01.02 as it applies to the Rock Excavation item is deleted and therefore does not apply. This item is for rock requiring excavation that is encountered in trenches for sewer and watermain and/or in areas of excavations for roadways or utility installations. The Contractor shall have no claim for payment under this item of work in the event that rock excavation is not required as part of the work.

For the purposes of this Contract rock excavation shall be defined as the removal of material encountered in solid beds of igneous, sedimentary or metamorphic rock which prior to removal was integral with the parent mass and shall include boulders and rock fragments measuring one cubic metre in volume or more. Excavation of rock shall require the use of blasting, drilling, wedging, sledging, barring or jackhammers. Soft, disintegrated, decayed, loose, shaken or previously blasted rock, broken stone, hardpan, till, boulders under one cubic metre in volume, logs, frost, snow, ice or other obstacles found in the excavation shall not be classified as rock and no extra payment will be made for their removal.

SPECIAL PROVISIONS

All excavated rock material shall be hauled to the City's stockpile area near the corner of Stone Road and Watson Parkway, unless otherwise directed by the Engineer. The cubic metre price for this item includes clearing the topsoil from the stockpile area where the surplus material is to be placed and maintaining the stockpile area (i.e., grading the "piles" so that the stockpile area can be built vertically).

Measurement for Payment

Measurement for rock excavation shall be by the applicable cubic metre unit in the Form of Tender.

Basis of Payment

Payment at the Contract price for the above work shall be full compensation for all Labour, Equipment, and Material to do the work including all requirements of SS-2, OPSS 120 and 206, including hauling material to the stockpile area and maintaining the stockpile area. The Contract price shall include compensation for any equipment or labour downtime for the affected sewer or water crew during the rock excavation operation i.e., the time where the crew (labour) and equipment sit idle while the rock is being removed and loaded for disposal.

13. GRANULAR "B" IN ROADWAY

Work under this item shall be completed in accordance with City of Guelph Standard Specifications OPSS 314 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

The following gradations shall apply for Granular "B" per MTO Test LS-602 Sieve Analysis of Aggregates:

MTO Sieve Designation	Percentage Passing by Mass
150.0 mm	100
26.5 mm	50 – 100
4.75 mm	20 – 55
1.18 mm	10 – 40
300 um	5 – 22
75 um	0 – 8

Granular "B" for road base only shall be paid under this item.

In accordance with OPSS 314.07.08 – Quality Control, the Contractor shall carry out grade checks on the finished Granular "B" surfaces and carry out all QC grade checks required to ensure that the finished Granular "B" courses are built to within the specified tolerances for grade and cross-section. Submission of all Contractor grade checks related to Granular "B" finished surfaces shall be in accordance with OPSS 314.07.09.

Compaction of Granular "B" materials shall be 100% of Maximum Dry Density.

The Contractor shall summarize on a daily basis the applicable weigh tickets in a tabular form the Project Name and Contract Number, location, stage or phase, as applicable, for each applicable granular road base item, listing the ticket number and net weight of material, and summary total

SPECIAL PROVISIONS

of material delivered to the site on the applicable item. The Contractor shall submit the summary table(s) and weigh tickets to the Engineer within 48 hours of delivery of material.

The Contractor's attention is drawn to various items in the drawings and contract documents which are inclusive of granular "B" materials. Where such materials are to be included in a separate payment item (i.e. commercial driveways, etc.) material delivery tickets shall be marked clearly to that effect, if delivered to personnel on site on the date of placement, and shall be deducted (or preferably excluded) from the Contractor's summary of materials placed. Under no circumstances shall materials included elsewhere for payment be included in the Contractor's total material payment quantity summary for Granular "B" road sub-base.

Measurement for Payment

Measurement shall be per tonne as evidenced by weigh scale tickets from an approved weigh scale (per OPSS 102 and MTO SP101S18).

Basis of Payment

Payment at the Contract shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to provision of summary tables for material, additional traffic control, protection schemes, and maintenance of the completed works prior to the subsequent operations.

14. GRANULAR "A" IN ROADWAY

Work under this item shall be completed in accordance with City of Guelph Standard Specifications OPSS 314 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

In accordance with OPSS 314.07.08 – Quality Control, the Contractor shall carry out grade checks on the finished Granular "A" surfaces and carry out all QC grade checks required to ensure that the finished Granular "A" courses are built to within the specified tolerances for grade and cross-section. Submission of all Contractor grade checks related to Granular "A" finished surfaces shall be in accordance with OPSS 314.07.09.

Granular "A" for road base and temporary Granular "A" shall be paid for under this item.

Compaction of Granular "A" materials shall be 100 % of Maximum Dry Density.

The Contractor shall summarize on a daily basis the applicable weigh tickets in a tabular form the Project Name and Contract Number, location, stage or phase, as applicable, for each applicable granular item, listing the ticket number and net weight of material, and summary total of material delivered to the site on the applicable item. The Contractor shall submit the summary table(s) and weigh tickets to the Engineer within 48 hours of delivery of material.

The Contractor's attention is drawn to various items in the drawings and contract documents which are inclusive of granular "A" materials. Where such materials are to be included in a separate payment item (i.e. sidewalks, driveways, etc.) material delivery tickets shall be marked clearly to that effect, if delivered to personnel on site on the date of placement, and shall be deducted (or preferably excluded) from the Contractor's summary of materials placed. Under no circumstances shall materials included elsewhere for payment be included in the Contractor's total material payment quantity summary for Granular "A" road base.

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Measurement for Payment

Measurement shall be per tonne as evidenced by weigh scale tickets from an approved weigh scale (per OPSS 102 and MTO SP101S18).

Basis of Payment

Payment at the Contract shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to provision of summary tables for material, additional traffic control, protection schemes, and maintenance of the completed works prior to the subsequent operations.

15. COLD PLANE BITUMINOUS PAVEMENT

Scope of Work

Work under this item shall be completed in accordance with City of Guelph Standard Specifications, OPSS 510, and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

For the purpose of this Contract the terms “Cold Planing”, “Milling” and “Asphalt Milling” may be used interchangeably.

The Contractor shall not cold plane any pavement until the progress of the Works dictates that cold planning be completed in preparation for scheduled paving operations, except as approved or directed by the Engineer.

Additions and deletions (Adjusted Plan Quantity) of Cold Planning, where and if necessary, shall be calculated from field tape measurements agreed to by the Engineer and the Contractor and adjust the Plan Quantity accordingly

Measurement for Payment

Measurement shall be by Plan Quantity of square metres as noted on the Contract Drawings and will not be measured directly but will be based on pro-rated progress of the Work.

Measurement may be revised by Adjusted Plan Quantity as specified in the Contract.

Basis of Payment

Payment at the Contract price shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to additional traffic control, protection schemes, haulage and disposal of material off-site.

At the contract price per square metre for the above tender item, the Contractor shall cold plane existing bituminous pavement where and as shown on the contract drawings.

Maximum depth of cold planning is 60 mm.

Payment shall be made at the contract price bid per metre square regardless of depth.

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16. HOT MIX HOT LAID ASPHALT (HL-8 and HL-3)

Scope of Work

Work under this item(s) shall be completed in accordance with City of Guelph Standard Specifications, OPSS 310, OPSS 1150 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

Mix Design

The Contractor shall utilize a laboratory that has current Canadian Council of Independent Laboratories (CCIL) Type "A" Certification or AMRL equivalent certification or other equivalent certified laboratory acceptable to the Engineer to conduct all mix designs, designate the mix proportions, and prepare the job-mix formulae. The Contractor will be responsible for all mix designs and the determination and designation of the job-mix formulae.

The Contractor shall provide the Engineer with their proposed mix design, a minimum of thirty (30) days prior to the placing of any asphalt. The Contractor shall not place any asphalt until the Engineer has approved the proposed mix design. The Engineer will provide in writing the above permission or the reason why the permission is being withheld within 10 business days of receipt, which commences when all of the required samples and documents have been submitted.

Asphalt mix shall be delivered as submitted during the pre-paving job mix formula approval phase. Field Job Mix revisions will not be entertained subsequent to the paving operation. All job mixes shall be accepted in advance of the paving operation.

The Contractor shall supply asphalt cement grade PGAC 64-28 for all asphalt supplied for the road work.

Construction

The Contractor shall refer to the suggested staging of Work described herein to determine the sequence of paving operations, and quantities required to complete an appropriate paving schedule to satisfy each stage of the Work to be completed, including all costs of preparation, mobilization and staging of the work.

The Contractor shall provide a detailed asphalt placement plan to the Engineer at least two weeks in advance of placing asphalt.

Where asphalt is placed by machine, the Contractor shall supply not less than 120 tonnes per hour at the uniform rate, per machine, to ensure continuity of the pavement and to avoid cold joints and a poor appearance and quality of the pavement.

For asphalt thicknesses of 75 mm or more, the Contractor shall be required to place the asphalt in two separate lifts. Where two lifts of asphalt are to be placed to a partial width, a staggered joint width of 0.5 m will be required to offset the joints for each lift.

Under the HL8 Base asphalt item(s), the Contractor shall provide necessary asphalt ramping at the concrete gutters adjacent to pedestrian curb ramps to eliminate the concrete "lip" as directed by the Engineer and provide temporary asphalt curb and gutter at catch basins where concrete curb and gutter is to be completed at a later date. The Contractor may substitute a finer asphalt mix for placement as temporary asphalt ramps at intersections, with prior approval from the Engineer. No additional payment shall be made for the provision of asphalt ramps. The placement of asphalt ramps shall be reviewed in advance with the Engineer to assure that positive drainage

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is maintained and that the limit and extent of the required ramps is sufficient for the period of time in which the ramps will remain.

Under this item, the Contractor shall include all step and butt joints in existing asphalt as required as part of the staging of the Work and as noted on the Contract Drawings.

The Contractor shall construct all manholes within the travelled surface of the roadways to the top of base course asphalt during the 2010 construction season, and shall adjust affected manholes to finished surface elevation on Streets to receive surface asphalt on this contract in 2010. Final manhole adjustments shall occur prior to the final surface course paving in the Year 2010 or later (not included in this Contract). No payment will be made for the adjustment of any new manholes.

The work of adjusting existing structures shall be paid under the appropriate adjustment items in the form of tender and the work of setting new structures to pavement grade shall be included as part of the work of the item for the new structure.

Testing

The Contractor is advised that results of asphalt laboratory testing must be transmitted to the City of Guelph Fax: 519-822-6194 or email walter.buettel@guelph.ca, Attention: Mr. Walter Buettel, Technologist, City of Guelph, Design & Construction.

The Contractor shall summarize on a daily basis the applicable weigh tickets in a tabular form the Project Name and Contract Number, location, stage or phase, as applicable, for each applicable asphalt item, listing the ticket number and net weight of material, and summary total of material delivered to the site on the applicable item. The Contractor shall submit the summary table(s) and weigh tickets to the Engineer within 48 hours of delivery of material.

The Contractor's attention is drawn to various items in the drawings and Contract Documents which are inclusive of Hot Mix Asphalt materials. Where such materials are to be included in a separate payment item (i.e. medians, boulevard paving, temporary walkways, residential and commercial driveways, etc.) material delivery tickets shall be marked clearly to that effect. Under no circumstances shall materials included elsewhere for payment be included in the Contractor's total material payment quantity summary for Hot Mix Asphalt (HL-3A, HL-3, or HL-8) in Roadway.

Hot Mix Asphalt Pricing based on Performance Graded Asphalt Cement (PGAC) Price Index

The City of Guelph will adjust the payment to the Contractor based on changes to the Ministry of Transportation's (MTO) PGAC price index. The price index will be published monthly in the MTO Contract Bulletin and displayed on the OHMPA (www.ohmpa.org) and MTO website (www.raqs.mto.gov.on.ca). The price index will be used to calculate the amount of the payment adjustment per tonne of new asphalt cement accepted into the Work.

The price index will be based on the price, excluding taxes, FOB the depots in the Toronto area, of asphalt cement grade PG 58-28 or equivalent. One index will be used to establish and calculate the payment adjustment for all grades. As of July 2006 the price index for each month will reflect the average of the same month's prices and be published on the last day of the month and be retroactively applied to HMA laid in the same month.

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A payment adjustment per tonne of new asphalt cement will be established for each month in which paving occurs when the price index for the month differs by more than \$15.00/tonne from the AC price index for the month prior to tender opening. When the price index differential is less than \$15.00/tonne, there will be no payment adjustment for that month. Payment adjustments due to changes in the price index are independent of any other payment adjustments made to the hot mix tender items. Provincial sales tax adjustment should be applied to the adjustment (either way).

The payment adjustment per tonne will apply to the quantity of new asphalt cement in the hot mix accepted into the Work during the month for which it is established. The payment adjustment for the month will be calculated by the following means:

1. When AC Prices are Rising by more than a \$15.00/tonne difference: the payment adjustment to be paid to the Contractor is the result of subtracting the price index for the month prior to tender opening from the price index in effect when paving took place, minus the \$15.00 float, multiplied by the number of tonnes of PGAC incorporated in the mix(s) as determined by the job mix formula. PST on the adjustment will be included.
2. When AC Prices are Falling by more than \$15.00/tonne difference: the payment adjustment made in favour of the Owner is the result of subtracting the price index in effect when paving took place, plus \$15.00 float from the price index for the month prior to the tender opening, multiplied by the number of tonnes of PGAC incorporated in the mix(s) as determined by the job mix formula. PST on the adjustment will be included.

The quantity of new asphalt cement includes all grades of asphalt cement supplied by the Contractor with and without polymer modifiers. For each month in which a payment adjustment has been established, the quantity of the escalation/de-escalation will be calculated using the hot mix quantity accepted into the Work and its corresponding asphalt cement content as required by the job mix formula except for mixes which contain reclaimed asphalt pavement.

For mixes which contain reclaimed asphalt pavement, the increase due the contractor or the rebate due the owner will be calculated as if virgin hot mix asphalt has been supplied. This fairly reflects the increasing value of the Contractor's RAP pile when AC prices are increasing and the opposite when they are declining.

Example 1 – AC Prices Increasing

PGAC 58-28 specified, 3,000 tonnes of HL3 @ 5.2% AC (156.0 tonnes AC)

The effective Price Index on July 17, 2006 on tender opening is \$433.80 (June, 2006)/tonne (PG 58-28)

The applicable Price Index as published on August 31st effective for the August 17-24 2007 actual paving dates is \$504/tonne (PG 58-28)

Payment adjustment to be paid to the Contractor:

$$(\$504 - \$15) - \$433.80 \times 156 \text{ tonnes AC} = \$55.20 \times 156 \text{ tonnes AC} = \$8611.20 + 8\% \text{ PST}$$

Example 2 – AC Prices Decreasing

PGAC 58-28 specified, 4,500 tonnes of HL8 @ 4.6% AC (207.0 tonnes AC)

SPECIAL PROVISIONS

The effective Price Index on May 5, 2007 on tender opening is \$508.60 (April, 2007)/tonne (PG 58-28)

The applicable Price Index as published on October 31 effective for the October 11-18, 2007 actual paving dates is \$451.35/tonne (PG 58-28)

Payment for hot mix items reduced by:

$$\begin{aligned} & \$508.60 - (\$451.35 + \$15) \times 207 \text{ tonnes AC} = \$42.25 \times 207 \text{ tonnes AC} = \\ & \$8745.75 + 8\% \text{ PST} \end{aligned}$$

Notes:

Contractors should bid the hot mix asphalt item using the cost of the grade of PGAC specified.

- 1) The AC Price Index is only a tool for qualifying hot mix prices and is not intended as a standard AC price to be incorporated into the contract bid.
- 2) The payment adjustment calculated using this formula is full compensation for any and all PGAC grades specified.
- 3) If the AC Index has not changed more than \$15.00 per tonne up or down, no adjustment is required. Only the amount of the change that is greater than \$15.00 is used to calculate payment adjustments.
- 4) Beginning with the AC Index for July 2006 MTO will amend their past practice of establishing the monthly index amount on the 1st day of the month from the average of the four weekly AC prices received in the previous month to a calculation that takes in the average of the four weeks of the current month and is subsequently published on the last day of that month.

Past Practice Before August 2006:

The index for June is the result of the AC prices received in May and published June 1st.

New Standard:

The index for July is the result of AC prices received in July and published July 31.

For qualifying payment adjustments on the priced of HMA the contractor will seek/give a PST adjustment on the total value because Ontario collects a levy of 8% PST on the total manufacturing costs of every tonne of HMA produced.

- 5) As the result of the implementation of Note #4 and the subsequent issue of MTO SP 103820 the AC Price index for the month prior to tender opening will be used as the AC bid price to calculate AC adjustments.

Measurement for Payment

Measurement shall be per tonne as evidenced by weigh scale tickets from an approved weigh scale (per OPSS 102 and MTO SP101S18).

SPECIAL PROVISIONS

Basis of Payment

Payment made under this item(s) shall be in accordance with OPSS 310.10 and shall include power sweeping or air cleaning the surface, *removal of all dirt and foreign material*, removing asphalt ramps, constructing asphalt ramps, applying bond breaker material, applying joint painting material, installation of shoulder treatments, ramping of catchbasins in concrete curb and gutter extending into the roadway beyond the curb line, all hand-placed asphalt as part of the roadway, all machine-laid asphalt paving, cleaning of castings, installation of hand-formed curb around catch basins at low points when specified or where concrete curb and gutter has been left out to be completed at a later date, and the provision of a detailed asphalt placement plan.

The unit price for the surface asphalt items shall include the removal of binder course asphalt used as ramping at the paving limits, and at gutters along pedestrian curb ramps, adjustment of new manhole tops to final elevations and sweeping clean all road surfaces prior to the placing of the asphalt which is to be applied prior to completion of this Contract.

17. WATER FOR COMPACTION & DUST CONTROL

Scope of Work

The Contractor shall, for the unit price bid, supply, transport, and apply water to aid in compaction and for dust control in accordance with City of Guelph Specification SS-4, and as directed by the Engineer.

18. CALCIUM CHLORIDE

Scope of Work

The Contractor shall, for the unit price bid, supply calcium chloride in accordance with the requirements of OPSS 501, in 45 kilogram bags, and shall apply the calcium chloride as an aid to compaction and for dust control, as directed by the Engineer. At all times a minimum of 25 bags shall be available on the job for dust control.

19. CONCRETE CURB AND GUTTER

Scope of Work

Work under this item shall be completed in accordance with City of Guelph, "*Specification for Curb and Gutter*", SS-16, OPSS 353 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

Material

Concrete materials shall be in accordance with City of Guelph, Standard Specification for Curb and Gutter, SS-16.

Construction

Where concrete curb abuts a concrete sidewalk, concrete or asphalt pathway, concrete or asphalt boulevard edging or impressed concrete surface, the additional width (50 mm) as shown on the applicable OPSD shall be placed on the back of the curb to support the adjacent surface material.

SPECIAL PROVISIONS

The standard drawings for concrete curb and gutter shall be modified such that at all pedestrian ramps (dropped curb), the 25 mm “lip” shall be eliminated along the gutter line (minimum distance of 1.5 metres) during the forming and finishing of the gutter surface to provide a smoother, barrier free ramping for the disabled.

Concrete curb construction, which will temporarily restrict access to intersecting roadways, or driveways, must be done with advance notice and scheduling consultations with the Engineer and the affected occupants/owners to ensure that alternative arrangements can be worked out for the period of restricted access.

Concrete finish shall be a medium broom textured finish perpendicular to the gutter line.

Where surface asphalt paving is delayed until the following construction season, the Contractor shall leave out the gutter at all catch basin and catch basin manhole structures set in roadway at roadway grade.

Curing compound shall meet the requirements of OPSS 1315.

Supplementary Acceptance Criteria

The Contractor shall ensure that the concrete supplier utilizes appropriate aggregates that do not contain deleterious particles that cause concrete pop-outs. The maximum allowable tolerance for pop-outs will be 10 pop-outs per square metre of sidewalk, median, boulevard and/or curb & gutter placed. Any concrete works with pop-outs greater than this tolerance shall be removed and replaced at the contractor’s expense. A pop-out is defined as a deleterious particle size, a minimum of 13mm wide with a minimum depth of 3mm.

Measurement of Payment

Payment made under this item shall be in accordance with OPSS 353.09.01, except there will be no separate measurement for payment for setbacks and gutter outlets, and concrete placed around side inlet frames and covers will be measured for payment along the gutter line.

Basis of Payment

Payment at the Contract price for this item shall be full compensation for all Labour, Equipment and Material to do the Work.

20. CONCRETE SIDEWALK AND BOULEVARD

Scope of Work

Work under this item shall be completed in accordance with City of Guelph, “*Specification for Sidewalks*”, SS-17, OPSS 353 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

Material

Concrete materials shall be in accordance with City of Guelph, Standard Specification for Curb and Gutter, SS-17.

Construction

Concrete sidewalks shall be constructed in accordance with City of Guelph Standard Detail Drawings and as illustrated on the Contract Drawings.

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The concrete sidewalk shall be textured at each approach to the intersection. Texturing shall provide a coarse broomed texture, transverse to the direction of the concrete sidewalk to achieve a uniform 5-10 mm depth grooved surface in the finished concrete sidewalk. Final slopes, cross-falls and textured broom finish locations shall be reviewed and confirmed with the Engineer in advance of the concrete pour.

Sidewalk base material shall be Granular "A" with a minimum depth of 75 mm.

Sidewalk thickness will be checked by the Engineer to confirm the minimum specified depth(s) has been provided as well as the minimum depth of granular base material has been provided.

Sign Sleeve inserts including related layout shall be supplied by the City of Guelph and shall be installed by the Contractor as part of the work of concrete sidewalk, paved boulevard or median, and/or concrete boulevard or median construction. No separate payment will be made for the installation of sign sleeve inserts. The Contractor shall be responsible to communicate their schedule for the related works with City of Guelph staff in order to ensure the sign sleeve layout is coordinated with the proposed work of the Contractor.

Supplementary Acceptance Criteria

The Contractor shall ensure that the concrete supplier utilizes appropriate aggregates that do not contain deleterious particles that cause concrete pop-outs. The maximum allowable tolerance for pop-outs will be 10 pop-outs per square metre of sidewalk, median, boulevard and/or curb & gutter placed. Any concrete works with pop-outs greater than this tolerance shall be removed and replaced at the contractor's expense. A pop-out is defined as a deleterious particle size, a minimum of 13mm wide with a minimum depth of 3mm.

Measurement of Payment

Measurement for Payment made under this item shall be by the in-place square metre for concrete sidewalk constructed.

Basis of Payment

Payment at the Contract price shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to, excavation for sidewalk, supply, placement and compaction of granular "A" base, steel reinforcing as required, installation of sign sleeves and supply, placement and finishing of concrete surface.

21. IMPORTED TOPSOIL

Work under this item shall be completed in accordance with City of Guelph, "*Specification for Topsoil*", SS-20, OPSS 570 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

Import topsoil shall be screened topsoil. Topsoil delivered in an unscreened condition will not be accepted under any circumstances.

Notwithstanding the City of Guelph standard specification, the specified topsoil thickness for this contract shall be a minimum of 150 mm where sod is being placed and 50 mm where seed and mulch is being placed. Topsoil thickness will be checked to confirm the minimum specified

SPECIAL PROVISIONS

depth(s) has been provided. Where the minimum depth has not been achieved, no measurement for payment will be made

Areas damaged by the Contractor beyond the project limits shall be restored with topsoil where necessary prior to carrying out sod or seed repairs. No measurement or payment will be made for this work.

Measurement for Payment

Measurement shall be by the in-place measurement in square metre for areas of imported topsoil placed.

Basis of Payment

Payment at the Contract price for the above item shall be full compensation for all Labour, Equipment and Material to do the work.

22. SUPPLY AND PLACE SOD

SOD (NURSERY NO. 1), WATER FOR SOD AND FERTILIZER

Scope of Work

Work under this item shall be completed in accordance with OPSS 571 and for the unit price bid shall include the following:

- Removal of stones / debris greater than 25 mm in size before sodding.
- No. 1 nursery sod supplied and placed by a professional landscaper cut-in to match adjacent existing sod.
- Watering of sod at a rate of not less than 22.5 litres per square metre (unless otherwise directed by the Engineer) as often as required to assure growth until maintenance period elapses.
- Adequate rolling of sod to the satisfaction of the Engineer.
- Hardwood stakes driven flush with top of sod where directed by the Engineer.
- Where new sod abuts existing sod, the Contractor shall countersink the new sod to match the existing sod.

On contracts that include the surface layer of asphalt, the placement of the surface asphalt will not be permitted until all sodding has been completed unless otherwise authorized by the Engineer.

Areas where the ground cover has been damaged by the Contractor beyond the project limits shall be restored at the Contractor's expense and shall not be included in the area measured for payment. If the nature of the proposed Contract work does not permit completion of activities without damage beyond the Contract grading limits illustrated on the plans, then the Contractor shall review all anticipated areas where it is felt unavoidable damage will occur and shall allow for the necessary restorative measures and their related costs to complete the respective items of work.

Construction

Sod operations shall not proceed until clearance to do so has been provided by the Engineer following checking of topsoil depth and placement grading.

SPECIAL PROVISIONS

Fertilizer 8-32-16 shall be applied uniformly at a rate of 5kg per 100m² of surface area. Fertilizer shall be applied prior to, and up to a maximum of 48 hours before, sod placement.

The Contractor shall roll the sod in all boulevards, in front of residential areas, and all other areas where the grass will be maintained by mowing.

All sod edges matching against existing hard surfaces or materials shall be placed such that ponding at the edges does not occur. This may mean cutting into existing base material prior to topsoil placement or building up sufficiently with topsoil to ensure positive drainage to the nearest outlet. The Contractor shall also cut in sod at the interface to existing turf over the entire length of the interface to ensure a uniform, level edge with existing turf and without gaps or overlaps.

The staking specified in OPSS 571.07.05 shall be a suggested procedure only as the Contractor is responsible for acceptance growth as specified elsewhere in these specifications and the Contractor shall take whatever necessary precautions to obtain acceptable growth.

The Contractor shall water the sod as required to obtain growth acceptable to the Engineer. The Contractor shall continue to provide ongoing maintenance, including watering to the sodded areas for a period of six (6) weeks from the installation of the sod. There will be no separate payment for the application of water. The cost of water and watering the sod to obtain growth acceptable to the Engineer is considered incidental to the item for Sod. The Contractor shall also include provision in the Contract price for two (2) cuttings of the sodded areas.

The Contractor will be responsible for the protection of sodded areas. This protection shall include the repair of sodded areas with additional sod, including the restoration of the slope itself and the supply of additional topsoil, until the final acceptance of the sodded areas, subject to the following paragraph.

If sodding has not been completed and accepted by November 15th, such areas will not be accepted until the following year when it can be determined that acceptable growth has taken place; unless it is obvious to the Engineer that acceptable growth has taken place. The Contractor shall be responsible for complete maintenance of the sod up to May 15th of the following year.

This period of maintenance will apply even if the Contract is completed, but the sodding is not completed and accepted by the date specified above and the Contractor shall allow for such repair work in his Contract prices.

Measurement and Basis of Payment

Subsection 571.09.01 and 571.10.01 are amended by deleting separate tender items for staked and un-staked sod. Staking shall be carried out where required and as called for in the Contract Documents and shall be included in the Contract price.

Re-measurements

The following shall form part of the sodding specification.

If the Contractor requests a re-measurement of the sod area and the re-measured area is less than or equal to the area measured for proposed payment, then the re-measured area will be used for payment and the Contractor will pay all costs for the re-measurement and recalculation of the quantity.

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If the re-measured area exceeds the area measured for proposed payment, the re-measured quantity will be used for payment and the Owner will bear all costs of re-measurement and recalculation.

Payment

Payment shall be made at the Contract price for the areas receiving sod. Payment at the Contract unit price shall be full compensation for sod, fertilizer and water for sod and for all other items of work necessary to complete the sodding of surfaces in accordance with the Contract requirements.

23. PAVEMENT MARKINGS – PAINT

Scope of Work

Work under this item shall be in accordance with the City of Guelph “*Specifications for Traffic-Related Items*”, SS-300, OPSS 532 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

The specific requirement for Temporary Pavement Markings will be confirmed in conjunction of the Contractor’s proposed staging of the Work and approval of the Contractor’s Traffic Management Plan and subsequent updates.

The Contractor shall be required to mobilize as often as required to complete the Work per the Contractor’s proposed staging of the Work and approved Traffic Management Plan(s).

The Contractor shall maintain all temporary pavement markings to the satisfaction of the Engineer. Pavement markings that become faded as a result of traffic or dirt or unsatisfactory to the Engineer shall be replaced immediately by the Contractor at the Contractor’s own expense.

Pavement marking obliterating shall be by mechanical means (grinding or sandblasting method), painting over will not be permitted unless otherwise directed by the Engineer.

Measurement and Basis of Payment

Measurement and Basis of Payment shall be as noted in the Form of Tender and in accordance with City of Guelph Standard Specification SS-300.

24. SUPPLY & INSTALL ROAD SIGNS

Scope of Work

The Contractor shall supply and install all traffic control signs as shown on the Contract Drawings and in City of Guelph Standard Specifications SS-300 and in accordance with the Ontario Traffic Manual unless otherwise noted. The Contractor shall return all surplus signs to the City of Guelph as directed by the Engineer.

Measurement for Payment

Measurement for payment shall be lump sum.

Basis of Payment

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Payment at the price bid in the Form of Tender for the above item shall be compensation in full for all labour, equipment and materials required to complete the work as specified.

25. PROVISIONAL GRANULAR 'A'

The work of this item includes the supply, placement and compaction of granular A for the purpose of maintaining road and sidewalk traffic.

Payment

Payment for granular materials must be accompanied by an appropriate weigh ticket. Tickets must be presented to the site inspector upon arrival on site. Placement of any material not accompanied by a ticket, will not receive payment.

26. ADJUSTMENT OF EXISTING MANHOLES, VALVE BOXES AND CHAMBERS

Scope of Work

Work under this item shall be completed in accordance with City of Guelph, "*Specification for Adjustments to Maintenance Holes and Valve Chambers*", SS-14, OPSS 408 and as amended herein. The most stringent of the above specifications shall govern in case of conflict.

The work shall include removal, salvage and replacement of existing frame and cover with a new frame and cover as specified in the Contract Documents or as directed by the Engineer. Salvaged frames and covers shall be delivered to the City of Guelph Works Yard.

The use of lift rings for final adjustments will not be permitted.

All frame and covers, which are adjusted to finished paving grade in advance of the paving operation, must be painted fluorescent orange on all exposed sides if they are to be left exposed to traffic.

Measurement for Payment

Payment for adjustments shall be based on the Contract price per each adjustment and not on the height of vertical adjustment unless otherwise noted.

Payment shall be made **only once** for the adjusting of all existing frames and covers, and valve boxes, within the road pavement areas to the specified elevations. Payment shall be made under this item following adjustment to the specified elevation, be that final elevation where in landscaped areas, concrete areas, or surface paved areas, or for adjustment to base asphalt (interim) elevation if surface asphalt will not be placed as part of the Work.

Measurement for payment of manhole, catch basin, valve box and/or valve chamber frames and grates/covers including raising or lowering will be on an each basis for adjustments up to 0.3 m. in height, based on the difference between the existing and proposed top of cover/grate elevations. Additional unit payments will be made for adjustments greater than 0.3m in 0.3m increments.

Separate payments will be made for the installation of frames and grates/covers provided by the Owner, where specified, and those to be supplied by the Contractor.

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Adjustment to the design elevation and grade will be considered incidental to the work. In all cases, the range of adjustment units on structures shall not be less than 150 mm and not greater than 300 mm.

Basis of Payment

Payment at the Contract price shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to, excavation to expose the existing manhole, catch basin, valve box and/or valve chamber frames and grates/covers, supply, and placement of adjustment precast concrete riser and/or precast adjustment units, butyl tape, concrete mortar, parging the exterior of adjustment units with 3:1 non-shrink grout, and backfilling the excavation to subgrade with the appropriate base materials in accordance with the design location and specifications for same.

27. SANITARY SEWER

Scope of Work

Work under this item shall be completed in accordance with the City of Guelph “*Specifications for Sewers*”, SS-100, OPSS 407 and 410 and as amended herein. The latest revision at the time of tendering, shall apply to all sanitary sewer installations under the jurisdiction of the City of Guelph. The most stringent of the above specifications shall govern in case of conflict.

The Contractor shall prepare construction record drawings (redlines) marked legibly in red ink for all sanitary sewers installed and/or intercepted and shall deliver same to the Engineer as part of the formal record of construction. Redline construction record drawings shall be provided to the Engineer prior to the certification for payment in the period in which the installed materials will be paid. A minimum of three swing ties shall be provided for each connection point and inverts at the connection, fitting types used and material type and size of sewer/service piping to which new piping is being connected. Construction Record redlines by the Contractor shall be in accordance with the City of Guelph “*Specifications for Sewers*”, latest revision at the time of tendering. Ties shall be related to existing surface features that will remain post construction.

The Contractor shall also redline all service tees installed at the main and deliver redlines with Contract chainage (station and offset) references and invert at the main.

Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender. Measurements for payment of maintenance holes will be pro-rated on the following basis:

1. 100% for completed structure, set to grade, parged, and benched as required.
2. Deduction of 5% for structure not set to finished grade
3. Deduction of 5% for structure not parged at pipe connections and adjustment units;
4. Deduction of 5% for structure not benched, where applicable;
5. Deduction of 5% for structure missing ladder rungs;

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to maintaining flows, cleanup as necessary, excavation, management and disposal of surplus materials, bedding,

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backfill, cover material, compaction, connections and fittings; and preparation and delivery of redline construction record drawings as specified to the Engineer.

28. CCTV INSPECTION OF SANITARY SEWERS

Scope of Work

Sanitary sewers shall be inspected by CCTV in accordance with the City of Guelph "*Specifications for Sewers*", SS-100 and OPSS 409. The cost of all labour, equipment and materials required to complete CCTV inspection shall be included in the appropriate Contract prices for sewer installation. Final acceptance of sanitary sewer installation will be contingent upon the Engineer's acceptance of the required CCTV reports, digital files and VHS or DVD format discs or video tapes. It is recommended by the Engineer that the CCTV inspections be undertaken on a progress basis and that CCTV reports and related digital records be delivered prior to paving of the roadway to reduce the potential cost to the Contractor for necessary repairs to the sewer installation.

CCTV inspections for all sizes of pipe shall be undertaken using pan and tilt equipment capable of providing a clear view of lateral connections and deficiencies. The video record shall provide an on-screen display of the chainage in metres from the centre of the initial manhole. Acceptance of the work for final payment and for commencement of the maintenance guarantee period will take place only after the Engineer has accepted and approved the inspection report.

The video record shall provide an on-screen display of the chainage in metres from the centre of the initial manhole. Acceptance of the work for final payment and for commencement of the maintenance guarantee period will take place only after the Engineer has accepted and approved the inspection report.

Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender.

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work.

29. SERVICE CONNECTION

Scope of Work

City of Guelph Standard Specification SS-100 shall apply for this work.

Where the same type of pipes are to be used for storm and sanitary lateral sewers, the Contractor shall paint a 100mm red stripe along the top of the storm lateral for its entire length.

All laterals connecting directly to manholes shall incorporate P.V.C. sweep bends along the benched manhole inverts to provide smooth flow surfaces within the manhole. Payment for supplying, cutting and placing the sweep bends shall be included under the unit prices bid for lateral and manhole construction.

The Contractor shall note that the sewer service lateral shall be installed at an angle no steeper than 45 degrees above the horizontal (see OPSD 1006.02). This maximum slope shall also apply

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to the deep service laterals. Any services installed steeper than 45 degrees will have to be removed and reinstalled at the Contractor's expense.

All sewer services shall be at the appropriate depth to provide gravity flows (2% grade) from the basements even if the existing services are not at such appropriate depths. The Contractor shall confirm the elevation of the basements and provide elbows and bends for such interim connections to existing shallow services near the property line (street line) where necessary.

30. TEMPORARY MAINTAINING SANITARY FLOW

Scope of Work

The Contractor shall pay special attention to maintaining the flows of the existing sanitary sewers. The flow of the sanitary sewer may fluctuate significantly. The Contractor shall have the proper pumps, pipes or other devices of adequate size, capacity and type to handle the fluctuating flow.

The Contractor shall submit details of any diversions for approval to the Engineer prior to interrupting any flows. Notwithstanding having the above approval, the Contractor shall remain responsible to divert the fluctuating flow in an adequate manner.

Pumping of flow shall occur only during the working day. Gravity flow shall be achieved between manholes prior to the Contractor leaving the site at the end of each day or week end. If gravity flow cannot be achieved at night or on weekends, the Contractor shall take all necessary actions necessary to ensure that the Contractor will not be in violation of the City Noise By-law.

Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender.

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work.

31. STORM SEWER

Scope of Work

Work under this item shall be completed in accordance with the City of Guelph "*Specifications for Sewers*", SS-100, OPSS 407 and 410 and as amended herein. The latest revision at the time of tendering, shall apply to all storm sewer installations under the jurisdiction of the City of Guelph. The most stringent of the above specifications shall govern in case of conflict.

The Contractor shall prepare construction record drawings (redlines) marked legibly in red ink for all watermain and appurtenances installed, services installed and/or intercepted and shall deliver same to the Engineer as part of the formal record of construction. Redline construction record drawings shall be provided to the Engineer prior to the certification for payment in the period in which the installed materials will be paid. Construction Record redlines by the Contractor shall be in accordance with The City of Guelph "*Specifications for Sewers*", latest revision at the time of tendering. Ties shall be related to existing surface features that will remain post construction.

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Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender. Measurements for payment of maintenance holes will be pro-rated on the following basis:

1. 100% for completed structure, set to grade, parged, and benched as required.
2. Deduction of 5% for structure not set to finished grade
3. Deduction of 5% for structure not parged at pipe connections and adjustment units;
4. Deduction of 5% for structure not benched, where applicable;
5. Deduction of 5% for structure missing ladder rungs;

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to maintaining flows, cleanup as necessary, excavation, management and disposal of surplus materials, bedding, backfill, cover material, compaction, connections and fittings; and preparation and delivery of redline construction record drawings as specified to the Engineer.

32. CCTV INSPECTION OF STORM SEWERS

Scope of Work

Storm sewers shall be inspected by CCTV in accordance with the City of Guelph “*Specifications for Sewers*”, SS-100 and OPSS 409. The cost of all labour, equipment and materials required to complete CCTV inspection shall be included in the appropriate Contract prices for sewer installation. Final acceptance of sanitary sewer installation will be contingent upon the Engineer's acceptance of the required CCTV reports, digital files and VHS or DVD format discs or video tapes. It is recommended by the Engineer that the CCTV inspections be undertaken on a progress basis and that CCTV reports and related digital records be delivered prior to paving of the roadway to reduce the potential cost to the Contractor for necessary repairs to the sewer installation.

CCTV inspections for all sizes of pipe shall be undertaken using pan and tilt equipment capable of providing a clear view of lateral connections and deficiencies. The video record shall provide an on-screen display of the chainage in metres from the centre of the initial manhole. Acceptance of the work for final payment and for commencement of the maintenance guarantee period will take place only after the Engineer has accepted and approved the inspection report.

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Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender.

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work.

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33. TEMPORARY MAINTAINING STORM SEWER FLOW

Scope of Work

The Contractor shall pay special attention to maintaining the flows of the existing storm sewers. The flow of the storm sewer may fluctuate significantly. The Contractor shall have the proper pumps, pipes or other devices of adequate size, capacity and type to handle the fluctuating flow.

The Contractor shall submit details of any diversions for approval to the Engineer prior to interrupting any flows. Notwithstanding having the above approval, the Contractor shall remain responsible to divert the fluctuating flow in an adequate manner.

Pumping of flow shall occur only during the working day. Gravity flow shall be achieved between manholes prior to the Contractor leaving the site at the end of each day or week end. If gravity flow cannot be achieved at night or on weekends, the Contractor shall take all necessary actions necessary to ensure that the Contractor will not be in violation of the City Noise By-law.

Measurement for Payment

Measurement shall be by the applicable units in the Form of Tender.

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work.

34. CONNECTION TO EXISTING WATERMAINS

Scope of Work

The Contractor is advised that the date(s) for the overnight new isolation water valve installation, to be completed by City of Guelph Waterworks Division, will be discussed and scheduled during the preconstruction meeting and that the work will take place on Sunday(s). The Contractor will be required to provide five (5) days written notice to the affected water users. By the end of the work day prior to the valve installation, the Contractor will be required to have the existing watermain exposed at the installation locations, ready for the isolation valves to be installed by City of Guelph staff, and have the watermain joint restraints installed. Once the City has completed the overnight new water valve installation, the Contractor will be able to proceed with the watermain replacement portion of the contract. The Contractor shall note that the final main connections to existing watermains shall be performed by the Contractor after completion of the required testing and Chlorination/disinfection of the new system. The Contractor shall provide the City Waterworks Department forty eight hours notice to permit City Personnel to inspect the final connection.

The work of these items shall include, without limitation, the supply of all labour, materials and equipment to complete the connection of the proposed watermain and appurtenances to the existing watermain as shown on the Contract Drawings including providing joint restraint calculations (shop drawings) to the Engineer for approval. City of Guelph Standard specifications SS-200 shall apply to this work.

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35. WATERMAIN

Scope of Work

Work under this item shall be completed in accordance with the City of Guelph “*Specifications for Watermains*”, SS-200, OPSS 701, 702 and as amended herein. The latest revision at the time of tendering, shall apply to all watermain installations under the jurisdiction of the City of Guelph. The most stringent of the above specifications shall govern in case of conflict.

The Contractor shall prepare construction record drawings (redlines) marked legibly in red ink for all watermain and appurtenances installed, services installed and/or intercepted and shall deliver same to the Engineer as part of the formal record of construction. Redline construction record drawings shall be provided to the Engineer prior to the certification for payment in the period in which the installed materials will be paid. Construction Record redlines by the Contractor shall be in accordance with The City of Guelph “*Specifications for Watermains*”, latest revision at the time of tendering. Ties shall be related to existing surface features that will remain post construction item.

All planned disruptions in water service to reconnect existing watermains and services shall be coordinated with affected property owners and businesses.

Basis of Payment

Payment at the Contract price(s) for the respective items of work shall be full compensation for all Labour, Equipment and Material to do the Work, including but not limited to maintaining flows, cleanup as necessary, excavation, trench wall support, management and disposal of surplus materials, bedding, backfill, cover material, compaction, connections, fittings, preparation, testing & commissioning of the watermain and delivery of redline construction record drawings as specified to the Engineer.

36. TEMPORARY WATER SUPPLY

Scope of Work

The Contractor will maintain water supply and maintenance of potable water throughout the duration of the work, including the supply of bottled water as requested for the temporary period of the watermain shutdown to all customers.

The Contractor shall install temporary watermain including testing and inspection as required. The supply and maintenance of potable water is considered incidental to the work, and no additional payment or compensation will be made thereof.

Temporary watermains must be pressure tested and disinfected in accordance with the City of Guelph Standard Specification SS-200, prior to connection any building. The costs of testing shall be borne by the Contractor. The Contractor shall supply and install a backflow prevention system as shown on the Contract Documents. The water meter shall be supplied by the City of Guelph Waterworks Department for the monitoring and tracking of water usage. The Contractor should review the requirements of the DGSSMS, Section D.2.3.3 Minimum Diameter, when estimating the size of the temporary water service required to service these properties.

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The work under this item includes the supply, installation, protection and removal of temporary watermain to service all buildings to facilitate the construction of the sanitary sewer, storm and watermain on all labour and materials required to maintain the existing watermain in service until new watermain pipe is in service. The Contractor shall submit his proposed method of temporary water supply to the Engineer for approval within 2 weeks of the Contract award.

Basis of Payment

Payment on a lump sum basis for the above work shall be full compensation for all labour, testing equipment and material required to do the work.

37. FIRE HYDRANTS

Scope of Work

City of Guelph Standard Specifications SS-200 SI shall apply to this work.

Basis of Payment

Payment at the unit price bid shall be compensation in full for supplying all materials, labour, and equipment necessary to install the hydrant to the elevation as indicated on the drawings complete with tee connection to the main, lateral pipe from main to the hydrant, tracer wire, valve and valve box, thrust block, restrained joints, bedding, and backfill as specified.

Compensation for supplying and installing extension kits, if required, to set the hydrant and valve to the specified grade shall be included in the unit price of the fire hydrant and no additional payment will be made therefore.

**GEOTECHNICAL INVESTIGATION
REPORT**

SS-300 & STANDARD DRAWINGS
