

**List of Reference Drawings**  
 (attached for information purposes only, refer to IT – Part I, 2.3)

TITLE	DRAWING NO.	DATE	REVISION NO.
COVER SHEET	Oc-1057-00		
ROAD CONSTRUCTION	Oc-1057-01		
ROAD CONSTRUCTION	Oc-1057-02		
ROAD CONSTRUCTION	Oc-1057-03		
ROAD CONSTRUCTION	Oc-1057-04		
ROAD CONSTRUCTION	Oc-1057-05		
ROAD CONSTRUCTION	Oc-1057-06		
ROAD CONSTRUCTION	Oc-1057-07		
ROAD CONSTRUCTION	Oc-1057-08		
ROAD MARKINGS	Ec-767- 01		
ROAD MARKINGS	Ec-767- 02		
ROAD MARKINGS	Ec-767-03		
STORM SEWER CONSTRUCTION	Lc-1190-01		
STORM SEWER CONSTRUCTION	Lc-1190-02		
STORM SEWER CONSTRUCTION	Lc-1190-03		
TRAFFIC SIGNAL AT NELSON RD. @ BLUNDELL ROAD - CONSTRUCTION OF BASES & CONDUIT RUNS	Ec 791-01		
TRAFFIC SIGNAL AT NELSON RD. @ BLUNDELL ROAD - SIGNAL INSTALLATION & ELECTRICAL	Ec 791-02		
TRAFFIC SIGNAL AT NELSON RD. @ BLUNDELL ROAD - POLE ELEVATIONS & DETAILS	Ec 791-03		
SIGNAL & LIGHTING REVISION NELSON ROAD AT WESTMINSTER HWY SITE PLAN ENLARGEMENT	Ec 793-01		
SIGNAL & LIGHTING REVISION NELSON ROAD AT WESTMINSTER HWY ELEVATIONS - WIRING DIAGRAM	Ec 793-02		
ROADWAY/PATHWAY LIGHTING NELSON ROAD FROM WESTMINSTER HIGHWAY TO BLUNDELL ROAD	Tc 728		

## AGREEMENT

### Schedule 2

#### List of Contract Drawings

TITLE	DRAWING NO.	DATE	REVISION NO.
COVER SHEET	Oc-1057-00		
ROAD CONSTRUCTION	Oc-1057-01		
ROAD CONSTRUCTION	Oc-1057-02		
ROAD CONSTRUCTION	Oc-1057-03		
ROAD CONSTRUCTION	Oc-1057-04		
ROAD CONSTRUCTION	Oc-1057-05		
ROAD CONSTRUCTION	Oc-1057-06		
ROAD CONSTRUCTION	Oc-1057-07		
ROAD CONSTRUCTION	Oc-1057-08		
ROAD MARKINGS	Ec-767- 01		
ROAD MARKINGS	Ec-767- 02		
ROAD MARKINGS	Ec-767-03		
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## **MEASUREMENT OF AND PAYMENT FOR WORK**

### **1. SECTION 1 - GENERAL**

Any work called for in the Specifications or shown or implied on the drawings or necessary for the completion of the work called for in the Specifications, which is not specifically listed as a separate item in the Schedule, will be deemed incidental to the general purpose of the Contract and no separate payment will be made on account of any such work, but the cost of any such work will be included in the Tendered unit prices or lump sum prices for the various items of work appearing in the Schedule.

#### **Mobilization and Demobilization – Item 1.1**

Payment for mobilization shall be made at 40% of the Contractor's lump sum tendered amount on the first Progress Payment and the remaining 60% shall be made at the Progress Payment following the date of Substantial Completion.

- .1 The Contractor's Mobilization and Demobilization tendered amount shall include the costs associated with mobilizing manpower, materials and equipment onsite and offsite, and shall also include final clean up of the site.
- .2 The tendered price shall not exceed 3% of the Contractor's total tendered amount.

#### **Survey Layout and As-Constructed Drawings – Item 1.2**

The lump sum price tendered covers all manpower and equipment required to layout the works in accordance with the Contract drawings and to prepare as-constructed drawings. Payment for this item will be made at each progress payment based on a percentage of the total work completed less the amount of five thousand dollars (\$5,000.00) until receipt of fully completed and approved survey information is provided to the satisfaction of the Contract Administrator.

#### **Bonding and Insurance – Item 1.3**

Payment for bonding and insurance shall be made at the Contractor's lump sum tendered price on the first progress draw upon receipt of the documents as specified in the Contract Documents.

#### **Traffic Control Plan, Personnel and Equipment – Item 1.4**

The lump sum price tendered includes the submittal of a Traffic Control Plan for approval to the City of Richmond and any other jurisdictional body (Ministry of Transportation and Infrastructure), all manpower, equipment, and materials required to maintain the safety of the public as specified in the Contract Documents. Payment for this item will be made at each progress payment, with 10% of the price being paid upon acceptance of the plan and thereafter on a percentage of the total work completed.

The price tendered shall be based on maintaining public access at all times. Pedestrians and at least one vehicular lane of traffic in each direction must be accommodated at all times. The

Contractor is responsible for notifying emergency services and transit authorities, and to make necessary arrangements for temporary bus stops, as required suiting the Contractor's methodology. Traffic control must follow the requirements set out in SSP 22.

### **Erosion and Sediment Control Plans and Implementation – Item 1.5**

Payment for this item will be made at the lump sum price tendered. Payment will be made at each progress payment, with 10% of the price being paid upon acceptance of the plan and thereafter on a percentage of the total work completed.

The price shall include all costs associated with the requirements in MMCD Section 01 57 01 and SSP 33.

## **2. SECTION 2 – ROAD WORKS**

### **Clearing and Grubbing – Item 2.1**

The Contractor shall be responsible for clearing and grubbing including removing shrubs, trees or hedges shown on the contract drawings and everything else included in MMCD Section 31 11 01 as being within the road allowance or working easement area. The removed material shall be disposed of offsite by the Contractor to the Contract Administrator's satisfaction. The Contractor shall be fully responsible for all reinstatement costs if he removes or damages fences, trees, shrubs, or hedges not authorized for removal. No extra payment will be made for removing or alternately, for protecting fences, shrubs trees or hedges. Only where permitted by the geotechnical engineer, cleared plant material may be placed under sub-grade fill.

Payment will be made at the lump sum price of the Schedule of Quantities and Prices for clearing completed to the satisfaction of the Contract Administrator. Payment will be made at each progress payment based on a percentage of the total work completed.

### **Organic Stripping – Item 2.2a (OPTIONAL ITEM)**

Payment for this item will be made at the cubic metre price tendered and will be limited to those regions defined by the Contract Administrator and shall include all labour, fees, and trucking for disposal off-site.

Measurement will be made using end area methods and based on before and after excavation cross sections at sufficient equal intervals over the length of excavation or a method agreed between the Contractor and Contract Administrator.

### **Organic Stripping, contaminated soils – Item 2.2b**

Payment for this item will be made at the cubic metre price tendered and will be limited to those regions determined to be contaminated by the Contract Administrator and shall include all labour, fees, and trucking for disposal off-site.

Measurement will be made using end area methods and based on before and after excavation cross sections at sufficient equal intervals over the length of excavation or a method agreed between the Contractor and Contract Administrator.

### **Common Excavation – Dispose Offsite– Item 2.2c**

Payment for this item will be made at the unit price tendered per cubic metre. The unit price shall include but not be limited to excavation, transportation and disposal at an approved offsite location, dump fees and any other materials, equipment and labour required to complete the work as shown on the contract drawings. Payment will not be made for double handling of material e.g. excavation and stockpiling, followed by loading and disposal.

Measurement will be based on before and after cross section areas at sufficient intervals over the entire length of the excavation or by another method agreed between the Contractor and Contract Administrator.

### **Common Excavation – Reuse On-site – Item 2.2d (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered per cubic metre. The unit price shall include but not be limited to survey layout, traffic control, excavation, transportation, placement and compaction within the site boundaries, and any other materials, equipment and labour required to complete the work as shown on the contract drawings. Payment includes any double handling of material e.g. stockpiling for placement later.

Measurement will be based on before and after cross section areas at sufficient intervals over the entire length of the excavation or by another method agreed between the Contractor and Contract Administrator.

### **Over Excavation – Item – 2.2e (OPTIONAL ITEM)**

If additional excavation is required over and above the limits indicated on the plans and approved by the Contract Administrator, then payment for this additional work will be made at the unit price tendered per cubic metre under this item.

The unit price tendered shall include excavation and disposal of the excavated material, and supply and placement of suitable backfill material to the Contract Administrator's satisfaction.

Existing granular road materials that must be excavated may be re-used as general fill. Prior approval from the Contract Administrator is required.

Measurement will be based on before and after cross section areas at sufficient intervals over the entire length of the excavation or by another method agreed between the Contractor and Contract Administrator.

### **Imported Subgrade Fill– Item 2.3a**

Payment for this item will be made at the unit price tendered per tonne of material placed. The unit price shall include but not be limited to supply, delivery, placing, spreading, levelling, watering, drying, compacting and grading plus re-excavation and backfill where soft spots develop, all in conformance with these specifications and to the satisfaction of the Contract Administrator.

Measurement will be based on weigh tickets provided to the Contract Administrator as loads are delivered to the site or a method agreed between the Contractor and Contract Administrator.

**Reclaimed preload sand – Item 2.3b (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered per cubic metre of material placed. The unit price shall include but not be limited to supply, delivery, placing, spreading, levelling, watering, drying, compacting and grading plus re-excavation and backfill where soft spots develop, all in conformance with these specifications and to the satisfaction of the Contract Administrator.

Measurement will be by survey cross-sections taken before and after fill placement and the volume to be paid will be as calculated from such cross-sections using the end-area method or a method agreed between the Contractor and Contract Administrator.

**Subgrade preparation – Item 2.4 (OPTIONAL ITEM)**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to grading, moisture content adjustment, and compaction of the subgrade, temporary erosion control measures, dust control measures, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as noted in MMCD Section 31 22 16.1.

**Granular Sub-base, river sand – Item 2.5**

Payment for this item will be made at the unit price tendered per cubic metre of material placed. The unit price shall include but not be limited to supply, delivery, placing, spreading, levelling, watering, drying, compacting and grading plus re-excavation and backfill where soft spots develop, all in conformance with these specifications and to the satisfaction of the Contract Administrator and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as noted in MMCD Section 32 11 16.1.

Measurement for granular sub-base for each specified thickness will be for the actual area placed; Measurement for granular sub-base of variable thickness will be for the actual quantity placed based on weigh tickets provided to the Contract Administrator as loads are delivered.

**Granular base – Item 2.6**

Payment for this item will be made at the unit price tendered per cubic metre of material placed. The unit price shall include but not be limited to supply, delivery, placing, spreading, levelling, watering, drying, compacting and grading plus re-excavation and backfill where soft spots develop, all in conformance with these specifications and to the satisfaction of the Contract Administrator and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as noted in MMCD Section 32 11 23.

Measurement for each specified thickness will be for the actual area placed.

**Tack Coat – Item 2.7**

Measurement and payment for this item will be made as described in MMCD Section 32 12 13.1.

The unit price tendered shall include everything necessary to supply and install the materials as specified and as directed.

**Prime Coat – Item 2.8**

Measurement and payment for this item will be made as per MMCD Section 32 12 13.2.

The unit price tendered shall include everything necessary to supply and install the materials as specified and as directed.

**Asphalt Pavement, Lower Course MMCD #1 – Item 2.9a**

Payment for this item will be made at the unit price tendered per tonne of material placed as shown on the Schedule of Quantities and Prices.

Measurement will be by delivery slips of material authorized, received, and signed by the Contract Administrator's representative on site.

The unit price tendered shall include supply, delivery, placing and compacting of the asphalt, placement of taped and raised temporary markers, all in conformance with these specifications, MMCD Section 32 12 16 and to the satisfaction of the Contract Administrator.

**Asphalt Pavement, Upper Course MMCD #1 – Item 2.9b**

Payment for this item will be made at the unit price tendered per tonne of material placed as shown on the Schedule of Quantities and Prices.

Measurement will be by delivery slips of material authorized, received, and signed by the Contract Administrator's representative on site.

The unit price tendered shall include supply, delivery, placing and compacting of the upper course of asphalt, placement of taped and raised temporary markers, all in conformance with these specifications, MMCD Section 32 12 16 and to the satisfaction of the Contract Administrator.

**Asphalt Pavement, Leveling course – Item 2.9c (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered per tonne of material placed as shown on the Schedule of Quantities and Prices.

Measurement will be by delivery slips of material authorized, received, and signed by the Contract Administrator's representative on site.



The unit price tendered shall include supply, delivery, placing and compacting of the levelling asphalt, placement of taped temporary markers, all in conformance with these specifications, MMCD Section 32 12 16 and to the satisfaction of the Contract Administrator.

**Saw Cut Pavement 0mm to 200mm depth – Item 2.10 (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered per linear metre of saw cutting. The lump sum price tendered shall include all equipment, materials and labour required to saw cut asphalt as required to complete construction and to the satisfaction of the contract administrator.

Measurement will be along the centreline of the cut.

**Surface Milling – Item 2.11a**

Payment for this item will be made at the unit price tendered per square metre of asphalt milled.

Measurements will be the area of asphalt actually removed provided it is authorized by and carried out to the satisfaction of the Contract Administrator and in accordance with MMCD Section 32 01 16.7.

The unit price tendered shall include everything necessary to remove the specified thickness of asphalt.

**Utility pole infill – Item 2.12 – (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered for each hole filled. The unit price shall include but not be limited to supply and placement of concrete or other approved fill, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as specified by the Contract Administrator.

**Pavement Markings, linear thermoplastic markings – Item 2.13a**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to supply and placement of linear thermoplastic pavement markings including but not limited to 100mm wide, 300mm wide and 600mm wide lines and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

**Pavement Markings, recessed reflective markers – 2.13b**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to supply and placement of recessed reflective markers and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as directed by the Contract Administrator.

**Pavement Markings, thermoplastic directional arrows – Item 2.13c**

Payment for this item will be made at the unit price tendered per arrow installed. The unit price tendered shall include but not be limited to supply and placement of directional arrows and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

**Top Soil – Item 2.14**

Payment for this item will be made at the unit price tendered per square metre.

Measurement will be length times width of area actually constructed and approved as determined by the Contract Administrator.

The unit price tendered shall include grading and shaping the area to be landscaped and supply and place all fill required below the area of landscaping. A minimum of 150 mm of approved topsoil to be carried out to the satisfaction of the Contract Administrator, or alternatively, a minimum of 90 mm of approved topsoil and seed will suffice if it is placed on a 150 mm to 200 mm bed of approved locally excavated materials.

**Hydraulic Seeding– Item 2.15**

Payment for this item will be made at the unit price tendered per square metre covered.

Measurement will be taken as the area covered as directed by the Contract Administrator.

The unit price tendered shall include everything necessary to supply and install the hydraulic seeding as specified and as directed.

**Concrete Sidewalk, 100mm thick – Item 2.16**

Payment for this item will be made at the unit price tendered per square metre.

Measurement will be the length along centreline of sidewalk or lighting strip, times the width actually constructed and approved.

The unit price tendered shall include: supply and install a 100mm depth of concrete sidewalk as shown in the Schedule of Quantities and Prices. The unit price shall also include any excavation or sandfill required to bring the area to grade and includes minimum 100mm depth of granular base under the full area of the concrete and any work identified in MMCD Section 03 30 20 and on the contract drawings.

**MMCD C-5 Barrier Curb – Item 2.17a**

Payment for this item will be made at the unit price tendered per linear metre of curb placed.

The unit price tendered for concrete curb and gutter shall include but not be limited to: supply, place and compact 150mm depth of clear crush gravel, supply and placement of concrete curb and gutter as shown on the contract drawings and any other works identified in MMCD Section 03 30 20. Granular base gravels will be paid under Item 2.6

Curb and gutter at sidewalk crossings at driveways will be paid at the same rate as normal curb and gutter.

Measurement will be along the top back of curb.

**Bullnose Curb – Item 2.17b**

Payment for this item will be made at the unit price tendered per linear metre placed.

The unit price tendered for concrete curb and gutter shall include but not be limited to: supply, place and compact 150mm depth of clear crush gravel, supply and placement of concrete curb and gutter as shown on the contract drawings and any other works identified in MMCD Section 03 30 20. Granular base gravels will be paid under Item 2.6

Curb and gutter at sidewalk crossings at driveways will be paid at the same rate as normal curb and gutter.

Measurement will be along the top back of the curb.

**Relocate MMCD C-5 Barrier Curb – Item 2.17c**

Payment for this item will be made at the unit price tendered per linear metre of curb placed.

Measurement will be along the top back of new curb.

The unit price tendered for concrete curb and gutter shall include but not be limited to: remove and dispose existing concrete curb, saw cut asphalt, remove and dispose existing asphalt, excavate and dispose surplus material, supply, place and compact 150mm depth of clear crush gravel and minimum 115mm depth of granular base beneath the curb and gutter; these two gravel layers are to extend the full width of curb and gutter plus a minimum of 300mm beyond both the front of gutter and the back of curb, place and compact asphalt slot adjacent to curb as shown on the drawings.

Curb and gutter at sidewalk crossings at driveways will be paid at the same rate as normal curb and gutter.

**Extruded Asphalt Curb – Item 2.17d**

Payment for this item will be made at the unit price tendered per linear metre of curb placed. The unit price tendered shall include but not be limited key cutting, supply and placement of extruded asphalt curb, protection of fresh asphalt, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and any other works identified on the contract drawings.

Measurement will be along the top back of the curb.

**MMCD C-6 median curb – Item 2.17e**

Payment for this item will be made at the unit price tendered per linear metre placed. The unit price tendered shall include but not be limited key cutting, supply and placement of median curb, protection of fresh concrete, curb painting (yellow, white, etc), and any other materials, equipment and labour required to complete the work as shown on the contract drawings and any other works identified in MMCD Section 03 30 20.

Measurement will be along the top back of the curb.

**Removal of existing median islands– Item 2.18a**

Payment will be made at the lump sum price of the Schedule of Quantities and Prices for removal and off-site disposal completed to the satisfaction of the Contract Administrator. Payment will be made at each progress payment based on a percentage of the total work completed.

**Concrete median slab – Item 2.18b**

Payment for this item will be made at the unit price tendered per square metre placed. The unit price tendered shall include but not be limited to excavation and disposal of unsuitable or excess material, supply and placement of granular material, supply and placement of concrete median slab, finishing, edging, protection fresh concrete, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and to the satisfaction of the Contract Administrator.

Measurement will be the width multiplied by the length.

**Driveway Restoration – Item 2.19**

Payment for this item will be made at the unit price tendered per square metre of driveway surface for each material and thickness specified in the Schedule of Quantities and Prices.

Measurement will be length and width of driveway top as follows:

Width measurement will be the actual width of driveway surface constructed as shown on the drawings or directed by the Contract Administrator. Length measurement will be from back of walk to where the new driveway surface joins the existing driveway surface.

**Signage – Item 2.20a**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to removal of existing signage, relocation of existing signage, supply and installation of new signage and any other materials, equipment and labour required to complete the work as shown on the contract drawings, and as defined in the latest versions of the Manual of Uniform Traffic Control Devices and Standard Specifications for Highway Construction Section 635 – Electrical and Signage.

### **Overhead sign structure and signs – Item 2.20b**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to supply and installation of the base, supply and installation of the structure, signs, lighting, electrical, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as defined in the latest versions of the Manual of Uniform Traffic Control Devices and Standard Specifications for Highway Construction Section 635 – Electrical and Signage.

### **Rumble strips – Item 2.21 (OPTIONAL ITEM)**

Payment for this item will be made at the unit price tendered per linear metre of rumble strip installed. The unit price tendered shall include all materials, labour and equipment necessary to install rumble strips as described in SSP 32 in the contract documents and to the satisfaction of the contract administrator.

Measurement will be made along the center line of the rumble strips.

### **Lock Block Wall c/w hand rails – Item 2.22**

Payment for this item will be made at the unit price tendered per linear metre of wall. The unit price tendered shall include all materials, equipment and labour required to construct the lock block wall complete with base gravel, toe drain, and hand rail as shown on the contract drawings and to the satisfaction of the Contract Administrator.

Measurement will be made along the top edge of the wall.

## **3. SECTION 3 – STORM SEWER**

### **1350mm diameter concrete pipe – Item 3.1**

Payment for this item will be made at the unit price Tendered per linear metre of pipe installed. The unit price tendered shall include all materials and labour, excavations, removals and disposals of all materials within the trench including, existing old bridges, culverts, bulkheads, trees, hedges, bushes and shrubs; site isolation, dewatering, flow management, installations and connections of existing and proposed mains, catch basin and inspection chamber leads and related fittings, flushing, video inspection and backfill as required and any other works identified in MMCD Section 33 40 01.

If over excavation is required, it shall be removed and backfilled with sand, and this over-excavation and backfill will be paid for under pay Item 2.2e. Over excavation requires approval of the Contract Administrator.

Measurement will be the horizontal distance from the centreline of one manhole to the centreline of the next manhole. For capped pipe ends, measurement will be to end of cap.

**1800mm diameter sump manhole, minimum 600mm sump – Item 3.2a**

Payment for this item will be made at the unit price Tendered for each manhole placed. The unit price Tendered shall include but not be limited to excavation and disposal of ground material; removal and disposal of any existing pipe; supply and install of granular base; supply and installation of manhole base, rings, risers, concrete top, frame and 'Storm' cover to grade; manhole benching; joint grouting; backfilling and compaction; initial surface restoration; and any other materials, equipment and labour required to complete the work as shown on the contract drawings and any other work identified in MMCD Section 33 44 01.

**2400mm diameter sump manhole, minimum 600mm sump – Items 3.2b**

Refer to item 3.2a.

**1050mm diameter tee riser manhole for 1350mm diameter concrete pipe – Items 3.2c**

Refer to item 3.2a.

**Connect existing main to MH 5 – Item 3.2d**

Payment for this item will be made at the lump sum price Tendered. The lump sum price Tendered shall include but not be limited to the removal of the existing concrete headwall, excavation, supply and placement of pipe bedding, supply and placement of storm sewer pipe, grouting, backfill and compaction, initial asphalt restoration, and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

**Type II Inspection Chamber c/w Frame and Grate – Item 3.3a**

Payment for this items will be made the unit price tendered for each inspection chamber installed and shall include but not be limited to excavation and disposal of ground material; supply and install of granular base; supply and installation of inspection chamber base, risers, frame and grate; grouting joints; backfilling and compaction; initial surface restoration; and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as per MMCD Section 33 44 01.

**150mm diameter Inspection Chamber lead – Item 3.3b**

Payment for this items will be made the unit price tendered per linear metre of lead placed and shall include but not be limited to excavation and disposal of ground material; supply and install granular bedding material; supply and installation of pipe; backfilling and compaction; initial surface restoration; and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as per MMCD Section 33 40 01.

Measurement for this item will be from the centre of the inspection chamber to the centreline of the mainline.

### **Double catch basin – Item 3.3c**

Payment for this items will be made the unit price tendered for each double catch basin placed and shall include but not be limited to excavation and disposal of surplus material, supply and installation of granular bedding, supply and installation of two catch basin barrels risers and concrete lids, supply and installation of two metal frames and grates, backfilling and compacting, and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

### **200mm diameter catch basin lead – Item 3.3d**

Payment for this items will be made the unit price tendered per linear metre of pipe placed and shall include but not be limited to excavation and disposal of excavated material, supply and placement of granular bedding, supply and installation of catch basin lead including fittings, grouting, backfilling and compacting, initial surface restoration including initial asphalt lift as required and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as per MMCD Section 33 40 01.

Measurement for this item will be from the centre of the inspection chamber to the centreline of the mainline.

### **Catch basin relocation – Item 3.3e**

Payment for this items will be made the unit price tendered per each catch basin relocated and shall include but not be limited to excavation and disposal of surplus material, supply and placement of granular bedding, supply and installation of a new catch basin base and catch basin lead as required, reuse of existing metal catch basin frame and grate, backfilling and compacting, initial surface restoration including initial asphalt lift as required and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

### **Catch basin – Item 3.3f**

Payment for this items will be made the unit price tendered for each catch basin placed and shall include but not be limited to sawcut and disposal of existing asphalt, excavation and disposal of surplus material, supply and installation of granular bedding, supply and installation of a catch basin barrel, risers and concrete lid, supply and installation of a metal frame and grate, backfilling and compacting, and any other materials, equipment and labour required to complete the work as shown on the contract drawings.

### **150mm diameter catch basin lead – Item 3.3g**

Payment for this items will be made the unit price tendered per linear metre of lead placed and shall include but not be limited to sawcut and disposal of existing asphalt, excavation and disposal of ground material; supply and install granular bedding material; supply and installation of pipe; backfilling and compaction; initial surface restoration; and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as per MMCD Section 33 40 01.

### **Langley 26-28 Headwall c/w Grill, Inlet – Item 3.4a**

Payment for this items will be made the unit price tendered for each headwall and grillage placed and shall include but not be limited to, site isolation, dewatering and flow management, excavation and disposal of excavated material, supply and installation of granular bedding, supply and installation of headwall and grillage, connection to storm sewer pipe or culvert, backfilling and compacting, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and to the satisfaction of the Contract Administrator.

### **Langley 26-28 Headwall, Outlet – Item 3.4b**

Refer to item 3.4a, without Grill.

### **Drainage swale – Item 3.5**

Payment for this items will be made the unit price tendered per linear metre of swale constructed and shall include but not be limited to excavation and disposal of excavated material, erosion control measures, and any other materials, equipment and labour required to complete the work as shown on the contract drawings, and as per MMCD Section 31 23 01.

### **Drainage ditch – Item 3.6**

Payment for this items will be made the unit price tendered per linear metre of ditch constructed and shall include but not be limited to excavation and disposal of excavated material, site isolation, dewatering, flow management, erosion control measures and any other materials, equipment and labour required to complete the work as shown on the contract drawings and as per MMCD Section 31 23 01.

## **4. SECTION 4 WATER WORKS**

### **Relocated fire hydrant – Item 4.1**

Payment for this item will be made at the unit price tendered per hydrant relocated and shall include but not be limited to excavation and offsite disposal of surplus material, removal and return of existing hydrant to City of Richmond, supply and placement of granular bedding, supply and placement of hydrant lead pipe, supply and placement of new hydrant, backfilling and compacting, initial surface restoration including initial asphalt as required, and any other materials, equipment and labour required to complete the work as shown on the contract drawings.



## **5. SECTION 5 - ELECTRICAL**

### **Nelson Road Street Lighting System – Item 5.1**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to excavation and disposal of unsuitable or excess material, supply and installation of a completely operational street lighting system, including energizing and commissioning, and any other materials, equipment and labour required to complete the work as shown on the contract drawings, as per MMCD Section 25 56 01.

### **Relocate street lights – Item 5.2**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include but not be limited to excavation and disposal of unsuitable or excess material, removal and storage of existing street light poles and luminaires, supply and installation of electrical conduit, street light pole bases, conductors (wiring), placement of removed poles and luminaires, system testing, supply and placement of suitable bedding and backfill materials, initial surface restoration including but not limited to concrete, asphalt, topsoil, including energizing and commissioning, and any other materials, equipment and labour required to complete the work as shown on the contract drawings and to the satisfaction of the Contract Administrator and as per MMCD Section 25 56 01.

### **Nelson Road and Blundell Road Intersection Traffic Signal System – Item 5.3**

Payment of this item will be made at the lump sum price tendered. The lump sum price tendered includes all materials, equipment and labour required to supply and install a completely operational traffic signal system at the Blundell Road/Nelson Road intersection as shown on the contract drawings and to the satisfaction of the Contract Administrator. The lump sum price also includes the relocation and removal and disposal of existing signals infrastructure, supply and placement new infrastructure, energizing and commissioning, and any private utility works required as shown on the contract drawings. Work shall be as specified in MMCD Section 34 41 13.

### **Interconnect Nelson Road at Blundell Road Traffic Signal System with CN Rail Crossing Warning System – Item 5.4**

Payment for this item will be made at the lump sum price tendered. The lump sum price tendered shall include all materials, labour, equipment and permits required to interconnect the traffic lighting system with the CN Rail Crossing Warning System.

**Nelson Road at Westminster Highway Traffic Signal System – Item 5.5**

Payment of this item will be made at the lump sum price tendered. The lump sum price tendered includes all materials, equipment and labour required to supply and install a completely operational traffic signal system at the Nelson Road at Westminster Highway intersection as shown on the contract drawings and to the satisfaction of the Contract Administrator. The lump sum price also includes the relocation and removal and disposal of existing signals infrastructure, supply and placement new infrastructure, energizing and commissioning, and any private utility works required as shown on the contract drawings. Work shall be as specified in MMCD Section 34 41 13.

<b>T. 4783 - Nelson Road Widening - Westminster Highway to Blundell Road</b>						
<b>SCHEDULE OF QUANTITIES AND PRICES</b>						
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Amount</b>	
2	Road Works					
2.1	Clearing and Grubbing	L. S.	1	\$	\$	
2.2	Excavation					
	a) Organic Stripping (OPTIONAL ITEM)	cu.m	300	\$	\$	
	b) Organic Stripping - Contaminated Soils	cu.m	3000	\$	\$	
	c) Common Excavation - Dispose off site	cu.m	200	\$	\$	
	d) Common Excavation - Re-use on site (OPTIONAL ITEM)	cu.m	50	\$	\$	
	e) Over Excavation (OPTIONAL ITEM)	cu.m	75	\$	\$	
2.3	Subgrade Fill					
	a) Imported Subgrade Fill	tonne	10000	\$	\$	
	b) Reclaimed preload sand (OPTIONAL ITEM)	cu.m	100	\$	\$	
2.4	Subgrade preparation (OPTIONAL ITEM)	L. S.	1	\$	\$	
2.5	Granular Sub-Base, river sand	cu.m	800	\$	\$	
2.6	Granular Base	cu.m	650	\$	\$	
2.7	Tack Coat	sq.m	5200	\$	\$	
2.8	Prime Coat	sq.m	3000	\$	\$	
2.9	Asphalt Pavement					
	a) Asphalt Pavement, Lower Course MMCD #1	tonne	750	\$	\$	
	b) Asphalt Pavement, Upper Course MMCD #1	tonne	800	\$	\$	
	c) Asphalt Pavement, Leveling Course (OPTIONAL ITEM)	tonne	250	\$	\$	
2.10	Pavement Sawcutting - 0 to 200mm depth (OPTIONAL ITEM)	lin.m	550	\$	\$	
2.11	Surface milling	sq.m	175	\$	\$	
2.12	Utility Pole infill (OPTIONAL ITEM)	each	1	\$	\$	

<b>T. 4783 - Nelson Road Widening - Westminster Highway to Blundell Road</b>						
<b>SCHEDULE OF QUANTITIES AND PRICES</b>						
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Amount</b>	
2.13	Pavement Markings					
a)	Pavement Markings - linear thermoplastic markings	L. S.	1	\$	\$	
b)	Pavement Markings - recessed reflective markers	L. S.	1	\$	\$	
c)	Pavement Markings - thermoplastics - directional arrows	each	25	\$	\$	
2.14	Top Soil	sq.m	100	\$	\$	
2.15	Hydraulic Seeding	sq.m	2200	\$	\$	
2.16	Concrete Sidewalk - 100mm thick	sq.m	110	\$	\$	
2.17	Curb					
a)	MMCD C-5 Barrier Curb	lin.m	425	\$	\$	
b)	Bullnose Curb	lin.m	275	\$	\$	
c)	Relocate MMCD C-5 Barrier Curb	lin.m	100	\$	\$	
d)	Extruded Asphalt Curb	lin.m	50	\$	\$	
e)	MMCD C-6 Median Curb	lin.m	38	\$	\$	
2.18	Median slab					
a)	Removal of Existing Median Islands	L. S.	1	\$	\$	
b)	Concrete Median Slab	sq.m	152	\$	\$	
2.19	Driveway Restoration	sq.m	20	\$	\$	
2.20	Signage					
a)	Signage	L. S.	1	\$	\$	
b)	Overhead sign structure and signs	L. S.	1	\$	\$	
2.21	Rumble Strips (OPTIONAL ITEM)	lin.m	1400	\$	\$	
2.22	Lock Block Wall c/w Hand Rails	lin.m	120	\$	\$	
<b>TOTAL FOR SECTION 2 - ROAD WORKS</b>						
<b>(Carry Forward to Summary of Schedule of Quantities and Prices)</b>					\$	

<b>T. 4783 - Nelson Road Widening - Westminster Highway to Blundell Road</b>						
<b>SCHEDULE OF QUANTITIES AND PRICES</b>						
<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Amount</b>	
<b>3</b>	<b>Storm Sewer</b>					
3.1	1350 mm diameter concrete pipe	lin.m	405	\$	\$	
3.2	Manholes					
a)	1800mm diameter sump manhole, minimum 600mm deep sump	each	3	\$	\$	
b)	2400mm diameter sump manhole, minimum 600mm deep sump	each	1	\$	\$	
c)	1050mm diameter tee riser manhole for 1350mm diameter concrete pipe	each	2	\$	\$	
d)	Connect existing main to MH #5	L. S.	1	\$	\$	
3.3	Inspection Chambers and Catch Basins					
a)	Type II Inspection Chamber, c/w frame and grate	each	12	\$	\$	
b)	150mm diameter Inspection Chamber Lead	lin.m	35	\$	\$	
c)	Double Catch Basin	each	3	\$	\$	
d)	200mm diameter catch basin lead	lin.m	15	\$	\$	
e)	Catch basin relocation	each	4	\$	\$	
f)	Catch basin	each	4	\$	\$	
g)	150mm catch basin lead	lin.m	15	\$	\$	
3.4	Headwalls					
a)	Langley 26-28 Headwall, c/w grill. Inlet	each	1	\$	\$	
b)	Langley 26-28 Headwall. Outlet	each	1	\$	\$	
3.5	Drainage Swale	lin.m	380	\$	\$	
3.6	Drainage ditch	lin.m	10	\$	\$	
<b>TOTAL FOR SECTION 3 - STORM SEWER</b>						
<b>(Carry Forward to Summary of Schedule of Quantities and Prices)</b>					\$	