

**SUPPLEMENTARY
SPECIFICATIONS**

The following sections pertain to amendments and supplements to the Specifications of the Master Municipal Construction Document (MMCD) Volume II-printed 2009, and together with the Master Municipal Construction Document (MMCD) Volume II-printed 2009 they shall form part of the Contract between the Owner and the Contractor for this Work.

Section 01 30 01 – General Requirement (New Section)

1.1 GENERAL REQUIREMENTS

1. In this Contract, references to MMCD or Master Municipal Construction Documents are deemed to be references to the Master Municipal Construction Documents Association Platinum Edition Volume 2 (2009), including standard detail drawings and supplementary standard detail drawings, as supplemented by updates issued by the Master Municipal Construction Documents Association before and after the date of this Contract.
2. Precast Concrete Interlocking Modular Block wall including appurtenances shall be in accordance with the 2020 Standard Specifications for Highway Construction (SSHHC), Adopted November 1, 2020, BC Ministry of Transportation and Infrastructure (MoTI) and as detailed in the contract drawings and specifications. Where discrepancies occur, the more stringent requirement shall apply.
3. All work shall be performed in accordance with the Master Municipal Construction Documents Association Platinum Edition Vol II, City of Duncan requirements, MoTI 2020 Standard Specifications for Highway Construction, and these Contract Documents.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 All work called for in these Contract Documents, shown on the drawings or which is necessary for the completion of the Work called for in these Contract Documents and which is not specifically listed as a separate item in the Form of Tender is deemed to be incidental to the performance of the Work and to the general purpose of the Contract: no separate payment will be made on account of any such Work, but the cost of any such incidental Work shall be included in the Contract Price.
 - .1 All survey, including construction layout, earthworks volume quantities, and records of construction, are to be supplied by the Contractor, with all data, truck slips, survey and CAD files provided to the City for confirmation.
 - .2 Geotechnical and materials testing, including any density tests; concrete compressive strength; asphalt mix, densities and thickness; constructed embankments, will be completed by the Contractor. The Contractor will be responsible for the costs associated with all materials testing. Results are to be forwarded to the City immediately upon receipt.
 - .3 All labour, equipment, and materials for dust control, including the supply and costs of water, are the responsibility of the Contractor and for all costs.

- .4 Contractor to maintain a set of mark-up drawings on site at all times. The *Contract administrator* shall have access to the mark-up drawings as necessary. The contractor will be responsible to prepare and submit complete As built drawings to the satisfaction of the City of Duncan.
- .5 Traffic control, access, laydown areas, environmental protection, and local notifications are the responsibility of the Contractor. Traffic management plans are to be approved by the City. Any disruptions to the Trans-Canada Highway must be coordinated with MOTI with applicable permits and timing.
- .6 The Contractor must coordinate with the City for confirmation of irrigation plans proposed by the Contractor in advance of installation. Provide City of Duncan a minimum of two (2) week prior notice.
- .7 Contractor is responsible for acquiring and paying for all required permits, including but not limited to, City of Duncan Work permit, MoTI permits, and electrical permits.
- .8 The contractor is responsible for supplying all materials, equipment, labour, security and all equipment required. As well as disposal of all excavated material and all other deleterious materials.
- .9 Includes all removals, sub/trench excavation, supply/placement/compaction of sub-base and base to design elevations.
- .10 Refer to Soil Quality Report (Active Earth, October 12, 2023) for soil characterization report. Contractor is responsible for disposal of excavated soil at a clean fill receiver facility where the following conditions are met.
 - a. The Site must be located on Vancouver Island, and
 - b. Agricultural (AL) standards do not apply to the receiver site.
- .11 Includes supply and install of all works identified in the Issued for Tender Drawings including fill, asphalt, curb, hardscape, retaining wall, drainage, trees and landscaping, markings, signage, etc. except works specifically identified to be completed by BC Hydro, MoTI approved electrical contractor, or the City
- .12 All flagging / traffic control costs to be included.

End of Section 01 30 01

Section 01 55 00 – Traffic Control, Vehicle Access and Parking

1.6 (add the following clause)

- The existing sidewalk is only to be formally closed once the new pathway is fully open and safe for public use. Alternative safe passage for pedestrians and other users must be made available at all times on the east side of the TCH, and shall be specifically addressed in the Traffic Management Plan, as provided by the Contractor.

1.4.3.1 (add the following clause)

- The contractor shall prepare and submit a Traffic Management Plan (TMP) in accordance with the Traffic Management Manual for Work on Roadways 2020 Edition, Ministry of Transportation and Infrastructure. All costs associated with the TMP are the contractors responsibility. Work shall not commence on the road right-of-way until the TMP has been approved by the Engineer and the contractor has acquired all necessary permits.
- TMP shall be, at a minimum, Category 2 as identified in, and meeting all requirement of, the Traffic Management Manual for Work on Roadways 2020 Edition, Ministry of Transportation and Infrastructure. Ensure the TMP addresses safe passage for pedestrians, cyclists, and other users at all times throughout construction on the east side of the TCH. Access must be maintained for Original Farm and Ramada Hotel at all times.

Section 01 57 01 – Environmental Protection

1.6 PAYMENT

1.6.1 *(Delete Clause 1.6.1 and replace as follows)*

Payment for all materials and work performed under this Section will be made at the respective lump sum bid for environmental protection.

3.0 EXECUTION

3.0 *(Delete clause 3.0 and replace as follows)*

Environmental Management Plan and Erosion and Silt Control shall include completion and submission of the Environmental Management Plan acceptable to the Owner and the Owner's Representative, compliance with all requirements of the Environmental Management Plan including erosion and silt control, and all incidental work.

The contractor is responsible for soil testing of materials to be disposed off-site. Costs for testing and/or disposal shall be deemed inclusive to the pay item of the material being disposed.

Section 01 60 00 - Mobilization and Demobilization (New Section)

1.0 GENERAL

- .1 Section 01 60 00 refers to portions of work pertaining to mobilization and demobilization. reference and interpreted this section simultaneously with all other sections pertinent to the works described herein.

1.3 MOBILIZATION

- .1 Mobilization shall include the Contractors costs of mobilization at the beginning of the project. Included in mobilization are such items as permits, moving personnel, materials and equipment to the site, setting up temporary facilities, project information signage and WorkSafeBC signage and all preparation for performing The Work.
- .2 The lump sum price bid for this work shall be relative to the costs involved but shall not exceed 1.0 percent of the Tender Price.
- .3 Payment will be made as follows, as approved by the Engineer:
 - .1 100% of the lump sum bid will be included in the first progress payment certificate.
- .4 The Engineer may at his discretion recommend partial payment if mobilization is not complete.
- .5 Project information signage shall include supply and installation of a sign approximately 1951mm (wide) x 1220mm (high). The Owner will provide the sign, the contractor will be responsible for supply and installation of posts, bases, and all required appurtenances. Signage location to be approved by the Engineer prior to installation.
- .6 WorkSafeBC signage shall include supply and installation of signs as per WorkSafeBC requirements, posts, bases, and all required appurtenances.

1.4 DEMOBILIZATION

- .1 Demobilization shall include the Contractors costs of demobilization at the end of the project. Included in demobilization are preparation and submission of red marked as-built drawings, removal of all personnel, materials and equipment, signs, and cleanup of the site and The Work.
- .2 The lump sum price bid for this work shall be relative to the costs involved but shall not exceed 1.0 percent of the Tender Price.
- .3 Payment will be made as follows, as approved by the Engineer:
 - .1 100% of the lump sum bid will be included in the final progress payment certificate.
- .4 The Engineer may at his discretion recommend partial payment if demobilization is not complete.

End of Section 01 60 00

Section 01 62 00 - Other (New Section)

1.0 GENERAL

- .1 Section 01 62 00 refers to specific portions of work not addressed elsewhere within the specifications.

1.1 LIAISONS

- .1 Liaisons shall include the Contractors duties to liaison with service authorities, municipalities, provincial ministries, first nations, and other project stakeholders. Include documentation of liaison and all pertinent tasks resulting from liaisons and submittal to the Owner and Engineer, and execution of works in accordance with liaisons, as approved by the Engineer.
 - .1 Coordination with the City of Duncan regarding installation / relocation / adjustment of the existing irrigation system in Section 1 of the project (approximately station 0+000 to 0+120).
 - .2 Coordination with the City of Duncan regarding relocation of water meters and ancillary works.
 - .3 Coordination with the Business Owner / Property Owner regarding removal of private signs and installation of new private signs.
 - .4 Coordination with the Business Owner / Property Owner regarding revisions to irrigation system.
 - .5 Coordination with BC Hydro regarding works related to BC Hydro poles near station 0+115, 0+146, 0+153, and any other project locations. Contractor is responsible for adherence to BC Hydro schedule / timing and will be liable for all costs, at their own expense, incurred due to failure to adhere to BC Hydro schedule / timing. Brief summary of changes to poles is noted below, Contractor to liaise with BC Hydro for complete scope of work.
 - i) Pole near station 0+115: Pole and guy wire to be relocated to clear the proposed asphalt trail location.
 - ii) Pole near station 0+146: Adjustment to pilaster, ducting, new concrete, and ancillary work due to ground elevation raised around pole.
 - iii) Pole near station 0+153: Adjustment to pilaster, ducting, new concrete, and ancillary work due to ground elevation raised around pole.
 - .6 Coordination with Ministry of Transportation and Infrastructure pertaining to any impacts to the Trans Canada Highway operations.
 - .7 Any other coordination / liaisons works necessary.
- .2 Any costs associated with inspectors / agents from utility companies / service provider are to be included with this lump sum price

- .3 The lump sum price bid for this work shall be relative to the costs involved to undertake the works.
- .4 Payment will be made as follows, as approved by the Engineer:
 - .1 100% of the lump sum bid will be included upon completion of liaisons and execution of work accordingly.
 - .2 The Engineer may at his discretion recommend partial payment if demobilization is not complete.

End of Section 01 62 00

Section 03 30 30 – Stamped Coloured Concrete (New Section)

1. General

1.1 GENERAL REQUIREMENTS

- .1 Refer to Division 1, General Requirements
- .2 All contract documents form an integral part of this section

1.2 DESCRIPTION

- .1 This section specifies the supply and installation of cast-in-place concrete paving, as well as architectural, decorative and coloured exterior concrete paving. The extent and location of coloured concrete and cast-in-place concrete is indicated on the drawings.

1.3 RELATED DOCUMENTS:

- .1 This specification forms part of the Contract Documents and is to be read, interpreted and coordinated with all other parts.
- .2 The Master Municipal Construction Documents (MMCD)

1.4 MEASUREMENT PROCEDURES

- .1 Portland cement concrete pavement will be measured in square metres of indicated thickness in place.
- .2 Payment for Stamped Coloured Concrete includes supply and installation of the concrete, 150mm of compacted granular base under the stamped coloured concrete, excavation, subgrade preparation, handling, transportation, cleanup, colour, sealer, protection, stamping, offsite disposal of excess material, samples, and any necessary material to complete the stamped coloured concrete.
- .3 Any Item not specifically identified, but required for the construction of the Stamped Coloured Concrete, shall be considered incidental to the work and shall be considered to be included in the applicable Items listed in the *Schedule of Prices and Estimated Quantities*.

1.5 SAMPLES & SUBMITTALS

- .1 Prepare a mock-up of each type of coloured, stamped concrete of 1.0m x 1.0m for review by Contract Administrator and Owner on site, prior to proceeding installation.
- .2 Inform Consultant of proposed source of materials and provide access for sampling at least 2 weeks (14 days) prior to commencing work.
- .3 If materials have been tested by an accredited testing laboratory within previous 2 months and have passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle and/or dispose of waste materials in accordance with all applicable local, provincial and federal regulations.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely.

2. Products

2.1 MATERIALS

- .1 Granular base: to Section 31 05 17 – Aggregate and Granular Material, clause 2.10.1 19mm Granular Base. Granular Base compacted thickness to be 150mm.
- .2 Concrete mixes and materials: to Section 03 30 53 – Cast-in-Place Concrete and Section 03 30 20 Concrete Walks, Curbs and Gutters clause 2.1.5.1 Hand-formed and hand-placed concrete.
- .3 Refer to Section 03 30 53 – Cast-in-Place Concrete Clause 2.1 for additional materials.

2.2 PATTERNED COLOURED CONCRETE

- .1 This section applies to all areas on the project drawing and the materials legend that are notated as “stamped colour concrete”
- .2 Concrete to be ‘Hand-formed and hand-placed concrete’ per Section 03 30 20 Concrete Walks, Curbs and Gutters clause 2.1.5.1
- .3 The concrete mix shall be integrally coloured throughout the full depth and mix with colour admixture, color and quantity of admixture to be determined prior to ordering and to the approval by Contract Administrator.
- .4 Sealant: Clear, stain and slat resistant type recommended by the colour stained concrete systems supplier..
- .5 Pattern and colour: areas as indicated on drawings
 - i. PATTERN FN-3125.
Brickform, a division of Solomon Colors, Inc.
Pattern: Ashlar Cut Slate FM-3125.
Colour: Ruby, powdered integral colour by Brickfrom.

3. Execution

3.1 SUB-GRADE PREPARATION

- .1 Excavate or fill to design sub-grade
- .2 All grade preparation work to be performed in accordance with Section 31 23 01 – Excavation, Trenching, and Backfill
- .3 Construct embankments using excavated material free from organic matter or other objectionable materials. Dispose of surplus and unsuitable excavated material in approved location off site.

3.2 GRANULAR BASE COURSE

- .1 Place crushed granular base course material to design grade. 150mm compacted thickness for all areas below the Stamped Coloured Concrete.
- .2 Place base course in maximum 150mm (6”) layers and compact to at least 95% Modified Proctor Density (MPD).
- .3 Obtain the Consultant's approval of crushed granular base course, and reinforcing steel prior to placing concrete.
- .4 All concrete work to be performed in accordance with Section 03 30 53 - Cast-in-Place Concrete.

3.3 FORMWORK

- .1 Steel forms free from twists and warps following lines and shapes indicated on

detail drawings.

- .2 Wood forms to be of select dressed lumber, straight and free from defects and thoroughly cleaned following lines and shapes indicated on detail drawings.
- .3 Flexible forms to be used for all curves, or as required to form smooth curve. Ensure transition at tangent of curve is true and smooth.
- .4 Set forms to line and grade as shown on drawings, free from waves or irregularities in line or grade.
- .5 Set special forms as required around catch basins, manholes, poles or other objects as shown on drawings.
- .6 Tolerances: Maximum horizontal deviation: 6mm
 Maximum vertical deviation: 6mm
- .7 Maximum deflection from horizontal or vertical alignment to be 6mm in 3m
- .8 Adequately brace forms to maintain specified tolerances after concrete is placed.
- .9 Apply form release agent in strict accordance with manufacturer's written instructions and specifications.

3.4 CONCRETE PLACEMENT

- .1 Place concrete to MMCD standard and the following criteria specific to this Section.
- .2 Adhere to manufacturers recommendations for concrete installation and placement.
- .3 Do not place concrete during rain or on wet or frozen base.
- .4 Do not place concrete when air temperature appears likely to fall below 5 degrees Celsius within 24 hours, unless specified precautions are taken. Provide contract administrator with written construction process of concrete placement for work undertaken in these conditions.
- .5 Schedule concrete placement to ensure sufficient daylight hours available to permit edging and finishing.
- .6 Moisten crushed granular base immediately prior to placing concrete.
- .7 Place concrete within 1.5 hours of batching time.
- .8 Place concrete in forms, ensuring no segregation of aggregate and consolidate with approved mechanical vibrator or power screed.
- .9 Concrete to be placed in continuous operation until entire panel or section completed. Do not place fresh concrete that has achieved partial set.
- .10 Incorporate all castings into concrete at time of placement.
- .11 Discontinue placement at expansion, construction or isolation joints only.

3.5 EXPANSION AND CONTRACTION JOINTS

- .1 Install tooled transverse contraction joints after floating, when concrete is stiff, but still plastic, at intervals as shown on plans.
- .2 Install expansion joints as shown on drawings.
- .3 Ensure that joints of curb, gutters and sidewalk coincide.

3.6 ISOLATION JOINTS

- .1 Install isolation joints around manholes and catch basins and along length adjacent

to concrete curbs, catch basins, buildings, or permanent structure.

.2 Install joint filler in isolation joints in accordance with Section 03 30 53 - Cast-in-Place Concrete

.3 Seal isolation joints with sealant approved by the Contract Administrator.

3.7 CONCRETE FINISHING

.1 **Stamped Concrete Finishing:** Paved areas where specifically shown on Layout & Materials Plans and as per section 2.2, this Specification

3.8 PROTECTION

.1 Protect freshly finished concrete from dust, rain or frost by using tarpaulins or other suitable protective coverings. Keep clear of finished surface.

.2 Place and maintain suitable barriers to protect finished concrete from equipment, vehicles or pedestrian traffic.

.3 Provide personnel as required to prevent vandalism until concrete has set.

.4 Do not run vehicles or construction equipment on concrete for at least 7 days or as directed by Contract Administrator.

3.9 CURING

.1 Cure concrete by adding moisture continuously to exposed finished surfaces for at least one (1) day after placing, or sealing moisture in by curing compound approved by the Contract Administrator.

.2 Where burlap is used for moist curing, place two pre-wetted layers on concrete surface and keep continuously wet during curing period.

.3 Apply curing compound evenly to form continuous film in accordance with manufacturer's requirements.

3.10 BACKFILL & CLEAN-UP

.1 Allow concrete to cure for 7 days prior to backfilling.

.2 Backfill to designated elevations with material approved by the Contract Administrator

.3 Promptly, as the work proceeds and on completion, clean up and remove from the site any debris, waste material and rubbish resulting from work of this section.

3.11 ACCEPTANCE

.1 Prior to acceptance of finished concrete the following conditions will be met;

.1 Contract Administrator shall have reviewed concrete batch design and test results provided by the contractor.

.2 Concrete shall have a full 28 days curing time.

.3 All irregular, cracked or otherwise defective sections shall be removed and replaced to satisfaction of Contract Administrator. The extent of removal will be at a minimum to the nearest joint.

.4 All stains, marks and discolouration as a result of spills or drips shall be removed.

End of Section

Section 03 30 55 – Precast Interlocking Blocks (New Section)

1.0 GENERAL

- .1 Section 03 30 55 refers to those portions of the work that are unique to the construction of interlocking concrete block walls. This section must be referenced and interpreted simultaneously with all other sections pertinent to the works described herein.

1.1 Related Work

- .1 Not Used.

1.2 References

- .1 2020 Standard Specifications for Highway Construction (SSHC), Adopted November 1, 2020, BC Ministry of Transportation and Infrastructure (MoTI)
- .2 As described herein this section.

1.3 Measurement and Payment

- .1 Payment for interlocking concrete block walls will be measured by wall face area as measured by installed blocks and include buried portion of bottom course block and includes excavation, sub-grade preparation, bedding material , concrete or aggregate leveling pad, supply and installation of blocks and reinforcement, infill grouting, concrete cast-in-place infill blocks, transportation, loading, placing, hauling, infill material, backfill material, testing, geogrid reinforcement, geotextile material, and installation of all materials required. Payment for interlocking concrete block walls to include blocks set below finished grade. Interlocking concrete block walls as per details on Contract Drawings and contract specifications.
- .2 Any Item not specifically identified, but required for the construction of the retaining wall, shall be considered incidental to the work and shall be considered to be included in the applicable Items listed in the *Schedule of Prices and Estimated Quantities*.

2.0 PRODUCTS

- .1 New Interlocking concrete blocks shall be Lock-Block® or alternative type blocks that comply with MoTI Recognized Product List, latest edition and MoTI SSHC Section 942 – Precast Concrete Interlocking Modular Blocks.
 - .1 Only new interlocking blocks will be accepted.
 - .2 Block edges shall have chamfer of 50mm max.
- .2 Concrete shall comply with BC MoTI SSHC Section 942 Table 942-A and as specified below:

| | |
|---|---------|
| Minimum 28 day compressive strength (MPa) | 32 |
| Nominal size of aggregate (mm) | 28 |
| Air content (%) | 5% - 7% |
| Maximum slump (mm) | 80 ± 20 |
| Maximum water/cement ratio by weight | 0.4 |
| Minimum cement content (kg/m ³) | 320 |

- .3 Consistency of finish shall be maintained with the use of the same concrete mix (individual blocks shall not contain cold joints) and the same type of form oil for the entire project. Non-exposed surfaces shall be of uniform surface finish, roughly screened with no open pockets or distortions in excess of 12 mm.

3.0 EXECUTION

- .1 Excavation and backfill shall be carried out to the neat lines and dimensions shown on the Drawings.
- i) Minimum 450 mm wide zone of free-draining material (25 mm clear crushed gravel) to be placed behind the retaining wall.
 - ii) A separation layer of non-woven geotextile to be placed between the free-draining material and the adjacent backfill or native soils. Non-woven Non-woven geotextile shall have a 'Grab Tensile Strength' greater than 710 N and 'Apparent Opening Size' greater than 0.2 mm.
 - iii) General wall backfill soil, placed behind the zone of free-draining material, to comprise well-graded material having less than 10% fines content and a maximum nominal particle size of 100 mm. The general wall backfill soil to be compacted in 0.3 m thick lifts to 95% of the Modified Proctor maximum dry density (MPMDD).
- .2 Leveling Pad: 150 mm thickness of 25 mm Well-Graded Base per Section 202 of the 2020 Standard Specifications for Highway Construction (SSH, 2020). The leveling pad to extend at least 150 mm beyond the footprint of the bottom row of blocks.
- i) The levelling pad to be sloped to achieve the specified wall slope.
- .3 Perforated sub-drain pipe shall be installed to the neat lines and dimensions shown on the Drawings. The pipe shall be installed along the entire length of wall and comprise of a minimum 150 mm diameter perforated PVC pipe, surrounded by 25 mm clear crushed gravel and wrapped in non-woven geotextile. Non-woven geotextile shall have a 'Grab Tensile Strength' greater than 710 N and 'Apparent Opening Size' greater than 0.2 mm. Include Terminal and MidBlock cleanouts as directed by Engineer.
- .4 Concrete block elements shall be placed on a graded and compacted base to within the tolerances stated below:
- i. Vertical and horizontal alignment: 20 mm in 3000 mm
 - ii. Overall vertical tolerance: 20 mm (measured from top to bottom)

- iii. Component placement shall not vary more than 25 mm in plan or more than 12 mm from grade.
- .5 The retaining walls shall be constructed with precast monolithic concrete blocks in accordance with the dimensions, lines, and grades shown on the Drawings.
- .6 The Engineer reserves the right to reject concrete blocks based on visual and non-destructive methods.
- .7 The walls shall be inclined 1H:6V towards the retained embankment fill.
- .8 The bottom row of the retaining wall to be embedded 0.3 m below the bench.
- .9 The top course of blocks shall be bench style lock block with recessed lifting devices or inserts.
- .10 The top course of blocks shall be supplied flat topped without shear keys, and with recessed lifting devices or inserts.
- .11 Where clearance between adjacent blocks (as measured from face of block to face of block) exceeds 20mm, Contractor to supply and install infill grout in the opening to a minimum depth of $\frac{1}{2}$ the depth of the block. Grout to be flush with inside edge of chamfer. Use non-shrink grout, match color with blocks.
- .12 • The retaining wall to be keyed into the slopes where it terminates in existing or embankment slopes.
- .13 The exterior side of the blocks shall have a consistent facing finish as noted on the contract drawings.

3.1 Quality Control of the Concrete Blocks

- .1 Contractor to comply with the quality control requirements of British Columbia Ministry of Transportation and Infrastructure (BC MoT) 2020 Standard Specifications for Highway Construction, Section 211.
- .2 In addition to the quality control requirements of BC MoT SS 211, the Contractor shall extract two cores from one lock block for every 50 blocks prior to delivery to the Site. The cores shall be the standard cylinder sizes of 100 mm diameter and 200 mm high. One of these cores will be tested for the compressive strength in accordance with CSA-A23.2-14C and CSA-A23.2-9C. The second core shall be tested for air void analysis in accordance with ASTM C457. If the compressive strength or air void analysis does not meet the required specifications, the entire 50 blocks will be rejected at the Contractor's cost. The Contractor shall be responsible for insuring that the test results are traceable to each of the 50 block lot tested. The cores shall be taken in the middle of the block along the back face so that the block may still be used if specifications are met. The cored holes shall be patched and sealed using a patching mortar in accordance with BC MoT SS 211.17.05.
- .3 Blocks without traceable testing documentation will not be accepted for use on the project
- .4 All test reports and inspections are to be submitted to the Engineer.

End of Section 03 30 55

Section 31 05 17 – Aggregates and Granular Materials (Added Material)

add the following clause

2.14 Bridge End Fill Material

- Bridge End Fill (BEF) material shall be in accordance with the 2020 Standard Specifications for Highway Construction. Refer to Section 202.

Section 31 11 01 – Clearing and Grubbing

1.4.2 – *Delete entire clause and replace with the following.*

- Payment for all clearing and grubbing items will for all areas beneath the trail structure, retaining walls, cut/fill zones, and any incidental areas pertaining to the project construction works. Clearing and grubbing area will include any isolated trees to be cleared and grubbed, as shown on the project drawings. Clearing and grubbing is a lump sum payment item.

Section 31 11 41 – Shrub and Tree Preservation

add the following clause

1.3.2 Tree Transplant and Plan

- Payment for Tree Transplant and Plan shall include a contractor prepared tree preservation, removal, and transportation procedure to the approval of City of Duncan Arborist, all work necessary to transplant tree, including but not limited to, tree watering, removal, preservation, transportation and delivery to location approved by City of Duncan, loading, unloading, pruning, fertilizer application, and any incidental scope.

Section 31 24 13 – Roadway Excavation, Embankment and Compaction

1.8.5.1 – *Delete clause 1.8.5.1 through to 1.8.5.5 and replace with following:*

Measurement for Common Excavation

- .1 Common excavation limits to be as per the contract drawings. Any common excavation over the specified extents will not be compensated.
- .2 Initial cross-sections are as per cross sections provided on the Contract Drawings.
- .3 Final cross-sections to be completed at the completion of excavation to neat lines and levels indicated on the Contract Drawings prior to placing other materials over the evacuated surface. Contractor to retain surveyor to complete final cross sections and provide calculations to Contract Administrator for review. Truck slips will be used for verification but not for payment.

1.8.7 – *Delete entire clause and replace with the following.*

- Payment for imported embankment fill will be based on cubic meters of embankment fill as identified in the cross sections of the project drawings. Volume will be based on compacted embankment fill, as installed on site, as per on-site neat line measurements.

1.8.8 – *Delete entire clause and replace with the following.*

- Any dewatering required to perform the work is the responsibility of the Contractor and is deemed incidental to excavation works.

1.8.10 – *Delete entire clause and replace with the following.*

- Payment for removal of Unsuitable Material shall include removal of unsuitable subgrade, disposal off site, and any incidental works. Payment will also include replacement of unsuitable material removed with new sub-base material as per Section 32 11 16.1. and any incidental works. Measurement will be made by field measurement of volume (length x width x height) of material removed. Truck volumes will be used for verification but not for payment. Any removal of unsuitable material is subject to approval by the Engineer.

3.4.7.1– *add the following clause*

- Sloped embankments can be used to support the new pathway in locations shown on the contract drawings. The embankment to be sloped at 2H:1V and constructed of well-graded granular soil having less than 10% fines content and a maximum particle size of 100 mm. The well-graded granular soil shall be placed in maximum 0.3 m thick lifts and compacted to 95% Modified Proctor maximum dry density (MPMDD).. The embankment fill materials (well-graded granular soils) shall be keyed into the native slope using a series of level benches to provide stability at the interface. The benches shall be constructed so that the maximum height of each bench is 0.6 m and that the ratio of bench width to rise is 2H:1V or flatter (e.g., minimum 0.6 m wide bench for a bench height of 0.3 m). The sloped embankment to be over-built approximately 0.3 m beyond its final configuration and then trimmed back to the final position after compaction.

Section 32 12 16 – Hot Mix Asphalt Concrete Paving

1.5.1 – *Delete entire clause and replace with the following.*

- Payment for asphaltic concrete paving includes all construction joints preparation, supply and placement of asphaltic concrete, compaction, adjusting and cleaning frames, covers and lids of all castings affected and taped temporary pavement markings.
- Measurement for asphaltic concrete paving for the specified design mixes for lower and upper courses will be based on square meters, as measured on site, of asphalt concrete actually incorporated for the specified thickness.

Section 32 17 24 – Traffic Signage (New Section)

1.1 General

- .1 Requirements for the supply and installation of traffic signage and appurtenances.

1.2 References

- .1 Ministry of Transportation and Infrastructure – Standard Specifications for Highway Construction (2020)
- .2 Transportation Association of Canada – Manual of Uniform Traffic Control Devices of Canada (Latest Edition)
- .3 Master Municipal Construction Document Association

1.3 Measurement and Payment

- .1 Payment for Traffic Signage shall include supply and installation for excavation, backfill material, compaction, base, post, sign, and appurtenances necessary to complete the work as specified.
- .2 Payment for Removal of Existing Signage shall include sign / post dismantling, cutting of existing concrete base to below existing surface elevation, restoration of existing surface, hauling and transporting sign / posts to location directed by contract administrator, including any incidental work necessary to complete the work.

1.4 Shop Drawings

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of Work.
- .2 Submit shop drawings for signage, posts, and bases.
- .3 Allow 7 days for Engineer's review of each submission.
- .4 Indicate individual components by manufacturer's model number and accompany with technical and performance characteristics.
- .5 Submissions shall include, at a minimum:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - i) Subcontractor.
 - ii) Supplier.

- iii) Manufacturer.
- .4 Details of appropriate portions of Work as applicable:
 - i) Fabrication.
 - ii) Sign Layout, showing dimensions, including text and symbol dimensions, and clearances.
 - iii) Setting or erection details, including ground clearances and offsets.
 - iv) Signage material and reflective characteristics.
- .6 Do not proceed with work affected by submittal until review is complete
- .7 shop drawings, product data, samples, and mock-ups in SI Metric units.
- .8 Contractor to review submittals prior to submission to Engineer.
 - .1 This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.
- .9 Contractor's responsibility for errors and omissions in submission is not relieved by Engineer's review of submittal.
- .10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer's review.
- .11 Keep one reviewed copy of each submission on site in binder to be viewed by Engineer upon request.
- .12 Adjustments made on shop drawings by Engineer are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Engineer prior to proceeding with Work.

1.5 Products

- .1 Signage to be in conformance with the TAC "Manual of Uniform Traffic Control Devices for Canada".
- .2 Posts to be square 50mm O.D. galvanized steel. Execution

1.6 Installation

- .1 All earthworks to be in accordance with MMCD Division 31 - Earthworks
- .2 Install Base, Post, Signage and appurtenances in accordance with TAC "Manual of Uniform Traffic Control Devices for Canada" and MoTI 2016 Standard Specifications for Highway Construction.

END OF SECTION

Section 32 31 13 – Chain Link Fences and Gates

1.5.5 – *Add the following clause*

- Payment for bollards will be made for each bollard installed as specified and shown on the contract drawings. Payment includes supply of all materials and complete installation as shown on the Contract Drawings.

Section 32 91 21 – Topsoil and Finish Grading

2.2.2 – *Add the following clause.*

- Refer to Contract Drawings for locations of Topsoil and Hydraulic Seeding

1.4.1 – *Delete clause 1.4.1 and replace as follows.*

- Payment for growing medium and imported topsoil will be made separately for each type of growing medium and imported topsoil specified, and includes supply of material, on-site handling, placement to thickness specified, application of fertilizer and finish grading. Payment for growing medium will be lump sum. Payment for imported topsoil will be by actual area provided and authorized by the Contract Administrator.

2.2.2 – *Add the following clause.*

- Refer to Contract Drawings for locations of Topsoil and Hydraulic Seeding

Section 32 93 01 – Planting of Trees, Shrubs, and Ground Covers

1.9.4 – *Add the following clause.*

- Payment for mulch includes supply of material, transportation, on-site handling, placement to thickness specified, finish grading, and all incidental works necessary to complete the work. Payment for mulch will be by actual area provided.

Section 33 11 01 – Waterworks

1.8.15 – *Add the following clause.*

- Payment for Irrigation System - New shall include supply and installation of all irrigation system components as shown and described on Contract Drawings, sheet L102 and include all materials, work, and incidentals. Installation shall also be done accordance with manufacturers printed instructions and requirements. In addition, the following conditions are to be included.

- .1 Prior to and as a condition of Substantial Performance, submit to the Contract Administrator, three (3), copies of an operating and maintenance manual containing operational information for all operating components, cleaning and lubrication schedules, overhaul and adjustment schedule and similar maintenance operations, schematic zone map.
- .2 Winterizing
 - a. Winterize the system for the first time with the Owner's designated representatives observing. Winterizing shall include all operations necessary to protect the system from freezing temperatures, including manual and solenoid valve operations to isolate vulnerable parts of the system and draining components and pipes and/or blowing out of all pipes with compressed air.
- .3 Adjustment
 - a. Adjust the irrigation heads for optimum coverage and rate of flow.
 - b. The contractor shall balance and adjust the various components of the irrigation system to ensure the efficient operation of the system. This includes but is not limited to: .1 Adjustment of pressure regulators. .2 Adjustment of part circle sprinklers. .3 Adjustment of controller(s).
- .4 Coverage Test
 - a. When the irrigation system has been completed, a coverage test shall be performed in the presence of the Contract Administrator to ensure head to head coverage has been provided to all lawn and planting areas. The contractor shall complete all necessary adjustments as required.
 - b. Prior to final acceptance of the irrigation system by the Contract Administrator, the automatic controller(s) shall be tested through all their cycles in the presence of the Contract Administrator and any necessary adjustments shall be made.
- .5 Submit Certificate of proof of Double Check Valve Assembly Test and pass to Contract Administrator for their records.

1.8.16 – *Add the following clause.*

- Payment for Irrigation System- Revision shall include the contractors efforts to investigate the existing Irrigation System located at the frontage of 140 Trans Canada Highway; Ramada building and include supply and installation of all irrigation system components necessary to adjust the irrigation system to suit the revised frontage area as shown and described on Contract Drawings. Include all materials, work, and incidentals. Installation shall also be done accordance with manufacturers printed

instructions and requirements. Provide shop drawings, Winterizing, adjustments, and coverage test as per clause 1.8.15 of this Specification.

1.8.17 – *Add the following clause.*

Payment for water meter relocation includes saw cutting pavement, trench excavation, disposal of surplus excavated material, bedding, supply and installation of all pipe bolts, gaskets, and tie-rods, imported granular material, cleaning, pressure and leakage testing, flushing, disinfection, and all surface restorations works. Payment also includes new meter box (traffic rated), meter setter, concrete works, coordination with City of Duncan crews, tie-in to and extension of existing service, service piping size to match existing, and all related fittings and appurtenances specified and/or shown on Standard Detail Drawings W2c.

Measurement will be for each water meter relocated as shown on the drawings, with no regard to length of service pipe installed.

Section 33 44 01 – Manholes and Catchbasins

1.5.1.1 – *Delete clause 1.5.1.1 and replace as follows.*

Payment for manhole base, lid, slab, frame and cover includes all components shown on Standard Detail Drawings for manholes including risers of standard or non-standard heights required to complete manhole as shown on the project drawings and Standard Detail Drawings. Payment includes dewatering, base preparation, all in-situ concrete work. Measurement will be based on manhole completely installed as per the project requirements.

1.5.1.2 – *Delete clause 1.5.1.2*

1.5.1.5 – *Delete clause 1.5.1.5 and replace as follows*

No additional payment for drop or ramp type manhole connections as shown on Standard Detail Drawing S3 and S4 including re-benching will be made for each drop or ramp manhole connection as shown on the Contract Drawings. Include all supply and installation works for drop or ramp type manhole connections with Clause 1.5.1.1 of Section 33 44 01.

**APPENDIX A
SOIL QUALITY REPORT**