

## 1 GENERAL

### 1.1 DESCRIPTION OF WORK

- .1 Work under this Contract covers the furnishing of all labour, materials and equipment required to provide construction services for the realignment of approximately 1.1 kilometres of the Cabot Trail highway and the replacement of the Corney Brook culvert crossing the Cabot Trail, located in the Cape Breton Highlands National Park (CBHNP). The Project shall generally include but is not limited to:
- .2 Cabot Trail Realignment:
  - .1 Completion and submission of submittals listed for review and acceptance by the Departmental Representative prior to undertaking the work effected by the submittal.
  - .2 Site erosion and sediment control measures, including check dams, silt fencing, hay/straw bales, vegetative stabilization and other measures as required, maintained for the duration of the project.
  - .3 Dust control.
  - .4 Clearing, removal and disposal of trees, brush and other vegetation within the designated construction limits.
  - .5 Grubbing of stumps and organic materials within the designated construction limits.
  - .6 Stripping of topsoil material, temporary stockpile, and reuse as topsoil.
  - .7 Removal of existing asphalt throughout areas of the existing Cabot Trail highway that is to be decommissioned.
  - .8 Development of construction access to facilitate construction and rock removal operations. Restoration of the disturbed areas following construction.
  - .9 Diversion and maintenance of traffic along temporary travel lanes. Two-lane, two-way traffic shall be maintained at all times unless otherwise approved by the Departmental Representative.
  - .10 Supply and operation of traffic control including for the duration of the project.
  - .11 Removal and disposal of existing features within limit of contract including tree clearing and grubbing, asphalt pavement, guard rail, and culverts
  - .12 Excavation of roadway structure.
  - .13 Rock breaking, blasting, excavation and removal and off site disposal of rock material as required for the highway realignment.
  - .14 Supply, placement and compaction of sub-base and base gravels in roadway structure.
  - .15 Installation of new culverts and construction of new ditches.
  - .16 Construction of asphalt pavement, including butt joint overlays.
  - .17 Supply and installation of finish surfacing, including rip rap and shoulder gravel.
  - .18 Supply and installation of permanent pavement markings and

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- traffic signage.
  - .19 Restoration to pre-construction conditions and hydroseeding of disturbed areas and decommissioned highway.
  - .20 Supply and installation of guard rail.
  - .21 Quality management and Quality Control
- .3 Corney Brook Culvert Replacement:
- .1 Completion and submission of submittals listed for review and acceptance by the Departmental Representative prior to undertaking the work effected by the submittal.
  - .2 Site erosion and sediment control measures, including check dams, silt fencing, hay/straw bales, vegetative stabilization and other measures as required, maintained for the duration of the project.
  - .3 Dust control.
  - .4 Clearing, removal and disposal of trees, brush and other vegetation within the designated construction limits.
  - .5 Grubbing of stumps and organic materials within the designated construction limits.
  - .6 Stripping of topsoil material, temporary stockpile, and reuse as topsoil.
  - .7 Development of construction access to facilitate construction. Restoration of the disturbed areas following construction.
  - .8 Construction and maintenance of a temporary detour and bridge structure to divert traffic and handle the existing stream flow to allow construction of new culvert at Corney Brook.
  - .9 Diversion and maintenance of traffic along temporary travel lanes and the temporary bridge structure. Two-lane, two-way traffic shall be maintained at all times unless otherwise approved by the Departmental Representative.
  - .10 Supply and operation of traffic control including for the duration of the project.
  - .11 Removal and disposal of existing features within limit of contract including tree clearing and grubbing, asphalt pavement, guard rail, concrete culvert, steel bin walls and foundations.
  - .12 Supply and installation of corrugated steel arch span culvert, complete with associated precast concrete wingwall structures.
  - .13 Supply and installation of precast concrete panel retaining wall, complete with mechanically stabilized earth reinforcement.
  - .14 Supply, placement and compaction of bedding, surround and backfill/sub-grade materials around culvert and retaining walls.
  - .15 Rock breaking, blasting, excavation and removal of rock material as required for installation of concrete foundations.
  - .16 Supply, placement and compaction of sub-base and base gravels in roadway structure.
  - .17 Construction of reinforced cast-in-place concrete footing walls.
  - .18 Construction of asphalt pavement, including butt joint overlays.
  - .19 Supply and installation of finish surfacing, including rip rap and shoulder gravel.

- .20 Removal of bridge and detour and restoration to pre-construction conditions.
- .21 Supply and installation of permanent pavement markings and traffic signage.
- .22 Restoration to pre-construction conditions.
- .23 Supply and installation of guard rail.
- .24 Quality management and Quality Control

## 1.2 CODES

- .1 Meet or exceed requirements of: Contract documents, Specified standards, codes and referenced documents.

## 1.3 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy of each of the following:
  - .1 Contract Drawings;
  - .2 Specifications;
  - .3 Addenda;
  - .4 Reviewed shop drawings;
  - .5 Change orders;
  - .6 Other modifications to Contract;
  - .7 Field test reports;
  - .8 Copy of approved work schedule; and
  - .9 Manufacturers' installation and application instructions.

## 1.4 WORK SCHEDULE

- .1 Provide within 5 working days after Contract Award, construction schedule showing anticipated progress stages and final completion of work within time period required by Contract Documents and as specified herein.
- .2 All in-stream work is to be carried out between May 1<sup>st</sup> and September 30<sup>th</sup> under low flow conditions.
- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of the Departmental Representative.

## 1.5 CONTRACTORS'S USE OF SITE

- .1 Contractor's use of site for trailers storage and preparatory work shall be limited to locations identified in Section 01 52 00 - Construction Facilities. The Corney Brook Trail parking area may not be used by construction personnel. Any additional areas required shall be approved by the Departmental Representative prior to use. Access to the day use areas at Trout Brook and Corney Brook shall be maintained.
- .2 The Contractor shall maintain the site in a tidy condition free from the accumulation of waste products and debris. Upon substantial

performance of the work, remove surplus products, tools, machinery and equipment from the site. Completion of clean-up is required for total performance of the work.

- .3 The Contractor shall provide sanitary facilities for work force in accordance with governing regulations.
- .4 The Contractor shall keep the site clean and free from accumulation of waste materials and rubbish. Snow/ice shall be removed as necessary for the performance and inspection of the Work.
- .5 Contractor shall provide any and all traffic control services required for the project.
- .6 While the Work on site is under the Contractor's control, the Contractor shall be entirely responsible for the security of the Work Site and of the Work.
- .7 Contractor to obtain all necessary permits to perform work and to comply with all permit requirements and conditions.

#### **1.6 PROJECT MEETINGS**

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
- .2 The Owner shall make available, with adequate notice, meeting facilities for regular project meetings.

#### **1.7 SETTING OUT OF WORK**

- .1 Employ a certified surveyor to mark out work. All surface modifications are restricted to the identified construction limits.
- .2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .3 Provide devices needed to lay out and construct work.
- .4 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.
- .5 Provide coordinates, elevations and dimensions in the field, as required by the Departmental Representative.

#### **1.8 EXISTING SERVICES**

- .1 Where Work involves breaking into or connecting to existing services, carry out work at times directed by authorities having jurisdiction, with minimum of disturbance to pedestrian and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .5 Record locations of re-routed service lines.
- .6 The Contractor shall confirm all inverts and critical elevations in the field prior to construction.

### **1.9 ADDITIONAL DRAWINGS**

- .1 Departmental Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in the Contract Documents.

### **1.10 CONSTRUCTION SAFETY MEASURES**

- .1 The Contractor must submit a Safety Plan prior to the pre-construction meeting.

### **1.11 EXCAVATION**

- .1 Prior to commencing any excavation the Contractor shall check for and become aware of all buried utilities and submit findings for review and approval by Departmental Representative.

### **1.12 STANDARD HOURS**

- .1 The Contractor must maintain existing site hours for the work unless otherwise authorized by Departmental Representative. Work that involves temporary disruption of services will be scheduled through the Departmental Representative. Give Departmental Representative minimum 72 hours notice of any disruption of services.

### **1.13 SITE CONDITIONS**

- .1 For geotechnical and borehole information, refer to reports prepared by Stantec Consulting, Geotechnical Investigation Report, Proposed Culvert Replacement dated July 31, 2015, (Ref. No. 121618417) and Geotechnical Investigation, Corney Brook Slope Stabilization dated January 31, 2015 (Ref. No. 121615619), and attached in Appendix A.
- .2 Additional geotechnical information available from PWGSC upon request including Geotechnical Report prepared by ADI Ltd. dated April 2000 for PWGSC, and Geotechnical Investigation prepared by Stantec Consulting Ltd. dated January 31, 2013 for PWGSC.
- .3 Promptly notify Departmental Representative if subsurface conditions differ materially from those indicated in Contract Documents or a

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reasonable assumption of probable conditions based on thereon.

### **1.14 EXISTING SURVEY**

- .1 Topographic survey used in the preparation of these contract documents was completed by Crandall Engineering, in May 2015 and supplemented with LiDAR information provided by Public Works and Government Services Canada in July 2015.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not used.

## **3 EXECUTION**

### **3.1 WORK COMPLETION**

- .1 Prepare required submittals to commence immediately upon receipt of notice to proceed.
- .2 Achieve completion of rock blasting, excavation and disposal for the Cabot Trail Realignment by March 31<sup>st</sup>, 2016.
- .3 Supply and deliver Corrugated Metal Arch Span Culvert materials and Precast Concrete Panel Retaining Wall materials by March 31<sup>st</sup>, 2016.
- .4 Achieve Substantial Performance of the Cabot Trail Realignment by June 30<sup>th</sup>, 2016.
- .5 Achieve Substantial Performance of the Corney Brook Culvert Replacement by September 15<sup>th</sup>, 2016.

**END OF SECTION**

**Part 1      General**

**1.1          MEASUREMENT**

- .1      The quantities to be measured under the various items in the Tender and Schedule of Quantities and Unit Prices will be those quantities of Work completed in accordance with the drawings and specifications. The methods of measurement will be as stated hereinafter for the individual items.
- .2      All measurement shall be along the horizontal plane unless otherwise indicated.
- .3      Rock excavation will be measured by the volume calculated between the exposed rock surface and the finished grade elevation surface with cross sections staked at ten (10) metre intervals, taken after rock is exposed, and excavated to lines and levels indicated.
- .4      Common fill with approved borrow or rock fill material will be measured by the end area method of cross sections taken at ten (10) metre intervals.
- .5      In the case of quantities measured on a linear basis, unless otherwise provided for the length to be paid for shall be measured along the centerline of installation.
- .6      In the case of quantities paid for on an area basis, unless otherwise provided for the area to be paid for shall be the horizontal area, that is, the projection of area upon a horizontal plane.
- .7      All volume measurements refer to in-place measures unless specified otherwise.
- .8      The method of measurement of Work shall be determined by the Departmental Representative.
- .9      Measurements will be jointly made, and agreed to at the time by the Departmental Representative and the Contractor.
- .10     It is to be noted that the quantities shown in the Schedule of Prices are approximate and the Owner reserves the right to increase or decrease these quantities at the same unit price tendered.

**1.2          PRICES**

- .1      Unit or lump sum prices for all items in the Form of Tender are full compensation for the work necessary to complete each item in the Contract and in combination for all work necessary to complete the Work as a whole and shall include the cost of

furnishing all materials, labour, tools and equipment necessary to complete the work in accordance with the Contract, the drawings and specifications and all incidentals.

- .2 Unit or lump sum prices include supply and transportation of all labour, equipment and material necessary to complete each item in the Contract and in combination for all work necessary to complete the Work as a whole.
- .3 For culverts and storm drainage systems include all of the following as required where individual quantities are not provided in the Tender Form: environmental protection, protection of existing trees, common excavation, shoring, dewatering, bedding, backfilling, compaction, disposal of surplus material, testing, marker stakes, reinstatement and all incidentals.
- .4 For materials measured by mass, provide from each truck at time of delivery, a slip showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment. Scales shall be certified and approved by Departmental Representative.
- .5 The items described below correspond to the items in the Tender Form.

### 1.3 LUMP SUM ITEMS

- .1 Corney Brook Culvert Replacement
  - .1 Unit of Measurement: Lump Sum
  - .2 This item includes: All work within the Limits of Work shown on the drawings and in the specifications for the replacement of the Corney Brook Culvert.
- .2 Other Items Not Included in Unit Price Table
  - .1 No separate measurement for payment shall be made for any work completed under this item.
  - .2 The work of the lump sum item shall include, but not necessarily limited to, the following:
    - .1 All mobilization and demobilization to the site, temporary utilities, construction facilities and temporary barriers and enclosures.
    - .2 Protection of all cultural resources.
    - .3 All environmental protection, including erosion controls, sedimentation controls, de-watering and dust control. Dust prevention and erosion control measures shall be in effect until such works are restored to original condition or upon issuance of the "Certificate of Final Completion".

- .4 Field surveys for layout of the construction work items and for collection of as-built condition information.
- .5 Cleaning of work site, including removal of waste, debris, and recyclable materials.
- .6 Testing, inspections and permits from all regulatory agencies and groups required to complete the work.
- .7 Traffic control devices and measures, including flag persons, signs, mobile traffic signals, detour signs, lights, barriers, and pavement markings to maintain two-way traffic at all times.
- .8 This includes all signs indicated on the drawings, supply, installation, labour, equipment, reinstallation and removal of existing signs as indicated on the drawings. Signs required for this project are shown on the Drawings. Signs to be relocated are shown on the drawings. Also refer to drawings for signage installation details.
- .9 Design, construction, and maintenance of all temporary structures (water diversions, temporary bridges, temporary bridge abutments, temporary travel lanes, shoring, bracing, underpinning, working platforms, scaffolding, stability bracing, supports, etc.) required to complete the work.
- .10 Removal of all surplus materials from the site at completion of work.
- .11 Preparation and submission of all close-out submittals, maintenance manuals, and as-built drawings.
- .12 This item includes dust control as specified on any street or site where works have been or are being carried out. Supplying, installing, and maintaining the erosion control measures including but not limited to: silt fences in accordance with NSTIR Specification Division 7 Section 1 and erosion control structures in accordance with NSTIR Specification Division 7 Section 1.

**1.4 UNIT PRICE ITEMS**

.1 Clearing

- .1 Unit of measurement: hectares, measured before the start of work
- .2 This item includes: cutting and disposal of all trees and brush from areas indicated, environmental protection including silt fencing and erosion control structures needed as a result of the clearing operation and as shown on the drawings. Item also includes removal of limbs on trees exceeding 100 mm min diameter and cutting timber in to 2,400 mm lengths and delivery to Parks Canada where indicated. All material not accepted by Parks Canada shall be disposed of off site.

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- .2 Grubbing
    - .1 Unit of measurement: hectares, measured before the start of work
    - .2 This item includes: grubbing, removal and disposal of all stumps, roots, rootmat, humus, boulders less than 0.25 m<sup>3</sup>, and debris, environmental protection including silt fencing and erosion control structures needed as a result of the grubbing operation and as shown on the drawings. All material not accepted by Parks Canada shall be disposed of off site.
  - .3 Stripping, Stockpiling and Placement of Topsoil
    - .1 Unit of measurement: square metres, measured before the start of work
    - .2 This item includes: stripping, stock-piling and placement of material to be re-used at the specified thickness and disposal off site of any excess material, environmental protection including silt fencing and erosion control structures needed as a result of the stripping operation and as shown on the drawings. This also includes grading of existing areas, maintenance and repairs, screening, removal of rocks and debris and all work incidental thereto, all as specified or as shown on the drawings or as laid out by the Departmental Representative. Stock-piling of material to be re-used or disposal of stock-piled material will not be included in the measured area.
  - .4 Common Excavation
    - .1 Unit of measurement: cubic metres
    - .2 Method of measurement: Common excavation shall be measured as the number of cubic metres, place measure, based on volumes calculated by the average end area method for the material acceptably placed. Cross sections will be measured at ten (10) metre intervals.
    - .3 This item includes: Supply and transportation of all labour, equipment and materials, sourcing, testing, loading, placing, spreading, shaping, compaction, adjustment of moisture content, traffic control, dust control, proof rolling, clean up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.
  - .5 Rock Excavation
    - .1 Unit of measurement: cubic metres, in place measurement
    - .2 Method of measurement: Rock will be measured in its original position, by the cross-section method. Cross sections will be measured at ten (10) metre intervals. Rock excavations in roadway cuts shall be shattered to a depth of 500 mm below the rock subgrade for the full width of the cut section including the grade of the ditch bottom is considered incidental to the work and will not be measured for payment.

- .3 This item includes: The unit price will be full compensation for material, equipment, and work required for drilling and blasting; excavation, shattering rock to a depth of 500 mm below top of subgrade elevation indicated on the Drawings, filling the shattered surface by spreading rock fill and granular material to form a tight surface; placement of approved rock fill materials in fill areas along the proposed roadway realignment to lines and levels indicated on the Drawings, loading and disposal of rock material off site.
- .6 Type 2 Sub base Material
  - .1 Unit of measurement: tonnes
  - .2 Method of measurement: slip showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment.
  - .3 This item includes: supply, sourcing, testing, loading, weighing, placing, spreading, shaping, compaction, adjustment of moisture content, traffic control, dust control, proof rolling, clean up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.
- .7 Type 1 Base Material
  - .1 Unit of measurement: tonnes
  - .2 Method of measurement: slip showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment.
  - .3 This item includes: supply, sourcing, testing, loading, weighing, placing, spreading, shaping, compaction, adjustment of moisture content, traffic control, dust control, proof rolling, clean up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.
- .8 Type 1S Shoulder Material
  - .1 Unit of measurement: tonnes
  - .2 Method of measurement: slip showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment.
  - .3 This item includes: supply, sourcing, testing, loading, weighing, placing, spreading, shaping, compaction, adjustment of moisture content, traffic control, dust

control, proof rolling, clean up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.

.9 Hydroseeding

- .1 Unit of measurement: square metre
- .2 This item includes: Supply and transportation of all labour, equipment, and materials, preparation, soil amendments, mixing, distributing, rolling, maintenance including cutting and watering, re-hydraulic seeding as directed, clean-up and all work incidental thereto, all as specified or as shown on the Drawings or as laid out by the Departmental Representative. There shall be no separate payment for repairs to seeded or sodded areas during the maintenance period whether the cause is due to lack of growth or as a result of erosion.

.10 Culverts

a. 300 mm Class III Concrete

- .1 Unit of measurement: linear metre along centreline of pipe, diameter as indicated.
- .2 This item includes: all labour, materials and equipment required to properly supply and install pipe, excavation, excavation of ditches at inlet as shown on the drawings, dewatering, bedding, installation, and rip rap.

b. 600 mm Class III Concrete

- .3 Unit of measurement: linear metre along centreline of pipe, diameter as indicated.
- .4 This item includes: all labour, materials and equipment required to properly supply and install pipe, excavation, excavation of ditches at inlet as shown on the drawings, dewatering, bedding, installation, and rip rap.

c. 750 mm Class III Concrete

- .5 Unit of measurement: linear metre along centreline of pipe, diameter as indicated.
- .6 This item includes: all labour, materials and equipment required to properly supply and install pipe, excavation, excavation of ditches at inlet as shown on the drawings, dewatering, bedding, installation, and rip rap.

d. 1,500 mm Class III Concrete

- .7 Unit of measurement: linear metre along centreline of pipe, diameter as indicated.
- .8 This item includes: all labour, materials and equipment required to properly supply and install pipe, excavation, excavation of ditches at inlet as

shown on the drawings, dewatering, bedding, installation, precast concrete headwalls, and loose laid rip rap at culvert inlet and outlet.

.11 Asphalt Pavement

a. Asphalt, Type "B-HF", Complete

.1 Unit of measurement: tonnes

.2 Method of measurement: This work shall be measured in tonnes of asphalt concrete of the appropriate type, acceptably placed. Provide slips showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment.

.3 This item includes: supply and transportation of all equipment, labour and materials, signage and traffic control, fine grading, testing, tack coat, placement, compaction, construction joints, temporary striping, protection of structures, water for asphalt cooling when required, clean-up and all work incidental thereto, all as specified or as shown on the Drawings or as laid out by the Departmental Representative.

b. Asphalt, Type "C-HF", Complete

.1 Unit of measurement: tonnes

.2 Method of measurement: This work shall be measured in tonnes of asphalt concrete of the appropriate type, acceptably placed. Provide slips showing the weight, type of material being delivered, and identifying the truck and driver. Include only one load on each slip. Any slips not received and signed by the Departmental Representative at the time of delivery will not be included in the weight for payment.

.3 This item includes: supply and transportation of all equipment, labour and materials, signage and traffic control, fine grading, testing, tack coat, placement, compaction, construction joints, temporary striping, protection of structures, water for asphalt cooling when required, clean-up and all work incidental thereto, all as specified or as shown on the Drawings or as laid out by the Departmental Representative.

.12 Asphalt Gutters

.1 Unit of Measurement: linear metre

.2 This item includes: Installation of asphalt gutters in accordance with detail shown on the Drawings in locations as instructed by Departmental Representative.

.13 Pavement Markings

.1 Unit of Measurement: linear metre

- .2 This item includes: All paint markings indicated on the Drawings and as specified. Paint markings are shown on the drawings.
- .14 Milling Existing Asphalt
  - .1 Unit of measurement: square metre
  - .2 This item includes: supply and transportation of all labour, material and equipment, pulverization, mixing and blending, removal and disposal of oversized or unsuitable material, shaping, grading, compaction, protection of existing structures, signage, traffic control, dust control, safety, clean-up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.
- .15 Removing Existing Asphalt
  - .1 Unit of measurement: square metre
  - .2 This item includes: supply and transportation of all labour, material and equipment, asphalt removal, mixing and blending, removal and disposal of oversized or unsuitable material, shaping, grading, compaction, protection of existing structures, signage, traffic control, dust control, safety, clean-up and all work incidental thereto, all as specified or as shown on the Drawings or as directed by the Departmental Representative.
- .16 Guard Rail
  - .1 Unit of Measurement: linear metre
  - .2 This item includes: Supply, transportation of treated posts, blocks, metal rails, channels, washers, bolts, and all necessary appurtenances, augering of post holes, setting posts, offset blocks, installing reflectors, backfilling, compaction, disposal of surplus material and reinstatement of disturbed surfaces as measured from Contract Drawings.

**Part 2 Products**

**2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

- .1 Not Used

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 03 30 00 - Cast In Place Concrete
- .2 Section 31 05 16 - Aggregate Materials
- .3 Section 31 23 33.01 - Excavating, Trenching and Backfilling
- .4 Section 32 11 16.01 - Granular Sub-Base
- .5 Section 32 11 23 - Aggregate Base Courses
- .6 Section 32 12 16.01 - Asphalt Paving

### **1.2 APPOINTMENT AND PAYMENT**

- .1 Departmental Representative will appoint and pay for services of testing laboratory except as follows:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
  - .3 Testing, adjustment and balancing of equipment and systems.
  - .4 Mill tests and certificates of compliance.
  - .5 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
  - .6 Additional tests specified in the following paragraph.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

### **1.3 CONTRACTOR'S RESPONSIBILITIES**

- .1 Provide labour, equipment and facilities to:
  - .1 Provide access to Work to be inspected and tested.
  - .2 Facilitate inspections and tests.
  - .3 Make good Work disturbed by inspection and test.
  - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Departmental Representative.

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**2 PRODUCTS**

**2.1 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 DEFINITIONS**

- .1 Activity: An element of Work performed during course of Project. An activity normally has an expected duration, an expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart). A graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: Original approved plan (for Project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: Number of work periods (not including holidays or other nonworking periods) required to complete an activity or other Project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: A summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: A significant event in Project, usually completion of major deliverable.
- .8 Project Schedule: The planned dates for performing activities and the planned dates for meeting milestones. A dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: Overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

### **1.2 REQUIREMENTS**

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Ensure that it is understood that Award of Contract or time of

beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

### **1.3 SUBMITTALS**

- .1 Submit to Departmental Representative within 5 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .2 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

### **1.4 PROJECT MILESTONES**

- .1 Project milestones form targets for Project Schedule.
  - .1 Work to achieve substantial completion within 40 weeks of Contract Award.

### **1.5 MASTER PLAN**

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

### **1.6 PROJECT SCHEDULE**

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
  - .1 Award.
  - .2 Shop Drawings, Samples.
  - .3 Permits.
  - .4 Mobilization.
  - .5 Excavation.

### **1.7 PROJECT SCHEDULE REPORTING**

- .1 Update Project Schedule every 2 weeks reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

## **1.8 PROJECT MEETINGS**

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 11 00 - General Instructions.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 78 00 - Closeout Submittals.

### **1.2 ADMINISTRATIVE**

- .1 Submit to Departmental Representative submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .11 Make any changes in submissions which Departmental Representative may require consistent with Contract Documents and resubmit as directed by Departmental Representative.
- .12 Notify Departmental Representative, in writing, when resubmitting of any revisions other than those requested by Departmental Representative.

### **1.3 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor

- to illustrate details of a portion of Work that are specific to project requirements.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
  - .3 Allow 5 working days for Departmental Representative's review of each submission.
  - .4 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
  - .5 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
  - .6 Accompany submissions with transmittal letter, containing:
    - .1 Date.
    - .2 Project title and number.
    - .3 Contractor's name and address.
    - .4 Identification and quantity of each shop drawing, product data and sample.
    - .5 Other pertinent data.
  - .7 Submissions shall include:
    - .1 Date and revision dates.
    - .2 Project title and number.
    - .3 Name and address of:
      - .1 Subcontractor.
      - .2 Supplier.
      - .3 Manufacturer.
    - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
    - .5 Details of appropriate portions of Work as applicable:
      - .1 Fabrication;
      - .2 Layout, showing dimensions, including identified field dimensions, and clearances;
      - .3 Setting or erection details;
      - .4 Capacities;
      - .5 Performance characteristics;
      - .6 Standards;
      - .7 Operating weight;
      - .8 Relationship to adjacent work.
  - .8 After Departmental Representative's review, distribute copies.
  - .9 Submit 1 PDF digital file or 6 prints of shop drawings for each requirement requested in the Specification sections and as Departmental Representative may reasonably request.
  - .10 Submit 1 PDF digital file or 6 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.

- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

#### **1.4 SAMPLES**

- .1 Samples: examples of materials, equipment quality, finishes, workmanship.
- .2 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .3 Deliver samples prepaid to Departmental Representative's business address.
- .4 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

#### **1.5 PROGRESS PHOTOGRAPHS**

- .1 Submit electronic and hard copy of colour digital photographs in "jpg" format.
- .2 Identification: name and number of project and date of exposure indicated.
- .3 Number of view points: locations of view points determined by Departmental Representative.
- .4 Frequency: monthly and at completion excavation and services before concealment.

#### **1.6 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.

#### **1.7 WORK SCHEDULE**

- .1 Provide within 5 working days after contract award, schedule showing anticipated progress stages and final completion of work within time period required by Contract Documents.
- .2 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.

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**2 PRODUCTS**

**2.1 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 REFERENCE STANDARD**

- .1 Regulate traffic in accordance with the Public Highways Act (Nova Scotia) as stipulated in the Nova Scotia Temporary Workplace Traffic Control Manual (TWTCM) distributed by the Nova Scotia Department of Transportation and Infrastructure Renewal latest edition.
- .2 The Departmental Representative reserves the right to direct the contractor to reduce either the number or length of traffic control work areas during peak traffic volumes or when cumulative delays exceed the specified maximum.

### **1.2 RELATED SECTIONS**

- .1 Section 01 56 00 - Temporary Barriers and Enclosures

### **1.3 REFERENCES**

- .1 Manual of Uniform Traffic Control Devices (MUTCD) for streets and Highways - 2002.
- .2 Nova Scotia Temporary Workplace Traffic Control Manual (TWTCM) - Latest Edition.

### **1.4 PROTECTION OF PUBLIC TRAFFIC**

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
  - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
  - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
  - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of road without approval of Departmental Representative. Before rerouting traffic erect suitable signs and devices in accordance with instructions contained in Part D of MUTCD and TWTCM. Provide sufficient crushed gravel and asphalt millings to ensure a smooth riding surface during work.
- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
- .5 Keep travelled way free of mud, dust and debris. Have sweeping equipment on site at all times.
- .5 As indicated, provide stabilized detours or temporary roads or bridges to facilitate passage of traffic around restricted construction area:

- .1 Do grading for detour in accordance with Section 31 24 13 - Temporary Roadway Embankments. Maximum 10% grade.
- .2 Place and compact granular sub-base in accordance with Section 32 11 16.01 - Granular Sub-Base.
- .3 Place and compact removed asphalt pavement (millings) in accordance with Section 31 24 13 - Temporary Roadway Embankments.
- .6 Provide and maintain reasonable road access and egress to property fronting along Work under Contract, day-use sites at Trout Brook and Corney Brook, and in other areas as indicated, unless other means of road access exist that meet approval of Departmental Representative.

### 1.5 INFORMATIONAL AND WARNING DEVICES

- .1 Provide and maintain NSTIR approved temporary signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 All traffic signs are to be bilingual or symbolic and shall be Level 1 reflectivity.
- .3 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of MUTCD manual and TWTCM.
- .4 Place signs and other devices in locations as recommended by TWTCM.
- .5 The Contractor shall provide an Accredited Sign Supervisor, who has successfully completed the Temporary Workplace Traffic Control Training Course, to be on site at all times when active construction is taking place. The Accredited Traffic Control Sign Supervisor will be responsible to supervise the placement and dismantling of all temporary condition signs and devices that indicate to the road user that highway construction activity exists and also to ensure that proper traffic control procedures are carried out in accordance with the TWTCM. The Accredited Sign Supervisor is considered part of the contractors supervision and administration staff and compensation. The provision of this individual is considered incidental to the work.
- .6 Continually maintain traffic control devices in use by:
  - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
  - .2 Removing or covering signs which do not apply to conditions existing from day to day.

### 1.6 CONTROL OF PUBLIC TRAFFIC

- .1 Provide traffic control personnel who have a valid provincial license and trained in accordance with, and properly equipped as specified in TWTCM manuals in following situations:
  - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.

- .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, and approach speeds are high.
  - .3 When workmen or equipment are employed at locations where oncoming traffic would not otherwise have adequate warning.
  - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
  - .5 For emergency protection when other traffic control devices are not readily available.
  - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
  - .7 At each end of restricted sections where pilot vehicles are required.
- .2 All Traffic Control Personnel shall be equipped with portable radios of sufficient range to ensure continuous communication within the traffic control zone.
  - .3 All construction vehicles shall operate in accordance with and are subject to traffic control restrictions and operations in place on the project.

## 1.7 OPERATIONAL REQUIREMENTS

- .1 Existing conditions for traffic within right-of-way containing work in this Contract are indicated by following descriptions:
  - .1 Section within Park Boundaries and contract limits is asphalt concrete surfaced 2 lane undivided trunk roadway with posted speeds up to 80 km/h.
  - .2 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified herein and approved by Departmental Representative to protect and control public traffic, existing conditions for traffic may be restricted as follows:
    - .1 In accordance with TWTCM.
    - .2 Maintain two-lane, two way traffic for the duration of the Contract unless otherwise approved by the Departmental Representative following submission of a traffic control plan.
    - .3 Where required for temporary lane reductions, installation of transition lanes, and upon approval of the Departmental Representative: Maintain, at minimum, one-lane alternating two-way traffic.
      - .1 Traffic control using traffic control personnel shall meet the requirements of Guide B 35 of the TWTCM.
      - .2 When temporary traffic signal system is in use, it and all other signs, delineators and barricades shall strictly provide complete control and protection of public traffic, without the provision of traffic control personnel. Traffic control personnel shall only be present as follows:
        - .1 When temporary traffic signal system is completely inactive.
        - .2 For temporary protection is required while other traffic control devices are being erected or taken down.
        - .3 For emergency protection when other traffic control devices are not readily available.

- .3 Provide minimum 6.0 m wide two-way temporary travel lane with 1.5 m shoulder, complete with jersey barriers on both sides, through entire length of traffic detour.
- .4 Total traffic control zone delay shall not exceed 10 minutes during the peak park operating periods (July to August) and 20 minutes during off-peak park operating periods (September - June).
- .5 Temporary detours, as indicated, have a design speed of 50 km/h.
- .3 As directed by Departmental Representative, temporarily relocate traffic control informational devices, warning devices and barriers as required to accommodate 'wide load' traffic. Minimum 24 hours notice will be provided by Departmental Representative for passage of such traffic.
- .4 A traffic control plan and emergency response plan which accounts for the operational requirements above, must be approved by the Departmental Representative prior to commencing any work.

## 1.8 PORTABLE VARIABLE MESSAGE SIGNS

- .1 General:
  - .1 It is a requirement that electronic signage (trailer mounted) be employed at both ends of the work area, notifying the general public that construction will be occurring along with anticipated delay times, etc. Notification signage is critical for this project, given the traffic volumes and potential for accidents to occur.
- .2 Operating Characteristics:
  - .1 The Portable Variable Message Signs (PVMS) shall exhibit the following operating characteristics while in use:
    - .1 Light emitting diode (LED) technology or hybrid LED/Flip Disk Technology.
    - .2 Antiglare polycarbonate sheeting.
    - .3 Solar powered.
    - .4 Capable of operating for 7 consecutive days on battery power supply with solar panels disconnected.
    - .5 Shall include all hardware and software necessary to facilitate reliable local and remote sign control.
    - .6 Programmable (25 message sequence for one week duration).
    - .7 Capable of displaying a multiphase message with variable dwell times for each phase.
    - .8 Text of message shall not scroll or travel horizontally or vertically across the face of the sign.
    - .9 Capable of displaying 3 lines of 8 characters, each character being approximately 457 mm high.
    - .10 Each character matrix comprised of 35 pixels, 5 wide by 7 high.
    - .11 Message visible from 500 metres away in all ambient light conditions.
    - .12 Message legible from 50 m to 300 m away in all ambient light conditions.
    - .13 Ability to raise the bottom of the display board a minimum of 1.5 metres above ground level.
    - .14 Flat black background on the display area when the pixels are in the off position.
    - .15 Trailer painted orange or yellow.
    - .16 Capability to accurately level the sign and aim it towards oncoming

- traffic.
- .17 Photo sensor array to enable the luminance of the sign to be controlled both automatically and manually in relation to ambient light levels.
- .18 Locking device to prevent rotation of the sign in winds up to 10-km/hour, while the sign is in display mode.
- .3 Trailer Mounting
  - .1 The maximum dimensions of the Portable Variable Message Sign and trailer assembly while in display mode shall be as follows:
    - .1 Maximum overall height = 4.5 metres.
    - .2 Maximum overall width = 3.75 metres.
    - .3 Maximum overall length = 5.5 metres.
    - .4 Maximum gross unit weight = 2500 kilograms.
- .4 Conspicuity Markings:
  - .1 PVMS trailer assemblies shall require high reflectivity micro-prismatic fluorescent sheeting tape (or equivalent) (e.g. diamond grade or Type VII) (meeting ASTM standard E991 and ASTM E1247 for fluorescent materials). The reflectorized tape shall be of alternating, uniform white and orange or white and yellow sections. Sections of reflectorized tape shall be placed around the trailer frame, tongue or other outermost dimension, at uniform height and width such to reflect the light from the headlights of a vehicle approaching from any direction.
  - .2 PVSM sign assemblies shall require high reflectivity micro-prismatic fluorescent sheeting type (or equivalent) (e.g. diamond grade or Type VII) (meeting ASTM standard E991 and ASTM E1247 for fluorescent materials). The reflectorized tape shall be construction orange in colour, and 13 mm in width. The tape shall surround the outside of the sign assembly on all sides and be uniform distance from the outmost pixels.

## 2 PRODUCTS

### 2.1 NOT USED

- .1 Not Used.

## 3 EXECUTION

### 3.1 RUMBLE STRIPS

- .1 Two series of rumble strips to be installed on each approach, at locations as directed by the Departmental Representative.
- .2 Transverse rumble strips shall consist of a series of dish shaped indentations ground-in to the existing pavement, extending across the full width of travel lane for vehicles approaching the construction zone.
- .3 Rumble strips shall be rounded grooves with depth of 12 - 14 mm and width of 150 - 180 mm.
- .4 Spacing between rumble strips to be 300 - 500 mm.
- .5 Each series of rumble strips to consist of 4 rumble strips.
- .6 Reinstate asphalt to pre-existing conditions or better by milling entire area

of rumble strips to a minimum depth of 50 mm and installing asphalt concrete in accordance with Section 32 12 13.16 - Asphalt Tack Coats and 32 12 16.01 - Asphalt Paving.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal procedures.

### **1.2 REFERENCES**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Province of Nova Scotia
  - .1 Occupational Health and Safety Act, S.N.S. 1996.

### **1.3 SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit Material Safety Data Sheets (MSDS) to Departmental Representative.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 7 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's full responsibility for construction Health and Safety.
- .9 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.
- .11 Submit other data, information and documentation upon request as stipulated elsewhere in this section.

### **1.4 FILING OF NOTICE**

- .1 File Notice of Project and other Notices with provincial authorities prior to

commencement of Work.

- .2 Upon request, Departmental Representative will provide name and mailing address of provincial department to whom the Notice of Project shall be sent.

## 1.5 HAZARD ASSESSMENT

- .1 Implement and carry out a health and safety hazard assessment program as part of the work. Program to include:
  - .1 Initial hazard assessment carried out immediately upon notification of contract award prior to commencement of Work.
  - .2 Ongoing hazard assessments performed during the progress of work identifying new or potential health risks and safety hazards not previously known. As a minimum, hazard assessments shall be carried out when:
    - .1 New sub-trade work, new subcontractor(s) or new workers arrive at the site to commence another portion of the work.
    - .2 The scope of the work has been changed by Change Order.
    - .3 Potential hazard or weakness in current health and safety practices are identified by Departmental Representative or by an authorized safety representative.
  - .3 Hazard assessments to be project and site specific, based on review of contract documents, site and weather conditions.
  - .4 Each hazard assessment to be made in writing. Keep copies of assessments on site for duration of work. Upon request, make available to Departmental Representative for inspection.

## 1.6 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work. Have Contractor's Site Superintendent in attendance. Departmental Representative will advise of time and location.
- .2 Provide site safety orientation session to all workers and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the minimum site safety rules in force at the site.
- .3 Conduct site-specific occupational health and safety meetings during the entire work as follows:
  - .1 Formal meetings on a minimum monthly basis.
  - .2 Informal "tool box" meetings on a regular basis from a predetermined schedule.
- .4 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
  - .1 Progress of work;
  - .2 New sub-trades arriving on site, and;
  - .3 Changes in site and project conditions.
- .5 Record and post minutes of meeting. Make copies available to Departmental Representative upon request.

## 1.7 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

- .2 Health and Safety Plan shall contain the following three (3) parts:
  - .1 Part 1: List of individual health risks and safety hazards identified by hazard assessments.
  - .2 Part 2: List of specific measures to control or mitigate each hazard and risk identified in part one of Plan. Describe the engineering controls, personnel protective equipment and safe work practices to be implemented and followed when performing work related to each identified hazard or risk.
  - .3 Part 3: Emergency Measures and Communications Procedures as follows:
    - .1 Emergency Measures: on-site operating procedures, evacuation measures and emergency response to be implemented in the occurrence of an incident. Procedures to be specific and relevant to identified hazards. Measures to complement and be integrated with the facility and tenants Emergency Response Plans in place at site. Obtain information on existing emergency and evacuation plans from Departmental Representative and incorporate appropriate data.
    - .2 Communication Procedures:
      - .1 List of names and telephone numbers of designated officials, to be contacted should an incident or emergency situation occur, including the following.
        - .1 General Contractor and all Subcontractors. Federal and
        - .2 Provincial Departments and local emergency resources organizations, as resources organizations, as applicable laws and regulations.
        - .3 Officials from PWGSC and Parks Canada. Departmental Representative will provide list of names to be included.
      - .2 Procedures implemented at site to communicate and share information between workers, subcontractors, and General Contractor on work activities and in particular those which might endanger workers and Facility employees.
      - .3 List of critical construction activities to be communicated with the Facility Manager and designated tenant representatives which could affect facility and tenant operations, or pose a risk to the health and safety of their employees and to the general public. Develop list in consultation with the Departmental Representative.

- .3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

| <u>Column 1</u>   | <u>Column 2</u>              | <u>Column 3</u>                                  |
|-------------------|------------------------------|--|
| Identified Hazard | Control Measures Implemented | Emergency Measures and Communications Procedures |

- .4 Develop Health and Safety Plan in collaboration with all subcontractors. Address all work and activities of subcontractors as they arrive on site. Immediately update Plan and submit to Departmental Representative.
- .5 Implement, maintain and enforce compliance with requirements of the Health and Safety Plan until final completion of work and demobilization from site.
- .6 As work progresses, review and update Plan addressing additional health risks and safety hazards identified by on-going hazard assessments.
- .7 Submit revised versions of Plan to Departmental Representative.
- .8 Post a typed written copy, including all updates of the Health and Safety Plan in a common visible location at work site.

- .9 Submission of the Health and Safety Plan, and updates to the Departmental Representative is for review and information purposes only. Its submission shall not be construed to imply approval by Departmental Representative, be interpreted as a warranty of being complete, accurate and legislate compliant and shall not relieve the Contractor of his legal obligations for the provision Health and Safety of the Construction Project.
- .10 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

## **1.8 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

## **1.9 COMPLIANCE REQUIREMENTS**

- .1 Comply with Occupational Health and Safety Act, Occupational Safety General Regulations, N.S. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations made under part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
  - .1 2010 National Building Code of Canada, Part 8;
  - .2 Provincial Worker's compensation Board;
  - .3 Municipal Statutes and ordinances.
- .4 In event of conflict between any provisions of above authorities the most stringent provision shall apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.
- .5 A copy of the Canada Labour Code Part II may be obtained by contacting:  
Canadian Government Publishing  
Public Works & Government Services Canada  
Ottawa, ON, K1A 0S9  
Tel: (819) 956-4800 or 1-800-635-7943

## **1.10 UNFORESEEN HAZARDS**

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise Departmental Representative verbally and in writing.

## **1.11 HEALTH AND SAFETY CO-COORDINATOR**

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-coordinator. Health and Safety Co-ordinator must:
  - .1 Have site-related working experience specific to activities.

- .2 Have working knowledge of occupational safety and health regulations.
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

### **1.12 POSTING OF DOCUMENTS**

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.
- .2 Post all permits on site. Submit copies to Departmental Representative.

### **1.13 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

### **1.14 POWDER ACTUATED DEVICES**

- .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

### **1.15 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

### **1.16 SITE CONTROL AND ACCESS**

- .1 Control work site and entry points. Grant and allow entry to only workers and other persons so authorized. Immediately stop unauthorized persons from circulating within construction areas and remove from site.
- .2 Implement procedures for granting permission to enter into work site to all persons who require access. Procedures to include the provision of a site safety orientation session.
- .3 Delineate and isolate construction areas from other areas of site by use of appropriate means. Erect barricades, fences, hoarding and temporary lighting as required.
- .4 Erect signage at entry points and at other strategic locations around site, clearly identifying construction area(s) as being "off limits" to unauthorized persons. Signage must be professionally made in both official languages or by use of well-understood graphic symbols.
- .5 Secure site at night time or provide security guard(s) as deemed necessary to

protect site against entry.

- .6 Ensure persons granted access are fitted and wear appropriate personnel protective equipment (PPE). Be responsible for the provision of such PPE to persons who require access to conduct work or perform inspections.

### **1.17 PROTECTION**

- .1 Provide temporary facilities for protection and safe passage of public pedestrians and vehicular traffic around adjacent work site.
- .2 Provide safety barricades, lights and signage on work site as required to provide a safe working environment for workers.
- .3 Carry out work placing emphasis on health and safety of public, site personnel and protection of the environment.
- .4 Should unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

### **1.18 PERMITS**

- .1 Obtain permits, licenses and compliance certificates, at appropriate times and frequency as stipulated by authorities having jurisdiction.
- .2 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify Departmental Representative in writing and obtain Departmental Representative's approval to proceed prior to carrying out that portion of the work.

### **1.19 MINIMUM SITE SAFETY RULES**

- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements at the work site and obeyed by all persons granted access:
  - .1 Wear personal protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat and safety footwear. Wear eye protection where appropriate.
  - .2 Immediately report unsafe activities, conditions, near-miss accidents, injuries and damages.
  - .3 Maintain site in tidy condition.
  - .4 Obey warning signs and safety tags.
- .2 Brief workers on site safety rules, and on the disciplinary measures to be taken for violation or non-compliance of such rules. Post such information on site.

### **1.20 TOOLS AND EQUIPMENT SAFETY**

- .1 Implement and follow a scheduled tool and equipment inspection/maintenance program at work site. Regularly check tools, equipment and machinery for safe operation and perform maintenance at pre-established time and frequency intervals as recommended by manufacturer. Include subcontractors equipment as part of the inspection process.
- .2 Use standardized checklists to ensure established safety checks are stringently followed.

- .3 Immediately tag and remove items found faulty or defective off site.
- .4 Maintain written documentation on each inspection. Make available to Departmental Representative upon request.

### 1.21 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information Systems (WHMIS).
- .2 Keep MSDS data sheets on site. Provide copies of all data sheets to Departmental Representative upon receipt of materials on site.
- .3 Put all MSDS data sheets on site, in a common area, visible to workers.

### 1.22 PROJECT / SITE CONDITIONS

- .1 The following are known or potential project related safety hazards at site:
  - .1 Highway Traffic.
  - .2 Fractured and loose rock overhead. Contractor should be aware that the potential for falling rocks exists.
- .2 Obtain from Departmental Representative, copy of MSDS Data sheets of existing hazardous materials stored on site or being used by Facility and Tenant personnel in the course of their operations.
- .3 Above lists shall not be construed as being complete and inclusive of safety and health hazards encountered as a result of Contractor's operations during the course of work. Include above items into the hazard assessment program specified herein.

### 1.23 ACCIDENT REPORTING

- .1 Investigate and report incidents and accidents as outlined in Provincial Occupational Safety and Health Act and Regulations.
- .2 Investigate and immediately report to Departmental Representative incidents and accidents which results, or has the potential of resulting in:
  - .1 Injuries requiring medical aid.
  - .2 Property damage in excess of \$5,000.00.
  - .3 Required notification to Workers Compensation Board or other regulatory agencies as stipulated by applicable regulations.
- .3 Medical aid in above clause shall have the same meaning as the term "medical aid injury" as defined in the Canadian Dictionary of Safety Terms - 1987 issue, from the Canadian Society of Safety Engineers (C.S.S.E.) as follows:
  - .1 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.

## 2 PRODUCTS

### 2.1 NOT USED

- .1 Not used.

### **3 EXECUTION**

#### **3.1 NOT USED**

.1 Not used.

**END OF SECTION**

## 1 GENERAL

### 1.1 RELATED SECTIONS

- .1 Section 01 74 21 - Demolition Management and Disposal.
- .2 Section 31 23 33.01 - Excavating, Trenching and Backfilling.

### 1.2 ENVIRONMENTAL PERFORMANCE

- .1 A meeting will be held with the successful contractor at least two weeks prior to the commencement of construction activities. All Contractor staff and Departmental Representative's staff assigned to project are required to attend. Environmental protection requirements for the project will be reviewed, including, but not limited to watercourse maintenance or diversion, water quality management, soils disposal, dewatering management, related permit requirements and on-site reporting and monitoring procedures.
- .2 The Contractor is held responsible to ensure that all necessary permits related to Environmental Protection have been obtained and that necessary documentation is available on-site.
- .3 The Contractor shall meet all requirements as detailed in **Parks Canada National Best Management Practices Roadway, Highway, Parkway And Related Infrastructure; Basic Impact Analysis: Corney Brook Road Realignment; and Basic Impact Analysis: Culvert Replacement** included in Appendix B. Where stipulations in Appendix B differ from those in the rest of the specification herein, the more stringent requirements shall apply.
- .4 Contractor to prepare and submit the following documents as specified elsewhere in this section for review by the Departmental Representative:
  - .1 Diversion methodology.
  - .2 Construction Methodology.
  - .3 Erosion and Sedimentation Control Plan.
  - .4 Environmental/Spill Response Plan.
- .5 Under the Canadian Environmental Protection Act, Federal Fisheries Act and Nova Scotia Environment Act, no sediment shall be released into any waterbody.

### 1.3 SITE SET-UP AND USE

- .1 All site activities related to construction are to be confined within the defined project boundaries.
- .2 Work sites will be equipped with appropriate and properly maintained sanitary facilities.
- .3 Garbage must be collected and removed daily from the work site. All material must be removed, transported and disposed of in accordance with existing federal, provincial, and municipal solid waste disposal guidelines and/or regulations.
- .4 Littering is prohibited.

- .5 Temporary storage, parking areas, and turn-a-round facilities for contractor-related equipment and vehicles will be limited to those areas agreed to and designated by the Departmental Representative.
- .6 Fires and burning of rubbish on site are not permitted.
- .7 Contractor shall comply with all regulations set out in the Canadian National Parks Act (S.C. 2000, C.32), in particular, the prohibition of illegal fishing, hunting and feeding of wildlife.

#### **1.4 SITE CLEARING**

- .1 Restrict tree removal to areas indicated or designated by Departmental Representative. Minimize stripping of topsoil and vegetation.
- .2 Vegetation should not be cleared unless approved by Departmental Representative.
- .3 Bulldozers, graders, and other clearing and grubbing equipment should not be operated outside of designated clearing boundaries and should have a restricted turning radius.
- .4 Vegetation and topsoil should not be removed to obtain fill for road construction purposes.
- .5 Trees and other vegetation outside the limits indicated on the drawings should not be cut or removed; trees or snags posing a danger to operations would be an exception.
- .6 Trees and debris should not be permitted to fall outside cleared areas or into water courses.
- .7 Whenever possible, organic debris removed during grading operations should be stored for use during site restoration. Such stockpiles should be located well away from any stream or water body and should be covered with coarse material or tarps to minimize wind and water erosion.
- .8 For excavation for installation of new work grubbing operations should only be carried out where required. The vegetative mat should be disturbed in the grubbing operations area only.

#### **1.5 WORK IN AND ADJACENT TO WATERWAYS**

- .1 Work adjacent waterways to be conducted in accordance with Nova Scotia Environment Nova Scotia Watercourse Alteration Activity Standards.
- .2 All in-stream work is to be carried out under low flow conditions.
- .3 Do not operate construction equipment in waterways. Fording of watercourses is not permitted.
- .4 Do not use waterway beds for borrow material.
- .5 Do not dump excavated fill, waste material or other debris in waterways.
- .6 Design and construct temporary crossings to minimize erosion to waterways.

- .7 Do not skid construction materials across waterways.
- .8 Do not clean or drain equipment in waterways.
- .9 Watercourse flow maintenance:
  - .1 Corney Brook: Watercourse shall be maintained within the existing culvert. Contractor to submit construction methodology to Departmental Representative before proceeding. Methodology to include excavation dewatering techniques, maintenance of water course flow and isolation from construction areas for duration of construction. Methods to maintain and isolate flow to be capable of accommodating the equivalent full capacity of the existing concrete box culvert.
- .10 Temporary storage sites for debris generated from clearing operations should be deposited away from watercourses, should be surrounded by a natural vegetative buffer, should be screened from the road and should be selected by the Departmental Representative.
- .11 All in-stream work is to be completed in the dry.
- .13 Dewatering from any body of water or waterway is not permitted.
- .13 Do not pump or drain water containing suspended materials into waterways. Water containing suspended materials shall be pumped into vegetation a minimum of 30 m away from watercourses.

## 1.6 DISPOSAL OF WASTE

- .1 Do not bury rubbish and waste materials on site. Remove all garbage from site daily.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits or oil into waterways, storm or sanitary sewers.
- .3 Dispose of uncontaminated construction/ demolition materials which cannot be recycled or reused, at an approved construction and debris disposal site.
- .4 Nova Scotia Department of the Environment Contact for waste disposal in this Region is:
  - Mark Farrell
  - District Manager - Sydney Office
  - Phone: (902) 563-2100
  - Fax: (902) 563-2307

## 1.7 DRAINAGE

- .1 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .2 Watercourse shall be maintained within construction area. Contractor to submit construction methodology to Departmental Representative before proceeding. Methodology to include excavation dewatering techniques, maintenance of watercourse flow and isolation from construction areas for duration of construction.
- .3 Do not pump or drain water containing suspended materials into waterways. Water containing suspended materials shall be pumped into vegetation a minimum

of 30 m away from watercourses.

## 1.8 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment to Federal, Provincial and local authorities emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads. Chemicals used in dust control must have prior approval of the Departmental Representative.
- .4 Cleaning of heavy equipment, including concrete trucks, shall not be cleaned within the park boundaries.
- .5 Minimize idling of engines and equipment at all times.

## 1.9 EARTH MOVEMENT

- .1 Where engineering and environmental requirements can be met, excavated materials from this project may be used for backfilling, at the discretion of the geotechnical engineer designated by the Departmental Representative.
- .2 All surplus excavated material must be disposed of at an approved location and in an approved manner.
- .3 Any proposed sources of borrow material shall be approved by the Departmental Representative prior to start-up. Fill materials or aggregate used during this Contract shall not contain sulphide-bearing material as defined by the proposed Guidelines for Development on Slates in Nova Scotia (April, 1991).
- .4 When vegetation must be removed, then the extent and duration of exposure should be kept to a minimum. Plan the phases of development so that only areas that are activity being developed are exposed.
- .5 Any excavated material that is to be stockpiled on site must be covered to prevent erosion and minimize contaminated runoff.
- .6 Areas of unstable clays should be left undisturbed.
- .7 Dust control measures will be necessary, especially when asphalt is removed. The use of chemical dust control agents must be pre-approved by the Departmental Representative.
- .8 Where there is potential for severe erosion and/or downstream "siltation" the Contractor shall cover excavations during major precipitation events as directed by Departmental Representative.

## 1.10 EROSION AND SEDIMENT CONTROL

- .1 Appropriate preventative controls should be in place at all times during construction to prevent undue erosion and sedimentation. The Contractor is required to provide to the Departmental Representative for approval seven days before start-up an Erosion and Sedimentation Control Plan. Methodology proposed should be in accordance with the Province of Nova Scotia's Manual

entitled Erosion and Sedimentation Control, Handbook for Construction Sites. Such a plan shall incorporate necessary silt fences, silt traps, plastic lined trenches and ditches, temporary culverts or diversions as approved by the Departmental Representative. The Contractor shall install and maintain all sedimentation and erosion control features for the duration of the project, in accordance with the approved plan. The Contractor shall remove all sedimentation and erosion control upon completion of the work and when requested by the Departmental Representative.

- .2 The plan must cover all activities within the limits of the construction, laydown and traffic diversion areas.
- .3 The plan must acknowledge the potential for excavated materials to be contaminated and may be a source of contaminated leachate / runoff.
- .4 Backfilled slopes should be mechanically compacted and grades should be consistent with the prevailing down-slope grade. Where it is felt that immediate re-vegetation is needed to stabilize an area, hydroseeding operations or other temporary stabilization measures will be carried out, as directed by the Departmental Representative.
- .5 Prior to carrying out work, check long range weather forecast to ensure that there is adequate time before forecast of heavy rain storms to stabilize the work. Provide details of stabilization plan to Departmental Representative for review.
- .6 Maintain a stockpile of appropriate erosion and environmental protection materials (e.g. silt fences, straw bales, wood chips, clean rock fill and aggregate base course) on site at all times.
- .7 Install additional erosion control measures as required by site conditions to prevent sediment from entering drainage courses.
- .8 Inspect erosion and sediment control measures on a daily basis and maintain as necessary.

### 1.11 HAZARDOUS MATERIALS

- .1 Dangerous goods, whose release into the environment could cause adverse effect, should be stored and handled in a manner which gives due regard for workers and public safety, and for the protection of the environment.
- .2 No material toxic to fish or any aquatic life shall be permitted to enter any stream, river, or lake. This shall include, but not be limited to lubricants, fuels, testing fluids, insecticides, detergents, herbicides, cement, lime or concrete.
- .3 The management of fuels, lubricants and chemicals must meet with the requirements of the Nova Scotia Dangerous Goods and Hazardous Wastes Management Criteria and all other appropriate provincial and federal regulations.
- .4 Fueling and lubricating of equipment cannot be done closer than 100 m to any watercourse.
- .5 All refueling and lubricating operations should employ protection measures such as drip pans, to reduce the potential for escape or petroleum products to the environment.

- .6 The Departmental Representative must be immediately contacted after a spill of more than 10 L of fuel or lubricant, and after any amount of other chemical products has escaped.
- .7 Departmental Representative may suspend work following the improper handling of hazardous materials.
- .8 Storage of hazardous material, including explosives, shall not be permitted, except for quantities which shall normally be expected to be utilized in a day of Work, and which are not permitted to stockpile.
- .9 Contractor to maintain on-site adequate supply of sorbent material and berming devices to contain spills.

### **1.12 ENVIRONMENTAL INCIDENT OR EMERGENCY**

- .1 In the event of an environmental incident or emergency such as:
  - .1 Chemical spill or petroleum spill;
  - .2 Poisonous or caustic gas emission;
  - .3 Biological or chemical explosion;
  - .4 Hazardous material spill;
  - .5 Sewage spill;
  - .6 Contaminated water into waterways. The Contractor or his employees shall:
  - .7 Notify the Contractor's job superintendent.
  - .8 Call the local emergency services and give type of emergency.
  - .9 Notify the environmental emergency reporting system (1-800-565-1633) or Ingonish parks Canada Warden Office (902-285-2542).
  - .10 Notify the Departmental Representative.
- .2 The Contractor is to submit to Departmental Representative a copy of its Environmental/Spill Response Plan for approval.

### **1.13 SITE DECOMMISSIONING**

- .1 Unless prior permission from the Departmental Representative is obtained, all contractor equipment, facilities and materials must be removed from the site at the finish of each work phase, or if work is suspended due to weather or other circumstances, upon the suspension of work activities.
- .2 All work sites must be returned to a neat and tidy condition upon site abandonment.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 78 00 - Closeout Submittals.
- .3 Section 03 30 00 - Cast-In-Place Concrete.
- .4 Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .5 Section 31 24 13 - Temporary Roadway Embankments.
- .6 Section 32 11 16.01 - Granular Sub-Base.
- .7 Section 32 11 23 - Aggregate Base Courses.
- .7 Section 32 12 16.01 - Asphalt Paving.
- .8 Section 32 32 34 - Precast Concrete Panel Retaining Walls
- .9 Section 33 42 13.08 - Corrugated Metal Arch Culverts.

### **1.2 INSPECTION**

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

### **1.3 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

#### **1.4 ACCESS TO WORK**

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

#### **1.5 PROCEDURES**

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site.

#### **1.6 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Departmental Representative.

#### **1.7 REPORTS**

- .1 Submit 4 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to Subcontractor of work being inspected or tested.

#### **1.8 MILL TESTS**

- .1 Submit mill test certificates as required of specification Sections.

### **2 PRODUCTS**

#### **2.1 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 52 00 - Construction Facilities.
- .2 Section 01 56 00 - Temporary Barriers and Enclosures.

### **1.2 INSTALLATION AND REMOVAL**

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use or as directed by Departmental Representative.

### **1.3 DEWATERING**

- .1 Provide temporary drainage to keep excavations and site free from standing water.
- .2 Ensure discharge is not contaminated with sediment, oil, etc.

### **1.4 TEMPORARY HEATING AND VENTILATION**

- .1 Pay for costs of temporary heat, and pumping used during construction, including costs of installation, fuel, operation, maintenance and removal of equipment, if applicable.
- .2 Maintain strict supervision of operation of temporary heating and pumping equipment:
  - .1 Conform with applicable codes and standards.
  - .2 Enforce safe practices.
  - .3 Prevent abuse of services.
  - .4 Prevent damage to finishes.

### **1.5 TEMPORARY POWER AND LIGHT**

- .1 Departmental Representative will not provide and pay for temporary power during construction for temporary lighting and operating of power tools.
- .2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- .3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.
- .4 Provide and maintain temporary lighting throughout project.
- .5 Coordinate with all Parks Canada/PWGSC Staff.
- .6 Install temporary facilities for power to approval of local power supply authorities.
- .7 Provide and pay for temporary power and lights for use of Departmental Representative site office.

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## **1.6 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary telephone, fax and data hook up, line(s) and equipment as necessary for own use and use of Departmental Representative.

## **1.7 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

## **1.8 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 All surface modifications are restricted to the identified corridors. Accurate delineation of these corridors by field survey is required prior to commencement of construction.

## **1.09 STORAGE SHEDS**

- .1 Provide adequate weathertight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.

## **1.10 ACCESS**

- .1 Provide and maintain adequate access to project site.
- .2 Build and maintain temporary roads where indicated and provide snow removal during period of work.
- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .4 All surface modifications are restricted to the identified construction corridors. Accurate delineation of these corridors by field survey prior to commencement of construction is required.
- .5 All vehicle traffic is restricted to existing roadways or as indicated in project plans. A field visit will be scheduled with the Contractor for locational confirmation and all areas of proposed construction will be marked in the field with orange flagging tape prior to commencement of work.

## **1.11 TEMPORARY BRIDGE**

- .1 Design and erect a temporary pre-fabricated modular steel support system (Bailey Bridge) at the general location and in reasonable conformity to the lines and levels shown on the Drawings to divert traffic during the construction of the proposed culvert at Corney Brook.

- .2 Temporary roadway and pre-fabricated bridge system shall be capable of handling two lane, two-way traffic.
- .3 Detailed design of the Bailey bridge is the responsibility of the Contractor. Roadway widths, shoulder widths or other geometrical requirements not specified in the Contract Documents, shall comply with the TAC Geometric Design Guide for Canadian Roads. Submit detailed design to the Departmental Representative for review at least 14 days prior to the scheduled installation of the Bailey bridge.
- .4 Hydraulic Design and placement of the Bailey bridge abutments shall be capable of accommodating the following normal design floods:

| Return Period<br>(years) | Design Flow<br>(m <sup>3</sup> /s) |
|--------------------------|------------------------------------|
| 2                        | 34                                 |
| 5                        | 61                                 |
| 25                       | 108                                |
| 50                       | 129                                |
| 100                      | 150                                |

- .5 The Contractor shall provide, in writing, a detailed installation procedure to the Departmental Representative for review at least 14 days days prior to the scheduled installation of the Bailey bridge. Installation shall not commence without the Departmental Representative's approval of the installation procedure.
- .6 The detailed installation procedure shall comply with the instructions and recommendations in the current Bailey handbook. The following items shall be addressed in the procedure, but not limited to as a minimum:
- .1 Construction scheduling
  - .2 Contractor's Site Representative, manpower, and equipment.
  - .3 Site layout for storage, assembly, base plates/mudsills for roller locations, equipment and crane locations if applicable.
  - .4 Compaction of bearing soils, setting of alignment and elevations of base plates for roller locations.
  - .5 Launch configuration for the launch nose and the Bailey bridge to be placed.
  - .6 Method and details of launch including load application points.
  - .7 Erection procedure if launching is not applicable.
  - .8 Applicable weights during launching or lifting.
  - .9 Jacking and/or final positioning of the Bailey bridge.
  - .10 Blocking for stability during setting and resetting of jacks.

- 
- .7 The Departmental Representative's review of the installation procedure shall not relieve the Contractor of the responsibility for safety during the installation of the Bailey bridge.
  - .8 Prior to erecting the Bailey Bridge, the Contractor shall give evidence to the Departmental Representative that the foreman who will be in charge of the erection of the Bailey Bridge(s) has successfully discharged the duties of foreman on similar work.
  - .9 The Contractor shall notify the Departmental Representative not less than 7 days in advance of the date on which he will commence this work.
  - .10 During the working time of the contract, the Contractor shall maintain the complete structure, including the foundation, sub-structure, Bailey Bridge, deck, and temporary roadway surfaces.
  - .11 The Contractor shall prepare the site in conformance with:
    - .1 Applicable Bailey handbooks
    - .2 Environmental regulations
  - .12 The Contractor shall install the Bailey bridge as specified in the installation procedure.
  - .13 Place temporary roadway approach embankments in accordance with Section 31 24 13 - Temporary Roadway Embankments.
  - .14 No vehicular traffic shall utilize the bridge until the bridge is set onto the bearings.
  - .15 Substructure and roadway approaches shall be constructed as specified and maintained throughout construction.
  - .16 Following removal of the Bailey bridge, the Contractor shall cleanup and regrade the work area(s) including the full length of the detour to the initial ground levels to the satisfaction of the Departmental Representative.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 51 00 - Temporary Utilities.
- .2 Section 01 56 00 - Temporary Barriers and Enclosures.

### **1.2 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1-GP-189M-84, Primer, Alkyd, Wood, Exterior.
  - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
  - .1 CAN3-A23.1-/A23.2-94, Concrete Materials and Methods for Concrete Construction/Method of Test for Concrete.
  - .2 CSA-0121-M1978, Douglas Fir Plywood.
  - .3 CAN/CSA-Z321-96, Signs and Symbols for the Occupational Environment.

### **1.3 INSTALLATION AND REMOVAL**

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

### **1.4 SCAFFOLDING**

- .1 Provide and maintain scaffolding, ladders and temporary stairs.

### **1.5 HOISTING**

- .1 Provide, operate and maintain hoists cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
- .2 Hoists cranes shall be operated by qualified operator.

### **1.6 SITE STORAGE/LOADING**

- .1 Contractor's use of site storage and loading shall be limited to an area within limits shown. Any conditional areas required shall be approved by Departmental Representative prior to use.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

### **1.7 CONSTRUCTION PARKING**

- .1 Parking will be limited to Contractor vehicles and equipment required to carry out work only, provided it does not disrupt performance of Work.

- .2 Parking of Contractor vehicles will not be permitted at the Corney Brook trail head Parking Area.
- .3 Provide and maintain adequate access to project site.
- .3 Build and maintain temporary roads where indicated or directed by Departmental Representative and provide snow removal during period of Work.
- .4 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

### **1.8 SECURITY**

- .1 While the Work on site is under the Contractor's control, the Contractor shall be entirely responsible for the security of the Work Site and of the Work.

### **1.9 OFFICES**

- .1 Provide for use of Departmental Representative a lit and ventilated mobile type trailer office, with heating and cooling to maintain a temperature of 22 degrees Celsius. Office shall be of sufficient size to accommodate site meetings as required, and be furnished with a desk, chair, drawing laydown table and three-level shelf. All exterior doors shall be lockable.
- .2 The office shall be brought to site and ready for use no more than 5 working days prior to start of work. Site office shall remain on site until final completion certificate is signed by Departmental Representative.
- .3 The Contractor shall pay for and provide power, light, telephone, fax and data services for the Departmental Representative site office. Installations shall be inclusive of all required accessories to make complete and functional.
- .4 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .5 Contractors and Subcontractors may provide their own offices as necessary. Location of these offices to be to the satisfaction of the Departmental Representative.

### **1.10 EQUIPMENT TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

### **1.11 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

- 
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

### **1.12 CONSTRUCTION SIGNAGE**

- .1 No other signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction shall be in both official languages Graphic symbols shall conform to CAN3-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Departmental Representative.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 51 00 - Temporary Utilities.
- .2 Section 01 52 00 - Construction Facilities.

### **1.2 REFERENCES**

- .1 Nova Scotia Temporary Workplace Traffic Control Manual, latest edition.
- .2 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.189M-84, Primer, Alkyd, Wood, Exterior.
  - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978, Douglas Fir Plywood.

### **1.3 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

### **1.4 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around deep excavations.
- .2 Provide as required by governing authorities.

### **1.5 ACCESS TO SITE**

- .1 Provide and maintain access roads, as may be required for access to Work.

### **1.6 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain competent Traffic Control Persons, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.
- .2 Contractor to provide automated traffic control signed lights at all times during lane closures (24 hours a day, 7 days a week).
- .3 Two lanes to remain open as long as possible during construction with concrete jersey barriers along edge of excavation and embankment. Obtain approval of Departmental Representative prior to implementing temporary one lane, two-way operation and maintain maximum wait times as indicated in Section 01 35 00 - Traffic Regulation.
- .4 Two lanes to remain open at all times during inactive construction periods, nights and weekends.

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## **1.7 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

## **1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 REFERENCE STANDARDS**

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .5 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

### **1.2 QUALITY**

- .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions.

### **1.3 AVAILABILITY**

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items.

If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

#### **1.4 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .5 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

#### **1.5 TRANSPORTATION**

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Owner. Unload, handle and store such products.

#### **1.6 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

### **1.7 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

### **1.8 CO-ORDINATION**

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

### **1.9 REMEDIAL WORK**

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

### **1.10 EXISTING UTILITIES**

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 78 00 - Closeout Submittals.

### **1.2 REFERENCES**

- .1 Owner's identification of existing survey control points and property limits.

### **1.3 QUALIFICATION OF SURVEYOR**

- .1 Qualified registered land surveyor, licensed to practice in Province of Nova Scotia, acceptable to Departmental Representative.

### **1.4 SURVEY REFERENCE POINTS**

- .1 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .2 Make no changes or relocations without prior written notice to Departmental Representative.
- .3 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .4 Require surveyor to replace control points in accordance with original survey control.

### **1.5 SURVEY REQUIREMENTS**

- .1 Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.
- .2 Establish lines and levels, locate and lay out, by instrumentation.
- .3 Stake for grading, fill and topsoil placement.
- .4 Stake slopes.
- .5 Establish pipe invert elevations and location of any exposed pipe not being removed under this contract.
- .6 Record elevation and location of all existing and installed end caps of abandoned underground services.

### **1.6 EXISTING SERVICES**

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

## **1.7 RECORDS**

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 On completion of site works, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

## **1.8 SUBMITTALS**

- .1 Submit name and address of Surveyor to Departmental Representative.
- .2 On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.
- .3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform with Contract Documents.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTION**

- .1 Section 01 77 00 - Closeout Procedures.

### **1.2 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use clearly marked separate bins for recycling.
- .6 Remove waste material and debris from site and deposit in waste container at end of each working day.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Dispose of waste materials, and debris off site at approved facilities.

### **1.3 FINAL CLEANING**

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris other than that caused by Owner or other Contractors.
- .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Sweep and wash clean paved areas.

**2 PRODUCTS**

**2.1 NOT USED**

.1 Not Used.

**3 EXECUTION**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.

### **1.2 DEFINITIONS**

- .1 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .2 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
- .3 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .4 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .5 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .6 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .7 Separate Condition: Refers to waste sorted into individual types.
- .8 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.

### **1.3 DOCUMENTS**

- .1 Maintain at job site, one copy of following documents:
  - .1 Material Source Separation Plan.

### **1.4 SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare and submit following prior to project start-up:
  - .1 Submit 2 copies of Materials Source Separation Program (MSSP) description.

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### **1.5 WASTE REDUCTION WORKPLAN (WRW)**

- .1 Prepare Waste Reduction Work plan.
- .2 Structure WRW to prioritize actions and follow as first priority Reuse, then followed by Recycle.
- .3 Describe management of waste.
- .4 Post workplan or summary where workers at site are able to review its content.

### **1.6 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)**

- .1 Prepare MSSP and have ready for use prior to project start-up. The DWA with related weight bills and/or receipt must be submitted on a monthly basis with the Contractor's monthly Progress claim.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.
- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
  - .1 Transport to approved and authorized recycling facility.

### **1.7 STORAGE, HANDLING AND PROTECTION**

- .1 Store, materials to be reused, recycled and salvaged in locations as specified in MSSP.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of road is endangered, cease operations and immediately notify Departmental Representative.
- .7 Protect surface drainage and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.

- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

## **1.8 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste, volatile materials, mineral spirits, or oil into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
  - .1 Number and size of bins.
  - .2 Waste type of each bin.
  - .3 Total weight generated.
  - .4 Weight reused or recycled.
  - .5 Reused or recycled waste destination.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

## **1.9 USE OF SITE AND FACILITIES**

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by PWGSC.

## **1.10 SCHEDULING**

- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 APPLICATION**

- .1 Do Work in compliance with WRW.
- .2 Handle waste materials not reused, salvaged, or recycled in accordance with

appropriate regulations and codes.

### **3.2 CLEANING**

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 78 00 - Closeout Submittals.
- .2 Section 01 74 11 - Cleaning.

### **1.2 INSPECTION AND DECLARATION**

- .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
  - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
  - .1 Work has been completed and inspected for compliance with Contract Documents.
  - .2 Defects have been corrected and deficiencies have been completed.
  - .3 Systems have been tested and are fully operational.
  - .4 Certificates required by Nova Scotia Department of Labour and Environment has been submitted.
  - .5 Operation of systems have been demonstrated to Owner's personnel.
  - .6 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Owner and Departmental Representative, complete outstanding items and request reinspection.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

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PWGSC

CLOSEOUT PROCEDURES

Section 01 77 00

ROAD REALIGNMENT

Page 2 of 2

AND CULVERT REPLACEMENT, CORNEY BROOK

Project No. R.077166.001

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30-Oct-2015

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedure.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 71 00 - Examination and Preparation.
- .4 Section 01 77 00 - Closeout Procedures.

### **1.2 SUBMISSION**

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned after final inspection, with Departmental Representative's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 If requested, furnish evidence as to type, source and quality of products provided.
- .5 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .6 Pay costs of transportation.

### **1.3 FORMAT**

- .1 Organize data in the form of an instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- .7 Text: Manufacturer's printed data, or typewritten data.
- .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- .9 Provide 1:1 scaled CAD files in dxf or dwg format on diskettes or CD.

#### 1.4 CONTENTS - EACH VOLUME

- .1 Table of Contents: provide title of project;
  - .1 date of submission; names,
  - .2 addresses, and telephone numbers of Consultant and Contractor with name of responsible parties;
  - .3 schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
  - .1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

#### 1.5 AS-BUILTS AND SAMPLES

- .1 Maintain at the site for Departmental Representative one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to the Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

#### 1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of opaque drawings, provided by Departmental Representative.
- .2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .3 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
  - .1 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

- .2 Field changes of dimension and detail.
- .3 Changes made by change orders.
- .4 Details not on original Contract Drawings.
- .5 References to related shop drawings and modifications.
  
- .4 Specifications: legibly mark each item to record actual construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
  
- .5 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

## **1.7 FINAL SURVEY**

- .1 Submit final site survey certificate, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

## **1.8 WARRANTIES AND BONDS**

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

## **2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**