

**SCHEDULE “1”**  
**SPECIFICATIONS**

**1. Introduction**

**1.1. General**

The General Specifications and Local Area Specifications (Schedule 1 (“Specifications”)) include:

- a) Performance and service delivery requirements of the Services under the Agreement reflecting the levels of service, safety and reliability that the Province requires; and
- b) Auditable requirements of Contractor performance by the Province.

**1.2. Services**

**a) Routine Maintenance Services**

Consist generally of the annual maintenance and repair of all the infrastructure identified as Routine Maintenance Services in this Schedule 1 (“Specifications”) and includes work activities that are unpredictable in nature, as implied by the response times, frequencies and other conditions specified herein or that are predictable in nature, where the quantity of work can be determined by the response frequency specified herein.

**b) Quantified Maintenance Services**

Consist of the planned maintenance, repair, replacement or new installation of all infrastructure identified as Quantified Maintenance Services in this Schedule 1 (“Specifications”) and includes work activities that are reasonably predictable or seasonal, that are of a minor restorative nature extending the service life of the infrastructure, or that are quantifiable and measurable, as further described in Schedule 2 (“Quantified Maintenance Services”). The annual quantity of work activities can be reallocated every Contract Year to meet the needs of the infrastructure.

**c) Additional Maintenance Services**

Consist of Routine Maintenance Services that exceed the Routine Maintenance Services Cap, Additional Maintenance Services on Class 8 and Class F roads, Quantified Maintenance Services that exceed the total value set out in Appendix A of Schedule 2 (“Quantified Maintenance Services”) for the applicable Contract Year, and work activities the parties agree to be work that is in the nature of maintenance services.

The meanings of Routine Maintenance Services, Quantified Maintenance Services and Additional Maintenance Services are provided in Section 1 of the Agreement, Schedule 2 (“Quantified Maintenance Services”), and Schedule 3 (“Additional

Maintenance Services”) respectively, which are paramount to the above general descriptions.

### 1.3. Specification Categories

The Specifications are organized according to the following sections:

a) General Specifications:

- (i) Surface Maintenance;
- (ii) Drainage Maintenance;
- (iii) Winter Maintenance;
- (iv) Roadside Maintenance;
- (v) Traffic Maintenance;
- (vi) Structures Maintenance;
- (vii) Network Management; and

b) Local Area Specifications

General Specifications are further described in Section 6 of this Schedule 1 (“Specifications”) and Local Area Specifications are further described in Section 7 of this Schedule 1 (“Specifications”).

### 1.4. Specification Format

- Outcome – describes the result of achieving the Specification’s performance requirements;
- Routine Maintenance Services and / or Quantified Maintenance Services - performance measures (PM) identify required work activities and the response for completion; *For example:* **PM1.01.2-1**
- Specific Requirements – indicates additional requirements to deliver the maintenance activity;
- Notes – supplementary information related to the Specification;
- Materials and/or Procedures – indicates materials and/or procedures related to the Specification;
- Routine Maintenance Service Cap – indicates the financial limit for the provision of the Routine Maintenance Services, as further described in Section 2 of this Schedule 1 (“Specifications”); and

- Warranty – indicates the warranty on the Services, as further described in Section 3 of this Schedule 1 (“Specifications”).

Generally, the Specifications are structured on a subject basis. *For example, the Rest Area Specification only contains maintenance activities related to the facility, with all other required maintenance (including but not limited to mowing, drainage and winter activities) referenced within those Specifications. Similarly, all communications related activities are contained in the Communications Specification, rather than being imbedded throughout the Specifications.*

## 1.5. Interpretation

- Words in these Specifications will bear the meaning assigned to them in the Definitions (Article 1 of the Agreement) and in Section 5 of this Schedule 1 (“Specifications”);
- Whenever more than one Specification, whether in whole or in part, applies to a particular Highway location, condition, circumstance or activity, the Contractor will comply with each and every applicable Specification or part of a Specification, as the case may be;
- The following abbreviations are used:

Time Period	Abbreviation
Minute	min
Hour	h
Day	d
Week	w
Month	m
Year	y
n/a	not applicable
PM	performance measure

- The words “condition” and “situation” are interchangeable and are to be interpreted similarly within the context of the specifications. The word “condition” is meant to refer not only to physical conditions, but also to situations that may arise on the Highway;
- When the statements “as directed by the Province”, “as approved by the Province”, or “as determined by the Province” are used, this means the Province may provide the direction, approval or determination either verbally or in writing;
- If a Specification refers to infrastructure including, but not limited to brake checks, chain up/off areas, pullouts, parking areas and Rest Area accesses, that have not been assigned a Highway Classification, they are to be maintained in accordance with the response of the adjacent Highway Classification, unless otherwise stated;
- All Specifications are applicable at all times throughout the calendar year;

- h) When a response identifies a specific date or time period, it means the activity must be completed by that date or time period;
- i) When a performance measure (PM) identifies a response to complete a work activity, and a time period is associated with that response, the time begins from when the Contractor detects or was made aware of the condition; and
- j) If a performance measure (PM) does not specify a response, this means a response in another Specification applies. *For example, the response for a Road Base repair, that is associated with installing a Permanent Patch, is the response for the Permanent Patch.*

#### **1.6. Materials and/or Procedures**

Whenever the Specification references materials and / or procedures, the Contractor must use materials and/or procedures in accordance with the:

- a) Standard Specifications for Highway Construction;
- b) Recognized Products List; or
- c) As approved in writing by the Province.

Additional materials and/or procedures are indicated in the relevant applicable Specification.

## 2. Routine Maintenance Services Cap

The basis of the Routine Maintenance Services Cap is the Contractor's calculation (that is confirmed by the Province) of the Cost Plus Rates for a specific Routine Maintenance Service in one Contract Year.

- a) If, pursuant to Routine Maintenance Services with a Routine Maintenance Services Cap, the Contractor estimates that the cost to maintain the infrastructure exceeds the Routine Maintenance Services Cap or if the Contractor encounters a previously unknown condition that causes the maintenance costs to exceed the Routine Maintenance Services Cap, then the Contractor must notify the Province and provide a written estimate of the work required to complete the work in accordance with Section 5 of Schedule 3 ("Additional Maintenance Services").
- b) If the Contractor was already engaged in that work at the time that the Contractor knew or should have known that the Routine Maintenance Services Cap was to be exceeded, work activities will continue until the Contractor reaches the limit of the Routine Maintenance Services Cap, unless otherwise directed in writing by the Province to cease that work and to make the site safe for Highway Users.
- c) The Province will, if it approves the estimate pursuant to paragraph a), direct the Contractor, in writing, to proceed with that work, with the basis of payment to the Contractor for that work in excess of the Routine Maintenance Services Cap being determined pursuant to Section 5 of Schedule 3 ("Additional Maintenance Services").
- d) If the Province:
  - (i) does not approve the estimate or revised estimate of the work,
  - (ii) determines that the work should not proceed, or
  - (iii) determines that it will do the work itself or utilize the services of another contractor,

then the Province will direct the Contractor, in writing, not to commence that work or cease performing that maintenance, as the case may be, and to make the site safe for Highway Users.

### 3. Warranty

The Contractor warrants to the Province that all work provided by or on behalf of the Contractor will comply with its obligations pursuant to the Agreement, will conform and comply with the Specifications and will be performed in a professional and workmanlike manner, free from any defects or deficiencies in materials and workmanship (the "Standard"). This warranty applies to all Services.

This warranty will be in effect for a one year period from completion of the Services (the "Warranty Period"). This warranty will survive the expiration or termination of the Agreement.

The Contractor will be available at all times and at its expense to assist the Province with its questions, problems and concerns about the Services. If, during the Warranty Period, any part of the Services is discovered, or asserted by either party, not to conform to the Standard:

- a) the Contractor will obtain investigation and testing at its expense, to identify the extent of any defects or deficiencies and through the Contractors' investigation and testing, will propose to the Province the corresponding extent of the correction and/or remediation required;
- b) the Province may obtain additional investigation and testing at its expense and, in the event the Province's investigation and testing indicates the defects or deficiencies require greater correction and/or remediation than what was proposed by the Contractor, the Province's costs for the investigation and testing will be promptly reimbursed in full by the Contractor (or, in the Province's discretion, will be setoff against any amounts owing by the Province to the Contractor); and
- c) once the parties are in agreement concerning the appropriate correction and/or remediation, or failing such agreement, the Province has, in its sole discretion, determined the appropriate correction and/or remediation, the Contractor will, at its own expense, correct and/or repair the work (notwithstanding that the work may have been accepted by the Province) in accordance with the agreed upon correction and/or remediation requirements, and provide the Province with all relevant information with respect to such corrected and/or repaired work.

The remediation and/or correction of the work will be performed within 30 days from the date the work is discovered, or asserted by either party, not to conform to the Standard, or as otherwise noted in the applicable Specification or as otherwise agreed by the parties in writing.

For greater certainty, where the Services under warranty are Quantified Maintenance Services, the Contractor is not entitled to claim the work performed under this warranty as an additional quantity of work performed by the Contractor for any purpose in Schedule 2 ("Quantified Maintenance Services").

All disputes arising out of or in connection with this warranty will be governed by Section 19.4 of the Agreement.

**4. Referenced Documents**

Several manuals, guides and other documents (the “documents”) are referenced throughout these Specifications; these documents, along with such other documents as may be determined by the Province from time to time during the Term, are required to be obtained and used by the Contractor to perform the Services.

It is the Contractor’s obligation to obtain and use all of these documents, and any updated materials related to these documents, according to their intended application and maintain them current throughout the term of the Agreement.

## 5. Definitions

In these Specifications and Local Area Specifications, capitalized terms will have the corresponding meanings as set out in Article 1 of the Agreement, and as set forth below:

**“Abutment”** means a wall supporting the end of a Bridge or span and retaining the approach Fill.

**“Accumulation”** means dirt, sand, gravel and Winter Abrasives.

**“Acrow”** means a proprietary name for a modular steel Panel Bridge similar to a Bailey Bridge.

**“Anchor Bolt”** means a Foundation bolt, drift spike, or any other device, including all components that is used for holding any mechanism or structure down. It may or may not be threaded.

**“Anti-icing”** means an activity involving the direct application of liquid or solid materials to bare or plowed pavement carried out in advance of a Weather Event to prevent the bonding of snow or ice to the roadway surface.

**“Armour”** means metal covering used at joints or around Piles, including rigidly affixed anchorages, to protect the underlying material.

**“Backfill or Bridge Abutment Fill”** means earth or other material used to replace material removed during repairs or construction including, but not limited to, Road Base and Shoulder maintenance, Culvert trenches, and behind Bridge Abutments and Retaining Walls. Also, refers to material placed in binwalls and between an old Structure and a new lining.

**“Backslope”** means the slope at the opposite side of a Highway ditch from the Shoulder, and extending up to the natural ground level.

**“Bailey”** means a modular Bridge made of interchangeable latticed steel Panels, coupled with pins, that is used primarily as an emergency or temporary Bridge.

**“Base Stabilization”** means a process of stabilizing the crushed aggregate layer using additives (organic or inorganic), to provide a stronger, reinforced Road Base for Dirt and Gravel Highways that resists moisture penetration, dust formation, and loosening under traffic.

**“Bearing”** means the Superstructure support elements between the bridge seats and the Bridge Superstructure, composed of steel or rubber, that is either fixed allowing only rotational movements or expands allowing longitudinal and rotational movements.

**“Box Beam”** means concrete box Stringers, that are precast for quick assembly at a Bridge site and when placed beside one another, can form a Deck to be used as a temporary Wearing Surface.

**“Brace”** means a diagonal, or horizontal, structural member used to stiffen a Structure.



**“Bridge”** means a Structure that provides transit for vehicles, pedestrians or cyclists over an obstruction, gap or facility that is greater than 3 metres in span. It consists of: (a) the Substructure consisting of its Abutments and Pier or Piers supporting the Superstructure; (b) the Superstructure slab, girder, Truss, arch or other span or spans supporting the Highway loads and transferring them the Substructure; and (c) the Highway and its incidental parts functioning to receive and transmit traffic loads.

**“Bridge Deck”** means the structural components related to corrosion protection and Wearing Surface elements of a Bridge including, but not limited to steel plates, steel grid, wood, membranes and asphalt and polymer Wearing Surfaces.

**“Bridge Joint”** means, including, but not limited to, expansion joints, sealed joints, Finger Joints, Sliding Plate Joints and all other Deck joints.

**“Bridge Joint Armour”** means steel plating conforming to the deck slab designed to support and/or protect Bridge Joints.

**“Brow Log”** means a log placed above the Deck surface to be used as a wheel-guard or as an additional load-carrying Stringer, if cabled to the Needle Beams.

**“Camber”** means a slight arch built into the longitudinal profile of a beam to accommodate deflections due to dead loads and live loads.

**“Cap”** means a horizontal member on an Abutment or Pier to distribute the loads of the Bridge. The Stringers or Bearings rest on the Cap.

**“Cattle Guard System”** means a device, including all its components that is used to restrict the passage of cattle including, but not limited to the rails / tubing, supports, bases, tie in fencing, gates, and related hardware.

**“Cementitious”** means having the properties of cement.

**“Chord”** means the upper and lower longitudinal members of a Truss.

**“Communications Platform”** means the way in which the Contractor communicates with the public including, but not limited to email, web, phone and social media.

**“Compact”** means when snow or slush or ice has been compressed to form a solid mass.

**“Compaction”** means that the finished compacted surface must be tightly knit, well bounded, and does not leave an indentation when driven over with a loaded tandem truck.

**“Corbel”** means a piece constructed to project from the surface of a wall, column or other portion of a Structure to serve as a support for another member.

**“Counter Brace”** means a Truss diagonal member inclined in the opposite direction to the Main Brace and smaller than the Main Brace.

“**Crack Filling**” means a maintenance activity carried out on pavement cracks greater than 25 millimetres wide to prevent water infiltration and improve the ride quality.

“**Crack Sealing**” means a maintenance activity carried out on pavement cracks less than or equal to 25 millimetres wide to prevent water infiltration.

“**Crown**” means the vertical rise in elevation from the outside edge to the centerline on tangent sections of Highway.

“**Culvert**” means a drainage appliance designed to allow the passage of water to flow from one side to the other.

“**Custom Sign**” means a Sign for which no current fabrication record sheet exists for manufacture, or a Sign made to the customer’s specifications that would be geographically located, including, but not limited to G-001, G-005 and G-006 guide signs with local based destinations or service and attraction signs with business name panels typify custom signs.

“**Danger Tree**” means a tree that is a hazard to Highway Users and/or adjacent lands due to its location or lean, physical damage, overhead conditions, deterioration of its limbs, stem or root system, or any combination of these conditions.

“**Debris**” means items that are not part of the Highway by intention including, but not limited to litter, rubbish, vegetation, fallen rocks, mud, dead animals, spilled materials, brush, logs, branches and other tree components.

“**Deck**” means the portion of a Bridge that supports the Highway, from the top of the major structural members to the Wearing Surface and designed to distribute loads evenly across the Bridge.

“**Decking**” means timber planking used as a Wearing Surface on the Deck of a timber Bridge.

“**De-icing**” means activity involving the direct application of liquid or solid materials to Compact to facilitate removal of Compact.

“**Designated Bike Lane**” means the portion of the Highway designated exclusively for bicycle use, and is identified through striping, signage, pavement markings, or a physical barrier including, but not limited to curbs, barriers and delineators.

“**Dirt and Gravel Highway**” means an unpaved Highway, including the top surface of the Highway and the area between the outside edge of the top surface and the bottom of the ditch. The edge is the breakpoint between the extreme outside edge of the top surface and the side slopes.

“**Ditch**” means an open drainage facility constructed with natural or rigid materials, including, but not limited to steel, concrete and asphalt, for carrying water away from a Highway road base.

**“Drainage Appliance”** means an apparatus, including all its components, designed to facilitate the movement of water in a controlled manner including, but not limited to manholes, catch basins, inlets and outlets, drain pipes, flumes, spillways, culverts < 3 m diameter, and sub-drains.

**“End Post”** means the last diagonal member at the end of a Truss, or the vertical member at the end of a Bailey or Acrow Bridge.

**“Fill Slope”** means earth and/or rock slopes usually created from cut and fill road construction methods or fill used to elevate a road from the original ground surface.

**“Finger Joint”** means an expansion Joint where the opening is spanned by meshing steel fingers or teeth.

**“Flashing”** means sheet metal used as waterproofing or Armour for timber or log members.

**“Floor Beam”** means transverse members which support the Stringers and transmit the load to the main girders or load carrying members. Steel Pier Caps on reinforced concrete Pier columns are a special type of Floor Beam.

**“Flume”** means an open channel or conduit constructed of material including, but not limited to metal, concrete, or plastic used to direct water away from a drain or watercourse located beside or below a Highway.

**“Flyover”** means a Bridge carrying one-way traffic over a Highway.

**“Footing”** means the portion of the Substructure resting on the ground.

**“Foundation”** means the supporting soil material upon which the structural portion of the Bridge is placed and portions of the Bridge (usually below ground), which distribute the pressure to the soil or artificial supports.

**“Gradation”** means the distribution of size of material particles from coarse to very fine, determined by quantities retained on screens of decreasing mesh size or spacing.

**“Grading”** means the machine blading of Dirt and Gravel Highway surfaces to provide a smooth surface and establish a proper cross-section.

**“Grout”** means a fluid mixture of cement, sand, and water that can be poured or pumped easily.

**“Hard Surfaced Highway”** means all Highways that are constructed with a paved asphalt surface including, but not limited to hot mix, cold mix, concrete and surface treated.

**“Heart-Side”** means the face of a timber that was closest to the centre of the tree. Growth rings are concave on the heart-side.

**“Heavy Rainfall”** means 7 mm or more of rain within one hour as measured by Environment Canada or the Province’s Road Weather Information Systems (RWIS).

**“High Water Flow”** means higher than the normal flow of water resulting from freshet or severe weather as follows:

Location	Amount - Duration
All areas	≥ 25 mm within 1 hr
All areas except Vancouver Island and Central / Northern mainland coast	≥ 50 mm within 24 hrs
	≥ 75 mm within 48 hrs
Vancouver Island and Central / Northern mainland coast	≥ 100 mm within 24 hrs

**“Highway Crossing Infrastructure”** means a Structure, including all its components that facilitates the movement of pedestrians or animals, underneath or beside a Highway including, but not limited to pedestrian, cattle, and wildlife underpasses.

**“Highway User”** means any person or persons, regardless of form of transportation, that use any lands or facilities within the jurisdiction of the Province.

**“Highway Surface Treatment”** means the application of an aggregate/ emulsion combination to extend the service life of Hard Surface Highways or provide a smooth, durable and impermeable surface for Dirt and Gravel Highways (including, but not limited to, graded aggregate seals, sand seals and micro surfacing).

**“Isolated”** means a location with no available public access for specific Quantified Maintenance Services, as approved by the Province.

**“Laminated”** means transverse members of a laminated Bridge Deck having the same function as cross-ties. Usually preservative treated two-inch nominal sized lumber tightly placed perpendicular to the traffic direction and vertically on edge over the Stringers, then nailed to the Stringers and each other. May also be parallel to the traffic (longitudinally laminated).

**“Lateral Rod”** means a horizontal, transverse tension rod.

**“Major Event”** means a threat or an event resulting in serious risk to Highway Users or Highway infrastructure including, but not limited to a natural disaster, flood, fire, landslide, land subsidence, ice jam, severe weather, High Water Flow, Heavy Rainfall, Rapid Snowmelt, dam failure and embankment or cut slope failure. Subsection 3 (“Winter Maintenance”) of Schedule 1 Section 6 does not apply to the designation of a Major Event.

**“Major Event Site”** means an area affected by a Major Event, separated by 1 km of clear distance from another area affected by a Major Event for a 48-hour period. A site that had been restored to a state where the Province determines no further work was required by the Contractor, will generate a new Major Event Site when further damage/disturbance occurs.

**“Main Brace”** means a primary diagonal member in a Truss.

**“Median”** means the portion of a divided Highway separating the traveled ways for traffic in opposing directions.

**“Multiplate”** means a steel or aluminum Structure greater or equal to 3 metres in diameter, fully or partially factory assembled or field assembled by bolting together a number of corrugated steel or aluminum plates. When less than three metres in diameter, it is a Culvert.

**“Needle Beam”** means a transverse log, timber, or steel beam placed under the Stringers and fastened to them to make them act as a unit. Used to join the Stringers and trussing system.

**“Number 1”** means a lumber grading in accordance with the National Lumber Grades Authorities Standard Grading Rules for Canadian Lumber.

**“Number 2”** means a lumber grading in accordance with the National Lumber Grades Authorities Standard Grading Rules for Canadian Lumber.

**“Overhead”** means a Bridge carrying a Highway over a railway, or a railway and another facility.

**“Overlay Patch”** means a Permanent Patch that consists of a layer of new asphalt over an existing asphaltic pavement, or a new layer of asphalt or concrete on a Bridge deck.

**“Overpass”** means a Bridge where the Highway passes over another feature, including a Highway of less traffic volume.

**“Panel”** means the main load carrying member in a Bailey or Acrow Bridge. Panels are pinned together end to end and connected side by side where necessary to form continuous Girder Trusses from bank to bank. A traffic surface Deck is mounted between the bottom Chords of the Panels.

**“Parapet”** means a wall-like member of reinforced concrete integrally connected to the sidewalk portion of a Bridge to serve as a protective barrier for vehicular or pedestrian traffic.

**“Performance Criteria”** means the standards by which a Performance Measure is evaluated and may include, but not limited to a condition, situation, or action.

**“Performance Measure” or “PM”** mean the minimum performance requirements, that define the required service level for each maintenance activity necessary to meet the desired outcomes as specified in Schedule 1 (“Specifications”).

**“Permanent Patch”** means a patch that is constructed in accordance with Section 502 of the Standard Specifications for Highway Construction to ensure the cause of failure is addressed and does not need to be repaired again.

**“Pier”** means an intermediate vertical support Substructure used to join and support the two Spans.

**“Pile”** means a structural column, including all of its components driven deep into the ground (at least two metres) to provide support for Structures built on ground and are used for Abutments and Piers and for protective dolphins and Retaining Walls.

**“Piling”** means a structure or group of Piles.

**“Pin”** means a cylindrical bar used as a means of connecting, holding in position, and transmitting the stresses of the members forming a Truss or framed Joint.

**“Ponding”** means puddles of water pooling on the Travelled Lane and Shoulder.

**“Portal”** means the clear unobstructed space of a through truss Bridge, Tunnel, snow shed forming the entrance and the entire portal member of the top chord bracing, which fixes the upper most limit of the vertical clearance.

**“Professional Engineer”** means an engineer licensed to practice in the Province of British Columbia pursuant to the Engineers and Geoscientists Act, R.S.B.C. 1996, c. 116;

**“Qualified Assessor”** means an individual who has successfully completed a recognized, certified Danger Tree assessor course, such as the Wildlife Tree Committee of British Columbia or the International Society of Arboriculture and is currently certified to practice.

**“Qualified Structures Inspector”** means an individual who has completed the “BC Road and Bridge Maintenance Contractor Structure Inspector Course” or equivalent training or experience, as approved by the Province.

**“Railway Authority”** means a company which, under the Railway Act, has control of and is responsible for the rail portion of a Railway Crossing.

**“Railway Crossing”** means Highway surface common to both the Railway Authority and the Province bounded by a length equal to the length from end of tie to end of tie and a width equal to the Highway width from Shoulder point to Shoulder point plus one-half metre each side.

**“Railway Crossing Approach”** means the Highway prism, including the ditches on the Railway Authority’s property from the Railway Crossing outward to the edge of the Railway Authority’s Right-of-way.

**“Raised Hard Surfaced Infrastructure”** means raised concrete or asphalt areas including, but not limited to traffic islands, sidewalks roundabouts, medians, curbs and spillways.

**“Rapid Snowmelt”** means heavy runoff resulting from the rapid melting of the snow under the combined effect of sunlight, winds, rain or warmer temperatures.

**“Re-decking”** means the replacement of a Bridge Wearing Surface. On timber Structures this includes, but is not limited to the planking, wheel guards and shims, rail posts, post braces and railing, and may include cross ties. Minor Re-decking does not involve the replacement of cross-ties, whereas major Re-decking involves the replacement of cross-ties.

**“Reinforcing Steel”** means steel bars embedded in concrete Structures during forming and manufacture, that add tension strength to concrete and resist contraction or expansion due to temperature change.

**“Replacement Patch”** means a Permanent Patch that matches the profile and crossfall of the adjacent pavement including, but not limited to milling and applying a new asphalt layer and other surfacing strategies.

**“Re-shaping”** means the machine blading of Dirt and Gravel Highways from ditch line to ditch line, to re-establish the proper shape of the Highway including the outside edges and Crown to remove surface irregularities, bringing the aggregate and fines back onto the surface from the side slopes and ditches and involves a deeper cut than Grading.

**“Retaining Wall”** means a vertical structure designed to resist the horizontal earth pressures of embankments and cut-slopes.

**“Right-of-way”** means the legally defined property on which the Highway is situated.

**“Rip-rap”** means large stone or rock of various sizes placed compactly or irregularly to prevent and protect stream banks, cut slopes, sides of fills around Abutments or Piers, the Travelled Lanes and other Highway features from Scour, Debris and erosion.

**“Road Base”** means the portion of Highway subsurface on which the traveling surface is placed.

**“Roadside Catchment Appurtenance”** means a fixture, including all its components that is used to control the movement or contain accumulated rock, unconsolidated sediments and organic debris including, but not limited to barrier, fencing, walls, lock-block, impound basins, snow shed basins, avalanche berms / deflection berms / mounds, and rock fall berms/deflection berms.

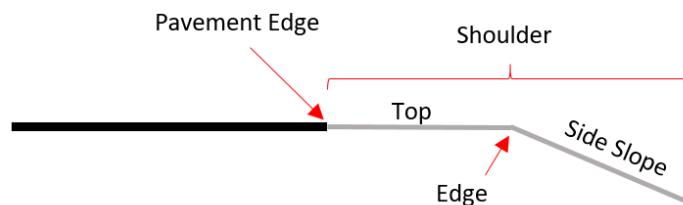
**“Salt Containment Infrastructure”** means a storage facility, including all its components that is used for the storage and loading of salt for winter maintenance operations including, but not limited to the salt shed, fabric/steel roofing, pit floor, evapotranspiration liner, containment pad, and skirt.

“**Safety Device**” means a device, including all its components that is designed to improve Highway safety, including, but not limited to cable barriers, concrete barriers, steel beam barrier, anti-glare screens and impact attenuators.

“**Scour**” means the erosion of foundation material, shores and banks by the movement of water.

“**Shim**” means to support, level, or adjust the fit by using thin, tapered pieces of material.

“**Shoulder**” means the area between the pavement edge of the outside Travelled Lane and the ditch, including the top, edge, and side slope to the bottom of the ditch.



“**Shoulder Grading**” means the machine blading of Shoulders to correct deficiencies.

“**Shoulder Re-shaping**” means the machine blading of Shoulders to provide a deep cut in preparation for Highway Shoulder gravelling.

“**Sight Distance**” means driver visibility of the Highway, Signs and intersections at minimum distance to safely drive the Highway at these locations.

- a) For the purpose of removing all movable obstructions, including but not limited to brush, tall grass, and abandoned vehicles from the Highway Right-of-way, the following minimum sight distances will be met

Criteria	Highway Classification	Minimum Sight Distance
i) Vehicles traveling on any traveled portion of a Highway	1,2,3	330 m
	4&5	200 m
	6&7	75 m
ii) Vehicles stopped at an intersection at a distance of 2 metres behind the applicable legal stopping location for the Highway at that point and intersection, visibility in both directions to the traveled portion of the Highway	1, 2, 3	300 m
	4&5	200 m
	6&7	100 m
iii) Vehicles on the traveled portion of the Highway, the minimum Sight Distance to Highway signs	1	500 m
	2&3	300 m
	4&5	150 m
	6&7	75 m



- b) Sight distance for traffic control requirements will be defined as the length of unobstructed Highway visible to the driver and the following values (as a function of the posted speed limit) will be the minimum distances acceptable to the Province. Sight distance less than set out below will require additional control as defined in the Traffic Management Manual for Work on Roadways:

Posted Speed Limit (kilometres per hour)	Minimum Highway Sight Distance
i) 50 to 70	100 m
ii) 80 to 90	170 m
iii) 100 to 110	250 m
iv) 120	300 m

**“Sign”** mean a lettered board, message or other display which includes all regulatory, warning, guide or informational, advisory, and all special or other messages/displays under the Provincial jurisdiction as defined by the Province, but excluding electronically controlled messages/displays; a sign includes the Sign Face Overlay.

**“Sign Bridge”** means an overhead sign support structure, including all its components, typically of truss construction, with the horizontal member either supported at both ends or cantilevered over the Traveled Lanes. Type L, M, or H galvanized post davits are not considered to be sign bridges.

**“Sign Face Overlay”** means the layer of the Sign that contains the message and is applied to an aluminum, wood or steel sign.

**“Sign System”** means all regulatory, warning, guide, construction, school, information, service and attraction, Sign Bridges, avalanche gates, delineators, hazard markers, Signs, Sign Face Overlay, posts, and hardware including, but not limited to nuts, bolts, washers and rivets and all special Signs, under other Provincial jurisdictions, as defined by the Province but excluding electronically controlled signage.

**“Sill”** means horizontal structural member set directly on the ground surface, or embedded to a firm surface level that is used to provide a temporary base for a temporary support or bracing.

**“Sliding Plate Joint”** means an expansion joint in which the opening is covered by a steel plate attached to only one side of the joint.

**“Slippery”** means any road condition which causes an increase in normal dry surface stopping distances, resulting from including, but not limited to the buildup of frost, ice, slush or snow.

**“Slump”** means a measure of the workability and flowability of concrete that varies with water, air, and admixture content and the temperature of the concrete.

**“Social Media Platform”** means a form of electronic communication, including, but not limited to websites for social networking and microblogging, through which users create online communities to share information, ideas, personal messages, and other content.

“**Sod**” means a mat of grass roots and fibres containing earth and granular aggregate.

“**Spalled**” means circular or oval depression in concrete resulting from separation of a portion of the surface, at a fracture and usually part of the rim perpendicular to the surface.

“**Specialty Fence**” means all fences excluding those installed on Highways listed in Schedule 1 or Schedule 2 of the Motor Vehicle Regulation, B.C. Reg. 26/58 for which the Province is responsible.

“**Spray Patching**” means the application of an aggregate and emulsion mixture to seal asphalt surfaces as described in the Asphalt Pavement Maintenance Guide.

“**Stakeholder**” means a party that may be affected by the Contractor’s actions including, but not limited to Highway Users, local governments, school districts, police authorities, emergency response providers, transportation organizations, tourism industry and businesses.

“**Standard Sign**” means a Sign that exists in the Ministry’s Catalogue of Standard Traffic Signs or the Catalogue of Supplemental Traffic Signs for which a fabrication record sheet exists for manufacture, including, but not limited to regulatory, warning, guide, construction, school, information, service and attraction typify standard signs.

“**Stringer**” means longitudinal beams supporting the Bridge Deck, and in large Bridges or Trusses, framed into or upon the Floor Beams.

“**Structure**” means Bridges (3 metre span or greater), tunnels (3 metre diameter or greater), culverts (3 metre diameter or greater), Retaining Walls (2 metre exposed height or greater), Sign Bridges, snow sheds, Ungulate Guards, marine structures, reaction ferry vessels, and aerial ferries. Within the Ministry’s Bridge Management Information System (BMIS), Structures are referred to as “Numbered Structures”.

“**Substructure**” means Abutments, Piers, their Foundations and protective works which form the Substructure supporting the Superstructure above.

“**Superelevation**” means the vertical rise in elevation from the outside edge of a Highway surface, to the inside edge on a curving section of Highway.

“**Superstructure**” means the entire structure of a Bridge resting on Piers and Abutments, consisting of Stringers, Decking, Trusses, sidewalks, Wearing Surface and railing.

“**Surface Treatment**” means a layer of asphalt emulsion that is overlaid by a layer of embedded aggregate to extend the service life of a Highway, including but not limited to graded aggregate seal and sand seals.

“**Sway Brace**” means a piece bolted or secured in an inclined position upon the side of a Pile or frame Bent between the Cap and Sills to add rigidity to the assemblage or a component of Bailey or Acrow Bridges, used to square each bay of the Bridge and prevent sway movements.

**“Temporary Patch”** means a pavement patch that provides a temporary treatment to address a potential safety issue or prevent further deterioration of the Highway surface, until a permanent treatment can be completed.

**“Traffic Delay”** means the additional travel time experienced by a Highway User due to conditions, incidents and events including, but not limited to road construction, maintenance activities, accidents, and avalanche closures. It is measured as the time difference between actual travel time and free-flow travel time

**“Transom Clamp”** means vise-type clamps with a swinging bolt at one end, used on Bailey and Acrow Bridges to hold the transom securely to the bottom Chord and Panels.

**“Trash Rack”** means a pervious barrier including all its components, constructed to catch Debris and prevent blockage of a Structure or a Culvert.

**“Travelled Lane”** means the surface of a Highway:

- a) between the painted lane edge line on one side and the painted lane edge line on the other side, or
- b) in the absence of painted lane edge lines - from asphalt edge to asphalt edge, or
- c) in the absence of hard surfacing, the top surface of a Dirt and Gravel Highway.

It also includes Bridge Deck surfaces, Rest Areas, pullout areas, parking areas, Vehicle Inspection Stations, brake checks, chain up/off areas and any other vehicle-accessible portions within the Right-of-way.

**“Truss”** means a jointed Bridge structure having an open built web construction with the frame divided into a series of triangular figures and its component straight members primarily stressed axially only.

**“Truss Rod”** means a vertical tension rod.

**“Tunnel”** means an enclosed underground or underwater passageway, excavated through the surrounding soil, earth and rock with an entrance and exit.

**“Underpass”** means a Bridge carrying a road with a lower traffic volume or railway over a Highway.

**“Ungulate Guard”** means a type of Structure with a deck of metal beams spaced far enough apart to prevent ungulates from crossing.

**“Urban”** means within a municipality as the term is defined in the Local Government Act, or within a distance of 3 kilometres of a municipal boundary, or extending out to the limit of residential or commercial development, whichever comes first.

**“Vehicle Inspection Station”** means a checkpoint along a Highway used for vehicle and/or operator assessments that includes, but is not limited to, weigh scale sites, self-weigh scale sites and weigh in motion sites.

**“Wane”** means bark or lack of wood from any cause, except eased edges, on the edge or corner of a piece of lumber.

**“Wash-boarding”** means transverse ridges, ripples or small bumps perpendicular to the direction of travel on a Dirt and Gravel Highway surface.

**“Wearing Surface”** means the surface portion of a Bridge Deck directly in contact with the wheels of vehicles.

**“Weather Event”** means any meteorological condition that permits the development of Slippery surface conditions, which requires the application of Winter Abrasive, anti-icing or De-icing chemicals and/or snow removal. A Weather Event has ended after the last measurable precipitation within a specific localized area and not when the Weather Event has ended for the entire Service Area.

**“Winter Abrasive”** means sand or fine gravel that may contain De-Icing chemicals to provide traction.

**“Winter Accumulation”** means loose snow, slush, loose or broken Compact and ice.

**“Winter Chemical”** means chemicals used to prevent, remove or assist in the removal of ice and Compact.

# **SECTION 6**

# **GENERAL SPECIFICATIONS**

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## 1 Surface Maintenance

### 1.01 Asphalt Pavement Maintenance

#### 1.01.1 Outcome

To provide a smooth, stable, sealed surface of Highways and bicycle / pedestrian paths.

#### 1.01.2 Routine Maintenance Services

**PM1.01.2-1** Construct Temporary Patches consistent with the profile and crossfall of the adjacent surface as follows:

Performance Criteria	Minimum Severity Level	Response by Highway Classification				
		1&2	3	4	5	6&7
a) Pot-hole on Travelled Lane or Shoulder of inside curve	high	1 d	2 d	3 d	7 d	14 d
b) Pot-hole on Shoulder of outside curve or tangent	high	3 d	7 d	10 d	21 d	45 d
c) Pot-hole on right Shoulder of divided Highway	high	1 d	2 d	3 d	7 d	14 d
d) Pot-hole on left Shoulder of divided Highway	high	3 d	7 d	10 d	21 d	45 d
e) Bleeding on Travelled Lane or Shoulder of inside curve	high	1 d	2 d	3 d	7 d	14 d
f) Bleeding on Shoulder of outside curve or tangent	high	3 d	7 d	10 d	21 d	45 d
g) Distortion on Travelled Lane or Shoulder	high	1 d	2 d	3 d	7 d	14 d

#### Notes:

- 1) Pavement surface distress types and severity levels are defined in the Ministry's Pavement Surface Condition Rating Manual.

#### 1.01.3 Quantified Maintenance Services

**PM1.01.3-1** Construct Permanent Patches consistent with the profile and crossfall of the adjacent surface on Highways and bicycle/pedestrian paths as follows:

Performance Criteria	Minimum Severity Level	Minimum Density Level	Response by Highway Classification				
			1&2	3	4	5	6&7
a) Shoving	high	frequent	21 d	21 d	21 d	21 d	1 m
b) Distortion	moderate	frequent	21 d	21 d	1 m	3 m	6 m
c) Alligatored areas without Distortion	moderate	frequent	21 d	1 m	3 m	6 m	1 y
d) Alligatored areas with Distortion	high	frequent	21 d	21 d	1 m	3 m	6 m
e) Pot-holes	moderate	throughout	21 d	21 d	1 m	3 m	6 m
f) Bleeding	moderate	frequent	21 d	21 d	1 m	3 m	6 m
g) Ravelling	high	extensive	21 d	1 m	3 m	6 m	1 y
h) Rutting	high	extensive	21 d	21 d	1 m	3 m	6 m



**PM1.01.3-2** Perform Crack Sealing or Crack Filling on Highways as follows:

Performance Criteria	Minimum Severity Level	Minimum Density Level	Response by Highway Classification				
			1&2	3	4	5	6&7
a) All longitudinal cracking	moderate	frequent	1 y	1 y	1 y	1 y	1 y
b) Pavement edge cracking	moderate	frequent	1 y	1 y	1 y	1 y	1 y
c) Transverse cracking	moderate	any	1 y	1 y	1 y	1 y	1 y

**PM1.01.3-3** Remove residual coating material within 1 day of cured Crack Sealing or Crack Filling.**Specific Requirements:**

- a) Maintain bicycle/pedestrian paths and Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) Pavement surface distress types and severity levels are defined in the Ministry's Pavement Surface Condition Rating Manual. The density level is calculated based on a 20-metre section, starting at the deficiency and continuing in the travel direction.

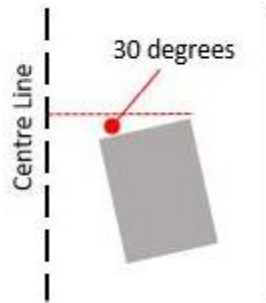
**1.01.4 Materials and/or Procedures**

Use Section 502 of the Standard Specifications for Highway Construction for:

- a) Density for Quantified Maintenance Services at 94 for permanent hand patching and 96 for permanent machine patching;
- b) Asphalt content, aggregate Gradation, and segregation; and
- c) Smoothness for machine patches greater than 1 lane km in length; or
- d) Unless otherwise approved by the Province.

Additional materials and/or procedures requirements are as follows:

- d) Feather Permanent Patch edges with the adjacent surface at an angle of no less than 30 degrees from a line perpendicular to the centreline of the Travelled Lane;



- e) Construct Overlay Patches to a minimum compacted depth of 40 mm;
- f) Construct Replacement Patches to the same thickness as the adjacent pavement structure with a minimum compacted depth of 60 mm; and
- g) Perform Crack Sealing on cracks that are less than or equal to 25 mm in width and Crack Filling on cracks that are greater than 25 mm in width;
- h) Apply Spray Patching in accordance with the manufacturer's specifications and recommendations;
- i) Consult with the Province prior to undertaking any work on surfaces with installed sensors at Weigh-in-Motion sites; and
- j) Conduct asphalt maintenance in Isolated areas in accordance with Schedule 2 ("Quantified Maintenance Services").

### 1.01.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## 1.02 Surface Treatment

### 1.02.1 Outcome

To provide a smooth, durable, impermeable surface of Highways.

### 1.02.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 1.02.3 Quantified Maintenance Services

**PM1.02.3-1** Construct Surface Treatments as follows:

Performance Criteria	Response
a) Placement of Surface Treatment following final surface preparation	2 d
b) Remove residual aggregate once the asphalt emulsion has cured	immediately
c) Remove residual aggregate with a second pass once the asphalt emulsion has cured	7 d

### 1.02.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Construct Surface Treatments in Isolated areas in accordance with Schedule 2 ("Quantified Maintenance Services").

### 1.02.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

### 1.03 Highway and Shoulder Grading and Re-Shaping

#### 1.03.1 Outcome

To provide safe, smooth, stable, compacted and free draining Dirt and Gravel Highways and Shoulders.

#### 1.03.2 Routine Maintenance Services

There are no Routine Maintenance Services.

#### 1.03.3 Quantified Maintenance Services

**PM1.03.3-1** Grading or Re-shaping of Dirt and Gravel Highways as follows:

Performance Criteria	Response by Highway Classification			
	3&4	5	6	7
a) Pot-holes averaging more than 1 per 25 metres	2 d	3 d	6 d	15 d
b) Rutting, Ponding and Wash-boarding exceeding 3 cm in depth	2 d	3 d	6 d	15 d
c) Loss of aggregates requiring reclaimed material	4 d	5 d	15 d	1 m
d) Lack of uniform outside edge	5 d	15 d	1 m	2 m
e) Loose material exceeding 5 cm in depth	5 d	15 d	1 m	2 m
f) Loss of profile or crossfall	5 d	15 d	1 m	2 m

**PM1.03.3-2** Shoulder Grading or Shoulder Re-shaping as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Pavement edge drop-off exceeding 5 cm in depth on the inside curve	1 d	1 d	3 d	7 d	14 d
b) Pavement edge drop-off exceeding 5 cm in depth on all other Shoulders	3 d	3 d	6 d	14 d	14 d
c) Settled and eroded localized areas exceeding 10 cm in depth	3 d	3 d	6 d	14 d	14 d
d) Loose material or soft Shoulders affecting vehicle control	3 d	3 d	6 d	14 d	14 d
e) Loose material or soft Shoulders not affecting vehicle control	14 d	30 d	45 d	3 m	6 m
f) Loss of profile or crossfall	14 d	30 d	45 d	3 m	6 m
g) Lack of uniform Shoulder edge	14 d	30 d	45 d	3 m	6 m
h) Removal of turf, Sod or other vegetation	6 m	6 m	6 m	1 y	1 y

**Specific Requirements:**

- a) Maintain Dirt and Gravel Highways and Shoulders within Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) The Contractor must not undertake Shoulder Grading where owners of property adjacent to Highways maintain a lawn up to the edge of the pavement, provided the lawn does not impede the drainage of the Highway surface.

**1.03.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Ensure the surface has a Superelevation and a Crown with a vertical rise of 4 centimeters for every 1 metre of Highway when Re-shaping;
- b) Ensure Compaction following Re-shaping or Grading;
- c) Ensure Compaction following Shoulder Grading or Shoulder Re-shaping; and
- d) Remove vegetation from the Shoulder top, unless it is effective and necessary to prevent erosion and to stabilize the Shoulders.

## 1.04 Dust Control and Base Stabilization

### 1.04.1 Outcome

To minimize the impact of dust for Highway Users, adjacent properties, and watercourses on Dirt and Gravel Highways.

### 1.04.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 1.04.3 Quantified Maintenance Services

**PM1.04.3-1** Apply dust control on Dirt and Gravel Highways by June 1<sup>st</sup> of each calendar year or at a later date as approved by the Province and at locations as follows:

Dust Site Location	Response by Highway Classification		
	3 & 4	5	6
a) All locations	1.0 metre from shoulder edge, not less than 3.5 metres width	3.5 metres width	3.5 metres width
b) Residences, commercial businesses, community halls, hospitals and churches	A strip not less than 100 metres long, 50 metres each side of a point perpendicular to a building within 100 metres of the Travelled Lane	A strip not less than 100 metres long, 50 metres each side of a point perpendicular to a building within 75 metres of the Travelled Lane	A strip not less than 100 metres long, 50 metres each side of a point perpendicular to a building within 50 metres of the Travelled Lane
c) School zone Sign, playground Sign, stop Sign, Railway Crossing Sign and Bridge approach Sign	Strip 60 metres along the Highway in all directions of the Sign	Strip 60 metres along the Highway in all directions of the Sign	Strip 60 metres along the Highway in all directions of the Sign
d) School zones, school bus pullouts, playgrounds, Rest Areas, lay-bys, stops of interest and cemeteries	Strip through identified area and extending 40 metres either side	Strip through identified area and extending 40 metres either side	Strip through identified area and extending 40 metres either side
e) Bridge and cattleguard approaches	Strip extending 30 metres in every direction of the approaches	Strip extending 30 metres in every direction of the approaches	Strip extending 30 metres in every direction of the approaches
f) Orchards (more than 10 trees), market gardens and vineyards within 50 metres of the Highway	Strip extending 20 metres either side of the adjacent Highway frontage	Strip extending 20 metres either side of the adjacent Highway frontage	Strip extending 20 metres either side of the adjacent Highway frontage
g) Highways with 40 commercial and/or industrial-type vehicles per day with 3 or more axles	Entire length	Hills over 5%, curves, intersections, and alongside lakes and rivers	Curves and alongside lakes and rivers

Dust Site Location	Response by Highway Classification		
	3 & 4	5	6
h) Other dust sites designated by the Province	Continuous application for entire length of dust site	Continuous application for entire length of dust site	Continuous application for entire length of dust site

**PM1.04.3-2** Apply or reapply dust applications within 10 days at areas with deficiencies when required.

**PM1.04.3-3** Apply Base Stabilization on Dirt and Gravel Highways by June 1 of each calendar year or at a later date as approved by the Province.

**PM1.04.3-4** Apply Base Stabilization on Dirt and Gravel Highways within 7 days following surface preparation or of when new highway surface gravelling being placed.

#### Specific Requirements:

- a) Maintain Dirt and Gravel Highways within Rest Areas in accordance with the response of the adjacent Highway Classification.

#### Notes:

- 1) The Contractor is not required to apply Base Stabilization by June 1 of each year on new highway surface gravelling.

#### 1.04.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Dust control material and application rates as follows:

- i) Calcium Chloride and Magnesium Chloride:

Condition	35 % Calcium Chloride Liquid (litres / m <sup>2</sup> )	30% Magnesium Chloride Liquid (litres / m <sup>2</sup> )
a) Highways never treated before	2.0	2.0
b) First application of the calendar year	1.5	1.5
c) Subsequent applications within 1 year of previous or first application	1.0	1.0

- ii) Other materials as approved by the Province.

- b) Base Stabilization material and application rates as follows:

- i) Calcium Chloride and Magnesium Chloride:

Condition	35 % Calcium Chloride Liquid (litres / m <sup>2</sup> )	30% Magnesium Chloride Liquid (litres / m <sup>2</sup> )
a) First application	3.0	3.0
b) Subsequent applications within 1 year of previous or first application	1.5	1.5

- ii) Other materials as approved by the Province.
- c) The Contractor will pre-water in advance of dust control or Base Stabilization if insufficient moisture is present in the Road Base to allow the material to combine chemically with the fines in accordance with the manufacturer's specifications and recommendations;
- d) Apply continuous application of the dust control when there are 8 or more dust sites per kilometre;
- e) Apply dust control on Class 7 Highways in accordance with Schedule 2 ("Quantified Maintenance Services") and
- f) Apply Base Stabilization on the entire Highway surface, except for 1 metre from the outside edge on each side of the Highway;



## 1.05 Surface and Shoulder Graveling

### 1.05.1 Outcome

To provide strengthened, uniform, smooth, compacted and free draining Dirt and Gravel Highways and Shoulders.

### 1.05.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 1.05.3 Quantified Maintenance Services

**PM1.05.3-1** Place gravel on deteriorated Dirt and Gravel Highways as follows:

Performance Criteria	Response by Highway Classification				
	3	4	5	6	7
a) Surface deformation affecting ride quality including, but not limited to wash boarding, potholes and rutting	2 d	2 d	3 d	6 d	15 d

**PM1.05.3-2** Place gravel on deteriorated Dirt and Gravel Highways within 2 days following surface preparation.

**PM1.05.3-3** Place gravel on deficient Shoulders or widen and reconstruct Shoulders as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Pavement edge drop-off exceeding 5 cm in depth on the inside curve	1 d	1 d	3 d	7 d	14 d
b) Pavement edge drop-off exceeding 5 cm in depth on all other Shoulders	3 d	3 d	6 d	14 d	14 d
c) Settled and eroded localized areas exceeding 10 cm in depth	3 d	3 d	6 d	14 d	14 d
d) Loss of profile or crossfall affecting vehicle control	3 d	3 d	6 d	14 d	14 d
e) Loss of profile or crossfall not affecting vehicle control	3 m	6 m	9 m	1 y	1 y

#### Specific Requirements:

- a) Maintain Dirt and Gravel Highways and Shoulders within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 1.05.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Ensure the surface has a Superelevation and that the Crown has a vertical rise of 4 centimeters for every 1 metre of Highway;
- b) Ensure Compaction following surface and Shoulder gravelling; and
- c) Place gravel on Dirt and Gravel Highways in Isolated areas in accordance with Schedule 2 (“Quantified Maintenance Services”).

## **1.06 Road Base Maintenance**

### **1.06.1 Outcome**

To provide a smooth, stable, compacted, Crowned, Superelevated and free draining Road Base for Highways.

### **1.06.2 Routine Maintenance Services**

There are no Routine Maintenance Services.

### **1.06.3 Quantified Maintenance Services**

**PM1.06.3-1** Remove unsuitable materials, provide free drainage and place granular fill.

### **1.06.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

### **1.06.5 Warranty**

Refer to Section 3 of this Schedule 1 ("Specifications").

## 1.07 Surface Cleaning

### 1.07.1 Outcome

To provide safe, clean surface conditions, and facilitate free drainage.

### 1.07.2 Routine Maintenance Services

**PM1.07.2-1** Remove Accumulations on Hard Surfaced Highway surfaces and Raised Hard Surfaced Infrastructure as follows:

Performance Criteria	Response
a) Unsafe or has the potential to become unsafe for Highway Users	immediately
b) Impaired free drainage adjacent to curb or barrier	immediately
c) Obscures pavement marking visibility	7 d
d) Potential to obscure visibility of Highway Users	7 d
e) Creates an air quality problem in accordance with local by-laws	7 d
f) Urban Highways, and Designated Bike Lanes	3 times annually
g) Other Class 1 and 2 Travelled Lanes, Shoulders, Raised Hard Surfaced Infrastructure, intersections, adjacent to barrier, and pedestrian walkways	May 15 annually
h) All other Highways, Travelled Lanes, Shoulders, Raised Hard Surfaced Infrastructure, intersections, adjacent to barrier, and pedestrian walkways	June 15 annually
i) Travelled Lanes, Shoulders, Raised Hard Surface Infrastructure, intersections, adjacent to barrier, pedestrian walkways and Designated Bike Lanes scheduled for pavement marking	3 d in advance

**PM1.07.2-2** Remove blockage that impede free drainage as follows:

Performance Criteria	Response
a) Blockage causing a situation that is unsafe or has the potential to become unsafe to the Highway User	immediately
b) Blockage causing water Ponding on the Travelled Lane or Shoulder	12 h

**PM1.07.2-3** Clean annually, all drainage holes, scupper and barrier openings.

### 1.07.3 Quantified Maintenance Services

**PM1.07.3-1** Remove Accumulations within 7 days at additional locations.

**PM1.07.3-2** Remove Accumulations exceeding 15 centimetres behind barriers within 15 days.

### 1.07.4 Materials and/or Procedures

Additional materials and/or procedures requirements are as follows:

- a) Coordinate surface sweeping with the pavement marking contractor.

## 1.08 Debris Removal

### 1.08.1 Outcome

To provide Highways free of Debris.

### 1.08.2 Routine Maintenance Services

**PM1.08.2-1** Remove Debris from Highways as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Debris exceeding 1000 cc on Travelled Lanes and sidewalks	1 h	1 h	3 h	5 h	1 d
b) Debris equal to or less than 1000 cc on Travelled Lanes and sidewalks	1 h	3 h	5 h	1 d	2 d
c) Debris exceeding 1000 cc on Shoulders	5 h	1 d	2 d	3 d	7 d
d) Debris equal to or less than 1000 cc on Shoulders	1 d	2 d	3 d	7 d	14 d
e) Dead animals on Travelled Lanes, Shoulders and sidewalks	1 h	3 h	5 h	1 d	2 d
f) Dead animals on the Right-of-way, excluding Travelled Lanes, Shoulders and sidewalks	3 h	5 h	1 d	2 d	3 d

**PM1.08.2-2** Remove Debris within 24 hours from Railway Crossing Approaches.

## 1.09 Cattle Guard System Maintenance

### 1.09.1 Outcome

To provide a safe, fully functional Cattle Guard System.

### 1.09.2 Routine Maintenance Services

**PM1.09.2-1** Clean or repair, Cattle Guard Systems as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Accumulations and other items, which are not part of the Highway by intention within 45 cm from the underside of the rails	15 d	15 d	30 d	30 d	30 d
b) Damaged or deteriorated components	1 d	2 d	3 d	5 d	10 d

#### Specific Requirements:

- a) Maintain Cattle Guard Systems within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 1.09.3 Quantified Maintenance Services

**PM1.09.3-1** Replace or install Cattle Guard Systems as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Damaged or deteriorated beyond repair	15 d	15 d	30 d	30 d	30 d
b) New locations	15 d	15 d	30 d	30 d	30 d

**PM1.09.3-2** Re-establish the crossing road surface elevation as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Maximum elevation difference between crossing road surface and Cattle Guard System not to exceed 3 cm	1 d	2 d	3 d	5 d	10 d

#### Specific Requirements:

- a) Maintain Cattle Guard Systems within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 1.09.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

## 1.10 Raised Hard Surfaced Infrastructure and Safety Device Maintenance

### 1.10.1 Outcome

To restore the functionality of Raised Hard Surfaced Infrastructure and Safety Devices.

### 1.10.2 Routine Maintenance Services

**PM1.10.2-1** Repair damaged or deteriorated Raised Hard Surfaced Infrastructure as follows:

Performance Criteria	Response
a) Fragmented, cracked or potholed with active pedestrian usage	3 d
b) Fragmented, cracked or potholed without active pedestrian, bike or assistive device usage	15 d
c) Chipped or scarred areas	90 d

**PM1.10.2-2** Repair damaged or deteriorated Safety Devices as follows:

Performance Criteria	Response
a) Concrete barrier surface area less than 900 square centimetres	3 d
b) Cable barrier and components	3 d
c) Other Safety Devices	3 d
d) Settled wood and steel posts and components	3 m
e) Rusted barrier	3 m

**PM1.10.2-3** Repair within 3 days, any misaligned barrier.

**PM1.10.2-4** Re-tension cable barriers within 3 days.

**PM1.10.2-5** Re-paint previously painted wooden Safety Devices within 9 months, when the surface is discoloured or no longer effective.

**PM1.10.2-6** Re-paint previously painted non-wooden Safety Devices within 9 months, when the surface is discoloured or no longer effective.

### 1.10.3 Quantified Maintenance Services

**PM1.10.3-1** Replace Raised Hard Surfaced Infrastructure as follows:

Performance Criteria	Response
a) Non-functioning traffic islands, sidewalks, pedestrian paths and curbs	15 d
b) Damaged beyond repair curbs	15 d

**PM1.10.3-2** Install curb within 30 days at new locations.

**PM1.10.3-3** Replace Safety Devices as follows:

Performance Criteria	Response
a) Non-functioning barrier	15 d
b) Damaged concrete barrier surface area greater than 900 square centimetres or structurally damaged (cracking and/or breakage) barrier	3 d
c) Damaged beyond repair, destroyed or missing impact attenuators, or cable barrier	3 d
d) All other damaged beyond repair, destroyed and missing Safety Devices	7 d

**PM1.10.3-4** Install Safety Devices within 30 days at new locations.

#### 1.10.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Restore misaligned barriers to the previous alignment;
- b) Re-tension cable barriers in accordance with the manufacturer’s specifications and recommendations;
- c) Maintain, repair, replace and install Safety Devices in accordance with the manufacturer’s specifications and recommendations;
- d) Re-paint with the same type of material; and
- e) The Contractor may initiate a planned program to eradicate paint on previously painted, non-wood Safety Device surfaces as they deteriorate, for approval by the Province.



**1.11 Railway Crossing Approach Maintenance**

**1.11.1 Outcome**

To provide safe Railway Crossing Approaches.

**1.11.2 Routine Maintenance Services**

**PM1.11.2-1** Respond immediately to any conditions that are unsafe or have the potential to become unsafe for Highway Users and contact the Railway Authority.

**PM1.11.2-2** Remove water and Accumulation within 24 hours at the Railway Crossing Approaches.

**PM1.11.2-3** Maintain the grade crossing surface elevation wear limits for Railway Crossing Approaches with sidewalks, paths or trails, designated for use by persons with assistive devices.

**PM1.11.2-4** Maintain the grade crossing surface elevation of Railway Crossing Approaches as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Maximum distance of the top of the rail above or below the crossing surface standard	1 d	2 d	3 d	5 d	10 d

**PM1.11.2-5** Maintain sight lines as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Deficient sight lines	1 d	2 d	3 d	5 d	10 d

**PM1.11.2-6** Pay invoices submitted by the Railway Authority in accordance with the Railway Authority’s invoice payment policy.

**Specific Requirements:**

- a) Seek approval from the Railway Authority to ensure repairs are completed within the response noted or reschedule the repairs in accordance with the Railway Authority’s requirements.

**Notes:**

- 1) The Railway Authority is responsible for the maintenance of the Railway Crossing infrastructure and any grade crossing surface elevation maintenance resulting from their activities; and

- 2) The Contractor is required to consult, coordinate and comply with the Railway Authority for any maintenance work that is required within 10 metres of a rail.

### **1.11.3 Materials and/or Procedures**

Additional materials and/or procedures requirement are as follows:

- a) Maintain the grade crossings and sightlines in accordance with the Transport Canada Grade Crossing Standards.

### **1.11.4 Routine Maintenance Services Cap**

\$35,000 – for each occurrence, the cost for the Contractor to maintain or repair a Railway Crossing Approach, or the cost for the Railway Authority by invoice for maintenance or repair of a Railway Crossing.

## 2 Drainage Maintenance

### 2.01 Ditch Maintenance

#### 2.01.1 Outcome

To provide unobstructed drainage for all Highways.

#### 2.01.2 Routine Maintenance Services

**PM2.01.2-1** Remove Debris and obstructions from Ditches where heavy equipment is not required and can be undertaken by handwork as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) During High Water Flow	60 min	90 min	2 h	3 h	4 h
b) At other times	2 m	3 m	4 m	6 m	6 m

#### Specific Requirements:

- a) Maintain Ditches within Rest Areas in accordance with the response of the adjacent Highway Classification.

#### 2.01.3 Quantified Maintenance Services

**PM2.01.3-1** Remove Debris and obstructions and re-establish existing Ditches or construct new Ditches requiring heavy equipment as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) At all times	2 m	3 m	4 m	6 m	6 m

#### Specific Requirements:

- a) Maintain Ditches within Rest Areas in accordance with the response of the adjacent Highway Classification.

#### Notes:

- 1) Any removal of snow and ice from Ditches will not receive Quantified Maintenance Services credits; and
- 2) The Contractor is not required to establish new Ditches in continuous solid rock formations.

#### 2.01.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Restore the cross section and grade of the Ditch;
- b) Repair damage to embankments and stabilize back slopes;
- c) Restore Ditch elevations to ensure free drainage of the sub-base layers and subgrade;
- d) Spread spoil piles when side-casting ditch material evenly and ensure free drainage;
- e) Widen and deepen Ditches at Culvert entrance locations and other Drainage Appliance locations, to provide a collection area, preventing the Culvert and other Drainage Appliances from becoming obstructed;
- f) Ensure the Shoulder width is not reduced;
- g) Ensure the Shoulder or back slope are not undermined;
- h) Construct new Ditches in accordance with the B.C. Supplement to the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads; and
- i) New Ditches can be established where localized, minor solid rock formations exist.

## 2.02 Drainage Appliance Maintenance

### 2.02.1 Outcome

To provide Highways that are efficiently drained and water is channelled or contained to prevent erosion.

### 2.02.2 Routine Maintenance Services

**PM2.02.2-1** Remove Debris and obstructions affecting the water flow or maintain or repair Drainage Appliances and Trash Racks, where heavy equipment is not required and can be undertaken by handwork as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) During High Water Flow	60 min	90 min	2 h	3 h	4 h
b) $\geq$ 50% reduction in water flow capacity or history of drainage problems	7 d	7 d	7 d	7 d	7 d
c) At other times	2 m	3 m	4 m	6 m	6 m

#### Specific Requirements:

- a) Maintain Drainage Appliances and Trash Racks within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 2.02.3 Quantified Maintenance Services

**PM2.02.3-1** Remove Debris and obstructions affecting the water flow or repair or replace existing Drainage Appliances and Trash Racks or install Drainage Appliances and Trash Racks at new locations, where heavy equipment is required as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) $\geq$ 50% reduction in water flow capacity or history of drainage problems	7 d	7 d	7 d	7 d	7 d
b) At other times	2 m	3 m	4 m	6 m	6 m

#### Specific Requirements:

- a) Maintain Drainage Appliances and Trash Racks within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 2.02.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Re-set or replace Drainage Appliances when correcting the Ditch profile to ensure free flow; and
- b) Install Rip-rap or other suitable material to fill Scour and erosion of foundation material and to prevent future erosion at the inlet and/or outlet of the Drainage Appliance.

## 2.03 Shore, Bank and Watercourse Maintenance

### 2.03.1 Outcome

To prevent Scour and erosion damage to Highways at shores and banks of watercourses.

### 2.03.2 Routine Maintenance Services

**PM2.03.2-1** Remove Debris and obstructions and potential obstructions, which may be a considerable distance upstream or downstream that threaten to damage Highways, where heavy equipment is not required and can be undertaken by handwork as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) During High Water Flow	60 min	90 min	2 h	3 h	4 h
b) At other times	2 m	3 m	4 m	6 m	6 m

**PM2.03.2-2** Install Rip-rap (or other suitable materials) sufficient to withstand a water flow where there has been or there is potential for Scour and erosion of natural or man-made shores and banks, where heavy equipment is not required and can be undertaken by handwork as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) During High Water Flow	60 min	90 min	2 h	3 h	4 h
b) At other times	2 m	3 m	4 m	6 m	6 m

#### Specific Requirements:

- a) Maintain shores, banks and watercourses within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 2.03.3 Quantified Maintenance Services

**PM2.03.3-1** Remove Debris and obstructions and potential obstructions, which may be a considerable distance upstream or downstream that threaten to damage Highways, where heavy equipment is required as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) During High Water Flow	1d	2d	3d	7d	7d
b) At other times	2 m	3 m	4 m	6 m	6 m

**PM2.03.3-2** Install Rip-rap (or other suitable materials) sufficient to withstand a water flow where there has been or there is potential for Scour and erosion of natural or man-made shores and banks, where heavy equipment is required as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) At all times	2 m	3 m	4 m	6 m	6 m

**Specific Requirements:**

- a) Maintain shores, banks and watercourses within Rest Areas in accordance with the response of the adjacent Highway Classification.

**2.03.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Provide for adequate catchment areas for future material containment.

**2.03.5 Warranty**

Refer to Section 3 of this Schedule 1 (“Specifications”).



### 3 Winter Maintenance

#### 3.01 Highway Snow Removal

##### 3.01.1 Outcome

To proactively monitor, anticipate, manage and respond to Winter Accumulations and Compact to facilitate the safe and orderly flow of traffic.

##### 3.01.2 Routine Maintenance Services

**PM3.01.2-1** Remove Winter Accumulations from Travelled Lanes as follows:

Performance Criteria	Maximum Winter Accumulations Response by Highway Classification				
	A	B	C	D	E
a) One lane each direction	4 cm	6 cm	10 cm	15 cm	25 cm
b) Second lane	8 cm	10 cm	n/a	n/a	n/a
c) All other lanes including brake checks, chain up/off areas and any other vehicle accessible portions within the Right-of-Way	12 cm	16 cm	20 cm	20 cm	n/a
d) Rest Areas, pull-outs and parking areas at a minimum 2.5 metre pass width	12 cm	16 cm	20 cm	20 cm	n/a

**PM3.01.2-2** Notwithstanding PM3.01.2-1, remove slush or broken Compact from Travelled Lanes as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) All lanes including brake checks, chain up/off areas and any other vehicle accessible portions within the Right-of-Way	90 min	2 h	6 h	n/a	n/a

**PM3.01.2-3** Remove Winter Accumulations and Compact after the end of the Weather Event from Travelled Lanes as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Bare lanes when the pavement temperature is -9°C or warmer	24 h	36 h	48 h	n/a	n/a

**Notes:**

- 1) The Response for Class C in PM3.01.2-3 does not apply to gravel or Surface Treatment on gravel Highways.

**PM3.01.2-4** Respond to allowable Compact conditions on Travelled Lanes at all times as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Maintain thickness of the Compact surface no greater than 40 mm	48 h	48 h	48 h	3 d	n/a
b) Remove pot-hole in Compact exceeding 25 mm depth and averaging more than 1 per 25 metres of Highway	24 h	24 h	48 h	7 d	n/a
c) Remove rutting in Compact exceeding 25 mm in depth	72 h	72 h	4 d	7 d	n/a

**PM3.01.2-5** Remove Winter Accumulations after the end of the Weather Event from paved shoulders of Travelled Lanes, as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Paved shoulders	30 h	42 h	54 h	80 h	n/a

**PM3.01.2-6** Remove the remaining Winter Accumulations after the end of the Weather Event from Rest Areas, pullouts and parking areas as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Rest Areas, pullouts and parking areas	4 d	6 d	10 d	24 d	n/a

### Specific Requirements:

- a) Maintain Rest Areas, pullouts and parking areas, brake checks, chain up/off areas, and other vehicle accessible portions within the Right-of-Way in accordance with the response of the adjacent Highway Classification.

### Notes:

- 1) Compact conditions are allowed on gravel or Surface Treatment on gravel Highways or when the pavement temperature is colder than -9°C on Class A, B or C Highways.

### 3.01.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

#### Weather Monitoring

- a) Monitor and evaluate Highway surface temperatures and conditions using methods including but not limited to safety patrols, observations, Road Weather Information

- System (RWIS) information and weather forecasts to anticipate impending Weather Events;
- b) Increase the frequency of monitoring and evaluating information including, but not limited to RWIS, forecasts and other methodologies / technologies, when a Weather Event is anticipated to occur;
  - c) The depth of Winter Accumulations is measured with measurements taken at several points on the Highway surface, which are representative of the immediate area and then averaged to the nearest centimetre;

### **Snow Removal**

- d) Remove Winter Accumulation from Superelevations and other locations where the Shoulder edge is higher than the Travelled Lane, so that snowmelt does not drain onto or across the Travelled Lanes;
- e) Travelled Lanes are to be maintained without impeding access or depositing Winter Accumulations onto arrestor beds; and
- f) Overpasses and interchanges are to be maintained without affecting underlying roads or railways.

### 3.02 Snow and Ice Bonding Prevention and Control

#### 3.02.1 Outcome

To proactively monitor, anticipate, manage and minimize the development of Slippery conditions and restore traction.

#### 3.02.2 Routine Maintenance Services

**PM3.02.2-1** Deploy resources in advance of a forecasted or anticipated Weather Event to pre-treat Compact Travelled Lanes with Winter Abrasives, as appropriate for the location, to minimize the development of Slippery conditions.

**PM3.02.2-2** Deploy resources in advance of a forecasted or anticipated Weather Event to pre-treat bare Class A and B Travelled Lanes with Anti-icing materials, as appropriate for the location, to minimize the development of Slippery conditions and prevent snow or ice from bonding.

**PM3.02.2-3** Restore traction on Travelled Lanes immediately, when Slippery conditions occur outside of a Weather Event.

**PM3.02.2-4** Restore traction on Travelled Lanes with Slippery conditions, once the Weather Event commences as follows:

Performance Criteria	Response by Highway Classification			
	A	B	C	D
a) Grades exceeding 5 percent, b) Curves with regulatory or warning speeds under 60 km per hour c) Curves on a hill d) School zones e) Intersections f) Black ice prone locations g) Incident prone locations h) Shady areas	60 min	90 min	2 h	4 h
i) All other locations	2 h	3 h	4 h	6 h

**PM3.02.2-5** Restore traction on Travelled Lanes during freezing rain as follows:

Performance Criteria	Response by Highway Classification			
	A	B	C	D
a) Freezing Rain	2 h	3 h	4 h	6 h

**PM3.02.2-6** Restore traction to Compact Travelled Lanes by modifying the surface using mechanical, chemical and/or Winter Abrasives as follows:

Performance Criteria	Response by Highway Classification			
	A	B	C	D
a) Compact Travelled Lanes not able to effectively retain Winter Abrasive	24 h	24 h	2 d	5 d

**Specific Requirements:**

- a) Restore traction on modified Compact Travelled Lanes in accordance with PM3.02.2-4 of the General Specifications of this Schedule 1 (“Specifications”); and
- b) Maintain Rest Areas in accordance with the response of the adjacent Highway Classification.

**3.02.3 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

**Weather Monitoring**

- a) Monitor and evaluate Highway surface temperatures and conditions, using methods including, but not limited to safety patrols, observations, Road Weather Information System (RWIS) information, other methodologies / technologies, and weather forecasts to anticipate impending Weather Events;
- b) Use Road Temperature and Condition (RTC) forecasts and other available methodologies and technologies, including but not limited to thermal mapping, in conjunction with RTC forecasts, to determine if a Weather Event is likely to develop Slippery conditions and to better identify locations that may develop Slippery surface conditions;
- c) Increase the frequency of monitoring and evaluating information, including but not limited to observations, RWIS information, RTC forecasts, other methodologies / technologies and weather forecasts, when a Weather Event is anticipated to occur;
- d) Utilize RWIS data and RTC forecasts or other alternative technologies when Anti-icing and De-Icing to determine and apply appropriate and sufficient chemical concentrations on the Travelled Lanes to:
  - i) Prevent re-freeze;
  - ii) Minimize the development of Slippery conditions; and
  - iii) Achieve the performance criteria stipulated in Highway Snow Removal PM3.01.2-3

**Materials**

- e) Anti-icing, De-Icing or pre-wetting materials recognized on the Pacific Northwest Snowfighters (PNS) Qualified Products List and as approved by the Province; and
- f) Materials in accordance with the maximum allowable particle size for Winter Abrasive and the mean Gradation limits when tested according to ASTM Designations C136 and C117, and as follows:

Particle Size	Winter Abrasive Type	
	Type A	Type B
a) Maximum particle size	9.5 mm	12.5 mm
b) % Passing 12.5 mm	-	100
c) % Passing 9.5 mm	100	80 to 100
d) % Passing 4.75 mm	50 to 95	50 to 95
e) % Passing 2.36 mm	30 to 80	30 to 80
f) % Passing 0 to 0.6 mm	10 to 50	10 to 50
g) % Passing 0 to 0.3 mm	0 to 25	0 to 25
h) % Passing 0 to 0.075 mm	0 to 6	0 to 6

Winter Abrasive Application by Winter Highway Classification	Winter Abrasive Type
a) Class A and B	Type A
b) Class C and D	Type A or B

### 3.03 Other Snow Removal and Ice Control

#### 3.03.1 Outcome

To remove Winter Accumulations from roadside, overhead, and pedestrian accessed infrastructure and restore traction.

#### 3.03.2 Routine Maintenance Services

**PM3.03.2-1** Remove snow and ice within 8 hours from overhead features that are unsafe or have the potential to become unsafe for Highway Users including, but not limited to rock faces, Tunnel walls, pedestrian Overpasses, Bridges and Sign Systems.

**PM3.03.2-2** Remove Winter Accumulations and restore traction of pedestrian accessed areas after the end of the Weather Event as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Bridge sidewalks and sidewalk approaches to Structures	24 h	24 h	24h	3 d	n/a
b) Pedestrian overpasses or Underpasses	24 h	24 h	24 h	3 d	n/a
c) Sidewalks and pedestrian paths	24 h	24 h	24 h	3 d	n/a
d) Information kiosks, and other tourist information facilities	48 h	48 h	48 h	3 d	n/a
e) Intersections, and Railway Crossing Approaches	48 h	3 d	8 d	12 d	20 d

**PM3.03.2-3** Remove Winter Accumulations from the entire surface area and restore traction of pedestrian accessed areas after the end of the Weather Event as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Traffic islands, Medians and roundabouts	24 h	24 h	24 h	3 d	n/a

**PM3.03.2-4** Remove Winter Accumulations after the end of the Weather Event as follows:

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
a) Winter Accumulations exceed 30 cm on Bridge railings	24 h	24 h	24 h	3 d	n/a
b) Sight Distance obstructions	36 h	36 h	36 h	3 d	n/a
c) Winter Accumulations exceed 30 cm above barrier	48 h	3 d	8 d	12 d	20 d
d) Winter Accumulations exceed 60 cm on non-pedestrian accessed traffic islands, Medians and roundabouts	48 h	3 d	8 d	12 d	20 d

Performance Criteria	Response by Highway Classification				
	A	B	C	D	E
e) Maximum Winter Accumulations on Bridge curbs with railings	20 cm	20 cm	n/a	n/a	n/a

**PM3.03.2-5** Remove snow and ice within 24 hours from active Cattleguard Systems and Ungulate Guards to ensure they function as designed.

**PM3.03.2-6** Remove snow and ice when required, from Ditches and Drainage Appliances to prevent flooding of the Highway and Ancillary Facilities.

**PM3.03.2-7** Restore vertical clearances when required to overhead utilities and Highway infrastructure impacted by Highway snow removal operations.

**PM3.03.2-8** Install snow fencing or construct snow berms at problematic locations to prevent drifting snow onto Travelled Lanes and Shoulders.

**PM3.03.2-9** Remove snow from behind snow fencing, when Winter Accumulations exceed 1 metre in depth, to form trenches for containing drifting snow.

**PM3.03.2-10** Remove snow and ice at avalanche gates to ensure they function as designed.

**PM3.03.2-11** Commence removal of Winter Accumulations within 30 minutes upon being notified by the Province to provide vehicle access to avalanche gates and infrastructure including, but not limited to gun platforms, explosive magazines, Road Weather Information System (RWIS), frost probe stations, dynamic message signs, and variable speed signs.

**Specific Requirements:**

- a) Provide snow storage requirements for continuing winter maintenance operations; and
- b) Maintain Rest Areas in accordance with the response of the adjacent Highway Classification.

**3.03.3 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Anti-icing, De-Icing or pre-wetting materials recognized on the Pacific Northwest Snowfighters (PNS) Qualified Products List and as approved by the Province;



- b) Materials in accordance with the maximum allowable particle size for Winter Abrasive and the mean Gradation limits when tested according to ASTM Designations C136 and C117, and as follows:

Particle Size	Winter Abrasive Type	
	Type A	Type B
a) Maximum particle size	9.5 mm	12.5 mm
b) % Passing 12.5 mm	-	100
c) % Passing 9.5 mm	100	80 to 100
d) % Passing 4.75 mm	50 to 95	50 to 95
e) % Passing 2.36 mm	30 to 80	30 to 80
f) % Passing 0 to 0.6 mm	10 to 50	10 to 50
g) % Passing 0 to 0.3 mm	0 to 25	0 to 25
h) % Passing 0 to 0.075 mm	0 to 6	0 to 6

Winter Abrasive Application by Winter Highway Classification	Winter Abrasive Type
a) Class A and B	Type A
b) Class C, D and E	Type A or B

### 3.04 Snow Avalanche Response

#### 3.04.1 Outcome

To protect Highway Users from avalanches, minimize Highway closures and facilitate the safe and orderly flow of traffic.

#### 3.04.2 Routine Maintenance Services

**PM3.04.2-1** Implement avalanche search and rescue plans immediately upon being notified by the Province and participate in search and rescue efforts.

**PM3.04.2-2** Mobilize required equipment and resources to the pre-staging locations determined by the Province, within 2 hours upon being notified by the Province.

**PM3.04.2-3** Commence removal of snow avalanche deposits immediately upon being notified by the Province from the Highway at a minimum removal rate of 500 m<sup>3</sup> per hour within a designated avalanche area, with uninterrupted service until the deposits are removed.

**PM3.04.2-4** Commence the removal of snow deposits within 12 hours upon being notified by the Province from catchment areas, static defence structures and safety structures at a minimum removal rate of 500 m<sup>3</sup> per hour within a designated avalanche area, with uninterrupted service until the deposits are removed.

#### Specific Requirements:

- a) Maintain the closed avalanche area, as directed by the Province and in accordance with General Specifications 3.01, 3.02 and 3.03 of this Schedule 1 ("Specifications").

#### Notes:

- 1) Designated snow avalanche areas are identified in the Snow Avalanche Atlas.

#### 3.04.3 Materials and/or Procedures

- a) Comply with the Snow Avalanche Safety Measures for Highways Manual;
- b) Comply with the Explosive Spill on Highway Emergency Response Assistance Plan; and
- c) Maintain the Backslope angle when removing snow avalanche deposits from the Highway and from the adjacent catchment areas, static defence structures and safety structures.

## **4 Roadside Maintenance**

### **4.01 Vegetation Control**

#### **4.01.1 Outcome**

To improve visibility and facilitate drainage.

#### **4.01.2 Routine Maintenance Services**

There are no Routine Maintenance Services.

#### **4.01.3 Quantified Maintenance Services**

**PM4.01.3-1** Cut vegetation from Shoulder tops and to a width of 1.8 metres from the Shoulder edge that exceeds 25 centimetres in height on Class 1-7 Highways.

**PM4.01.3-2** Cut vegetation that exceeds 15 centimetres in height at Rest Areas and other specified areas.

**PM4.01.3-3** Cut vegetation that exceeds 10 centimetres in height on Raised Hard Surfaced Infrastructure.

#### **4.01.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Cut vegetation to the lowest possible height considering uneven terrain, ensuring that no soil is exposed and vegetation roots remain intact; and
- b) The 1.8 metre cutting swath for Dirt and Gravel Highways is to be measured from the outside edge of the Travelled Lane.

## 4.02 Brush, Tree and Danger Tree Removal

### 4.02.1 Outcome

To improve visibility, facilitate drainage and provide access to Structures.

### 4.02.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 4.02.3 Quantified Maintenance Services

**PM4.02.3-1** Partially or completely remove brush/trees along Highways that cause Sight Distance obstructions or impede drainage or create shaded areas on the road surface or when the maximum height above the Travelled Lanes are reached, as follows:

Highway Maintenance Classification	Distance from Shoulder Edge	Maximum Height
a) Interchanges	1.8 to 15 metres	2 metres
b) 1 to 3	1.8 to 7 metres	3 metres
c) 4 to 6	1.8 to 5 metres	4 metres

**PM4.02.3-2** Partially or completely remove overhanging trees/limbs over Travelled Lanes and Shoulders as follows:

Highway Maintenance Classification	Distance from Shoulder Edge	Elevation Above Surface
a) 1 to 3	0 to 3 metres	0 to 8 metres
b) 4 to 7	0 to 2 metres	0 to 8 metres

**PM4.02.3-3** Assess immediately, any visually suspect Danger Tree and remove it, as instructed by a Qualified Assessor.

**PM4.02.3-5** Partially or completely remove brush/trees annually, within a 5 metre perimeter of Structures.

#### Notes:

- 1) The table in PM4.02.3-1 is not applicable when the ground elevation is more than 3 metres above or below the Travelled Lanes; and
- 2) The removal of brush/trees along Highways that create shaded areas on the road surface is in response to resulting winter icing conditions.

### 4.02.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Remove brush/trees to the lowest possible height considering uneven terrain;
- b) Danger Trees are to be confirmed by a Qualified Assessor using a recognized assessment methodology such as that recognized by the Wildlife Tree Committee of British Columbia or the International Society of Arboriculture; and
- c) Partially or completely remove brush/trees at Rest Areas and other specified areas in accordance with Schedule 2 (“Quantified Maintenance Services”).

### 4.03 Litter Collection and Graffiti Removal Maintenance

#### 4.03.1 Outcome

To keep Highways clean and tidy.

#### 4.03.2 Routine Maintenance Services

**PM4.03.2-1** Collect and dispose of litter from Highways as follows:

Performance Criteria	Response by Highway Classification						
	1 >50000 vpd	1 All others	2	3&4	5	6	7
a) Along Highways	7 d	14 d	21 d	30 d	45 d	60 d	90 d
b) Rest Areas and Vehicle Inspection Stations	1 d	1 d	1 d	1 d	1 d	1 d	1 d

**PM4.03.2-2** Empty and dispose of litter and recycling receptacles as follows:

Performance Criteria	Response
a) Along Highways	when full or every 3 days, whichever occurs first
b) Rest Areas and Vehicle Inspection Stations	1 d

**PM4.03.2-3** Collect and dispose of bags daily from the Adopt-a-Highway Program.

**PM4.03.2-4** Remove or cover graffiti on natural features and Highway infrastructure as follows:

Performance Criteria	Response by Highway Classification				
	1&2	3	4	5	6&7
a) Along Highways	3 d	6 d	9 d	15 d	30 d
b) Rest Areas and Vehicle Inspection Stations	1 d	1 d	1 d	1 d	1 d

#### Specific Requirements:

- a) Maintain Rest Areas in accordance with the response of the adjacent Highway Classification.

#### 4.3.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) If removal is not possible, graffiti is to be painted with an appropriate, matching colour to minimize the effect of the repair.

#### 4.04 Rest Area Facility Maintenance

##### 4.04.1 Outcome

To provide Rest Area facilities that are clean, sanitary and are systematically monitored, maintained, repaired and replaced.

##### 4.04.2 Routine Maintenance Services

**PM4.04.2-1** Maintain Rest Area facilities as follows:

Performance Criteria	Response
a) External building components (including but not limited to exterior walls, foundations, roof, windows and doors) are cleaned and maintained	weekly or more often when required
b) Interior building components (including but not limited to walls, ceilings, floors, fittings and fixtures) are cleaned and maintained	daily or more often when required
c) Interior walls, ceilings and floors are repainted	annually or when required
d) Water systems are maintained and functioning	daily or more often when required
e) Water systems are monitored for water quality (potable)	as required
f) Septic systems (including but not limited to tanks/fields, sani-pumps and toilets) are maintained and functioning	daily or more often when required
g) Heating/cooling systems and building electrical systems are maintained and functioning	daily or more often when required
h) All required supplies are available	daily or more often when required
i) Picnic tables and benches are maintained (including but not limited to wood varnished and cement sealed) and readily available	annually or more often when required
j) Rest Area facilities are prepared for seasonal conditions	annually

**PM4.04.2-2** Repair or replace damaged or deteriorated Rest Area facilities as follows:

Performance Criteria	Response
a) External building components (including but not limited to exterior walls, foundations, roof, windows and doors)	immediately
b) Interior building components (including but not limited to walls, ceilings, floors, fittings and fixtures)	immediately
c) Water systems, septic systems, heat/cooling systems and building electrical systems	immediately

##### 4.04.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Comply with provincial water quality regulations and operating permits with water quality testing to be performed by a qualified laboratory retained by the Contractor and respond to deficiencies;
- b) The Contractor is required to follow a least life cycle cost approach that encourages preventative maintenance with the appropriately timed replacement of Rest Area components, as would be followed by a prudent owner;
- c) Maintain and repair water systems, septic systems, heat/cooling systems, and building electrical systems in accordance with the manufacturer's specifications and recommendations; and
- d) The replacement of systemically failed or deficient systems and building components is to be considered when assessing maintenance, repair and replacement options.

#### **4.04.4 Routine Maintenance Services Cap**

\$15,000 - for each occurrence, the cost to repair or replace external building components, internal building components, and systems.



## 4.05 Fence Maintenance

### 4.05.1 Outcome

To restore the functionality of fences.

### 4.05.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 4.05.3 Quantified Maintenance Services

**PM4.05.3-1** Repair or construct fences as follows:

Performance Criteria	Response
a) Temporarily repair to restore functionality to damaged fences that are unsafe or have the potential to become unsafe along a Schedule 1 or Schedule 2 Highway	immediately
b) Temporarily repair to restore functionality to damaged Speciality Fences that are unsafe or have the potential to become unsafe	immediately
c) Permanently repair fences	7 days
d) Construct new Speciality Fences	30 days

#### Notes:

- 1) Schedule 1 and Schedule 2 Highways are defined in the *Motor Vehicle Act* Regulations, B.C. Reg. 26/58 ("Schedule 1 and Schedule 2 Highways");
- 2) Speciality Fences are inclusive to all Highways; and
- 3) Repairs are only to be completed for fences that have been damaged because of a motor vehicle incident, acts of vandalism, fallen trees from the Right-of-way and Major Events. As stewards of the Highway, the Contractor is expected to work with adjacent third parties to resolve damaged fences that are their responsibility to repair.
- 4) The response for permanent repairs begins when the Contractor detected or was made aware of the requirement for the temporary repair.

### 4.05.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- 1) Permanent repairs are to be completed with the same type of fence material.

## **4.06 Roadside Catchment Appurtenances Maintenance**

### **4.06.1 Outcome**

To protect Highway Users and Highway infrastructure.

### **4.06.2 Routine Maintenance Services**

There are no Routine Maintenance Services.

### **4.06.3 Quantified Maintenance Services**

**PM4.06.3-1** Repair immediately, as directed by the Province, any damaged or deteriorated Roadside Catchment Appurtenances that have been structurally compromised, as determined by the Province.

**PM4.06.3-2** Repair or replace within 3 months, damaged or deteriorated Roadside Catchment Appurtenances that have not been structurally compromised, as determined by the Province.

**PM6.06.3-3** Replace within 6 months, Roadside Catchment Appurtenances that are damaged or deteriorated beyond repair.

**PM4.06.3-4** Repair within 6 months, all structural and non-structural cracks.

**PM4.06.3-5** Remove within 1 month, any accumulated rock, unconsolidated sediment or organic debris from Flumes, or as directed by the Province.

**PM4.06.3-6** Remove annually, any accumulated rock, unconsolidated sediment or organic debris from the catchment area, or as directed by the Province.

**PM4.06.3-7** Clean relief wells annually.

#### **Notes:**

- 1) Roadside Catchment Appurtenances may be located a considerable distance away from the Travelled Lane.

### **4.06.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Seal non-structural cracks in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile; and

- b) Repair structural cracks by pressure injection of an epoxy material in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile.

## 5 Traffic Maintenance

### 5.01 Sign System Maintenance

#### 5.01.1 Outcome

To regulate and facilitate the safe and orderly flow of traffic.

#### 5.01.2 Routine Maintenance Services

**PM5.01.2-1** Maintain Sign Systems so they are clean, repaired, legible, visible, erect, and properly placed as follows:

Performance Criteria	Response by Highway Classification		
	1&2	3&4	5,6 & 7
a) Regulatory and Warning	1 d	1 d	1 d
b) Pedestrian and School	1 d	1 d	1 d
c) Guide	2 d	3 d	7 d
d) Information	2 d	3 d	7 d
e) Service and Attraction	2 d	3 d	7 d
f) All other Sign Systems	7 d	7 d	7 d

**PM5.01.2-2** Maintain Sign Systems as follows:

Performance Criteria	Response
a) Temporarily repair regulatory and warning Sign Systems that are not flat (planar) or properly orientated or either 10 square centimetres or 1% (whichever is greater) of the Sign face area is defective, dented or vandalized	immediately
b) Place temporary signage for missing regulatory and warning Sign Systems	immediately
c) Re-paint previously painted Sign posts when the surface is discoloured or damaged	immediately
d) Install, remove and reinstall Signs Systems due to seasonal requirements	within 7 days or as directed by the Province
e) Remove illegal or unauthorized signs	as directed by the Province

**PM5.01.2-3** Maintain electronically controlled signs (including, but not limited to lighted chevrons, lighted curve warning Signs, variable speed zone Signs and wildlife detection systems) within 24 hours so they are clear, legible and visible;

**PM5.01.2-4** Maintain solar panels when required to ensure electronically controlled signs function as designed.

**Specific Requirements:**

- a) Maintain Sign Systems within Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) The Contractor is not responsible for electrical component maintenance, replacement or relocation of electronically controlled signs; and
- 2) The Contractor is not responsible for electronically controlled dynamic message signs.

**5.01.3 Quantified Maintenance Services**

**PM5.01.3-1** Replace Sign Systems as follows:

Performance Criteria	Response by Sign Type			
	Standard Regulatory, Warning, Pedestrian and School	Standard Guide, Service and Attraction	Custom Guide, Service and Attraction	Other Standard Sign Systems
a) Damaged Sign Systems beyond repair	1 d	3 d	6 w	7 d
b) Sign exceeds its expected service life based on ASTM retroreflective sheeting standard warranty periods	1 d	3 d	6 w	7 d
c) Greater than 25% of the Sign face area has degraded retro-reflectivity compared to the rest of the sign based on a visual nighttime inspection from a moving vehicle	1 d	3 d	6 w	7 d
d) The reduced retro-reflectivity overrides the ability of the Sign text, colour, or legend to be effectively presented to Highway Users	1 d	3 d	6 w	7 d

**PM5.01.3-2** Install Sign Systems within three days after delivery at new locations.

**PM5.01.3-3** Replace barrier and shoulder mounted delineators within 10 days, that are missing or are no longer effective.

**PM5.01.3-4** Install barrier and shoulder mounted delineators within 10 days at new locations.

**PM5.01.3-5** Relocate Sign Systems when required, due to policy changes by the Province.

**Specific Requirements:**

- a) Maintain Sign Systems within Rest Areas in accordance with the response of the adjacent Highway Classification.

**5.01.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Store removed illegal or unauthorized signs until they are claimed by the owner or as directed by the Province;
- b) Clean electronically controlled signs and solar panels in accordance with the manufacturer’s specifications and recommendations;
- c) Comply with the Manual of Standard Traffic Signs and Pavement Markings, Specifications for Standard Highway Sign Materials, Fabrication and Supply, Sign Blank Dimensions, and Ministry technical circulars/bulletins or as approved by the Province;
- d) Metal posts and battens are made of perforated, galvanized steel square tubing or of other material, as approved by the Province;
- e) All hardware is of non-corrosive material to avoid discolouration of Sign and delineator faces; and
- f) The selection of the post type and quantity of posts required for each installation is to be based on the structural wind loading in that geographical area.

## 5.02 Temporary Pavement Markings and Eradication

### 5.02.1 Outcome

To facilitate the continuous, safe and orderly flow of traffic.

### 5.02.2 Routine Maintenance Services

**PM5.02.2-1** Place temporary pavement markings within 3 hours of altered permanent pavement markings by the Contractor.

**PM5.02.2-2** Eradicate superfluous temporary pavement markings that were previously placed by the Contractor within 3 hours of the permanent pavement marking being placed.

### 5.02.3 Quantified Maintenance Services

**PM5.02.3-1** Restore temporary pavement markings placed by others or place new temporary pavement markings as follows:

Performance Criteria	Response
a) Safety related	24 h
b) Functional related	14 d

**PM5.02.3-2** Eradicate pavement markings placed by others as follows:

Performance Criteria	Response
a) Safety related	24 h
b) Functional related	14 d

### 5.02.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Materials applied in accordance with the Traffic Management Manual for Work on Roadways;
- b) Temporary pavement markings must be well defined, clear, distinct and remain effective until permanent pavement markings are applied; and
- c) Ensure there is no or only minimal pavement surface damage as a result of temporary pavement marking eradication.

### 5.03 Traffic Management

#### 5.03.1 Outcome

To keep Highway Users safe, protect Highway workers and minimize Traffic Delays.

#### 5.03.2 Routine Maintenance Services

**PM5.03.2-1** Respond immediately to unplanned events or incidents and take appropriate actions to ensure the safety of Highway Users until traffic management and temporary control measures can be deployed.

**PM5.03.2-2** Provide traffic management during the delivery of the Services.

**PM5.03.2-3** Manage traffic queues as follows:

Performance Criteria	Response
a) Provide regular updates to delayed Highway Users when Traffic Delays exceed 20 minutes	immediately
b) Position traffic queues clear of areas that are unsafe or have the potential to become unsafe (including but not limited to avalanche areas, rockfall/slide areas, debris torrent areas, blind corners, horizontal and vertical curves)	immediately
c) Coordinate temporary vehicle parking / storage	immediately

**PM5.03.2-4** Respond immediately to any traffic management deficiency, as approved by the Province.

**PM5.03.2-5** Establish traffic management beyond Service Area boundaries at key decision making points when required, to ensure minimum disruption to Highway Users.

**PM5.03.2-6** Provide traffic management at designated avalanche closure points and other locations for avalanche related conditions, as directed by the Province.

#### 5.03.3 Materials and/or Procedures

Additional materials and/or procedures requirements as follows:

- Comply with the Traffic Management Manual for Work on Roadways;
- Planned lane closures are prohibited on statutory holidays, unless approved by the Province;
- Calculate and document anticipated Traffic Delays prior to commencement of work, for planned Services, which exceed 20 minutes;



- d) Remain at the site(s) until traffic flow in all lanes has been re-established or the traffic deficiency has been resolved and the site(s) are safe for Highway Users; and
- e) Prior approval is required from the Province to use automated flagger assistance devices.

#### **5.03.4 Routine Maintenance Services Cap**

When Traffic Management is required for incident response in Section 7.01 in this Schedule 1 (“Specifications”) or snow avalanche response in Section 3.04 in this Schedule 1 (“Specifications”), the Contractor will be limited to providing, as Routine Maintenance Services:

- All equipment and devices required in accordance with the appropriate layout in the Traffic Management Manual for Work on Roadways;
- 4 portable changeable message signs for the Service Area; and
- Maximum of 4 traffic control persons and 1 traffic control supervisor at each site and at each designated avalanche area, regardless of the amount of time required.

\$0 – for each occurrence, if requested by the Province, the cost to provide additional personnel, pilot vehicle services, food, beverages, washroom facilities and additional portable changeable message signs.

## 6 Structures Maintenance

### 6.01 Bridge Deck Maintenance

#### 6.01.1 Outcome

To provide safe, uniform, smooth, stable, free draining and durable surfaces on Bridge Decks.

#### 6.01.2 Routine Maintenance Services

**PM6.01.2-1** Temporarily repair Bridge Decks as follows:

Performance Criteria	Response by Highway Classification			
	1&2	3&4	5,6&7	8
a) Pot-hole in Travelled Lane	4 h	6 h	1 d	16 d
b) Pot-hole in other areas	2 d	3 d	5 d	30 d
c) Loose, broken or rotted timber planks in Travelled Lane	4 h	6 h	24 h	16 d
d) Loose, broken or rotted timber planks in other areas	2 d	3 d	5 d	30 d

**PM6.01.2-2** Repair Bridge Decks as follows:

Performance Criteria	Response by Highway Classification			
	1&2	3&4	5,6&7	8
a) Loose steel sections or broken welds in Travelled Lane	4 h	6 h	1 d	16 d
b) Loose steel sections or broken welds in other areas	2 d	3 d	5 d	30 d

#### Specific Requirements:

- a) Maintain Bridge Decks within Rest Areas in accordance with the response of the adjacent Highway Classification.

#### 6.01.3 Quantified Maintenance Services

**PM6.01.3-1** Permanently repair within 6 months any temporary repair for Bridge Decks.

**PM6.01.3-2** Minor or major Re-decking within 6 months on damaged or deteriorated Bridge Decks.

**PM6.01.3-2** Apply linseed oil/mineral spirits on Bridge Decks as follows:

Performance Criteria	Response
a) 1 year-old concrete surface treatment	initial re-application
b) 2 year-old concrete surface treatment	second re-application
c) 4 year-old concrete surface treatment	third re-application
d) 6 year-old concrete surface treatment	fourth re-application

**PM6.01.3-3** Repair within 6 months, all structural and non-structural concrete Bridge Deck cracks.

**Specific Requirements:**

- a) Maintain Bridge Decks within Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) The response for permanent repairs begins when the Contractor detected or was made aware of the requirement for the temporary repair.

**6.01.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Achieve a smooth, sound, durable, well bonded and safe Wearing Surface;
- b) Address non-visible deterioration on repaired Deck areas;
- c) Tine or broom finish concrete Permanent Patches;
- d) Construct Permanent Patches or crack repairs consistent with the profile of the adjacent Bridge Deck surface;
- e) Seal non-structural cracks in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile;
- f) Repair structural cracks by pressure injection of an epoxy material in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile;
- g) Replace timber planks when the deterioration exceeds 25 percent of the cross-section; and

- h) Use timber Deck materials in accordance with the following:
- i) Cross-ties must be Number 1 or better grade, S2S Douglas Fir, cross-ties must be a minimum of 150 mm X 150 mm (6 inch by 6 inch) by the full width the Bridge Deck. Size tolerance is plus or minus 3 mm and maximum Wane allowed must be 10 mm on any surface and cross-ties must be preservative-treated;
  - ii) Laminated Decking material must be preservative-treated;
  - iii) Re-decking planks must be of Number 1 grade and Wane free, SIS2E, Heart-Side surfaced, 100 mm X 250 mm (4 inch by 10 inch) Douglas Fir, in minimum 4.9 metre (16 foot) lengths laid Heart-Side down;
  - iv) All fasteners must be hot-dip galvanized; and
  - v) Concrete patching materials mixed in accordance with manufacturer's specifications and recommendations that will obtain an initial set within 15 minutes, and final set to allow traffic usage within 30 minutes. This material will have a minimum compressive strength within 1 hour of 10 MPa and within 24 hours of 30MPa as tested by ASTM C-109.

#### **6.01.5 Warranty**

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.02 Structures Cleaning Maintenance

### 6.02.1 Outcome

To provide safe and clean Structures.

### 6.02.2 Routine Maintenance Services

**PM6.02.2-1** Remove Accumulations, surface contaminants and chemicals by June 30 of each calendar year from all surfaces of Structures and their components.

#### Notes:

- 1) A list specifying which Structures require cleaning will be provided annually in Schedule 8 ("Infrastructure").

### 6.02.3 Materials and/or Procedures

Additional materials and/or procedures requirements are as follows:

- a) Remove Accumulations, surface contaminants and chemicals from Structure surfaces according to the following minimum heights:

Structure Details	Minimum Cleaning Height
a) Bridge members	3 metres above and all below the Bridge Deck
b) Tunnel walls	3 metres above the Travelled Lane
c) Retaining Walls	3 metres above or below the Travelled Lane

- b) Remove Accumulations, surface contaminants and chemicals from the interior surfaces of snow sheds.

## 6.03 Structures Drainage Maintenance

### 6.03.1 Outcome

To provide effective drainage for Structures.

### 6.03.2 Routine Maintenance Services

**PM6.03.2-1** Repair or replace immediately, any damaged, rusted, separated or missing grates, drain pipes, Flumes or funnels that are unsafe or have the potential to become unsafe for Highway Users.

**PM6.03.2-2** Repair or replace within 14 days, any other damaged, rusted, separated or missing grates, drain pipes, Flumes or funnels.

**PM6.03.2-3** Clear any grates, drain pipes, Flumes or funnels within 1 hour that causes Ponding on Travelled Lanes.

**PM6.03.2-4** Clear any plugged grates, drain pipes, Flumes or funnels within 14 days that does not cause Ponding on Travelled Lanes.

### 6.03.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Ensure Flumes carry water from drain pipes down Fill Slopes and away from Bridge Abutment Fills and wing walls.

## 6.04 Bridge Joint Maintenance

### 6.04.1 Outcome

To provide a safe, sealed, smooth and stable surface for Bridges.

### 6.04.2 Routine Maintenance Services

**PM6.04.2-1** Repair immediately, any Bridge Joints, Bridge Joint Armour and joint Anchor Bolts that are unsafe or have the potential to become unsafe for Highway Users.

**PM6.04.2-2** Repair Bridge Joints, Bridge Joint Armour and joint Anchor Bolts that potentially reduce the service life of the structure as follows.

Performance Criteria	Response by Highway Classification		
	1&2	3	4,5,6,7&8
a) Not aligned, cracked, worn, shrivelled, leaking, separated from joint walls or abraded Bridge Joints	2 m	3 m	6 m
b) Damaged, rusted or loose joint Anchor Bolts	2 m	3 m	6 m
c) Missing components, broken welds, loose or cracked Finger Joints and Sliding Plate Joints	2 m	3 m	6 m
d) Separated from the concrete Deck, bent, gouged or loose Bridge Joint Armour	4 m	6 m	6 m

#### Specific Requirements:

a) Maintain Bridge Joints, Bridge Joint Armour and joint Anchor Bolts within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 6.04.3 Quantified Maintenance Services

**PM6.04.3-1** Replace Bridge Joint seals and Bridge Joint Armour as follows.

Performance Criteria	Response by Highway Classification	
	1&2	3,4,5,6,7&8
a) Damaged or Deteriorated beyond repair Bridge Joint seals and Bridge Joint Armour	4 m	6 m

#### Specific Requirements:

a) Maintain Bridge Joints and Bridge Joint Armour within Rest Areas in accordance with the response of the adjacent Highway Classification.

#### Notes:

a) The Contractor is not required to replace complete Finger Joints.

**6.04.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

**6.04.5 Warranty**

Refer to Section 3 of this Schedule 1 (“Specifications”).



## 6.05 Bridge Bearing Maintenance

### 6.05.1 Outcome

To enable Bearings to transmit loads on the Superstructure to the Substructure and allow the Superstructure to move as designed.

### 6.05.2 Routine Maintenance Services

- PM6.05.2-1** Repair Bearings immediately that are considered unsafe or have the potential to become unsafe, as directed by the Province.
- PM6.05.2-2** Clean, lubricate, re-align, re-Grout and repair Bearings within 6 months that are rusty, not aligned, or covered in Accumulations.
- PM6.05.2-3** Repair or replace Anchor Bolts and Pins within 6 months that are damaged or missing.
- PM6.05.2-4** Repair concrete pads and Bearing areas within 6 months that are cracked or Spalled.
- PM6.05.2-5** Repair all pads within 6 months that are damaged, crushed, cracked, split, bulging or torn.
- PM6.05.2-6** Lubricate Bearings annually or in accordance with the manufacturer's specifications and recommendations, whichever is more frequent.

### 6.05.3 Quantified Maintenance Services

- PM6.05.3-1** Replace damaged or deteriorated Bearings and associated components within 4 months.

### 6.05.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Repair and replacement of Bearings must be in accordance with the manufacturer's specifications, the original design specifications or as designed by the Province; and
- b) Use an installation and jacking procedure as approved by the Province and prepared by a Professional Engineer, retained by the Contractor.

### 6.05.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.06 Bailey and Acrow Bridge Maintenance

### 6.06.1 Outcome

To provide safe and structurally sound Bailey and Acrow Bridges that support the required load-carrying capacity.

### 6.06.2 Routine Maintenance Services

**PM6.06.2-1** Respond immediately to: restrict the load-carrying capacity, vehicle usage or all access to the Bridge, as directed by the Province.

**PM6.06.2-2** Repair immediately, as directed by the Province, Bailey or Acrow Bridges that have been structurally compromised, as determined by the Province.

**PM6.06.2-3** Repair or replace within 2 months, any damaged or deteriorated components that do not restrict the load carrying capacity or cause the Bailey or Acrow Bridge to be structurally compromised, as determined by the Province.

**PM6.06.2-4** Repair, replace and/or tighten damaged, deteriorated, missing or loose components as follows:

Performance Criteria	Response
a) Bolts or Pins	2 h
b) Sway Braces, Transom Clamps, End Posts, Panel Pins or bolt	1 d

**PM6.06.2-5** Tighten annually, all Sway Braces, Transom Clamps, and bolts.

### 6.06.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Tighten Sway Braces, Transom Clamps, and Pins in accordance with the manufacturer's specifications and recommendations;
- b) Provide Panels of the same steel section and steel grade as the Panels on the existing Bailey or Acrow Bridge. If an existing Bailey/Acrow Bridge contains Panels of differing steel section and/or steel grade, then replacement Panels must be at least equal to the original strength of the damaged Panel; and
- c) Ensure Bailey BB1 "I" section Panels and American BB1 channel section Panels are not used as a replacement component in any assembled structure.

**6.06.4 Routine Maintenance Services Cap**

\$50,000 – for each occurrence, the cost to repair or replace a Bailey or Acrow Bridge or components.

## 6.07 Structure Minor Coating

### 6.07.1 Outcome

To prevent corrosion and deterioration of Structures.

### 6.07.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 6.07.3 Quantified Maintenance Services

**PM6.07.3-1** Prepare and coat, previously coated surfaces of Structures as follows:

Performance Criteria	Response
a) Damaged, deteriorated, or rusted Structures and steel rail systems	1 y
b) Damaged or deteriorated timber rail systems	1 y

**PM6.07.3-2** Prepare and coat within 1 calendar year, new surfaces of Structures.

#### Notes:

- 1) Treated wood components do not require coating.

### 6.07.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications")

Additional materials and/or procedures requirements are as follows:

- a) Materials in accordance with SSPC SP3 or SP6 of the Standard Specifications for Highway Construction; and
- b) Coat and re-coat surfaces with material in accordance with the same type and quality on the existing Structure.

### 6.07.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.08 Concrete Structure Maintenance

### 6.08.1 Outcome

To provide a sound, durable, and well-bonded concrete surface for Structures.

### 6.08.2 Routine Maintenance Services

**PM6.08.2-1** Respond immediately to: restrict the load-carrying capacity or vehicle usage or all access to the Structures as directed by the Province.

### 6.08.3 Quantified Maintenance Services

**PM6.08.3-1** Repair immediately, as directed by the Province, any damaged or deteriorated concrete surfaces that have been structurally compromised, as determined by the Province.

**PM6.08.3-2** Repair within 3 months, any damaged or deteriorated concrete surfaces that do not restrict the load carrying capacity or cause the Structure to be structurally compromised, as determined by the Province.

**PM6.08.3-3** Repair within 6 months, all other damaged or deteriorated concrete surfaces.

**PM6.08.3-4** Repair within 6 months, all structural and non-structural cracks.

#### Notes:

- 1) The tolerances or deviations are allowable only if they do not prevent the required fit of structural members.

### 6.08.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Meet the following concrete mixes and patching material specifications:

Component	Minimum Compressive Strength at 28 Days	Maximum Nominal Size Aggregate Mm	Maximum Water/Cement Ratio by Weight	Air Content %	Slump Maximum Mm
i) Parapet	35 MPa	20	0.42	6 (+/-1)	50
ii) Abutments, Piers and Footings	30 MPa	28	0.45	5 (+/-1)	75

- b) Achieve minimum 28-day compressive strength of 35 MPa for Cementitious, non-shrink, non-metallic Grout which may be polymer-modified;

- c) Remove all damaged or deteriorated concrete prior to the surface repair;
- d) Finish concrete surfaces to match the adjacent concrete surface profile;
- e) Ensure tolerances or deviations of the concrete repairs to do not exceed the following limits:

Condition	Limit
i) Patches on other surfaces (excluding Decks)	± 5 mm
ii) Cross-sectional dimensions	± 25 mm
iii) Cover to Reinforcing Steel	minimum 50 mm
iv) Separation from other reinforcing	minimum 25 mm

- f) Seal non-structural cracks in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile; and
- g) Repair structural cracks by pressure injection of an epoxy material in accordance with the manufacturer's specifications and recommendations and remove any excess material to match the adjacent surface profile.

#### 6.08.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## **6.09 Steel, Aluminum and Multiplate Structure Maintenance**

### **6.09.1 Outcome**

To maximize the service life of steel and aluminum Structures.

### **6.09.2 Routine Maintenance Services**

**PM6.09.2-1** Respond immediately to: restrict the load-carrying capacity or vehicle usage or all access to the Structure as directed by the Province.

**PM6.09.2-2** Repair or replace immediately, as directed by the Province, any damaged or deteriorated steel or aluminum Structure members that have been structurally compromised, as determined by the Province.

**PM6.09.2-3** Repair or replace within 3 months, any damaged, deteriorated or missing rivets, bolts and components (including but not limited to, catwalks, ladders, working platforms, and fall arrest systems) that do not restrict the load carrying capacity or cause the Structure to be structurally compromised, as determined by the Province.

**PM6.09.2-4** Repair or replace within 3 months, any damaged or deteriorated steel or aluminum members that do not restrict the load carrying capacity or cause the Structure to be structurally compromised, as determined by the Province.

### **6.09.3 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional material and/or procedures requirements are as follows:

- a) Use materials in accordance with the same type and quality on the existing Structure.

### **6.09.4 Routine Maintenance Services Cap**

\$50,000 – for each occurrence, the cost to repair or replace steel or aluminum Structures or components.

### **6.09.5 Warranty**

Refer to Section 3 of this Schedule 1 (“Specifications”).

## 6.10 Bridge Piling Maintenance

### 6.10.1 Outcome

To provide protection to Bridge Pilings and transfer loads from the Substructure to the ground as designed.

### 6.10.2 Routine Maintenance Services

**PM6.10.2-1** Respond immediately to: restrict the load-carrying capacity or vehicle usage or all access to the Bridge as directed by the Province.

**PM6.10.2-2** Repair immediately, as directed by the Province, any damaged or deteriorated Bridge Pilings that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.10.2-3** Repair within 6 months, any damaged or deteriorated Bridge Pilings that have not been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.10.2-4** Tighten within 6 months, loose cables and fasteners.

**PM6.10.2-5** Repair or replace within 6 months, damaged or missing cables, fasteners, Flashing and Armour.

**PM6.10.2-6** Install within 6 months, Flashing and Armour at new locations as directed by the Province.

### 6.10.3 Quantified Maintenance Services

**PM6.10.3-1** Replace immediately, as directed by the Province, any damaged or deteriorated Bridge Pilings that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.10.3-2** Replace within 6 months, any damaged or deteriorated Bridge Pilings that have not been structurally compromised and do not require complete re-construction, as determined by the Province.

#### Notes:

- 1) The Contractor is not responsible for replacing concrete Piles.

### 6.10.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional material and/or procedure requirements are as follows:

- a) Splice Piles only if the base of the Pile is not damaged or deteriorated; and



- b) Use Pile types and installation procedure as approved by the Province and prepared by a Professional Engineer, retained by the Contractor.

#### **6.10.5 Warranty**

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.11 Retaining Wall Maintenance

### 6.11.1 Outcome

To provide safe and stable Retaining Walls.

### 6.11.2 Routine Maintenance Services

There are no Routine Maintenance Services.

### 6.11.3 Quantified Maintenance Services

**PM6.11.3-1** Repair immediately, as directed by the Province, any damaged or deteriorated Retaining Walls that have been structurally compromised, as determined by the Province.

**PM6.11.3-2** Repair any damaged or deteriorated Retaining Walls that have not been structurally compromised, as determined by the Province as follows:

Performance Criteria	Response by Highway Classification			
	1&2	3	4	5,6,7&8
a) Damage, deterioration, deflection or settlement	1 m	2 m	4 m	6 m

**PM6.11.3-3** Repair within 6 months, other damaged or deteriorated Retaining Walls.

**PM6.11.3-4** Replace within 6 months, Retaining Wall components that are damaged or deteriorated beyond repair.

#### Specific Requirements:

a) Maintain Retaining Walls within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 6.11.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

a) Supply and use material of the same type, quality and size as existing.

### 6.11.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.12 Bridge Railing Maintenance

### 6.12.1 Outcome

To provide a safe barrier between pedestrians, vehicles and hazards.

### 6.12.2 Routine Maintenance Services

**PM6.12.2-1** Temporary repair within 24 hours any damaged or deteriorated Bridge railings.

**PM6.12.2-2** Permanently repair within 2 months any temporary repair for damaged or deteriorated Bridge railings.

**PM6.12.2-3** Replace within 2 months any damaged or deteriorated Bridge railings beyond repair.

#### Notes:

- 1) The response for permanent repairs begins when the Contractor detected or was made aware of the requirement for the temporary repair.

### 6.12.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Supply and use timber material of the same type, quality and size as existing or as approved by the Province.

### 6.12.4 Routine Maintenance Services Cap

\$50,000 – for each occurrence, the cost to repair or replace Bridge railings.

### 6.12.5 Warranty

Refer to Section 3 of this Schedule 1 ("Specifications").

## 6.13 Timber Truss Bridge Maintenance

### 6.13.1 Outcome

To maximize the service life of timber Truss Bridges.

### 6.13.2 Routine Maintenance Services

**PM6.13.2-1** Respond immediately to: restrict the load-carrying capacity or vehicle usage or all access to the Bridge as directed by the Province.

**PM6.13.2-2** Repair immediately, as directed by the Province, any damaged or deteriorated timber Truss Bridges that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.13.2-3** Repair within 6 months, any damaged or deteriorated Portals, Braces or lateral Braces that do not restrict the load carrying capacity or cause the Bridge to be structurally compromised, as determined by the Province.

**PM6.13.2-4** Repair or replace timber Truss Bridge components as follows:

Performance Criteria	Response
a) Torn, loose or missing Flashing	6 m
b) Damaged or loose or missing lateral Truss Rods and fasteners	2 m
c) Damaged or deteriorated cast components	2 m

**PM6.13.2-5** Install within 1 calendar year, Flashings at new locations.

### 6.13.3 Quantified Maintenance Services

**PM6.13.3-1** Replace immediately, as directed by the Province, any damaged or deteriorated timber Truss Bridge components that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.13.3-2** Replace within 2 months, any damaged or deteriorated Truss Rods, Lateral Rods, End Posts, Main Braces, Counter Braces, Floor Beams or Corbels that have not been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.13.3-3** Adjust and replace vertical Truss Rods, as directed by the Province.

**PM6.13.3-4** Adjust the Camber of the Truss Bridge for excessive deviation, as directed by the Province.

#### 6.13.4 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) Treat all freshly sawn or drilled timber members with preservatives;
- b) Camber the top and bottom Laminated Chords in accordance with a procedure, as approved by the Province and prepared by a Professional Engineer, retained by the Contractor;
- c) Refrain from excessive tightening of Truss Rods to lift more Camber into the Truss. The Province may require the Contractor to Shim and/or cut Counter Brace lengths if the Chord Cambers are not smooth or even in profile after all Counter Braces are bearing both ends;
- d) Tighten all Lateral Rods evenly to maintain a straight and uniform Chord line; and
- e) Use a patching, welding or splicing procedure, as approved by the Province and prepared by a Professional Engineer, retained by the Contractor.

## 6.14 Timber and Log Bridge Maintenance

### 6.14.1 Outcome

To maximize the service life of timber and log Bridges.

### 6.14.2 Routine Maintenance Services

**PM6.14.2-1** Respond immediately to: restrict the load-carrying capacity or vehicle usage or all access to the Bridge as directed by the Province.

**PM6.14.2-2** Repair immediately, as directed by the Province, any damaged or deteriorated timber and log Bridges that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.14.2-3** Repair any timber and log Bridge components that do not restrict the load carrying capacity or cause the Bridge to be structurally compromised, as determined by the Province as follows:

Performance Criteria	Response by Highway Classification	
	1,2&3	4,5,6,7&8
a) Damaged or deteriorated timber or log Stringers, Brow Logs, Needle Beams, Caps, Braces and other structural components	3 m	6 m

**PM6.14.2-4** Repair any loose timber and log Bridge components as follows:

Performance Criteria	Response by Highway Classification	
	1,2&3	4,5,6,7&8
a) Loose timber joints, bolts, fastenings, cables and other structural components	1 m	4 m

#### Specific Requirements:

- a) Maintain timber and log Bridges within Rest Areas in accordance with the response of the adjacent Highway Classification.

### 6.14.3 Quantified Maintenance Services

**PM6.14.3-1** Replace immediately, as directed by the Province, any damaged or deteriorated timber and log Bridge components that have been structurally compromised and do not require complete re-construction, as determined by the Province.

**PM6.14.3-2** Replace timber and log Bridge components that have not been structurally compromised and do not require complete re-construction, as determined by the Province as follows:

Performance Criteria	Response by Highway Classification	
	1,2&3	4,5,6,7&8
a) Damaged or deteriorated timber or log Stringers, Brow Logs, Needle Beams and Caps	3 m	6 m

**Specific Requirements:**

- a) Maintain timber and log Bridges within Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) The Contractor is not responsible for replacing Laminated Stringers.

**6.14.4 Materials and/or Procedures**

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Bolt Brow Logs to the log Stringers or Needle Beams.
- b) Replace timber material with preservative-treated Douglas Fir timber of the following standard sizes, unless otherwise approved by the Province;
- i) Timber Stringers, 150 mm x 400 mm (6 inch x 16 inch) select structural grade or as specified or directed by the Province;
  - ii) Timber Caps, Sills 305 mm x 305 mm minimum (12 inch x 12 inch) Number 1 grade; and
  - iii) Timber Box Beam Caps 305 mm x 355 mm (12 inch x 14 inch) Number 1 grade.
- c) Logs for structural repair must be cut from live Cedar or Douglas Fir species, and must be cut in mid-winter and allowed to cure for a minimum of 30 days prior to peeling and placing, unless otherwise approved by the Province

## 7 Network Management

### 7.01 Highway Incident Response

#### 7.01.1 Outcome

To protect Highway Users from traffic related incidents and re-establish traffic flow.

#### 7.01.2 Routine Maintenance Services

**PM7.01.2-1** Respond immediately to all traffic related incidents in accordance with the Inter-Agency Motor Vehicle Incident Response Strategic Protocol.

**PM7.01.2-2** Re-establish traffic flow, working in cooperation with regulatory agencies, police authorities, and the Province as follows:

Performance Criteria	Response
a) Take all actions required to re-establish at least one lane of traffic initially	immediately
b) Re-establish all lanes of traffic	as soon as possible

**PM7.01.2-3** Eliminate potential contaminants (including but not limited to minor gas and oil spills) immediately, working in cooperation with regulatory agencies, police authorities and the Province.

**PM7.01.2-4** Remove vehicles immediately from the Travelled Lanes and Shoulders, when this service is not provided by others.

**PM7.01.2-5** Remove or temporarily relocate cargo and incident debris to a nearby location away from the Travelled Lanes and Shoulders immediately, when this service is not provided by others.

**PM7.01.2-6** Respond immediately to dangerous goods incidents, working in cooperation with regulatory agencies, police authorities and the Province to identify the material.

**PM7.01.2-7** Identify and document immediately, all traffic incidents and the actions taken.

#### 7.01.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 ("Specifications").

Additional materials and/or procedures requirements are as follows:

- a) Comply with the Ministry's Incident Response Management website that contains current policies and procedures supporting incident response for Highways;
- b) Respond to dangerous goods incidents in accordance with the Canadian Transport Emergency Centre (Canutec) Emergency Response Guidebook;



- c) Remain at the site(s) until traffic flow in all lanes has been re-established and the site(s) are safe for Highway Users; and
- d) Provide photographs with traffic incident documentation

## 7.02 Major Event Response

### 7.02.1 Outcome

To ensure the safety of Highway Users, re-establish traffic flow and restore damaged Highway infrastructure caused by Major Events.

### 7.02.2 Routine Maintenance Services

**PM7.02.2-1** Monitor areas and the Highway infrastructure that are known or suspected of being at risk, before, during and after a Major Event as follows:

Performance Criteria	Response
a) Initial response	immediately
b) Following the initial response	as directed by the Province

**PM7.02.2-2** Respond when a Major Event occurs as follows:

Performance Criteria	Response
a) Assess the situation	immediately
b) Mobilize required equipment and resources, and temporary Structures	immediately
c) Take all actions required to re-establish at least one lane of traffic initially	immediately
d) Re-establish all lanes of traffic	as soon as possible
e) Restore the Highway infrastructure to a condition acceptable to the Province	as soon as possible

### 7.02.3 Materials and/or Procedures

Refer to Subsection 1.6 of this Schedule 1 (“Specifications”).

Additional materials and/or procedures requirements are as follows:

- a) The Province will assess the damage and may prescribe the required repair;
- b) The Province will determine when a Major Event Site is deemed restored;
- c) The Ministry’s Incident Response Management website contains current policies and procedures supporting Major Event response for Highways;
- d) Establish and remove temporary detour routes and temporary Structures, working in cooperation with the Province;
- e) Install, disassemble and store temporary Structures in accordance with the manufacturer’s specifications and recommendations;
- f) Work continuously 24 hours per day, 7 days a week in certain situations or as directed by the Province;

- g) Remain at the Major Event Site(s) until traffic flow in all lanes has been re-established and the Major Event Site(s) are safe for Highway Users; and
- h) Determine priorities as approved by the Province if multiple Major Events occur.

#### **7.02.4 Routine Maintenance Services Cap**

\$10,000 – for each occurrence, the costs to restore damaged Highway infrastructure at each Major Event Site. In addition, in each Contract Year, the Contractor's total financial risk for all Major Events will not exceed 2% of the Annual Price. Only the \$10,000 paid by the Contractor for each Major Event will contribute towards the 2% cap in each Contract Year.

## 7.03 Highway Inspection

### 7.03.1 Outcome

To develop a comprehensive knowledge of Highway conditions to support a work identification and planning program.

### 7.03.2 Routine Maintenance Services

**PM7.03.2-1** Inspect immediately any conditions reported by the Province and others (including but not limited to the public, regulatory agencies, and police authorities) that are considered unsafe or have the potential to become unsafe.

**PM7.03.2-2** Increase inspections as directed by the Province, for any condition that is considered unsafe or has the potential to become unsafe.

**PM7.03.2-3** Inspect and document the condition of Highway infrastructure as follows:

Highway Infrastructure	Response by Highway Classification				
	1&2	3	4&5	6&7	8
a) Bailey and Acrow Bridges	14 d	21 d	2 m	3 m	3 m
b) Timber Truss Bridges	21 d	1 m	1 m	1 m	1 m
c) Structure drains and flumes	1 m	1 m	1 m	1 m	1 m
d) Log Stringer Bridges	n/a	3 m	6 m	1 y	1 y
e) Other timber Bridges	2 m	3 m	6 m	1 y	1 y
f) Concrete Structures	4 m	6 m	1 y	1 y	1 y
g) Steel, Aluminum and Multiplate Structures	4 m	6 m	1 y	1 y	1 y
h) Retaining Walls	2 y	2 y	2 y	2 y	2 y
i) Tunnels and Snow Sheds	6 m	1 y	1 y	1 y	1 y
j) Pedestrian and Farm/Animal Underpasses	1 y	1 y	1 y	1 y	1 y
k) Sign Bridges	1 y	1 y	1 y	1 y	1 y
l) Ungulate Guards	1 y	1 y	1 y	1 y	1 y
m) All other Structures	1 y	1 y	1 y	1 y	1 y
n) Drainage infrastructure (including but not limited to Drainage Appliances and Ditches)	1 y	1 y	1 y	1 y	n/a
o) Roadside Catchment Appurtenances	6 m	1 y	1 y	1 y	n/a
p) Highway Crossing Infrastructure	1 y	1 y	1 y	1 y	n/a
q) All other Highway infrastructure	3 y	3 y	3 y	3 y	n/a

**PM7.03.2-4** Inspect Safety Devices annually or in accordance with the manufacturer's specifications and recommendations, whichever is more frequent.

#### Specific Requirements:

- a) Conduct inspections within Rest Areas in accordance with the response of the adjacent Highway Classification.

**Notes:**

- 1) Increased inspections as identified in PM7.03.2-2 of the General Specifications of this Schedule 1 (“Specifications”) are for Structures only and may include, but are not limited to: a structural deficiency, impact from vehicles or their loads, vessels or their loads, slope movement, fill movement / settlement, erosion, flooding, Debris, water, high winds, vandalism, fire and/or excessive heat, earthquakes, excessive loading vibration and excessive settlement or movement of Structure Foundations; and
- 2) A list specifying which Structures require inspection will be provided annually in Schedule 8 (“Infrastructure”).

**7.03.3 Materials and/or Procedures**

Additional materials and/or procedures requirements are as follows:

- a) Inspect and document within the First Contract Year, the condition of all Highway infrastructure identified in PM7.03.2-3 (n) and (q) of the General Specifications of this Schedule 1 (“Specifications”) in accordance with the Highway Inspection Condition Rating Guidelines. This is to include all inventoried and non-inventoried infrastructure;
- b) Conduct Structure inspections using a Qualified Structure Inspector;
- c) Use inspection results to support the development of annual work plans for Routine Maintenance Services and Quantified Maintenance Services; and
- d) Monitor Bridges and Culverts for any evidence of live or dead animals including, but not limited to invasive zebra and quagga mussels.

## 7.04 Highway Safety Patrol

### 7.04.1 Outcome

To monitor the conditions of the Highway and respond to conditions that are unsafe, or have the potential to become unsafe to Highway Users or the Highway.

### 7.04.2 Routine Maintenance Services

**PM7.04.2-1** Respond immediately to conditions that are unsafe, or have the potential to become unsafe.

**PM7.04.2-2** Conduct safety patrols of Highways at the continuous frequencies as follows:

Performance Criteria	Response by Highway Classification (every min, h or d)				
	1&2	3	4	5	6&7
a) At all times	24 h	2 d	7 d	14 d	21 d
b) During periods of Heavy Rainfall, High Water Flow or Rapid Snowmelt	2 h	4 h	8 h	16 h	32 h
c) When a Weather Event is forecasted	4 h	8 h	16 h	24 h	36 h
d) During a Weather Event	90 min	3 h	8 h	12 h	n/a

**PM7.04.2-3** Increase safety patrols as approved by the Province, for any condition that is considered unsafe or has the potential to become unsafe.

**PM7.04.2-4** Identify and document immediately, conditions that are unsafe, or have the potential to become unsafe and the actions taken.

**PM7.04.2-5** Identify and document immediately, conditions that have a performance criteria response of 7 days or less.

#### Specific Requirements:

- a) Conduct safety patrols within Rest Areas in accordance with the response of the adjacent Highway Classification; and
- b) Patrol vehicles are to be appropriately equipped to respond to conditions that are unsafe, or have the potential to become unsafe.

## 7.05 Communications

### 7.05.1 Outcome

To communicate effectively and in a timely manner with the public, Stakeholders, and Province.

### 7.05.2 Routine Maintenance Services

**PM7.05.2-1** Communicate Highway conditions as follows:

Performance Criteria	Response
a) Report to the Province any Major Events and conditions that are unsafe or have the potential to become unsafe to Highway Users or the Highway, including those that are not covered by the Agreement, and those beyond the Right-of-way	immediately
b) Notify local Ministry avalanche personnel of any significant avalanche occurrences either above or on the Highway and report any changes in weather conditions associated with rising avalanche hazard conditions	immediately
c) Input public messages on the Province's low frequency broadcast stations consistent with current conditions in accordance with the Provincial template.	immediately
d) Report to the Province abandoned vehicles/equipment and assist in the disposal if required, in accordance with the Province's Abandoned Vehicle or Object Process	immediately
e) Advise tow truck operators when it is appropriate to remove vehicles from the Highway	immediately
f) Report to the Province Traffic Delays exceeding 20 minutes	immediately
g) Report to the Province when an electronically controlled sign is damaged or not functioning properly	immediately
h) Report to the Province any evidence of live or dead invasive animals including, but not limited to zebra and/or quagga mussels on Bridges or culverts	immediately

**PM7.05.2-2** Update DriveBC as follows:

Performance Criteria	Response
a) Highway conditions from October 1 to April 30	5:00 a.m., 7:00 a.m. and 4:00 p.m. daily
b) Highway conditions May 1 to September 30	7:00 a.m. and 4:00 p.m. daily
c) When weather conditions affecting visibility deteriorate or improve	immediately
d) When driving conditions deteriorate or improve	immediately
e) Communicate in accordance with the Provincial Incident Response and Travel Advisory Messaging Protocol, any conditions leading to Highway closures, lane closures, Traffic Delays or adverse weather that could lead to unsafe Highway conditions	immediately
f) Recommend changes to the Province, in accordance with the Provincial Incident Response and Travel Advisory Messaging Protocol, regarding messages displayed on the electronically controlled dynamic message signs	immediately

**PM7.05.2-3** Communicate with the public and Stakeholders as follows:

Performance Criteria	Response
a) Monitor, receive, and respond to complaints, comments and requests for service across various Communications Platforms or in person and document the result of those communications	24 h
b) Monitor and communicate across various Communications Platforms in advance, during and after planned Services, traffic disruptions, or upcoming Weather Events	immediately
c) Solicit and monitor input regarding the delivery of Services and work with the public, Stakeholders and Province when Services are, or may be disruptive/contentious	in advance, during and after
d) Engage in public educational campaigns (including but not limited to winter preparedness, Shift Into Winter and Cone Zone) independently or in conjunction with the Province	each season
e) Provide a toll-free telephone public service, attended by sufficient personnel to respond to: complaints; comments or concerns; reports of conditions that are unsafe or have the potential to become unsafe; and reports of and requests for provincial Highway conditions	24 hrs/day, 7 days a week
f) Provide a contact list to all emergency responders and enter this information into the Ministry's Incident Response Management website	Commencement Date and immediately thereafter for any changes

**7.05.3 Materials and/or Procedures**

Additional materials and/or procedures requirements are as follows:

- a) Communications with the public, Stakeholders and Province are to be clear and concise;



- b) Provide highway condition information in DriveBC in accordance with the DriveBC Web Input Utility User Manual;
- c) Communicate with the public and Stakeholders using different strategies in rural and urban areas;
- d) Actively operate a minimum of 2 Social Media platforms that are specifically intended for highway maintenance to communicate, engage with and educate the public, fully utilizing the Social Media Platform's communications capabilities; and
- e) Provide an automated acknowledgement on all Communications Platforms, where technically feasible, including the provision of 24 hours per day, 7 days a week contact service for emergency related matters.

# **SECTION 7**

# **LOCAL AREA SPECIFICATIONS**