

## SECTION 145

### GENERAL REQUIREMENTS FOR HIGHWAY, BRIDGE AND MARINE CONSTRUCTION

**145.01 General Requirements** - This Section covers the general Work requirements for highway, bridge, and marine construction.

The standards and materials specifications contained in the Standard Specifications for Highway Construction govern the specific requirements for the Work. Special Provisions provide additional specific requirements for the Work and supersede the Standard Specifications where there is conflict.

Specifications, standards, regulations and codes of other authorities named in full or by acknowledged abbreviations in the Glossary of Terms of the Standard Specifications or the Contract Document Package shall be adopted by reference.

Such reference in whole or in part by the necessary alphanumerical designation from the latest edition or revision is intended to fully detail the requirements of the Work.

**145.02 Reference Information** - Reference information for the Work identified in the [Contract](#) is made available for the Contractor to use for its own purpose. The Contractor shall be solely responsible for any interpretation placed thereon and for all impacts resulting from such interpretation.

**145.03 Value Engineering Proposals** - The Ministry wishes to encourage the development of value engineering proposals (VEP's) during the Term of the Contract. The Ministry will provide a process, as outlined in SS 125 to encourage the introduction, consideration, and possible implementation of VEP's. The Contractor may submit any number of VEP's during the Term.

The Ministry will be the sole judge of the acceptability of a VEP and of the cost savings, which will be realized by the Ministry due to the implementation of the VEP. The decision of the Ministry will be final.

The Ministry will not be liable to the Contractor for the Ministry's failure to accept or implement a VEP submitted by the Contractor nor for any delays to the Work that may be attributable to the VEP. A VEP or Summary VEP cannot, under any circumstances, be the basis for a claim by the Contractor.

**145.04 Scope of Work** - The scope of Work is described in the Special Provisions. No warranty is given or implied that any or all of this Work will be required or supplied.

**145.05 Quantities and Dimensions** - Quantities,  
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dimensions, lines and elevations as shown on the plans and Drawings are designed neat lines. Approximate quantities entered in Schedule 7 - Approximate Quantities and Unit Prices are quantities approximated using the lines and dimensions shown in the Contract Document Package and other relevant factors, and may vary from quantities derived from the Drawings. Actual payment quantities will be measured, calculated, or otherwise determined in accordance with the [Contract](#).

**145.06 Unit Prices** – Unit Prices in the Schedule of Approximate Quantities and Unit Prices shall be complete and contain all the elements of cost involved, provision of all things, superintendence and profits. The price shall stand independent of any other Unit Price Item on the Schedule of Approximate Quantities and Unit Prices.

**145.07 Pre-construction Meeting** - The Ministry Representative will determine the pre-construction meeting's location and time and notify the Contractor.

**145.08 Mobilization** - Mobilization consists of the necessary Work and operations including, but not limited to, the movement of personnel, equipment, supplies, and incidentals to the Site, the establishment of offices, camps, and other facilities necessary to undertake the Work and all other Work Items and operations which must be initiated and finished as part of completion of the Work.

**145.08.01 Payment for Mobilization** – Where the Contract includes a payment Item for mobilization, the Lump Sum Price for mobilization includes any or all of the related expenses incurred for mobilization, demobilization and any re-mobilization not covered under the Work Items which must be initiated and finished as part of the Work. The Lump Sum Price for mobilization will be paid in increments as the Work progresses.

If the Contract does not contain a payment Item for "Mobilization", all costs associated with mobilization, demobilization and re-mobilization will be included in payment for Items having such costs.

Payment for mobilization, if applicable, will be made at the tendered Lump Sum Price as follows:

- a) The Contractor will be paid any portion of the mobilization Lump Sum Price exceeding five percent (5%) of the Tender Price within sixty (60) days after the Actual Completion Date or on the final progress estimate (whichever occurs first).
- b) That portion of the mobilization Lump Sum Price not exceeding five percent (5%) of the total Tender

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Price, will be paid to the Contractor according to the following breakdown:

- i) Seventy-five percent (75%) when the Contractor has submitted, in an acceptable form, to the Ministry Representative each of the following that is required under the Contract
- Construction Schedule,
  - Cash Flow Projection Schedule,
  - Traffic Management Plan,
  - Quality Control Plan,
  - Sediment and Drainage Management Plan,

and the value of the Work completed on bid Items other than mobilization exceeds two percent (2%) of the Tender Price.

- ii) The remaining twenty-five percent (25%) of this portion of the mobilization Lump Sum Price will be paid prorated on a monthly basis for the percentage of Work completed as determined by the Ministry Representative when the Ministry Representative receives acceptable construction schedule updates, all quality control reports have been submitted by the Contractor as required by the Ministry, all equipment has been removed from the Site, and the Site has been cleaned up to the satisfaction of the Ministry Representative.

The payments from the Lump Sum Price, as set out above, will be full compensation for mobilization, demobilization and re-mobilization, regardless of the number of times the Contractor mobilizes.

**145.09 Authority of the Ministry Representative** - The Ministry Representative has the authority to accept or reject the Contractor's Work in accordance with the conditions set out in the [Contract](#). Until the Work meets the requirements of the [Contract](#) and has been accepted by the Ministry Representative, the Ministry is not obligated to make payment for Work done by the Contractor. The Ministry Representative shall take all necessary measurements and calculations to determine the final quantities for final payment.

**145.10 Power, Telegraph, Telephone Lines and Other Utilities** - Moving of existing power, telegraph and telephone lines, poles and other utilities from their current to their final design locations, unless specified as being part of the Work, shall be performed by third parties at the Ministry's expense.

If the Contractor's operations require the temporary removal or relocation of lines or poles, such removal or relocation shall be entirely the responsibility of the Contractor and costs of any interim utility relocations shall be to the Contractor's account. Utility owner(s) must be

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contacted prior to doing any utility work.

The Contractor shall be responsible for any damage to poles, lines or utilities caused by the Contractor's construction operations, and shall repair and make good the same or bear the expense of making good and repairing the same.

The Contractor shall take the necessary precautions to protect existing utility services during the performance of the Work and shall be responsible for any losses or damages caused by the Contractor.

Locations of the utilities shown on the Drawings are approximate and may not be complete. The Contractor shall be responsible to ensure the locations of the utilities are complete and shall notify the Ministry Representative of any discrepancies between the Drawings and the Contractor's findings.

**145.11 Permits** - The Contractor shall give all requisite notices in connection with the Work to the proper authorities and shall procure at the Contractor's expense all permits, licences, etc., of every description necessary for the construction and completion of the Work.

The Contractor shall deliver or make available all original certificates to the Ministry Representative for all or any part of the Work for which such certificates may be required in connection with performing the Work.

**145.12 Inspection of Work** - All materials and each part or detail of the Work shall be subject to inspection by the Ministry Representative.

The Contractor shall be held strictly to the true intent of the [Contract](#) in regard to quality of materials, work practice and the diligent execution of the Contract.

The Ministry Representative shall be given access to all or any part of the Work, and to the preparation, fabrication or manufacture of the materials to be used. The Contractor shall furnish all information and assistance as is required to make a complete, true and detailed inspection.

The Ministry Representative may reject any part or parts of the Work which do not comply with the requirements of the [Contract](#). The Ministry Representative's decision will be accepted as final.

Inspection may extend to all or any part of the Work and to the preparation, fabrication or manufacture of the materials to be used. The Ministry Representative may station others on the Site to report on the progress of the Work and the manner in which it is being performed.

The Ministry Representative will report to the Contractor

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on materials furnished or Work performed that fails to fulfill the requirements of the Contract.

Inspection or its lack shall not relieve the Contractor from any obligations to furnish acceptable materials or to provide completed construction Work that complies with the [Contract](#).

The Contractor shall furnish for the approval of the Ministry Representative, at proper times, all shop and installation drawings as requested by the Contract or which the Ministry Representative may deem necessary.

In accepting [Drawings](#) submitted by the Contractor, the Ministry Representative will assume no responsibility as to the correctness of such [Drawings](#) and the Ministry Representative's examination is only to ensure general compliance with the [Contract](#).

### **145.13 "Ministry Representative's Instruction" and "Contractor's Declaration"**

**145.13.01 "Ministry Representative's Instruction" -** "Ministry Representative's Instruction" form (H0202) will be issued by the Ministry Representative to the Contractor in order to:

- a) describe a portion of the Work which may not be covered specifically in the Contract.
- b) confirm instructions which may affect the method of carrying out the Work or payment.
- c) confirm verbal agreements made with the Contractor's representative.
- d) respond to the Contractor's representation on "Contractor's Declaration" form (H0203).

**145.13.02 "Contractor's Declaration" -** The Contractor is to issue the "Contractor's Declaration" form (H0203) to the Ministry Representative in order to:

- a) make a declaration of acceptance or objection to contents of the "Ministry Representative's Instruction".
- b) formally present the Contractor's opinions, problems or requirements for clarification.

**145.14 Protection and Restoration of the Work -** The Contractor shall protect all Work and surrounding infrastructure from injury or damage until the issuance of the Completion Certificate.

If the Contractor fails to prevent any injury or damage to the Work, the Contractor shall rebuild, repair, and restore at its expense any portion of the Work so injured or

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damaged.

The Ministry may reimburse the Contractor for any injury or damage caused by an event not foreseen and not reasonably foreseeable by the Contractor and beyond the control and not resulting from any fault or negligence of the Contractor including but not restricted to acts of God, acts of a Public Enemy, acts of the [Ministry](#), extraordinary action of the elements and unavoidable slides.

### **145.15 Materials**

**145.15.01 Supply of Materials -** [The Contractor shall supply all Materials necessary for the completion of the Work with the exception of the Materials supplied by the Ministry as listed in the Special Provisions.](#)

[All Materials supplied under the Contract shall be deemed to be the property of the Ministry held by the Contractor for the due completion of the Work.](#)

### **145.15.02 Acceptance of Materials**

[All Materials supplied under the contract:](#)

- [a\) Shall be new.](#)
- [b\) Shall conform to the requirements of the Contract.](#)
- [c\) Shall be inspected by the Ministry](#)
- [d\) Shall be approved by the Ministry for incorporation in the Work.](#)

**145.15.03 Inspection of Materials**– [includes material certificates review, fabrication inspection, sampling and testing of Materials.](#)

[The Contractor shall provide to the Ministry, material or mill certificates two weeks prior to shipping of the Materials supplied by the Contractor. Such material or mill certificates shall include the material properties that demonstrate the Materials compliance with the requirements of the Contract.](#)

[The Contractor shall notify the Ministry Representative of the sources of Materials supplied by the Contractor, and obtain the right for the Ministry to enter upon the premises of the material supplier or fabricator and carry out such inspection. Such notification shall be given sufficient far in advance of Materials delivery dates to enable the Ministry Representative to make inspection of the Materials at the source.](#)

[The Ministry will not be responsible for any delays to the Contractor's operations where the Contractor fails to give](#)

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sufficiently advance notification to the Ministry Representative to enable the Ministry to carry out the inspection before the scheduled shipping dates.

The Contractor will be charged for all travel time, board and lodging costs incurred by the Ministry or its designate, required to inspect Materials components if the source of the material is outside the Province.

As requested, the Contractor shall submit representative samples of Materials to the Ministry Representative at no charge to the Ministry.

**145.15.04 Approval of Materials** - Any rejected Materials shall be removed from the site and replaced at the Contractor's expense immediately after notification. All costs incurred for inspection, sampling and testing that established Materials rejection shall be charged to the Contractor.

Approval of any Materials shall not preclude later rejection of the same Materials prior to acceptance of the complete work.

**145.15.05 Alternative Materials** - Brands, species and manufacturer's names specified are approved for use in the performance of the Work. No alternative Materials will be considered unless approved in advance by the Ministry Representative in writing.

Savings as a result of using alternate Materials will be evaluated using SS 125 Value Engineering.

**145.15.06 Recognized Products List** - The Ministry has reviewed a number of products for use in highway applications and publishes a "Recognized Products List", indicating which products are considered generally acceptable for particular purposes. Contractors are encouraged to review the list to aid in determining which products they will supply, but are cautioned that the products listed, although generally acceptable, may not meet Contract-specific specifications.

The Categories "Proven," "Tentative" or "Approved" in the Recognized Products List are an indication of the product's record of use and purpose. Products in any category are "recognized" and may be used as long as the product meets Contract specific specifications.

Unless so specified in the Contract, Materials provided are not required to be amongst those on the Recognized Products List.

The Recognized Products list is available on-line at: [www.th.gov.bc.ca/publications/eng\\_publications/geotech/Recognized\\_Products\\_Book.pdf](http://www.th.gov.bc.ca/publications/eng_publications/geotech/Recognized_Products_Book.pdf)

**145.15.07 Storage and Use of Materials** - The Contractor shall provide a secure storage acceptable to the Ministry

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Representative for all Materials. The Contractor shall, in advance of receipt of the shipment of the Materials notify the Ministry Representative of the storage facilities locations for their inspection and acceptance.

The Materials shall be kept in the designated storage immediately upon receipt of the Materials. The Contractor shall not remove any Materials from the storage locations, except for incorporation in the Work, without the written authorization from the Ministry Representative.

The Contractor shall be responsible at no cost to the Ministry for:

**a)** acceptance of all Materials including careful unloading and handling, prompt turn around of tank or shipping cars, trucks or delivery containers, hauling and delivery from delivery point to job site, storage, stockpiling and reloading of Materials;

**b)** prompt payment of all demurrage or rental charges on cars, (except as provided in SS 501) freight, handling, delivery, storage or any other charges arising after the initial receipt of material at the delivery point;

**c)** ensuring that proper accounting is kept of all Materials.

The Contractor shall not unload or take delivery of any material without presence of the Ministry Representative. The Contractor shall notify the Ministry Representative of Materials delivery schedule and allow sufficient time for the Ministry Representative to check quantity and quality before any Materials are delivered.

The Contractor shall be solely responsible for recovery of any loss, damage, or improper use (including incorporating in the rejected Work) of any Materials.

Upon completion of the Work, all Materials supplied by the Contractor in excess of the amount used to complete the Work shall become the property of the Contractor and shall be charged to the Contractor at the supplied cost (including freight and all other costs incurred to supply the Materials) plus applicable overheads.

Empty Materials packaging that are not required for their original purpose shall become the property of the Contractor and shall be disposed of by the Contractor.

**145.15.08 Materials Supplied by the Ministry** – are Materials arranged and paid by the Ministry by purchase orders for delivery by the Purchasing Commission on instructions from the Contractor notifying the Ministry Representative.

Separate purchase orders will be issued for each class of material.

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Materials ordered for a specific Site shall not be transferred to any other Site without the written consent of the Ministry Representative.

Ministry supplied Materials will be used only for Ministry Work. Further requirements for asphalt Materials supplied by the Ministry are contained in SS 501 and SS 951.

**145.15.08.01 Delivery Points** - Each purchase order will specify points of delivery. If the Contractor makes a request for a change of delivery points specified by the Purchasing Commission, the additional cost for this delivery shall be charged to the Contractor.

**145.15.08.02 Delivery of Materials** – When the Ministry Representative advises the Contractor of the name of the supplier(s), the Contractor shall be responsible for determining requirements and ordering far enough in advance that work is not delayed.

The Contractor shall report to the Ministry Representative any Materials damage or discrepancies between the quantities received and the quantities shown on the bills of lading immediately upon Materials arrive at the delivery point. If damage or deficiencies are not so reported, it will be assumed that the Materials arrived in good order.

If asphalt materials are hauled directly from the delivery point for immediate application to the roadway, the material will be measured by mass or volumetrically by the Ministry Representative at the time of delivery. The Contractor shall ensure that an acceptable means of measurement is available.

**145.15.08.03 Distribution of Materials** - To control distribution of Ministry supplied Materials (except asphalt materials as provided in SS 501 and SS 951) and to facilitate accounting:

a) the Contractor shall arrange for delivery of the Materials only after applying for and receiving authority to do so on "Authority to Arrange for Delivery of Construction Materials" form (H0313). The requirements of the Contractor shall be indicated on Part "A" of the form. Approval from the Ministry Representative shall be indicated on Part "B" of the form. The Contractor may then arrange for delivery from the supplier. As delivery will be made only on receipt of the purchase order number and the serial number of the "Authority" form, the Contractor shall arrange with the Ministry Representative to immediately distribute appropriate copies of the "Authority" form.

Material suppliers will be required to notify both the Ministry Representative and the Contractor when Materials are shipped, giving sufficient information to

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identify each and every shipment against an appropriate "Authority" form serial number and purchase order number.

b) The use of "Authority" form shall not in any way relieve the Contractor of any responsibility imposed under SS 145.15.08.02

c) If the Ministry Representative refuses to authorize the delivery of Materials to the job, the Ministry Representative will send the refusal, with reasons in writing, to the Contractor.

Upon completion of the Work, the Contractor will deliver all unused Materials supplied by the Ministry, to a location as specified by the Ministry Representative. No payment will be made for this portion of the Work.

**145.15.09 Payment** - The Ministry will offset any material costs charged to the Contractor from any payments made to the Contractor.

### **145.16 Not Used**

**145.17 Operation of Pavement Brooms on Highway** - No mechanical pavement broom shall be operated on any highway without a rotating amber flashing light in operation. The light shall be mounted on self-propelled brooms and upon the towing vehicle of trailer type brooms.

Traffic Control is to be in accordance with the Traffic Control Manual for Work on Roadways. In addition, on extremely winding narrow roads an additional shadow vehicle shall be used ahead of the broom with a C-37 on the front of the vehicle and a flashing arrow in bar mode.

### **145.18 Supply and Maintain Facilities**

**145.18.01 Working Office** - When required under Special Provisions, the Contractor shall provide a suitable working office with lock-up for the sole use of the Ministry. The office shall meet the requirements of Appendix A and be weatherproof, reasonably soundproof, and have ample window area and ventilation. Location of the office shall be determined by the Ministry Representative.

The Contractor shall regularly collect refuse and keep the office clean and properly maintained with heat and light. .

The office and contents shall be for the use of the Ministry for the duration of the Work and may if necessary be used concurrently with the other inspection agencies.

The Contractor shall supply a private telephone line for the sole use of the Ministry Representative. Ministry's long



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distance calls will be paid for by the Ministry.

Payment for the Ministry's Site Office (when requested) will be made at the Lump Sum price in the [Contract](#).

Payment will include the provision of the office, furnishings, maintenance through out the Term, and removal in its entirety.

Payment of 50% of the Lump Sum will be made when the office is ready for occupancy and the remaining 50% after the office has been removed and the Site cleaned up to the satisfaction of the Ministry Representative.

**145.18.02 Testing Facility** – When required by the Special Provisions, the Contractor shall provide the Ministry with a material testing facility with a minimum of 12 m<sup>2</sup> floor space either in the form of a small trailer or the portion of a large trailer. The testing facility shall include power, light, heat, ventilation, plus basic furniture to permit testing and preparation of test records. The facility shall be stable, reasonably quiet and lockable.

Payment for the Ministry's Material Testing facility (when required) will be made at the Lump Sum price in the [Contract](#)

Payment will include the provision of the facility, furnishings, maintenance through out the Term, and removal in its entirety.

Payment of 50% of the Lump Sum will be made when the facility is ready for occupancy and the remaining 50% after it has been removed and the Site cleaned up to the satisfaction of the Ministry Representative.

**145.18.03 Service for Ministry Facilities** – Where the Ministry provides its own facilities on Site, the Contractor shall, for the duration of the Contract, provide light and heat and any other services requested by the Ministry Representative for same, and the Contractor will be compensated on a Force Account Basis.

**145.18.04 Weigh Scale** - The Contractor shall provide a truck weigh scale wherever measurement of materials by mass is required.

The weigh scale shall be an approved electronic weigh scale or platform type with remote balancing beam. The scale shall be of sufficient size and capacity to weigh, at a single pass, the largest, rigid-framed haulage vehicle to be used on the job and in any case shall be of not less than 13 t (tonne) capacity. The scale shall be capable of weighing all loads to within 20 kg of the true mass.

At the start of the Work, and as frequently as the Ministry Representative may deem necessary in order to ensure the

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accuracy, the scale shall be calibrated and checked at the Contractor's expense by an Inspector of Weights and Measures.

The remote balancing beam shall be enclosed in a sound, watertight, dust-free scale house, properly ventilated and insulated. Adequate heating must be provided when the shade temperature is below 16°C.

The scale house shall be provided with full length windows facing the scale platform, and windows shall also be provided at either end, so that both the Contractor's scaleperson and the Ministry Representative's scale checker can at all times see vehicles to be weighed, not only on the scale but also approaching and leaving.

The front window shall be sufficiently large and low that the whole scale platform is readily visible to the Ministry Representative's checker. Immediately behind the balancing beam, a bench or table of sufficient length shall be provided to permit both scaleperson and checker to sit abreast in a position in which they can both write on the table and view the electronic scale or weigh beam and scale platform. Drawing SP145-01 shows these requirements.

The Contractor shall supply and maintain, at no additional expense to the Ministry, portable washroom facilities at the weigh scale site.

Payment for the weigh scale and ancillary facilities shall be incidental to the Unit Prices of the materials being weighed.

**145.19 Weighing Materials** - The Contractor shall supply, at no additional expense to the Ministry, a qualified scaleperson to carry out the necessary weighing which will be monitored by the Ministry Representative's scaleperson.

A weighing certificate prepared in triplicate, certified by the Ministry Representative's scaleperson, will be issued for each load. The required certificate will be supplied by the Ministry. The Contractor will be paid only for such material as has been acknowledged by the Ministry Representative's checker as having been received at the point of delivery designated by the Ministry Representative.

The delivery receipts will bear the signature, initials or other approved marking of the issuing Ministry Representative's scaleperson and receiving checker.

If the Contractor has an automated scale and the following conditions are being met, the Contractor shall not be required to supply a scaleperson:

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- a) All weighed material is being delivered to a single Ministry job site. If the Contractor is delivering to two or more Ministry job sites at the same time, the Contractor shall supply a scaleperson as detailed in the first paragraph.
- b) Truck operators do not require instruction.
- c) There are no overloads, tarp covering, spillage difficulties, or any safety problems.
- d) The scale platform is maintained by the Contractor to be clean and free from loose material at all times.

Should any of the above four conditions not be met, the Contractor shall provide a qualified scaleperson upon the instruction of the Ministry Representative.

In the event the Ministry Representative determines a scaleperson is not required, all weighed vehicles must be tared by both the Ministry Representative and the Contractor together once a day. In the event that any of the above conditions are not being met, at any time during the Term, in the opinion of the Ministry Representative, then the Contractor shall supply a scaleperson as detailed in the first paragraph.

**145.20 Weather** - No work shall be undertaken by the Contractor when, in the opinion of the Ministry Representative, the weather is unsuitable or unfavourable for that particular class of work. The Contractor shall not be entitled to make any claim for damages due to such delay.

**145.21 Layout of Work and Calculation of Quantities-** A number of key reference points of control line (primary) for the establishment of the design control line will be provided by the Ministry to enable the Contractor to lay out the Work. The Contractor shall assume full responsibility for the alignment, dimensions and elevations of each and every part of the work and their mutual agreement.

**145.21.01 Ministry Responsibilities** - The Ministry will survey the original ground line, and any subsequent material horizons, for determination of appropriate pay item quantities.

Where the Ministry has a pre-existing survey of the Site, the Ministry may use that survey as the original ground. If the Ministry elects to use such a survey, the Ministry Representative will notify the Contractor of such intent and give the Contractor an opportunity to view the cross-sections, contours, or Digital Terrain Model. Any areas of the survey or model that do not adequately reflect the Site at the start of construction will be identified by the Contractor or the Ministry and will be resurveyed by the

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Ministry prior to the Contractor starting work in any affected area of the Site.

Unless otherwise specified in the [Contract](#), calculation of quantities will be on a neat line basis, as calculated from the design lines shown on the [Drawings](#), adjusted to incorporate design changes and field-fits authorized by the Ministry Representative. Any material placed or excavated beyond the design lines is considered Unauthorized Work.

For items such as Type D excavation where the upper boundary of a cut cannot be determined until the completion of stripping, the design line will be revised to reflect the actual bottom of stripping line as determined by the Ministry's survey.

Quantities calculated from digital terrain models will be done using average-end-areas based on cross-sections extracted from the model or, at the Ministry Representative's option, by using prismatic volumes between surfaces in the model.

Where agreeable with the Contractor, alternate methods of determining payment quantities may be employed.

The Contractor may be required to adjust its construction activities from time to time to allow the Ministry's measurement work to proceed unencumbered. The Contractor shall not proceed with the next stage of any construction until the Ministry has completed measurements of the previous work.

Quality Assurance and checking of layout may be performed by the Ministry Representative.

**145.21.02 Contractor's Responsibilities** - The Contractor shall perform all layout of the work and all other survey work required to execute the Contract and construct the works in accordance with the [Contract](#).

The Contractor shall be responsible for establishing all secondary control points and/or lines, all slope stakes, the establishment of line and grades for subgrade and the various granular aggregate layers, layout by line and grade of all structures, culverts, and underground utilities, and shall perform all other layout and measurement necessary for the proper execution of the Contract.

The staking of all works shall be of a sufficient accuracy and frequency for the Ministry to carry out its quantity measurements and quality assurance program.

On request of the Ministry Representative, the Contractor shall submit documentation to verify the accuracy of the layout work.

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The Contractor shall be satisfied, before commencing any Work, as to the meaning, intent and accuracy of any control points, control lines and benchmarks established by the Ministry.

Should the Contractor discover or suspect any errors in any control points, control lines, benchmarks, and data provided by the Ministry, the Contractor shall at once discontinue the affected work until such errors are investigated by the Ministry Representative and, if necessary, rectified.

No separate payment will be made for layout work and the cost thereof will be considered incidental to the various items of work to be performed in the Contract.

The Work shall be so laid out and constructed that the location of substructure elements and anchor bolt groups shall not differ from the true positions by more than the following amounts:

- a) Substructure elements - 12 mm
- b) Anchor bolt groups - 6 mm.
- c) The elevation of bridge seats shall not differ from true elevations by more than 3 mm.

Any deviation beyond the above mentioned tolerances shall be satisfactorily corrected by the Contractor at the Contractor's expense.

**145.22 Access to Site** - The Contractor shall provide access to the Site as may be necessary. No separate payment will be made for the provision of any access roads or incidental works in connection therewith.

The Contractor shall make arrangements with the property owners adjacent to and around the terminal site for the use of access and for the use of any storage areas the Contractor may require. The Contractor shall acquire such access and storage rights at the Contractor's expense.

In the event of roads being temporarily closed to the travelling public, the Contractor shall, at the Contractor's expense, provide, erect and maintain all requisite barriers, fences or other proper protection and must provide, keep and maintain such patrollers, lights and danger signals as may be necessary, or as may be required by the Ministry Representative to ensure safety to the public and to the workers.

The Contractor, during the Contractor's operations, must also provide and maintain reasonable road access and egress to property fronting along or in the vicinity of the work under contract, unless other means of road access exists. The Ministry Representative will be the sole judge

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as to what may be deemed reasonable road access.

**145.23 Accommodation of Traffic** - The Contractor shall cause as little inconvenience as possible to the travelling public during the Contractor's operations and shall erect and maintain proper and adequate barricades, traffic signs, lights and other traffic control devices as may be considered necessary, in the opinion of the Ministry Representative, for the safety of both workers and public traffic.

All barricades, traffic signs, lights and other control devices shall be provided at the Contractor's expense, and shall be erected in accordance with, and otherwise conform to the standards as set out in the Ministry's "Traffic Control Manual for Work on Roadways", Special Provisions and Standard Specifications.

**145.23.01 Maintenance of Traffic** - The Contractor shall comply with the requirements of the Highways Act and amendments thereto and such other Acts, By-Laws or Regulations as are in force for the governing and regulating of traffic or use of any road upon or over which it is necessary to do work or transport materials. The Contractor must arrange to keep roads open to traffic at all times and must cause as little inconvenience as possible to the travelling public.

**145.23.02 Road Closure Notification** - Road closures shall not be permitted until the Contractor requests and receives written permission from the appropriate authority in the Ministry. This request shall be submitted in writing not less than seven days in advance of the closure.

Upon receiving written permission for closure, the Contractor shall notify the local police, fire, ambulance, municipality, school board, and public transit at least 72 hours in advance of the closure.

The Contractor shall notify the public by local radio and newspaper at least 24 hours in advance of the closure.

All costs related to the above shall be for the Contractor's account.

**145.24 Alterations to Drawings and Plans** - It shall be understood that the Drawings and Plans represent the nature and general layout of the work to be executed and not necessarily the works exactly as they will be carried out. The Ministry Representative will, without invalidating the Contract, be at liberty to make any reasonable alteration or to furnish any additional or amended Drawings which do not radically change the type of construction.

Payment for any such altered Work will be at the rates set forth in the Schedule 7 Approximate Quantities and Unit



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Prices.

**145.24.01 Adherence to Drawings** - The various parts of the Work shall be built in strict accordance with the furnished Drawings and with any supplementary Drawings which may be furnished during the progress of the Work as occasion requires.

Special Provisions, special specifications, Standard Specifications and the Drawings/Plans are to be considered as explanatory of each other, but should anything appear in one that is not described in the other, or should any discrepancy appear, no advantage shall be taken of such omission or discrepancy and the decision of the Ministry Representative as to the true intent and meaning of the Special Provisions, special specifications, Standard Specifications and the Drawings in such instances shall be final and binding, it being clearly understood that the Contractor is to execute all the works requisite for the perfect completion of each and all of the several parts of the Work according to the true intent and meaning of [the Contract](#).

On all Drawings, in case of any discrepancy between the figured dimensions and the scaled dimensions, the figured dimensions shall govern.

**145.25 Use of Explosives** - In using explosives the Contractor shall exercise the utmost care so as not to endanger life or property and, whenever directed, the number and size of the charges shall be reduced. Before doing any blasting the Contractor shall ascertain if there are in the neighbourhood any railway, power or other lines, water or other pipes, etc., which are likely to be in danger of being damaged. The Contractor shall give to the owner of such lines, pipes or other works timely notice of the intention to blast.

Whenever possible electric batteries shall be employed for simultaneous blasting.

The storage of explosives shall be in accordance with the regulations of the Canada Explosives Act and with any requirements of the representative of the Explosives Regulatory Division within the Mineral Technology Branch of the Minerals and Metals Sector of the Federal Department of the Natural Resources Canada.

**145.26 Work in Ministry Pits or Quarries** - When operating in a Ministry pit or quarry where the Ministry retains the role of Pit Manager, the Contractor shall comply with all provisions of the Mines Act, the Health, Safety and Reclamation Code for Mines in British Columbia, and/or the WCB Occupational Health & Safety Regulation, as applicable to the work undertaken.

The Contractor shall appoint a properly [qualified](#)

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supervisor or shift boss in any Ministry pit or quarry where work is undertaken, in compliance with Section 26 of the Mines Act, and ensure that the supervisor or shift boss is duly ~~qualified~~[qualified](#) certified in accordance with Section 1.13 of the Health, Safety and Reclamation Code for Mines in British Columbia.

When the Contractor is operating in a Ministry pit or quarry, the Contractor shall utilize the pit or quarry in accordance with the Ministry Pit Development Plan or obtain written approval from the Ministry Project Manager prior to deviating from the plan.

When investigating private aggregate sources, the Contractor shall ensure that all permits are in place allowing the Contractor to purchase and remove the aggregate from the property of the Owner.

Availability and use of the listed reserves or any other private aggregate source must be arranged by the Contractor. Prior to the removal of any aggregate material from an aggregate source, the Contractor shall provide a written notice from the owner authorizing the Contractor to remove aggregate material for use in the work.

Ministry pits or quarries may be used without charge, provided they are utilized, worked and maintained in accordance with the Standard Specifications and the Ministry's development plans. Prior to the removal of any aggregate material, the Contractor shall obtain written approval from the local District Manager [Transportation](#). No warranty is given or implied that the source of aggregate material from the Ministry pits or quarries will meet requirements or requisite quantities.

The Contractor shall contact the Road and Bridge Maintenance Contractor a minimum of two (2) weeks before the date the Contractor anticipates the use of any Ministry pits or quarries.

The Contractor and the Road and Bridge Maintenance Contractor shall co-ordinate their activities and schedule usage of the pit among themselves and any other affected parties.

The following listed Variances to the Health, Safety and Reclamation code for Mines in British Columbia will apply only to pits and quarry operations which fall under Ministry ownership.

The Chief Inspector of Mines has provided the following clarifications to the Ministry in a letter dated August 9, 1999:

### **Application for Continuation of Variance to Mine Code Section 1.5.1 - Hours of Employment**

*“Pursuant to section 13 of the Mines Act, R.S.B.C.*

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1996. c293, the assigned Ministry of Transportation (MoT) Pit Manager may permit the employment of persons in a sand and gravel pit or quarry (Mine) for up to 12 hours in a 24 hour period.

*This variance applies only to pits managed by the MoT (Ministry of Transportation).*

*The Pit Manager shall communicate this variance to all affected workers, whether employees of the Ministry of Transportation, its contractors or sub-contractors.*

*This variance is subject to review within five years as provided by section 13(4) of the Mines Act.*

*A copy of this variance is available to any MoT regional or district Occupational Health and Safety Committees which may be involved in sand and gravel pit or quarry operations."*

### **Section 4.9.1 – Health, Safety and Reclamation Code for Mines in British Columbia (Code)**

*“Due to the short period of time that some haul trucks spend at your various pits and quarries, i.e. for loading purposes only, I am hereby enabling a Health and Safety Inspector of the Mines Branch to vary the requirement for automatic back-up alarms on transient haul trucks at the discretion of the Inspector. If, in the opinion of the Inspector, the time spent by the truck at the pit or quarry is of short duration, and the required routing of the truck for loading purposes is such that no hazards are created by such a routing, then an automatic back-up alarm need not be required and the use of any audio warning device will be accepted while in reverse.”*

*“You are reminded that the above refers only to transient haul trucks and not to trucks used for production purposes; neither does it apply to any other vehicle in excess of 7,000 kg gross vehicle weight.”*

### **Section 4.9.5 - Health, Safety and Reclamation Code for Mines in British Columbia (Code)**

*As a haul truck driver’s visibility of the area surrounding the truck tends to improve as the size of the truck decreases, I am prepared to allow a variance to the above section of the Code as follows:*

*“Provided that any haul truck used for production purposes at a gravel pit or quarry does not exceed 45 tonnes gross vehicle weight, there will be no requirement for the attachment of a whip antenna fitted with a flag and lamp, or a flashing light mounted on the cab of non-production vehicles.”*

**145.26.01 Available Ministry Sources** - The Contractor, by entering an available source, will be deemed to have

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accepted all obligations, risks and costs for the production of aggregate meeting the contract requirements, just as if the pit or quarry was private. No warranty is given that the source will meet the quality and quantity requirements. The Contractor, without any additional compensation, shall provide whatever selection, screening, crushing, mixing, blending or other processing of any kind may be required to produce aggregate meeting all requirements for its intended use, including but not limited to:

- specified aggregate gradation,
- fracture count,
- aggregate quality requirements such as but not limited to those set out in SS 202.04 and Table 501-D of SS 501 as applicable, and
- the specified properties of any products into which the aggregate is to be incorporated.

The Contractor shall comply with the Ministry pit development plan and the Ministry Representative’s directions regarding the location of material extraction within the pit by the Contractor.

The Contractor’s use of Ministry pits is limited to the extraction of previously unexcavated material from the bank, for the supply of materials for use on this Contract.

The Ministry’s Road and Bridge Maintenance Contractor has certain rights and obligations with respect to some Ministry pits, and the Contractor shall coordinate its activities with those of that contractor, where applicable, and with any other users, to the satisfaction of the Ministry Representative and the Ministry’s District Manager, [Transportation](#).

Except where specifically stated otherwise in the Special Provisions, no separate payment will be made for clearing, grubbing, disposal or relocation of stockpiles, debris or contaminated materials, or for any other costs of site preparation, pit development, or access, or for any delay or other cost arising from the use of Ministry pits by others, and all costs thereof shall be covered in the prices for the Items under which payment is provided for the applicable materials.

**145.27 Highway Right-of-Way** - The Contractor shall confine its operations to the highway right-of-way and Licences to Construct as shown on the [Ministry’s](#) Drawings. Any land, property or water lot outside these boundaries required for construction yards, access roads, disposal or storage areas, or other operations of the Contractor, shall be acquired by the Contractor at no additional expense to the Ministry. The Contractor shall make arrangements for the use and compensation of such land with the titled land owner.

Work within the Site shall be confined to that necessary to construct the Project to the lines and grades specified. Excavation outside the design lines and grades to extract

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aggregates or for other purposes is prohibited unless authorized in advance by the Ministry Representative.

**145.27.02 Disposal Site Outside the Right-of-Way -** Waste, or other materials specified or designated by the Ministry's Representative to be disposed of, such as, but not limited to clearing and grubbing materials, fences, old culverts, old concrete and asphalt, etc., shall be removed from the Site to a disposal site provided by the Contractor. All disposal sites shall be the responsibility of the Contractor.

The Contractor shall ensure that the disposal site complies with all Federal, Provincial, Municipal and Regional by-laws and regulations prior to disposing of the material. Any fees incurred shall be paid by the Contractor. The Contractor must provide documented proof to the Ministry Representative for the use of the selected disposal site.

In addition, the Contractor shall ensure that the disposal site complies with all municipal and regional government by-laws and regulations and, when relying upon any exemption permitted under section 2(d) of the *Agricultural Land Reserve Permit Regulation*, shall provide a written confirmation from the Regional District of their agreement that no permit is required.

**145.27.03 Access Roads to Private and Public Lands -** The Contractor shall not block or impede the use of any private access roads or driveways during the Work of this Contract without the consent of the Ministry Representative.

The Contractor shall schedule any anticipated closure of an access with the property owner to minimize impact on the owner.

**145.27.04 Private Land Reserves -** Excavated or construction material shall not be deposited on land outside the right-of-way. Borrow material shall not be obtained from land outside the right-of-way, without prior approval from the titled land owner. In addition, lands located within an Agriculture Land Reserve require the approval from the B.C. Agricultural Land Commission and issuance of a valid permit under the Soil Conservation Act.

### **145.28 Protection of Land Subdivision Monuments, Roads and Property**

**145.28.01 Protection of Subdivision Monuments -** The Contractor shall protect, preserve, and keep uncovered all land subdivision monuments or property marks during its construction activities which may cause disturbance to them. At points where construction activities will cover or destroy any land subdivision monuments or property marks, the Contractor shall be responsible for their protection from disturbance until their positions have been

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referenced. The Contractor shall not remove them until so directed by the Ministry Representative.

**145.28.02 Protection of Survey Monuments -** The Contractor shall be responsible for the preservation during construction of all geodetic benchmarks, survey monuments and property markers on the right-of-way. The Contractor shall use, at no additional expense to the Ministry, a British Columbia Land Surveyor to replace any survey monuments destroyed or damaged as a result of the Contractor's negligence. At locations where construction work will cover or destroy such markers, the Contractor shall not move or remove them until written direction is received from the Ministry Representative.

**145.28.03 Protection of Roads -** The Contractor shall ensure all equipment working on or hauling material on to and from the Site does not damage or deposit material onto any part of an existing roadway. Materials spilled onto the public roadways or driveways opened to public traffic shall be cleaned up immediately. The Contractor has the full responsibility to repair any damage to existing highways, local roads and driveways caused by its construction equipment and/or operations.

**145.28.04 Protection of Railway Property -** The Contractor shall be wholly responsible for any damage to railway trackage or property on the railway company's right-of-way resulting from highway construction operations. It shall be the Contractor's responsibility that all workers and persons employed by the Contractor or the Contractor's agents, or under the Contractor's control, shall use due care that no person or property is injured, and that no rights are infringed in performing the work. The Contractor shall compensate injured parties.

All costs for employment of traffic control persons or other personnel required for the protection of the railway trackage or property shall be the responsibility of the Contractor. Where it is found necessary to re-route any telegraph or telephone lines during the course of operations, or where it is found necessary to make repairs to such installations as a result of contract operations, such re-routing or repair work shall be the responsibility of the Contractor, and shall be for the Contractor's account.

Any costs borne directly by or billed directly to the Ministry which relate to the above responsibilities will be charged to the Contractor with a surcharge of 20%.

The Contractor shall restore and clean all slopes between the highway and the railway track together with any fences, ditches and drains disturbed by the work to the satisfaction of the Ministry Representative.

The Contractor shall give advance notice to the railway company prior to carrying out any work on the railway

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right-of-way and shall not proceed without specific coordination with the railway company and its schedule, and notice to the Ministry Representative.

**145.28.05 Construction Stakes, Monuments, Bench Marks and Tide Gauge** - The Contractor shall set, as the Ministry Representative may direct and as is necessary for the proper layout of the Work, monuments and bench marks of concrete or other material sufficiently permanent and rigid to remain intact during the duration of the Work. The Contractor shall particularly avoid destroying or disturbing such monuments or construction stakes and, should such destruction be unavoidable, shall notify the Ministry Representative in advance so that the points may be properly referenced and re-established.

**145.28.06 Protection and Restoration of Property and Environment** - The Contractor shall not enter upon private property for any purpose without first obtaining permission of the owner of that property and shall be responsible for the preservation of public property along and adjacent to the Work, and shall use every reasonable precaution necessary to prevent damage or injury thereto.

The Contractor shall be liable for all damages caused by fire started by the Contractor and shall, under no circumstances start fires without first securing the required permits and approval of authorities having jurisdiction even though it may be ordered or required to do such burning.

The Contractor shall take special care when burning brush, stumps or rubbish not to damages any standing trees, shrubs or other property and to use when practicable smokeless burning methods.

**145.29 Haul Routes and Overloads** - The Contractor shall be responsible for ascertaining that the Contractor's haul routes are acceptable to the authority having jurisdiction for highway loading.

Overweight or oversize vehicles are not permitted to use existing highway as a haul road for the hauling of construction materials, notwithstanding Section 7.01 of the Commercial Transport Regulation 1980 Consolidation, as amended from time to time.

Off-highway equipment may be permitted to cross the existing highway only at specific locations as approved by the Ministry Representative.

Once the crushed granular base, surfacing or pavement work has commenced on any portion of the new, reconstructed or relocated highway, no overloads will be permitted on that portion unless written approval is given by the Ministry Representative.

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### 145.30 Health and Safety

**145.30.01 Occupational Health and Safety Program** - The Contractor shall provide an Occupational Health and Safety Program at the time of the pre-construction meeting and have it in place prior to the commencement of any Work. The Contractor shall provide evidence that an Occupational Health and Safety Program is in place at the pre-construction meeting.

Any delays in commencement of the Work related to acceptance of the Contract and site specifics of the Contractor's Occupational Health and Safety Program or interruptions of the Work related to the implementation of the Occupational Health and Safety Program are not Reimbursable Delays unless otherwise agreed to in writing by the Ministry Representative.

**145.30.02 Worksite Hazards** - The Contractor has the responsibility to identify worksite hazards and shall develop operational occupational safety policies and procedures and plans which are specific to the Work to ensure the safety of all persons at the Site and the travelling public passing through the Site.

When requested by the Ministry Representative, the Contractor shall provide copies of any safety policies, procedures or plans verifying steps have been taken to make all concerned fully aware of all hazards or unsafe conditions in accordance to SS 135 - Construction Site Safety.

The Contractor shall provide for the safety, protection and convenience of the general public and residents along the highway.

The Contractor shall erect and maintain signs, fences and barricades at the ends of the bridges before they are opened to traffic and at other dangerous areas of the Project, as necessary to prevent access of vehicles and pedestrians to the unfinished bridge and other dangerous areas.

**145.30.03 Equipment** - All trucks and other equipment used by the Contractor whether owned or rented for use on the Project shall meet manufacture's specifications for its purpose.

All trucks and other equipment rented by the Contractor for use on the Project shall when practicable be qualified local trucks obtained from local residents.

For the purposes of this Section, qualified local truck means a truck that meets all the following:

- a) a truck that has Motor Carrier approval.

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- b) where the Contractor has a collective agreement with its employees the truck operator is a member of, or has the permission of the appropriate bargaining unit.
- c) the truck fulfils, in the opinion of the Ministry Representative, the specialized needs of the Contractor.
- d) a truck registered on the Ministry's Hired Equipment list for the geographic area encompassing the Site to in adjacent areas.

Hire of trucks and other equipment paid on a production rate basis constitutes a Subcontract.

**145.30.04 Audible Back Up Warning Device** - All haul vehicles shall be equipped with an automatic audible warning device which will activate whenever the vehicle is backing up. The warning device shall be clearly audible above the ambient noise level at a minimum distance of 6 m from the back of the vehicle

**145.31 Faulty Work** - If there is evidence of any fault, defect, or injury from any cause whatever, which may adversely affect the strength, durability, safety, maintenance, or appearance of any section of the work, the Contractor shall, at the Contractor's expense, satisfactorily correct such faults or, if required, shall replace as much of said section as the Ministry Representative may deem necessary, even to the extent of replacing the entire section. The fact that the inspector in charge may have previously overlooked such defective work shall not constitute an acceptance of any part of it.

Upon failure of the Contractor to comply promptly with any order of the Ministry Representative made under the provisions of this Section, the Ministry Representative will have authority to cause defective work to be remedied or removed and replaced and to deduct the costs thereof from any monies due or to become due to the Contractor.

**145.32 Temporary Excavation** - Where temporary excavations are undertaken in the course of the Work, the Contractor shall be responsible for maintaining the stability of adjacent ground and all structures and other works thereon, and for the cost of any temporary works which it provides for this purpose for which payment is not expressly provided in the Contract

### 145.33 General Sign Requirements

**145.33.01 Contractor Identification Signs** - The Contractor may supply and install contractor identification signs for the Term. The Contractor shall maintain and remove such signs and all costs of supply, installation, maintenance and removal shall be the responsibility of the Contractor.

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The contractor identification sign shall display only the Contractor's company name and beneath it the word "Information" followed by a telephone number which directly connects any caller to the Contractor's personnel who are familiar with, and are currently active on the Project.

The sign will not be reflectorized, and the background colour will not be either red, yellow or orange. The sign dimensions will not exceed 2,400 mm horizontal and 1,200 mm vertical, and the text size (height) will not be less than 150 mm.

The contractor identification sign will be erected only in conjunction with the C-35 project identification sign, and will not be in advance of or at the same location as the C-35 sign. Where there is no C-35 sign, no contractor identification sign will be permitted.

No contractor identification sign may be installed without prior approval of both the sign and the intended installation and location by the Ministry Representative who, in determining whether or not to grant such approval, will not necessarily be limited to the requirements set out above.

**145.33.02 Prime Contractor Sign** - When designated as the Prime Contractor, the Contractor shall provide "Prime Contractor" sign as specified in SS 135 Construction Site Safety.

**145.33.03 Traffic Control Signs** – The Contractor is required to use the appropriate encapsulating or prismatic lens sheeting on the following traffic control signs in the work zone:

- a) encapsulating lens sheeting (identified by the "honeycomb" pattern) on:
  - C-2 ..... Survey Crew/Speed Limit;
  - C-4 ..... Crew Working;
  - C-15 & C-16 .. Temporary Slow & Hazard Marker;
  - C-36 ..... Survey Crew; and
- b) prismatic lens sheeting (identified by the diamond shaped pattern) on:
  - C-27 ..... Stop/Slow Paddle.

All the above traffic control signs shall meet current Ministry specifications. The Ministry *Specifications for Standard Highway Sign Materials, Fabrication and Supply* are located on our Ministry web page at:

[www.th.gov.bc.ca/publications/eng\\_publications/geomet/geometsigns.htm](http://www.th.gov.bc.ca/publications/eng_publications/geomet/geometsigns.htm)

All costs to provide, replace and use the required control signs in the work zone will be included in related work items and no additional compensation will be made.



**APPENDIX A****Ministry Office Requirements**

<b>REQUIREMENTS FOR OFFICE TYPES</b>			
<b>Office Type</b>	<b>A</b>	<b>B</b>	<b>C</b>
Lockable desk/chair	1	2	3
Typist desk/chair	-	-	1
Drafting table 1.2 m x 2.4 m /stool	1	1	1
Reference table 1.2 m <sup>2</sup>	-	1	3
Conference table 1.2 m x 2.4 m	-	-	1
Additional chairs	2	2	9
Plan case or drawing storage unit	1	1	2
Filing cabinet (# drawers)	1 - 2 drawers	1 - 4 drawers	3 - 4 drawers
Shelving bookcase m <sup>2</sup>	2	5	20
Fire Extinguisher for Class A, B and C fires	1 - 5 kg	1 - 5 kg	2 - 5 kg
Supply Activated Telephones and Lines	One (1)	One (1)	Three (3) on two (2) lines with external bell and switch
Toilet	On site	On site	In washroom, hot and cold running potable water and wash basin
First Aid Kit	On site	#1 Unit Kit	#1 Unit Kit
<b>Floor Areas - m<sup>2</sup></b>			
a) Entrance	-	-	5
b) Ministry Representative's office	12	12	12
c) Additional Staff office	-	8	20
d) Wash room	-	-	As required
e) Store room	-	-	5