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## **5.2 SUPPLY OF AGGREGATE**

### **5.2.1 GENERAL**

This specification covers the general requirements for the supply of aggregate materials by the Contractor. Aggregate materials are considered the total of the granular portion of construction materials consisting of the coarse and fine gravel splits, blend sand and manufactured fines when required.

### **5.2.2 AGGREGATE CATEGORIES**

For the purposes of administering the operational and payment conditions concerning the supply of aggregate for the Work, aggregate sources are categorized as follows:

#### **5.2.2.1 Aggregate Sources Controlled by the Department**

The following are deemed to be aggregate sources controlled by the Department:

- (i) a source owned by the Department, or
- (ii) a Crown source for which the Department has a reservation, or
- (iii) a private source for which the Department has a royalty agreement, and holds an approval under the Environmental Protection and Enhancement Act.

##### **5.2.2.1.1 Designated Sources**

When it is specified in the Contract that the Contractor shall only use the Department sources (pits, stockpiles or quarry sites) for the production of crushed or uncrushed aggregate, these sources shall be termed "Designated Sources".

#### **5.2.2.2 Aggregate Sources Not Controlled by the Department**

The following are deemed to be aggregate sources not controlled by the Department:

- (i) a Crown source on undeeded land, operated primarily under lease or license and for which the Department does not have a reservation.
- (ii) a private source for which the Department does not have a royalty agreement, and does not hold an approval under the Environmental Protection and Enhancement Act.

### **5.2.3 GENERAL REQUIREMENTS FOR THE USE OF ALL AGGREGATE SOURCES**

When supplying aggregate from any source, the Contractor shall:

- (i) ensure a Conservation and Reclamation Approval or Registration from Alberta Environment, or a lease or license to extract from Alberta Sustainable Resource Development, and a clearance from the Archaeological Survey of Alberta are in place prior to commencement of the Work;
- (ii) assume full responsibility for the quantity and quality of the material in the aggregate source;
- (iii) specify the location of the proposed aggregate source(s) and haul routes, prior to Contract award;
- (iv) acquire the necessary rights to remove materials from all aggregate sources except sources controlled by the Department;

- (v) explore and develop the aggregate sources; and
- (vi) save the Department harmless from any and all claims resulting from the use of the aggregate sources.

The Department will not consider the use of aggregates from existing stockpiles unless the Contractor can satisfy the Department that the aggregate in question meets all required specifications. Agreement by the Department that such pre-prepared aggregates can be used will not constitute acceptance of the material in stockpile. Acceptance of such material will be based on testing done by the Consultant as the material is incorporated into the Work.

#### 5.2.4 PIT OPERATIONS

##### 5.2.4.1 **General**

In all aggregate sources, the Contractor shall comply with the conditions set by Alberta Environment or Alberta Sustainable Resource Development when removing topsoil, subsoil and inorganic overburden, including material in a frozen condition. The standards and conditions for appropriate development and reclamation as required by Alberta Environment or Alberta Sustainable Resource Development shall apply to all sources.

##### 5.2.4.2 **Pit Operations in Aggregate Sources Controlled by the Department**

###### 5.2.4.2.1 General Operating Requirements

Except where modified by the Special Provisions, the Contractor's operations in an aggregate source controlled by the Department shall be in accordance with the following requirements.

All reject material produced in an aggregate source controlled by the Department shall be disposed of as directed by the Consultant and the Contractor shall have no claim to the material.

When aggregate is to be produced from a source which has been partially excavated previously, the new excavation shall proceed as an extension of the previous excavation provided that suitable material is obtainable. If required, stockpiled materials from previous operations shall be removed and deposited as indicated on the Plans and in the Special Provisions unless otherwise directed by the Consultant. The aggregate exposed shall be processed and used.

Normally, the cleared area shall extend beyond the final position of an open face by a minimum distance of four times the expected depth of excavation. Clearing and timber salvage, if required, shall be carried out in accordance with Specification 2.1, Clearing.

The Contractor shall erect and maintain any temporary fences and livestock guards that may be required to prevent livestock from straying into the aggregate source.

Inorganic overburden shall be removed to a minimum 10 m beyond the top of the backsloped aggregate face. Topsoil and subsoil shall be stripped to a minimum distance of 5 m beyond the top of the backsloped overburden face. The stripped buffers shall be maintained throughout the project.

Prior to the placement of excavated inorganic overburden, the Contractor shall remove the full depth of both topsoil and subsoil layers and stockpile the materials in separate stockpiles. In addition, unless otherwise directed by the Consultant, the Contractor shall remove and separately

stockpile the full depth of both topsoil and subsoil layers from all temporary work sites including but not limited to, the crusher, plant, camp, parking areas and all access roads.

Prior to the placement of excavated subsoil, the Contractor shall remove and stockpile the full depth of topsoil layer.

The aggregate area to be used shall be stripped in stages as follows. The first stage shall be the removal and stockpiling of topsoil. The second stage shall be the removal and stockpiling of the subsoil. The final stage shall be the removal and deposition of the inorganic overburden, as indicated on the Plans or in the Special Provisions, or as directed by the Consultant. The Contractor shall remove all materials in a manner that prevents contamination of one material with another. Dozers shall not be used for the removal topsoil or subsoil unless specifically authorized by the Consultant in writing. Topsoil, subsoil, and inorganic overburden shall be stockpiled uniformly and compactly in separate piles in the area(s) designated by the Consultant. Stockpiling of all stripped materials shall be completed in a manner that will minimize surface damage and interruption of natural drainage.

Unless otherwise directed by the Consultant, where stockpiles of topsoil, subsoil and inorganic overburden exist from previous pit operations, the Contractor shall utilize the same stockpile locations for the deposit of excavated topsoil, subsoil and inorganic overburden.

During the term of the Contract, the Contractor shall prevent erosion of all topsoil, subsoil, and inorganic overburden stockpiles resulting from his operations. In the event such piles remain at the completion of construction, they shall be seeded by the Contractor.

All materials required for seeding shall be supplied by the Contractor. Grass seed shall conform to Specification 2.20, Seeding. The composition and application rate of the grass seed mixture will be determined by the Consultant at the time of construction.

The excavation of aggregate shall advance uniformly to obtain maximum yield from the deposit. Under no circumstances will waste of useable material be permitted, and excavations shall be continued to depths below water level if suitable material is available.

The Contractor shall clean-up the areas of pits affected by operations performed under this Contract in accordance with the following:

- (i) All faces with potential future use for the removal of aggregate shall be sloped at a ratio of at least two horizontal to one vertical.
- (ii) Faces designated to be abandoned in a deposit shall be sloped at a ratio of at least four horizontal to one vertical.
- (iii) At boundaries of authorization or property lines, sloping shall be at a ratio of at least four horizontal to one vertical with the top of slopes terminating at a minimum distance of 3.0 m from the boundary.
- (iv) Upon completion of the Work, the site shall be left in a neat and presentable condition. All fences removed for purposes of entry shall be replaced in a condition equal to or better than they were before being removed, and all debris, including construction materials and garbage, resulting from the Contractor's operations shall be removed and disposed of as required by the Consultant. The Contractor shall not drain, spill or bury at this site any garbage, sewage, outhouse waste, fluids, oils, fuels, mechanical parts or equipment.
- (v) All asphalt material produced by the Contractor shall be removed from the site, unless otherwise outlined in the special provisions. All reject asphalt material produced by the

Contractor shall be disposed of in accordance with Environment Regulations.

In addition to the foregoing sloping operations, where practical, the Consultant may order that flatter slopes be constructed on selected areas using stockpiled overburden material. The quantity of overburden material available will determine the amount of sloping to be done. This operation may require some site preparation such as ripping of the compacted earth floor.

#### **5.2.4.2.2 Supply, Installation and Maintenance of Pit Signage**

The Contractor shall be responsible for maintaining signage in Department controlled pits in accordance with the requirements of Drawings TEB 1.59 and TEB 1.60, as applicable. This shall include the removal, salvage and re-installation of existing signs as required to accommodate the Contractor's operations, and the replacement of previously damaged signs with new ones. Warning signs removed to accommodate the Contractor's operations shall be re-installed as soon as practicable.

At the completion of all pit operations, the Contractor shall supply and install any additional signage required in the pit.

Signs supplied by the Contractor shall be new, and shall meet the requirements of Specification 5.18, Supply of Permanent Highway Signs, Posts and Bases.

#### **5.2.4.3 Pit Operations in Aggregate Sources Not Controlled by the Department**

All aspects of clearing, removal of overburden, protection and safety of livestock, general pit management and clean-up shall be the responsibility of the Contractor.

### **5.2.5 MEASUREMENT AND PAYMENT**

#### **5.2.5.1 General**

Payment for the supply of aggregate will not be made separately when the applicable specification states that the cost of supplying aggregate is considered incidental to the Work, or is included in the unit price bid for the Work for which the aggregate is being produced. If this is the case for all applicable specifications for the Work, the Contract will not contain a bid item for the supply of aggregate.

In Contracts that contain a bid item for supplying aggregate, payments made for the supply of aggregate will be considered full compensation for the cost of the aggregate material. All other costs incurred by the Contractor including, but not limited to, the cost of obtaining approvals and rights to use a source, exploration, development, reclamation, clearing, removal and stockpiling of topsoil, subsoil, and inorganic overburden, erosion protection, seeding, and the erection and removal of temporary fences will be considered incidental to the Work, and no separate or additional payment will be made.

For the purpose of payment for the supply of aggregate, Contractor owned reclaimed asphalt pavement (RAP) material used in the production of recycled asphalt concrete pavement (RACP) will be considered to be aggregate supplied from a private source not controlled by the Department. RAP material used for any other purpose will not be paid for.

Payment for all costs associated with the supply and installation of new pit signage, if required, will be made in accordance with Section 1.2.33.2, Extra Work, of Specification 1.2, General. Signs

damaged as the result of the Contractor's operations shall be replaced by the Contractor at his expense. All costs associated with the removal, salvage and re-installation of existing signs to accommodate the Contractor's operations will be considered incidental to the Work, and no separate or additional payment will be made.

#### 5.2.5.2 Designated Sources

Unless otherwise specified, the aggregate in designated sources will be supplied free of cost to the Contractor.

#### 5.2.5.3 Supply of Aggregate Bid Item

The Specification Amendment Table contained in the Special Provisions will indicate whether or not the Contractor has the option of using a specific aggregate source controlled by the Department for the supply of aggregate for the Work.

If the Table indicates that the Contractor has the option of using a specific aggregate source controlled by the Department, the tender will contain a Bid Item for "Supply of Aggregate – With Option". In such cases, the Department will establish the unit price for this work and insert the amount in the Unit Price Schedule.

If the Table indicates that the Contractor may not use an aggregate source controlled by the Department for the supply of aggregate for the Work, the tender will contain a Bid Item for "Supply of Aggregate – No Option", and the Contractor shall bid a unit price for this work.

#### 5.2.5.4 Payment

The payment conditions for supplying aggregate vary depending on the category of the aggregate source used. Categories of aggregate sources are listed in Section 5.2.2, Aggregate Categories. Further, it is possible that more than one aggregate source may be used for the supply of aggregate for the Work (e.g. Portions or all of the pit-run gravel and/or the blend sand components of the aggregate may be obtained from separate aggregate sources of different categories).

The payment conditions for the various categories of aggregate sources are as follows:

No payment will be made for the quantity of aggregate material obtained from a source controlled by the Department.

Payment for the quantity of aggregate obtained from a source not controlled by the Department will be made in accordance with the following:

- (i) For material obtained from crown sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department for "Supply of Aggregate – With Option", or at the unit price bid by the Contractor for "Supply of Aggregate – No Option", as applicable, minus \$0.96 per tonne. The \$0.96 per tonne reduction recognizes that royalty payments to Alberta Environment and Parks (AEP) are not applicable to Public Works projects.
- (ii) For material obtained from private sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department or bid by the Contractor (as applicable) for the item "Supply of Aggregate."
- (iii) The quantity for payment will be determined by the Consultant by measuring the material containing the aggregate which has been incorporated into the accepted Work and

calculating the quantity of aggregate obtained from sources not controlled by the Department. In the event the material containing the aggregate contains asphalt, no deduction will be made for the asphalt material.

- (iv) When the material measurement is by volume, a conversion factor of 1.632 tonnes per cubic metre will be used to determine the weight of a gravel component and 1.365 tonnes per cubic metre will be used for a blend sand component.

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## **5.2 SUPPLY OF AGGREGATE**

### **5.2.1 GENERAL**

This specification covers the general requirements for the supply of aggregate materials by the Contractor. Aggregate materials are considered the total of the granular portion of construction materials consisting of the coarse and fine gravel splits, blend sand and manufactured fines when required.

### **5.2.2 AGGREGATE CATEGORIES**

For the purposes of administering the operational and payment conditions concerning the supply of aggregate for the Work, aggregate sources are categorized as follows:

#### **5.2.2.1 Aggregate Sources Controlled by the Department**

The following are deemed to be aggregate sources controlled by the Department:

- (i) a source owned by the Department, or
- (ii) a Crown source for which the Department has a reservation, or
- (iii) a private source for which the Department has a royalty agreement, and holds an approval under the Environmental Protection and Enhancement Act.

##### **5.2.2.1.1 Designated Sources**

When it is specified in the Contract that the Contractor shall only use the Department sources (pits, stockpiles or quarry sites) for the production of crushed or uncrushed aggregate, these sources shall be termed "Designated Sources".

#### **5.2.2.2 Aggregate Sources Not Controlled by the Department**

The following are deemed to be aggregate sources not controlled by the Department:

- (i) a Crown source on undeeded land, operated primarily under lease or license and for which the Department does not have a reservation.
- (ii) a private source for which the Department does not have a royalty agreement, and does not hold an approval under the Environmental Protection and Enhancement Act.

### **5.2.3 GENERAL REQUIREMENTS FOR THE USE OF ALL AGGREGATE SOURCES**

When supplying aggregate from any source, the Contractor shall:

- (i) ensure a Conservation and Reclamation Approval or Registration from Alberta Environment, or a lease or license to extract from Alberta Sustainable Resource Development, and a clearance from the Archaeological Survey of Alberta are in place prior to commencement of the Work;
- (ii) assume full responsibility for the quantity and quality of the material in the aggregate source;
- (iii) specify the location of the proposed aggregate source(s) and haul routes, prior to Contract award;
- (iv) acquire the necessary rights to remove materials from all aggregate sources except sources controlled by the Department;

- (v) explore and develop the aggregate sources; and
- (vi) save the Department harmless from any and all claims resulting from the use of the aggregate sources.

The Department will not consider the use of aggregates from existing stockpiles unless the Contractor can satisfy the Department that the aggregate in question meets all required specifications. Agreement by the Department that such pre-prepared aggregates can be used will not constitute acceptance of the material in stockpile. Acceptance of such material will be based on testing done by the Consultant as the material is incorporated into the Work.

#### 5.2.4 PIT OPERATIONS

##### 5.2.4.1 **General**

In all aggregate sources, the Contractor shall comply with the conditions set by Alberta Environment or Alberta Sustainable Resource Development when removing topsoil, subsoil and inorganic overburden, including material in a frozen condition. The standards and conditions for appropriate development and reclamation as required by Alberta Environment or Alberta Sustainable Resource Development shall apply to all sources.

##### 5.2.4.2 **Pit Operations in Aggregate Sources Controlled by the Department**

###### 5.2.4.2.1 General Operating Requirements

Except where modified by the Special Provisions, the Contractor's operations in an aggregate source controlled by the Department shall be in accordance with the following requirements.

All reject material produced in an aggregate source controlled by the Department shall be disposed of as directed by the Consultant and the Contractor shall have no claim to the material.

When aggregate is to be produced from a source which has been partially excavated previously, the new excavation shall proceed as an extension of the previous excavation provided that suitable material is obtainable. If required, stockpiled materials from previous operations shall be removed and deposited as indicated on the Plans and in the Special Provisions unless otherwise directed by the Consultant. The aggregate exposed shall be processed and used.

Normally, the cleared area shall extend beyond the final position of an open face by a minimum distance of four times the expected depth of excavation. Clearing and timber salvage, if required, shall be carried out in accordance with Specification 2.1, Clearing.

The Contractor shall erect and maintain any temporary fences and livestock guards that may be required to prevent livestock from straying into the aggregate source.

Inorganic overburden shall be removed to a minimum 10 m beyond the top of the backsloped aggregate face. Topsoil and subsoil shall be stripped to a minimum distance of 5 m beyond the top of the backsloped overburden face. The stripped buffers shall be maintained throughout the project.

Prior to the placement of excavated inorganic overburden, the Contractor shall remove the full depth of both topsoil and subsoil layers and stockpile the materials in separate stockpiles. In addition, unless otherwise directed by the Consultant, the Contractor shall remove and separately

stockpile the full depth of both topsoil and subsoil layers from all temporary work sites including but not limited to, the crusher, plant, camp, parking areas and all access roads.

Prior to the placement of excavated subsoil, the Contractor shall remove and stockpile the full depth of topsoil layer.

The aggregate area to be used shall be stripped in stages as follows. The first stage shall be the removal and stockpiling of topsoil. The second stage shall be the removal and stockpiling of the subsoil. The final stage shall be the removal and deposition of the inorganic overburden, as indicated on the Plans or in the Special Provisions, or as directed by the Consultant. The Contractor shall remove all materials in a manner that prevents contamination of one material with another. Dozers shall not be used for the removal topsoil or subsoil unless specifically authorized by the Consultant in writing. Topsoil, subsoil, and inorganic overburden shall be stockpiled uniformly and compactly in separate piles in the area(s) designated by the Consultant. Stockpiling of all stripped materials shall be completed in a manner that will minimize surface damage and interruption of natural drainage.

Unless otherwise directed by the Consultant, where stockpiles of topsoil, subsoil and inorganic overburden exist from previous pit operations, the Contractor shall utilize the same stockpile locations for the deposit of excavated topsoil, subsoil and inorganic overburden.

During the term of the Contract, the Contractor shall prevent erosion of all topsoil, subsoil, and inorganic overburden stockpiles resulting from his operations. In the event such piles remain at the completion of construction, they shall be seeded by the Contractor.

All materials required for seeding shall be supplied by the Contractor. Grass seed shall conform to Specification 2.20, Seeding. The composition and application rate of the grass seed mixture will be determined by the Consultant at the time of construction.

The excavation of aggregate shall advance uniformly to obtain maximum yield from the deposit. Under no circumstances will waste of useable material be permitted, and excavations shall be continued to depths below water level if suitable material is available.

The Contractor shall clean-up the areas of pits affected by operations performed under this Contract in accordance with the following:

- (i) All faces with potential future use for the removal of aggregate shall be sloped at a ratio of at least two horizontal to one vertical.
- (ii) Faces designated to be abandoned in a deposit shall be sloped at a ratio of at least four horizontal to one vertical.
- (iii) At boundaries of authorization or property lines, sloping shall be at a ratio of at least four horizontal to one vertical with the top of slopes terminating at a minimum distance of 3.0 m from the boundary.
- (iv) Upon completion of the Work, the site shall be left in a neat and presentable condition. All fences removed for purposes of entry shall be replaced in a condition equal to or better than they were before being removed, and all debris, including construction materials and garbage, resulting from the Contractor's operations shall be removed and disposed of as required by the Consultant. The Contractor shall not drain, spill or bury at this site any garbage, sewage, outhouse waste, fluids, oils, fuels, mechanical parts or equipment.
- (v) All asphalt material produced by the Contractor shall be removed from the site, unless otherwise outlined in the special provisions. All reject asphalt material produced by the

Contractor shall be disposed of in accordance with Environment Regulations.

In addition to the foregoing sloping operations, where practical, the Consultant may order that flatter slopes be constructed on selected areas using stockpiled overburden material. The quantity of overburden material available will determine the amount of sloping to be done. This operation may require some site preparation such as ripping of the compacted earth floor.

#### **5.2.4.2.2 Supply, Installation and Maintenance of Pit Signage**

The Contractor shall be responsible for maintaining signage in Department controlled pits in accordance with the requirements of Drawings TEB 1.59 and TEB 1.60, as applicable. This shall include the removal, salvage and re-installation of existing signs as required to accommodate the Contractor's operations, and the replacement of previously damaged signs with new ones. Warning signs removed to accommodate the Contractor's operations shall be re-installed as soon as practicable.

At the completion of all pit operations, the Contractor shall supply and install any additional signage required in the pit.

Signs supplied by the Contractor shall be new, and shall meet the requirements of Specification 5.18, Supply of Permanent Highway Signs, Posts and Bases.

#### **5.2.4.3 Pit Operations in Aggregate Sources Not Controlled by the Department**

All aspects of clearing, removal of overburden, protection and safety of livestock, general pit management and clean-up shall be the responsibility of the Contractor.

### **5.2.5 MEASUREMENT AND PAYMENT**

#### **5.2.5.1 General**

Payment for the supply of aggregate will not be made separately when the applicable specification states that the cost of supplying aggregate is considered incidental to the Work, or is included in the unit price bid for the Work for which the aggregate is being produced. If this is the case for all applicable specifications for the Work, the Contract will not contain a bid item for the supply of aggregate.

In Contracts that contain a bid item for supplying aggregate, payments made for the supply of aggregate will be considered full compensation for the cost of the aggregate material. All other costs incurred by the Contractor including, but not limited to, the cost of obtaining approvals and rights to use a source, exploration, development, reclamation, clearing, removal and stockpiling of topsoil, subsoil, and inorganic overburden, erosion protection, seeding, and the erection and removal of temporary fences will be considered incidental to the Work, and no separate or additional payment will be made.

For the purpose of payment for the supply of aggregate, Contractor owned reclaimed asphalt pavement (RAP) material used in the production of recycled asphalt concrete pavement (RACP) will be considered to be aggregate supplied from a private source not controlled by the Department. RAP material used for any other purpose will not be paid for.

Payment for all costs associated with the supply and installation of new pit signage, if required, will be made in accordance with Section 1.2.33.2, Extra Work, of Specification 1.2, General. Signs

damaged as the result of the Contractor's operations shall be replaced by the Contractor at his expense. All costs associated with the removal, salvage and re-installation of existing signs to accommodate the Contractor's operations will be considered incidental to the Work, and no separate or additional payment will be made.

#### 5.2.5.2 Designated Sources

Unless otherwise specified, the aggregate in designated sources will be supplied free of cost to the Contractor.

#### 5.2.5.3 Supply of Aggregate Bid Item

The Specification Amendment Table contained in the Special Provisions will indicate whether or not the Contractor has the option of using a specific aggregate source controlled by the Department for the supply of aggregate for the Work.

If the Table indicates that the Contractor has the option of using a specific aggregate source controlled by the Department, the tender will contain a Bid Item for "Supply of Aggregate – With Option". In such cases, the Department will establish the unit price for this work and insert the amount in the Unit Price Schedule.

If the Table indicates that the Contractor may not use an aggregate source controlled by the Department for the supply of aggregate for the Work, the tender will contain a Bid Item for "Supply of Aggregate – No Option", and the Contractor shall bid a unit price for this work.

#### 5.2.5.4 Payment

The payment conditions for supplying aggregate vary depending on the category of the aggregate source used. Categories of aggregate sources are listed in Section 5.2.2, Aggregate Categories. Further, it is possible that more than one aggregate source may be used for the supply of aggregate for the Work (e.g. Portions or all of the pit-run gravel and/or the blend sand components of the aggregate may be obtained from separate aggregate sources of different categories).

The payment conditions for the various categories of aggregate sources are as follows:

No payment will be made for the quantity of aggregate material obtained from a source controlled by the Department.

Payment for the quantity of aggregate obtained from a source not controlled by the Department will be made in accordance with the following:

- (i) For material obtained from crown sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department for "Supply of Aggregate – With Option", or at the unit price bid by the Contractor for "Supply of Aggregate – No Option", as applicable, minus \$0.96 per tonne. The \$0.96 per tonne reduction recognizes that royalty payments to Alberta Environment and Parks (AEP) are not applicable to Public Works projects.
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The following are deemed to be aggregate sources not controlled by the Department:

- (i) a Crown source on undeeded land, operated primarily under lease or license and for which the Department does not have a reservation.
- (ii) a private source for which the Department does not have a royalty agreement, and does not hold an approval under the Environmental Protection and Enhancement Act.

### **5.2.3 GENERAL REQUIREMENTS FOR THE USE OF ALL AGGREGATE SOURCES**

When supplying aggregate from any source, the Contractor shall:

- (i) ensure a Conservation and Reclamation Approval or Registration from Alberta Environment, or a lease or license to extract from Alberta Sustainable Resource Development, and a clearance from the Archaeological Survey of Alberta are in place prior to commencement of the Work;
- (ii) assume full responsibility for the quantity and quality of the material in the aggregate source;
- (iii) specify the location of the proposed aggregate source(s) and haul routes, prior to Contract award;
- (iv) acquire the necessary rights to remove materials from all aggregate sources except sources controlled by the Department;



- (v) explore and develop the aggregate sources; and
- (vi) save the Department harmless from any and all claims resulting from the use of the aggregate sources.

The Department will not consider the use of aggregates from existing stockpiles unless the Contractor can satisfy the Department that the aggregate in question meets all required specifications. Agreement by the Department that such pre-prepared aggregates can be used will not constitute acceptance of the material in stockpile. Acceptance of such material will be based on testing done by the Consultant as the material is incorporated into the Work.

#### 5.2.4 PIT OPERATIONS

##### 5.2.4.1 **General**

In all aggregate sources, the Contractor shall comply with the conditions set by Alberta Environment or Alberta Sustainable Resource Development when removing topsoil, subsoil and inorganic overburden, including material in a frozen condition. The standards and conditions for appropriate development and reclamation as required by Alberta Environment or Alberta Sustainable Resource Development shall apply to all sources.

##### 5.2.4.2 **Pit Operations in Aggregate Sources Controlled by the Department**

###### 5.2.4.2.1 General Operating Requirements

Except where modified by the Special Provisions, the Contractor's operations in an aggregate source controlled by the Department shall be in accordance with the following requirements.

All reject material produced in an aggregate source controlled by the Department shall be disposed of as directed by the Consultant and the Contractor shall have no claim to the material.

When aggregate is to be produced from a source which has been partially excavated previously, the new excavation shall proceed as an extension of the previous excavation provided that suitable material is obtainable. If required, stockpiled materials from previous operations shall be removed and deposited as indicated on the Plans and in the Special Provisions unless otherwise directed by the Consultant. The aggregate exposed shall be processed and used.

Normally, the cleared area shall extend beyond the final position of an open face by a minimum distance of four times the expected depth of excavation. Clearing and timber salvage, if required, shall be carried out in accordance with Specification 2.1, Clearing.

The Contractor shall erect and maintain any temporary fences and livestock guards that may be required to prevent livestock from straying into the aggregate source.

Inorganic overburden shall be removed to a minimum 10 m beyond the top of the backsloped aggregate face. Topsoil and subsoil shall be stripped to a minimum distance of 5 m beyond the top of the backsloped overburden face. The stripped buffers shall be maintained throughout the project.

Prior to the placement of excavated inorganic overburden, the Contractor shall remove the full depth of both topsoil and subsoil layers and stockpile the materials in separate stockpiles. In addition, unless otherwise directed by the Consultant, the Contractor shall remove and separately

stockpile the full depth of both topsoil and subsoil layers from all temporary work sites including but not limited to, the crusher, plant, camp, parking areas and all access roads.

Prior to the placement of excavated subsoil, the Contractor shall remove and stockpile the full depth of topsoil layer.

The aggregate area to be used shall be stripped in stages as follows. The first stage shall be the removal and stockpiling of topsoil. The second stage shall be the removal and stockpiling of the subsoil. The final stage shall be the removal and deposition of the inorganic overburden, as indicated on the Plans or in the Special Provisions, or as directed by the Consultant. The Contractor shall remove all materials in a manner that prevents contamination of one material with another. Dozers shall not be used for the removal topsoil or subsoil unless specifically authorized by the Consultant in writing. Topsoil, subsoil, and inorganic overburden shall be stockpiled uniformly and compactly in separate piles in the area(s) designated by the Consultant. Stockpiling of all stripped materials shall be completed in a manner that will minimize surface damage and interruption of natural drainage.

Unless otherwise directed by the Consultant, where stockpiles of topsoil, subsoil and inorganic overburden exist from previous pit operations, the Contractor shall utilize the same stockpile locations for the deposit of excavated topsoil, subsoil and inorganic overburden.

During the term of the Contract, the Contractor shall prevent erosion of all topsoil, subsoil, and inorganic overburden stockpiles resulting from his operations. In the event such piles remain at the completion of construction, they shall be seeded by the Contractor.

All materials required for seeding shall be supplied by the Contractor. Grass seed shall conform to Specification 2.20, Seeding. The composition and application rate of the grass seed mixture will be determined by the Consultant at the time of construction.

The excavation of aggregate shall advance uniformly to obtain maximum yield from the deposit. Under no circumstances will waste of useable material be permitted, and excavations shall be continued to depths below water level if suitable material is available.

The Contractor shall clean-up the areas of pits affected by operations performed under this Contract in accordance with the following:

- (i) All faces with potential future use for the removal of aggregate shall be sloped at a ratio of at least two horizontal to one vertical.
- (ii) Faces designated to be abandoned in a deposit shall be sloped at a ratio of at least four horizontal to one vertical.
- (iii) At boundaries of authorization or property lines, sloping shall be at a ratio of at least four horizontal to one vertical with the top of slopes terminating at a minimum distance of 3.0 m from the boundary.
- (iv) Upon completion of the Work, the site shall be left in a neat and presentable condition. All fences removed for purposes of entry shall be replaced in a condition equal to or better than they were before being removed, and all debris, including construction materials and garbage, resulting from the Contractor's operations shall be removed and disposed of as required by the Consultant. The Contractor shall not drain, spill or bury at this site any garbage, sewage, outhouse waste, fluids, oils, fuels, mechanical parts or equipment.
- (v) All asphalt material produced by the Contractor shall be removed from the site, unless otherwise outlined in the special provisions. All reject asphalt material produced by the

Contractor shall be disposed of in accordance with Environment Regulations.

In addition to the foregoing sloping operations, where practical, the Consultant may order that flatter slopes be constructed on selected areas using stockpiled overburden material. The quantity of overburden material available will determine the amount of sloping to be done. This operation may require some site preparation such as ripping of the compacted earth floor.

#### **5.2.4.2.2 Supply, Installation and Maintenance of Pit Signage**

The Contractor shall be responsible for maintaining signage in Department controlled pits in accordance with the requirements of Drawings TEB 1.59 and TEB 1.60, as applicable. This shall include the removal, salvage and re-installation of existing signs as required to accommodate the Contractor's operations, and the replacement of previously damaged signs with new ones. Warning signs removed to accommodate the Contractor's operations shall be re-installed as soon as practicable.

At the completion of all pit operations, the Contractor shall supply and install any additional signage required in the pit.

Signs supplied by the Contractor shall be new, and shall meet the requirements of Specification 5.18, Supply of Permanent Highway Signs, Posts and Bases.

#### **5.2.4.3 Pit Operations in Aggregate Sources Not Controlled by the Department**

All aspects of clearing, removal of overburden, protection and safety of livestock, general pit management and clean-up shall be the responsibility of the Contractor.

### **5.2.5 MEASUREMENT AND PAYMENT**

#### **5.2.5.1 General**

Payment for the supply of aggregate will not be made separately when the applicable specification states that the cost of supplying aggregate is considered incidental to the Work, or is included in the unit price bid for the Work for which the aggregate is being produced. If this is the case for all applicable specifications for the Work, the Contract will not contain a bid item for the supply of aggregate.

In Contracts that contain a bid item for supplying aggregate, payments made for the supply of aggregate will be considered full compensation for the cost of the aggregate material. All other costs incurred by the Contractor including, but not limited to, the cost of obtaining approvals and rights to use a source, exploration, development, reclamation, clearing, removal and stockpiling of topsoil, subsoil, and inorganic overburden, erosion protection, seeding, and the erection and removal of temporary fences will be considered incidental to the Work, and no separate or additional payment will be made.

For the purpose of payment for the supply of aggregate, Contractor owned reclaimed asphalt pavement (RAP) material used in the production of recycled asphalt concrete pavement (RACP) will be considered to be aggregate supplied from a private source not controlled by the Department. RAP material used for any other purpose will not be paid for.

Payment for all costs associated with the supply and installation of new pit signage, if required, will be made in accordance with Section 1.2.33.2, Extra Work, of Specification 1.2, General. Signs

damaged as the result of the Contractor's operations shall be replaced by the Contractor at his expense. All costs associated with the removal, salvage and re-installation of existing signs to accommodate the Contractor's operations will be considered incidental to the Work, and no separate or additional payment will be made.

#### 5.2.5.2 Designated Sources

Unless otherwise specified, the aggregate in designated sources will be supplied free of cost to the Contractor.

#### 5.2.5.3 Supply of Aggregate Bid Item

The Specification Amendment Table contained in the Special Provisions will indicate whether or not the Contractor has the option of using a specific aggregate source controlled by the Department for the supply of aggregate for the Work.

If the Table indicates that the Contractor has the option of using a specific aggregate source controlled by the Department, the tender will contain a Bid Item for "Supply of Aggregate – With Option". In such cases, the Department will establish the unit price for this work and insert the amount in the Unit Price Schedule.

If the Table indicates that the Contractor may not use an aggregate source controlled by the Department for the supply of aggregate for the Work, the tender will contain a Bid Item for "Supply of Aggregate – No Option", and the Contractor shall bid a unit price for this work.

#### 5.2.5.4 Payment

The payment conditions for supplying aggregate vary depending on the category of the aggregate source used. Categories of aggregate sources are listed in Section 5.2.2, Aggregate Categories. Further, it is possible that more than one aggregate source may be used for the supply of aggregate for the Work (e.g. Portions or all of the pit-run gravel and/or the blend sand components of the aggregate may be obtained from separate aggregate sources of different categories).

The payment conditions for the various categories of aggregate sources are as follows:

No payment will be made for the quantity of aggregate material obtained from a source controlled by the Department.

Payment for the quantity of aggregate obtained from a source not controlled by the Department will be made in accordance with the following:

- (i) For material obtained from crown sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department for "Supply of Aggregate – With Option", or at the unit price bid by the Contractor for "Supply of Aggregate – No Option", as applicable, minus \$0.96 per tonne. The \$0.96 per tonne reduction recognizes that royalty payments to Alberta Environment and Parks (AEP) are not applicable to Public Works projects.
- (ii) For material obtained from private sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department or bid by the Contractor (as applicable) for the item "Supply of Aggregate."
- (iii) The quantity for payment will be determined by the Consultant by measuring the material containing the aggregate which has been incorporated into the accepted Work and

calculating the quantity of aggregate obtained from sources not controlled by the Department. In the event the material containing the aggregate contains asphalt, no deduction will be made for the asphalt material.

- (iv) When the material measurement is by volume, a conversion factor of 1.632 tonnes per cubic metre will be used to determine the weight of a gravel component and 1.365 tonnes per cubic metre will be used for a blend sand component.

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## **5.2 SUPPLY OF AGGREGATE**

### **5.2.1 GENERAL**

This specification covers the general requirements for the supply of aggregate materials by the Contractor. Aggregate materials are considered the total of the granular portion of construction materials consisting of the coarse and fine gravel splits, blend sand and manufactured fines when required.

### **5.2.2 AGGREGATE CATEGORIES**

For the purposes of administering the operational and payment conditions concerning the supply of aggregate for the Work, aggregate sources are categorized as follows:

#### **5.2.2.1 Aggregate Sources Controlled by the Department**

The following are deemed to be aggregate sources controlled by the Department:

- (i) a source owned by the Department, or
- (ii) a Crown source for which the Department has a reservation, or
- (iii) a private source for which the Department has a royalty agreement, and holds an approval under the Environmental Protection and Enhancement Act.

##### **5.2.2.1.1 Designated Sources**

When it is specified in the Contract that the Contractor shall only use the Department sources (pits, stockpiles or quarry sites) for the production of crushed or uncrushed aggregate, these sources shall be termed "Designated Sources".

#### **5.2.2.2 Aggregate Sources Not Controlled by the Department**

The following are deemed to be aggregate sources not controlled by the Department:

- (i) a Crown source on undeeded land, operated primarily under lease or license and for which the Department does not have a reservation.
- (ii) a private source for which the Department does not have a royalty agreement, and does not hold an approval under the Environmental Protection and Enhancement Act.

### **5.2.3 GENERAL REQUIREMENTS FOR THE USE OF ALL AGGREGATE SOURCES**

When supplying aggregate from any source, the Contractor shall:

- (i) ensure a Conservation and Reclamation Approval or Registration from Alberta Environment, or a lease or license to extract from Alberta Sustainable Resource Development, and a clearance from the Archaeological Survey of Alberta are in place prior to commencement of the Work;
- (ii) assume full responsibility for the quantity and quality of the material in the aggregate source;
- (iii) specify the location of the proposed aggregate source(s) and haul routes, prior to Contract award;
- (iv) acquire the necessary rights to remove materials from all aggregate sources except sources controlled by the Department;

- (v) explore and develop the aggregate sources; and
- (vi) save the Department harmless from any and all claims resulting from the use of the aggregate sources.

The Department will not consider the use of aggregates from existing stockpiles unless the Contractor can satisfy the Department that the aggregate in question meets all required specifications. Agreement by the Department that such pre-prepared aggregates can be used will not constitute acceptance of the material in stockpile. Acceptance of such material will be based on testing done by the Consultant as the material is incorporated into the Work.

#### 5.2.4 PIT OPERATIONS

##### 5.2.4.1 **General**

In all aggregate sources, the Contractor shall comply with the conditions set by Alberta Environment or Alberta Sustainable Resource Development when removing topsoil, subsoil and inorganic overburden, including material in a frozen condition. The standards and conditions for appropriate development and reclamation as required by Alberta Environment or Alberta Sustainable Resource Development shall apply to all sources.

##### 5.2.4.2 **Pit Operations in Aggregate Sources Controlled by the Department**

###### 5.2.4.2.1 General Operating Requirements

Except where modified by the Special Provisions, the Contractor's operations in an aggregate source controlled by the Department shall be in accordance with the following requirements.

All reject material produced in an aggregate source controlled by the Department shall be disposed of as directed by the Consultant and the Contractor shall have no claim to the material.

When aggregate is to be produced from a source which has been partially excavated previously, the new excavation shall proceed as an extension of the previous excavation provided that suitable material is obtainable. If required, stockpiled materials from previous operations shall be removed and deposited as indicated on the Plans and in the Special Provisions unless otherwise directed by the Consultant. The aggregate exposed shall be processed and used.

Normally, the cleared area shall extend beyond the final position of an open face by a minimum distance of four times the expected depth of excavation. Clearing and timber salvage, if required, shall be carried out in accordance with Specification 2.1, Clearing.

The Contractor shall erect and maintain any temporary fences and livestock guards that may be required to prevent livestock from straying into the aggregate source.

Inorganic overburden shall be removed to a minimum 10 m beyond the top of the backsloped aggregate face. Topsoil and subsoil shall be stripped to a minimum distance of 5 m beyond the top of the backsloped overburden face. The stripped buffers shall be maintained throughout the project.

Prior to the placement of excavated inorganic overburden, the Contractor shall remove the full depth of both topsoil and subsoil layers and stockpile the materials in separate stockpiles. In addition, unless otherwise directed by the Consultant, the Contractor shall remove and separately



stockpile the full depth of both topsoil and subsoil layers from all temporary work sites including but not limited to, the crusher, plant, camp, parking areas and all access roads.

Prior to the placement of excavated subsoil, the Contractor shall remove and stockpile the full depth of topsoil layer.

The aggregate area to be used shall be stripped in stages as follows. The first stage shall be the removal and stockpiling of topsoil. The second stage shall be the removal and stockpiling of the subsoil. The final stage shall be the removal and deposition of the inorganic overburden, as indicated on the Plans or in the Special Provisions, or as directed by the Consultant. The Contractor shall remove all materials in a manner that prevents contamination of one material with another. Dozers shall not be used for the removal topsoil or subsoil unless specifically authorized by the Consultant in writing. Topsoil, subsoil, and inorganic overburden shall be stockpiled uniformly and compactly in separate piles in the area(s) designated by the Consultant. Stockpiling of all stripped materials shall be completed in a manner that will minimize surface damage and interruption of natural drainage.

Unless otherwise directed by the Consultant, where stockpiles of topsoil, subsoil and inorganic overburden exist from previous pit operations, the Contractor shall utilize the same stockpile locations for the deposit of excavated topsoil, subsoil and inorganic overburden.

During the term of the Contract, the Contractor shall prevent erosion of all topsoil, subsoil, and inorganic overburden stockpiles resulting from his operations. In the event such piles remain at the completion of construction, they shall be seeded by the Contractor.

All materials required for seeding shall be supplied by the Contractor. Grass seed shall conform to Specification 2.20, Seeding. The composition and application rate of the grass seed mixture will be determined by the Consultant at the time of construction.

The excavation of aggregate shall advance uniformly to obtain maximum yield from the deposit. Under no circumstances will waste of useable material be permitted, and excavations shall be continued to depths below water level if suitable material is available.

The Contractor shall clean-up the areas of pits affected by operations performed under this Contract in accordance with the following:

- (i) All faces with potential future use for the removal of aggregate shall be sloped at a ratio of at least two horizontal to one vertical.
- (ii) Faces designated to be abandoned in a deposit shall be sloped at a ratio of at least four horizontal to one vertical.
- (iii) At boundaries of authorization or property lines, sloping shall be at a ratio of at least four horizontal to one vertical with the top of slopes terminating at a minimum distance of 3.0 m from the boundary.
- (iv) Upon completion of the Work, the site shall be left in a neat and presentable condition. All fences removed for purposes of entry shall be replaced in a condition equal to or better than they were before being removed, and all debris, including construction materials and garbage, resulting from the Contractor's operations shall be removed and disposed of as required by the Consultant. The Contractor shall not drain, spill or bury at this site any garbage, sewage, outhouse waste, fluids, oils, fuels, mechanical parts or equipment.
- (v) All asphalt material produced by the Contractor shall be removed from the site, unless otherwise outlined in the special provisions. All reject asphalt material produced by the

Contractor shall be disposed of in accordance with Environment Regulations.

In addition to the foregoing sloping operations, where practical, the Consultant may order that flatter slopes be constructed on selected areas using stockpiled overburden material. The quantity of overburden material available will determine the amount of sloping to be done. This operation may require some site preparation such as ripping of the compacted earth floor.

#### **5.2.4.2.2 Supply, Installation and Maintenance of Pit Signage**

The Contractor shall be responsible for maintaining signage in Department controlled pits in accordance with the requirements of Drawings TEB 1.59 and TEB 1.60, as applicable. This shall include the removal, salvage and re-installation of existing signs as required to accommodate the Contractor's operations, and the replacement of previously damaged signs with new ones. Warning signs removed to accommodate the Contractor's operations shall be re-installed as soon as practicable.

At the completion of all pit operations, the Contractor shall supply and install any additional signage required in the pit.

Signs supplied by the Contractor shall be new, and shall meet the requirements of Specification 5.18, Supply of Permanent Highway Signs, Posts and Bases.

#### **5.2.4.3 Pit Operations in Aggregate Sources Not Controlled by the Department**

All aspects of clearing, removal of overburden, protection and safety of livestock, general pit management and clean-up shall be the responsibility of the Contractor.

### **5.2.5 MEASUREMENT AND PAYMENT**

#### **5.2.5.1 General**

Payment for the supply of aggregate will not be made separately when the applicable specification states that the cost of supplying aggregate is considered incidental to the Work, or is included in the unit price bid for the Work for which the aggregate is being produced. If this is the case for all applicable specifications for the Work, the Contract will not contain a bid item for the supply of aggregate.

In Contracts that contain a bid item for supplying aggregate, payments made for the supply of aggregate will be considered full compensation for the cost of the aggregate material. All other costs incurred by the Contractor including, but not limited to, the cost of obtaining approvals and rights to use a source, exploration, development, reclamation, clearing, removal and stockpiling of topsoil, subsoil, and inorganic overburden, erosion protection, seeding, and the erection and removal of temporary fences will be considered incidental to the Work, and no separate or additional payment will be made.

For the purpose of payment for the supply of aggregate, Contractor owned reclaimed asphalt pavement (RAP) material used in the production of recycled asphalt concrete pavement (RACP) will be considered to be aggregate supplied from a private source not controlled by the Department. RAP material used for any other purpose will not be paid for.

Payment for all costs associated with the supply and installation of new pit signage, if required, will be made in accordance with Section 1.2.33.2, Extra Work, of Specification 1.2, General. Signs

damaged as the result of the Contractor's operations shall be replaced by the Contractor at his expense. All costs associated with the removal, salvage and re-installation of existing signs to accommodate the Contractor's operations will be considered incidental to the Work, and no separate or additional payment will be made.

#### **5.2.5.2 Designated Sources**

Unless otherwise specified, the aggregate in designated sources will be supplied free of cost to the Contractor.

#### **5.2.5.3 Supply of Aggregate Bid Item**

The Specification Amendment Table contained in the Special Provisions will indicate whether or not the Contractor has the option of using a specific aggregate source controlled by the Department for the supply of aggregate for the Work.

If the Table indicates that the Contractor has the option of using a specific aggregate source controlled by the Department, the tender will contain a Bid Item for "Supply of Aggregate – With Option". In such cases, the Department will establish the unit price for this work and insert the amount in the Unit Price Schedule.

If the Table indicates that the Contractor may not use an aggregate source controlled by the Department for the supply of aggregate for the Work, the tender will contain a Bid Item for "Supply of Aggregate – No Option", and the Contractor shall bid a unit price for this work.

#### **5.2.5.4 Payment**

The payment conditions for supplying aggregate vary depending on the category of the aggregate source used. Categories of aggregate sources are listed in Section 5.2.2, Aggregate Categories. Further, it is possible that more than one aggregate source may be used for the supply of aggregate for the Work (e.g. Portions or all of the pit-run gravel and/or the blend sand components of the aggregate may be obtained from separate aggregate sources of different categories).

The payment conditions for the various categories of aggregate sources are as follows:

No payment will be made for the quantity of aggregate material obtained from a source controlled by the Department.

Payment for the quantity of aggregate obtained from a source not controlled by the Department will be made in accordance with the following:

- (i) For material obtained from crown sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department for "Supply of Aggregate – With Option", or at the unit price bid by the Contractor for "Supply of Aggregate – No Option", as applicable, minus \$0.96 per tonne. The \$0.96 per tonne reduction recognizes that royalty payments to Alberta Environment and Parks (AEP) are not applicable to Public Works projects.
- (ii) For material obtained from private sources not controlled by the Department, payment will be made at the unit price per tonne established by the Department or bid by the Contractor (as applicable) for the item "Supply of Aggregate."
- (iii) The quantity for payment will be determined by the Consultant by measuring the material containing the aggregate which has been incorporated into the accepted Work and

calculating the quantity of aggregate obtained from sources not controlled by the Department. In the event the material containing the aggregate contains asphalt, no deduction will be made for the asphalt material.

- (iv) When the material measurement is by volume, a conversion factor of 1.632 tonnes per cubic metre will be used to determine the weight of a gravel component and 1.365 tonnes per cubic metre will be used for a blend sand component.