

1.0 GENERAL

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- .1 This section has been revised from the Alberta Transportation Civil Works Master Specifications template.

1.2 DEFINITIONS

- .1 “Common Excavation” means the excavation of on-Site soils required by the Contract Documents, excluding Topsoil and Subsoil Stripping, Borrow Area Excavation, and Rock Excavation.
- .2 “Topsoil and Subsoil Stripping” means the excavation of Topsoil and Subsoil defined in Section 02234 – Topsoil and Subsoil Stripping.
- .3 “Borrow Area Excavation” means the excavation required for the Contractor to provide suitable fill materials as specified in Section 02330 – Earthwork Materials. Supply of suitable fill material and associated borrow area excavation is the sole responsibility of the Contractor.

1.3 SUBMITTALS

Provide the following submittals:

- .1 A list of the proposed source(s) where Borrow Area Excavation will be conducted to supply suitable materials, as outlined in Section 02330 – Earthwork Materials, at least 7 days prior to commencing Borrow Area Excavation.

2.0 EXECUTION

2.1 EXCAVATION - GENERAL

- .1 Sequence, schedule, and perform excavation and fill placement operations to make the best use of all excavated material, and to minimize the volume of Borrow Area Excavation.
- .2 Locate and protect utility lines, survey reference points, instrumentation, and other facilities, unless otherwise specified in Section 02220 – Demolition, Salvage, and Removal.
- .3 Remove and dispose of all snow, surface ice, organics, excess water, debris, or deleterious materials prior to starting the excavation.
- .4 Excavate to the lines, grades, slopes, and elevations specified in the Contract Documents, unless established otherwise by the Engineer of Record.
- .5 The Engineer of Record will determine if unsuitable bearing soils are encountered at the specified subgrade level. Carry the excavation deeper to remove unsuitable bearing soils and replace excavated soil with Impervious Fill Zone 1A material as directed by the Engineer of Record.

- .6 Unauthorized over-excavation beyond the lines, grades, slopes, and elevations specified in the Contract Documents will not be compensated for. Required filling of unauthorized over-excavation will not be compensated for and shall be completed per Section 02331 – Fill Placement.

2.2 PROTECTION

- .1 Protect excavations throughout the Work by temporary shoring, bracing, or other suitable methods, if required, to provide safe working conditions and to prevent cave-ins and loose soil from falling into the excavations.
- .2 Remove boulders, loose rock, soil blocks, and other fragments that may slide or roll into excavated areas, which, in the opinion of the Owner, Engineer of Record, or Contractor, are unsafe or appear to endanger persons, work, or property. Site safety remains the responsibility of the Contractor.
- .3 Protect excavated surfaces against which fill materials will be placed from becoming saturated, freezing, or otherwise becoming unsuitable by sequencing stripping/excavation activities to minimize the amount of exposed areas and the duration the excavation surfaces are exposed prior to receiving fill.

2.3 COMMON EXCAVATION

- .1 Provide Common Excavation at the locations, and to the lines, grades, slopes, and elevations specified in the Contract Documents.
- .2 Load, haul, and dump all Common Excavation materials at the appropriate fill placement zones, waste disposal areas, or other locations as directed by the Owner or Engineer of Record.
- .3 Do not place any Common Excavation materials in waste disposal areas that can be worked to meet the specified requirements for Impervious Fill Zone 1A, unless directed otherwise by the Owner or Engineer of Record.
- .4 If necessary, temporarily stockpile materials derived from Common Excavations that are suitable for use in the Impervious Fill Zone 1A. Rehandle, if required, and incorporate these materials in appropriate fill zones prior to obtaining similar materials from the Borrow Area Excavation.
- .5 At the end of each workday, the base of the Common Excavation areas are to be prepared to a smooth surface and are to be graded to ensure that ponding of water will not occur within the dike footprint. Positive drainage conditions are to be maintained throughout construction. Provide dewatering measures, if required, to remove accumulated water from Common Excavation areas.

2.4 TRENCH EXCAVATION

- .1 Excavate trenches to the alignments, depths, and slopes indicated in the Contract Documents, or otherwise specified by the Engineer of Record, to a uniform width, sufficiently wide to provide adequate working room for installation and backfill compaction.
- .2 Temporarily stockpile trench excavation material a minimum of 1x the depth of trench away from the trench.

- .3 Do not complete trench excavation under wet conditions or when precipitation is anticipated to cause adverse conditions.
- .4 At the end of each workday, the base of the Trench Excavation areas are to be prepared to a smooth surface and are to be graded to ensure that ponding of water will not occur within the trench. Positive drainage conditions are to be maintained throughout construction. Where maintaining positive drainage within a trenched excavation is not possible, provide dewatering measures, if required, to remove accumulated water from Trench Excavation areas, to ensure work in the dry.
- .5 While trench excavations are open (and specifically at the end of each workday), clearly identify and secure the open excavation per Occupational Health and Safety requirements. Site safety and security in the responsibility of the Contractor.
- .6 No individual trench excavation shall remain open for more than 7 days. The Engineer of Record may extend this time limit as they see fit based on observed conditions.
- .7 Maintain trench excavation side slopes in a safe and neat condition, at all times. The limits of the angle of safe excavation for temporary side slopes are to comply with Occupational Health and Safety requirements. Provide temporary shoring, bracing, or other suitable methods, if required, to provide safe working conditions and to prevent cave-ins and loose soil from falling into the excavations. At the time of construction, the Engineer of Record for the Downtown Dike can provide safe excavation recommendations based on observed Site conditions, however, the Contractor is responsible for safe working conditions. Temporary shoring or bracing is not anticipated at this Site.

2.5 BORROW AREA EXCAVATION

- .1 The location(s), excavation layout(s), excavation methods, scheduling, and sequencing of Borrow Area Excavation to provide suitable Impervious Fill Zone 1A and Retaining Wall Reinforced Fill Zone materials is the sole responsibility of the Contractor. Impervious Fill Zone 1A and Retaining Wall Reinforced Fill Zone are to be pre-qualified as outlined in Section 02330 – Earthwork Materials. The Contractor is responsible to obtain all required permits and approvals to conduct Borrow Area Excavation, as may be required.

2.6 EXCAVATION TOLERANCES

- .1 Provide finished excavation surfaces that are smooth, regular, and uniform.
- .2 Common Excavation: For finished excavation surfaces, a deviation measured normal to the excavated surface of +/-100 mm will be permitted between the finished excavated surface and the lines, grades, slopes, and elevations specified in the Contract Documents or as established by the Owner and Engineer of Record.
- .3 Trench Excavation: For finished excavation surfaces, a deviation measured normal to the excavated surface of 0 mm to -50 mm will be permitted between the finished excavated surface and the lines, grades, slopes, and elevations specified in the Contract Documents or as established by the Owner and Engineer of Record. A consistent grade is to be maintained on the finished excavation surfaces for all trench excavations, to ensure positive drainage and limit ponding.

END OF SECTION