Standard Specification

Placement of Fill

2016-12-14	0	Approved for Use	B. Whitehead	A. Grobbelaar	N. Mason	
Date	**Rev.**	**Status**	**Prepared By**	**Checked By**	**Approved By**	**Approved By**
			HATCH			**Employer**

Table of Contents

1. General

1.1 Description of Work

1.1.1 The Work to be performed under this Section shall consist of supplying all labour, materials and equipment and performing all the work necessary for supplying, transporting and placing all fill and backfill materials as shown on the Drawings, as indicated in these Specifications, and as directed by the Employer.

1.2 Related Sections

1.2.1 H353004-00000-280-078-0002 – Quarried Fill Materials Requirements

1.3 References

1.3.1 Not used.

1.4 Definitions

1.4.1 Supply: all the work for quarry development, excavation, maintenance, reclamation of a quarry and the processing required to provide fill to achieve the specified gradation limits of the material.

1.4.2 Transport: all work necessary to haul materials from the stockpiles or quarries, to the required locations.

1.4.3 Material Definitions.

- Frozen Soil or Rock: Soil or rock with a temperature below 0°C. This definition is based entirely on temperature and is independent of the water and ice content of the soil or rock.
- Fill: Quarry or borrow materials used to raise existing grades
- Fill: Material from cut used to raise existing grades
- Sub Grade: Surface or elevation remaining after completing excavation
- Sub Base Course: The layer between the base course and the sub grade
- Base Course: Course placed on top of the sub base course
- Surface Course: Course placed on the top of the road or pad strata, namely base.

1.5 Inspection and Testing

1.5.1 The Contractor is responsible for providing a system/method of performing quality control to demonstrate adherence of the Work to the Contract Drawings, grading geometry, and tolerances. This quality control program shall be developed and confirmed with the Employer as part of the tender process.

2. Products

2.1 Materials

2.1.1 See H353004-00000-280-078-0002, Quarried Fill Materials. Fill material to be obtained from quarry sources indicated or approved by the Employer.

3. Execution

3.1 General Requirements

3.1.1 The Contractor shall supply all resources including furnishing of all labour, supervision, transportation, material, tools, machinery, equipment, supplies and services required to complete the Work in accordance with this specification and the Contract Documents.

3.1.2 All Work shall be performed in accordance with the Contract Documents, Contract Drawings, applicable codes, and applicable government regulations.

3.1.3 Carefully maintain all benchmarks, monuments and other reference points. If disturbed or destroyed, replace and restore the same to the satisfaction of the Employer.

3.1.4 Adhere to the project environmental requirements.

3.2 Site Preparation

3.2.1 Protect structures, archaeological sites, temporary construction, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards resulting from earthwork operations.

3.2.2 Establish required lines, levels, elevations, contours, and datum.

3.2.3 Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed.

3.3 Submittals

3.3.1 Submit location plans with the planned equipment access routes to the Employer for approval prior to commencement of the Work.

3.4 General Placement of Fill

3.4.1 Use appropriate methods to prevent the disturbance or damage to buried services (if applicable). Any damage shall be reversed and corrected solely at the Contractor’s expense.

3.4.2 An alternative method of placing alternating lifts of fill materials may be utilized, provided that each lift is thoroughly compacted to the required density prior to application of the succeeding lift of material, and as approved by the Employer.

3.4.3 Where fill is placed around structures, the fill shall be placed and compacted evenly around the structure so as to prevent displacement. Care shall be taken to place and compact the fill evenly around the structure in thin layers, to avoid unbalanced lateral loading.

High compactive effort shall not be used against structures in order to avoid structural damage. Particular care must be taken adjacent to utility connection branches and retaining walls (if applicable).

3.4.4 Existing surfaces are not to be cleared or grubbed

3.4.5 Snow or ice should be cleared prior to commencement of the next lift during earthworks construction

3.4.6 Place material using methods which do not lead to segregation or degradation of aggregate.

3.4.7 Place fill to elevations and grades shown on the Drawings.

3.4.8 Raise fill in such a manner that the top surface of any layer of the embankment under construction shall remain approximately level.

3.4.9 Shape each layer to smooth contours and compact to the specified compaction before the succeeding layer is placed.

3.4.10 Remove and replace any portion of a lift in which the material becomes segregated during spreading.

3.4.11 Place fill in the wet (under water) by end-dumping, or other acceptable means. Dump as close to the water surface as possible to minimize segregation.

3.5 Compaction

3.5.1 In the event that an uncertainty exists with regards to compaction, the Contractor shall notify and confirm the uncertainty with the Employer prior to commencing or continuing the Work.

3.5.2 Place granular surface course materials in lifts not exceeding 200 mm in loose depth for material grade types 5 and 7.

3.5.3 Place base and sub base fill materials for the rough grade in lifts not exceeding 300 mm or 1.5 times the maximum dimension of the largest particle whichever is greater for material grade types 5, 7 and 8.

3.5.4 In areas where hand-operated tampers are to be used for compaction, place fill and backfill soil material in lifts not exceeding 100 mm in loose depth for grade types 5 and 7.

3.5.5 The final surface of Type 12 Run of quarry fill shall be chinked with compacted fill material.

3.5.6 Route construction equipment, sheepsfoot rollers, pneumatic-tired rollers, vibratory compactors, or other equipment uniformly over the entire surface of each layer until embankment does not rut under the compaction equipment as approved by the Employer.

3.5.7 In areas not accessible to rolling equipment, compact to the specified compaction with mechanical tampers or by other suitable means approved by the Employer.

3.5.8 Keep dumping and rolling areas separate. Do not cover any lift by another lift until the required compaction and performance has been achieved.

3.5.9 Clean granular materials may be stockpiled in the summer months in such a way as to promote drainage to lower water contents.

3.6 Site Tolerances

3.6.1 After compaction, the top surface of the base course shall not extend more than 25 mm above nor more than 25 mm below the specified grade at any location.

3.6.2 Finished surface limits shall be within plus or minus 25 mm horizontally and 15 mm vertically of the established grade and cross section, but not uniformly high or low.

3.6.3 Correct surface irregularities by loosening and adding or removing material until the surface is within the specified tolerance.

3.7 Dust and Erosion Control Stabilizer Agent

3.7.1 Use dust and erosion control stabilizer agent, EK-35, approved equivalent in accordance with BIM Environmental Management Policy and requirements.

3.7.2 Apply stabilizer agent as per the manufacturer requirements for application rates, allowable weather conditions and application methods.

3.7.3 Preference should be taken to utilize water as a dust suppressant.

3.8 Disposal of Surplus Material

3.8.1 Remove surplus satisfactory soil and waste material, including unsatisfactory soil to the specified spoils location as directed by the Employer.

3.9 Provision for Traffic on Existing Roads

3.9.1 The Contractor shall be responsible for all works necessary, including the construction and maintenance of detour routes, to maintain the safe flow of traffic at all times where interfacing between new and existing works. The Contractor shall provide, erect and maintain advanced warning signs, barricades and all other necessary traffic management schemes for the duration of the Work, or as directed by the Employer.

END OF SECTION