

SECTION 02223

BACKFILLING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Site structure and utility trench backfilling to subgrade elevations
- B. Site filling and backfilling to subgrade elevations.
- C. Consolidation and compaction.
- D. Fill for over-excavation.

1.02 REFERENCES

- A. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. (2.49 kg) Rammer and 12 inch (304.8 mm) Drop. (Standard Proctor).
- B. AASHTO M43 - Standard Specification for Standard Sizes of Coarse Aggregate for Highway Construction.
- C. PA DOT Publication 408, Latest Edition.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01300.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Type A: Course limestone meeting AASHTO #1 requirements as specified in AASHTO M43.
- B. Type B: Limestone Gravel meeting AASHTO #57 requirements as specified in AASHTO M43.
- C. Type C: Granular fill meeting specifications for PA DOT Section 703.1, Fine Aggregate.
- D. Subsoil: Reuse excavated subsoil specified in Section 02211.
- E. Concrete: Structural concrete with a 28-day compressive strength of 3,000 psi.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify fill materials to be reused are acceptable.

3.02 PREPARATION

- A. Generally, compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of in-situ compaction. Backfill with Type A, C or subsoil fill and compact to density equal to or greater than requirements for subsequent backfill material.

3.03 BACKFILLING

- A. Backfill areas to required contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Type A, B, or Subsoil Fill: Place and compact material in continuous layers, which will result in the specified compaction. This may require layers not to exceed 8" in depth.
- D. Support utilities during placement and compaction of bedding fill.
- E. Employ a placement method that does not disturb or damage structures or utilities in trenches.
- F. Maintain optimum moisture content of backfill materials to attain compaction density of 95% maximum dry unit weight determined by the Standard Proctor Test (ANSI/ASTM D698).
- G. Backfill against supported structures or utilities.
- H. Backfill simultaneously on each side of unsupported structures or utilities.
- I. Slope grade away from structures minimum 2 inches in 10 ft., unless noted otherwise.
- J. Make grade changes gradual. Blend slope into level areas.
- K. Remove surplus backfill materials from site.
- L. Leave fill material stockpile areas completely free of excess materials.

3.04 TOLERANCES

- A. Top Surface of Backfilling: Plus or minus one inch from required elevations.

3.05 FIELD QUALITY CONTROL

- A. Field testing will be performed under provisions of Section 01400.
- B. Compaction testing will be performed in accordance with ANSI/ASTM D698 and with Section 01400.
- C. Frequency of Tests: Contractor shall provide a minimum of one test for every 50 cubic yards of backfill material. Engineer may call for additional compaction tests on any backfilled material. If the additional test results show the Work does not meet specified requirements; the test shall be at the Contractor's expense and the cost deducted from the Contract Sum Price. Owner shall bear expense of additional tests, which prove specified Work.
- D. If tests indicate Work does not meet specified requirements, Contractor shall correct the area and retest at no cost to Owner.

3.06 PROTECTION OF FINISHED WORK

- A. Protect finished Work.

END OF SECTION