

SECTION 02100 - Site Preparation and Grading

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Clearing and grubbing and removal of debris.
- B. Cutting, grading and rough contouring the site.
- C. Bring all areas to elevations, lines and grades shown on drawings.

1.2 RELATED SECTIONS

- A. Section 02215 - Grading.

1.3 REFERENCES

- A. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. Rammer and 12 inch Drop.
- B. ANSI/ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Methods.
- C. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.

1.4 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01000.
- B. Accurately record actual locations of utilities remaining, by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Suitable: Suitable materials for fills shall be classified as A-1, A-3 or A-2-4 in accordance with AASHTO Designation M-145 and shall be free from vegetation and organic material. Not more than 12 percent by weight of fill material shall pass the No. 200 sieve. The Contractor shall furnish all additional fill material required.
- B. Suitable Material to be Placed in Water: Suitable material for fills to be placed in water shall be classified as A-1 or A-3 in accordance with AASHTO Designation M-145.
- C. Unsuitable: Unsuitable materials are classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-5, A-7 and A-8 in accordance with AASHTO Designation M 145.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify site conditions.
- B. Verify that survey bench mark and intended elevations for the Work are as indicated.

3.2 PREPARATION

- A. Identify required lines, levels, contours and datum.
- B. Identify known underground, above ground and aerial utilities. Stake and flag locations.
- C. Protect above and below grade utilities which are to remain.
- D. Protect benchmarks, existing structures that remain fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

3.3 PERFORMANCE

- A. All specific excavation and backfill requirements, as stated within the construction drawings, if more stringent, shall override the requirements specified herein.
- B. Clearing and Grubbing:
 - 1. Clearing and grubbing shall consist of the complete removal and disposal of all trees, brush, stumps, roots, grass, weeds, rubbish and all other obstructions resting on or protruding through the surface of the existing ground and the surface of the excavated areas.
 - 2. When excavation is done within paved areas, all stumps, roots, etc., protruding through or appearing on the surface of the completed excavation shall be removed to a depth of not less than 2 feet below the excavated surface. All stumps within building site area shall be grubbed to a depth of 2 feet below existing grade and replaced with compacted backfill before the area is filled.
 - 3. Within all other areas where clearing and grubbing is to be done, all stumps, roots, and other debris projecting through or appearing on the surface of the ground shall be removed to a depth of one foot below the completed surface.
- C. Excavation:
 - 1. Excavation shall conform to the limits indicated on the plans or specified herein. This work shall include shaping and sloping and other work necessary in bringing the earthwork to the required grade, alignment and cross section.
 - 2. All suitable materials removed from the excavation shall be used as far as practicable in the formation of the embankments, subgrades, shoulders, building sites and other

places as directed. No excavated material shall be wasted without permission, and where necessary to waste such material it shall be at the direction of the Engineer. Unsuitable material shall be removed to the required depth and replaced to the satisfaction of the Engineer with suitable material. Unsuitable material existing in open areas may remain, and these open areas may be used as disposal areas for the unsuitable material as directed by the Engineer.

3. All excess excavated material shall be disposed of outside the limits of the project as directed by the Owner.

D. Filling

1. Fill areas to contours and elevations as shown on the drawings.
2. Place and compact materials in continuous layers not exceeding 8 inches compacted depth, compacted to 95 percent of its maximum density as determined by AASHTO Method T-180.
3. Fill outside of roadways, walkways, parking areas, building sites or other structures shall be compacted to a density of not less than 90 percent of its maximum density as determined by AASHTO Method T-180.
4. Maintain optimum moisture content of all fill materials to attain required compaction density.
5. Slope grade away from building or structures as specified on the drawings.
6. Make grade changes gradual. Blend slope into level areas.

E. Tolerances

1. Top surface: Plus or minus 1/10 foot.

**** END OF SECTION ****