

## **1. General**

### **1.1 Sections Includes**

- 1.1.1 This Section defines the correction to maximum dry density to take into account aggregate particles larger than 4.75 mm.

### **1.2 Related Sections**

- Section 31 05 16 – Aggregate Materials.
- Section 32 11 16 – Granular Sub-Base.
- Section 32 11 23 – Aggregate Base Courses.
- Section 31 23 33 – Excavating, Trenching and Backfilling.

### **1.3 References**

- 1.3.1 American Society for Testing and Materials International (ASTM):
- ASTM C127 – 04, Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate.
  - ASTM D698 – 00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>).
  - ASTM D1557 – 00, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2700 kN-m/m<sup>3</sup>).
  - ASTM D4253 – 00, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.

### **1.4 Submittals**

- 1.4.1 Submittals in accordance with Section 01 33 00 – Submittal Procedures.

### **1.5 Definitions**

- 1.5.1 Corrected Maximum Dry Density is defined as:
- $D = D1 \times D2 / (F1 \times D2) + (F2 \times D1)$ .
  - $D = (F1 \times D1) + (0.9 \times D2 \times F2)$ .
  - Where:
    - ♦  $D$  = Corrected Maximum Dry Density kg/m<sup>3</sup>.
    - ♦  $F1$  = fraction of total field sample passing 4.75 mm sieve.
    - ♦  $F2$  = fraction of total field sample retained on 4.75 mm sieve (equal to 1.00 –  $F1$ ).
    - ♦  $D1$  = maximum dry density, kg/m<sup>3</sup> of material passing the 4.75 mm sieve determined in accordance with Method A of ASTM D698.

- ♦ D2=bulk density,  $\text{kg/m}^3$ , of material retained on 4.75 mm sieve, equal to 1000 G where G is bulk specific gravity (dry basis) of material when tested to ASTM C127.
- For free draining aggregates, determine D1 (maximum dry density) to ASTM D4253 dry method when directed by Departmental Representative.

**2. Products**

2.1 Not Used

**3. Execution**

3.1 Not Used

**4. Measurement and Basis for Payment**

**4.1 Measurement for Payment**

4.1.1 This item will not be measured for payment.

**4.2 Basis for Payment**

4.2.1 No separate or direct payment will be made for work under this Section, which will be considered incidental to work under this Contract. Costs will be deemed to be included in the unit and lump sum prices quoted in the Schedule of Quantities and Prices.