

## **SECTION 02204 MINERAL AGGREGATES AND FILL**

### **PART 1- GENERAL**

#### 1.1 SECTION INCLUDES

- A. Select fill, borrow and untreated base course aggregate.

#### 1.2 RELATED SECTIONS

- A. Section 02225- Trench Excavating and Backfilling.

#### 1.3 REFERENCES

- A. ASTM C 131: Standard Test Method for resistance to Degradation of Small-Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- B. ASTM C 136: Standard Method for Sieve Analysis for Fine and Coarse Aggregates.
- C. AASHTO M 145: Recommended Practice for the Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Samples: Submit, in air tight containers, 50 lb. (45kg) sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires Engineer approval.

#### 1.5 ACCEPTANCE

- A. Acceptance shall be determined by Engineer based upon aggregate gradation and a test lot size of one subplot of 500 tons or portion thereof plus any additional subplot of 500 tons or portion thereof placed in any one week.
- B. Engineer reserves the right to select and test embankment on a random basis from any location in the Work, or from the select fill sources.

#### 1.6 DEFINITIONS

- A. Combined Aggregate Target: The ideal gradation of a combined aggregate, approved by Engineer. The ideal gradation shall be a smooth curve within the limits of the Master Grading Band.
- B. Master Grading Band: The allowance gradation limits for a Combined Aggregate Target.

### **PART 2- PRODUCTS**

#### 2.1 AGGREGATES

- A. Clean, hard, tough, durable, and sound mineral aggregates that consists of crushed stone, crushed gravel or crushed slag: free of deleterious and organic matter; and complies with the following:
  - 1. Rodded Weight: Not less than 75 pounds per cubic foot.
  - 2. Material Passing No. 200 Sieve: Non-plastic.
  - 3. Aggregate Wear Under ASTM C 131: Less than 50 percent.

4. Master Grading Band Limits: Table No. 002204-2.1  
 5. Target Grading Band Limits: Table No. 02204-2.1.

Sieve Size	Sewer Rock		Untreated Base Course <sup>1</sup>						Pea Gravel	
	Grade 2 Min	Grade 2 Max	Grade 1-1/2 Min	Grade 1-1/2 Max	Grade 1 Min	Grade 1 Max	Grade- 3/4 Min	Grade- 3/4 Max	Grade No. 4 Min	Grade No. 4 Max
2"	95	100	-	-	-	-	-	-	-	-
1-1/2"	-	-	100	-	-	-	-	-	-	-
1"	60	70	-	-	100	-	-	-	-	-
3/4"	-	-	81	91	-	-	100	-	-	-
1/2"	4	6	67	77	79	91	-	-	-	-
3/8"	-	-	-	-	-	-	78	92	-	-
No. 4	-	-	43	53	49	61	55	67	100	-
No.16	-	-	23	29	27	35	28	38	-	3
No.200	-	2	6	10	7	11	7	11	-	2

<sup>1</sup> Untreated Base Course: Based on fine and coarse aggregate having approximately the same bulk specific gravity.

## 2.2 SELECT FILL MATERIALS

- A. Borrow: Classifications A-1-a through A-4 of AASHTO M 145.
- B. Granular Borrow: Classifications A-1-a, A-2-b, A-2-4, or A-3 of AASHTO M 145. The material meets the design CBR or R value for suitability of source and not for project control testing.
- C. Granular Backfill Borrow: Classification of A-1 of AASHTO M 145, well graded with a particle size of 2 inches maximum.
- D. Sand: Natural river or bank sand, free of loam, friable, deleterious or soluble materials and organic matter, graded in accordance with Table No. 002204-2.2.

SAND		
Sieve Size	Percent Passing By weight	
	Min	Max
No. 3/8	100	-
No. 200	-	15

## 2.3 TOPSOIL

- A. Native or approved imported material which is fertile, friable, natural loam containing Humus and capable of sustaining vigorous plant growth with pH range of 5.5 to 7.5.
- B. Furnish topsoil that is free of admixture of subsoil and reasonably free of stones Larger than 2 inches, lumps, clods or hard earth, plants or their roots, sticks, and other extraneous matter, and contains no noxious weeds or their seeds.

## 2.4 SOURCE QUALITY CONTROL

- A. Stockpile in sufficient quantities to meet Progress Schedule and requirements.
- B. Separate differing materials to prevent mixing.
- C. Maintain optimum moisture content of stockpiles.
- D. Direct surface water away from stockpiles to prevent erosion or deterioration of materials.

2.5 INSTALLATION

- A. Backfilling for utilities; Section 02225.

2.6 CLEANUP

- A. Remove stockpiles from the site. Grade site surface to prevent free standing surface water.
- B. Leave borrow areas clean and neat.

**END OF SECTION**