

SECTION 02206

SELECT FILL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Select fill material requirements.

1.02 REFERENCES

- A. AASHTO T-96: Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- B. AASHTO T-27: Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

1.03 DEFINITIONS

- A. Select Fill: Backfill material which is mechanically graded.

1.04 SUBMITTALS

- A. Material analyses of each select fill material to be used.

1.05 ACCEPTANCE

- A. Engineer reserves the right to select, reject, and test backfill on a random basis from any location in the Work or from the backfill source.

PART 2 PRODUCTS

2.01 AGGREGATES – UNTREATED BASE COURSE

- A. Clean, hard, tough, durable and sound mineral aggregates that consists of 95% crushed stone, crushed gravel or crushed slag; free of deleterious and organic matter; and complies with the following:
 1. Aggregate Wear Under AASHTO T-96: Less than 50 percent.
 2. Material shall be classified as A-1 material.
 3. Two fractured faces Under AASHTO T-335: A minimum of 50 percent.
 4. Dry Rodded Weight Under AASHTO T-19: Not be less than 75 lb/ft³.
 5. Gradation Limits: Establish the job mix target gradation for each sieve. Target grading curve must lie within the gradation limits of the Master Grading Band Limits. The Job Mix Gradation Tolerance is the allowable deviation from the job mix target gradation on the applicable sieves. The following limits are based on fine and course aggregate having approximately the same bulk specific gravities. Sieve gradations are based upon percent of aggregate passing by weight in accordance with AASHTO T-27 and T-11.

MASTER GRADING BAND LIMITS – UNTREATED BASE COURSE

SIEVE SIZE	Type 1-1/2		Type 1		Type 3/4		JOB MIX GRADATION TOLERANCE
	Min	Max	Min	Max	Min	Max	
1-1/2"	100	--	--	--	--	--	
1"	90	100	100	--	--	--	±9.0 (1-1/2")
3/4"	70	85	--	--	100	--	±9.0 (1-1/2 & 1")
1/2"	65	80	79	91	--	--	±9.0
3/8"	55	75	--	--	78	92	±9.0
No. 4	40	65	49	61	55	67	±7.0
No. 16	25	40	27	35	28	38	±5.0
No. 200	7	11	7	11	7	11	±3.0

6. Source quality control shall be in accordance with AASHTO T-27. Verify job-mix grading band material compliance by selecting samples uniformly in time on a random basis.

2.02 DRAIN ROCK

- A. Consist of hard, durable particles of stone or gravel, screened or crushed to specified size and gradation.
- B. Free from vegetable matter, lumps or balls of clay, or other deleterious matter.
- C. Crush or waste coarse material and waste fine material as required to meet gradation requirements.
- D. Aggregate Wear: Percentage of wear not greater than 50 percent when tested in accordance with AASHTO T-96.
- E. Conform to size and grade within the limits as follows when tested in accordance with AASHTO T-27.

	3/4" Drain Rock	1-1/2" Drain Rock	3" Drain Rock
SIEVE SIZE (Square Openings)	PERCENT BY WEIGHT PASSING SIEVE	PERCENT BY WEIGHT PASSING SIEVE	PERCENT BY WEIGHT PASSING SIEVE
4 inch	100	100	100
3 inch	100	100	95-100
2 inch	100	100	50-100
1-1/2 inch	100	95-100	15-55
3/4 inch	95-100	50-100	0-20
3/8 inch	15-55	15-55	0-15
Number 4	0-10	0-25	0-10
Number 8	0-5	0-5	0-5
Number 200	0-2	0-2	0-2

2.03 GRAVEL

- A. Consist of hard, durable particles or fragments of stone or gravel, screened or crushed to specified sizes and gradations.
- B. Free from vegetable matter, lumps or balls of clay, alkali, adobe, or other deleterious matter.
- C. When sampled and tested in accordance with specified test methods, material shall comply with the following requirements:
 - 1. Durability index: Percentage of wear not greater than 40 percent after 500 revolutions when tested in accordance with ASTM C 131.
 - 2. Plasticity Index: Not greater than 5 when tested in accordance with ASTM D 4318.
 - 3. Liquid limit: Not greater than 25 percent when tested in accordance with ASTM D 4318.
- D. Conform to sizes and grade within the limits as follows when tested in accordance with ASTM C 136 and ASTM C 117:

SIEVE SIZE (Square Openings)	PERCENT BY WEIGHT PASSING SIEVE
3 inch	--
1-1/2 inch	100
Number 4	30-70
Number 8	20-60
Number 30	10-40
Number 200	0-12

2.04 PEA GRAVEL

- A. Consists of hard, durable particles or fragments of stone or gravel, screen or crushed to specified sizes and gradations. Pea gravel shall only be used with Engineer's approval.

SIEVE	PERCENT PASSING BY WEIGHT
1/2 inch	100
3/8 inch	95-100
Number 4	0-3
Number 16	0-2
Number 200	0-1

2.05 COARSE SAND

- A. Consists of hard, durable particles or fragments of stone or gravel, screen or crushed to specified sizes and gradations. Coarse sand shall only be used with Engineer's approval.

SIEVE	PERCENT PASSING BY WEIGHT
3/8 inch	100
Number 4	95-50
Number 16	0-5
Number 200	0-3

2.06 BEDDING SAND

- A. Friable river or bank aggregate, free of loam and organic matter. Graded as follows.

SIEVE	PERCENT PASSING BY WEIGHT
3/8 inch	100
Number 4	95-100
Number 50	0-70
Number 100	0-30
Number 200	0-20

PART 3 EXECUTION

3.01 INSTALLATION

- A. Excavation and Backfill Operations: In accordance with Section 02225.

END OF SECTION