

SECTION 2140

EMBEDMENT AND BASE COURSE AGGREGATE

1.00 GENERAL

1.01 Scope. This work shall consist of furnishing and placing one or more courses of aggregate on the prepared surface in accordance with these Specifications in reasonably close conformity with the lines, grades and typical cross sections shown on the drawings or established by the Engineer in the field.

1.02 Related Work Specified Elsewhere.

Section 2120 - Excavation and Backfill for Structures
 Section 2130 - Trenching, Backfilling and Compaction
 Section 2300 - Water Transmission and Distribution Lines
 Section 2500 - Hot Bituminous Pavement

1.03 Submittals.

A. Aggregates. Certified statement from independent testing laboratory, acceptable to Engineer, of material compliance.

2.00 MATERIALS

Aggregate used for pipeline bedding, base course and subbase course and specified by Class in other sections of this Specification shall conform to the gradation schedule shown below.

CLASSIFICATION TABLE FOR AGGREGATE BASE COURSE*

Percentage by Weight Passing Square Mesh Sieves

Sieve Designation	LL not greater than 35			LL not greater than 30				
	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	
4 inch	----	100	----	----	----	----	----	
3 inch	----	95-100	----	----	----	----	----	
2½ inch		100	----	----	----	----	----	
2 inch	95-100	----	100	----	----	----	----	
1½ inch	----	----	----	90-100	100	----	----	
1 inch	----	----	----	95-100	----	100	----	
¾ inch	----	----	----	50-90	----	100	----	
No. 4		30-65	----	35-50	30-70	30-65	----	No. 8----
----	----	----	----	25-65	20-85	No. 200	3-15	3-15
20 max.	3-12	3-15	3-12	5-15				

*Reproduced from Colorado Department of Highways Standard Specifications for Road and Bridge Construction.

3.00 METHODS AND PROCEDURES

3.01 Placing. Placement shall not commence until all subgrade requirements have been completed and the prepared subgrade has been accepted by the Town. The base course material shall be placed on the previously prepared subgrade at the locations and in the proper quantities to conform to the typical cross sections as shown on the Drawings and as directed by the Engineer. Placing and spreading shall be done by means of spreader machine, moving vehicle, motor grader or other approved equipment methods. The material shall be placed without segregation. Any segregated areas shall be removed and replaced with uniformly graded material at the Contractor's expense.

The base material may be placed in lifts of up to 6 inches, providing that after compaction, uniform density is obtained throughout the entire depth of the lift. If the required depth exceeds 6 inches, it shall be placed in two or more lifts of approximately equal thicknesses. If uniform density cannot be obtained by 6 inch lifts, the maximum lift shall not exceed 4 inches in final thickness.

3.02 Compacting. Rolling will be continuous until the base material has been compacted to not less than 95% of maximum density as determined by ASTM D698 or AASHTO T99. Water shall be uniformly applied as necessary during compaction to obtain optimum moisture content and to aid in consolidation. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture is produced and the aggregates are firmly keyed.

The finished base course surface shall be smooth and free of ruts and irregularities and true to grade and crown as shown on the plans or as directed by the Engineer. The final surface shall be finished with a surface smoothness tolerance of ¼ inch, measured as vertical ordinate from the face to a ten-foot straight edge. The Town may require the contractor to stringline the base course surface to assure conformity to the plans and specifications. The base course shall be maintained in this condition by watering, drying, rolling or blading as necessary, or as the Engineer may direct, until the surface material is placed. All segregation will be removed prior to paving to the satisfaction of the Town.

4.00 QUALITY CONTROL - FIELD

4.01 Inspection and Testing. Inspection and testing to be performed at the direction of the Engineer. Contractor to cooperate fully with all persons engaged in testing. Contractor to excavate as required to allow testing; Contractor to backfill all test excavations in accordance to these Specifications.

4.02 Density Testing and Control.

- A. Reference Standards. Density/moisture relationships to be developed for all soil types encountered according to ASTM D698 or ASSHTO T99.
- B. Field Testing. Testing for density during compaction operations to be done in accordance with ASTM D2922 using nuclear density methods or other methods as may be approved by the Town.
- C. Frequency of Testing. Conduct a minimum of one test for each layer of specified depth of fill or backfill as follows:

Foundations: For each 100 lineal feet or less of trench.

Slabs on Grade: For each 2,000 square feet or less of building area.

Pavement and Walks: For each 2,000 square feet or less.

All Other Areas: For each 5,000 square feet or less.

Utility Trenches: For each 250 lineal feet or less of trench.

4.03 Payment for Testing. Owner is responsible for all costs of initial testing of backfill. Contractor to pay for all costs of any retesting required.

End of Section