

SECTION 02222 - EXCAVATION, BACKFILLING AND FILLING

PART 1 - GENERAL

1.1 SUMMARY

- A. The footprint of the Building shall be backfilled with clean select fill. Once filled, the site shall be graded to drain to the East, West, and South Curbs. Backfill of the Building Footprint will slope towards the North Plaza Area. Provide a smooth transition between adjacent existing grades and new grades. Use of the North Plaza Area is restricted to limited use for staging, storage and loading. Deconstruction Contractor shall be responsible for restoring the North Plaza Area to conditions as existing upon Contract execution, including Jersey Barriers, and Sliding Gate.
- B. This Section specifies requirements for excavation, backfilling and filling.
- C. Definitions
 - 1. As used herein, excavation shall mean the removal of existing pavement, concrete foundations and all materials other than bedrock (ledge rock) encountered within the limits of excavation.
 - 2. As used herein, backfilling shall mean the filling of excavations made for construction purposes and shall extend only to existing grades, or design grades, whichever are lower.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM D 422 Test method for Particle - Size Analysis of Soils
 - 2. ASTM D 1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-Kg) Rammer and 18-in. (457-mm) Drop
 - 3. ASTM D 4318 Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils

1.3 JOB CONDITIONS

- A. Protect excavations as follows:
 - 1. Prevent water from entering excavated areas.
 - 2. Dispose of water in a manner not to cause injury to the public health or damage to public or private property.
 - 3. If underlying soil is weakened or disturbed, remove the disturbed soil and replace it in conformance with 3.01 A.5.

1.4 SUBMITTALS

- A. Submit sample in clean, sturdy container or bag which shall not permit loss of any of the material.

- B. Clearly label sample with: Contract location; title and number; designation of fill; and source of the material being supplied.
- C. Submit sample at least three weeks prior to delivery of material to the site.
- D. Do not deliver any material until the Engineer has checked and approved material from that source.
- E. Contractor to supply plans “MTA Influence Line Drawings”. Apply for approval with any and all agencies having jurisdiction prior to any excavation, backfilling or ground disturbance. Contractor to be liable for any services required by the MTA or City Agency during the progress of this contract.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fill and Backfill

- 1. Clean sand and gravel containing no organic matter, and conforming to the following Gradations or as approved by the Port Authority:
- 2.

<u>Sieve Sizes</u>	<u>Total Percent Passing by Weight</u>	
	<u>I-12</u>	<u>I-10</u>
4 inch	100	100
3/4 inch	70-100	60-100
No. 50	0-75	5-40
No. 200	0-5	0-20

- 3. Material shall conform to the requirements for I-12 designation, subject to 2.01 A.3 below.
- 4. Where the entire fill or backfill is above the water table, material conforming to the requirements for I-10 designation may be used in lieu of I-12 designation except under foundations, aircraft pavement and utilities.
- 5. Use recycled material from the demolition process or material excavated at the construction site if it satisfies above requirements, and meets with Port Authority approval.
- 6. Gradation of more than 1 ½” shall not be permitted.

PART 3 - EXECUTION

3.1 EXCAVATION

A. General

1. Excavation shall consist of the removal of materials as defined in 1.01 B.1.
2. Excavate to elevations required to perform the work.
3. Should bottom of excavation be weakened, disturbed or carried below required depth:
 - a. Under footings - compact bottom as specified in 3.02 below and replace over-excavation with concrete of the same Class as that specified for the footing or foundation.
 - b. Elsewhere - Compact bottom as approved by the Engineer and refill with material conforming to I-12 designation defined in 2.01 A.
4. Perform excavation around and adjacent to existing structures, pipes and conduits which are to remain in place, without damage to or movement of existing construction. When excavation is to be performed under such structures, pipes and conduits, support them in a manner as approved by the Engineer to ensure uninterrupted operation of the supported items.
5. All debris and all material unsuitable for or in excess of that required for backfill or fill, shall be disposed of away from the construction site, except that the Engineer may direct that excess suitable fill be disposed of at a facility approved by such agencies having jurisdiction.

3.2 PLACEMENT AND COMPACTION

A. Compaction Requirements

1. Subgrade, excavated surfaces, existing surfaces, backfill and fill shall be compacted by mechanical means sufficiently to insure uniform densities.

B. Backfill and Fill

1. Backfill and fill shall be placed in 24-inch, loose layers and compacted as specified above.

3.3 FIELD TESTS

A. Inspection and Testing

1. The Engineer will determine the extent of testing required based on observations of the work being performed in the field.

END OF SECTION 02222