LIGHTWEIGHT BACKFILL

**From Canaan ER ST 0271(16)

xx. DESCRIPTION. This work shall consist of furnishing and placing lightweight backfill at the locations shown in the Plans in accordance with these specifications and as directed by the Engineer.

xx. MATERIALS.

(a) General. Lightweight backfill shall be an approved rotary kiln material meeting the requirements of ASTM C 330. No by-product slags, cinders, or by-products of coal combustion will be permitted. Lightweight backfill shall be non-corrosive and shall have a proven record of durability as determined in accordance with AASHTO T 104.

(b) Gradation. Gradation shall meet the following requirements:

LIGHTWEIGHT BACKFILL

Sieve Designation	Percentage by Mass (Weight) Passing Square Mesh Sieves
25 mm (1 inch)	100
19 mm (3/4 inch)	90 to 100
9.5 mm (3/8 inch)	10 to 50
4.75 mm (No. 4)	0 to 15

(c) Density. The dry loose density shall be less than 801 kg/m^3 (50 pcf).

The maximum in-situ density (moist, surface dry) shall be less than 961 kg/m^3 (60 pcf). The minimum compacted dry density shall be equal to 65% relative density as determined in accordance with the manufacturer's specifications, or as otherwise specified by the Engineer.

(d) Soundness. The maximum soundness loss when tested with 5 cycles of magnesium sulfate shall be 10% as determined in accordance with AASHTO T 104.

(e) Chloride Content. The maximum chloride content shall be 100 ppm as determined in accordance with AASHTO T 291.

The following manufacturers are capable of supplying lightweight backfill that meets these specifications:

Norlite Corporation
628 S. Saratoga Street
Cohoes, NY 12047
Tel.: 518-235-0030
Fax: 518-235-0233

Glass Mountain Lightweight Aggregate
4603 50th Street
McClellan, CA 95652
Tel.: 916-921-2884
Fax: 916-921-2893

Buildex, Inc.
P.O. Box 77
Ottawa, KS 66067-0077
Tel.: 785-242-2177

Requests for substitutions for the above shall be submitted to the Agency's Office of Contract Administration a minimum of 10 days in advance of the bid opening date. Substitutions for the above after award shall be approved by the Resident Engineer.

xx. GENERAL CONSTRUCTION REQUIREMENTS. Lightweight backfill shall be placed in uniform layers not to exceed 300 mm (12 inches) loose thickness. Each layer shall be compacted using vibratory compaction equipment weighing not more than 10.9 metric tons (12 tons) static weight. The actual lift thickness, exact number of passes, and need for vibrating the roller will be determined by the Engineer, depending on the project requirements (i.e., strength, compressibility, unit weight, etc.) and equipment used.

The Contractor shall take all necessary precautions during construction activities in operations on or adjacent to the lightweight backfill to ensure that the material is not over-compacted. Construction equipment, other than for compaction, shall not operate on the exposed lightweight backfill.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Lightweight Backfill) to be measured for payment will be the number of cubic meters (cubic yards) complete and in place in the accepted work, measured within the limits specified on the Plans or as directed by the Engineer.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Lightweight Backfill) will be paid for at the Contract unit price per cubic meter (cubic yard). Payment will be full compensation for performing the work specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
900.608 Special Provision (Lightweight Backfill)	Cubic Meter (Cubic Yard)