

STATE OF NEBRASKA
DEPARTMENT OF ROADS
ADDENDUM NO. 2
AND
ELECTRONIC BIDDING SYSTEM
AMENDMENT NO. 1
PROJECT NO. S-77-2(1038)
CONTROL NO. 11801B
CALL ORDER N01
US-77, CERESCO - WAHOO
LETTING DATE: SEPTEMBER 5, 2002

The Schedule of Items for Group 3 is amended as follows:

1. The quantity for the bid item "Subgrade Preparation" is incorrect. The quantity should read 28,253.000 m2.
2. The bid item "Stabilized Subgrade" has been added with a quantity of 333,893.000 m2.
3. The bid item "Hydrated Lime" has been added with a quantity of 6,575.000 Mg.

The EBS generated bid items sheet must show these corrections or the bid will be considered void.

For this letting, all EBS amendments will be applied by the Department. Bidders will need to download the updated EBL file reflecting these corrections. This updated EBL file will be available on August 30, 2002.

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The Special Provisions are amended to include the following:

STABILIZED SUBGRADE

Description

The work of constructing the stabilized subgrade applies only to Highway US-77 mainline lanes, shoulders and turn lanes. Stabilized subgrade will extend beyond the pavement and shoulders, the same distance as subgrade prep. This work shall consist of reshaping the subgrade, constructing and compacting a 200 mm layer of pulverized soil from the subgrade, hydrated lime and water to provide a firm, stable foundation for the subsequent pavement construction.

Material Requirement

1. Hydrated lime shall conform to the requirements of ASTM C206, except that the requirements and tests for Plasticity and for Popping and Pitting are eliminated and the calcium oxide plus the magnesium oxide percentage shall not be less than 93 and the residue retained on the 600 μ m sieve shall not exceed 3%. Pebble Quicklime may be used in lieu of Hydrated Lime if the dry placing method of application is used. If the Contractor elects to use Pebble Quicklime it shall be measured and paid as Hydrated Lime.
2. Water shall conform to the requirements of Section 1005 in the 1997 Metric Edition of the Standard Specifications.

Equipment

1.
 - a. All equipment used in the work shall be adequate for the purpose for which it is to be used and shall be kept in satisfactory working order.
 - b. The contractor shall furnish the necessary accessories and personnel and shall perform the tests and calibrations on the equipment under the supervision of the engineer. In the event problems are encountered during the tests and calibrations, the contractor shall arrange for a trained technician or company representative of the company from which the equipment was obtained to make the necessary repairs and/or adjustments to the equipment. Calibration shall be made as often as is deemed necessary by the engineer, to insure accuracy of the equipment.
2. If hydrated lime is hauled in bulk, the boxes of the vehicles hauling the hydrated lime shall be tight and provided with a suitable covering to prevent loss of the material.
3. Distributors used for applying water shall conform to the requirements of Subsection 301.02.
4. When hydrated lime slurry is used for the treatment, the contractor shall furnish facilities for preparing the hydrated lime slurry and accurately determining the quantities of lime and water used in the mixer.
5. Equipment for use in trimming stabilized subgrade shall conform to the requirements of Section 302.

Prosecution and Progress

The work of constructing the stabilized subgrade shall be performed between April 15 and October 15. The subgrade soil shall contain no frost and the atmospheric temperature shall be at least 5°C and rising.

Application of Hydrated Lime

1. Lime placement on the subgrade may be accomplished by the methods hereinafter described as "Dry Placing", or "Slurry Placing" at the contractor's option. Prior to the placement of the lime, the subgrade shall be adjusted to the typical cross section shown in the plans. The quantity of lime to be applied shall be approximately 5% as determined by the Materials and Research Division Laboratory.
2. Dry Placing

After the subgrade has been adjusted to the typical cross section shown in the plans, the hydrated lime shall be placed on the surface of the subgrade and distributed in a layer of uniform thickness over the entire width of the area being treated. The lime shall not be placed on the subgrade when the wind is blowing so that the loss of lime cannot be satisfactorily controlled. After the lime has been uniformly distributed, it shall be sprinkled with water.
3. Slurry Placing
 - a. A slurry shall be prepared by combining hydrated lime and water in a ratio of approximately one Mg of hydrated lime to 2100 liters of water, either in a central mixing tank or directly in the tanks used for distribution. The tanks shall be equipped with means of agitating the slurry to provide a uniform mixture and prevent the lime from settling after mixing. Water shall be measured with a calibrated meter and the hydrated lime shall be weighed on approved scales or the quantity determined by a count of bags used.
 - b. After the subgrade has been adjusted to the typical cross section shown in the plans, the hydrated lime slurry shall be applied to the surface of the subgrade by means of distributors equipped with means of agitating the slurry during hauling and spreading. The number of applications and the rate of application shall be such that the total application of residual lime per square meter shall be uniformly deposited over the entire width of the area being treated and the quantity of slurry in any one application shall be such that run-off will not take place. The surface of the material being treated may be lightly scarified by use of a spike-tooth harrow or other comparable equipment closely following the distributor to facilitate absorption and prevent run-off.

Construction Methods

1. The subgrade mixing procedure shall be the same for "Dry Placing" or "Slurry Placing" as hereinafter described.
2. The portion of the roadbed being treated shall be trimmed to within 15-mm of the finished elevation by use of conventional equipment, then scarified to loosen the subgrade soil to the full width and depth of the lime treated subgrade. This work may be performed prior to, during or after the application of the lime, however, if prior to the application of the lime, the material being treated shall be broken down to the extent necessary to prevent the lime, insofar as practicable, from sifting or draining through the material to be treated, into the underlying subgrade. If necessary the larger chunks or pieces of soil shall be broken down by the use of disc harrows, sheepsfoot rollers or other suitable equipment.
3. Preliminary mixing of lime and water shall be accomplished throughout the scarified material with a machine capable of pulverizing the existing subgrade to the depth required by these specifications and to a minimum width of not less than 2.4 meters in a single pass operation. The pulverizing machine shall be capable of blending and mixing, to a homogeneous material, the pulverized subgrade with the lime and water. The machine shall be equipped with standard automatic depth controls and be capable of maintaining a constant depth and width. Care shall also be taken to avoid mixing the lime with a greater quantity of the subgrade soil than is required to build the compacted thickness specified. During the preliminary mixing, water shall be added to provide a moisture content in a range from optimum moisture content of the mixture to plus 5 percentage points. The optimum moisture content shall be determined by NDR T 99. Preliminary mixing shall be continued until all chunks of soil have been reduced to a maximum of 50-mm in size.
4. The material shall then be bladed into approximately the final cross section and rolled with pneumatic-tired rollers to seal in the moisture and to insure against excessive wetting from rain. The material shall be cured in this condition for a period of 48 hours in order for the reaction of the lime and water to soften the remaining chunks of soil. The surface shall be lightly sprinkled during this period to compensate for evaporation loss.
5. Following the curing period, final mixing shall be performed with the pulverizing machine until the mixture is uniform throughout and chunks of soil have been broken down to the extent that all will pass a 25-mm sieve and not more than 30 percent will be retained on the 4.75-mm sieve. The moisture content at the completion of the mixing shall be within plus or minus two percentage points of the optimum moisture percentage, determined by NDR T 99.

6. After mixing, the material shall again be shaped to the proper cross section and compacted with sheepsfoot rollers. Final shaping with a motor grader and final rolling with pneumatic-tired rollers will then be accomplished. The size and weight of the sheepsfoot and pneumatic-tired roller shall be such that the attained density throughout the entire width and depth of the layer shall be not less than the compaction requirements shown in the plans, determined by NDR T 99. Water may be added during the compaction and finishing operations to compensate for evaporation loss.
7.
 - a. After the required compaction has been attained, the subgrade shall be trimmed in accordance with the requirements of Subsection 302.03.
 - b. After the trimming operation has been completed, the surface of the stabilized subgrade shall be lightly sprinkled with water at frequent intervals to offset the effects of evaporation, for a period of 3 days. No construction traffic, except for water trucks, will be allowed on the surface of the stabilized subgrade during the curing period.
8. Any damage to the stabilized subgrade shall be repaired at the Contractors expense.

Maintenance of the Compacted Subgrade

Maintenance of the lime treated subgrade shall be the responsibility of the contractor until the material for the subsequent construction has been placed. Water used to maintain the subgrade after the 3-day curing period and the work of maintaining the subgrade, prior to the subsequent construction will not be paid for directly but shall be considered to be subsidiary to any or all of the items for which the contract provides that direct payment is to be made.

Sampling and Testing

Sampling and testing shall be completed according to Section 12 of the Materials and Tests Division Material Sampling Guide except that sampling of the Hydrated Lime shall be one 4.5 kg. sample for each 450 Mg of material used.

A 27 kg. sample(s) of subgrade soil and a 4.5 kg. sample of the hydrated lime shall be submitted for mix design prior to beginning the Stabilized Subgrade.

Method of Measurement

1. Hydrated lime shall be measured by the Mg of acceptable material used in the work.
2. Water used in preparing the slurry or that which is applied as directed by the Engineer, except that which is used for maintenance of the lime treated subgrade after the 3-day curing period, will be measured as provided in paragraph 2. of Subsection 302.04.
3. Stabilized subgrade will not be measured directly. The quantity for payment will be the number of overlying square meters of pavement.

Basis of Payment

1. Hydrated lime that is used in the work, measured as provided herein, shall be paid for at the contract unit price per Mg for the item, "Hydrated Lime". This price shall be full compensation for furnishing, delivering, and distributing the lime, for preparing the hydrated lime slurry, and for all equipment, labor, tools and incidentals necessary to complete the work.
2. Water used in preparing the slurry, or which is applied as directed by the Engineer, measured as provided herein, shall be paid for at the contract unit price per kiloliter for the item "Water."
3. Stabilized Subgrade measured as provided herein, shall be paid for at the contract unit price per square meter of the overlying pavement for the item, "Stabilized Subgrade". This price shall be full compensation for reshaping and trimming the subgrade, scarifying and pulverizing the subgrade soil, drying, mixing, shaping, and compacting the lime treated subgrade, for shaping and smoothing of surplus material on slopes or in waste areas, and for all material and services required.

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Upon execution of the contract, the plans will be revised to reflect these changes.

DEPARTMENT OF ROADS

Claude Oie
Construction Engineer

Issued: August 20, 2002

CO:DB:N01AD209

NOTICE: Only the contractors issued bidding proposals receive this addendum and responsibility for notifying any potential subcontractors or suppliers remains with the contractor.