

2016 Putnam County Township Trustees Road Maintenance Program
June 22, 2016
9:30 A.M.
Addendum #1

Company Name _____

Contact Name _____

Email Address _____

Street Address _____

City, State _____

Zip Code _____

Phone _____

Fax _____

To be considered a valid bidder, you must either pick up a contract book at our office and be added to the bidders list, or fax this registration form to us at least **4 days prior to the bid opening** to be added to the bidders list. Subcontractors and suppliers are encouraged but not required to register as a contract holder.

To be a qualified bidder you must fax this sheet back to our office. If this is not done, your bid will be rejected.

Fax completed form to:

Putnam County Engineer's Office: (419) 523-6014

CHEMICAL STABILIZATION SPECIFICATIONS

The standard specifications found in the latest version of the State of Ohio Department of Transportation Construction and Material Specifications Manual, including changes and Supplemental Specifications shall govern this project except as herein modified.

ITEM SPECIAL – CEMENT STABILIZATION BASE RECONSTRUCTION (Double Cut Process)

1. DESCRIPTION

This work shall consist of pulverizing and mixing a combination of granular base and sub-grade material to the specified length, width, and depth (Pass #1). Once pulverized, the reclaimed material shall then be used to establish proper width, grade and cross-slope. Once the above criteria are met, water and the specified type and amount of chemical stabilizer shall be added, as per plan, and said materials shall then be mixed together to create a chemical stabilized base course (Pass #2). The material shall then be placed, compacted and moist-cured as shown on the plans and as provided herein to create an "In-Place" Stabilized Base Course (SBC).

2. MATERIALS

(2.1) PULVERIZED BASE MATERIAL.

Pulverized Base Material shall consist of the material existing in the area to be stabilized to a depth as shown in the table. A sub-surface investigation was not performed.

(2.2) CHEMICAL STABILIZER

Type 1 Portland cement (ASTM C 150-95) has been tested and approved as the stabilizer for this project. The MSDS and typical composition for this material follows these specs. The amount of Portland cement used shall be at the rate per Square Yard shown in the table.

(2.3) WATER.

Water shall be clean and clear. If the water is of questionable quality, it should be tested in accordance with the requirements of AASHTO T26.

3. MIXTURE

Combine the pulverized materials, Portland cement and water, meeting the requirements specified herein, in such proportions that they conform to the Design accepted by the Engineer. Make field adjustments to the mix proportions under the guidance of the Engineer to obtain a satisfactory Stabilized Base Course (SBC).

4. CONSTRUCTION

(4.1) GENERAL.

The contractor shall provide all necessary labor, equipment, Portland cement, water, and bituminous material (if used for cure) required to pulverize, mix, place, compact, finish, and cure the Stabilized Base Course. All materials, testing, design, certification, and provisions as specified herein shall apply.

(4.2) EQUIPMENT.

The equipment for pulverizing and mixing the existing pavement surfaces shall be a self-propelled road reclaimer/soil stabilizer capable of pulverizing, "In-Place", the existing pavement, base and sub-grade at a minimum width as shown in the table, and mixing any added materials to the specified depth as shown in the table. The cutting drum shall have the ability to operate at various speeds(RPM), independent of the machine's forward speed, in order to control chunk size and gradation. The machine shall be capable of pushing a water supply tanker or distributor and shall be equipped with a computerized integral liquid proportioning system capable of regulating and monitoring the water application rate relative to depth of cut, width of cut, and speed. The water pump on the machine shall be connected by a hose to the supply tanker/distributor, and shall be mechanically or electronically interlocked with the forward movement/ground speed of the machine. The spray bar shall be mounted in such a manner as to allow the water to be injected directly into the cutting drum/mixing chamber. Only under special circumstances will the Engineer consider allowing the water to be sprayed directly onto the cut/un-cut pavement ahead of or behind the pulverizer/mixer by a distributor or other means. The equipment shall be capable of mixing water, dry additives, and the pulverized pavement into a homogenous mixture. The cutting drum shall be fully maintained and in good condition at all times throughout the job.

(4.3) METHODS.

(A) PULVERIZATION (Pass #1)

Before other operations begin, the roadway grades should be graded and shaped as required to execute the stabilization treatment in conformance with lines, grades, thickness', and typical cross-sections. **The existing roadway materials shall first be pulverized prior to the application of the additives at a first pass depth shown in the table.**

(B) PORTLAND CEMENT APPLICATION and MIXING (Pass #2)

Upon completion of the initial pulverization of the pavement, base and sub-grade, the Portland cement specified for this job shall be accurately and uniformly spread over the pulverized material by a bulk distributor at the specified application rate. Extreme care should be taken to minimize dust, scattering and material loss by wind.

Manual and gravity(tail gate) spreading of the additives is unacceptable.

In the event that accuracy, uniformity or dust, in the opinion of the engineer becomes a problem, said spreading operation shall be ceased until an agreeable method can be secured.

No Portland cement shall be spread when the soil or sub-grade is frozen or when the air temperature is less than 40 deg F in the shade.

Once the Portland cement is spread, it along with the pulverized base material shall be mixed at a depth as shown in the table, as per plan, to create a homogenous stabilized base course.

The percentage of moisture in the pulverized material, at the time of Portland cement application, shall be the amount that assures a uniform and intimate mixture of pulverized material and Portland cement during mixing operations.

The operations of Portland cement application, water application, mixing, spreading, compacting, and finishing shall be continuous and completed in daylight. The mixing, grading, and final compaction should be completed within a time frame appropriate for the additive applications and required strengths. If mixing operations are interrupted, the surface should be sealed to protect the material.

Any stabilized base course mixture that has not been compacted and finished shall not remain undisturbed for more than 30 minutes.

(C) COMPACTION.

The number, weight and type of rollers shall be sufficient to obtain the required compaction while the SBC is in a workable condition. As a minimum requirement, breakdown compaction shall be performed with a large single drum vibratory pad-foot compactor w/blade. Said roller shall be capable of applying 56,000 lbs. of centrifugal force minimum

Compaction of the mixture should proceed immediately after mixing, in such a manner to provide uniformity and continuous compaction of the treated layer. At the start of compaction, the percentage of moisture in the mixture and in un-pulverized soil lumps shall not be below or more than two percentage points above the optimum moisture content, and shall be less than that quantity which will cause the stabilized base course mixture to become unstable during compaction and finishing.

The target density of the compacted stabilized mixture is 98% of the Standard Dry density as determined by AASHTO T-99. If during compaction operations depressions, defective areas, or soft spots develop, they should be corrected immediately by additional pulverization/aeration alone, or by the addition and mixing of additional stabilizer. For quality control after each section is completed, the engineer may perform field density tests in accordance with AASHTO T-191, AASHTO T-205, or AASHTO T-238. If the compacted

mixture fails to meet the specified density requirements, the Engineer may require it to be re-worked as necessary to meet those requirements.

They may require the contractor to change his compaction methods to obtain the required density on the next section(s).

(D) STABILIZED BASE COURSE PLACEMENT/GRADING/FINISHING.

The SBC shall be placed by means of a conventional motor grader with automatic slope control, to the lines and grades established in the plans or proposal. Paving of this type is expected to be in accordance with acceptable base course products with a tolerance of not more than .05' of irregularity.

Throughout the entire operation, the shape of the base course should be maintained.

When initial compaction is nearing completion, the surface of the stabilized base course shall be shaped to the required lines, grades, and cross section. The moisture content of the surface material shall be maintained at not less than its optimum moisture content during finishing operations.

Compaction and finishing shall be done in such a manner as to produce a smooth, dense surface free of compaction planes, cracks, ridges, or loose material.

(E) CURING

After the roadway has been finished as specified, it should be protected against drying for 3 calendar days. The surface should be maintained to a moist condition by sprinkling with water for the above mentioned time period. Heavy traffic or equipment other than curing equipment will not be allowed on the finished roadway until completion of curing, unless permitted by the Engineer.

Other methods of curing, such as a bituminous sealant, is approved by the Engineer. However, cover aggregate shall be used to provide residents of the road a tack free surface to drive on. Any additional costs incurred by the contractor to perform the cure in this manner shall be included in said contractors unit price.

(4.3) WEATHER LIMITATIONS.

No work shall be performed before April 15th or after October 15th. The weather and temperature limitations for this work shall be 50 deg. F and rising with no standing water on the existing surface. No work shall be performed if there is a forecast of an atmospheric temperature below 32 deg. F within 24 hours from the time the SBC is completed. All work shall be completed and open to local traffic during daylight hours.

5. MAINTENANCE OF TRAFFIC

Traffic maintenance shall be performed per local specifications protecting the uncompacted material from traffic. Enough flag people/signs for incoming roads shall be used until product is compacted properly.

6. METHOD OF PAYMENT

Payment for accepted quantities, complete in-place, shall be made at the contract price for:

<u>ITEM</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
Special	Square Yard	Cement Stabilization Base Reconstruction

Road	Length	Width	SY	Pulverization Depth (Pass 1)	Treatment Depth (Pass 2)	Cement Rate Lb/SY	Cement Tons
Varies	Varies	Varies	20,123	12	12	50.0	503