MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**SALVAGE AND REINSTALL BRICK PAVERS ON AGGREGATE AND SAND BED**

GND:DLK 1 of 3 APPR:JLB:TEB:07-20-21

**a. Description.** This work consists of removing, salvaging, and reinstalling existing brick pavers on an aggregate base and sand bed as shown on the plans, in accordance with the standard specifications, this special provision and as directed by the Engineer. Ensure all workers specialize in performing work similar in nature and scope to the specified work. Provide references to the Engineer if requested.

**b. Materials.** Furnish materials meeting the standard specifications and this special provision. Store granular materials in a well-drained area on a solid surface to prevent mixing with foreign materials. Do not use frozen materials or materials mixed or coated with ice or frost.

1. Salvaged Brick Pavers. Use only brick pavers that are salvaged from removal areas on this project. Salvaged pavers from other sources are prohibited. Salvaged pavers that are broken, chipped, stained, or otherwise damaged are not acceptable for reuse.

2. Aggregate Base. Use dense-graded Class 21AA in accordance with section 902 of the Standard Specifications for Construction.

3. Sand Bedding Layer.

A. Furnish sand which is well graded, clean, non-plastic, and free from deleterious or foreign matter. Furnish sand that is a minimum 60 percent combined sub-angular and sub-rounded in shape from natural or manufactured from crushed rock in accordance with *ASTM D2488*. Limestone screenings, stone dust, blast furnace slag, Mason’s sand and sand in accordance with *ASTM C144* are not acceptable.

B. Provide gradation for sand samples for the bedding layer in accordance with *ASTM* *C136/C136M*. Furnish bedding sand meeting the gradation in accordance with *ASTM C33/C33M* as shown in Table 1.

**Table 1: Gradation for Sand Bedding Layer**

|  |  |
| --- | --- |
| Sieve Size | Percent Passing |
| 3/8 inch (9.5 mm) | 100 |
| No. 4 (4.75 mm) | 95 to 100 |
| No. 8 (2.36 mm) | 85 to 100 |
| No. 16 (1.18 mm) | 50 to 85 |
| No. 30 (0.600 mm) | 25 to 60 |
| No. 50 (0.300 mm) | 5 to 30 |
| No. 100 (0.150 mm) | 0 to 10 |
| No. 200 (0.075 mm) | 0 to 1 |

4. Paver Joint Filler. Furnish joint filler, which is well graded, clean, non-plastic, and free from deleterious or foreign matter. Furnish sand that is sub-angular in shape from natural or manufactured from crushed rock.

A. Furnish stabilizing polymeric jointing sand.

(1) Blend of native sands with synthetic polymer binders.

(2) Ensure color is gray as approved by the Engineer.

(3) Install in accordance with the manufacturer’s instructions.

B. Provide gradation for sand samples for the joints to meet gradation of *ASTM C144* as shown in Table 2.

**Table 2: Gradation for Paver Joint Filler Sand**

|  |  |  |
| --- | --- | --- |
| Sieve Size | Natural Sand Percent Passing | Manufactured Sand Percent Passing |
| No. 4 (4.75 mm) | 100 | 100 |
| No. 8 (2.36 mm) | 95 to 100 | 95 to 100 |
| No. 16 (1.18 mm) | 70 to 100 | 70 to 100 |
| No. 30 (0.600 mm) | 40 to 75 | 40 to 100 |
| No. 50 (0.300 mm) | 10 to 75 | 20 to 40 |
| No. 100 (0.150 mm) | 2 to 15 | 10 to 25 |
| No. 200 (0.075 mm) | 0 to 5 | 0 to 10 |

**c. Construction.** Prior to starting the production work, construct a nominal 5 square foot sample panel using bedding depth, materials, pattern, and joints as shown on the plans. Correct and rebuild sample panel until it is acceptable to the Engineer, at the Contractors expense. Retain the sample panel during construction as a standard for completed work.

Restrict pedestrian and vehicular traffic in the area during installation of pavers. Do not build on frozen, wet, saturated, or unstable subgrade. Protect partially completed paving against weather damage when work is not in progress. Remove and replace completed work damaged during construction.

1. Removing and Salvaging Brick Pavers. Take care not to chip, break, or otherwise damage existing brick pavers during removal. Salvage additional pavers for reuse on site in accordance with the plans. Ensure pavers that are determined by the Engineer to have been damaged during removal or excess pavers are properly disposed of upon completion of salvaging.

2. Aggregate Base. Excavate to the depth as shown on the plans and place aggregate base materials only on an approved surface. Compact the finished subgrade to 95 percent of its maximum unit weight. Level and shape aggregate base surface to the required grade and cross section within a tolerance of 1/4 inch. Compact the aggregate base layer to 95 percent of its maximum unit weight.

3. Sand Bedding Layer. Spread sand bedding layer material evenly over the entire area to receive pavers. Screed to a level that provides a 1-inch thickness and that allows the pavers to be flush with adjacent sidewalk after compaction. Protect completed sand bedding layer from damage until covered with paver units. Do not pre-compact sand bedding layer.

4. Pavers. Correct any unsatisfactory substrate or installation conditions prior to placing any pavers, as directed by Engineer. Use full pavers wherever possible. Where cutting is required, use the largest size pavers possible. Cut pavers as needed to match the existing pattern and to neatly fit adjoining work. Cut pavers with block splitter or other equipment designed to cut masonry with clean, sharp, unchipped edges. Ragged cuts are not acceptable. Cut through the full thickness of the pavers. Do not cut more than 1 inch of the 4-inch dimension of a soldier course.

Lay paver units to match the existing paver pattern on site. Set all pavers flush to existing adjacent concrete curbs and adjoining work. Pavers are to be fit and/or feathered into the existing brickwork pattern so as not to interrupt the existing paver pattern on site. Maintain uniform 1/16-inch to 1/8-inch joints between pavers.

Vibrate pavers to final grade with three or more passes of a vibratory plate compactor. After the first pass, brush joint filler material over the surface and vibrate into the joints with additional passes. Completely fill all joints. After final vibrating, ensure the surface is true to grade and not vary by more than 1/4 inch when tested with a 10 foot straightedge at any location on the surface. Remove all excess filler from paver surface and wet polymeric sand to activate binder in accordance with manufacturer’s guidelines.

Remove and replace pavers that are broken, chipped, stained, or otherwise damaged. Provide new salvaged pavers, install as specified and to minimize evidence of replacement.

Clean pavers during installation and upon completion of the work. Repair damage to adjacent areas resulting from paver installation operations, as directed by the Engineer.

Remove and properly dispose of all excess material and debris upon completion of paver installation.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

**Pay Item Pay Unit**

Brick Pavers, Rem and Salv Square Foot

Reinstall Brick Pavers on Aggregate and Sand Bed Square Foot

1. **Brick Pavers, Rem and Salv** will be measured and paid for by the total area, based on nominal dimensions, of brick pavers removed from the site. The contract unit price includes removing the existing pavers, delivering, salvaging and/or storing brick pavers that are determined acceptable for reuse, and disposing of removed pavers that are determined to be unacceptable for reuse or in excess of those to be reinstalled or stored.

2. **Reinstall Brick Pavers on Aggregate and Sand Bed** will be measured and paid for by total area of installed pavers. **Reinstall Brick Pavers on Aggregate and Sand Bed** includes excavation, furnishing and placing aggregate base, sand bedding layer materials, installing salvaged brick pavers, joint filler, restoration of the site after construction and disposal of excess or unsuitable materials.