MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**SIDEWALK, BRICK PAVERS ON AGGREGATE AND SAND BED**

BRI:LEK 1 of 3 APPR:TES:TEB:07-16-21

**a. Description.** This work consists of removing and salvaging existing brick pavers and constructing brick paver sidewalk and ramp areas on aggregate base and sand bed as shown on the log, Standard Plan R-28 Series, the standard specifications, this special provision, and as directed by the Engineer. Perform this work by workers with satisfactory record of performance on completed projects of comparable size and quality. 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 brick pavers that are salvaged from removal areas on this project. Provide new matching pavers, as approved by the Engineer, if insufficient salvaged pavers are available and install as specified to minimize evidence of replacement. Pavers that are broken, chipped, stained, or otherwise damaged are not to be used.

2. New Pavers. Ensure new pavers are in accordance with *ASTM C902, for Class PX, Type I, Application PX*. Furnish pavers that are uniform in dimension, color, and texture. Provide manufacturer's product data and installation instructions for pavers.

A. Furnish only sound pavers free of defects that could interfere with proper installation or reduce the service life of the finished work. Minor cracks and minor chipping incidental to methods of manufacture or handling are subject to visual inspection and the Engineer’s approval.

Ensure there is no efflorescence evident upon visual inspection of the pavers at the project site.

B. Provide manufacturer’s test data documenting that the pavers meet these specifications when tested as specified in *ASTM C902*. Conduct freeze-thaw tests not more than 12 months prior to delivery.

If sampling and testing is required, sampling frequency and sample size will be as stated for concrete brick in Section G of the *MQAP Manual*.

C. Protect pavers from damage, chipping, and soiling during delivery and storage. Store off the ground on pallets or wood platforms. Do not use paving units with chips, cracks, voids, discoloration, or other visible defects.

3. Aggregate Base. Furnish 21AA in accordance with section 902 of the Standard Specifications for Construction.

4. Geotextile Separator. Furnish geotextile separator in accordance with section 910 and in accordance with the requirements for woven geotextile separator in Table 910-1.

5. Sand Bedding Layer. Furnish 2NS in accordance with section 902 of the Standard Specifications for Construction, or blast furnace slag sand in accordance with the gradation shown in Table 1 (commercially known as 30A Blast Furnace Slag):

**Table 1: Grading Requirements for 30A Blast Furnace Slag**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sieve Analysis (ASTM C136/C136M) Total Percent Passing | | | | | | | | |
| U.S. Sieve | 3/8 inch | #4 | #8 | #16 | #30 | #50 | #100 | #200 |
| % Passing | 100 | 95-100 | 70-95 | 45-75 | 25-55 | 15-35 | 0-20 | - |

6. Paver Joint Filler. Furnish 2MS in accordance with section 902 of the Standard Specifications for Construction.

**c. Construction.** Before starting this work, construct a 20 square foot (approximately) sample panel using bedding depth, materials, pattern, and joints shown on the plans. Construct the sample panel using the range of clay brick paver color, texture, and workmanship proposed for the work. Correct and rebuild sample panel until it is acceptable to the Engineer, at no additional cost to the contract. 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 muddy sub-grade. 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. Whenever possible, take care not to chip, break, or otherwise damage existing brick pavers during removal. Pavers are to be stacked neatly and stored on palettes in a location specified by the Engineer. Dispose of pavers that are deemed by the Engineer to be damaged during removal upon completion of salvaging. Unused salvaged pavers will be picked up by the local municipality for future use.

2. Aggregate Base. Excavate to depth as shown on the log and place aggregate base materials only on an approved surface. Compact the finished subgrade to 95 percent of its maximum unit weight. Compact the aggregate base layer to 98 percent of maximum unit weight. Level and shape aggregate base surface to the required grade and cross section within a tolerance of 1/4 inch.

3. Sand Bedding Layer. Spread sand bedding layer materials evenly over the entire area to be paved, 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. 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 will not be accepted. 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 vibrating plate compactor. After the first pass, brush joint filler material over the surface and vibrate into the joints with additional passes. Completely fill 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 and replace pavers that are broken, chipped, stained, or otherwise damaged.

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 as approved by the Engineer.

**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 Square Foot

Sidewalk, Brick Pavers on Aggregate and Sand Bed Square Foot

1. **Brick Pavers, Rem** 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, salvaging and storing brick pavers that are determined acceptable for reuse, and disposing of removed pavers that are determined to be unacceptable for reuse.

2. **Sidewalk, Brick Pavers on Aggregate and Sand Bed** will be measured and paid for by total area of installed pavers. **Sidewalk, Brick Pavers on Aggregate and Sand Bed** includes excavation, furnishing and placing geotextile separator, 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. Detectable warning surface areas will be paid for separately.