SP-150844
(New)

SPECIAL PROVISIONS
FOR
PCC PAVERS

Dickinson County
NHSX-071-9(78)--3H-30

Effective Date
April 19, 2022

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150844.01 DESCRIPTION.

A. This special provision includes the requirements for PCC pavers, sand setting bed, paver joint filler, and subslab weeps.

B. Submittals.

1. PCC paver manufacturer's material test data certifying pavers comply with specification.
   a. Testing shall be performed by an independent testing agency retained by the paver manufacturer.
   b. Test results shall indicate project name and pallet numbers corresponding to pavers delivered to the job site.

2. Six paver samples representing actual size, shape, and color range. Samples will be retained by the Engineer.

3. Setting bed and joint filler sand material sample.

4. Setting bed and joint filler sand gradation reports.

C. Site Disturbances.

1. Take precautions to ensure equipment and vehicles do not disturb or damage existing site grading, walks, drives, utilities, plants, etc.

2. Repair and/or return to original condition any damage caused by Contractor's negligence at no cost to Contracting Authority.

3. Provide temporary barricades and warning lights as required for protection of project work and public safety.

D. Delivery, Storage, and Handling.

1. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers packaging with identification labels intact. Unload pavers at job site in such a manner that no damage occurs to the product.

2. Storage and Protection: Store materials protected such that they are kept free from mud, dirt, and other foreign materials.

3. Cover bedding sand and joint sand with waterproof covering if needed to prevent exposure to rainfall or removal by wind. Secure the covering in place.

E. Environmental Requirements.

1. Do not install sand or pavers during heavy rain or snowfall.

2. Do not install frozen sand or saturated sand.

3. Do not install concrete pavers on frozen or saturated sand.

150844.02. MATERIAL.

A. PCC Pavers.

1. PCC Pavers: UNI-Stone as manufactured by a member of UNI-Group U.S.A., or a member of the Interlocking Concrete Paving Institute (ICPI).

2. PCC Pavers shall comply with ASTM C 936.

3. Compressive Strength: Greater than 8000 psi per ASTM C 140.

4. Water Absorption: Maximum of 5% per ASTM C 140.

5. Freeze-thaw and De-icing Salt Durability per ASTM C 1645 (Saline test).

6. Style and Size: Cobble style pavers comprised of two sizes.
   a. Square paver measuring 6 inch by 6 inch by 2 3/8 inches thick
   b. Rectangle paver measuring 6 inch by 9 inch by 2 3/8 inches thick

7. Manufacturers, subject to compliance with the special provision:
   a. Cambridge Cobble Pavers, Harvest Blend Color as manufactured by Belgard, 844-495-8210.
   b. Olde Greenwich Cobble, Autumn Red Color as manufactured by Unilock, 630-892-9191
   c. Cobble Series Pavers, Autumn Blend Color as manufactured by Borgert Products, 800.622.4952.

B. Setting Bed Sand and Joint Filler Sand.

1. Clean, non-plastic, free from deleterious or foreign matter, natural or manufactured from crushed rock. Do not use limestone screenings or stone dust that do not conform to the grading requirements in Table 1. When concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available.

2. Sieve according to ASTM C 136.

3. Setting Bed Sand.

Grading Requirements for Setting Bed Sand - ASTM C 33

Sieve Size	Percent Passing
3/8 inch	100
No. 4	95 to 100
No. 8	85 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10
No. 200	0 to 1

4. Joint Filler Sand.

Grading Requirements for Joint Filler Sand

	ASTM C 144 Natural Sand	ASTM C 144 Manufactured Sand
Sieve Size	***Percent Passing***	***Percent Passing***
No. 4	100	100
No. 8	95 to 100	95 to 100
No. 16	70 to 100	70 to 100
No. 30	40 to 75	40 to 100
No. 50	10 to 35	20 to 40
No. 100	2 to 15	10 to 25
No. 200	0 to 1	0 to 10

C. Subslab Weeps.

1. Weep holes formed of 2 inch diameter PVC, Schedule 40 pipe.

2. Reservoir and weep drainage material comprising of 3/4 inch rock complying with gradation 29 per Article 4109.02 of the Standard Specifications.

3. Engineering fabric complying with Article 4196.01, B, 2, of the Standard Specifications.

150844.03. CONSTRUCTION.

A. Installation of Subslab Weeps.

1. Identify low points where water would collect in the subslab and install 2 inch diameter weep holes a minimum of 6 inches from the edge of the subslab.
   a. Below the weep hole, place 1 cubic foot of 3/4 inch rock. If subdrains are present, extend the rock down to connect to the subdrain.
   b. Form weep holes using 2 inch diameter PVC, a minimum of 12 inches long. Place PVC pipe so that top of pipe is flush with top of subslab.

2. Prior to placing the setting bed sand, inspect weep holes for obstructions that would prevent drainage. Remove debris and fill with 3/4 inch rock to the top of the sub-slab elevation.
   .
3. Place a minimum of 18 inches by 18 inches of engineering fabric over the weep hole. Wrap edges of fabric up along edge of curb, sidewalk, or concrete band.

4. Install a continuous 18 inch wide strip of filter fabric where subslab meets back of curb. Wrap 6 inches of the fabric up the back side of the curb.

B. Preparation of Concrete Subslab.

1. Inspect concrete subslab to ensure surface is clean and built in conformance with details.

2. Verify elevation difference between concrete subslab and adjacent finish concrete surface to ensure concrete pavers can be installed flush with bordering concrete pavement.

C. Placing Setting Bed Sand.

1. Spread the bedding sand evenly over the subslab and screed to a nominal 1 inch thickness, and not to exceed 1 1/2 inches thick.

2. The screeded sand should not be disturbed.

3. Place sufficient sand to stay ahead of the laid pavers.

4. Screeded area will not substantially exceed that which is covered by pavers in one day.

D. Installation of PCC Pavers.

1. After the sand setting bed has been installed, carefully place the pavers in straight courses with “hand” tight joints and uniform top surface.

2. Paver spacer bars will provide joints between pavers (joints may be between 1/16 inch and 3/16 inch wide and no more than 5% of the joints shall exceed 1/4 inch wide to achieve straight bond lines). No joints shall exceed 3/8 inch.

3. Paver Joint lines shall not deviate more than ± 1/2 inch over 50 feet from string lines.

4. Fill gaps at the edges of the paved area with cut pavers or edge units.

5. Cut pavers, to be placed along the edge, with a double blade paver splitter or masonry saw.

6. Adjust paver pattern at pavement edges such that cutting of edge pavers is minimized.

7. All cut pavers exposed shall be no smaller than one-third of a whole paver in length.

8. Cut pavers edges are to abut pavers only; a paver spacer bar must abut the cut edge of a paver.

9. Do not place cut paver edges against concrete.

10. Keep skid steer and forklift equipment off newly laid pavers that have not received initial compaction and joint sand.

11. Cut away excess engineering fabric. Cut fabric flush with top of pavers.

E. Joint Treatment.

1. Use a low-amplitude plate compactor capable of a minimum of 4000 pounds at a frequency of 75 to 100 Hz to vibrate the pavers into the sand. Remove any cracked or damaged pavers and replace with new pavers. Follow manufacturer's recommendations on padding to protect paver surface from damage during compaction.

2. Simultaneously spread, sweep and compact dry joint sand into joints continuously until full. This will require at least four to six passes with a plate compactor. Do not compact within 6 feet of unrestrained edges of pavers.

3. All work within 6 feet of the laying face shall be left fully compacted with sand-filled joints at the end of each day or compacted upon acceptance of the work. Cover the laying face or any incomplete areas with plastic sheets overnight if not closed with cut and compacted pavers with joint sand to prevent exposed bedding sand from becoming saturated from rainfall.

4. Remove excess sand from surface when installation is complete.

5. Allow excess joint sand to remain on surface to protect pavers from damage from other trades. Remove excess sand when directed by the Engineer.

6. Surface shall be broom clean after removal of excess joint sand.

F. Field Quality Control.

1. The final surface tolerance from grade elevations shall not deviate more than ±3/8 inch under a 10 foot straightedge.

2. Check final surface elevations for conformance to drawings.

3. The surface elevation of pavers shall be 1/8 inch to 1/4 inch above adjacent drainage inlets, concrete collars or channels.

4. Lippage: No greater than 1/8 inch difference in height between adjacent pavers.

G. Cleaning.

1. Clean concrete pavers in accordance with the manufacturer's written recommendations.

2. Sweep excess sand from paved surfaces and remove from site.

3. Remove all excess materials and debris from site.

H. Protection.

1. Protect adjacent pavements and improvements during installation of PCC pavers in crosswalks.

2. After PCC paver work is complete, protect work from damage due to subsequent construction activity on the site.

150844.04. METHOD OF MEASUREMENT.
The Engineer will measure the square foot surface area of the installed PCC Pavers.

150844.05. BASIS OF PAYMENT.
Contractor shall be paid the contract unit price for PCC Pavers for each square foot measured. Payment for PCC Pavers includes all labor, materials, equipment, and supervision required to furnish and install concrete pavers, subslab preparation, drainage weeps, engineering fabric, material and installation of pavers, sand setting bed and joint filler.