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PAVING STONE SPECIFICATION SHEET

SECTION 2518 INTERLOCKING CONCRETE PAVERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete paving stone units.
- B. Sand setting bed and joint sand.

1.2 RELATED SECTIONS

- A. Section (_____ - _____): Curbs and drains.
- B. Section (_____ - _____): Gravel base.
- C. Section (_____ - _____): Cement treated base.
- D. Section (_____ - _____): Asphalt treated base.
- E. Section (_____ - _____): Pavements, asphalt & concrete.
- F. Section (_____ - _____): Roofing materials.
- G. Section (_____ - _____): Bitumen and neoprene setting bed
- H. Section (_____ - _____): Acrylic fortified mortar setting.
- I. Section (_____ - _____): Soil separation fabrics.

1.3 REFERENCES

- A. American Society of Testing Materials (ASTM):
 - 1. C33: Specification for Concrete aggregates, and Coarse Aggregates.
 - 2. C140: Method for Sampling and Testing Concrete Masonry Units.
 - 3. C936: Specification for Solid Interlocking Concrete Paving Units.
- B. Canadian Standards Association (CSA):

1.4 QUALITY ASSURANCE

- A. Installation shall be by an installer with as least one year experience in placing interlocking concrete paving stones.

1.5 SUBMITTALS

- A. Submit shop or product drawings and product data.
- B. Submit samples of concrete paving units to indicate color and shape selections.
- C. Submit sieve analysis for grading of bedding and joint sand.
- D. Submit test results for compliance of paving units to requirements of ASTM C936 from an independent testing laboratory.

1.6 MOCK UPS

- A. Install a 10 ft. x 10 ft. (3Mx 3M) paving stones area as described in Article 3.02. This area will be used to determine surcharge of the sand layer, joint sizes, lines, laying pattern (s), color's, and texture of the job. This area shall be the standard from which the work will be judged.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver concrete paving stones to the site in steel banded, plastic banded or plastic wrapped on pallets capable of transfer by fork lift or clamp lift. Unload paving stones at job site in such a manner that no damage occurs to the product.
- B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be weighted to resist removal by wind.

1.8 ENVIRONMENTAL CONDITIONS

- A. Do not install sand or paving stones during heavy rain or snowfall.
- B. Do not use frozen sand.

PART 2 PRODUCT

2.1 MANUFACTURED UNITS

Concrete paving stones may have spacer bars on the sides of each unit. These ensure a minimum joint width between each unit in which the sand is placed. Spacer bars help prevent contact of the edges with adjacent paving stones and subsequent spalling.

- A. Concrete paving stones shall be manufactured by Western Interlock, Inc.
- B. Product name/shape, overall dimensions, and thickness of the paving stones used shall be:
_____ in./mm x _____ in./mm and _____ in./mm thick.
_____ in./mm x _____ in./mm and _____ in./mm thick.
- C. Paving stones shall meet the following requirements set forth in ASTM C936, Standard Specification for Interlocking Concrete Paving Units:
 - 1. Minimum average compressive strength of 8,000 psi. (55 MPa).
 - 2. Maximum water absorption of 5% when tested in accordance with ASTM C140.
 - 3. Resistance of 50 freeze-thaw cycles, when tested in accordance with ASTM C67.
- D. Color and surface texture of the paving stones shall be according to the schedule in article 3.04.

2.2 BEDDING AND JOINT SAND

The sand bedding is a leveling course. The type of sand used for this layer is often called concrete sand. Sands vary regionally. Contact paving stone installers local to the project and confirm sand (s) successfully used in previous similar applications.

- A. Bedding and joint sand shall be clean, non-plastic, and free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Grading of samples shall be done according to ASTM C136. The particles shall be sharp and conform to the grading requirements of ASTM C33 as shown in Table 1 below:

Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	80 to 100
No. 16 (1.18mm)	50 to 85
No. 30 (600 mm)	25 to 60
No. 50 (300 mm)	10 to 30
No. 100 (150 mm)	2 to 10

PART 3 EXECUTION

For installations on a compacted gravel base and soil subgrade, the specifier should be aware that the top surface of the paving stones after vibration may be 1/8 to 1/4 in. (4 to 6 mm) above the final elevations. This difference in initial and final elevation is to compensate for possible minor settling.

3.1 EXAMINATION

- A. Verify that base is dry and ready to support sand, paving stones and imposed loads.
- B. Verify base surface is closed or tightly compacted with adequate fines to seal the surface, this restricts the sand setting bed from migrating into the base.
- C. Verify gradients and elevations of base are correct.
- D. Verify location , type, installation and elevations of edge restraints around the perimeter area to be paved.
- E. Beginning of installation means acceptance of base and edge restraints.

3.2 INSTALLATION

- A. Spread the sand evenly over the base course and screed to 1 in. thickness. The screeded sand should not be disturbed. Place sufficient sand to stay ahead of the laid paving stones. Do not screed more sand than can be used in one day.
- B. Lay the paving stones in the patterns as shown on the drawings. Maintain straight pattern lines.
- C. Joints between the paving stones shall be between 1/16 in. and 1/8 in. (1.5mm and 3mm) wide.
- D. Fill gaps at the edges of the paved area with cut paving stones or edge units.
- E. Cut paving stones to be placed along the edge with a double bladed splitter or masonry saw.
- G. Compact paving stones into the sand using a low amplitude, high frequency plate vibrator capable of 3,000 to 5,000 lbs. centrifugal compaction force.
- H. Sweep dry sand into the joints and compact again. This will require at least two or three passes with the vibrator. Use different path patterns for the compactor each time the surface is recompacted. Do not vibrate within three feet of the unrestrained edges of the paving units.
- I. All work to within three feet of the laying face must be left fully compacted with sand-filled joints at the completion of each day.
- J. Sweep off excess sand when the job is complete.
- K. The final surface elevations shall not deviate more than 3/8 in. (10mm) under a 10 ft. (3m) long straightedge, or 3/8" from plan specifications.
- L.. The surface elevation of paving stones shall be 1/8 to 1/4 in. (4 to 6mm) above adjacent drainage inlets, concrete collars or channels.
- M. Laying pattern and unit line shall be straight and uniform throughout project.

3.3 FIELD QUALITY CONTROL

- A. After removal of excess sand and aggregate, check the final elevations for conformance to the drawings.

3.4 COLOR and SURFACE SCHEDULE

- A. Color and surface of the paving stone are to be per approved color and as approved per submittals.
- B. The color and surface approved are listed on schedule.

Color	Surface	Shape
_____	_____	_____
_____	_____	_____
_____	_____	_____