



Permeable Pavement System

BIO-AQUIFER STORM SYSTEM

Specifications for Construction (Section 02780)

PART 3 – EXECUTION

3.01 – SUBGRADE

A. The site engineer shall verify that the subgrade has been shaped and compacted in conformance to the lines, grades and cross-sections shown on the plans, to provide for the construction of the Bio-Aquifer Storm System pavement structure.

B. Site grades can be raised to the design subgrade elevation using clean native earth fill (free of deleterious material). This fill should be placed in lifts not exceeding six inches (6”) and compacted to a minimum of ninety-five percent (95%) Standard Proctor density. The final subgrade profile should be uniformly compacted to a minimum of ninety-eight percent (98%) Standard Proctor density and proof-rolled using a vibratory steel drum roller to delineate soft areas. Removing the unstable soil and replacing with clean, dry compacted earth fill shall be performed to repair these areas.

C. The requirements to include sub-drains in the pavement base design would depend on the subgrade soil conditions. It is recommended that an experienced, qualified geotechnical engineer determine the requirements for sub-drains. If required, the sub-drain pipe shall consist of a four-inch (4”) diameter pvc perforated pipe wrapped with filter fabric. The pipe would be placed at subgrade elevation and surrounded with a minimum of four inches (4”) of approved open-graded stone. The sub-drain shall drain into a catch basin or other frost-free positive outlet.

3.02 – SUB-BASE COURSE

A. The thickness of the sub-base course layer will depend upon the subgrade soil conditions and the anticipated traffic loadings. It is recommended that a site assessment be carried out by an experienced qualified geotechnical engineer to determine the required thickness of the sub-base course.

B. The sub-base course shall consist of a minimum thickness of twelve inches (12”) and be compacted using a vibratory smooth-drum roller. It shall be installed in lifts not to exceed six inches (6”). Upon completion of the sub-base course installation, the area shall be proof-rolled using a heavy rubber-tired vehicle (such as a loaded tandem truck) to identify any areas requiring additional compaction. The sub-base course shall be installed to the elevation and cross-section per the plan documents.

3.03 – EDGE RESTRAINTS

A. All edge restraints shall be constructed as shown on the plans and in place prior to the installation of the base course, bedding course and pavers. Poured-in-place concrete curbs are recommended for the Bio-Aquifer Storm System.

3.04 – BASE COURSE

A. The base course shall consist of a thickness of four inches (4”), placed in one lift, and be compacted using a vibratory smooth-drum roller until there is no visible movement of aggregate under static rolling. The base course shall be installed to the elevation and cross-section per the plan documents.

3.05 – BEDDING COURSE

A. The bedding course shall be spread loose in a uniform layer to give a depth after compaction of the paving units of two inches (2”), plus or minus ½”. The contractor shall screed the bedding course using either a mechanical screed beam apparatus or by the use of screed guides and boards.

B. The screeded bedding aggregate shall not be subjected to any traffic by either mechanical equipment or pedestrian use prior to the installation of the paver units. The voids left after the removal of the screed rails shall be filled with loose aggregate as the paver bedding course proceeds.

3.06 – ECOLOGICAL PAVERS

A. The pavers shall be installed in approximately the order in which they were manufactured. No cluster shall be installed next to a cluster that was manufactured more than 2,500 cycles before or after.

B. Lay pavers in the pattern as shown on the drawings. Lay pavers away from the existing laying face or edge restraint in such a manner as to ensure that the pattern remains square. Chalk lines shall be used upon the bedding course to maintain straight joint lines. Joint spacing between pavers shall be between 1/8” and ¼”; however, the joint width may need to be increased to 3/8” (if necessary) to maintain straight joint lines. Lines and grades shown on the plans shall be established and maintained during the installation of the wearing course.

C. Pavers shall be cut using a table-mounted masonry saw. Block splitting shall not be permitted. All cut faces shall be vertical. Dry cutting of the pavers shall be performed utilizing a dust collection system.

D. Once the pavers have been placed upon the bedding course and all cut pavers have been inserted to provide a full and complete surface, inspect the pavers for

damaged units and remove and replace those units. Once all pattern lines have been straightened, the void filler shall then be placed into the paver openings to the top of the chamfer on the pavers and the surface swept broom clean.

E. The pavement surface shall be compacted to achieve consolidation of the bedding course and paving stones and brought to design levels and profiles by two passes of a suitable plate compactor. Compaction of the pavers shall be accomplished by the use of a vibratory plate compactor capable of a minimum of 4,500 pounds of compaction force. No compaction shall be permitted within three feet (3') of unrestrained edges of the pavement. After compaction, inspect the pavers for damaged units and remove and replace those units.

F. On completion of vibration after void filling, the surface tolerances shall be plus or minus 1/2" from finish levels. The pavers shall be flush to 1/2" above edge restraints. Additional void filler material shall be swept in the paver voids, as required, to within 1/2" from the bottom of the chamfer on the paving stones. Upon completion, the wearing course surface shall be swept clean of all excess materials. Remove from the site all surplus materials, equipment and debris resulting from these operations.



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