

a recreational  
lifestyle community

WOODMEN HILLS

***WOODMEN HILLS  
METROPOLITAN DISTRICT***

***LIFT STATION #1 REPLACEMENT  
OPERATIONS & MAINTENANCE MANUAL  
for  
PERMEABLE PAVING SYSTEM***

**February 2019**

**Prepared By:**



**CONSULTANTS, INC.**

**PCD File No. PPR1841**

## **Operations and Maintenance Procedures**

### **Description:**

A permeable paving system covers approximately 3,300 square feet of driveway and parking area at the site of Lift Station #1 (LS1). This facility is owned and operated by the Woodmen Hills Metropolitan District (WHMD, the District), and conveys wastewater via lifting pumps from the southernmost portion of the District to the Falcon Lift Station on McLaughlin Road.

The paving system consists of approximately four inches (4") of AASHTO #57 crushed gravel below a one-inch thick, high-density polyethylene (HDPE) grid paver, with 1-1/2 inches of 3/8-inch gravel inside and above the grid paver. The top of the 3/8" gravel is "at grade" for the driveway and parking areas.

### **Purpose:**

The purpose of the permeable paving system is to offset the need for a detention pond while allowing storm water to infiltrate almost immediately and filter into the soils beneath instead of flowing immediately offsite. The volume of the permeable material at an assumed 40% void ratio is roughly 4,500 gallons, or 1,500 cubic feet.

### **Installation:**

Grid pavers are placed on AASHTO #57 gravel and interlocked. Galvanized steel stakes are used to secure the pavers in place prior to installation of 3/8-inch gravel inside and above the pavers.

### **Routine Maintenance:**

Routine maintenance of the paving system involves:

- Replacement of any gravel displaced during normal operations
- Replacement of grid pavers upon damage
- Spraying for weeds and removal of weeds
- Do not use equipment intended for thatching, scalping, or aerating on paving system.

### **Manufacturers' Manuals**

Specific manufacturer's manuals are part of the final O&M manual presented to the District upon completion of the overall project. A copy of the specifications of an approved manufacturer is provided below.

## **TRUEGRID® ECO**

### **Manufacturer's Product Specification Sheet**

<b>Dimensions:</b>	24" x 24" x 1" (4 sq/ft)
<b>Pre-Assembled:</b>	16 sq/ft per layer (4' x 4' sheet) (4 grids per layer)
<b>Cell Width:</b>	3-2/16"
<b>Weight:</b>	2.53 lbs
<b>Porosity:</b>	90%
<b>Compressive strength:</b>	Over 6,000 psi when filled.
<b>Material:</b>	Recycled High Density Polyethylene (100% post-consumer)
<b>Color:</b>	Black with UV Stabilizer
<b>Temperature Range:</b>	Dimensionally Stable for -58F to 194F
<b>Moisture Absorption:</b>	.01%
<b>Environmental Compatibility:</b>	Nontoxic, harmless to plants, animals, and microorganisms. Inert material, groundwater neutral
<b>Installation Speed:</b>	1000 sq/ft per man hour

### **Other features of TRUEGRID**

- Highly resistant to oils, gasoline, acids, salt, ammonia, and alcohol
- May be saw cut
- Patented design yields ultimate hoop strength
- Circular elements provide multi-directional crush and shear strength
- Flexible links allow expansion and contraction depending on environmental conditions
- Built in X-Anchors allows weight of filler to hold grid down without any extra staking
- Interlocking connectors

**Ground Preparation:** Depends upon site condition and local conditions.

**Suggested Sub-base:** Gravel/sandy soil mix (60/40) (or similar).  
 $\frac{3}{4}$ " and under diameter clean/washed, angular gravel (or similar).  
 Depth of this layer should be a minimum of 4" - 6". Deeper for heavier applications.  
 For additional drainage, increase depth of sub-base.  
 Class 2 road base (crushed concrete or similar) is also a typical sub-base material.  
 Level and compact sub-base before laying TrueGrid.

**Installation:** Layout and snap together pre-assembled sheets. (4 pcs per layer = 16 sq/ft)  
 If body weight does not level the grids, use plate vibrator or heavy cylinder to level.

**Backfill:** Any angular or round medium may be used. Fill cells with filler of choice.  
 $1\frac{1}{2}$ " –  $\frac{3}{4}$ " diameter typical.

- TRUEGRID may be cut on site
- Pre-cutting is not required

Angle grinder, circular saw, compass saw, or handsaw are all options for cutting TRUEGRID.

**Delivery:**

- **Pallet content:** 672 sq/ft = 42 layers per pallet = 168 pcs
- **Pallet dimensions:** 48" x 48" x 48"
- **Approximate pallet weight:** 472 lbs
- **Truckload:** 48 pallets or 32,256 sq/ft



For more info on TRUEGRID  
 Please visit our website:

[www.truegridpaver.com](http://www.truegridpaver.com)



TRUEGRID ECO 24" X 24" X 1.0"

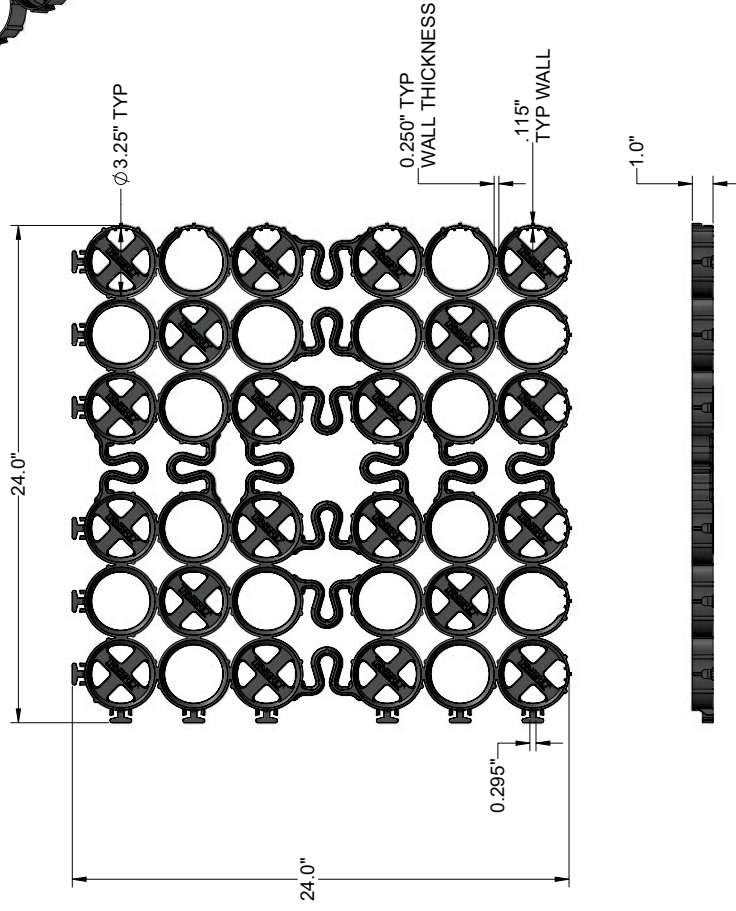
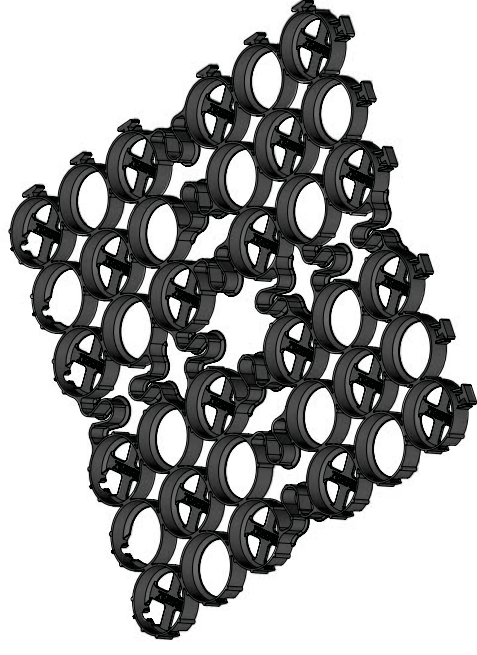
US PATENT NO. 8,734,049

PROPRIETARY FEATURES:

- 1) X-ANCHORS (NO STAKING NEEDED)
- 2) 3 POINT MALE/FEMALE LOCKING TABS
- 3) S-FLEX JOINTS ( BUILT IN EXPANSION JOINTS FOR SOIL MOVEMENT AND SEASONAL CHANGES)
- 4) HOOP STRENGTH DESIGN

OTHER:

- 1) 100 % POST-CONSUMER RECYCLED HDPE.
- 2) DELIVERED IN PREASSEMBLED 4' X 4' SHEETS THAT CAN BE RECONFIGURED, AS NEEDED.



FOR PRICING OR ORDERING: CALL 1-855-355-GRID (4743). IN STOCK. FACTORY DIRECT.