

Austin Gisi
Eagle Scout Service Project Proposal:

Ruth Asawa School of the Arts
Erosion Control and Beautification Project



San Francisco Troop 15

Project Description

Ruth Asawa San Francisco's School of the Arts (SOTA) campus has an eroding hill that sends a lot of dirt into the 30 ft long drain at the base of the hill. During the rainy season the eroding hill causes the drainage system to clog and the area around the drain to flood. SOTA would like to have 30ft long retaining wall built to stop the hill from eroding into the drainage system and solve the flooding problem. To help SOTA solve this problem I created a service project will include i) clearing the drainage system, ii) constructing a retaining wall (18" high x 33 feet long) and iii) adding landscaping plants for additional erosion control and beatifying the hill (and adjacent patio).



Problem

(Before)

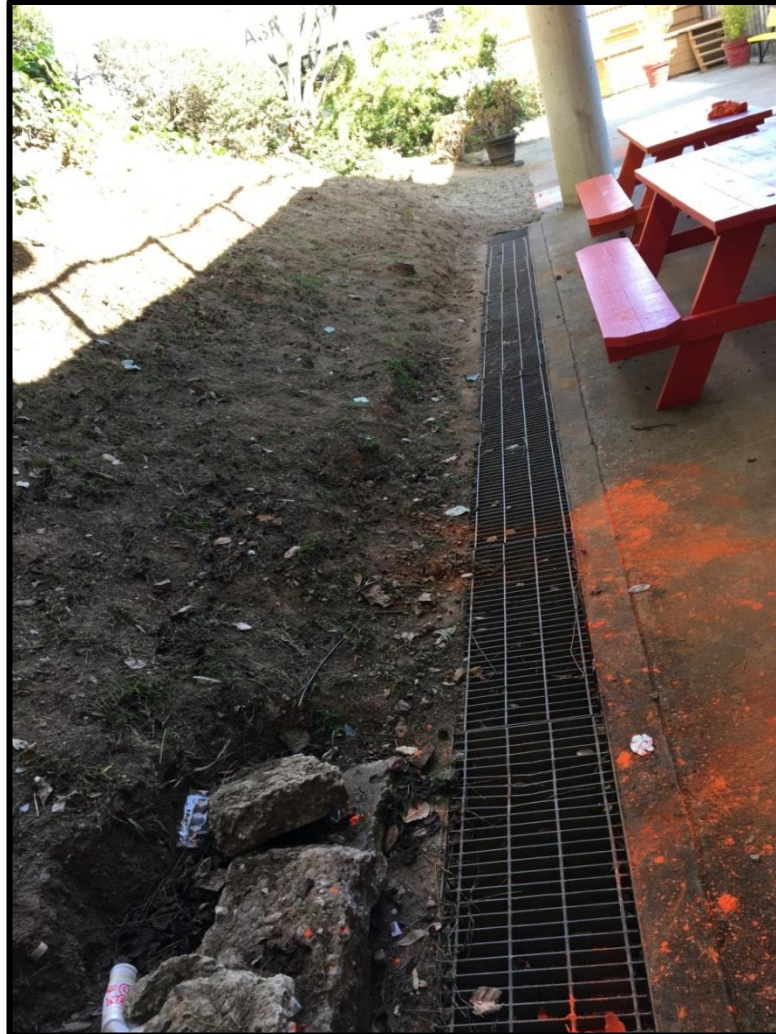
Hill Erosion



Hill Erosion



Drainage System



Past Attempt



Solution

(After)

- i. Build Erosion Controlling Retaining Wall
- ii. Add Plants and Erosion Controlling Vegetation
- iii. Clean Drainage System

Example Wall Type



Wall Composition



Project Stages

- 1) Have PG&E mark up ground before digging
- 2) Dig 33 foot long trench 5 inches deep by 22 inches wide
- 3) Add Retaining wall paver base (3 inches - 6 cubic feet) & tamper
- 4) Lay and Level first row of approximately 33 bricks (most time consuming task)
- 5) Lay remaining 4 levels of brick (33 bricks/level) - should go considerable faster than first level
- 6) While adding levels, we will also lay down drainage gravel (2.5 cubic yards), drainage pipe (32 feet), and compacted Soil
- 7) Till and redistribute dirt on upper part of hill
- 8) Install plants and mulch up to 2.5 feet from wall and erosion control plants on the hill.
- 9) Clean up work area
- 10) Clean drainage system

Measure & Mark



Tamper Dirt



Tamper Paver Base Gravel



Level

Check Level



Stagger Bricks

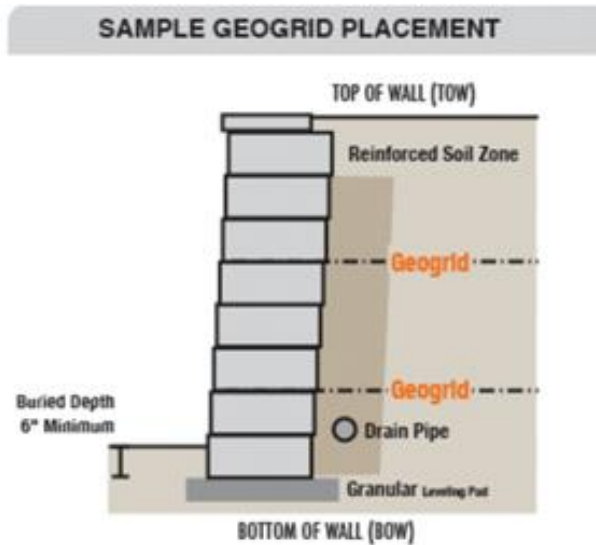


Stack Rows



Add Top Soil

Geogrid layering

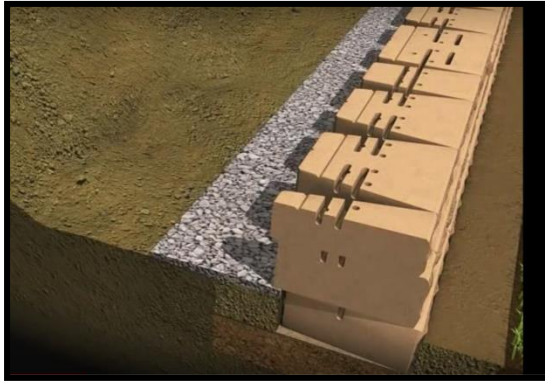


Geogrid placement

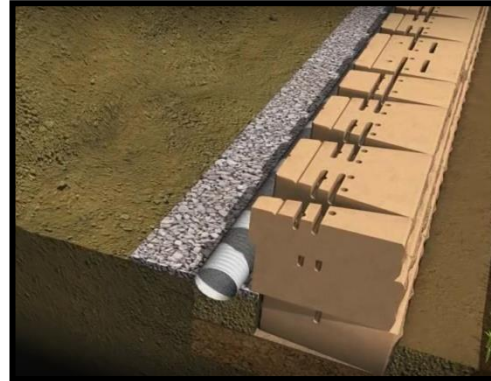


Wall Drainage

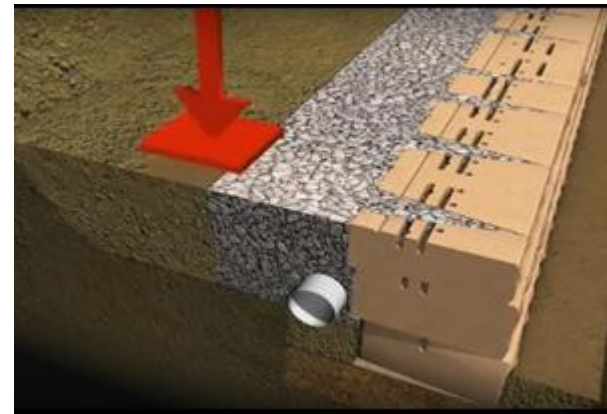
Drainage Gravel 1"



Drainage Proliferated Pipe

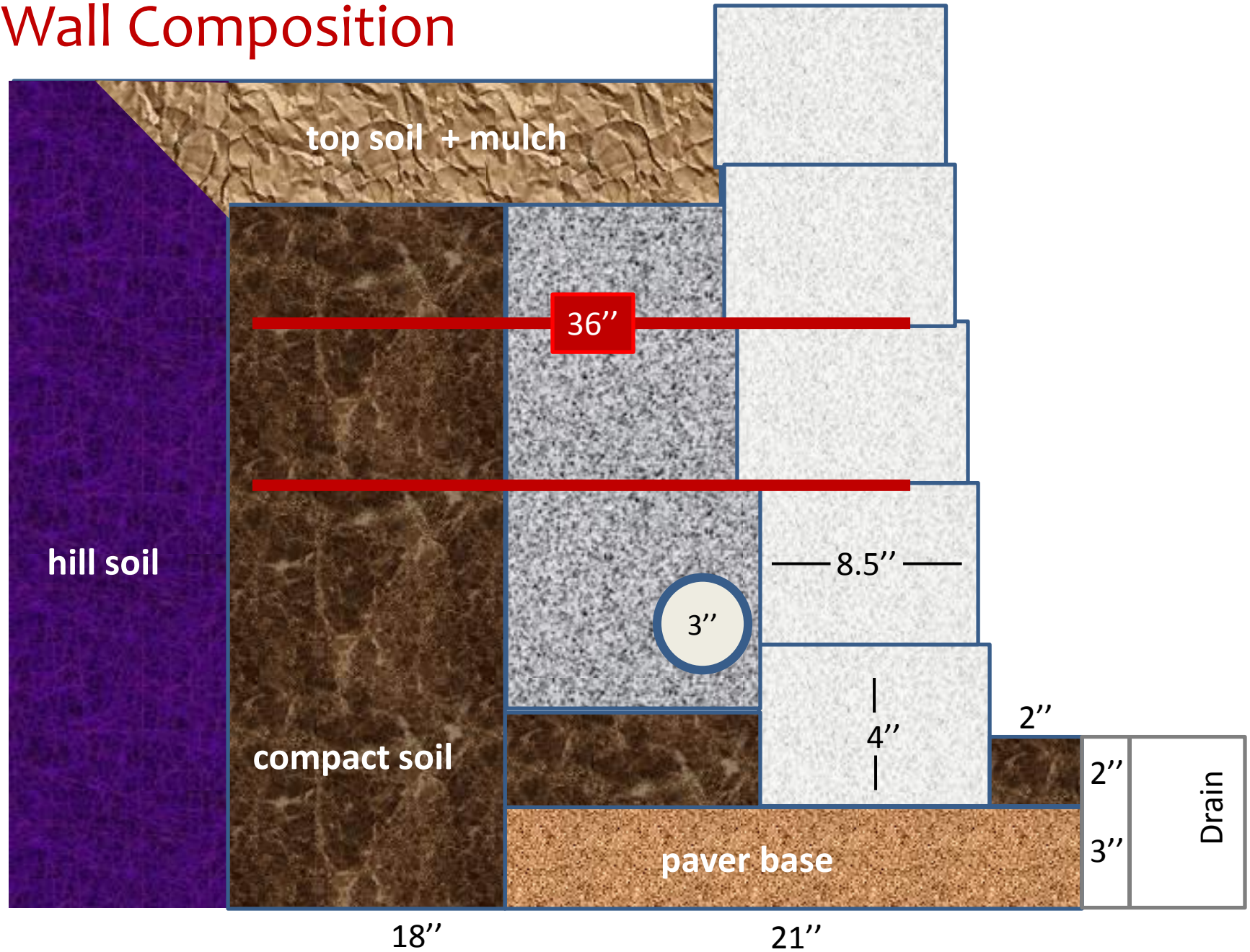


Drainage Gravel 12"x 14"



Compress Dirt & Rock

Wall Composition



Some Core Suppliers



4 in. x 11.75 in. x 6.75 in. Pewter Concrete Retaining Wall Block

★★★★★ (188) [Write a Review](#) [Questions & Answers \(154\)](#)

- Self-aligning rear lip makes proper setback automatic
- Trapezoidal shape easily forms concave, convex or straight walls
- Split-face technology shows the veining and definition of colors



\$1⁹⁷ /each
Buy 200 or more **\$1.77** /each



1,100 lb. 3/4 in. Gravel/Crushed Rock

★★★★★ (60) [Write a Review](#) [Questions & Answers \(59\)](#)

- Each bag weights roughly 1,000 - 1,200 lbs.
- Designed to be used for back fill and ground cover
- Gravel/crushed rock and be added when mixina concrete

Model # 479497 Internet #100318376 Store SKU #479497



SAKRETE >

0.5 cu. ft. Step 1 Patio Paver Base

★★★★★ (32) [Write a Review](#) [Questions & Answers \(54\)](#)

- 1 bag covers 0.5 cu. ft.
- Engineered to prevents cracking in colder climates
- Creates a coarse stone base that improves drainage

Model # 40100317 Internet #205153034 Store SKU #1000052246



3 in. x 10 ft. Perforated Corex Drain Pipe

★★★★★ (6) [Write a Review](#) [Questions & Answers \(3\)](#)

\$7⁹⁷ /each

Model # 03010010 Internet #100576671 Store SKU #418051 Store SO SKU #1000675101

Materials Budget Estimate

Materials	Quantity	Cost/Unit	Total
Bricks	180	\$1.97	\$354.60
Drainage Pipe	3	\$10.34	\$31.02
Drain Sleeve	1	\$20.00	\$20.00
Pipe Connectors	2	\$1.89	\$3.78
Paver base gravel	12	\$3.33	\$39.96
Drainage gravel	4	\$25.00	\$100.00
Top soil	30	\$3.00	\$90.00
Plants	10	\$10.00	\$100.00
Mulch	15	\$5.00	\$75.00
Glue Cement	10	\$7.00	\$70.00
GeoGrid	1	\$40.00	\$40.00

\$924.36

They Lived Happily Ever After





How Does Geogrid Work?





You're shopping
The Home Depot Pro

paver base rock



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Model # STPB5

Internet #206668249

Store SKU #1001705621



5 Yards Bulk Paver Base



[Write the first Review](#)

- Additional quantities available through dr
- Product varies by state on texture, color
- \$99 flat rate scheduled delivery via dump

\$321⁵⁰ /each

Color Family: **Gray**

Gray

Cubic Yards: **5**

5

6

7

8

9

15

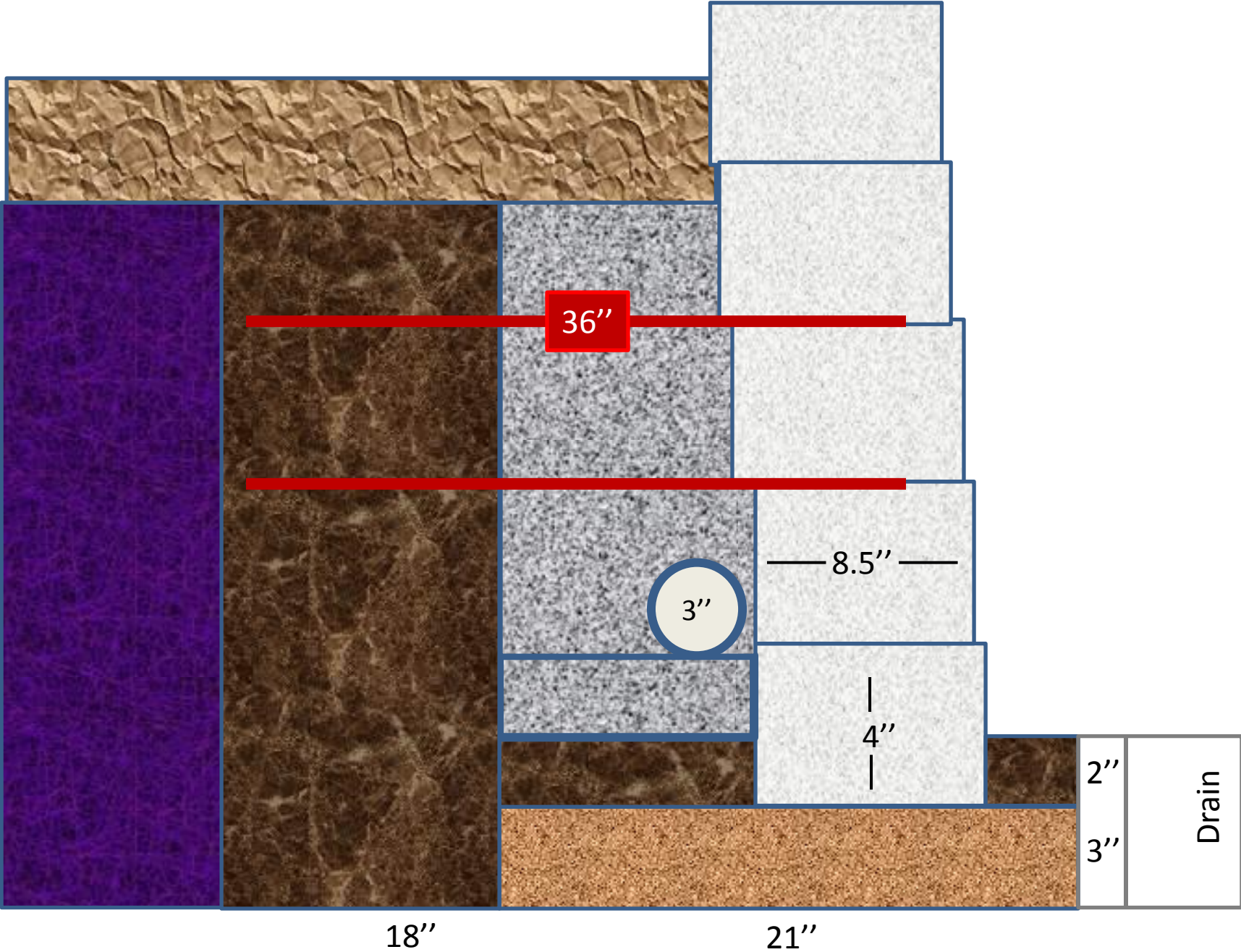
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Quantity

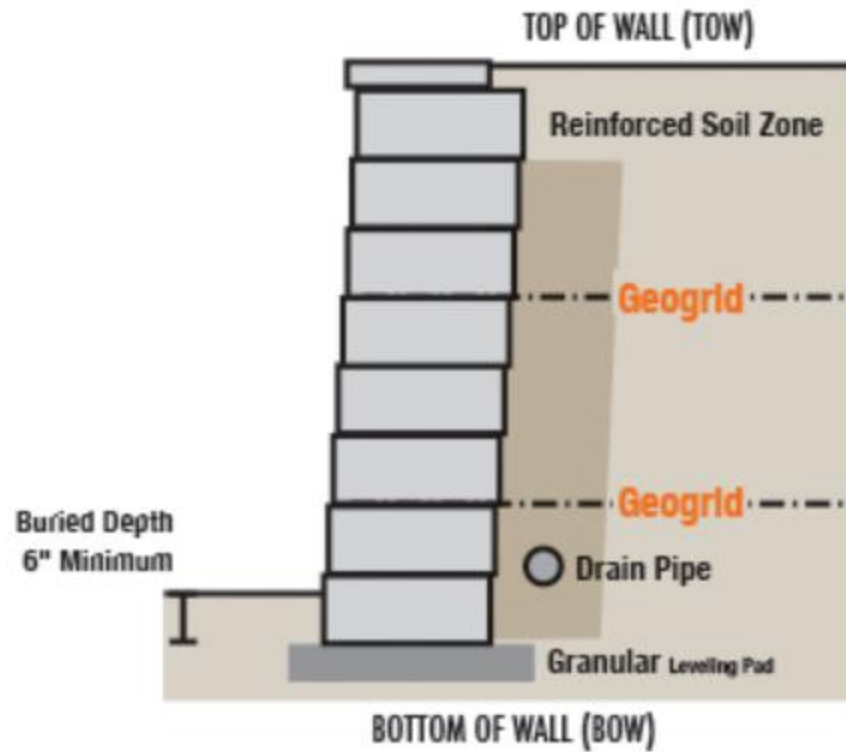
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SAMPLE GEOGRID PLACEMENT

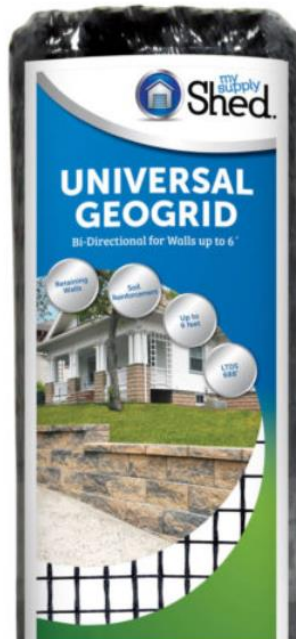




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BI-DIRECTIONAL UNIVERSAL RETAINING WALL GEOGRID, WALLS UP TO 6 FEET

Condition: **New**

Size:

Quantity:

More than 10 available / 7 sold

Price: **US \$60.42**

[Buy It Now](#)

[Add to cart](#)

[Add to watch list](#)

Free shipping

30-day returns

Ships from United States

Shipping: **FREE** Standard Shipping | [See details](#)
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Delivery: Estimated on or before **Tue. Nov. 06** to 94127

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