

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

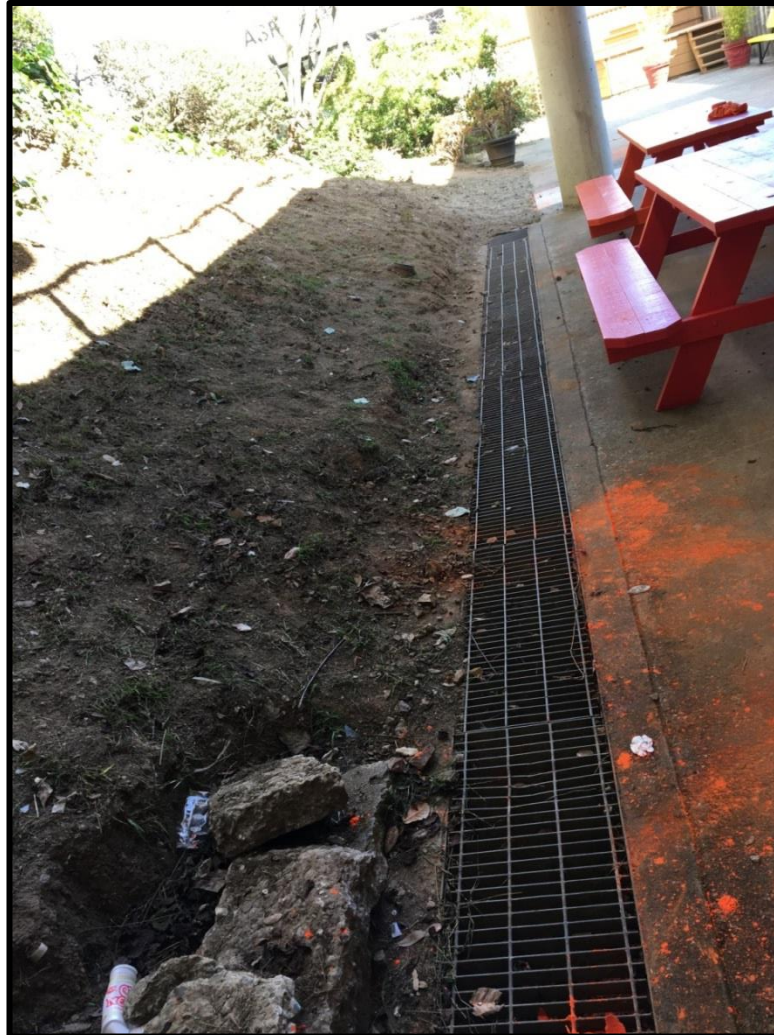




# Hill Erosion



# Drainage System





# Past Attempt



# **Solution**

## **(After)**

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



# 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

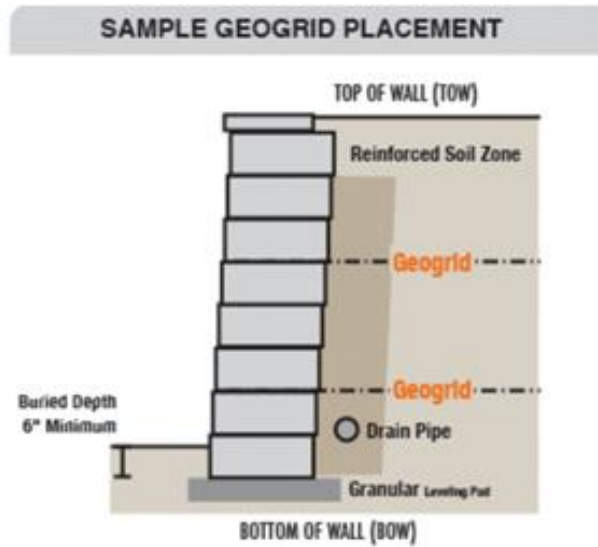


Stack Rows



Add Top Soil

## Geogrid layering



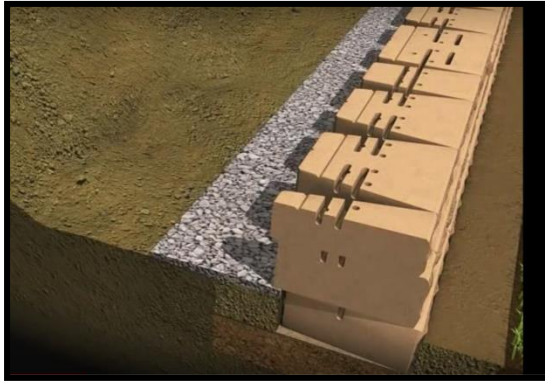
## Geogrid placement



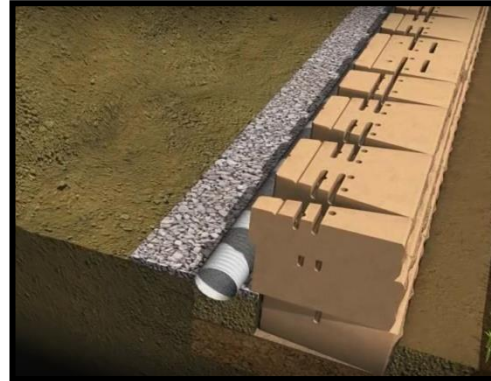


# Wall Drainage

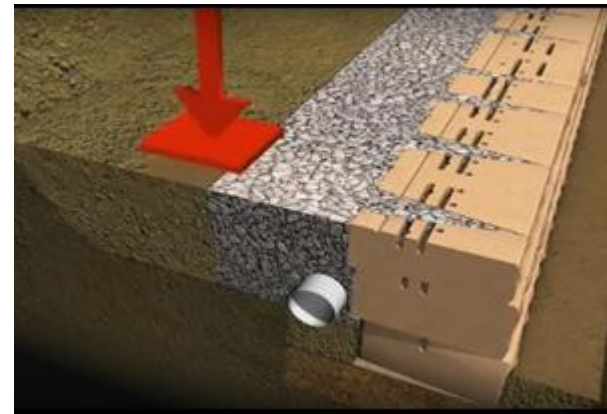
Drainage Gravel 1"



Drainage Proliferated Pipe

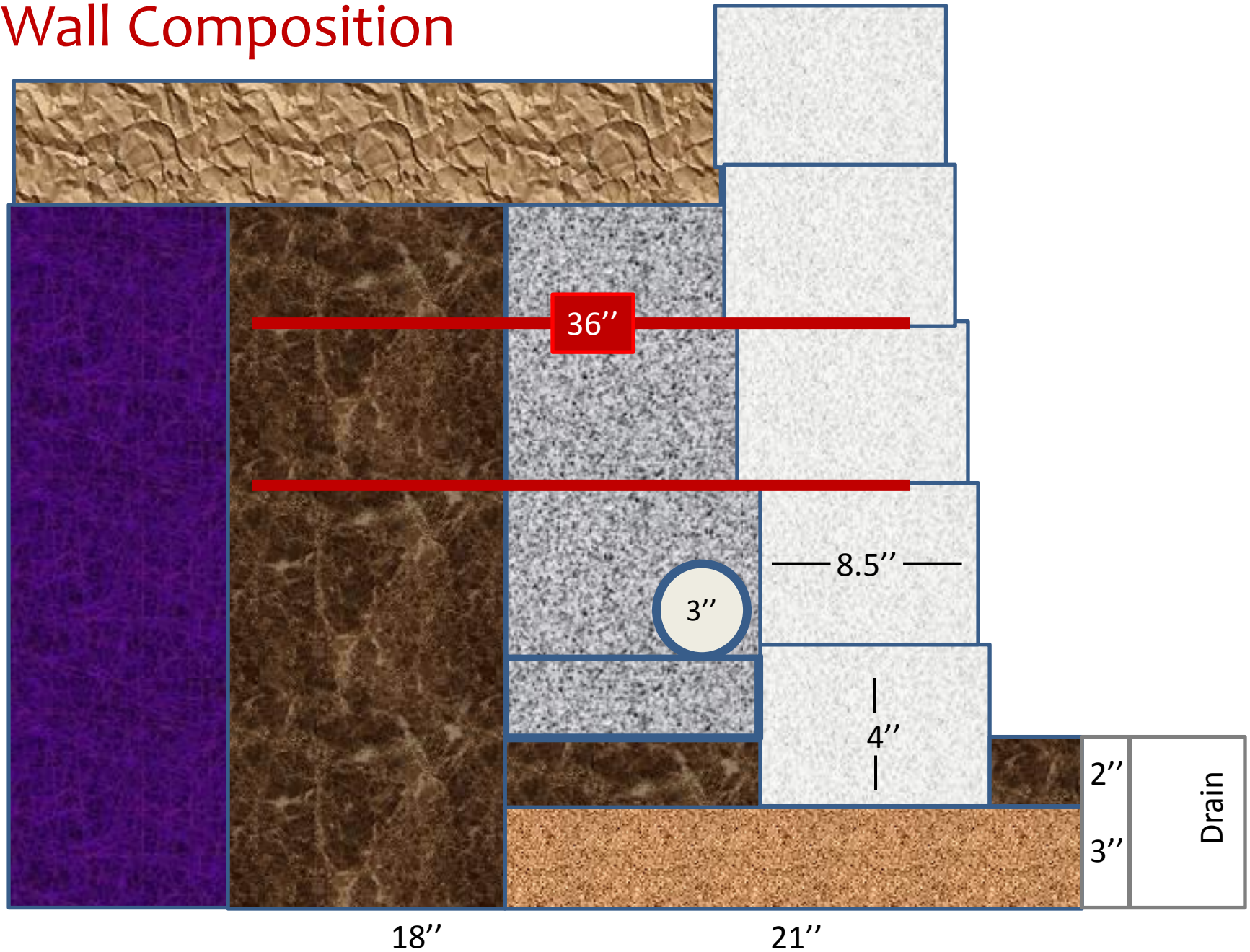


Drainage Gravel 12"x 14"



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



**\$1<sup>97</sup>** /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 mixing 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 \(3\)](#)

**\$7<sup>97</sup>** /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

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\$924.36

# They Lived Happily Ever After











# How Does Geogrid Work?





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paver base rock



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Local Ad

Home / Outdoors / Garden Center / Landscaping / Hardscapes / Landscape Rocks / Bulk

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

**\$321<sup>50</sup>** /each

Color Family: **Gray**

**Gray**

Cubic Yards: **5**

5

6

7

8

9

15

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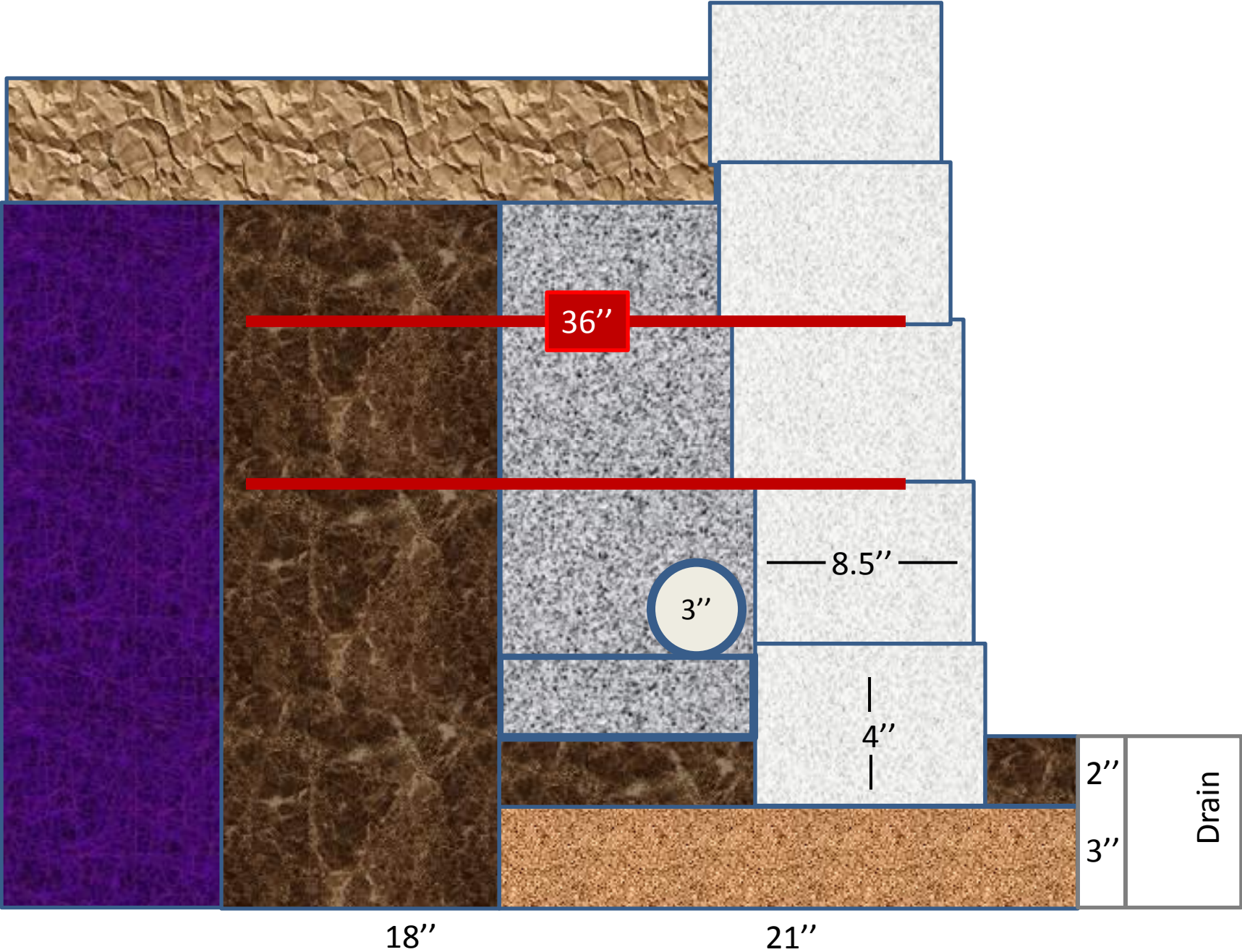
Quantity

-

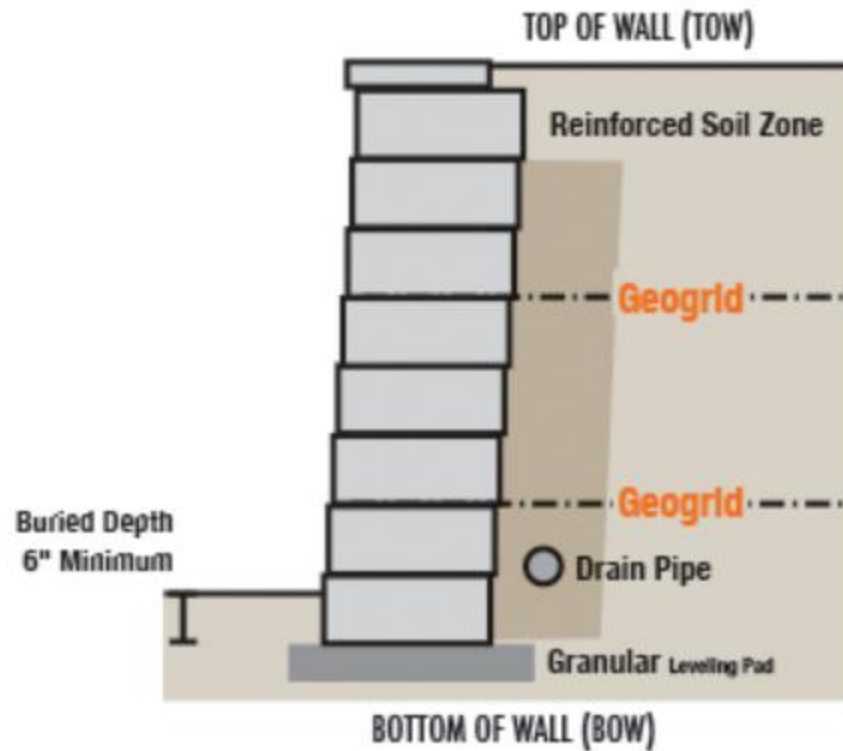
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## SAMPLE GEOGRID PLACEMENT

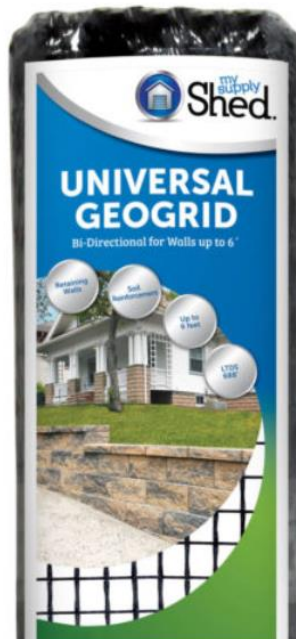




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### BI-DIRECTIONAL UNIVERSAL RETAINING WALL GEOGRID, WALLS UP TO 6 FEET

Condition: **New**

Size:

Quantity:

More than 10 available / 7 sold

Price: **US \$60.42**

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