

Austin Gisi
Eagle Scout Service Project Proposal:

Ruth Asawa School of the Arts
Erosion Control and Beautification Project

San Francisco Troop 15
October 2018



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 30ft 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 fabric and plants for additional erosion control and beatifying the hill (and adjacent patio).



Problem

(Before)

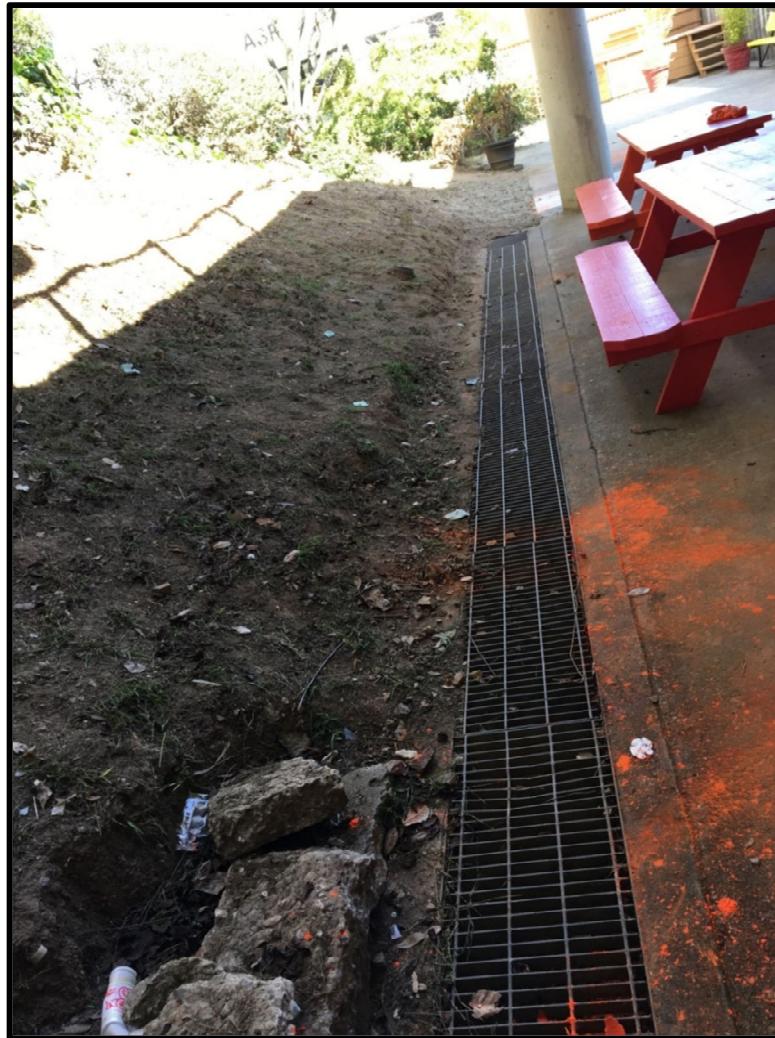
Hill Erosion



Hill Erosion



Drainage System



Past Attempt

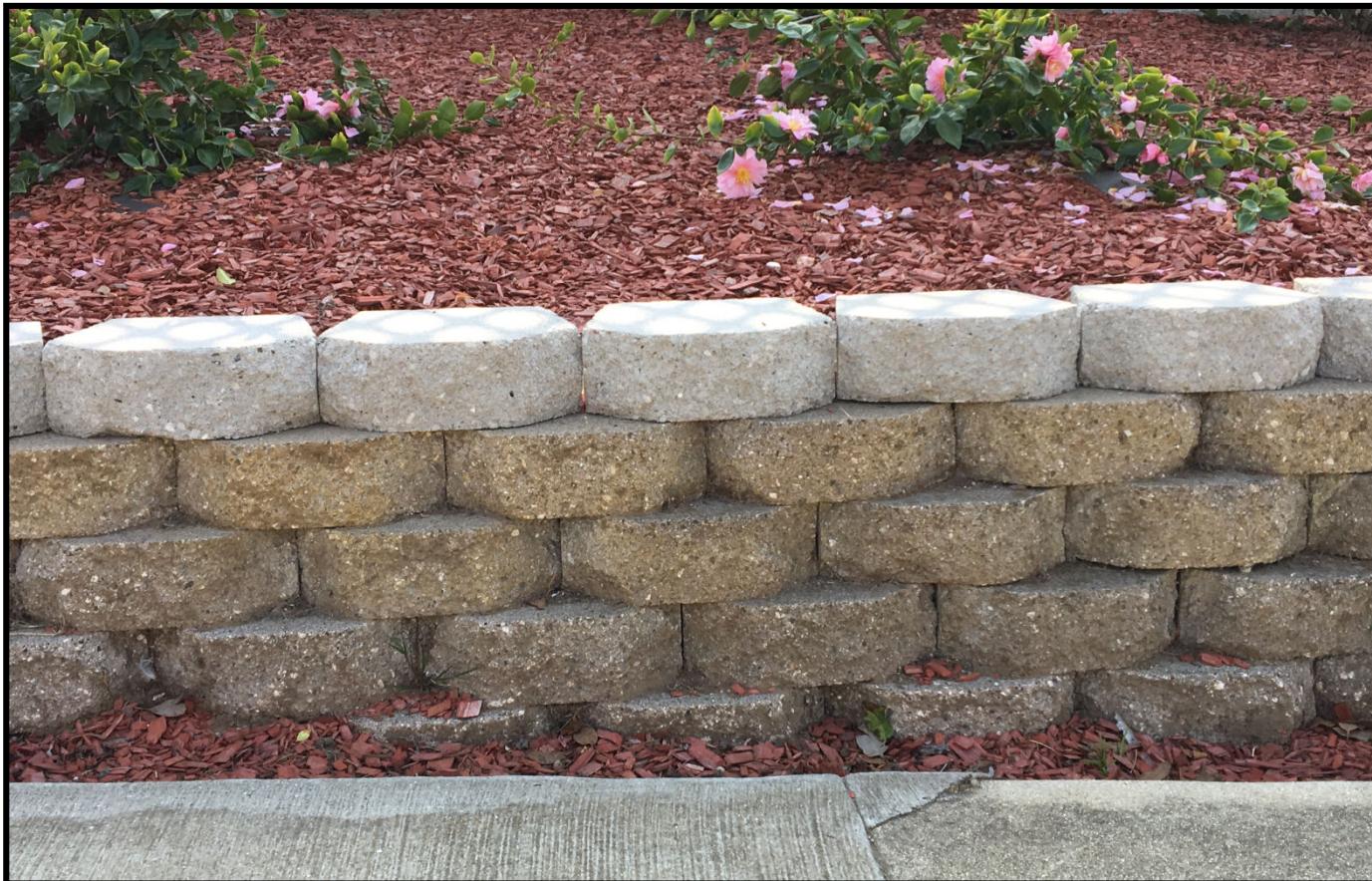


Solution

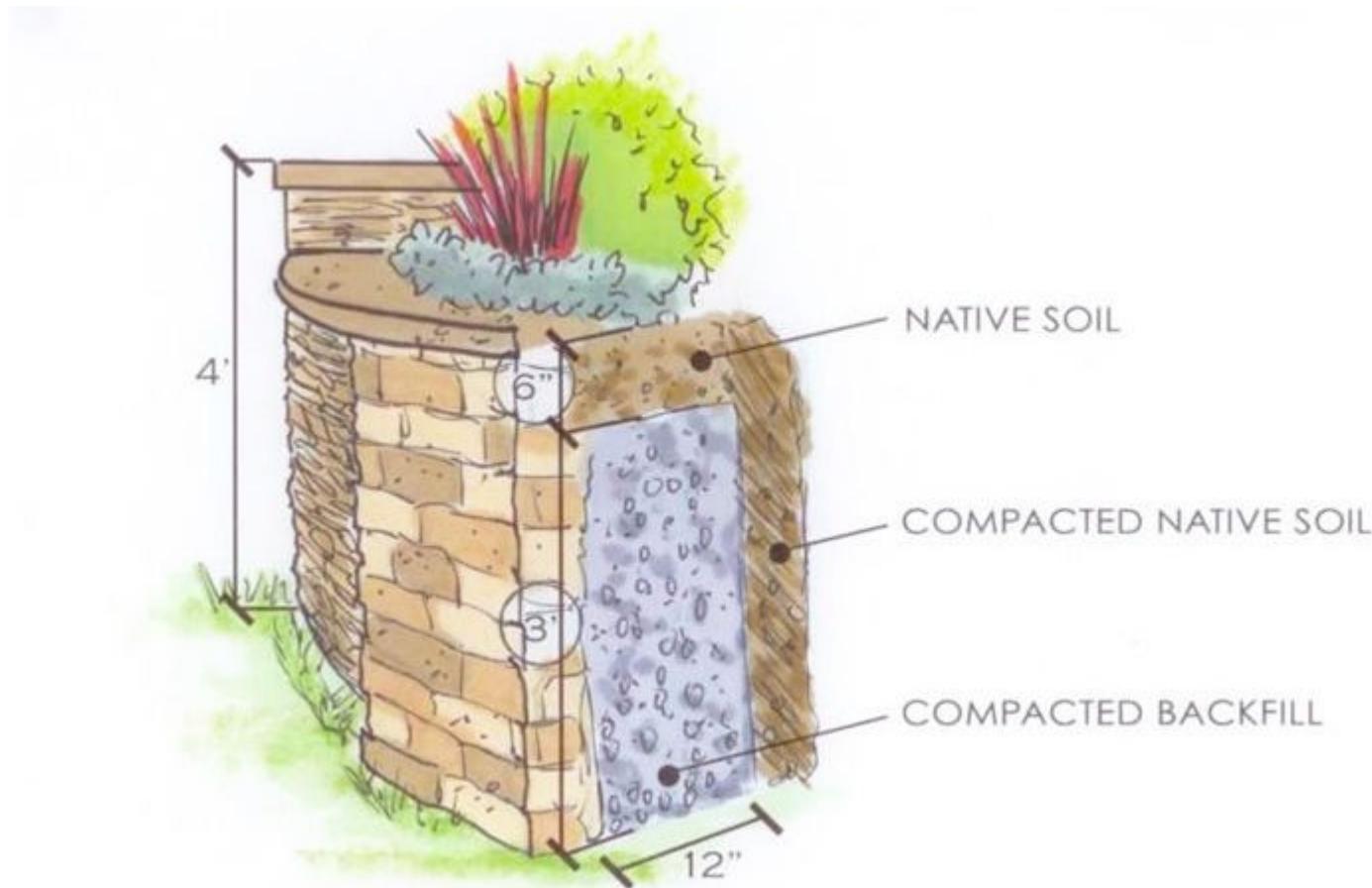
(After)

- i. Build Erosion Controlling Retaining Wall
- ii. Add Erosion Control netting to Hill
- iii. Add top soil to hill
- iv. Add plants
- v. Clean Drainage System

Example Wall Type



Wall Composition



Project Stages

Stage 1

- Dig 33 foot long trench 5 inches deep by 22 inches wide
- Add Retaining wall paver base gravel (3 inches -> 17 cubic feet) & tamper
- Lay and Level first row of approximately 22 bricks (most time consuming task)
- Lay remaining 2 levels of brick (44 bricks/level) - should go considerable faster
- While adding levels, we will also lay down drainage gravel (3 cubic yards), drainage pipe (32 feet), and compacted Soil
- Top level – add 1.5” x 12” x12” stone caps (30)

Stage II

- Till and add compost (5 cubic yards) on upper part of hill
- Install 26’x30’ erosion control fabric
- Install plants and mulch up to 2.5 feet from retaining wall.

Stage III

- Clean drainage system

Stage IV

- Clean up work area

Measure & Mark



Tamper Dirt



Tamper Paver Base Gravel



Level

Check Level



Stagger Bricks



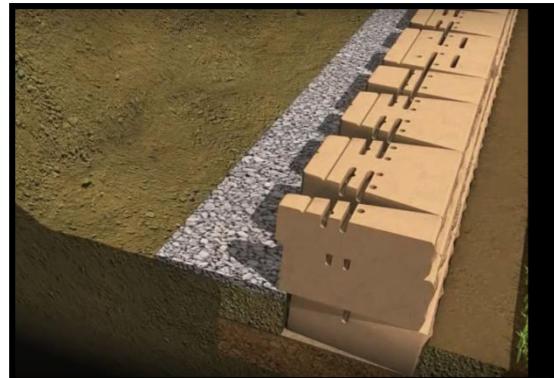
Stack Rows



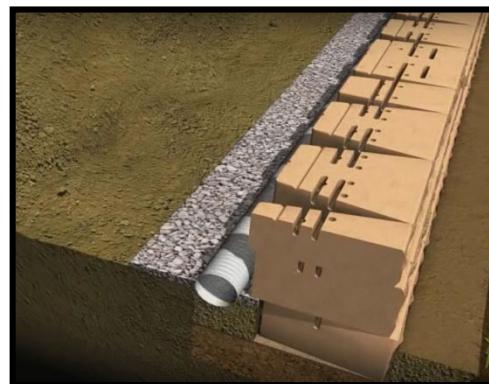
Add Top Soil

Wall Drainage

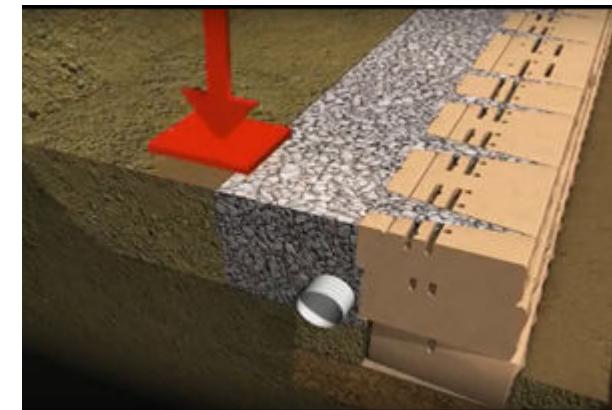
Drainage Gravel 1"



Drainage Proliferated Pipe

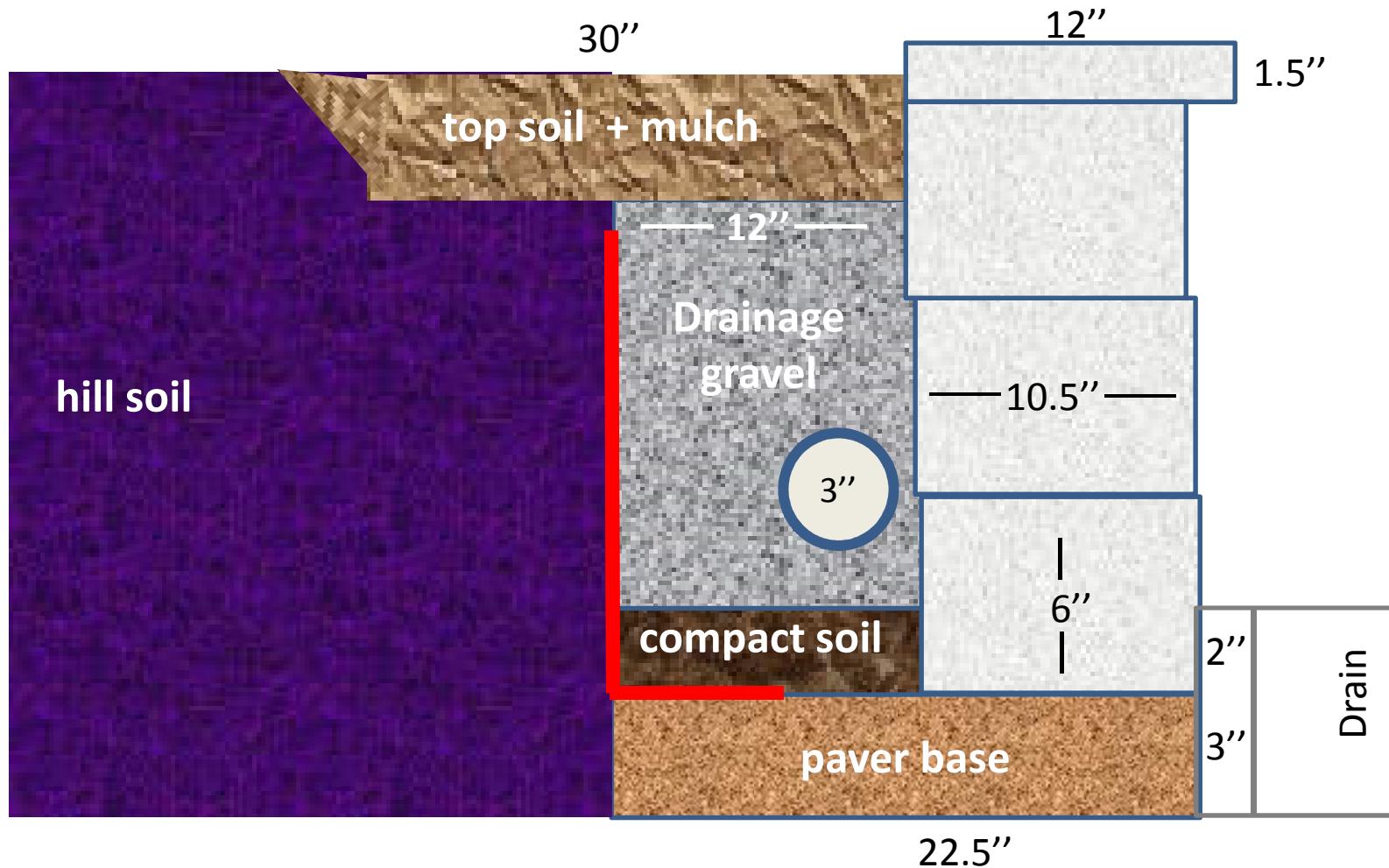


Drainage Gravel 12"x 14"



Compress Dirt & Rock

Wall Composition



not drawn to scale

Hill Jute Erosion Control Netting



Some Core Suppliers



16 in. Positano Concrete Estate Ashlar Retaining Wall



(3) ▾

[Write a Review](#)

[Questions & Answers \(6\)](#)



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) ▾

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[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 \(3\)](#)

\$7.97
/each

Model # 03010010

Internet #100576671

Store SKU #418051

Store SO SKU #1000675101

Materials Budget Estimate

| Materials | Quantity | Cost/Unit | Total |
|--------------------------|----------|-----------|------------------------|
| Bricks | 90 | \$4.20 | \$378.00 |
| Wall caps | 45 | \$1.00 | \$45.00 |
| Drainage Pipe | 3 | \$10.34 | \$31.02 |
| Drain Sleeve | 1 | \$20.00 | \$20.00 |
| Pipe Connectors | 2 | \$2.50 | \$5.00 |
| Paver base gravel | 11 | \$3.33 | \$36.63 |
| Drainage gravel | 4 | \$25.00 | \$100.00 |
| Top soil | 1 | \$150.00 | \$150.00 |
| Glue Cement | 3 | \$7.00 | \$21.00 |
| Jute net erosion control | 1 | \$90.00 | \$90.00 |
| Transporation | 1 | \$99.00 | \$99.00 |
| | | | <u><u>\$975.65</u></u> |



They Lived Happily Ever After





