

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

The 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 it to flood. To solve the problem I created a service project that will include i) constructing a retaining wall at the base of the hill in front of the drain 30' long by 18" high, ii) adding landscaping netting and plants for additional erosion control and beautifying the hill (and the adjacent patio), and iv) clearing the drain



Problem **(Before)**

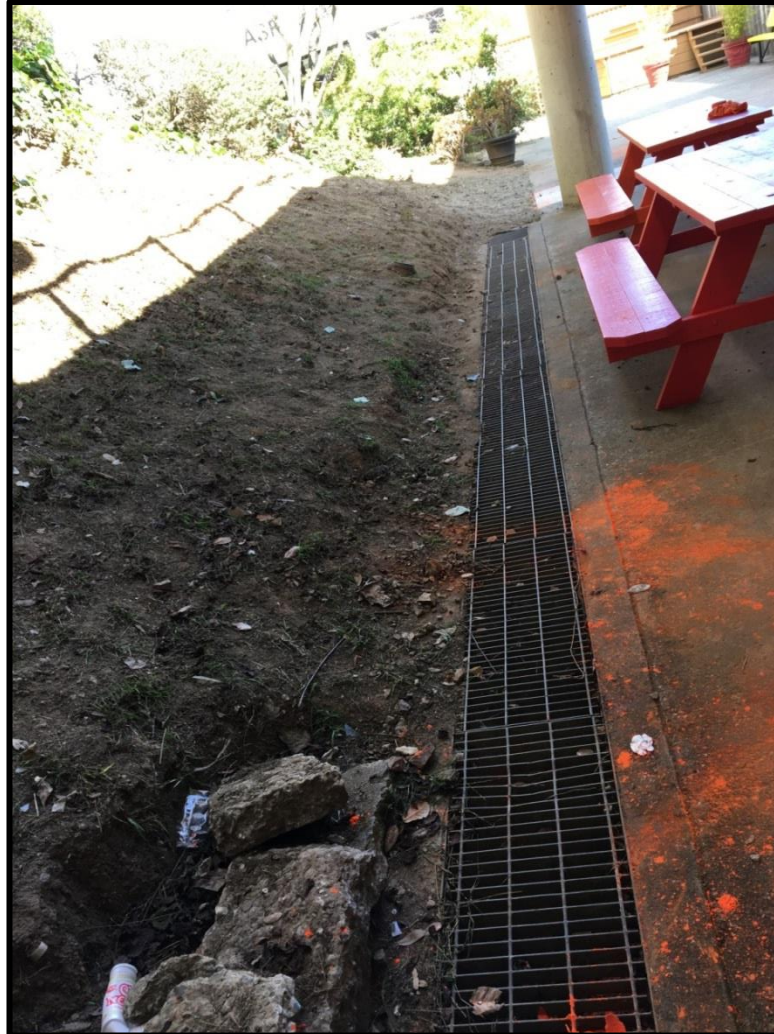
Hill Erosion



Hill Erosion



Drainage System



Past Attempt



Solution

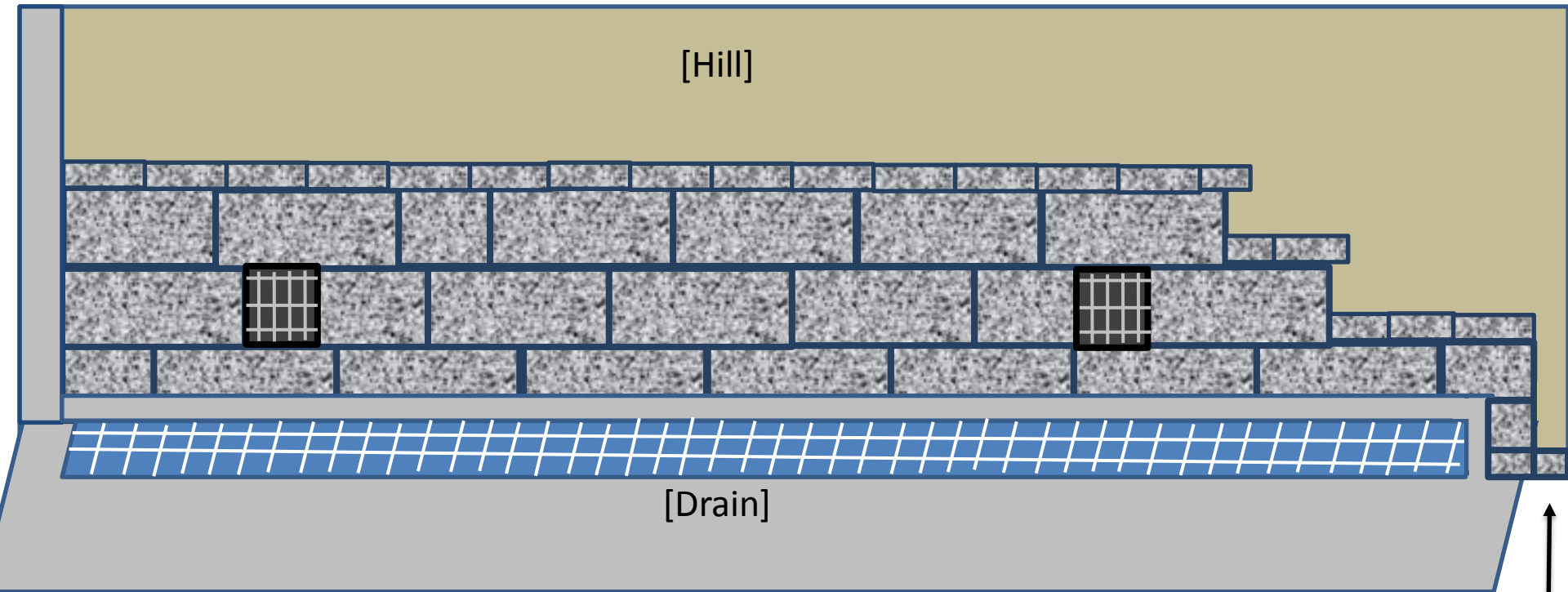
(After)

- i. Build Erosion Controlling Retaining Wall
- ii. Add Compost to Hill
- iii. Add Erosion Control netting to Hill
- iv. Add top soil + mulch + plants 1-3' behind retaining wall
- v. Clean Drainage System

Example Wall Type



Wall Sketch



- Not drawn to scale
- Each row will consist of ~22 stone blocks (16'' long, 6'' high)
- Wall will step down on the right side
- We will add an additional 12 feet stone curb (7'' high)

Not drawn to scale

Hill Jute Erosion Control Netting



- Will be added to the hill to prevent dirt erosion

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)
- Add 12' stone curb (7'' inch high) adjacent to the retaining wall. Using one block + cap X 12'

Stage II

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

Stage III

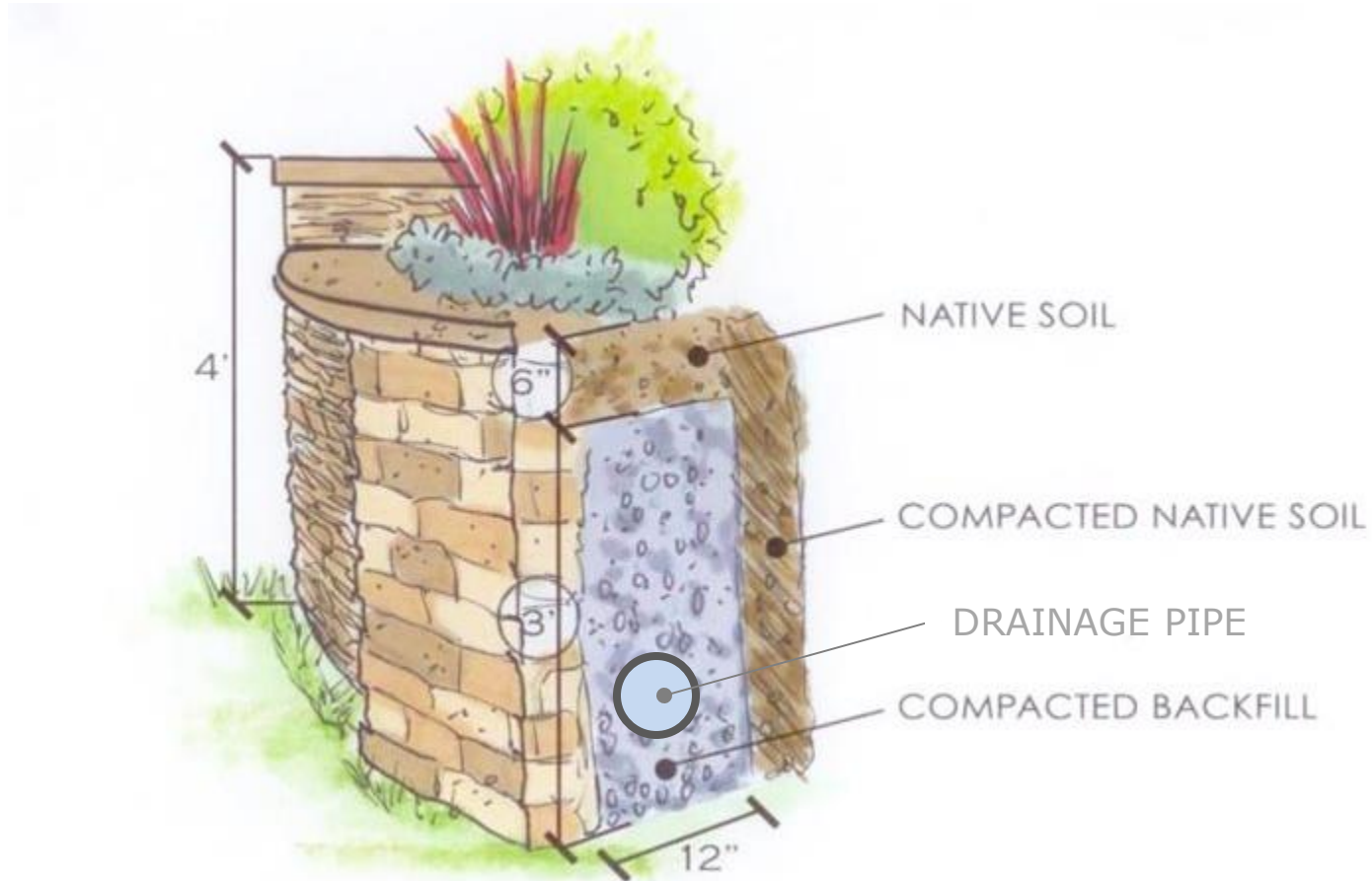
- Clean drainage system

Stage IV

- Clean up work area

** Note: Stages 1 and 2 can be performed simultaneously.

Wall Composition



Measure & Mark



Tamper Dirt



Tamper Paver Base Gravel



Level

Check Level



Stagger Bricks



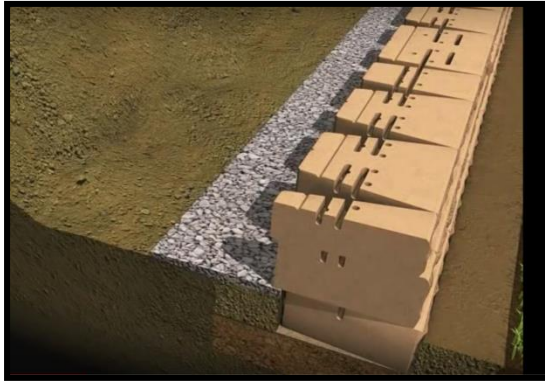
Stack Rows



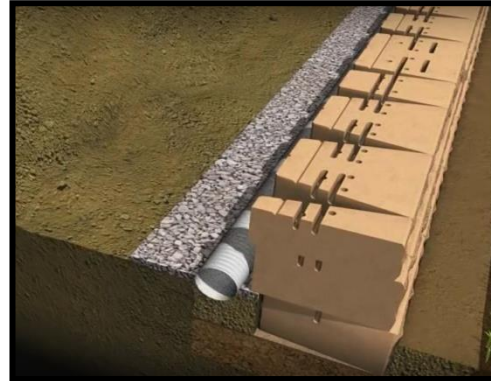
Add Top Soil

Wall Drainage

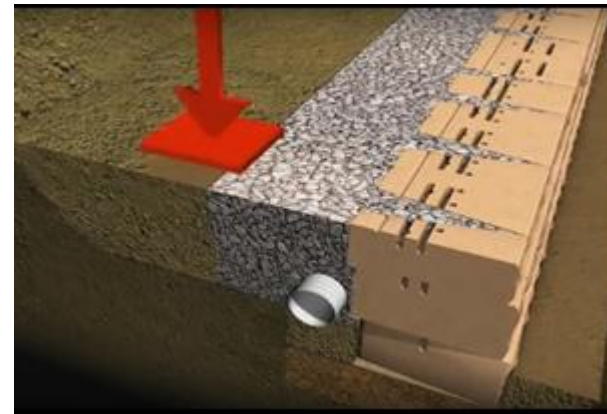
Drainage Gravel 1"



Drainage Proliferated Pipe

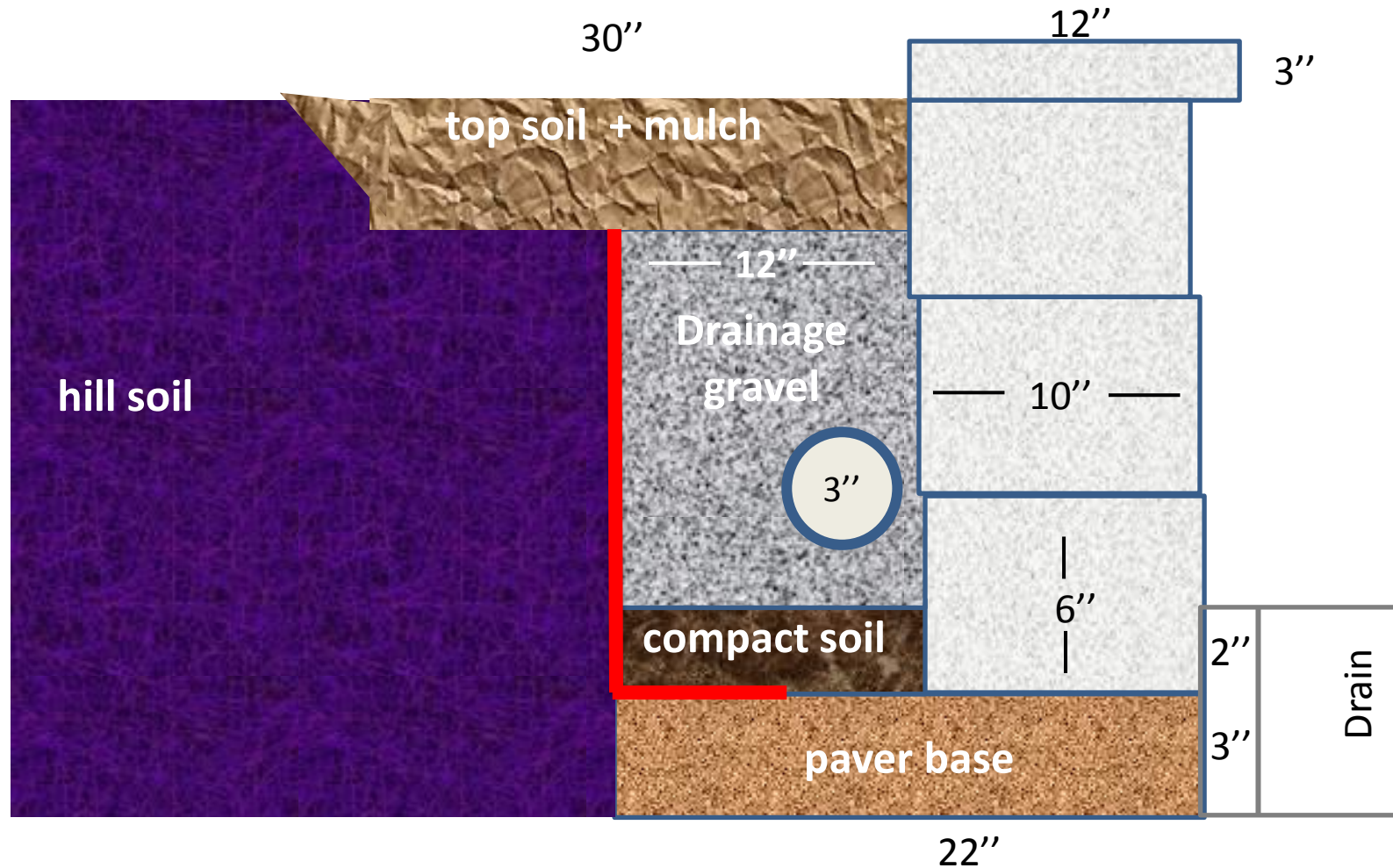


Drainage Gravel 12"x 14"



Compress Dirt & Rock

Wall Composition



not drawn to scale

Some Core Suppliers



Item # 443035 Model # LR110.W.GC

Gray/Charcoal Retaining Wall Block (Common: 6-in x 16-in; Actual: 6-in x 16-in)

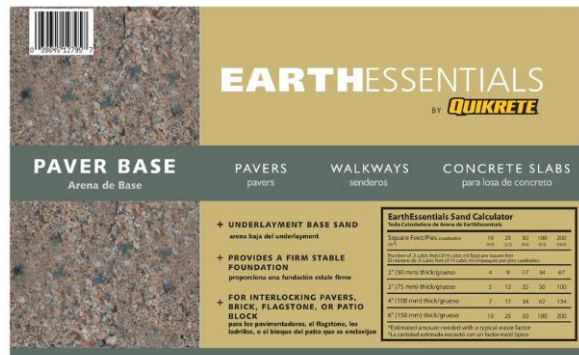


Item # 443057 Model # LR110.C.GC

Gray/Charcoal Retaining Wall Cap (Common: 3-in x 16-in; Actual: 3-in x 15.5-in)

Item # 745404 Model # 127957

EARTHESENTIALS BY QUIKRETE 0.5-cu ft Paver Base Sand



3 in. x 10 ft. Perforated Corex Drain Pipe

★★★★★ (6) ▼

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[Questions & Answers \(3\)](#)

\$7⁹⁷
/each

Model # 03010010

Internet #100576671

Store SKU #418051

Store SO SKU #1000675101

Some Core Suppliers (con't)



Item # 152978 Model # 903068

Oldcastle 0.33 Cubic Yards Off-white Drainage Rock

Item # 327640 Model # 686

Kellogg 3-cu ft Organic Tree; Shrub and Roses Soil



Compost

Materials Budget Estimate

Austin's Eagle Service Project Core Materials Cost Estimate

| Materials | Bulk | Quantity | Cost/Unit | Total |
|--------------------------|------|----------|-----------|----------|
| Bricks | y | 90 | \$2.50 | \$225.00 |
| Wall caps | y | 45 | \$3.58 | \$161.10 |
| Drainage Pipe | | 3 | \$10.34 | \$31.02 |
| Drain Sleeve | | 1 | \$20.00 | \$20.00 |
| Pipe Connectors | | 2 | \$2.50 | \$5.00 |
| Paver base gravel | y | 34 | \$2.50 | \$85.00 |
| Drainage gravel | y | 4 | \$18.75 | \$75.00 |
| Top soil | y | 1 | \$150.00 | \$150.00 |
| Glue Cement | | 4 | \$7.00 | \$28.00 |
| Jute net erosion control | | 1 | \$90.00 | \$90.00 |
| landscape fabric | | 1 | \$13.00 | \$13.00 |
| Transporation | | 1 | \$0.00 | \$0.00 |
| Mulch | Y | 4 | \$3.50 | \$14.00 |
| | | | | |
| | | | subtotal | \$897.12 |

w/tax

\$977.86



