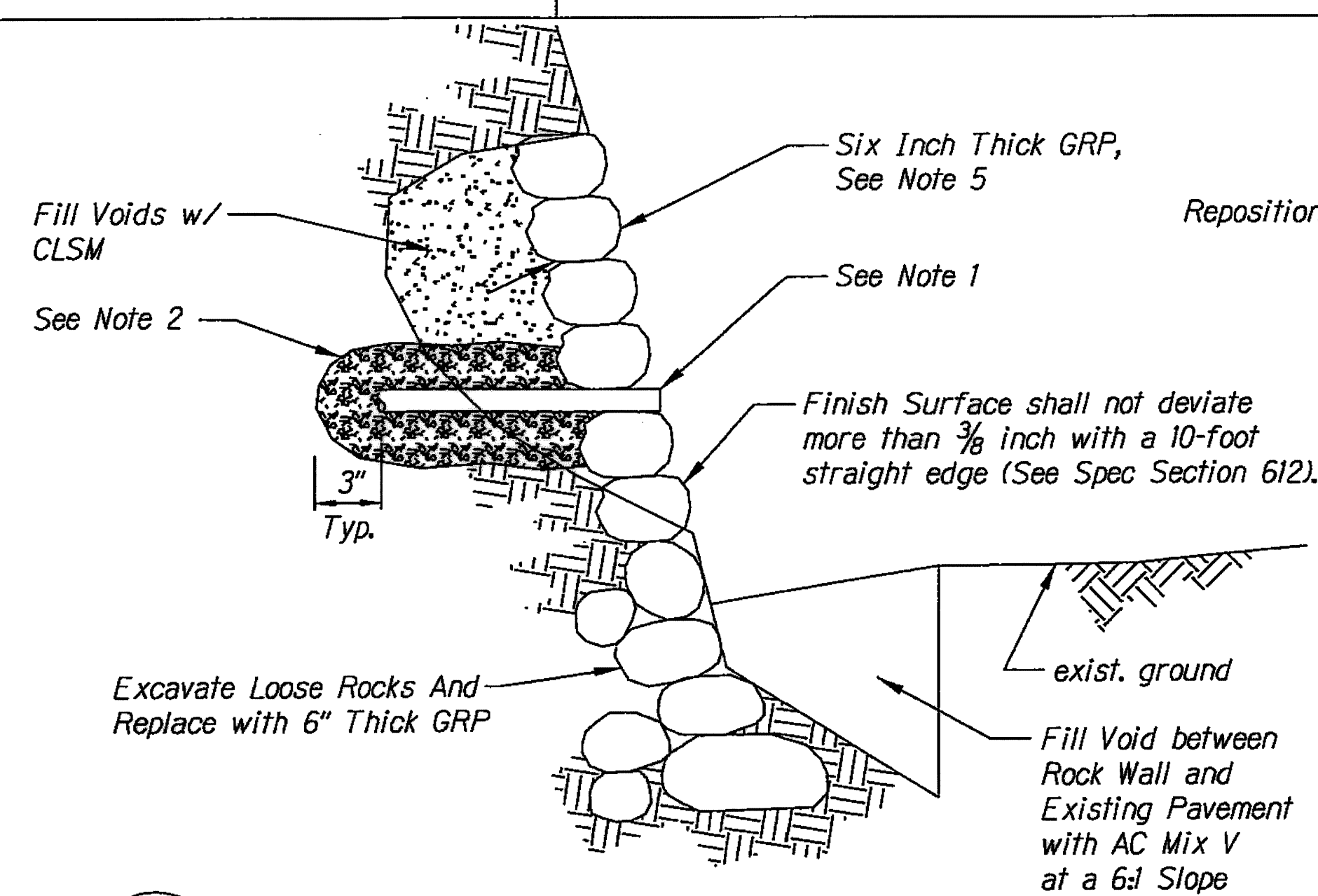
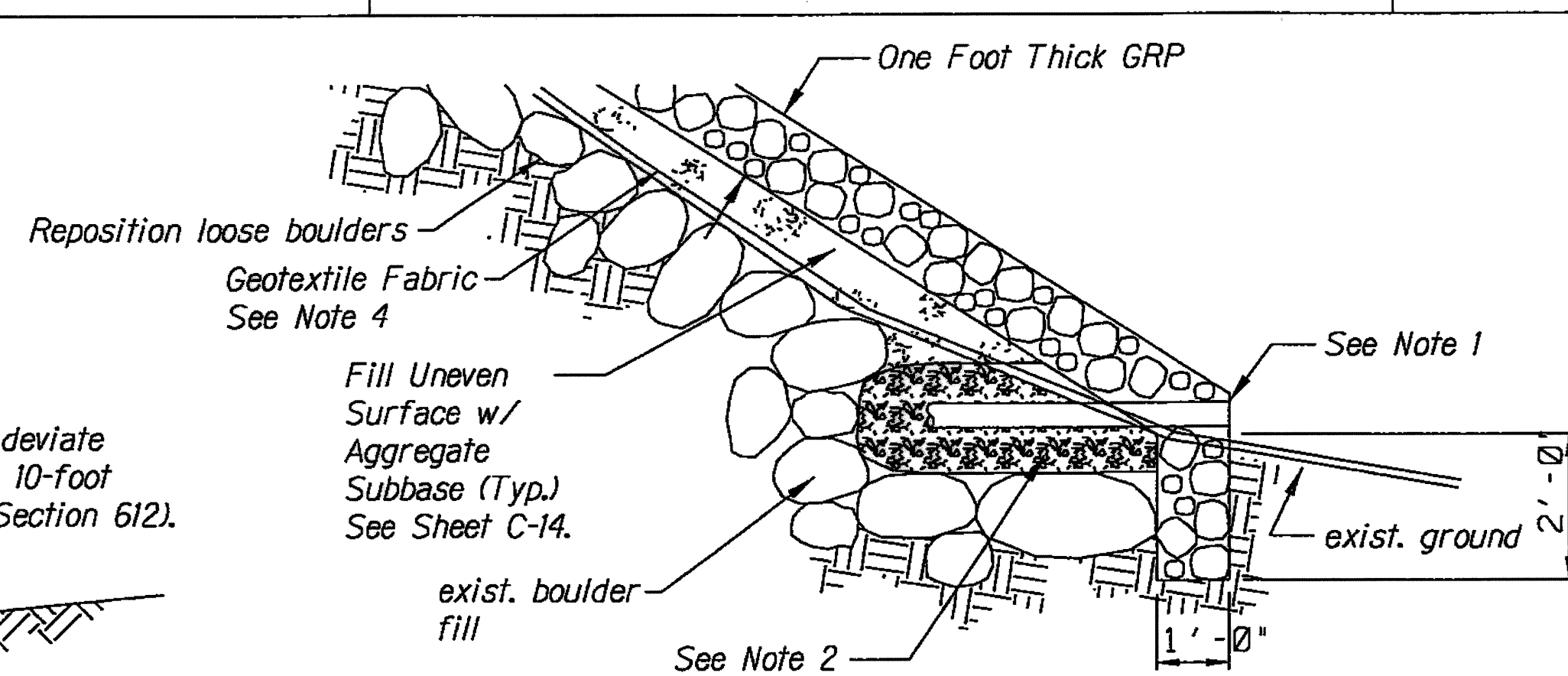


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-15(20)	2010	7	33



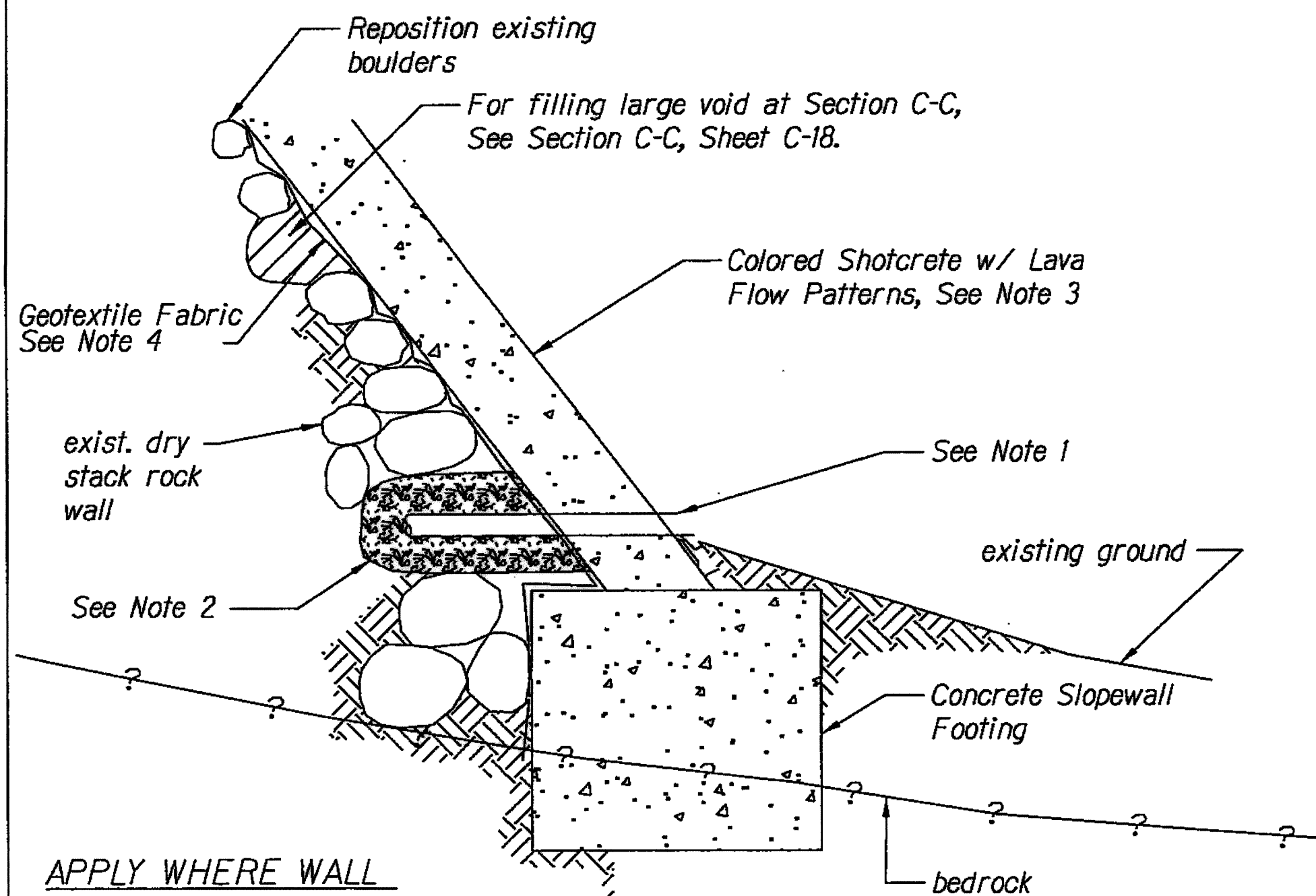
1 SUBDRAIN DETAIL
KUAKINI HIGHWAY, ROUTE 11, MP 117.6
NO SCALE



2 SUBDRAIN DETAIL
KUAKINI HIGHWAY, ROUTE 11, MP 114.1
NO SCALE

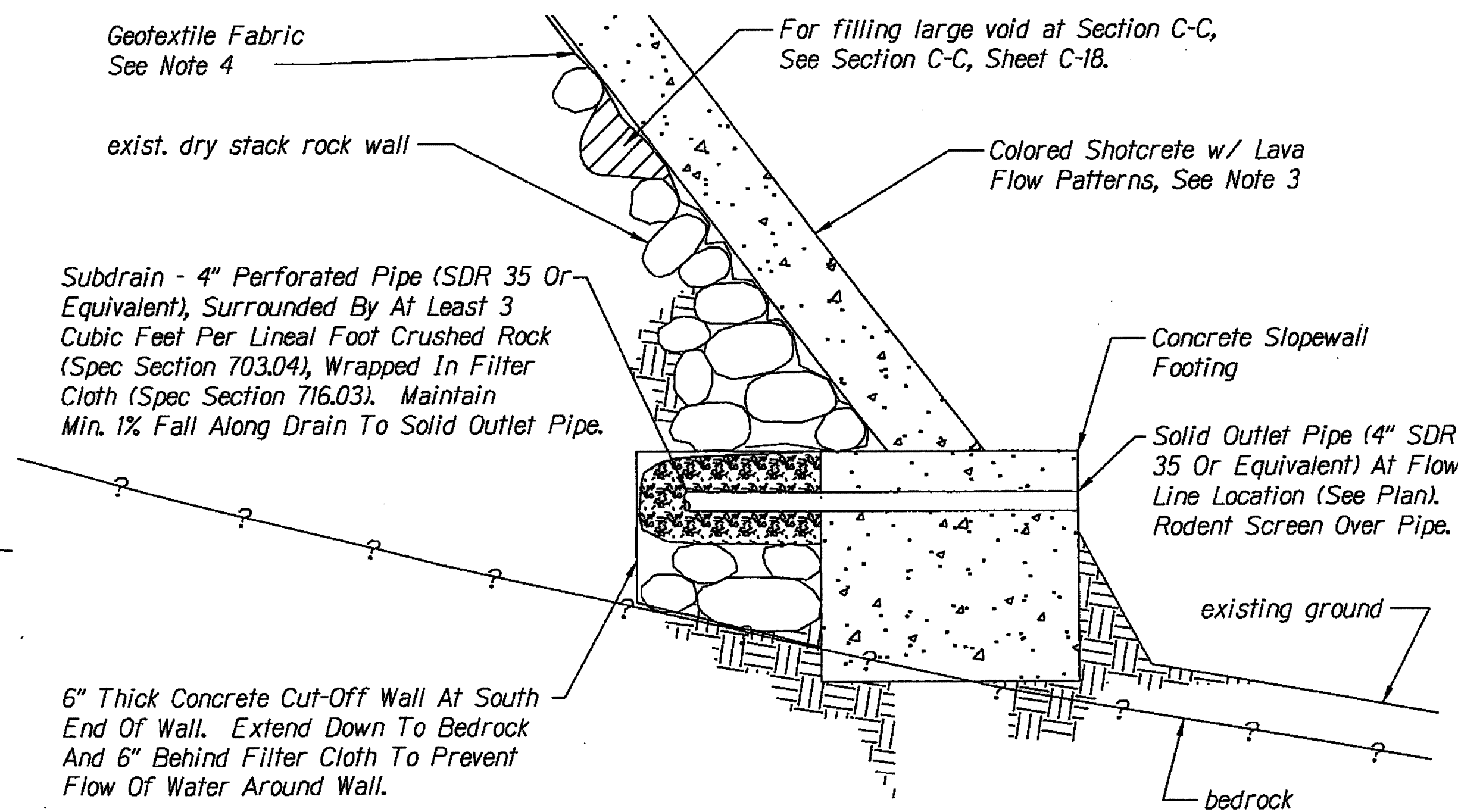
DETAIL 2 NOTES:

1. Remove all trees and vegetation. Trees and brush shall be chipped and disposed of as directed by the Engineer.
2. All loose boulders, cobbles, organics, and soft/yielding materials shall be removed to expose firm foundation bed. Reposition loose boulders and cobbles into existing slope or retain for use in bedding layer/GRP as appropriate, to produce the planned slope.
3. The Contractor may fill all voids that are deeper than 6" with uniformly graded aggregate smaller than 6", up to 6" below bottom of GRP.
4. Place geotextile fabric on firm foundation bed/surface. See Spec Section 716.03 for geotextile fabric.
5. Backfill pockets or eroded slope with aggregate subbase (See Spec Section 703.17) to form bed in GRP. The GRP bed shall be compacted to 90%, per Spec Section 612, and finished to allow placement of the GRP at planned grade and slope.
6. Construct Grouted Rubble Paving (GRP). See Spec and Special Provision for Section 612.



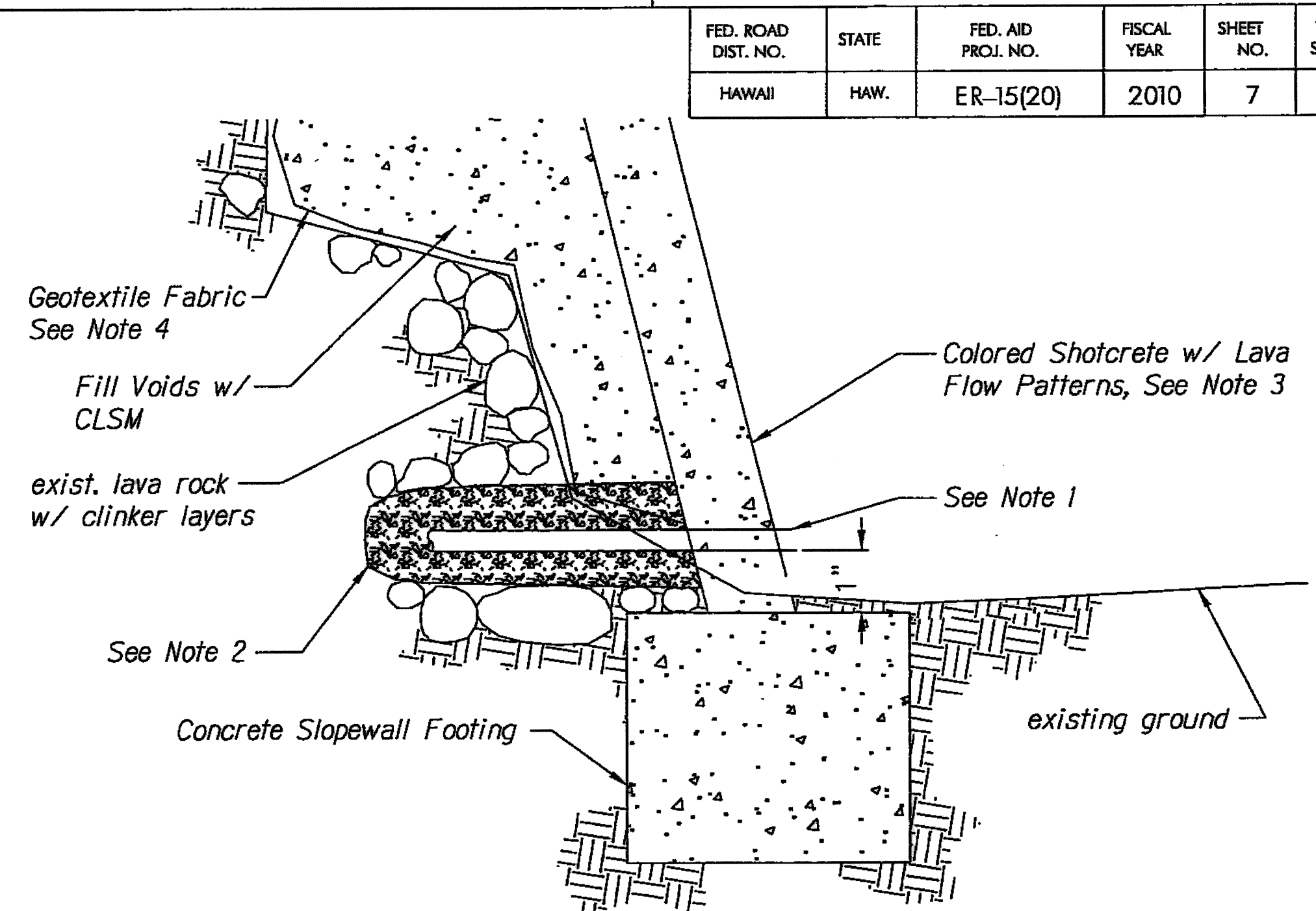
APPLY WHERE WALL
FOOTING IS BELOW
EXISTING GROUND SURFACE

3 SUBDRAIN DETAIL
MAMALAHOA HIGHWAY, ROUTE 11, MP 108.8
NO SCALE



APPLY WHERE WALL FOOTING IS ABOVE
EXISTING GROUND SURFACE

4 SUBDRAIN DETAIL
MAMALAHOA HIGHWAY, ROUTE 11, MP 108.8
NO SCALE

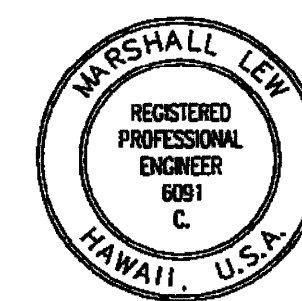


5 SUBDRAIN DETAIL
MAMALAHOA HIGHWAY, ROUTE 11, MP 108.9
NO SCALE

NOTES:

1. Typical Weep Hole Pipe (4" SDR 35 or Equivalent at 8" Spacing Max. Rodent Screen Over Inside End of Pipe. Pipe Lengths May Vary And Should Extend Back To Crevise If Possible.
2. Subdrain - Minimum One Cubic Foot Per Lineal Foot Crushed Rock (Spec Section 703.04), Wrapped In Filter Cloth (See Spec. Section 716.03). Shape Of Crushed Rock Should Extend At Least 3" Above And Below Weep Holes.
3. For Shotcrete Slope Wall Details, See Structural Drawings.
4. See Spec. Section 716.03 For Geotextile Fabric.
5. See Spec. Section 612. Furnish rocks in the sizes and face areas to produce the general characteristics and appearance indicated on the plans. Except stones for filling voids, stones shall have a thickness of not less than 6 inches with width and length of not less than 1-1/2 times thickness.

SURVEY PLATTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	



This work was prepared by me or under my supervision and construction of this project will be under my observation.

signature *Marshall Law* 4/30/12
expiration date of the license

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SUBDRAIN DETAILS	
EMERGENCY EARTHQUAKE	
ROCKFALL REPAIRS	
VARIOUS LOCATIONS ON HAWAII, UNIT 2	
FEDERAL AID PROJECT NO. ER-15(20)	Date: NOVEMBER 2010
Scale: AS NOTED	
SHEET No. C-5 OF 33 SHEETS	