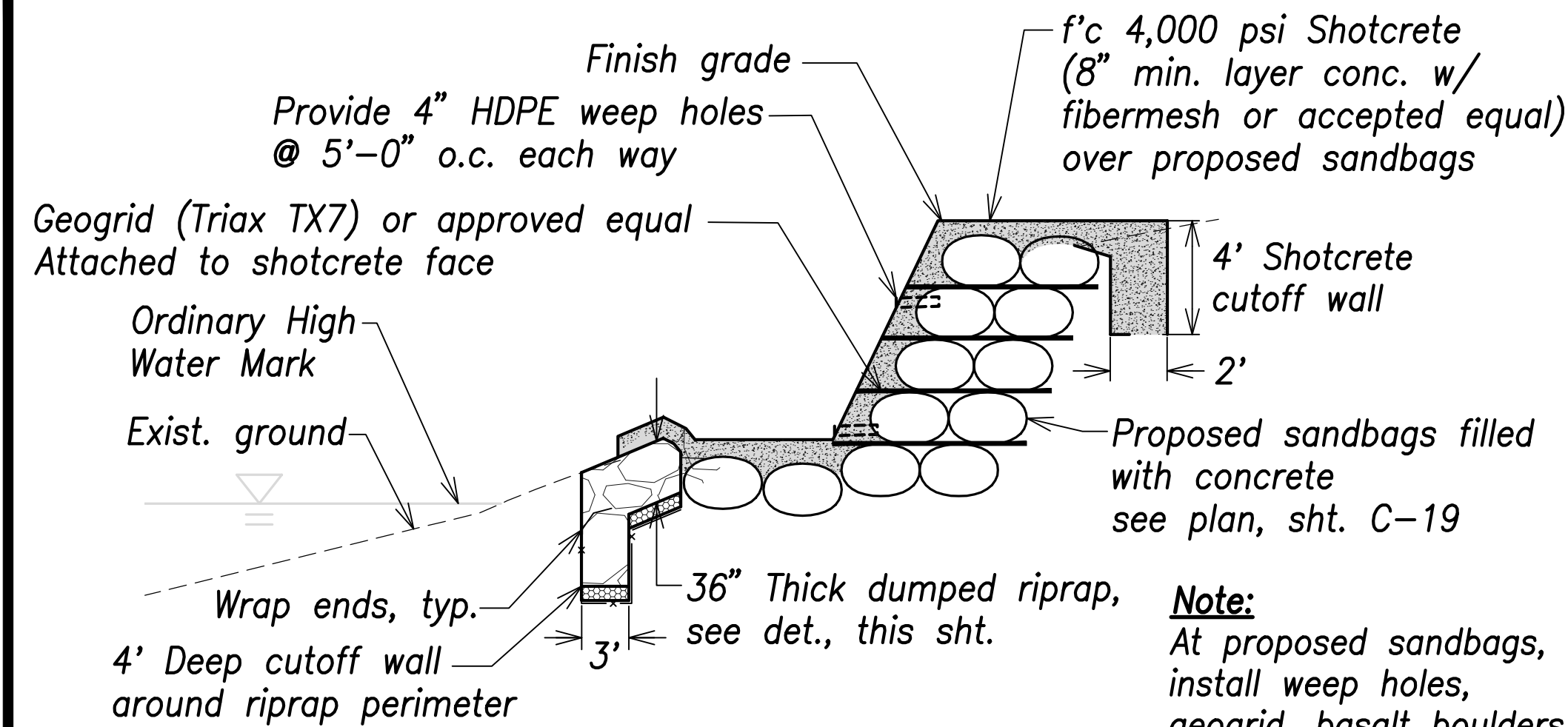
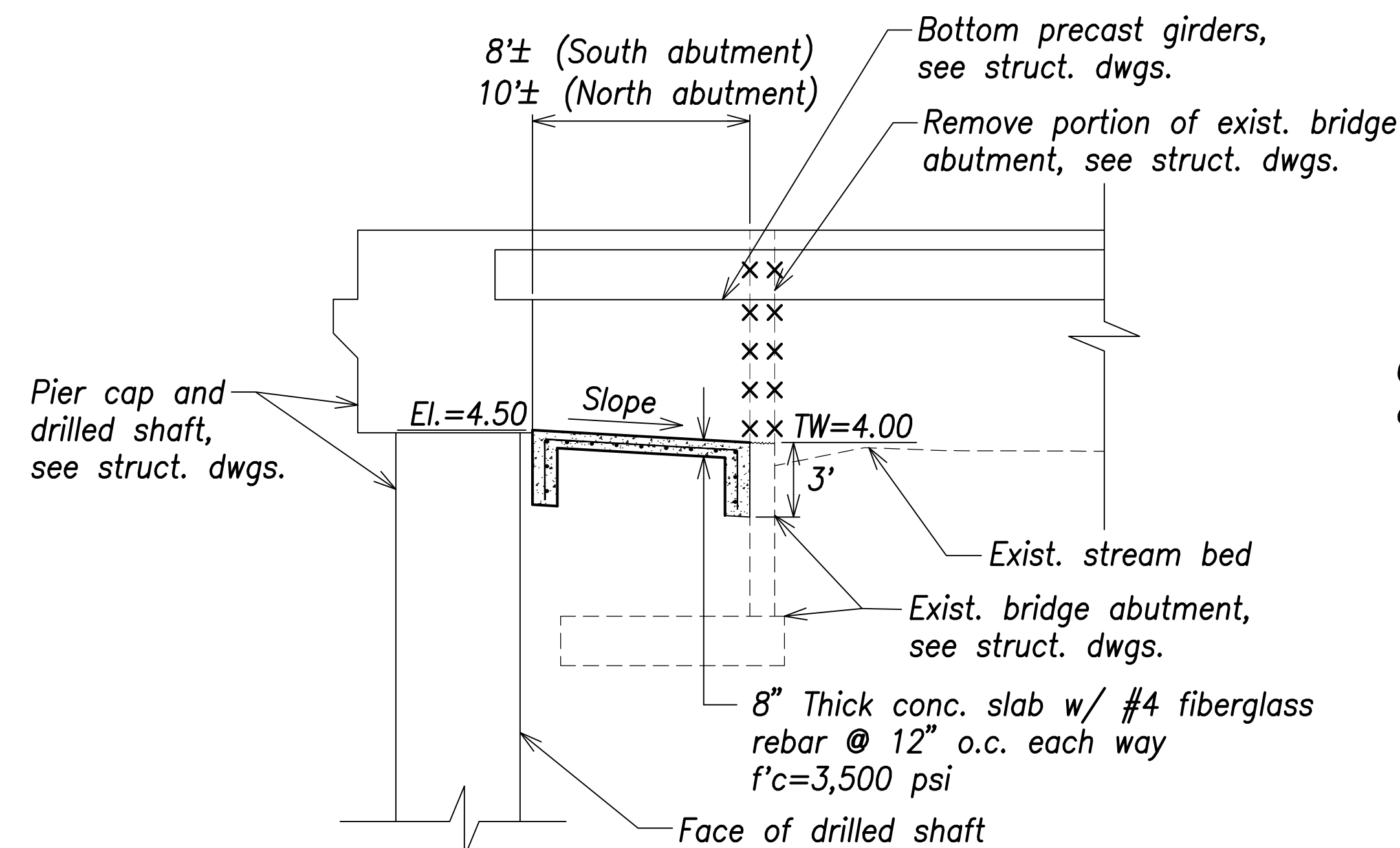


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2021	39	161

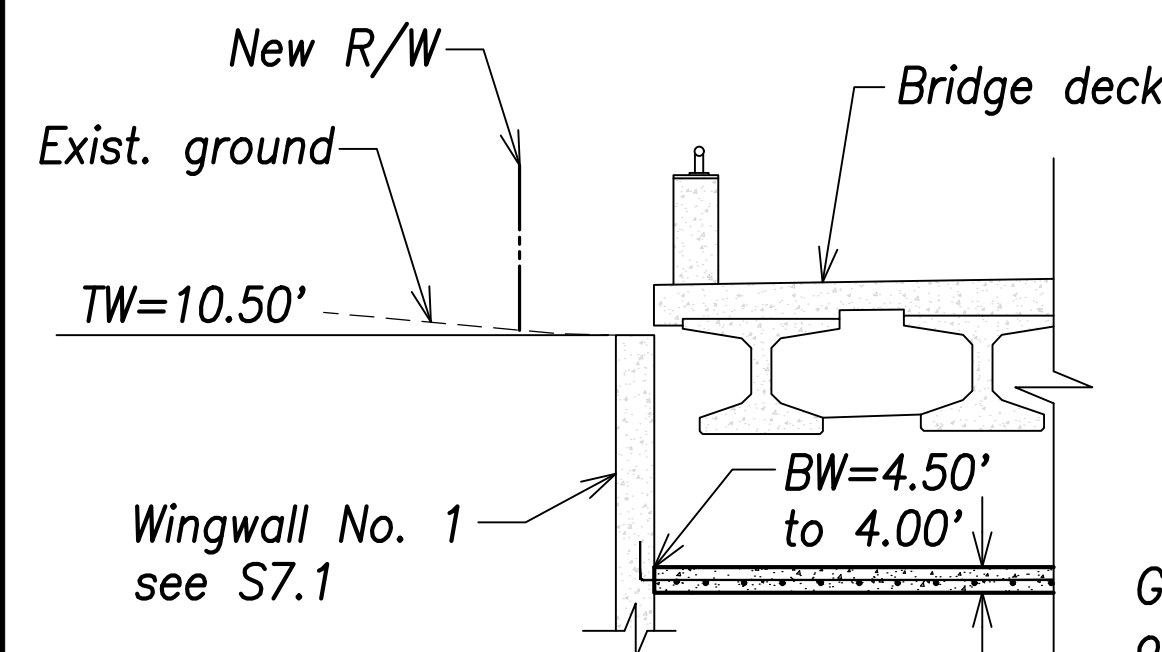


**TYPICAL SECTION - NEW SANDBAGS**

Scale: 1"=5'

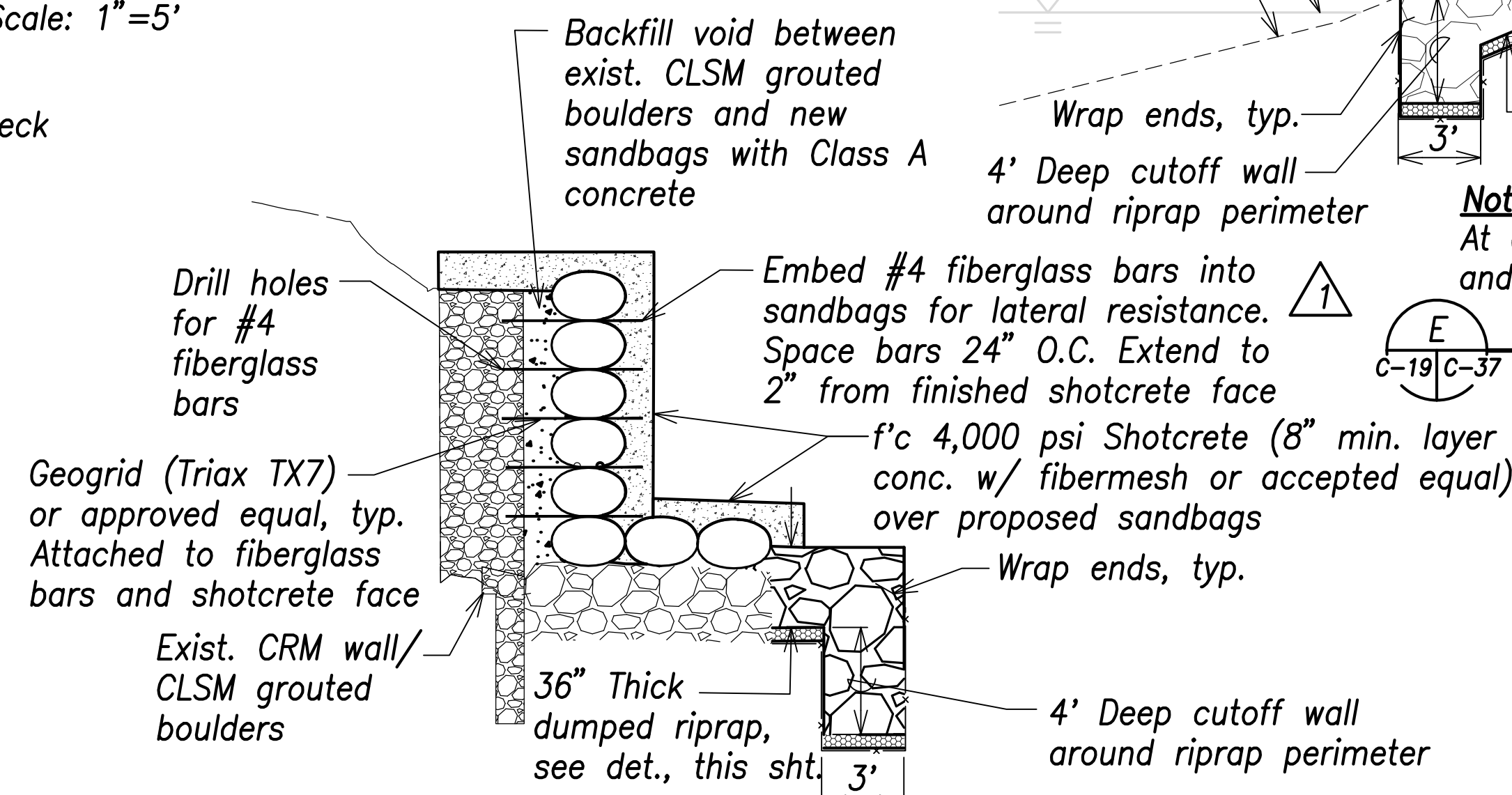


**SECTION A**  
C-19/C-37 Scale: 1"=5'

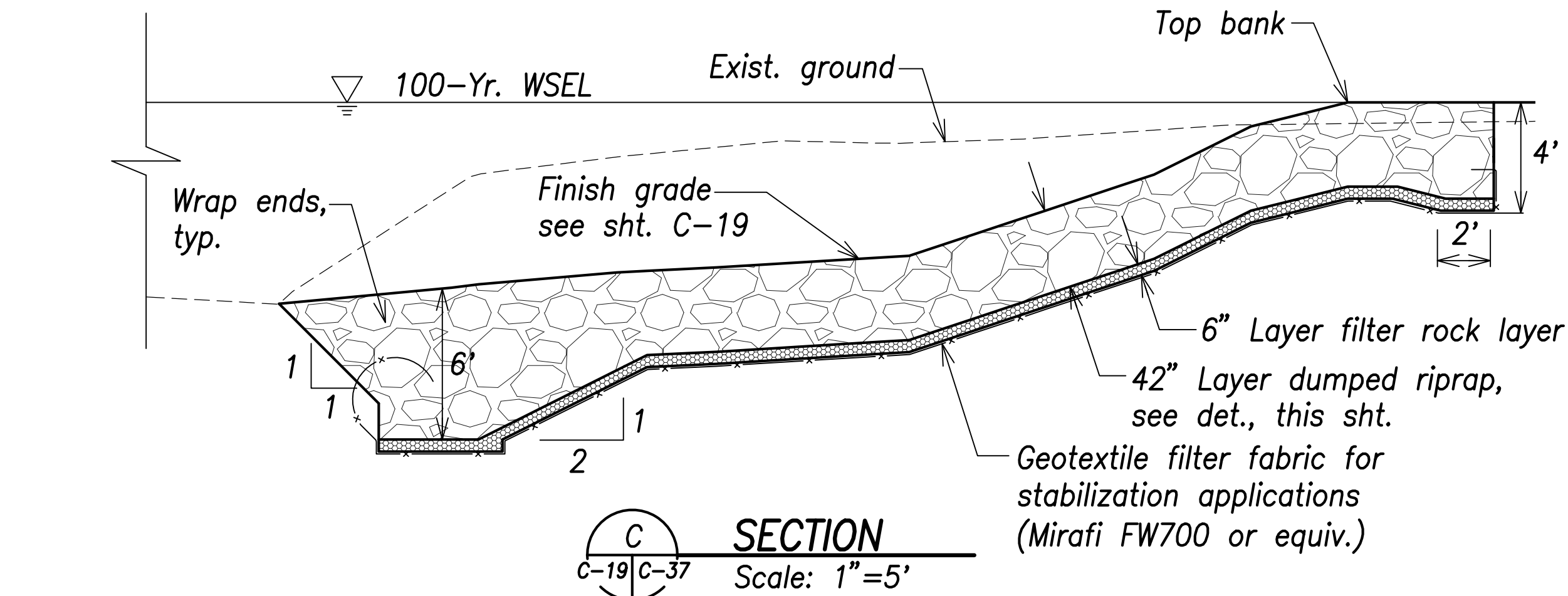


**Note:**  
Concrete shall be f'c=3,500 psi.

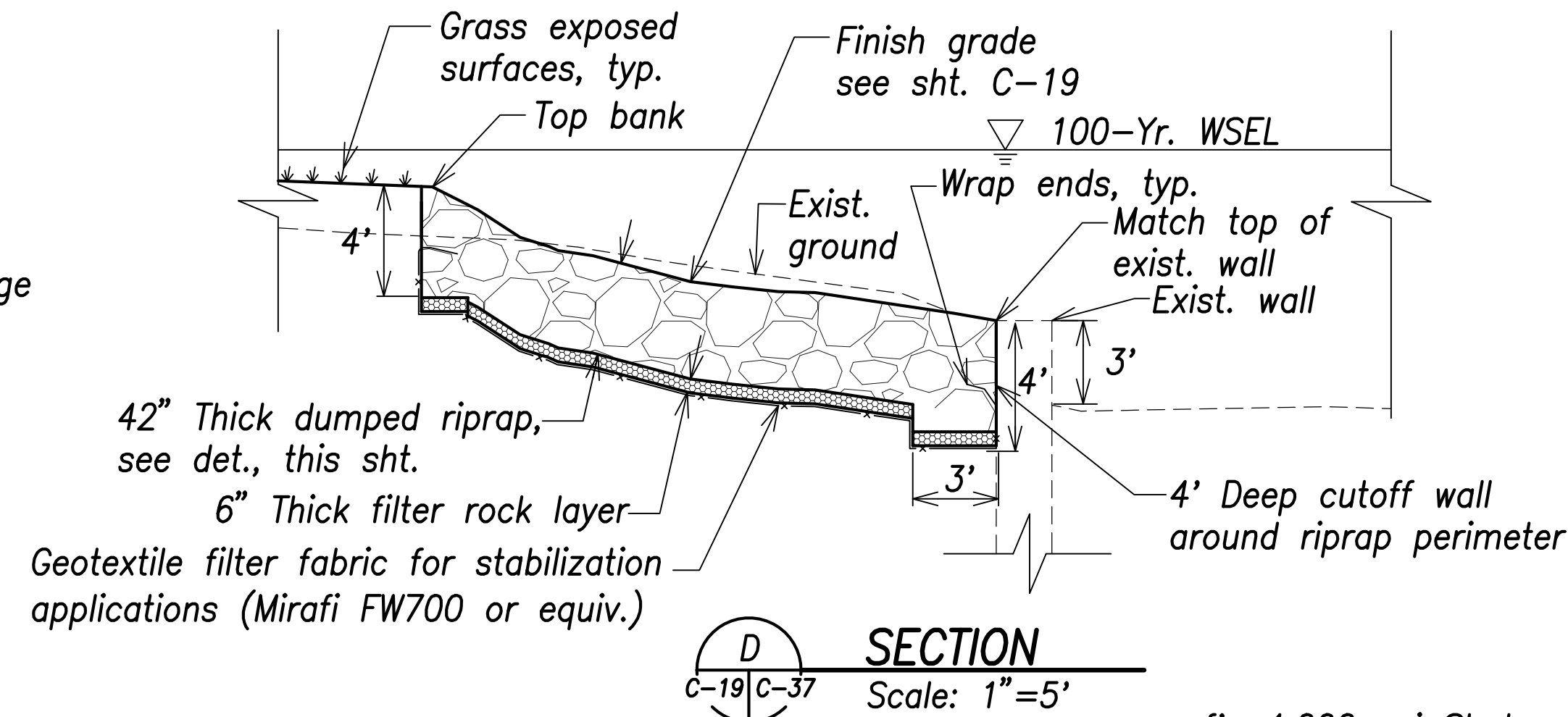
**SECTION B**  
C-19/C-37 Scale: 1"=5'



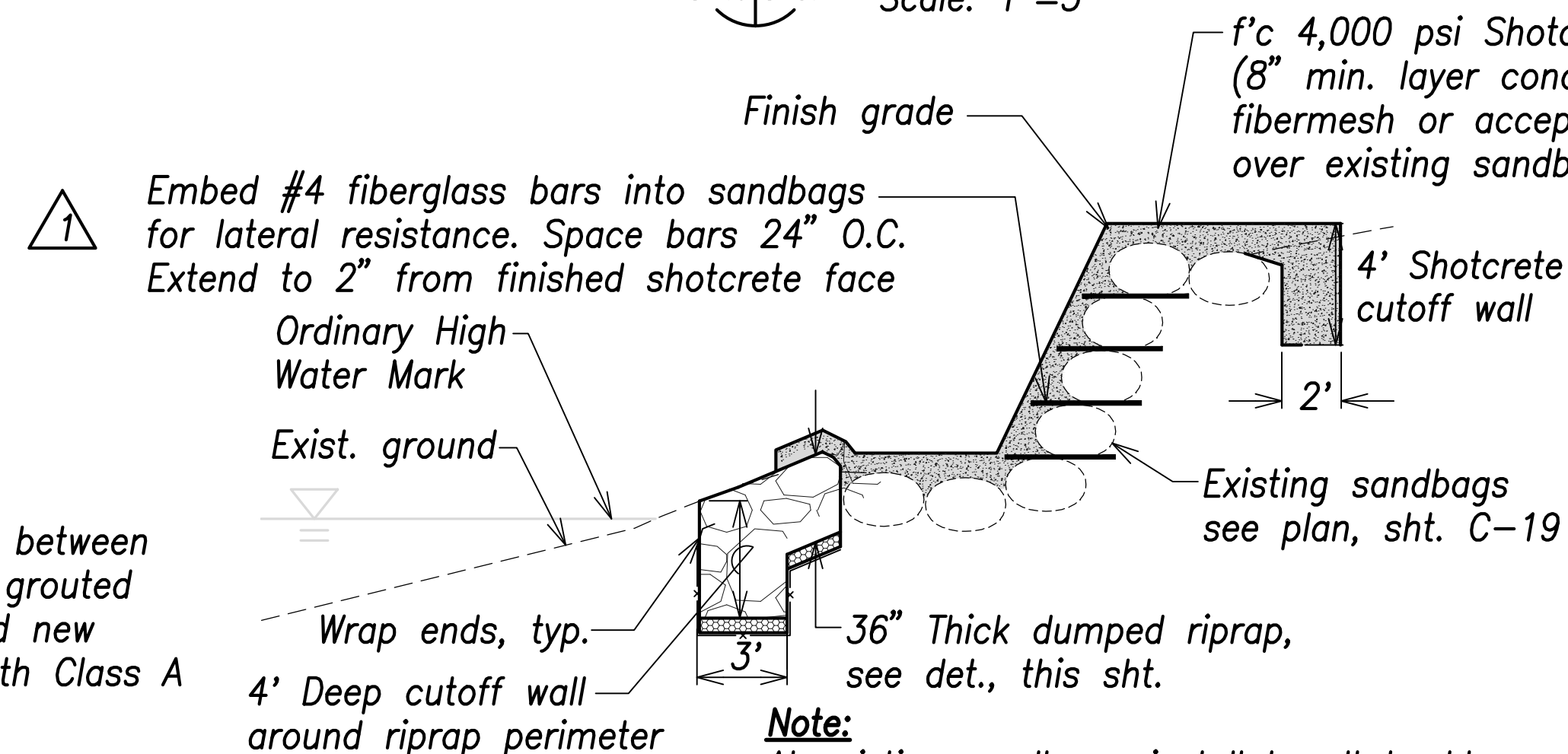
**TYPICAL SECTION - NEW SANDBAGS AT CRM WALL**  
Scale: 1"=5'



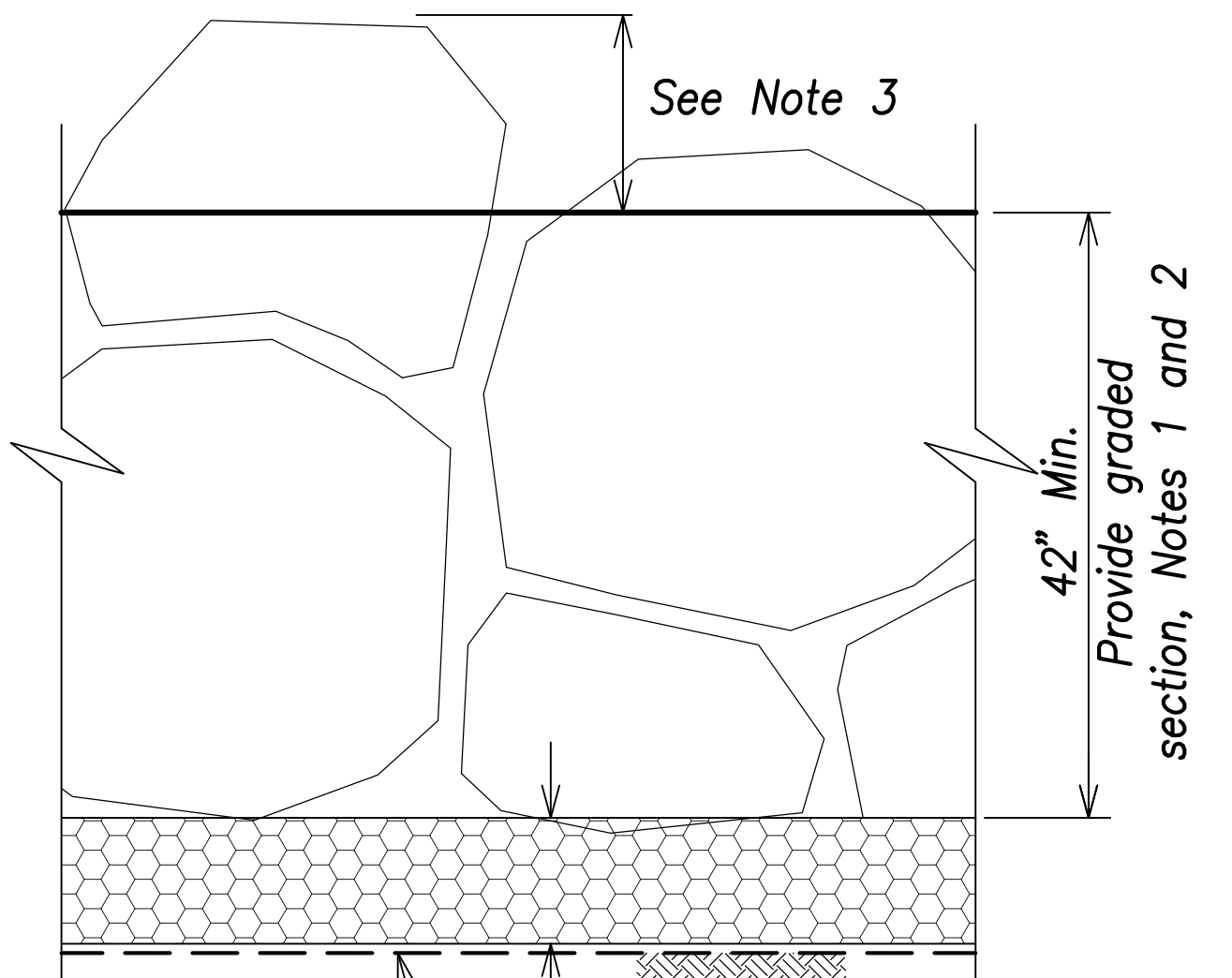
**SECTION C**  
C-19/C-37 Scale: 1"=5'



**SECTION D**  
C-19/C-37 Scale: 1"=5'



**SECTION E**  
C-19/C-37 Scale: 1"=5'



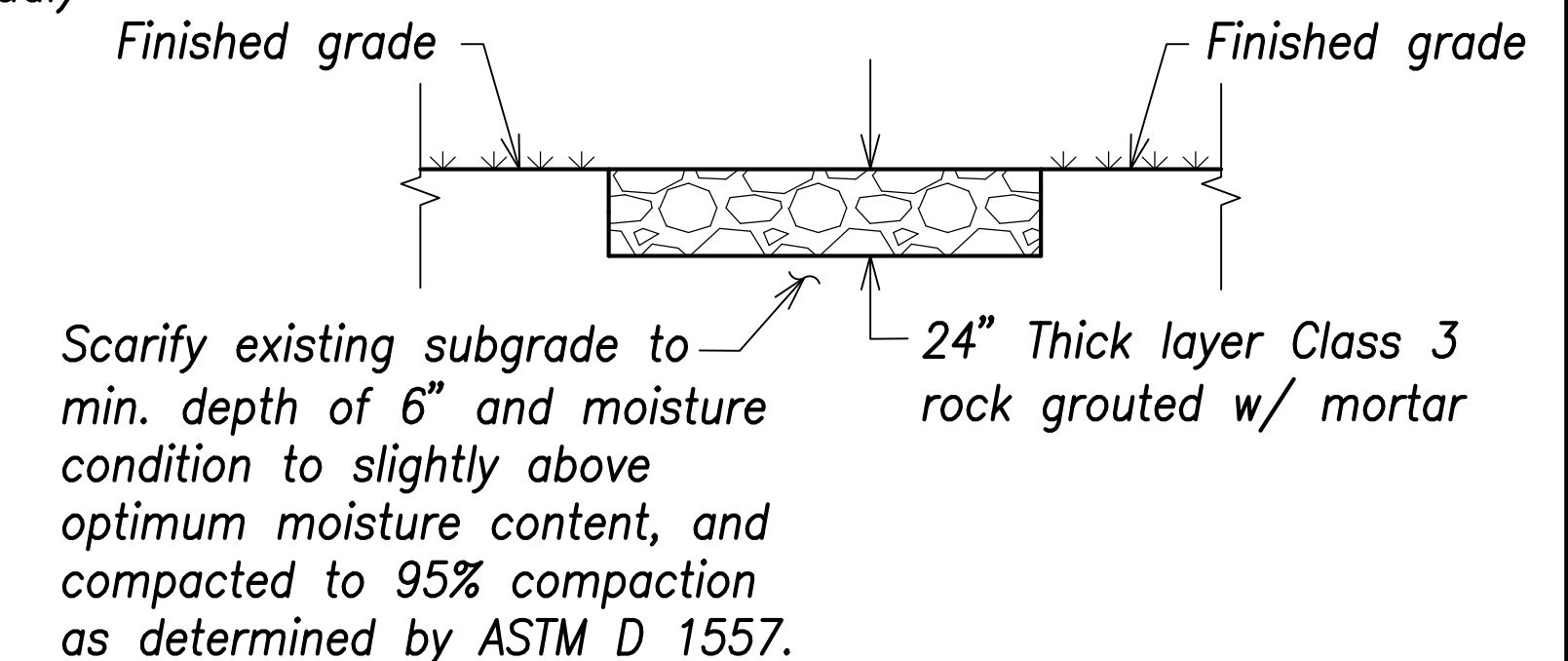
Geotextile filter fabric for stabilization applications (Mirafi FW700 or equiv.)

Compacted subgrade, typ.  
6" Thick filter rock layer

**Notes:**

- Riprap shall be basalt rock and consist of 27" average stone size.
- Riprap gradation:  
D<sub>100</sub> = 2.85' 2,000 lbs  
D<sub>50</sub> = 2.25' 1,000 lbs  
D<sub>10</sub> = 1.80' 500 lbs
- 12" Max. from highest adjacent rock finish top.

**DUMPED RIPRAP**  
Not to Scale



Scarify existing subgrade to 24" thick layer Class 3 min. depth of 6" and moisture condition to slightly above optimum moisture content, and compacted to 95% compaction as determined by ASTM D 1557.

**GROUTED RIPRAP SECTION**  
Not to Scale

7/7/21	Add. 24" O.C. spacing for bars
DATE	REVISION

**WALTER G. C. CHONG**  
LICENSED PROFESSIONAL ENGINEER  
No. 8982-C  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. "OBSERVATION OF CONSTRUCTION" IS DEFINED IN CHAPTER 16-115, HAWAII ADMINISTRATIVE RULES, ENTITLED "PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS AND LANDSCAPE ARCHITECTS."

SIGNATURE: *Walter G. C. Chong* 4/30/22  
R. M. TOWILL CORPORATION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STREAM BANK STABILIZATION & MISCELLANEOUS DETAILS**  
Kamehameha Highway  
Kaipapau Stream Bridge Replacement  
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: February 2021