

**DESIGN REFERENCES**

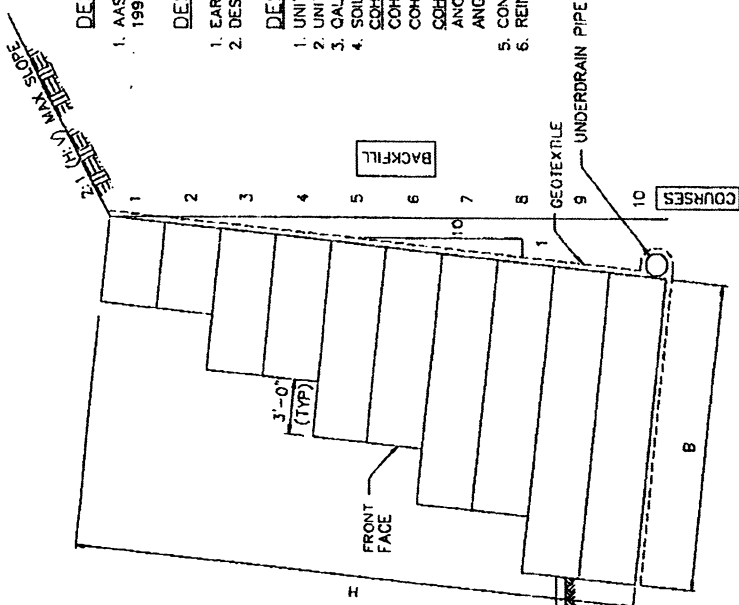
1. AASHTO - STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SIXTEENTH EDITION, 1996 WITH INTERIMS 1997 & 1998

**DESIGN LOADS**

1. EARTHQUAKE - MAX. EXPECTED ROCK ACCELERATION  $A = 0.20 G$ .
2. DESIGN LIVE LOAD (SURCHARGE) = 250 psf.

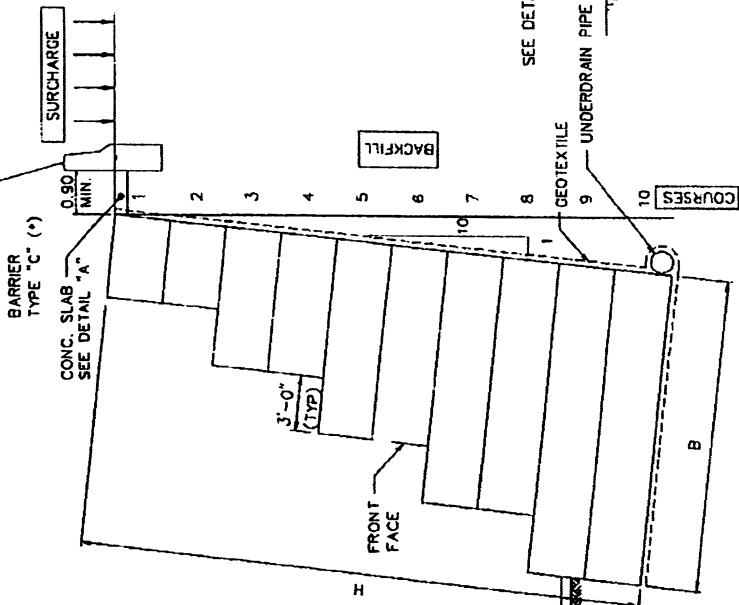
**DESIGN DATA:**

1. UNIT WEIGHT OF GABIONS 110 PCF.
2. UNIT WEIGHT OF SOIL = 120 pcf.
3. QALL - ALLOWABLE SOIL BEARING CAPACITY (SEE TABLE)
4. SOIL PROPERTIES AT WALL BASE AS FOLLOWS:  
COHESIVE SOILS  
COHESION,  $C = 1500$  psf MIN. (FOR 1 TO 7 COURSES)  
COHESIONLESS SOILS  
ANGLE OF INTERNAL FRICTION,  $\phi = 28^\circ$  MIN. (FOR 1 TO 5 COURSES)  
ANGLE OF INTERNAL FRICTION,  $\phi = 32^\circ$  MIN. (FOR 6 TO 10 COURSES)
5. CONCRETE CLASS "A"
6. REINFORCING STEEL AASHTO M31 GRADE 60



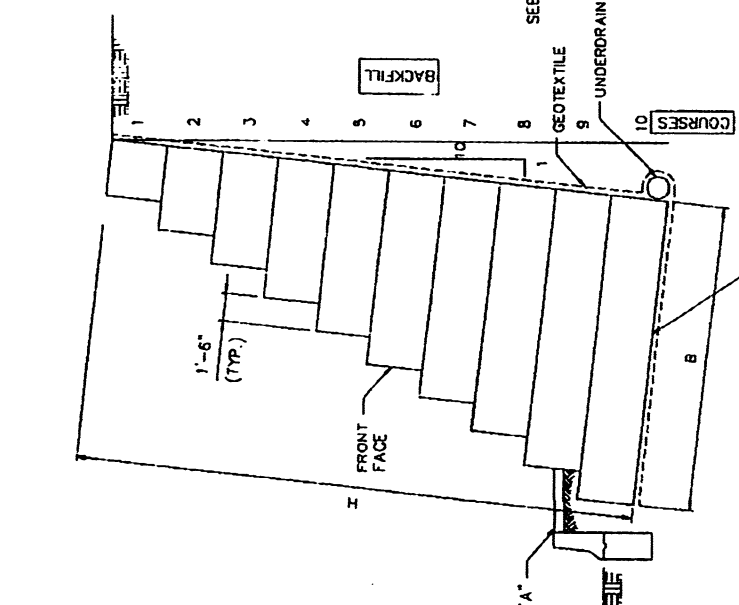
**GABION WALL WITH SLOPE**  
SCALE: N.T.S.

NO OF COURSES	H FT	B FT	VOLUME M <sup>3</sup> /L.M.	QALL KSF
1	3.0	6.0	1.67	2.0
2	6.0	6.0	3.34	2.0
3	9.0	9.0	5.85	2.0
4	12.0	9.0	8.36	2.0
5	15.0	12.0	11.71	2.5
6	18.0	12.0	15.05	3.0
7	21.0	15.0	19.23	3.5
8	24.0	15.0	23.41	3.5
9	27.0	18.0	28.43	4.0
10	30.0	18.0	33.45	4.5



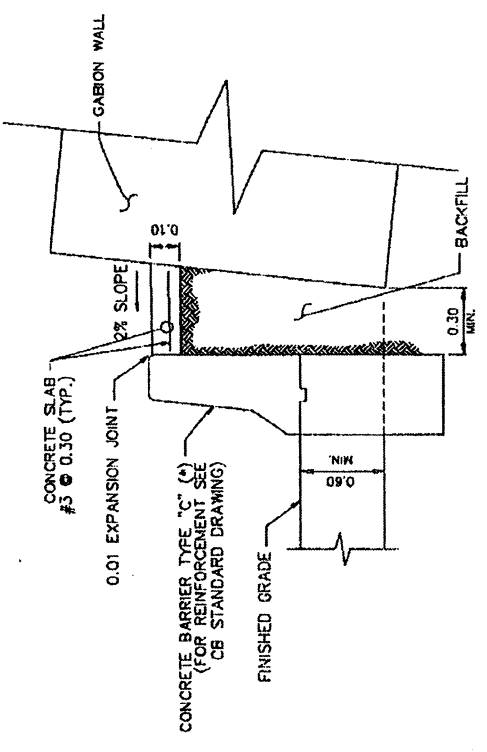
**GABION WALL WITH SURCHARGE**  
SCALE: N.T.S.

NO OF COURSES	H FT	B FT	VOLUME M <sup>3</sup> /L.M.	QALL KSF
1	3.0	6.0	1.67	2.0
2	6.0	6.0	3.34	2.0
3	9.0	9.0	5.85	2.0
4	12.0	9.0	8.36	2.0
5	15.0	12.0	11.71	2.5
6	18.0	12.0	15.05	3.0
7	21.0	15.0	19.23	3.5
8	24.0	15.0	23.41	3.5
9	27.0	18.0	28.43	4.0
10	30.0	18.0	33.45	4.0



**GABION WALL WITHOUT SURCHARGE**  
SCALE: N.T.S.

NO OF COURSES	H FT	B FT	VOLUME M <sup>3</sup> /L.M.	QALL KSF
1	3.0	3.0	0.84	2.0
2	6.0	4.5	2.09	2.0
3	9.0	6.0	3.76	2.0
4	12.0	7.5	5.85	2.0
5	15.0	9.0	8.36	2.0
6	18.0	10.5	11.29	2.5
7	21.0	12.0	14.63	3.0
8	24.0	13.5	18.39	3.0
9	27.0	15.0	22.58	3.5
10	30.0	16.5	27.17	3.5



**DETAIL "A"**  
(\* ) IF REQUIRED ON PLANS

EFFECTIVE DATE: OCTOBER 2000

COMMONWEALTH OF PUERTO RICO  
DEPARTMENT OF TRANSPORTATION  
AND PUBLIC WORKS  
HIGHWAY AND TRANSPORTATION AUTHORITY

RECOMMENDED BY: *[Signature]*  
DESIGN AREA DIRECTOR  
DATE: *[Date]*  
APPROVED BY: *[Signature]*  
EXECUTIVE DIRECTOR  
DATE: *[Date]*

**GABIONS**  
**GRAVITY WALL**  
**STEPPED FRONT FACE**

DATE	REVISION	BY	STD. DWG.	GABI
				9 OF 20

**NOTES:**

1. THE BACKFILL, GEOTEXTILES, UNDERDRAIN, CONCRETE SLAB, EXCAVATION, BARRIERS (IF REQUIRED ON PLANS), EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK ARE SUBSIDIARY OBLIGATIONS OF THE GABION UNITS PAY ITEM UNLESS THESE OTHER ITEMS HAVE BEEN INCLUDED AS INDIVIDUAL PAY ITEM IN THE PROJECT.
2. FOR GEOTEXTILE & UNDERDRAIN DETAILS SEE OTHER GABI STANDARD DRAWINGS
3. BACKFILL SHALL BE A-1, A-3, A-2-2 OR A-2-4 COMPACTED TO 95% T-1800

**LEGEND:**  
L.M. = LINEAR METER  
KSF = KIPS PER SQUARE FOOT (kips = 1000 pounds)  
QALL = ALLOWABLE BEARING PRESSURE