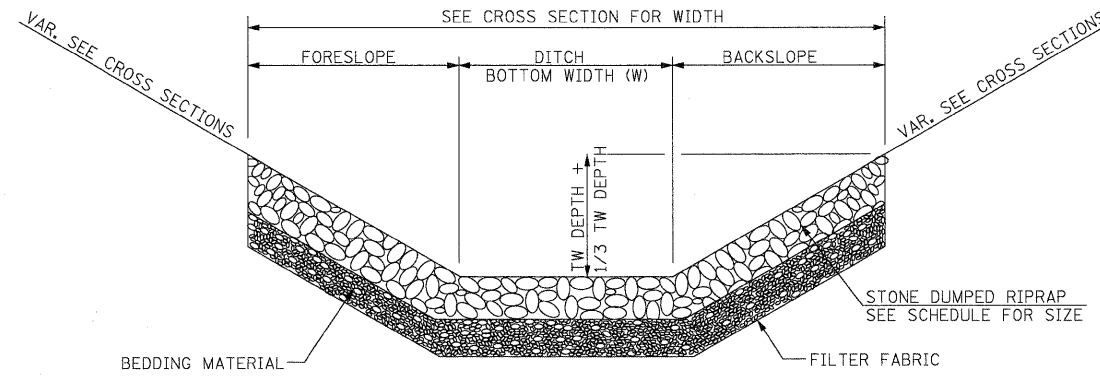


**NOTES:**

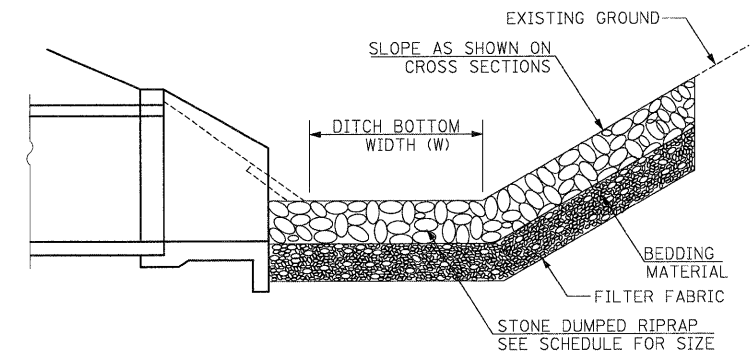
1. FOR RIPRAP LENGTH, WIDTH AND DEPTH SEE RIPRAP SCHEDULE SHEET DU-19.
2. THE RIPRAP MATERIAL SHALL CONFORM TO CLASS A OR CLASS B QUALITY.
3. FILTER FABRIC WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR FILTER FABRIC FOR USE WITH RIPRAP.
4. THE EXACT LENGTH, WIDTH AND DEPTH FOR RIPRAP PLACEMENT WILL BE DETERMINED BY THE ENGINEER.
5. NO RIPRAP SHALL BE PROVIDED WHERE PROPOSED CULVERT OUTLETS TO PAVED DITCH OR EXPOSED BEDROCK.

DEPTH	SIDE WIDTH		
	1:2 SLOPE	1:3 SLOPE	1:4 SLOPE
6"	1.0'	1.5'	2.0'
12"	2.0'	3.0'	4.0'
18"	3.0'	4.5'	6.0'
24"	4.0'	6.0'	8.0'
36"	6.0'	9.0'	12.0'
48"	8.0'	12.0'	16.0'

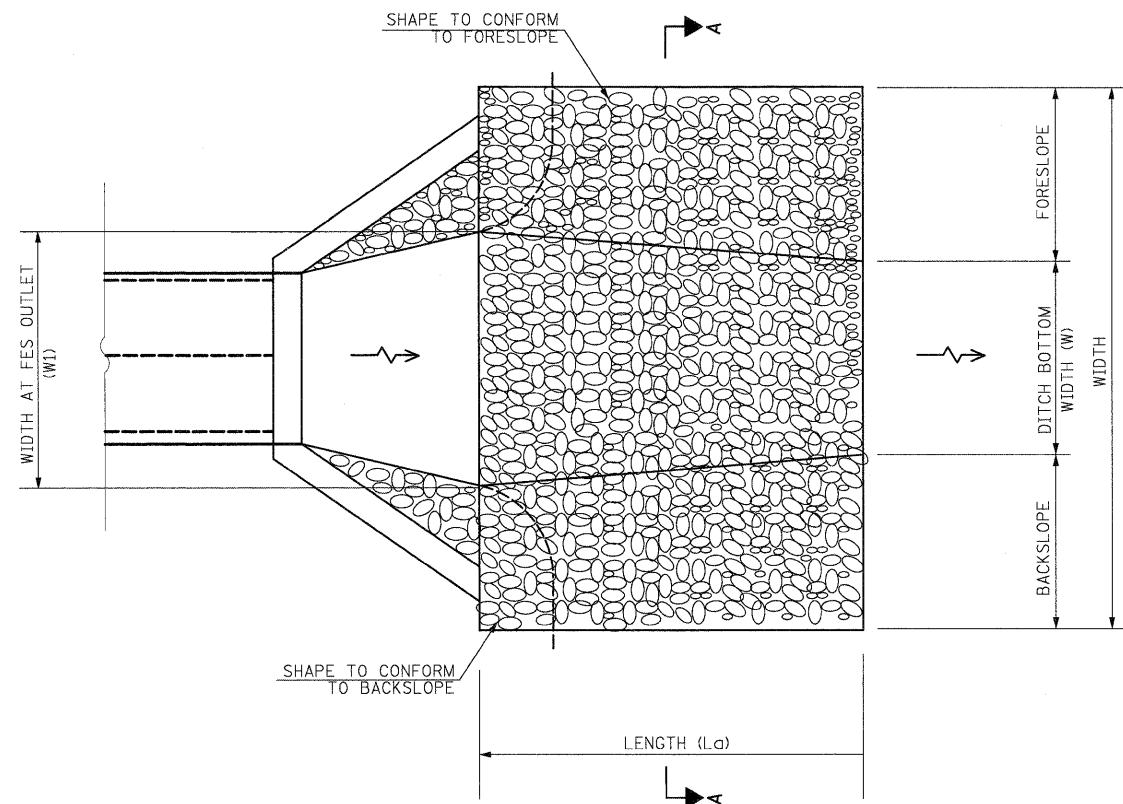
\* TRANSITIONAL AREAS, SIDE WIDTH WILL VARY ACCORDING TO SIDE SLOPE.



**SECTION A-A**

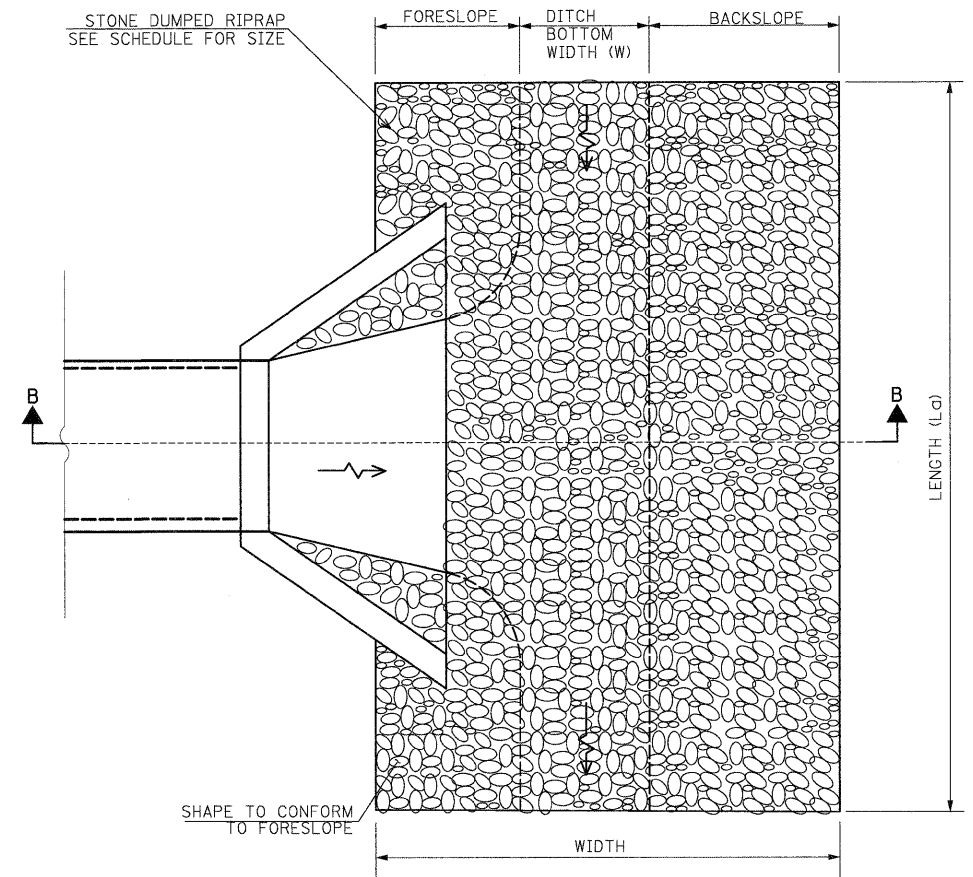


**SECTION B-B**



**PLAN**

**RIPRAP AT CULVERT OUTLET**  
NOT TO SCALE



**PLAN**

**RIPRAP AT CULVERT OUTLET PERPENDICULAR TO DITCH**  
NOT TO SCALE

GRADATION	MIN. THICKNESS	BEDDING THICKNESS
RR3	8"	---
RR4	16"	6"
RR5	22"	8"

**SINGH**  
 300 W. ADAMS ST.  
 CHICAGO, IL 60606  
 TEL: (312) 629-0240  
 SINGH & ASSOCIATES, INC.  
 CONSULTING ENGINEERS  
 FAX: (312) 629-8449

FILE NAME = D:\60F12-SHT-DRAIN21.dgn	USER NAME = TKLuegel	DESIGNED - VP	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DRAINAGE DETAILS</b>			F.A.1 RTE. 55	SECTION 99-2HB-2B-1	COUNTY WILL	TOTAL SHEETS 756	SHEET NO. 187
PLOT SCALE = 1:1500	CHECKED - CL	REVISED -	REVISED -		SCALE: NONE	SHEET NO. 21 OF 25 SHEETS	STA. TO STA.	CONTRACT NO. 60F12				
PLOT DATE = 2/3/2011	DATE - 2/4/11	REVISED -	REVISED -		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							