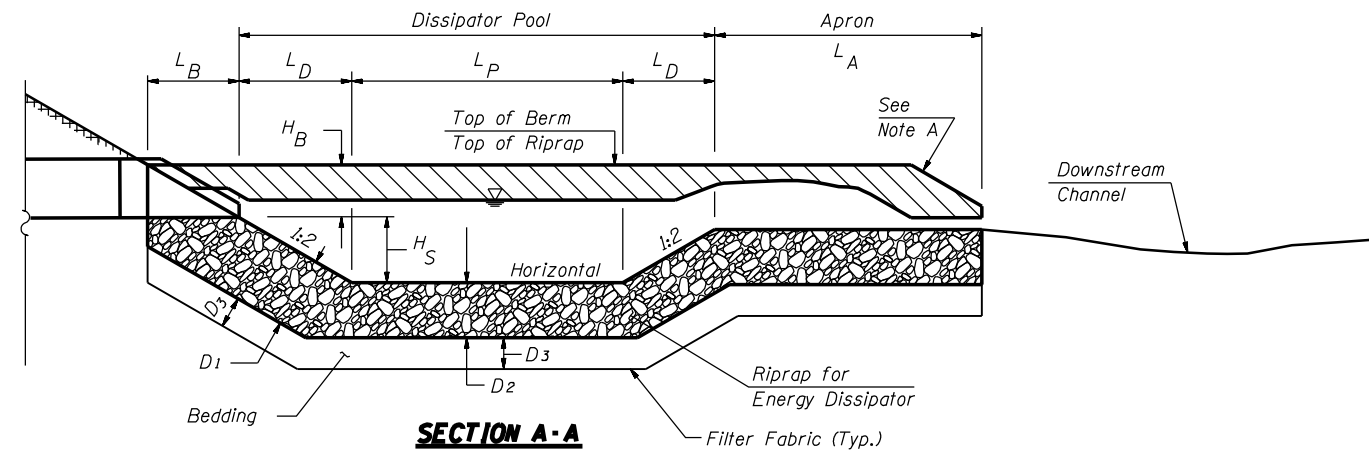
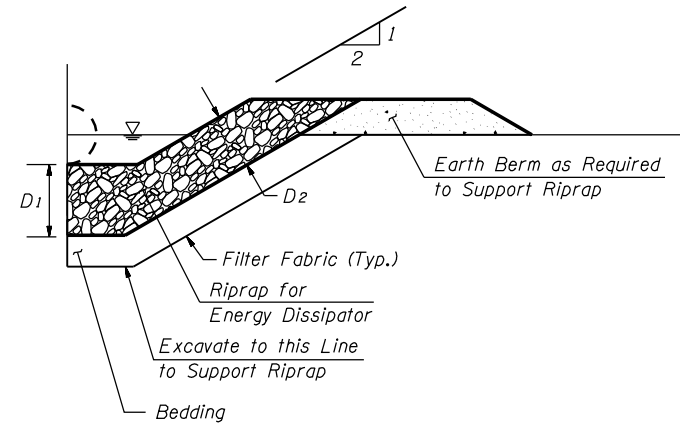


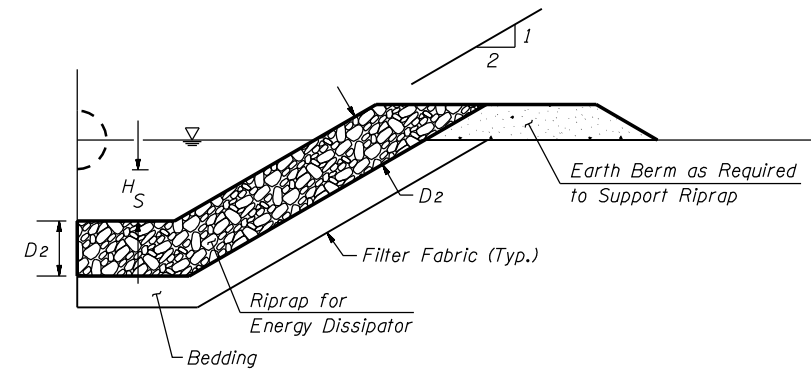
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
315	34-5	HANCOCK	612	290
STA.		TO STA.		
FED. ROAD DIST. No.		ILLINOIS FED. AID PROJECT		



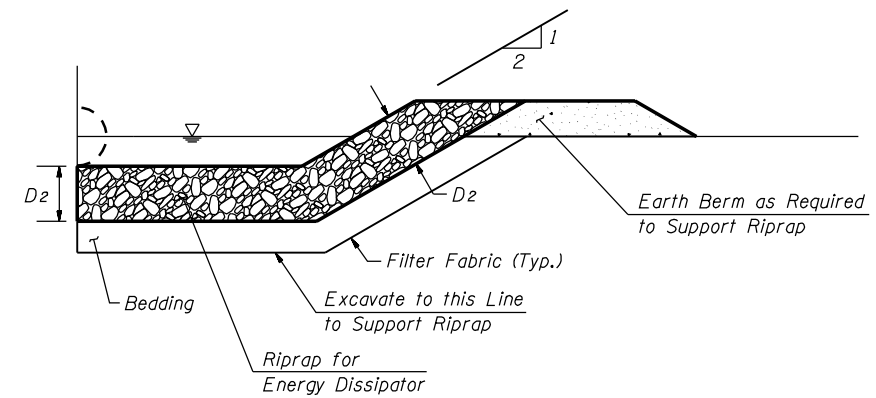
**SECTION A-A**



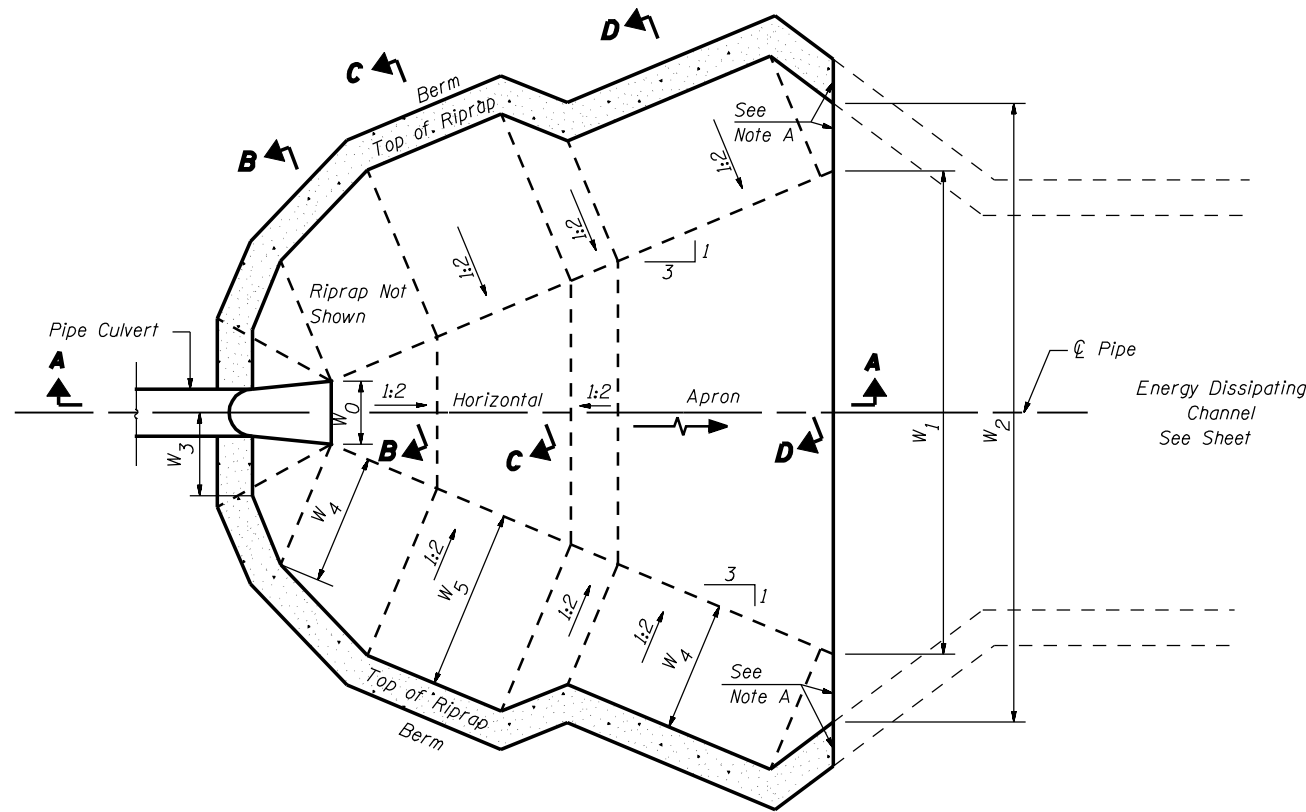
**SECTION B-B**



**SECTION C-C**



**SECTION D-D**



**PLAN**

**NOTE A:**  
Warp Basin to conform to Natural Stream Channel.  
Top of Riprap in Floor of Basin Should be at the Same Elevation or Lower than Natural Channel Bottom at End of Apron.

**NOTE:**  
All Slope Ratios are Expressed as Units of Vertical Displacement to Units of Horizontal Displacement (V:H)

STRUCTURE SIZE	STATION	L <sub>B</sub>	L <sub>D</sub>	L <sub>P</sub>	L <sub>A</sub>	W <sub>0</sub>	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	H <sub>S</sub>	H <sub>B</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	RIPRAP Size	VOLUME Cu. Yd.	RIPRAP Ton
		ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	ft.	in.		
48" PIPE	1190+80, RT	7.6	3.8	11.5	9.5	7.0	26.1	33.3	6.0	7.6	11.4	1.9	3.8	3.2	2.4	8	RR 5	103.2	180.5
48" PIPE	1196+45, RT	8.8	2.8	8.2	6.9	7.0	20.8	30.4	6.4	8.8	11.6	1.4	4.4	2.4	1.8	6	RR 4	58.7	102.7
42" PIPE	1222+82, RT	7.6	1.8	6.9	4.2	6.5	16.3	23.5	5.8	7.6	9.4	0.9	3.8	2.4	1.8	6	RR 4	35.9	62.8
48" PIPE	1334+50, RT	6.0	5.8	17.0	14.3	7.0	35.6	39.6	5.5	6.0	11.8	2.9	3.0	3.2	2.4	8	RR 5	160.4	280.7
54" PIPE	1349+83, RT	8.8	2.4	8.7	6.0	7.5	20.5	30.1	6.7	8.8	11.2	1.2	4.4	3.2	2.4	8	RR 5	74.1	129.7
60" PIPE	1368+00, RT	7.2	5.6	16.8	14.0	8.0	36.0	42.4	6.4	7.2	12.8	2.8	3.6	3.2	2.4	8	RR 5	171.4	299.9
60" PIPE	1380+16 & 1380+50, RT	8.2	7.4	22.1	18.5	40.0	76.9	85.3	22.7	8.2	15.6	3.7	4.1	3.2	2.4	8	RR 5	433.2	758.2
60" PIPE	1389+10, RT	10.0	2.6	9.8	6.4	17.0	31.3	43.3	11.8	10.0	12.6	1.3	5.0	3.2	2.4	8	RR 5	109.5	191.7

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**RIPRAP ENERGY DISSIPATOR  
DETAILS FOR PIPE CULVERTS**

SCALE:  
DATE: MARCH 10, 2006

DRAWN BY: RG  
CHECKED BY: JAC