

Melinda L. McGrath
Deputy Executive Director/
Chief Engineer

Brenda Znachko
Deputy Executive Director/
Administration



Steven K. Edwards
Director
Office of Intermodal Planning

Willie Huff
Director
Office of Enforcement

Larry L. "Butch" Brown
Executive Director

P. O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7001 / FAX (601) 359-7110 / GoMDOT.com

Inter-Departmental Memorandum

Date: May 25, 2010
To: Design Team Leaders
From: Assistant Roadway Design Division Engineer
Amy Mood *AM*
Subject: New Silt Basin Special Design Sheet

Attached is the new Type "D" Silt Basin special design sheet and sizing chart. Silt basins should be placed in the side ditches just before cross drains. The sizing chart provides the dam length and height based on the computed drainage area. This area should include any portion of the pavement surface which is sloped toward the ditch, all construction limits that drain toward the ditch, any area beyond the construction limits that drains toward the ditch, and any median drains that empty into the side ditch. There may be cases where placing the silt basin in line with a pipe is appropriate. However, the silt basin must be increased in size to also include the drainage area of the pipe, and the pipe cannot carry a live stream.

Cells for each size silt basin are in the rwd.cel cell library. The cell names begin with SBD and are placed on the level DRAINAGE_EROSION_CONTROL_SILT_BASINS. The cells will be added to the DZine menu in the next update.

The Cell Library that contains the new cells is available for consultants at:

<http://ftp.mdot.state.ms.us>

Download a File
Roadway_Design
RWD_Files
2010-03-V8iSS1
POST_Revisions
04-Silt_Basins



pc: Roadway Design Division Engineer (Reese)
Special Projects Engineer (Boteler)
Quality Control Engineer (Reeves)
Roadway Design Section Engineers
Construction Division (Lewis, Chisolm, Area Engineers)
Environmental Division (Thurman, Stafford)
Active Consultants

TYPE "D" SILT BASIN

5/25/2010

RIP RAP DAM LENGTH FEET	DAM HEIGHT FEET	RIP RAP TONS	SED CTL STONE TONS	D. A. TRMT AC
35	3	63.00	13.13	1.44
	4	100.80	19.69	1.68
	5	157.50	26.25	1.92
	6	226.80	32.81	2.16

40	3	72.00	15.00	1.65
	4	115.20	22.50	1.92
	5	180.00	30.00	2.19
	6	259.20	37.50	2.47

45	3	81.00	16.88	1.85
	4	129.60	25.31	2.16
	5	202.50	33.75	2.47
	6	291.60	42.19	2.78

50	3	90.00	18.75	2.06
	4	144.00	28.13	2.40
	5	225.00	37.50	2.74
	6	324.00	46.88	3.09

75	3	135.00	28.13	3.47
	4	216.00	42.19	4.05
	5	337.50	56.25	4.63
	6	486.00	70.31	5.21

RIP RAP DAM LENGTH FEET	DAM HEIGHT FEET	RIP RAP TONS	SED CTL STONE TONS	D. A. TRMT AC
100	3	180.00	37.50	6.17
	4	288.00	56.25	7.20
	5	450.00	75.00	8.23
	6	648.00	93.75	9.26

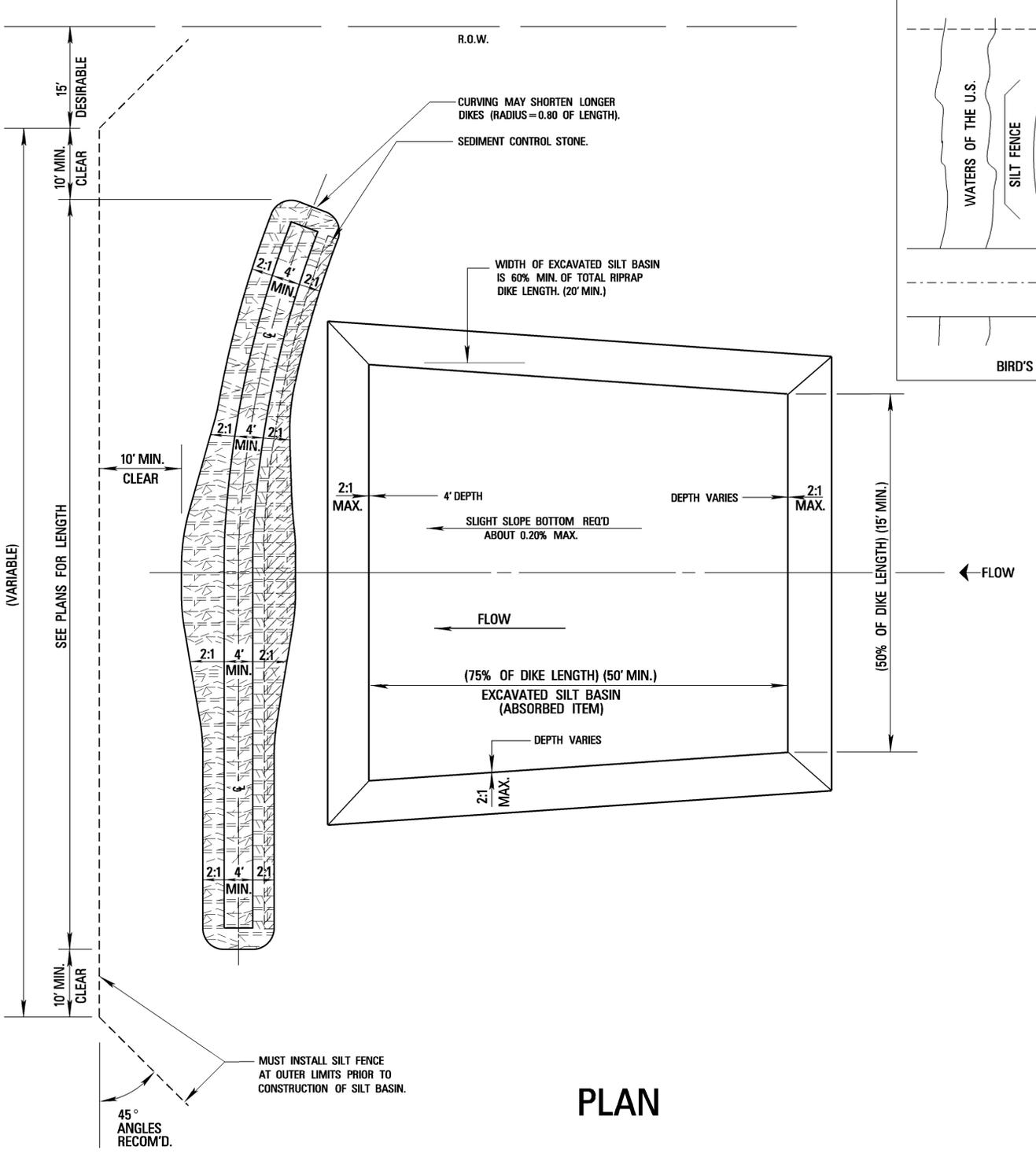
125	3	225.00	46.88	9.65
	4	360.00	70.31	11.25
	5	562.50	93.75	12.86
	6	810.00	117.19	14.47

150	3	270.00	56.25	13.89
	4	432.00	84.38	16.20
	5	675.00	112.50	18.52
	6	972.00	140.63	20.83

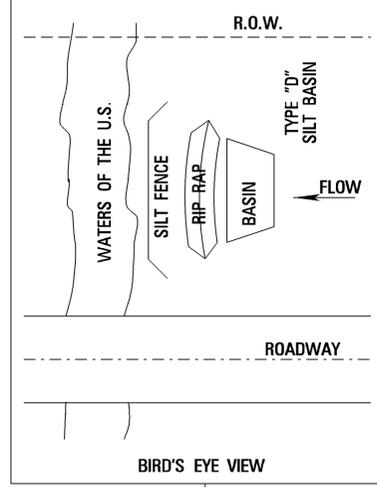
175	3	315.00	65.63	18.90
	4	504.00	98.44	22.06
	5	787.50	131.25	25.21
	6	1134.00	164.06	28.36

200	3	360.00	75.00	24.69
	4	576.00	112.50	28.81
	5	900.00	150.00	32.92
	6	1296.00	187.50	37.04

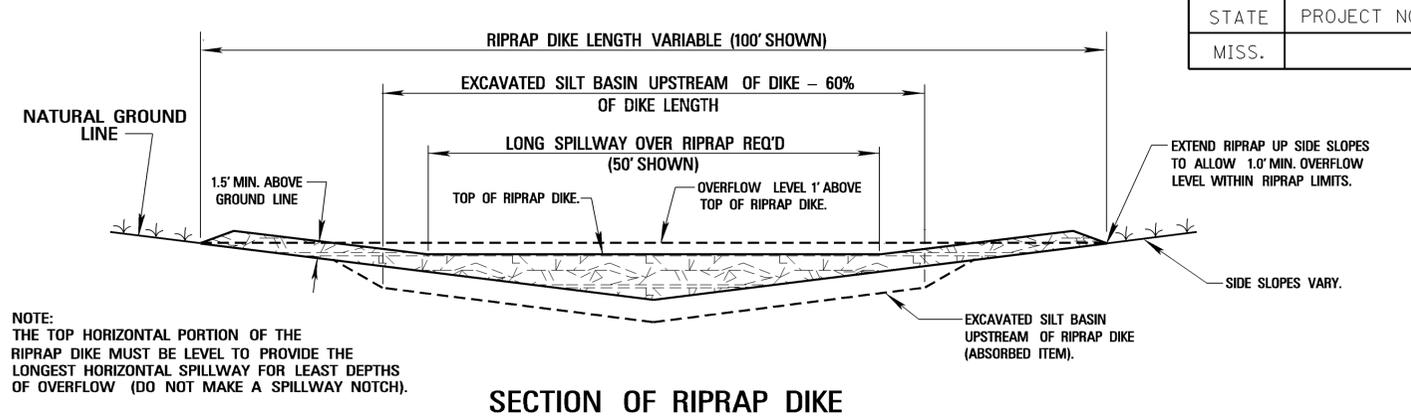
NOTES: Length of Basin = 0.75 X Length of RIP-RAP Dam or 50 foot min.; Width = 1/2 Length of RIP-RAP Dam or 15 foot min.; Height = Dam Height minus one foot freeboard plus 4 foot depth of basin at 75% Dam Length. The D.A. (Drainage Area) Treatment is the Volumetric Treatment equivalent to 135 yds³/Acre Disturbed.



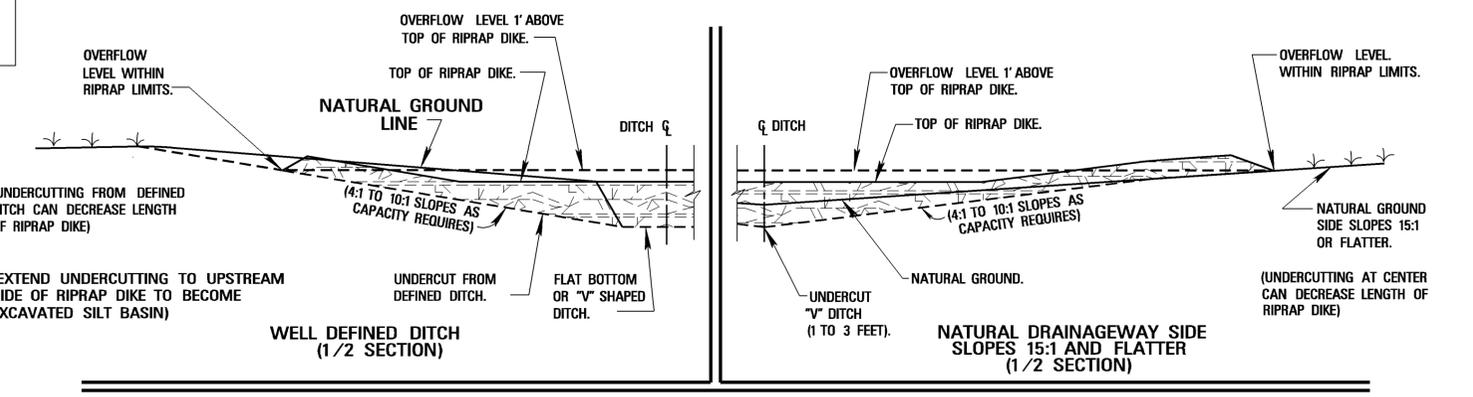
PLAN



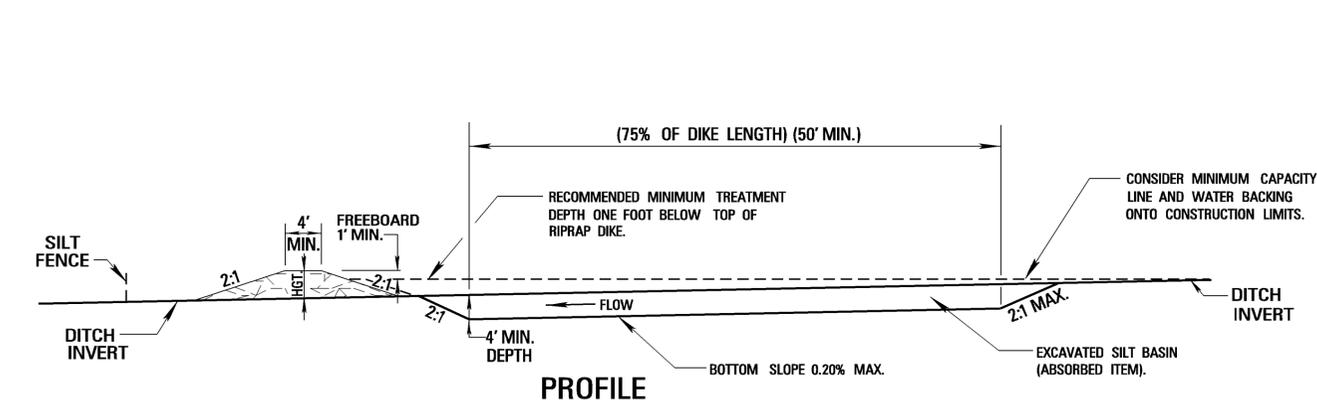
BIRD'S EYE VIEW



SECTION OF RIPRAP DIKE



DETAIL SECTION RIPRAP DIKE



PROFILE

- NOTES**
1. THE REQUIRED SIZE / CAPACITY OF THE RIPRAP DIKE SILT BASIN IS TO PROVIDE AT LEAST 135 CUBIC YARDS OF VOLUME / CAPACITY PER ACRE OF DRAINAGE AREA RECEIVED. THE RIPRAP DIKE SILT BASIN MUST BE MAINTAINED AT ALL TIMES TO ASSURE THE INTENDED FUNCTION, REMOVING THE ACCUMULATED SILT ROUTINELY AND / OR WHEN APPROACHING A 50% MAXIMUM DECREASE FROM THE EFFECTIVE DESIGN CAPACITY, AND RESTORING THE BASIN TO ITS ORIGINAL EFFECTIVE DESIGN CAPACITY.
 2. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH ALL MATERIALS, PERFORM ALL WORK FOR THE PROPER INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY EROSION CONTROL MEASURES NECESSARY TO CONTROL SILTATION.
 3. AFTER THE PURPOSE FOR THE SILT BASIN HAS BEEN SERVED, THE POSTS AND SILT FENCE SHALL BE REMOVED. THE RIP RAP AND SEDIMENT STONE SHALL BE REMOVED AND PLACED AT A PIPE OUTLET. THE DISTURBED AREA SHALL BE SITE GRADED AND REVEGETATED AS DEEMED NECESSARY BY THE ENGINEER. ALL COSTS OF REMOVAL AND REPLACEMENT TO BE ABSORBED IN PAY ITEM FOR SILT BASIN.
 4. RIPRAP FOR THE TYPE D SILT BASIN SHALL BE 300 LB RIPRAP AND SHALL BE PAID FOR - PER TON.
 5. SEDIMENT CONTROL STONE SHALL BE SIZE NO. 57 STONE AND SHALL BE PAID FOR - PER TON.
 6. THE TEMPORARY EROSION CONTROL MEASURES SHOWN ON THIS SHEET WILL ONLY BE MEASURED FOR SEPARATE PAYMENT WHEN APPROPRIATE PAY ITEMS ARE INCLUDED IN THE BID SCHEDULE OF THE PROPOSAL.
 7. THE ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES 1/3 TO 1/2 THE HEIGHT OF THE CONTROL FEATURE. SILT SHALL BE DISPOSED OF PROPERLY AND SHALL NOT BE DISPOSED OF IN THE VICINITY OF THE EROSION CONTROL DEVICES.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
TYPICAL TEMPORARY EROSION CONTROL MEASURES (TYPE "D" SILT BASIN)	
(RIPRAP DIKE SILT BASIN) 135 CU. YDS. CAPACITY PER ACRE OF DRAINAGE	
PROJ. NO:	WORKING NUMBER
COUNTY:	TEC-D
FILENAME: EROSION CONTROL\TEC-D135.DGN	SHEET NUMBER
DESIGN TEAM	CHECKED
DATE	DATE

ROADWAY DESIGN PLAN, C.A.D.S. SECTION, MISSISSIPPI DEPARTMENT OF TRANSPORTATION