



Appendix E

Cost Opinion

Table E-1. Cost Opinion

Improvement No. 5 - Outfall 8 Drainage Improvements

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL (2009 Dollars)
1	Mobilization/Demobilization	1	LS	\$25,120	\$25,120
2	Regular Excavation	630	CY	\$20.00	\$12,600
3	Manhole (VDOT MH-1 or MH-2)	24	LF	\$750	\$18,000
4	Frame and Cover MH-1 or MH-2	3	EA	\$650	\$1,950
5	54" RCP	740	LF	\$350	\$259,000
6	Endwall with Wingwalls for twin 54" RCPs	1	EA	\$10,600	\$10,600
7	48" RCP	68	LF	\$275	\$18,700
8	48" FES	2	EA	\$3,500	\$7,000
9	Traffic Control	1	LS	\$3,000	\$3,000
10	VDOT PG-5 Paved Ditch for Emergency Spillway	70	SY	\$200	\$14,000
11	HRPDC Class I Dry Riprap	60	TONS	\$100	\$6,000
12	Relocate or Modify Existing Misc. Items	1	LS	\$3,000	\$3,000
13	Erosion and Sediment Control	1	LS	\$5,000	\$5,000
Construction Sub-Total:					\$383,970
Design and Permitting		1	LS	\$35,000	\$35,000
Survey		1	LS	\$5,000	\$5,000
Contingency		15	%	\$57,595	\$57,595
Design & Construction Subtotal:					\$481,565
Total Project Cost:					\$481,565

Cost Assumptions

1. Mobilization/Demobilization set at 7% of construction subtotal.
2. Excavation cost includes hauling material offsite and disposal.
3. Endwall cost assumes 12 CY of class A3 concrete and 1,000# reinforcing steel.
4. EC-2 soil retention mat assumed to be placed on all side slopes of proposed ditch.
Cost for EC-2 includes topsoil, seed, lime and fertilizer.

