ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST
WEST TRAIL REPAIRS - SHORELINE PROTECTION ALTERNATIVE #1

Client: San Mateo Harbor District
Project: Pillar Point Harbor - West Trail Repairs

Date: 04-12-12

Description	Quantity No	Quantity Unit	Cost Mat'l	Cost Labor	Total Material Cost	Total Labor Cost	Total Unit Cost	Total Cost
General Description of Work								
Provide protection against further shoreline erosion by placing stone rip rap along approximately 300 feet on shoreline. Alternatives to rip consist of a soldier pile wall with timber or concrete lagging, steel sheet pile bulkhead, cast-in-place concrete retaining wall or shotcrete and soil nail wall. Repairs are required to two drainage culverts. Vegetation at southern trail portion for erosion protection and repair and stabilization for erosion occuring on hillside								
Mobilization	1	LS		$30,000.00		$30,000.00	$30,000.00	$30,000
Northern Portion of Path - Erosion Protection								
Alternative #1 - Riprap	420	CY	$87.00	$65.00	$36,540.00	$27,300.00	$152.00	$63,840
Repairs at Stacked Culverts								
Installation of underground junction structure, and connection of existing 24" pipe to this structure. Assume demo of existing culverts, and installation of new 24" culvert under path	1	LS	$2,500.00	$6,900.00	$2,500.00	$6,900.00	$9,400.00	$9,400
Removal of Concrete Rubble	1	LS	$0	$10,000.00	$0	$10,000.00	$10,000.00	$10,000
Southern Portion of Path - Erosion Protection								
Place soil and vegetate	200	SF	$0.06	$2.75	$12.00	$550.00	$2.81	$562
Vegetation of desire paths	150	SF	$0.06	$2.75	$9.00	$412.50	$2.81	$422
Hillside above Path - Erosion Protection								
Vegetate Hillside	20,000	SF	$0.06	$1.35	$1,200.00	$27,000.00	$1.41	$28,200
Temporary Fencing	600	LF	$5.75	$9.00	$3,450.00	$5,400.00	$14.75	$8,850
Materials Subtotal					$43,711.00			
Subtotal Labor + Materials								$151,274
Hard Costs Estimating Contingency	5%							$7,564
Subtotal Hard Costs								$158,837
Sales Tax on Materials	8.50%							$3,715
General Conditions	10%							$15,884
Bond & Insurance	3%							$5,518.65
Subtotal								$25,118
General Contractor's Fee (OH&P)	8%							$14,716.40
Overall Estimating Contingency	20%							$37,894.73
TOTAL ESTIMATED CONSTRUCTION COSTS (with ALT #1 Shoreline Repair)								**$236,566**

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST
WEST TRAIL REPAIRS - SHORELINE PROTECTION ALTERNATIVE #2

Client: San Mateo Harbor District
Project: Pillar Point Harbor - West Trail Repairs

Date: 04-12-12

Description	Quantity No	Quantity Unit	Cost Mat'l	Cost Labor	Total Material Cost	Total Labor Cost	Total Unit Cost	Total Cost
General Description of Work								
Provide protection against further shoreline erosion by placing stone rip rap along approximately 300 feet on shoreline. Alternatives to rip consist of a soldier pile wall with timber or concrete lagging, steel sheet pile bulkhead, cast-in-place concrete retaining wall or shotcrete and soil nail wall. Repairs are required to two drainage culverts. Vegetation at southern trail portion for erosion protection and repair and stabilization for erosion occuring on hillside.								
Mobilization	1	LS		$30,000.00	$0.00	$30,000.00	$30,000.00	$30,000
Northern Portion of Path - Erosion Protection								
Alternative #4 - Soldier Pile Retaining Wall	300	LF	$230.00	$225.00	$69,000.00	$67,500.00	$455.00	$136,500
Repairs at Stacked Culverts								
Installation of underground junction structure, and connection of existing 24" pipe to this structure. Assume demo of existing culverts, and installation of new 24" culvert under path.	1	LS	$2,500.00	$6,900.00	$2,500.00	$6,900.00	$9,400.00	$9,400
Removal of Concrete Rubble	1	LS	$0	$10,000.00	$0	$10,000.00	$10,000.00	$10,000
Southern Portion of Path - Erosion Protection								
Place soil and vegetate	200	SF	$0.06	$2.75	$12.00	$550.00	$2.81	$562
Vegetation of desire paths	150	SF	$0.06	$2.75	$9.00	$412.50	$2.81	$422
Hillside above Path - Erosion Protection								
Vegetate Hillside	20,000	SF	$0.06	$1.35	$1,200.00	$27,000.00	$1.41	$28,200
Temporary Fencing	600	LF	$5.75	$9.00	$3,450.00	$5,400.00	$14.75	$8,850
Materials Subtotal					$76,171.00			
Subtotal Labor + Materials								$223,934
Hard Costs Estimating Contingency	5%							$11,197
Subtotal Hard Costs								$235,130
Sales Tax on Materials	8.50%							$6,475
General Conditions	10%							$23,513
Bond & Insurance	3%							$8,199.52
Subtotal								$38,187
General Contractor's Fee (OH&P)	8%							$21,865.38
Overall Estimating Contingency	20%							$56,303.35
TOTAL ESTIMATED CONSTRUCTION COSTS (with ALT #4 Shoreline Repair)								**$351,486**

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST
WEST TRAIL REPAIRS - SHORELINE PROTECTION ALTERNATIVE #3

Client San Mateo Harbor District
Project Pillar Point Harbor - West Trail Repairs

Date: 04-12-12

Description	Quantity No	Quantity Unit	Cost Mat'l	Cost Labor	Total Material Cost	Total Labor Cost	Total Unit Cost	Total Cost
General Description of Work								
Provide protection against further shoreline erosion by placing stone rip rap along approximately 300 feet on shoreline. Alternatives to rip consist of a soldier pile wall with timber or concrete lagging, steel sheet pile bulkhead, cast-in-place concrete retaining wall or shotcrete and soil nail wall. Repairs are required to two drainage culverts. Vegetation at southern trail portion for erosion protection and repair and stabilization for erosion occuring on hillside.								
Mobilization	1	LS		$30,000 00	$0.00	$30,000 00	$30,000.00	$30,000
Northern Portion of Path - Erosion Protection								
Alternative #5 - Shotcrete and Soil Nail Wall	1,800	SF	$32 00	$46 00	$57,600 00	$82,800.00	$78 00	$140,400
Repairs at Stacked Culverts								
Installation of underground junction structure, and connection of existing 24" pipe to this structure. Assume demo of existing culverts, and installation of new 24" culvert under path.	1	LS	$2,500 00	$6,900 00	$2,500.00	$6,900.00	$9,400.00	$9,400
Removal of Concrete Rubble	1	LS	$0	$10,000.00	$0	$10,000 00	$10,000 00	$10,000
Southern Portion of Path - Erosion Protection								
Place soil and vegetate	200	SF	$0 06	$2.75	$12 00	$550 00	$2 81	$562
Vegetation of desire paths	150	SF	$0.06	$2 75	$9.00	$412.50	$2.81	$422
Hillside above Path - Erosion Protection								
Vegetate Hillside	20,000	SF	$0 06	$1.35	$1,200 00	$27,000.00	$1.41	$28,200
Temporary Fencing	600	LF	$5 75	$9 00	$3,450.00	$5,400 00	$14 75	$8,850
Materials Subtotal					$64,771.00			
								$227,834
Subtotal Labor + Materials								$11,392
Hard Costs Estimating Contingency	5%							$239,225
Subtotal Hard Costs								
								$5,506
Sales Tax on Materials	8.50%							$23,923
General Conditions	10%							$8,308 86
Bond & Insurance	3%							$37,737
Subtotal								
								$22,156 97
General Contractor's Fee (OH&P)	8%							$57,054 19
Overall Estimating Contingency	20%							$356,173
TOTAL ESTIMATED CONSTRUCTION COSTS (with ALT #4 Shoreline Repair)								