



US Army Corps
of Engineers
Baltimore District



Maryland Port
Administration

Baltimore Harbor Anchorages and Channels, Maryland

*Integrated Feasibility Report and
Environmental Impact Statement*

Technical Appendices

APPENDIX H - COST ESTIMATES

March 1997

Cost Engineering

1. General. The following methodology was used in the preparation of the Baseline Cost Estimate for the Baltimore Harbor Anchorage & Channels Feasibility Study:

- a. The estimate is in accordance with the guidance contained in ER 1110-2-1302, Civil Works Cost Engineering.
- b. The estimate is presented in the standard Civil Work Breakdown Structure.
- c. The price level for the estimate is October 1996.
- d. Construction cost developed by Cost Engineering Branch are based on input/quantities from the Operations Technical Support Branch . Unit costs were developed using the Cost Engineering Dredge Estimating Program (CEDEP) . The estimates are documented with notes to explain the specific information used to develop the costs.
- e. The labor costs are based on the prevailing Davis-Bacon wage rates for dredging.
- f. Navigation Branch, Operations Division provided costs for Construction Management and Engineering and Design based on historical data from similar projects.

2. Estimate Scope. The estimate reflects the cost for widening and or deepening existing channels and anchorage's in the Baltimore Harbor. All excavated material would be placed in the Hart -Miller Island Dredged Material Placement Site.

3. Contingency. Contingency amounts for the construction cost items are based on uncertainties within individual project elements. Considering these uncertainties, contingencies were assigned to individual cost items or groups of related cost items to protect against the risk of potential cost increases. The following is a list by element of the uncertainties that were identified and the corresponding contingency percentages.

a. Planning, Engineering and Design -- 10%

The uncertainty associated with the planning engineering and design costs are low to moderate. However, design changes could be triggered by a variety of future conditions, including local sponsor requested changes due to unanticipated public pressure, new Federal or Local regulations, and site changes prior to construction. For now a contingency of 10 percent is considered reasonable.

b. Construction Management -- 10%

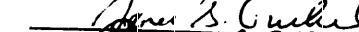
The uncertainty associated with construction management cost is moderate. Since construction is a future task, and plans and specifications are not completed, changes in the proposed administration of the construction contract may occur. For now, a contingency of 10 percent is considered reasonable.

c. Dredging Cost Items -- 15%

The uncertainty associated with the quantities are relatively high. Since construction is a future task, and plans and specifications are not completed, changes in the proposed quantities may occur. For now a contingency of 15 percent is reasonable.

TOTAL PROJECT COST SUMMARY ALL CONTRACTS											
PROJECT: BALTIMORE HARBOR AND ANCHORAGES LOCATION : BALTIMORE, MARYLAND		THIS ESTIMATE IS BASED ON THE FEASIBILITY STUDY, DATED MARCH 1997 PREPARED BY : CENAB-EN-C OLIVER LEIMBACH P.O.C.: RONALD J. MAJ P.E., CHIEF, COST ENGINEERING BRANCH									
ACCOUNT NUMBER	ITEM DESCRIPTION	CURRENT MCACES ESTIMATE MARCH 1997 EFFECTIVE PRICING LEVEL 1 OCT 96				AUTHORIZ./BUDGET YEAR 1996 EFFECTIVE PRICING LEVEL: 1 OCT 96			FULLY FUNDED ESTIMATE		
		COST (\$K)	CNTG (\$K)	CNTG %	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	TOTAL (\$K)	COST (\$K)	CNTG (\$K)	FULL (\$K)
12	NAVIGATION PORTS & HARBORS	\$22,474	\$3,085	13.7%	\$25,559	\$22,474	\$3,085	\$25,559	\$24,339	\$3,341	\$27,680
	TOTAL CONSTRUCTION COST	\$22,474	\$3,085	13.7%	\$25,559	\$22,474	\$3,085	\$25,559	\$24,339	\$3,341	\$27,680
30	PLANNING, ENGINEERING AND DESIGN	\$828	\$83	10.0%	\$2,568	\$828	\$83	\$911	\$936	\$94	\$1,030
31	CONSTRUCTION MANAGEMENT	\$446	\$45	10.0%	\$895	\$446	\$45	\$491	\$505	\$50	\$555
	TOTAL PROJECT COSTS	\$23,748	\$3,212	13.5%	\$29,022	\$23,748	\$3,212	\$26,960	\$25,780	\$3,485	\$29,265
Note : Fully Funded Estimate amounts are based on the escalation factors in EC 11-1-169 dated 31 Mar 96.								TOTAL FEDERAL COST		\$20,216	
								TOTAL NON-FEDERAL COST		\$6,987	

DISTRICT APPROVED:


 Greg M. Call
 CHIEF, COST ENGINEERING BRANCH

 James S. Culver
 CHIEF, REAL ESTATE DIVISION

 James D. Johnson
 CHIEF, PLANNING DIVISION

 John D. Miller
 CHIEF, ENGINEERING DIVISION

 Stephen C. Hunter
 CHIEF, OPERATIONS DIVISION

 David J. Hart
 CHIEF, PROGRAMS MANAGEMENT BRANCH

 Michael J. Deasey
 PROJECT MANAGER

 Timothy J. Hart
 DDE (PM)

APPROVED DATE:

26 MAR 97

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate

TIME 16:24:43
TITLE PAGE 1

Balto Harbor Anchorages/Channels
Baseline Cost Estimate

Designed By: U.S. Army Corps of Engineers
Estimated By: Baltimore District

Prepared By: CENAB-EN-C
Oliver Leimbach

Preparation Date: 03/20/97
Effective Date of Pricing: 10/01/96

Sales Tax: 5.00%

This report is not copyrighted, but the information
contained herein is For Official Use Only.

M C A C E S G O L D E D I T I O N
Composer GOLD Software Copyright (c) 1985-1994
by Building Systems Design, Inc.
Release 5.30A

Thu 20 Mar 1997
Eff. Date 10/01/96
TABLE OF CONTENTS

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate

TIME 16:24:43
CONTENTS PAGE 1

SUMMARY REPORTS	SUMMARY PAGE
PROJECT OWNER SUMMARY - FEATURE.....	1
PROJECT OWNER SUMMARY - SUB FEAT.....	2
PROJECT OWNER SUMMARY - LEVEL 3.....	3
PROJECT INDIRECT SUMMARY - FEATURE.....	4
PROJECT INDIRECT SUMMARY - SUB FEAT.....	5
PROJECT INDIRECT SUMMARY - LEVEL 3.....	6
PROJECT DIRECT SUMMARY - FEATURE.....	7
PROJECT DIRECT SUMMARY - SUB FEAT.....	8
PROJECT DIRECT SUMMARY - LEVEL 3.....	9

DETAILED ESTIMATE	DETAIL PAGE
12. Navigation Ports & Harbors	
02. Harbors	
01. Mob, Demob & Preparatory Work	
AA. First Year Mob/Demob.....	1
BB. Second Year Mob/Demob.....	2
15. Mechanical Dredging	
02. Site Work	
01. First Year Dredging	
AA. Turning Basin.....	3
BB. East Dundalk Channel.....	4
CC. Seagirt/Conn. Channel/W.Dundalk.....	5
DD. Cutoff Angle.....	6
EE. Anchorage #3 Modification.....	7
02. Second Year Dredging	
AA. South Locust Point.....	8
BB. Anchorage #4 Modification.....	9
20. Disposal Areas	
02. Site Work	
1. Dike Construction.....	10
30. Planning, Engineering and Design	
02. P.E.D. Phase.....	11
31. Construction Management	
01. Supervision and Administration.....	13

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT OWNER SUMMARY - FEATURE **

TIME 16:24:43

SUMMARY PAGE 1

	QUANTITY	UOM	CONTRACT COST	CONTINGE	ESCALATN	TOTAL COST	NOTES
12 Navigation Ports & Harbors	1.00	EA	22,473,809	3,085,021	2,121,192	27,680,023	
30 Planning, Engineering and Design	1.00	EA	827,912	82,791	119,302	1,030,005	
31 Construction Management	1.00	EA	446,300	44,630	64,312	555,242	
TOTAL Balto Harbor Anchorages/Channels	1.00	EA	23,748,021	3,212,443	2,304,806	29,265,270	

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT OWNER SUMMARY - SUB FEAT **

TIME 16:24:43
SUMMARY PAGE 2

	QUANTITY UOM	CONTRACT COST	CONTINGE	ESCALATN	TOTAL COST	NOTES
12 Navigation Ports & Harbors						
12 02 Harbors	1.00 EA	22,473,809	3,085,021	2,121,192	27,680,023	
TOTAL Navigation Ports & Harbors	1.00 EA	22,473,809	3,085,021	2,121,192	27,680,023	
30 Planning, Engineering and Design						
30 02 P.E.D. Phase	1.00 EA	827,912	82,791	119,302	1,030,005	
TOTAL Planning, Engineering and Design	1.00 EA	827,912	82,791	119,302	1,030,005	
31 Construction Management						
31 01 Supervision and Administration	1.00 EA	446,300	44,630	64,312	555,242	
TOTAL Construction Management	1.00 EA	446,300	44,630	64,312	555,242	
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	23,748,021	3,212,443	2,304,806	29,265,270	

Thu 20 Mar 199r
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT OWNER SUMMARY - LEVEL 3 **

TIME 16:24:43

SUMMARY PAGE 3

		QUANTITY UOM	CONTRACT COST	CONTINGE	ESCALATN	TOTAL COST	NOTES
12 Navigation Ports & Harbors							
12 02 Harbors							
12 02 01 Mob, Demob & Preparatory Work	1.00 EA	2,000,834	300,125	190,980		2,491,939	
12 02 15 Mechanical Dredging	1.00 EA	18,565,975	2,784,896	1,772,122		23,122,994	
12 02 20 Disposal Areas	1.00 EA	1,907,000	0	158,090		2,065,090	
TOTAL Harbors	1.00 EA	22,473,809	3,085,021	2,121,192		27,680,023	
TOTAL Navigation Ports & Harbors	1.00 EA	22,473,809	3,085,021	2,121,192		27,680,023	
30 Planning, Engineering and Design							
30 02 P.E.D. Phase	1.00 EA	827,912	82,791	119,302		1,030,005	
TOTAL Planning, Engineering and Design	1.00 EA	827,912	82,791	119,302		1,030,005	
31 Construction Management							
31 01 Supervision and Administration	1.00 EA	446,300	44,630	64,312		555,242	
TOTAL Construction Management	1.00 EA	446,300	44,630	64,312		555,242	
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	23,748,021	3,212,443	2,304,806		29,265,270	

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT INDIRECT SUMMARY - FEATURE **

TIME 16:24:43

SUMMARY PAGE 4

	QUANTITY UOM	TOTAL DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST
12 Navigation Ports & Harbors	1.00 EA	22,473,809	0	0	0	0	22,473,809
30 Planning, Engineering and Design	1.00 EA	827,912	0	0	0	0	827,912
31 Construction Management	1.00 EA	446,300	0	0	0	0	446,300
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	23,748,021	0	0	0	0	23,748,021
Contingency							3,212,443
SUBTOTAL							26,960,464
Escalation							2,304,806
TOTAL INCL OWNER COSTS							29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorage/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT INDIRECT SUMMARY - SUB FEAT **

TIME 16:24:43

SUMMARY PAGE 5

	QUANTITY UOM	TOTAL DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST
<hr/>							
12 Navigation Ports & Harbors							
12 02 Harbors	1.00 EA	22,473,809	0	0	0	0	22,473,809
TOTAL Navigation Ports & Harbors	1.00 EA	22,473,809	0	0	0	0	22,473,809
<hr/>							
30 Planning, Engineering and Design							
30 02 P.E.D. Phase	1.00 EA	827,912	0	0	0	0	827,912
TOTAL Planning, Engineering and Design	1.00 EA	827,912	0	0	0	0	827,912
<hr/>							
31 Construction Management							
31 01 Supervision and Administration	1.00 EA	446,300	0	0	0	0	446,300
TOTAL Construction Management	1.00 EA	446,300	0	0	0	0	446,300
TOTAL Balto Harbor Anchorage/Channels	1.00 EA	23,748,021	0	0	0	0	23,748,021
Contingency							3,212,443
SUBTOTAL							26,960,464
Escalation							2,304,806
TOTAL INCL OWNER COSTS							29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT INDIRECT SUMMARY - LEVEL 3 **

TIME 16:24:43

SUMMARY PAGE 6

	QUANTITY UOM	TOTAL DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST
<hr/>							
12 Navigation Ports & Harbors							
12 02 Harbors							
12 02 01 Mob, Demob & Preparatory Work	1.00 EA	2,000,834	0	0	0	0	2,000,834
12 02 15 Mechanical Dredging	1.00 EA	18,565,975	0	0	0	0	18,565,975
12 02 20 Disposal Areas	1.00 EA	1,907,000	0	0	0	0	1,907,000
TOTAL Harbors	1.00 EA	22,473,809	0	0	0	0	22,473,809
TOTAL Navigation Ports & Harbors	1.00 EA	22,473,809	0	0	0	0	22,473,809
30 Planning, Engineering and Design							
30 02 P.E.D. Phase	1.00 EA	827,912	0	0	0	0	827,912
TOTAL Planning, Engineering and Design	1.00 EA	827,912	0	0	0	0	827,912
31 Construction Management							
31 01 Supervision and Administration	1.00 EA	446,300	0	0	0	0	446,300
TOTAL Construction Management	1.00 EA	446,300	0	0	0	0	446,300
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	23,748,021	0	0	0	0	23,748,021
Contingency							3,212,443
SUBTOTAL Escalation							26,960,464
							2,304,806
TOTAL INCL OWNER COSTS							29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorage/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT DIRECT SUMMARY - FEATURE **

TIME 16:24:43

SUMMARY PAGE 7

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 Navigation Ports & Harbors	1.00	EA	0	0	0	0	22,473,809	22,473,809
30 Planning, Engineering and Design	1.00	EA	0	827,912	0	0	0	827,912
31 Construction Management	1.00	EA	0	446,300	0	0	0	446,300
TOTAL Balto Harbor Anchorage/Channels	1.00	EA	0	1,274,212	0	0	22,473,809	23,748,021
Contingency								3,212,443
SUBTOTAL								26,960,464
Escalation								2,304,806
TOTAL INCL OWNER COSTS								29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT DIRECT SUMMARY - SUB FEAT **

TIME 16:24:43

SUMMARY PAGE 8

	QUANTITY UOM MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
<hr/>						
12 Navigation Ports & Harbors						
12 02 Harbors	1.00 EA	0	0	0	22,473,809	22,473,809
TOTAL Navigation Ports & Harbors	1.00 EA	0	0	0	22,473,809	22,473,809
<hr/>						
30 Planning, Engineering and Design						
30 02 P.E.D. Phase	1.00 EA	0	827,912	0	0	827,912
TOTAL Planning, Engineering and Design	1.00 EA	0	827,912	0	0	827,912
<hr/>						
31 Construction Management						
31 01 Supervision and Administration	1.00 EA	0	446,300	0	0	446,300
TOTAL Construction Management	1.00 EA	0	446,300	0	0	446,300
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	0	1,274,212	0	22,473,809	23,748,021
Contingency						3,212,443
SUBTOTAL Escalation						26,960,464
TOTAL INCL OWNER COSTS						2,304,806
						29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
** PROJECT DIRECT SUMMARY - LEVEL 3 **

TIME 16:24:43

SUMMARY PAGE 9

		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 Navigation Ports & Harbors									
12 02 Harbors									
12 02 01	Mob, Demob & Preparatory Work	1.00	EA	0	0	0	0	2,000,834	2,000,834
12 02 15	Mechanical Dredging	1.00	EA	0	0	0	0	18,565,975	18,565,975
12 02 20	Disposal Areas	1.00	EA	0	0	0	0	1,907,000	1,907,000
TOTAL Harbors		1.00	EA	0	0	0	0	22,473,809	22,473,809
TOTAL Navigation Ports & Harbors		1.00	EA	0	0	0	0	22,473,809	22,473,809
30 Planning, Engineering and Design									
30 02	P.E.D. Phase	1.00	EA	0	827,912	0	0	0	827,912
TOTAL Planning, Engineering and Design		1.00	EA	0	827,912	0	0	0	827,912
31 Construction Management									
31 01	Supervision and Administration	1.00	EA	0	446,300	0	0	0	446,300
TOTAL Construction Management		1.00	EA	0	446,300	0	0	0	446,300
TOTAL Balto Harbor Anchorages/Channels		1.00	EA	0	1,274,212	0	0	22,473,809	23,748,021
Contingency									
SUBTOTAL Escalation								3,212,443	
TOTAL INCL OWNER COSTS								26,960,464	
								2,304,806	
									29,265,270

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43

DETAIL PAGE 1

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12. Navigation Ports & Harbors										
12 02. Harbors										
12 02 01. Mob, Demob & Preparatory Work										
The unit cost was developed using the CEDEP. Costs include overhead, profit and bond.										
12 02 01 AA. First Year Mob/Demob										
USR AA <	>	Mob/Demob Clamshell Dredge	2.00 EA	0.00	0.00 0	0.00 0	0.00 0	0.00 0	314415.00 628,830	314415.00 628,830
USR AA <	>	Mob/Demob Hydraulic Unloader	1.00 EA	0.00	0.00 0	0.00 0	0.00 0	0.00 0	371587.00 371,587	371587.00 371,587
TOTAL First Year Mob/Demob				1.00 EA	0	0	0	0	1,000,417	1,000,417

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 2

12 02. Harbors		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 01 BB. Second Year Mob/Demob											
USR AA <	> Mob/Demob Clamshell Dredge	2.00	EA		0.00	0.00	0.00	0.00	0.00	314415.00 628,830	314415.00 628,830
USR AA <	> Mob/Demob Hydraulic Unloader	1.00	EA		0.00	0.00	0.00	0.00	0.00	371587.00 371,587	371587.00 371,587
TOTAL Second Year Mob/Demob		1.00	EA			0	0	0	0	1,000,417	1,000,417
TOTAL Mob, Demob & Preparatory Work		1.00	EA			0	0	0	0	2,000,834	2,000,834

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 3

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15. Mechanical Dredging The unit costs for dredging were developed using the CEDEP. The unit costs include overhead, profit and bond.										
12 02 15 02. Site Work										
12 02 15 02 01. First Year Dredging										
12 02 15 02 01 AA. Turning Basin										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.	355500 CY		0.00	0.00 0	0.00 0	0.00 0	0.00 0	3.86 1,372,230	3.86 1,372,230
TOTAL Turning Basin										
		355500 CY		0	0	0	0	0	1,372,230	1,372,230

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 4

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 01 BB. East Dundalk Channel										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.		38800 CY	0.00	0.00 0	0.00 0	0.00 0	0.00 0	7.94 308,072	7.94 308,072
	TOTAL East Dundalk Channel		38800 CY		0	0	0	0	308,072	308,072

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43

DETAIL PAGE 5

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 01 CC. Seagirt/Conn. Channel/W.Dundalk										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.		402600 CY	0.00	0.00 0	0.00 0	0.00 0	0.00 0	4.32 1,739,232	4.32 1,739,232
	TOTAL Seagirt/Conn. Channel/W.Dundalk		402600 CY		0	0	0	0	1,739,232	1,739,232

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 6

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 01 DD. Cutoff Angle										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.	215000	CY	0.00	0.00 0	0.00 0	0.00 0	0.00 0	3.91 840,650	3.91 840,650
	TOTAL Cutoff Angle			215000	CY	0	0	0	840,650	840,650

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 7

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 01 EE. Anchorage #3 Modification										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.	1584000	CY	0.00	0.00 0	0.00 0	0.00 0	0.00 0	4.18 6,621,120	4.18 6,621,120
	TOTAL Anchorage #3 Modification		1584000	CY		0	0	0	6,621,120	6,621,120
	TOTAL First Year Dredging			1.00 EA		0	0	0	10,881,304	10,881,304

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43
DETAIL PAGE 8

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 02. Second Year Dredging										
12 02 15 02 02 AA. South Locust Point										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.		216300 CY	0.00	0.00 0	0.00 0	0.00 0	0.00 0	6.12 1,326,816	6.12 1,326,816
TOTAL South Locust Point			216300 CY		0	0	0	0	1,326,816	1,326,816

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43

DETAIL PAGE 9

12 02. Harbors	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02 15 02 02 BB. Anchorage #4 Modification										
USR AA <	> Mechanical Dredging Unit cost were developed using the CEDEP.	1585500 CY		0.00	0.00	0.00	0.00	0.00	4.01	4.01
	TOTAL Anchorage #4 Modification	1585500 CY			0	0	0	0	6,357,855	6,357,855
	TOTAL Second Year Dredging	1.00 EA			0	0	0	0	7,684,671	7,684,671
	TOTAL Site Work	1.00 EA			0	0	0	0	18,565,975	18,565,975
	TOTAL Mechanical Dredging	1.00 EA			0	0	0	0	18,565,975	18,565,975

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
12. Navigation Ports & Harbors

TIME 16:24:43

DETAIL PAGE 10

		QUANTITY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
12 02. Harbors											
12 02 20. Disposal Areas											
12 02 20 02. Site Work											
12 02 20 02 1. Dike Construction											
Cost provided by the Maryland Port Authority.											
AA <	> Dike Construction. The costs of the dike raising at HMI placement site, is a pro-rated cost based on the additional capacity of the site (30 mcy) and the actual quantity of material to be placed (4.4 mcy).		1.00 EA		0.00	0.00	0.00	0.00	0.00	1907000.00	1907000.00
					0	0	0	0	0	1,907,000	1,907,000
	TOTAL Dike Construction		1.00 EA		0	0	0	0	0	1,907,000	1,907,000
	TOTAL Site Work		1.00 EA		0	0	0	0	0	1,907,000	1,907,000
	TOTAL Disposal Areas		1.00 EA		0	0	0	0	0	1,907,000	1,907,000
	TOTAL Harbors		1.00 EA		0	0	0	0	0	22,473,809	22,473,809
	TOTAL Navigation Ports & Harbors		1.00 EA		0	0	0	0	0	22,473,809	22,473,809

Thu 20 Mar 1997
 Eff. Date 10/01/96
 DETAILED ESTIMATE

U.S. Army Corps of Engineers
 PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
 Baseline Cost Estimate
 30. Planning, Engineering and Design

TIME 16:24:43

DETAIL PAGE 11

30 02. P.E.D. Phase		QUANTITY	UOM	CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
30. Planning, Engineering and Design										
30 02. P.E.D. Phase										
USR 30 <	> Survey and Mapping	1.00	EA		0.00 0	30000.00 30,000	0.00 0	0.00 0	0.00 0	30000.00 30,000
USR 30 <	> H&H Analyses	1.00	EA		0.00 0	10604.00 10,604	0.00 0	0.00 0	0.00 0	10604.00 10,604
USR 30 <	> Engineering Design	1.00	EA		0.00 0	82704.00 82,704	0.00 0	0.00 0	0.00 0	82704.00 82,704
USR 30 <	> Engineering Design	1.00	EA		0.00 0	82704.00 82,704	0.00 0	0.00 0	0.00 0	82704.00 82,704
USR 30 <	> Geotechnical Analyses	1.00	EA		0.00 0	21734.00 21,734	0.00 0	0.00 0	0.00 0	21734.00 21,734
USR 30 <	> Ship Simulation Studies	1.00	EA		0.00 0	125000.00 125,000	0.00 0	0.00 0	0.00 0	125000.00 125,000
USR 30 <	> Economic Analyses	1.00	EA		0.00 0	111221.00 111,221	0.00 0	0.00 0	0.00 0	111221.00 111,221
USR 30 <	> Environmental Compliance	1.00	EA		0.00 0	53130.00 53,130	0.00 0	0.00 0	0.00 0	53130.00 53,130
USR 30 <	> HTRW Investigations	1.00	EA		0.00 0	9000.00 9,000	0.00 0	0.00 0	0.00 0	9000.00 9,000
USR 30 <	> Cost Estimates	1.00	EA		0.00 0	17910.00 17,910	0.00 0	0.00 0	0.00 0	17910.00 17,910
USR 30 <	> Value Engineering	1.00	EA		0.00 0	33000.00 33,000	0.00 0	0.00 0	0.00 0	33000.00 33,000
USR 30 <	> Project Cooperation Agreement	1.00	EA		0.00 0	2300.00 2,300	0.00 0	0.00 0	0.00 0	2300.00 2,300
USR 30 <	> Technical Management	1.00	EA		0.00 0	81856.00 81,856	0.00 0	0.00 0	0.00 0	81856.00 81,856
USR 30 <	> Contract Award Activities	1.00	EA		0.00 0	4288.00 4,288	0.00 0	0.00 0	0.00 0	4288.00 4,288
USR 30 <	> Project Management	1.00	EA		0.00 0	162461.00 162,461	0.00 0	0.00 0	0.00 0	162461.00 162,461
TOTAL P.E.D. Phase		1.00	EA		0	827,912	0	0	0	827,912

LABOR ID: RG0295 EQUIP ID: RG0295

Currency in DOLLARS

CREW ID: RG0295 UPP ID: RG0295

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
30. Planning, Engineering and Design

TIME 16:24:43
DETAIL PAGE 12

30 02. P.E.D. Phase	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
TOTAL Planning, Engineering and Design	1.00 EA	0	827,912	0	0	0	827,912

Thu 20 Mar 1997
Eff. Date 10/01/96
DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT HARBOR: Balto Harbor Anchorages/Channels - Baseline Cost Estimate
Baseline Cost Estimate
31. Construction Management

TIME 16:24:43
DETAIL PAGE 13

31 01. Supervision and Administration	QUANTITY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	QUOTES	TOTAL COST
31. Construction Management							
TOTAL Supervision and Administration	1.00 EA	0	446,300	0	0	0	446,300
TOTAL Construction Management	1.00 EA	0	446,300	0	0	0	446,300
TOTAL Balto Harbor Anchorages/Channels	1.00 EA	0	1,274,212	0	0	22,473,809	23,748,021