LUTAK DOCK

DESIGN & DEVELOPMENT CONCEPTS

PRELIMINARY PROGRESS DRAWINGS
HAINES, ALASKA

12/23/2016 PROGRESS SET

MAYOR
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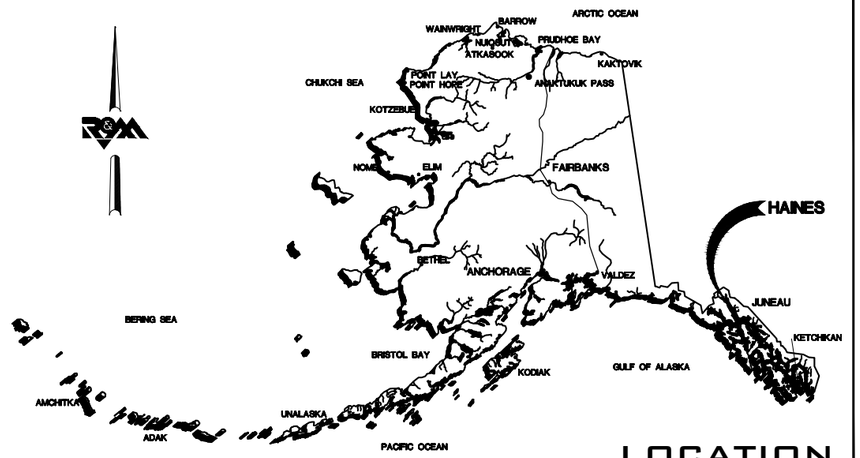
CORPORATE AUTHORIZATION NUMBER AECC111



LOCATION

VICINITY

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Plotted 12/23/2016 9:35 AM by Jean Cumlat
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ALTERNATIVES MATRIX:

ALT. NO.	DESCRIPTION	PROS	CONS	LEVEL OF SERVICE	CAPITAL COST
1A	ENCAPSULATE USING MODIFIED DIAPHRAGM	• EFFICIENT AND COST EFFECTIVE • MAINTAINS EXISTING FOOTPRINT • ACCOMMODATES CURRENT USERS INCLUDING PASS PASS CARGO OPERATIONS • RECLAIM ABOUT ½ ACRE UPLANDS AT CELLS 5, 6, AND 7	• PILE DRIVING RISK DURING CONSTRUCTION • ENCAPSULATES EXISTING SHEETS AND POOR QUALITY FILL	• HIGH	• $37,420,000
1B	ENCAPSULATE USING MODIFIED DIAPHRAGM	• EFFICIENT AND COST EFFECTIVE • MAINTAINS EXISTING FOOTPRINT • ACCOMMODATES CURRENT USERS INCLUDING PASS PASS CARGO OPERATIONS	• PILE DRIVING RISK DURING CONSTRUCTION • ENCAPSULATES EXISTING SHEETS AND POOR QUALITY FILL • DOES NOT RECLAIM UPLANDS AT CELLS 5, 6, AND 7	• HIGH	• $31,989,000
2	PLATFORM DOCK (STEEL PILE-SUPPORTED CONCRETE DECK)	• ALL NEW FACILITIES • HIGHER LEVEL OF SEISMIC PERFORMANCE • MAINTAINS EXISTING FOOTPRINT AND RECLAIMS ½ ACRE UPLANDS AT CELLS 5, 6, AND 7 • ACCOMMODATES CURRENT USERS INCLUDING PASS PASS CARGO OPERATIONS	• HIGHEST COST	• HIGH	• $61,840,000
3A	DOLPHINS AND TRANSFER BRIDGE	• ALL NEW FACILITIES	• LOSE APPROXIMATELY 1.7 ACRES OF UPLANDS • LOSE ABILITY TO USE PASS PASS FOR CARGO OPERATIONS • LOSE ABILITY TO SIDE LOAD OVER DOCK FACE	• MEDIUM	• $25,383,000
3B	DOLPHINS AND TRANSFER BRIDGE	• LEAST COST • ALL NEW FACILITIES	• LOSE APPROXIMATELY 1.7 ACRES OF UPLANDS • LOSE ABILITY TO USE PASS PASS FOR CARGO OPERATIONS • LOSE ABILITY TO SIDE LOAD OVER DOCK FACE • SERVICEABILITY LIMITED TO EXISTING FUEL AND CARGO BARGES	• MEDIUM	• $21,166,000

PROGRESS SET NOT FOR CONSTRUCTION

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Haines Borough
LUTAK DOCK STUDY

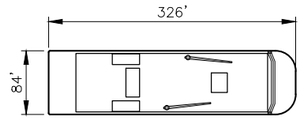
HAINES BOROUGH ALASKA

No.	Description	Date

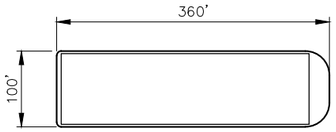
Drawn By: PMH/JVC
Checked By: JD/DA
Date: DEC 23, 2016
Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: ALTERNATIVES MATRIX
SHEET NO: 2 OF 27

G2.0

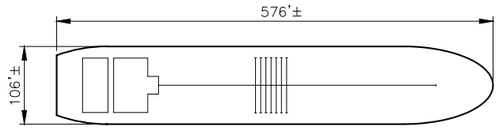
Plotted 12/23/2016 9:35 AM by Jean Cumlat Z:\project\2443.01 Hb Haines Lutak Dock Study\Civil\ACAD\2443.01 – G2.0 Notes.dwg



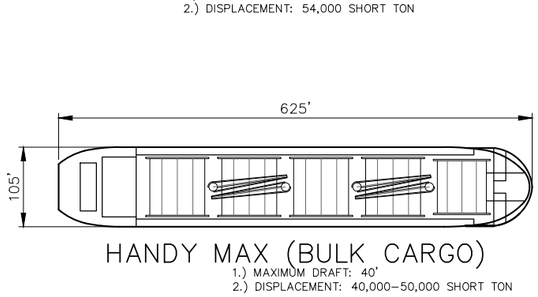
FUEL BARGE
1.) MAXIMUM DRAFT: 19'
2.) DISPLACEMENT: 15,000 SHORT TON



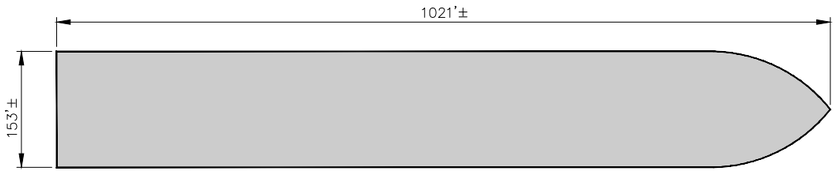
CARGO BARGE
1.) MAXIMUM DRAFT: 22'
2.) DISPLACEMENT: 23,000 SHORT TON



HMI CAPE LOOKOUT SHOALS (BULK TANKER)
1.) MAXIMUM DRAFT: 37'
2.) DISPLACEMENT: 54,000 SHORT TON

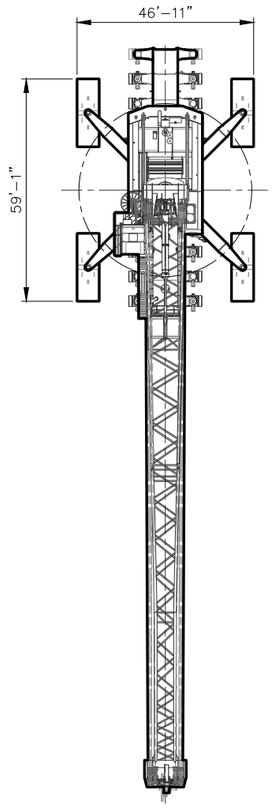


HANDY MAX (BULK CARGO)
1.) MAXIMUM DRAFT: 40'
2.) DISPLACEMENT: 40,000–50,000 SHORT TON

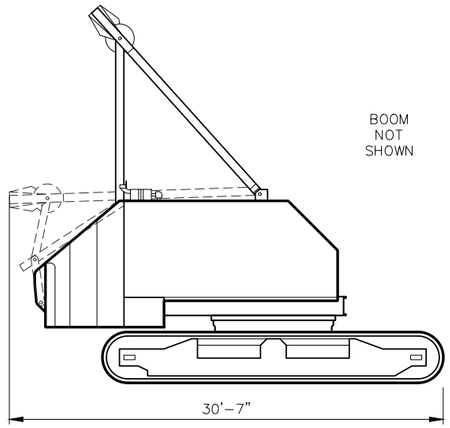


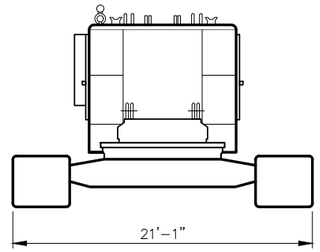
PASSENGER CRUISE LINER
1.) MAXIMUM DRAFT: 29'
2.) DISPLACEMENT: 64,474 SHORT TON

1 DESIGN VESSELS
Scale: 1:100

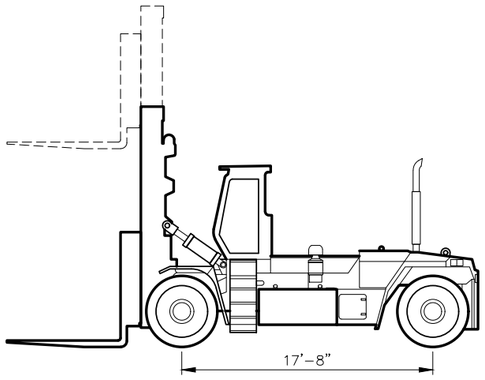


2 LHM 420 - MOBILE HARBOR CRANE
Scale: 1/16" = 1'-0"

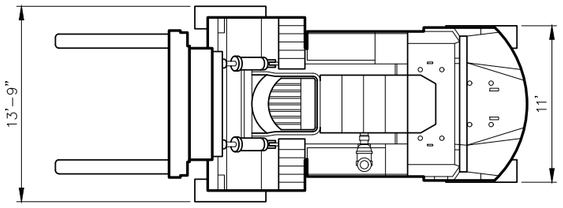




3 MANITOWOC 4000 W
Scale: 1/4" = 1'-0"



4 HYSTER H800-1050HD/S FORKSLIFT
Scale: 3/16" = 1'-0"



PROGRESS SET
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Haines Borough

LUTAK DOCK STUDY

No.	Description	Date

Drawn By: PMH/JVC
Checked By: JD/DA
Date: DEC 23, 2016
Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: DESIGN VESSELS AND VEHICLES

SHEET NO: 3 OF 27

G3.0

Plotted 12/23/2016 9:36 AM by Jean Cumlat Z:\project\2443.01 Hb Haines Lutak Dock Study\Civil\ACAD\2443.01 – G3.0 Design Vessels.dwg

1 EXISTING SITE PLAN

Scale: 1" = 100'

0 100 200
FEET

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No.	Description	Date

Drawn By: PMH/JVC
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Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: EXISTING SITE PLAN

SHEET NO: 4 OF 27

G4.0

Plotted 12/23/2016 9:37 AM by Jean Cumlat
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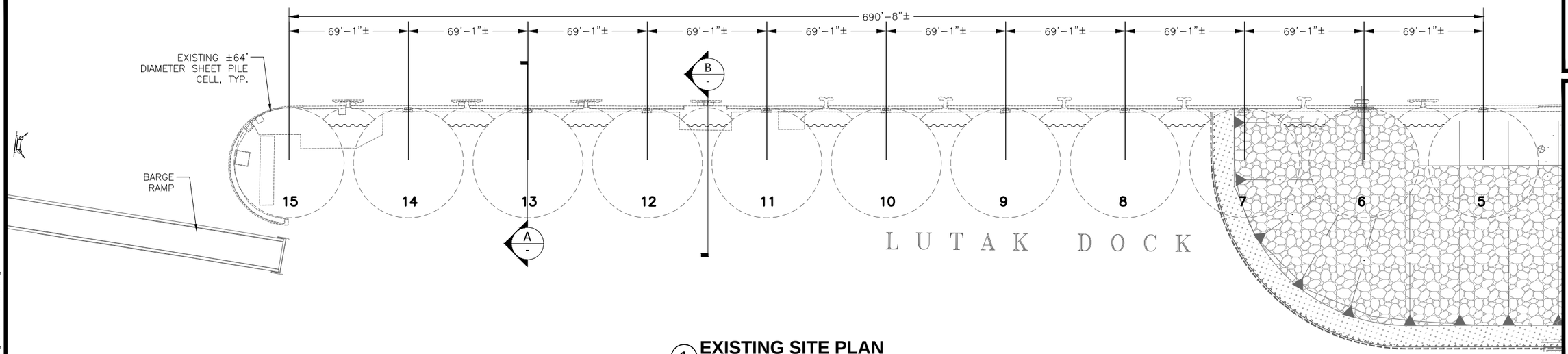
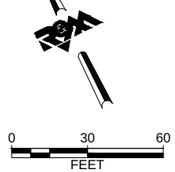
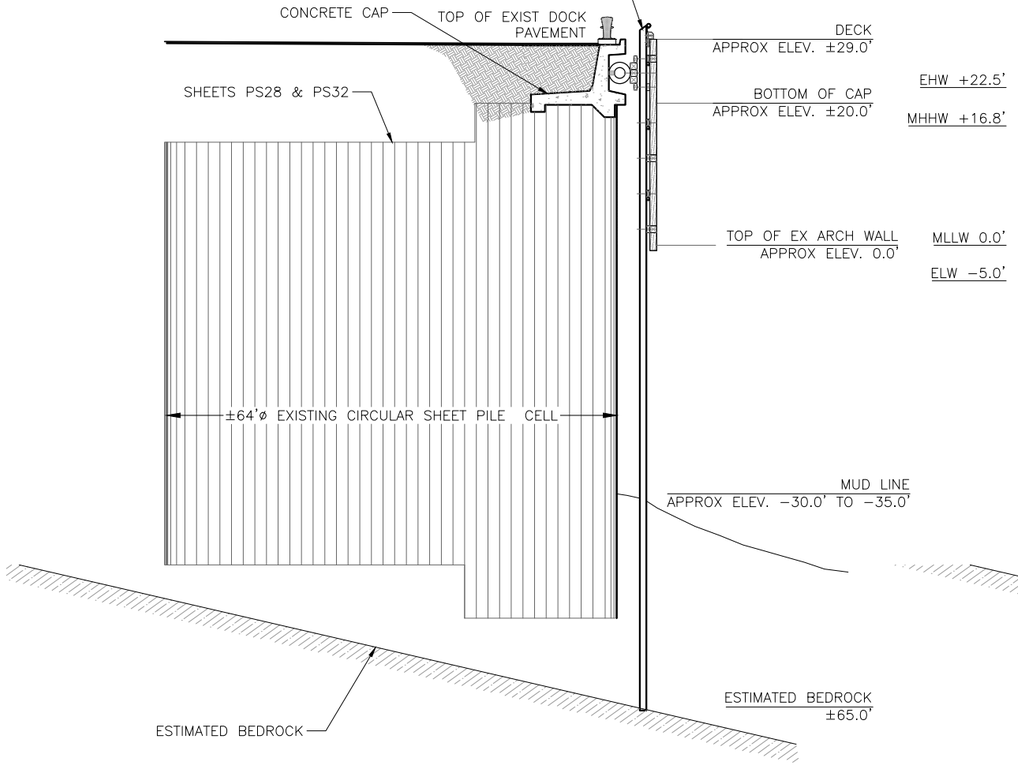


1 EXISTING SITE PLAN

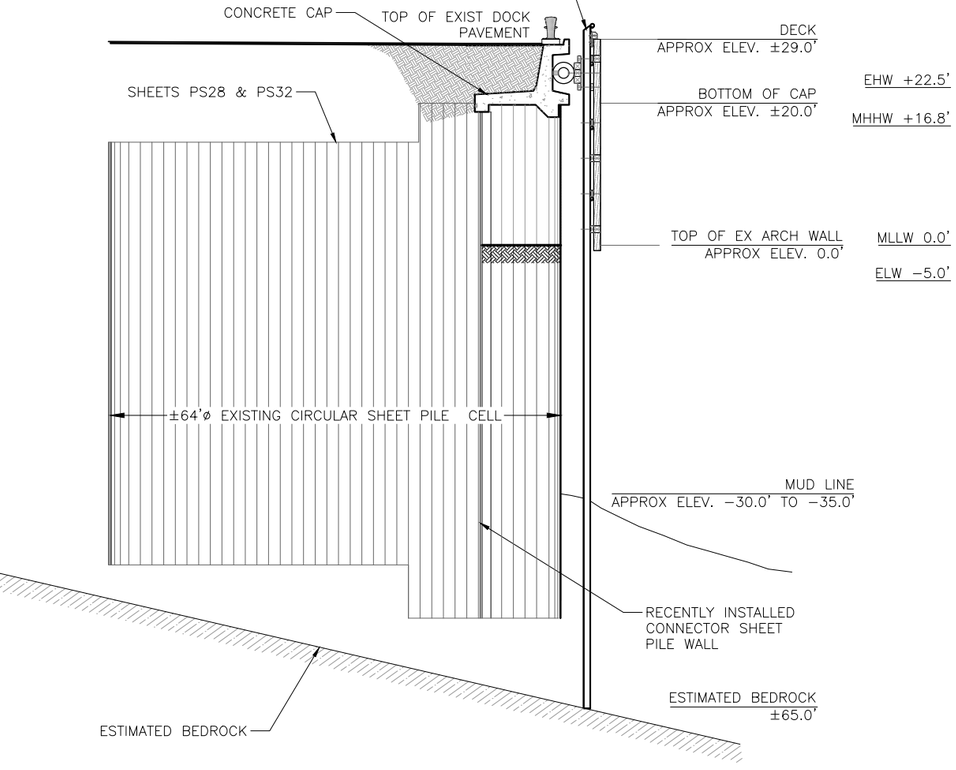
Scale: 1" = 30'





A EXISTING WHARF AT CENTER OF CELL

Scale: 3/32" = 1'-0"



B EXISTING WHARF SECTION AT CLOSURE ARC

Scale: 3/32" = 1'-0"

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Haines Borough

LUTAK DOCK STUDY

No.	Description	Date

Drawn By: PMH/JVC
Checked By: JD/DA
Date: DEC 23, 2016
Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: EXISTING WHARF DETAILS
SHEET NO: 5 OF 27

G4.1

Plotted 12/23/2016 9:37 AM by Jean Cumlat Z:\project\2443.01 Hb Haines Lutak Dock Study\Civil\ACAD\2443.01 – G4.1 Existing Wharf Details.dwg

CONCEPT COST ESTIMATE:

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	MOB AND DEMOB	LS	1	$3,000,000	$3,000,000
2	CONSTRUCTION SURVEY	LS	1	$180,000	$180,000
3	PROTECTED SPECIES OBSERVER	LS	1	$120,000	$120,000
4	EROSION AND POLLUTION CONTROL	LS	1	$31,250	$31,250
5	SILT CURTAIN - BOOM	LS	1	$120,000	$120,000
	SUB TOTAL MOB AND DEMOB				**$3,451,250**
6	DEMOLITION OF PILE CAPS AND MISC STRUCTURE	LF	770	$510	$392,700
7	DEMOLITION OF DOLPHINS AND EXISTING STRUCTURE	LS	1	$50,000	$50,000
8	DEMOLITION OF CLOSURE ARCS	EA	10	$25,000	$250,000
9	SALVAGE EXISTING FENDERS	EA	11	$2,000	$22,000
10	SALVAGE EXISTING FENDER PILES	EA	22	$2,500	$55,000
11	EXCAVATION AND DISPOSAL OF EXISTING FILL	CY	72,157	$15	$1,082,355
12	DREDGING AND DISPOSAL	CY	34,369	$24	$824,856
	SUB TOTAL DEMOLITION				**$2,676,911**
13	FURNISH PS-31 SHEET PILING	SF	210,495	$34	$7,156,830
14	INSTALL PS-31 SHEET PILING, PER PAIR	EA	802	$2,500	$2,005,000
15	FURNISH AND INSTALL POROUS BACKFILL	CY	24,845	$40	$993,800
16	FURNISH AND INSTALL SELECT MATERIAL TYPE A	CY	48,770	$20	$975,400
17	FURNISH AND INSTALL SUBBASE GRADING TYPE B	CY	7,049	$25	$176,225
18	FURNISH AND INSTALL LEVELING COURSE D-1	CY	1,177	$40	$47,080

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
19	FURNISH 16" DIAMETER FACE BEAM PILING	LF	2,263	$91	$205,933
20	INSTALL 16" DIAMETER FACE BEAM PILING	EA	31	$3,900	$120,900
21	FURNISH 18" DIAMETER PILING	LF	1,119	$128	$143,232
22	INSTALL 18" DIAMETER FACE BEAM PILING	EA	11	$4,000	$44,000
23	INSTALL 18" DIAMETER PILING IN ROCK SOCKET	EA	6	$20,000	$120,000
24	FURNISH AND INSTALL FACE BEAM AND BULLRAIL	CY	1,142	$2,000	$2,284,000
25	INSTALL SALVAGED FENDERS	EA	11	$6,000	$66,000
26	INSTALL SALVAGED FENDER PILES	EA	22	$2,500	$55,000
27	FURNISH AND INSTALL BOLLARDS	EA	11	$10,000	$110,000
28	FURNISH AND INSTALL LIFE RINGS	EA	5	$1,200	$6,000
29	FURNISH AND INSTALL FIRE EXTINGUISHERS	EA	5	$1,200	$6,000
30	FURNISH AND INSTALL FIRE STANDPIPE	LF	1,000	$120	$120,000
31	FURNISH AND INSTALL 150# ANODES	EA	769	$1,200	$922,800
32	FURNISH 30" DIAMETER PILING	LF	880	$258	$227,040
33	INSTALL 30" DIAMETER PILING IN ROCK SOCKET	EA	17	$25,000	$425,000
34	FURNISH AND INSTALL TENSION ANCHOR	EA	23	$35,000	$805,000
35	FURNISH AND INSTALL BARGE BERTH ABUTMENT PILE CAP	LS	1	$30,000	$30,000
36	FURNISH AND INSTALL BARGE TRANSFER BRIDGE	LS	1	$1,120,000	$1,120,000
37	FURNISH AND INSTALL 3 PILE DOLPHINS	EA	3	$140,000	$420,000
38	FURNISH AND INSTALL 4 PILE DOLPHINS	EA	2	$210,000	$420,000
39	ELECTRICAL AND LIGHTING	LS	1	$315,600	$315,600
	SUB TOTAL CONSTRUCTION				**$19,320,840**

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	TOTAL CONSTRUCTION				**$25,449,001**
A	DESIGN UPLAND SURVEY	LS	1	$55,000	$55,000
B	DESIGN HYDROGRAPHIC SURVEY	LS	1	$20,000	$20,000
C	DESIGN GEOTECH PROGRAM	LS	1	$140,000	$140,000
D	DESIGN (10% OF CONSTRUCTION)	LS	1	$2,544,900	$2,544,900
E	PERMITTING CLEAN WATER ACT SECTION 10 AND 404	LS	1	$20,000	$20,000
F	PERMITTING NMFS IHA	LS	1	$80,000	$80,000
G	PERMITTING NEPA	LS	1	$100,000	$100,000
H	CONSTRUCTION ADMINISTRATION (6% OF CONSTRUCTION)	LS	1	$1,526,940	$1,526,940
	SUB TOTAL ENGINEERING AND ADMIN				**$4,486,840**
	TOTAL CONSTRUCTION & ENGINEERING COST:				$29,935,841
	25% CONTINGENCY:				$7,483,960
	TOTAL:				$37,420,000

ALTERNATIVE 1A - MODIFIED DIAPHRAGM

PROGRESS SET NOT FOR CONSTRUCTION

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LUTAK DOCK STUDY

HAINES BOROUGH ALASKA

No.	Description	Date

Drawn By: PMH/JVC
Checked By: JD/DA
Date: DEC 23, 2016
Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: ALTERNATIVE 1A - MODIFIED DIAPHRAGM
SHEET NO: 6 OF 27

C1.0

Plotted 12/23/2016 9:37 AM by Jean Cumlat
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CONCEPT COST ESTIMATE:

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	MOB AND DEMOB	LS	1	$3,000,000	$3,000,000
2	CONSTRUCTION SURVEY	LS	1	$180,000	$180,000
3	PROTECTED SPECIES OBSERVER	LS	1	$120,000	$120,000
4	EROSION AND POLLUTION CONTROL	LS	1	$31,250	$31,250
5	SILT CURTAIN - BOOM	LS	1	$120,000	$120,000
	SUB TOTAL MOB AND DEMOB				**$3,451,250**
6	DEMOLITION OF PILE CAPS AND MISC STRUCTURE	LF	770	$510	$392,700
7	DEMOLITION OF DOLPHINS AND EXISTING STRUCTURE	LS	1	$50,000	$50,000
8	DEMOLITION CLOSURE ARCS	EA	8	$25,000	$200,000
9	SALVAGE EXISTING FENDERS	EA	11	$2,000	$22,000
10	SALVAGE EXISTING FENDER PILES	EA	22	$2,500	$55,000
11	EXCAVATION AND DISPOSAL OF EXISTING FILL	CY	72,157	$15	$1,082,355
12	DREDGING AND DISPOSAL	CY	34,369	$24	$824,856
	SUB TOTAL DEMOLITION				**$2,626,911**
13	FURNISH PS-31 SHEET PILING	SF	161,855	$34	$5,503,070
14	INSTALL PS-31 SHEET PILING, PER PAIR	EA	617	$2,500	$1,542,500
15	FURNISH AND INSTALL POROUS BACKFILL	CY	19,479	$40	$779,160
16	FURNISH AND INSTALL SELECT MATERIAL TYPE A	CY	36,648	$20	$732,960
17	FURNISH AND INSTALL SUBBASE GRADING TYPE B	CY	5,035	$25	$125,875
18	FURNISH AND INSTALL LEVELING COURSE D-1	CY	841	$40	$33,640

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
19	FURNISH 16" DIAMETER FACE BEAM PILING	LF	1,680	$91	$152,880
20	INSTALL 16" DIAMETER FACE BEAM PILING	EA	23	$3,900	$89,700
21	FURNISH 18" DIAMETER PILING	LF	900	$128	$115,200
22	INSTALL 18" DIAMETER FACE BEAM PILING	EA	8	$4,000	$32,000
23	INSTALL 18" DIAMETER PILING IN ROCK SOCKET	EA	6	$20,000	$120,000
24	FURNISH AND INSTALL FACE BEAM AND BULLRAIL	CY	817	$2,000	$1,634,000
25	INSTALL SALVAGED FENDERS	EA	8	$6,000	$48,000
26	INSTALL SALVAGED FENDER PILES	EA	16	$2,500	$40,000
27	FURNISH AND INSTALL BOLLARDS	EA	8	$10,000	$80,000
28	FURNISH AND INSTALL LIFE RINGS	EA	5	$1,200	$6,000
29	FURNISH AND INSTALL FIRE EXTINGUISHERS	EA	5	$1,200	$6,000
30	FURNISH AND INSTALL FIRE STANDPIPE	LF	700	$120	$84,000
31	FURNISH AND INSTALL 150# ANODES	EA	615	$1,200	$738,000
32	FURNISH 30" DIAMETER PILING	LF	880	$258	$227,040
33	INSTALL 30" DIAMETER PILING IN ROCK SOCKET	EA	17	$25,000	$425,000
34	FURNISH AND INSTALL TENSION ANCHOR	EA	23	$35,000	$805,000
35	FURNISH AND INSTALL BARGE BERTH ABUTMENT PILE CAP	LS	1	$30,000	$30,000
36	FURNISH AND INSTALL BARGE TRANSFER BRIDGE	LS	1	$1,120,000	$1,120,000
37	FURNISH AND INSTALL 3 PILE DOLPHINS	EA	3	$140,000	$420,000
38	FURNISH AND INSTALL 4 PILE DOLPHINS	EA	2	$210,000	$420,000
39	ELECTRICAL AND LIGHTING	LS	1	$315,600	$315,600
	SUB TOTAL CONSTRUCTION				**$15,625,625**

NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	TOTAL CONSTRUCTION				**$21,703,786**
A	DESIGN UPLAND SURVEY	LS	1	$55,000	$55,000
B	DESIGN HYDROGRAPHIC SURVEY	LS	1	$20,000	$20,000
C	DESIGN GEOTECH PROGRAM	LS	1	$140,000	$140,000
D	DESIGN (10% OF CONSTRUCTION)	LS	1	$2,170,379	$2,170,379
E	PERMITTING CLEAN WATER ACT SECTION 10 AND 404	LS	1	$20,000	$20,000
F	PERMITTING NMFS IHA	LS	1	$80,000	$80,000
G	PERMITTING NEPA	LS	1	$100,000	$100,000
H	CONSTRUCTION ADMINISTRATION (6% OF CONSTRUCTION)	LS	1	$1,302,227	$1,302,227
	SUB TOTAL ENGINEERING AND ADMIN				**$3,887,606**

TOTAL CONSTRUCTION & ENGINEERING COST:	$25,591,392
25% CONTINGENCY:	$6,397,848
TOTAL:	$31,989,000

ALTERNATIVE 1B - MODIFIED DIAPHRAGM

PROGRESS SET NOT FOR CONSTRUCTION

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CORPORATE AUTHORIZATION NUMBER AECC111

Haines Borough
LUTAK DOCK STUDY

No.	Description	Date

Drawn By: PMH/JVC
Checked By: JD/DA
Date: DEC 23, 2016
Phase: PRELIMINARY
Project No: 2443.01
SHEET TITLE: ALTERNATIVE 1B - MODIFIED DIAPHRAGM
SHEET NO: 7 OF 27
C1.1

Plotted 12/23/2016 9:37 AM by Jean Cumlat Z:\project\2443.01 Hb Haines Lutak Dock Study\Civil\ACAD\2443.01 – C1.0 Alternative 1A And 1B Description.dwg