

**EXPLANATION OF CONSENT AGENDA ITEM E.2.c.(4) – August 24, 2016**

**ITEM:**

Consideration of approving a purchase order to CH2M under their general engineering services contract for the inspection and evaluation of the sheet pile berth walls throughout the port in an amount not to exceed \$195,980. (Patrick Hammond/ BillCrowe)

**EXPLANATION:**

Many of Port Canaveral's bulkhead walls were originally constructed between 1965 and 1996 and are aging facilities. In order to ensure safe and structurally stable bulkhead walls throughout the port, engineering assessments are required on a routine bases.

The attached proposal is for an engineering investigation and assessment of the current bulkhead walls throughout the port that includes dive operations. This assessment will allow staff to determine critical repairs that are needed and allow staff to set up a port wide repair plan, schedule and cost estimate. The underwater dive inspection will include use of instrumentation that will measure the remaining thickness of the steel bulkhead cross section and will allow the CPA Engineering to project remaining life cycle of the various facilities.

**Funding Review by Finance (Pat Poston):** The total NTE amount of \$195,980 is included in the FY16 Capital Budget and no increase is required. [Budget item 2221 - Improved Fender System]

**Staff Recommends Approval**

**Prepared by Patrick Hammond/Bill Crowe**

*PK*





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July 29, 2016

CH2M HILL

\$195,980.00

Canaveral Port Authority  
445 Challenger Road, Suite 301  
Cape Canaveral, FL 32920

Attn: Mr. Bill Crowe, P.E.  
Senior Director, Facilities, Construction & Engineering

Re: Proposal for Engineering Order Number CPA 2016-09: Bulkhead Condition Survey

Canaveral Port Authority has a significant investment in the harbor's marine infrastructure and the condition of this infrastructure needs to be monitored not only to assess its present condition, but also for future planning. As shown in the attached table, the bulkhead walls range from 12 to over 50 years in age, with the majority of the walls at over 40 years in age. The last comprehensive underwater condition survey of these walls was performed in 1999. Port Staff recognizes that the failure of any of these walls could lead to significant damage to upland facilities, disruption of the use of adjacent berths, negative impacts on the tenants, and possible shoaling of the navigation channel. Consequently, CH2M has prepared the following proposal to perform an underwater condition survey of the bulkhead walls and submerged toewalls.

### Scope of Services

Within the scope of our June 18, 2014 General Engineering Professional Services Contract, CH2M HILL Engineers, Inc. is pleased to submit the following proposal for professional services in connection with the Bulkhead Wall Condition Survey. Below is an in-depth description of our scope of services.

Perform a condition survey of the bulkhead walls within Port Canaveral as shown in the attached site plan. The total length of walls to be surveyed is over 3-1/2 miles long. The condition survey will be performed by a CH2M Professional Engineer Dive Team. Team members are commercially certified divers who routinely perform underwater inspections in ports and harbors. The survey will be performed in accordance with American Society of Civil Engineers (ASCE) Standard Practice Manual for Underwater Investigations as follows:

For 100% of the indicated bulkhead walls perform a Level 1 inspection. As defined by ASCE, the Level I effort is a close visual examination that is intended to detect obvious damage or deterioration, and to confirm the continuity of the wall and any undermining or exposure of the wall.

For each 100 lineal feet of wall, perform a Level II and Level III inspection in accordance with ASCE. This is intended to detect and identify the condition of the wall hidden by biofouling. This effort will consist of cleaning the steel sheet piling to bare metal at three (3) locations in the water column (Level II: high water, midwater, and mudline). Sheet pile wall thicknesses will be measured using Ultrasonic Thickness Measuring equipment at each cleaned location (Level III). This data will be used to assess the general condition of the wall and its expected service life.

Underwater photography will be performed as necessary to adequately convey typical conditions and areas of significant deterioration or damage.

## **Deliverables**

Deliverable to include an inspection report containing an executive summary, a narrative of findings, and supporting drawings and photographs.

## **Project Schedule**

The project will begin upon notice to proceed from the CPA. Notice to proceed will be construed as a signed work order as well as the issuance of a purchase order. Depending on vessel occupancy at the nearby berth, it is anticipated that work within this scope of services will be completed within sixty (60) days. If there are protracted delays for reasons beyond our control, we would expect to negotiate with you and equitable adjustment of our not-to-exceed budgets and schedule taking into consideration the impact of such delay.

## **Price**

CH2M shall be paid on a cost basis in accordance with the General Contract dated June 18, 2014, and the Rate Table dated January 20, 2016. The Not-to-Exceed (NTE) budget for Priority Walls "A" thru "I" is \$195,980.00. If Wall "I" (NCP 3 & 4) is deleted from the Project, then \$26,095.00 will be deducted from the NTE budget.

## **Acceptance of Proposal**

Acceptance of this proposal may be indicated by the signature of a duly authorized official of the Port in the space provided below. One signed copy of this proposal returned to the Consultant will serve as an Agreement between the two parties and as Notice to Proceed. Should this proposal not be accepted within a period of thirty (30) days from the above date, it shall become null and void.

Max Mozo, P.E.  
Geographic Operations Manager  
CH2M HILL ENGINEERS, Inc.

Accepted By:  
CANAVERAL PORT AUTHORITY

\_\_\_\_\_  
Bill Crowe, P.E.  
Senior Director, Facilities, Construction and  
Engineering  
Canaveral Port Authority

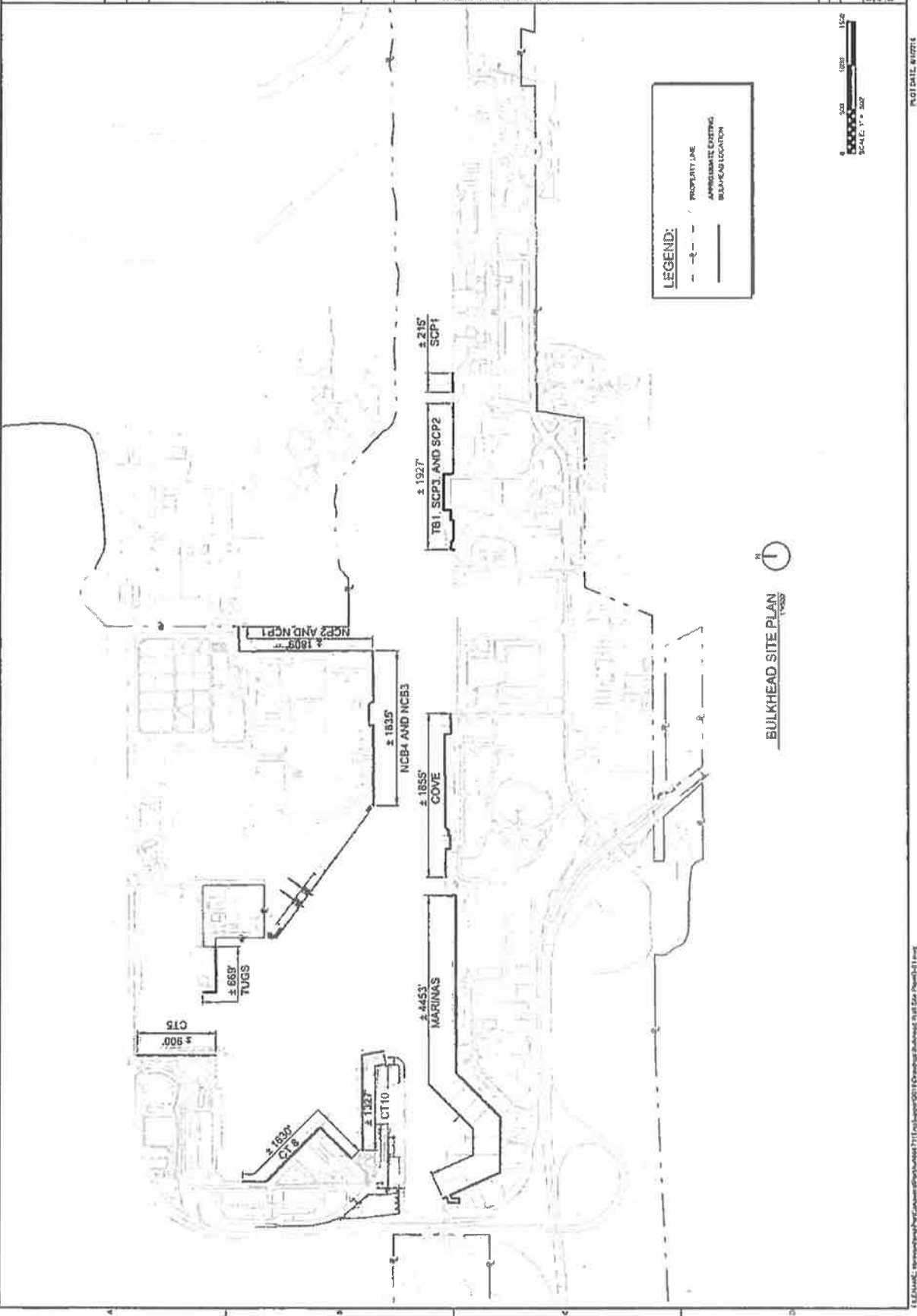
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Date

Approved at CPA Commission Meeting on \_\_\_\_\_

Port Canaveral

Bulkhead Wall Condition Survey

Priority	Location	Lineal Feet of Bulkhead Wall	Lineal Feet of Submerged Toewall	Type of wall	Year Constructed	Remarks
A	NCP 1 & 2	1809	750	SSP	1973	Added toewall and encasement to NCP 1 in 1987
B	CT5	900	0	SSP	1989	
C	CT10	1327	1150	SSP	1994	
D	CT8	1630	1000	SSP	1996	
E	SCP 2 & 3, TB-1	1927	0	SSP	varies	Replaced SCP 3 front wall in 1980; replaced SCP3 end walls in 2002; replaced west 650 feet of SCP2 in 2004; constructed TB-1 wall in 1995.
F	SCP 1 and Tugs	669	0	SSP	varies	SCP1 wall -1990; Tug wall - 1971
G	Marinas and Boat Ramp	4453	0	SSP & Conc	varies	Wall #13 - 1971, #14 -1967, #15 - 1965
H	Cove	1855	0	SSP & Conc	varies	Wall #17 - 1965, #18 - 2000 (replacement), #19 thru 21 - 1994, #22 - 1962 (underneath resturant and deck)
I	NCP 3 & 4	1835	0	SSP	1973	
Subtotal Length of wall, LF		16405	2900			
Miles		3.11	0.55			
Total Length of walls, miles		3.66				



# 2016 Cost Estimate

for  
**UNDERWATER INSPECTION OF BULKHEAD WALLS  
 AT PORT CANAVERAL**

## COMPLETE INSPECTION OF ALL WALLS (PRIORITY A-I)

### LABOR HOURS

TASK	PM	QC Engr	Team Leader	Dive Supervisor	Engr. Diver	Engr	CADD	Total
1. Planning/Logistics/Equipment Prep	8		18	16	16		8	64
2. Mobilization/Demobilization	0		32	32	32			96
3. Inspection	12		184	184	164			552
4. Report	2	24	160	8	16			220
5. Drawing/Sketches	2		32				100	134
6. Cost Estimates	8							0
7. Meeting								16
8. Presentation								0
9. Misc.								0
<b>Total</b>	<b>30</b>	<b>24</b>	<b>432</b>	<b>240</b>	<b>248</b>	<b>0</b>	<b>108</b>	<b>1,082</b>

### LABOR FEES

TASK	PM	QC Engr	Team Leader	Dive Supervisor	Engr. Diver	Engr	CADD	Total
1. Planning/Logistics/Equipment Prep	\$221.00	\$0.00	\$2,768.00	\$2,240.00	\$2,240.00	\$0.00	\$696.00	\$9,712.00
2. Mobilization/Demobilization	\$0.00	\$0.00	\$5,536.00	\$4,480.00	\$4,480.00	\$0.00	\$0.00	\$14,496.00
3. Inspection	\$0.00	\$0.00	\$31,832.00	\$25,760.00	\$25,760.00	\$0.00	\$0.00	\$83,352.00
4. Report	\$2,652.00	\$5,304.00	\$27,680.00	\$1,120.00	\$2,240.00	\$0.00	\$0.00	\$38,996.00
5. Drawing/Sketches	\$442.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$442.00
6. Cost Estimates	\$1,768.00	\$0.00	\$1,384.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,152.00
7. Meeting	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
8. Presentation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9. Misc.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Total</b>	<b>\$6,630.00</b>	<b>\$5,304.00</b>	<b>\$74,736.00</b>	<b>\$33,600.00</b>	<b>\$34,720.00</b>	<b>\$0.00</b>	<b>\$9,396.00</b>	<b>\$164,386.00</b>

### EXPENSES

Equipment	Rate	Quantity	d/w/ies	Duration	Cost
Van	\$ 102	1	d	23	\$ 2,346
UT Meter	\$ 190	1	d	23	\$ 2,300
Dive Station (Equipment)	\$ 317	1	d	23	\$ 7,291
UV Camera	\$ 350	1	w	5	\$ 1,750
Per Diem Allowance	\$ 175	3	d	5	\$ 2,625
Small Boat	\$ 400	0	ea	1	\$ -
Airfares	\$ 250	1	ea	1	\$ 250
Reproduction	\$ -	1	d	1	\$ -
Misc.	\$ -	1	d	1	\$ -
Misc.	\$ -	1	d	1	\$ -
Misc.	\$ -	1	d	1	\$ -
<b>Total Dive Team Expenses</b>					<b>\$ 16,562</b>
<b>Total Dive Team Labor</b>					<b>\$ 164,386</b>

### Cape Canaveral Office Costs

Task	Proj. Director	Staff Prof.	Jr. Staff Prof.	Tech. Staff
Project Admin.	8	4	6	8
Meetings	4			
Wall strength & service lia calculations	40			
<b>Total</b>	<b>52</b>	<b>4</b>	<b>6</b>	<b>8</b>
Rate	\$ 257.00	\$ 113.00	\$ 92.50	\$ 59.50
Subtotals	\$ 13,364.00	\$ 452.00	\$ 740.00	\$ 476.00

Total Cape Canaveral Office Cost \$ 15,022.00

Deduct for NCP 3 & 4 WA# (Priority WA# 1)

\$ 26.09%

**TOTAL FEE \$ 195,980**