APPENDIX M

ROUGH ORDER OF MAGNITUDE COST ESTIMATES

HONOLULU HARBOR 2050 MASTER PLAN
ESTIMATED COST OF CONSTRUCTION

For

State of Hawai‘i, Department of Transportation, Harbors Division

R. M. TOWILL CORPORATION

HONOLULU HARBOR MASTER PLAN

SUMMARY SHEET

ESTIMATED ROUGH ORDER OF MAGNITUDE CONSTRUCTION COSTS

10/10/2022

			Annual Cost Escalation =	5.00%
Master Plan Recommended Improvements	**1/1/2023**	**1/1/2030**	**1/1/2040**	**1/1/2050**
Harbor-Wide Improvements	$ 81,500,000	$ 114,683,000	$ 186,795,000	$ 304,290,000
Lay berth Improvements	$3,845,000	$ 5,411,000	$ 8,814,000	$ 14,359,000
Piers 1A, 1B, and 2A - Multi-Use Pier Reconstruction	$435,212,000	$ 612,408,000	$ 997,482,000	$ 1,624,902,000
Pier 2 - Cruise Terminal Pier Upgrades	$296,368,000	$ 417,034,000	$ 679,260,000	$ 1,106,517,000
Pier 2-DOH Building Renovation	$10,000,000	$ 14,072,000	$ 22,921,000	$ 37,339,000
Pier 5 & 6 and Mini Park - Maritime Upgrades	$512,344,000	$ 720,944,000	$ 1,174,264,000	$ 1,912,881,000
Piers 7 to 11 Aloha Tower Area Improvements	$171,071,000	$ 240,723,000	$ 392,087,000	$ 638,712,000
Piers 12-15 Modernization	$29,742,000	$ 41,852,000	$ 68,168,000	$ 111,046,000
Piers 16-18 Fishing Pier Improvements	$75,653,000	$ 106,455,000	$ 173,393,000	$ 282,458,000
Piers 19 and 20 Multi-purpose Cargo Terminal	$188,184,000	$ 264,803,000	$ 431,308,000	$ 702,603,000
Piers 21 and 22 "Tug Row" Improvements	$114,397,000	$ 160,974,000	$ 262,193,000	$ 427,114,000
Piers 22 and 23 Maritime Support Pier Improvements	$173,474,000	$ 244,104,000	$ 397,594,000	$ 647,682,000
Piers 19 and 23 Maritime Center	$409,788,000	$ 576,633,000	$ 939,212,000	$ 1,529,980,000
Piers 24 to 29A Maritime Support Pier Improvements	$510,499,000	$ 718,348,000	$ 1,170,036,000	$ 1,905,993,000
Pier 29 Multi-purpose Cargo Pier Improvements	$91,400,000	$ 128,614,000	$ 209,485,000	$ 341,252,000
Piers 31 to 34 Multi-purpose Cargo Terminal Improvements	$363,729,000	$ 511,821,000	$ 833,647,000	$ 1,358,014,000
Pier 35 UH Research Pier	$135,604,000	$ 190,815,000	$ 310,797,000	$ 506,290,000
Pier 36 Fishing Village Pier Extension	$74,896,000	$ 105,390,000	$ 171,658,000	$ 279,632,000
Pier 38 Fishing Village Pier Improvements and Expansion	$70,892,000	$ 99,756,000	$ 162,482,000	$ 264,684,000
Pier 38 Maritime Support Area Improvements	$17,462,000	$ 24,572,000	$ 40,023,000	$ 65,198,000
Piers 39 to 41 Interisland Terminal Modernization	$898,384,000	$ 1,264,159,000	$ 2,059,045,000	$ 3,354,192,000
Piers 51-53 Sand Island Terminal Improvements	$1,124,275,000	$ 1,582,021,000	$ 2,576,774,000	$ 4,197,574,000
Pier 60 Aggregate and Cargo Pier Improvements	$146,037,000	$ 205,496,000	$ 334,709,000	$ 545,243,000
	$ 5,934,756,000	**$ 8,351,088,000**	**$ 13,602,147,000**	**$ 22,157,955,000**
Piers 1 & 2 Consolidated Cruise Terminal Options and Alternatives				
Passenger Access Option 1 - Mobile Staging Equipment	$ 750,000	$ 1,056,000	$ 1,720,000	$ 2,802,000
Passenger Access Option 2 - Elevated Retractable Walkway	$ 14,850,000	$ 20,897,000	$ 34,037,000	$ 55,447,000
Terminal Building Option 1 - Renovate/Consolidate Existing Building	$ 40,000,000	$ 56,286,000	$ 91,678,000	$ 149,344,000
Terminal Building Option 2 - New Semi-Permanent Terminal Structure	$ 12,500,000	$ 17,590,000	$ 28,651,000	$ 46,673,000
Terminal Building Option 3 - New Permanent Terminal Structure	$ 50,000,000	$ 70,358,000	$ 114,599,000	$ 186,683,000
Alternative 1 - Semi-Permanent Terminal Structure / Mobile Staging Equip.	$ 13,250,000	$ 18,645,000	$ 30,369,000	$ 49,472,000
Alternative 2a - Renovate Existing Terminal Bldg. / Mobile Staging Equip.	$ 40,750,000	$ 57,342,000	$ 93,398,000	$ 152,146,000
Alternative 2b - Renovate Existing Terminal Bldg. / Elevated Walkway	$ 54,850,000	$ 77,183,000	$ 125,715,000	$ 204,791,000
Alternative 3a - New Permanent Terminal Bldg. / Mobile Staging Equip.	$ 50,750,000	$ 71,413,000	$ 116,317,000	$ 189,481,000
Alternative 3b - New Permanent Terminal Bldg. / Elevated Walkway	$ 64,850,000	$ 91,254,000	$ 148,634,000	$ 242,126,000

Notes:
- Cost estimate values for recommended improvement items are rounded up to the nearest thousandths in the Summary Sheet.
- ROM estimates represent a broad approximation of a project's cost. Costs attributes for the Kapalama Container Terminal were used as the baseline to derive ROM estimates for selected HHMP projects. These costs will be refined as projects concepts are developed and specific uses and needs are identified.

HARBOR-WIDE IMPROVEMENTS - EMERGENCY ACCESS RAMP & DREDGING

1 Develop an emergency access boat ramp within Honolulu Harbor for pilots, jet skis and other emergency water vehicles (Consider Pier 27E, Pier 38 maritime support area, or continue to use the Sand Island Boat Ramp).

2 Deepen the operational draft of the pier side of all cargo piers. Dredge water depths along the pier face to accommodate the greatest variety of vessels to allow for operational flexibility.

- Minimum recommended dredged depth at cargo piers affected by wave energy (Piers 1 and 2, 19 and 20) = 45 FT.
- Minimum recommended dredged depth at cargo piers in protected areas of the harbor (Piers 29, 31 to 33, Interisland Terminal, KCT and Sand Island Terminal) = 43 FT.

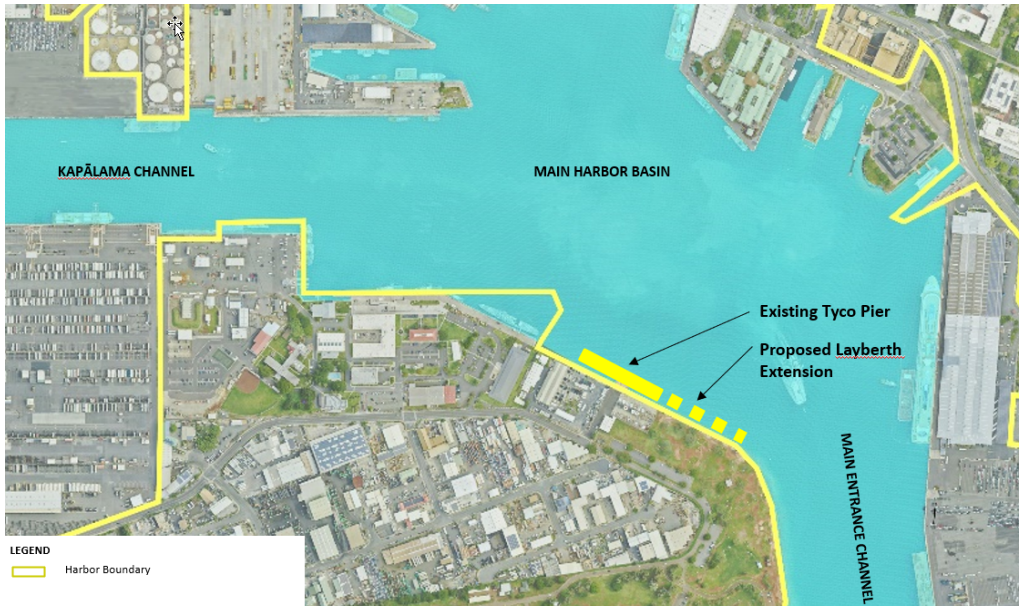
Item	Unit	Quantity	Unit Cost*	Cost	
Develop emergency access boat ramp	L.S.	L.S.	L.S.	$1,500,000	* Based on prior project experience
Dredge to 43 to 45 ft deep at piers 1, 2, 19, 20, 29, 39, 40, 51, 52 and 53	per pier	10	$7,000,000.00	$70,000,000	* Based on Kapalama Wharf and Dredging cost per pier
Coral Transplantation at each piers 1, 2, 19, 20, 29, 39, 40, 51, 52 and 53	per pier	10	$ 1,000,000	$10,000,000	* Assume minimal Coral Transplantation (deep areas have limited coral growth)
TOTAL				**$81,500,000**	

LAY BERTH IMPROVEMENTS - EXTEND TYCO PIER BERTH LENGTH

1 Tyco Pier - Install two or three new dolphins along Sand Island revetment to extend the Tyco Pier mooring length from approximately 600 LF existing (utilizing the existing two dolphins and the Tyco Pier) to approximately 1,200 LF.

Item	Unit	Quantity	Unit Cost*	Cost
Install dolphins along sand island revetment	ea	3	$1,281,412.04	$3,844,236.11
TOTAL				**$3,844,236**

* Based on 20907 Pier 15 Bid



PIERS 1A, 1B, & 2A MULTI-USE CARGO TERMINAL MODERNIZATION

1 Reconstruct Piers 1A, 1B and 2A
Cut back Piers 1A and 1B pier face to fast land (approximatley 75 lf in from existing pier face) and shift the knuckle between Piers 1B and 2A mauka to create more pier side ship berthing space outside of the harbor entrance channel navigation corridor.
Pier Length 1A-2A = 1,600 lf (portion designated for cargo pier)
Pier Length 1A-2A cutback = 1,630 lf

1a Raise pier and yard to to adapt to projected 3.2 ft SLR by 2060 and maintain minimum design freeboard of 6 feet to accommodate full range of barge and Ro/Ro vessel operations. (Note: Recommend raising the entire yard area rather than constructing a raised apron due to the terminal's function as a primary resiliency pier.)
Pier Length = 1,630 lf (cutback / reconstructed length)
Yard / Pier Existing Elevation above MLLW (2019) = 7.25 ft
Yard / Pier Proposed Elevation above MLLW (2019) = 11.10 ft
Yard / Pier Elevation Increase = 3.85 ft
Yard Area Existing = 1,524,545 sf
Proposed Demo Area (pier cutback) = 82,900 sf / 1.90 ac
Proposed Transfer Area to Cruise Terminal: 112,424 sf
Proposed 2050 Yard Area = 1,329,221 sf / 30.51 ac
Proposed Fill Volume = 189,537 cy / 117.48 ac-ft

1b Reconstruct and strengthen Piers 1A, 1B and 2A apron and yard.

1c Reconstruct pier using sheet-pile/bulkhead design.

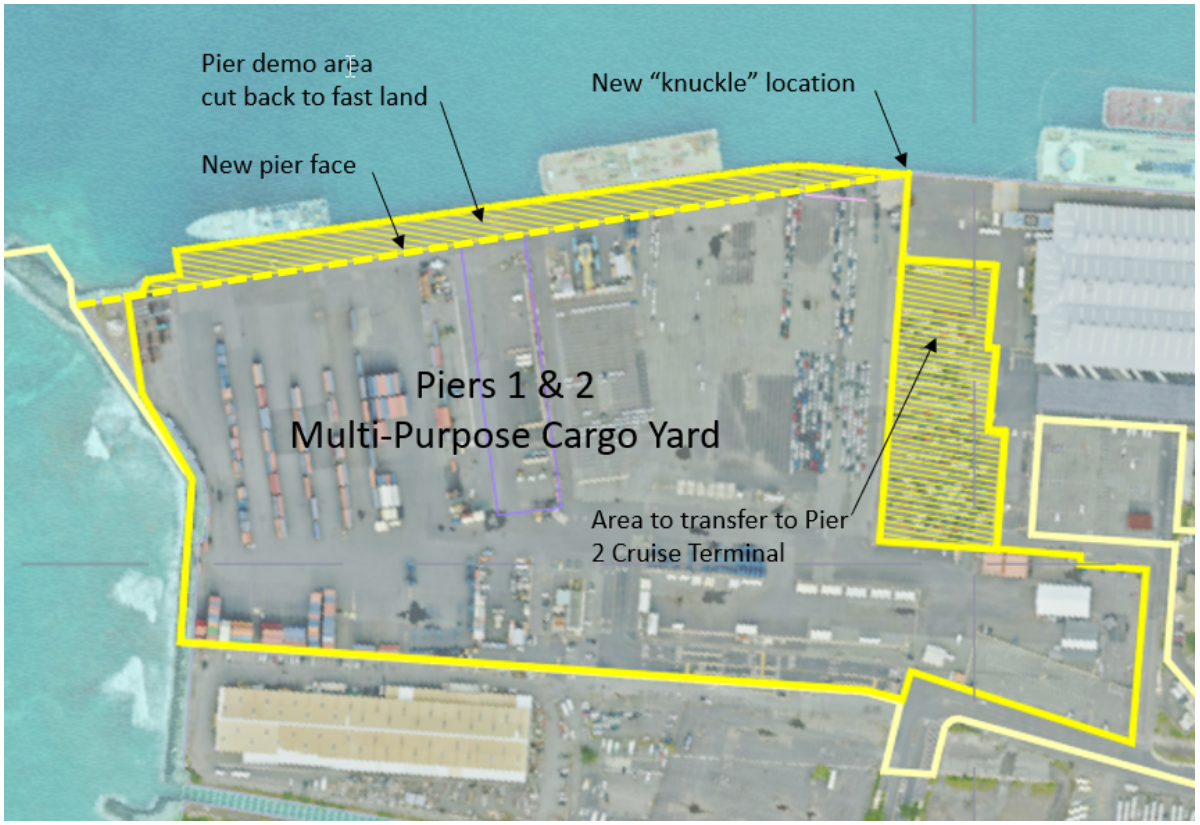
1ci Incorporate wave dampening measures into the sheet-pile construction to diffuse wave energy from south swells and storm surge. Requires ocean engineering study to design wave dampening system and upgrading the pier to handle the wave loading. The system will augment the standard bulkhead pier construction.

1cii Modernize fendering and bollards

2 Repave Piers 1A, 1B and 2A yards with concrete

3 Install heavy lift pads for mobile cranes and Ro-Ro ramps. Consider 6,000 psi-strength concrete and special coating for heavy lift pads.

4 Install reinforced utility conduit to support the pier's function as a resiliency pier.



Item	Unit	Quantity	Unit Cost*	Cost	
Cut back and demolish pier and apron.	lf	1,630	$10,611.92	$17,297,425	* Based on KCT Wharf and Dredging cost per LF for demolition.
Reconstruct Piers 1A, 1B, and 2A Yard	ac	30.50	$3,649,872.84	$111,321,122	* Based on KCT cost per acre
Additional Fill Material	ac-ft	117.50	$252,141.49	$29,626,625	* Based on KCT cost for fill
Construct bulkhead pier, bollards (100-ton) and fenders	lf	1,630.00	$148,654.13	$242,306,224	* Based on KCT Wharf and Dredging - bulkhead pier construction
Wave dampening measures	lf	1,630.00	$20,000.00	$32,600,000	* Based on professional assumptions. Ocean engineering study required.
Heavy Lift Pads	ea	2.00	$780,000.00	$1,560,000	* 150'x100'x2' or 1,111 cy at $700/cy
Reinforced utility conduit	L.S.	L.S.	L.S.	$500,000	* Assume replacement of covers and that existing utilities will not be affected
TOTAL				**$435,211,396**	

PIERS 1 AND 2 CONSOLIDATED CRUISE TERMINAL IMPROVEMENTS

Passenger Access Option 1
Temporary/Mobile Staging

1 Use temporary, mobile equipment for cruise vessels berthed at Pier 1 (gangway, water barriers, covered awnings for ship-side staging areas).

Passenger Access Option 2
Elevated Walkway

2 Create an elevated, retractable walkway from the Pier 2 terminal building "knuckle" between Piers 1B and 2A to extend approximately 1,200 LF from the Pier 2 terminal building to the mid-ship point of a cruise ship berthed at Piers 1A-B.

Facility Option 1
Renovate Existing Pier 2B Terminal for Two-Vessel Operations

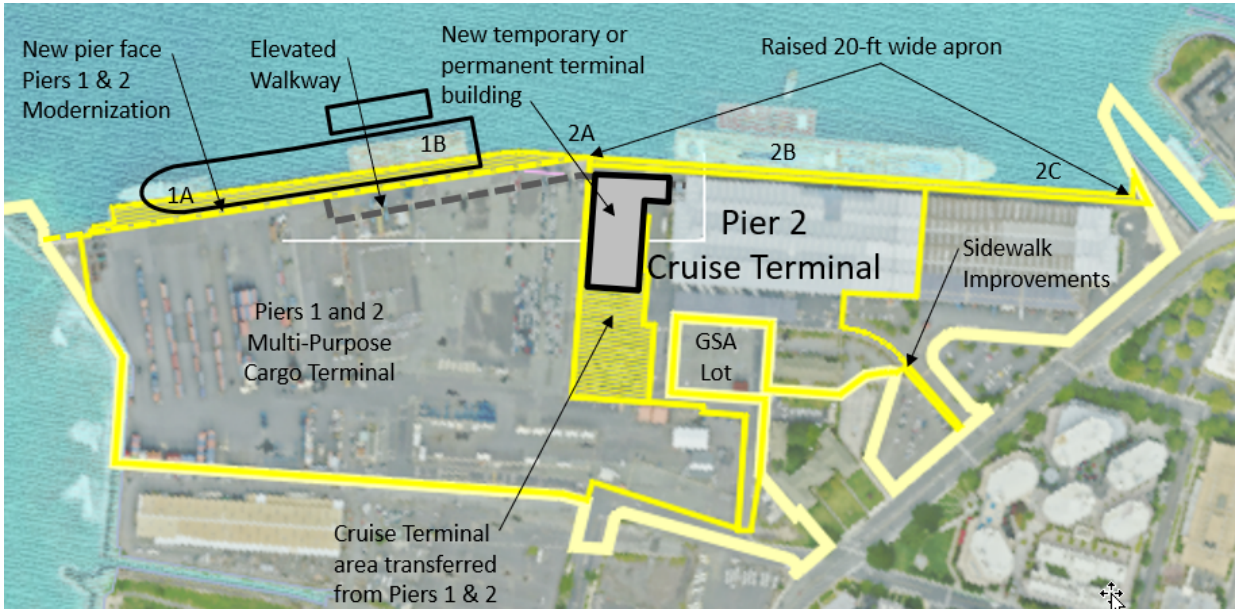
3 Renovate the existing Pier 2 cruise terminal to simultaneously accommodate two cruise vessel operations.

Facility Option 2
Temporary/Semi-Permanent Structure at Pier 2A

4 Install a temporary tension-fabric structure at Pier 2A to accommodate passenger operations (security and health screening, baggage, orientation

Facility Option 3
New Permanent Structure at Pier 2A

5 Construct a new cruise terminal building in the Pier 2A yard makai of the existing Pier 2 Cruise Terminal building
Integrate into the new terminal building hardened, high-cube facilities for pre-staging emergency equipment (e.g., generators and fuel tanks) for disaster events and for storage of large/heavy maritime cargo handling and servicing equipment.



Passenger Access Option 1 - Temporary, Mobile Staging Equipment

Item	Unit	Quantity	Unit Cost*	Cost
Gangway, Water Barriers, Covered Awnings	ls			**$750,000**

* Note: Operating Costs not CIP Cost. Price highly variable budgetary cost provided

Passenger Access Option 2 - Elevated Retractable Walkway

Item	Unit	Quantity	Unit Cost*	Cost
Elevated Retractable Walkway	lf	1,200	$12,375.00	**$ 14,850,000**

Based on 15' wide 1,200' long retractable walkway

Facility Option 1 - Renovate Existing Pier 2B Terminal for Two-Vessel Operations

Item	Unit	Quantity	Unit Cost*	Cost
Renovate Existings Termainal Building for Two-Vessel Operations	sf	200,000	$200.00	**$40,000,000**

* Derived from Rider Levett Bucknall Cost Data.

Facility Option 2 - Temporary/Semi-Permanent Structure at Pier 2A

Item	Unit	Quantity	Unit Cost*	Cost
Temporary Sprung Structure	sf	50,000	$250.00	**$12,500,000**

* Note Operational Cost not CIP Cost. Based on Rider Levett Bucknall Cost Data.

Facility Option 3 - New Permanent Structure at Pier 2A

Item	Unit	Quantity	Unit Cost*	Cost
Construct New Cruise ship Terminal	sf	100,000	$500.00	**$50,000,000**

* Based on Rider Levett Bucknall Cost Data.

PIER 2 CRUISE TERMINAL GENERAL IMPROVEMENTS

1 Provide shoreside sewer connection to allow cruise vessels to discharge to the municipal collection system.

2 Improve shoreside water connection for cruise vessels to take on water (pressure and flow). Consider upsizing existing lines and providing pumps.

3 Provide shoreside power to reduce carbon emissions from idling vessels.

4 Modernize fendering. Replace bollards with 100-ton bollards.

5 At Pier 2 improve ground transportation circulation and staging and develop more parking to improve cruise terminal functionality and reduce impacts to FTZ operations and traffic flow on Ala Moana Blvd.

5a Modify fencing and pavement markings to create additional vehicle circulation, staging and parking area.

5b Utilize approximately 0.5 to 1 AC of land area from the Pier 2 yard to increase the staging area at the makai side of the existing cruise terminal building to expand and improve circulation for containers and service trucks that service cruise vessels berthed at the Pier 2 cruise terminal.

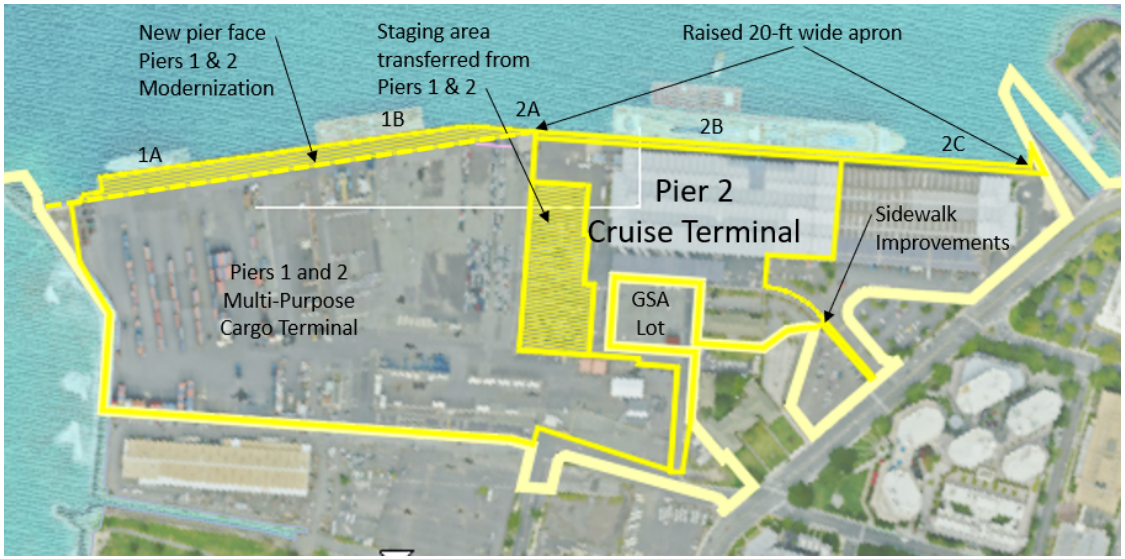
6 Develop pedestrian connectivity and improve pedestrian facilities around Pier 2.

6a Widen sidewalks along Channel Street to better accommodate cruise passengers with luggage walking to/from Ala Moana Blvd. Sidewalk Length = 685 lf

7 Renovate the Pier 2 Cruise Terminal building to improve capacity and passenger processing.

8 Piers 2A to 2C - Raise 20-ft wide apron at edge of pier using sheet pile / bulkhead construction to form a sea wall at the pier face to adapt to projected 3.2 ft SLR and maintain minimum design freeboard of 5 feet for cruise ships.

Pier length 2A-2C = 1,850 lf
Pier length 2A-2C = 1,665 lf (after Pier 1A-B & 2A reconstruction)
Minimum design freeboard = 5 ft for cruise vessels and lay berth
Pier Existing elevation above MLLW (2019) = 7.5 ft
Pier Proposed Elevation above MLLW (2019) = 10.10 ft
Pier Elevation Increase = 2.85 ft
Proposed Raised Apron Area = 34,310 sf / 0.79 ac
Proposed Fill Volume = 3,621 cy / 2.24 ac-ft



Acquisition – Do not include in ROM Costs

1. Expand harbor property by acquiring or gaining use of the General Services Agency (GSA) lot at Pier 2. DON'T INCLUDE IN ROM COSTS.

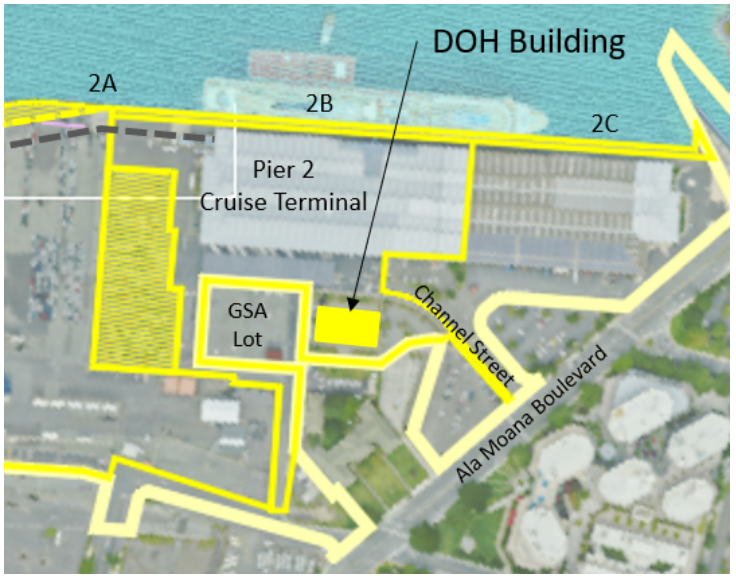
Item	Unit	Quantity	Unit Cost*	Cost	
Sewer connection for cruise ships to city sewer system	ac	8.90	$359,218	$3,197,041	* Based on KCT cost per acre - sewer utilities
Water connection for cruise ships improvement	ac	8.90	$167,871	$1,494,055	* Based on KCT cost per acre - water utilities
Power connection for cruise ships	ac	8.90	$381,247	$3,393,096	* Based on KCT cost per acre - power utilities
Construct bulkhead pier, bollards (100-ton) and fenders	lf	1,665	$148,654	$247,509,119	* Based on KCT Wharf and Dredging - bulkhead pier construction
Additional Fill Material	ac-ft	2.24	$252,141	$564,797	* Based on KCT cost for fill
Ground transportation improvements (modify fencing and pavement makings to create additional vehicle circulation, staging, and parking areas)	L.S.	L.S.	L.S.	$100,000	* Minor cost for fence relocation and markings
Sidewalk widening on Channel Street	sf	5480	$20	$109,600	* Based on current cost for sidewalk construction
Pier 2 Cruise Terminal Renovation	sf	200,000	$200	$40,000,000	* Based on Rider Levett Bucknall Cost Data.
TOTAL				**$ 296,367,707**	

PIER 2 GENERAL IMPROVEMENTS - RENOVATE HISTORIC DOH BUILDING FOR ADMINISTRATIVE USE

1 Renovate Historic DOH Building for Office Space Use
Based on 2-story building, 12,500 sf per floor.

Item	Unit	Quantity	Unit Cost*	Cost
Renovate Historic DOH Building for Office Space Use	sf	25,000	$400	$10,000,000
TOTAL				**$10,000,000**

* Based on Rider Levett Bucknall Cost Data.



PIERS 5 AND 6 PIER AND BACKLAND REDEVELOPMENT

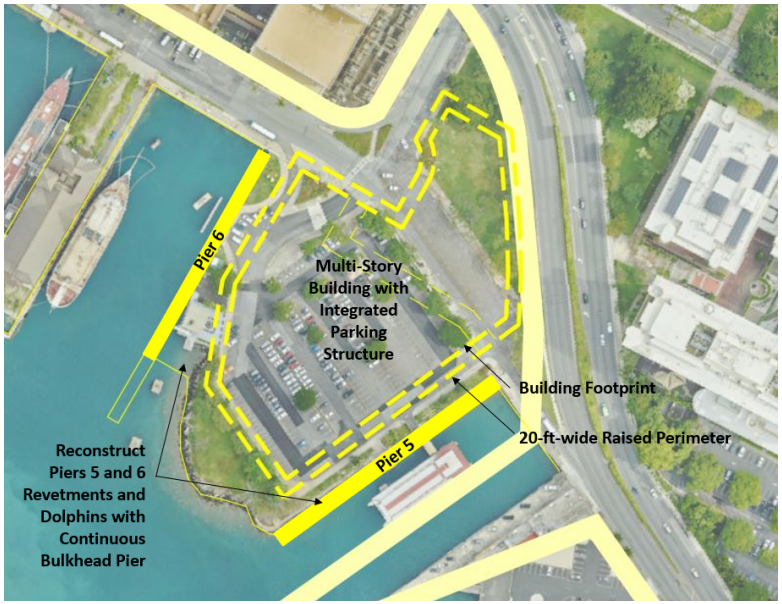
1a Develop Piers 5 and 6 through a public-private-partnership with the State and a private developer: multi-level, mixed-use structure that could potentially contain offices for maritime operators and other businesses, hotel space, passenger orientation facilities, event space, a cultural and/or educational center, retail/commercial and parking.

1b Raise backland ground elevation to accommodate 3.2 ft SLR by 2060
Existing Elevation = 7.5 ft, Proposed Elevation = 10.10 ft,
Fill Height = 2.60 ft Area = Bldg. Area + 20-ft wide perim. = 178,545 sf
Fill Volume = 17193 cy / 10.66 ac-ft

1c Upgrade sewer, water, power/communication and drainage, assuming development of a 10-story structure with Building Area = 143,200 sf, Floor Area = 1,432,000 sf commercial/retail/office building footprint and containing 1,200 parking stalls.

2 Replace Pier 5 and 6 revetments and dolphins with continuous piers using sheet-pile/bulkhead construction to improve berthing for day excursion vessels, ferry service and lay berth.

2a Keep makai edge of Piers 5 and 6 as natural shoreline with pedestrian access to serve as a public open space / point of interest. Construct 8'-wide by 500 lf sidewalk to provide pedestrian access.



Item	Unit	Quantity	Unit Cost*	Cost	
Develop multi-story building on Piers 5 and 6 backland area.	sf	892000	$400	$356,800,000	* Based on Rider Levett Bucknall Cost Data - Office, Hotel, Retail/Comm.
Develop parking structure integrated with new multi-story building.	sf	540000	$210	$113,400,000	* Based on Rider Levett Bucknall Cost Data - Parking Structure
Additional Fill Material	ac-ft	10.66	$252,141	$2,687,828	* Based on bid for KCT cost for fill
Utility Upgrades (sewer, water, power, drainage, communication)	ac	3.50	$1,265,356	$4,428,745	* Based on KCT cost per acre for sewer, water, drainage and electrical.
Replace Pier 5 and 6 revetments and dolphins with a continuous, bulkhead pier.	lf	1,100.00	$31,770	$34,946,468	* Based on Pier 38 HC-1972 Bid (1998) with escalation to 1/1/2023
Pedestrian access to Pier 5 and 6	SF	4,000.00	$20	$80,000	* Based on current cost for sidewalk construction
TOTAL				**$512,343,042**	

Note: ▪ The building floor area used for the rough order of magnitude cost estimate is based on a conceptual, 10-story mass building envelope and thus is expected to produce a conservative cost estimate. The actual building design will be determined by a private developer in coordination with the Aloha Tower Development Corporation and can be expected to have a different building height and incorporate building setbacks, such as a pedestal/tower building design, that would produce a different, and potentially reduced building floor area calculation.

PIERS 7 TO 11 - ALOHA TOWER AREA REDEVELOPMENT

1 Develop street parking and pedestrian promenade improvements along Aloha Tower Drive based on the Aloha Tower Marketplace concept plans.

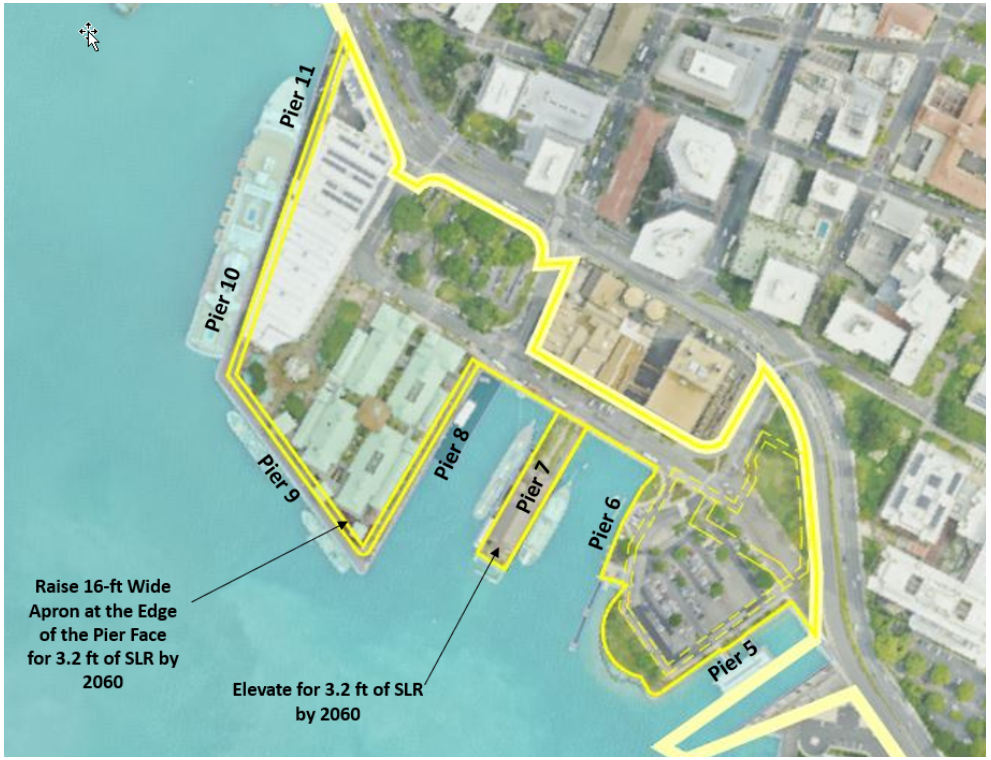
2 Piers 7 and 8 - Construct shore-to-ship sewer connection using existing sewer collection system.

3 Pier 7 - Raise existing pier to adapt to projected 3.2 feet SLR and maintain minimum design freeboard of 5 ft for day excursion vessels.
- Pier 7 Length = 725 lf
- Minimum design freeboard = 5 ft for day excursion vessels and lay berth
- Raised Pier Area = 37,026 sf / 0.85 ac
- Pier Existing elevation above MLLW (2019) = 8.6 ft
- Pier Proposed Elevation above MLLW (2019) = 10.10 ft
- Pier Elevation Increase = 1.5 ft
- Proposed Fill Volume = 2,057 cy / 1.28 ac-ft

4 Piers 8 to 11 - Raise 16-ft wide apron at edge of pier using sheet pile / bulkhead construction to form a sea wall at the pier face to adapt to projected 3.2 ft SLR and maintain minimum design freeboard of 5 feet for day excursion vessels and lay berth.
- Piers 8 to 11 Length = 2,176 lf
- Minimum design freeboard = 5 ft for day excursion vessels and lay berth
- Raised Apron Width = 16 lf, Raised Apron Area = 34,816 sf
- Pier Existing elevation above MLLW (2019) = 7.0 ft
- Pier Proposed Elevation above MLLW (2019) = 10.10 ft
- Pier Elevation Increase = 3.10 ft
- Proposed Raised Apron Area = 34,816 sf / 0.80 ac
- Proposed Fill Volume = 3997 cy / 2.48 ac-ft

5a Renovate Piers 10 and 11 sheds to accommodate shared-use cruise, retail, commercial and office use. See next page for square footage breakdown of conceptual building program.

5b Upgrade utilities to support joint-use at Piers 10 and 11.



Item	Unit	Quantity	Unit Cost*	Cost	
Develop street parking and pedestrian improvements (parking and promenade).	L.S.	L.S.	L.S.	$1,000,000	* Highly variable. Based on a conservative budgetary estimate.
Pier 7-8 Sewer upgrades to accommodate ships	L.S.	L.S.	L.S.	$750,000	* Based on conservative estimate of in-place sewer line replacement
Additional fill material to raise Pier 7	ac-ft	1.28	$252,141.49	$322,741	* Based on bid for KCT cost for fill
Piers 8 to 11 reconstruction - bulkhead	lf	2,176	$31,769.52	$69,130,468	* Based on HC-1972 Pier 38 - Pier Construction Costs (1998)
Additional fill material to create raised apron Piers 8 to 11	ac-ft	2.48	$252,141.49	$625,311	* Based on bid for KCT cost for fill
Renovate Piers 10 and 11 sheds for cruise, retail and commercial use	sf	233,236	$400.00	$93,294,400	* Based on Rider Levett Bucknall Cost Data.
Upgrade utilities to support piers 10 and 11 renovation.	ac	4.70	$1,265,355.85	$5,947,172	* Based on KCT cost per acre for sewer, water, drainage and electrical.
TOTAL				**$171,070,092**	

PIERS 10 and 11 SHED SHARED-USE CRUISE, RETAIL/COMMERCIAL BUILDING PROGRAM (sf)

5a Renovate Piers 10 and 11 sheds to accommodate shared-use cruise, retail, commercial and office use.

Pier 10 - Ground Level = 46,700 sf
- Renovate - Cruise Terminal Staging = 23,500 sf
- Renovate - Comm/Ret/Office = 23,200 sf

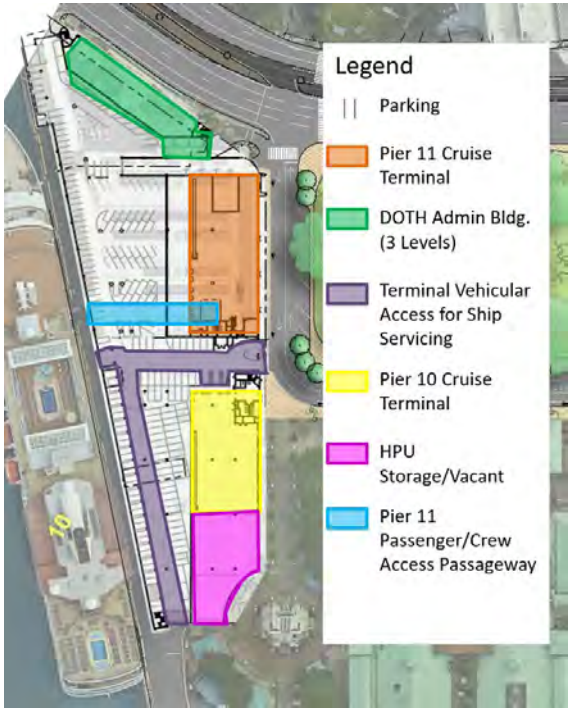
Pier 10 - Upper Level = 57,648 sf
- New - Comm/Ret/Office = 48,600 sf
- Renovate - Cruise Terminal Concourse = 5,920 sf
- Renovate - Cruise Terminal Crossover = 3,128 sf

Pier 11 - Ground Level = 46,700 sf
- Renovate - Cruise Screening Area = 17,500 sf
- New - Cruise Baggage= 26,700 sf
- Renovate - Cruise Crew Passageway = 2,500 sf

Pier 11 - Upper Level = 21,400 sf
- New - Cruise Passenger Check-in = 21,400 sf

DOTH Building - Repurpose = 60,788 sf
- Renovate/Repurpose - Comm/Ret = 15,588 sf
- Renovate - Comm/Ret (3 floors) = 22,200
- Renovate - Cruise Terminal Queueing = 23,000

Total Floor Area = 233,236
- Total Cruise Terminal Area = 123,648
- Total Commercial/Retail/Office Area = 109,588



PIERS 12 TO 15 IMPROVEMENTS FOR MARITIME SUPPORT SERVICES

1 Pier 12 - Reconstruct Pier 12 for a maritime operator. Replace dolphins and segmented pier on *'ewa* side of Pier 12 with a continuous pier.

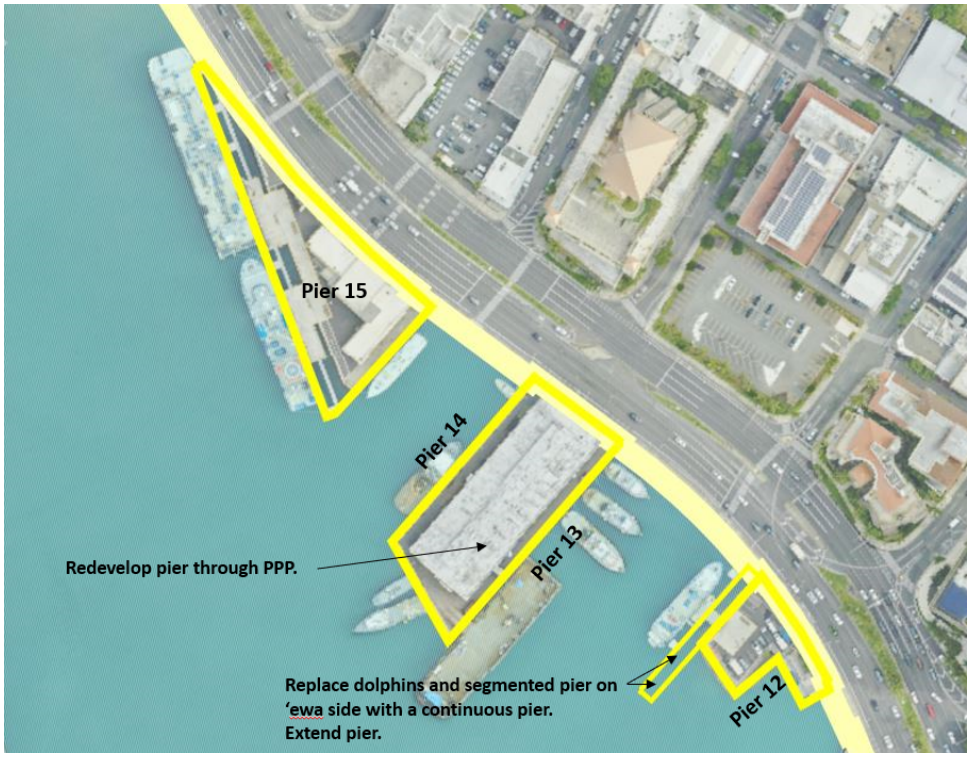
2 Piers 13 and 14 – Redevelop the Piers 13 and 14 pier and building facilities through a public-private partnership with a maritime operator.

- Given its historic status, the shed should be retained if feasible. However, if the needs of the harbor dictate and the opportunity arises, redevelopment of the pier and shed structure could be conducted by a private maritime operator under a long-term lease in order to enhance the function of the pier for the intended maritime support services use and to support overall harbor operations.
- Piers 13 and 14 were constructed in 1930 and determined to have high preservation value. Endeavor to the preserve the historic attributes and character of the building when renovation or redevelopment work is undertaken.

3 Piers 13 and 14 - Reconstruct pier using sheet pile / bulkhead construction. Include a 2-ft wide raised edge to form a barrier at the pier face to adapt to projected 3.2 ft SLR and maintain minimum design freeboard of 3 feet for work boats.

Piers 13 and 14 Length = 775 lf
Minimum design freeboard = 3 ft for work boats
Raised Edge Width = 2 ft, Raised Edge Area = 1,550 sf
Pier Existing elevation above MLLW (2019) = 7.0 ft
Pier Proposed Elevation above MLLW (2019) = 8.10 ft
Pier Elevation Increase = 1.10 ft
Proposed Fill Volume = 63.15 cy / 0.04 ac-ft

4 Use long-term leases and public private partnership agreements to incentivize investment in maritime facilities, including pier reconstruction and development of support buildings.



Item	Unit	Quantity	Unit Cost*	Cost	
Reconstruct Pier 12 and replace dolphins and segmented pier on *'ewa* side with continuous pier.	ac	0.28	$18,249,364	$5,109,822	* Based on KCT pier/yard cost per acre x 5 for economies of scale
Piers 13 and 14 reconstruction - bulkhead	lf	775	$31,770	$24,621,375	* Based on HC-1972 Pier 38 - Pier Construction Costs (1998)
Additional fill material to create raised edge Piers 13 and 14	ac-ft	0.04	$252,141	$10,086	* Based on bid for KCT cost for fill
TOTAL				**$29,741,283**	

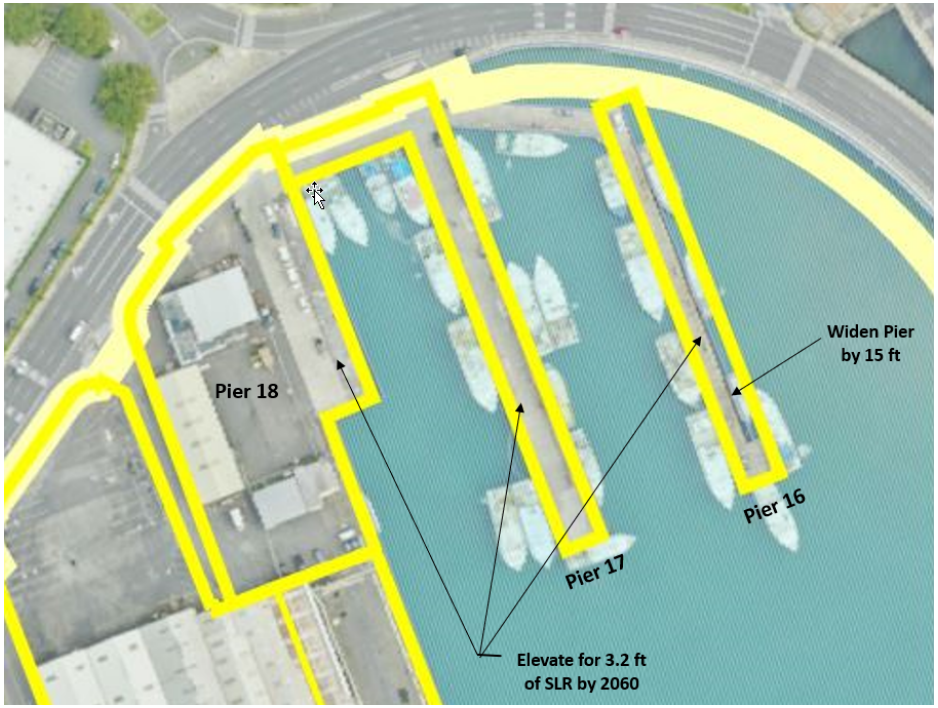
PIERS 16 TO 18 COMMERCIAL FISHING FLEET PIER IMPROVEMENTS

1 Widen Pier 16 from 20 ft to 35 ft to accommodate motor vehicles to facilitate ship provisioning, fueling and repair.
Assumptions: Two rows of piles. Widen 520 lf (one side) by 15 feet = 7,800 sf

2 Raise Piers 16 and 17 deck height for 3.2' SLR by 2060. Raise pier deck to minimum design freeboard of 3 ft for fishing vessel operations. Assume substructure / piles are in suitable condition for reuse.
Pier 16
Pier Length = 930 lf
Pier existing elevation above MLLW (2019) = 7.00 ft
Pier proposed elevation above MLLW (2019) = 8.10 ft
Pier = elevation increase = 1.10 ft
Pier Area = 930 lf x 35 ft = 32,550 sf
Pier 17
Pier Length = 965 lf
Pier existing elevation above MLLW (2019) = 5.00 ft
Pier proposed elevation above MLLW (2019) = 8.10 ft
Pier = elevation increase = 3.10 ft
Pier Area = 965 lf x 35 ft = 33,775 sf

3 Maintain existing driveway access to Piers 16 to 18 Fishing Fleet.

4 Reconstruct and elevate Pier 18 pier deck height as necessary to account for SLR of 3.2 feet while maintaining a minimum operational freeboard of 3 feet for fishing vessel operations and lay berth.
Pier Length = 210 lf, Yard Area = 59,031 sf / 1.36 ac
Yard/Pier existing elevation above MLLW (2019) = 6.00 ft
Yard/Pier proposed elevation above MLLW (2019) = 8.10 ft
Yard/Pier = elevation increase = 2.10 ft
Yard Fill = 4,591 cy / 2.85 ac-ft



Item	Unit	Quantity	Unit Cost*	Cost
Widen Pier 16	sf	7,800	$4,500.00	$35,100,000
Raise Piers 16 and 17 using existing piles with spacers.	sf	66,325	$500.00	$33,162,500
Pier 18 - bulkhead reconstruction	lf	210.00	$31,769.52	$6,671,598
Pier 18 - additional fill material	ac-ft	2.85	$252,141.49	$718,603
TOTAL				**$75,652,702**

* Based on consultation with Contractors and KAI Hawai'i.
* Derived from Contractors and KAI Hawai'I estimate.
* Based on HC-1972 Pier 38 - Pier Construction Costs (1998)
* Based on bid for KCT cost for fill

PIERS 19 AND 20 MULTI-PURPOSE CARGO TERMINAL MODERNIZATION

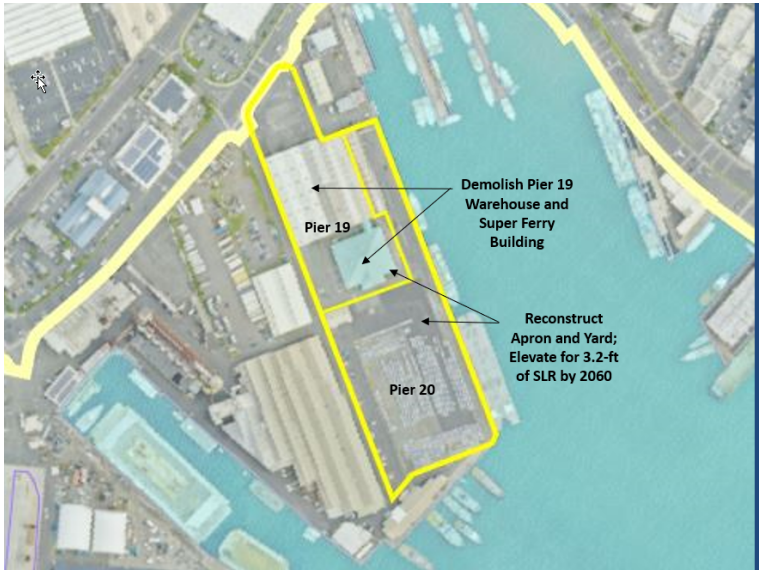
1 Demolish the existing Pier 19 warehouse and Super Ferry building to create open yard. Phase demolition as existing buildings lose their ability to support maritime needs.
Based on 21,201 sf (Ferry Bldg) 69,077 sf (Warehouse) = 2.07 ac

2 Reconstruct Piers 19 and 20, apron and yard.

2a Raise pier and yard for 3.2' SLR by 2060. Raise pier deck and yard to minimum design freeboard of 6 ft for barge, cargo and RO-RO vessel operations. (Note: Recommend raising the entire yard area rather than constructing a raised apron due to the relatively small size and lack of yard depth at this terminal.)
Pier Length = 980 lf
Yard Area = 365,996 sf / 8.40 ac
Yard/Pier existing elevation above MLLW (2019) = 6.35 ft
Yard/Pier proposed elevation above MLLW (2019) = 11.10 ft
Yard/Pier = elevation increase = 4.75 ft
Yard Fill = 64,388 cy / 39.91 ac-ft

2b Strengthen yard and entire apron for heavy-lift, mobile crane operations. Replace asphalt pavement with concrete.

2c Improve fendering and bollards.



Item	Unit	Quantity	Unit Cost*	Cost	
Demolish existing Pier 19 warehouse and super ferry building	ac	2.07	$861,278	$1,782,844	* Based on KCT cost per acre - demolition
Reconstruct Piers 19 and 20 - yard	ac	8.40	$3,649,873	$30,658,932	* Based on KCT cost per acre
Reconstruct Piers 19 and 20 - bulkhead piers	lf	980.00	$148,654	$145,681,043	* Based on KCT Wharf and Dredging - bulkhead pier construction
Additional Fill	ac-ft	39.90	$252,141	$10,060,446	* Based on bid for kapalama container yard cost for fill
TOTAL				**$188,183,265**	

PIERS 21 AND 22 "TUG ROW" MODERNIZATION

1 Demolish existing buildings = 18,829 sf / 0.46 ac existing building area

2 Reconstruct pier, apron and yard:

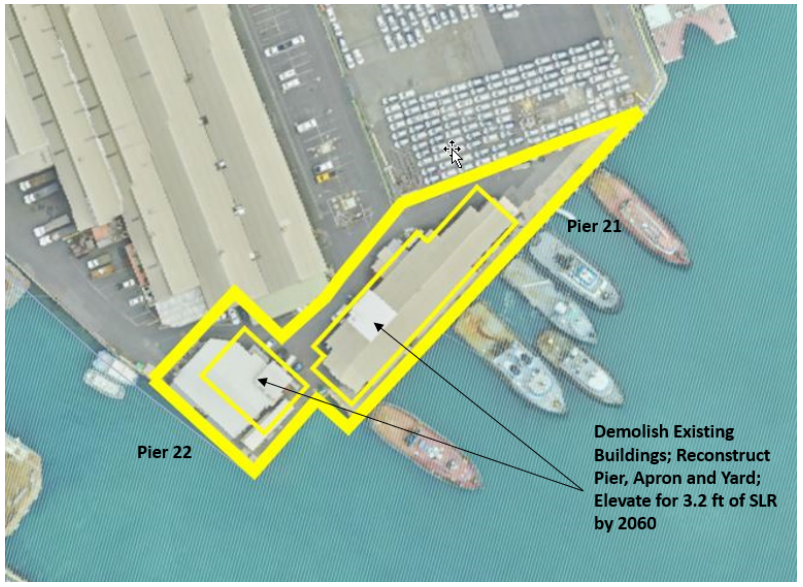
2a Reconstruct pier, apron and yard using sheet pile / bulkhead construction. Strengthen pier and apron to accommodate heavy equipment (spool trucks, cranes on trucks). Replace asphalt pavement with concrete.

2b Raise "tug row" pier and yard for 3.2' SLR by 2060. Raise pier deck and yard to minimum design freeboard of 3 ft for tug boat operations.
- Pier Length = 665 lf
- Minimum design freeboard = 3 ft for tugs
- Yard Area = 43533 sf / 1.0 ac
- Yard/Pier existing elevation above MLLW (2019) = 6.00 ft
- Yard/Pier proposed elevation above MLLW (2019) = 8.10 ft
- Yard/Pier = elevation increase = 2.10 ft
- Yard Fill = 3,386 cy / 2.10 ac-ft

2c Improve fendering and bollards.

3 Provide shoreside power.

4 Develop new shared-use facilities and consolidate tug operators. Facilities will include new office, warehouse and maintenance building(s), and parking.



Item	Unit	Quantity	Unit Cost*	Cost	
Demolish Existing Buildings	ac	0.46	$861,277.50	$396,188	* Based on KCT cost per acre - demolition
Reconstruct Piers 21 and 22 - yard	ac	1.00	$3,649,872.84	$3,649,873	* Based on KCT cost per acre - pier and yard construction
Reconstruct Piers 21 and 22 - bulkhead piers, bollards and fenders	lf	665.00	$148,654.13	$98,854,993	* Based on KCT Wharf and Dredging - bulkhead pier construction
Additional Fill	ac-ft	2.1	$252,141.49	$529,497	* Based on KCT cost for fill
Provide shoreside power	ac	1.00	$381,246.76	$381,247	* Based on KCT cost per acre - electrical power
Develop new shared use facility (office, warehouse, maint. Bldg, and parking)	sf	23,522.40	$450.00	$10,585,080	* Based on Rider Levett Bucknall Cost Data.
TOTAL				**$114,396,878**	

PIERS 22 AND 23 MODERNIZATION FOR MARITIME USERS

1 Demolish grain silos, warehouses and miscellaneous buildings to accommodate driveway access, and efficient layout of yard area for maritime uses.
- Warehouse 6 = 105,418 sf, Warehouse 8 = 19,942 sf
- Total warehouse demolition = 125,360 sf / 2.88 ac
- Silo height = 140 ft
- Silos = 13,397 sf + 5,829 sf + 2,976 sf = 22,202 sf / 0.52 ac
- Total Building Demolition Area = 237,840 sf

1a Remediate contaminated soil, groundwater, lead and asbestos.

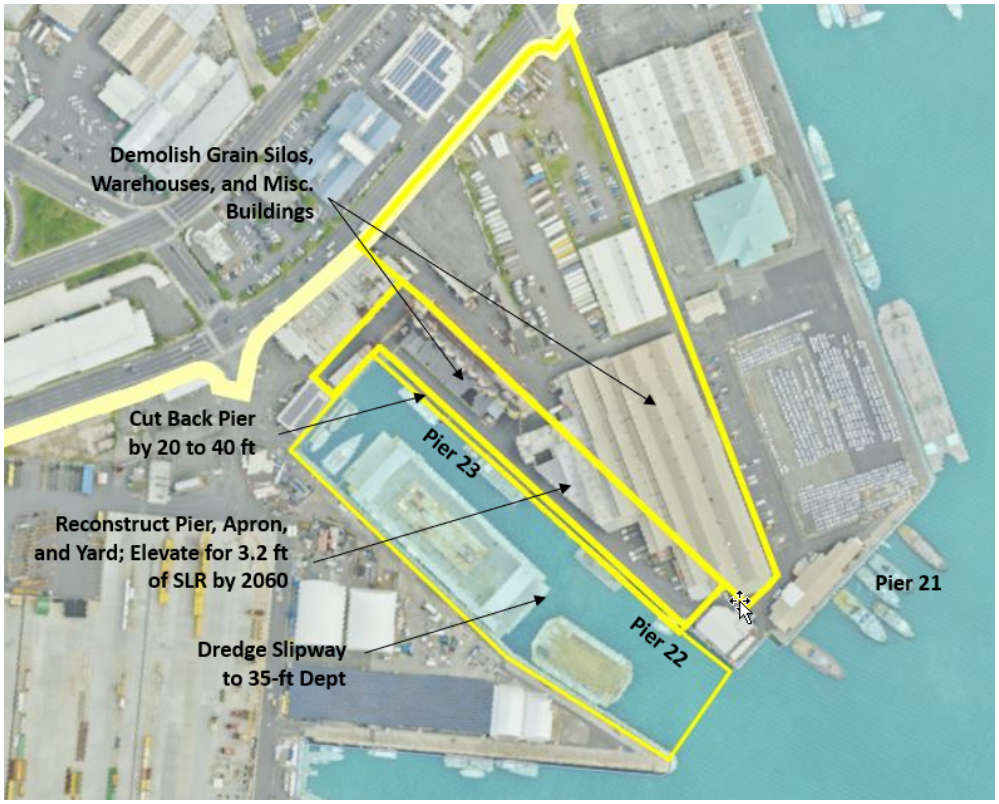
2 Cut back pier face by 20 to 40 feet to widen slipway. Clear out subsurface coral and rocks.

3 Reconstruct pier, apron and yard. Reconstruct pier using sheet pile / bulkhead construction. Strengthen pier foundation to support construction of the proposed maritime center at Piers 19 to 23.

4 Raise the pier deck height as necessary to account for SLR of 3.2 feet while maintaining a minimum operational freeboard of 3 feet for work boat and tug operations.
- Piers 22 and 23 Length = 930 lf
- Piers 22 to 25 Length = 2,100 lf (for slipway)
- Minimum design freeboard = 3 ft for work boats and tugs
- Demo 20-ft wide section of pier = 930 lf x 20 = 18,600 sf
- Yard Area = 108,760 sf / 2.50 ac
- Yard/Pier existing elevation above MLLW (2019) = 6 ft
- Yard/Pier proposed elevation above MLLW (2019) = 8.10 ft
- Yard/Pier = elevation increase = 2.10 ft
- Yard Fill = 8,459 cy / 5.24 ac-ft

5 Replace asphalt paving with concrete and strengthen yard to support heavy equipment.

6 Dredge full extents of slipway to 35-foot depth.



Item	Unit	Quantity	Unit Cost*	Cost	
Demolish silos (concrete structures)	ac	0.51	$12,057,885.02	$6,149,521	* Based on KCT cost per acre - demolition x 14 stories
Demolish warehouse buildings	ac	2.88	$861,277.50	$2,480,479	* Based on KCT cost per acre
Remediation of contaminated material	ac	0.51	$272,289.54	$138,868	* Based on KCT cost per acre - remediation x 3
Cut back and demolish pier face and apron.	lf	930	$10,611.92	$9,869,083	* Based on KCT Wharf and Dredging cost per lf for demolition.
Reconstruct Piers 22 and 23 - yard	ac	3.7	$3,649,872.84	$13,504,530	* Based on KCT cost per acre
Reconstruct Piers 22 and 23 - bulkhead piers	lf	930.00	$148,654.13	$138,248,336	* Based on KCT Wharf and Dredging - bulkhead pier construction
Additional Fill	ac-ft	5.24	$252,141.49	$1,321,221	* Based on bid for KCT cost for fill
Dredge slipway to 35 feet deep	lf	2100	$839.00	$1,761,900	* Based on 2019 Pier 20 dredging cost per lf
TOTAL				**$173,473,938**	

PIERS 19 T0 23 MARITIME CENTER

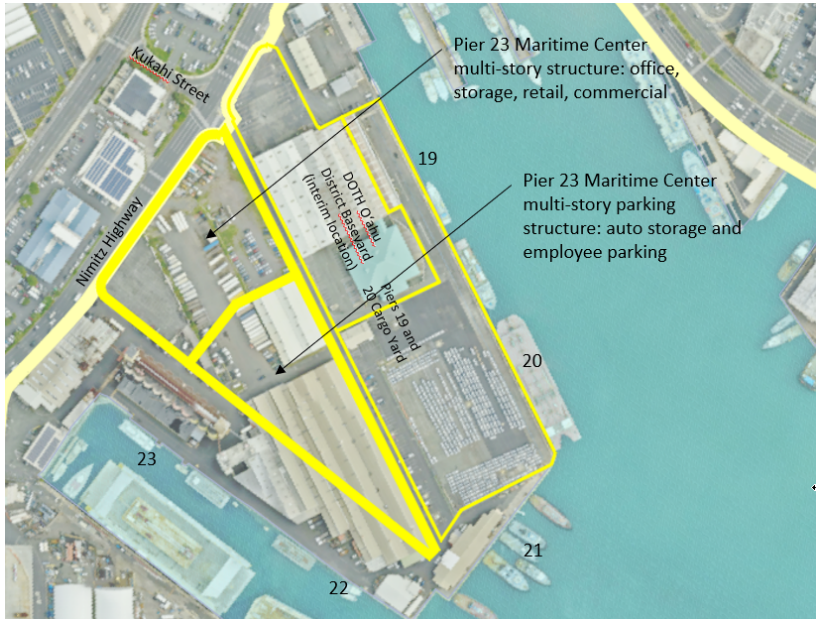
1 Develop multi-level, mixed-use structure to accommodate office space, employee parking, auto storage, high-cube ground level integrated with Piers 19 and 20 cargo operations, and retail/commercial on Nimitz Highway frontage. Include storage area for large/heavy maritime cargo handling and servicing equipment. Consider incorporating the existing McCabe building. Examples of the type of structure being contemplated for the Maritime Center include Walmart on Ke'eaumoku St. and the Airport industrial Center.

Assume:

Building Area = 268,700 sf
Floor Area = 1,343,605 (5 stories)
5-Story Parking Structure Area = 134,350 sf x 5 = Floor Area = 671,750 sf
Comm/Ret/Office/Storage Area = 134,350 sf, Floor Area = 671,750 sf
Com/Ret Floor Area = 134,350 sf
Office Floor Area = 268,700 sf
Storage Floor Area = 268,700 sf

2 Access Improvements:

- Develop the Kukahi Street intersection on Nimitz Highway as a primary access to the new Piers 19 to 23 Maritime Center and Piers 19 and 20 cargo terminal. Signalize the intersection. Coordinate with DOTHWY for a signalization warrant study.
- Reauthorize the driveway entrance at Pier 23 to provide right-turn-in only access to Piers 21 and 22, "Tug Row," and to maritime uses and the proposed Maritime Center at Piers 22 to 23.
- Designate the new Pier 23 driveway access as secured access to Tug Row and the Piers 19-20 cargo terminal and proposed Maritime Center.



Item	Unit	Quantity	Unit Cost*	Cost	
Develop multi-level, mixed-use structure	sf	671,750.00	$400.00	$268,700,000	* Based on Rider Levett Bucknall Cost Data - Office, Hotel, Retail/Comm.
Develop multi-story parking structure	sf	671,750.00	$210.00	$141,067,500	* Based on Rider Levett Bucknall Cost Data - Parking Structure
Reauthorize driveway entrance at Pier 23	L.S.	L.S.	L.S.	$10,000	* Assumed permitting cost
Designate primary access to Maritime Center at the Kukahi Street intersection	L.S.	L.S.	L.S.	$10,000	* Assumed permitting cost
Develop the existing pier driveway entrance as a primary access to the new Maritime Center and Piers 19 and 20 cargo terminal.	L.S.	L.S.	L.S.	$250,000	* Budgetary, pavement improvements.
Signalize Kukahi Street intersection if warranted by study	L.S.	L.S.	L.S.	$250,000	* Budgetary cost for signalization.
TOTAL				**$409,787,500**	

PIERS 24 TO 29A IMPROVEMENTS FOR CONSOLIDATED MARITIME SUPPORT SERVICES

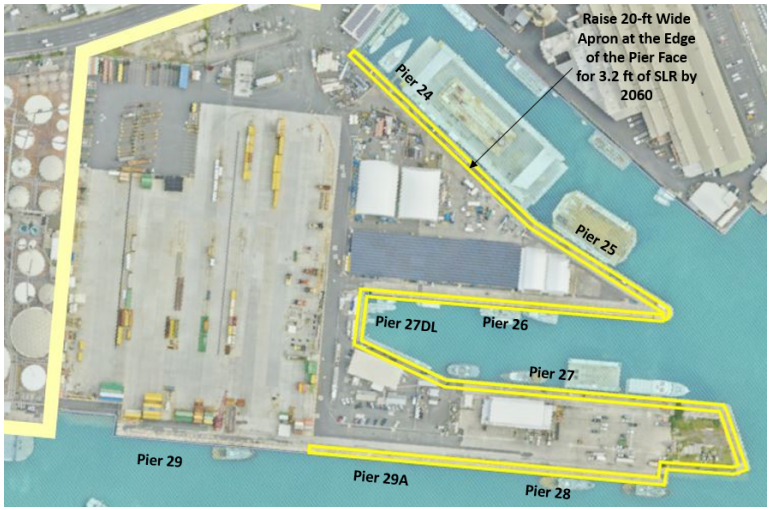
1 Raise 20-ft wide apron at pier edge to accommodate 3.2 ft SLR by 2060.
- Maintain minimum design freeboard of 3 feet for work boats, tugs, dry docks and lay berth.
- Improve fendering and bollards.

1a Pier 24-25
Length = 945 lf, Apron Area = 18,800 sf / 0.43 ac
Existing Ht = 6.00 ft, Proposed Ht = 8.10 ft, Ht above existing = 2.10 ft
Fill volume = 1,470 cy / 0.91 ac-ft

1b Pier 26
Total Length = 685 lf, Apron Area = 13,700 sf / 0.31 ac
Existing Ht = 6.00 ft, Proposed Ht = 8.10 ft, Ht above existing = 2.10 ft
Fill Volume = 1,066 cy / 0.66 ac-ft

1c Piers 27-29A
Length = 1,800 lf, Apron Area = 34,400 sf / 0.79 ac
Existing Ht = 7.00 ft, Proposed Ht = 8.10 ft, Ht above existing = 1.10 ft
Fill volume = 1,401 cy / 0.87 ac-ft

2 Use long-term leases and public private partnership agreements to incentivize investment in maritime facilities, including pier reconstruction and development of support buildings.



Item	Unit	Quantity	Unit Cost*	Cost	
Piers 24-25 - Reconstruct pier with raised apron, bollards and fenders.	lf	945	$148,654.13	$ 140,478,148	* Based on KCT Wharf and Dredging - bulkhead pier construction
Piers 24-25 - additional fill	ac-ft	0.91	$252,141.49	$ 229,449	* Based on KCT cost for fill
Piers 26 - Reconstruct pier with raised apron, bollards and fenders.	lf	685	$148,654.13	$ 101,828,076	* Based on KCT Wharf and Dredging - bulkhead pier construction
Piers 26 - additional fill	ac-ft	0.66	$252,141.49	$ 166,413	* Based on KCT cost for fill
Piers 27-29A - Reconstruct pier with raised apron, bollards and fenders.	lf	1,800	$148,654.13	$ 267,577,425	* Based on KCT Wharf and Dredging - bulkhead pier construction
Piers 27-29A - additional fill	ac-ft	0.87	$252,141.49	$ 219,363	* Based on KCT cost for fill
TOTAL				**$510,498,875**	

PIER 29 MULTI-PURPOSE CARGO TERMINAL MODERNIZATION

1 Reconstruct and strengthen pier face and apron using bulkhead / sheet pile construction to approximately 50-feet from pier face (up to recently reconstructed yard).
   Pier Length = 600 lf (with notch)
   - Fill notch in apron as part of pier reconstruction.
   - Construct apron to accommodate heavy lift equipment.

2 Construct 100-ft wide raised apron to accommodate 3.2 ft SLR by 2060 while maintaining 6 ft minimum freeboard for cargo and RO/RO vessels. (Note: Assume access ramps will be built into the raised apron footprint.)
   Yard Area = 515,233 sf / 11.83 ac
   Apron only area = 60,000 sf / 1.38 ac (600 lf x 100 ft)
   Minimum design freeboard = 6 ft for cargo, RO-RO vessels
   Pier existing elevation above MLLW (2019) = 7.0 ft
   Pier proposed elevation above MLLW (2019) = 11.10 ft
   Pier = elevation increase = 4.10 ft
   Apron Fill (100-ft wide) = 9,111 cy / 5.66 ac-ft

3 Re-authorize and reconstruct the east-bound highway exit lane with connection to the Pacific St. intersection and access to Piers 27 to 29. At the Pacific St. exit, container trucks leaving Pier 29 are permitted right-out only to avoid blocking the Pacific St. intersection. Note: This project is currently in progress.

Item	Unit	Quantity	Unit Cost*	Cost
Reconstruct and strengthen pier face and apron	lf	600.00	$148,654.13	$89,192,475
Install Heavy Lift Pads	ea	1.00	$780,000.00	$780,000
Additional fill for 100-ft wide raised apron	ac-ft	5.66	$252,141.49	$1,427,121
Reconstruct east-bound hwy exist lane to Pacific St and access to Piers 27 to 29	1	ls		N/A
TOTAL				**$91,399,596**

* Based on KCT Wharf and Dredging - bulkhead pier construction
* Heavy Lift Pad - 150'x100'x2' or 1,111 cy at $700/cy
* Based on KCT cost for fill
* Project is currently in construction

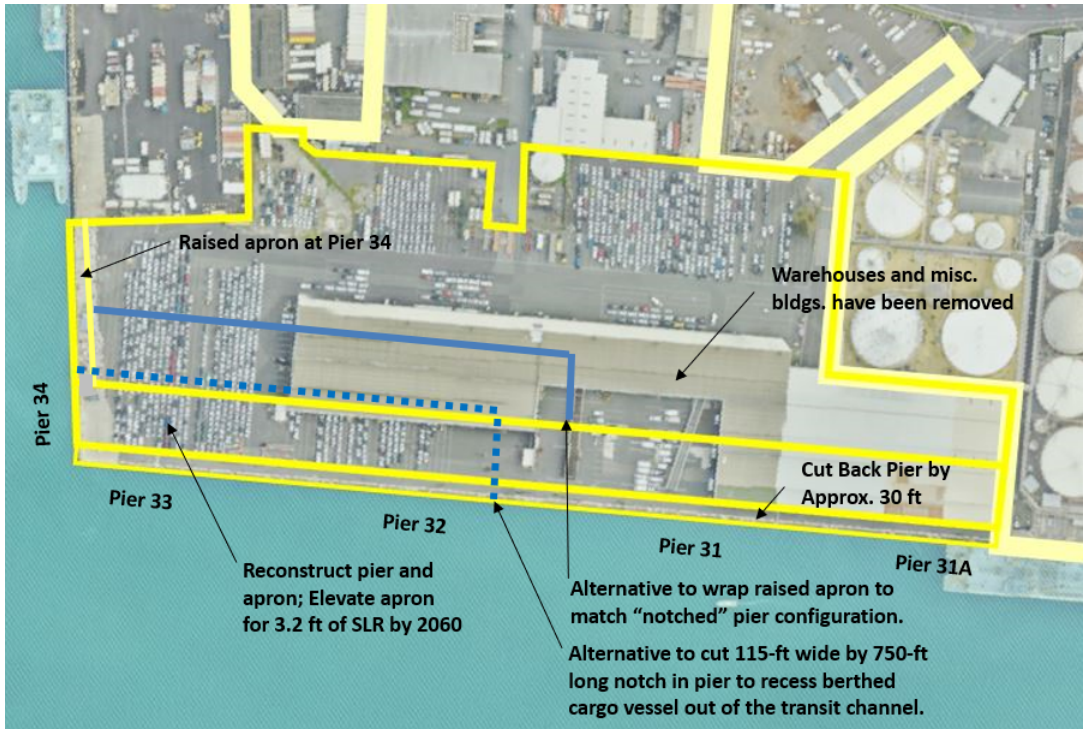
PIERS 31 TO 34 MULTI-PURPOSE CARGO TERMINAL MODERNIZATION

1 Reconstruct pier and apron:
- Cut back pier face to remove pile-supported deck construction and replace with bulkhead/sheet pile with fill construction. Cut back at a minimum to existing fast land (approximately 30 feet) to create a notch for vessel berthing to reduce intrusion into the Kapalama Transit Channel as an aid to navigation.
  Demo Area = 61,350 sf / 1.40 ac (30-ft cut back on channel edge)
- Improve fendering and bollards.

2 Construct 100-ft raised wide apron at edge of PIers 31 to 33 and a 20-ft wide raised apron at the edge of Pier 34 using sheet pile / bulkhead construction to form a sea wall at the pier face to adapt to projected 3.2 ft SLR and maintain minimum design freeboard of 6 feet for cargo and RO-RO vessels and lay berth. (Note: Assume access ramps will be built into the raised apron footprint.) Keep the landside areas at their current height behind the sea wall. Install motor vehicle access ramps onto the raised apron.
  Pier Length = (31-33): 2,045 lf, (34): 210 lf, (Total): 2,255
  Apron Area = (31-33): 204,500 sf / 4.69 ac, (34): 4,200 sf / 0.10 ac
  Apron existing elevation above MLLW (2019) = 7.0 ft
  Apron proposed elevation above MLLW (2019) = 11.10 ft
  Apron = elevation increase = 4.10 ft
  Apron Fill = (31-33): 31,053 cy / 19.25 ac-ft, (34): 638 cy / 0.40 ac-ft
  Total Apron Fill = 31,691 cy / 19.65 ac-ft

3 Strengthen pier and yard surfaces to accommodate heavy lift equipment.

4 Create a new internal access driveway to serve Piers 31 to 34 with connection to the signalized intersection at Alakawa St. and Nimitz Hwy. This will allow for full, signalized turning movements onto Nimitz Highway. Note: This alternative requires acquisition of the Honolulu Freight Services parcel by the DOTH. DOTH is currently in the process of acquiring the property from DOT-A.



Item	Unit	Quantity	Unit Cost*	Cost
Cut back and demolish pier face (30-ft cut back on channel edge)	lf	2,045	$10,611.92	$21,701,370
Reconstruct pier - bulkhead, bollards and fenders	lf	2,255	$148,654.13	$335,215,052
Additional fill for raised apron	ac-ft	19.65	$252,141.49	$4,954,580
Install Heavy Lift Pads	ea	2	$780,000.00	$1,560,000
Create new internal access driveway	lf	930	$320.00	$297,600
TOTAL				**$363,728,603**

* Based on KCT Wharf and Dredging cost per lf for demolition.
* Based on KCT Wharf and Dredging - bulkhead pier construction
* Based on KCT cost for fill
* Heavy Lift Pad - 150'x100'x2' or 1,111 cy at $700/cy
* Assuming 930' long driveway, 40' wide, 4" AC pavement, 12-inch Aggregate Base

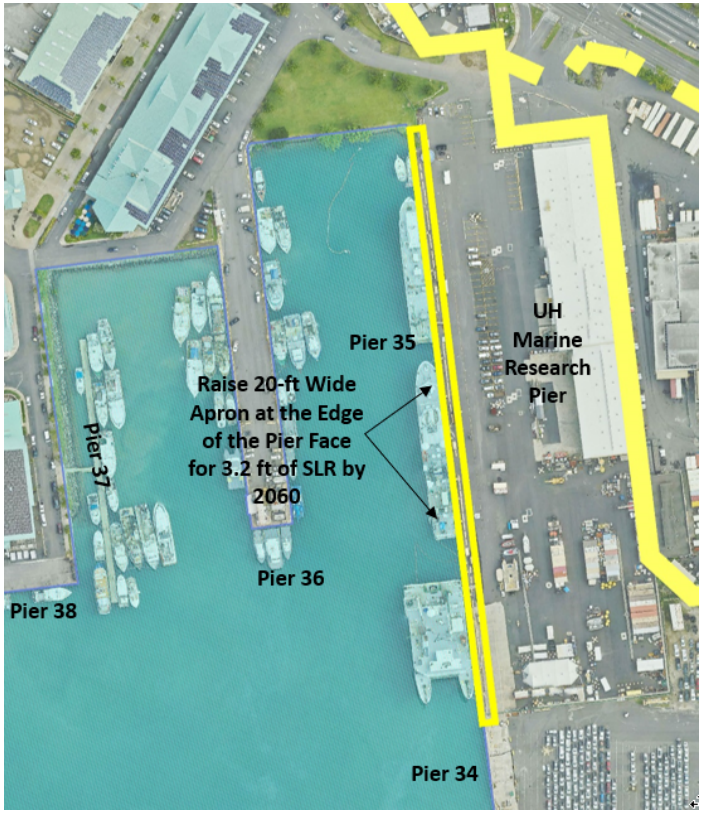
PIER 35 UH RESEARCH PIER

1 Construct 20-ft raised wide apron at edge of pier using sheet pile / bulkhead construction to form a sea wall at the pier face to adapt to projected 3.2 ft SLR and maintain minimum design freeboard of 5 feet for research vessels, workboats and lay berth. (Note: Assume access ramps will be built into the raised apron footprint.) Keep the landside areas at their current height behind the sea wall. Install motor vehicle access ramps onto the raised apron.

Pier Length = 910 lf (incl. portion of Pier 34)
Apron Area = 18,200 sf / 0.42 ac
Apron existing elevation above MLLW (2019) = 7.0 ft
Apron proposed elevation above MLLW (2019) = 10.10 ft
Apron = elevation increase = 3.10 ft
Apron Fill = 2,089 cy / 1.30 ac-ft

Item	Unit	Quantity	Unit Cost*	Cost
Reconstruct pier - bulkhead, bollards and fenders	lf	910	$148,654.13	$135,275,254
Additional fill for 20-ft wide raised apron	ac-ft	1.3	$252,141.49	$327,784
TOTAL				**$135,603,038**

* Based on KCT Wharf and Dredging - bulkhead pier construction
* Based on KCT cost for fill



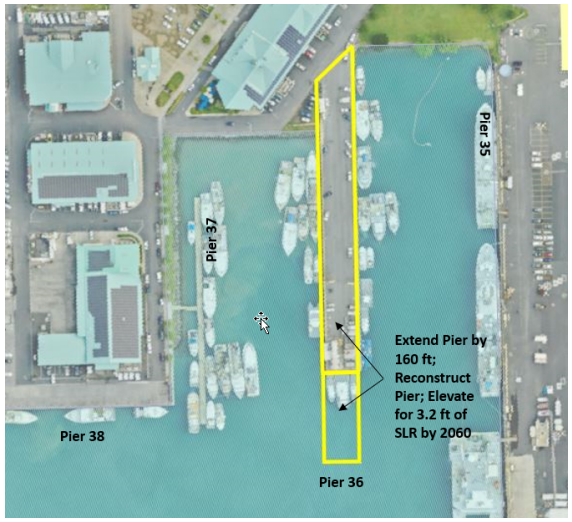
PIER 36 COMMERCIAL FISHING PIER IMPROVEMENTS

1 Extend Pier 36 by approximately 160 LF to the federal project limit to provide additional berthing for fishing vessels.
Pier width = 62 ft x Additional Pier Length = 160 lf, New Pier Area = 9,920 sf

2 Reconstruct and elevate Pier 36 pier deck height as necessary to account for SLR of 3.2 feet by 2060 while maintaining a minimum operational freeboard of 3 feet for fishing vessel operations. Alternatives depend on the structural condition at the time of reconstruction and may include:

- Reconstruct the entire pile and deck pier structure.
- Raise the pier deck using the existing piles with the addition of structural spacers.

Pier Length = DH 546 lf + Ewa 430 lf = 976 lf
Minimum design freeboard = 3 feet for fishing vessels
Pier existing elevation above MLLW (2019) = 7.0 ft
Pier proposed elevation above MLLW (2019) = 8.10 ft
Pier = elevation increase = 1.10 ft
Pier area = 976 ft x 62 ft = 60,512 sf



Item	Unit	Quantity	Unit Cost*	Cost
Extend pier 36	sf	9,920	$4,500.00	$44,640,000
Raise Pier 36 using existing piles with spacers.	sf	60,512	$500.00	$30,256,000
TOTAL				**$74,896,000**

* Based on consultation with Contractors and KAI Hawai
* Derived from Contractors and KAI Hawai'I estimate.

PIER 38 FISHING VILLAGE MARITIME IMPROVEMENTS

1

Pier 37 Replacement - Replace existing pier when it reaches the end of its designed life. Consider using a floating dock design to accommodate 3.2 ft SLR by 2060.

Pier Length = 408 lf
Minimum design freeboard = 3 feet for fishing vessels
Pier existing elevation above MLLW (2019) = 7.0 ft
Pier proposed elevation above MLLW (2019) = 8.10 ft
Pier = elevation increase = 1.10 ft
Pier Deck Area = 7,405 sf / 0.17 ac

2

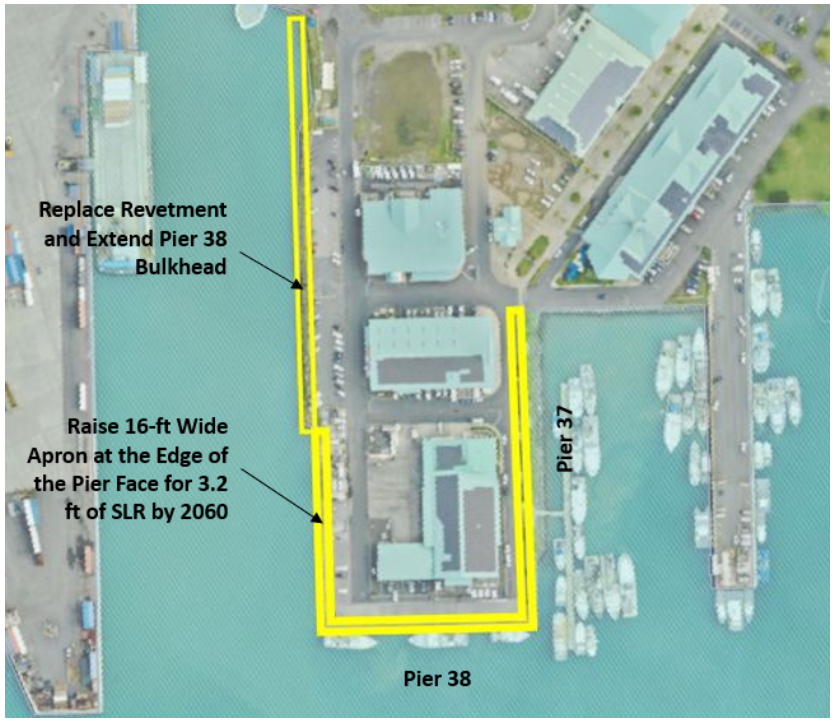
Pier 38 Extension - Replace existing revetment and extend Pier 38 bulkhead pier improvements by approximately 645 LF for shore side vessel services, provisioning off-loading fish for the auction, and for lay berth use.

2a Use floating dock design for fishing vessels and work boat piers along new pier construction.

Raise 16-ft wide apron at edge of pier to form a sea wall at the pier face around Pier 38 to adapt to projected 3.2 ft SLR by 2060 and maintain minimum design freeboard of 3 feet for fishing vessels and lay berth. Keep the landside areas at their current height behind the sea wall to minimize the costs of redevelopment filling and raising the yards. Install motor vehicle access ramps onto the raised apron.

3

Apron length = 1,140 lf, Apron width = 16 ft
Apron Area = 18,240 sf
Apron existing elevation = 5 ft
Apron proposed elevation = 8.10 ft
Apron elevation increase = 3.10 ft
Apron Fill = 2,094 cy / 1.30 ac-ft



Item	Unit	Quantity	Unit Cost*	Cost	
Replace Pier 37 with a floating dock.	sf	7,405	$1,000	$7,405,000	* Based on prior project experience
Extend Pier 38 improvements (bulkhead) to fuel barge pier	lf	645.00	$31,770	$20,491,338	* Based on Pier 38 HC-1972 project cost escalated 5% annualy to 2023.
Pier 38 - Install floating dock for fishing and work boats (645 lf x 10 ft)	sf	6,450	$1,000	$6,450,000	* Based on prior project experience
Reconstruct Pier 38 - bulkhead, bollards and fenders - to support raised apron.	lf	1,140	$31,770	$36,217,249	* Based on Pier 38 HC-1972 project cost escalated 5% annualy to 2023.
Additional fill for raised apron	ac-ft	1.30	$252,141	$327,784	* Based on KCT cost for fill
TOTAL				**$70,891,371**	

PIER 38 MARITIME SUPPORT AREA IMPROVEMENTS

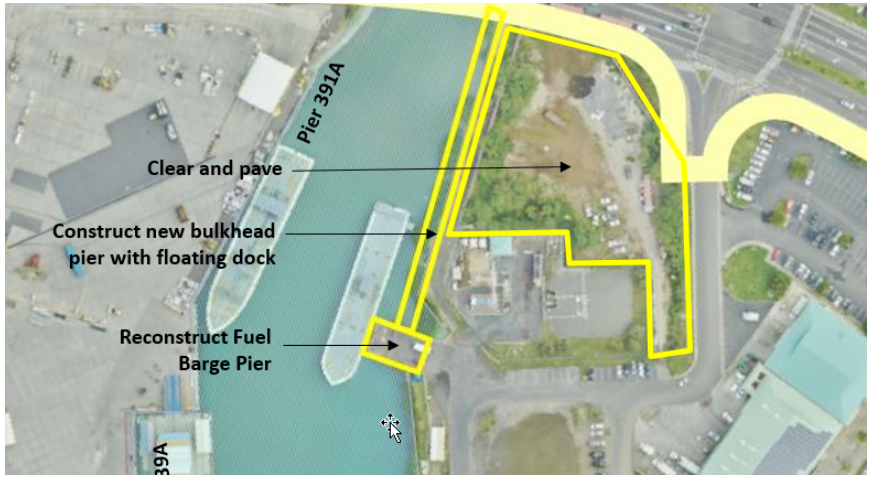
1 Develop approximately 330 LF of new pier adjacent to maritime support area for work boats and layberth.

1a Raise 16-ft wide apron at edge of pier to form a sea wall at the pier face to adapt to projected 3.2 ft SLR by 2060 and maintain minimum design freeboard of 3 feet for work boats and lay berth.
- Apron length = 330 lf, Apron width = 16 ft
- Apron Area = 5,280 sf
- Assumed ground elevation = 5 ft
- Apron proposed elevation = 8.10 ft
- Apron elevation increase = 3.10 ft
- Apron Fill = 606 cy / 0.38 ac-ft

1b Use floating dock design for fishing vessels and work boat piers adjacent to the Maritime Support Area.

1c Reconstruct existing fuel barge pier.

2 Clear and pave the 1.39-acre lot adjacent to the Kapalama Canal outlet for Maritime Support uses and possible future facility development through a public/private partnership.



Item	Unit	Quantity	Unit Cost*	Cost	
Extend Pier 38 bulkhead improvements along Pier 38 maritime support area.	lf	330	$31,769.52	$10,483,940	* Based on Pier 38 HC-1972 project cost escalated 5% annualy to 2023.
Additional fill for raised apron.	ac-ft	0.38	$252,141.49	$95,814	* Based on KCT cost for fill
Reconstruct fuel barge pier (60 lf)	lf	60	$31,769.52	$1,906,171	* Based on Pier 38 HC-1972 project cost escalated 5% annualy to 2023.
Install floating pier for workboats (330 lf x 10f)	sf	3,300	$1,000.00	$3,300,000	* Based on prior project experience
Clear lot adjacent to Kapalama Canal outlet	ac	1.39	$440,306.49	$612,026	* Based on KCT cost per acre - mobilization and excavation
Pave lot adjacent to Kapalama Canal outlet	ac	1.39	$765,139.93	$1,063,545	* Based on KCT cost per acre - pavement
TOTAL				**$17,461,496**	

PIERS 39 T0 41 INTERISLAND TERMINAL MODERNIZATION

1 Pier Improvements

1a Reconstruct and strengthen Piers 39 to 41 with sheet-pile/bulkhead construction to accommodate modern barge operations to the full extent of the pier.

1b Replace pier deck and yard area adjacent to pavement with concrete to accommodate heavy-lift operations.

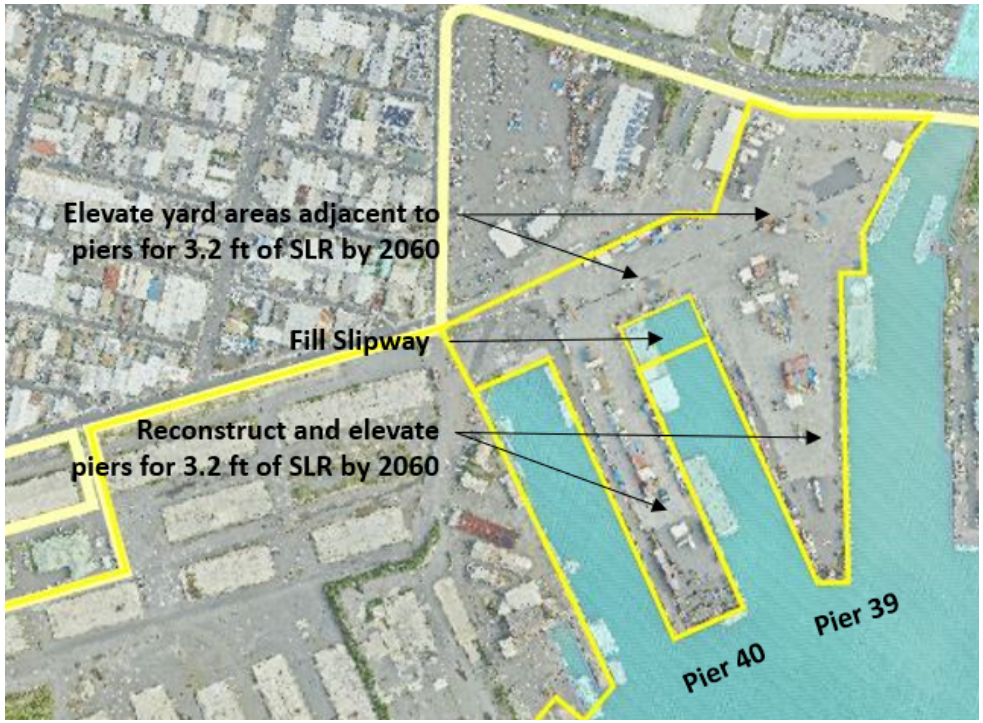
1c Improve fendering and bollards.

2 Raise the height of the piers and portion of the yard as necessary to account for SLR of 3.2 feet by 2060 while maintaining a minimum operational freeboard of 6 feet for tug and barge operations. Raise the portion of the yard adjacent to the piers to match the pier height and leave the mauka areas of the terminal at existing grade.
Pier Length = 5,151 lf
Minimum design freeboard = 6 feet for tug & barge operations
Yard Area - piers and adjacent areas = 1,100,800 sf / 25.3 ac
Yard/Pier existing elevation above MLLW (2019) = 8 ft
Yard/Pier proposed elevation above MLLW (2019) = 11.10 ft
Yard/Pier = elevation increase = 3.10 ft
Yard Fill - piers and adjacent yard areas = 126,388 cy = 78.3 ac-ft

3 Fill in approximately 0.85-acres of the Piers 39 and 40 slipway to expand the yard area. Retain sufficient berthing within the slipway to accommodate two barges on each side.
Slipway Fill = 37,000 sf x 30-ft depth = 1,110,000 cf = 41,111 cy=25.5 ac-ft

4 Reconstruct, raise and strengthen the revetment at the Kapalama Canal outlet near Pier 39-1A for SLR, resiliency and terminal function.

5 New Libby Street Driveway - create new driveway entrance on Libby Street to non-secure areas of the terminal for staff and customer traffic.



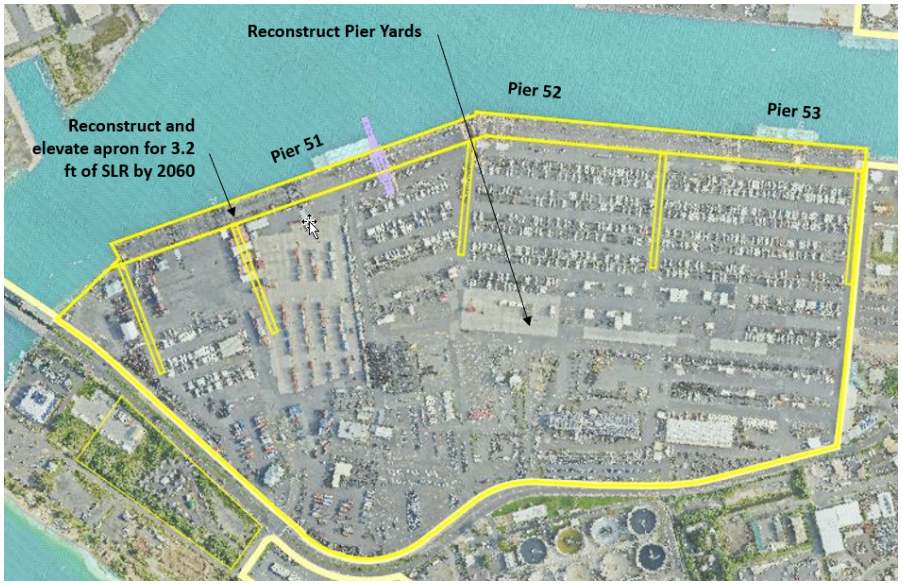
Item	Unit	Quantity	Unit Cost*	Cost	
Reconstruct Piers 39 to 41 - bulkhead	lf	5,151	$148,654.13	$765,717,399	* Based on KCT Wharf and Dredging - bulkhead pier construction
Reconstruct Piers 39 to 41 - yard areas adjacent to piers	ac	25.30	$3,649,872.84	$92,341,783	* Based on KCT cost per acre
Additional Fill for SLR - piers and yard areas adjacent to piers	ac-ft	78.30	$252,141.49	$19,742,679	* Based on bid for kapalama container yard cost for fill
Additional Fill for piers 39 to 40 slipway	ac-ft	25.5	$252,141.49	$6,429,608	* Based on bid for kapalama container yard cost for fill
Construct pier over filled area	ac	0.85	$3,649,872.84	$3,102,392	* Based on KCT cost per acre
Reconstruct, raise and strengthen the revetment at Kapalama Canal	lf	550	$20,000.00	$11,000,000	* Based on previous project experience
Design and Construct new driveway on Libby Street	L.S.	L.S.	L.S.	$50,000	* Budgetary for new driveway construction based on project experience
TOTAL				**$898,383,861**	

PIERS 51 TO 53 SAND ISLAND CONTAINER TERMINAL MODERNIZATION

1 Reconstruct Piers 51-53 pier and yard using sheet-pile/bulkhead construction. Use concrete in all areas to be used for container storage and heavy lift (top pick) operations.

1a Raise the height of the pier, apron and 120-ft wide gantry track corridor as necessary to account for SLR of 3.2 feet by 2060 while maintaining a minimum operational freeboard of 6 feet for cargo vessel operations. Construct access ramps between the raised apron and yard.
- Piers 51A-C Length=2,035 lf, Piers 52A to 53 Length=2,050 lf, Total=4,085 lf
- Minimum design freeboard = 6 feet for cargo vessel operations
- 120-ft Wide Apron/Gantry Corridor=244,200 sf/5.6 ac + 246,000 sf/5.7 ac = 490,200 sf/11.3 ac
- Pier existing elevation above MLLW (2019) = 51A-C = 8 ft, 52A-53 = 8.2 ft
- Pier proposed elevation above MLLW (2019) = 11.10 ft
- Pier = elevation increase = 51A-C = 3.10 ft, 52A-53 = 2.90 ft
- Apron/Gantry Fill 51A-C = 28,037 cy = 17.4 ac-ft
- Apron/Gantry Fill 52A-53 = 26,422 cy = 16.4 ac-ft, Total = 54,459 cy = 33.8
- Ramp Fill Volume = 30'x600'x3' (0.5% slope) = 1000 cy each x 5 = 5,000 cy
- Total Fill Volume 51A-C = 30,037 cy = 18.6 ac-ft
- Total Fill Volume 52A-53 = 29,442 cy = 18.3 ac-ft
- Total Fill Volume = 59,479 cy = 39.9 ac-ft

2 Install hydro-dynamic separators as necessary. Possibly need 3 HDS units at Sand Island.



Item	Unit	Quantity	Unit Cost*	Cost	
Reconstruct Piers 51A through 53B - yard	ac	138.20	$3,649,872.84	$504,412,427	* Based on KCT cost per acre
Reconstruct Piers 51A through 53B - bulkhead pier	lf	4,085.00	$148,654.13	$607,252,102	* Based on KCT Wharf and Dredging - bulkhead pier construction
Additional Fill - 120-ft apron and ramps	ac-ft	39.90	$252,141.49	$10,060,446	* Based on bid for kapalama container yard cost for fill
Install hydrodynamic separators	ea	3	$850,000.00	$2,550,000	* Based on KCT cost
TOTAL				**$1,124,274,974**	

PIER 60 AGGREGATE PIER MODERNIZATION

1 Reconstruct Pier 60 yard into a heavy-duty pier for barge (Ro/Ro) operations:

1b Reconstruct Pier 60 yard (HC&D lease areas), including pavement, water, sewer, drainage and electricity. Pave with concrete for pier strength and to make it easier to store aggregate.

2 Raise the height of the pier, apron and yard in the HC&D lease area as necessary to account for SLR of 3.2 feet while maintaining a minimum operational freeboard of 6 feet for tug and barge operations.

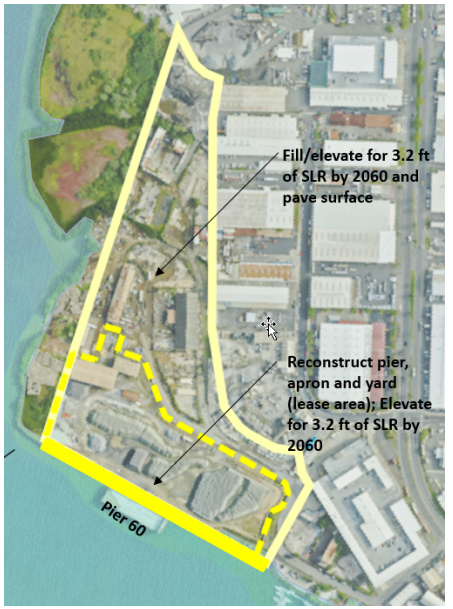
- Pier Length = 452 lf
- Minimum design freeboard = 6 feet for tug & barge operations
- Total Pier 60 Yard Area (lease area and backland) = 897,973 sf / 20.6 ac
- Yard/Pier existing elevation above MLLW (2019) = 7 ft
- Yard/Pier proposed elevation above MLLW (2019) = 11.10 ft
- Yard/Pier = elevation increase = 4.10 ft
- Total Yard Fill = 136,360 cy = 84.5 ac-ft
- HC&D Lease Area = 344,292 sf / 7.9 ac = 32.4 ac-ft
- Backland Area = 553,681 sf / 12.7 ac = 52.1 ac-ft

3 Develop backland areas with paved surface for auto or container/chassis storage or other maritime uses.

4 Raise backland areas to account for SLR consistent with Pier 60 lease areas.

5 Develop existing mauka perimeter driveway into a new industrial street to create new business frontage on Pier 60 backlands, with street connection to Pahounui Street.

5a Acquire right-of-way to improve street layout and circulation.



Item	Unit	Quantity	Unit Cost*	Cost	
Reconstruct Pier 60 - bulkhead pier	lf	452.00	$148,654.13	$67,191,665	* Based on KCT Wharf and Dredging - bulkhead pier construction
Reconstruct HC&D lease area yard	ac	7.9	$3,649,872.84	$28,833,995	* Based on KCT cost - yard construction
Additional Fill - HC&D lease area	ac-ft	32.40	$252,141.49	$8,169,384	* Based on KCT cost - fill
Pave backland areas	ac	12.70	$765,139.93	$9,717,277	* Based on KCT cost - pavement
Additional Fill - backland area	ac-ft	52.10	$252,141.49	$13,136,572	* Based on KCT cost - fill
Develop exist. Mauka perimeter driveway into new industrial street	lf	2600	$380.00	$988,000	* Assuming 2,600 lf road, 40' wide, 4" of ac pavement and 12" of aggregate base
Acquire right-of-way to improve street layout and circulation	ac	6	$3,000,000.00	$18,000,000	* Assuming 2,600 foot acquisition at 100 ' wide @ $3.0 million per acre
TOTAL				**$146,036,893**	

UNIT COST BREAKDOWN

		KCT - Yard								Escalated Costs	
	Item	Quantity	Unit	Price	Cost per Unit	date start	date future	date 2050	annual escalat	2023	2050
1	Mobilization and Demobilization	70	ac	$10,100,000.00	$144,285.71	1/1/2020	1/1/2023	1/1/2050	5.00%	$167,034.33	$623,636.19
2	Demolition - yard, buildings, structures, utilities [1]	70	ac	$52,078,533.00	$743,979.04	1/1/2020	1/1/2023	1/1/2050	5.00%	$861,277.50	$3,215,649.32
3	Excavation	70	ac	$16,523,842.00	$236,054.89	1/1/2020	1/1/2023	1/1/2050	5.00%	$273,272.16	$1,020,283.76
4	Pavement	70	ac	$46,265,420.00	$660,934.57	1/1/2020	1/1/2023	1/1/2050	5.00%	$765,139.93	$2,856,711.93
5	Sewer	70	ac	$21,720,697.70	$310,295.68	1/1/2020	1/1/2023	1/1/2050	5.00%	$359,218.03	$1,341,169.63
6	Water	70	ac	$10,150,609.30	$145,008.70	1/1/2020	1/1/2023	1/1/2050	5.00%	$167,871.31	$626,761.12
7	Drainage	70	ac	$21,587,775.00	$308,396.79	1/1/2020	1/1/2023	1/1/2050	5.00%	$357,019.75	$1,332,962.16
8	Electrical	70	ac	$23,052,700.00	$329,324.29	1/1/2020	1/1/2023	1/1/2050	5.00%	$381,246.76	$1,423,415.65
9	Environmental Concerns	70	ac	$5,488,142.02	$78,402.03	1/1/2020	1/1/2023	1/1/2050	5.00%	$90,763.18	$338,871.68
10	Security Fencing	70	ac	$1,977,400.00	$28,248.57	1/1/2020	1/1/2023	1/1/2050	5.00%	$32,702.34	$122,096.85
11	Traffic Control	70	ac	$2,000,000.00	$28,571.43	1/1/2020	1/1/2023	1/1/2050	5.00%	$33,076.10	$123,492.32
12	Signage and Pavement Markings	70	ac	$800,000.00	$11,428.57	1/1/2020	1/1/2023	1/1/2050	5.00%	$13,230.44	$49,396.93
13	Landscaping	70	ac	$611,424.50	$8,734.64	1/1/2020	1/1/2023	1/1/2050	5.00%	$10,111.77	$37,753.11
14	Other	70	ac	$8,338,903.66	$119,127.20	1/1/2020	1/1/2023	1/1/2050	5.00%	$137,909.22	$514,895.26
	Total cost per acre				$3,152,792.10	1/1/2020	1/1/2023	1/1/2050	5.00%	$3,649,872.84	$13,627,095.91

		KCT Wharf and Dredging									
	Item	Quantity	Unit	Price	Cost per Unit	date start	date future	date 2050	annual escalat	2023	2050
1	Dredging	5	pier	$34,211,500.00	$6,842,300.00	1/1/2020	1/1/2023	1/1/2050	5.00%	$7,921,082.06	$29,574,001.50
2	Demolition - piers [1]	3180	lf	$29,150,000.00	$9,166.67	1/1/2020	1/1/2023	1/1/2050	5.00%	$10,611.92	$39,620.45
3	Fill material	70	ac-ft	$15,246,142.00	$217,802.03	1/1/2020	1/1/2023	1/1/2050	5.00%	$252,141.49	$941,390.69
4	Bulkhead Pier Construction Cost per LF	3180	lf	$408,339,775.00	$128,408.73	1/1/2020	1/1/2023	1/1/2050	5.00%	$148,654.13	$555,012.22

		Miscellaneous Unit Costs									
	Item	Quantity	Unit	Price	Cost per Unit	date start	date future	date 2050	annual escalat	2023	2050
1	20907 Pier 15 (2012) - Mooring Dolphin Installed	5	ea	$4,553,226.00	$910,645.20	1/1/2016	1/1/2023	1/1/2050	5.00%	$1,281,412.04	$4,784,255.64
2	20907 Pier 15 (2021) - Mooring Bollard Installed	1	ea	$17,015.77	$17,015.77	1/1/2016	1/1/2023	1/1/2050	5.00%	$23,943.70	$89,395.73
3	Wave dampening design	1	lf	$20,000.00	$20,000.00	1/1/2023	1/1/2023	1/1/2050	5.00%	$20,000.00	$74,671.62
4	Heavy lift pads - *150'x100'x2' or 1,111 cy at $700/cy	1	ea	$780,000.00	$780,000.00	1/1/2023	1/1/2023	1/1/2050	5.00%	$780,000.00	$2,912,193.18
5	Sidewalk construction	1	sf	$20.00	$20.00	1/1/2023	1/1/2023	1/1/2050	5.00%	$20.00	$74.67
6	HC-1972 Pier 38 - Pier Construction Costs (1998)	743	lf	$6,970,781.08	$9,381.94	1/1/1998	1/1/2023	1/1/2050	5.00%	$31,769.52	$118,614.06
7	St John Port Authority Pugsley C. and Long Wharf Terminal Elevated Walkway [2]	394	lf	$3,300,000.00	$8,375.63	1/1/2015	1/1/2023	1/1/2050	5.00%	$12,375.00	$46,201.67
8	Dredging - Pier 20 (2019)	400	lf	$276,000.00	$690.00	1/1/2019	1/1/2023	1/1/2050	5.00%	$839.00	$3,131.35
9	Pile-and-Deck Pier Construction (Contractor and KAI Hawai'i expertise)	n/a	sf	n/a	$4,500.00	1/1/2023	1/1/2023	1/1/2050	5.00%	$4,500.00	$16,801.11
10	Elevate pile-and-deck pier with spacers (derived from KAI Hawai'i est.)	n/a	sf	n/a	$500.00	1/1/2023	1/1/2023	1/1/2050	5.00%	$500.00	$1,866.79

Notes:

1 Demolition costs include hazardous material handling and disposal.

2 Based on 20% of total 2015 project cost of $16,500,000 which included fixed elevated structure, six 150-ton bollards, site grading, 2nd-story terminal improvements, new kitchen and patio, and miscellaneous other improvements.

FILL QUANTITY CALCULATIONS

Pier No.	Pier/Berth Length (LF)	Yard Area (SF) (from ACAD)	Future Yard Area (sf) C-(D+F)	Yard Area (AC)	Yard/Pier Existing Elevation (FT)	Yard/Pier Proposed Elevation (FT) 2019 MLLW with min. dsgn. Draft	Yard/Pier Elevation Increase (FT)	Raised Apron / Edge (FT)	Yard Fill (CY)	Yard Fill (AC FT)
1 & 2 Cargo	1175.00	1,524,545	1329221.00	30.51	7.25	11.10	3.85		189537.07	117.48
2 Cruise Terminal	1850.00	34310.00	34310.00	0.79	7.25	10.10	2.85	20.00	3621.61	2.24
4	325.00	3616.00	3616.00	0.08	6.50	8.10	1.60		214.28	0.13
5 & 6	545.00		0.00	0.00	6.00	10.10	4.10		0.00	0.00
5 & 6 Landside (by ATDC)		178,545	178545.00	4.10	7.50	10.10	2.60		17193.22	10.66
7DH	450.00	37026.00	37026.00	0.85	8.60	10.10	1.50		2057.00	1.28
7E	275.00		0.00	0.00	8.60	10.10	1.50		0.00	0.00
8-11	2176.00	34816.00	34816.00	0.80	7.00	10.10	3.10	16.00	3997.39	2.48
12	112.00	13580.89	13580.89	0.31	8.10	8.10	0.00		0.00	0.00
13-14E	775.00	1550.00	1550.00	0.04	7.00	8.10	1.10	2.00	63.15	0.04
15	485.00		0.00	0.00	7.00	8.10	1.10		0.00	0.00
16	930.00		0.00	0.00	7.00	8.10	1.10		0.00	0.00
17	965.00		0.00	0.00	5.00	8.10	3.10		0.00	0.00
18	210.00	59031.00	59031.00	1.36	6.00	8.10	2.10		4591.30	2.85
19 & 20 Cargo Piers	980.00	365996.00	365996.00	8.40	6.35	11.10	4.75		64388.19	39.91
19	580.00		0.00	0.00	6.35	11.10	4.75		0.00	0.00
20	400.00		0.00	0.00	6.35	11.10	4.75		0.00	0.00
21-22	665.00	43533.00	43533.00	1.00	6.00	8.10	2.10		3385.90	2.10
22-23	930.00	108761.00	108761.00	2.50	6.00	8.10	2.10		8459.19	5.24
Pier 23 Maritime Center	n/a	343344.00	343344.00	7.88	6.35	11.10	4.75		60403.11	37.44
24-25	945.00	18900.00	18900.00	0.43	6.00	8.10	2.10	20.00	1470.00	0.91
24	580.00	11600.00	11600.00	0.27	6.00	8.10	2.10	20.00	902.22	0.56
25	365.00	7300.00	7300.00	0.17	6.00	8.10	2.10	20.00	567.78	0.35
26	685.00	13700.00	13700.00	0.31	6.00	8.10	2.10	20.00	1065.56	0.66
27 - 29A	1800.00	34400.00	34400.00	0.79	7.00	8.10	1.10	20.00	1401.48	0.87
27	660.00	13200.00	13200.00	0.30	7.00	8.10	1.10	20.00	537.78	0.33
27DL	250.00	5000.00	5000.00	0.11	7.00	8.10	1.10	20.00	203.70	0.13
27E	0.00	0.00	0.00	0.00	7.00	8.10	1.10	20.00	0.00	0.00
28	490.00	9800.00	9800.00	0.22	7.00	8.10	1.10	20.00	399.26	0.25
29A	400.00	6400.00	6400.00	0.15	7.00	11.10	4.10	20.00	971.85	0.60
29	600.00	60000.00	60000.00	1.38	7.00	11.10	4.10	100.00	9111.11	5.65
30	270.00		0.00	0.00	6.00				0.00	0.00
31A-33 - Raise all for SLR	2045.00	663842.00	663842.00	15.24	7.00	11.10	4.10		100805.64	62.48
31A-33 - Raise apron for SLR	2045.00	204500.00	204500.00	4.69	7.00	11.10	4.10	100.00	31053.70	19.25
34 - Raise apron for SLR	210.00	4200.00	4200.00	0.10	7.00	11.10	4.10	20.00	637.78	0.40
35	910.00	18200.00	18200.00	0.42	7.00	10.10	3.10		2089.63	1.30
36DH	546.00		0.00	0.00	7.00	8.10	1.10		0.00	0.00
36E	430.00		0.00	0.00	7.00	8.10	1.10		0.00	0.00

FILL QUANTITY CALCULATIONS

Pier No.	Pier/Berth Length (LF)	Yard Area (SF) (from ACAD)	Future Yard Area (sf) C-(D+F)	Yard Area (AC)	Yard/Pier Existing Elevation (FT)	Yard/Pier Proposed Elevation (FT) 2019 MLLW with min. dsgn. Draft	Yard/Pier Elevation Increase (FT)	Raised Apron / Edge (FT)	Yard Fill (CY)	Yard Fill (AC FT)
37	408.00		0.00	0.00	7.00	8.10	1.10		0.00	0.00
38 (LAND-NIMITZ HWY)	990.00	15840.00	15840.00	0.36	5.00	8.10	3.10	16.00	1818.67	1.13
38 (PIER)	1140.00	18240.00	18240.00	0.42	5.00	8.10	3.10	16.00	2094.22	1.30
391A-40F - Raise all for SLR	5151.00	1750942.00	1750942.00	40.20	8.00	11.10	3.10		242145.19	150.10
391A-40F - Raise por. for SLR	5151.00	1100800.00	1100800.00	25.27	8.00	11.10	3.10		167499.26	103.83
41, 42 & 43 Cargo - KCT	2113.00	253560.00	253560.00	5.82	9.81	11.10	1.29		12114.53	7.51
41	250.00		0.00	0.00	9.81	11.10	1.29		0.00	0.00
42	963.00		0.00	0.00	9.81	11.10	1.29		0.00	0.00
43	900.00		0.00	0.00	9.81	11.10	1.29		0.00	0.00
51, 52, 53 pier, apron and yard	6135.00	6853842.00	6853842.00	157.34	8.00	11.10	3.10	120.00	786922.60	487.76
51, 52, 53 - 120-ft wide apron	4805.00	576600.00	576600.00	13.24	8.00	11.10	3.10	120.00	66202.22	41.03
51 (A-C)	2035.00	244200.00	244200.00	5.61	8.00	11.10	3.10	120.00	28037.78	17.38
52A to 53C	2050.00	246000.00	246000.00	5.65	8.20	11.10	2.90	120.00	26422.22	16.38
52 (A&B)	800.00	96000.00	96000.00	2.20	8.20	11.10	2.90	120.00	10311.11	6.39
53 (A-C)	1250.00	150000.00	150000.00	3.44	8.20	11.10	2.90	120.00	16111.11	9.99
60	452.00	897973.00	897973.00	20.61	7.00	11.10	4.10		136358.86	84.52

Notes:

1. Pier 34: 210 lf raised 20-ft apron calculation: 545 lf (Pier 34 berth) - 130 lf (pier 33 cut and raised apron) - 205 lf (portion of pier used by UH Research) = 210

1. Pier 391A-40F: Add 37,000 sf slipway infill area * 30-ft. depth (ARCGIS bathymetry layer) to fill quantity

2. Piers 51 to 53: Ramp Fill Volume = 30'x600'x3' (0.5% slope) = 1000 cy each x3 = 3,000 cy

PIER HEIGHT CALCULATIONS

Island	Harbor	Pier No.	Primary Operation/Vessel	Min. Freeboard of Current Pier Deck Required to Function	Freeboard of Current Pier Deck at MLLW *	Difference in height between MLLW and MHHW **	Freeboard of Current Pier Deck at MHHW	Freeboard of Current Pier Deck with 3.2ft SLR @2060 MHHW	Increase Pier Height by (ft) by 2050: (L-S)	2050 Pier Height (based on 2019 MLLW)
Oahu	HO	1A	container	6	7.25	1.9	5.35	2.15	3.85	11.1
Oahu	HO	1B	container	6	7.25	1.9	5.35	2.15	3.85	11.1
Oahu	HO	2A	cruise/layberth	5	7.25	1.9	5.35	2.15	2.85	10.1
Oahu	HO	2B	cruise/layberth	5	7.25	1.9	5.35	2.15	2.85	10.1
Oahu	HO	2C	cruise/layberth	5	7.25	1.9	5.35	2.15	2.85	10.1
Oahu	HO	4	fishing/workboat	3	6.5	1.9	4.6	1.4	1.6	8.1
Oahu	HO	5	day excursion/ferry	5	6	1.9	4.1	0.9	4.1	10.1
Oahu	HO	6	day excursion/ferry	5	6	1.9	4.1	0.9	4.1	10.1
Oahu	HO	7DH	day excursion/ferry	5	8.6	1.9	6.7	3.5	1.5	10.1
Oahu	HO	7E	day excursion/ferry	5	8.6	1.9	6.7	3.5	1.5	10.1
Oahu	HO	8	day excursion/ferry	5	7	1.9	5.1	1.9	3.1	10.1
Oahu	HO	9	day excursion/ferry/layberth	5	7	1.9	5.1	1.9	3.1	10.1
Oahu	HO	10	cruise/layberth	5	7	1.9	5.1	1.9	3.1	10.1
Oahu	HO	11	cruise/layberth	5	7	1.9	5.1	1.9	3.1	10.1
Oahu	HO	12	tug	3	8.1	1.9	6.2	3	0	8.1
Oahu	HO	13	tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	14	tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	14E	tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	15	tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	16	fishing/workboat	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	17	fishing/workboat	3	5	1.9	3.1	-0.1	3.1	8.1
Oahu	HO	18	barge	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	19	cargo	6	6.35	1.9	4.45	1.25	4.75	11.1
Oahu	HO	20	cargo	6	6.35	1.9	4.45	1.25	4.75	11.1
Oahu	HO	21	tug	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	22	tug	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	23	workboats/tug	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	24	dry dock	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	25	dry dock	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	26	workboats/tug	3	6	1.9	4.1	0.9	2.1	8.1
Oahu	HO	27	workboats/tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	27DL	workboats/tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	27E	workboats/tug	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	28	tug/layberth	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	29	ro-ro/layberth	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	29A	ro-ro/layberth	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	30	barge	6	6	1.9	4.1	0.9	5.1	11.1
Oahu	HO	31A	cargo/barge/lay	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	31	cargo/barge/lay	6	7	1.9	5.1	1.9	4.1	11.1

PIER HEIGHT CALCULATIONS

Island	Harbor	Pier No.	Primary Operation/Vessel	Min. Freeboard of Current Pier Deck Required to Function	Freeboard of Current Pier Deck at MLLW *	Difference in height between MLLW and MHHW **	Freeboard of Current Pier Deck at MHHW	Freeboard of Current Pier Deck with 3.2ft SLR @2060 MHHW	Increase Pier Height by (ft) by 2050: (L-S)	2050 Pier Height (based on 2019 MLLW)
Oahu	HO	32	cargo/ro-ro/lay	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	33	cargo/ro-ro/lay	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	34	cargo/ro-ro/lay	6	7	1.9	5.1	1.9	4.1	11.1
Oahu	HO	35	Research Vessel	5	7	1.9	5.1	1.9	3.1	10.1
Oahu	HO	36DH	fishing/workboat	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	36DH	fishing/workboat	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	37	fishing/workboat	3	7	1.9	5.1	1.9	1.1	8.1
Oahu	HO	38	fishing/workboat	3	5	1.9	3.1	-0.1	3.1	8.1
Oahu	HO	391A	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39A	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39B	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39C	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39D	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39E	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	39F	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40A	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40B	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40C	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40D	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40E	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	40F	barge	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	41	container	6	9.81	1.9	7.91	4.71	1.29	11.1
Oahu	HO	42	container	6	9.81	1.9	7.91	4.71	1.29	11.1
Oahu	HO	43	container	6	9.81	1.9	7.91	4.71	1.29	11.1
Oahu	HO	51A	container	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	51B	container	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	51C	container	6	8	1.9	6.1	2.9	3.1	11.1
Oahu	HO	52A	container	6	8.2	1.9	6.3	3.1	2.9	11.1
Oahu	HO	52B	container	6	8.2	1.9	6.3	3.1	2.9	11.1
Oahu	HO	53A	container	6	8.2	1.9	6.3	3.1	2.9	11.1
Oahu	HO	53B	container	6	8.2	1.9	6.3	3.1	2.9	11.1
Oahu	HO	53C	container	6	8.2	1.9	6.3	3.1	2.9	11.1
Oahu	HO	60	barge	6	7	1.9	5.1	1.9	4.1	11.1

DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
THE NEW KAPALAMA CONTAINER TERMINAL YARD DESIGN AT
HONOLULU HARBOR, OAHU, HAWAII - JOB H.C. 10502

BID TABULATION - PART J
BID OPEN DATE: JUNE 16, 2017

Bid Items		Kiewit Infrastructure West Co.				Nan, Inc.				Watts Constructors, LLC				Goodfellow Bros., Inc.				Hawaiian Dredging Construction Company, Inc.				Road and Highway Builders, LLC				Engineer's Estimate			
ITEM NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL	EST. QTY	UNIT	UNIT PRICE	TOTAL
PART I:						PART I:				PART I:				PART I:				PART I:				PART I:				PART I:			
1.	Mobilization and Demobilization	L.S.	Lump Sum	L.S.	$ 8,600,000.00	L.S.	Lump Sum	L.S.	$ 6,470,000.00	L.S.	Lump Sum	L.S.	$ 10,160,000.00	L.S.	Lump Sum	L.S.	$ 9,250,000.00	L.S.	Lump Sum	L.S.	$ 4,929,475.00	L.S.	Lump Sum	L.S.	$ 4,000,000.00	L.S.	Lump Sum	L.S.	$ 8,500,000.00
2.	Demolition and removal of poles, floodlights, remote ballasts, including concrete bases, switchboard, lighting controls, fencing (including removal and replacement), cold planing, asphalt concrete, concrete, concrete building slabs, buildings, drain pipes, concrete beams, utility lines and ducts, trees and vegetation, and any other items within the limit of demolition and removal, excluding items indicated to remain.	L.S.	Lump Sum	L.S.	$ 5,500,000.00	L.S.	Lump Sum	L.S.	$ 1,877,500.00	L.S.	Lump Sum	L.S.	$ 6,719,117.42	L.S.	Lump Sum	L.S.	$ 8,813,440.00	L.S.	Lump Sum	L.S.	$ 10,000,000.00	L.S.	Lump Sum	L.S.	$ 21,000,000.00	L.S.	Lump Sum	L.S.	$ 6,500,000.00
3.	Excavation, characterization, profiling, and hauling of grossly contaminated soils and material for and resulting from demolition and removal work, including, but not limited to soil, concrete building foundations, concrete footings, asphalt concrete pavement, underground utility structures, and loose material removed as part of the demolition and removal work, inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 3,600,000.00	L.S.	Lump Sum	L.S.	$ 8,555,400.00	L.S.	Lump Sum	L.S.	$ 4,898,739.22	L.S.	Lump Sum	L.S.	$ 3,000,000.00	L.S.	Lump Sum	L.S.	$ 8,500,000.00	L.S.	Lump Sum	L.S.	$ 9,000,000.00	L.S.	Lump Sum	L.S.	$ 4,500,000.00
4.	Excavation, characterization, profiling, and hauling of non-grossly contaminated soils and material for and resulting from demolition and removal work, including, but not limited to soil, concrete building foundations, concrete footings, asphalt concrete pavement, underground utility structures, and loose material removed as part of the demolition and removal work, inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 4,000,000.00	L.S.	Lump Sum	L.S.	$ 13,851,500.00	L.S.	Lump Sum	L.S.	$ 2,640,710.82	L.S.	Lump Sum	L.S.	$ 3,000,000.00	L.S.	Lump Sum	L.S.	$ 15,900,000.00	L.S.	Lump Sum	L.S.	$ 7,000,000.00	L.S.	Lump Sum	L.S.	$ 3,500,000.00
5.	Separating petroleum grossly and non-grossly contaminated soils and material for and resulting from demolition and removal work, including, but not limited to soil, concrete building foundations, concrete footings, asphalt concrete pavement, underground utility structures, and loose material removed as part of the demolition and removal work. Costs shall include physically separating material, time associated with and required for separating material, tools, labor, materials, and incidentals necessary to complete the work, as well as protective wear, safety plan, and other costs related to petroleum contamination.	L.S.	Lump Sum	L.S.	$ 350,000.00	L.S.	Lump Sum	L.S.	$ 1,083,800.00	L.S.	Lump Sum	L.S.	$ 127,361.96	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 150,000.00	L.S.	Lump Sum	L.S.	$ 500,000.00	L.S.	Lump Sum	L.S.	$ 500,000.00
6.	Demolition and removal of existing pole-mounted electrical transformers, assume 3 transformer per pole, inclusive of but not limited to disposal characterization analyses for PCBs, disposal of dielectric fluid, and disposal of wooden utility poles.	33	Each	$ 4,000.00	$ 132,000.00	33	Each	$ 4,100.00	$ 135,300.00	33	Each	$ 2,708.36	$ 89,375.88	33	Each	$ 2,000.00	$ 66,000.00	33	Each	$ 2,150.00	$ 70,950.00	33	Each	$ 10,000.00	$ 330,000.00	33	Each	$ 3,500.00	$ 115,500.00
7.	Demolition and removal of existing pad-mounted electrical transformers, inclusive of but not limited to disposal characterization analyses for PCBs, disposal of dielectric fluid, and disposal of concrete slab.	16	Each	$ 10,250.00	$ 164,000.00	16	Each	$ 10,400.00	$ 166,400.00	16	Each	$ 4,317.16	$ 69,074.56	16	Each	$ 2,000.00	$ 32,000.00	16	Each	$ 9,225.00	$ 147,600.00	16	Each	$ 12,000.00	$ 192,000.00	16	Each	$ 10,000.00	$ 160,000.00
8.	Removal and disposal of PCB-containing light ballasts and mercury-containing light bulbs and tubes from buildings to be demolished.	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00	Allow.	Allowance	Allow.	$ 175,000.00
9.	Sealing/abandonment of groundwater monitorino wells.	33	Each	$ 1,300.00	$ 42,900.00	33	Each	$ 8,501.00	$ 280,533.00	33	Each	$ 6,162.28	$ 203,355.24	33	Each	$ 3,000.00	$ 99,000.00	33	Each	$ 6,750.00	$ 222,750.00	33	Each	$ 1,000.00	$ 33,000.00	33	Each	$ 7,500.00	$ 247,500.00
10.	Preparation of Planning Documents, inclusive of EHMP	L.S.	Lumo Sum	L.S.	$ 250,000.00	L.S.	Lump Sum	L.S.	$ 189,000.00	L.S.	Lump Sum	L.S.	$ 997,633.43	L.S.	Lump Sum	L.S.	$ 750,000.00	L.S.	Lump Sum	L.S.	$ 1,160,000.00	L.S.	Lump Sum	L.S.	$ 300,000.00	L.S.	Lump Sum	L.S.	$ 350,000.00
11.	Contractors Environmental Qualified Consultant	L.S.	Lump Sum	L.S.	$ 450,000.00	L.S.	Lump Sum	L.S.	$ 252,000.00	L.S.	Lump Sum	L.S.	$ 518,230.27	L.S.	Lump Sum	L.S.	$ 1,000,000.00	L.S.	Lump Sum	L.S.	$ 406,000.00	L.S.	Lump Sum	L.S.	$ 500,000.00	L.S.	Lump Sum	L.S.	$ 400,000.00
12.	Setup, maintenance, and removal of soil staging area for non-grossly contaminated soils.	L.S.	Lump Sum	L.S.	$ 200,000.00	L.S.	Lump Sum	L.S.	$ 109,300.00	L.S.	Lump Sum	L.S.	$ 131,954.01	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 392,000.00	L.S.	Lump Sum	L.S.	$ 60,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00
13.	Setup, maintenance, and removal of soil staging area for grossly contaminated soils.	L.S.	Lump Sum	L.S.	$ 32,000.00	L.S.	Lump Sum	L.S.	$ 109,300.00	L.S.	Lump Sum	L.S.	$ 131,954.01	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 1,392,000.00	L.S.	Lump Sum	L.S.	$ 60,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00
14.	Setup, maintenance, and removal of soil staging area for contaminated sediment.	L.S.	Lump Sum	L.S.	$ 65,000.00	L.S.	Lump Sum	L.S.	$ 109,300.00	L.S.	Lump Sum	L.S.	$ 131,954.01	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 153,000.00	L.S.	Lump Sum	L.S.	$ 25,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00
15.	Setup, maintenance, and removal of soil staging area for excavated landfill debris.	L.S.	Lump Sum	L.S.	$ 65,000.00	L.S.	Lump Sum	L.S.	$ 109,300.00	L.S.	Lump Sum	L.S.	$ 131,954.01	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 304,000.00	L.S.	Lump Sum	L.S.	$ 60,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00
16.	Removal and disposal of oily sheen/product from groundwater, during backtrenching.	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00	Allow.	Allowance	Allow.	$ 300,000.00
	DEMOLITION				**52,078,533.00**																								
17.	Excavation, characterization, profiling, and hauling of grossly contaminated soils for site grading inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 4,791,842.00	L.S.	Lump Sum	L.S.	$ 6,030,400.00	L.S.	Lump Sum	L.S.	$ 11,930,450.19	L.S.	Lump Sum	L.S.	$ 3,500,000.00	L.S.	Lump Sum	L.S.	$ 9,100,000.00	L.S.	Lump Sum	L.S.	$ 5,000,000.00	L.S.	Lump Sum	L.S.	$ 8,000,000.00
18.	Excavation, characterization, profiling, and hauling of non-grossly contaminated soils for site grading inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 2,800,000.00	L.S.	Lump Sum	L.S.	$ 6,046,100.00	L.S.	Lump Sum	L.S.	$ 5,881,695.14	L.S.	Lump Sum	L.S.	$ 5,500,000.00	L.S.	Lump Sum	L.S.	$ 6,800,000.00	L.S.	Lump Sum	L.S.	$ 5,000,000.00	L.S.	Lump Sum	L.S.	$ 6,000,000.00
19.	Separating petroleum grossly and non-grossly contaminated material for site grading, including, but not limited to, physically separating material, time associated with and required for separating material, tools, labor, materials, and incidentals necessary to complete the work, as well as protective wear, safety plan, and other costs related to petroleum contamination.	L.S.	Lump Sum	L.S.	$ 22,000.00	L.S.	Lump Sum	L.S.	$ 831,300.00	L.S.	Lump Sum	L.S.	$ 407,242.76	L.S.	Lump Sum	L.S.	$ 100.00	L.S.	Lump Sum	L.S.	$ 31,000.00	L.S.	Lump Sum	L.S.	$ 300,000.00	L.S.	Lump Sum	L.S.	$ 750,000.00
20.	Overexcavation, characterization, profiling, and hauling of grossly contaminated soils for subgrade stabilization and stabilization of local spots inclusive of excavation hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00	Allow.	Allow.	Allow.	$ 2,250,000.00
21.	Overexcavation, characterization, profiling, and hauling of non-grossly contaminated soils for subgrade stabilization and stabilization of local soft spots inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work.	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00	Allow.	Allow.	Allow.	$ 100,000.00
22.	Separating petroleum grossly and non-grossly contaminated material for subgrade stabilization and stabilization of local soft spots, including, but not limited to, physically separating material, time associated with and required for separating material, tools, labor, materials, and incidentals necessary to complete the work, as well as protective wear, safety plan, and other costs related to petroleum contamination.	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00	Allow.	Allow.	Allow.	$ 560,000.00
23.	Removed from Scope																												

	EXCAVATION				**22,471,750.19**																								
24.	Embankment for site grading, settlement, and surcharging, inclusive of import, backfill, hauling, removal and relocation of materials, equipment, tools, labor, materials, and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 6,000,000.00	L.S.	Lump Sum	L.S.	$ 5,053,300.00	L.S.	Lump Sum	L.S.	$ 7,052,160.47	L.S.	Lump Sum	L.S.	$ 15,246,142.00	L.S.	Lump Sum	L.S.	$ 2,300,000.00	L.S.	Lump Sum	L.S.	$ 3,000,000.00	L.S.	Lump Sum	L.S.	$ 6,250,000.00
25.	10" Thick Asphalt concrete Base Course, in place, complete.	6,450	Square Yard	$ 70.00	$ 451,500.00	6,450	Square Yard	$ 79.00	$ 509,550.00	6,450	Square Yard	$ 77.34	$ 498,843.00	6,450	Square Yard	$ 68.00	$ 438,600.00	6,450	Square Yard	$ 63.00	$ 406,350.00	6,450	Square Yard	$ 120.00	$ 774,000.00	6,450	Square Yard	$ 85.00	$ 548,250.00
26.	Grade retaining walls, inclusive of backfill, footing, piping, equipment, tools, labor, materials, and incidentals to complete the work in place.	4,450	Linear Foot	$ 1,600.00	$ 7,120,000.00	4,450	Linear Foot	$ 649.00	$ 2,888,050.00	4,450	Linear Foot	$ 578.01	$ 2,572,144.50	4,450	Linear Foot	$ 925.00	$ 4,116,250.00	4,450	Linear Foot	$ 680.00	$ 3,026,000.00	4,450	Linear Foot	$ 1,200.00	$ 5,340,000.00	4,450	Linear Foot	$ 600.00	$ 2,670,000.00
27.	Tensar TX-160 or approved equal triaxial geogrid, inclusive of installation, equipment, tools, labor, materials, and incidentals necessary to complete the work.	581,350	Square Foot	$ 2.00	$ 1,162,700.00	581,350	Square Foot	$ 0.79	$ 459,266.50	581,350	Square Foot	$ 1.34	$ 779,009.00	581,350	Square Foot	$ 1.30	$ 755,755.00	581,350	Square Foot	$ 1.60	$ 930,160.00	581,350	Square Foot	$ 1.00	$ 581,350.00	581,350	Square Foot	$ 2.50	$ 1,453,375.00
28.	Aggregate base course for the asphalt concrete pavement, in place, complete.	2,050	Cubic Yard	$ 125.00	$ 256,250.00	2,050	Cubic Yard	$ 99.00	$ 202,950.00	2,050	Cubic Yard	$ 86.23	$ 176,771.50	2,050	Cubic Yard	$ 180.00	$ 369,000.00	2,050	Cubic Yard	$ 150.00	$ 307,500.00	2,050	Cubic Yard	$ 60.00	$ 123,000.00	2,050	Cubic Yard	$ 95.00	$ 194,750.00
29.	Aggregate base course for the Portland cement concrete pavement, in place, complete.	47,660	Cubic Yard	$ 92.00	$ 4,384,720.00	47,660	Cubic Yard	$ 96.00	$ 4,575,360.00	47,660	Cubic Yard	$ 82.00	$ 3,908,120.00	47,660	Cubic Yard	$ 135.00	$ 6,434,100.00	47,660	Cubic Yard	$ 123.00	$ 5,862,180.00	47,660	Cubic Yard	$ 80.00	$ 3,812,800.00	47,660	Cubic Yard	$ 95.00	$ 4,527,700.00
30.	Portland cement concrete curbs, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place.	2,350	Linear Foot	$ 80.00	$ 188,000.00	2,350	Linear Foot	$ 29.00	$ 68,150.00	2,350	Linear Foot	$ 42.28	$ 99,358.00	2,350	Linear Foot	$ 60.00	$ 141,000.00	2,350	Linear Foot	$ 43.00	$ 101,050.00	2,350	Linear Foot	$ 200.00	$ 470,000.00	2,350	Linear Foot	$ 35.00	$ 82,250.00
31.	Portland cement concrete sidewalks, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place.	725	Square Yard	$ 130.00	$ 94,250.00	725	Square Yard	$ 118.00	$ 85,550.00	725	Square Yard	$ 67.79	$ 49,147.75	725	Square Yard	$ 165.00	$ 119,625.00	725	Square Yard	$ 260.00	$ 188,500.00	725	Square Yard	$ 200.00	$ 145,000.00	725	Square Yard	$ 100.00	$ 72,500.00
32.	Portland cement concrete pavement, inclusive of reinforcements, dowels, tie bars, other joint materials; furnishing, placing, and removing of forms, protection devices; furnishing and placing curing materials, furnishing and installing longitudinal joints, isolation/expansion joints, transverse expansion, transverse construction joints, and transverse contraction joints; grinding and grooving; obtaining cores; testing; backfilling holes with concrete; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place.	113,000	Cubic Yard	$ 280.00	$ 31,640,000.00	113,000	Cubic Yard	$ 339.00	$ 38,307,000.00	113,000	Cubic Yard	$ 407.36	$ 46,031,680.00	113,000	Cubic Yard	$ 415.00	$ 46,895,000.00	113,000	Cubic Yard	$ 355.00	$ 40,115,000.00	113,000	Cubic Yard	$ 550.00	$ 62,150,000.00	113,000	Cubic Yard	$ 385.00	$ 43,505,000.00
33.	Portland cement concrete for concrete transition slabs, inclusive of forming, placing, curing, equipment, tools, labor, materials, and incidentals, in place, complete.	40	Cubic Yard	$ 1,500.00	$ 60,000.00	40	Cubic Yard	$ 591.00	$ 23,640.00	40	Cubic Yard	$ 382.05	$ 15,282.40	40	Cubic Yard	$ 1,000.00	$ 40,000.00	40	Cubic Yard	$ 530.00	$ 21,200.00	40	Cubic Yard	$ 2,750.00	$ 110,000.00	40	Cubic Yard	$ 385.00	$ 15,400.00
34.	2" Thick Asphalt concrete pavement, Mix IV, in place, complete.	15,300	Square Yard	$ 20.00	$ 306,000.00	15,300	Square Yard	$ 22.00	$ 336,600.00	15,300	Square Yard	$ 21.88	$ 334,764.00	15,300	Square Yard	$ 18.00	$ 275,400.00	15,300	Square Yard	$ 17.75	$ 271,575.00	15,300	Square Yard	$ 100.00	$ 1,530,000.00	15,300	Square Yard	$ 25.00	$ 382,500.00
104.	Backfill and placement of Tensar TX-160 or approved equal geogrid in soft and yielding areas for subgrade stabilization and backfill and placement of Mirafi 180N or approved equal non-woven filter fabric for stabilization of local soft spots, inclusive of backfill, placing, equipment, tools, labor, materials, and incidentals necessary to complete the work in place.	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00	Allow.	Allowance	Allow.	$ 350,000.00
105.	5" Thick Asphalt concrete pavement, Mix IV, in place, complete.	6,300	Square Yard	$ 40.00	$ 252,000.00	6,300	Square Yard	$ 46.00	$ 289,800.00	6,300	Square Yard	$ 45.60	$ 287,280.00	6,300	Square Yard	$ 37.00	$ 233,100.00	6,300	Square Yard	$ 40.00	$ 252,000.00	6,300	Square Yard	$ 150.00	$ 945,000.00	6,300	Square Yard	$ 45.00	$ 283,500.00
	PAVEMENT				**96,849,442.00**																								
35.	4" diameter pipe for pressure sewer system, inclusive of backfill, all fittings, labor, materials, tools, and incidentals required to construct the pipelines, in place, complete.	1,985	Linear Foot	$ 20.00	$ 39,700.00	1,985	Linear Foot	$ 116.00	$ 230,260.00	1,985	Linear Foot	$ 85.50	$ 169,717.50	1,985	Linear Foot	$ 75.00	$ 148,875.00	1,985	Linear Foot	$ 94.00	$ 186,590.00	1,985	Linear Foot	$ 400.00	$ 794,000.00	1,985	Linear Foot	$ 125.00	$ 248,125.00
36.	6" diameter pipe for gravity sewer system, inclusive of backfill, all fittings, labor, materials, tools, and incidentals required to construct the pipelines, in place, complete.	530	Linear Foot	$ 45.00	$ 23,850.00	530	Linear Foot	$ 132.00	$ 69,960.00	530	Linear Foot	$ 172.43	$ 91,387.90	530	Linear Foot	$ 210.00	$ 111,300.00	530	Linear Foot	$ 150.00	$ 79,500.00	530	Linear Foot	$ 500.00	$ 265,000.00	530	Linear Foot	$ 150.00	$ 79,500.00
37.	8" diameter pipe for gravity sewer system, inclusive of backfill, all fittings, labor, materials, tools, and incidentals required to construct the pipelines, in place, complete.	2,285	Linear Foot	$ 20.00	$ 45,700.00	2,285	Linear Foot	$ 126.00	$ 287,910.00	2,285	Linear Foot	$ 202.80	$ 463,398.00	2,285	Linear Foot	$ 135.00	$ 308,475.00	2,285	Linear Foot	$ 1,370.00	$ 3,130,450.00	2,285	Linear Foot	$ 600.00	$ 1,371,000.00	2,285	Linear Foot	$ 175.00	$ 399,875.00
38.	Structurally designed sewer manhole structure, inclusive of backfill, rebar, bolts, welding, connections, coatings, all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	3	Each	$ 33,000.00	$ 99,000.00	3	Each	$ 25,523.00	$ 76,569.00	3	Each	$ 28,764.31	$ 86,292.93	3	Each	$ 60,000.00	$ 180,000.00	3	Each	$ 47,000.00	$ 141,000.00	3	Each	$ 20,000.00	$ 60,000.00	3	Each	$ 30,000.00	$ 90,000.00
39.	Standard sewer manhole structure, inclusive of backfill, rebar, bolts, welding, connections, coatings, all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	10	Each	$ 20,000.00	$ 200,000.00	10	Each	$ 25,291.00	$ 252,910.00	10	Each	$ 28,819.77	$ 288,197.70	10	Each	$ 25,000.00	$ 250,000.00	10	Each	$ 25,000.00	$ 250,000.00	10	Each	$ 20,000.00	$ 200,000.00	10	Each	$ 25,000.00	$ 250,000.00
40.	Transition sewer manhole structure, inclusive of backfill, rebar, bolts, welding, connections, coatings, all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	1	Each	$ 33,000.00	$ 33,000.00	1	Each	$ 22,800.00	$ 22,800.00	1	Each	$ 29,925.51	$ 29,925.51	1	Each	$ 60,000.00	$ 60,000.00	1	Each	$ 49,000.00	$ 49,000.00	1	Each	$ 30,000.00	$ 30,000.00	1	Each	$ 27,500.00	$ 27,500.00
41.	Shallow drop sewer manhole structure, inclusive of backfill, rebar, bolts, welding, connections, coatings, all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	1	Each	$ 33,000.00	$ 33,000.00	1	Each	$ 19,800.00	$ 19,800.00	1	Each	$ 40,144.81	$ 40,144.81	1	Each	$ 62,500.00	$ 62,500.00	1	Each	$ 24,000.00	$ 24,000.00	1	Each	$ 30,000.00	$ 30,000.00	1	Each	$ 27,500.00	$ 27,500.00
42.	Sewer pump station inclusive of wet well, pumps, pipes, covers, fittings, chains, floats, penetrations, anti-flotation components, backfill and all equipment, tools, labor, materials, and appurtenances in place, complete.	L.S.	Lump Sum	L.S.	$ 185,000.00	L.S.	Lump Sum	L.S.	$ 117,400.00	L.S.	Lump Sum	L.S.	$ 192,609.19	L.S.	Lump Sum	L.S.	$ 350,000.00	L.S.	Lump Sum	L.S.	$ 435,000.00	L.S.	Lump Sum	L.S.	$ 150,000.00	L.S.	Lump Sum	L.S.	$ 175,000.00
43.	Connection to the existing sewer system.	L.S.	Lump Sum	L.S.	$ 230,000.00	L.S.	Lump Sum	L.S.	$ 9,100.00	L.S.	Lump Sum	L.S.	$ 7,458.11	L.S.	Lump Sum	L.S.	$ 265,000.00	L.S.	Lump Sum	L.S.	$ 12,000.00	L.S.	Lump Sum	L.S.	$ 30,000.00	L.S.	Lump Sum	L.S.	$ 8,500.00
44.	Excavation of grossly contaminated soils for installation of sewer system, water system, drainage system, and electrical system, inclusive of handling, storage, and disposal in accordance with Article XL - Handling and Removal of Contaminated Soil Encountered During Construction, and furnishing labor, materials, equipment, protective wear, tools and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 3,365,000.00	L.S.	Lump Sum	L.S.	$ 2,817,300.00	L.S.	Lump Sum	L.S.	$ 4,142,672.51	L.S.	Lump Sum	L.S.	$ 95,000.00	L.S.	Lump Sum	L.S.	$ 4,100,000.00	L.S.	Lump Sum	L.S.	$ 150,000.00	L.S.	Lump Sum	L.S.	$ 3,500,000.00

45.	Excavation of non-grossly contaminated soils for installation of sewer system, water system, drainage system, and electrical system, inclusive of handling, storage, disposal, and furnishing labor, materials, equipment, tools and incidentals necessary to complete the work.	L.S.	Lump Sum	L.S.	$ 13,000,000.00	L.S.	Lump Sum	L.S.	$ 5,919,900.00	L.S.	Lump Sum	L.S.	$ 2,148,766.89	L.S.	Lump Sum	L.S.	$ 110,000.00	L.S.	Lump Sum	L.S.	$ 6,300,000.00	L.S.	Lump Sum	L.S.	$ 300,000.00	L.S.	Lump Sum	L.S.	$ 3,500,000.00
46.	Separating grossly and non-grossly contaminated material for installation of sewer system, water system, drainage system, and electrical system, including, but not limited to, physically separating material, time associated with and required for separating material, tools, labor, materials, and incidentals necessary to complete the work, as well as protective wear, safety plan, and other costs related to petroleum contamination.	L.S.	Lump Sum	L.S.	$ 800,000.00	L.S.	Lump Sum	L.S.	$ 579,400.00	L.S.	Lump Sum	L.S.	$ 202,686.79	L.S.	Lump Sum	L.S.	$ 90,000.00	L.S.	Lump Sum	L.S.	$ 136,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 350,000.00
99.	Sewer connection fees. No Contractor's mark-up will be allowed for this item.	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00	Allow.	Allowance	Allow.	$ 100,000.00
	SEWER				**21,720,697.70**																								
47.	Water system appurtenances, inclusive of backfill; crushed rock backfill and dewatering; air relief valves, fire hydrants, laterals and lateral connections, reduced pressure principle backflow preventers, gate valves, cast iron valve and air relief valve boxes and covers, structures, leak detection wells, electronic markers and electronic marker readers (2 each), fittings, and couplings; concrete for reinforced concrete jacketing and reaction blocks; bollards; materials for connections; chlorination, flushing and testing; NPDES requirements; and all other materials, equipment and labor required to construct the water system, in place, complete.	L.S.	Lump Sum	L.S.	$ 1,600,000.00	L.S.	Lump Sum	L.S.	$ 2,573,500.00	L.S.	Lump Sum	L.S.	$ 3,839,873.85	L.S.	Lump Sum	L.S.	$ 2,500,000.00	L.S.	Lump Sum	L.S.	$ 4,100,000.00	L.S.	Lump Sum	L.S.	$ 4,000,000.00	L.S.	Lump Sum	L.S.	$ 3,250,000.00
48.	6" diameter pipe and fittings for domestic water system and fire protection water system construction, inclusive of all labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete.	740	Linear Foot	$ 60.00	$ 44,400.00	740	Linear Foot	$ 15.00	$ 11,100.00	740	Linear Foot	$ 80.70	$ 59,718.00	740	Linear Foot	$ 225.00	$ 166,500.00	740	Linear Foot	$ 75.00	$ 55,500.00	740	Linear Foot	$ 300.00	$ 222,000.00	740	Linear Foot	$ 150.00	$ 111,000.00
49.	8" diameter pipe and fittings for domestic water system and fire protection water system construction, inclusive of all labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete.	8,165	Linear Foot	$ 60.00	$ 489,900.00	8,165	Linear Foot	$ 15.00	$ 122,475.00	8,165	Linear Foot	$ 92.42	$ 754,609.30	8,165	Linear Foot	$ 90.00	$ 734,850.00	8,165	Linear Foot	$ 33.00	$ 269,445.00	8,165	Linear Foot	$ 320.00	$ 2,612,800.00	8,165	Linear Foot	$ 175.00	$ 1,428,875.00
50.	10" diameter pipe and fittings for domestic water system and fire protection water system construction, inclusive of all labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete.	95	Linear Foot	$ 120.00	$ 11,400.00	95	Linear Foot	$ 15.00	$ 1,425.00	95	Linear Foot	$ 192.74	$ 18,310.30	95	Linear Foot	$ 150.00	$ 14,250.00	95	Linear Foot	$ 122.00	$ 11,590.00	95	Linear Foot	$ 600.00	$ 57,000.00	95	Linear Foot	$ 200.00	$ 19,000.00
51.	12" diameter pipe and fittings for domestic water system and fire protection water system construction, inclusive of all labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete.	6,620	Linear Foot	$ 60.00	$ 397,200.00	6,620	Linear Foot	$ 52.00	$ 344,240.00	6,620	Linear Foot	$ 121.99	$ 807,573.80	6,620	Linear Foot	$ 345.00	$ 2,283,900.00	6,620	Linear Foot	$ 44.00	$ 291,280.00	6,620	Linear Foot	$ 350.00	$ 2,317,000.00	6,620	Linear Foot	$ 225.00	$ 1,489,500.00
52.	16" diameter pipe and fittings for domestic water system and fire protection water system construction, inclusive of all labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete.	375	Linear Foot	$ 390.00	$ 146,250.00	375	Linear Foot	$ 701.00	$ 262,875.00	375	Linear Foot	$ 478.76	$ 179,535.00	375	Linear Foot	$ 180.00	$ 67,500.00	375	Linear Foot	$ 63.00	$ 23,625.00	375	Linear Foot	$ 800.00	$ 300,000.00	375	Linear Foot	$ 400.00	$ 150,000.00
53.	Removed from Scope																												
54.	Removed from Scope																												
55.	Removed from Scope																												
103.	Water system facilities charges. No Contractor's mark-up will be allowed for this item.	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00	Allow.	Allowance	Allow.	$ 2,400,000.00
	WATER				**10,150,609.30**																								
56.	4' x 3' box culvert, inclusive of backfill, 4' x 3' reinforced concrete box culvert, connections, trench repaving, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	500	Linear Foot	$ 3,500.00	$ 1,750,000.00	500	Linear Foot	$ 3,360.00	$ 1,680,000.00	500	Linear Foot	$ 2,858.30	$ 1,429,150.00	500	Linear Foot	$ 5,835.00	$ 2,917,500.00	500	Linear Foot	$ 3,100.00	$ 1,550,000.00	500	Linear Foot	$ 1,200.00	$ 600,000.00	500	Linear Foot	$ 3,000.00	$ 1,500,000.00
57.	7' x 4' box culvert, inclusive of backfill, 7' x 4' reinforced concrete box culvert, connections, trench repaving, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	785	Linear Foot	$ 5,000.00	$ 3,925,000.00	785	Linear Foot	$ 4,219.00	$ 3,311,915.00	785	Linear Foot	$ 3,994.38	$ 3,135,588.30	785	Linear Foot	$ 6,835.00	$ 5,365,475.00	785	Linear Foot	$ 5,500.00	$ 4,317,500.00	785	Linear Foot	$ 1,800.00	$ 1,413,000.00	785	Linear Foot	$ 4,200.00	$ 3,297,000.00
58.	36" wide trench train, inclusive of rebar, bolts, welding, and all other items required for construction, in place, complete.	1,580	Linear Foot	$ 2,500.00	$ 3,950,000.00	1,580	Linear Foot	$ 2,186.00	$ 3,469,680.00	1,580	Linear Foot	$ 1,651.71	$ 2,609,701.80	1,580	Linear Foot	$ 3,085.00	$ 4,874,300.00	1,580	Linear Foot	$ 1,960.00	$ 3,096,800.00	1,580	Linear Foot	$ 1,300.00	$ 2,054,000.00	1,580	Linear Foot	$ 2,000.00	$ 3,160,000.00
59.	42" wide trench train, inclusive of rebar, bolts, welding, and all other items required for construction, in place, complete.	2,300	Linear Foot	$ 2,500.00	$ 5,750,000.00	2,300	Linear Foot	$ 2,529.00	$ 5,816,700.00	2,300	Linear Foot	$ 1,625.93	$ 3,739,639.00	2,300	Linear Foot	$ 3,335.00	$ 7,670,500.00	2,300	Linear Foot	$ 1,920.00	$ 4,416,000.00	2,300	Linear Foot	$ 1,400.00	$ 3,220,000.00	2,300	Linear Foot	$ 2,250.00	$ 5,175,000.00
60.	Drain inlet structure, inclusive of backfill, rebar, bolts, welding, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	4	Each	$ 33,000.00	$ 132,000.00	4	Each	$ 19,824.00	$ 79,296.00	4	Each	$ 48,471.31	$ 193,885.24	4	Each	$ 55,000.00	$ 220,000.00	4	Each	$ 29,000.00	$ 116,000.00	4	Each	$ 20,000.00	$ 80,000.00	4	Each	$ 30,000.00	$ 120,000.00
61.	Temporary drainage system, inclusive of excavation, backfill, disposal, structures, and all equipment tools, labor, materials, and appurtenances to construct the temporary drainage system in place, complete.	L.S.	Lump Sum	L.S.	$ 110,000.00	L.S.	Lump Sum	L.S.	$ 282,200.00	L.S.	Lump Sum	L.S.	$ 292,857.60	L.S.	Lump Sum	L.S.	$ 350,000.00	L.S.	Lump Sum	L.S.	$ 540,000.00	L.S.	Lump Sum	L.S.	$ 200,000.00	L.S.	Lump Sum	L.S.	$ 300,000.00
62.	Removed from Scope																												
63.	Removed from Scope																												
64.	Removed from Scope																												
	DRAIN				**21,587,775.00**																								
65.	New poles and foundation, luminaires, ballasts, ballast enclosures, panels, and bases; new switchboard and lighting controls; new underground electrical distribution system; HECO facilities, HT and OTWC facilities; field illumination measurements; testing; and all appurtenant materials and work, required to construct the electrical system, in place, complete.	L.S.	Lump Sum	L.S.	$ 16,500,000.00	L.S.	Lump Sum	L.S.	$ 13,772,800.00	L.S.	Lump Sum	L.S.	$ 14,215,785.39	L.S.	Lump Sum	L.S.	$ 17,500,000.00	L.S.	Lump Sum	L.S.	$ 18,000,000.00	L.S.	Lump Sum	L.S.	$ 14,595,307.00	L.S.	Lump Sum	L.S.	$ 14,000,000.00

66.	New underground HECO, HT and OTWC infrastructure; street lighting modification; and traffic signal modifications within the Sand Island Access Road right-of-way, and all appurtenant materials and work, required to construct the electrical system, in place, complete.	L.S.	Lump Sum	L.S.	$ 50,000.00	L.S.	Lump Sum	L.S.	$ 302,700.00	L.S.	Lump Sum	L.S.	$ 245,245.51	L.S.	Lump Sum	L.S.	$ 55,000.00	L.S.	Lump Sum	L.S.	$ 50,000.00	L.S.	Lump Sum	L.S.	$ 50,000.00	L.S.	Lump Sum	L.S.	$ 275,000.00
67.	HECo service contribution charges, to be paid for from a force account of the exact amount as quoted by the utility company. The amounts indicated on the Proposal Schedule are approximate only. No Contractor's mark-up will be allowed for this item.	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00	Allow.	Allowance	Allow.	$ 4,500,000.00
68.	Hawaiian Telcom service contribution charges, to be paid for from a force accounr of the exact amount as quoted by the utility company. The amounts indicated on the Proposal Schedule are approximate only. No Contractor's mark-up will be allowed for this item.	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00	Allow.	Allowance	Allow.	$ 250,000.00
69.	Removed from Scope																												
70.	Removed from Scope																												
71.	Removed from Scope																												
	ELEC				**23,052,700.00**																								
72.	Removal and disposal of asbestos cement piping, conduit, and waste.	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00	Allow.	Allowance	Allow.	$ 790,000.00
73.	Removal and disposal asbestos-containing materials in buildings to be demolished, and waste.	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 93,200.00	L.S.	Lump Sum	L.S.	$ 93,475.82	L.S.	Lump Sum	L.S.	$ 71,500.00	L.S.	Lump Sum	L.S.	$ 65,100.00	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00
74.	Tapping, draining, cleaning, testing, and disposal of fuel pipelines, inclusive of disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated during cleaning of the underground pipelines, all equipment, tools, materials, labor, and appurtenances required to complete the work.	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00	Allow.	Allowance	Allow.	$ 787,500.00
75.	Tapping, draining, handling, and removal of existing aboveground storage tank (AST) and associated piping, including concrete slab, inclusive of mobilization/demobilization, disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated, and preparation of closure report.	L.S	Lump Sum	L.S.	$ 120,000.00	L.S	Lump Sum	L.S.	$ 71,100.00	L.S	Lump Sum	L.S.	$ 324,754.59	L.S	Lump Sum	L.S.	$ 275,000.00	L.S	Lump Sum	L.S.	$ 96,000.00	L.S	Lump Sum	L.S.	$ 25,000.00	L.S	Lump Sum	L.S.	$ 275,000.00
76.	Excavation, tapping, draining, and removal of existing underground storage tanks (USTs) and associated piping, inclusive of mobilization/demobilization, disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated, and preparation of closure report.	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 80,800.00	L.S.	Lump Sum	L.S.	$ 294,957.43	L.S.	Lump Sum	L.S.	$ 200,000.00	L.S.	Lump Sum	L.S.	$ 82,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 275,000.00
77.	Lead-containino Paint Control Measures	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00	L.S.	Allowance	Allow.	$ 750,000.00
78.	Ambient air monitorino	L.S.	Lump Sum	L.S.	$ 9,000.00	L.S.	Lump Sum	L.S.	$ 440,900.00	L.S.	Lump Sum	L.S.	$ 26,513.03	L.S.	Lump Sum	L.S.	$ 60,000.00	L.S.	Lump Sum	L.S.	$ 288,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 80,000.00
110.	Disposal of hazardous materials; that are unacceptable to State landfill facilities, encountered within HC 10502 limits	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00	Allow.	Allowance	Allow.	$ 2,000,000.00
	ENVIRONMENTAL CONCERNS				**5,488,142.02**																								
79.	TWIC chain link fence, in place, complete.	3,950	Linear Foot	$ 110.00	$ 434,500.00	3,950	Linear Foot	$ 122.00	$ 481,900.00	3,950	Linear Foot	$ 90.07	$ 355,776.50	3,950	Linear Foot	$ 115.00	$ 454,250.00	3,950	Linear Foot	$ 68.00	$ 268,600.00	3,950	Linear Foot	$ 80.00	$ 316,000.00	3,950	Linear Foot	$ 100.00	$ 395,000.00
80.	Low security chain link fence, in place, complete.	2,300	Linear Foot	$ 85.00	$ 195,500.00	2,300	Linear Foot	$ 122.00	$ 280,600.00	2,300	Linear Foot	$ 84.67	$ 194,741.00	2,300	Linear Foot	$ 76.00	$ 174,800.00	2,300	Linear Foot	$ 65.00	$ 149,500.00	2,300	Linear Foot	$ 70.00	$ 161,000.00	2,300	Linear Foot	$ 90.00	$ 207,000.00
81.	28' wide low security chain link double swing gate, in place, complete	1	Each	$ 7,000.00	$ 7,000.00	1	Each	$ 8,700.00	$ 8,700.00	1	Each	$ 7,117.44	$ 7,117.44	1	Each	$ 9,510.00	$ 9,510.00	1	Each	$ 7,400.00	$ 7,400.00	1	Each	$ 20,000.00	$ 20,000.00	1	Each	$ 7,500.00	$ 7,500.00
82.	24' wide TWIC chain link double swing gate, in place, complete.	1	Each	$ 7,500.00	$ 7,500.00	1	Each	$ 7,300.00	$ 7,300.00	1	Each	$ 7,142.09	$ 7,142.09	1	Each	$ 9,510.00	$ 9,510.00	1	Each	$ 7,400.00	$ 7,400.00	1	Each	$ 16,000.00	$ 16,000.00	1	Each	$ 7,500.00	$ 7,500.00
83.	26' wide TWIC chain link double swing gate, in place, complete.	1	Each	$ 7,600.00	$ 7,600.00	1	Each	$ 7,300.00	$ 7,300.00	1	Each	$ 8,319.08	$ 8,319.08	1	Each	$ 9,510.00	$ 9,510.00	1	Each	$ 7,400.00	$ 7,400.00	1	Each	$ 18,000.00	$ 18,000.00	1	Each	$ 7,500.00	$ 7,500.00
84.	40' wide TWIC chain link double swing gate, in place, complete.	1	Each	$ 45,000.00	$ 45,000.00	1	Each	$ 10,900.00	$ 10,900.00	1	Each	$ 10,414.26	$ 10,414.26	1	Each	$ 19,100.00	$ 19,100.00	1	Each	$ 10,750.00	$ 10,750.00	1	Each	$ 30,000.00	$ 30,000.00	1	Each	$ 12,000.00	$ 12,000.00
85.	10' wide low security chain link double swing gate, in place, complete.	1	Each	$ 4,000.00	$ 4,000.00	1	Each	$ 3,700.00	$ 3,700.00	1	Each	$ 3,062.65	$ 3,062.65	1	Each	$ 4,750.00	$ 4,750.00	1	Each	$ 3,500.00	$ 3,500.00	1	Each	$ 15,000.00	$ 15,000.00	1	Each	$ 3,500.00	$ 3,500.00
86.	30' wide low security chain link double swing gate, in place, complete.	2	Each	$ 8,000.00	$ 16,000.00	2	Each	$ 5,100.00	$ 10,200.00	2	Each	$ 7,641.23	$ 15,282.46	2	Each	$ 19,100.00	$ 38,200.00	2	Each	$ 8,000.00	$ 16,000.00	2	Each	$ 20,000.00	$ 40,000.00	2	Each	$ 8,000.00	$ 16,000.00
116.	36' wide low security chain link double swing gate, in place, complete.	1	Each	$ 9,000.00	$ 9,000.00	1	Each	$ 8,700.00	$ 8,700.00	1	Each	$ 9,144.83	$ 9,144.83	1	Each	$ 15,000.00	$ 15,000.00	1	Each	$ 9,000.00	$ 9,000.00	1	Each	$ 20,000.00	$ 20,000.00	1	Each	$ 9,000.00	$ 9,000.00
117.	5' wide low security chain link pedestrian gate, in place, complete.	2	Each	$ 1,200.00	$ 2,400.00	2	Each	$ 3,700.00	$ 7,400.00	2	Each	$ 2,957.90	$ 5,915.80	2	Each	$ 5,000.00	$ 10,000.00	2	Each	$ 4,000.00	$ 8,000.00	2	Each	$ 6,000.00	$ 12,000.00	2	Each	$ 2,500.00	$ 5,000.00
118.	Structural pinch roller gate, in place, complete.	1	Each	$ 15,000.00	$ 15,000.00	1	Each	$ 108,400.00	$ 108,400.00	1	Each	$ 44,368.44	$ 44,368.44	1	Each	$ 15,000.00	$ 15,000.00	1	Each	$ 17,000.00	$ 17,000.00	1	Each	$ 15,000.00	$ 15,000.00	1	Each	$ 25,000.00	$ 25,000.00
100.	Concrete K-rail, in place, complete.	1,530	Linear Foot	$ 115.00	$ 175,950.00	1,530	Linear Foot	$ 145.00	$ 221,850.00	1,530	Linear Foot	$ 240.80	$ 368,424.00	1,530	Linear Foot	$ 175.00	$ 267,750.00	1,530	Linear Foot	$ 160.00	$ 244,800.00	1,530	Linear Foot	$ 350.00	$ 535,500.00	1,530	Linear Foot	$ 175.00	$ 267,750.00
101.	TWIC chain link fence on concrete K-rail, in place, complete.	1,400	Linear Foot	$ 85.00	$ 119,000.00	1,400	Linear Foot	$ 262.00	$ 366,800.00	1,400	Linear Foot	$ 260.05	$ 364,070.00	1,400	Linear Foot	$ 275.00	$ 385,000.00	1,400	Linear Foot	$ 69.00	$ 96,600.00	1,400	Linear Foot	$ 100.00	$ 140,000.00	1,400	Linear Foot	$ 250.00	$ 350,000.00
	SECURITY FENCING				**1,977,400.00**																								
87.	Traffic controls, in place, complete.	L.S.	Lump Sum	L.S.	$ 400,000.00	L.S.	Lump Sum	L.S.	$ 84,200.00	L.S.	Lump Sum	L.S.	$ 629,949.54	L.S.	Lump Sum	L.S.	$ 35,000.00	L.S.	Lump Sum	L.S.	$ 500,000.00	L.S.	Lump Sum	L.S.	$ 2,000,000.00	L.S.	Lump Sum	L.S.	$ 600,000.00
88.	Signage and pavement markings, in place, complete	L.S.	Lump Sum	L.S.	$ 490,000.00	L.S.	Lump Sum	L.S.	$ 620,000.00	L.S.	Lump Sum	L.S.	$ 636,153.59	L.S.	Lump Sum	L.S.	$ 450,000.00	L.S.	Lump Sum	L.S.	$ 421,000.00	L.S.	Lump Sum	L.S.	$ 800,000.00	L.S.	Lump Sum	L.S.	$ 600,000.00
89.	3A Course Gravel over weed barrier, inclusive of all labor, materials, equipment, and incidentals necessary to construct and plant, in place, complete.	475	Cubic Yard	$ 150.00	$ 71,250.00	475	Cubic Yard	$ 166.00	$ 78,850.00	475	Cubic Yard	$ 251.42	$ 119,424.50	475	Cubic Yard	$ 143.00	$ 67,925.00	475	Cubic Yard	$ 188.00	$ 89,300.00	475	Cubic Yard	$ 100.00	$ 47,500.00	475	Cubic Yard	$ 225.00	$ 106,875.00
90.	Weed Barrier, DeWitt P4 Pro 5 Barrier or equal with staples at 4 feet on center, inclusive of all labor, materials, equipment, and incidentals necessary to construct in place, complete.	480	Linear Foot	$ 14.00	$ 6,720.00	480	Linear Foot	$ 15.00	$ 7,200.00	480	Linear Foot	$ 14.79	$ 7,099.20	480	Linear Foot	$ 13.00	$ 6,240.00	480	Linear Foot	$ 12.00	$ 5,760.00	480	Linear Foot	$ 50.00	$ 24,000.00	480	Linear Foot	$ 15.00	$ 7,200.00

91.	Landscape maintenance, inclusive of all labor, materials, equipment, and incidentals for the maintenance of all plants and planted areas in optimum growing condition and appearance throughout construction, 360 day maintenance period, the inspections, and until acceptance of the landscape planting.	L.S.	Lump Sum	L.S.	$ 29,000.00	L.S.	Lump Sum	L.S.	$ 53,600.00	L.S.	Lump Sum	L.S.	$ 56,340.18	L.S.	Lump Sum	L.S.	$ 26,400.00	L.S.	Lump Sum	L.S.	$ 42,500.00	L.S.	Lump Sum	L.S.	$ 80,000.00	L.S.	Lump Sum	L.S.	$ 55,000.00
93.	Coconut Palm (field stock), inclusive of all labor, materials, tools, equipment, and incidentals to construct and plant, in place, complete.	14	Each	$ 4,500.00	$ 63,000.00	14	Each	$ 3,526.00	$ 49,364.00	14	Each	$ 3,450.88	$ 48,312.32	14	Each	$ 4,135.00	$ 57,890.00	14	Each	$ 2,800.00	$ 39,200.00	14	Each	$ 10,000.00	$ 140,000.00	14	Each	$ 3,500.00	$ 49,000.00
96.	Naupaka, Scaevola taccada (3 gallon), inclusive of all labor, materials, tools, equipment, and incidentals to construct and plant, in place, complete.	199	Each	$ 40.00	$ 7,960.00	199	Each	$ 37.00	$ 7,363.00	199	Each	$ 36.97	$ 7,357.03	199	Each	$ 35.00	$ 6,965.00	199	Each	$ 30.00	$ 5,970.00	199	Each	$ 1,000.00	$ 199,000.00	199	Each	$ 40.00	$ 7,960.00
97.	Croton 'Norma', Codiaeum variegatum (3 gallon), inclusive of all labor, materials, tools, equipment, and incidentals to construct and plant, in place, complete.	35	Each	$ 40.00	$ 1,400.00	35	Each	$ 37.00	$ 1,295.00	35	Each	$ 36.97	$ 1,293.95	35	Each	$ 35.00	$ 1,225.00	35	Each	$ 30.00	$ 1,050.00	35	Each	$ 1,000.00	$ 35,000.00	35	Each	$ 40.00	$ 1,400.00
95.	Kou Cordia, subcordata (25 gallon), inclusive of all labor, materials, tools, equipment, and incidentals to construct and plant, in place, complete.	4	Each	$ 550.00	$ 2,200.00	4	Each	$ 629.00	$ 2,516.00	4	Each	$ 616.23	$ 2,464.92	4	Each	$ 532.00	$ 2,128.00	4	Each	$ 500.00	$ 2,000.00	4	Each	$ 2,000.00	$ 8,000.00	4	Each	$ 600.00	$ 2,400.00
119.	Aloe Vera 'Aloe', (3 gallon), inclusive of all labor, materials, tools, equipment, and incidentals to construct and plant, in place, complete.	30	Each	$ 35.00	$ 1,050.00	30	Each	$ 37.00	$ 1,110.00	30	Each	$ 36.97	$ 1,109.10	30	Each	$ 35.00	$ 1,050.00	30	Each	$ 30.00	$ 900.00	30	Each	$ 200.00	$ 6,000.00	30	Each	$ 40.00	$ 1,200.00
	LANDSCAPING				**611,424.50**																								
92.	Comfort Station	L.S.	Lump Sum	L.S.	$ 925,000.00	L.S.	Lump Sum	L.S.	$ 566,800.00	L.S.	Lump Sum	L.S.	$ 563,749.16	L.S.	Lump Sum	L.S.	$ 250,000.00	L.S.	Lump Sum	L.S.	$ 400,000.00	L.S.	Lump Sum	L.S.	$ 500,000.00	L.S.	Lump Sum	L.S.	$ 575,000.00
94.	Comfort Station metering equipment, panelboards, receptacles, lighting, branch circuiting; testing; and all appurtenant materials and work, required to construct the electrical system, in place, complete.	L.S.	Lump Sum	L.S.	$ 65,000.00	L.S.	Lump Sum	L.S.	$ 75,600.00	L.S.	Lump Sum	L.S.	$ 79,539.08	L.S.	Lump Sum	L.S.	$ 50,000.00	L.S.	Lump Sum	L.S.	$ 10,000.00	L.S.	Lump Sum	L.S.	$ 10,000.00	L.S.	Lump Sum	L.S.	$ 75,000.00
98.	Field Office including Maintenance	L.S.	Lump Sum	L.S.	$ 400,000.00	L.S.	Lump Sum	L.S.	$ 167,300.00	L.S.	Lump Sum	L.S.	$ 381,787.60	L.S.	Lump Sum	L.S.	$ 1,500,000.00	L.S.	Lump Sum	L.S.	$ 775,000.00	L.S.	Lump Sum	L.S.	$ 200,000.00	L.S.	Lump Sum	L.S.	$ 250,000.00
102.	Type 1A-9P grated drop inlet with A9-P grate per DOT Highways Standard Details H-9, H-10, and H-11, inclusive of backfill, rebar, bolts, welding, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	1	Each	$ 23,000.00	$ 23,000.00	1	Each	$ 17,500.00	$ 17,500.00	1	Each	$ 6,968.31	$ 6,968.31	1	Each	$ 20,000.00	$ 20,000.00	1	Each	$ 10,000.00	$ 10,000.00	1	Each	$ 20,000.00	$ 20,000.00	1	Each	$ 20,000.00	$ 20,000.00
106.	Post-construction security.	18	Months	$ 40,000.00	$ 720,000.00	18	Months	$ 23,211.00	$ 417,798.00	18	Months	$ 68,469.81	$ 1,232,456.58	18	Months	$ 35,000.00	$ 630,000.00	18	Months	$ 45,000.00	$ 810,000.00	18	Months	$ 20,000.00	$ 360,000.00	18	Months	$ 45,000.00	$ 810,000.00
107.	Archaeological monitoring	L.S.	Lump Sum	L.S.	$ 250,000.00	L.S.	Lump Sum	L.S.	$ 129,200.00	L.S.	Lump Sum	L.S.	$ 265,130.28	L.S.	Lump Sum	L.S.	$ 175,000.00	L.S.	Lump Sum	L.S.	$ 360,000.00	L.S.	Lump Sum	L.S.	$ 100,000.00	L.S.	Lump Sum	L.S.	$ 250,000.00
108.	Burial Treatment	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00	Allow.	Allowance	Allow.	$ 1,500,000.00
109.	Communication with the public	L.S.	Lump Sum	L.S.	$ 5,000.00	L.S.	Lump Sum	L.S.	$ 139,000.00	L.S.	Lump Sum	L.S.	$ 106,052.11	L.S.	Lump Sum	L.S.	$ 25,000.00	L.S.	Lump Sum	L.S.	$ 338,000.00	L.S.	Lump Sum	L.S.	$ 60,000.00	L.S.	Lump Sum	L.S.	$ 125,000.00
111.	H.C.10498 Project Site Security (after completion of Part II; Job H.C. 10370)	30	Months	$ 12,000.00	$ 360,000.00	30	Months	$ 23,211.00	$ 696,330.00	30	Months	$ 1,819.47	$ 54,584.10	30	Months	$ 20,000.00	$ 600,000.00	30	Months	$ 38,000.00	$ 1,140,000.00	30	Months	$ 10,000.00	$ 300,000.00	30	Months	$ 20,000.00	$ 600,000.00
112.	Demolition and removal of the vertical elements of the abandoned UH Marine Buildings structures, above the finished floor slab, including dust control measures and related incidentals, handling and disposal of non-hazardous materials, complete.	L.S.	Lump Sum	L.S.	$ 200,000.00	L.S.	Lump Sum	L.S.	$ 232,000.00	L.S.	Lump Sum	L.S.	$ 383,578.00	L.S.	Lump Sum	L.S.	$ 180,000.00	L.S.	Lump Sum	L.S.	$ 176,000.00	L.S.	Lump Sum	L.S.	$ 300,000.00	L.S.	Lump Sum	L.S.	$ 250,000.00
113.	(Contingent Item) Demolish and remove existing chain-link fence, including posts and concrete footings, backfill voids resulting from footing removal, within TMK: 1-2-25: 036 (Servco); approximately 550 LF ± (Contractor to verify), install new end posts with bracing and footing and connect to existing fencing.	L.S.	Lump Sum	L.S.	$ 40,000.00	L.S.	Lump Sum	L.S.	$ 3,500.00	L.S.	Lump Sum	L.S.	$ 39,769.54	L.S.	Lump Sum	L.S.	$ 15,000.00	L.S.	Lump Sum	L.S.	$ 5,200.00	L.S.	Lump Sum	L.S.	$ 50,000.00	L.S.	Lump Sum	L.S.	$ 30,000.00
114.	(Contingent Item) Demolish and remove existing chain-link fence, including posts and concrete footings, backfill voids resulting from footing removal, within Department of Agriculture area; approximately 2000 LF± (Contractor to verify), and install of new end posts with bracing and footings and connect to existing fencing.	L.S.	Lump Sum	L.S.	$ 110,000.00	L.S.	Lump Sum	L.S.	$ 13,400.00	L.S.	Lump Sum	L.S.	$ 39,769.54	L.S.	Lump Sum	L.S.	$ 45,000.00	L.S.	Lump Sum	L.S.	$ 23,000.00	L.S.	Lump Sum	L.S.	$ 150,000.00	L.S.	Lump Sum	L.S.	$ 450,000.00
115.	Temporary Access Road, inclusive of design and construction, any relocation and reconstruction, maintenance for the duration of the project, demolition and removal and all labor, materials, tools, equipment, and incidentals required to complete the work in place.	L.S.	Lump Sum	L.S.	$ 1.00	L.S.	Lump Sum	L.S.	$ 593,300.00	L.S.	Lump Sum	L.S.	$ 699,823.30	L.S.	Lump Sum	L.S.	$ 250,000.00	L.S.	Lump Sum	L.S.	$ 1,300,000.00	L.S.	Lump Sum	L.S.	$ 350,000.00	L.S.	Lump Sum	L.S.	$ 625,000.00
	OTHER				**8,338,903.66**																								
BID ITEM A JOB H.C. 10502, PART I - SUM OF ALL ITEMS (1 THROUGH 119) *					**$ 409,020,141.21**				**$ 159,867,612.50**			*	**$ 165,255,608.23**				**$ 174,812,140.00**				**$ 182,918,800.00**				**$ 187,857,757.00**				**$ 161,625,885.00**

* Watts Constructors:
Total bid amount for Part I is $170,590,241.10.
Calculated bid amount via the "Total" column is $170,610,240.10.
Calculated bid amount via the "Unit Price" column is $170,608,815.83.

PROPOSAL SCHEDULE - PART 1
THE NEW KAPALAMA CONTAINER TERMINAL WHARF AND DREDGING
HONOLULU HARBOR, OAHU, HAWAII
JOB H.C. 10498

			Kiewit Infrastructure West Co.			Hawaii Harbors Constructors JV		
Item No.	**Description**	**Approx. Quantity**	**Unit**	**Unit Price**	**Amount**	**Unit**	**Unit Price**	**Amount**
Mobilization/Demobilization								
1	Furnish all labor, equipment, and materials necessary for Project Mobilization and Demobilization (Excluding Items 2 and 3) (6% Max)	LS	LS	LS	$ 12,000,000	LS	LS	$ 18,200,000
2	Furnish all labor, equipment, and materials necessary for Mobilization and Demobilization for dredging (6% Max)	LS	LS	LS	$ 1,500,000	LS	LS	$ 2,000,000
3	Furnish all labor, equipment, and materials necessary for Mobilization and Demobilization for cast in drilled hole (CIDH) piles	LS	LS	LS	$ 1,700,000	LS	LS	$ 2,200,000
Demolition and Removal Work								
5	Demolition, removal, handling and disposal of items as described on the plans, Inclusive of coordination with utility owners, and compliance with Federal, State, and County hauling and disposal regulations; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	LS	LS	LS	$ 15,000,000	LS	LS	$ 22,000,000
5A	Demolition and closures of cesspools, including the preparation of a Large Capacity Backfilling Final Completion Report	Allowance	Allowance	Allowance	$ 100,000	Allowance	Allowance	$ 100,000
5B	Towing of vessels and equipment to other berths in Honolulu Harbor if the vessels are still present when the construction of H.C. 10498 begins	Allowance	Allowance	Allowance	$ 6,500,000	Allowance	Allowance	$ 6,500,000
5C	Removal and disposal of contents in 24" abandoned sewer force main	Allowance	Allowance	Allowance	$ 500,000	Allowance	Allowance	$ 500,000
5D	Demolition and disposal of existing underground structures, that include but are not limited to, abandoned sumps, existing cesspools, septic tanks, vaults and other underground improvements, excluding underground fuel tanks, including the removal and disposal of the sump contents plus backfilling with Portland cement controlled low strength material (CLSM) the inclusive of furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work	Allowance	Allowance	Allowance	$ 50,000	Allowance	Allowance	$ 50,000
Pavement								
6	Aggregate base course for asphalt concrete pavement outside of City Right-Of-Way, in place, complete	4	CY	$ 700.00	$ 2,800	CY	$ 1,875.00	$ 7,500
7	Aggregate base for Portland cement concrete pavement, in place, complete	15250	CY	$ 100.00	$ 1,525,000	CY	$ 217.00	$ 3,309,250
8	Portland cement concrete pavement, inclusive of reinforcements, dowels, tie bars, joint materials, furnishing, placing, and removing of forms, protection devices, furnishing and installing construction joints, control joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	48950	CY	$ 350.00	$ 17,132,500	CY	$ 624.00	$ 30,544,800
9	3" thick asphalt concrete pavement, Mix IV, in place	680	SY	$ 33.00	$ 22,440	SY	$ 55.00	$ 37,400
10	2' wide, 4" thick asphalt pavement outside City right -of-way, Mix IV, in place	10	SY	$ 241.00	$ 2,410	SY	$ 305.00	$ 3,050
Site Work								
11	Excavation and Embankment for site grading, settlement, and surcharging, inclusive of backfill, hauling, removal and relocation of materials, equipment, tools, labor, materials, and incidentals	LS	LS	LS	$ 11,967,000	LS	LS	$ 16,600,000
12	Portland cement concrete curbs, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals	210	LF	$ 67.00	$ 14,070	LF	$ 430.00	$ 90,300
13	Portland cement concrete curbs and gutters outside City right-of-way, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals	410	LF	$ 75.00	$ 30,750	LF	$ 227.00	$ 93,070
14	Installation, Maintenance, Monitoring, and Removal of BMP outside City Right of Way	LS	LS	LS	$ 1,500,000	LS	LS	$ 4,250,000
15	Traffic Control outside City Right of Way	LS	LS	LS	$ 20,000	LS	LS	$ 60,000
16	Stormwater Warning Placard	LS	LS	LS	$ 40,000	LS	LS	$ 60,000
Water System								
17	Water system appurtenances, inclusive of backfill, pipe support stabilization, air relief valves, fire hydrants, lateral and lateral connections, butterfly valves, bevel-geared gate valves, water manholes, cast iron valve box, electronic markers and electronic marker readers, fittings, and couplings, concrete thrust blocks, guard posts, materials for connections connecting to H.C. 10502 water system, chlorination, flushing and testing, NPDES requirements and all others materials, equipment and labor required to construct the water system, in place complete	LS	LS	LS	$ 2,000,000	LS	LS	$ 1,050,000
18	4-inch diameter pipe and fittings for domestic water and fire protection water system construction, inclusive of all backfill, pipe support stabilization, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	2110	LF	$ 45.00	$ 94,950	LF	$ 115.00	$ 242,650
19	6-inch diameter pipe and fittings for domestic water and fire protection water system construction, inclusive of all backfill, pipe support stabilization, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	225	LF	$ 135.00	$ 30,375	LF	$ 275.00	$ 61,875
20	8-inch diameter pipe and fittings for domestic water and fire protection water system construction, inclusive of all backfill, pipe support stabilization, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	1765	LF	$ 45.00	$ 79,425	LF	$ 290.00	$ 511,850
21	12-inch diameter pipe and fittings for domestic water and fire protection water system construction, inclusive of all backfill, pipe support stabilization, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	1680	LF	$ 65.00	$ 109,200	LF	$ 345.00	$ 579,600
22	Pier 40F waterline installation of 12-inch diameter waterline and appurtenances, inclusive of all backfill, pipe support stabilization, labor, material, equipment, tools, and incidentals required to construct the pipelines; and coordination with Young Brothers and BWS	LS	LS	LS	$ 25,000	LS	LS	$ 15,000
23	PTW vault and appurtenances for domestic water system construction, inclusive of all fittings, backflow preventer, gate valve, valve support, copper tubing, PVC drainage pipe, hatch cover & frame, ladder rung, and all material, equipment, tools and incidentals required for construction, in place, complete	7	EA	$ 18,500.00	$ 129,500	EA	$ 10,000.00	$ 70,000

24	Water main connections to existing BWS main, including coordination with BWS, notification of BWS customers, and inclusive of all fittings, concrete blocks, backfill, pipe support stabilization, labor, material, equipment, tools and incidentals required for the water main connections, cutting and plugging of BWS water lines	LS	LS	LS	$ 65,000	LS	LS	$ 115,000
24A	16-inch diameter DIP, CL S3 waterline and fittings, and coupling, inclusive of all backfill, pipe support stabilization, cathodic protection, restoration of existing pavement, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	820	LF	$ 600.00	$ 492,000	LF	$ 3,300.00	$ 2,706,000
24B	HDPE Water System by HDD; 30" HDPE casing containing 20" diameter HDPE carrier pipe, inclusive of HDPE and end seals, restoration of existing pavement, labor, material, equipment, tools, and incidentals required to construct the pipelines, in place, complete	3000	LF	$ 2,300.00	$ 6,900,000	LF	$ 2,800.00	$ 8,400,000
24C	Alternative Parking Arrangement for Hawaii Stevedores, Inc. Employees	Allowance	Allowance	Allowance	$ 1,500,000	Allowance	Allowance	$ 1,500,000
24D	Provide training to State personnel on the maintenance of the Cathodic protection system	LS	LS	LS	$ 10,000	LS	LS	$ 25,000
24E	Operation and maintenance of Cathodic Protection System for 16-inch DIP for 1 year	LS	LS	LS	$ 5,000	LS	LS	$ 20,000
24F	Operation and maintenance of Cathodic Protection System for 16-inch DIP for 1 additional year	LS	LS	LS	$ 5,000	LS	LS	$ 20,000
24G	BWS Water System Facility Charge	Allowance	Allowance	Allowance	$ 2,400,000	Allowance	Allowance	$ 2,400,000
24H	2" Copper tube and fittings for domestic water lateral construction, inclusive of couplings, gate, valve, valve support, backflow preventer, water meter, service saddle, backfill, labor, material, equipment, tools, restoration of existing pavement, and incidentals required to construct the pipe lines, in place, complete	850	LF	$ 60.00	$ 51,000	LF	$ 300.00	$ 255,000
25	Trench excavation for water, drainage and electrical utilities, inclusive of removal and disposal of soft material, stockpiling of excavated material suitable to be used as backfill, and furnishing all labor, materials, equipment, tools and incidentals to complete the work	LS	LS	LS	$ 15,000,000	LS	LS	$ 5,400,000
25A	Test excavations and additional soil stabilization for soft and yielding areas encountered during trench excavation for water, drainage, and electrical utilities, inclusive of the removal and disposal of soft material, installation of geotextile fabric and/or geogrid, and gravel, and furnishing all labor, materials, equipment, tools and incidentals to provide additional soil stabilization required by the State's Geotechnical Engineer	Allowance	Allowance	Allowance	$ 1,000,000	Allowance	Allowance	$ 1,000,000
Drainage								
26	7' x 4' box culvert, inclusive of backfill, pipe support stabilization, 7' x 4' reinforced concrete box culvert, connections, trench repaving, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	280	LF	$ 7,000.00	$ 1,960,000	LF	$ 10,500.00	$ 2,940,000
27	3' x 5' box culvert, inclusive of backfill, pipe support stabilization, 3' x 5' reinforced concrete box culvert, connections, trench repaving, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete.	245	LF	$ 5,000.00	$ 1,225,000	LF	$ 12,500.00	$ 3,062,500
28	24" wide trench train, inclusive of backfill, pipe support stabilization, rebar, bolts, grating, and all equipment, tools, labor, materials, and appurtenances required for construction.	2,315	LF	$ 1,500.00	$ 3,472,500	LF	$ 1,850.00	$ 4,282,750
29	Trench drain inlet structure at trench drains, inclusive of backfill, pipe support stabilization, rebar, bolts, welding, and all equipment, tools, labor, materials, and appurtenances required for construction, in place, complete	1	EA	$ 30,000.00	$ 30,000	EA	$ 35,000.00	$ 35,000
30	Drain inlet structure at reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	12	EA	$ 53,000.00	$ 636,000	EA	$ 50,000.00	$ 600,000
31	Catch Basin structure at reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	4	EA	$ 22,000.00	$ 88,000	EA	$ 20,000.00	$ 80,000
31A	Overflow Basin structure at reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	Allowance	Allowance	Allowance	$ 100,000	Allowance	Allowance	$ 100,000
32	Manhole, inclusive of all equipment, too ls, labor, materials and appurtenances required for construction, in place, complete	10	EA	$ 50,000.00	$ 500,000	EA	$ 75,000.00	$ 750,000
33	6" PVC pip e and fitting inclusive of backfill, pipe support stabilization, cleanout and all equipment, tools, labor, materials and appurtenances required for construction	430	LF	$ 60.00	$ 25,800	LF	$ 174.00	$ 74,820
34	3" PVC pipe and fitting inclusive of backfill, pipe support stabilization, and all equipment, tools, labor, materials and appurtenances required for construction	150	LF	$ 15.00	$ 2,250	LF	$ 156.00	$ 23,400
35	18" reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	1,830	LF	$ 140.00	$ 256,200	LF	$ 533.00	$ 975,390
36	24" reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	1,030	LF	$ 200.00	$ 206,000	LF	$ 521.00	$ 536,630
37	36" reinforced concrete pipe, inclusive of backfill, pipe support stabilization and all equipment, tools, labor, materials and appurtenances required for construction, In place, complete	730	LF	$ 370.00	$ 270,100	LF	$ 754.00	$ 550,420
38	18" High Density Polyethylene pipe, inclusive of backfill, pipe support stabilization, and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	180	LF	$ 350.00	$ 63,000	LF	$ 215.00	$ 38,700
39	24" Ductile Iron Pipe, inclusive of backfill, pipe support stabilization, and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	30	LF	$ 360.00	$ 10,800	LF	$ 613.00	$ 18,390
40	Transition structure, inclusive of backfill, stabilization layer and all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	1	EA	$ 250,000.00	$ 250,000	EA	$ 225,000.00	$ 225,000
40A	Junction structure, inclusive of backfill, stabilization layer all equipment, tools, labor, materials and appurtenances required for construction, in place, complete	1	EA	$ 800,000.00	$ 800,000	EA	$ 535,000.00	$ 535,000
41	CDS stormwater treatment unit or approved equal at Piers 41 and 40F, inclusive of backfill, stabilization layer and all equipment, tools, labor, materials and appurtenances required for construction	2	EA	$ 75,000.00	$ 150,000	EA	$ 185,000.00	$ 370,000
41A	Jellyfish filter system or approved equal at Piers 41 and 40F, inclusive of backfill, stabilization layer and all equipment, tools, labor, materials and appurtenances required for construction	2	EA	$ 310,000.00	$ 620,000	EA	$ 290,000.00	$ 580,000
41B	Maintenance of CDS stormwater treatment units at Piers 41 and 40F for 1 year	LS	LS	LS	$ 11,000	LS	LS	$ 25,000
41C	Maintenance of CDS stormwater treatment units at Piers 41 and 40F for 1 additional year.	LS	LS	LS	$ 11,000	LS	LS	$ 25,000
41D	Maintenance of Jellyfish filters at Piers 41 and 40F for 1 year.	LS	LS	LS	$ 20,000	LS	LS	$ 25,000
41E	Maintenance of Jellyfish filters at Piers 41 and 40F for 1 additional year.	LS	LS	LS	$ 20,000	LS	LS	$ 25,000

42	Highland Tank stormwater treatment unit or approved equal at Piers 42 and 43, including associated two drainage manholes, two manways, and four access manways, inclusive of backfill, stabilization layer and all equipment, tools, labor, materials and appurtenances required for construction	LS	LS	LS	$ 1,500,000	LS	LS	$ 3,650,000
42A	Jellyfish filter system or approved equal at Piers 42 and 43, including associated four drainage manholes and one access manhole, inclusive of backfill, stabilization layer and all equipment, tools, labor, materials and appurtenances required for construction	LS	LS	LS	$ 3,000,000	LS	LS	$ 3,200,000
42B	Maintenance of Highland Tank stormwater treatment units at Piers 42 and 43 for 1 year	LS	LS	LS	$ 31,000	LS	LS	$ 25,000
42C	Maintenance of Highland Tank stormwater treatment units at Piers 42 and 43 for 1 additional year	LS	LS	LS	$ 31,000	LS	LS	$ 25,000
42D	Maintenance of Jellyfish filters at Piers 42 and 43 for 1 year	LS	LS	LS	$ 42,000	LS	LS	$ 25,000
42E	Maintenance of Jellyfish filters at Piers 42 and 43 for 1 additional year	LS	LS	LS	$ 42,000	LS	LS	$ 25,000
42F	SWTD manufacturer training and onsite installation supervision	Allowance	Allowance	Allowance	$ 20,000	Allowance	Allowance	$ 20,000
Striping & Fencing								
43	TWIC chain link fence	515	LF	$ 130.00	$ 66,950	LF	$ 100.00	$ 51,500
43A	TWIC chain link fence on concrete k-rails	361	LF	$ 230.00	$ 83,030	LF	$ 250.00	$ 90,250
44	Pavement markings	LS	LS	LS	$ 85,000	LS	LS	$ 300,000
Dredging (Pier 40F-41)								
45	Dredge/Excavate Material Above +1.9 & place for Upland Disposal D101/F110	5,500	CY	$ 100.00	$ 550,000	CY	$ 185.00	$ 1,017,500
46	Dredge/Excavate Material Below +1.9 & place for Upland Disposal D103/F110	16,500	CY	$ 100.00	$ 1,650,000	CY	$ 165.00	$ 2,722,500
47	Dredge/Place Non-Coralline Deposits @ Snug Harbor below -8' D102/F102	21,000	CY	$ 50.00	$ 1,050,000	CY	$ 46.00	$ 966,000
48	Dredge/Place Non-Coralline Deposits @ Snug Harbor below +10' Dl02/Fl04	41,000	CY	$ 50.00	$ 2,050,000	CY	$ 55.00	$ 2,255,000
49	Dredge/Place Non-Coralline Deposits @ Upland Disposal Dl02/F110	3,000	CY	$ 100.00	$ 300,000	CY	$ 167.00	$ 501,000
50	Dredge/Place Coralline Deposits @ Snug Harbor from elevation -8' to +10' D104/F103	30,000	CY	$ 50.00	$ 1,500,000	CY	$ 59.00	$ 1,770,000
					$ 7,100,000			$ 9,232,000
Dredging (Pier 42-43)								
51	Dredge/Excavate Material Above +1.9 & place @ Upland Disposal D105, D109/F110	15,000	CY	$ 100.00	$ 1,500,000	CY	$ 174.00	$ 2,610,000
52	Dredge/Place Non-Coralline Deposits Offshore Disposal D106, D108, D110, D112/F109	100,000	CY	$ 50.00	$ 5,000,000	CY	$ 38.00	$ 3,800,000
53	Dredge/Place Coralline Deposits, Process @ Snug Harbor to be placed to +10' D107/F103	10,000	CY	$ 50.00	$ 500,000	CY	$ 75.00	$ 750,000
54	Dredge/Place Coralline Deposits, Process@ Drydock Area to +10'D107, D111/F106	10,000	CY	$ 50.00	$ 500,000	CY	$ 51.00	$ 510,000
55	Dredge/Place Coralline Deposits, Process @ Snug Harbor SurchargeD107/F105	65,000	CY	$ 50.00	$ 3,250,000	CY	$ 65.00	$ 4,225,000
56	Dredge/Place Coralline Deposits @ 40F to +8' D111/F107	4,000	CY	$ 50.00	$ 200,000	CY	$ 29.00	$ 116,000
57	Dredge/Place Coralline Deposits @ 40F Surcharge D111/F108	2,000	CY	$ 50.00	$ 100,000	CY	$ 62.00	$ 124,000
58	Dredge/Place Coralline Deposits, Process@ Rail Slip Surcharge D111/F106	5,800	CY	$ 50.00	$ 290,000	CY	$ 70.00	$ 406,000
59	Dredge/Place Coralline Deposits, Process & Offshore Disposal D111/F109	19,000	CY	$ 50.00	$ 950,000	CY	$ 113.00	$ 2,147,000
60	Remove Surcharge and Dispose Off Shore 0113, 0114, D115/F109	73,000	CY	$ 30.00	$ 2,190,000	CY	$ 23.00	$ 1,679,000
60A	Handling, removal, characterization, profiling, hauling, and disposal of dredge debris containing fuel, oil, or other substances	1,500	Ton	$ 130.00	$ 195,000	Ton	$ 397.00	$ 595,500
61	Armor stone and Quarry Run	1,500	Ton	$ 300.00	$ 450,000	Ton	$ 206.00	$ 309,000
62	Gravel/ Recycled Concrete Debris R101	5,800	Ton	$ 100.00	$ 580,000	Ton	$ 110.00	$ 638,000
63	Wick Drains	170,000	LF	$ 4.00	$ 680,000	LF	$ 8.00	$ 1,360,000
64	Settlement Monitoring and Instrumentation	LS	LS	LS	$ 550,000	LS	LS	$ 145,000
64A	In-water BMPs, in place complete	LS	LS	LS	$ 1,100,000	LS	LS	$ 250,000
64B	Water sampling in accordance with Section 401 WQC and AMAP	LS	LS	LS	$ 500,000	LS	LS	$ 750,000
64C	EPA SOODMDS Standard Conditions	LS	LS	LS	$ 500,000	LS	LS	$ 115,000
					$ 19,035,000			$ 20,529,500
Dredging (Snug Harbor)								
65	Dredge/Place Non-Coralline Deposits Upland Disposal 0116/F110	30,000	CY	$ 100.00	$ 3,000,000	CY	$ 140.00	$ 4,200,000
65A	Construct Rubble dike at Snug Harbor, in place complete	LS	LS	LS	$ 400,000	CY	LS	$ 250,000
					$ 3,400,000			$ 4,450,000
Structural								
66	Construct extension with access manhole to existing City and County of Honolulu 10x4 box culvert at Pier 40F, with access manhole inclusive of plain concrete, precast concrete, reinforcement, joint materials, connections, excavation and backfill including 2-foot thick layer of gravel and geogrid wrapped in filter fabric, furnishing, placing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	10	LF	$ 52,000.00	$ 520,000	LF	$ 175,000.00	$ 1,750,000
66A	Preconstruction Structural Investigation (interior/underwater survey) and Alignment Survey of the CCH existing box culvert at Pier 40F	LS	LS	LS	$ 43,000	LS	LS	$ 55,000
66B	Additional work to or for CCH box culvert at Pier 40F, as directed by the State	Allowance	Allowance	Allowance	$ 5,000,000	Allowance	Allowance	$ 5,000,000
67	Construct Precast Bridge planks over existing City and County of Honolulu 10' x 4' box culvert at Pier 40F, inclusive of precast concrete deck planks, reinforcement, joint materials, connections, furnishing, placing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	4850	SF	$ 200.00	$ 970,000	SF	$ 111.00	$ 538,350
68	Construct cast-in-place elements for Bridging Structure over existing City and County of Honolulu 10' x 4' box culvert at Pier 40F, inclusive of cast-in-place concrete slabs, grade beams, and topping, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and incidentals necessary to complete the work in place	760	CY	$ 1,500.00	$ 1,140,000	CY	$ 900.00	$ 684,000
69	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to furnish, coat, and Install Bulkhead Walls at Pier 40F-41 including closure bulkhead at west side of Pier 40F, inclusive of steel sheet wall, king piles, double corrosion protected tie-rods, wales, joint sealing, and all connections	1,395	LF	$ 14,000.00	$ 19,530,000	LF	$ 16,000.00	$ 22,320,000
70	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to furnish, coat, and Install Bulkhead Walls at Pier 42-43, inclusive of steel sheet wall, king piles, double corrosion protected tie-rods, wales, joint sealing, and all connections	1,870	LF	$ 18,000.00	$ 33,660,000	LF	$ 20,000.00	$ 37,400,000

71	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to furnish, coat, and Install Bulkhead Walls at west end of Pier 43 (bridge abutment protection wall), inclusive of steel sheet wall king piles, double corrosion protected tie- rods, wales, joint sealing, and all connections	90	LF	$ 25,000.00	$ 2,250,000	LF	$ 34,000.00	$ 3,060,000
72	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to furnish, coat, and Install Steel sheet piling supports at Pier 40F Bridging Structure, inclusive of steel sheet wall, king piles, joint sealing, and all connections	440	LF	$ 4,000.00	$ 1,760,000	LF	$ 7,100.00	$ 3,124,000
73	Construct Concrete Bulkhead Capping Beam at Piers 40F-41, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	4,300	CY	$ 2,500.00	$ 10,750,000	CY	$ 948.00	$ 4,076,400
74	Construct concrete connection between Pier 40F and Pier 40E, inclusive of expansion joint, concrete knee braces, slab, concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work In place	23	CY	$ 6,500.00	$ 149,500	CY	$ 25,000.00	$ 575,000
75	Construct Concrete Deadman at Piers 40F-41, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	5400	CY	$ 1,600.00	$ 8,640,000	CY	$ 789.00	$ 4,260,600
76	Construct Concrete Bulkhead Capping Beam at Piers 42-43, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction Joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	6,130	CY	$ 2,500.00	$ 15,325,000	CY	$ 958.00	$ 5,872,540
77	Construct Waterside Crane Beams at Piers 42-43, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	4,830	CY	$ 1,600.00	$ 7,728,000	CY	$ 1,072.00	$ 5,177,760
78	Construct Landside Crane Beams at Piers 42-43, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	11,000	CY	$ 1,600.00	$ 17,600,000	CY	$ 899.00	$ 9,889,000
79	Construct Concrete Tie-Beams between landside and waterside ship-to-shore crane beams at Piers 42-43, inclusive of concrete, reinforcement, joint materials, connections, excavation and backfill, furnishing, placing, curing, and removing of forms, protection devices, furnishing and installing construction joints, grinding and grooving; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	1,860	CY	$ 4,700.00	$ 8,742,000	CY	$ 2,507.00	$ 4,663,020
79A	Reinforced cast-in-place concrete slab at Piers 42-43 heavy lift area	2,250	CY	$ 1,400.00	$ 3,150,000	CY	$ 613.00	$ 1,379,250
80	Furnish all labor, equipment, materials, testing, and incidentals necessary to complete the work in place, to construct 36" reinforced concrete CIDH Piles at Piers 42-43	13,050	LF	$ 600.00	$ 7,830,000	LF	$ 800.00	$ 10,440,000
81	Furnish all labor, equipment, materials, testing, and incidentals necessary to complete the work in place complete, to construct 48" reinforced concrete CIDH Piles at Piers 42-43	14,025	LF	$ 1,000.00	$ 14,025,000	LF	$ 1,250.00	$ 17,531,250
82	Furnish all labor, equipment, materials, testing, and incidentals necessary to complete the work in place complete, to construct 48" reinforced concrete CIDH Piles at Piers 40F-41	8,970	LF	$ 1,000.00	$ 8,970,000	LF	$ 1,400.00	$ 12,558,000
83	Furnish all labor, equipment, materials, testing and incidentals, to construct 48" reinforced concrete CIDH foundations for HMLPs	360	LF	$ 1,000.00	$ 360,000	LF	$ 1,200.00	$ 432,000
84	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place to install Cathodic protection system for sheetpiles, tie- rods, and all of their components at Piers 42-43 inclusive of training and O&M manual	LS	LS	LS	$ 5,000,000	LS	LS	$ 1,850,000
Item No.	Description	Approx. Quantity	Unit	Unit Price	Amount	Unit	Unit Price	Amount
85	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place to install Cathodic protection system for sheetpiles, tie- rods, and all of their components at Piers 40F-41 inclusive of training and O&M manual	LS	LS	LS	$ 20,000	LS	LS	$ 1,725,000
85A	Operation and maintenance of cathodic protection system for a period of one (1) year from the date of acceptance of the final test report	LS	LS	LS	$ 47,000	LS	LS	$ 30,000
85B	Additional operation and maintenance of cathodic protection system for an additional one (1) year after and beyond the initial first year of operation and maintenance	LS	LS	LS	$ 47,000	LS	LS	$ 30,000
85C	Implementation of Marine Observer and In-Water Construction Protocol for Endangered Species	LS	LS	LS	$ 1,300,000	LS	LS	$ 1,000,000
85D	Acoustic monitoring program for sheet pile and king pile driving	Allowance	Allowance	Allowance	$ 500,000	Allowance	Allowance	$ 500,000
85E	Sheet pile and king pile driving energy attenuator	Allowance	Allowance	Allowance	$ 6,000,000	Allowance	Allowance	$ 6,000,000
86	Retaining wall with fence along Auiki Street outside city Right-Of-Way	199	LF	$ 1,300.00	$ 258,700	LF	$ 1,875.00	$ 373,125
87	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to construct, and install 302.4 lb/yd Crane Rails at Piers 42-43 includes rails, clips, base plates, and grout	3,405	LF	$ 850.00	$ 2,894,250	LF	$ 820.00	$ 2,792,100
88	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place to construct and install crane rail stops at Piers 42-43	4	EA	$ 20,000.00	$ 80,000	EA	$ 25,000.00	$ 100,000
89	Furnish and Install Safety Ladders at Piers 40F-41, inclusive of material, installation, connections, protection devises, furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	7	EA	$ 8,000.00	$ 56,000	EA	$ 45,000.00	$ 315,000
90	Furnish and Install Safety Ladders at Piers 42-43, inclusive of material, installation, connections, protection devices, furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	10	EA	$ 8,000.00	$ 80,000	EA	$ 40,000.00	$ 400,000
90A	Furnish and install removable bullrail, in place complete	LS	LS	LS	$ 1,300,000	LS	LS	$ 750,000
90B	Furnish fifty (SO) extra removable bullrails	LS	LS	LS	$ 242,000	LS	LS	$ 200,000
91	Furnish and Install 100 MT Bollards at Piers 40F·41, inclusive of hardware, connections and necessary testing, furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	24	EA	$ 8,000.00	$ 192,000	EA	$19 ,000.00	$ 456,000
92	Furnish and Install 100 MT Bollards at Piers 42·43, inclusive of hardware, connections and necessary testing, furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work in place	48	EA	$ 8,000.00	$ 384,000	EA	$19, 000.00	$ 912,000

93	Furnish all labor, equipment, materials, and incidentals necessary to complete the work In place, to install fender system at Piers 40F-41, including bolts, UHMW-PE rub strips, and appurtenances, complete as specified and shown	LS	LS	LS	$ 1,025,000	LS	LS	$ 1,200,000
94	Furnish all labor, equipment, materials, and incidentals necessary to complete the work in place, to install fender system at Piers 42-43, including bolts, UHMW-PE rub strips, and appurtenances, complete as specified and shown	38	EA	$ 20,000.00	$ 760,000	EA	$ 45,000.00	$ 1,710,000
95	Construct Stone Columns (beyond Snug Harbor limits)	LS	LS	LS	$ 8,000,000	LS	LS	$ 11,500,000
96	Construct Stone Columns within Snug Harbor Limits	LS	LS	LS	$ 1,000,000	LS	LS	$ 2,000,000
Electrical & Telecommunications								
97	Exterior Lighting inclusive of material, lighting fixtures and poles, enclosures, controls, protective bollards, guard posts, pole grounding, equipment, tools, labor, testing, and incidentals (Concrete CIDH foundation is excluded from this item)	LS	LS	LS	$ 3,000,000	LS	LS	$ 1,500,000
98	HECO service contribution charges. No Contractor's mark-up will be allowed for this item.	Allowance	Allowance	Allowance	$ 2,000,000	Allowance	Allowance	$ 2,000,000
98A	HTCO service contribution charges. No Contractor's markup will be allowed for this item.	Allowance	Allowance	Allowance	$ 250,000	Allowance	Allowance	$ 250,000
99	Underground electrical work, inclusive of concrete, ducts, wiring, hand holes, pull boxes, manholes, grounding systems, backfill, hauling, and installation of material, equipment, tools, labor, materials, and incidentals	LS	LS	LS	$ 10,000,000	LS	LS	$ 10,000,000
99A	Crane Cable Trench System	LS	LS	LS	$ 1,000,000	LS	LS	$ 1,200,000
100	Wiring Systems work, inclusive of equipment, tools, labor, materials, panelboards, less than 600V ducts, wire, cables and incidentals	LS	LS	LS	$ 300,000	LS	LS	$ 350,000
101	Breaker Switchgear, Medium Voltage Drawout Mounted, related to the metal clad enclosed breaker switchgear, concrete pad, connections, relaying, arc flash mitigation, protective device coordination, testing and commissioning inclusive of material, equipment, tools, labor, testing, and incidentals	LS	LS	LS	$ 150,000	LS	LS	$ 5,000,000
102	Telecommunications System including cables, equipment, testing and commissioning inclusive of material, equipment, tools, labor, testing, and incidentals	LS	LS	LS	$ 6,000	LS	LS	$ 7,500
102A	All miscellaneous electrical work and materials required for a complete functioning electrical system, and all electrical work and materials required but not included in other bid items.	LS	LS	LS	$ 2,000	LS	LS	$ 2,500,000
Environmental								
103	Preparation of Planning Documents, inclusive of EHMP	LS	LS	LS	$ 120,000	LS	LS	$ 250,000
104	Contractors Environmental Qualified Consultant	LS	LS	LS	$ 500,000	LS	LS	$ 650,000
105	Setup, maintenance, and removal of soil staging area for non-grossly contaminated soils and contaminated sediment	LS	LS	LS	$ 150,000	LS	LS	$ 250,000
106	Setup, maintenance, and removal of soil staging area for grossly contaminated soils	LS	LS	LS	$ 150,000	LS	LS	$ 250,000
107	Not used							
108	Setup, maintenance, and removal of soil staging area for excavated landfill debris	LS	LS	LS	$ 150,000	LS	LS	$ 70,000
109	Removal and disposal of oily sheen/product from groundwater, during backtrenching	Allowance	Allowance	Allowance	$ 121,000	Allowance	Allowance	$ 121,000
110	Handling, removal, characterization, profiling, hauling, and disposal of grossly contaminated soils for site grading inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work	15,000	CY	$ 200.00	$ 3,000,000	CY	$ 400.00	$ 6,000,000
111	Handling, removal, characterization, profiling, hauling, and disposal of non- grossly contaminated soils and contaminated sediment for site grading inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work	15,000	CY	$ 30.00	$ 450,000	CY	$ 300.00	$ 4,500,000
111A	Handling, removal, characterization, profiling, hauling, and disposal of contaminated concrete, asphalt and (miscellaneous demolition) debris inclusive of excavation, hauling, disposal, equipment, tools, labor, materials, and incidentals necessary to complete the work	500	Ton	$ 130.00	$ 65,000	Ton	$ 250.00	$ 125,000
111B	Handling, removal, characterization, profiling, hauling, and disposal of contaminated sunken debris inclusive of excavation, hauling, disposal, equipment, tools, labor, materials and incidentals necessary to complete the work	500	Ton	$ 130.00	$ 65,000	Ton	$ 700.00	$ 350,000
112	Tapping, draining, cleaning, testing, and disposal of fuel pipelines, if encountered, inclusive of disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated during cleaning of the underground pipelines, all equipment, tools, materials, labor, and appurtenances required to complete the work	Allowance	Allowance	Allowance	$ 100,000	Allowance	Allowance	$ 100,000
113	Demolition and removal of existing pole-mounted electrical transformers inclusive of disposal characterization analyses for PCBs, disposal of dielectric fluid, and disposal of wooden utility poles	6	EA	$ 8,000.00	$ 48,000	EA	$ 18,000.00	$ 108,000
114	Demolition and removal of existing pad- mounted electrical transformers, inclusive of disposal characterization analyses for PCBs, disposal of dielectric fluid, and disposal of concrete slab	Allowance	Allowance	Allowance	$ 50,000	Allowance	Allowance	$ 50,000
115	Ambient Air Monitoring	LS	LS	LS	$ 7,000	LS	LS	$ 135,000
116	Sealing/abandonment of groundwater monitoring wells	Allowance	Allowance	Allowance	$ 50,000	Allowance	Allowance	$ 50,000
117	Removal and Disposal of Asbestos- Containing Material, Asbestos-Cement Piping, Conduit, and Asbestos- Containing Waste	LS	LS	LS	$ 300,000	LS	LS	$ 325,000
119	Lead-Containing Paint Control Measures	LS	LS	LS	$ 16,000	LS	LS	$ 30,000
120	Removal and disposal of PCB-containing light ballasts and mercury-containing light bulbs and tubes from buildings and/or light poles to be demolished	Allowance	Allowance	Allowance	$ 17,000	Allowance	Allowance	$ 17,000
121	Excavation, tapping, draining, and removal of existing underground storage tanks (USTs) and associated piping, inclusive of disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated, and preparation of closure report	Allowance	Allowance	Allowance	$ 201,000	Allowance	Allowance	$ 201,000
122	Excavation, tapping, draining, and removal of existing aboveground storage tanks (ASTs) and associated piping, inclusive of disposal characterization analyses for residual fuel, disposal of residual fuel, disposal characterization analyses for sludge, rinsate, and solids, disposal of sludge, rinsate, and solids generated, and preparation of closure report	Allowance	Allowance	Allowance	$ 24,000	Allowance	Allowance	$ 24,000
123	Environmental Mitigation	Allowance	Allowance	Allowance	$ 1,000,000	Allowance	Allowance	$ 1,000,000
124	H.C. 10502 KCT Yard Project Site Security	30	Months	$ 30,000.00	$ 900,000	Months	$ 28,000.00	$ 840,000
124A	Post-construction security	30	Months	$ 40,000.00	$ 1,200,000	Months	$ 37,000.00	$ 1,110,000
125	Field Office including maintenance	LS	LS	LS	$ 1,300,000	LS	LS	$ 450,000
126	Archaeological Monitoring	LS	LS	LS	$ 315,000	LS	LS	$ 250,000
127	Burial Treatment	Allowance	Allowance	Allowance	$ 1,000,000	Allowance	Allowance	$ 1,000,000
128	Communication with Public	LS	LS	LS	$ 25,000	LS	LS	$ 50,000
129	Construction Progress Documentation	LS	LS	LS	$ 50,000	LS	LS	$ 150,000

130	Implementation of Coral Transplantation Plan, including but not limited to conducting survey of recipient site, developing coral transplantation work plan, removing corals from the donor site and transplanting the corals at the recipient site and preparing post coral transplantation report	LS	LS	LS	$ 66,000	LS	LS	$ 750,000
131	Additional work associated with, or required for, implementation of Coral Transplantation Plan, Including but not limited to, transplantation of live corals >40cm above and in excess of 69 square meters	Allowance	Allowance	Allowance	$ 150,000	Allowance	Allowance	$ 150,000
132	Auiki Street Improvements including traffic control within city Right-Of-Way	LS	LS	LS	$ 45,000	LS	LS	$ 40,000
132A	Auiki Street Improvements consisting of installation, maintenance, monitoring, and removal of BMP within city Right- Of-Way	LS	LS	LS	$ 10,000	LS	LS	$ 25,000
132B	Auiki Street Improvements consisting of demolition work within city Right-Of- Way	LS	LS	LS	$ 18,000	LS	LS	$ 22,000
132C	Auiki Street Improvements including aggregate base course, for asphalt concrete pavement, within city Right- Of-Way	10	CY	$ 400.00	$ 4,000	CY	$ 675.00	$ 6,750
132D	Auiki Street Improvements including 2' wide, 4" thick asphalt pavement, Mix IV, in place, within city Right- Of-Way	47	SY	$ 240.00	$ 11,280	SY	$ 330.00	$ 15,510
132E	Portland cement concrete curbs and gutters within City right-of-way, specific to Auiki Street improvements, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals	105	LF	$ 100.00	$ 10,500	LF	$ 125.00	$ 13,125
132F	Portland cement concrete sidewalks within City right-of-way, specific to Auiki Street, inclusive of Portland cement concrete; furnishing, placing, and removing of forms; protection devices; furnishing and placing curing materials; joints; grinding and grooving; testing; and furnishing labor, materials, tools, equipment, and incidentals	170	SY	$ 120.00	$ 20,400	SY	$ 270.00	$ 45,900
	TOTAL SUM BID PART I· JOB H.C. 10498 (SUM OF ALL ITEMS 1- 132F, INCLUSIVE)				$ 370,412,680			$ 415,439,775

Pier Construction Cost per LF	$ 3,180	$130,641.44
Pier Construction Cost per Acre	$ 19	$22,456,204.05

ITEM NO.		ITEM	APPROX. QUANTITY		Nan, Inc.			Hawaii Harbors Constructors JV			ENGINEER'S ESTIMATE		
					UNIT	UNIT PRICE	AMOUNT	UNIT	UNIT PRICE	AMOUNT	UNIT	UNIT PRICE	AMOUNT
1		Mobilization and Demobilization (not to exceed 10% of all bid items)	1		LS	LS	$1,024,916	LS	LS	$880,000	LS	LS	$425,000
2		Project Sign, in place complete	1		LS	LS	$9,111	LS	LS	$1,700	LS	LS	$3,128
3		Mobilization and Demobilization for pile driving ($85,000 maximum). 60% of this amount will be paid for mobilization and 40% for demobilization.	1		LS	LS	$75,008	LS	LS	$85,000	LS	LS	$85,000
4		Traffic Control (Nimitz Highway)	1		LS	LS	$116,542	LS	LS		LS	LS	$25,023
5		Environmental Health Management Plan	Allowance		Allowance	Allowance	$10,000	Allowance	10000	$10,000	Allowance	10000	$10,000
6		Archaeological Monitoring and Report	Allowance		Allowance	Allowance	$50,000	Allowance	50000	$50,000	Allowance	50000	$50,000
7		Pile Driving Energy Attenuator	---		LS	LS	$106,515	LS	LS	$192,600	LS	LS	$60,000
		Pier 12 (Items 8 - 42, inclusive)											
8		Saw-cut and Removal of Asphaltic Concrete Pavement	2100		SF	$8	$16,800	SF	$8	$16,800	SF	$4	$8,408
9		Saw-cut and Removal of Concrete Pavement	850		SF	$12	$10,200	SF	$7	$5,950	SF	$8.13	$6,911
10		Demolition and Removal of Asphaltic Concrete Curb	260		LF	$17	$4,420	LF	$12	$3,120	LF	$12.20	$3,172
11		Demolition and Removal of Chain Link Fence	110		LF	$15	$1,650	LF	$16	$1,760	LF	$6.69	$736
12		BMP Measures	1		LS	LS	$77,213	LS	LS	$47,000	LS	LS	$22,769
13		9-Foot High Industrial Ornamental Fence	70		LF	$113	$7,910	LF	$280	$19,600	LF	$281.55	$19,709
14		9-Foot High by 30-Foot Wide Industrial Ornamental Rolling Gate	1		EA	$7,567	$7,567	EA	$219	$21,900	EA	$10,634.86	$10,635

15		Asphaltic Concrete Pavement Restoration Mix IV (2-1/2" thick)	1200		SF	$104	$124,800	SF	$11	$13,200	SF	$10.01	$12,012
16		Earthwork, Inclusive of Excavation, Embankment and Subgrade Preparation	1		LS	LS	$32,706	LS	LS	$13,500	LS	LS	$6,506
17		Soil Compaction Testing	1		LS	LS	$15,135	LS	LS	$12,000	LS	LS	$3,128
18		Aggregate Base Course	25		CY	$371	$9,275	CY	$230	$5,750	CY	$70.06	$1,752
19		Concrete Curb	220		LF	$27	$5,940	LF	$77	$16,940	LF	$33.97	$7,473
20		Curb and Scupper Filter	9		EA	$1,389	$12,501	EA	$1,500	$13,500	EA	$72.44	$652
21		Removable Bollards	5		EA	$1,538	$7,690	EA	$1,050	$5,250	EA	$938.37	$4,692
22		Pavement Marking and Striping	1		LS	LS	$4,540	LS	LS	$4,420	LS	LS	$7,692
23		Water System	1		LS	LS	$168,589	LS	LS	$125,000	LS	LS	$38,077
24		Furnishing Micropile Installation Equipment	1		LS	LS	$36,859	LS	LS	$10,200	LS	LS	$17,516
25		7-Inch Bulb Production Micropiles, Furnished and Installed, in place complete.	2280		LF	$140	$319,200	LF	$136	$310,080	LF	$200.19	$456,433
26		Proof Tests for 7-Inch Bulb Micropiles	3		EA	$6,143	$18,429	EA	$4,500	$13,500	EA	$15,013.92	$45,042
27		Grout Testing	6		SET	$361	$2,166	SET	$227	$1,362	SET	$1,063.49	$6,381
28		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Furnished	486		LF	$175	$85,050	LF	$113	$54,918	LF	$81.33	$39,526
29		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Predrill Holes 20 Feet Below Mudline	105		LF	$131	$13,755	LF	$159	$16,695	LF	$90.08	$9,458

30		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Installed	486		LF	$94	$45,684	LF	$55	$26,730	LF	$102.98	$50,048
31		Dynamic Load Test for 20-Inch Octagonal Precast Prestressed Concrete Piles	5		EA	$6,070	$30,350	EA	$7,500	$37,500	EA	$25,023.19	$125,116
32		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Furnished	1466		LF	$175	$256,550	LF	$113	$165,658	LF	$81.33	$119,230
33		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Predrill Holes 20 Feet Below Mudline	315		LF	$131	$41,265	LF	$159	$50,085	LF	$60.06	$18,919
34		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Installed	1466		LF	$94	$137,804	LF	$55	$80,630	LF	$83.21	$121,986
35		Install Vehicular Bridge, Loading Platform and Bull Rail, Two Concrete Dolphins, Aluminum Catwalk with Mesh Grating and Aluminum Guardrails, Dock Fenders, in place complete.	1		LS	LS	$664,169	LS	LS	$851,896	LS	LS	$618,009
36		Install 14-Inch Concrete Parking/Delivery Slab and Beams	1		LS	LS	$110,897	LS	LS	$110,000	LS	LS	$156,401
37		Furnish and Install Mooring Bollards	4		EA	$4,556	$18,224	EA	$2,700	$10,800	EA	$17,016	$68,063
38		Electrical, Lighting, Telecom and Communication Work	1		LS	LS	$669,542	LS	LS	$236,000	LS	LS	$239,518
39		Interpretive Marker, Furnished and Installed, in place complete.	Allowance		Allowance	10000	$10,000	Allowance	10000	$10,000	Allowance	10000	$10,000
40		HECO Service Charge	Allowance		Allowance	50000	$50,000	Allowance	50000	$50,000	Allowance	50000	$50,000
41		HTCO Service Charge	Allowance		Allowance	10000	$10,000	Allowance	10000	$10,000	Allowance	10000	$10,000
42		BWS Service Charge	Allowance		Allowance	40000	$40,000	Allowance	40000	$40,000	Allowance	40000	$40,000
		Pier 15 (Items 43 - 87, inclusive)											
43		Demolition and Removal of Chain Link Fence and Sliding Gate	50		LF	$19	$950	LF	$125	$6,250	LF	$39.41	$1,971

44		Remove Salvage and Return Bollards to Harbors	10		EA	$884	$8,840	EA	$1,370	$13,700	EA	$938.37	$9,384
45		Demolition Remove and Dispose Wood Bumpers	135		LF	$38	$5,130	LF	$35	$4,725	LF	$30.03	$4,054
46		Demolition and Removal Concrete Curb	20		LF	$22	$440	LF	$71	$1,420	LF	$12.20	$244
47		Saw-cut and Removal of Asphaltic Concrete Pavement	4950		SF	$6	$29,700	SF	$8	$39,600	SF	$4.00	$19,800
48		Remove and Dispose Concrete Pile (cut at mudline)	10		EA	$9,572	$95,720	EA	$1,500	$15,000	EA	$3,127.90	$31,279
49		Remove and Dispose Miscellaneous Items at Seabed	1		LS	LS	$117,891	LS	LS	$90,000	LS	LS	$31,279
50		Partial Demolition and Removal of Pier Shed Roof and Wall	1		LS	LS	$54,570	LS	LS	$57,000	LS	LS	$21,845
51		Remove and Dispose Asbestos Containing Items	1		LS	$15,135	$15,135	LS	$6,500	$6,500	LS	LS	$18,767
52		Air Monitoring for Removal and Disposal of Asbestos Containing Materials	1		LS	LS	$7,567	LS	LS	$3,100	LS	LS	$6,256
53		Installation, Maintenance, Monitoring and Removal of BMP Measures	1		LS	LS	$144,571	LS	LS	$62,000	LS	LS	$63,011
54		8-Foot High Chain Link Fence with Barbed Wire	24		LF	$75	$1,800	LF	$190	$4,560	LF	$90.08	$2,162
55		8-Foot High by 22-Foot Wide Chain Link Sliding Gate with Barbed Wire	1		EA	$6,810	$6,810	EA	$4,900	$4,900	EA	$5,630	$5,630
56		Asphaltic Concrete Pavement Restoration, Mix IV (2-1/2" thick)	1310		SF	$52	$68,120	SF	$10	$13,100	SF	$10.01	$13,113
57		Earthwork, Inclusive of Excavation, Embankment and Subgrade Preparation	1		LS	LS	$50,665	LS	LS	$20,500	LS	LS	$15,514

58		Soil Compaction Testing	1		LS	LS	$15,135	LS	LS	$17,000	LS	LS	$3,128
59		Aggregate Base Course	25		CY	$318	$7,950	CY	$285	$7,125	CY	$70.06	$1,752
60		Concrete Curb	30		LF	$37	$1,110	LF	$85	$2,550	LF	$33.97	$1,019
61		Scupper Filter	14		EA	$1,573	$22,022	EA	$1,500	$21,000	EA	$36.22	$507
62		Pavement Marking and Striping	1		LS	LS	$3,783	LS	LS	$1,400	LS	LS	$1,481
63		Water System	1		LS	LS	$528,851	LS	LS	$205,000	LS	LS	$74,699
64		7-Inch Bulb Production Micropiles, Furnished and Installed, in place complete	340		LF	$140	$47,600	LF	$136	$46,240	LF	$200.19	$68,065
65		16-1/2-Inch Octagonal Precast Prestressed Concrete Test Piles, Furnished	452		LF	$127	$57,404	LF	$82	$37,064	LF	$52.55	$23,753
66		16-1/2-Inch Octagonal Precast Prestressed Concrete Test Piles, Predrill Holes 15 Feet Below Ground Surface	60		LF	$185	$11,100	LF	$48	$2,880	LF	$60.06	$3,604
67		16-1/2-Inch Octagonal Precast Prestressed Concrete Test Piles, Installed	410		LF	$100	$41,000	LF	$25	$10,250	LF	$109.86	$45,043
68		Static Load Test for 16-1/2-Inch Octagonal Precast Prestressed Concrete Piles	4		EA	$28,182	$112,728	EA	$5,000	$20,000	EA	$25,023.19	$100,093
69		16-1/2-Inch Octagonal Precast Prestressed Concrete Production Piles, Furnished	1230		LF	$128	$157,440	LF	$82	$100,860	LF	$52.55	$64,637
70		16-1/2-Inch Octagonal Precast Prestressed Concrete Production Piles, Predrill Holes 15 Feet Below Ground Surface	180		LF	$174	$31,320	LF	$32	$5,760	LF	$60.06	$10,811
71		16-1/2-Inch Octagonal Precast Prestressed Concrete Production Piles, Installed	1230		LF	$83	$102,090	LF	$17	$20,910	LF	$53.71	$66,063

72		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Furnished	699		LF	$173	$120,927	LF	$113	$78,987	LF	$81.33	$56,850
73		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Predrill Holes 20 Feet Below Mudline	126		LF	$163	$20,538	LF	$159	$20,034	LF	$90.08	$11,350
74		20-Inch Octagonal Precast Prestressed Concrete Test Piles, Installed	699		LF	$79	$55,221	LF	$55	$38,445	LF	$157.51	$110,099
75		Dynamic Load Test for 20-Inch Octagonal Precast Prestressed Concrete Piles	6		EA	$6,070	$36,420	EA	$10,000	$60,000	EA	$25,023.19	$150,139
76		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Furnished	7121		LF	$173	$1,231,933	LF	$113	$804,673	LF	$81.33	$579,151
77		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Predrill Holes 20 Feet Below Mudline	1281		LF	$132	$169,092	LF	$115	$147,315	LF	$2.63	$3,369
78		20-Inch Octagonal Precast Prestressed Concrete Production Piles, Installed	7121		LF	$81	$576,801	LF	$48	$341,808	LF	$63.95	$455,388
79		Install Two Loading Platforms and Bull Rail, Five Concrete Dolphins, Aluminum Catwalk with Mesh Grating and Aluminum Guardrails, Dock Fenders, Concrete Bull Rail, in place complete.	1		LS	LS	$2,441,380	LS	LS	$2,415,000	LS	LS	$3,657,618
80		Install 12-Inch Concrete Parking/Delivery Slab and Beams	1		LS	LS	$238,918	LS	LS	$262,000	LS	LS	$128,625
81		Furnish and Install Mooring Bollard	11		EA	$6,798	$74,778	EA	$2,300	$25,300	EA	$17,015.77	$187,173
82		Install New Parapet at Pier Shed Roof, including metal studs, gypsum sheathing board, exterior finish system, cap and wall flashing, plywood roof cricket, built-up roofing, concrete column, “x” bracing, painting, in place complete.	1		LS	LS	$260,282	LS	LS	$170,000	LS	LS	$63,870
83		Electrical, Lighting, Telecom and Communication Work	1		LS	LS	$669,542	LS	LS	$330,000	LS	LS	$299,506

84		Coral Quantitative Assessment and Report (see Note 5 on Sheet C15.1)	Allowance		Allowance	$13,000	$13,000	Allowance	$13,000	$13,000	Allowance	$13,000	$13,000
85		HECO Service Charge	Allowance		Allowance	$50,000	$50,000	Allowance	$50,000	$50,000	Allowance	$50,000	$50,000
86		HTCO Service Charge	Allowance		Allowance	$10,000	$10,000	Allowance	$10,000	$10,000	Allowance	$10,000	$10,000
87		BWS Service Charge	Allowance		Allowance	$300,000	$300,000	Allowance	$300,000	$300,000	Allowance	$300,000	$300,000
		TOTAL - SUM OF ALL ITEMS					**$12,475,246**			**$9,595,000**			**$9,799,206**

The total bid submitted by Hawaii Harbors Constructors JV is $9,595,000.

$9,538,000

The calculated total is $9,538,000, it is ($57,000) less then the actual bid.

Gross Bid Amount and Rank		**Nan Inc.**	**Hawaii Harbors Constructors JV**	
Total Gross Bid:		$12,475,246.00	$9,538,000.00	
Rank:		2	1	
Difference from Top Bidder:		-$2,937,246.00		

ACCEPTABLE HAWAII PRODUCTS		**Nan Inc.**			**Hawaii Harbors Constructors JV**					
Product Category		Cost	Credit		Cost	Credit				
Aggregates and Sand-Basalt Rock, Cinder, Limestone and Coral*		$5,500.00		HAR-3-124-5 (b)	$11,200.00		HAR-3-124-5 (b)			
Asphalt and Paving Material		$9,500.00	$950.00	10%						
Cement and Concrete Products*		$250,000.00		HAR-3-124-5 (b)	$211,570.00		HAR-3-124-5 (b)			
Precast Concrete Products*		$1,541,000.00		HAR-3-124-5 (b)	$1,334,815.00		HAR-3-124-5 (b)			
Aluminum Floating Dock - Misc.					$222,500.00	$22,250.00	10%			
Total		$1,806,000.00	$950.00		$1,780,085.00	$22,250.00				

***HAR-Section 3-124-5 (b) All bidders submitted for Hawaii Products preference therefore no Hawaii Products preference shall be considered.**

APPRENTICE CREDIT

Nan Inc.			**Hawaii Harbors Constructors JV**		
Gross Bid	Credit	Percentage	Gross Bid	Credit	Percentage
$12,475,246	$623,762	5%	$9,538,000	$476,900	5%

		Nan Inc.	**Hawaii Harbors Constructors JV**	
Total Gross Bid Less Acceptable Hawaii Products and Apprentice:		$11,850,533.70	$9,038,850.00	

BID TABULATION FOR THE DOMESTIC COMMERCIAL FISHING VILLAGE, PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR, OAHU, JOB H. C. 1972

BIDS OPENED: October 8, 1998
ENGINEER'S ESTIMATE: $5,762,419.18

				Healy Tibbits Builders, Inc.		Dillingham Construction Pacific, Ltd. dba Hawaiian Dredging Construction Company		Engineer's Estimate	
ITEM NO.	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID
12.0100	**Project Sign**								
12.0101	Project Sign	LS	LS	LS	$2,400.00	LS	$1,500.00	LS	$1,500.00
13.0100	**Mobilization**								
	Mobilization	LS	LS	LS	$250,000.00	LS	$145,000.00	LS	$131,125.00
14.0100	**Contaminated Soils and Groundwater**								
14.0101	Excavation and disposal of uncontaminated soil from project site, including soil testing	3000	CY	$26.80	$80,400.00	$35.00	$105,000.00	$27.00	$81,000.00
14.0102	Excavation and disposal of contaminated soil from project site, including soil testing	F.A.	F.A.	F.A.	$60,000.00	F.A.	$60,000.00	F.A.	$60,000.00
14.0103	Segregation of soil and construction of holding temporary holding cells, placement of contaminated solid therein, and management of contaminated soil facility	1500	CY	$16.40	$24,600.00	$30.00	$45,000.00	$27.00	$40,500.00
14.0104	TCLP testing	10	Sample	$180.00	$1,800.00	$650.00	$6,500.00	$1,000.00	$10,000.00
	Free product removal	10	HR	$2,000.00	$20,000.00	$200.00	$2,000.00	$200.00	$2,000.00
14.0105	Disposal of hazardous contaminated soil to be sent to an EPA approved disposal facility on the continental United States	F.A.	F.A.	F.A.	$10,000.00	F.A.	$10,000.00	F.A.	$10,000.00
16.0100	**Clearing and Grubbing**								
16.0101	Clearing and Grubbing	3.1	ACRE	$11,000.00	$34,100.00	$15,000.00	$46,500.00	$4,400.00	$13,640.00
17.0100	**Removal of Structures and Obstructions**								
17.0101	Removal of Structures and Obstructions	3.1	ACRE	$3,300.00	$10,230.00	$3,200.00	$9,920.00	$11,000.00	$34,100.00
18.0100	**Earthwork and Subgrade Preparation**								
18.0101	Excavation (Stockpile for H. C. 1983) includes contaminated soil that meets the requirements of general fill and can be re-used.	3,845	CY	$2.30	$8,843.50	$25.00	$96,125.00	$5.50	$21,147.50
18.0102	Excavation / fill (Onsite)	330	CY	$5.60	$1,848.00	$3.50	$1,155.00	$7.70	$2,541.00
20.0100	**Aggregate Base Course and Subbase Course**								
20.0101	Asphaltic Concrete Pavement (3" thick)	2440	S.Y.	$10.50	$25,620.00	$11.55	$28,182.00	$13.20	$32,208.00
20.0102	Aggregate base course (8" thick)	2440	S.Y.	$18.70	$45,628.00	$15.00	$36,600.00	$22.00	$53,680.00
20.0103	Aggregate base course (11" thick)	1100	S.Y.	$24.00	$26,400.00	$17.00	$18,700.00	$30.80	$33,880.00
20.0104	Aggregate select borrow (12" thick)	3540	S.Y.	$20.50	$72,570.00	$16.00	$56,640.00	$22.00	$77,880.00
20.0105	Aggregate select borrow (16" thick)	455	S.Y.	$28.60	$13,013.00	$16.00	$7,280.00	$29.70	$13,513.50

BID TABULATION FOR THE DOMESTIC COMMERCIAL FISHING VILLAGE, PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR, OAHU, JOB H. C. 1972

BIDS OPENED: October 8, 1998
ENGINEER'S ESTIMATE: $5,762,419.18

				Healy Tibbits Builders, Inc.		Dillingham Construction Pacific, Ltd. dba Hawaiian Dredging Construction Company		Engineer's Estimate	
ITEM NO.	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID
21.0100	**Water System**								
21.0101	12" Fire Line	580	L.F.	$72.60	$42,108.00	$70.00	$40,600.00	$172.50	$100,050.00
21.0102	8" Fire Line	255	L.F.	$46.00	$11,730.00	$45.00	$11,475.00	$161.00	$41,055.00
21.0103	6" Fire Lateral (connection and gate valve)	1	EA	$3,900.00	$3,900.00	$2,000.00	$2,000.00	$575.00	$575.00
21.0104	3" water line	570	L.F.	$29.00	$16,530.00	$14.00	$7,980.00	$98.00	$55,860.00
21.0105	2" water line	230	L.F.	$29.00	$6,670.00	$11.00	$2,530.00	$34.50	$7,935.00
21.0106	1-1/2" water line	475	L.F.	$23.00	$10,925.00	$8.00	$3,800.00	$32.20	$15,295.00
21.0107	4" PVC Sleeve	705	L.F.	$6.70	$4,723.50	$16.00	$11,280.00	$2.30	$1,621.50
21.0108	Water Hatches	8	EA	$1,025.00	$8,200.00	$4,500.00	$36,000.00	$5,750.00	$46,000.00
21.0109	Fire Hydrant with 2 bollards	2	EA	$2,800.00	$5,600.00	$4,500.00	$9,000.00	$2,875.00	$5,750.00
21.0110	Fire Hydrant with 6 bollards	1	EA	$4,780.00	$4,780.00	$5,250.00	$5,250.00	$4,600.00	$4,600.00
21.0111	1-1/2" backflow preventer	1	EA	$1,150.00	$1,150.00	$1,500.00	$1,500.00	$1,150.00	$1,150.00
21.0112	1-1/2" water meter with totalizer-transmiter and meter box	2	EA	$4,725.00	$9,450.00	$5,000.00	$10,000.00	$1,725.00	$3,450.00
21.0113	Double check valve with Fox demand valve assembly	1	EA	$1,430.00	$1,430.00	$4,300.00	$4,300.00	$5,750.00	$5,750.00
21.0114	3/4" Air release valve	1	EA	$970.00	$970.00	$3,000.00	$3,000.00	$1,150.00	$1,150.00
21.0115	Connection to existing 1-1/2" service	1	EA	$460.00	$460.00	$350.00	$350.00	$230.00	$230.00
21.0116	Chlorination and testing	LS	LS	LS	$3,375.00	LS	$3,000.00	LS	$2,300.00
22.0100	**Sewer System**								
22.0101	8" Sewer Line	200	L.F.	$67.00	$13,400.00	$10.00	$2,000.00	$92.00	$18,400.00
22.0102	4" Sewer Line	130	L.F.	$66.50	$8,645.00	$5.50	$715.00	$69.00	$8,970.00
22.0103	Plain SMH (6' Deep)	1	EA	$4,500.00	$4,500.00	$3,000.00	$3,000.00	$4,025.00	$4,025.00
22.0104	6" Single service lateral	1	EA	$900.00	$900.00	$300.00	$300.00	$1,380.00	$1,380.00
22.0105	Sewer Pipe trench excavation	150	CY	$19.50	$2,925.00	$75.00	$11,250.00	$200.00	$30,000.00
23.0100	**Drainage System**								
23.0101	24" Drain line	160	L.F.	$100.00	$16,000.00	$40.00	$6,400.00	$97.00	$15,520.00
23.0102	18" Drain line	25	L.F.	$140.00	$3,500.00	$36.00	$900.00	$63.00	$1,575.00
23.0103	12" Drain line	85	L.F.	$56.00	$4,760.00	$14.00	$1,190.00	$34.50	$2,932.50
23.0104	8" Drain line	47	L.F.	$50.00	$2,350.00	$8.00	$376.00	$28.00	$1,316.00
23.0105	6" Drain line	70	L.F.	$40.00	$2,800.00	$7.50	$525.00	$28.00	$1,960.00
23.0106	Trench Drain	556	L.F.	$60.00	$33,360.00	$135.00	$75,060.00	$75.00	$41,700.00
23.0107	18" Drain Inlet	1	EA	$3,400.00	$3,400.00	$4,000.00	$4,000.00	$7,475.00	$7,475.00
23.0108	CRM Apron	1	EA	$13,000.00	$13,000.00	$6,200.00	$6,200.00	$11,500.00	$11,500.00
23.0109	Fox Diversion valve with box	1	EA	$4,900.00	$4,900.00	$8,500.00	$8,500.00	$23,000.00	$23,000.00
23.0110	Drain pipe trench excavation	200	CY	$19.40	$3,880.00	$70.00	$14,000.00	$200.00	$40,000.00

BID TABULATION FOR THE DOMESTIC COMMERCIAL FISHING VILLAGE, PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR, OAHU, JOB H. C. 1972

BIDS OPENED: October 8, 1998
ENGINEER'S ESTIMATE: $5,762,419.18

				Healy Tibbits Builders, Inc.		Dillingham Construction Pacific, Ltd. dba Hawaiian Dredging Construction Company		Engineer's Estimate	
ITEM NO.	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID
24.0100	**Dredging**								
24.0101	Tests: TPH-Diesel, TPH-Gas w/Btex, TPH-Oil	40	EA	$390.00	$15,600.00	$1,000.00	$40,000.00	$250.00	$10,000.00
24.0102	Tests: PAH	40	EA	$220.00	$8,800.00	$750.00	$30,000.00	$250.00	$10,000.00
24.0103	Tests: TCLP-metals, Metals, PCB's, HVOC's	40	EA	$390.00	$15,600.00	$1,100.00	$44,000.00	$250.00	$10,000.00
24.0104	On-land disposal (contaminated material) w/o Remediation	3519	CY	$125.00	$439,875.00	$45.00	$158,355.00	$39.50	$139,000.50
24.0105	On-land disposal (contaminated material) w/ Remediation	F.A.	F.A.	F.A.	$60,000.00	F.A.	$60,000.00	F.A.	$60,000.00
24.0106	Offshore Disposal	27479	CY	$7.30	$200,596.70	$13.00	$357,227.00	$16.92	$464,944.68
25.0100	**Precast / Stressed Composite Pile**								
25.0101	Furnish Precast / stressed composite pile	150	LF	$53.00	$7,950.00	$70.00	$10,500.00	$45.00	$6,750.00
25.0102	Install Precast / Stressed composite pile	147	LF	$150.00	$22,050.00	$75.00	$11,025.00	$30.00	$4,410.00
26.0100	**Steel Sheet Pile System, including steel, sheet piles, wales, tie-rods, turnbuckles, miscellaneous connections**								
26.0101	Steel Sheet Pile System	LS	LS	LS	$1,775,000.00	LS	$2,300,000.00	LS	$1,306,472.00
27.0100	**Cast-in-Place Concrete, including formwork, rebars and concrete for the various items requiring cast-in-place concrete.**								
27.0101	Cast-in-place Concrete	LS	LS	LS	$1,950,000.00	LS	$1,580,225.00	LS	$1,779,501.00
27.0102	Concrete curb (19" tall)	460	LF	$40.00	$18,400.00	$15.75	$7,245.00	$22.00	$10,120.00
28.0100	**Miscellaneous Metals, including steel tube sign**								
28.0101	Miscellaneous Metals	LS	LS	LS	$118,000.00	LS	$5,000.00	LS	$12,445.00
29.0100	**Rubber Fender System, including hardware**								
29.0101	Rubber Fender System	LS	LS	LS	$130,000.00	LS	$150,000.00	LS	$168,851.00
29.0102	Used Tire System	LS	LS	LS	$6,500.00	LS	$1,250.00	LS	$2,500.00
30.0100	**Mooring Bitts and Cleats**								
30.0101	Mooring Bitts	10	EA	$4,000.00	$40,000.00	$1,800.00	$18,000.00	$1,250.00	$12,500.00
30.0102	Cleats	8	EA	$1,500.00	$12,000.00	$650.00	$5,200.00	$650.00	$5,200.00
30.0103	Spare Mooring Bitts	3	EA	$1,500.00	$4,500.00	$880.00	$2,640.00	$1,250.00	$3,750.00
30.0104	Spare Cleats	3	EA	$300.00	$900.00	$250.00	$750.00	$650.00	$1,950.00
31.0100	**Protective Coating System**								
31.0101	Protective Coating System	LS	LS	LS	$110,000.00	LS	$250,000.00	LS	$52,413.00
32.0100	**Electrical Work**								
32.0101	Electrical Work	LS	LS	LS	$140,000.00	LS	$135,000.00	LS	$210,372.00
33.0100	**Surcharge**								
33.0101	Furnishing, Hauling & Placement of surcharge material	15000	CY	$1.00	$15,000.00	$11.50	$172,500.00	$17.00	$255,000.00
33.0102	Settlement gauges, including furnishing, installation, monitoring & of settlement	LS	LS	LS	$40,000.00	LS	$5,000.00	LS	$7,500.00
33.0103	Removal of surcharge material	15000	CY	$1.00	$15,000.00	$6.50	$97,500.00	$6.50	$97,500.00
34.0100	**Painting**								
34.0101	Painting	LS	LS	LS	$8,000.00	LS	$6,000.00	LS	$10,000.00
	BASIC BID-SUM OF ALL ITEMS				$6,091,545.70		$6,410,000.00		$5,762,419.18

BID TABULATION FOR THE DOMESTIC COMMERCIAL FISHING VILLAGE, PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR, OAHU, JOB H. C. 1972

BIDS OPENED: October 8, 1998
ENGINEER'S ESTIMATE: $5,762,419.18

				Healy Tibbits Builders, Inc.		Dillingham Construction Pacific, Ltd. dba Hawaiian Dredging Construction Company		Engineer's Estimate	
ITEM NO.	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID
	DEDUCTIVE ALTERNATE NO. 1: Deduct steel sheet pile system including related work items such as: protective coating system, tie rods and turnbuckles, wales, concrete pile cap, and connections (extent as shown on Sheets S-6 and S-7). Deductive work includes dredging, and the following work from gridlines 3 through 11: 8 inch concrete pavement, rubber fender system, moorings, water system, drainage system, and								
21.0100	**Water System**								
21.0101	1-1/4" water line	135	L.F	$23.00	$3,105.00	$5.00	$675.00	$32.00	$4,320.00
21.0102	4" PVC Sleeve	135	L.F	$6.70	$904.50	$14.00	$1,890.00	$2.30	$310.50
21.0104	Water Hatches	3	EA.	$1,025.00	$3,075.00	$500.00 *	$15,000.00	$5,750.00	$17,250.00
23.0100	**Drainage System**								
23.0101	6" Drain line	40	L.F	$40.00	$1,600.00	$6.50	$260.00	$28.00	$1,120.00
23.0102	Trench Drain	157	L.F	$60.00	$9,420.00	$100.00	$15,700.00	$75.00	$11,775.00
23.0103	Drain Pipe trench excavation	8	C.Y.	$20.00	$160.00	$55.00	$440.00	$200.00	$1,600.00
24.0100	**Dredging**								
24.0101	Tests: TPH-Diesel, TPH-Gas w/Btex, TPH-Oil	13	EA.	$370.00	$4,810.00	$735.00	$9,555.00	$250.00	$3,250.00
24.0102	Tests: PAH	13	EA.	$210.00	$2,730.00	$575.00	$7,475.00	$250.00	$3,250.00
24.0103	Tests: TCLP-metals, Metals, PCB's, HVOC's	13	EA.	$370.00	$4,810.00	$800.00	$10,400.00	$250.00	$3,250.00
24.0104	On-land disposal (contaminated material) w/o Remediation	1136	C.Y.	$75.00	$85,200.00	$40.00	$45,440.00	$40.00	$45,440.00
24.0105	On-land disposal (contaminated material) w/ Remediation	1136	C.Y.	F.A. ++	$60,000.00	$52.00	$59,072.00	$67.00	$76,112.00
24.0106	Offshore disposal	8910	C.Y.	$5.00	$44,550.00	$10.00	$89,100.00	$15.00	$133,650.00
26.0100	**Steel sheet pile system, including steel sheet piles, wales, tie rods, turnbuckles, concrete cap, miscellaneous connections, extent as shown on sheets S-6 and S-7**								
26.0101	Steel sheet pile system	L.S.	L.S.	L.S.	$550,000.00	L.S.	$765,000.00	L.S.	$514,122.00
27.0100	**Cast-in-Place Concrete Pavement**								
27.0101	8" thick reinforced concrete pavement from gridlines 3 through 11, as shown on sheet S-6	L.S.	L.S.	L.S.	$70,000.00	L.S.	$42,000.00	L.S.	$120,000.00
29.0100	**Rubber Fender System, including hardware**								
29.0101	Rubber Fender System from gridlines 3 through 11, as shown on Sheet S-6.	L.S.	L.S.	L.S.	$58,000.00	L.S.	$50,000.00	L.S.	$58,000.00
30.0100	**Mooring Bitts and Cleats**								
30.0101	Mooring Bitts	3	EA.	$4,000.00	$12,000.00	$1,500.00	$4,500.00	$1,250.00	$3,750.00
30.0102	Cleats	3	EA.	$1,500.00	$4,500.00	$600.00	$1,800.00	$650.00	$1,950.00
31.0100	**Protective Coating System**								
31.0101	Protective Coating System for steel sheet piles	L.S.	L.S.	L.S.	$26,500.00	L.S.	$80,000.00	L.S.	$15,000.00
32.0100	**Electrical Work**								
32.0102	1-1/4" PVC	555	L.F.	$3.80	$2,109.00	$1.50	$832.50	$6.90	$3,829.50
32.0103	3/4" PVC	555	L.F.	$2.00	$1,110.00	$1.00	$555.00	$4.60	$2,553.00
32.0104	Trench and Backfill	215	L.F.	$20.00	$4,300.00	$16.00	$3,440.00	$11.50	$2,472.50
32.0105	Concrete	16	C.Y.	$150.00	$2,400.00	$135.00	$2,160.00	$80.50	$1,288.00
32.0106	Hatches	3	EA.	$1,000.00	$3,000.00	$1,050.00	$3,150.00	$2,185.00	$6,555.00
	SUM OF DEDUCTIVE ALTERNATE NO.1				$954,283.50		$1,208,444.50		$1,030,847.50

++ Unit Price Bid not specified by Company

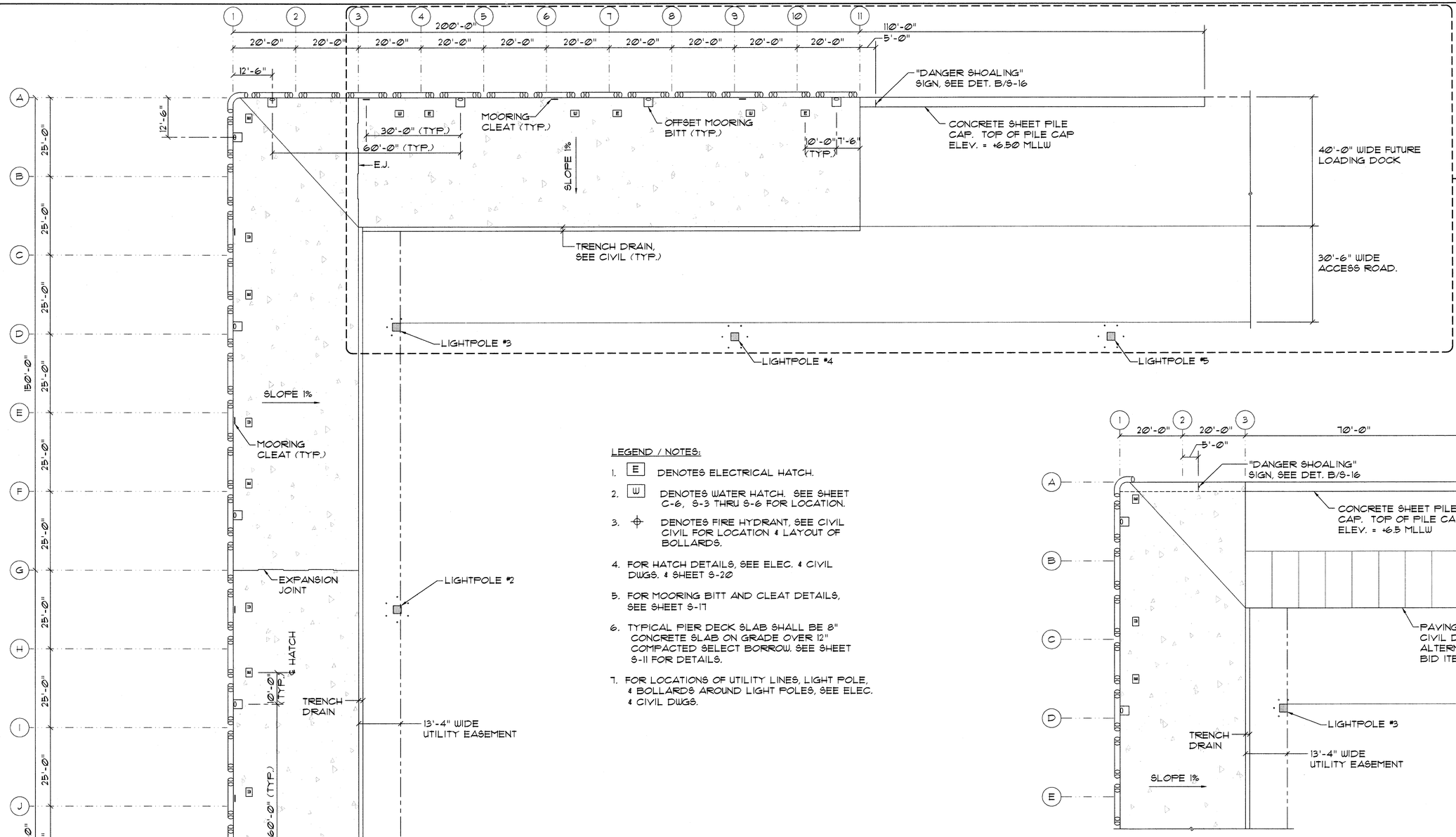
* Incorrect Unit Price Bid

BID TABULATION FOR THE DOMESTIC COMMERCIAL FISHING VILLAGE, PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR, OAHU, JOB H. C. 1972

BIDS OPENED: October 8, 1998
ENGINEER'S ESTIMATE: $5,762,419.18

				Healy Tibbits Builders, Inc.		Dillingham Construction Pacific, Ltd. dba Hawaiian Dredging Construction Company		Engineer's Estimate	
ITEM NO.	DESCRIPTION	APPROX. QUANTITY	UNIT	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID	UNIT PRICE BID	AMOUNT BID
	ADDITIVE ALTERNATE NO. 1A: Add 18 parking stalls, including 2 inch thick asphaltic concrete pavement, prime coat, 6 inch thick aggregate base course, and 12 inch thick aggregate select borrow.								
20.0100	**Aggregate Base Course and Subbase Course**								
20.0101	Asphaltic concrete pavement (2" thick)	306	S.Y.	$12.00	$3,672.00	$11.00	$3,366.00	$8.80	$2,692.80
20.0102	Aggregate base course (6" thick)	306	S.Y.	$20.00	$6,120.00	$10.00	$3,060.00	$16.50	$5,049.00
20.0103	Aggregate base course (12" thick)	306	S.Y.	$26.00	$7,956.00	$13.00	$3,978.00	$22.00	$6,732.00
	SUM OF ADDITIVE ALTERNATE NO.1A				$17,748.00		$10,404.00		$14,473.80

ADJUSTED BID-SUM OF ALL ITEMS			$5,155,010.20		$5,211,959.50		$4,746,045.48
PREFERENCES	In-State Contractor Preference		$5,155,010.20		$5,211,959.50		$4,746,045.48
	Hawaii Products Preference		None		None		None
ADJUSTED BASE BID			$5,155,010.20		$5,211,959.50		$4,746,045.48



LEGEND / NOTES:

1. [E] DENOTES ELECTRICAL HATCH.
2. [W] DENOTES WATER HATCH. SEE SHEET C-6, S-3 THRU S-6 FOR LOCATION.
3. ⊕ DENOTES FIRE HYDRANT, SEE CIVIL CIVIL FOR LOCATION & LAYOUT OF BOLLARDS.
4. FOR HATCH DETAILS, SEE ELEC. & CIVIL DWGS. & SHEET S-20
5. FOR MOORING BITT AND CLEAT DETAILS, SEE SHEET S-17
6. TYPICAL PIER DECK SLAB SHALL BE 8" CONCRETE SLAB ON GRADE OVER 12" COMPACTED SELECT BORROW. SEE SHEET S-11 FOR DETAILS.
7. FOR LOCATIONS OF UTILITY LINES, LIGHT POLE, & BOLLARDS AROUND LIGHT POLES, SEE ELEC. & CIVIL DWGS.

NORTH

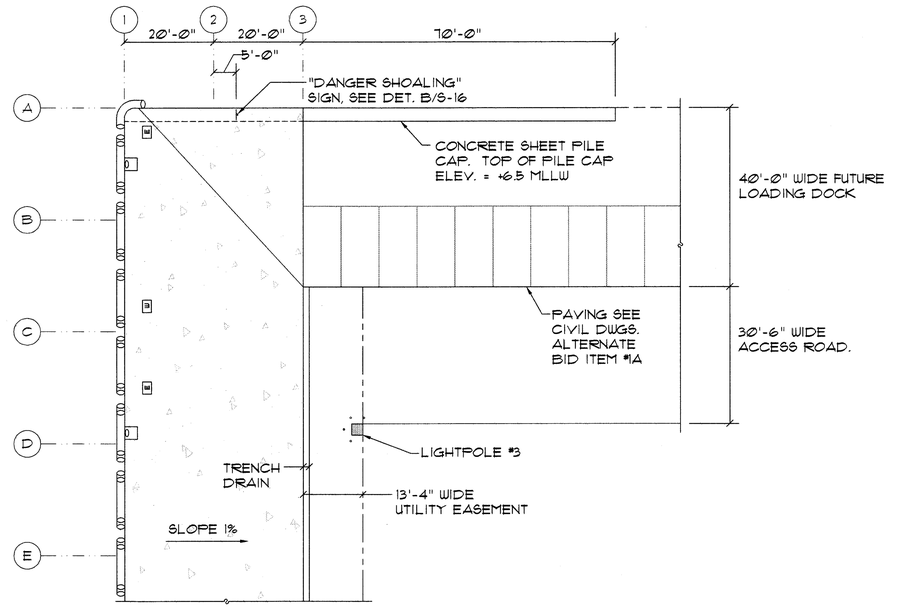
PIER DECK PLAN

SCALE: 1/16" = 1'-0"

GRAPHIC SCALE:

0 8' 16' 32' 48'

SCALE: 1/16" = 1'-0"



A S-2 PIER DECK PLAN - ALTERNATE BID ITEM #1

SCALE: 1/16" = 1'-0"

REV	DATE	DESCRIPTION	BY	APPROVED

SHIGEMURA, LAU, SAKANASHI, HIGUCHI & ASSOC., INC.
CONSULTING STRUCTURAL ENGINEERS
615 PIIKOI STREET, SUITE 205
HONOLULU, HAWAII 96814

BEVERLY K. ISHII-NAKAYAMA LICENSED PROFESSIONAL ENGINEER No. 7159-S HAWAII, U.S.A.

Beverly K. Ishii-Nakayama

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
DOMESTIC COMMERCIAL FISHING VILLAGE PIER IMPROVEMENTS, PIERS 36-38
HONOLULU HARBOR OAHU

SHEET TITLE
PIER DECK PLAN

SUBMITTED BY: _____ SECTION HEAD

RECOMMENDED BY: Frederick S. Nunes ENGINEERING PROGRAM MANAGER

DESIGNED BY:	BIN
DRAWN BY:	MT
CHECKED BY:	HL
DATE:	14 AUG., 1998
SCALE:	AS NOTED

APPROVED BY: _____ HARBORS ADMINISTRATOR

JOB NUMBER H.C. 1972

SHEET S-2

86 OF 62 SHTS.

PLOT DATE: 08/17/98

INDICATIVE CONSTRUCTION COSTS

The data in the chart below represents estimates of current building costs in each respective market. Costs m
as a consequence of factors such as site conditions, climatic conditions, standards of specification, market cor
etc. Values of U.S. locations represent hard construction costs based on U.S. dollars per square foot of gross fl
area, while values of Canadian locations represent hard construction costs based on Canadian dollars per squ

	OFFICES				RETAIL SHOPPING				HOTELS				HOSPITAL		INDUSTRIAL		PARKING				RESIDENTIAL						EDUCATION	
	PRIME		SECONDARY		CENTER		STRIP		5 STAR		3 STAR		GENERAL		WAREHOUSE		GROUND		BASEMENT		MULTI-FAMILY		SINGLE-FAMILY		ELEMENTARY		HIGH SCHOOL	
LOCATION	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
USA																												
Boston	350	550	225	325	200	300	150	240	400	580	275	390	425	675	110	190	85	140	100	160	185	315	260	360	350	475	375	500
Chicago	280	450	175	280	185	290	135	220	400	660	290	410	380	720	110	185	80	125	125	170	165	400	220	420	265	380	300	405
Denver	235	300	165	200	95	150	80	175	300	500	225	325	400	550	90	150	75	100	135	175	115	235	115	450	275	320	300	400
Honolulu	295	540	250	405	215	500	185	440	525	760	330	555	485	775	150	235	105	150	145	270	205	455	290	775	350	485	415	620
Las Vegas	160	295	105	190	115	480	80	145	350	550	150	300	375	475	60	100	50	85	60	150	100	405	100	350	200	315	225	455
Los Angeles	240	360	180	265	160	350	135	195	380	560	285	365	615	930	125	190	105	125	135	195	235	370	205	365	365	480	310	550
New York	400	600	300	400	275	425	175	300	400	600	300	400	500	750	115	200	95	175	125	200	200	375	275	400	425	550	465	600
Phoenix	200	325	140	195	120	200	80	150	350	550	175	250	425	550	60	100	45	70	70	110	100	250	120	450	225	350	275	400
Portland	220	300	165	220	170	270	155	225	320	420	250	350	445	590	110	175	115	150	130	215	175	275	155	325	320	400	350	425
San Francisco	350	550	300	400	290	420	250	360	460	660	400	550	500	750	175	250	140	160	260	300	390	575	275	440	350	430	375	475
Seattle	210	255	145	205	140	310	115	165	275	390	230	260	430	550	100	130	100	120	140	200	165	275	170	290	300	330	390	500
Washington	325	550	225	325	175	300	140	225	400	600	265	390	500	750	120	190	90	130	110	140	200	350	300	400	300	400	325	420
CANADA																												
Calgary	235	295	190	285	220	310	110	160	300	450	190	245	550	720	85	145	75	95	75	120	140	215	125	315	185	260	220	310
Toronto	220	295	200	285	240	295	125	170	420	525	215	280	525	735	90	110	80	115	120	160	200	240	310	395	225	245	245	290

CONSTRUCTION UNEMPLOYMENT - AT A GLANCE

As we witness the effects of the COVID-19 pandemic, Rider Levett Bucknall is working to keep a pulse on the market. As of the release of this publication, construction unemployment rates, provided by the U.S. Bureau of Labor Statistics, have been published through May 2020. In the accompanying chart, a cyclical trend is apparent, where construction unemployment sees a rise during the first few months of a new year, typically as a result of harsh weather conditions during winter months. Over the last decade, the peak of this trend dialed down consistently as each year passed. However, at the onset of the coronavirus, we saw construction unemployment rise to 6.9% during March; a higher rate than expected despite the anticipated cyclical peak. The rate continued to rise in April to 16.6%; the highest rate since March 2012. This dramatic influx of unemployment came as a result of construction job sites shutting down and trades being furloughed or laid off until it became safe to work again. As stay-at-home orders began to lift, more job sites opened back up and the construction unemployment rate reported at 12.7% in May 2020.

We anticipate that construction unemployment will continue to decrease as job sites open back up, though we do not expect that the rate will get as low as it was, pre-pandemic.