



October 20, 2017

Submitted via email:
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Karen Olson
Deputy Director
City of Key West
Port & Marine Services
201 William Street
Key West, FL 33040

**Subject: Key West Bight Marina Pile Assessment
From Dock H1 through Dock A**

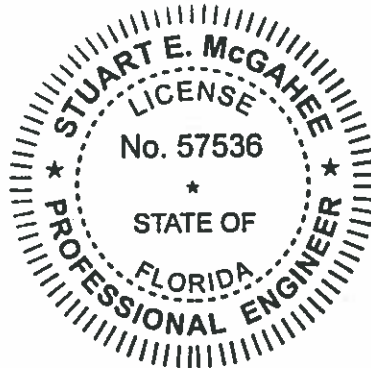
Dear Ms. Olson:

Tetra Tech is pleased to submit this pile assessment report for your review. The report discusses the condition of the piles from in front of the Half Shell Raw Bar restaurant (Dock A) west to the Conch Republic Restaurant (Dock H1) and provides recommendations for repairs and replacements. If you have any questions or need any additional information, please contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Stuart', with the date '10.20.17' written below it.

Stuart E. McGahee PE
Project Engineer
FL PE No. 57536



cc: Doug Bradshaw, Director, Ports & Marine Services
Shauna Stotler-Hardy, Tetra Tech



CITY OF KEY WEST
PORT & MARINE SERVICES

KEY WEST BIGHT MARINA
DOCK AND PIER PILE ASSESSMENT REPORT



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- Appendix A. Key West Bight Marina Deficiency Tables
- Appendix B. Key West Bight Marina Deficiency Figures
- Appendix C. Key West Bight Marina Site Photographs

1.0 EXECUTIVE SUMMARY

From May 31 through June 1, 2017, Tetra Tech, Inc. (Tt) performed a structural assessment of the pilings, cross-members, and hardware of the docks in the Key West Bight Marina, extending from in front of the Half Shell Raw Bar west toward the Conch Republic Restaurant, as shown in Figure 1. The pile assessment was performed for the piles from the water line up, and includes the components that were visible during the inspection. Typical components inspected during the pile assessment include:

- Condition of the pile (typically at the water line)
- Condition of the horizontal cross-members (for dock structural piles)
- Condition of the diagonal cross-members (only where applicable)
- Condition of connection hardware (typically stainless steel or galvanized steel)
- Condition of the pier against the seawall/bulkhead
- Miscellaneous structural components observed during the inspection

The following exhibit is intended to show the full range of the docks inspected during the pile assessment.



Figure 1: Key West Bight Marina Dock Locations with Names

The following is a list of the structures inspected, as shown in Figure 1: Dock A, Dock C, Dock D, Dock E, Dock F, Dock G1, Dock G2, Dock G3, Dock H1, Dock H2, Dock H3, and the Harbor Walk Pier.

The numbering for the piles inspected followed a pre-existing numbering list of piles provided to Tt, and was modified in the field to account for extra piles and structural components found in the field during

the inspection. The types of piles inspected include structural timber piles, mooring piles, fender piles, guide piles, and concrete piles/caps.

The inspection of piles involved an inspector in the water, reporting the condition of the piles, cross-members, and connection hardware, and an inspector on the dock looking at live feed of what the inspector in the water was observing, and taking notes of the condition of each component. The notes taken served as a guide for rating each component observed, and determining what may need to be repaired and/or replaced to allow for the continued safe usage of each dock/pier.

Based on the full assessment of each dock and pier, the major deficiencies are most apparent in the condition of Dock D. Dock D contained the majority of all bad piles due to the rotting of the various piles at the waterline. The condition of these piles presents a danger to the safety of this structure, and should be remedied by the replacement of the affected piles. Of secondary concern is the state of the galvanized steel connection hardware still being utilized throughout much of the marina. The galvanized hardware shows signs of corrosion that may lead to a failure of structural components throughout some of the existing docks.

2.0 INTRODUCTION

The project area is located along the northwestern shore of Key West and lies within Key West Bight. Global Positioning System (GPS) coordinates for the site can be generalized as follows: Latitude 24° 33.691' North, Longitude 81°48.055' West. The purpose of the pile assessment was to determine the condition of the piles (from what is visible above water) in the Key West Bight Marina. The information for the pile assessment was provided by the City of Key West Port and Marine Services division. The names of the structures to be inspected were confirmed with the City of Key West after the inspection was performed, and a general plan view of the marina layout is shown in Figure 1.

3.0 SITE DESCRIPTION

The piling assessment performed consisted of a combination of docks and piers in the Key West Bight Marina. As shown in Figure 1, the following is a list of the structures inspected: Dock A, Dock C, Dock D, Dock E, Dock F, Dock G1, Dock G2, Dock G3, Dock H1, Dock H2, Dock H3, and the Harbor Walk Pier.

Dock A is located in front of the Half Shell Raw Bar restaurant, and is composed of a wood deck supported on timber piles that extends Northwest toward the Key West Bight. From the main deck, there are 8 piers that extend west from the main deck, forming the boat docking spots for this dock. In-between piers there are two mooring piles that divide the two docking spots between piers. The full extent of the inspection for Dock A consisted of 181 piles.

Dock C is located at the end of the concrete pier extending Northwest into the Key West Bight from between the Half Shell Raw Bar restaurant and the Turtle Kraals Restaurant. Dock C consists of a wood pier that wraps along the perimeter of the end of the concrete pier, and is supported by timber piles. Extending out from Dock C is the Fuel Dock, consisting of a wood deck supported by timber piles, with a single steel pile at the end for the “Marathon” fuel sign. The Dock Master’s office is located at the center of Dock C, at the end of the concrete pier. During the time of the piling assessment, the area around the Dock Master’s office was under construction. The full extent of the inspection for Dock C and the Fuel Dock consisted of 87 piles.

Dock D is located adjacent to Dock C/the concrete pier on which the Dock Master’s office is located, and begins in front of the Turtle Kraals restaurant. Dock D consists primarily of a wood pier and a floating dinghy dock supported primarily by timber piles, and is connected to the Key West Turtle Museum. From the dinghy dock, there is a square pier area supported by a combination of timber piles and concrete piles. The full extent of the inspection for Dock D consisted of 145 piles.

Dock E is located in front of the Waterfront Brewery and is composed of a concrete pier topped with a wood deck, followed by a wood pier supported by concrete piles. On the west side of the dock there are timber fender piles, while on the east side of the dock there are mooring piles that work to separate docking spots. The full extent of the inspection for Dock E consisted of 55 timber piles, and 26 pairs of concrete piles.

Dock F is located in front of the Waterfront Market and is composed of a short wood deck supported by three rows of timber piles. The full extent of the inspection for Dock F consisted of 18 piles.

Dock G is located in front of the Schooner Wharf bar area and is composed of three floating docks extending Northwest into Key West Bight supported by timber guide piles. The full extent of the inspection for Dock G consisted of 12 piles.

Dock H is located in front of the Conch Republic restaurant and is composed of three wood piers extending Northeast into Key West Bight supported by timber piles. The full extent of the inspection for Dock H consisted of 28 piles for Dock H1, 21 piles for Dock H2, and 16 piles for Dock H3.

4.0 INSPECTION METHODOLOGY

The inspection of piles involved an inspector in the water, reporting the condition of the piles, cross-members, and connection hardware, and an inspector on the dock looking at live feed of what the inspector in the water was observing, and taking notes of the condition of each component. The notes taken served as a guide for rating each component observed, and determining what may need to be repaired and/or replaced to allow for the continued safe usage of each dock/pier. The condition assessment mainly involved the condition of components below the elevation of the deck to that which

was observable from the waterline. If the piles had noticeable deficiencies above the elevation of the deck, a note was typically made to indicate that the pile's condition should be monitored.

5.0 OBSERVATIONS AND RECOMMENDATIONS

The notes were transferred into a table format that summarizes the condition of each pile, at each dock. The tables are shown in Appendix A. All deficiencies were broken down into color-coded categories to indicate the severity of each deficiency. Deficiencies marked in red indicate a bad condition, which means a component that should be replaced as soon as possible, to prevent failure of the structure/component. Deficiencies marked in orange indicate a poor condition, which means a component that may need to be repaired or replaced before it becomes a hazard. Deficiencies marked in yellow indicate a fair condition and/or an item that should be checked to ensure the component is performing its intended purpose. A final deficiency color shown in the Tables is gray, which indicate a condition that could become problematic in the future.

Based on the condition of each pile, the observations were broken down by component: pile condition, horizontal cross-member condition closest to the pile, horizontal cross-member hardware connected to the pile, diagonal cross-member condition closest to the pile, diagonal cross-member hardware connected to the pile, and miscellaneous. Notes were added where necessary, to show the full description of each component.

The hardware found at each dock consisted of two types of steel: stainless steel bolts/all-threads with nuts and washers, and galvanized steel bolts/all-threads with nuts and washers. In the case of galvanized connections, all bolts/all-threads were found to have either a significant amount of surface corrosion, or heavy corrosion that may indicate that the connection hardware may not perform its function in supporting the structure.

Below is a summary of the condition of each dock and the typical types of deficiencies found at each dock.

5.1 DOCK A

Dock A consisted of timber support piles, both horizontal and diagonal cross-members, and mooring piles. The condition of all the piles was found to be satisfactory (no major deficiencies noted for any of the piles). As shown in Figure 2 and Figure 3, however, there were various cross-member hardware that were galvanized steel and showed signs of minor to heavy corrosion. The galvanized corroded hardware was mainly contained to the horizontal cross-member connections, along with a few observed on the diagonal cross-members. Figure 4 shows the view of a typical component with galvanized corroded hardware. At least 149 connection points had the corroded galvanized hardware, making the number of bolts/all-threads that would need to be replaced approximately 298. Refer to Table 1 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

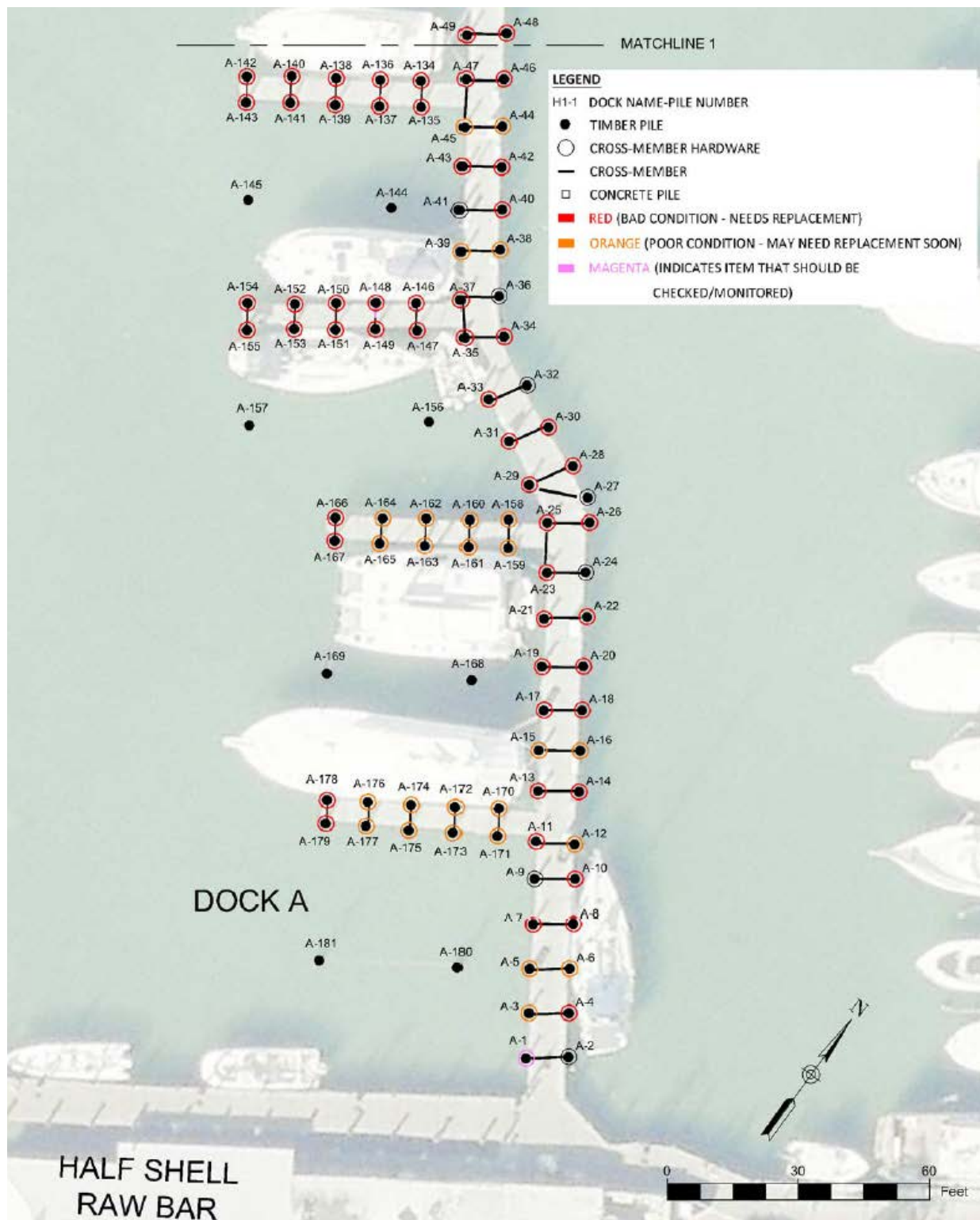


Figure 2: Dock A Plan View with Deficiencies

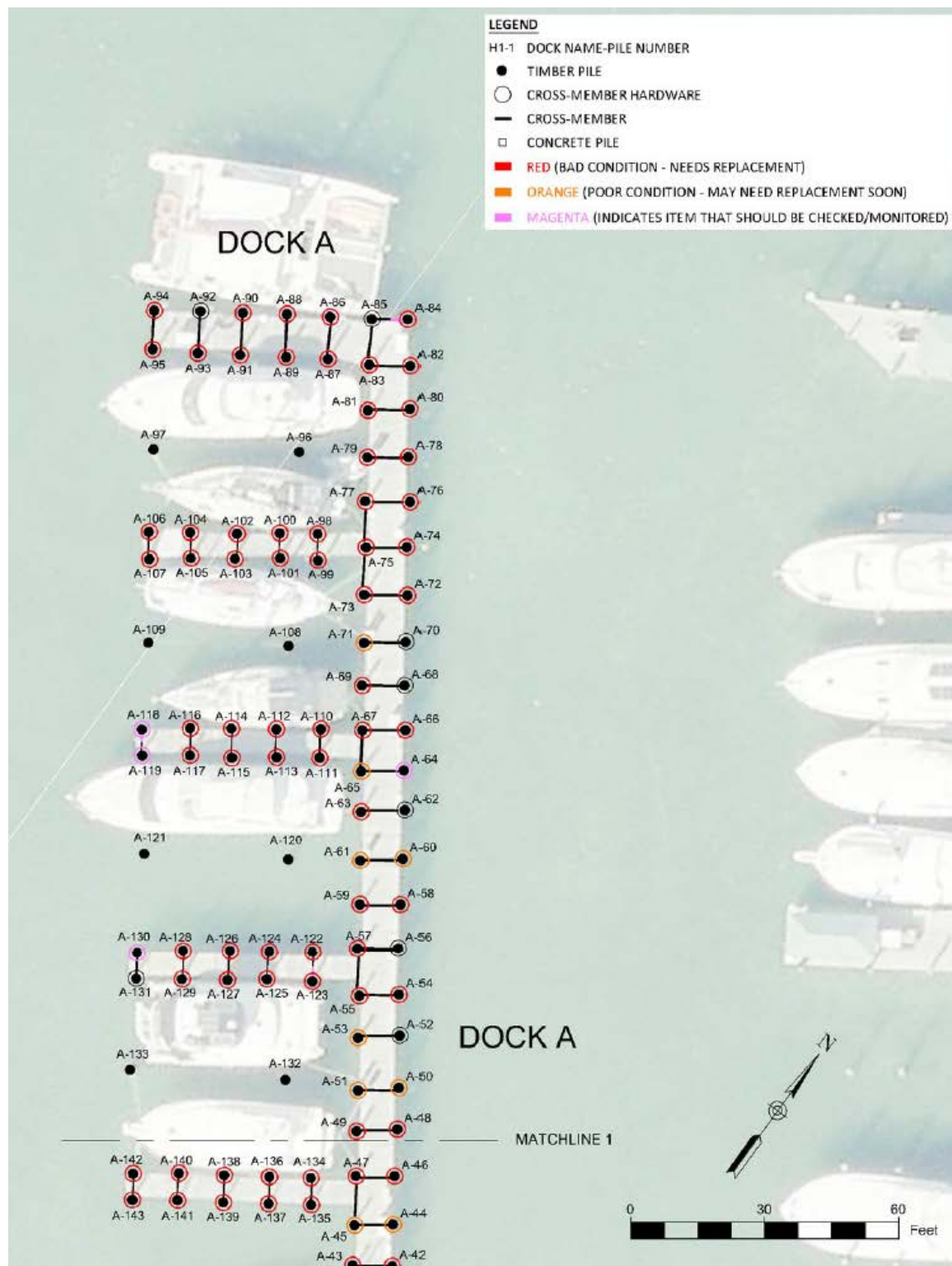


Figure 3: Dock A Plan View with Deficiencies (continued)



Figure 4: Pile A-123 with Corroding Galvanized Bolt Connections

Table 1: Dock A Deficiency Summary

Dock A		
Component	Condition	Piles
Pile Condition		A-5, A-7, A-145
Horizontal Member		A-84, A-123, A-148
H-Hardware		A-4, 7, 8, 10, 11, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 28, 29, 30, 31, 33, 34, 35, 37, 40, 42, 43, 46, 47, 48, 49, 54, 55, 57, 58, 59, 63, 66, 67, 69, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 86, 87, 88, 89, 90, 91, 93, 94, 95, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 110, 111, 112, 113, 114, 115, 116, 117, 122, 123, 124, 125, 126, 127, 128, 129, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 166, 167, 178, 179
		A-3, 5, 6, 12, 15, 16, 38, 39, 44, 45, 50, 51, 53, 60, 61, 65, 71, 158, 159, 160, 161, 162, 163, 164, 165, 170, 171, 172, 173, 174, 175, 176, 177
		A-1, A-25
Diagonal Member		A-118
D-Hardware		A-21, 22, 25, 26, 42, 43,
		A-64, A-118, A-119, A-130, A-166, A-178, A-179
		A-131

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

Table 2: Dock A Replacement Components List

	Component	Size	Qty	Location/Note (if needed)
Dock A	12" DIA Pile	-	0	
	3x8 Horizontal Timber	7'	2	@ A-123,148
	3x8 Horizontal Timber	10'	1	@ A-84
	26" SS All-thread bolt	1/2" D	331	x32 at horizontal for piers + x1 add'l missing bolt
	SS Nut and Washer	1/2" D	669	x7 add'l missing nut/washer

5.2 DOCK C AND FUEL DOCK

The piles for Dock C and the Fuel Dock were labeled as “M” during the inspection, as a dock name had not yet been determined. As can be seen from Figure 5, the main source of deficiencies on Dock C consist of the galvanized corroded hardware on the pile cross-members. Pile M-49 was in bad condition, just north of the Dock Master’s office. Along the Fuel Dock, there were various piles with abandoned man-made holes from cleats that have since been relocated, and there did not appear to be any major damage to the piles. There were some horizontal cross-members on the Fuel Dock that did show signs of damage (splitting/cracking, possible boat impact damage), an example of which is shown in Figure 6. At least 40 connection points had the corroded galvanized hardware, making the number of bolts/all-threads that would need to be replaced approximately 80. Refer to Table 3 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 3: Dock C and Fuel Dock Deficiency Summary

Dock C and Fuel Dock		
Component	Condition	Piles
Pile Condition		M-49
		M-1
Horizontal Member		M-10, M-29, M-43, M-44, M-51,
H-Hardware		M-2, 3, 3(2), 4, 4(2), 5, 5(2), 6, 6(2), 7, 7(2), 8, 8(2), 9, 9(2), 10, 10(2), 11, 12, 12(2), 13, 14, 14(2), 15, 15(2), 52, 52(2), 53, 53(2), 55(2), 56(2), 57(2), 58, 58(2), 62
		M-1, 54, 54(2)
		M-13(2)
Miscellaneous		M-61, M-62

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

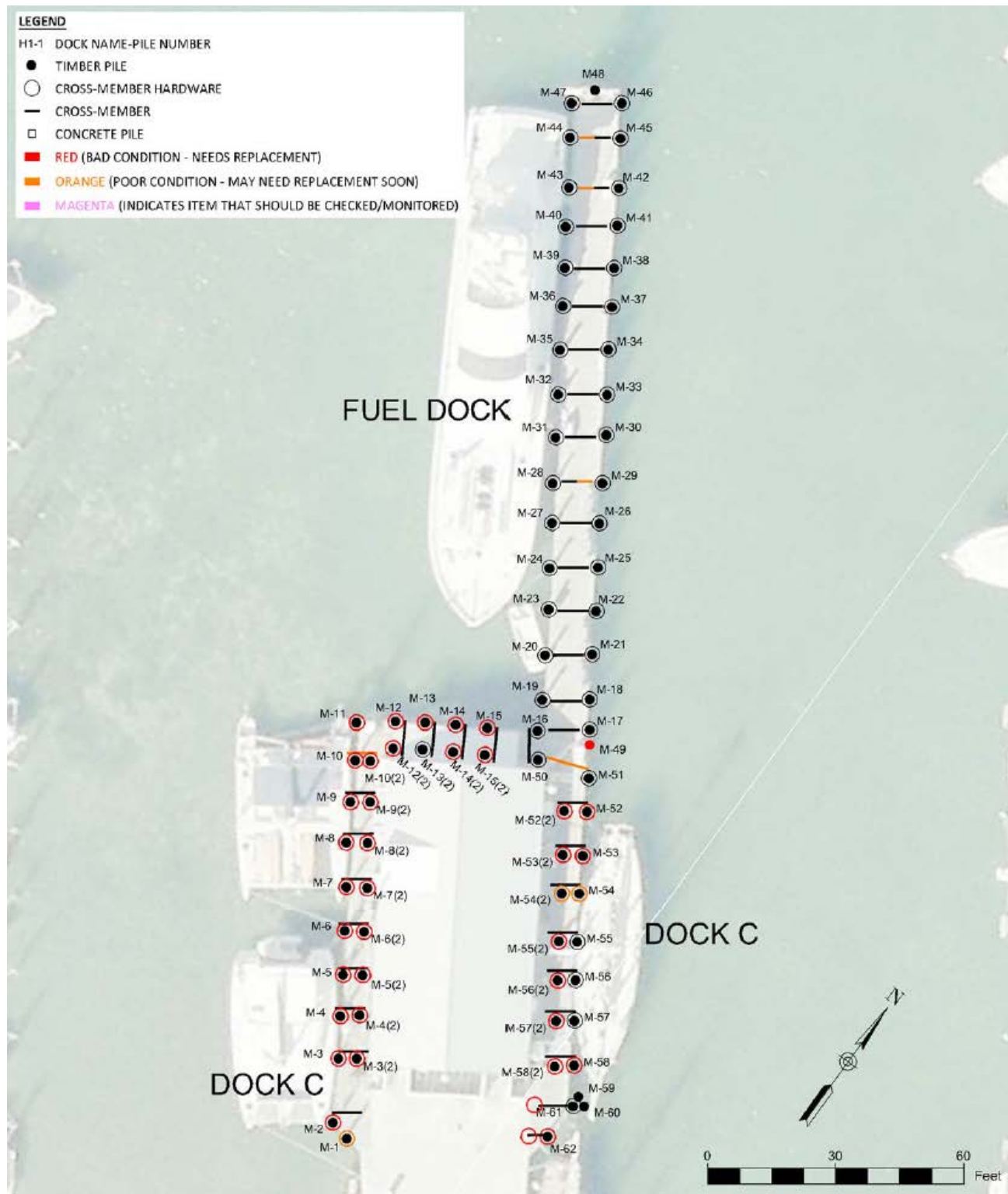


Figure 5: Dock C and Fuel Dock with Deficiencies



Figure 6: Pile M-29 Showing Cracked Horizontal Cross-Member

Table 4: Dock C and Fuel Dock Replacement Components List

	Component	Size	Qty	Location/Note (if needed)
Dock C + Fuel Dock	12" DIA Pile	-	1	@ M-49
	3x8 Horizontal Timber	8'	1	@ M-10
	3x8 Horizontal Timber	12'	4	@ M-29,43,44,51
	26" SS All-thread bolt	1/2" D	78	
	SS Nut and Washer	1/2" D	156	

5.3 DOCK D

Dock D presented the most issues out of all of the docks, as can be seen in Figure 7 and Figure 8, as well as in the Table in Appendix A. Major rot/wear of approximately 30-80% section loss in the tidal zone was observed on at least 40 of the piles that support the dock, and an additional 24 piles were showing signs of rot/wear significant enough to be of concern (approximately 10-30% section loss in the tidal zone). Figure 9 and Figure 10 show examples of the type of degradation observed on the piles. At least 40 connection points had the corroded galvanized hardware, making the number of bolts/all-threads that would need to be replaced approximately 80. Refer to Table 5 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 5: Dock D Deficiency Summary

Dock D		
Component	Condition	Piles
Pile Condition		D-19, 20, 21, 22, 23, 25, 29, 35, 39, 40, 41, 43, 44, 51, 53, 58, 61, 64, 67, 68, 70, 72, 73, 75, 77, 80, 82, 84, 86, 88, 89, 91, 92, 101, 105, 109, 115, 117, 119, 120, 137
		D-6, 9, 24, 32, 34, 37, 42, 49, 50, 52, 59, 78, 90, 94, 99, 102, 104, 108, 111, 112, 113, 114, 116, 121
		D-138
		D-2, 54, 55, 60, 63, 66, 71, 74, 76, 81, 83, 87, 96, 97, 100, 106
Horizontal Member		D-8, D-10
		D-5, D-6
H-Hardware		D-5, 6, 9, 15, 107, 109, 121, 121BH, 138
		D-4, 7, 8, 10, 11, 12, 13, 14, 62, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136
		D-19, D-49, D-56, D-80
		DC-1, DC-2, DC-3, DC-4, DC-5, DC-6
Diagonal Member		D-22, D-23, D-101
		D-29, D-31, D-44
D-Hardware		D-29, D-31, D-33, D-70, 72, 75, 78, 82, 85, 88
		D-16

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

Table 6: Dock D Replacement Components List

Dock D	Component	Size	Qty	Location/Note (if needed)
	12" DIA Pile	-	65	(see map)
	3x8 Horizontal Timber	11'	2	@ D-8,10
	3x8 Diagonal Timber	13'	6	@ D-22,23,29,31,44,101
	26" SS All-thread bolt	1/2" D	80	
	SS Nut and Washer	1/2" D	161	x1 add'l missing nut

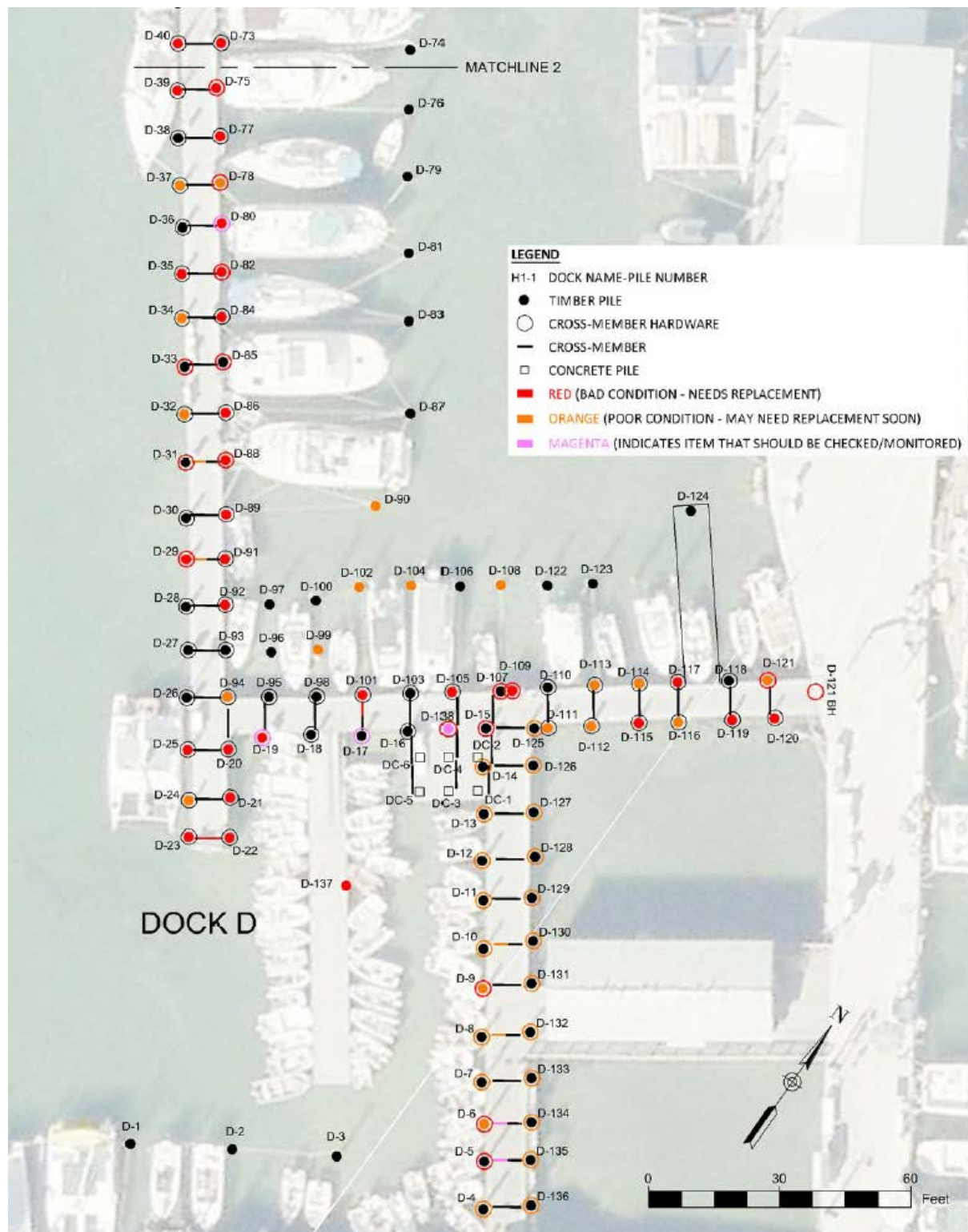


Figure 7: Dock D with Deficiencies

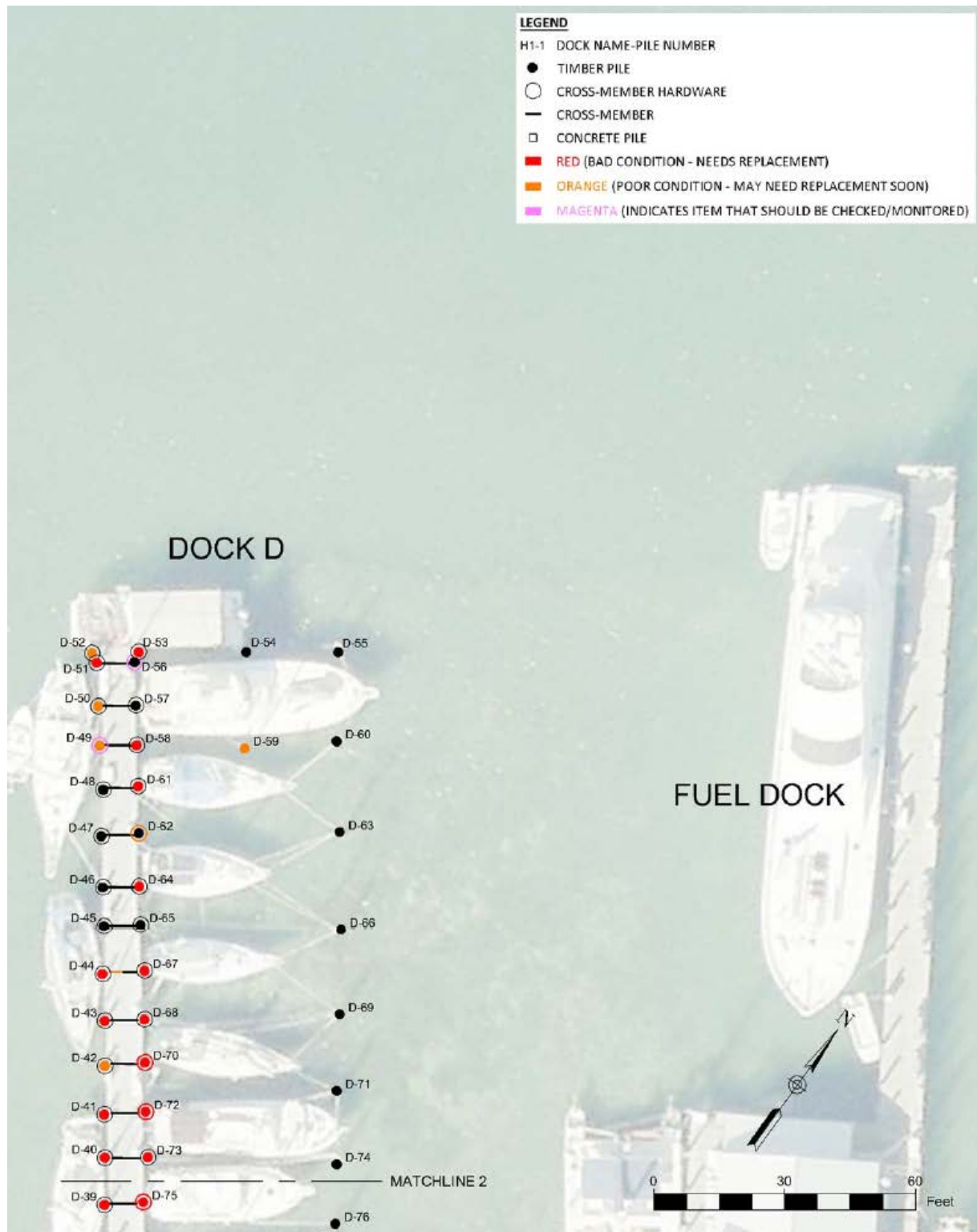


Figure 8: Dock D with Deficiencies (continued)



Figure 9: Pile D-39 Showing Rot at Waterline



Figure 10: Pile D-73 Showing Heavy Rot at Waterline

5.4 DOCK E

The condition of Dock E is different from the other docks as the timber piles on this dock are mainly fender piles. The configuration of the supports for Dock E is shown in Figure 11, where the supports for the dock are concrete piles all the way until the end, at which point there are two timber piles supporting the dock. The major deficiencies for Dock E consisted mainly of worn fender/mooring piles, of which there were 10 that might be of concern (minor to moderate shaving of the pile with up to 3" diameter loss from wear). At the end of the dock, there were also two timber piles with galvanized hardware connections with surface corrosion on the horizontal cross-member. As for the concrete supports, the first 6 supports are actually for a concrete pier topped with wood decking, after which the dock transitions into a wood pier with concrete piles. Most of the concrete caps on the concrete pier showed signs of horizontal cracking (1/16" to 1/8" thick) or damage (spalling/chipping, with no exposed metal), as shown in Figure 12, which should be monitored for future signs of wear/deterioration. Along the wood pier with concrete piles, all of the horizontal cross-members were attached to the piles by corroding galvanized bolts/all-threads. At least 40 connection points (4 per every concrete pile pair) had the corroded galvanized hardware, making the number of bolts/all-threads that would need to be replaced approximately 80. Refer to Table 7 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 7: Dock E Deficiency Summary

Dock E		
Component	Condition	Piles
Pile Condition		E-4, 10, 12, 13, 38, 45, 46, 51, 52, 53
		E-50
		E-3, E-5, E-6, E-7, E-9, E-11
Concrete Caps		EC-1, EC-2, EC-3, EC-4, EC-5, EC-6
Horizontal Member		EC-8, EC-9
H-Hardware		EC-7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26
		E-30, E-31
D-Hardware		EC-7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future



Figure 12: Pile Pair and Cap EC-3 Showing Crack and Spall on Face

Table 8: Dock E Replacement Components List

Dock E	Component	Size	Qty	Location/Note (if needed)
	10" DIA Pile	-	10	@ E-4,10,12,13,38,45,46,51,52,53
	3x8 Horizontal Timber	10'	3	@ EC-8, EC-9x2
	3x8 Diagonal Timber	12'	0	
	26" SS All-thread bolt	1/2" D	44	
	SS Nut and Washer	1/2" D	88	

5.5 DOCK F

Dock F is a small wide dock, as shown in Figure 13. The only deficiencies noted on this dock were horizontal/diagonal cracking on the horizontal timber member at the end of the dock, as shown in Figure 15, and bent stainless steel hardware connections on pile F-18. Items of note also include that the piles showed signs of splitting/wear along the top. Refer to Table 9 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 9: Dock F Deficiency Summary

Dock F		
Component	Condition	Piles
Pile Condition		F-11
		F-1, F-9, F-12
Horizontal Member		F-6, F-18
H-Hardware		F-6, F-18

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

Table 10: Dock F Replacement Components List

	Component	Size	Qty	Location/Note (if needed)
Dock F	12" DIA Pile	-	1	@ F-11
	3x8 Horizontal Timber	15'	1	@ F-18
	26" SS All-thread bolt	1/2" D	2	
	SS Nut and Washer	1/2" D	4	

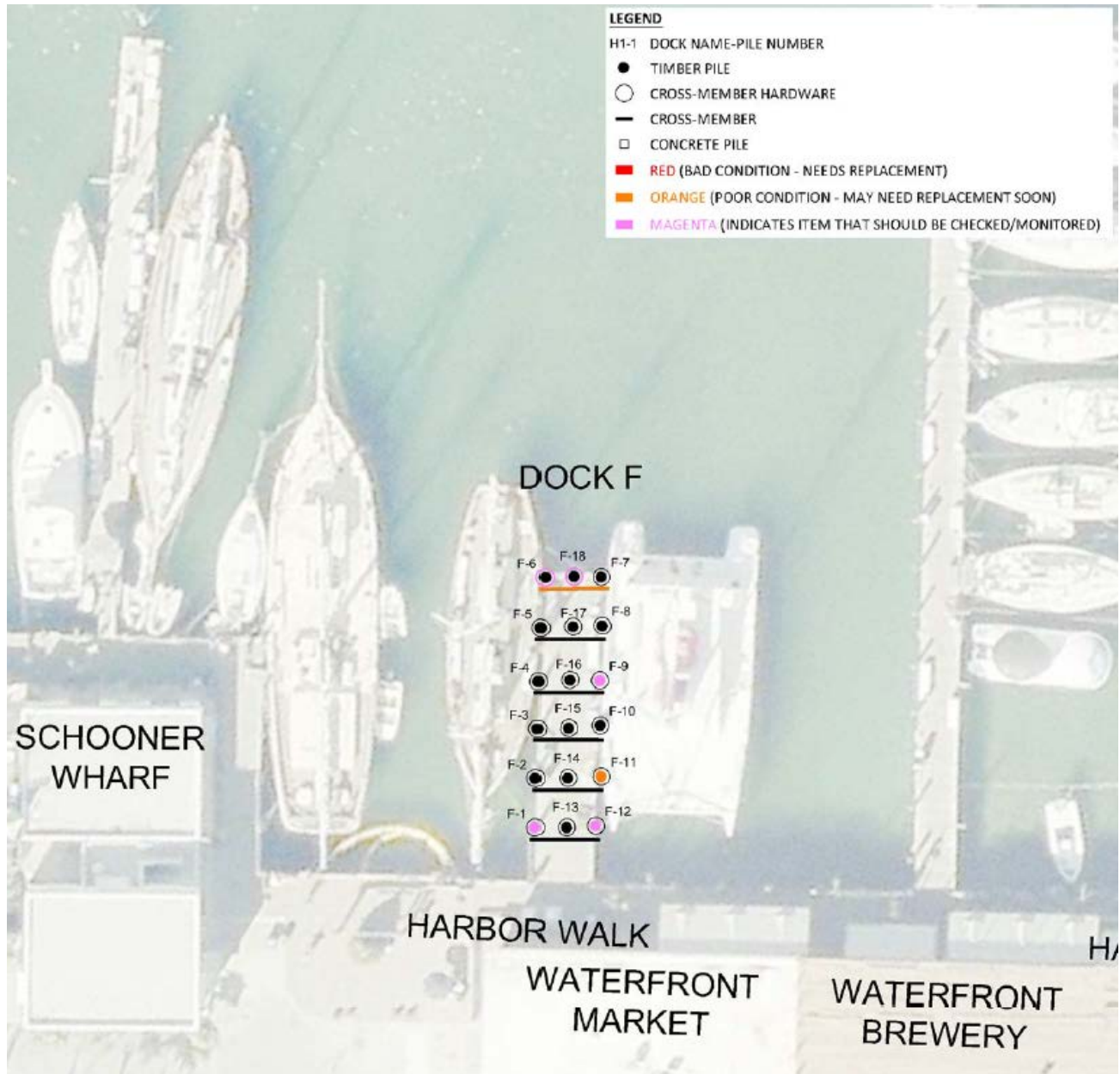


Figure 13: Dock F with Deficiencies

5.6 DOCK G

Dock G consists of 3 floating docks, G1, G2, and G3, each of a larger size than the previous, as shown in Figure 14. The support components for these docks are timber guide piles, a dolphin at the end of Dock G3, and 2 mooring piles, all of which appeared to be in good condition. No deficiencies noted. Refer to Appendix A for the condition of all components inspected.

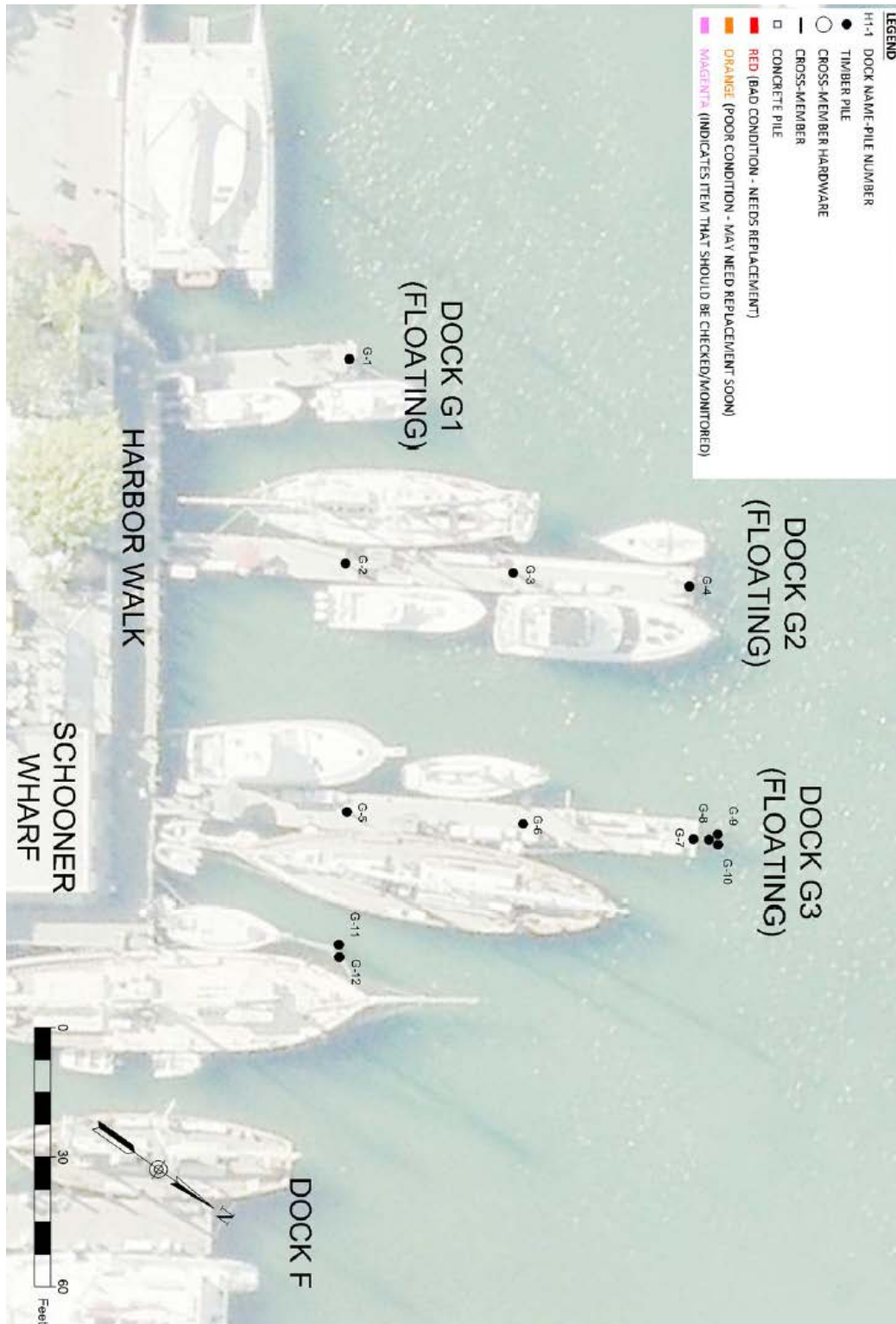


Figure 14: Dock G with Deficiencies



Figure 15: Pile F-18 Showing Cracking Horizontal Member and Bent Hardware

5.7 DOCK H

Dock H consists of 3 fixed pier wood docks, H1, H2, and H3, as shown in Figure 16. The timber support piles on all three of these docks appeared to be in good condition, however, Dock H1 had some rotting cross-member boards (noted at piles H1-4, H1-10, H1-17, H1-25, and H1-27). The connection hardware on Dock H1 was in good condition and appeared to be stainless steel. On Dock H2, all of the connection hardware for the horizontal members was galvanized, and has moderate to severe corrosion with metal loss. On Dock H3, approximately 60% of connections are stainless steel and 40% are galvanized bolts/all-threads, and some horizontal cross-members showed signs of damage (decay, splitting, cracking). The galvanized hardware has moderate to severe corrosion and metal loss. Stainless steel hardware is in good condition. Overall, 6 diagonal cross-members were showing signs of rotting at the ends, and at least 26 connection points had the corroded galvanized hardware, as well as at the bulkheads (each with approximately 6 bolts), making the number of bolts/all-threads that would need to be replaced approximately 70. Refer to Table 11 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 11: Dock H Deficiency Summary

Dock H		
Component	Condition	Piles
Pile Condition		H1-9, H1-10 ; H2-7, H2-11, H2-12 ; H3-6
		H1-8, H1-21, H1-25
Horizontal Member		H2-3 ; H3-3, H3-8
		H2-10 ; H3-6
H-Hardware		H1-BH ; H2-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 ; H3-4, 5, 6, 11, 12, 13
		H2-BH ; H3-BH
		H1-2, H1-15, H1-16, H1-27
Diagonal Member		H1-4, 10, 17, 25, 27 ; H2-8 ; H3-8
D-Hardware		H1-4, H1-6
		H1-14

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

Table 12: Dock H Replacement Components List

Dock H1	Component	Size	Qty	Location/Note (if needed)
	12" DIA Pile	-	0	
	3x8 Horizontal Timber	10'	0	
	3x8 Diagonal Timber	12'	5	@ H1-4,10,17,25,27
	26" SS All-thread bolt	1/2" D	6	x6 at Bulkhead
	SS Nut and Washer	1/2" D	13	x1 add'l missing nut

Dock H2	Component	Size	Qty	Location/Note (if needed)
	12" DIA Pile	-	0	
	3x8 Horizontal Timber	10'	1	@ H2-3
	3x8 Diagonal Timber	12'	1	@ H2-8
	26" SS All-thread bolt	1/2" D	48	x6 at Bulkhead
	SS Nut and Washer	1/2" D	96	

Dock H3	Component	Size	Qty	Location/Note (if needed)
	12" DIA Pile	-	0	
	3x8 Horizontal Timber	10'	2	@ H3-3,8
	3x8 Diagonal Timber	12'	1	@ H3-8
	26" SS All-thread bolt	1/2" D	18	x6 at Bulkhead
	SS Nut and Washer	1/2" D	30	

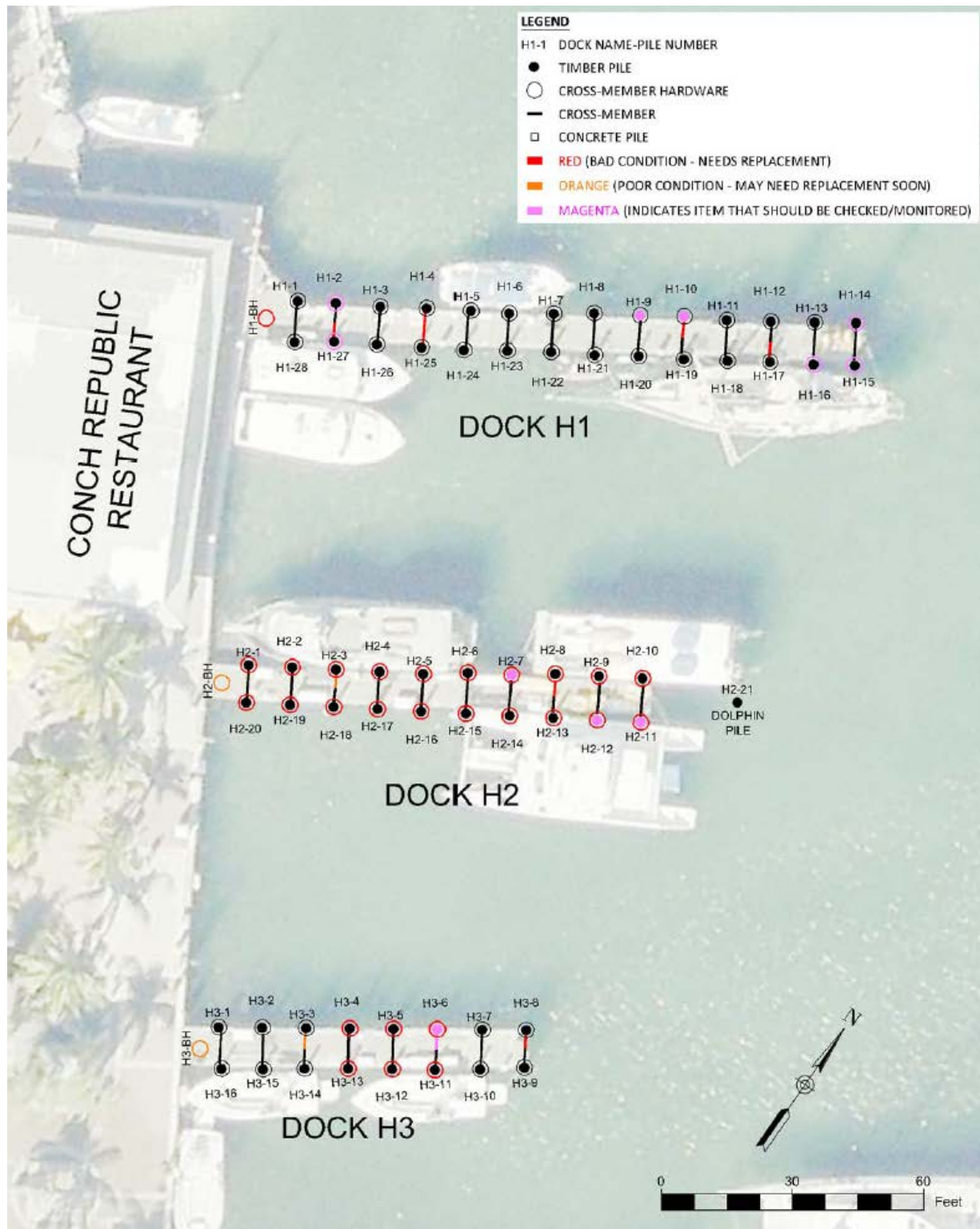


Figure 16: Dock H with Deficiencies

5.8 HARBOR WALK PIER

The Harbor Walk Pier was defined as the frontage pier lining the seawall from the Schooner Wharf Bar to the Half Shell Raw Bar. The extent of the piles inspected for this section is shown in Figure 17 through Figure 19. The condition of piles along the pier were noted to be in fairly good condition, with the exception of piles L-50 (decay and over 80% section loss at the tidal zone) and L-53 (shaved with 1-1/2" of section loss). Overall most of the cross-members and hardware connections were also in good condition, however along part of the seawall (in front of the Waterfront Market, piles L-37 to L-44) there were connections that still utilized galvanized hardware that was corroding. A similar situation occurs with the 2 piles (L-98 and L-99) connecting to the Half Shell Raw Bar overhang, both of which had galvanized and corroding hardware, and also on pile L-55 (at the start of Dock D). Piles L-31, L-42, L-51, and L-59 had missing or loose hardware. Additionally, the knee braces that support the Turtle Kraals walkway were inspected, and the diagonal supports on members TK-6 and TK-7 were observed to be disconnected from the Refer to Table 13 below for the summary of Harbor Walk deficiencies and to Appendix A for the condition descriptions of all components inspected.

Table 13: Harbor Walk Pier Deficiency Summary

Harbor Walk		
Component	Condition	Piles
Pile Condition		L-50
		L-53
		L-1, L-4, L-12, L-66
		L-3, L-13, L-28, L-36
Horizontal Member		L-69, L-73
H-Hardware		L-98, L-99
		L-55
		L-1, L-31, L-42, L-51, L-59, L-92
		L-56
Miscellaneous		L-3, L-37, 38, 39, 40, 41, 42, 43, 44

Color	Condition Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

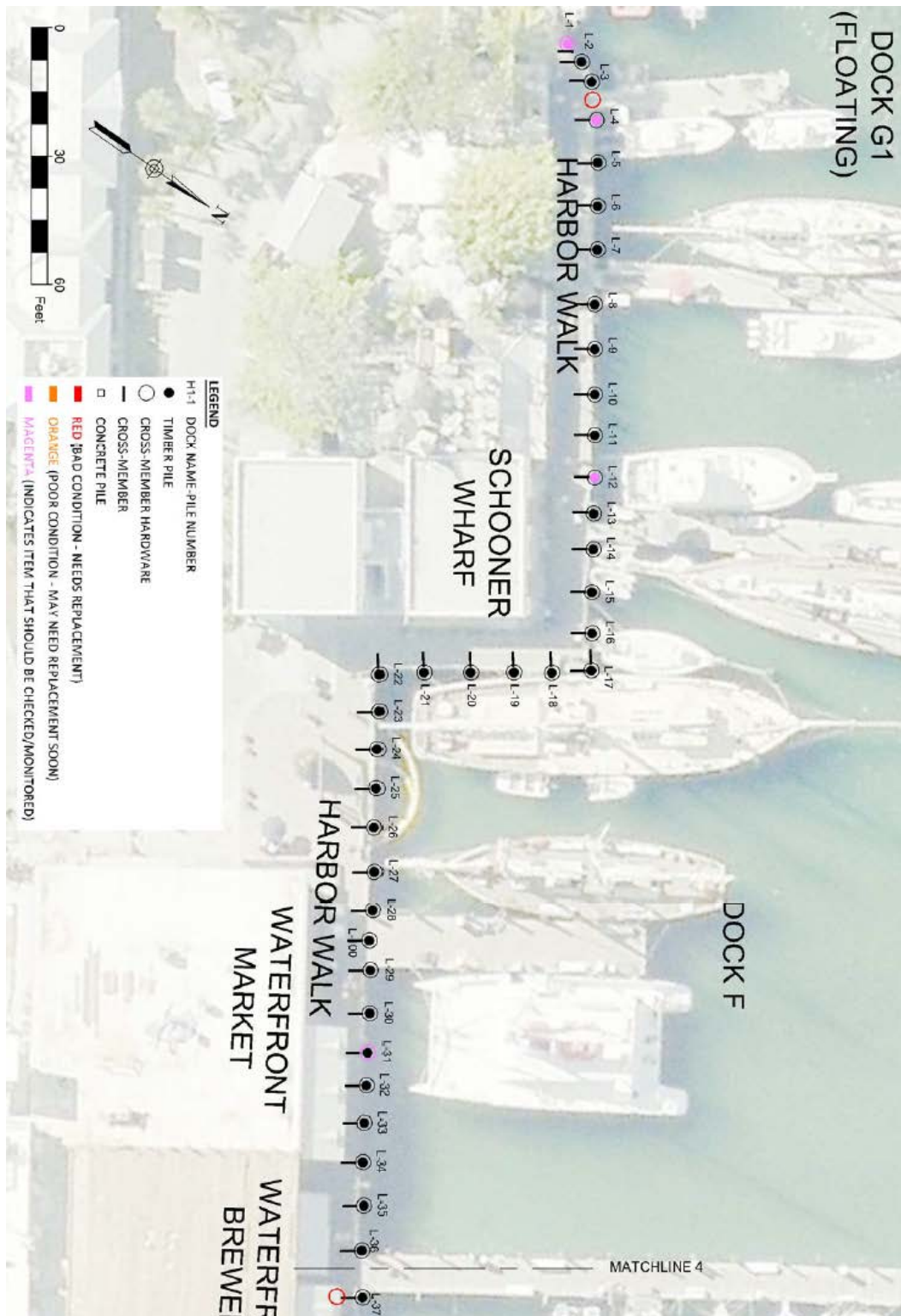


Figure 17: Harbor Walk Pier with Deficiencies

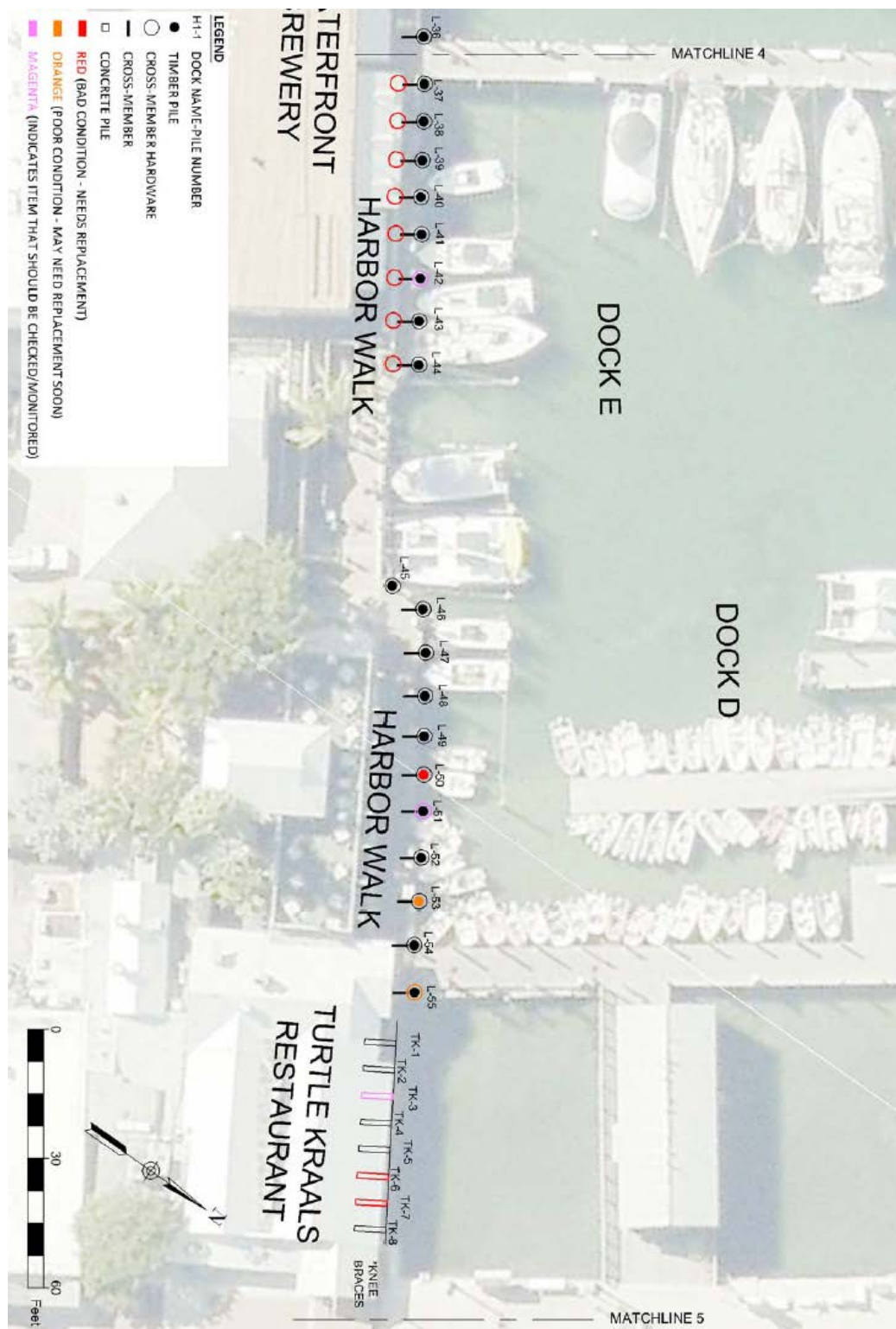


Figure 18: Harbor Walk Pier with Deficiencies (continued-1)



Figure 19: Harbor Walk Pier with Deficiencies (continued -2)

Table 14: Harbor Walk Replacement Components List

	Component	Size	Qty	Location/Note (if needed)
Harbor Walk (Pier L)	12" DIA Pile	-	2	@ L-50,53
	3x8 Horizontal Timber	-	0	
	26" SS All-thread bolt	1/2" D	7	@ L-31,55,98,99
	SS Nut and Washer	1/2" D	19	x5 add'l missing nut/washer

6.0 CONCLUSION

Based on the visual inspection, we recommend that all piles that were noted as being in “bad” condition be replaced, especially with regard to the various piles that make up the structural support for Dock D. Changing of connection hardware from galvanized to stainless steel should also be considered for most of the docks that still have these components. This work should be scheduled as soon as practical.

For items in “poor” condition, although there may not be an immediate danger of failure of the components or the overall structure, the components should be scheduled to be repaired and/or replaced in the near future. For all other items “noted” in the inspection report, whether it involves missing hardware or early signs of splitting on piles, an effort should be made to monitor and remedy each situation on an as needed basis, as full replacement is likely not needed.

APPENDIX A

DOCK A												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
A-1	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	x1 SS nut missing
A-2	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
A-3	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-4	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-5	OK	"S"	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-6	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-7	OK	"S"	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-8	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-9	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-10	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-11	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-12	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-13	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-14	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-15	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-16	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-17	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-18	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-19	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-20	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-21	OK	-	OK	-	GA CO	-	OK	-	GA CO	Note	-	Only top diagonal at this pile is GA
A-22	OK	-	OK	-	GA CO	-	OK	-	GA CO	Note	-	Only bottom diagonal at this pile is GA
A-23	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-24	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-25	OK	-	OK	-	SS OK	Note	OK	-	GA CO	Note	-	Horizontal member for pier, all hardware GA CO; Only top diagonal at this pile is GA
A-26	OK	-	OK	-	SS OK	-	OK	-	GA CO	Note	-	Only bottom diagonal at this pile is GA
A-27	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
A-28	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-29	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-30	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-31	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-32	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-33	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-34	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-35	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-36	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-37	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-38	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-39	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-40	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-41	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-42	OK	-	OK	-	GA CO	-	OK	-	GA CO	Note	-	Only top diagonal at this pile is GA
A-43	OK	-	OK	-	GA CO	-	OK	-	GA CO	Note	-	Only bottom diagonal at this pile is GA
A-44	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-45	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	Horizontal member for pier, all hardware GA CO
A-46	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-47	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-48	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-49	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-50	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-51	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-52	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-53	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-54	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-55	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-56	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-57	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-58	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-59	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-60	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-61	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-62	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-63	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-64	OK	-	OK	-	SS OK	-	OK	-	SS OK	Note	-	x1 Diagonal member hardware missing
A-65	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-66	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-67	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-68	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-69	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-70	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-71	OK	-	OK	-	GA SC	-	OK	-	SS OK	-	-	
A-72	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-73	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	

DOCK A												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
A-74	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-75	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-76	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-77	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	Horizontal member for pier, all hardware GA CO
A-78	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-79	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-80	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-81	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-82	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-83	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-84	OK	-	OK	Note	GA CO	-	OK	-	SS OK	-	-	Horizontal member broken at top (hardware not supporting)
A-85	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-86	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-87	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-88	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-89	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-90	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-91	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-92	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
A-93	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-94	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-95	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-96	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-97	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-98	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-99	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-100	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-101	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-102	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-103	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-104	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-105	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-106	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-107	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-108	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-109	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-110	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-111	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-112	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-113	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-114	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-115	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-116	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-117	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-118	OK	-	OK	-	SS OK	-	OK	Note	SS OK	Note	-	Edge of Diagonal member broken; Diagonal hardware not all the way through
A-119	OK	-	OK	-	SS OK	-	OK	-	SS OK	Note	-	Diagonal hardware not all the way through
A-120	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-121	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-122	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-123	OK	-	OK	Note	GA CO	-	NA	-	NA	-	-	Bottom corner of horizontal broken near hardware
A-124	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-125	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-126	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-127	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-128	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-129	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-130	OK	-	OK	-	SS OK	-	OK	-	SS OK	Note	-	x1 missing nut/washer
A-131	OK	-	OK	-	SS OK	-	OK	-	SS OK	"I"	-	
A-132	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-133	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-134	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-135	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-136	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-137	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-138	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-139	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-140	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-141	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-142	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-143	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-144	OK	-	NA	-	NA	-	NA	-	NA	-	-	

DOCK A												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
A-145	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
A-146	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-147	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-148	OK	-	OK	Note	GA CO	-	NA	-	NA	-	-	Corner of horizontal member broken
A-149	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-150	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-151	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-152	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-153	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
A-154	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-155	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-156	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-157	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-158	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-159	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-160	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-161	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-162	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-163	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-164	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-165	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-166	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	Diagonal hardware not all the way through
A-167	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
A-168	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-169	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-170	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-171	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-172	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-173	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-174	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-175	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-176	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-177	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
A-178	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	Diagonal hardware not all the way through
A-179	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	Diagonal hardware not all the way through
A-180	OK	-	NA	-	NA	-	NA	-	NA	-	-	
A-181	OK	-	NA	-	NA	-	NA	-	NA	-	-	

Abbreviations: SS = Stainless Steel, GA = Galvanized, CO = Corroded, SC = Surface Corrosion, "s" = Shaved, "r" = Rust Staining/Surface Corrosion, BH = Bulkhead

Color	Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

DOCK C + FUEL DOCK												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
M-1	OK	"s"	OK	-	GA SC	Note	NA	-	NA	-	-	x1 Missing hardware
M-2	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-3	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-3 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-4	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-4 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-5	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-5 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-6	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-6 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-7	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-7 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-8	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-8 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-9	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-9 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-10	OK	-	Poor	Note	GA CO	-	NA	-	NA	-	-	Horizontal rotting at bottom connection
M-10 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-11	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-12	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-12 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-13	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-13 (2)	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
M-14	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-14 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-15	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-15 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-16	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-17	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-18	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-19	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-20	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-21	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-22	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-23	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-24	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-25	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-26	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-27	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-28	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-29	OK	-	Poor	Note	SS OK	-	NA	-	NA	-	-	Horizontal cracked
M-30	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-31	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-32	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-33	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-34	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-35	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-36	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-37	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-38	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-39	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-40	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-41	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-42	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
M-43	OK	-	Poor	Note	SS OK	-	OK	-	SS OK	-	-	Horizontal splitting between hardware
M-44	OK	-	Poor	Note	SS OK	-	NA	-	NA	-	-	Horizontal split at corner
M-45	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-46	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-47	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-48	OK	-	NA	-	NA	-	NA	-	NA	-	-	Steel pile "Marathon" sign
M-49	Rot	Note	NA	-	NA	-	NA	-	NA	-	-	Pile heavily rot, and although not connected to deck, it has a board connected overhead to Dock Master's office
M-50	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	The exact configuration around this pile was not fully determined at time of inspection (there may have been an additional pile near here)
M-51	OK	-	Poor	Note	SS OK	-	NA	-	NA	-	-	Horizontal rotting at edge
M-52	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-52 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-53	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-53 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-54	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
M-54 (2)	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
M-55	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	

DOCK C + FUEL DOCK												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
M-55 (2)	OK	-	OK	-	GA CO	Note	NA	-	NA	-	-	Nuts almost completely gone
M-56	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-56 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-57	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
M-57 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-58	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-58 (2)	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
M-59	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-60	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-61	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	Connection at Bulkhead has x2 GA CO connections
M-62	OK	-	OK	-	GA CO	-	NA	-	NA	-	GA CO	Connection at Bulkhead has x2 GA CO connections
M-63	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-64	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-65	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-66	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-67	OK	-	NA	-	NA	-	NA	-	NA	-	-	
M-68	OK	-	NA	-	NA	-	NA	-	NA	-	-	
Abbreviations: SS = Stainless Steel, GA = Galvanized, CO = Corroded, SC = Surface Corrosion, "s" = Shaved, "r" = Rust Staining/Surface Corrosion, BH = Bulkhead												

Color	Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

DOCK D												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
D-1	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-2	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved
D-3	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-4	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-5	OK	-	OK	Note	GA CO	-	NA	-	NA	-	-	A second board was nailed on but has become disconnected
D-6	Poor	Note	OK	Note	GA CO	-	NA	-	NA	-	-	Pile shaved approximately 1-1/2"/rotting; Second board nailed
D-7	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-8	OK	-	Poor	Note	GA SC	-	NA	-	NA	-	-	Horizontal member splitting at edge
D-9	Poor	"s"	OK	-	GA CO	-	NA	-	NA	-	-	Pile shaved approximately 1-1/2"
D-10	OK	-	Poor	Note	GA SC	-	NA	-	NA	-	-	Horizontal member splitting
D-11	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-12	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-13	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-14	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-15	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
D-16	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-17	OK	-	OK	-	SS OK	-	OK	-	SS OK	Note	-	SS hardware missing nut/washer
D-18	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-19	Rot	Note	OK	-	SS OK	Note	OK	-	SS OK	-	-	Pile rotting at waterline; SS hardware loose
D-20	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile rotting at waterline
D-21	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-22	Rot	Note	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Pile rotting at waterline; Diagonal member bottom rotting
D-23	Rot	Note	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Pile heavily rotting at waterline and splitting at top; Diagonal member bottom rotting
D-24	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-25	Rot	Note	OK	-	SS OK	-	OK	-	OK	-	-	Pile heavily rotting at waterline
D-26	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-27	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-28	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-29	Rot	Note	OK	-	SS OK	-	Poor	Note	CO	Note	-	Pile heavily rotting at waterline; Diagonal bottom rotting; Hardware in water corroded
D-30	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-31	OK	-	OK	-	SS OK	-	Poor	Note	CO	Note	-	Diagonal member bottom rotting; Hardware in water corroded
D-32	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline; top of pile splitting
D-33	OK	-	OK	-	SS OK	-	OK	-	CO	Note	-	Hardware in water corroded
D-34	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-35	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile rotting at waterline
D-36	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-37	Poor	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile starting to rot at waterline
D-38	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-39	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline
D-40	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-41	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline
D-42	Poor	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile starting to rot at waterline
D-43	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile rotting at waterline
D-44	Rot	Note	OK	-	SS OK	-	Poor	Note	SS OK	-	-	Pile heavily rotting at waterline; Diagonal member bottom rotting
D-45	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-46	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-47	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-48	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-49	Poor	"s"	OK	-	SS OK	Note	NA	-	NA	-	-	Pile shaved approximately 2-1/2"; x1 SS hardware nut/washer missing to boardwalk
D-50	Poor	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile starting to rot at waterline
D-51	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-52	Poor	Note	NA	-	NA	-	NA	-	NA	-	-	Pile starting to rot at waterline/top of pile badly split
D-53	Rot	Note	NA	-	NA	-	NA	-	NA	-	-	Pile heavily rotting at waterline/top of pile badly split
D-54	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-55	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-56	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	x2 additional GA hardware corroded
D-57	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-58	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-59	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 1" (thin pile)
D-60	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-61	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline
D-62	OK	-	OK	-	GA SC	Note	NA	-	NA	-	-	x1 SS OK, x1 GA hardware does not go through
D-63	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	

DOCK D												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
D-64	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline
D-65	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-66	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-67	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline
D-68	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile heavily rotting at waterline; top of pile splitting
D-69	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-70	Rot	Note	OK	-	SS OK	-	OK	-	CO	Note	-	Pile rotting at waterline; Hardware is corroded or missing
D-71	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-72	Rot	Note	OK	-	SS OK	-	OK	-	GA CO	-	-	Pile rotting at waterline
D-73	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-74	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-75	Rot	Note	OK	-	SS OK	-	OK	-	GA CO	-	-	Pile rotting at waterline
D-76	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-77	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-78	Poor	Note	OK	-	SS OK	-	OK	-	GA CO	-	-	Pile starting to rot at waterline
D-79	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-80	Rot	Note	OK	-	SS OK	Note	NA	-	NA	-	-	Pile rotting; SS hardware loose
D-81	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-82	Rot	Note	OK	-	SS OK	-	OK	-	GA CO	-	-	Pile heavily rotting at waterline
D-83	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-84	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting all around
D-85	OK	-	OK	-	SS OK	-	OK	-	GA CO	-	-	
D-86	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-87	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-88	Rot	Note	OK	-	SS OK	-	OK	-	GA CO	-	-	Pile rotting at waterline
D-89	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline/top of pile splitting
D-90	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 1-1/2"
D-91	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile almost completely deteriorated
D-92	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-93	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-94	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-95	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-96	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-97	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-98	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-99	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 2"
D-100	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-101	Rot	Note	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Pile heavily rotting at waterline; Diagonal member bottom rotting
D-102	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 1-1/2"
D-103	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
D-104	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 2"
D-105	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-106	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
D-107	OK	-	OK	-	GA CO	Note	NA	-	NA	-	-	x1 GA hardware missing nut/washer
D-108	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved approximately 2-1/2" (thin pile)
D-109	Rot	Note	OK	-	GA CO	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-110	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-111	Poor	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile starting to rot at waterline
D-112	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline; top of pile splitting
D-113	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-114	Poor	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile starting to rot at waterline
D-115	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile rotting at waterline; top of pile splitting
D-116	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-117	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile rotting at waterline
D-118	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
D-119	Rot	Note	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile rotting at waterline
D-120	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Pile heavily rotting at waterline
D-121	Poor	Note	OK	-	GA CO	-	NA	-	NA	-	-	Pile starting to rot at waterline
D-121 BH	NA	-	OK	-	GA CO	-	NA	-	NA	-	-	
D-122	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-123	OK	-	NA	-	NA	-	NA	-	NA	-	-	
D-124	OK	-	NA	-	NA	-	NA	-	NA	-	-	Floating Dock
D-125	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-126	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-127	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-128	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-129	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-130	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-131	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	

DOCK D												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
D-132	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-133	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-134	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-135	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-136	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
D-137	Heavily Worn		NA	-	NA	-	NA	-	NA	-	-	Floating Dock
D-138	OK	Note	OK	-	GA CO	-	NA	-	NA	-	-	Pile appears to have been repaired previously
DC-1	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
DC-2	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
DC-3	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
DC-4	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
DC-5	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
DC-6	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	

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55												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
E-1	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-2	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-3	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile shaved from boats (typical)
E-4	Poor	Note	NA	-	NA	-	NA	-	NA	-	-	Pile splitting at top and water level
E-5	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
E-6	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
E-7	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
E-8	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-9	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
E-10	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 3/4" loss
E-11	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	
E-12	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 1" loss
E-13	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 1" loss
E-14	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-15	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-16	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-17	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-18	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-19	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-20	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-21	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-22	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-23	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-24	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-25	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-26	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-27	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-28	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-29	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-30	OK	-	OK	-	GA SC	Note	NA	-	NA	-	-	GA hardware surface corrosion
E-31	OK	-	OK	-	GA SC	Note	NA	-	NA	-	-	GA hardware surface corrosion
E-32	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-33	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-34	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-35	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-36	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-37	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-38	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved, approximately 1-1/2" loss above water line
E-39	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-40	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-41	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-42	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-43	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-44	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-45	Poor	Note	NA	-	NA	-	NA	-	NA	-	-	Top of pile damaged/loose/splitting
E-46	Poor	Note	NA	-	NA	-	NA	-	NA	-	-	Pile is thin with heavy ware above water line
E-47	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-48	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-49	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-50	OK	Note	NA	-	NA	-	NA	-	NA	-	-	Some loss, but pile has been wrap-repaired
E-51	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 1-1/2" loss
E-52	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 1-1/2" loss
E-53	Poor	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile heavily shaved approximately 2" loss
E-54	OK	-	NA	-	NA	-	NA	-	NA	-	-	
E-55	OK	-	NA	-	NA	-	NA	-	NA	-	-	
EC-1	Concrete piles appear in good condition, concrete cap shows horizontal cracking (~1/8") and spalling.											-
EC-2	Concrete piles in good condition. Horizontal cracking on face of cap.											-
EC-3	Concrete piles in good condition. Horizontal cracking (~1/8") on the cap. Corner of cap damaged.											-
EC-4	Concrete piles in good condition. Cracking/possible large spall on cap.											-
EC-5	Concrete piles in good condition. Long horizontal crack on face of cap (~1/16").											-
EC-6	Concrete piles in good condition. Multiple cracks on face of cap.											-
EC-7	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-8	OK	-	OK	Note	GA CO	-	OK	-	SS OK	Note	-	Horizontal member broken at end; SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-9	OK	-	OK	Note	GA CO	-	OK	-	SS OK	Note	-	Horizontal member appears to have been repaired previously; SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-10	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion

55												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
EC-11	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-12	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-13	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-14	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-15	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-16	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-17	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-18	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-19	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-20	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-21	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-22	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-23	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-24	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-25	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion
EC-26	OK	-	OK	-	GA CO	-	OK	-	SS OK	Note	-	SS hardware at the bottom in contact with concrete shows signs of surface corrosion

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Color	Description
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DOCK F												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
F-1	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile splitting/wearing
F-2	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-3	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-4	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-5	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-6	OK	-	Poor	Note	SS OK	Note	NA	-	NA	-	-	Horizontal member broken at corner; hardware was covered, but appeared OK
F-7	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-8	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-9	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile splitting
F-10	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-11	Poor	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile heavy splitting/breakage
F-12	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile splitting
F-13	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-14	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-15	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-16	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-17	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
F-18	OK	-	Poor	Note	SS OK	Note	NA	-	NA	-	-	Horizontal member broken at center; SS hardware bent

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DOCK G												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
G-1	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile slightly shaved
G-2	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-3	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-4	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-5	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-6	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-7	OK	"s"	NA	-	NA	-	NA	-	NA	-	-	Pile slightly shaved
G-8	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-9	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-10	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-11	OK	-	NA	-	NA	-	NA	-	NA	-	-	
G-12	OK	-	NA	-	NA	-	NA	-	NA	-	-	

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DOCK H												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
H1-BH	NA	-	OK	-	GA CO	-	NA	-	NA	-	-	x6 bolts - GA CO
H1-1	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-2	OK	-	OK	-	SS OK	Note	OK	-	SS OK	-	-	Hardware not through fully on horizontal member
H1-3	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-4	OK	-	OK	-	SS OK	-	Rot	Note	SS OK	"r"	-	Diagonal portion in water is rotted; Some rust staining on SS
H1-5	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-6	OK	-	OK	-	SS OK	-	OK	-	SS OK	"r"	-	Some rust staining on SS
H1-7	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-8	OK	"s"	OK	-	SS OK	-	OK	-	SS OK	-	-	Top of pile shaved
H1-9	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile splitting
H1-10	OK	Note	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Top of pile splitting; Slight rot on bottom diagonal member
H1-11	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-12	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H1-13	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-14	OK	-	OK	-	SS OK	-	OK	-	SS OK	Note	-	SS hardware loose
H1-15	OK	-	OK	-	SS OK	Note	OK	-	SS OK	-	-	SS hardware loose
H1-16	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	Loose nut
H1-17	OK	-	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Bottom of diagonal rotting
H1-18	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-19	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H1-20	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-21	OK	"s"	OK	-	SS OK	-	OK	-	SS OK	-	-	Pile slightly shaved
H1-22	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-23	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H1-24	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-25	OK	"s"	OK	-	SS OK	-	Rot	Note	SS OK	-	-	Pile slightly shaved; Bottom of diagonal rotting
H1-26	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
H1-27	OK	-	OK	-	SS OK	Note	Rot	Note	SS OK	-	-	Missing x1 SS hardware on horizontal; Bottom of diagonal rotting
H1-28	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
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	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
H2-BH	NA	-	OK	-	GA SC	-	NA	-	NA	-	-	
H2-1	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-2	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H2-3	OK	-	Poor	Note	GA CO	-	NA	-	NA	-	-	Horizontal member is splitting
H2-4	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H2-5	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-6	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H2-7	OK	Note	OK	-	GA CO	-	NA	-	NA	-	-	Top of pile starting to split
H2-8	OK	-	OK	-	GA CO	-	Rot	Note	SS OK	-	-	Bottom of diagonal rotting
H2-9	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-10	OK	-	OK	Note	GA CO	-	OK	-	SS OK	-	-	Horizontal member has a broken corner
H2-11	OK	Note	OK	-	GA CO	-	OK	-	SS OK	-	-	Top of pile splitting
H2-12	OK	Note	OK	-	GA CO	-	NA	-	NA	-	-	Top of pile warping
H2-13	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H2-14	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-15	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	GA hardware missing nut/washer
H2-16	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-17	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	GA hardware heavy corrosion
H2-18	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-19	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H2-20	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
H2-21	OK	-	NA	-	NA	-	NA	-	NA	-	-	
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	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
H3-BH	NA	-	OK	-	GA SC	-	NA	-	NA	-	-	
H3-1	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-2	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-3	OK	-	Poor	Note	SS OK	-	OK	-	SS OK	-	-	Horizontal member broken past bolt
H3-4	OK	-	OK	-	GA CO	Note	OK	-	SS OK	-	-	GA hardware missing nut
H3-5	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H3-6	OK	Note	OK	Note	GA CO	Note	OK	-	SS OK	-	-	Top of pile splitting/shaved; Horizontal member corner split; GA hardware missing bolt
H3-7	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-8	OK	-	Poor	Note	SS OK	-	Rot	Note	SS OK	-	-	Horizontal member bottom is broken; Diagonal member rotting
H3-9	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-10	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-11	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	

DOCK H												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
H3-12	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H3-13	OK	-	OK	-	GA CO	-	OK	-	SS OK	-	-	
H3-14	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-15	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	
H3-16	OK	-	OK	-	SS OK	-	OK	-	SS OK	-	-	

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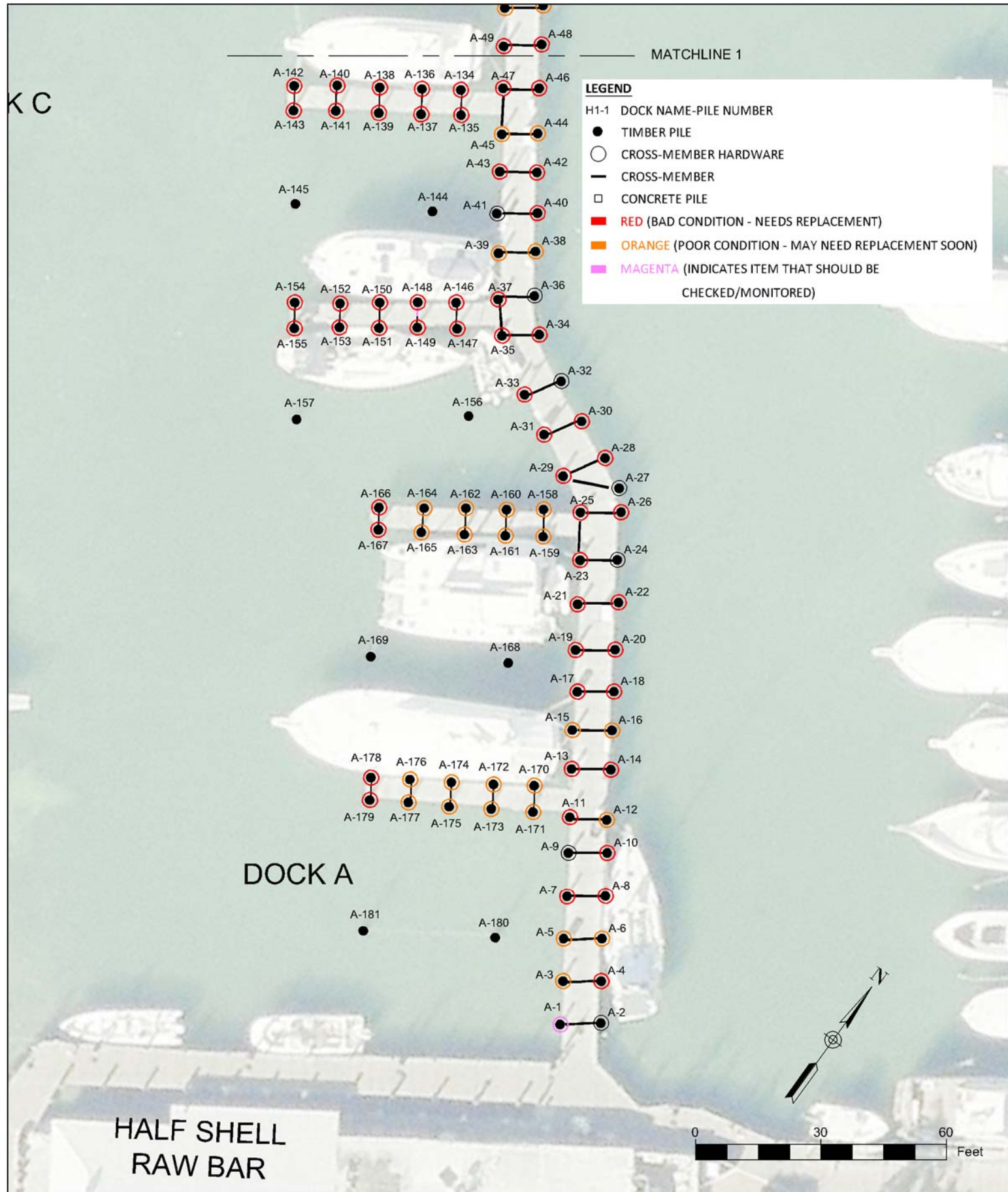
HARBOR WALK												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
L-1	OK	Note	OK	-	SS OK	Note	NA	-	NA	-	-	Pile badly shaved; x5 SS bolts at pile (typical L-1 to L-22)
L-2	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Bulkhead has SS hardware in good condition (typical L-2 to L-24)
L-3	OK	"s"	OK	-	SS OK	-	NA	-	NA	-	GA CO	Extra non-structural horizontal beam with GA CO hardware
L-4	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile cracking and shaved at waterline
L-5	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-6	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-7	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-8	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-9	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-10	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-11	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-12	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Two piles: broken cut-off pile with usual hardware to horizontal, and new pile attached to bulkhead
L-13	OK	"s"	OK	-	SS OK	-	NA	-	NA	-	-	
L-14	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-15	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-16	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-17	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Corner pile with additional horizontal member
L-18	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-19	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-20	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-21	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-22	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Corner pile with additional horizontal member
L-23	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-24	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-25	OK	-	NA	-	NA	-	NA	-	NA	-	-	Only hardware is x2 SS bolts to walkway
L-26	OK	-	NA	-	NA	-	NA	-	NA	-	-	Only hardware is x2 SS bolts to walkway
L-27	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-28	OK	"s"	OK	-	SS OK	-	NA	-	NA	-	-	Dock F corner
L-29	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Dock F corner
L-30	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Bulkhead SS hardware x5 to concrete (typical L-30 to L-36)
L-31	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	x1 nut missing at top; Missing x1 SS hardware to boardwalk
L-32	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Missing SS hardware to boardwalk
L-33	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-34	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-35	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-36	OK	"s"	OK	-	SS OK	-	NA	-	NA	-	-	Dock E corner
L-37	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	Dock E corner; Bulkhead connection changes to combination x2 SS and x1 GA CO hardware (typical L-37 to L-44)
L-38	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-39	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-40	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-41	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-42	OK	-	OK	-	SS OK	Note	NA	-	NA	-	GA CO	SS hardware missing nut/washer, also loose components
L-43	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-44	OK	-	OK	-	SS OK	-	NA	-	NA	-	GA CO	
L-45	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	Bulkhead connection changes to SS, some with rust staining (typical L-45 to L-54)
L-46	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-47	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-48	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-49	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-50	Rot	Note	OK	-	SS OK	-	NA	-	NA	-	-	Large void/heavy rot at waterline (approx. 5% of pile left)
L-51	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	Missing x2 SS nuts/washers on one side
L-52	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-53	Poor	"s"	OK	-	SS OK	-	NA	-	NA	-	-	Pile shaved approximately 1-1/2"
L-54	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-55	OK	-	OK	-	GA SC	-	NA	-	NA	-	-	
L-56	OK	-	OK	-	SS OK	"r"	NA	-	NA	-	-	
L-57	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-58	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-59	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	SS hardware not coming out from one side, and loose
L-60	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-61	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	

HARBOR WALK												
	Pile Condition		Horizontal Member		H-Hardware		Diagonal Member		D-Hardware		Misc.	Notes
L-62	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-63	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-64	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-65	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-66	OK	Note	OK	-	SS OK	-	NA	-	NA	-	-	Top of pile is splitting/rotting
L-67	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-68	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-69	OK	-	OK	Note	SS OK	-	NA	-	NA	-	-	Horizontal member splitting slightly
L-70	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-71	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-71 (2)	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-72	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-72 (2)	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-73	OK	-	OK	Note	SS OK	-	NA	-	NA	-	-	Horizontal member has been repaired (spliced)
L-73 (2)	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-74	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-75	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-76	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-77	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-78	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-79	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-80	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-81	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-82	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-83	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-84	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-85	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-86	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-87	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-88	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-89	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-90	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-91	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-92	OK	-	OK	-	SS OK	Note	NA	-	NA	-	-	x1 SS bolt installed outside of horizontal
L-93	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-94	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-95	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-96	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-97	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	
L-98	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
L-99	OK	-	OK	-	GA CO	-	NA	-	NA	-	-	
L-100	OK	-	OK	-	SS OK	-	NA	-	NA	-	-	

Abbreviations: SS = Stainless Steel, GA = Galvanized, CO = Corroded, SC = Surface Corrosion, "s" = Shaved, "r" = Rust Staining/Surface Corrosion, BH = Bulkhead

Color	Description
	"Bad" Condition - Needs Replacement
	"Poor" Condition - May Need Replacement in the Future
	"Noted" - Indicates Item that Should be Checked/Monitored
	Indicates Item Could Become Problematic in the Future

APPENDIX B



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK A PLAN VIEW

KEY WEST, MONROE COUNTY, FLORIDA



TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 314
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION
NO. 2429

Designed by:	---
Drawn By:	F. MARTINEZ
Checked By:	---
Reviewed By:	---
Design file no:	KW PILE INSPECTION V2.DWG
Scale:	AS SHOWN

Sheet Reference:
G-002
Sheet 2 of 13

H1-1 DOCK NAME-PILE NUMBER

● **TIMBER PILE**

CROSS-MEMBER HARDWARE

— CROSS-MEMBER

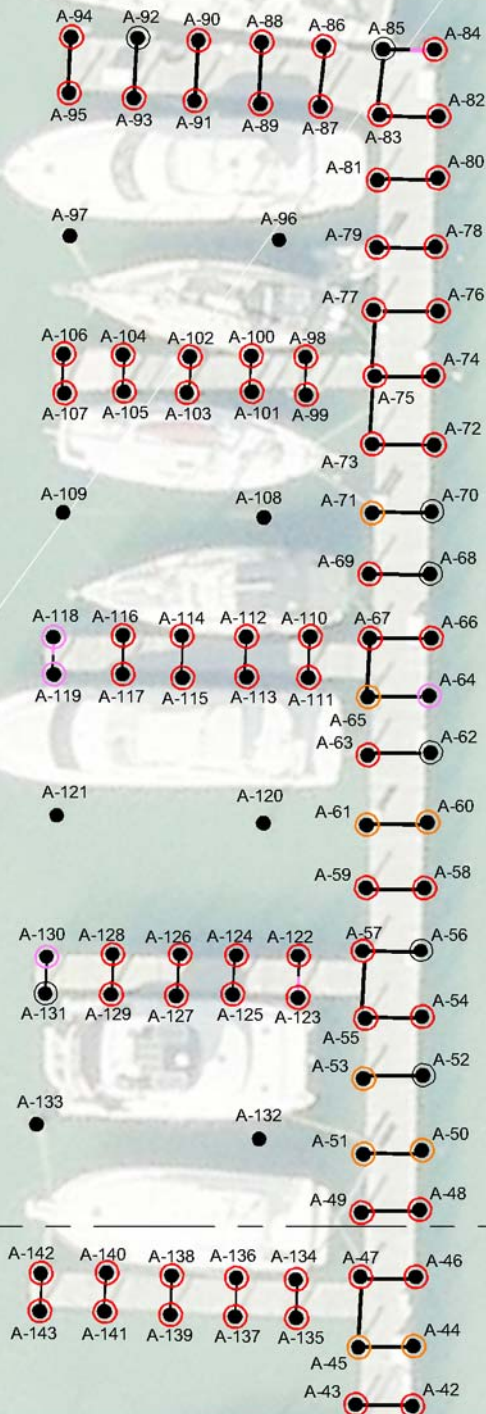
☐ CONCRETE PILE

RED (BAD CONDITION - NEEDS REPLACEMENT)

ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)

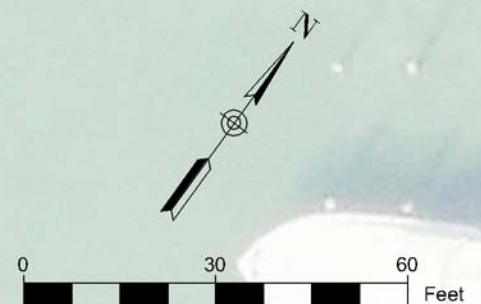
MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)

DOCK A



DOCK A

MATCHLINE 1



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK A PLAN VIEW

KEY WEST, MONROE COUNT, FLORIDA



TETRA TECH INC.
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STUART, FL 34994-2936
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CERTIFICATE OF AUTHORIZATION
NO. 2429

Designed by:	
--------------	--

Drawn By:

F. MARTÍNEZ

Checked By: _____

Reviewed By:

Design file no:
KW PILE INSPECTION V2.DWG

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AS SHOWN

Sheet Reference:

G-003

Sheet 3 of 13

LEGEND

H1-1 DOCK NAME-PILE NUMBER

● TIMBER PILE

○ CROSS-MEMBER HARDWARE

— CROSS-MEMBER

□ CONCRETE PILE

RED (BAD CONDITION - NEEDS REPLACEMENT)

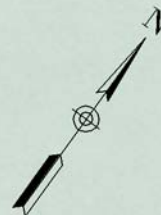
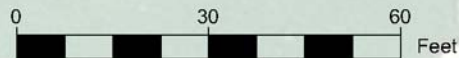
ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)

MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)

FUEL DOCK

DOCK C

DOCK C



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK C AND FUEL DOCK PLAN VIEW

KEY WEST, MONROE COUNTY, FLORIDA



TETRA TECH INC.
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NO. 2429

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Drawn By:

Checked By:

Reviewed By:

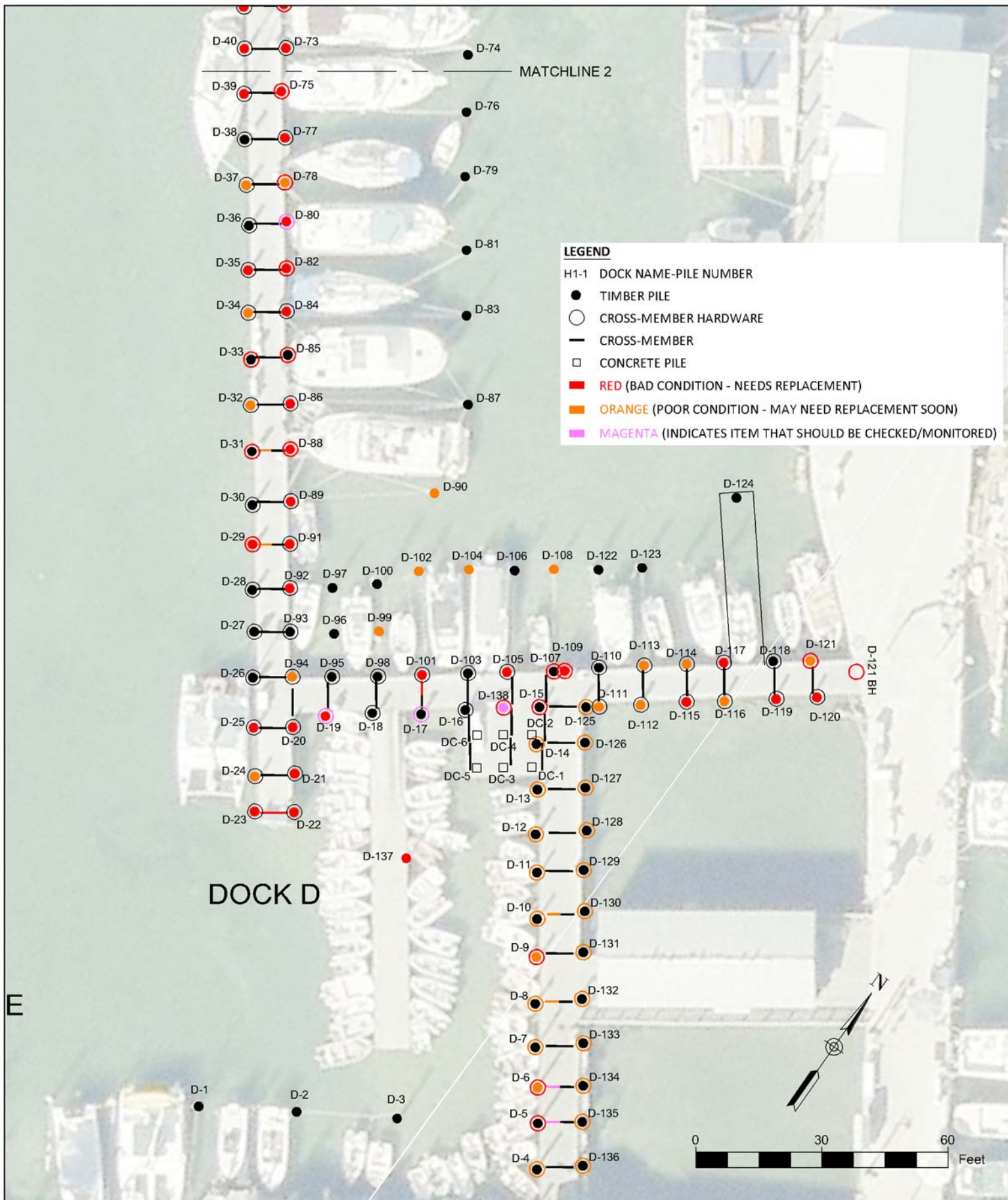
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Sheet Reference:

G-004

Sheet 4 of 13



LEGEND

H1-1 DOCK NAME-PILE NUMBER

● TIMBER PILE

○ CROSS-MEMBER HARDWARE

— CROSS-MEMBER

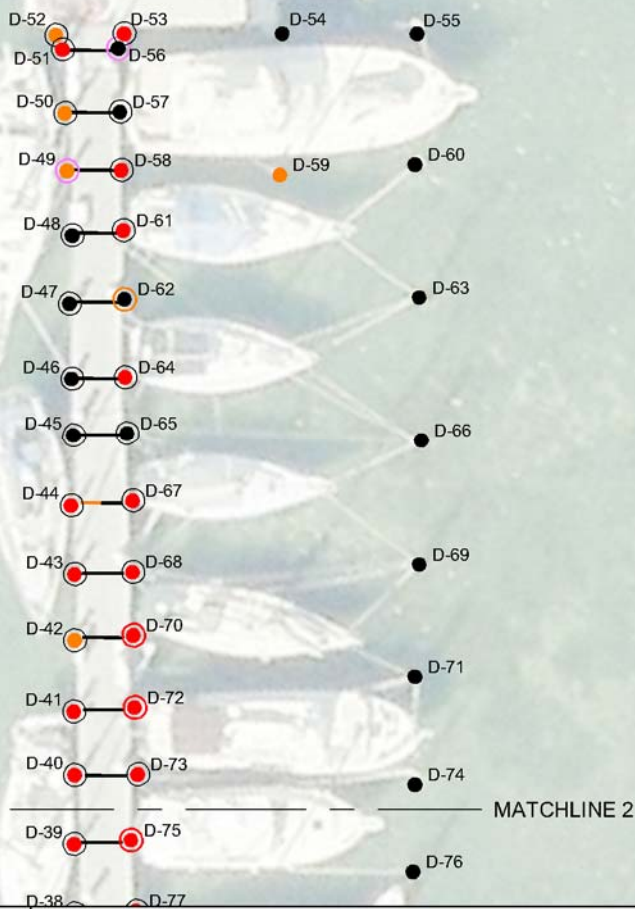
□ CONCRETE PILE

■ RED (BAD CONDITION - NEEDS REPLACEMENT)

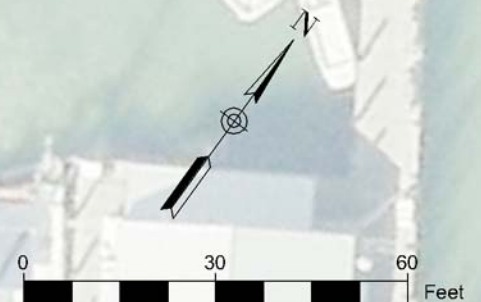
■ ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)

■ MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)

DOCK D



FUEL DOCK



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK D PLAN VIEW

KEY WEST, MONROE COUNTY, FLORIDA



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NO. 2429

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Drawn By:

F. MARTINEZ

Checked By:

Reviewed By:

Design file no:

KW PILE INSPECTION V2.DWG

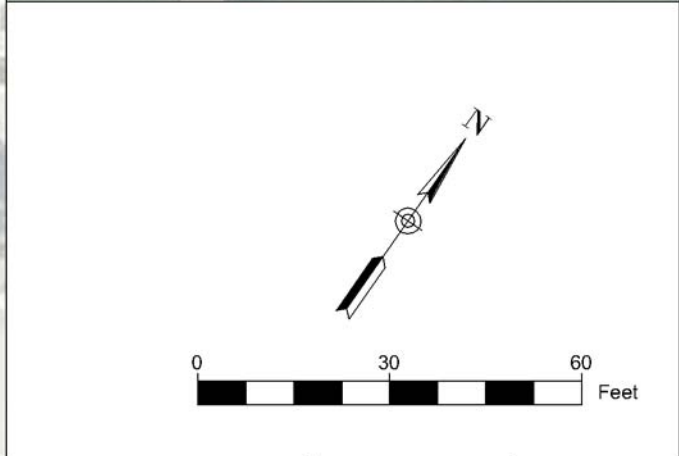
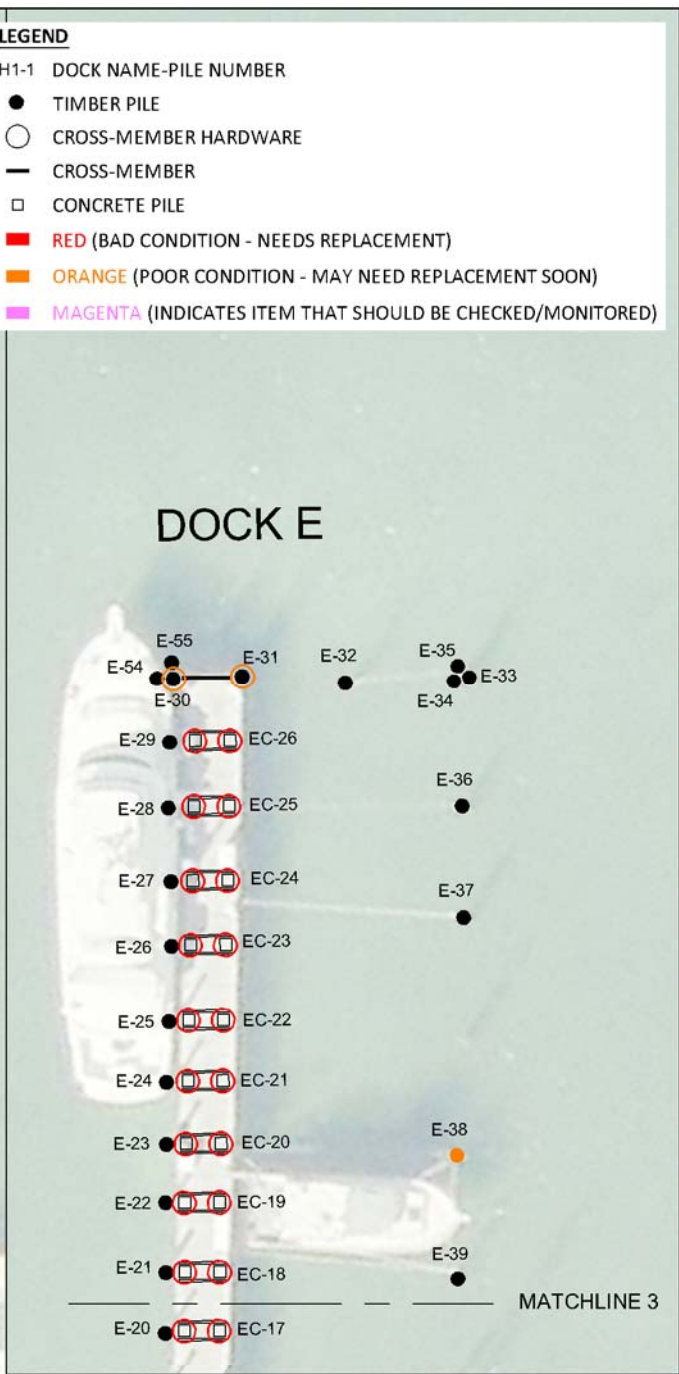
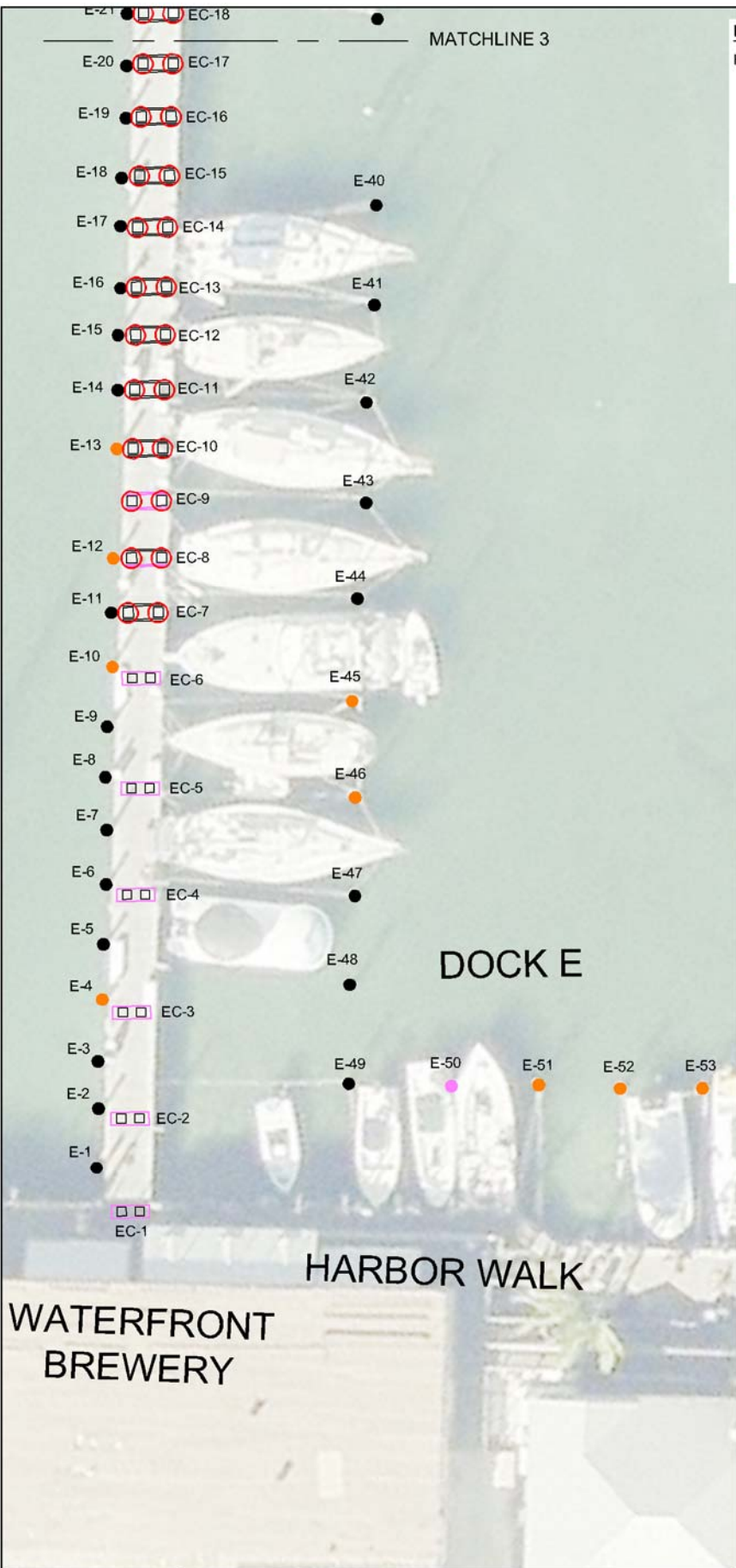
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G-006

Sheet 6 of 13



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK E PLAN VIEW

KEY WEST, MONROE COUNT, FLORIDA

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NO. 2429

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Drawn By:	F. MARTINEZ
Checked By:	---
Reviewed By:	---
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Scale:	AS SHOWN

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G-007
Sheet 7 of 13

LEGEND

H1-1 DOCK NAME-PILE NUMBER

● TIMBER PILE

○ CROSS-MEMBER HARDWARE

— CROSS-MEMBER

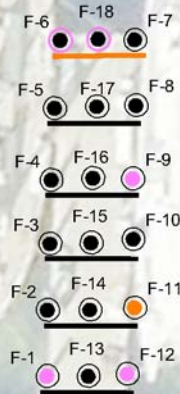
□ CONCRETE PILE

■ RED (BAD CONDITION - NEEDS REPLACEMENT)

■ ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)

■ MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)

DOCK F

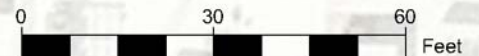
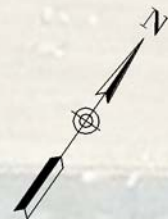


SCHOONER
WHARF

HARBOR WALK

WATERFRONT
MARKET

WATERFRONT
BREWERY



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK F PLAN VIEW

KEY WEST, MONROE COUNT, FLORIDA



TETRA TECH INC.
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Drawn By:

F. MARTINEZ

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Reviewed By:

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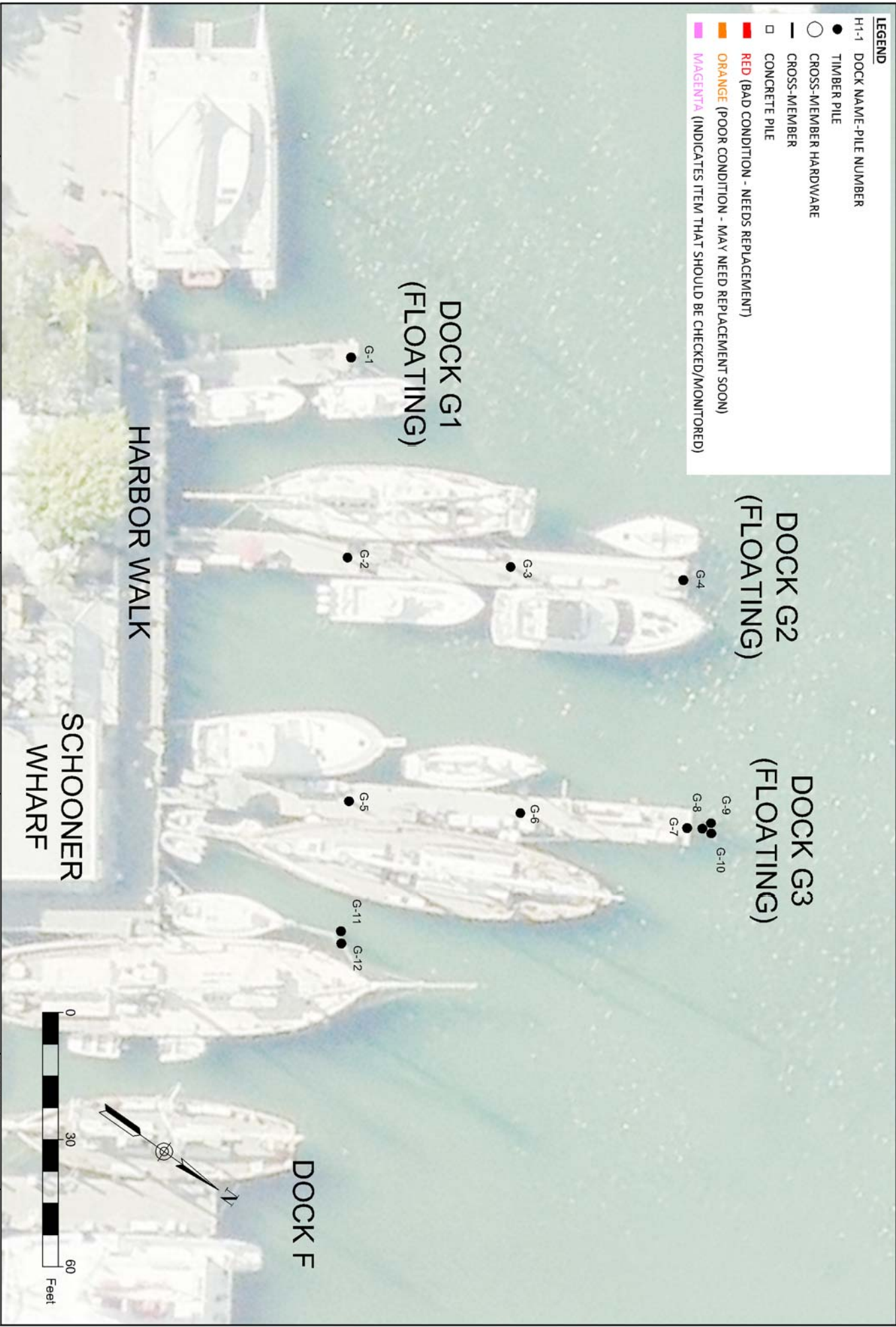
G-008

Sheet 8 of 13

LEGEND

H1-1 DOCK NAME-PILE NUMBER

- TIMBER PILE
- CROSS-MEMBER HARDWARE
- CROSS-MEMBER
- CONCRETE PILE
- RED (BAD CONDITION - NEEDS REPLACEMENT)
- ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)
- MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT
DOCK G PLAN VIEW
KEY WEST, MONROE COUNT., FLORIDA

TETRA TECH INC.
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CERTIFICATE OF AUTHORIZATION
NO. 2429

ENGINEER NAME
Florida PE No. -----

Designed By: _____
Drawn By: F. WATKINS
Checked By: _____
Reviewed By: _____
Design file no.: _____
Per Pile Inspection v2.0mg
Scale: AS SHOWN

Sheet Reference:
G-009
Sheet 9 of 13

LEGEND

H1-1 DOCK NAME-PILE NUMBER

● TIMBER PILE

○ CROSS-MEMBER HARDWARE

— CROSS-MEMBER

□ CONCRETE PILE

RED (BAD CONDITION - NEEDS REPLACEMENT)

ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)

MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)

CONCH REPUBLIC
RESTAURANT

DOCK H1

DOCK H2

DOCK H3

H2-21
DOLPHIN
PILE

0 30 60 Feet



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT

DOCK H PLAN VIEW

KEY WEST, MONROE COUNT, FLORIDA



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CERTIFICATE OF AUTHORIZATION
NO. 2429

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F. MARTINEZ

Checked By:

Reviewed By:

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KW PILE INSPECTION V2.DWG

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AS SHOWN

Sheet Reference:

G-010

Sheet 10 of 13

DOCK G1
(FLOATING)



SCHOONER
WHARF

HARBOR WALK

WATERFRONT MARKET
WATERFRONT BREWER

LEGEND

H1-1 DOCK NAME-PILE NUMBER

- TIMBER PILE
- CROSS-MEMBER HARDWARE
- CROSS-MEMBER
- CONCRETE PILE
- RED (BAD CONDITION - NEEDS REPLACEMENT)
- ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)
- MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)



CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT
HARBOR WALK PLAN VIEW
KEY WEST, MONROE COUNT, FLORIDA



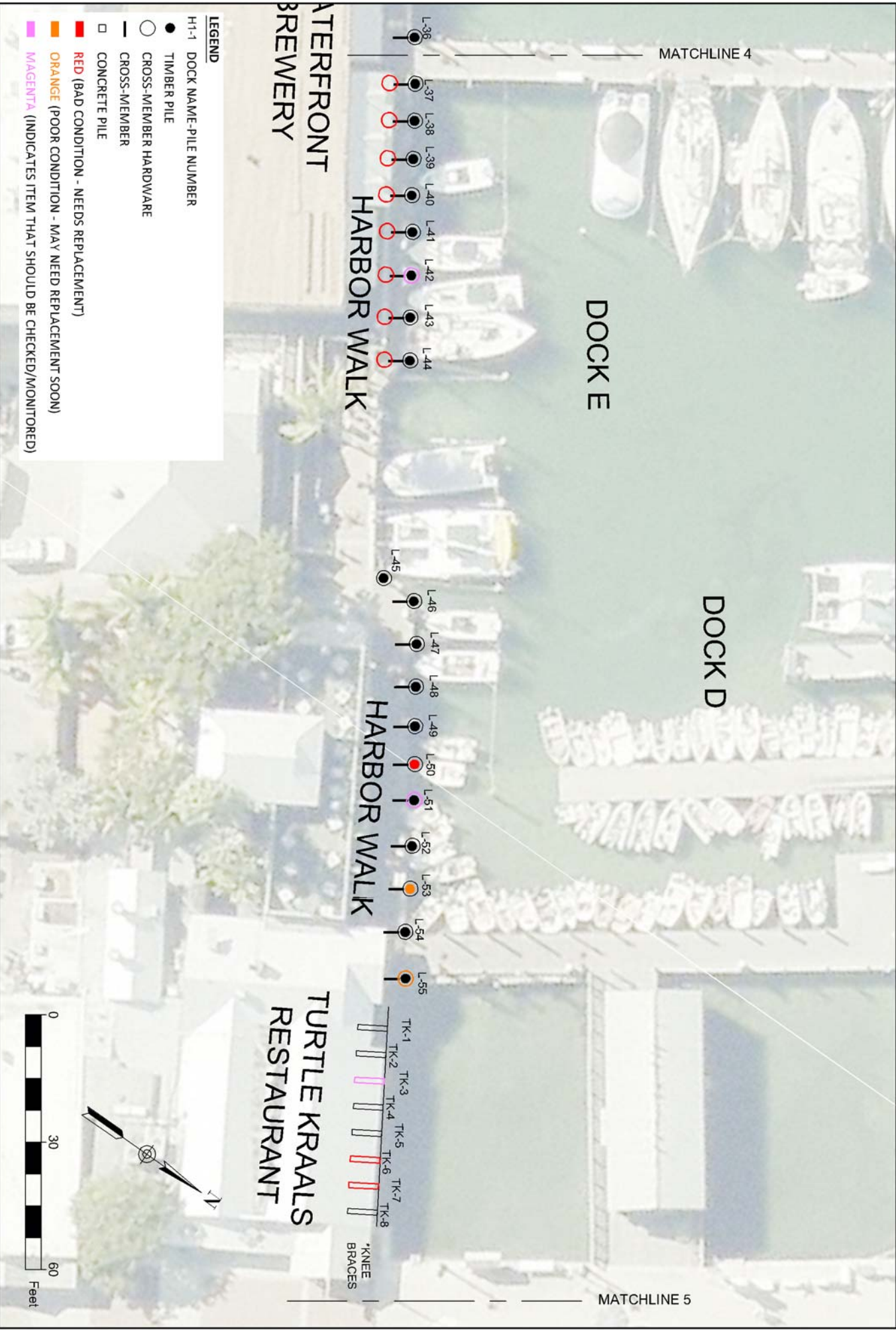
TETRA TECH INC.
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TEL: (772) 781-3400
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CERTIFICATE OF AUTHORIZATION
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ENGINEER NAME

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Checked By: _____
Reviewed By: _____
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Scale: AS SHOWN

Sheet Reference:
G-011
Sheet 11 of 13





CITY OF KEY WEST
KEY WEST BIGHT MARINA PILE ASSESSMENT
HARBOR WALK PLAN VIEW
KEY WEST, MONROE COUNT., FLORIDA



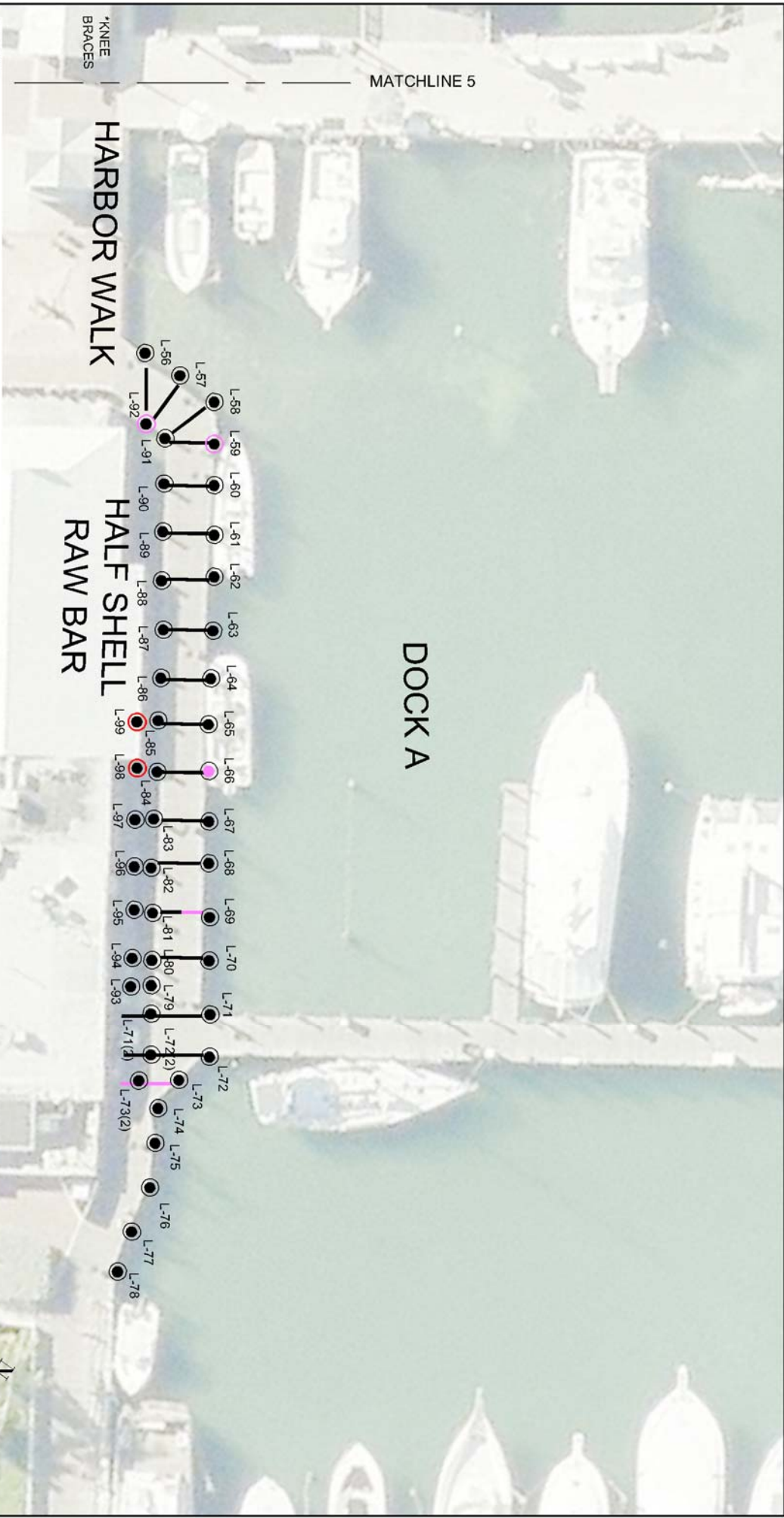
TETRA TECH INC.
759 SOUTH FEDERAL HWY
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TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION
NO. 2429

ENGINEER NAME

Florida PE No. _____

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Drawn By: F. WATKINS
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Reviewed By: _____
Design file no.: _____
Permit No.: _____
Scale: AS SHOWN

Sheet Reference:
G-012
Sheet 12 of 13



MATCHLINE 5

*KNEE
BRACES

HARBOR WALK

HALF SHELL
RAW BAR

DOCK A

LEGEND

- H-1 DOCK NAME-PILE NUMBER
- TIMBER PILE
- CROSS-MEMBER HARDWARE
- CROSS-MEMBER
- CONCRETE PILE
- RED (BAD CONDITION - NEEDS REPLACEMENT)
- ORANGE (POOR CONDITION - MAY NEED REPLACEMENT SOON)
- MAGENTA (INDICATES ITEM THAT SHOULD BE CHECKED/MONITORED)





CITY OF KEY WEST

KEY WEST BIGHT MARINA PILE ASSESSMENT

HARBOR WALK PLAN VIEW

KEY WEST, MONROE COUNT., FLORIDA



TETRA TECH INC.

759 SOUTH FEDERAL HWY

SUITE 314

MIAMI, FL 33136

TEL: (772) 781-3400

FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION

NO. 2429

ENGINEER NAME

Florida PE No. -----

Designed By: _____

Drawn By: F. WATKINS

Checked By: _____

Reviewed By: _____

Design file no: HW PILE INSPECTION v2.DWG

Scale: AS SHOWN

Sheet Reference:

G-013

Sheet 13 of 13

APPENDIX C

Dock A



A-1.1



A-1.2



A-5.1



A-5.2



A-7.1



A-7.2



A-64.1



A-64.2



A-84.1



A-84.2



A-107.1



A-107.2

Dock A



A-107.3



A-107.4



A-118.1



A-118.2



A-118.3



A-118.4



A-118.5



A-119.1



A-119.2



A-119.3



A-123.1



A-123.2

Dock A



A-130.1



A-148.1



A-148.2



A-168.1



A-168.2



A-168.3



A-178.1



A-178.2



A-179.1



A-GENERAL (1)



A-GENERAL (2)



A-GENERAL (3)

Dock A



A-GENERAL (4)

Dock C + Fuel Dock



M-1.1



M-1.2



M-1.3



M-1.4



M-1.5



M-1.6



M-2.1



M-3.1



M-4.1



M-6.1



M-6.2



M-10.1

Dock C + Fuel Dock



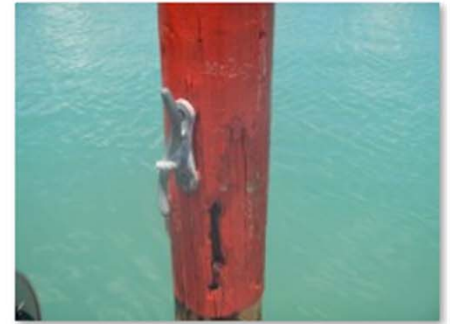
M-10.2



M-11.1



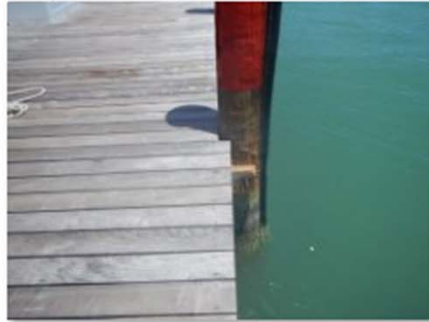
M-11.2



M-25.1



M-26.1



M-26.2



M-29.1



M-43.1



M-43.2



M-44.1



M-44.2



M-49.1

Dock C + Fuel Dock



M-49.2



M-49.3



M-49.4



M-49.5



M-49.6



M-49.7



M-51.1



M-51.2



M-57.1



M-57.2



M-57.3



M-57.4

Dock C + Fuel Dock



M-57.5



M-57.6



M-58.1



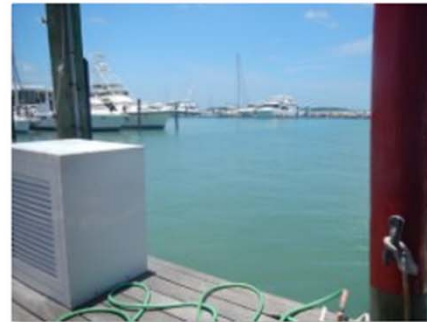
M-58.2



M-58.3



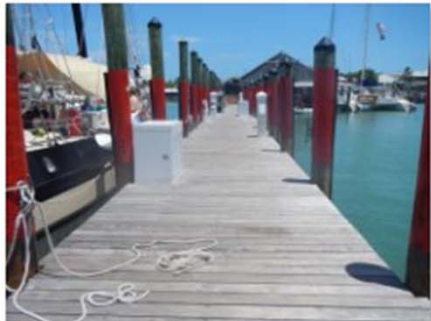
M-GENERAL (1)



M-GENERAL (2)



M-GENERAL (3)



M-GENERAL (4)



M-GENERAL (5)



M-GENERAL (6)

Dock D



D-5.1



D-5.2



D-5.3



D-6.1



D-6.2



D-6.3



D-8.1



D-8.2



D-9.1



D-9.2



D-9.3



D-10.1

Dock D



D-10.2



D-17.1



D-17.2



D-17.3



D-17.4



D-19.1



D-19.2



D-19.3



D-20.1



D-20.2



D-20.3



D-20.4

Dock D



D-22.1



D-22.2



D-22.3



D-22.4



D-22.5



D-22.6



D-23.1



D-23.2



D-23.3



D-23.4



D-23.5



D-23.6

Dock D



D-23.7



D-24.1



D-24.2



D-29.1



D-29.2



D-29.3



D-29.4



D-32.1



D-32.2



D-35.1



D-35.2



D-35.3

Dock D



D-39.1



D-39.2



D-39.3



D-39.4



D-41.1



D-41.2



D-41.3



D-41.4



D-41.5



D-43.1



D-43.2



D-43.3

Dock D



D-43.4



D-43.5



D-44.1



D-44.2



D-44.3



D-44.4



D-44.5



D-49 adjacent-1



D-49 adjacent-2



D-49.1



D-49.2



D-51.1

Dock D



D-51.2



D-51.3



D-51.4



D-52.1



D-53.1



D-53.2



D-53.3



D-53.4



D-58.1



D-58.2



D-58.3



D-59.1

Dock D



D-61.1



D-61.2



D-61.3



D-64.1



D-64.2



D-64.3



D-64.4



D-67.1



D-67.2



D-67.3



D-68.1



D-68.2

Dock D



D-68.3



D-68.4



D-68.5



D-70.1



D-70.2



D-70.3



D-72.1



D-72.2



D-72.3



D-73.1



D-73.2



D-73.3

Dock D



D-75.1



D-75.2



D-75.3



D-77.1



D-77.2



D-77.3



D-80.1



D-80.2



D-80.3



D-82.1



D-82.2



D-82.3

Dock D



D-84.1



D-84.2



D-84.3



D-86.1



D-86.2



D-86.3



D-88.1



D-88.2



D-89.1



D-89.2



D-89.3



D-89.4

Dock D



D-91.1



D-91.2



D-91.3



D-92.1



D-92.2



D-92.3



D-92.4



D-100.1



D-100.2



D-100.3



D-100.4



D-105.1

Dock D



D-105.2



D-105.3



D-108.1



D-109.1



D-109.2



D-109.3



D-112.1



D-115.1



D-115.2



D-115.3



D-115.4



D-117.1

Dock D



D-117.2



D-117.3



D-119.1



D-119.2



D-119.3



D-120.1



D-120.2



D-120.3



D-121 BH.1



D-121 BH.2



D-121 BH.3



D-138.1

Dock D



D-138.2



D-138.3



D-138.4



D-138.5



DC-1.1



DC-1.2



DC-1.3



D-GENERAL (1)



D-GENERAL (2)



D-GENERAL (3)



D-GENERAL (4)



D-GENERAL (5)

Dock D



D-GENERAL (6)



D-GENERAL (7)



D-GENERAL (8)



D-GENERAL (9)



D-GENERAL (10)



D-GENERAL (11)



D-GENERAL (12)

Dock E



E-1.1



E-1.2



E-3.1



E-3.2



E-4.1



E-4.2



E-4.3



E-10.1



E-10.2



E-12.1



E-12.2



E-13.1

Dock E



E-13.2



E-38.1



E-38.2



E-38.3



E-45.1



E-45.2



E-45.3



E-45.4



E-46.1



E-46.2



E-50.1



E-50.2

Dock E



E-51.1



E-51.2



E-51.3



E-51.4



E-52.1



E-52.2



E-52.3



E-52.4



E-53.1



E-53.2



E-53.3



E-53.4

Dock E



EC-1.1



EC-1.2



EC-2.1



EC-2.2



EC-2.3



EC-2.4



EC-3.1



EC-3.2



EC-3.3



EC-3.4



EC-3.5



EC-4.1

Dock E



EC-4.2



EC-4.3



EC-4.4



EC-5.1



EC-5.2



EC-5.3



EC-5.4



EC-6.1



EC-6.2



EC-6.3



EC-6.4



EC-6.5

Dock E



EC-7.1



EC-7.2



EC-7.3



EC-7.4



EC-7.5



EC-7.6



EC-8.1



EC-8.2



EC-9.1



EC-9.2



E-GENERAL (1)



E-GENERAL (2)

Dock E



E-GENERAL (3)



E-GENERAL (4)



E-GENERAL (5)

Dock F



F-1.1



F-6.1



F-6.2



F-6.3



F-6.4



F-6.5



F-6.6



F-6.7



F-6.8



F-6.9



F-9.1



F-9.2

Dock F



F-11.1



F-11.2



F-12.1



F-18.1



F-18.2



F-18.3



F-18.4



F-18.5



F-18.6



F-18.7



F-18.8



F-GENERAL (1)

Dock F



F-GENERAL (2)



F-GENERAL (3)



F-GENERAL (4)



F-GENERAL (5)



F-GENERAL (6)



F-GENERAL (7)



F-GENERAL (8)



F-GENERAL (9)



F-GENERAL (10)

Dock G



G2-2.1



G2-3.1



G2-3.2



G2-4.1



G2-4.2



G2-GENERAL



G3-8, 9, 10



G3-8



G3-11 AND 12



G3-GENERAL

Dock H1



H1-2.1



H1-2.2



H1-2.3



H1-2.4



H1-4.1



H1-4.2



H1-9.1



H1-9.2



H1-10.1



H1-10.2



H1-10.3



H1-10.4

Dock H1



H1-14.1



H1-14.2



H1-15.1



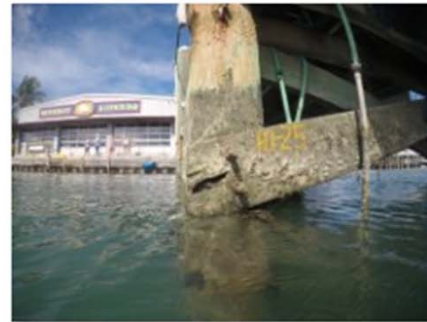
H1-15.2



H1-17.1



H1-17.2



H1-25.1



H1-25.2



H1-25.3



H1-27.1



H1-27.2



H1-27.3

Dock H1



H1-27.4



H1-BH.1



H1-BH.2



H1-BH.3



H1-GENERAL (1)



H1-GENERAL (2)



H1-GENERAL (3)



H1-GENERAL (4)

Dock H2



H2-3.1



H2-3.2



H2-7.1



H2-7.2



H2-8.1



H2-8.2



H2-10.1



H2-10.2



H2-10.3



H2-11.1



H2-11.2



H2-12.1

Dock H2



H2-12.2



H2-12.3



H2-12.4



H2-15.1



H2-15.2



H2-15.3



H2-GENERAL (1)



H2-GENERAL (2)



H2-GENERAL (3)



H2-GENERAL (4)



H2-GENERAL (5)



H2-GENERAL (6)

Dock H3



H3-3.1



H3-3.2



H3-4.1



H3-4.2



H3-6.1



H3-6.2



H3-6.3



H3-6.4



H3-6.5



H3-8.1



H3-8.2



H3-8.3

Dock H3



H3-8.4



H3-8.5



H3-8.6



H3-8.7



H3-BH.1



H3-BH.2



H3-GENERAL (1)



H3-GENERAL (2)



H3-GENERAL (3)



H3-GENERAL (4)

Turtle Kraals Walkway Knee Braces



TK-1.1



TK-1.2



TK-1.3



TK-1.4



TK-1.5



TK-3.1



TK-3.2



TK-6.1



TK-6.2



TK-7.1



TK-7.2



TK-GENERAL (1)

Turtle Kraals Walkway Knee Braces



TK-GENERAL (2)



TK-GENERAL (3)



TK-GENERAL (4)

Harbor Walk Pier



L-1.1



L-1.2



L-1.3



L-1.4



L-1.5



L-2.BH



L-4.1



L-4.2



L-4.3



L-7.1



L-7.2



L-12 adjacent

Harbor Walk Pier



L-12.1



L-12.2



L-16.1



L-16.2



L-16.3



L-16.4



L-22.1



L-22.2



L-24.1



L-24.2



L-30.1



L-30.2

Harbor Walk Pier



L-30.3



L-30.4



L-30.5



L-30.6



L-31.1



L-31.2



L-31.3



L-31.4



L-32.1



L-32.2



L-36.1



L-36.2

Harbor Walk Pier



L-36.3



L-37.1



L-37.2



L-42.1



L-42.2



L-42.3



L-44.1



L-44.2



L-50.1



L-50.2



L-50.3



L-50.4

Harbor Walk Pier



L-50.5



L-51.1



L-52.2



L-53.1



L-53.2



L-53.3



L-59.1



L-59.2



L-59.3



L-59.4



L-66.1



L-66.2

Harbor Walk Pier



L-73.1



L-73.2



L-73.3



L-73.4



L-92.1



L-92.2



L-94.1



L-94.2



L-GENERAL (1)



L-GENERAL (2)

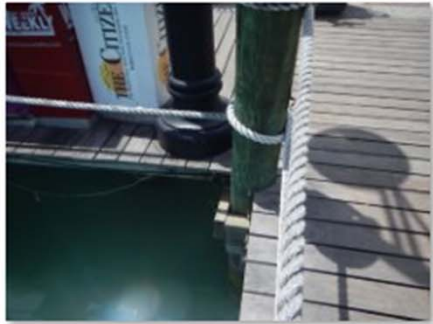


L-GENERAL (3)



L-GENERAL (4)

Harbor Walk Pier



L-GENERAL (5)



L-GENERAL (6)



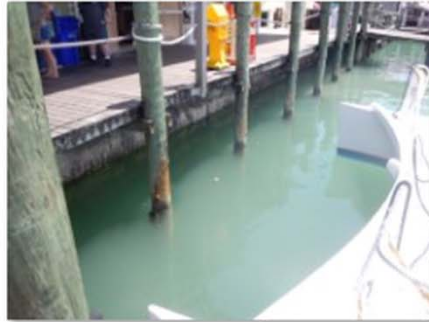
L-GENERAL (7)



L-GENERAL (8)



L-GENERAL (9)



L-GENERAL (10)



L-GENERAL (11)



L-GENERAL (12)



L-GENERAL FROM L-2 (1)



L-GENERAL FROM L-2 (2)



L-GENERAL FROM L-2 (3)



L-GENERAL FROM L-22 (1)

Harbor Walk Pier



L-GENERAL FROM L-22 (2)



L-GENERAL FROM L-22 (3)



L-GENERAL FROM L-22 (4)



L-GENERAL FROM L-22 (5)



L-GENERAL FROM L-22 (6)



L-GENERAL FROM L-25 (1)



L-GENERAL FROM L-25 (2)



L-GENERAL FROM L-25 (3)



L-GENERAL FROM L-30 (1)



L-GENERAL FROM L-30 (2)



L-GENERAL FROM L-30 (3)



L-GENERAL FROM L-30 (4)

Harbor Walk Pier



L-GENERAL FROM L-56 (1)



L-GENERAL FROM L-56 (2)