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October 21, 2022

Mr. William Whitson
 Flagler Beach City Manager
 105 South 2nd Street
 Flagler Beach, FL 32136

Re: Fishing Pier-Post Hurricane Ian Assessment Supplement
 FEMA Disaster Declaration DR-4673-FL
 Temporary Pier Closure
 Mott MacDonald Project No. 502100947

Dear Mr. Whitson:

After review of the draft Post Hurricane Ian Logan Diving and Salvage report dated October 06-12, 2022, Mott MacDonald recommends the City of Flagler Beach post the Fishing Pier (Pier) as unsafe for occupancy and entry and keep the Pier closed to public access and use. This recommendation is based on the following significant observations noted in the report:

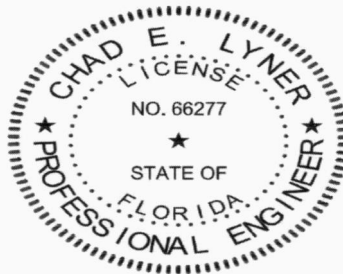
- An approximate 120-foot section of Pier on the eastern end was destroyed
- Three (3) to seven (7) feet of sand was scoured across the full width and length of the Pier resulting in a significant reduced pile embedment below the sand line
- Deteriorated timber piling now exposed between the ends of the fiberglass reinforcing pile jackets and the sand line.

Mott MacDonald also recommends the City restrict public water activities and sports around the eastern most end of the Pier until a licensed Florida General Contractor is procured to remove the unsupported pier section and stabilize the last three bents (20-22) of the Pier.

Please call at your convenience if you have any questions regarding these recommendations.

Very truly yours,
 Mott MacDonald Florida, LLC

Chad E. Lyner, PE
 FL License #66277



This document has been digitally signed and sealed by:

Chad E Lyner

Digitally signed by Chad E. Lyner
 DN: cn=Chad E. Lyner,
 o=Mott MacDonald, ou=Professional Engineers,
 email=chad@lyner.com, c=US
 Date: 2022.10.21 09:56:52-05'00'

Printed copies of this document are not considered signed and sealed. The signature must be verified on the electronic documents.

The above-named professional engineer shall be responsible for the following sheets in accordance with Rule 61G15.23.004, F.A.C.

Cc: David D. Skipper, PE-Mott MacDonald

Lowry J. Denty, PE-Mott MacDonald



LOGAN DIVING & SALVAGE

2815 SAINT JOHNS BLUFF
JACKSONVILLE, FLORIDA 32246
TEL: (904) 731-0000 FAX: (904) 731-5493
MARINE SPECIALTY CONTRACTOR
FL SCC131151014

DRAFT

**FLAGLER BEACH PIER
POST INCIDENT SAFETY INSPECTION
HURRICANE IAN
OCTOBER 6 - 12, 2022**



PROFESSIONAL COMMERCIAL DIVING AND MARINE CONSTRUCTION SERVICES WERE REQUESTED TO INSPECT AND DOCUMENT EXISTING SUBSTRUCTURE CONDITIONS AT THE FLAGLER BEACH PIER, FLAGLER BEACH, FLORIDA, POST HURRICANE IAN.

THE FLAGLER BEACH PIER IS A TIMBER PILE STRUCTURE LOCATED AT THE INTERSECTION OF 2ND. STREET AND FLORIDA A1A, FLAGLER BEACH, FLORIDA. ORIGINAL PIER CONSTRUCTION WAS COMPLETED IN 1928.

PIER SUBSTRUCTURE COMPOSITION CURRENTLY IS COMPRISED OF 12" TO 14" DIAMETER (BUTT) TIMBER PILE BENTS SUPPORTING 12" X 12" TIMBER CAPS (RUNNING NORTH TO SOUTH). TRANSVERSE PILE CAPS SUPPORT LONGITUDINAL STRINGERS (RUNNING EAST TO WEST) WHICH ARE 4" X 12", PROVIDING SUPPORT FOR THE TRANSVERSE 2" X 6" DECKING. PILE BENTS AND PILING ARE CONNECTED BY CROSS BRACING WHICH ARE 4" X 8" OR 4" X 6" TIMBERS BOLTED TO THE PILING DIAGONALLY AND PINNED IN THE MIDDLE WHERE THEY CROSS. ADDITIONAL CROSS BRACING CONSISTS OF A 4" X 8" HORIZONTAL X BRACE BETWEEN THE PILE BENTS DIRECTLY BELOW THE STRINGERS.

DRAFT

DIVERS UTILIZING SURFACE SUPPLIED DIVE GEAR WITH HARDWIRE COMMUNICATIONS INSPECTED THE SUBSTRUCTURE TIMBER PILING. INSPECTION WAS VISUAL AND ACCOMPLISHED BY DIVERS FAMILIAR WITH THIS TYPE OF PIER CONSTRUCTION AND CONFIGURATION.

PILE LAYOUT AND SEQUENCING WAS REFERENCED FROM DRAWINGS TITLED: FISHING PIER- HURRICANE MATTHEW EMERGENCY SAFETY TEMPORARY REPAIRS DATED JANUARY 2017 SUPPLIED BY AND PREPARED BY MOTT MACDONALD, AND PILE LAYOUT AND REPAIR PLAN, AND PROFILES DATED AUGUST 2013 PREPARED BY QUENTIN L. HAMPTON ASSOCIATES, INC. CONSULTING ENGINEERS SUPPLIES BY CITY OF FLAGLER BEACH.

THE RESULTS OF INSPECTION ARE AS FOLLOWS:

INSPECTION OF THE FISHING PIER SUBSTRUCTURE WAS COMPLETED WITH DIVERS FOR THE UNDERWATER PORTIONS AND MARINE CONSTRUCTION PERSONNEL WORKING BENEATH THE PIER FROM THE WATERLINE TO THE SUB DECK LEVEL. THE REMAINING AMOUNT OF THE PIER STARTS AT BENT 20, OCEANSIDE, TO BENT 50, SHORESIDE. BENTS 19 TO 13 HAVE FAILED AND NO LONGER EXIST. BENT 20 HAS 1 OUT 4 REMAINING PILES. BENT 21 HAS 2 OUT OF 4 REMAINING PILES. BENT 22 HAS 3 OUT OF 4 REMAINING PILES. DUE TO SAFETY FOR THE DIVERS, INSPECTIONS STARTED ON BENT 23.

SUBSTRUCTURE PILING INSPECTION REVEALED THE FOLLOWING:

23 PILES WERE FOUND TO HAVE GREATER THAN 50% OF THE PILE NOT TOUCHING THE CAP BEAM, 13 OF THOSE 23 PILES HAVE 100% OF THE PILE NOT TOUCHING THE CAP BEAM. 13 PILES ARE PROVIDING NO SUPPORT TO THE CAPS, STRINGERS, AND DECK (SEE ATTACHED PILE INSPECTION SHEETS).

HEAVY SEAS AND CURRENTS EXPERIENCED DURING THE HURRICANE HAVE SCOURED OUT THE GROUND LINE, EXPOSING AND SUSPENDING PAST PILE JACKET REPAIRS FROM 0' TO -7' COMPARED TO POST IRMA GL ELEVATIONS (SEE ATTACHED PILE INSPECTION SHEET).

52 PILES HAVE EXCESSIVE SCOUR RESULTING IN SUSPENDED PILE JACKETS. PREVIOUSLY BURIED SECTIONS OF PILING NOW ARE EXPOSED AND UNPROTECTED AGAINST MARINE BORERS. ALL SUSPENDED PILE JACKETS HAVE CEMENT FILL MISSING IN ANNULUS VOID FROM THE BOTTOM UP FOR 6" TO 8".

THE MAJORITY OF TOP EPOXY SEALS ON EVERY PILE JACKET ARE BROKEN/ CRACKED/ MISSING/ FAILED, LEAVING AN ANNULAR SPACE OF TRAPPED SEAWATER.

THERE ARE AT LEAST 4 PILES THAT ARE DETERIORATED 50% OR MORE BELOW THE PILE JACKET AND 4 ABOVE THE PILE JACKET (SEE ATTACHED PILE INSPECTION SHEET). "DETERIORATED" REFERS TO THE PERCENTAGE OF THE SUBSTRUCTURE MEMBER THAT APPEARS WEAKENED BEYOND ITS USEFUL SERVICE LIFE. DURING THE PILE INSPECTION, DIVERS FOUND MANY PILE STUBS FROM OLD PILING REMAIN THROUGHOUT THE ENTIRE PIER FOOTPRINT.

CAP AND STRINGER INSPECTION REVEALED THE FOLLOWING:

THE CAP BEAMS WERE FOUND TO BE GENERALLY IN GOOD CONDITION. THERE ARE HOWEVER, 10 BEAMS DETERIORATED 50% OR MORE (SEE ATTACHED PILE INSPECTION SHEETS). OUT OF THESE 10, 2 HAVE A REPAIR DONE WITH 12" C-CHANNEL SANDWICH (SEE PHOTO BELOW).

HARDWARE INSPECTION REVEALED THE FOLLOWING:

THE MAJORITY OF HARDWARE WAS FOUND TO BE STAINLESS STEEL AND IN SERVICEABLE CONDITION. BENTS 45-50 DID NOT APPEAR TO HAVE STAINLESS STEEL HARDWARE AND MAJORITY WAS 90-100% DETERIORATED.

MISSING OR FAILED SUBSTRUCTURE MEMBERS ON EXISTING PIER

MAJORITY OF THE MISSING OR FAILED SUBSTRUCTURE MEMBERS ARE BETWEEN BENTS 26 AND 38. NORTH PILES 'B' ON BENTS 26 AND 37 ARE MISSING, VISIBLE HARDWARE IN PREVIOUS LOCATION FOUND UNDER CAP BEAM (SEE PHOTOS BELOW). SEVERAL VERTICAL DIAGONAL AND HORIZONTAL CROSS BRACING WERE ALSO FOUND MISSING/BROKEN (SEE ATTACHED PILE INSPECTION SHEETS).

SIDE SCAN SONAR

SONAR OPERATORS, UTILIZING THE EDGETECH 4125D SIDE SCAN SONAR, SCANNED 500' TO THE NORTH OF THE PIER, 600' TO THE EAST, AND 500' TO THE SOUTH. OPERATORS MADE 4 OVERLAPPING PASSES ON EACH SIDE WITH A 300' RANGE SWATH. DURING THE SCAN, SONAR OPERATORS DID NOT FIND ANY OBVIOUS SIGNS OF LARGE OR SMALL FAILED PIER DEBRIS IN THOSE PASSES. WHILE SCANNING ALONG THE PIER BASELINE, APPARENT PILE STUBS WERE SEEN, AND GPS MARKS WERE ACQUIRED (SIDE SCAN IMAGES BELOW).

AFTER SCANNING, DIVERS LOCATED AND INSPECTED THE PILES FOR REFERENCE. DIVERS NOTED ALL THE PILES THAT WERE FOUND WERE APPROXIMATELY 3'-4' ABOVE THE GROUNDLINE. THEY NOTED HOLLOW CENTERS WITH HEAVY HARD MARINE GROWTH INSIDE AND OUT. DIVERS SET 2 BUOYS ON THE MOST EASTERN EXPOSE PILE STUBS, ONE ON THE NORTH AND ONE ON THE SOUTH.

NORTH BUOY GPS – N29°28'49.8925" W081°07'28.69

SOUTH BUOY GPS – N29°28'49.5958" W081°07'28.8573"

OVERALL SPECIFIC FINDINGS

BENT 20

PILES B, F, H MISSING

BENT 21

PILES B, H MISSING

BENT 22

PILE D MISSING

BENT 23

PILE B, H 100% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED
PILE D 50% DETERIORATED BELOW PILE JACKET

BENT 24

ALL PILE JACKETS SUSPENDED

BENT 25

PILE F 100% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED

BENT 26

PILE B MISSING
PILE F 50% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED
EAST, WEST, NORTH V/D CROSS BRACING BROKEN/MISSING
CAP IS 50% DETERIORATED WITH REPAIR

BENT 27

PILE D 90% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED
EAST, WEST V/D CROSS BRACING BROKEN/MISSING

BENT 28

PILES B, D 100% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED

BENT 29

PILE B, D PILE JACKETS SUSPENDED

BENT 30

APPEARS IN SERVICEABLE CONDITION

BENT 31

PILE F, H 50% NOT TOUCHING THE CAP
PILE H 60% DETERIORATED ABOVE PILE JACKET

BENT 32

APPEARS IN SERVICEABLE CONDITION

BENT 33

PILE D 50% DETERIORATED BELOW PILE JACKET
PILE F 90% DETERIORATED BELOW PILE JACKET
ALL PILE JACKETS SUSPENDED

BENT 34

PILE B, F 80% NOT TOUCHING THE CAP
NORTH V/D CROSS BRACING BROKEN/MISSING

BENT 35

PILE D 80% NOT TOUCHING THE CAP
PILE F 100% NOT TOUCHING THE CAP
PILE F PILE JACKET SUSPENDED
PILE H 50% DETERIORATED ABOVE PILE JACKET
BOTH HORIZONTAL CROSS BRACING BROKEN/MISSING

DRAFT

BENT 36

CAP IS 70% DETERIORATED

BENT 37

PILE B MISSING
PILES G, H 100% NOT TOUCHING THE CAP
ONE HORIZONTAL CROSS BRACE NO LONGER CONNECTED

BENT 38

PILE B PILE JACKET SUSPENDED
PILE D PILE JACKET SUSPENDED
NORTH V/D CROSS BRACE BROKEN/MISSING

BENT 39

PILE D 50% NOT TOUCHING THE CAP
CAP IS 60% DETERIORATED WITH REPAIR

BENT 40

PILES B, H PILE JACKETS SUSPENDED

BENT 41

PILES D, G PILE JACKETS SUSPENDED

BENT 42

PILE H 90% NOT TOUCHING THE CAP

BENT 43

PILE D 100% NOT TOUCHING THE CAP
PILE H PILE JACKET SUSPENDED
CAP IS 60% DETERIORATED

BENT 44

PILE C 100% NOT TOUCHING THE CAP
ALL PILE JACKETS SUSPENDED

BENT 45

ALL PILE JACKET SUSPENDED
PILE C, D, E 100% NOT TOUCHING THE CAP
PILE H 80% NOT TOUCHING THE CAP
PILE D 70% DETERIORATED BELOW PILE JACKET
CAP IS 50% DETERIORATED

BENT 46

ALL PILE JACKETS SUSPENDED
PILE F 50% DETERIORATED ABOVE PILE JACKET
CAP IS 80% DETERIORATED

BENT 47

ALL HARDWARE 90-100% DETERIORATED
CAP IS 50% DETERIORATED

DRAFT

BENT 48

ALL HARDWARE 90-100% DETERIORATED
CAP IS 50% DETERIORATED

BENT 49

ALL HARDWARE 90-100% DETERIORATED
CAP IS 50% DETERIORATED

BENT 50

PILE H 50% DETERIORATED
NO PILE JACKET
ALL HARDWARE 90-100% DETERIORATED
CAP IS 50% DETERIORATED

PIER SYNOPSIS:

HURRICANE DRIVEN ELEVATED WIND, SEAS, AND CURRENT SCOURED OUT THE GROUND LINE REMOVING SAND BY AS MUCH AS -7' OF ELEVATION DURING HURRICANE IAN, RESULTING IN SIGNIFICANTLY LESS PILE EMBEDMENT DEPTH /BURIAL. THIS INCIDENT ALLOWED MORE PIER MOVEMENT AND RESULTED IN THE FAILURE OF A PORTION OF THE PIER. REMAINING PIER ALSO SUSTAINED SUBSTRUCTURE DAMAGE AND NOW HAS LESS PILE EMBEDMENT THAT PRE HURRICANE IAN.

RECOMMENDATIONS:

- 1) REPLACE FAILED/MISSING PILING (2) AND MEMBERS BETWEEN BENTS 26 -38.
- 2) RESTORE SUPPORT AND BEARING TO THE PILING NOT TOUCHING THE CAP BEAMS. JACK, SHIM, AND LEVEL ALL LOOSE PILES THAT ARE NOT TOUCHING PILE CAPS AND CARRYING LOAD.
- 3) REPAIR SUBSTRUCTURE PILING THAT ARE 50% OR MORE DETERIORATED.
- 4) REPAIR/HARDEN CAP BEAMS THAT ARE 50% OR MORE DETERIORATED.
- 5) REMOVE AND REPLACE ALL MISSING, FAILED, LOOSE, CRACKED CROSS BRACING.
- 6) REPAIR ALL SUSPENDED EPOXY PILE JACKET REPAIRS BY INSTALLING PILE JACKET EXTENSIONS FROM THE LOWER SUSPENDED ELEVATION INTO THE EXISTING GROUND LINE - 3' (ON PILING DETERIORATED 50% OR MORE).
- 7) REPLACE ALL FAILED OR MISSING HURRICANE STRAPS AND HARDWARE.
- 8) APPLY 2-PART EPOXY IN ALL UPPER ELEVATION PILE JACKETS GAPS. INJECT OR FORCE EPOXY INTO THE ANNULAR SPACE FOR TEMPORARY 2-YEAR REPAIR.

/SCOTT C. ANDERSON/

S. C. ANDERSON
PRESIDENT
LOGAN DIVING & SALVAGE
sanderson@logandiving.com

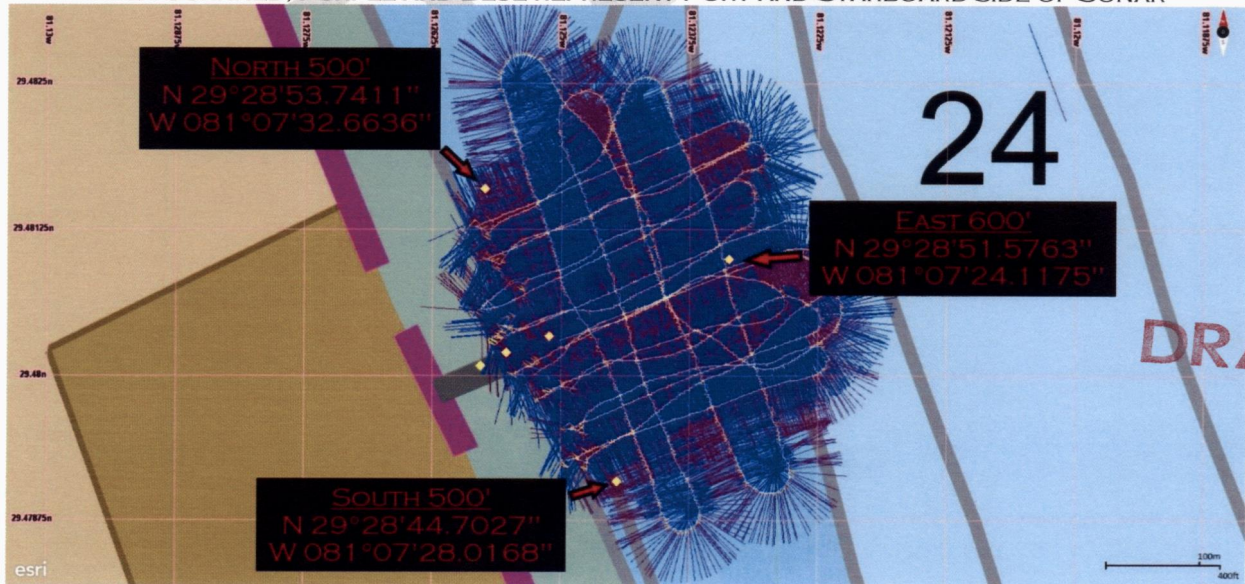
DRAFT

SIDE SCAN SONAR IMAGES

NORTH SIDE OF PIER



AREA SCANNED, PURPLE AND BLUE REPRESENT PORT AND STARBOARD SIDE OF SONAR



END OF PILE STUBS GPS LOCATIONS WITH BUOY MARKERS

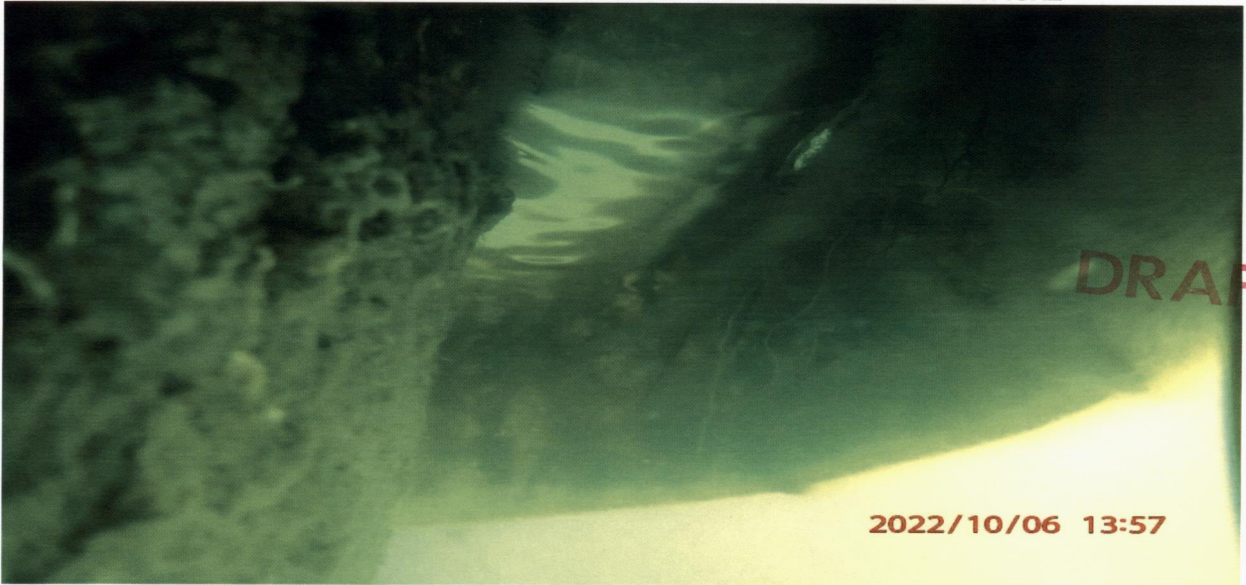


END OF PIER (BENT 20)



STILLS

ANNULUS VOID FROM BOTTOM OF SUSPENDED PILE JACKETS — TYPICAL



SUSPENDED PILE JACKET-TYPICAL



4'x12" SHIM ON TOP OF CAP – TYPICAL



EXPOSED HOLLOWED PILE STUB ABOVE GL – TYPICAL



STAINLESS STEEL MOUNTING HARDWARE – TYPICAL , NOTE PILE TOPPING DISPLACED



SOUTH CROSS BRACING – TYPICAL



BENT 39 CAP REPAIR WESTSIDE



BENT 39 CAP REPAIR EASTSIDE



DRAFT

STAINLESS STEEL CAP JACK – TYPICAL



BENT 38 NORTH V/D CROSS BRACE BROKEN



DRAFT

BENT 37 PILE B MISSING



TOP EPOXY SEALS ON EVERY PILE JACKET ARE BROKEN/ CRACKED/ MISSING/ FAILED — TYPICAL TOP OF PILE JACKET FIBERGLASS TORN/MISSING



SUSPENDED PILE JACKETS — TYPICAL



BENT 37 HORIZONTAL CROSS BRACE NO LONGER ATTACHED



DRAFT

BENT 36 70% DETERIORATED CAP BEAM



BENT 35 PILE F FAILED STAINLESS STEEL HURRICANE STRAP/BENT LEVELING BOLT



BENT 23 PILE D UPPER SECTION OF PILE JACKET SEAM SEPARATION



PILE 100% NOT TOUCHING THE CAP – TYPICAL



DRAFT

BENT 49 PILE F 5'x3" DEEP CRACK ~ 2'+ GROUT CRACK LENGTH



BENT 49 PILE F 5'x3" DEEP CRACK



BENT 49 PILE H OVER POUR



BENT 48 PILE J WITH STAINLESS STEEL CLAMP — TYPICAL



FLAGLER BEACH PIER PILE INSPECTION

Bent # 21

Date 6-12 OCT 22

Pile	% Wasted ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap	Notes
B					Missing
D					
F					
H					Missing

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				

Cap Beams

% Deteriorated	Notes
20	
Additional Notes:	No inspection conducted due to Safety.

FLAGLER BEACH PIER PILE INSPECTION

Bent # **22** **Date** 6-12 OCT 22

Pile	% Wasted ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap	Notes
B					
D					Missing
F					
H					

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				

Cap Beams

% Deteriorated	Notes
20	
Additional Notes:	No inspection conducted due to Safety.

FLAGLER BEACH PIER PILE INSPECTION

Bent # 23

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	15↑ / 10↓	Y	100	23'10" / 30'4"	BT of PJ 7' above GL, 3' of Pile clean, Northside 6"x1' top of PJ missing section
D	20↑ / 50↓	Y	30		BT of PJ 5' above GL, 2' of Pile clean, Vertical seam on top shell of PJ separated, Westside 4" crack from top of PJ to BT
F	15↑ / 10↓	Y	15		BT of PJ 4' above GL, 2' of Pile clean, Southside 18" crack from top of PJ to BT, NE side 6" crack from top of PJ to BT
H	30↑ / 10↓	Y	100	24'8" / 30'	BT of PJ 7' above GL, 3' of Pile clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 23-22	15	50	
Bent 23-22	15	50	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	10	
West Face	20	15	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	25	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	15	5	
F	N	10	5	
G	N	10	5	
H	N	20	5	
I	Y	10	5	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
20	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 24

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑ / 10↓	Y	40	23'5" / 29'9"	BT of PJ 8' above GL, 3' of Pile clean, SE side 18"x18" top of PJ missing section
D	20↑ / 20↓	Y	20		BT of PJ 7' above GL, 3' of Pile clean, Top 1' of PJ missing
F	20↑ / 30↓	Y	10		BT of PJ 6' above GL, 4' of Pile clean, Cap Jack, SW side 1'x1.5' top of PJ missing
H	15↑ / 30↓	Y	10	24'2" / 29'6"	BT of PJ 6' above GL, 3' of Pile clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 24-23	30	15	
Bent 24-23	15	15	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	25	15	
West Face	15	5	
North Face	15	10	
South Face	15	10	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	Y	20	5	
B	Y	15	5	
C	Y	15	5	
D	Y	15	5	
E	N	15	5	
F	N	30	5	
G	N	15	5	
H	N	10	5	
I	Y	25	5	
J	Y	20	5	
K	Y	20	5	

Cap Beams

% Deteriorated	Notes
25	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 25

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑ / 10↓	Y	20	23'1" / 29'8"	BT of PJ 10' above GL, 3' of Pile clean
D	15↑ / 10↓	Y	PJ to Cap		BT of PJ 8' above GL, 3' of Pile clean
F	15↑ / 10↓	Y	100		BT of PJ 6' above GL, 2' of Pile clean, Southside 6" crack from top of PJ to BT
H	15↑ / 40↓	Y	10	23'5" / 29'3"	BT of PJ 7' above GL, 3' of Pile clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 25-24	15	10	
Bent 25-24	15	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	40	10	
West Face	30	10	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	40	5	
B	N	10	5	
C	N	15	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	10	5	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
25	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **26** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B				23'4" / 29'2"	Missing
D	20↑ / 40↓	N	10		BT of PJ 9' above GL, 3' of Pile clean, Eastside 12"x20" top of PJ missing section
F	20↑ / 20↓	N	50		BT of PJ 7' above GL, 2' of Pile clean, Northside 6"x6" top of PJ missing section
H	20↑ / 10↓	N	10	23'2" / 28'8"	BT of PJ 8' above GL, 3' of Pile clean, Pile is battered, Southside 12"x10" top of PJ missing section

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 26-25	25	15	
Bent 26-25	25	15	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	100	N/A	Broken/Missing
West Face	100	N/A	Broken/Missing
North Face	100	N/A	Broken/Missing
South Face	10	5	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	15	5	
B	N	10	5	
C	N	15	5	
D	N	10	5	
E	N	10	5	
F	N	15	5	
G	N	10	5	
H	Y	10	5	
I	Y	15	5	
J	Y	15	5	
K	Y	15	5	

Cap Beams

% Deteriorated	Notes
50	Repaired with C-Channel Cap sandwich
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **27** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑ / 20↓	Y	0	23'10" / 27'5"	BT of PJ 7' above GL, 1' of Pile clean, 6" of PJ missing halfway around pile
D	10↓	Y	90		BT of PJ 4' above GL, 1' of Pile clean, PJ to BT of Cap, Southside 6"x3" top of PJ missing section
F	10↑ / 30↓	Y	0		BT of PJ 7' above GL, 2' of Pile cleans side 12"x16" top of PJ missing section
H	10↑ / 30↓	Y	10	22'11" / 28'1"	BT of PJ 7' above GL, 2' of Pile clean, Northside 8" crack from top of PJ to BT

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 27-26	25	20	
Bent 27-26	25	20	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	100	100	Broken/Missing
West Face	100	100	Broken/Missing

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	10	5	
C	N	5	5	
D	N	5	5	
E	N	5	5	
F	N	10	5	
G	N	10	5	
H	Y	10	5	
I	N	10	5	
J	Y	5	5	
K	N	5	5	

Cap Beams

% Deteriorated	Notes
20	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 28

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	5↑ / 10↓	Y	100	24'7" / 27'6"	BT of PJ 2' above GL, SW side 12" crack from top of PJ to BT
D	10↑ / 0↓	Y	100		BT of PJ 2' above GL, SW side 10"x16" top of PJ missing section
F	5↑ / 0↓	Y	10		BT of PJ 2' above GL, 2' of Pile clean
H	10↓	Y	15	22'10" / 26'7"	BT of PJ 4' above GL, 2' of Pile clean, PJ goes up to BT of Cap

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 28-27	15	25	
Bent 28-27	15	25	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	15	10	
West Face	15	10	
North Face	10	5	
South Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	5	5	
B	N	10	5	
C	N	15	100	
D	N	10	5	
E	N	5	5	
F	N	10	5	
G	N	5	5	
H	N	10	5	
I	N	5	5	
J	N	5	5	
K	Y	10	5	

Cap Beams

% Deteriorated	Notes
25	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 29

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑ / 0↓	Y	0	23'8" / 26'5"	BT of PJ 4" above GL, NE 12"x12" tear from top of PJ
D	15↑ / 0↓	Y	5		BT of PJ 3" above GL, 9" of Pile and PJ total clean
F	10↑	Y	0		BT of PJ into GL
H	30↑	Y	15	22'9" / 25'2"	BT of PJ into GL, Southside 12"x12" tear from top of PJ

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 29-28	15	15	
Bent 29-28	15	15	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	10	
West Face	20	10	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	5	
B	Y	20	5	
C	N	5	5	
D	N	5	5	
E	N	20	5	
F	N	20	5	
G	N	10	5	
H	N	10	5	
I	N	20	5	
J	N	20	5	
K	N	30	5	

Cap Beams

% Deteriorated	Notes
10	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 30

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑	Y	10	23'4" / 24'9"	BT of PJ into GL, Southside top of PJ 6"x6" missing section
D	20↑	Y	10		BT of PJ into GL, Northside 3"x6" tear from top of PJ, Eastside 3" crack/tear from top of PJ
F	10↑	Y	10		BT of PJ into GL
H	20↑	Y	5	22'2" / 24'2"	BT of PJ into GL, 8" of PJ clean, Southside 4"x12" tear from top of PJ, Top of PJ 8"x12" missing section

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 30-29	20	5	
Bent 30-29	20	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	
West Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	5	5	
C	N	5	5	
D	N	10	NONE	
E	N	5	5	
F	N	5	5	
G	N	5	NONE	
H	N	10	5	
I	N	5	5	
J	N	15	5	
K	Y	10	5	

Cap Beams

% Deteriorated	Notes
10	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 31

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑	Y	0	23' / 24'5"	BT of PJ into GL
D	40↑	Y	10		BT of PJ into GL
F	10↑	Y	50		BT of PJ into GL
H	60↑	Y	50	21'9" / 22'7"	BT of PJ into GL

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 31-30	30	5	
Bent 31-30	30	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	5	
West Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	5	
B	N	30	5	
C	N	10	5	
D	N	15	5	
E	N	20	5	
F	Y	20	5	
G	Y	20	5	
H	Y	20	5	
I	Y	20	5	
J	Y	20	5	
K	N	30	5	

Cap Beams

% Deteriorated	Notes
30	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **32** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑	Y	0	22' / 23'4"	BT of PJ into GL, Northside of PJ top missing 10"x8" section, Eastside 8" crack/tear from top of PJ
D	10↑	Y	15		BT of PJ into GL
F	10↑	Y	20		BT of PJ into GL
H	20↑	Y	10	22'10" / 23'7"	BT of PJ into GL

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 32-31	10	5	
Bent 32-31	10	5	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	
West Face	10	5	
North Face	10	5	
South Face	10	5	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	20	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	10	5	
J	N	20	5	
K	N	30	5	

Cap Beams

% Deteriorated	Notes
20	
LEGEND	↑ - ABOVE ↓ - BELOW ZONE BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH

FLAGLER BEACH PIER PILE INSPECTION

Bent # **33** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑ / 10↓	Y	5	21'6" / 23'10"	BT of PJ 2' above GL, 1' of Pile clean, Northside 8"x8" tear with missing grout from top of PJ, Eastside 3" crack top of PJ to BT
D	25↑ / 50↓	Y	10		BT of PJ 3' above GL, Southside 1" hole 2" deep, Westside 6" crack from top of PJ
F	90↓	Y	PJ to Cap		BT of PJ 3' above GL, Northwest side of PJ 4" crack
H	20↑ / 0↓	Y	10	21'4" / 23'2"	BT of PJ 2' above GL, 2' of Pile clean

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 33-32	40	5	
Bent 33-32	40	5	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	
West Face	10	5	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	20	5	
H	N	10	5	
I	N	10	5	
J	N	40	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
20	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 34

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑	Y	80	21'2" / 23'4"	BT of PJ into GL, 1' of PJ clean, NE 4"x12" top of PJ missing section
D	10↑	Y	5		BT of PJ into GL
F	10↑	Y	80		BT of PJ into GL
H	30↑	Y	10	22'3" / 23'4"	BT of PJ into GL

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 34-33	20	5	
Bent 34-33	20	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	5	
West Face	5	5	
North Face	100	50	Broken/Missing
South Face	20	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	5	NONE	
C	Y	5	5	
D	N	10	NONE	
E	Y	10	NONE	
F	Y	10	NONE	
G	Y	30	NONE	
H	Y	30	NONE	
I	N	20	NONE	
J	N	20	5	
K	Y	5	5	

Cap Beams

% Deteriorated	Notes
20	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent #

35

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	25↑	N	0	20' / 23'	BT of PJ into GL, 1' of PJ clean, West top of pj 6" crack, SE top of PJ 6" crack
D	20↑	Y	80		BT of PJ into GL, 1' top of PJ missing all the way around exposing grout
F	20↑ / 20↓	N	100		BT of PJ 3' above GL, 2' of Pile clean, Broken SS Strap, Pile freely moving
H	50↑	N	20	21'5" / 23'3"	BT of PJ into GL, Broken cofferdam covering pile, 7" crack from top of PJ to BT

Horizontal Brace

4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 35-34	100	100	Broken/Missing
Bent 35-34	100	100	Broken/Missing

V/D Member

4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	25	10	
West Face	40	30	

Stringers

4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	5	
B	Y	10	5	
C	N	20	NONE	
D	Y	10	5	
E	Y	10	5	
F	N	10	5	
G	N	10	5	
H	N	20	5	
I	N	10	NONE	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
45	4x12 shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent #

36

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	15↑	Y	0	19'6" / 24'3"	BT of PJ into GL, 1.5' of PJ clean, Northside 12"x6" top of PJ missing section, SW 8" crack from top of PJ
D	30↑	N	20		BT of PJ into GL, SE 6" crack from top to BT
F	15↑	Y	20		BT of PJ into GL, SW 8" crack from top of PJ to BT, SE 8" crack from top of PJ to BT
H	40↑	N	10	20'9" / 23'5"	BT of PJ into GL, Southside 3" crack from top of PJ to BT

Horizontal Brace

4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 36-35	10	5	
Bent 36-35	10	5	

V/D Member

4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	10	
West Face	30	30	
North Face	10	5	
South Face	10	5	

Stringers

4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	25	5	
B	N	10	5	
C	Y	10	5	
D	Y	20	5	
E	Y	15	5	
F	Y	10	5	
G	N	25	5 ⁰	
H	N	25	5	
I	N	10	5	
J	N	5	5	
K	N	5	5	

Cap Beams

% Deteriorated	Notes
70	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM P.J - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 37

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	N/A	N/A	N/A	19' / 22'5"	Missing
D	20↑	Y	10		BT of PJ into GL, 3" of PJ clean, Eastside 6"x8" top of PJ missing section
E	30↑	N	0		BT of PJ into GL, 8" of PJ clean, Northside 8" crack from top of PJ to BT
F	30↑	Y	0		BT of PJ into GL, 1' of PJ clean, Cofferdam repair, Eastside 4"x24" top of PJ missing
G	30↑	N	100		BT of PJ into GL, 10" of PJ clean
H	20↑	Y	100	21' / 23'8"	BT of PJ into GL, 8" of PJ clean, 1 SS Cap Jack

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 37-36	100	50	No longer connected
Bent 37-36	5	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	30	5	
West Face	30	10	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	Y	10	5	
B	Y	5	5	
C	Y	10	5	
D	Y	10	5	
E	Y	5	5	
F	Y	5	5	
G	N	40	5	
H	N	20	5	
I	Y	10	5	
J	Y	5	5	
K	Y	5	5	

Cap Beams

% Deteriorated	Notes
20	4x12 shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 38

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑ / 0↓	Y	15	18'1" / 22'1"	BT of PJ 3' above GL, 2' of Pile clean, 6" crack from top of PJ to BT
D	10↑ / 0↓	Y	0		BT of PJ 3' above GL 2' of Pile clean, Northside 4"x8" top of PJ missing section
F	10↑	Y	5		BT o PJ into GL, 6" of PJ clean
H	10↑	Y	10	18'9" / 23'	BT of PJ into GL, 10" of PJ clean, Westside 6"x10" top of PJ missing section

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 38-37	5	5	
Bent 38-37	5	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	5	5	
West Face	5	5	
North Face	100	5	Broken/Missing
South Face	5	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	Y	10	5	
B	Y	10	5	
C	Y	10	5	
D	Y	10	5	
E	N	10	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	10	5	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
20	4x12 shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **39** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑	N	0	17'6" / 22'5"	BT of PJ into GL, 8" of PJ clean, Northside 4" crack/tear from Top of PJ to BT
D	20↑	N	50		BT of PJ into GL, 8" of PJ clean, Northside 6" crack from top of PJ to BT, NW 4" crack top of PJ to BT
F	10↑	N	0		BT of PJ into GL, 1' of PJ clean, Southside 10"x8" top of PJ missing section
H	10↑	N	0	18'2" / 22'5"	BT of PJ into GL, 1' of PJ clean

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 39-38	10	10	
Bent 39-38	10	10	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	5	5	
West Face	5	5	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	Y	20	5	
B	Y	20	5	
C	N	10	5	
D	N	10	5	
E	N	40	5	
F	N	10	5	
G	N	10	5	
H	N	30	5	
I	N	30	5	
J	Y	30	5	
K	Y	10	5	

Cap Beams

% Deteriorated	Notes
60	C-channel cap sandwich repair
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 40

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑ / 0↓	N	10	18'8" / 21'11"	BT of PJ 18" above GL, 2' of Pile and PJ total clean, Northside 10" top of PJ missing section
D	10↑	Y	0		BT of PJ into GL, 1' of PJ clean
E	20↑	Y	0		BT of PJ into GL, 1' of PJ clean
F	10↑	Y	0		BT of PJ into GL, 6" of PJ clean, Northside 4"x8" top of PJ missing section
H	10↑ / 0↓	Y	5	17'4" / 21'8"	BT of PJ 18" above GL, 2' of Pile and PJ total clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 40-39	10	10	
Bent 40-39	10	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	10	
West Face	10	10	
North Face	10	10	
South Face	10	10	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	Y	30	5	
B	N	40	5	
C	N	40	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	20	5	
H	N	20	5	
I	N	20	5	
J	N	40	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
10	4x12 Shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **41** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑	Y	10	16'4" / 21'7"	BT of PJ into GL, 1' of PJ clean, North and SW side have 8" crack from top of PJ to BT
D	10↑ / 0↓	Y	5		BT of PJ 3' above GL, 3' of Pile clean, Northside 16"x16" top of PJ missing section
E	20↑	Y	10		BT of PJ into GL, 8" of PJ clean
F	20↑	Y	10		BT of PJ into GL, 1' of PJ clean
G	10↑ / 0↓	Y	15		BT of PJ 2' above GL, 2' of Pile clean
H	10↑	Y	10	17'10" / 21'6"	BT of PJ into GL, 1' of PJ clean, 4" of grout missing from top of PJ

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 41-40	10	10	
Bent 41-40	10	10	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	10	
West Face	10	10	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	10	5	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
10	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 42

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑	Y	0	15'3" / 19'10"	BT of PJ into GL, 2" of PJ clean, Northside 8"x16" top of PJ missing section
D	20↑	Y	0		BT of PJ into GL, 6" of PJ clean, NE 4" crack from top of PJ to BT
F	10↑	Y	0		BT of PJ into GL, 6" of PJ clean, Northside 24"x8" middle of PJ missing section
H	20↑	Y	90	15'5" / 20'4"	BT of PJ into GL, 1' of PJ clean, NE 6" crack from top of PJ to BT

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 42-41	20	10	
Bent 42-41	20	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	5	
West Face	20	5	
North Face	10	5	
South Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	20	5	
B	N	20	5	
C	N	20	5	
D	N	20	5	
E	N	20	5	
F	N	20	5	
G	N	20	5	
H	N	20	5	
I	N	20	5	
J	N	20	5	
K	N	30	5	

Cap Beams

% Deteriorated	Notes
20	4x12 Shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 43

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	40↑	N	0	14'3" / 20'2"	BT of PJ into GL, 1' of PJ clean, Northside 6"x20" top of PJ missing section
D	10↑	N	100		BT of PJ into GL, 1' of PJ clean, Eastside 8"x24" top of PJ missing section
F	10↑	N	10		BT of PJ into GL, 10" of PJ clean, North, West, and Eastside 3" cracks from top of PJ to BT
G	10↑	N	10		BT of PJ into GL, 1' of PJ clean, Westside 6"x10" tear in top of PJ
H	10↑ / 0↓	N	15	14'10" / 19'11"	BT of PJ 2' above GL, 4" of Pile clean, Southside 12"x10" top of PJ missing section

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 43-42	10	10	
Bent 43-42	10	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	5	5	
West Face	5	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	40	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	20	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	10	5	
J	N	10	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
60	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **44** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10↑ / 0↓	N	0	13'4" / 18'	BT of PJ 15" above GL, 100% Pile & PJ clean (In SZ), NW 12" crack from top of PJ to BT
C	10↑ / 0↓	Y	100		BT of PJ 18" above GL, 100% Pile & PJ clean (In SZ)
D	10↑ / 0↓	N	0		BT of PJ 1' above GL, 100% Pile & PJ clean (In SZ), Eastside 3" crack from top of PJ to BT
F	10↑ / 0↓	N	0		BT of PJ 1' above GL, 100% Pile & PJ clean (In SZ), SE side 8" crack from top of PJ to BT, Southside 3" crack from top of PJ to BT
H	20↑ / 0↓	N	0	13'6" / 18'1"	BT of PJ 15" above GL, 100% Pile & PJ clean (In SZ), Eastside 7" crack from top of PJ to BT

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 44-43	5	5	
Bent 44-43	5	5	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	10	
West Face	10	10	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	10	5	
C	N	10	5	
D	N	10	5	
E	N	10	5	
F	N	10	5	
G	N	10	5	
H	N	10	5	
I	N	20	5	
J	N	20	5	
K	N	10	5	

Cap Beams

% Deteriorated	Notes
20	4x18 Shim on top of Cap
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **45** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	20↑ / 0↓	N	10	12'11" / 17'11"	BT of PJ 8" above GL, 100% Pile & PJ clean (In SZ)
C	5↑ / 0↓	Y	100		BT of PJ 6" above GL, 100% Pile & PJ clean (In SZ), NE side 10"x8" top of PJ missing section
D	15↑ / 70↓	Y	100		BT of PJ 10" above GL, 100% Pile & PJ clean (In SZ), 3" top of PJ missing section all around
E	5↑ / 0↓	Y	100		BT of PJ 6" above GL, 100% Pile & PJ clean (In SZ)
F	10↑ / 10↓	N	5		BT of PJ 8" above GL, 100% Pile & PJ clean (In SZ)
H	30↑ / 0↓	Y	80	13'2" / 16'8"	BT of PJ 1' above GL, 100% Pile & PJ clean (In SZ), Shimmed (Shim is 80% Wasted)

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 45-44	10	60	
Bent 45-44	10	10	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	20	20	
West Face	20	20	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	10	5	
B	N	10	5	
C	N	10	None	
D	N	10	None	
E	N	10	None	
F	N	10	None	
G	N	20	5	
H	N	20	None	
I	N	10	None	
J	N	10	None	
K	N	20	5	

Cap Beams

% Deteriorated	Notes
50	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 46

Date 6-12 OCT 22

Pile	% Deteriorated ↑↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	30↑ / 0↓	N	30	12'1" / 14'9"	BT of PJ 18" above GL, 100% Pile & PJ clean (In SZ), Has single SS Cap Jack, NW side 12" crack from top of PJ to BT
D	10↑ / 0↓	N	10	14'8"	BT of PJ 10" above GL, 100% Pile & PJ clean (In SZ), Has 2 SS Cap Jacks, NE side 5"x16" top of PJ missing section, NW side 5"x8" tear top of PJ, Westside 5"x8" tear top of PJ
F	50↑ / 0↓	N	10	14'7"	BT of PJ 1' above GL, 100% Pile & PJ clean (In SZ), NW 10" crack from top of PJ to BT
H	30↑ / 0↓	N	30	12'4" / 14'8"	BT of PJ 8" above GL, 100% Pile & PJ clean (In SZ), NE side 2" crack from top of PJ to BT

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bents 46-45	20	10	
Bents 46-45	20	10	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	5	5	
West Face	5	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	90	
B	N	30	90	
C	N	30	90	
D	N	30	90	
E	N	30	90	
F	N	30	90	
G	N	30	90	
H	N	30	90	
I	N	30	90	

Cap Beams

% Deteriorated	Notes
80	
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # **47** **Date** 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	N/A	N	0	11'4" / 12'7"	BT of PJ into GL, 100% PJ clean (In SZ), Southside middle of PJ 1/2"x5" deep hole, Northside middle of PJ 1/2"x4" deep hole, Eastside 1/2"x3" deep hole
D	N/A	N	30	12'4"	BT of PJ into GL, 100% PJ clean (In SZ), Northside middle of PJ 1/2"x4" deep hole
F	N/A	N	5	10'6" / 12'6"	BT of PJ into GL, 100% PJ clean (In SZ), East and Northside middle of PJ 1/2"x4" deep hole, Northside BT of PJ 1/2" deep hole
H	N/A	N	0	12'6"	BT of PJ into GL, 100% PJ clean (In SZ)
J		Clamp	0	11'7"	BT of PJ into GL, 100% PJ clean (In SZ)

Horizontal Brace **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
Bent 47-46	10	5	
Bent 47-46	10	5	

V/D Member **4 x 8**

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	No hardware, 1" hole through Pile D
West Face	10	5	

Stringers **4 x 12**

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	90	
B	N	30	90	
C	N	30	90	
D	N	30	90	
E	N	30	90	
F	N	30	90	
G	N	30	90	
H	N	30	90	
I	N	40	90	
Lifeguard St	N	5	5	Stringers supporting Lifeguard St

Cap Beams

% Deteriorated	Notes
50 / 40 Extension	(6) 2x12 sandwich cap extension to Pile J that supports Lifeguard Station
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 48

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	N/A	N	10	10'10" / 10'11"	BT of PJ into GL, 100% clean
D	N/A	N	0	11'	BT of PJ into GL, 100% clean
F	N/A	N	5	11'2"	BT of PJ into GL, 100% clean
H	N/A	N	0	11'3"	BT of PJ into GL, 100% clean
J		Clamp	0	10' / 10'2"	BT of PJ into GL, 100% clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 48-47	N/A	N/A	
Bent 48-47	N/A	N/A	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	5	5	
West Face	5	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	90	
B	N	30	90	
C	Y	30	90	
D	Y	30	90	
E	Y	40	90	
F	Y	30	90	
G	Y	30	90	
H	Y	30	90	
I	Y	30	90	
Lifeguard St	N	5	5	Stringers supporting Lifeguard St

Cap Beams

% Deteriorated	Notes
50 / 10 Extension	(6) 2x12 sandwich cap extension to Pile J that supports Lifeguard Station
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 49

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	N/A	N	5	9'10" / 9'7"	BT of PJ into GL, 100% clean
D	N/A	N	0	9'8"	BT of PJ into GL, 100% clean
F	N/A	N	5	9'10"	BT of PJ into GL, 100% clean, Eastside 5' long crack 3" deep into grout in middle of PJ
H	N/A	N	0	10'	BT of PJ into GL, 100% clean, Over pour of grout 1' ↑ GL 360 around PJ, Crack from top of PJ and runs to adjacent side to hardware
J		Clamp	0	8'11" / 9'	BT of PJ into GL, 100% clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 49-48	5	5	
Bent 49-48	5	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	
West Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	30	90	
B	N	30	90	
C	N	30	90	
D	N	30	90	
E	Y	40	90	
F	Y	30	100	
G	Y	30	90	
H	Y	30	90	
I	Y	30	90	
Lifeguard St	N	5	5	Stringers supporting Lifeguard St

Cap Beams

% Deteriorated	Notes
50 / 10 Extension	(6) 2x12 sandwich cap extension to Pile J that supports Lifeguard Station
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

FLAGLER BEACH PIER PILE INSPECTION

Bent # 50

Date 6-12 OCT 22

Pile	% Deteriorated ↑ ↓ Pile Jacket	SS Strap	% Not Touching Cap	GL To Bottom of Cap 2017/2022	Notes
B	10	N	10	8'7" / 8'3"	No PJ
D	30	N	10	8'4"	No PJ
F	20	N	0	8'8"	No PJ
H	50	N	20	9'	No PJ
J		Clamp	0	7'8" / 8'	BT of PJ into GL, 100% clean

Horizontal Brace 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
Bent 49-48	5	5	
Bent 49-48	5	5	

V/D Member 4 x 8

Location	% Deteriorated	Hardware Wasted	Notes
East Face	10	5	
West Face	10	5	

Stringers 4 x 12

Stringer	Gap Y/N	% Deteriorated	Hardware Wasted	Notes
A	N	20	100	
B	N	20	90	
C	N	20	90	
D	N	20	90	
E	Y	20	100	
F	Y	20	90	
G	Y	20	100	
H	Y	30	100	
I	Y	80	100	
Lifeguard St	N	5	5	Stringers supporting Lifeguard St

Cap Beams

% Deteriorated	Notes
50 / 10 Extension	(6) 2x12 sandwich cap extension to Pile J that supports Lifeguard Station
LEGEND	↑ - ABOVE ↓ - BELOW BT - BOTTOM PJ - PILE JACKET GL - GROUND LINE SZ - SPLASH ZONE

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