Washington State Department of Transportation
Bridge Preservation Dive Team

UNDERWATER INSPECTION REPORT FOR

STEILACOOM MOORING FLOAT

BRIDGE NO. DOC-2 **STRUCTURE ID 00200437**

Prepared For WA State Dept. of Corrections (DOC)

Inspection Date April 26, 2021

Lead Inspector/Diver James R. W. Harding
Cert. # G0911

Inspector/Diver Loren A. Wilson

JAMES REX WILLIAM HARDING
STATE OF WASHINGTON
15222
REGISTERED
PROFESSIONAL ENGINEER

7/8/21

Status: Released Printed On: 7/8/2021 Agency: Other State Agencies

CD Guid: ec7f720e-8c2a-4f0a-a945-250b6f3ff0a3 CD Date: 4/29/2021 Program Mgr: Evan M Grimm

UNDERWATER INSPECTION REPORT
FOR THE
STEILACOOM MOORING FLOAT

BRIDGE NO. DOC-2
STRUCTURE ID 00200437

EXECUTIVE SUMMARY

The WSDOT Dive Team performed an underwater inspection of the Steilacoom Mooring Float on April 26, 2021. Twelve steel pipe piles and the concrete floating pontoon exterior were inspected by diving.

In general, the steel pipe piles that position the floating concrete pontoon (spud piles) are in fair condition. The epoxy coating is failing in large areas underwater, exposing the steel substrate to corrosion and subsequent section loss. An ultrasonic thickness meter was used to check spot metal thicknesses on the piles and small localized areas exhibited losses of up to 50% of the pipe wall thickness. Since these piles are not bearing vertical loads, this condition does not require repair but will be monitored during future inspections. The concrete floating pontoon had thick marine growth covering up to 80% of the surface area, however spot cleanings of the growth revealed no defects.

No underwater repairs are required at this time. Recommend retaining the 48-month frequency for underwater inspections.

Washington State Department of Transportation

Daily Site Dive Log

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Inspector James R. W. Harding **Date** 4/26/2021

Bridge No. DOC-2 **Bridge Name** STEILACOOM MOORING FLOAT

Bridge Type **Waterway Name** PUGET SOUND

Dive Objective Inspection of submerged substructure elements

Diving Operation

Type of Operation ☐ SCUBA ☑ Surface Supplied Air ☐ Snorkel ☐ ROV ☐ Other _____

Equipment

Suit Dry suit

Air Supply Surface Supplied

Site Access Munson dive boat - launched from Zittel's Marina

Inspection Tools GoPro camera, D-meter thickness gauge, hammer/scraper

Conditions

Water ☑ Salt ☐ Fresh ☐ Brackish Temperature 48 °F Visibility 15 ft

Surface ☑ Calm ☐ Choppy ☐ Rough

Tide ☐ High ☐ Low ☐ Flood ☑ Ebb ☐ N/A

Current ☐ Fast ☐ Moderate ☑ Slow Velocity < 0.5 ft/sec

Weather ☑ Clear ☐ Cloudy ☐ Overcast ☐ Rain ☐ Windy Air Temp 52 °F

Diver Checks

- ☑ First Aid Equipment on Site
- ☑ Communication for EMS
- ☑ Dive Gear Inspected
- ☑ Air Source Checked
- ☑ Pre-Activity Safety Plan Reviewed
- ☑ COVID-19 Addendum to PASP
- ☑ Physical Condition of Diver(s) Checked
- ☑ Communications for Diver(s) Checked
- ☑ Team Briefed and Understands Dive Plan
- ☑ Special Site Hazards Noted
- ☑ Line-Tending Procedures Reviewed
- ☐ _____

Dive Plan and Dive Team Procedures

Assess site conditions and determine type of dive operation. Hold on-site pre-dive safety meeting to discuss and plan dive operation, determine roles and responsibilities, review emergency procedures, and check physical condition of diver(s). Assemble and check dive gear. Check communication for diver(s). After completion of dive, review notes, check condition of diver(s), take soundings and photos as required.

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Dive Schedule

Dive No.	Entry Time	Exit Time	Total Time in Water	Maximum Depth	Remarks
1	09:05:00	10:51:00	01:46:00	23 fsw*	Loren inspected all of DOC-2 and DOC-1 in this one dive.

Dive Narrative

The team converged at Zittel's Marina and proceeded to prepare the boat and gear. A pre-activity safety plan was discussed and team roles for the inspection were decided upon. A surface-supplied air (SSA) diver operation was chosen and after the appropriate gear was loaded, the boat was launched and the team proceeded to motor east, around the southern tip of the Key Peninsula, and along the west side of Anderson Island, to the inspection location on the south side of McNeil Island. The boat was moored to the concrete pontoon floats, and after making contact with DOC personnel on-site, the diver was geared up and checked. The diver splashed and began the inspection at Spud Pile Group 2 at the east inshore end of the floats, and proceeded around counterclockwise to Groups 1, 3, and 4. The bottom and sides of the concrete pontoon floats were also given a swim-by inspection, although heavy marine growth impaired the visual inspection. Notes and findings were relayed to support personnel on the dive boat via hardwired communications in the umbilical. Depths and photos were taken as necessary. Passenger ferry boat traffic was monitored to ensure the safety of the diver during boat arrivals and departures. Once all underwater elements had been inspected, the diver was recovered to the boat, where his physical condition was checked. All notes and photos were reviewed for completeness prior to leaving the site.

* fsw = feet sea water

Dive Diver Air IN/OUT (psig)
1 LAW 3600/2900

Dive Team Members

James R. W. Harding, P.E. (Name)	Notes / Comms. (Role)
Loren A. Wilson, P.E. (Name)	Diver (Role)
Darren O. Nebergall, P.E. (Name)	Standby Diver (Role)
Richard M. Pawelka, P.E. (Name)	DPIC (Role)

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Underwater Inspection Report

Status: Released Printed On: 7/8/2021 Agency: Other State Agencies

CD Guid: ec7f720e-8c2a-4f0a-a945-250b6f3ff0a3 CD Date: 4/29/2021 Program Mgr: Evan M Grimm

Inspector	James R. W. Harding	**Agency/Owner**	WA State Dept. of Corrections (DOC)	**Date**	4/26/2021
Bridge No.	DOC-2	**Bridge Name**	STEILACOOM MOORING FLOAT		
Bridge Type		**Waterway Name**	PUGET SOUND		
Substructure	Steel Pipe Piles	**Foundation**	Steel Pile Piles		
No. Spans	1	**No. Piers Dived**	4	**Inspection Hours**	2.0

4 [ ] Substructure Condition (1676) 8 [ ] Chan/Protection (1677) T [ ] Scour Code (1680)

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
8361	Scour	4	EA	4	0	0	0
8701	Ferry Concrete Floating Pontoon	8	CELL	0	0	7	1
8703	Spud Piling & Wells	12	EA	0	0	12	0
8902	Protective Coating - Piling	2200	SF	1230	0	970	0
8910	Safety Access Ladders	1	EA	1	0	0	0

Notes

0	ORIENTATION: The Steilacoom Mooring Float includes the float, gangplank, and the steel spud piles. For location reference: Offshore is north, shore is south, left side is west, and right side is east.
1676	SUBSTRUCTURE: Substructure set to '4' due to pontoon cells in Condition State 4.
1677	CHANNEL: This structure abuts another structure and does not connect to the shoreline directly. No bank issues noted. No restrictions to water flow past the structure.
1680	SCOUR: Structure is in tidal waters with weak and variable tidal currents. Scour code set to "T - tidal" and is considered a low risk for scour. See note 8361.
8361	SCOUR (Field): There are four spud pile groups. Underwater Inspection Findings: Water flow in the vicinity is tidal. No scour patterns or scour countermeasures were observed around the float or spud piles.

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Notes (Continued)

8701 FERRY CONCRETE FLOATING PONTOON:

INTERIOR:

All eight cells of the mooring float were entered during the 2017 inspection (see layout sheet for cell numbering) (photos #7 & #8).

The cell at the spud pile well connection on the west side, cell #4, showed some signs of leaking at the interior connection plates (photo #9) (CS4). Marty Rankin informed us in 2013 that cell #5 is pumped regularly. DOC employees told the inspectors in 2017 and 2019 that all cells are pumped regularly. The pumping depths should be tracked, REPAIRS #10001 and #10007.

Cell #4 has a broken hold down bolt stuck in the base tab and Cell #5 has a broken hold down tab (photos #11 and #12). REPAIR #10003.

Cell #5 spud pile well connections have rust and some section loss (photo #13).

Cell #8 also has spud pile well connection plates on the interior. These plates are slightly undersized resulting in the bolts not having a solid anchor base (photo #14).

WATER DEPTH TRACKING (T = some ponding to <1" deep, D = Dry)

DATE	CELL	1	2	3	4	5	6	7	8
5/22/2013		1"	T	T	T	2"	1"	T	T
4/20/2015	- cell hatches not opened in 2015 (48 month frequency)								
4/24/2017		3/4"	1-1/4"	1-1/2"	1-1/2"	3"	1-1/2"	1"	1"
4/08/2019	-	*	*	*	*	4"	*	*	*

*cell hatches not opened in 2019 (48 month frequency), Cell #5 water depth measured from deck.

EXTERIOR:

Offshore exterior top edge is spalled 10' of its length with patching of half its length.

Many of the bumper attachments have minor distortions, repairs, or have been replaced. Offshore right side bumper has broken welds (photo #30).

Hatch bolts missing on all hatches in 2019. Holes have been corked (photo #33). Also noted in photo #33 of Cell #7, hatch lift handle is broken. REPAIR #10003.

FLOATER FOUR CORNER DRAFT MEASUREMENTS

DATE	CORNER --- OFFSHORE RT	--- OFFSHORE LT	--- SHORE RT	--- SHORE LT
5/22/2013	30"	30"	29.5"	29"
4/20/2015	28.5"	29-3/4"	28"	28.5"
4/24/2017	29"	27"	29"	27.5"
4/08/2019	29.5"	29"	29"	27"

No significant change found between 2013 and 2019.

Underwater Inspections Findings:

The concrete pontoon surface below the waterline is typically about 80% covered in marine growth up to 1-ft. thick. Spot cleaning of growth revealed no defects (photo UW-5).

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Substructure	Steel Pipe Piles	**Foundation**	Steel Pile Piles		
No. Spans	1	**No. Piers Dived**	4	**Inspection Hours**	2.0

Notes (Continued)

8703 SPUD PILING & WELLS:
Spud Pile #3 (SP3), typical well connection. Undersized washers at slotted bolt holes (photo #19).
Spud Pile #4 (SP4), base plate does not sit flush to concrete float (photo #23).
Spud Pile #4 well (SP4) collar is tipped due to loose sliding bolts, worn bolts, or worn slots (photos #31 and #32). REPAIR #10008.

Underwater Inspection Findings:
Spud piling are in generally fair condition underwater. Coating failure with section loss was the most common defect noted. Thickness measurements of the steel were taken in localized areas of corrosion and pitting as well as in good areas for comparison. Up to 50% metal thickness has been lost in some of the small pitted areas. These section losses are not a structural concern since the spud piles do not carry vertical loads and are for pontoon positioning only although future inspections will monitor these losses (photos UW-3, UW-4, UW-7 and UW-8). Refer to attached Layout drawing and Pile Inspection Data Sheets for more location and defect information.

8902 INORGANIC ZINC VINYL PAINT:
Spud pile coating is missing with laminar rust in the intertidal zone (photo #20).

Underwater Inspection Findings:
Spud piles have varying degress of coating failure and loss underwater. The coatings have adhesion failure in areas up to 75% of the pile surface area (coating in place but ineffective). Coating is missing in large areas as well, exposing the metal substrate which is corroding and losing section (photos UW-4, UW-6 and UW-7). Refer to attached Layout drawing and Pile Inspection Data Sheets for more location and defect information.

8910 SAFETY ACCESS LADDERS:
Safety access ladder located between SP3 and SP4 has rust blooms.

Repairs

Repair No	Pr	R	Repair Description	BMS	Noted	Maint	Verified
			(No repairs for this structure)				

Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Underwater	4/26/2021	48	2.0	JRWH	G0911	LAW	Underwater inspection by WSDOT Dive Team. Frequency set at 48 months to correspond with every-other routine inspection.

Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
Boat		M	M	M				Used Munson dive boat for access.

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Substructure	Steel Pipe Piles	**Foundation**	Steel Pile Piles		
No. Spans	1	**No. Piers Dived**	4	**Inspection Hours**	2.0

Third Party Notification									Schedule inspection with Greg Buikema (DOC) 253-328-3229 or 253-588-5281 (cell). A security clearance must be done for all inspectors prior to landing on the island. This can be done via Greg.
Primary Safety	4/8/2019	24	1.0	JHL	D2016	CRT	Switched from Routine to Primary Safety inspection type in 2019 as this is pedestrian traffic only.		

Resources	**Hours**	**Min**	**Pref**	**Max**	**Freq Date**	**Need Date**	**Override**	**Notes**
Boat								Boat needed for inspection. Kvichek boat used during 2019 inspection.
Special Equipment								Enter the eight float cells with an electronic winch on a tripod provided by DOC maintenance personnel. Harness and air monitor is required. Last done in 2017, DOC enters these on a regular basis, inspect in 2021. Arrange with Greg Buikema.
Third Party Notification								Schedule inspection with Greg Buikema (DOC) 253-328-3229 or 253-588-5281 (cell). A security clearance must be done for all inspectors prior to landing on the island. This can be done via Greg, provide full name, SS#, and date of birth (DOB).

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Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: ec7f720e-8c2a-4f0a-a945-250b6f3ff0a3

Release Date: 6/22/2021

Program Mgr: Evan M Grimm

Br. No. DOC-2 **SID** 00200437 **Br. Name** STEILACOOM MOORING FLOAT

Carrying

Route On **Mile Post**

Intersecting PUGET SOUND

Route Under **Mile Post**

UW-5

8701 Ferry Concrete Floating Pontoon

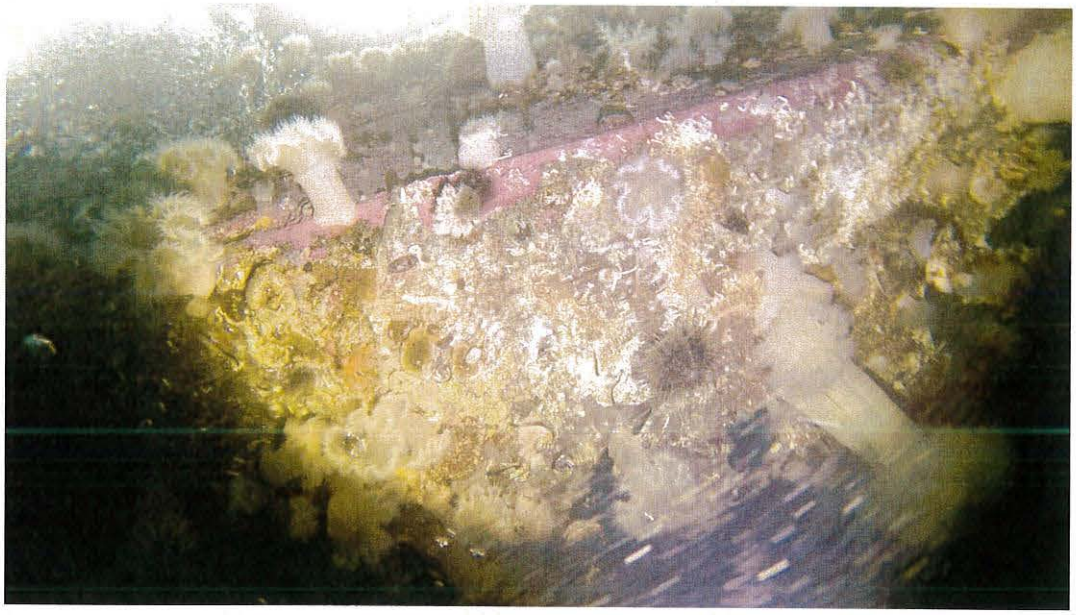
Photo Type: I - In Depth

Orientation: UP

Date: 4/24/2017

Repairs:

Heavy marine growth on concrete pontoon.



UW-3

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 5/22/2013

Repairs:

Typical coating failure/rust blooming on spud piles (SP1A shown).

Status: Released | Printed On: 7/8/2021 | Agency: Other State Agencies

CD Guid: ec7f720e-8c2a-4f0a-a945-250b6f3ff0a3 | Release Date: 6/22/2021 | Program Mgr: Evan M Grimm

Br. No. DOC-2 **SID** 00200437 **Br. Name** STEILACOOM MOORING FLOAT

Carrying **Route On** **Mile Post**

Intersecting PUGET SOUND **Route Under** **Mile Post**

UW-4

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 5/22/2013

Repairs:

More advanced corrosion and section loss on steel spud pile. SP3B thickness reading 0.300"

UW-7

8703 Spud Piling & Wells

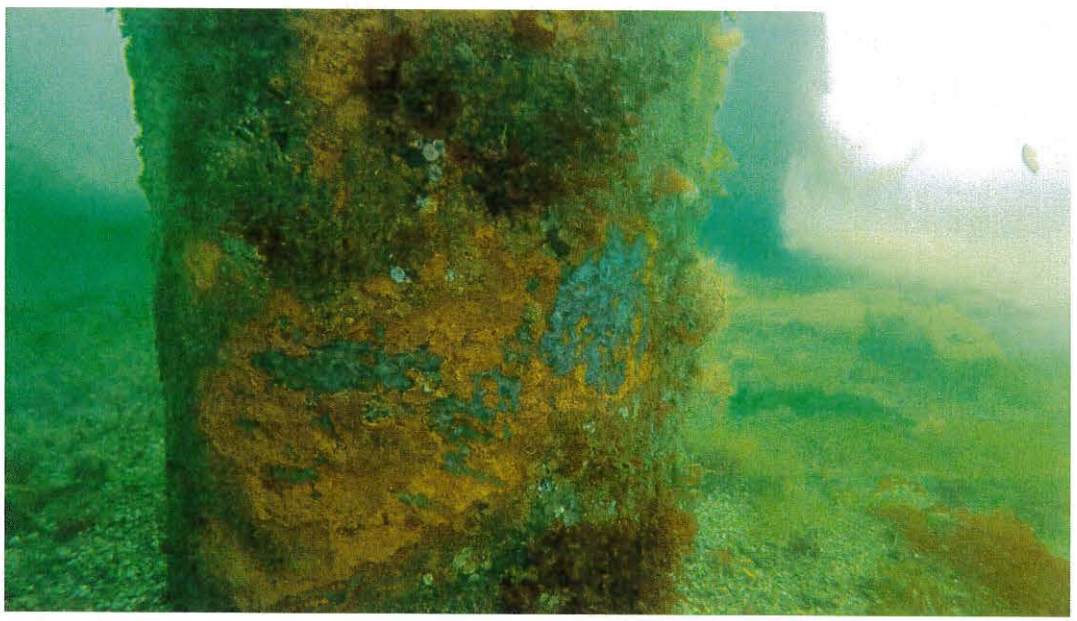
Photo Type: I - In Depth

Orientation: Sea

Date: 4/26/2021

Repairs:

SP4 Pile B has 50% coating failure from MDL to MDL +3.



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Br. No. DOC-2 **SID** 00200437 **Br. Name** STEILACOOM MOORING FLOAT

Carrying **Route On** **Mile Post**

Intersecting PUGET SOUND **Route Under** **Mile Post**

UW-8

8703 Spud Piling & Wells

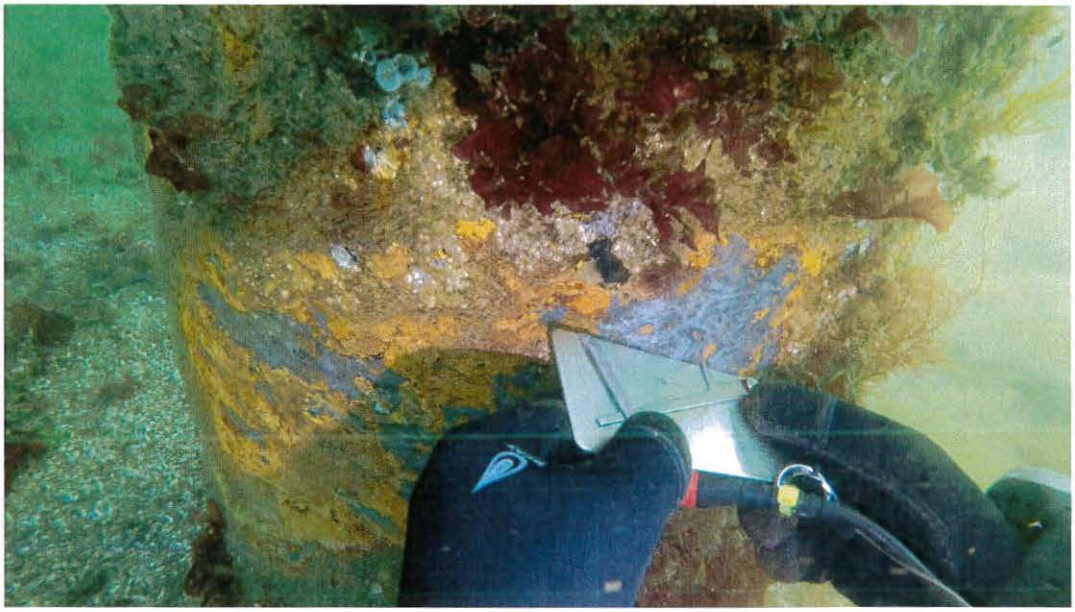
Photo Type: I - In Depth

Orientation: DN

Date: 4/26/2021

Repairs:

SP4 Pile B has deep pitting at MDL +2.



SI-20

8902 Inorganic Zinc Vinyl Paint

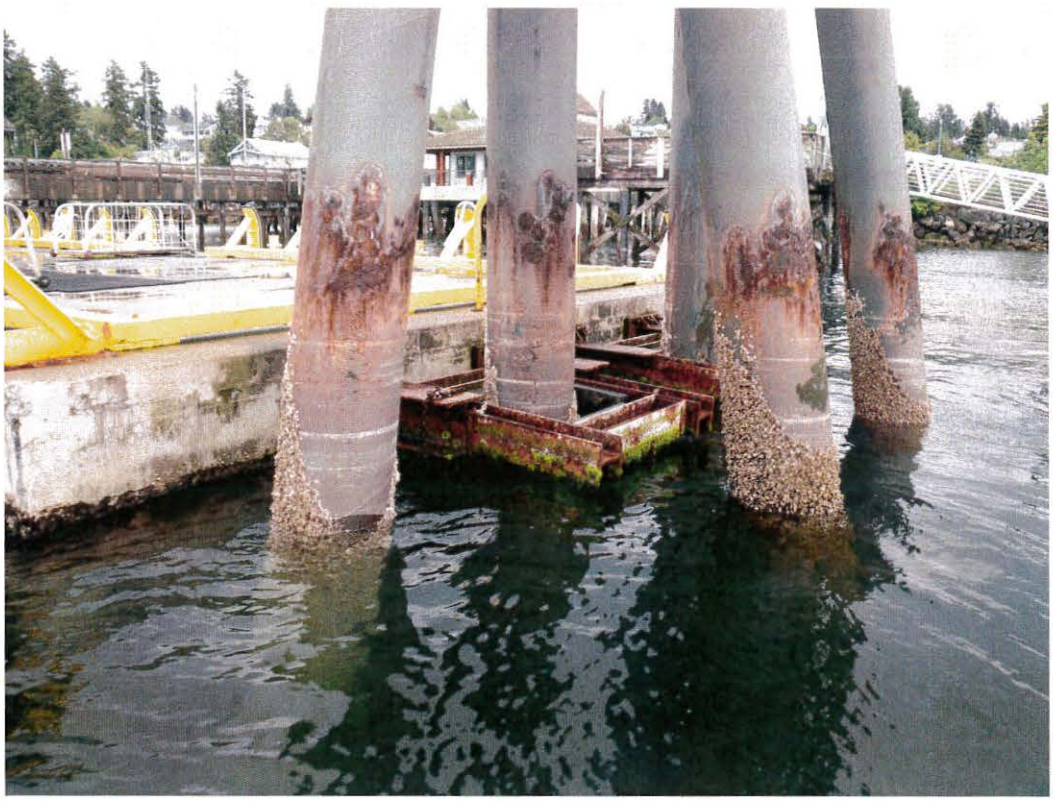
Photo Type: G - General

Orientation: Shore

Date: 5/22/2013

Repairs:

Steel Spud piles have lost protective coat in the intertidal zone.



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Br. No. DOC-2 **SID** 00200437 **Br. Name** STEILACOOM MOORING FLOAT

Carrying **Route On** **Mile Post**

Intersecting PUGET SOUND **Route Under** **Mile Post**

UW-6

8902 Inorganic Zinc Vinyl Paint

Photo Type: G - General

Orientation:

Date: 4/24/2017

Repairs:

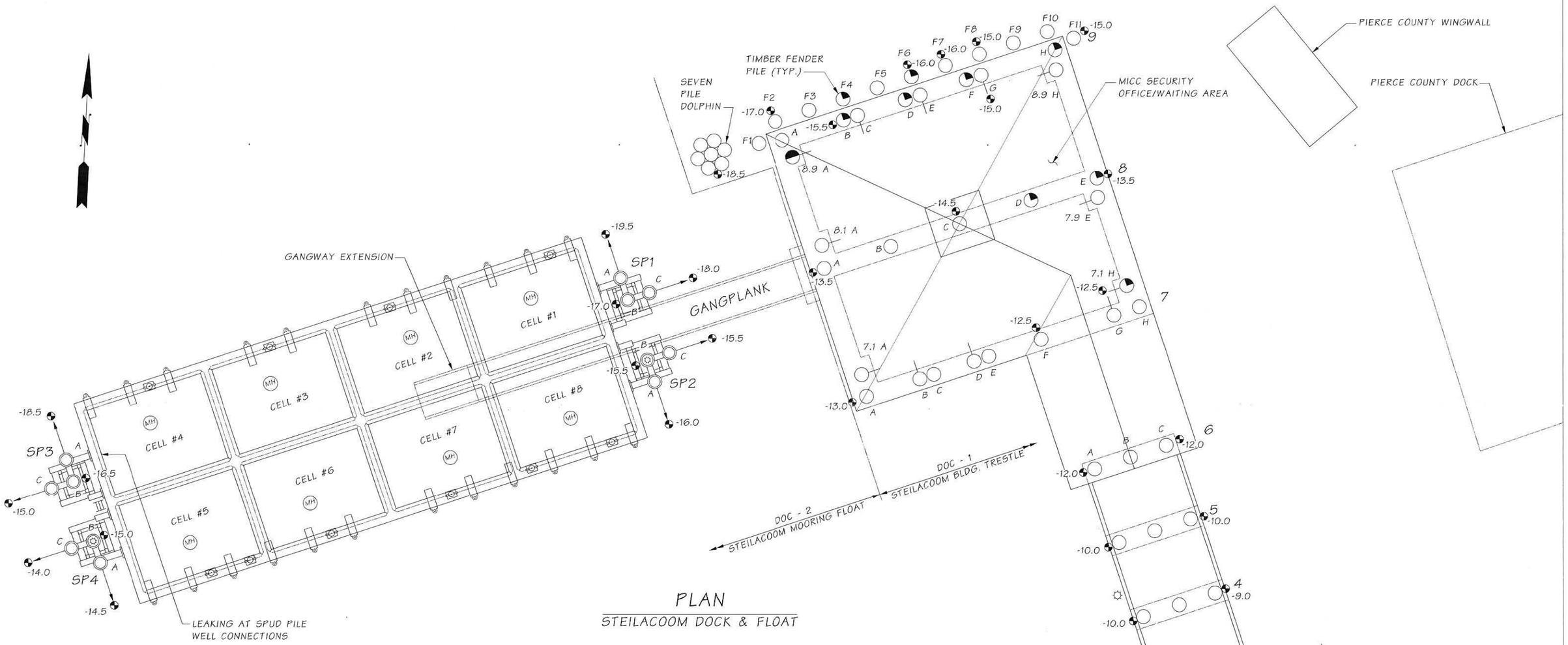
Typical coating failure and corrosion occuring on spud piling underwater (approx. 50% failure shown).

Washington State Department of Transportation

Steilacoom Floating Dock
DOC-2 / 00200437
Pile Inspection Data Sheets

Underwater	4/26/2021	Lead: JRWH	Co: LAW		
Routine	4/26/2021	Lead: LAW	Co: ABK		

Pile Location		Condition/Damage				Inspection Type	
Bent	Pile	Pile Type	MDL El.	Defect Location	Details/Remarks	Routine/UW	Date
PILE INSPECTION DATA - Float Spud Pile Groups							
SP1	A	Steel	-19.5		25% coating failure/loss. Thickness readings 0.455"/0.300" See Photo #UW-3 (typical coating failure/loss).	UW	4/26/2021
	B	Steel	-17		50% coating failure/loss. Thickness readings 0.445"/0.315"	UW	4/26/2021
	C	Steel	-18	MDL+3	50% coating failure/loss. Thickness readings 0.465"/0.340" (2021)	UW	4/26/2021
SP2	A	Steel	-16		25% coating failure/loss. Thickness reading 0.250" in small corroded area. Good area reading 0.485"	UW	4/26/2021
	B	Steel	-15.5	MDL+16	25% coating failure/loss. Up to 50% area adhesion failure. Thickness readings 0.470"/0.415" Up to 0.125" pitting in the dent in the pile.	UW	4/26/2021
	C	Steel	-15.5	MDL+1	25% coating failure/loss. Up to 50% area adhesion failure. Thickness reading 0.450"/0.255" (2021).	UW	4/26/2021
SP3	A	Steel	-18.5	MDL+1	25% coating failure/loss. 50% area adhesion failure. Thickness reading 0.470"/0.350" (2021).	UW	4/26/2021
	B	Steel	-16.5		50% coating failure. Thickness reading 0.300" in pitted area. Photo #UW-4.	UW	4/26/2021
	C	Steel	-15		10% coating failure. Up to 50% adhesion failure. Thickness readings 0.470" (good)/0.370" (in pitted area).	UW	4/26/2021
SP4	A	Steel	-14.5	MDL +1	25% coating failure/loss. Up to 75% area adhesion failure. Thickness readings 0.410"/0.300" (2021)	UW	4/26/2021
	B	Steel	-15	MDL to +3 MDL +2	25% coating failure/loss. 50% coating failure. Thickness readings 0.480"/0.290" (2021).	UW	4/26/2021
	C	Steel	-14		25% coating failure/loss. 0.390"/0.250" (in small pitted area).	UW	4/26/2021
Counts	Steel =	12					



PLAN

STEILACOOM DOCK & FLOAT

LEGEND:

- 100% SECTION REMAINING
- 75%TO 100% SECTION REMAINING
- 50% TO 75% SECTION REMAINING - YT
- 25% TO 50% SECTION REMAINING - MONITOR - YT
- 0% TO 25% SECTION REMAINING - REPAIR OR REPLACE - RT
- REDUNDANT
- VERTICAL TREATED TIMBER PILE
- VERTICAL ROUND STEEL PILE
- BATTERED (br) TREATED TIMBER PILE
- BATTERED (br) ROUND STEEL PILE
- LUMINAIRE
- SAFETY ACCESS LADDER
- FENDER
- MAN HOLE
- FIELD MEASURED ELEVATION

ROUTINE INSPECTION		UNDERWATER INSPECTION	
Date:	4/26/2021	Date:	4/26/2021
Scale:	NA	Scale:	NA
Inspected by:	LAW/ABK	Inspected by:	JRWH/LAW

WSDOT
BRIDGE PRESERVATION OFFICE

Washington State Department of Transportation
Bridge and Structures Office

DOC - 1 AND DOC - 2
STEILACOOM BUILDING TRESTLE
AND MOORING FLOAT

LAYOUT

SHEET NO. 1
SHEET
OF
SHEETS

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
NBI STRUCTURE INVENTORY AND APPRAISAL REPORT
(ENGLISH UNITS)

CD Date: 4/29/2021 Printed on: 7/8/2021
CD Guid: ec7f720e-8c2a-4f0a-a945-250b6f3ff0a3

IDENTIFICATION

(1) STATE NAME - WASHINGTON 530
(8) STRUCTURE NUMBER # 002004370000000
(5) INVENTORY ROUTE (ON/UNDER) - Under 0 8 0 10210
STATE ROUTE MILEPOST 5.96
(2) HIGHWAY AGENCY DISTRICT -
(3) COUNTY CODE 53 - Pierce County (4) PLACE CODE 00000
(6) FEATURES INTERSECTED PUGET SOUND
(7) FACILITY CARRIED
(9) LOCATION
(12) BASE HIGHWAY NETWORK - Not part of network 0
(13) LRS INV ROUTE AND SUB ROUTE
(11) LRS MILEPOST
(16) LATITUDE 47 Deg 10 Min 21.98 Sec
(17) LONGITUDE 122 Deg 36 Min 13.89 Sec
(98A) BORDER BR. - (98B) (99) BORDER BR. SID

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL -
DESIGN -
(44) STRUCTURE TYPE APPR: MATERIAL -
DESIGN -
(45) NO. OF SPANS IN MAIN UNIT
(46) NO. OF APPROACH SPANS
(107) DECK STRUCTURE TYPE -
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
(A) TYPE OF WEARING SURFACE -
(B) TYPE OF MEMBRANE -
(C) TYPE OF DECK PROTECTION -

AGE AND SERVICE

(27) YEAR BUILT 1996
(106) YEAR RECONSTRUCTED
(42) TYPE OF SERVICE ON - Other 0
UNDER - Other 0
(28) LANES: ON STRUCTURE 0 UNDER STRUCTURE 0
(29) AVERAGE DAILY TRAFFIC 0
(30) YEAR OF ADT (109) TRUCK ADT 0%
(19) BYPASS, DETOUR LENGTH 000

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN
(49) STRUCTURE LENGTH
(50) CURB OR SIDEWALK: LEFT RIGHT
(51) BRIDGE ROADWAY WIDTH CURB TO CURB
(52) DECK WIDTH OUT TO OUT
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)
(33) BRIDGE MEDIAN -
(34) SKEW Deg (35) STRUCTURE FLARED
(10) INVENTORY ROUTE MIN VERT CLEAR 99 ft 99 in
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR
(53) MIN VERT CLEAR OVER BRIDGE RDW
(54) MIN VERT UNDERCLEAR
(55) MIN LAT UNDERCLEAR RT
(56) MIN LAT UNDERCLEAR LT

NAVIGATION DATA

(38) NAVIGATION CONTROL -
(111) PIER PROTECTION - Not Applicable
(39) NAVIGATION VERTICAL CLEARANCE
(116) VERT-LIFT BRIDGE NAV MIN VERT CLR
(40) NAVIGATION HORIZONTAL CLR

WSBIS DATA

BRIDGE NUMBER DOC-2
BRIDGE NAME STEILACOOM MOORING FLOAT
CUSTODIAN Other State Agencies
CROSSING DESC
MAIN LISTING FLAG M
SUFFICIENCY RATING

CLASSIFICATION

(112) NBIS BRIDGE LENGTH
(104) HIGHWAY SYSTEM - Not on the NHS 0
(26) FUNCTIONAL CLASS -
(100) DEFENSE HIGHWAY - Not a STRAHNET route 0
(101) PARALLEL STRUCTURE -
(102) DIRECTION OF TRAFFIC -
(103) TEMPORARY STRUCTURE - Not Applicable
(105) FEDERAL LANDS HIGHWAY -
(110) DESIGNATED NATIONAL NETWORK - Not part of network 0
(20) TOLL -
(21) MAINTENANCE -
(22) OWNER -
(37) HISTORICAL SIGNIFICANCE -

CONDITION

(58) DECK
(59) SUPERSTRUCTURE
(60) SUBSTRUCTURE
(61) CHANNEL AND CHANNEL PROTECTION
(62) CULVERTS

LOAD RATING AND POSTING

(31) DESIGN LOAD -
(63) OPER RATING METHOD -
(64) OPERATING RATING
(65) INV RATING METHOD -
(66) INVENTORY RATING
(70) BRIDGE POSTING -
(41) STRUCT OPEN, POSTED, CLOSED -

APPRAISAL

(67) STRUCTURAL EVALUATION
(68) DECK GEOMETRY
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL
(71) WATERWAY ADEQUACY
(72) APPROACH ROADWAY ALIGNMENT
(36) TRAFFIC SAFETY FEATURES
(113) SCOUR CRITICAL BRIDGE

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK -
(76) LENGTH OF STRUCTURE IMPROVEMENT
(94) BRIDGE IMPROVEMENT COST
(95) ROADWAY IMPROVEMENT COST
(96) TOTAL PROJECT COST
(97) YEAR OF IMPROVEMENT COST ESTIMATE
(114) FUTURE ADT
(115) YEAR OF FUTURE ADT

INSPECTIONS

(90) INSPECTION DATE (91) FREQUENCY MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
(A) FRACTURE CRIT DETAIL - NO - Month (A) __/__
(B) UNDERWATER INSP - NO - Month (B) __/__
(C) OTHER SPECIAL INSP - NO - Month (C) __/__

UNDERWATER INSPECTION PROCEDURES
SUMMARY SHEET

Bridge Name:	Steilacoom Mooring Float
Bridge Number:	DOC-2
Structure ID:	00200437
Owner:	DOC
Marine Environment:	Saltwater
Substructure Units Inspected:	Concrete Float and Steel Spud Piles
Scour Mitigation Present:	None
Bridge Site Orientation:	See attached bridge layout sheet(s)

Substructure and Foundation Type(s):

Float — Concrete

Inspection Procedures:

Level I Inspection: Visual inspection of 100% of structural members full length for cracks, abrasion, spalling, mechanical damage, exposed reinforcing steel, and rust stains. Sound members with a hammer to detect delaminations, hollow spots, or soft concrete.

Level II Inspection: Clean several 12 in. x 12 in. areas of all marine growth on the bottom, and sides of the floating pontoon.

Level III Inspection: Use hand tools to remove delaminated or soft concrete to determine extent of damage. For structures with extensive deterioration or damage WSDOT will contract with Consultants to core drill concrete to determine structure condition.

Spud Piles — Steel

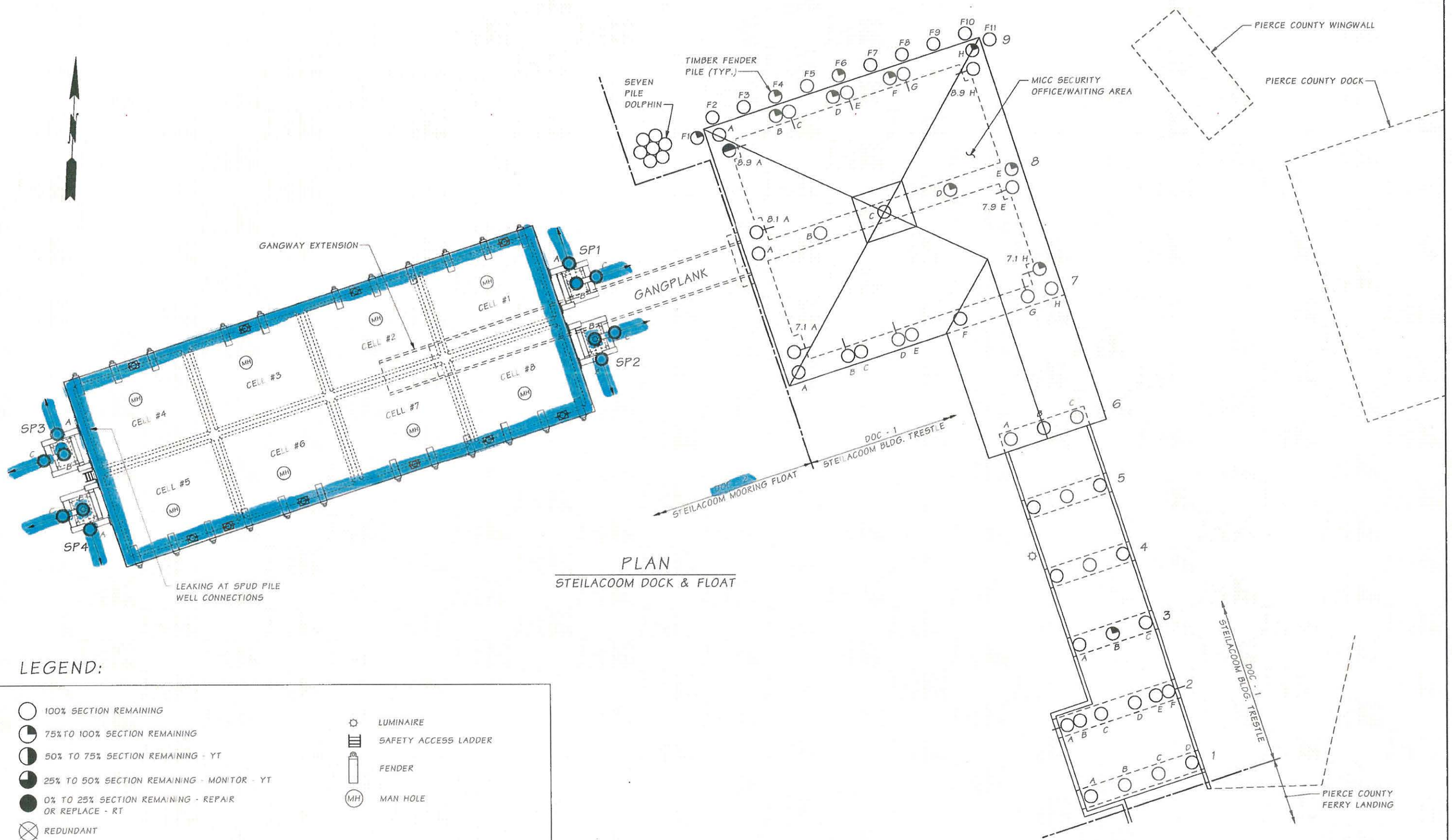
Inspection Procedure:

Level I Inspection: Visual inspection of 100% of structural members full length. Note condition of epoxy coating and/or level of corrosion. Check for impact damage.

Level II Inspection: Clean a 12 in. band of all marine growth at the mudline, mid-depth, and intertidal zone of 10% of the piles in a bent, with one pile per bent minimum.

Level III Inspection: For critical structural members or inconclusive Level I and/or II Inspections, measure the steel member thickness with an ultrasonic thickness gauge to determine section remaining.

Scour Critical (Y/N): N



PLAN

STEILACOOM DOCK & FLOAT

LEGEND:

- 100% SECTION REMAINING
- 75% TO 100% SECTION REMAINING
- 50% TO 75% SECTION REMAINING - YT
- 25% TO 50% SECTION REMAINING - MONITOR - YT
- 0% TO 25% SECTION REMAINING - REPAIR OR REPLACE - RT
- REDUNDANT
- VERTICAL TREATED TIMBER PILE
- VERTICAL ROUND STEEL PILE
- BATTERED (br) TREATED TIMBER PILE
- BATTERED (br) ROUND STEEL PILE
- LUMINAIRE
- SAFETY ACCESS LADDER
- FENDER
- MAN HOLE

ROUTINE INSPECTION		UNDERWATER INSPECTION	
Date:	4/24/2017	Date:	4/24/2017
Scale:	NA	Scale:	NA
Inspected by:	JSW/KGH	Inspected by:	DON/MBS

WSDOT
BRIDGE PRESERVATION
OFFICE

Washington State Department of Transportation
Bridge and Structures Office

DOC - 1 AND DOC - 2
STEILACOOM BUILDING TRESTLE
AND MOORING FLOAT

LAYOUT

SHEET NO. 1
SHEET OF SHEETS

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