BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/1/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3 SID 00200438 Br. Name MCNEIL IS. MOORING FLOAT Carrying Route On 10210 Mile Post 5.96 Intersecting PUGET SOUND **Route Under** Mile Post Inspector's Signature LAW Cert Exp Date 1/12/2022 Co-Inspector's Signature ABK **Inspections Performed** Report Type Inspection Type Date Freq Hours Inspector Cert No Co-Insp.

Jnderw	ater				4/27/2021	48	2.0	DON		G0314	JF	RWH
rimary	Safety				4/27/2021	24	1.0	LAW		G1112	Al	<u>BK</u>
7 7 4 9 8	Deck Overall (Superstructure (Substructure (Culvert (Chan/Protection		17	Operating Tons (1552) Op RF (1553) Inventory Tons (1555) Inv RF (1556) Operating Level (1660) Open/Closed (1293)		Trans Guard Termi Bridge	Irails nals	(1684) (1685) (1686) (1687) (2612) (2611)	0	As Ye	Utilities ohalt Dep ar Built ar Rebuilt	(1332)
т	Waterway	(1679) (1662) (1680)	*	Structural Eval (1657) Deck Geometry (1658) Underclearance (1659)						NBIS Ris Routine: Underwater:	No Risk	Category
	Soundings (269)	3)	М	easure Clearance (2694)	spection	Flags	g (2688)		Photos	(2691)	Па)A Flag (269

		ınsı	pection Fia	gs				
	Soundings (2693)	Measure Clearance (2694)	Revise F	Rating (26	588)	Photos (269	1)	QA Flag (2695)
		BN	IS Element	S				
Element	Ele	ment Description	Total	Units	CS 1	CS 2	CS 3	CS 4
8361	Scour		4	EA	4	0	0	0
8390	Fixed Bearing		1	EA	1	0	0	0
8391	Moveable Bearing (re	oller, sliding, etc.)	2	EA	2	0	0	0
8640	Moveable Pedestriar	n Gangplank	50	LF	50	0	0	0
8701	Ferry Concrete Float	ing Pontoon	13	CELL	0	0	8	5
8703	Spud Piling & Wells		16	EA	1	0	9	6
8902	Protective Coating -	Piling	2300	SF	1595	100	605	0

Notes

0 ORIENTATION:

The McNeil Island Mooring Float includes the float, gangplank, and steel spud piles. For location reference: Offshore is south, shore is north, left side is east, and right side is west.

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Notes (Continued)

9 The WSDOT Bridge Preservation Dive Team performed an underwater inspection of the subject facility on April 27, 2021. Sixteen steel pipe piles and the concrete floating pontoon exterior were inspected below water by diving.

In general, the steel pipe piles that position the floating concrete pontoon (spud piles) are in fair to poor condition. The coating has failed in large areas where the pontoon keeper chains abrade directly on the piles. This was most evident in the lower intertidal zone (ITZ) where the steel/UHMW rub strips have failed. Some of these locations have holed thru the pile wall due to the chains rubbing on the pile. Ultrasonic thickness measurements were taken in other locations and minor section losses were noted. Minor section losses are not a structural concern due to the piles being for pontoon positioning only, however holed thru piles may be susceptible to failing in extreme wind and wave event and should be monitored for buckling during such events.

Repair recommendations include repairing or replacing spud piles that have holes in them (REPAIR #10007) which are susceptible to failing during extreme weather events. Recommend retaining the 48-month frequency for underwater inspections. REPAIR #10005 VERFIED in 2021.

1676 SUBSTRUCTURE:

Substructure moved to a coding of '4', due to as of yet unknown water infiltration rates into pontoon cells (see note 8701).

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 (2021):

Water flow is tidal. No scour patterns or scour countermeasures were observed around the float or spud piles.

8390 FIXED BEARING:

The gangplank connection to the fixed dock consists of a structural tube that has sliding bearings and a center pin connection (photo #21). The center pin connection is a 1-1/4" diameter bolt connected through an upper and lower plate. Fixed Pin Bearing was replaced in 2016.

Inspect each inspection for condition and wear.

8391 MOVEABLE BEARING:

Two slider bearings under the floater side of the gangplank (photo #6).

Bearings are wearing - 1/2" on the right side, 3/4" on the left. (photos #36 and #37)

8640 MOVEABLE PEDESTRIAN GANGPLANK:

Aluminum Gangplank, 50 lf. Top and bottom connections of railing (truss) inspected each inspection.

Cables tied to the fixed trestle installed to keep gangplank square (photo #20). Additional rope installed from offshore side of float to the end of the gangplank to prevent it from working towards shore (photo #31).

Left side tie back cable attachment is cracked along the bottom of the gangplank (photos #40 and #41).

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Notes (Continued)

8701 FERRY CONCRETE FLOATING PONTOON:

The floating dock consists of the main float with eight cells, and two flanker pontoons with two and three cells, for a total of 13 cells.

INTERIOR:

All eight of the of the main pontoon cells were entered during the 2021 inspection (see layout sheet for cell numbering) (photos #7 and #8).

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

DATE	CELL	1	2	3	4	5	6	7	8
5/21/20	13	Т	Т	2-1/2"	1"	T	D	D	 T
4/20/20	15 - cell	hatches	not	opened	in 20	15			
4/25/20				1" 1			D	D	1-1/2"
4/08/20	19 - cell	hatches	no	t opened	d in 20	019			
	21 1-1/2"				3"	Т	T"	8"	

2021: Cells 1, 3, 4, 5, and 8 are in Condition State 4 (CS4) due to water presence as well as statements made by DOC employees concerning pumping of pontoons. Leaks were not found, source of water may be seepage through the hatches. Cells 2, 6 and 7 are in CS3 due to presence and depth of water.

All cells pumped during the inspection.

Pumping records are needed. REPAIR #10006.

EXTERIOR:

The offshore exterior top edge has many concrete patches. Cells 6 and 7 are in CS2 due to these patches (CS3 due to water) Boat fender bumpers are in fair condition, many have had repairs (photo #24).

The right flanker fender bracket at the right shore side corner had been repaired with new bolts added (photos #35, #29 & #30). REPAIR #10004 VERIFIED 2021.

Four corner water depth taken on the main float found to be approximately level. Wave action makes this difficult.

FLOATER FOUR CORNER DRAFT MEASUREMENTS

DATE	CORNER OFFSHORE RT	OFFSHORE LT	SHORE	RT SHORE LT
4/20/2015	28-5/8"	29"	26-1/2"	26-3/4"
4/25/2017	29"	28"	26"	27"
4/08/2019	27"	27.5"	26"	25"
4/27/2021	27"	24.5"	29.5"	25.5"

FLANKER PONTOON:

The left flanker pontoon patched spall in the right exterior wall (CS2 condition) (photo #26).

The flanker pontoons are full of water and foam and cannot be entered. AllI CS3 due to water found.

Underwater Inspection Findings (2021):

The concrete pontoon surfaces below water are typically about 90% covered in marine growth up to 1.5-ft. thick. Spot cleaning of growth revealed no defects in the underlying concrete.

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Notes (Continued)

8703 SPUD PILING & WELLS:

The Steel Spud Piles adjacent to the concrete float are showing their age. The piles are attached to the float via a chain. The tides and wave action move the chain up and down on the pile. The piles have steel backer plates with missing UHMW sheeting. There are locations of wear on the exposed structural surface.

Pile SP1-A has had plates welded on to prevent wear to the pile from the chain. (photo #34).

Spud pile group SP2 has failing UHMW protection with steel backer plates remaining, typical for spud piles (photo #17).

Spud pile SP2-C has heavy rusting and section loss at the high side of the tidal zone (photo #33).

Spud pile SP3-D has been repaired several feet below the high water mark (CS2) (Photo #32 and #27). REPAIR #10005 VERIFIED

Pile Inspection Data Sheets have 9 piles in CS3 due to minor section loss and 5 additional piles in CS4 due to holes in piling (6 total).

Underwater Inspection Findings (2021):

The steel pipe pile spuds are in generally fair to poor condition underwater with some areas showing more advanced deterioration. Coating failure with corrosion and steel section losses including holed thru piles were the most common defects noted. Thickness measurements of the steel were taken in localized areas of corrosion and pitting as well as in good areas for comparison (photo #UW-6). The most extreme cases of section losses are typically in the spud piles closest to the floats that have keeper chains around them (photo #UW-5). The majority of the rub strips have failed in the lower intertidal zone (ITZ) and the chains rub directly on the pile causing large areas of corrosion and section loss, including holes worn thru the pile wall from chain fretting. Minor section losses (CS3) are not a structural concern since the spud piles are for pontoon positioning only. However piles with holes may be susceptible to failure during extreme events such as heavy wind/wave events (CS4), and should be repaired or replaced REPAIR #10007.

See attached Layout drawing and Pile Inspection Data Sheets for additional photo references and location/defect information.

8902 PROTECTIVE COATING - PILING:

The spud piles have rust blooms in the intertidal zone (photo #39).

Underwater Inspection Findings (2021):

The spud pile coating is largely failed in the intertidal zone (ITZ) mainly from pontoon positioning chains rubbing directly on the piles (photo #UW-3). Underwater coating condition below the ITZ is largely intact with only about 5%-10% of the pile surface area showing corrosion on most piling (photo #UW-7).

			Repairs				
Repair No	Pr	R	Repair Descriptions	BMS	Noted	Maint	Verified
10004	1	В	Right flanker pontoon fender bracket at the right shore side corner has pulled out hold down bolts. Refasten anchor bolts to pontoon. 2021 LAW. Bolts have been tightened with more added on top. REPAIR VERIFIED	8701	4/8/2019		4/27/2021
10005	1	В	Spud pile SP3-D has a horizontal crack across a butt weld several feet below the high water mark. Weld cover plate over crack or replace pile. 2021 LAW - Cover plate welded on. REPAIR VERIFIED	8703	4/8/2019	8	4/27/2021
10006	2	В	Pumping records of the float cells should be recorded and tracked. This should include cell # (see layout sheet), date, and depth of water removed. Infiltration rates can be tracked and used for future repair work scheduling.	8701	4/8/2019		
10007	1	В	The following Spud Piles have holes in the pile wall and are suseptable to failure during extreme wind/wave events: SP1-A, SP1-D, SP3-B, SP3-C, and SP4-A These piles should be repaired (if possible) or replaced.	8703	4/27/2021		

		Inspect	ons Pe	erforme	d and R	esources Required
Report Type	<u>Date</u>	<u>Freq Hr</u>	<u>s Insp</u>	<u>CertNo</u>	Coinsp	<u>Note</u>

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Br. No. DO	C-3			SID	02004	438	Br. N	lame	MCNEIL IS.	MOORING FL	.OAT
Carrying									Route On	10210	Mile Post 5.96
Intersectin	g PUG	ET SOUND							Route Und	ler	Mile Post
Underwater		4/27/2021	48	2.0	DON	G0314	JRWH				Dive Team. Frequency set rery-other routine inspection.
Resources	Hours	Min	Pref	Max	Fre	q Date	Nee	d Date	Override	Notes	ery carre reasons mopeous.
Boat		О	М	M						Used Munson d from Zittel's Mar	ive boat for 2021. Launched ina.
Primary Safe	ty	4/27/2021	24	1.0	LAW	G1112	ABK				
Resources	Hours	Min	Pref	Max	Fre	q Date	Nee	d Date	Override	Notes	
Boat			D							Boat needed for	inspection.
Special Equipment										tripod provided Ladder can be u and air monitor Last done in 202	loat cells with a winch on a by DOC maintenance personnel. ised to help access. Harness is required. 21, DOC enters these on a spect in 2025. Arrange with
Third Party Notification											ction with Greg Buikema (DOC) r 253-588-5281 (cell).

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Carrying

Intersecting PUGET SOUND

SI-1

0 Orientation

Photo Type:

E - Elevation

Orientation:

Е

4/18/2013

Repairs:

Date:

Elevation view looking east.

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Br. Name MCNEIL IS. MOORING FLOAT

Route On

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Mile Post 5.96

Route Under

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SI-2

0 Orientation

Photo Type:

E - Elevation

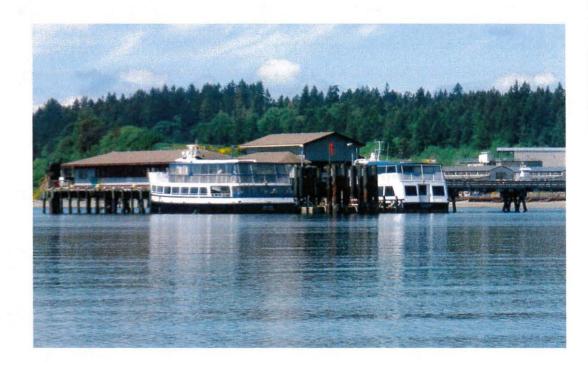
Orientation:

W

5/21/2013

Date: Repairs:

Elevation looking west.



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Route On

Mile Post 5.96

Route Under

Mile Post

SI-28

0 Orientation

Photo Type: D - Deck

Orientation:

E

Intersecting PUGET SOUND

4/8/2019

Date: Repairs:

Deck looking east



UW-0

9 Underwater Report Executive

Summary Photo Type:

W - UW Cover

Orientation:

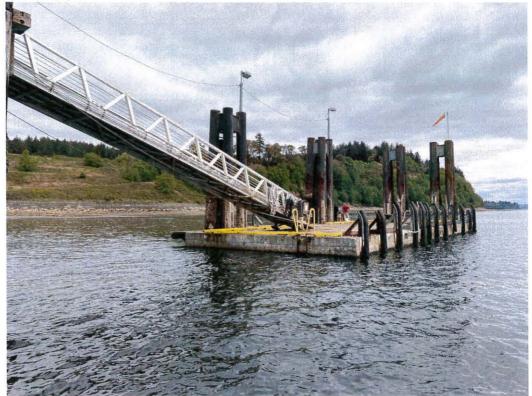
NW

Date:

4/27/2021

Repairs:

UW report cover (elevation).



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Carrying

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Route Under

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SI-21

8390 Fixed Bearing

Photo Type:

G - General

Orientation:

W

Date:

5/3/2017

Repairs:

Top end gangplank center pin connection

is under upper landing plate.



SI-6

8391 Moveable Bearing (roller, sliding,

etc.)

Photo Type: G - General

Orientation:

Shore 4/18/2013

Date: Repairs:

Gangplank sliding bearings.



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Carrying

Intersecting PUGET SOUND

SI-36

8391 Moveable Bearing (roller, sliding,

etc.)

Photo Type: G

G - General

Orientation: Date: Sea 4/27/2021

Repairs:

Gangplank sliding bearing is warn to 1/2"

on the right side.

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Br. Name MCNEIL IS. MOORING FLOAT

Route On

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Mile Post 5.96

Route Under

Mile Post



SI-37

8391 Moveable Bearing (roller, sliding,

etc.)

Photo Type: G - General

Orientation:

Shore

Date:

4/27/2021

Repairs:

Gangplank sliding bearing is warn to 3/4"

on the left side.



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Br. Name MCNEIL IS. MOORING FLOAT

Route On

Route Under

Carrying

Intersecting PUGET SOUND

SI-20

8640 Moveable Pedestrian Gangplank

Photo Type:

G - General

Orientation:

Right

Date:

5/3/2017

Repairs:

Cables tied to the fixed trestle installed to

keep gangplank square.



SI-31

8640 Moveable Pedestrian Gangplank

Photo Type:

G - General

Orientation:

Left

4/8/2019

Date: Repairs:

Additional rope attached to gangplank to prevent it from working towards shore.



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Carrying

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SI-40

8640 Moveable Pedestrian Gangplank

Photo Type:

G - General W

Orientation: Date:

4/27/2021

Repairs:

Tie back cable attachment on the left side of the gangplank has a cracked weld. See Photo #41.

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Br. Name MCNEIL IS. MOORING FLOAT

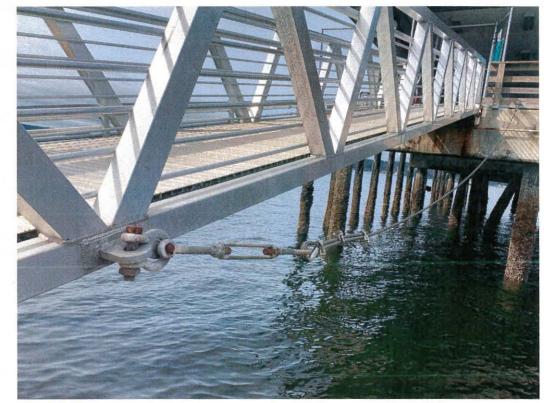
Route On

10210

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Route Under

Mile Post



SI-41

8640 Moveable Pedestrian Gangplank

Photo Type:

I - In Depth

Orientation:

Date:

4/27/2021

Repairs:

Close up of crack in tie back cable attachment on the left side of the gangplank.



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Carrying

Intersecting PUGET SOUND

SI-7

8701 Ferry Concrete Floating Pontoon

Photo Type:

G - General

Orientation:

Shore

Date:

5/21/2013

Repairs:

Cell entry via tripod with winch.



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Route Under

Mile Post



SI-8

8701 Ferry Concrete Floating Pontoon

Photo Type:

G - General

Orientation:

Shore

Date:

5/21/2013

Repairs:

Cell entry via tripod with winch.



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Carrying

Intersecting PUGET SOUND

SI-24

8701 Ferry Concrete Floating Pontoon

G - General Photo Type:

Orientation:

Left

Date:

5/3/2017

Repairs:

Most of the fender brackets have been

repaired or replaced.

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SI-35

8701 Ferry Concrete Floating Pontoon

Photo Type:

C - Completed

Orientation:

Left

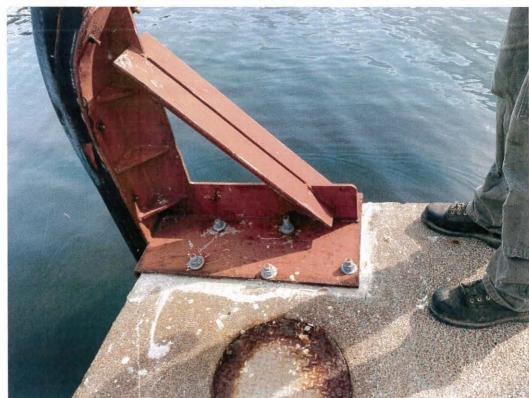
Date:

4/27/2021

Repairs:

10004

Right flanker pontoon fender bracket at the right shore side corner has been repaired. Archive photo next inspection.



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SI-29

8701 Ferry Concrete Floating Pontoon

Photo Type:

R - Repair

Orientation:

Sea

Date:

4/8/2019

Repairs:

10004

Pre-repair photo. See Photo #35. Right flanker pontoon fender bracket at the right shore side corner has pulled out hold down bolts. Arheive next inspection. Br. Name MCNEIL IS. MOORING FLOAT

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Mile Post



SI-30

8701 Ferry Concrete Floating Pontoon

Photo Type:

R - Repair

Orientation:

Sea

Date:

4/8/2019

Repairs:

10004

Pre-repair photo. See Photo #35. Right flanker pontoon fender bracket at the right shore side corner has pulled out hold down bolts. Archive next inspection.



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Carrying

Intersecting PUGET SOUND

SI-26

8701 Ferry Concrete Floating Pontoon

Photo Type:

G - General

Orientation: Date:

Left 5/3/2017

Repairs:

Left flanker pontoon has an old repair.

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Br. Name MCNEIL IS. MOORING FLOAT

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SI-34

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Sea

Date:

4/27/2021

Repairs:

Pile SP1-A has had plates welded on to prevent wear to the pile from the chain.



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SI-17

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Left

Date:

4/22/2015

Repairs:

Spud pile group SP2 has failing UHMW protection with steel backer plates remaining, typical for spud piles.

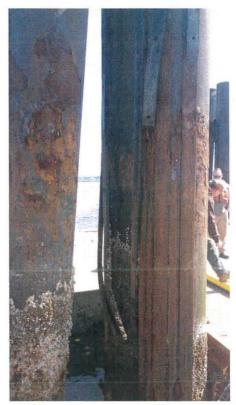
Route On

10210

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Route Under

Mile Post



SI-33

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Shore

Date:

4/27/2021

Repairs:

Spud pile SP2-C has heavy rusting and section loss at the high side of the tidal zone.



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Carrying

Intersecting PUGET SOUND

SI-32

8703 Spud Piling & Wells

Photo Type:

C - Completed

Orientation:

Left

Date:

4/27/2021

Repairs:

10005

Spud Pile SP3-D has been repaired. See photo #27 for pre-repair photo. Archive

next inspection.

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Route On

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Route Under

Mile Post



SI-27

8703 Spud Piling & Wells

Photo Type:

R - Repair

Orientation:

Left

Date:

4/8/2019

Repairs:

10005

Pre - repair: Spud Pile SP3-D is cracked at a butt splice. Archive next inspection



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UW-6

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Date:

4/25/2017

Repairs:

Using D-meter thickness gauge to measure pile section thicknesses.



UW-5

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Date:

4/25/2017

Repairs:

10007

Keeper chains fret directly on spud piles in the lower ITZ, causing holes in some locations.



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Carrying

Route

Route On 10210

Mile Post 5.96

Route Under

Mile Post

UW-8

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation: S

SE

Intersecting PUGET SOUND

Date:

4/27/2021

Repairs:

10007

Spud Pile SP1-A holed thru from keeper

chain fretting.



UW-9

8703 Spud Piling & Wells

Photo Type:

G - General

Orientation:

Date:

4/27/2021

Repairs:

Most spud piles have good coating below the ITZ. Pile SP1-B shown near mudline

(MDL).



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3

Carrying

Intersecting PUGET SOUND

UW-10

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

Date:

4/27/2021

Repairs:

Localized deep pitting in Pile SP1-C; typical of other piles in localized areas.

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Route On

10210

Mile Post 5.96

Route Under

Mile Post



UW-11

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

SE

Date:

4/27/2021

Repairs:

10007

Spud Pile SP1-D holed thru near

mudline.



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

SID 00200438

Program Mgr: Evan M Grimm

Br. No. DOC-3

Br. Name MCNEIL IS. MOORING FLOAT

10210

Mile Post 5.96

Route On **Route Under**

Mile Post

Carrying

Intersecting PUGET SOUND

UW-12

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

DN

Date:

4/27/2021

Repairs:

Heavy corrosion and section loss in SP2-A from chain fretting. Only about 1/8" section remaining in this location.



UW-13

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

W

Date:

4/27/2021

Repairs:

10007

Spud Pile SP3-B holed thru at MDL+4



Printed On: 7/8/2021

Agency: Other State Agencies

10210

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Carrying

Intersecting PUGET SOUND

Route On

Mile Post 5.96

Route Under

Mile Post

UW-14

8703 Spud Piling & Wells

Photo Type:

pe: I - In Depth

. п. Бор.

Orientation:

W

Date:

4/27/2021

Repairs: 10007

Spud Pile SP3-C deeper pits holed thru

at MDL+4



UW-15

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

NW

Date:

4/27/2021

Repairs:

10007

Spud Pile SP4-A holed thru in the ITZ

from chain fretting.



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3

Carrying

Intersecting PUGET SOUND

UW-16

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

W

Date:

4/27/2021

Repairs:

Localized deep pitting near MDL in Spud

Pile SP4-B.

recess bate. 7

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Route On

10210

Mile Post 5.96

Route Under

Mile Post



UW-17

8703 Spud Piling & Wells

Photo Type:

I - In Depth

Orientation:

Date:

4/27/2021

Repairs:

Spud Pile SP4-C deep pits mid-height.



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-3

Carrying

Intersecting PUGET SOUND

SI-39

8902 Inorganic Zinc Vinyl Paint

Photo Type:

G - General

Orientation:

Right

Date:

4/27/2021

Repairs:

Spud pile paint has many rust blooms.

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Route On

10210

Mile Post 5.96

Route Under

Mile Post



UW-3

8902 Inorganic Zinc Vinyl Paint

Photo Type:

G - General

Orientation:

DN

Date:

4/25/2017

Repairs:

Typical spud pile condition in the upper intertidal zone (ITZ)

BRIDGE INSPECTION REPORT

Page 20 of 21

Status: Released

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Printed On: 7/8/2021

Agency: Other State Agencies

Release Date: 7/1/2021

Br. No. DOC-3

Carrying

Intersecting PUGET SOUND

UW-7

8902 Inorganic Zinc Vinyl Paint

Photo Type:

I - In Depth

Orientation:

Date:

5/21/2013

Repairs:

5%-10% coating failure with rusting. SP4-B shown; typical of other piles.

Program Mgr: Evan M Grimm

SID 00200438

Br. Name MCNEIL IS. MOORING FLOAT

Route On

10210

Mile Post 5.96

Route Under

Mile Post



Printed On: 7/8/2021

Agency: Other State Agencies

CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

Release Date: 7/1/2021

Program Mgr: Evan M Grimm

Br. No. DOC-	-3 SID 00200438	Br. Name MCNEIL IS. MOORING	FLOAT		
Carrying		Route On 10210	Mile	Post 5.96	
Intersecting	PUGET SOUND	Route Under	Mile	Post	
Entry Name	Folder Name		Туре	Repairs	Page
SI-1	0 Orientation		E		1
SI-2	0 Orientation		E		1
SI-28	0 Orientation		D		2
UW-0	9 Underwater Report Executive Summary		W		2
SI-21	8390 Fixed Bearing		G		3
SI-6	8391 Moveable Bearing (roller, sliding, etc.)		G		3
SI-36	8391 Moveable Bearing (roller, sliding, etc.)		G		4
SI-37	8391 Moveable Bearing (roller, sliding, etc.)		G		4
SI-20	8640 Moveable Pedestrian Gangplank		G		5
SI-31	8640 Moveable Pedestrian Gangplank		G		5
SI-40	8640 Moveable Pedestrian Gangplank		G		6
SI-41	8640 Moveable Pedestrian Gangplank		I		6
SI-7	8701 Ferry Concrete Floating Pontoon		G		7
SI-8	8701 Ferry Concrete Floating Pontoon		G		7
SI-24	8701 Ferry Concrete Floating Pontoon		G		8
SI-35	8701 Ferry Concrete Floating Pontoon		С	10004	8
SI-29	8701 Ferry Concrete Floating Pontoon		R	10004	9
SI-30	8701 Ferry Concrete Floating Pontoon		R	10004	9
SI-26	8701 Ferry Concrete Floating Pontoon		G		10
SI-34	8703 Spud Piling & Wells		G		10
SI-17	8703 Spud Piling & Wells		G		11
SI-33	8703 Spud Piling & Wells		G		11
SI-32	8703 Spud Piling & Wells		С	10005	12
SI-27	8703 Spud Piling & Wells		R	10005	12
UW-6	8703 Spud Piling & Wells		G		13
UW-5	8703 Spud Piling & Wells		G	10007	13
UW-8	8703 Spud Piling & Wells		Í	10007	14
UW-9	8703 Spud Piling & Wells		G		14
UW-10	8703 Spud Piling & Wells		Supplied to		15
UW-11	8703 Spud Piling & Wells		1	10007	15
UW-12	8703 Spud Piling & Wells		1		16
UW-13	8703 Spud Piling & Wells		Ī	10007	16
UW-14	8703 Spud Piling & Wells		1 1	10007	17
UW-15	8703 Spud Piling & Wells		Ī	10007	17
UW-16	8703 Spud Piling & Wells		1 1 3		18
UW-17	8703 Spud Piling & Wells		Ī		18
SI-39	8902 Inorganic Zinc Vinyl Paint		G		19
UW-3	8902 Inorganic Zinc Vinyl Paint		G		19
UW-7	8902 Inorganic Zinc Vinyl Paint		1		20



McNeil Island Floating Dock DOC-3 / SID 00200438 Pile Inspection Data Sheets

Unde	rwater	4/27/2021	Lead:	DON	Co: JRWH		
Rou	utine	4/27/2021	Lead:	LAW	Co: ABK		-
Pile Lo	ocation		Inspection	on Type			
Bent	Pile	Pile Type Cond. State Elevation		Elevation	Details/Remarks	Routine/UW	Date
					PILE INSPECTION DATA - Spud Pile Groups		
SP1	A A	Steel	CS4	MDL+2 MDL+13 to +16 ITZ	Thickness = 0.485 " (2021) 3'(h) x 2"(w) hole thru pile @4:00 from chain fretting (Photo #UW-8). Dime-sized hole in upper ITZ @3:00 from chain wear. Up to 50% coating failure where UHMW/steel chain standoffs have failed; chains rub/fret directly on piling especially in the lower ITZ (typical condition on piles adjacent to floats).	UW	4/27/2021
	В	Steel	CS3	MDL+1 MDL+13 ITZ	Thickness = 0.480" (2021). Coating looks good near MDL (Photo #UW-9). Up to 3/16" deep pits @7:00 in larger 3'(h) x 4"(w) area of section loss from chain fretting. Thickness in good area adjacent = 0.485"(2021) Up to 50% coating failure where UHMW/steel chain standoffs have failed; chains rub/fret directly on piling especially in the lower ITZ.	UW	4/27/2021
	C	Steel	CS3	MDL+2 MDL+3 ITZ	Thickness = 0.485" (2017) 1" dia. localized pit @1:00; 0.41" deep. Thickness = 0.480"(2021) in adjacent good area. Typical of other areas of localized deep pitting (Photo #UW-10). 5%-10% area general coating loss/failure.	UW	4/27/2021
	D	Steel	CS4	MDL+1 MDL+2 ITZ	3"(h) x 5"(w) hole thru pile @4:00 (Photo #UW-11). Thickness = 0.490" (2021) in adjacent good area. 3/4" dia. pits up to 0.25" deep in Level II cleaned area @4:00 Thickness 0.490" (2013). 5%-10% area general coating loss/failure.	UW	4/27/2021
SP2	Α	Steel	CS3	MDL+1 MDL to MDL+1.5 ITZ	Thickness = 0.495" (2021) 18"(h) x 9"(w) area of coating failure with pitting up to 3/8" deep @2:30 Up to 50% coating failure and heavy corrosion from chain fretting (Photo #UW-12). Thickness readings were 0.130" & 0.270" in fretted area (2021).	UW	4/27/2021
STATE OF THE STATE	В	Steel	CS3	MDL+1 ITZ	Thickness = 0.480" (2021) 10% area general coating loss/failure. Pontoon chains are fretting on pile and causing heavy corrosion and section loss. Thickness readings were 0.300" & 0.340" in fretted area from 6:00-9:00 (2021)	uw	4/27/2021
	С	Steel	CS3	MDL+1 MDL+3 ITZ	Thickness = 0.515" (2013) Thickness = 0.480" (2021). Small dia. pitting up to 3/8" deep @ 6:00 5%-10% area general coating loss/failure.	UW	4/27/2021
	D	Steel	CS1	MDL ITZ	Thickness = 0.510" (2021) 5%-10% area general coating loss/failure.	UW	4/27/2021



McNeil Island Floating Dock DOC-3 / SID 00200438 Pile Inspection Data Sheets

Under	rwater	4/27/2021	Lead	: DON	Co: JRWH		
Rou	utine	4/27/2021 Lead: LAW Co: ABK					
Pile Lo	ocation		Inspecti	on Type			
Bent	Pile	Pile Type	Cond. State	Elevation	Details/Remarks	Routine/UW	Date
	d d			MDL+1	Thickness = 0.500" (2013); 0.500" (2021)		
SP3	Α	Steel	CS3	ITZ	5%-10% area general coating loss/failure. Pontoon chains are fretting on pile though rubbing plates are still intact. Some small localized areas of 0.25" deep pitting. Thickness = 0.225" @ MDL+18; 9:00 (2021)	uw	4/27/202
	В	Steel	CS4	MDL+4	3" dia. hole thru pile @ 9:00 centered in 2'(h) x 6"(w) area of corrosion (Photo #UW-13). Thickness in good area adjacent = 0.490" (2021) More general coating failure than others, with 10%-15% area coating loss/failure.	UW	4/27/2022
	С	Steel	CS4	MDL+3 MDL+4	3" dia. pit holed thru pile @6:00. Thickness = 0.465" in adjacent good area. 1"(h) x 3"(w) hole thru pile @9:00 (Photo #UW-14); also 1" dia. pit holed thru about 4" lower. 5%-10% area general coating loss/failure.	UW	4/27/2021
				MDL+1			
	D	Steel	CS4	ITZ	Thickness = 0.495" (2017); 0.490" (2021). Approx. 20% area coating failure near mudline. 10% area general coating loss/failure. 3'(h) x 6"(w) area of corrosion and section loss due to chain fretting. Thickness = 0.300"(2021). Horizontal crack across butt weld several feet below high water mark (Photo #27; REPAIR #10005)	UW	4/27/2021
				MDL+1	Thickness = 0.470"(2017); 0.460"(2021).		
SP4	Α	Steel	CS4	MDL+3 to +5 MDL+16 to +19.5 ITZ	Corr. band w/ concentrated localized pitting.	UW stabilization of the stabil	4/27/2021
	В	Steel	CS3	MDL MDL+1 ITZ	Photo #UW-7 shows typical coating condition near mudline. Thickness = 0.515"(2021) in good coating area. Localized pits up to 0.280" deep around 9:00 (Photo #UW-16) 5%-10% area general coating loss/failure.	UW	4/27/2021
				MDL	Thickness 0.515"/0.260" (good/bad)(2013).		
40 Williams	С	Steel	CS3	MDL+5	Deeper pitting up to 0.350" deep (Photo #UW-17). Thickness = 0.505" in adjacent good area (2021).	uw	4/27/2021
				ITZ	5%-10% area general coating loss/failure.		
	D 1770 1770 1770 1770 1770 1770 1770 177	Steel	CS3	MDL+5 to +6 ITZ	Thickness = 0.510" (2021). Corr. band w/ concentrated localized pitting. 5%-10% area general coating loss/failure. UHMW/Steel stand-offs mainly intact and protecting pile from chain fretting.	UW	4/27/2021

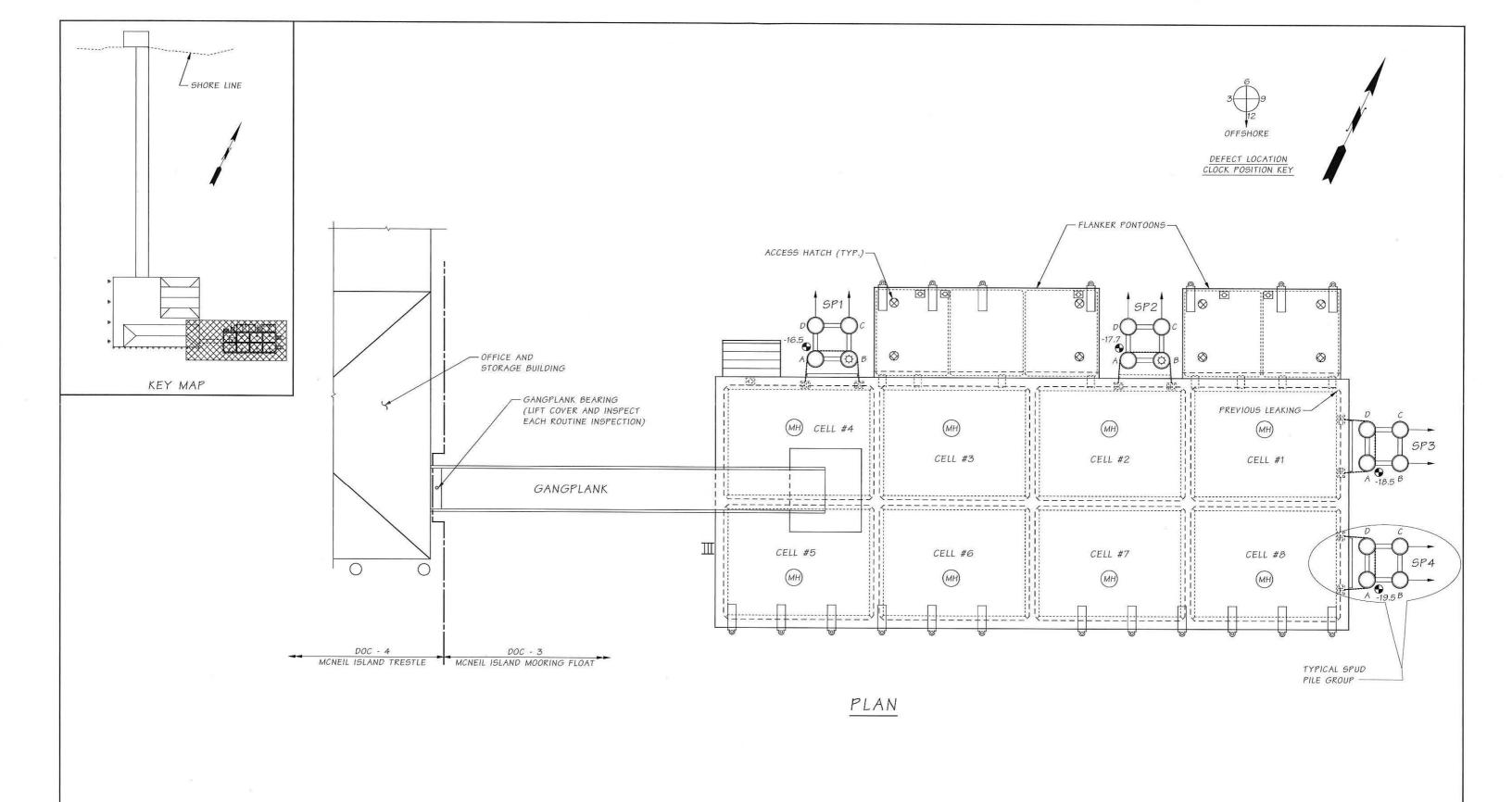
McNeil Island Floating Dock DOC-3 / SID 00200438 Pile Inspection Data Sheets

Underwater Routine Pile Location		4/27/2021	Lead: [DON	Co: JRWH			
		4/27/2021 Lead: LAW Co: ABK						
					Condition/Damage	Inspection	Inspection Type	
Bent	Pile	Pile Type	Cond. State	Elevation	Deta	ails/Remarks	Routine/UW	Date
Counts								
	Steel =	16						
	CS3 =	9						
	CS4 =	6	11 3 15 17 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			The state of the s		

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION NBI STRUCTURE INVENTORY AND APPRAISAL REPORT (ENGLISH UNITS) CD Date: 6/1/2021 CD Guid: 189de48f-4

CD Date: 6/1/2021 Printed on: 8/12/2021 CD Guid: 189de48f-a776-4a8d-9d4c-4e117189944d

	IDENTIFICATION		WSBIS DATA	
(1)	STATE NAME - WASHINGTON	530	BRIDGE NUMBER	DOC-3
*****	STRUCTURE NUMBER	# 002004380000000	BRIDGE NAME MCN	IEIL IS. MOORING FLOAT
V-7	INVENTORY ROUTE (ON/UNDER) - On	1 5 1 10210	CUSTODIAN	Other State Agencies
	STATE ROUTE MILEPOST	5.96	CROSSING DESC	
	HIGHWAY AGENCY DISTRICT - OL Region	03	MAIN LISTING FLAG	М
25 (0)	COUNTY CODE 53 - Pierce County	(4) PLACE CODE 00000	SUFFICIENCY RATING	43.00
2.2	FEATURES INTERSECTED	PUGET SOUND	CLASSIFICATION	
3.5	FACILITY CARRIED		(112) NBIS BRIDGE LENGTH	N
15000	LOCATION	MCNEIL ISLAND	(104) HIGHWAY SYSTEM -	
	BASE HIGHWAY NETWORK -		(26) FUNCTIONAL CLASS -	
	LRS INV ROUTE AND SUB ROUTE		(100) DEFENSE HIGHWAY -	
	LRS MILEPOST		(101) PARALLEL STRUCTURE -	
8 8	LATITUDE	47 Deg 11 Min 41.15 Sec	(102) DIRECTION OF TRAFFIC - 1-way traffic	Ĩ
55 55	LONGITUDE	122 Deg 39 Min 11.56 Sec	(103) TEMPORARY STRUCTURE - Not Applicable	
50 550	BORDER BR Not a border bridge (98B) (99) BOR	SAMPLE AND SERVICE SERVICES SERVICES SERVICES OF SECURITIES	(105) FEDERAL LANDS HIGHWAY - Not Applicable	0
(90A)	STRUCTURE TYPE AND N		(110) DESIGNATED NATIONAL NETWORK - Not part of	of network 0
(43)	STRUCTURE TYPE MAIN: MATERIAL -	ATENAL	(20) TOLL -	
(43)	DESIGN -		(21) MAINTENANCE -	
(44)	STRUCTURE TYPE APPR: MATERIAL - Other		(22) OWNER - Other State Agencies	21
(44)	DESIGN - Other	000	(37) HISTORICAL SIGNIFICANCE - Not determined	4
(45)	NO. OF SPANS IN MAIN UNIT	1	CONDITION	
	NO. OF APPROACH SPANS	0	(58) DECK	7
331 3	DECK STRUCTURE TYPE -		(59) SUPERSTRUCTURE	7
	WEARING SURFACE / PROTECTIVE SYSTEM:		(60) SUBSTRUCTURE	4
	TYPE OF WEARING SURFACE -		(61) CHANNEL AND CHANNEL PROTECTION	8
30,000,000	TYPE OF MEMBRANE -		(62) CULVERTS	N
	TYPE OF DECK PROTECTION -		LOAD RATING AND POS	TING
(0)	AGE AND SERVIC	E CONTRACTOR OF THE CONTRACTOR	(31) DESIGN LOAD - Other or Unknown	0
(27)	YEAR BUILT		(63) OPER RATING METHOD - No rating analysis	5
(106)	YEAR RECONSTRUCTED	0000	(64) OPERATING RATING	17 T
	TYPE OF SERVICE ON -		(65) INV RATING METHOD - No rating analysis	5
	UNDER -		(66) INVENTORY RATING	10 T
(28)	LANES: ON STRUCTURE	UNDER STRUCTURE	(70) BRIDGE POSTING -	
(29)	AVERAGE DAILY TRAFFIC	0	(41) STRUCT OPEN, POSTED, CLOSED -	
	YEAR OF ADT	(109) TRUCK ADT 0%	APPRAISAL	
(19)	BYPASS, DETOUR LENGTH	000	(67) STRUCTURAL EVALUATION	4
,	GEOMETRIC DAT	Α	(68) DECK GEOMETRY	`*
(48)	LENGTH OF MAXIMUM SPAN		(69) UNDERCLEARANCES, VERTICAL & HORIZON	ΓAL *
(49)	STRUCTURE LENGTH		(71) WATERWAY ADEQUACY	
(50)	CURB OR SIDEWALK: LEFT	RIGHT	(72) APPROACH ROADWAY ALIGNMENT	
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB		(36) TRAFFIC SAFETY FEATURES	
	DECK WIDTH OUT TO OUT		(113) SCOUR CRITICAL BRIDGE	T
	APPROACH ROADWAY WIDTH (W/SHOULDERS)		PROPOSED IMPROVEM	1000000
(33)	BRIDGE MEDIAN -		(75) TYPE OF WORK -	350
(34)	SKEW Deg (35) STRUCTURE FLARED No 0	(76) LENGTH OF STRUCTURE IMPROVEMENT	
(10)	INVENTORY ROUTE MIN VERT CLEAR	99 ft 99 in	(94) BRIDGE IMPROVEMENT COST	
	INVENTORY ROUTE TOTAL HORIZ CLEAR		(95) ROADWAY IMPROVEMENT COST	
(53)	MIN VERT CLEAR OVER BRIDGE RDW		(96) TOTAL PROJECT COST	
) MIN VERT UNDERCLEAR		(97) YEAR OF IMPROVEMENT COST ESTIMATE	
6.) MIN LAT UNDERCLEAR RT		(114) FUTURE ADT	0
5000) MIN LAT UNDERCLEAR LT		(115) YEAR OF FUTURE ADT	
(50	NAVIGATION DA	TA	INSPECTIONS	
(38) NAVIGATION CONTROL - Not applicable	N	(90) INSPECTION DATE	(91) FREQUENCY MO
130) PIER PROTECTION - Not Applicable		(92) CRITICAL FEATURE INSPECTION:	(93) CFI DATE
0.0) NAVIGATION VERTICAL CLEARANCE		(A) FRACTURE CRIT DETAIL - NO -	Month (A)/_
) VERT-LIFT BRIDGE NAV MIN VERT CLR		(B) UNDERWATER INSP - YES -	48 Month (B) 04/21
0.000) NAVIGATION HORIZONTAL CLR		(C) OTHER SPECIAL INSP - NO -	Month (C)/_
(-10	A ST POLYMPIA D TO AN EXPERIENCE AND A STATE OF THE STATE			



LEGEND:

O VERTICAL ROUND STEEL PILE

BATTERED (br) ROUND STEEL PILE

UMINAIR ON PILE

0.0 FIELD MEASURED CHANNEL ELEVATION

ROUTINE INSPECTION		UNDERWATER INSPECTION	
Date:	4/27/2021	Date:	4/27/2021
Scale:	NA	Scale:	NA
Inspected b	y: LAW/ABK	Inspected by:	DON/JRWH





DOC - 3

MCNEIL ISLAND MOORING FLOAT

LAYOUT

SHEET

1

SHEET

1

SHEET

1

SHEET