Washington State Department of Transportation
Bridge Preservation Dive Team

UNDERWATER INSPECTION REPORT

FOR THE

MANETTE BRIDGE

BRIDGE NO. 303/4A

STRUCTURE ID 0017926A

Prepared For	WSDOT
Inspection Date	May 08, 2017
Lead Inspector/Diver	James R. W. Harding
Cert. #	G0911
Inspector/Diver	Michael B. Smith
Report Status	Released

JAMES REX WILLIAM HARDING
STATE OF WASHINGTON
45222
REGISTERED
PROFESSIONAL ENGINEER

8/3/2017

UNDERWATER INSPECTION REPORT
FOR THE
MANETTE BRIDGE

BRIDGE NO. 303/4A
STRUCTURE ID 0017926A

EXECUTIVE SUMMARY

The WSDOT Bridge Preservation Office Dive Team performed an underwater inspection of the Manette Bridge on May 8, 2017. Piers 2 through 6 were in the water at the time of inspection and included in this report. Each pier consists of a pair of 12-foot diameter steel encased drilled shafts sharing a rounded shaft cap. The cap supports a pair of concrete columns below the superstructure.

Overall, the submerged substructure components were in very good condition. The concrete condition of the shaft caps was very good. The drilled shaft caps had typical light to medium marine growth. The steel encased drilled shafts were in very good condition. The steel showed corrosion with some rust blooms and had light to medium marine growth. Local scour was not evident at the piers. The channel bottom was gravel and cobbles with some scattered large rock that appears to be previously placed at the old bridge. The piers of the old structure were cut off or removed. The only old pier seen was the one adjacent to Pier 5 which was cut off at el. -20.3. The channel is very well established and tidal. The south bank at the bridge appears stable. There was a bank failure west of the bridge.

No repairs are required per our underwater inspection findings. Recommend the underwater inspection frequency remain at 60-months.

Washington State Department of Transportation

Daily Site Dive Log

Inspector	James R. W. Harding			**Date**	5/8/2017
Bridge No.	303/4A	**Bridge Name**	MANETTE BRIDGE		
Bridge Type	Stringer/multi-beam		**Waterway Name**	PORT WASH NARROWS	
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	LP95 + Pony
Site Access	Duckworth Boat via Evergreen Park Launch
Inspection Tools	GoPro, Dive Light, Hammer/scraper, and Dive Computer

Conditions

Water ☑ Salt ☐ Fresh ☐ Brackish Temperature 52 °F Visibility 10 - 20 ft

Surface ☑ Calm ☐ Choppy ☐ Rough

Tide ☐ High ☑ Low ☑ Flood ☑ Ebb ☐ N/A

Current ☑ Fast ☐ Moderate ☐ Slow Velocity 1 - 4 ft/sec

Weather ☐ Clear ☐ Cloudy ☑ Overcast ☐ Rain ☐ Windy Air Temp 51 °F

Diver Checks

☑ First Aid Equipment on Site	☑ Physical Condition of Diver(s) Checked
☑ Communication for EMS	☑ Communications for Diver(s) Checked
☑ Dive Gear Inspected	☑ Team Briefed and Understands Dive Plan
☑ Air Source Checked	☑ Special Site Hazards Noted
☑ Pre-Activity Safety Plan Reviewed	☑ 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.

Dive Schedule

Dive No.	Entry Time	Exit Time	Total Time in Water	Maximum Depth	Remarks
1	09:58:00	10:01:00	00:03:00	8 fsw*	DON inspected Pier 2
2	10:26:00	10:39:00	00:13:00	41 fsw*	DON inspected Pier 3
3	10:49:00	10:55:00	00:06:00	24 fsw*	DON inspected Pier 6
4	11:11:00	11:17:00	00:06:00	36 fsw*	MBS inspected Pier 4
5	11:23:00	11:38:00	00:15:00	36 fsw*	MBS inspected Pier 5

Dive Narrative

Launched from Evergreen Park launch at 09:00. Arrived on site at bridge by boat at 09:15. A water surface vertical distance to the reference elevation, the top of Pier 2 shaft cap (EL 12.0), was measured throughout the day to capture a water surface reference elevation. A pre-activity safety plan was conducted prior to the inspection. The boat typically tied off the west side of the pier shaft cap. A line tended diver would splash and get to the west side of the pier shaft cap. The diver would then descend and inspect the shaft cap and then descend down Shaft A. Shaft A and then Shaft B would be inspected at the groundline. Depths and structural condition notes were called out via hardwire comms to the surface team. Underwater photos and Level II cleanings were performed as needed. At the conclusion of each diver's inspection, their physical condition was checked, notes were reviewed and post dive safety issues were discussed as needed. The underwater inspection of all the piers was completed by 13:30.

* fsw = feet sea water

Dive Team Members

Michael B. Smith, P.E.	Standby and Diver
(Name)	(Role)
Darren O. Nebergall, P.E.	Diver and Standby
(Name)	(Role)
Richard M. Pawelka, P.E.	Standby
(Name)	(Role)
James R. W. Harding, P.E.	DPIC and Notes
(Name)	(Role)

Washington State Department of Transportation

Underwater Inspection Report

Inspector	James R. W. Harding	**Agency/Owner**	WSDOT	**Date**	5/8/2017
Bridge No.	303/4A	**Bridge Name**	MANETTE BRIDGE		
Bridge Type	Stringer/multi-beam		**Waterway Name**	PORT WASH NARROWS	
Substructure	Concrete Columns on a Shaft Cap		**Foundation**	Steel Encased Concrete Shaft	
No. Spans	7	**No. Piers Dived**	5	**Inspection Hours**	4.0

8 [ ] Substructure Condition (1676) 7 [ ] Chan/Protection (1677) 8 [ ] Scour Code (1680)

BMS Elements

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
220	Concrete Submerged Foundation	6	EA	6	0	0	0
227	Concrete Submerged Pile/Column	10	EA	10	0	0	0
361	Scour	6	EA	6	0	0	0

Notes

0	Bridge is oriented south to north per route convention. Pier 1 is at the Bremerton side. Pier 8 is at the small town of Manette.
220	Underwater Inspection Findings: Piers 2 through 7 had exposed foundation elements that are considered submerged. These piers are made up of two 12' diameter drilled shafts capped by a reinforced concrete precast tub with rounded noses. The concrete precast tubs or shaft caps were found to be in excellent condition. See photos UW-2 and UW-3. The steel encased shafts were exposed at Piers 2 though 6.
227	Underwater Inspection Findings: The two 12' diameter drilled shafts are exposed at Piers 2 through 6. The shafts have the full height steel casings still in place. The shafts have rust nodules and marine growth. See photos UW-3 and UW-4.
361	The bridge spans the Port Washington Narrows which has tidal flows and currents. The BPO dive team will perform soundings during each scheduled UW inspection. Underwater Inspection Findings: The channel bottom is made up of mainly gravel and cobbles with some scattered rock that appears to be from the old bridge piers. See photos UW-4, UW-5, and UW-6. Slight changes in the channel bottom was noticed since the previous underwater inspection. This change was most likely due to the removal of most of the old piers. The old pier that was adjacent to Pier 5 was cuttoff at el. -20.3 but still can be seen. See photo UW-7.
1677	The channel is well established and tidal. Underwater Inspection Findings: The south bank at the bridge did not show any new sloughing. The concrete wall at the toe of the slope appears stable. See photo UW-8. There was a slope failure west of the bridge. See photo UW-9.
1680	This bridge is founded on drilled shafts.

Repairs

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

Washington State Department of Transportation

Underwater Inspection Report

Inspector	James R. W. Harding	**Agency/Owner**	WSDOT	**Date**	5/8/2017
Bridge No.	303/4A	**Bridge Name**	MANETTE BRIDGE		
Bridge Type	Stringer/multi-beam	**Waterway Name**	PORT WASH NARROWS		
Substructure	Concrete Columns on a Shaft Cap	**Foundation**	Steel Encased Concrete Shaft		
No. Spans	7	**No. Piers Dived**	5	**Inspection Hours**	4.0

Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Routine	12/7/2015	24	2.0	WDS	G0910	HDR	

Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes
UBIT	3.00	60	60		48	12/7/2015	12/7/2019		Deployed from west side of bridge.
Flagging	3.00								Contact OLR Traffic control at 253-377-2073.
Scheduling Restrictions									2015 Traffic Windows: No Restrictions.
Third Party Notification									For UBIT inspections over and around the navigable channel, contact Austin Pratt of the US Coast Guard at 206-220-7282 and request a Local Notice to Mariners (LNM) regarding the inspection. Even with this notification, the inspection team must remain aware of navigation traffic and get out of the way of any ships.

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note
Underwater	5/8/2017	60	4.0	JRWH	G0911	MBS	

Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes
SNDG					60	~~5/14/2012~~ 5/8/2017	~~5/14/2017~~ 5/8/2022		Underwater inspectors provide groundlines. Regional inspectors do not need to take soundings.
Boat	5.00	D	D	D					Launched from Evergreen Park in Bremerton. No launch fee.
Special Equipment									Use fathometer equipment for fathometric survey.
Third Party Notification									Notified USCG Sector Seattle (206) 217-6002 of arrival and departure.
Tides									Underwater inspection should be done during small exchanges.

Status: Released | Printed On: 8/3/2017 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | CD Date: 8/2/2017 | Program Mgr: Harvey L. Coffman

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-2

220 Concrete Submerged Foundation

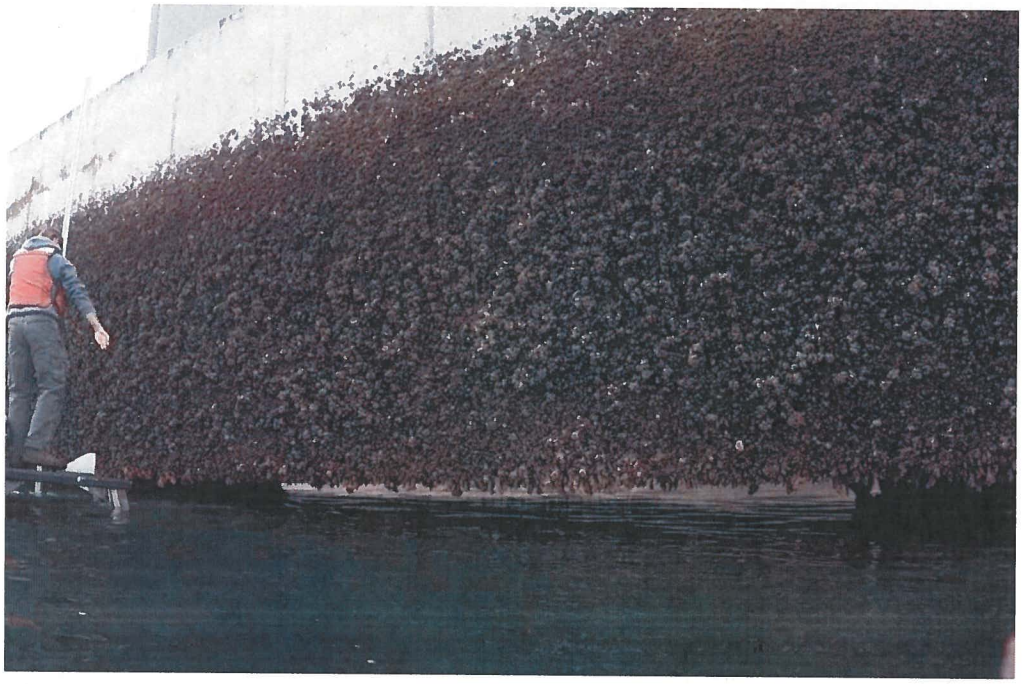
Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Typical Shaft Cap. Looking at Pier 2.



UW-3

220 Concrete Submerged Foundation

Photo Type: G - General

Orientation: SE

Date: 5/8/2017

Repairs:

Typical top of shaft to shaft cap. Looking at Shaft 2A.

Status: Released | Printed On: 8/3/2017 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | CD Date: 8/2/2017 | Program Mgr: Harvey L. Coffman

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-4

227 Concrete Submerged Pile/Column

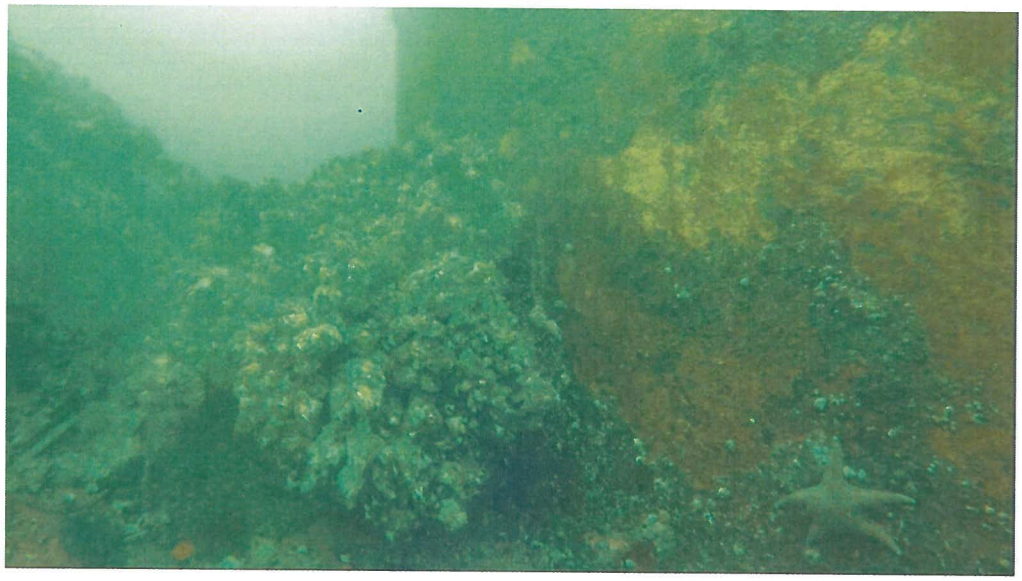
Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

Typical rust nodules. Note the rock that was around the old pier still in place. Looking at Column 5A.



UW-5

361 Scour

Photo Type: G - General

Orientation: DN

Date: 5/8/2017

Repairs:

Typical channel bottom is gravel and cobbles. Note the rust nodules on the shaft. Looking at the west side of Column 3B.

Status: Released | Printed On: 8/3/2017 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | CD Date: 8/2/2017 | Program Mgr: Harvey L. Coffman

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-6

361 Scour

Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

Pile of rock at the south face of Shaft 3A.

UW-7

361 Scour

Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Old pier adjacent to Shaft 5A is exposed.

Status: Released | Printed On: 8/3/2017 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | CD Date: 8/2/2017 | Program Mgr: Harvey L. Coffman

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-8

1677 Channel Protection

Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Concrete wall at the toe of the slope appears stable.

UW-9

1677 Channel Protection

Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

Slope failure west of the bridge on the south bank.

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

CD Date: 8/2/2017 Printed on: 8/4/2017
CD Guid: f054995d-d385-4497-9253-f001d5aea402

IDENTIFICATION

(1) STATE NAME - WASHINGTON	530
(8) STRUCTURE NUMBER	# 0017926A0000000
(5) INVENTORY ROUTE (ON/UNDER) - On	1 5 1 00303
STATE ROUTE MILEPOST	0.26
(2) HIGHWAY AGENCY DISTRICT - OL Region	03
(3) COUNTY CODE 35 - Kitsap County	(4) PLACE CODE 00000
(6) FEATURES INTERSECTED	PORT WASH NARROWS
(7) FACILITY CARRIED	CITY STREET
(9) LOCATION	0.6 E JCT SR 303
(12) BASE HIGHWAY NETWORK - Part of network	1
(13) LRS INV ROUTE AND SUB ROUTE	44000053000
(11) LRS MILEPOST	0.30
(16) LATITUDE	47 Deg 34 Min 9.47 Sec
(17) LONGITUDE	122 Deg 37 Min 23.76 Sec
(98A) BORDER BR. - Not a border bridge (98B)	(99) BORDER BR. SID - Not a border bridge

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL - Prestressed conc continuous	
DESIGN - Stringer/multi-beam	602
(44) STRUCTURE TYPE APPR: MATERIAL - Other	
DESIGN - Other	000
(45) NO. OF SPANS IN MAIN UNIT	7
(46) NO. OF APPROACH SPANS	0
(107) DECK STRUCTURE TYPE - Conc. CIP	1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:	
(A) TYPE OF WEARING SURFACE - Monolithic concrete	1
(B) TYPE OF MEMBRANE - None	0
(C) TYPE OF DECK PROTECTION - Epoxy coated reinforcing	1

AGE AND SERVICE

(27) YEAR BUILT	2011
(106) YEAR RECONSTRUCTED	0000
(42) TYPE OF SERVICE ON - Highway & Pedestrian	5
UNDER - Waterway	5
(28) LANES: ON STRUCTURE 2	UNDER STRUCTURE 0
(29) AVERAGE DAILY TRAFFIC	6537
(30) YEAR OF ADT 2011	(109) TRUCK ADT 3%
(19) BYPASS, DETOUR LENGTH	3 mi

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN	250 ft
(49) STRUCTURE LENGTH	1550 ft
(50) CURB OR SIDEWALK: LEFT 0.0 ft	RIGHT 10.4 ft
(51) BRIDGE ROADWAY WIDTH CURB TO CURB	29.8 ft
(52) DECK WIDTH OUT TO OUT	54.8 ft
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)	30 ft
(33) BRIDGE MEDIAN - No median	0
(34) SKEW 0 Deg	(35) STRUCTURE FLARED Yes 1
(10) INVENTORY ROUTE MIN VERT CLEAR	99 ft 99 in
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR	29 ft 09 in
(53) MIN VERT CLEAR OVER BRIDGE RDW	99 ft 99 in
(54) MIN VERT UNDERCLEAR	0 ft 00 in N
(55) MIN LAT UNDERCLEAR RT	0.0 ft N
(56) MIN LAT UNDERCLEAR LT	0.0 ft

NAVIGATION DATA

(38) NAVIGATION CONTROL - Navigation control	1
(111) PIER PROTECTION -	1
(39) NAVIGATION VERTICAL CLEARANCE	75 ft
(116) VERT-LIFT BRIDGE NAV MIN VERT CLR	
(40) NAVIGATION HORIZONTAL CLR	231 ft

WSBIS DATA

BRIDGE NUMBER	303/4A
BRIDGE NAME	MANETTE BRIDGE
CUSTODIAN	Washington State
CROSSING DESC	MANETTE BRIDGE
MAIN LISTING FLAG	M
SUFFICIENCY RATING	81.08 Not SD or FO

CLASSIFICATION

(112) NBIS BRIDGE LENGTH	Y
(104) HIGHWAY SYSTEM - On the NHS	1
(26) FUNCTIONAL CLASS - Other Principal Arterial	14
(100) DEFENSE HIGHWAY - Not a STRAHNET route	0
(101) PARALLEL STRUCTURE - Not a parallel bridge	N
(102) DIRECTION OF TRAFFIC - 2-way traffic	2
(103) TEMPORARY STRUCTURE - Not Applicable	
(105) FEDERAL LANDS HIGHWAY - Not Applicable	0
(110) DESIGNATED NATIONAL NETWORK - Part of network	1
(20) TOLL - Non-toll structure	3
(21) MAINTENANCE -	1
(22) OWNER - Washington State	1
(37) HISTORICAL SIGNIFICANCE - Not determined	4

CONDITION

(58) DECK	6
(59) SUPERSTRUCTURE	8
(60) SUBSTRUCTURE	8
(61) CHANNEL AND CHANNEL PROTECTION	7
(62) CULVERTS	N

LOAD RATING AND POSTING

(31) DESIGN LOAD - HL-93	A
(63) OPER RATING METHOD - Ld Res. Fctr (LRFR) RF HL93	8
(64) OPERATING RATING	1.44
(65) INV RATING METHOD - Ld Res. Fctr (LRFR) RF HL93	8
(66) INVENTORY RATING	1.11
(70) BRIDGE POSTING - Equal or above legal loads	5
(41) STRUCT OPEN, POSTED, CLOSED - Open, no restrictions	A

APPRAISAL

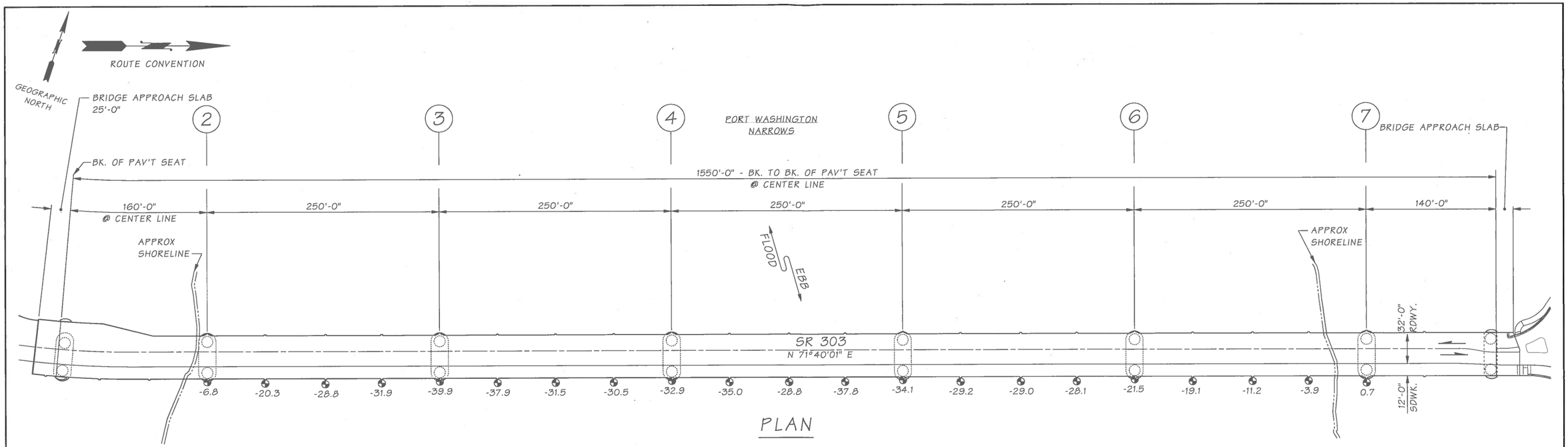
(67) STRUCTURAL EVALUATION	8
(68) DECK GEOMETRY	4
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71) WATERWAY ADEQUACY	8
(72) APPROACH ROADWAY ALIGNMENT	8
(36) TRAFFIC SAFETY FEATURES	111
(113) SCOUR CRITICAL BRIDGE	8

PROPOSED IMPROVEMENTS

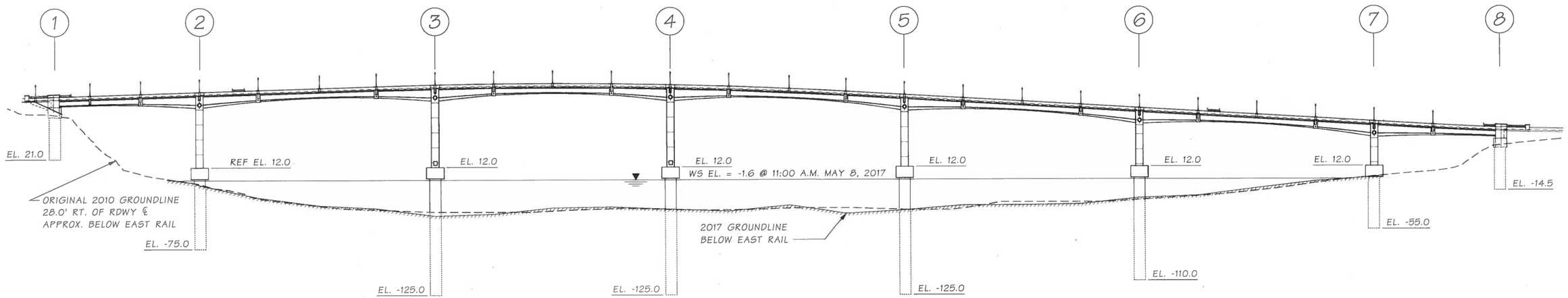
(75) TYPE OF WORK -	351
(76) LENGTH OF STRUCTURE IMPROVEMENT	1550 ft
(94) BRIDGE IMPROVEMENT COST	$9,920,000
(95) ROADWAY IMPROVEMENT COST	$1,984,000
(96) TOTAL PROJECT COST	$19,840,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE	2014
(114) FUTURE ADT	10949
(115) YEAR OF FUTURE ADT	2036

INSPECTIONS

(90) INSPECTION DATE 12/15	(91) FREQUENCY 24 MO	
(92) CRITICAL FEATURE INSPECTION:		(93) CFI DATE
(A) FRACTURE CRIT DETAIL - NO -	Month	(A) __/__
(B) UNDERWATER INSP - YES -	60 Month	(B) 05/17
(C) OTHER SPECIAL INSP - NO -	Month	(C) __/__



PLAN



ELEVATION
LOOKING WEST

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

LEGEND:

0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:640
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

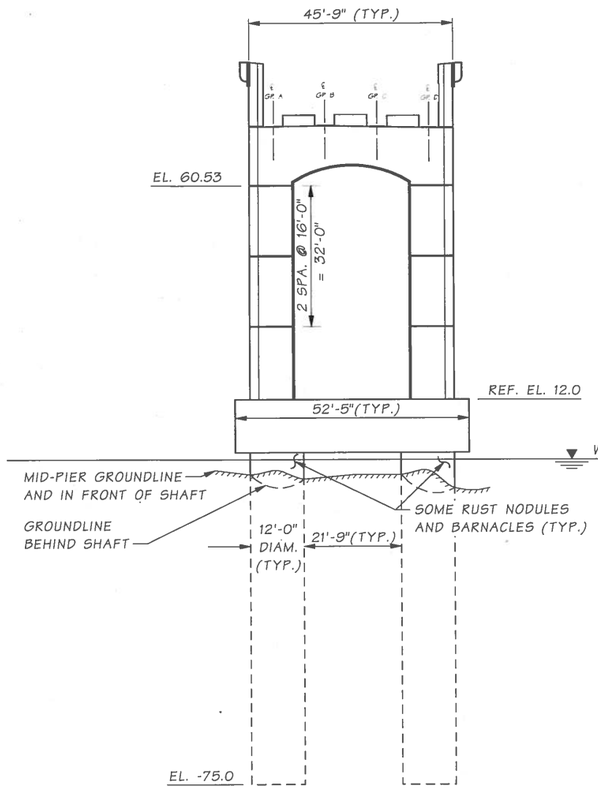
Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

LAYOUT

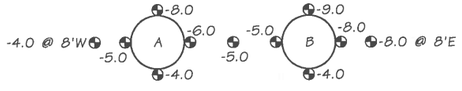
SHEET NO. 1

SHEET 1 OF 4 SHEETS

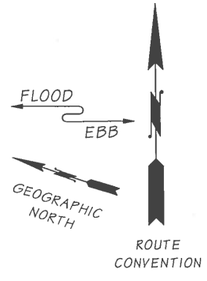


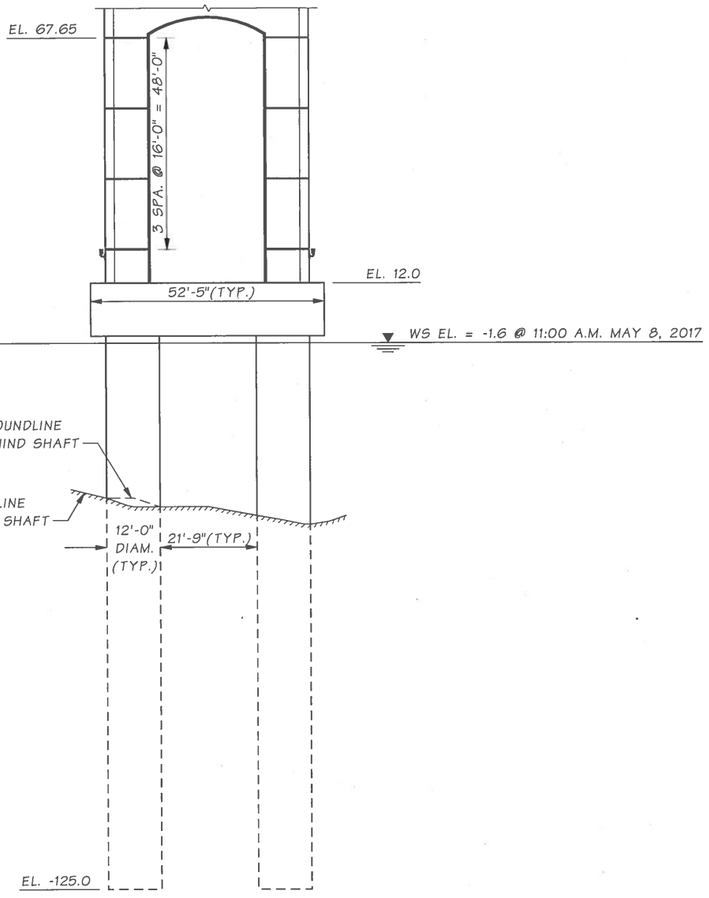
PIER 2 - ELEVATION

LOOKING NORTH



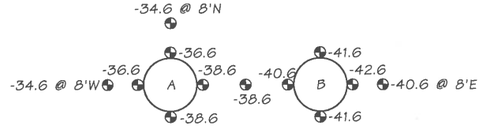
PIER 2 - PLAN





PIER 3 - ELEVATION

LOOKING NORTH



PIER 3 - PLAN

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

-0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

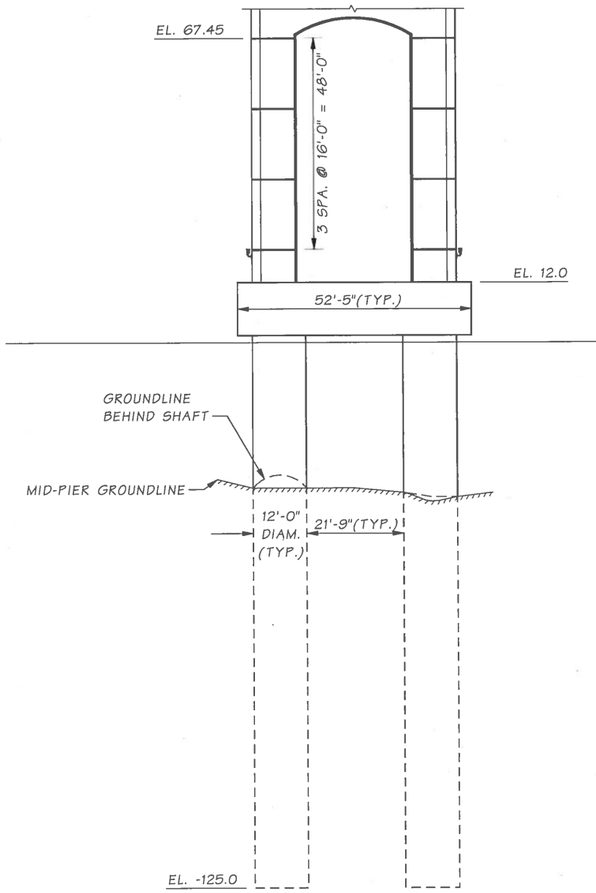
Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

PIER 2 AND PIER 3

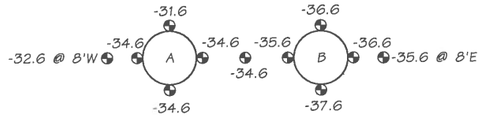
SHEET NO. 2

SHEET 2 OF 4 SHEETS

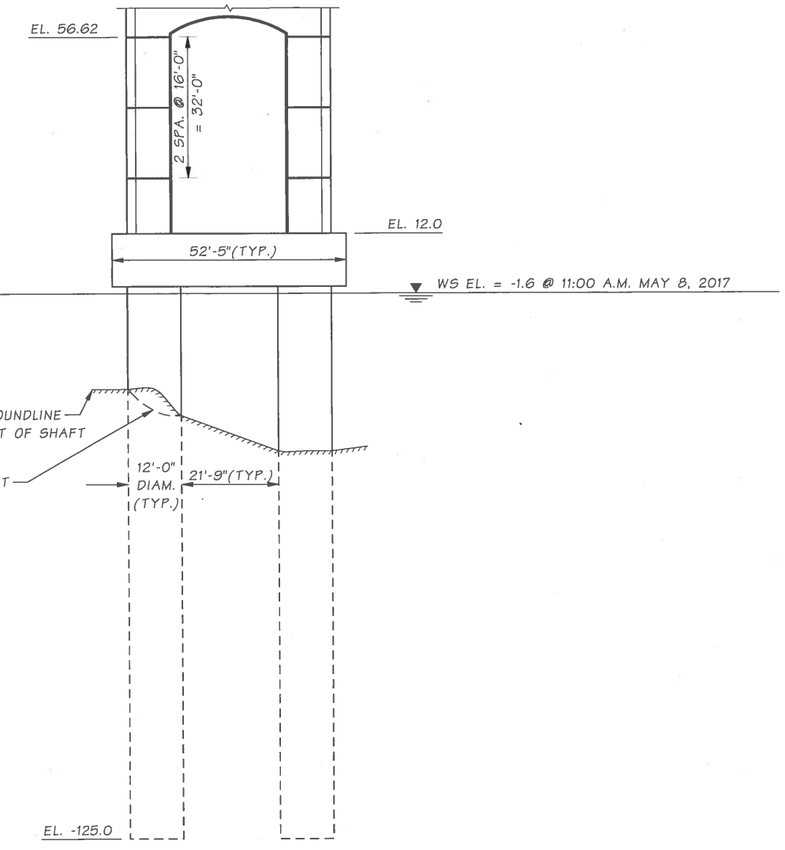


PIER 4 - ELEVATION

LOOKING NORTH

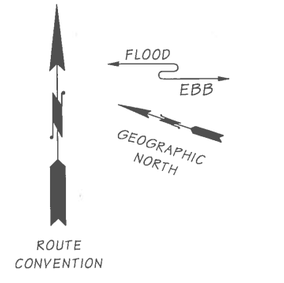


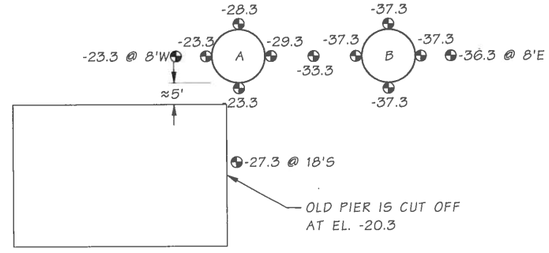
PIER 4 - PLAN



PIER 5 - ELEVATION

LOOKING NORTH





PIER 5 - PLAN

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

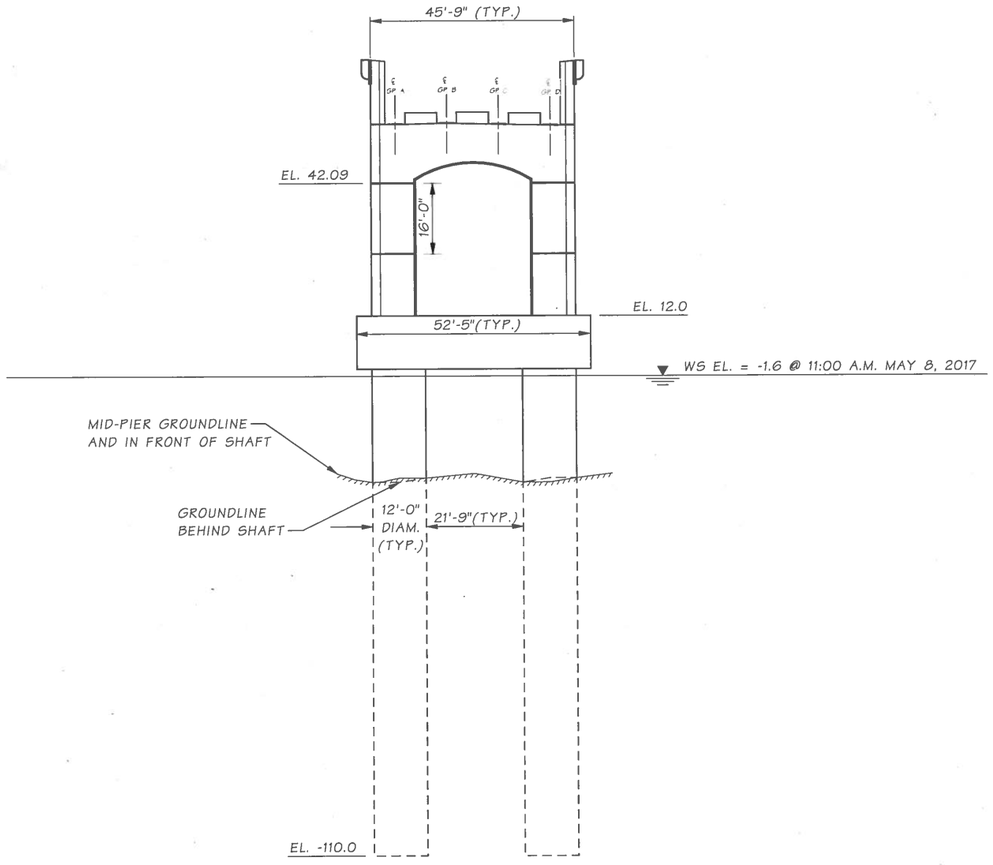
Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

PIER 4 AND PIER 5

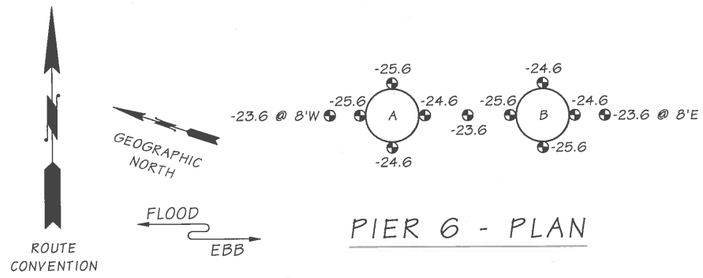
SHEET NO. 3

SHEET 3 OF 4 SHEETS



PIER 6 - ELEVATION

LOOKING NORTH



PIER 6 - PLAN

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

⊕ 0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

PIER 6

SHEET NO. 4

SHEET 4 OF 4 SHEETS

Status: Released | Printed On: 1/21/2021 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | Release Date: 8/2/2017 | Program Mgr: Evan M Grimm

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-2

220 Concrete Submerged Foundation

Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Typical Shaft Cap. Looking at Pier 2.

UW-3

220 Concrete Submerged Foundation

Photo Type: G - General

Orientation: SE

Date: 5/8/2017

Repairs:

Typical top of shaft to shaft cap. Looking at Shaft 2A.

Status: Released | Printed On: 1/21/2021 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | Release Date: 8/2/2017 | Program Mgr: Evan M Grimm

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-4

227 Concrete Submerged Pile/Column

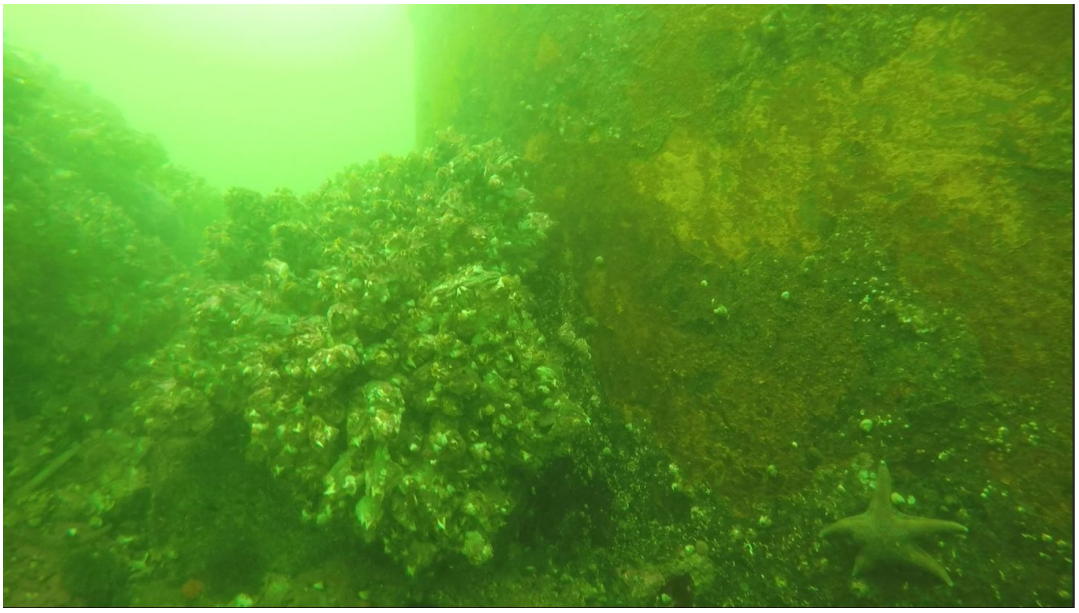
Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

Typical rust nodules. Note the rock that was around the old pier still in place. Looking at Column 5A.



UW-5

361 Scour

Photo Type: G - General

Orientation: DN

Date: 5/8/2017

Repairs:

Typical channel bottom is gravel and cobbles. Note the rust nodules on the shaft. Looking at the west side of Column 3B.

Status: Released | Printed On: 1/21/2021 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | Release Date: 8/2/2017 | Program Mgr: Evan M Grimm

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-6

361 Scour

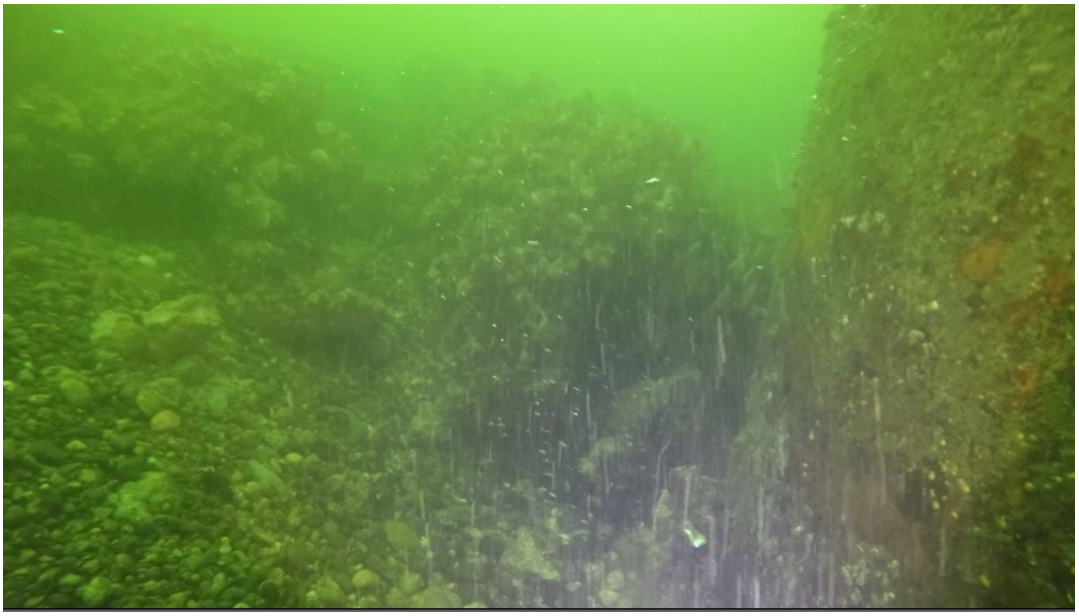
Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

Pile of rock at the south face of Shaft 3A.



UW-7

361 Scour

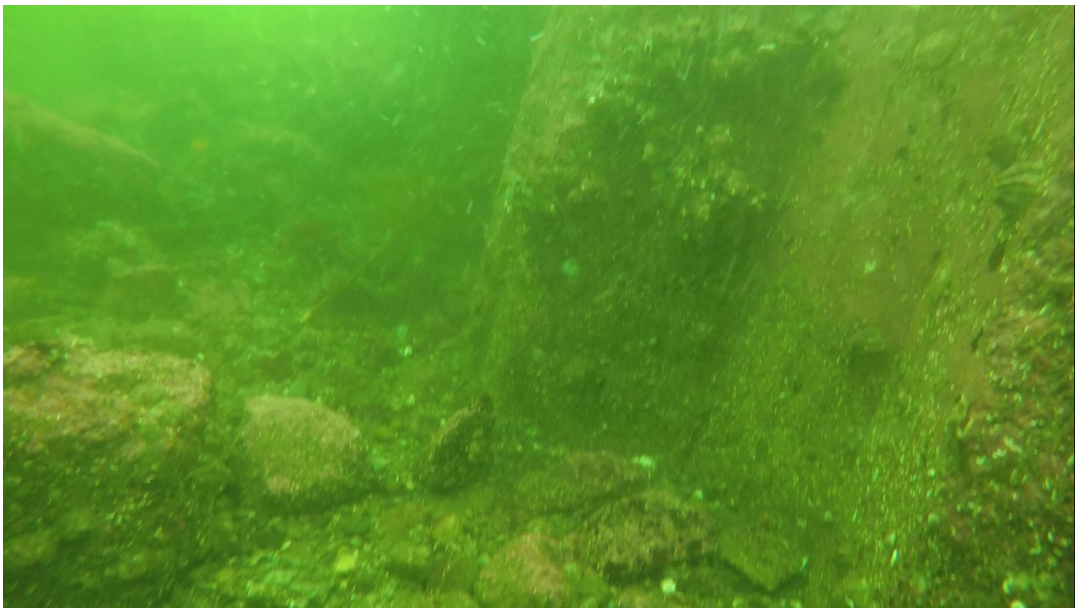
Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Old pier adjacent to Shaft 5A is exposed.



Status: Released | Printed On: 1/21/2021 | Agency: Washington State

CD Guid: f054995d-d385-4497-9253-f001d5aea402 | Release Date: 8/2/2017 | Program Mgr: Evan M Grimm

Br. No. 303/4A **SID** 0017926A **Br. Name** MANETTE BRIDGE

Carrying CITY STREET **Route On** 00303 **Mile Post** 0.26

Intersecting PORT WASH NARROWS **Route Under** **Mile Post**

UW-8

1677 Channel Protection

Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Concrete wall at the toe of the slope appears stable.

UW-9

1677 Channel Protection

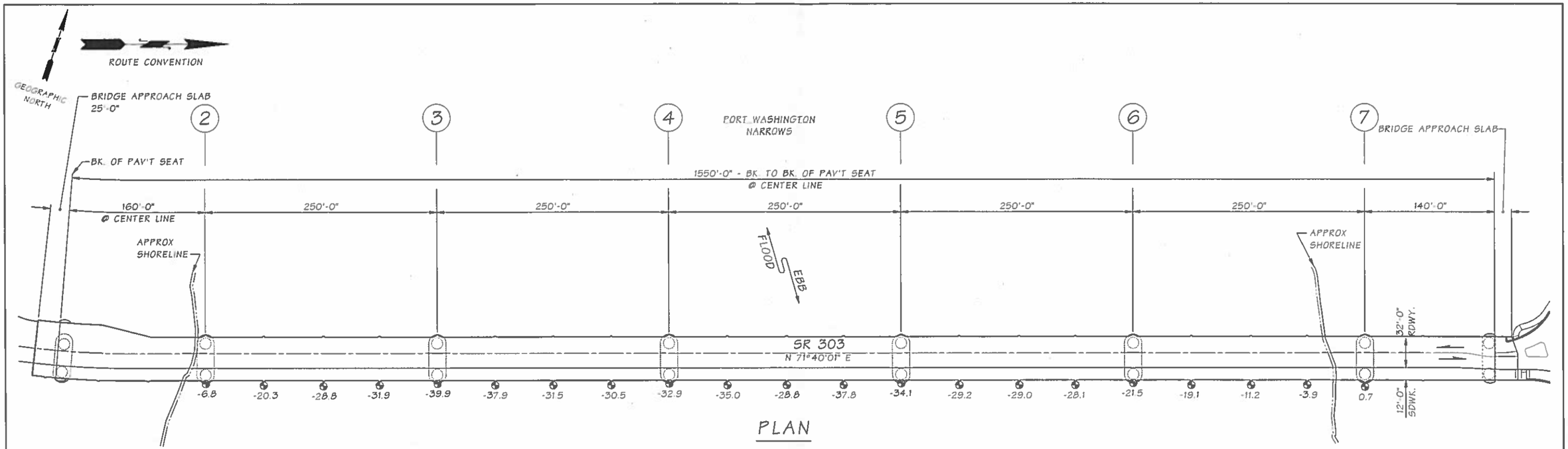
Photo Type: G - General

Orientation: W

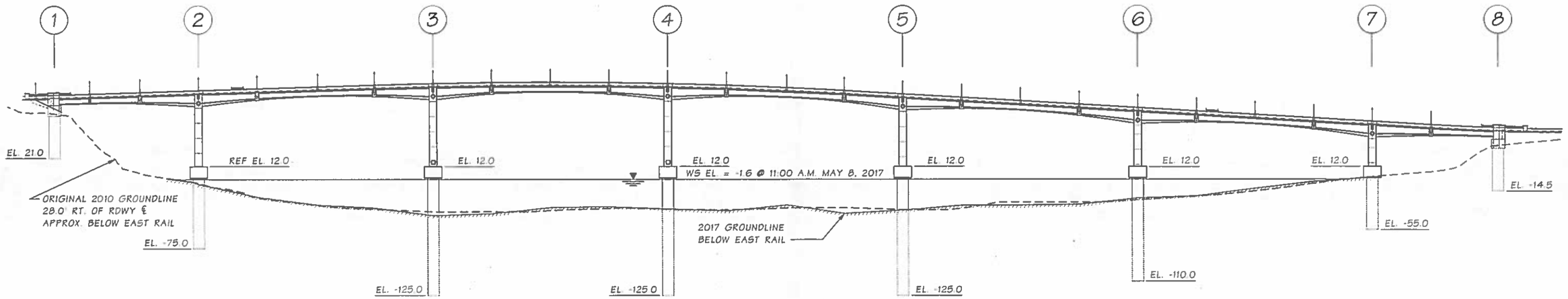
Date: 5/8/2017

Repairs:

Slope failure west of the bridge on the south bank.



PLAN



ELEVATION
LOOKING WEST

LEGEND.

0.0 FIELD MEASURED ELEVATION

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:640
Drawn By:	JRWH
Reviewed By:	MBS

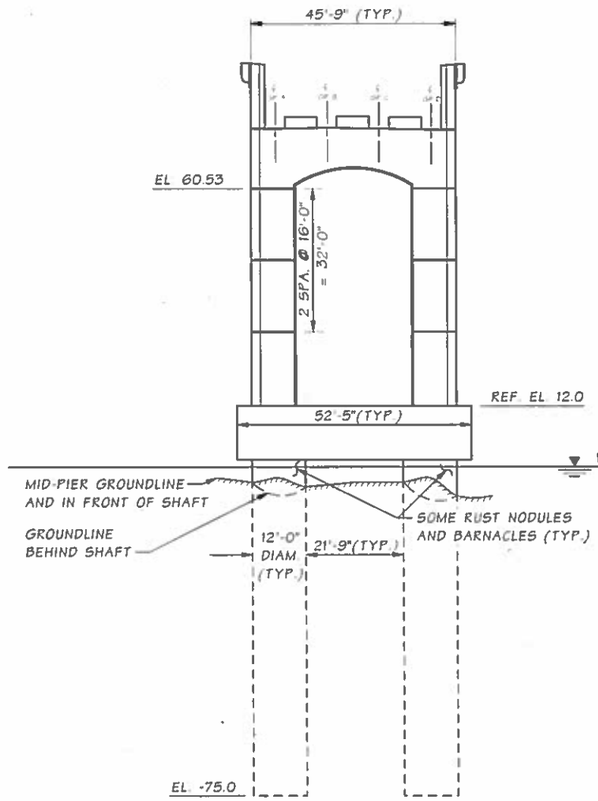
WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

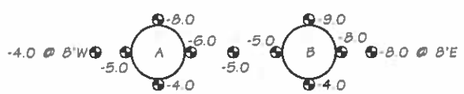
LAYOUT

SHEET NO 1
SHEET 1 OF 4 SHEETS

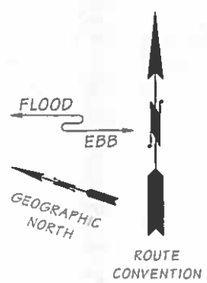


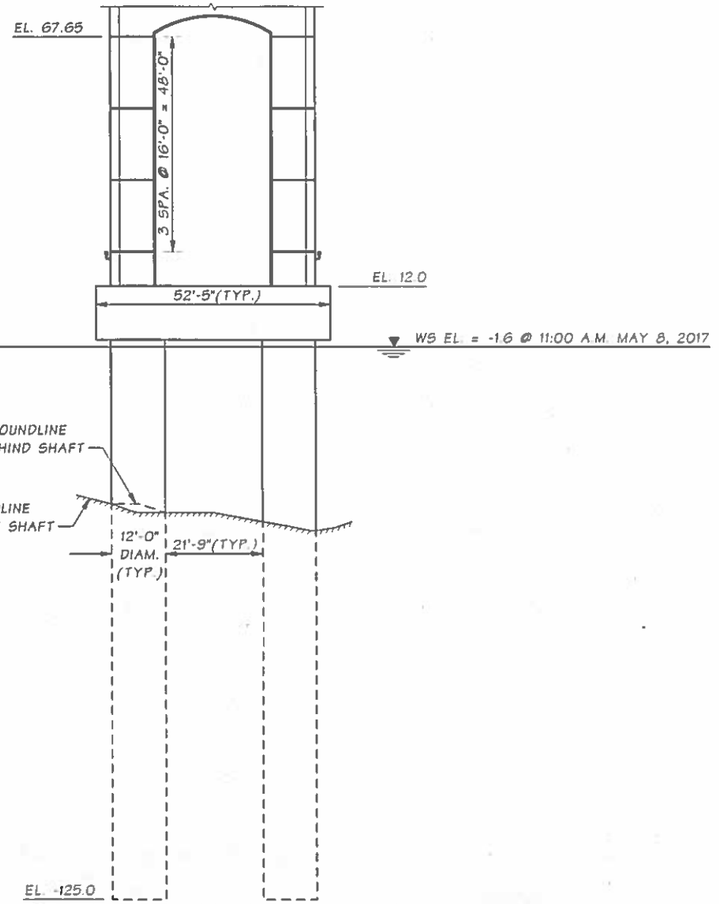
PIER 2 - ELEVATION

LOOKING NORTH



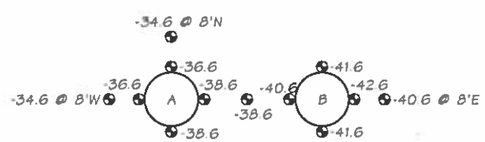
PIER 2 - PLAN





PIER 3 - ELEVATION

LOOKING NORTH



PIER 3 - PLAN

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

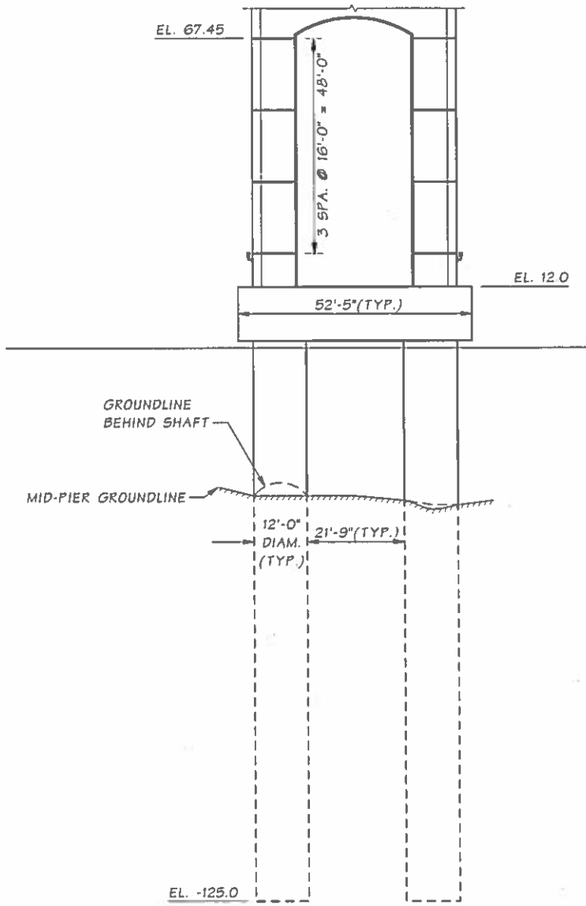
WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

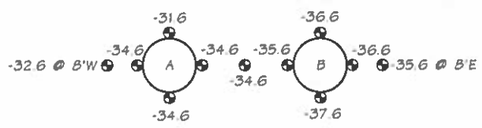
PIER 2 AND PIER 3

SHEET NO. 2
SHEET 2 OF 4 SHEETS

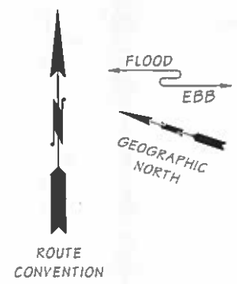


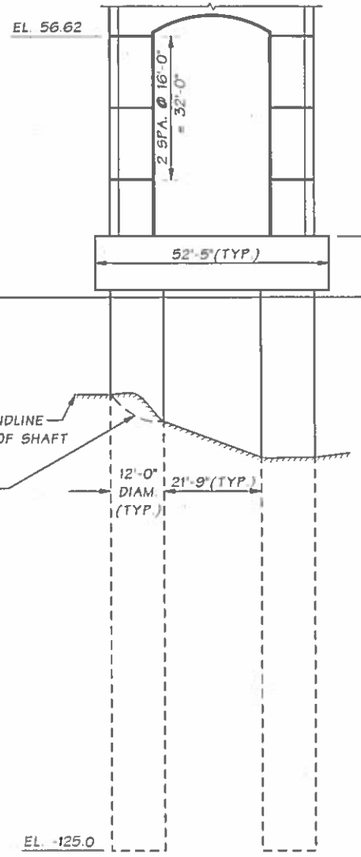
PIER 4 - ELEVATION

LOOKING NORTH



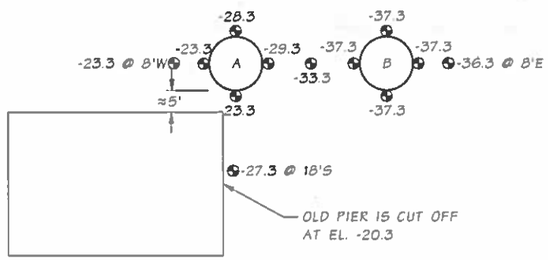
PIER 4 - PLAN





PIER 5 - ELEVATION

LOOKING NORTH



PIER 5 - PLAN

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

⊕ 0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

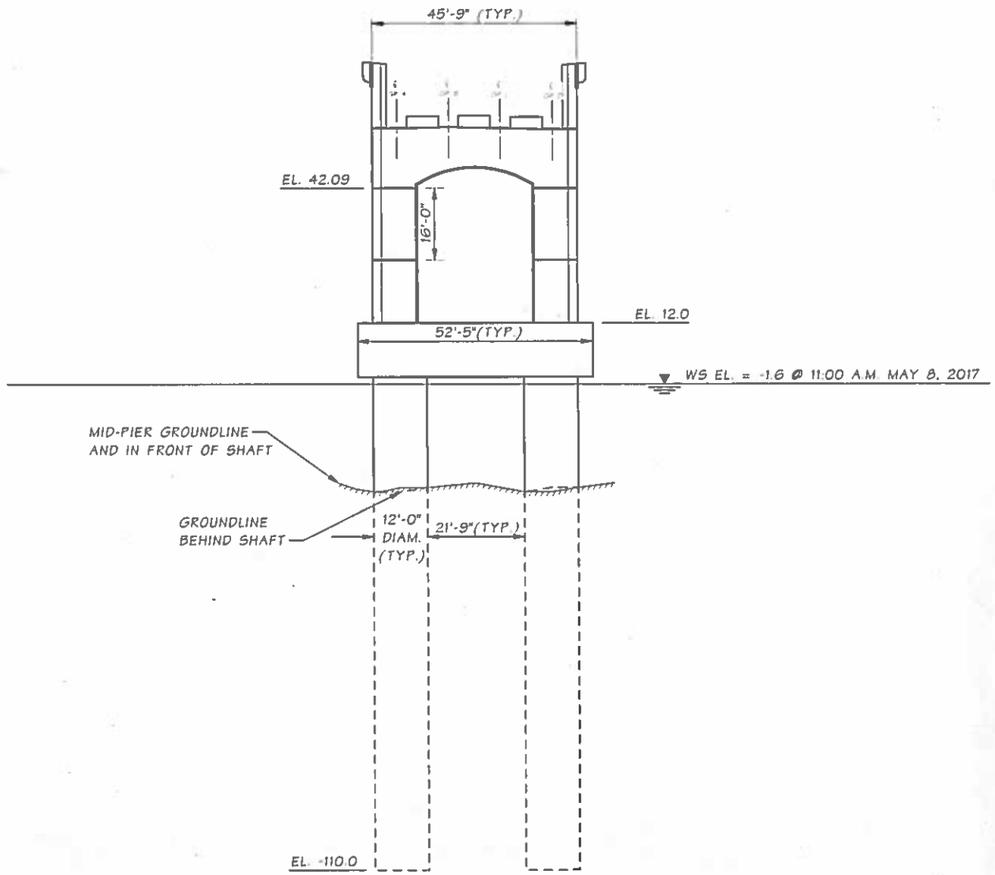
WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

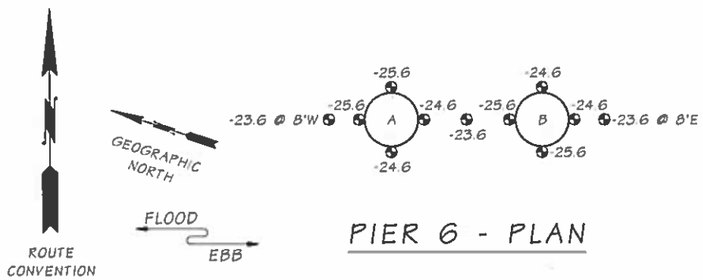
PIER 4 AND PIER 5

SHEET NO. 3
SHEET 3 OF 4 SHEETS



PIER 6 - ELEVATION

LOOKING NORTH



PIER 6 - PLAN

NOTES.

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

⊕ 0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:200
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

PIER 6

SHEET NO. 4
SHEET 4 OF 4 SHEETS

UNDERWATER INSPECTION PROCEDURES
SUMMARY SHEET

Bridge Name:	MANETTE BRIDGE
Bridge Number:	303/4A
Structure ID:	0017926A
Owner:	WSDOT
Marine Environment:	Saltwater
Substructure Units Inspected:	Piers 2 through 6
Scour Mitigation Present:	None
Bridge Site Orientation:	See attached bridge layout sheet(s)

Substructure Type(s):	Piers 2 through 6	2 Reinf. Concrete Columns on Pre-cast tub (Shaft Cap)

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 a 12 in. band of 10% of the columns in a bent, with one column per bent minimum and several 12 in. x 12 in. areas of all marine growth at the mudline, mid-depth, and intertial zone on each face of the pier wall.

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.

Foundation Type(s):	Piers 2 through 6	2 Steel Lined 12' Diameter Drilled Shafts Capped with a Pre-cast Tub

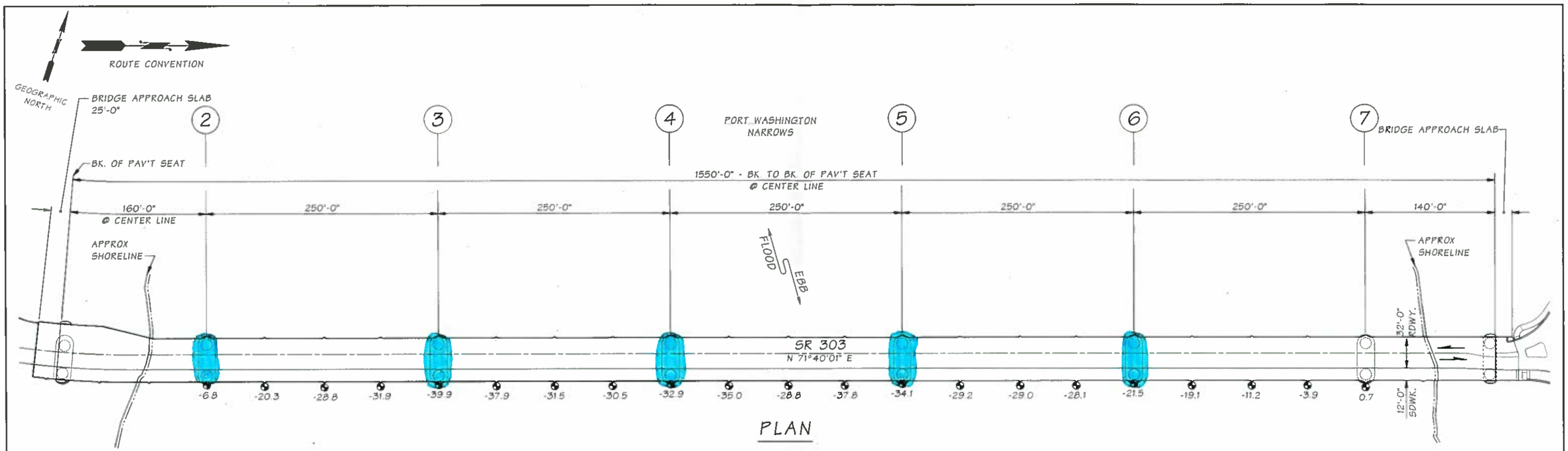
Inspection Procedures:

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.

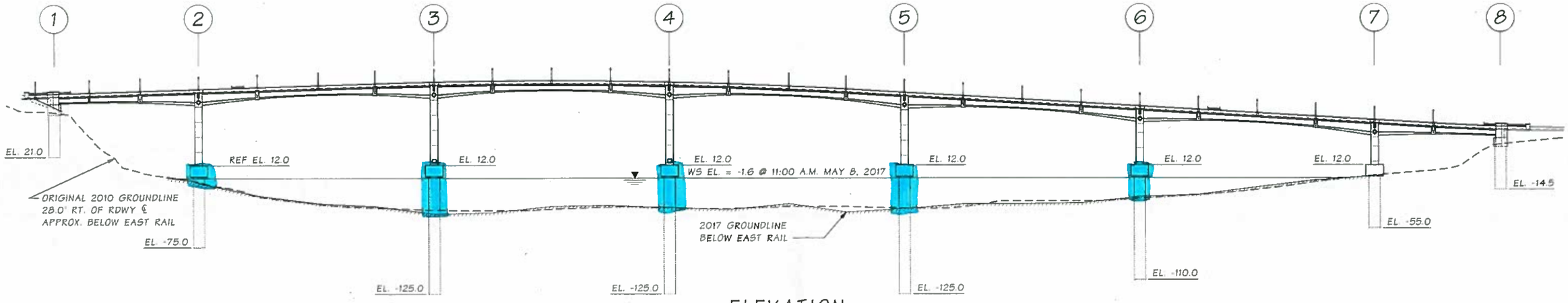
Level II Inspection: Clean a 12 in. band of all marine growth at the mudline, mid-depth, and intertial zone of 10% of the piles in a bent, with one pile per bent minimum.

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



ELEVATION
LOOKING WEST

NOTES:

1. REFERENCE CONTRACT PLANS FOR CONSTRUCTION OF CITY OF BREMERTON, MANETTE BRIDGE 303/4A BRIDGE REPLACEMENT, KITSAP COUNTY F.A. PROJECT NO. BR-0303(005), 2010.
2. REFERENCE ELEVATION TOPS OF SHAFT CAPS 12.0. PIER 2 TOP OF SHAFT CAP USED DURING INSPECTION.

LEGEND:

⊕ 0.0 FIELD MEASURED ELEVATION

Date:	MAY 8, 2017
Scale:	MGDS SCALE 1:640
Drawn By:	JRWH
Reviewed By:	MBS

WSDOT Dive Team

Washington State Department of Transportation
Bridge and Structures Office

303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

LAYOUT

SHEET NO. 1
SHEET 1 OF 4 SHEETS