

BRIDGE INSPECTION REPORT

Page 1 of 4

Status: Released
 CD Guid: 709fe2e5-4d30-432b-a44f-b3ca8e7f240d

Printed On: 1/4/2020
 Release Date: 1/4/2020

Agency: Washington State
 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

Inspector's Signature SMT Cert # G1915 Cert Exp Date 7/2/2024

Co-Inspector's Signature MJA

Inspections Performed

Report Type	Inspection Type	Date	Freq	Hours	Inspector	Cert No	Co-Insp.
Routine		12/2/2019	24	3.0	SMT	G1915	MJA
Underwater		5/8/2017	60	4.0	JRWH	G0911	MBS

8	<input type="checkbox"/> Alignment (1661)	<input type="checkbox"/> Operating Tons (1552)	1	<input type="checkbox"/> Bridge Rails (1684)	3	<input type="checkbox"/> No Utilities (2675)
6	7 <input type="checkbox"/> Deck Overall (1663)	1.44 <input type="checkbox"/> Op RF (1553)	1	<input type="checkbox"/> Transition (1685)	0.00	<input type="checkbox"/> Asphalt Depth (2610)
8	<input type="checkbox"/> Superstructure (1671)	<input type="checkbox"/> Inventory Tons (1555)	1	<input type="checkbox"/> Guardrails (1686)	2011	<input type="checkbox"/> Year Built (1332)
8	<input type="checkbox"/> Substructure (1676)	1.11 <input type="checkbox"/> Inv RF (1556)	1	<input type="checkbox"/> Terminals (1687)	0	<input type="checkbox"/> Year Rebuilt (1336)
9	<input type="checkbox"/> Culvert (1678)	5 <input type="checkbox"/> Operating Level (1660)	32.0	<input type="checkbox"/> Bridge Rail Ht (2612)		
7	<input type="checkbox"/> Chan/Protection (1677)	A <input type="checkbox"/> Open/Closed (1293)	8.00	<input type="checkbox"/> Design Curb Ht (2611)		
1	<input type="checkbox"/> Pier/Abut/Prot (1679)	8 <input type="checkbox"/> Structural Eval (1657)				
8	<input type="checkbox"/> Waterway (1662)	4 <input type="checkbox"/> Deck Geometry (1658)				
8	<input type="checkbox"/> Scour (1680)	9 <input type="checkbox"/> Underclearance (1659)				

NBIS Risk Category
 Low Risk

Inspection Flags

<input type="checkbox"/> Soundings (2693)	<input type="checkbox"/> Measure Clearance (2694)	<input type="checkbox"/> Revise Rating (2688)	<input type="checkbox"/> Photos (2691)	<input type="checkbox"/> QA Flag (2695)
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BMS Elements

Element	Element Description	Total	Units	CS 1	CS 2	CS 3	CS 4
26	Concrete Deck w/Coated Bars	50,997	SF	50,997	0	0	0
35	Concrete Deck Soffit	50,997	SF	50,997	0	0	0
115	Prestressed Concrete Girder	4,600	LF	4,600	0	0	0
200	Abutment Fill	2	EA	2	0	0	0
205	Concrete Pile/Column	12	EA	12	0	0	0
215	Concrete Abutment	154	LF	154	0	0	0
220	Concrete Submerged Foundation	6	EA	6	0	0	0
227	Concrete Submerged Pile/Column	10	EA	10	0	0	0
234	Concrete Pier Cap/Crossbeam	250	LF	250	0	0	0
266	Concrete Sidewalk & Supports	16,275	SF	16,275	0	0	0
310	Elastomeric Bearing	32	EA	32	0	0	0
321	Concrete Roadway Approach Slab	2,616	SF	2,616	0	0	0
330	Metal Bridge Railing	3,100	LF	3,100	0	0	0
331	Concrete Bridge Railing	3,100	LF	3,100	0	0	0
340	Metal Pedestrian Railing	1,550	LF	1,550	0	0	0

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BMS Elements (Continued)

Element	Element Description	Total	Units	CS 1	CS 2	CS 3	CS 4
341	Concrete Pedestrian Railing	441	LF	441	0	0	0
361	Scour	6	EA	6	0	0	0
400	Asphalt Butt Joint Seal	64	LF	64	0	0	0
416	Assembly Joint Seal (Modular)	77	LF	77	0	0	0
705	Bridge Luminaire Pole and Base	49	EA	49	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.

9 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.

26 Deck has transverse cracks throughout, with widely spaced map cracking over the piers.
In the right lane of Span 1 there is an 11 ft. wide x 48 ft. long patch of unknown material. See photo #6

35 Soffit has transverse leaching hairline cracks throughout, the crack spacing varies from about 18 inches apart over the piers to about 5 feet at mid-span in all spans.
There are some diagonal leaching hairline cracks at the abutments.

115 Many girders have transverse and/or longitudinal leaching hairline cracks in the top flange.
Girder 7D has a longitudinal leaching crack in the web.

215 Abutment BMS quantity includes wingwalls.

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 through 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.

310 Bearing 7B girder stop pad has become separated allowing girder to contact the stop. See photo #7.

331 Concrete Bridge rail has vertical leaching hairline cracks throughout.

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Notes (Continued)

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 cutoff at el. -20.3 but still can be seen. See photo UW-7.

400 Joints are sawcut and filled.

416 Joints are measured at centerline:

Date	Pier 1	Pier 8	Time	Temp.(°F)
12/2/19	12"	12"	12:00 pm	40°
12/6/2017	11"	10-1/2"	12:30 pm	40°
12/7/2015	11-3/4"	11-1/4"	11:00 am	45°

1663 Coded a '6' due to the degree of transverse cracking, and map cracking over the piers. Please refer to element notes 26 and 35.

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.

2675 There is a bundle of three utilities between Girders B and C, and two between Girders C and D. The two between Girders C and D are a 10" sewer and a 12" water line.

Repairs

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

Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note		
Routine	12/2/2019	24	3.0	SMT	G1915	MJA			
Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes
UBIT	3.00	60	60		48	12/2/2019	12/2/2023		Deployed from west side of bridge.
Flagging	3.00								Contact OLR Traffic control at 253-377-2073.
Scheduling Restrictions									2019 Traffic Windows: No Restrictions.

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Inspections Performed and Resources Required (Continued)

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note		
Third Party Notification							Traffic light at the south end of the bridge needs to be switched to flashing red to aid traffic control operations. Olympic region flagging has this capability. A courtesy call to City of Bremerton to let them know when this happens is recommended. Call signal tech Jeff Collins: 360-473-5370 or 360-981-2304.		
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.		
Underwater	5/8/2017	60	4.0	JRWH	G0911	MBS			
Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes
SNDG					60	5/8/2017	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.

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

CD Date: 12/2/2019 Printed on: 1/21/2021
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IDENTIFICATION				WSBIS DATA			
(1) STATE NAME - WASHINGTON		530		BRIDGE NUMBER		303/4A	
(8) STRUCTURE NUMBER	# 0017926A0000000			BRIDGE NAME		MANETTE BRIDGE	
(5) INVENTORY ROUTE (ON/UNDER) - On		1 5 1 00303		CUSTODIAN		Washington State	
STATE ROUTE MILEPOST		0.26		CROSSING DESC		MANETTE BRIDGE	
(2) HIGHWAY AGENCY DISTRICT - OL Region		03		MAIN LISTING FLAG		M	
(3) COUNTY CODE 35 - Kitsap County	(4) PLACE CODE 00000			SUFFICIENCY RATING		81.08 Not SD or FO	
(6) FEATURES INTERSECTED	PORT WASH NARROWS			CLASSIFICATION			
(7) FACILITY CARRIED	CITY STREET			(112) NBIS BRIDGE LENGTH		Y	
(9) LOCATION	0.6 E JCT SR 303			(104) HIGHWAY SYSTEM - On the NHS		1	
(12) BASE HIGHWAY NETWORK - Part of network	1			(26) FUNCTIONAL CLASS - Other Principal Arterial		14	
(13) LRS INV ROUTE AND SUB ROUTE	44000053000			(100) DEFENSE HIGHWAY - Not a STRAHNET route		0	
(11) LRS MILEPOST	0.30			(101) PARALLEL STRUCTURE - Not a parallel bridge		N	
(16) LATITUDE	47 Deg 34 Min 9.47 Sec			(102) DIRECTION OF TRAFFIC - 2-way traffic		2	
(17) LONGITUDE	122 Deg 37 Min 23.76 Sec			(103) TEMPORARY STRUCTURE - Not Applicable			
(98A) BORDER BR. - Not a border bridge (98B) (99) BORDER BR. SID - Not a border bridge				(105) FEDERAL LANDS HIGHWAY - Not Applicable		0	
STRUCTURE TYPE AND MATERIAL				(110) DESIGNATED NATIONAL NETWORK - Part of network		1	
(43) STRUCTURE TYPE MAIN: MATERIAL - Prestressed conc continuous				(20) TOLL - Non-toll structure		3	
DESIGN - Stringer/multi-beam		602		(21) MAINTENANCE - State Highway Agency		01	
(44) STRUCTURE TYPE APPR: MATERIAL - Other				(22) OWNER - Washington State		1	
DESIGN - Other		000		(37) HISTORICAL SIGNIFICANCE - Not determined		4	
(45) NO. OF SPANS IN MAIN UNIT		7		CONDITION			
(46) NO. OF APPROACH SPANS		0		(58) DECK		7	
(107) DECK STRUCTURE TYPE - Conc. CIP		1		(59) SUPERSTRUCTURE		8	
(108) WEARING SURFACE / PROTECTIVE SYSTEM:				(60) SUBSTRUCTURE		8	
(A) TYPE OF WEARING SURFACE - Monolithic concrete		1		(61) CHANNEL AND CHANNEL PROTECTION		7	
(B) TYPE OF MEMBRANE - None		0		(62) CULVERTS		N	
(C) TYPE OF DECK PROTECTION - Epoxy coated reinforcing		1		LOAD RATING AND POSTING			
AGE AND SERVICE				(31) DESIGN LOAD - HL-93		A	
(27) YEAR BUILT		2011		(63) OPER RATING METHOD - Ld Res. Fctr (LRFR) RF HL93		8	
(106) YEAR RECONSTRUCTED		0000		(64) OPERATING RATING		1.44	
(42) TYPE OF SERVICE ON - Highway & Pedestrian		5		(65) INV RATING METHOD - Ld Res. Fctr (LRFR) RF HL93		8	
UNDER - Waterway		5		(66) INVENTORY RATING		1.11	
(28) LANES: ON STRUCTURE 2	UNDER STRUCTURE 0			(70) BRIDGE POSTING - Equal or above legal loads		5	
(29) AVERAGE DAILY TRAFFIC		6537		(41) STRUCT OPEN, POSTED, CLOSED - Open, no restrictions		A	
(30) YEAR OF ADT 2011	(109) TRUCK ADT 3%			APPRAISAL			
(19) BYPASS, DETOUR LENGTH		3 mi		(67) STRUCTURAL EVALUATION		8	
GEOMETRIC DATA				(68) DECK GEOMETRY		4	
(48) LENGTH OF MAXIMUM SPAN		250 ft		(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL		N	
(49) STRUCTURE LENGTH		1550 ft		(71) WATERWAY ADEQUACY		8	
(50) CURB OR SIDEWALK: LEFT 0.0 ft	RIGHT 10.4 ft			(72) APPROACH ROADWAY ALIGNMENT		8	
(51) BRIDGE ROADWAY WIDTH CURB TO CURB		29.8 ft		(36) TRAFFIC SAFETY FEATURES		1111	
(52) DECK WIDTH OUT TO OUT		54.8 ft		(113) SCOUR CRITICAL BRIDGE		8	
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)		30 ft		PROPOSED IMPROVEMENTS			
(33) BRIDGE MEDIAN - No median		0		(75) TYPE OF WORK -		351	
(34) SKEW 0 Deg	(35) STRUCTURE FLARED Yes 1			(76) LENGTH OF STRUCTURE IMPROVEMENT		1550 ft	
(10) INVENTORY ROUTE MIN VERT CLEAR		99 ft 99 in		(94) BRIDGE IMPROVEMENT COST		\$9,920,000	
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR		29 ft 09 in		(95) ROADWAY IMPROVEMENT COST		\$1,984,000	
(53) MIN VERT CLEAR OVER BRIDGE RDW		99 ft 99 in		(96) TOTAL PROJECT COST		\$19,840,000	
(54) MIN VERT UNDERCLEAR		0 ft 00 in N		(97) YEAR OF IMPROVEMENT COST ESTIMATE		2014	
(55) MIN LAT UNDERCLEAR RT		0.0 ft N		(114) FUTURE ADT		10949	
(56) MIN LAT UNDERCLEAR LT		0.0 ft		(115) YEAR OF FUTURE ADT		2036	
NAVIGATION DATA				INSPECTIONS			
(38) NAVIGATION CONTROL - Navigation control		1		(90) INSPECTION DATE 12/19	(91) FREQUENCY 24 MO		
(111) PIER PROTECTION -		1		(92) CRITICAL FEATURE INSPECTION:	(93) CFI DATE		
(39) NAVIGATION VERTICAL CLEARANCE		75 ft		(A) FRACTURE CRIT DETAIL - NO -	Month (A) _/_		
(116) VERT-LIFT BRIDGE NAV MIN VERT CLR				(B) UNDERWATER INSP - YES -	60 Month (B) 05/17		
(40) NAVIGATION HORIZONTAL CLR		231 ft		(C) OTHER SPECIAL INSP - NO -	Month (C) _/_		

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SI-5

0 Orientation

Photo Type: D - Deck

Orientation: N

Date: 12/3/2013

Repairs:

Deck looking north.



SI-4

0 Orientation

Photo Type: E - Elevation

Orientation: SW

Date: 12/3/2013

Repairs:

Elevation looking SW.



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UW-1

0 Orientation

Photo Type: W - UW Cover

Orientation: W

Date: 5/8/2017

Repairs:

Underwater Cover Photo.



SI-6

26 Concrete Deck w/Coated Bars

Photo Type: G - General

Orientation: N

Date: 12/6/2017

Repairs:

In the right lane of Span 1 there is an 11 ft. wide x 48 ft. long patch of unknown material.



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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.



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UW-4

227 Concrete Submerged Pile/Column

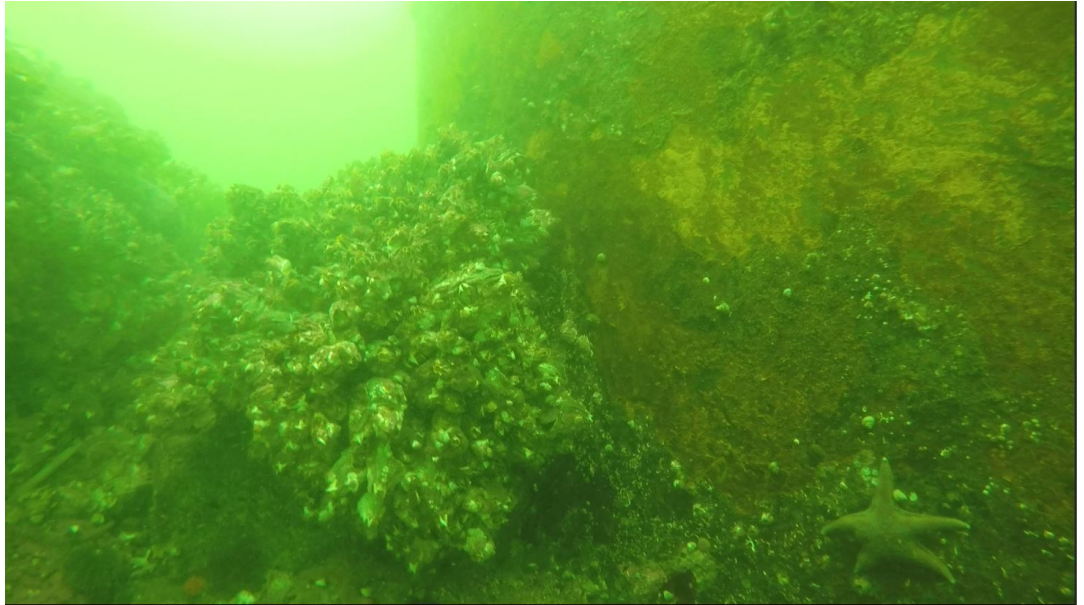
Photo Type: G - General

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.



SI-7

310 Elastomeric Bearing

Photo Type: G - General

Orientation: N

Date: 12/2/2019

Repairs:

Bearing 7B girder stop pad separation.



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UW-5

361 Scour

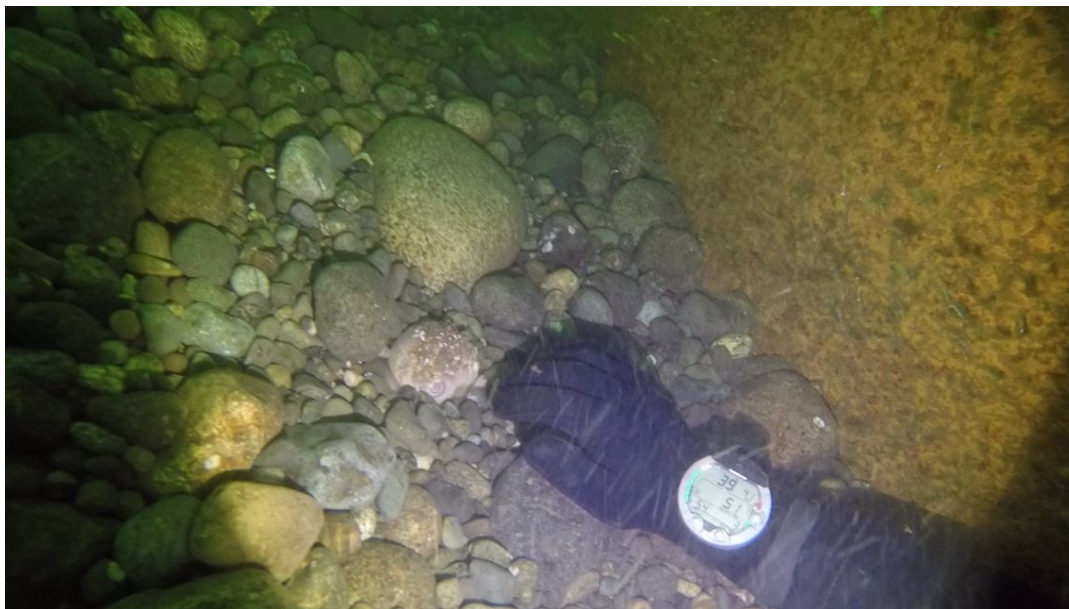
Photo Type: G - General

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.



UW-6

361 Scour

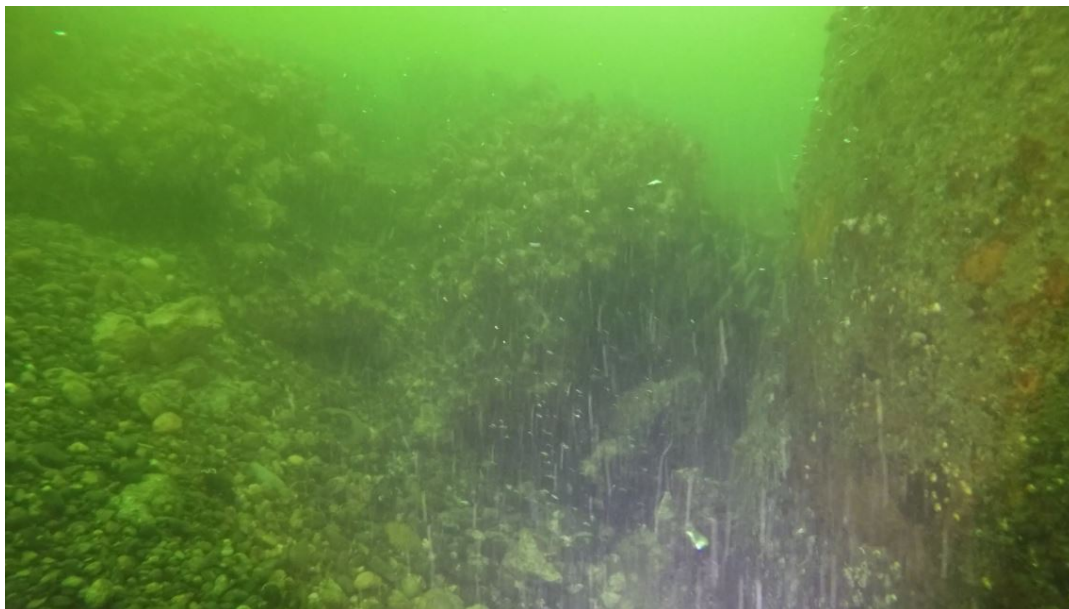
Photo Type: G - General

Orientation: W

Date: 5/8/2017

Repairs:

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



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UW-7

361 Scour

Photo Type: G - General

Orientation: S

Date: 5/8/2017

Repairs:

Old pier adjacent to Shaft 5A is exposed.



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.



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UW-9

1677 Channel Protection

Photo Type: G - General

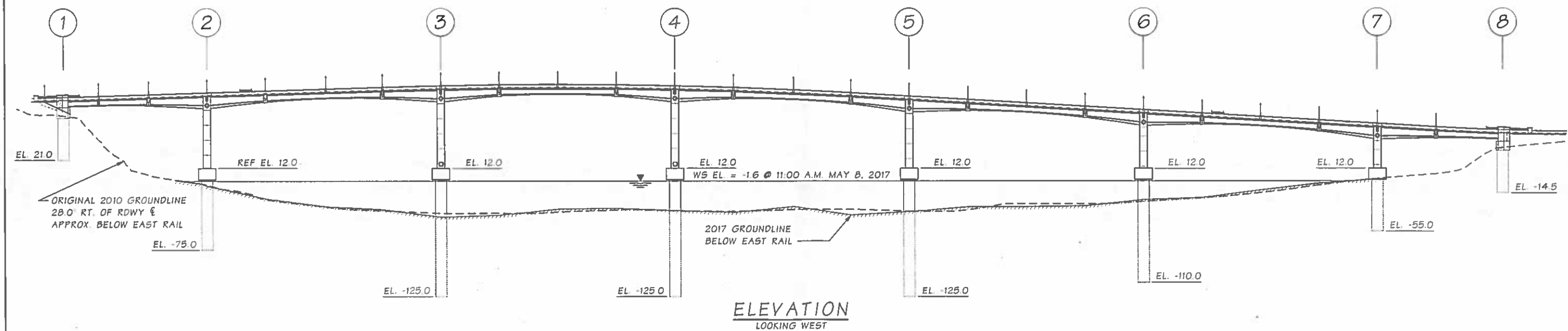
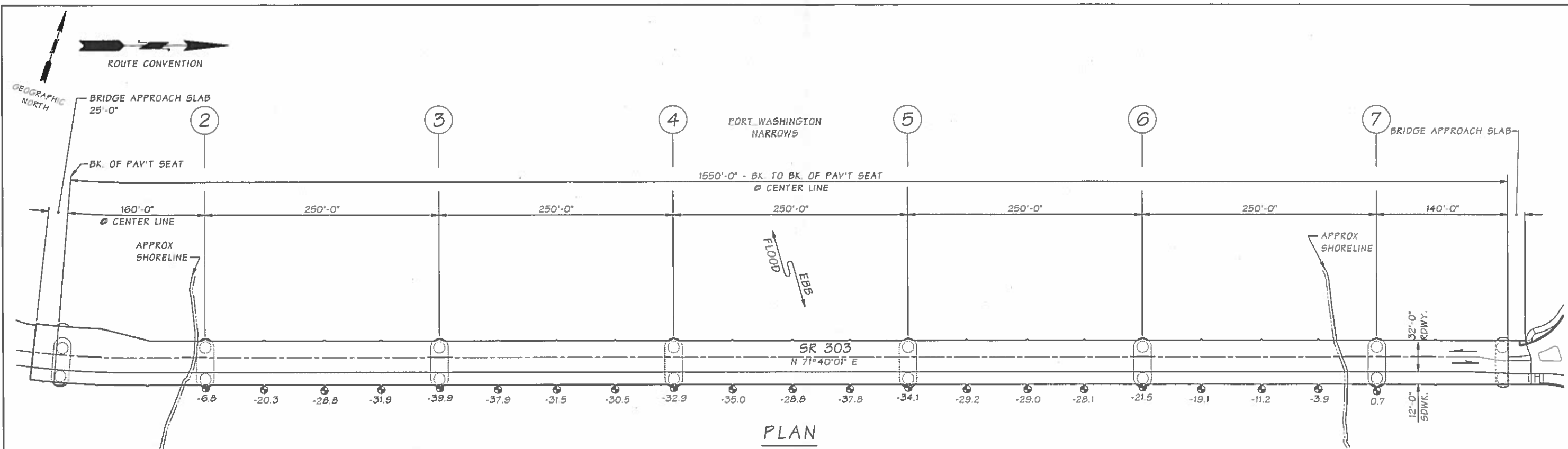
Orientation: W

Date: 5/8/2017

Repairs:

Slope failure west of the bridge on the south bank.





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:

① 0.0 FIELD MEASURED ELEVATION

Date: MAY 8, 2017

Scale: MGDS SCALE 1:640

Drawn By: JRWH

Reviewed By: MBS



WSDOT Dive Team

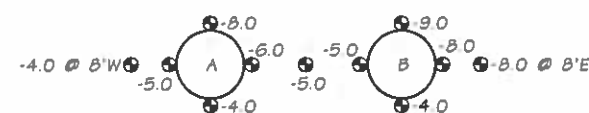
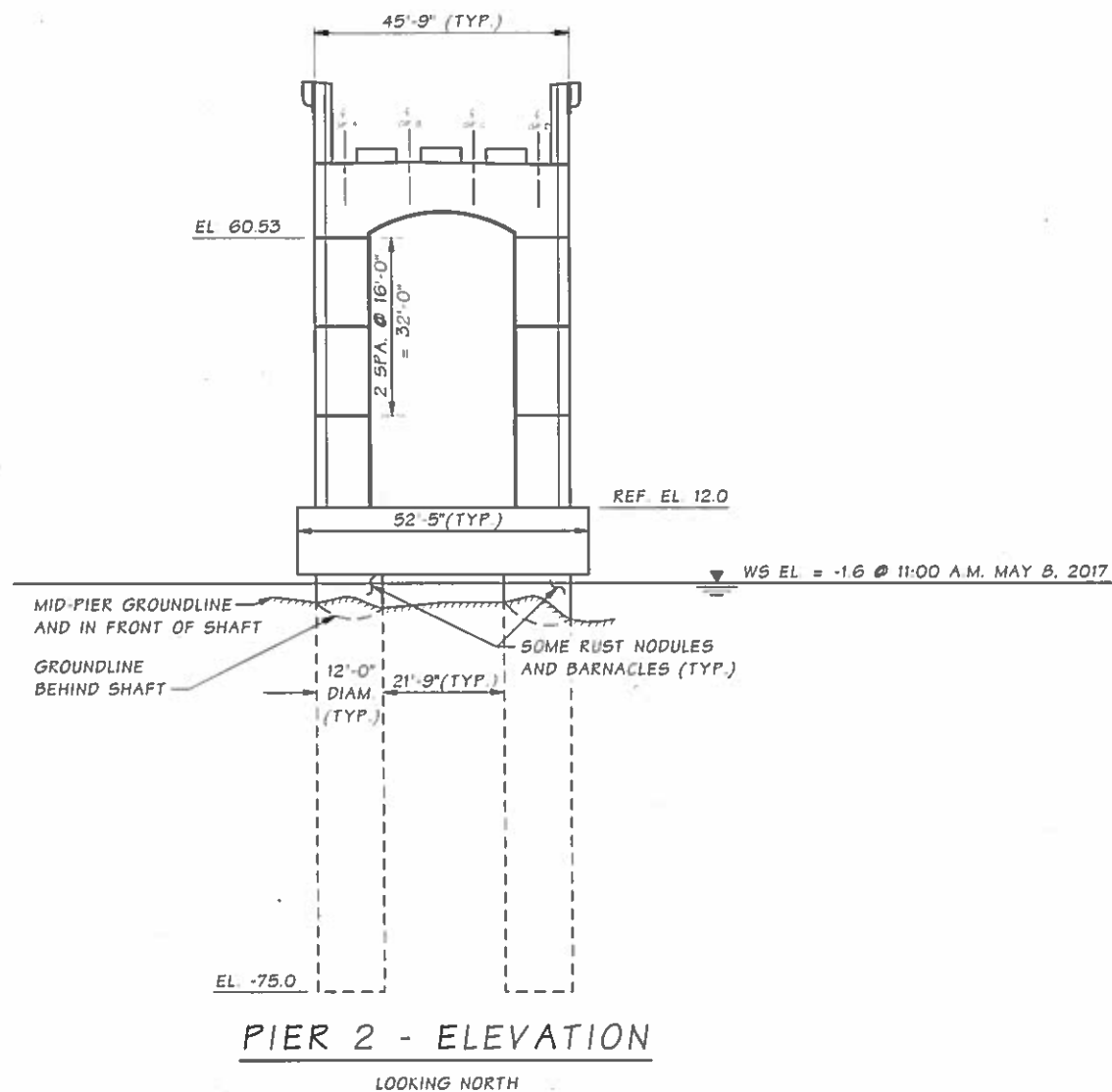


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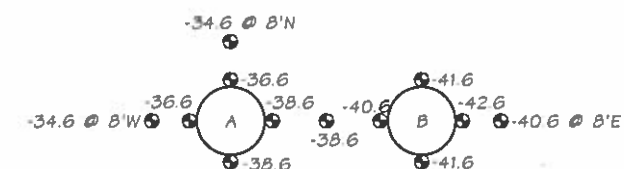
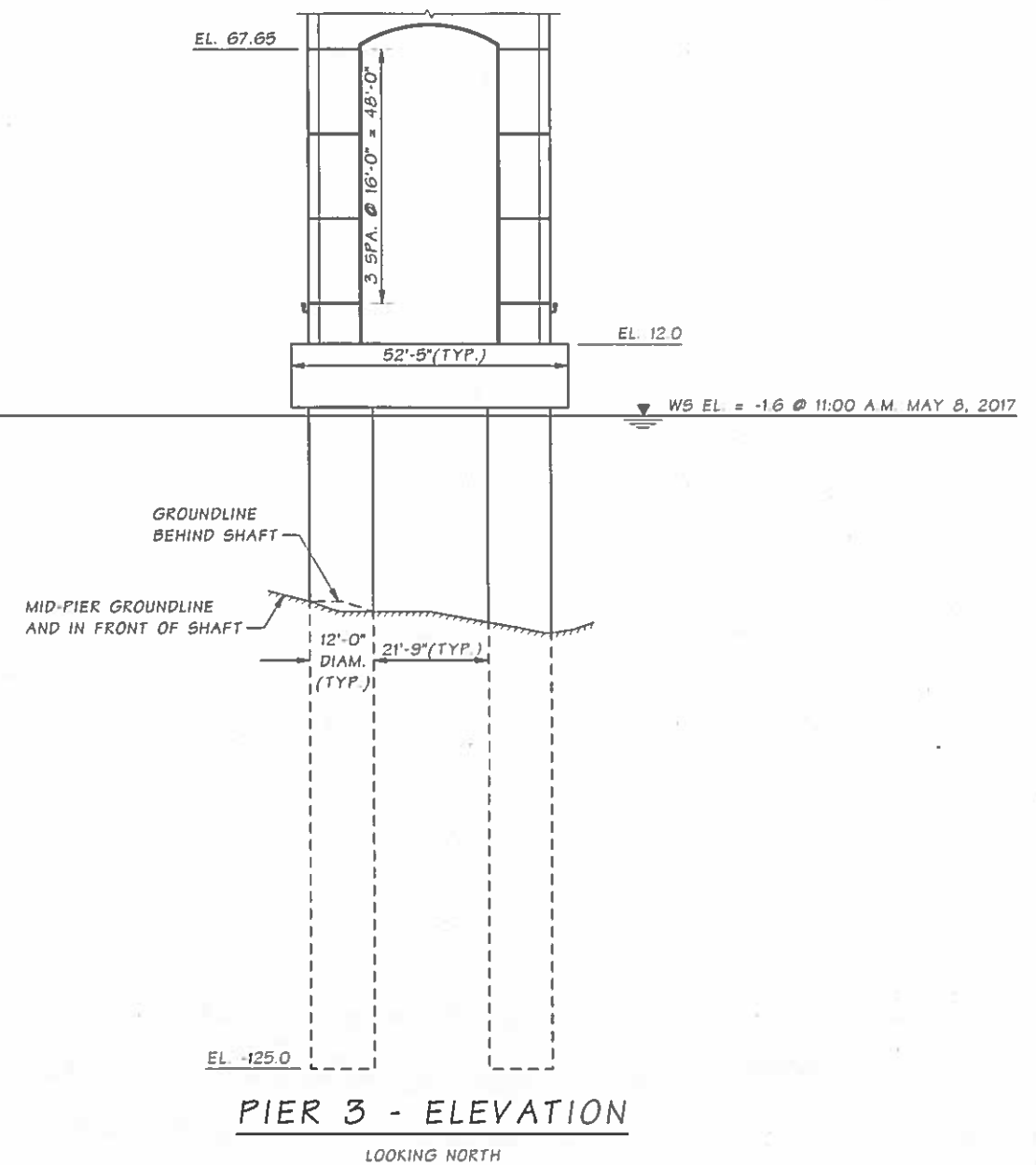
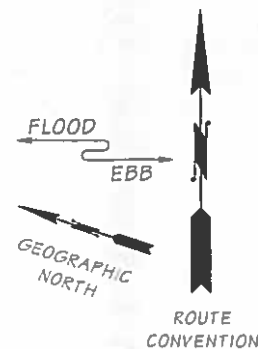
303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

LAYOUT

SHEET
1
OF
4
SHEETS



PIER 2 - PLAN

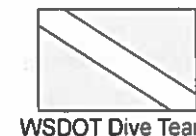


PIER 3 - PLAN

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

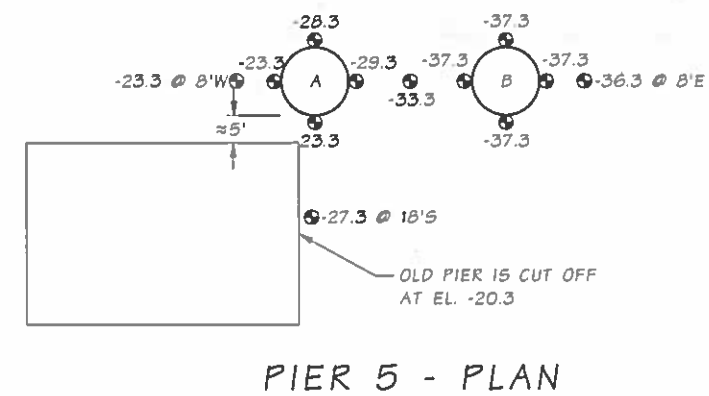
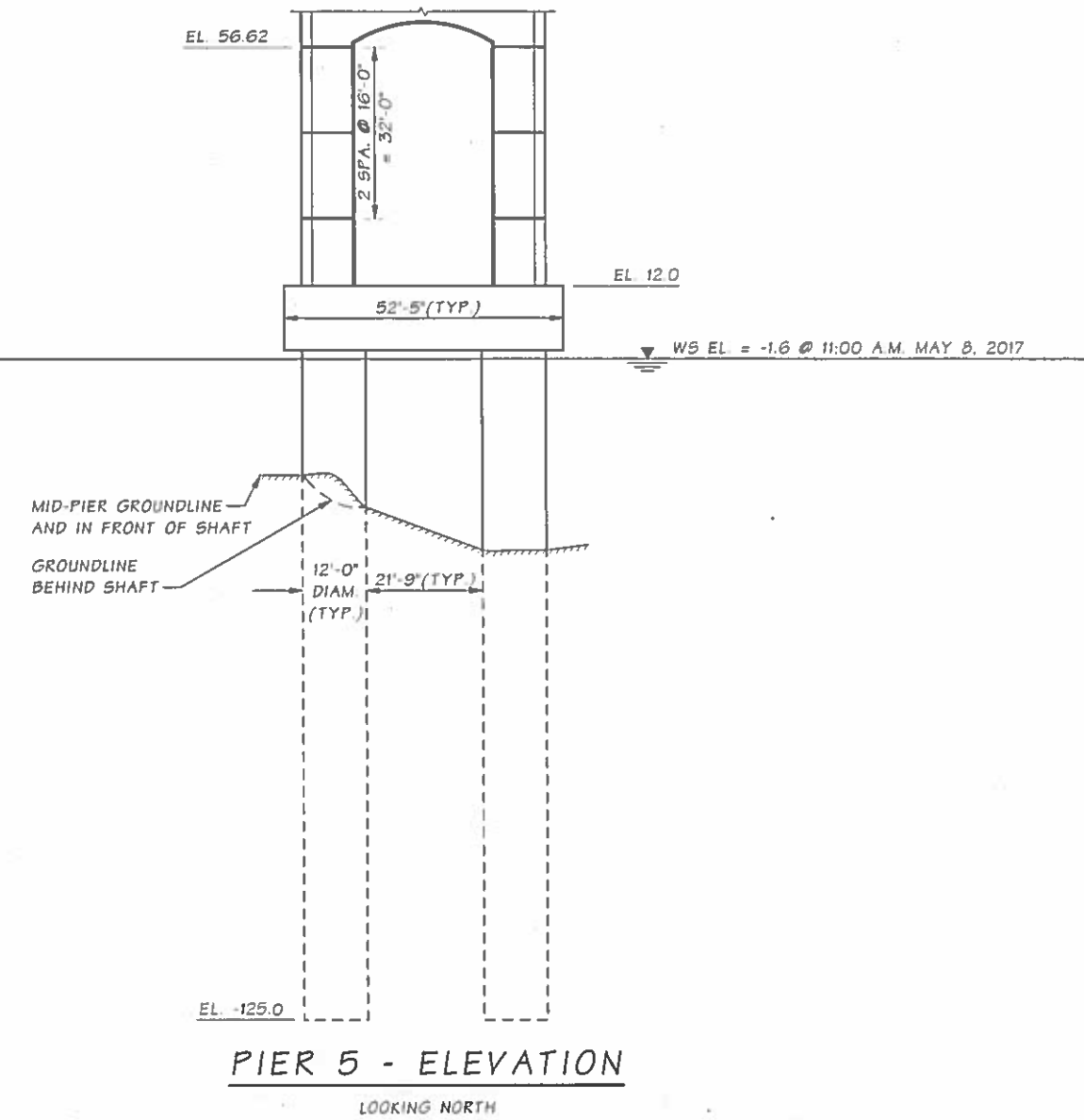
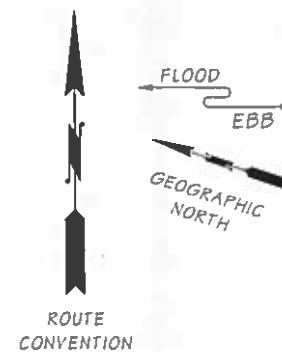
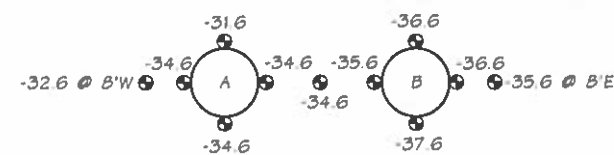
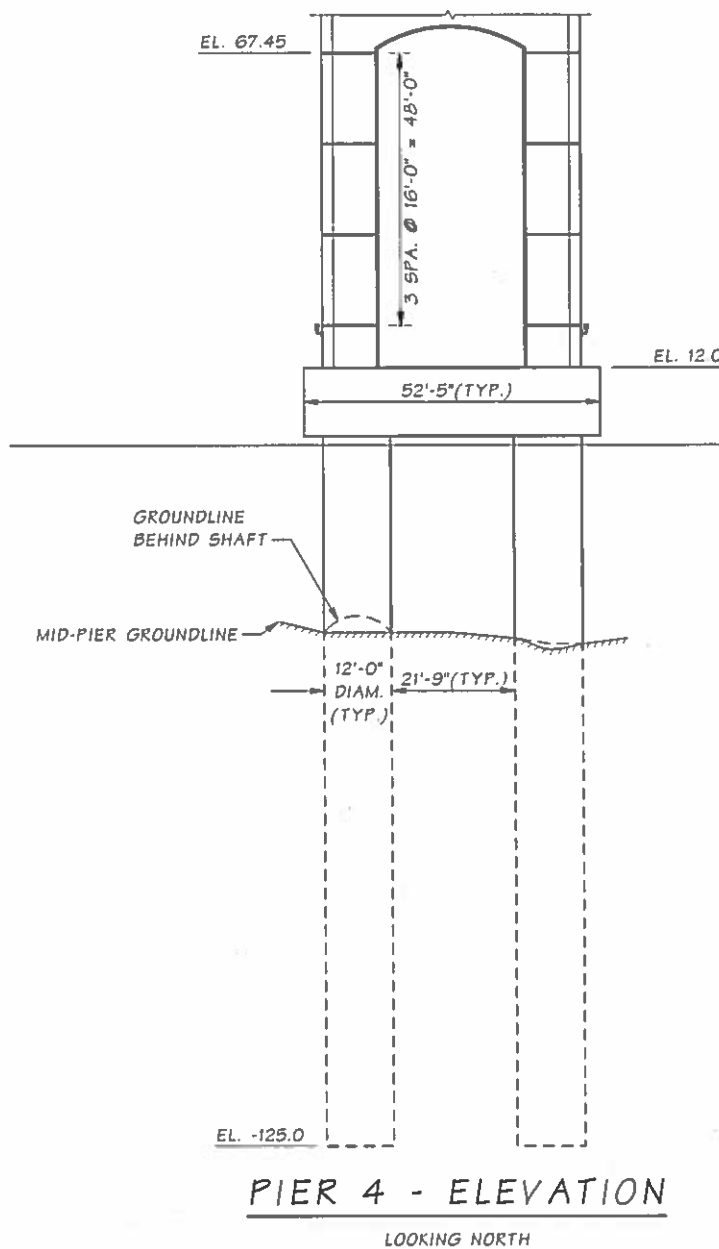


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303/4A MANETTE BRIDGE
 WSDOT SID #0017926A
 UNDERWATER INSPECTION

PIER 2 AND PIER 3

SHEET
 NO.
 2
 OF
 4
 SHEETS



NOTES:

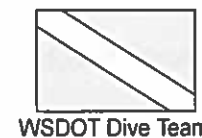
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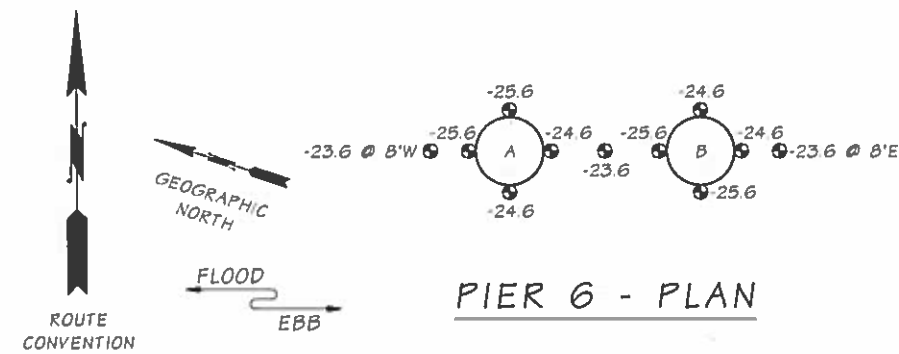


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303/4A MANETTE BRIDGE
WSDOT SID #0017926A
UNDERWATER INSPECTION

PIER 4 AND PIER 5

SHEET NO.
3
OF
4
SHEETS



4

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 intertidal 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 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

