


Appendix B: Previous Diving Report

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		Project Reference Number: 18245-16	Revision:	0

Grand Bank Wharf Inspection

0	May 18 th , 2016	Issued for Information/IFI	Matthew Peddle CET (In Training)	Steve Chafe President & GM	Alex R. Afonso VP & Operations Manager	Alex R. Afonso VP & Operations Manager
Rev.	Issue Date	Description	Made by	Checked by	Discipline Approval	Project Approval



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1. REVISION DETAILS


Revision	Location of Change	Brief description of Change
0		Issued for Information - IFI

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2. PURPOSE AND SCOPE


The Marginal Wharf in Grand Bank, NL, consists of 66 bents with various numbers and styles of piles in each bent. The innermost (shore) row has retaining structures including timber retaining walls, bagged concrete, poured concrete, building foundation, and steel retaining wall. The length of the wharf to be inspected is approximately 285 meters.

Afonso Group Limited was requested by PWGSC to travel to Grand Bank to perform a wharf inspection. The scope of the inspection includes inspection of the underwater portion of the piles for existing condition, which piles are encased and which are exposed, the material and condition of the retaining wall, the condition of the underside and top side of the deck, and the general conditions under the wharf. It was not requested that each individual pile be inspected, but that inspections are done systematically (i.e. every 2nd or 3rd bent depending on conditions) to give a general overview of the wharf condition.

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3. DEFINITIONS AND ABBREVIATIONS

CLIENT	PWGSC
PWGSC	PUBLIC WORKS GOVERNMENT SERVICES CANADA
AGL	AFONSO GROUP LIMITED
ISO	INTERNATIONAL STANDARDS ORGANIZATION
DVD	DIGITAL VIDEO DISK
H	HIGH TIDE
L	LOW TIDE
HA	HARBOUR AUTHORITY

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4. PRELIMINARY DATA

Location: Grand Bank, NL.


Project: Grand Bank Wharf Inspection

Client: PWGSC

Client Representative: Eddie Bearns


Harbour Authority: Arch Evans

Date: April 18th -21st, 2016

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5. PERSONNEL


Dive Supervisor	Terry Griffin
Diver	Trace Roberts
Diver	Gerard Dwyer
Diver	Robert Cox

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6. CLIMATE CONDITIONS

Surface Climate Conditions	Date			
	April 18, 2016	April 19, 2016	April 20, 2016	April 21, 2016
Weather	Cloudy	Fair	Cloudy	Cloudy
Air Temperature (Celsius)	1	-3	-4	4
Wind Speed (km/h)	10	13	65-80	25
Wind Direction	North	NNE	NE	South


Water Conditions	Date			
	April 18, 2016	April 19, 2016	April 20, 2016	April 21, 2016
Average Water Temp.(Celsius)	4	4	4	4
Visibility	<5m	<5m	<5m	<5m
Tide (H and L @ Time)	High@0726 Low@1348	High@0812 Low@1424	High@0853 Low@1455	High@0929 Low@1522
Wave Height	< 1/2m	< 1/2m	< 1/2m	< 1/2m

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7. DAILY TIME SUMMARY

Daily Time Summary	Date			
	April 18 th , 2016	April 19 th , 2016	April 20 th , 2016	April 21 st , 2016
Time Left Base	0700	0630	0630	0630
Time Arrived on Site	1115	0650	0645	0645
Time Diver Entered Water	-*	0920*	1215*	-*
Time Diver Exited Water	-*	1120*	1730*	-*
Time Left Site	1815	1815	1815	1030
Time Arrived at Home Base	1830	1830	1830	1930

** Indicates that diver was dressed and working underwater taking measurements in dry suit all day but the recorded clock times are actual times the diver was underwater diving.*

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8. METHOD

On April 18th, the diving crew mobilized to Grand Bank from St. John's. In the afternoon, the wharf was marked with bent numbers prior to the inspection of the wharf.


On April 19th, the crew finished the wharf markings and set up for the inspection. Underwater inspection of the pile conditions was performed, checking casing condition and steel condition where applicable. Excess corrosion and sea growth was removed and soundness checked with a hammer.

On April 20th, the crew inspected the underside of the wharf above water. This inspection consisted of checking piles for encasement, the length of the encasement, the general condition of the piles, the condition of the retaining wall, and the sea bed condition.

On April 21st, the crew inspected the top side of the wharf to complete the wharf inspection and demobilized early afternoon.

CCTV images were recorded both underwater and above water, with commentary relating to the condition of the structure. Notes for inspected portions were recorded for presentation in this report. The inspection of the top side of the wharf was recorded through still images.

Every third Bent was inspected in entirety, and every second pile was inspected for the back row (Row C). The retaining wall was inspected in its entirety.

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9. FINDINGS

Piles that are not encased and have exposed steel are deteriorated. Deterioration began to be progressively worse starting at bent 36 for piles adjacent to the retaining wall. *For the purpose of this report piles as part of the retaining wall structure were not designated a label (i.e. 2D). The drawing provided prior to the inspection was found to be accurate in regards to pile encasements.*

The concrete structure is in good condition, there is minor surface cracking and no evidence of internal structural damage. This includes the pile caps, and underside of the decking.

The retaining wall condition varied by section and material. Between bents 1-7 there is a timber retaining wall structure, for bents 7-28 the timber retaining wall has reinforced bagged concrete, for bents 28-62 the foundations of the adjoining buildings are part of the retaining wall but did not include piles as part of their structure, and bents 62-66 are constructed with a steel retaining wall. The timber and concrete sections were in good condition, and the steel section is in poor condition showing severe deterioration.

Deteriorated conditions are outlined in Figure 9-1 to Figure 9-6 below.

Figure 9-1 Anomaly Report		
Video File Reference: 08.35.46-08.52.55		
Time	Pile	Comments
8:44	1C	Showing Deterioration
Figure 9-2 Anomaly Report		
Video File Reference: 08.56.55-08.59.11		
Time	Pile	Comments
8:58	3C	Showing Deterioration




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Figure 9-3 Anomaly Report		
Video File Reference: 09.02.00-09.12.11		
Time	Pile	Comments
9:08	6C	Showing Deterioration
9:21	9C	Showing Deterioration
Figure 9-4 Anomaly Report		
Video File Reference: 09.18.50-09.44.19		
Time	Pile	Comments
9:23	10C	Showing Deterioration
9:30	12C	Showing Deterioration
Figure 9-5 Anomaly Report		
Video File Reference: 15.13.51-15.37.14		
Time	Pile	Comments
15:20	36C	Poor Condition on Bottom
15:23	38C	Poor Condition on Top
15:31	44C	Poor Condition
15:34	46C	Poor Condition on Top
Figure 9-6 Anomaly Report		
Video File Reference: 15.54.10-16.17.32		
Time	Pile	Comments
15:56	50C	Poor Condition on Top
15:58	52C	Poor Condition on Top
15:31	54C	Poor Condition
16:02	56C	Poor Condition
16:04	58C	Poor Condition
16:15	Retaining wall	Poor Condition

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10.SUMMARY

Overall wharf condition is in good visible condition. Deterioration was found on piles that were not encased, and on the steel retaining walls. Front piles were surveyed based on every third pile, and back piles were surveyed every second pile. Piles that were part of the retaining wall structure were not encased, and is in moderate to good condition with minor corrosion present. Piles that were encased with no exposed steel were in good condition.

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11.DISCLAIMER

This report has been prepared on a “Without Prejudice” basis and is believed to reflect the true condition of Marginal Wharf Grand Bank at the time and date of the inspection as it has been derived from the field notes and the post inspection debriefing of the inspection team.

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12.PICTURES



10/5/2016
36C-001.jpg



10/5/2016
36C-002.jpg



10/5/2016
36C-003.jpg



10/5/2016
36C-004.jpg



10/5/2016
44C-001.jpg



10/5/2016
44C-002.jpg



10/5/2016
44C-003.jpg



10/5/2016
44C-004.jpg



10/5/2016
50C-001.jpg



10/5/2016
50C-002.jpg



10/5/2016
50C-003.jpg



10/5/2016
50C-004.jpg



10/5/2016
9C-001.jpg



10/5/2016
9C-002.jpg



10/5/2016
9C-003.jpg



10/5/2016
9C-004.jpg



10/5/2016
STR_15.54.10-16.17.32[F][0@0][0]-001.jpg



10/5/2016
STR_15.54.10-16.17.32[F][0@0][0]-003.jpg



10/5/2016
STR_15.54.10-16.17.32[F][0@0][0]-004.jpg



10/5/2016
STR-15.54.10-16.17.32[F][0@0][0]-002.jpg



21/4/2016
TS_2680.JPG



21/4/2016
TS_2681.JPG



21/4/2016
TS_2682.JPG



21/4/2016
TS_2683.JPG



19/4/2016
TS_2684.JPG



19/4/2016
TS_2685.JPG



21/4/2016
TS_2686.JPG




21/4/2016
TS_2687.JPG



21/4/2016
TS_2688.JPG

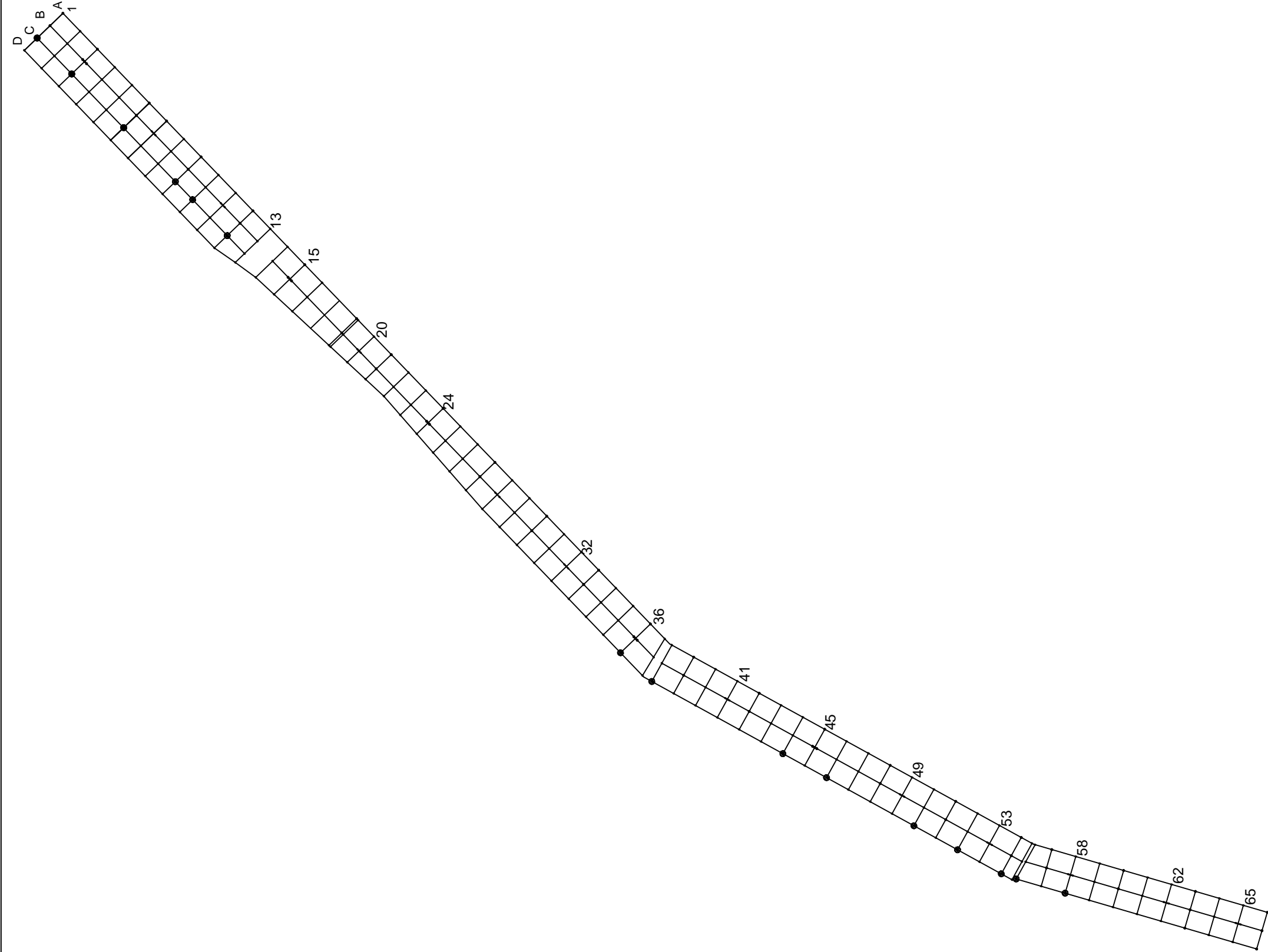


21/4/2016
TS_2689.JPG

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13. DRAWINGS

Item 1	Description	Drawing #
1	Wharf Layout Grand Bank, NL	18245-16-01



Notes:

1. Enlarged circles at
piles highlight areas of
concern in report.

Drawing Name:

Wharf Inspector
Grand Bank, NL
Overview

Scale: NTS

Drawn By: MP

Drawing #: 1-1

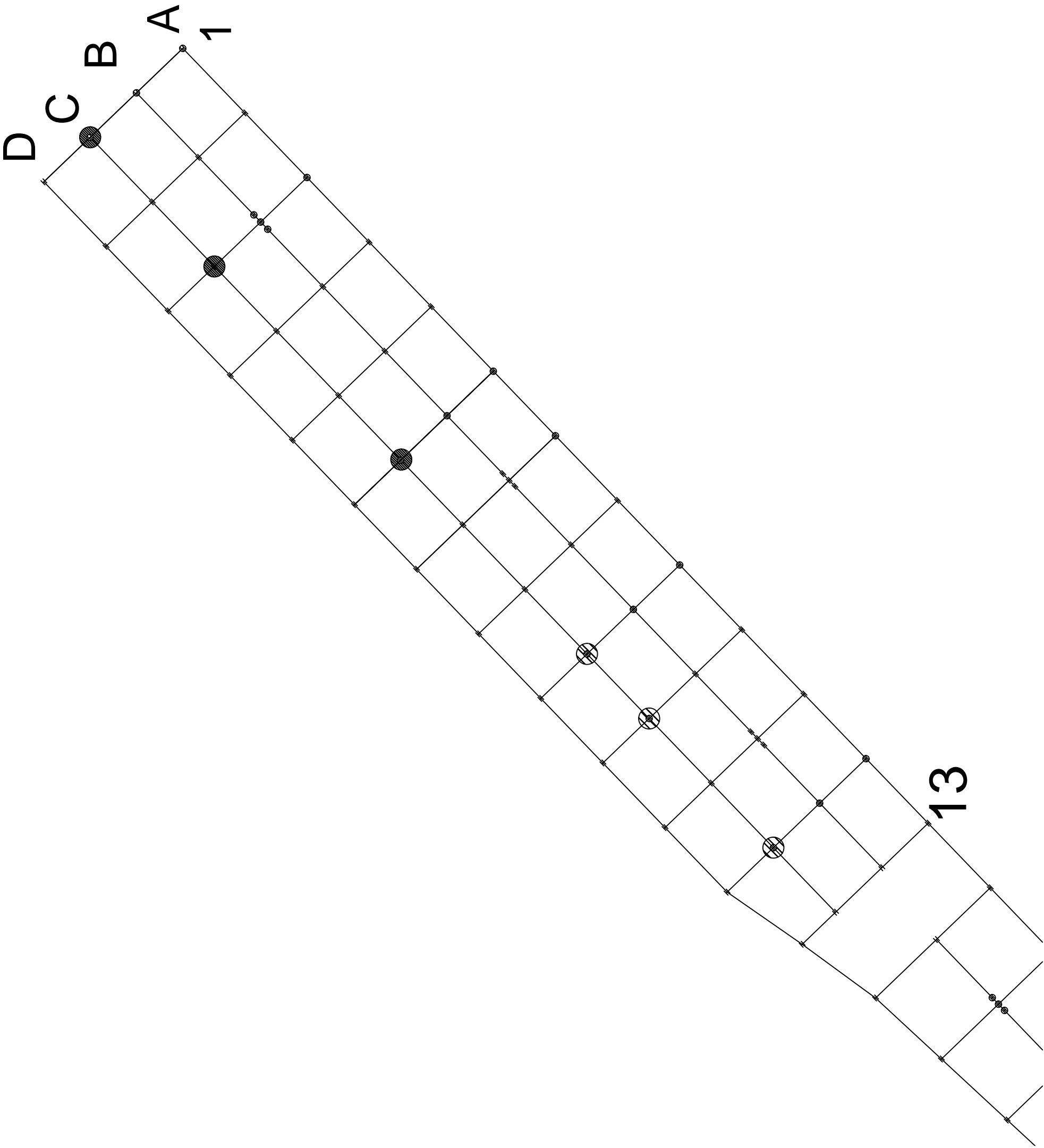
Date: May 12, 201

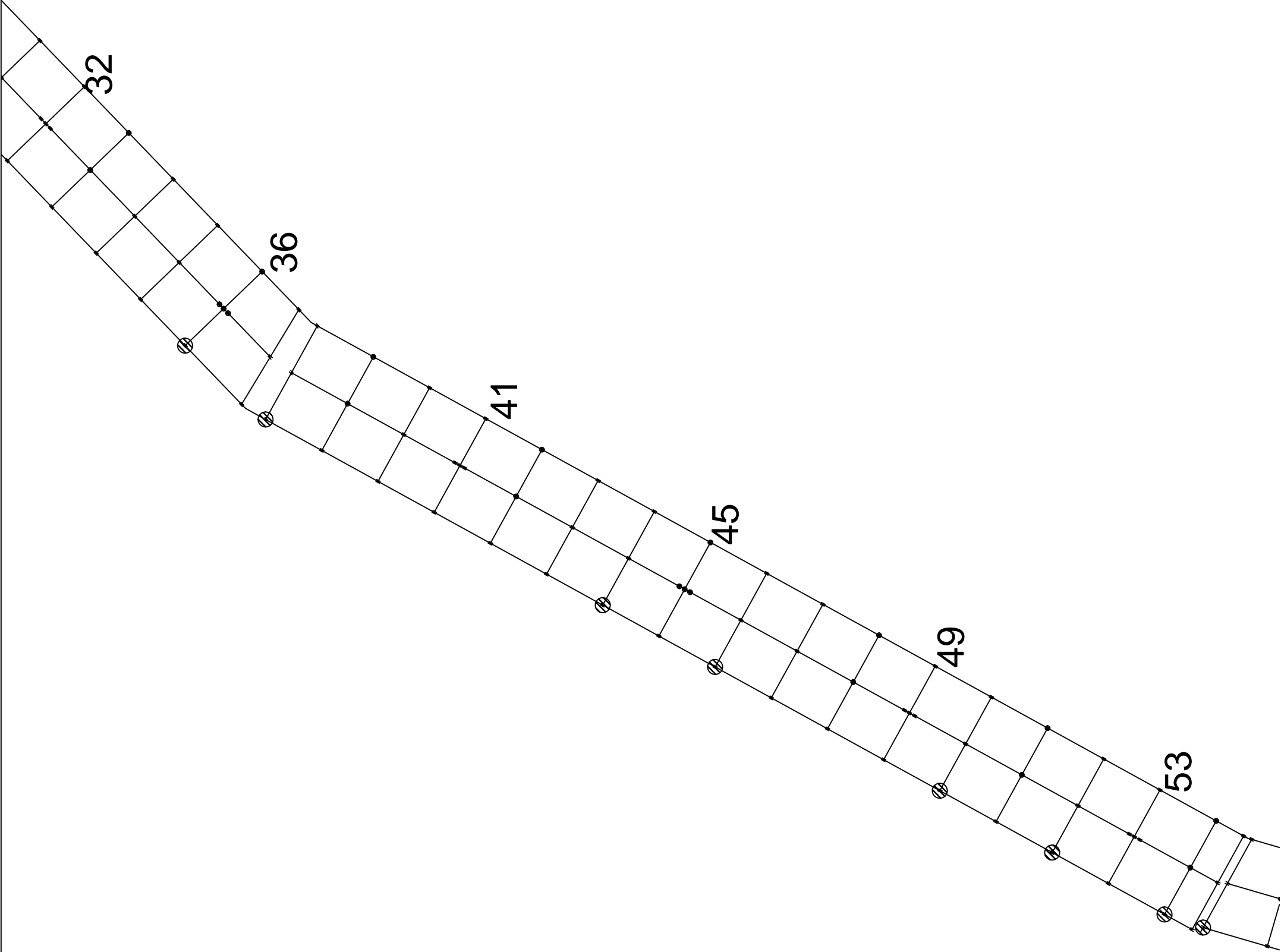
Page: 1 of 4



Notes:
1. Enlarged circles
around piles highlight
areas of concern in
report.

Drawing Name:	
Wharf Inspector Grand Bank, NL Bents 1-13	
Scale:	NTS
Drawn By:	MP
Drawing #:	1-1
Date:	May 12, 201
Page:	2 of 4

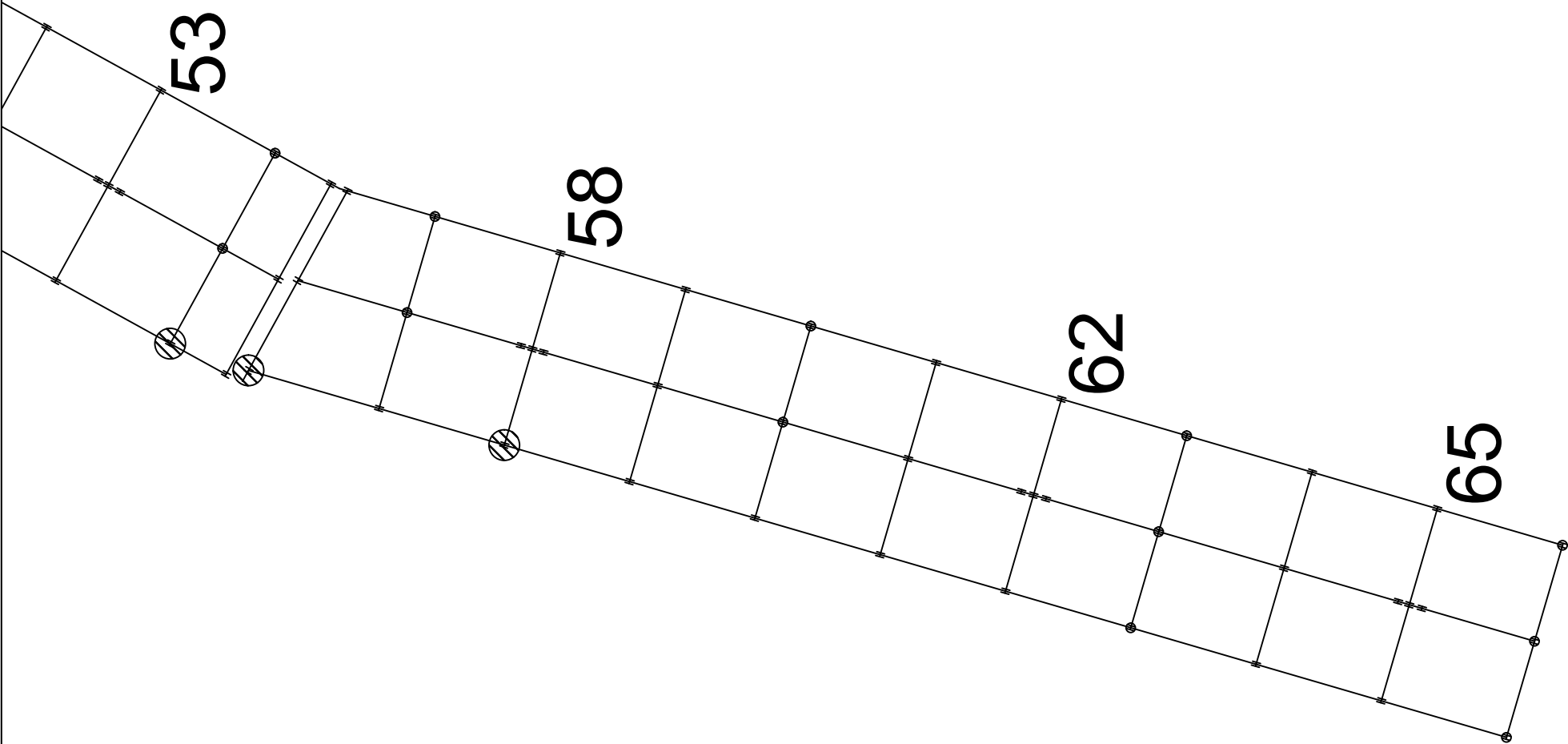




Notes:


1. Enlarged circles are
piles highlight areas of
concern in report.

Drawing Name:	Wharf Inspection Grand Bank, NL Bents 32-55
Scale:	NTS
Drawn By:	MP
Drawing #:	1-1
Date:	May 12, 201
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Notes:
1. Enlarged circles are
piles highlight areas of
concern in report.

Drawing Name:		Wharf Inspection Grand Bank, NL Bents 53-66	
Scale:	NTS		
Drawn By:	MP		
Drawing #:	1-1		
Date:	May 12, 201		
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14.DIVE LOGS



ACTUAL DIVE SHEET

0162

DATE: April 19-16	VESSEL/LOCATION: Grenada Bank	DIVE NO:	
DIVE SUPERINTENDANT:	DIVE SUPERVISOR: T. G. S. R.	STANDBY DIVER: B. Dwyer	STANDBY EQUIPMENT: Supelite 2A.
DIVER #1: Robert Cox	EQUIPMENT: Supelite 2A.	BREATHING MEDIUM: CIA.	TENDER: B. Dwyer / T. R. R.
LEFT SURFACE: 12:15	REACHED BOTTOM:	LEFT BOTTOM: 17:30	BOTTOM TIME: 315 mins.
MAXIMUM DEPTH:	DECOMP. TABLE USED: Dien	DECOMP. SCHEDULE USED: NO Deco.	
DIVER #2:	EQUIPMENT:	BREATHING MEDIUM:	TENDER:
LEFT SURFACE:	REACHED BOTTOM:	LEFT BOTTOM:	BOTTOM TIME:
MAXIMUM DEPTH:	DECOMP. TABLE USED:	DECOMP. SCHEDULE USED:	

PURPOSE OF DIVE:

REMARKS	WATER STOP	TIME REACHED	TIME LEFT
	130		
	120		
	110		
	100		
	90		
	80		
	70		
	60		
	50		
	40		
	30		
	20		
	10		
	0		
	SURFACE INTERVAL		
	CHAMBER		
	40		
	30		
	20		
	10		
	SURFACE		
RACK OPERATOR: T. G. S. R.	HP (PSI): 2000	BAIL OUT #1 (PSI): 2400	
APPROVED BY:	OXY (PSI):	BAIL OUT #2 (PSI):	
CHAMBER OPERATOR:	CHAMBER PRESSURE DEPTH (FEET):	BAIL OUT STANDBY (PSI): 2400	
Form #: QP04-D002	Issue#: 01	Date: 01-11-2010	



ACTUAL DIVE SHEET


0161

DATE: April 19, 2016	VESSEL/LOCATION: Grand Bank	DIVE NO:	
DIVE SUPERINTENDANT:	DIVE SUPERVISOR: T. Green	STANDBY DIVER: Robert Cox	STANDBY EQUIPMENT: Superlite 27
DIVER #1: Tare Roberts	EQUIPMENT: K.M.B.	BREATHING MEDIUM: CIA	TENDER: G. Dwyer
LEFT SURFACE: 09:20	REACHED BOTTOM: 09:20	LEFT BOTTOM: 11:20	BOTTOM TIME: 120
MAXIMUM DEPTH: 15'	DECOMP. TABLE USED:	DECOMP. SCHEDULE USED:	
DIVER #2:	EQUIPMENT:	BREATHING MEDIUM:	TENDER:
LEFT SURFACE:	REACHED BOTTOM:	LEFT BOTTOM:	BOTTOM TIME:
MAXIMUM DEPTH:	DECOMP. TABLE USED:	DECOMP. SCHEDULE USED:	

PURPOSE OF DIVE: WHARF Inspection / Piles
Video & still pictures with Report.

REMARKS	WATER STOP	TIME REACHED	TIME LEFT
G. Dwyer assistant supervisor	130		
	120		
	110		
	100		
	90		
	80		
	70		
	60		
	50		
	40		
	30		
	20		
	10		
	0		
	SURFACE INTERVAL		
	CHAMBER		
	40		
	30		
	20		
	10		
	SURFACE		

RACK OPERATOR: Gerald Dwyer	HP (PSI): 2500	BAIL OUT #1 (PSI): 2700
APPROVED BY:	OXY (PSI):	BAIL OUT #2 (PSI):
CHAMBER OPERATOR:	CHAMBER PRESSURE DEPTH (FEET):	BAIL OUT STANDBY (PSI): 2700
Form #: QP04-D002	Issue#: 01	Date: 01-11-2010

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15.DVD CATALOGUE

DVD	File Number	Description
1	08.35.46-05.52.55	Bent 1-3
1	08.56.55-08.59.11	Bent 3
1	09.02.00-09.12.17	Bent 3-9
1	09.18.50-09.44.19	Bent 9-21
1	12.57.04-13.58.00	Bent 21-36
1	13.58.03-14.09.14	Bent 36-39
1	14.09.59-15.10.00	Bent 39-54
1	15.10.03-16.07.31	Bent 54-66
2	13.11.55-13.43.56	Bent 1-17 Retaining Wall
2	14.23.37-14.48.50	Bent 17-32 Retaining Wall
2	15.13.51-15.37.14	Bent 32-50 Retaining Wall
2	15.54.10-16.17.32	Bent 50-66 Retaining Wall