

APPENDIX F

MEMORANDUM - OBSERVATIONS AND MEASUREMENTS OF GROUND
BELOW THE EXISTING WHARF STRUCTURE AT BERTHS 11A, 11B AND 11C



MEMORANDUM

FOR:

**DRY DOCK No. 1 – STRUCTURAL REPAIRS BERTHS AT 11A, 11B AND 11C
PORTSMOUTH NAVAL SHIPYARD - KITTERY, MAINE
PWD MAINE**

To: Project File TP-104A

Prepared By: Marc Nicolazzo, P.E. – MNFST

Date: February 18, 2016

Subject: Contract N40085-14-D-8113
Task Order X003
eProjects Work Order No. 1356489

Regarding: **Observations and Measurements of Ground below the Existing Wharf
Structure at Berths 11A, 11B and 11C**

Purpose

The purpose of this memorandum is to document field measurements that were taken by MN-FST of the distance from isolated points on the underside of the existing wharf structure to the ground at certain locations along Berth 11. In addition, general visual observations describing the composition of the ground surface (above Mean Low Water (MLW)) below the existing wharf structure at certain locations.

General

Measurements and observations were made on 24 June 2015 and represent the conditions that were observed at that time. Conditions and depths to ground surface between documented observations presented herein may differ significantly from the observations described below. The information is provided as general information and is not meant to be a guarantee of existing conditions.

Ground Measurements

See attached plan and section for layout.



Table 1 - Ground Measurements at Head End

Pile Number	Bent C	Bent E	Bent G
	Distance (ft)	Distance (ft)	Distance (ft)
E	10.8	NR	NR
D	NR	9.3	8.2
C	12	NR	NR
B	NR	14.5	14.5
A	NR	NR	NR
Face of Wharf	27	27	23.5

1. Measurements at piles are from bottom of deck to ground
2. Measurements at face of wharf are from top of timber wale to ground

Table 2 - Ground Measurements at Head End

Pile Number	Bent J	Bent K
	Distance (ft)	Distance (ft)
A'	3.3	6.6
B'	NR	NR
C'	NR	NR
A	3.4	6.2
B	NR	NR
C	NR	NR
D	2.2	5.2
E	NR	NR
F	2.4	5.4
G	0	NR
H	-	1.5

Measurements at piles are from bottom of pile cap to ground



Table 3 – Ground Measurements at Berth 11A

Pile Number	Bent M	Bent Q	Bent 1	Bent 3	Bent 7	Bent 9
	Distance (ft)					
H	0.8	1.1	1.2	1.1	NR	1.6
G	4.8	2.6	4.3	2.5	4	3.9
F	6.2	5.8	6.6	5.2	NR	7.5
E	7.1	9.3	8.6	8.2	8.8	11.1
D	7.8	NR	NR	11.8	NR	15
C	NR	NR	NR	14.9	NR	18.9
B	NR	NR	NR	18.4	NR	22.3
A	NR	NR	NR	21.3	NR	25.8
1975 Master Pile	NA	NA	NA	NA	NA	NA
Face of Wharf	20	27.4	28	28	30	33

** Measurements at piles are from bottom of pile cap to ground

** Measurements at face of wharf are from top of timber wale to ground

NR = No Reading Taken

NA = Not Applicable

Table 4 – Ground Measurements at Berth 11B

Pile Number	Bent 13	Bent 15	Bent 18	Bent 21	Bent 22
	Distance (ft)				
H	NR	NR	1	NR	NR
G	4.9	NR	1.9	NR	3.4
F	NR	NR	3.9	NR	NR
E	10.2	NR	6.1	NR	8
D	NR	NR	8.7	NR	NR
C	NR	16	10.4	13.8	NR
B	NR	19	12.7	16	NR
A	21.2	21.6	16.1	19	21.2
1975 Master Pile	22.8	21.8	18.8	21	23
Face of Wharf	43.5	NR	43	43	44

** Measurements at piles are from bottom of pile cap to ground

** Measurements at face of wharf are from top of timber wale to ground

NR = No Reading Taken

NA = Not Applicable



Table 5 – Ground Measurements at Berth 11C

Pile Number	Bent 28	Bent 32	Bent 34	Bent 37	Bent A'	Bent D'
	Distance (ft)					
A	NR	1.7	1.3	1	1.8	1
B	3	2.7	2	2.3	2.8	2.8
C	6.4	4.6	4.4	4	4	6.5
D	8.3	7.3	7.7	7.1	6	7
E	10.2	8	11	9.6	7	NR
F	13.5	NR	13.5	13	NR	NR
G	17.5	NR	18.6	16.9	NR	NR
H	23.1	19.8	20.7	20.5	NR	NR
Face of Pile Cap	NR	NR	NR	NR	20.6	28
1975 Master Pile	27	25.5	23	23	23.5	29
Face of Wharf	47	47	45	46	43	52

** Measurements at piles, master pile and face of pile cap are from bottom of pile cap to ground

** Measurements at face of wharf are from top of timber wale to ground

NR = No Reading Taken

Ground Surface

Visual observations were made of the slope under the wharf to document the size on the top surface of the stone/rip-rap above mean low water (MLW) (see photos 1 and 2). Stone sizes indicated in the following table are approximate and based on observations made above MLW on June 24, 2015. Where sizes are presented as a single dimension, it represents an approximate stone diameter. The size of stone is being provided as a general description of the existing conditions to be encountered and is not a guarantee that larger stones do not exist or how deep the stone/rip rap extends below the surface.

Table 6 – Visual Descriptions of Top of Rock Slope at Discrete Locations

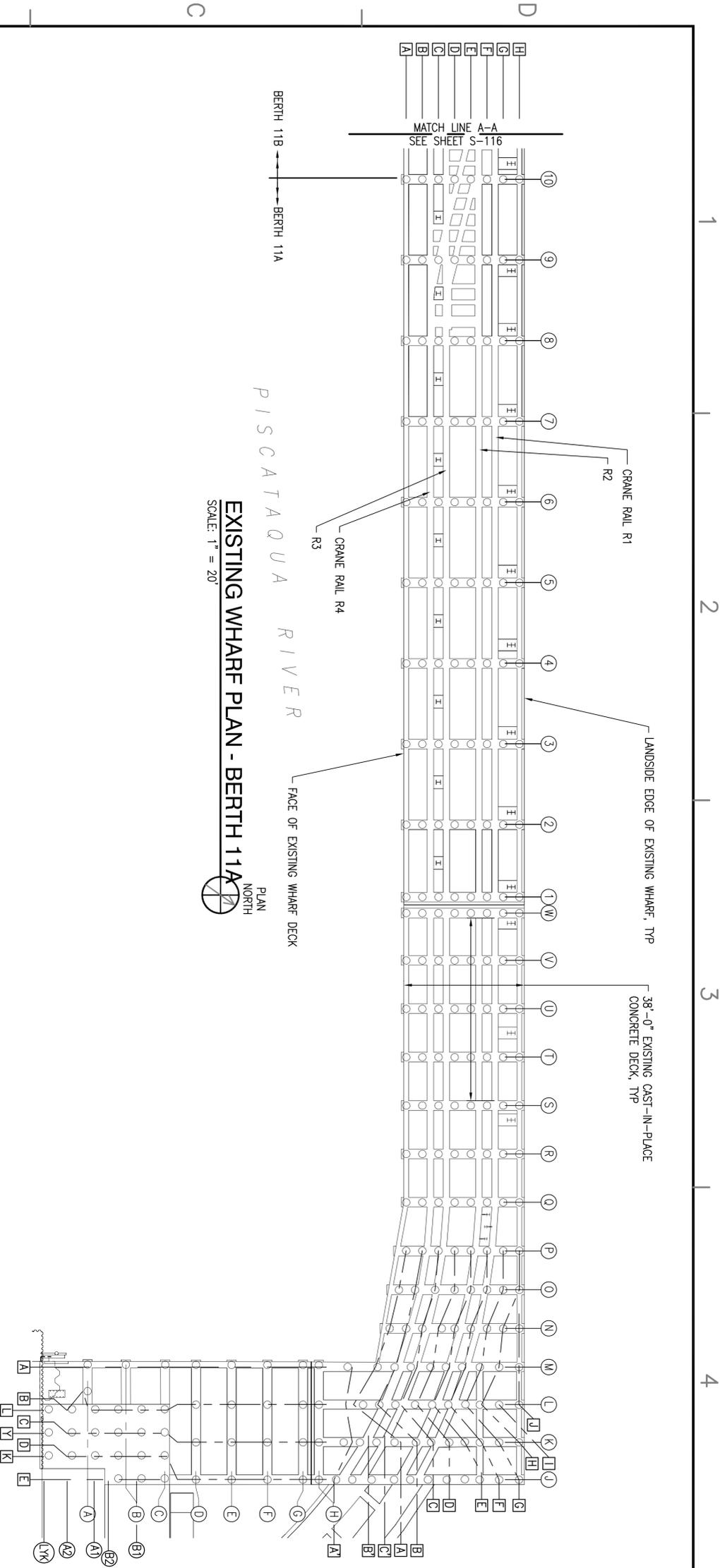
ROCK SLOPE - SCHEDULE OF ROCK SIZES			
BENT	TYPICAL	MAXIMUM	MINIMUM
G	2" TO 6"	2' x 2' x 2'	-
M	2"	2' x 2'	-
Q	3' x 3'	-	2" to 1'
1	8" to 12"	5' x 3'	2" x 2"
3	1' to 3'	6' x 2'	3" x 5"
7	1' to 2'	5' x 4'	2" x 4"
9	1' to 2'	4' x 3'	6" x 8"
13	6" to 2'	4' x 2'	2" to 6"
18	2' to 5'	10' x 3' x 4'	6" to 1'
28	1' x 2' x 0.5'	2' x 2' x 4'	-
32	1' x 1' x 1'	2' x 3'	-



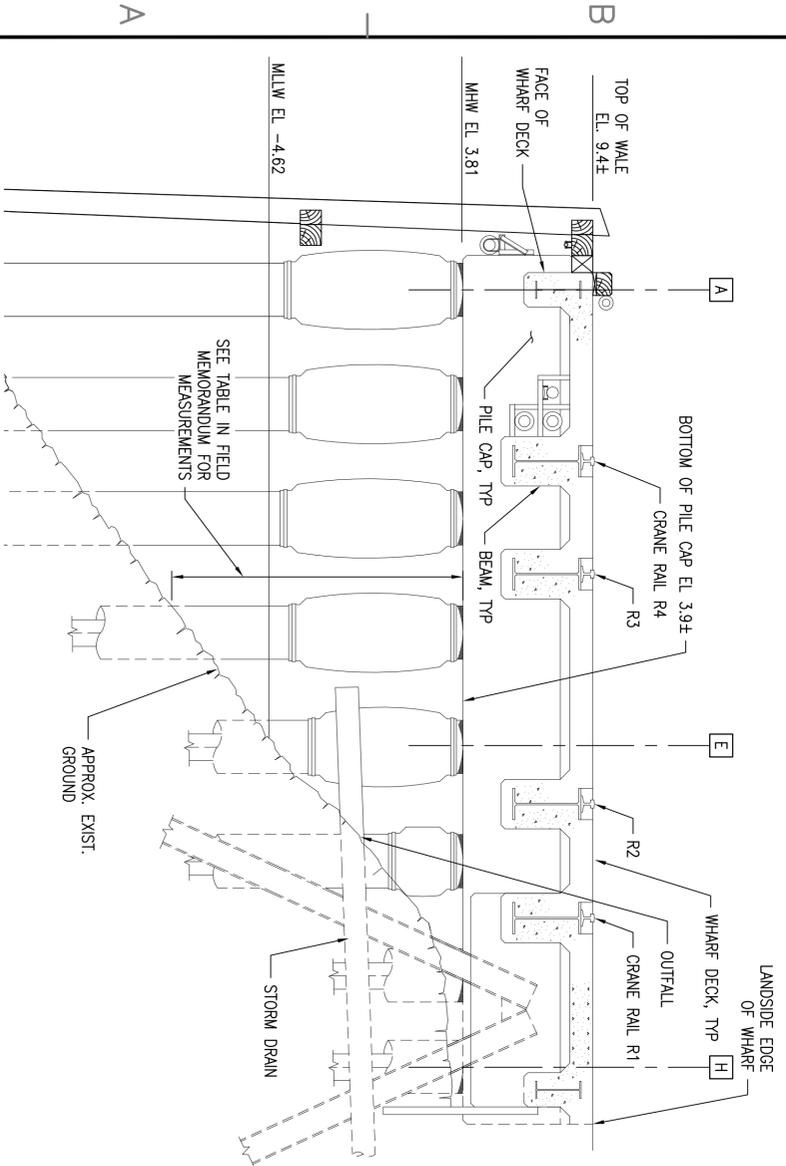
Photo 1 - Rock Slope at Berth 11B Bent 12



Photo 2 - Rock Slope at Berth 11C Bent 32



EXISTING WHARF PLAN - BERTH 11A
SCALE: 1" = 20'



EXISTING TYPICAL SECTION AT BERTH 11A
SCALE: 1/4" = 1'-0"

LEGEND:

BENT NUMBER
 PILE ROW DESIGNATION
 RAIL IDENTIFICATION

GRAPHIC SCALE

1" = 20'

0 20' 40'

CHECK GRAPHIC SCALE BEFORE USING

PROJECT NO.: 13588B	CONSTR. CODE: NA
NAVFAC DRAWING NO.: 12716076	PROJECT NO.: 13588B
SHEET 80 OF 144	PROJECT NO.: 13588B
S-115	FP2-16-716

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PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

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NAVAL SHIPYARD - PORTSMOUTH, NH

STRUCTURAL REPAIRS AT BERTHS 11A, 11B AND 11C

EXISTING DECK REPAIR PLAN - SHEET 1 OF 2

APPROVED: [Signature]

FOR DRAWING OFFICE: [Signature]

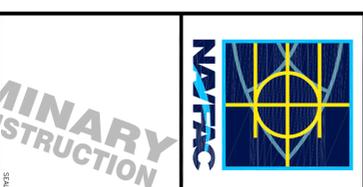
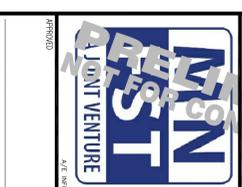
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DESIGNED BY: [Signature]

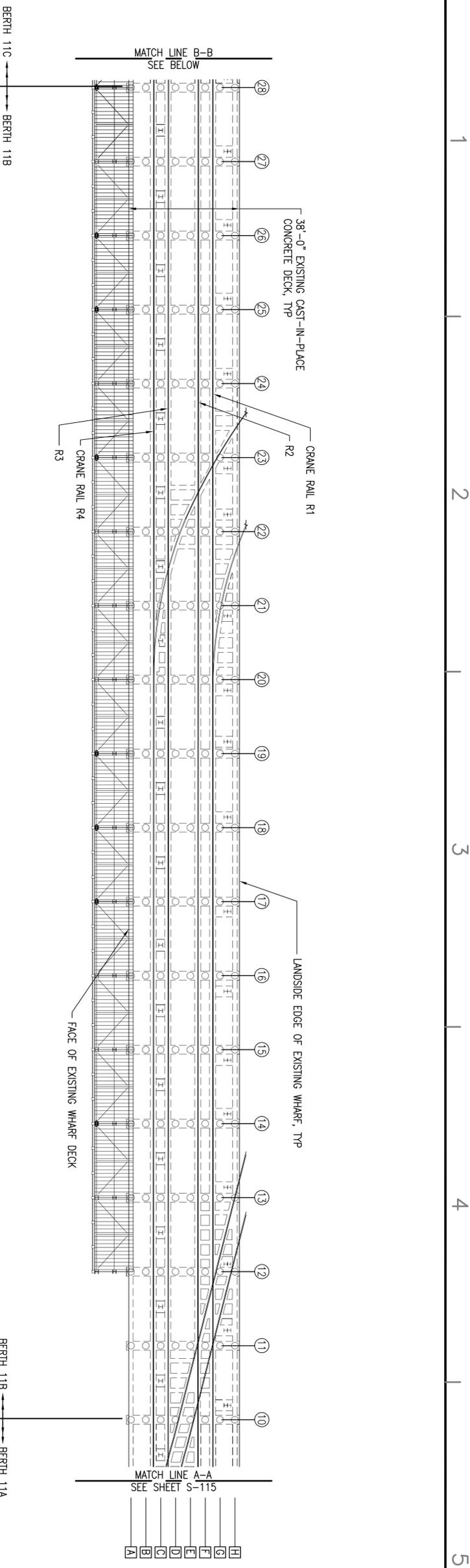
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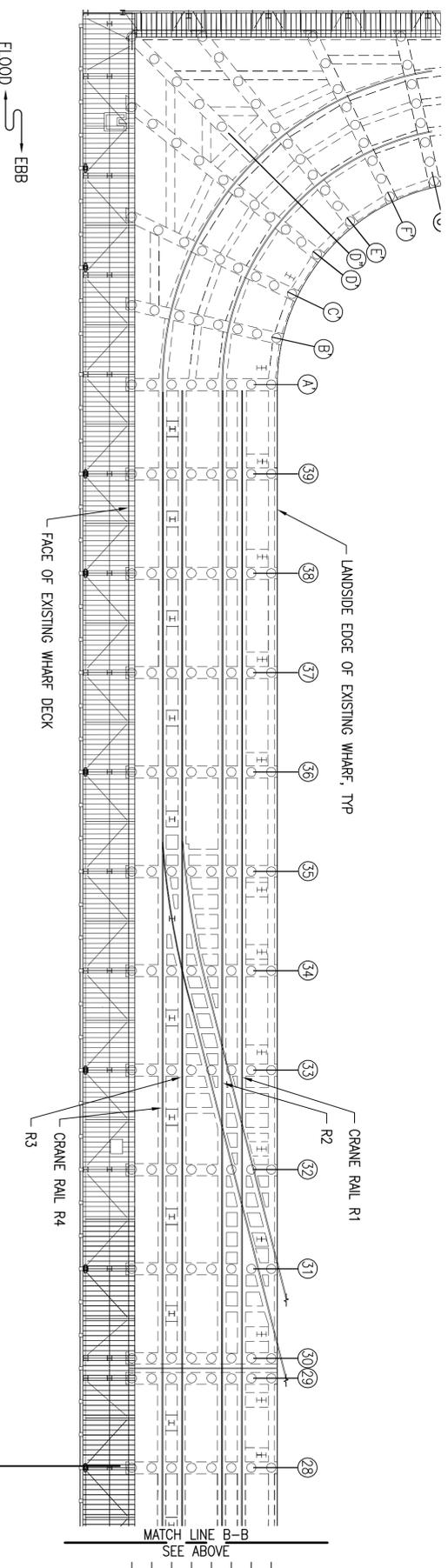


SYM	DESCRIPTION	DATE	APPR



EXISTING WHARF PLAN - BERTH 11B
SCALE: 1" = 20'
PLAN NORTH

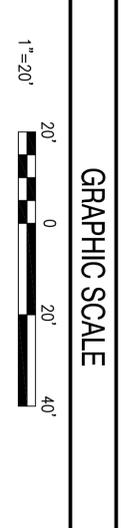
PISCATAQUA RIVER



EXISTING WHARF PLAN - BERTH 11C
SCALE: 1" = 20'
PLAN NORTH

LEGEND:

	BENT NUMBER
	PILE ROW DESIGNATION
	RAIL IDENTIFICATION



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KITTEERY, MAINE

PORTSMOUTH NAVAL SHIPYARD

STRUCTURAL REPAIRS AT BERTHS 11A, 11B AND 11C

EXISTING DECK REPAIR PLAN - SHEET 2 OF 2

APPROVED	FOR DRAWN	DATE
ACTIVITY	BRANCH NUMBER	TS/D/P/SCALE
DESIGN	BRANCH NUMBER	TS/D/P/SCALE
REVISION	BRANCH NUMBER	TS/D/P/SCALE
DATE	BRANCH NUMBER	TS/D/P/SCALE

PRELIMINARY

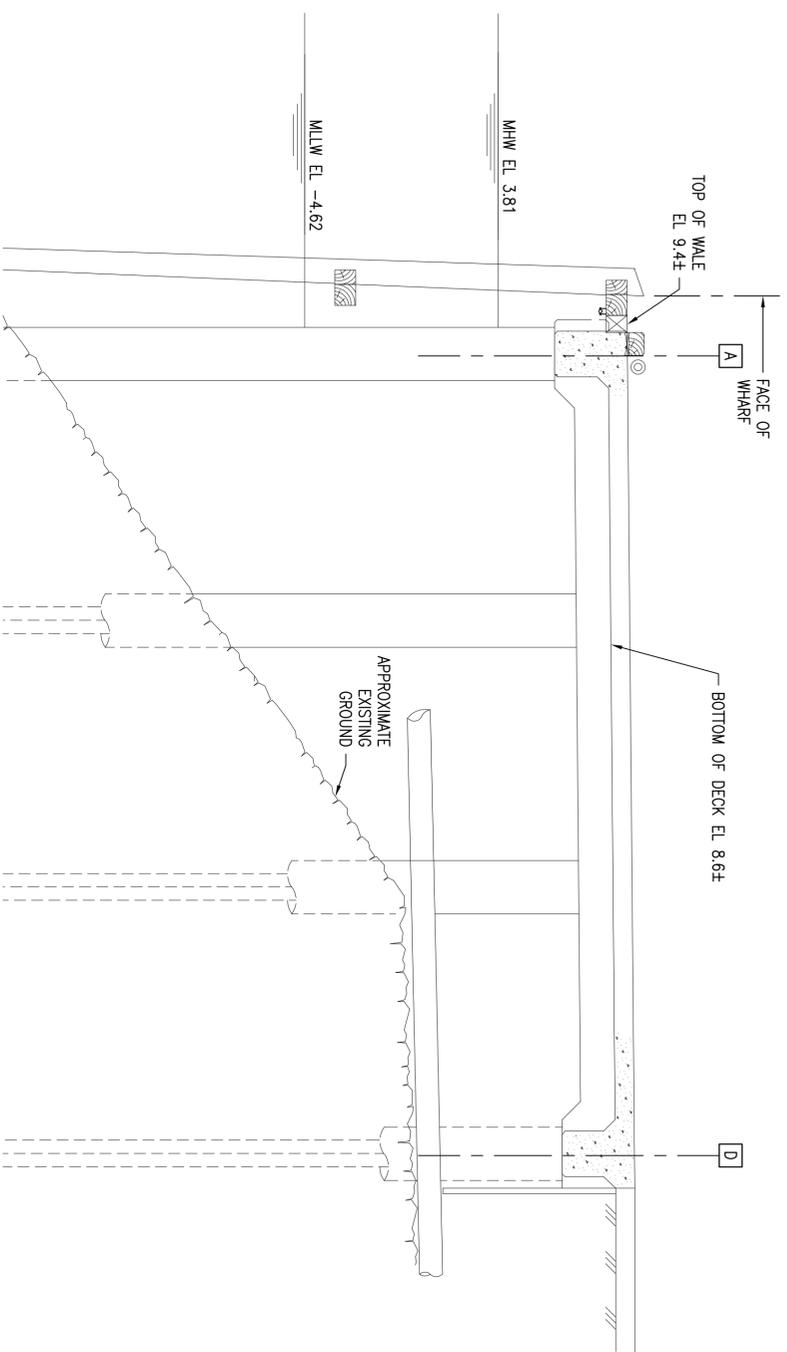
CONSTRUCTION

NAVIFAC

SYM	DESCRIPTION	DATE	APPR

A B C D 1 2 3 4 5

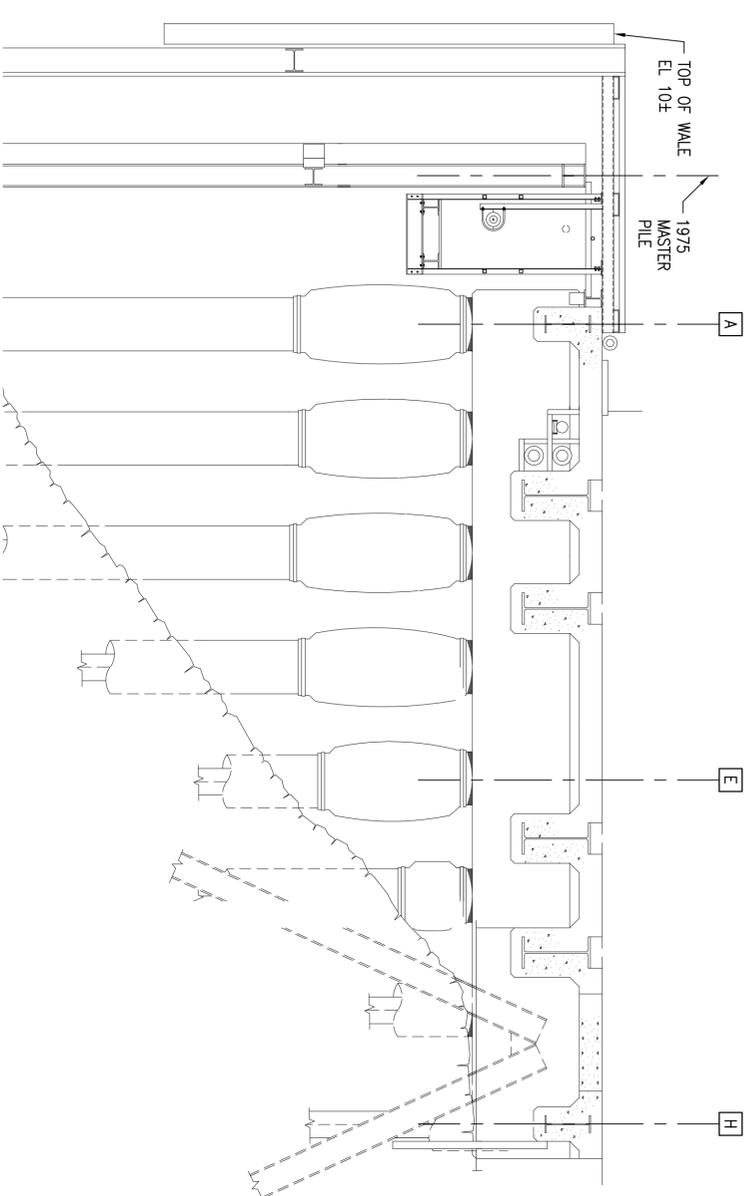
A B C D 1 2 3 4 5



EXISTING TYPICAL SECTION AT BERTH 11 (EAST END)

SCALE: 1/4" = 1'-0"

B1



EXISTING TYPICAL SECTION AT BERTH 11B & 11C

SCALE: 1/4" = 1'-0"

B3

SYM	DESCRIPTION	DATE	APPR



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STRUCTURAL REPAIRS AT BERTHS 11A, 11B AND 11C
 SCHEMATIC - ROCK ANCHOR TEST SUPPORT SYSTEM

APPROVED: [Signature]
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 ACTIVITY: [Signature]
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DRAWN BY: [Signature]
 REVISION NUMBER: [Signature]
 TYPED/PLOTTED: [Signature]

SUBMITTED TO: [Signature]
 DATE: [Signature]
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DRAWN BY: [Signature]

PROJECT NO.: 13588B
 CONSTRUCTION NO.: M40085-X-C-XXXX
 NAVAL FACILITIES ENGINEERING NO.: 12716085
 SHEET: 89 OF 144

GRAPHIC SCALE



1/8" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

S-302
 FP2-16-725
 DRAWING REVISION: 10 OCTOBER 2014