

PORT OF TACOMA

TACOMA, WASHINGTON

2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3

PROJECT NO. 201130.01, 201130.02, AND 201130.03

CONTRACT NO. 071569

PORT COMMISSIONERS:

JOHN MCCARTHY
RICHARD MARZANO
DON MEYER
DEANNA KELLER
KRISTIN ANG

PORT STAFF:

ERIC JOHNSON
Executive Director

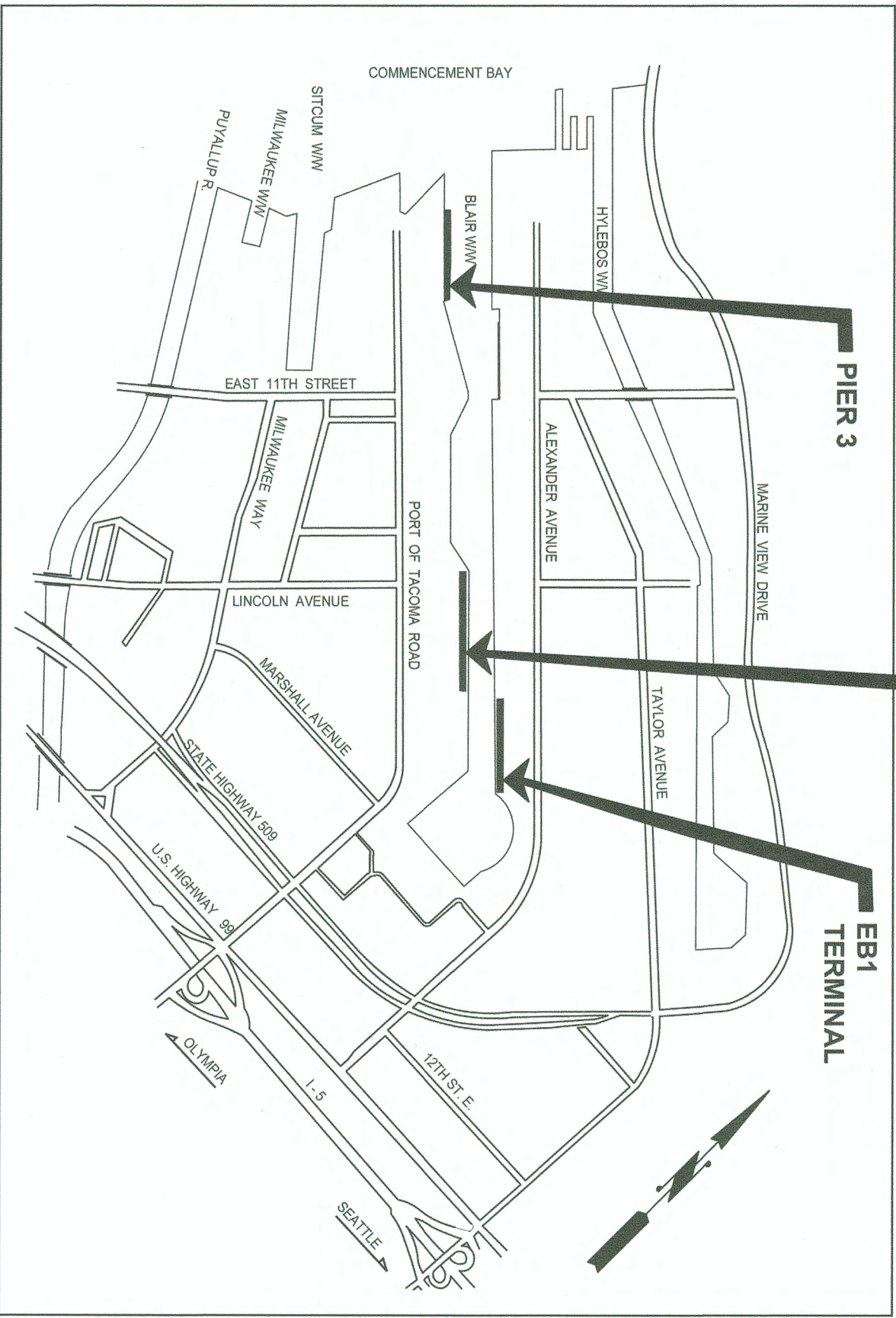
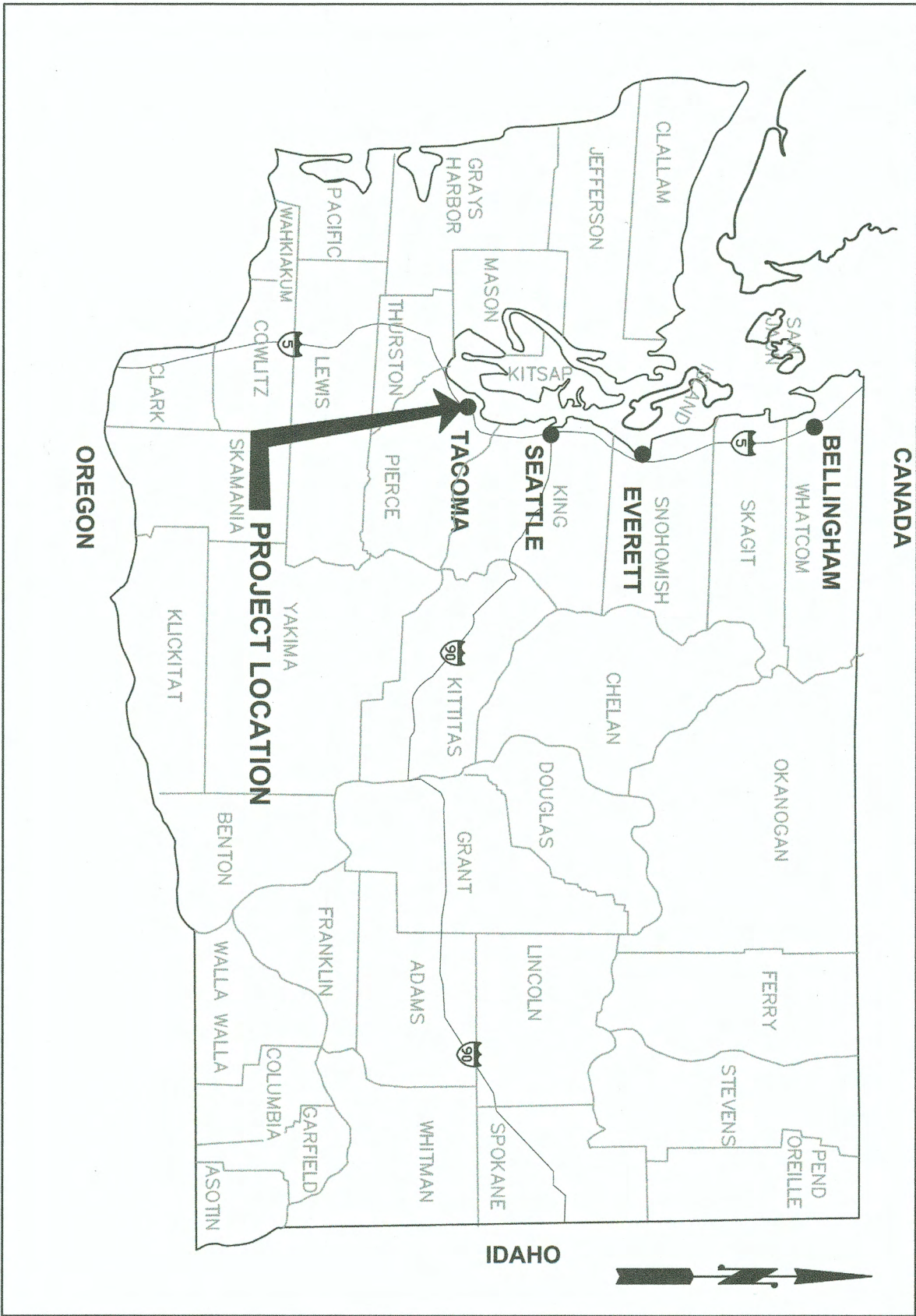
THAIS HOWARD, P.E.
Director of Engineering

BRETT OZOLIN, P.E.
Project Manager

CONSULTANT:



moffatt & nichol
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BID SET
ISSUED: 2021-10-06

6671 T1.0 1 OF 14	PORT OF TACOMA			APPROVED:	S.BRANDLUND 10/4/2021				600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222		P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841		
	2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3			 DIRECTOR ENG. DATE	CHECKED BY DATE		A.PATTERSON 10/4/2021	moffatt & nichol					
	COVER SHEET & DRAWING INDEX			PRINTED BY: cgreene Oct 05, 2021	PROJ. ENGR DATE			MARK:					
				PORT ADDRESS:ONE SITCUM PLAZA				REVISION:					
CONT/CONS: 071567	TOWNSHIP: 21N	RANGE: 3E	SECTION: 35	10/15/2021		BY:		APPR:		DATE:			
M. ID:201130.01-201130.02-201130.03	DAT-HRZ: WA83-SF	VERT: MLLW 19.39' @ Tide 22 1933			TACOMA, WA 98401-1837								
PHASE: 100%	PARCEL:	DRAWING SCALE: AS NOTED											

GENERAL NOTES

- THESE NOTES CONTAIN GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY INFORMATION PROVIDED IN DRAWINGS WITH THE SPECIFICATIONS AND OTHER DOCUMENTS AND BRING ANY CONFLICTS TO THE ATTENTION OF THE ENGINEER BEFORE BEGINNING AFFECTED WORK. THE ENGINEER WILL RESOLVE ANY SUCH CONFLICT.
- SITE ACCESS AND ACTIVITY SHALL BE COORDINATED WITH REGARD TO TIDAL CYCLES.
- THE FACILITIES WILL BE IN OPERATION DURING THE DURATION OF THIS PROJECT. THE CONTRACTOR SHALL KEEP ITS WORKERS, MATERIAL, AND EQUIPMENT CLEAR OF ALL TERMINAL AND SHIPPING OPERATIONS AND SHALL NOT IN ANY WAY HINDER OR DISRUPT PORT OR TENANT OPERATIONS.
- THE PROJECT SITE IS LOCATED ALONG AN ACTIVE SHIPPING CHANNEL. AT NO TIME SHALL THE CONTRACTOR OBSTRUCT OR HINDER SHIPPING ACTIVITIES WITHIN THE CHANNEL. ALL WATER BORNE CONSTRUCTION EQUIPMENT SHALL BE MOORED OUT OF THE SHIPPING CHANNEL OR AS DIRECTED BY THE PORT. NO MOORING LINES OR ANCHORS SHALL BE PLACED WITHIN THE CHANNEL. ALL TERMINAL FACILITIES SHALL BE IN OPERATIONAL ORDER BEFORE NEXT VESSEL ARRIVES.
- ALL DIMENSIONS AND DETAILS (INCLUDING EXISTING MEMBER DAMAGE AND HARDWARE SIZES) SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL ELEVATIONS REFER TO MEAN LOWER LOW WATER (MLLW) ELEVATION 0.00 FT.
- EXISTING FEATURES SHOWN ON THESE DRAWINGS ARE BASED ON EXISTING REFERENCE DRAWINGS AND RECENT FIELD SURVEYS. THE CONTRACTOR SHALL IMMEDIATELY BRING ANY CONFLICTS TO THE ENGINEER'S ATTENTION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE THE ADEQUACY OF THE EXISTING STRUCTURE TO SUPPORT CONSTRUCTION EQUIPMENT AND LOADS. ANY DAMAGE TO EXISTING FEATURES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REVIEWED BY THE ENGINEER AND REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE DESIGN INTENT OF THIS PROJECT IS TO MATCH THE CAPACITY OF THE EXISTING TERMINAL STRUCTURES TO ALLOW 15 ADDITIONAL YEARS OF SIMILAR USE.

CODES AND STANDARDS

- REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR CONCRETE CONSTRUCTION" (ACI 301) AND "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY" (ACI 318), LATEST EDITIONS.

DEMOLITION

- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO CONTAIN THE DEMOLITION WITHIN THE LIMITS DESIGNATED. TO AVOID DAMAGE TO EXISTING STRUCTURES, UTILITIES, OR FACILITIES, AND TO KEEP ALL DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL PROVIDE FLOATS OR FALSEWORK TO CATCH ALL FALLING DEBRIS UNDER ALL OVERWATER DEMOLITION.
- ALL DEMOLITION MATERIAL, EXCEPT AS NOTED AND/OR SPECIFIED, SHALL BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR, IN ACCORDANCE WITH THE PROJECT PERMITS.

TIDES

- TIDAL DATA OBTAINED FROM NOAA WEBSITE FOR STATION ID 9446484 AND CHART 18453 FOR THE 1983 – 2001 EPOCH AS FOLLOWS.

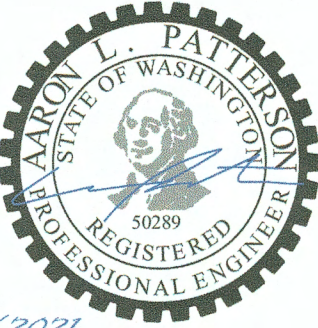
EXTREME HIGH WATER (EHW)	15.49 FT
MEAN HIGHER HIGH WATER (MHHW)	11.78 FT
MEAN SEA LEVEL (MSL)	6.84 FT
MEAN LOWER LOW WATER (MLLW)	0 FT
EXTREME LOW WATER (ELW)	-4.11 FT

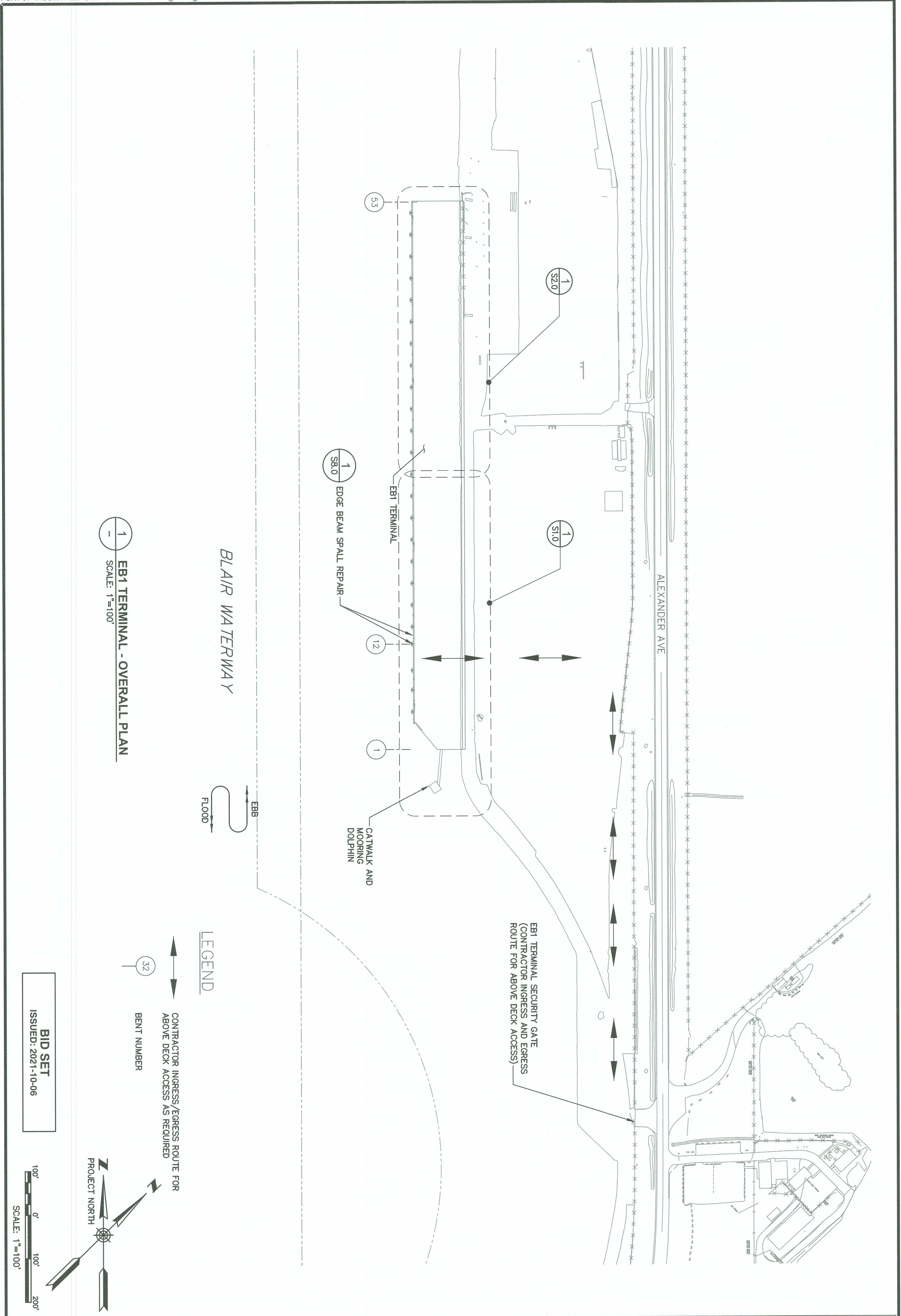
ABBREVIATIONS

&	AND
Ø	DIAMETER
ACZA	AMMONIACAL COPPER ZINC ARSENATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWPA	AMERICAN WOOD PROTECTION ASSOCIATION
BOT	BOTTOM
CF	CUBIC FEET
CL	CENTER LINE
CLR	CLEAR
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
DBL	DOUBLE
DEMOL	DEMOLISH
DIA	DIAMETER
DWG	DRAWING
ELW	EXTREME HIGH WATER
EL	ELEVATION
ELW	EXTREME LOW WATER
EXIST, (E)	EXISTING
FB	FLAT BAR
FHP	FRESH HEAD PILE
HOPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HPC	HIGH-PERFORMANCE CEMENTITIOUS
I/P	INSTALL NEW FENDER PILE
IN	INCH
LOC'N	LOCATION
MANUF	MANUFACTURER
MHHW	MEAN HIGHER HIGH WATER
MLLW	MEAN LOWER LOW WATER
MSL	MEAN SEA LEVEL
NO	NUMBER
NOM	NOMINAL
OC	ON CENTER
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PREP	PREPARE PREPARATION
REINF	REINFORCEMENT
REQD	REQUIRED
RFP	REMOVE & DISPOSE FENDER PILE
SHT	SHEET
SIM	SIMILAR
SPA	SPACE, SPACES
THRU	THROUGH
TYP	TYPICAL
UHMW-PE	ULTRAHIGH MOLECULAR WEIGHT POLYETHYLENE
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W/	WITH
WPI	WESTERN WOOD PRESERVERS INSTITUTE

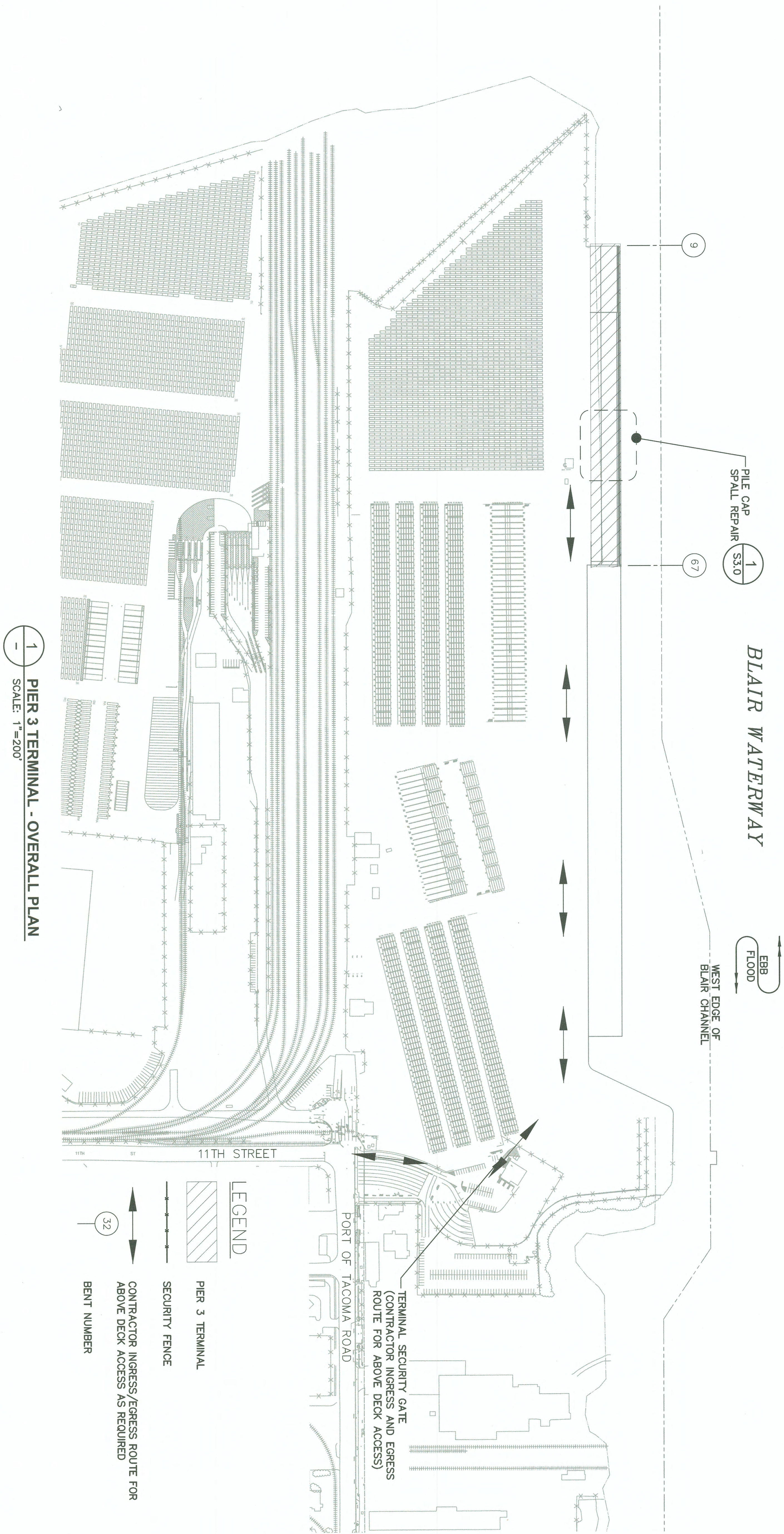
NIC NOT IN CONTRACT

BID SET
ISSUED: 2021-10-06

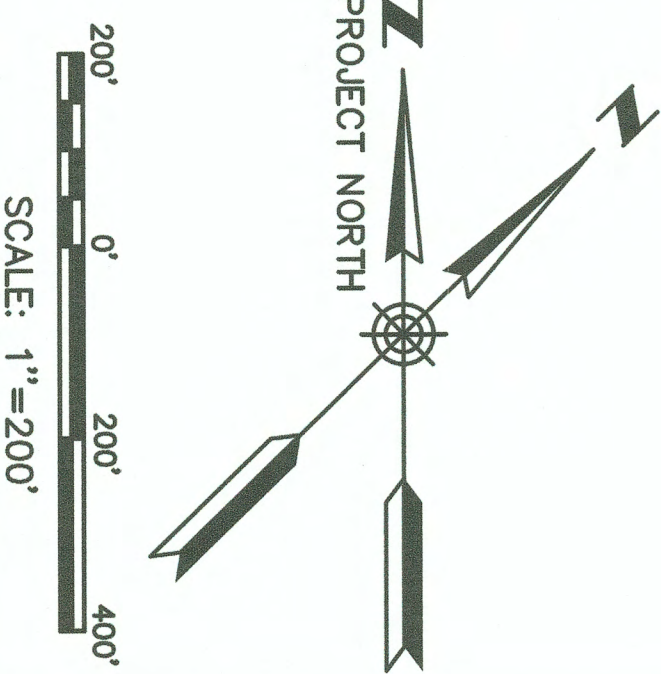
6671 G1.0 2 OF 14	PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 GENERAL NOTES & ABBREVIATIONS			APPROVED:	S.BRANDLUND 10/4/2021		 600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222	 P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841
				CHECKED BY DATE	A.PATTERSON 10/4/2021			
				DIRECTOR ENG. DATE	PROJ. ENGR DATE			
				PRINTED BY: cgreene Oct 05, 2021				
CONT/CONS: 071567	TOWNSHIP: 21N	RANGE: 3E	SECTION: 35	PORT ADDRESS:		10/5/2021	MARK:	REVISION:
M. ID: 201130.01-201130.02-201130.03	DAT-HRZ:	VERT:						BY:
PHASE: 100%	PARCEL:	DRAWING SCALE:						APPR:
								DATE:



6671 G2.0 3 OF 14	PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 EB1 TERMINAL - OVERALL PLAN			APPROVED:	S.BRANDLUND 10/4/2021
				CHECKED BY DATE	A.PATTERSON 10/4/2021
CONT/CONS: 071567	TOWNSHIP: 21N	RANGE: 3E	SECTION: 35	DIRECTOR ENG. DATE	PROJ. ENGR DATE
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				600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222	
				P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841	
MARK:		REVISION:		BY:	APPR:
					DATE:

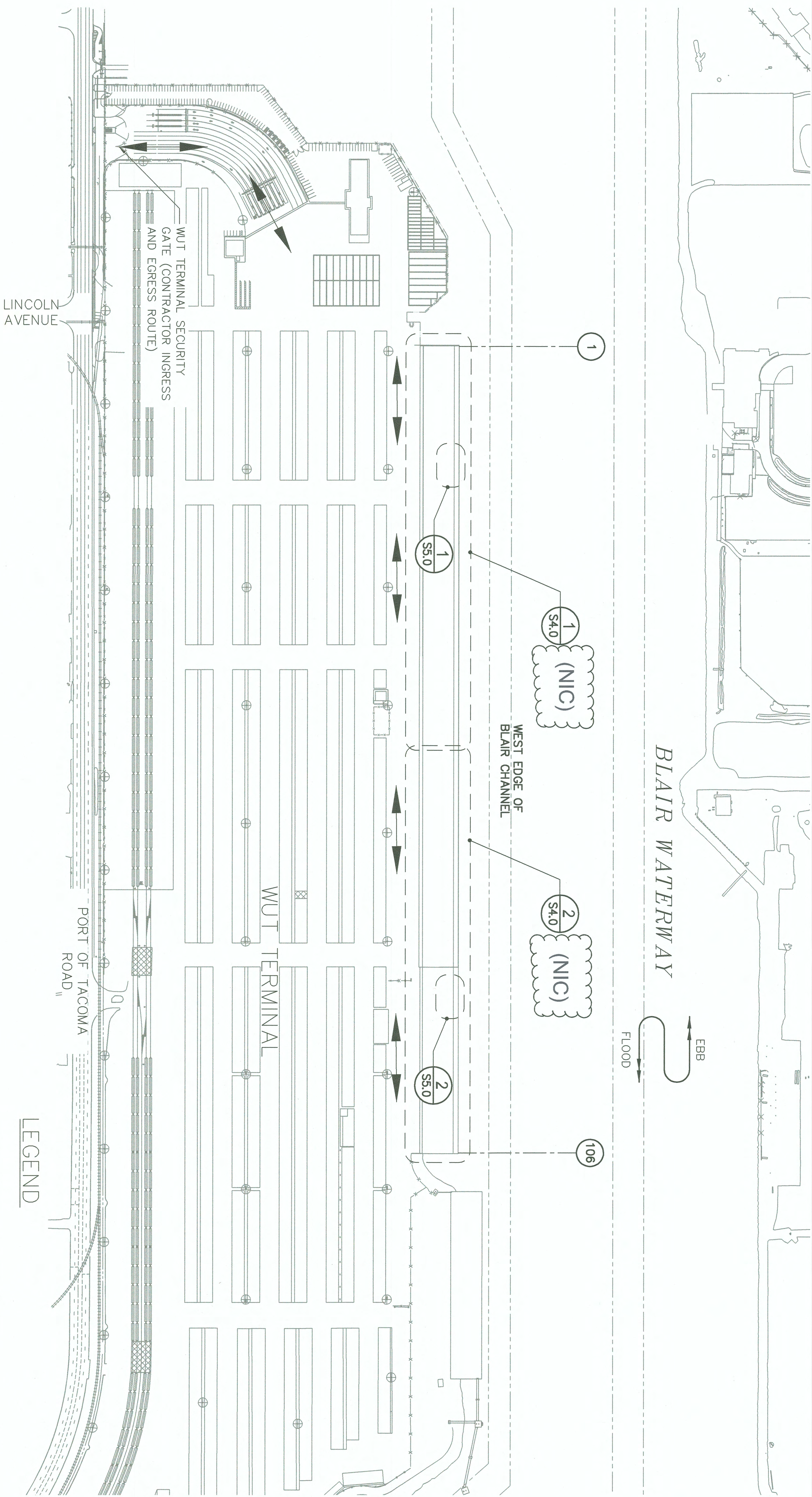


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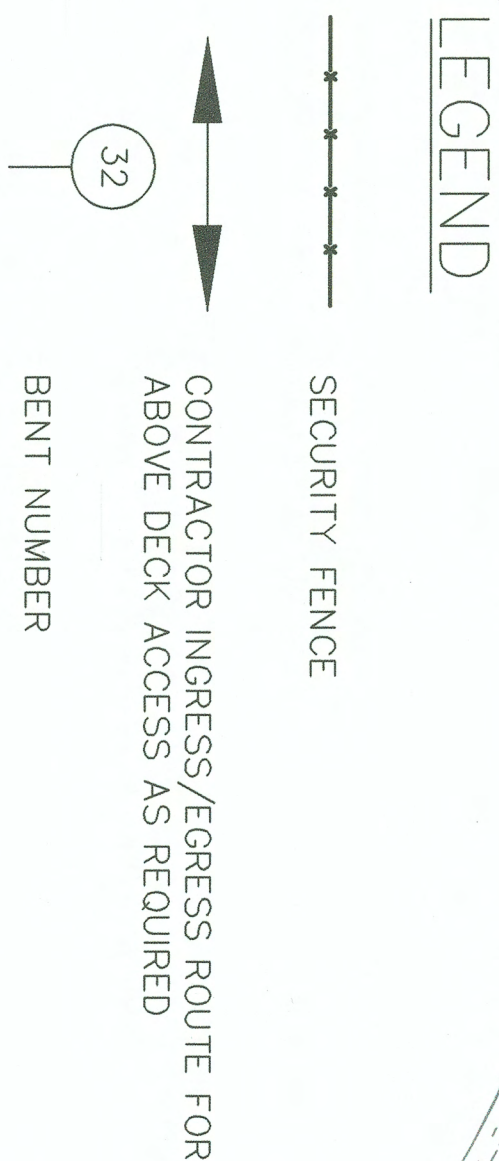


6671 G3.0 4 OF 14		PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 PIER 3 TERMINAL - OVERALL PLAN			APPROVED: <i>John Howard 10/16/21</i> DIRECTOR ENG. DATE	S.BRANDLUND 10/4/2021 CHECKED BY DATE A.PATTERSON 10/4/2021 PROJ. ENGR DATE	 10/15/2021	 600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222		 P.O. BOX 1837 TACOMA, WA 98401 (253)385-5941	
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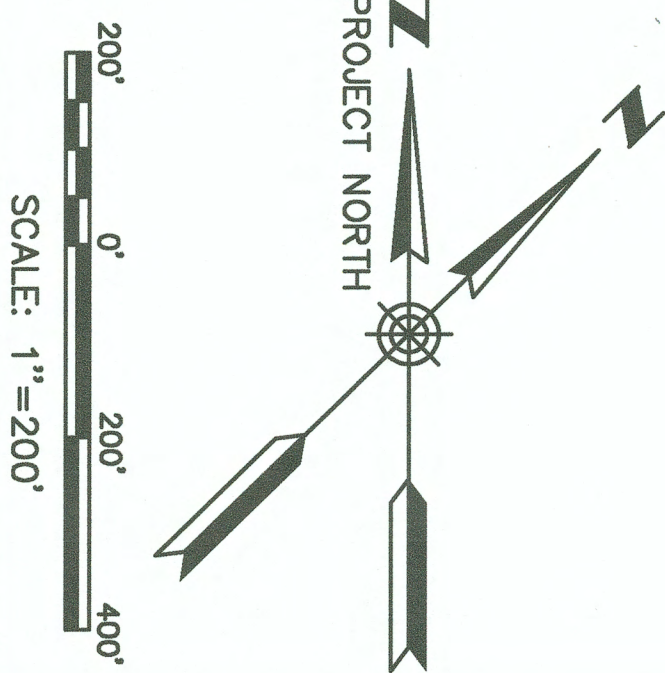
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1 WUT TERMINAL - OVERALL PLAN
SCALE: 1"=200'

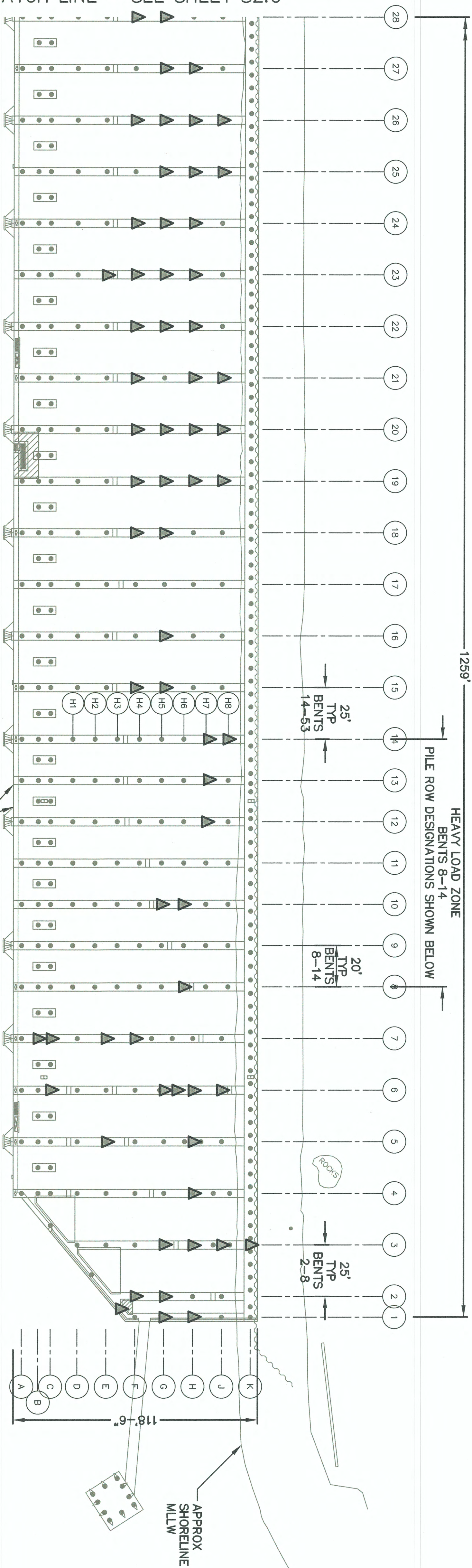


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ISSUED: 2021-10-06

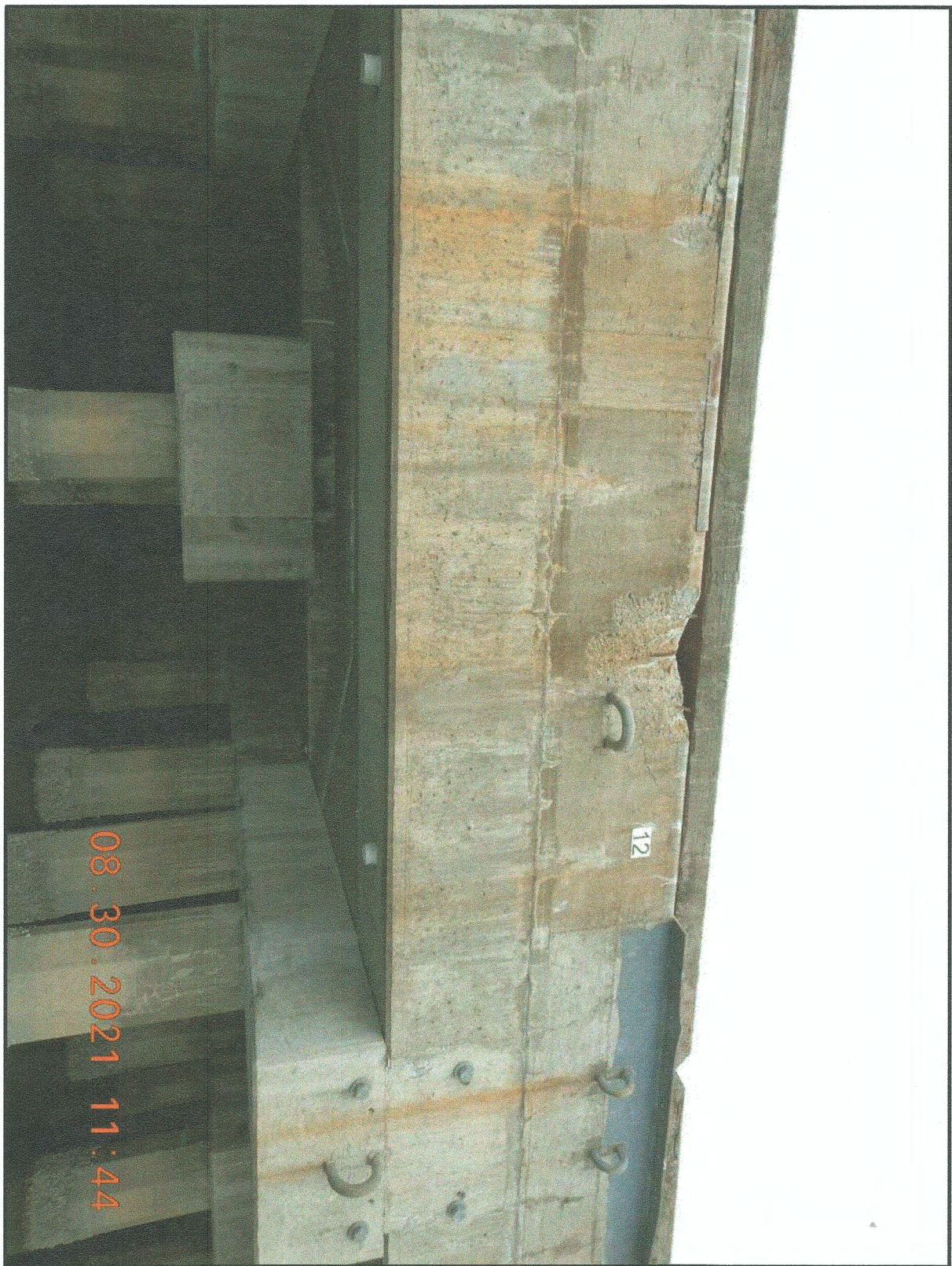


6671 G4.0 5 OF 14		PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 WUT TERMINAL - OVERALL PLAN		APPROVED: Chris Howard 10-3-21 DIRECTOR ENG. DATE PRINTED BY: cgreene Oct 05, 2021 PORT ADDRESS:		S.BRANDLUND 10/4/2021 CHECKED BY DATE A.PATTERSON 10/4/2021 PROJ. ENGR DATE		AARON L. PATTERSON STATE OF WASHINGTON 50289 REGISTERED PROFESSIONAL ENGINEER 10/15/2021	mo ffatt & nichol 600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222		Port of Tacoma P.O. BOX 1637 TACOMA, WA 98401 (253)363-5841	
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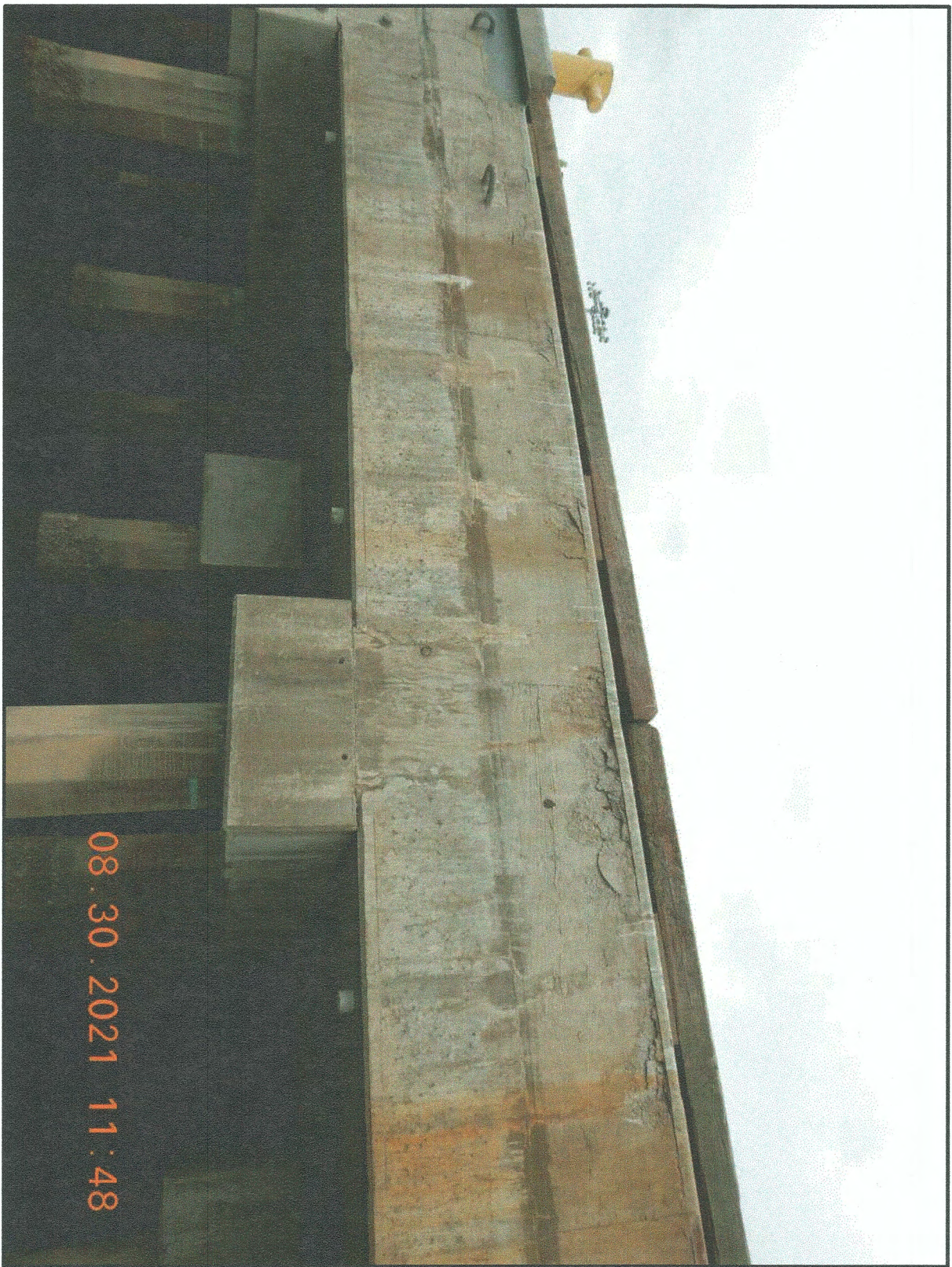
MATCH LINE – SEE SHEET S2.0



1
G2.0
EB1 WHARF - REPAIR PLAN (1 OF 2)
SCALE: 1"=30'



P1
-
EDGE BEAM SPALL - BENT 12.25
LOOKING EAST



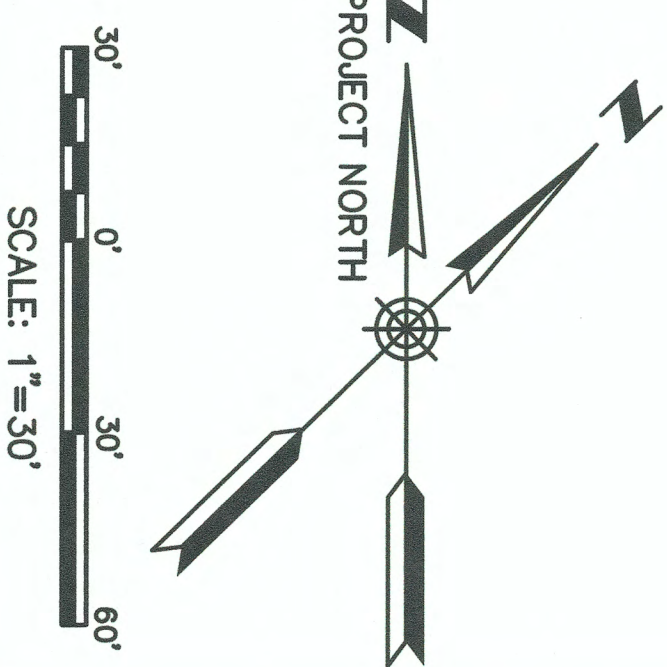
P2
-
EDGE BEAM SPALL - BENT 13
LOOKING EAST

LEGEND

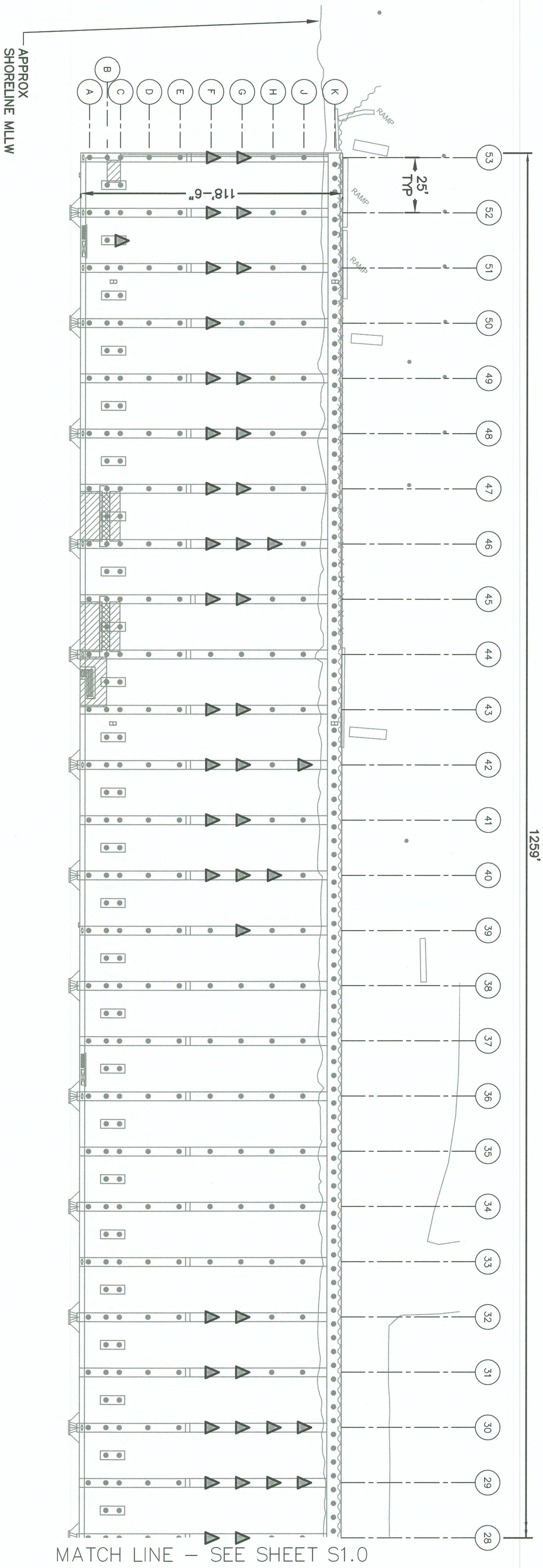
▲ SURFACE APPLIED EPOXY CRACK REPAIR

1
S9.0

BID SET
ISSUED: 2021-10-06

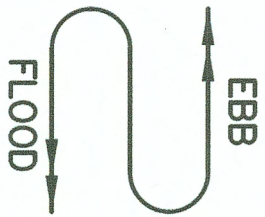


6671 S1.0 6 OF 14		PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 EB1 WHARF - REPAIR PLAN (1 OF 2)		APPROVED: S.BRANDLUND 10/4/2021 CHECKED BY DATE A.PATTERSON 10/4/2021 DIRECTOR ENG. DATE PROJ. ENGR DATE PRINTED BY: cgreene Oct 05, 2021 PORT ADDRESS:	AARON L. PATTERSON STATE OF WASHINGTON 50389 REGISTERED PROFESSIONAL ENGINEER 10/5/2021	moftatt & nichol 600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222		Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)363-5841		
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PHASE: 100%	PARCEL:	DRAWING SCALE:								



1
EB1 WHARF - REPAIR PLAN (2 OF 2)
G2.0 SCALE: 1"=30'

BLAIR WATERWAY

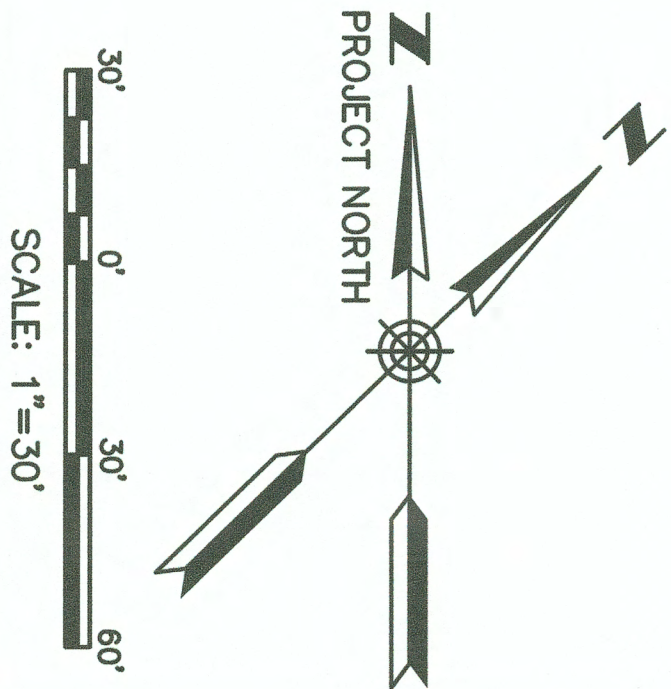


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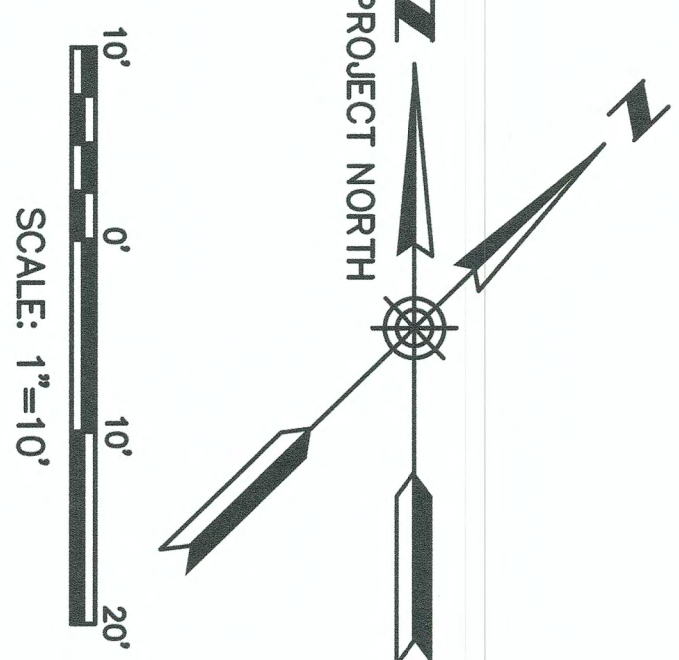
▲ SURFACE APPLIED EPOXY CRACK REPAIR



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6671 S2.0 7 OF 14		PORT OF TACOMA				APPROVED:		S.BRANDLUND 10/4/2021							600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222							
2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3						EB1 WHARF - REPAIR PLAN (2 OF 2)						CHECKED BY DATE		A.PATTERSON 10/4/2021		MARK:		REVISION:	BY:	APPR:	DATE:	
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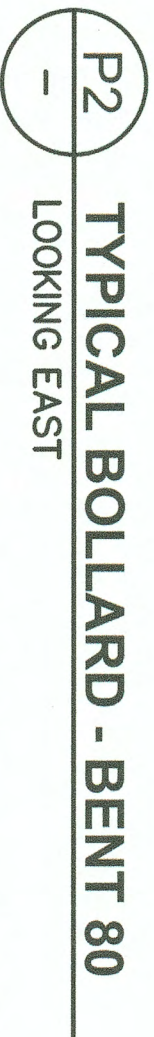
LOOKING SOUTH SOUTHEAST



LOOKING SOUTH

LOOKING SOUTH

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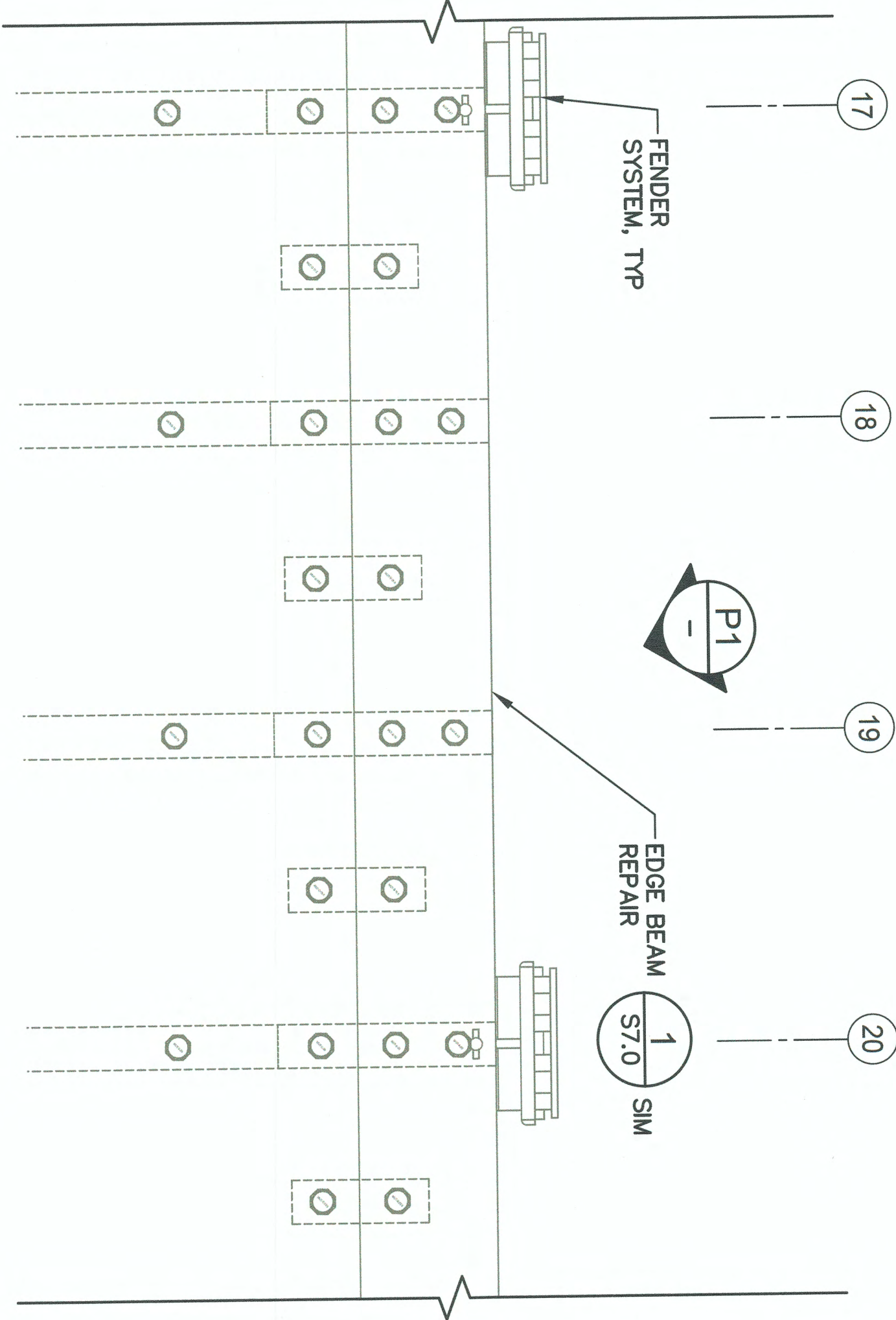
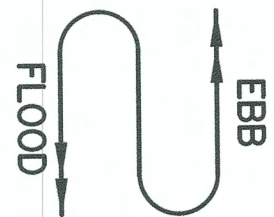
- NOTES:

(NIC)



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BLAIR WATERWAY

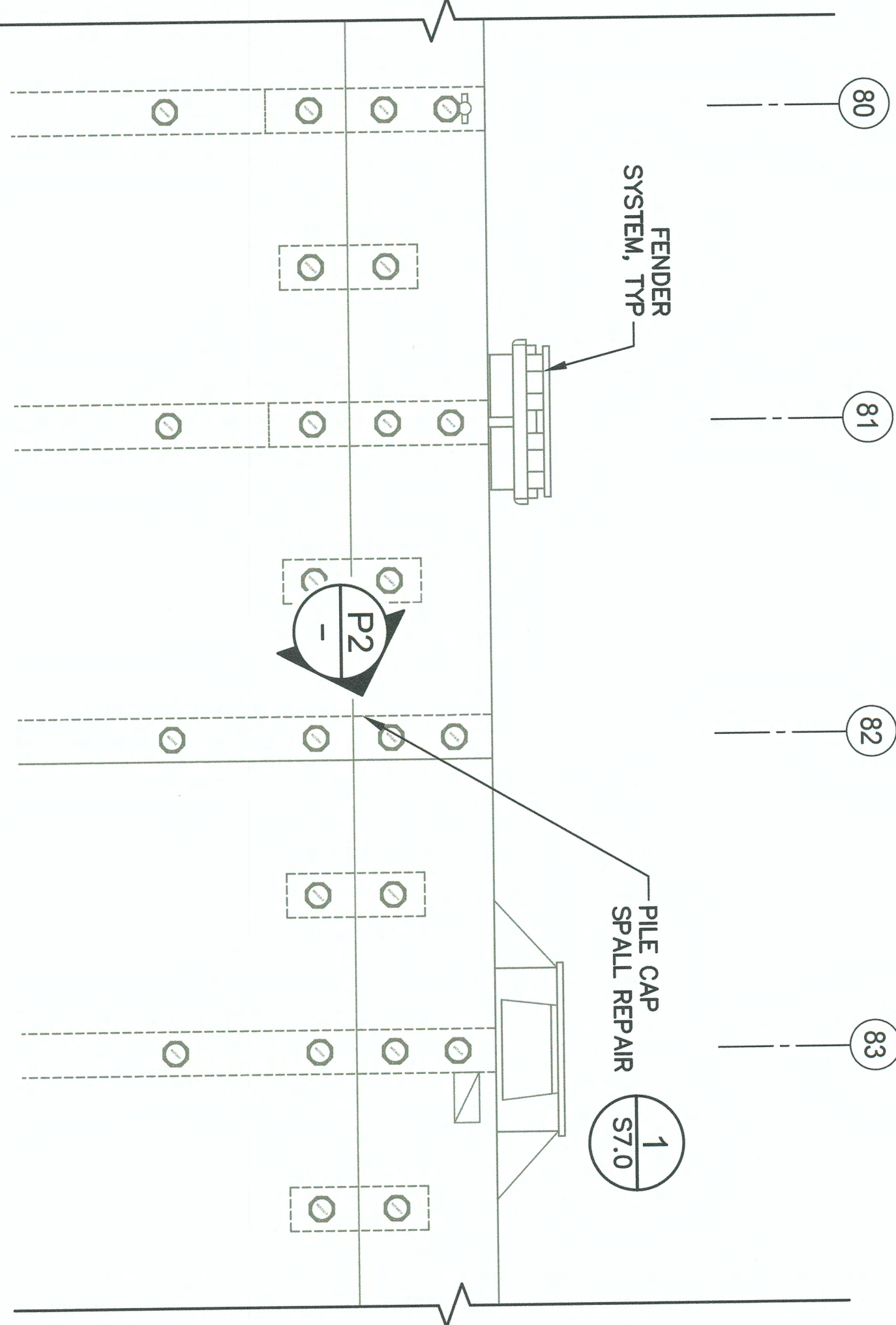
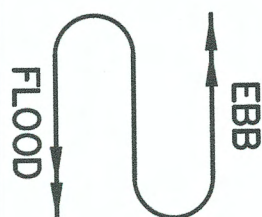


1
G4.0
WUT REPAIR PLAN - BENT 19
SCALE: 1"=10'



P1
-
EDGE BEAM SPALL - BENT 19
LOOKING SOUTH

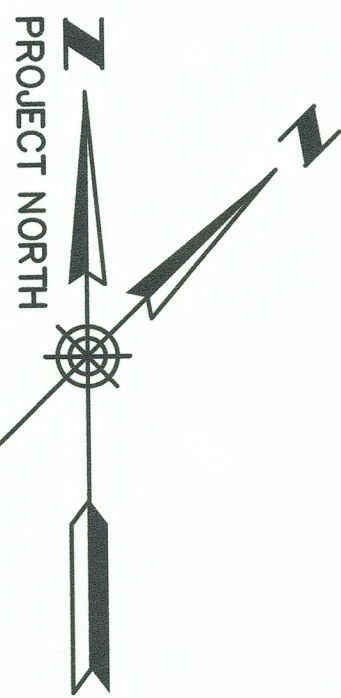
BLAIR WATERWAY



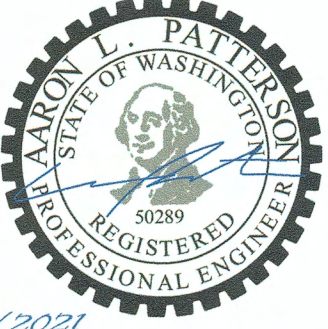
2
G4.0
WUT REPAIR PLAN BENT 82
SCALE: 1"=10'



P2
-
PILE CAP SPALL - BENT 82:B
LOOKING SOUTH



BID SET
ISSUED: 2021-10-06

6671 S5.0 10 OF 14		PORT OF TACOMA 2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3 WUT WHARF - PILE CAP REPAIR PLAN		APPROVED: S.BRANDLUND 10/4/2021 CHECKED BY DATE A.PATTERSON 10/4/2021 DIRECTOR ENG. DATE PROJ. ENGR DATE PRINTED BY: cgreene Oct 05, 2021 PORT ADDRESS:	 10/5/2021	600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222 moftatt & nichol		MARK:	REVISION:	BY:	APPR:	DATE:
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PHASE: 100%	PARCEL:		DRAWING SCALE:									

GENERAL NOTES:

1. SEE SHEET G1.0

REINFORCING STEEL:

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
2. MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE 3".
3. REINFORCING BARS SHALL NOT BE WELDED WITHOUT ENGINEER'S APPROVAL.

CONCRETE REPAIR NOTES:

1. CONTRACTOR SHALL PROVIDE CATCHMENT DEVICE DURING REPAIR WORK TO PREVENT CONCRETE CHIPS AND OTHER DEBRIS FROM FALLING INTO THE WATER.
2. NO DISTINGCTION IS MADE BETWEEN SPALLS AND DELAMINATIONS SINCE REPAIRS ARE THE SAME.
3. LIMIT REPAIR AREAS TO THOSE SPECIFIED FOR EACH STRUCTURAL MEMBER UNLESS APPROVED BY THE PORT.
4. REMOVE ALL DELAMINATED OR DETERIORATED CONCRETE WITHIN THE REPAIR AREA UNTIL SOUND CONCRETE IS ENCOUNTERED. CHIPPED OUT AREA SHALL EXTEND AN ADDITIONAL 2" AROUND THE PERIMETER OF THE DETERIORATED CONCRETE.
5. CHECK SURFACES TO ENSURE THEY ARE FREE FROM LOOSE AGGREGATE OR ADDITIONAL DELAMINATIONS.
6. CHIPPED OUT AREA SHALL BE NOT LESS THAN 1" CLEAR AROUND ALL EXPOSED REINFORCING BARS.
7. EDGES OF THE CHIPPED OUT AREA SHALL BE SAWCUT PERPENDICULAR TO THE CONCRETE SURFACE TO A MINIMUM DEPTH OF 1" OR A 1/4" ABOVE THE SHALLOWEST REINFORCEMENT DEPTH, WHICHEVER IS LESS. THE UPPER EDGE OF A VERTICAL FACE SPALL REPAIR SHALL BE ANGLED OUTWARD AT APPROXIMATELY 1V:3H. DO NOT SAWCUT THROUGH EXISTING REINFORCING BARS. SEE DETAIL 1, THIS SHEET.
8. ALL EXPOSED REINFORCING BARS SHALL BE CLEANED OF ALL SCALE, RUST, DIRT, OIL, OR ANY OTHER DELETERIOUS MATERIAL.
9. AFTER THE BARS HAVE BEEN CLEANED BY HANDTOOLS OR WIRE BRUSH, MEASURE THE DIAMETER OF THE UNCORRODED EXPOSED REINFORCING BARS AT THE EDGE OF THE CHIPPED OUT AREA WITH A MICROMETER TO DETERMINE THE ORIGINAL BAR SIZE. MEASURE THE CORRODED DIAMETER AND DETERMINE NEED TO REPAIR REINFORCEMENT PER EVALUATION NOTES ON THIS SHEET.
10. ALL FORMS SHALL BE WATER TIGHT.
11. REMOVE EXCESS CEMENTITIOUS MATERIALS AND PARTICULATE SLURRY BEFORE CURING.
12. PREPARE, PLACE, AND CURE HPC REPAIR MATERIAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
13. DO NOT FEATHER THE EDGES OF THE REPAIR.
14. THE CONTRACTOR SHALL NOTIFY THE PORT OF ANY REPAIR TYPES THAT DIFFER FROM THE DESIGN DRAWINGS AND SHALL NOT PROCEED WITH WORK UNTIL APPROVED BY THE ENGINEER.
15. PROVIDE 3/4" CHAMFER ON ALL CAST-IN-PLACE EXPOSED CORNERS, UON.
16. AT ALL INTERFACES BETWEEN EXISTING CONCRETE AND HPC REPAIR MATERIAL, ROUGHEN EXISTING SURFACE TO A 1/4" AMPLITUDE.
17. PROVIDE ANODES AT ALL INTERFACES BETWEEN EXISTING CONCRETE AND HPC REPAIR MATERIAL, SEE SPECIFICATIONS.

REINFORCEMENT EVALUATION NOTES:

1. CLEAN REINFORCING BARS.
2. MEASURE EXPOSED BAR DIAMETERS TO DETERMINE ORIGINAL BAR SIZE AND EXISTING DIAMETER. REPORT ANY BARS FOUND TO HAVE GREATER THAN 20% SECTION LOSS TO THE PORT.

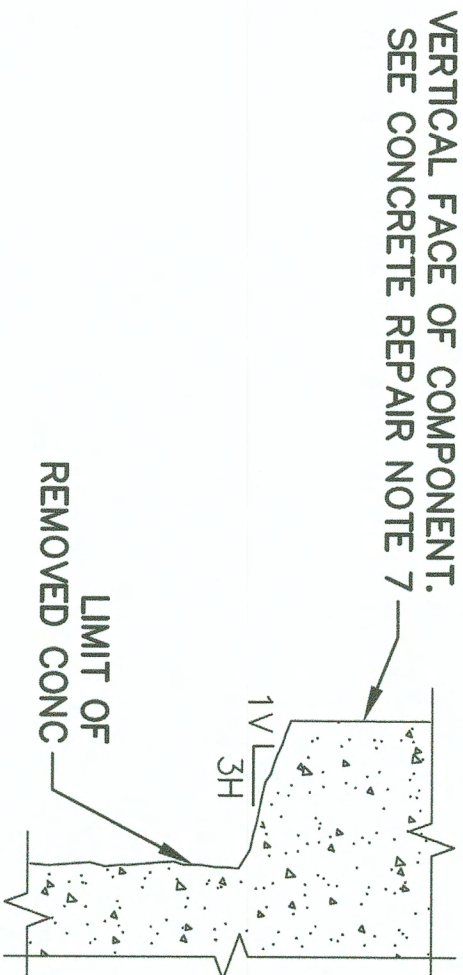
SPECIAL INSPECTION REQUIREMENTS:

1. IF A REPAIR, OR THE CUMULATIVE VOLUME OF MULTIPLE REPAIRS ON A GIVEN STRUCTURAL COMPONENT (E.G. PILE CAP) EXCEEDS THE FOLLOWING THRESHOLDS, THEN EVERY REPAIR ON THAT COMPONENT SHALL BE INSPECTED AT A LEVEL CONSISTENT WITH THAT OF SPECIAL INSPECTIONS, AS DEFINED BY CHAPTER 17 OF THE 2015 INTERNATIONAL BUILDING CODE.
- A. GREATER THAN 27 CF OF TOTAL REPAIR VOLUME IS ANTICIPATED.
2. THE FOLLOWING ADDITIONAL ITEMS SHALL BE INSPECTED AT A LEVEL CONSISTENT WITH THAT OF SPECIAL INSPECTIONS, AS DEFINED BY CHAPTER 17 OF THE 2015 INTERNATIONAL BUILDING CODE.
- A. ANY CONCRETE REPAIRS REQUIRING THE REPAIR OR ADDITION OF REINFORCEMENT.
- B. ANY REPAIR INVOLVING THE INSTALLATION OF EMBEDMENTS.
3. THE ABOVE INSPECTIONS WILL BE PERFORMED BY THE PORT INSPECTOR.
4. EACH INSPECTION SHALL BE DOCUMENTED. INSPECTION RECORDS SHALL BE SUBMITTED TO THE PORT FOR REVIEW.
5. ALL ANODE PLACEMENT WILL BE INSPECTED BY THE PORT INSPECTOR.

CONCRETE SPALL REPAIR QUANTITIES:

1. THE FOLLOWING ARE ESTIMATED QUANTITIES OF CONCRETE SPALL REPAIR. QUANTITIES SHALL BE VERIFIED IN THE FIELD BY CONTRACTOR PRIOR TO START OF ALL REPAIRS.

CONCRETE SPALL REPAIR QUANTITIES					
TERMINAL	LOCATION	TYPE	DETAIL	QTY	UNIT
PIER 3	BENT 45:C	PILE CAP	1/S7.0	4	CF
EB1	BENT 12.25	EDGE BEAM	1/S8.0	12	CF
EB1	BENT 13	EDGE BEAM	1/S8.0	4	CF
WUT	BENT 19	EDGE BEAM	1/S7.0 (SIM)	2	CF
WUT	BENT 82:B	PILE CAP	1/S7.0	1.5	CF



1
-
DETAIL - VERTICAL FACE SPALL REPAIR TOP EDGE CHAMFER
SCALE: NTS

BID SET
ISSUED: 2021-10-06

6671
S6.0
11 OF 14

CONT/CONS: 071567
M. ID: 201130.01-201130.02-201130.03
PHASE: 100%

PORT OF TACOMA

2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3
EDGE BEAM AND PILE CAP REPAIR NOTES & TABLE

TOWNSHIP: 21N

RANGE: 3E

SECTION: 35

DAT-HRZ:

VERT:

PARCEL:

DRAWING SCALE:

APPROVED:

S.BRANDLUND 10/4/2021

CHECKED BY DATE

A.PATTERSON 10/4/2021

PROJ. ENGR DATE

PRINTED BY: cgreene Oct 05, 2021

PORT ADDRESS:

50389

PATRICIA A. PATTERSON

REGISTERED PROFESSIONAL ENGINEER

10/5/2021

600 UNIVERSITY STREET
SUITE# 610
SEATTLE, WA 98101
(206) 622-0222

mark: revision: BY: APPR: DATE:

mo

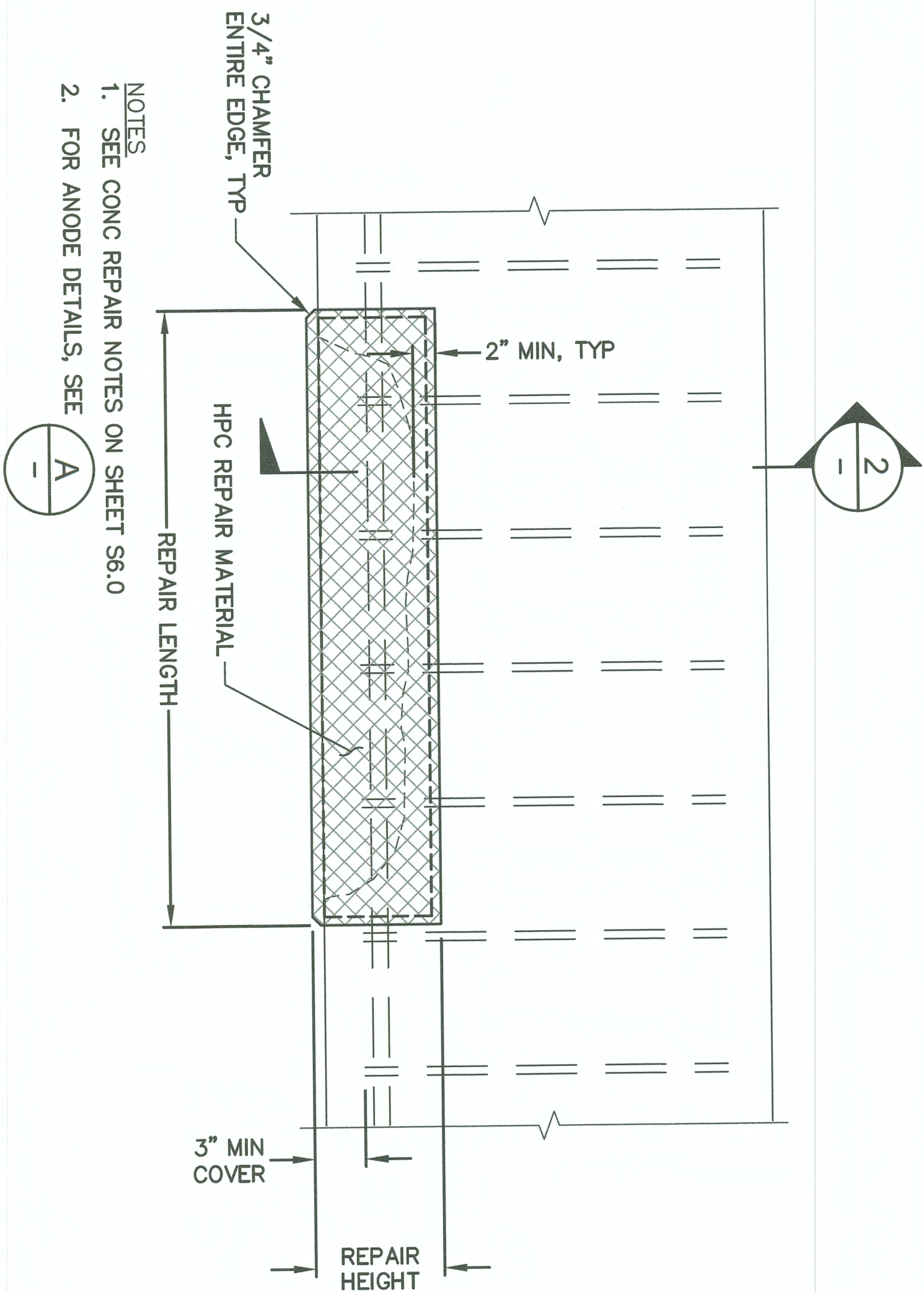
ffatt & nichol

Port of Tacoma

P.O. BOX 1637 TACOMA, WA 98401 (253)383-5841

APPR: DATE:

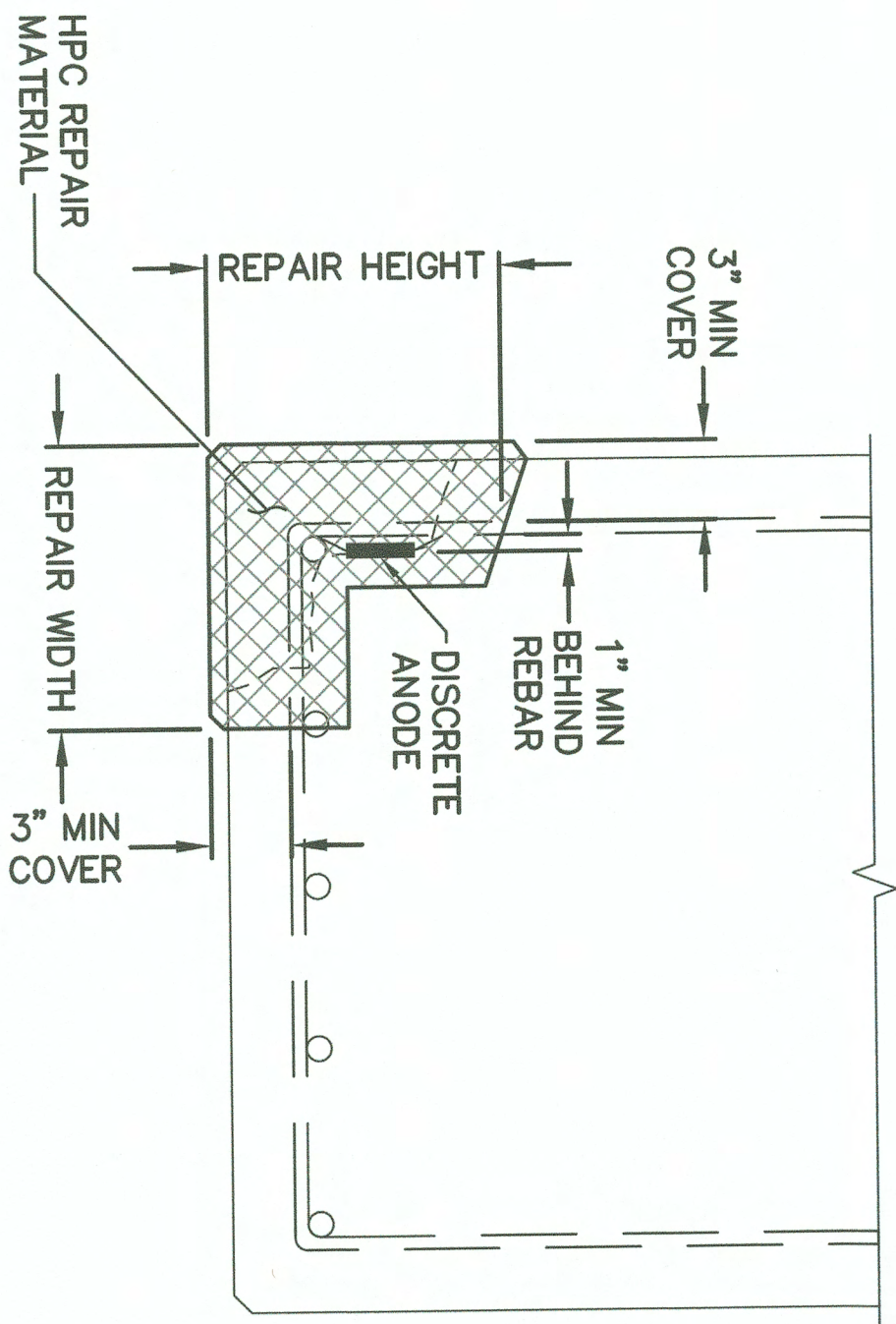
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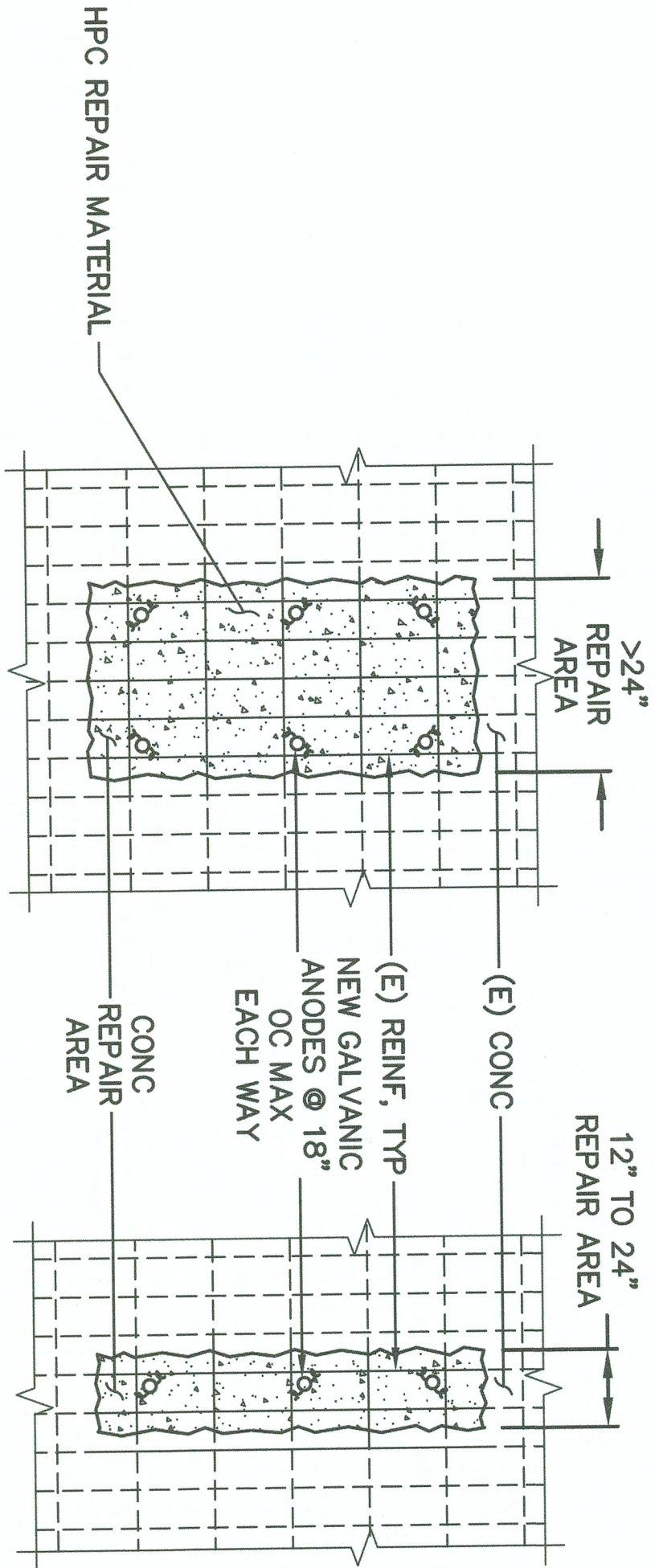
- NOTES
1. SEE CONC REPAIR NOTES ON SHEET S6.0
 2. FOR ANODE DETAILS, SEE



1
S3.0
ELEVATION - PILE CAP CORNER REPAIR
SCALE: NTS



2
SECTION - PILE CAP REPAIR
SCALE: NTS

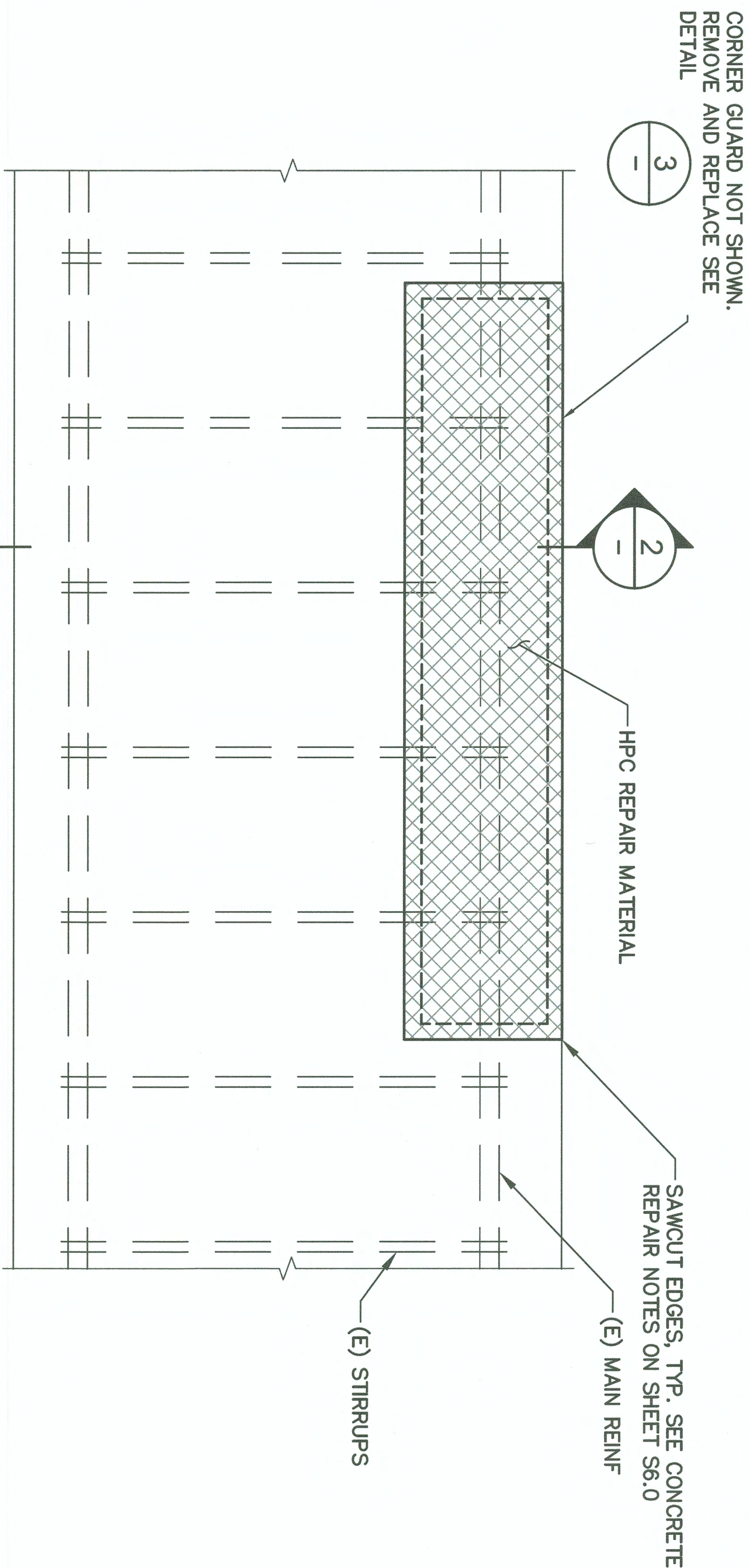


- NOTE
1. DISCRETE ANODES SHALL BE VECTOR CORROSION TECHNOLOGIES GALVASHIELD XP OR AN APPROVED EQUAL.

A
SCALE: NTS
DETAIL - CONCRETE REPAIRS USING EMBEDDED DISCRETE ANODES

6671 S7.0 12 OF 14		PORT OF TACOMA			APPROVED:		S.BRANDLUND 10/4/2021			600 UNIVERSITY STREET SUITE# 610 SEATTLE, WA 98101 (206) 622-0222				 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)383-5841							
2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3					<i>A. Patterson 10/4/21</i> DIRECTOR ENGR. DATE		A.PATTERSON 10/4/2021			CHECKED BY DATE											
EDGE BEAM AND PILE CAP REPAIR DETAILS (1 OF 2)					PROJECT ENGR. DATE		PROJECT ENGR. DATE					MARK:		REVISION:		BY:		APPR:		DATE:	
CONT/CONS: 071567		TOWNSHIP: 21N		RANGE: 3E		SECTION: 35		PRINTED BY: cgreene Oct 05, 2021													
M. ID: 201130.01-201130.02-201130.03		DAT-HRZ:		VERT:				PORT ADDRESS:													
PHASE: 100%		PARCEL:		DRAWING SCALE:						10/5/2021											

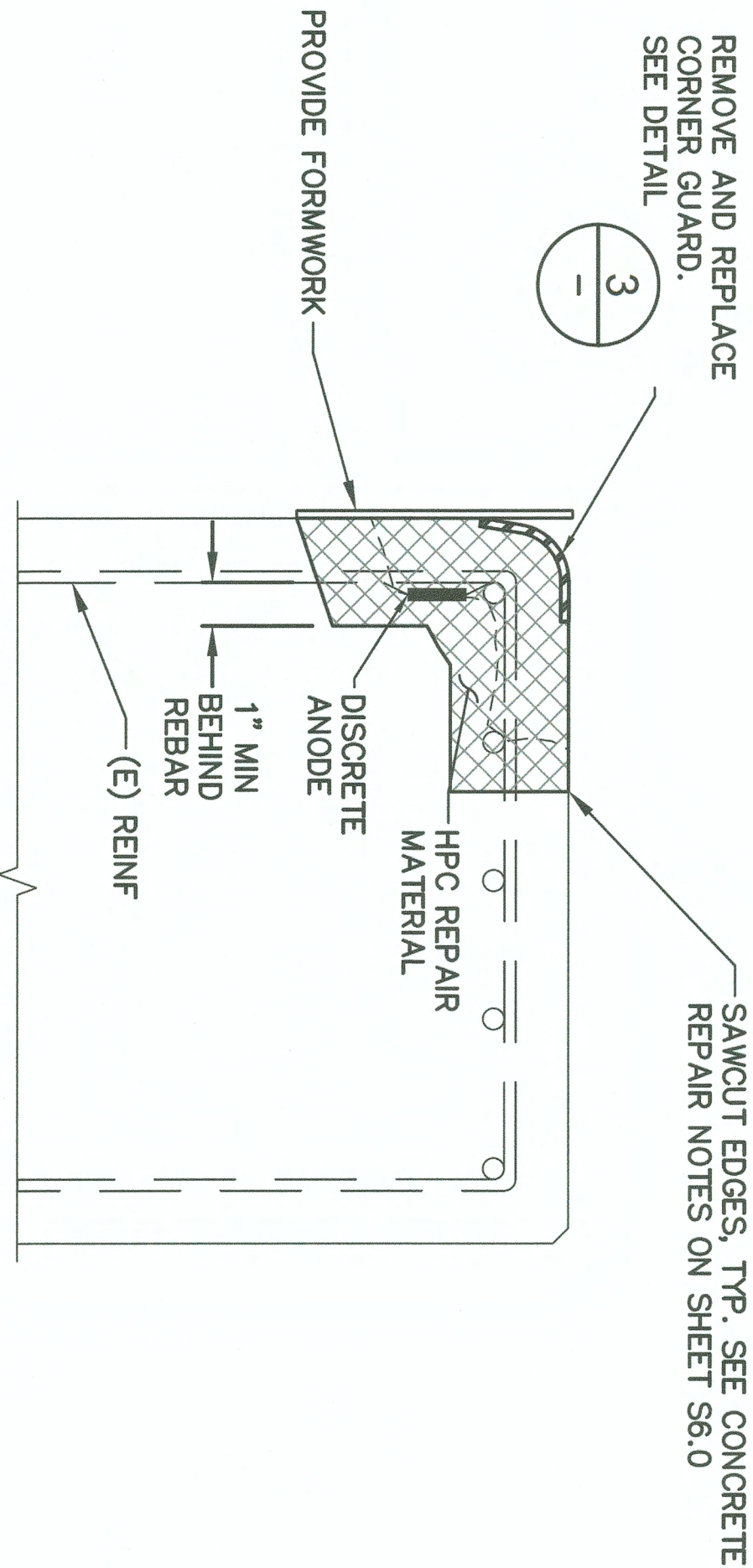
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1
S1.0
ELEVATION - EDGE BEAM REPAIR
SCALE: NTS

- NOTES
1. SEE CONC REPAIR NOTES ON SHEET S6.0
 2. CONCRETE SPALL REPAIR QUANTITIES SHOWN ON SHEET S6.0
 3. FOR ANODE DETAILS, SEE

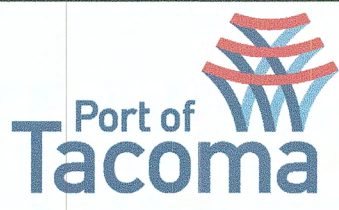
A
S7.0



2
SECTION - EDGE BEAM REPAIR
SCALE: NTS

BENT PL 1/4 x 5 x CONT (2 1/2" EA LEG)
W 1/2" x 4" HEADED STUD @ 9" OC

3
DETAIL - CORNER GUARD
SCALE: NTS

6671 S8.0 13 OF 14		PORT OF TACOMA		APPROVED:		S.BRANDLUND 10/4/2021						600 UNIVERSITY STREET						
		2021 PIER REPAIRS (PILE CRACKS, SPALL REPAIRS AND MOORING COATING) - EB1, WUT, AND PIER 3		<i>Aaron L. Patterson</i>		CHECKED BY DATE			SUITE# 610									
		EDGE BEAM AND PILE CAP REPAIR DETAILS (2 OF 2)		DIRECTOR ENG. DATE		A.PATTERSON 10/4/2021			SEATTLE, WA 98101									
				PRINTED BY: cgreene Oct 05, 2021		PROJ. ENGR DATE			(206) 622-0222									
				PORT ADDRESS:														
CONT/CONS: 071567		TOWNSHIP: 21N		RANGE: 3E		SECTION: 35			MARK:		REVISION:		BY:		APPR:		DATE:	
M. ID: 201130.01-201130.02-201130.03		DAT-HRZ:		VERT:														
PHASE: 100%		PARCEL:		DRAWING SCALE:				10/5/2021										

BENT	ROW	CRACK LENGTH (FT)
1.5	E	3.2
1	G	3.2
1	H	2.4
2	F	3.2
2	G	1.6
3	G	2.4
3	H	2.4
3	J	2.4
3	K	2.4
4	H	2.4
5	E	1.6
5	H	3.2
6	C	1.6
6	G	2.4
6	G.5	5.6
6	H	4.0
6	J	2.4
7	B	2.4
7	C	1.6
7	E	2.4
7	F	3.2
8	H3	3.2
10	H1	2.4
10	H3	4.8

BENT	ROW	CRACK LENGTH (FT)
12	H5	2.4
13	H5	1.6
14	H5	2.4
14	H6	1.6
15	F	4.8
15	G	3.2
16	G	3.2
18	F	4.0
18	G	4.8
19	F	2.4
19	G	3.2
19	H	1.6
19	J	2.4
20	F	2.4
20	G	2.4
20	H	3.2
20	J	3.2
21	F	3.2
21	H	3.2
21	J	3.2
22	F	2.4
22	G	3.2
22	H	1.6
23	E	2.4

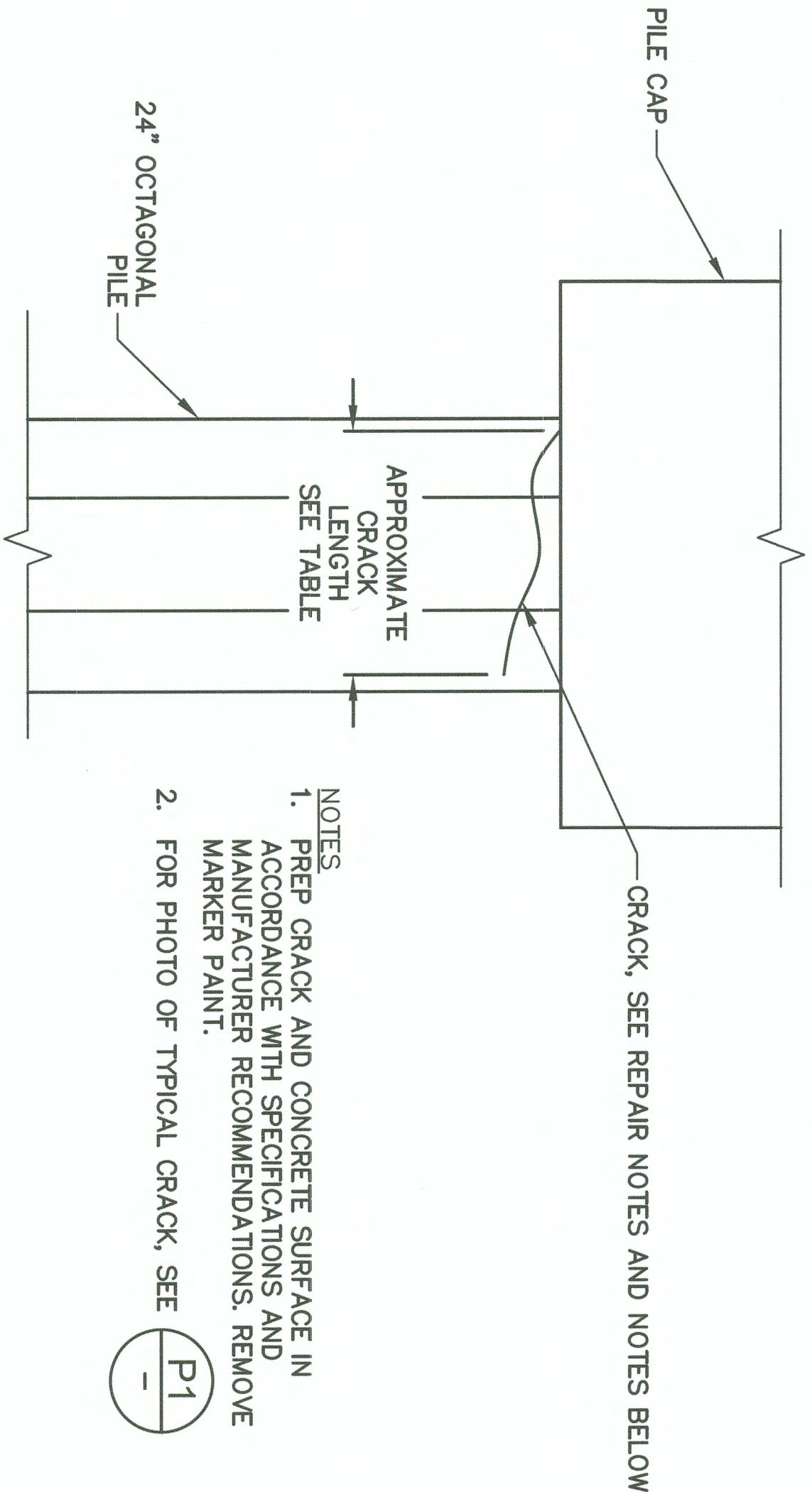
BENT	ROW	CRACK LENGTH (FT)
23	F	2.4
23	G	4.8
23	H	2.4
24	F	1.6
24	G	4.8
24	H	2.4
25	G	1.6
25	H	1.6
25	J	2.4
26	F	2.4
26	G	5.6
26	H	1.6
26	J	3.2
27	G	2.4
27	H	1.6
28	F	3.2
28	G	2.4
28	F	1.6
29	G	1.6
29	H	2.4
29	J	2.4
30	F	4.8
30	G	4.8
30	H	2.4

BENT	ROW	CRACK LENGTH (FT)
30	J	2.4
31	F	4.0
31	G	3.2
32	F	2.4
32	G	1.6
39	G	3.2
40	F	1.6
40	G	1.6
40	H	2.4
41	F	5.6
41	G	2.4
42	F	3.2
42	G	1.6
43	F	4.0
43	G	4.8
45	F	2.4
45	G	2.4
46	F	1.6
46	G	1.6
46	H	1.6
47	F	2.4
47	G	5.6
48	F	3.2

BENT	ROW	CRACK LENGTH (FT)
48	G	3.2
49	F	5.6
49	G	5.6
50	F	3.2
51	F	4.0
51	G	3.2
51.5	C	2.4
52	F	6.3
52	G	6.3
53	F	6.3
53	G	4.8

- NOTES:
1. BENT AND ROW DESIGNATIONS SHOWN WITH DECIMAL LOCATIONS REFLECT OFFSET FROM STANDARD GRIDLINE (IE PILE 6:G.5 IS LOCATED HALF A GRIDLINE OFF STANDARD GRID CENTER BETWEEN G AND H).
2. A HEAVY LOAD ZONE IS LOCATED BETWEEN PILE BENTS 8 AND 14. PILE ROW DESIGNATIONS IN THIS ZONE DIFFER FROM STANDARD PILE ROW DESIGNATIONS ELSEWHERE AT THE TERMINAL.

1
TABLE - EB1 CONCRETE CRACK QUANTITIES



- NOTES
1. PREP CRACK AND CONCRETE SURFACE IN ACCORDANCE WITH SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS. REMOVE MARKER PAINT.
2. FOR PHOTO OF TYPICAL CRACK, SEE P1



EXISTING CRACK, MARKED WITH WHITE PAINT

2
DETAIL - SURFACE APPLIED EPOXY CRACK REPAIR

P1
TYPICAL PILE CRACK

LOOKING SOUTH SOUTHEAST

BID SET
ISSUED: 2021-10-06