

PORT OF TACOMA

PIER 7A STRUCTURAL REPAIRS PROJECT NO. 091197 CONTRACT NO. 069408

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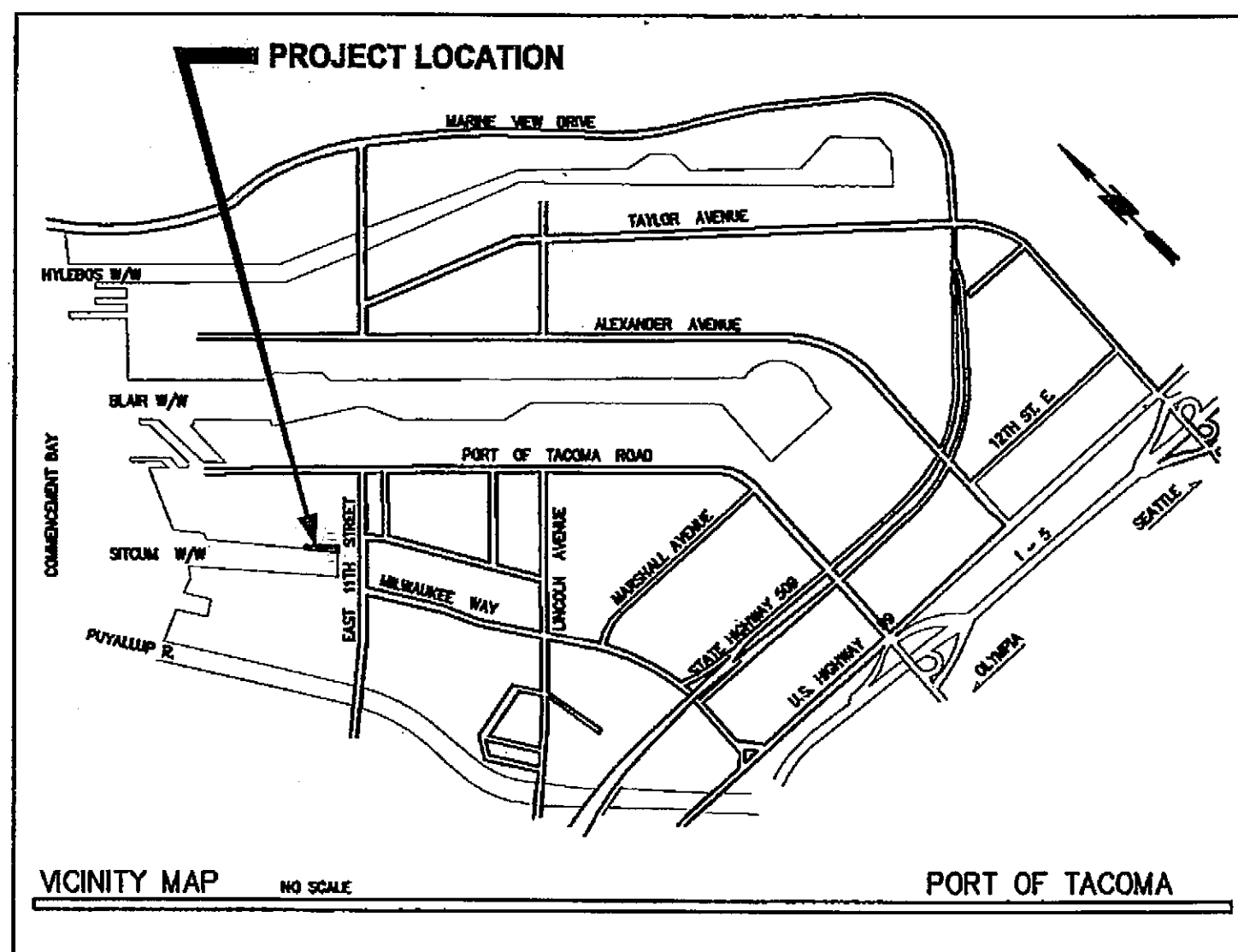
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DRAWING LIST		
SHEET DESIGNATION	SHEET #	SHEET TITLE
G1.0	1	COVER SHEET AND DRAWING LIST
G2.0	2	GENERAL NOTES
C1.0	3	SITE ACCESS & PHASING PLAN
S2.0	4	BERTH A REPAIR PLAN
S2.1	5	BERTH A REPAIR PLAN
S2.2	6	SECTION AT BERTH A
S2.3	7	PILE REPLACEMENT DETAILS
S2.4	8	PILE CAP DETAILS
S2.5	9	DECK REPLACEMENT DETAILS
S2.6	10	ALTERNATE ACCESS HOLE FOR PILE REPLACEMENT
S2.7	11	(NEW SHEET) BERTH A REPAIR PLAN
S2.8	12	(NEW SHEET) SECTION AT BERTH A
S2.9	13	(NEW SHEET) DECK REPLACEMENT DETAILS
S2.10	14	(NEW SHEET) DECK REPLACEMENT DETAILS
S2.11	15	(NEW SHEET) TIMBER SUBCAP DETAILS
R1	16	REFERENCE DRAWING
R2	17	REFERENCE DRAWING

RED LINE DRAWINGS

6500 G1.0 SHEET 1 OF 17	CONTRACT/CONS: 091197 M. ID: 091197 PHASE: BID SET	TOWNSHIP: 21 N RANGE: 3 E SECTION: 34 DATE: 19-39' @ TIDE 22.19.33 DAT-HRZ: NAD 83-07 VERT: AS NOTED DRAWING SCALE: AS NOTED PARCEL: 27	PIER 7A STRUCTURAL REPAIRS COVER SHEET AND DRAWING LIST	APPROVED:	RHM 9/25/12 CHECKED BY: DATE	9/25/12 SUB: DATE	9/25/12 PROJ. ENGR: DATE	9/25/12 PRINTED BY: valendy Feb 12, 2013	9/25/12 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837
				Parametrix ENGINEERING, PLANNING, ENVIRONMENTAL SCIENCES 1019 39TH AVENUE SE, SUITE 100 PUYALLUP, WASHINGTON 98374 T. 253.604.6600 F. 253.604.6799 www.parametrix.com	Port of Tacoma P.O. BOX 1887 TACOMA, WA 98401-1887				
				MARK: 1	REVISION: 1	ADD NEW SHEETS	BY: RHM	APPR: RHM	DATE: 2/6/13

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GENERAL STRUCTURAL NOTES:

CODES

- ALL METHODS AND MATERIALS SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2009 EDITION, AS ADOPTED AND AMENDED BY THE CITY OF TACOMA.
- STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION AND ERECTION THEREOF SHALL CONFORM TO THE AISC STEEL CONSTRUCTION MANUAL 13TH EDITION.
- WELDING OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1; STRUCTURAL WELDING CODE – STEEL.
- REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) AND "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318), LATEST EDITIONS.

GENERAL

- THE CONTRACTOR SHALL VERIFY INFORMATION GIVEN HERE WITH THE SPECIFICATIONS AND OTHER DOCUMENTS AND BRING ANY CONFLICTS TO THE ATTENTION OF THE PORT BEFORE BEGINNING THE AFFECTED WORK. THE PORT WILL RESOLVE ANY SUCH CONFLICT.
- ALL DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION.
- ALL SHOP DRAWINGS FOR TIMBER ELEMENTS, REPAIR PROCEDURES, AND MISCELLANEOUS STEEL SHALL BE SUBMITTED TO AND APPROVED BY THE PORT PRIOR TO FABRICATION.
- THE EXISTING PIER WILL BE IN OPERATION DURING CONSTRUCTION. THE CONTRACTOR SHALL KEEP THEIR PERSONNEL, MATERIALS, AND EQUIPMENT CLEAR OF ALL SHIPPING ACTIVITIES EXCEPT WITHIN THE DESIGNATED AREA OF CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE ALL UTILITY INTERRUPTIONS THAT MAY BE REQUIRED WITH THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AT LEAST 2 WEEKS ADVANCE NOTICE OF ANY POSSIBLE IMPACTS ON UTILITIES. THE PORT WILL SHUT DOWN AFFECTED UTILITIES AND TEST THEM ONCE THEY ARE RE-ENERGIZED. IT IS NOT INTENDED THAT UTILITIES WILL BE REMOVED TO FACILITATE THE WORK. THE CONTRACTOR SHALL WORK AROUND EXISTING UTILITIES.

DEMOLITION

- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO STRICTLY CONTAIN THE DEMOLITION WITHIN THE LIMITS OF CONSTRUCTION AND AVOID ANY DAMAGE TO THE EXISTING STRUCTURE. NO DEBRIS SHALL FALL INTO THE WATER. FLOATING DEBRIS BOOMS SHALL BE IN PLACE AND APPROVED BY THE PORT PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION.
- PRIOR TO GENERAL DEMOLITION THE CONTRACTOR SHALL SAWCUT WHERE NOTED, OR OTHERWISE PROVIDE A SMOOTH CLEAN BREAK BETWEEN ITEMS THAT ARE TO BE DEMOLISHED AND ITEMS THAT ARE TO REMAIN.
- ANY DAMAGE INCURRED IN EXECUTION OF THIS CONTRACT TO ANY PART OF THE PROPERTY, STRUCTURE, OR UTILITIES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION SHALL BE REPAIRED, REPLACED, AND/OR RECONSTRUCTED BY THE CONTRACTOR AT HIS EXPENSE, TO ITS PREDISTURBED CONDITION AS DIRECTED BY THE PORT.
- ALL DEMOLISHED MATERIAL, SHALL BECOME THE PROPERTY OF CONTRACTOR, AND SHALL BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR. THE REMOVAL, HANDLING, AND DISPOSAL OF ALL DEMOLITION MATERIALS, INCLUDING CREOSOTE TREATED MATERIALS, SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- PILING BEING REPLACED SHALL BE COMPLETELY REMOVED BY PULLING (DRIVE REPLACEMENT PILE IN THE HOLE LEFT BY REMOVED PILE). IF A PILE BREAKS DURING REMOVAL, CUT PILE OFF BELOW MUDLINE AS SPECIFIED AND DRIVE THE NEW PILE ADJACENT TO THE REMAINING PILE SUB.
- ASBESTOS-CONTAINING FABRIC MAY BE PRESENT AT THE PILE TOPS AND CONCRETE THAT SUPPORT PILE CAPS. SEE SPECIFICATIONS FOR PROPER REMOVAL, HANDLING AND DISPOSAL OF BOTH ASBESTOS -CONTAINING FABRIC AND PILE TOP.

PILING

- PILE DRIVING WILL ONLY BE ALLOWED DURING THE DAYLIGHT HOURS OR BETWEEN 8:00 A.M. AND 6:00 P.M. WHICHEVER IS LONGER, OR STIPULATED IN THE PROJECT PERMITS.
- PILING SHALL BE DRIVEN TO THE TIP ELEVATIONS INDICATED ON THE DRAWINGS AND SHALL DEVELOP A MINIMUM DESIGN LOAD CAPACITY OF 25 TONS. DESIGN LOAD CAPACITY SHALL BE VERIFIED DURING INSTALLATION BY USING THE PILE DRIVING FORMULA NOTED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY THE PORT IMMEDIATELY IF PILE DESIGN CAPACITY IS NOT ATTAINED DURING DRIVING. THE PORT MAY REQUIRE THE CONTRACTOR TO ARRANGE FOR REDRIVING SELECTED PILES TO VERIFY SET AFTER A MINIMUM TIME LAPSE OF 24 HOURS FROM INITIAL DRIVING TO TIP ELEVATION.
- TIMBER PILES (SUPPLIED BY PORT)
 - PILES SHALL BE PACIFIC COAST DOUGLAS FIR CONFORMING TO ASTM D 25 LATEST EDITION.
 - DRIVEN PILES SHALL HAVE A MINIMUM DIAMETER OF 14 INCHES (44 IN. CIRCUMFERENCE) MEASURED 3 FEET FROM BUTT END.
 - PILE POST SHALL HAVE A MINIMUM DIAMETER OF 12" MEASURED 3' FROM BUTT END.
 - TREATMENT FOR PILES SHALL BE 1.5 PCF OF WATERBORNE PRESERVATIVE, AMMONIACAL COPPER ZINC ARSENATE (ACZA). TREATMENT SHALL BE IN ACCORDANCE WITH ACPA STANDARDS T1, U1 & UCSA. BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INCORPORATED INTO ALL TIMBERS AS SET FORTH BY THE WESTERN WOOD PRESERVATIVE INSTITUTE (WWPI). ALL PRODUCTS SHALL BEAR EVIDENCE THAT THE BMP STANDARDS INCLUDING BMP AMENDMENT #1 HAVE BEEN MET.
- THE TOPS OF ALL PILES, SHALL HAVE A LAYER OF 30 POUND ASPHALT-IMPREGNATED ORGANIC FELT STAPLED OVER THEM AFTER TOP OF PILE HAS BEEN TREATED IN ACCORDANCE APWA M4 REQUIREMENTS.

STRUCTURAL TIMBER

- ALL TIMBER SHALL BE DOUGLAS FIR-LARCH, SELECT STRUCTURAL OR DOUGLAS FIR NO. 2 AS SHOWN (ALTERNATE ACCESS HOLE FOR PILE REPLACEMENT, SHT S2.6) AND SHALL CONFORM TO THE LATEST SPECIFICATIONS OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB).
- ALL TIMBER SHALL BE SURFACED AS NOTED ON THE DRAWINGS.
- TREATMENT OF ALL STRUCTURAL TIMBER SHALL BE 0.60 PCF OF WATERBORNE PRESERVATIVE, AMMONIACAL COPPER ZINC ARSENATE (ACZA). TREATMENT SHALL BE IN ACCORDANCE WITH ACPA STANDARDS T1, U1, AND UC4B. BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INCORPORATED INTO ALL TIMBERS AS SET FORTH BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI). ALL PRODUCTS SHALL BEAR EVIDENCE THAT THE BMP STANDARDS INCLUDING BMP AMENDMENT #1 HAVE BEEN MET.
- FABRICATION: HOLES FOR BOLTS SHALL BE 1/8" LARGER THAN THE BOLT. LEAD HOLES FOR SPIKES SHALL BE 75 PERCENT OF THE FASTENER SHANK DIAMETER. LEAD HOLES FOR LAG BOLTS SHALL BE PREBORED TO 65 PERCENT OF THE SHANK DIAMETER.
- THE CONTRACTOR MAY EXERCISE THE OPTION OF USING SAW SIZED TIMBER FOR PILE CAPS IN LIEU OF THE S4S SURFACING INDICATED ON THE PLANS. IF THIS OPTION IS EXERCISED, THE CONTRACTOR SHALL ASSUME ALL RISKS AND COSTS THAT MAY BE INCURRED BY DEVIATING FROM THE ORIGINAL DESIGN REQUIREMENTS AS INDICATED ON THE PLANS. ONLY MATERIAL MATCHING THE FINISHED TIMBER DIMENSIONS INDICATED ON THE PLANS SHALL BE PERMITTED TO BE INSTALLED.
- ALL FIELD CUT ENDS OF TIMBER SHALL BE TREATED IN ACCORDANCE WITH APWA STANDARD M4.

CAST-IN-PLACE CONCRETE

- CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS
- REINFORCEMENT FOR CAST-IN-PLACE CONCRETE SHALL BE IN CONFORMANCE WITH ASTM A615 GRADE 60 FOR DEFORMED STEEL BARS, AND ASTM A185 FOR WELDED PLAIN WIRE REINFORCEMENT.
- FORMS SHALL BE CONSTRUCTED AS TO BE RIGID, UNYIELDING, TRUE TO LINE, LEVEL, AND SUFFICIENTLY TIGHT TO PREVENT ESCAPE OF MORTAR. MORTAR SPILLAGE ONTO THE RIPRAP SLOPE IS NOT PERMITTED; THE CONTRACTOR SHALL MAKE PROVISION TO MAINTAIN MORTAR TIGHT FORMWORK AROUND ALL COLUMNS AND OTHER STRUCTURAL ELEMENTS.

MISCELLANEOUS STEEL

- ALL MISCELLANEOUS STEEL SHAPES AND PLATES SHALL CONFORM TO ASTM A36, AND SHALL BE UNCOATED, NO GALVANIZING.
- ALL BOLTS AND NUTS SHALL CONFORM TO ASTM A307, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
- HARDWARE: BOLTS AND MISCELLANEOUS HARDWARE NECESSARY FOR THE COMPLETE INSTALLATION SHALL BE UNCOATED. NO GALVANIZING IS REQUIRED. MALLEABLE IRON WASHERS SHALL BE USED UNDER ALL NUT AND BOLTS HEADS ON TIMBER, EXCEPT UNDER THE HEADS OF ECONOMY BOLTS. BOLTS SHALL BE TIGHTENED WHEN INSTALLED AND SHALL BE RETIGHTENED BEFORE FINAL ACCEPTANCE OF THE CONTRACT. ALL NAILS AND SPIKES SHALL BE UNCOATED, NO GALVANIZING. THE CONTRACTOR SHALL FURNISH ALL HARDWARE REQUIRED FOR COMPLETE INSTALLATION OF ALL TIMBER PRODUCTS.

REFERENCE DRAWINGS

REFERENCE DRAWINGS AND HISTORICAL PILE DRIVING RECORDS ARE AVAILABLE AT THE PORT'S ENGINEERING DEPARTMENT FOR REVIEW BY THE CONTRACTOR.

CONSTRUCTION LOADS

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CALCULATIONS AND DETERMINATIONS OF STRUCTURE CAPACITY FOR THE ANTICIPATED LOADS OF THE CONSTRUCTION EQUIPMENT TO BE USED.
- PROVIDE TEMPORARY SUPPORT TO EXISTING STRUCTURE AS REQUIRED TO MAINTAIN STABILITY, AVOID UNDUE STRESS, AND PREVENT DAMAGE PRIOR TO AND DURING REPAIR.
- CLEARLY DELINEATE AT DECK LEVEL, THE EXTENTS OF THE UNDERDOCK REPAIRS AND OPEN DECK AREA'S USING TEMPORARY FENCING.

DATUMS

HORIZONTAL CONTROL – NAD 83/91
VERTICAL CONTROL – MLLW/NOAA

BENCHMARK

TIDAL 22 (1960-1978 EPOCH)
NGS PID: #SY0536
NOAA VM: #13315
ELEVATION = 19.39 MLLW US FEET

ABBREVIATIONS

APA	AMERICAN PLYWOOD ASSOC.	LONG	LONGITUDINAL
APPO	APPROVED	LLH	LONG LEG HORIZONTAL
B/B	BACK TO BACK	LLV	LONG LEG VERTICAL
BLKG	BLOCKING	LP	LOW POINT
B	BOLT	MK	MARK
BUR	BUILT UP ROOFING	MS	MILD STEEL
CDP	CONTROLLED DENSITY FILL	MC	MOMENT CONNECTION
CTR	CENTER	MO	MASONRY OPENING DIMENSION
C/C	CENTER TO CENTER	NF	NEAR FACE
CONC	CONCRETE	NS	NEAR SIDE
CMU	CONCRETE MASONRY UNIT	NIC	NOT IN CONTRACT
CONN	CONNECTION, CONNECT	OPP	OPPOSITE
CNJ	CONSTRUCTION JOINT	O/O	OUT TO OUT
CJ	CONTROL JOINT	OA	OVERALL
DO	DITTO	PERP	PERPENDICULAR
DBL	DOUBLE	PWD	PLYWOOD
DS	DOWNSPOUT	PC	PIECE OF
DWL	DOWEL	PCC	PRECAST CONCRETE
ES	EACH SIDE	PCF	POUNDS PER CUBIC FOOT
EMBD	EMBEDDED/EMBEDMENT	PREFAB	PREFABRICATED
ENGR	ENGINEER	PROJ	PROJECTION, PROJECT
EJ	EXPANSION JOINT	PT	PRESSURE TREATED
EPS	EXPANDED POLYSTYRENE	RO	ROUGH OPENING
EXT	EXTERNAL/EXTERIOR	SCH	SCHEDULE
FAB	FABRICATE	SIP	STRUCTURAL INSULATED PANEL
FOS	FACE OF STUDS	SOG	SLAB ON GRADE
FOW	FACE OF WALL	SLV	SLEEVE
F/F	FACE TO FACE	SPCS	SPACES
FS	FAR SIDE	SQ	SQUARE
FIN	FINISH/FINISHED	STGD	STAGGERED
FO	FLOOR OPENING	STIFF	STIFFENER
FND	FOUNDATION	STRUCT	STRUCTURAL
GLB	GLU-LAM BEAM	T & B	TOP & BOTTOM
GWB	GYPSUM WALL BOARD	TOC	TOP OF CONCRETE
HDW	HARDWARE	TOS	TOP OF GRATING
HP	HIGH POINT	TOS	TOP OF STEEL
HM	HOLLOW METAL	U/S	UNDERSIDE
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
INTER	INTERMEDIATE	WSHR	WASHER
INT	INTERNAL/INTERIOR	WP	WORK POINT
KD	KILN-DRIED		
LOCN	LOCATION		
STRUCTURAL SHAPES			
C	CHANNEL		
L	ANGLE		
HSS	HOLLOW STRUCTURAL SHAPE		
SCH	PIPE SCHEDULE		
W	WIDE FLANGE		
S	S SHAPE		
M	MISCELLANEOUS SHAPE		

PILE SUMMARY TABLE

Grid	RPP/PP	Approx. Rip Rap Elevation ft	Approx. Mudline Elevation ft	Pile Tip Elevation ft	Specified Required		Utilize From Inventory		Order (1) Quantity	See Note
					Quantity	Length (ft)	Quantity	Length (ft)		
A	RPP	-19	-21	-60	8	85	5	85	8	
B	RPP	-16	-18	-57	2	85	2	85		
C	RPP	-13	-15	-54	2	80	2	80		
E	RPP	-7	-9	-48	4	75	4	75		
H	RPP	-1.3	-3.3	-45	1	70	1	70		
K	RPP	-1.1	-0.9	-40	8	65			8	

NOTE 1 : THE PORT HAS PURCHASED THESE PILES TO THE SPECIFIED REQUIRED LENGTH.

6500

G2.0

SHEET 2 OF 17

CONTRACTOR: 09/197
M. ID: 09/197
PHASE: BID SET

DATE: 9/25/12
SUB: 9/25/12
PROJ: 9/25/12
PRINTED BY: velenov Feb 12, 2013
PORT ADDRESS: 1200M PLAZA
TACOMA, WA 98401-1837

APPROVED: [Signature]
DIRECTOR: [Signature]
DATE: 9/25/12
SUB: 9/25/12
PROJ: 9/25/12
PRINTED BY: velenov Feb 12, 2013
PORT ADDRESS: 1200M PLAZA
TACOMA, WA 98401-1837

REVISION: 1
BY: RHM
DATE: 2/16/13

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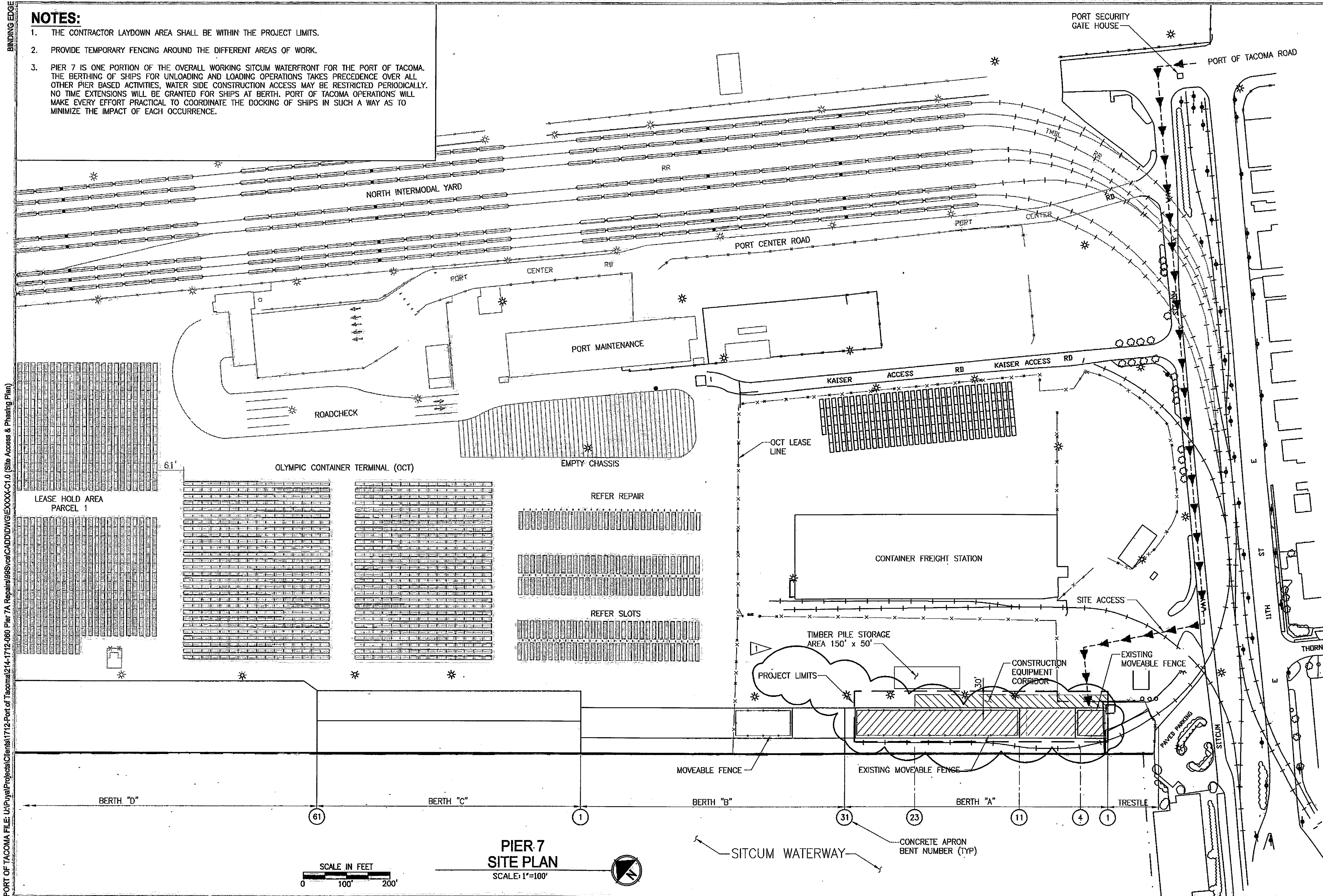
PIER 7A
STRUCTURAL REPAIRS
GENERAL NOTES

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PORT OF TACOMA FILE: U:\P\p\p\Projects\Clients\1712-Port of Tacoma\214-1712-060 Pier 7A Repairs\985\p\p\CADD\DWG\EXXX-C1.0 (Site Access & Phasing Plan)

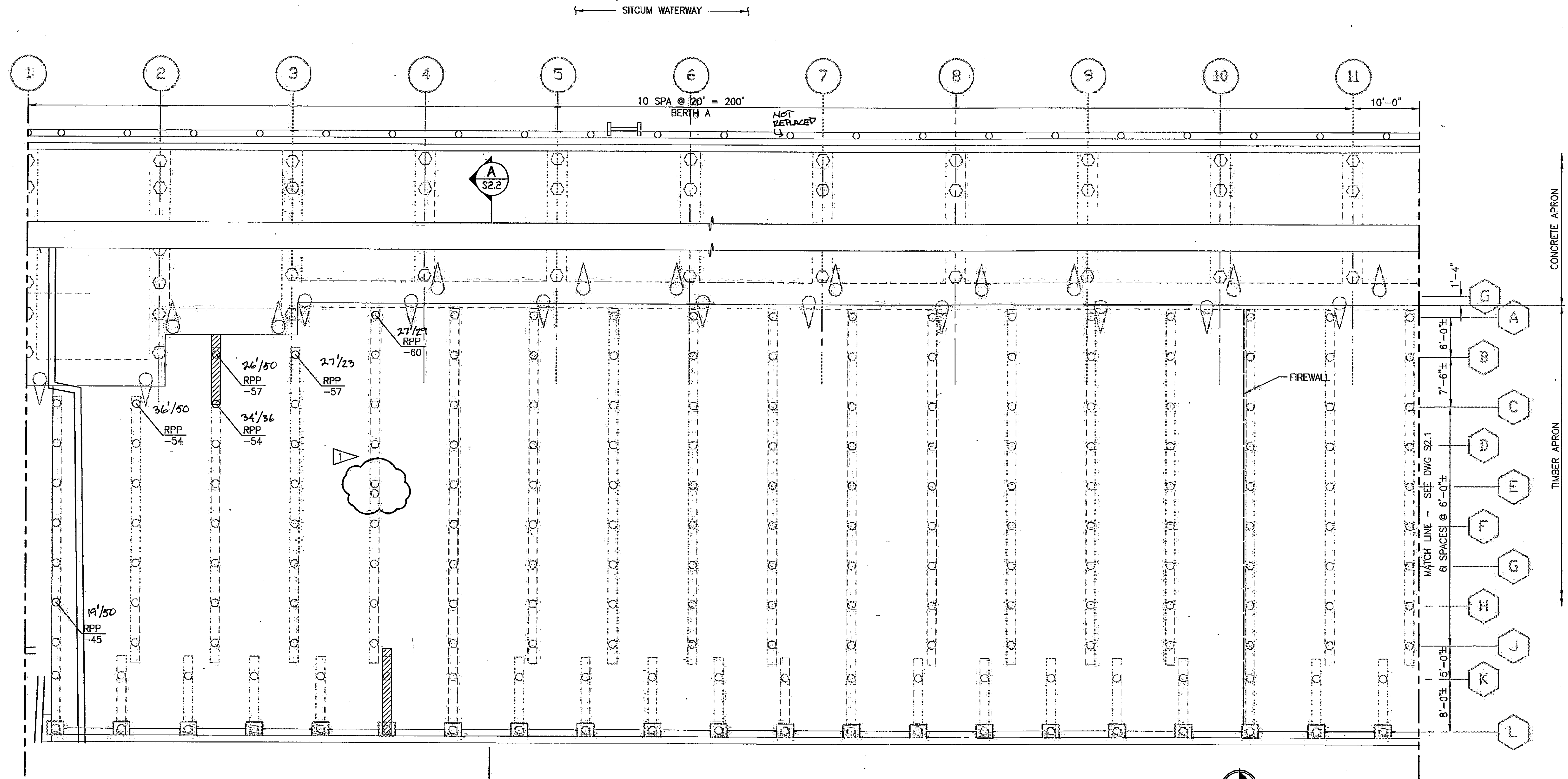
NOTES:

1. THE CONTRACTOR LAYDOWN AREA SHALL BE WITHIN THE PROJECT LIMITS.
2. PROVIDE TEMPORARY FENCING AROUND THE DIFFERENT AREAS OF WORK.
3. PIER 7 IS ONE PORTION OF THE OVERALL WORKING SITCUM WATERFRONT FOR THE PORT OF TACOMA. THE BERTHING OF SHIPS FOR UNLOADING AND LOADING OPERATIONS TAKES PRECEDENCE OVER ALL OTHER PIER BASED ACTIVITIES. WATER SIDE CONSTRUCTION ACCESS MAY BE RESTRICTED PERIODICALLY. NO TIME EXTENSIONS WILL BE GRANTED FOR SHIPS AT BERTH. PORT OF TACOMA OPERATIONS WILL MAKE EVERY EFFORT PRACTICAL TO COORDINATE THE DOCKING OF SHIPS IN SUCH A WAY AS TO MINIMIZE THE IMPACT OF EACH OCCURRENCE.



6500 C1.0 SHEET 3 OF 17	PIER 7A STRUCTURAL REPAIRS SITE ACCESS & PHASING PLAN	APPROVED: RHM 9/25/12 CHECKED BY DATE SUB 9/25/12 PROJ. ENGR DATE DIRECTOR ENG. DATE: 9/25/12 PRINTED BY: valendy Feb 12, 2013 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837	DATE: 2/6/13 APPR: RHM BY: RHM REVISION: 1 LIMITS OF WORK	Parametrix PLANNING PLANNING ENVIRONMENTAL SERVICES 1710 3RD AVENUE SE SUITE 100 PUALLUM WASHINGTON 98449 WWW.PARAMETRIX.COM	Port of Tacoma TACOMA PORT TACOMA, WA 98401

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LEGEND:

- RPP REPLACE PLUMB PILE 2
-XX TIP ELEVATION, SEE S2.3
AND NOTE 1
- PP REPLACE PILE POST SEE 1
S2.3
- EXISTING TIMBER PILE
- EXISTING 16 1/2" OCTAGONAL PRESTRESSED CONCRETE PILE
- EXISTING 16 1/2" OCTAGONAL PRESTRESSED CONCRETE BATTER PILE
- REPLACE TIMBER PILE CAP, SEE 5
S2.4
- REPLACE TIMBER DECK WITH CIP CONCRETE, SEE 9
S2.5

X'/X = Penetration in to MUD LINE
BLOWS PER FT

1 BERTH A PLAN - BENTS 1-11 SCALE: 1/8"=1'-0"



NOTES:

- THE REPLACEMENT PILES SHALL BE DRIVEN AT THE SAME LOCATION AS THE PILE BEING REPLACED. REMOVE EXISTING PILE PER THE GENERAL NOTES PRIOR TO INSTALLING NEW PILE. PILE CUT OFF ELEVATIONS VARY, SEE REFERENCE DRAWINGS. SEE SPECIFICATIONS FOR CUT OFF ALLOWANCE.
- WHERE PILE CAPS REQUIRE REPLACEMENT, THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO THE DECK AS NEEDED TO AVOID DISTRESS TO ADJACENT STRUCTURAL ELEMENTS. CONTRACTOR SHALL SUBMIT DETAILS FOR TEMPORARY SUPPORT TO THE PORT FOR REVIEW.
- SOUTH AND NORTH END OF DECK REMOVAL LIMITS SHALL BE CENTERED ON THE ACTUAL PILE CAPS.
- EXISTING UTILITIES THROUGHOUT THE STRUCTURE SUCH AS FIRE SPRINKLERS, ELECTRICAL AND COMMUNICATIONS ARE NOT SHOWN. PRIOR TO CONSTRUCTING REPAIRS, CONTRACTOR SHALL LOCATE AND TEMPORARY SUPPORT UTILITIES AS NECESSARY TO PERFORM WORK.

SCALE IN 1/8"=1'-0"
0 8 16

6500
S2.0
SHEET 4 OF 17

CON/CONS: 09197
M ID: 09197
PHASE: BID SET

PIER 7A
STRUCTURAL REPAIRS
BERTH A REPAIR PLAN

TOWNSHIP: 21 N RANGE: 3 E SECTION: 34
DAT-HRZ: NAD 83-07 VERT: MLLV 19.39' @ TIDE 22 1993
DRAWING SCALE: AS NOTED
PARCEL: 27

APPROVED:

CHECKED BY: DATE
SUB 9/25/12
PROJ. ENGR DATE
DIRECTOR ENG. DATE
PRINTED BY: valendiv Feb 12, 2013
PORT ADDRESS: LINE SITCUM PLAZA
TACOMA, VA 98401-1837



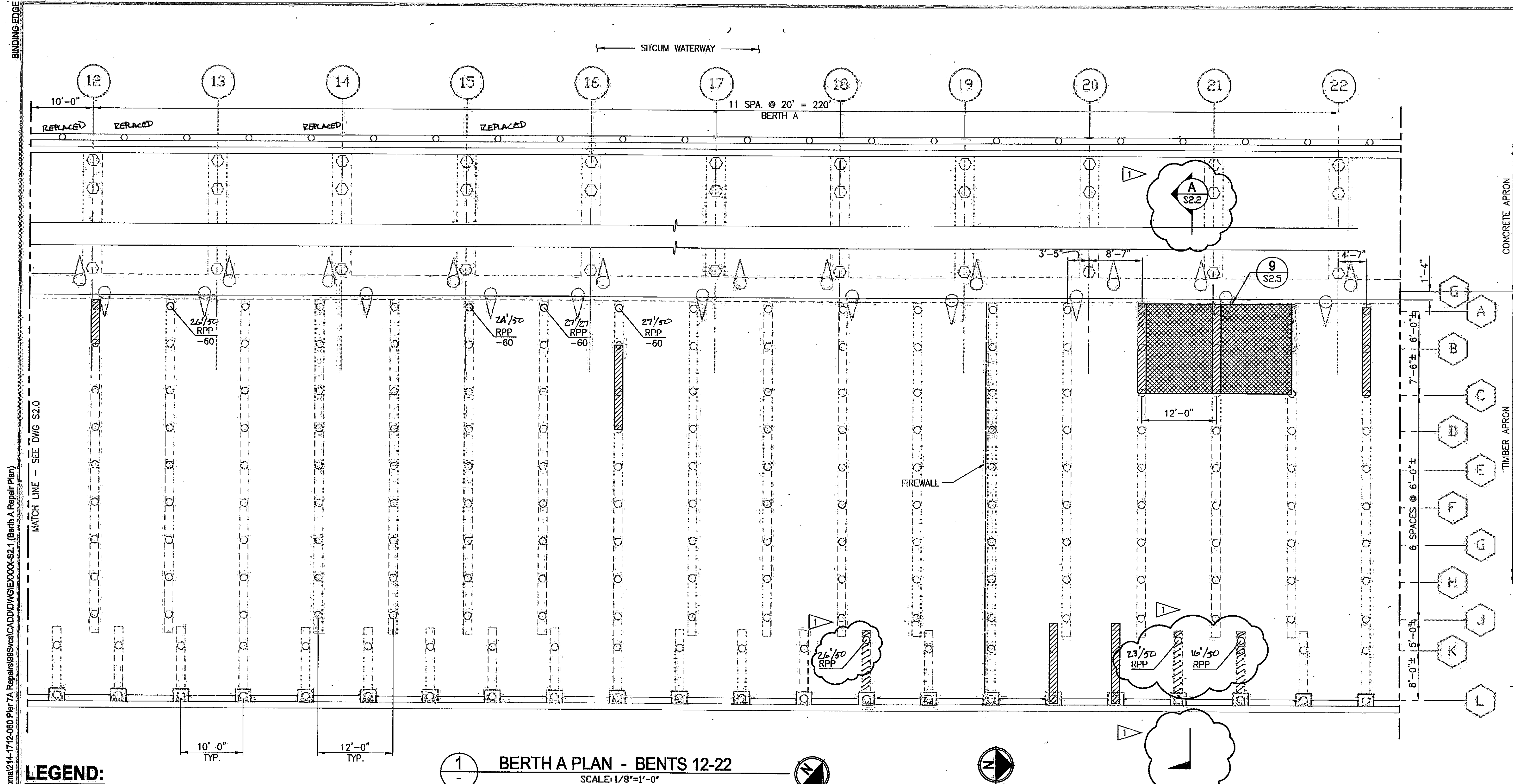
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Port of Tacoma
PO BOX 887 TACOMA, WA 98401-0887

MARK: 1 REVISION: REMOVE RPP GRID 4
BY: RHM
APPR: DATE: 2/6/13

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PORT OF TACOMA FILE: \\P:\P\Projects\Clients\1712-Port of Tacoma\214-1712-080 Pier 7A Repairs\9858s\CADD\DWG\EG000X-S2.1 (Berth A Repair Plan)



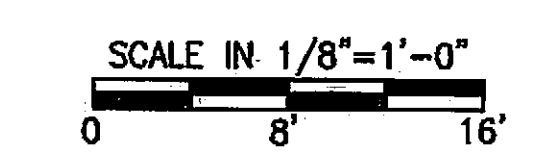
LEGEND:

- RPP REPLACE PLUMB PILE
XX TIP ELEVATION, SEE
AND NOTE 1
- PP REPLACE PILE POST SEE
- EXISTING TIMBER PILE
- EXISTING 16 1/2" OCTAGONAL
PRESTRESSED CONCRETE PILE
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PRESTRESSED CONCRETE BATTER PILE
- REPLACE TIMBER PILE CAP, SEE
- REPLACE TIMBER DECK
WITH CIP CONCRETE, SEE

$\frac{X}{K} = \frac{\text{PENETRATION IN TO MUDDLINE}}{\text{BLOWS PER FOOT}}$

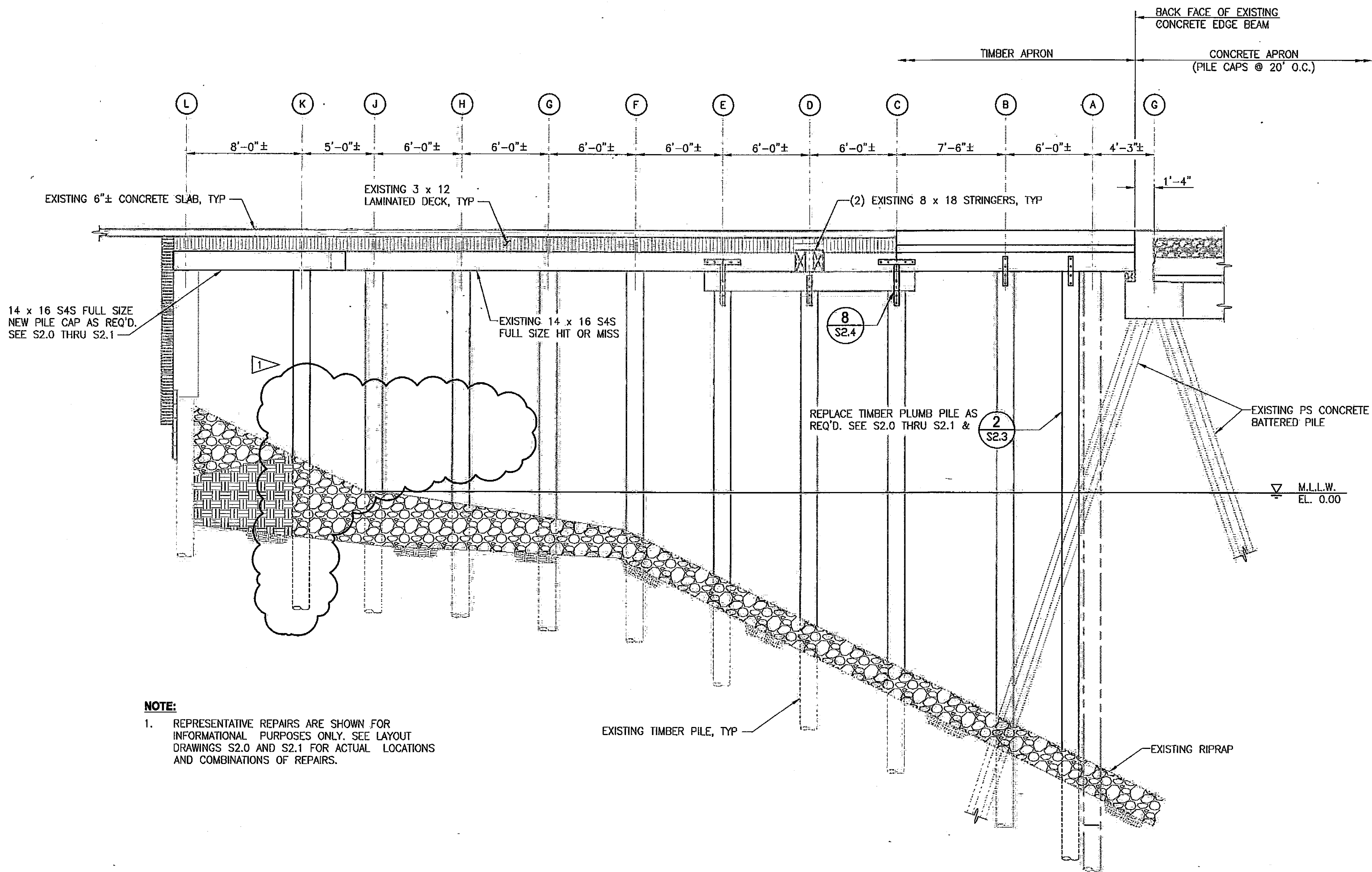
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6500 S2.1 SHEET 5 OF 17	PIER 7A STRUCTURAL REPAIRS BERTH A REPAIR PLAN				APPROVED: RHM 9/25/12 CHECKED BY DATE SUB 9/25/12		Port of Tacoma ENGINEERING, PLANNING, ENVIRONMENTAL SERVICES 1700 10TH AVENUE, SUITE 100 TACOMA, WA 98401-1837 P.O. BOX 887 TACOMA, WA 98401-0887 WWW.PORTOFTACOMA.WA.GOV	
	TOWNSHIP: 21 N		RANGE: 3 E		SECTION: 34		BY: RHM	
	DATE: 09/19/17		DATE: 09/25/12		DATE: 09/25/12		DATE: 09/25/12	
	M. ID: 09197		M. ID: 09197		M. ID: 09197		M. ID: 09197	
PHASE: BID SET		DRAWING SCALE: AS NOTED		PORT ADDRESS: ONE SITCUM PLAZA		CHANGE PP TO RPP		
				TACOMA, WA 98401-1837		2/6/13		

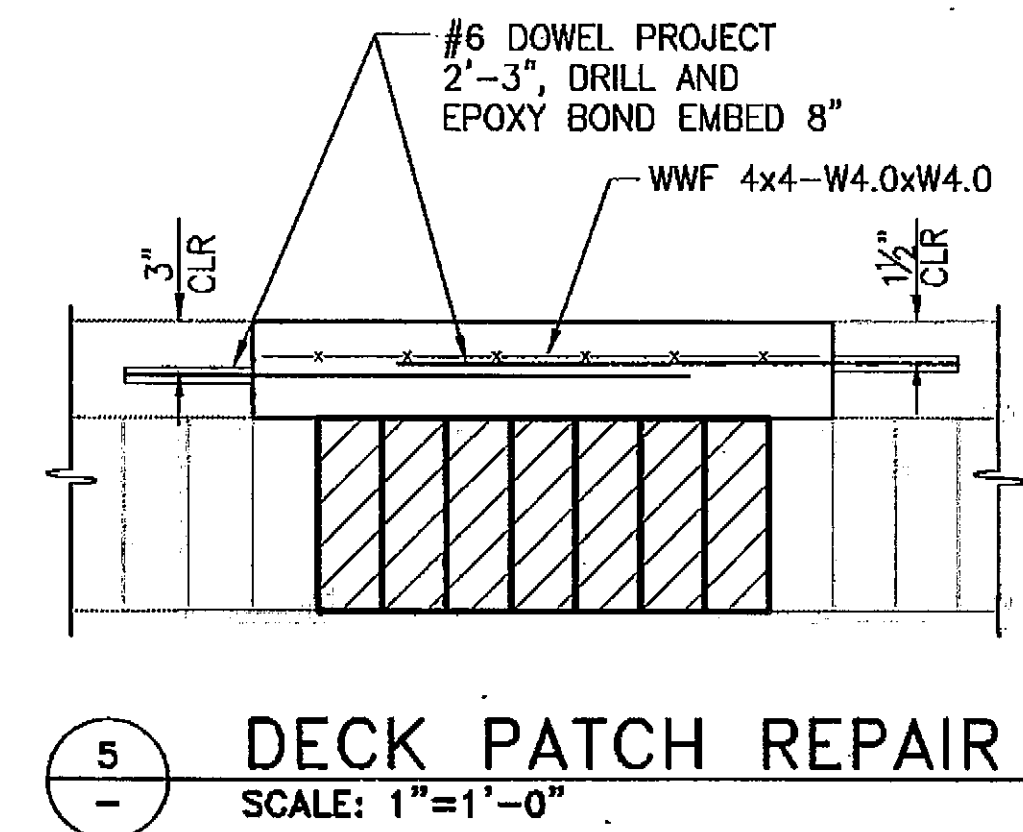
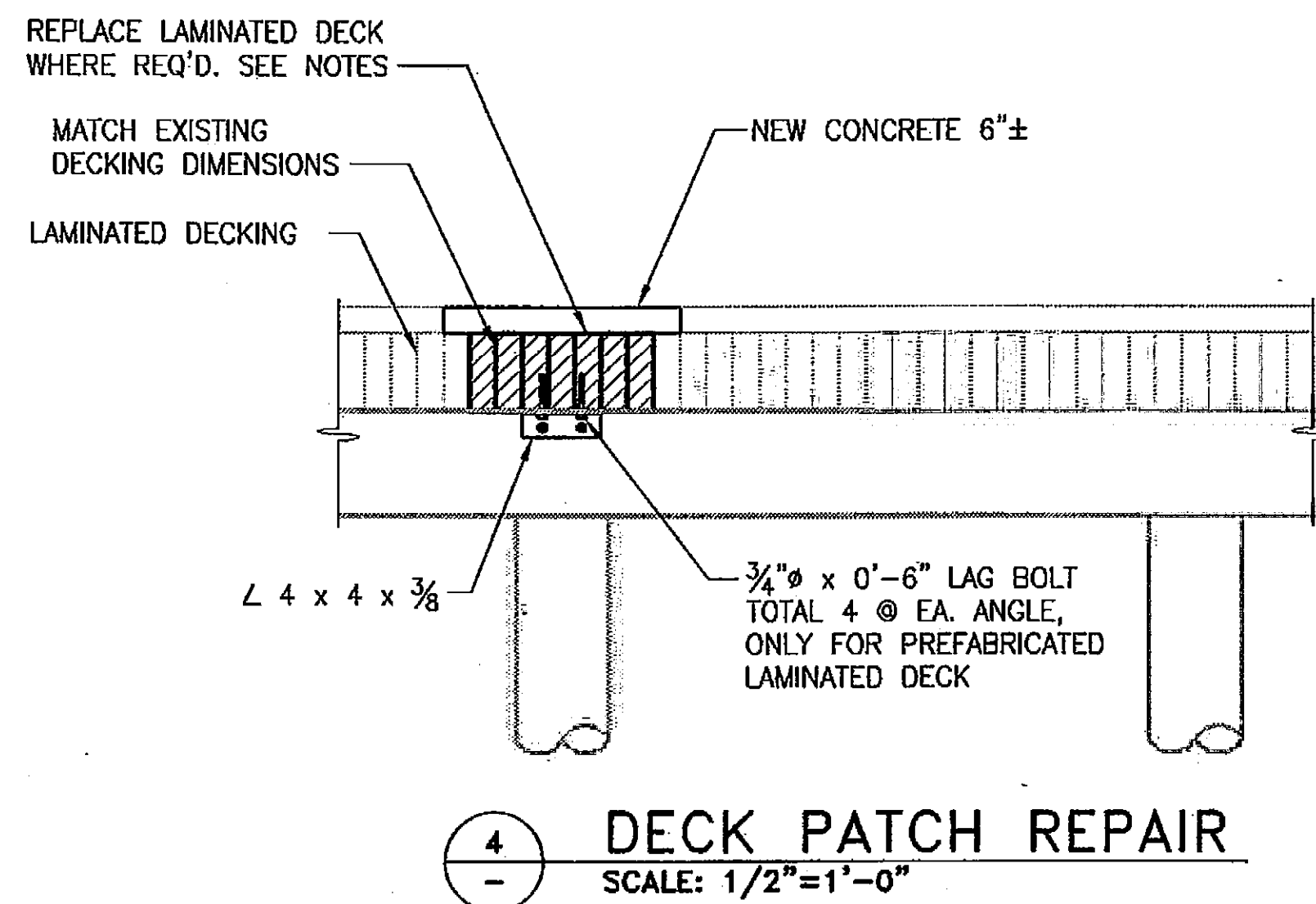
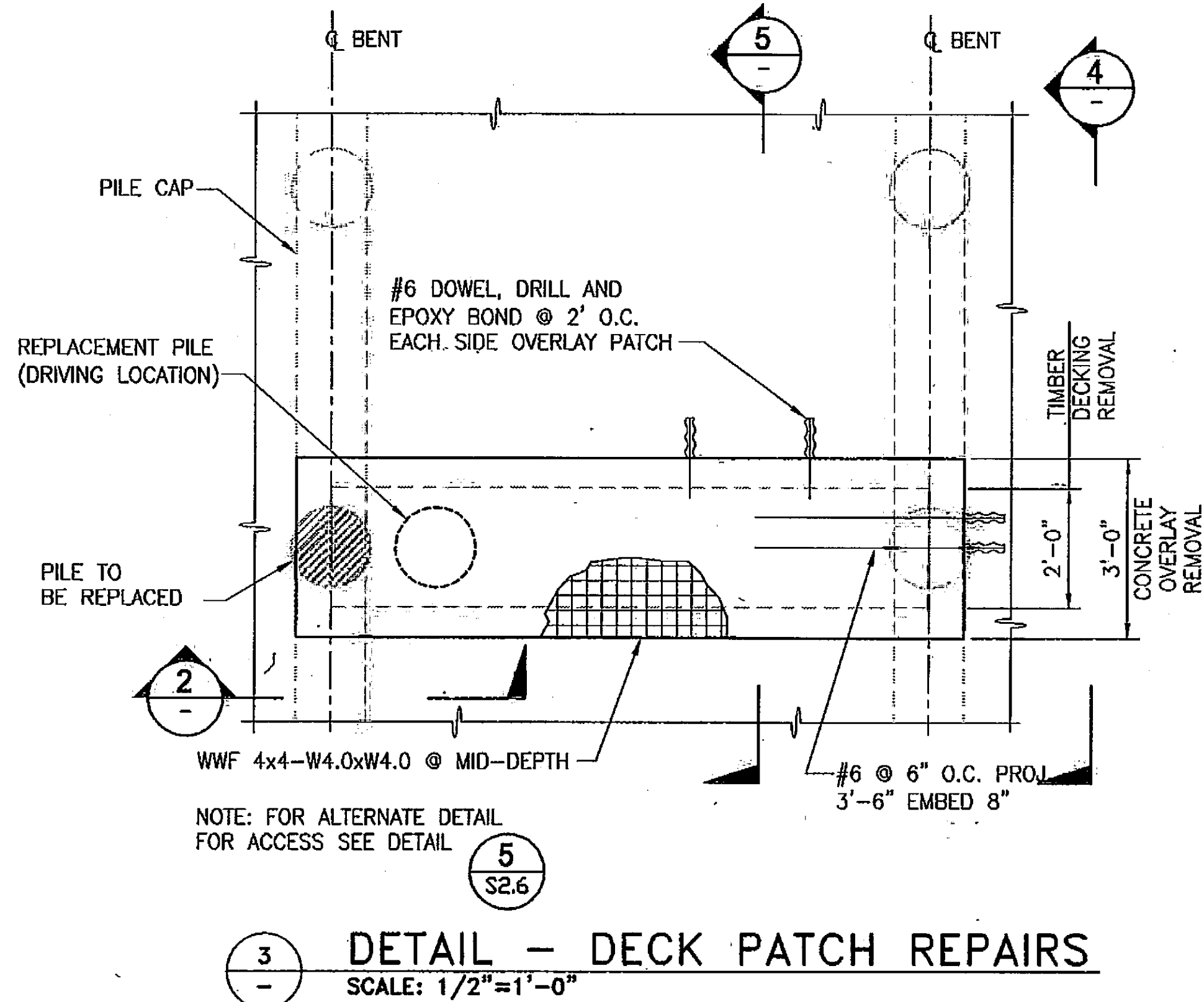
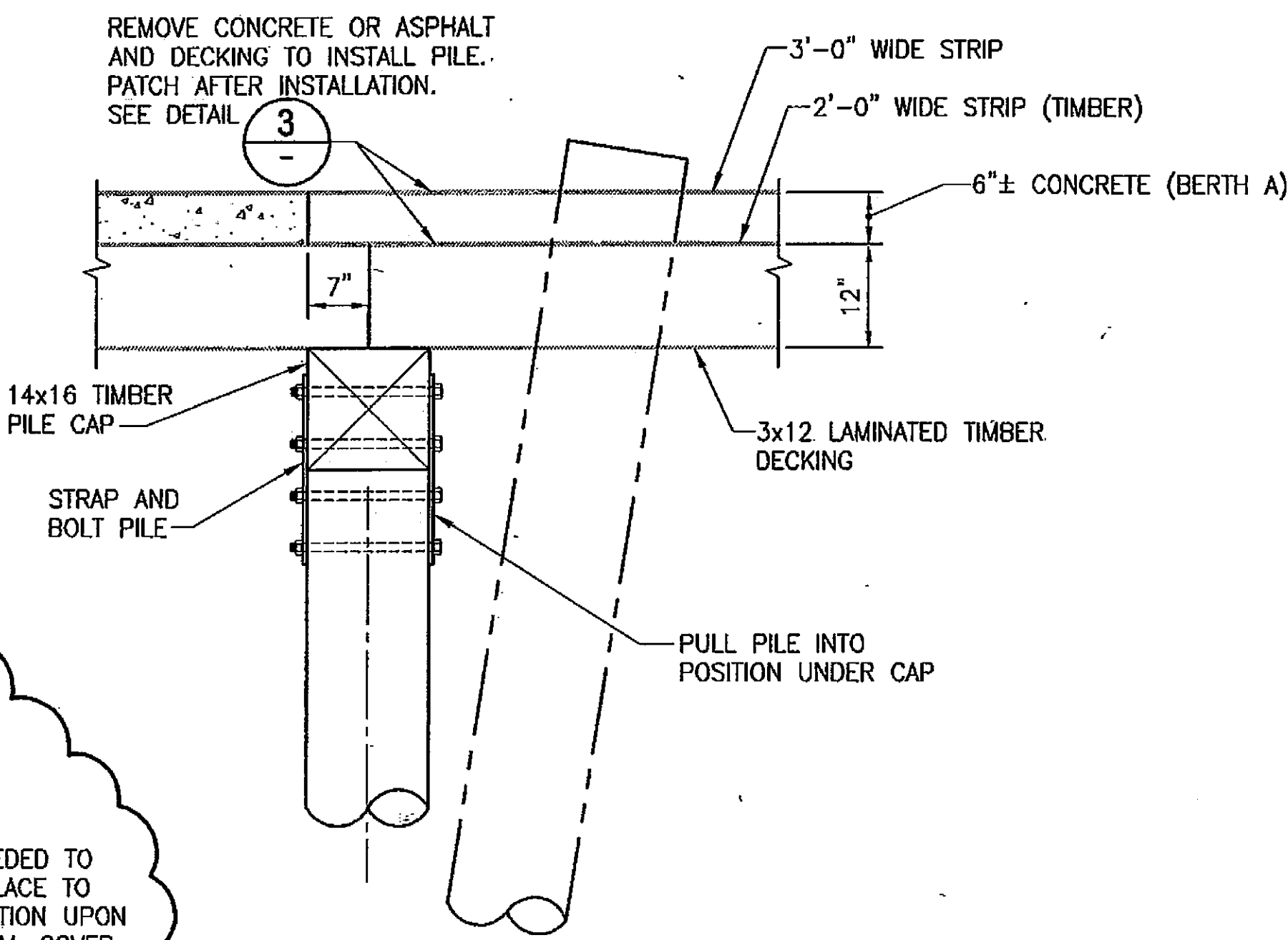
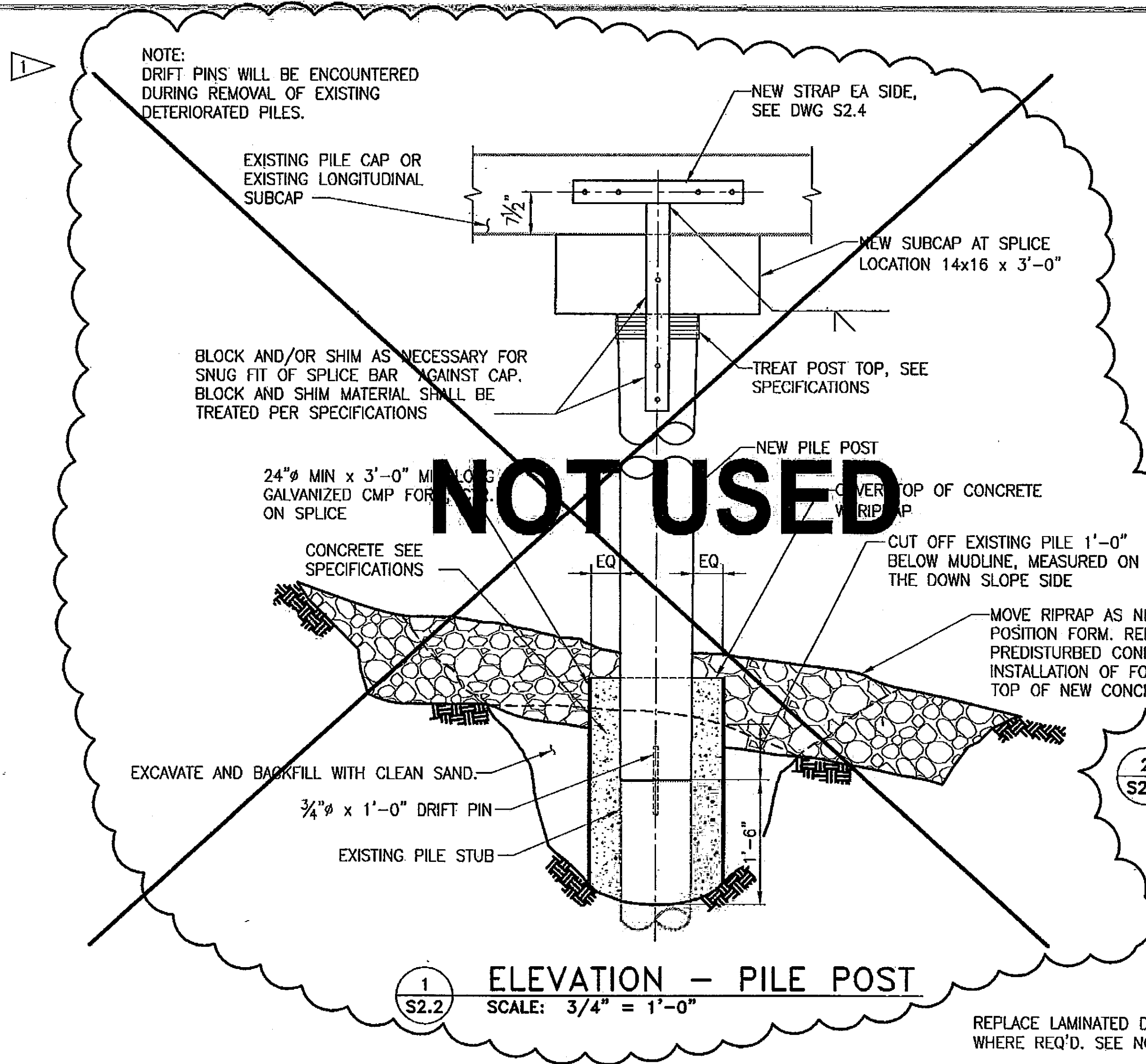
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NOTE:
1. REPRESENTATIVE REPAIRS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. SEE LAYOUT DRAWINGS S2.0 AND S2.1 FOR ACTUAL LOCATIONS AND COMBINATIONS OF REPAIRS.

A
ELEVATION - BERTH A
SCALE: 1/4"=1'-0"

6500 S2.2 SHEET 6 OF 17	PIER 7A STRUCTURAL REPAIRS SECTION AT BERTH A				APPROVED: RHM 9/25/12 CHECKED BY DATE SJB 9/25/12 PROJ. ENGR DATE DIRECTOR ENG. DATE PRINTED BY: Volodya Feb 12, 2013 PORT ADDRESS: SITUUM PLAZA TACOMA, VA 98401-1837	
	TOWNSHIP: 21 N RANGE: 3 E SECTION: 34 DAT-HRZ: NAD 83-07 VERT: MLLV 1939' @ Tide 22 1933 PARCEL: 27 DRAWING SCALE: AS NOTED				REVISION: MARK: 1 REVISION: 1 BY: RHM DATE: 2/6/13	
	CONTRACT/CONS: 091197 PHASE: BID SET				REVISION: MARK: 1 REVISION: 1 BY: RHM DATE: 2/6/13	
	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION				REVISION: MARK: 1 REVISION: 1 BY: RHM DATE: 2/6/13	



NOTES:

1. WHERE BEING REPLACED, LAMINATE DECK WITH 3/8" x 0'-10" SPIKES @ 1'-6" O.C. ALTERNATELY NEAR THE UPPER AND LOWER EDGES AND ALSO STAGGERED ONE THIRD OF THE SPACING IN THE ADJACENT LAMINATION. TOE-NAIL EACH LAMINATION TO THE PILE-CAP WITH 2 - 40d COMMON NAILS AS FAR AS PRACTICABLE, EXCEPT IF PREFABRICATED, USE ANGLES AND LAG BOLTS. SEE NOTE 2.

2. CONNECT REPLACEMENT LAMINATED DECK TO PILE CAP WITH L4x4x3/8 x 1'-0". EA. ANGLE TO HAVE 2 LAG BOLTS INTO PILE CAP AND 2 LAG BOLTS INTO REPLACEMENT LAMINATED DECK. BOLT SPACING TO BE 0'-6" O.C.

6500

S2.3

SHEET 7 OF 17

CONT/CONS: 09197

PHASE: BID SET

PIER 7A
STRUCTURAL REPAIRS
PILE REPLACEMENT DETAILS

TOWNSHIP: 21 N RANGE: 3 E SECTION: 34

DATE: 09/19/12

PARCEL: 27

APPROVED:

CHECKED BY:

DATE:

DATE:

DATE:

DATE:

RHM

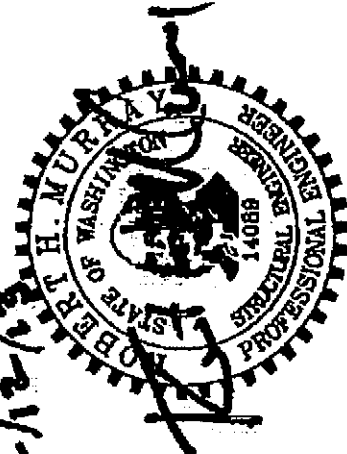
9/25/12

DATE

DATE

DATE

DATE



Parametrix

ENGINEERING PLANNING ENVIRONMENTAL SCIENCE

PORT OF TACOMA

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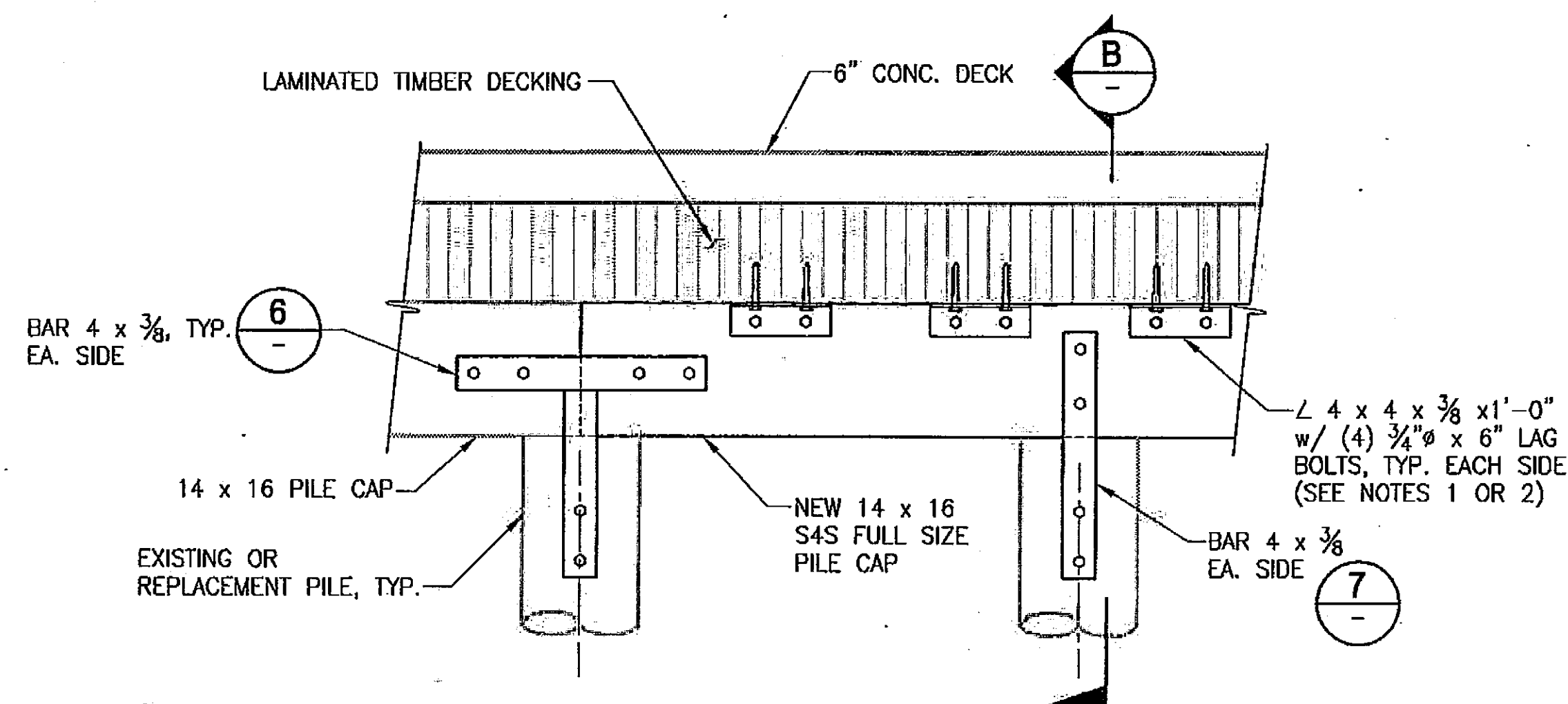
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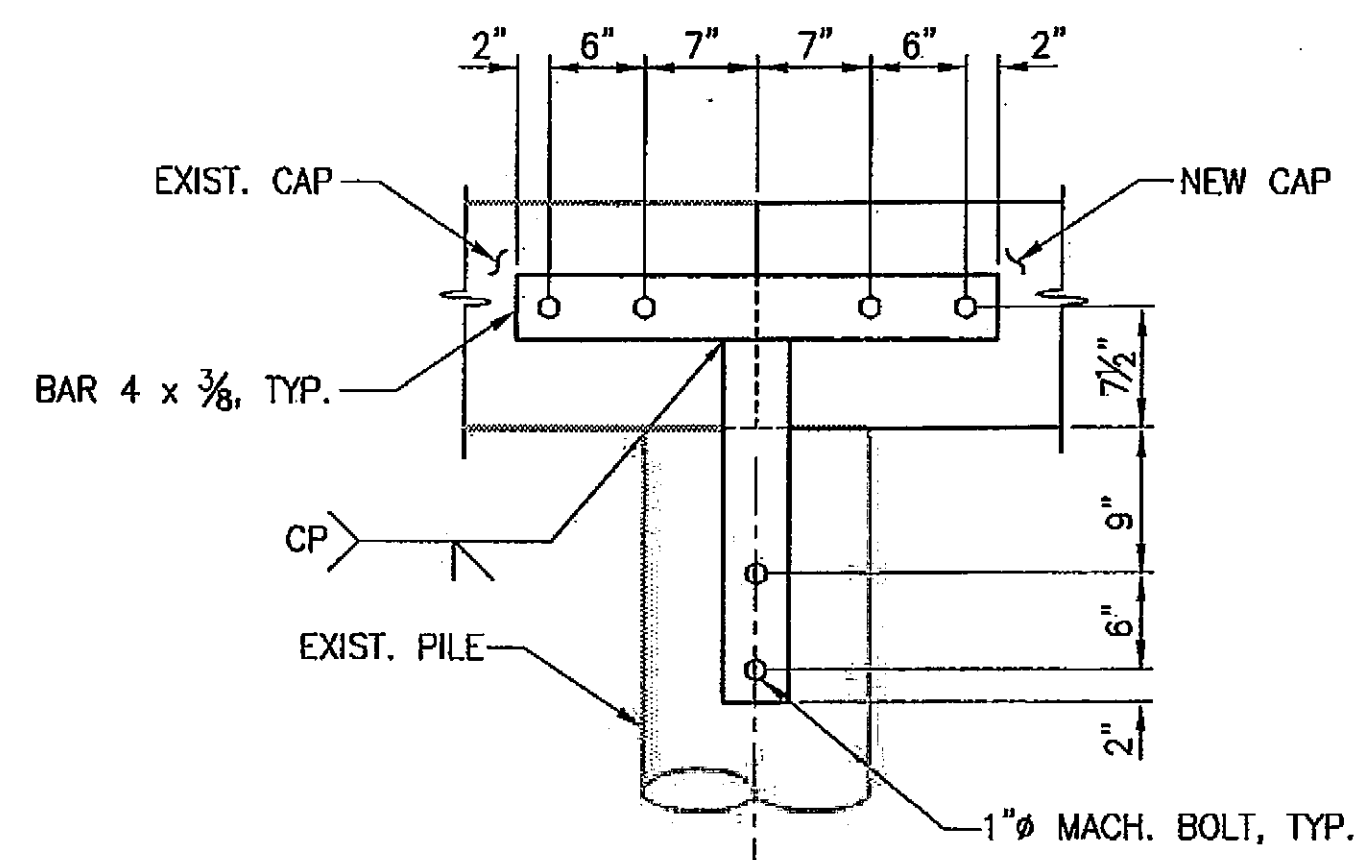
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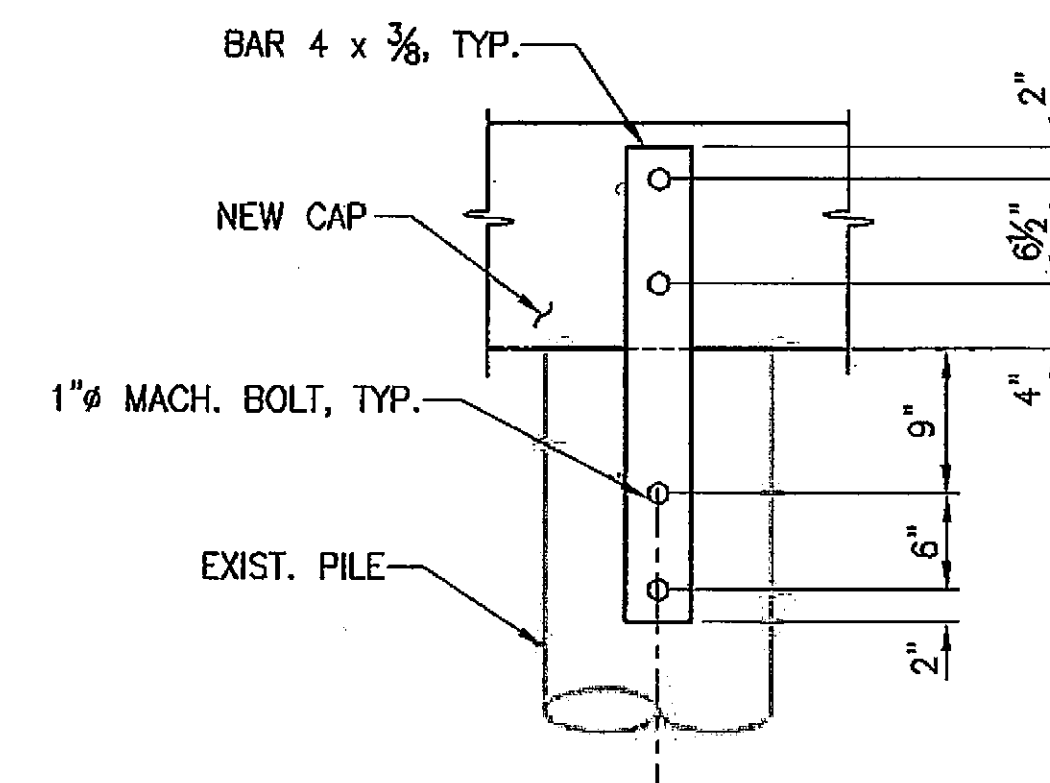
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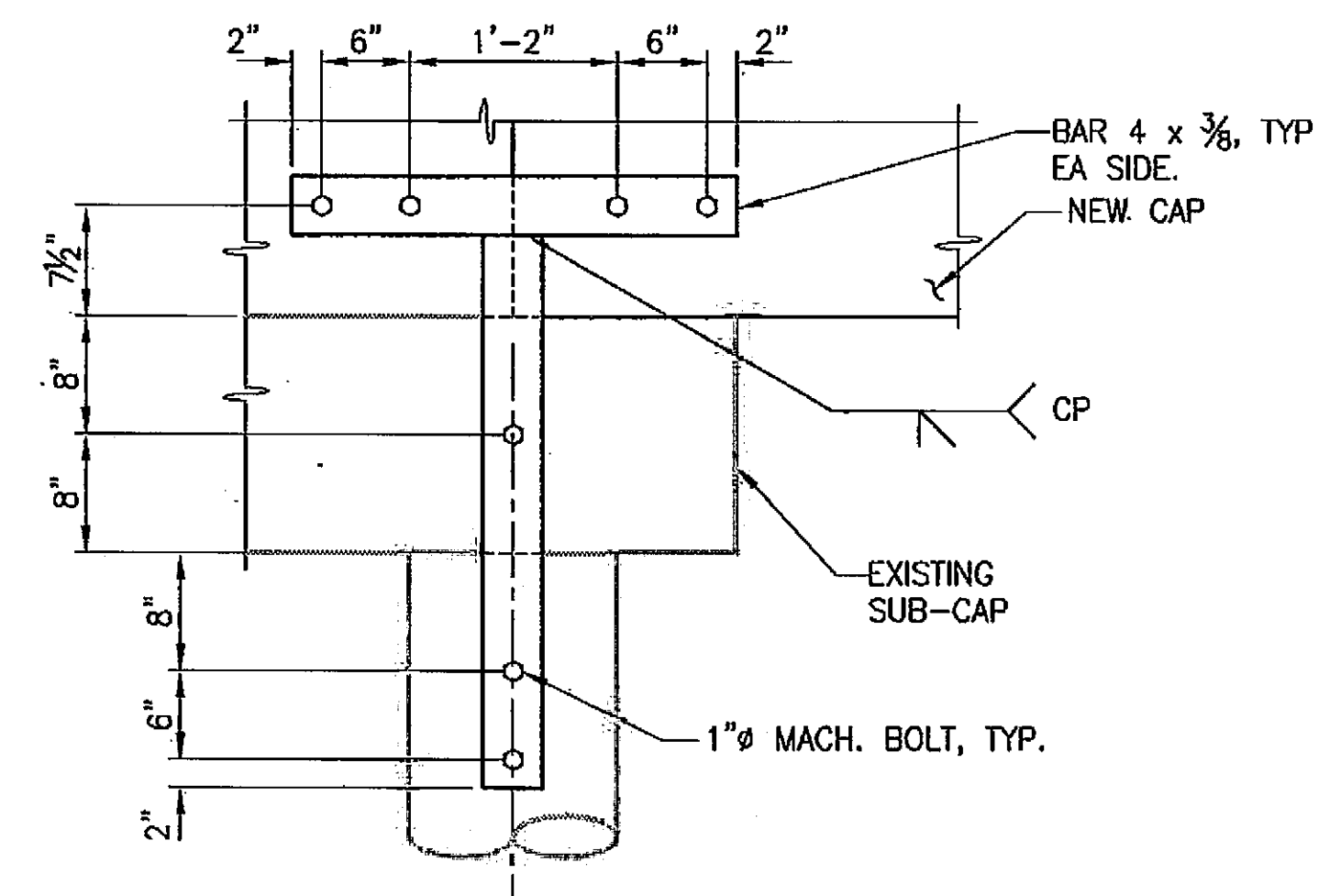
5
S2.0
PILE CAP REPL. DETAIL
SCALE: 3/4" = 1'-0"



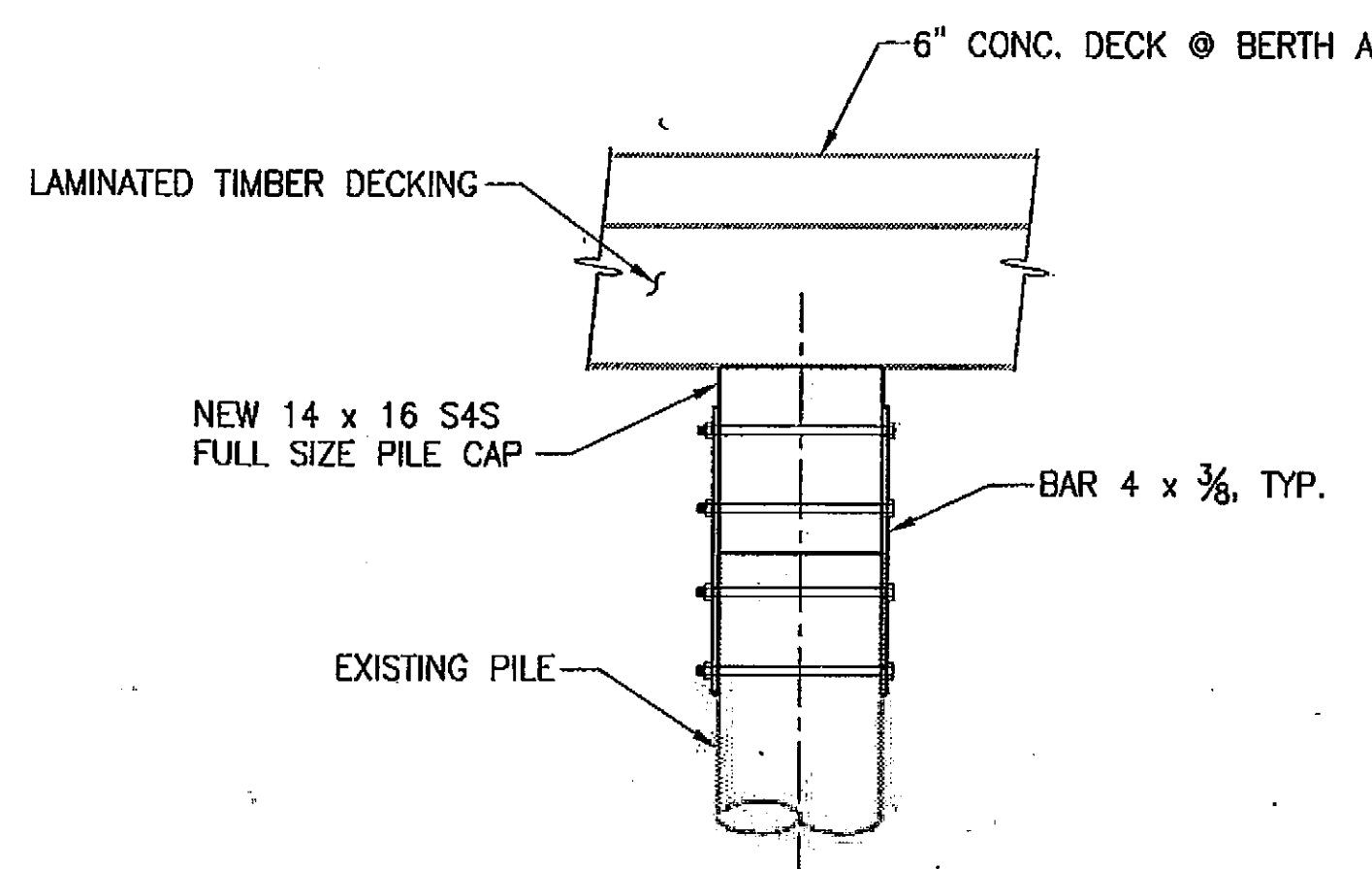
6
S2.0
DETAIL
SCALE: 1" = 1'-0"



7
-
DETAIL
SCALE: 1" = 1'-0"



8
S2.2
DETAIL
SCALE: 1" = 1'-0"

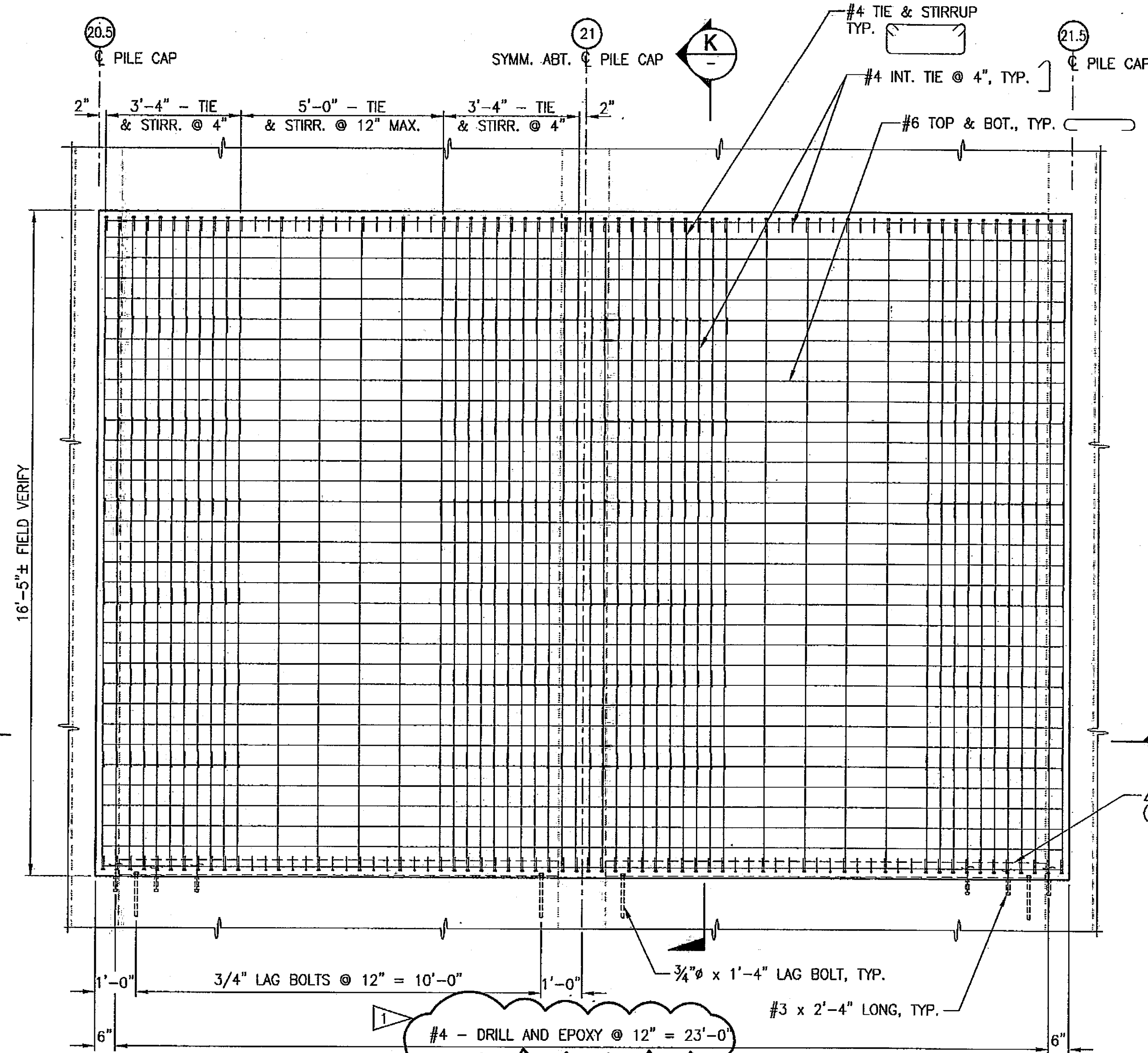


B
-
SECTION
SCALE: 3/4" = 1'-0"

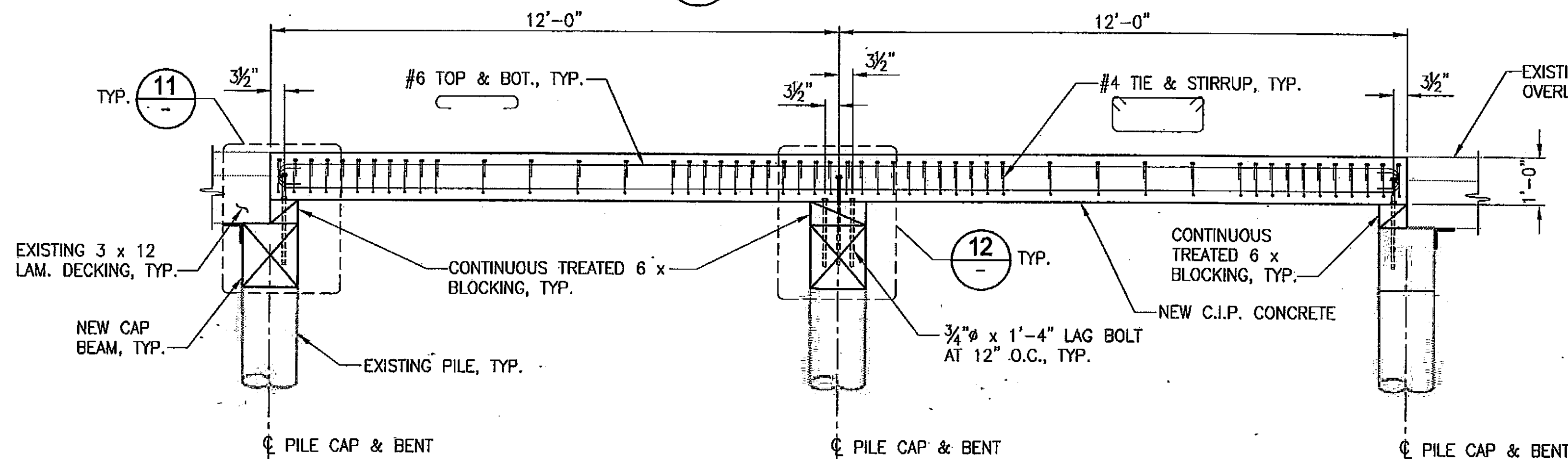
NOTES:

1. CONNECT LAMINATED DECK TO REPLACEMENT PILE CAP WITH L4x4x3/8 x 1'-0" AT 2'-0" O.C. (MAX) EA. SIDE AS SHOWN. EA. ANGLE TO HAVE 2 LAG BOLTS INTO PILE CAP AND 2 LAG BOLTS INTO REPLACEMENT LAMINATED DECK. BOLT SPACING TO BE 0'-6" O.C. ANGLES SHALL BE STAGGERED 1'-0" MIN. ON EITHER SIDE OF PILE CAP WHERE DECKING IS CONTINUOUS ACROSS A CAP.
2. PILE CAP REPLACEMENT ON 20.5 GRID C-A AND NON PILE CAP REPLACEMENT ON 21.5 GRID C-A. ANGLE TO BE INSTALLED ON ONE SIDE OF CAP ONLY.
3. PILE CAP REPLACEMENT ON 27.5 GRID C-A AND NON PILE CAP REPLACEMENT ON 28.5 GRID C-A. ANGLE TO BE INSTALLED ON ONE SIDE OF CAP ONLY.
4. NON PILE CAP REPLACEMENT ON 27.5 GRID J-L AND NON PILE CAP REPLACEMENT ON 28.5 GRID J-L. ANGLE TO BE INSTALLED ON ONE SIDE OF CAP ONLY.
5. NON PILE CAP REPLACEMENT ON 28.5 GRID D-G AND PILE CAP REPLACEMENT ON 29.5 GRID D-G. ANGLE TO BE INSTALLED ON ONE SIDE OF CAP ONLY.

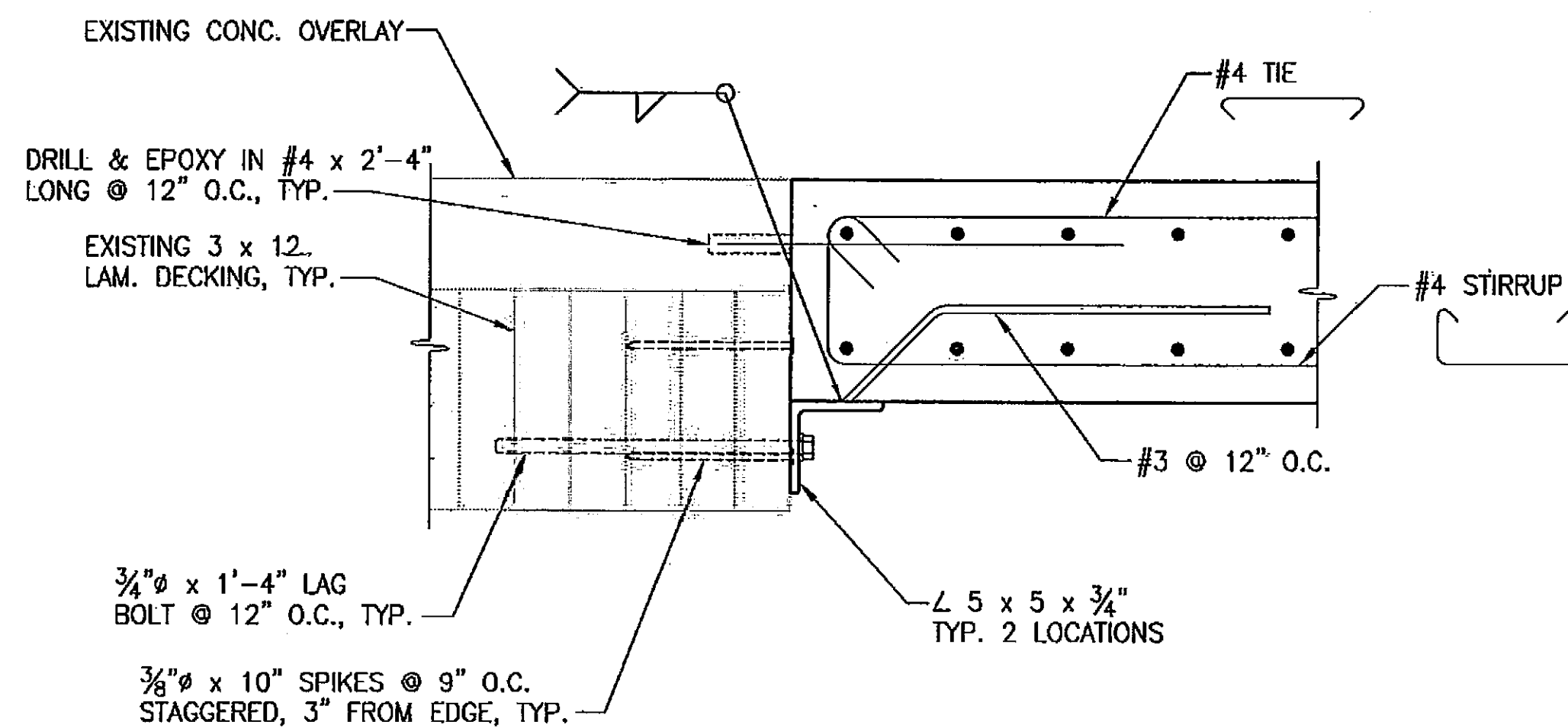
6500 S2.4 SHEET 8 OF 17	PIER 7A STRUCTURAL REPAIRS PILE CAP DETAILS		APPROVED:	CHECKED BY: RHM DATE: 9/25/12	PROJECT: 34 RANGE: 3 E TOWNSHIP: 21 N DAT-HRZ: NAD 83-07 VERT: MLLV 1939' @ TIDE 22 1933 PARCEL: 27
	DIRECTOR: ENG. DATE: 9/25/12 PRINTED BY: valentyn Feb 12, 2013 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, VA 98401-1837		MARK: 1 REVISION: 1 BY: RHM DATE: 2/6/13	ADDITIONAL NOTES: 1 ADDED	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION



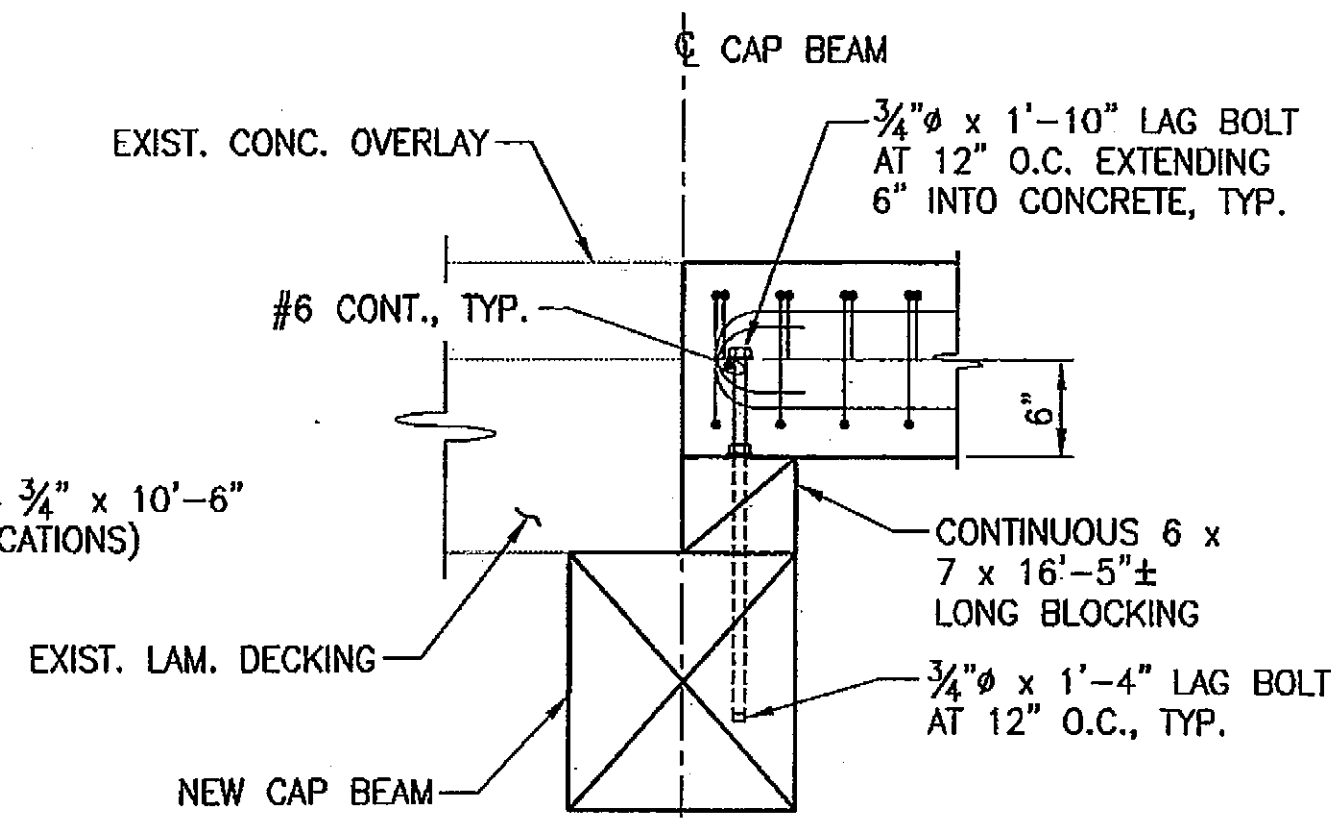
9
TYPICAL DECK REPL.
PLAN DETAIL
SCALE: 1/2" = 1'-0"



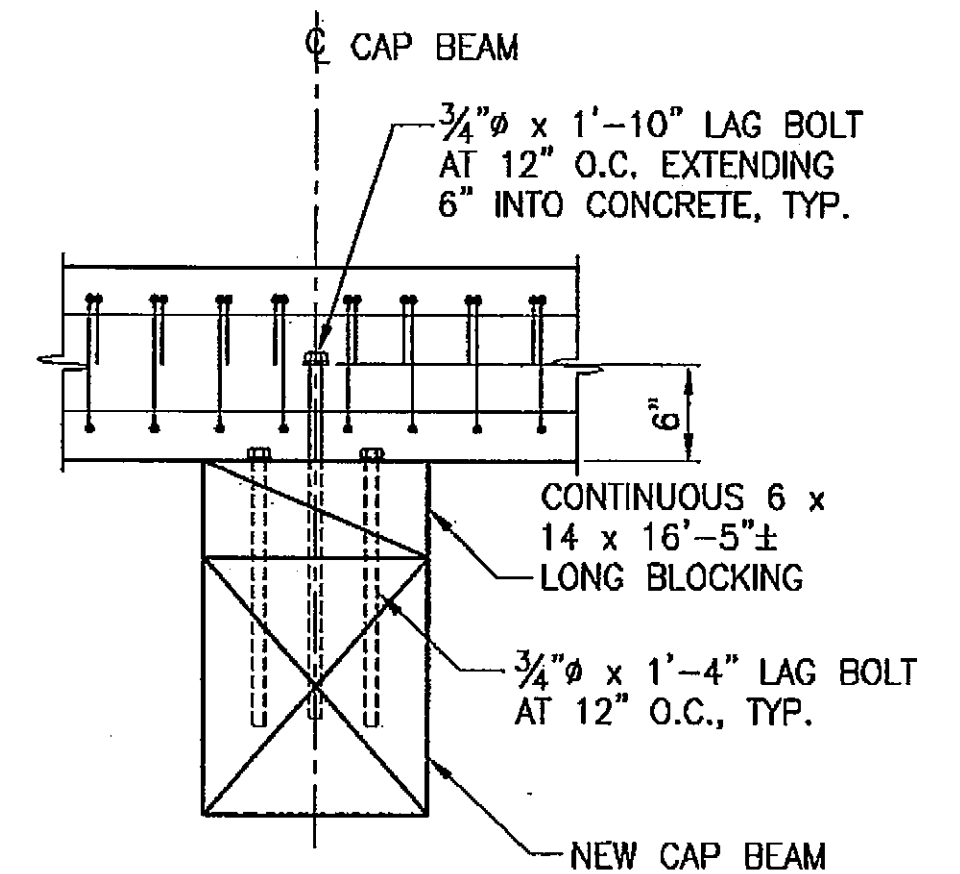
L
SECTION
SCALE: 1/2" = 1'-0"



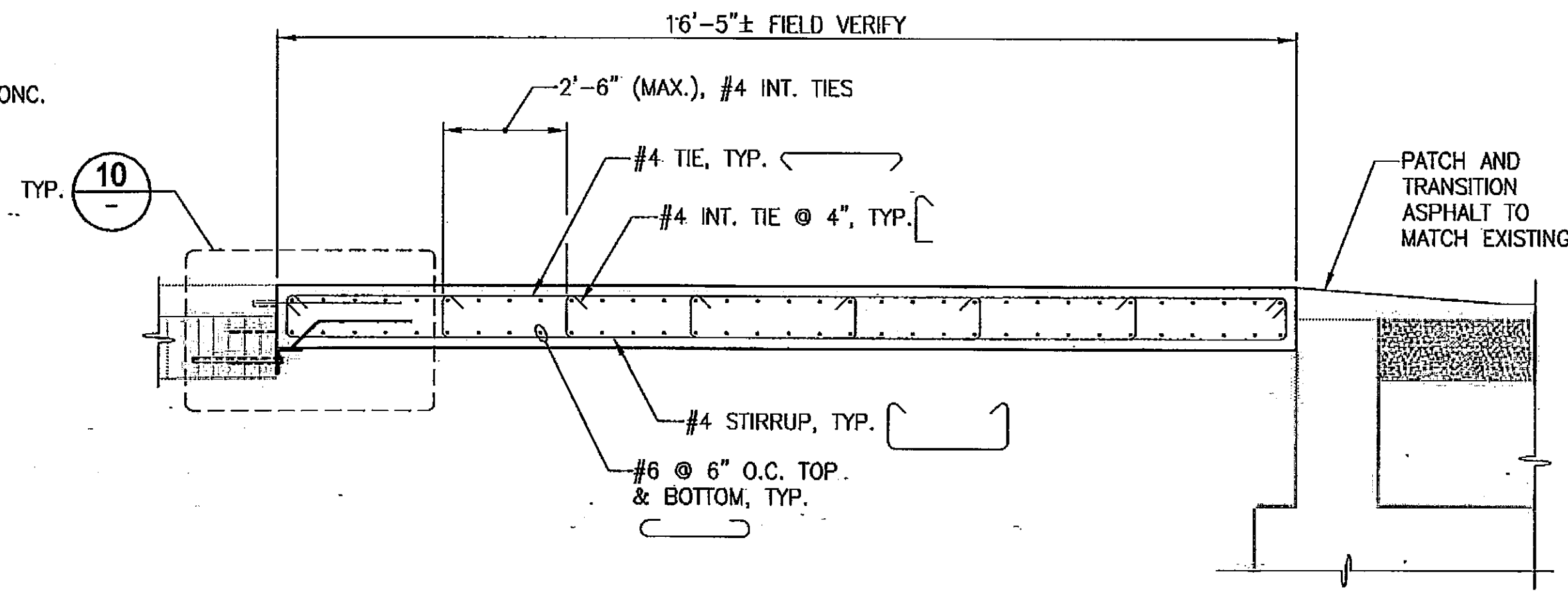
10
DETAIL
SCALE: 1-1/2" = 1'-0"



11
DETAIL
SCALE: 1" = 1'-0"

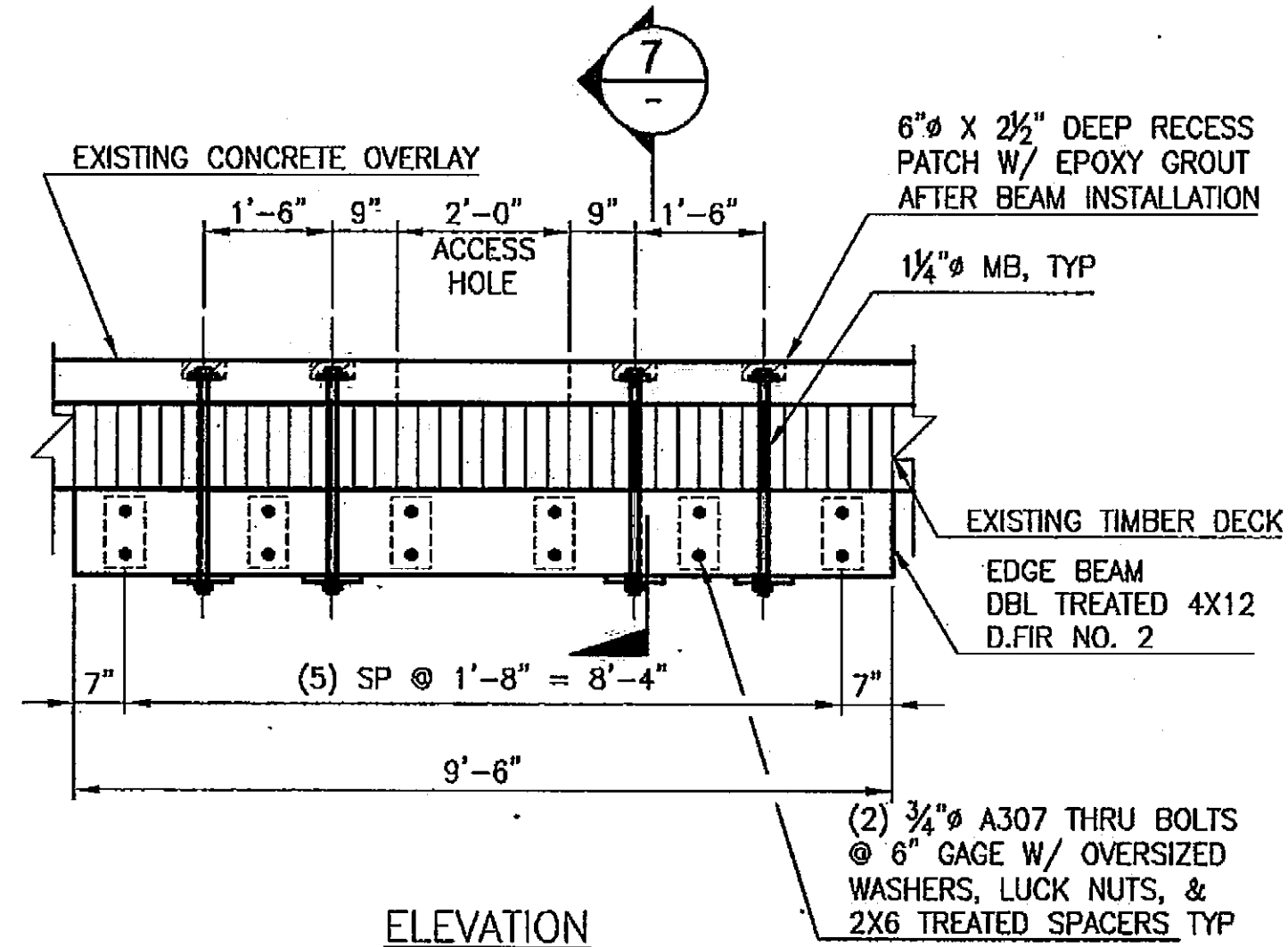
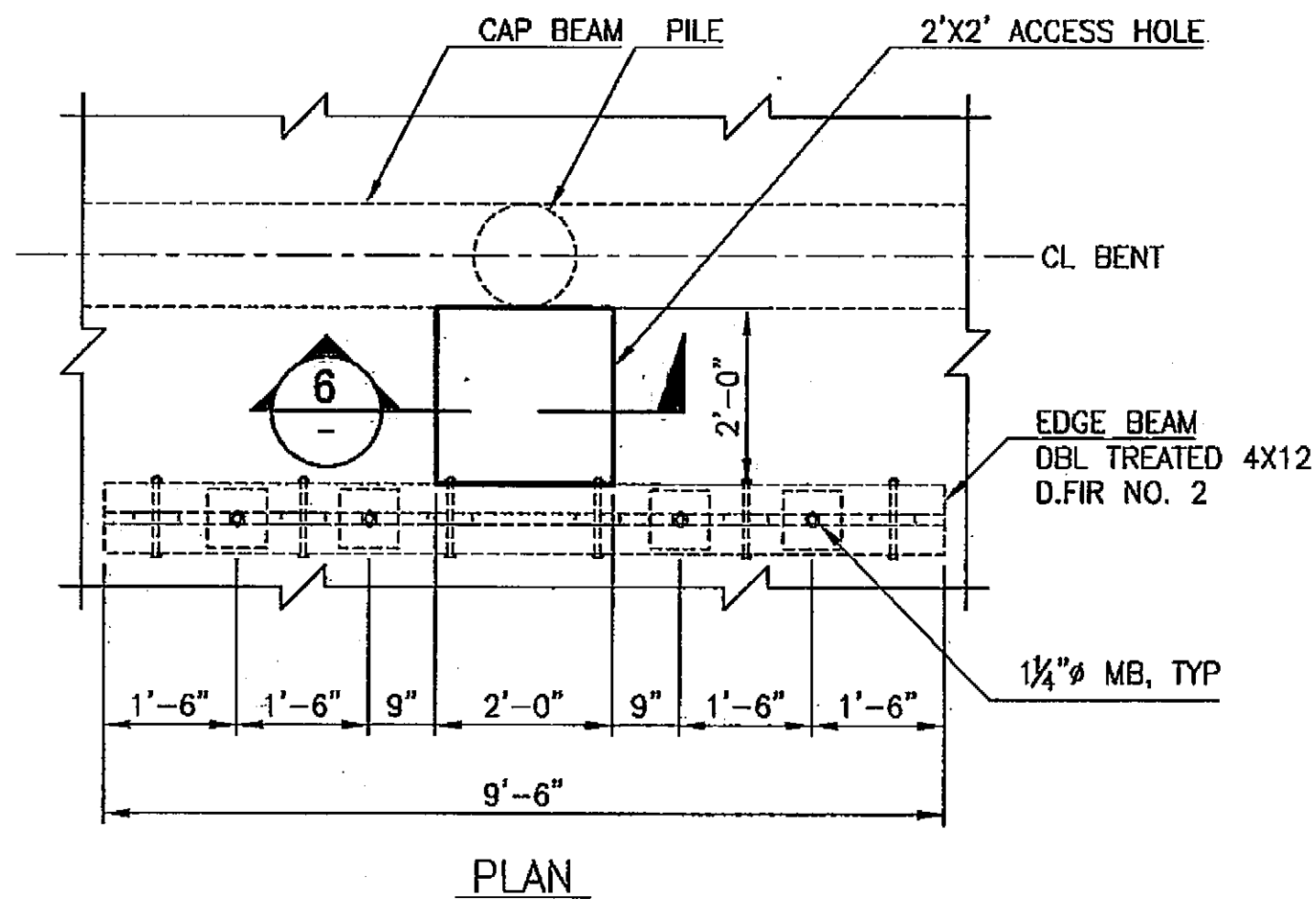


12
DETAIL
SCALE: 1" = 1'-0"

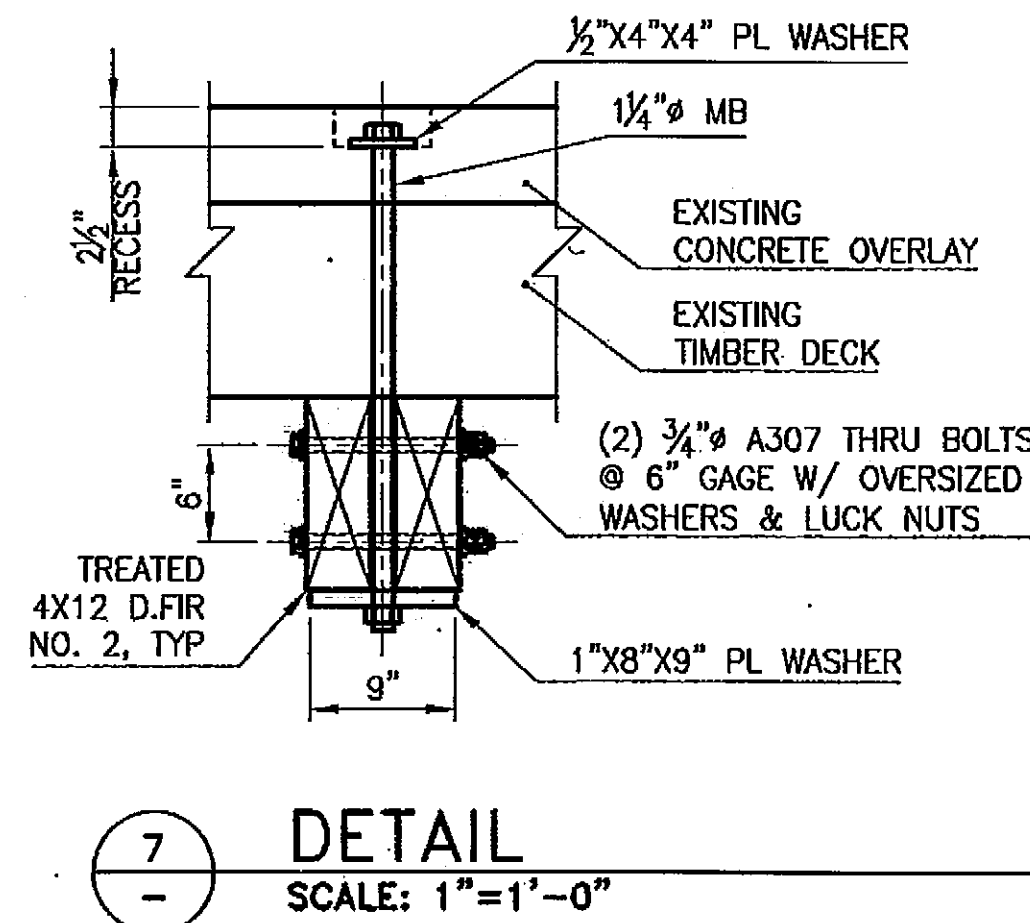
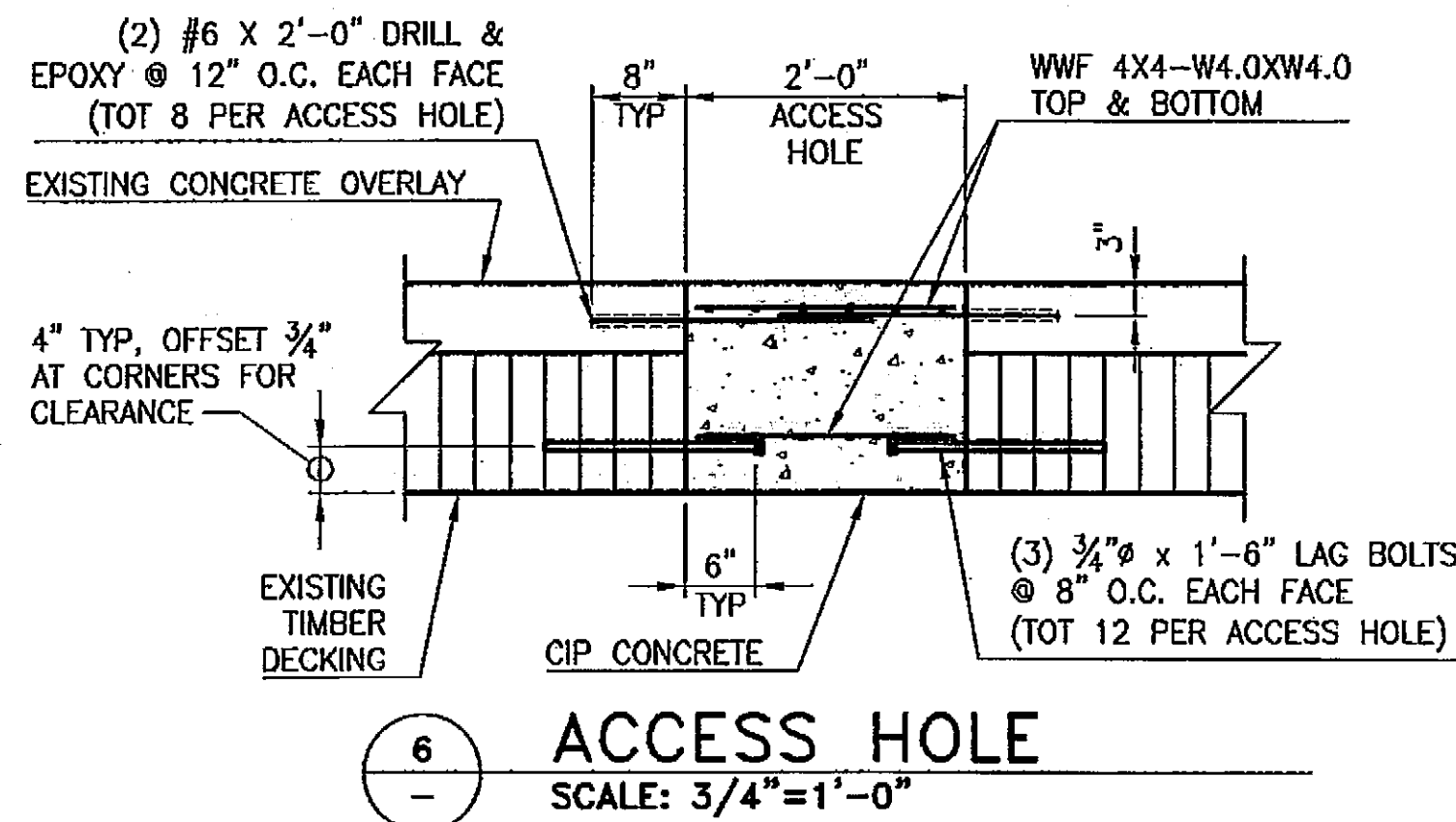


K
SECTION
SCALE: 1/2" = 1'-0"

6500 S2.5 SHEET 8 OF 17	PIER 7A STRUCTURAL REPAIRS DECK REPLACEMENT DETAILS				APPROVED:	RHM 9/25/12 CHECKED BY:	DATE: 9/25/12
	CONT/CONS: 21 N RANGE: 3 E SECTION: 34 M. ID: 081197 DATE-HRZ: NAD 83-07 TIDE: 22 1933 PHASE: BID SET DRAWING SCALE: AS NOTED				DIRECTOR ENG. DATE: 9/25/12 PRINTED BY: valentin Feb 12, 2013 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837	MARK: 1 REVISION: 1 REVISE BAR SIZE	BY: RHM DATE: 2/6/13
	Parametrix ENGINEERING PLANNING ENVIRONMENTAL SERVICES 1010 5TH AVENUE SE SUITE 400 PUYALLUP WASHINGTON 98344 WWW.PARAMETRIX.COM				Port of Tacoma PORT OF TACOMA WASHINGTON	APPR:	DATE: 2/6/13
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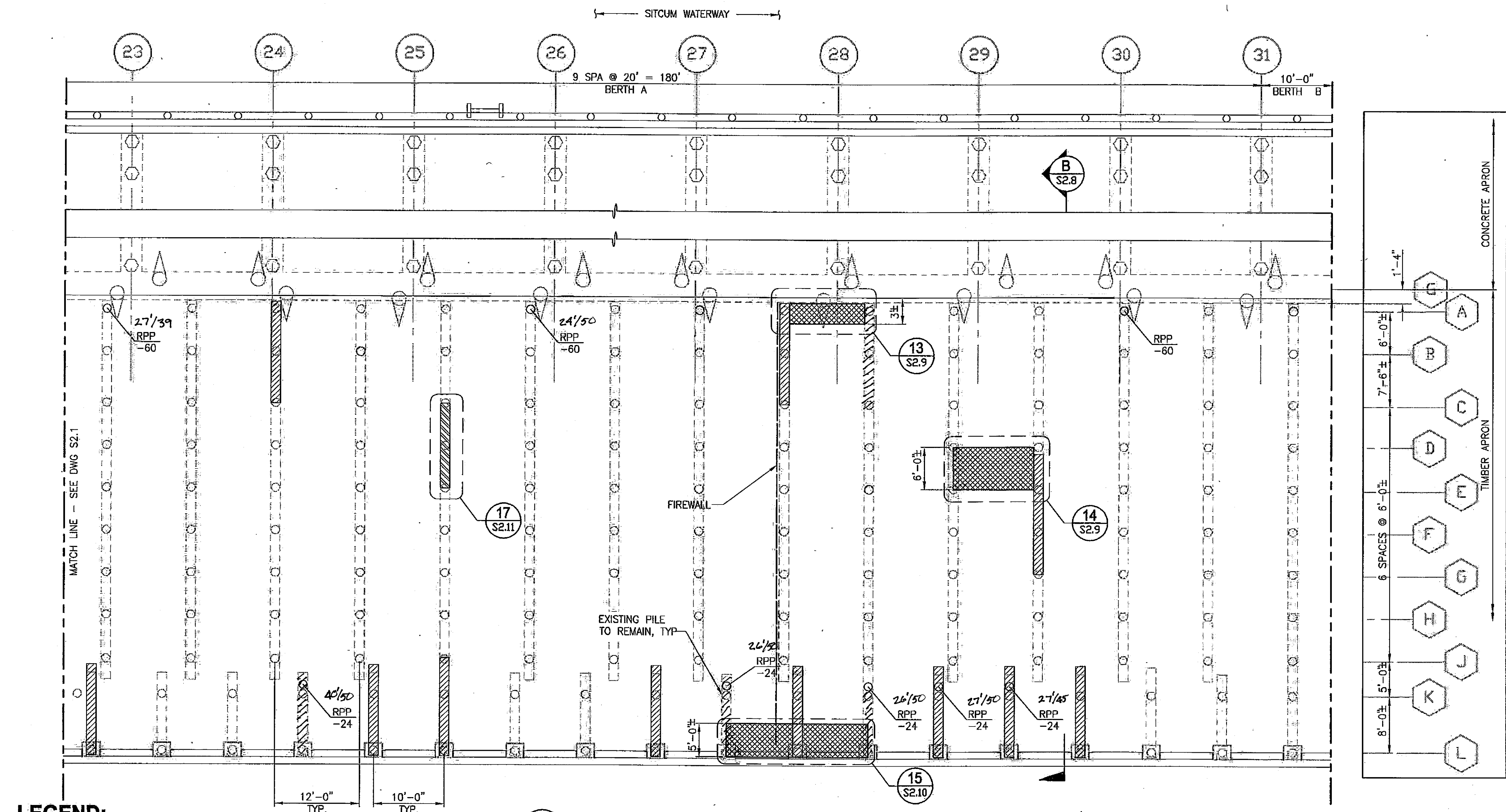


5 ALTERNATE ACCESS
SCALE: 1/2"=1'-0"



6500 S2.6 SHEET 10 OF 17	PIER 7A STRUCTURAL REPAIRS ALTERNATE ACCESS HOLE FOR PILE REPLACEMENT				APPROVED:	RHM 9/25/12 CHECKED BY DATE	9/25/12
	CONTRACT/CONS:	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 34	DIRECTOR ENG. DATE	SUB 9/25/12	DATE
M. ID: 091197	DAT-HRZ: NAD 83-07	VERT: MLLV 19.39'	TIDE 22 1933	PRINTED BY: valendiv Feb 12, 2013	PROJ. ENGR DATE	9/25/12	DATE
PHASE: BID SET	PARCEL: 27	DRAWING SCALE: AS NOTED	AS NOTED	PORT ADDRESS: ONE SITCUM PLAZA	BY:	REVISION:	DATE:
				TACOMA, WA 98401-1837			

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LEGEND:

- RPP REPLACE PLUMB PILE
XX TIP ELEVATION, SEE
AND NOTE 1 2
S2.3
- PP REPLACE PILE POST SEE 1
S2.3
- EXISTING TIMBER PILE
- EXISTING 16" OCTAGONAL
PRESTRESSED CONCRETE PILE
- EXISTING 16" OCTAGONAL
PRESTRESSED CONCRETE BATTER PILE
- REPLACE TIMBER PILE CAP, SEE 5
S2.4
- REPLACE TIMBER SUBCAP, SEE 17
S2.11
- REPLACE TIMBER DECK
WITH CIP CONCRETE, SEE 13 14 15
S2.9 S2.9 S2.10

$X'/K = \frac{\text{Penetration in to mudline}}{\text{Blows per foot}}$

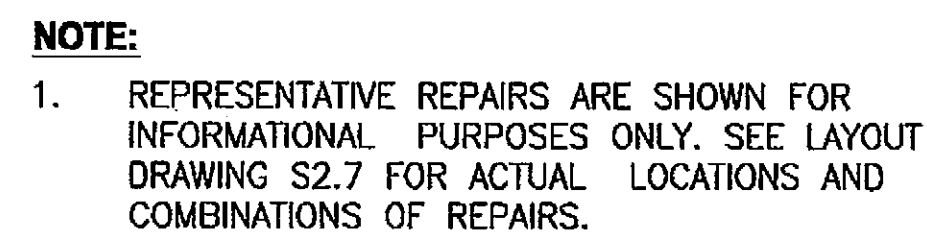
1 BERTH A PLAN - BENTS 23 - 31
SCALE: 1/8"=1'-0"

NOTES:

- THE REPLACEMENT PILES SHALL BE DRIVEN AT THE SAME LOCATION AS THE PILE BEING REPLACED. REMOVE EXISTING PILE PER THE GENERAL NOTES PRIOR TO INSTALLING NEW PILE. PILE CUT OFF ELEVATIONS VARY, SEE REFERENCE DRAWINGS. SEE SPECIFICATIONS FOR CUT OFF ALLOWANCE.
- WHERE PILE CAPS REQUIRE REPLACEMENT, THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO THE DECK AS NEEDED TO AVOID DISTRESS TO ADJACENT STRUCTURAL ELEMENTS. CONTRACTOR SHALL SUBMIT DETAILS FOR TEMPORARY SUPPORT TO THE PORT FOR REVIEW.
- REATTACH FIREWALL TO REPLACEMENT PILES AFTER INSTALLATION. SEE REFERENCE DRAWINGS FOR ATTACHMENT DETAILS.
- SOUTH AND NORTH END OF DECK REMOVAL LIMITS SHALL BE CENTERED ON THE ACTUAL PILE CAPS.
- EXISTING UTILITIES THROUGHOUT THE STRUCTURE SUCH AS FIRE SPRINKLERS, ELECTRICAL AND COMMUNICATIONS ARE NOT SHOWN. PRIOR TO CONSTRUCTING REPAIRS, CONTRACTOR SHALL LOCATE AND TEMPORARY SUPPORT UTILITIES AS NECESSARY TO PERFORM WORK.

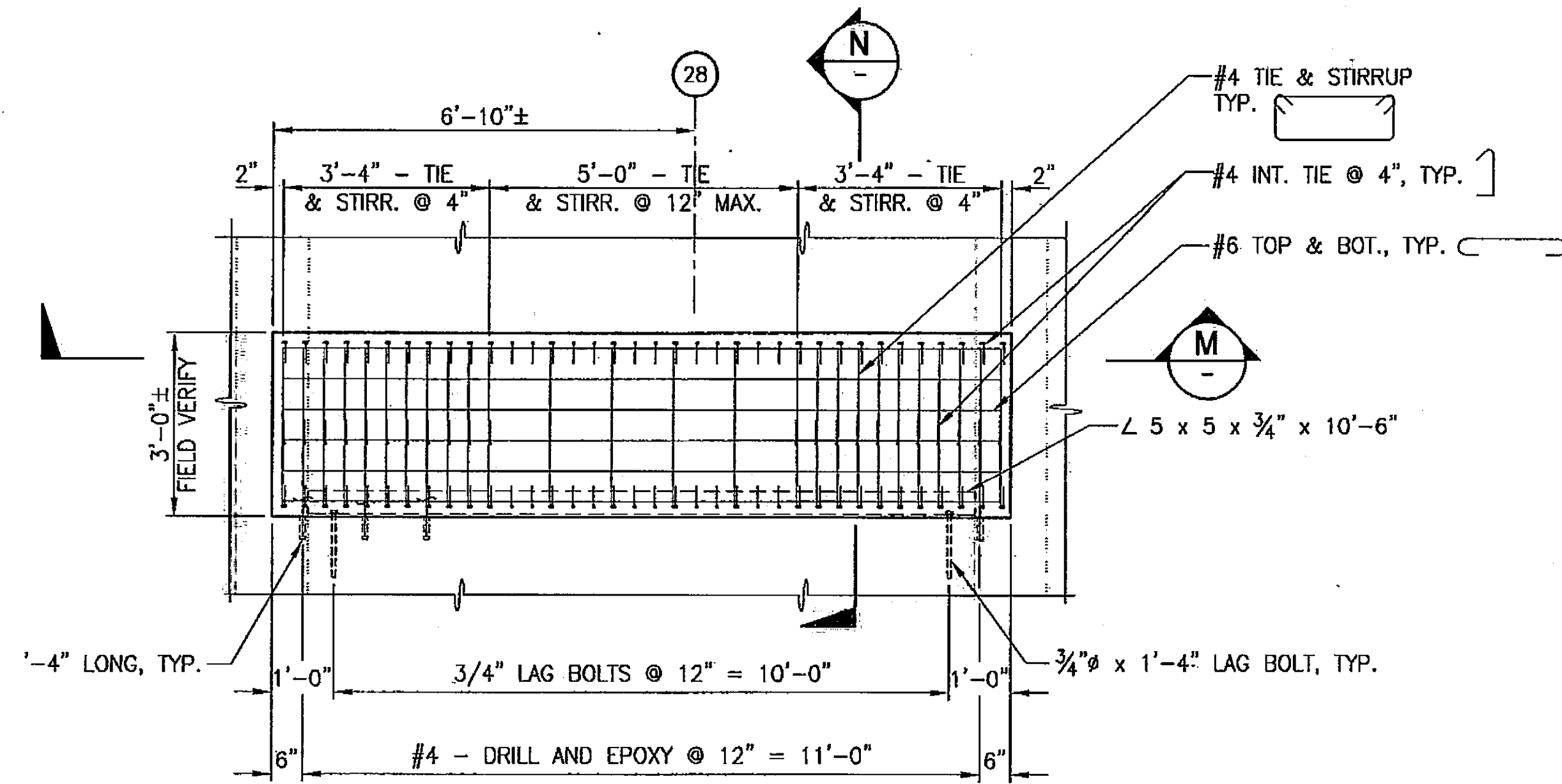
SCALE IN 1/8"=1'-0"
0 8' 16'

6500 S2.7 SHEET 11 OF 17	PIER 7A WHARF REPAIRS BERTH A REPAIR PLAN				APPROVED:	RHM 2/1/13 CHECKED BY DATE			Port of Tacoma P.O. BOX 187 TACOMA, WA 98401-0187	
	TOWNSHIP: RANGE:		SECTION:		DIRECTOR ENG. DATE PRINTED BY: volendy Feb 12, 2013		MARK: REVISION:		BY: APPR: DATE:	
	DAT-HRZ: NAD 83/91 VERT: MLLV/NDAA		PORT ADDRESS: ONE SITCUM PLAZA TACOMA, VA 98401-1837		THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION		Parametrix ENGINEERING PLANNING ENVIRONMENTAL SCIENCES 1010 30TH AVENUE SE, SUITE 100 FEDERAL WAY, WA 98003-3824 WWW.PARAMETRIX.COM		Port of Tacoma P.O. BOX 187 TACOMA, WA 98401-0187	
	M. ID: 091197 PHASE: BID SET		DRAWING SCALE: AS NOTED PARCEL:		2/12/13		DATE:		DATE:	

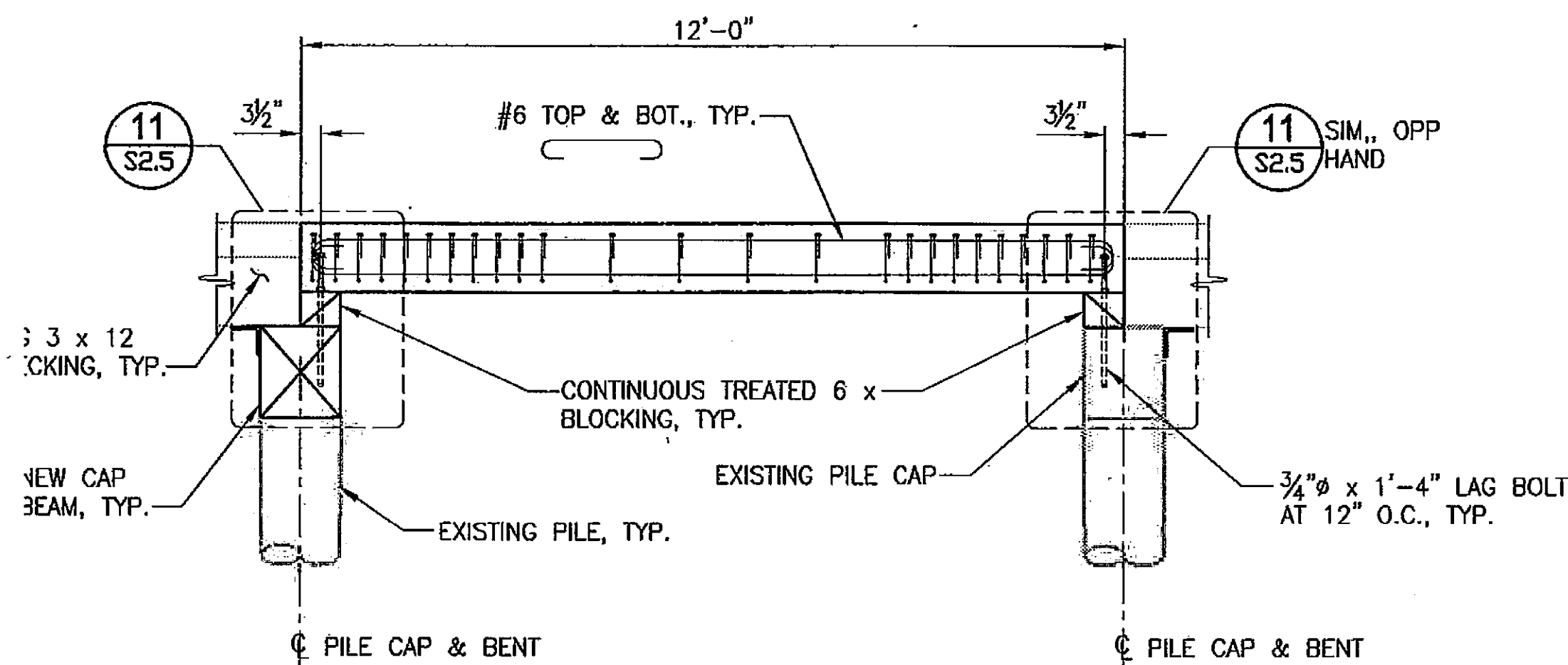


SCALE: 1/4"=1'-0"

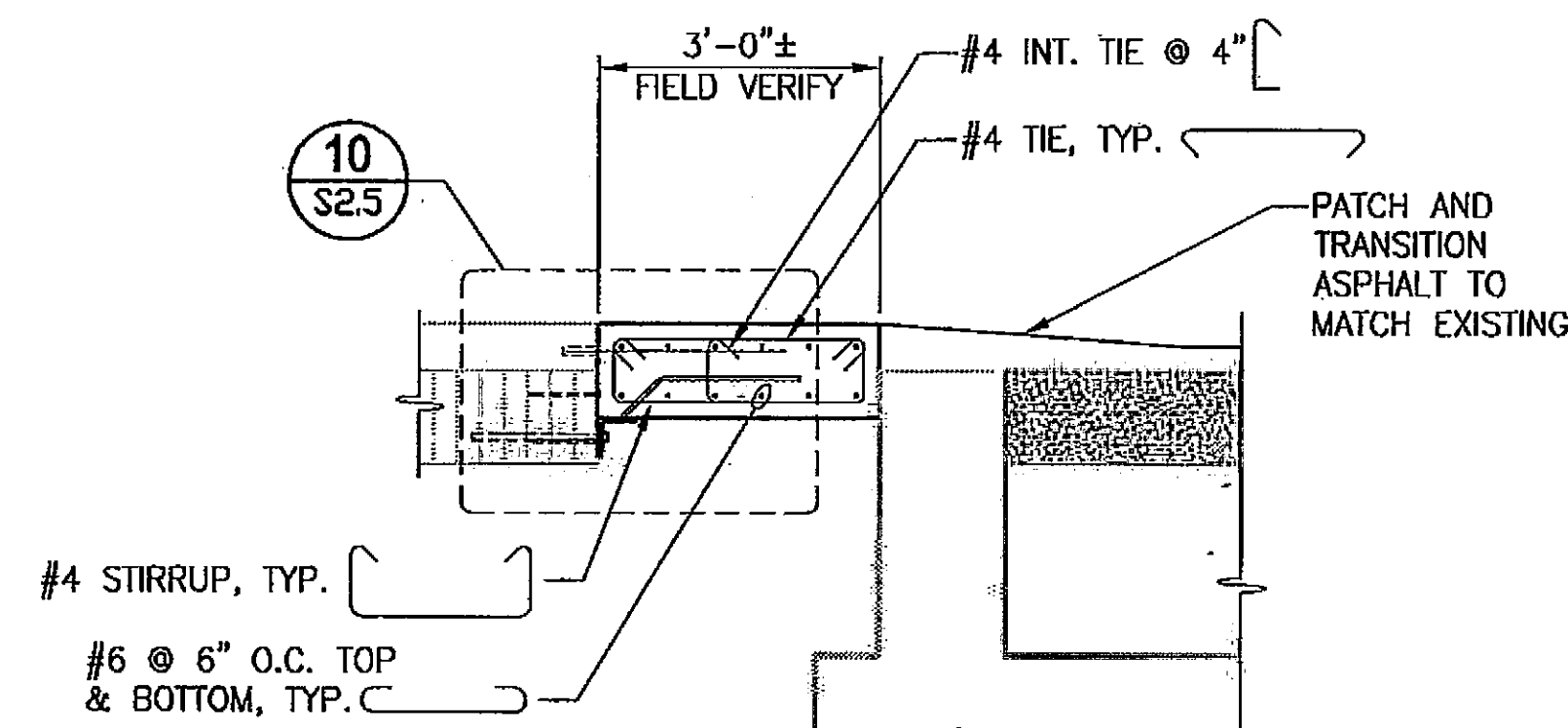
6500 S2.8 SHEET 12 OF 17	PIER 7A STRUCTURAL REPAIRS SECTION AT BERTH A		APPROVED:		RHM 2/1/13 CHECKED BY DATE
	TOWNSHIP: 21 N RANGE: 3 E SECTION: 34 DAT-HRZ: NAD 83-07 VERT: MLLV 1939' @ Tide 22 1933 PARCEL: 27 DRAWING SCALE: AS NOTED	DIRECTOR ENG. DATE PRINTED BY: voluntary Feb 12, 2013 PORT ADDRESS: SITCUM PLAZA TACOMA, WA 98401-1837		JRM 2/1/13 PROJ. ENGR DATE	2/1/13
CONT/CONS: . M. ID: 091197 BID SET			MARK: REVISION: BY: APPR: DATE:		
PARAMETRIX ENGINEERING, PLANNING, ENVIRONMENTAL, LANDSCAPES 2100 35TH AVENUE SE, SUITE 500 TACOMA, WA 98401-1837 P: 252.664.6600 F: 252.664.9799 WWW.PARAMETRIX.COM			Port of Tacoma 400 SOUTH TACOMA STREET, TACOMA, WA 98401-1837		



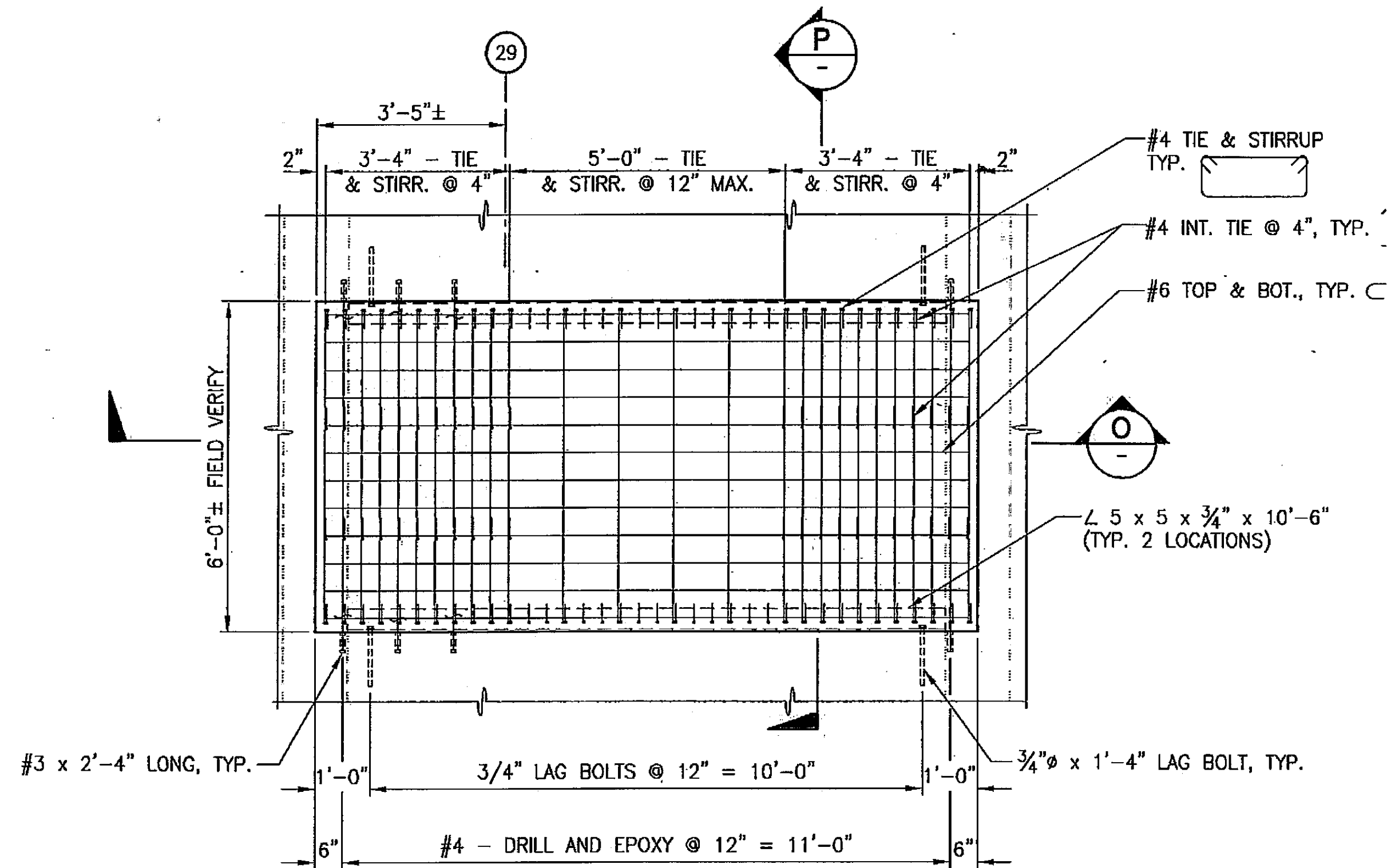
DECK REPL. ON GRID 28
13
S2.7
SCALE: 1/2" = 1'-0"



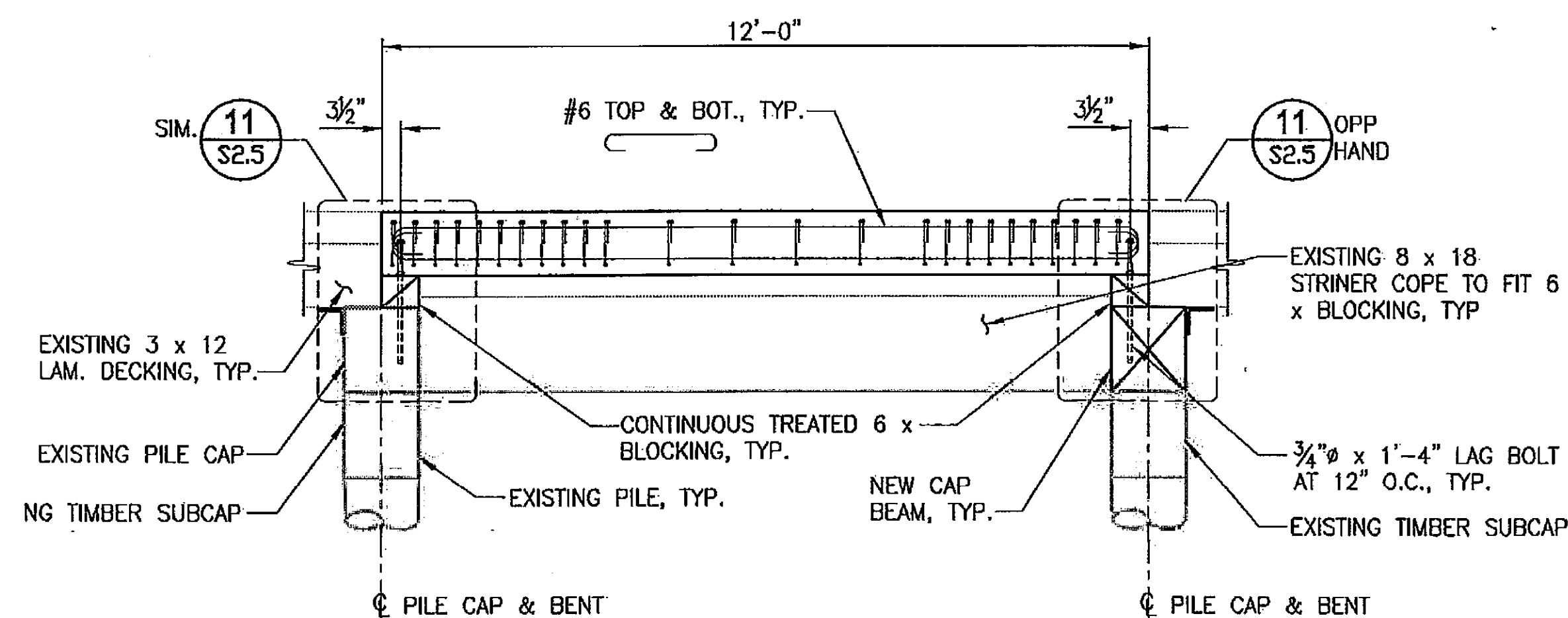
SECTION M-M
SCALE: 1/2" = 1'-0"



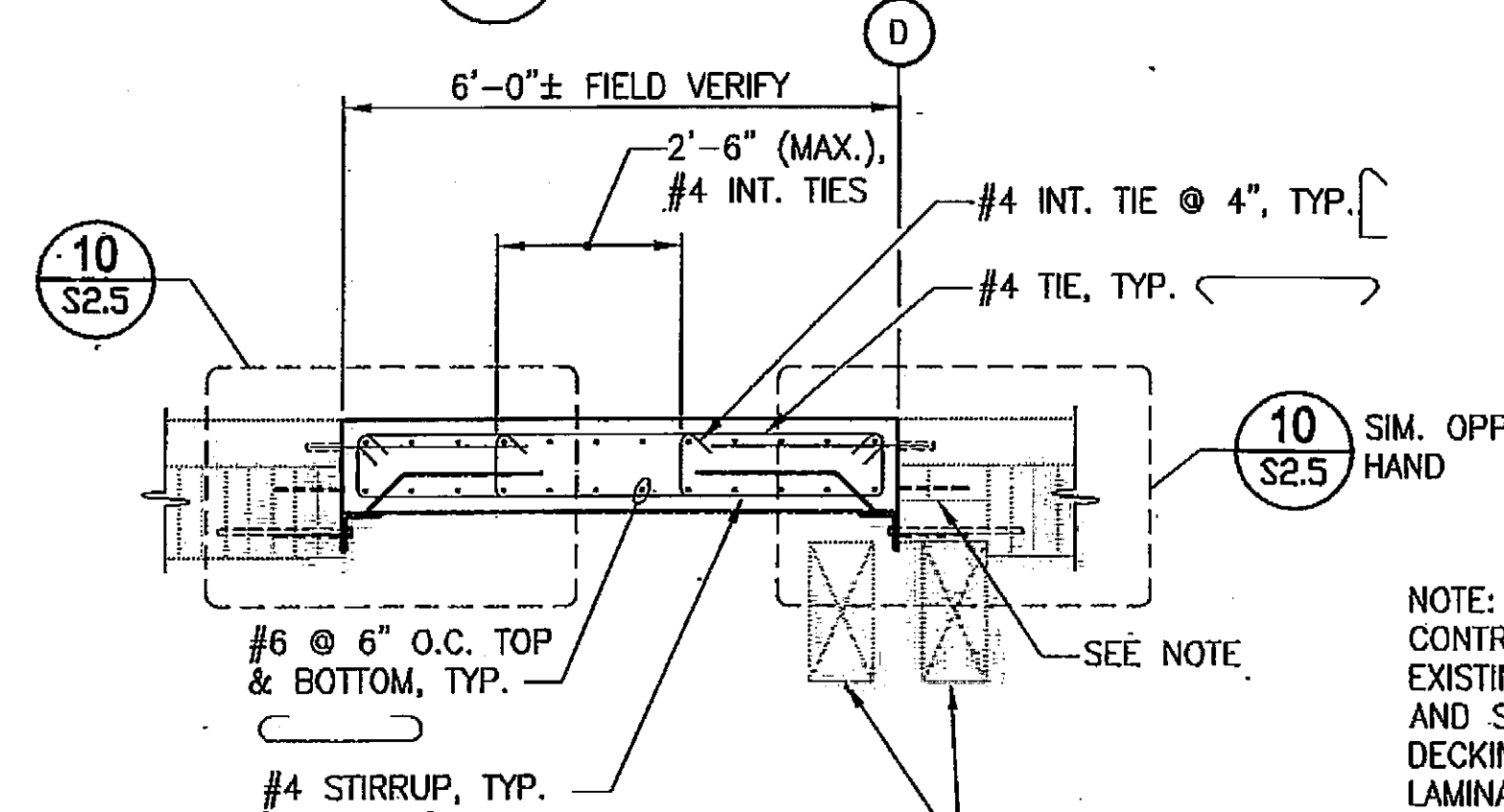
SECTION N-N
SCALE: 1/2" = 1'-0"



DECK REPL. ON GRID 29
14
S2.7
SCALE: 1/2" = 1'-0"



SECTION O-O
SCALE: 1/2" = 1'-0"



SECTION P-P
SCALE: 1/2" = 1'-0"

NOTE:
CONTRACTOR TO VERIFY
EXISTING CONDITION IS SOUND
AND SOLID. IF NOT, EXTEND
DECKING REPAIR TO SOLID
LAMINATED WOOD DECK.

Port of
Tacoma

Parametrix
ENGINEERING PLANNING ENVIRONMENTAL SCIENCES
1000 1ST AVENUE, SUITE 200
PUALLIP, WASHINGTON 98374
TEL: 206.604.6000 FAX: 206.604.6700



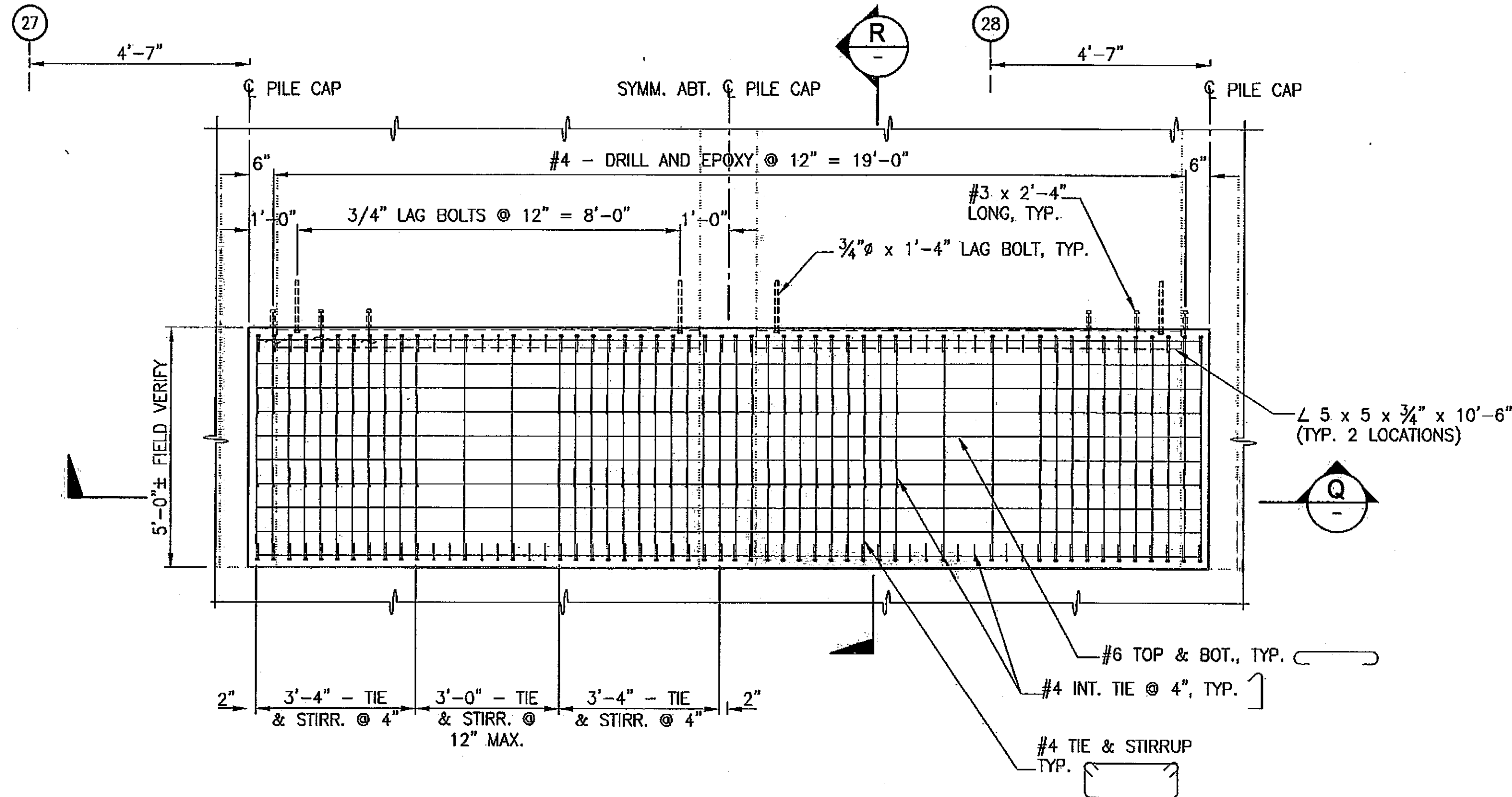
APPROVED: RHM 2/1/13
CHECKED BY: JRM 2/1/13
DATE: 2/1/13
DIRECTOR ENG. DATE: valeriy Feb 12, 2013
PRINTED BY: valeriy Feb 12, 2013
PORT ADDRESS: ONE SITCUM PLAZA
TACOMA, WA 98401-1837

PIER 7A
STRUCTURAL REPAIRS
DECK REPLACEMENT DETAILS

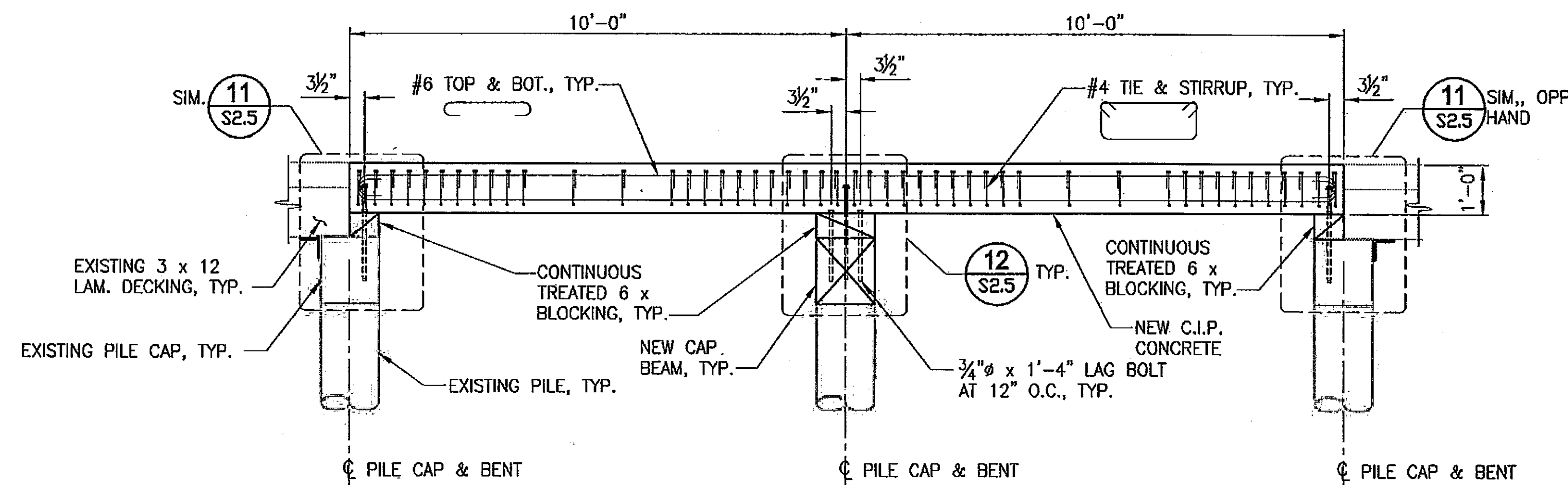
6500
S2.9
SHEET 13 OF 17

CONTRACT: TOWNSHIP: 21 N RANGE: 3 E SECTION: 34
DATE: 09/197 DAT-HRZ: NAD 83-07/VERT: MLLV 1939' @ TIDE 22 1933
PHASE: BID SET PARCEL: 27 DRAWING SCALE: AS NOTED

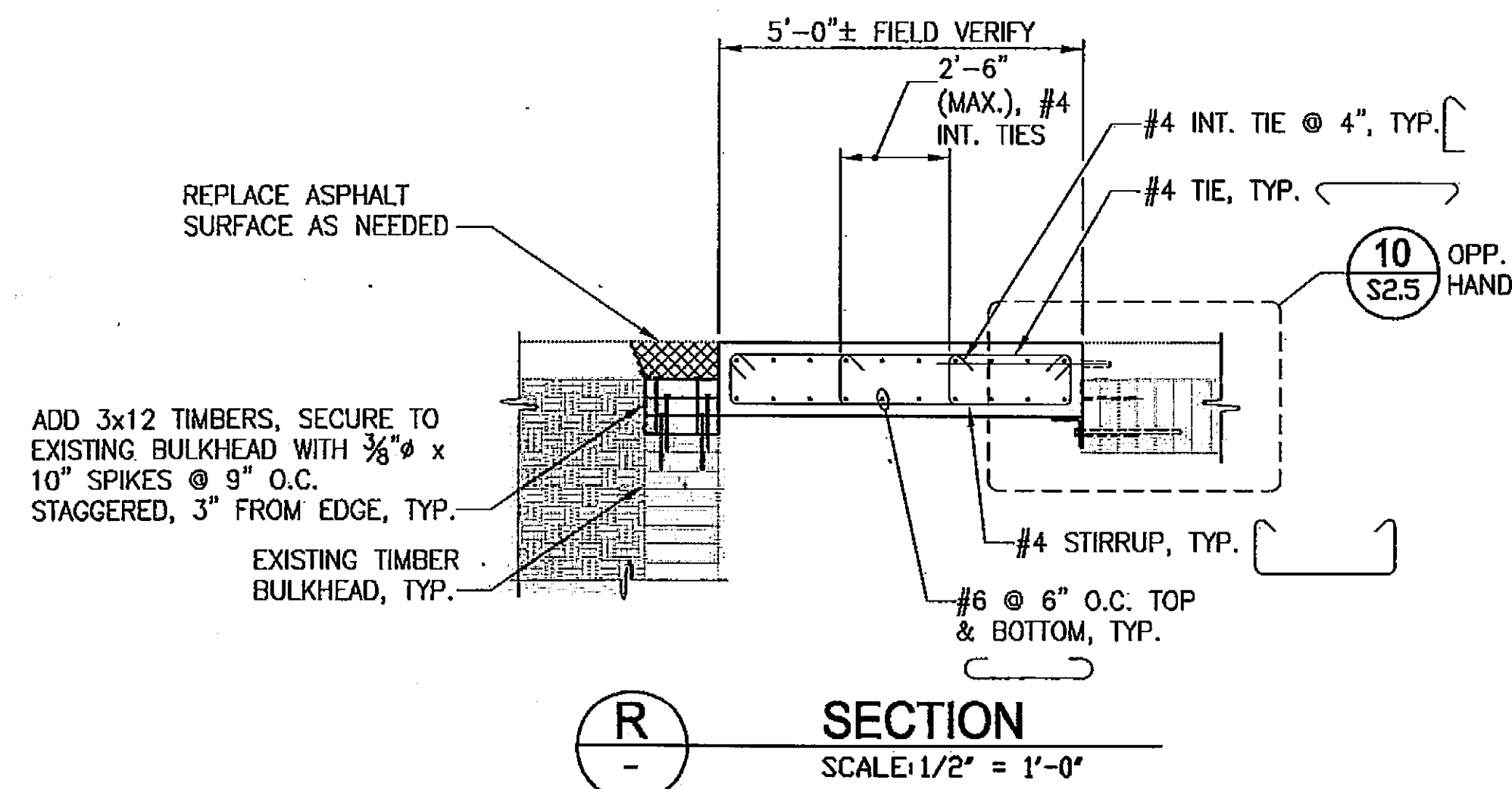
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DECK REPL. ON GRID 28
15
S2.7
SCALE: 1/2" = 1'-0"



SECTION
Q
SCALE: 1/2" = 1'-0"

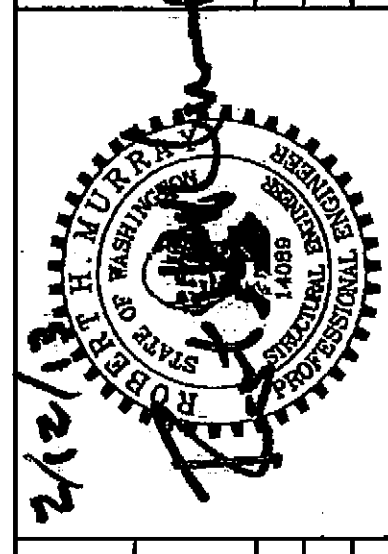


6500
S2.10
SHEET 14 OF 17

PIER 7A
STRUCTURAL REPAIRS
DECK REPLACEMENT DETAILS

APPROVED:

RM	2/1/13
CHECKED BY	DATE
JRM	2/1/13
PROJ. ENGR	DATE
DIRECTOR	2/1/13
PRINTED BY	volendiv Feb 12, 2013
PORT ADDRESS	STICUM PLAZA
TACOMA, WA	98401-1837



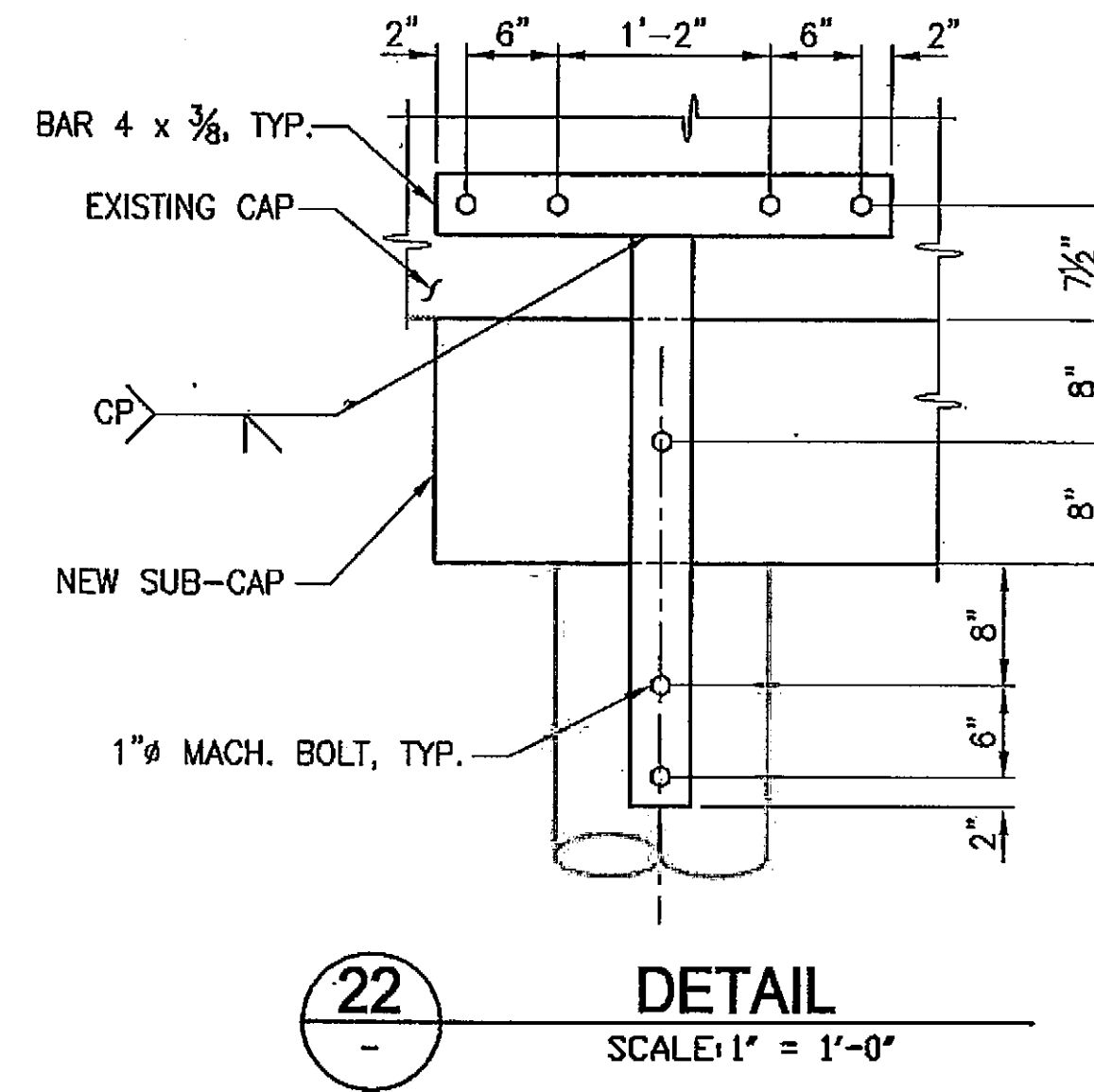
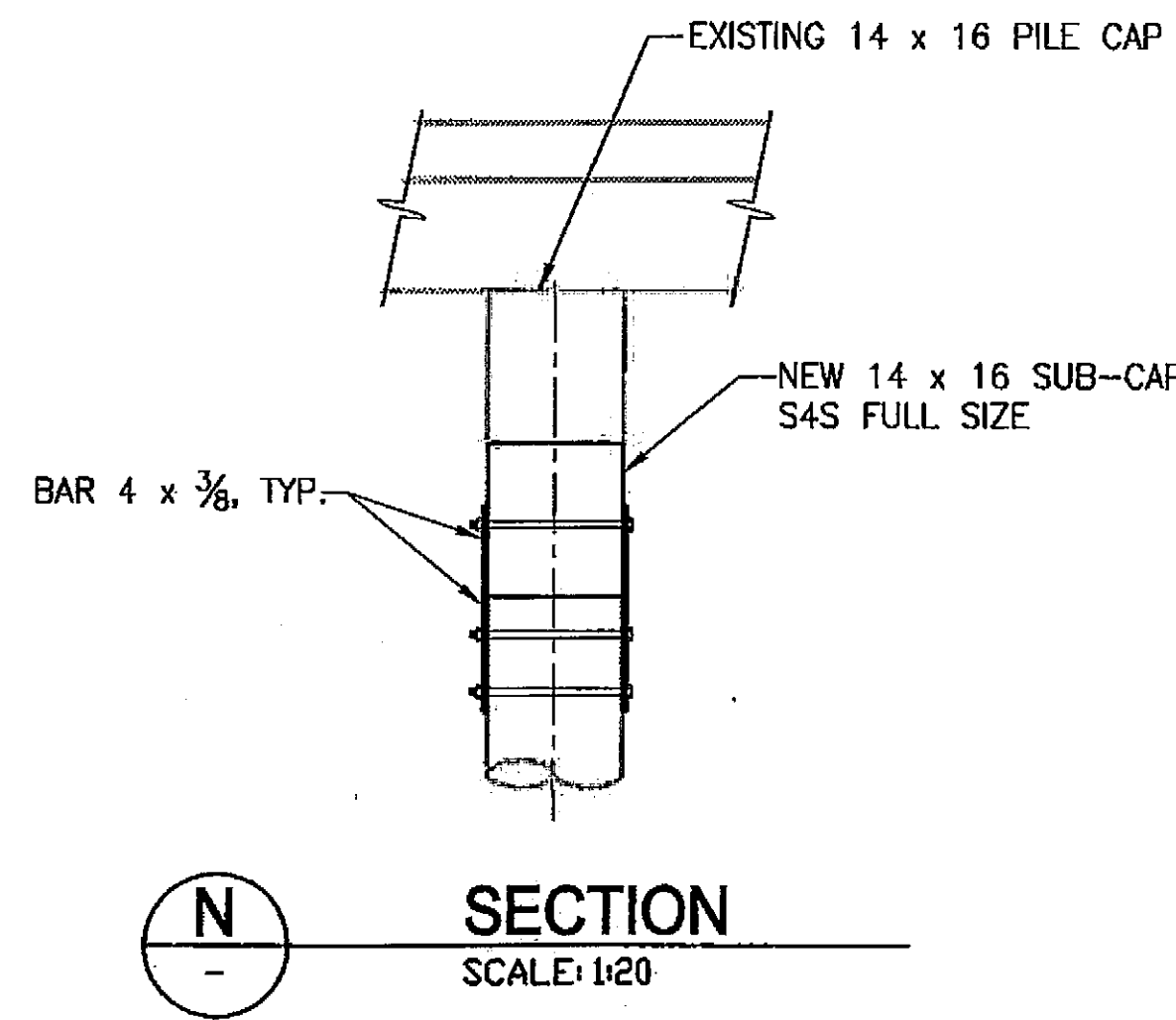
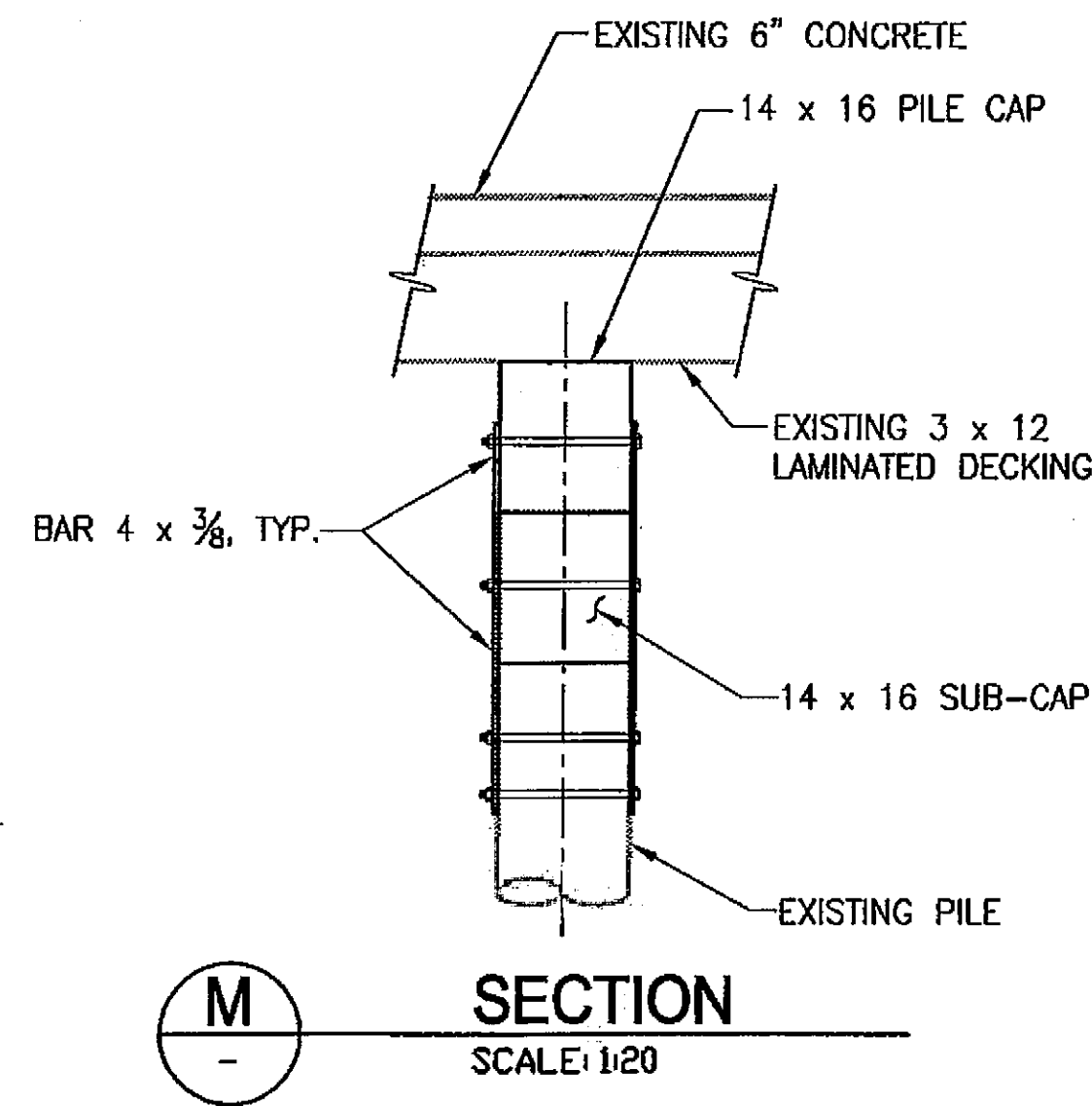
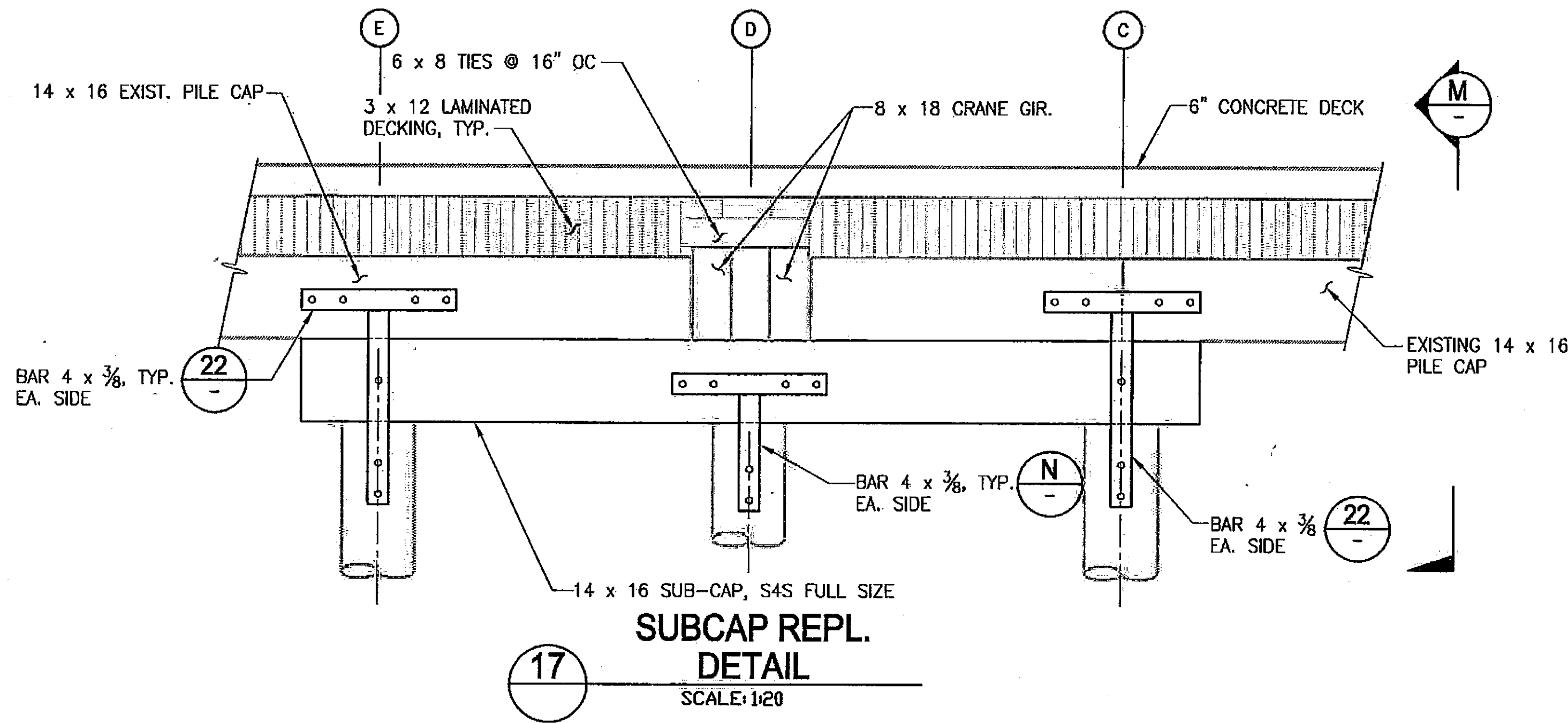
Parametrix
ENGINEERING PLANNING ENVIRONMENTAL SERVICES
100 8TH AVENUE SE SUITE 100
TACOMA, WA 98401
T: 253.854.8600 F: 253.854.8750
www.parametrix.com

Port of Tacoma
P.O. BOX 1007 TACOMA, WA 98401-0100

CONT./CONS: 081197
M. ID: 081197
PHASE: BID SET

TOWNSHIP: 21 N RANGE: 3 E SECTION: 34
DATE-HRZ: NAD 83-07 VERT: MLLV 1939' @ TIDE 22 1933
DRAWING SCALE: AS NOTED

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6500
S2.11
SHEET 15 OF 17

PIER 7A
STRUCTURAL REPAIRS
TIMBER SUBCAP DETAILS

CONT/CONS:	091197	TOWNSHIP: 21 N	RANGE: 3 E	SECTION: 34
M. ID:	091197	DAT-HRZ: NAD 83-07	VERT: MLLV 19.39'	@ TIDE 22 1933
PHASE:	BID SET	PARCEL: 27	DRAWING SCALE:	AS NOTED

APPROVED:

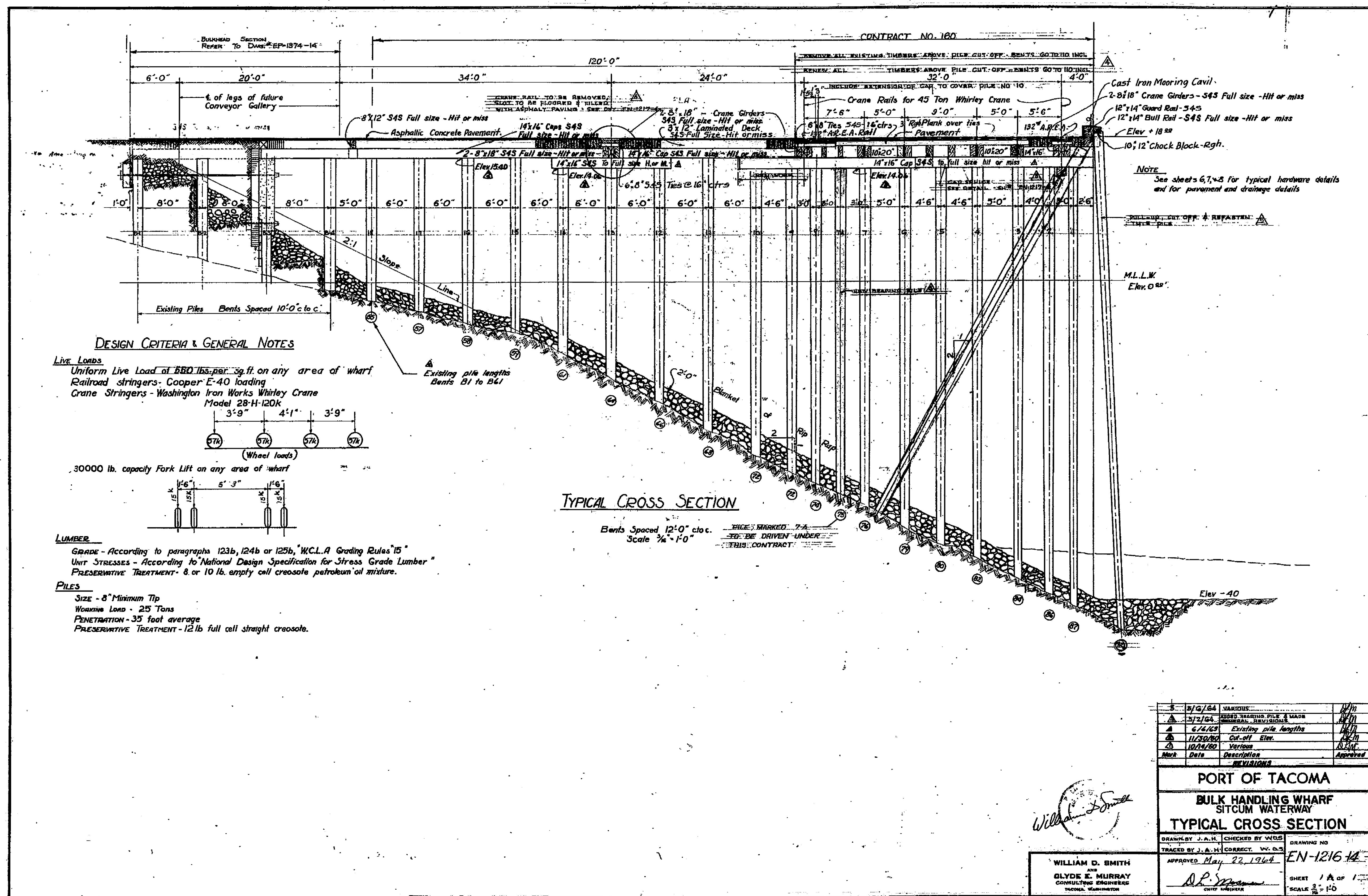
CHECKED BY	DATE	RHM	2/1/13
PROJ. ENGR	DATE	JRM	2/1/13
DIRECTOR ENG. DATE	valerdy Feb 12, 2013		
PRINTED BY:	valerdy Feb 12, 2013		
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TACOMA, VA	98401-1837		



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DRAWN <u>JA</u>	PORT OF TACOMA PIER 7 - BERTH A CONCRETE OVERLAY MISCELLANEOUS DETAILS -				
DATE <u>9-7-79</u>					
CHECKED					
DATE					
CHECKED					
DATE					
CONT. NO. <u>477</u>					
FIELD BOOK(S)					
APPROVED	<u>9/3/79</u> DATE				
<u>B. L. MacLeod</u>					
	<table border="1"> <tr> <td>SCALE AS NOTED</td> </tr> <tr> <td>DRAWING NO.</td> </tr> <tr> <td>EP-3&07-14</td> </tr> <tr> <td>SHEET 4 OF 4</td> </tr> </table>	SCALE AS NOTED	DRAWING NO.	EP-3&07-14	SHEET 4 OF 4
SCALE AS NOTED					
DRAWING NO.					
EP-3&07-14					
SHEET 4 OF 4					

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