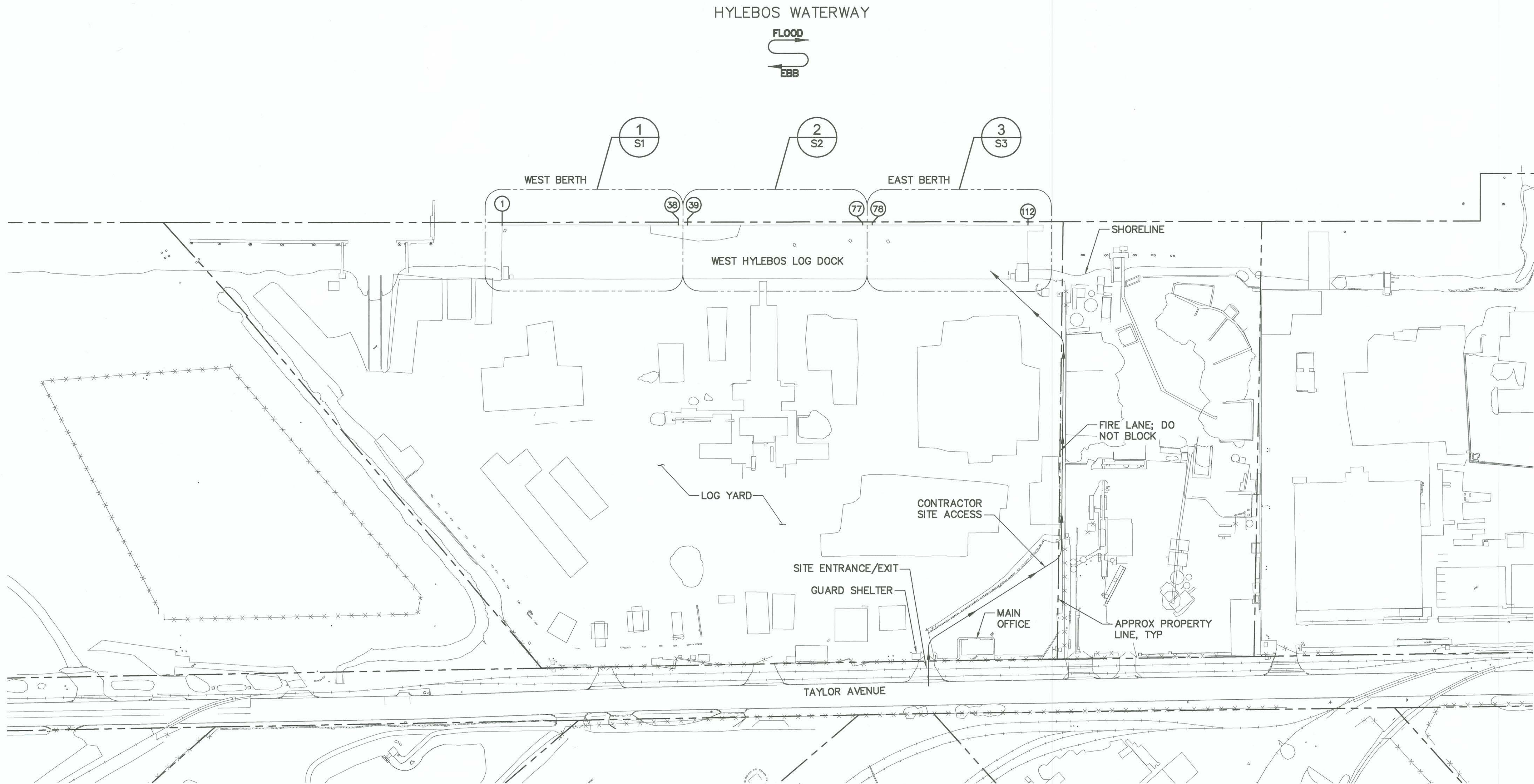
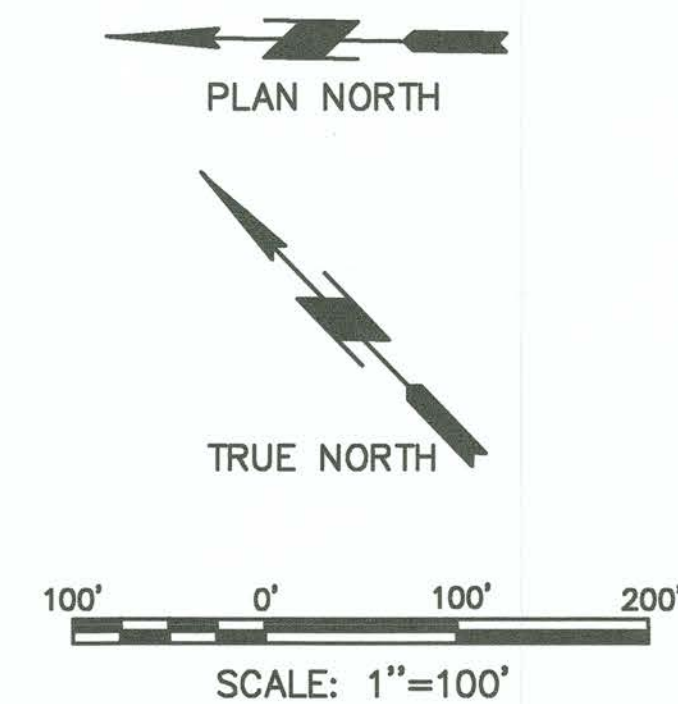




CONSTRUCTION NOTES:

1. VESSEL CALLS ARE TYPICALLY BETWEEN THE 15TH AND 25TH OF ANY GIVEN MONTH. THE BERTH AND UPLAND AREAS ARE UNAVAILABLE FOR STORAGE, STAGING, AND CONSTRUCTION DURING THE VESSEL CALL WINDOW.
2. THE CONTRACTOR SHALL NOT START WORK ON A DOLPHIN THAT CANNOT BE FULLY RESTORED PRIOR TO THE VESSEL CALL. EXISTING DOLPHINS MAY REMAIN IN THEIR PRE-AWARD CONDITION DURING VESSEL CALLS.

**SITE PLAN**  
SCALE: 1" = 100'



6570  
**C1**  
3 OF 10

**PORT OF TACOMA**  
**WEST HYLEBOS LOG DOCK REPAIRS**  
SITE PLAN

|                   |                  |                                  |             |
|-------------------|------------------|----------------------------------|-------------|
| CONT/CONS: 070636 | TOWNSHIP: 21N    | RANGE: 03E                       | SECTION: 36 |
| M. ID: 201016.01  | DAT-HRZ: WA83-SF | VERT: MLLW 19.39' @ Tide 22 1933 |             |
| PHASE: BID SET    | PARCEL:          | DRAWING SCALE: AS NOTED          |             |

|                                |                       |         |
|--------------------------------|-----------------------|---------|
| APPROVED:                      | B.OSTBO               | 7/21/17 |
| CHECKED BY:                    | B.HALEY               | 7/21/17 |
| DIRECTOR ENGR. DATE:           | PROJ. ENGR. DATE:     |         |
| PRINTED BY: oszardadi          | JUL 20, 2017          |         |
| PORT ADDRESS: ONE SITCUM PLAZA | TACOMA, WA 98401-1837 |         |



**moffatt & nichol**

**Port of Tacoma**  
P.O. BOX 4887 TACOMA, WA 98404-4887

|       |           |     |       |
|-------|-----------|-----|-------|
| MARK: | REVISION: | BY: | DATE: |
|       |           |     |       |
|       |           |     |       |

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# PORT OF TACOMA

## WEST HYLEBOS LOG DOCK REPAIRS PROJECT NO. 201016.01 CONTRACT NO. 070636

### PORT COMMISSIONERS:

CONSTANCE T. BACON  
DON MEYER  
DONALD C. JOHNSON  
RICHARD P. MARZANO  
CLARE PETRICH

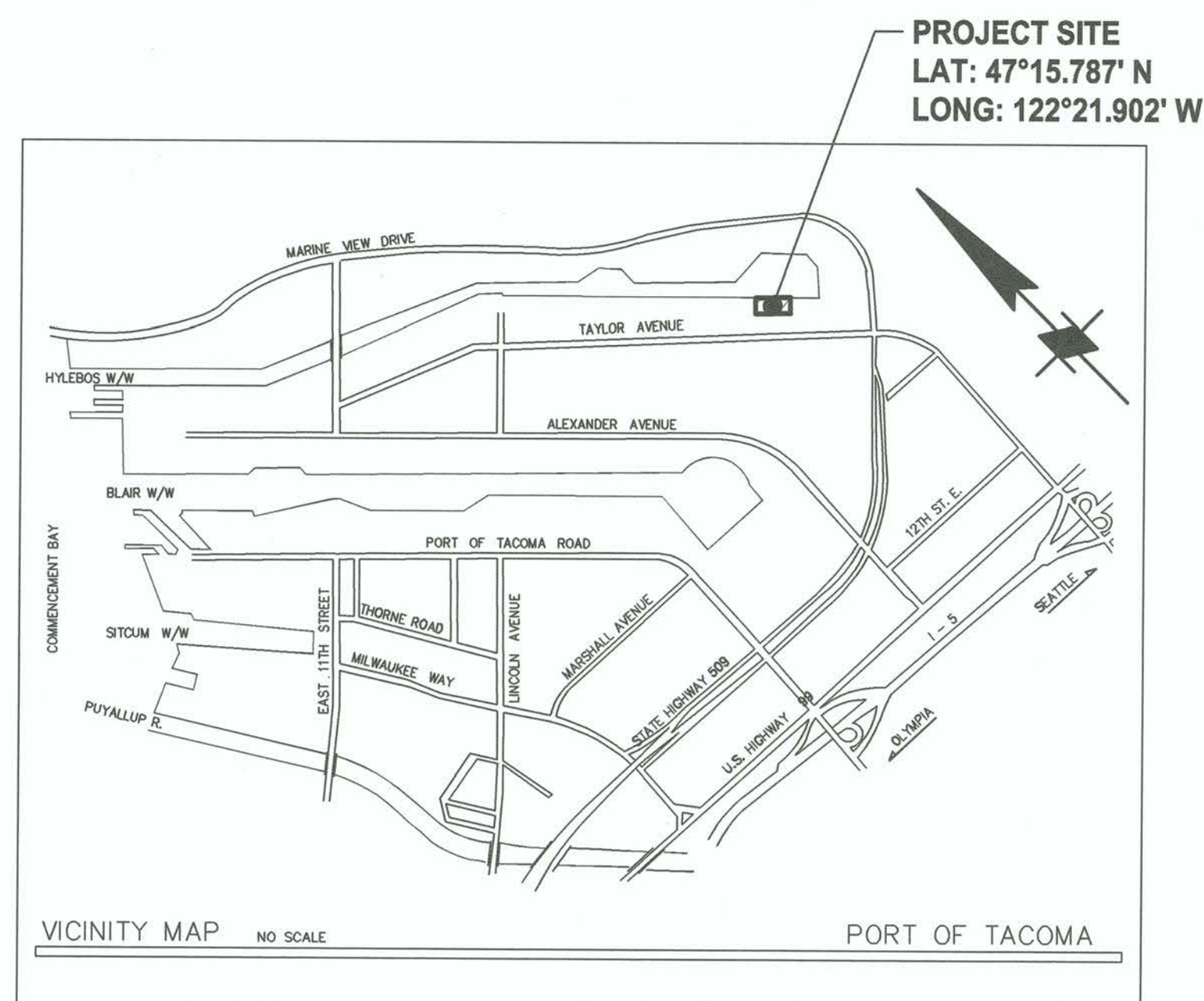
### PORT STAFF:

JOHN WOLFE  
Chief Executive Officer

DAKOTA CHAMBERLAIN, PE  
Chief Facilities  
Development Officer

JANE VANDENBERG, PE  
Director of Engineering

PEDRO REYES, PE  
Project Manager





GENERAL NOTES:

1. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES.
2. IN THE EVENT OF CONFLICTING REQUIREMENTS BETWEEN THE CONTRACT DRAWINGS, GENERAL NOTES, AND SPECIFICATIONS, REFER TO DIVISION 00 OF THE CONTRACT SPECIFICATIONS FOR GUIDANCE.
3. THE CONTRACTOR SHALL ENSURE ALL PERMITS REQUIRED BY ANY FEDERAL, STATE, OR LOCAL DEPARTMENTS, UTILITY COMPANIES, OR JURISDICTIONS AFFECTED BY THE WORK ARE OBTAINED.
4. THESE NOTES CONTAIN GENERAL INFORMATION AND ARE NOT ALL-INCLUSIVE. CONTRACTOR SHALL VERIFY INFORMATION GIVEN HEREIN WITH SPECIFICATIONS AND OTHER DOCUMENTS AND BRING ANY CONFLICTS TO THE ATTENTION OF THE PORT BEFORE BEGINNING AFFECTED WORK.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS FOR COMPATIBILITY BEFORE PROCEEDING. ANY DISCREPANCIES IN DIMENSIONS OR SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE PORT BEFORE PROCEEDING. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL THE DISCREPANCY HAS BEEN RESOLVED BY THE PORT.
6. THE CONTRACTOR SHALL PLACE CONSTRUCTION DEBRIS CONTROL DEVICES AS NECESSARY TO PREVENT DEBRIS FROM ENTERING THE WATER, AND AIRBORNE MATERIALS FROM LEAVING THE IMMEDIATE VICINITY OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF ANY MATERIALS DEPOSITED OUTSIDE AND WITHIN THE WORK AREA.
7. THE CONTRACTOR SHALL DISPOSE OF ALL HAZARDOUS/NON-HAZARDOUS AND REGULATED/NON-REGULATED DEBRIS OFF THE PROJECT SITE IN A PERMITTED LANDFILL.
8. COORDINATE ACCESS TO THE SITE WITH THE PORT.
9. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION STABILITY AND TEMPORARY SUPPORT AS NECESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING SURFACES OR STRUCTURES THAT WILL REMAIN.
12. ALL FEDERAL, STATE, AND LOCAL SAFETY REGULATIONS SHALL BE FOLLOWED. METHODS OF DEMOLITION, CONSTRUCTION, AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY.
13. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL PROTECTION STANDARDS, PERMITS, LAWS, AND REGULATIONS.

CODES AND STANDARDS:

ALL WORK SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS. CODES AND STANDARDS SHALL BE THE LATEST EDITION AVAILABLE AS OF THE DATE OF THE INVITATION TO BID, UNLESS OTHERWISE SPECIFIED.

1. THE INTERNATIONAL BUILDING CODE (IBC), 2012 EDITION.
2. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), STEEL CONSTRUCTION MANUAL, 14TH EDITION.
3. ANSI/AISC 360, SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS.
4. THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, & MUNICIPAL CONSTRUCTION (STANDARD SPECIFICATIONS), 2016 EDITION.
5. AMERICAN CONCRETE INSTITUTE (ACI) 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE & COMMENTARY.

TIDAL DATA:

REFERENCE: ELEVATIONS OF TIDAL DATUMS REFERRED TO MLLW IN US FEET, AT STATION 9446484 BASED ON TIDAL EPOCH 1983-2001:

|       |             |
|-------|-------------|
| EHW:  | +14.55 FEET |
| MHHW: | +11.80 FEET |
| MHW:  | +10.92 FEET |
| MLW:  | +2.86 FEET  |
| MLLW: | 0.00 FEET   |
| ELW:  | -4.70 FEET  |

MATERIALS:

WOOD PRESERVATION TREATMENT

1. ALL TIMBER SHALL BE CUT TO LENGTH AND DRILLED PRIOR TO PRESERVATIVE TREATMENT.
2. CUTS MADE IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE-BASED SOLUTION IN ACCORDANCE WITH AWWA STANDARD M4. THE PRESERVATIVES CONCENTRATION SHALL CONTAIN NO LESS THAN 2 PERCENT COPPER METAL, FIELD TREATMENT SHALL BE BY BRUSHING, DIPPING OR SOAKING AND SHALL BE DONE IN A MANNER THAT THE PRESERVATIVE DOES NOT DRIP OR SPILL ON THE GROUND OR IN THE WATER.

STEEL

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS (AISC). STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED.

a. MISC. PLATES, BARS, AND SHAPES: ASTM A36, UNO

b. THREADED RODS: ASTM A36

c. BOLTS: NUTS, AND WASHERS: ASTM A307 (CARBON STEEL)

d. NAILS: ASTM F1667
2. EXCEPT AS NOTED, ALL STEEL SHAPES PLATES, OTHER FABRICATIONS, AND ALL HARDWARE SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE

1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 301, UNLESS OTHERWISE STATED.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (145 PCF), MINIMUM.
3. ALL DETAILING, FABRICATION, AND ERECTION OF REINFORCING STEEL SHALL CONFORM TO ACI SP-66(04), ACI DETAILING MANUAL.
4. CONCRETE MATERIALS SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED.

a. CONCRETE TYPE: 28 DAY STRENGTH: CAST-IN-PLACE CONCRETE 5,000 PSI

b. REINFORCING STEEL: #6 AND LARGER ASTM A706, GRADE 60 #5 AND SMALLER ASTM A615, OR A706, GRADE 60
5. SEE SPECIFICATIONS FOR FINISHES ON ALL EXPOSED CONCRETE SURFACES.

PORT-FURNISHED TIMBER PILES

1. PORT-FURNISHED TIMBER PILES ARE COAST DOUGLAS FIR IN ACCORDANCE WITH ASTM D25 AND ACZA-TREATED. COORDINATE PILE PICK-UP LOCATION AND LOGISTICS WITH THE PORT.

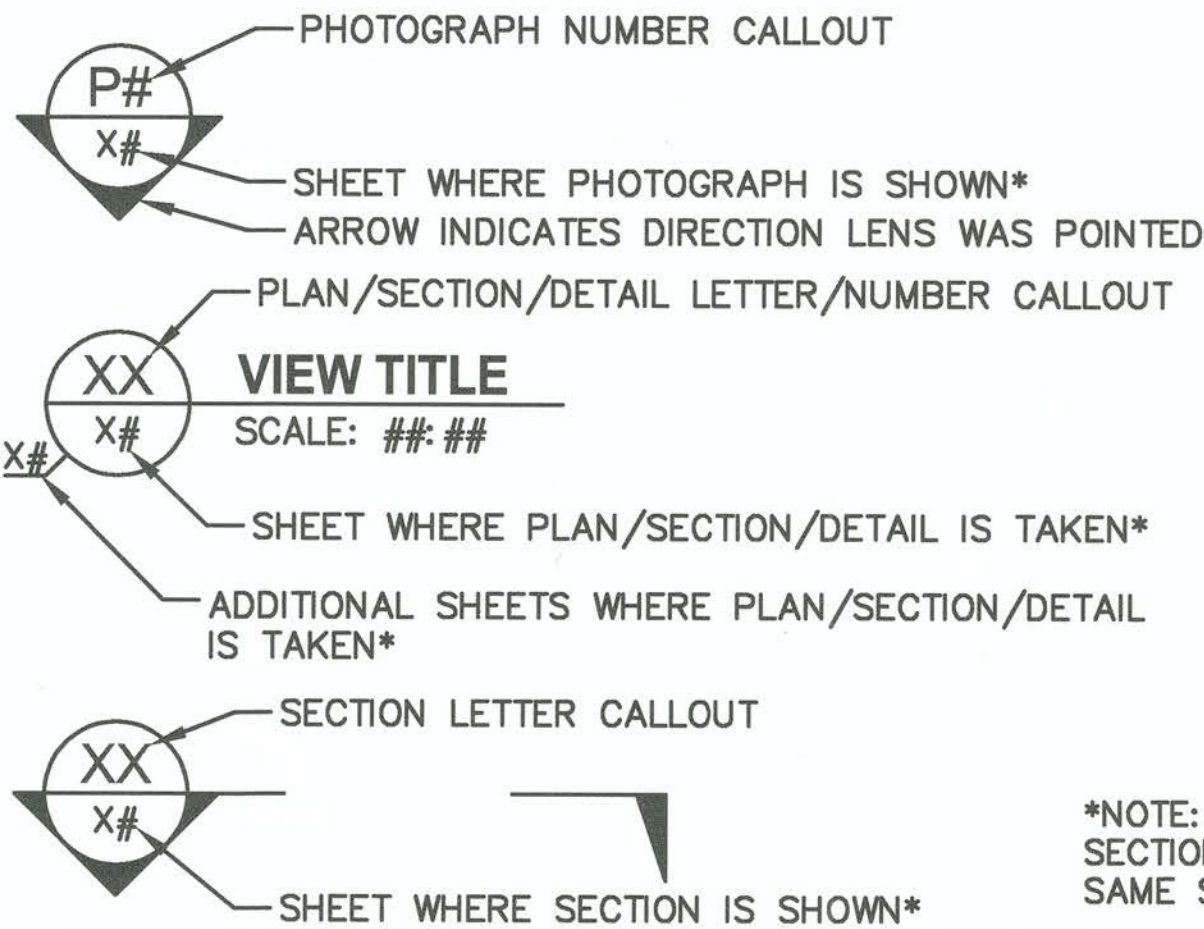
PORT-FURNISHED PILES:

| MIN BUTT DIA (IN) | MIN LENGTH (FT) | QUANTITY | PURPOSE        |
|-------------------|-----------------|----------|----------------|
| 18                | 95              | 1        | PILE 30: B     |
| 18                | 85              | 1        | PILE 54: A     |
| 14                | 80              | 28       | DOLPHIN PILING |

REFERENCE DRAWINGS:

1. FOR REFERENCE: UPLAND GEOTECHNICAL BORINGS, TEST PILE INFORMATION AND WHARF SECTION AND DETAILS ARE PROVIDED, SEE THE REFERENCE DRAWINGS INCLUDED WITH THIS DRAWING SET.

REFERENCE CALLOUTS:



ABBREVIATIONS:

|        |                                            |
|--------|--------------------------------------------|
| '      | FEET                                       |
| "      | INCHES                                     |
| ±      | PLUS OR MINUS                              |
| ∠      | ANGLE                                      |
| ⊙      | AT                                         |
| #      | NUMBER                                     |
| ACZA   | AMMONIACAL COPPER ZINC ARSENATE            |
| ANSI   | AMERICAN NATIONAL STANDARDS INSTITUTE      |
| APPROX | APPROXIMATE                                |
| ASTM   | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| AWPA   | AMERICAN WOOD PROTECTION ASSOCIATION       |
| CIP    | CAST-IN-PLACE                              |
| CLR    | CLEAR                                      |
| CONC   | CONCRETE                                   |
| DIA, Ø | DIAMETER                                   |
| EA     | EACH                                       |
| EHW    | EXTREME HIGH WATER                         |
| ELEV   | ELEVATION                                  |
| ELW    | EXTREME LOW WATER                          |
| EQ     | EQUAL                                      |
| EW     | EACH WAY                                   |
| (E)    | EXISTING                                   |
| FT     | FEET                                       |
| IN     | INCH                                       |
| L      | LOWER                                      |
| LAM    | LAMINATED                                  |
| LAT    | LATITUDE                                   |
| LONG   | LONGITUDE                                  |
| MHW    | MEAN HIGH WATER                            |
| MHHW   | MEAN HIGHER HIGH WATER                     |
| MIN    | MINIMUM                                    |
| MISC   | MISCELLANEOUS                              |
| MLW    | MEAN LOW WATER                             |
| MLLW   | MEAN LOWER LOW WATER                       |
| (N)    | NEW                                        |
| NTS    | NOT TO SCALE                               |
| OC     | ON CENTER                                  |
| OPP    | OPPOSITE                                   |
| PCF    | POUNDS PER CUBIC FOOT                      |
| PE     | POLYETHYLENE                               |
| PIP    | PROTECT-IN-PLACE                           |
| PSI    | POUNDS PER SQUARE INCH                     |
| R      | RADIUS                                     |
| REINF  | REINFORCEMENT OR REINFORCED                |
| REQ'D  | REQUIRED                                   |
| SIM    | SIMILAR                                    |
| SPA    | SPACES                                     |
| SPECS  | SPECIFICATIONS                             |
| SS     | STAINLESS STEEL                            |
| TEMP   | TEMPORARY                                  |
| THRU   | THROUGH                                    |
| TYP    | TYPICAL                                    |
| U      | UPPER                                      |
| UHMW   | ULTRA-HIGH MOLECULAR WEIGHT                |
| UNO    | UNLESS NOTED OTHERWISE                     |
| W      | WATER, WIDTH OR WEST                       |
| w/     | WITH                                       |

Port of Tacoma

P.O. BOX 1837 TACOMA, WA 98401 (206)384-8441

moffatt & nichol

Seal of the Port of Tacoma

OFFICIAL SEAL

BOSTBO

CHECKED BY

DATE

B-HALEY

7/21/17

APPROVED:

*Debra Landman*

8/16/17

DIRECTOR (ENG)

DATE

PRINTED BY:

aszarvadi

Jul 20, 2017

PORT ADDRESS: ONE SITCUM PLAZA

TACOMA, WA 98401-1837

6570

G2

2 OF 10

CONTRACT/CONS: 070636

M. ID: 201016.01

PHASE: BID SET

TOWNSHIP: 21N

DAT-HRZ: WA83-SF

PARCEL:

RANGE: 03E

SECTION: 36

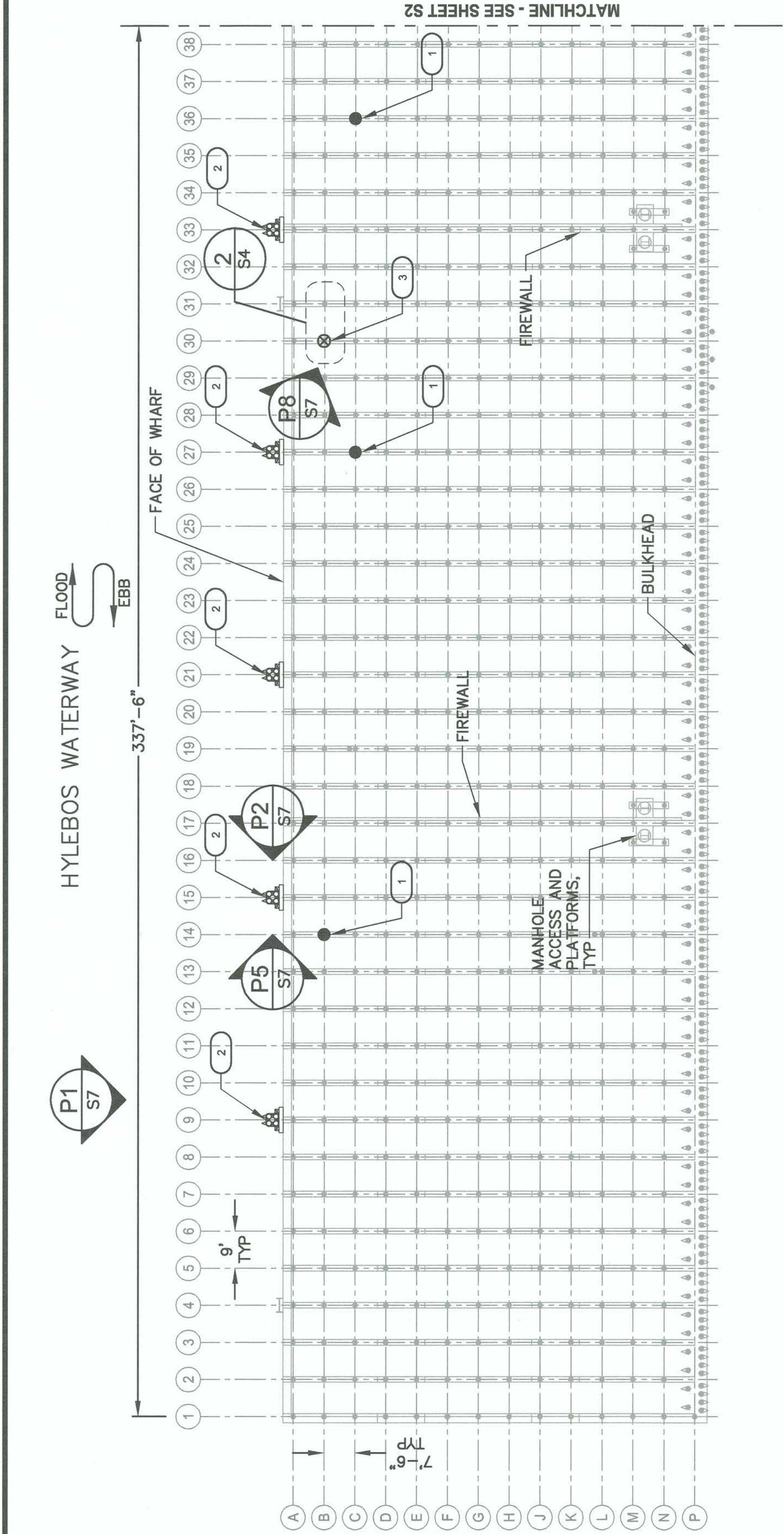
MLLW 19.39' @ Tide 22 1933

DRAWING SCALE: AS NOTED

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|                                             |  |                                                |  |                                                          |  |                                         |  |                                                                                               |  |                |  |
|---------------------------------------------|--|------------------------------------------------|--|----------------------------------------------------------|--|-----------------------------------------|--|-----------------------------------------------------------------------------------------------|--|----------------|--|
| 6570<br>S1<br>4 OF 10                       |  | PORT OF TACOMA<br>REPAIR PLAN<br>BENTS 1 TO 38 |  | APPROVED:<br><br>CHECKED BY DATE<br>B.O.S.T.B.O. 7/21/17 |  | B.H.A.L.E.Y. 7/21/17<br>PROJ. ENGR DATE |  | PRINTED BY: aszordyad Jul 20, 2017<br>PORT ADDRESS: ONE SITCUM PLAZA<br>TACOMA, WA 98401-1837 |  | 05/21/2017     |  |
| CONTRACT/CONS: 070636                       |  | TOWNSHIP: 21N                                  |  | RANGE: 03E                                               |  | SECTION: 36                             |  | DRAWING SCALE: AS NOTED                                                                       |  | PARCEL:        |  |
| M. ID: 201016.01                            |  | DATE-HRZ: WA83-SF                              |  | VERT: MLLW 19.39' @ Tide 22 1933                         |  | DRAWING SCALE: AS NOTED                 |  | PARCEL:                                                                                       |  | PHASE: BID SET |  |
| P.O. BOX 1837 TACOMA, WA 98401 (206)88-4841 |  |                                                |  |                                                          |  |                                         |  |                                                                                               |  |                |  |
| moffatt & nichol                            |  | TACOMA                                         |  |                                                          |  |                                         |  |                                                                                               |  |                |  |
| APPR: DATE:                                 |  | BY:                                            |  | REVISION:                                                |  | MARK:                                   |  |                                                                                               |  |                |  |



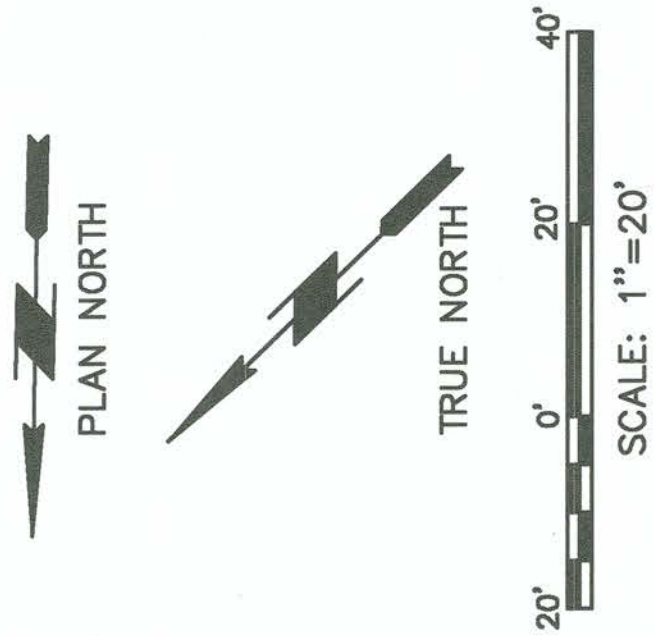
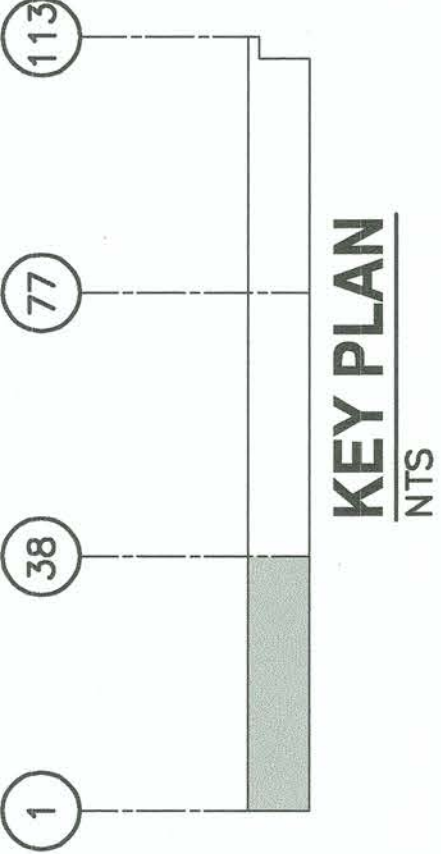
1 C1  
REPAIR PLAN BENTS 1 TO 38  
SCALE: 1"=20'

LEGEND

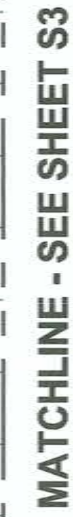
- TIMBER PILE
- TIMBER BATTER PILE
- BENT DESIGNATION
- ROW DESIGNATION
- RESTORE BEARING OF MISALIGNED PILE
- REPLACE EXISTING BEARING PILE

KEY NOTES:

- RESTORE BEARING OF MISALIGNED PILE. SEE SHEET S4, DETAIL 4.
- BREASTING DOLPHIN REPAIRS, SEE SHEET S6.
- REPLACE MISSING BEARING PILE, SEE SHEET S4, DETAIL 3.



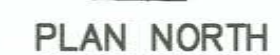




SCALE: 1"=20'

- TIMBER PILE
- TIMBER BATTER PILE
- ① BENT DESIGNATION
- Ⓐ ROW DESIGNATION
- RESTORE BEARING OF MISALIGNED PILE
- ⊗ REPLACE EXISTING BEARING PILE

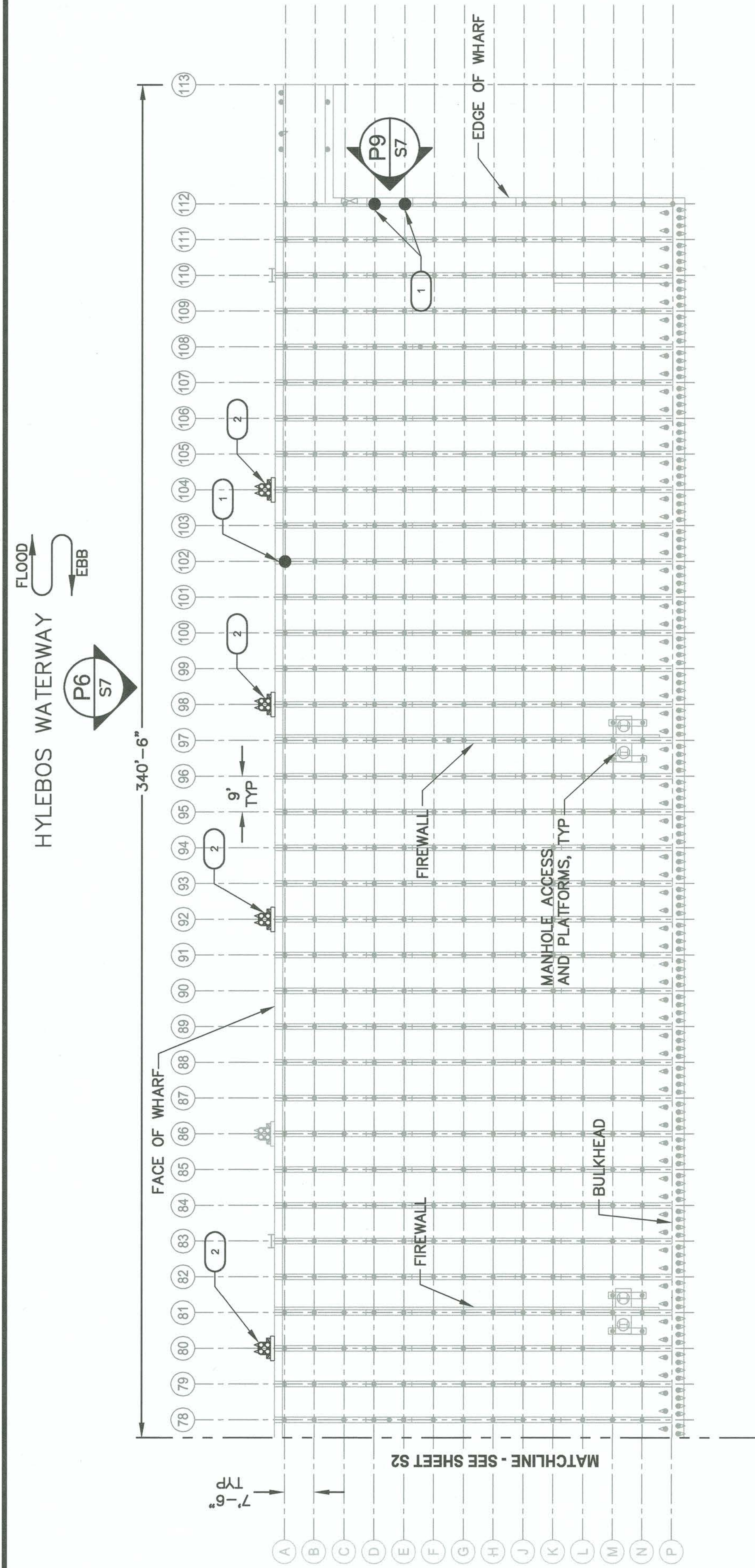
- 1 RESTORE BEARING OF MISALIGNED PILE. SEE SHEET S4, DETAIL 4.
- 2 BREASTING DOLPHIN REPAIRS, SEE SHEET S6.
- 3 REPLACE MISSING BEARING PILE, SEE SHEET S4, DETAIL 3.



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|                                                                                   |  |                                                                                                                                                            |  |                                              |  |
|-----------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|
| 6570                                                                              |  | S3                                                                                                                                                         |  | 6 OF 10                                      |  |
| PORT OF TACOMA<br>WEST HYLEBOS LOG DOCK REPAIRS<br>REPAIR PLAN<br>BENTS 78 TO 113 |  |                                                                                                                                                            |  |                                              |  |
| APPROVED:                                                                         |  | DIRECTOR ENG. DATE<br><i>[Signature]</i> 7/21/17                                                                                                           |  | B. HALEY 7/21/17                             |  |
| CHECKED BY DATE<br>B.OSTBO 7/21/17                                                |  | PROJECT ENGR DATE<br>B. HALEY 7/21/17                                                                                                                      |  |                                              |  |
| PRINTED BY: aszovadi Jul 20, 2017                                                 |  | PORT ADDRESS: ONE SITCUM PLAZA                                                                                                                             |  |                                              |  |
| TACOMA, WA 98401-1837                                                             |  | 07/21/2017                                                                                                                                                 |  |                                              |  |
| M. ID: 201016.01                                                                  |  | CONTRACT/CONS: 070636                                                                                                                                      |  | PHASE: BID SET                               |  |
| TOWNSHIP: 21N                                                                     |  | RANGE: 03E                                                                                                                                                 |  | DRAWING SCALE: AS NOTED                      |  |
| DATE-HRZ: WA83-SF                                                                 |  | VERT: MLLW 19.39' @ Tide 22 1933                                                                                                                           |  | PORT ADDRESS: ONE SITCUM PLAZA               |  |
| PARCEL:                                                                           |  | 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 |  |                                              |  |
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| APPR:                                                                             |  | DATE:                                                                                                                                                      |  | F.O. BOX 1837 TACOMA, WA 98401 (206)388-4841 |  |
| moffatt & nichol                                                                  |  | Tacoma<br>Port of                                                                                                                                          |  |                                              |  |



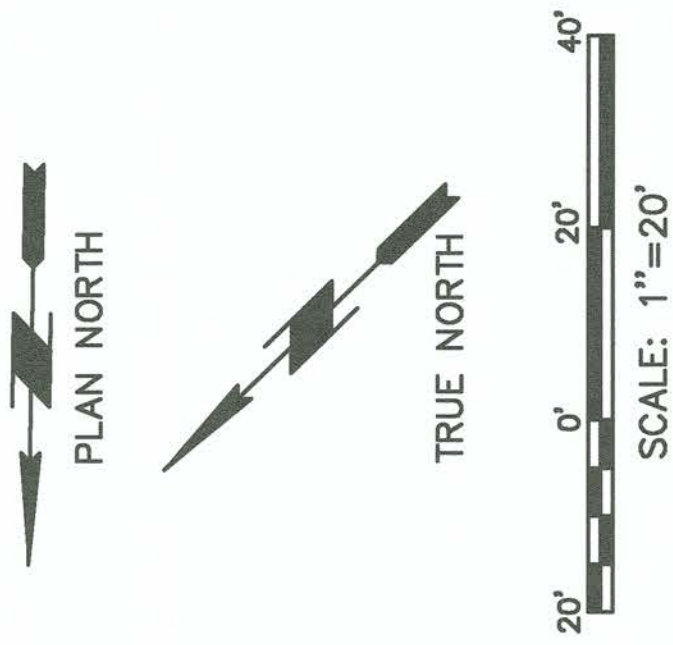
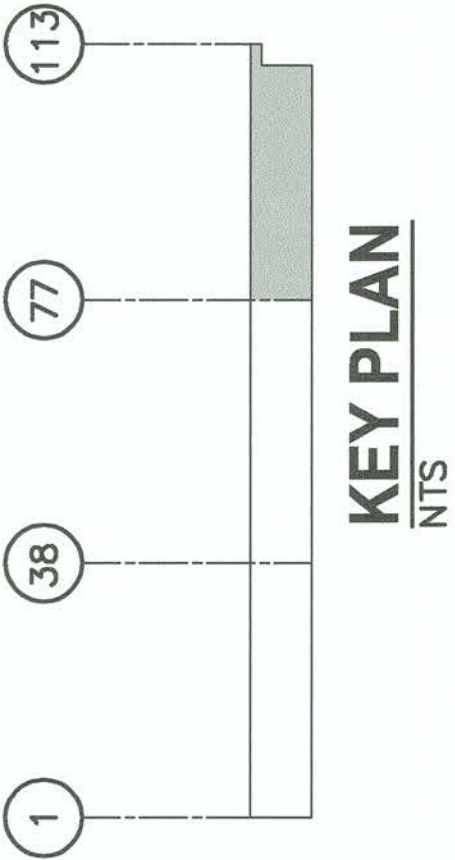
3 C1 REPAIR PLAN BENTS 78 TO 113  
SCALE: 1"=20'

LEGEND

- TIMBER PILE
- TIMBER BATTER PILE
- BENT DESIGNATION
- ROW DESIGNATION
- RESTORE BEARING OF MISALIGNED PILE
- REPLACE EXISTING BEARING PILE

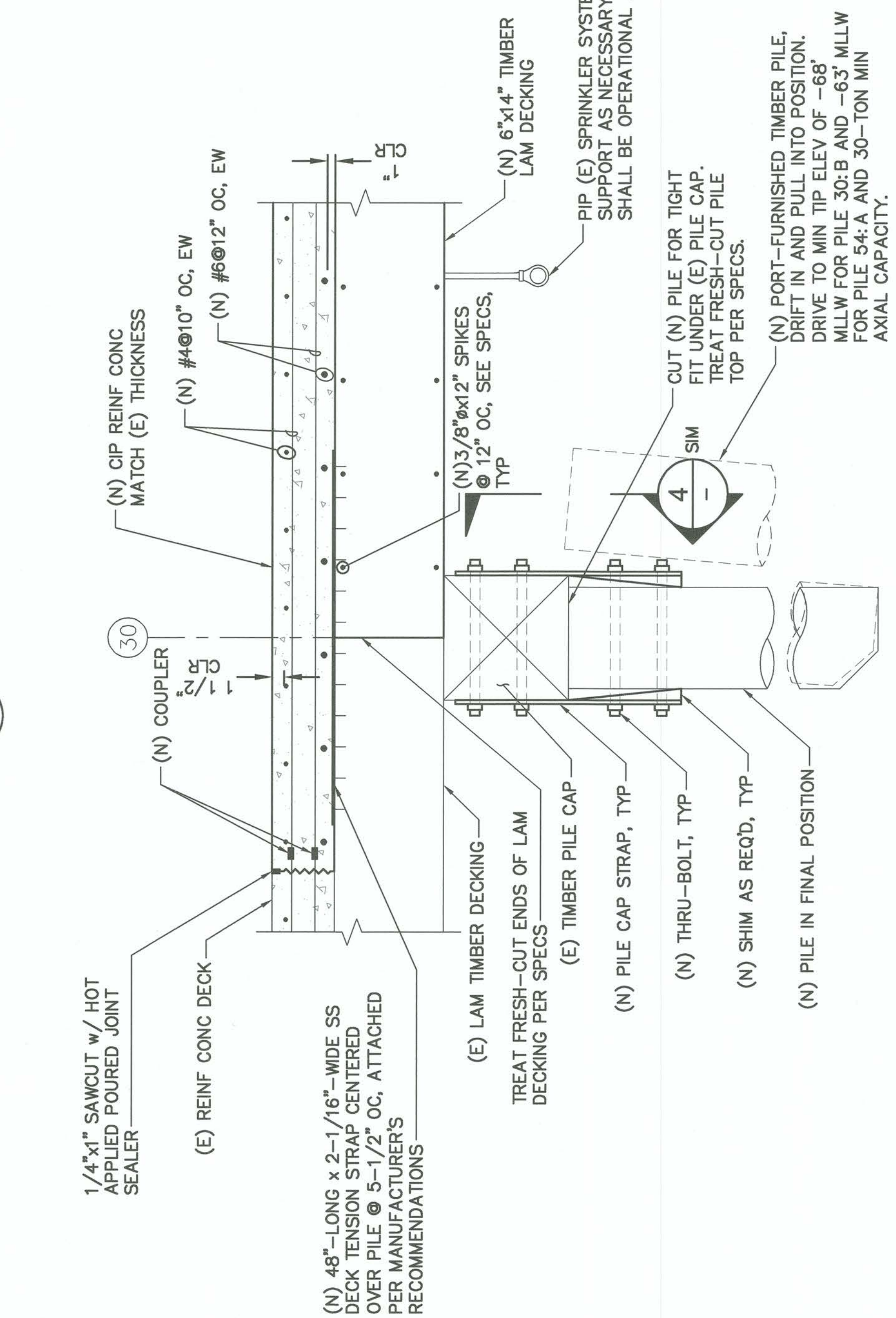
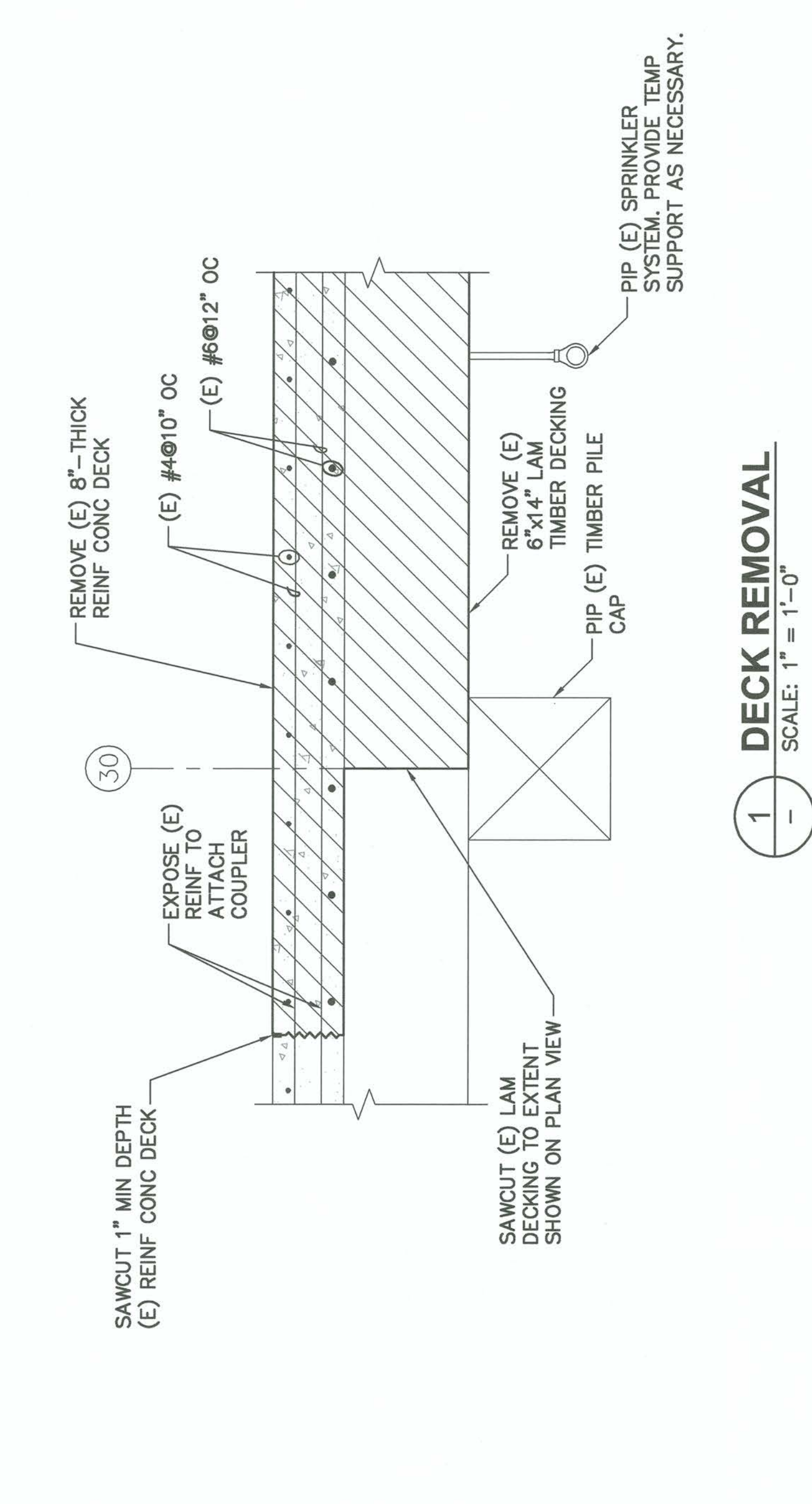
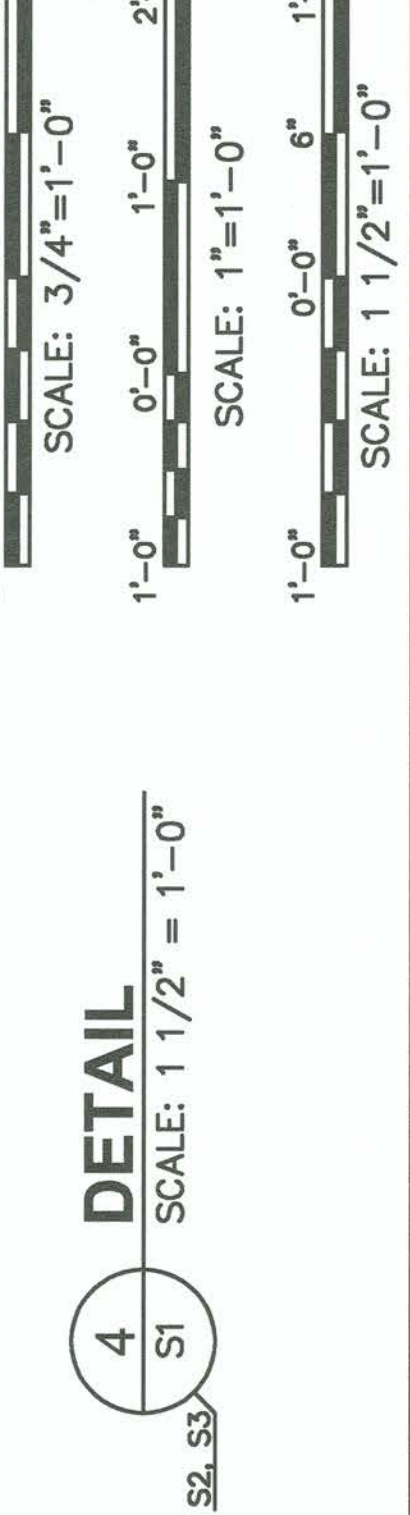
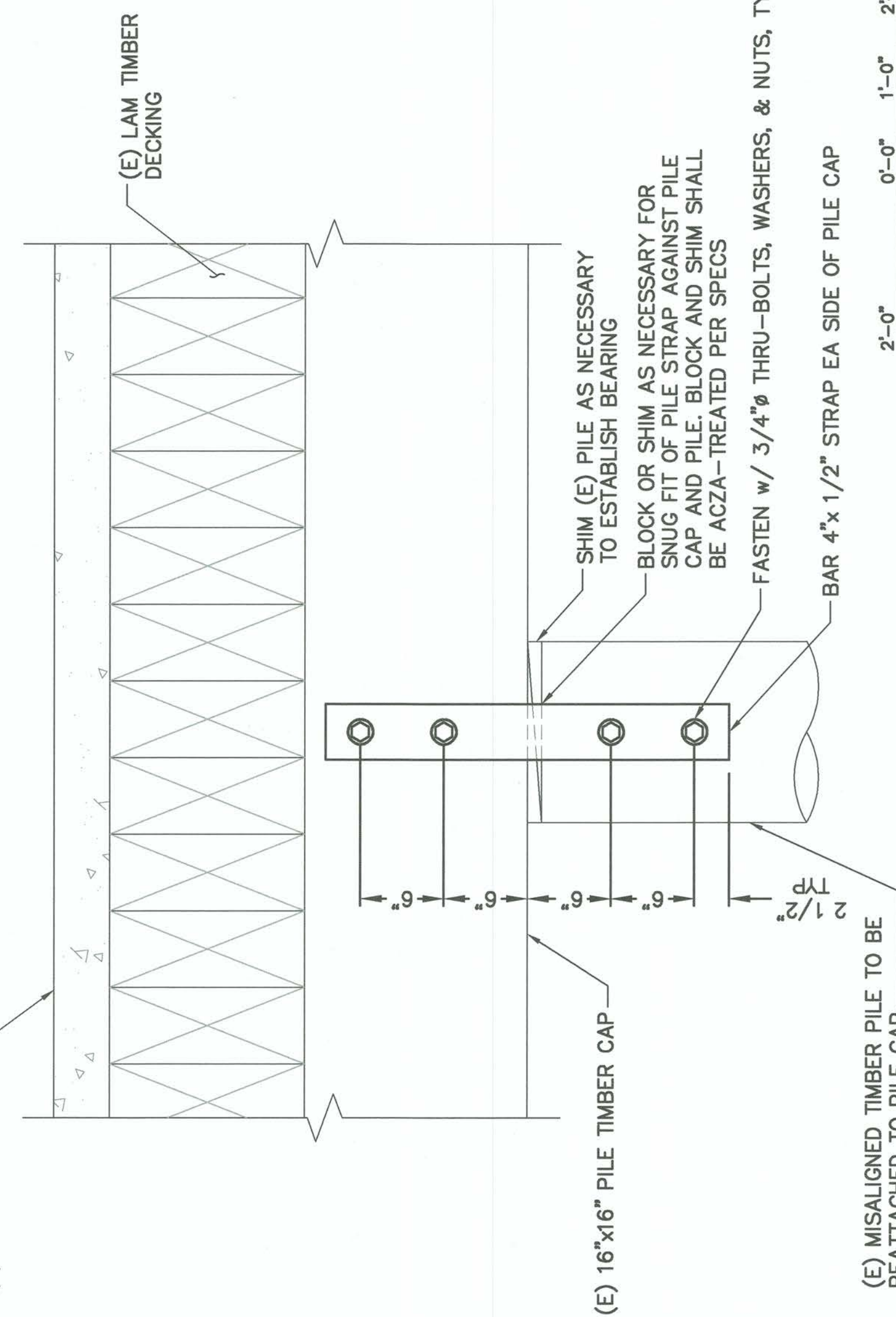
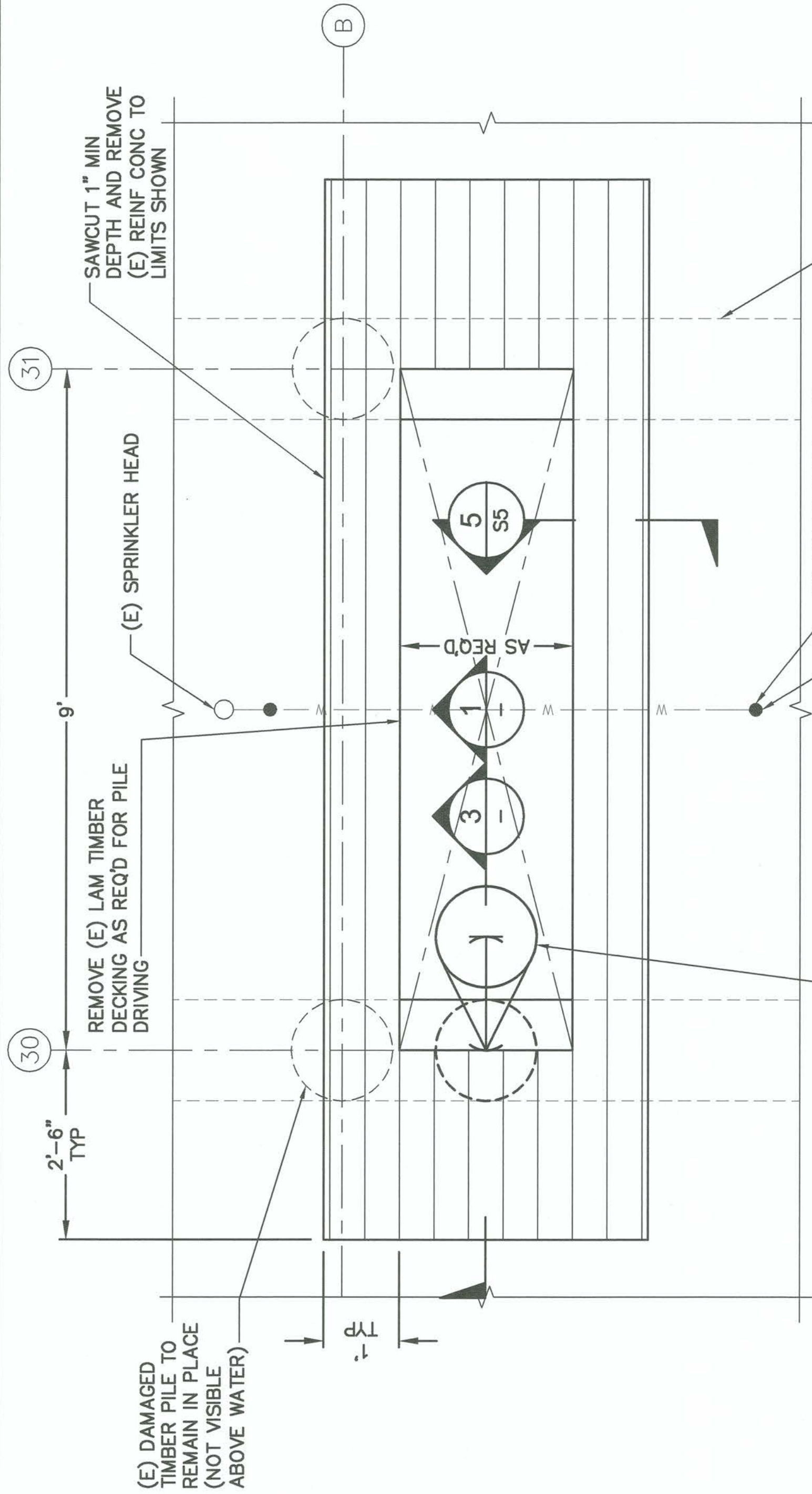
KEY NOTES:

- 1 RESTORE BEARING OF MISALIGNED PILE. SEE SHEET S4, DETAIL 4.
- 2 BREASTING DOLPHIN REPAIRS, SEE SHEET S6.



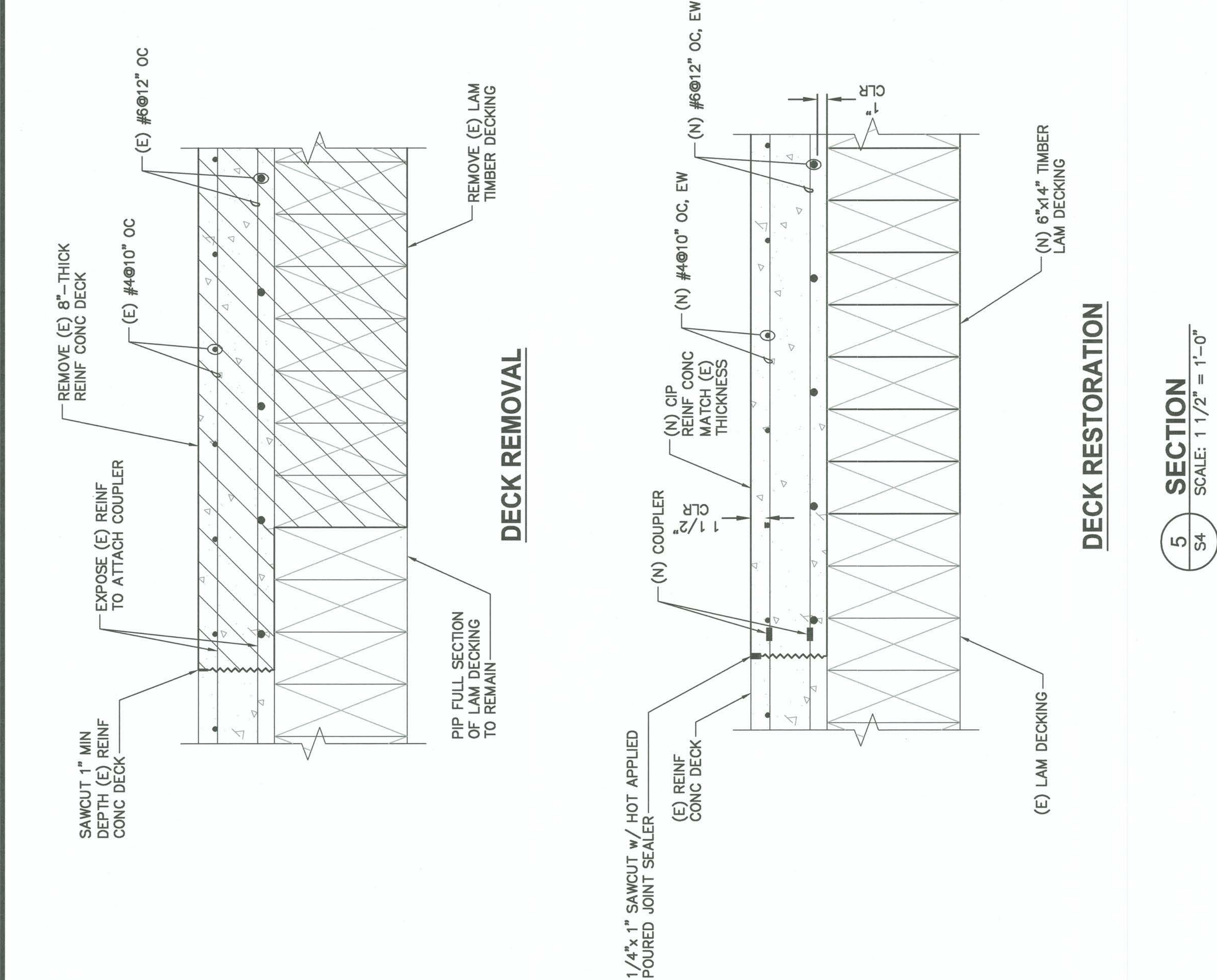


|                                                                                   |  |                                                                                                                            |  |                                                                                                  |  |                                                                                     |  |
|-----------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
|  |  |                                           |  |                |  |  |  |
| APPROVED: _____<br>DIRECTOR ENG. DATE _____<br>B.HALEY 7/21/17                    |  | CHECKED BY DATE _____<br>B.OSTBO 7/21/17                                                                                   |  | PRINTED BY: aszardov Jul 20, 2017<br>PORT ADDRESS: ONE SITCUM PLAZA<br>TACOMA, WA 98401-1837     |  | 07/21/2017                                                                          |  |
| PHASE: BID SET<br>M. ID: 201016.01<br>CONT/CONS: 070636                           |  | TOWNSHIP: 21N<br>RANGE: 03E<br>SECTION: 36<br>SHEET 1<br>REPAIR DETAILS<br>WEST HYLEBOS LOG DOCK REPAIRS<br>PORT OF TACOMA |  | PARCEL: _____<br>DRAWING SCALE: AS NOTED<br>VERT: MLTW 19.39' @ TIDA 22 1933<br>DAT-HRZ: WA83-SF |  | PHASE: BID SET<br>M. ID: 201016.01<br>CONT/CONS: 070636                             |  |





|                                              |  |                                              |  |                                              |  |
|----------------------------------------------|--|----------------------------------------------|--|----------------------------------------------|--|
| 6570                                         |  | 8 OF 10                                      |  | S5                                           |  |
| PORT OF TACOMA                               |  | WEST HYLEBOS LOG DOCK REPAIRS                |  | SHEET 2                                      |  |
| APPROVED:                                    |  | B.OSTBO                                      |  | 7/21/17                                      |  |
| CHECKED BY:                                  |  | B.HALEY                                      |  | 7/21/17                                      |  |
| DIRECTOR ENG. DATE:                          |  | 7/21/17                                      |  | DATE                                         |  |
| PRINTED BY:                                  |  | as200vrd                                     |  | JUL 20, 2017                                 |  |
| PORT ADDRESS:                                |  | ONE SITCUM PLAZA                             |  | TACOMA, WA 98401-1837                        |  |
| DRAWING SCALE:                               |  | AS NOTED                                     |  | PARCEL:                                      |  |
| M. ID:                                       |  | 201016.01                                    |  | DATE:                                        |  |
| CONTRACT/CONS:                               |  | 070636                                       |  | TOWNSHIP:                                    |  |
| RANGE:                                       |  | 03E                                          |  | SECTION:                                     |  |
| VERT:                                        |  | MLLW 19.39' @ Tide 22 1933                   |  | DATE-HRZ:                                    |  |
| TACOMA, WA 98401-1837                        |  | WA 98401-1837                                |  | TACOMA, WA 98401-1837                        |  |
| DATE:                                        |  | DATE:                                        |  | DATE:                                        |  |
| APPR:                                        |  | APPR:                                        |  | APPR:                                        |  |
| BY:                                          |  | BY:                                          |  | BY:                                          |  |
| REVISION:                                    |  | REVISION:                                    |  | REVISION:                                    |  |
| MARK:                                        |  | MARK:                                        |  | MARK:                                        |  |
| Moffatt & nichol                             |  | Moffatt & nichol                             |  | Moffatt & nichol                             |  |
| P.O. BOX 1837 TACOMA, WA 98401 (206)383-0841 |  | P.O. BOX 1837 TACOMA, WA 98401 (206)383-0841 |  | P.O. BOX 1837 TACOMA, WA 98401 (206)383-0841 |  |



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**\*TIGHTEN WEST HOOK--PLATE ANCHOR NUT.**  
**\*\*MOVE BACKBOARD TO BE CENTERED ON DOLPHINS.**



**ELEVATION - DOLPHIN**  
SCALE: 1/2" = 1'-0"

APPROVED:

11/10/2017

# PORT OF TACOMA

## WEST HYLBOS LOG DOCK REPAIRS

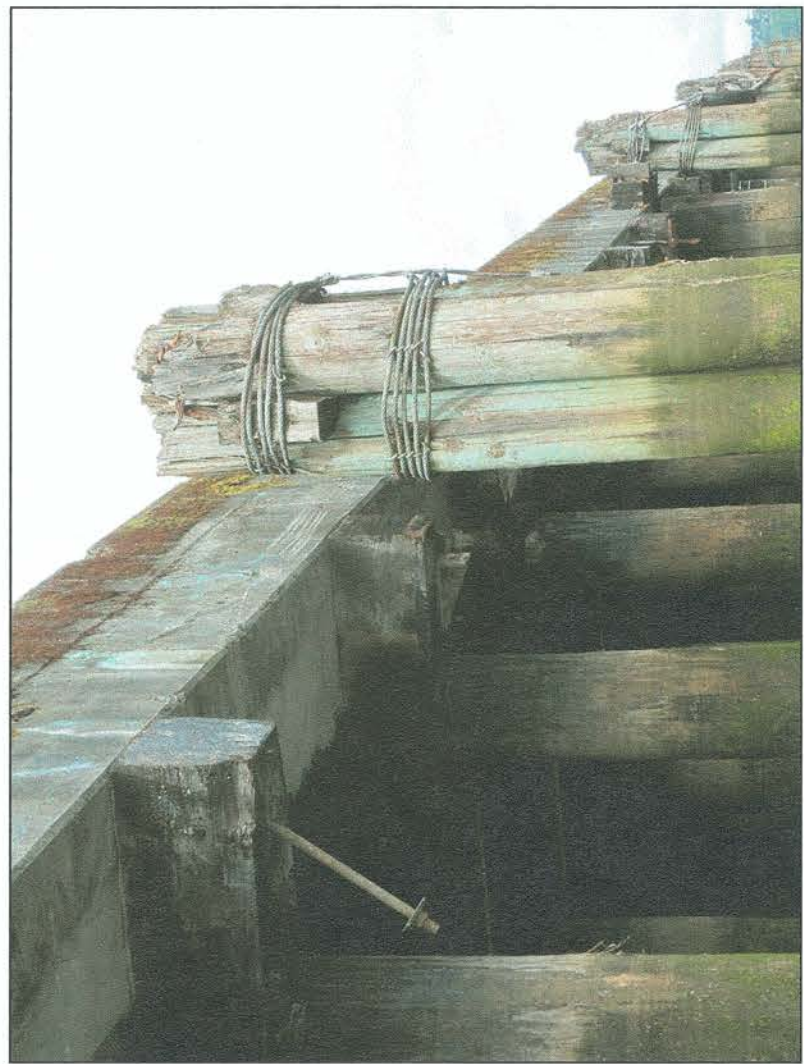
### REPAIR DETAILS

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|                                                   |                   |  |                                |  |                       |  |              |  |                                              |  |                                  |  |                         |  |            |  |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------|-------------------|--|--------------------------------|--|-----------------------|--|--------------|--|----------------------------------------------|--|----------------------------------|--|-------------------------|--|------------|--|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <div>6570</div> <div>S7</div> <div>10 OF 10</div> | CONT/CONS: 070636 |  | TOWNSHIP: 21N                  |  | RANGE: 03E            |  | SECTION: 36  |  | DATE-HRZ: WA83-SF                            |  | VERT: MLLW 19.39' @ Tide 22 1933 |  | DRAWING SCALE: AS NOTED |  | PARCEL:    |  | PHASE: BID SET |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   | M. ID: 201016.01  |  | PORT ADDRESS: ONE SITCUM PLAZA |  | PRINTED BY: aszarvadi |  | JUL 20, 2017 |  | TACOMA, WA 98401-1837                        |  | PROFESSIONAL ENGINEER            |  | 22984                   |  | 07/21/2017 |  | MARK:          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   | REVISION:         |  | BY:                            |  | APPR:                 |  | DATE:        |  | P.O. BOX 1837 TACOMA, WA 98401 (253)983-8841 |  | Port of Tacoma                   |  | 7/21/17                 |  | CHECKED BY |  | B.OSTBO        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                   | DATE:             |  | 7/21/17                        |  | DATE:                 |  | 7/21/17      |  | PROJECT ENGR                                 |  | B. HALEY                         |  | DATE:                   |  | 7/21/17    |  | APPROVED:      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| WEST HYLEBOS LOG DOCK REPAIRS                     |                   |  |                                |  |                       |  |              |  |                                              |  |                                  |  |                         |  |            |  |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SITE PHOTOGRAPHS                                  |                   |  |                                |  |                       |  |              |  |                                              |  |                                  |  |                         |  |            |  |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PORT OF TACOMA                                    |                   |  |                                |  |                       |  |              |  |                                              |  |                                  |  |                         |  |            |  |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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P3 BENT 39 DOLPHIN  
S2 LOOKING NORTHWEST



P6 BENT 98 DOLPHIN  
S3 LOOKING SOUTHWEST



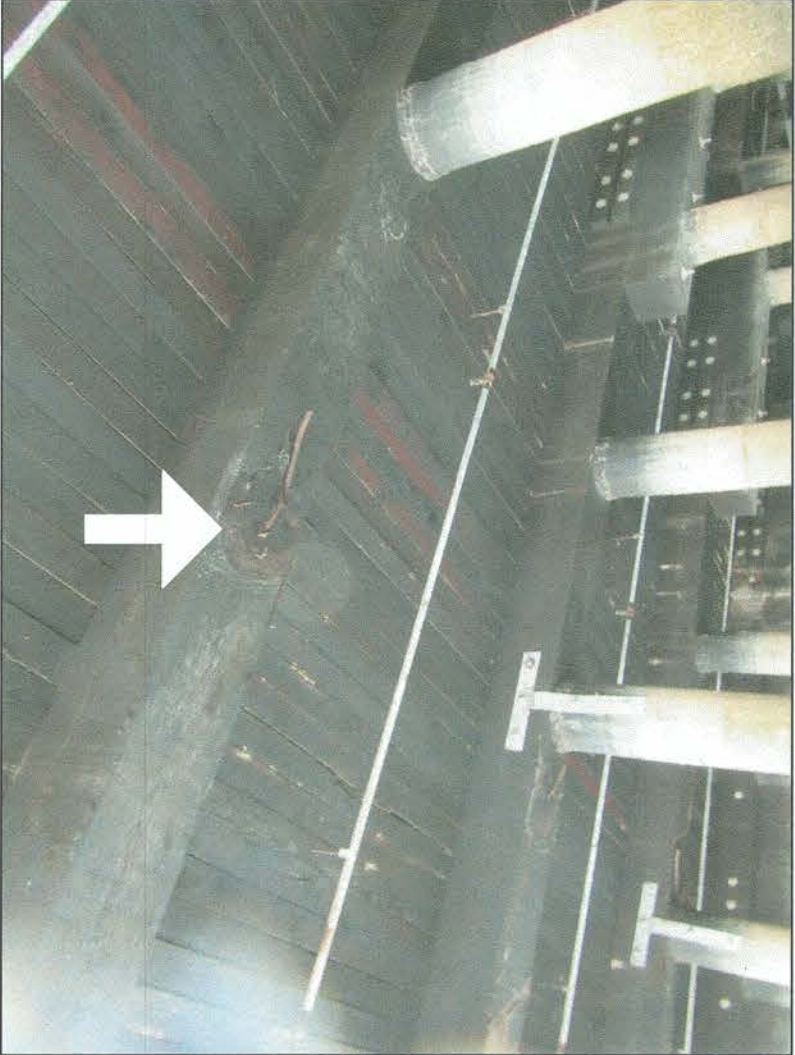
P9 MISALIGNED PILES B112:D & B112:E  
S3 LOOKING WEST



P2 BENT 15 DOLPHIN HOOK  
S1 LOOKING NORTHWEST



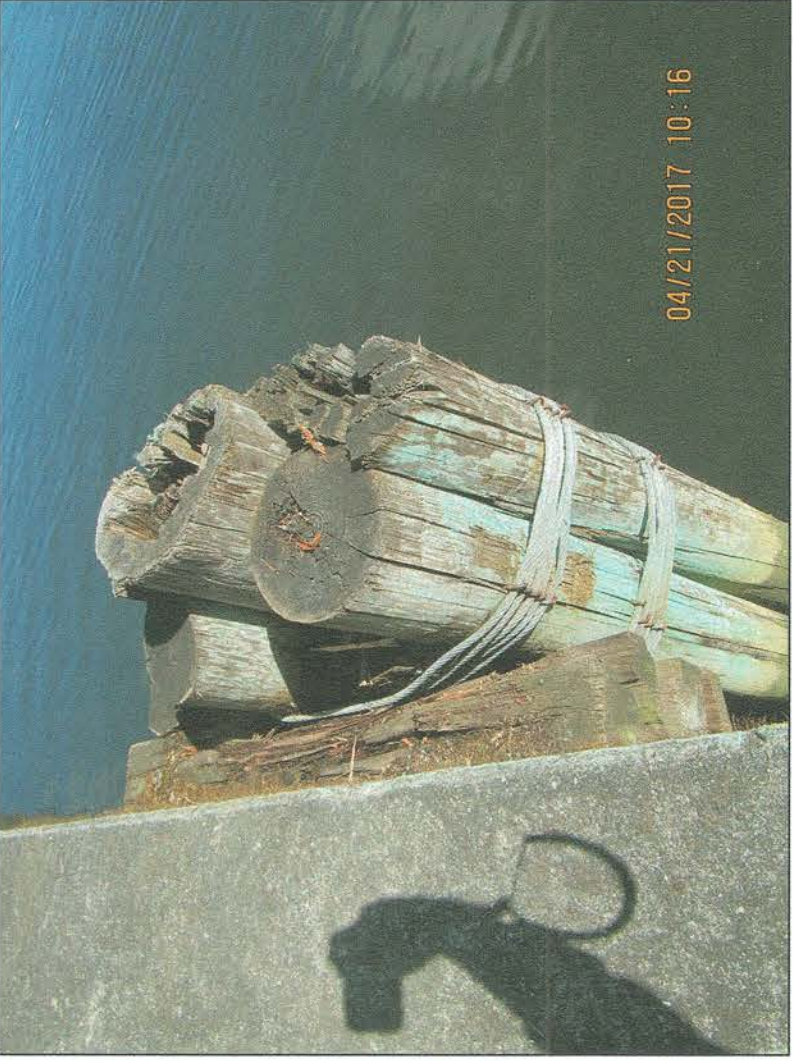
P5 BENT 15 DOLPHIN  
S1 LOOKING SOUTHEAST



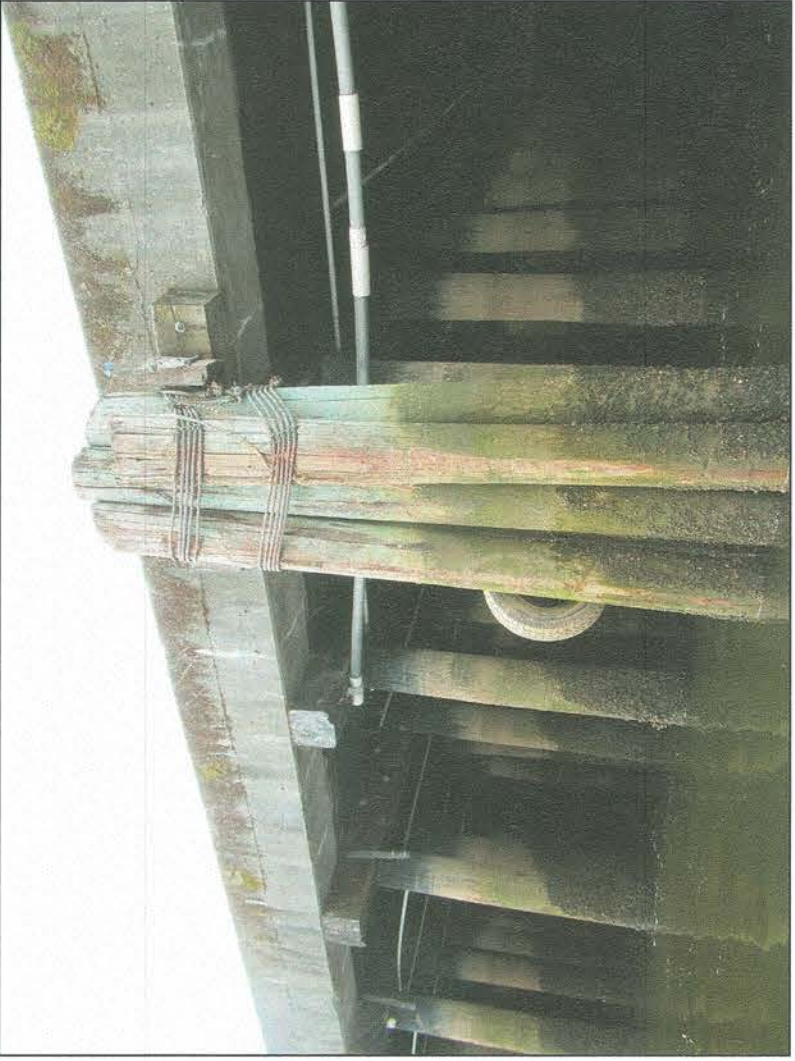
P8 MISSING PILE B30:B  
S1 LOOKING SOUTH



P1 BENT 9 DOLPHINS  
S1 LOOKING SOUTHWEST



P4 BENT 63 DOLPHIN  
S2 LOOKING NORTHWEST

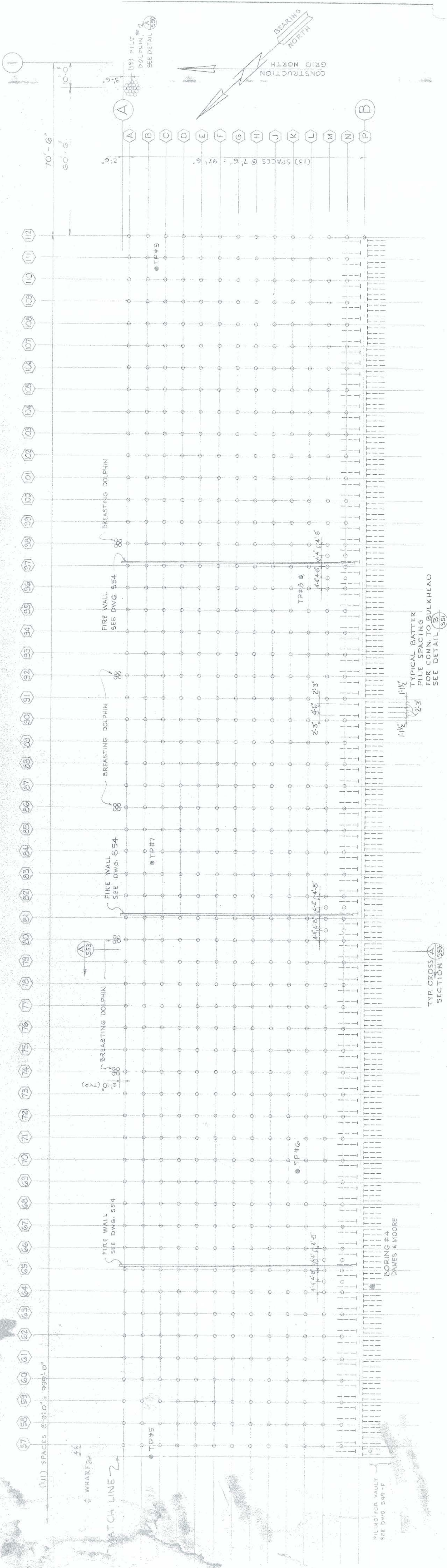


P7 BENT 74 DOLPHIN  
S2 LOOKING SOUTH



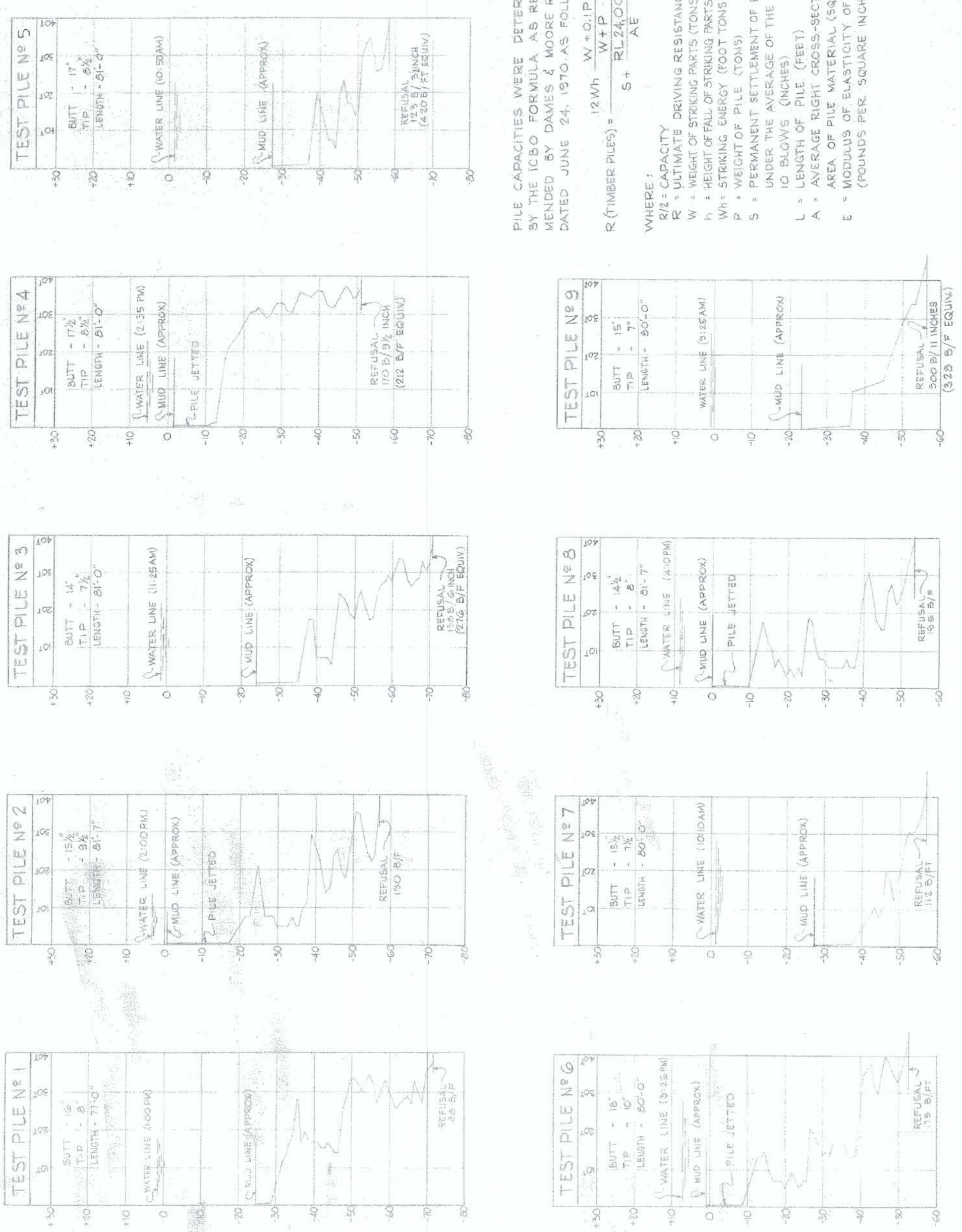






LEGEND  
○ VERTICAL TREATED TIMBER PILES  
--- TREATED TIMBER BATTER PILES  
● TEST PILES

WHARF PILING PLAN  
(PARTIAL)  
1/16" = 1'-0"



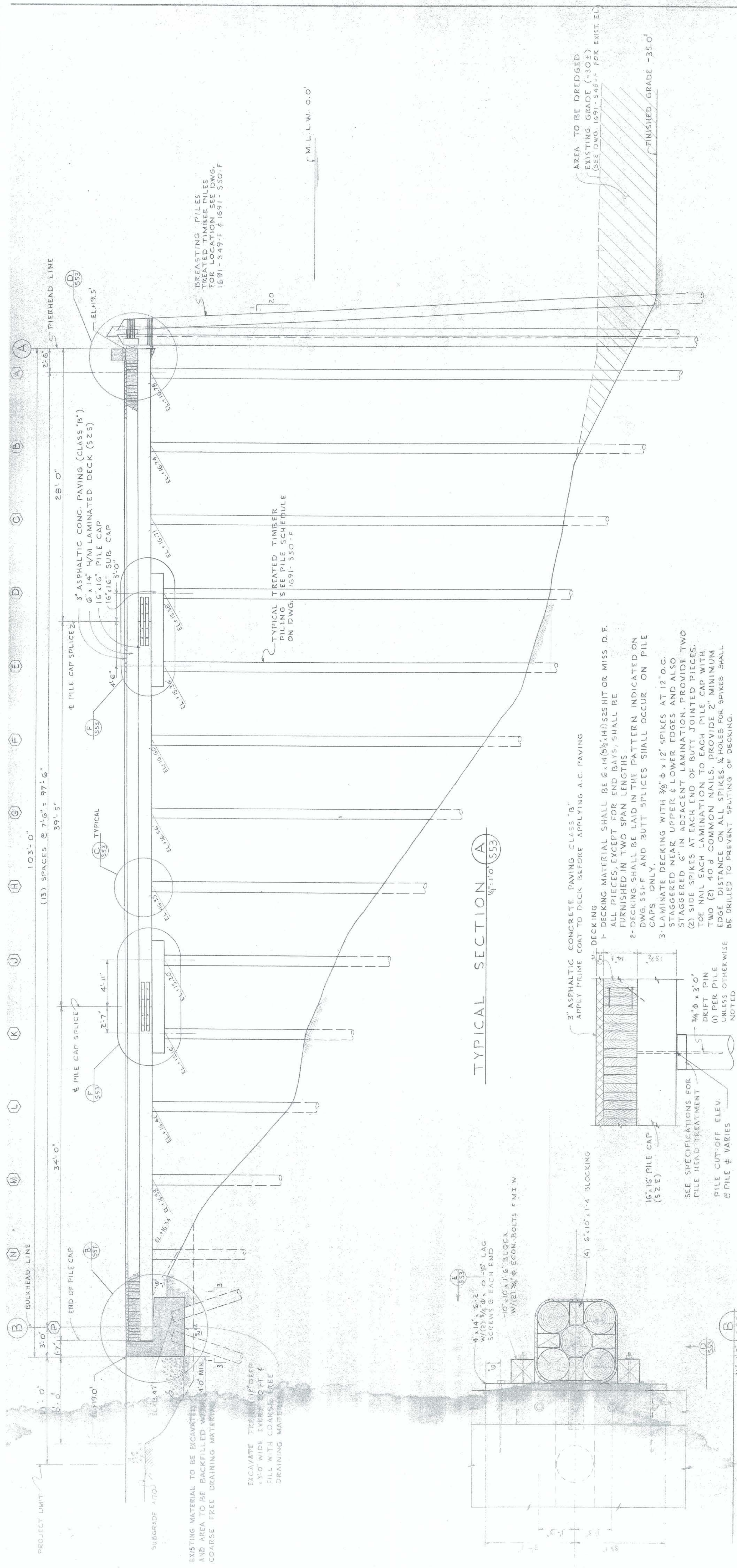
PILE CAPACITIES WERE DETERMINED BY THE ICBO FORMULA AS RECOMMENDED BY DAVIES & MOORE REPORT DATED JUNE 24, 1970 AS FOLLOWS:  
 $R(\text{TIMBER PILES}) = \frac{124W}{S} \cdot \frac{W+P}{AE}$   
WHERE:  
R = PILE CAPACITY (TONS)  
W = WEIGHT OF STRIKING PARTS (TONS)  
H = HEIGHT OF FALL OF STRIKING PARTS (FEET)  
P = WEIGHT OF PILE (TONS)  
S = PERMANENT SETTLEMENT OF PILE (INCHES)  
L = LENGTH OF PILE (FEET)  
A = AVERAGE RIGHT CROSS-SECTIONAL AREA OF PILE MATERIAL (SQ INCHES)  
E = MODULUS OF ELASTICITY OF PILE (POUNDS PER SQUARE INCH)

TEST PILE DATA  
(PILES DRIVEN ON JULY 31, 1970)

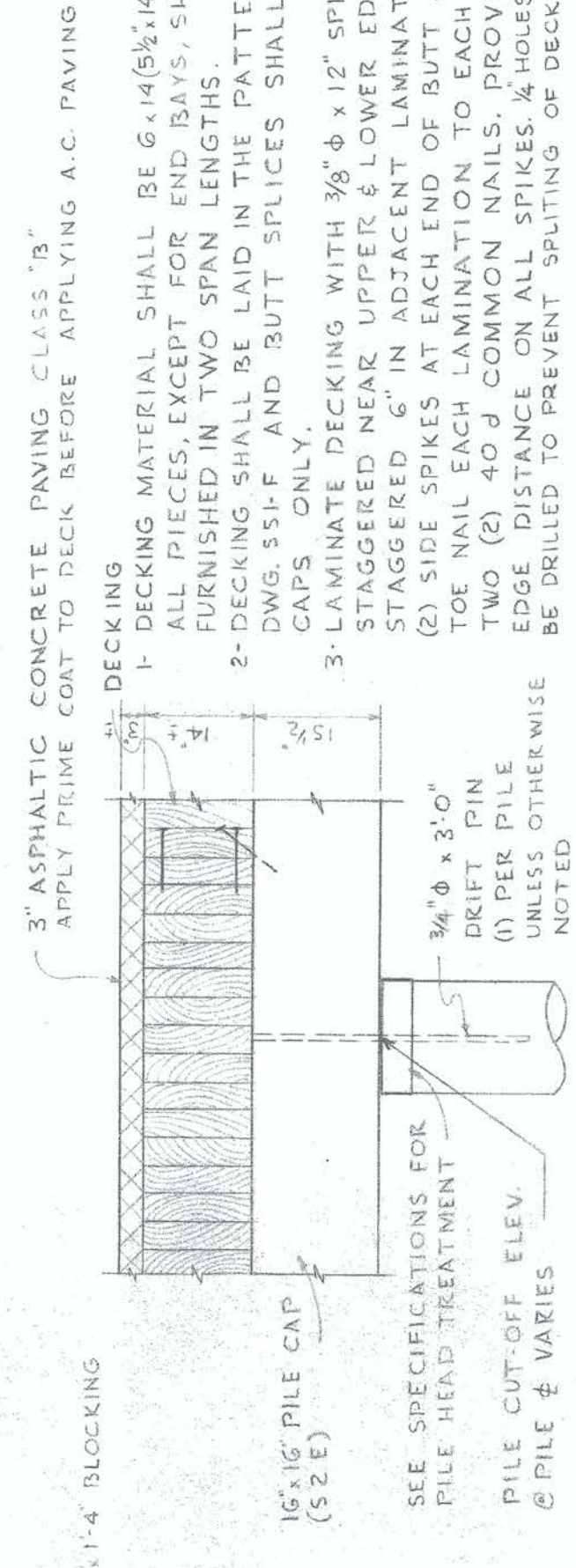
| PILING SCHEDULE |               |      |          |              |        |               |              |               |      |
|-----------------|---------------|------|----------|--------------|--------|---------------|--------------|---------------|------|
| LOCATION ROW    | LOCATION BENT | TYPE | NO. RECD | NO. MIN. SUT | LENGTH | CUT OFF ELEV. | LOCATION ROW | LOCATION BENT | TYPE |
| A               | 1-29          | VERT | 23       | 7            | 16'    | 85'           | 15           | 17            | VERT |
|                 | 30-42         |      | 13       | 8            | 18'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 18'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 18'    | 85'           |              |               |      |
| B               | 84-112        |      | 29       | 8            | 18'    | 85'           |              |               |      |
|                 | 1-29          |      | 29       | 7            | 18'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 8            | 18'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 18'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 18'    | 85'           |              |               |      |
| C               | 84-112        |      | 29       | 7            | 17'    | 85'           |              |               |      |
|                 | 1-29          |      | 13       | 7            | 17'    | 85'           |              |               |      |
|                 | 30-42         |      | 14       | 8            | 17'    | 85'           |              |               |      |
|                 | 43-56         |      | 27       | 8            | 17'    | 85'           |              |               |      |
|                 | 57-83         |      | 23       | 8            | 17'    | 85'           |              |               |      |
| D               | 84-112        |      | 23       | 8            | 17'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 17'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 17'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 17'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 17'    | 85'           |              |               |      |
| E               | 84-112        |      | 23       | 8            | 17'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| F               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| G               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| H               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| I               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| J               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| K               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| L               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| M               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| N               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |
| P               | 84-112        |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 1-29          |      | 23       | 7            | 16'    | 85'           |              |               |      |
|                 | 30-42         |      | 13       | 7            | 16'    | 85'           |              |               |      |
|                 | 43-56         |      | 14       | 8            | 16'    | 85'           |              |               |      |
|                 | 57-83         |      | 27       | 8            | 16'    | 85'           |              |               |      |

TACOMA SORTION YARD  
WHARF PILING PLAN  
TACOMA WASHINGTON  
Weyerhaeuser Company  
Tacoma, Washington  
DESIGNED BY: [Signature]  
CHECKED BY: [Signature]  
SCALE: AS NOTED  
DATE: 8/13/73  
REV: 1  
NO. 1  
DATE  
REVISIONS  
ISSUED  
SEP 18 1970  
WHITAKER ENGINEERS, INC.  
Tacoma, Washington

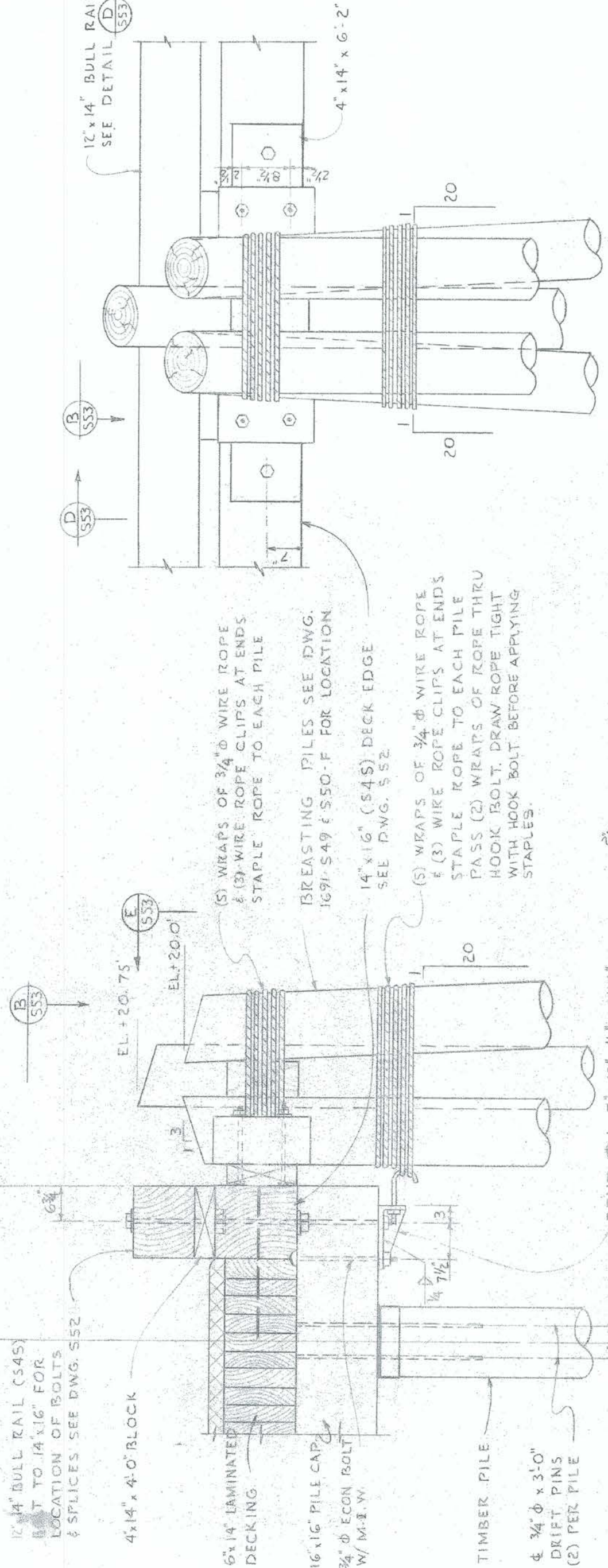




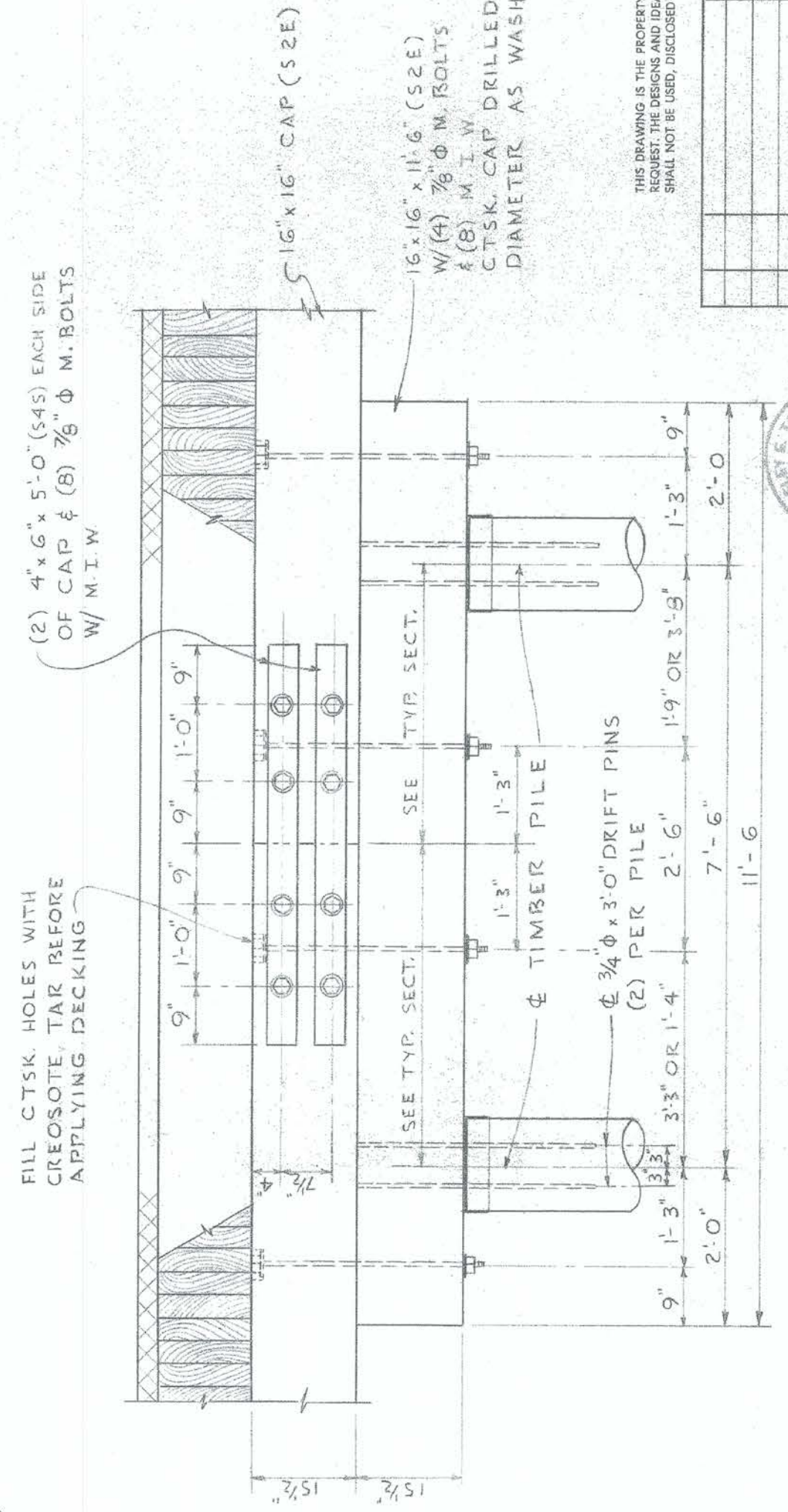
TYPICAL SECTION A



TYPICAL PILE CAP CONNECTION & DECK DETAIL



BULL RAIL & BREASTING PILES (D)  $\frac{3}{4}$ " 1' 0' \$53



PILE CAP SPICE DETAIL

[illegible]

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PRINTED  
JUL 17 1987  
ADAM ENGINEERS

TACOMA SORTING YARD  
WHARF TYP CROSS SECT. & DETS  
TACOMA WASHINGTON

**Weyerhaeuser Company**  
Construction Engineering  
Tacoma, Washington

|           |      |          |     |     |          |            |         |          |      |  |
|-----------|------|----------|-----|-----|----------|------------|---------|----------|------|--|
| NO.       | DATE | REVISION | DR. | AP. | DESIGNED | DRAWN      | CHECKED | APPROVED | REV. |  |
| 1         |      | AS BUILT |     |     |          |            |         |          | 1    |  |
|           |      |          |     |     | SCALE    | 1691-553-E |         |          |      |  |
|           |      |          |     |     | DATE     | 8/1/78     |         |          |      |  |
| REVISIONS |      |          |     |     |          |            |         |          |      |  |