Port of Port Orford

Permanent Dock Structure

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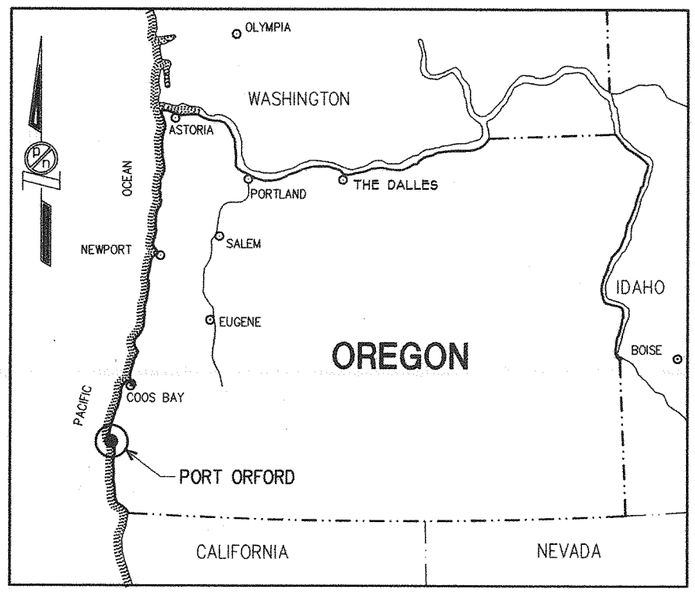
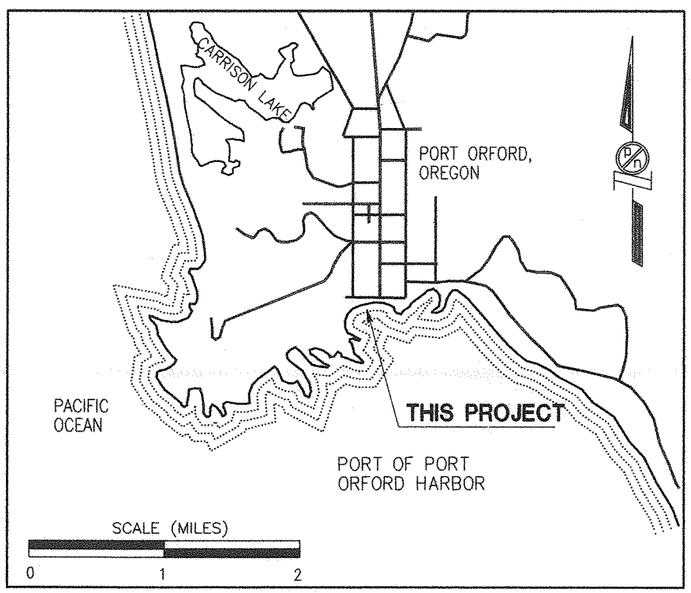


LOCATION MAP



VICINITY MAP

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: DRH
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Date: JUNE '99
Scale:

TITLE SHEET AND INDEX

Sheet 1 of 29

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PLOT 1:1 F.S. 05-20-99

Construction Surveying

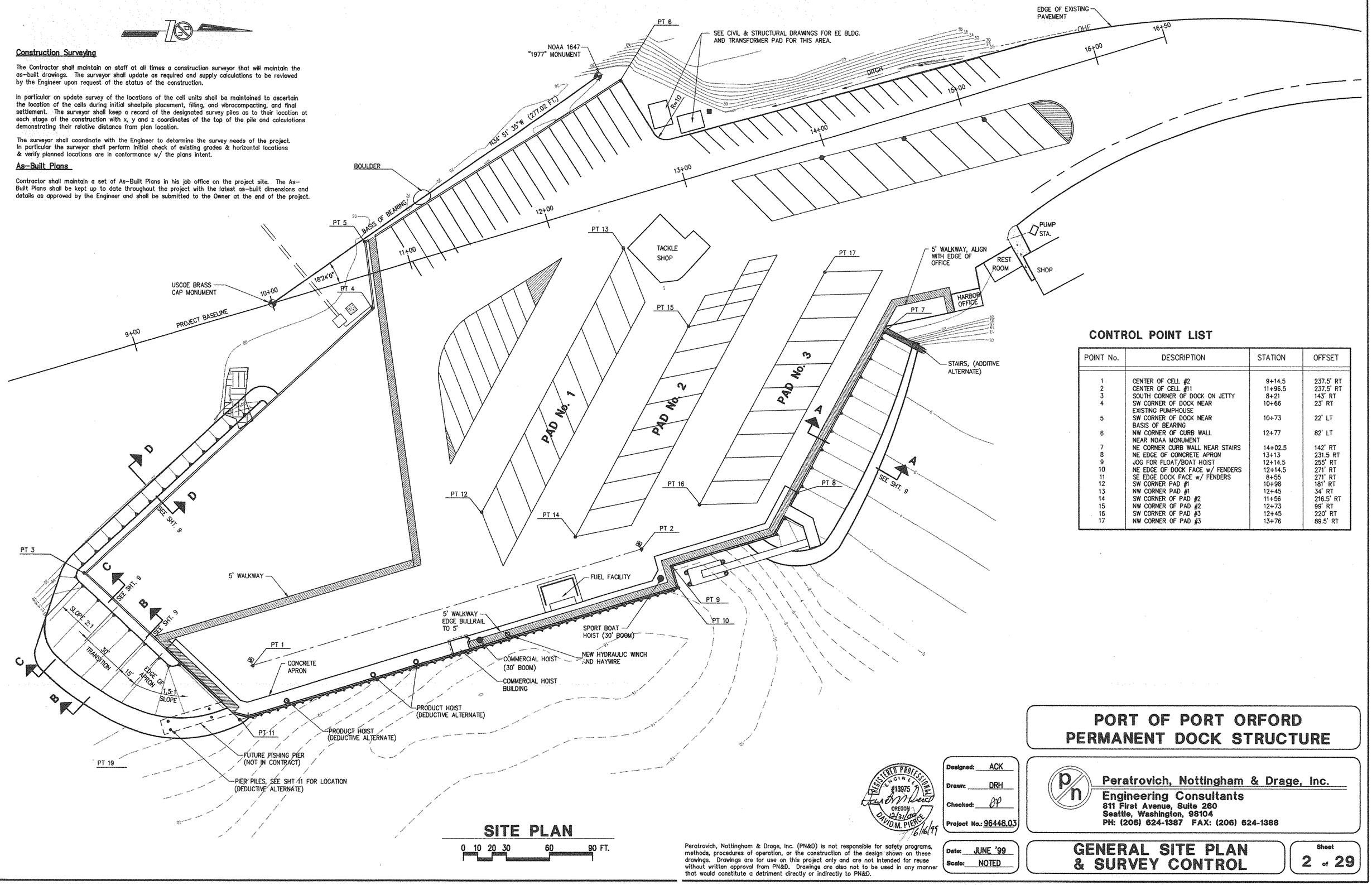
The Contractor shall maintain on staff at all times a construction surveyor that will maintain the as-built drawings. The surveyor shall update as required and supply calculations to be reviewed by the Engineer upon request of the status of the construction.

In particular an update survey of the locations of the cell units shall be maintained to ascertain the location of the cells during initial sheetpile placement, filling, and vibrocompacting, and final settlement. The surveyor shall keep a record of the designated survey piles as to their location at each stage of the construction with x, y and z coordinates of the top of the pile and calculations demonstrating their relative distance from plan location.

The surveyor shall coordinate with the Engineer to determine the survey needs of the project. In particular the surveyor shall perform initial check of existing grades & horizontal locations & verify planned locations are in conformance w/ the plans intent.

As-Built Plans

Contractor shall maintain a set of As-Built Plans in his job office on the project site. The As-Built Plans shall be kept up to date throughout the project with the latest as-built dimensions and details as approved by the Engineer and shall be submitted to the Owner at the end of the project.



SITE PLAN

0 10 20 30 60 90 FT.

CONTROL POINT LIST

POINT No.	DESCRIPTION	STATION	OFFSET
1	CENTER OF CELL #2	9+14.5	237.5' RT
2	CENTER OF CELL #11	11+96.5	237.5' RT
3	SOUTH CORNER OF DOCK ON JETTY	8+21	143' RT
4	SW CORNER OF DOCK NEAR EXISTING PUMPHOUSE	10+66	23' RT
5	SW CORNER OF DOCK NEAR BASIS OF BEARING	10+73	22' LT
6	NW CORNER OF CURB WALL NEAR NOAA MONUMENT	12+77	82' LT
7	NE CORNER CURB WALL NEAR STAIRS	14+02.5	142' RT
8	NE EDGE OF CONCRETE APRON	13+13	231.5 RT
9	JOG FOR FLOAT/BOAT HOIST	12+14.5	255' RT
10	NE EDGE OF DOCK FACE w/ FENDERS	12+14.5	271' RT
11	SE EDGE DOCK FACE w/ FENDERS	8+55	271' RT
12	SW CORNER PAD #1	10+98	181' RT
13	NW CORNER PAD #1	12+45	34' RT
14	SW CORNER OF PAD #2	11+56	216.5' RT
15	NW CORNER OF PAD #2	12+73	99' RT
16	SW CORNER OF PAD #3	12+45	220' RT
17	NW CORNER OF PAD #3	13+76	89.5' RT

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PLOT 1:1 F.S. 06-07-99

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE 6/16/99

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

Date: JUNE '99
Scale: NOTED

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

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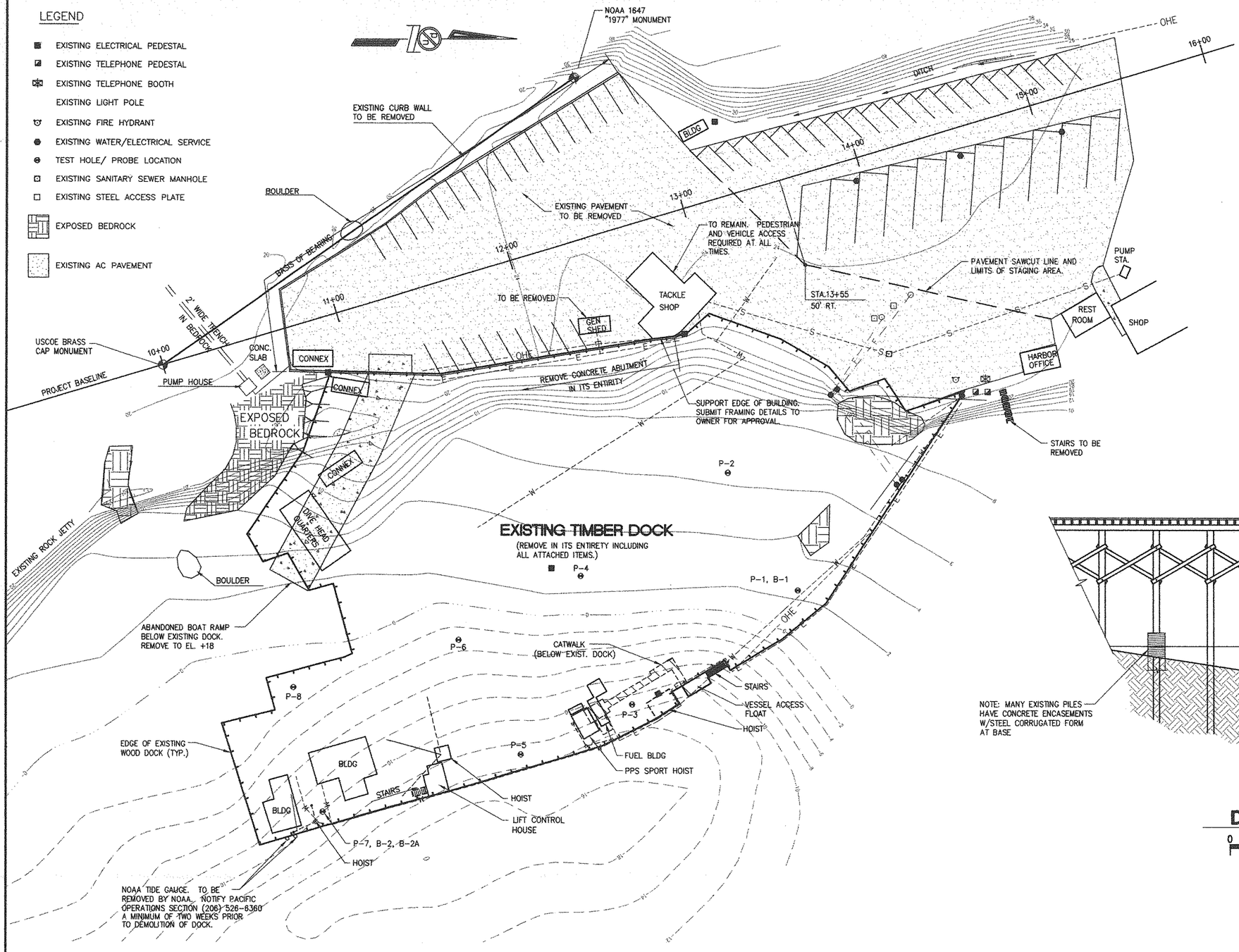
GENERAL SITE PLAN & SURVEY CONTROL

LEGEND

- EXISTING ELECTRICAL PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING TELEPHONE BOOTH
- EXISTING LIGHT POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER/ELECTRICAL SERVICE
- TEST HOLE/ PROBE LOCATION
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STEEL ACCESS PLATE
- EXPOSED BEDROCK
- EXISTING AC PAVEMENT



EXISTING SITE CONDITIONS

0 10 20 30 60 90 FT.

NOTES:

1) VERTICAL DATUM MLLW. = 0.00'
2) BASIS FOR VERTICAL DATUM IS FROM TIDAL BM NOV. 6, 1937 ELEVATION 17.18'. PUBLICATION DATE FEB. 18, 1992.
3) SITE PLAN INFORMATION IS BASED ON SITE SURVEY BY PERATROVICH, NOTTINGHAM & DRAGE INC. (PN&D) CONDUCTED MAY 29–31, 1996

UTILITY DEMOLITION
SEE UTILITY PLANS & SPECIFICATIONS FOR DEMOLITION

Demolition

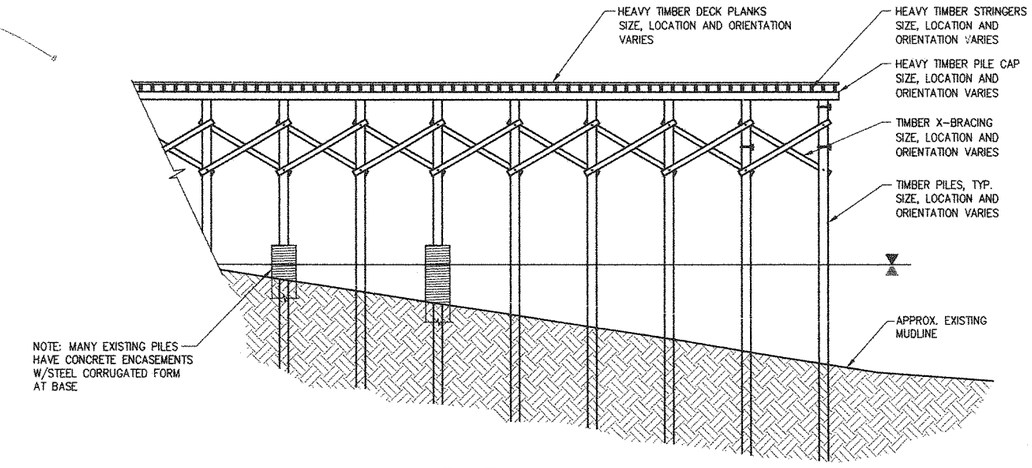
The Contractor shall remove in their entirety the structures indicated on the plans. These plans substantially indicate the existing construction, however some discrepancies should be expected. The Contractor is required to view the site to ascertain the condition of the facility and the scope of work of the demolition prior to bidding.

The Contractor shall pull all piles in their entirety in the designated demolition. All debris from the demolition shall become the property of the Contractor and shall be removed from site. Dispose of all materials in a legal manner. (Note: Local residents have expressed a desire to obtain salvaged material).

Some structures and other items as detailed on the drawoings are to remain. The Contractor shall familiarize with the plans prior to demolition and insure that all components scheduled to remain are not removed or damaged. If any items are damaged, the Contractor shall repair the damage or make other structural modifications as required at no additional cost to the Owner.

Salvage

The Owner prior to start of construction may remove and salvage all or part of items associated with demolition as shown on the plans. The Contractor shall provide the Owner at least one month notice prior to start of demolition of the facility to allow Owner time to salvage items.



PARTIAL DOCK SECTION

0 5 10 20 30 FT.

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Designed:	TN
Drawn:	DRH
Checked:	DP
Project No.:	96448.03
Date:	JUNE '99
Scale:	NOTED

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EXISTING CONDITIONS AND DEMOLITION

Sheet 3 of 29

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PLOT 1:1 F.S. 06-14-99

Boring B-1

Approx. Stratum Elevation	SPT Blows per 6-Inches	Remarks
2.5		Mudline
-1	12-15-7	Dark gray micaceous fine SAND, fine shell fragments
-4	9-5-3	Dark gray micaceous fine SAND, with several fine-medium gravel fragments near tip of spoon; fine shell fragments
-6	6-6-6/5"	Dark gray micaceous fine SAND, with fine-medium weathered rock fragments; fine shell fragments
-7	90+/ 1/8"	Refusal. 1/8 wafer of rock in tip of spoon

Boring B-2

Approx. Stratum Elevation	SPT Blows per 6-Inches	Remarks
-10		Mudline
-14	1-1-1	Dark gray micaceous fine SAND, fine shell fragments
-21	6-6-5	Dark gray micaceous fine SAND, fine shell fragments
-24	5-6-10	Dark gray micaceous fine SAND, with fine shell fragments
-30	10-50-25	Top of sample Dark gray micaceous fine SAND, with fine shell fragments. Bottom of sample dark gray silty course SAND and very fine GRAVEL, probably rock fragments. Considerable auger chatter during drilling
-33	16-12-12	Dark grey sandy CLAY or Clayey SAND; micaceous, fine shell fragments

Boring B-2A

Approx. Stratum Elevation	SPT Blows per 6-Inches	Remarks
-10		Mudline
-30	47-41-55	Dark gray silty course SAND and very fine GRAVEL, probably rock fragments.
-35	5-5-5	Dark gray fine sandy GRAVEL-ROCK fragments
-38	40-69-99	Dark gray micaceous fine SAND, with fine shell fragments. Tip of spoon - light gray fine GRAVEL, angular (rock fragments).
-43		Black sticky CLAY with fine angular rock fragments, <1".

Boring P-1

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
2		Mudline
1	1	
0	9	
-1	15	
-2	17	
-3	14	
-4	32	
-5	42	
-6	32	
-7	21	
-8	18	
-9	90/3"	Refusal

Boring P-2

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
7		Mudline
6	3	
5	11	
4	25	
3	110	
2	45	
1	39	
0	36	
-1	38	
-2	31	
-3	24	
-4	14	
-5	13	
-6	21	
-7	31	
-8	31	
-9	44	
-10	31	
-11	23	
-12	28	
-13	34	
-14	51	
-15	48	
-16	65	
-17	138	
-18	152	
-19	152	
-20	123	
-21	112	
-22	113	
-23	69	
-24	76	
-25	133	
-26	190	
-27	178	
	100/6"	Refusal

Boring P-3

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
-11		Mudline
-12	0	
-13	1	
-14	6	
-15	4/6" 78/6"	
-16	38	
-17	33	
-18	70	
-19	37	
-20	38	
-21	32	
-22	35	
-23	26	
-24	39	
-25	51	
-26	64	
	70/6"	Refusal

Boring P-4

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
2		Mudline
1	3	
0	10	
-1	18	
-2	25	
-3	26	
-4	20	
-5	43	
-6	37	
-7	36	
-8	41	
-9	23	
-10	14	
-11	12	
-12	12	
-13	11	
-14	11	
-15	25	
-16	50	
-17	28	
-18	31	
-19	125	
-20	61	
-21	59	
-22	37	
-23	35	
-24	38	
-25	101	
-26	102	
-27	198	Refusal

Boring P-5

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
-13		Mudline
-14	0	
-15	1	
-16	1	
-17	9	
-18	7	
-19	10	
-20	19	
-21	28	
-22	46	
-23	59	
-24	53	
-25	65	
-26	55	
-27	54	
-28	56	
-29	95	
-30	66	
-31	100	
-32	130	
-33		Refusal

Boring P-6

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
-3		Mudline
-4	4	
-5	9	
-6	21	
-7	27	
-8	31	
-9	33	
-10	37	
-11	29	
-12	21	
-13	22	
-14	23	
-15	18	
-16	14	
-17	12	
-18	13	
-19	11	
-20	29	
-21	30	
-22	33	
-23	25	
-24	40	
-25	50	
-26	54	
-27	57	
-28	66	
-29	135	
-30	89	
-31	129	
-32	112	
-33	180/11"	Refusal

Boring P-7

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
-10		Mudline
-11	1	
-12	2	
-13	6	
-14	14	
-15	20	
-16	19	
-17	17	
-18	15	
-19	16	
-20	17	
-21	23	
-22	24	
-23	30	
-24	56	
-25	66	
-26	33	
-27	28	
-28	39	
-29	33	
-30	48	
-31	73	
-32	66	
-33	60	
-34	142	
-35	128	
-36	117	
-37	132	
-38	114	
-39	80	
-40	100/11"	Refusal

Boring P-8

Approx. Stratum Elevation	SPT Blows per 12-Inches	Remarks
-1		Mudline
-2	3	
-3	8	
-4	17	
-5	23	
-6	26	
-7	27	
-8	26	
-9	29	
-10	40	
-11	35	
-12	27	
-13	36	
-14	27	
-15	23	
-16	17	
-17	19	
-18	16	
-19	65	
-20	61	
-21	78	
-22	69	
-23	84	
-24	55	
-25	50	
-26	55	
-27	102	
-28	200	Refusal

NOTES

THE SOIL AND PENETROMETER INFORMATION SHOWN IS INTERPRETED FROM THE GEOTECHNICAL INFORMATION PROVIDED IN THE "FINAL REPORT: PORT OF PORT ORFORD PERMANENT DOCK REPLACEMENT", WHICH IS AVAILABLE FOR REVIEW AT THE PORT OFFICE AND AT PN&D SEATTLE OFFICE. THE CONTRACTOR SHOULD REVIEW THE INFORMATION CONTAINED IN THIS REPOR FOR A COMPLETE UNDERSTANDING OF THE AVAILABLE GEOTECHNICAL DATA.

TEST HOLES B-1, B-2, AND B-2A WERE DRILLED WITH AN 8-INCH HOLLOW STEM AUGER. SOIL SAMPLES WERE OBTAINED USING A 1.4-INCH STANDARD SPLIT SPOON LOWERED INTO THE HOLLOW STEM AUGER WITH "A" SIZE ROD. THE SPLIT SPOON WAS DRIVEN INTO UNDISTURBED GROUND WITH A 140-POUND DROP HAMMER WITH A 30-INCH FREE FALL USING AN AUTOMATIC HAMMER SYSTEM.

PENETROMETERS WERE DRIVEN AT LOCATIONS P-1 TO P-8. THIS CONSISTED OF DRIVING "A" SIZE ROD WITH CLOSED TIP AND RECORDING BLOW COUNTS AT EACH 1-FOOT INCREMENT.

SOIL CLASSIFICATIONS PRESENTED ON THE BORING LOGS ARE BASED ON VISUAL AND LABORATORY OBSERVATION IN GENERAL ACCORDANCE WITH ASTM D 2487 AND ASTM D 2488. THE SUBSURFACE CONDITIONS NOTED APPLY ONLY AT THE SPECIFIED LOCATION AND ON THE DATE INDICATED AND THEREFORE MAY NOT NECESSARILY BE INDICATIVE OF CONDITIONS AT OTHER TIMES OR AT OTHER LOCATIONS. THE READER IS REFERRED TO THE ABOVE REFERENCED REPORT FOR A MORE COMPLETE DESCRIPTION OF SITE AND SOIL CONDITIONS.

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PLOT T: W/ANCH.PCP 05-20-99

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/06 DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed:
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
311 First Avenue, Suite 260
Seattle, Washington, 98104
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Date: JUNE '99
Scale:

SOIL BORING LOGS

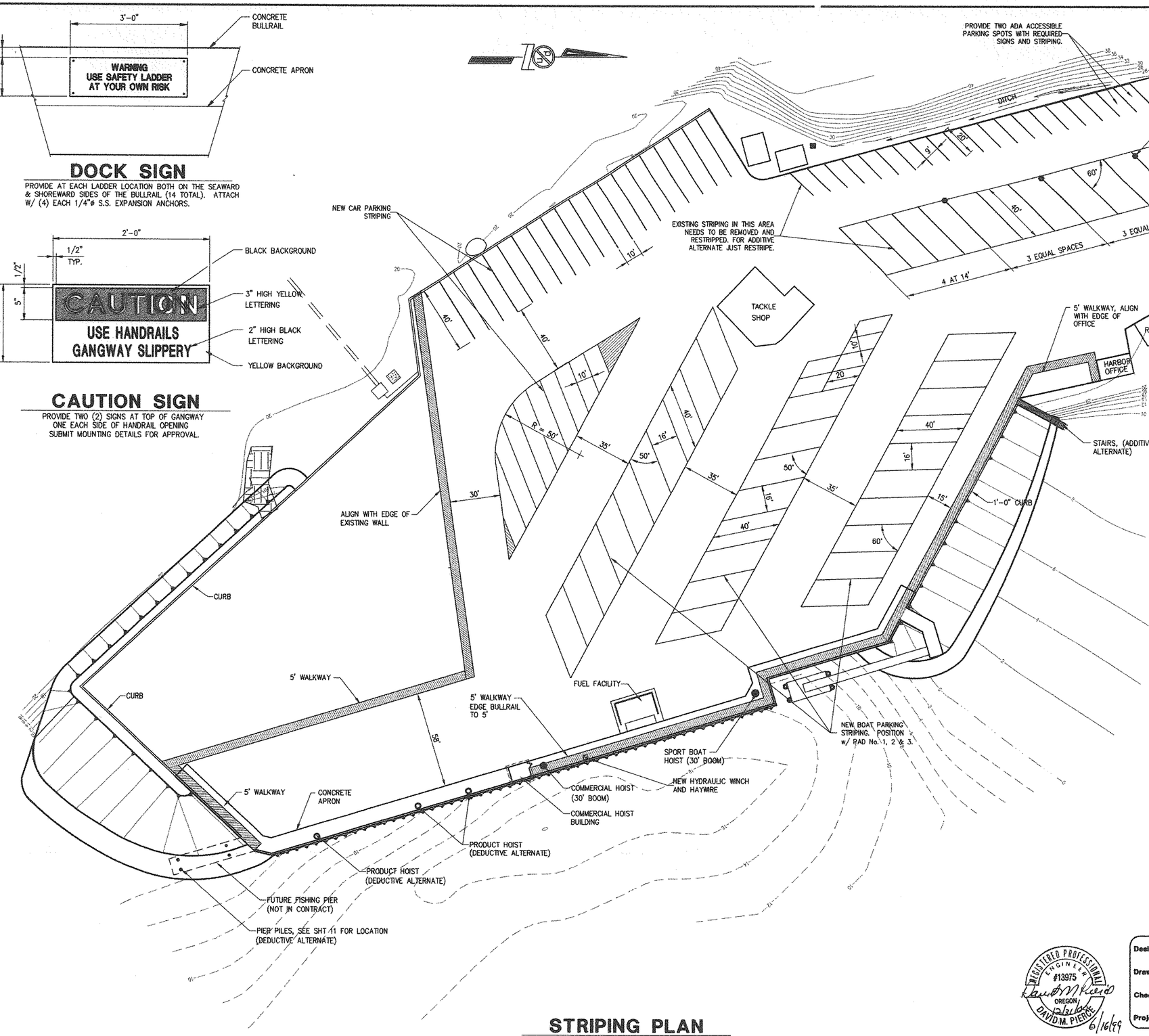
Sheet 4 of 29

DOCK SIGN

PROVIDE AT EACH LADDER LOCATION BOTH ON THE SEAWARD & SHOREWARD SIDES OF THE BULLRAIL (14 TOTAL). ATTACH W/ (4) EACH 1/4"ø S.S. EXPANSION ANCHORS.

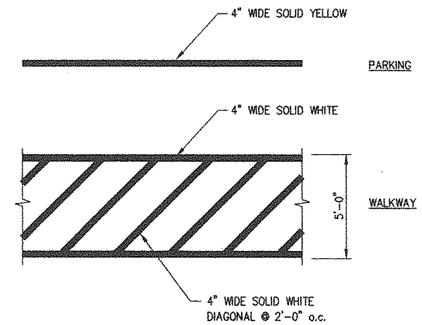
CAUTION SIGN

PROVIDE TWO (2) SIGNS AT TOP OF GANGWAY ONE EACH SIDE OF HANDRAIL OPENING SUBMIT MOUNTING DETAILS FOR APPROVAL.



STRIPING PLAN

0 10 20 30 60 90 FT.



STRIPING

SIGN NOTES

Life Rings

Provide U.S. Coast Guard approved 30-inch-diameter, orange life ring with 100 feet of 1/2-inch diameter flexible nylon rope. The rings shall be located in an enclosed fiberglass cabinet mounted to the concrete deck in a manner that will withstand anticipated wind loading. Locate life rings (5 total required) as follows:

1) Near Commercial Hoist
2) Near Sport Hoist
3) Near Hoist Building
4) On Float (Attach to barrier)
5) Near Future Fishing Pier

Paint for Dock Structure Marking

Paint for striping and lettering shall conform to AASHTO M248, Type F. Color shall be yellow. The area to be marked shall be clean and free of loose particles. Paint shall not be applied to pavements which are dirty, damp or cold. Paint shall not be applied when the pavement temperature. temperature is less than 40 degrees F. Apply in accordance with Manufacturer's recommendations.

Stripes shall be four inches wide. Arrows and letters shall be the dimensions shown on the Plans.

All markings shall present a clean cut, uniform workmanlike appearance. The Contractor shall correct all markings which fail to have a uniform satisfactory appearance, either day or night.

Signs

All signs shall be aluminum sheet with thickness of 0.080 inches. All signs shall have black lettering on a yellow non-reflectorized background with paint that is durable and non-fading. Signs shall be lettered in block style letters as shown on the plans. Signs shall be mounted to bullrail or handrail posts as indicated and attached with a minimum of 4 screws one at each corner. Materials and construction of signs shall conform to ODOT 00940.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed:	ACK
Drawn:	DRH
Checked:	DP
Project No.:	96448.03
Date:	JUNE '99
Scale:	NOTED

Peratrovich, Nottingham & Drage, Inc.
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SIGNAGE AND STRIPING PLAN

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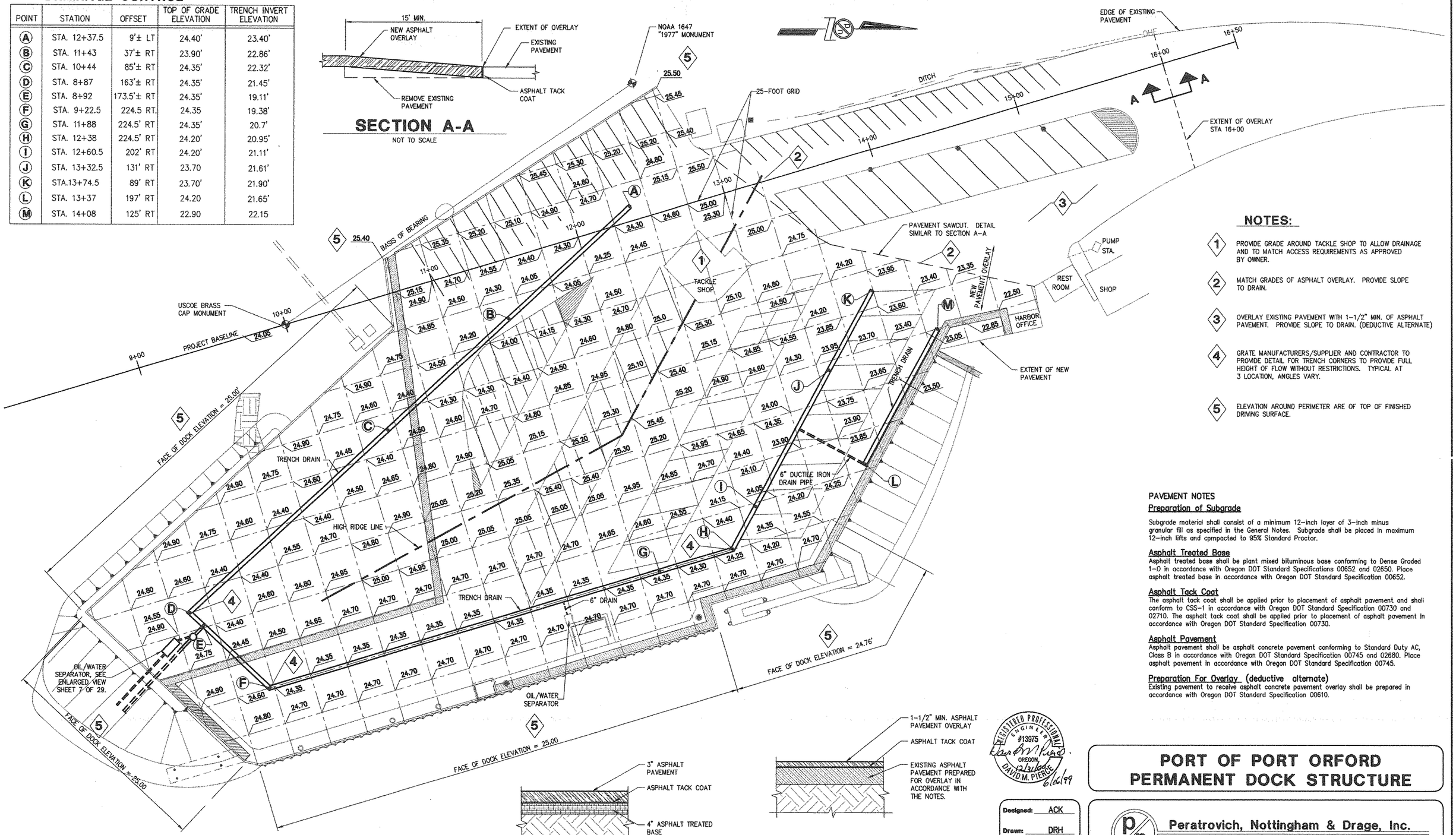
PLOT 1:1 w/ANCH.PCP 05-20-99

DRAINAGE CONTROL

POINT	STATION	OFFSET	TOP OF GRADE ELEVATION	TRENCH INVERT ELEVATION
(A)	STA. 12+37.5	9'± LT	24.40'	23.40'
(B)	STA. 11+43	37'± RT	23.90'	22.86'
(C)	STA. 10+44	85'± RT	24.35'	22.32'
(D)	STA. 8+87	163'± RT	24.35'	21.45'
(E)	STA. 8+92	173.5'± RT	24.35'	19.11'
(F)	STA. 9+22.5	224.5 RT.	24.35	19.38'
(G)	STA. 11+88	224.5' RT	24.35'	20.7'
(H)	STA. 12+38	224.5' RT	24.20'	20.95'
(I)	STA. 12+60.5	202' RT	24.20'	21.11'
(J)	STA. 13+32.5	131' RT	23.70	21.61'
(K)	STA.13+74.5	89' RT	23.70'	21.90'
(L)	STA. 13+37	197' RT	24.20	21.65'
(M)	STA. 14+08	125' RT	22.90	22.15

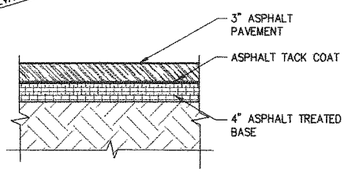
SECTION A-A

NOT TO SCALE



GRADING AND DRAINAGE PLAN

0 10 20 30 60 90 FT.



TYPICAL ASPHALT PAVEMENT SECTION

TYPICAL ASPHALT OVERLAY SECTION

ADDITIVE ALTERNATE

NOTES:

1. PROVIDE GRADE AROUND TACKLE SHOP TO ALLOW DRAINAGE AND TO MATCH ACCESS REQUIREMENTS AS APPROVED BY OWNER.
2. MATCH GRADES OF ASPHALT OVERLAY. PROVIDE SLOPE TO DRAIN.
3. OVERLAY EXISTING PAVEMENT WITH 1-1/2" MIN. OF ASPHALT PAVEMENT. PROVIDE SLOPE TO DRAIN. (DEDUCTIVE ALTERNATE)
4. GRATE MANUFACTURERS/SUPPLIER AND CONTRACTOR TO PROVIDE DETAIL FOR TRENCH CORNERS TO PROVIDE FULL HEIGHT OF FLOW WITHOUT RESTRICTIONS. TYPICAL AT 3 LOCATION, ANGLES VARY.
5. ELEVATION AROUND PERIMETER ARE OF TOP OF FINISHED DRIVING SURFACE.

PAVEMENT NOTES

Preparation of Subgrade

Subgrade material shall consist of a minimum 12-inch layer of 3-inch minus granular fill as specified in the General Notes. Subgrade shall be placed in maximum 12-inch lifts and compacted to 95% Standard Proctor.

Asphalt Treated Base

Asphalt treated base shall be plant mixed bituminous base conforming to Dense Graded 1-0 in accordance with Oregon DOT Standard Specifications 00652 and 02650. Place asphalt treated base in accordance with Oregon DOT Standard Specification 00652.

Asphalt Tack Coat

The asphalt tack coat shall be applied prior to placement of asphalt pavement and shall conform to CSS-1 in accordance with Oregon DOT Standard Specification 00730 and 02710. The asphalt tack coat shall be applied prior to placement of asphalt pavement in accordance with Oregon DOT Standard Specification 00730.

Asphalt Pavement

Asphalt pavement shall be asphalt concrete pavement conforming to Standard Duty AC, Class B in accordance with Oregon DOT Standard Specification 00745 and 02680. Place asphalt pavement in accordance with Oregon DOT Standard Specification 00745.

Preparation For Overlay (deductive alternate)

Existing pavement to receive asphalt concrete pavement overlay shall be prepared in accordance with Oregon DOT Standard Specification 00610.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON, 12/31/00 DAVID M. PIERCE 6/6/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

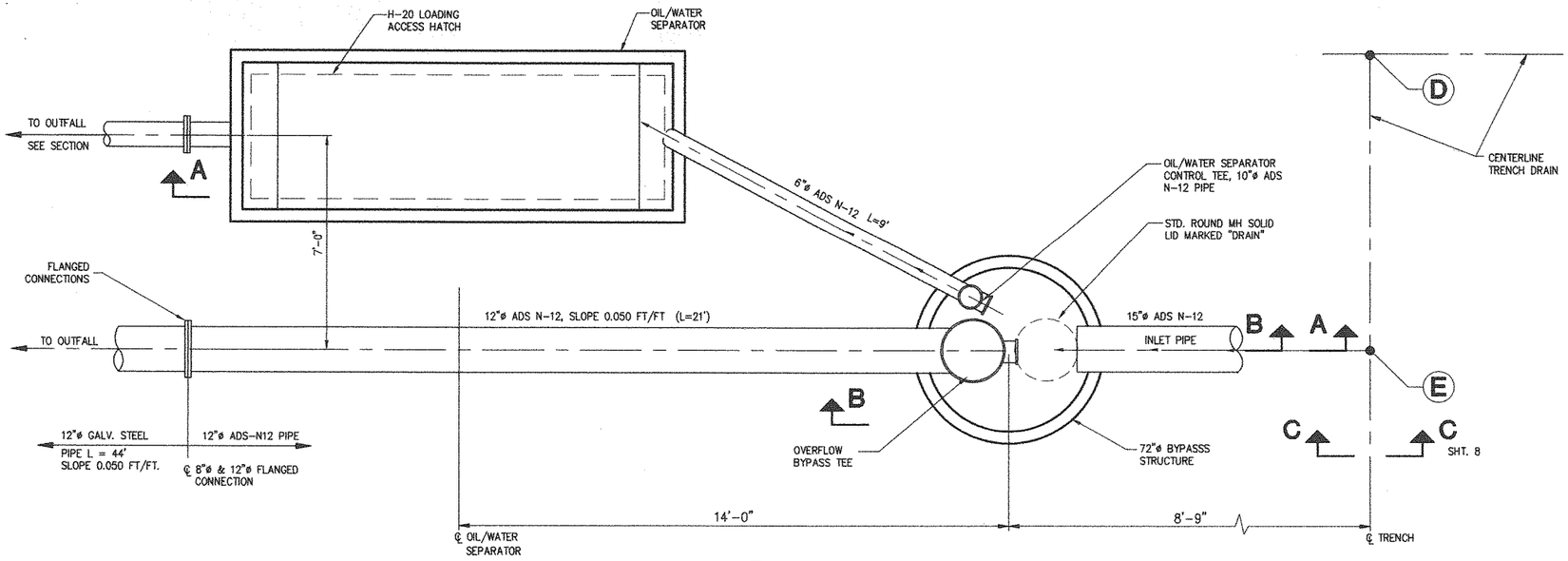
Designed:	ACK
Drawn:	DRH
Checked:	DP
Project No.:	96448.03
Date:	JUNE '99
Scale:	NOTED

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

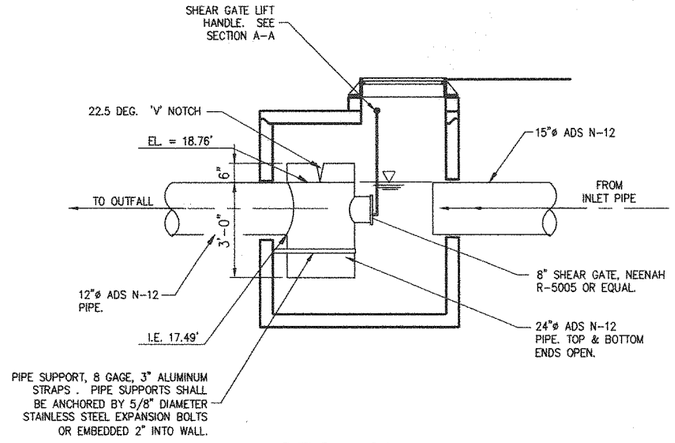
GRADING AND DRAINAGE

Sheet 6 of 29

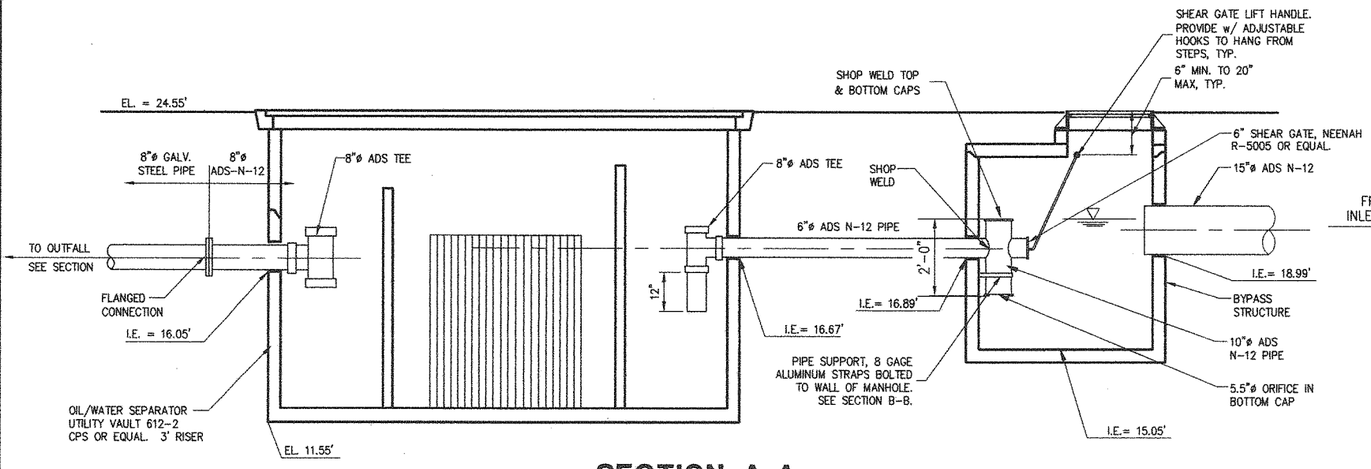
C:\ACDATA\DRH\1996\96448\6448-06.DWG
PLOT 1:1 w/ANCH.PCP 05-20-99



PLAN VIEW



SECTION B-B



SECTION A-A

SECTION C-C

SECTION D-D

OUTFALL SECTION

NOTE:
PENETRATION OF 6" PVC FROM FUEL PAD AND 6" D.I.P. FROM TRENCH DRAIN NEAR STAIRS SIMILAR WITH UNIFORM TRENCH BOTTOM.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

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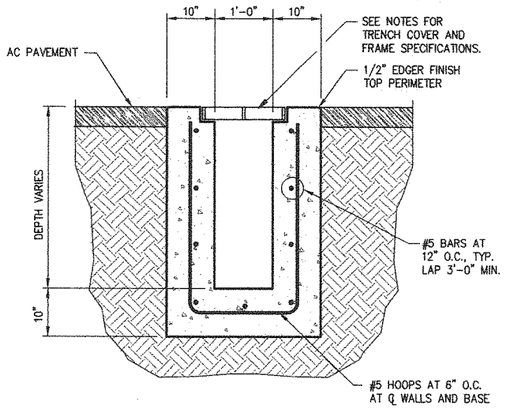
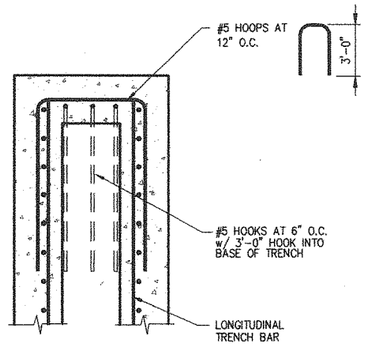
DRAINAGE DETAILS

Sheet 7 of 29

C:\ACDATA\DRH\1996\96448\96448-07.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



TYPICAL TRENCH DRAIN SECTION



PLAN VIEW TRENCH END

NOTE: DETAILS NOT SHOWN SIMILAR TO TYPICAL TRENCH SECTION

DRAINAGE NOTES

Drain Pipe
All drainpipe shall be ADS N-12 (Advanced Drainage Systems), or equivalent, unless otherwise specified in plans. All polyethylene pipe fittings shall be ADS Double Wall, or equivalent, unless otherwise specified. All ductile iron pipe shall be AWWA C151, Class 50. Steel pipe shall be hot-dip galvanized, minimum 1/4" wall thickness. Flanged connections shall be assembled with hot-dip galvanized 150-lb, ductile iron ASTM A536 backup flanges.

Oil/Water Separator
Shall be as noted on the plans.

Bypass Structure
Manhole shall be precast ODOT Type B-P with ladder and standard manhole cover. Fabricated components from ADS N-12 shall be assembled and welded in the shop in accordance with the Manufacturer's requirements.

Installation
Install trench drain frames and grates, drain pipes, oil/water separator, bypass structure and all appurtenances in accordance with manufacturer's recommendations. Excavation, bedding and backfill shall be in accordance with manufacturer's recommendations, ODOT 00405, and the General Notes. All systems are to be watertight. All pipes shall be leakage tested per the manufacturer's recommendations. Contractor shall submit test procedures and results to the Engineer prior to backfill. Grout trench and manhole pipe penetrations with Portland Cement Grout per ODOT 02080, or seal penetration in accordance with pipe manufacturer's recommendations as approved by the Engineer.

Check Valve
Tideflex™ manufactured by Red Valve Company, Inc. (412) 279-0044.

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

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Scale:

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE 6/16/99

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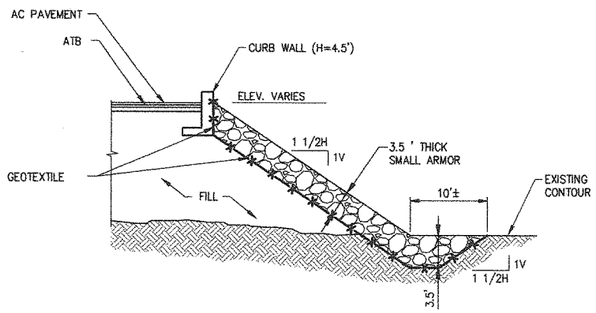
DRAINAGE DETAILS

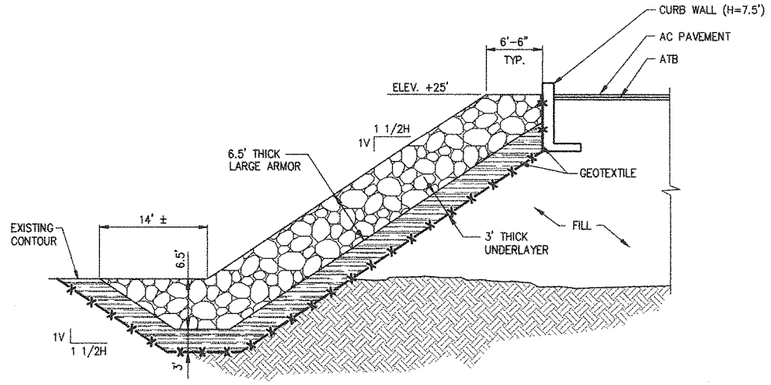
Sheet 8 of 29

C:\ACDATA\DRH\1996\96448\96448-08.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



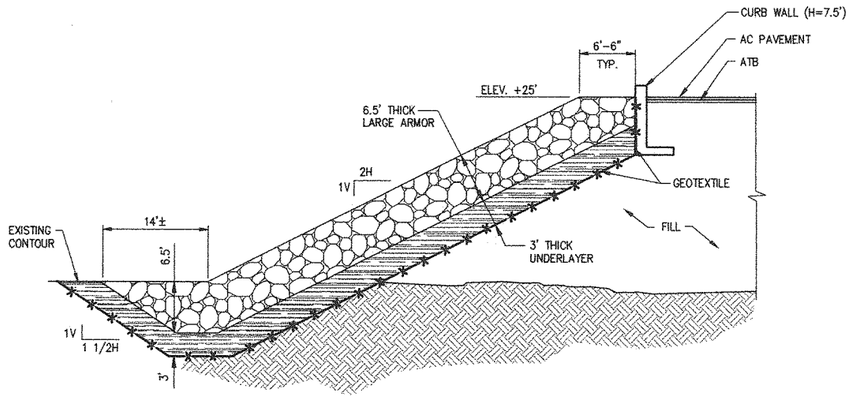
SECTION A-A

FROM SHEET 2



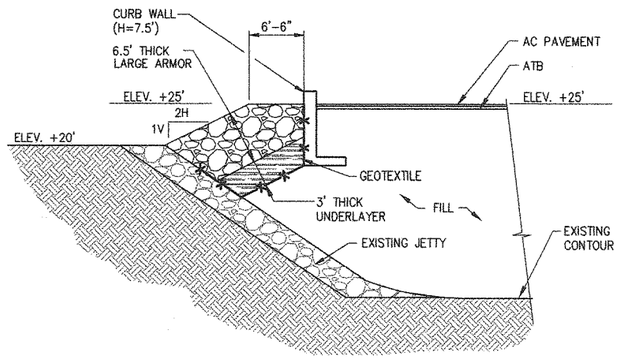
SECTION B-B

FROM SHEET 2



SECTION C-C

FROM SHEET 2



SECTION D-D

FROM SHEET 2

NOTE:

SEE SHEET 2, 11 AND 12 FOR HORIZONTAL CONTROL TRANSITION LOCATIONS.

GEOTEXTILE

WOVEN GEOTEXTILE FILTER FABRIC SHALL BE MIRAFI FW700 OR APPROVED EQUAL. A MINIMUM 3-FOOT OVERLAP IS REQUIRED BETWEEN ADJACENT SECTIONS OF FABRIC. FABRIC SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS.

REVETMENT

ALL ROCK USED TO CONSTRUCT THE REVETMENT SHALL CONFORM TO THE FOLLOWING QUALITY AND GRADATION REQUIREMENTS:

1) BULK SPECIFIC GRAVITY (SSD) NOT LESS THAN 2.60 (ASTM C-127)
2) WATER ABSORPTION NOT MORE THAN 2.5% (ASTM C-127)
3) FREEZE/THAW (25 CYCLES) LESS THAN 5% LOSS (ASTM C-666)
4) SODIUM SULFATE SOUNDNESS (5 CYCLES) LESS THAN 12% (ASTM C-88)
5) EXPANSIVE BREAKDOWN IN ETHYLENE GLYCOL (15 DAYS) LESS THAN 8% LOSS (CRD-C148)
6) UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 10,000 PSI (ASTM D-2938)
7) NOT MORE THAN 30% LOSS AT 1000 REVOLUTIONS, AS DETERMINED BY ASTM C-535
8) ALL STONE SHALL BE ANGULAR. THE LEAST DIMENSION OF ANY ARMOR STONE SHALL BE NOT LESS THAN 1/3 ITS GREATEST DIMENSION. ROUNDED ROCK WILL NOT BE ACCEPTED.
9) LARGE ARMOR STONE SHALL BE WELL GRADED WITH WEIGHTS OF INDIVIDUAL STONES RANGING FROM AT LEAST 700 LBS. TO 20,000 LBS. MAX. WITH AT LEAST 50 PERCENT OF THE INDIVIDUAL STONES WEIGHING MORE THAN 5,200 LBS. SMALL ARMOR STONE SHALL BE WELL GRADED WITH WEIGHTS OF INDIVIDUAL STONES RANGING FROM AT LEAST 100 LBS. TO 3,000 LBS MAX. WITH AT LEAST 50 PERCENT OF THE INDIVIDUAL STONES WEIGHING MORE THAN 750 LBS. STONE SHALL BE PLACED SUCH THAT A WELL KEYED, STABLE ROCK MASS WITH A RELATIVELY REGULAR SURFACE IS OBTAINED. PLACING STONE THROUGH CHUTES, DROPPING STONE MORE THAN 4 FEET, AND OTHER METHODS WHICH SEGREGATE OR DAMAGE THE STONE WILL NOT BE PERMITTED. THE FINISHED REVETMENT SURFACE SHALL BE FREE FROM POCKETS OF STONE LESS THAN AVERAGE SIZE. INDIVIDUAL STONES SHALL NOT PROTRUDE MORE THAN 18 INCHES ABOVE THE AVERAGE LEVEL OF THE SLOPE. EXISTING STRUCTURES SHALL NOT BE DAMAGED DURING STONE PLACEMENT. EXISTING RIPRAP REMOVED DURING EXCAVATION MAY BE REUSED PROVIDED IT MEETS SIZE AND GRADATION SPECIFICATIONS. ARMOR LAYER SHALL BE A MINIMUM OF TWO (2) STONES THICK.
10) UNDERLAYER SHALL BE WELL GRADED WITH WEIGHTS OF INDIVIDUAL STONES RANGING FROM AT LEAST 35 LBS. TO 1,000 LBS. MAX. WITH AT LEAST 50 PERCENT OF THE INDIVIDUAL STONES WEIGHING MORE THAN 260 LBS. UNDERLAYER SHALL BE A MINIMUM OF THREE (3) STONES THICK. CONSTRUCTION REQUIREMENTS FOR FILTER BLANKET PER ODOT 00390 SHALL APPLY TO UNDERLAYER.

PLACEMENT

INSTALL/PLACE GEOTEXTILE, ARMOR STONE AND UNDERLAYER (FILTER BLANKET) IN ACCORDANCE WITH ODOT SECTIONS 00350 AND 00390

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: WJG/ACK
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Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
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Seattle, Washington, 98104
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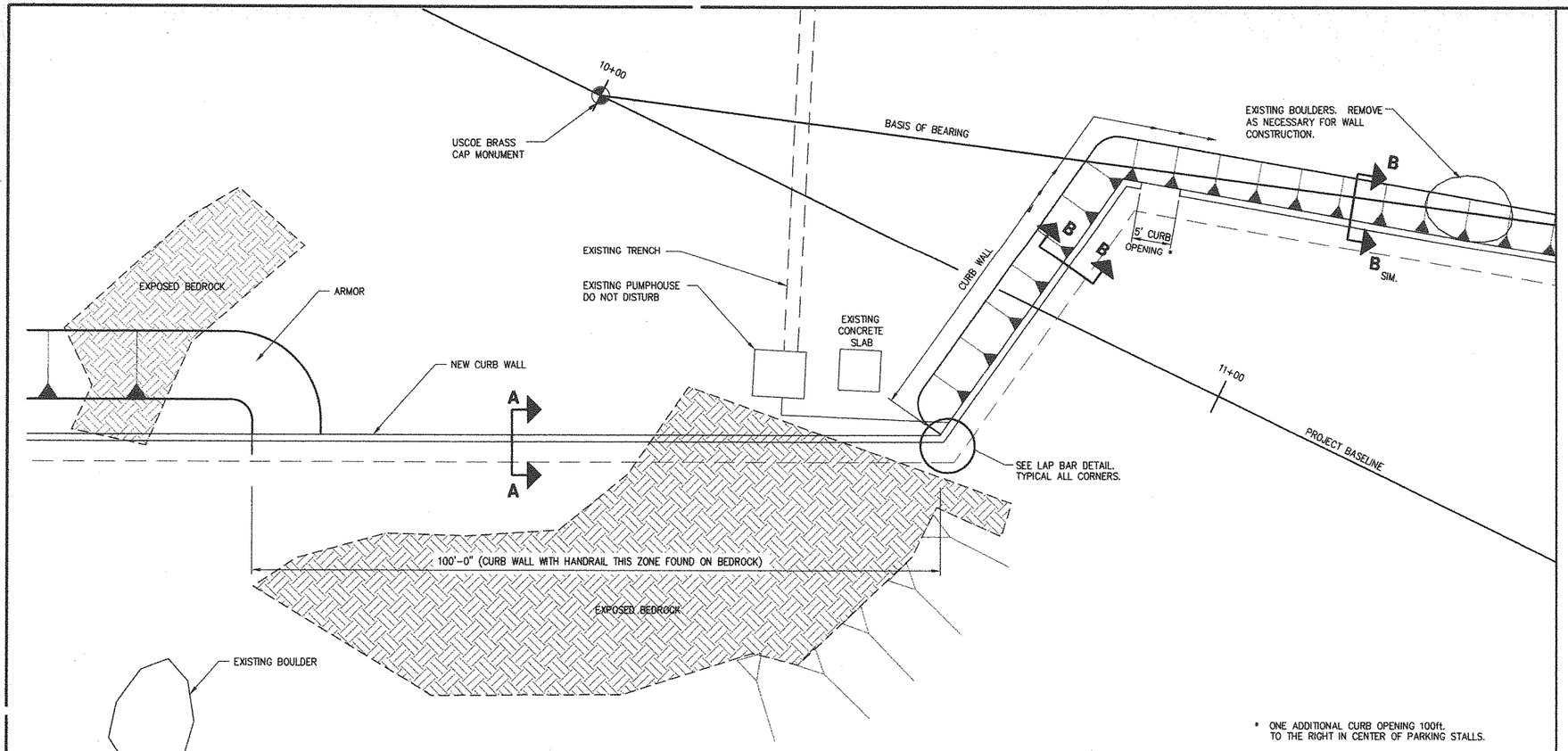
Date: JUNE '99
Scale:

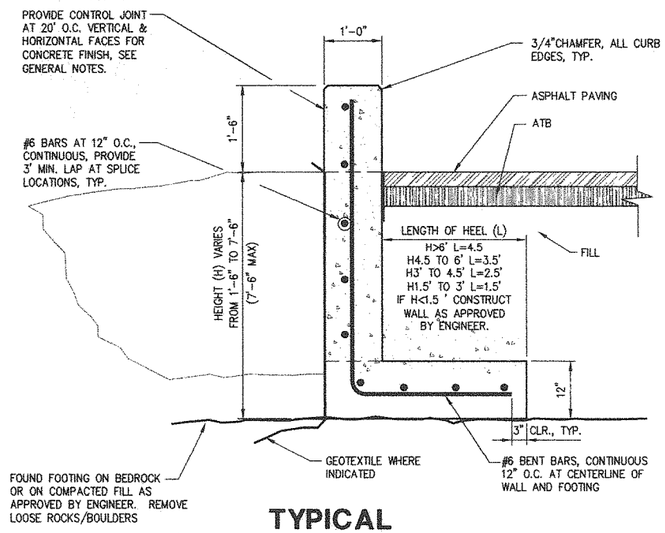
TYPICAL SECTIONS

Sheet 9 of 29

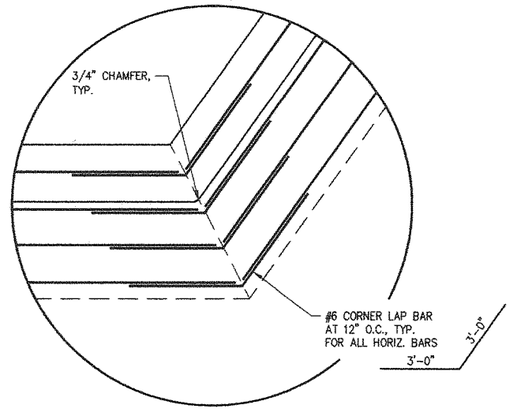
C:\ACDATA\DRH\1996\96448\96448-09.DWG
PLOT 1:1 w/ANCH.PCP 05-20-99



* ONE ADDITIONAL CURB OPENING 100ft. TO THE RIGHT IN CENTER OF PARKING STALLS.



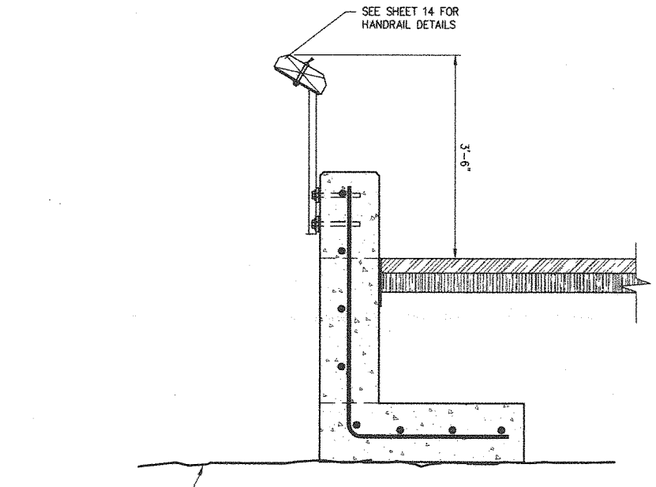
TYPICAL CURB WALL SECTION



LAP BAR

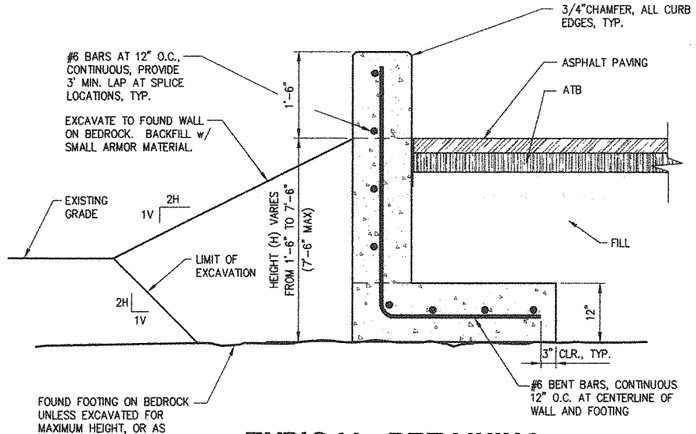
PARTIAL PLAN RETAINING WALL

0 5 10 20 30 FT.



TYPICAL RETAINING WALL SECTION A-A

DETAILS NOT SHOWN SAME AS TYPICAL CURB WALL SECTION



TYPICAL RETAINING WALL SECTION B-B

DETAILS NOT SHOWN SAME AS TYPICAL CURB WALL SECTION

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
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Project No.: 96448.03
Date: JUNE '99
Scale:

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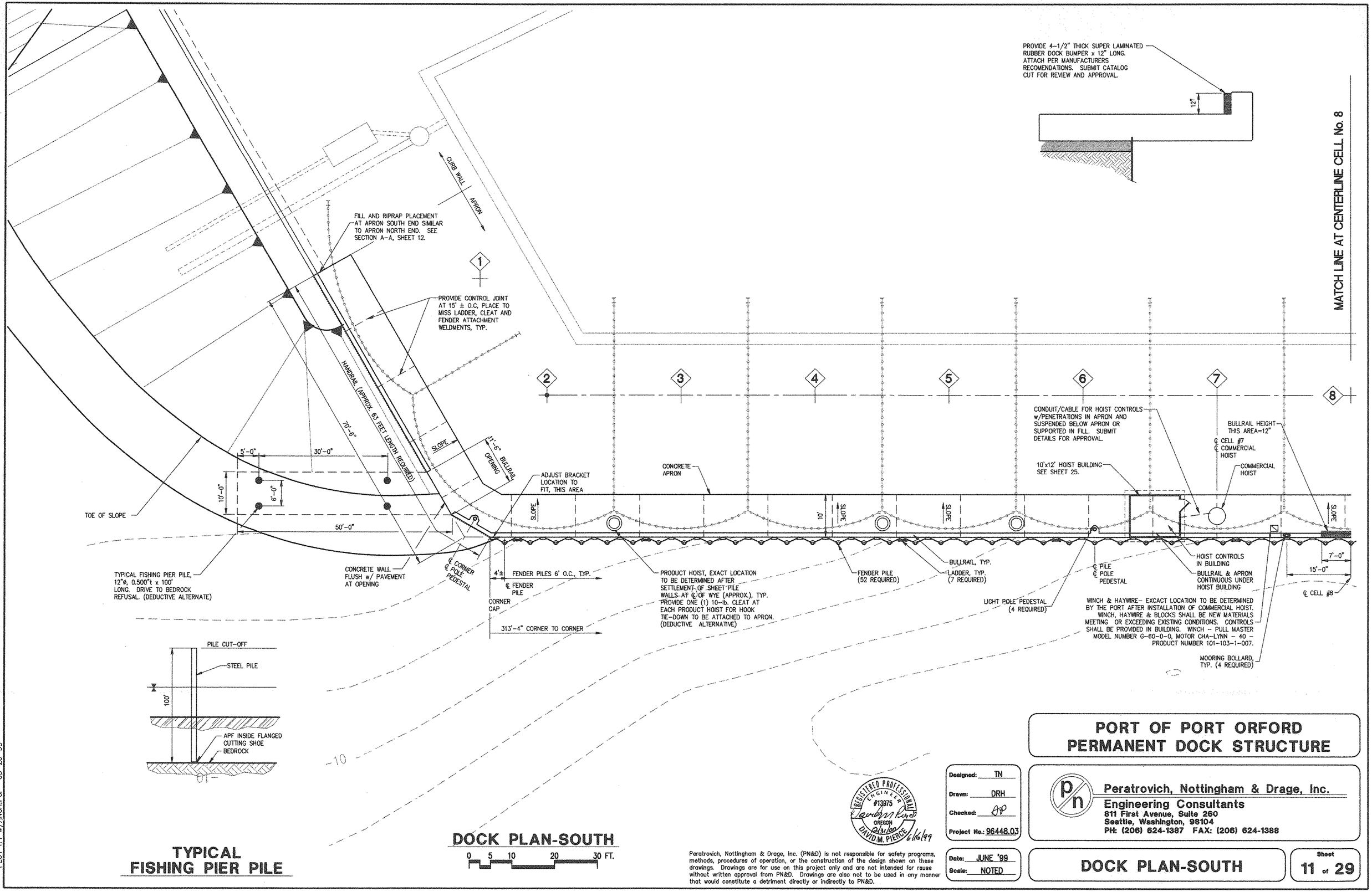
RETAINING WALL

Sheet 10 of 29

C:\ACDATA\DRH\1996\96448\96448-10.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



TYPICAL FISHING PIER PILE

DOCK PLAN-SOUTH

0 5 10 20 30 FT.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE 6/16/99

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PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: TN
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
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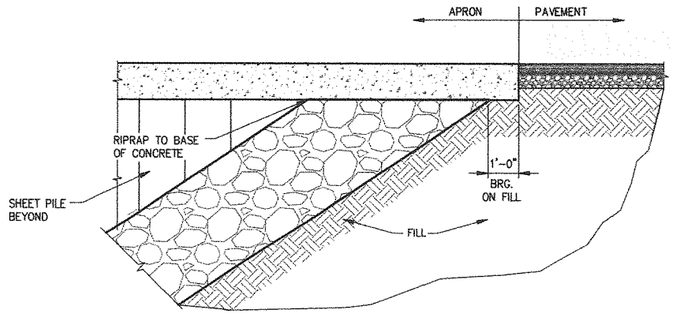
DOCK PLAN-SOUTH

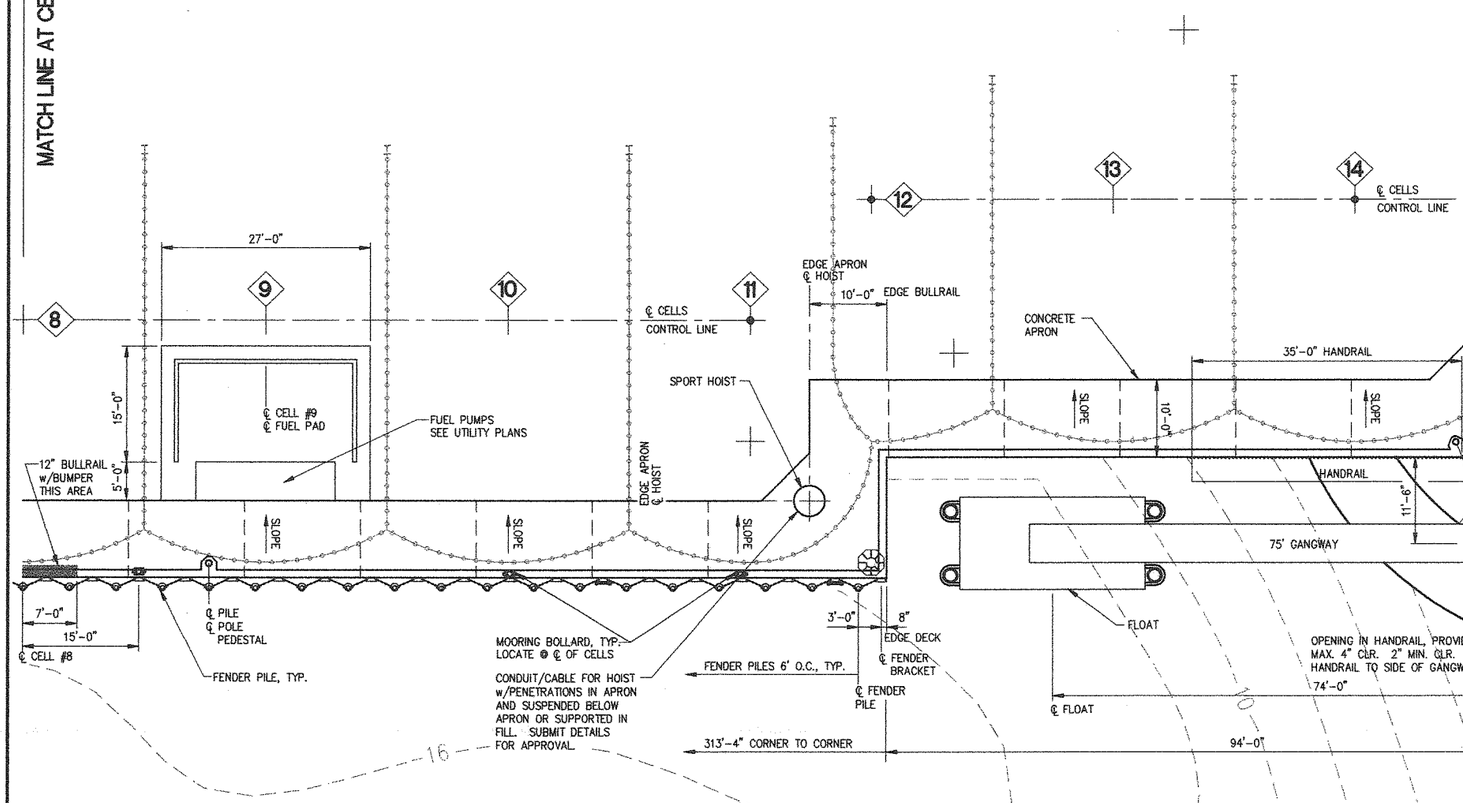
Sheet 11 of 29

C:\ACDATA\DRH\199B 96448\96448-11.DWG
PLOT 1:1 w/ANCH.PCP 05-20-99



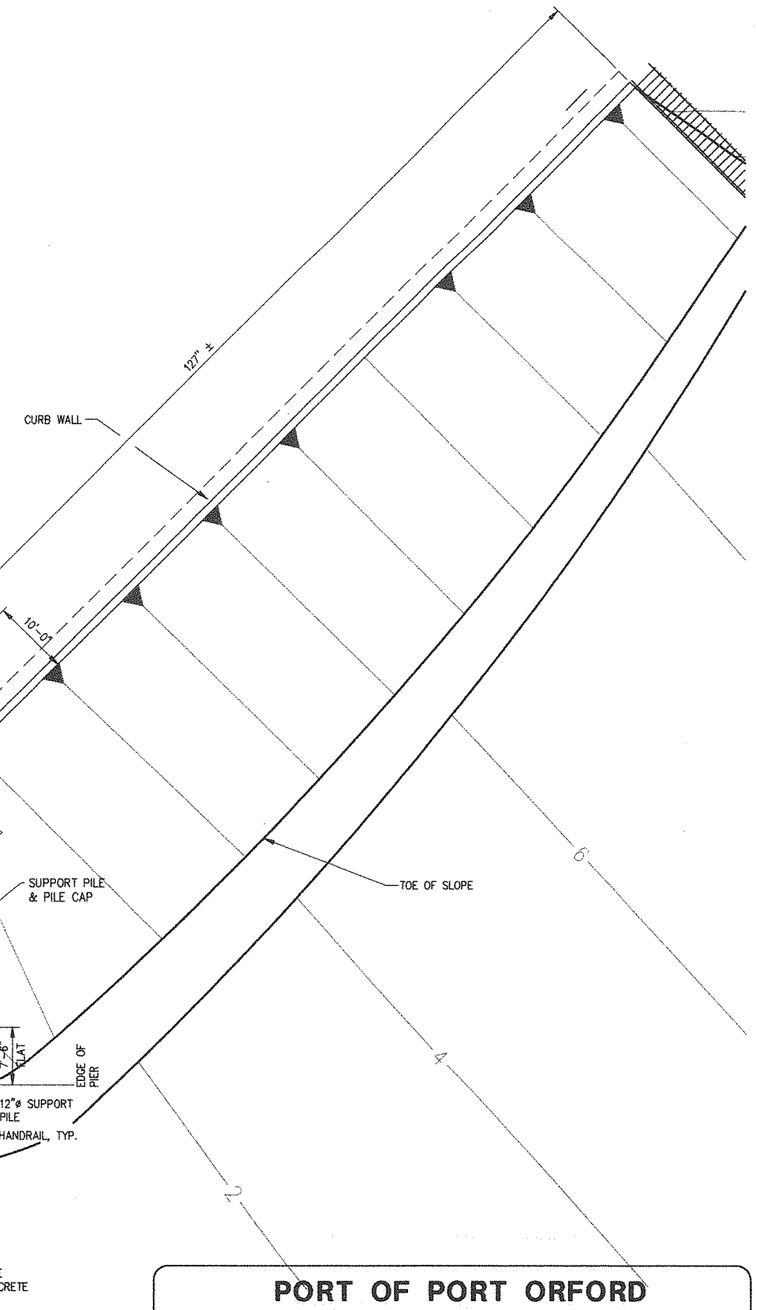
SECTION A-A

MATCH LINE AT CENTERLINE CELL No. 8



DOCK PLAN-NORTH

0 5 10 20 30 FT.



PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

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Designed: TN
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Date: JUNE '99
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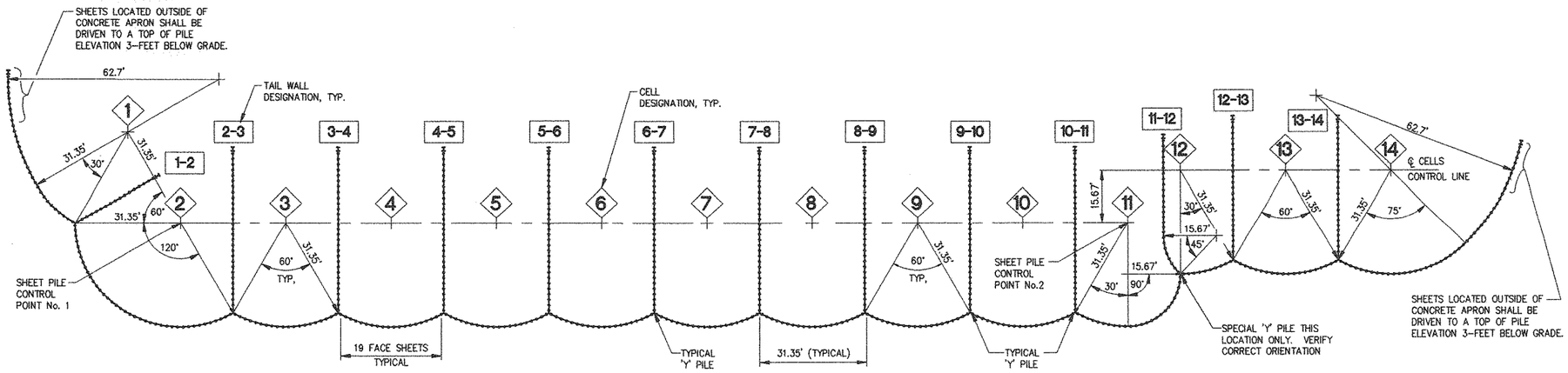
DOCK PLAN-NORTH

Sheet 12 of 29

C:\ACDATA\DRH\1996\96448\96448-12.DWG
PLOT 1:1 w/ANCH.PCP 05-20-99

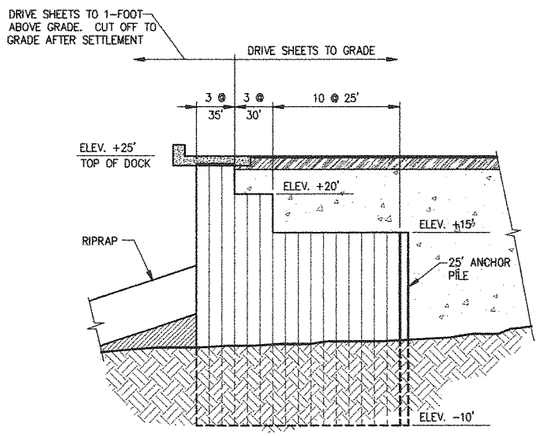


PARTIAL SHEET PILE PLAN

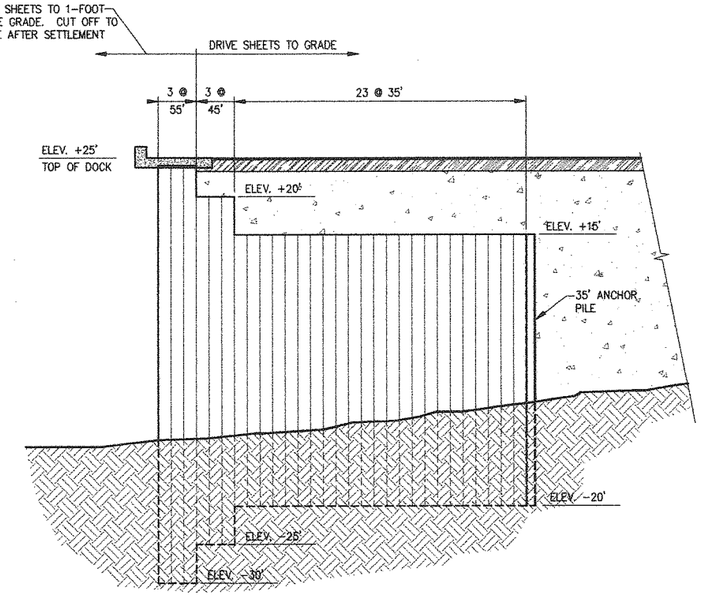
0 5 10 20 30 FT.

Sheet Location	Cell No.	Y-Pile Length	Anchor Length	Number of sheets per specifed length						
				55-foot	50-foot	45-foot	40-foot	35-foot	30-foot	25-foot
End	1		25					21G	3G	6G
Tail	1-2	35G	25						3	3
Face	2			8G	8G	11G	6G	6G		
Tail	2-3	55G	35	3		3		23		
Face	3			19G						
Tail	3-4	55G	35	3		3		23		
Face	4			19G						
Tail	4-5	55G	35	3		3		23		
Face	5			19G						
Tail	5-6	55G	35	3		3		23		
Face	6			19G						
Tail	6-7	55G	35	3		3		23		
Face	7			19G						
Tail	8-9	55G	35	3		3		23		
Face	9			19G						
Tail	9-10	55G	35	3		3		23		
Face	10			19G						
Tail	10-11	55G	35	3		3		23		
Face	11			24G						
Tail	11-12	55G	35	3		3		23		
Face	12				9G					
Tail	12-13	50G	35		3		3	19		
Face	13				19G					
Tail	13-14	50G	35		3		3	19		
End	14		30		3G	15G	6G	12G	3G	

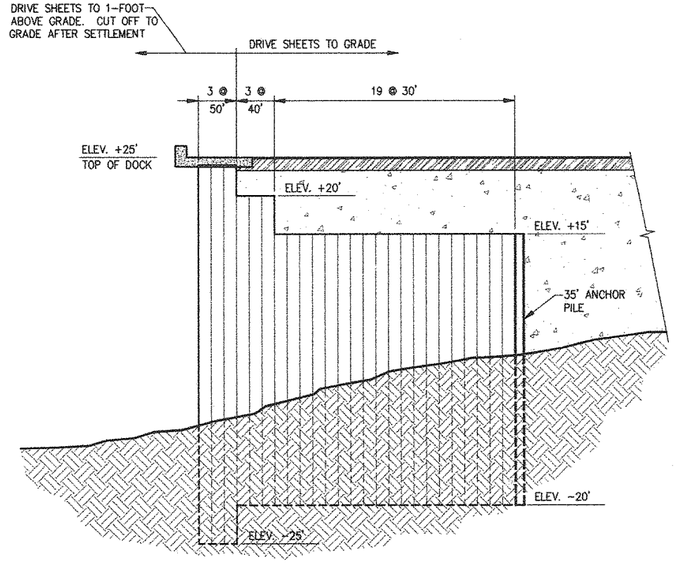
G = GALVANIZED SHEET PILE. ALL OTHER SHEETS BARE STEEL.



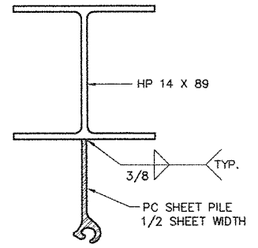
TYPICAL SECTION TAIL WALL 1-2



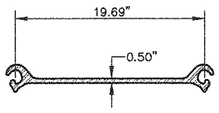
TYPICAL SECTION TAIL WALLS 2-3 TO 11-12



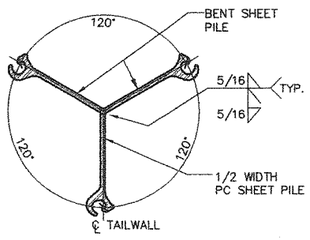
TYPICAL SECTION TAIL WALLS 11-12 TO 13-14



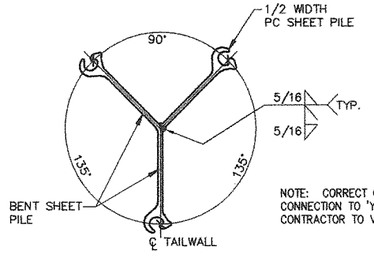
ANCHOR PILE SECTION



SHEET PILE SECTION



TYPICAL 'Y' PILE SECTION



NOTE: CORRECT ORIENTATION & INTERLOCK CONNECTION TO 'Y' PILES ARE IMPERATIVE. CONTRACTOR TO VERIFY & PLACE CORRECTLY.

SPECIAL 'Y' PILE SECTION

DRIVING REQUIREMENTS:

GENERAL: DRIVE ALL SHEETS AND ANCHOR PILES TO THE DESIRABLE TIP ELEVATIONS INDICATED ON THE PLANS OR TO PRACTICAL REFUSAL BELOW ORIGINAL GROUND, AS APPROVED BY THE ENGINEER.

FACE SHEETS AND WYE PILES SHALL BE DRIVEN AS DESCRIBED ABOVE AND SHALL ALSO REMAIN ONE FOOT ABOVE FINAL CUT OFF ELEVATION (C.O. EL.) UNTIL COMPACTION HAS BEEN COMPLETED. PILES SHALL THEN BE CUT OFF AT APPROPRIATE HEIGHT.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD PERMANENT DOCK STRUCTURE

Designed: TN
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
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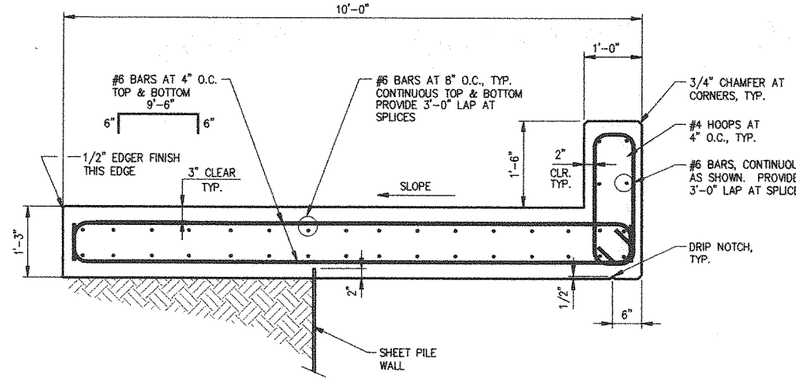
Scale: NOTED

SHEET PILE PLAN

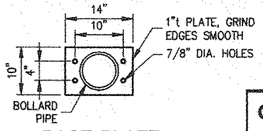
Sheet 13 of 29

C:\ACDATA\DRH\1996\96448\96448-13.DWG
PLOT 1:1 w/ANCH.PCP 05-20-99

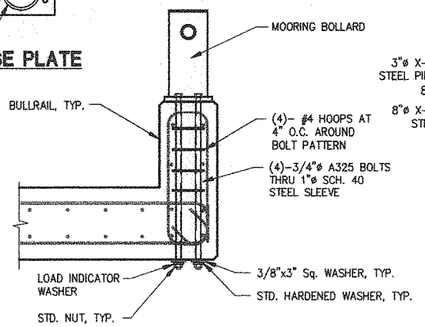


TYPICAL SECTION CONCRETE APRON

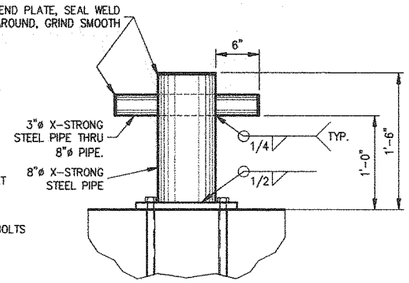
HANDRAIL, FENDER PIPE & RUBBER FENDER NOT SHOWN FOR CLARITY.
CONCRETE SILL FOR HOIST BUILDING NOT SHOWN FOR CLARITY.
SEE SHEET 25 FOR DETAILS.



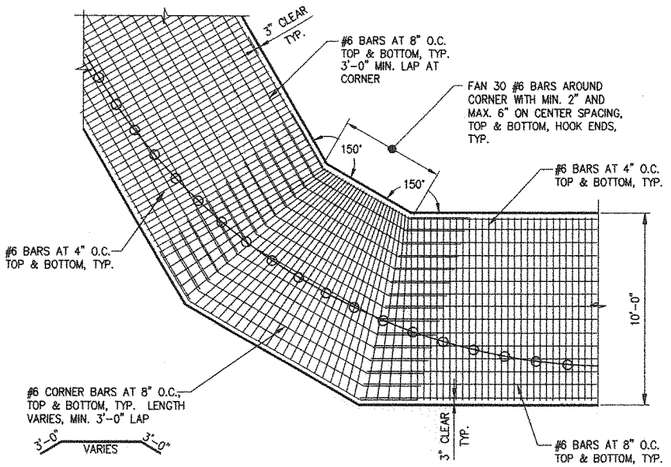
BASE PLATE



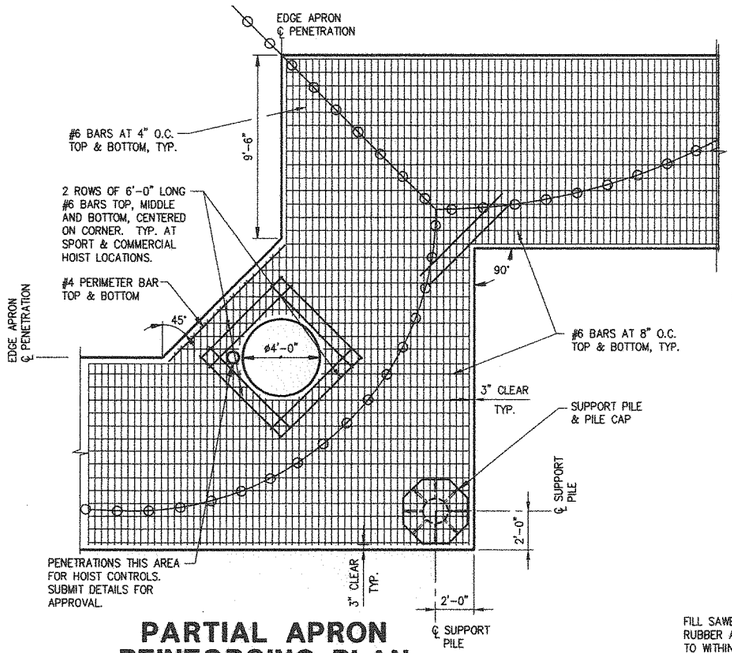
MOORING BOLLARD



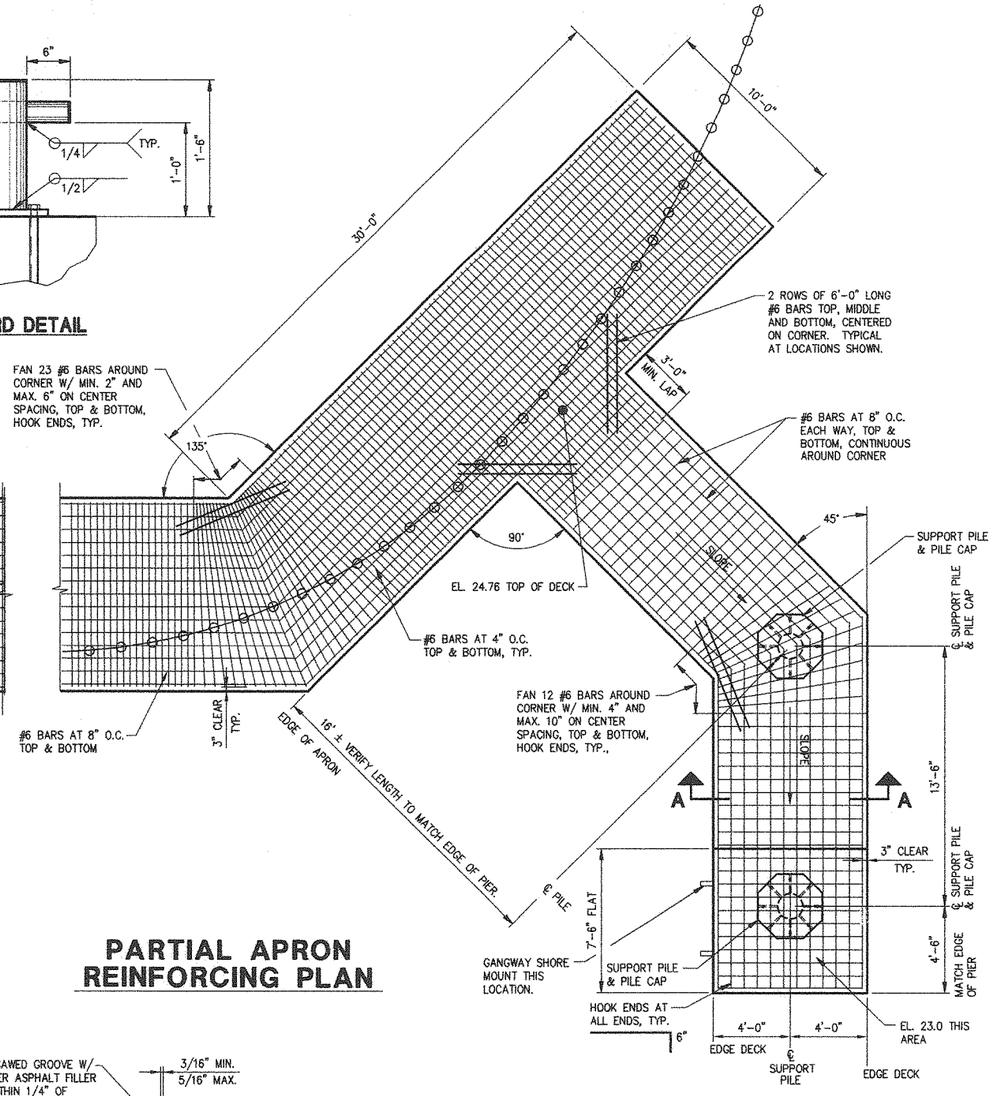
BOLLARD DETAIL

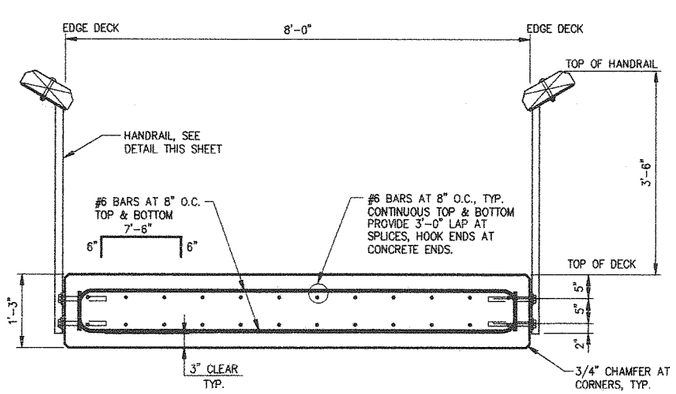


PARTIAL APRON REINFORCING PLAN



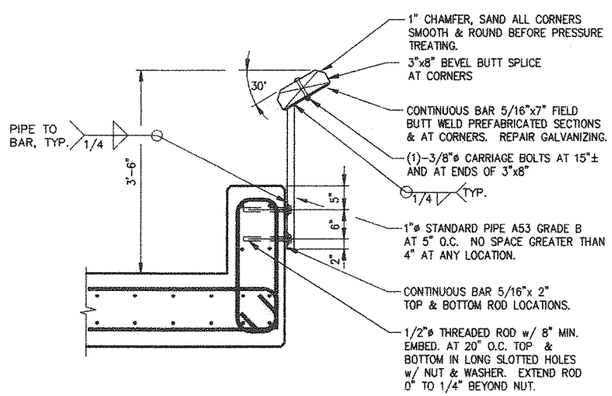
PARTIAL APRON REINFORCING PLAN



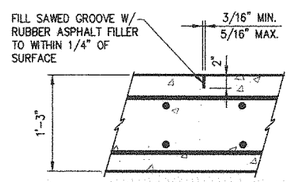


SECTION A-A

TYPICAL SECTION–APRON PIER



HANDRAIL



TYPICAL CONTROL JOINT

NOTE: PROVIDE CONTROL JOINT EVERY 15' ALONG CONCRETE APRON & BULLRAIL UNLESS OTHERWISE NOTED. PROVIDE CONSTRUCTION JOINTS AS REQUIRED SIMILAR TO SHEET 22 WHEN OPERATIONS ARE DISCONTINUED MORE THAN 30 MINUTES.

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Date: JUNE '99
Scale:

CONCRETE APRON AND HANDRAIL

Sheet 14 of 29

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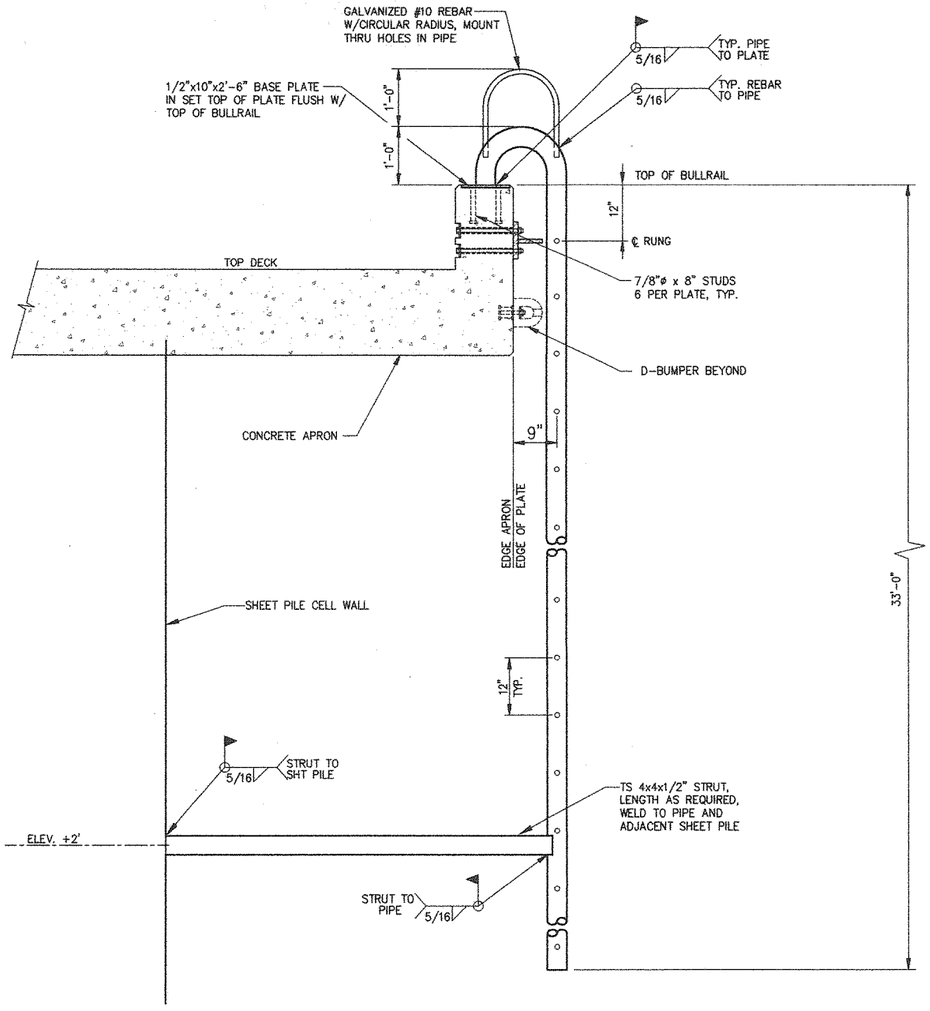
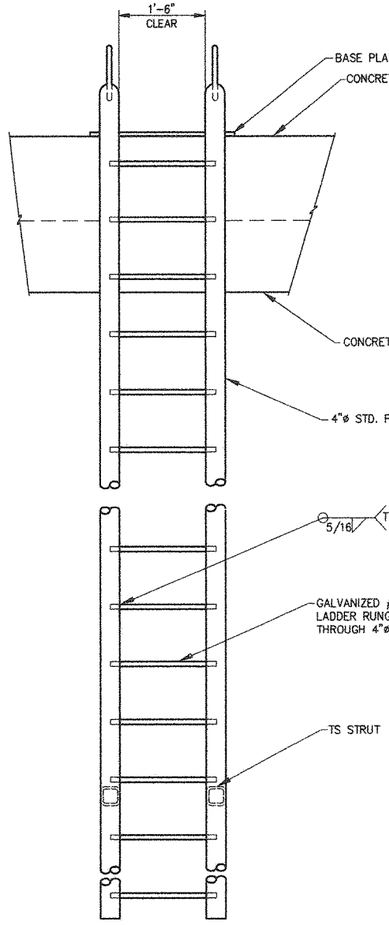
PLOT 1:1 W/ANCH.PCP 05-20-99



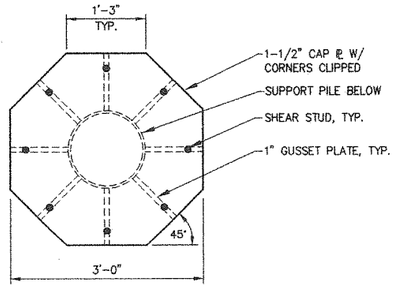
SIDE ELEVATION



TYPICAL LADDER DETAILS

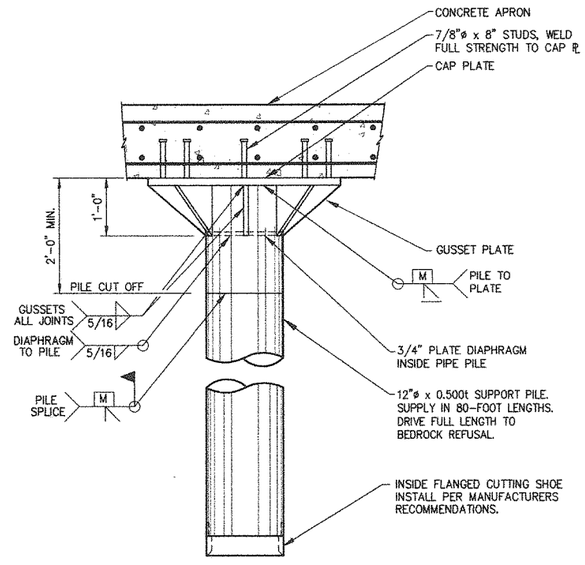
FRONT ELEVATION

FENDER APPURTENANCES NOT SHOWN FOR CLARITY



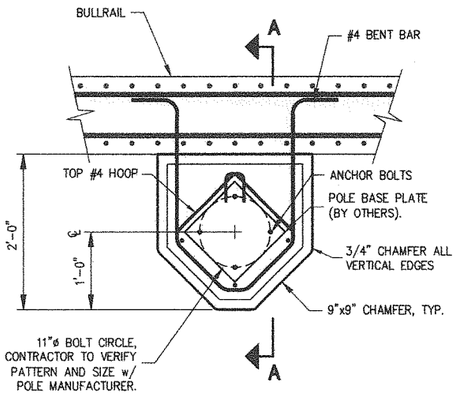
TYPICAL PILE CAP

NOT TO SCALE

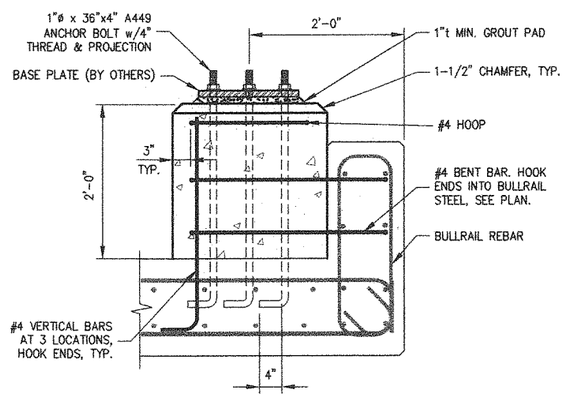


TYPICAL PILE CAP ELEVATION

NOT TO SCALE



PLAN LIGHT POLE PEDESTAL



SECTION A-A

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked: DP
Project No. 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Date: JUNE '99
Scale:

LADDER, POLE PEDESTAL AND PILE CAP

Sheet 15 of 29

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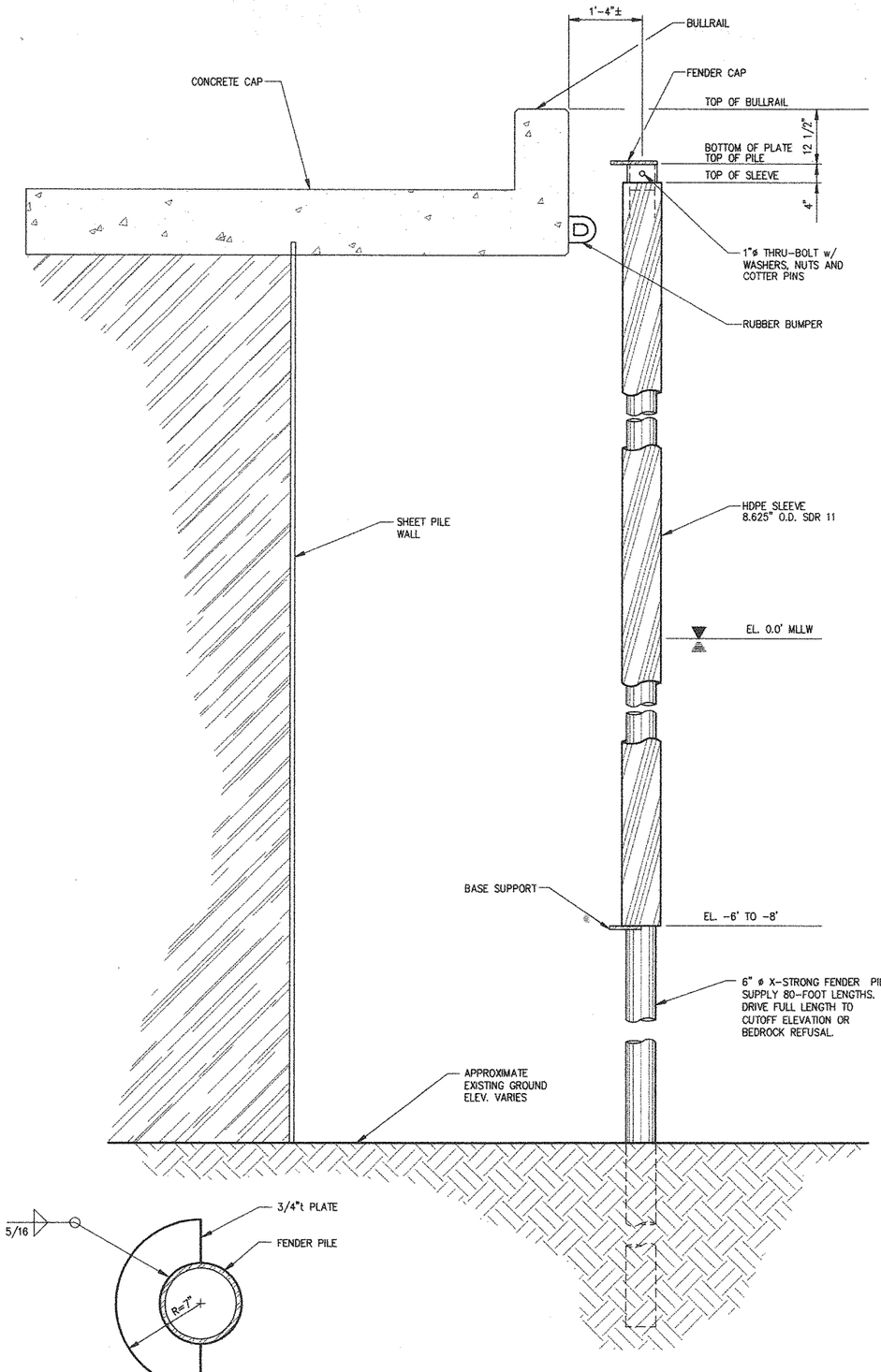
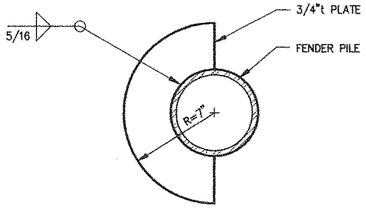
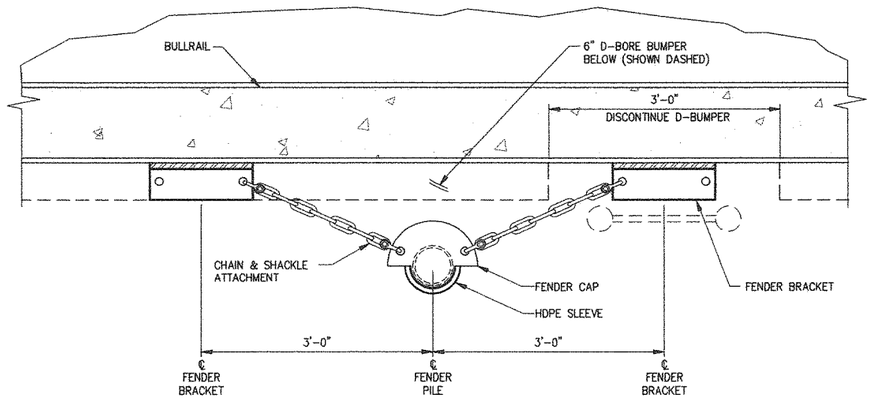
PLOT 1:1 W/ANCH.PCP 05-20-99



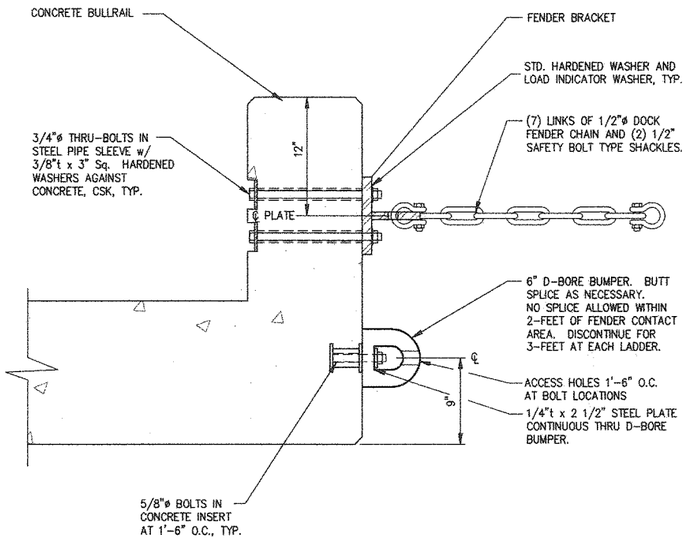
FENDER ELEVATION



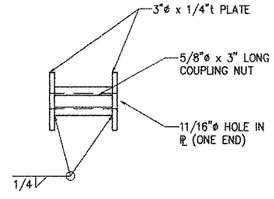
SLEEVE BASE PLATE



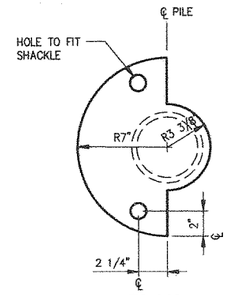
FENDER PLAN



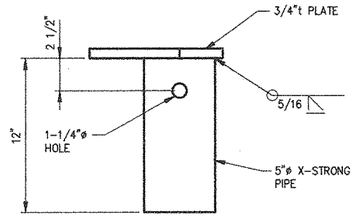
FENDER BRACKET & D-BORE BUMPER ATTACHMENT



TYPICAL INSERT

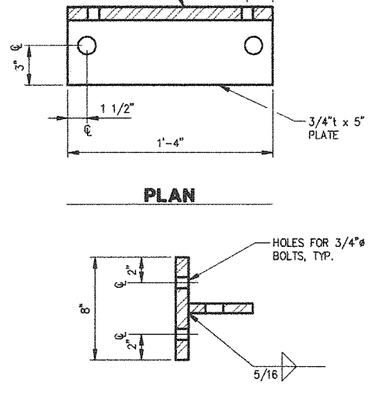


PLAN



ELEVATION

FENDER CAP



PLAN

SECTION

FENDER BRACKET

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Date: JUNE '99
Scale:

FENDER

Sheet 16 of 29

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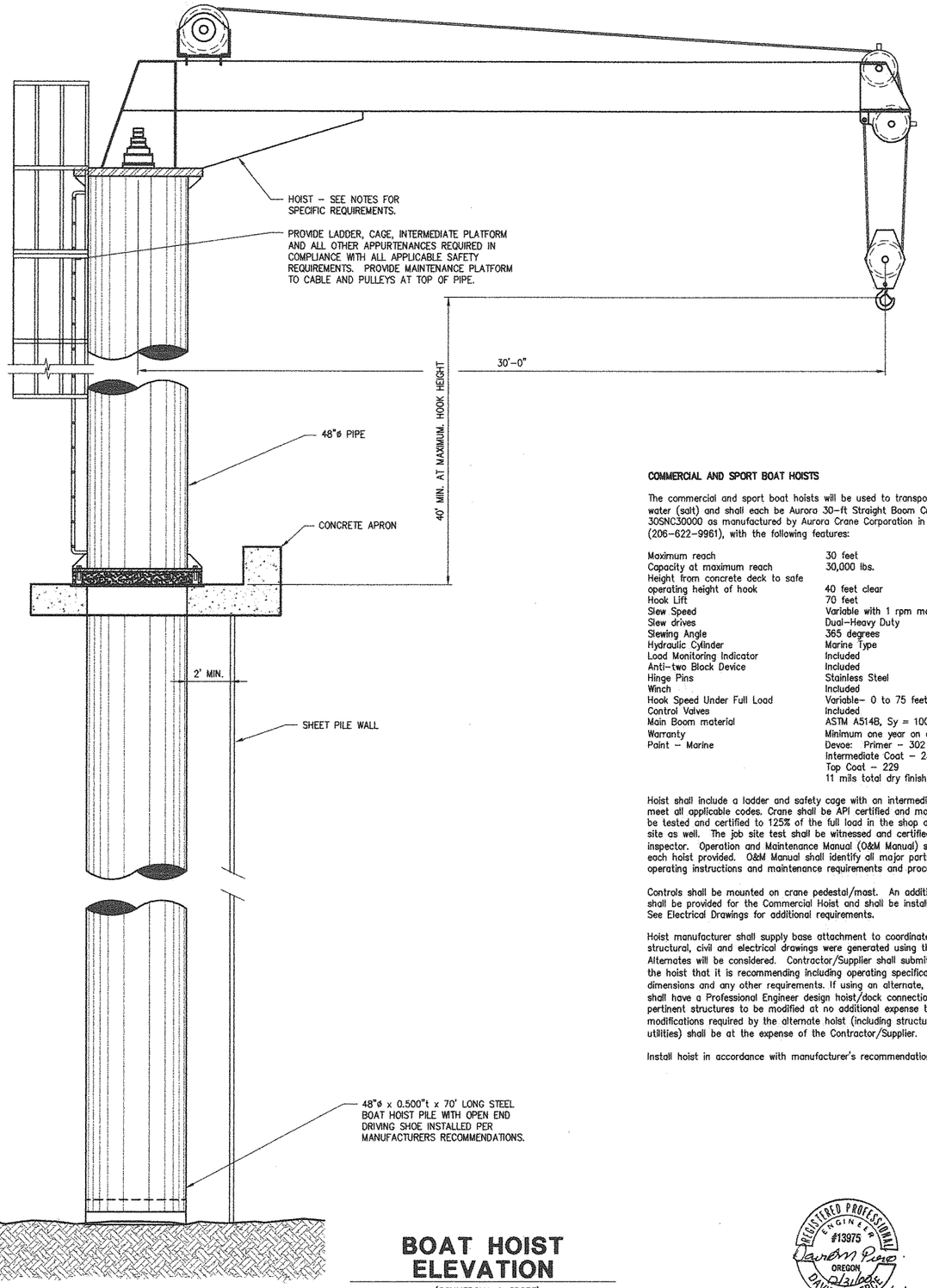
PLOT T:1 W/ANCH.PCP 05-20-99



BOAT HOIST ELEVATION

(COMMERCIAL & SPORT)

COMMERCIAL AND SPORT BOAT HOISTS

The commercial and sport boat hoists will be used to transport vessels to and from the water (salt) and shall each be Aurora 30-ft Straight Boom Crane, Model No. 30SNC30000 as manufactured by Aurora Crane Corporation in Seattle, Washington (206-622-9961), with the following features:

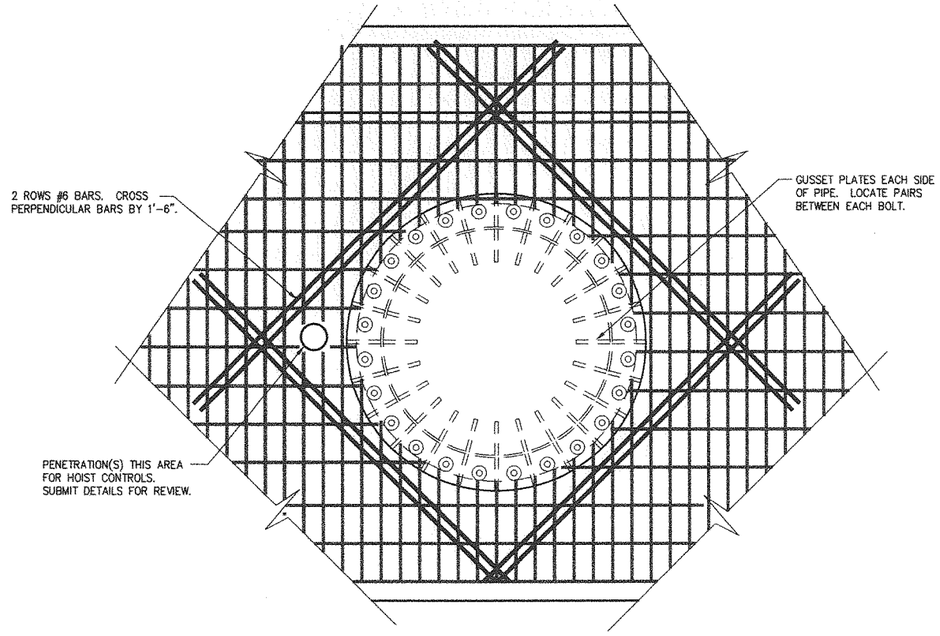
Maximum reach	30 feet
Capacity at maximum reach	30,000 lbs.
Height from concrete deck to safe operating height of hook	40 feet clear
Hook Lift	70 feet
Slew Speed	Variable with 1 rpm max. both directions
Slew drives	Dual-Heavy Duty
Slewing Angle	365 degrees
Hydraulic Cylinder	Marine Type
Load Monitoring Indicator	Included
Anti-two Block Device	Included
Hinge Pins	Stainless Steel
Winch	Included
Hook Speed Under Full Load	Variable- 0 to 75 feet per minute
Control Valves	Included
Main Boom material	ASTM A514B, Sy = 100,000 psi minimum
Warranty	Mininum one year on all parts (labor incl.)
Paint - Marine	Devoe: Primer - 302 Intermediate Coat - 235 Top Coat - 229 11 mils total dry finish

Hoist shall include a ladder and safety cage with an intermediate platform as required to meet all applicable codes. Crane shall be API certified and monogrammed. Crane shall be tested and certified to 125% of the full load in the shop and shall be tested at the job site as well. The job site test shall be witnessed and certified by a OSHA certified crane inspector. Operation and Maintenance Manual (O&M Manual) shall be provided with each hoist provided. O&M Manual shall identify all major parts and shall include all operating instructions and maintenance requirements and procedures.

Controls shall be mounted on crane pedestal/mast. An additional control board/panel shall be provided for the Commercial Hoist and shall be installed in the hoist building. See Electrical Drawings for additional requirements.

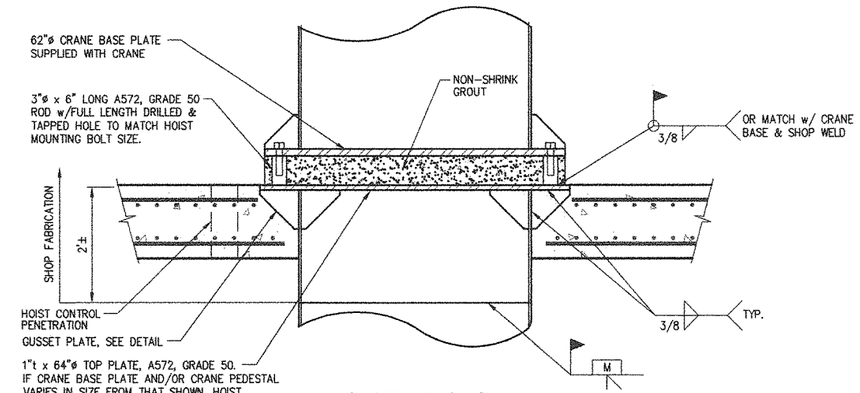
Hoist manufacturer shall supply base attachment to coordinate with drawings. The structural, civil and electrical drawings were generated using the above model. Alternates will be considered. Contractor/Supplier shall submit detailed information on the hoist that it is recommending including operating specifications/characteristics, dimensions and any other requirements. If using an alternate, the Contractor/Supplier shall have a Professional Engineer design hoist/dock connections, hoist pile, and all other pertinent structures to be modified at no additional expense to the Owner. All modifications required by the alternate hoist (including structural, electrical, and all other utilities) shall be at the expense of the Contractor/Supplier.

Install hoist in accordance with manufacturer's recommendations.

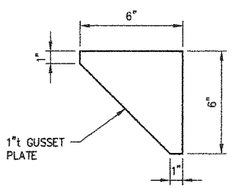


BOAT HOIST BASE PLATE

COMMERCIAL HOIST SHOWN.
SPORT HOIST SIMILAR.



BOAT HOIST BASE PLATE



GUSSET PLATE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Peratrovich, Nottingham & Drage, Inc. (PN&D) is not responsible for safety programs, methods, procedures of operation, or the construction of the design shown on these drawings. Drawings are for use on this project only and are not intended for reuse without written approval from PN&D. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PN&D.

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked:
Project No.: 96448.03

Date: JUNE '99
Scale:

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

BOAT HOIST

Sheet 17 of 29

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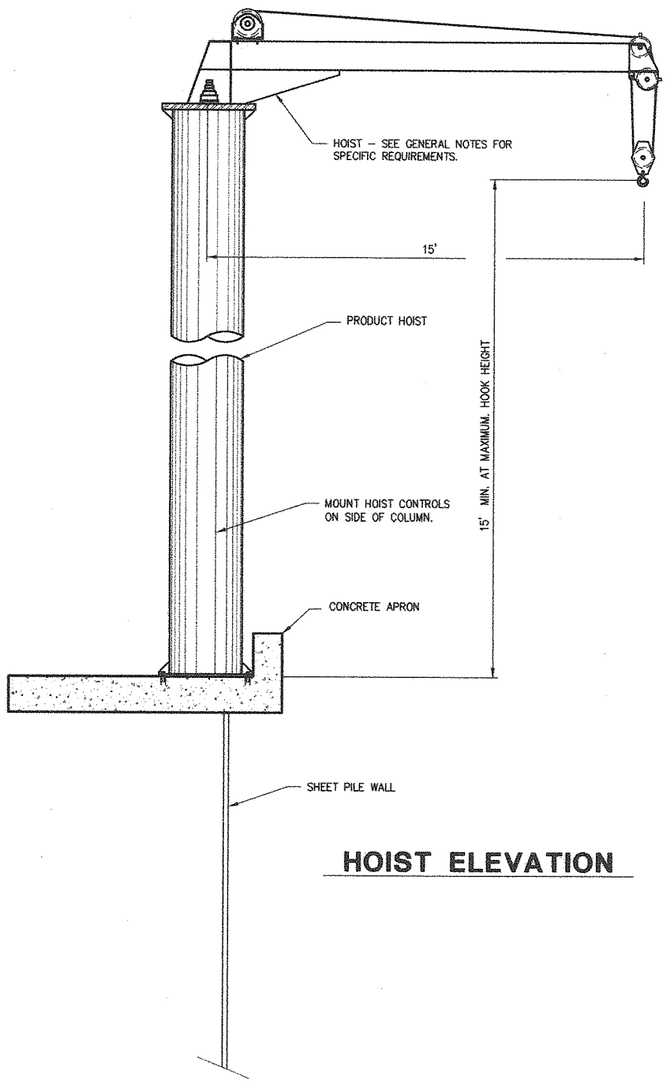
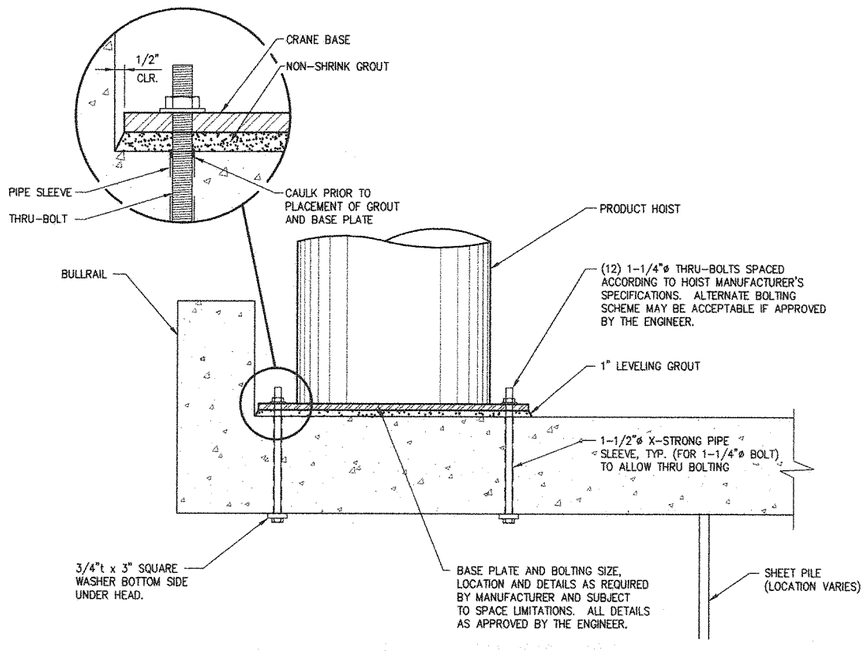
PLOT 1:1 w/ANGH.PCP 06-07-99



HOIST ELEVATION



PRODUCT HOIST BASE PLATE

PRODUCT HOISTS

The product hoists will be used to move products and equipment to and from the dock to vessels in the water (salt) below and shall each be Gorbel 15-ft Jib Crane, Model No. FS300-1612 as supplied by Washington Crane & Hoist Corporation in Seattle, Washington (206-624-4335), with the following features:

Maximum reach	15 feet
Capacity at maximum reach	2,000 lbs.
Height from concrete deck to safe operating height of hook	15 feet clear
Hook Lift	45 feet
Slew Speed	Manual
Slewing Angle	355 degrees
Overload Protection Device	Included
Winch	Included
Hook/Hoist Speed Under Full Load	15 feet per minute
Warranty	Minimum one year on all parts (labor incl.)
Paint – Marine	Epoxy Paint suitable for marine exposure

Crane shall be tested and certified to 125% of the full load in the shop and shall be tested at the job site as well. The job site test shall be witnessed and certified by a OSHA certified crane inspector. Operation and Maintenance Manual (O&M Manual) shall be provided with each hoist provided. O&M Manual shall identify all major parts and shall include all operating instructions and maintenance requirements and procedures. Controls and appurtenances shall be mounted on crane pedestal/mast. See electrical drawings for additional requirements.

Hoist manufacturer shall supply base attachment to coordinate with drawings. The structural, civil and electrical drawings were generated using the above model. Alternates will be considered. Contractor/Supplier shall submit detailed information on the hoist that it is recommending including operating specifications/characteristics, dimensions and any other requirements. If using an alternate, the Contractor/Supplier shall have a Professional Engineer design hoist/dock connections, hoist pile, and all other pertinent structures to be modified at no additional expense to the Owner. All modifications required by the alternate hoist (including structural, electrical, and all other utilities) shall be at the expense of the Contractor/Supplier.

Install hoist in accordance with manufacturer's recommendations.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03
Date: JUNE '99
Scale:

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
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PRODUCT HOIST (DEDUCTIVE ALTERNATE)

Sheet 18 of 29

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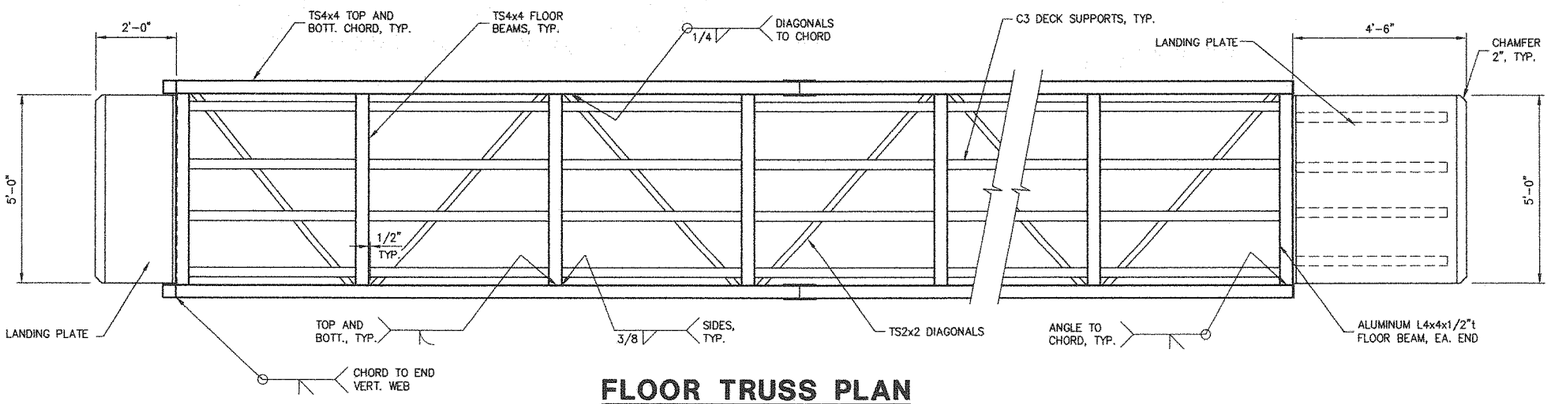
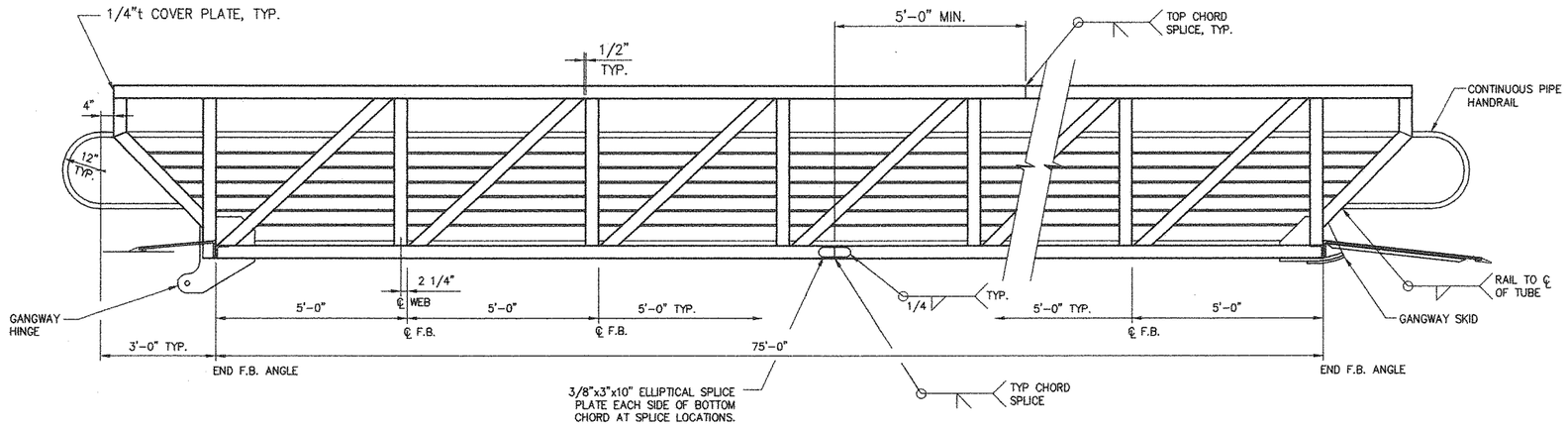
PLOT 1:1 W/ANCH.PCP 05-20-99

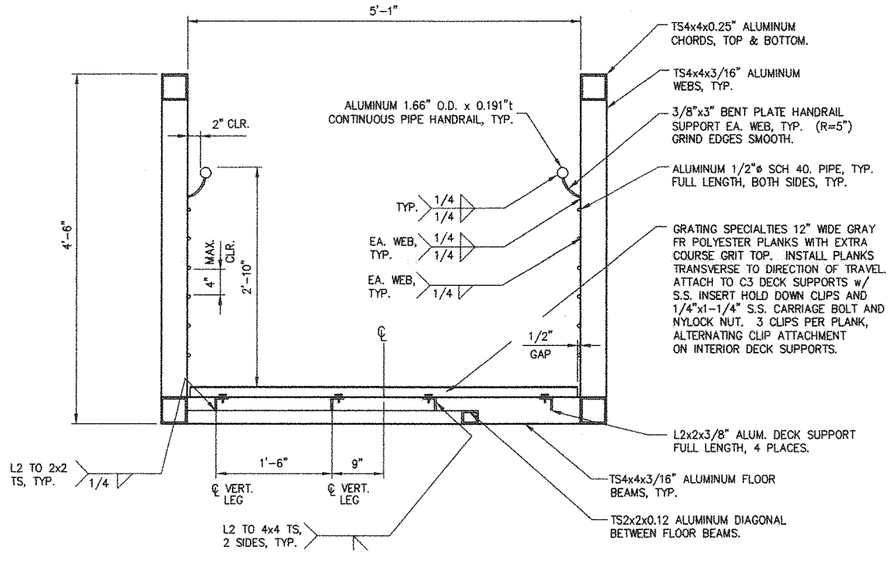


FLOOR TRUSS PLAN



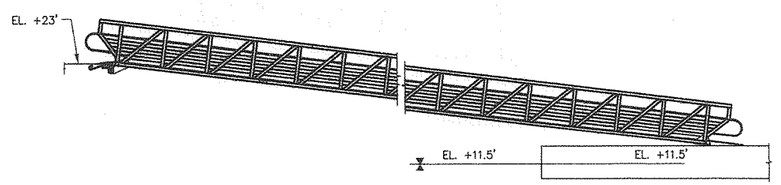
ELEVATION

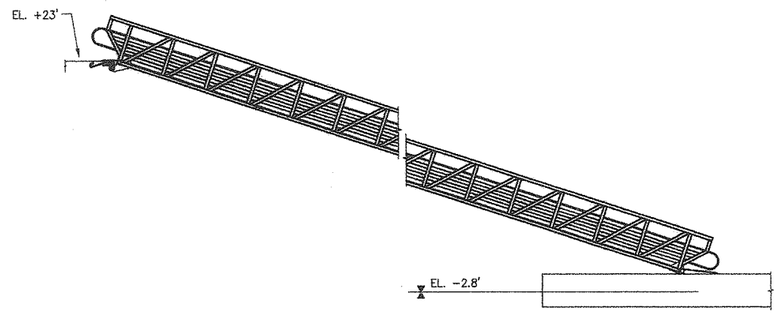
NOTE: 1" MIN. UPWARDS CAMBER AT MID-SPAN AFTER DEAD LOAD.



CROSS SECTION

HIGH TIDE PROFILE





LOW TIDE PROFILE

MATERIALS AND CONSTRUCTION

General Requirements
Fabrications, delivery and installation of the aluminum gangway shall conform to the latest revisions of aluminum construction manual and all applicable standards and data as set forth by the aluminum association. Edges shall be cut true, smooth, and free from burrs. Flame cutting is not permitted. Holes for bolts shall be drilled or punched. All exposed ends of tubes or pipes shall be capped. Corner edges shall be ground smooth. Weld spatter and weld flash shall be removed from all exposed surfaces. Mill stamps shall be removed.

The aluminum gangway shall be installed according to the recommendations of the manufacturer. The gangway shall be installed on the float and positioned so as to allow the float system to travel the full range of water levels and storage level.

Aluminum
All structural aluminum, including tubes, plates, angles and pipe shall be alloy 6061-T6.

Structural Steel
Plates and shapes shall conform to ASTM A36. Pipe shall conform to ASTM A53 Grade B. Tube steel shall conform to ASTM A500 Grade B. All structural steel shall be galvanized.

Reinforcing Steel
Reinforcing steel welded for gangway shore mount as shown on the drawings shall be new billet stock ASTM A-706, grade 60, low alloy steel suitable for welding.

Bolts
All bolts for aluminum construction shall be stainless steel appropriate for use with aluminum in marine environments

UHMW
Ultra High Molecular Weight Polyethylene (UHMW) shall be either a mechanical blend of virgin UHMW resin and ground UHMW chips or crosslinked virgin grade. The material shall be suitable for high impact and severe abrasion. UHMW shall be fully UV stabilized. . UHMW polyethylene isolators shall be used when connecting dissimilar materials.

Welding
Welding shall conform to the latest AWS D1.1 or D1.2 as applicable. All welding shall be performed by Welders qualified by AWS for the type of welding anticipated.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked: DP
Project No. 96448.03

Date: JUNE '99
Scale:

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Engineering Consultants
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75-FOOT GANGWAY

Sheet 19 of 29

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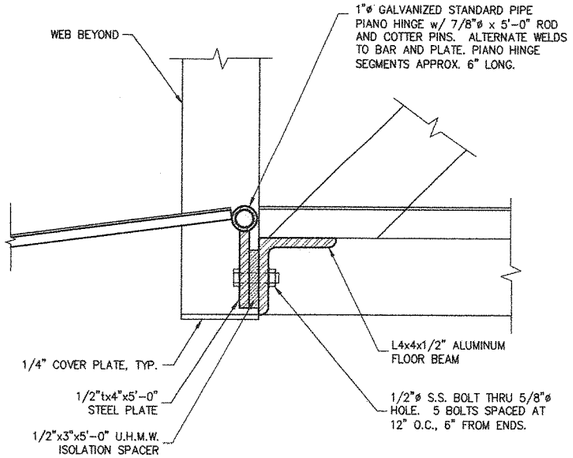
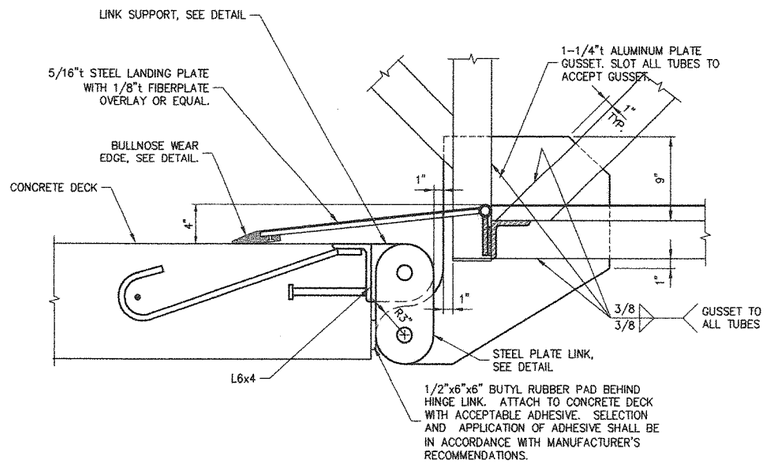
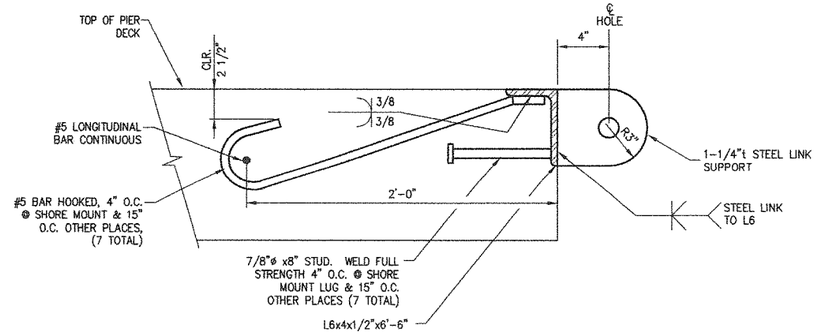
PLOT TIME: 05-20-99



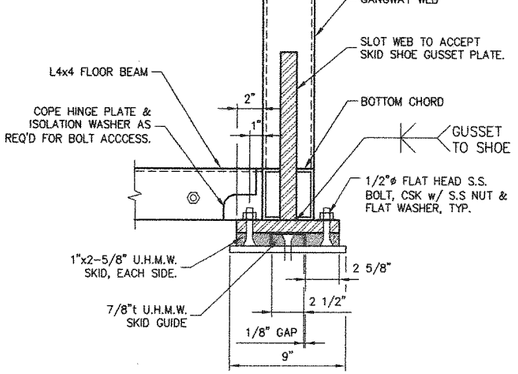
LANDING PLATE HINGE DETAIL



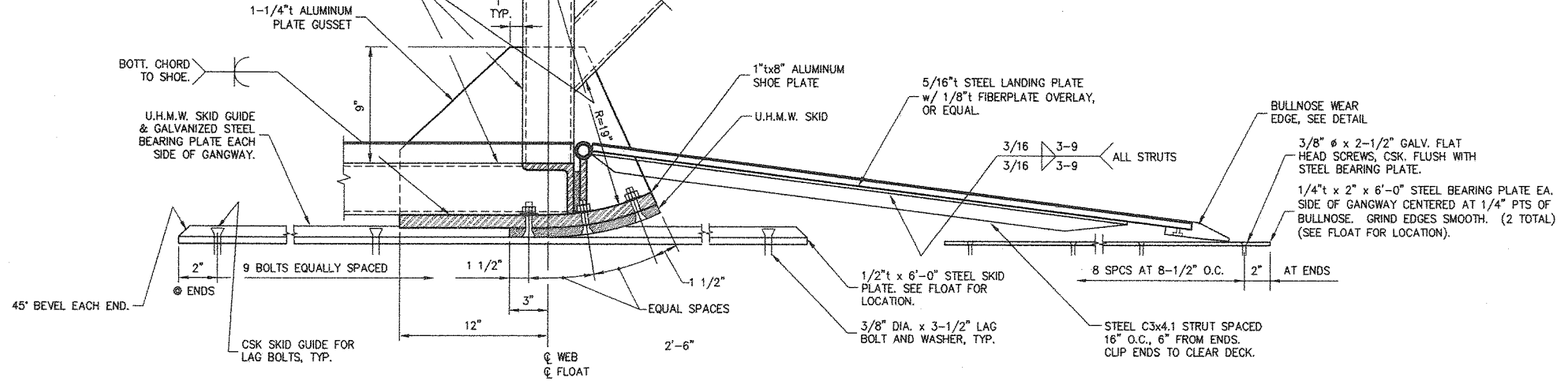
HINGE ASSEMBLY



SUPPORT LINK

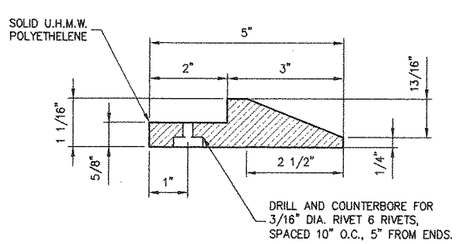


SECTION

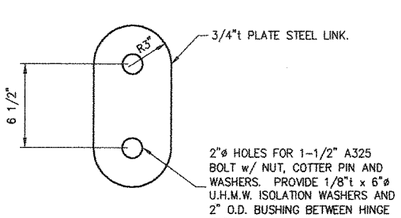


GANGWAY SKID

SECTION



BULLNOSE WEAR EDGE



LINK PLATE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

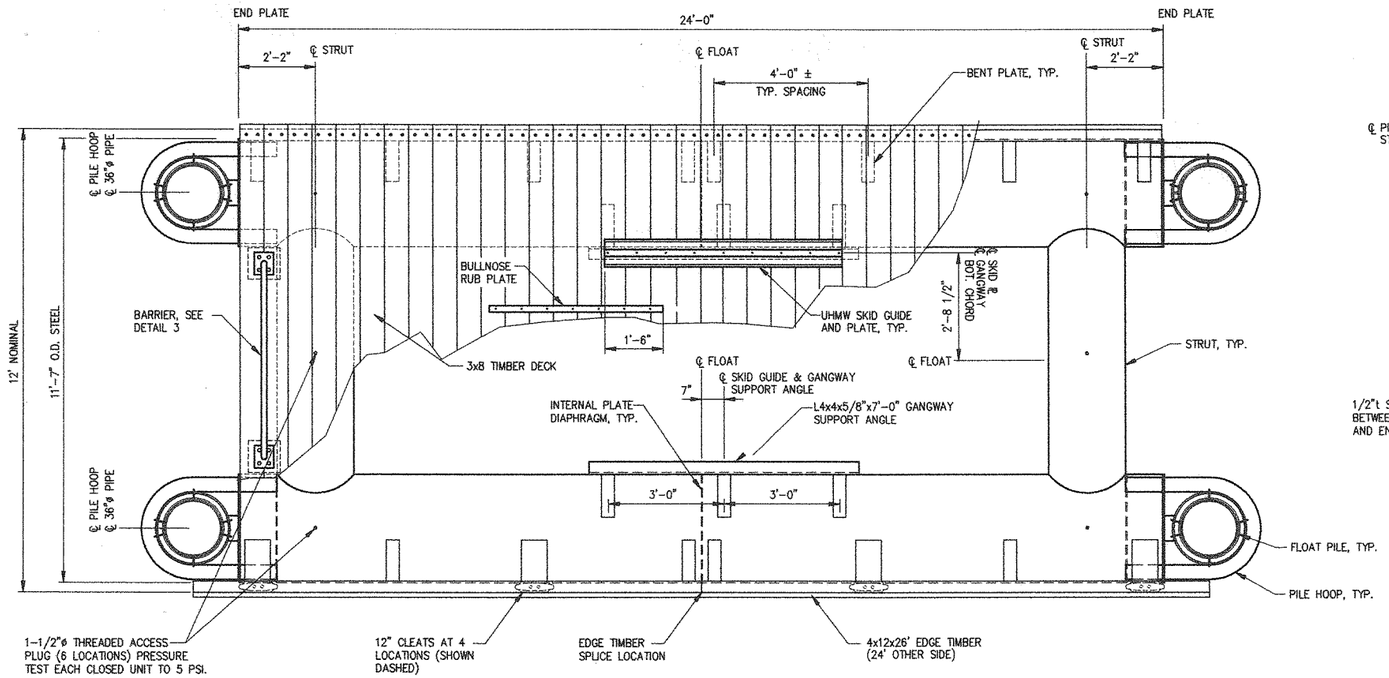
Designed: ACK
Drawn: DRH
Checked: DP
Project No. 96448.03

Date: JUNE '99
Scale:

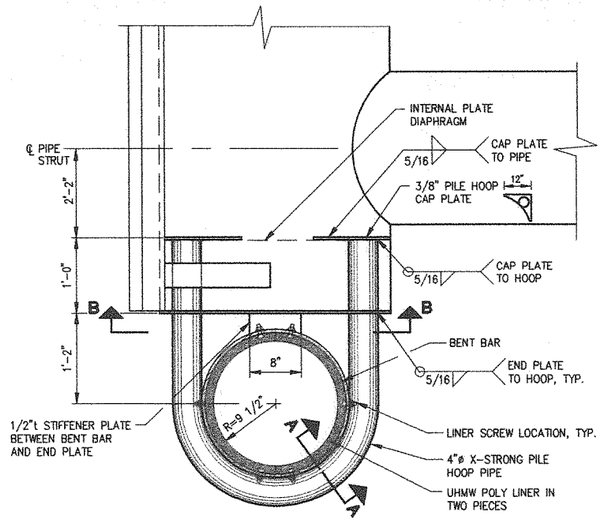
GANGWAY DETAILS

Sheet 20 of 29

C:\ACDATA\DRH\1996\96448\POINT03\96448-20.DWG
PLOT IT: 05-20-99

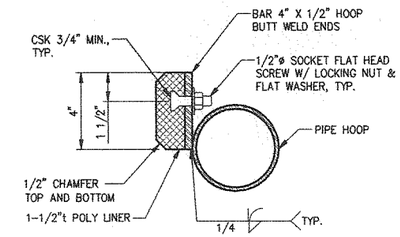


FLOAT PLAN



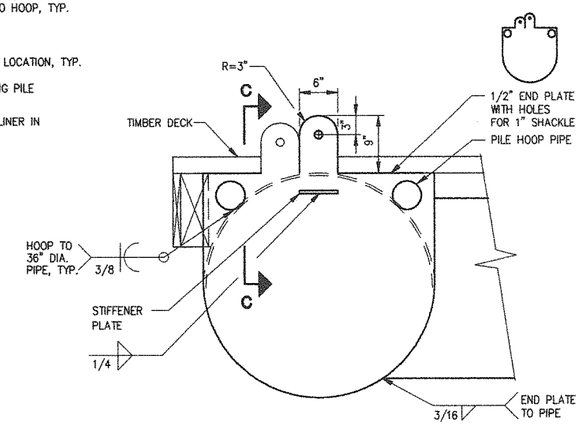
PLAN VIEW

DECK NOT SHOWN FOR CLARITY



SECTION A-A

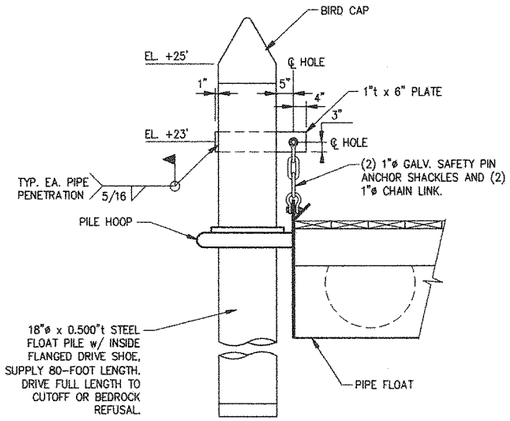
PILE HOOP



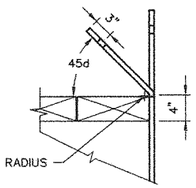
SECTION B-B

TYPICAL SECTION

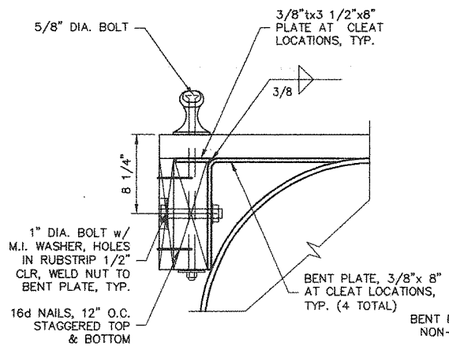
INTERNAL DIAPHRAGN



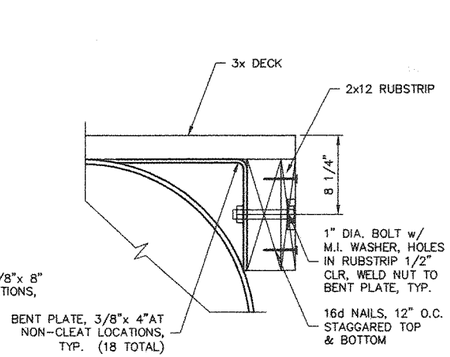
FLOAT PILE



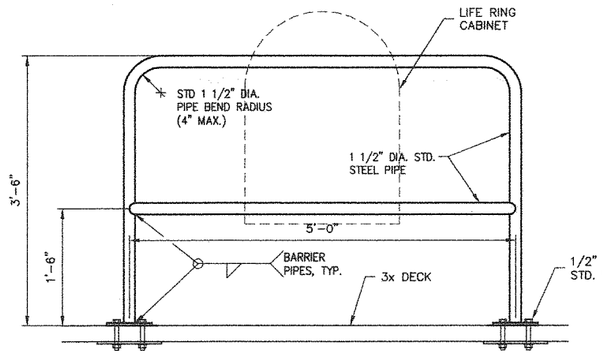
SECTION C-C



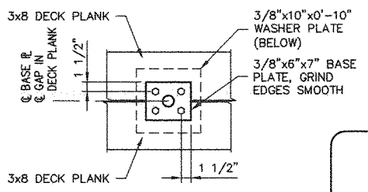
DETAIL 1



DETAIL 2



DETAIL 3



BASE PLATE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

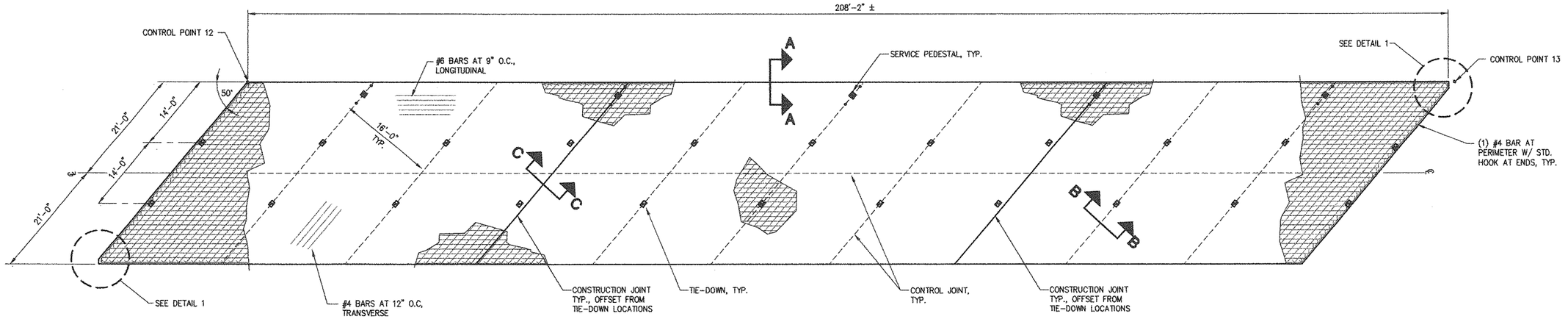
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Date: JUNE '99
Scale:

FLOAT

Sheet 21 of 29

C:\ACDATA\DRH\1996\96448\96448-21.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



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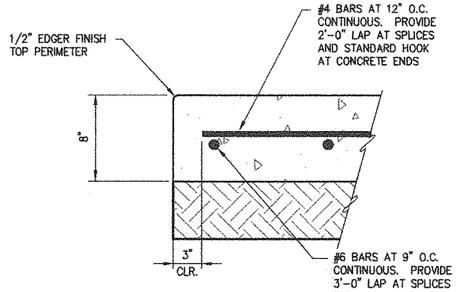
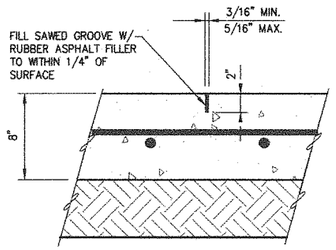


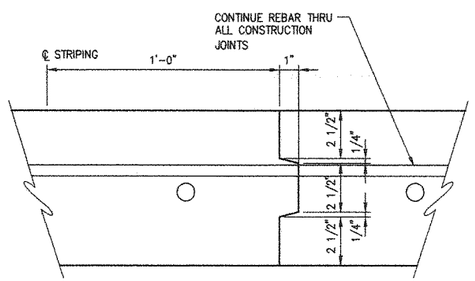
SECTION A-A TYPICAL SECTION

NOT TO SCALE



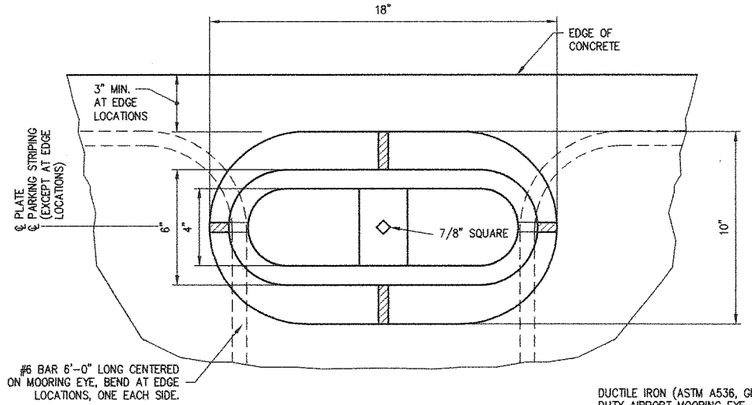
SECTION B-B CONTROL JOINT

NOT TO SCALE



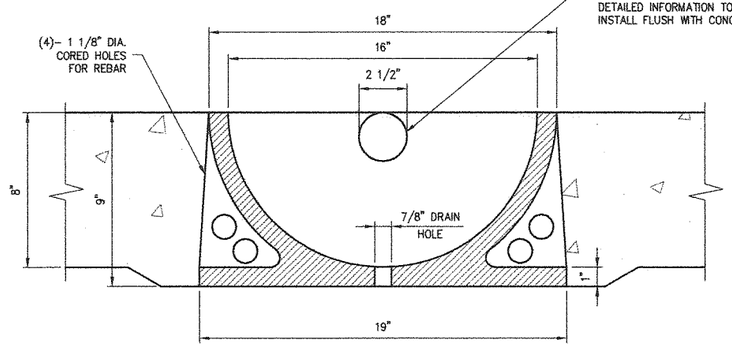
SECTION C-C

CONSTRUCTION JOINT TO BE USED WHEN OPERATIONS ARE DISCONTINUED FOR MORE THAN 30 MINUTES. DO NOT LOCATE AT CONTROL JOINT.



PLAN

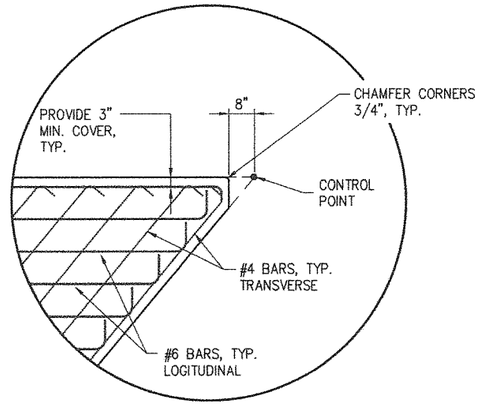
DUCTILE IRON (ASTM A536, GRADE 80-55-06) HEAVY DUTY AIRPORT MOORING EYE AS MANUFACTURED BY OLYMPIC FOUNDARY, INC, (206-764-1200) PART No. 199AME. ALTERNATES WILL BE CONSIDERED. SUBMIT DETAILED INFORMATION TO ENGINEER FOR APPROVAL. INSTALL FLUSH WITH CONCRETE PAD.



ELEVATION

TIE-DOWN

MAINTAIN LONGITUDINAL AND TRANSVERSE REBAR AT TIE-DOWNS.



DETAIL No.1

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Designed: ACK
Drawn: DRH
Checked:
Project No.: 96448.03

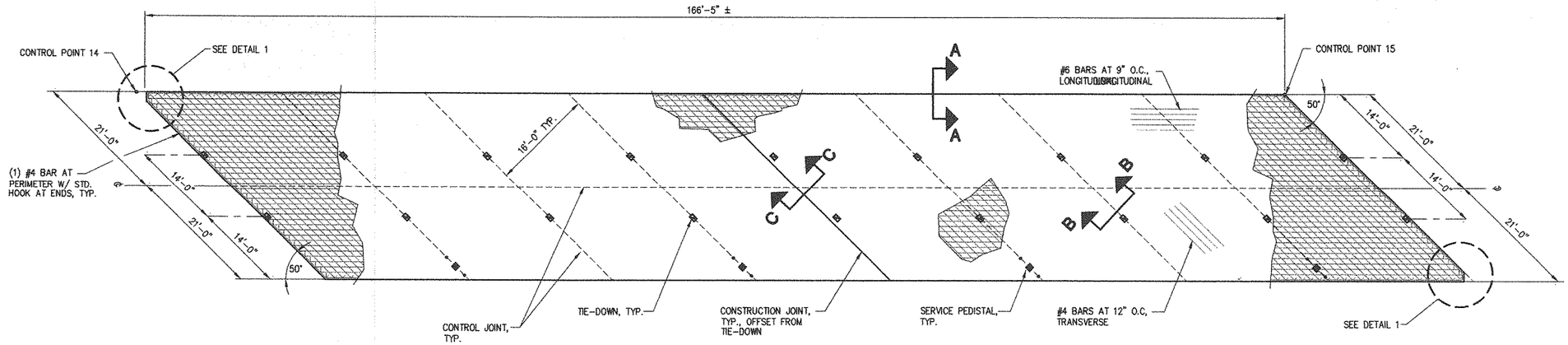
Date: JUNE '99
Scale:

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

PARKING PAD No.1

Sheet 22 of 29

C:\ACDATA\DRH\1996\96448\96448-22.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



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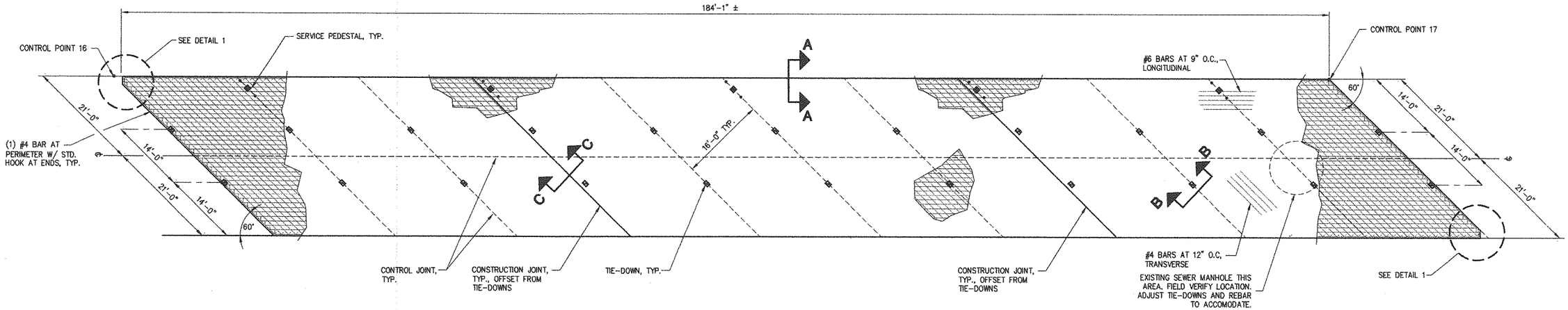

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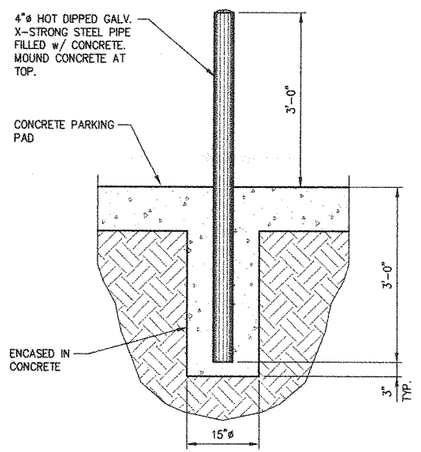
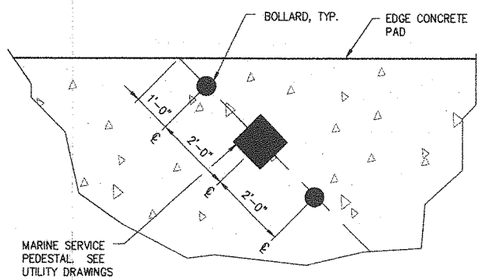


TYPICAL BOLLARD



SERVICE PEDESTAL

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

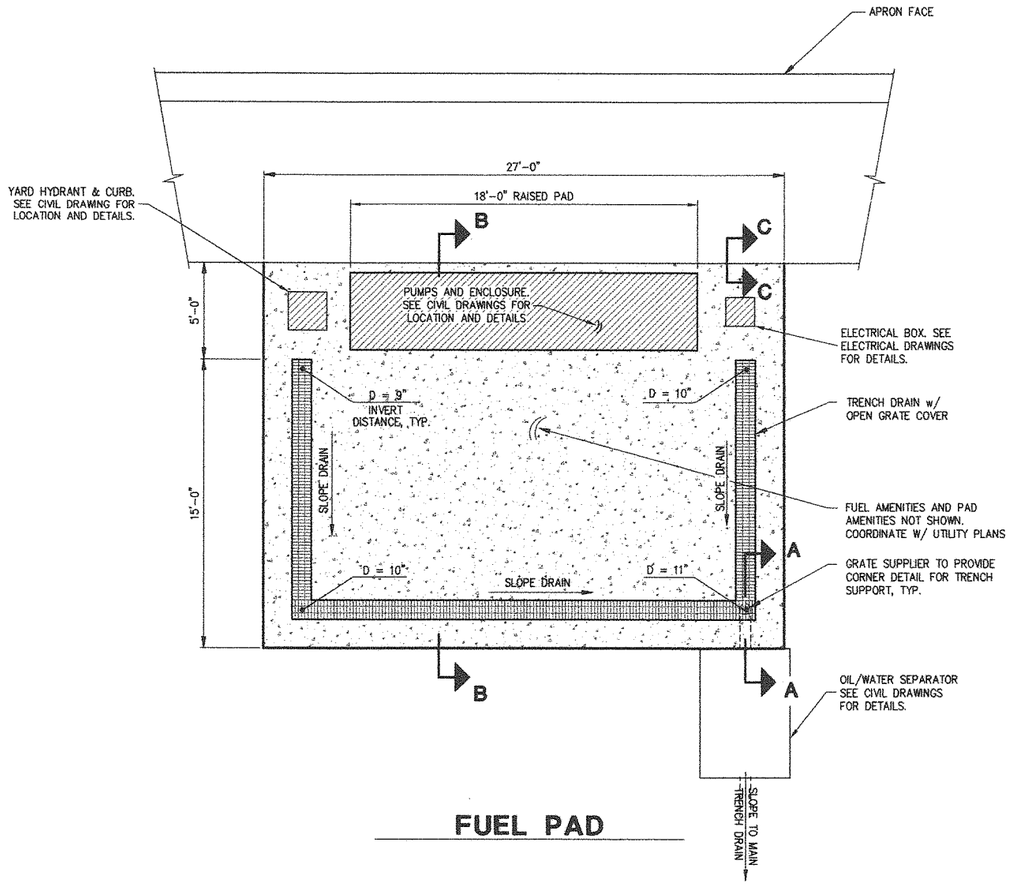
Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

Date: JUNE '99
Scale:

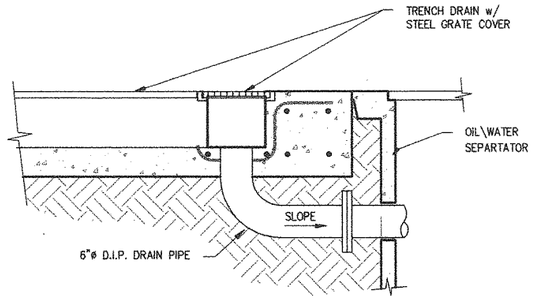
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

PARKING PAD No. 2 & 3

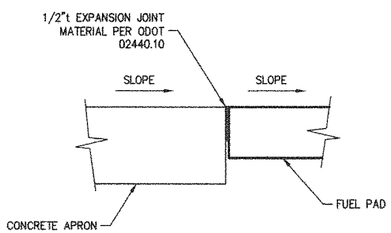
Sheet 23 of 29



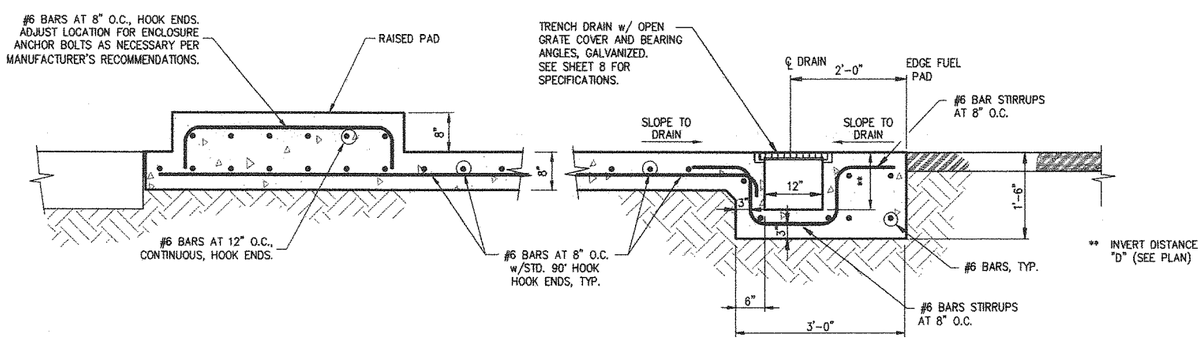
FUEL PAD



SECTION A-A



SECTION C-C



SECTION B-B

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PLOT 1:1 w/ANCH.PCP 05-20-99

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

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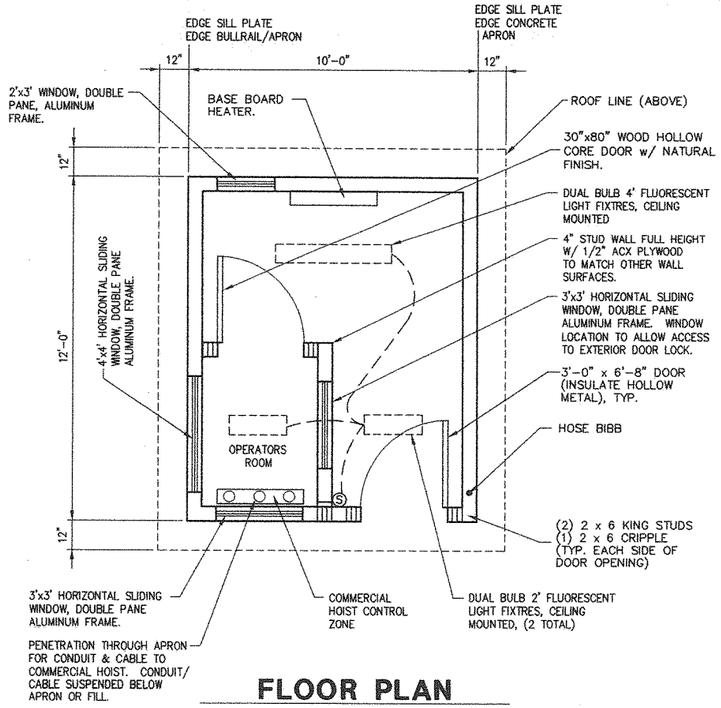
Designed: TN
Drawn: DRH
Checked: DP
Project No.: 96448.03
Date: JUNE '99
Scale:

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

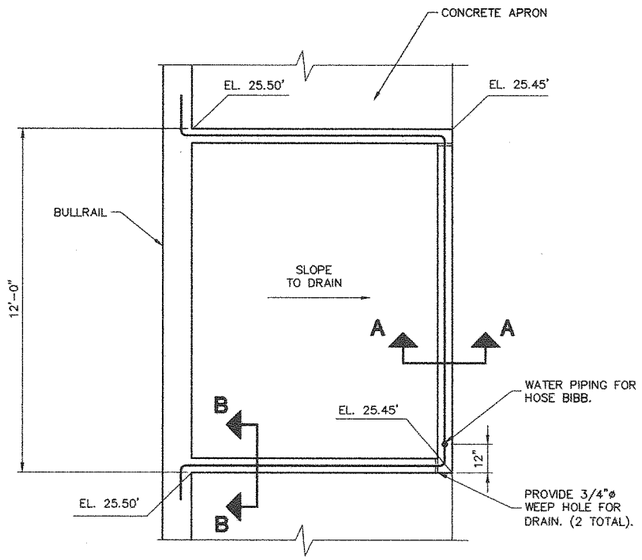
FUEL PAD

Sheet 24 of 29



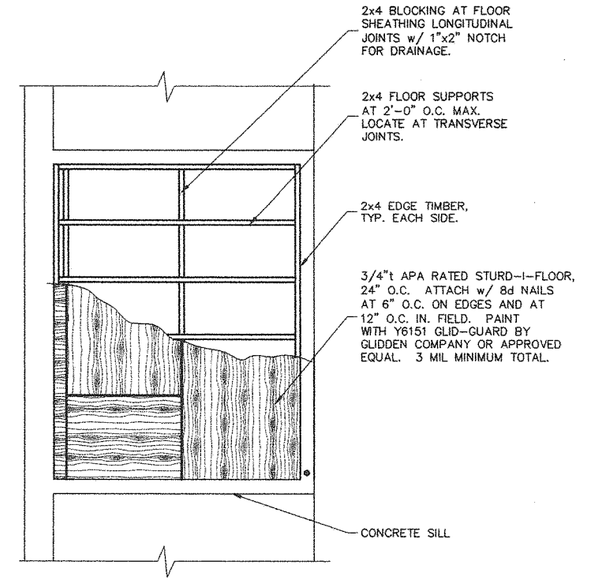
FLOOR PLAN

PROVIDE (6) 110V WALL MOUNTED OUTLETS SPACED AS APPROVED BY OWNER.

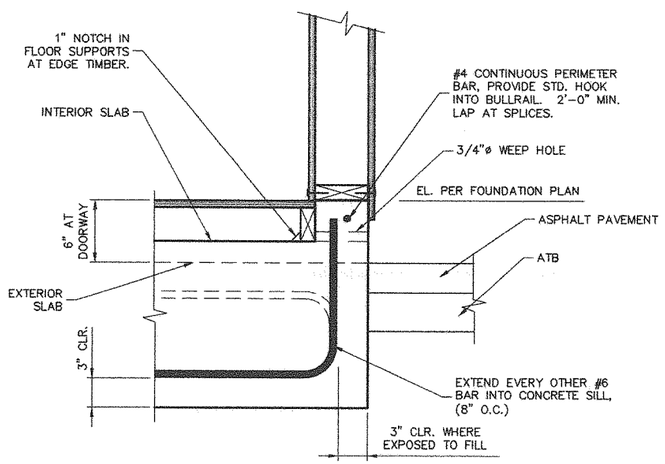


FOUNDATION PLAN

ELEVATIONS CORRESPOND TO TOP OF CONCRETE SILL.

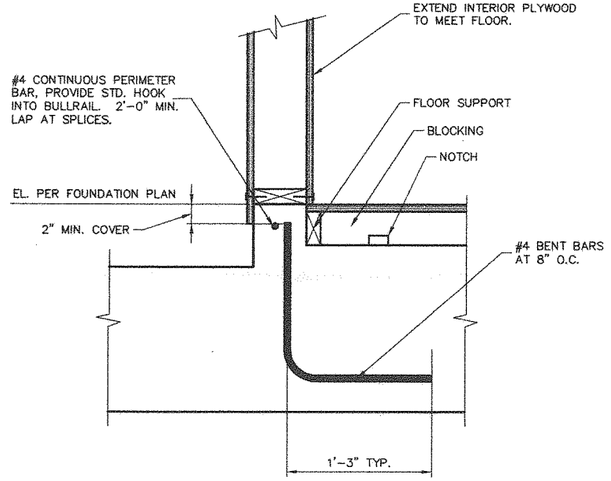


FLOOR FRAMING PLAN

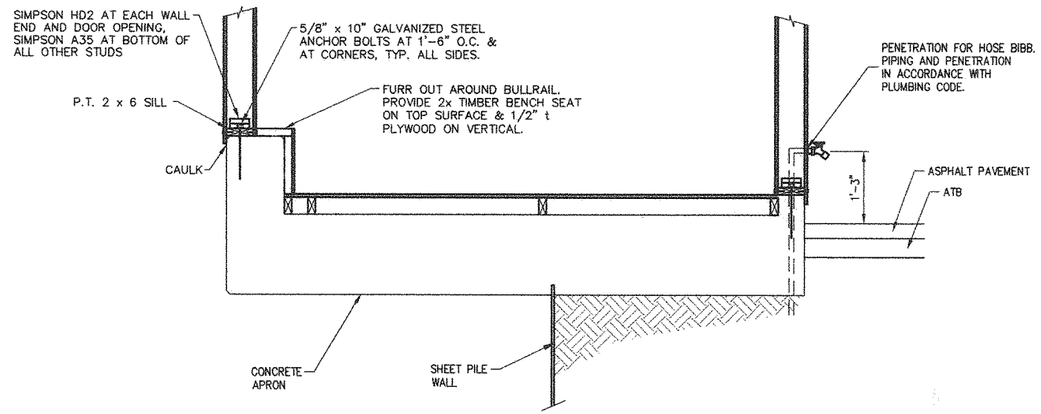


SECTION A-A

APRON EDGE-OTHER REINFORCEMENT NOT SHOWN FOR CLARITY



SECTION B-B



TYPICAL SECTION

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REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

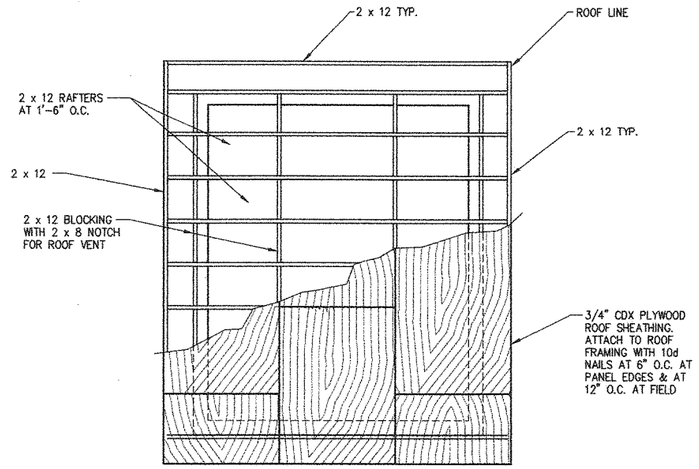
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03
Date: JUNE '99
Scale:

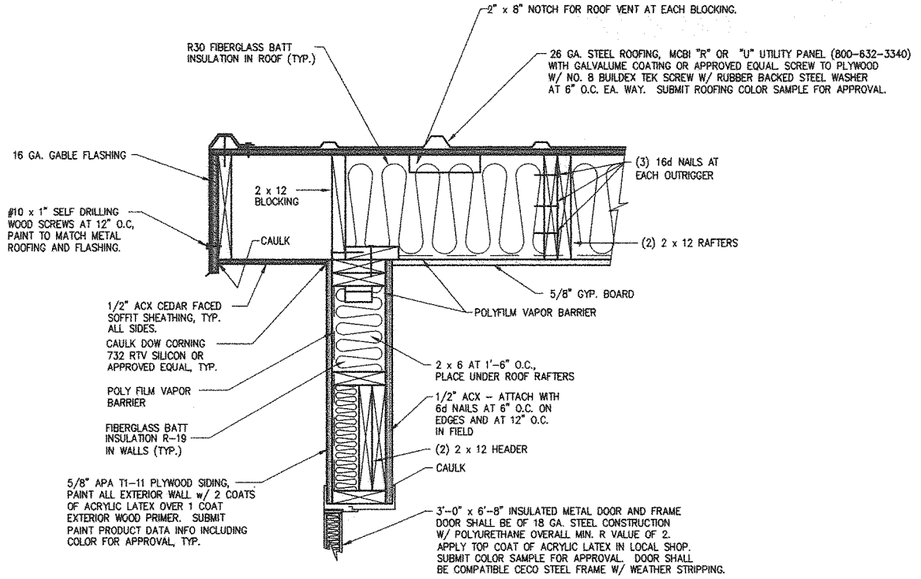
HOIST BUILDING

Sheet 25 of 29

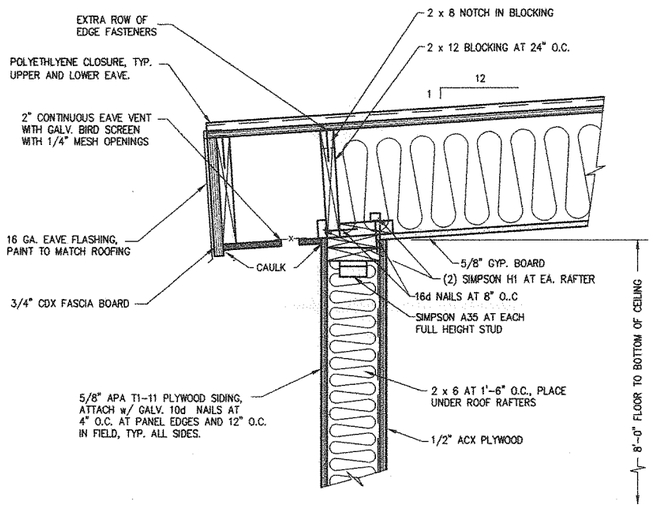
C:\ACDATA\DRH\1998\96448\96448-25.DWG
PLOT 1:1 W/ANCH.PCP 05-20-99



ROOF FRAMING PLAN



GABLE EDGE



LOWER EAVE

UPPER EAVE SIMILAR

THE BUILDING AS SHOWN PORTRAYS THE MINIMAL ACCEPTABLE FACILITY. THE CONTRACTOR IS RESPONSIBLE FOR:
1. MEETING ALL ENERGY AND BUILDING CODE REQUIREMENTS, AND
2. COORDINATE WITH ATTACHING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY VARIATION IN THE BUILDING REQUIRED BY CODE OR REQUESTED BY THE CONTRACTOR.

DESIGN LOADS
FLOOR LIVE LOAD: 100 PSF
SNOW LOAD: 45 PSF
WIND LOAD: 120 MPH, EXPOSURE D (UBC)

TIMBER
ALL FLOOR AND WALL FRAMING LUMBER SHALL BE DOUGLAS FIR OR HEM-FIR STUD GRADE. ALL ROOF FRAMING LUMBER SHALL BE DOUGLAS FIR NO. 2 STRUCTURAL JOISTS AND PLANKS. LUMBER SHALL BE GRADED IN ACCORDANCE WITH THE WCLIB MOST CURRENT GRADING RULES.

OTHER MATERIALS
EQUIVALENT MATERIALS TO THOSE SPECIFIED WILL BE CONSIDERED BY THE ENGINEER. CONTRACTOR MUST SUBMIT COMPLETE PRODUCT INFORMATION TO THE ENGINEER FOR APPROVAL INCLUDING INSTALLATION RECOMMENDATIONS AT LEAST THREE WEEKS PRIOR TO INCORPORATION INTO THE WORK.

SUBMIT COMPLETE PRODUCT INFORMATION/CATALOG CUTS FOR APPROVAL BY THE ENGINEER/OWNER FOR THE FOLLOWING ITEMS:
WINDOWS INCLUDING COLOR
EXTERIOR DOOR AND HARDWARE INCLUDING COLOR
ROOFING COLOR
SIDING PAINT PRODUCTS AND COLOR INCLUDING PRIMER
VAPOR BARRIER
INSULATION
FLOOR PAINT PRODUCTS AND COLOR
LIGHT FIXTURES
BASE BOARD HEATER
THIS INFORMATION MUST BE SUBMITTED AT LEAST THREE WEEKS PRIOR TO ORDERING. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING INFORMATION IN A MANNER THAT WILL MAINTAIN THE PROJECT SCHEDULE.

ALL OTHER MATERIALS SHALL BE AS SPECIFIED IN THE GENERAL NOTES.

CONSTRUCTION
HOIST BUILDING CONSTRUCTION SHALL CONFORM TO THE UBC REQUIREMENTS IN CHAPTER 23, DIVISIONS I, II, III AND IV.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/16/99

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03
Date: JUNE '99
Scale:

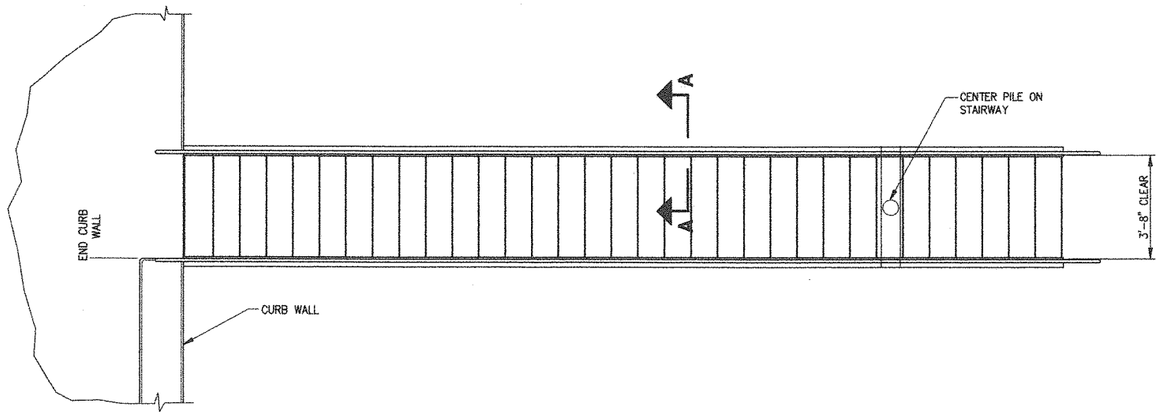
PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

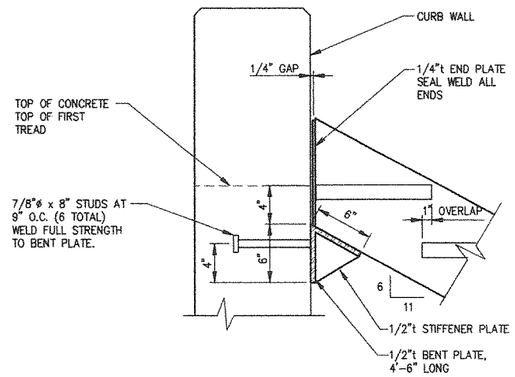
HOIST BUILDING

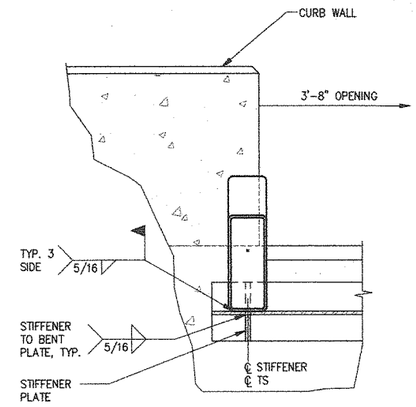
Sheet 26 of 29

C:\ACDATA\DRH\1996\96448\96448-26.DWG
PLOT 1:1 W/ANCH.PCP 06-07-99



STAIR PLAN





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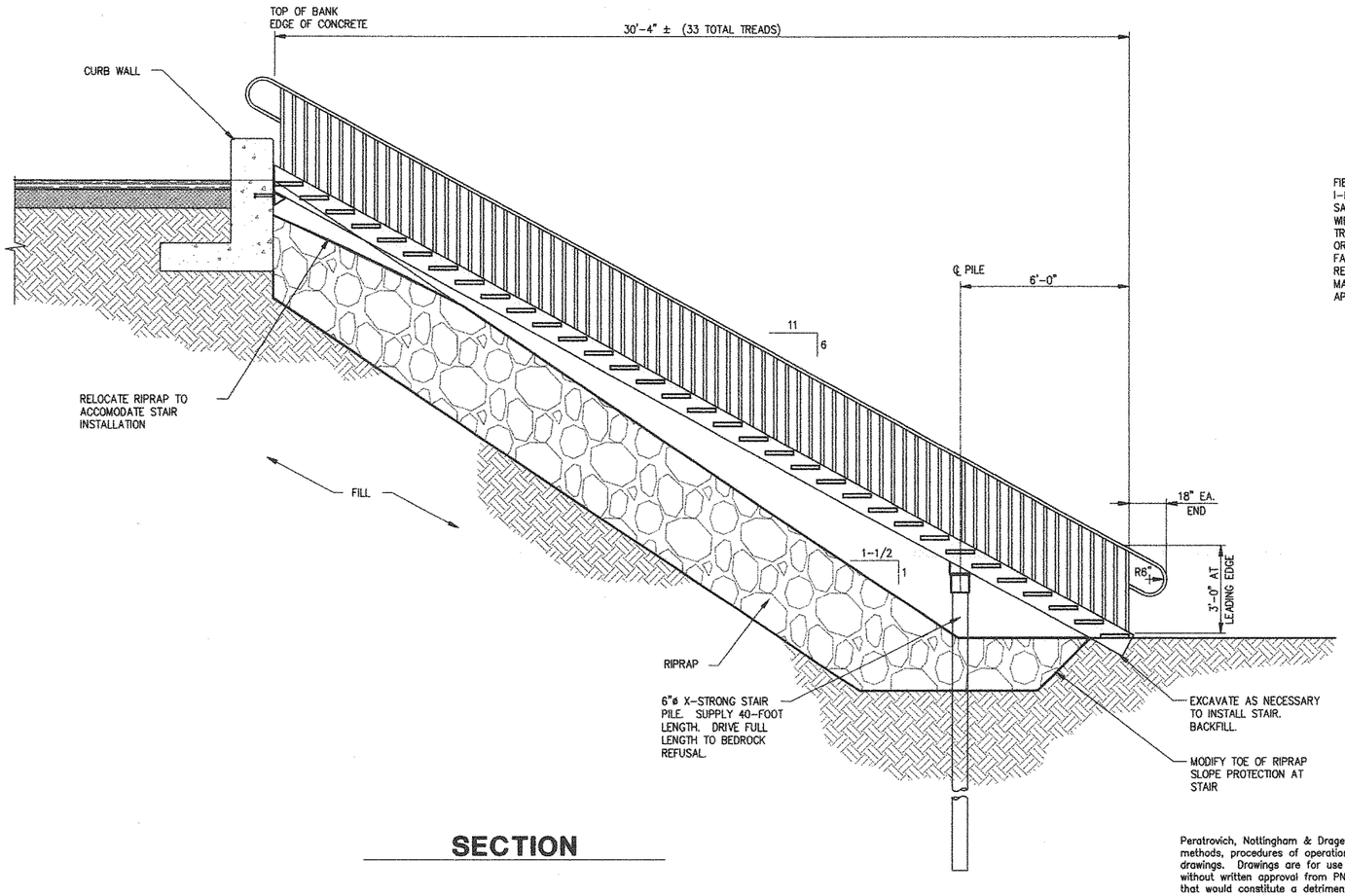
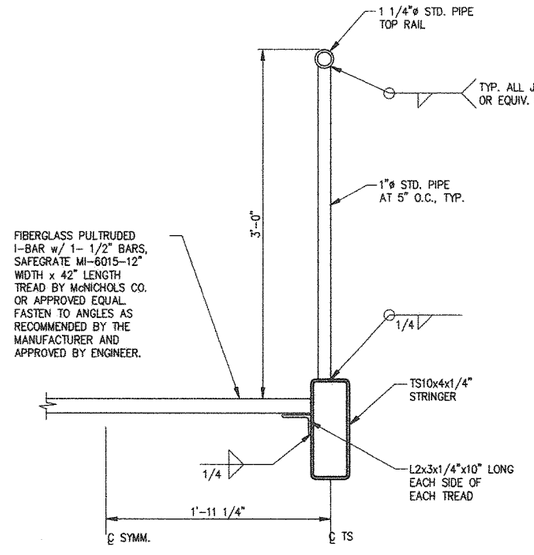


SECTION



SECTION A-A

PILE SUPPORT

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 6-30-00 DAVID M. PIERCE 6/16/99

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03
Date: JUNE '99
Scale:

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

STAIRWAY (DEDUCTIVE ALTERNATE)

GENERAL NOTES

Applicable Codes
All local codes plus the following are part of these General Notes.
Uniform Building Code (UBC)
American Concrete Institute (ACI), Standard 318
1994 American Institute of Steel Construction (AISC), 9th Edition
American Association of State Highway and Transportation Offices (AASHTO), 1996
AWS D1.1 and D1.2
ASTM Specifications
Oregon Standard Specification for Highway Construction (ODOT), 1991
American Water Works Association (AWWA) Standards, newest edition.

The information contained in these General Notes is in addition the to the details and notes provided on the individual plan sheets. In case of conflict between notation the above references, these general notes, notes and details on individual sheets the following priority shall be followed:
1) All project permit requirements
2) Notes on individual plan sheets
3) Details and callouts on individual plan sheets
4) These General Notes
5) Local Codes
6) The specifications and standards listed above in order of appearance.

DESIGN CRITERIA

Live Loads
Uniform live load on gangway approach pier (i.e. pile supported concrete pier): 100 psf
966C Front End Loader on concrete apron
60-ton axle lift truck on trench drains and manhole covers
AASHTO HS20 highway truck on all surfaces
Uniform live load on gangway: 60 psf, 1000-lb point load.
Mooring Loads: 20 kips in any horizontal direction - dock cleats.
For Hoist Building loads, see pertinent drawing.

Wind Load
120 mph, Exposure D (UBC)

Seismic Load
0.2g lateral sliding block wedge for open-cell tie walls.

Port of Port Orford Tides
Elevation 11.49' - EXHW
Elevation 7.35' - MHHW
Elevation 4.00' - MTL
Elevation 0.00' - MLLW
Elevation -2.78' - EXLW

MATERIALS

Structural Steel
Plates and shapes shall conform to ASTM A36 unless otherwise indicated on these drawings. Pipe shall conform to ASTM A53 Grade B. Tube steel shall conform to ASTM A500 Grade B. All structural steel shall be galvanized.

Pipe Pile
All pile shall be new. All piles shall be ASTM A252 Grade 3, galvanized full length. All piles shall meet ASTM A36 chemistry requirements and be suitable for welding. Pile splices shall be full strength butt-welded with backing rings per AWS Specifications. Care shall be taken that pipe remains in straight alignment through splices. No piece of pipe less than eight feet long shall be spliced into a pile.

Sheetpiles
Sheetpiles shall be ASTM A328 with chemistry meeting ASTM A36 requirements, minimum interlock tensile strength of 16,000 pounds per inch, and minimum swing angle of 7 degrees. Sheetpiles shall be installed full lengths without splices unless otherwise approved by Engineer. Sheetpiles shall be new. All face sheets and those sheets directly exposed to saltwater or air shall be fully galvanized. Contractor shall insure interlocks are clear of dross or other buildup with use of interlock gauge so that no pile installation difficulties occur. Tie walls and those sheets that are fully buried with fill material on both sides of the sheetpile may be bare.

Bolts and Other Hardware
All connecting bolts for steel to steel or steel to concrete shall be ASTM A325 with threads excluded from the shear plane. Anchor bolts shall be ASTM A325 bolts, or as specified on the drawings. All other bolts shall be ASTM A-307 with heavy hex nuts, or as otherwise shown on the drawings. All bolts shall be galvanized, unless otherwise noted. All other screws, nuts, washers, nails and spikes shall meet ASTM A307 or ASTM A36 or as specified on the drawings or similar requirements as approved by the Engineer and shall be hot-dipped galvanized. Nails for the Hoist Building framing and interior sheathing do not need to be galvanized. Studs shall be Nelson studs or equivalent. Screws shall be zinc-plated unless otherwise specified.

Washers are required under both head and nut of all bolts unless otherwise noted. Where cut washers are used, they shall be 1/4-inch plate minimum. Malleable iron washers or economy heads are required wherever bolt heads or nuts bear against wood. Swab field-drilled bolt holes with preservative before installing in treated wood

Bird Cap
Bird caps for piles shall be fiberglass as manufactured by Stockland (714-660-0590) or approved equal.

Galvanizing
All bolts, nuts, washers, ladders, cleats, concrete inserts, fender piles, fender steel, stairs, weldments, railings, shapes, pile plates, and other miscellaneous metals and hardware shall be hot-dip-galvanized per ASTM A-123 or A-153 as appropriate. Nails for the framing and interior sheathing for the Hoist Building do not need to be galvanized.

Concrete
Concrete shall have a 28-day cylinder strength (f'c) = 4,500 psi minimum; 6-1/2 sacks cement/cubic yard minimum; water/cement ratio of 0.43 maximum; 1-inch maximum slump (prior to addition of superplasticizer); 4 to 7 % entrained air; 3/4-inch-minus coarse aggregate size. Contractor shall submit mix design and test results a minimum of 6 weeks prior to scheduled concrete placement.

Non-Shrink Grout
Grout shall be Embeco 885 grout, produced by Master Builders, or other Engineer approved non-shrink, non-metallic, non-bleeding grout, with a minimum allowable compressive strength of f'c = 8,000 psi. If Contractor uses alternative grout, a mix design shall be submitted and approved prior to start of work. The grout must be pumpable. Install per manufacturer's recommendations. At no additional expense to the Owner, a manufacturer's representative shall be on site during initial placement and shall FAX a job service report back to the Engineer.

Reinforcing Steel
Reinforcing steel welded for ladder and gangway shore mount as shown on the drawings shall be new billet stock ASTM A-706, grade 60, low alloy steel suitable for welding.

All other reinforcing steel shall be new billet stock ASTM A-615, Grade 60 steel. Bars shall be supported on approved chairs or well-cured concrete blocks. Reinforcing steel shall be detailed, bent, and placed in accordance with the CRSI "Manual of Standard Practice", the most current edition.

Granular Fill
Granular fill shall consist of durable, well-graded gravel and/or rock, with no more than 10 percent by weight passing the #200 sieve, and shall be free of organics, ice, snow, and other deleterious materials. Below Elevation +2 material shall be 24-inch minus, with the exception of material in the vicinity of sheetpile driving. Fill between Elevation +2 and Elevation +21 and in the vicinity of sheetpile driving shall be 6-inch minus. Care shall be taken to avoid placing larger rocks where they may interfere with sheet and pipe pile driving. Oversize material may be used in the fill at the discretion of the Engineer. Fill above Elevation +21 shall be 3-inch minus.

The Contractor is responsible to locate a fill source meeting the requirements specified above.

Backfill Around Pipes and Structures
Backfill around and bedding under formed concrete structures, drainage structures, and all pipes shall conform to that recommended by the manufacturers and the Specifications.

Backfill Under ATB
Backfill under asphalt treated base (ATB) shall consist of a 12-inch thick layer of 3-inch minus granular fill as specified above. The Contractor is encouraged to provide a well-graded material in order to enhance constructability.

HDPE
High Density Polyethylene (HDPE) resin compound shall have a PPI/ASTM material designation of PE3408 and a minimum ASTM D-3350 cell classification of 345434C. UV stabilizing additives shall be provided suitable for the proposed application. HDPE welds shall provide the full strength of pipe. Pipe weld reinforcement shall not exceed 1/8 inch.

UHMW
Ultra High Molecular Weight Polyethylene (UHMW) shall be either a mechanical blend of virgin UHMW resin and ground UHMW chips or crosslinked virgin grade. The material shall be suitable for high impact and severe abrasion. UHMW shall be fully UV stabilized. UHMW shall be Tivar 1000 or equivalent.

Timber (for other than hoist building)
Coast Region Douglas Fir No. 1 or better, pressure treated with ACZA per AWPA C-18 to a net retention of 0.6 lbs./c.f. Thoroughly swab bolt holes and cuts with a copper naphthanate solution per AWPA M-4. Boltholes shall be drilled 1/8-inch oversize. All damaged, cut, or drilled areas remaining structurally sound shall be field-coated with preservative per AWPA M-4 and installed as shown on the drawings. For Hoist Building timber, see pertinent drawing.

D-Bore Bumper
All rubber energy absorbers shall be Good Year Black EPDM or Black SBR. Alternates will be considered. Contractor/Supplier shall submit specifications on product it is recommending as an alternate.

Chain and Shackles
Fender chain shall be Campbell Chain?s Galvanized Dock Fender Chain as supplied by Obert Marine Supply, Inc. (206-623-7822), galvanized. 1/2-inch dock fender chain shall have an inside length of 3.5 inches, be proof tested for 15,000 lbs. and have an ultimate capacity of 35,000 lbs. Shackles shall be safety bolt type (anchor or chain). Shackles and chain to hang float on float piles shall be galvanized, Grade 80 Alloy Steel, as supplied by Obert Marine Supply, Inc. (206-623-7822). Alternates will be considered. Contractor/Supplier shall submit specifications on product it is recommending as an alternate.

CONSTRUCTION

Survey
All Construction surveys shall be performed by or under the supervision of a Professional Land Surveyor licensed in the State of Oregon. The Contractor shall layout the work from established horizontal and vertical control points indicated on the drawings and shall be responsible for all required measurements taken from these points.

The Contractor shall furnish at its own expense all stakes, templates, platforms, equipment, range markers, transponder stations, and labor as may be required to lay out the work from the control points furnished by the Owner. It shall be the responsibility of the Contractor to maintain the control points until authorized to remove them. If such points are destroyed or disturbed they shall be reestablished by the Contractor at its own expense.

The Contractor shall submit survey information to the Engineer at the minimum intervals: 1) 1) before beginning sheetpile cell fill operations, 2) before placement of ATB, 3) as necessary to determine acceptability of work. At a minimum, each survey submittal shall include cross sections perpendicular to the Project Baseline at 50-foot intervals beginning with Station 7+50 and ending with the extent of the pavement overlay.

Steel Welding
Welding shall conform to the latest AWS D1.1. All welding shall be performed by welders qualified by AWS for the type of welding anticipated and actually performed. Submittals verifying Welder qualification must be transmitted to the Owner for approval prior to any welding. Deposited weld metal shall meet Charpy requirements of 20 ft-lbs. at -20 degrees F and have chemistry similar to the base metal as approved by the Engineer. Welds will be spot tested by the Owner and those failing will be repaired at the Contractor's expense.

Galvanizing Repair
Galvanized coatings damaged from handling, welding or other means shall be repaired with melted stick galvanizing, as approved by the Engineer to achieve a 12 mil minimum coating thickness. A 2 mil minimum coating of zinc rich paint spray or brush applied shall follow the stick galvanizing.

Steel Erection
All steel erection shall follow AISC guidelines. All A325 bolts with load indicator washers are to be tightened per AISC slip critical requirements.

Backfill Around Pipes and Structures
In general, backfill shall be placed and compacted in accordance with "Sheetpile Cell Filling" in these General Notes. Backfill around and bedding under formed concrete structures, drainage structures, and all pipes shall be placed in accordance with the manufacturers recommendations and the Specifications.

Backfill Under ATB
In general, backfill shall be placed and compacted in accordance with "Sheetpile Cell Filling" in these General Notes. Backfill under asphalt treated base (ATB) shall be placed in maximum 12-inch lifts and shall be compacted to 95% Standard Proctor.

Concrete Placement
Concrete shall be formed, batched, placed and cured per ASTM C-94 and ACI 318. Reinforcing steel shall be detailed, bent, and placed in accordance with the CRSI "Manual of Standard Practice", the most current edition. Provide two-inch minimum clearance unless otherwise noted. Reinforcement bar shall be lap-spliced for tension unless otherwise noted on the drawings. Lap splice lengths shall be governed by the CRSI "Manual of Standard Practice", unless otherwise specified on the drawings. Welding or tack welding of ASTM A-615 reinforcing bars to other bars or to plates, angles, etc. is prohibited. Bars shall be clean and free from cutting oil or other deleterious material.

Construction joints and saw-cut control joints shall be installed as required or shown on the drawings. Forms shall be free of snow and ice prior to placement of concrete.

All exposed slab concrete and horizontal curb face shall receive light broom finish after steel trowelling. Exposed verticle curb and wall faces shall be smooth finish. As-cast smooth finish, smooth form finish and smooth rubbed finish are all acceptable if defects are patched and appearance is acceptable to the Engineer.

PIPE PILE DRIVING

General
Pipe piles shall be installed within 2 inches of horizontal location shown on the drawings at cutoff elevation, and shall not exceed 1/4-inch per foot of length out-of-plumb, without written approval from the Engineer. All pile installations shall be conducted with the Engineer present.

Piles shall be driven with a diesel-, air-, or steam-impact-type hammer and suitable cap block and cushion to prevent damage to piles. The Contractor shall submit a plan for pile driving containing hammer type, technical data, and driving method for all hammers, and receive written approval prior to mobilization of the hammers and related equipment. Any hammer that causes damage to the pile during driving operations may be required to be substituted with an acceptable alternate hammer at no additional expense to the Owner. The Engineer will determine the driving resistance in blows per foot required for design loads by analysis of the Contractor's intended methods and equipment, and by actual driving conditions. Monitoring and inspection of the pile driving operation by the Engineer is required. Piles shall not be driven in the Engineer's absence. The Contractor shall assist the Engineer in recording pile driving data, and shall provide copies of the record to the Engineer. The Contractor shall mark each pile with footmarks, and label every 5-foot increment with the actual pile length.

Any pile that is damaged, out of location or otherwise unacceptable will be replaced or repaired by the Contractor at no additional charge to the Owner.

All pile cutoffs larger than five feet shall remain the property of the Owner and shall be stockpiled at an Owner designated location within one mile of the site by the Contractor. All other cutoffs shall become the property of the Contractor and shall be removed from the site.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON 12/31/00 DAVID M. PIERCE

PORT OF PORT ORFORD
PERMANENT DOCK PROJECT

Designed: TN
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Date: JUNE '99
Scale:

GENERAL NOTES

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PIPE PILE DRIVING (CONT.)

Support Piles
All concrete apron and pier support piles shall be driven with an impact hammer of minimum rated energy of 40,000 ft-lbs and are required to achieve a 50-ton capacity.

Fishing Pier Piles
Fishing Pier piles shall be driven with an impact hammer of minimum rated energy of 15,000 ft-lbs and are required to achieve a 20-ton capacity.

Stair Pile
Stair pile shall be driven with an impact hammer of minimum rated energy of 15,000 ft-lbs and are required to achieve a 20-ton capacity.

Boat Hoist Piles
Commercial and Sport Boat Hoist piles shall be driven with an impact hammer with a minimum rated energy of 60,000 ft-lbs, unless otherwise approved by the Engineer. Boat Hoist Piles are expected to be driven to bedrock refusal as determined by the Engineer. Boat hoist piles shall be driven after cell installation, filling and vibrocompaction has been completed.

Float Piles
Float piles shall be driven with an impact hammer with a minimum rated energy of 15,000 ft-lbs., and are required to achieve a 20-ton capacity. Install the full length of the supplied pile to within one foot of cutoff elevation. If bedrock refusal occurs prior to full-length installation as determined by the Engineer and the pile has achieved the required capacity, the pile may be cutoff at the achieved embedment.

Fender Piles
Fender piles shall be driven with a vibratory or impact hammer as necessary to install the full length of the supplied pile to within one foot of cutoff elevation. If bedrock refusal occurs prior to full-length installation as determined by the Engineer, the pile may be cutoff at the achieved embedment.

SHEETPILE INSTALLATION, SHEETPILE CELL FILLING, & VIBROCOMPACTION

General

Filling of structure shall be in compliance with the obtained permits.

The final location of the sheetpiles both horizontally and vertically is important to the function of the structure. The details as noted on the drawings, are adequate for a one-foot tolerance shoreward or seaward from the plan location shown. If the sheetpiles exceed these limitations, modifications of the plan details are required. Any modification of the details will be performed by the Contractor under direction of the Engineer at no additional cost to the Owner.

Until filled, the sheetpile cells are an extremely flexible membrane structure that will expand when filled. The amount of expansion depends upon many variables including material type, methods of installation and compacting, etc. To allow for this expansion and to meet the required structure geometry, the Contractor shall install (i.e. drive) the sheetpiles 12 inches landward of the location shown on the drawings. It is anticipated that this setback of the sheetpiles will be adequate to account for the cell expansion, however if the cells expand beyond the structural geometry limits, modifications of the design will be required. The Contractor shall take all care possible to construct the cells in a manner that will control the expansion within desirable limits.

In addition to the cell expansion, settlement of the filled structure will occur. To limit long-term settlement the construction sequence of filling and vibrocompaction as noted shall be followed.

The Contractor shall place, fill, and compact the sheetpile cells in the following construction sequence:

1. Install the entire sheetpile cell structure 12 inches landward of the location shown on the drawings.

2. Survey pre-filling conditions.

3. Fill all cells in one operation or sequentially as described elsewhere in these General Notes, to elevation +7 MLLW. The +7 MLLW fill elevation shall be carried back at a minimum of 80 feet from the face of the sheetpile cells at all locations. Survey the location of the sheetpiles.

4. Vibrocompact designated areas per the General Notes. Survey the location of the sheetpiles.

5. Fill the cells to +10 MLLW.

6. Vibrocompact the designated areas. Survey the location of the sheetpiles.

7. Fill all areas to within 2 feet of final grade. Survey the location of the sheetpiles.

8. Monitor the sheetpile locations for 12 days, by surveying the location of the sheetpiles every 3 days for both horizontal and vertical location to ascertain settlement rate. Survey information shall be submitted to the Engineer for review.

9. If settlement rates are within acceptable limits according to the Engineer, final construction of the remainder of the structure can begin. If settlement rates are not within acceptable limits vibrocompaction shall again be performed and sheetpile location again surveyed during a 12-day monitoring period.

*The Contractor should anticipate two complete coverage's of the site with vibrocompaction in the bid. If additional coverage of the site is required, compensation for the additional work will be negotiated between the Owner and the Contractor.

Sheetpile Driving

Sheetpiles shall be driven 12 inches landward of the location noted on the drawings.

Sheetpiles shall be driven with a vibratory and/or impact hammer to elevations shown on the drawings by methods that will achieve penetration without pile damage. Methods such as trenching or jetting may be required if driving becomes difficult or if pile damage occurs. Piles shall be driven such that the tip of adjacent piles do not advance more than 5 feet except in instances of difficult driving, where the Contractor may be required to reduce this lead distance to approximately 2 feet. The Engineer should be contacted if difficult driving is encountered. All pile installations shall be conducted with the Engineer present.

No face sheetpile in any unit shall be driven more than 5 feet beyond any other sheet in that cell unit.

Wye, face, and end cell sheets shall be driven within 2 inches from planned location, and not more than 1/4-inch per foot of length out of plumb. The planned distance from centerline to centerline of wye sections shall be maintained with temporary bracing between wyes after driving and during fill operations. The Contractor is cautioned that any deviation from this distance will result in substantial distortion and misalignment of cell faces, and associated complications along the dock face. Wye, face and end sheets shall be driven and initially left 2 feet above planned cutoff elevation, and monitored as described herein before cutoff at the required elevation.

Anchor wall sheetpiles shall be driven in a straight line or smooth curve, as shown on the drawings, with piles not more than 2 feet from location shown on the drawings, nor more than 1/2-inch per foot of length out-of-plumb.

All sheetpile driving methods and equipment shall be submitted to the Engineer for approval before driving starts. Both a vibratory hammer (energy 2,500 in.-lb. minimum) and an impact hammer (energy 10,000 to 20,000 ft.-lb. +/-) capable of driving the sheets shall be available on-site.

The Contractor shall continuously probe the soils to full penetration depth of sheetpiles along the line where face and anchor walls will be driven. If obstacles are encountered along the face that would interfere with face sheets, the Contractor shall excavate and remove the debris and refill the subsequent void, unless otherwise determined by the Engineer. If obstacles are encountered along the anchor wall, the debris shall be removed as previously stated, or the wall alignment shall be curved away from obstacle in a smooth curve similar to curves shown on the drawings as approved by Engineer. Care shall be taken to avoid conflicts with support piles, in all cases shift sheetpile locations to avoid relocation of apron/pier support piles.

Should bedrock or obstructions in the fill be encountered during driving, the Engineer should be contacted. Should soft soils be encountered, face sheets may require support from the template or the tail wall before filling cell.

Sheetpile Cell Filling

Fill in the sheetpile cells shall consist of that previously described for Granular Fill. Care shall be taken to avoid placing larger rocks where they may interfere with sheet and pipe pile driving. Oversize material may be used in the fill at the discretion of the Engineer.

The initial fill from mudline to elevation +7 MLLW shall not be dumped into final position, but shall be dumped on top of the embankment and dozed into place in a manner that will ensure proper placement in horizontal layers, such that voids, pockets, and bridging will be reduced to a minimum. The intervening spaces and interstices shall be filled with smaller stones and earth as may be available from excavation, so as to form a dense, well-compacted embankment.

Granular fill shall be placed in 12-inch-thick maximum horizontal lifts above Elevation +7. Each lift shall be compacted to achieve not less than 90% Standard Proctor Density, with methods equal to or greater than 8 passes of a 10-ton vibratory roller moving at approximately 2 to 4 mph. Density measurement methods may be adjusted by the Engineer as applicable for materials supplied. Smaller compactors and additional care shall be used to compact within 5 feet of the dock face sheetpiles to prevent damage, distortion, or excessive soil pressures on the bulkhead face. Special care shall also be used to obtain thorough compaction against anchor wall sheetpiles. Above Elevation +21, each 12-inch maximum lift shall be compacted to achieve not less than 95% Standard Proctor Density.

Fill shall be placed as follows around sheetpile cells to prevent distortion of the bulkhead: Place fill in approximately level lifts across the entire cell area. Fill around anchor wall sheets first, and then fill against face sheets. The elevation of fill between adjacent cells shall not differ by more than 5 feet at any time during construction operations. The Contractor shall use rigid bracing between wyes as described under "Sheetpile Driving". The Contractor is cautioned that uneven filling of cells or failure to maintain plan distance between wyes will result in undesirable distortions of the sheetpile wall.

The Contractor should be aware that during and after filling, the open-cell dock is expected to move 12 inches or more seaward and to settle vertically. The Contractor shall place the fill, vibrocompact and monitor wall movement as previously described.

Vibrocompaction

Vibrocompaction shall be used throughout the sheetpile cell area to compact the new fill material and the underlying soil. Vibrocompaction shall be performed along the entire length of the sheetpile wall structures and shall extend no less than 100 feet from the face sheets of the sheetpile cells at all locations.

Vibrocompaction shall consist of driving a steel pile probe with a vibratory hammer on a 10-foot by 10-foot grid throughout the designated area. The pile probe shall consist of a steel HP14x89 or a steel 24-inch diameter pipe. The probe shall be driven to bedrock and raised to the surface twice at each grid location for each coverage of the area. Fill material shall be pushed into any void created by the operation as the vibration is being conducted.

The vibratory hammer utilized for vibrocompaction shall have a minimum rated engine horsepower of 650 such as a MKT V-36 or an ICE 1412 or an approved equal.

FIELD LABORATORY AND MATERIAL

The Contractor shall hire a qualified independent laboratory as acceptable to the Engineer to sample and test concrete, soil and pavement. Types and frequency of testing shall be as follows:

1) Concrete Testing per ACI 318, and as modified below:
a) Mix Design including all required tests for aggregate, cement, and air content per ACI 318. Mix Design may be done off-site, but must use materials from the anticipated materials sources.
b) Field Testing of concrete shall consist of the following:
i) Slump – each truck load
ii) Entrained air – every 50 cubic yards or every pour, whichever is the more frequent.
iii) Compression Tests – four 6" diameter x 12" cylinders taken every 50 yards, or every pour which ever is the more frequent and test one at 7 days and two at 28 days. The remaining cylinder shall be retained until the end of the project.
c) Concrete failing the required tests shall not be used on the project. If already incorporated into the project the concrete shall be subject to further tests as determined by the Engineer, and if failing shall be removed from the structure.
d) The laboratory personnel shall be responsible for collecting all concrete batch tickets and immediately reporting conformance with the mix design to the Engineer.

2) Soil Testing shall be performed per ODOT 00330 requirements and as modified as follows:
a) Gradation tests shall be performed on all types of fill or surfacing material. At least one test shall be performed initially to verify gradation and further tests when material visibly changes, as determined by the Engineer.
b) Standard Proctor tests shall be performed initially on all material types, and when material visibly changes, as determined by the Engineer.
c) Field density verifications shall be performed on each lift of fill above +7 MLLW, but not less than every 500 cubic yards.

3) Pavement Testing shall be performed per ODOT 00652 and 00745 requirements and as modified as follows:
a) Obtain and submit a copy of the certified mix design and Marshall testing prior to start of construction for both ATB and asphalt pavement.
b) Collect all batch tickets for both ATB and asphalt pavement.
c) Monitor pavement temperature and density during construction for both ATB and asphalt pavement.
d) Perform a minimum of two asphalt extraction's including associated gradation and oil content tests for both ATB and asphalt pavement.

SUBMITTALS

The Contractor shall submit evidence in the form of bills of materials, fabricator's shop drawings, certifications, Manufacturer's data and installation recommendations, samples, or other information that may be required by the Engineer to verify that all materials and methods used on the Project conform to the Plans and Specifications, good workmanship, acceptable industry standards, and Manufacturer's recommendations.

The Contractor shall at the start of the project submit a list of intended submittals, which include anticipated content and approximate submittal date for each submittal.

The Contractor shall also submit a detailed schedule and work plan for the project before construction begins.

The Engineer's review of submittals will be for general conformance only, and it shall remain the responsibility of the Contractor to conform to all requirements of the Plans and Specifications. Any intended deviation from the Plans and Specifications must be specifically identified by the Contractor and specifically approved by the Engineer to be acceptable.

Shop drawings of all fabricated materials shall be submitted to the Engineer for written approval prior to fabrication or mobilization of any item. A minimum of five sets shall be provided for each submittal, of which two will be returned to the Contractor. The Contractor should allow two weeks from the time of receipt for review of submittals by the Engineer for a reasonable number of drawings.

EXISTING OPERATIONS

The Contractor shall maintain operations for the Port Office during the duration of the Project. The Contractor shall also provide dry, heated office for the inspector which includes a 3'X6' desk, 3 electrical outlets, phone service and a fax machine. Minimum dimensions shall be 8'X10'.

REGISTERED PROFESSIONAL ENGINEER #13975 OREGON DAVID M. PIERCE 6/6/99

PORT OF PORT ORFORD
PERMANENT DOCK PROJECT

Designed: ACK
Drawn: DRH
Checked: DP
Project No.: 96448.03

Peratrovich, Nottingham & Drage, Inc.
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Date: JUNE '99
Scale:

GENERAL NOTES

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PLOT 1:1 w/ANCH.PCP 06-14-99

GENERAL SITE NOTES

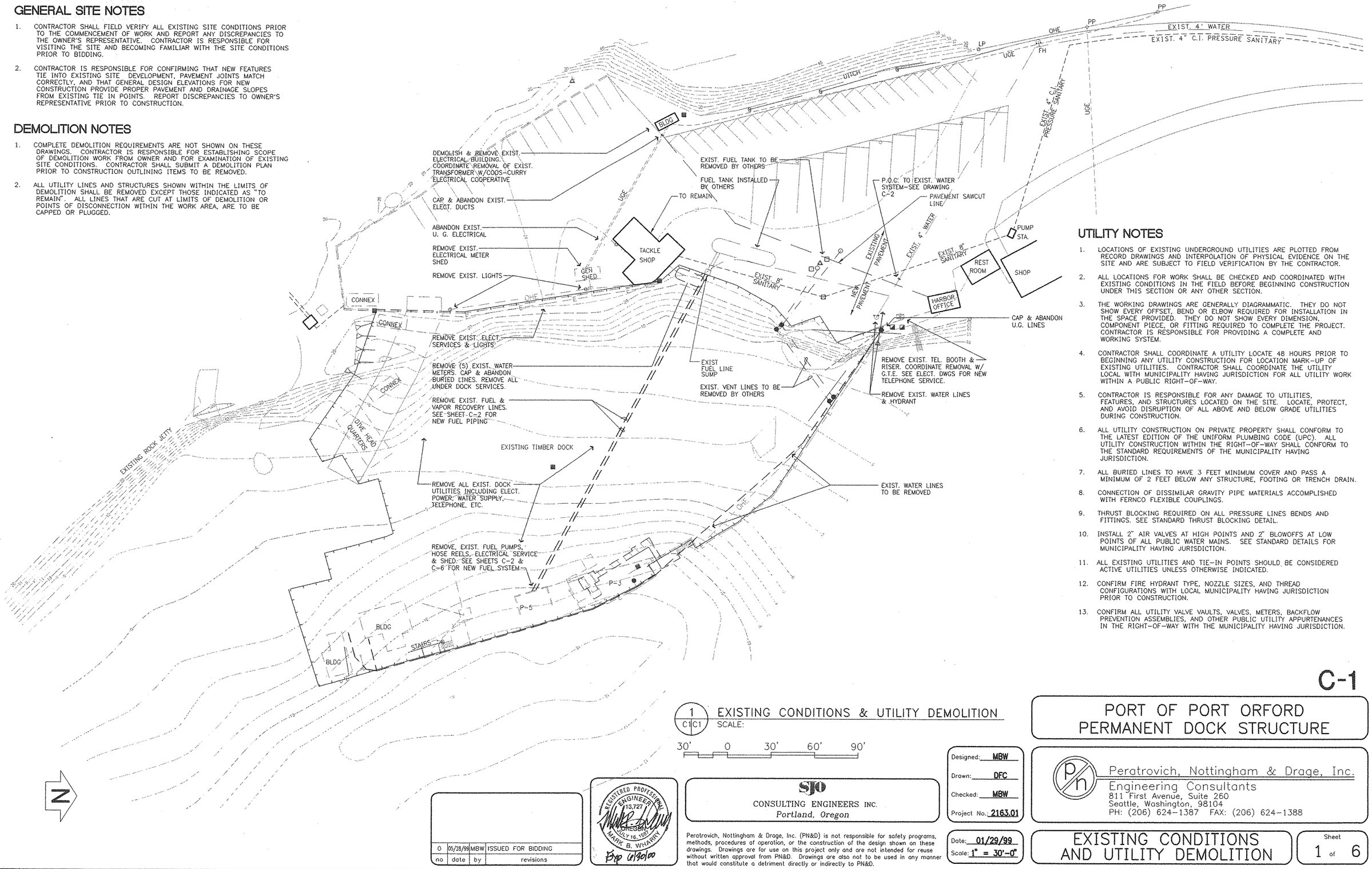
1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND BECOMING FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING.

2. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT NEW FEATURES TIE INTO EXISTING SITE DEVELOPMENT, PAVEMENT JOINTS MATCH CORRECTLY, AND THAT GENERAL DESIGN ELEVATIONS FOR NEW CONSTRUCTION PROVIDE PROPER PAVEMENT AND DRAINAGE SLOPES FROM EXISTING TIE IN POINTS. REPORT DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

DEMOLITION NOTES

1. COMPLETE DEMOLITION REQUIREMENTS ARE NOT SHOWN ON THESE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING SCOPE OF DEMOLITION WORK FROM OWNER AND FOR EXAMINATION OF EXISTING SITE CONDITIONS. CONTRACTOR SHALL SUBMIT A DEMOLITION PLAN PRIOR TO CONSTRUCTION OUTLINING ITEMS TO BE REMOVED.

2. ALL UTILITY LINES AND STRUCTURES SHOWN WITHIN THE LIMITS OF DEMOLITION SHALL BE REMOVED EXCEPT THOSE INDICATED AS "TO REMAIN". ALL LINES THAT ARE CUT AT LIMITS OF DEMOLITION OR POINTS OF DISCONNECTION WITHIN THE WORK AREA, ARE TO BE CAPPED OR PLUGGED.



UTILITY NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND ARE SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR.

2. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION UNDER THIS SECTION OR ANY OTHER SECTION.

3. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.

4. CONTRACTOR SHALL COORDINATE A UTILITY LOCATE 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION FOR LOCATION MARK-UP OF EXISTING UTILITIES. CONTRACTOR SHALL COORDINATE THE UTILITY LOCAL WITH MUNICIPALITY HAVING JURISDICTION FOR ALL UTILITY WORK WITHIN A PUBLIC RIGHT-OF-WAY.

5. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURES LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.

6. ALL UTILITY CONSTRUCTION ON PRIVATE PROPERTY SHALL CONFORM TO THE LATEST EDITION OF THE UNIFORM PLUMBING CODE (UPC). ALL UTILITY CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO THE STANDARD REQUIREMENTS OF THE MUNICIPALITY HAVING JURISDICTION.

7. ALL BURIED LINES TO HAVE 3 FEET MINIMUM COVER AND PASS A MINIMUM OF 2 FEET BELOW ANY STRUCTURE, FOOTING OR TRENCH DRAIN.

8. CONNECTION OF DISSIMILAR GRAVITY PIPE MATERIALS ACCOMPLISHED WITH FERNCO FLEXIBLE COUPLINGS.

9. THRUST BLOCKING REQUIRED ON ALL PRESSURE LINES BENDS AND FITTINGS. SEE STANDARD THRUST BLOCKING DETAIL.

10. INSTALL 2" AIR VALVES AT HIGH POINTS AND 2" BLOWOFFS AT LOW POINTS OF ALL PUBLIC WATER MAINS. SEE STANDARD DETAILS FOR MUNICIPALITY HAVING JURISDICTION.

11. ALL EXISTING UTILITIES AND TIE-IN POINTS SHOULD BE CONSIDERED ACTIVE UTILITIES UNLESS OTHERWISE INDICATED.

12. CONFIRM FIRE HYDRANT TYPE, NOZZLE SIZES, AND THREAD CONFIGURATIONS WITH LOCAL MUNICIPALITY HAVING JURISDICTION PRIOR TO CONSTRUCTION.

13. CONFIRM ALL UTILITY VALVE VAULTS, VALVES, METERS, BACKFLOW PREVENTION ASSEMBLIES, AND OTHER PUBLIC UTILITY APPURTENANCES IN THE RIGHT-OF-WAY WITH THE MUNICIPALITY HAVING JURISDICTION.

C-1

1 / C1|C1 EXISTING CONDITIONS & UTILITY DEMOLITION

SCALE:

30' 0 30' 60' 90'

no	date	by	revisions
0	05/28/99	MBW	ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER 13,727 OREGON JULY 16, 1987 MARK B. WHARRY 6/30/00

SJO CONSULTING ENGINEERS INC. Portland, Oregon

Designed: MBW
Drawn: DFC
Checked: MBW
Project No.: 2163.01

Date: 01/29/99
Scale: 1" = 30'-0"

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

EXISTING CONDITIONS AND UTILITY DEMOLITION

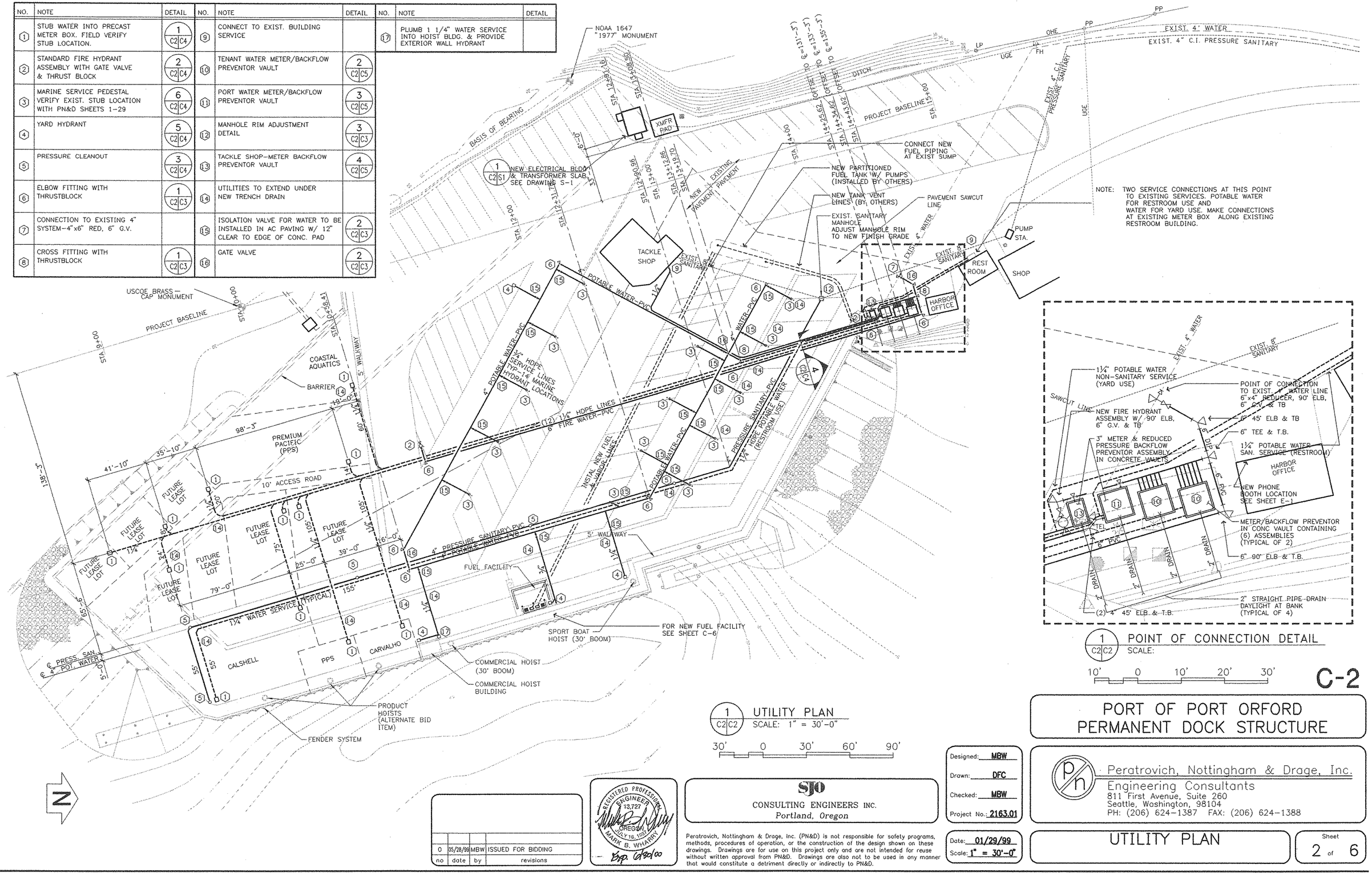
Sheet 1 of 6

2163.01\C01-0.DWG
PLOTTED 05/28/99

NO.	NOTE	DETAIL
1	STUB WATER INTO PRECAST METER BOX. FIELD VERIFY STUB LOCATION.	1 C2|C4
2	STANDARD FIRE HYDRANT ASSEMBLY WITH GATE VALVE & THRUST BLOCK	2 C2|C4
3	MARINE SERVICE PEDESTAL VERIFY EXIST. STUB LOCATION WITH PN&D SHEETS 1-29	6 C2|C4
4	YARD HYDRANT	5 C2|C4
5	PRESSURE CLEANOUT	3 C2|C4
6	ELBOW FITTING WITH THRUSTBLOCK	1 C2|C3
7	CONNECTION TO EXISTING 4" SYSTEM-4"x6" RED, 6" G.V.	
8	CROSS FITTING WITH THRUSTBLOCK	1 C2|C3

NO.	NOTE	DETAIL
9	CONNECT TO EXIST. BUILDING SERVICE	
10	TENANT WATER METER/BACKFLOW PREVENTOR VAULT	2 C2|C5
11	PORT WATER METER/BACKFLOW PREVENTOR VAULT	3 C2|C5
12	MANHOLE RIM ADJUSTMENT DETAIL	3 C2|C3
13	TACKLE SHOP-METER BACKFLOW PREVENTOR VAULT	4 C2|C5
14	UTILITIES TO EXTEND UNDER NEW TRENCH DRAIN	
15	ISOLATION VALVE FOR WATER TO BE INSTALLED IN AC PAVING W/ 12" CLEAR TO EDGE OF CONC. PAD	2 C2|C3
16	GATE VALVE	2 C2|C3

NO.	NOTE	DETAIL
17	PLUMB 1 1/4" WATER SERVICE INTO HOIST BLDG. & PROVIDE EXTERIOR WALL HYDRANT	



1 C2|C2 POINT OF CONNECTION DETAIL
SCALE:

10' 0 10' 20' 30'

1 C2|C2 UTILITY PLAN
SCALE: 1" = 30'-0"

30' 0 30' 60' 90'

C-2

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

no	date	by	revisions
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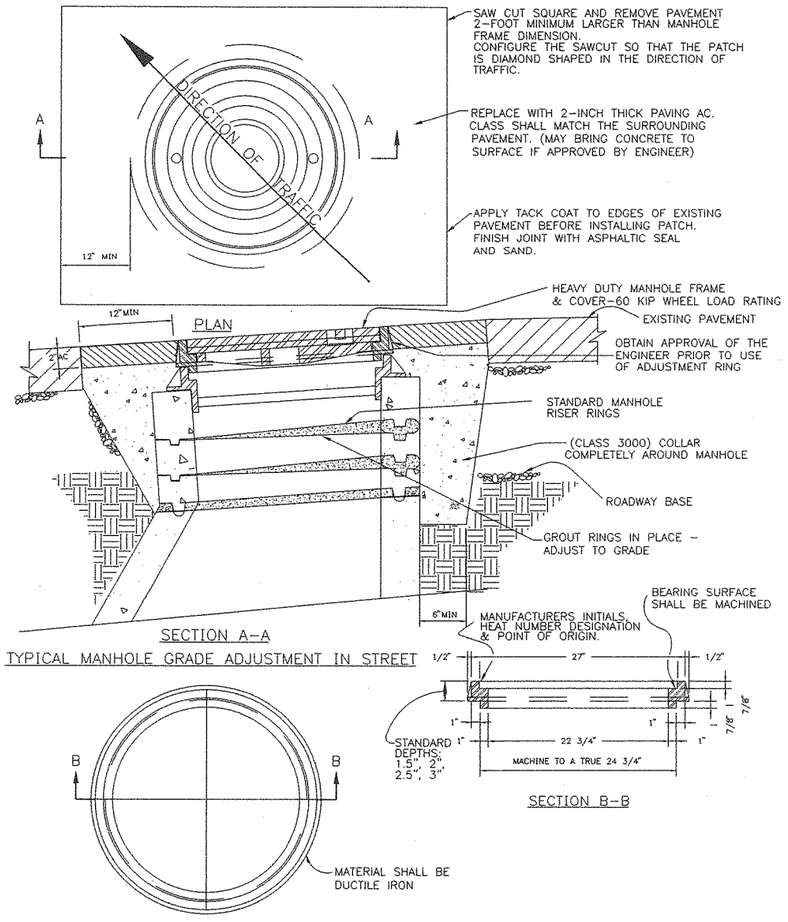
UTILITY PLAN

Sheet 2 of 6

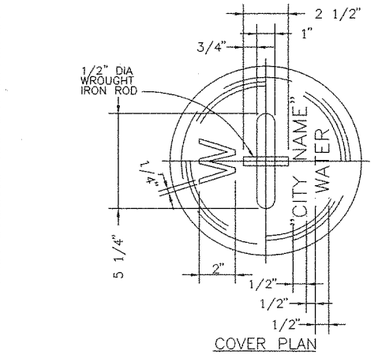
2163.01\C02-0.DWG
PLOTTED 05/28/99



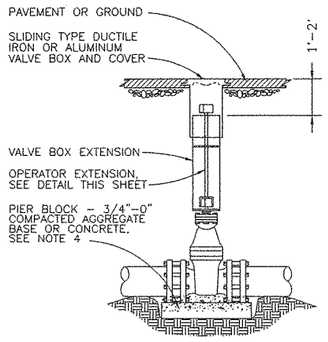
MANHOLE ADJUSTMENT RINGS FOR RESURFACING

NOTE:
THE DISTANCE FROM THE TOP OF THE FRAME TO THE TOP OF THE CONE SHALL NOT EXCEED 18".

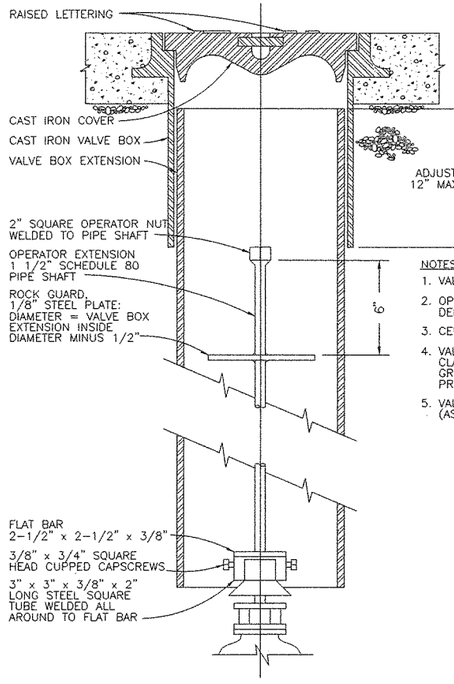
3 / C2|C3 MANHOLE RIM ADJUSTMENT DETAIL
SCALE: NONE



COVER PLAN

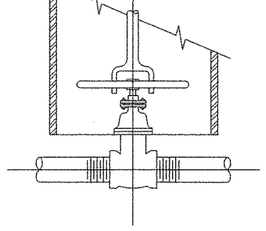


VALVE BOX ASSEMBLY DETAIL



NOTES:
1. VALVE BOX NOT TO REST ON OPERATING ASSEMBLY.
2. OPERATOR EXTENSION REQUIRED WHEN VALVE NUT IS DEEPER THAN 4 FEET FROM FINISH GRADE.
3. CENTER VALVE BOX ON AXIS OF OPERATOR NUT.
4. VALVES 12" AND SMALLER SHALL BE PROVIDED WITH CLASS B BASE ON UNDISTURBED GROUND. VALVES GREATER THAN 12" SHALL BE INSTALLED ON PRECAST CONCRETE PIER BLOCK.
5. VALVE BOX EXTENSION SHALL BE CAST IRON OR PVC (ASTM D 3034).

GATE VALVE EXTENSION SECTION

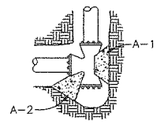


ISOLATION VALVE EXTENSION SECTION

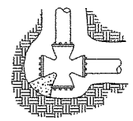
2 / C2|C3 VALVE BOX/EXTENSION ASSEMBLY
SCALE: NONE

(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET									(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS			
FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22-1/2° BEND	11-1/4° BEND	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
				A-1	A-2							
4	1.0	1.6	1.4	1.9	1.4	1.0	---	---	---	---	---	---
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	---	1.3	---	---	---
8	3.8	6.5	5.3	7.6	5.4	2.9	1.5	1.0	2.3	1.1	---	---
10	5.9	10.2	8.4	11.8	8.4	4.6	2.4	1.2	3.7	1.8	---	---
12	8.5	14.7	12.0	17.0	12.0	6.6	3.4	1.7	5.5	2.8	1.2	---
14	11.5	---	16.3	23.0	16.3	8.9	4.6	2.3	7.6	3.9	1.7	---
16	15.0	26.1	21.3	30.0	21.3	11.6	6.0	3.0	9.9	5.1	2.3	0.9
18	19.0	---	27.0	38.0	27.0	14.6	7.6	3.8	---	---	---	---
20	23.5	40.8	33.3	47.0	33.3	18.1	9.4	4.7	---	---	---	---
24	34.0	58.8	48.0	68.0	48.0	26.2	13.6	6.8	---	---	---	---

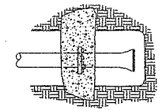
NOTES:
1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
   BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
   VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)



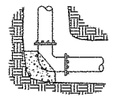
TEE



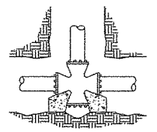
CROSS



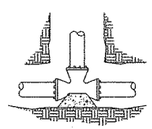
STRADDLE BLOCK



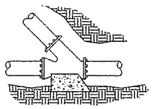
BEND



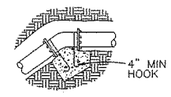
CROSS



TEE



WYE



VERTICAL BEND

RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14"-16"	#8	36"

NOTES:
1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE DEFORMED GALVANIZED COLD ROLLED STEEL, 40000 PSI TENSILE STRENGTH.

1 / C2|C3 THRUST BLOCKING
SCALE: NONE

CIVIL ABBREVIATIONS

AB	ANCHOR BOLT	DIA ø	DIAMETER	HB	HOSE BIBB	OC	ON CENTER	R	RADIUS	TB	THRUST BLOCK	VCP	VITRIFIED CLAY PIPE
AC	ASPHALTIC CONCRETE	DIP	DUCTILE IRON PIPE	HH	HAND HOLE	OH	OVERHEAD	RCP	REINFORCED CONCRETE PIPE	TBM	TEMPORARY BENCH MARK	VT	VENT
ACP	ASBESTOS CONCRETE PIPE	DS	DOWNSPOUTS	HPG	HIGH PRESSURE GAS	OW	OIL/WATER SEPARATOR	RIM	RIM ELEVATION	TC	TOP OF CURB	VV	VALVE VAULT
		DW	DRYWELL	HC	HANDICAPPED			RPBP	REDUCED PRESSURE BACKFLOW PREVENTER	TEL	TELEPHONE		
BLDG	BUILDING	DWG	DRAWING	HYD	HYDRANT	PD	POLYDRAIN			TOB	TOP OF BERM	WM	WATER METER
BOT	BOTTOM OF TRENCH					PIV	POST INDICTOR VALVE	RR	RAILROAD	TOC	TOP OF CONCRETE	WTR	WATER
BOC	BOTTOM OF CONCRETE	E	ELECTRICAL POWER	IE	INVERT ELEVATION	POC	POINT OF CONNECTION			TOG	TOP OF GRATE	WV	WATER VALVE
BOS	BOTTOM OF SUMP	ELEV	ELEVATION	IRR	IRRIGATION	PP	POWER POLE	S	SLOPE	TOP	TOP OF PIPE	WWF	WELDED WIRE FABRIC
		ELEC	ELECTRICAL			PVC	POLYVINYL CHLORIDE	SAN	SANITARY	TYP	TYPICAL		
CA	COMPRESSED AIR	EXIST	EXISTING	L	LENGTH	PVMT	PAVEMENT	SD	STORM DRAIN			XFMR	TRANSFORMER
CB	CATCH BASIN			LP	LIGHT POLE	PW	POTABLE WATER	SS	SANITARY SEWER				
CJ	CONSTRUCTION JOINT	FA	FIRE ALARM										
CI	CURB INLET	FD	FOUNDATION DRAIN	MAX	MAXIMUM								
CIP	CAST IRON PIPE	FF	FINISH FLOOR	MH	MANHOLE								
CMP	CORRUGATED METAL PIPE	FH	FIRE HYDRANT	MIN	MINIMUM								
CND	CONDUIT	FW	FIRE WATER										
CO	CLEANOUT			NIC	NOT IN CONTRACT								
CONC	CONCRETE	G	GUTTER	NO	NUMBER								
CR	CONDENSATE RETURN	GR	GRADE	NOM	NOMINAL								
		GV	GATE VALVE	NTS	NOT TO SCALE								

no	date	by	revisions
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REGISTERED PROFESSIONAL ENGINEER 13,727 OREGON JULY 16, 1381 MARK B. WHARRY
Exp 6/30/00

SJO
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C-3

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CIVIL DETAILS

Sheet 3 of 6

2163.01\C03-0.DWG
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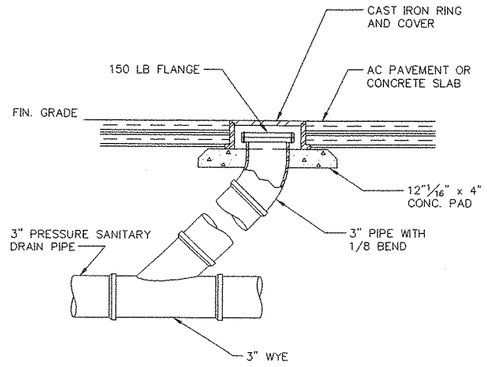
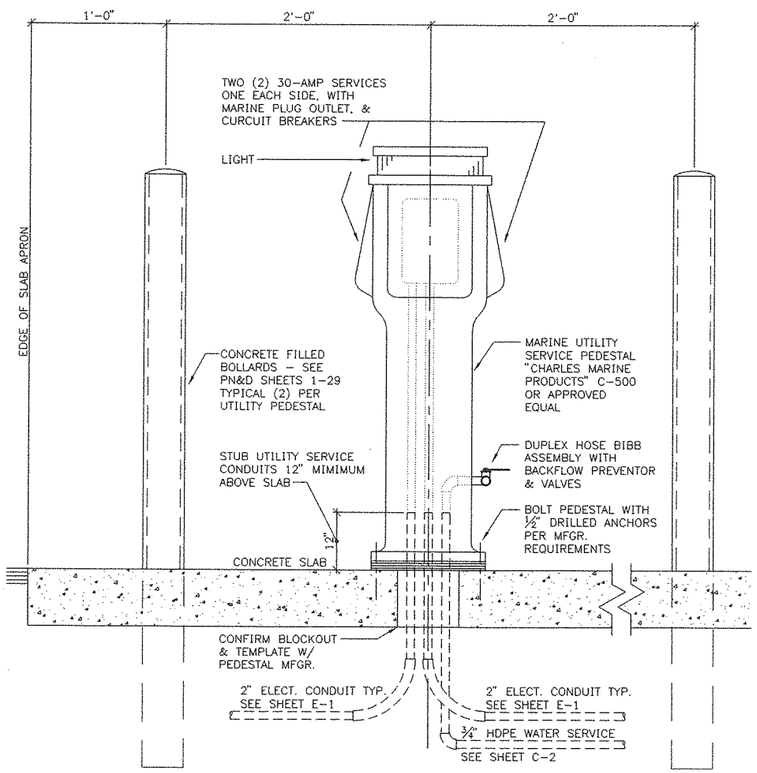
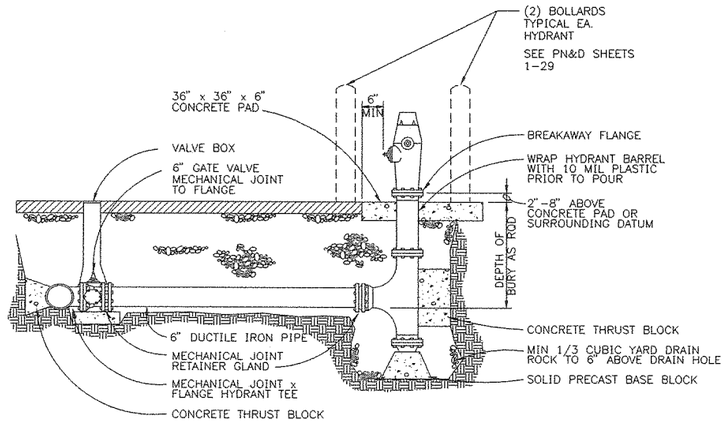


3 / C2|C4 CLEANOUT
SCALE: NONE

NOTE: PEDESTAL AND BOLLARDS TO BE INSTALLED ON ANGLED DIVIDING LINE BETWEEN STALLS. CONFIRM EXACT LOCATIONS WITH PN&D SHEETS 1-29 PRIOR TO UTILITY OR PEDESTAL INSTALLATION.

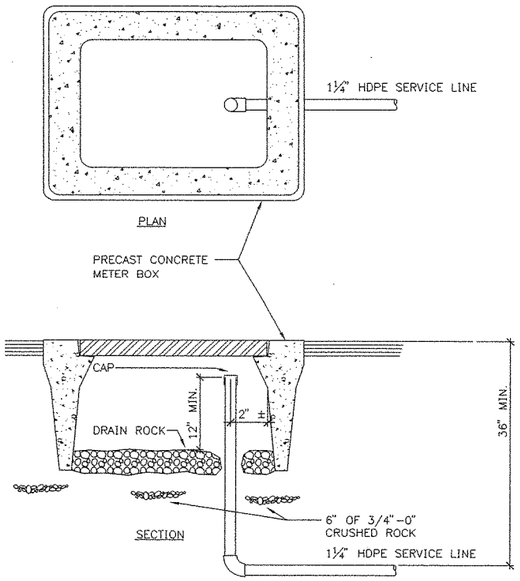


6 / C2|C4 MARINE SERVICE PEDESTAL
SCALE: NONE



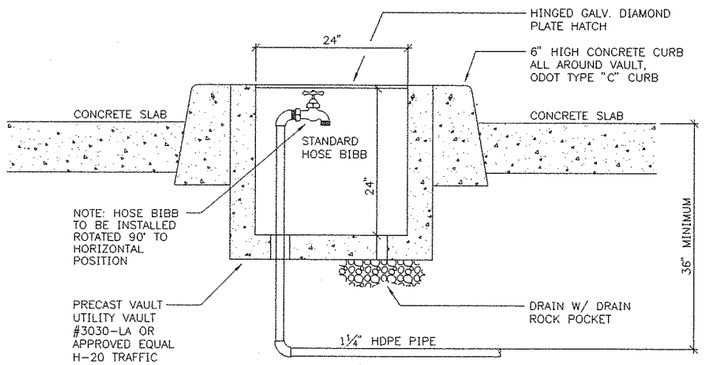
NOTES
1. WHEN PIPE IS SHORTER THAN 18', NO JOINTS ALLOWED. USE MECHANICAL JOINT RETAINER GLANDS. TWO 3/4" GALVANIZED TIE RODS MAY BE USED IN LIEU OF THRUST BLOCKS FOR INSTALLATIONS LESS THAN 18' LONG. TIE RODS SHALL BE COATED WITH TWO COATS OF BITUMASTIC.
2. WHEN PIPE IS LONGER THAN 18', RETAINER GLANDS NOT REQUIRED.
3. THERE SHALL BE A MINIMUM OF 18" HORIZONTAL CLEARANCE AROUND HYDRANT.
4. WHEN PLACED ADJACENT TO CURB, HYDRANT PORT SHALL BE 24" FROM FACE OF CURB.
5. CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED AS PER THRUST BLOCK STANDARD DRAWING. DO NOT BLOCK DRAIN HOLES.
6. EXTENSIONS REQUIRED FOR HYDRANT SYSTEMS SHALL BE INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS.
7. FIRE HYDRANTS SHALL BE PLACED TO PROVIDE A MINIMUM OF 5' CLEARANCE FROM DRIVEWAYS, POLES, AND OTHER OBSTRUCTIONS.
8. HYDRANT PUMPER PORT SHALL FACE DIRECTION OF ACCESS.
9. CONFIRM HYDRANT REQUIREMENTS WITH CITY OF PORT ORFORD.

2 / C2|C4 HYDRANT INSTALLATION
SCALE: NONE

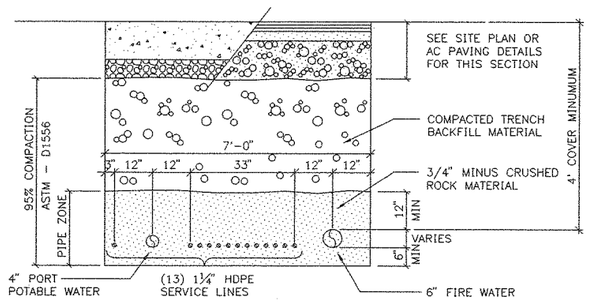


NOTES:
3. SET BOX 4" MINIMUM BEHIND CURB, SIDEWALK OR EDGE OF PAVEMENT.
4. BOXES AND LIDS SHALL BE RATED FOR 60 KIP TRAFFIC LOADING WITH TRAFFIC COVERS. UTILITY VAULT SERIES 37-1220MB OR APPROVED EQUAL.

1 / C2|C4 WATER SERVICE BOX SETTING DETAIL
SCALE: NONE



5 / C2|C4 YARD HYDRANT
SCALE: NONE



4 / C2|C4 TRENCH SECTION
SCALE: NONE

C-4

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

no	date	by	revisions
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SJO CONSULTING ENGINEERS INC. Portland, Oregon

Designed: MBW
Drawn: DFC
Checked: MBW
Project No.: 2163.01

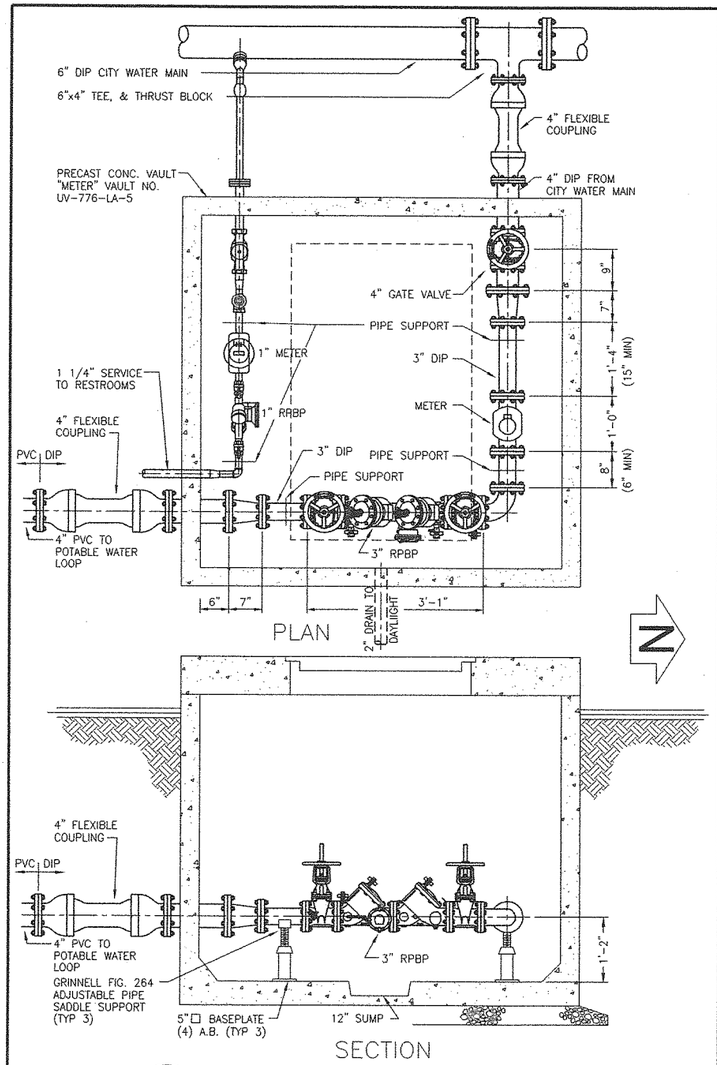
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

Date: 01/29/99
Scale: NONE

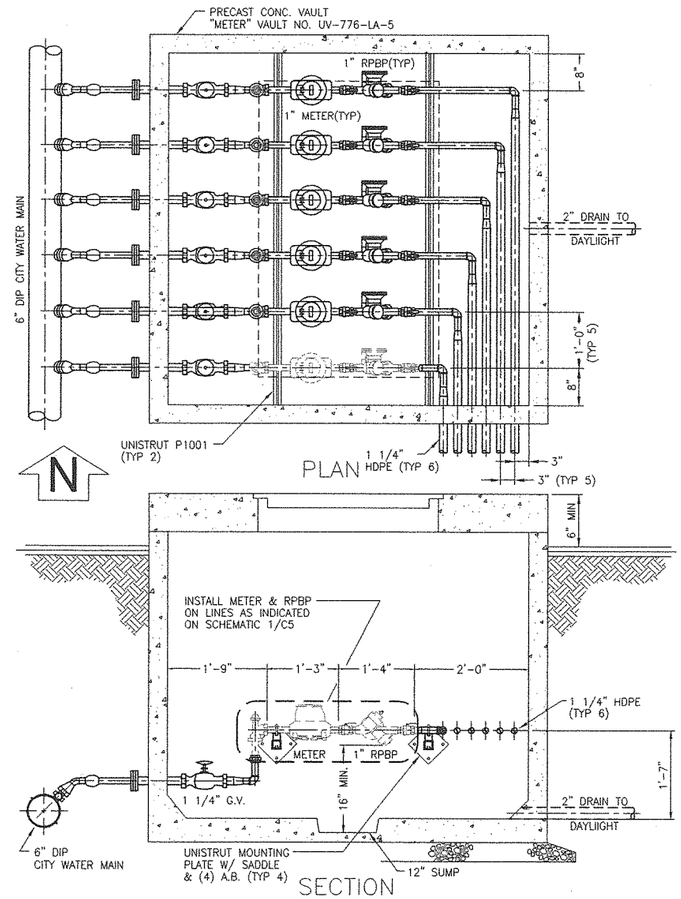
CIVIL DETAILS

Sheet 4 of 6

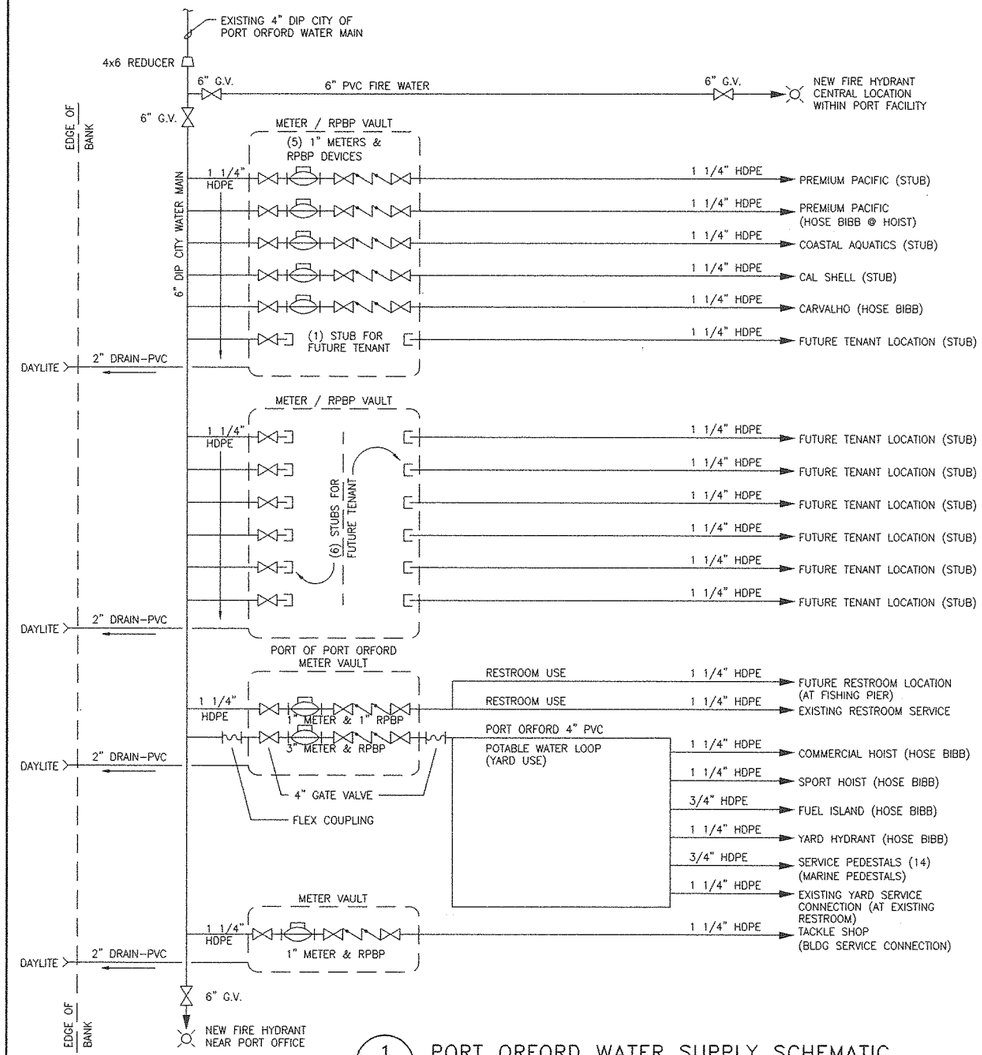
2163.01\C04-0.DWG
PLOTTED 05/28/99



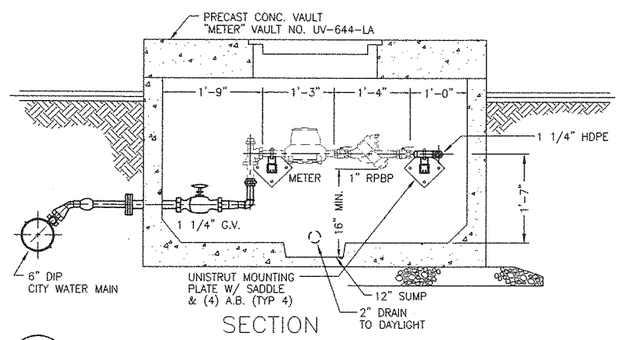
3 C2|C5 PORT WATER SUPPLY METER VAULT
SCALE: 3/4" = 1'-0"



2 C2|C5 TENANT WATER SUPPLY METER VAULT
SCALE: 3/4" = 1'-0" (TYPICAL OF 2)



1 C2|C5 PORT ORFORD WATER SUPPLY SCHEMATIC
SCALE: NONE



4 C2|C5 TACKLE SHOP WATER SUPPLY METER VAULT
SCALE: 3/4" = 1'-0"

2163.01 C05-0.DWG
PLOTTED 05/28/99

1' 0 1' 2' 3' 4' 5'

no	date	by	revisions
0	05/28/99	MBW	ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER 13,727 OREGON JULY 16, 1997 MARK S. WHARRY Exp 6/30/00

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Portland, Oregon

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Designed: MBW
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Checked: MBW
Project No.: 2163.01

Date: 01/29/99
Scale: AS SHOWN

C-5

PORT OF PORT ORFORD PERMANENT DOCK STRUCTURE

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
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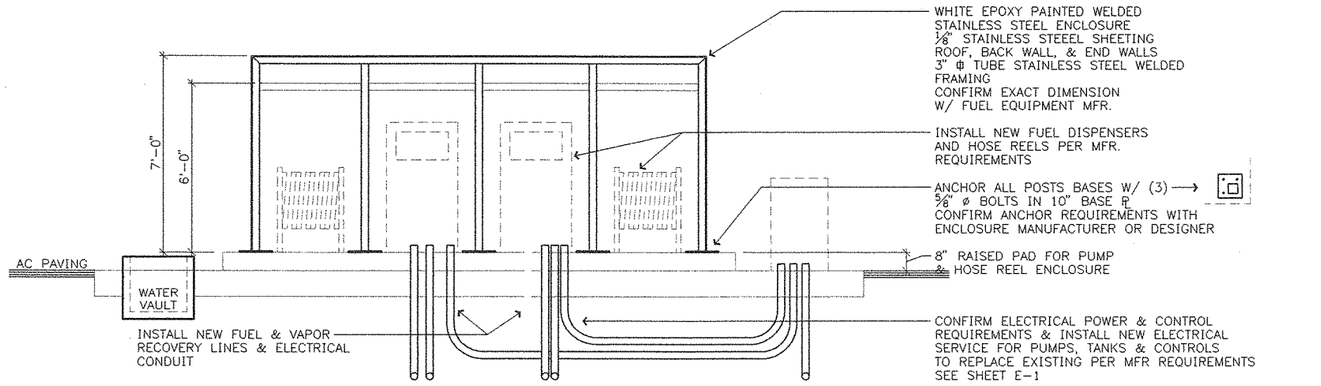
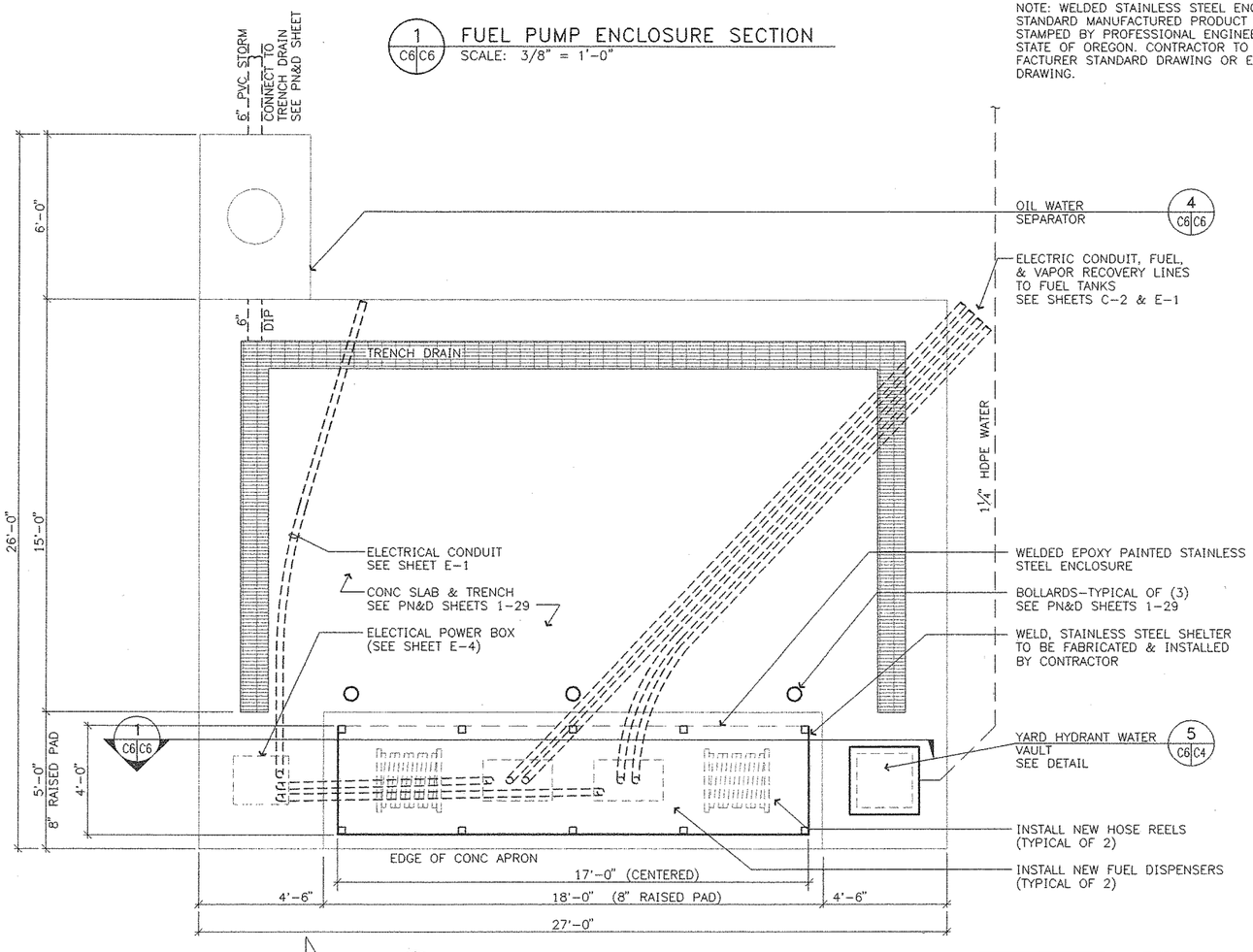
CIVIL DETAILS

Sheet 5 of 6



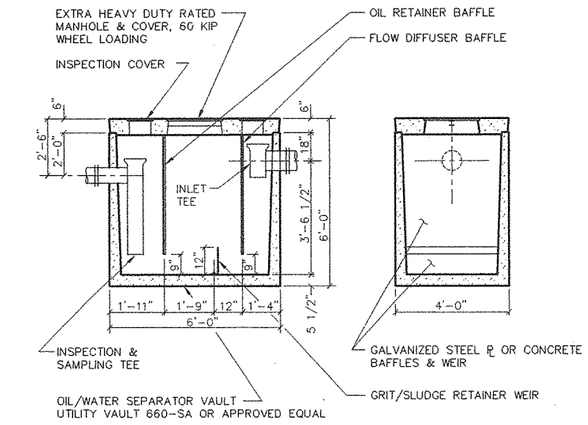
1 C6|C6 FUEL PUMP ENCLOSURE SECTION
SCALE: 3/8" = 1'-0"

NOTE: WELDED STAINLESS STEEL ENCLOSURE TO BE STANDARD MANUFACTURED PRODUCT OR CUSTOM DESIGN STAMPED BY PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OREGON. CONTRACTOR TO PROVIDE MANUFACTURER STANDARD DRAWING OR ENGINEERED DESIGN DRAWING.



2 C2|C6 FUEL FACILITY
SCALE: 3/8" = 1'-0"

1' 0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'



4 C6|C6 OIL WATER SEPARATOR
SCALE: NONE

no	date	by	revisions
0	05/28/99	MBW	ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER 13,727 OREGON JULY 16, 1987 MARK S. WHARRY 6/30/00

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CONSULTING ENGINEERS INC.
Portland, Oregon

Designed: MBW
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Project No.: 2163.01

Date: 01/29/99
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Seattle, Washington, 98104
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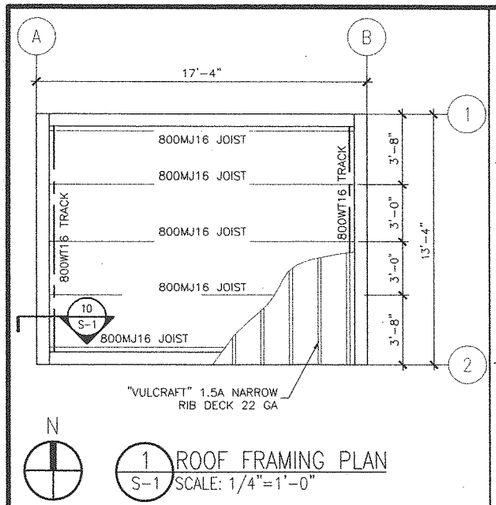
C-6

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

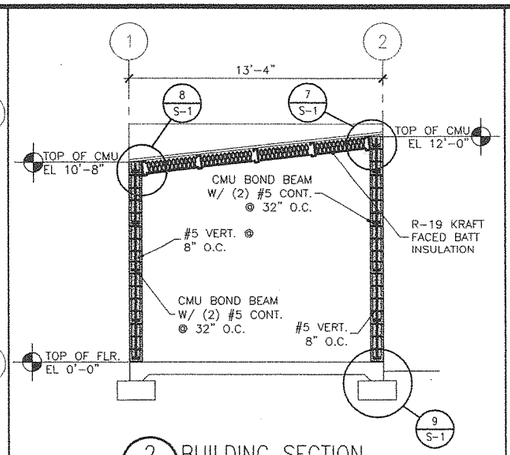
FUEL FACILITY LAYOUT

Sheet 6 of 6

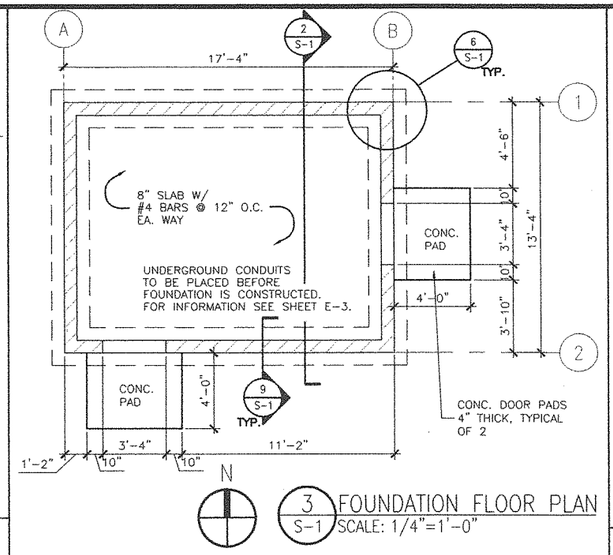
2163.01\C06-0.DWG
PLOTTED 05/28/99



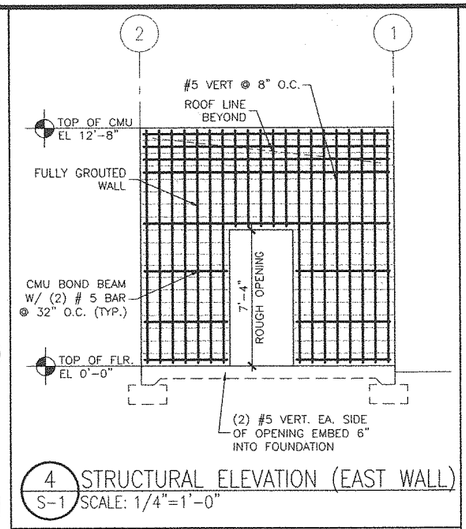
1 S-1 ROOF FRAMING PLAN
SCALE: 1/4"=1'-0"



2 S-1 BUILDING SECTION
SCALE: 1/4"=1'-0"



3 S-1 FOUNDATION FLOOR PLAN
SCALE: 1/4"=1'-0"



4 S-1 STRUCTURAL ELEVATION (EAST WALL)
SCALE: 1/4"=1'-0"

GENERAL NOTES AND SPECEFICATIONS

1) DESIGN LOADS:
   A) ROOF LOAD: 25 PSF MINIMUM ROOF SNOW LOAD (SNOW BUILD-UP LOADING AS PER SEAW SNOW LOAD ANALYSIS). ROOF LOAD DOES NOT INCLUDE ANY MECHANICAL EQUIPMENT.
   B) WIND LOAD: 1997 U.B.C. 120 MPH EXPOSURE "D"
   C) SEISMIC LOAD: 1997 U.B.C. ZONE 4

2) GENERAL CONDITIONS:
   A) GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH ANY WORK.
   B) IN CASE OF ANY DISCREPANCY, NOTIFY ENGINEER BEFORE FURTHER WORK IS DONE.
   C) CONDUIT RUNS UNDER SLAB NOT SHOWN. LOCATION TO BE COORDINATED WITH ELECTRICAL ENGINEER.
   D) CONTRACTOR TO VERIFY LOCATION AND SIZE OF EQUIPMENT PADS WITH MECHANICAL DRAWINGS.
   E) REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION ON PIPE PENETRATIONS AND SLEEVES THROUGH WALLS.

3) SITE PREPARATION:
   A) REMOVE VEGETATION AND TOP SOIL BEFORE ANY EARTH WORK IS DONE.
   B) IF OLD FILL OR ORGANIC MATERIALS ARE ENCOUNTERED, OVER-EXCAVATE AND REPLACE WITH COMPACTED GRANULAR BACKFILL.

4) FOUNDATIONS:
   A) FOUNDATION SIZES ARE BASED ON A LOAD BEARING SOIL PRESSURE OF 1,500 PSF.
   B) ALL FOUNDATIONS TO BEAR ON CLEAN, FIRM, VISUALLY INSPECTED AND UNDISTURBED SOIL, 18 IN. MINIMUM BELOW LOWEST ADJACENT FINISHED GRADE.
   C) IF ADEQUATE BEARING MATERIAL IS NOT PRESENT, PROVIDE CLEAN, GRANULAR BACKFILL COMPACTED TO 95% PER ASTM D-1557.
   D) PROVIDE 6 MIL VISQUEN UNDER ALL SLABS, LAYED ON COMPACTED GRANULAR FILL.
   E) CONSULT THE FOUNDATION INVESTIGATION REPORT WHICH IS AVAILABLE AT THE ENGINEER'S OFFICE FOR ADDITIONAL INFORMATION.

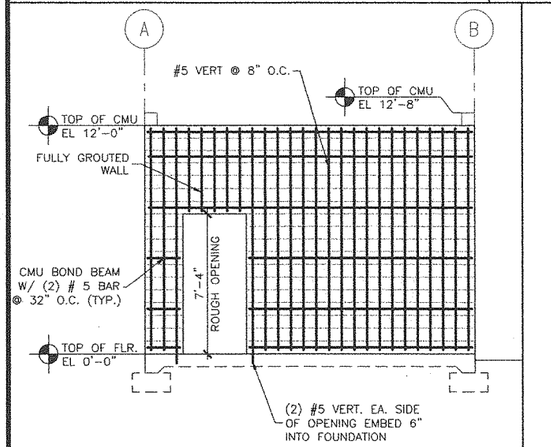
5) REINFORCING STEEL:
   A) ALL DEFORMED BAR REINFORCING TO COMPLY WITH ASTM A-615, GRADE 60.
   B) ANCHOR BOLTS SHALL CONFORM TO ASTM A-307, GRADE A, AND SHALL BE GALVANIZED.
   C) LAP ALL BARS A MINIMUM OF 36 DIAMETERS IN CONCRETE AND 48 DIAMETERS IN MASONRY, EXCEPT AS OTHERWISE NOTED.

6) CAST-IN-PLACE CONCRETE:
   A) ALL CONCRETE TO BE Fc = 2,500 PSI AT 28 DAYS.
   B) CONCRETE, FORMS MIXING, PLACING AND CURING SHALL CONFORM TO ACI MANUAL OF CONCRETE PRACTICE, AND ITS SPECIFICATIONS.

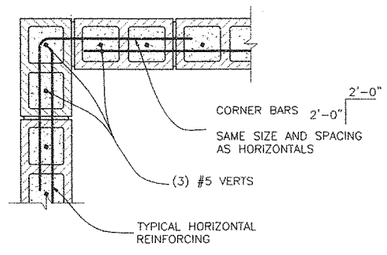
7) MASONRY:
   A) ALL HOLLOW CONCRETE MASONRY UNITS (CMU) SHALL BE GRADE N, CONFORMING TO ASTM C-90, F'm = 1500 PSI.
   B) ALL MORTAR FOR REINFORCED MASONRY SHALL BE TYPE "S" WITH 1800 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   C) SEAL ALL EXTERIOR MASONRY WITH MASCOSEAL SILOXANE WITH 20% SOLIDS AVAILABLE MASONS SUPPLY COMPANY.
   D) PAINT EXTERIOR CMU WALLS W/ MARINE GRADE EPOXY PAINT COLOR SELECTION BY OWNER.

8) STRUCTURAL STEEL:
   A) STRUCTURAL COLD ROLLED STEEL SHAPES SHALL BE GALVANIZED AND CONFORM TO ASTM A570 GRADE 50 (Fy = 50 KSI).
   B) ALL FABRICATION, ERECTION, IDENTIFICATION AND PAINTING OF STRUCTURAL STEEL SHALL CONFORM TO AISI SPECIFICATIONS.
   C) SCREWS ATTACHING COLD ROLLED SHAPES SHALL BE #8 TEKS.

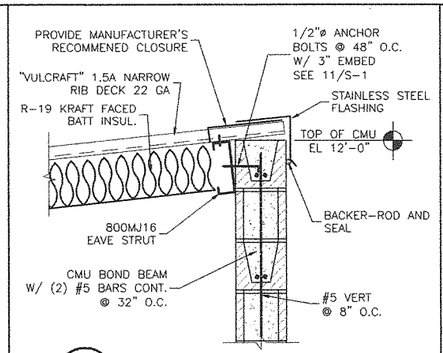
9) METAL ROOF DECKING
   A) METAL DECKING SHALL BE VULCRAFT 1.5 A, 22 GA. GALVANIZED DECK OR APPROVED EQUAL.
   B) METAL DECKING TO BE SCREWED TO SUPPORTS WITH #12 TEKS AT ALL EDGE RIBS PLUS 2 INTERIOR RIBS. ATTACH SIDE LAPS WITH #10 TEKS AT 18" O.C.
   C) SEAL ALL SCREW PENETRATIONS THROUGH DECK WITH MANUFACTURERS RECOMMENDED SEALANT SYSTEM.
   D) DECKING SHALL BEAR A MINIMUM OF 2" ON SUPPORTS.
   E) ROOF FLASHING AND GUTTERS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR AS PER MANUFACTURERS RECOMMENDATIONS. SEAL PARAPET FLASHING WITH FRY REGLETS TYPE SM, STAINLESS STEEL TYPE 304, 0.020 INCHES THICK.



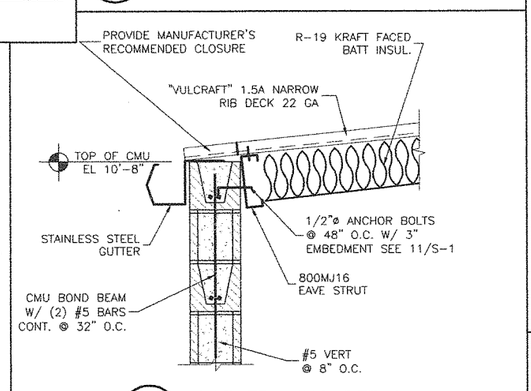
5 S-1 STRUCTURAL ELEVATION (SOUTH WALL)
SCALE: 1/4"=1'-0"



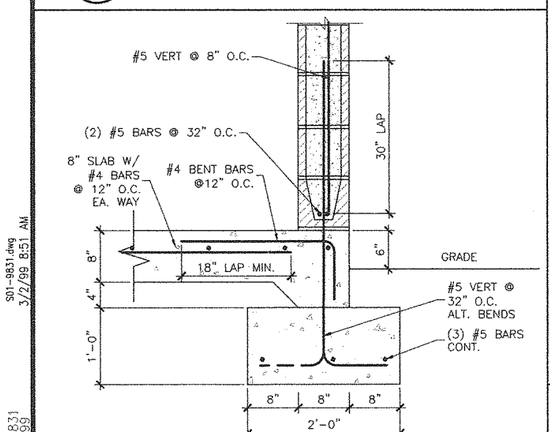
6 S-1 CORNER
SCALE: 1"=1'-0"



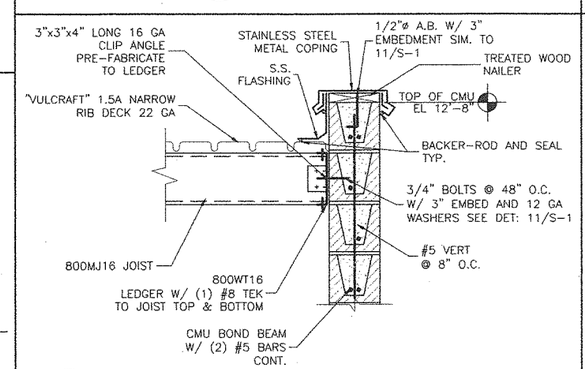
7 S-1 ROOF FRAMING DETAIL
SCALE: 1"=1'-0"



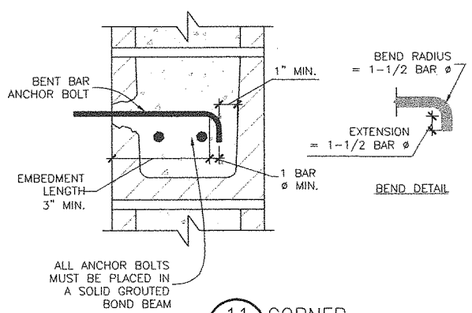
8 S-1 ROOF FRAMING DETAIL
SCALE: 1"=1'-0"



9 S-1 FOOTING DETAIL
SCALE: 1"=1'-0"



10 S-1 ROOF FRAMING DETAIL
SCALE: 1"=1'-0"



11 S-1 CORNER
SCALE: 1"=1'-0"

S-1

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

REVISIONS:			
0	5/28/99	JSH	ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER 9685 OREGON JULY 14, 1978 JULIUS S. HORVATH
5.25.99.
Exp. 6.30.99.

PROGRESSIVE CONSULTANTS, INC.
1902 S.E. MORRISON STREET, PORTLAND, OR 97214
(503) 230-0227 FAX (503) 230-0389

Designed: DSW
Drawn: CLP
Checked: JSH
Project No.: 9831
Date: 01/28/98
Scale:

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
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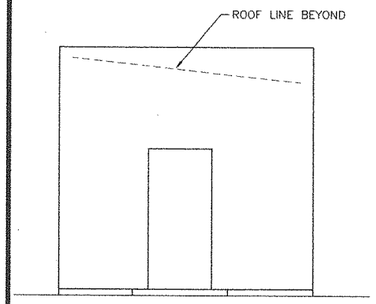
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

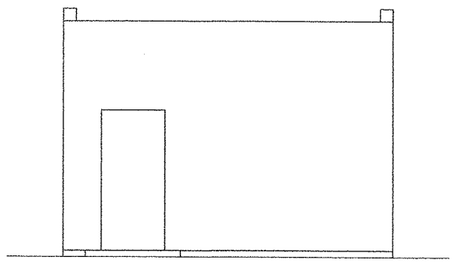
BUILDING LAYOUT

Sheet 1 of 2

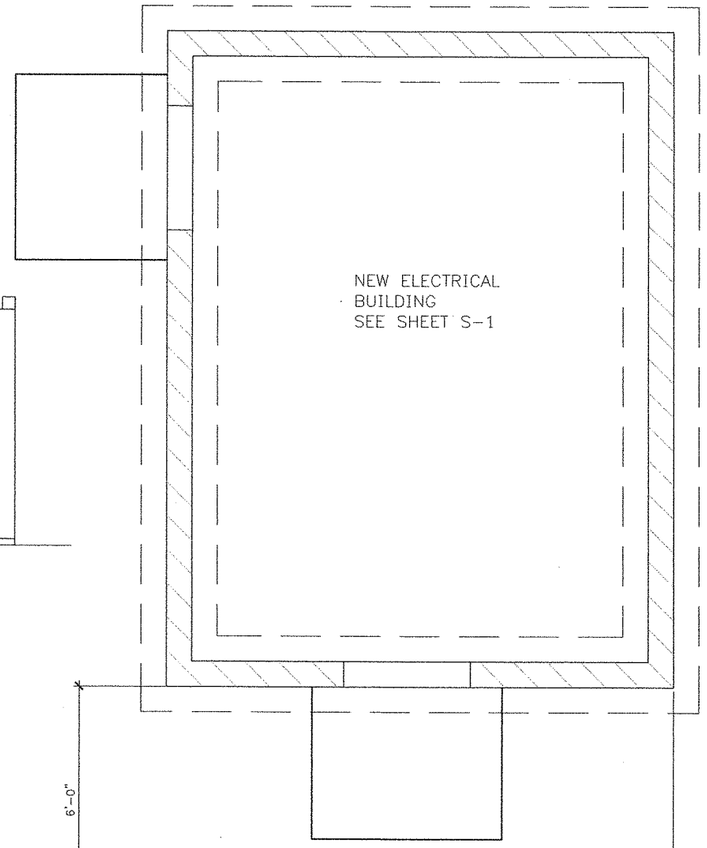
S01-9831.dwg 3/2/99 8:51 AM
S01-9831 1/28/99

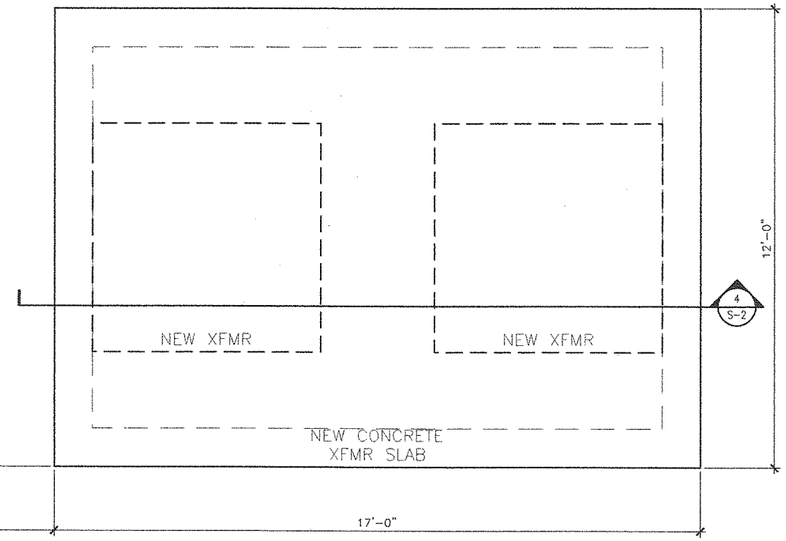


1 S-2 SOUTH ELEVATION
SCALE: 1/4"=1'-0"



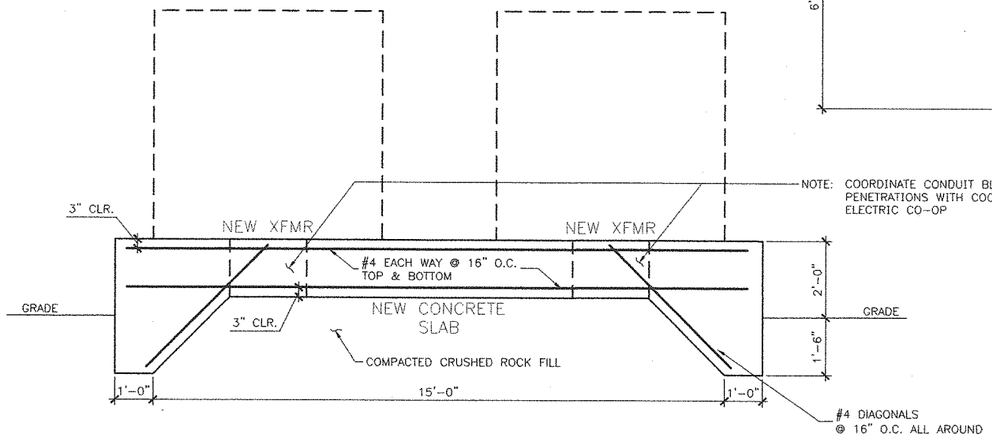
2 S-2 EAST ELEVATION
SCALE: 1/4"=1'-0"





3 S-2 CONCRETE XFMR SLAB (PLAN)
SCALE: 1/2"=1'-0"

NOTE:
ANCHOR BOLTS TO BE INSTALLED
PER TRANSFORMER ANCHOR BOLT PLACING PLAN



4 S-2 CONCRETE XFMR SLAB (SECTION)
SCALE: 1/2"=1'-0"

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3/2/99 9:02 AM

S02-9831
1/28/99

S-2

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

REVISIONS:			
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REGISTERED PROFESSIONAL ENGINEER
6665
OREGON
JULY 13, 1978
JULIUS S. HORVATH
5.25.99
EXP. 6.30.99.

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Date: 01/28/98
Scale:

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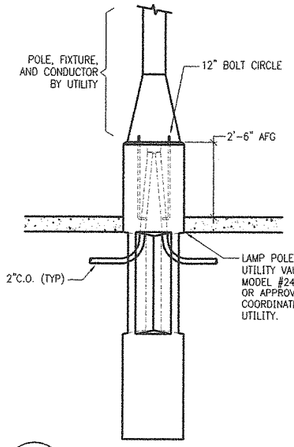
TRANSFORMER SLAB

Sheet 2 of 2



2 / E1|E1 LAMP POLE BASE
SCALE: NONE

NOTES:

1. INCLUDE ONE (1) CONDUIT ONLY FOR TELEPHONE TO EACH TENANT LEASE LOT OR PORT STUB-OUT LOCATION. NOT ALL TELEPHONE CONDUIT SHOWN. COORDINATE TELEPHONE DUCT & STUB-UPS WITH TELEPHONE UTILITY.
2. NOT ALL ABBREVIATIONS AND SYMBOLS USED.
3. LIGHT POLE AND FIXTURE BY COOS-CURRY ELECTRICAL COOPERATIVE
4. LIGHT POLE AND FIXTURE SUPPLIED BY PORT, THIS WORK.
5. ROUTE UTILITY LIGHTING TO COOS-CURRY ELECTRIC SERVICE.
6. ROUTE TELEPHONE DUCT PER TELEPHONE UTILITY REQUIREMENTS.

SYMBOLS

- NON-FUSED DISCONNECT ("FD" INDICATES FUSED DISC.)
- FULL VOLTAGE NON-REVERSING COMBINATION MOTOR STARTER
- JUNCTION BOX (TYP - CNDT BODY)
- CONDUIT - EXPOSED
- CONDUIT - CONCEALED OR BURIED
- CONDUIT - ROUTED "UP"
- CONDUIT - ROUTED "DOWN"
- CONDUIT W/ EXP. PROOF SEAL
- CONDUIT - LIQUIDTITE FLEX
- HEAT TRACING
- #8 WIRE SIZE (#12 IF NOT SHOWN); NEUTRAL; ISOLATED GND; GND; CIRCUITS
- 4PP1-22 HOME RUN TO PANEL & CRKT
- DUPLEX RECEPTACLE
- GFI RECEPTACLE
- SPECIAL RECEPTACLE
- $ 120V, 20A SWITCH
- $3 277V, 20A 3-WAY SWITCH
- $M 120V, MANUAL MOTOR STARTER
- CONDUIT W/ POWER
- CONDUIT ONLY
- FIXTURE; LIGHT POLE AND FIXTURE; POLE

ABBREVIATIONS

A	– AMPS
AFF	– ABOVE FINISHED FLOOR
AFG	– ABOVE FINISHED GRADE
AF	– AMPS FRAME
AT	– AMPS TRIP
BOT	– BOTTOM
CB	– CIRCUIT BREAKER
C.T.	– CURRENT TRANSFORMER
CNDT OR C.	– CONDUIT
C.O.	– CONDUIT ONLY
CRKT	– CIRCUIT
(D)	– DEMOLISH OR REMOVE
DPLX	– DUPLEX
(E)	– EXISTING ITEM
EMT	– ELECTRICAL METALLIC TUBING
EP	– EXPLOSION PROOF (NEMA 7)
FA	– FIRE ALARM
GND	– GROUND
HP	– HORSEPOWER
JB	– JUNCTION BOX (TYP CNDT BODY)
kVA	– KILOVOLT-AMPS
kcmil	– THOUSAND CIRCULAR MILS
MDP	– MAIN DISTRIBUTION PANEL
MTG	– MOUNTING
N	– NORTH
(N)	– NEW
NC	– NORMALLY CLOSED
NFD	– NON-FUSED DISCONNECT
NO	– NORMALLY OPEN
NTS	– NOT-TO-SCALE
PA	– PUBLIC ADDRESS
PB	– PULL BOX
PNL	– PANEL
PVC	– POLYVINYL CHLORIDE
PMH	– POWER MANHOLE
PWR	– POWER
RCPT	– RECEPTACLE
SW	– SWITCH
TB	– TERMINAL BOX
TMH	– TELEPHONE MANHOLE
TYP	– TYPICAL
WP	– WATERPROOF

1 / E1|E1 ELECTRICAL UTILITY PLAN
SCALE: 1" = 30'-0"

1" = 30'-0" (30' 0 30' 60' 90')

no	date	by	revisions
0	05/28/98	GAS	ISSUED FOR BIDDING

SJO
CONSULTING ENGINEERS INC.
Portland, Oregon

Designed: GAS
Drawn: DBS
Checked: GAS
Project No.: 2163.01

Date: 6/9/98
Scale: 1" = 30'-0"

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PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

ELECTRICAL UTILITY PLAN

Sheet 1 of 4

E-1

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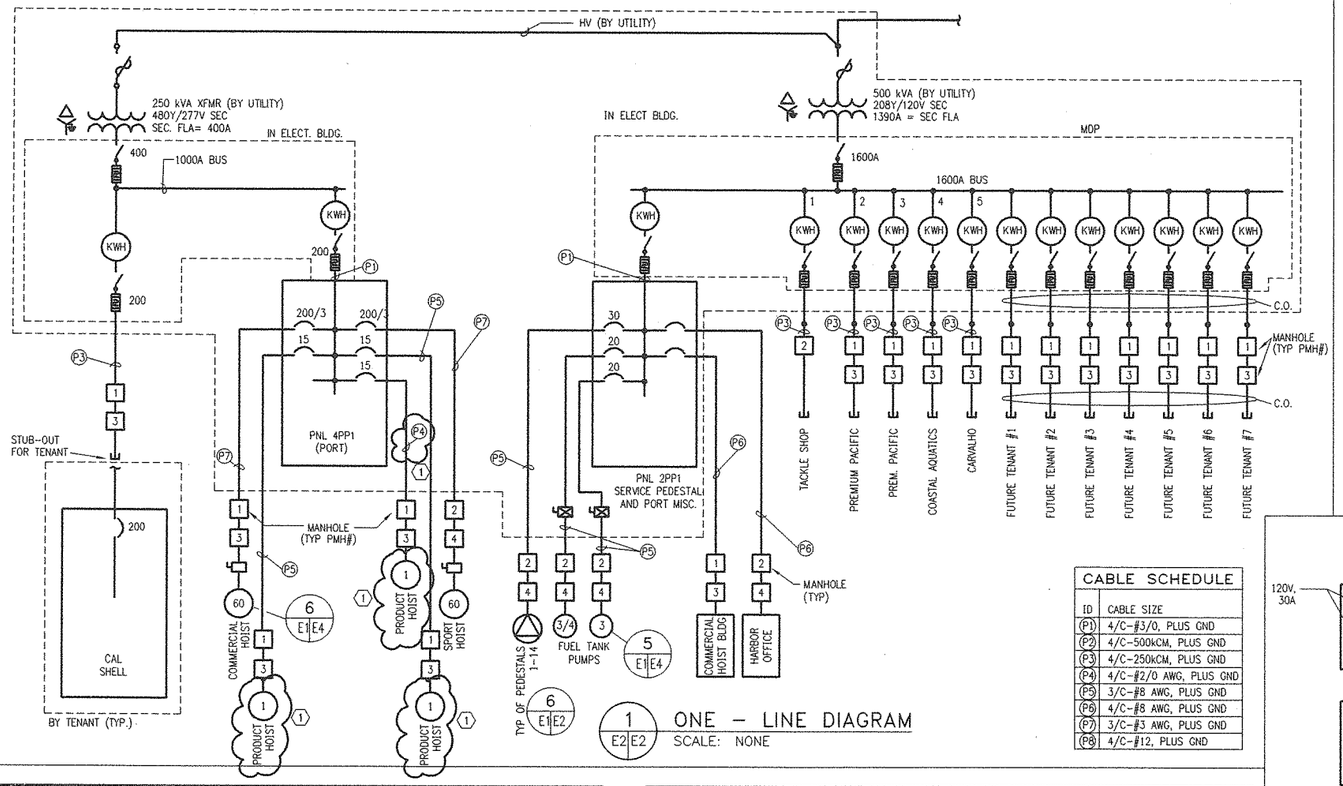
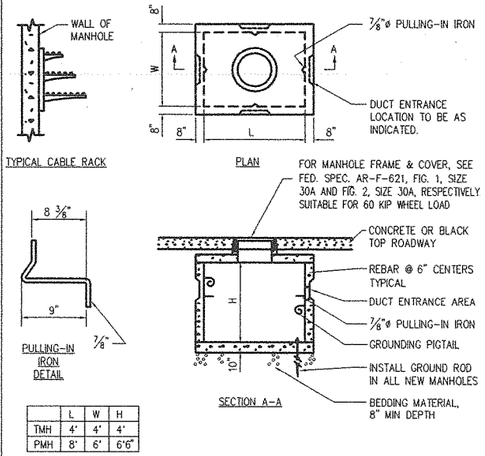


1 E2 E2 ONE – LINE DIAGRAM
SCALE: NONE

CABLE SCHEDULE	
ID	CABLE SIZE
P1	4/C-#3/0, PLUS GND
P2	4/C-500kCM, PLUS GND
P3	4/C-250kCM, PLUS GND
P4	4/C-#2/0 AWG, PLUS GND
P5	3/C-#8 AWG, PLUS GND
P6	4/C-#8 AWG, PLUS GND
P7	3/C-#3 AWG, PLUS GND
P8	4/C-#12, PLUS GND

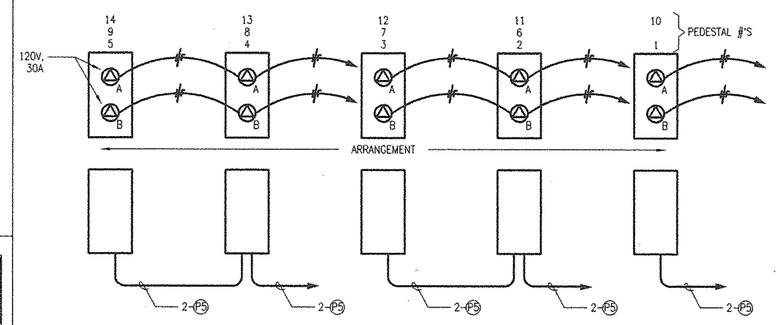
KEYED NOTES

1. CONDUIT FROM MANHOLE #3, WIRING, & CIRCUIT BREAKERS FOR PRODUCT HOIST ARE ADDITIVE BID ITEMS.

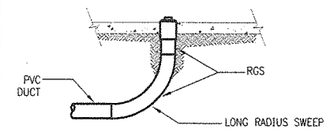


	L	W	H
TMH	4'	4'	4'
PMH	8'	6'	6'6"

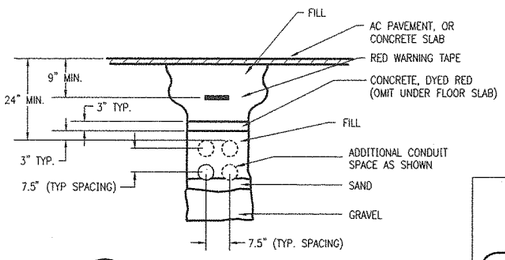
4 E1 E2 MANHOLE DETAIL
SCALE: NONE



6 E1 E2 BOAT PARKING PEDESTAL – WIRING DETAIL
E2 SCALE: NONE



5 E1 E2 DUCT STUB-UP DETAIL
SCALE: 1" = 1'-0"



3 E1 E2 DUCT DETAIL
SCALE: 1/2" = 1'-0"

1" = 1'-0" 1' 0 1' 2' 3'

1/2" = 1'-0" 1' 0 1' 2' 3' 4' 5' 6' 7' 8'

PANEL LABEL: 4PP1	LOCATION: ELEC. RM								MOUNTING: SURFACE		
PANEL VOLTAGE:	480 277	PHASE: 3 WIRE: 4		WIRE: #3/0 AWG			BUS: 225	INCOMING CONNECTIONS: 225A MCB			
SERVICE	WATTS	A/P	#	A	B	C	#	A/P	WATTS	SERVICE	
COMMERCIAL	20000		1	●			2		20000	SPORT	
HOIST	20000	200/3	3		●		4	200/3	20000	BOAT	
	20000		5			●	6		20000	HOIST	
PRODUCT	1000		7	●			8		1000	PRODUCT	
HOIST #1 (1)	1000	15/3	9		●		10	15/3	1000	(1)	
	1000		11			●	12		1000	HOIST #3	
PRODUCT	1000		13	●			14				
HOIST #2 (1)	1000	15/3	15		●		16				
	1000		17			●	18				
			19	●			20				
			21		●		22				
			23			●	24				
– SPACE –			25	●			26				
– SPACE –			27		●		28				
– SPACE –			29			●	30				
– SPACE –			31	●			32			– SPACE –	
– SPACE –			33		●		34			– SPACE –	
– SPACE –			35			●	36			– SPACE –	
– SPACE –			37	●			38			– SPACE –	
– SPACE –			39		●		40			– SPACE –	
– SPACE –			41			●	42			– SPACE –	
LOAD SUMMARY	WATTS	AMPS									
PHASE A	43000	155.2									
PHASE B	43000	155.2									
PHASE C	43000	155.2									
TOTALS:	129000	155.2									

PANEL LABEL: 2PP1	LOCATION: ELEC. BLDG								MOUNTING: SURFACE		
PANEL VOLTAGE:	208 120	PHASE: 3 WIRE: 4		WIRE: #4/0 AWG			BUS: 225	INCOMING CONNECTIONS: 225A MCB			
SERVICE	WATTS	A/P	#	A	B	C	#	A/P	WATTS	SERVICE	
PEDESTAL #1A	1440	30/1	1	●			2	30/1	1440	PEDESTAL #10A	
PEDESTAL #1B	1440	30/1	3		●		4	30/1	1440	PEDESTAL #10B	
PEDESTAL #2A, #3A	2880	30/1	5			●	6	30/1	2880	PEDESTAL #11A, #12A	
PEDESTAL #2B, #3B	2880	30/1	7	●			8	30/1	2880	PEDESTAL #11B, #12B	
PEDESTAL #4A, #5A	2880	30/1	9		●		10	30/1	2880	PEDESTAL #13A, #14A	
PEDESTAL #4B, #5B	2880	30/1	11			●	12	30/1	2880	PEDESTAL #13B, #14B	
PEDESTAL #6A, #7A	2880	30/1	13	●			14	20/1	1920	OFFICE	
PEDESTAL #6B, #7B	2880	30/1	15		●		16	20/1	1920	OFFICE	
PEDESTAL #8A, #9A	2880	30/1	17			●	18	20/1	1920	OFFICE	
PEDESTAL #8B, #9B	2880	30/1	19	●			20	20/1	1920	RESTROOM	
FUEL PUMP – GAS	1000	30/1	21		●		22	20/1	1920	RESTROOM	
BLDG RCPT	320	20/1	23			●	24	20/1	1920	COMMER. HOIST BLDG	
FUEL PUMP	1000		25	●			26	20/1	1920	COMMER. HOIST BLDG	
DIESEL	1000	20/3	27		●		28	20/1	1920	COMMER. HOIST BLDG	
	1000		29			●	30	20/1	320	FUEL PEDESTAL	
SPACE			31	●			32	20/1	320	FUEL LEVEL CNTL	
SPACE			33		●		34			SPACE	
SPACE			35			●	36			SPACE	
SPACE			37	●			38			SPACE	
SPACE			39		●		40			SPACE	
SPACE			41			●	42			SPACE	
LOAD SUMMARY	WATTS	AMPS									
PHASE A	21480	178.9									
PHASE B	19280	160.5									
PHASE C	19880	165.5									
TOTALS:	60640	168.3									

E-2

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

no	date	by	revisions
0	05/28/98	GAS	ISSUED FOR BIDDING

REGISTERED PROFESSIONAL ENGINEER 10,133 OREGON JULY 13, 1979 GARY A. SEDIVY 5/28/98

SJO
CONSULTING ENGINEERS INC.
Portland, Oregon

Designed: GAS
Drawn: DBS
Checked: GAS
Project No.: 2163.01
Date: 6/9/98
Scale: 1/2" = 1'-0"

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
811 First Avenue, Suite 260
Seattle, Washington, 98104
PH: (206) 624-1387 FAX: (206) 624-1388

ELECTRICAL DETAILS

Sheet 2 of 4

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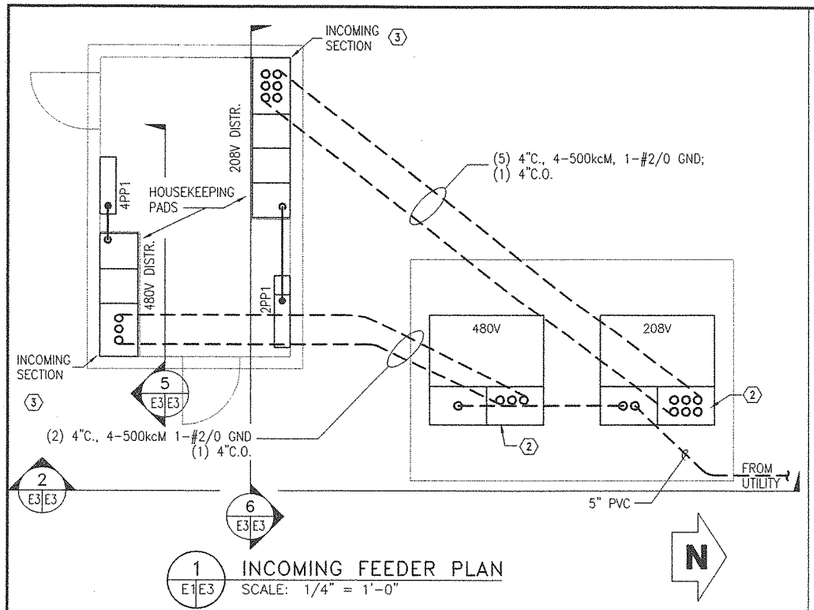
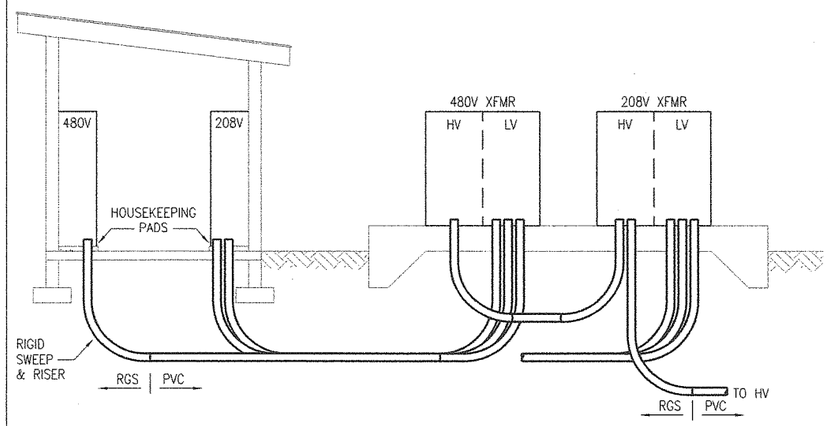
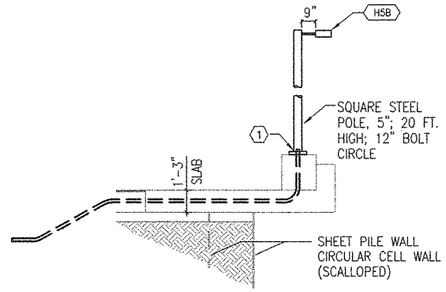


1 E1|E3 INCOMING FEEDER PLAN
SCALE: 1/4" = 1'-0"



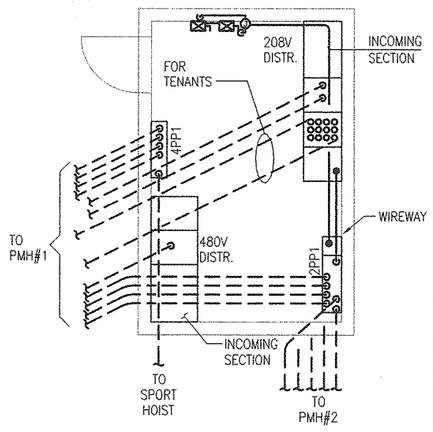
2 E3|E3 INCOMING FEEDERS – ELEVATION
SCALE: 1/4" = 1'-0"



3 E1|E3 CONDUIT ENTRY TO LIGHT POLE
SCALE: 1/4" = 1'-0"

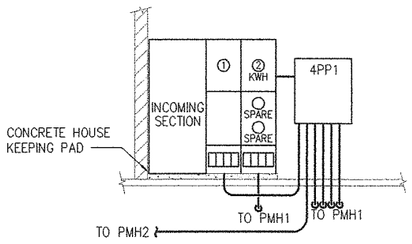
KEYED NOTES

1. SEE PN&D DRAWING SHEET I-29 FOR ANCHOR BOLT DETAIL. COORDINATE ANCHOR BOLT WITH POLE MANUFACTURER & PND.
2. COORDINATE CNDT STUB-UP LOCATION FOR XFMR HIGH & LOW VOLTAGE COMPARTMENTS WITH UTILITY.
3. COORDINATE INCOMING CONDUIT STUB-UPS WITH METERING SWITCHBOARD MANUFACTURER.



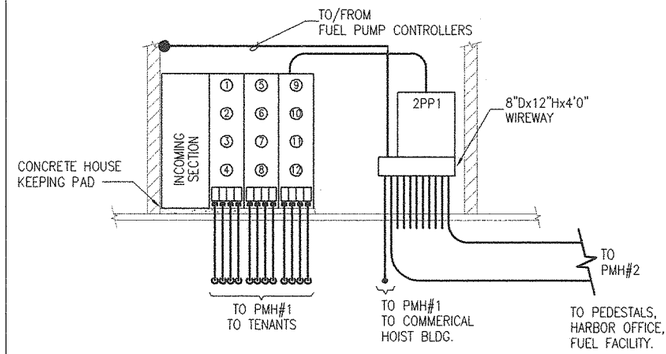
4 E1|E3 UNDERGROUND POWER DISTRIBUTION
SCALE: 1/4" = 1'-0"

① KWH – PORT
② KWH – CALSHELL

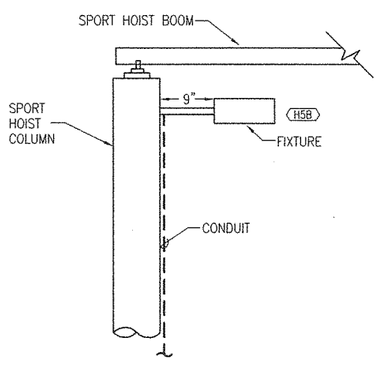


5 E3|E3 480V POWER DISTR. ELEVATION
SCALE: 1/4" = 1'-0"

① KWH – TACKLE SHOP
② PREMIUM PACIFIC
③ PREMIUM PACIFIC
④ COASTAL AQUATICS
⑤ CARVALITO
⑥ PORT & PEDESTALS
⑦–⑫ FUTURE TENANTS – SPACE FOR SOCKETS ONLY



6 E3|E3 208V POWER DISTR. ELEVATION
SCALE: 1/4" = 1'-0"



7 E1|E3 SPORT HOIST – LIGHT FIXTURE
SCALE: NO SCALE

8 E1|E3 LIGHT POLE
SCALE: 1/4" = 1'-0"

1/4" = 1'-0" 5' 0 5' 10' 15'

no	date	by	revisions
0	05/28/99	GAS	ISSUED FOR BIDDING

OREGON 10,183 JULY 13, 1976 GARY A. SEDIVY

SJO
CONSULTING ENGINEERS INC.
Portland, Oregon

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Designed: GAS
Drawn: DBS
Checked: GAS
Project No.: 2163.01

Date: 7/13/98
Scale: 1/4" = 1'-0"

Peratrovich, Nottingham & Drage, Inc.
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E-3

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

ELECTRICAL DETAILS

Sheet 3 of 4

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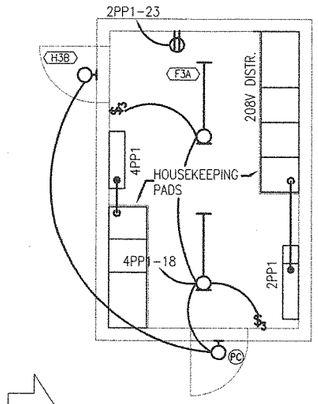
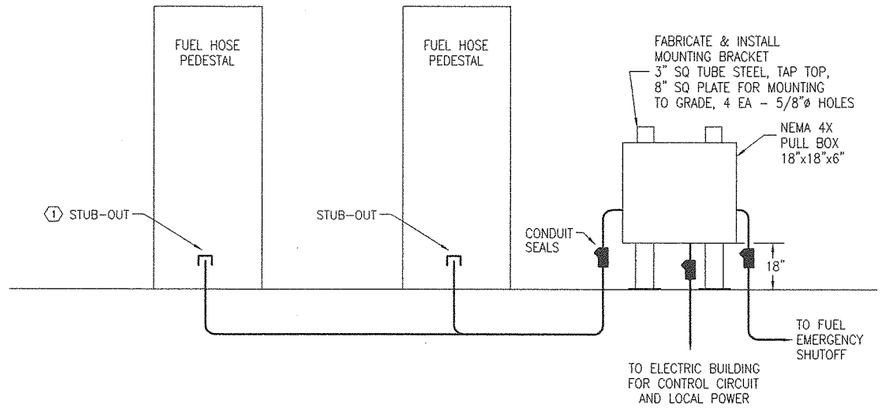
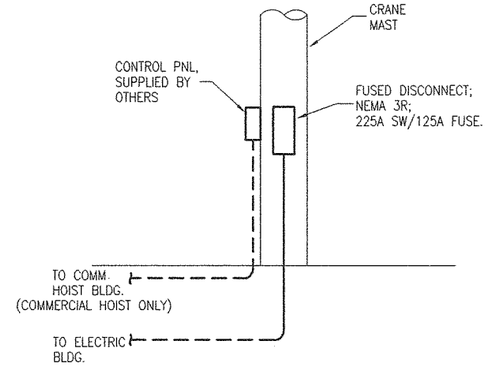


1 E4 E4 LIGHTING PLAN
SCALE: 1/4" = 1'-0"



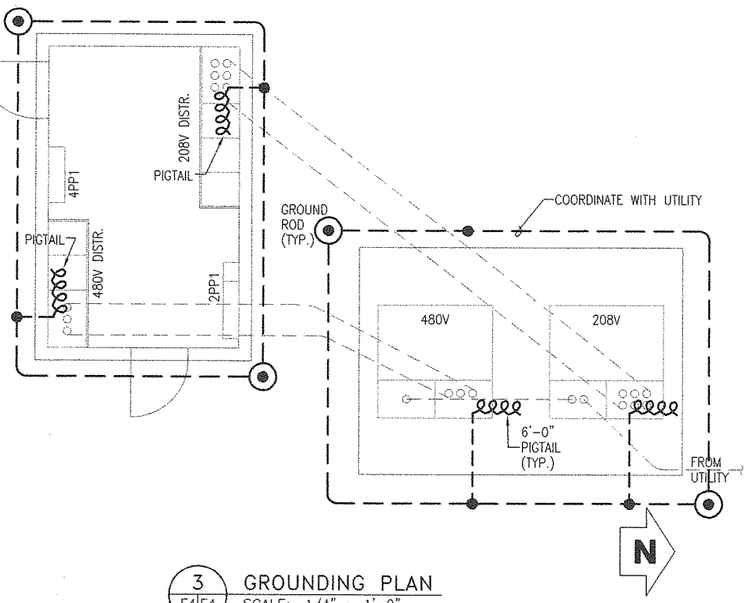
2 E1 E4 PULL BOX DETAIL
SCALE: NO SCALE



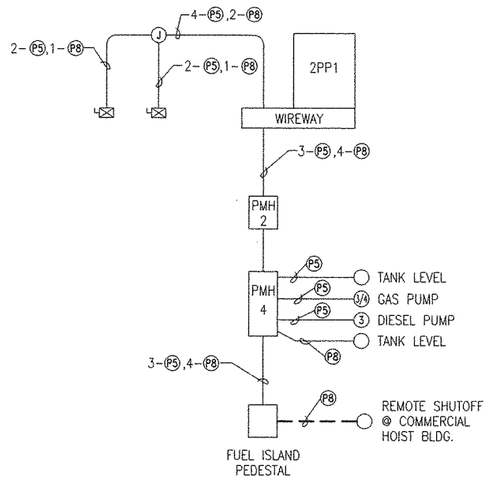
4 E4 E4 COMMERCIAL/SPORT BOAT HOIST
SCALE: NONE

KEYED NOTES

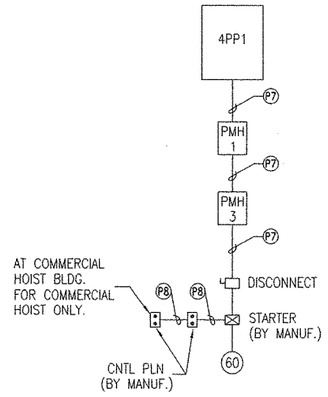
1 COORDINATE STUB-OUT IN FUEL PEDESTALS WITH MANUFACTURER. COORDINATE CONTROL CIRCUIT CABLE AND CONNECTION WITH MANUFACTURER.



3 E4 E4 GROUNDING PLAN
SCALE: 1/4" = 1'-0"



5 E1 E4 CABLE ROUTING DIAGRAM
SCALE: NONE



6 E4 E4 CRANE HOIST CABLING DIAGRAM
SCALE: NONE

E-4

PORT OF PORT ORFORD
PERMANENT DOCK STRUCTURE

1/4" = 1'-0" 5' 0 5' 10' 15'

no	date	by	revisions
0	05/28/99	GAS	ISSUED FOR BIDDING

OREGON 10,185 EXPIRES: JUNE 30, 1999 GARY A. BECHT

SJO
CONSULTING ENGINEERS INC.
Portland, Oregon

Designed: GAS
Drawn: DBS
Checked: GAS
Project No.: 2163.01

Date: 7/13/98
Scale: 1/2" = 1'-0"

Peratrovich, Nottingham & Drage, Inc.
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ELECTRICAL DETAILS

Sheet 4 of 4

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