

**APPENDIX D**  
**Nearshore Confined Disposal (NCD) As-Built Drawings**



# STAGE 1 MARINE TERMINAL IMPROVEMENTS

## COMMISSIONERS:

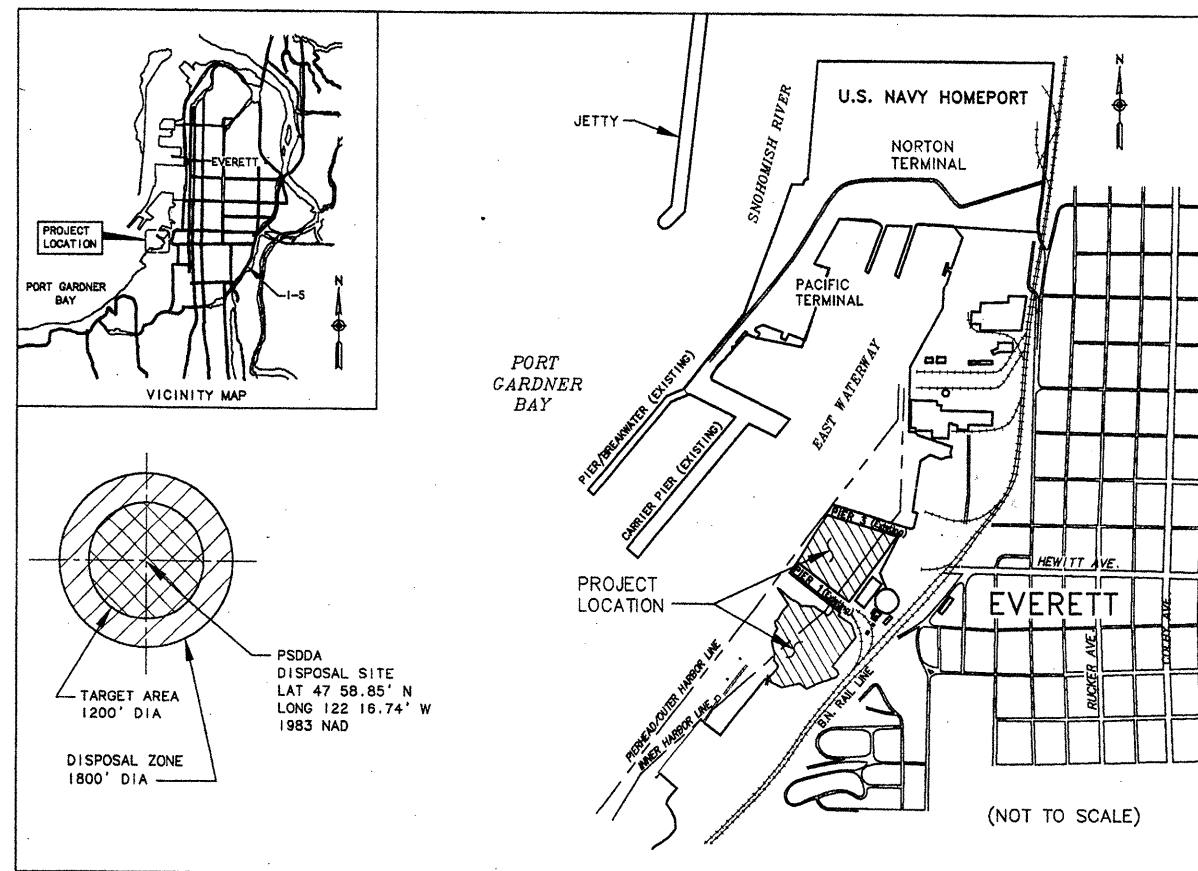
DON HOPKINS, JR.  
ED MORROW  
JAMES P. SHAFFER

## PORT STAFF:

MICHAEL R. DELLER EXECUTIVE DIRECTOR  
JACK R. OLSON PROJECT MANAGER

## CONSULTING ENGINEERS:

BERGER/ABAM ENGINEERS, INC - CIVIL/STRUCTURAL  
DAMES & MOORE, INC - GEOTECHNICAL ENGINEERS  
HARTMAN ASSOCIATES, INC - DREDGING  
CLARK M. LEEMAN - SURVEYING  
McGOWAN BROZ ENGINEERS, INC - ELECTRICAL & MECHANICAL

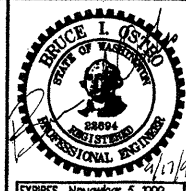


## DRAWING LIST

DRAWING NO.	TITLE	DRAWING NO.	TITLE	DRAWING NO.	TITLE	DRAWING NO.	TITLE	DRAWING NO.	TITLE
	GENERAL		CIVIL		STRUCTURAL		MECHANICAL		ADDITIVE BID NO. 2
T-1	TITLE SHEET & VICINITY MAP	C-1	DRAINAGE PLAN	S-10	PILE CAP DETAILS - SHEET 2	M-1	LEGENDS, ABBREVIATIONS AND GENERAL NOTES	C-5	ADD. BID NO. 2 - STRUCTURAL DEMOLITION DETAILS
G-1	EXISTING SITE CONDITIONS AND TOPOGRAPHY	C-2	DRAINAGE DETAILS - SHEET 1	S-11	PILE CAP DETAILS - SHEET 3	M-2	DOMESTIC WATER & FIRE PROTECTION PIPING PLAN	S-23	ADD. BID NO. 2 - WHARF SURFACE FEATURES AND PILE PLAN
G-2	SITE PLAN	C-3	DRAINAGE DETAILS - SHEET 2	S-12	PILE DETAILS	M-3	DOMESTIC WATER & FIRE PROTECTION PIPING PLAN	S-24	ADD. BID NO. 2 - FRAMING PLAN AND PILE CAP DETAILS
G-3	SOIL BORING PLAN	C-4	STRUCTURAL DEMOLITION DETAILS	S-13	PILE-TO-CAP CONNECTION DETAILS	M-4	SECTIONS AND PROFILES	S-25	ADD. BID NO. 2 - PILE CAP AND BOLLARD DETAILS
	DREDGE AND FILL		STRUCTURAL	S-14	PRECAST DECK PANEL DETAILS - SHEET 1	M-5	SECTION AND DETAILS	S-26	ADD. BID NO. 2 - INTEGRATION PLAN AND DETAILS
DF-1	DEMOLITION PLAN - SOUTH WATERWAY AREA	S-1	STRUCTURAL NOTES AND DESIGN CRITERIA	S-15	NOT USED			S-27	ADD. BID NO. 2 - PRECAST DECK PANEL DETAILS
DF-2	DREDGE AND FILL PLAN - SOUTH WATERWAY AREA	S-2	WHARF SURFACE FEATURES PLAN - SHEET 1	S-16	PRECAST DECK PANEL DETAILS - SHEET 2				
DF-3	SECTIONAL VIEWS 1 - SOUTH WATERWAY AREA	S-3	WHARF SURFACE FEATURES PLAN - SHEET 2	S-17	BULLRAIL DETAILS	E-1	LEGENDS, GENERAL NOTES AND ELEC SITE PLAN		
DF-4	SECTIONAL VIEWS 2 - SOUTH WATERWAY AREA	S-4	PILE AND PILE CAP PLAN - SHEET 1	S-18	UTILITY HATCH DETAILS	E-2	WHARF PARTIAL PLAN SOUTH - POWER & COMMUNICATIONS		
DF-5	DREDGE AND FILL PLAN - PIER 1 - 3 AREA	S-5	PILE AND PILE CAP PLAN - SHEET 2	S-19	BOLLARD AND CLEAT DETAILS	E-3	WHARF PARTIAL PLAN NORTH - POWER & COMMUNICATIONS		
DF-6	SECTIONAL VIEWS - PIER 1 - 3 AREA	S-6	FRAMING PLAN - SHEET 1	S-20	300-TON BOLLARD DETAILS	E-4	SECTIONS AND DETAILS		
DF-7	SETTLEMENT MONITORING PLAN & DETAILS	S-7	FRAMING PLAN - SHEET 2	S-21	FENDER SYSTEM - SHEET 1				
1	PROPOSED NCD BERTH APPROACH DREDGING AND DEEPENING TO EL -40 MLLW, PLAN VIEW	S-8	TYPICAL WHARF CROSS SECTION	S-22	MISCELLANEOUS DETAILS				
2	PROPOSED NCD BERTH APPROACH DREDGING AND DEEPENING TO EL -40 MLLW, CROSS SECTION A-A	S-9	PILE CAP DETAILS - SHEET 1	S-22A	INTEGRATION DETAILS				
				S-22B	FENDER SYSTEM - SHEET 2				



**BERGER/ABAM ENGINEERS INC.**  
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DRAWN BY: R. MOHN 08/08/96  
DESIGN BY: J. BARDI 08/08/96  
CHECK BY: B. OSTBO 08/08/96  
PROJ ENGR: B. OSTBO 08/08/96

DATE	BY	APP.	DATE
AS-BUILT	JAW	BIO	4/3/98
MARK	REVISION	BY	APP. DATE

STAGE 1  
MARINE TERMINAL IMPROVEMENTS  
TITLE SHEET & VICINITY MAP

DRAWING NO. T-1  
BERGER/ABAM PROJECT NO. A96073  
SHEET NO. 1 OF 55

POSSESSION SOUND  
PORT GARDNER BAY

**NOTES:**

GRID SYSTEM:  
WASHINGTON GRID SYSTEM, NORTH ZONE  
(NAD 83), BASED ON GLOBAL POSITIONING  
SURVEY BY CLARK M. LEEMAN LAND  
SURVEYING OCT. 23, 1991.

BENCH MARK:  
BM TIDAL 4: A STANDARD DISK STAMPED  
"4-1934" IN TOP SE CORNER OF NE  
ABUTMENT OF RAILROAD BRIDGE OVER  
HEWITT AVE. ELEVATION = 42.17 FEET  
(12.853 METERS) MEAN LOWER LOW  
WATER DATUM. THIS BM = 36.24 FEET  
NGVD "MEAN SEA LEVEL" DATUM (MLLW-5.93)  
1960-1978 TIDAL EPOCH.

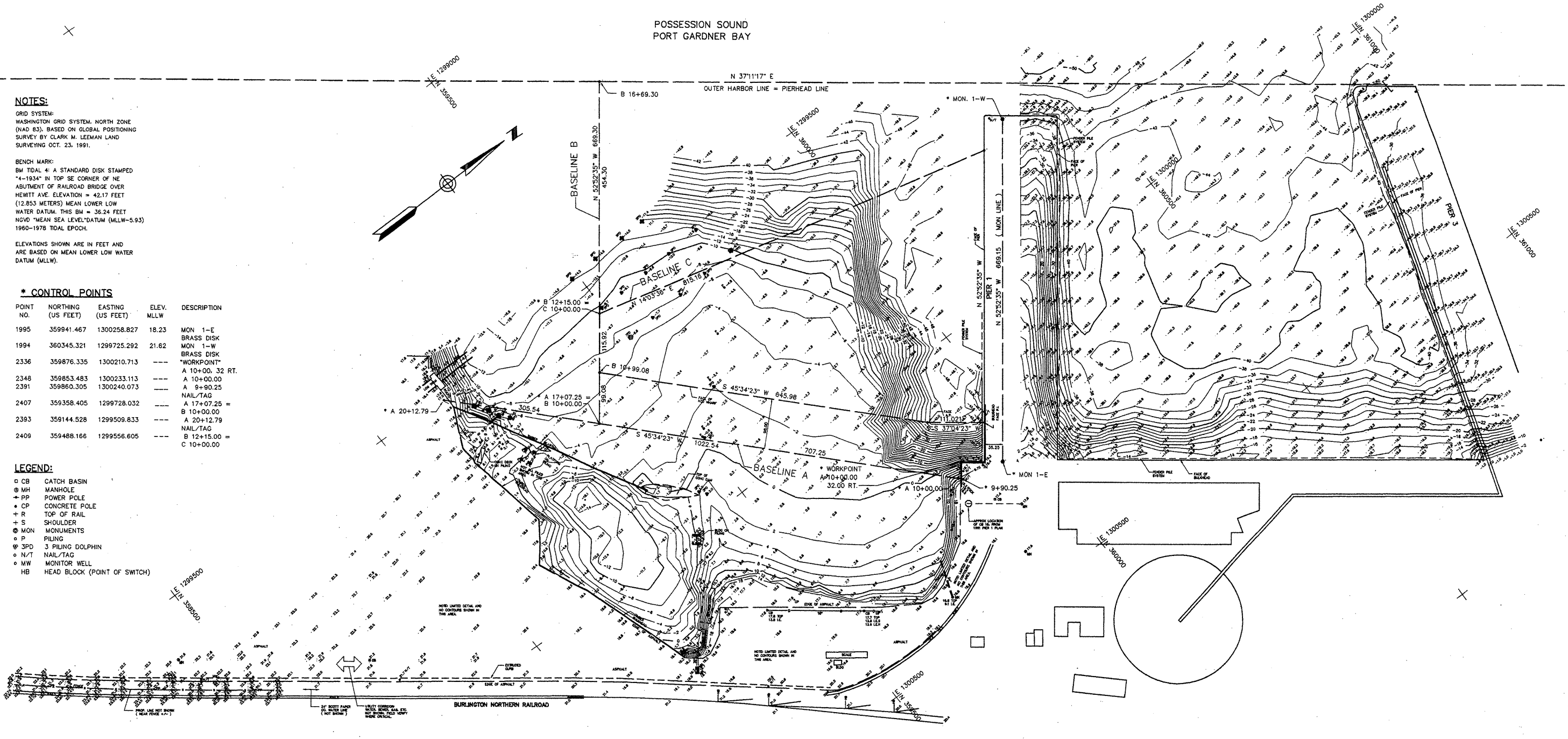
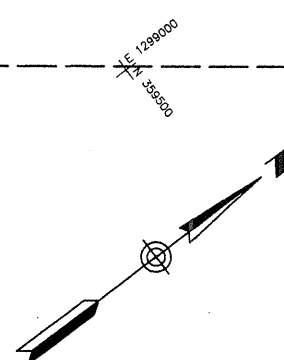
ELEVATIONS SHOWN ARE IN FEET AND  
ARE BASED ON MEAN LOWER LOW WATER  
DATUM (MLLW).

**\* CONTROL POINTS**

POINT NO.	NORTHING (US FEET)	EASTING (US FEET)	ELEV. MLLW	DESCRIPTION
1995	359941.467	1300258.827	18.23	MON 1-E BRASS DISK
1994	360345.321	1299725.292	21.62	MON 1-W BRASS DISK
2336	359876.335	1300210.713	---	"WORKPOINT" A 10+00.32 RT.
2348	359853.483	1300233.113	---	A 10+00.00
2391	359860.305	1300240.073	---	A 9+90.25 NAIL/TAG
2407	359358.405	1299728.032	---	A 17+07.25 = B 10+00.00
2393	359144.528	1299509.833	---	A 20+12.79 NAIL/TAG
2409	359488.166	1299556.605	---	B 12+15.00 = C 10+00.00

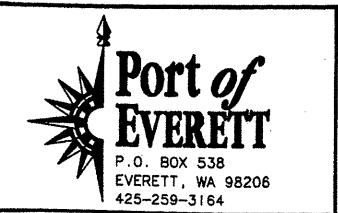
**LEGEND:**

- CB CATCH BASIN
- ⊙ MH MANHOLE
- + PP POWER POLE
- CP CONCRETE POLE
- + R TOP OF RAIL
- + S SHOULDER
- ⊙ MON MONUMENTS
- ⊙ P PILING
- ⊙ 3PD 3 PILING DOLPHIN
- ⊙ N/T NAIL/TAG
- ⊙ MW MONITOR WELL
- ⊙ HB HEAD BLOCK (POINT OF SWITCH)

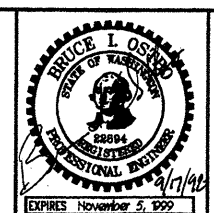


1  
G-1 PLAN - SITE SURVEY  
SCALE: 1"=100'-0"

**CLARK M. LEEMAN LAND SURVEYING**  
3216 Wetmore Ave, Everett, WA 98201 (206) 259-6072



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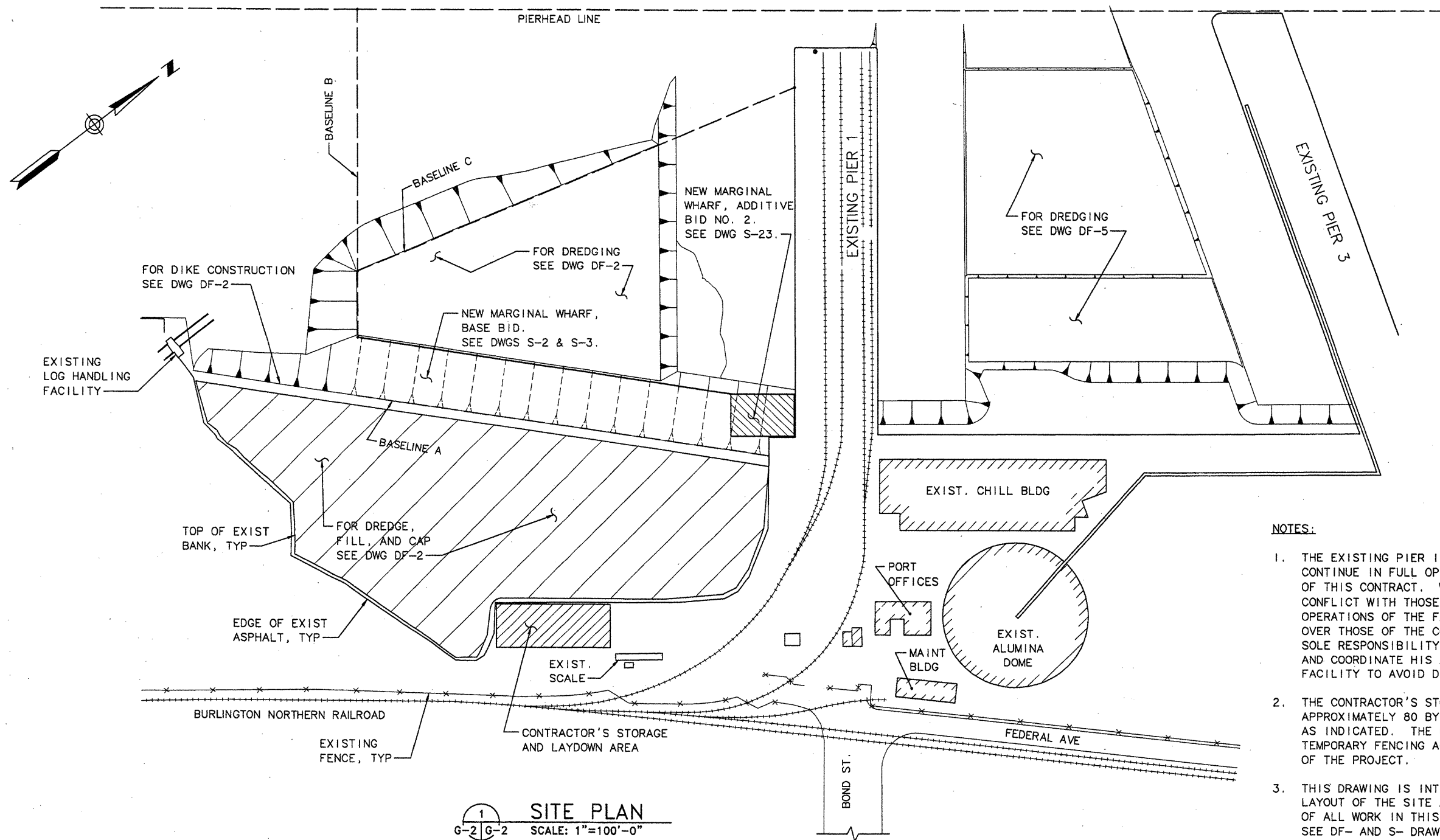
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DESIGN BY:	CLM	08/08/96			
CHECK BY:	CLM	08/08/96			
PROJ ENGR:	B. OSTBO	08/08/96			
DATE	AS-BUILT	JAW	BIO	4/3/98	
MARK	REVISION	BY	APP.	DATE	

STAGE 1  
MARINE TERMINAL IMPROVEMENTS  
  
EXISTING SITE CONDITIONS  
AND TOPOGRAPHY

DRAWING NO. G-1  
BERGER/ABAM  
PROJECT NO. A96073  
SHEET NO. 2 OF 55

PLOTED: Fri Sep 11 1998 6:37am FILENAME: V:\1996\A96073\SURVEY\STRUCT-G-1.dwg SCALE: 100

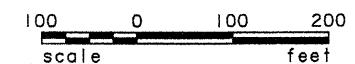
POSSESSION SOUND  
PORT GARDNER BAY



NOTES:

1. THE EXISTING PIER 1 AND PIER 3 FACILITIES WILL CONTINUE IN FULL OPERATION THROUGH CONSTRUCTION OF THIS CONTRACT. WHERE FACILITY OPERATIONS CONFLICT WITH THOSE OF THE CONTRACTOR, THE OPERATIONS OF THE FACILITY WILL TAKE PRECEDENCE OVER THOSE OF THE CONTRACTOR. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND COORDINATE HIS ACTIVITIES WITH THOSE OF THE FACILITY TO AVOID DISRUPTION OF FACILITY OPERATIONS.
2. THE CONTRACTOR'S STORAGE AND LAYDOWN AREA, APPROXIMATELY 80 BY 200 FEET, HAS BEEN PROVIDED AS INDICATED. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AND GATE FOR THE ENTIRE DURATION OF THE PROJECT.
3. THIS DRAWING IS INTENDED ONLY TO SHOW THE GENERAL LAYOUT OF THE SITE AND THE PHYSICAL RELATIONSHIP OF ALL WORK IN THIS CONTRACT. FOR DETAILED PLANS, SEE DF- AND S- DRAWINGS AS INDICATED.

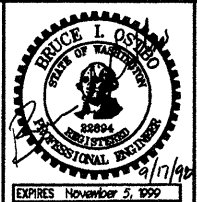
1 SITE PLAN  
G-2 SCALE: 1"=100'-0"



PLOTTED: Fri Sep 11 1998 6:30am FILENAME: V:\1996\A96073\SURVEY\STRUCT\G-2.dwg SCALE: 100



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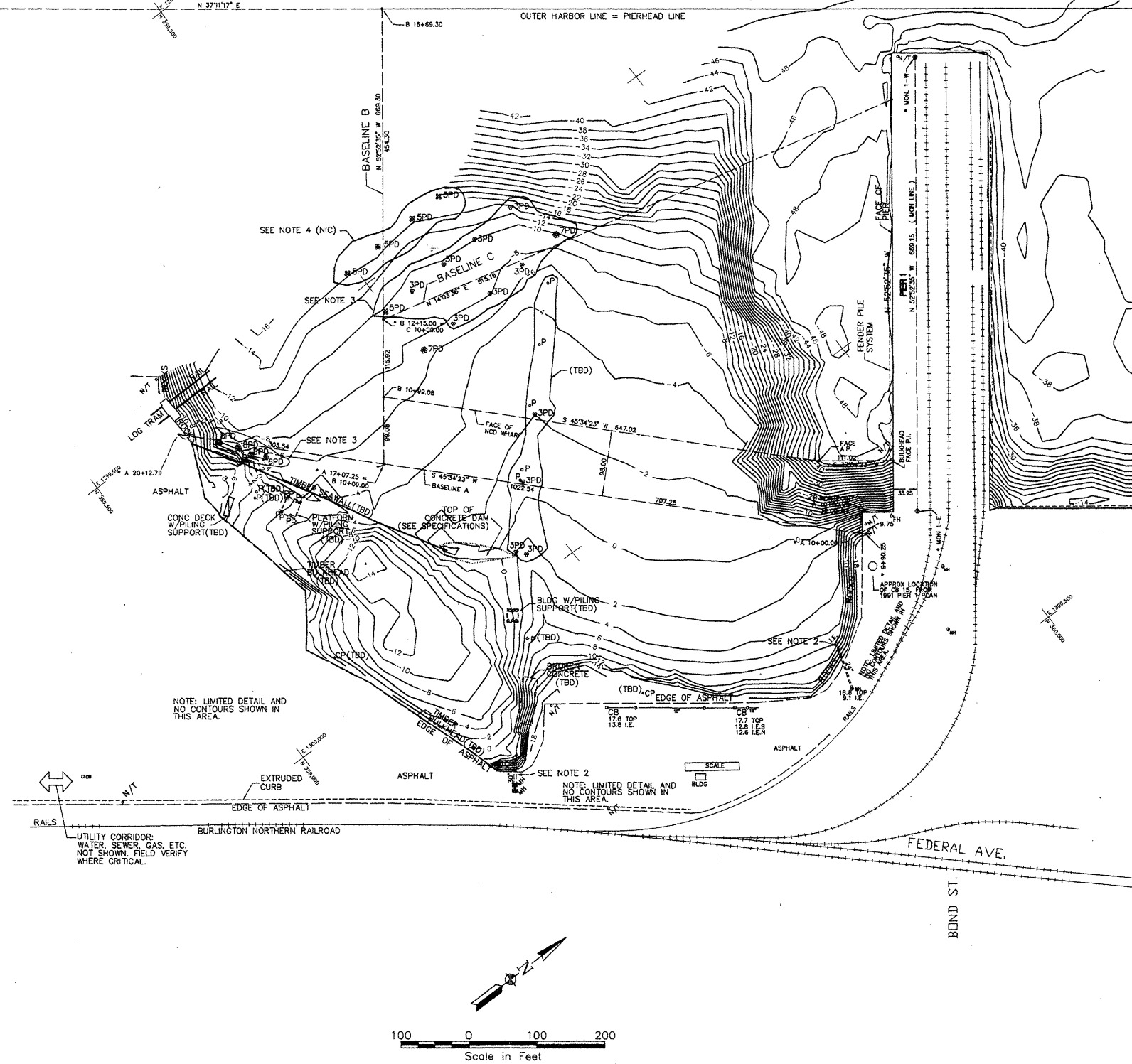


DRAWN BY: BOLLINGER	08/08/96				
DESIGN BY: J. BARDI	08/08/96				
CHECK BY: B. OSTBO	08/08/96				
PROJ ENGR: B. OSTBO	08/08/96				
DATE		AS-BUILT	JAW	BIO	4/3/98
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STAGE 1  
MARINE TERMINAL IMPROVEMENTS  
  
SITE PLAN

DRAWING NO. G-2  
BERGER/ABAM  
PROJECT NO. A96073  
SHEET NO. 3 OF 55

POSSESSION SOUND  
PORT GARDNER BAY



NOTES:

- 1) STRUCTURES, DOLPHINS, PILING AND OTHER ITEMS TO BE DEMOLISHED ARE INDICATED WITH SYMBOL (TBD). REFER TO SECTION 02050 OF THE SPECIFICATIONS FOR DEMOLITION REQUIREMENTS.
- 2) FOR EXTENSION OF STORM DRAIN PIPING SEE DRAWING NO. C-2.
- 3) MULTIPLE-PILE DOLPHINS INDICATED WITH NOTE 3 SHALL BE PULLED AND THE PILING TURNED OVER TO THE PORT. PILING SHALL BE STOCKPILED WHERE DIRECTED BY THE PORT PROJECT MANAGER.
- 4) MULTIPLE-PILE DOLPHINS INDICATED WITH NOTE 4 SHALL NOT BE DISTURBED (NOT IN CONTRACT).
- 5) HORIZONTAL DATUM:  
WASHINGTON GRID SYSTEM, NORTH ZONE (NAD 83), BASED ON GLOBAL POSITIONING SURVEY BY CLARK M. LEEMAN LAND SURVEYING OCT. 23, 1991.  
BENCH MARK:  
BM TIDAL 4: A STANDARD DISK STAMPED "4-1934" IN TOP SE CORNER OF NE ABUTMENT OF RAILROAD BRIDGE OVER HEWITT AVE. ELEVATION = 42.17 FEET (12.853 METERS) MEAN LOWER LOW WATER DATUM. THIS BM = 36.24 FEET NGVD "MEAN SEA LEVEL" DATUM (MLLW-5.93) 1960-1978 TIDAL EPOCH.
- 6) VERTICAL DATUM:  
ELEVATIONS SHOWN ARE IN FEET AND ARE BASED ON MEAN LOWER LOW WATER DATUM (MLLW).
- 7) BATHYMETRIC AND UPLAND SURVEY BY CLARK M. LEEMAN LAND SURVEYING OCT. 1995 AND JUNE 1996.

LEGEND:

- CB CATCH BASIN
- MH MANHOLE
- ◆ PP POWER POLE
- CP CONCRETE POLE
- ⊙ MON MONUMENTS
- P PILE
- ⊕ 3PD 3 PILE DOLPHIN
- N/T NAIL/TAG
- MW MONITOR WELL

NOTE: LIMITED DETAIL AND NO CONTOURS SHOWN IN THIS AREA.

NOTE: LIMITED DETAIL AND NO CONTOURS SHOWN IN THIS AREA.

UTILITY CORRIDOR:  
WATER, SEWER, GAS, ETC.  
NOT SHOWN. FIELD VERIFY  
WHERE CRITICAL.

100 0 100 200  
Scale in Feet



HARTMAN ASSOCIATES, INC.

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DESIGN BY:	REW	08/6/96
CHECK BY:	GLH	08/6/96
PRJ ENGR:	REW	08/6/96
		DATE

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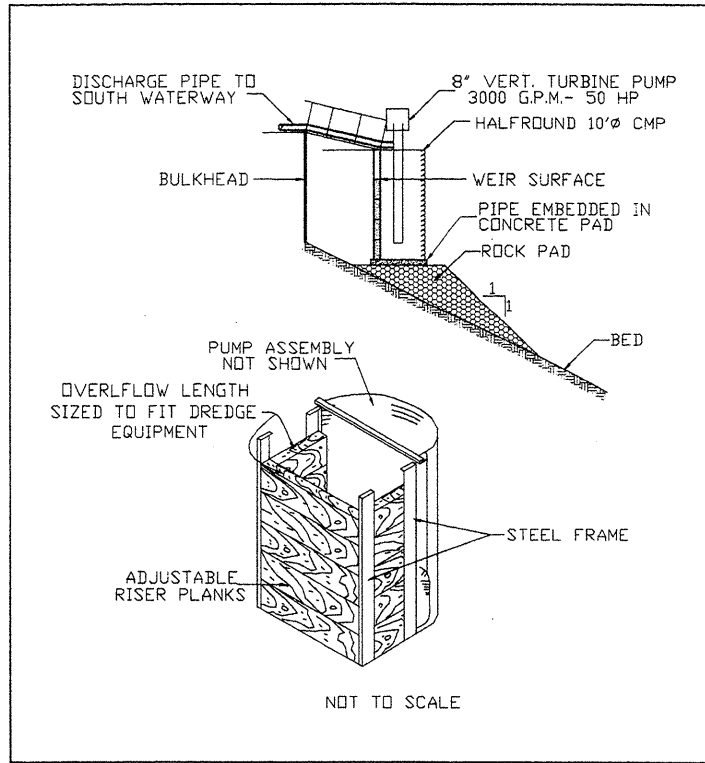
STAGE 1  
MARINE TERMINAL IMPROVEMENTS

DEMOLITION PLAN  
SOUTH WATERWAY AREA

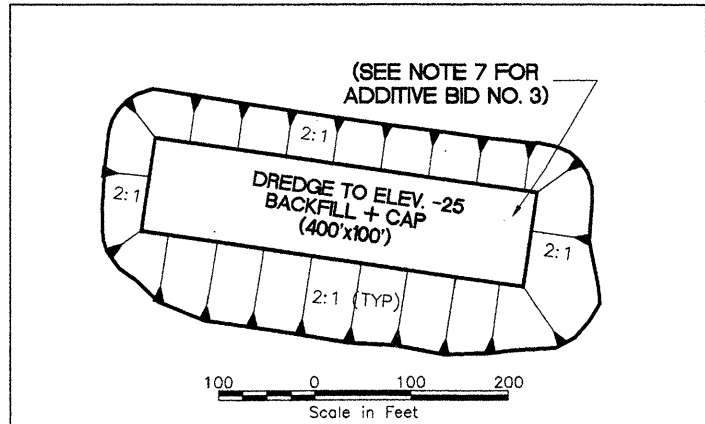
DRAWING NO. DF-1

BERGER/ABAM  
PROJECT NO.

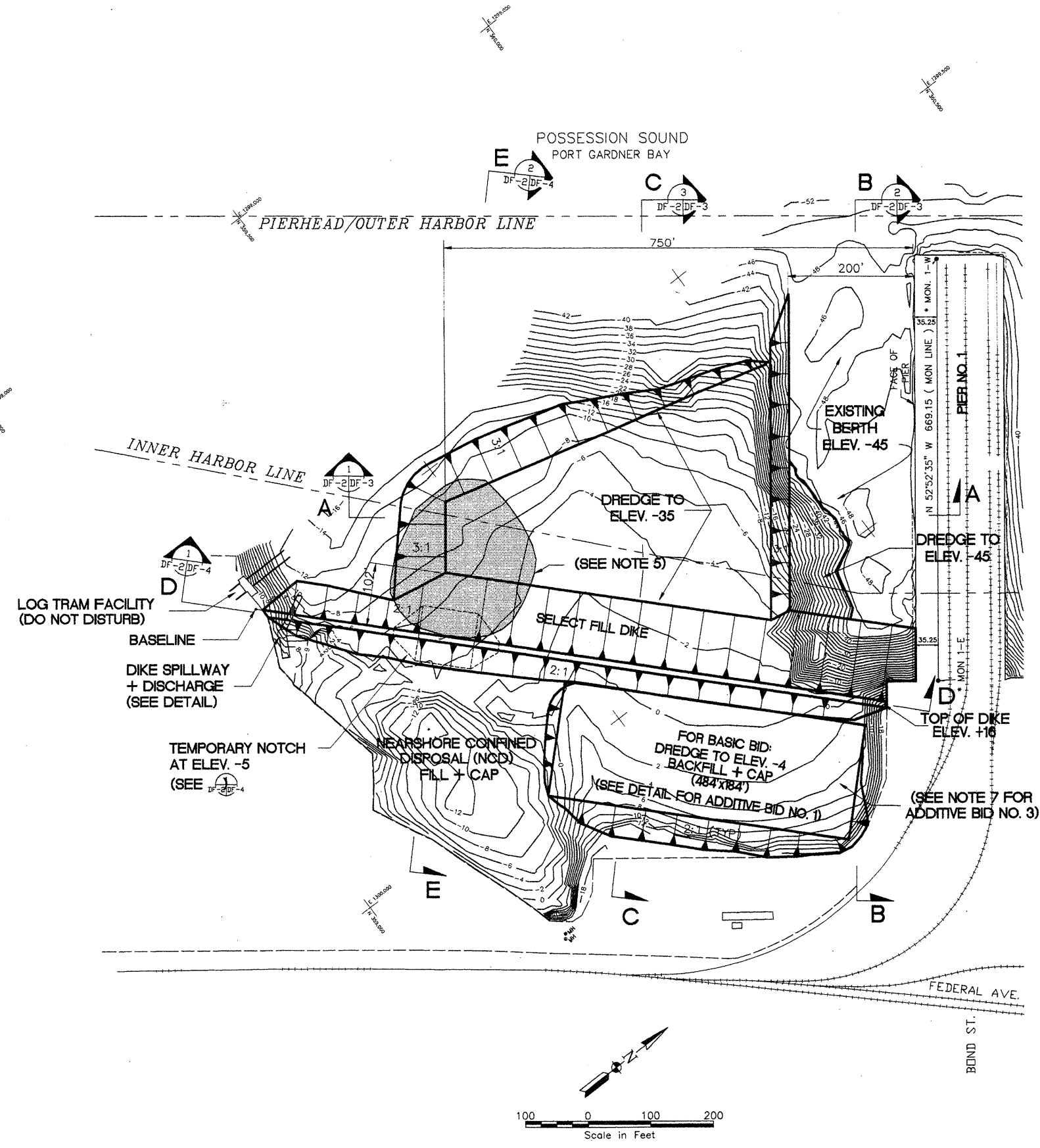
SHEET NO. 1 OF 7



**DROP INLET WEIR AND DISCHARGE FACILITY DETAIL (CONCEPTUAL)**



**BASIC BID WITH ADDITIVE BID NO. 1 DETAIL (SEE SPECIFICATIONS)**

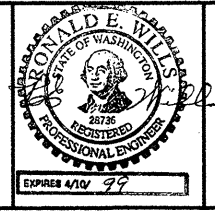


- LEGEND**
- INDICATES SLOPE DIRECTION
  - WOOD DEBRIS
  - CONTOUR - 2' INTERVAL
  - HARBOR/PIERHEAD LINE
  - EDGE OF CONCRETE
  - FENDERPILE SYSTEM

- NOTES:**
- 1) DROP INLET WEIR AND DISCHARGE FACILITY IS CONCEPTUAL. ACTUAL SIZE AND CONFIGURATION DEPEND ON DREDGING EQUIPMENT USED BY THE CONTRACTOR.
  - 2) HORIZONTAL DATUM: WASHINGTON GRID SYSTEM, NORTH ZONE (NAD 83), BASED ON GLOBAL POSITIONING SURVEY BY CLARK M. LEEMAN LAND SURVEYING OCT. 23, 1991. BENCH MARK: BM TIDAL 4: A STANDARD DISK STAMPED "4-1934" IN TOP SE CORNER OF NE ABUTMENT OF RAILROAD BRIDGE OVER HEWITT AVE. ELEVATION = 42.17 FEET (12.853 METERS) MEAN LOWER LOW WATER DATUM. THIS BM = 36.24 FEET NGVD "MEAN SEA LEVEL" DATUM (MLLW-5.93) 1960-1978 TIDAL EPOCH.
  - 3) VERTICAL DATUM: ELEVATIONS SHOWN ARE IN FEET AND ARE BASED ON MEAN LOWER LOW WATER DATUM (MLLW).
  - 4) BATHYMETRIC AND UPLAND SURVEY BY CLARK M. LEEMAN LAND SURVEYING OCT. 1995 AND JUNE 1996.
  - 5) WOOD DEBRIS TO UPLAND DISPOSAL ON PORT PROPERTY WHERE DIRECTED BY PORT PROJECT MANAGER.
  - 6) FOR DREDGING SEQUENCE OF SOUTH WATERWAY AREA SEE SECTION 02482 OF SPECIFICATIONS.
  - 7) FOR DESCRIPTION OF ADDITIVE BID NO. 3 PROVIDING FOR UPLAND DISPOSAL OF SEDIMENTS DREDGED BEHIND NCD DIKE SEE SECTION 01025 OF SPECIFICATIONS.



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 Seattle, WA 98104  
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DRAWN BY:	LMB	08/06/96			
DESIGN BY:	REW	08/06/96			
CHECK BY:	GLH	08/06/96			
PROJ ENGR:	REW	08/06/96			
	DATE				
MARK	REVISION	BY	APP.	DATE	

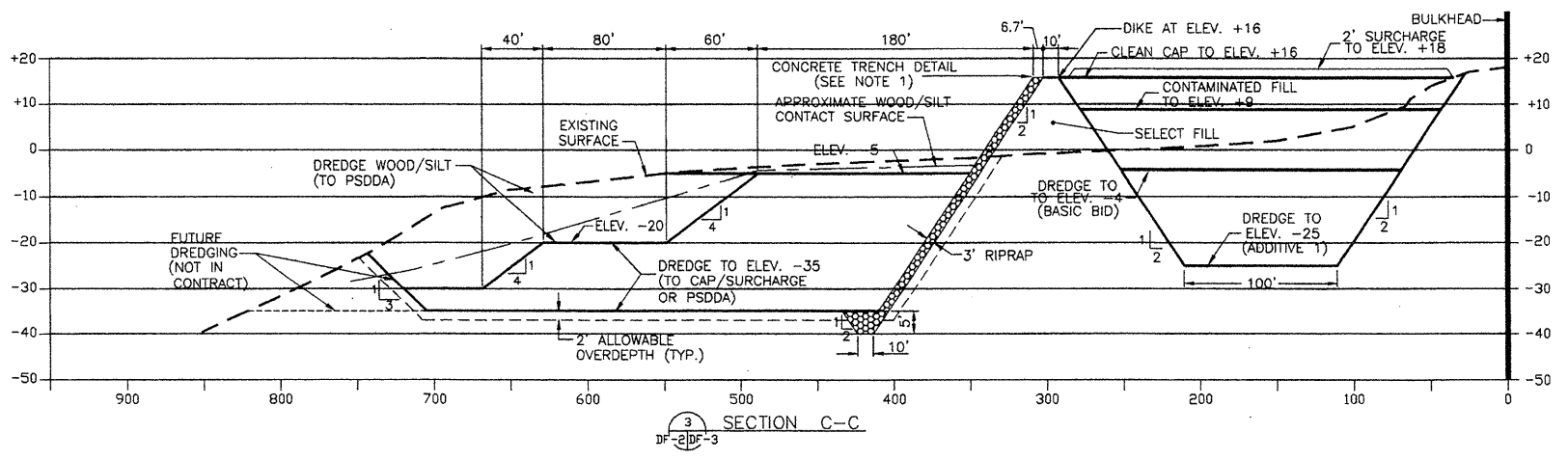
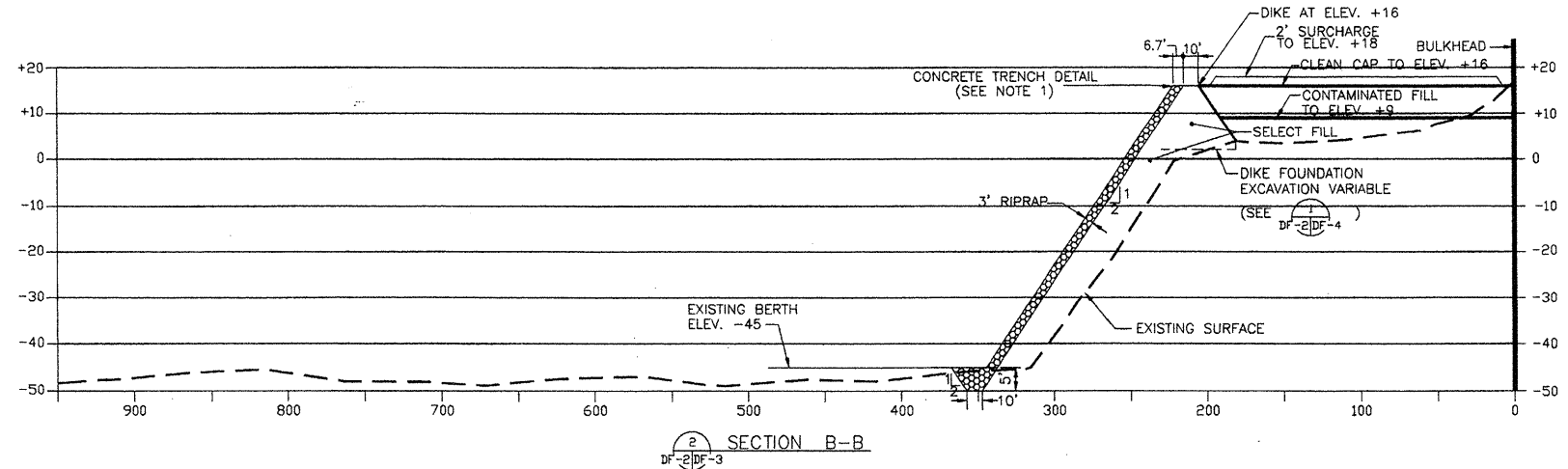
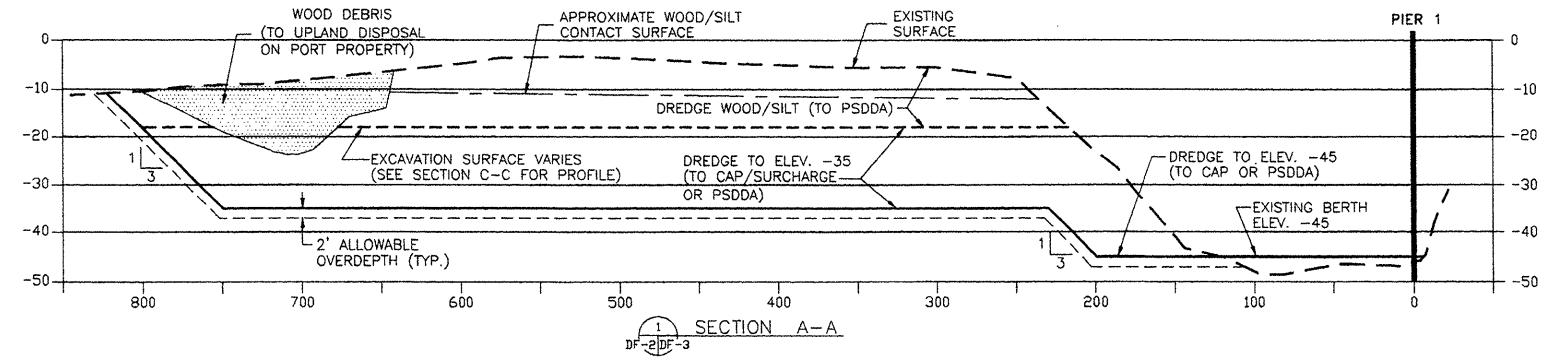
**STAGE 1  
 MARINE TERMINAL IMPROVEMENTS**

**DREDGE and FILL PLAN  
 SOUTH WATERWAY AREA**

DRAWING NO. **DF-2**

BERGER/ABAM  
 PROJECT NO. \_\_\_\_\_

SHEET NO. **2** OF **7**



**LEGEND**

- APPROX. BOTTOM OF WOOD/SILT
- 1995 OR 1996 EXISTING SURFACE
- PROPOSED DREDGE

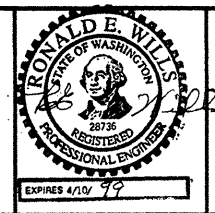
HORIZONTAL SCALE: 1"=60'  
VERTICAL SCALE: 1"=20'

**NOTE:**

- 1) CONCRETE TRENCH INSTALLATION AND MODIFIED RIPRAP DETAIL NOT SHOWN (SEE DRAWING NO. S-8).
- 2) ELEVATIONS SHOWN ARE IN FEET AND ARE BASED ON MEAN LOWER LOW WATER DATUM (MLLW)
- 3) FOR FILL SURCHARGE LAYOUT - SEE DRAWING (DF-7).



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DESIGN BY:	REW	08/06/96				
CHECK BY:	GLH	08/06/96				
PROJ ENGR:	REW	08/06/96				
		DATE				
			MARK	REVISION	BY	APP. DATE

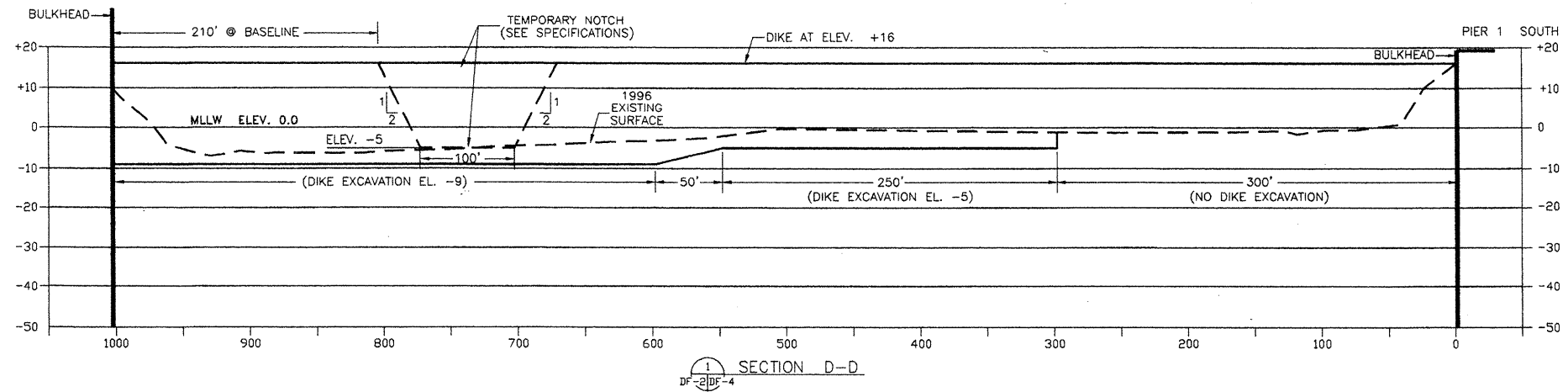
**STAGE 1**  
**MARINE TERMINAL IMPROVEMENTS**

**SECTIONAL VIEWS 1**  
**SOUTH WATERWAY AREA**

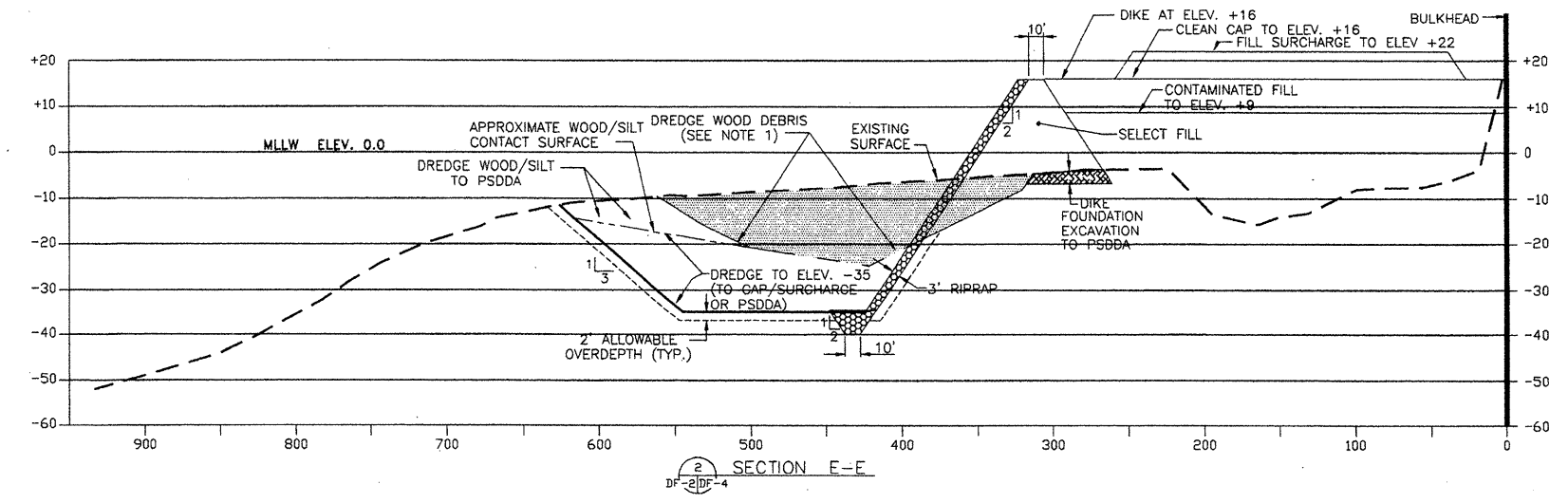
DRAWING NO. **DF-3**

BERGER/ABAM  
PROJECT NO. \_\_\_\_\_

SHEET NO. **3** OF **7**



SECTION D-D  
DF-2/DF-4



SECTION E-E  
DF-2/DF-4

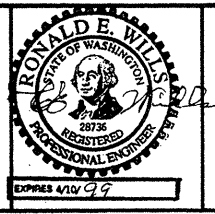
**LEGEND**  
 - - - - - APPROX. BOTTOM OF WOOD/SILT  
 - - - - - 1995 OR 1996 EXISTING SURFACE  
 - - - - - PROPOSED DREDGE

HORIZONTAL SCALE: 1"=60'  
 VERTICAL SCALE: 1"=20'

**NOTE:**  
 1) WOOD DEBRIS TO UPLAND DISPOSAL ON PORT PROPERTY WHERE DIRECTED BY PORT PROJECT MANAGER.  
 2) ELEVATIONS SHOWN ARE IN FEET AND ARE BASED ON MEAN LOWER LOW WATER DATUM (MLLW)  
 3) FOR FILL SURCHARGE LAYOUT - SEE DRAWING (DF-7).



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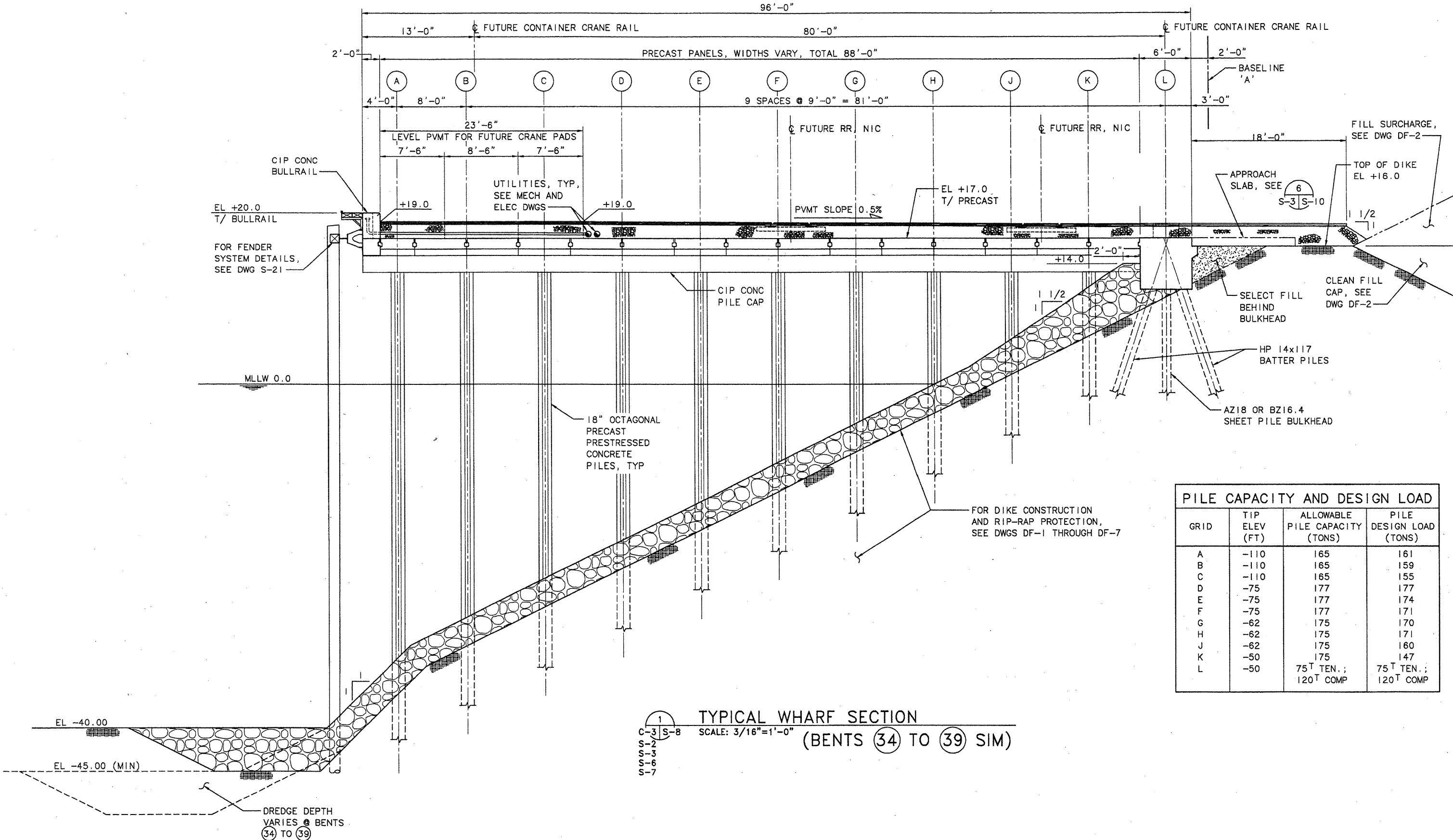
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DESIGN BY:	REW	08/06/96
CHECK BY:	GLH	08/06/96
PRJ ENGR:	REW	08/06/96
		DATE

MARK	REVISION	BY	APP.	DATE

STAGE 1  
 MARINE TERMINAL IMPROVEMENTS  
 SECTIONAL VIEWS 2  
 SOUTH WATERWAY AREA

DRAWING NO. **DF-4**  
 BERGER/ABAM  
 PROJECT NO. \_\_\_\_\_  
 SHEET NO. **4** OF **7**





PILE CAPACITY AND DESIGN LOAD			
GRID	TIP ELEV (FT)	ALLOWABLE PILE CAPACITY (TONS)	PILE DESIGN LOAD (TONS)
A	-110	165	161
B	-110	165	159
C	-110	165	155
D	-75	177	177
E	-75	177	174
F	-75	177	171
G	-62	175	170
H	-62	175	171
J	-62	175	160
K	-50	175	147
L	-50	75 <sup>T</sup> TEN.; 120 <sup>T</sup> COMP	75 <sup>T</sup> TEN.; 120 <sup>T</sup> COMP

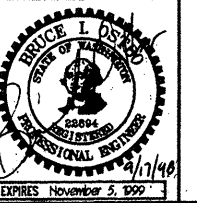
1  
C-3 S-8  
S-2  
S-3  
S-6  
S-7

**TYPICAL WHARF SECTION**  
SCALE: 3/16"=1'-0"  
(BENTS 34 TO 39 SIM)

PLOTTED: Fri Sep 13 1998 6:48am FILENAME: V:\1996\A96073\STRUCTS-8.dwg SCALE: 64



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DRAWN BY: R. MOHN	08/08/96				
DESIGN BY: J. BARDI	08/08/96				
CHECK BY: B. OSTBO	08/08/96	AS-BUILT	JAW	BIO	4/3/98
PROJ ENGR: B. OSTBO	08/08/96	ADD APPROACH SLAB, EXTEND PVMT	B10	B10	10/97
		ADD CRANE, MOVE UTILITIES	B10	BCM	11/96
		ADDENDUM NO. 1	B10	BCM	9/4/96
		MARK	REVISION	BY	APP. DATE

STAGE 1  
MARINE TERMINAL IMPROVEMENTS  
TYPICAL WHARF CROSS SECTION

DRAWING NO. **S-8**  
BERGER/ABAM  
PROJECT NO. **A96073**  
SHEET NO. **25** OF **55**