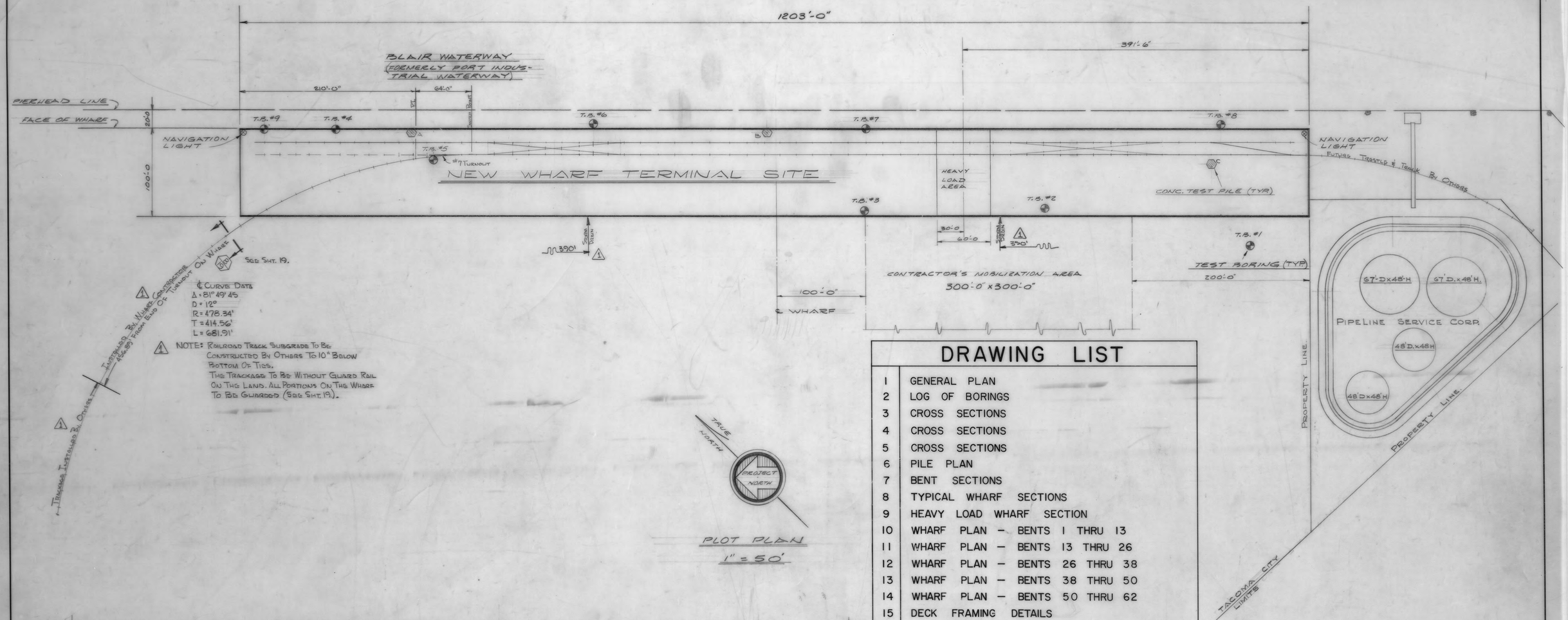
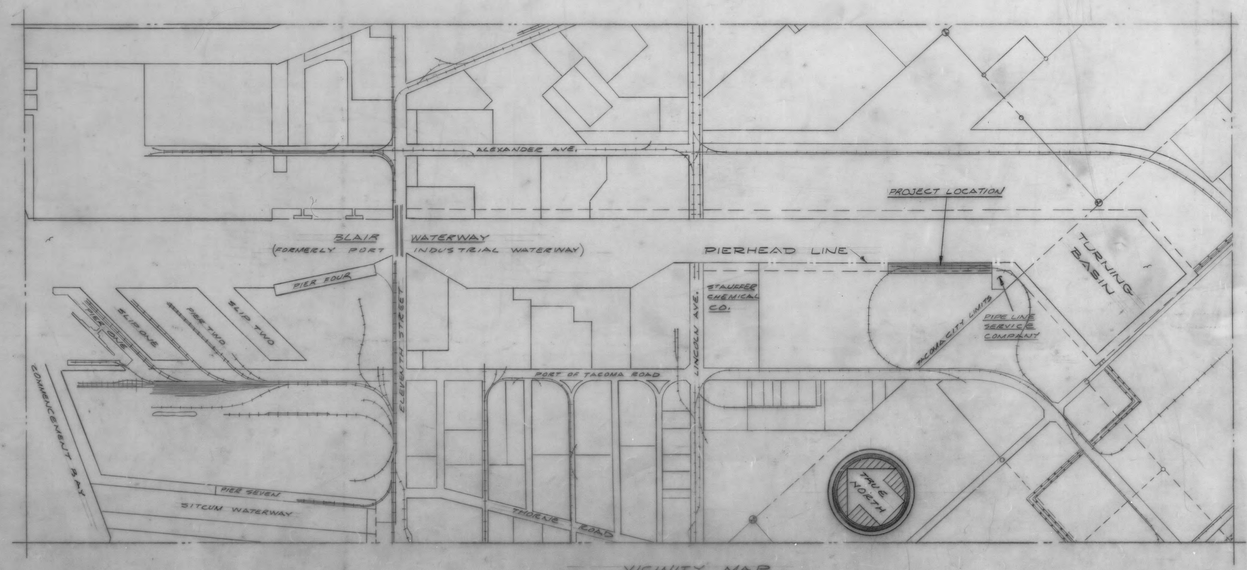


PLOT PLAN
1" = 50'

DRAWING LIST

1	GENERAL PLAN
2	LOG OF BORINGS
3	CROSS SECTIONS
4	CROSS SECTIONS
5	CROSS SECTIONS
6	PILE PLAN
7	BENT SECTIONS
8	TYPICAL WHARF SECTIONS
9	HEAVY LOAD WHARF SECTION
10	WHARF PLAN – BENTS 1 THRU 13
11	WHARF PLAN – BENTS 13 THRU 26
12	WHARF PLAN – BENTS 26 THRU 38
13	WHARF PLAN – BENTS 38 THRU 50
14	WHARF PLAN – BENTS 50 THRU 62
15	DECK FRAMING DETAILS
16	DECK FRAMING DETAILS
17	DECK PANEL DETAILS
18	PRESTRESSED CONCRETE PILE DETAILS
19	TRACK PLAN & DETAILS
20	FENDER SYSTEM & TIMBER DETAILS
21	WHARF UTILITY PLAN
22	UTILITY DETAILS
23	UTILITY DRAINAGE & GRADING PLAN
24	CROSS SECTIONS WEST OF THE WHARF
25	COMPOSITE DECK PANEL – ALTERNATE
9A	HEAVY LOAD WHARF SECTION REVISION

16A W 12"x12" CAP @ BACK OF WHARF



VICINITY MAP
1" = 800'

REFERENCE: DRAWING ENTITLED 'PORT OF TACOMA INDUSTRIAL DEVELOPMENT DISTRICT' DRAWING NO. EP-1894-8, REVISED APRIL 29, 1969.

MARK	REVISION	APP.	DATE
2	DWG. NO. 9A ADDED TO LIST.	WM	3-8-71
1	NOTES ON TRACK & STORM DRAINS	PLM	7-10-70

HARRY L. MARSHALL STATE OF WASHINGTON 1521 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER
FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
GENERAL PLAN

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
SAM	SAM
CHECKED	DATE
JDH	6-18-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
1	2
EP-1894-16	

BORING #1

ELEV. +19.66'

- BROWNISH GRAY SAND WITH OCCASIONAL THIN LENSES OF SILT (LOOSE) (FILL)
- GRAVISH BROWN SANDY SILT WITH ORGANIC MATTER (SOFT) (OLD BOTTOM DEPOSIT)
- GRAY SAND WITH TRACE OF SILT AND OCCASIONAL ORGANIC MATTER (LOOSE TO MEDIUM DENSE)
- RANGE OF WATER LEVEL FLUCTUATION OBSERVED DURING INVESTIGATION
- DARK GRAY SILTY SAND WITH OCCASIONAL ORGANIC MATTER (MEDIUM DENSE) DARK GRAY SAND (MEDIUM DENSE)
- DARK GRAY SAND WITH TRACE OF SILT (MEDIUM DENSE)
- SMALL POCKET OR LENS OF GRAY CLAYEY SILT
- OCCASIONAL SMALL POCKET OF ORGANIC MATTER & SILT
- GRAY VERY FINE SANDY SILT (MEDIUM STIFF)
- GRAY SILTY SAND WITH SHELL FRAGMENTS (MEDIUM DENSE TO DENSE) DARK GRAY SILTY SAND WITH SHELL FRAGMENTS (MEDIUM DENSE TO DENSE)
- DARK GRAY SILTY SAND WITH TRACE OF ORGANIC MATTER (MEDIUM DENSE)
- DARK GRAY SAND WITH SOME SILT (TRACE OF ORGANIC MATTER (DENSE)

BORING COMPLETED 8-7-69

BORING #2

ELEV. +19.48'

- DARK GRAY SAND (LOOSE) (FILL) OCCASIONAL THIN LENSES OF SILT
- DARK GRAY SILTY VERY FINE SAND WITH OCCASIONAL ORGANIC MATTER (LOOSE)
- BROWNISH GRAY SILT WITH ORGANIC MATTER & OCCASIONAL SAND LENSES (SOFT)
- RANGE OF WATER LEVEL FLUCTUATIONS OBSERVED DURING INVESTIGATION
- DARK GRAY SAND (LOOSE TO MED. DENSE)
- GRAY SANDY SILT WITH OCCASIONAL ORGANIC MATTER (SOFT TO MEDIUM STIFF)
- DARK GRAY SILTY SAND (MEDIUM DENSE)
- GRAY FINE SANDY SILT WITH OCCASIONAL ORGANIC MATTER (SOFT TO MEDIUM STIFF)
- DARK GRAY SILTY SAND WITH OCCASIONAL ORGANIC MATTER (MEDIUM DENSE TO DENSE)
- DARK GRAY SAND WITH OCCASIONAL SHELL FRAGMENTS (DENSE)
- GRAY FINE SANDY SILT WITH SILTY SAND & SAND (MEDIUM STIFF TO STIFF)
- OCCASIONAL SHELL FRAGMENTS DARK GRAY SAND WITH SOME SILT (DENSE)

BORING COMPLETED 8-12-69

BORING #3

ELEV. +18.67'

- DARK GRAY FINE SAND WITH OCCASIONAL THIN LENSES OF SILT & SHELL FRAGMENTS (LOOSE) (FILL)
- GRAY SILT W/ORGANIC MATTER (SOFT) DARK GRAY SILTY FINE SAND (LOOSE TO MEDIUM DENSE)
- GRAY SILT WITH ORGANIC MATTER AND SOME FINE SAND (SOFT)
- RANGE OF WATER LEVEL FLUCTUATIONS OBSERVED DURING INVESTIGATION
- DARK GRAY SAND (MEDIUM DENSE TO DENSE)
- DARK GRAY SILTY FINE SAND WITH LENSES OF SILT & OCCASIONAL ORGANIC MATTER (MEDIUM DENSE)
- DARK GRAY SAND (MEDIUM DENSE TO DENSE)
- OCCASIONAL SMALL LENSES OF SILT
- OCCASIONAL SILT
- DARK GRAY SILTY SAND (DENSE)
- DARK GRAY SAND (DENSE)
- DARK GRAY SILTY SAND (MEDIUM DENSE)
- DARK GRAY SAND WITH OCCASIONAL WOOD FRAGMENTS (DENSE)
- GRAY SILT WITH OCCASIONAL SANDY SILT & SHELL FRAGMENTS (SOFT TO MEDIUM STIFF)
- DARK GRAY SAND WITH OCCASIONAL SHELL FRAGMENTS & SOME SILT (DENSE)
- LENSES OF SILTY SAND
- DARK GRAY SILTY SAND WITH LENSES OF SILT (DENSE)
- GRAY SILT WITH OCCASIONAL LENSES & POCKETS OF SANDY SILT (SOFT TO MEDIUM STIFF)
- LENSES OF SAND WITH SHELL FRAGMENTS
- MANY SHELL FRAGMENTS
- DARK GRAY SAND WITH OCCASIONAL LENSES OF SILTY SAND (DENSE)
- OCCASIONAL ORGANIC MATTER & SHELL FRAGMENTS

BORING COMPLETED 8-14-69

BORING COMPLETED 1-13-70

BORING #4

WATER

- GRAY ORGANIC SILT WITH LENSES OF SILTY SAND (SOFT)
- DARK GRAY SILTY SAND WITH OCCASIONAL SAND AND SHELL FRAGMENTS (LOOSE TO MEDIUM DENSE)
- DARK GRAY SAND WITH OCCASIONAL SHELL FRAGMENTS & ORGANIC MATTER (MEDIUM DENSE TO DENSE)
- GRAY SANDY SILT WITH SOME SAND AND ORGANIC MATTER (SOFT TO MEDIUM STIFF)

BORING #5

WATER

- GRAY SILT WITH ORGANIC MATTER & OCCASIONAL SAND (SOFT)
- SHELL FRAGMENTS
- DARK GRAY SILTY SAND (MEDIUM DENSE)
- GRAY SANDY SILT W/ORGANIC MATTER & SHELL FRAG. (SOFT TO MEDIUM STIFF)
- DARK GRAY SAND WITH SOME SILTY SAND & SHELL FRAGMENTS (MEDIUM DENSE TO DENSE)
- OCCASIONAL THIN LENSES OF SILT WITH ORGANIC MATTER
- DARK GRAY SILTY SAND WITH OCCASIONAL LENSES OF SILT
- GRAY SILT WITH OCCASIONAL LENSES OF SILTY SAND (SOFT TO MEDIUM STIFF)
- DARK GRAY SILTY SAND WITH SHELL FRAGMENTS AND SOME ORGANIC MATTER (DENSE)
- OCCASIONAL LENSES OF SILTY SAND

BORING COMPLETED 1-21-70

BORING #6

WATER

- GRAY SILT WITH ORGANIC MATTER (SOFT)
- DARK GRAY SAND WITH SHELLS AND LENSES OF GRAY SANDY SILT (LOOSE)
- DARK GRAY SILTY SAND (LOOSE TO MEDIUM DENSE)
- DARK GRAY SAND WITH LENSES OF SILTY SAND AND OCCASIONAL ORGANIC MATTER (MEDIUM DENSE)
- SHELL FRAGMENTS
- DARK GRAY SANDY SILT WITH SHELL FRAGMENTS AND SOME ORGANIC MATTER (SOFT TO MEDIUM STIFF)
- DARK GRAY SAND (MEDIUM DENSE TO DENSE)
- DARK GRAY SILTY SAND WITH OCCASIONAL LENSES OF SILTY SAND (MEDIUM DENSE TO DENSE)
- LESS SILT
- GRAY SILT WITH OCCASIONAL LENSES OF SANDY SILT (MEDIUM STIFF)
- DARK GRAY SAND WITH SHELL FRAGMENTS (MEDIUM DENSE TO DENSE)
- LENSES OF SANDY SILT
- GRAY SILT WITH SOME SANDY SILT (MEDIUM STIFF)
- ALTERNATING LENSES OF DARK GRAY SILTY SAND & SANDY SILT (MEDIUM DENSE TO DENSE)
- DARK GRAY SAND WITH SMALL LENSES & POCKETS OF SILT (DENSE)
- OCCASIONAL ORGANIC MATTER

BORING COMPLETED 1-15-70

BORING #7

WATER

- DARK GRAY SILTY SAND WITH ORGANIC MATTER (LOOSE)
- DARK GRAY SAND WITH TRACE OF SILT (MEDIUM DENSE TO DENSE)
- SHELL FRAGMENTS
- GRAY SILT WITH THIN LAYERS OR LENSES OF SILTY SAND (MEDIUM STIFF) SHELL FRAGMENTS
- DARK GRAY SAND (MEDIUM DENSE TO DENSE)
- GRAY SILT WITH OCCASIONAL LENSES OF SILTY SAND AND SHELL FRAGMENTS (SOFT TO MED. STIFF)
- DARK GRAY SILTY SAND WITH SHELL FRAGMENTS (DENSE)
- DARK GRAY SILTY FINE SAND WITH SHELL FRAGMENTS (DENSE)
- DARK GRAY SAND WITH SHELL FRAGMENTS & SOME SILT (DENSE)
- GRAY SILT WITH SOME SAND (SOFT TO MEDIUM STIFF)
- DARK GRAY SAND WITH SHELL FRAGMENTS (DENSE)

BORING COMPLETED 1-16-70

BORING #8

WATER

- DARK GRAY SILTY SAND WITH SHELL FRAGMENTS (LOOSE TO MEDIUM DENSE)
- OCCASIONAL LENSES AND POCKETS OF SANDY SILT
- DARK GRAY SAND (DENSE)
- DARK GRAY SANDY SILT (MEDIUM STIFF)
- DARK GRAY SAND WITH TRACE OF SILT AND MANY SHELL FRAGMENTS AND OCCASIONAL ORGANIC MATTER (DENSE)
- GRAY SILTY SAND WITH LENSES OF SANDY SILT & SAND (MEDIUM DENSE) SHELL FRAGMENTS
- GRAY SILT (SOFT TO MEDIUM STIFF) GRADING TO SANDY SILT
- DARK GRAY SILTY SAND (MEDIUM DENSE)
- GRAY SILT (MEDIUM STIFF TO STIFF)
- DARK GRAY SAND WITH LENSES OF SILTY SAND & SHELL FRAGMENTS (MEDIUM DENSE TO DENSE)
- LESS SILT
- DARK GRAY SILTY SAND WITH MANY SHELL FRAGMENTS (DENSE)
- GRAY SANDY SILT WITH SHELL FRAGMENTS (MEDIUM STIFF)
- DARK GRAY SAND WITH OCCASIONAL SILTY SAND AND SOME ORGANIC MATTER (DENSE)
- OCCASIONAL SHELL FRAGMENTS

BORING COMPLETED 1-20-70

BORING #9

WATER

- DARK GRAY SAND WITH LENSES OF SILTY SAND (LOOSE)
- DENSER
- GRAY SILT WITH SOME FINE SAND (SOFT TO MEDIUM STIFF)
- OCCASIONAL ORGANIC MATTER
- DARK GRAY SAND WITH SOME SILT (DENSE)
- MORE SILT
- GRAY SILT WITH LENSES OF SANDY SILT (SOFT TO MEDIUM STIFF)
- OCCASIONAL SILTY SAND
- DARK GRAY SAND WITH SOME SILT AND MANY SHELLS (DENSE)
- LENSES OF SILT WITH MANY SHELL FRAGMENTS
- GRAY SILT WITH SOME SILTY SAND AND MANY SHELL FRAGMENTS (MEDIUM STIFF)
- DARK GRAY SAND WITH OCCASIONAL SILTY SAND AND SOME ORGANIC MATTER (DENSE)
- LENSES OF SANDY SILT

BORING COMPLETED 1-22-70

ELEVATION IN FEET

+20 +15 +10 +5 MLLW 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60 -65 -70 -75 -80 -85 -90 -95 -100 -105 -110 -115 -120 -125 -130 -135 -140 -145 -150 -155 -160 -165 -170

AS BORED & COMPILED BY DAMES & MOORE, CONSULTANTS IN APPLIED EARTH SCIENCES. THESE BORINGS HAVE BEEN MADE IN THE USUAL MANNER & RECORDED IN GOOD FAITH, BUT THERE IS NO GUARANTEE EXPRESSED OR IMPLIED, THAT THE DEPTHS OR CHARACTER OF THE MATERIAL HAVE BEEN CORRECTLY INDICATED.

ELEVATIONS ARE IN FEET & REFER TO MEAN LOWER LOW WATER U.S. COAST & GEODETIC SURVEY TIDE CHART DATUM.

HARRY L. MARSHALL STATE OF WASHINGTON 1321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

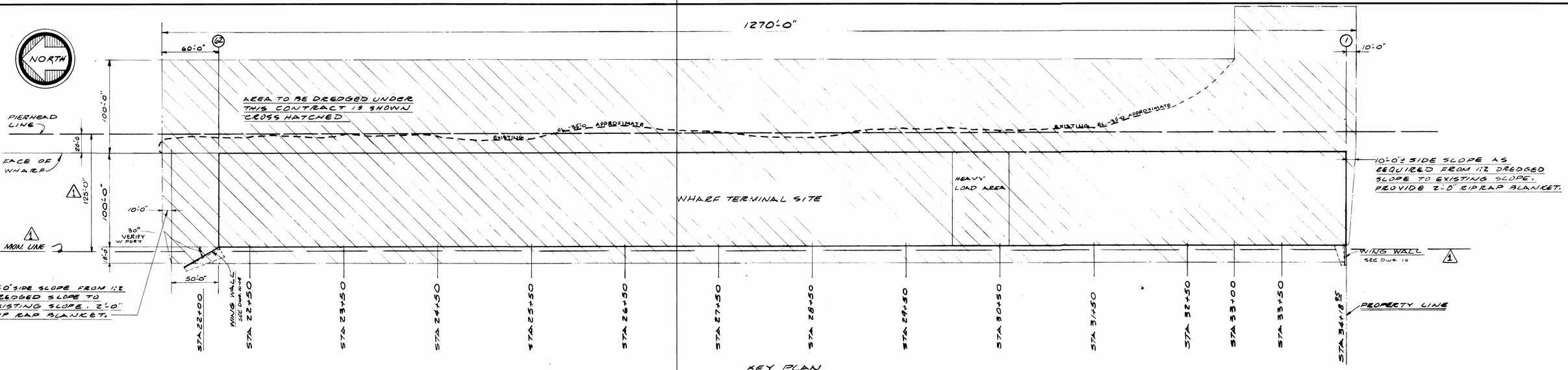
CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

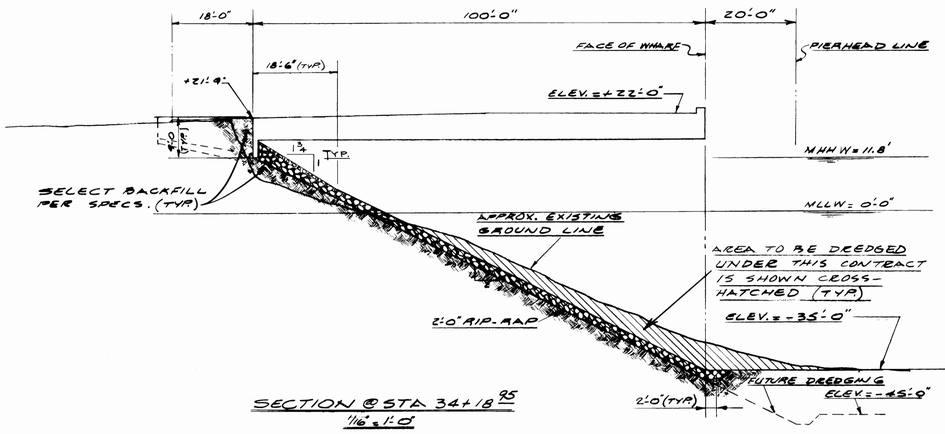
LOG OF BORINGS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	JDH
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
2	
EP-1895-16	

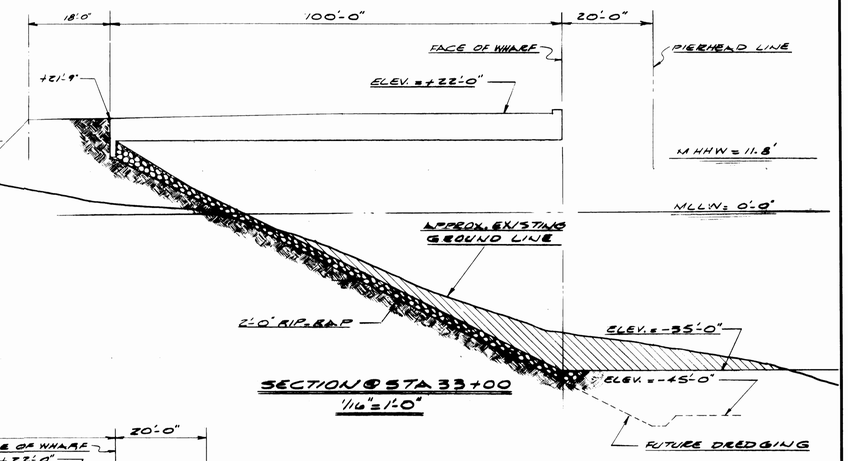


KEY PLAN
1" = 50'-0"

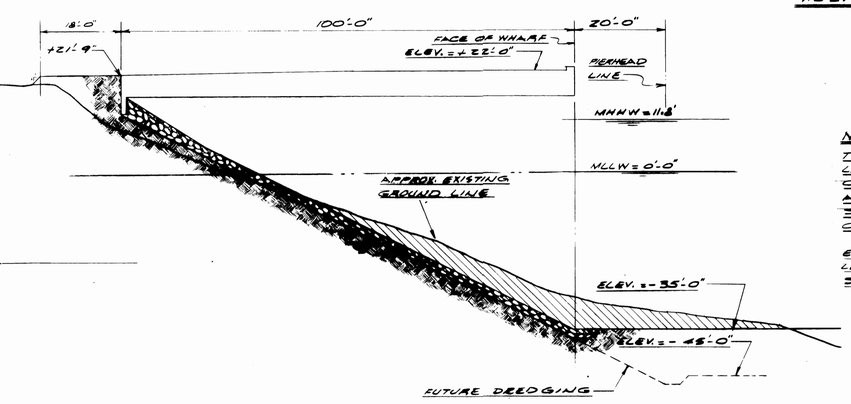


SECTION @ STA 34+18.85
1/16" = 1'-0"

SECTION @ STA 33+50
1/16" = 1'-0"



SECTION @ STA 33+00
1/16" = 1'-0"



SECTION @ STA 32+50
1/16" = 1'-0"

NOTE

THESE SECTIONS HAVE BEEN DEVELOPED FROM THE LATEST SURVEY BY THE PORT OF TACOMA DWG. NO EP-1878-18 REVISED 12-3-69. HOWEVER THEIR ACCURACY IS NOT GUARANTEED AND THEY ARE SHOWN ONLY TO INDICATE THE GENERAL CONDITIONS AND THE SCOPE OF THE WORK.

ELEVATIONS ARE IN FEET & REFER TO 0.0 MEAN LOWER LOW WATER U.S. COAST & GEODETIC SURVEY TIDE CHART DATUM.

MARK	REVISION	APP.	DATE
1	ADDED AREA MON LINE DIMENSION	RPS	8-28-70

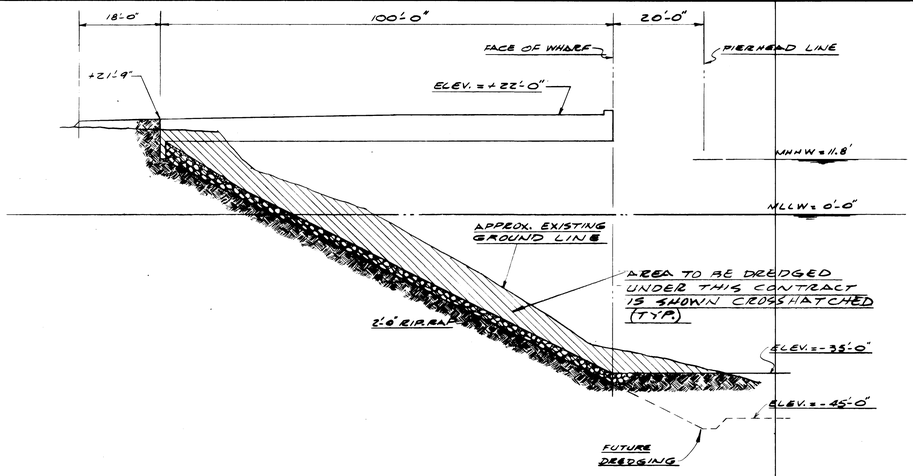
HARRY L MARSHALL STATE OF WASHINGTON 1221 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER
FIELD BOOK

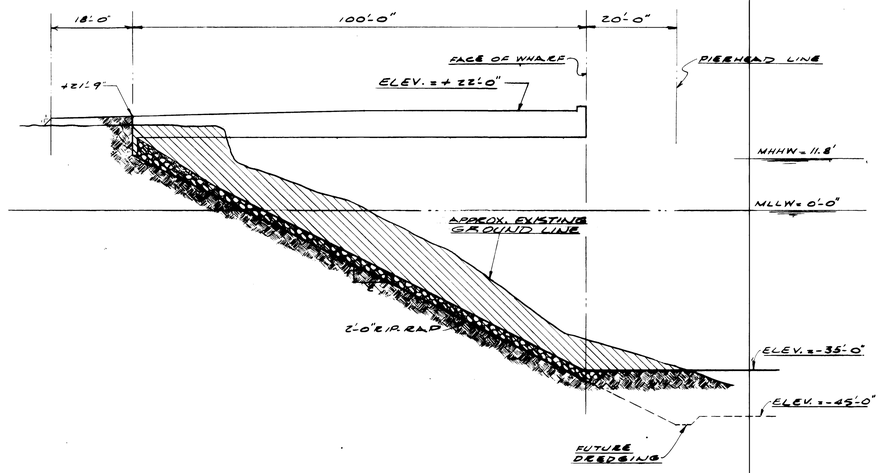
PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
CROSS SECTIONS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

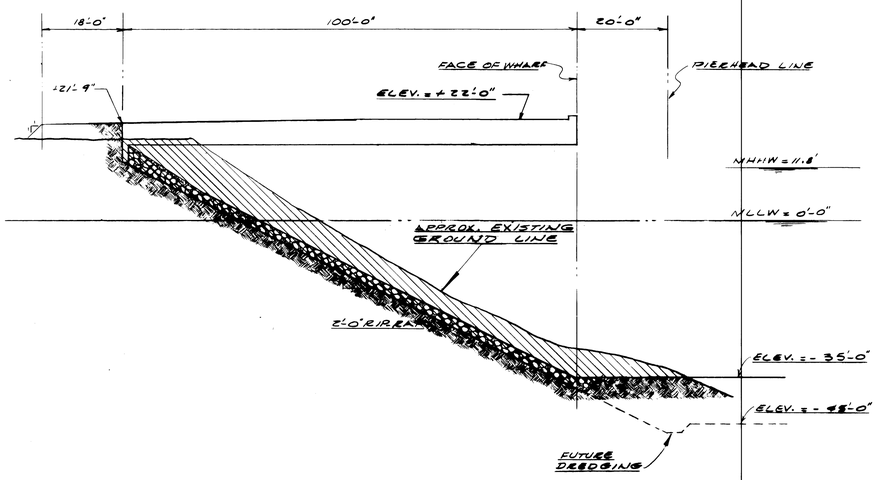
JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JDH	5-18-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
3	
EP-1896-16	



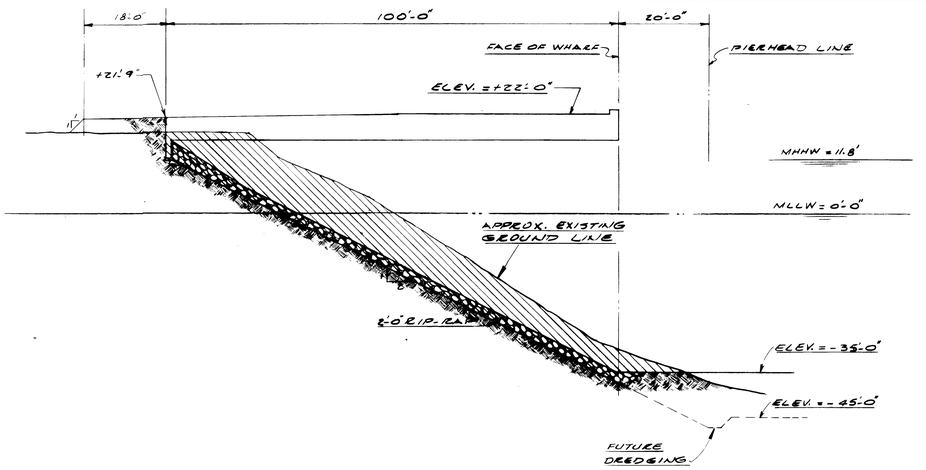
SECTION @ STA 31+50
1/16" = 1'-0"



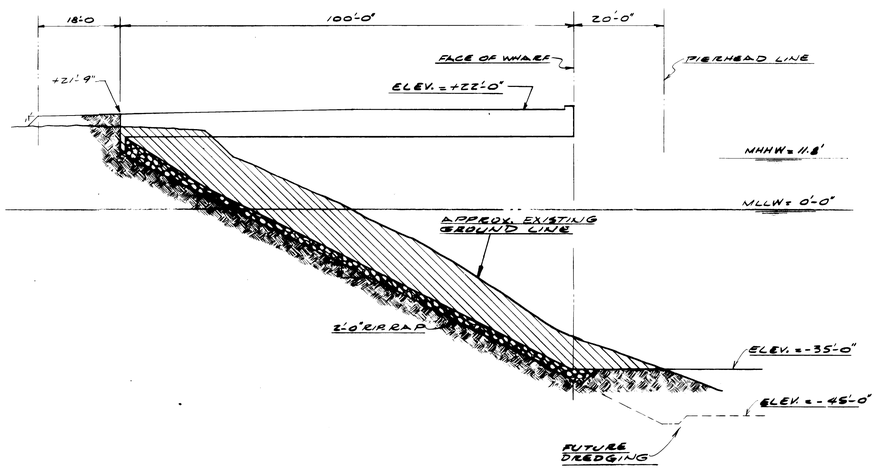
SECTION @ STA 30+50
1/16" = 1'-0"



SECTION @ STA 29+50
1/16" = 1'-0"



SECTION @ STA 28+50
1/16" = 1'-0"



SECTION @ STA 27+50
1/16" = 1'-0"

HARRY L. MARSHALL — STATE OF WASHINGTON — 9381 — REGISTERED PROFESSIONAL ENGINEER

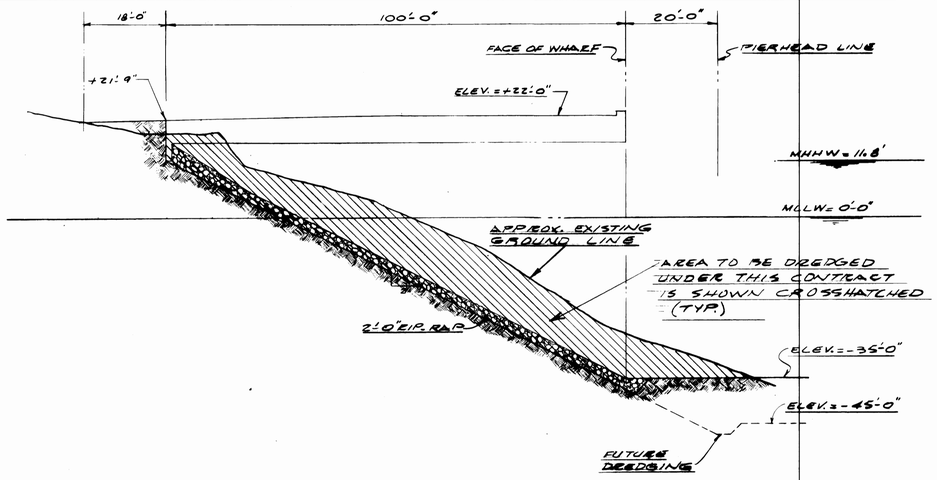
APPROVED 6-18-70 DATE
CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
CROSS SECTIONS

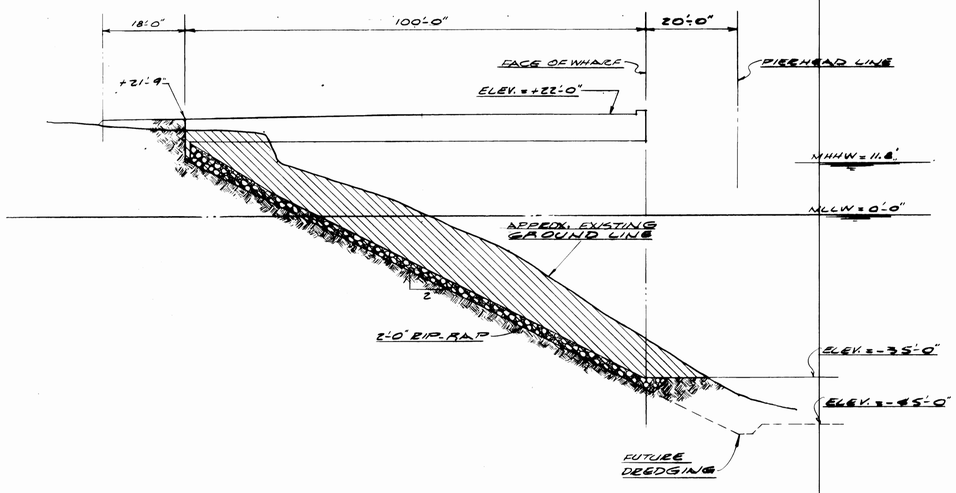
MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JDH	5-18-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
4	
EP-1897-16	



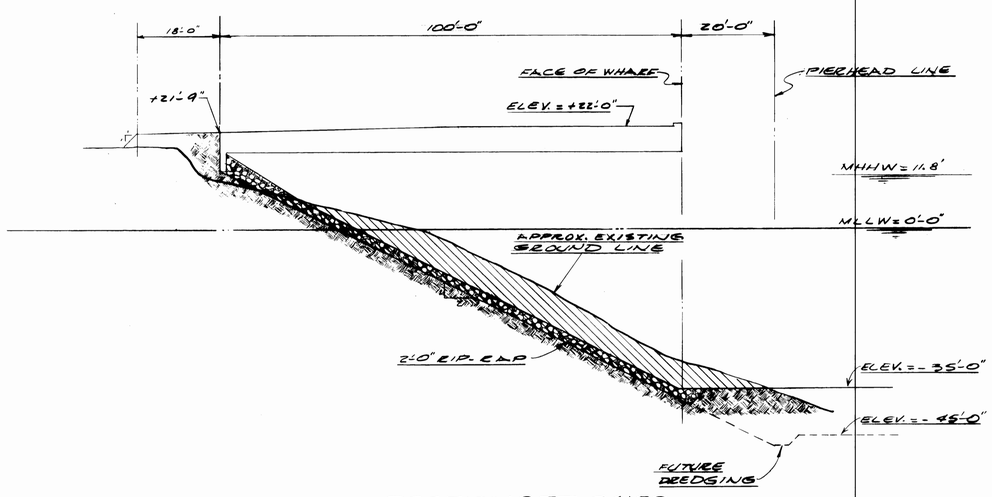
SECTION @ STA 26+50

1/16" = 1'-0"



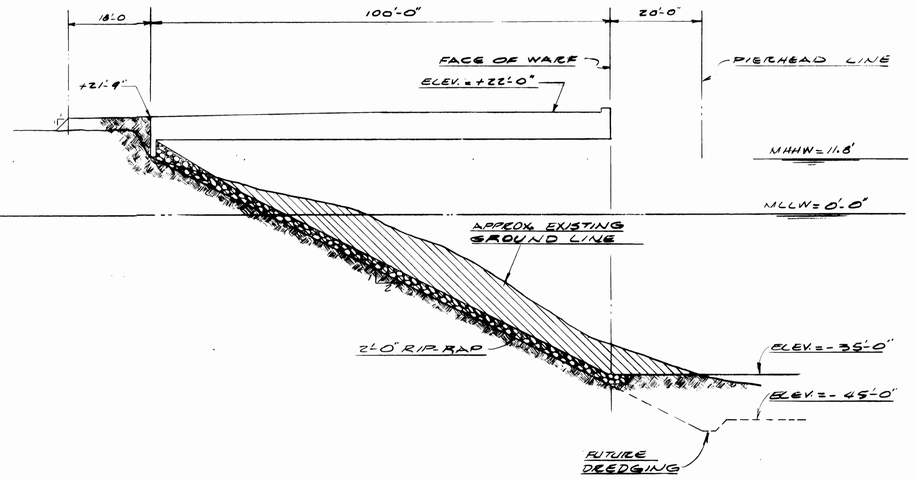
SECTION @ STA 25+50

1/16" = 1'-0"



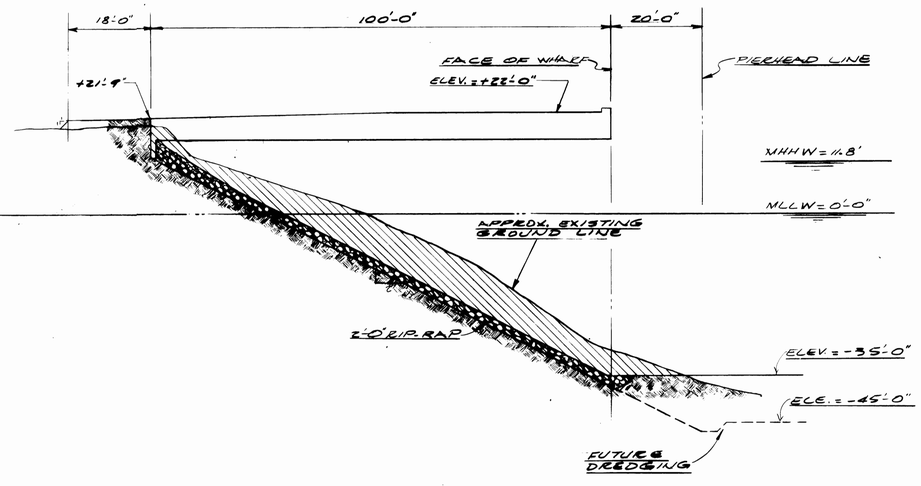
SECTION @ STA 24+50

1/16" = 1'-0"



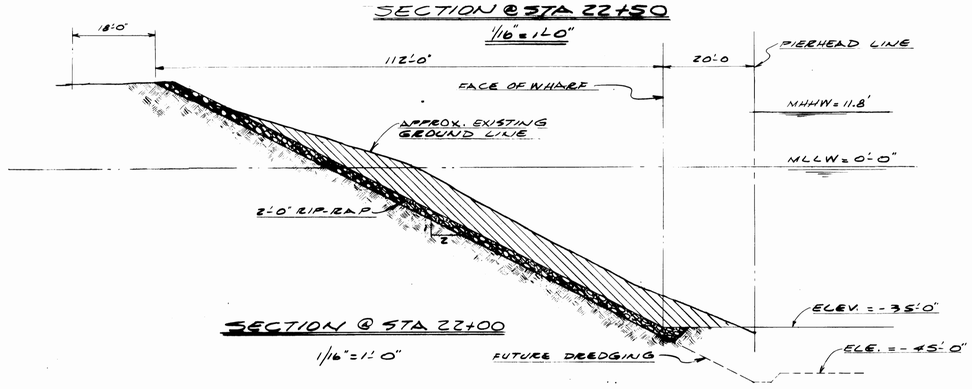
SECTION @ STA 23+50

1/16" = 1'-0"



SECTION @ STA 22+50

1/16" = 1'-0"



SECTION @ STA 22+00

1/16" = 1'-0"

HARRY L. MARSHALL STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

CROSS SECTIONS

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
SMM	GMM
CHECKED	DATE
JDH	5-18-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
5	
EP-1898-16	

PIERHEAD LINE

TIMBER FENDER PILES @ 10'-0" O.C. EXCEPT AS SHOWN ON SOUTH & NORTH CORNER - TIP ELEV. = -55'-0"

MIN. PILE TIP ELEV. (TYP.)

22'-6" 17'-0" 7'-6" TYP

BORING #7 BORING #3 BORING #8 BORING #2 BORING #1

-100' -94' -92' -90' -88' -70' -62' -59' -55' -51' -47' -132' -52' -88' -55' -94' -92' -90' -88' -86' -84' -62' -59' -55' -51' -47' -44'

2'-0" (TYP.) 10 SPACES @ 4'-5" = 42'-6" 12 SPACES @ 4'-4½" = 52'-6" 3'-4" 5'-0" TYP. 2'-0" TYP. 1'-6"

9 SPACES @ 20'-0" = 180'-0"

4 SPACES @ 15'-0" = 60'-0"
HEAVY LOAD AREA
16½" OCTAGONAL P.C. PILES
SEE DRAWING Nº 9A FOR REVISED SECTION OF PILE PLAN. (1)

18 SPACES @ 20'-0" = 360'-0"

PROPERTY LINE

NORTH

BORING #4 BORING #6 BORING #5 TEST PILE 'A' TEST PILE 'B'

-122' -128' -130' -134' -132' -62' -128' -105' -70' -100' -39' TYP. LINE "E" -55' TYP. LINE "D" -51' TYP. LINE "C" -47' TYP. LINE "B" -44'

95'-0"

1:3 BRACE PILES 55'-0" MIN. PENETRATION TYPICAL LINE A EXCEPT AS NOTED.

30 SPACES @ 20'-0" = 600'-0"

PILE PLAN
1" = 20'-0"

NOTES

1. ALL PILES ARE OCTAGONAL PRESTRESSED CONCRETE 16½" EXCEPT AS NOTED.
2. MINIMUM PILE TIP ELEVATIONS ARE BASED ON DAMES & MOORE'S REPORT OF MARCH 5, 1970.
3. FENDER PILES TO BE TREATED D.F.C.C.
4. SEE DWG. # 8 FOR TYPICAL WHARF SECTION.
5. SEE DWG. # 9 FOR HEAVY LOAD WHARF SECTION.
6. SEE DWG. #13 FOR PRESTRESSED CONCRETE PILE DETAILS.
7. BEARING CAPACITY OF 16½" OCT. P.C. PILES = 100 TONS MIN. BEARING CAPACITY OF 24" OCT. P.C. PILES = 200 TONS MIN.
8. ELEVATIONS ARE IN FEET & REFER TO 0.0 MEAN LOWER LOW WATER U.S. COAST & GEODETIC SURVEY TIDE CHART DATUM.

MARK.	REVISION.	APP'D	DATE.
1	16½" For 24" Oct. P.C. Piles.	WM	3-8-71

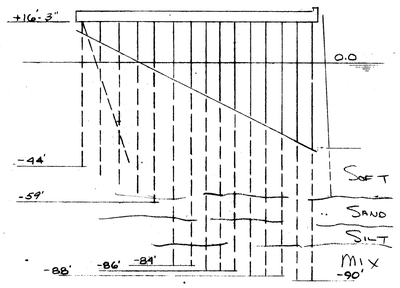
HARRY L. MARSHALL STATE OF WASHINGTON 1921 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER
FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
PILE PLAN

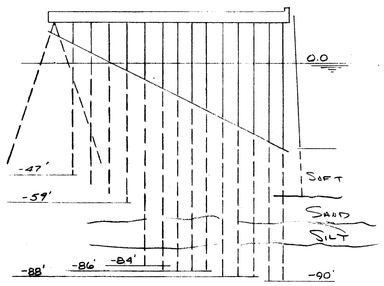
MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JDH	5-1-70
SCALE	
AS NOTED	
DWG. NO.	REVISE
6	1
EP-1699-16	



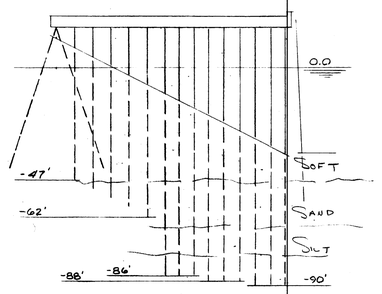
1-6

BENT 1



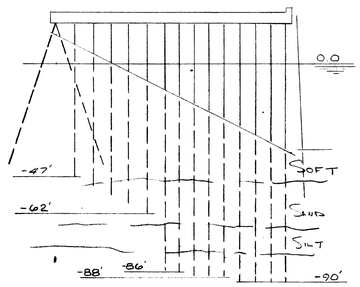
1-6

BENTS 2 THRU 8



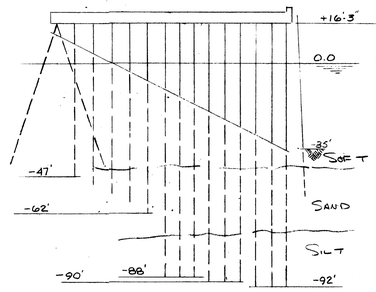
12

BENTS 9 THRU 13



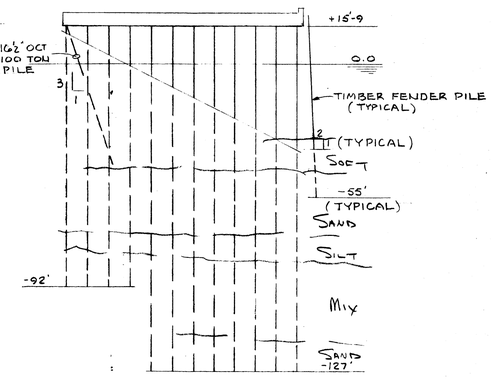
17

BENT 15



19

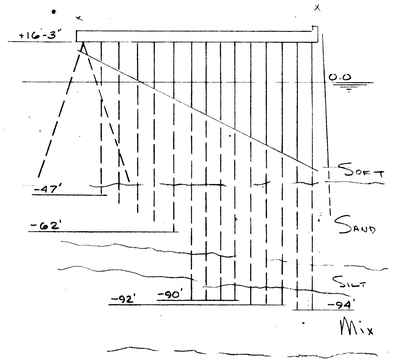
BENT 18



19

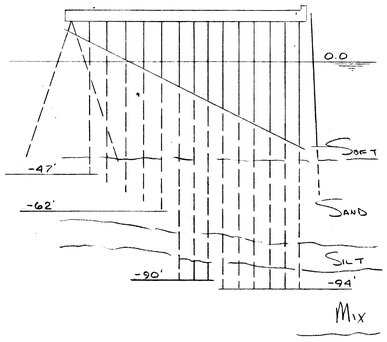
BENTS 19 THRU 23

HEAVY LOAD AREA
24" OCT. 200 TON PILES



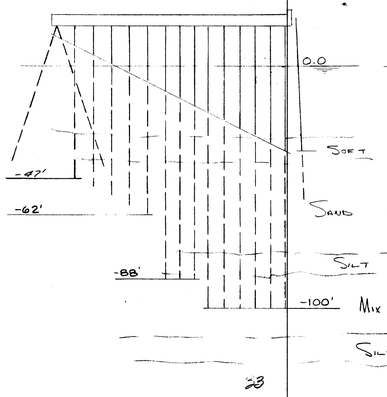
24

BENTS 24 & 25



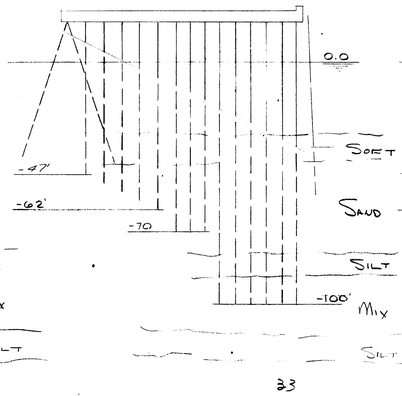
24

BENTS 28 & 29



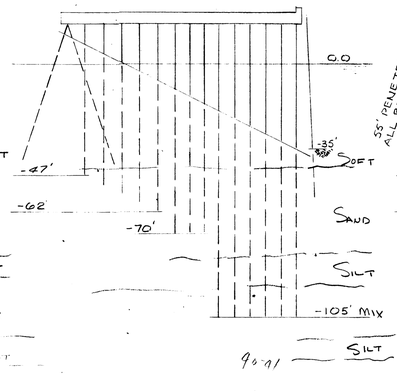
28

BENTS 30 & 31



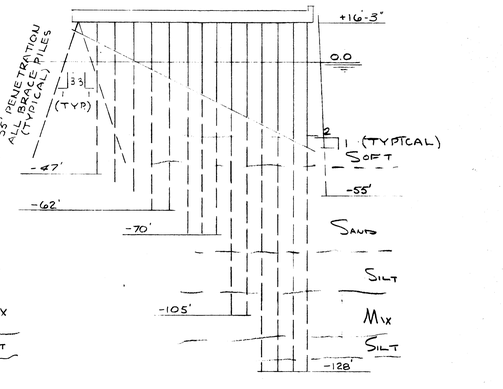
33

BENTS 32 THRU 37

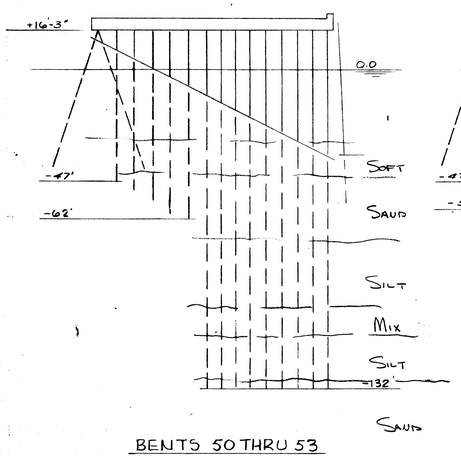


9-71

BENTS 38 THRU 43

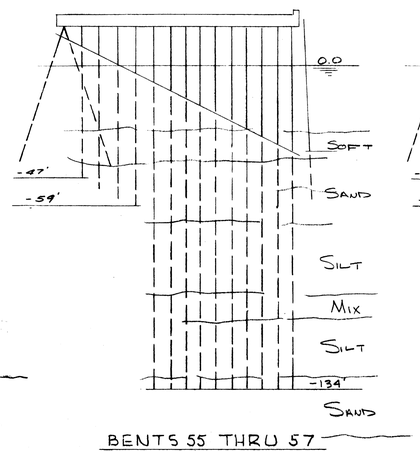


BENTS 44 THRU 49



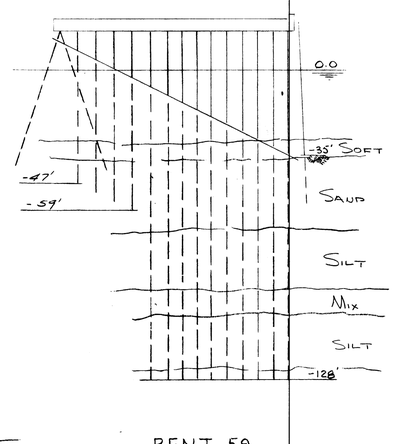
53

BENTS 50 THRU 53



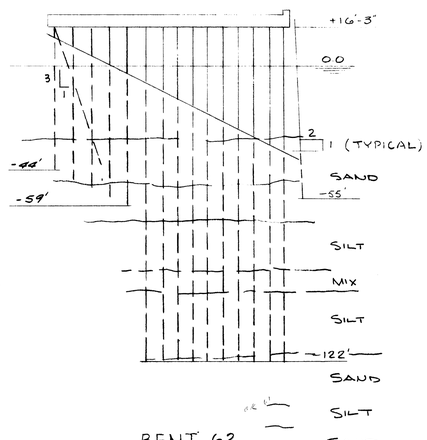
57

BENTS 55 THRU 57



58

BENT 59



59-60

BENT 62

ELEVATIONS ARE IN FEET AND REFER TO 0.0 MEAN LOWER LOW WATER U.S COAST & GEODETIC SURVEY TIDE CHART DATUM.

ALL PILES 16½" OCT 100 TONS EXCEPT AS NOTED. BENTS ARE NUMBERED BEGINNING @ THE SOUTH END OF THE WHARF. NOS. 1 THRU 62 SEE PILE PLAN. PILE PENETRATIONS & TIP ELEVATIONS ARE BASED ON REPORTS BY DAMES & MOORE, DATED FEB. 13, 1970 & MAR. 5, 1970. BENTS BETWEEN BORINGS WERE PLOTTED BY STRAIGHT LINE INTERPOLATION. MODIFICATIONS TO ABOVE CRITERIA AT THE DIRECTION OF DAMES & MOORE MAR. 4, 1970.

HARRY L. MARSHALL STATE OF WASHINGTON 3321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

BENT SECTIONS

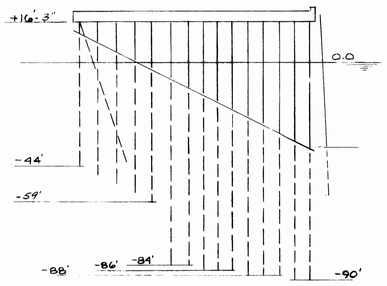
MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

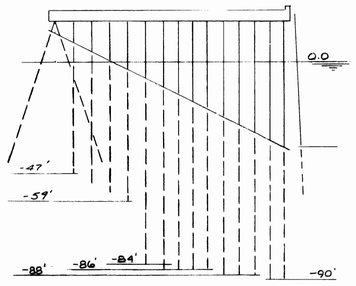
MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
JDH	JDH
CHECKED	DATE
GMM	4-24-70
SCALE	
1" = 30'	
DWG. NO.	SHEET
7	

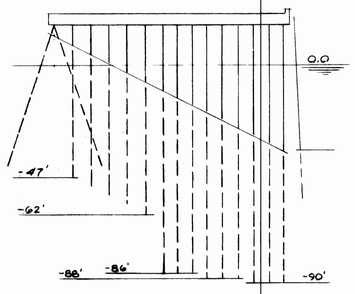
EP-1900-16



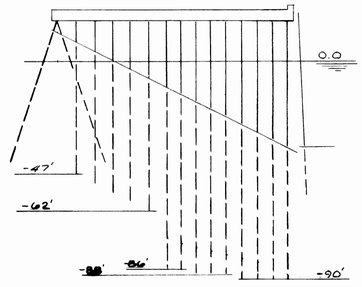
BENT 1



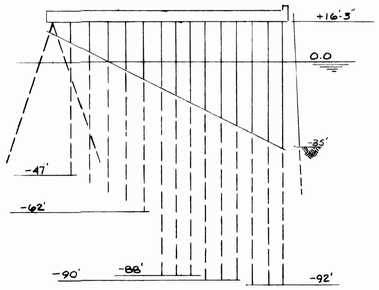
BENTS 2 THRU 8



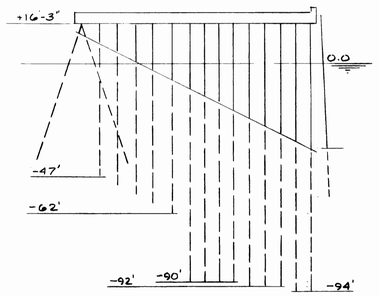
BENTS 9 THRU 13



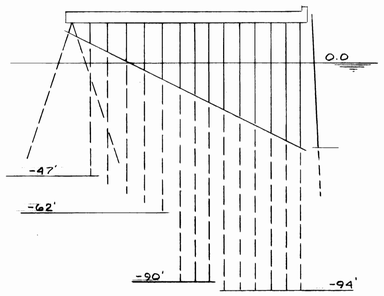
BENT 15



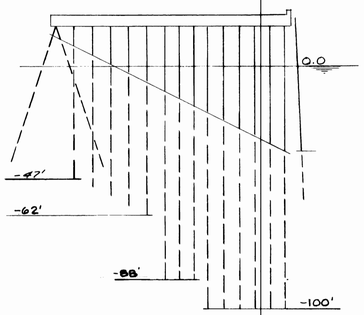
BENT 18



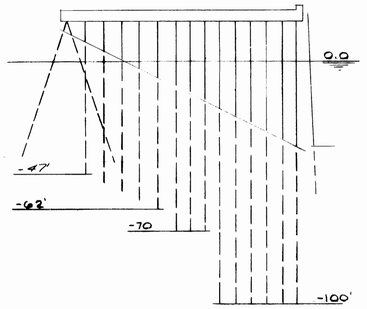
BENTS 24 & 25



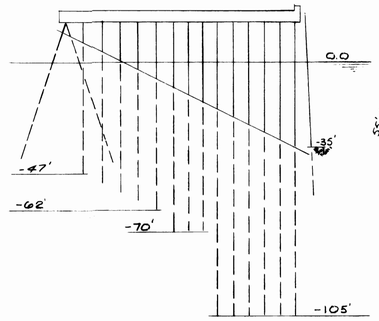
BENTS 28 & 29



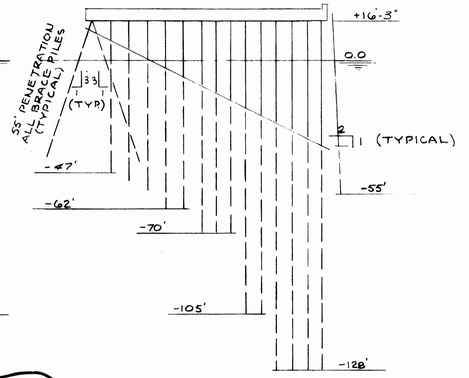
BENTS 30 & 31



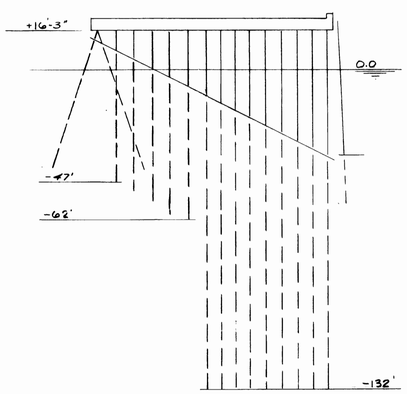
BENTS 32 THRU 37



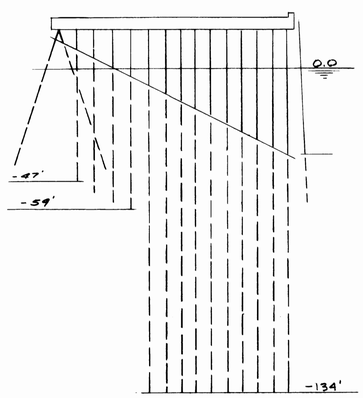
BENTS 38 THRU 43



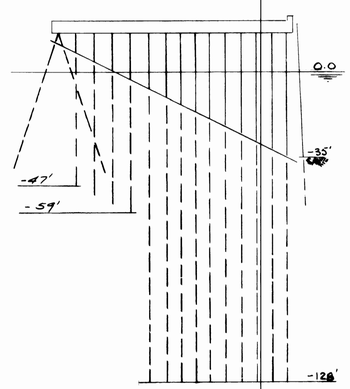
BENTS 44 THRU 49



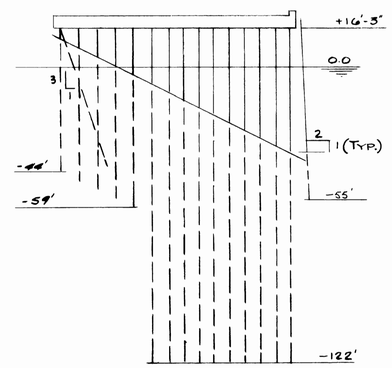
BENTS 50 THRU 53



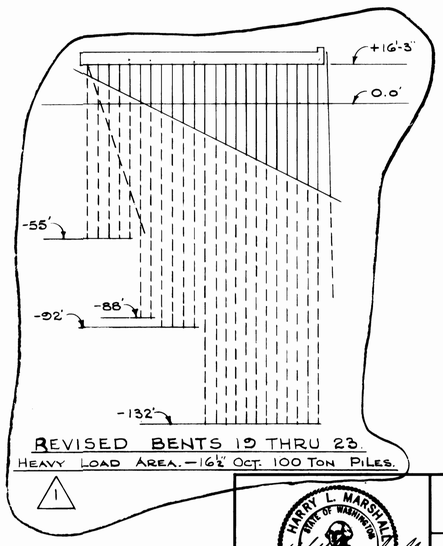
BENTS 55 THRU 57



BENT 59



BENT 62



REVISED BENTS 19 THRU 23.
HEAVY LOAD AREA. — 16½" OCT. 100 TON PILES.

1

ELEVATIONS ARE IN FEET AND REFER TO 0.0 MEAN LOWER LOW WATER U.S COAST & GEODETIC SURVEY TIDE CHART DATUM.

ALL PILES 16½" OCT. 100 TONS EXCEPT AS NOTED. BENTS ARE NUMBERED BEGINNING @ THE SOUTH END OF THE WHARF, NOS. 1 THRU 62. SEE PILE PLAN. PILE PENETRATIONS & TIP ELEVATIONS ARE BASED ON REPORTS BY DAMES & MOORE, DATED FEB. 13, 1970 & MAR. 5, 1970. BENTS BETWEEN BORINGS WERE PLOTTED BY STRAIGHT LINE INTERPOLATION. MODIFICATIONS TO ABOVE CRITERIA AT THE DIRECTION OF DAMES & MOORE MAR. 4, 1970.

MARK	REVISION	APP'D	DATE
1	PILES, BENTS 19 THRU 23		8-2-71

HARRY L. MARSHALL — STATE OF WASHINGTON — 7258 — REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-16-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

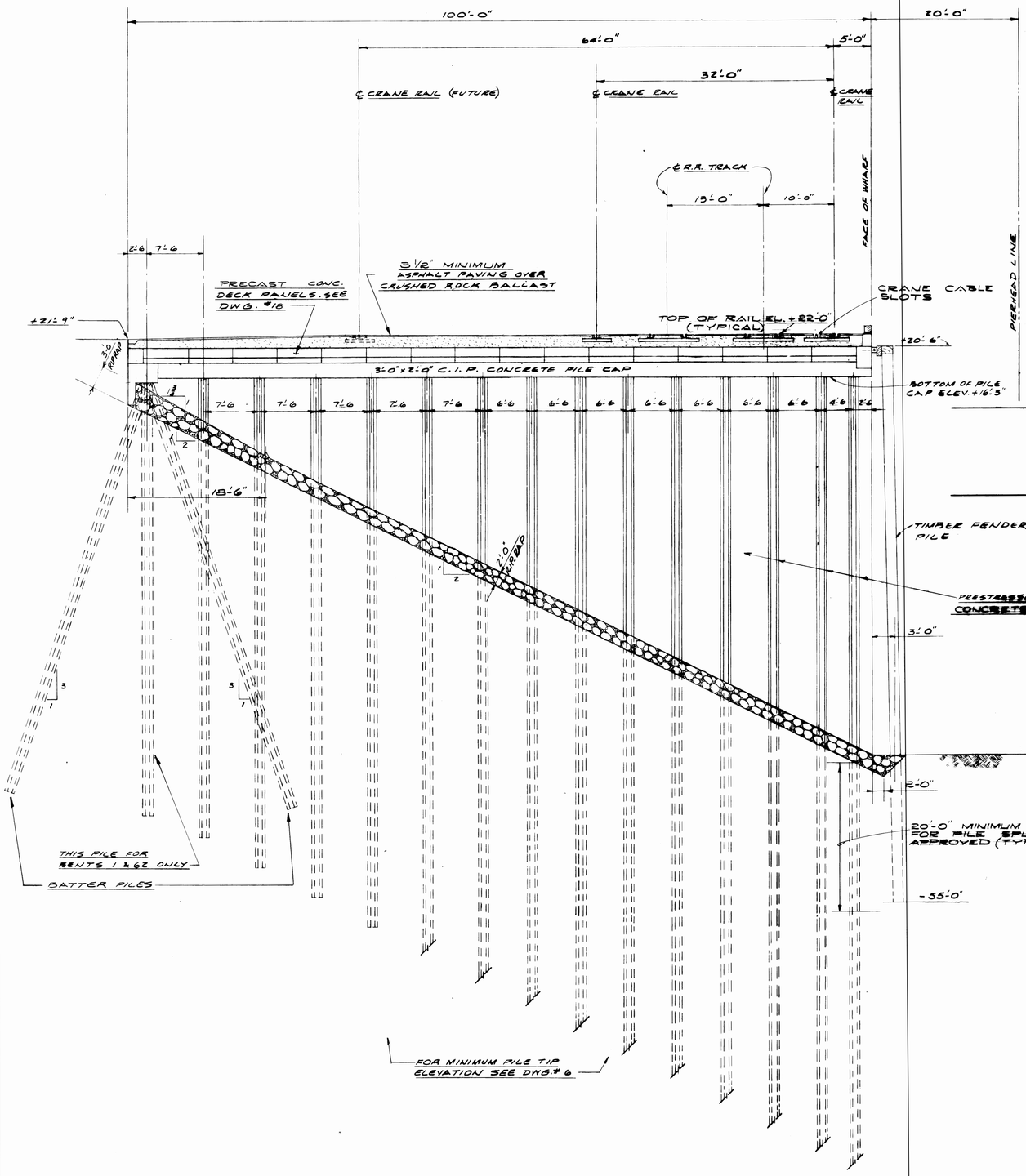
CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

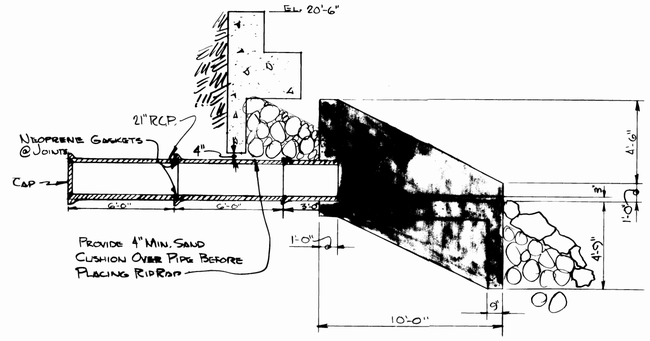
BENT SECTIONS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

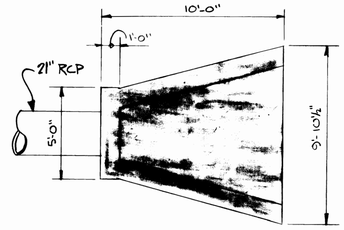
JOB NO.	
1251	
DRAWN	TRACED
JDH	JDH
CHECKED	DATE
GMM	4-24-70
SCALE	
1" = 30'	
DWG. NO.	ISSUE
7A	1
EP-1900-16	



TYPICAL WHARF SECTION
1/8"=1'-0"

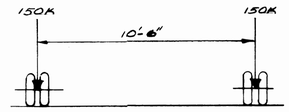


1 SECTION - OUTFALL
1/4"=1'-0"

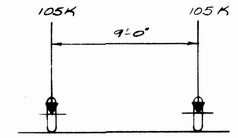


1 PLAN - OUTFALL
1/4"=1'-0"

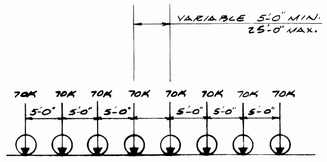
NOTES: 1) ALL REINFORCING STEEL #5 @ 1'-0 C.C. EACH WAY FOR WALLS & SLABS.
2) ALL CONC. TO BE 3000 PSI.
3) CONTRACTOR TO PROVIDE STUB TO EXTEND 5' BEYOND CURTAIN WALL.



FRONT AXLE LOADING
60T FORK LIFT



FRONT AXLE LOADING
40T FORK LIFT



CRANE TRUCK WHEEL LOADING
CRANE RAILS 32' OR 64' GAUGE

NOTES

1. LIVE LOADS:
   UNIFORM LIVE LOAD OF 1000 PSF ON ANY AREA.
   170,000# FORK LIFT ON ANY AREA.
   COOPER E-60 LOADING ON RAILROAD.
2. ELEVATIONS ARE IN FEET & REFER TO 0.0 MEAN LOWER LOW WATER U.S. COAST & GEODETIC SURVEY TIDE CHART DATUM.

MARK	REVISION	APP.	DATE
1	ADDED OUTFALL DETAILS	GNN	7-10-70

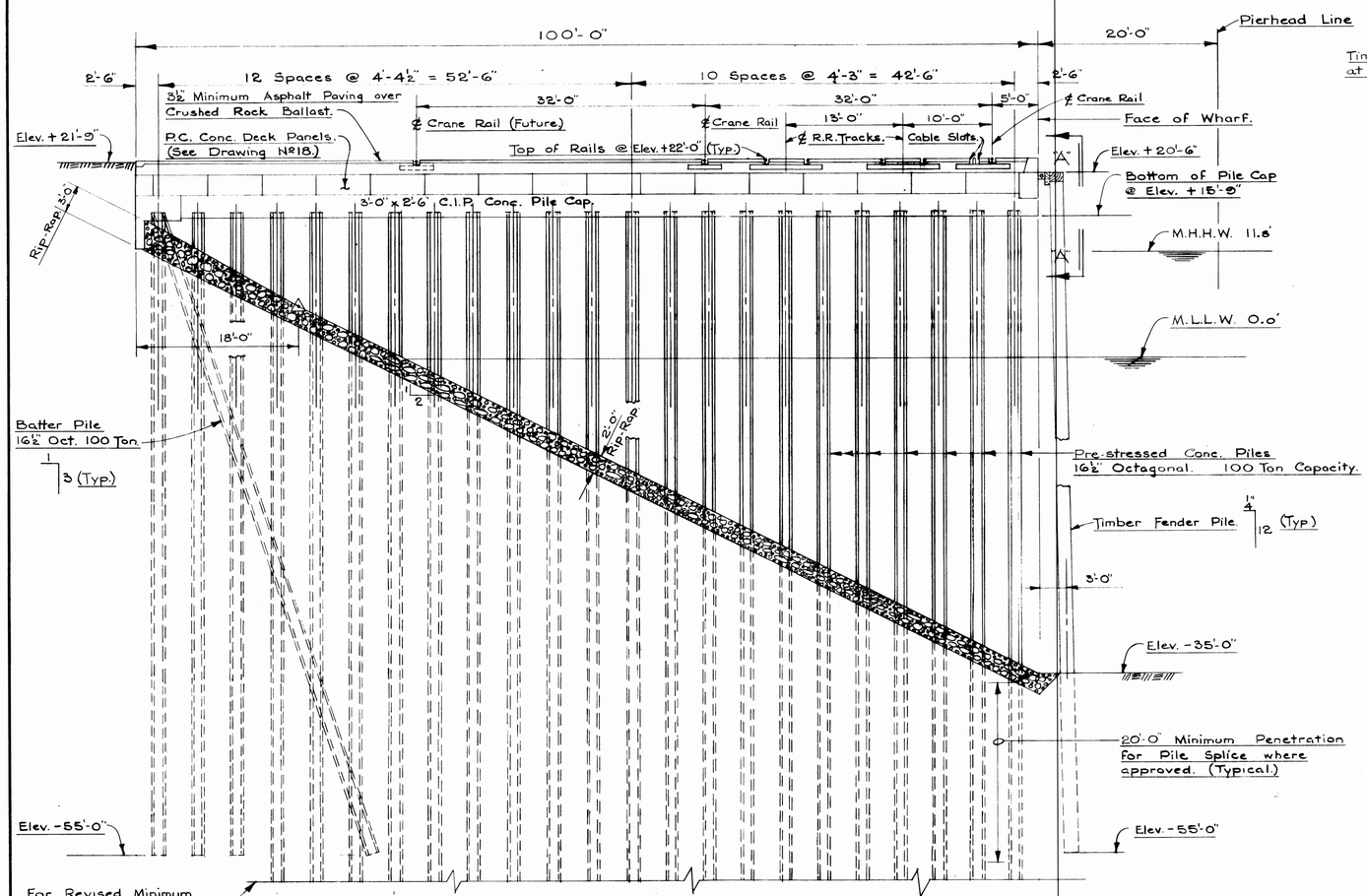
HARRY L. MARSHALL STATE OF WASHINGTON 1321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER
FIELD BOOK

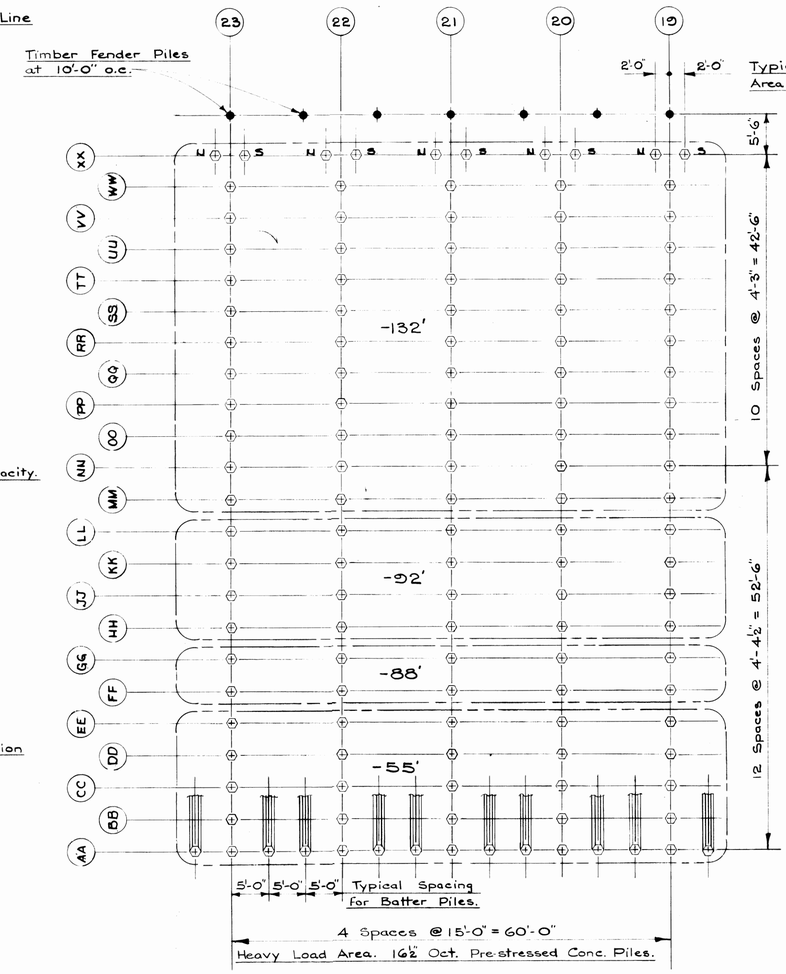
PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
TYPICAL WHARF SECTIONS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GNN	GNN
CHECKED	DATE
[illegible]	15 Jun '70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
8	
EP-1901-16	

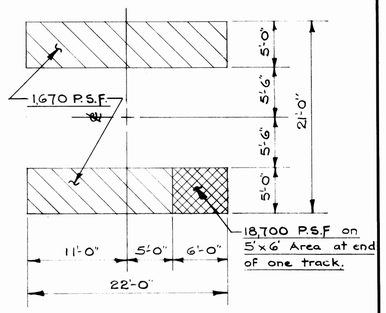


HEAVY LOAD WHARF SECTION REVISED FOR 16½" OCT. PILES.
BENTS №19 THROUGH 23.
Scale: ⅛" = 1'-0".

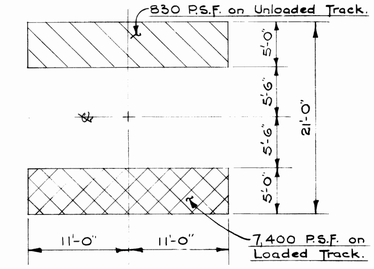


REVISED PILE PLAN.
HEAVY LOAD AREA.
Scale: 1" = 10'-0".

Typical Pile Spacing For new Heavy Load Area Design along Line (P)



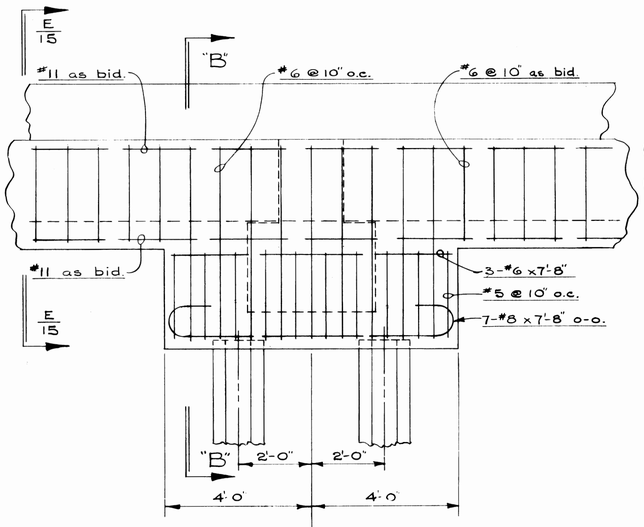
BOOM ON DIAGONAL OF TRACKS.
RATED LOAD AT 18 FT. RADIUS.



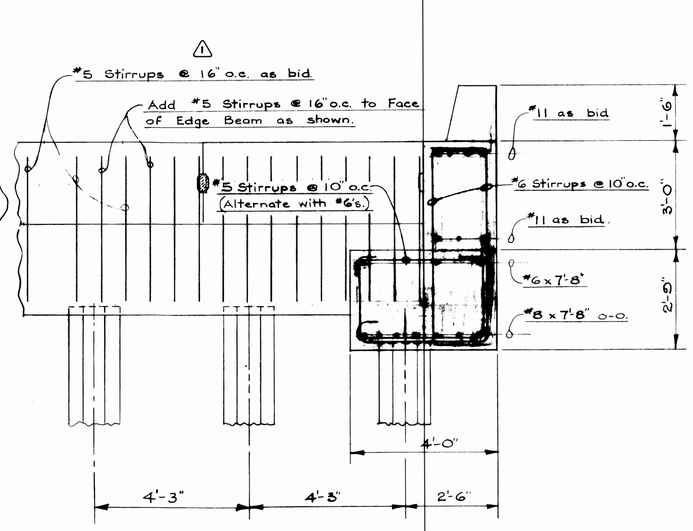
BOOM PERPENDICULAR TO TRACKS.
RATED LOAD AT 18 FT. RADIUS.

CONTACT AREA OF TRACKS FOR CRAWLER CRANE

WEIGHT OF CRANE	= 450 KIPS
RATED LOAD	= 480 KIPS
TOTAL WEIGHT. (CRANE PLUS LOAD)	= 930 KIPS.



SECTION "A"-"A".
Scale: ½" = 1'-0".



SECTION "B"-"B".
Scale: ½" = 1'-0".

NOTES:

(1) LIVE LOADS:
MAXIMUM UNIFORM LIVE LOAD ON FULL AREA = 2000 P.S.F.
120,000# FORK LIFT ON ANY AREA.
COOPER E-60 LOADING ON RAILROAD.
CRANE RAIL LOAD SAME AS SHOWN ON DRAWING №8.

(2) ELEVATIONS ARE IN FEET AND REFER TO 0.0 MEAN LOWER LOW WATER U.S. COAST AND GEODETIC SURVEY TIDE CHART DATUM.

MARK	REVISION	BY	APP.	DATE
1	SECTION "B-B" (STIRRUPS @ 16" o.c.)	J.H.	R.L.M.	9-23-71

HARRY L. MARSHALL STATE OF WASHINGTON 9021 REGISTERED PROFESSIONAL ENGINEER

APPROVED 9-23-71 DATE
CHIEF ENGINEER
FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
HEAVY LOAD WHARF SECTION REVISIONS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
W. Webb	W. Webb
CHECKED	DATE
A.B.L.	2-19-71
SCALE	
As Noted.	
DWG. NO.	ISSUE
9-A	
EP-1902A-16	

NORTH

12 BAYS @ 20'-0" = 240'-0"

BOLLARD (TYP)

FACE OF WHARF

CHANNEL HANGERS @ 10' OC. on PILE CAP. SEE DWG. 21

℄ TELEPHONE, SHIP SERVICE DET. "F" DWG. 16

440 VAC ℄ ELECTRICAL, SHIP SERVICE, - DETAIL "F" DWG. 16

120/240 VAC

MOORING CAVIL (TYP)

FENDER PILES @ 10'-0" O.C. EXCEPT AS NOTED

SEE DWG. 20 FOR FENDER SYSTEM DETAILS

℄ WATER, - SHIP SERVICE DET. "F" DWG. 16

BULL RAIL SPLICE (TYP)

℄ TELEPHONE SHIP SERVICE DET. "F" DWG. 16

ELECTRICAL, SHIP SERVICE DET. "F" DWG. 16

℄ LADDER

NAVIGATION LIGHT

PROPERTY LINE

20'-0" TO INBOARD LINE

℄ CABLE FUNNEL

℄ LADDER

CRANE CABLE SLOT. SEE DWG. 19

CAVIL

R.R. TRACK. SEE DWG. 19

CRANE STOP DET. "F" DWG. 19 (TYP)

CRANE RAIL

℄ FUTURE CRANE RAIL 64'-0" GAUGE

PROVIDE HOLES IN DECK PANEL FOR FUTURE CRANE STOP. DET. "F" DWG. 19

BULL RAIL SPACES @ 4'-0" = 64'-0"

16 - 6'-0 WIDE R.C. DECK PANELS = 96'-0"

THIS SECTION OF BULKHEAD & DECK TO BE REMOVED WHEN R.R. TRACK IS EXTENDED.

100'-0"

15 SPACES @ 6'-0" = 24'-0"

SPACING OF 4" ø DRAIN HOLES

CHANNEL HANGERS @ 10' OC. on PILE CAP. SEE DWG. 21

2'-0" ø MANHOLE.

8 - 6" ø STUDS.

PILE CAP

6" ø SLEEVE IN BULKHEAD @ EL. +15'-3" - CRANE SERVICE See Detail 6, Dwg. 22

KEY PLAN

DWG. 14 | DWG. 13 | DWG. 12 | DWG. 11 | DWG. 10

12" ø PIPE SLEEVE IN BULKHEAD, INVERT ELEV. = +14'-0"

℄ BAY

4" ø HOLE IN R.C. DECK PANELS @ BAY ℄ (TYP)

HOLES WITH COVERS SHOWN DOTTED

12" ø PIPE SLEEVE IN BULKHEAD, INVERT ELEV. = +12'-0"

SEE DWG. 14 FOR WING WALL & NORTH END

WING WALL

+20'-6"

BEND BARS TO CLEAR & ADD 2 - #5 x 5'-0" BELOW OPENING

12" ø SCHEDULE 60 STEEL PIPE W/150# SLIP ON WELDING FLANGE EACH END. GALV. PER SPECS. AFTER FABRICATING.

1/2" ø COVER 12 - 7/8" ø BOLTS

SECTION "AA"
1/2" = 1'-0"

WHARF PLAN
1/8" = 1'-0"

#9 @ 10" (ZONE A)
#9 @ 12" (ZONE B)
#8 @ 12" (ZONE C)
#5 @ 18"
#10 @ 10" (ZONE A)
#10 @ 12" (ZONE B)
#9 @ 12" (ZONE C)
#5 @ 18"
#5

+21'-9"

WEEP HOLES @ 6'-0" O.C.

12'-0" @ WHARF END

6'-0" @ LAND END

1'-10" @ WHARF END
1'-0" @ LAND END

12'-3" @ WHARF END
5'-9" @ LAND END

SECTION "BB"
1/4" = 1'-0"

HARRY L. MARSHALL STATE OF WASHINGTON 321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
WHARF PLAN — BENTS 1 THRU 13

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
10	
EP-1903-16	

NORTH

24 SPACES @ 10'-0" = 240'-0" (FENDER PILE SPACING)

3 BAYS @ 20'-0" = 60'-0" | 4 BAYS @ 15'-0" = 60'-0" | 6 BAYS @ 20'-0" = 120'-0"

26 25 24 23 22 21 20 19 18 17 16 15 14 13

3'-0" | 4 SP @ 4'-0" = 16'-0" | 1'-0" | 4 SP @ 4'-0" = 16'-0" | 3'-0" | 3'-7" | 7'-6" | 2'-0" | 3'-6" | 5'-0" | 5'-0" | 2'-0" | 3'-0" | 3 SP @ 4'-0" = 12'-0" | 3'-0" | 3 SP @ 4'-0" = 12'-0" | 3 SP @ 4'-0" = 12'-0" | 3'-0" | 3'-0" | 4 SP @ 4'-0" = 16'-0" | 1'-0" | 2'-0" | 4 SP @ 4'-0" = 16'-0" | 1'-0" | 2'-0" | 4 SP @ 4'-0" = 16'-0" | 3'-0" | 3'-0" | 4 SP @ 4'-0" = 16'-0" | 1'-0" | 2'-0" | 4 SP @ 4'-0" = 16'-0" | 2'-0" | 4 SP @ 4'-0" = 16'-0" | 3'-0"

5'-0" ℄ LADDER

TELEPHONE SHIPS SERVICE DET 'E' DWG. 16 120/240 VAC

440 VAC

FOR FENDER SYSTEM DETAILS SEE DWG. #20

FACE OF WHARF

20'-0" TO PIERHEAD LINE

SPACING OF DRAIN HOLES

5'-0" | 20 | 3'6" | 5'-0" | 5'-6" | 5'-2" 1/4 | 4'-6" | 4'-0" | 6'-0" | 4'-0" | 5'-0" | 4 SPACES @ 6'-0" = 24'-0"

32'-0"

℄ CRANE RAIL

9'-0" | 8'-3" | 11'-6"

BOLLARD (TYP.) | SPLICE (TYPICAL) | MOORING CAVIL (TYPICAL) | 9'-0" | CRANE CABLE SLOT (DWG. 19)

WATER SHIPS SERVICE | DET 'E' DWG. 16 (TYP.) | ELECTRICAL SHIPS SERVICE DET 'F' DWG 16 | SHIPS WATER SERVICE

R.R. TRACK - SEE DWG. 19

℄ FUTURE CRANE RAIL - 84'-0" GAUGE

16'-0" PRE-CAST CONCRETE PANELS = 96'-0"

100'-0"

12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

℄ BAY

2'-0" ϕ MANHOLE

8 - #6 STUBS

4" ϕ HOLES IN P.C. DECK PANELS @ BAY ℄ (TYP.)
HOLES WITH COVERS SHOWN DOTTED.

12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

WHARF PLAN
LINE 13 TO LINE 26
1/8" = 1'-0"

62 | 50 | 38 | 26 | 13 | 1

DWG. 14 | DWG. 13 | DWG. 12 | DWG. 11 | DWG. 10

KEY PLAN

HARRY L. MARSHALL — STATE OF WASHINGTON — 1821 — REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
WHARF PLAN — BENTS 13 THRU 26

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
JTA	JTA
CHECKED	DATE
JSH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
11	
EP-1904-16	

NORTH

38 37 36 35 34 33 32 31 30 29 28 27 26

12 BAYS @ 20'-0" = 240'-0"

3'-0" 4 SP. @ 4'-0" = 16'-0" | 14'-0" | 4 SP. @ 4'-0" = 16'-0" | 2'-0" | 4 SP. @ 4'-0" = 16'-0" | 3'-0" | 3'-0" | 4 SP. @ 4'-0" = 16'-0" | 14'-0" | 4 SP. @ 4'-0" = 16'-0" | 2'-0" | 4 SP. @ 4'-0" = 16'-0" | 3'-0" | 11" | 4'-0" | 8'-3" | 3'-10" | 14'-0" | 4 SP. @ 4'-0" = 16'-0" | 2'-0" | 4 SP. @ 4'-0" = 16'-0" | 3'-0" | 3'-0" | 4 SP. @ 4'-0" = 16'-0" | 14'-0" | 4 SP. @ 4'-0" = 16'-0" | 2'-0" | 4 SP. @ 4'-0" = 16'-0" | 3'-0"

20'-0" TO PIERHEAD LINE

FACE OF WHARF

BOLLARD (TYP.)

FENDER PILES @ 10'-0" O.C. - SEE DWG. 20

MOORING CAVIL (TYP.)

℄ WATER SHIPS SERVICE - DET. 'E' DWG. 16

℄ LADDER

℄ TELEPHONE SHIPS SERVICE DET. 'F' DWG. 16

℄ ELECTRICAL SHIPS SERVICE DET. 'F' DWG. 16

440 VAC

120/240 VAC

℄ CABLE FUNNEL

℄ CABLE FUNNEL

5'-0" ℄ CRANE RAIL

32'-0"

100'-0" TO ℄ OF R.C. DECK PANELS = 96'-0"

16 - 6'-0" WIDE

R.R. TRACK - SEE DWG. 19

℄ FUTURE CRANE RAIL - 66'-0" GAUGE

CHANNEL MARKERS @ 10' OL ON PILECAP SEE DWG. "21

4 SPACES @ 6'-0" = 24'-0"

SPACING FOR 4" DRAIN HOLES

5'-0" 3'-0" 5'-0" 5'-6" 5'-2" 4'-6" 4'-0" 4'-0" 6'-0"

2'-0"

4" ℄ HOLE IN R.C. DECK PANEL @ BAY ℄ (TYP.) (SEE SECT. 'A-A' - DWG. 19)

12" ℄ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

℄ BAY

A/10

B/16

5'-0"

B-#6 STUBS.

2'-0" ℄ MANHOLE.

6" ℄ SLEEVES IN BULKHEAD @ EL. +15'-3" FOR CRANE SERVICE. SEE DETAIL "G", DWG. "22

℄ PILE CAP.

12" ℄ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

KEY PLAN

62 50 38 26 13 1

DWG. 14 | DWG. 13 | DWG. 12 | DWG. 11 | DWG. 10

WHARF PLAN.

SCALE: 1" = 1'-0"

HARRY L. MARSHALL STATE OF WASHINGTON 3321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

WHARF PLAN – BENTS 26 THRU 38

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
SMM	CMM
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
12	
EP-1905-16	

NORTH

24 SPACES @ 10'-0" = 240'-0" (FENDER PILE SPACING)

12 BAYS @ 20'-0" = 240'-0"

50 49 48 47 46 45 44 43 42 41 40 39 38

3'-0" 4 SP @ 4'-0" = 16'-0" | 1'-0" 4 SP @ 4'-0" = 16'-0" | 3'-0" 3'-7" 3'-7" 7'-6" | 2'-10½" 3'-0" 4 SP @ 4'-0" = 16'-0" | 1'-0" 1'-0" 4 SP @ 4'-0" = 16'-0" | 3'-0" 4 SP @ 4'-0" = 16'-0" | 1'-0" 1'-0" 3'-0" 3'-0" 4 SP @ 4'-0" = 16'-0" | 2'-0" 4 SP @ 4'-0" = 16'-0" | 2'-0" 7'-0" | 3'-0" 3'-0" 4 SP @ 4'-0" = 16'-0" | 2'-0" 4 SP @ 4'-0" = 16'-0" | 2'-0" 2'-9" 3'-7" 7'-5" 2'-9" 2'-6"

C/16 C/16 D/15 D/15 F/15 F/15

5'-4½" 440 VAC

TELEPHONE, SHIP SERVICE DET. 'E' DWG. 16 120/240 VAC

MOORING CAVIT (TYPICAL)

BOLLARD (TYPICAL)

FOR FENDER SYSTEM DETAILS SEE DWG. #20

SPLICE (TYP.)

FACE OF WHARF

SHIP SERVICE PHONE

ELEC. SHIP SERVICE 120/240 VAC

WATER SHIP SERVICE - DETAIL 'G' DWG. 16

ELECTRICAL SHIPS SERVICE - DET. 'F' DWG. 16

B-3" 3'-3"

CABLE SLOT (DWG. 19)

5'-0" LADDER

R.R. TRACK - SEE DWG. 19

82'-0"

SPACING FOR 4" DRAIN HOLES

4 SPACES @ 6'-0" = 24'-0"

5'-0" 5'-0" 5'-6" 5'-0" 5'-6" 5'-2" 5'-4" 6'-0" 6'-0" 6'-0" 5'-0"

20'-0" PIERHEAD LINE

100'-0"

PRE-CAST CONCRETE PANELS - 96'-0"

20'

20'-0"

℄ FUTURE CRANE RAIL - 64'-0" GAUGE

A/10 12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

℄ BAY

A/10

4"ϕ HOLE IN P.C. DECK PANEL @ BAY ℄ (TYP.)

A/10 12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

℄ BAY

B/16 5'-0" B/16

8-#6 STUBS

2'-0" ϕ MANHOLE.

A/16 A/10 12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEVATION = +14'-0"

℄ BAY

WHARF PLAN

LINE 38 TO LINE 50

1/8" = 1'-0"

(62) (50) (38) (26) (13) (1)

DWG. 14 DWG. 13 DWG. 12 DWG. 11 DWG. 10

KEY PLAN

HARRY L. MARSHALL STATE OF WASHINGTON 1821 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

WHARF PLAN — BENTS 38 THRU 50

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
J.T.A.	J.T.A.
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
13	

EP-1906-16

NORTH

12 BAYS @ 20'-0" = 240'-0"

62 61 60 59 58 57 56 55 54 53 52 51 50

4SR@4'-0"=16'-0" | 3'-0" | 3'-0" | 4SR@4'-0"=16'-0" | 4SR@4'-0"=16'-0" | 3'-0" | 3'-0" | 4SR@4'-0"=16'-0" | 4SR@4'-0"=16'-0" | 3'-0" | 3'-0" | 4SR@4'-0"=16'-0" | 4SR@4'-0"=16'-0" | 4SR@4'-0"=16'-0" | 4SR@4'-0"=16'-0" | 3'-0"

FACE OF WHARF

20'-0" TO PIERHEAD LINE

NAVIGATION LIGHT

℄ LADDER

7'-0"

℄ WATER, SHIPS SERVICE - DET. E DWG. 16

BULL RAIL SPLICE (TYP.)

TELEPHONE SHIPS SERVICE

ELECTRICAL - SHIP SERVICE

BOLLARD (TYP.)

FENDER PILES @ 10'-0" O.C. EXCEPT AS NOTED. SEE DWG. 20 FOR DETAILS.

MOORING CAVIL (TYP.)

440 VAC

120/240 VAC

CRANE STOP - DET. A DWG. 19 (TYP.)

CRANE CABLE SLOT. DWG. 19

CAVIL

R.R. TRACK. SEE DWG. 19

℄ CRANE

℄ CABLE FUNNEL

5 SPACES @ 4'-0" = 20'-0"

16.6' WIDE P.C. DECK PANELS = 96'-0"

BULL RAIL SPLICE

PROVIDE HOLES IN DECK PANEL FOR CRANE STOP - DET. A DWG. 19

℄ FUTURE CRANE RAIL - 64'-0" GAUGE

CHANNEL HANGERS @ 10'0" O.C. ON PILE CAP SEE DWG. #21

8-#6 STUBS

2'-0" ϕ MANHOLE

6" ϕ SLEEVE IN BULKHEAD. ℄ @ EL. +15'-3 FOR CRANE SERVICE. SEE DETAIL "G", DWG. #22

℄ PILE CAP

WING WALL SEE PLAN

12"ϕ PIPE SLEEVE IN BULKHEAD. INVERT ELEV. = +14'-0"

℄ BAY

4" ϕ HOLE IN P.C. DECK PANELS @ BAY ℄ (TYP.) (SEE SECT. "A-A" - DWG. 17)

100'-0"

62 | 50 | 38 | 26 | 13 | 1

DWG. 14 | DWG. 13 | DWG. 12 | DWG. 11 | DWG. 10

KEY PLAN

WHARF PLAN

3/32" = 1'-0"

BENT 62

REAR FACE OF WHARF

ZONES FOR REINFORCING

ZONE A

ZONE B

ZONE C

WING WALL PLAN

3/8" = 1'-0"

REFER TO DWG. 10 SECTION B-B FOR REINFORCING & DIMENSIONS NOT SHOWN

Mark	Revision	App	Date
1	Rail Curve On Pier	RRH	7-10-70

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

HARRY L. MARSHALL STATE OF WASHINGTON No. REGISTERED PROFESSIONAL ENGINEER

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

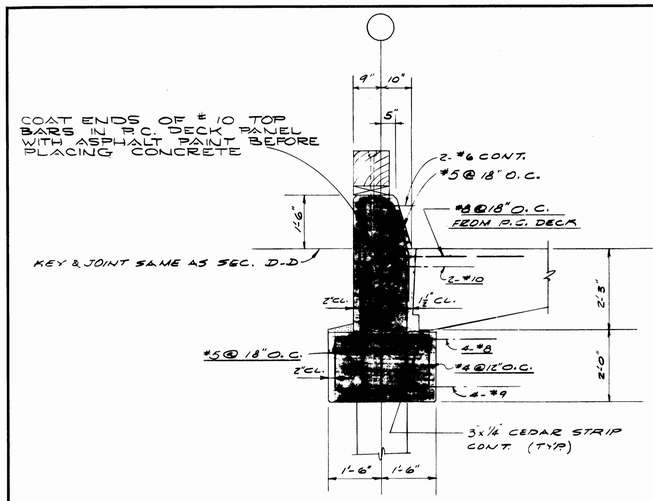
WHARF PLAN — BENTS 50 THRU 62

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

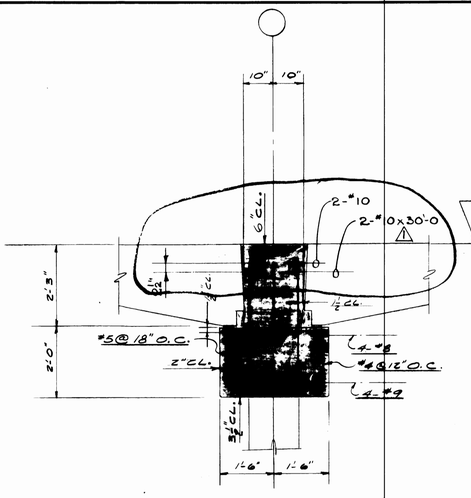
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
14	
EP-1907-16	



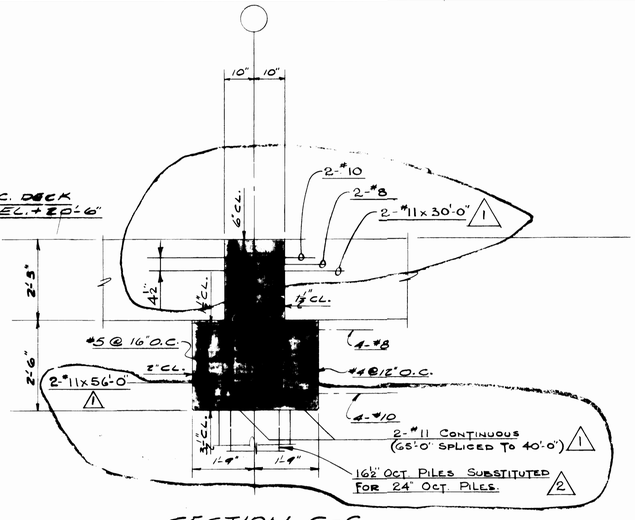
SECTION A-A
½" = 1'-0"

PILE CAP & CURB @ BENTS (1) & (62)



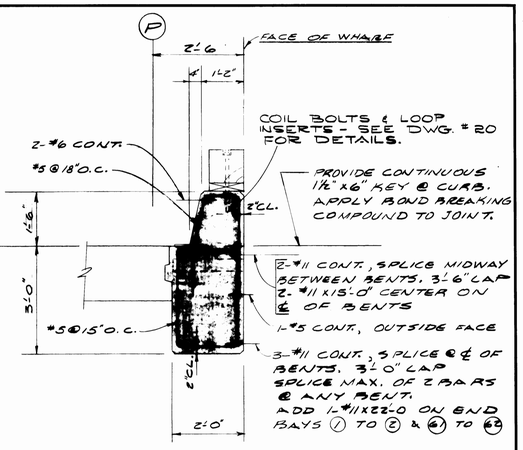
SECTION B-B
½" = 1'-0"

PILE CAP @ BENTS (2) — (18) & (24) — (61)



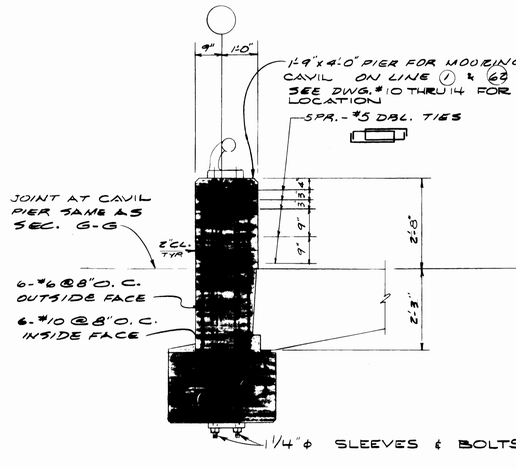
SECTION C-C
½" = 1'-0"

PILE CAP @ BENTS (19) THRU (23)

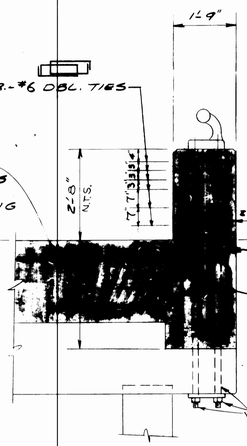


SECTION D-D
½" = 1'-0"

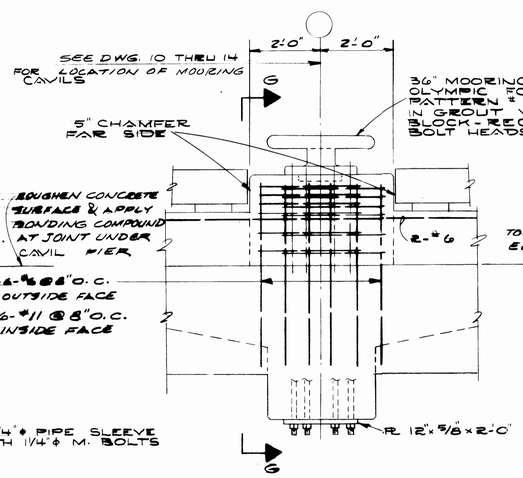
BEAM AT FACE OF WHARF - BENTS (1) — (19) & (23) — (62)



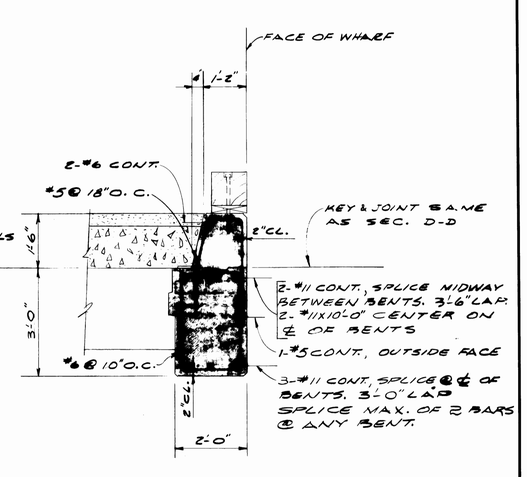
SECTION H-H
½" = 1'-0"



SECTION G-G
½" = 1'-0"

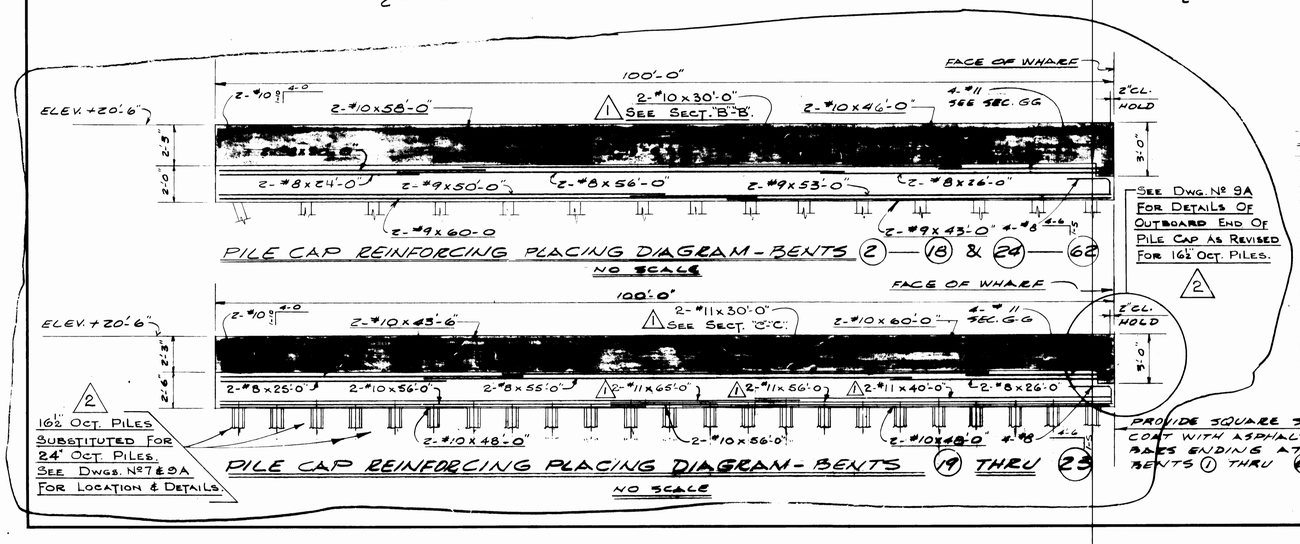


SECTION F-F
½" = 1'-0"



SECTION E-E
½" = 1'-0"

BEAM AT FACE OF WHARF - BENTS (19) — (23)



NOTES

CONCRETE : WORKING STRESS DESIGN, COMPRESSIVE STRENGTH f'_c = 4,000 PSI AT 28 DAYS FOR ALL CAST IN PLACE CONCRETE. PROPORTION BY METHOD 2 AS OUTLINED IN A.C.I. 318-63 SPECIFICATION.

REINFORCING STEEL : A.S.T.M. A-615 GRADE 60 FABRICATE & PLACE PER A.C.I. 318-63 SPEC. MINIMUM LAP TO BE 36 DIAMETERS. SUBMIT REINFORCING PLACING PLANS TO THE PORT ENGINEER FOR APPROVAL BEFORE CASTING CONCRETE.

ALL CORNERS EXPOSED IN THE FINISHED WORK SHALL HAVE A ¾" CHAMFER UNLESS OTHERWISE NOTED.

SEE DRAWINGS #10 THRU #14 FOR LOCATION OF SECTIONS

MARK	REVISION	APP'D	DATE
2	HEAVY LOAD AREA PILING REVN.	WM	3-2-71
1	CAP STEEL ADDED.	WM	3-2-71

HARRY L. MARSHALL — STATE OF WASHINGTON — 1321 — REGISTERED PROFESSIONAL ENGINEER

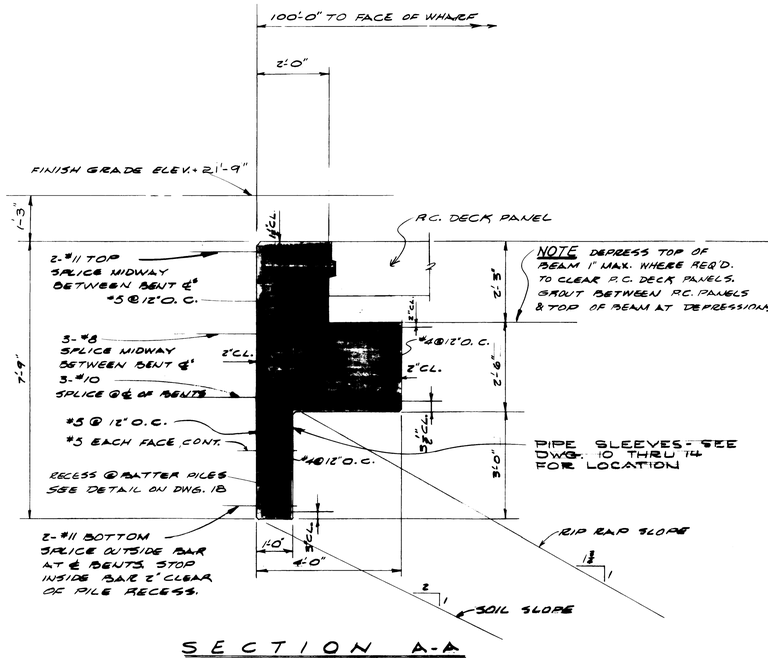
APPROVED 6-18-70 DATE
CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
DECK FRAMING DETAILS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

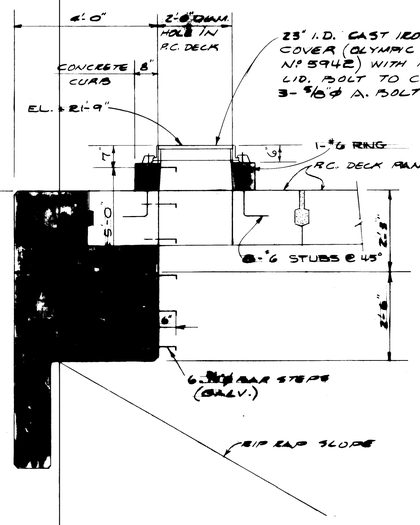
JOB NO.	
1251	
DRAWN	TRACED
RCN	GNN
CHECKED	DATE
[illegible]	6/in/70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
15	2
EP-1908-16	



SECTION A-A

1/2" = 1'-0"

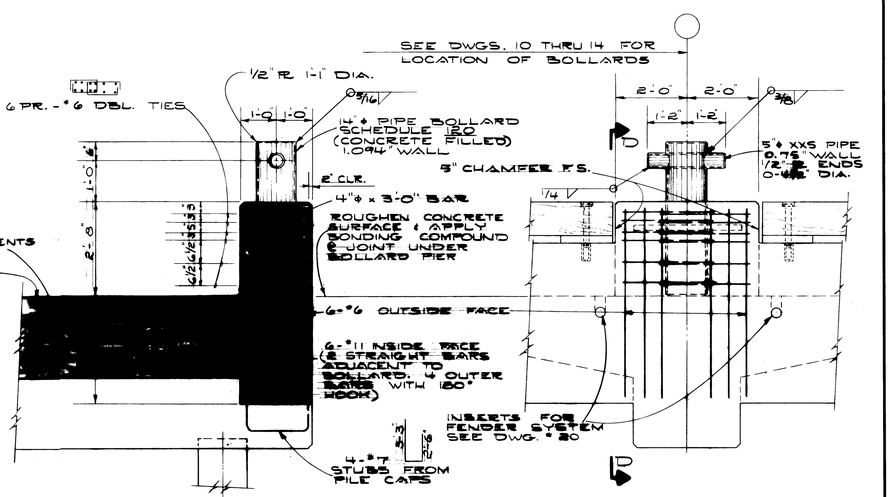
TYPICAL SECTION AT BACK OF WHARF FROM BENT (1) THRU (62)



SECTION B-B

1/2" = 1'-0"

INSPECTION MANHOLE AT BACK OF WHARF SEE DWG. 10-14 FOR LOCATION



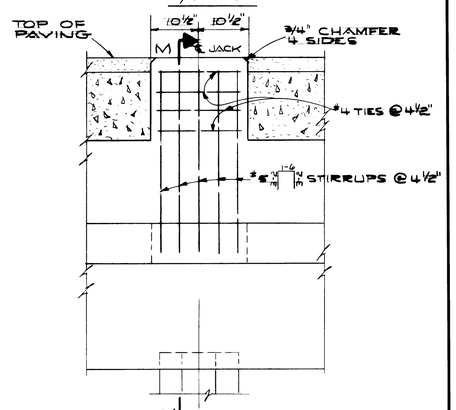
SECTION D-D

1/2" = 1'-0"

NOTE:
FILL BOLLARDS WITH 6" 4000 P.S.I. CONCRETE PRIOR TO INSTALLATION

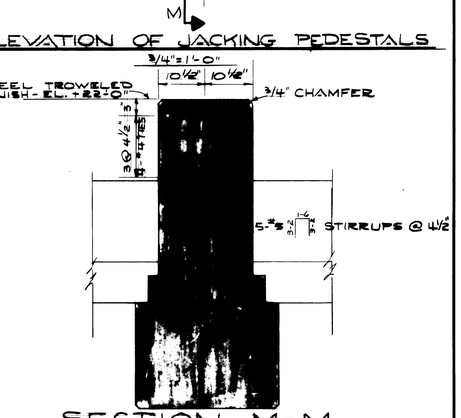
SECTION C-C

1/2" = 1'-0"



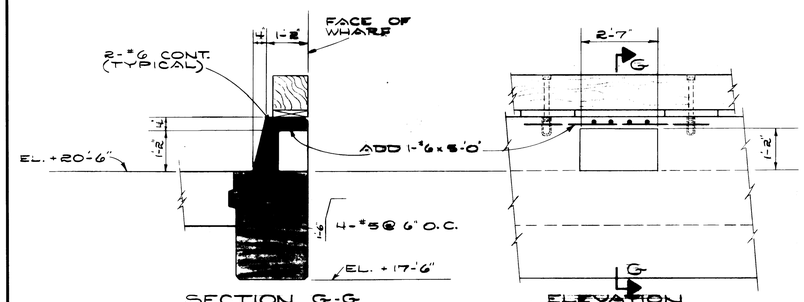
ELEVATION OF JACKING PEDESTALS

3/4" = 1'-0"



SECTION M-M

3/4" = 1'-0"



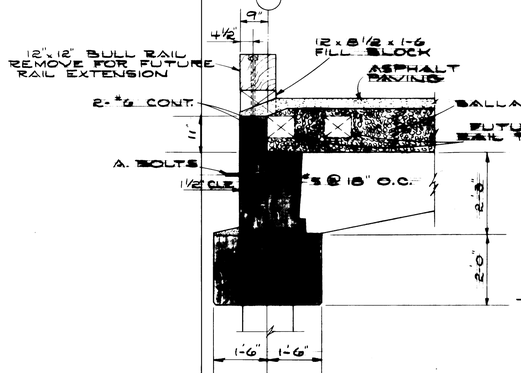
SECTION G-G

ELEVATION

DETAIL E

WATER SERVICE VALVE ENCLOSURE @ FACE OF WHARF. SEE DWG. # 22 FOR PIPING.

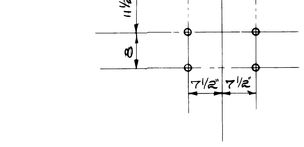
1/2" = 1'-0"



SECTION K-K

TYPICAL 12'-0" TOTAL = 6'-0" EACH SIDE OF ℄ RAIL SPUR.

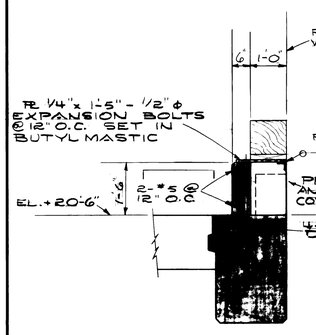
1/2" = 1'-0"



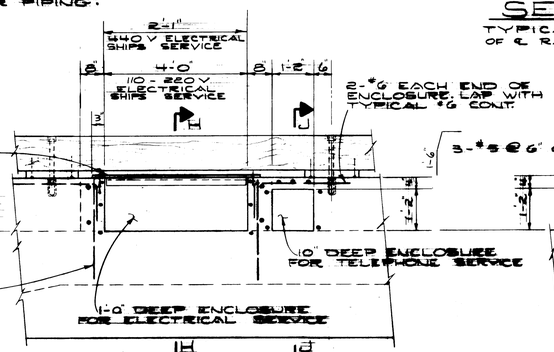
PLAN OF CRANE ANCHOR-BOLTS

3/4" = 1'-0"

BEFORE SETTING BOLTS VERIFY DIMENSIONS WITH PORT FOR FIT WITH NEW OR EXISTING CRANES TO BE USED ON WHARF.



SECTION H-H

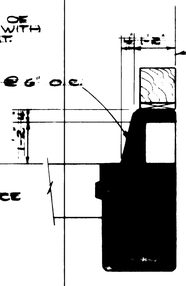


ELEVATION

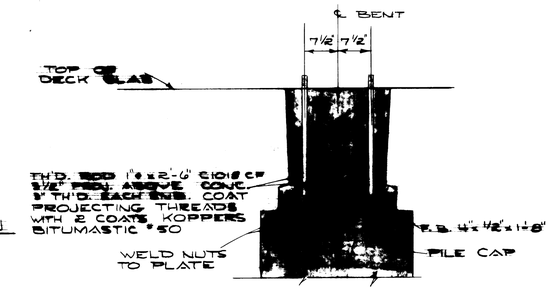
DETAIL F

ELECTRICAL SERVICE & TELEPHONE SERVICE ENCLOSURES AT FACE OF WHARF. SEE DWG. # 22 FOR CONDUIT.

1/2" = 1'-0"



SECTION J-J



SECTION L-L

3/4" = 1'-0"

HARRY L. MARSHALL STATE OF WASHINGTON No. 2281 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-76 DATE
CHIEF ENGINEER
FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

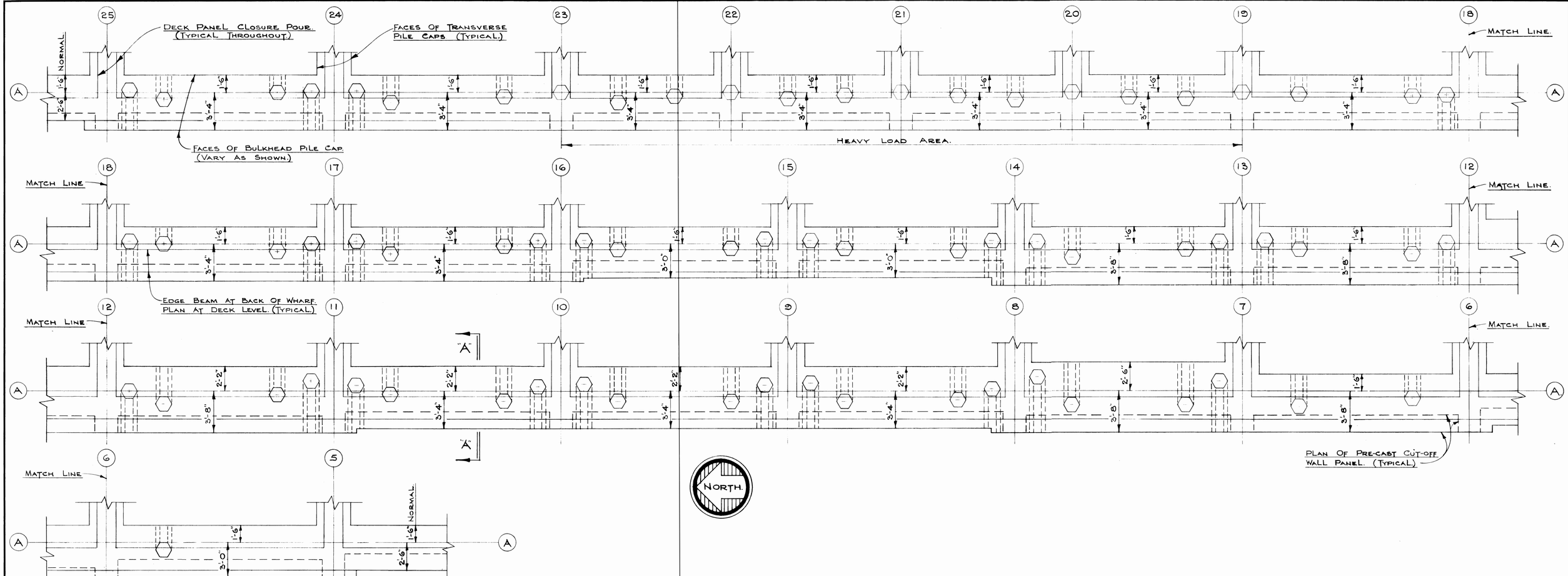
CONTAINER & BULK HANDLING FACILITY

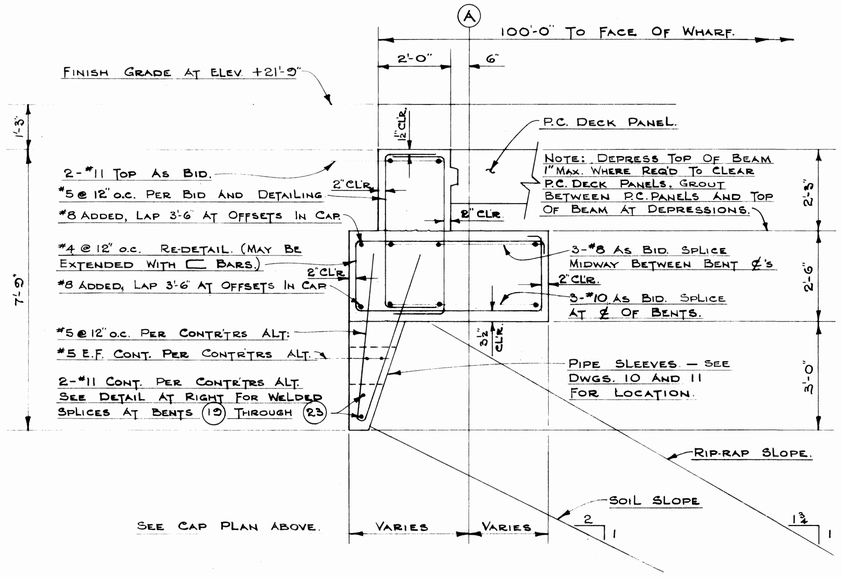
BERTHS A & B

DECK FRAMING DETAILS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
RCN	GMW
CHECKED	DATE
WJS	15 JUN '76
SCALE	
AS NOTED	
DWG. NO.	ISSUE
16	
EP-1909-16	





SECTION "A"-"A".

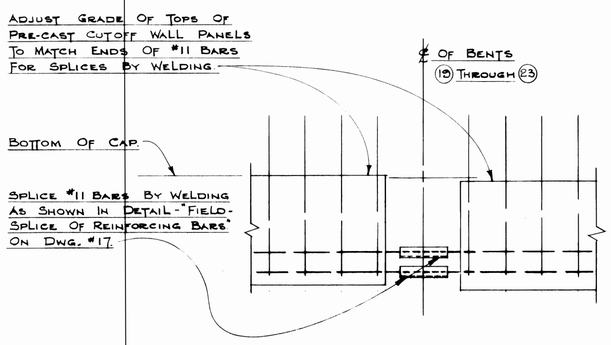
TYPICAL SECTION AT BACK OF WHARF FROM BENT (5) THROUGH (25)

SCALE: 1/2" = 1'-0".

CAP PLAN AT BACK OF WHARF

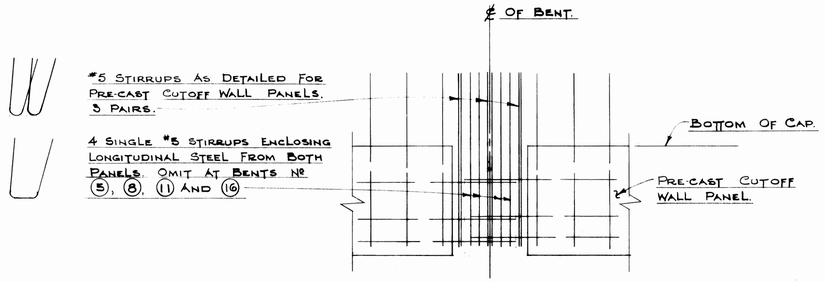
BENT (5) THROUGH (25)

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



SPLICING OF #11 BARS IN PRE-CAST CUTOFF WALL PANELS THROUGHOUT HEAVY LOAD AREA.

SCALE: 1/2" = 1'-0".



STIRRUPS IN CLOSURE POURS OF OFFSET PRE-CAST CUTOFF WALL PANELS AT BENTS (5), (6), (8), (11), (14), (16) AND (25)

SCALE: 1/2" = 1'-0".

HARRY L. MARSHALL — STATE OF WASHINGTON — 1321 — REGISTERED PROFESSIONAL ENGINEER

APPROVED 7-1-71 DATE

R P Packard Asst. CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

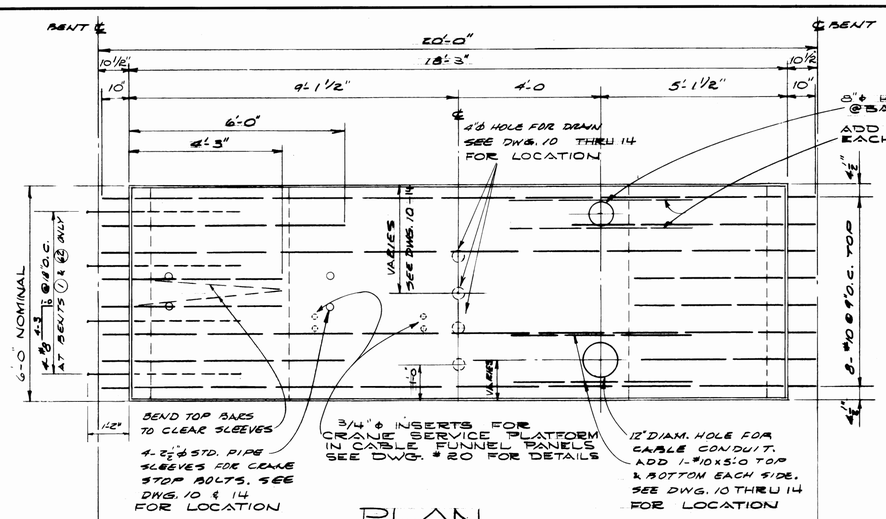
WIDENED CAP AT BACK OF WHARF

MARSHALL, BARR & PACQUER

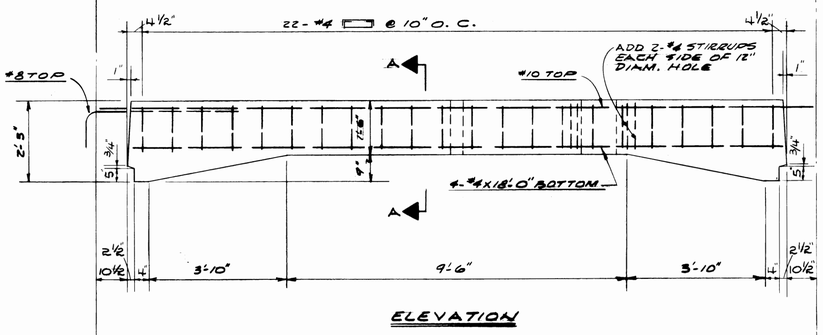
SEATTLE, WASHINGTON 98101

CONSULTING ENGINEERS

JOB NO.	
1251-BP	
DRAWN	TRACED
W.Webb	
CHECKED	DATE
ALP	3-24-71
SCALE	
As Noted.	
DWG. NO.	ISSUE
16-A	
EP-1909A-16	



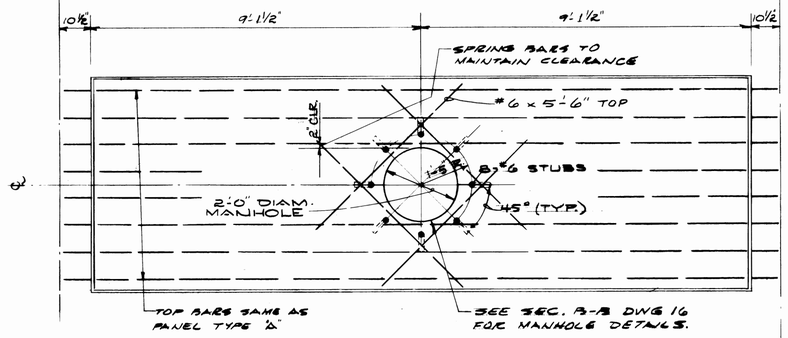
PLAN



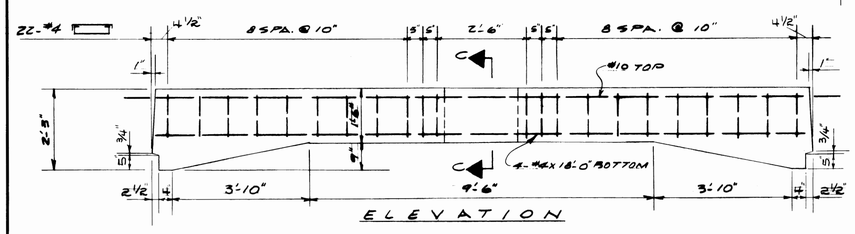
ELEVATION

DECK PANEL TYPE "A"

½" = 1'-0"



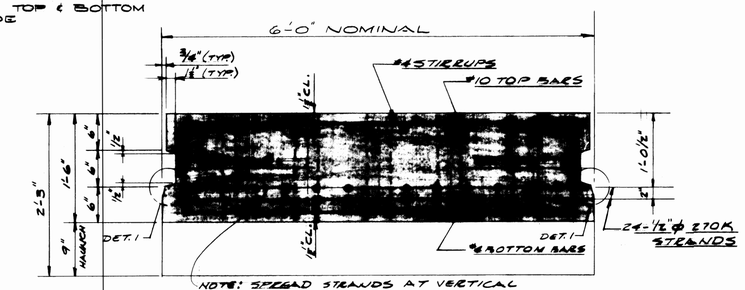
PLAN



ELEVATION

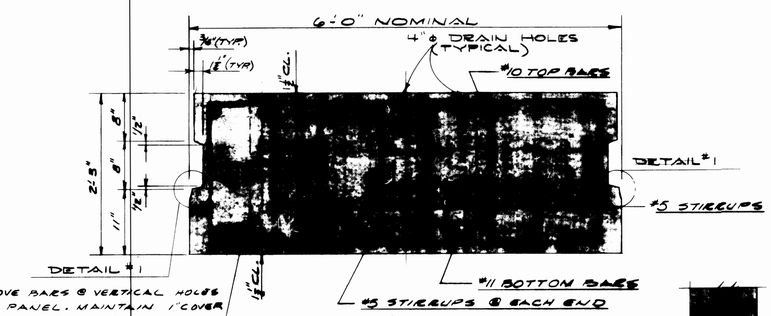
DECK PANEL TYPE "C"

½" = 1'-0"



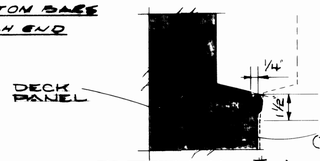
SECTION A-A

1" = 1'-0"



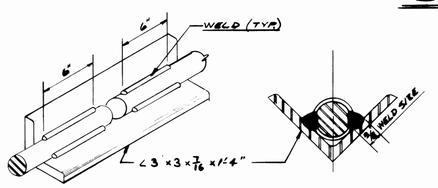
SECTION B-B

1" = 1'-0"



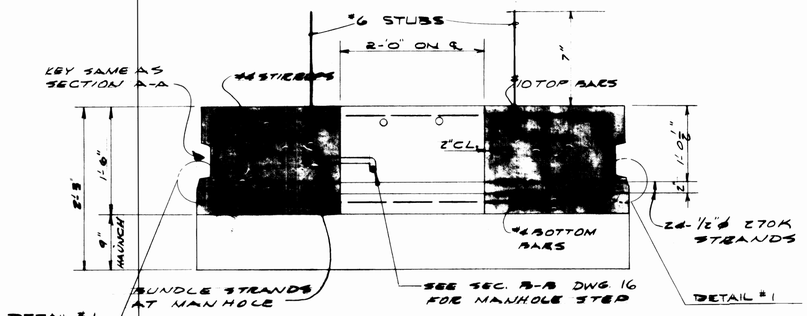
DETAIL #1

3" = 1'-0"



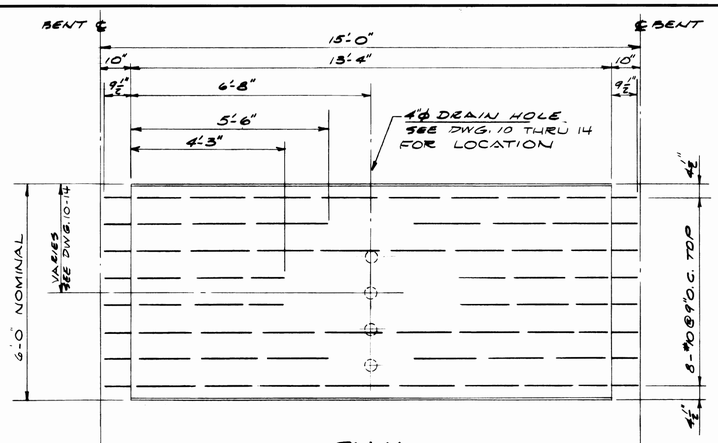
FIELD SPLICE OF REINFORCING BARS

N.T.S.

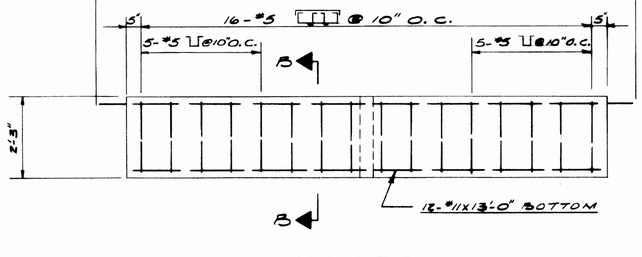


SECTION C-C

1" = 1'-0"



PLAN



ELEVATION

DECK PANEL TYPE "B"

½" = 1'-0"

NOTES

1. DECK PANEL TYPE "A" & "C"
   CONCRETE COMPRESSIVE STRENGTH f'_c = 6,000 PSI @ 28 DAYS.
   FINAL PRESTRESS FORCE = 370 KIPS
   REINFORCING STEEL A.S.T.M A-615 GRADE 60
   PANEL WEIGHT = 28 KIPS

2. DECK PANEL TYPE "B"
   CONCRETE COMPRESSIVE STRENGTH f'_c = 5,000 PSI @ 28 DAYS.
   REINFORCING STEEL A.S.T.M. A-615 GRADE 60
   PANEL WEIGHT = 27 KIPS

3. COMPLETE SHOP DRAWINGS, INCLUDING CONCRETE MIX, REINFORCING STEEL AND LIFTING DEVICES, SHALL BE SUBMITTED TO THE PORT ENGINEER FOR APPROVAL BEFORE FABRICATING DECK PANELS

HARRY L. MARSHALL STATE OF WASHINGTON 7201 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

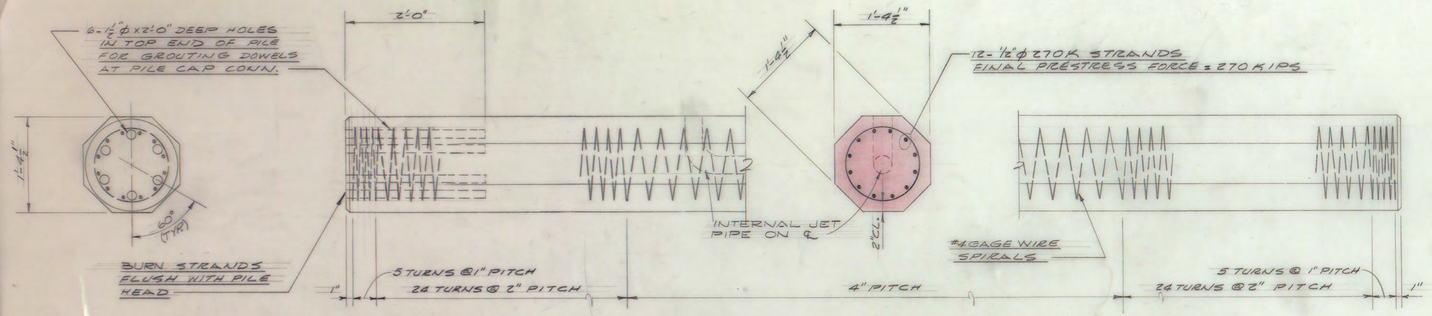
DECK PANEL DETAILS

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

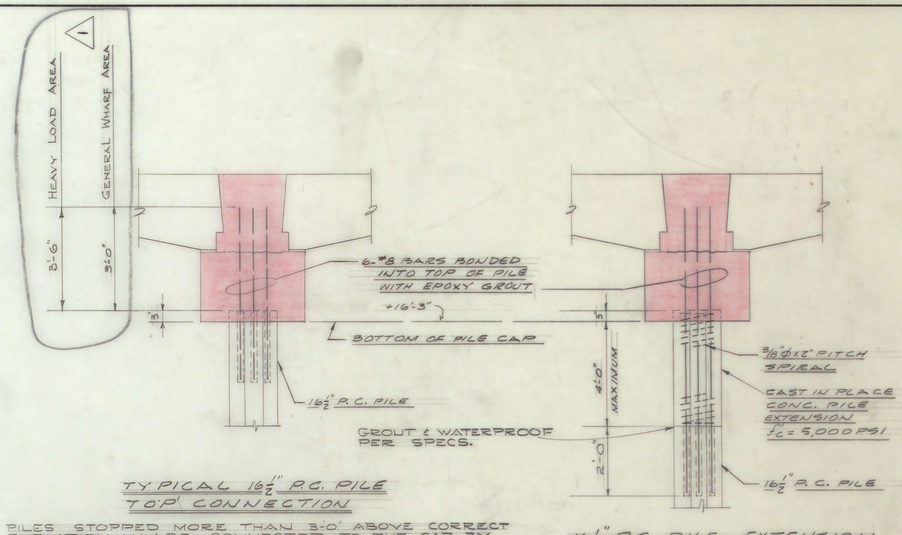
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
RCN	GMM
CHECKED	DATE
[illegible]	6-6-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
17	
EP-1910-16	



16"½" PRESTRESSED CONCRETE PILE

1" = 1'-0"

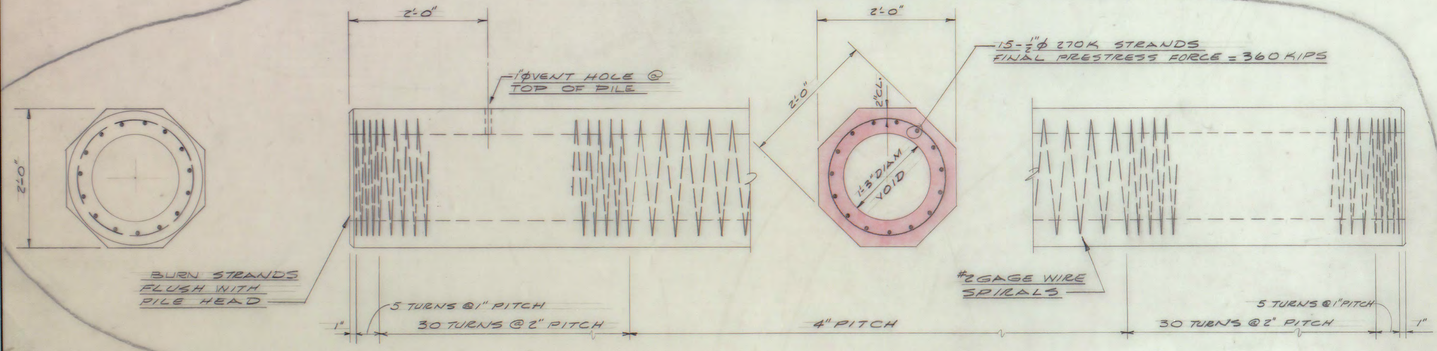


TYPICAL 16½" P.C. PILE TOP CONNECTION

16½" P.C. PILE EXTENSION

PILES STOPPED MORE THAN 3'-0" ABOVE CORRECT ELEVATION MAY BE CONNECTED TO THE CAP BY CHIPPING TO CUT-OFF & PRESERVING 3'-0" MINIMUM OF ALL STRANDS.

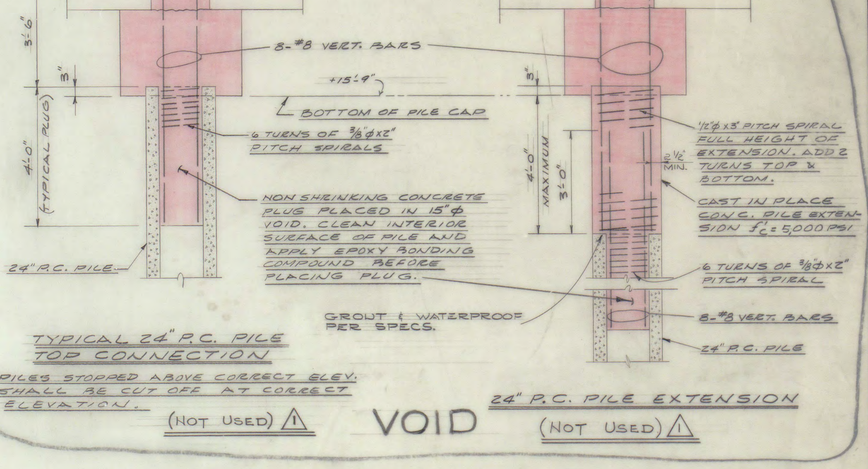
PILES STOPPED LESS THAN 3'-0" ABOVE CORRECT ELEV. SHALL BE CUT-OFF AT CORRECT ELEVATION AND HAVE 6 - 1"/2" ϕ x 2'-0" DEEP HOLES FIELD DRILLED TO RECEIVE 6-#8 DOWELS.



VOID

24" PRESTRESSED CONCRETE PILE (NOT USED) ⚠1

1" = 1'-0"



TYPICAL 24" P.C. PILE TOP CONNECTION

PILES STOPPED ABOVE CORRECT ELEV. SHALL BE CUT OFF AT CORRECT ELEVATION.

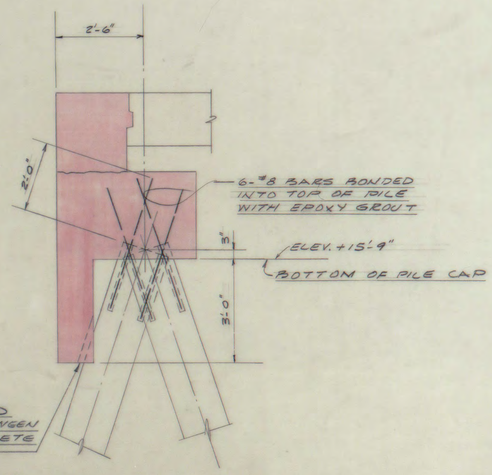
(NOT USED) ⚠1

VOID

24" P.C. PILE EXTENSION (NOT USED) ⚠1

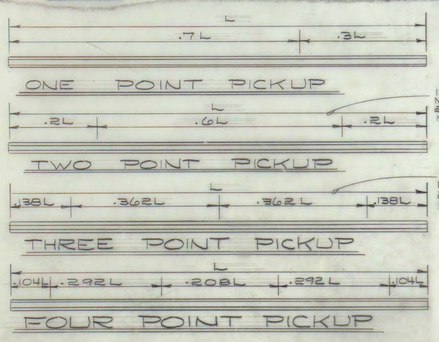
PRESTRESSED PILE CONNECTIONS AT PILE CAPS

½" = 1'-0"



16 7/12" P.C. BATTER PILE TOP CONNECTION

½" = 1'-0"



NOTES:

1. CONCRETE STRENGTH FOR PILES SHALL BE AS FOLLOWS:
   16½" PILES ON LINES (A) THRU (K) ; f'_c = 6,000 PSI
   16½" PILES ON LINES (L) THRU (P) ; f'_c = 8,000 PSI
   SEE PILE PLAN DWG. #6
   24" PILES ; f'_c = 7,000 PSI
   CAST IN PLACE PILE EXTENSION AND PLUGS ; f'_c = 5,000 PSI ⚠1
2. REINFORCING FOR PILES:
   PRESTRESS TENDONS — ½" DIAM. STRANDS, 270 KSI ULTIMATE STRESS.
   REINFORCING BARS — A.S.T.M. A-615 GRADE 60.
   #2 AND #4 GAGE WIRE SPIRALS — A.S.T.M. A-82-66
   ⅜" & ½"ϕ SPIRALS — STRENGTH SPEC. SAME AS A-615 GRADE 60
3. COMPLETE SHOP DRAWINGS, INCLUDING CONCRETE MIX, REINFORCING, PILE SPLICES AND LIFTING POINTS, SHALL BE SUBMITTED TO THE PORT ENGINEER FOR APPROVAL BEFORE FABRICATING PILES.
4. CONCRETE STRENGTH FOR 16½" PILES IN HEAVY LOAD AREA SHALL BE AS FOLLOWS: ⚠1
   ON LINES (A) THROUGH (00) f'_c = 6,000 p.s.i. } SEE PILE PLAN ON
   ON LINES (PP) THROUGH (P) f'_c = 8,000 p.s.i. } DRAWINGS Nº 6 AND 9A

MARK	REVISION.	APP'D	DATE.
⚠1	HEAVY LOAD AREA-PILING REV.	WM	3-2-71

HARRY L MARSHALL STATE OF WASHINGTON 3021 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

PRESTRESSED CONCRETE PILE DETAILS

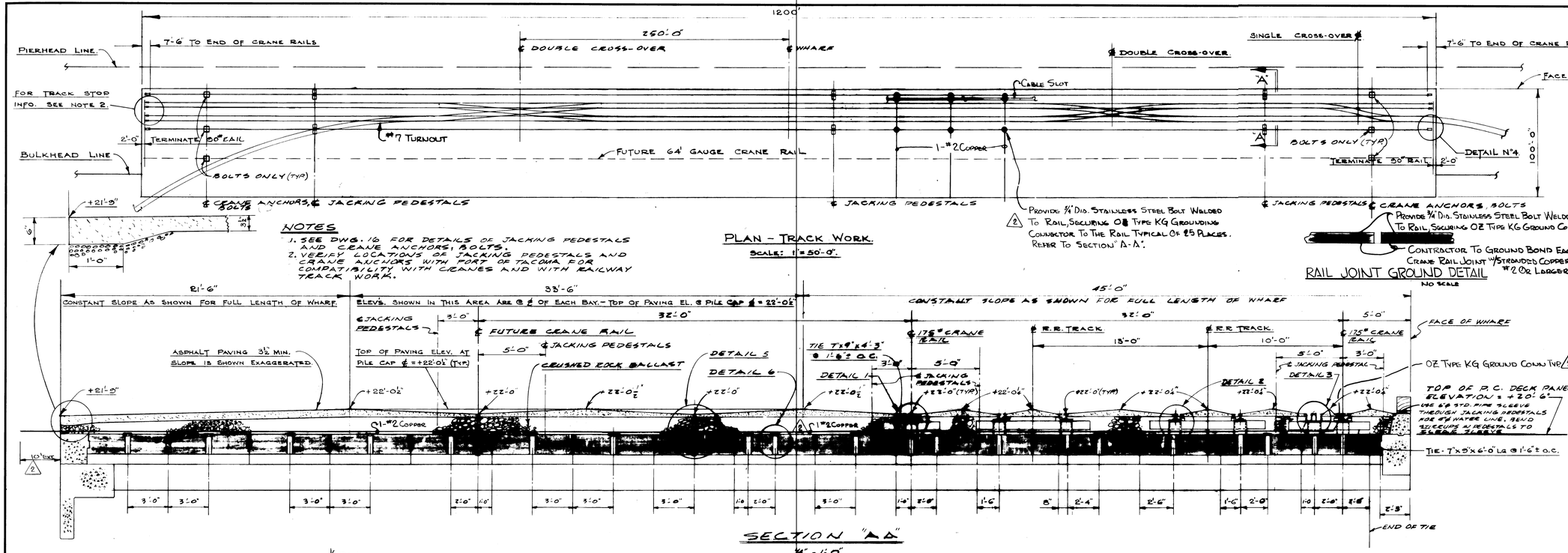
MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
ECN	GMM
CHECKED	DATE
CwB	15-6-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
18	⚠1

EP-1911-16



PLAN - TRACK WORK.

SCALE: 1"=50'-0".

NOTES

1. SEE DWG. 16 FOR DETAILS OF JACKING PEDESTALS AND CRANE ANCHORS; BOLTS.
2. VERIFY LOCATIONS OF JACKING PEDESTALS AND CRANE ANCHORS WITH PORT OF TACOMA FOR COMPATIBILITY WITH CRANES AND WITH RAILWAY TRACK WORK.

SECTION "A-A"

½" = 1'-0"

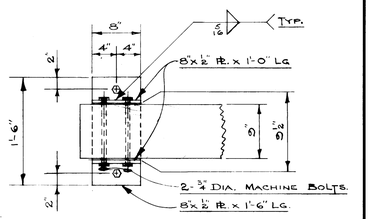
(2) Provide ¾" Dia. Stainless Steel Bolt Welded To Rail, Securing OE Type KG Grounding Connector To The Rail Typical Of 25 Places. Refer To Section "A-A".

RAIL JOINT GROUND DETAIL

NO SCALE

Provide ¾" Dia. Stainless Steel Bolt Welded To Rail Securing OZ Type KG Ground Conn.

Contractor To Ground Bond Each Crane Rail Joint W/ Stranded Copper #2 Or Larger.



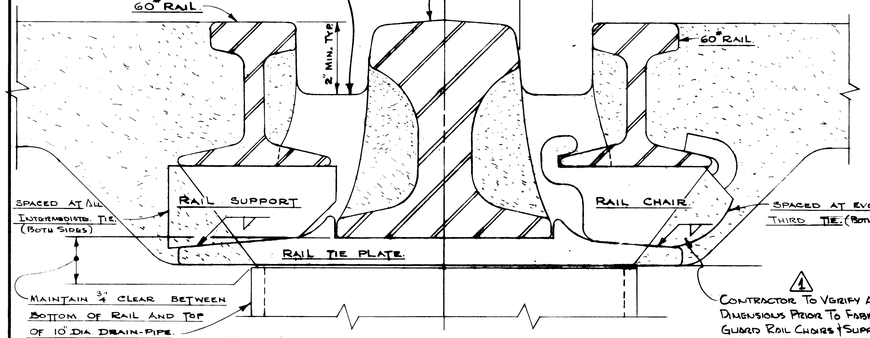
PLAN.

NOTE SPACE ANCHORS @ 10'-0" O.C. FOR FULL LENGTH OF WHARF FOR ALL CRANE RAILS.

ELEVATION

CRANE RAIL TIE ANCHORS.

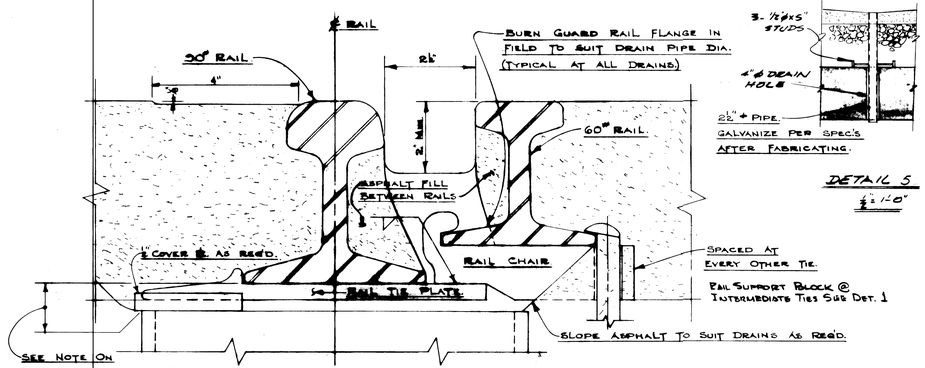
SCALE: 1"=1'-0".



DETAIL Nº 1 — TYPICAL CRANE RAIL SECTION.

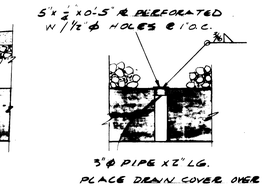
SCALE: 6"=1'-0".

(4) Contractor To Verify All Shapes & Dimensions Prior To Fabrication Of Guard Rail Chairs & Supports. All Chairs To Be Min. 2" Thick. All Supports To Be Min. 1" Thick.



DETAIL Nº 2 — TYPICAL TRACK RAIL SECTION.

SCALE: 6"=1'-0".



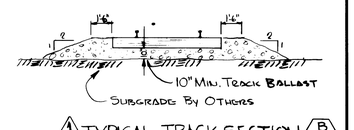
DETAIL 5

½" = 1'-0"

PLACE DRAIN COVER OVER ALL BLOCK OUTS NOT USED FOR DECK DRAINS. GALVANIZE COVER PER SPECIFICATIONS

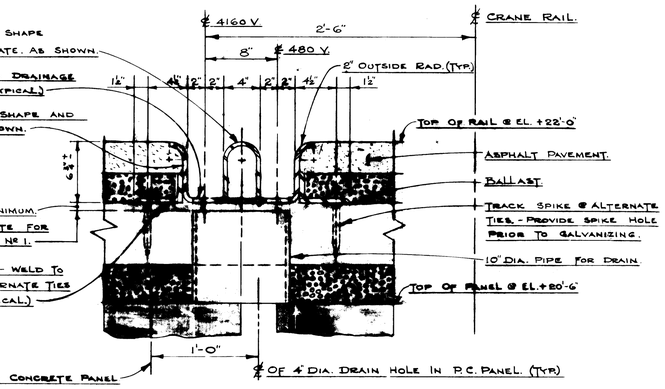
DETAIL 6

1" = 1'-0"



(4) TYPICAL TRACK SECTION ON LAND (B/19)

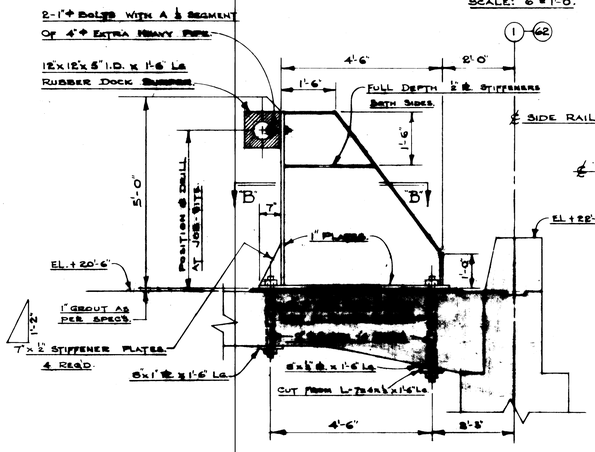
3/4" = 1'-0"



NOTE: PROVIDE ELECTRICAL GROUND.

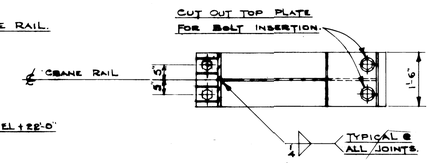
DETAIL Nº 3. — CABLE SLOT AND DRAINAGE.

SCALE: 1½"=1'-0".



DETAIL Nº 4 — CRANE STOP

SCALE: ½"=1'-0".



NOTE: ALL PLATES ARE ½" UNLESS OTHERWISE NOTED. ALL WELDS ARE ¼" FILLET BOTH SIDES, ALL JOINTS.

SECTION "B-B".

SCALE: ½"=1'-0".

NOTES:

(1) FABRICATE CABLE SLOT ASSEMBLY IN MINIMUM LENGTHS OF 18'-0". GALVANIZE AFTER FABRICATION IS COMPLETE. CO-ORDINATE FABRICATING LENGTHS, ATTACHMENTS AND DRAINS WITH SPACING OF RAIL TIES, DRAIN HOLES IN PANELS AND LOCATION OF CABLE FUNNEL. BUTT ASSEMBLIES OVER RAIL TIES. LENGTHS OF FABRICATED SLOT ASSEMBLIES TO BE IN MULTIPLES OF 1'-6".

(2) ON EACH 90# RAIL - 1'-0" FROM EACH END OF TRACK - INSTALL CAST STEEL WHEEL STOPS, NELSON IRON WORKS, DESIGN NO. 425 FURNISHED BY PORT.

(3) SEE SPECIFICATIONS FOR DATA AND RELATED INFORMATION REGARDING FROGS, TURNOUTS AND CROSS-OVERS.

Mark	Revision	App	Date
2	Crane Rail & Cable Slot Grounds		7-10-70
1	Added Land Track Section		7-10-70

HARRY L. MARSHALL STATE OF WASHINGTON 3321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 8-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

TRACK PLAN & DETAILS

MARSHALL, BARR & PACQUER

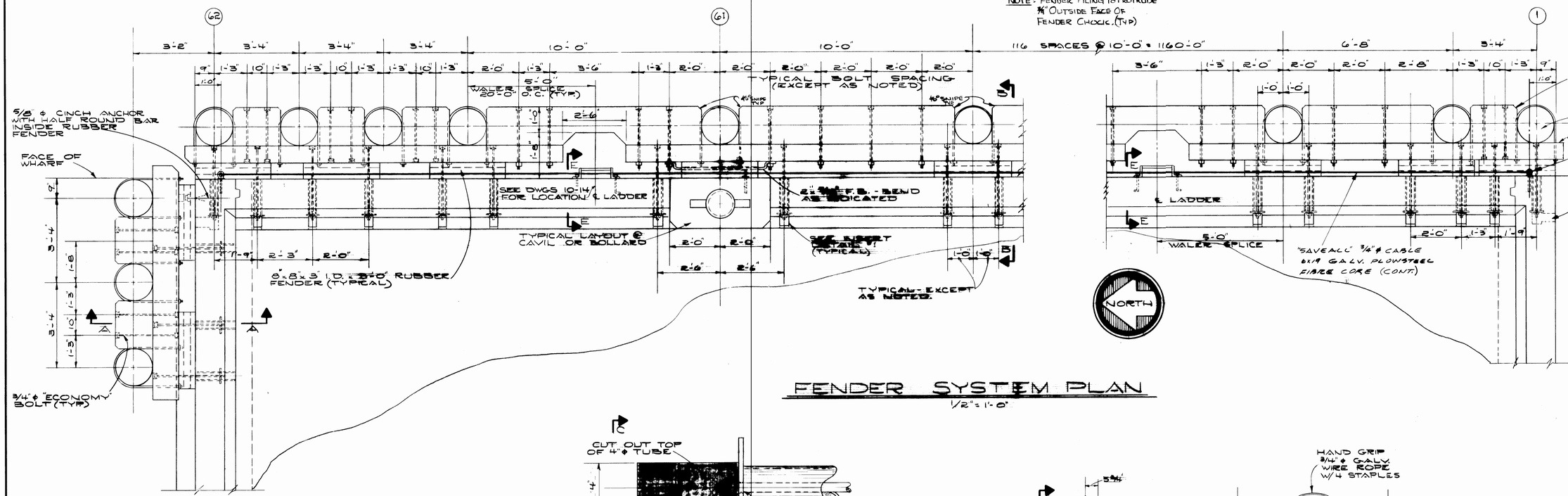
SEATTLE, WASHINGTON 98101

CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
W. Webb	W. Webb
CHECKED	DATE
JDH	6-16-70
SCALE	
As Noted	
DWG. NO.	
19	
EP-1912	

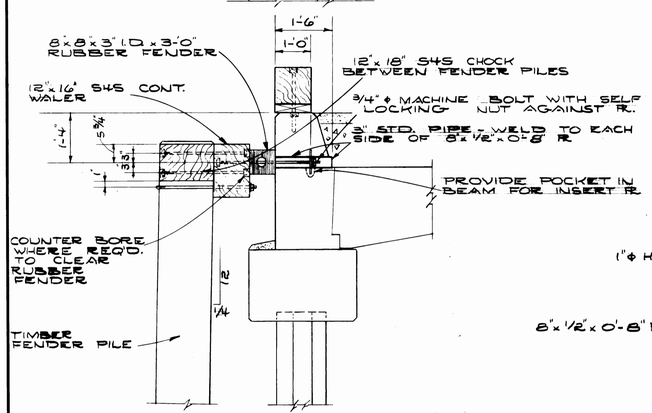

REMOVE PLANKING AND FILL WITH LEAN CONCRETE (TYPICAL)
RAIL ROAD RAIL MISSING IN THIS AREA
LIMITS OF OVERLAY PAVING
PIERHEAD LINE
BULKHEAD LINE
FOR TRACK STOP INFO. SEE NOTE 2.
DOUBLE CROSS-OVER
SINGLE CROSS-OVER
CABLE SLOT
#7 TURNOUT
FUTURE 64' GAUGE CRANE RAIL
TERMINATE 30" RAIL
FACE OF WHARF
7-6 TO END OF CRANE RAILS
DETAIL Nº4
NORTH
BOLTS ONLY (TYP)
CRANE ANCHORS & BOLTS
JACKING PEDESTALS
NOTES
1. SEE DWG. 16 FOR DETAILS OF JACKING PEDESTALS AND CRANE ANCHORS, BOLTS.
2. VERIFY LOCATIONS OF JACKING PEDESTALS AND CRANE ANCHORS WITH PORT OF TACOMA FOR COMPATIBILITY WITH CRANES AND WITH RAILWAY TRACK WORK.
PLAN - TRACK WORK.
SCALE: 1"=50'-0"
Provide 3/4 Dia. Stainless Steel Bolt Welded To Rail, Securing OZ Type KG Grounding Connector To The Rail Typical Of 25 Places. Refer To Section A-A.
Contractor To Ground Bond Each Crane Rail Joint w/Stranded Copper #2 Or Larger.
RAIL JOINT GROUND DETAIL
NO SCALE
CONSTANT SLOPE AS SHOWN FOR FULL LENGTH OF WHARF
ELEVS. SHOWN IN THIS AREA ARE @ ℄ OF EACH BAY. - TOP OF PAVING EL. @ PILE CAP ℄ = 22'-0½
SLOPE OVERLAY TO DRAIN INTO THIS ROW OF DECK DRAINS
CENTER OF OVERLAY
2" A.C.P. OVERLAY ON FABRIC EXAGGERATED SCALE
ASPHALT PAVING 3½ MIN. SLOPE IS SHOWN EXAGGERATED
CRUSHED ROCK BALLAST
TOP OF P.C. DECK PANELS ELEVATION = +20'-6"
TIE - 7"x9"x6'-0 LG @ 1'-6" O.C.
52.5'
SECTION "AA"
DETAIL Nº1 - TYPICAL CRANE RAIL SECTION.
SCALE: 6"=1'-0".
ASPHALT FILL BETWEEN RAILS (TYP) SLOPE TO DRAIN FROM BENT LINE
60" RAIL
175" RAIL
RAIL SUPPORT
RAIL CHAIR
RAIL TIE PLATE
Contractor To Verify All Shapes & Dimensions Prior To Fabrication Of Guard Rail Chairs & Supports. All Chairs To Be Min 2" Thick. All Supports To Be Min 1" Thick
DETAIL Nº2 - TYPICAL TRACK RAIL SECTION.
SCALE: 6"=1'-0".
BURN GUARD RAIL FLANGE IN FIELD TO SUIT DRAIN PIPE DIA. (TYPICAL AT ALL DRAINS)
SLOPE ASPHALT TO SUIT DRAIN AS REQD.
DETAIL 5
DETAIL 6
CRANE RAIL TIE ANCHORS
TYPICAL TRACK SECTION ON LAND
DETAIL Nº3. - CABLE SLOT AND DRAINAGE.
SCALE: 1½"=1'-0".
NOTE: PROVIDE ELECTRICAL GROUND.
DETAIL Nº4 - CRANE STOP.
SCALE: ½"=1'-0".
REMOVE CRANE STOP AND BOLTS (TYPICAL - 4 PLACES)
SECTION "B-B".
SCALE: ½"=1'-0".
NOTE: ALL PLATES ARE ½" UNLESS OTHERWISE NOTED. ALL WELDS ARE ¼" FILLET BOTH SIDES, ALL JOINTS.
NOTES:
(1) FABRICATE CABLE SLOT ASSEMBLY IN MINIMUM LENGTHS OF 18'-0". GALVANIZE AFTER FABRICATION IS COMPLETE. CO-ORDINATE FABRICATING LENGTHS, ATTACHMENTS AND DRAINS WITH SPACING OF RAIL TIES, DRAIN HOLES IN PANELS AND LOCATION OF CABLE FUNNEL. BUTT ASSEMBLIES OVER RAIL TIES. LENGTHS OF FABRICATED SLOT ASSEMBLIES TO BE IN MULTIPLES OF 1'-6".
(2) ON EACH 30" RAIL-1'-0 FROM EACH END OF TRACK - INSTALL CAST STEEL WHEEL STOPS, NELSON IRON WORKS, DESIGN Nº 425 FURNISHED BY PORT. REMOVE AND DELIVER TO PORT MAINTENANCE.
(3) SEE SPECIFICATIONS FOR DATA AND RELATED INFORMATION REGARDING FROGS, TURNOUTS AND CROSS-OVERS.
* BLOCK DRAIN HOLES (WOOD OR STYROFOAM SUGGESTED) TO SUPPORT CONCRETE FILLER
★ PRELEVEL WITH LEAN (3 SACK/YD³) CONCRETE
2 Crane Rail & Cable Slot Grounds 7-10-70
1 Added Land Track Section 7-10-70
MARK REVISION APP DATE
HARRY L. MARSHALL STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER
APPROVED 6-18-70 DATE CHIEF ENGINEER
FIELD BOOK
PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B OVERLAY
CONT. #654 DATE: 10-10-88
MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
MB CONSULTING ENGINEERS
JOB NO. 1251
DRAWN W. Webb TRACED W. Webb
CHECKED JDH DATE 6-16-70
SCALE As Noted
DWG. NO. 19 A
EP-1912-16

NOTE: FENDER PILING TO PROTRUDE ¾" OUTSIDE FACE OF FENDER CHOCK. (TYP)



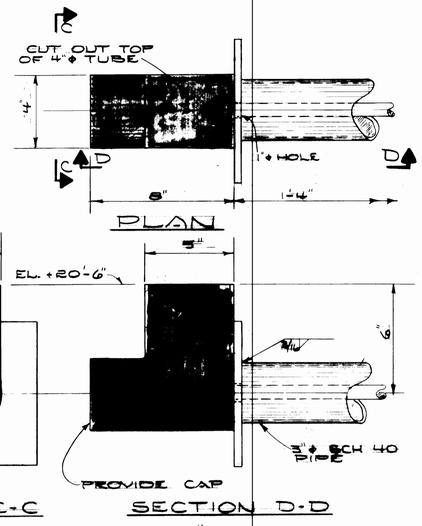
FENDER SYSTEM PLAN

1/2" = 1'-0"



SECTION A-A

1/2" = 1'-0"



PLAN

SECTION C-C

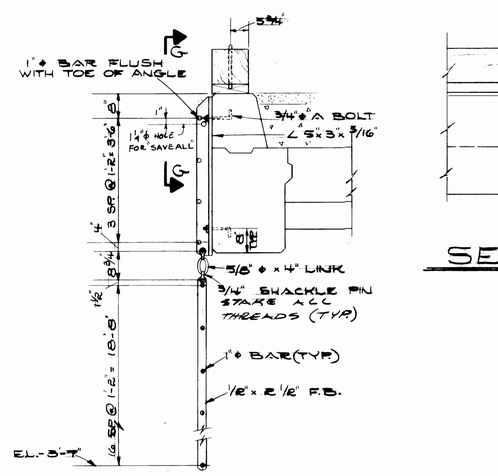
SECTION D-D

DETAIL #1

DETAIL OF FENDER SYSTEM BOLT INSERT IN CONCRETE

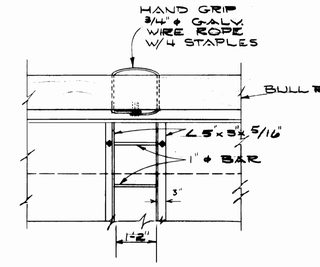
3" = 1'-0"

SHADED PORTION OF DETAIL INDICATES REQUIRED VOID. MAY BE FORMED OF STYROFOAM - P.V.C. PIPE OR GALV. SHEET METAL. 1/2" & 3" ϕ SCHEDULE 40 PIPE SHALL BE GALV. STEEL PER SPECS.



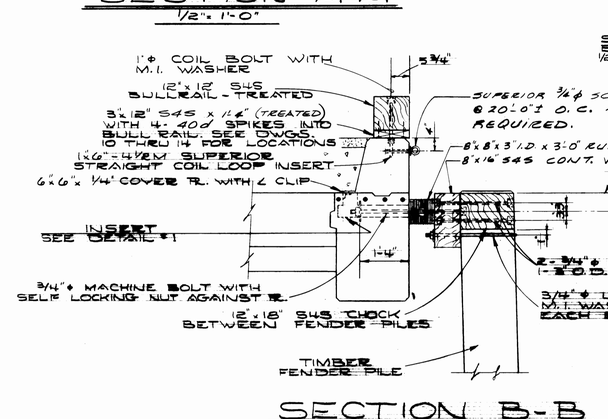
SECTION E-E

1/2" = 1'-0"



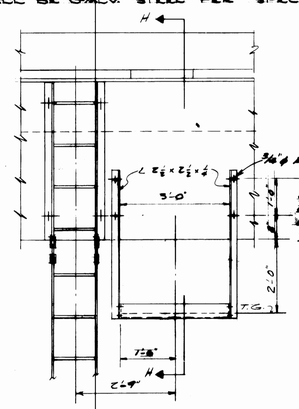
SECTION G-G

1/2" = 1'-0"



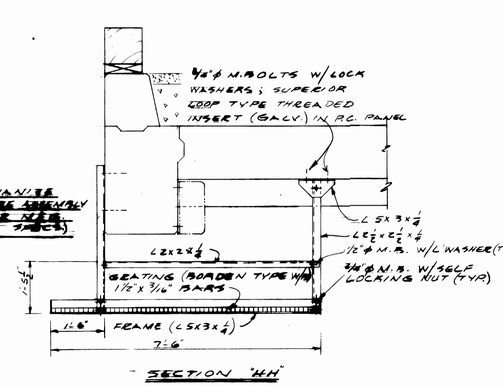
SECTION B-B

1/2" = 1'-0"



CATWALK DETAIL

1/2" = 1'-0"



SECTION "HH"

NOTES:

1. FENDER PILING & TREATMENT PER SECTION 2E SPECIFICATIONS.
2. ALL TIMBER - GRADE & TREATMENT PER SECTION 2G SPECIFICATIONS.
3. ALL HARDWARE & BOLTS, HOT DIP GALV PER SPECIFICATIONS
4. RUBBER FENDERS PER SECTION 2F SPECIFICATIONS
5. ALL BOLT THREADS SHALL BE COATED WITH AN APPROVED WATER PROOF GREASE BEFORE INSTALLATION.
6. SELF LOCKING NUTS, WHERE NOTED, SHALL BE GALVANIZED, ASTM 307G, BETHLEHEM ANCO SELF LOCKING HEAVY HEX NUTS, OR APPROVED EQUAL.

HARRY L. MARSHALL — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

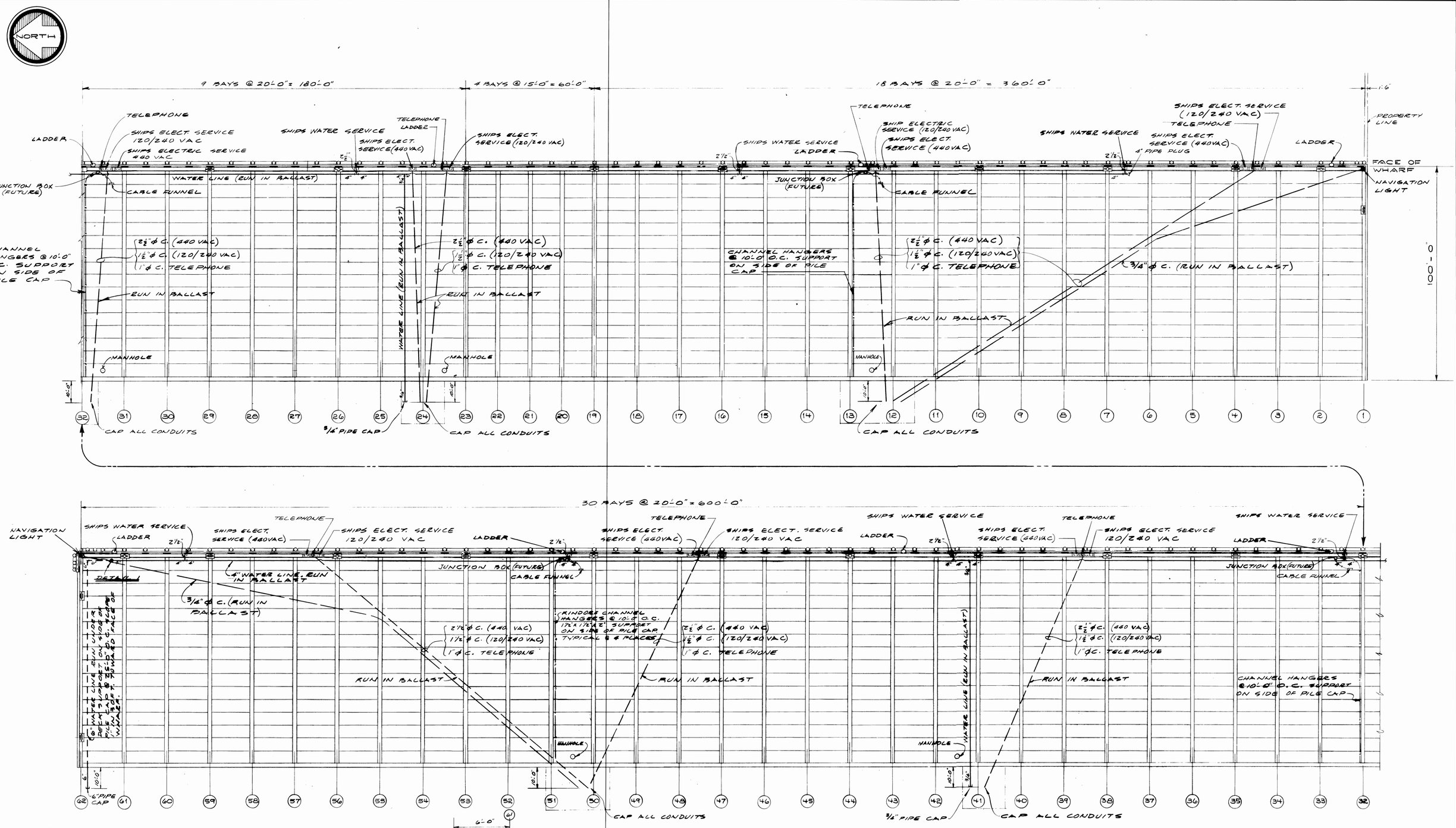
FENDER SYSTEM & TIMBER DETAILS

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

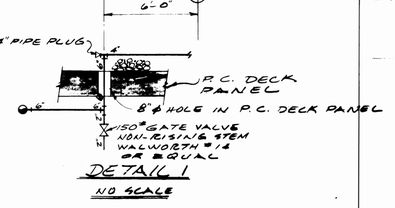
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
J.M.M.	J.T.A.
CHECKED	DATE
JDH	6-16-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
20	
EP-1913-16	



PLAN VIEW

1" = 20'-0"



DETAIL 1

NO SCALE

NOTES

1. TWO NAVIGATION LIGHTS ARE REQUIRED (COLOR TO BE DETERMINED BY PORT OF TACOMA). LIGHTS SHALL BE CROUSE-HINDS TYPE RNC-8 WITH HEAVY DUTY GUARD AND 100 WATT EXTRA LONG LIFE LAMP. PROVIDE SUBSTANTIAL GALVANIZED F.B. "ROPE GUARD".
2. SEE DWG. 21 FOR UTILITY DETAILS.

HARRY L. MARSHALL STATE OF WASHINGTON 3521 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

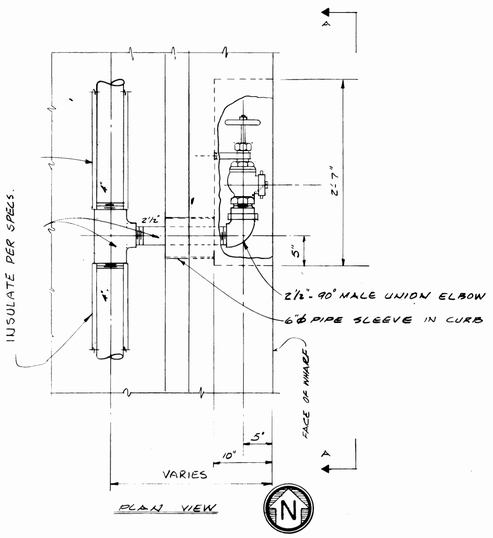
WHARF UTILITY PLAN

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
G.M.M.	J.T.A.
CHECKED	DATE
JDH	6-16-70
SCALE	
1" = 20'-0"	
DWG. NO.	ISSUE
21	
EP-1914-16	

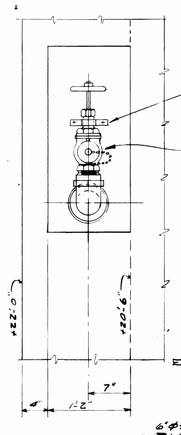


PLAN VIEW

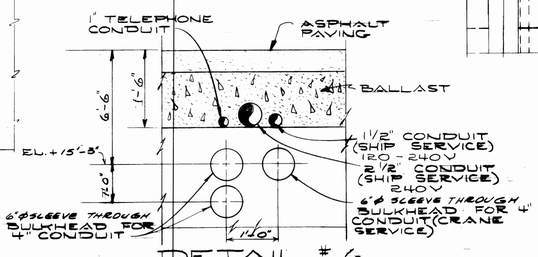
NOTE: PROVIDE RUBBER COVER & GUARD ANGLES PER DETAIL 5

DETAIL 1

1" = 1'-0"



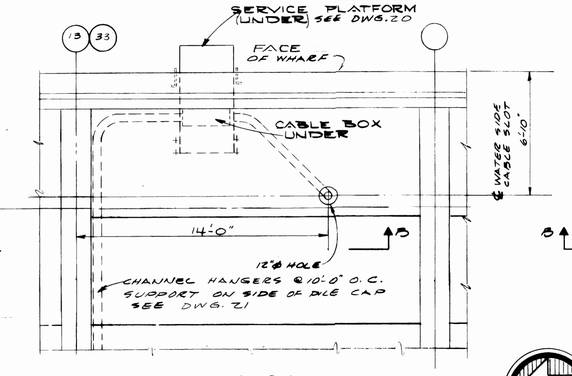
VIEW "AA"



DETAIL # 6

NO SCALE

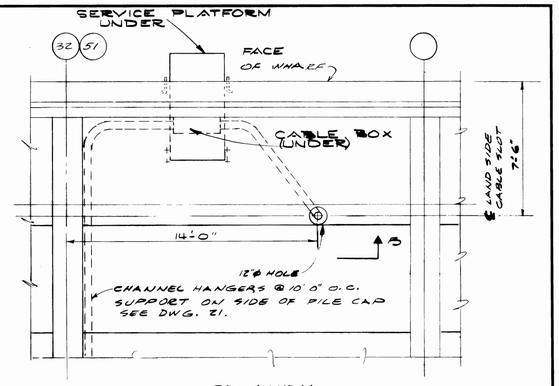
TYPICAL 4 PLACES - SEE DWGS. 10-14 FOR LOCATION



PLAN VIEW
CRANE SERVICE

DETAIL 2

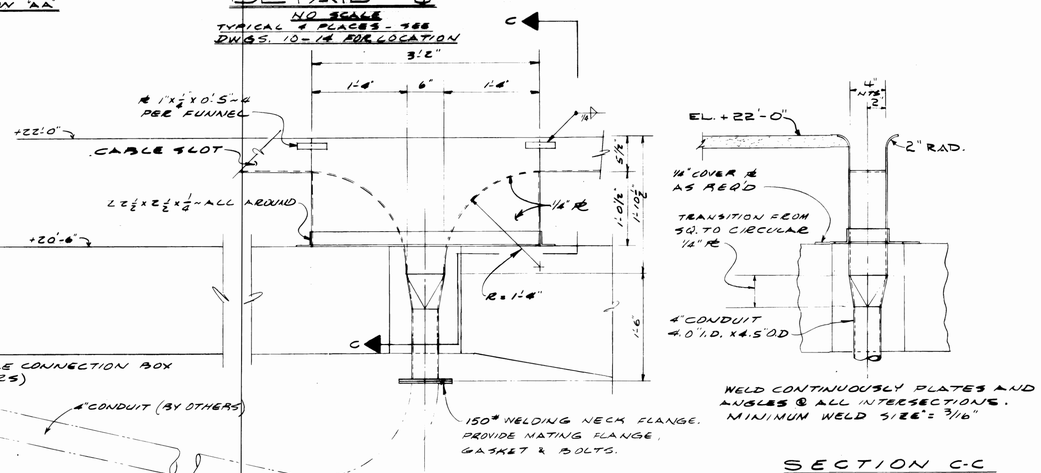
1/4" = 1'-0"



PLAN VIEW
CRANE SERVICE

DETAIL 3

1/4" = 1'-0"



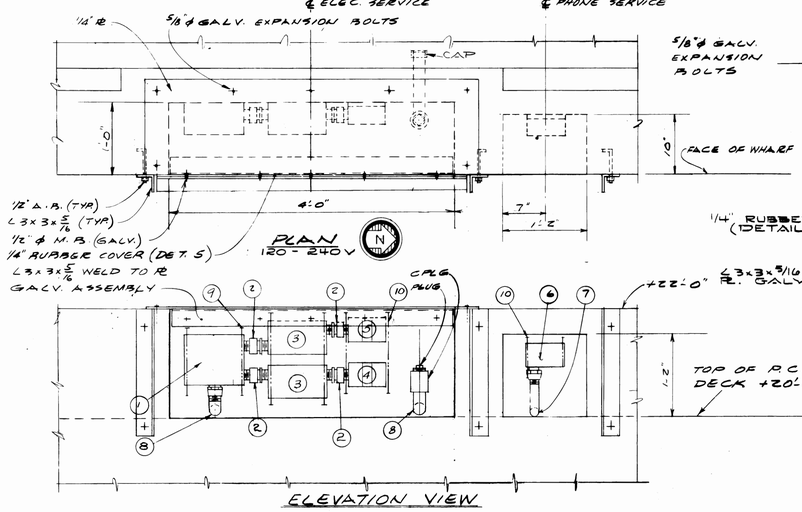
WELD CONTINUOUSLY PLATES AND ANGLES @ ALL INTERSECTIONS. MINIMUM WELD SIZE = 3/16"

SECTION C-C

1" = 1'-0"

CRANE SERVICE SECTION "BB"

1" = 1'-0"



PLAN
120 - 240V

PLAN
440 V.

ELEVATION VIEW

ELEVATION VIEW

SNAP ELECTRIC & TELEPHONE SERVICE
PROVIDE RUBBER COVER & GUARD ANGLES PER DETAIL 5

DETAIL 4 ~ 1"=1'-0"

DETAIL "4" LIST OF MATERIAL

(1) CROUSE-HINDS GUB-06 JUNCTION CONDULET WITH NEOPRENE GASKET 8½"W x 10"W

(2) THOMAS & BETTS 1" ERICKSON COUPLING

(3) CROUSE-HINDS DVS-122DT 20-2 CIRCUIT BREAKER; 20A, 2-P; 240V; WITH MOUNTING LUGS.

(4) CROUSE-HINDS FD-02 SERIES TWO GANG CONDULET WITH MOUNTING LUGS - TWO DS102G GASKETED COVERS WITH ONE 120V-20A-2P HUBBELLOK #23000G & ONE 120V-20A-2P HUBBELL GROUNDED RECP. #5361

(5) CROUSE-HINDS FD-02 SERIES TWO-GANG CONDULET WITH MOUNTING LUGS - TWO DS102G NEOPRENE GASKETED COVERS - HUBBELL #5361 AND ONE 6810G-20A-2P-GROUNDED.

(6) CROUSE-HINDS FD-02 SERIES TWO-GANG CONDULET WITH MOUNTING LUGS WITH DS1009 NEOPRENE GASKETED BLANK COVER ON ONE GANG AND SPECIAL TELEPHONE COVER (PER SPECIFICATIONS) ON OTHER GANG.

(7) 1" RIGID STEEL CONDUIT

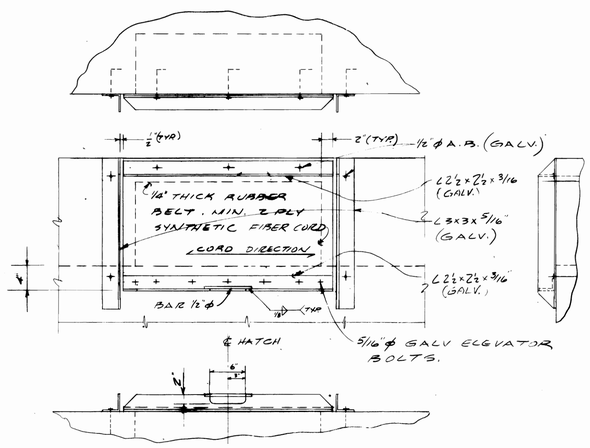
(8) 1½" RIGID STEEL CONDUIT

(9) POWER STRUT PS-549 FOR CONCRETE INSERT - USE PS-6-1420SS CLAMPING NUT & ⅛" HEX. HD. CAP SCREW

(10) POWER STRUT PS-510 HELD WITH PS 2600 SPOT INSERTS AND PS-6-1420 W3HS RECTANGULAR NUTS & ⅛" ROUND HD. MACH. SCREWS. USE PS-6-1420SS CLAMPING NUT AND ⅛" HEX. HD. CAP SCREW.

(11) 440V 3ϕ RECEPTACLE - 100A - PYLE NATIONAL #PRRA 6C 2040 SR

(12) CIRCUIT BREAKER "SQUARE D" - 100A-FA - NEMA 8 STAINLESS STEEL ENCLOSURE



DETAIL 5

1" = 1'-0"

TYPICAL @ ALL WATER, TELEPHONE & ELECTRICAL SERVICE HATCHES.

HARRY L. MARSHALL — STATE OF WASHINGTON — 321 — REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 (DATE)
CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
UTILITY DETAILS

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
GMM	GMM
CHECKED	DATE
JBH	6-17-70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
22	
EP-1915-16	

PIERHEAD LINE

NORTH

1 1250'

1 AREA MON. LINE

WHARF

STA. 34+18½ PROPERTY LINE

EXISTING 16" ROAD TO BE RELOCATED

EXIST. 6" WATER LINE TO BE RELOCATED

EXIST. 6" PETROLEUM LINE TO BE RELOCATED

EXIST. O.H. POWERLINE TO BE RELOCATED

TOE 20⁰

TOE 19²

2:1 SLOPE EL. 18⁴

DATA FROM A DWG. BY THE PORT OF TACOMA

THIS DRAWING IS FURNISHED FOR REFERENCE PURPOSES ONLY

ELEVATIONS ARE IN FEET & REFER TO 0.0 MEAN LOWER LOW WATER, U.S. COAST & GEODETIC SURVEY TIDE CHART DATUM

MARK	REVISION	APP	DATE
1	ADDED AREA MON. LINE DIMENSION	RWB	8-28-70

HARRY L. MARSHALL STATE OF WASHINGTON 3321 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

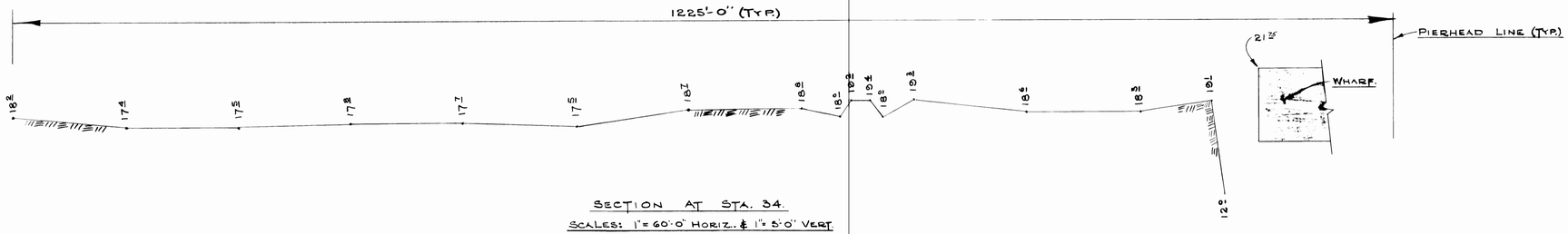
UTILITY DRAINAGE & GRADING PLAN

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

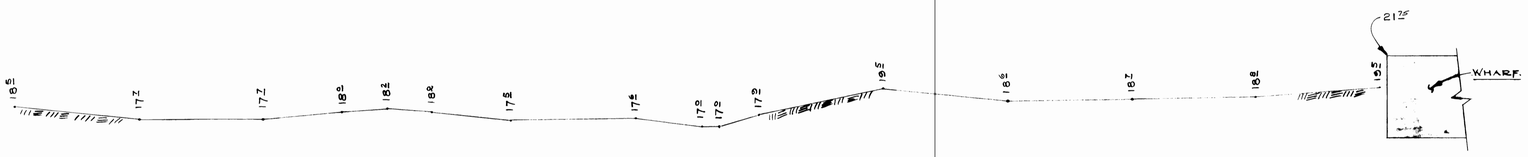
CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
G.M.M.	J.T.A.
CHECKED	DATE
JDH	6-16-70
SCALE	
1" = 60'-0"	
DWG. NO.	ISSUE
23	
EP-1916-16	



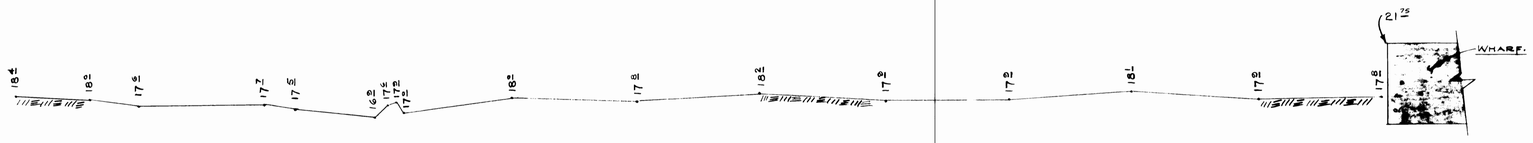
SECTION AT STA. 34.

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.



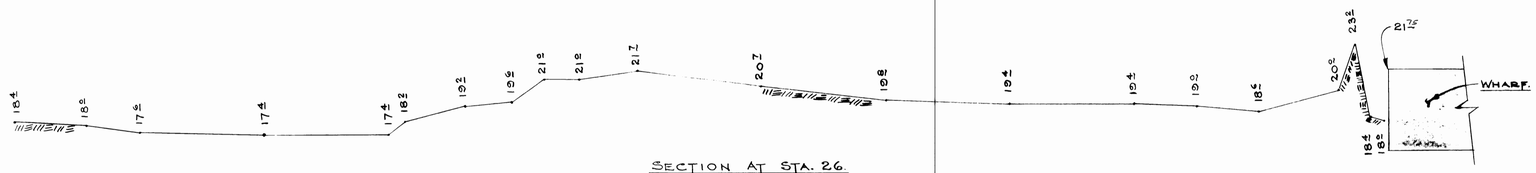
SECTION AT STA. 32

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.



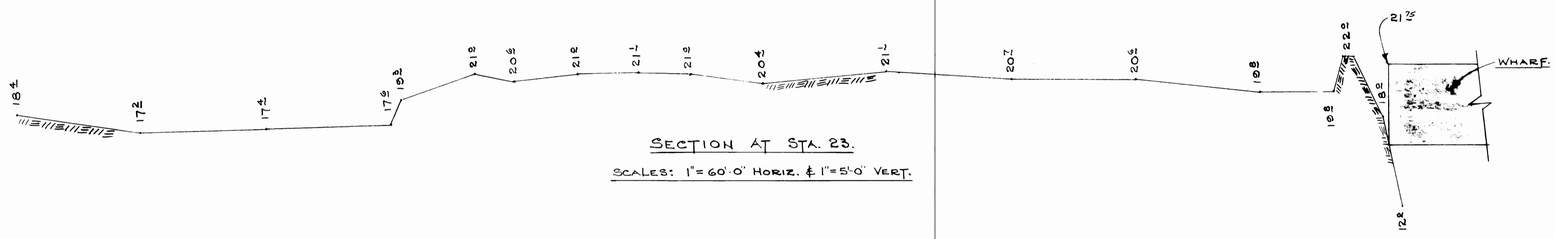
SECTION AT STA. 29.

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.



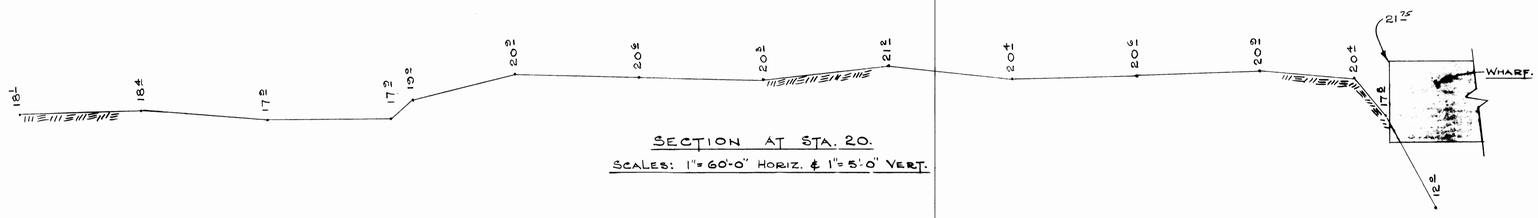
SECTION AT STA. 26.

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.



SECTION AT STA. 23.

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.



SECTION AT STA. 20.

SCALES: 1"=60'-0" HORIZ. & 1"=5'-0" VERT.

THIS DRAWING IS FURNISHED FOR REFERENCE PURPOSES ONLY.

DATA FROM A DRAWING BY THE PORT OF TACOMA.

ELEVATIONS ARE IN FEET & TENTHS.

HARRY L MARSHALL STATE OF WASHINGTON 2221 REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE

CHIEF ENGINEER

FIELD BOOK

PORT OF TACOMA

BLAIR WATERWAY TERMINAL

CONTAINER & BULK HANDLING FACILITY

BERTHS A & B

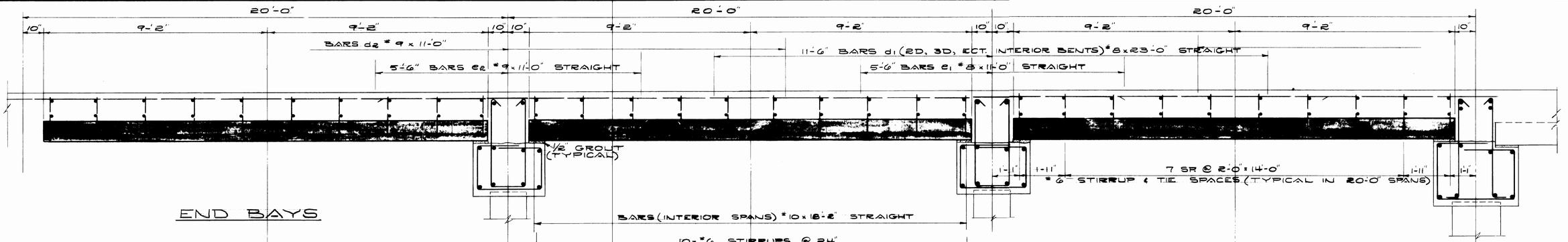
CROSS SECTIONS WEST OF THE WHARF

MARSHALL, BARR & PACQUER

SEATTLE, WASHINGTON 98101

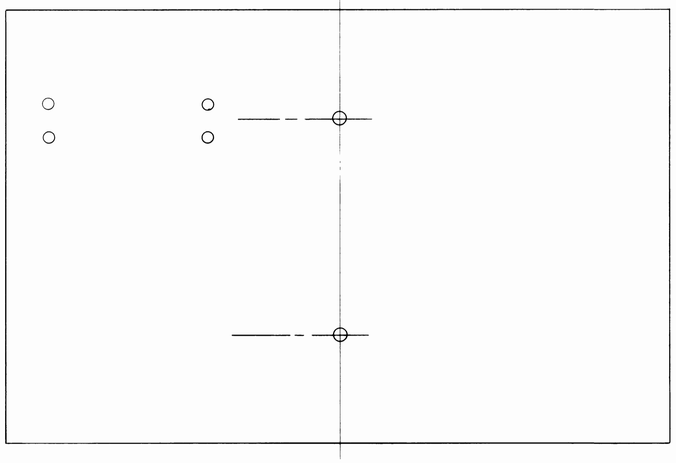
MB CONSULTING ENGINEERS

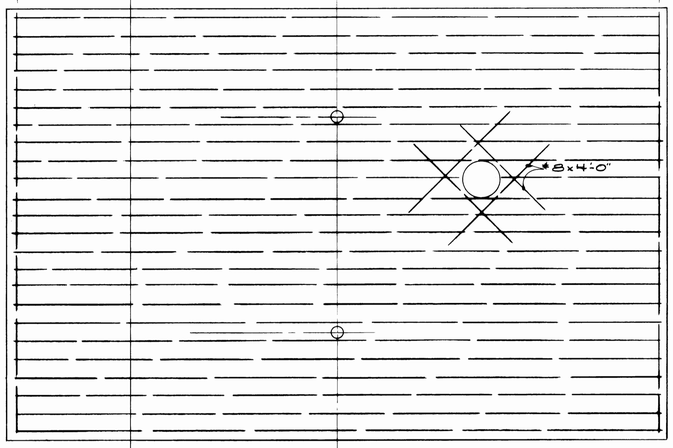
JOB NO.	
1251	
DRAWN	TRACED
G.M.M.	W.Webb
CHECKED	DATE
JDH	6-16-70
SCALE	
As Noted.	
DWG. NO.	ISSUE
24	
EP-1917-16	



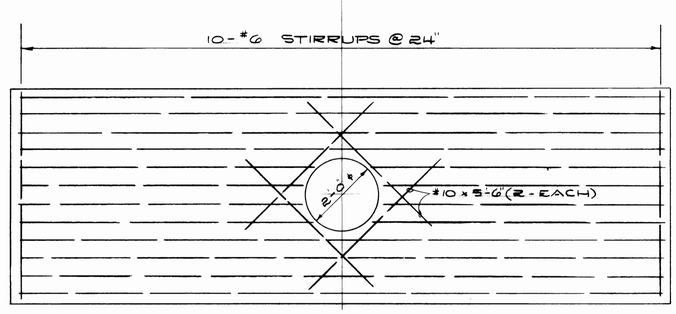
END BAYS

TYPICAL PILE CAP @ LINES #19 + #23

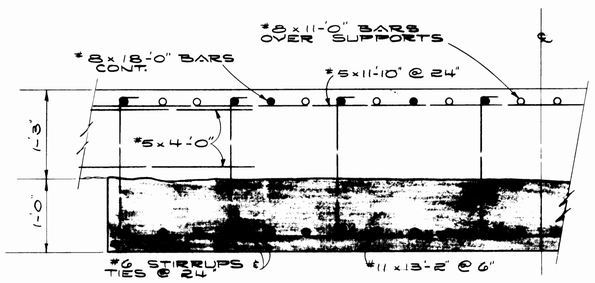




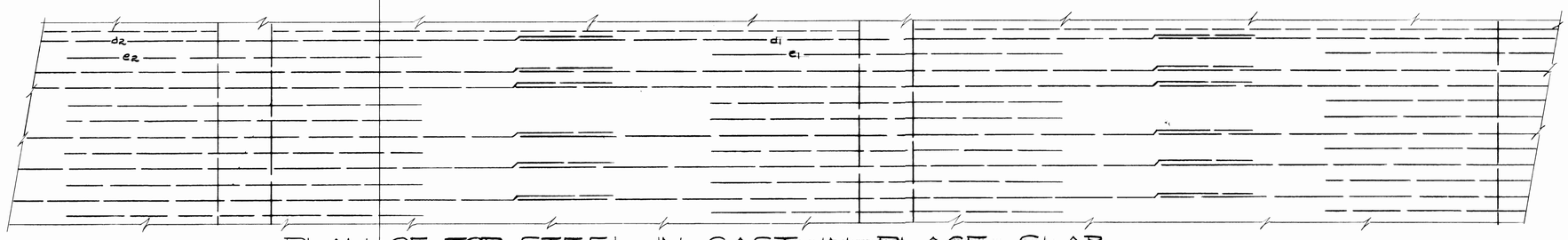
BOTTOM STEEL PLAN
IN 12'-0" PRECAST PANELS
1/2" = 1'-0"



BOTTOM STEEL PLAN
IN 6'-0" PRECAST PANELS
1/2" = 1'-0"

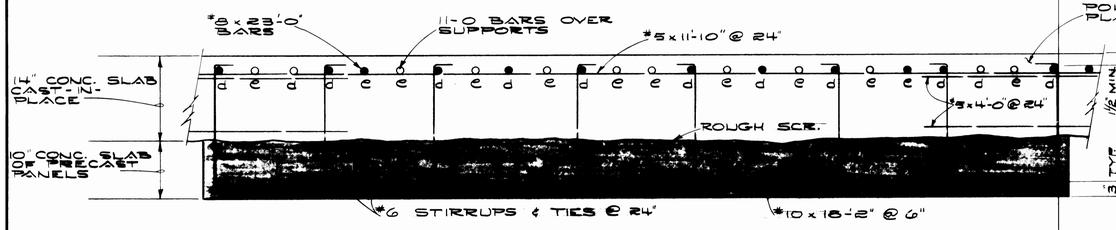


COMPOSITE SECTION
BETWEEN LINES 19 & 23
1" = 1'-0"

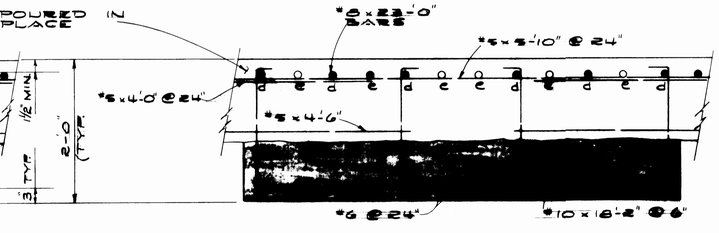


PLAN OF TOP STEEL IN CAST-IN-PLACE SLAB
FOR USE IN 12'-0" PANELS

PARTIAL PLAN & LONGITUDINAL SECTION - 24" COMPOSITE DECK SLAB



COMPOSITE DECK SECTION
USING 12'-0" PRECAST PANELS
1" = 1'-0"



COMPOSITE DECK SECTION
USING 6'-0" PRECAST PANELS
1" = 1'-0"

GENERAL NOTES:
ONLY TYPICAL DESIGN FEATURES ARE SHOWN FOR THESE COMPOSITE PANEL ALTERNATES. BULKHEAD, PILE CAP, FENDER SYSTEM, CURBS, OPENINGS, TRACK DETAILS, ECT. ARE THE SAME OR SIMILAR TO THOSE FOR THE PRE-STRESSED PANELS. TWO WIDTHS OF PRECAST PANELS ARE SHOWN, BUT THE CONTRACTOR WILL NOT BE HELD TO EITHER OF THESE. HE MAY VARY THE WIDTH TO SUIT THE CAPACITY OF THE PROPOSED CONSTRUCTION EQUIPMENT.

HARRY L. MARSHALL STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

APPROVED 6-18-70 DATE
CHIEF ENGINEER
FIELD BOOK

PORT OF TACOMA
BLAIR WATERWAY TERMINAL
CONTAINER & BULK HANDLING FACILITY
BERTHS A & B
COMPOSITE DECK PANEL — ALTERNATE

MARSHALL, BARR & PACQUER
SEATTLE, WASHINGTON 98101
MB CONSULTING ENGINEERS

JOB NO.	
1251	
DRAWN	TRACED
A.L.	J.T.A.
CHECKED	DATE
[illegible]	15 May 70
SCALE	
AS NOTED	
DWG. NO.	ISSUE
25	
EP-1918-16	