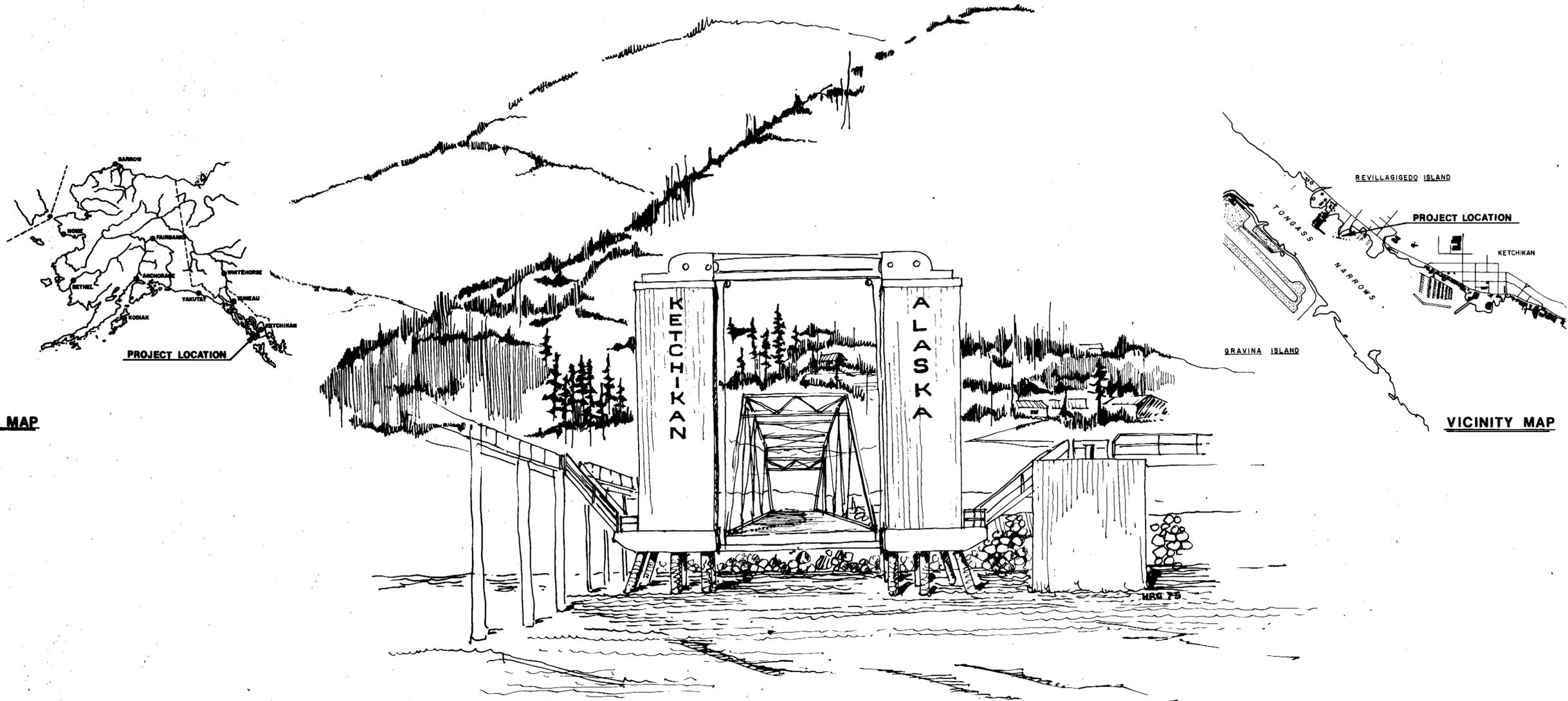


# KETCHIKAN FERRY TERMINAL RECONSTRUCTION

PREPARED FOR

STATE OF ALASKA  
DEPARTMENT OF PUBLIC WORKS  
PROJECT NO 6-75153



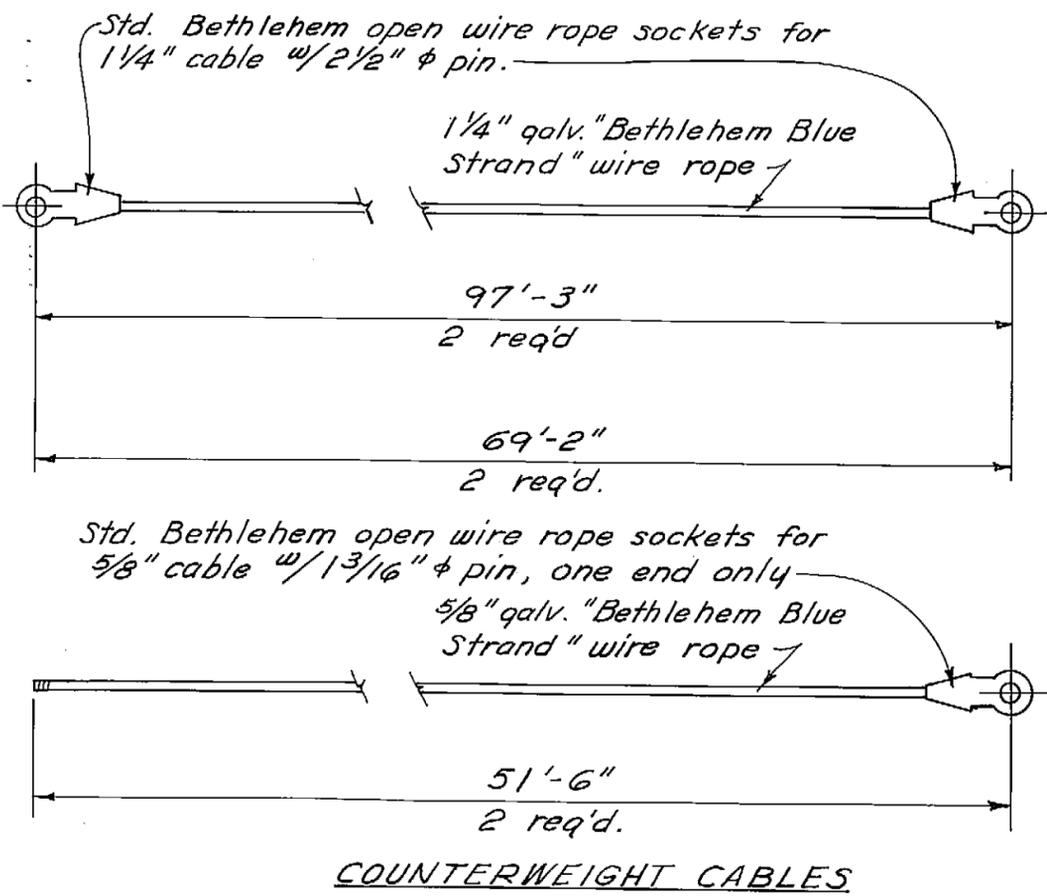
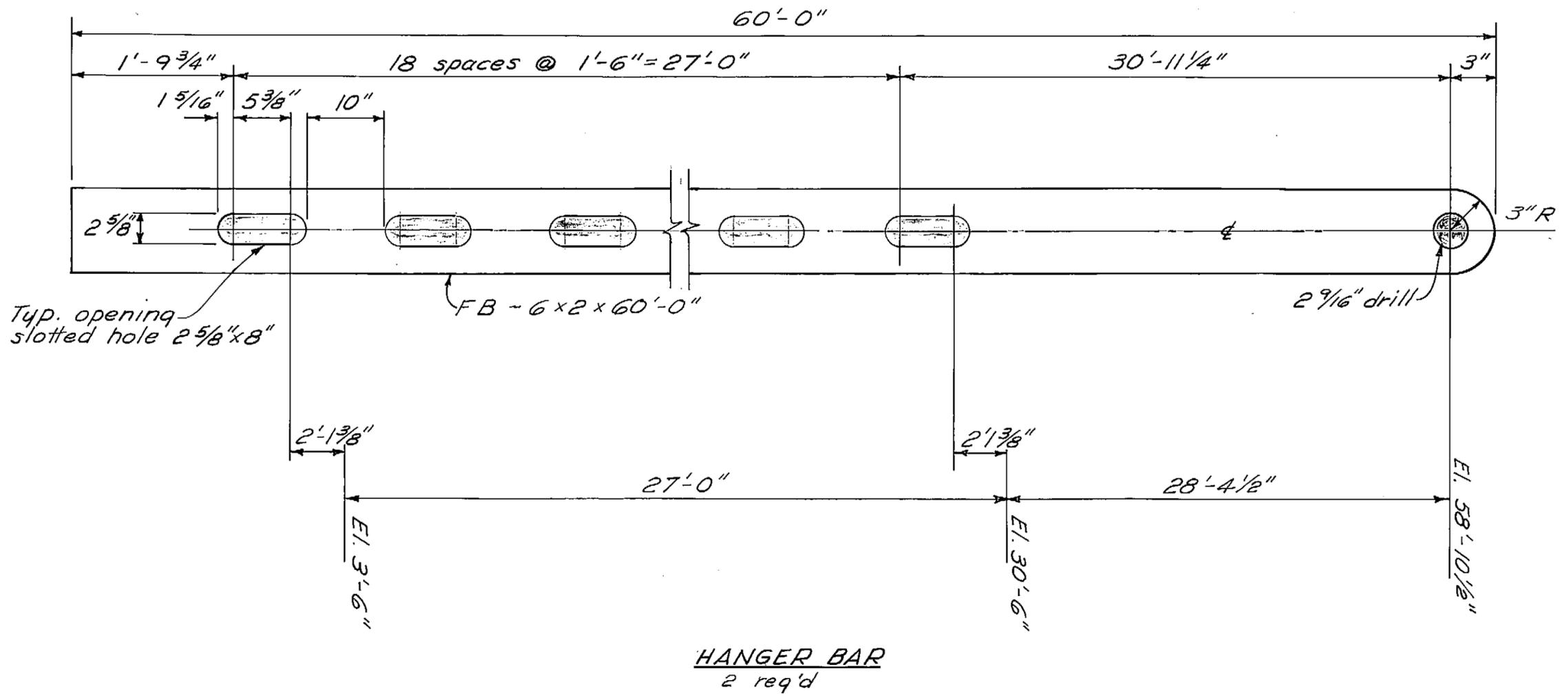
LOCATION MAP

VICINITY MAP

**R&M**  
CONSULTANTS INC.  
349 East 61st Avenue, Anchorage, Alaska 99503 Phone: 907/779-0482

As Constructed <sup>45</sup>/<sub>176</sub>

APPROVED BY \_\_\_\_\_  
(COMMISSIONER OF PUBLIC WORKS)



**As Constructed** *ES*  
1/16

DO NOT SCALE THIS DRAWING - USE DIMENSIONS		
STATE OF ALASKA DEPARTMENT OF PUBLIC WORKS DIVISION OF WATER AND HARBORS		
<b>KETCHIKAN FERRY TERMINAL RECONSTRUCTION</b>		
<b>HANGER BAR REVISION &amp; COUNTERWEIGHT CABLE DETAILS</b>		
SCALE <i>N.T.S.</i>	SURVEYED _____	APPROVED _____
DESIGNED _____	DRAWN <i>ES</i>	DON STATTER
CHECKED _____	DATE <i>10-22-75</i>	DIRECTOR
PROJECT NUMBER <i>6-75153</i>	SHEET <i>1</i> OF <i>1</i>	

Pay Items	Quantity	Unit
Delphin Fender and Cap System, In-Place	L.S.	
Delphin Pipe Piles, Furnished	Lin Ft	
Delphin Pipe Piles, Driven	Ea.	
Delphin Fender Piling, Furnished	Lin Ft	
Delphin Fender Piling, Driven	Ea.	
Delphin Prestressed Pile Anchor	Ea.	
Two Metal & Concrete Towers, In-Place	L.S.	
Tower Piling, Furnished	Lin Ft	
Tower Piling, Driven	Ea.	
Tower Sheathing	L.S.	
Railing, Catwalk and Stairs and Ladders	L.S.	
Removal of Damaged Mooring Delphin	L.S.	
Removal of Damaged Dock Structure	L.S.	
Misc. Repairs	Force Account	
L.S. = Lump Sum		

APPROXIMATE QUANTITIES

Delphin Fender and Cap System, In-Place	20,000# Struct. Steel, 5.1 MBM Timber, 2-Rubber Fenders
Delphin Pipe Piles, Furnished	411.8 330' Lin. Ft.
Delphin Pipe Piles, Driven	3 each
Delphin Fender Piling, Furnished	200' Lin Ft.
Delphin Fender Piling, Driven	4 each
Delphin Prestressed Pile Anchor	1 each
Two Metal & Concrete Towers, In-Place	34,400# Struct. Steel, 4600# Re Steel, 43.4 Cu. Yd. Concrete
Tower Piling, Furnished	1565.3 1280' Lin. Ft.
Tower Piling, Driven	14 each
Tower Sheathing	2000# Struct. Steel, 3200 Sq. Ft. Metal Sheathing
Railing, Catwalks and Stairs and Ladders	11,100# Struct. Steel
Removal of Damaged Mooring Delphin	All (Lump Sum)
Removal of Damaged Dock Structure	All (Lump Sum)
Misc. Repairs	All (Lump Sum)
Electrical & Mechanical Repair	All (Force Account)

\* Quantities shown are for information only. Actual quantities may vary.

**Design Criteria**

**Towers:**  
 Live Load = HS-20-44  
 Snow = 50 psf  
 Wind = 30 psf  
 Earthquakes = UBS Zone 3 (w/Tower Connections 0.25g)

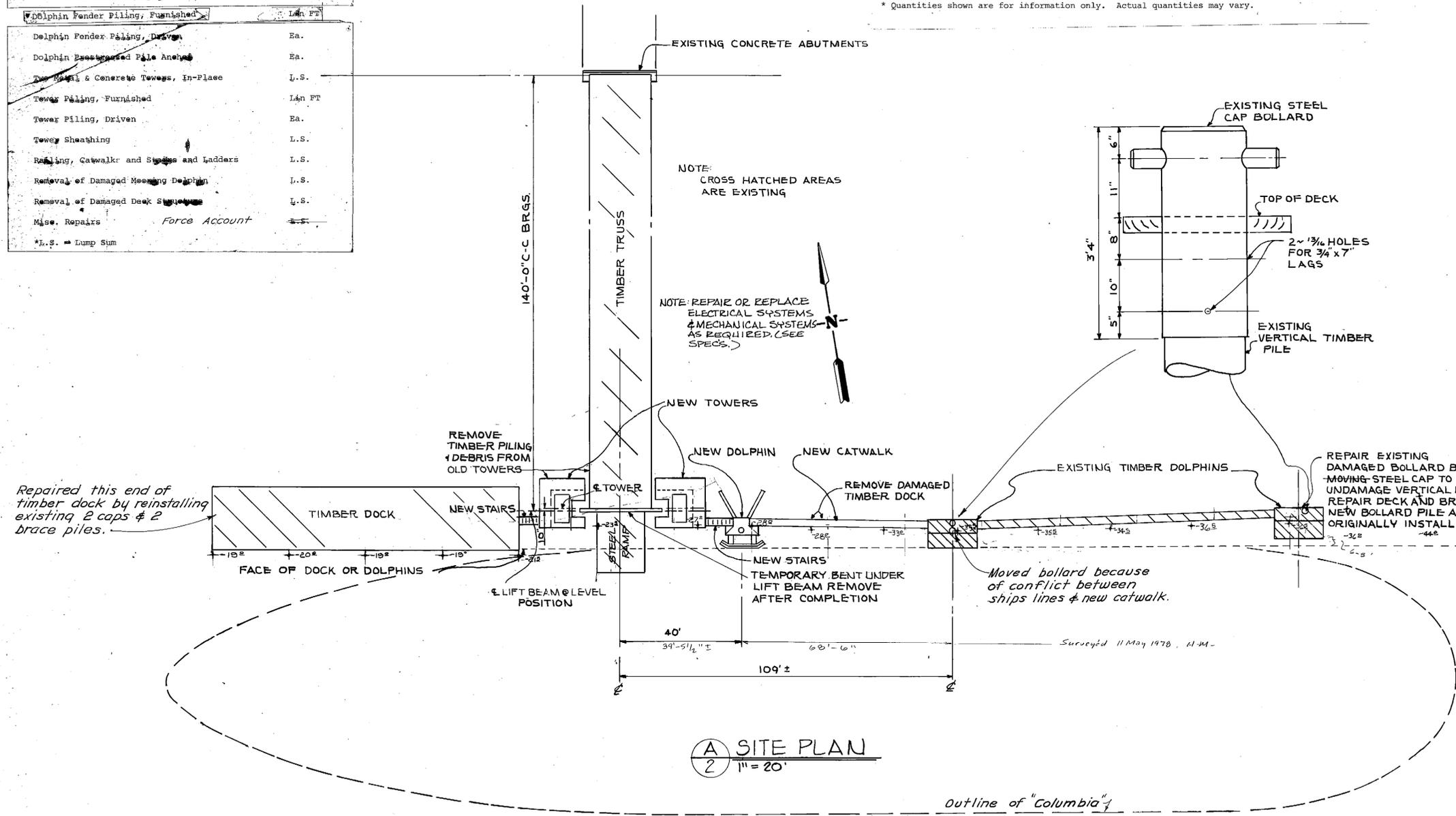
**Dolphins:**  
 Ship Weight = 6700 L.T. Max. (Loaded Displacement)  
 Ship Approach Angle = 10° Max.  
 Ship Approach Docking Velocity = 3 ft/sec. max.  
 Design Energy = 30 ft.-kips  
 Mooring Line Force = 30 kips in any direction

**Catwalk & Stairs:**  
 Live Load = 60 psf  
 Snow = 50 psf  
 Wind = 30 psf  
 Earthquake = UBC Zone 3

**Tides:**  
 Extreme High = +21 ft. (Observed 1948)  
 Mean Higher High = +15.4 ft.  
 Extreme Low = -5 ft.

**Basic Materials:**  
 Structural Steel = A-36  
 Concrete = 28 day compressive strength of 3000 psi  
 Reinforcing Steel = A 615 Grade 40  
 Timber = Douglas Fir or Approved Equal  
 Prestressed Piling = Fc' = 6000 psi

**Unit Stresses:**  
 Structural Steel = fs = 20,000 psi  
 Reinforced Concrete = fs = 1,200 psi  
 fs = 20,000 psi  
 Timber = fb = 1,200 psi  
 Pile Bearing Capacity and Penetration = See Drawings & Specifications



+ INDICATES GROUND LINE ELEVATION POINTS TAKEN SEPTEMBER 15, 1975.

As Constructed Jan. 1976

BY	DATE	NO.	DATE	REVISIONS	BY	APPD.
DES. <i>Wm</i>	9-75					
CHK. <i>RP</i>	9-75					
DWN. <i>VRZ</i>	9-75					
CKD. <i>Wm</i>	9-75					
APPD.						

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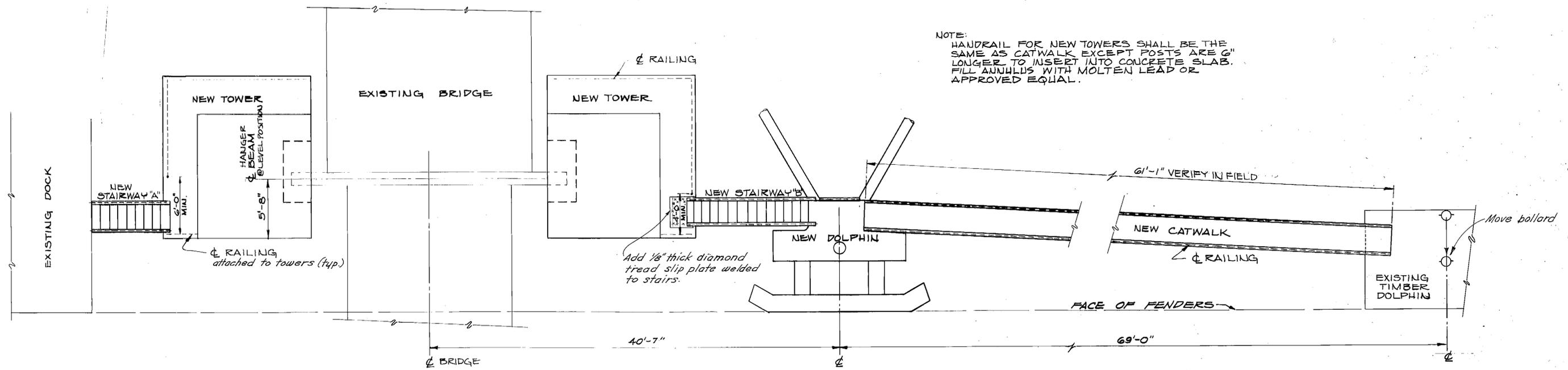


SITE PLAN  
 PAY ITEMS  
 DESIGN CRITERIA

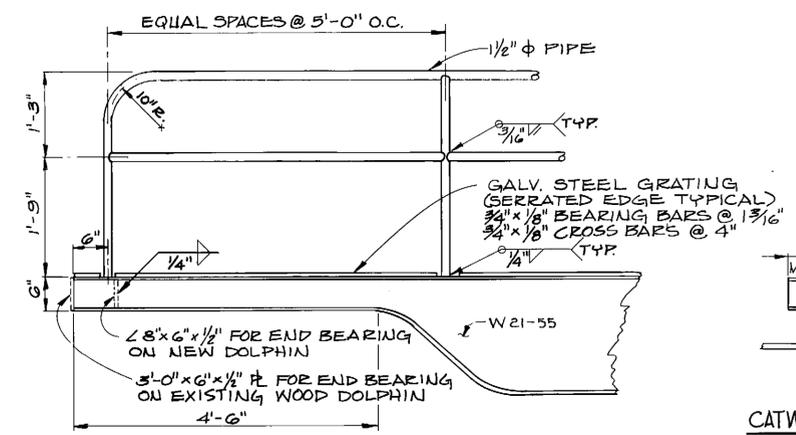
SHEET NO.	OF	SCALE	DATE	PROJECT NO.	GRID	FILE
2	7	1" = 20'	SEPT. 1975	55403/		



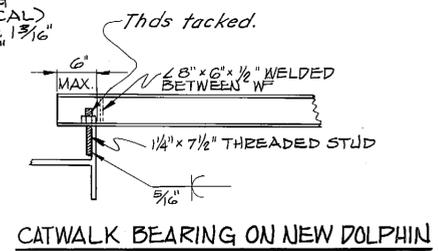




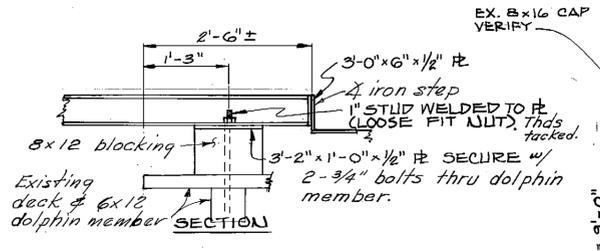
**U** GENERAL PLAN  
6



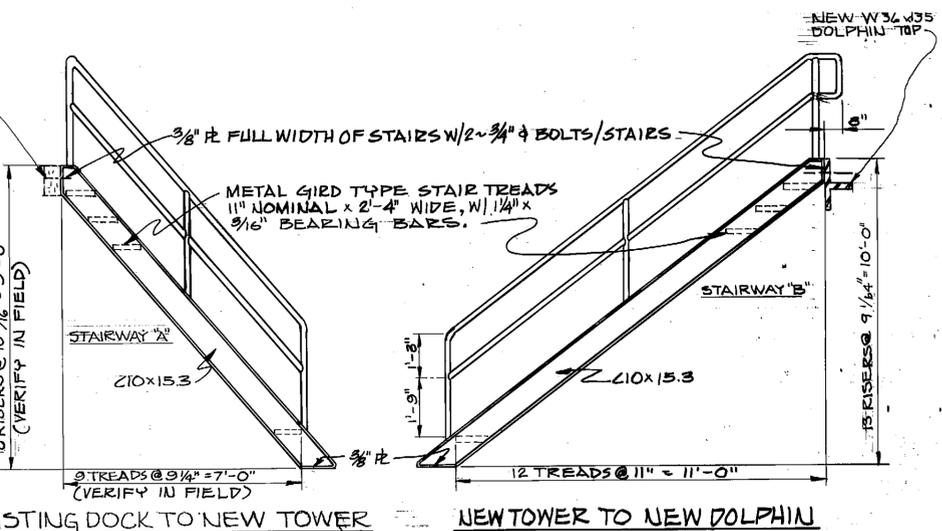
NOTE:  
CUT WEB AS SHOWN.  
SPlice & WELD FLANGE  
BOTH SIDES.  
**END SECTION DETAIL**



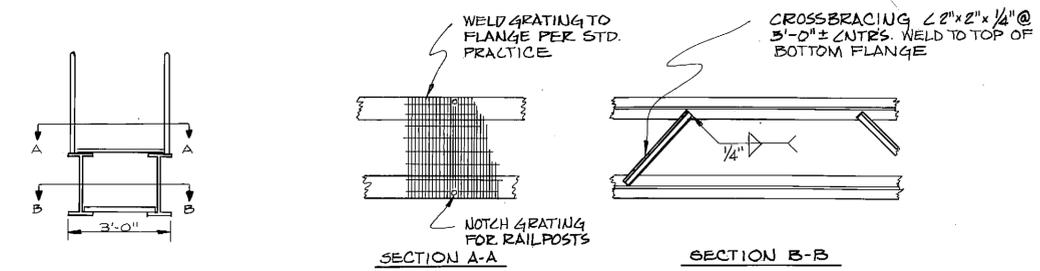
**CATWALK BEARING ON NEW DOLPHIN**



**SECTION**  
CATWALK BEARING ON EXISTING DOLPHIN



**W** STAIRS DETAILS  
6 N.T.S.



**TYPICAL SECTION**

**V** CATWALK DETAILS  
6 N.T.S.

DES.	BY	DATE
CHK.	RP	9-75
DWN.	RP	9-75
CKD.	DM	9-75
APPD.		

NO.	DATE	REVISIONS	BY	APPD.

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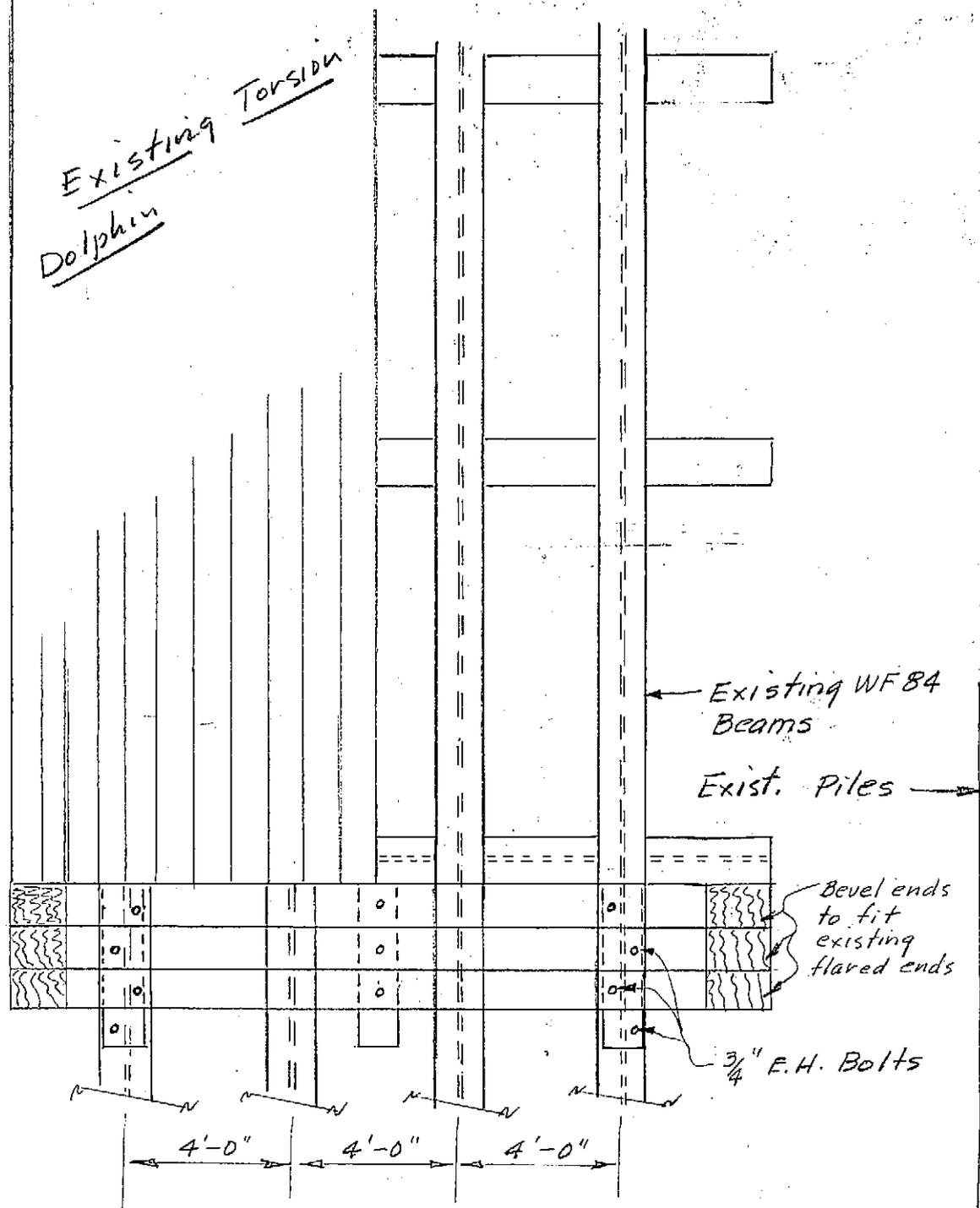
GENERAL PLAN  
CATWALK DETAILS  
STAIRS DETAILS

SHEET NO.	6
OF	7
SCALE	N.T.S.
DATE	SEPT. 1975
PROJECT NO.	554031
GRID	FILE

As Constructed 11/67

Existing Torsion  
Dolphin

Elev. +4.0



Existing WF 84 Beams

Exist. Piles

Bevel ends to fit existing flared ends

3/4" E.H. Bolts

4'-0" 4'-0" 4'-0"

Existing 10x10 rub timbers

12x12x18' horizontal rub timbers bolted to blocking & flanges of WF 84 beams

12x12x4' vertical blocking bolted to flanges of WF 84 fender pile supports

NOTE: Timbers to be salvaged from state storage yard adjacent to Terminal. Holes for bolts may be burned in WF 84 flanges.

KETCHIKAN DOLPHIN FENDER SYSTEM  
Extension to Rub timbers

May 4, 1976  
DCW