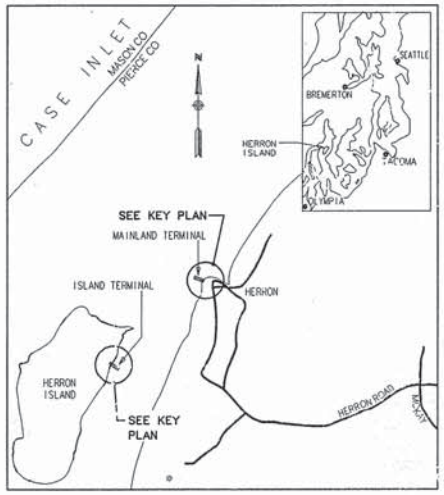
HERRON ISLAND FERRY TERMINALS REPLACEMENT

OWNER
HERRON MAINTENANCE COMPANY
PO BOX 119
LAKEBAY, WA. 98349

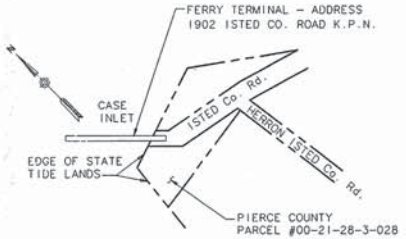
PRIME CONSULTANT
ABAM ENGINEERS
33301 9TH AVENUE SOUTH
FEDERAL WAY, WA. 98003

GEOTECHNICAL ENGINEERS
GEOENGINEERS INC
6240 TACOMA MALL BLVD SUITE 318
TACOMA, WA. (206)471-0379

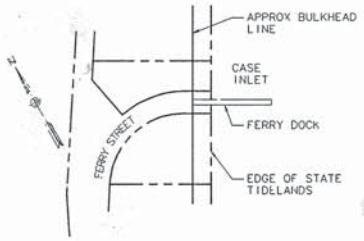
MECH. & ELECT. ENGINEERS
CROSS ENGINEERS
260 S. 5th STREET
TACOMA, WA. (206)383-2544



VICINITY MAP



KEY PLAN MAINLAND



KEY PLAN ISLAND

DRAWING LIST

T-1	TITLE SHEET AND VICINITY MAP
C-1	EXISTING STRUCTURES TO BE DEMOLISHED
C-2	SITE PLAN AND ELEVATIONS - MAINLAND TERMINAL
C-3	SITE PLAN AND ELEVATIONS - ISLAND TERMINAL
S-1	GENERAL NOTES AND RAMP OPERATION NOTES
S-2	PILING PLANS
S-3	PILING AND PILE CAP DETAILS
S-4	DECK REINFORCEMENT PLANS
S-5	DECK SECTIONS AND DETAILS
S-6	RAMP PLAN, ELEVATION AND SECTIONS
S-7	RAMP TOWER LAYOUT AND NOTES
S-8	RAMP SECTIONS AND DETAILS
S-9	SECTIONS AND DETAILS
S-10	SECTIONS AND DETAILS
M & E-1	ISLAND TERMINAL MECHANICAL AND ELECTRICAL PLAN
E-2	MAINLAND TERMINAL ELECTRICAL PLAN
E-3	RAMP & TOWER ELECTRICAL DETAILS
E-4	LIGHTING FIXTURES SCHEDULE, ELECTRICAL LEGEND & DIGRAMS

LEGEND

- A / S-7 — SECTION OR DETAIL NUMBER / LOCATED ON SHEET S-7
- CENTERLINE
- W — EXISTING DOMESTIC WATER LINE
- NORTH ARROW
- PROPERTY LINE
- EXISTING CONTOUR LINE
- XX.XX — ELEVATION
- MONUMENT

FOR CONSTRUCTION

ABAM CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

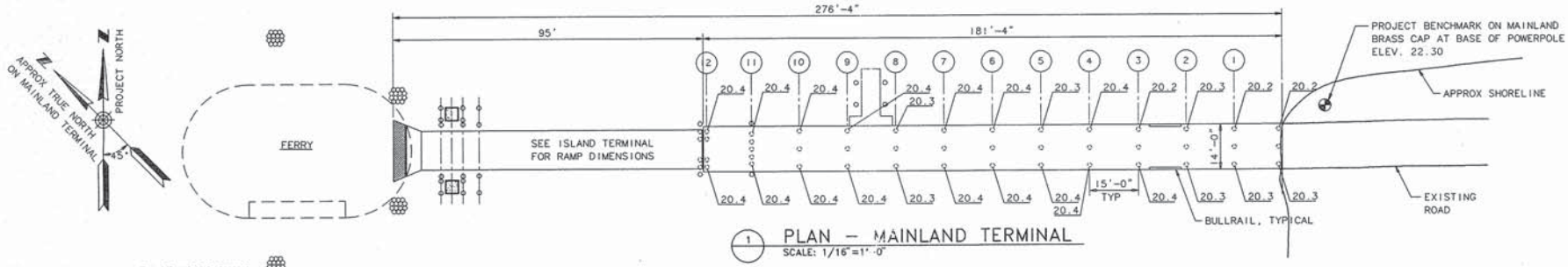
VISWANATH E. KUMAR — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
EXPIRES APR. 8, 1995

MNB	4/27/94	VKK	5/26/94					
DRAWN BY	DATE	CHECKED BY	DATE					
RSH	5/26/94	RSH	5/25/94	MARK	REVISION	BY	APP.	DATE
DESIGN BY	DATE	PROJ. ENGR	DATE					

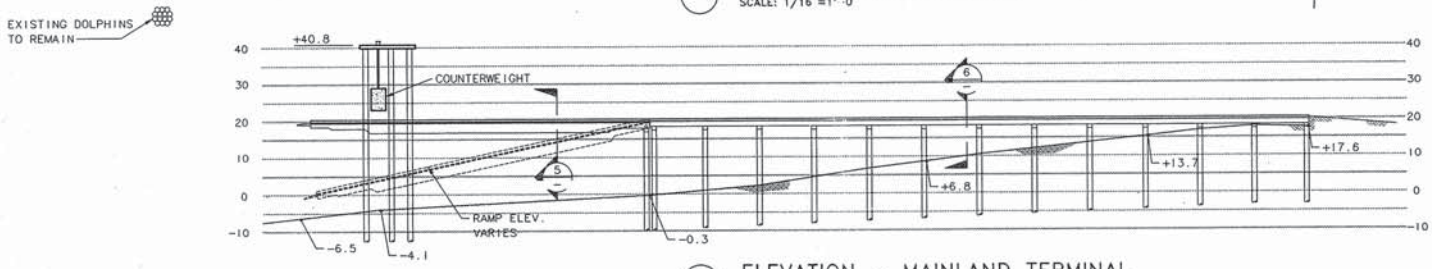
HERRON ISLAND
FERRY TERMINALS
TITLE SHEET & VICINITY MAP

DRAWING NO. T-1
CONTRACT NO. A94042
SHEET NO. ____ OF ____

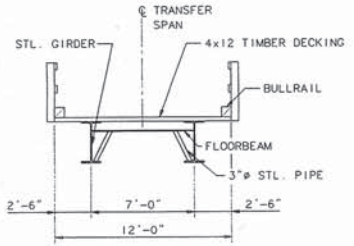
Thu Sep 15 1994 8:46am PLOTNAME: T-1.MEC PLOTSCALE: 1



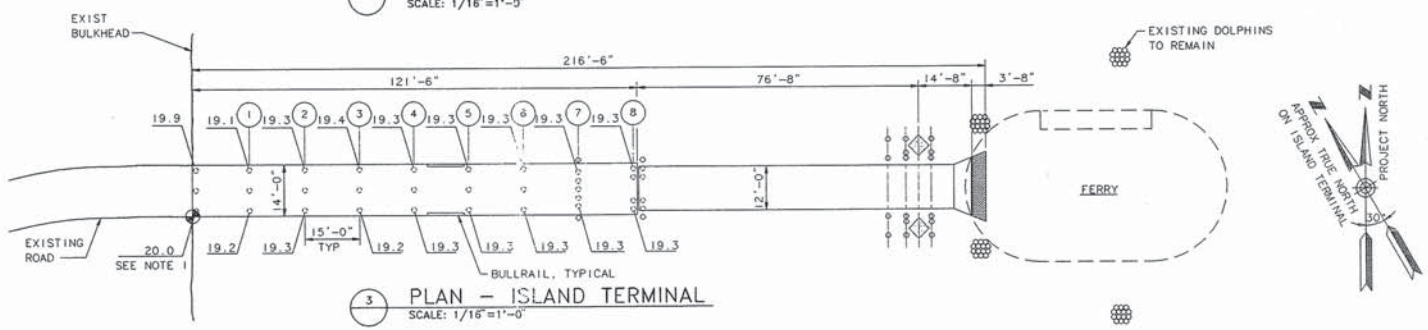
1 PLAN – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"



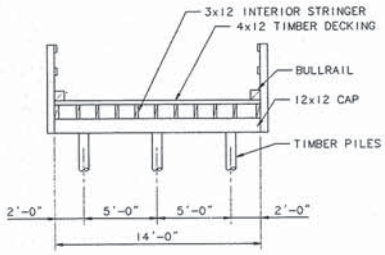
2 ELEVATION – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"



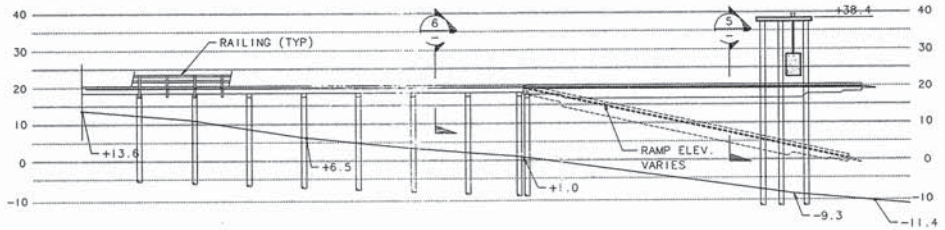
5 RAMP SECTION
SCALE: 1/4"=1'-0"



3 PLAN – ISLAND TERMINAL
SCALE: 1/16"=1'-0"



6 PIER SECTION
SCALE: 1/4"=1'-0"



4 ELEVATION – ISLAND TERMINAL
SCALE: 1/16"=1'-0"

NOTES:

1. CONTRACTOR SHALL ESTABLISH A CONSTRUCTION BENCHMARK ON THE ISLAND USING THE TOP OF THE CONCRETE BULKHEAD AT THE LOCATION SHOWN AS A REFERENCE ELEVATION.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS (RELATIVE TO THE BENCHMARKS) PRIOR TO CONSTRUCTION.
3. THE EXISTING TERMINALS SHALL BE DEMOLISHED EXCEPT AS NOTED.

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISVANATH K. KUDER — STATE OF WASHINGTON — 18195 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES APRIL 10, 1995

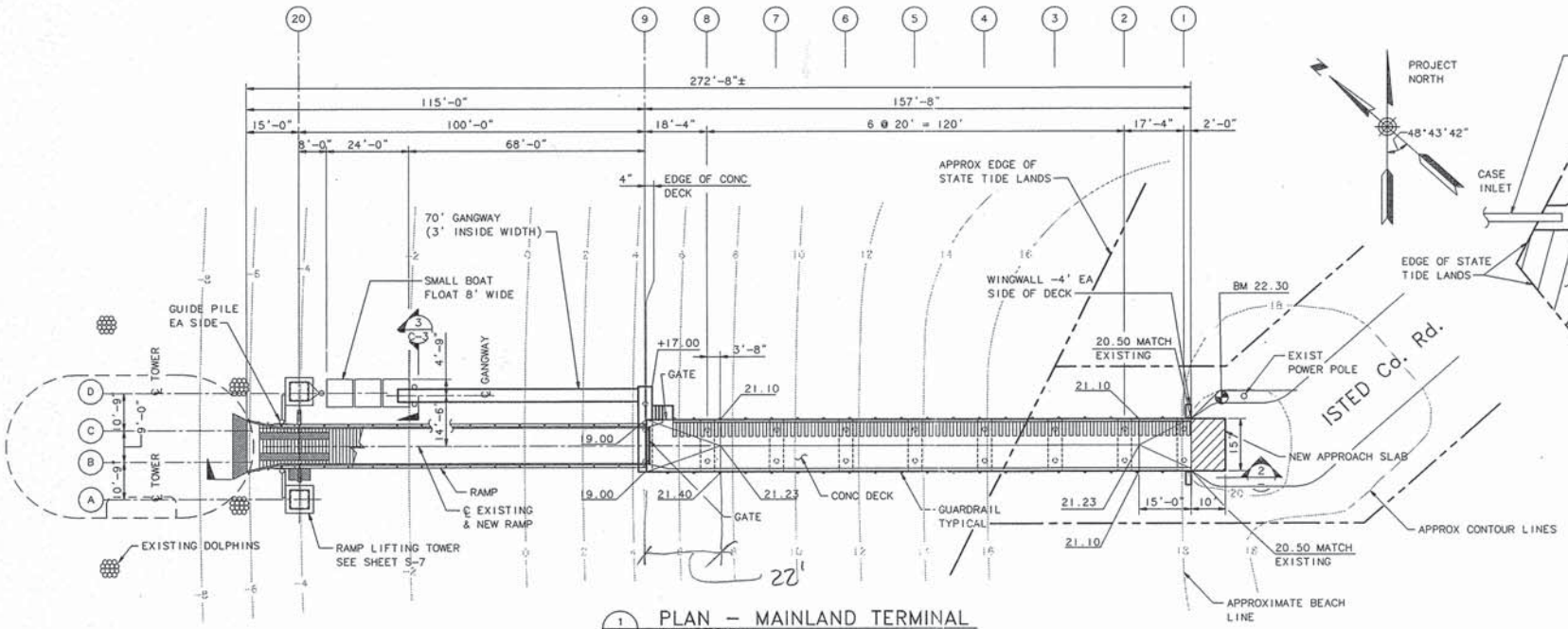
MDB	5/27/94	VKK	5/26/94	MARK	REVISION	BY	APP.	DATE
DRAWN BY	DATE	CHECK BY	DATE					
REH	5/26/94	REH	5/26/94					
DESIGN BY	DATE	PROJ ENGR	DATE					

HERRON ISLAND
FERRY TERMINALS

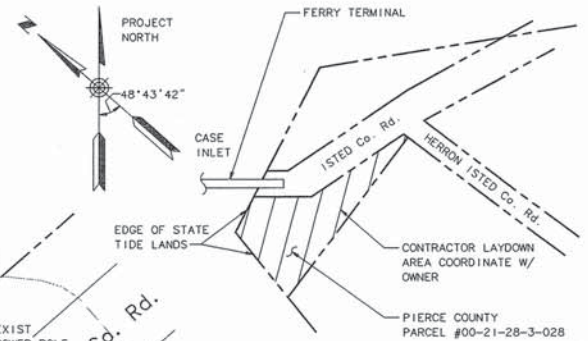
EXISTING STRUCTURES TO BE DEMOLISHED

DRAWING NO. C-1
CONTRACT NO. A94042
SHEET NO. _____ OF _____

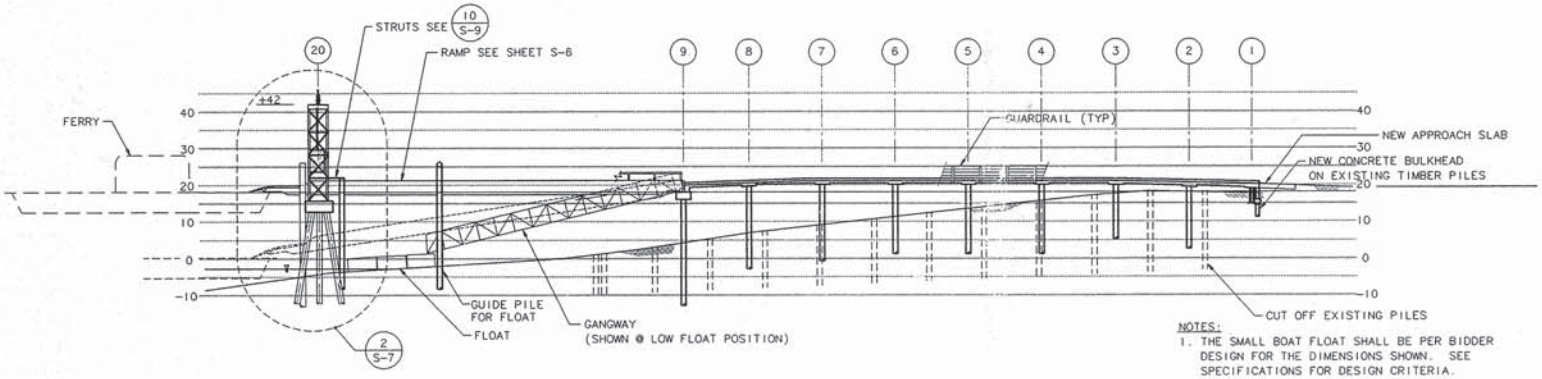
PLOTTED: Thu Sep 15 1994 9:27am FILENAME: Y:\A94042\FILING\-FILING SCALE: 192



1/- PLAN – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"

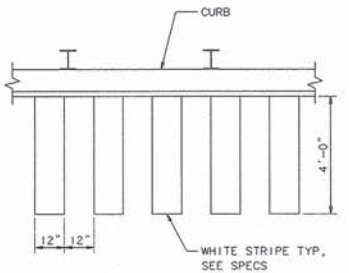


KEY PLAN



2/- ELEVATION – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"

NOTES:
1. THE SMALL BOAT FLOAT SHALL BE PER BIDDER DESIGN FOR THE DIMENSIONS SHOWN. SEE SPECIFICATIONS FOR DESIGN CRITERIA.
2. SEE SHEET C-1 FOR ESTABLISHMENT OF BENCH MARK.
3. CONTRACTOR SHALL LOCATE PROPERTY LINES IN FIELD.
4. FOR LAYDOWN AREA SEE KEY PLAN.



3/- WALKWAY STRIPING
SCALE: 1/2"=1'-0"

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

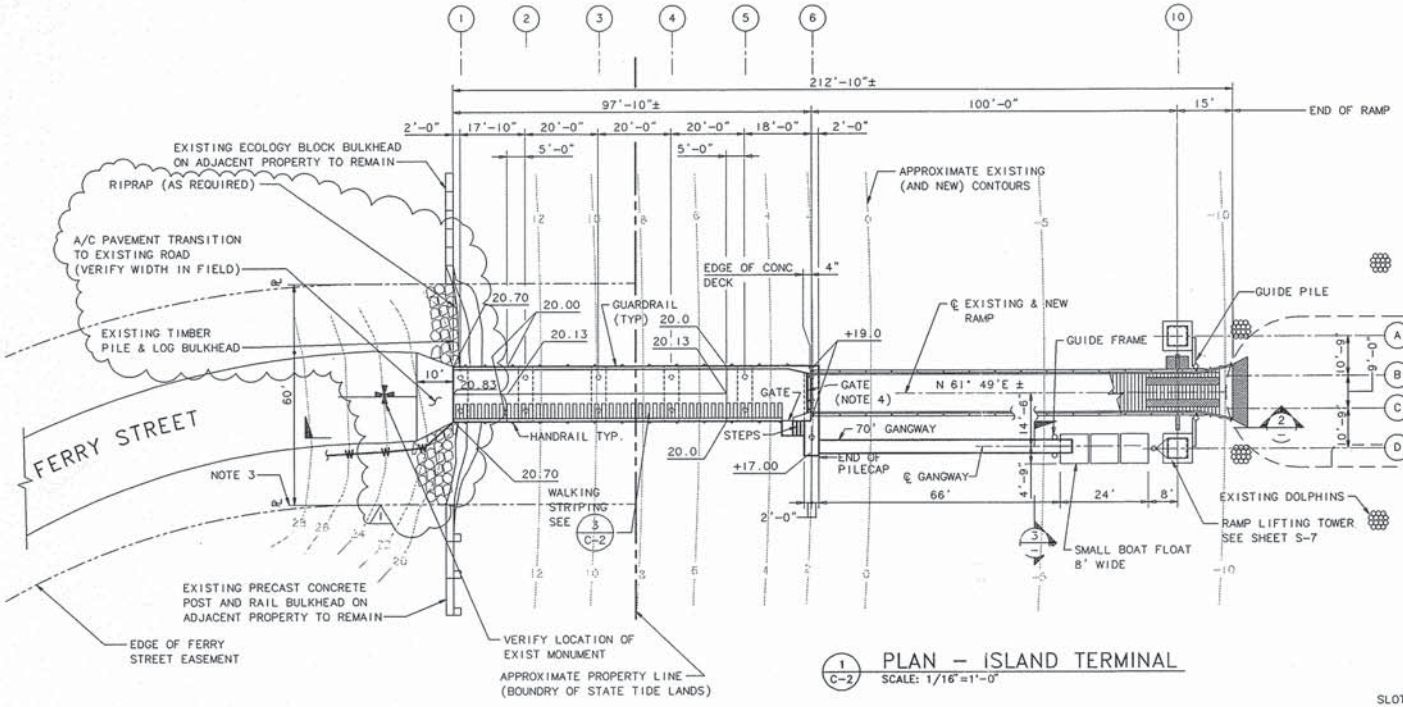
VISWANATH K. KUMAR — STATE OF WASHINGTON — 19185 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES APR. 10, 1996

MDB	5/27/94	VKK	5/26/94				
DRAWN BY	DATE	CHECK BY	DATE				
REH	5/26/94	REH	5/26/94	MARK	REVISION	BY	APP. DATE
DESIGN BY	DATE	PROJ ENGR	DATE				

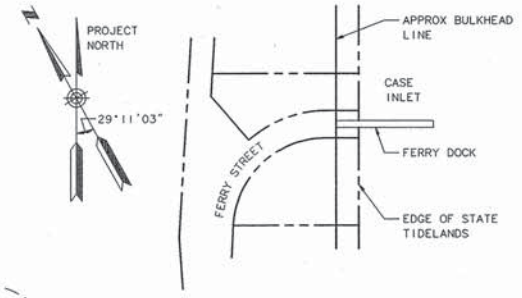
HERRON ISLAND FERRY TERMINALS
MAINLAND TERMINAL SITE PLAN & ELEVATION

DRAWING NO. C-2
CONTRACT NO. A94042
SHEET NO. ____ OF ____

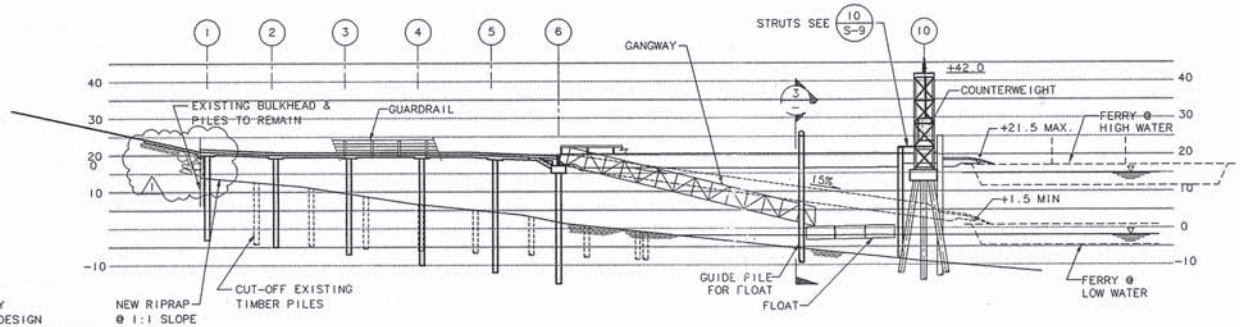
PLOTTED: Thu Sep 15 1994 10:14am FILENAME: F:\A94042\2DWG SCALE: 1&2



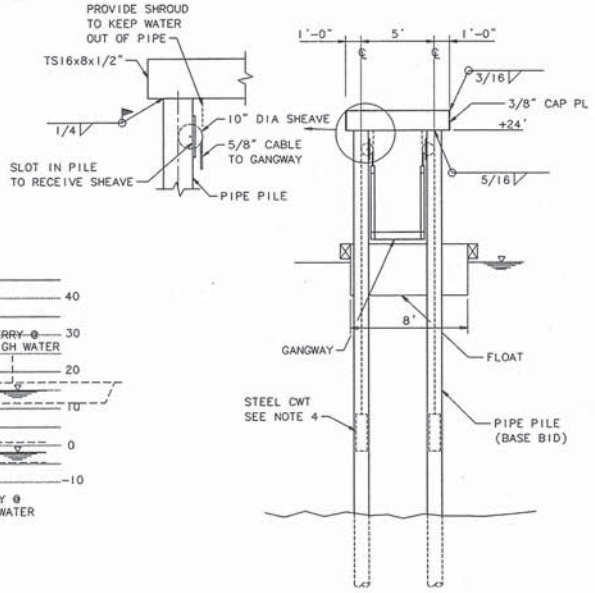
1/C-2 PLAN – ISLAND TERMINAL
SCALE: 1/16"=1'-0"



KEY PLAN



2/C-2 ELEVATION – ISLAND TERMINAL
SCALE: 1/16"=1'-0"



3/– ELEVATION GUIDE FRAME
SCALE: 1/4"=1'-0"

NOTES:
1. THE SMALL BOAT FLOAT AND GANGWAY (ADDITIVE BID) SHALL BE BIDDER DESIGN OF THE DIMENSIONS SHOWN. SEE SPECIFICATIONS.
2. SEE SHEET C-1 FOR ESTABLISHMENT OF BENCH MARK.
3. CONTRACTOR SHALL LOCATE PROPERTY LINES IN FIELD.
4. PROVIDE A COUNTERWEIGHT SYSTEM TO SUPPORT 95% OF DEAD LOAD REACTION OF GANGWAY AT GUIDEFRAME. SUBMIT BIDDER DESIGN AS PART OF GANGWAY SYSTEM PER NOTE 1.

FOR CONSTRUCTION

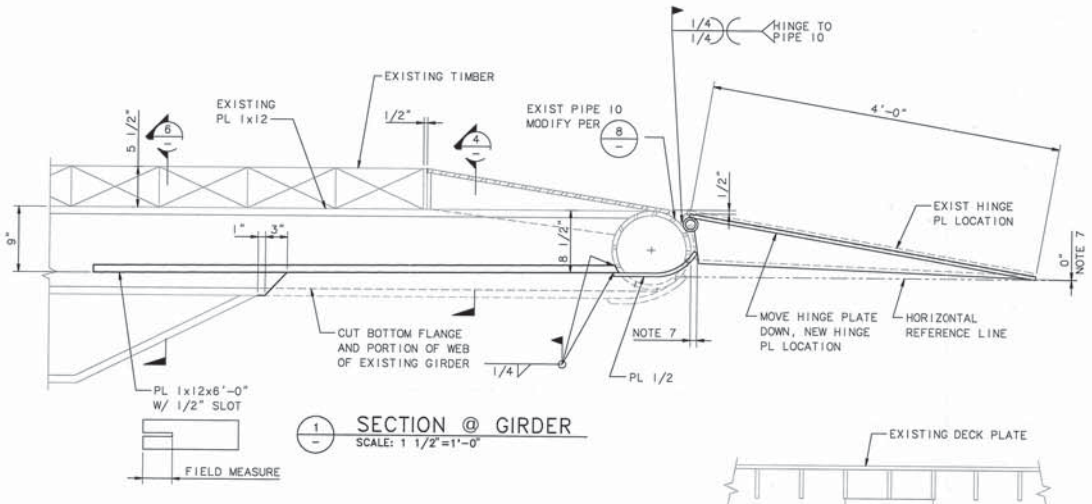
ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISWANATH K. KESHAV — STATE OF WASHINGTON — 18180 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES APRIL 10, 1995

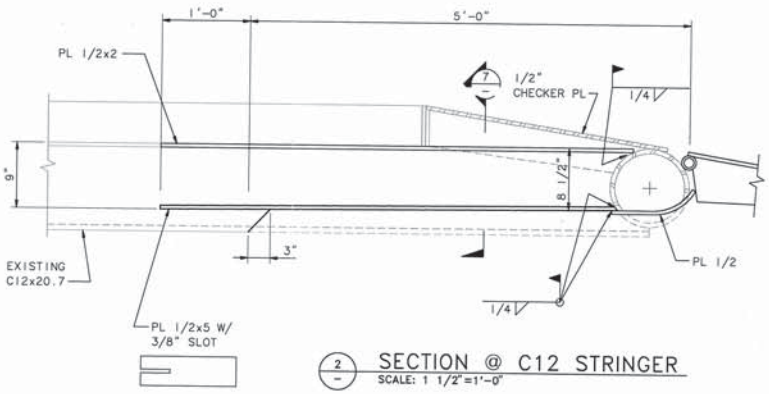
MDB	5/27/94	VKK	5/26/94	⚠	PERMIT REQUIREMENTS	ELB	VKK	9/15/94	HERRON ISLAND FERRY TERMINALS
DRAWN BY	DATE	CHECK BY	DATE						
REH	5/26/94	REH	5/26/94						ISLAND TERMINAL SITE PLAN & ELEVATION
DESIGN BY	DATE	PROJ ENGR	DATE	MARK	REVISION	BY	APP.	DATE	

DRAWING NO. C-3
CONTRACT NO. A94042
SHEET NO. ____ OF ____

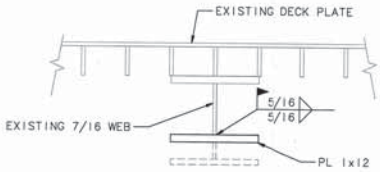
PLOTTED: Thu Sep 15 1994 10:35am FILENAME: Y:\A9\1042\C-3.DWG SCALE: 192



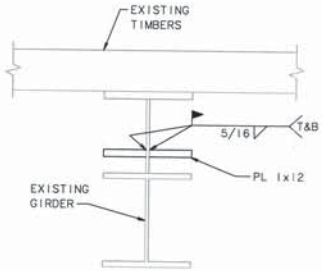
1 SECTION @ GIRDER
SCALE: 1 1/2"=1'-0"



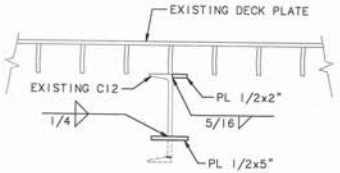
2 SECTION @ C12 STRINGER
SCALE: 1 1/2"=1'-0"



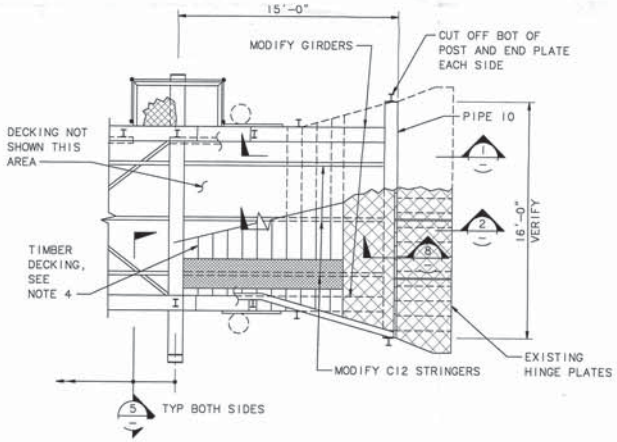
4 SECTION
SCALE: 1 1/2"=1'-0"



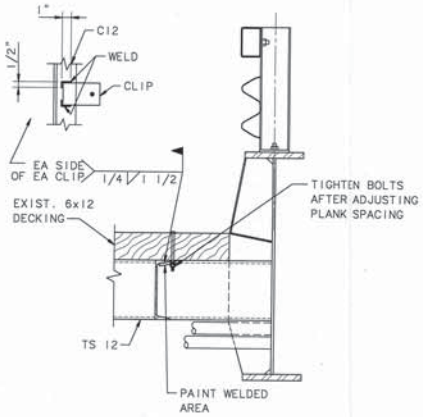
6 SECTION
SCALE: 1 1/2"=1'-0"



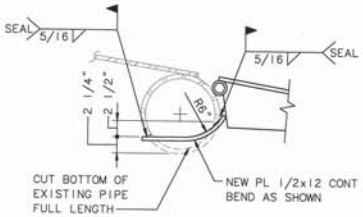
7 SECTION
SCALE: 1 1/2"=1'-0"



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



5 PLANK CONNECTION
SCALE: 1"=1'-0"



8 SECTION THRU PIPE
SCALE: 1 1/2"=1'-0"

NOTES:
1. ALL WORK SHALL CONFORM TO THE HERRON ISLAND GENERAL NOTES AND SPECIFICATIONS.
2. PAINT NEW STEEL AND DAMAGED PAINT ON EXISTING STEEL. FIELD TREAT THE WELDS ON GALVANIZED STEEL PER SPECIFICATIONS.
3. COORDINATE ALL WORK WITH OWNER TO MINIMIZE DISRUPTION TO FERRY OPERATIONS.
4. REMOVE TIMBER DECKING AS REQUIRED TO COMPLETE THE MODIFICATIONS.
5. NEW STEEL ASTM A36.
6. WELDS E70 ELECTRODES.
7. EXTEND PLATE SO THAT HINGE PLATE HANGS FREE AS SHOWN.

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISWANATH K. KUMAR
STATE OF WASHINGTON
16183
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: APRIL 10, 1997

MDB	4/29/96	VKK	4/25/96				
DRAWN BY	DATE	CHECK BY	DATE				
REH	4/29/96	REH	4/25/96	MARK	REVISION	BY	APP. DATE
DESIGN BY	DATE	PROJ ENGR	DATE				

HERRON ISLAND
FERRY TERMINALS

MODIFICATIONS TO RAMP
MAINLAND & ISLAND TERMINALS

DRAWING NO. S-12
CONTRACT NO. A94042
SHEET NO. _____ OF _____

PLOTTED: Tue Apr 30 1996 2:45pm FILENAME: Y:\A94042\S-12.DWG SCALE: 8

GENERAL NOTES

GENERAL NOTES

CODES AND STANDARDS

1. ALL METHODS AND MATERIALS SHALL CONFORM TO THE UNIFORM BUILDING CODE, 1991 EDITION AS ADOPTED BY PIERCE COUNTY.

2. REINFORCED CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301-84) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE FOR BUILDINGS (ACI 318-89).

3. STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION SHALL CONFORM TO THE "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (AISC MANUAL OF STEEL CONSTRUCTION - NINTH EDITION).

4. WELDING OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1 REV. 2-83)

GENERAL

1. THESE NOTES CONTAIN GENERAL INFORMATION AND ARE NOT COMPLETE FOR CONSTRUCTION PURPOSES. CONTRACTOR SHALL VERIFY INFORMATION GIVEN HERE WITH SPECIFICATIONS AND OTHER DOCUMENTS AND BRING ANY CONFLICTS TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING AFFECTED WORK.

2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS DURING ALL PHASES OF THE PROJECT.

3. THE ELEVATIONS SHOWN ARE BASED ON FIELD MEASUREMENTS TAKEN BY ABAM ENGINEERS IN NOVEMBER 1993. ALL ELEVATIONS ARE RELATIVE TO THE BENCHMARKS SHOWN ON DRAWING C-1. THE CONTRACTOR SHALL ESTABLISH CONSTRUCTION BENCHMARKS AS DESCRIBED ON DRAWING C-1.

4. THE DETAILS SHOWN FOR THE CONSTRUCTION OF THE FIXED PORTION OF THE TERMINALS (PIERS) ASSUME THE EXISTING TIMBER DECK WILL BE USED AS FALSEWORK FOR THE NEW CONCRETE PIER AND SUBSEQUENYLY DEMOLISHED THE DECK THICKNESS SHOWN ARE MINIMUMS - THE CONTRACTOR MAY EITHER SHIM THE EXISTING PILE CAPS TO LEVEL THE EXISTING DECK TO OBTAIN UNIFORM SLAB THICKNESS, OR THE CONTRACTOR MAY USE THE EXISTING DECK "AS-IS" (WITH PLASTIC OVERLAY PER SPECS.) AND VARY THE SLAB THICKNESS AS REQUIRED. SEE DRAWING C-1 FOR EXISTING DECK ELEVATIONS.

5. THE COMPLETED MAINLAND TERMINAL MAY BE USED BY THE CONTRACTOR TO LOAD A REDI-MIX CONCRETE TRUCK ONTO THE CONTRACTORS BARGE FOR CONSTRUCTING THE ISLAND TERMINAL. COORDINATE SCHEDULE WITH OWNER.

6. THE RAMP LIFTING SYSTEM SHALL BE CONTRACTOR DESIGNED AS NOTED ON SHEET S-7.

DESIGN CONCEPT

1. VERTICAL LOADS ARE DISTRIBUTED THROUGH THE CONCRETE DECK TO THE PILE CAPS, PILECAPS TO PILES, AND PILES TO SOIL IN FRICTION AND END BEARING. THE RAMP SPANS BETWEEN THE PIER AND THE COUNTERWEIGHT TOWERS UNDER VERTICAL DEAD LOADS.

2. THE RAMP RESTS ON THE FERRY DURING LOADING/UNLOADING. THE RAMP SPANS BETWEEN THE PIER AND THE FERRY UNDER VERTICAL LIVE LOADS.

3. HORIZONTAL LOADS ARE DISTRIBUTED BY THE CONCRETE DECK TO THE PILES ACTING AS FLAGPOLES FIXED IN THE SOIL. HORIZONTAL LOADS FROM THE RAMP ARE RESISTED AT THE PIER BY PILES IN FLEXURE, AND AT THE TOWERS BY GUIDE PILES SUPPORTED BY THE TOWER PILECAPS, AND BY THE PILE CAP TO THE BATTER PILES ACTING IN TENSION OR COMPRESSION.

SMALL BOAT FLOATS

1. REQUIRED FREEBOARD 15-18 INCHES

2. LIVE LOAD ON FLOAT AND GANGWAY 40 PSF OR 1000 LB CONCENTRATED.

DESIGN LOADS

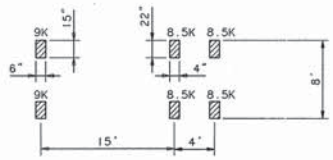
1. TIDES

THE FERRY TERMINALS HAVE BEEN DESIGNED FOR THE FOLLOWING TIDES AT McMICKEN ISLAND PER TIDE TABLES FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA).

HIGHEST OBSERVED WATER LEVEL	18.16 FEET
HIGHEST OPERATING TIDE (HOT)	15.75 FEET
MEAN HIGHER HIGH WATER (MHHW)	14.07 FEET
MEAN LOWER LOW WATER (MLLW)	0.00 FEET
LOWEST OPERATING TIDE (LOT)	-2.12 FEET
LOWEST OBSERVED WATER LEVEL	- 5.10 FEET

2. LIVE LOADS

A. TRUCK LOADS - AASHTO HS-15 TRUCK, OR 7 CY CONCRETE TRUCK WITH THE FOLLOWING WHEEL LOADS:



3. LATERAL LOADS

A. WIND: 1991 UBC - 80 MPH EXPOSURE C.

B. SEISMIC (1991 UBC):

A. SEISMIC FORCE V = ZICW/Rw
B. SEISMIC ZONE FACTOR Z = 0.3
C. IMPORTANCE FACTOR I = 1.0
D. SITE COEFFICIENT FOR SOIL CHARACTERISTICS = 1.2
E. STRUCTURE WEIGHT W = DEAD WEIGHT
F. STRUCTURAL SYSTEM COEFFICIENT Rw=4

REINFORCED CONCRETE

1. REINFORCING STEEL SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A615, GRADE 60 GALVANIZED.

2. PRESTRESSING STEEL SHALL BE UNCOATED, LOW LOW-RELAXATION SEVEN WIRE STRAND CONFORMING TO ASTM A416, GRADE 270.

3. WIRE FOR SPIRAL REINFORCEMENT SHALL BE ASTM A 82.

4. SPLICING OF REINFORCING BARS OVER 40 FEET IN LENGTH, EXCEPT AS PROHIBITED ON THE DRAWINGS, SHALL BE PERMITTED. SPLICES SHALL BE STAGGERED WITH NO MORE THAN 50% OF THE BARS BEING SPLICED IN ONE LOCATION. PROVIDE A MINIMUM SPLICE LENGTH OF 50 BAR DIAMETERS.

5. MINIMUM 28-DAY COMPRESSIVE STRENGTH FOR CAST-IN-PLACE CONCRETE SHALL BE 4000 PSI.

6. CHAMFER ALL EXPOSED CORNERS 3/4 INCH.

7. CONCRETE PILES SHALL BE PRECAST, PRESTRESSED CONCRETE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 6000 PSI.

STRUCTURAL AND MISCELLANEOUS STEEL

1. ALL MISCELLANEOUS STEEL SHAPES, PLATES, AND BARS: ASTM A 36 EXCEPT AS NOTED.

2. PIPES: ASTM A53, GRADE B, TYPE E OR S.

3. TUBES: ASTM A500 GRADE B.

4. STRUCTURAL STEEL FOR RAMP PLATE GIRDERS : ASTM A572 GRADE 50.

5. FASTENERS: ASTM A 307

6. HOT-DIP GALVANIZE MISCELLANEOUS STEEL, RAILINGS LIFTING TOWERS, HEAD BEAMS AND FASTENERS. GALVANIZED ITEMS AFTER FABRICATION AS FAR AS PRACTICAL. RESTORE GALVANIZING DAMAGED BY WELDING OR HANDLING WITH A FIELD-APPLIED GALVANIZING COMPOUND IN ACCORDANCE WITH THE SPECIFICATIONS.

7. PAINT ALL STEEL NOT GALVANIZED PER SPECS.

8. UHMW: BLACK UHMW POLYETHELYNE W/ 2.5% CARBON.

FOUNDATIONS AND PILING

1. FOUNDATIONS HAVE BEEN DESIGNED ACCORDING TO THE RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT BY GEOENGINEERS INC. DATED JANUARY 26, 1994. THE REPORT IS AVAILABLE AT ABAM ENGINEERS OFFICE FOR REVIEW BY THE PROSPECTIVE BIDDERS.

2. PILING SHALL BE DRIVEN TO THE TIP ELEVATION SHOWN ON THE DRAWINGS. JETTING MAY BE REQUIRED.

3. CONCRETE PILES DRIVEN TO THE EMBEDMENTS NOTED WILL DEVELOP THE FOLLOWING ULTIMATE LOADS (BASED ON SOIL)

15 FEET EMBEDMENT - 100 TONS COMP 22 TONS TENSION
20 FEET EMBEDMENT - 130 TONS COMP 35 TONS TENSION

4. STEEL PIPE PILES SHALL BE ASTM A252 GRADE 2 OR 3.

TIMBER

1. ALL TIMBER DECKING SHALL BE DOUGLAS FIR-LARCH NO.1 S4S AS GRADED BY THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB).

2. ALL TIMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) C18 & P5 WITH A MINIMUM RETENTION OF 0.60 POUNDS OF ACZA PER CUBIC FOOT.

3. ALL HARDWARE, BOLTS AND WASHERS NECESSARY TO PROVIDE A COMPLETE INSTALLATION SHALL BE HOT-DIP GALVANIZED.

RAMP OPERATION NOTES

FOLLOWING IS A DESCRIPTION OF THE RAMP OPERATION. SEE SHEET S-7 FOR TOWER LAYOUT AND DESCRIPTION OF FEATURES.

1. THE RAMP SHOULD BE LIFTED TO THE HIGHEST POSITION WITH BRAKE LOCKED AFTER DEPARTURE OF THE FERRY, OR WHENEVER THE FERRY IS MOORED IN A STANDBY OR INOPERABLE POSITION.

2. AS THE FERRY APPROACHES THE TERMINAL, THE FERRY OPERATOR SHOULD ADJUST THE RAMP HEIGHT USING THE RADIO OPERATED CONTROLS TO ALLOW BERTHING OF THE FERRY. AFTER THE FERRY HAS BERTHED, THE FERRY OPERATOR LOWERS THE RAMP TO BEAR ON THE DECK OF THE FERRY.

3. DURING THE LOADING OPERATION, OR UNDER A FALLING TIDE, THE PILOT OR ASSISTANT SHOULD SET THE TENSIONING COUNTERWEIGHT (**TC**) IN THE LOWER END OF THE OPERATING RANGE (**OR**). AS THE FERRY LOWERS, THE **TC** WILL RISE TO KEEP THE WINCH LINES TIGHT. IF THE **TC** RISES ABOVE THE **OR**, AN ALARM WILL SOUND. IF NO ACTION IS TAKEN TO ADJUST THE **TC**, THE **TC** WILL HIT THE UPPER STOP, THE RAMP WILL LIFT, AND LOSE CONTACT WITH THE FERRY.

4. DURING THE UNLOADING OPERATION, OR WITH RISING TIDE, THE TENSIONING COUNTERWEIGHT WILL TAKE UP THE SLACK IN THE WINCH LINES. THE FERRY OPERATOR SHOULD SET THE **TC** AT THE UPPER END OF THE **OR** PRIOR TO UNLOADING. THE OPERATOR SHOULD ADJUST THE **TC** TO KEEP IT WITHIN THE **OR**. AN ALARM WILL SOUND WHEN THE **TC** TRAVELS BELOW THE **OR**. IF NO ACTION IS TAKEN AFTER THE ALARM SOUNDS, THE **TC** WILL BOTTOM OUT ON THE PILE CAP, AND THE CABLE WILL GO SLACK ON THE WINCH. IF THE OPERATOR FAILS TO STOP THE WINCH AT THE UPPER END OF THE **OR** WHEN RAISING THE **TC**, AN ALARM WILL SOUND. IF THE WINCH IS NOT STOPPED, THE RAMP WILL RAISE AFTER THE **TC** HAS ENGAGED THE UPPER STOP.

5. THE RAMP HAS BEEN DESIGNED TO SPAN FROM THE PIER TO THE FERRY UNDER LIVE LOADS IMPOSED BY THE DESIGN 52,000 LB TRUCK. THE FERRY WILL DISPLACE ABOUT 30" AT THE END SUPPORTING THE RAMP DURING LOADING. THE **TC** WILL MOVE 150 INCHES. NO PEDESTRIANS SHOULD BE ALLOWED ON THE RAMP DURING LOADING OR UNLOADING OF VEHICLES. ONLY ONE VEHICLE AT A TIME SHALL USE THE RAMP.

6. POST THE FOLLOWING SIGN AT THE LANDSIDE END OF THE RAMPS.

NO PEDESTRIANS ALLOWED ON RAMP DURING VEHICLE LOADING.

ONLY ONE VEHICLE AT A TIME IS PERMITTED ON THE RAMP

MAXIMUM GVW 52,000lbs

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

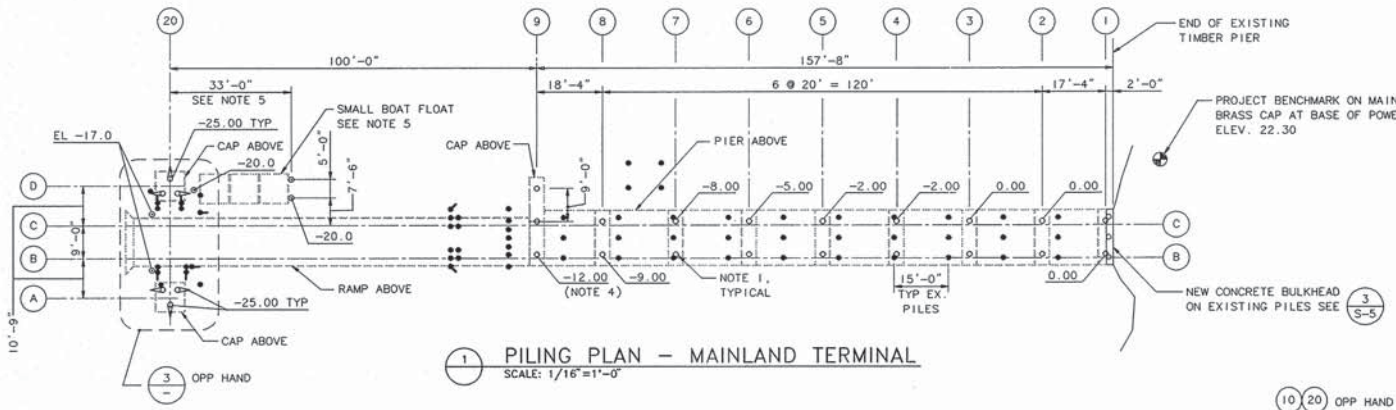
VISWANATH K. KUMAR
STATE OF WASHINGTON
18145
REGISTERED PROFESSIONAL ENGINEER
EXPIRES APR. 9, 1995

MDB	5/27/94	VKK	5/26/94						
DRAWN BY	DATE	CHECK BY	DATE						
REH	5/26/94	REH	5/26/94	MARK	REVISION	BY	APP.	DATE	
DESIGN BY	DATE	PROJ ENGR	DATE						

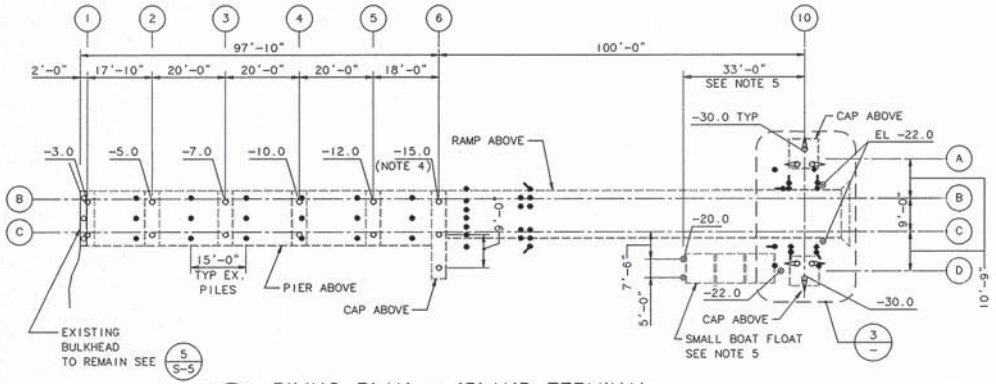
HERRON ISLAND
FERRY TERMINALS
GENERAL NOTES & RAMP OPERATION NOTES

DRAWING NO. S-1
CONTRACT NO. A94042
SHEET NO. _____ OF _____

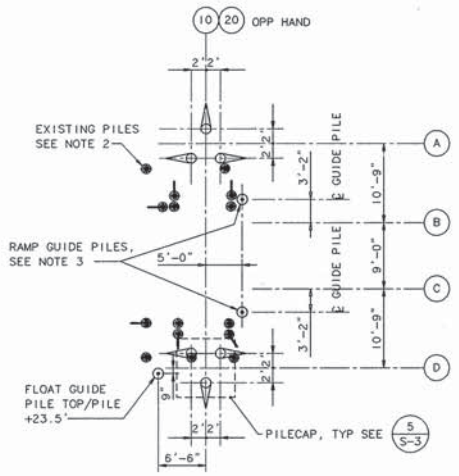
PLOTTED: Thu Sep 15 1994 10:38am FILENAME: I:\A94042\S-1.DWG SCALE: 1



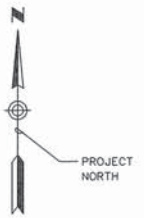
1 PILING PLAN – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"



2 PILING PLAN – ISLAND TERMINAL
SCALE: 1/16"=1'-0"



3 PILE LAYOUT @ RAMP LIFTING TOWERS
SCALE: 1/8"=1'-0"



LEGEND

- TIP ELEV
- 16 1/2" OCT. P/S P/C CONCRETE PILE
- BATTER PILE 2H:12V.
- EXISTING TIMBER PILE TO REMAIN
- EXISTING TIMBER PILES TO BE PULLED
- PIPE 12 X-STRONG PILE

NOTES:

1. PILES MAY BE ADJUSTED ± 3" IN ANY DIRECTION AS REQUIRED TO MISS EXISTNG STRINGERS, PILES AND PILECAPS.
2. LOCATIONS OF EXISTING PILES AT RAMP TOWER ARE APPROXIMATE. VERIFY LOCATION IN FIELD AND REPORT ANY INTERFERENCE WITH NEW PILES TO ENGINEER PRIOR TO BEGINNING WORK.
3. RAMP GUIDE PILES SHALL BE DRIVEN TO TOLERANCES NOTED IN SPECS.
4. PILES ON LINE (C) HAVE SAME TIP ELEV AS LINE (B).
5. ADJUST GUIDE PILE LOCATIONS TO FIT ACTUAL FLOAT PROVIDED.

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33201 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

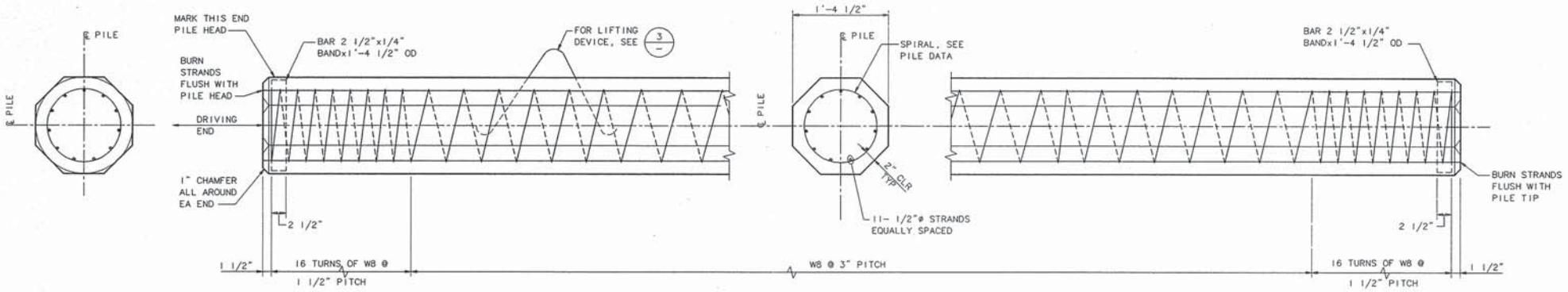
VISWANATH K. KUMAR
STATE OF WASHINGTON
18186
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES APR. 21, 1995

MOB DRAWN BY	5/27/94 DATE	VKK CHECK BY	5/26/94 DATE	MARK	REVISION	BY	APP.	DATE
REH DESIGN BY	5/26/94 DATE	REH PROJ ENGR	5/26/94 DATE					

HERRON ISLAND
FERRY TERMINALS
PILING PLANS

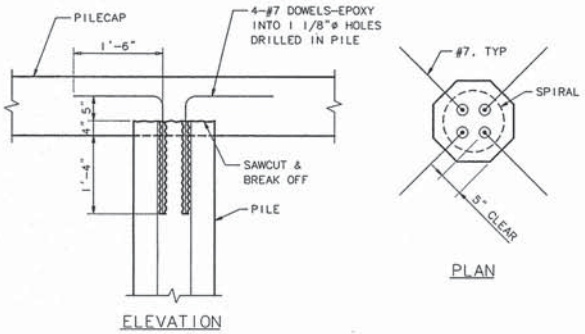
DRAWING NO. S-2
CONTRACT NO. A94042
SHEET NO. _____ OF _____

PLOTTED: Thu Sep 15 1994 10:46am FILENAME: V:\A94042\S-2.DWG SCALE: 1&2



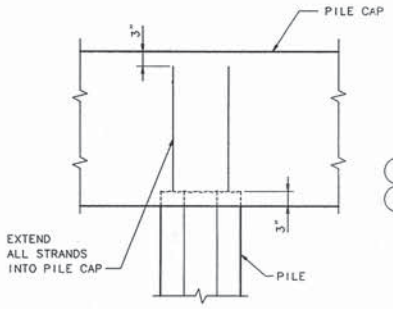
1/- 16 1/2" OCTAGONAL PRECAST PRESTRESSED CONCRETE PILE

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



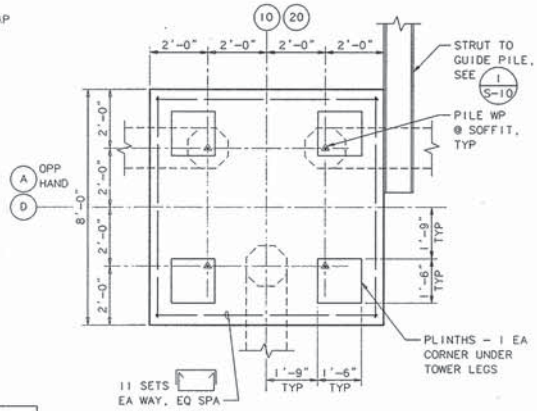
2/- TYPICAL PILE CUTOFF @ SLAB

SCALE: 1"=1'-0"



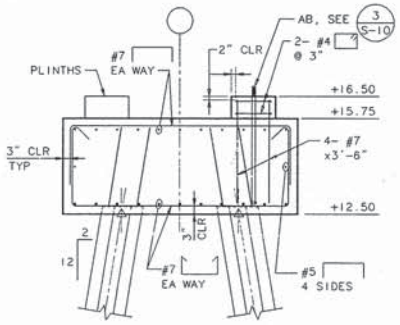
4/- TYPICAL PILE CUTOFF

SCALE: NONE



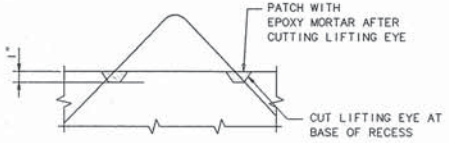
5/- PLAN - TOWER PILE CAP

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



6/- SECTION - TOWER PILE CAP

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



NOTE:
LIFTING DEVICE LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR CONSIDERING ALL LOADS IMPARTED TO THE PILE (NORMAL AND PARALLEL TO THE LONGITUDINAL AXIS) BY THE RIGGING BEING USED. ALL MODES OF LIFTING (FABRICATION AND FIELD) SHALL BE CONSIDERED.

3/- DETAIL - LIFTING EYE

SCALE: NONE

PRECAST PRESTRESSED PILE DATA	
SIZE SECTION AREA WEIGHT SECTION MODULUS	16 1/2" OCTAGON 225 SQ IN 247 LBS/FT 495 CUBIC IN
MIN CONCRETE COMPRESSIVE STRENGTH: AT RELEASE AT DRIVING AT 28 DAYS	4800 PSI 6000 PSI 6000 PSI
PRESTRESSING STEEL	1/2" DIA-7 WIRE STRAND
PRETENSION: NUMBER OF STRANDS DESIGN FORCE	11 273 KIPS
SPIRAL - SPACE PER DRAWING	ASTM A 82

7/- PRECAST PILE DATA

SCALE: NONE

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE., SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISVANATH K. KUMAR
18105
REGISTERED PROFESSIONAL ENGINEER
EXPIRES APRIL 21, 1995

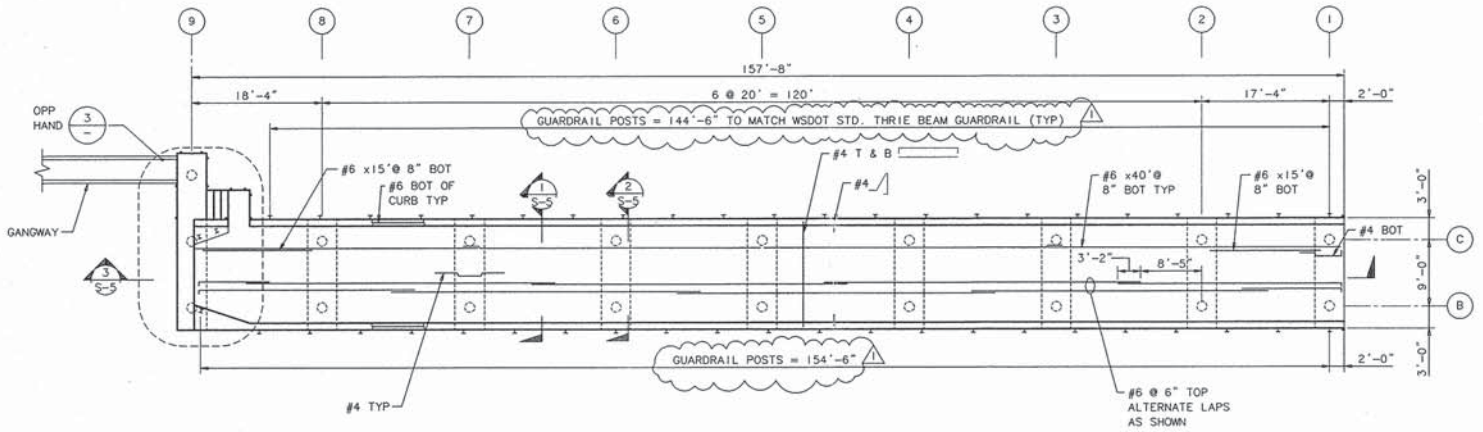
MDB	5/27/94	VKK	5/28/94	1	GENERAL REVISION	ELB	VKK 9/15/94
DRAWN BY	DATE	CHECK BY	DATE				
REH	5/28/94	REH	5/28/94				
DESIGN BY	DATE	PROJ ENGR	DATE	MARK	REVISION	BY	APP. DATE

HERRON ISLAND
FERRY TERMINALS

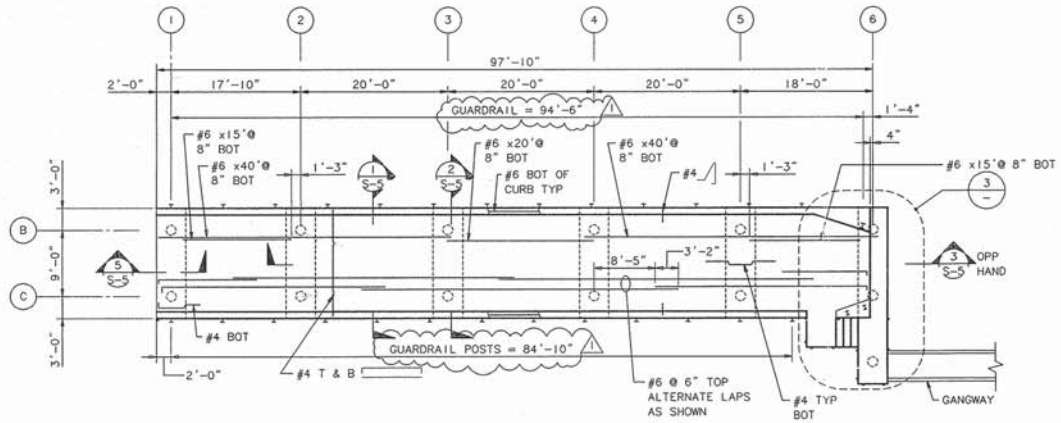
PILING & PILE CAP DETAILS

DRAWING NO. S-3
CONTRACT NO. A94042
SHEET NO. _____ OF _____

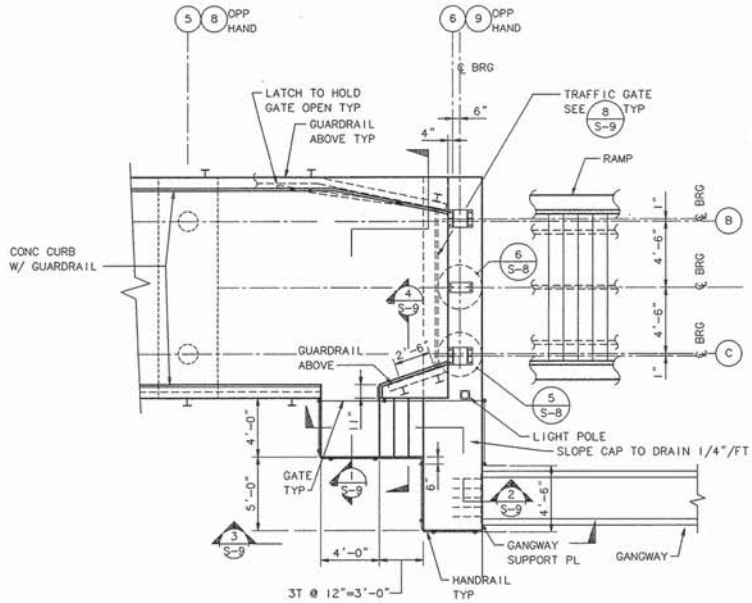
PLOTTED: Thu Sep 15 1994 10:54am FILENAME: I:\A94012\S-3.DWG SCALE: 8



1 — DECK PLAN – MAINLAND TERMINAL
SCALE: 1/8"=1'-0"



2 — DECK PLAN – ISLAND TERMINAL
SCALE: 1/8"=1'-0"



3 — PLAN
SCALE: 1/4"=1'-0"

PROJECT NORTH

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISWANATH K. KUMAR — STATE OF WASHINGTON — 18195 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES APR. 10, 1995

MDB	5/27/94	VKK	5/25/94
DRAWN BY	DATE	CHECK BY	DATE
REH	5/26/94	REH	5/26/94
DESIGN BY	DATE	PROJ ENGR	DATE

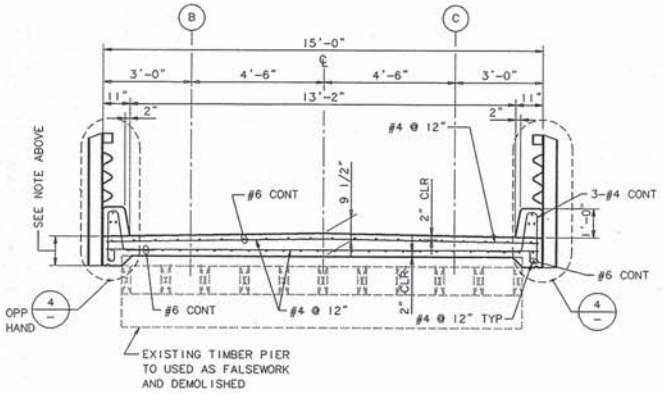
MARK	REVISION	BY	APP.	DATE
1	ADDENDUM 1	ELB	VKK	9/15/94

HERRON ISLAND
FERRY TERMINALS
DECK REINFORCEMENT PLANS

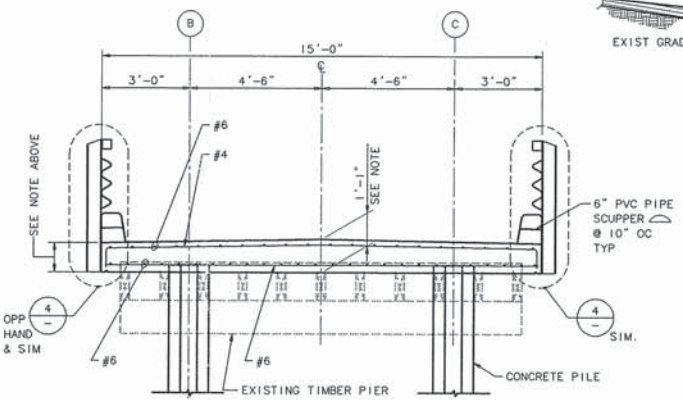
DRAWING NO. S-4
CONTRACT NO. A94042
SHEET NO. ____ OF ____

PLOTTED: Thu Sep 15 1994 11:08am FILENAME: Y:\A94042\S-4.DWG SCALE: 96

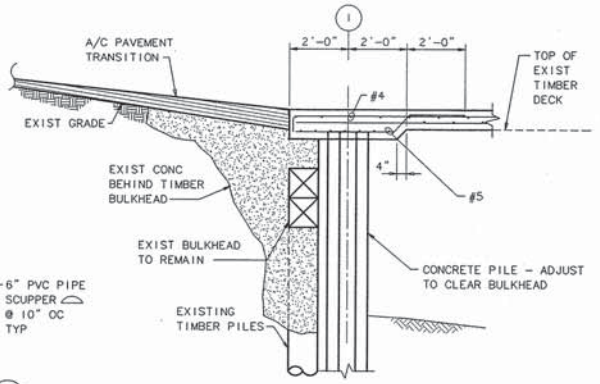
NOTE:
PILECAP THICKNESS IS 11 1/2" NOMINAL AT EDGE, ASSUMING THE EXISTING DECKING IS 4" THICK. IT IS ASSUMED 1/2" PLYWOOD WILL BE USED AS A SOFFIT FORM IN THE PILECAP AFTER REMOVAL OF THE 4x12 DECKING.



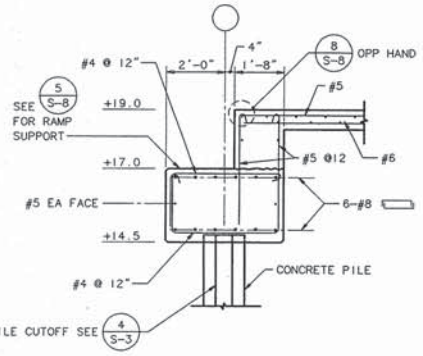
1 — TYPICAL SECTION
SCALE: 1/2"=1'-0"



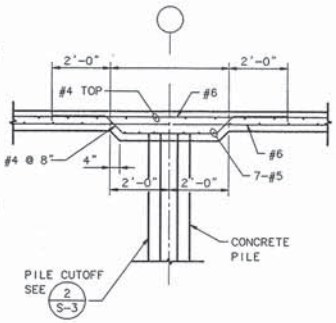
2 — SECTION @ PILE CAP
SCALE: 1/2"=1'-0"



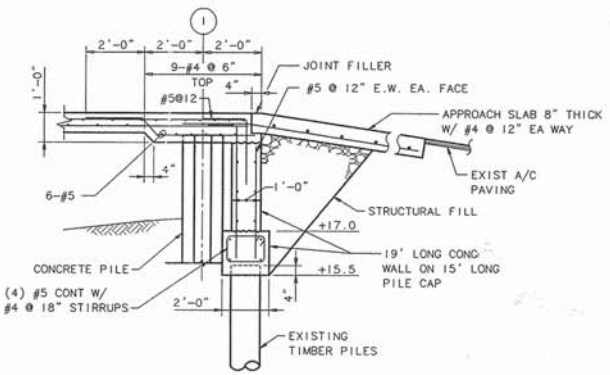
5 — SECTION @ ISLAND ABUTMENT
SCALE: 1/2" = 1'-0"



RAMP SUPPORT

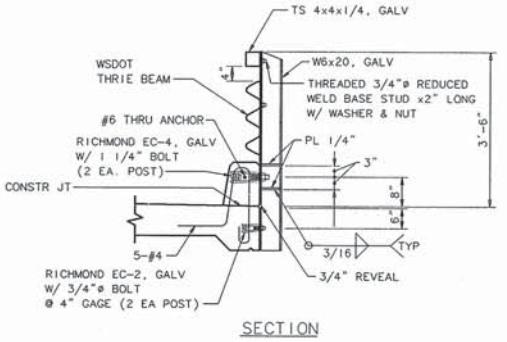


TYPICAL PILE CAP

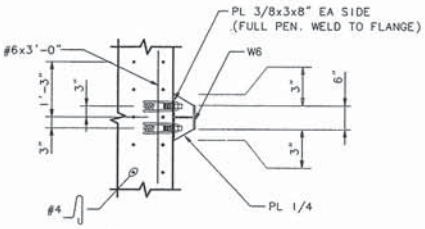


MAINLAND ABUTMENT

3 — LONGITUDINAL SECTION
SCALE: 1/2"=1'-0"



SECTION



PLAN

4 — SECTION @ GUARDRAIL
SCALE: 3/4"=1'-0"

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

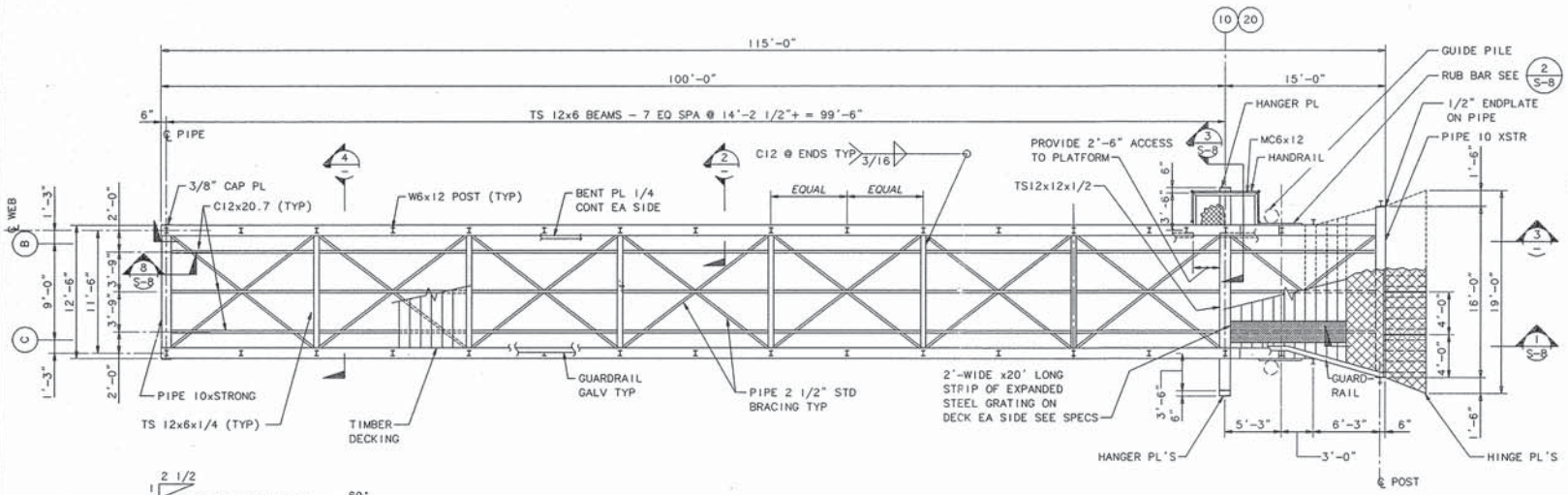
VISWANATH K. KUMAR
STATE OF WASHINGTON
18183
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: APRIL 30, 1995

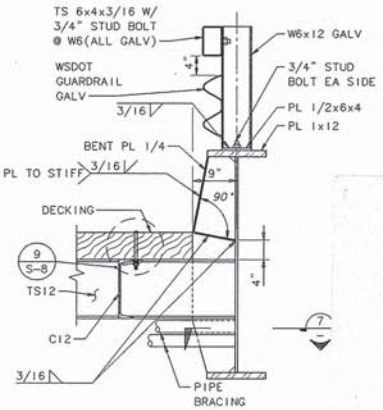
RGP	5/27/94	VKK	5/26/94				
DRAWN BY	DATE	CHECK BY	DATE				
REH	5/26/94	REH	5/26/94	MARK	REVISION	BY	APP. DATE
DESIGN BY	DATE	PROJ ENGR	DATE				

HERRON ISLAND
FERRY TERMINALS
DECK SECTIONS & DETAILS

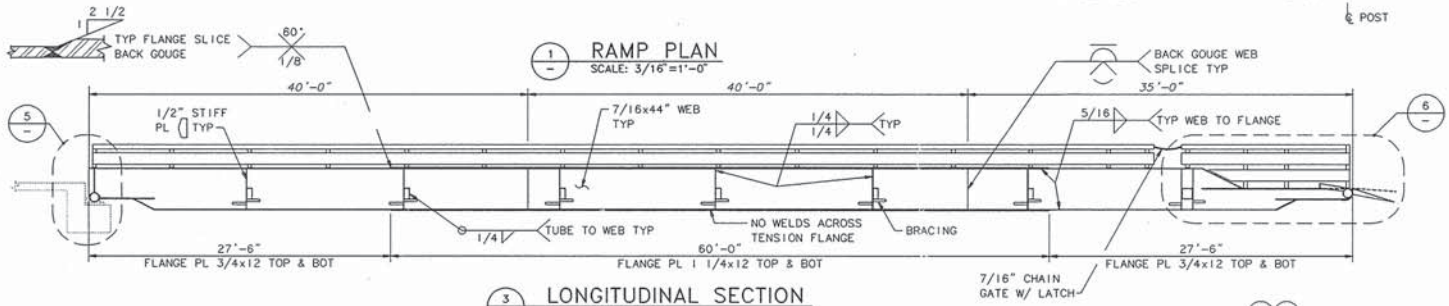
DRAWING NO. S-5
CONTRACT NO. A94042
SHEET NO. ____ OF ____

LOTTED: Thu Sep 15 1994 11:15am PLENAME: Y:\A94042\S-5.DWG SCALE: 24



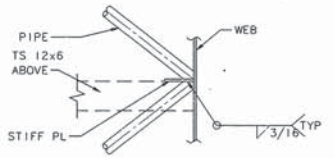


2 GIRDER
SCALE: 1"=1'-0"

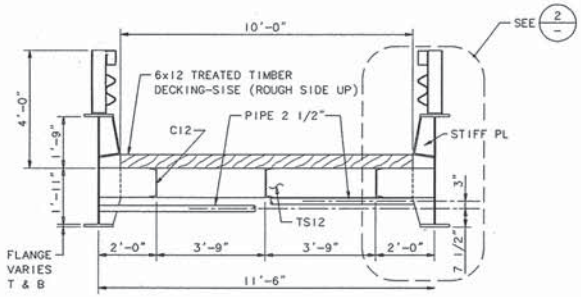


1 RAMP PLAN
SCALE: 3/16"=1'-0"

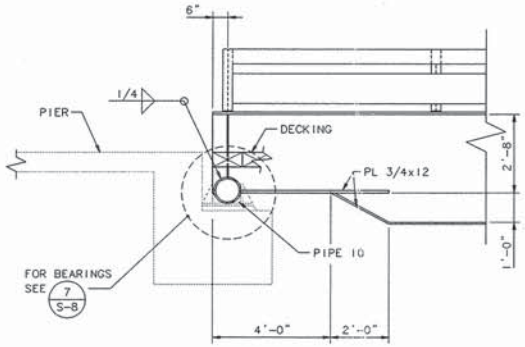
3 LONGITUDINAL SECTION
SCALE: 3/16"=1'-0"



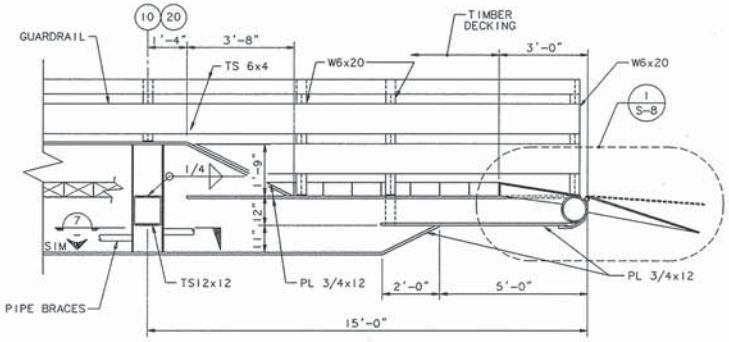
7 SECTION
SCALE: 1"=1'-0"



4 SECTION THRU RAMP
SCALE: 1/2"=1'-0"



5 SECTION @ PIER END
SCALE: 1/2"=1'-0"



6 SECTION @ FERRY END
SCALE: 1/2"=1'-0"

FOR CONSTRUCTION

ABAM CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

VISWANATH K. KUMAR
STATE OF WASHINGTON
18185
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES APR. 10, 1995

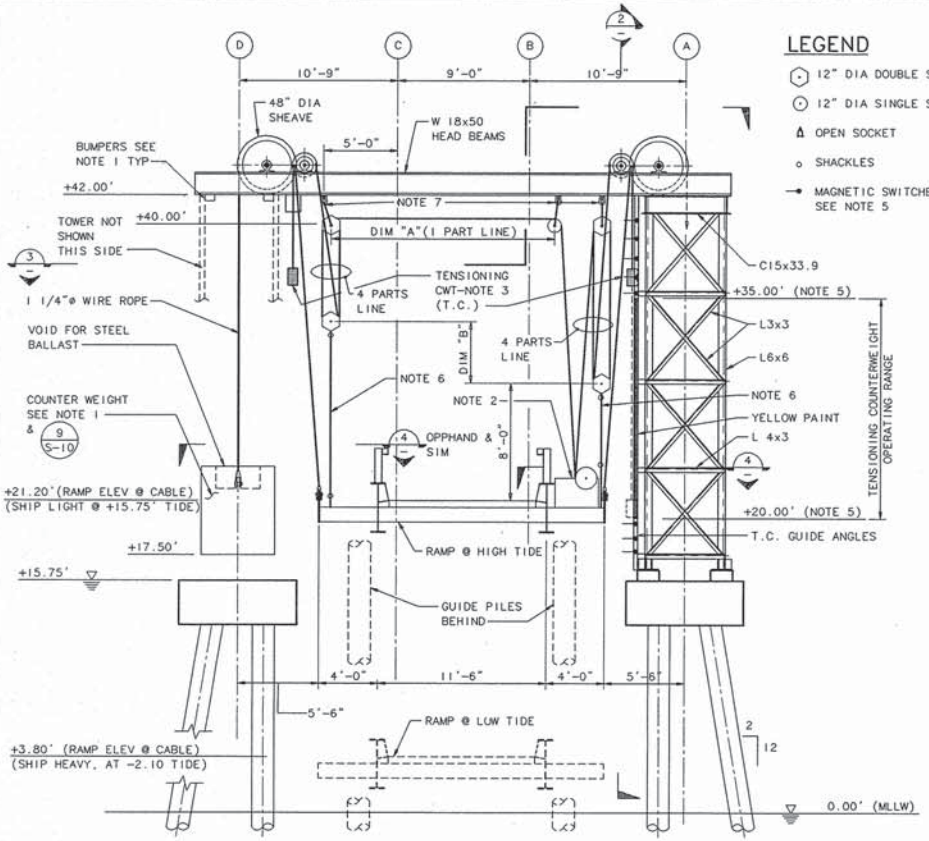
MDB	5/27/94	VKK	5/28/94						
DRAWN BY	DATE	CHECK BY	DATE						
REH	5/26/94	REH	5/28/94	MARK	REVISION	BY	APP.	DATE
DESIGN BY	DATE	PROJ ENGR	DATE					

HERRON ISLAND FERRY TERMINALS

RAMP PLAN, ELEVATION & SECTIONS

DRAWING NO. S-6
CONTRACT NO. A94042
SHEET NO. _____ OF _____

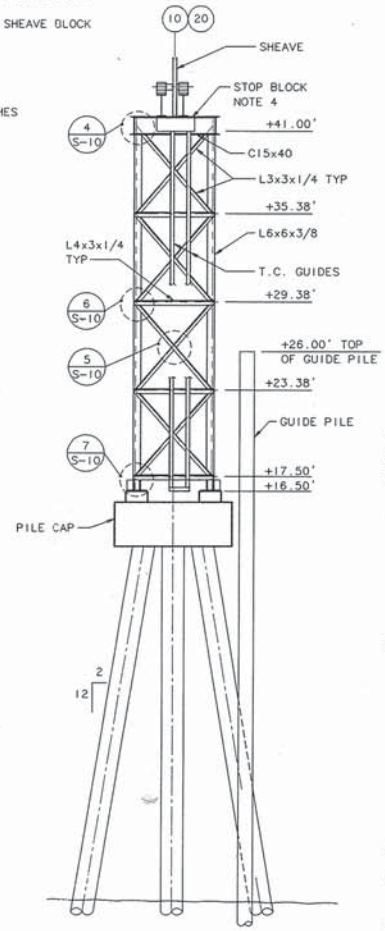
PLOTTED: Thu Sep 15 1994 11:20am FILENAME: Y:\A94042\S-6.DWG SCALE: 64



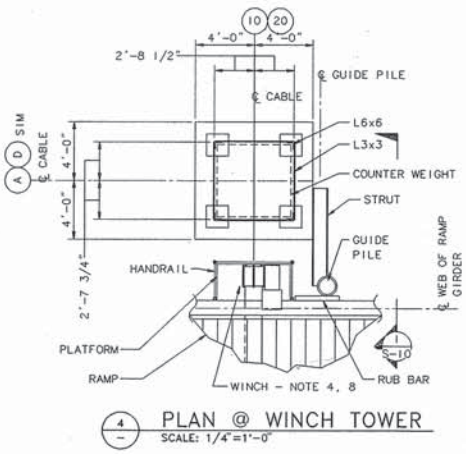
1 — ELEVATION @ RAMP LIFTING TOWERS
SCALE: 1/4"=1'-0"

LEGEND

- 12" DIA DOUBLE SHEAVE BLOCK
- 12" DIA SINGLE SHEAVE BLOCK
- OPEN SOCKET
- SHACKLES
- MAGNETIC SWITCHES SEE NOTE 5



2 — ELEVATION
SCALE: 1/4"=1'-0"



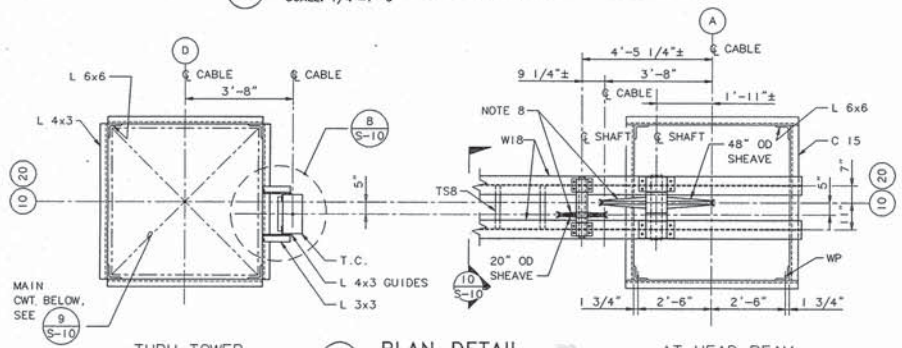
4 — PLAN @ WINCH TOWER
SCALE: 1/4"=1'-0"

NOTES:

THE RAMP LIFTING SYSTEM SHALL BE CONTRACTOR DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WASHINGTON. THE LIFTING SYSTEM AND ITS CONTROLS SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

1. PROVIDE A COUNTERWEIGHT AT EACH TOWER. THE ACTUAL WEIGHT OF THE RAMP SHALL BE DETERMINED BY THE FABRICATOR AFTER THE RAMP IS FABRICATED AND PAINTED. FOR BIDDING PURPOSES, ASSUME A COUNTERWEIGHT OF THE SIZE SHOWN WITH STEEL PUNCHINGS EMBEDED IN THE MIX TO ACHIEVE AN AVERAGE UNIT WEIGHT OF 180 pcf. PROVIDE 2000 LBS OF LOOSE PUNCHINGS EACH COUNTERWEIGHT TO FIT IN THE VOID ON TOP OF EACH COUNTERWEIGHT FOR FINAL BALANCING. FINAL BALANCING SHALL OCCUR WITH THE TIMBER DECK INSTALLED AT A MOISTURE CONTENT OF 19%. PROVIDE ENERGY ABSORBING BUMPERS AT TOP OF TOWER. THE COUNTERWEIGHT SHALL OPERATE WITHIN THE RANGE NOTED.

2. PROVIDE A 3-TON, DOUBLE-DRUM WINCH (SEE SPECIFICATIONS) MOUNTED IN THE APPROXIMATE LOCATION SHOWN WITH THE FOLLOWING MINIMUM FEATURES:
   - MINIMUM LIFTING SPEED = 3 FPM AT END OF RAMP.
   - A SPRING-SET, POWER RELEASE BRAKE ON THE DRUMS. THE BRAKE SHALL BE CAPABLE OF HOLDING A 52,000 LB VEHICLE LOCATED AT THE END OF THE RAMP.
   - A MANUAL CONTROL IN A WEATHER PROOF LOCKING BOX OPERABLE FROM THE WALKWAY LOCATED AS SHOWN ON THE ELECTRICAL DRAWINGS.
   - A RADIO OPERATED CONTROL FIXED IN THE FERRY PILOTS ROOM.
   - PROVIDE THREE (3) HAND HELD, RADIO OPERATED CONTROLS.
   - THE WIRE ROPE SHALL BE 5/8"ø 6x37 IWRC EXTRA IMPROVED PLOW STELL
   - MANUAL CRANK TO RAISE & LOWER RAMP WITH A MANUAL BRAKE RELEASE.
   - CENTER WINCH UNDER HEAD BEAM SHEAVE TO INSURE 1 1/2° MAX FLEET ANGLE AT HIGH TIDE
3. PROVIDE TENSIONING COUNTERWEIGHTS AT EACH TOWER PER 8 S-10.
4. PROVIDE A STOP BLOCK TO ENGAGE THE TENSIONING COUNTERWEIGHT. LOCATE TO CLEAR MAIN CWT CABLE.
5. PROVIDE A FLASHING LIGHT AND AUDIBLE ALARM OPERATED BY MAGNETIC SWITCHES (SEE SPECS) TO INDICATE WHEN THE TENSIONING COUNTERWEIGHT IS BEYOND THE OPERATING RANGE. PAINT THE GUIDE ANGLES YELLOW AS NOTED TO INDICATE OPERATING RANGE.
6. PROVIDE 3/4"x4" GALVANIZED FLAT BAR HANGERS WITH SHACKLES TOP AND BOTTOM TO ATTACH THE BLOCKS TO THE RAMP. SET DIM "B"=1/4 (DIM "A") TO KEEP LINE LENGTH EQUAL FOR BOTH SIDES OF RAMP.
7. PROVIDE 17 TON, BOLT TYPE ANCHOR SHACKLES. SEE DETAIL 10 S-10.
8. SHEAVE LAYOUT AND SIZES ARE SCHEMATIC CONTRACTOR SHALL DESIGN SHEAVE, LAYOUT AND PROVIDE LUBRICATION SYSTEM PER SPECS.
9. SEE DRAWING S-1 FOR A DESCRIPTION OF RAMP OPERATIONS.



THRU TOWER — 3 — PLAN DETAIL — SCALE: 1/2"=1'-0" — AT HEAD BEAM

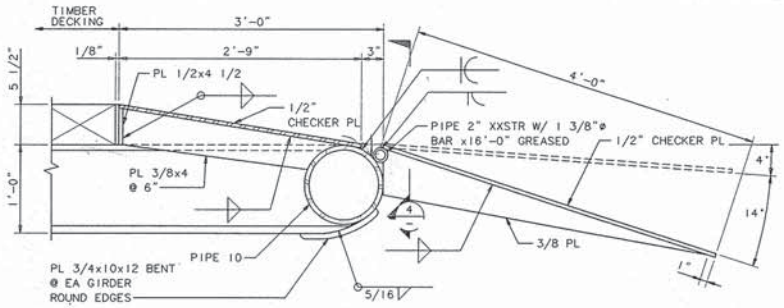
FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

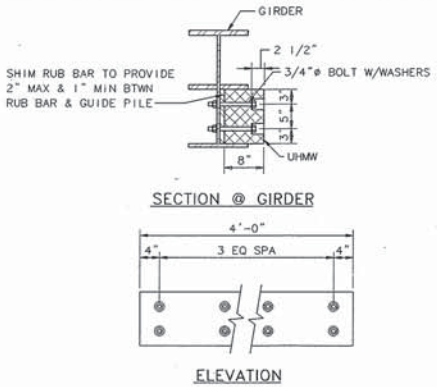
VISWANATH K. KUMAR — STATE OF WASHINGTON — 18183 — PROFESSIONAL ENGINEER — EXPIRES APRIL 10, 1995

MDB	5/27/94	VKK	5/28/94	MARK	REVISION	BY	APP.	DATE	HERRON ISLAND FERRY TERMINAL
DRAWN BY	DATE	CHECK BY	DATE						RAMP TOWER LAYOUT & NOTES
REH	5/26/94	REH	5/28/94						DRAWING NO. S-7
DESIGN BY	DATE	PROJ ENGR	DATE						CONTRACT NO. A94042
									SHEET NO. ____ OF ____

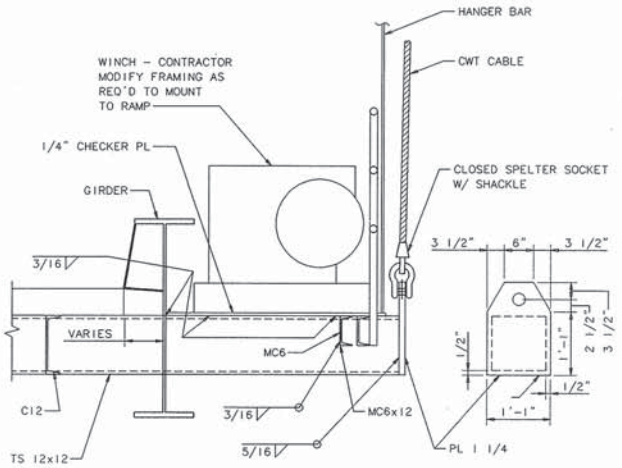
PLOTTED: Thu Sep 15 1994 11:24am FILENAME: I:\A9404\S-7.DWG SCALE: 48



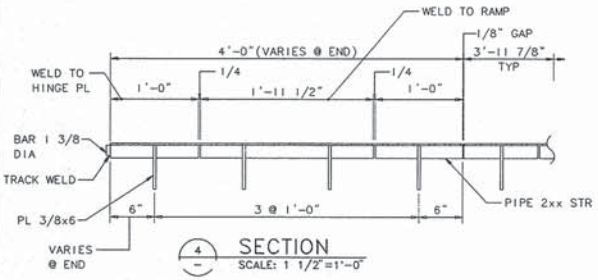
1 — SECTION @ HINGE PLATE
SCALE: 1 1/2"=1'-0"



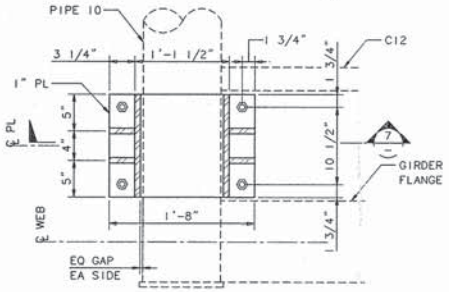
2 — DETAIL — RUB BAR
SCALE: 1"=1'-0"



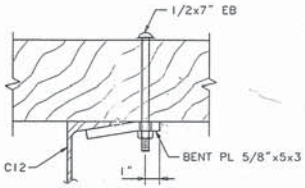
3 — SECTION — WINCH PLATFORM
SCALE: 1"=1'-0"



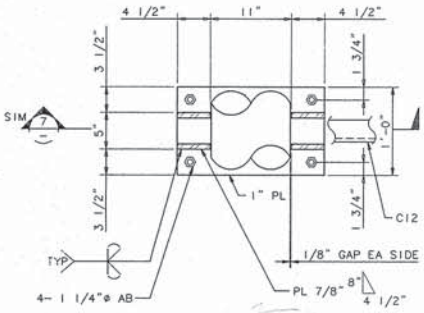
4 — SECTION
SCALE: 1 1/2"=1'-0"



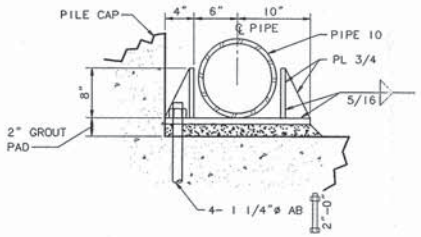
5 — DETAIL — EDGE BEARINGS
SCALE: 1 1/2"=1'-0"



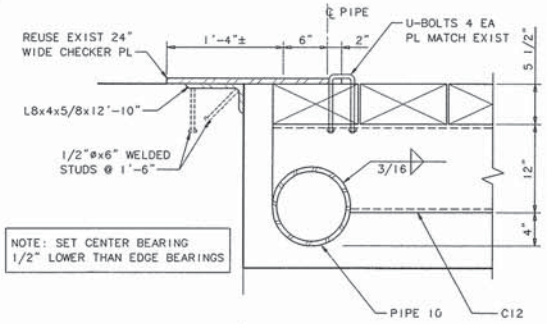
SECTION



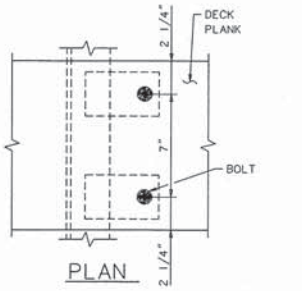
6 — DETAIL — CENTER BEARING
SCALE: 1 1/2"=1'-0"



7 — SECTION @ BEARINGS
SCALE: 1 1/2"=1'-0"



8 — DETAIL — JOINT COVER PLATE
SCALE: 1 1/2"=1'-0"



PLAN

9 — DECKING ATTACHMENT
SCALE: 3"=1'-0"

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 352-6100
A MEMBER OF THE BERGER GROUP

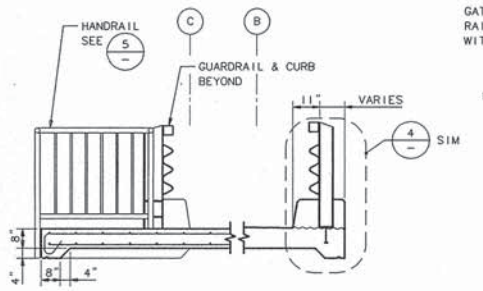
VISWANATH K. VIJAYAKAR — STATE OF WASHINGTON — 18193 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES APR. 10, 1995

MDB DRAWN BY	5/27/94 DATE	VKK CHECK BY	5/26/94 DATE				
REH DESIGN BY	5/26/94 DATE	REH PROJ ENGR	5/26/94 DATE	MARK	REVISION	BY	APP. DATE

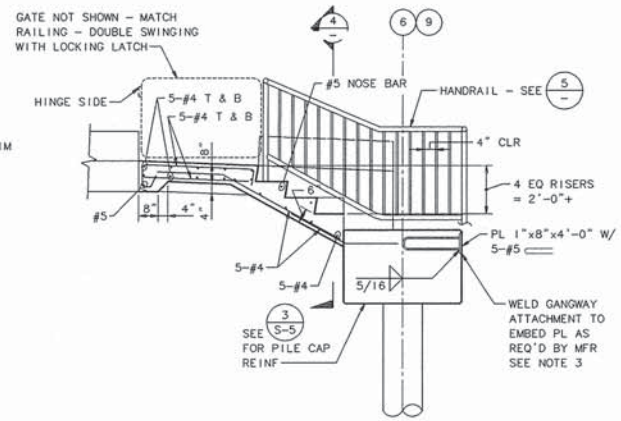
HERRON ISLAND FERRY TERMINALS
RAMP SECTIONS & DETAILS

DRAWING NO. S-8
CONTRACT NO. A94042
SHEET NO. ____ OF ____

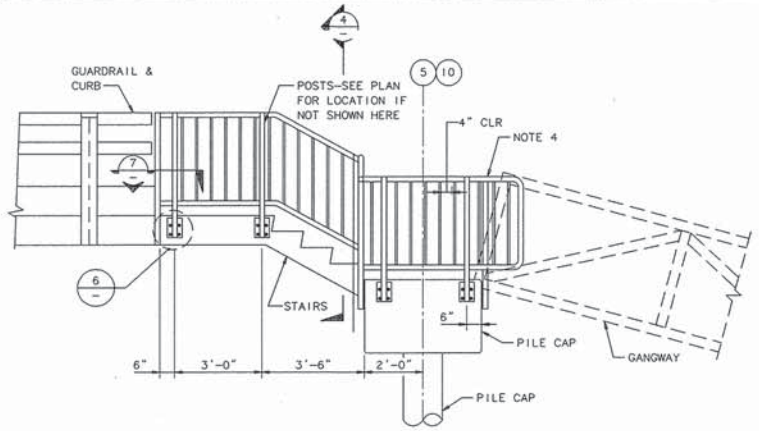
PLOTTED: Thu Sep 15 1994 11:29am FILENAME: I:\A940\S\S-8.DWG SCALE: 12



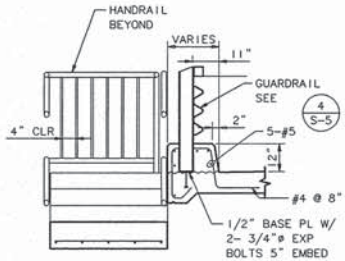
1 ELEVATION
SCALE: 1/2"=1'-0"



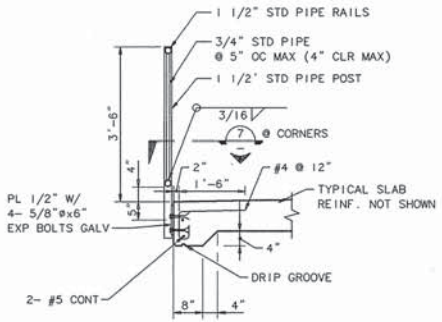
2 SECTION @ STAIRS
SCALE: 1/2"=1'-0"



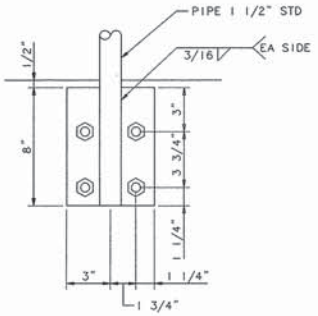
3 HANDRAIL ELEVATION
SCALE: 1/2"=1'-0"



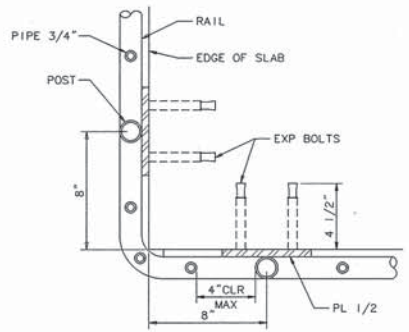
4 SECTION
SCALE: 1/2"=1'-0"



5 SECTION @ HANDRAIL
SCALE: 3/4"=1'-0"

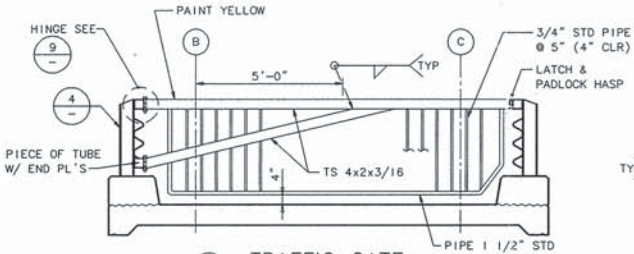


6 DETAIL
SCALE: 3"=1'-0"

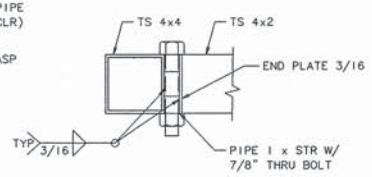


7 DETAIL @ CORNERS
SCALE: 3"=1'-0"

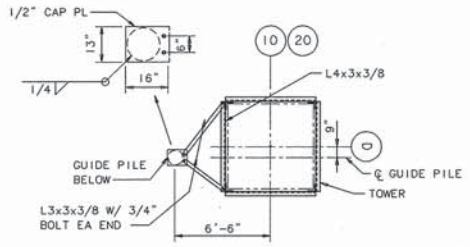
NOTES:
1. ALL HANDRAILS SHALL CONFORM TO UBC SECTION 3306. GUARDRAILS PER UBC 1712(a).
2. GALVANIZE ALL HANDRAILS, GUARDRAIL, INSERTS AND FASTENERS.
3. CORRDINATE ATTACHMENT OF GANGWAY TO EMBED PL. MODIFY PL AS REQUIRED AND SUBMITT TO ENGINEER FOR APPROVAL.
4. COORDINATE GEOMETRY OF HANDRAILS TO INSURE OVERLAP OF HANDRAILS ON GANGWAY AND PIER AT ALL TIDAL ELEVATIONS.
5. PLACE 3/16" END CAPS ON ALL EXPOSED PIPES & TUBES.



8 TRAFFIC GATE
SCALE: 1/2"=1'-0"



9 HINGE
SCALE: 3"=1'-0"



10 BRACE STRUT
SCALE: 1/4"=1'-0"

FOR CONSTRUCTION

ABAM CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

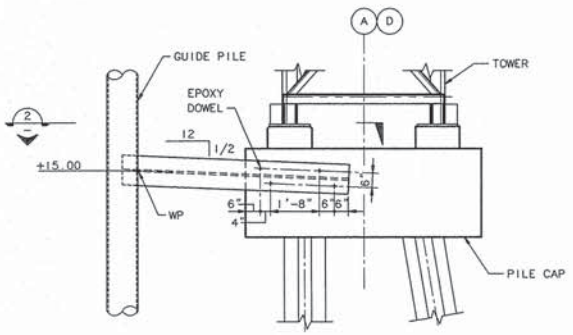
VISVANATH K. KUMAR
STATE OF WASHINGTON
18183
REGISTERED PROFESSIONAL ENGINEER
EXPIRES APRIL 10, 1995

MDB	5/27/94	VKK	5/26/94				
DRAWN BY	DATE	CHECK BY	DATE				
REH	5/26/94	REH	5/26/94	MARK	REVISION	BY	APP	DATE
DESIGN BY	DATE	PROJ ENGR	DATE					

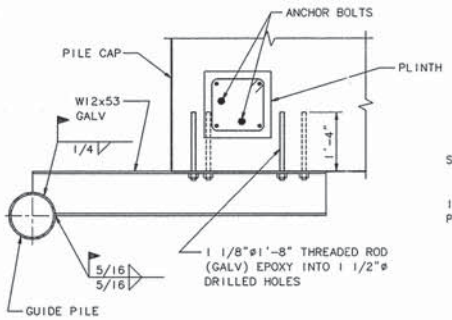
HERRON ISLAND FERRY TERMINALS
SECTIONS & DETAILS

DRAWING NO. S-9
CONTRACT NO. A94042
SHEET NO. ____ OF ____

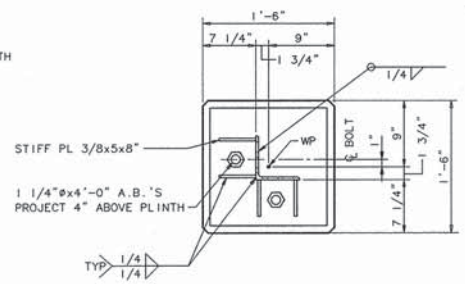
PLOTTED: Thu Sep 15 1994 11:33am FILENAME: I:\A94042\S-9.DWG SCALE: 24



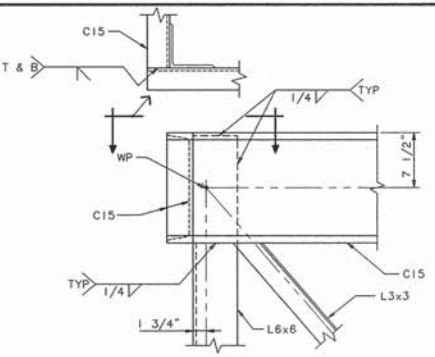
1 GUIDE PILE CONNECTION
SCALE: 1/2"=1'-0"



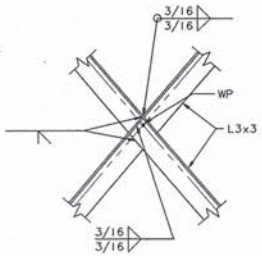
2 DETAIL
SCALE: 3/4"=1'-0"



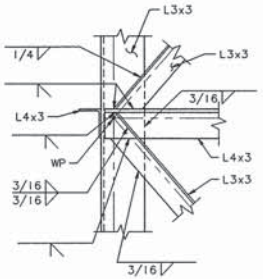
3 DETAIL @ PLINTH
SCALE: 1 1/2"=1'-0"



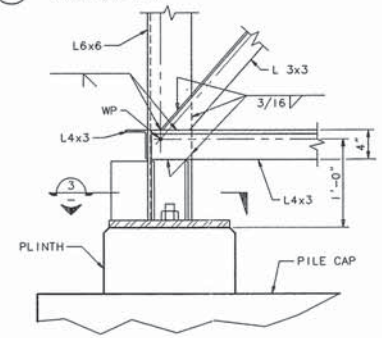
4 DETAIL
SCALE: 1 1/2"=1'-0"



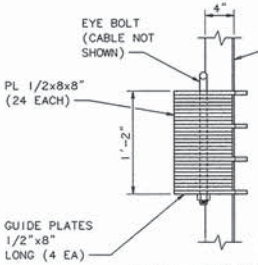
5 DETAIL
SCALE: 1 1/2"=1'-0"



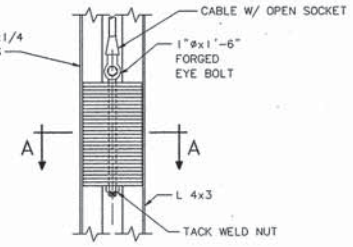
6 DETAIL
SCALE: 1 1/2"=1'-0"



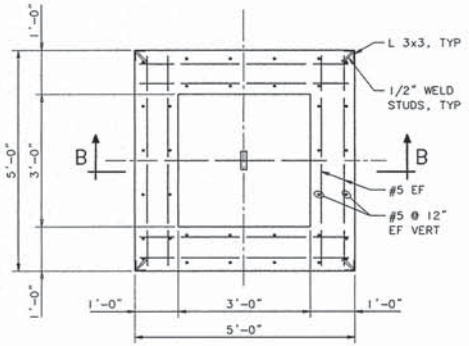
7 DETAIL
SCALE: 1 1/2"=1'-0"



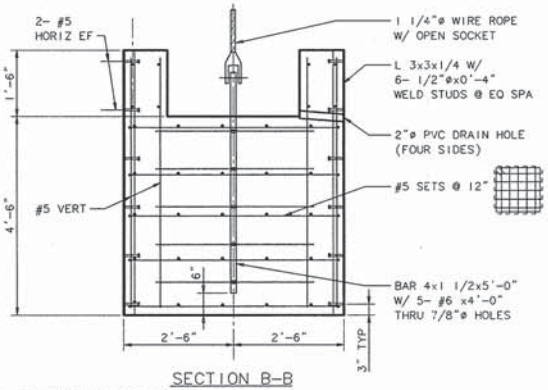
SIDE ELEVATION



ELEVATION



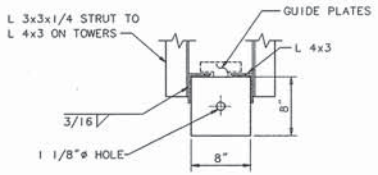
PLAN



SECTION B-B

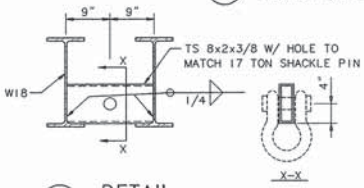
9 DETAIL - MAIN COUNTERWEIGHT
SCALE: 3/4"=1'-0"

NOTE:
CONTRACTOR MAY SUBMIT
ALTERNATE T.C. OF SAME
WEIGHT FOR APPROVAL.



SECTION A-A

8 DETAIL - TENSIONING COUNTERWEIGHT
SCALE: 1 1/2"=1'-0"



10 DETAIL
SCALE: 1"=1'-0"

FOR CONSTRUCTION

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

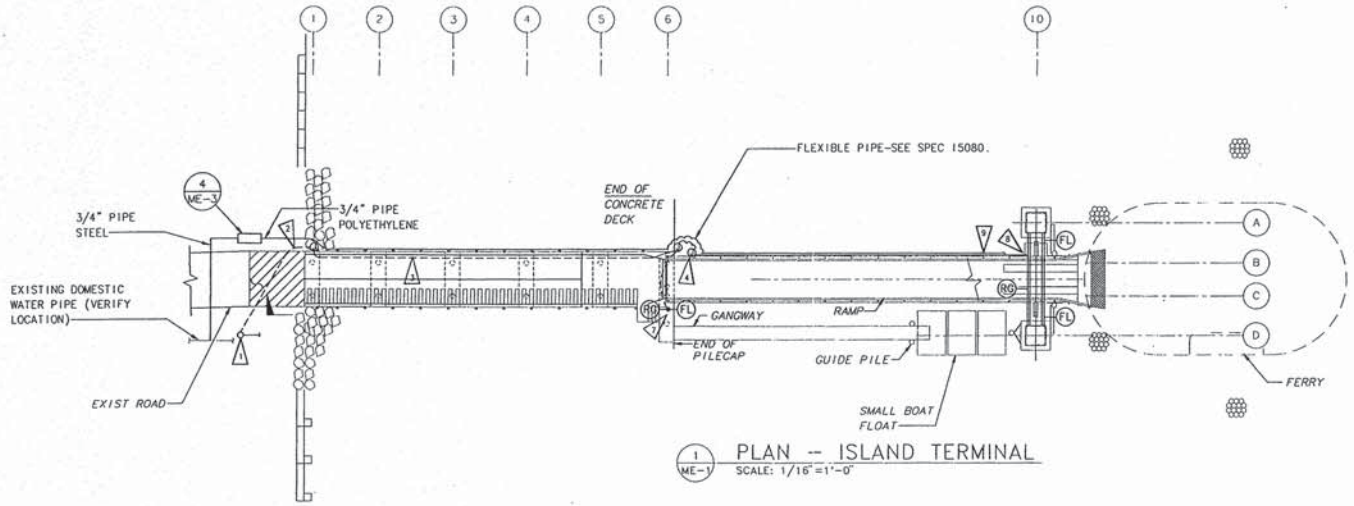
VISWANATH K. NITNAIK
STATE OF WASHINGTON
18185
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES APRIL 10, 1995

MDB	5/27/94	VKK	5/26/94						
DRAWN BY	DATE	CHECK BY	DATE						
REH	5/26/94	REH	5/26/94						
DESIGN BY	DATE	PROJ ENGR	DATE	MARK	REVISION	BY	APP.	DATE	

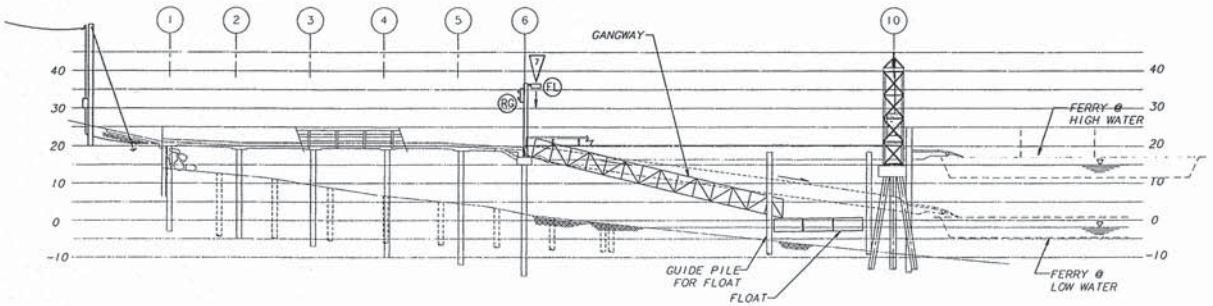
HERRON ISLAND
FERRY TERMINALS
SECTIONS & DETAILS

DRAWING NO. S-10
CONTRACT NO. A94042
SHEET NO. _____ OF _____

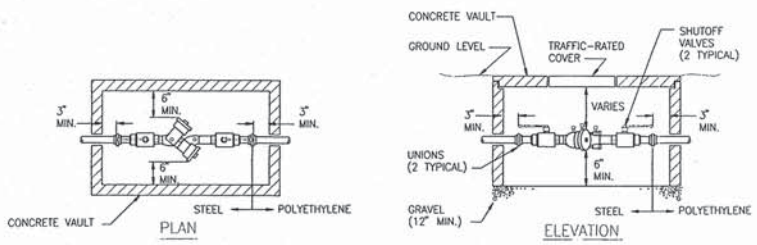
PLOTTED: Thu Sep 15 1994 11:37am FILENAME: Y:\A94042\S-10.DWG, SCALE: 0



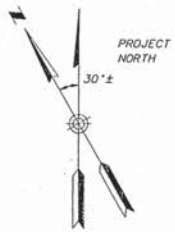
1 ME-1 PLAN -- ISLAND TERMINAL
SCALE: 1/16"=1'-0"



2 ME-1 ELEVATION -- ISLAND TERMINAL
SCALE: 1/16"=1'-0"

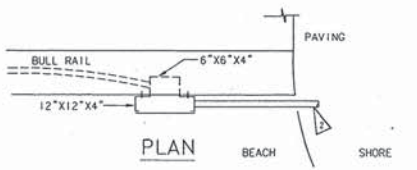


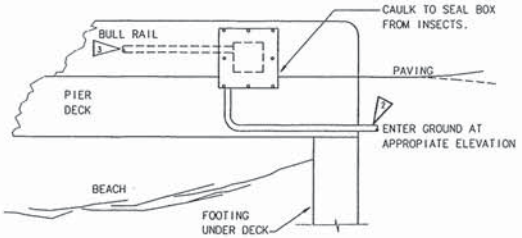
4 ME1 BACKFLOW PREVENTER INSTALLATION
NOT TO SCALE



FLAG NOTES:

1. PROVIDE NEW 30 FOOT FULLY TREATED CLASS 5 POWER POLE, ANCHOR AND GUY. SET POLE 5 FEET DEEP. PROVIDE COMBINATION METER SOCKET AND 100 AMPERE 2 POLE MAIN CIRCUIT BREAKER ON POLE. PROVIDE 1-1/4" GALV. RIGID STEEL CONDUIT (GRS) UP POLE WITH 3-#2 COPPER AND WEATHERHEAD AT TOP OF POLE. PROVIDE INSULATOR RACK BELOW WEATHERHEAD. ARRANGE FOR UTILITY TO CONNECT OVERHEAD SERVICE. PROVIDE SERVICE GROUND WITH TWO GROUND RODS.
2. 1-1/4" PLASTIC COATED GRS 24" UNDER ROAD TO AN EXTENSION BOX OVER PULL BOX FLUSHED INTO BULL RAIL OF NEW PIER. 3-#2 XHHW PLUS #8 THW GROUND.
3. 1-1/4" GRS EMBEDDED IN CONCRETE BULL RAIL, 3-#2 XHHW AND #8 THW GROUND.
4. 1-1/4" SEAL TIGHT FLEX FROM EXTENSION BOX OVER PULL BOX IN FACE OF PIER TO RAMP. SURFACE BOXES AND EXTENSION BOXES SHALL BE PLASTIC COATED STEEL AS SPECIFIED.
5. 1-1/4" PLASTIC COATED GRS, 3-#2, 1-#8, 4-#12 TO PANEL A.
6. 3/4" GRS EMBEDDED IN CONCRETE TO BASE OF LIGHT POLE; 4-#12.
7. 16 FOOT 4" SQUARE STEEL LIGHT POLE GALVANIZED AFTER FABRICATION. TOP CAP, SIDE MOUNT LIGHT FIXTURE FL TO SEAWARD, TRAFFIC SIGNAL TOWARD BEACH.
8. SEE DWG E-3 FOR WIRING AT END OF RAMP.
9. PROVIDE 3/4" WATER PIPE FROM EXISTING WATER SERVICE VIA ROUTE SHOWN ON PIER TO A HOSE BIB FAUCET NEAR WINCH PLATFORM. PROVIDE SHUT OFF/DRAIN VALVE WHERE PIPE LEAVES BACK FLOW PREVENTING TO PERMIT SHUT OFF AND AIR INTAKE TO PIPES WHEN DRAINED. INSULATE BACKFLOW PIT FROM FREEZING. SUPPORT PIPING ON SIDE OF PIER AND RAMP WITH SLIGHT SLOPE TO DRAIN.





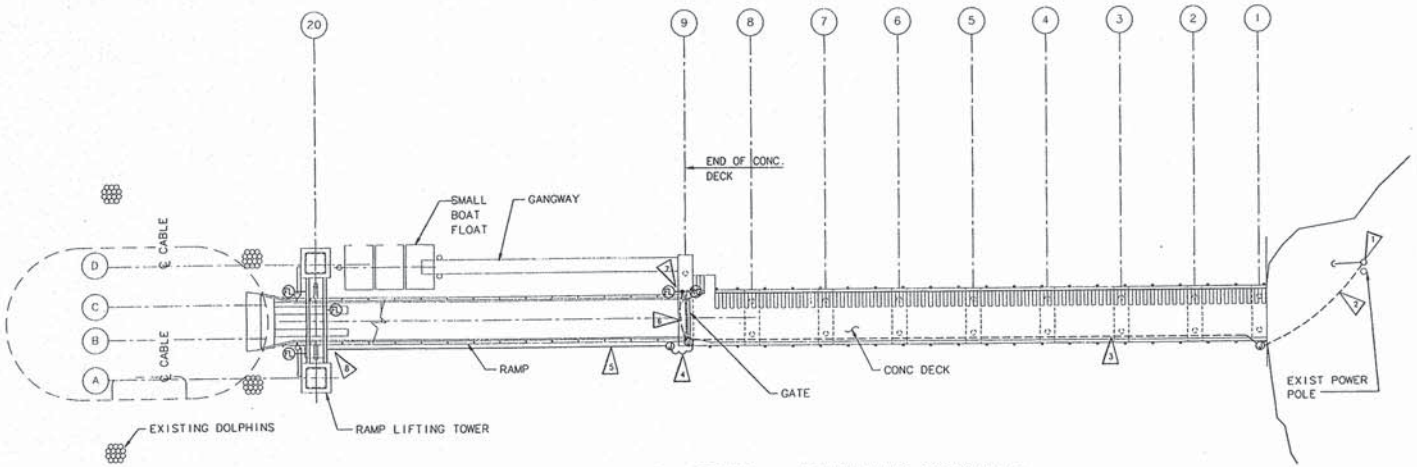
ELEVATION AT GRID (1)
3 ME-1 DETAIL AT PIER TO UNDERGROUND
SCALE: 1" = 1'-0"

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

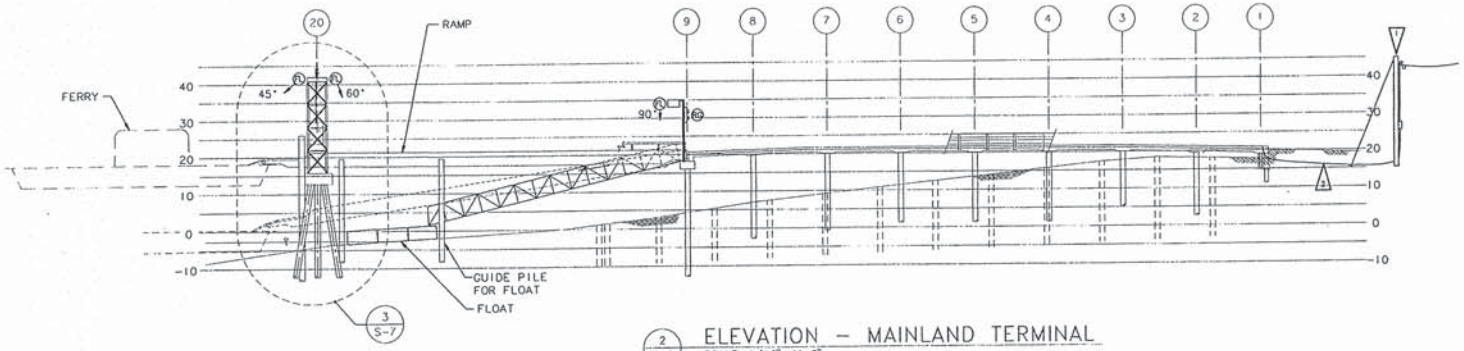
REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
7649
NOVEMBER 26, 1990

ABF 5/26/94 DRAWN BY DATE	TJC 5/26/94 CHECK BY DATE						HERRON ISLAND FERRY TERMINALS
TJC 5/26/94 DESIGN BY DATE	REH 5/26/94 PROJ ENGR DATE	MARK	REVISION	BY	APP.	DATE	ISLAND TERMINAL MECHANICAL & ELECTRICAL PLAN

DRAWING NO. M&E-1
CONTRACT NO. A94042
SHEET NO. 15 OF 18



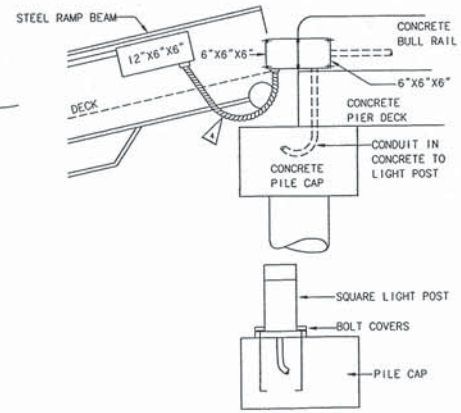
1 / E-2 PLAN – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"



2 / E-2 ELEVATION – MAINLAND TERMINAL
SCALE: 1/16"=1'-0"

FLAG NOTES:

1. REMOVE EXISTING SERVICE POLE. PROVIDE NEW 30 FOOT FULLY TREATED CLASS 5 POWER POLE, ANCHOR AND GUY. SET POLE 5 FEET DEEP. PROVIDE COMBINATION METER SOCKET AND 100 AMPERE 2 POLE MAIN CIRCUIT BREAKER ON POLE. PROVIDE 1-1/4" GALV. RIGID STEEL CONDUIT (GRS) UP POLE WITH 3-#2 COPPER AND WEATHERHEAD. PROVIDE INSULATOR RACK BELOW WEATHERHEAD. ARRANGE FOR UTILITY TO CONNECT OVERHEAD SERVICE. PROVIDE SERVICE GROUND WITH TWO GROUND RODS.
2. 1-1/4" PLASTIC COATED GRS 24" UNDER ROAD TO AN EXTENSION BOX OVER PULL BOX FLUSHED INTO BULL RAIL OF NEW PIER, 3-#2 XHHW PLUS #8 THW GROUND.
3. 1-1/4" GRS EMBEDDED IN CONCRETE BULL RAIL, 3-#2 XHHW AND #8 THW GROUND.
4. 1-1/4" SEAL TIGHT FLEX FROM EXTENSION BOX OVER PULL BOX IN FACE OF PIER TO RAMP SURFACE BOXES AND EXTENSION BOXES SHALL BE PLASTIC COATED STEEL AS SPECIFIED.
5. 1-1/4" PLASTIC COATED GRS, 3-#2, 1-#8, 4-#12 TO PANEL A.
6. 3/4" GRS EMBEDDED IN CONCRETE TO BASE OF LIGHT POLE; 4-#12.
7. 16 FOOT 4" SQUARE STEEL LIGHT POLE GALVANIZED AFTER FABRICATION. TOP CAP, SIDE MOUNT LIGHT FIXTURE FL TO SEAWARD, TRAFFIC SIGNAL TOWARD BEACH.
8. SEE DWG E-3 FOR WIRING AT END OF RAMP.

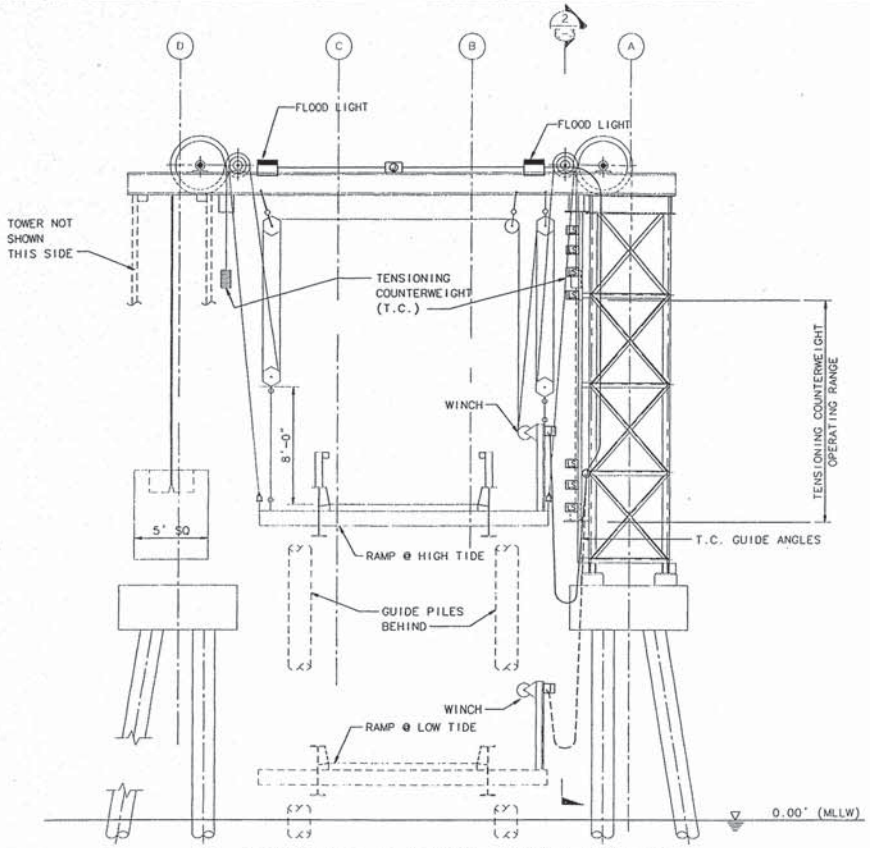


DETAIL AT PIER TO RAMP JOINT
ELEVATION AT GRID ⑨
3 / E-2 SCALE: 1" = 1'-0"

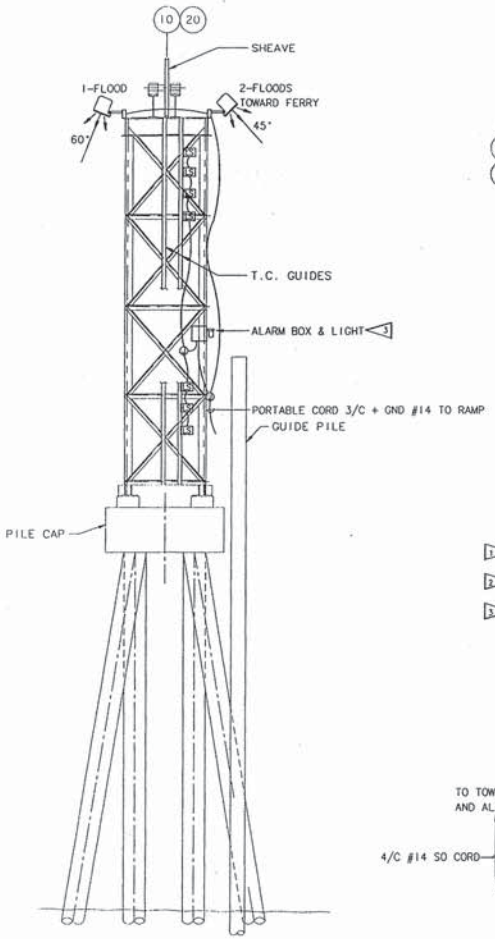
ABAM
CONSULTING ENGINEERS
3380 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

THEODORE J. CROSS
STATE OF WASHINGTON
REGISTERED ENGINEER
SIGNS NOVEMBER 26, 1994

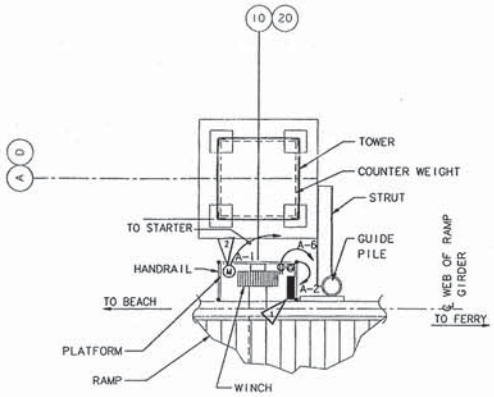
ABF 5/26/94 DRAWN BY DATE	TJC 5/26/94 CHECK BY DATE			HERRON ISLAND FERRY TERMINALS	DRAWING NO. E-2
TJC 5/26/94 DESIGN BY DATE	REH 5/26/94 PROJ ENGR DATE	MARK	REVISION BY APP. DATE	MAINLAND TERMINAL ELECTRICAL PLAN	CONTRACT NO. A94042
					SHEET NO. 16 OF 18



1 E-3 ELEVATION @ RAMP LIFTING TOWERS
SCALE: 1/4"=1'-0"



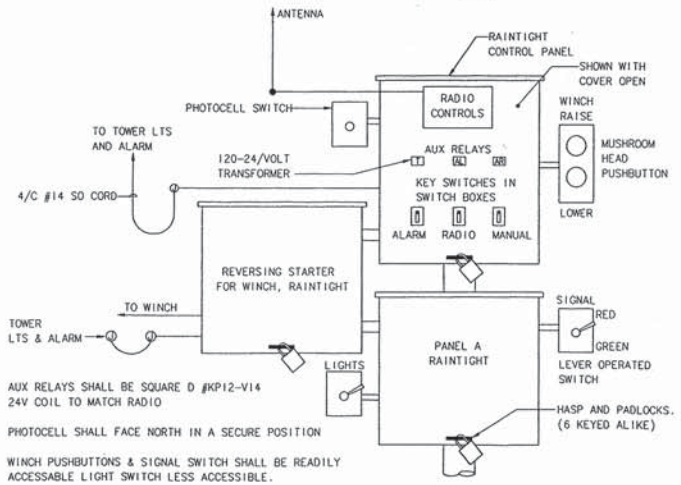
2 E-3 ELEVATION
SCALE: 1/4"=1'-0"



3 E-3 PLAN @ WINCH TOWER
SCALE: 1/4"=1'-0"

FLAG NOTES:

1. PANELS CONTAINING ELECTRICAL EQUIPMENT - SEE ELEVATION 4 E-3
2. WINCH MOTOR
3. ALARM PANEL FOR TENSIONING COUNTERWEIGHT RELAYS AND HORN WITH ALARM LIGHT MOUNTED TO ITS SIDE. SEE DETAIL 5 E-3

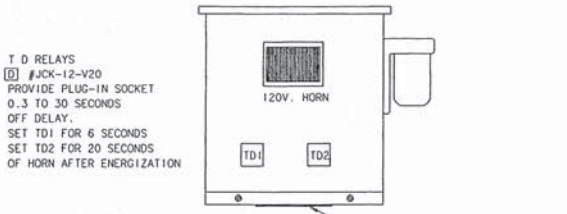


AUX RELAYS SHALL BE SQUARE D #KP12-V14 24V COIL TO MATCH RADIO

PHOTOCELL SHALL FACE NORTH IN A SECURE POSITION

WINCH PUSHBUTTONS & SIGNAL SWITCH SHALL BE READILY ACCESSABLE LIGHT SWITCH LESS ACCESSIBLE.

4 E-3 CONTROLS AT WINCH PLATFORM
NO SCALE



5 E-3 ALARM PANEL SHOWN WITH FRONT COVER REMOVED
SCALE: 1/4" = 1'-0"

ABAM
CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6102
A MEMBER OF THE BERGER GROUP

THEODORE J. CROSS — STATE OF WASHINGTON — 13468 — REGISTERED PROFESSIONAL ENGINEER
5-21-94
EXPIRES NOVEMBER 26, 1994

ABF 5/26/94 DRAWN BY DATE	TJC 5/26/94 CHECK BY DATE				
TJC 5/26/94 DESIGN BY DATE	REH 5/26/94 PROJ ENGR DATE	MARK	REVISION	BY	APP. DATE

HERRON ISLAND FERRY TERMINAL
RAMP & TOWER ELECTRICAL DETAILS

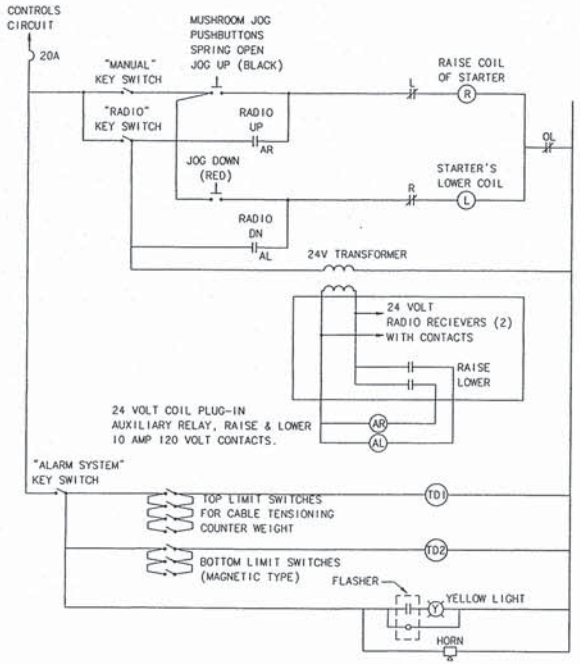
DRAWING NO. E-3
CONTRACT NO. A94042
SHEET NO. 17 OF 18

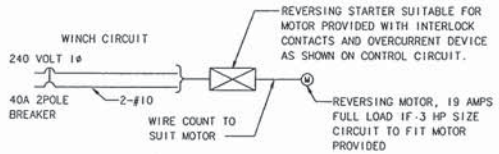
LIGHTING FIXTURE SCHEDULE

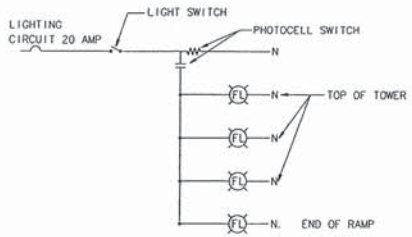
SYMBOL	DESCRIPTION & MFGR.	LAMP
(FL)	GE #SBF-50 -HPS-120 HIGH POWER FACTOR WIDE BEAM OUTDOOR FLOODLIGHT AIMING: FIXTURE FACING FERRY SHALL BE AIMED 45 DEGREES DOWN SO THEY CAN BE SEEN FROM DISTANT BOATS BUT NOT BLIND FERRY OPERATOR. FIXTURE AT SHORE END OF RAMP SHALL BE AIMED 90° STRAIGHT DOWN LIKE A CUT-OFF STREET LIGHT SO IT WILL NOT GLARE TO THE BEACH. IT SHALL LIGHT THE FLOAT AND ITS RAMP AS WELL AS THE PIER.	50 HPS
(R)	RED & GREEN TRAFFIC LIGHT. CROUSE-HINDS OR EQUAL 8" DIA. LENS, POLYCARBONATE YELLOW BODY	40 WATT LONG LIFE
(Y)	YELLOW FLASHING LIGHT. PRESCOLITE WB 44 WITH FLASHER AND YELLOW BUG LIGHT, POLYCARBONATE DIFFUSER.	75 WATT

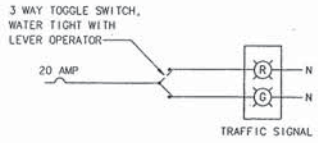
ELECTRICAL SYMBOL LEGEND

LS	LIMIT SWITCH – SEALED MAGNETIC TYPE, 5 AMPERE CONTACT, 120 VOLT, SUITABLE FOR A MARINE ENVIRONMENT. CONTACT SHALL CLOSE UPON SENSING STEEL. INSTALL WHERE STEEL COUNTERWEIGHT WILL CAUSE PICKUP, BUT WHERE THE FIXED STRUCTURE DOES NOT AFFECT PICK-UP AND DROP-OUT.
	RAINTIGHT DUPLEX RECEPTACLE. 120 VOLT GROUNDING TYPE.
	RAINTIGHT SINGLE 20 AMP 3 POLE 4 WIRE TWISTLOCK FOR PHASE A, PHASE B, NEUTRAL AND GROUND. PROVIDE TWO PLUGS TO FIT TWISTLOCK RECEPTACLES. NEMA STYLE L14-20R AND L14-20P.
	JUNCTION BOX. GALVANIZED STEEL WHERE IMBEDDED IN CONCRETE, PLASTIC COATED STEEL WHERE SURFACE ON PIER.
	SWITCH, WEATHERPROOF.
	CONDUIT SURFACE, PLASTIC COVERED RIGID STEEL ON PIER.
	GRS CONDUIT IMBEDDED IN CONCRETE OR PLASTIC COVERED RIGID STEEL UNDERGROUND.









2 PANELS IDENTICAL

SURFACE MOUNTING 10,000 AIC — **PANEL SCHEDULE** — NEMA 3R COPPER BUS

NO. A — LOCATION: PIERS" — SERVING: — 120/240 VOLTS 1PH 3WIRE 100 AMPS WITH 100 MAIN BREAKER

CKT NO	LOAD DESCRIPTION	KVA	TRIP AMPS	GFI	TRIP AMPS	KVA	LOAD DESCRIPTION	CKT NO
1	WINCH 3HP	3.5	40		20	• 1.5	(GFI) 5HP OUTLET ON RAMP	2
3								4
5	CONTROL CIRC	0.1	20		20	1	ALARM CIRC	6
7	RAMP OUTLET (GFI)	0.2•	20		20	3	LIGHTING	8
9	SPACE						SPACE	10
11	SPACE						SPACE	12

REMARKS: • GFI BREAKERS

CONNECTED LOAD: 5.7 KVA 24 AMPS
DEMAND LOAD: 7.1 KVA 30 AMPS

ABAM CONSULTING ENGINEERS
33301 9TH AVE. SOUTH
FEDERAL WAY, WASHINGTON 98003
(206) 952-6100
A MEMBER OF THE BERGER GROUP

THEODORE J. CROSS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
EXPIRES NOVEMBER 26, 1994

ABF 5/26/94 DRAWN BY DATE	TJC 5/26/94 CHECK BY DATE					
TJC 5/26/94 DESIGN BY DATE	REH 5/26/94 PROJ ENGR DATE	MARK	REVISION	BY	APP	DATE

HERRON ISLAND FERRY TERMINAL

LIGHTING FIXTURE SCHEDULE, ELECTRICAL LEGEND AND DIAGRAMS

DRAWING NO. E-4
CONTRACT NO. A94042
SHEET NO. 18 OF 18