02-90519 \ 290519S1

LEGEND

ALL ITEMS SHALL BE ALUMINUM UNLESS NOTED BY *

- ✡ MAJOR REVISION FROM PREVIOUS DRAWINGS
- (1) C 15 X 11.71 X 40'-0" EXTERIOR BEAM
- (2) C 15 X 11.71 X 23'-0" INTERIOR BEAM
- (3) C 15 X 11.71 X 3'-0" END BEAM
- (4) C 15 X 11.71 X 5'-8" SHORE END STRINGER
- (5) L 3 X 3 X 1/4
- (6) 1-1/2" DIA PIPE POST / HANDRAIL, SEE B/S2
- (7) 2' 11-1/2" X 1/4" CHECKERED FLOOR PLATE
- (8) 1/4" CHECKERED SHIP END FIXED TREAD, SEE B/S4
- (9) 1/4" CHECKERED SHORE END FIXED TREAD, SEE B/S7
- (10) 12" X 1/4" CHECKERED ROTATING TREAD, SEE F/S2
- (11) 1/4" BENT CHECKERED ROTATING TREAD, SEE F/S2
- * (12) 6" DIA X 5" SHIP END POLYURETHANE FIXED CASTER, SEE A/S2
- * (13) 8" DIA X 5" SHORE END POLYURETHANE SWIVEL CASTER, SEE A/S2
- * (14) 1" DIA STAINLESS STEEL BOLT
- * (15) 3/4" DIA STAINLESS STEEL BOLT } SEE B/S1
- * (16) 1/2" DIA STAINLESS STEEL BOLT
- * (17) 1/8" OR 1/4" TEFLON INSULATOR PLATE, SEE B/S1
- * (18) 3 TON HAND-OPERATED HOIST WITH CHAINS, HOOKS AND SHACKLES EACH SIDE (2 PER BROW), SEE C/S5
- * (19) 3/16" YELLOW VINYL COATED CHAIN WITH SNAP HOOK AND 1" I.D. RING WELDED TO PIPES EACH END
- * (20) 1" LEAD PLATE, SEE F/S2
- (A_1) 37" X 1" X 13" AXLE HORIZONTAL PLATE, SEE C/S8
- (A_2) 37" X 1" X 7-1/4" AXLE VERTICAL PLATE, SEE C/S8
- (B_1) 18" X 1" X 9-1/4" PLATE, SEE C/S7
- (B_2) 18" X 1" X 6" PLATE, SEE C/S7
- (C_1) 12" X 1" X 16" SHORE END TREAD PLATE, SEE C/S7
- (C_2) 12" X 1" X 7-1/4" CASTER PLATE SEE A/S2
- (D_1) 10" X 1" X 16" LIFTING PLATE SHIM, SEE D/S2
- (D_2) 10" X 1" STRINGER TREAD PLATE, SEE C/S7
- (E) 8" X 1" X 35-3/16" SHIP END CASTER PLATE, SEE B/S4
- (F) 3-3/8" X 1" X 24-1/4" STRINGER END WEB STIFFENER, SEE C/S7
- (G_1) 3" X 1" X 5-8" STRINGER WEB HORIZONTAL STIFFENER, SEE A/S6
- (G_2) 3" X 1" X 3'-8" STRINGER BRACE, SEE A/S6
- (G_3) 3" X 1" X 3' 2-1/2" STRINGER BRACE, SEE A/S7
- (G_4) 3" X 1" X 3'-1/2" SHORE END TREAD STIFFENER, SEE B/S7
- (G_5) 3" X 1" X 7-1/2" SHORE END TREAD STIFFENER, SEE A/S6
- (H_1) 9" X 1" PADEYE WITH 1-1/2" DIA HOLE, SEE E/S2
- (H_2) 6" X 1" PADEYE WITH 1-1/2" DIA HOLE, SEE E/S2
- (I) 12" X 1/2" X 12" BENT PLATE, SEE C/S7
- (J_1) 7-1/4" X 1/2" X 5" AXLE STIFFENER, SEE C/S8
- (J_2) 7-1/4" X 1/2" TAPERED AXLE STIFFENER, SEE C/S8
- (K) 21" X 1/2" X 6" BENT LIFTING PLATE WITH 2" DIA HOLE, SEE D/S2
- (L) 17" X 3/8" X 6" SHIP END TREAD PLATE, SEE A/S4
- (M) 4" DIA X 3/8" LIFTING PLATE WITH 2" DIA HOLE, SEE D/S2
- (N) 6-1/2" X 3/8" X 6-1/2" CASTER STIFFENER PLATE, SEE C/S7
- (O) 5" X 3/8" X 3" PADEYE BACKING PLATE, SEE A/S7
- (P) 2" X 3/8" ROTATING TREAD BRACE PLATE, SEE B/S5
- (Q_1 – Q_4) 3/8" ROTATING TREAD END PLATE, SEE F/S2
- (R_1 – R_4) 1/4" ROTATING BENT TREAD PLATE, SEE F/S2
- (S) 4" X 1/4" TOEBOARD, SEE C/S2
- (T) 1-3/4" X 1/4" X 6-1/2" TOEBOARD STIFFENER PLATE, SEE C/S2
- (U) 1-3/4" X 1/4" X 8" / 9-1/4" / 24" POST STIFFENER PLATE, SEE B/S2
- (V) 3-1/2" X 1/4" X 3" ROTATING TREAD PLATE, SEE A/S7
- (W) 1/4" HANDRAIL STIFFENER PLATE, SEE C/S5
- (X) 1/2" DIA ALUMINUM 2024-T4 OR 7075-T73 BOLT

STRUCTURAL NOTES

1. PWC CODE 450 SHALL BE NOTIFIED OF ANY DEVIATIONS BETWEEN THESE PLANS. PWC CODE 450 SHALL APPROVE ANY CHANGES OR MODIFICATIONS PRIOR TO ACCOMPLISHMENT
2. ALL DETAILS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR ALUMINUM STRUCTURES BY THE ALUMINUM ASSOCIATION UNLESS SPECIFIED OTHERWISE
3. DETAILS AND DIMENSIONS ARE TYPICAL UNLESS NOTED OTHERWISE
4. FABRICATE FOUR (4) 40 FEET BY 3 FEET ALUMNINUM BEAM BROWS
5. DESIGN CODES:

   DESIGN AND CONSTRUCTION SHALL CONFORM TO LATEST SPECIFICATIONS OF FOLLOWING:

   GENERAL ---------- MIL-HDBK-1025/1 & MIL-B-22342
   ALUMINUM ---------- ALUMINUM CONSTRUCTION MANUAL
   WELDING ALUMINUM --- AWS D1.2
6. DESIGN DATA:

   BROW LIVE LOAD ---------- 75 PSF
   HANDRAIL LOAD ---------- 200 LBS
7. MATERIALS:

   ALUMINUM ---------- 6061-T6, T651
   WELDING FILLER ALLOY ---------- 4043
   STAINLESS STEEL ---------- SERIES 300
8. PIPE SIZE INDICATED IS NOMINAL DIAMETER AND SHALL BE SCHEDULE 40 OR STANDARD WEIGHT
9. SHEETS AND PLATES SHALL BE 6061-T6, T651 ALLOY AND TEMPER WITH COMPRESSIVE MODULUS OF ELASTICITY E=10,100 KSI WITH FOLLOWING MINIMUM STRESSES :

	ULTIMATE STRENGTH	YIELD STRENGTH
TENSION	42,000 PSI	35,000 PSI
COMPRESSION	----------	35,000 PSI
SHEAR	27,000 PSI	20,000 PSI

10. ALUMINUM EXTRUSIONS SHALL BE 6061-T6, T6510 ALLOY AND TEMPER WITH COMPRESSIVE MODULUS OF ELASTICITY E=10,100 KSI WITH FOLLOWING MINIMUM STRESSES:

	ULTIMATE STRENGTH	YIELD STRENGTH
TENSION	38,000 PSI	35,000 PSI
COMPRESSION	----------	35,000 PSI
SHEAR	24,000 PSI	20,000 PSI

11. ALUMINUM SHALL BE SEPARATED FROM DIRECT CONTACT WITH STEEL AND LEAD TO PREVENT GALVANIC CORROSION
    A. PROVIDE TEFLON INSULATOR PLATES, SHEETS, WASHERS OR SLEEVES BETWEEN ALL ALUMINUM, LEAD AND STEEL INTERFACES
    B. ALUMINUM SURFACES ADJACENT TO STEEL OR LEAD SHALL ALSO BE PAINTED WITH THREE COATS (3 MIL EACH) OF EPOXY POLYAMIDE MIL-P-24441 FORMULA 150 GREEN PRIMER, FORMULA 152 INTERMEDIATE COAT AND FORMULA 151 HAZE GRAY FINISH COAT
12. NON-ALUMINUM AND NON-STAINLESS STEEL SURFACES SHALL BE CLEANED, PRE-TREATED AND PAINTED WITH ONE COAT (2 MIL EACH) OF EPOXY PRIMER, INTERMEDIATE AND FINISH COAT (3 COATS TOTAL)
13. EXCESS EPOXY PAINT MAY BE DISPOSED OF AS SOLID WASTE AFTER IT IS MIXED AND HARDENED PER ENVIRONMENTAL REGULATIONS
14. PARTS SHALL BE CUT BY SAWING, CHIPPING, MACHINING, SHEARING OR ARC CUTTING. DO NOT USE OXYGEN CUTTING
15. STAINLESS STEEL BOLTS SHALL BE TYPE 316 AND CONFORM TO ASTM A193. PROVIDE LOCK WASHERS WITH ALL NUTS / BOLTS, TEFLON WASHERS AND SLEEVES, SEE B/S1
16. ALUMINUM BOLTS SHALL BE ALLOY 2024-T4 OR 7075-T73 WITH ANSI STANDARD B27.1 LOCK WASHERS
17. CONNECTIONS SHALL BE CONTINUOUS FILLET WELDS THE THICKNESS OF THE THINNER MATERIAL OR 1/4" WHICHEVER IS LESS UNLESS NOTED OTHERWISE
18. WELDING SHALL BE DONE WITH AN INERT GAS SHIELDED ARC OR RESISTANCE WELDING PROCESS. DO NOT USE ANY WELDING PROCESS THAT REQUIRES A WELDING FLUX
19. USE ER 4043 ALUMINUM FILLER ALLOY FOR ALL WELDING
20. VERIFY COUNTERBALANCE OF BROW PRIOR TO WELDING TOP TREAD PLATES

CASTER NOTES

1. 'BRAWNY' EXTRA HEAVY DUTY POLYURETHANE CASTERS SHALL BE INSTALLED. REFERENCE MCMASTER-CARR NO. 2789T55 FOR SHIP END AND 2789T25 FOR SHORE END CASTERS
2. REPLACEABLE POLYURETHANE PRESS-ON TIRED TAPERED ROLLER BEARING WHEELS SHALL ROLL FREELY AND NOT FLATTEN UNDER MINIMUM CAPACITY LOADS OF 3,500 AND 4,590 POUNDS FOR SHIP AND SHORE END CASTERS RESPECTIVELY
3. TOP PLATES AND SWIVEL BASES SHALL BE HEAT TREATED, DROP FORGED STEEL WITH ZINC-PLATED FINISH
4. CASTERS SHALL HAVE 1-1/4" DIAMETER INTEGRALLY-FORGED KINGPINS AND 1" DIAMETER SOLID AXLES
5. CASTER SHALL BE SECURED TO BROW WITH FOUR (4) - 1/2" DIAMETER STAINLESS STEEL BOLTS AT EACH LOCATION
6. SHIP END RIGID CASTER SHALL HAVE 6" X 5" TAPERED ROLLER BEARING WHEEL THAT IS PRELUBRICATED AND SEALED
7. SHORE END SWIVEL CASTER SHALL HAVE 8" X 5" WHEEL, TAPERED ROLLER OR BALL SWIVEL BEARINGS, PRESSURE GREASE FITTINGS IN WHEEL HUB, SWIVEL YOKE BASE AND 3/8" THICK LEGS
8. STEEL AND ALUMINUM INTERFACES SHALL BE INSULATED WITH TEFLON PLATES, WASHERS OR SLEEVES TO PREVENT GALVANIC CORROSION, SEE B/S1
9. CASTERS SHALL CONFORM TO DIMENSIONS AND REQUIREMENTS INDICATED ABOVE. SUBMIT ANY CHANGES WITH REQUIRED MODIFICATIONS TO OTHER DIMENSIONS SHOWN ON THESE PLANS FOR APPROVAL PRIOR TO FABRICATION

'BRAWNY' CASTER SCHEDULE

TYPE	MINIMUM CAPACITY	WHEEL SIZE	MOUNTING HEIGHT	PLATE SIZE	BOLT HOLE CENTER - CENTER
SHIP END RIGID	3,500 LB	6" X 5"	8"	7.25" X 5"	5.25" X 3.375"
SHORE SWIVEL	4,590 LB	8" X 5"	10.5"	7.5" X 6.5"	6" X 4.5"

INDEX OF DRAWINGS

POINT OF CONTACT :

PWC CODE 450 REGGIE CHONG 474-3820

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPROVED

6"
1/8" THICK ALUMINUM PLATE

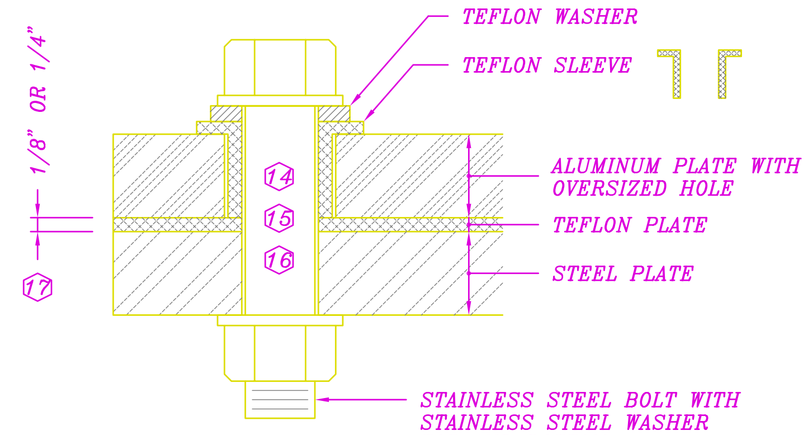
BROW TYPE	PERSONNEL BEAM
NAVFAC DWG NO.	7498187 THRU 7498194
SIZE	45 FEET X 3 FEET
MANUFACTURED BY	PUBLIC WORKS CENTER
CONTRACT NO.	NOT APPLICABLE
TESTED TO	100 LBS PER SQUARE FOOT
DESIGN LIVE LOAD	75 LBS PER SQUARE FOOT
DATE BUILT	---------- FILL IN AFTER CONSTRUCTION
WEIGHT OF BROW	----------

UNITED STATES NAVY

4-1/4"

ABOVE INFORMATION SHALL BE STAMPED USING 1/8" STEEL LETTER AND FIGURE DIES

A S3|S1 NAME PLATE DETAIL
FULL SIZE



B S1|S1 BOLT DETAIL
FULL SIZE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE REDUCED ACCORDINGLY.

STRUCTURAL SHT 1 OF 8	DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
DES R. CHONG	PUBLIC WORKS CENTER, PEARL HARBOR, HAWAII
DR R. CHONG	SUBASE PEARL HARBOR, HI
CHK SUEHIRO	SIERRA WHARVES
DPPE ORLOWSKI	40' X 3' BEAM BROW
INIT BR MGR	LEGEND, NOTES AND DETAILS
DIV DIR	

S1 — APPROVED PER ENDORSEMENT TO PWC CODE 420 MEMO OF 11/15/02
SATISFACTORY AS TO FUNCTION TROY OTSUKA 11/15/02
TITLE CNRH N464 DATE
BY DIRECTION OF COMMANDING OFFICER

APPROVED DATE

SIZE D | CODE IDENT NO 80091 | NAVFAC DRAWING NO 7498187
CONSTR CONTR NO PWC SHOP
SCALE AS NOTED | SPEC PWC SHOP | SHEET 1 OF 8

PLOT SCALE:

WR NO 90519 JON 141-6312 / 02