

GENERAL NOTES

DESIGN CODES AND DESIGN REFERENCE DOCUMENTS

- 1) INTERNATIONAL BUILDING CODE (IBC) 2008 - DEAD, LIVE, AND HANDRAIL LOADS
2) AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7.02 - WIND AND WAVE LOADS
3) NATIONAL DESIGN STANDARD (NDS) 2005 - TIMBER DESIGN AND ANALYSIS - ASD METHOD.
4) AISC STEEL DESIGN MANUAL - STEEL DESIGN AND ANALYSIS - ASD DESIGN.
5) NAVFAC DESIGN MANUAL 7.02 - FOUNDATIONS AND EARTH STRUCTURES.
6) AMERICAN CONCRETE INSTITUTE (ACI) 2008, "ACI MANUAL OF CONCRETE PRACTICE.

DESIGN LOAD CRITERIA\*

Table with columns for load type (DEAD LOAD, LIVE LOAD, SNOW LOAD, WIND LOAD) and criteria (ALL FLOATS, GANGWAYS, BOATHOUSE, BOAT SHOP).

\*\* LIVE LOAD RATING APPLIES TO NEW SOUTH ENTRY AND WEST ENTRY FLOATS. ALL OTHERS NOT EVALUATED IN THIS DESIGN.

PND ENGINEERS HAS CONSIDERED THE SNOW LOAD ON THE NEW SOUTH & WEST ENTRY FLOATS. PND ENGINEERS HAS ONLY CONSIDERED THE LATERAL SUPPORT LOAD OF THE BOAT HOUSE & BOAT SHOP. THE SYSTEM TO SUPPORT GRAVITY LOADS IS NOT BEING ALTERED. THEREFORE, RESISTANCE TO GRAVITY LOADS INCLUDING DEAD, LIVE AND SNOW LOADS WERE NOT CONSIDERED FOR THESE STRUCTURES.

REFERENCE DRAWINGS AND DOCUMENTS

- 1) EXHIBIT DRAWING FOR DNR LEASE IN WATERWAY #4, DRAWINGS 1-3.
2) CWB SITE PLAN AND GENERAL NOTES, SHEET 1A OF 5, VAUGHN ARCHITECTS, FEBRUARY 1988
3) CWB BOATHOUSE FLOOR PLAN, SHEET 3A OF 5, VAUGHN ARCHITECTS, FEBRUARY 1988
4) CWB BOATHOUSE FLOOR FRAMING, SHEET 2A OF 5, VAUGHN ARCHITECTS, FEBRUARY 1988
5) CWB BOATHOUSE EXTERIOR ELEVATIONS, SHEET 4A OF 5, VAUGHN ARCHITECTS, FEBRUARY 1988
6) CWB BOATHOUSE SECTION AND DETAILS, SHEET 5A OF 5, VAUGHN ARCHITECTS, FEBRUARY 1988
7) CWB CITY OF SEATTLE PERMIT DRAWINGS SHEETS 1-9, DEC 1982

ITEMS DESIGNED BY OTHERS

- 1) BOAT HOUSE AND BOAT SHOP STRUCTURES
2) NYBA FLOATS
3) EL TORO FLOAT
4) LIVERY FLOATS
5) GARHOUSE FLOAT
6) KAYAK FLOAT
7) WORKSHED FLOAT
8) DRY DOCK FLOAT
9) WATER TAXI FLOAT
10) 'A' DOCK FLOAT MODULES
11) 'D' DOCK FLOAT MODULES
12) 'E' DOCK FLOAT
13) NEW WEST ENTRY FLOOR MODULES
14) NEW SOUTH ENTRY FLOOR MODULES
15) WEST AND SOUTH ENTRY GANGWAY ABUTMENTS

MATERIALS AND CONSTRUCTION

TIMBER
ALL TIMBER SHALL BE DOUGLAS FIR-LARCH NO.1, ACCORDING TO WCLIB GRADING RULES, STANDARD NO.17. ALL PLYWOOD SHALL BE APA 3/4" B-B MARINE GRADE WITH 5 PLYS MINIMUM. TIMBER AND PLYWOOD SHALL BE PRESSURE TREATED IN ACCORDANCE WITH CCA PER AWPA C TO A NET RETENTION OF 0.4 LBS./C.F. THOROUGHLY SWAB ANY FIELD DRILLED BOLT HOLES AND/OR FIELD CUTS WITH COPPER NAPHTHANATE SOLUTION PER AWPA M4. BOLT HOLES SHALL BE 1/8-INCH OVERSIZE, ANY FIELD FABRICATION OR DAMAGE SHALL BE REPAIRED PER AWPA M4.

SHEAR WALL PANELS SHALL BE 3/8" STRUCTURAL I-GRADE SHEATHING.

GLULAM
ALL GLUE-LAMINATED MEMBERS SHALL BE MANUFACTURED WITH COAST REGION DOUGLASS FIR THAT CONFORMS TO AITC 117 SPECIFICATIONS AND SHALL BE MANUFACTURE IN BALANCED COMBINATIONS HAVING EQUAL DESIGN VALUES FOR BOTH POSITIVE AND NEGATIVE BENDING. THE GLULAMS SHALL HAVE DESIGN VALUES EQUAL TO OR EXCEEDING THE FOLLOWING WHEN LOADED PARALLEL TO THE WIDEST FACE OF THE LAMINATIONS.
BENDING (FB) = 2,400 PSI
HORIZONTAL SHEAR (FV) = 165 PSI
MODULUS OF ELASTICITY (E) = 1,800,000 PSI
THE GLULAMS SHALL BE TREATED WITH PENTA, COPPER NAPHTHENATE, WATERBORNE PRESERVATIVES, OR OTHER APPROVED METHODS RECOMMENDED BY THE AMERICAN WOOD PRESERVATIVES ASSOCIATION FOR EXPOSED, EXTERIOR CONSTRUCTION.

STEEL & FABRICATION

- 1) PIPE-PILES SHALL BE ASTM A252 GRADE 3 WITH A MINIMUM YIELD STRENGTH OF 50 KSI.
2) RECTANGULAR AND SQUARE HSS SECTIONS SHALL BE A500 GRADE C.
3) ANGLES SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
4) PLATES SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.

BOLTS AND OTHER HARDWARE

ALL BOLTS SHALL BE ASTM A307 WITH HEAVY HEX NUTS OR AS OTHERWISE SHOWN ON THE DRAWINGS. ALL BOLTS SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED. FOR BOLTS IN TREATED WOOD, SWAB FIELD-DRILLED BOLT HOLES WITH PRESERVATIVE BEFORE INSTALLING BOLTS.

ALL STAINLESS STEEL BOLTS, SCREWS, NUTS, AND WASHERS, PIANO HINGE RODS, AND MISCELLANEOUS HARDWARE CALLED OUT AS STAINLESS STEEL (S.S.) SHALL BE TYPE 316.

MALLEABLE IRON WASHERS ARE REQUIRED UNDER BOLT HEAD OR NUT OF ALL BOLTS THAT BEAR AGAINST WOOD UNLESS OTHERWISE NOTED.

PILOT HOLES SHALL BE DRILLED IN TIMBER PRIOR TO INSTALLATION OF ALL LAG BOLTS.

ALL BOLTS ANCHORED INTO CONCRETE SHALL BE ANCHORED WITH SIMPSON STRONG-TIE EPOXY-TIE ADHESIVE OR APPROVED EQUIVALENT BY THE ENGINEER. THE BOLTS SHALL BE ANCHORED IN STRICT ACCORDANCE TO THE WITH THE ANCHORING MANUFACTURER'S RECOMMENDATIONS.

THREADED SLEEVES SHALL HAVE COMPATIBLE THREADS TO THE FASTENER BEING ATTACHED. SLEEVES SHALL BE ABLE TO DEVELOP THE FULL STRENGTH OF THE FASTENER BEING ATTACHED.

SPLIT RINGS SHALL BE ASTM A47 AND COMPATIBLE WITH THE ASSOCIATED BOLT.

STAPLES

ALL STAPLES SHALL BE 16 GAUGE WITH A 2-INCH LEG AND 1-INCH WIDE CROWN. ALL STAPLES SHALL BE GALVANIZED AND DRIVEN WITH A POWER FASTENER.

EXPANDED METAL DECK

EXPANDED METAL SHALL BE McNICHOLS 1/2" #13S OR APPROVED EQUIVALENT BY THE ENGINEER. EXPANDED METAL SHEET SHALL BE 6'SWD x 8'LWD. EXPANDED METAL SHALL BE GALVANIZED.

CLEATS

CLEATS SHALL BE 10-INCH HEAVY-DUTY GALVANIZED SEA-DOG OR APPROVED EQUAL. BOLTS SHALL BE 5/8-INCH GALVANIZED HEX HEAD.

COATINGS / GALVANIZING

ALL BOLTS, NUTS, WASHERS, SLEEVES, WELDMENTS, SHAPES, AND OTHER MISCELLANEOUS METALS AND HARDWARE SHALL BE HOT-DIP GALVANIZED PER ASTM A123 OR A153 AS APPROPRIATE, UNLESS OTHERWISE NOTED.

WELDING

SHOP WELDING SHALL CONFORM TO AWS D.1.1 2005 STRUCTURAL WELDING CODE. IN PARTICULAR:

- 4) PRE-HEAT WELD BASED ON MATERIAL GRADE AND THICKNESS SHOWN HEREWITH, PER AWS TABLES. AS A SUPPLEMENTARY CONDITION TO AWS TABLE 3.2 MINIMUM PRE-HEAT SHALL BE 70°F REGARDLESS OF AMBIENT TEMPERATURE. UNIFORMITY OF PRE-HEAT SHALL CONFORM TO AWS STIPULATIONS.
5) WELDING PERSONNEL SHALL BE QUALIFIED TO WELD PROCEDURES, AND WELD POSITIONS NECESSARY FOR THE JOINT DETAILS SPECIFIED HEREWITH.
6) VISUALLY INSPECT ALL WELDS. APPLY CYCLIC LOADING ACCEPTANCE CRITERIA FOR TUBULARS AND NON-TUBULARS AS APPLICABLE.
7) WHERE NOTED, NON-DESTRUCTIVELY TEST WELDS USING UT, RT, OR MT METHODS, PER AWS SECTION 6. ACCEPTANCE CRITERIA SHALL BE FOR CYCLIC LOADING. WELDS FAILING INSPECTION SHALL BE REPAIRED TO A ACHIEVE PASSING TEST.
8) NO WELDING THROUGH GALVANIZED COATING SHALL BE PERFORMED. THE GALVANIZING WITHIN 2" OF THE WELD SHALL BE REMOVED PRIOR TO WELDING AND REPAIRED BY HOT STICK METHOD.

PILE DRIVING

ALL PILE DRIVING METHODS SHALL MEET THE REQUIREMENTS OF THE PERMITS ISSUED FOR THIS PROJECT. ANY HAMMER THAT CAUSES DAMAGE TO THE PILES DURING DRIVING OPERATIONS SHALL BE SUBSTITUTED WITH AN ACCEPTABLE ALTERNATE HAMMER AT NO ADDITIONAL EXPENSE TO CWB. PND ENGINEERS SHALL HAVE A REPRESENTATIVE ONSITE DURING ALL PILE DRIVING OPERATIONS TO ADDRESS POTENTIAL CHANGES IN DRIVING CONDITIONS, AND TO ASSIST WITH MONITORING THE EXISTING CELL STRUCTURES TO DETECT POTENTIAL MOVEMENT.

THE CONTRACTOR SHALL MARK EACH PILE WITH ONE FOOT INCREMENTS WITH EVERY FIVE FOOT INCREMENT NUMBERED. THE MARKS SHALL BE VISIBLE/READABLE FROM ALL SIDES OF THE PILE. EXCAVATE AND REMOVE ANY OBSTRUCTIONS ENCOUNTERED AREA OF PILE INSTALLATION AS NOTED ON THE DESIGN DRAWINGS. PILES HITTING OBSTACLES AND/OR MISALIGNED SHALL BE PULLED BY THE CONTRACTOR WITH A VIBRATORY HAMMER AND REDRIVEN. AN ADEQUATELY SIZED VIBRATORY HAMMER CAPABLE OF PULLING THE SIZE PILES ON THIS PROJECT SHALL BE AVAILABLE ON SITE DURING ALL PILE DRIVING OPERATIONS.

PIPE PILES SHALL BE DRIVEN WITH A VIBRATORY AND/OR IMPACT HAMMER TO THE ELEVATIONS SHOWN ON THE DRAWINGS OR BY METHODS THAT WILL ACHIEVE PENETRATION WITHOUT PILE DAMAGE.

PIPE PILES SHALL BE PLACED WITHIN 1% OF SPECIFIED ALIGNMENT AND WITHIN 2 INCHES OF SPECIFIED LOCATION AT CUTOFF.

PILE LENGTHS NOTED IN THESE PLANS ARE BASED ON DIMENSIONS FROM TIP TO CUT OFF.

SPECIAL INSPECTIONS/INSTRUCTIONS: (PER DPD REQUIREMENTS)
PRIOR TO BEGINNING PROJECT WORK COORDINATE/ARRANGE A PRE-CONSTRUCTION MEETING AT CENTER FOR WOODEN BOATS SLU WITH SEATTLE DPD INSPECTOR PRESENT. THIS MEETING IS REQUIRED FOR ALL PROJECTS WITH SPECIAL INSPECTION REQUIREMENTS. CALL (206) 684-8860. ALL APPOINTED SPECIAL INSPECTION PERSONNEL ARE TO BE PRESENT. SEE SPECIAL INSPECTION NOTES PER DPD COVER SHEET AND THESE NOTES.

PROJECT PERMITS

REFER TO PROJECT PERMITS FOR PARTICULAR STIPULATIONS REGARDING BEST MANAGEMENT PRACTICES REQUIRED UNDER THE SEPA EXEMPTION. PERMIT REQUIREMENTS OF THE UNITED STATES ARMY CORPS OF ENGINEERS AND THE DEPARTMENT OF FISH & WILDLIFE CONTAIN ADDITIONAL RESTRICTION ON THE WORK. CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH THE PERMIT RESTRICTIONS.

SUBMITTALS

THE CONTRACTOR SHALL SUBMIT EVIDENCE IN THE FORM OF BILLS OF MATERIALS, FABRICATOR'S SHOP DRAWINGS, CERTIFICATIONS, MANUFACTURER'S DATA AND INSTALLATION RECOMMENDATIONS, SAMPLES, OR OTHER INFORMATION THAT MAY BE REQUIRED BY THE ENGINEER TO VERIFY THAT ALL MATERIALS AND METHODS USED ON THE PROJECT CONFORM TO THE PLANS AND SPECIFICATIONS, GOOD WORKMANSHIP, ACCEPTABLE INDUSTRY STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS. THE ENGINEER'S REVIEW OF SUBMITTALS WILL BE FOR GENERAL CONFORMANCE ONLY, AND IT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR TO CONFORM TO ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. ANY INTENDED DEVIATION FROM THE PLANS AND SPECIFICATIONS MUST BE SPECIFICALLY IDENTIFIED BY THE CONTRACTOR AND SPECIFICALLY APPROVED BY THE ENGINEER TO BE ACCEPTABLE.

LIST OF SUBMITTALS

- 1) CERTIFICATION OF MECHANICAL AND CHEMICAL PROPERTIES OF FOR:
A. PIPE PILES.
2) AWS WELDER QUALIFICATION RECORDS FOR WELDERS WORKING ON THIS PROJECT.
3) STEEL FABRICATION DRAWINGS PLATES AND HOOPS.

WORK ITEM

- 1) PIPE PILE DRIVING PND CONSULTING ENGINEERS
2) FLOAT FRAMING PND CONSULTING ENGINEERS

LEGAL DESCRIPTION

Waterway #4 Uplands
Sub Area 8

That portion of the NE 1/4 of Section 30, Township 25 North, Range 4 East, W.M., in King County, Washington, being a portion of the uplands area of Waterway No. 4 as shown on Sheet 5 of 7, 2005 Third Supplemental Plat of Lake Union Harbor filed for record under No. 2005081000004, records of King County, Washington, said plat being an amendment to the Map of Lake Union Harbor (1907), Maps of Lake Union Shorelands as surveyed and plotted and approved by the Board of State Land Commissioners of the State of Washington (June 4th, 1907 and filed with the City of Seattle on July 1st, 1907), the Supplemental Plat of Lake Union Shorelands (1933), and the Second Supplemental Maps of Lake Union Shorelands (1982), described as follows:
Commencing at Inner Harbor Line Corner #4 as plotted in said Lake Union Shorelands, thence South 89°42'07" East along said Inner Harbor Line a distance of 772.30 feet to the northwest corner of Waterway No. 4, thence South 00°18'23" West along the westerly margin of Waterway No. 4 a distance of 566.50 feet to the True Point of Beginning, thence North 79°12'23" East a distance of 123.56 feet to an intersection with the easterly margin of Waterway No. 4, thence South 20°28'03" West along said easterly margin a distance of 15.39 feet to an angle point in said margin, thence South 26°31'57" West a distance of 149.39 feet to the southeasterly corner of Waterway No. 4, thence North 89°41'33" West a distance of 50.00 feet to the southwesterly corner of Waterway No. 4, thence North 00°18'23" East along the westerly margin of said Waterway No. 4 a distance of 126.06 feet to the True Point of Beginning.

Waterway #4 Bedlands
Center for Wooden Boats

That portion of the NE 1/4 of Section 30, Township 25 North, Range 4 East, W.M., in King County, Washington, being the submerged bedlands of Waterway #4 as shown on Sheet 6 of 7, 2005 Third Supplemental Plat of Lake Union Harbor filed for record under No. 2005081000004, records of King County, Washington, lying below the line of Ordinary High Water [18.50 NAVD88 Datum/21.83 US Corps of Engineers Datum (Locks)] and excepting the easterly 48' thereof; said plat being an amendment to the Map of Lake Union Harbor (1907), Maps of Lake Union Shorelands as surveyed and plotted and approved by the Board of State Land Commissioners of the State of Washington (June 4th, 1907 and filed with the City of Seattle on July 1st, 1907), the Supplemental Plat of Lake Union Shorelands (1933), and the Second Supplemental Maps of Lake Union Shorelands (1982), described as follows:
Commencing at Inner Harbor Line Corner #4 as plotted in said Lake Union Shorelands, thence South 89°42'07" East along said Inner Harbor Line a distance of 772.30 feet to the northwest corner of Waterway #4 and the True Point of Beginning;

Thence continuing South 89°42'07" East along the Inner Harbor Line a distance of 118.00 feet, thence South 00°18'23" West a distance of 566.50 feet to the line of Ordinary High Water, thence westerly along said line of Ordinary High Water the following approximate courses:
North 89°41'19" West a distance of 26.00 feet, South 79°57'49" West a distance of 63.00 feet, North 89°41'33" West a distance of 30.70 feet to an intersection with the west line of Waterway #4, thence North 00°18'23" East a distance of 581.0 feet to the northwest corner of Waterway #4 and the TPOB, containing 67737.8 sq ft more or less

Bearings refer to Lake Union Shorelands

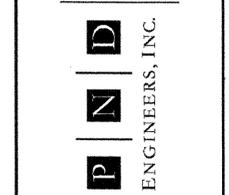
Waterway #4 Uplands
Sub Area C

That portion of the NE 1/4 of Section 30, Township 25 North, Range 4 East, W.M., in King County, Washington, being a portion of the uplands area of Waterway No. 4 as shown on Sheet 5 of 7, 2005 Third Supplemental Plat of Lake Union Harbor filed for record under No. 2005081000004, records of King County, Washington, said plat being an amendment to the Map of Lake Union Harbor (1907), Maps of Lake Union Shorelands as surveyed and plotted and approved by the Board of State Land Commissioners of the State of Washington (June 4th, 1907 and filed with the City of Seattle on July 1st, 1907), the Supplemental Plat of Lake Union Shorelands (1933), and the Second Supplemental Maps of Lake Union Shorelands (1982), described as follows:
Commencing at Inner Harbor Line Corner #4 as plotted in said Lake Union Shorelands, thence South 89°42'07" East along said Inner Harbor Line a distance of 772.30 feet to the northwest corner of Waterway No. 4, thence South 00°18'23" West along the westerly margin of Waterway No. 4 a distance of 660.00 feet to the True Point of Beginning, thence North 00°18'23" East a distance of 78.08 feet to the intersection with the line of Ordinary High Water of the Department of Children, Youth and Development, thence easterly along said line of Ordinary High Water the following courses:
South 89°41'33" East a distance of 30.70 feet, North 78°57'49" East a distance of 63.00 feet, South 89°41'19" East a distance of 26.00 feet, North 59°57'07" East a distance of 13.44 feet, North 68°05'41" East a distance of 25.00 feet, North 27°12'41" East a distance of 21.94 feet to an intersection with the easterly margin of Waterway No. 4, thence South 00°18'23" West along the easterly margin of Waterway No. 4 a distance of 54.63 feet to an angle point of said margin, thence North 89°42'23" West a distance of 25.00 feet, thence South 20°28'03" West a distance of 57.10 feet, thence leaving said easterly margin of Waterway No. 4 South 79°23'36" West a distance of 123.56 feet to the intersection with the westerly margin of Waterway No. 4 and the True Point of Beginning, containing 10969.5 sf

Bearings refer to Lake Union Shorelands

RECEIVED
APR 17 2010
Dept. of Planning & Development
Plans Routing

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PROJECT: CENTER FOR WOODEN BOATS
TITLE: FLOAT RECONFIGURATION
GENERAL NOTES

Table with columns for REVISIONS, DESIGN BY, CHECKED BY, DATE, SCALE, PROJECT NO., SHEET NO.

3/17/10 Drawings (2009) 094046.02 - CWB Flooding Dock Retrofit Final 094046.02-02.dwg