CITY OF NEWPORT BEACH

WATERFRONT PROJECT GUIDELINES AND STANDARDS

HARBOR DESIGN CRITERIA

COMMERCIAL & RESIDENTIAL FACILITIES

2008 EDITION

City of Newport Beach

Waterfront Project Guidelines and Standards

Harbor Design Criteria

Commercial and Residential Facilities

January 2008

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HARBOR DESIGN CRITERIA

GENERAL

The construction of harbor facilities shall accommodate the need for safety and durability as well as convenience and appearance. Structural elements of the docks, floats, gangways, piles, etc., shall be adequate to safeguard human life, boats, and boating equipment. Boat berthing facilities shall be designed to adequately handle anticipated loads with an ample factor of safety as deemed appropriate by the City of Newport Beach Building Department. Materials of construction shall resist the corrosion of saltwater in order to assure low maintenance requirements and long life of the facility. Floats shall be designed to assure stability and buoyancy for safe operations. Adequate utilities meeting all requirements of the current, applicable codes, shall be provided for the convenience and safety of boaters and maintenance workers.

Harbor Permits and Plan Check shall be as per the Title 17 of the City of Newport Beach Municipal Code and Council Policy H-1.

Dock systems shall be designed by a civil or structural engineer, licensed by the State of California, who is experienced in the design of marine structures. Repairs and non-structural modifications to existing residential docks can be designed by a contractor experienced in dock facilities, at the discretion of the Building Department.

I. WATERSIDE DEVELOPMENT

The limits and constraints of construction in the harbor are defined by a series of lines that have been established over time by the Federal Government, as well as the City of Newport Beach. These lines have been defined in Chapter 17.01 of the Municipal Code. Prior to the preparation of documents to be submitted to the City of Newport Beach for review of a proposed project, the applicant should obtain a full understanding of these lines and have a qualified engineer, surveyor or contractor define these lines on any plans submitted for a proposed project. These lines include the existing or current edge of construction along the waterfront with respect to the Federal Bulkhead, Pierhead and Project Lines, Channel lines, Anchorage Area, and Turning Basins.

A. DOCKS

1. ALTERNATIVE BERTHING GEOMETRIES

Various berthing geometries are available and acceptable for the berthing of boats for a docking facility. The following figures present the generalized arrangements that are considered acceptable to the City of Newport Beach for the safe mooring of boats. The attached figures and “Case” geometries can be

utilized as shown, or in combination with one another, in an overall marina dock scheme.

2. LAYOUT AND DESIGN (Commercial & Residential)

a. General

(1) Layout and design of harbor facilities shall be based upon the use of the facility defined as follows:

(a) Single or joint residential
(b) Multi-residential
(c) Commercial

1) Passenger
2) Recreational boat marina

(2) Harbor structures shall conform to "Layout & Design Guidelines for Marina Berthing Facilities", latest edition, published by the State of California Department of Boating and Waterways, 2000 Evergreen Street, Suite 100, Sacramento, California 95814; Telephone (888) 326-2822, except as modified by the City's harbor standard drawings within the Design Criteria.

(3) See the attached **Harbor Standard Drawings** for plans, sections and details of typical conditions for vessel moorings and docks, gangways, platforms, seawalls, and beach profiles. These Standards are to be considered <u>minimum</u> requirements for the cases represented and, at the City of Newport Beach Building Department discretion, may not apply to the specific project submitted. The Building Department reserves the right to mandate deviation from the Standards, if particular project conditions require special consideration.

b. Slip and Boat Overhang into Adjacent Fairways:

(1) Berths shall not be occupied by vessels more than 3 feet longer than the berth or slip, or in the case of fairways with a 1.75 x Lb width, not more than 10% of the length of the finger.

(2) For berths either parallel or perpendicular to a main channel, vessels can extend beyond the limits of the slip by as much as the ***beam of the boat***.

c. Finger and Walkway Widths:

(1) Minimum finger widths for recreational commercial and residential docks shall be per **Table No. 1**.

(2) Fillets at the connection of walkways to fingers shall not have less than a 4-foot side.

(3) Outer end (end tie) and side-tie fingers shall be a minimum of one foot wider than the minimal widths for all other adjacent finger docks.

(4) Residential Headwalks and Mainwalks:

(a) Minimum residential headwalk widths shall be no less than 6 feet for dock lengths up to 80 feet in total length, and 8 feet wide for dock lengths of more than 80 feet.

(5) Commercial Headwalks and Mainwalks:

(a) Minimum widths shall be no less than 8 feet wide. If use of a walkway is for staging the public while waiting to board a vessel, the minimum dock width shall be 12 feet.

(b) At gangways, a minimum of 6 feet of walking surface shall be maintained in front of the furthermost gangway projection (including toe plate) at high tide, and have a minimum of 4 feet of clear space to walk along the side of any gangway for access to berthed vessels.

Table No. 1
Minimum Finger Widths

Fingerfloat Width (Feet)	Length of Berth (Feet)
F = 5.0’	All ADA Accessible Fingerfloats
F = 3.0’	Up to 35’
F = 4.0’	36’ to 55’
F = 5.0’	56’ to 70’
F = 6.0’ (1)	71’ to 84’
F = 8.0’ (1)	85’ and over

(1) *Widths of more than that shown in this Figure may be necessary for specific site conditions and/or uses of fingers over 70 feet.*
(2) *Minimum 5’-0” widths are required for the entire path of travel for ADA access, including paths along main- and headwalks.*

d. Single and Double-Wide Slips:

(1) Single-wide slips are those slips that have a finger on each side of the boat. Double-wide slips have only one finger adjacent to any given boat.

e. Vessel "Rafting":

(1) Vessel "rafting" is the practice of connecting multiple vessels together, with only one of the vessels being tied/berthed to a walkway or finger. Rafting of vessels is not allowed, unless specifically approved by the Harbor Resources Division and/or the Fire Department for special facilities and/or events.

f. Long Docks:

(1) Long docks are defined as side-tie docks with more than one boat berthed. Unless specifically identified otherwise, and for the purpose of establishing the number of boats that may utilize a long dock per State of California Department of Boating and Waterways Guidelines, it will be assumed that one boat is berthed alongside a long dock every 40 feet of long dock length. This would relate to a 30-ft berthed boat, with 5 feet of clearance on either end.

g. Loading Criteria:

(1) The design of the dock system shall incorporate all anticipated dead and live loads.

(a) Dead Loads: Dead loads shall include the weight of the dock system components (walers, bracing, bracketry, etc) which are permanently incorporated into the dock system, and non-dock system components (transformers, gangways, dinghy racks, trash containers, buildings, etc.) which are permanently affixed to the dock system.

(b) Live Loads: Live loads are temporary, transient loads imposed in the ordinary use of the dock system, such as people, carts, mobile equipment, wave loadings from boats, wind loads, impact loads, etc. The dock system shall be capable of supporting live loads and freeboards per "Flotation and Freeboards". The structure shall also be capable of supporting a 400-pound moving point load anywhere on the deck surface, but no closer than 12"

from any dock edge, while maintaining the level tolerances cited in this guideline.

(c) Wildlife Loads: Refer to "Design & Guidelines for Marina Berthing Facilities".

(2) Wind loads shall be calculated both parallel to and perpendicular to maximum length of vessels and structures.

(a) Wind load on the lateral area of vessels or structures shall not be less than 15 pounds per square foot acting on the projected area of the docks as well as the "sail area" of the berthed vessels.

(b) Lateral area of vessels for wind load calculations acting on the "sail area" of the vessel shall be as per **Graph No. 1,** or the actual sail area of the anticipated vessel, whichever is greater.

(c) Ten percent (10%) of the full wind load for an unshielded vessel shall be applied to each vessel in the lee of the unshielded vessel.

(d) Wave and impact loading criteria shall be as appropriate for the location of the marina, and the surrounding conditions. Impact loads shall be calculated in accordance with California Department of Boating and Waterways impact loading criteria.

(3) Current Loading: Floating docks in areas of the harbor may be subject to current loads. Contact the City of Newport Beach Marine Department for these locations and potential velocities.

(4) Load Combinations:

(a) Combined load cases for design of docks shall include the following:

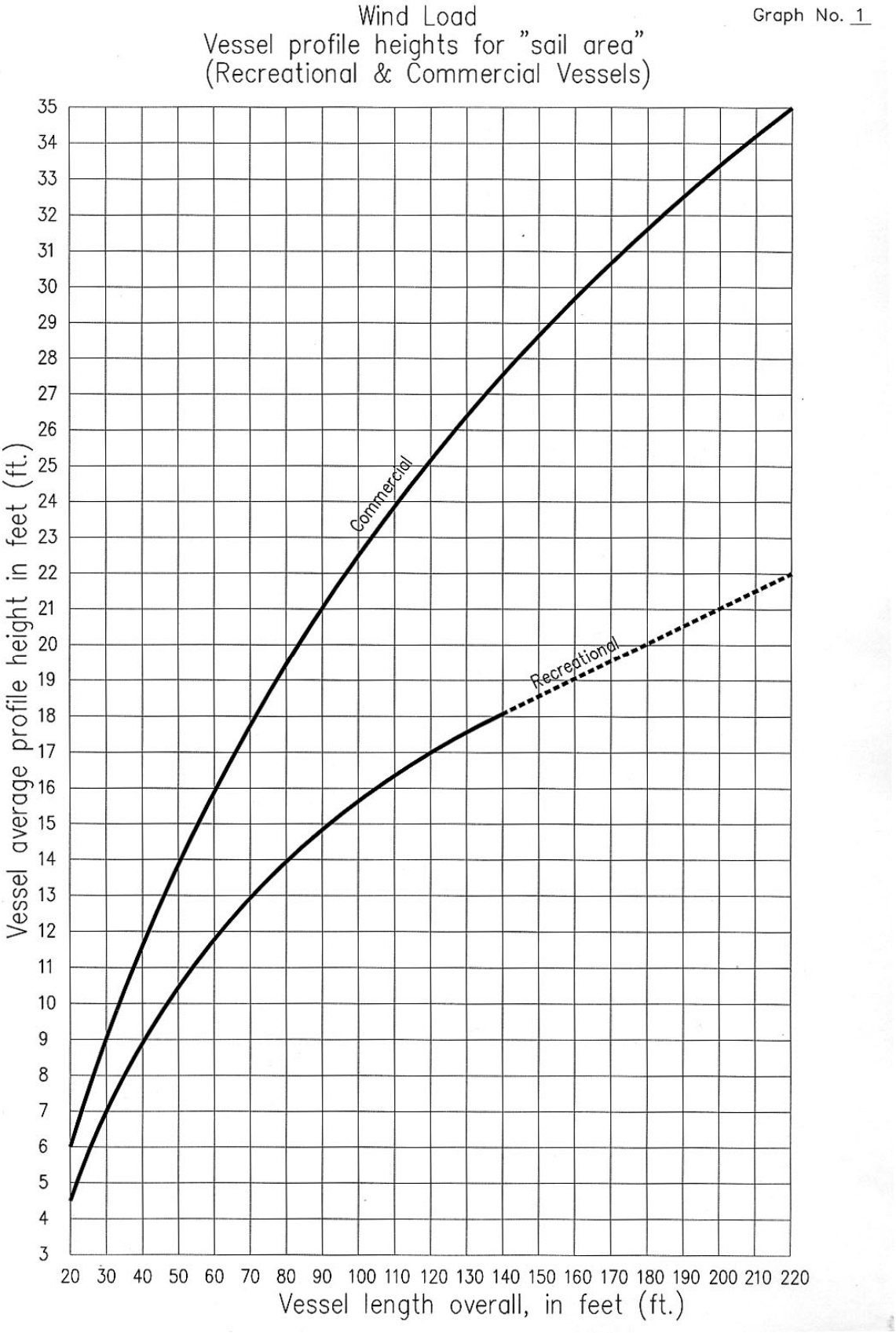
1) Dead load plus uniform live load
2) Dead load plus concentrated 400-lb live load. In the ADA path of travel, a 650-lb point live load shall be used.
3) Dead load plus wind load plus current & wave loads, plus impact loads.

(b) Fabrication, handling and lifting loads shall also be checked in the calculation of the dock system.

(c) A 1/3 increase in allowable stresses can be used when in combination with either wind, current, wave or impact loads. For all wood stresses, the allowable stress shall be reduced in accordance with the California Building Code for wet conditions, and then the 1/3 increase in allowable stress applied.

(d) Calculations shall include the transfer of forces from the dock system into the piles. All components within this transfer mechanism shall be substantiated.

Graph No. 1


Wind Load
Vessel profile heights for "sail area"
(Recreational & Commercial Vessels)
Vessel average profile height in feet (ft.)
35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3
Commercial
Recreational
20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220
Vessel length overall, in feet (ft.)

h. Flotation and Freeboards:

(1) Sufficient flotation shall be provided to support dead load plus live load with freeboards as noted below. Higher live load requirements may be required by the City of Newport Beach, under special circumstances as may be deemed appropriate by the Building Department.

(a) Commercial Docks: Live load of 50 pounds per square foot with a dead plus live load freeboard of not less than 15 inches. Under dead load only, the minimum freeboard is 18 inches, and the maximum is 24 inches. If docks are used for staging of passengers, a live load of 65 pounds per square foot shall be required.

Exception: For alterations to existing docks, match the original design loads and freeboards.

(b) Residential Docks: Live load of 25 pounds per square foot with a dead plus live load freeboard of not less than 10 inches. Under dead load only, the minimum freeboard is 14 inches, and the maximum is 24 inches.

(c) Weight of seawater, for the purposes of flotation calculations, shall be 64 pounds per cubic foot.

(2) The flotation shall use expanded polystyrene cores. The use of hollow pontoons shall not be allowed.

(3) Docks shall have pontoons composed of outer shells of either concrete (1" minimum thickness) or an ultra-violet stable plastic such as fiberglass or cross-linked polyethylene (1/8" minimum thickness). Other alternative materials must be submitted to the City for review and approval, per the "Request for Alternate Material or Method of Construction" appeals process. Exposed foam flotation is not allowed.

(4) Residential Docks: In addition to the pontoon encapsulation types noted above, residential docks may also use spray-on elastomeric encapsulation systems for pontoons. Spray-on products must demonstrate resistance to ultra-violet rays, solvents that may be present on the water surface, and environmental conditions imposed by saltwater contact. Minimum spray-on product thickness shall be 100 mils.

i. Static Floating Tolerances:

(1) The dock surface of the in-place dock system, which includes fingerfloats and walkways, under various loading conditions, shall be level within the following tolerances:

Under Dead Load Only, & Under Dead and Live Loads:	¼" per foot, 1" maximum (transverse)
	1/8" per foot, 1" in 10 feet maximum (longitudinal)
Under Dead and Point Live Loads:	½" per foot (4%), 2" maximum (transverse)
	¼" per foot, 2" in 10 feet maximum (longitudinal)
On Accessible Routes, for ALL Loading Conditions:	Shall not exceed 1:50 or 2% maximum (transverse)

(2) Under Dead Load Only conditions, the free ends of fingerfloats shall always float level or higher than the fingerfloat ends connected to the head or mainwalk, within the limits noted above.

j. Torsional Resistance Requirements:

(1) General: Fingers, connected walkways, and free-standing headwalks unattached to other dock elements must be designed to provide dock stability and resistance to torsional loads. Torsion bars installed in fingers, and/or dock framing construction that provides for calculated and verifiable twist resistance, is required. Free-standing headwalks need not provide independent means of torsional resistance if the width of headwalk is 8 feet or more.

Alternative means of providing torsional resistance to fingers and main- or headwalks may be considered by the City Building Department. Methods such as twist-controlling guide roller assemblies may be considered, if acceptable twist resistance can be proved.

k. Guide Piles:

(1) Dock system pilings shall be designed by an Engineer, licensed by the State of California, who shall have demonstrated expertise in the design of marine structures. Pile loading calculations shall be provided based on a soils investigation by a licensed geotechnical engineer, or based on minimum code values for soil properties. Alternatively, a pile test may be conducted by a licensed engineer after piles have been driven, to confirm that the piles can withstand the design loads anticipated. Testing procedures must be approved by the City prior to commencement.

(2) Soil conditions in Newport Harbor can vary depending on the existence of rock strata near historic bluffs along the coastline. The Applicant is advised to research the soils conditions of the subject site in order to properly assess the conditions for pile stability and installation.

(3) Loading Conditions & Criteria:

(a) Applied lateral wind and impact loads shall be calculated for not lower than a +7.5 foot MLLW water surface, and a load height acting upon the piles at no lower than +8.5 foot MLLW.

(b) Loads imposed on the dock framing system as previously noted in this loading criteria, shall be imposed in-like-kind to the piles providing the lateral load resistance for the docks.

(c) Pile penetration shall not be less than 15 feet, nor the calculated penetration plus 3 feet.

(d) Pile cutoff elevation shall not be lower than +13.0 feet, MLLW.

(e) Guide pile caps shall be provided to discourage birds from perching on piles.

(4) Special Geological Conditions:

(a) There are locations within the Newport Harbor area that contain rock-like geological conditions, exhibiting different soil resistance characteristics than standard bay mud. The applicant is encouraged to observe the type of

guide piles used in the existing surrounding installations to assess the type of piles that may be required for any new project. A geotechnical consultant could be retained to provide this information and pile design and installation recommendations, as well.

3. DOCK MATERIALS OF CONSTRUCTION

a. General: Materials used in dock systems shall have a demonstrated history of use in salt water environments of at least 10 years, or otherwise be approved by a licensed engineer practicing in waterfront engineering. Materials used in dock systems are to be new and in good condition.

(1) Flotation:

(a) Flotation systems shall be the products of manufacturers and contractors regularly engaged in the production of such items for marine construction.

(b) Flotation units shall consist of:

1) Concrete cast around a solid, closed cell foam core, or

2) Fiberglass, polyethylene or plastic shell with a fitting, solid, closed cell foam core.

(2) Plastics:

All plastics used in the dock systems shall be ultra-violet light stabilized or protected. Plastics proposed for use must have a demonstrable performance history in salt water environments of at least ten years, or be the recommendation of a California licensed Engineer. Design strengths and thickness shall be appropriate for the intended purpose.

(3) Foam core for floats shall be a rigid block of closed cell expanded polystyrene with a unit weight of between 0.95 to 1.2 pounds per cubic foot. Properties of foam shall conform to ASTM C578, with maximum water absorption of 3.0 percent or less as determined by ASTM C 272, Method C. The foam core shall not have more than 10 percent reground material, and reground foam pieces shall not exceed 3/8-inch diameter.

b. Timber:

(1) All wood-construction fingers shall have framing that includes cross-members that provide rigid connection to the full-length stringers. All connections shall be made using thru-bolts.

(a) Commercial Dock Framing: For independent long docks that float freely and do not have docks and/or fingers attached for stability, all primary load carrying framing members shall be fabricated from glued-laminated beam construction, to prevent warpage of the major members, contributing to dock instability.

(2) Allowable Stresses: Allowable stresses for harbor structures shall not exceed those stated in the "California Building Code".

(3) Timber used for walking decks shall have a minimum net thickness of 1½ inches.

(4) Timber for walking surfaces shall be Douglas Fir, Select Structural. Sawn timber for other framing members shall be Douglas Fir, No. 1, minimum.

(5) Glued-laminated timber shall be Douglas Fir 24F-V8, industrial grade for application in wet environments. Fabrication shall comply with Product Standard PS 56-73, "Structural Glued Laminated Timber".

(6) Walking surfaces shall have a non-skid finish and be maintained periodically or when worn and unsafe. Treated timber decking requires no further non-skid finish.

(7) Dimensional lumber is not required to be painted. However, if the applicant chooses to paint, such paint shall be maintained to good condition and appearance.

(8) Plywood utilized within dock framing systems shall be exterior grade material. Plywood shall not be used as the walking surface for a dock system, unless the product can be demonstrated to the City of Newport Beach Building Department that it is provided with a factory-applied protective, non-skid walking surface that will be durable and has a proven process for patching and touch-up. Internal plywood members shall be provided in such a manner that water can be easily conveyed off the top surface of plywood and not pond or get trapped, leading to early deterioration and dry rot.

(9) Weight of treated Douglas Fir shall be assumed to be 35 pounds per cubic foot.

(10) All timber used for dock construction shall be marked with the appropriate grade of material and preservative treatment, or may be subject to rejection by the City Inspector.

(11) Wood Preservative for Timber:

(a) All timber products shall be coated with preservative treatment to retention limits recommended by the American Wood Preservers Association Standard M4 "Standard for the Care of Preservative-Treated Wood Products" and AWPA Standard C2 "Lumber, Timber, Bridge Ties & Mine Ties – Preservative Treatment by Pressure Processes".

(b) Current State and Federal environmental requirements and guidelines for the type and application of preservative treatments will be strictly enforced.

(c) All lumber must bear a stamp approved by the American Lumber Standards Committee for conformance to the American Preservers Association Standards.

(d) Field cuts and bored holes shall receive field-applied preservative treatment in accordance with Best Management Practices. Preservative treatment chemicals shall not be allowed to enter harbor waters.

c. Steel:

(1) Any steel components used in the marine environment shall be hot-dip galvanized with a minimum of 3 mils of zinc, or epoxy coated per ASTM A 934 and manufacturers recommendations, or shall be stainless steel.

(2) Structural steel shall conform to Standard Specifications for Structural Steel for Bridges and Buildings, ASTM A36. Aluminum shall conform to 6061-T6 material specifications. Stainless Steel shall conform to A316 material specifications.

(3) Fabrication and erection shall comply with the latest applicable codes as noted:

- AISC, Latest Editions
- Aluminum Structural Welding Code, Latest Edition
- Aluminum Design Manual, Latest Edition
- 12011 Design Manual for Structural Stainless Steel, Latest Edition

(4) All bolts securing primary structural members shall be a minimum of ½ inch diameter thru bolts. Bolts shall be A307 and include washers where direct contact with timber members occurs. Carriage bolts are also allowed.

(5) No connecting device shall protrude beyond the fascia or waler into the berthed area, which may contact any part of the berthed vessel, or extend up into any walking surface creating a tripping hazard.

d. Concrete and Reinforcing:

(1) Concrete shall be designed for permeability, strength, chemical stability and abrasion resistance, appropriate for its application. Minimum compressive strength for concrete, subject to salt water splash, immersion and/or brackish water is 4,500psi and a 0.45 water-to-cement ratio.

(2) Portland cement shall conform to ASTM C 150 Type I or Type II modified, and low alkali. Chemical admixtures shall conform to ASTM C 494. Chemicals designed to limit corrosion of internal reinforcing may be used. Air entrainment admixtures shall conform to ASTM C 260. Coarse and fine aggregate shall conform to ASTM C 33, and ASTM C 330 where lightweight aggregates are used. Lightweight aggregate, if used, shall consist of expanded and coated shale or equivalent material of sufficient strength and durability to provide concrete of the required strength.

(3) Concrete structures shall be designed to provide sufficient coverage of reinforcing steel, so as to prevent corrosion, per code requirements. For structures exposed to salt water splash or immersion, bar reinforcement shall conform to ASTM A 706, and shall be epoxy coated per ASTM A 934, after bending of the bars. Welded wire mesh shall conform to ASTM A 185 and shall be epoxy coated conforming to ASTM A 884, with all visible defects and cut ends repair coated. Wires used to tie reinforcing steel shall be either epoxy-coated steel, or A 316 stainless steel.

e. Pilings and Anchorage:

(1) Piles shall be the products of manufacturers and contractors regularly engaged in the production of such items for marine construction. Typical materials approved for pile materials include: 1. Pre-stressed concrete, 2. Steel, or 3. High-strength composite materials. Timber piles are not allowed.

(2) Unless subsurface soil materials prevent their use, pilings shall be pre-stressed concrete. Portland cement shall be ASTM C150 Type 2. Water for mixing and curing shall be fresh, clean and potable. Aggregates shall conform to ASTM C33, Size Number 67, and be free from any substance that is deleteriously reactive with the alkalis in the cement. Admixtures, if used, shall conform to the requirements of ASTM C494 and not contain chlorides. Corrosion inhibiting concrete admixtures are encouraged. Pre-stressing steel shall be uncoated, seven-wire stress relieved strand with a minimum ultimate stress of 270,000 psi conforming to ASTM A416. Ties and spirals shall conform to ASTM A82, cold drawn. Piles shall cure and reach a strength of not less than 4,000psi before de-tensioning and cutoff of the strands.

(3) Guide rollers shall be fabricated from polyethylene, UHMW, polyolefin or polyurethane roller or plate material. As an option to the use of rollers, UHMW rub blocks may be used. Minimum thickness of a rub block shall be 2 inches, with attachment bolts countersunk into the UHMW material.

(4) Any structural steel components used in the marine environment shall be hot-dip galvanized or epoxy coated per manufacturers recommendations, or A316 stainless steel.

(5) Steel piles must be painted with a non-toxic coating that prevents or inhibits the corrosion of the pile base material. Design of steel piles shall include a 1/8-inch additional corrosion allowance. Coatings must be maintained to prevent growth and wear from the guide roller assemblies. Rollers should be cleaned periodically to prevent shell fragment build-up from further deteriorating the coatings protecting the steel piles. For added steel pile protection, sacrificial anodes may also be designed and installed to limit corrosion, and UHMW plastic pile wraps can be installed to limit wear of the steel surface from guide roller friction.

(6) Installation Criteria:

(a) Piling shall be installed by a licensed contractor regularly engaged in the business of pile driving. Care shall be taken in the handling and driving of piling, to prevent spalling, cracking or other damage. Contractor shall install piles per approved local, state and federal requirements. Jetting may be permitted with State and Federal approval.

(b) Tolerances:

1) The elevation of the head of piles shall be within one inch of designer top of pile elevation. Minimum pile top elevation for dock systems shall be +13.0 MLLW.

2) Piling shall be installed vertically plumb within tolerances defined in the construction documents, but in no cases more than 2.5% out of vertical plumb, and 4 inches out of horizontal location.

(c) Records and Certifications:

1) Records of pile driving operations shall be maintained under the supervision of the Engineer of Record, and made available to the City upon request.

2) Upon completion of the pile driving operation, the engineer shall certify that the pilings were installed in accordance with the design and these guidelines. Such certification shall be on the Engineer's letterhead and bear the Engineer's stamp, and shall be submitted to the City prior to issuance of the certificate of occupancy.

f. Alternative and/or Hybrid Materials

Alternative materials such as recycled plastic, PVC, and others, which can show a demonstrated experience and useful lifespan in the marine environment and usage, can be proposed to the City of Newport Beach for consideration. The decision of the City of Newport Beach regarding the use of alternative or hybrid materials will be final.

4. APPURTENANCES

a. Locker Boxes: Individual locker "dock" boxes may be provided for slips, and may provide housing for electrical and mechanical services. Locker boxes shall be securely attached to the dock surface. All dock boxes should be located on finger fillets; i.e., the intersection of the finger and the main or headwalk, on the triangular dock surface. Locations other than on a finger fillet require the approval of the City. Locker boxes installed in the path of travel that limits safe pedestrian access will not be allowed. Minimum clearances for safe pathways are as follows: 2 feet clear on fingers, 3 feet clear path on main and headwalks.

Lockers boxes shall be made of 1/8 inch minimum thick fiberglass or cross-linked polyethylene. Flammable materials shall not be kept in locker boxes.

b. Cleats: Cleats shall be designed to accommodate boats and loads appropriate for their location. A minimum of two cleats on each side of a finger is required. Cleats shall be hot-dip galvanized, and attached to the dock system by means of through-bolts of adequate size to transmit loads between boats and the dock system.

c. Bumpers: Bumpers shall be installed on dock surfaces that will come into contact with boats. Outer corners of fingers should be protected with corner bumpers or dock wheels. Bumper material shall be vinyl products, or those that have been approved by an Engineer, licensed to practice in the State of California. Water retentive material such as rugs, or salvage materials such as tires, shall not be used. Install bumpers with aluminum or stainless steel nails or screws.

d. Boarding Steps: Boarding steps shall not be kept on main walks. Boarding steps may be kept on, or attached to, finger floats, but in no case shall boarding steps on finger floats occupy more than one-half of the width of the finger float. Boarding steps shall be light-weight and not used for storage, unless the supporting dock section has been specifically designed for the additional dead and live load. Boarding steps shall not be permanently attached to the outermost 5 feet of any finger float.

e. Life Rings: Life rings shall be installed in strategic locations on commercial docks. Life rings for residential docks are encouraged, but not required.

f. Dock Ladders: Dock ladders shall be installed in strategic locations on commercial docks for safety purposes. Ladders shall extend into the

water by at least 3 feet, and be constructed of materials that resist corrosion and prolong ladder life. Ladders may be provided with the ability to swing out of the water in order to allow for special recreational uses of the docks. Ladders for residential docks are encouraged, but not required.

5. ACCESS/GANGWAYS/AMERICANS WITH DISABILITIES (ADA) COMPLIANCE

a. General

(1) Landside facilities of commercial docks and of docks serving new multi-family developments shall meet all ADA requirements for the path of travel from the street and parking lot, to the gangway and down to the docks.

(2) Walking surfaces of gangways shall have a non-skid finish, such as punched metal, unpainted timber, or grit impregnated metal, painted non-skid coatings, etc.

(3) Gangway Support: Connections between gangways and the adjacent bulkheads or platforms shall be designed by a licensed engineer, and comply with the following minimum requirements:

(a) Gangways shall be supported by the bulkhead or platform through a mechanical connection system, such as face-mounted plates or clip angle hangers with saddles, shackles or pins, attached to the bulkhead or platform with poured-in-place anchor bolts or epoxy-anchored threaded studs. Minimum diameter of bolts shall be 5/8 inch, and material for bolts in contact with concrete or treated lumber shall be A304 stainless steel.

(b) The hinge and supports shall be capable of transferring full dead and live loads generated by the gangway to the mechanical connection system.

(c) Steel angles, plates and other sections utilized in these connections shall be minimum A36 grade and have a minimum thickness of 3/8 inches. Any exposed edges of plates that may potentially be in the path of travel or in contact with foot traffic shall have beveled or rounded smooth edges.

(d) All steel members and hardware shall be galvanized, or coated with a formulated non-toxic coating system designed specifically for the marine environment.

(e) The gangway shall be restrained from lifting out of the support saddle during extreme high tide elevations, without interfering with rotation at the gangway hinge.

(4) Gangways shall be braced in the horizontal plane to prevent lateral deformation. The bracing system can consist of diagonal supports within or under the gangway framing system, plywood sheathing, or by decking designed to act as a shear transfer membrane.

b. Commercial Docks: Commercial docks servicing the public will be required to meet all applicable requirements relating to Federal ADA Compliance requirements.

(1) Design live loads for gangways shall be a minimum of 50 pounds per square foot for gangways functioning strictly for access to the dock system, and a minimum of 100 pounds per square foot for gangways that can be used as a staging area for passengers boarding vessels. The maximum allowable deflection of a gangway or bridge at midspan is L/240, with L/360 suggested for walking comfort.

(2) Gangway slopes shall meet current state and Federal requirements for safety and ADA compliance, where applicable.

(3) All commercial gangways shall be ADA compliant.

(4) Gangways shall be equipped with self-closing, self-latching gates at the bulkhead end of the gangway. Gates shall not open into intersecting walkways.

(5) All walking surfaces shall be provided with a commercial grade non-skid surface. Worn or slick non-skid surfaces shall be repaired immediately upon notice. Non-skid walking surfaces shall be maintained and/or re-applied at a minimum of every six (6) months. The maximum allowable gap in adjacent walking planks or surfaces shall be ½", and the maximum vertical height differential between adjacent planks or surfaces shall be ¼".

(6) All gangways shall be equipped with transition plates at the bottom of the gangway, and if fabrication details include gaps in the hinge transition of more than ½ inch, at the top of gangway as

well. These transition plates shall be of non-skid surface material and provide the transition from the gangway platform and/or dock, onto the gangways. All transition plates shall have a slope no steeper than 1:8 for non-ADA-compliant gangways, and 1:12 for ADA-compliant gangways. Transition plates shall have rounded edges along the path of travel and a height or thickness at the end of the plate of no greater than 3/8 inch.

(7) Minimum clearance on the dock system around a gangway landing shall be 5'-0".

(8) For additional discretionary gangways, other than the required ADA gangway, gangway slopes for commercial docks shall not exceed 1 foot vertically for each 3.0 feet of length, when the tide is at –1.0 feet MLLW. The minimum length of commercial gangway shall be 30'-0".

(9) Guard, mid and hand railings shall meet the requirements of the latest State of California Title 24 requirements.

(10) Railings shall be designed to resist a load of 50 pounds per foot applied horizontally to the rail or a 200-pound point load applied vertically at any point along the length of all horizontal rails.

c. Residential Docks:

(1) Gangway slopes for residential docks shall not exceed 1 foot vertically for each 2.5 feet of length, during the full range of tidal swing elevations. The minimum length of residential gangway shall be 24'-0".

(2) Minimum gangway clearance (within handrails) shall be 2'-6" wide.

(3) A 3-foot long toe plate, at the base of a gangway, is encouraged for ease of use and safety and to provide a continuous sloping path of travel, from the surface of the gangway to the surface of the dock. A gangway bottom "step-off", if the toe plate is not utilized, shall not exceed 7 inches in vertical height.

(4) Worn or slick non-skid surfaces shall be repaired immediately upon notice. Non-skid walking surfaces shall be inspected and maintained periodically for safety purposes.

(5) Gangway handrail heights shall be 34 to 38 inches above the gangway walking surface. Openings in rails of residential

gangways shall not permit a sphere 12 inches in diameter to pass through.

The gangway rail shall be designed to resist a load of 20 pounds per foot of horizontal force applied to the top of the rail.

(6) If a residential dock system has 25 or more slips, an ADA-compliant gangway system must be designed with a minimum design load of 50 pounds per square foot, and a maximum deflection of L/240, with a deflection of L/360 suggested. See Federal ADA Accessibility Guidelines.

6. SPECIAL FACILITIES

a. Fuel Floats:

(1) Locate boat-fueling docks near the entrance of the harbor, in an area that is protected from waves and rough water environmental conditions.

(2) Fuel floats used for dispensing petroleum products shall be adequately designed and placed to provide maximum service to the boater. Adequate guide piles or dolphins shall be required to provide permanence, safety, and stability to the floating docks, and shall be designed by a California Licensed Engineer with waterfront experience. Fuel floats must be designed to support the dead loads imposed by the dispensers, hose reels, storage, pipe chaseways, etc.

(3) Fuel facilities shall be in conformance with County, State and Federal codes, ordinances and law. Equipment, such as containment booms and absorbent pads, shall be kept on the fuel dock to contain spills.

(4) Fuel Floats shall contain all necessary fire fighting equipment and systems, as deemed appropriate by the City of Newport Beach Fire Department.

b. Sewage Pump Out Facilities:

(1) Marinas with more than 50 boats are required to have at least one (1) sewage pump out facility. Sewage pump out facilities shall connect to the nearest City of Newport Beach sewage line system. Refer to ***City of Newport Beach Standard Drawings for Public Works Construction*** for details of these connections.

(2) Sewage pump out equipment shall be products that have been designed, tested and installed for the specific purpose of vessel sewage pump out.

c. Floating Buildings:

(1) To obtain approval from the City of Newport Beach Harbor Resources Division for the installation of a floating building, the applicant must provide compelling reasons that such a facility is necessary and is precluded from location on land.

(2) Only commercial facilities are allowed to consider floating buildings. Residential facilities are not allowed to have floating buildings. Potential floating building uses include restrooms, the dockmaster's office, enclosures on a floating fuel dock, and boat rental office. Other uses may be considered, at the discretion of the City of Newport Beach.

(3) Floating buildings are subject to the latest edition of all local, State and Federal building codes.

d. Vessel Launching Facilities:

(1) Vessel launching facilities may include vehicle launch ramps for trailered boats, concrete launch ramps with rails and/or tracks for special vessel carriers, elevated travel lift launches, swing hoists on davits, and forklift launching.

(2) All launch facilities shall be designed considering the launching and vehicle loads imposed on existing and/or planned structures.

(3) Vessel launching facilities shall be designed in accordance with California Department of Boating and Waterways, Boating Facilities Division, "Layout, Design and Construction Handbook for Small Craft Boat Launching Facilities".

e. Special Mooring Devices:

(1) Special vessel mooring devices may be required or desired for specific berthing conditions. Large vessels may require mooring and/or breasting dolphins (pile groupings designed to resist large impact and berthing loads), berthing walls, or other devices that facilitate vessel docking.

(2) Special mooring devices shall be designed by a licensed engineer and geotechnical consultant, with experience in waterfront

engineering. Special mooring devices shall be designed to resist berthing loads, wind, wave, and current loading for the localized area.

f. Piers, Platforms, and Wharves

(1) Piers, platforms, and wharves shall be designed by a California licensed Engineer experienced in waterfront structures. A geotechnical report, for pile design and installation, shall be provided that addresses special issues such as liquefaction potential, and the gravity and seismic support of the waterfront structure. The geotechnical report shall be prepared by a California-licensed Geotechnical Consultant.

Refer to the Harbor Standard Drawings for the various geometries allowed for piers and platforms that serve and provide access to residential floating docks.

(2) Commercial: Structures shall be designed for an assembly area live load of 100 pounds per square foot (psf) as well as vehicle loads that may be imposed on the structure for maintenance purposes.

(3) Residential: Structures shall be designed for a minimum live load of 50 psf.

g. Seawalls (Bulkheads):

(1) General: Several types of seawalls are common to support soils and construction on the landside of the wall. Typical wall types include freestanding or "cantilevered" seawalls and "tied-back" seawalls. Cantilevered seawalls are limited by the height of the wall above the waterside mudline and are generally effective for exposed heights of not more than 8 feet. Tied-back seawalls can be effective for exposed heights over 8 feet and require walers (beams), steel tie rods and a foundation anchors (deadman), or earth anchors.

(2) Generally, seawall sheets constructed of reinforced, prestressed concrete are desirable, although for special conditions, structural steel interlocking sheets may be necessary. Steel products in the marine environment require special non-toxic coating protection and cathodic protection, in order to provide extended life spans.

(3) Seawalls shall have a top elevation of not less than 9.0 MLLW. Seawall elevations of 10.0 MLLW or more, depending on

location within the bay and potential for wave or wake over-topping, are recommended.

(4) The distance between seawalls and all floating dock components shall be a minimum of one foot horizontal distance.

(5) Seawalls shall be designed to resist all applicable vertical and horizontal loads.

(6) A minimum safety factor of 1.5 shall apply to gravity loads, and a minimum safety factor of 1.0 shall apply to seismic loading cases for the stability of seawalls.

(7) Decking shall butt to the seawall cap, or cantilever over the top of the seawall, if approved.

(8) Wing Walls: Wing walls are retaining walls that project landward and are perpendicular to the seawall. Wing walls may be necessary to isolate the seawall protection system of one property to the adjacent property. Special care must be taken to assure that the construction of a seawall for the subject property does not adversely impact the seawalls of the adjoining properties, either during construction or over the life of the structures.

(9) Seawall design requires a soils report from a California-licensed geotechnical consultant experienced with the design of waterfront structures. Any sloping surface on the water or landside of the seawall must be accounted for in the calculations for the seawall.

(10) All concrete sheets used for seawall construction shall be designed as pre-cast, pre-stressed concrete elements. Sheet design shall provide for symmetrical distribution and sizing of strands, to prevent curvature of the wall. See "Pilings & Anchorage" for concrete and reinforcing requirements.

(11) All seawalls or seawall alterations shall be designed by a California-licensed Civil or Structural Engineer.

7. DREDGING

a. All projects that require dredging must follow current local, State and Federal permitting requirements.

b. For maintenance dredging projects involving small quantities, the City of Newport Beach, in conjunction with the Army Corps of Engineers

(ACOE), has a program allowing for a simplified permitting process, as long as the amount of dredging and disposal quantities are small and meet quality requirements. The applicant is encouraged to inquire about this simplified process with the Harbor Resources Division, to verify qualifications.

8. UTILITIES

a. All utility lines in a floating dock system shall maintain clearances as outlined in "Layout & Design Guidelines for Marina Berthing Facilities".

b. Electrical Power and Lighting:

(1) All electrical design shall be in accordance with the latest edition of the National Electric Code (NEC) Article 555 – "Marinas and Boatyards", California State Building Standards "Article E555 Title 24, and the National Fire Protection Association (NFPA) code, NFPA 303 and NFPA 70.

(2) Electrical systems shall be designed by an Electrical Engineer, licensed by the State of California, and shall be in accordance with the latest requirements of the City of Newport Beach.

(3) An electric service connection shall be located at a minimum of every other slip. Electrical receptacles shall be waterproof and approved for marine waterfront exposure. The following are suggested minimum receptacle requirements based on boat size: one (1) 120v, 30 amp outlet at each boat slip under 35ft, two (2) 120v, 30 amp outlets at each boat slip between the sizes of 36 to 45ft, one (1) 120v, 30amp and one (1) 120v, 50 amp receptacle at each boat slip between 46 to 55ft, and two (2) 120v, 50 amp receptacles for boats between 56 to 65ft. For vessels larger than 65ft, special power requirements may be required and the applicant should consult the vessel manufacturer. Some large vessels may require 220v or 480v, 100amp services. Sub metering of each boat slip is recommended and has proven to reduce power usage in marinas where meters have been installed.

(4) Lighting shall be provided on all floating structures for pedestrian safety. All lighting shall be so designed as to provide sufficient light for safe pedestrian usage. All lighting on landside structures and buildings shall be designed to provide a minimum reflection/glare on the adjacent water areas with consideration for lighting reductions in evening hours.

(5) Electrical cables and conduits shall be fastened securely to the dock system and gangways such that the system is protected from damage by boats. All electrical equipment shall be located above the harbor water level per NEC requirements at all times. If distribution cabling will be subject to water contact, cabling shall be rated for submersible use. All strapping supports for conduit shall be stainless steel. All electrical conduit and cables must be concealed within the dock system.

(6) Transformers and panels located on the docks shall meet all requirements of the National Electrical Code (NEC). Several maintenance receptacles should be placed throughout the marina system to allow dock maintenance crews to use small electric tools without using metered power dedicated to slip renters.

(7) Commercial Facilities:

(a) Commercial facilities shall provide minimum lighting levels for public safety along the path of travel from land to the berthed vessel.

(b) Lighting fixtures with a capacity of 9 watts mounted at heights between 1.5 to 3 feet above the floating deck surface in dock boxes or on individual pedestals along the path of travel will generally meet this requirement. Fixtures should be located such that lighting levels on the walking surface are as uniform as possible.

(c) In addition, pole-mounted lighting shall be provided to illuminate vertical access systems such a gangways, steps, and lifts, providing a higher level of illumination at vertical transitions in the path of travel.

(d) Lighting systems shall be designed to provide light for the floating walking and access surfaces and not project light into neighboring properties and/or water space. Special lens and/or shields may be required to ensure that stray light is blocked and/or managed.

(e) All lighting shall be controlled by photo cells and/or timers, to assure that their operation is automatic and energy conserving.

c. Plumbing

(1) Plumbing systems shall be designed by a Civil or Mechanical Engineer, licensed by the State of California, and shall be in accordance with the latest National Mechanical Code, State Plumbing Code, and National Fire Protection Association Code.

(2) One hose bib shall be provided for every two (2) boats, as a minimum. Hose bibs for every boat slip are recommended for boater convenience and the reduction of clutter on the docks.

(3) Backflow preventers shall be provided for all water supply systems into the site. Pressure reducers or booster pumps may be required to meet pressure and flow requirements.

(4) Refer to Section "Sewage Pump Out Facilities" for criteria for sewage system installations.

(5) Supply water and sewage piping shall accommodate the full range of tidal movement, via the installation of flexible hoses and/or mechanical swivel pipe fittings. All materials shall be suited for the salt-water marine environment and be rated as "Food Grade" materials.

d. Fire Protection:

(1) General:

(a) All fire protection systems for marinas, wharves and piers shall be in accordance with NFPA Chapters 14 and 303, latest edition, and the California Fire Code Appendix II-C, latest edition. See the attached Newport Beach Fire Department "Fire Protection for Marinas, Wharves, and Piers" for system requirements.

(2) Code Requirements:

(a) Retroactivity of code provisions: At the option of the Newport Beach Fire Department, the authority can make the conditions and provisions of applicable current codes retroactive, if deemed necessary for public safety. Otherwise, the provisions of applicable codes that existed or were approved for construction or installation prior to the effective date of the standard shall apply.

(3) Fire Department connection/s (FDC's), backflow preventers and pressure reducing assemblies or booster pumps if required, firehose cabinets, fire standpipes and portable fire extinguishers shall be provided on the docks, as required by Code. Meet City of Newport Beach Fire Department requirements for periodic hose testing and replacement.

(4) Commercial Facilities:

(a) All commercial dock installations shall be provided with a fire fighting system, approved by the City of Newport Beach Fire Department. If the City water pressure is not adequate to produce pressures necessary to meet special City and Code requirements, an auxiliary booster pump system may be required.

(b) All new and existing marinas and boating facilities shall meet the requirements described in "Cases" as made part of this Design Criteria. The purpose of these requirements is to facilitate safe boating navigation, as well as provide fire-fighting capability.

(5) Residential Facilities:

(a) Fire protection systems for single-family residential docks are optional, although highly recommended. The residential owner should contact their insurance carrier for any policy requirements associated with providing a fire protection system.

(b) Fire protection for multi-family or condominium residential docks, piers and floats are required to have a fire protection system meeting City and Code requirements.

9. ENVIRONMENTAL

a. Commercial Facilities:

(1) All commercial facilities shall prepare a Best Management Practices plan to document environmental practices to be applied to daily operations. Plans shall address in-water maintenance limitations, storage and handling of hazardous and/or waste products common to the boating community, and emergency response to chemical spills.

(2) Commercial facilities shall provide a means for vessels to pump out their bilge tanks and the wastewater products taken to an approved treatment and disposal facility.

b. Residential Facilities:

Not applicable

10. PERMITTING

Project Types and City Classifications: The purpose of project types and City classifications noted below is to establish the permit fee structure and process for submitted projects. Percentage replacement is based on the valuation of total dock system. Values of various types of construction are based on City records for average construction, and are not necessarily based on the construction cost estimates provided to the City by the Applicant.

a. Maintenance Projects**:**
(Do not require State and Federal permit processing)

(1) Re-decking an existing float, gangway, or pier, like for like (not more than 20% of total replacement cost).

(2) Fixing dry rot or damage (not more than 20% of total replacement cost).

(3) Replacing piles, like for like, in the same hole (maximum 7 piles).

(4) Replacing a gangway to City standards.

(5) Raising a bulkhead to City standards.

(6) Replacing deteriorated tie rods with earth anchors.

(7) Repairing seawall cap beams and deadmen.

(8) Emergency repair of structures deemed by the City to jeopardize public safety. (Follow-up permitting may be required with the Coastal Commission.)

(9) Partial demolition of structures; i.e., elimination of half of a "U" shaped dock and/or respective piles.

(10) New waler at sea side of an existing bulkhead, minimum of 2 feet above mudline (without encroaching property line).

b. Alteration Projects**:**
(Requires State and Federal permit processing)

(1) Re-decking an existing float, gangway, or pier, like for like (between 20% and 50% of the total replacement cost).

(2) Fixing dry rot or damage (20% to 50% of the total replacement cost).

(3) Relocating one (1) or more piles

(4) Replace float, pier and/or gangway, like for like (20% to 50% of the total replacement cost).

(5) Change in orientation or configuration of an existing dock, including pile relocation.

(6) Any increase in dock footprint

(7) Replace seawall panels

c. New Construction Projects:
(Requires State and Federal permit processing)

(1) Re-decking an existing float, gangway, or pier, like for like (over 50% of total replacement cost).

(2) Fixing dry rot or damage (over 50% of total replacement cost).

(3) Total reconstruction of a float, gangway, and/or pier

(4) New configuration of a float, gangway, and/or pier

(5) New bulkhead system

(6) Dredging

d. Submittal Requirements:

Refer to **Exhibit A** for a summary of the permitting process. This Flowchart is presented for general information purposes only, and is not intended to be interpreted as the definitive process for any given project. This process is subject to change based on periodic development of public and governmental agency policies.

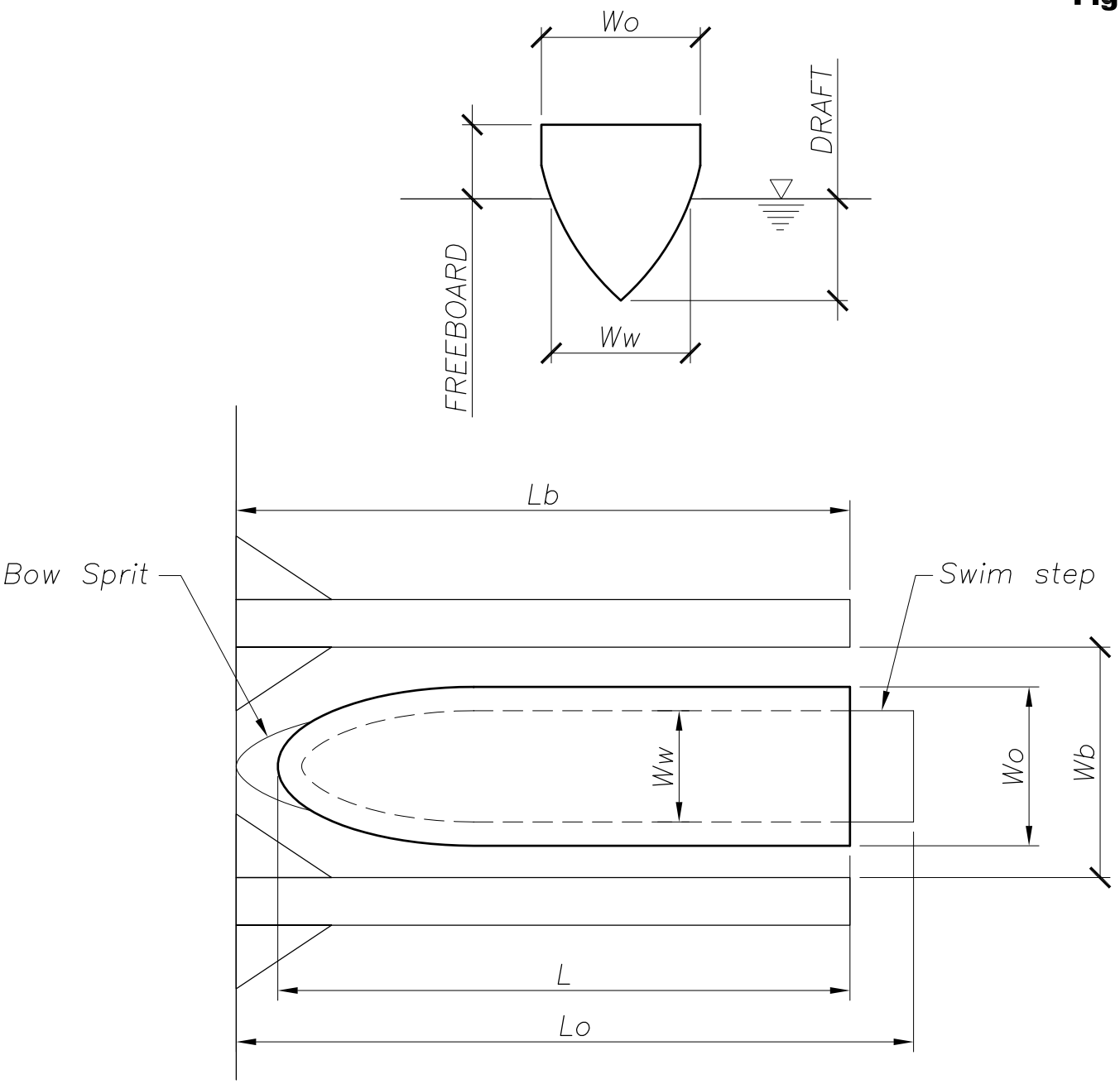
II. LANDSIDE DEVELOPMENTS (Commercial Only)

A. Landside developments of waterfront projects are subject to City of Newport Beach Planning & Building Department requirements.

B. See State of California Department of Boating and Waterways "Layout and Design Guidelines for Marina Berthing Facilities", latest edition, for minimum requirements for landside facilities, in support of waterfront developments.

C. Landside requirements for marina projects include location and design of restroom facilities, minimum parking requirements and ADA compliance.

Fig. No. 1



LEGEND:

Ww = WIDTH @ WATER LINE

L = LENGTH W/O EXTENSIONS

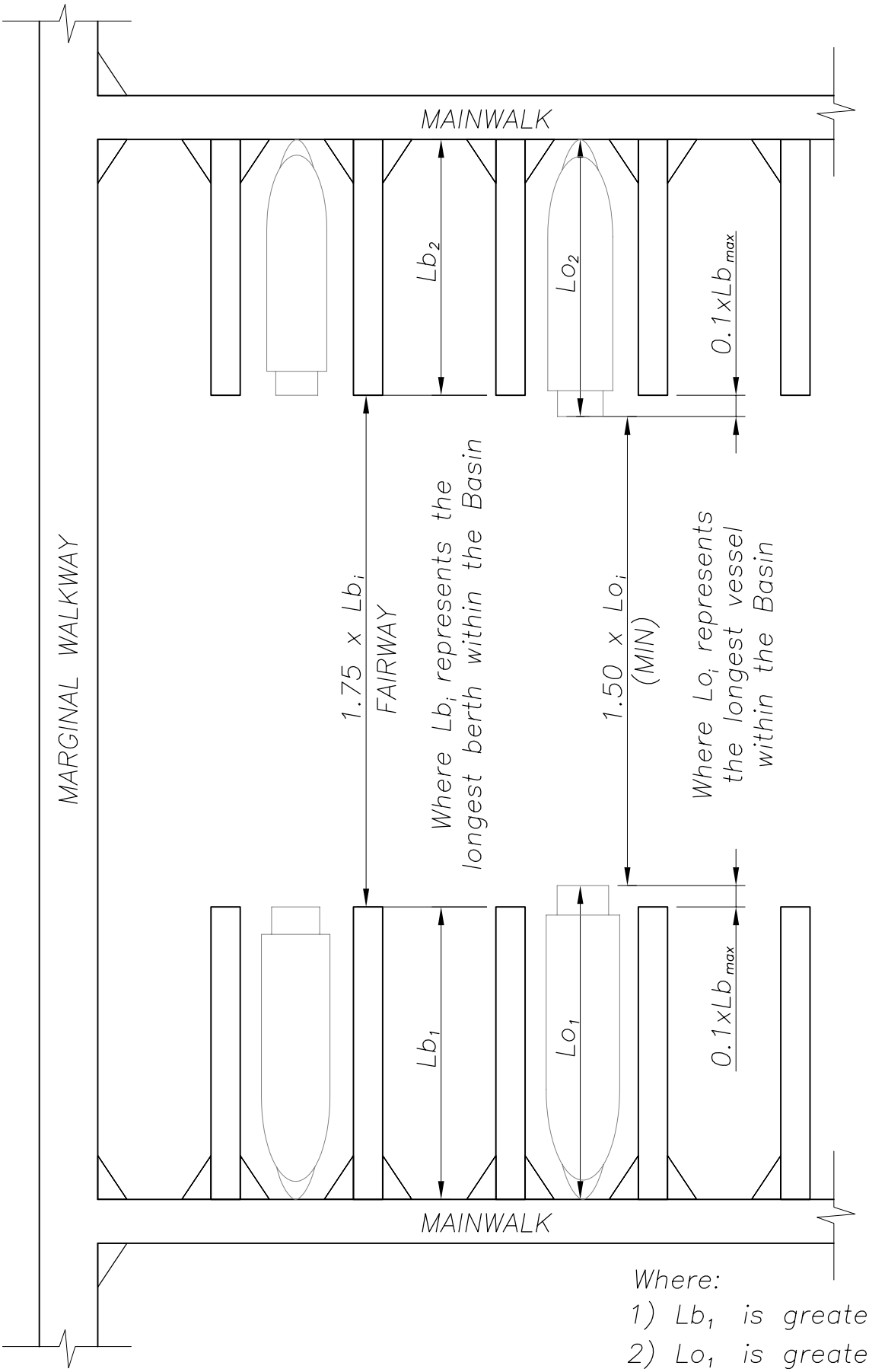
Lo = LENGTH OVERALL, WITH BOW SPRIT, SWIM STEP OR OTHER PROTRUSIONS

Wo = WIDTH OVERALL

Lb = LENGTH OF BERTH (FINGERFLOAT OR SLIP) (DBAW)

Wb = WIDTH OF BERTH (DBAW)

VESSEL SIZE ILLUSTRATION

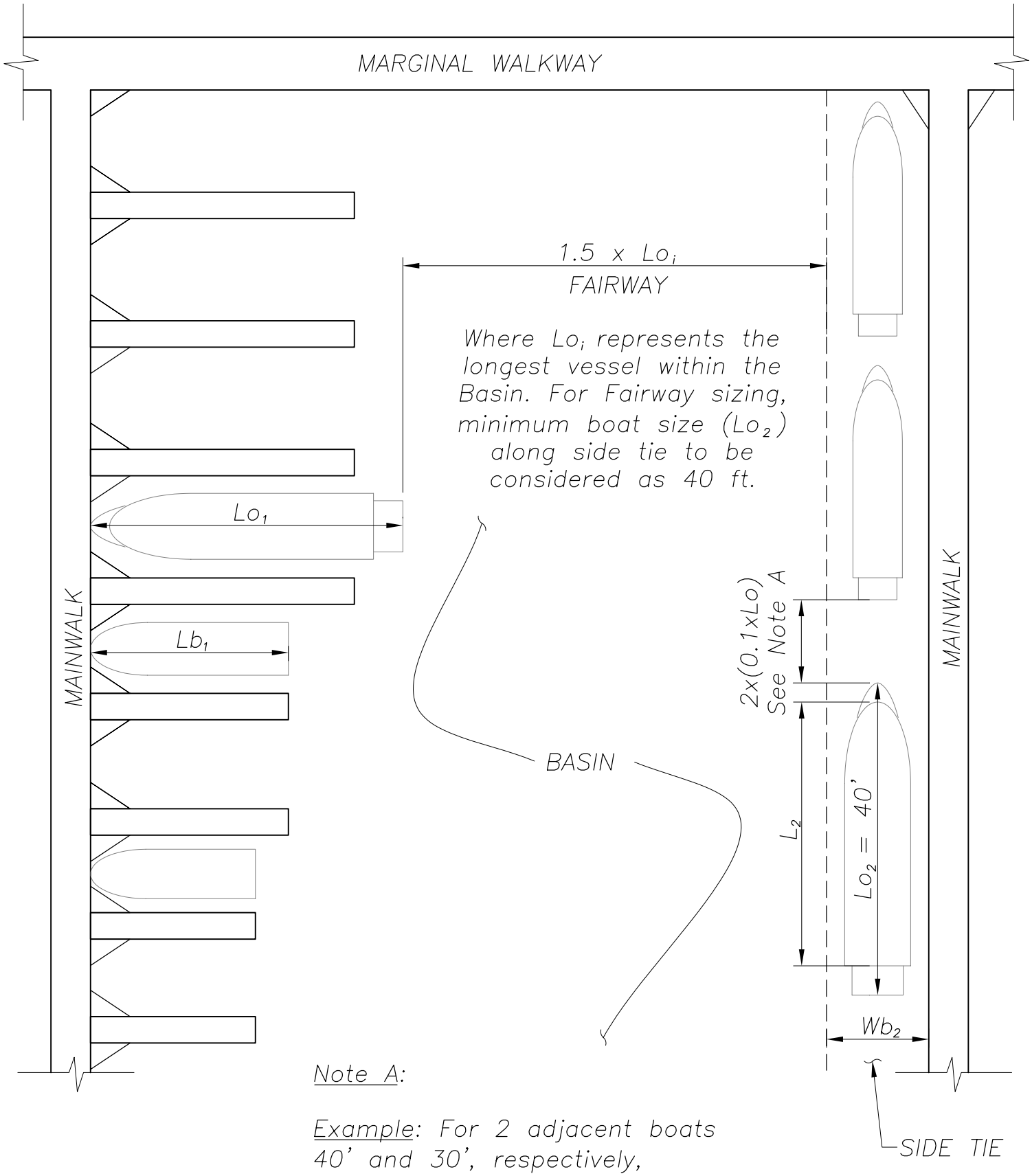


Where:

1) Lb_1 is greater than Lb_2
2) Lo_1 is greater than Lo_2

DOCK ARRANGEMENT
CASE 1

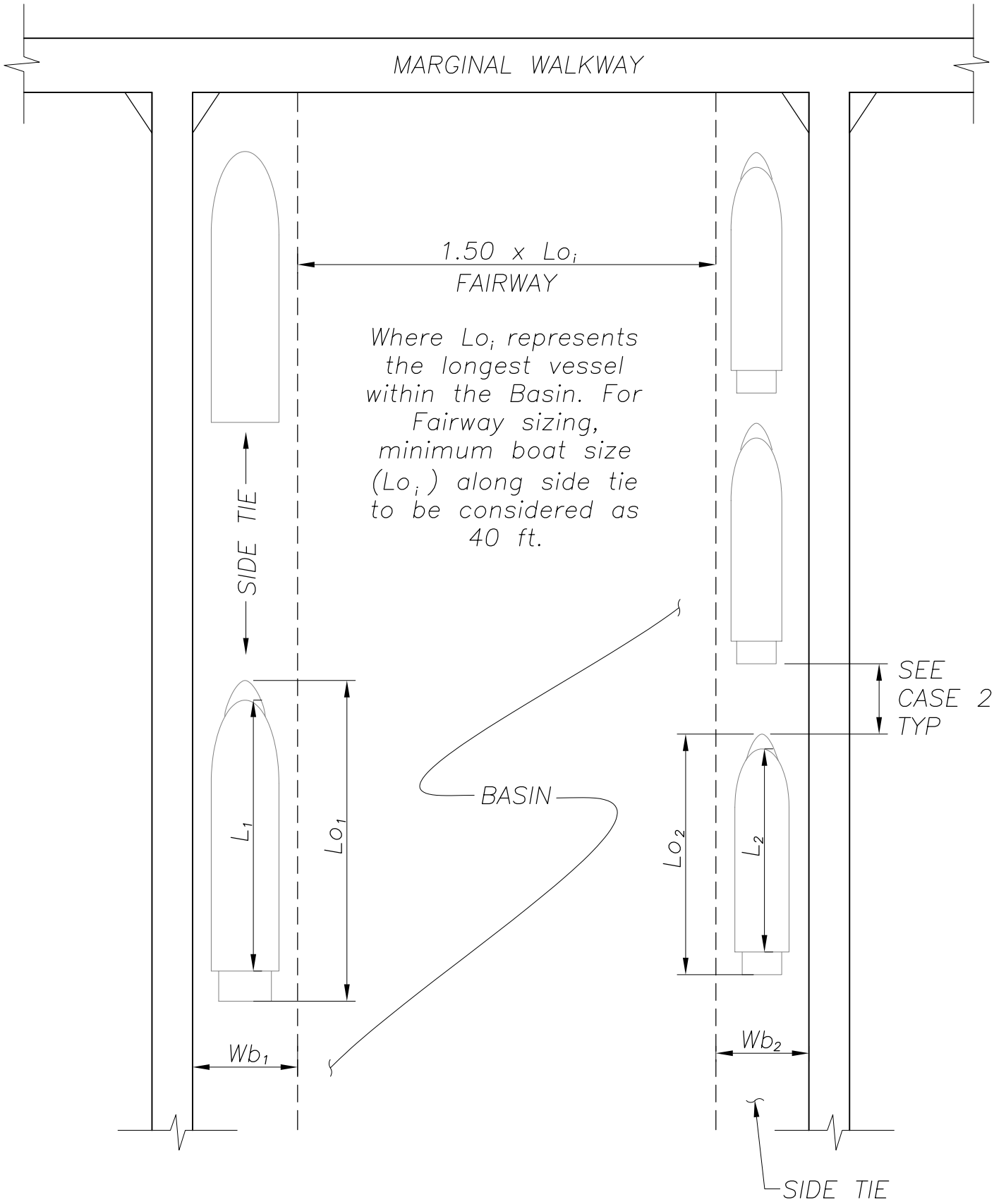
Fig. No. 3



Note A:

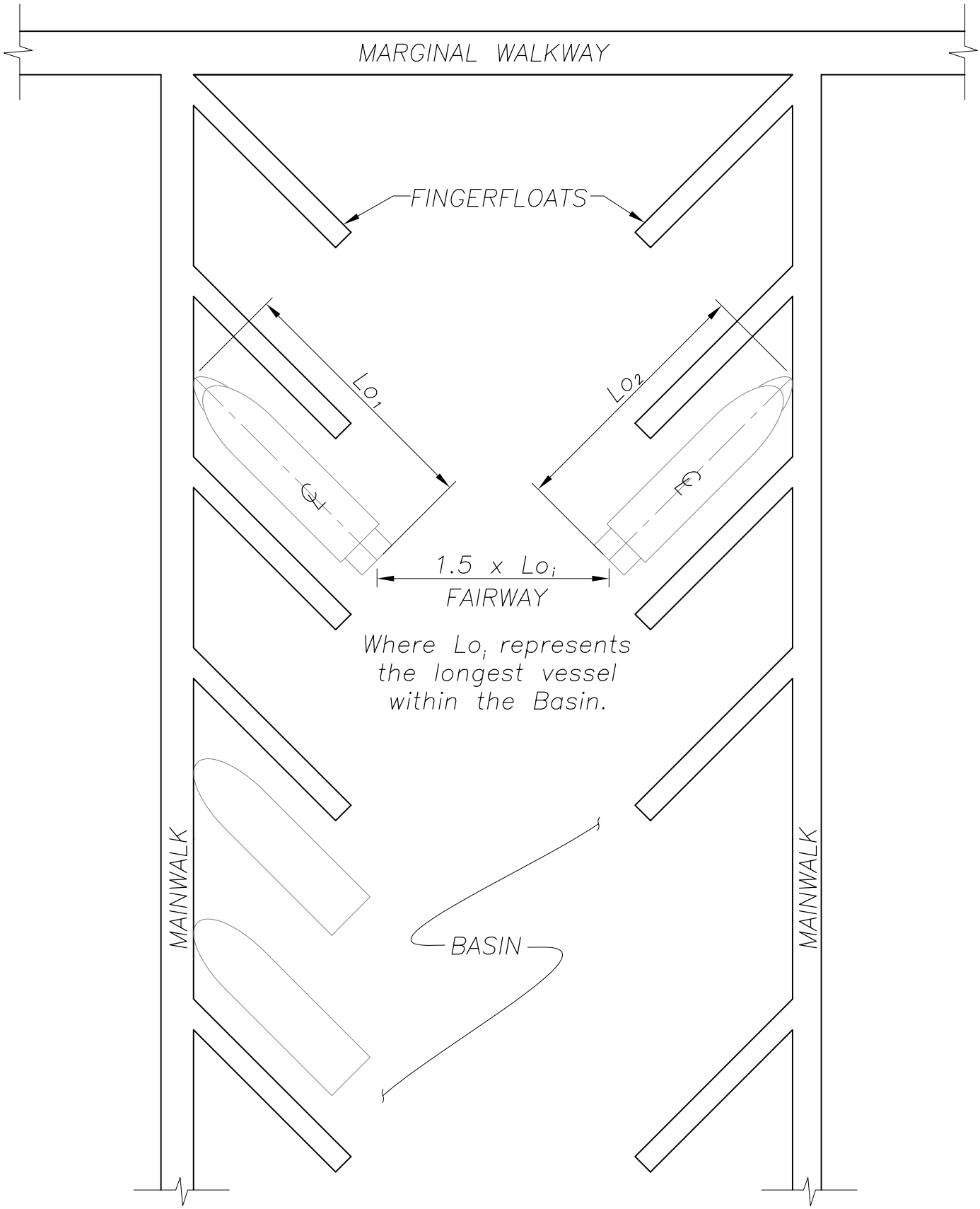
Example: For 2 adjacent boats 40' and 30', respectively, clearance = 2 x [0.1x40']= 8'–0"

DOCK ARRANGEMENT
CASE 2

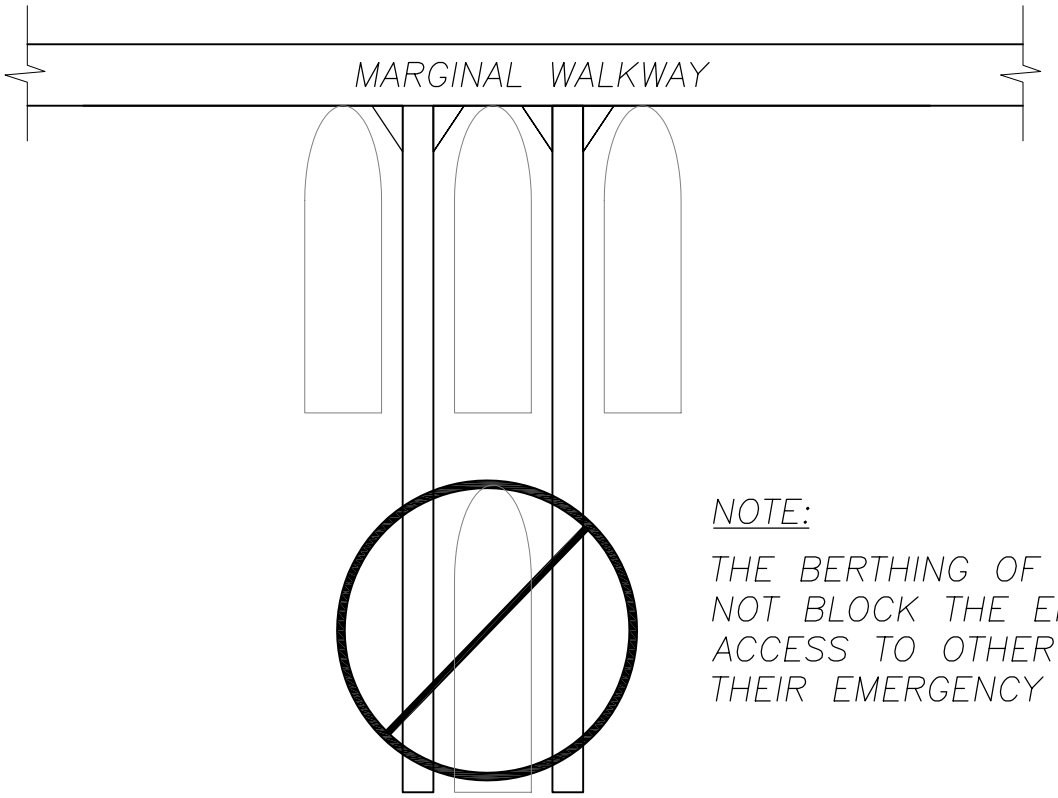


DOCK ARRANGEMENT
CASE 3

Fig. No. 5



DOCK ARRANGEMENT
CASE 4



NOTE:

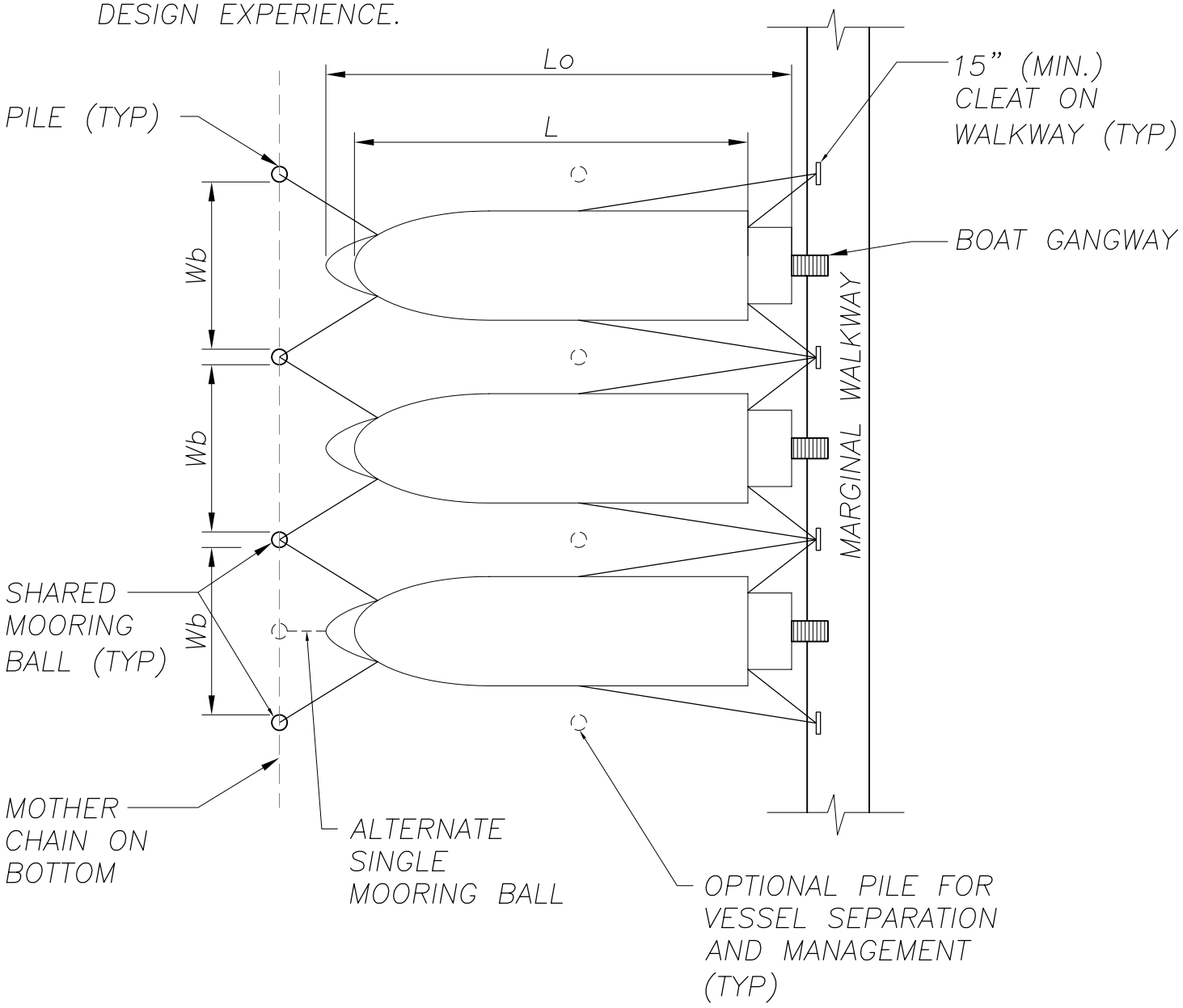
THE BERTHING OF BOATS CAN NOT BLOCK THE EMERGENCY ACCESS TO OTHER BOATS OR THEIR EMERGENCY EGRESS.

DOCK ARRANGEMENT
CASE 5

Fig. No. 7

NOTE:

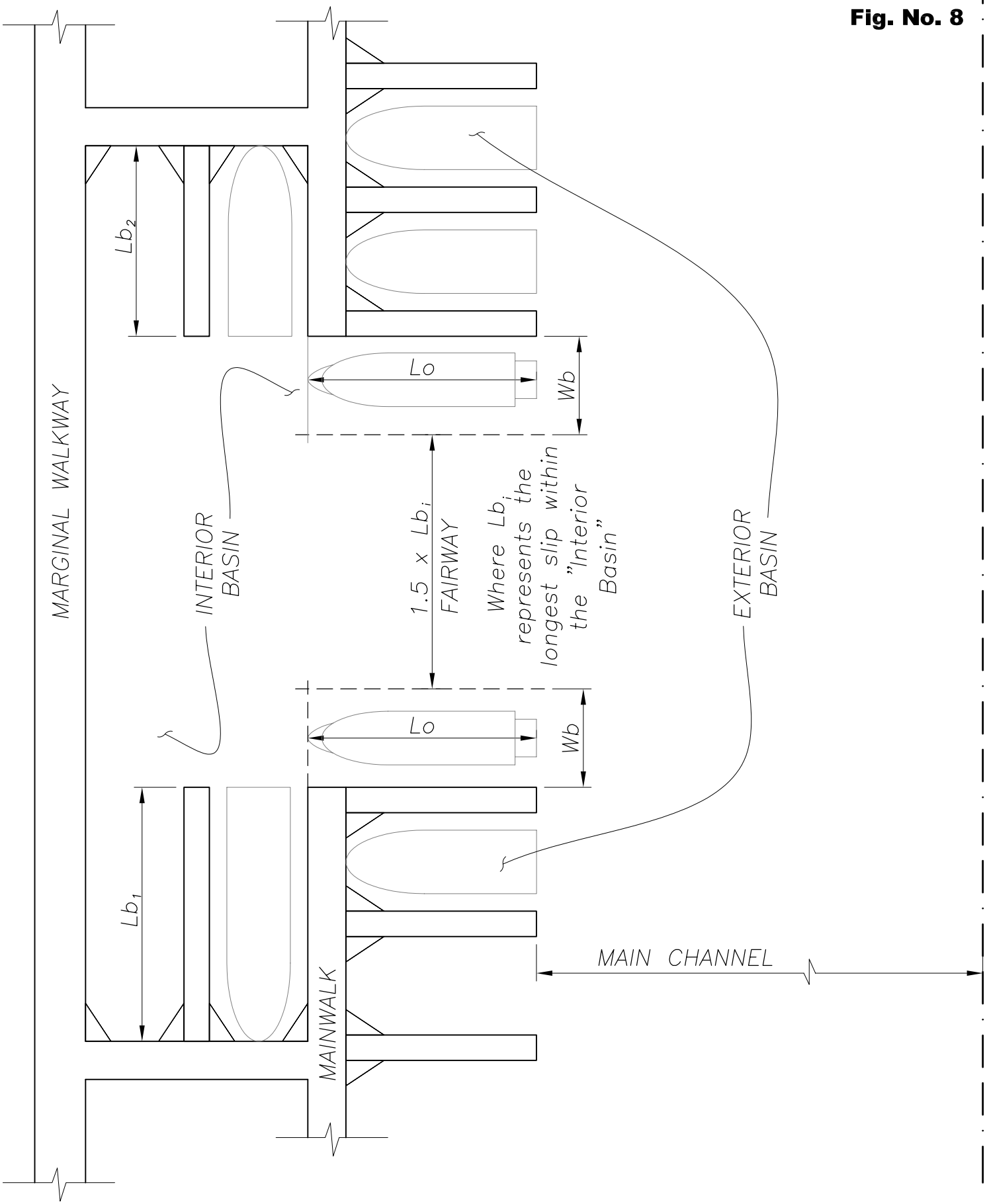
FOR VESSELS 40'–0" OR LARGER, SUPPORT PILES, MOORING SYSTEM, & ACCESS BRIDGES/GANGWAYS TO BE DESIGNED BY A LICENSED ENGINEER, REGISTERED IN THE STATE OF CALIFORNIA, WITH FLOATING DOCK DESIGN EXPERIENCE.



MEDITERRANEAN-STYLE MOORING

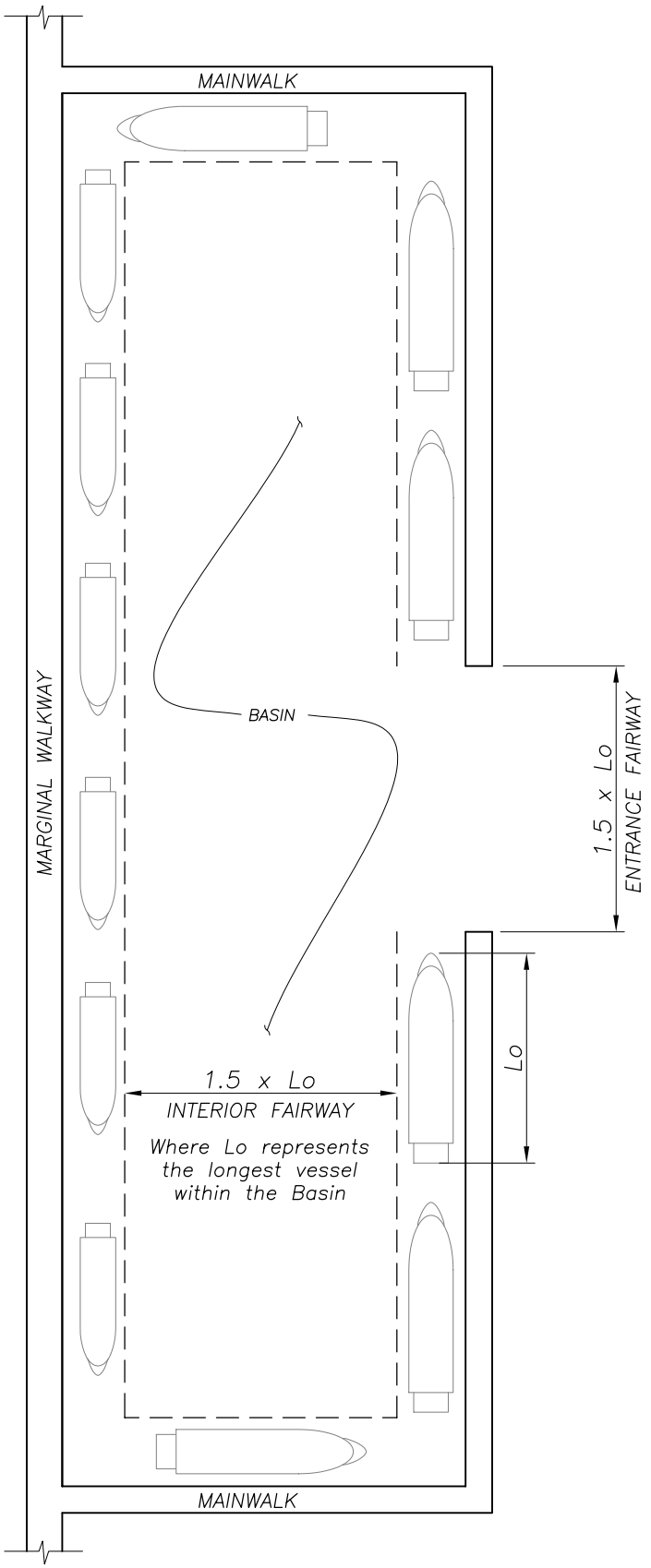
DOCK ARRANGEMENT CASE 6

Fig. No. 8

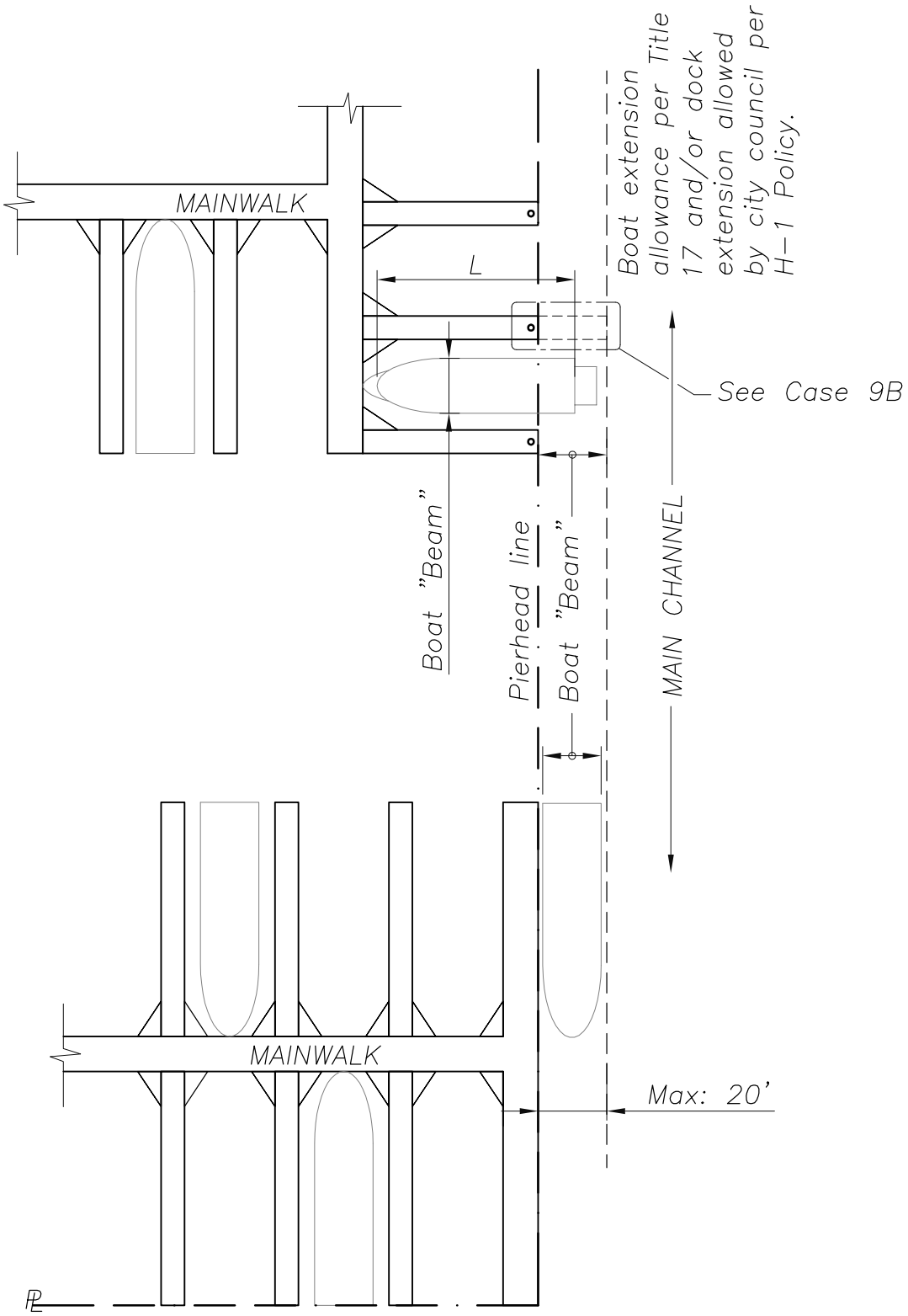


DOCK ARRANGEMENT
CASE 7

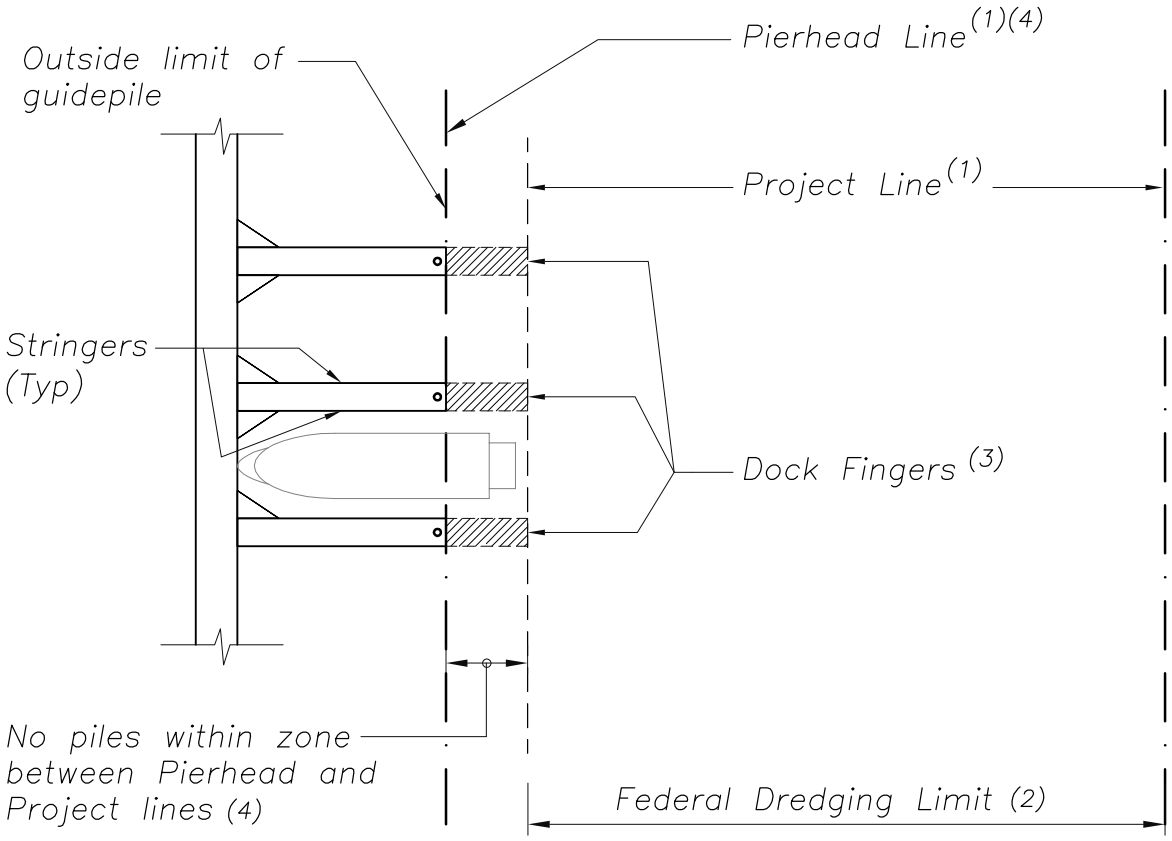
Fig. No. 9



DOCK ARRANGEMENT
CASE 8



DOCK ARRANGEMENT
CASE 9A



(1) *Pierhead and Project lines are established and managed by the federal government.*

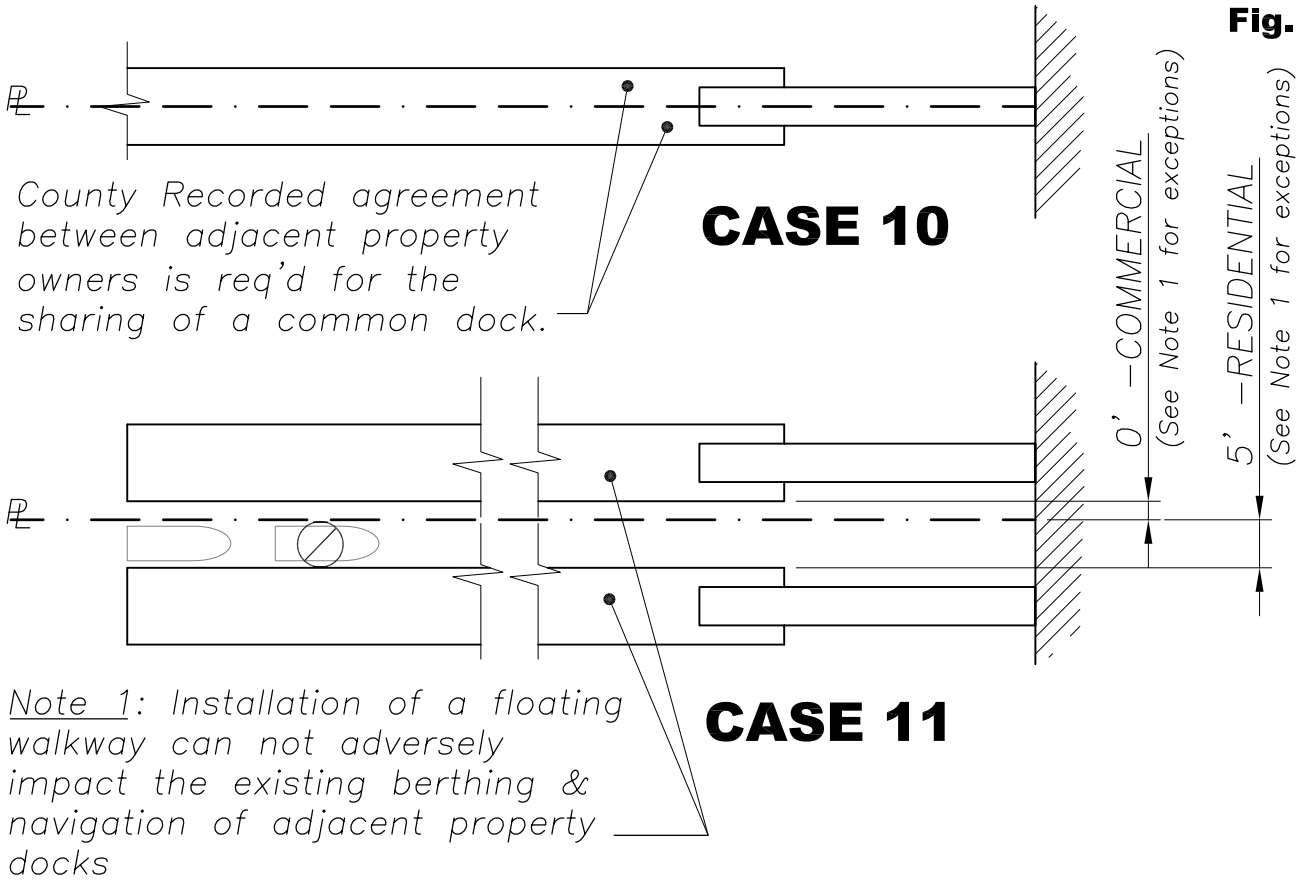
(2) *Portions of floating docks that extend into Federal Dredging Limit must be removed by the dock owner at dock owner's cost, when the federal goverment conducts periodic dredging operations.*

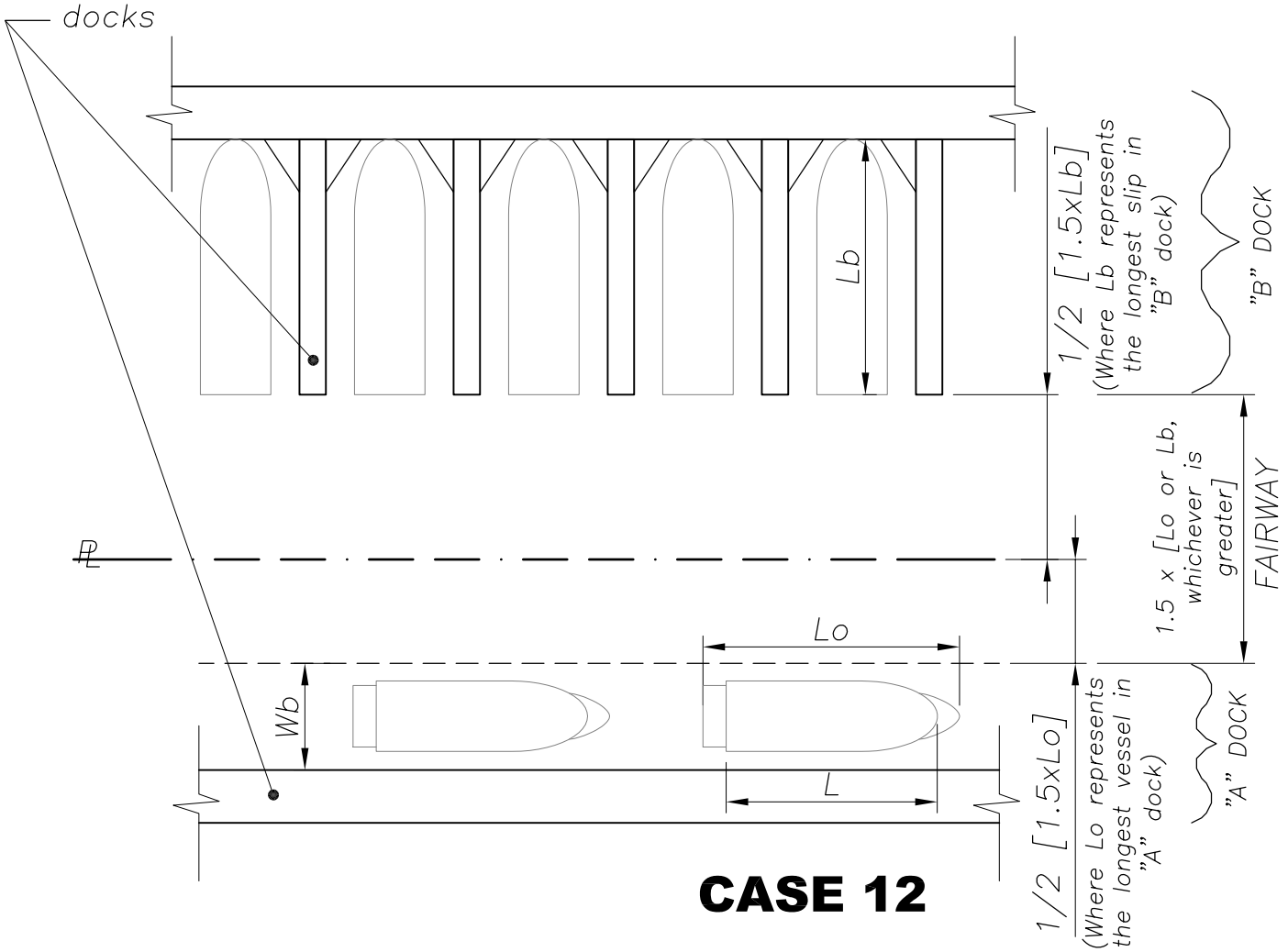
(3) *Dock fingers must be designed and constructed in such a way that provides structural integrity of the fingers to resist lateral impact and mooring line loads without guide piles at the finger ends. Continuous structural stringers and/or special moment and shear–carrying splices must be engineered and submitted to the Building Department for approval.*

(4) *The City council has allowed exceptions for dock constrcution beyond the Pierhead Lines as noted in Council Policy H–1.*

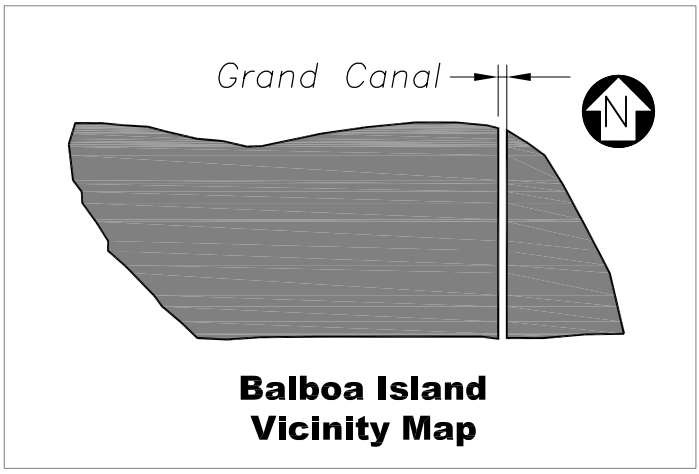
DOCK ARRANGEMENT
CASE 9B

Fig. No. 11

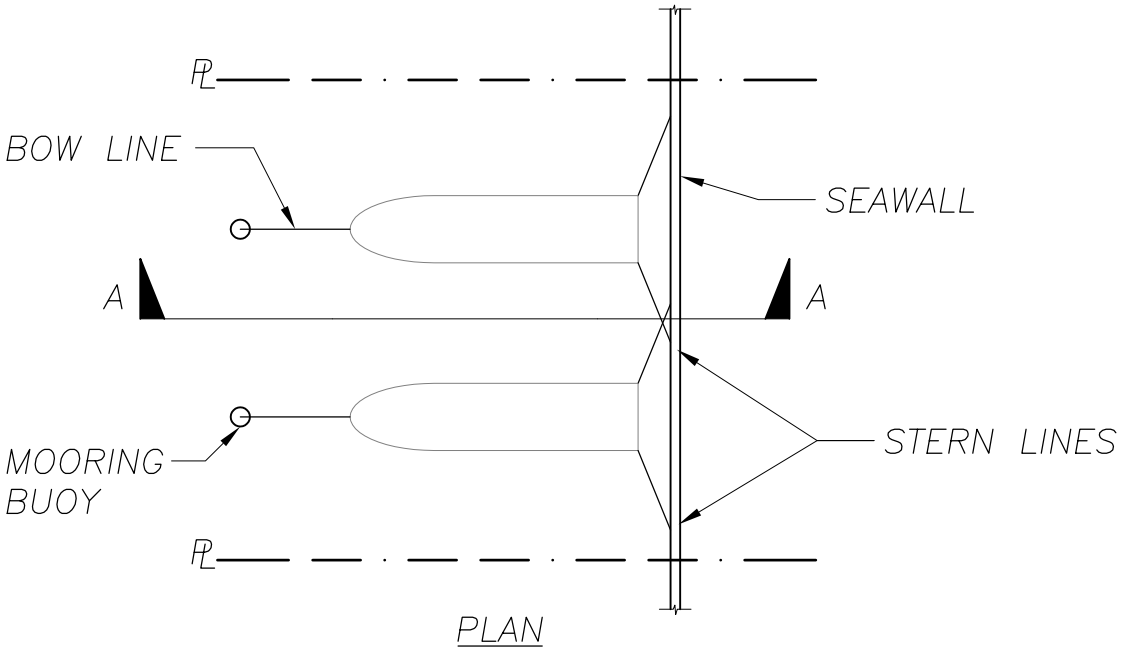




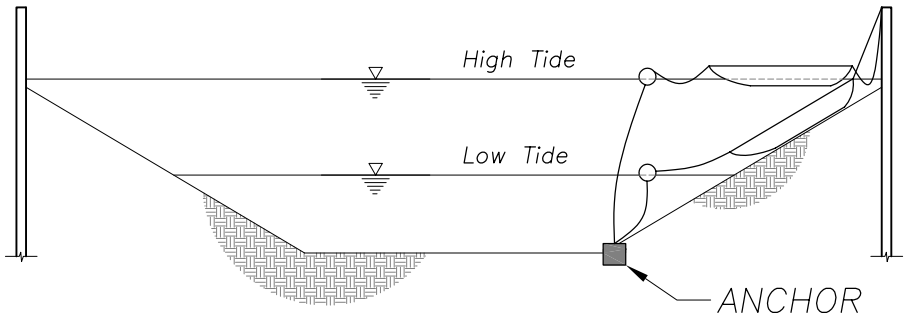
PROPERTY LINE CONDITIONS



Balboa Island
Vicinity Map



PLAN



SECTION A–A

DOCK ARRANGEMENT
CASE 13
(Grand Canal Only)

Exhibit A

Coastal Zone Permitting Process: City of Newport Beach/State/Federal: Flowchart

Revision Box			
Rev.	Date	Comment	By

City of Newport Beach Project Types[1]

I. Maintenance
II. Alteration
III. New Construction
IV. Dredging Projects[2]

City of Newport Beach Process

Applicant Preparation of Concept/Prelim. Drawings & Application Form
- Eelgrass Survey required

City of Newport Beach Harbor Resources Submittal (2 sets of Dwgs.)
Planning Dept.

Type II & III Projects

Approval-In-Concept
- Submittal Fee

Type I Project (Pile calculation required)

Production of Final Construction Documents[5]

City of Newport Beach Building Department Submittal
- 4 sets of drawings & calculations

B&S Review:
Projects Type II & III (formal review 2 to 4 wks)
Project Type I (over-the-counter review)
Resubmittals, if necessary

City of Newport Beach Fire Department Submittal

Fire Dept. Review/ Comment Period
Resubmittals if necessary

Fire Department Approval

City of Newport Beach Bldg. Dept. Final Approval/Issue Permit
- Fee Payment

Construction Begins

City of Newport Beach Inspections

City of Newport Beach Harbor Resources Dept.

See Note 5

California Coastal Commission Process

California Coastal Commission Submittal ($200 fee)

Grain Size Test[4]
Bio-Assay of Sediments [4]
Hydrographic Survey or Spot Soundings
Geotechnical Report - (may be waived for residential projects)
Marine Biology Survey/Report (eelgrass, caulerpa, etc.)
Dept. of Fish & Game Coordination
State Lands Comm. Coordination
Tidal Flow/Erosion Potential - Optional Study
Sedimentation Characteristics - Option Study
Litteral Flow Characteristics - Option Study

Review & Assignment Period (30 days)

Planner determines if application is complete
Resubmittals, if necessary

Staff Report Prepared with "Conditions of Approval"

Coastal Commission Meeting

Coastal Approval w/Conditions

Submit Documents responding to special conditions (Bio-Survey Amendment)

Coastal Permit Issued

Coastal Approval (sent to Applicant, Owner's Rep., and City of Newport Beach Harbor Resources Dept.)

California Regional Water Quality Control Board Process

CA Regional Water Quality Control Board Submittal ($500 fee)

Application Review & Assignment Period (30 days) Public Notice (3 weeks)

Planner determines if application is complete
Resubmit Additional Info to Planner

Issue Permit (30 days)

CRWQCB Approval

Provide copy of CRWQCB Approval

U.S. Army Corps of Engineers Process

Army Corp of Engineers Submittal (No Fee)

ACOE Review Period

Marine Fisheries Review
U.S. Fish & Wildlife Review
EPA (Dredging projects only)

Resubmittal & Response to Inquiries

Public Advertising Period

Response to Public Comments if required

ACOE Approval with Conditions

Submit Documents responding to conditions of approval

Final Signed ACOE Permit

County of Orange Process

County of Orange Tidelands Encroachment Permit Application[3]

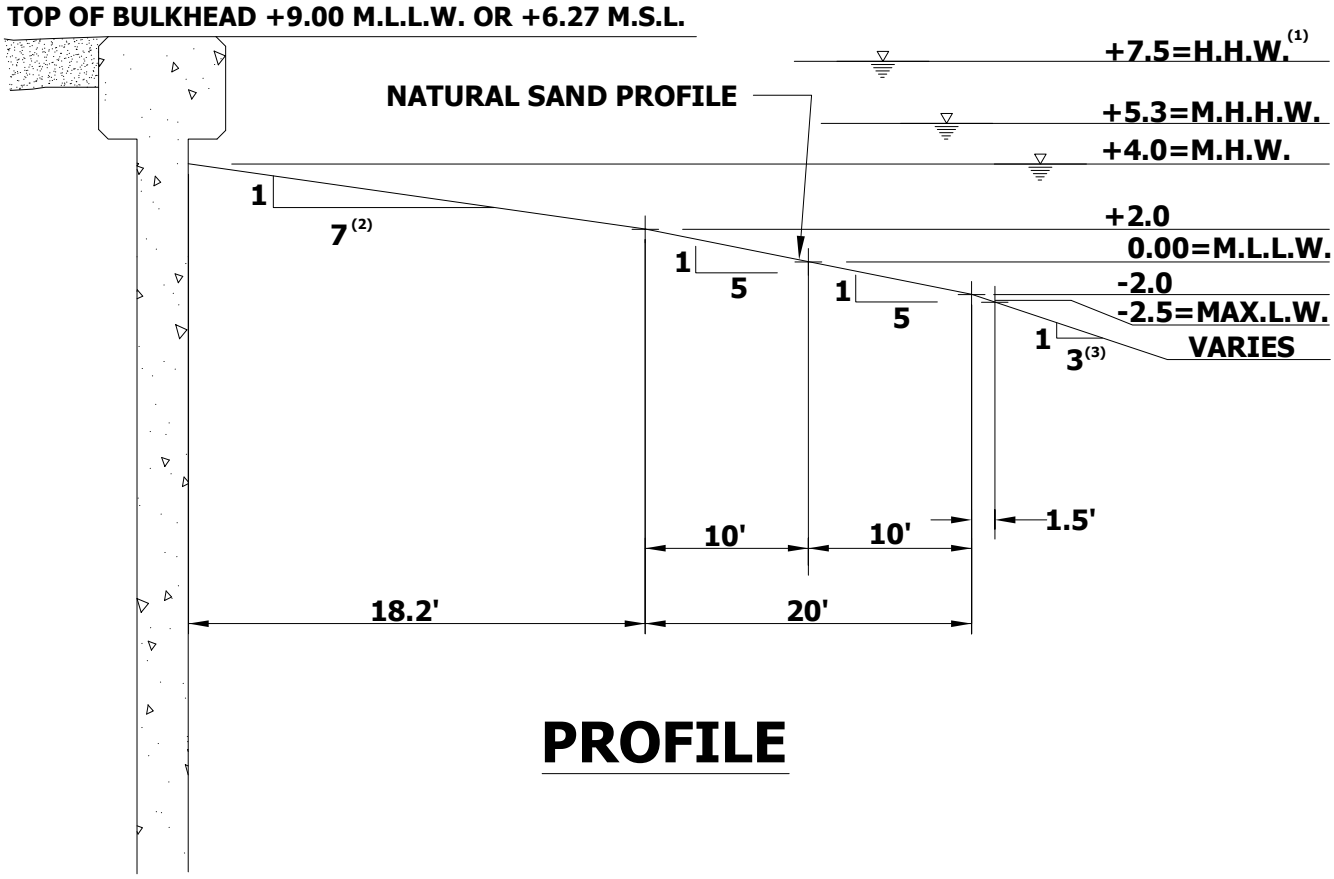
County Review and Approval
- Fee Assessment

To Applicant, Owner's Rep., & Harbor Resources

Flowchart Disclaimer:
This Flowchart is presented for general information purposes, and is not intended to be interpreted as the definitive process, or representative of each and every step in the permit process. This process is subject to change based on periodic development of public and governmental agency policies.

NOTES:

(1) See "Harbor Permit Policy (H-1) for City of Newport Beach Project type descriptions.
(2) Dredging projects are subject to a separate review/approval and permitting process.
(3) Verify w/Harbor Resources Division if project site is subject to "Tidelands" jurisdiction.
(4) Dredging Projects, only
(5) Alternatively, this task can be delayed until provisional approvals have been obtained from State & Federal Agencies



PROFILE

NOTES:

1. **WHEN COUPLED WITH STORM SURGE AND HIGHEST HIGH WATER LEVEL, THE H.H.W. ELEVATION OF +7.5 MAY BE OVER-TOPPED AND WATER ELEVATIONS APPROACHING +8.5 COULD OCCUR.**
2. **USE 8 TO 1 FOR TRAVELED BEACH AREAS.**
3. **USE 4 TO 1 AROUND NEWPORT ISLAND DUE TO HIGH SILT CONTENT.**

DATUM: M.L.L.W. (DATUM IS NGVD 29; FOR NAVD 88 DATUM, ADD 2.34') REV. 11/07

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

NATURAL SAND PROFILES IN NEWPORT HARBOR

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-598-L

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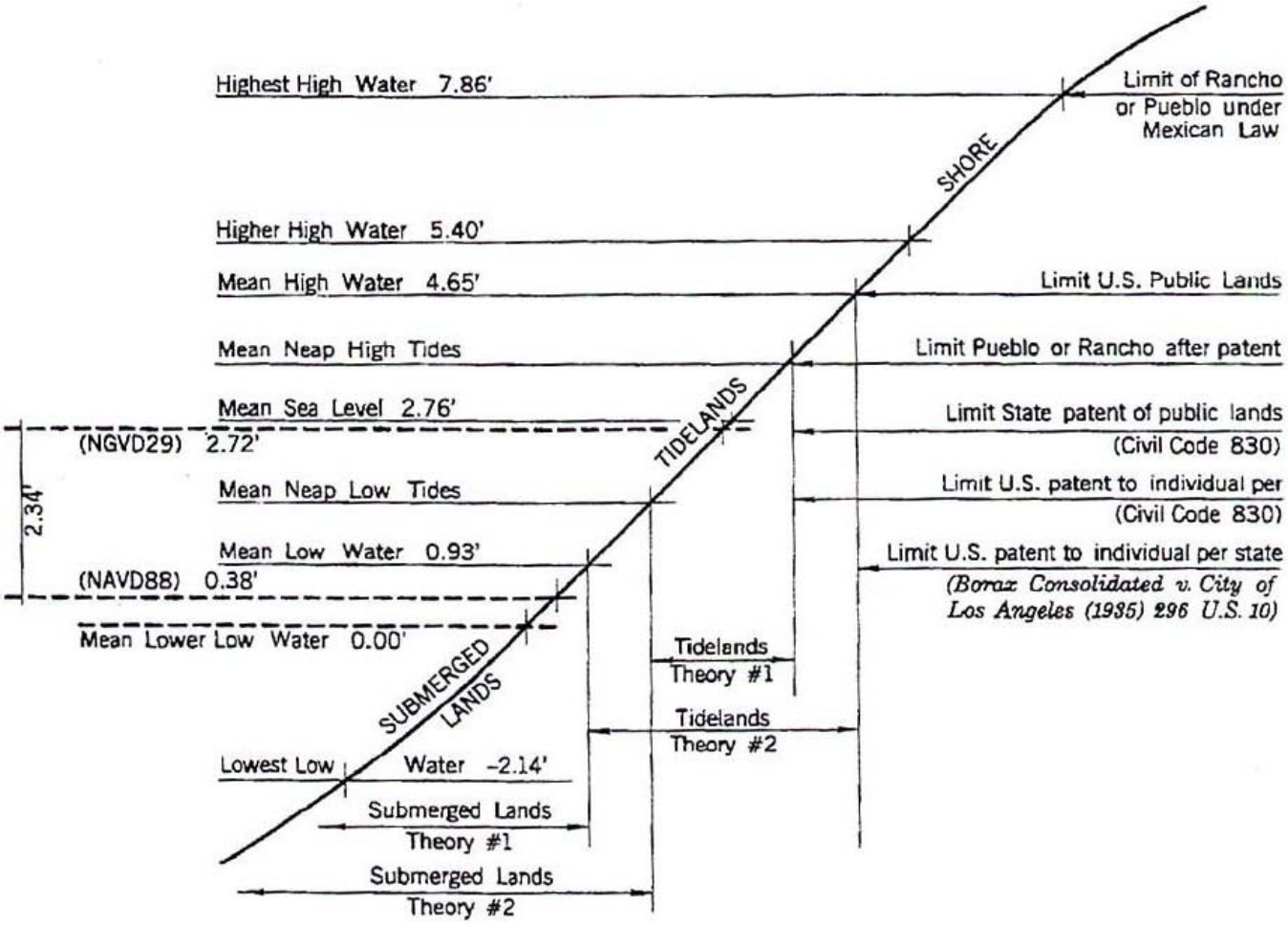
Tide Planes and Tidal Datum Relationships (U. S. Survey Foot)



Theory #1 - Tidelands lie between mean high and mean of low neap tides.

Theory #2 - Tidelands lie between mean of all high and mean of all low tides.

Information was taken from National Ocean Service (NOS), Office of Ocean and Earth Science (OES), Tidal Datum sheet - Publication Date 07/17/89

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

TIDE PLANES & TIDAL DATUM RELATIONSHIPS (U.S. SURVEY FOOT)

APPROVED: _____
BUILDING DIRECTOR

Drawn: R OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-599-L

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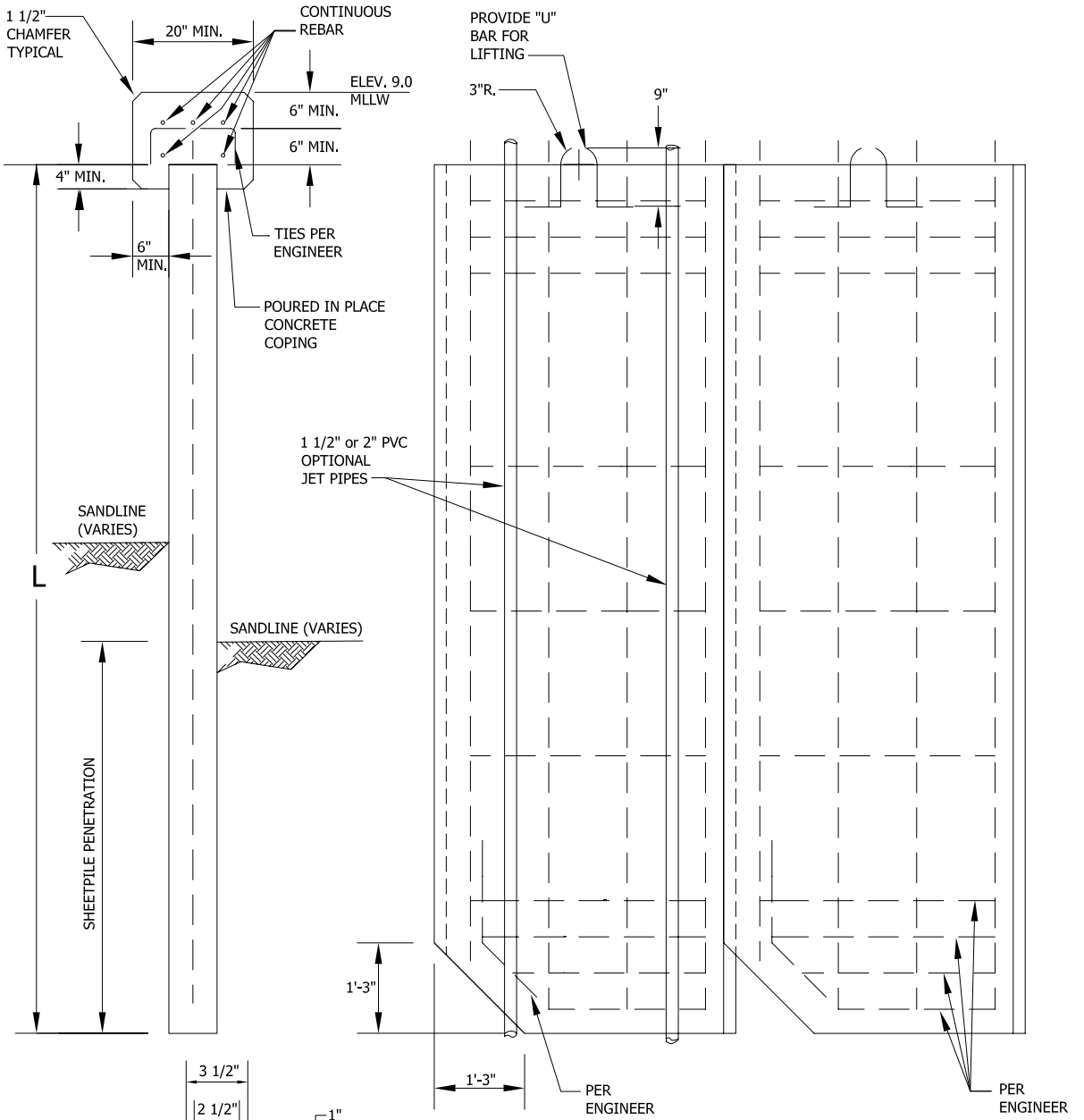

NOTES:

1. **PANELS TO HAVE A SMOOTH FINISH ON BOTH SIDES.**
2. **REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3" AND BE EPOXY-COATED PER ASTM A-934. GRADE 60 BARS SHALL BE USED.**
3. **AS AN OPTION, APPLICANT MAY USE PRESTRESSED CONCRETE SHEETS PER STD. 611-L.**
4. **USE OF JETTING TECHNIQUES MAY REQUIRE SPECIAL PERMITS AND MITIGATION MEASURES BY LOCAL, STATE, AND FEDERAL AGENCIES.**
5. **CONCRETE: f'c = 4,500 PSI (MIN.) AND W/C RATIO = 0.45 (MAX.)**
6. **PANEL MUST BE DESIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER.**

REV. 4/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

PRECAST REINFORCED CONCRETE GROIN PANEL

(NOT FOR BULKHEAD USE)

APPROVED: _____
BUILDING DIRECTOR

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-600-L

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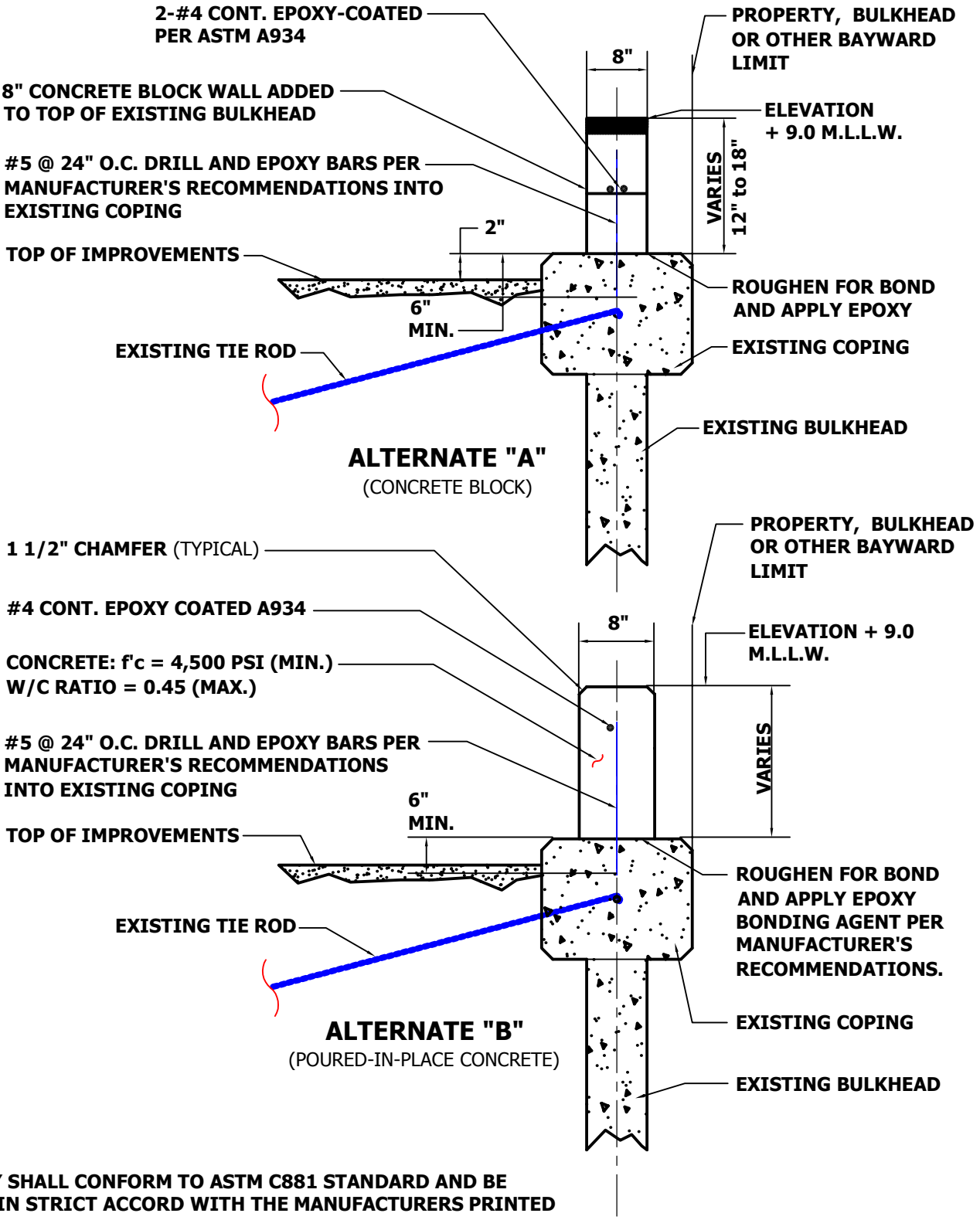

NOTE:

EPOXY SHALL CONFORM TO ASTM C881 STANDARD AND BE USED IN STRICT ACCORD WITH THE MANUFACTURERS PRINTED INSTRUCTIONS.

REV. 11/07

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

DETAIL FOR RAISING BULKHEADS

APPROVED: _____
BUILDING DIRECTOR

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-601-L

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NOT USED

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED:

Drawn: ---
Date: ---

Scale: ---

DRAWING NO. STD-602-L

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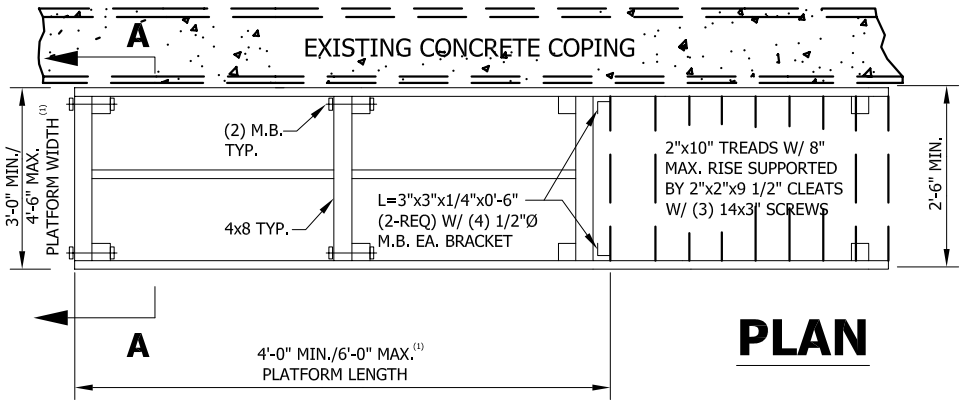
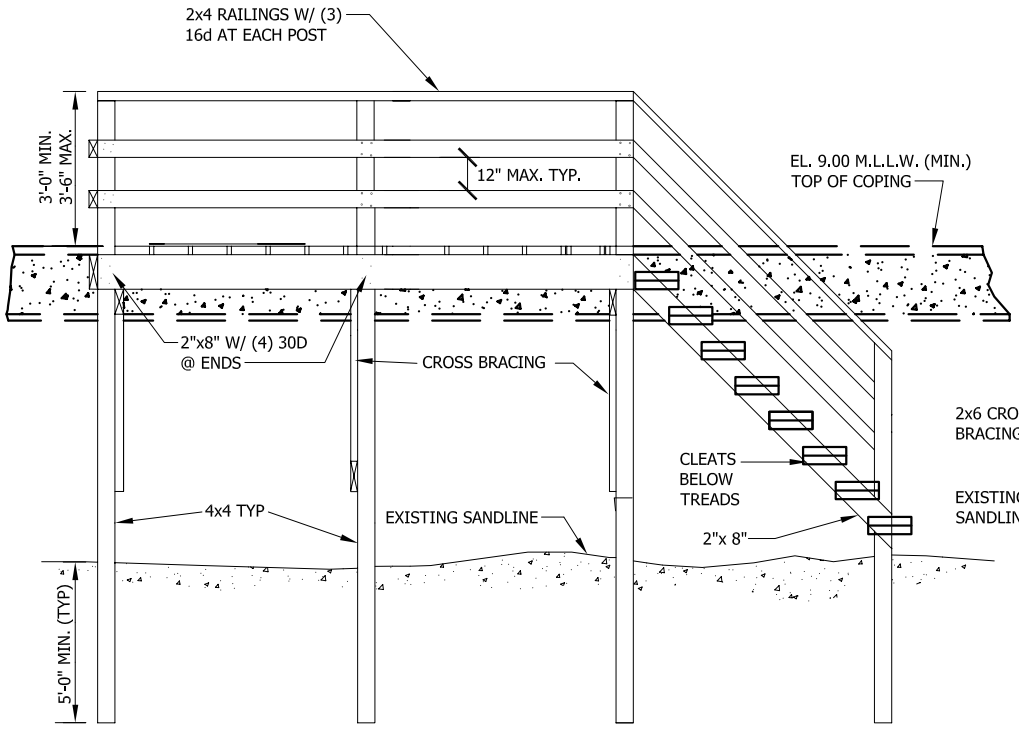
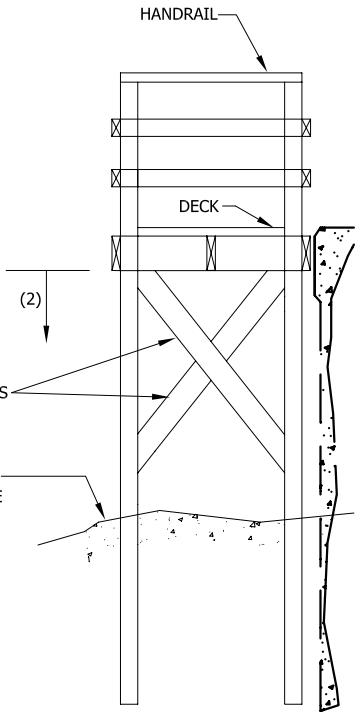


PLAN



ELEVATION



SECTION A-A

NOTES

1. **OVERALL PLATFORM SIZE (NOT INCLUDING STEPS) SHALL NOT BE GREATER THAN 27 SQ. FT.**
2. **ALL STRUCTURAL PLATFORM SUPPORTING MEMBERS BELOW ELEV 7.5 MLLW SHALL BE SUITABLE FOR MARINE ENVIRONMENT SUBMERSION INTO HARBOR WATERS AS WELL AS SUBTERRANEAN EMBEDMENT INTO THE MUDFLATS. TREATED LUMBER IS NOT ALLOWED FOR THIS SERVICE, UNLESS ENCAPSULATED IN AN IMPERVIOUS MEMBRANE. ALTERNATIVE OR COMPOSITE MATERIALS OR CONSTRUCTION CAN BE SUBMITTED FOR CITY APPROVAL.**
3. **PLATFORM SHALL NOT BE ANCHORED TO COPING.**
4. **PRESERVATIVE TREATMENT FOR ALL LUMBER USED ABOVE ELEV 7.5 MLLW SHALL MEET STATE OF CALIFORNIA REQUIREMENTS.**
5. **ALL METAL CONNECTION PLATES SHALL BE GALVANIZED OR STAINLESS STEEL. ALL FASTENERS (LAG BOLTS, SCREWS AND/OR NAILS) SHALL BE GALVANIZED STEEL, STAINLESS STEEL OR A PRODUCT SPECIFICALLY DESIGNED TO RESIST CORROSION IN THE MARINE ENVIRONMENT, AND APPROVED BY THE CITY.**
6. **NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.**

REV. 4/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED:

GRAND CANAL PLATFORM & STEPS

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-603-L

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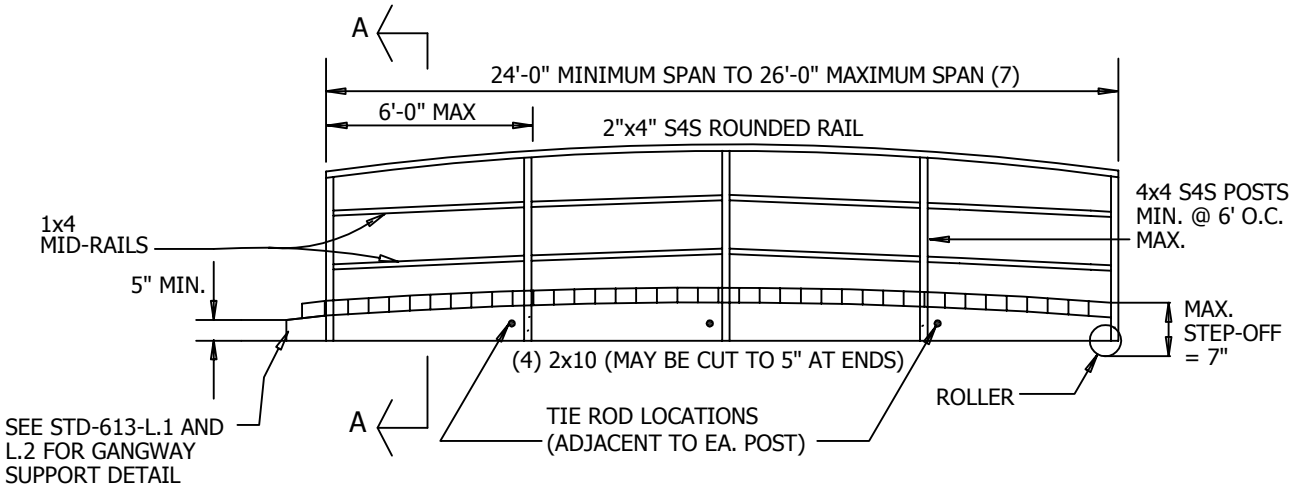
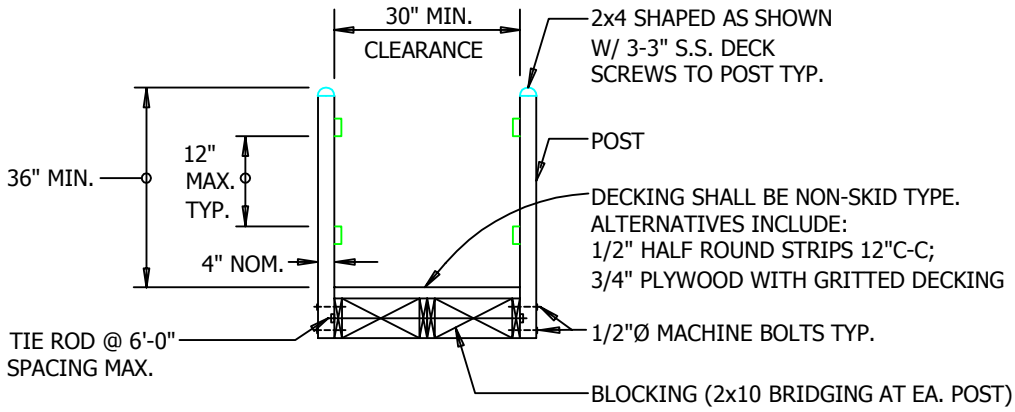


GANGWAY (USING STANDARD SAWN LUMBER STRINGERS)
SIDE ELEVATION (MAX. SLOPE FOR RESIDENTIAL USE = 1:2.5)



SECTION A-A

NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL D.F. WITH A STATE OF CALIFORNIA-APPROVED PRESERVATIVE. (ALLOWABLE BENDING STRESS, Fb = 1500 p.s.i.).
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A FIELD-APPLIED COAT OF PRESERVATIVE TREATMENT, PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT-DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. OPTIONAL GANGWAY TYPES:
   ALUMINUM GANGWAYS WITH NON-SKID WALKING PLANKS ARE RECOMMENDED AS A SUBSTITUTE FOR THE DETAILS NOTED IN THIS STANDARD. ALUMINUM GANGWAYS ARE NORMALLY PROVIDED BY QUALIFIED DESIGN/BUILD ALUMINUM FABRICATORS.
7. FOR LENGTHS OVER 26', APPLICANT TO PROVIDE STRUCTURAL ENGINEERING CALCULATIONS.

REV. 11/07

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

SINGLE OR JOINT RESIDENTIAL USE GANGWAY

APPROVED:

BUILDING DIRECTOR

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-604-L

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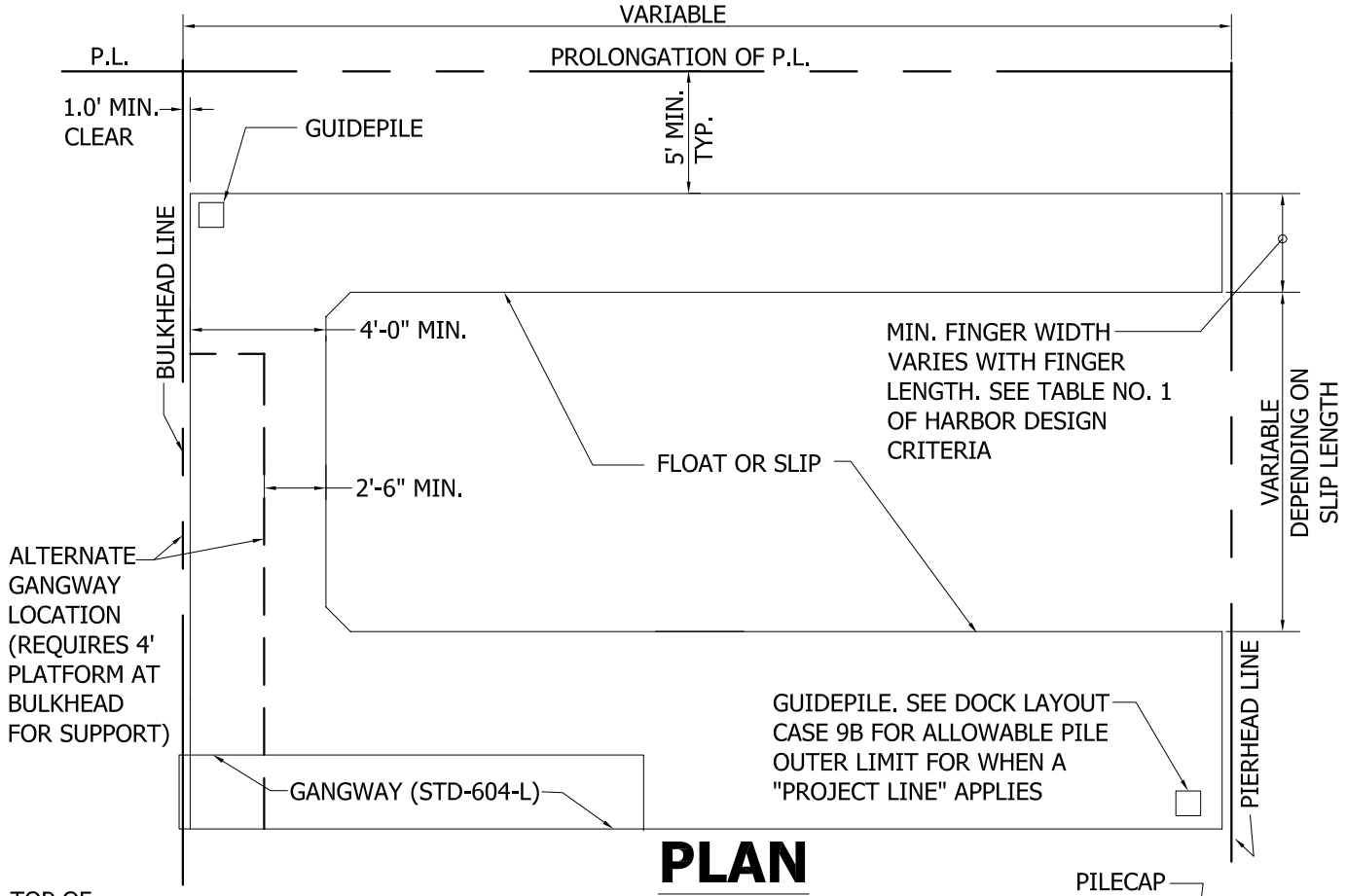
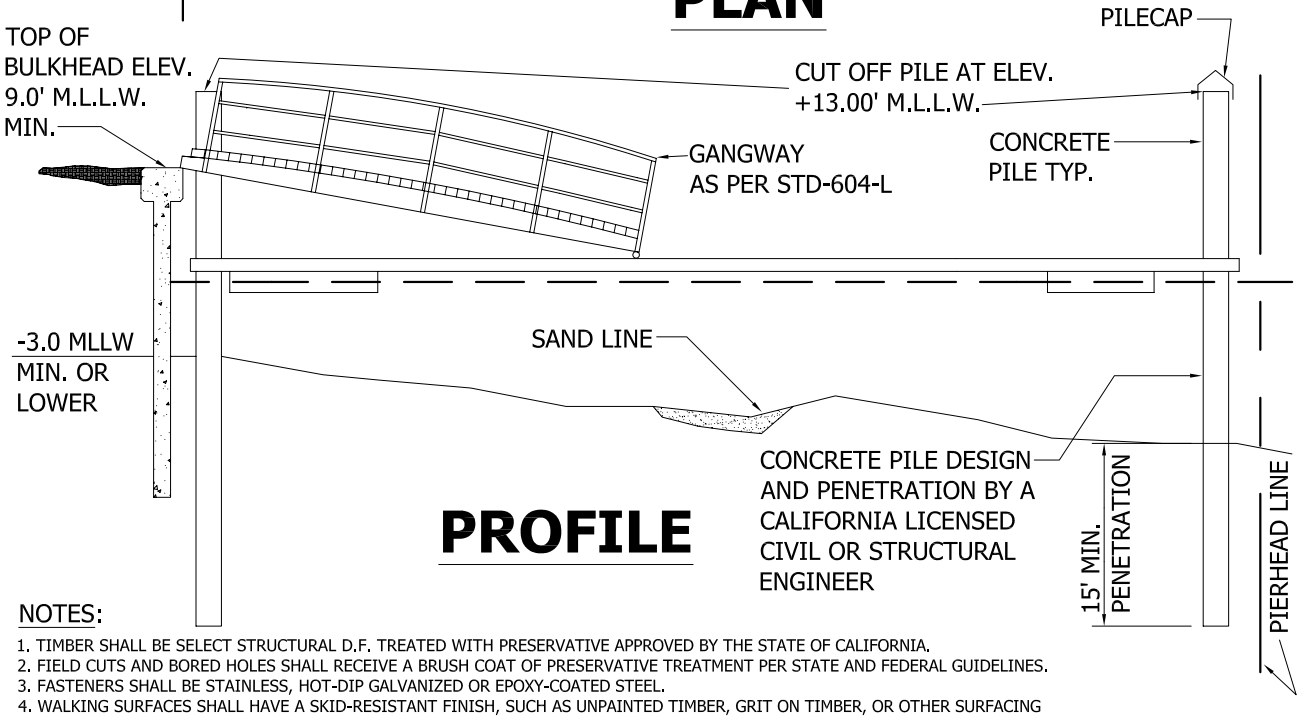


PLAN



PROFILE

NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL D.F. TREATED WITH PRESERVATIVE APPROVED BY THE STATE OF CALIFORNIA.
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A BRUSH COAT OF PRESERVATIVE TREATMENT PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT-DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE, BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. SEE STD-604-L & HARBOR DESIGN CRITERIA FOR GANGWAY DESIGN REQUIREMENTS.
7. LOCATION OF PLATFORM, GANGWAY, SLIP & FLOATS IS OPTIONAL PROVIDING PROPER SETBACKS ARE MAINTAINED.

REV. 7/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

SINGLE RESIDENTIAL USE FLOAT WITHOUT PIER

Drawn: R OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-605-L

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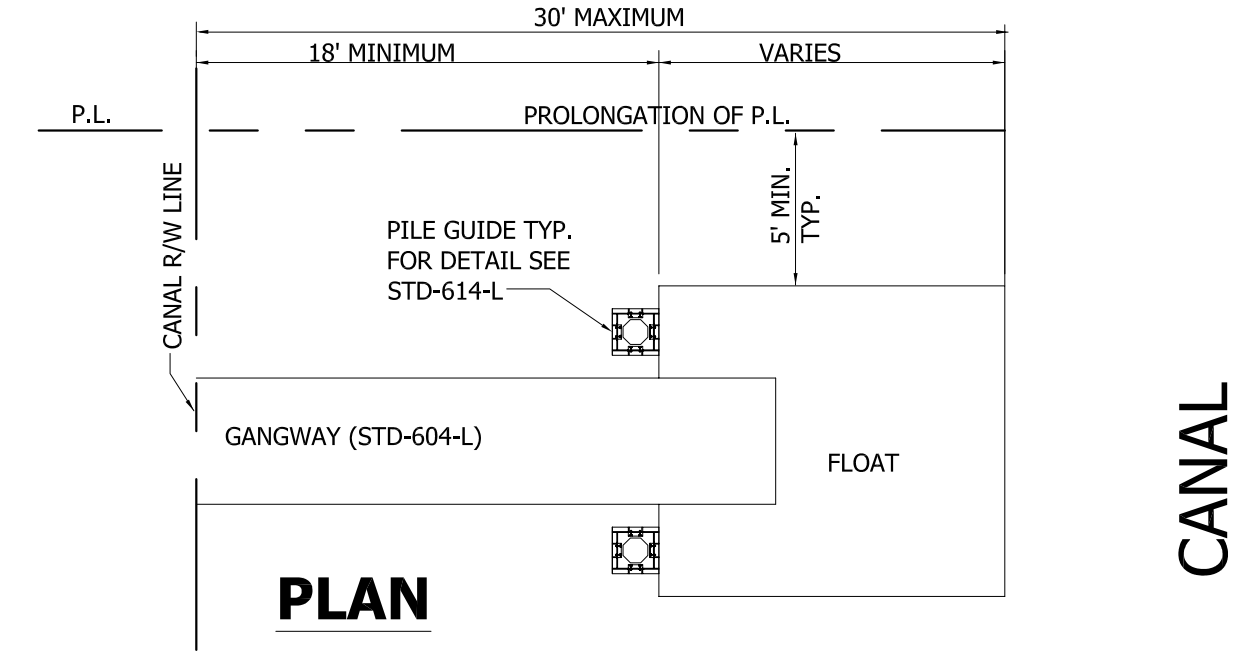
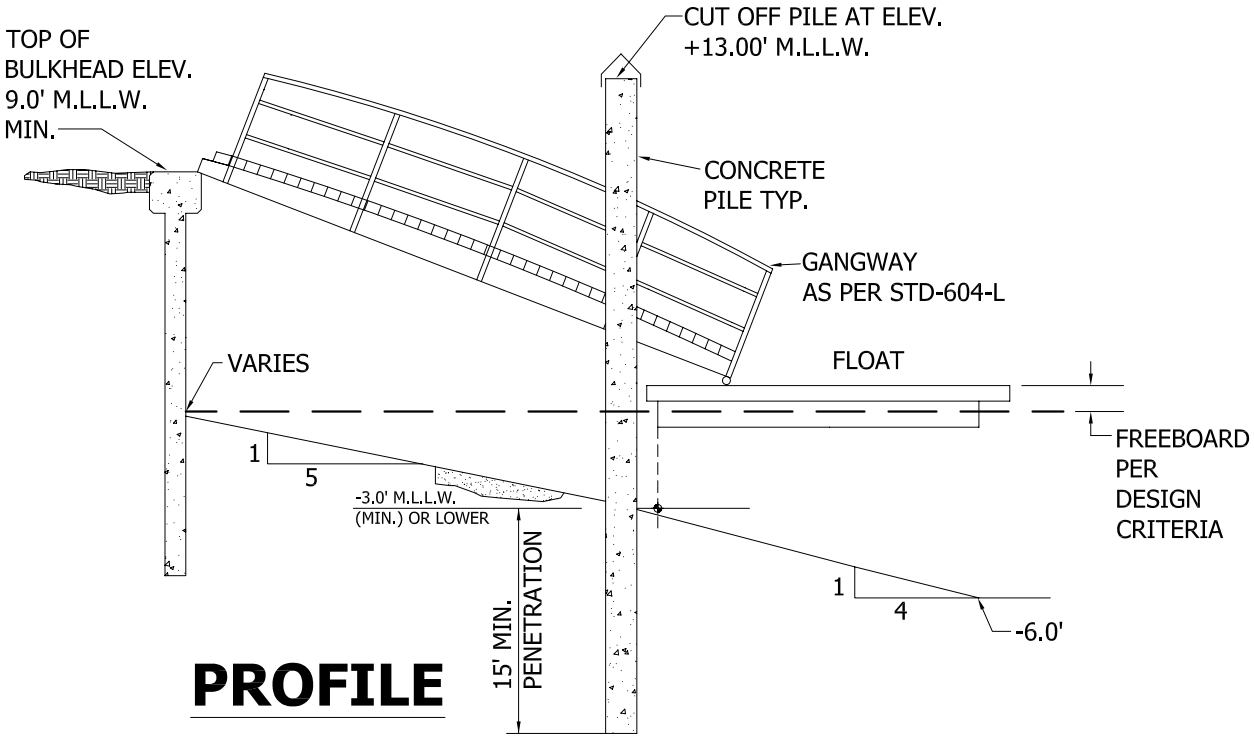


PLAN



PROFILE

NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL D.F. TREATED WITH PRESERVATIVE APPROVED BY THE STATE OF CALIFORNIA.
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A BRUSH COAT OF PRESERVATIVE TREATMENT PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT-DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE, BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. SEE STD-604-L & HARBOR DESIGN CRITERIA FOR GANGWAY DESIGN REQUIREMENTS.
7. LOCATION OF PLATFORM, GANGWAY, SLIP & FLOATS IS OPTIONAL PROVIDING PROPER SETBACKS ARE MAINTAINED.

REV. 7/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

SINGLE RESIDENTIAL USE FLOAT
WEST NEWPORT CHANNELS

Drawn: R OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-606-L

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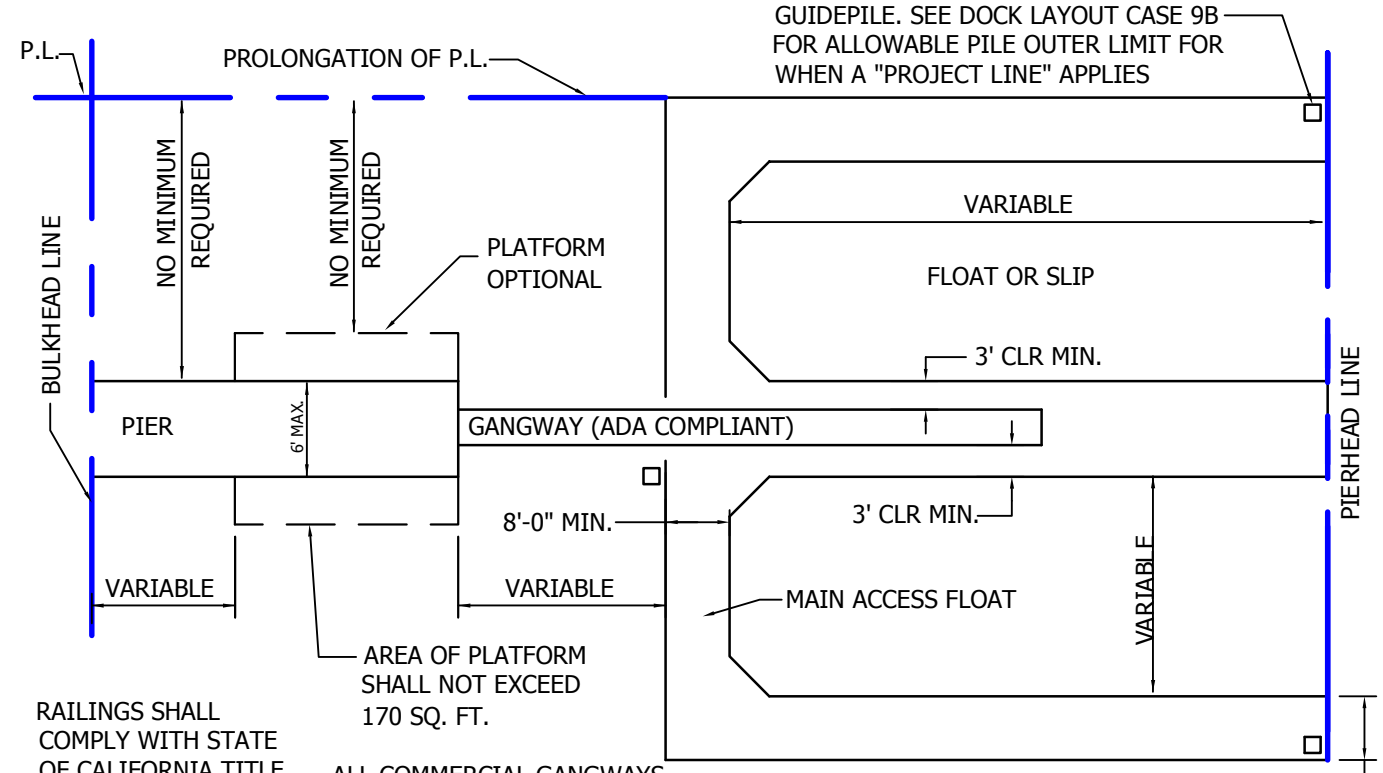

NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL D.F. TREATED WITH PRESERVATIVE APPROVED BY THE STATE OF CALIFORNIA.
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A BRUSH COAT OF PRESERVATIVE TREATMENT PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT-DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE, BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. COMMERCIAL PIERS, GANGWAYS, FLOATS AND PILES TO BE DESIGNED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER.
7. LOCATION OF PLATFORM, GANGWAY, SLIP & FLOATS IS OPTIONAL PROVIDING PROPER SETBACKS ARE MAINTAINED.

REV. 11/07

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

COMMERCIAL PIER & FLOAT INSTALLATION

APPROVED:

BUILDING DIRECTOR

Drawn: R OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-607-L

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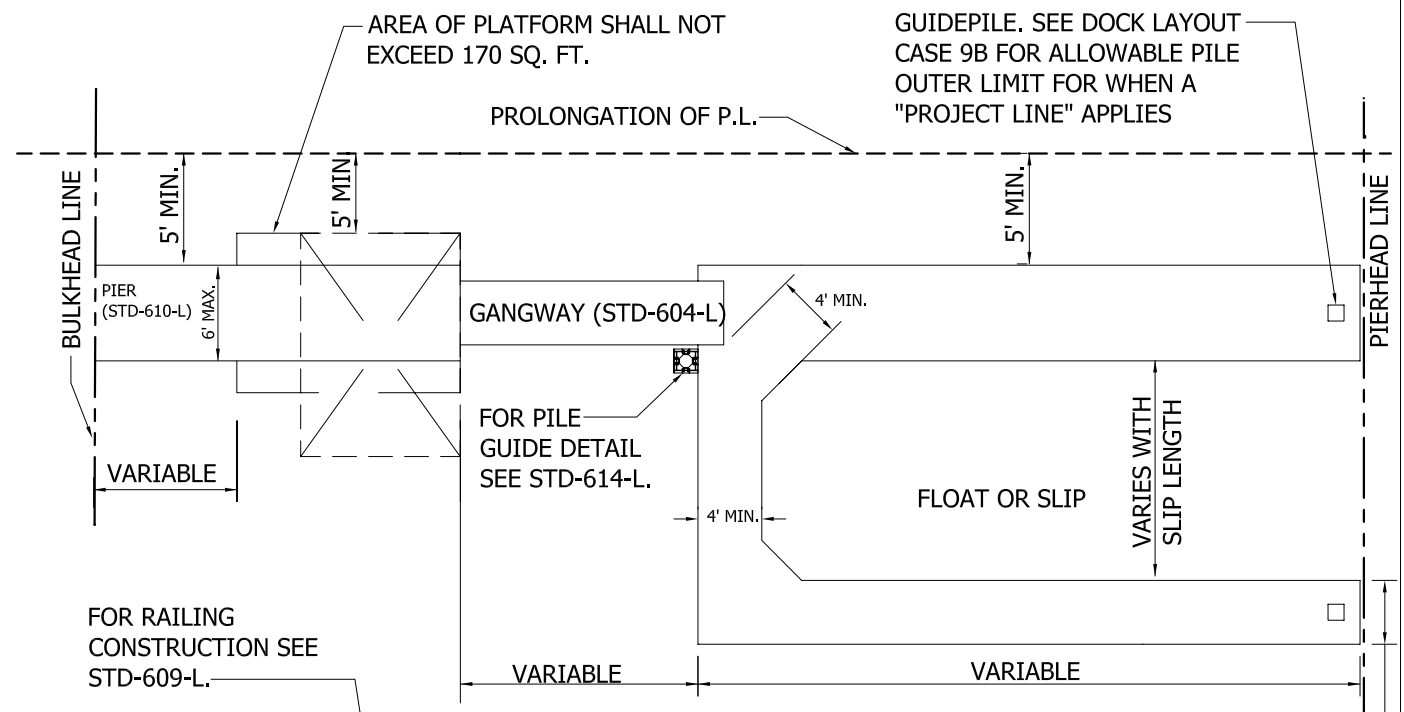

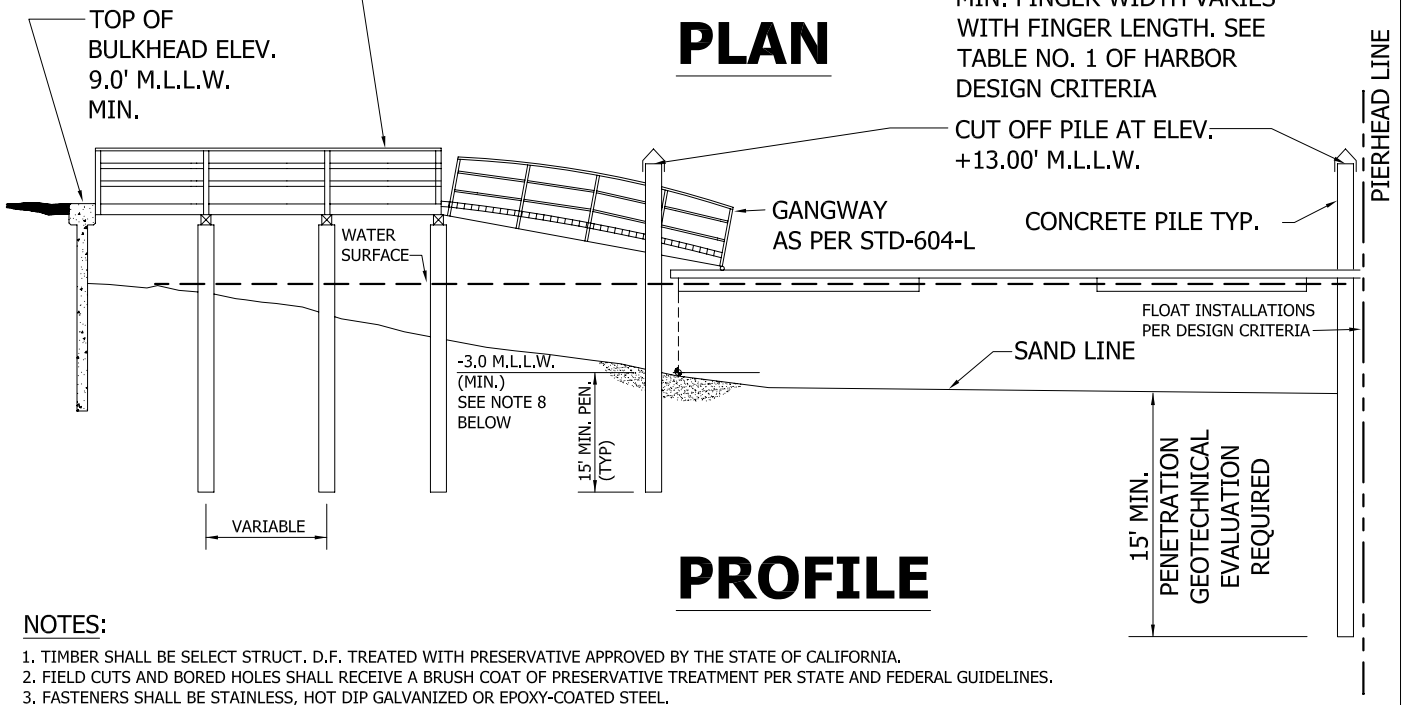

NOTES:

1. TIMBER SHALL BE SELECT STRUCT. D.F. TREATED WITH PRESERVATIVE APPROVED BY THE STATE OF CALIFORNIA.
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A BRUSH COAT OF PRESERVATIVE TREATMENT PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE, BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. SEE STD-604-L & HARBOR DESIGN CRITERIA FOR GANGWAY DESIGN REQUIREMENTS.
7. LOCATION OF PLATFORM, GANGWAY, SLIP & FLOATS IS OPTIONAL PROVIDING PROPER SETBACKS ARE MAINTAINED.
8. UNDER EXTREME LOW WATER CONDITIONS, PONTOON MAY CONTACT MUDLINE. VERIFY IF PONTOONS AND DOCK SYSTEM CAN WITHSTAND THIS STRESS.

REV. 7/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

SINGLE RESIDENTIAL USE FLOAT WITH PIER

Drawn: R OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-608-L

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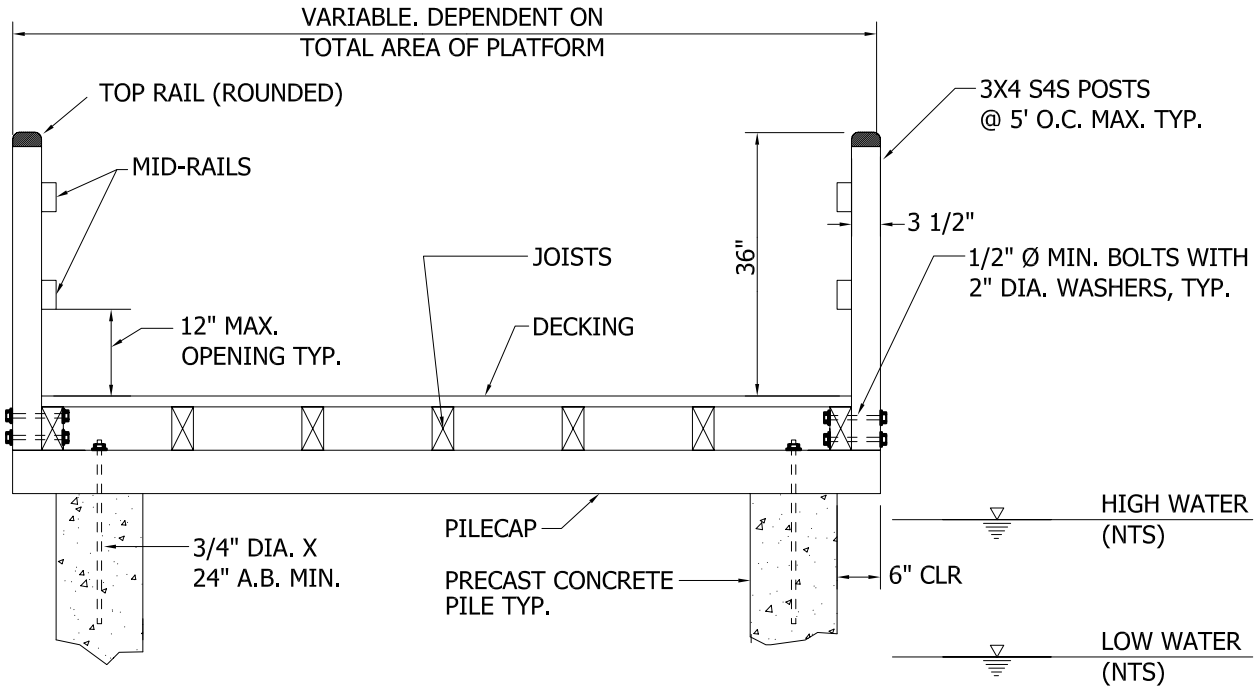

TYPICAL PLATFORM SECTION

NOTES:

1. TIMBER SHALL BE SELECT STRUCT. D.F. TREATED WITH PRESERVATIVE APPROVED BY THE STATE OF CALIFORNIA.
2. FIELD CUTS AND BORED HOLES SHALL RECEIVE A BRUSH COAT OF PRESERVATIVE TREATMENT PER STATE AND FEDERAL GUIDELINES.
3. FASTENERS SHALL BE STAINLESS, HOT DIP GALVANIZED OR EPOXY-COATED STEEL.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER, GRIT ON TIMBER, OR OTHER SURFACING DEEMED APPROPRIATE FOR THE INTENDED SERVICE, BY THE CITY OF NEWPORT BEACH.
5. NON-STRUCTURAL MEMBERS MAY BE ALTERNATIVE MATERIALS SUCH AS PLASTIC DIMENSIONAL LUMBER. SUBMIT PRODUCT SPECIFICATIONS TO CITY OF NEWPORT BEACH FOR APPROVAL.
6. JOIST SPLICES ARE NOT PERMITTED BETWEEN PILES.
7. NUMBER OF PILES DEPENDENT ON PLATFORM LAYOUT.
8. SIZE AND SPACING OF JOISTS DEPENDENT ON PLATFORM LAYOUT.
9. SIZE OF PILECAP DEPENDENT ON PILE SPACING AND PLATFORM WIDTH.

REV. 4/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED:

BUILDING DIRECTOR

SINGLE OR JOINT RESIDENTIAL USE PLATFORM SECTION

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-609-L

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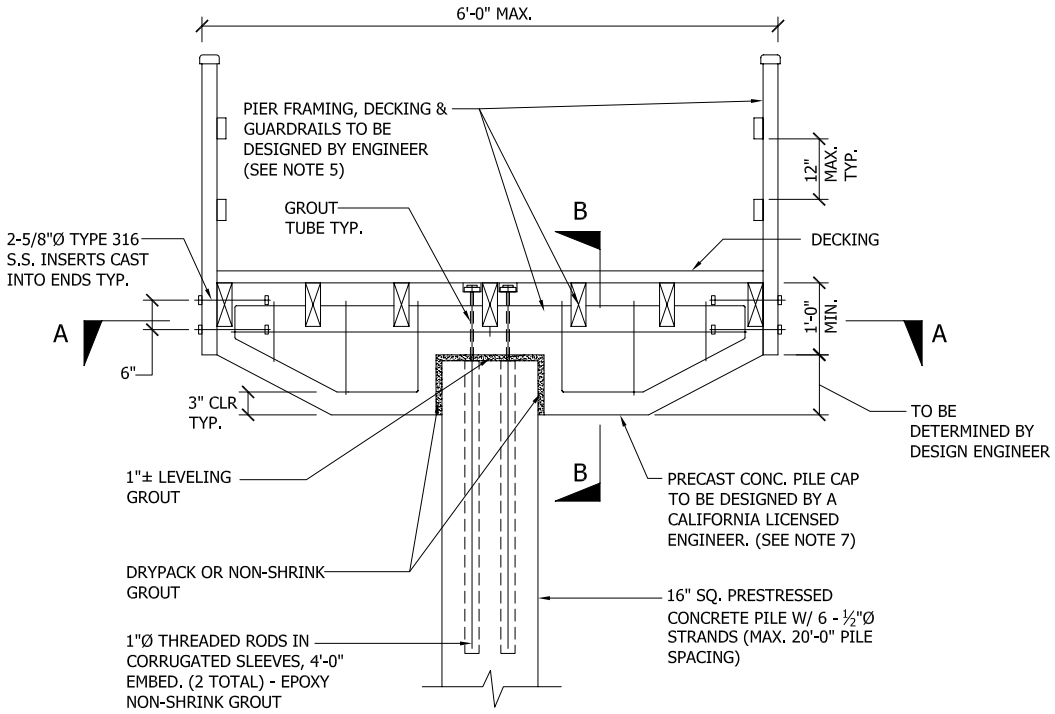
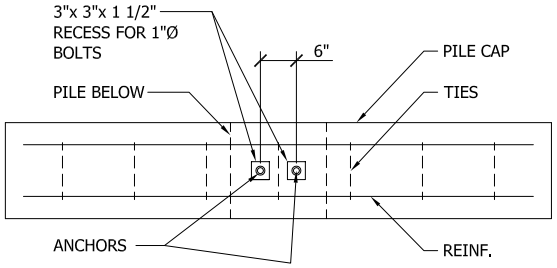
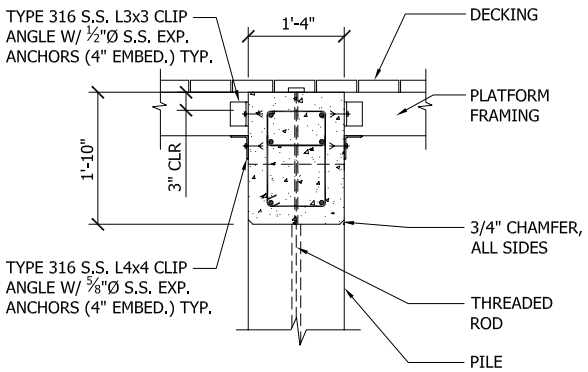




NOTE: PLATFORM FRAMING NOT SHOWN FOR CLARITY

SECTION A-A



SECTION B-B

NOTES:

1. CONCRETE SHALL HAVE MINIMUM f'c = 6,000 PSI. PRESTRESSING STRANDS SHALL HAVE A MINIMUM fpu = 270 KSI.
2. ALL TIMBER SHALL BE TREATED PER ACCEPTED STATE OF CALIFORNIA REQUIREMENTS.
3. BRACKETS AND FASTENERS FOR TIMBER FRAMING SHALL BE HOT-DIP GALVANIZED, EPOXY-COATED OR STAINLESS STEEL. CONNECTORS TO BE ¼" MIN. THICKNESS, UNLESS OTHERWISE NOTED.
4. WALKING SURFACES SHALL BE SKID-RESISTANT.
5. ALL TIMBER PLATFORM FRAMING AND RAILINGS SHALL BE DESIGNED BY A LICENSED ENGINEER AND ARE NOT DETAILED IN THIS STANDARD.
6. TIMBER STRINGER SPLICES ARE NOT PERMITTED BETWEEN PILES.
7. OPTIONAL CAST-IN-PLACE CONSTRUCTION IS ACCEPTABLE. IF SO, LEVELING GROUT AND DRYPACK OR NON-SHRINK GROUT ILLUSTRATION WOULD NOT BE REQUIRED.
8. AN ENGINEER LICENSED IN THE STATE OF CALIFORNIA SHALL VERIFY PILE SIZE AND TYPE, AS WELL AS EMBEDMENT.

TYPICAL PIER SECTION

SCALE: N.T.S.

REV. 4/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED:

BUILDING DIRECTOR

TYPICAL PIER SECTION

Drawn: ---
Date: AUG 2004

Scale: N.T.S.

DRAWING NO. STD-610-L.1

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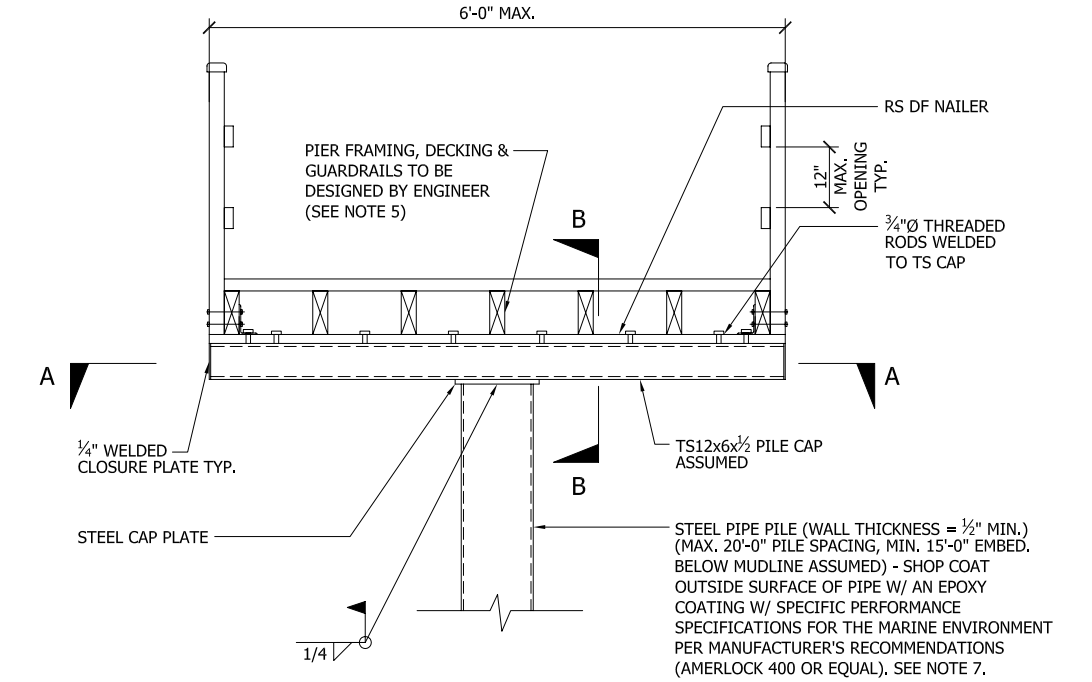
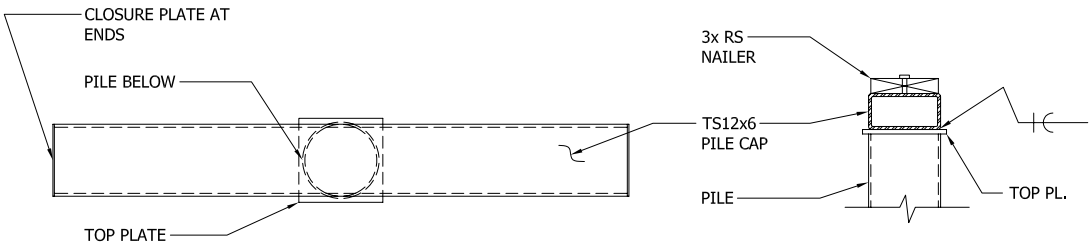




SECTION A-A

SECTION B-B

NOTES:

1. ALL STEEL COMPONENTS SHALL BE MINIMUM ASTM A36 (MIN. Fy = 36 KSI). ALL STEEL PIPE PILES SHALL BE ASTM A53, GR B MATERIAL (MIN. Fy = 35 KSI).
2. ALL TIMBER SHALL BE TREATED PER ACCEPTED STATE OF CALIFORNIA REQUIREMENTS.
3. BRACKETS AND FASTENERS FOR TIMBER FRAMING SHALL BE HOT-DIP GALVANIZED, EPOXY-COATED OR STAINLESS STEEL. CONNECTORS TO BE ¼" MIN. THICKNESS.
4. WALKING SURFACES SHALL HAVE A SKID-RESISTANT FINISH, SUCH AS UNPAINTED TIMBER.
5. ALL TIMBER PLATFORM FRAMING AND RAILINGS SHALL BE DESIGNED BY A LICENSED ENGINEER AND ARE NOT DETAILED IN THIS STANDARD.
6. TIMBER STRINGER SPLICES ARE NOT PERMITTED BETWEEN PILES.
7. NO COATING ON STEELWORK 4" FROM WELDED PARTS (PILE AND CAP) TO ALLOW FOR FIELD WELDING. TOUCH-UP THIS UNCOATED AREA AFTER FABRICATION PER MANUFACTURERS RECOMMENDATIONS, INCLUDING SURFACE PREPARATION. IF PILES REQUIRE CUT-OFF DUE TO SUFFICIENT BLOW COUNTS PRIOR TO OBTAINING TIP ELEVATION, REMOVE COATING IN UPPER 4" OF PILE TO ALLOW FIELD WELDING.
8. FOR ADDITIONAL CORROSION RESISTANCE, THE APPLICANT MAY WISH TO CONSIDER INSTALLING A PASSIVE OR ACTIVE CATHODIC PROTECTION SYSTEM.
9. AN ENGINEER LICENSED IN THE STATE OF CALIFORNIA SHALL VERIFY PILE SIZE AND TYPE, AS WELL AS EMBEDMENT.

TYPICAL PIER SECTION
(OPTION AT LOCATIONS OF SHALE AND/OR HARD SUBSURFACE MATERIALS NOT SUITABLE FOR CONCRETE PILES)

SCALE: N.T.S.

REV. 4/06

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

TYPICAL PIER SECTION (ALTERNATE)

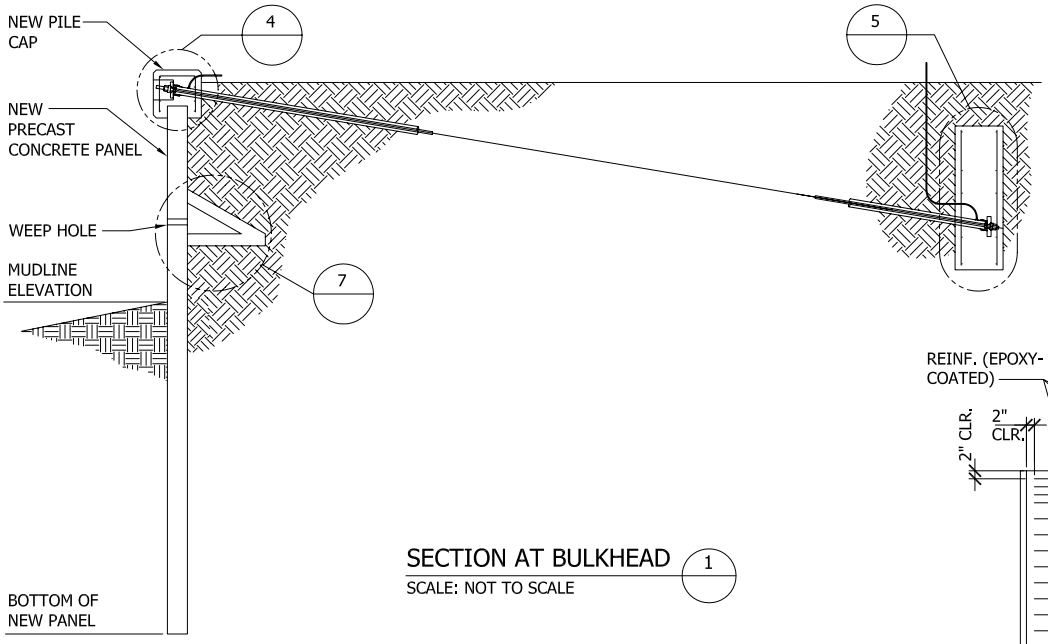
APPROVED:

BUILDING DIRECTOR

Drawn: ---
Date: AUG 2004

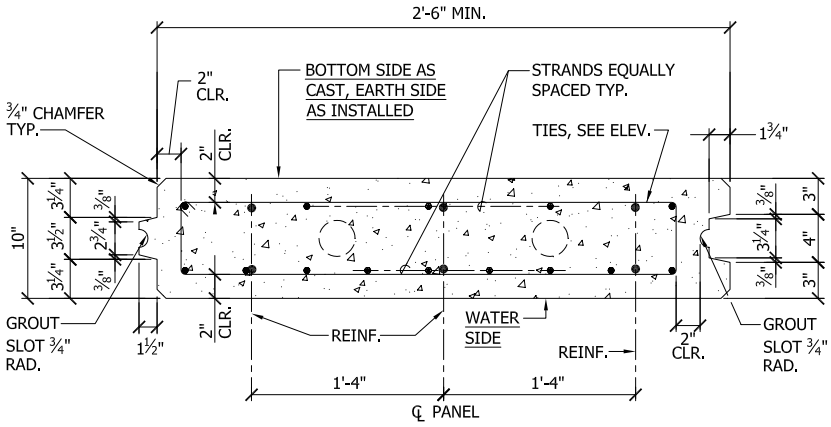
Scale: N.T.S.

DRAWING NO. STD-610-L.2



SECTION AT BULKHEAD 1

SCALE: NOT TO SCALE

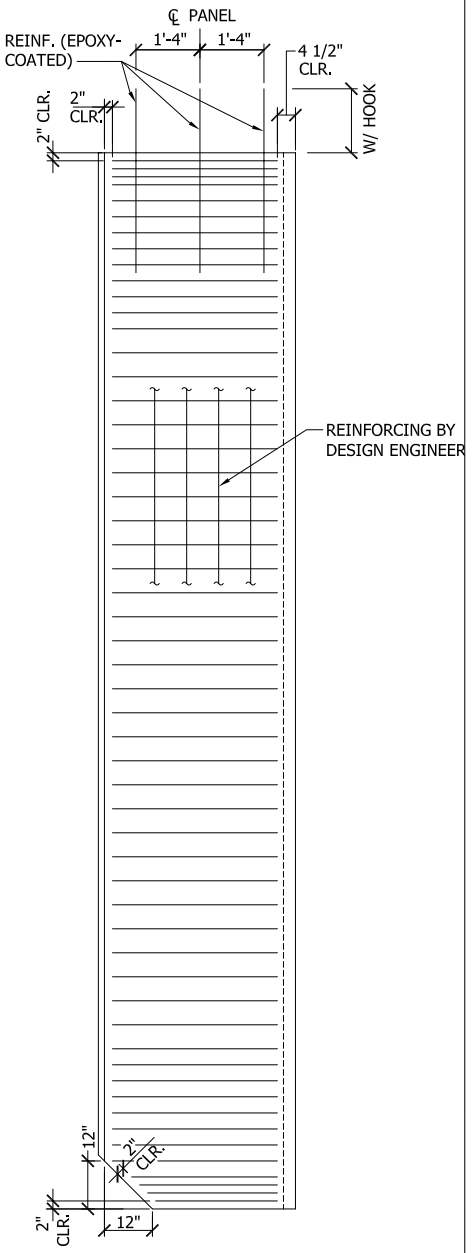


PRECAST (PRESTRESSED) PANEL SECTION (1) 3

SCALE: N.T.S.

NOTE:

1. DIMENSIONS AND SIZES NOTED TO BE CONFIRMED OR AMENDED BY THE ENGINEER OF RECORD.



PRECAST (PRESTRESSED) PANEL ELEVATION (1) 2

(WATER SIDE)

SCALE: N.T.S.

CITY OF NEWPORT BEACH

BUILDING DEPARTMENT

BULKHEAD & PRECAST PANEL SECTIONS & ELEVATION

APPROVED:

BUILDING DIRECTOR

Drawn: ---

Date: AUG 2004

Scale: As Noted

DRAWING NO. STD-611-L.1

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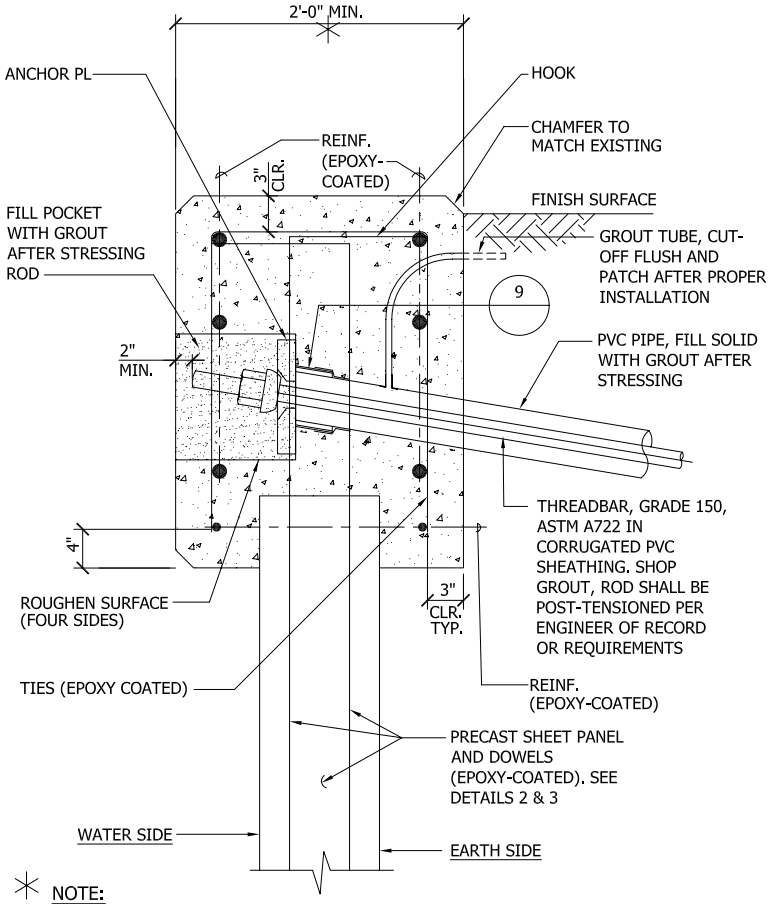


NOTE:

THE 2'-0" CAP WIDTH IS A MINIMUM DIMENSION AND DOES NOT ALLOW FOR MISALIGNMENT OF CONCRETE PANEL. CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS TO THE CAP WIDTH TO MAINTAIN INDICATED CLEARANCES. WIDTH OF CAP SHALL BE MAINTAINED FOR THE ENTIRE LENGTH OF NEW CAP.

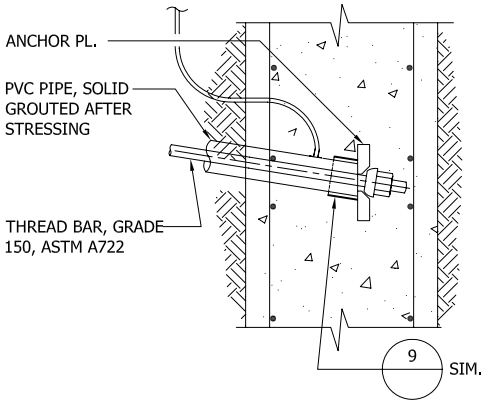
GENERAL NOTE:

REINFORCEMENT, WALL DIMENSIONS AND THICKNESSES TO BE DESIGNED FOR THE SPECIFIC SITE CONDITIONS AND LOADS.

SECTION AT BULKHEAD CAP (STRESSING END) (1)

4

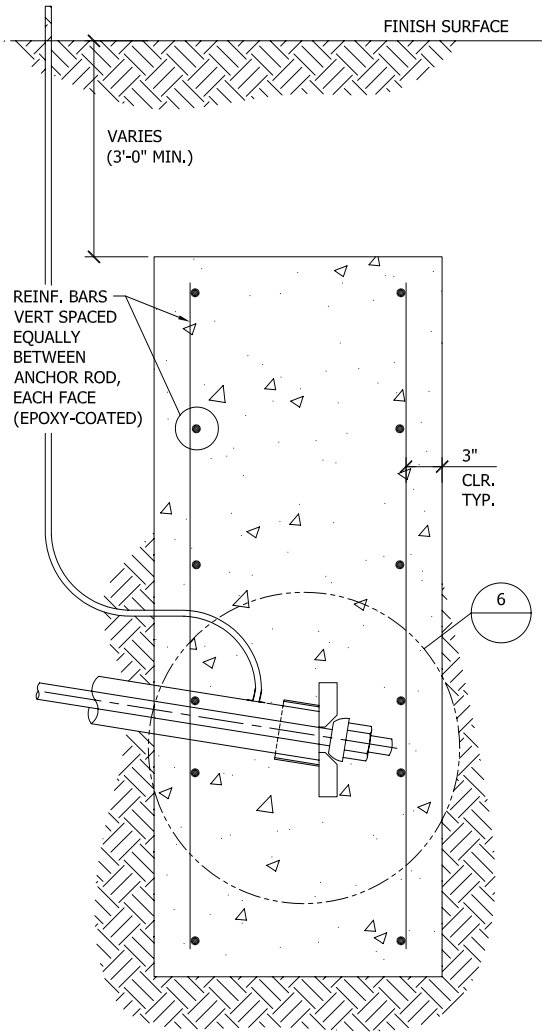
SCALE: 3/4" = 1'-0"



DETAIL (FIXED END) (1)

6

SCALE: N.T.S.



CONCRETE DEADMAN SECTION (1)

(FIXED END)

5

SCALE: N.T.S.

NOTE:

1. DIMENSIONS AND SIZES NOTED TO BE CONFIRMED OR AMENDED BY THE ENGINEER OF RECORD.
2. DETAILS OF THREADBAR, ENCASEMENT, ANCHOR PLATES, NUTS, WASHERS AND POCKETS MAY DIFFER FROM MANUFACTURER TO MANUFACTURER.

CITY OF NEWPORT BEACH

BUILDING DEPARTMENT

BULKHEAD CAP & DEADMAN SECTIONS & DETAIL

APPROVED:

BUILDING DIRECTOR

Drawn: ---

Date: AUG 2004

Scale: As Noted

DRAWING NO. STD-611-L.2

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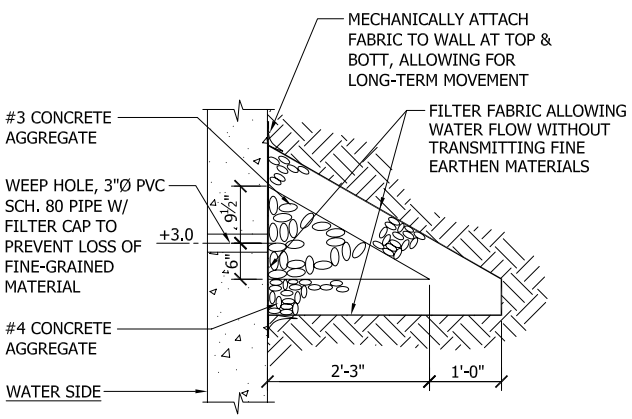
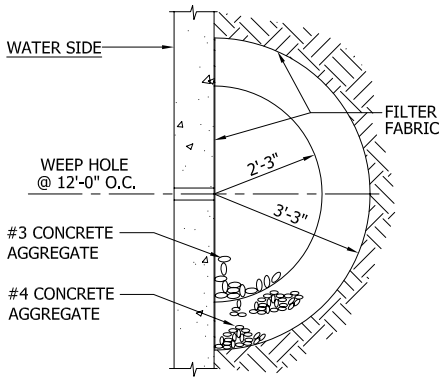


ELEVATION

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

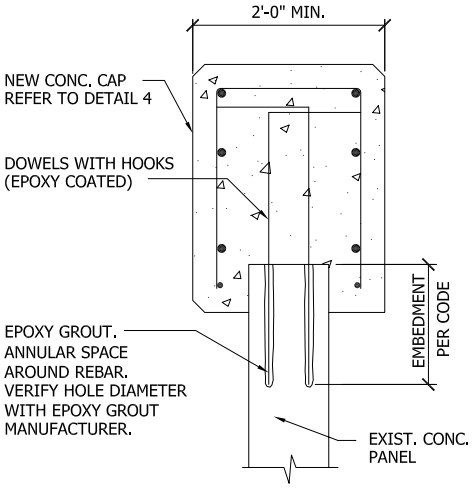


PLAN

SCALE: NOT TO SCALE

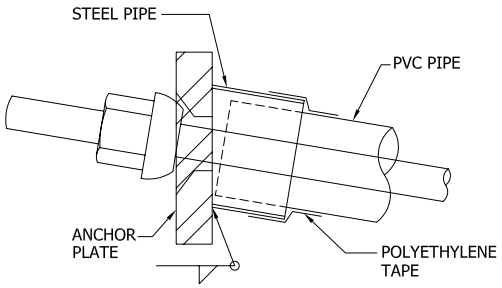
WEEP HOLE SECTION 7

SCALE: AS SHOWN



SECTION AT BULKHEAD DOWELS 8

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



NOTE:

PLATE DETAIL AT STRESSING END (CAP) SHOWN, PLATE DETAIL, SIMILAR AT FIXED END (DEADMAN)

DETAIL 9

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

CITY OF NEWPORT BEACH

BUILDING DEPARTMENT

BULKHEAD SECTIONS & DETAILS

APPROVED:

BUILDING DIRECTOR

Drawn: ---

Date: AUG 2004

Scale: As Noted

DRAWING NO. STD-611-L.3

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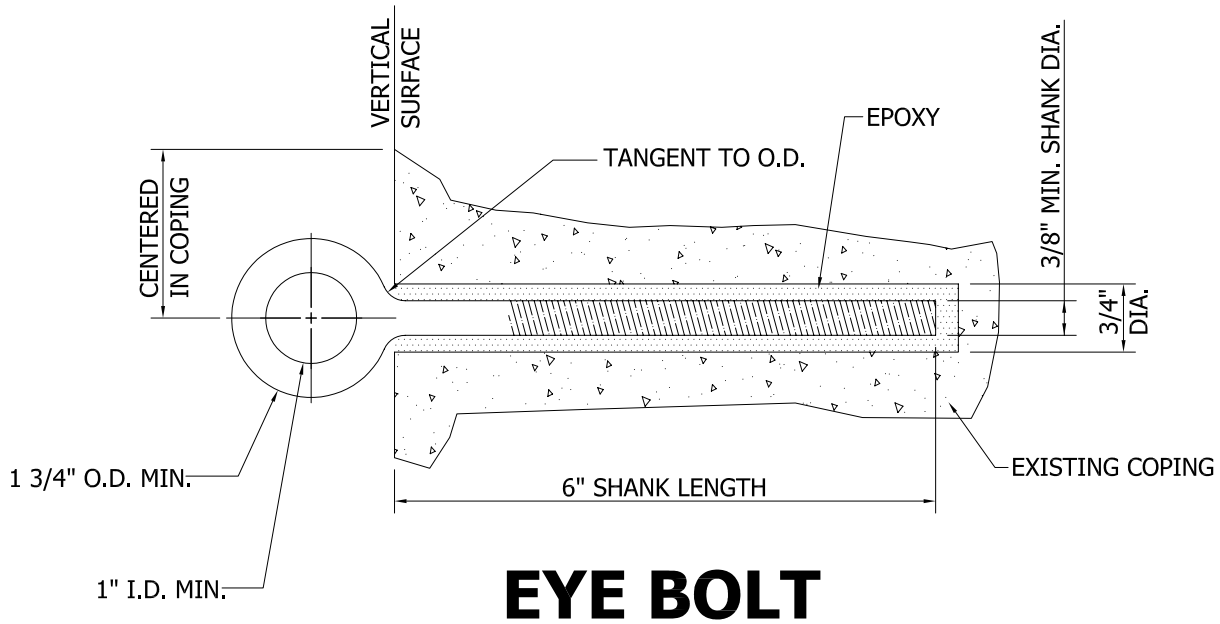
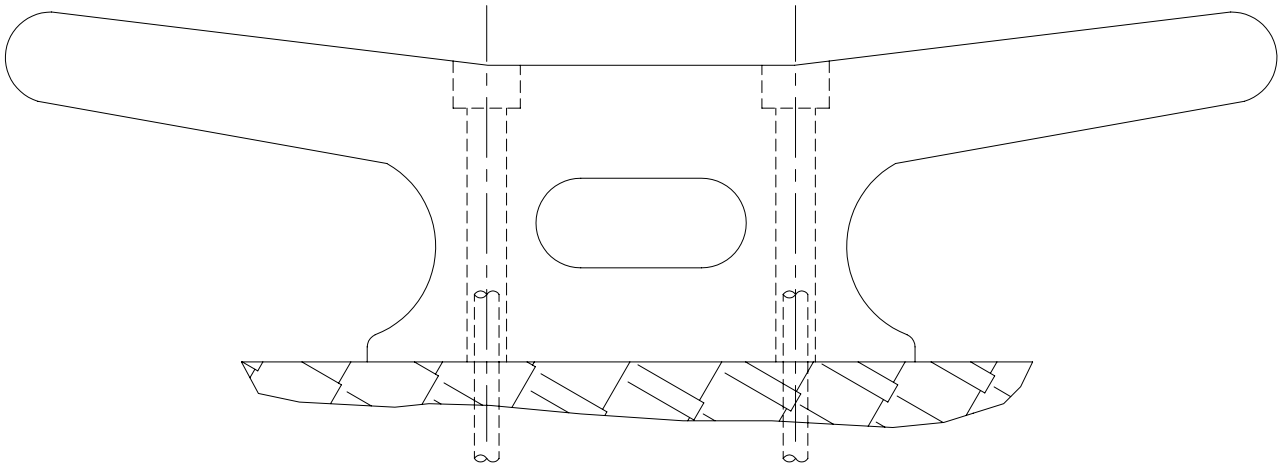


EYE BOLT

(SHORE MOORING)



DOCK CLEAT

(TYPICAL DOCK MOORING CLEAT)

NOTES

1. EYE BOLT SHALL BE FABRICATED OF STAINLESS OR GALVANIZED STEEL.
2. EPOXY SHALL CONFORM TO ASTM C881 STANDARD, OR SHALL BE AN EPOXY FORTIFIED GROUT INTENDED TO BE USED FOR PERMANENT ANCHORAGE OF EQUIPMENT, AND SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. DOCK CLEATS SHALL BE GALVANIZED CAST METAL WITH HEX-HEAD THRU-BOLTS CONNECTED INTO THE TIMBER FRAMING WITH WASHER AND NUT, ALL GALVANIZED.
4. DIAMETER OF THRU-BOLT PER CLEAT MANUFACTURER RECOMMENDATIONS.
5. CLEAT AND BOLT SIZES BY DESIGN ENGINEER.

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

EYE BOLT OR CLEAT FOR BOAT ANCHORAGE

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-612-L

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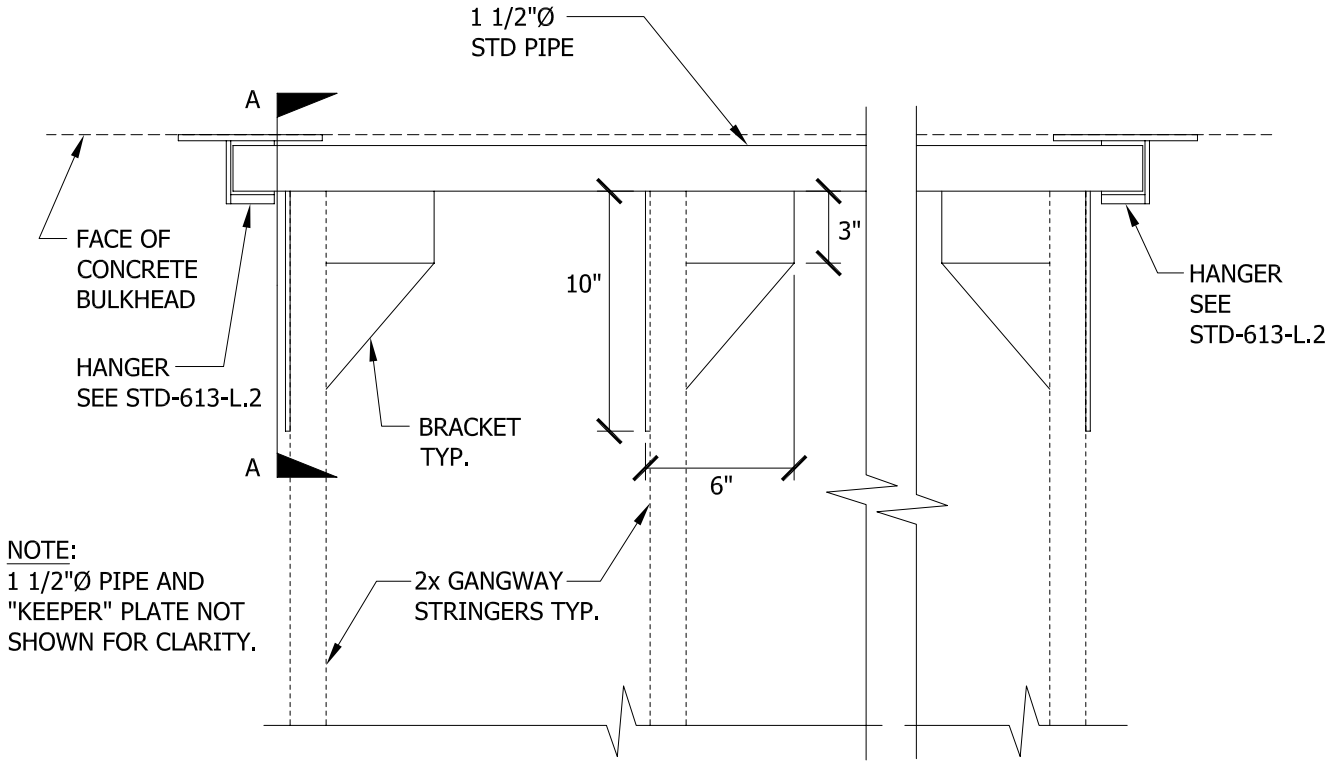
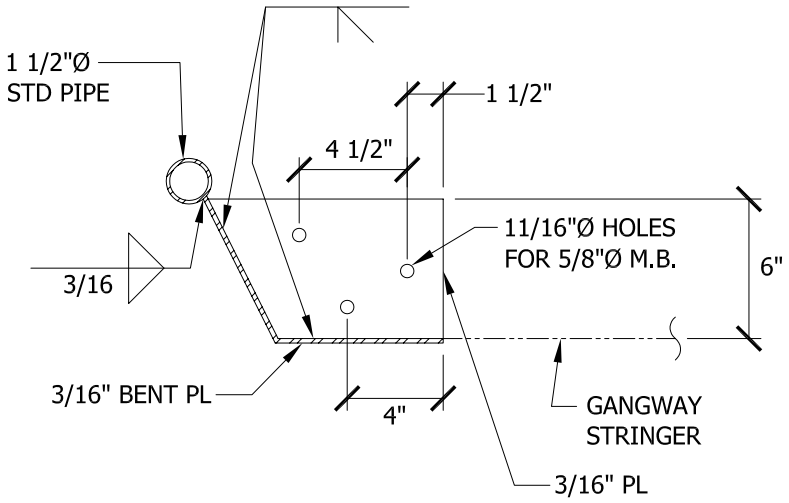


PARTIAL PLAN AT GANGWAY

NOTES:

1. ALL STEEL SHALL BE GALVANIZED.
2. PROVIDE ONE BRACKET PER GANGWAY STRINGER.



DETAIL A - GANGWAY BRACKET

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

RESIDENTIAL GANGWAY BRACKET - TYPICAL (CONCEPT)

APPROVED:

BUILDING DIRECTOR

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-613-L.1

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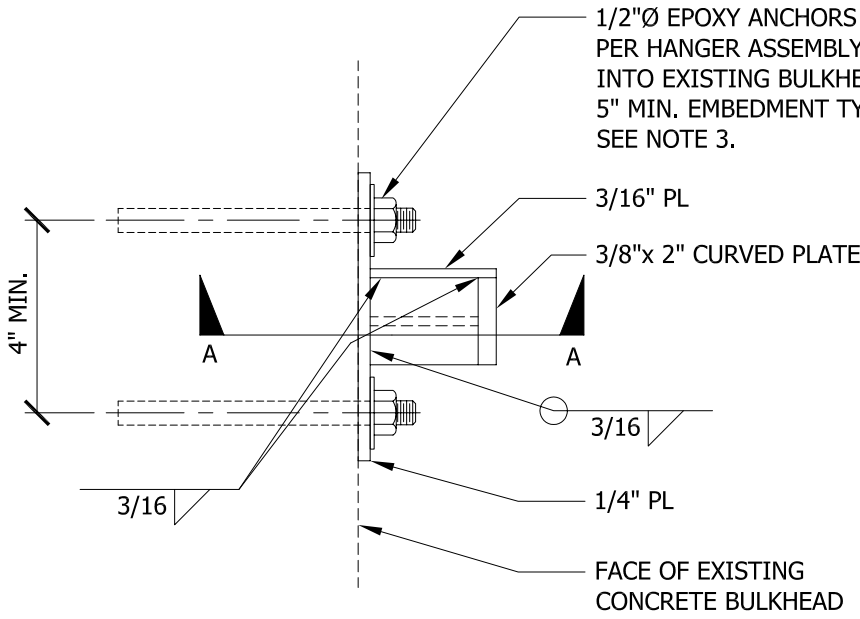
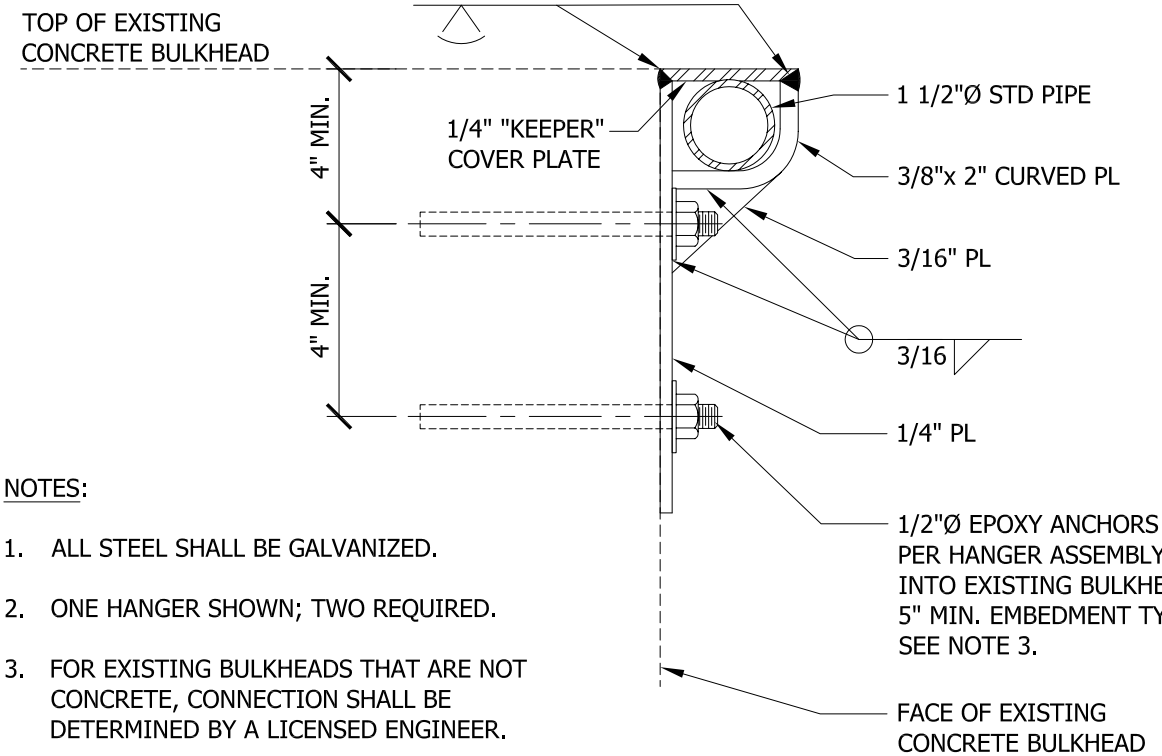


NOTE:
1 1/2"Ø PIPE AND "KEEPER" PLATE NOT SHOWN FOR CLARITY.

PLAN DETAIL - GANGWAY HANGER



NOTES:

1. ALL STEEL SHALL BE GALVANIZED.
2. ONE HANGER SHOWN; TWO REQUIRED.
3. FOR EXISTING BULKHEADS THAT ARE NOT CONCRETE, CONNECTION SHALL BE DETERMINED BY A LICENSED ENGINEER.

DETAIL A - GANGWAY HANGER

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

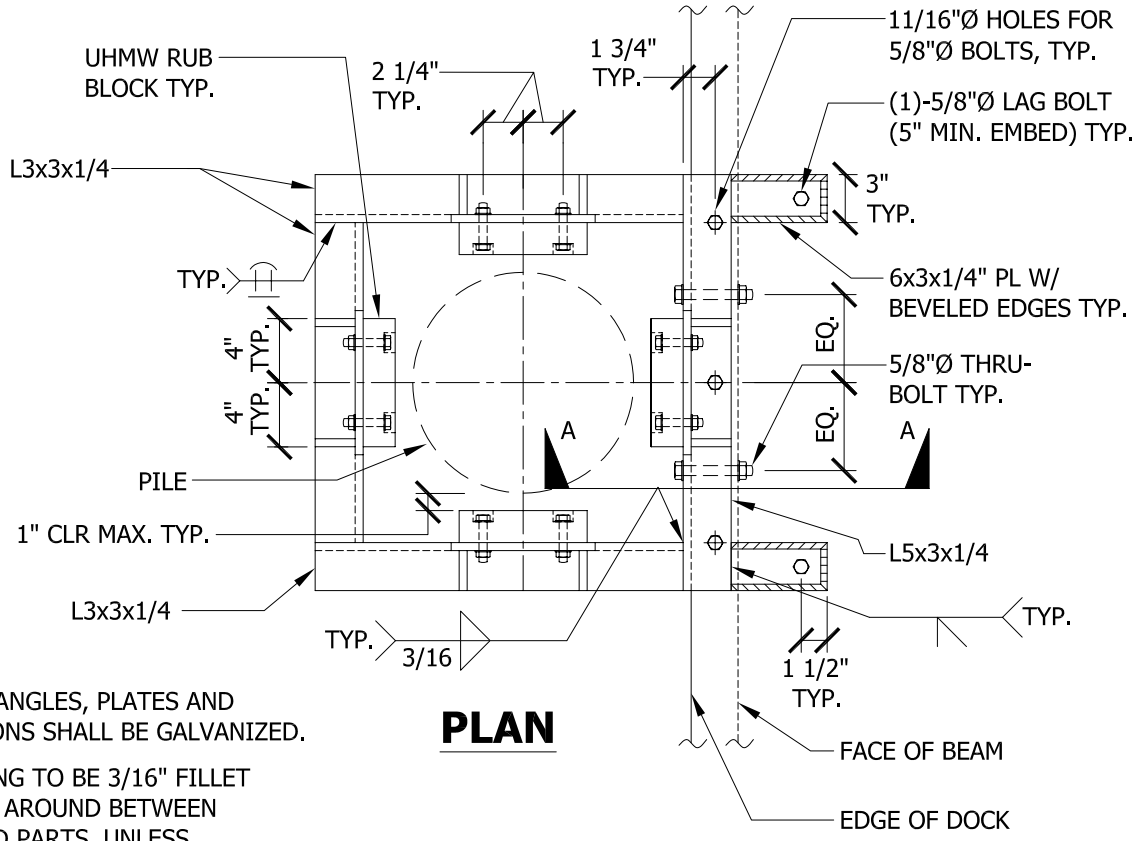
APPROVED: _____
BUILDING DIRECTOR

RESIDENTIAL GANGWAY HANGER - TYPICAL (CONCEPT)

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

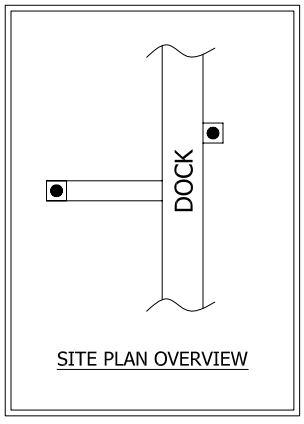
DRAWING NO. STD-613-L.2



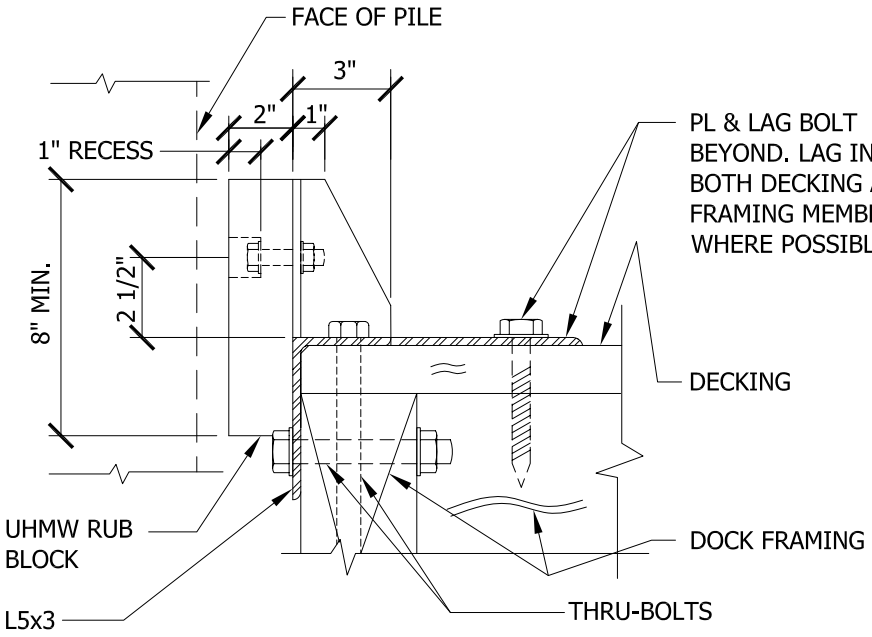
PLAN

NOTES:

1. ALL STEEL ANGLES, PLATES AND CONNECTIONS SHALL BE GALVANIZED.
2. ALL WELDING TO BE 3/16" FILLET WELDS ALL AROUND BETWEEN CONNECTED PARTS, UNLESS OTHERWISE NOTED.
3. ALL PLATES TO BE 3/8" THICKNESS, UNLESS OTHERWISE NOTED.



KEY PLAN



SECTION A-A

PILE GUIDE RUB BLOCK TYPICAL DETAIL

(CONDITION W/ GUIDE FRAME SUPPORTED ON ONE SIDE ONLY)

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

PILE GUIDE RUB BLOCK TYPICAL DETAIL (CASE I)

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-614-L

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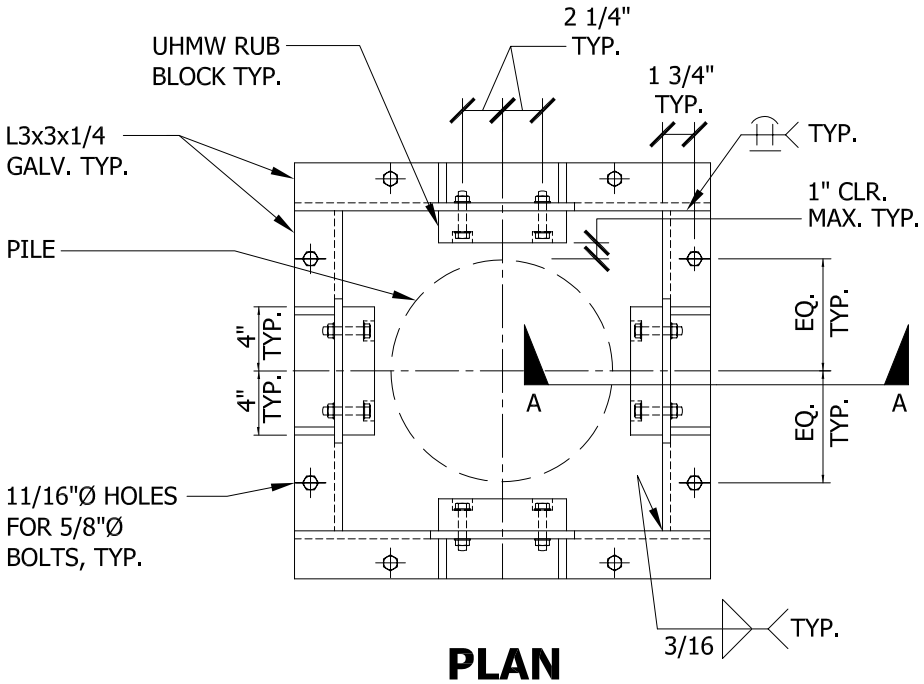
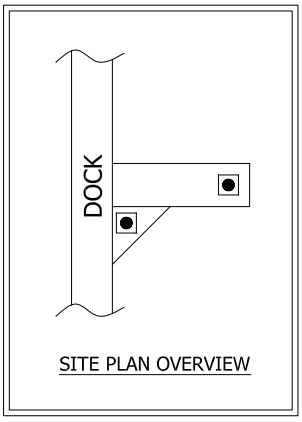


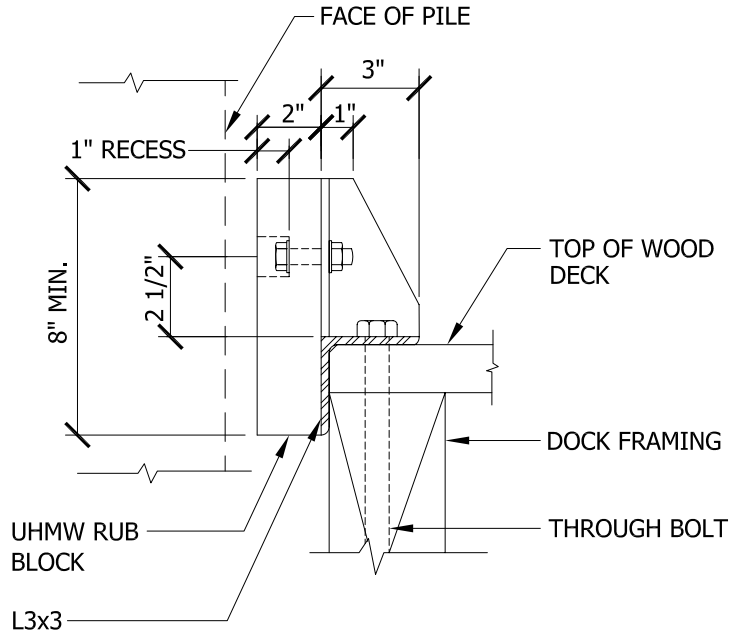
PLAN

NOTES:

1. ALL STEEL ANGLES, PLATES AND CONNECTIONS SHALL BE GALVANIZED.
2. ALL WELDING TO BE 3/16" FILLET WELDS ALL AROUND BETWEEN CONNECTED PARTS, UNLESS OTHERWISE NOTED.
3. ALL PLATES TO BE 3/8" THICKNESS, UNLESS OTHERWISE NOTED.



KEY PLAN



SECTION A-A

PILE GUIDE RUB BLOCK TYPICAL DETAIL

(CONDITION W/ SUPPORT ALL AROUND GUIDE FRAME)

CITY OF NEWPORT BEACH
BUILDING DEPARTMENT

APPROVED: _____
BUILDING DIRECTOR

PILE GUIDE RUB BLOCK TYPICAL DETAIL (CASE II)

Drawn: R. OKADA
Date: JULY 2004

Scale: N.T.S.

DRAWING NO. STD-615-L

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