

## CHAPTER III:

# DESIGNING ACCESSIBLE LAUNCHES IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES

The 2000 U.S. Census reports that over 49 million Americans have one or more disabilities and that a significant number of these individuals participate in outdoor recreation activities including canoeing, kayaking, and other boating activities.

In 1990, in order to provide an equal opportunity for individuals with disabilities, Congress enacted the Americans with Disabilities Act (ADA). The ADA mandates that individuals with disabilities must be given an equal opportunity to access public facilities and that reasonable accommodations must be made to account for physical and mental limitations of individuals with disabilities.

Guidelines for newly designed, constructed, and altered recreation facilities issued by the ADA in 2002 require that all public boat launches, *which include fixed and floating structures of all sizes*, comply with ADA Accessibility Guidelines (ADAAG) standards. Copies of ADAAG for recreation facilities are available online at <http://www.usdoj.gov/crt/ada/stdspdf.htm> and may be downloaded as an Adobe PDF file.

This chapter addresses ADAAG standards that apply to launch structures and does not discuss operational issues related to boating facilities, such as accessible parking, exterior routes, and restroom facilities. *A Guide to Boating and Canoe Access Development in Illinois* (IL DNR, 1998) provides information on developing accessible land-side facilities. Accessibility recommendations for trails and access routes may be found at <http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm> in the Access Board's *Proposed Guidelines for Outdoor Developed Areas*.

When providing an equal opportunity for participation in boating activities, different types of disabilities must be taken into account. Physical disabilities necessitate reasonable modification of the structural environment to provide access to the shore or launch site, as well as the watercraft. Developmental disabilities necessitate methods of effective communication to provide directions to sites and instructions for safe usage; these may include signage and alternative formats for informational materials.

Due to fluctuating water levels and varying terrain at different access sites, innovative ways to adapt or customize launch sites may be needed. This chapter discusses important considerations that must be made when providing access for paddlers with disabilities.

The Access Board, which develops and maintains criteria for accessibility, provides basic design requirements for recreation and recreation facilities through the following three websites:

- <http://www.access-board.gov/recreation/final.htm>
- <http://www.access-board.gov/recreation/guides/boating.htm>
- <http://www.access-board.gov/adaag/html/adaag.htm#15.2%20Boating%20Facilities>

## Access Board Guidelines for Boat Launches

The Access Board's guidelines for accessible recreation facilities are as follows:

ADAAG require that boat launches be equipped with at least one accessible route to boat launches that complies with ADAAG standards for:

- location
- width
- passing space
- head room
- surface slope
- level changes
- doors
- egress
- areas of rescue assistance

ADAAG standards *must be met* if the accessible route connects a fixed launch to the shore or if the accessible route connects a fixed launch to another fixed structure, unless they are modified by specific provisions outlined by the Access Board.

### Exception: Gangways connecting floating structures

If the accessible route uses a gangway connecting to a floating structure, exceptions to ADAAG may be made to accommodate varying water levels and other factors. Gangways should be designed with the least possible slope and, if possible, designed so as not to exceed a slope of 8.33% or a ratio of 1:12. Since the slope of a gangway will rise and fall with changing water levels, its slope may, in some cases, exceed 8.33%. This is acceptable as long as the gangway is at least 30 feet long. Gangways are required to be at least 80 feet long if the vertical distance between the lowest water level and the point where the gangway connects to land is 10 feet.

Any other sloped surface must comply with ADAAG requirements:

### *Transition plates*

These are sloped surfaces located at the end of a gangway. If the slope of a gangway is greater than 1:20 (or 5%) it must be equipped with a landing at the non-gangway end of the transition plate and comply with ADAAG ramp requirements.

### *Handrails*

Handrails are required on sloped surfaces that have a rise of less than 6 inches or a projection less than 72 inches, or a slope of 1:20 (5%) or less. Since the surface may be moving with changes in the water handrail extensions do not need to be parallel to ground or floor surfaces.

### *Cross slope*

The cross slope of a structure refers to the slope perpendicular to the structure's "running" slope or slope spanning the length of the structure. The cross slopes of gangways, transition plates, and floating piers that are part of an accessible route must be designed and constructed to not exceed a maximum of 2% or a slope of 1:50. Gangways and piers that are part of an accessible route are expected to be designed and constructed to meet the 2% requirement. Once placed in the water, measurements, absent live loads, are to be made from a static condition (i.e., absence of movement that results from wind, waves, etc.). Where floating piers are grounded due to low water conditions, slope requirements would not apply.

While many launches built prior to ADA's issuing of accessibility guidelines are not accessible to paddlers with disabilities, they may be retrofitted with features that make them accessible.

When designing or retrofitting a launch to meet ADAAG, it is important to ensure that design alterations do not prevent paddlers without disabilities from also using them. It is possible that placement of handrails or other modifications made for accessibility can prevent able paddlers from using them. Launch designs should consider the needs of all paddlers.

## **Design considerations from a paddler's point of view**

Michael Passo, an experienced paddler who uses a wheelchair, recommends the following design accommodations in order to provide access for paddlers with disabilities:

### ***Access route***

Surface, grade, width, and cross slope need to be as accessible as a particular location will allow. Surface should be as even and level as possible (not exceeding 8.33% slope or 2% cross slope) and without gaps or interruptions. The route should be clearly marked.

### ***Level and stable landing/loading area***

There should be an area adjacent to the loading area that is level, stable, and at least 60" x 60". This can be anywhere adjacent to the loading area, including in water up to 12" deep. An accessible back country canoe launch might incorporate a large, flat rock surface (provided that it is not slippery) that is 8" to 12" under the surface of the water and has a gradual access route made of native soil. The transfer from a wheelchair on that rock to a floating canoe could be nearly level.

### ***Transfer assistance***

The greatest challenge to using a launch, once a paddler is beside the canoe, can be getting down into the seat of the boat. Whether it is on a highly developed launch or the bank of a lake, it is difficult to transfer to a moving boat. Making the transfer easier will help paddlers considerably.

Options to facilitate transfer from the launch area into a boat include:

- A **transfer step** or moveable structure approximately 8" to 12" high that assists paddlers who have difficulty bending or squatting and provides wheelchair users with an intermediate step between their chair and the ground. A carpet-covered box or large, stable rock may be used.
- A **transfer board** is a board that slides out from the launch, over the top of the canoe, and allows a person to slide out over the canoe before sitting down on the seat. If located at gunwale level, it can both support a person's weight and stabilize the boat as legs are moved around and adjustments are made.
- **Overhead handles, grab bars, etc.** The transfer between land and boat can be extremely difficult to maneuver, especially when moving from a canoe seat to a higher launch platform. Alternative grab points can mitigate the complicated procedure of getting oneself onto a launch from a boat so that the boat is not the sole anchor point.
- **Surface textures** on a launch, including those added to provide extra traction, should be practical for wheelchair use. Surface gaps should not exceed 0.5" since the widths of most wheelchair tires and caster tires are between 0.75" and 1". Innovations in adaptive gear, which include devices to improve traction and maneuverability, do exist and can make off-road surfaces much easier to navigate. Nevertheless, launches should be built to accommodate basic wheelchair treads. The website <http://www.titaniumarts.com> offers commercial examples of adaptive gear.

Passo also recommends the book *Canoeing for Disabled People* by Geoff Smiley as a useful resource on accessible designs (see *Bibliography*).

## ADA accessible launches: Case examples, designs, photos

### 1) Bonnie Gool Guest Dock, Humboldt Bay, Eureka, California

Built about 10 years ago, the Bonnie Gool Guest Dock maintains a consistently accessible slope of 8.33% for about 90 percent of the time. Only during extreme low tides does the slope become too steep. The launch is composed of several connecting parts. A fixed dock at the shoreline connects to an intermediate approach ramp at a 90 degree turn. This intermediate ramp, designed to be flexible, has a “certain” elevation, meaning that its slope will never exceed 8.33%; it is secured with locks and piles that give it a set minimum height. The ramp is surfaced with non-skid, expanded metal (aluminum alloy) that provides traction when the slope becomes steep; it connects to a floating launch at a 90 degree turn.



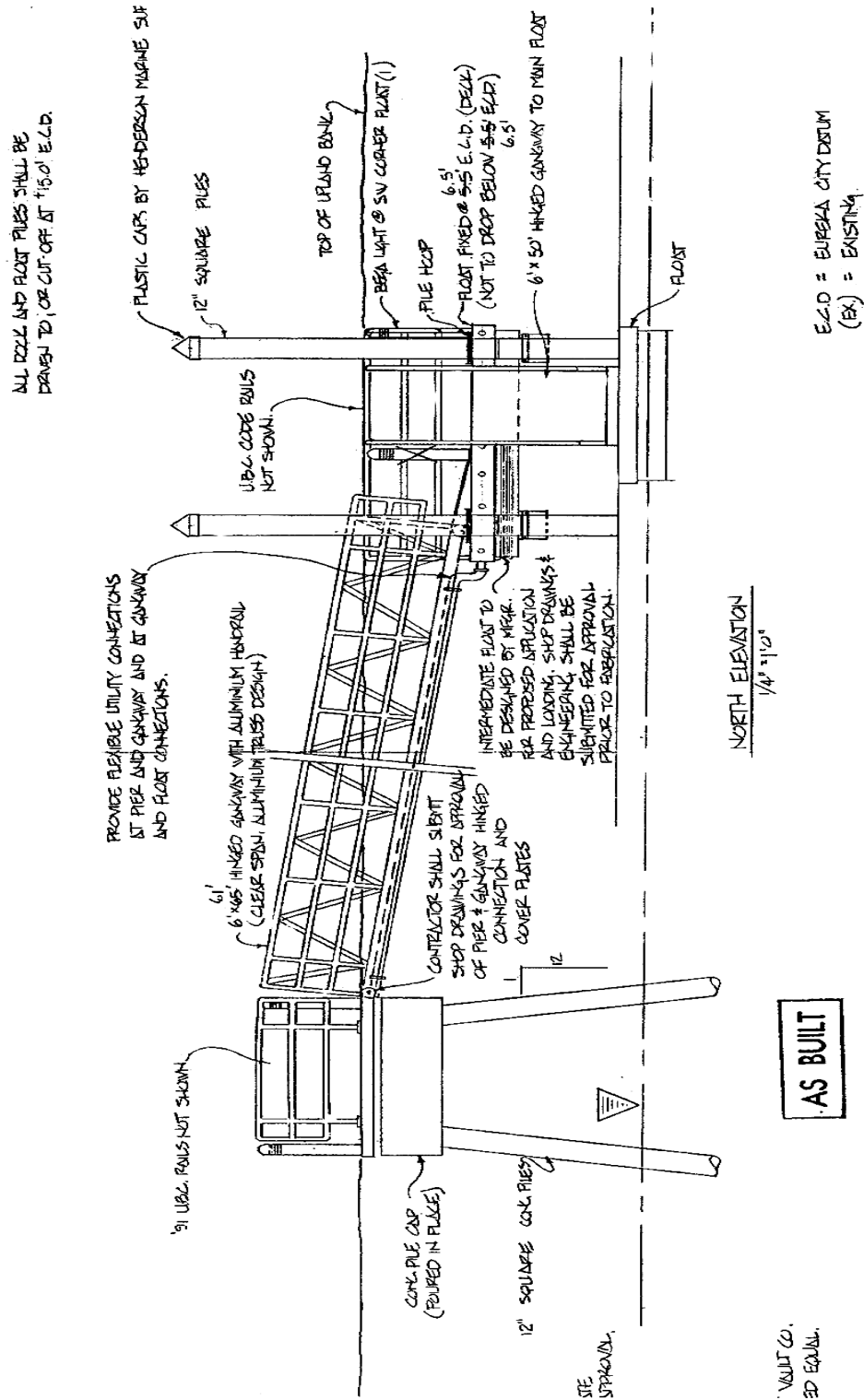
**Photos 3A, 3B: An approach ramp, with a fixed slope of 8.33%, connects floating launch to the shore**



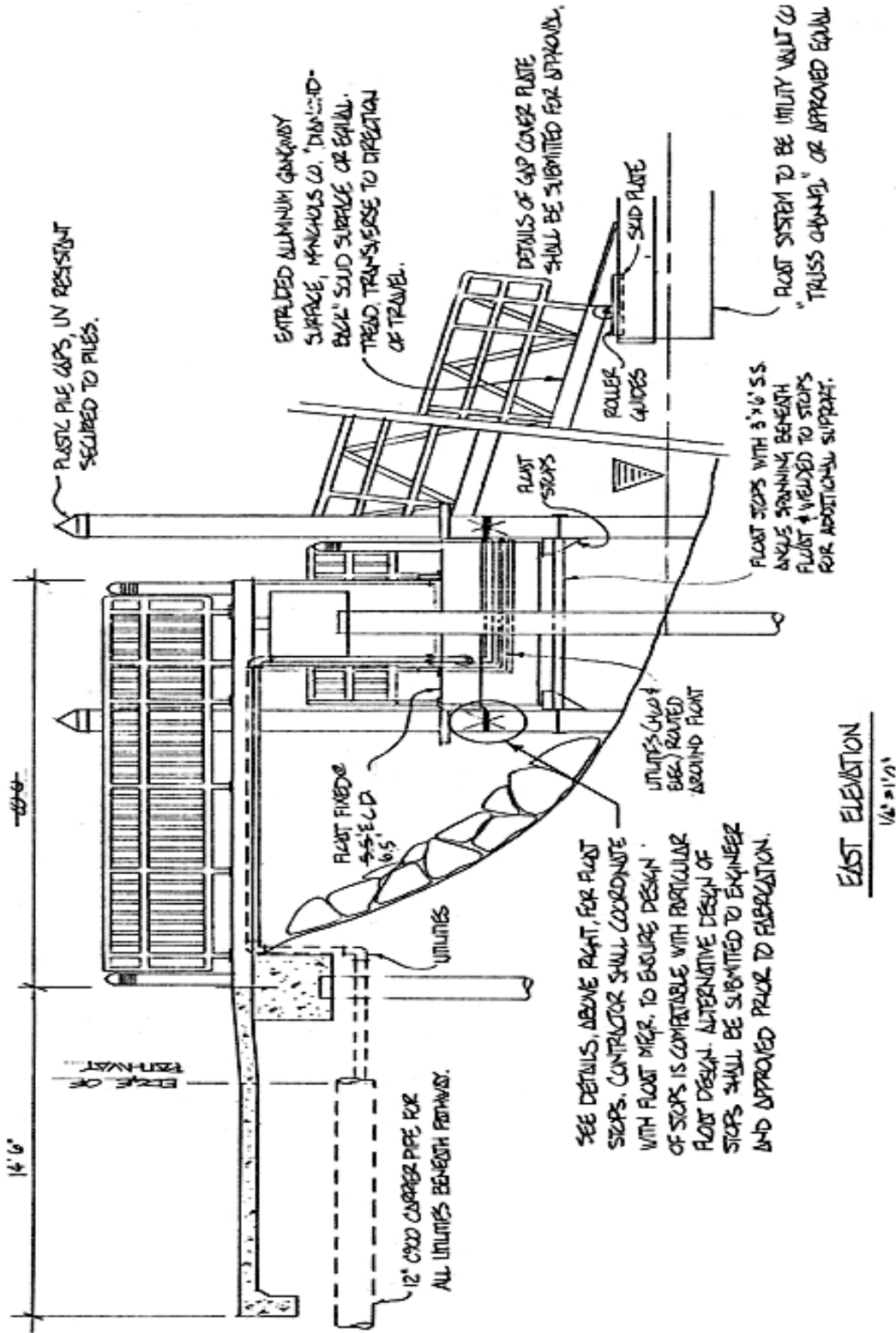
Photos courtesy of Gary Boughton, City of Eureka

The following designs show details of the Bonnie Gool Guest Dock, as built:

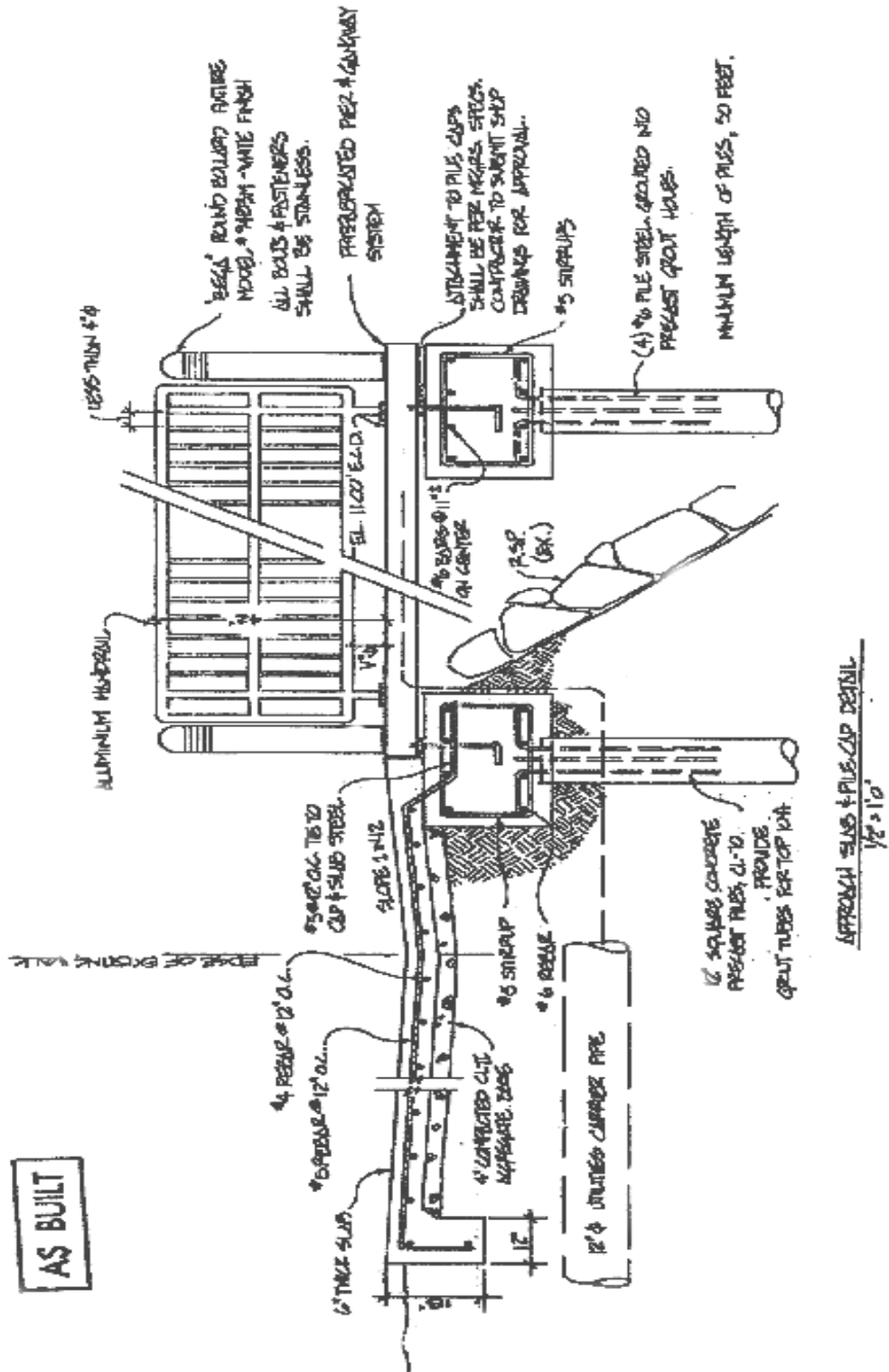
**DIAGRAM 3A: North elevation, Bonnie Gool Guest Dock**



**DIAGRAM 3B: East elevation, Bonnie Gool Guest Dock**

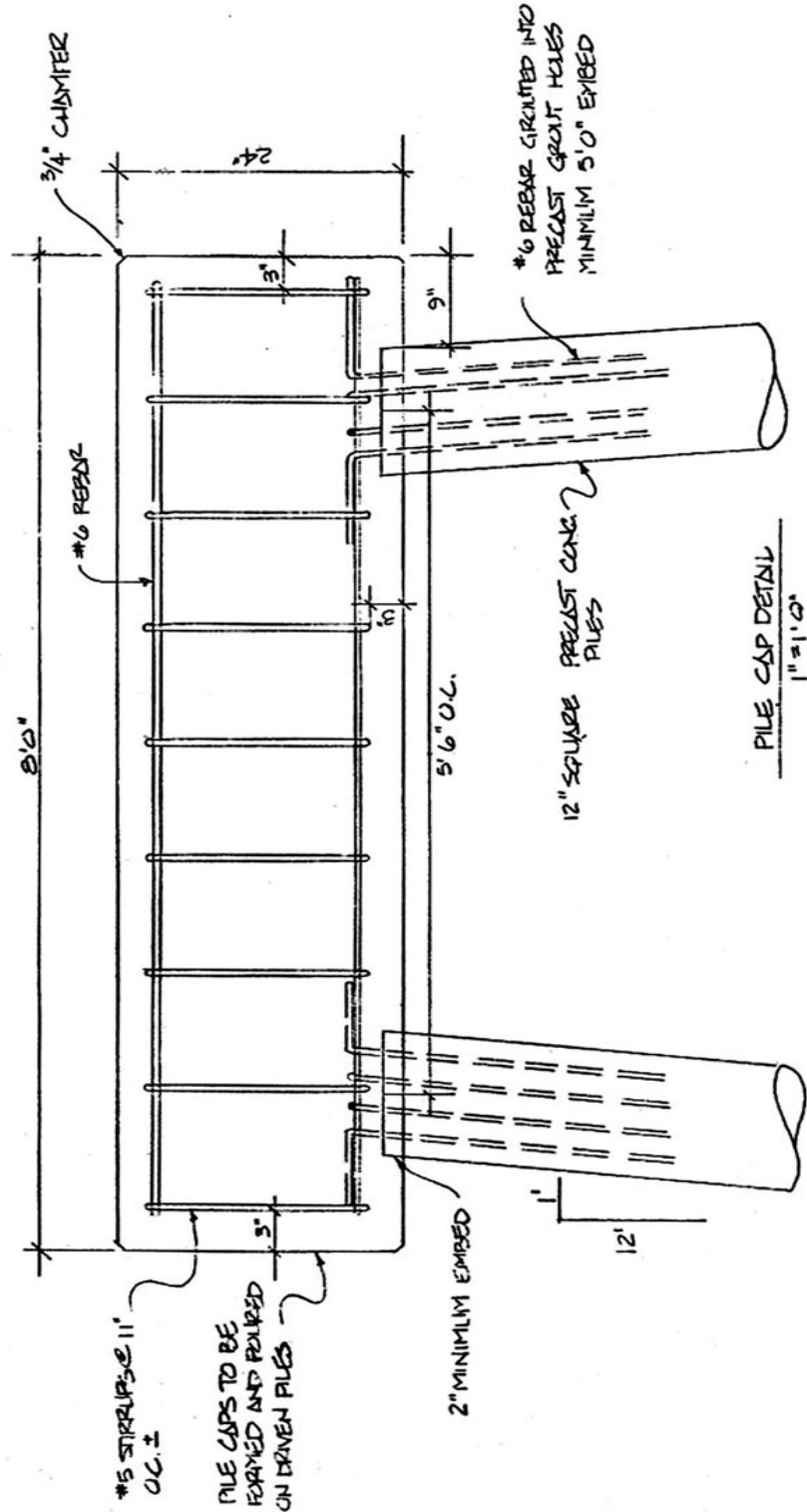


**DIAGRAM 3C: Approach slab and pile cap detail, Bonnie Gool Guest Dock**





**DIAGRAM 3D: Pile cap detail, Bonnie Gool Guest Dock**



PILE CAP DETAIL  
1" = 1'0"

2) Canoe launch, Camp For All, Burton, Texas

Situated on an 8-acre lake, this launch provides access for children with disabilities. The 20' x 16' wooden structure attaches to a concrete surface on the shoreline via an aluminum gangway approximately 12' long. Two 3.5' tapered ramps allow canoes to slide up onto the launch, easing transition to the water for those in wheelchairs. A railing around the perimeter of the launch, made of double 2' x 4' wooden pieces, helps keep wheelchairs from sliding off the launch and also provides an anchoring device for boats.



Photos courtesy of Roger Lewis  
Lower Colorado River Authority

**Photos 3C, 3D: ADA accessible wooden floating launch has two tapered ramps that allow canoes to slide up onto the deck**



3) "F" Street Floating Dock, Humboldt Bay, Eureka, California

The "F" Street floating dock is one of several launch structures on Humboldt Bay that provides access to paddlers with disabilities. An aluminum gangway just over 80' long connects to a floating launch made of treated wood and concrete floats. Galvanized steel connectors hold the dock's components together. Concrete floats provide maximum stability and are extremely durable (see Chapter VIII).



Photo courtesy of Gary Boughton, City of Eureka, CA

**Photo 3E: Aluminum gangway serves as a ramp to floating launch**

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