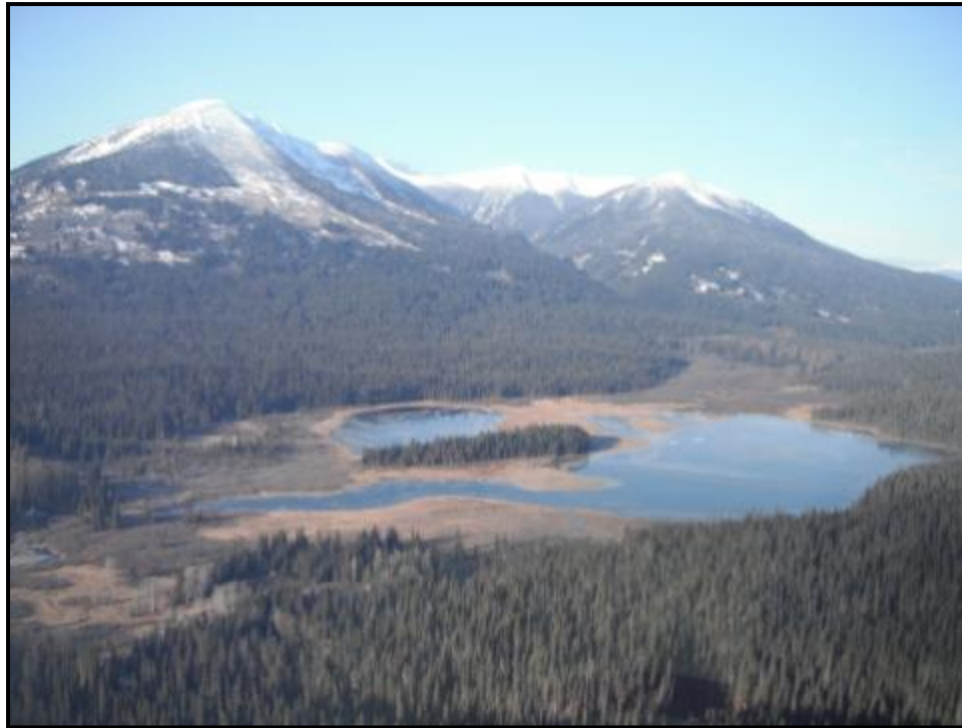


Slamgeesh Camp Infrastructure Improvements



Prepared for:

Pacific Salmon Commission

Northern Fund Project NF-2012-I-14



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INTRODUCTION

The Slamgeesh Lake field station was established in 2000 with the goal of becoming a long-term full index site for sockeye and coho in the upper Skeena Watershed. Slamgeesh Lake is located within the Damdochax Protected Area approximately 160 km north of Hazelton, British Columbia. The traditional territory (*Golangiist*) has important cultural significance to the Gitksan people as it was once an important fishing site and winter village. The Gitksan Watershed Authorities (GWA) has used this fly-in only system as a focus of wild salmon research for the past thirteen years. Our studies have included:

- in-season coho and sockeye smolt population estimates
- coded-wire tagging of coho smolts
- adult escapement counts through a weir
- scale ageing of smolts and adults
- foot surveys of spawning streams
- biophysical measurements (lake temperature and oxygen profiles, lake bathymetry, stream stage, and air temperature)

Over the past ten years we have been making incremental improvements of the Slamgeesh Camp to increase the efficiency of stock assessment efforts. PSC Northern Fund grants have assisted in the installation of a modular aluminum and concrete adult fence and a smolt trapping system that has improved smolt estimates and facilitated coded-wire tag marking of an upper Skeena wild coho cohort. Camp improvements have been of secondary importance, but we have been making some improvements to the camp annually such as adding a solar powered camp-wide electric system, a water supply with sterilized drinking water and a hot shower. Proper facilities are important as our programs require having crew on site for six months of the year serviced by bi-weekly flights. The objective of this infrastructure improvements project was to maintain the functionality of the Slamgeesh Camp. The 2012 replacement of the Slamgeesh dock enables continued air service to the camp. Replacement of the floor of the old log cabin, built about 1973, was needed to safeguard crew health and provides a sterile cooking/eating area.

DESCRIPTION

Dock Rebuild

The new main dock on Slamgeesh Lake was rebuilt at the same location at the edge of the camp. The dock was enlarged to 12' x 16' compared to the old 8' x 12' structure. The frame was framed with 2x8" pressure treated lumber and covered with 2x6" pressure treated lumber. Galvanized carriage bolts, lag bolts and Simson Strong-Tie GA2 galvanized reinforcing angles were used to secure the frame. There are 16 floats supporting the main dock. The polystyrene floats are Western Dock AP8 Units, each measuring 24"x48"x8" and each supporting up to 250 pounds (Figure 1). The smaller T-section leading to the main dock is approximately 6' by 12', framed with 2x8" pressure treated lumbers and supported by four floats. Heavy duty galvanized hinges (Figure 2) were used to connect the two sections so that they could be disassembled and the smaller section loaded onto the larger float for winter storage. Skids were attached to the bottom of the floats of the smaller section to enable this maneuver. The decking throughout is 2x6" pressure treated lumber, secured with screws and spaced approximately one half inch apart. A walkway was later installed to provide easy access to the dock from the uneven shoreline.

Docks in this region need to survive wind-driven ice movement during spring melt. Since the adjacent shore is too steep to store the dock on land, we designed the dock to withstand the pressure of ice flows in the spring. The new dock perimeter is secured with 2" metal drill pipe. An air compressor driven pile driver was used to pound four pipes on each side of the main dock (Figures 4,5). The pipe are in the lake bottom about four feet and were cut off so that they remain approximately two feet above the dock to allow for changes in lake water level. The tops were covered with foam to avoid staff injury. To protect the sides of the boat and airplane pontoons, 8.5" inflatable vinyl fenders were used along the outer edge of the dock (Figure 6). Where the float protection required more depth, used tires were secured. Cleats were positioned on the deck edge to which boats and float planes can be secured. Dock plans are included attached as an Appendix to this report. When the existing dock was removed, the scraps were burned or moved to high ground.



Figure 1. The Western Dock AP8 polystyrene floats used for the new dock, each measuring 24"x48"x8".



Figure 2. One of two heavy-duty hinges joining the two sections of the dock.



Figure 3. Simpson Strong-Tie galvanized reinforcing angles were used to connect the structural members. Note attachment of float units on right and left.



Figure 4. Instalation of drill pipe protection around dock.



Figure 5. A photo of the new walkway leading to the two part dock during the pile driving of the 2 inch drill stem that secures the main 12'by16'platform.



Figure 6. 8.5" x 48" Fender floats used along outer edge of main dock



Figure 7. The newly completed dock at Slamegeesh camp in July 2012 prior to attachment of fender floats.

Main Cabin Floor Rebuild

The existing rotted floor of the main log cabin was removed by the field crew on the final shift of the smolt trapping season. The site was prepped and ready for the new materials and construction crew to arrive. The old joists were mainly logs lying on earth or log posts which had for the majority rotted. The floor level was raised slightly to enable concrete footing installation and bracing to make the floor level. New tongue and groove $\frac{3}{4}$ " plywood was used and properly joined with the walls to avoid gaps which allow easy *Peromyscus* mouse entry into the cabin. The floor is approximately 18' by 18' and is now level with even joints. Two coats of paint were applied before the construction crew left and technical field staff resumed work.



Figure 8. A section of the new floor in the main cabin at Slamgeesh camp in July 2012.



Figure 9. Lake side section of the new floor with appliances re-installed.

DEVELOPMENT AND OPERATIONS

Design plans were developed in the late winter of 2011/2012 before the Slamgeesh field season. Design and schedules were finalized with the construction consultant one and a half months before on site work began. During this time the materials and hardware were ordered and purchased and staged at the GWA's Kispiox field offices. Most materials were local except for the floats which were shipped from Prince George. All of the construction materials, supplies and tools were transported by truck and trailer to our staging site at Elizabeth Lake in the Kispiox Valley about 70 miles south of Slamgeesh. The 2012 ice and snow melt was not early enough to allow time for construction in the spring. The construction was re-scheduled for after the smolt program field operations. An Otter aircraft was used for transportation of the material and crew.

The construction and repair activities were carried out during the break between smolt and adult salmon stock assessment programs in mid July. The materials and construction crew flew in to the Slamgeesh camp on July 12th, 2012. The majority of the onsite fabrication and construction of the new cabin floor and dock took 6.5 days. Construction was completed by a certified carpenter and an experienced assistant who stayed at the camp until July 18th. The construction company, Misty River Ventures is local to Kispiox, B.C. Construction did not overlap with biological sampling periods; however program staff flew in a week early to await a possible early sockeye migration and finish work on the maintenance around camp. This prefabrication and finishing work was performed by GWA seasonal technicians; including a week of extra work for a technician from the Slamgeesh Gitksan house group.

OPERATIONAL IMPROVEMENTS

The new infrastructure has improved the function of the Slamgeesh field camp. The new dock is long-lasting and provides a safe platform for daily transportation by boat to the field sites as well as the bi-weekly float plane flights to and from camp. It is larger and very sturdy, enabling crews to efficiently load equipment and camp supplies. The new floor in the main cabin has been successful in deterring mice from entering. This is important as the space is used as a communal work and cooking area. Ergonomics and safety has been improved by having a sturdy level surface as the old floor was becoming weakened and slanted. The infrastructure was build with durability in mind and they will continued to be maintained and repaired as necessary along with the rest of the camp.

Continued Slamgeesh Salmon Program Operations

The improvement of infrastructure in the Slamgeesh camp supports the field operations of the Slamgeesh Salmon Program which just completed its thirteenth year of operation. The 2012 smolt program was successful in providing sockeye and coho smolt population estimates and a valuable coho coded wire tagging study. The 2012 adult fence program operated through the sockeye and coho migrations without interruption or malfunction. The program provides an indicator for high interior coho stocks and data that represents the health of a smaller wild sockeye stocks. These long term goals of providing an index site for Upper Skeena sockeye and coho also require long term goals in camp maintenance. This project funding by the PSC Northern Fund has enabled two necessary infrastructure items to be replaced and improved the field site operations. The Gitksan Watershed Authorities and its partners look forward to another successful program in 2013.

APPENDIX

Scale Drawings of Dock Components

188.996"

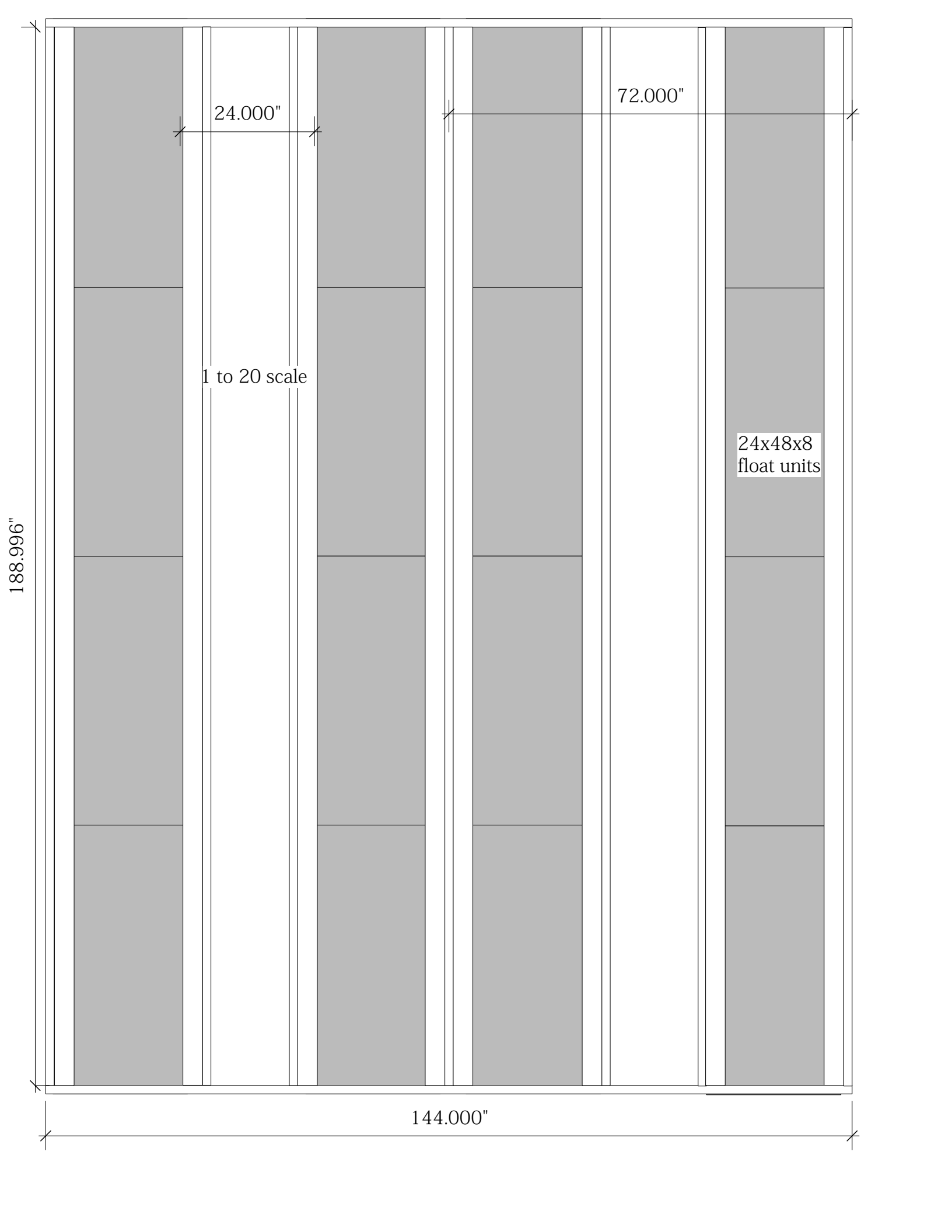
24.000"

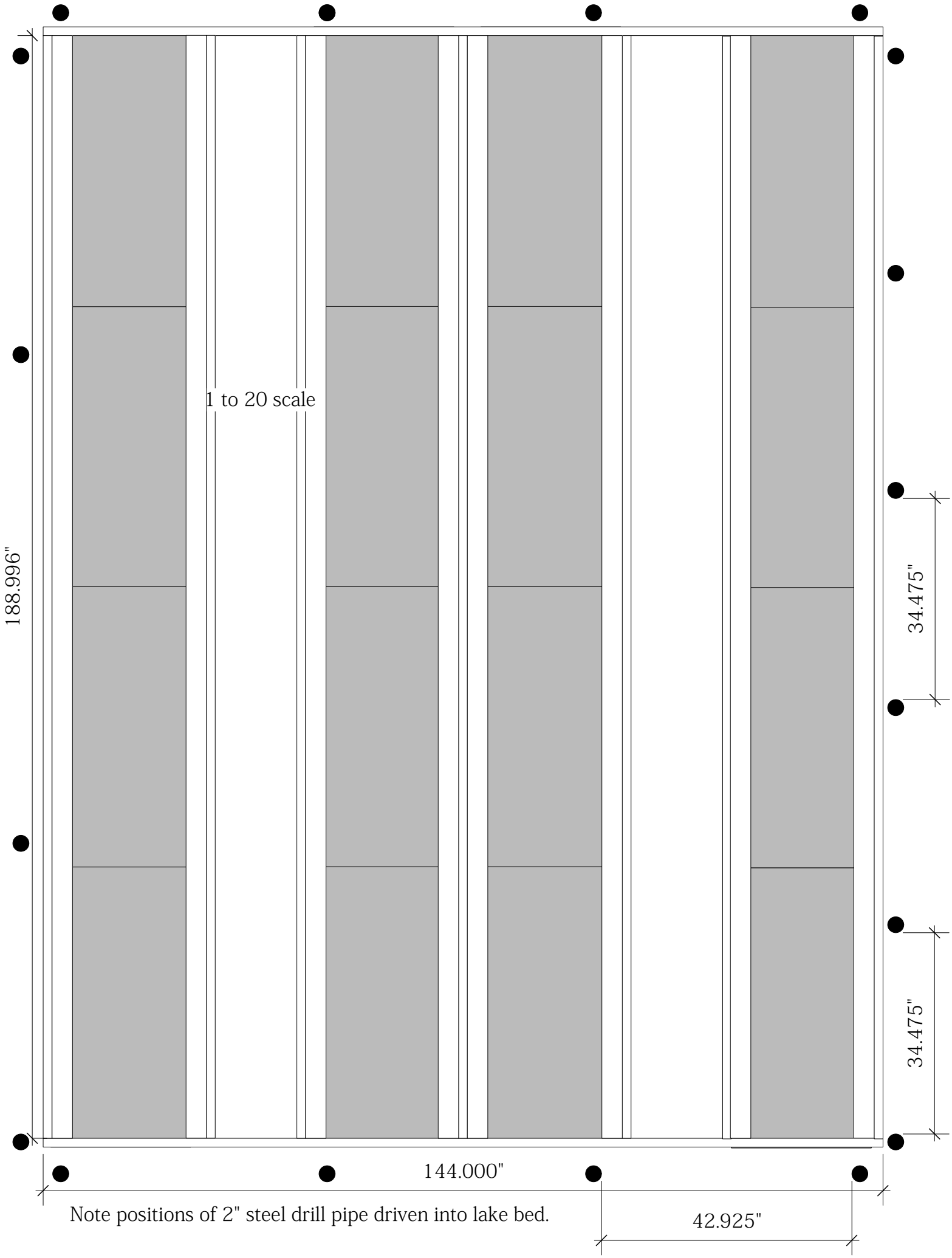
72.000"

1 to 20 scale

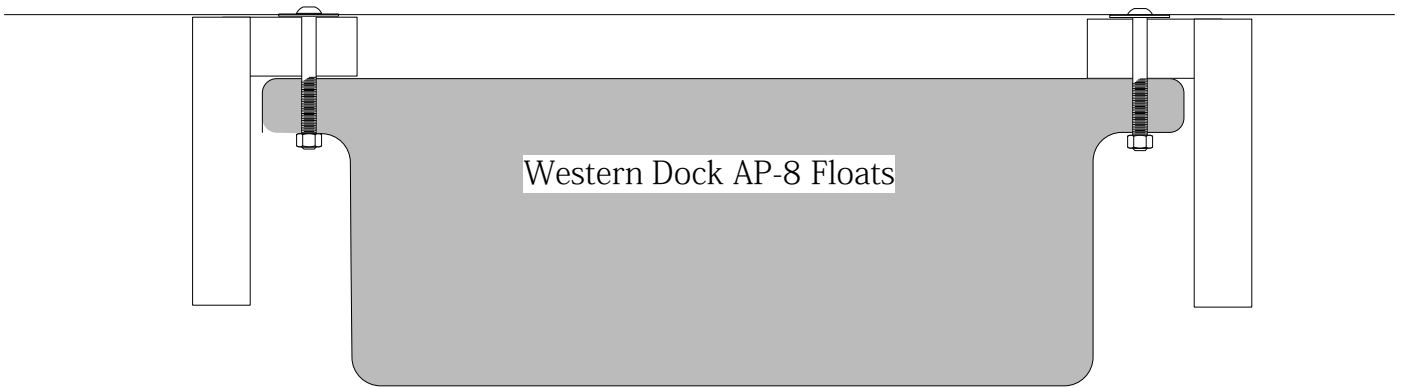
24x48x8
float units

144.000"

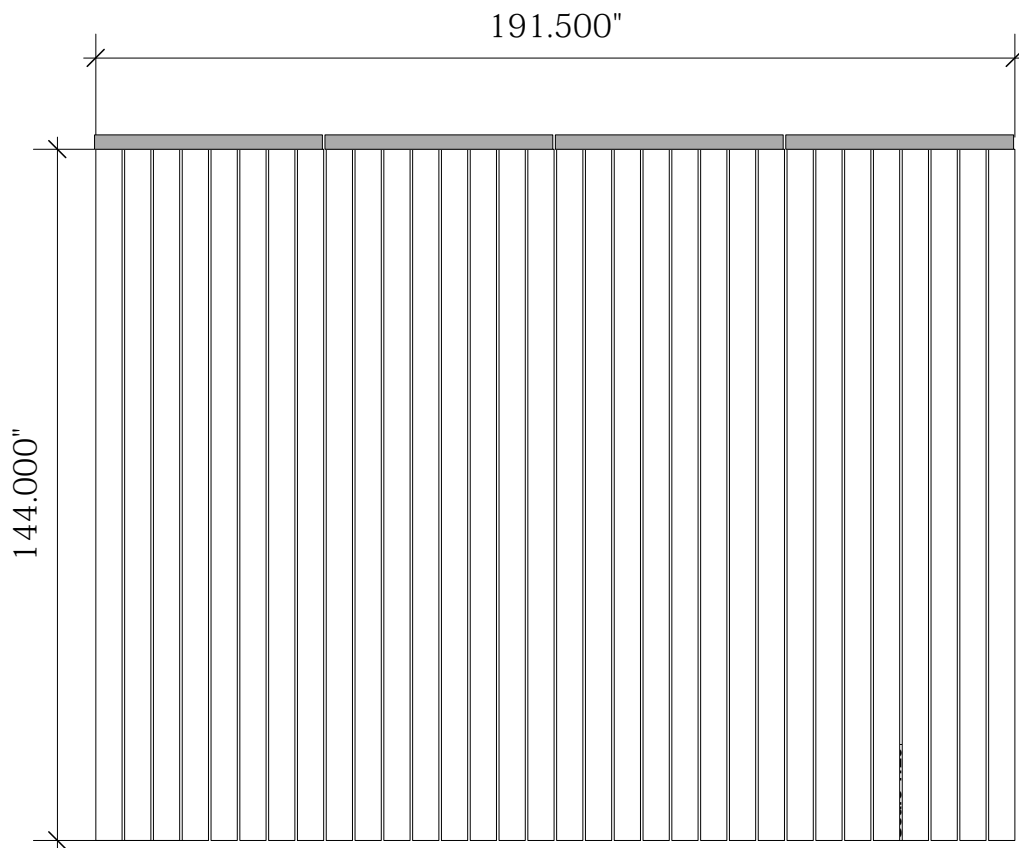




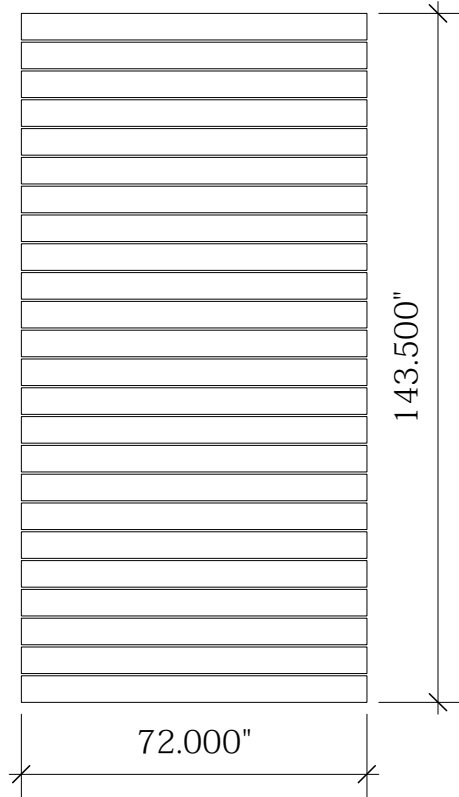
1.5"x 5.5" treated decking



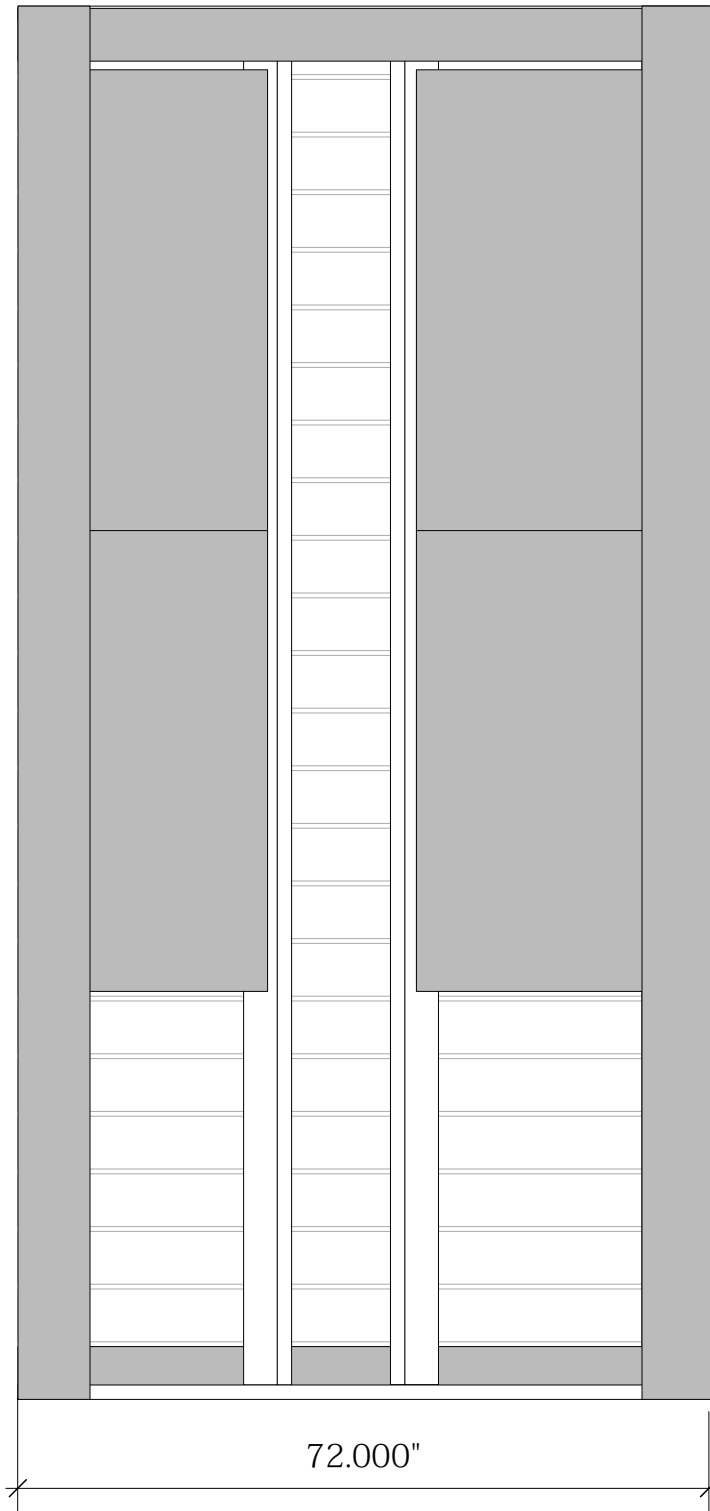
Detail of Float Attachment
Scale 1:5



1 to 40 scale



1 to 20 scale
Note 2x6 cross-wise
spacers and 2x8
skids beneath float
units



Diagrammatic section of small float

