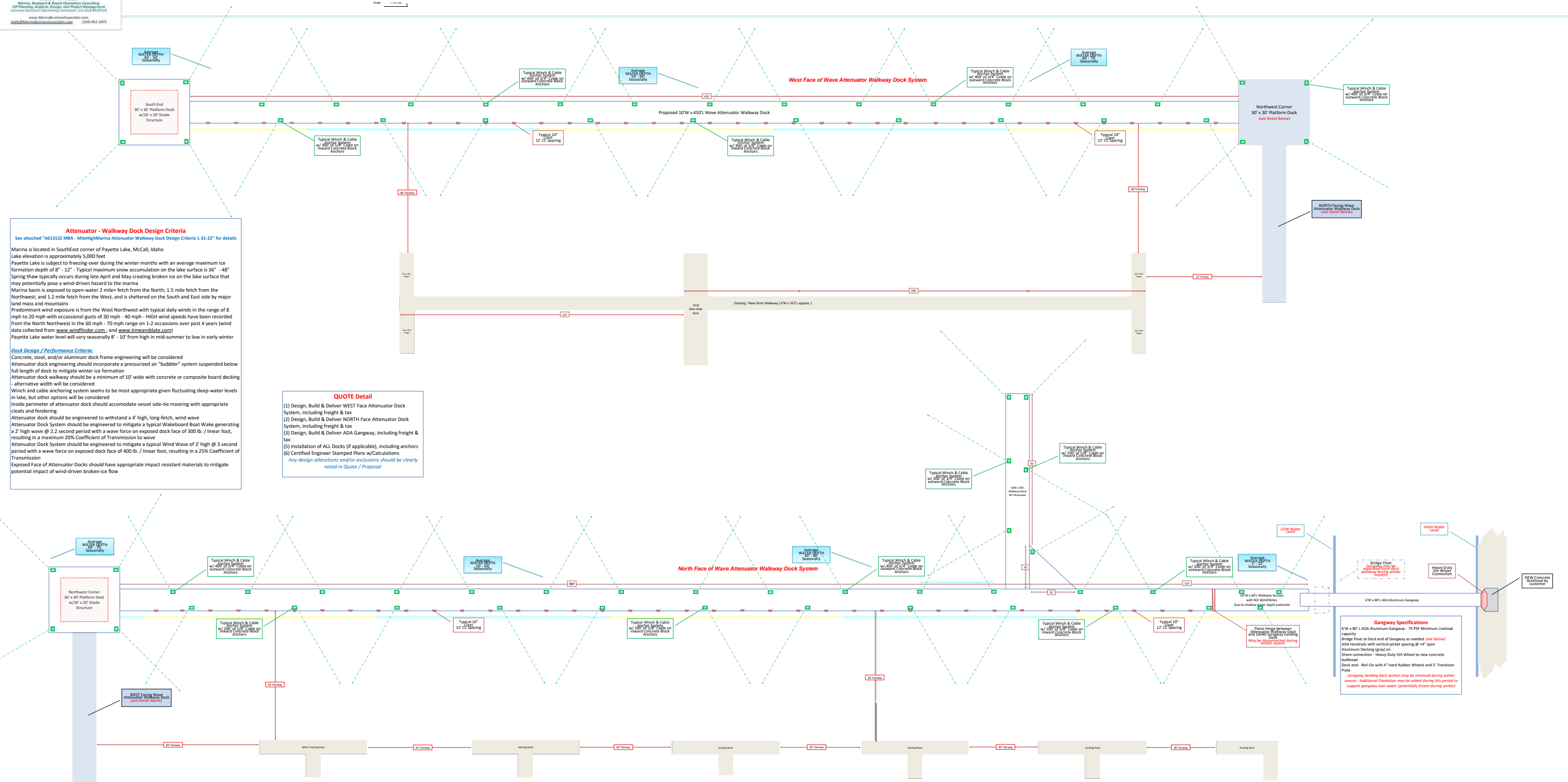


# ATTACHMENT 5



**Mile High Marina Wave Attenuator System - Payette Lake, ID**  
Proposed Layout & Design Criteria  
Drawing & Specs v011022



**Attenuator - Walkway Dock Design Criteria**  
See attached "A013122 MBA - MileHighMarina Attenuator Walkway Dock Design Criteria 1-31-22" for details

Marina is located in SouthEast corner of Payette Lake, McCall, Idaho  
Lake elevation is approximately 5,000 feet  
Payette Lake is subject to freezing-over during the winter months with an average maximum ice formation depth of 8" - 12" - Typical maximum snow accumulation on the lake surface is 36" - 48"  
Spring thaw typically occurs during late April and May creating broken ice on the lake surface that may potentially pose a wind-driven hazard to the marina  
Marina basin is exposed to open-water 2 mile+ fetch from the North; 1.5 mile fetch from the Northwest; and 1.2 mile fetch from the West, and is sheltered on the South and East side by major land mass and mountains  
Predominant wind exposure is from the West Northwest with typical daily winds in the range of 8 mph to 20 mph with occasional gusts of 30 mph - 40 mph - HIGH wind speeds have been recorded from the North Northwest in the 60 mph - 70 mph range on 1-2 occasions over past 4 years (wind data collected from [www.windfinder.com](http://www.windfinder.com) and [www.timeanddate.com](http://www.timeanddate.com))  
Payette Lake water level will vary seasonally 8' - 10' from high in mid-summer to low in early winter

**Dock Design / Performance Criteria:**  
Concrete, steel, and/or aluminum dock frame engineering will be considered  
Attenuator dock engineering should incorporate a pressurized air "bubble" system suspended below full length of dock to mitigate winter ice formation  
Attenuator dock walkway should be a minimum of 10' wide with concrete or composite board decking - alternative width will be considered  
Winch and cable anchoring system seems to be most appropriate given fluctuating deep-water levels in lake, but other options will be considered  
Inside perimeter of attenuator dock should accommodate vessel side-tie mooring with appropriate cleats and fendering  
Attenuator Dock should be engineered to withstand a 4' high, long-fetch, wind wave  
Attenuator Dock System should be engineered to mitigate a typical Wakeboard Boat Wake generating a 2' high wave @ 2.2 second period with a wave force on exposed dock face of 300 lb. / linear foot, resulting in a maximum 20% Coefficient of Transmission to wave  
Attenuator Dock System should be engineered to mitigate a typical Wind Wave of 3' high @ 3 second period with a wave force on exposed dock face of 400 lb. / linear foot, resulting in a 25% Coefficient of Transmission  
Exposed Face of Attenuator Docks should have appropriate impact resistant materials to mitigate potential impact of wind-driven broken-ice flow

**QUOTE Detail**

- (1) Design, Build & Deliver WEST Face Attenuator Dock System, including freight & tax
- (2) Design, Build & Deliver NORTH Face Attenuator Dock System, including freight & tax
- (3) Design, Build & Deliver ADA Gangway, including freight & tax
- (5) Installation of All Docks (if applicable), including anchors
- (6) Certified Engineer Stamped Plans w/Calculations

*Any design alterations and/or exclusions should be clearly noted in Quote / Proposal*

**Gangway Specifications**  
6'W x 80' LADA Aluminum Gangway - 75 PSF Minimum LiveLoad capacity  
Bridge Float at Dock end of Gangway as needed (see below)  
ADA Handrails with vertical picket spacing @ 4" span  
Aluminum Decking (gray) on  
Shore connection - Heavy Duty 5th Wheel to new concrete bulkhead  
Dock end - Roll-On with 4" Hard Rubber Wheels and 3" Transition Plate  
Gangway landing dock section may be removed during winter season - Additional floatation may be added during this period to support gangway over water (potentially frozen during winter)