



**Counsilman · Hunsaker**  
AQUATICS FOR LIFE

# BARTLETT POOL – DIVE STAND INSTALLATION ANALYSIS

Anchorage, AK



**Report for:** Bettisworth North &  
Municipality of Anchorage - Parks & Rec

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### **Introduction**

Counselman-Hunsaker (C-H) was commissioned by Bettisworth North in October of 2024 to perform an assessment of the newest dive stand installations at Bartlett Pool, an existing 50M pool in Anchorage, AK. This task arose from various comments regarding the new installation by the Anchorage swimming community. The claims are that the newest 3M dive stands are a safety hazard to swimmers that use starting blocks 4 and 5. Additionally, claims state that the 3M dive stands have developed new pinch points on the pool deck at the deep end of the pool that were not previously present. In this report, C-H will analyze the new dive stand installations and compare to pertinent safety codes, competition codes, aquatic design industry standards, and the previously existing diving equipment installation.

### **Facility Description & Background**

The Bartlett Pool is a long-course (50-meter length) swimming pool that is 58 feet wide. The pool includes a shallow end with a minimum water depth of 4ft, and a deep end with a maximum water depth of 12'-6". The pool utilizes two stainless steel movable bulkheads to vary the swimming course length from eight (8) 7'-0" wide 50-meter swimming lanes to sixteen (16) 7'-0" wide 25-yard swimming lanes. The pool includes starting blocks at each end, with the deep end utilizing Omega OSB-11 track start blocks for swimming competition. The pool is highly programmed. It is utilized for club swimming (USA Swimming), club diving (USA Diving), and high school varsity swimming and diving (NFHS). The pool hosts many state-level aquatic competitions on a regular basis. This is the only 50-meter pool in the state of Alaska.



### **Previous Diving Equipment Description**

The previous installation of diving equipment at Bartlett included one (1) 3-meter Paragon Paraflyte side-ladder dive stand, and two (2) 1-meter Paragon Paraflyte dive stands. These products have a large center pedestal base. The side-ladder stand was provided for the 3-meter board to ensure that adequate walking space could be provided behind the stand for swimmers and divers alike. All the dive stands were installed centered over the swimming lane dividers; therefore, the stands were directly between starting blocks in the adjacent lanes.

### **Newest Diving Equipment Description**

The latest diving equipment at Bartlett includes one additional dive stand. The newest installation includes two (2) 3-meter Duraflex stands, and two (2) 1-meter Duraflex short-stands anchored on cast-in-place concrete pads with custom stainless steel guard rails. The 3M dive stands are only available with a rear ladder entry, which limits space behind the stand. The stands have large legs that spread over a large area to anchor into the pool deck. Duraflex is considered the premier installation for diving equipment; these products are used at all large competitions up to the national and international stages. Installing Duraflex at local facilities allows athletes to train on the same equipment that they will use to compete during high-level competition.



### **Codes/Standards Analysis of Newest Dive Stand Installation**

This section of the report will analyze health, safety, and competition code requirements that are pertinent to the diving equipment that was installed. The following codes will be discussed:

- Alaska Pool Code (Department of Environmental Conservation, 18 AAC 30)
  - This is the applicable health code for public pools in Alaska.
- Model Aquatic Health Code 2023 (MAHC)
  - While Alaska does not require adherence to this code, the MAHC is a thorough, national-level health code developed by the Center for Disease Control (CDC). This code often sets trends for various pool requirements around the country, and has been adopted by several states.
- USA Swimming 2024 Rulebook (USAS)
  - This rulebook includes criteria for club swimming facilities that are used for club practice and club swim meets.



- USA Diving Competitive and Technical Rules 2019 (USAD)
  - This rulebook includes criteria for club diving facilities that are used for club practice and club competitions.
- National Federation of High School Associations Rulebook 2024-2025 (NFHS)
  - This rulebook includes criteria for varsity swimming and diving facilities that are utilized for high school practices and competitions.
- World Aquatics Facilities Rules 2021-2025 (WA)
  - These rules describe criteria for various facilities around the world that host aquatic competitions.
- Americans with Disabilities Act (ADA)
  - A federal code that requires public spaces and commercial buildings to be accessible to those with physical disabilities.
- Aquatic Industry Standards not covered by Code
  - Commentary by C-H as to the design practices that are typical of modern commercial swimming pool installations.

<b>Code</b>	<b>Pertinent Code Requirements</b>	<b>Commentary on Installation</b>
Alaska Pool Code	<ol style="list-style-type: none"> <li>1. Water depth at diving area must be 12'-6" for 3M installations.</li> <li>2. Water depth at diving area must be 11'-10" for 1M installations.</li> <li>3. Horizontal separation between board and pool wall side must be 10'-0".</li> <li>4. Unobstructed head room of 16'-6" at each diving board.</li> <li>5. Minimum deck width of 13'-0" where diving boards are located.</li> </ol>	<ol style="list-style-type: none"> <li>1. Installation meets criteria.</li> <li>2. Installation meets criteria.</li> <li>3. Installation meets criteria.</li> <li>4. Installation meets criteria.</li> <li>5. Installation meets criteria.</li> </ol>
Model Aquatic Health Code	<ol style="list-style-type: none"> <li>1. Unobstructed deck area of 4 feet width must be provided for access around diving boards.</li> <li>2. Guard rails must be at least 30 inches tall for all 1-meter stands</li> <li>3. Guard rails must be at least 36 inches tall for all 3-meter stands</li> <li>4. World Aquatic dimensional criteria must be met for all springboard equipment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Deck area provided directly underneath 3M stands, but not provided behind the 3M ladder or the 1M stands.</li> <li>2. Installation meets criteria.</li> <li>3. Installation meets criteria.</li> <li>4. Installation meets criteria.</li> </ol>
USA Swimming 2024	<ol style="list-style-type: none"> <li>1. 1-meter diving boards which overhang the racecourse shall be hinged out of the way or removed during competition.</li> </ol>	<ol style="list-style-type: none"> <li>1. Installation meets criteria.</li> <li>2. Installation meets criteria – dive stands must be</li> </ol>



	<ol style="list-style-type: none"> <li>Use of portable deck fixtures should be removed from competition area to allow free passage and unobstructed view for competitors and officials.</li> </ol>	<p>fixed to the deck to withstand forces.</p>
USA Diving 2019	<ol style="list-style-type: none"> <li>Springboard overhangs water by 5'-11" minimum.</li> <li>World Aquatic dimensional criteria must be met for all springboard equipment.</li> </ol>	<ol style="list-style-type: none"> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> </ol>
National Federation of High School Associations	<ol style="list-style-type: none"> <li>Springboard overhangs pool wall by 6'-0".</li> <li>Pool water depth at 1M springboards must be 12'-0".</li> <li>Distance between boards is a minimum of 8'-0".</li> <li>Distance between board and pool wall at side is a minimum of 10'-0".</li> <li>Unobstructed head room of 16'-0" at each diving board.</li> </ol>	<ol style="list-style-type: none"> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> </ol>
World Aquatics	<ol style="list-style-type: none"> <li>Water depth of 11'-2" for 1M installations and 12'-2" for 3M installations.</li> <li>Side-to-side dimensions of 7'-2 1/2" between 3M plummet and adjacent plummet.</li> <li>Side-to-side dimensions of 6'-7" between 1M plummet and adjacent plummet.</li> <li>Side-to-side dimensions of 8'-2 3/8" between 1M plummet and pool wall at side.</li> <li>Unobstructed head room of 16'-5" at each diving board.</li> </ol>	<ol style="list-style-type: none"> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> <li>Installation meets criteria.</li> </ol>
Americans with Disabilities Act	<ol style="list-style-type: none"> <li>Accessible route to pool's ADA access is provided via the locker rooms and a clear walking width of 36".</li> </ol>	<ol style="list-style-type: none"> <li>Installation meets criteria</li> </ol>
Aquatic Industry Standards not covered by code	<ol style="list-style-type: none"> <li>1M and 3M dive stands are typically installed directly between starting blocks for spacing reasons.</li> </ol>	<ol style="list-style-type: none"> <li>Criteria not met for 3M springboards. 3M installations are directly above starting blocks.</li> </ol>

The code issues noted are related to deck clearances between the 1M dive stand and the natatorium wall. However, this pinch point condition may have existed with the old installation, and could be potentially considered “grandfathered” by the health department.

During new designs, C-H typically calls for a minimum of 4'-0” between the rear extent of dive stands and the natatorium wall. However, depending on the interpretation of the health department, the space between the rear ladder for the 3M and the natatorium wall may be a non-issue. In some jurisdictions, these clearances between the rear ladder and natatorium wall are overlooked for 3M dive stand installations, since lifeguards and swimmers can still safely access the entire pool perimeter by traveling underneath the 3M stand.

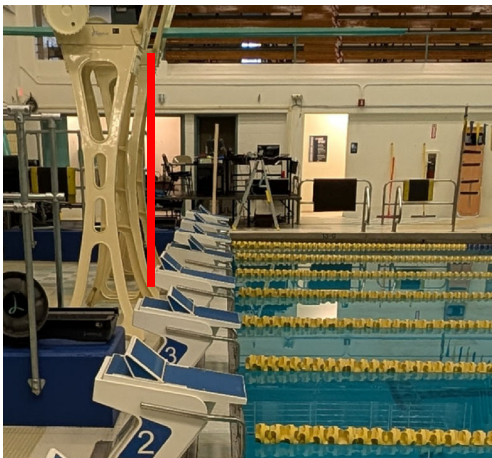
### **Comparison Summary of the Two Installations**

The two installations of diving equipment can be broken down into several different categories. Each category will be explored throughout the remainder of the report:

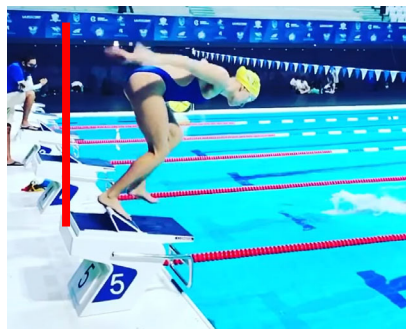
- **Quality:** Overall, the quality of diving equipment at Bartlett has drastically increased. The new installation utilizes Duraflex equipment, the same materials that are used at high-caliber competitions all over the world. The existing equipment was irrelevant to high-level diving competition and it was extremely dated. The equipment had not seen a significant renovation within the last 20+ years.
- **Number of diving plummets:** The number of plummets has increased from three (3) to four (4) with the addition of a second 3-meter stand. This will allow for higher through-put during diving practice and diving competition at the 3M height. 3M synchronized diving events may now also be hosted.
- **Deck & Ladder clearance:** Due to the increased number of 3M stands, and therefore an increase in number of anchor points and ladder entries, deck clearances at the deep end of the pool have been reduced. Switching from a side ladder entry to a rear ladder entry has reduced the clearance behind the 3M stand to roughly 15 inches, which has the potential to cause safety issues with divers climbing the ladder. In addition to clearance safety issues, the new 3M dive stand anchor points can cause congestion during high-capacity swim meets.
- **Clearance to swimming starting blocks:** With an increase in the number diving plummets installed at the end wall of a pool with a width of 58', the horizontal dimensional requirements between springboards force the 3M dive stands to directly flank some of the swimming starting blocks. This is different from the previous installation and is atypical of the industry standard that calls for dive stands being located directly between swimming lanes. However, code requirements do not exist regarding clearances around starting blocks. The 3M springboards being located directly above the starting block will force staff to raise the springboard prior to swim practice or swim competitions, much like the USA Swimming rules for 1M springboards. If this occurs, it will eliminate the possibility of swimmers hitting the springboard during flat starts or the upswing of their arms during relay starts.

### Position of Swimmers in Relation to 3M Dive Stands

For traditional flat start and relay exchange motions during competitive swimming events, swimmer's arms or legs will not encounter the dive stand equipment. For a flat start, swimmers' arms and legs never extend past the rear of block. See installation image below compared with Olympian Anthony Ervin preparing for a flat start, with a red line indicating the vertical plane of the rear starting block edge.



With the innovative and explosive stepover relay start, swimmers swing their arms as they “step over” the track start wedge of the block to gain momentum as they dive into the water. Local swim coaches are concerned about swimmers' arms contacting the dive stand. Three images are provided below from an elite swim coach (David Marsh) social media page, with a red line indicating the vertical plane of the rear starting block edge. The images indicate that the arms do not traditionally pass the rear edge of the block. This is because swimmers are already forward with their feet as the arm swinging motion is executed.



## **Conclusion & Recommendations**

The currently installed diving equipment does not violate any applicable competition codes for USA Swimming, USA Diving, NFHS, or World Aquatics. Additionally, the installation is an adherence with the applicable Alaska Pool Code since the deck width is 13'-0" and the water depth meets the requirements. It does not meet Model Aquatic Health Code deck widths around a pool perimeter due to the pinch points behind the 1M and 3M stands. While the MAHC provides good recommendations, it is not strictly enforced in Alaska currently.

C-H believes based on the research above that while the latest installation is unorthodox when compared to aquatic industry design standards, the 3M dive stands do not pose a hazard for the typical flat start motions and relay start motions of a competitive swimmer, and they do not violate applicable codes. However, space behind the blocks is reduced, and swimmers may "feel" like they will contact the stand.

C-H takes no exception to the current installation remains in place. But it should be made clear that if both 3M stands remain, the swimmers will be the group that is most inconvenienced by the change. The facility will now include more wholistic aquatic programming since it offers more for diving clubs, but it will be at the expense of the swimming teams and clubs.

However, C-H recommends that stringent operational procedures must be administered by staff to require all 1M and 3M springboards to be hinged upwards during any swim practice or competition to adhere to the USA Swimming Rulebook. In addition, bolded signage should be attached to platforms 4 and 5 stating that the blocks may not be climbed from the rear edge. In addition, padding can be added to the underside of the 3M dive stands. These actions will further prevent the possibility of head collisions with the stands.

