PIERCE JOINT UNIFIED SCHOOL DISTRICT AND ARBUCKLE COMMUNITY AQUATIC CENTER

Swimming Pool Programming and Design Narrative

SECTION 1: SWIMMING POOL EXECUTIVE SUMMARY

Pierce Joint Unified School District and Arbuckle Community Aquatic Center at the Pierce High School site in Arbuckle will be designed to meet the competitive and physical education needs of Pierce Joint Unified School District and the instructional, therapeutic and recreational needs of the greater Arbuckle Community for the next seventy years and beyond.

Demographic information available from public records provided by the 2010 and 2020 census clearly indicates that the community of **Arbuckle is a young and growing community** in comparison to both State and National averages, and all indicators predict that Arbuckle will continue to grow and the demand for aquatic recreation for families and young people will also grow. Decisions made today are decisions made for the future of the students and community families.

The Aquatic Center Design emphasis is to provide maximum flexibility for aquatic programming, competitive, instructional, and recreational, which will be the key to maximize utilization and to maximize aquatic facility revenue stream.

The Aquatic Center will feature an outdoor competition/recreation swimming pool and an adjacent recreation/teaching pool (yet to be determined) as described in Section 2. Both pools will be constructed of wet-mix (shotcrete) pneumatically applied concrete. The interior of the pools will be white marcite plaster with waterline tile and perimeter hand holds. All loose and deck equipment will be as required by the applicable Health Department Regulations and the requirements of the District of the State Architect i.e., ladders, grab rails, safety ropes and anchors, lifeguard chairs, stanchions, deck anchors, etc. The pools filtration systems will be high rate pressure sand. Miscellaneous maintenance and first aid equipment will be provided that meets the applicable Health Department Regulations.

The swimming pools will meet the following performance standards:

Competition / Recreation Pool = 75'-0" x 60'-0" (8-lanes) with step in entry, depths from 12' to 4'-6".

Recreation / Teaching Pool = 75'0" x 25'-0" freeform with step in entry, depths from 3'-6" to 2'-0"

Overhead lighting:

Competition and Recreation Pool = 50 foot candles

Water Temperature:

Competition / Recreation Pool = 78 - 82 degrees F. Recreation / Teaching Pool = 84 - 86 degrees F.

Turnover Rate of Filtration System:

Competition / Recreation Pool = 5.5 hours

Recreation / Teaching Pool = 3.0 hours or less

Free Chlorine Level = 1.0 - 3.0 ppm

pH level = 7.4 - 7.6

30 May, 2022 Page 1 of 7

SECTION 2: SWIMMING POOL PROGRAM

Competition / Recreation Pool

The outdoor Competition / Recreation pool with dimensions of approximately 75'-1 $\frac{1}{2}$ " (25-yards) x 60' or 4,500 Sq Ft, with a minimum depth of 3-feet 6-inches and a maximum depth of 12-feet. Eight (8) 7'-4" wide swim lanes will be marked with black floor markers along the length of the pool. A 12" deep x 12" wide deck level gutter system will be provided around the perimeter of the pool for recirculation of pool water. Wall targets and floor markers will be provided for a competitive swimming racecourse. Rope anchors will be provided in the pool for floating lane lines. A stair alcove system for easy entry and exit will also be provided. Equipment to be provided will include (not all inclusive): starting blocks (8), movable guard stands (2), pace clocks, handicap lift, maintenance equipment, and safety equipment. The water temperature in this pool will be kept between 78-82 degrees.

Recreation / Teaching Pool

The outdoor Recreation / Teaching pool will be approximately 3,000 Sq Ft and have the following amenities: interactive water play features, a low platform level short flume waterslide, and large step/stair entry area for water confidence training and socialization. The pool will have a minimum depth of 3'-6" and a maximum depth of 4' - 6". A 12" deep x 12" wide deck level gutter system will be provided for recirculation of pool water. Equipment to be provided will include (not all inclusive): movable guard stand (1) that is 42" tall, one handicap lift, maintenance equipment, and safety equipment. An emergency shut off switch will be provided near the pool to control the slide flow and recirculation pumps. The water temperature in this pool will be kept between 84-86 degrees.

Aquatic Programming (both pools)

- High School and USA Swim Team 8-lane competition swimming.
- Grade through High (K-12) School Physical education swim instruction.
- High School 1-meter springboard diving.
- Recreational aquatics (free water time activities) community, private parties, corporate events.
- Learn-to-swim for children and adults.
- Water therapy and post-surgical rehabilitation.
- Water aerobics and aquatic exercise programs.
- Red Cross Lifeguard and Water Safety Instructor courses.
- Water confidence and interactive water features and low platform water slide.

30 May, 2022 Page 2 of 7

SECTION 3: SWIMMING POOL SYSTEMS AND EQUIPMENT

POOL CONSTRUCTION

Pool shells of wet-mix (shotcrete) pneumatically applied concrete will be provided as per the results and recommendations of the geotechnical investigation report.

POOL FINISH

The interior finish for the competition and recreation pools will be unglazed ceramic tile and white marcite plaster. Specialty tile will be provided for the perimeter tile band, gutter nosing, wall targets, recessed steps, floor lane markings, depth markings, and warning signs.

UNDERWATER POOL LIGHTS

The pools will have underwater pools lights as required by code, the lights will be 120V energy-efficient white LED lights.

DECK SIGNAGE

Depth markings and warning signs for the pool(s) will be required by code in contrasting ceramic tile. Depth markings will be shown in standard and/or metric measurements. "NO DIVING" signs will be provided at all pool areas with a depth of water 5'-0" or less. Depth markers will be provided per code at not more than 25 ft intervals.

OVERFLOW RECIRCULATION SYSTEMS

In modern swimming pools, the purpose of the perimeter overflow system is to receive and capture water at the pool surface. This water is then transferred to the pool mechanical systems through a surge tank, which helps stabilize the water displacement in the swimming pools.

A 12" deep x 12" wide deck level gutter will be installed on the competition pool and a 12" deep x 12" wide deck level gutter will be installed on the recreation pool. A surge tank will be required for all pools utilizing a gutter system.

FILTRATION SYSTEMS

The filters will be highrate pressure sand filters operating at a flow rate of up to 15 GPM per square foot of filter area. While many manufacturers rate their system at 20 GPM/sq. ft., field experience has shown that the lower flow rate results in better water quality. The system will be designed to completely turn over the competition pool water every 5.5 hours, the recreation pool water every 3 hours or less.

Filter room and filter face piping will be PVC Schedule 80 piping system (8 in. or smaller) because of its non-corrosive quality; however, only molded fittings are recommended. All flanges will be reinforced with a steel ring molded into the flange to avoid cracking due to vibration. Heat exchanger by-pass piping will be CPVC, (no copper).

PUMPING EQUIPMENT

Pumps will have self-priming TEFC (Totally Enclosed premium efficient, F Class insulated Motors), commercial grade, non-corrosive for durability and long life, light weight, NSF and UL approved and compatible with VFD (Variable Frequency Drive) for optimal efficiency. Each pump will include a hair and lint strainer with a clear observation top. Pressure gauges will be installed on the discharge of the pumps and compound gauges will be provided at the intake port of the pumps, after the hair and lint strainer.

Variable Frequency Drive motor starters shall be provided for the pool recirculation pumps. These VFD's shall provide the ability to adjust the flow rate of its respective system as well as communicate with the other pool filtration and chemical treatment and monitoring and pool heating equipment specified.

30 May, 2022 Page 3 of 7

PIPING SYSTEMS

Exposed piping in the pool mechanical room and surge tank will be Schedule 80 PVC for strength and resistance to corrosion. All piping below the floor of the pool shells will be Schedule 40 PVC.

All valves will be identified in the filter room. Valves will be described as to their function and referenced in the operating instruction manual and wall mounted piping diagram to be prepared by the contractor.

The pool(s) will utilize a combination of floor and wall inlets.

CHEMICAL TREATMENT SYSTEMS

Sodium Hypochlorite will provide the primary chemical sanitizing for the pools. The halogen requirement of the pools will be automatically monitored and controlled by a chemical controller capable of monitoring 0 to 6 parts per million of chemical and showing Oxidation Reduction Potential (ORP) in addition to the traditional readings of sanitizer and pH. Muriatic Acid/CO2 will be provided as the pH Buffering System. Chemical feed pumps will be electrotechnical peristaltic single head adjustable output pumps. Two (2) 500-gallon bulk sodium hypochlorite molded double wall /dual containment tank and one (1) 350-gallon bulk muriatic acid molded double wall /dual containment tank by Chemtainer will be provided for the chemicals. The CO2 system shall consist of CO2 storage tank(s), a lockable fill box for bulk delivery, a pressure reducing/regulating system, automatic tank changeover system, a feed and rate of flow adjustment control system, injection or mass transfer system, and all valves, tubing, fittings and appurtenances required for a complete and operable system. Chemical feed pumps will be furnished and connected to the filtered water return lines to the pools as shown on the pool plans. The pumps will be capable of feeding a solution to the pools to maintain pH level against the back pressure involved and will be fully adjustable while in operation. The system is to include the following components.

WATER CHEMISTRY CONTROLLER

A programmable chemical automation system will be furnished for the pools for continuous monitoring of water chemistry (ORP/HRR, PPM, pH and Temperature), Langelier Saturation Index, and for automatic control of the chemical feeders, heater, and water level. Installation of the system will be as specified by the manufacturer. A factory-authorized representative will provide training to the owner and the training will be video taped per the specifications. Such a system will maintain the water quality of the pool due to the greater degree of chemical balance of the water.

A wiring box (pool systems interlock) will be specified as part of the water chemistry controller which will allow either a 4-20 mA or line voltage connection from all respective pool systems (chemical feeders, pool pump motor starters, VFD, filter control panel, pool flow meter sensor, pool heat exchanger, pool HVAC/DH unit). Swimming Pool Contractor will be responsible for electrical connections that are less than 110V line voltage (4-20 mA) and the Electrical Engineer shall call for the line voltage connections from the respective equipment to the wiring box.

POOL HEATING

To maintain a consistent water temperature the pools will be heated, when required, by commercial gas pool water heaters delivering 88% or greater thermal efficiency with a low NOx rating of 9.9 ppm or less, offering accurate temperature control and comprehensive diagnostic information. The heating demand will be interconnected with the programmable chemical automation system for continuous temperature monitoring.

System design will include a by-pass connection for future back-up heating from the installation of thermal solar pool heating collectors with individual separated tubes providing simplicity, durability and effectiveness for pool water heating, maintenance and weather resistance.

30 May, 2022 Page 4 of 7

INSERTS AND ANCHOR SOCKETS

- A. Anchors for grab rails and stair railings will be provided.
- B. Anchors for backstroke stanchions will be provided.
- C. Heavy-duty cup anchors for all floating lane lines will be provided.
- D. Anchors for starting blocks will be provided.
- E. Anchors for diving board (if installed) will be provided.
- F. Anchors for the handicap lift will be provided.
- G. Anchors for the volleyball net and basketball goals will be provided (if requested).

DECK EQUIPMENT

- A. Grab rails and recessed steps for the pool will be provided as required. These will be provided by stainless steel grab-rails set in chrome plated bronze wedge anchors and escutcheons with set screws. Recessed steps in the pool wall will be provided.
- B. Backstroke and recall rope stanchions will be provided. The backstroke stanchions will be fitted with pennants and the recall stanchions with a rope.
- C. 24" x 32" track start starting platforms will be provided for the pool. These may be removed from the deck when not in use. Diving from the starting platforms should be restricted to supervised practice or competition of athletic teams.
- D. Deck mounted water polo goal anchors can be provided (if requested).
- E. Lifeguard chairs to meet the minimum standards of state regulations will be provided in portable (wheeled) units that may be stored out of the way during periods when lifeguards are not required.
- F. A surge tank access hatch will be furnished and installed over the surge tank opening. The access hatch will be constructed of marine grade HDPE with ATSM 50 slip resistant surface.
- G. Surge tank ladder rungs will be 1/2 inch Grade 60 steel encased with co-polymer polypropylene plastic.
- H. Handicap lift(s) will be provided to meet ADA guidelines.

LOOSE EQUIPMENT

- A. 6" diameter floating lane lines will be provided with an adequate number of storage reels.
- B. Lane line storage reels will be fabricated from a heavy-duty aluminum reel joined together by a 1-1/2 inch aluminum axle. This unit must ride easily on four hard rubber wheels.
- C. Two (2) 31" octagonal pace clocks will be provided on portable carts with battery power.

MAINTENANCE EQUIPMENT

- A. Wall brush will be a flexible polyethylene material with five (5) rows of nylon bristles. Pool brush holder will be permanent mold cast aluminum.
- B. Skimming net head will consist of one-piece molded plastic frame with a reinforced, integral handle bracket suitable for quick attachment to a standard 1¼ or 1½ inch diameter handle using bolts and wing nut.
- C. Adjustable telescopic and stainless steel poles to will be provided.
- D. Testing kit to feature liquid reagents, color comparator, waterproof instructions and treatment charts, chemistry guide and watergram. Test kit to have the ability to test for free and total chlorine (0.5 5.0 ppm), bromine (1-10 ppm), pH (7.0 8.0), acid and base demand, total alkalinity, calcium hardness and cyanuric acid.
- E. A vacuum cleaner will be provided with pump and strainer.
- F. Stainless steel cleaner will be provided.

SAFETY EQUIPMENT

- A. Ring buoys and extension ropes will be provided.
- B. Life hook and an aluminum extension pole will be provided.

30 May, 2022 Page 5 of 7

- C. Spineboard will be provided with head immobilizer, head strap, body straps, side roll ups, adhesive strips and required staples.
- D. A first aid kit will be a 24 unit kit per American Red Cross standards as manufactured by Swift First Aid, or equal.
- E. Rescue tubes for each lifeguard chair will be provided.
- F. A safety eye wash station will be a self-contained system in which eyewash bottles are securely positioned in a portable holder. Eyewash bottles will be 32 ounces and easily removable from case, and will contain a sterile, saline solution with the ability to neutralize a varying quantity acids or caustics.
- G. A safety eyeglasses dispenser station containing ten (10) pairs of safety glasses will be provided.

POOL COVERS

Recommended continual use of commercial grade thermal pool blankets with UV-resistant coating whenever the pools are not in use, day and night, winter and summer, by reducing heating costs, chemical consumption, water loss due to evaporation, and cleaning needs.

A swimming pool cover system will be provided and be the standard catalogued product of a company regularly engaged in the manufacture of such products. Alternate swimming pool cover systems will not be considered unless equal to the specified product and must be submitted for approval. Submittal data must include complete documentation relating to all the specified features and include manufacturer's sales literature, specification sheets, energy conservation audit, installation/maintenance manuals and engineering drawings.

SWIMMING POOL TIMING SYSTEM (optional)

A Timing System, Touch Pads and/or a Scoreboard will be specified if requested, as supplied by Colorado Time or Daktronics. The scoreboard would display times for 8-lanes plus 3-event information lines and a facility name line.

END OF DOCUMENT

30 May, 2022 Page 6 of 7