

Pool Design Criteria:

Competition Pool Water Surface Area-	6,216 square feet
Competition Pool Perimeter-	324 linear feet
Competition Pool Depths-	3'-6" to 13'-0"
Competition Pool Volume-	384,881 gallons
Competition Pool Turnover-	1,069 GPM (6-hour turnover)
Recreation Pool Water Surface Area-	4,127 square feet
Recreation Pool Perimeter-	277 linear feet
Recreation Pool Depths-	0'-0" - 6'-3"
Recreation Pool Volume-	105,659 gallons
Recreation Pool Turnover-	587 GPM (4-hour turnover)
Splashpad Surface Area-	2,000 square feet
Splashpad Depth-	0'-0"
Splashpad Volume-	4,000 gallons
Splashpad Turnover-	133 GPM (30-minute turnover)
Water Slide Volume-	2400 gallons
Water Slide Turnover-	80 GPM (30-minute turnover)

Pool Design Narratives:

Overall Facility:

The new Si View Aquatic Center will feature four distinct aquatic amenities: a indoor competition pool, a indoor recreation pool, an outdoor splashpad, and a slide that starts indoor before exiting the building and coming back indoors. The Competition Pool will be a 25-meter x 25-yard pool (82' x 75'). The Recreation Pool will have a 25-yard lane lap area, a river current with water features and sprays, and a beach entry area with interactive water features. The Splashpad will have a variety of water and spray features as well as age appropriate zones. The Water Slide will be a body slide that leaves the building and returns. Having multiple pools allows for variable temperatures and more clearly defined programs to be run simultaneously without concern of overlapping or interference. Another benefit of multiple pools is that if for any reason one pool needs to be shut down, the other pool can remain open and potentially accommodate overlapping programs. Having 25-yard lap lanes in the Recreation Pool will also allow for warm up and warm down when competitions are being held in the Competition Pool. The Recreation Pool offers diverse and fun amenities for young children and bathers of all ages. The Splashpad serves children of all ages and swimming abilities. The Water Slide offers a fun option for adults and children of all swimming abilities. The pools are situated in a manner that will allow for a phased approach if necessary. The Competition Pool is located in a separate part of the building from the other pools to facilitate disparate programs and enhance air quality and user experience.

Competition Pool:

The Competition Pool is designed to support the competitive swimming, diving, and waterpolo as well as being utilized for fitness swimming and aquatic programs and recreational programs when not being used for traditional lap swimming. It is designed to accommodate the following programs:

- 25-yard Competitive Swimming
- Regulation Fixed Cage 25-Yard Water Polo
- Practice Floating Cage 25-Yard Water Polo
- Fitness Swimming
- Lap / Recreational Swimming
- Masters Swimming
- Inner Tube Water Polo
- Competitive Diving
- Recreational Diving
- Inner Tube Basketball
- Kayak Lessons
- Battleship
- Paddle Board Lessons
- Paddle Board Yoga
- Scuba Lessons
- Lifeguard Training
- Red Cross Training
- Public Safety Training
- Deep Water Therapy Programs
- Deep Water Physiology Programs
- Climbing Wall
- Inflatable Open Recreation Programs

The pool shall feature nine regulation 25-yard lanes plus have an additional 25-yard practice lane. The pool shall feature eight 25-meter lanes. All lanes shall be 8' in width. Pool water shall be designed to be maintained in the 78-82 degree range. Permanent tile lane markings on the bottom and ends of the pool shall be provided per competitive requirements. The pool shall have two 1-meter springboard diving boards and a climbing wall which can be removed when not in use.

Pool water depth shall be 3'-6" at the west end of the pool in the south corner with accessible stairs, extend to 4'-0", and then graduate to 13'-0" at the east end of the pool where the springboard diving boards and climbing wall sit. The pool perimeter overflow system shall be a deep competition gutter with the concrete pool deck cantilevered over the top.

The pool will have a fixed accessible lift as a primary means of ADA access and ADA accessible stairs as the secondary means of ADA access. The accessible stairs and lift will be at the west end of the pool.

Recreation Pool:

The Recreation Pool is designed to maximize the uses of community recreation swimming programming. With a beach entry area and water features, this pool is friendly for swimmers or bathers of all ability levels. The pool shall also feature two sets of walk-out stairs to facilitate easy access and programs for younger children and those with mobility constraints. The pool shall also feature a river current and a 3-lane 25-yard lap area. There will also be underwater benches in the pool to allow people to relax while in the pool as well as serving as a place where parents can sit and watch their kids play. The pool is designed to accommodate the following programs.

- Aquatic Play
- Recreational Water Activities
- Kinesiology Programs
- Therapy Programs
- Physiology Programs
- Recreational Programs (aerobics, aqua zumba, etc.).
- Swim Lessons
- Lounging
- Social Interaction
- Dive-in-Movies

Pool water shall be designed to be maintained in the 84-88 degree range. Pool water depth shall range from 0'-0" to 6'-3". The perimeter overflow system shall feature rim-flow / deck-level gutters.

The pool will have a permanent zero-depth entry and an ADA compliant accessible lift as the primary means of ADA access. Walkout stairs serve as an additional secondary means of ADA access.

Splashpad:

The Splashpad is designed to maximize aquatic recreation for children of all ages regardless of swimming ability. This circular amenity will contain a themed variety of features. With both ground sprays and overhead features the Splashpad will provide interactive, learning based opportunities for play suitable for kids of all ages from toddlers to older children.

Located outdoors the Splashpad will be capable of providing fun play during busy summer months as well as being available during nice weather in late spring and early fall. With no standing water the Splashpad does not require lifeguards and provides a safe amenity for children who are either not comfortable in water or cannot swim.

The recirculated water shall be capable of being heated and maintained in the 84-88 degree range.

Water Slide:

The Water Slide shall be a 14' high and 109' long body flume (no raft required). The Water Slide is designed to leave the building and return and can be used without the need to pass a swim test as the ride will stop in a run-out flume with 8" of water as opposed to landing in a swimming pool. This aquatic amenity will maximize aquatic recreation for both adults and children of all swimming abilities. Recirculated water shall be heated and capable of being maintained in the 84-88 degree range.

Pool Construction Methods:

All pools shall be machine excavated and hand trimmed, where permitted by soil conditions. If soil conditions are not suitable for using the excavation as a form, pool shall be over-excavated and formed (one-sided formwork). Upon completion of pool structure curing period, forms shall be stripped, and engineered backfill shall be compacted to 95% maximum density provided to pool deck sub-grade elevation.

Finish sub-grade elevation of pool floors shall be lowered by a minimum of 18" (450 millimeters) to accommodate a layer of drain rock within the excavation and provide a working mat during construction. If required by geotechnical conditions, perforated pipes and a sounding well with submersible pump(s) will be provided to mitigate potential ground water migration into the excavation during construction phase, and hydrostatic relief valves shall be installed within pool main drain sumps (minimum of 2 each) to mitigate potential for hydrostatic pressure when pool is drained post-construction.

Pool structures shall be steel reinforced, pneumatically-applied concrete (shotcrete) with a minimum compressive strength of 3,000 pounds per square inch (207 bar). Shotcrete finish shall be compatible with installation of pool interior waterproof finishes.

Competition Pool finishes shall consist of a cantilever gutter spanning over a continuous perimeter gutter system, a 6" band of ceramic tile below waterline, 12" wide unglazed ceramic mosaic tile lane lines and targets on the pool floor and walls, and white quartz based pool plaster for all other interior pool finishes. Recreation Pool finishes shall consist of a rim-flow gutter spanning over a continuous perimeter gutter system, a 6" band of ceramic tile below waterline, 12" wide unglazed ceramic mosaic tile lane lines and targets on the pool floor and walls, and white quartz based pool plaster for all other interior pool finishes.

Pool Equipment:

Pool safety equipment, maintenance equipment, fittings, and deck equipment shall be installed in strict accordance with pertinent codes and regulations and the manufacturer's published recommendations, anchoring firmly and securely for long life under hard use.

Pool mechanical equipment shall conform to the following design criteria:

- Circulation pumps shall be horizontally mounted end suction centrifugal pumps, bronze fitted, stainless steel shaft, with fuse coat epoxy on all wetted surfaces. Motors shall be totally enclosed, fan cooled, premium efficiency, 1,150 RPM.
- Filtration systems shall be hi-rate sand with a flow rate not to exceed 15 gallons per minute / square foot of filter area. Filtration system shall be furnished complete with influent piping manifold, effluent piping manifold, backwash piping manifold, and all necessary valves and fittings as required for normal filtration and automated backwash operations. Influent and effluent pressure gauges, pool water temperature gauges and flow meter with paddlewheel flowsensor shall also be provided as part of a fully integrated system.
- Pool water heating systems shall incorporate the use of multiple natural gas fired pool heaters piped to dedicated cupro-nickel pool heat exchangers with minimum 97% thermal efficiency, sized to provide a 25 degree Fahrenheit temperature rise within twenty-four hours, and shall be furnished with electronic ignitions, integral recirculating pumps, and cupro-nickel heat exchangers. A pair of tees with blind flanges on outlet side shall be provided downstream of the filtration system (but upstream of pool water heating system) to allow for installation of thermal solar heating system in the future if ever desired.
- Chemical treatment systems shall utilize sodium hypochlorite (Liquid Chlorine). The oxidant feed system shall be capable of providing a constant in-tank chlorine residual of 1-15 parts per million. The pH shall be controlled to a reading of 7.2 - 7.8 through the combination of carbon dioxide and muriatic acid. Both chemical feed systems shall be automatically controlled by a single chemical controller with the capacity of monitoring and continually adjusting ORP, PPM, and pH.
- U/V (Ultra Violet sterilization) will also be used on all pools, the splashpad, and the water slide. The addition of a UV system will further reduce the risk of pathogens in the water as well as help control chloramines, which can irritate eyes, skin, and throats.

Pool Mechanical:

All pool mechanical piping shall consist of Schedule 40 PVC for all below grade piping and Schedule 80 PVC for all above grade piping. Piping shall be sized for velocities not to exceed 6 feet per second (1.8 meters per second) for suction (return) piping and 8 feet per second (2.4 meters per second) for discharge (supply) piping. All underground piping shall have a minimum of 18" (450 millimeters) of earth cover. Provisions shall be made for automated filling of pool to compensate for water loss due to filter backwash operations and evaporation.

Pool Electrical:

All pool electrical work shall include: conduit, conductors and breakers for all single phase electrical equipment; conduit, conductors and motor starters for all three phase electrical equipment; and control circuitry and interface between circulation

pump(s), filtration microprocessor, Pool water heater recirculating pumps, water chemistry controller and water level controller. LED lighting fixtures shall be utilized for underwater lighting of the pool, which shall provide an 85% reduction in installed underwater lighting watts (one 70 watt LED fixture takes the place of one 450 watt incandescent fixture). In addition, the LED fixtures are rated for 50,000 hours of service, versus 3,000 hours for incandescent fixtures.