



**REPORT OF THE TECHNICAL EVALUATION
OF THE
WEST ST. PAUL SWIMMING POOL
WEST ST. PAUL, MINNESOTA
2/7/25**

SIGNATURE PAGE



I hereby certify that this document was prepared by me or under my direct personal supervision and that I am a duly licensed Engineer under the laws of the State of Minnesota.

Printed or typed name
Richard T. Weegens, P.E. #58021
My license renewal date is 6/30/2026

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This report contains 92 pages.

INTRODUCTION

Burbach Aquatics, Inc. (BAI) respectfully submits this Report regarding the technical evaluation of the West Saint Paul Municipal Swimming Pool located in West St. Paul, Minnesota. This document is the final work product and report for professional services performed by BAI as per the Professional Services Agreement between BAI and the City of West St. Paul for Phase I-Step #1 Service.

The purpose of this technical evaluation is to inventory the existing condition of the municipal facility including the pools and building, provide comment on each of the facility categories, list recommended improvements necessary to restore the facility to good repair and/or meet the significant Code requirements of the Minnesota Department of Public Health Rules for Public Swimming Pools and the Americans With Disabilities Act (ADA); provide Opinions of Probable Construction Costs and present a summary with recommendations.

This Report contains five chapters. The first chapter, "Existing Facilities", summarizes the existing facility as observed. The second chapter, "Executive Summary of the Existing Facilities" summarizes BAI's findings for the existing facility. The third chapter, "Recommendations" provides recommendations for each section of the facility. In the fourth chapter, "Appendix" is where BAI inventories the facility data gathered during BAI's on-site observations, which were conducted on Wednesday June 12th, 2024 and Tuesday September 17th, 2024. The final chapter, "Data and Probable Construction Cost" provides a quick reference to data of the facility such as area of the pool vessel, official pool vessel capacities and other information. The second component of this chapter is the Opinion of Probable Construction Cost to restore the facility to its original condition and meet significant requirements of The Code and ADA.

Please bear in mind that the impetus of this Report is to maintain the status quo of the facility with a preference for renovation in lieu of complete replacement. The anticipated project life for renovation is 25 years, however realize certain equipment needs to be maintained and repaired to achieve the 25 year design life. Project categories, which in BAI's opinion, cannot be renovated to achieve a high probability of 25 year life will be replaced with new. This is an important parameter since there will be two Opinions of Probable Construction Costs, one for a 25 year design life as described, and the other for a 50 year design life. The 50 year design recommendation provides an option to the city to understand the total replacement cost for select facility assets which will greatly

extend the life of the facility. An example pool vessel replacement is provided at the end of the report to present the scale of what a proposed pool vessel replacement may look like with a 50 years design life project.

In cases such as, the re-plumbing of the bathhouse for example, may be more expensive than a completely new system in a new bathhouse, the cost for the new system will be represented in the Opinion of Cost. Bear in mind that replacement recommendations will be presented for each category only when renovation does not result in a 25 year project life or has of cost comparable to new construction. Due to the scope differences between the two design life recommendations, two separate schedules for implementation are provided. Expansion or conversion of the facility into a more recreational orientated center is the subject of the next Step of the Feasibility Study service.

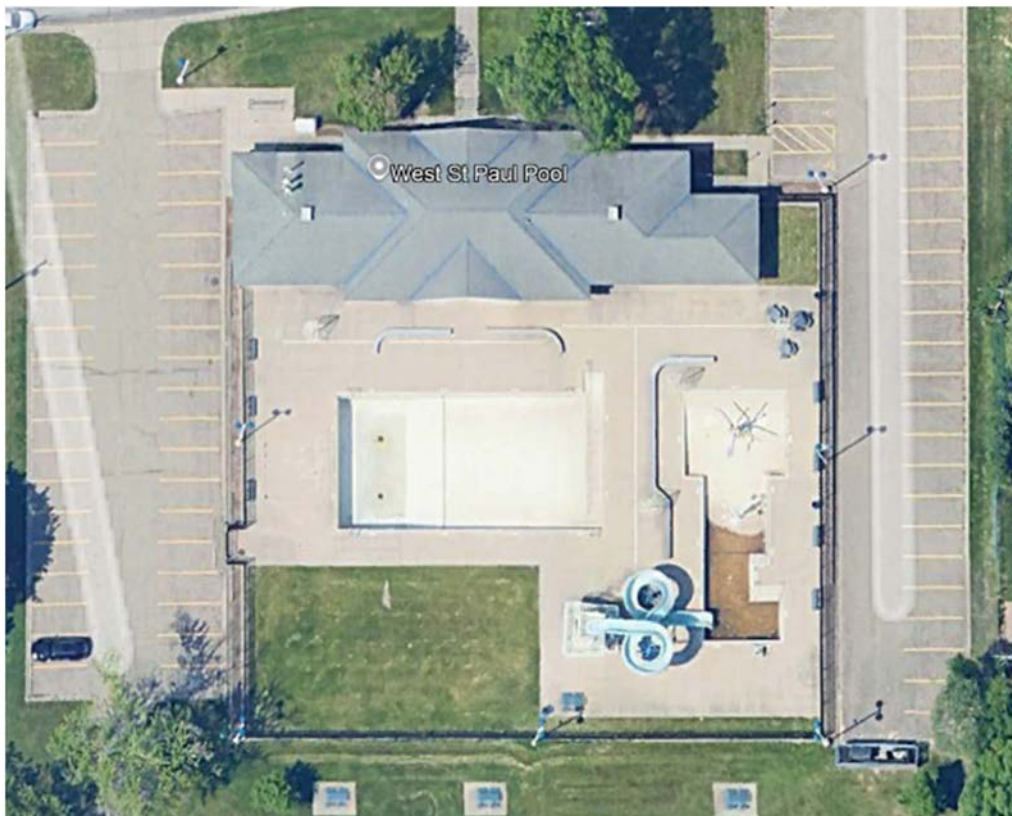
We would like to thank the City of West Saint Paul staff for their assistance with explanations of the facility conditions, providing plans, and assisting communications between the City and consultant. It has been a pleasure to work with such personable and dedicated staff.

Sincerely,
BURBACH AQUATICS, INC.

CHAPTER I. EXISTING FACILITIES

1a. General Comments

The City of West Saint Paul is dedicated to maintaining and improving the quality of life in West Saint Paul and recognizes the importance of recreational facilities in attracting new residents while retaining their present residents. The City has decided to study the condition of the complete swimming pool facility and develop a facility improvement plan with a high probability of achieving a 25 year project life, as opposed to short-term band-aid type repairs. These facilities were originally intended to improve the quality of life in the community and offer opportunities for recreational enrichment. BAI believes that mission has not changed through the years.



The West Saint Paul Pool is located at 92 W Orme St, West St Paul, MN 55118. The facility has two pool vessels, a medium to deep water depth pool and a shallow water depth activity pool. The surrounding area is residential land use.

At this time, the City staff reported that the facility loses a significant amount of water. The City of West Saint Paul felt that the development of a comprehensive action plan was needed and a determination should be made as to the extent of construction work and associated costs to renovate the complete facility. This report is the first step in the process of strategic planning for long term solutions to provide aquatic opportunities to the residents of the City of West Saint Paul.

CHAPTER II. EXECUTIVE SUMMARY OF THE EXISTING FACILITY

In 1999 the West Saint Paul Swimming facility underwent a major renovation project which included installing a gunite pool inside the existing concrete pool, a new shallow activity pool, and new bathhouse. Reportedly the original pool facility was built in 1955, and it is that facilities pool vessel which the 99' pool vessel was constructed within. The splash pool vessel provides an abundance of aquatic activity in the form of shallow water play, interactive spray features, and a water slide. On the other hand the lap pool vessel has minimal to no activity amenities. Its original design purpose for lap swimming and deep end diving are no longer viable. Due to the renovation which added a zero depth ramp and decreased the maximum depth the lap pool effectively lost its distinction which its name would imply.

However, the both pools are losing significant water during operation. No significant cracks are reflected through the finish. It can be assumed that replacing the finish with a new finish along with spot concrete repair would extend the life of the pool. If the aggregate finish is original to 1999 the city got more than the typical life for an aggregate finish for the Minnesota climate. Both the lap pool and splash pool surge tanks are suspect of being a source for pool water loss based on staff reports. The surge tank which manages the effective surge of the lap pool during patron use is of original construction, predating the renovation project in 1999. In addition to its condition the tank is also undersized to meet the capacity required per code. Deck areas south of the lap pool vessel are having issues of settlement, which is apparent by the grouted mud jacking bores and hollow sounding sections.

The pool equipment has had select upgrades and replacements since its renovation in 99". These components include select pump motors, pool water heaters, and the chemical disinfection system. Equipment is often replaced after 20-25 years of service dependent on its condition. Equipment in need of replacement includes the lap pools recirculation pump, both pools filtration systems, and the pools water heaters.

During the 99' renovation a new bathhouse was constructed using ADA standards for accessibility which are still meeting compliance. In its current state the bathhouse is up to standards and in generally good condition. Outside of some deteriorating soffit conditions due to trapped rain water, the bathhouse needs minimal renovation or repair. A new electrical system,

water supply, and gas supply was included with the renovation project. Architecturally the bathhouse sets itself apart with its unique wood picket barrel which spans through the entry and control space. This barrel is also reflected to the exterior design of building with a circular main entrance frame and arched eave. Due to its compliance for accessibility, fixture counts, and its architectural prestige there is definite value for keeping the bathhouse structure with a new construction project.

The West St. Paul Swimming Pool is in the position where many of the renovation techniques from 25 years ago are starting to meet their life expectancy. Generally the facility is in an addressable condition to where repairs are possible and problem areas addressed. For that reason with our recommendations we provide commentary for repairs in the objective of a 25 year design life and a 50 year design life. The 50 year design life recommendation involves the two pool vessels being replaced new while reutilizing the bathhouse maintaining its value at the site. The benefits of the 50 years design life is the facility will gain a modern pool facility for decades to come. Any costs allocated to a 25 year design life project can be used with a 50 year design life project now rather than readdressing the same issues 25 years into the future.

CHAPTER III. RECOMMENDATIONS

1. Pool Vessel #1

- a. The current pool shell is a reinforced shotcrete shell constructed within the original pool vessel. Original pool construction date reportedly was in 1955.
- b. Ground water does not appear to be an issue.
- c. Complete assessment of the pool vessels concrete condition was incomplete. For this reason BAI recommends the removal of the poor aggregate pool finish. This will give a better opportunity to visually observe the vessels concrete. While the pool finish is removed BAI recommends to test the integrity of the vessel with a leak test.
- d. BAI does not recommend a significant repair/improvement project to the existing pool vessel due to its current reliance on the under lying pools structure. This creates a difficult and complex design challenge for any additions or section repairs.
- e. For a 50 year design life BAI would recommend replacing the current pool vessel with one of equal or greater surface area.
- f. A 25 year design life may be achieved dependent on the pools concrete condition and using surface repair methods.

2. Pool Finish

- a. Remove the existing “Diamond Brite” exposed aggregate pool finish to assess the pool concrete and review its condition.
 - b. Dependent on the underlying concrete condition either a high performance epoxy paint or plaster finish is recommended.
 - c. With a new pool vessel a high performance paint finish is recommended. This cost is included in the Opinion of Probable Construction Cost. The same is recommended for the splash pool finish as well.
3. Pool Enclosure (Fence)
- a. The chain-link enclosure is in great condition.
 - b. Site conditions have affected the stability of the perimeter mow-strip and post footings. Skewed fence posts specifically at the fence terminations have created gaps larger than 4 inches within the site enclosure.
 - c. BAI recommends re-stabilizing the misaligned fence posts to resolve the gaps. Re-using the existing chain link pool enclosure is recommended as long as a renovation project maintains the existing boundary.
 - d. Add two emergency exit gates for emergency egress from the facility as required by building code. This cost is included in the Opinion of Probable Construction Cost.
4. Pool Covers
- a. The facility does not utilize pool covers.

- b. Pool covers are not required by code and not recommended due to the low return on investment.
- c. No work is needed for this line item.

5. Pool Vacuum System

- a. A contemporary robot pool vacuum is provided at the facility.
- b. The vacuum appears in good condition and is assumed operational.
- c. No work is needed for this line item.

6. Decking

- a. The majority of the deck surface is in decent condition with select areas experiencing cracking.
- b. A large problem area is occurring on the south side of the main pool vessel. Along a majority of the south pool wall and extending roughly 5 feet, the deck is hollow sounding. Several grouted drill locations are found along this area where apparent concrete jacking has occurred.
- c. With a 25-year design life renovation project, which maintains the existing pool vessel. BAI recommends the hollow sounding deck areas be removed to review the soil settlement condition and its cause.
- d. With a 50 year design life replacement project, which replaces the existing pool vessels. BAI recommends replacing a majority of the deck area as much of it will be removed for a large scale construction project. This is included in the Opinion

of Probable Construction Cost.

7. Deck Drain System

- a. The deck drain system should be sufficient for total pool deck drainage. However, the trench style drains are clogged to the point minimal rain water reaches the discharge locations in the parking lot retaining walls. Water ponding on the deck surface is a direct result.
- b. Removing the debris from the trench troughs should resolve this issue and should be added to routine maintenance practices.
- c. Staff mentioned the brittle condition of the pool deck drains makes it difficult to remove the grates and clear debris.
- d. For a 25 year design life BAI recommends the existing trench drains be cut and removed with new trench drains installed in their place.
- e. With a 50 year design life and complete deck replacement recommended, the deck drain system should also be replaced. This is included in the Opinion of Probable Construction Cost.

8. Deck Equipment

- a. Deck equipment such as lifeguard chairs, pool ladders, benches, and umbrellas can be reused with a pool renovation project. Select equipment deck anchors might need replacing with deck reconstruction.
- b. Pool Slide

- i. The pool slide's foundations are in poor condition. Several of the concrete foundation columns are experiencing spalling failures. These failures compromise stability of the structure, especially if the condition is worsened.
 - ii. The foundations with advanced deterioration should be called out as needed to be rebuilt. The slide should not be placed in service until the foundations have been repaired.
 - iii. Supports for the stairway railing are highly corroded and in some cases sheared off due to the deteriorated condition. Left unrepaired, the railings will fall off from their supports.
 - iv. The composite fiberglass slide flume is fading from UV exposure.
 - v. BAI recommends the slide be rehabilitated to bring back to near new condition. This would include new foundations, replacement of rusted components, and flume restoration. The city has been in contact with a slide restorer and has received quotes.
 - vi. The slide can be reused with a new pool vessel project using the restoration techniques expressed above. The cities quoted cost for slide renovation is included in the Opinion of Probable Construction Cost. The Owner should compare the cost of slide renovation as compared to a new replacement water slide.
- c. In the opinion of BAI, the pool facility is missing out on deep-water activities such as diving.

- i. The bounds of the 99' pool vessel were limited to the footprint of the previous vessel. It was because of this that the pool depths are as they are, and the use of diving boards is not allowable by code.
 - ii. At the time of the 1999 design a drop slide was shown on the pool deck plan positioned at the deep end. The drop slide has since been removed, roughly 10 years ago.
 - iii. Currently depths are sufficient for amenities such as a climbing wall, deck slide, or zip line.
 - iv. BAI recommend designing a new pool vessel with a deep end either with 1-meter or 3-meter diving capabilities. The cost for both diving boards is included in the 50 year design life Opinion of Probable Construction Cost.
- d. The pool deck benches are experiencing delamination of its tiles. With a 25 year design life renovation project this should be addressed. The cost is included in the Opinion of Probable Construction Cost.

9. Surge Capacity

- a. The surge tank vessel used for the main pool is original construction from the previous pool vessel. The tank also doubles as a collection vessel for pool winterization.
- b. Staff reports the surge tank is leaking. Which is likely the case due to its age.
- c. Based on field measurements the main pool's surge tank is well below the one gallon of surge capacity per square foot of surface area requirement.

- d. Due to its condition, reported water loss, and being undersized BAI recommends the replacement of the existing surge tank with a new tank of sufficient sizing. This cost is included in the Opinion of Probable Construction Cost.
- e. For a renovation project with a 25 year design life the existing surge tank can remain in its role for pool drainage and winterization. With a 50 year design life and new pool vessel a deep manhole should be constructed to handle pool underdrainage and winterization.
- f. The splash pool has a separate surge tank which is size appropriately and in good condition.

10. Piping System – Pool #1

- a. The manufactured pool gutter which handles both filter water return and top water skimming is in good condition. The uniform rim flow at all gutter locations is a good sign that pool settlement is minimal.
- b. Staff mentioned the gutters fiberglass grates are in poor condition. Pool patrons have even experienced fiberglass slivers when coming in contact with deteriorated grate sections.
- c. Piping plans show that the pipe sizing is compliant throughout the system to maintain code compliant water velocities.
- d. The underground pipe condition is unknown and should be pressure tested with continued use of the existing vessels.
- e. Deep drain outlets are VGBA compliant.

- f. The main drains are directly connected to the pool recirculation pump. An open “tee” is located in the surge tank to pick up gutter outlet water and maintain rim flow operation. The direct connection of the main drain to the pools recirculation system is not allowable by code.
- g. With a 25 year design life BAI recommends;
 - i. Replacing all the fiberglass grates for both pools. Pool equipment suppliers should be able to provide replacement grates as the manufactured gutter is a common installation.
 - ii. Pressure testing all piping systems to determine integrity.
 - iii. Resolving the issue of the direct main drain connection with the pool surge tank replacement.
 - iv. These costs are included in the Opinion of Probable Construction Cost for a 25 year design life.
- h. For a 50 year design life and a new pool vessel recommended the entire pool piping system from the deep main drains all the up to the gutter grates will be new construction.

11. Filtration Assembly

- a. The pool filtration system is reaching its 25 year expected operational life.
- b. Kenloch Company which manufactured the high rate sand filters has since shut down operations and likely any certifications are no longer up to date.
- c. No NSF certification was located on the filters. NSF 50 standard filters are

required by Minnesota Code.

- d. BAI recommends removing and replacing the existing high rate pressure sand filters with like equipment. The new filters should be properly sized and NSF 50 certified.
- e. This is included in the Opinion of Probable Construction Cost.

12. Recirculation Pump Assembly

- a. The lap pool recirculation pump is a Pentair Aurora 342A 4x5x9A which is the same brand and model installed with construction in 99'.
- b. Based on the level of corrosion of the pump housing it appears the unit has severed the full 25 years without replacement.
- c. Although properly sized the condition of the recirculation pump drives BAIs recommendation to replace the existing unit with one of the same make and model. This cost is included in the 25 year design life Opinion of Probable Construction Cost.
- d. For a 50 year design life the pump should be replace with a model that meets the recirculation requirements of a new pool vessel.

13. Disinfectant System #1

- a. Gas Chlorine System
 - i. The facility utilizes gas chlorination for its pool water disinfection.
Although highly effective, gas chlorine requires additional storage needs,

monetarization, training, and safety precautions.

- ii. The number of facilities using gas chlorine has reduced due to high maintenance costs, insurance costs, and additional operator training associated with a gas chlorine system.
- iii. For these reasons BAI recommends switching to a liquid chlorine injection system. The switch should be fairly seamless and low cost. This is included in the Opinion of Probable Construction Cost.

b. pH balancing

- i. The facility properly uses sodium hydroxide to raise the pool water pH which is innately lowered by the gas chlorine system.
- ii. With the recommendation to change to a liquid chlorine system which innately increase the waters pH a liquid acid such as hydrochloric acid is needed to reduce the water pH.
- iii. The switch from Sodium Hydroxide to Hydrochloric Acid would be fairly seamless with minimal changes to the injection equipment. No cost is included for this change.
- iv. Much like the chlorine storage room a separate chemical room for the acid solution is recommended to better protect the equipment within the mechanical space.

14. Chemical Controller #1 and Sampling Pump

- a. The chemical controller is a contemporary model used frequently in the

commercial pool industry and can be reused with a pool renovation project regardless of the disinfectant used.

- b. No cost is include in the Opinion of Probable Construction Cost.

15. Pool Heaters

- a. The pool heaters are both Raypak brand. The smaller of the heaters which serves the splash pool vessel is completely inoperable. The other heater is of a similar age and should be replaced prior to its failure.
- b. For both a 25 and 50 year design life BAI recommends new pool heaters. Newer pool heaters offer much greater efficiency in a smaller footprint. In addition to maintaining pool water heating, energy savings, and floor space can positively affect the facility. This cost is included in the Opinion of Probable Construction Cost.

16. Pool Vessel #2

- a. The secondary pool vessel at the facility is a shallow depth splash pool.
- b. The splash pool brings shallow water availability for the younger patrons to enjoy.
- c. This vessel was constructed new in place of an old wading pool during the 99' renovation project.
- d. Similarly to the new main pool shell the vessel is constructed out of gunite concrete and losing significant amounts of water. Up to 18 inches per day

reported.

- e. BAI recommends a complete assessment of the pool vessel concrete. This would include removal of the existing exposed aggregate for visual observation followed by a leak test.
- f. Contemporary concrete surface repair methods are available and shall be used if necessary for a 25 year design life.
- g. For a 50 year design life BAI recommends the replacement of the pool vessel into a separate similarly sized pool vessel or else realized within a large single vessel to maintain the pool surface area at the facility.

17. Pool Piping System #2

- a. The significant water loss warrants additional pool pipe integrity testing to locate where pool water might be leaving the system.
- b. For a 25 year design life BAI recommends pressure testing the entire splash pool recirculation system and replacing sections of piping where needed/ if needed.
- c. For a 50 year design life BAI recommends the replacement of the splash pool with a new shallow water area. This area, whether separate or combined will require new pool process piping. This is included in the Opinion of Probable Construction Cost.

18. Filtration Assembly #2

- a. Similarly to the lap pool filtration system the splash pool high rate sand filter is at the end of its expected life.

- b. NSF certification was not located for this unit either, making there a need for replacement of the filter to meet code compliance.
- c. Replacement for a NSF certified high rate sand filter of equal size is included in the 25 year design life Opinion of Probable Construction Cost.
- d. For a 50 year design life either filter upsizing for a single vessel filtration system or an additional filtration system is required. The cost for both is assumed to be of equal magnitude, and this cost is include in the Opinion of Probable Construction Cost.

19. Recirculation Pump Assembly #2

- a. The splash pool pump assembly has been newly rebuilt with a new motor and coupling guard.
- b. It appears to be the original Pentair Aurora 342A 2.5x3x9 pump. However, the housing is in better condition than the lap pool pump and can continue to be used.
- c. With a 25 year design life no cost is in the Opinion of Probable Construction Cost to reuse the existing pump assembly.
- d. For a 50 year design life
 - i. BAI would recommend the replacement of the existing pump for the objective to achieve a 50 year design life.
 - ii. Either, pump upsizing for a single vessels recirculation or an additional recirculation pump is required. The cost for both is assumed to be of equal magnitude, and this cost is include in the Opinion of Probable Construction Cost.

- e. Recirculation pumps for the spray features and water slide are in moderate condition.
 - i. After the first onsite evaluation the staff informed BAI that the strainer basket for the spray feature pump assembly had a significant failure.
 - ii. The facility decommissioned the spray features for the remainder of the season.
 - iii. The cost for a compatible strainer basket with the spray feature pump is included in the Opinion of Probable Construction Cost.

20. Disinfectant System #2

- a. Please review the main pools disinfectant system recommendations as they are consistent for the splash pool.
- b. Costs are included in the Opinion of Probable Construction Cost.

21. Chemical Controller #2 and Sampling Pump

- a. Please review the main pools chemical controller recommendations as they are consistent for the splash pool.
- b. No costs are included in the Opinion of Probable Construction Cost

22. Mechanical Space

- a. The mechanical space is just sufficient for pool equipment housing. Conversion to a single pool vessel facility will reduced the amount of equipment units and

free up additional area within the mechanical space.

- b. For the 25 year design life replacement of any equipment shall be selected and oriented within the room to be spatially conscious.
- c. To better protect the equipment from corrosion the basic or acidic chemicals should be separated from the space.
- d. BAI recommends a small acid storage area be constructed within the existing mechanical space or nearby storage room. This room will be properly ventilated.
- e. The cost to add this storage space is included in the Opinion of Probable Construction Cost.

23. Bathroom Structure

- a. At 25 years of age the bathroom structure is still in sound condition with no signs of failure.
- b. No cost is needed for the existing bathroom structure at this time.

24. Bathroom Roof

- a. The bathroom shingle roof appears in good condition. BAI did not closely inspect the shingles or interior under side of the roof. The city can have a roof inspector review the conditions of the structure if it has been some time since replacement.
- b. During the first on site visit a heavy rain occurred and no leaks were detected on inside the bathroom.
- c. The beaded plywood used as soffit material is beginning to deteriorate. It appears

the lack of a rain gutters with the drip edge roof design is allowing the collection of water under the roof's eave.

- d. There is a cost included in both Opinions of Probable Construction Cost for repairing the underside of the roof eave where deterioration is occurring.

25. Bathroom Doors and Windows

- a. No cost is included at this time for the bathroom doors or windows.
- b. An eye should be kept on the corrosion select doors are experiencing and replaced when necessary.

26. Bathroom Sanitary Facilities

- a. Bathroom sanitary fixtures meet the code required counts, and have ADA accessibility.
- b. No work is needed for bathroom facilities at this time.

27. Bathroom Water Heater

- a. Two potable water heaters are used in parallel to supply hot water to the facility. Fixtures use mixing valves to temper bathroom water temperature.
- b. Both are in good condition and no work is needed.

28. HVAC Systems

- a. Additional combustion air louvers should be provided in the mechanical space

due the quantity of gas fired appliances in the space.

- b. Some cost is included in the Opinions of Probable Construction Cost.

29. Electrical System

- a. The electrical system is sized appropriately for the existing facility.
- b. Electrical switch gear equipment is in moderate condition with minimal corrosion.
- c. Age of the equipment may begin to show, but at this time no cost is needed to update the electrical system thanks to good maintenance.
- d. Dependent on desired amenities with a new pool vessel the electrical equipment may need to be upsized. Amenities similar to what is provided should keep the system adequate.

30. Utilities

- a. The utilities are sufficient for the facility.
- b. No work is included in the Opinion of Probable Construction Cost.

31. Pool Area Lighting System

- a. Pool area lighting and in pool lighting is provided at the facility. However, the in pool lights are not operational.
- b. The photometric study should be conducted to determine if the overhead lighting provides enough foot-candles to allow for night swimming in absence of the in pool lights.

- c. For a 25 year design life the cost for a photometric study is include in the Opinion of Probable Construction Cost.
- d. With a new swimming pool recommended the existing site lighting can be reused if sufficient. Otherwise pool area lighting is not recommended due to its low return on investment. No cost is included in the Opinion of Probable Construction Cost.

32. Safety Equipment

- a. Regular replacement of safety equipment is recommended with facility upkeep.
- b. BAI recommends replacing the existing eyewash station with a unit containing an additional full body shower head. This will unsure full body washing in the case of chemical exposure to the skin.
- c. The eyewash/shower station unit replacement is included in the Opinion of Probable Construction Cost

33. Site Work

- a. The site pad is built up roughly 4'6" relative to the facility parking lots. The pool deck area is stabilized via retaining walls where needed.
- b. The retaining walls are in decent condition with no apparent failures. However, erosion of the granular material between the retaining walls and pool deck has caused movement of the perimeter mow strip and in some cases the fence post footings.

- c. BAI recommends with a renovation project, the mow strip and fence post footings be reoriented and stabilized with compaction of the granular material behind the retaining walls. This work is included in the Opinion of Probable Construction Cost.
- d. The existing site enclosure, bathhouse, parking lots, and site pad can be reused with a renovation project.

34. ADA Compliance

- a. ADA compliance is met throughout the facility.
- b. It is apparent ADA access was a primary design objective with the construction of the ADA accessible ramp in the shallow end of the pool. Unfortunately this removed the ability for lap swimming in the 25 meter pool.
- c. With a new pool vessel, lap swimming would be a desirable design feature and ADA access should be achieved via a chair lift.
- d. The continued use of the existing lap pool vessel will maintain its ADA compliance with the zero depth ramp. No cost is included in the Opinion of Probable Construction Cost for the 25 year design life recommendation.
- e. For a 50 year design life and a new pool vessel the cost for an ADA pool lift is included with the Opinion of Probable Construction Cost.

CHAPTER IV. APPENDIX

EXISTING SWIMMING POOL FACILITY EVALUATION FORM

Owner City of West St. Paul Project # 2.809 Date 9/12/24

Facility Name West St. Paul Community Pool Facility Location West St. Paul

Facility Address 92 W Orme St. County Dakota

Personnel at Site Jordan Wiegand (BAI)

Plans received Y N Project Manual received Y N Pictures received Y N

Other Documents received _____

History:

Pool Built 1955 Bathhouse Built 1999 Pool Renovated 1999 Bathhouse Renovated _____

Pool: Vessel #1 Description Rectangular Gunitite Pool #2 Description Shallow Splash Pool.

Building: #1 Description Bathhouse #2 Description _____.

Do Pools Leak Water Y N Amount 18"/ Day in the Splash Pool

Reported Location of Leaks _____

Subsurface Conditions: Open Water in close proximity High Ground water observed

Ratings throughout the report are 1 through 5 with 1 being Worst or Lowest and 5 being the Best or Highest

Background Comments:

1. Pool Vessel #1

Indoor Outdoor

Pool Vessel Type: Combination Recreation Only Wellness Only Diving Only

Shape: Rectangular W 40' 5-1/4" L 79' 5-1/4" Free Form Trapezoidal

Pool Uses: Recreation Wellness Education Competition

Area: 3240 Square Feet Volume: 125,000 Gallons Recirculation Rate: 347.2 gpm

Minimum Depth: 3'- 4" Maximum Depth: 8'2" Calculated Patron Capacity: 182

Perimeter Length: 240'

Pool Vessel Features:

25-Yard Lanes 25-Meter Lanes Water Depth Less than 3' Zero Depth Ramp

50-Yard Lanes 50-M Lanes Waterslide receiving Area Lazy River Other - _____

Existing Floor: Observed Unobserved None

Constructed Of: Concrete Aluminum Steel Fiberglass

Random Cracking In:

Shallow Area 1 2 3 4 5

Medium Area 1 2 3 4 5

Diving hopper 1 2 3 4 5

Unknown due to pool finish

Is Floor Repairable Y N

Diving Hopper: Observed None

Endwall Fillet Length _____ Sidewall Fillet Width _____

Floor Length 14' Floor Width 28.5' transition Panel: Length 10.5' Rise 3'

Constructed Of: Cast Concrete Gunite Aluminum Fiberglass Masonry

Hopper Condition Report:

Rebar Exposed Y N Disjointed Walls Y N Walls Straight Y N

Evidence of Structural Failure Y N Structural Cracks Y N

Wall & Fillet Separate Y N Are Fillets Repairable Y N

Are Hopper Walls Repairable Y N Are Hopper Floors Repairable Y N

Walls: Observed Unobserved None

Constructed Of: Cast Concrete Gunitite Aluminum Fiberglass Masonry

Wall Condition Report:

Rebar Exposed Y N Disjointed Walls Y N Walls Straight Y N

Evidence of Structural Failure Y N Structural Cracks Y N

Wall & Floor Separate Y N Wall & Fillet Separate Y N

Random Cracking In:

Shallow Area 1 2 3 4 5

Medium Area 1 2 3 4 5

Diving hopper 1 2 3 4 5

Unknown due to pool finish

Are Walls Repairable Y N

Expansion-contraction Joints: Observed None

Location: In Floor Vertical Walls Intersection of Walls and Floors Breakline DH

Joint Condition: 1 2 3 4 5 N/A

Type of Original Joint Waterproofing: Sealant PVC Waterstop Unknown

Waterstop Location: Present in Joints Unknown Shown on Plans Y N

Construction Joints: Observed None

Location: In Floor Vertical Walls Intersection of Walls and Floors Breakline DH

Joint Condition: 1 2 3 4 5 N/A

Type of Original Joint Waterproofing: Sealant PVC Waterstop Unknown

Waterstop Location: Present in Joints Unknown Shown on Plans Y N

Recirculation System:

Recirculation Type: Conventional Reverse Mixed

Outlet System Type: Skimmer Pool Gutter Pool

For Gutter Pool:

Type: Roll Out Curb with gutter

Manufactured gutter inserted into Cast/Gunitite Pool Wall

Constructed Of: Gunitite/Ceramic Tile Gutter Cast Concrete Masonry Units

Stainless Steel Assembly Pre-cast Concrete Aluminum Pool Gutter

Pool Gutter Level Y N if No, Approximate Difference _____

Test Procedure: Rim Flow Test



Main Pool Vessel

Field Comments:

1. Concrete condition of the pool vessel is unknown due to built-up exposed aggregate pool finish.
2. The 99' pool renovation included a gunite pool shell poured within the existing cast in place concrete pool.
 - a. Previous shell was perforated by drilling holes 4' on center and granular fill was placed between the shells for free drainage.
 - b. Main drains demolished and replaced with the new shell.
 - c. Pool rim was removed and manufactured gutter put in place.
 - d. Existing shell concrete removed as needed for in pool lighting.
 - e. ADA zero entry ramp added with new pool shell.
3. Pool leaks reported by staff as a couple inches per day.

4. Pool concrete was not evaluated due the heave exposed aggregate finish, which made it difficult to properly sound the vessel. Cracks in the pool finish may be a result of reflection from underlying concrete cracks.

Code Comments:

1. The main drain sumps and covers are VGBA certified and current.
2. Dive hopper dimensions do not meet the requirements for deck level diving boards or taller. The owner recognizes this condition and no diving boards are present.

2. Pool Finish

Pool #1 Finish Type: Pool Finish: Paint Aggregate Ceramic Tile Unfinished

Finish Condition: 1 2 3 4 5

For Paint: Heavy Build Up Y N Abrasion Blasting Required Y N

Pool #2 Finish Type: Pool Finish: Paint Aggregate Ceramic Tile Unfinished

Finish Condition: 1 2 3 4 5

For Paint: Heavy Build Up Y N Abrasion Blasting Required Y N

Signage on Deck Y N Type: Paint Tile

Depth Marking Y N Size of numbers 6" Meet Code Distance Y N

In Corners Y N Changes in Pool Floor Depth Y N

No Diving Y N Size of letters 1" Meet Code Distance Y N

Signage in Pool Y N Type: Paint Tile

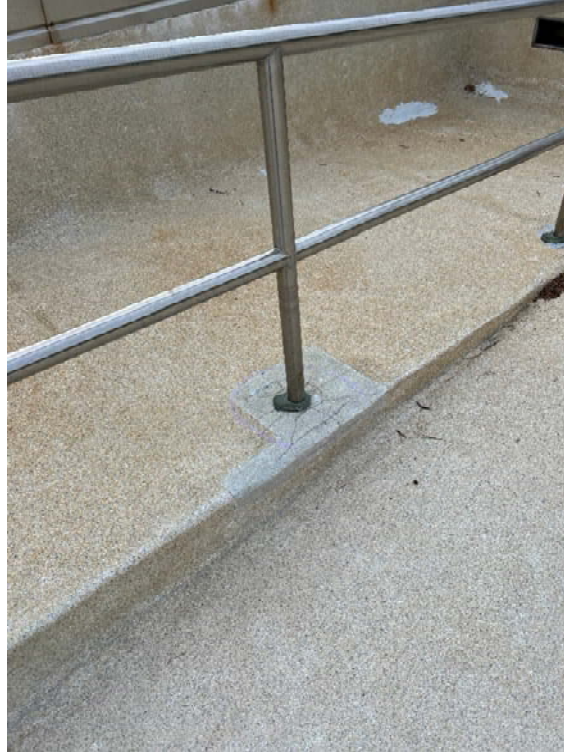
Depth Marking Y N Size of numbers _____ Meet Code Distance Y N

In Corners Y N Changes in Pool Floor Depth Y N

Finish Details:

Contrasting Color Line at Breakline Y N At Step Treads Y N

Competition Lane Lines Y N Paint Tile Meet Standards Y N



Main Pool Vessel Finish

Field Comments:

1. The “Diamond Brite” exposed aggregate finish was part of the original pool renovation project in 99’.
2. Regular maintenance includes the removal and replacement of poor aggregate.
3. Thickness of the existing finish layer shows the shell has undergone multiple resurfacing projects.
4. 1” blue tiles are used for the contrasting line at the shallow-deep area boundary.
5. Select depth and no diving markers need replacement where tiles are cracked.

Code Comments:

1. A contrasting line must mark the boundary between the shallow and deep areas. The line must be at least 4 inches wide on the floor and walls of the pool. A safety rope and floats equipped with float keepers is also required. The existing pool design utilizes rope cup

anchors in the manufactured gutter and a tile line on the floor and up the pool wall.

2. "In shallow areas, "no diving" markers or symbols at least 4 inches high shall be located at not more than 25 foot intervals around the pool perimeter. This requirement is met.
3. The depth markings are Code compliant for spacing, Code requires a maximum spacing of 25' and at each 1' water depth increments throughout the pool.

3. Pool Enclosure (fence)

Exterior Perimeter Enclosure: Height 6' Gaps Under Enclosure Y N

4" Gaps at Ends Y N Type: Chain Link Ornamental Other-_____

For Chain Link: Safety Woven Y N Top Bar Y N Barb Wire Y N

For Ornamental: Gap Width between bars or pickets _____

Gate(s) Y N # Gates _____ 4" Gaps in Gates Y N Emergency Exits Y N

Interior: Height _____ 4" Gaps Under Enclosure Y N 4" Gaps at Ends Y N

Type: Chain Link Ornamental Other

For Chain Link: Safety Woven Y N Top Bar Y N Barb Wire Y N

For Ornamental: Gap Width between bars or pickets _____

Gate(s) Y N # Gates _____ 4" Gaps in Gates Y N Emergency Exits Y N

Are Interior Gates Self Closing Y N Self Latching Y N



Facility Site Enclosure and Foundation Wall

Field Comments:

1. The pool enclosure is in good condition.

Code Comments:

1. Two 5' wide emergency exit gates are required to meet Building Code requirements for emergency egress from the facility.
2. The existing fence is 6' tall, 5' tall is the minimum Code height, BAI typically recommends 8' high fence to ensure the enclosure is not readily climbable.
3. Code requires the enclosure not have any openings greater than 4 inches. This condition is exceeded at fence terminations where the site foundation wall is failing and post footings shifting. This should be remedied.

4. Pool Covers

Winter Cover Y N Brand _____ Model # _____ Quantity _____

Type _____ Deck Pop-up Anchors _____ Deck Weights _____ Storage Cart _____

Solar Cover Y N Brand _____ Model # _____ Quantity _____

Type _____ Deck Pop-up Anchors _____ Deck Weights _____ Storage Cart _____

Field Comments:

Code Comment:

- 1. Winter and Solar pool covers are not required by Code.

5. Pool Vacuum System

Pool Vacuum Observed Y N Brand Dolphin Model # Wave 140

Type: Central w/Wall Fittings Skimmer Type Portable Robot

For Portable: Discharge Type: W/Filter Back To Pool WO/Filter to Gutter System

Powered By: Gas Engine Electric Motor GFIC Protection

For Robot: Air Sensor Remote Control

Field Comments:

- 1. Pool robot vacuum appears in good condition. Operational condition is unknown.

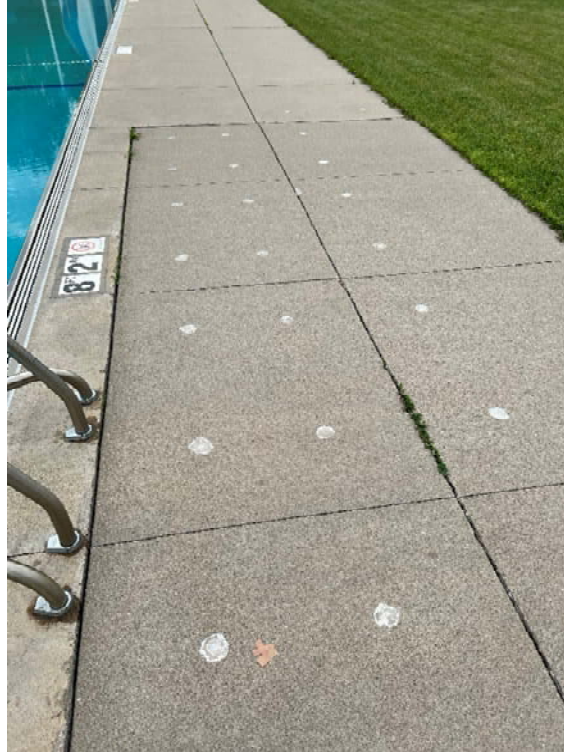
6. Decking

Type: Unfinished Concrete Decorative Concrete Other

Slope Away From Pool Slope to Deck Drains Slope to Grade Slope to Pool

Min Width _____ Obstructions within 5' of Pool Y N

Cracking: 1 2 3 4 5 Ramps Y N



Deck Area Which Underwent Mud Jacking

Field Comments:

1. Deck area north of main pool vessel is hollow sounding. Suggesting possible undermining of the soil beneath.
2. In the same area it appears mud jacking took place to remedy the sinking deck.
3. Outside of the one problem area the deck condition is fair and properly sloped. Select cracks are present throughout.

Code Comments:

1. Tripping hazards: The deck area noted in the field comments is not in tolerance and a trip hazard is present, most cracks have been caulked and the deck is level within $\frac{1}{4}$ ". Cracking may shift due to freeze thaw, any elevation differences at joints or crack that are greater than $\frac{1}{4}$ " should be ground to reduce the difference to under $\frac{1}{4}$ ".

2. An unobstructed deck at least 5 feet wide must entirely surround the pool. The existing pool is compliant.
3. Deck areas must not exceed the maximum allowable running slope of 1:20 for ADA travel. None located.
4. Deck areas must not exceed the maximum allowable cross slope of 1:48 for ADA travel. None located

7. Deck Drain System

Deck Drains Y N Air Gap Y N

Discharge To: Storm Sewer Sanitary Sewer To Grade

6" air gap on discharge Y N Elevation difference to Storm Sewer _____

Maximum Distance Between Drains _____ Water flow more than 15' in one direction Y N

Location of Drains Between Pools and Bathhouse



Deck Drain Outfall



Deck Trench Drain Experiencing Flooded Condition

Field Comments:

1. Deck drains discharge out retaining walls adjacent the parking lots.
2. Drains are heavily clogged and deck floods during heavy rain.

Code Comments:

1. The deck must be sloped away from the pool unless drains are provided to intercept water on the way back to the pool, and must be sloped to provide positive drainage of all deck areas. The existing deck drain system consists of a narrow trench drain that is installed where water is not allowed to drain to grade, which provides Code-compliant drainage.
2. A direct connection between the pool deck drains and the storm or sanitary sewer or plumbing drainage systems is prohibited. The existing system drains into the storm system without an air gap.

8. Deck Equipment

Number of Units:

3-meter Tower _____ Portable Lifeguard Chair 2 Stair Case into Pool 1 (Shallow Pool)

1-meter Tower _____ Stationary Lifeguard Chair _____ Pool Slide 1 (Shallow Pool)

Deck Level Tower _____ Pool Ladder 4

Lifeguard Chairs:

Style: Single Pedestal 4 Leg Site Built Broken Fittings Y N

Brand Pentair Overall Condition 1 2 3 4 5

Umbrellas Y N Fiberglass seats Wood seats Meet OSHA Y N

All appear to have concrete footings Y N Replace Y N

Pool Ladders:

Style: Stainless steel Other Type: Overhang Flush Cross braced Y N

Broken fittings Y N Overall Condition 1 2 3 4 5

Brand Paragon Replace Y N

Distance Between Ladder and Walls NA

Pool Slide:

Water source: Pool Water Potable Water None Tower Height 15'8"

Overhang distance beyond pool wall: _____ Water Depth at end of overhang: 3'

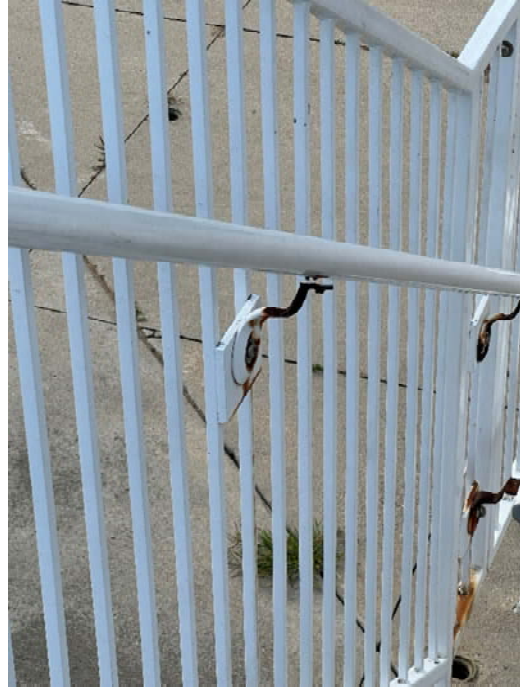
Overhang height above water elevation _____

Overall Condition 1 2 3 4 5

Brand RB6-90109L Miracle Replace Y N



Faded Water Slide Flume



Rusted Railing Brackets



Failing Slide Foundations

Field Comments:

1. Pool Slide

- a. The miracle pool slide foundation concrete is beginning to fail and needs to be addressed.
- b. The flume has a couple irregularities which can lead to rider skin irritations or cuts.
- c. Railing mounts are heavily rusted leading to breaks at select locations.
- d. A leak is present at the water supply connection a top the structure.

Code Comments:

- 1. The table below summarizes the diving tower requirements per SPS 390.11. The ability for diving tower is not present

Diving Tower requirements				
Pool Component	Code minimums		Field Measurements	
	3-meter	1-meter	1.5-meter	1-meter
Fillet Length	5'	5'		
Base of Fillet to Centerline of diving tower	10'	8'		
Tower to Side Wall	12'	10'		
Water Depth Below End of Diving Board	12'	10'		
Hopper Floor Length	13'	12'		
Water Depth at End of Floor	13'	12'		
Minimum Transition Panel Length	21'	15'		

*-The pool had standing water in the diving hopper, therefore accurate measurements were not obtained.

9. Surge Capacity

Surge capacity present Y N Type: Tank In Gutter Other

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Location West of main pool Condition 1 2 3 4 5

Size: From Plans = _____ gallons

From field measurements= $\text{Pi } 3.5'^2 \times \text{H } 8'2'' = 2357$ Gallons

Reuse Y N Flood pumps/Basement possible Y N N/A

Automatic fill valve Y N Type _____ Brand _____

Cross connection: 6" air gap on fill Y N 6" air gap on drain Y N



Interior of Pool Surge Tank

Field Comments:

1. The surge tank used for the main pool vessel was reused from the original pool recirculation system. At the time of construction, the capacity of the tank may have been sufficient.

However, current swimming pool code finds the existing tank undersized and non-compliant.

2. The required amount of total surge capacity is 3240 gallons, or 1 gallon per square foot of pool surface area. The existing surge tank is roughly a thousand gallons undersized.
3. Age of the concrete tank has led to poor condition and reported leaking.

Code Comments:

1. All overflow systems must be designed with an effective surge capacity of not less than 1 gallon for each square foot of pool surface area. Surge must be provided within a surge tank, in the gutter or filter above the normal flow line, or elsewhere in the system. Surge tanks, gutters, and filter tanks must have overflow pipes to convey excess water to waste.
2. The existing surge capacity is found in the surge tank. The capacity is not compliant.

10. Piping System - Pool #1

Conventional Flow Reverse Flow Combination Original System Y N

Main Drain System: Main Drain: Number 2 Size: 18" x 18"

Drain cover Brand Neptune Benson Drain Cover Model #MLD-FGD-1818

Year Installed Documentation not located Maximum Life of drain cover 10 years

VGBA Compliant Y N 1/2" Maximum Opening Y N

Main Drain Pipe Diameter 6" Constructed Of: PVC Metal

Return System:

Inlet Type: Individual Inlets Floor Trench Inlet Part of Manufactured Gutter

For Individual Inlets: In Wall In Floor Spacing Per Code Directional Adjustable

PVC Metallic Number of Inlets

Return Pipe Diameter 6" Constructed Of: PVC Metal

Outlet System: Gutter Y N Skimmer Y N

For Gutter Pool: Type of Outlet: Continuous Grate Individual Grates

Number of Drains "L" Type Flat Type Spacing .

Outlet Pipe Diameter 10" Constructed of: PVC Metal

Location of Drains: _____

Field Comments:

1. Field welding of section joints is present. Weldments are not passivated and are tarnished.
2. The gutter rim flows properly showing the pool is still within tolerances.

Code Comments:

1. The main pool vessel water must be recirculated on a continuous basis with a theoretical turnover rate. The Code specifies minimum turnover rates varying from 0.5 hours up to 6.0 hours. The minimum Code recirculation rates are determined by dividing the volume of water contained in the pool vessel by the Code turnover rate required for each pool vessel. The recirculation rate of the main pool vessel is 347.2 gpm, which is based on a 6 hour turnover rate. This assumes the ADA ramp is not a zero depth area by definition, which would require a 2 hour turnover rate in this area. The chart below shows the compliance of the various piping systems of the pool vessel.

Required Recirculation Rate (gpm)		347.2		
Pipe Compliance Chart				
Pipe System	Pipe Size (inches)	Max Pipe Flow Rate (gpm)	Code Required Flow Rate (gpm)	Code Compliant
Inlet Return	6"	705.16	347.2	Y
Main Drain	6"	528.87	347.2	Y
Gutter Outlet	10"	736	173.6	Y

2. Inlets/Return System: Compliant
 - a. An engineered, manufactured gutter system with integral supply orifices may be used instead of individual directional inlets.
3. Gutters: Compliant

- a. The piping for an overflow perimeter gutter system shall be designed to convey at least 50 percent of the recirculation flow rate.
4. Main Drain: Compliant
- a. The main pool has two drains. The grate is Neptune Benson brand, model MLD-FGD-1818. The life of the drain cover is 10 years, but location and review of installation documents is needed. The drain covers need to be replaced once expired. The main drain piping in the mechanical building is sized appropriately, the piping in the pool vessel was reviewed using renovation plans and is also sized appropriately.

11. Filtration Assembly

Brand Kenloch Model # FF-34-74 # Units 2

Type: Pressure Sand Vacuum Sand Gravity Sand Other

Pressure DE Vacuum DE Bump DE Cartridge Other

NSF Listed

Tank Material: Steel Fiberglass S.S. Aluminum Concrete Other

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Reuse Filter Y N

Sand Filter Size: High Rate Rapid Rate Diameter _____ or L 130" x W 52" = Area 16.5 s.f.

Flow rate 247.5 gpm (15gpm per sf)

For DE: Number of Septums _____ Diameter _____ or L _____ x W _____ = Area _____ s.f.

1 gpm per sf for vacuum filters and 3 gpm per sf for pressure filters.

For Cartridge: Number of Cartridges _____ Diameter _____ or L _____ x W = Area _____ s.f.

Hydraulic Capacity: From Data Plate: Loading of _____ gpm/sf Flow of _____ gpm

From Calculations: Loading of _____ gpm/sf x area _____ sf = Flow of _____ gpm

Loading of _____ gpm/sf x area _____ sf = Flow of _____ gpm

Supply Piping: Manifold _____ Each Filter Lateral _____ Independently Valved Y N

Manifold Piping: D.I. PVC Valves: Gate Butterfly

Backwash: Individually Group Backwash Pipe Size _____ Air Gap Sight Glass

Backwash Flow To: Storm Sanitary To Grade

Field Comments:

1. The filters by Kenloch are the original filters installed with the renovation project. Kenloch Company has since gone out of business. An NSF certification was not located on the filters.
2. The filters are at reaching the end of their expected operational life of 25 years.

Code Comments:

1. The maximum flow rate of the filters at 15 gpm per s.f. is 495 gpm, the filter capacity is compliant for maintaining the required recirculation flow for the main pool of 347 gpm.
2. The existing effluent flow of the backwash system is discharged to the storm sewer with a Code-compliant air gap. Code requires filter system discharge water to flow to the sanitary sewer with a minimum 6" air gap.

12. Recirculation Pump Assembly #1

Pump Brand Pentair Aurora Model # 342A BF # Units 1 Size 4x5x9A

Type: End Suction Centrifugal Split Case Centrifugal Vertical Turbine

Long Coupled Short Coupled

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Capacity: From Data Plate 375gpm @ 75ft.TDH

From Plans _____ gpm @ _____ ft.TDH

From Pump Curve _____ gpm @ _____ ft.TDH

Pump Housing Suction Size 5" Pump Housing Discharge Size 4"

Pump Reusable: Y N Data Plate Located Y N

Pump Suction:

Pump Suction Pipe Commences: At Surge Tank Direct From Main Drains At Filter

Suction Pipe Size 6" Pipe Type: D.I. PVC Valve in Suction Line Y N

Flooded Suction Y N Existing Foot Valve Y N Foot Valve Required Y N

Hair & Lint Strainer Y N Brand _____ Size _____ Model # _____

Reuse Strainer Y N Isolation Valve(s) For Strainer Y N

Pump Discharge:

Discharge Pipe Size 6" Pipe Type: D.I. PVC

Flow Meter Y N Brand George Fisher Model # _____

Distance Between Pump Discharge Flange and: Valve _____ Check Valve _____ Elbow _____

Pump Motor:

Brand Marathon Model # 6VE254TTDX4345AA L HP 15

Phase 3 Voltage 200 Amps 44.2 RPM 1760 Type TDR Frame 254 JMV

Starter Provided Y N Within Site of Motor Y N Model # _____

Safety Switch Y N



Facility Recirculation Pump Array

Field Comments:

Code Comments:

1. The existing pump is NSF listed as non-self priming; therefore, a foot valve is required. A foot valve is present to assist in the priming of the existing pump.
2. The existing centrifugal pump is properly sized for the main pool required recirculation rate.

13. Disinfectant System #1

Form of Disinfectant: Gas Liquid Solid Type: Chlorine Bromine

Specific Type Chemical Used CL2

Chlorinator Brand Hydro Instruments Model # 300 # Units 1

Maximum Output _____gph 500ppd Location Seperate room adjacent mechanical space

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Method of Operation: Vacuum Pressure Manual Feed Automatic Control

Point of Injection Downstream of: Pump Y N Heater Y N Filter Y N

Method of Inducing Flow Through Chlorinator:

Internal Pump Valve in Return Public Water Booster Pump

For Booster Pump: Brand Webtrol Model # ACE-S150-3 Hp 1.5 Volt 208 Phase 3

Does Method of Inducing Flow Result In Direct Cross Connection Y N

Where Chemicals Stored Chlorine Room

pH Adjustment System: Y N if Yes, Then Manual Control Automatic Control

Brand Pulsatron Model # LP84SA-VAT1-F06 # Units 1

Maximum Output 24 in gpd Location West Mechanical Building Wall

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

pH Form: Gas Liquid Slurry Type: Soda Ash Co2 Muriatic Acid

Specific Type Chemical Used Sodium Hydroxide

Chemical Equipment/Storage Space:

Type: Dedicated Rooms Y N Number 1

In Open Space with Other Equipment Y N Location of Space Next to Chemical Control

Equipment

Dedicated Rooms: Room Sealed Y N Closed Ceiling Y N Open Ceiling Y N

Walls Constructed of: Masonry Wood Frame

Ceiling Constructed of: Concrete Wood Frame W/ Finish

Rooms Have: Out Swing Door Y N Mechanical Ventilation Y N Window Y N

Alarm Y N Outside Light Switch Y N Outside Ventilation Switch Y N

Light Operational Y N Ventilator Operational Y N None Safety Mask Y N

Chemical Storage: Tanks Y N Double Containment Y N

For Gas: Cylinder Chain Y N Cylinder Scales Y N

Describe Any Chemicals Present Gas Chlorine in Seperate Room, Sodium Hydroxide in Mechanical

Room



Gas Chlorine Cylinders and Storage Room



Chemical Controllers

Field Comments:

1. Although highly effective, gas chlorine requires additional storage needs, monetarization, training, and safety precautions due to the high toxicity of the gas.
2. The introduction of pure gas chlorine (CL₂) and water (H₂O) creates a unique chemical reaction different from a liquid or solid solution. Hydrochloric Acid (HCL) is released with the reaction lowering the pH of the pool water. For this reason, either sodium carbonate or sodium hydroxide is needed to be introduced to increase and maintain the pool water pH within the proper range.

Code Comments:

1. The chlorine system is NSF listed.
2. The chlorine residual for the main pool must be a minimum of 1.0 ppm or 1.0 mg/L, the existing feeder is compliant for sizing.
3. The Gas Chlorine is stored within a reach in enclosure on the west side of the building.
 - a. Reach-in enclosures. Reach-in enclosures must be:
 - i. not over two feet in depth;
 - ii. vandal resistant; and
 - iii. naturally ventilated by means of openings in the upper and lower parts of the enclosure.
4. Doors. The door of a room or enclosure must be labeled "DANGER - GAS CHLORINE" in letters at least four inches high.
5. Seals. All openings between a chlorine room or enclosure and other enclosed space must be sealed.
6. Venting. Vents from feeders and storage rooms or enclosures must discharge to the outside atmosphere, above grade.
7. Chlorinating equipment. Chlorinating equipment must be capable of withstanding wear without developing leaks.
 - a. All chlorine cylinders must be anchored to prevent falling over.

- b. A valve stem wrench must be maintained on the chlorine cylinder so the supply can be shut off quickly in an emergency.
 - c. The valve protection hood must be kept in place except when the cylinder is connected to the system.
 - d. The chlorine feeding device must be designed so that during accidents or interruptions of the water supply, leaking chlorine gas is conducted to the out-of-doors.
 - e. The chlorinator must be a vacuum-operated solution-feed type, capable of delivering chlorine at its maximum rate without releasing chlorine gas to the atmosphere.
 - f. Pressurized chlorine feedlines must not carry chlorine gas beyond the chlorinating room.
 - g. Chlorinators must be designed to prevent the backflow of water into the chlorine solution container.
8. Respiratory protection equipment. Respiratory protection equipment, meeting the requirements of the National Institute for Occupational Safety and Health (NIOSH) or the United States Bureau of Mines for chlorine use must be available where chlorine gas is handled. The respiratory protection equipment must be stored at a convenient location, in a closed cabinet accessible without a key, but not inside any room where chlorine is used or stored.
- a. The respirators must use compressed air, have at least a 30-minute capacity, and be compatible with or exactly the same as the respirators used by the fire or emergency rescue department responsible for the pool facility, or be a canister type gas mask with full face mask and replacement canisters provided.
 - b. A record of use and inspection must be kept to ensure that the respirators will be serviceable when needed.
9. Chlorine leak detection. A bottle of ammonium hydroxide, 56 percent ammonia solution, or a comparable solution recommended by the chlorine supplier, must be available for chlorine leak detection.
- a. Where ton chlorine containers are used, an emergency leak repair kit recommended

by the Chlorine Institute, Inc., 2001 "L" Street NW, Washington, D.C. 20036, must be provided.

- b. Where an automatic leak detector is provided, it must be equipped with both an audible alarm and a visual warning sign.

10. Trained personnel. Installation of chlorinator equipment and its operation must be carried on by and under the supervision of personnel trained by the manufacturer or supplier for the installation and operation of such equipment

14. Chemical Controller #1 and Sampling Pump

Chemical Controller Y N

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

W/recorder Y N W/Sampling Stream Y N

Controller Brand BECS Model # Sys5 # Of Units 1 Serial # _____

Sampling Pump Brand _____ Model # _____ Hp _____ Voltage _____

Field Comments:

Code Comments:

- 1. A chemical controller is required for the chemical system, to automate acid and disinfectant injection into the pool return lines.

15. Pool Heaters

Pool Heater Y N

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Type: Standard Pool Heater Y N Central Boiler w/Heat Exchanger Y N

Solar Collector Heat Pump Other Hot Water Steam State Boiler # _____

Standard Pool Heater Brand Raypak Model # Raytherm # of Units _____

Serial # _____ Input _____ BTU/Hr Output _____ BTU/Hr

General: Energy Type: Electric Gas If Gas Then: Natural Gas LPG

Vent Size 12" Forced Draft Y N Common Chimney Y N Size _____

Combustion Air Source Y N 50% High Y N 50% Low Y N Motorized

Method of Inducing Flow: Recirculate Pump Y N Bypass Valve Y N

From Data Plate on Unit Y N Gas Feed _____ Regulator before Appliance Y N

Temp/Pressure Relief Valve Y N 6" Air Gap on Blow off Y N

Thermometer Y N Location: Influent Lateral Effluent Lateral Main Return Line

ASME mark found Y N AGA mark found Y N

Water Supply 3" Water Return 3" Metal Pipe Y N

Expansion Tank Y N Brand _____ Size _____ gallons

Recirculate Pump: Brand _____ Model # _____ # of Units _____

Flow _____ gpm from Data Plate

Motor Brand _____ H.P. _____ Phase _____ Voltage _____ Amperage _____



Domestic Water Heaters (Left) Pool Heaters (Right)

Field Comments:

1. The smaller pool water heater which serves the splash pool is not operational

Code Comments:

1. The heaters are ASME inspected and stamped;
2. Thermometers were observed.
3. Combustion Air is provided sufficiently as a combustion air louver and ducting is provided at a low horizon of the mechanical building.
4. Venting is also Code-compliant.

16. Pool Vessel #2

Indoor Outdoor

Pool Vessel Type: Combination Recreation Only Wellness Only Diving Only

Shape: Rectangular W _____ L _____ Free Form Trapezoidal

Pool Uses: Recreation Wellness Education Competition

Area: 1835 Square Feet Volume: 20643.75 Gallons Recirculation Rate: 172 gpm

Minimum Depth: 0' Maximum Depth: 3'

Calculated Patron Capacity: 112

Pool Vessel Features:

25-Yard Lanes 25-Meter Lanes Water Depth Less than 3' Zero Depth

50-Yard Lanes 50-M Lanes Waterslide receiving Area Lazy River Other - _____

Existing Floor: Observed None

Constructed Of: Gunite Aluminum Steel Fiberglass

Random Cracking In:

Shallow Area 1 2 3 4 5

Medium Area 1 2 3 4 5

Diving hopper 1 2 3 4 5

Unknown due to pool finish

Is Floor Repairable Y N

Walls: Observed None

Constructed Of: Cast Concrete Gunite Aluminum Fiberglass Masonry

Wall Condition Report:

Rebar Exposed Y N Disjointed Walls Y N Walls Straight Y N

Evidence of Structural Failure Y N Structural Cracks Y N

Wall & Floor Separate Y N Wall & Fillet Separate Y N

Are Walls Repairable Y N

Expansion-contraction Joints: Observed None

Location: In Floor Vertical Walls Intersection of Walls and Floors Breakline DH

Joint Condition: 1 2 3 4 5 N/A

Type of Original Joint Waterproofing: Sealant PVC Waterstop Unknown

Waterstop Location: Present in Joints Unknown Shown on Plans Y N

Construction Joints: Observed None

Location: In Floor Vertical Walls Intersection of Walls and Floors Breakline DH

Joint Condition: 1 2 3 4 5 N/A

Type of Original Joint Waterproofing: Sealant PVC Waterstop Unknown

Waterstop Location: Present In Joints Unknown Shown on Plans Y N

Recirculation System:

Recirculation Type: Conventional Reverse Mixed

Outlet System Type: Skimmer Pool Gutter Pool

For Gutter Pool:

Type: Roll Out Amityville Curb with gutter

Manufactured gutter inserted into Cast/Gunite Pool Wall

Constructed Of: Gunite/Ceramic Tile Gutter Cast Concrete Masonry Units Stainless

Pool Gutter Level Y N if No, Approximate Difference _____



Splash Pool

Field Comments:

1. The splash pool would be considered light duty with 6" single mat reinforced floors and 8" walls.
2. No expansion joints are present in the 75' long pool.
3. Some cracks are present in the exposed aggregate finish. It is possible these could be from underlying concrete cracks reflecting to the pool finish surface.
4. It appears some field welding was attempted on the gutter sections.

Code Comments:

17. Pool Piping System #2

Conventional Flow Reverse Flow Combination Original System Y N

Main Drain System: Main Drain: Number 2 Size: 18" x 18"

Drain cover Brand Neptune Benson Drain Cover Model #MLD-FGD-1818

Year Installed Needing review Maximum Life of drain cover 10 years

VGBA Compliant Y N 1/2" Maximum Opening Y N

Main Drain Pipe Diameter 6" Constructed Of: PVC Metal

Return System:

Inlet Type: Individual Inlets Floor Trench Inlet Part of Manufactured Gutter

For Individual Inlets: In Wall In Floor Spacing Per Code Directional Adjustable

PVC Metallic Number of Inlets

Return Pipe Diameter 4" Constructed Of: PVC Metal

Outlet System: Gutter Y N Skimmer Y N

For Gutter Pool: Type of Outlet: Continuous Grate Individual Grates

Number of Drains "L" Type Flat Type Spacing .

Outlet Pipe Diameter 8" Constructed of: PVC Metal

Location of Drains:

For Skimmer Pool: Number Skimmers Constructed of: PVC Metal

Outlet Pipe Diameter Constructed of: PVC Metal

Field Comments:

Required Recirculation Rate (gpm) 172

Pipe Compliance Chart				
Pipe System	Pipe Size (inches)	Max Pipe Flow Rate (gpm)	Code Required Flow Rate (gpm)	Code Compliant
Inlet Return	4"	313.44	172	Y

Main Drain	6"	528.7	172	Y
Skimmer Outlet	8"	470	86	Y

Code Comments:

1. Inlets/Return System: Compliant
 - a. An engineered, manufactured gutter system with integral supply orifices may be used instead of individual directional inlets.
2. Gutters: Compliant
 - a. The piping for an overflow perimeter gutter system shall be designed to convey at least 50 percent of the recirculation flow rate.
3. Main Drain: Compliant
 - a. The wading pool has 2 drains. The grate is Neptune Benson brand, model #MLD-FGD-1818. The life of the drain cover is 10 years. The drain covers do not need to be replaced at this time, however the date of installation should be reviewed. Additionally, the drain covers supply a maximum of 846 gpm, and 172 gpm is the required flow rate through the drain covers. The main drain piping in the mechanical building is sized appropriately, the piping in the pool vessel was not reviewed, a minimum 6" pipe is required to extend to each main drain. BAI estimates that the main drain piping is a 4", which would be sized according to the size of the drain covers.

18. Filtration Assembly #2

Brand Kenloch Model # FF-34-89 # Units 1

Type: Pressure Sand Vacuum Sand Gravity Sand Other

Pressure DE Vacuum DE Bump DE Cartridge Other

NSF Listed

Tank Material: Steel Fiberglass S.S. Aluminum Concrete Other

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Reuse Filter Y N

Sand Filter Size: High Rate Rapid Rate Diameter _____ or L _____ x W _____ = Area 20 s.f.

Flow rate 300 gpm (15gpm per sf)

Supply Piping: Manifold 4" Each Filter Lateral 4" Independently Valved Y N

Manifold Piping: D.I. PVC Valves: Gate Butterfly

Backwash: Individually Group Backwash Pipe Size 4" Air Gap Sight Glass

Backwash Flow To: Storm Sanitary To Grade

Field Comments:

Code Comments:

1. The maximum flow rate of the filters at 15 gpm per s.f. is 300 gpm, the 250 gpm required result in a 12.5 gpm per s.f. The filter capacity is compliant for maintaining the required recirculation flow for the competition pool.
2. The existing effluent flow of the backwash system is discharged to the sanitary sewer with a Code-compliant air gap. This is code compliant.

19. Recirculation Pump Assembly #2

Pump Brand Aurora Model # 342 A # Units 1 Size 2.5x3x9

Type: End Suction Centrifugal Split Case Centrifugal Vertical Turbine

Long Coupled Short Coupled

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

Capacity: From Data Plate _____ gpm @ _____ ft. TDH

From Plans 250 gpm @ 75 ft. TDH

From Pump Curve _____ gpm @ _____ ft. TDH

Pump Housing Suction Size 3" Pump Housing Discharge Size 2.5

Pump Reusable: Y N Data Plate Located Y N

Pump Suction:

Pump Suction Pipe Commences: At Surge Tank Direct From Main Drains At Filter

Suction Pipe Size 6" Pipe Type: D.I. PVC

Flooded Suction Y N Existing Foot Valve Y N Foot Valve Required Y N

Hair & Lint Strainer Y N Brand _____ Size _____ Model # _____

Reuse Strainer Y N Isolation Valve(s) For Strainer Y N

Pump Discharge:

Discharge Pipe Size 4" Pipe Type: D.I. PVC

Flow Meter Y N Brand George Fischer Model # Signet

Distance Between Pump Discharge Flange and: Valve 3' Check Valve NA Elbow 0"

Pump Motor:

Brand Toshiba Model # _____ HP 10

Phase 3 Voltage 208 Amps _____ RPM 1750 Type _____ Frame _____

Starter Provided Y N Within Site of Motor Y N Model # _____

Field Comments:

Code Comments:

1. The existing pump is NSF listed self-priming; therefore, a foot valve is not required as it is installed with flooded suction.
2. The existing centrifugal pump is properly sized for the competition pool required recirculation rate.

20. Disinfectant System #2

Form of Disinfectant: Gas Liquid Solid Type: Chlorine Bromine

Specific Type Chemical Used CL2

Chlorinator Brand Hydro Instruments Model # 300 # Units 1

Maximum Output _____ gph 500 ppd Location _____

Serves Pool #1 Serves pool #2 Serves Pool #3 Serves Pool #4

Method of Operation: Vacuum Pressure Manual Control Automatic Control

Point of Injection Downstream of: Pump Y N Heater Y N Filter Y N

Method of Inducing Flow Through Chlorinator:

Internal Pump Valve in Return Public Water Booster Pump

For Booster Pump: Brand Webtrol Model # ACE-S150-3 Hp 1.5 Volt 208 Phase 3

Does Method of Inducing Flow Result In Direct Cross Connection Y N

Where Chemicals Stored Chlorine Room

pH Adjustment System: Y N if Yes, Then Manual Control Automatic Control

Brand Pulsatron Model # LP84SA-VAT1-F06 # Units 1

Maximum Output 24 in gpd Location West Mechanical Building Wall

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

pH Form: Gas Liquid Slurry Type: Soda Ash Co2 Muriatic Acid

Specific Type Chemical Used Sodium Hydroxide

Chemical Equipment/Storage Space:

Type: Dedicated Rooms Y N Number 1

In Open Space with Other Equipment Y N Location of Space Next to Chemical Control Equipment

Dedicated Rooms: Room Sealed Y N Closed Ceiling Y N Open Ceiling Y N

Walls Constructed of: Masonry Wood Frame

Ceiling Constructed of: Concrete Wood Frame

Rooms Have: Out Swing Door Y N Mechanical Ventilation Y N Window Y N

Alarm Y N Outside Light Switch Y N Outside Ventilation Switch Y N

Light Operational Y N Ventilator Operational Y N None Safety Mask Y N

Chemical Storage: Tanks Y N Double Containment Y N

For Gas: Cylinder Chain Y N Cylinder Scales Y N

Describe Any Chemicals Present Gas Chlorine in Seperate Room, Sodium Hydroxide in Mechanical Room

Field Comments:

1. Chemical equipment data is the same as the main pools because they use two sets of like equipment.

Code Comments:

1. The Pulsatron solution pumps are NSS listed.

21. Chemical Controller #2 and Sampling Pump

Chemical Controller Y N

Serves Pool #1 Serves Pool #2 Serves Pool #3 Serves Pool #4

W/recorder Y N W/Sampling Pump Y N

Controller Brand BECS Model # Sys5 # Of Units 1 Serial # _____

Sampling Pump Brand _____ Model # _____ Hp _____ Voltage _____

Field Comments:

1. Chemical controllers can be reused.

Code Comments:

22. Mechanical Building

Separate Mechanical Building Y N Dimensions L 31' W 17' H 12'4"

Plans Available Y N Basement Y N

Foundation Y N Wall Type: Masonry Wood Frame Cast Concrete

Roof Type: Flat Single Pitch Double Pitch

Roofing Type: Shingles Membrane Metal

Roof Structure: Wood Truss Wood Rafters Precast Concrete Bar Joists

Evidence of Roof Leakage Y N Fire Resistive Roof Y N

Fire Resistive Structure Y N

Field Comments:

Code Comments:

1. Combustion air makeup is provided for the pool heaters.
2. Eye wash stations are required for areas with hazardous materials. The gas chlorine and liquid acid for pH adjustment are considered hazardous; therefore, an eye wash station is required.

23. Bathhouse Structure

Separate Building Y N Or Part of Larger Building Y N 1 Story 2 Story

Dimensions L 42' W 113'6" H 8'

Plans Available Y N Basement Y N

Foundation Y N Foundation Wall Type: Masonry Wood Frame Cast Concrete

Main Wall Type: Masonry Wood Frame Cast Concrete

Rooms: Entry Single Entry Y N Office First Aid Guard Chlorine

Janitorial Control Manager Combination Guard/Basket Room

Family Toilet Room

Male: Shower Toilet Room Indoor Change Room Outdoor Change Area

Female: Shower Toilet Room Indoor Change Room Outdoor Change Area

Basket Storage: Central Y N In Each Change Area Y N

Requires Male/Female Guard Y N

Floor Treatment: Painted Concrete Natural Concrete Ceramic Tile Other

Floor Condition: Interior 1 2 3 4 5 Exterior Condition: 1 2 3 4 5

Well Lighted Y N Vandal Resistive Lighting Y N

Mechanical Ventilation Y N Rooftop Y N Wall Type Y N

Natural Ventilation Y N Type _____ Bug Proof Bird Proof

Combustion Makeup Air Y N

Field Comments:

Code Comments:

24. Bathhouse Roof

Roof Type: Flat Single Pitch Double Pitch

Roofing Type: Shingles Membrane Metal

Roof Structure: Wood Truss Wood Rafters Concrete Bar Joists

Evidence of Roof Leakage Y N Fire Resistive Roof Y N

Fire Resistive Structure Y N

Interior Ceiling: Cathedral Y N Flat Y N Ceiling Finish Wood Cross Hatch

Field Comments:

1. There were no signs of leaks within the bathhouse. Heavy rain was occurring during observation.
2. The beaded plywood used as soffit material is beginning to deteriorate. It appears the lack of a rain gutters with the drip edge roof design is allowing the collection of water under the roof's eave. (See image below)



Bathhouse Eave Condition

25. Bathhouse Doors and Windows

Door Frames: Metal Wooden Fiberglass Aluminum Replace Y N

Doors: Metal Wooden Fiberglass Aluminum Replace Y N

Heavy Duty Hardware Y N Operating Condition: 1 2 3 4 5

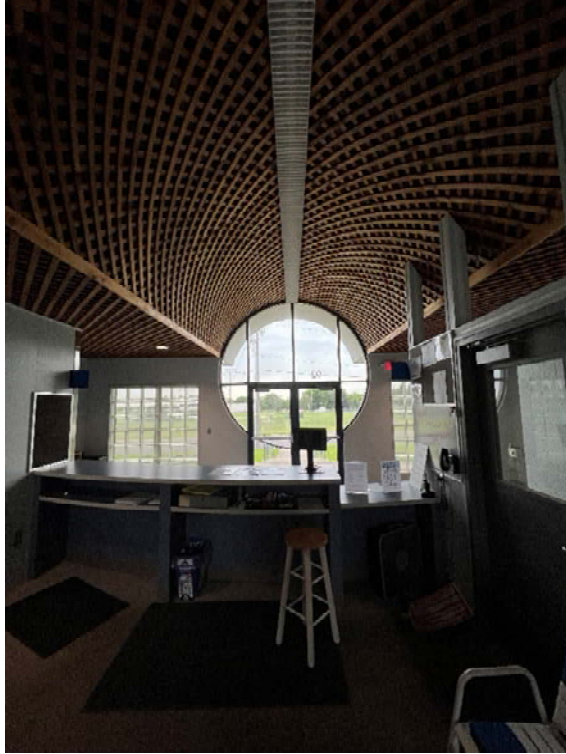
Windows Y N Type: Fixed Operable Frame: Metal Wooden Fiberglass

Aluminum Sky Lights Y N Window Replacement Required Y N

Overhead Door Y N Replacement Required Y N

Shutter Door Y N Replacement Required Y N

Standard Exit Openings Y N Sufficient Exit Openings Y N



Interior Ceiling Façade Showcasing the Front Window and Door Assembly

Field Comments:

1. Doors are in moderate condition with low elevation areas experiencing some corrosion.

Code Comments:

26. Bathhouse Sanitary Facilities

Fixture Type	Existing Quantity		Code Required Quantity	
	Female	Male	Female	Male
Urinals	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>
Water Closet	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>
Shower	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>
Lavatory	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
Baby Changing	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Mirror	<u>2</u>	<u>2</u>	<u>0</u>	<u>0</u>
Soap	<u>1</u>	<u>1</u>		
Towel	<u>1</u>	<u>1</u>		
Hair/Hand Dryer	<u>0</u>	<u>0</u>		
Privacy Booths	<u>0</u>	<u>0</u>		
Indoor Change Area	<u>0</u>	<u>0</u>		
Outdoor Chge Area	<u>0</u>	<u>0</u>		
Benches	<u>8</u>	<u>7</u>		
Baskets	<u>0</u>	<u>0</u>		
Lockers	<u>0</u>	<u>0</u>		

Water Closet Type: Tank Flush Valve Open Seats Y N

Urinal Type: Flush Tank Flush Valve Floor Mounted Wall Mounted

Shower Type: Individual Surface Mount Gang Type Column Shower

Touch Control Flow Y N Individual Shower Floor Drain Y N

Tempering Valve Y N

Field Comments:

1. One family change room and one accessible family change room are located off of a central corridor. The corridor connects the lobby and pool side exit. Each room has a lavatory, diaper change station, water closet and shower. These fixtures are additional and not included in the counts above.

Code Comments:

1. Individual shower drains are required in the plumbing Code, the existing showers use individual drains.
2. Fixture counts meet the code required amount.

27. Bathhouse Water Heater

Water Heater Y N Energy Type: Natural Gas LPG Electric

Appliance Type: Standard Tank Type Boiler W/Separate Tank

Central Boiler W/Exchanger Storage Tank Capacity

Heater Brand State Model # SBT100 75 NE Serial # C99165664 + J99368888

Temp & Pressure Relief Y N Tempering Valve Y N # Units 2

Balancing Valve Brand _____ Model # _____ Serial # _____

Input 75,100 x 2 BTU/Hr Output _____ BTU/Hr Wattage _____ Phase _____

Recharge Rate _____gph From Data Plate Y N

Vent Type: Power Direct Standard Power-Direct Sealed Combustion

Field Comments:

1. The domestic water heaters are in good condition and have reusable life.
2. The two heaters are connected in parallel and are connected to the hot water circulating loop. The loop should be set at 140 degrees for the concession service and mop sink. Mixing valves at the showers, lavatories and hand sinks at 120 degrees.

28. HVAC Systems

Mechanical Building/Room: Power Ventilation Y N Heating System Y N

Rooftop Ventilator Y N Wall Ventilator Y N Combustion Air Ventilator Y N

Bathhouse: Power Ventilation Y N Heating System Y N Air Condtg Y N

Rooftop Ventilator Y N Wall Ventilator Y N Combustion Air Ventilator Y N

Natural Ventilation Y N Type Louvered Penthouse Ventilator Total Size _____

Open Area Size _____ Quantity _____

Natural Ventilation by room:

Male Restroom: Open Area Size _____ Quantity _____

Female Restroom: Open Area Size _____ Quantity _____

Central Guard Room: Open Area Size _____ Quantity _____

Other Rooms: Open Area Size _____ Quantity _____

Field Comments:

1. EF 1 (2000CFM) serves Women’s change room and offices
2. EF 2 (2730CFM) serves Men’s change room, family change rooms, and guard area.
3. During operation roller doors at the concessions area and control area are open.

Code Comments:

1. International Mechanical Code requires natural or mechanical ventilation. The bathhouse requires natural or mechanical ventilation. The existing method of ventilation is mechanical.
 - a. The restrooms, concession room and guard rooms have mechanical ventilation via two exhaust fans splitting the bathhouse areas.
2. Combustion air is required in the mechanical space as it contains multiple gas fired appliances. A combustion air intake louver and duct is provided.

29. Electrical System

Number of Services to Facility 1

Point of Service #1 Transformer in front of bathhouse Transformer Type: Pad Mount Pole Mount

Transformer location Front of bathhouse CT Cabinet Y N

Meter Location Outside west of mechanical space

Service #1: Amperage 400 A Voltage 120/208V Phase: 1 3 Wye 4 Wire Delta _____

Service Disconnect Type: Single Switch 6 Switch

If Single Switch: Fused Safety Switch Breaker Panel w/Main MDP w/Main

If six switch: Fused Safety Switches Breaker Panel wo/Main MDP wo/Main

Fused Main Safety Switch Brand _____ Cat# _____ Amperage _____

Main Breaker Panel Brand _____ Cat# _____ Amperage _____

Main Distribution Panel Brand Siemens Cat# _____ Amperage 400

Feeder Power Panels Y N Number of Feeder Panels 3

Feeder Power Panel #1 MCC1: Location Mechanical Room Main Breaker Y N Amperage 200

Feeder Power Panel #2 LP1: Location Storage Room Main Breaker Y N Amperage 200

Feeder Power Panel #3 LP2: Location Mechanical Room Main Breaker Y N Amperage 200

Branch Circuit Overcurrent Protection Type: Breakers Fuse GFIC

Bonding: Observed Y N For Pump Y N Deck Equipment Y N

Field Comments:

Code Comments:

30. Utilities

Site Utilities: Electric Water Sanitary Gas Telephone Internet Storm

Bathroom Utilities: Electric Water Sanitary Gas Telephone

Internet Storm

Mechanical Building Utilities: Electric Water Sanitary Gas Telephone

Internet Storm

Potable Water Source: Municipal Private Well

High Iron Y N High Hardness Y N High Alkalinity Y N

System Water Pressure _____

Point of Water Service #1: Site Bathroom Mechanical Building Size 4"

Water Service #1 Meter: Size 2 1/2" Location East Wall in Mechanical Space Brand _____

If Meter 2" And Larger = Manual Valve Bypass Y N

Exempt Meter For: Site Pool

Point of N Gas Service #1: Site Bathroom Mechanical Building Size _____

Point of N Gas Service #2: Site Bathroom Mechanical Building Size _____

N Gas #1 Meter Location _____ N Gas #2 Meter Location _____

Gas Fired Appliance 1. _____ 2. _____

Regulator In Front Of Appliances Y N Name of Utility _____

Storm Sewer To Site _____ Flow Direction _____ Gravity Y N

Storm Sewer Into BH _____ Flow Direction _____ Gravity Y N

Storm Sewer Into MB _____ Flow Direction _____ Gravity Y N

Storm Sewer Receives: Filter Backwash Y N Surge Tank Y N

Pool Drainage Y N Deck Drain Y N Roof Drainage Y N

Air Gaps: Filter Backwash Y N Surge Tank Y N Pool Drain Y N

Deck Drain Y N

Storm System: Lift Station Y N Location: _____ Duplex Simplex

Discharge Size _____ Submersible Y N Shaft Driven Y N

Sanitary Treatment Source: Municipal Private Septic Tank

Sanitary Sewer To Site _____ Flow Direction _____ Gravity Y N

Sanitary Sewer Into BH_____ Flow Direction_____ Gravity Y N
 Sanitary Sewer Into MB_____ Flow Direction_____ Gravity Y N
 Sanitary Sewer Receives: Filter Backwash Y N Surge Tank Y N
 Pool Drainage Y N Deck Drain Y N Roof Drainage Y N
 Sanitary System: Lift Station Y N Location: _____ Duplex Simplex
 Discharge Size _____ Submersible Y N Shaft Driven Y N
 Field Comments:

Code Comments:

1. The backwash has an air gap above the pit. A 6” air gap is required between the process water systems and sanitary sewer.
2. The pool fill line is provided with a complaint 6” air gap. An automatic fill line is generally recommend to maintain a consistent water level in the pool vessel.

31. Pool Area Lighting System

Pool Area Lighting Y N Security Lighting Y N
 Pole Type: Steel Aluminum Wood Concrete # Poles 6 Height of Poles 25'
 Fixture Type: Incandescent Mercury HPS Metal Halide Quartz
 # Pole Mounted Fixtures 12 # Building Mounted Fixtures 4
 Condition Of Poles 1 2 3 4 5 Condition Of Fixtures 1 2 3 4 5
 Underwater Lighting Y N Operating Y N
 Fixture Type: Incandescent Other
 Fixture Accessible From: Inside Pool Only Utility Chase Around Pool
 Light Nitch Has: Stainless Steel Form Circular hole in Pool Wall W/Glazed Cover
 # Underwater Lights 6 (Lap Pool), 1 (Splash Pool)

Field Comments:

1. Each pole has two 400 W high pressure sodium light fixtures.

2. The wattage of the underwater lights is unknown

Code Comments:

1. When underwater lighting is used, not less than 0.5 watts shall be employed per square foot of pool water surface area. The wattage of the in pool lights need to be reviewed to determine compliance.
2. Overhead lighting without the use of underwater lighting must provide a minimum of 10 foot candles of illumination at the pool water surface and the adjacent deck area. The existing illumination level does not meet the minimum lighting levels required by Code for evening swimming.
3. In the case that the underwater lighting is insufficient a photometric study may be required to determine if the foot-candle requirements are met. Making night swimming available.

32. Safety Equipment

Ring Buoys Spine Board Blankets Telephone Emergency #'s

Fire Extinguisher First Aid Kit Eye Wash Chlorine Mask

Separate First Aid Water Closet Separate First Aid Lavatory

Field Comments:

1. An eye wash station is provided in the mechanical room for chemical exposure. The unit should be replaced with a model that contains a shower head as well.
2. The unit use a mixing valve with cold and hot water. Temperature gage shows water is supplied to the unit is 77 degrees Fahrenheit.

Code Comments:

33. Site Work

Field Comments:

1. Erosion of the granular material between the site retaining wall and 2' wide mow strip has caused movement of the mow strip and fence post footings.
 - a. The retaining wall appears unaffected.
 - b. Movement of the fence footings has created a gap greater than 4" at the fence termination.



Failing Mow Strip and Fence Footings

Code Comments:

34. ADA Compliance

Site Arrival

Field Comments:

1. The ramp to which goes toward the East parking lot is within compliance for an ADA accessible path.
 - a. The slope is roughly 4% which is within the 5% requirement.
 - b. ADA parking spots are located in this lot.
2. The ramp which goes toward the West parking lot is not with compliance for an ADA accessible path.
 - a. The slope is roughly 7% which exceeds the 5% maximum.
 - b. ADA parking is not provided in the West lot.

Site Arrival ADA Code Comments:

1. At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones; public streets and sidewalks; and public transportation stops to the accessible building or facility entrance they serve;
2. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

Bathroom Structure

Entrance Width 3' Entrance Counter Height 34.5"

Hallway Widths 4' min

Door Widths 3' Operable Hardware Height 38-40"

Door Approach Direction 8'

Distance Perpendicular to Doorway 10' Distance Parallel to Doorway 28'

Shower Type: Transfer Roll In

Shower Size Width 3' Shower Size Depth 3'4"

Toilet Compartment Size: Width 5' Length 7'10"

Width of Approach to Door 3' 6" Seat Height 20"

Grab Bar Locations: Side Wall Rear Wall

Rear Wall Grab Bar Measurements:

Length 36" Distance from Center Line of Water Closet (Short Side) 12"

Distance from Center Line of Water Closet (Long Side) 24"

Side Wall Grab Bar Measurements:

Length 42" Distance from Rear Wall 12" Distance from Rear Wall to end of Grab Bar 54"

Urinal Height 18" and 24" Urinal Depth 12"

Mirror Height _____ Shelve Height _____

Toilet Paper Dispenser Height _____ Toilet Paper Dispenser Distance from Water Closet _____

Lavatory Height 2' 10" Drinking Fountain Height 33"

ADA Compliant: Entrance Y N Entrance Counter Y N Hallways Y N

Shower Rooms Y N Toilet Rooms Y N Door Widths Y N

Plumbing Stalls Y N Plumbing Fixtures Y N Door Hardware Y N

Mirrors Y N Drinking Fountain Y N

Field Comments:

1. All ADA dimension requirements appear to be met.

Code Comments:

1. Door openings shall provide a clear width of 32" minimum;
2. Sales and service counters shall be 36" high maximum for both forward and parallel approaches;
3. The clear width of walking surfaces shall be 36" minimum;
4. Transfer type shower compartments shall be 36" by 36" clear inside dimensions measured at

the center points of opposing sides and shall have a 36" wide minimum entry on the face of the shower compartment. Clearance of 36" wide minimum by 48" long minimum measured from the control wall shall be provided;

5. Standard roll-in type shower compartments shall be 30" wide minimum by 60" deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60" wide minimum entry on the face of the shower compartment;
6. Clearance around a water closet shall be 60" minimum measured perpendicular from the side wall and 56" minimum measured perpendicular from the rear wall;
7. The seat height of a water closet above the finish floor shall be 17" minimum and 19" maximum measured to the top of the seat;
8. The side wall grab bar shall be 42" long minimum, located 12" maximum from the rear wall and extending 54" minimum from the rear wall;
9. The rear wall grab bar shall be 36" long minimum and extend from the centerline of the water closet 12" minimum on one side and 24" minimum on the other side;
10. Toilet paper dispensers shall be 7" minimum and 9" maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15" minimum and 48" maximum above the finish floor and shall not be located behind grab bars;
11. Ambulatory toilet compartments are required where six or more toilet compartments are provided, or where the combination of urinals and water closets totals six or more fixtures;
12. Ambulatory accessible compartments shall have a depth of 60" minimum and a width of 35" minimum and 37" maximum;
13. Urinals shall be the stall-type or the wall-hung type with the rim 17" maximum above the finish floor or ground. Urinals shall be 13-1/2" deep measured from the outer face of the urinal rim to the back of the fixture;
14. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34" maximum above the finish floor or ground;
15. Shelves shall be 40" minimum and 48" maximum above the finish floor or ground;
16. Mirrors located above lavatories or countertops shall be installed with the bottom edge of

the reflecting surface 40” maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35” maximum above the finish floor or ground;

17. Drinking fountain spout outlets shall be 36” maximum above the finish floor or ground;

18. A cursory review of elements in the bathhouse was performed to check for American Disabilities Act (ADA) compliance. ADA compliance is met through-out the facility. Updates to the bathhouse are not required.

Decking

Meet ADA Y N

Field Comments:

Code Comments:

1. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

Pool Vessels

ADA Access:

Pool #1 ADA Accessible Y N

Accessible Method: Lift Ramp Staircase Transfer Wall Transfer Systems

Broken fittings Y N Overall Condition 1 2 3 4 5

Brand _____ Model _____ Replace Y N

Pool #2 ADA Accessible Y N

Accessible Method: Lift Ramp Staircase Transfer Wall Transfer Systems

Broken fittings Y N Overall Condition 1 2 3 4 5

Brand _____ Model _____ Replace Y N

Field Comments:

Code Comments:

1. Pools with less than 300 linear feet require one means of ADA-compliant egress. The main pool perimeter is 240 feet and requires 1 means of egress. The splash pool are is also below the 300' threshold. Each pool is accessible via a sloped entry. The chart below is a summary of ADA requirements.

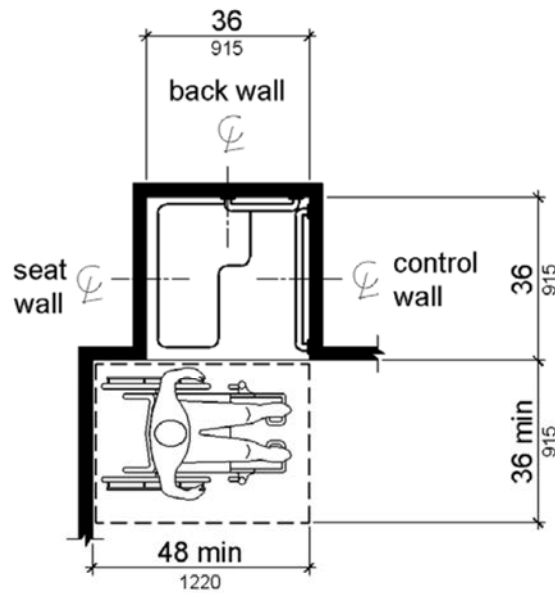
Summary of ADA Requirements for Swimming Pools					
Pool Type	Means of Egress				
	Slope Entry	Lift	Transfer Walls	Transfer systems	Stairs
Pool with perimeter of less than 300 lineal feet	X	X			
Pool with perimeter greater than or equal to 300 lineal feet	X*	X*	X	X	X
Wave action, Leisure river, other pools where user entry is limited to 1 area	X	X		X	
Wading Pool	X				
Spa		X	X	X	

* Requires two means of access. Primary means shall be sloped entry or pool lift. Secondary means can be any of the permitted types.

Table 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

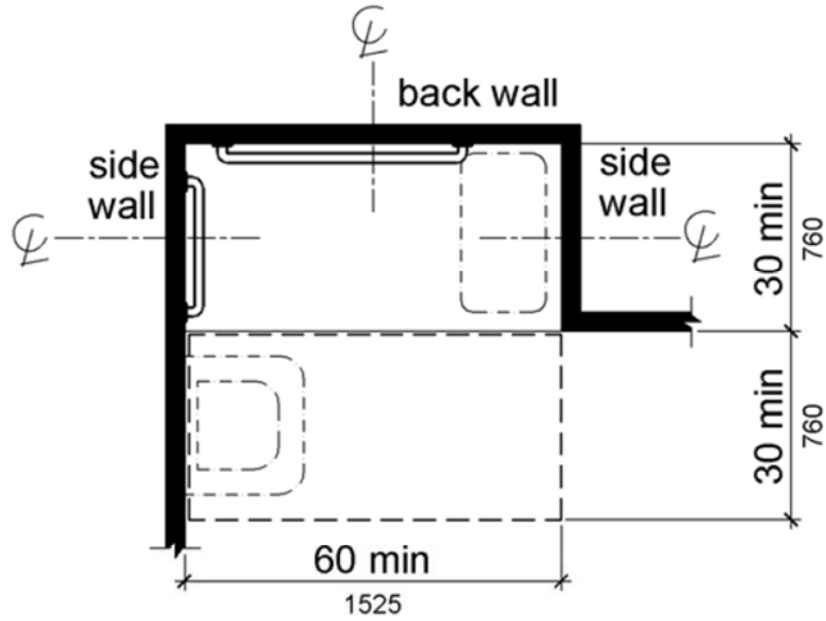
Type of Use		Minimum Maneuvering Clearance	
Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch side unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm) ¹
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm) ²	22 inches (560 mm) ³
From latch side	Pull	48 inches (1220 mm) ⁴	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm) ⁴	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 6 inches (150 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 6 inches (150 mm) if closer is provided.



Note: inside finished dimensions measured at the center points of opposing sides

Figure 608.2.1
Transfer Type Shower Compartment Size and Clearance



Note: inside finished dimensions measured at the center points of opposing sides

Figure 608.2.2
Standard Roll-In Type Shower Compartment Size and Clearance

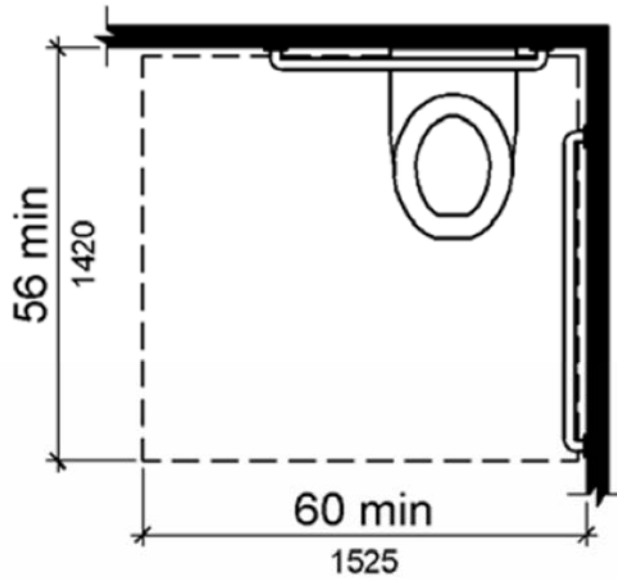


Figure 604.3.1
Size of Clearance at Water Closets

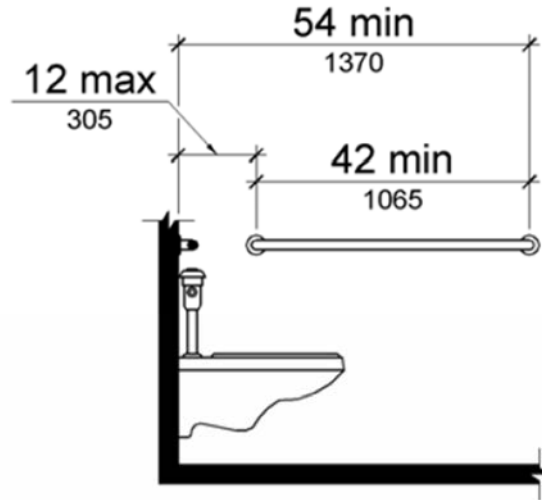


Figure 604.5.1
Side Wall Grab Bar at Water Closets

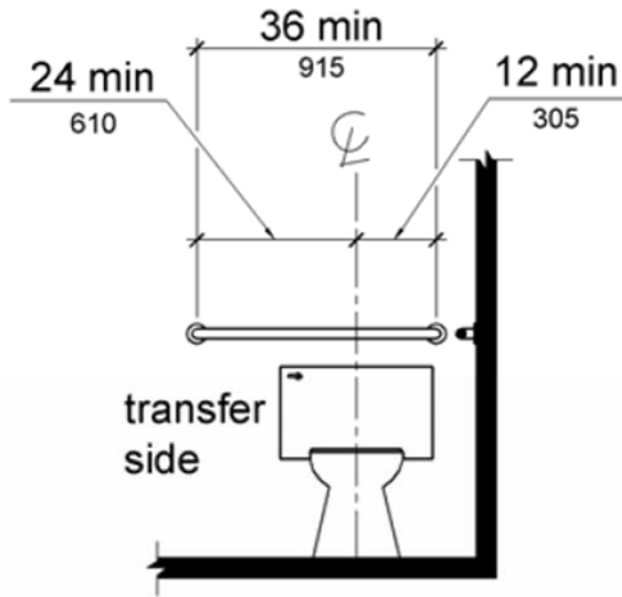


Figure 604.5.2
Rear Wall Grab Bar at Water Closets

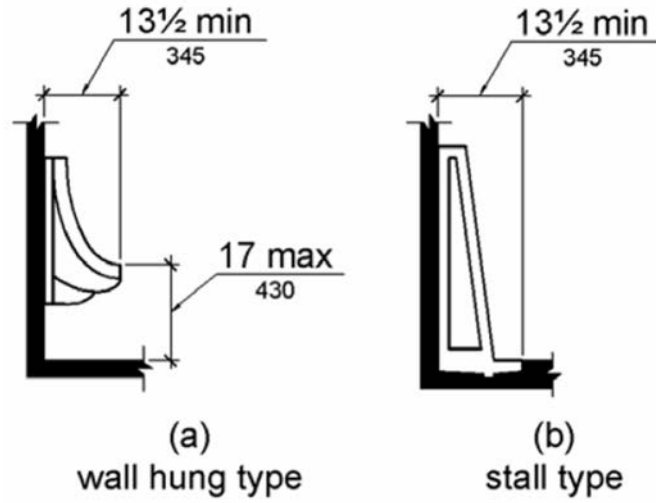


Figure 605.2
Height and Depth of Urinals

CHAPTER V. DATA AND PROBABLE CONSTRUCTION COSTS INFORMATION

2a. Data For Existing Facility

(Data for study purposes only)

TOTAL WATER SURFACE AREA = 5075 square feet

TOTAL FACILITY PATRON CAPACITY = 294 patrons, does not include decking

1. Existing main pool surface area: 3240 square feet
2. Existing main pool water volume: gallons
3. Existing main pool patron capacity: 182 patrons
4. Existing main pool recirculation rate: 347.2 gpm
5. Existing wading pool surface area: 1835 square feet
6. Existing wading pool water volume: gallons
7. Existing wading pool patron capacity: 112 patrons
8. Existing wading pool recirculation rate: 172 gpm
9. Number of existing and required sanitary facilities:

Fixture Type	Existing Quantity		Code Required Quantity	
	Female	Male	Female	Male
Urinals	<u>0</u>	<u>2</u>	<u>0</u>	<u>2</u>
Water Closet	<u>3</u>	<u>2</u>	<u>3</u>	<u>2</u>
Shower	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>
Lavatory	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>

10. Existing Surge capacity: 2300 gallons (gross)
11. Required Surge Capacity: 3240 gallons

Opinions of Probable Construction Cost

West St. Paul Swimming Pool		
Opinion of Probable Construction Costs		
Version #1 - 25 Year Design Life		
Date: 2/6/2025		
Created for Bidding in Fall 2025		
Line Items		
1	Pool Vessel.	\$54,000
2	Pool Finish.	\$65,000
3	Pool Enclosure (Fence).	\$8,000
4	Pool Covers.	\$0
5	Vacuum System	\$0
6	Decking.	\$31,000
7	Deck Drain System.	\$26,000
8	Deck Equipment and Gutter Gating.	\$51,000
9	Competition Equipment.	\$0
10	Surge Tanks & MH #1.	\$80,000
11	Main Pool Piping.	\$36,000
12	Pool Filtration and Backwash System.	\$39,000
13	Recirculation Pump Assembly.	\$36,000
14	Pool Disinfectant System.	\$22,000
15	Chemical Control.	\$0
16	Pool Heaters.	\$180,000
17	Splash Pool Vessel.	\$31,000
18	Splash Pool Finish.	\$37,000
19	Splash Pool Piping System.	\$17,000
20	Splash Pool Filtration Assembly.	\$17,000
21	Splash Pool Recir. Pump Assembly.	\$0
22	Splash Pool Disinfectant System.	\$1,000
23	Splash Pool Chemical Contoller Pump.	\$0
24	Mechanical Building	\$16,000
25	Bathhouse Structure.	\$0
26	Bathhouse Roof Assembly.	\$9,000
27	Bathhouse Doors & Windows.	\$0
28	Bathhouse and Site Plumbing.	\$0
29	Potable Water Heater.	\$0
30	HVAC Systems.	\$5,000
31	Electrical System	\$0
32	Utilities	\$0
a	Storm & Sanitary Sewer Utility.	\$0
b	Water and Electric Utilities.	\$0
33	Pool Area Lighting System.	\$4,000
34	Safety Equipment.	\$5,000
35	Site Work.	\$7,000
36	Site Amenities.	\$0
a	Water Slide Restoration.	\$100,000
b	Bench Tile Repair.	\$5,000
c	. . . . .	\$0
d	. . . . .	\$0
e	. . . . .	\$0
f	. . . . .	\$0
36	Additional Line Items	
a	Demolition & Excavation.	\$50,000
b	Contractor Mobilization, Supervision, and Bonding.	\$47,000
c	Contractor Profit & Overhead.	\$75,000
d	Design Fees, Permits, Soil Borings, Site Survey, Reimbursables, etc.	\$100,000
e	Construction Related Services & Reimbursables.	\$58,000
f	Contingency Fund 8% - Inflation, project creep etc.	\$84,000
Opinion of Probable Construction Cost.		\$1,296,000

West St. Paul Swimming Pool		
Opinion of Probable Construction Costs		
Version #1 - 50 Year Design Life		
Date: 2/6/2025		
Created for Bidding in Fall 2025		
Line Items		
1	Pool Vessel.	\$803,000
2	Pool Finish.	\$54,000
3	Pool Enclosure (Fence).	\$8,000
4	Pool Covers.	\$0
5	Vacuum System	\$0
6	Decking.	\$222,000
7	Deck Drain System.	\$24,000
8	Deck Equipment.	\$171,000
9	Competition Equipment.	\$0
10	Surge Tanks & MH #1.	\$85,000
11	Main Pool Piping.	\$115,000
12	Pool Filtration and Backwash System.	\$77,000
13	Recirculation Pump Assembly.	\$36,000
14	Pool Disinfectant System.	\$22,000
15	Chemical Control.	\$0
16	Pool Heater.	\$180,000
17	Splash Pool Vessel.	\$455,000
18	Splash Pool Finish.	\$26,000
19	Splash Pool Piping System.	\$109,000
20	Splash Pool Filtration Assembly.	\$18,000
21	Splash Pool Recir. Pump Assembly.	\$12,000
22	Splash Pool Disinfectant System.	\$1,000
23	Splash Pool Chemical Contoller Pump.	\$0
24	Mechanical Building	\$17,000
25	Bathhouse Structure.	\$0
26	Bathhouse Roof Assembly.	\$9,000
27	Bathhouse Doors & Windows.	\$0
28	Bathhouse and Site Plumbing.	\$0
29	Potable Water Heater.	\$0
30	HVAC Systems.	\$5,000
31	Electrical System	\$0
32	Utilities	
a	Storm & Sanitary Sewer Utility.	\$0
b	Water and Electric Utilities.	\$0
33	Pool Area Lighting System.	\$0
34	Safety Equipment.	\$5,000
35	Site Work.	\$7,000
36	Site Amenities.	\$0
a	Water Slide Restoration and Installation.	\$150,000
b	. . . . .	\$0
c	. . . . .	\$0
d	. . . . .	\$0
e	. . . . .	\$0
f	. . . . .	\$0
30	Additional Line Items	
a	Demolition & Excavation.	\$300,000
b	Contractor Mobilization, Supervision, and Bonding.	\$146,000
c	Contractor Profit & Overhead.	\$233,000
d	Design Fees, Permits, Soil Borings, Site Survey, Reimbursables, etc.	\$313,000
e	Construction Related Services & Reimbursables.	\$181,000
f	Contingency Fund 8% - Inflation, project creep etc.	\$263,000
Opinion of Probable Construction Cost.		\$4,047,000

Schedule of Implementation (50-Year)

A suggested schedule for repair/renovation or replacement of the West Saint Paul facility is as follows:

- | | |
|---|----------------|
| 1. Submit completed Phase I - Step #1 Technical Evaluation
for review and approval | February 2025 |
| 2. Submit completed Step #2 Feasibility Study
for review and approval | April 2025 |
| 3. Select project option and authorize financing mechanism
and place on ballot for referendum(if required) | November 2025 |
| 4. Conduct referendum | December 2025 |
| 5. Authorize preparation of plans and specifications | January 2026 |
| 6. Submit plans and specifications for review and approval | June 2026 |
| 7. Submit plans and specifications to the State for approval
(approval required for pool and buildings) | July 2026 |
| 8. Advertise for Bids | September 2026 |
| 9. Open Bids | October 2026 |
| 10. Award Contracts | October 2026 |
| 11. Begin Construction | September 2026 |
| 12. Substantially Complete Construction | May 2027 |

Please note the above schedule is an example time frame for reference only with the objective for an operational pool by May 27'. The schedule can be modified to meet the Owner's specific needs.

Schedule of Implementation (25-Year)

A suggested schedule for repair/renovation or replacement of the West Saint Paul facility is as follows:

1. Submit completed Phase I - Step #1 Technical Evaluation
for review and approval February 2025
2. Addition integrity investigation
 - a. Request for mechanical contractor proposals March 2025
 - b. Approve proposal March 2025
 - c. Conduct integrity testing May 2025
3. Determine repair action plan and authorize financing mechanism
and place on ballot for referendum (if required) June 2025
4. Conduct referendum (if required) June 2025
5. Authorize preparation of plans and specifications August 2025
6. Submit plans and specifications for review and approval September 2025
7. Submit plans and specifications to the State for approval
(approval required for pool and buildings) September 2025
8. Advertise for Bids October 2025
9. Open Bids November 2025
10. Award Contracts November 2025
11. Begin Construction December 2025
12. Substantially Complete Construction May 2026

Please note the above schedule is an example time frame for reference only with the objective for an operational pool by May 26'. The schedule can be modified to meet the Owner's specific needs.

GLOSSARY

CODES REFERENCED

1. Minnesota Rules Chapter 4747 Department of Health, Environmental Health, 2019
2. 2010 ADA Standards for Accessible Design
3. *NEC 2008: NFPA 70 National Electrical Code*. National Fire Protection Association, 2007.
4. *2012 International Building Code*. ICC, 2012.
5. *2012 Uniform Plumbing Code*. International Association of Plumbing and Mechanical Officials, 2012.

TERMS

1. BAI: Burbach Aquatics, Inc.
2. Bonding: The practice of intentionally electrically connecting metallic items to reduce voltage gradients in the pool area.
3. Cast Iron Water Pipe (CI): Cast iron pipes historically have been used as a pressure pipe for transmission of water, gas and sewage.
4. Chlorine Residual: After adding chlorine (Cl) into water the chlorine residual is the amount of chlorine that remains in the water after a certain period of contact time.
5. Circulation System: The outlets, inlets, equipment and piping of pools and water attractions designed to circulate water at a predetermined quantity and velocity in order to treat and purify the water, but does not include backwash piping.
6. Deck: The unobstructed walking surface immediately adjacent to the pool or water attraction.
7. Double Containment: A means of surrounding one or more primary storage containers to collect any hazardous material spillage in the event of loss of integrity or container failure.

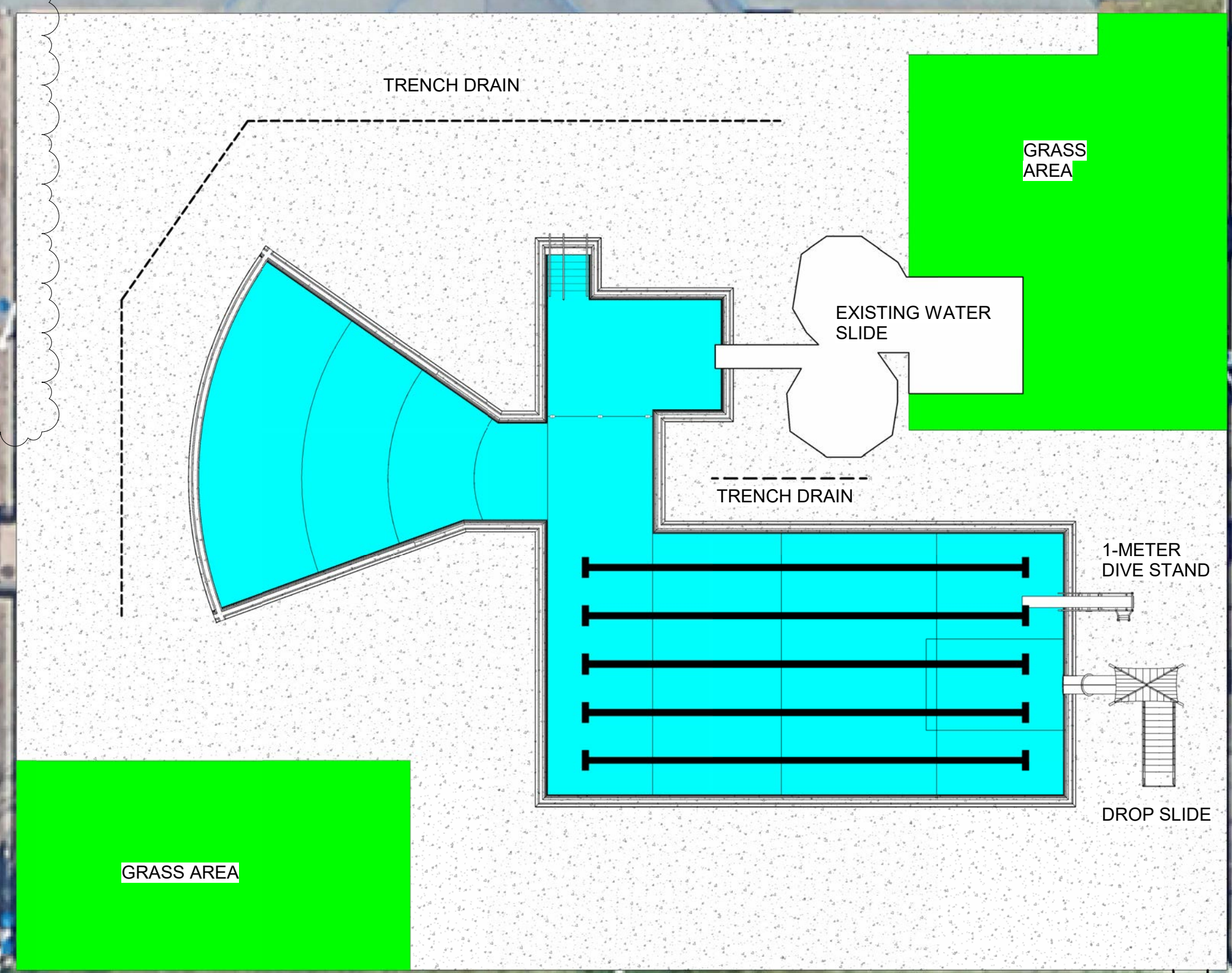
8. Ductile Iron: Ductile Iron (DI) is a type of cast iron known for its impact and fatigue resistance, elongation, and wear resistance due to the spherical graphite structures in the metal.
9. FRP: Fiberglass reinforced panel.
10. Fillet: A fillet pertains to a pool wall configuration typically found in a dive hopper or dive well. Historical construction techniques used to reduce the cost of the deep concrete construction include a radius shape created by shotcrete construction or an angled facet for cast-in-place construction. Code requirements call out separation requirements with respect to dive path clearances for dive boards.
11. Grounding: Providing a common return path for electric current to return to the ground.
12. GPH: Gallons per hour.
13. GPM: Gallons per minute.
14. NSF: The National Sanitation Foundation.
15. ORP: Oxidation-reduction potential.
16. pH: A scale from 0 to 14 that is used to specify how acidic or basic a water-based solution is. Acidic solutions have a lower pH, while basic solutions have a higher pH.
17. pph: Pounds per hour.
18. ppm: Parts per million.
19. Pool Finish:
 - a. Plaster: Refers to cementitious pool surface material. Plaster material type include marble dust and proprietary aggregates. The surface material is approximately ¼” thickness and is applied to concrete substrate.
 - b. Paint: Refers to pool paint coating systems sourced from coating manufacturer product lines. Product selection is dependent on emersion service and type of substrate.
20. PVC: Polyvinyl chloride commonly referred to as PVC is a plastic material that is used for many purposes.
21. Sounding: BAI will take a hammer and gently tap along the pool vessel walls and floors looking for areas of concrete deterioration. A good sounding pool will produce a ringing

noise while a poor sounding pool produces a dull thud sound.

22. Turnover Rate: The time for a given volume of water to pass through the circulation system. The volume of water is generally the basin volume and the time is usually expressed in hours.

23. Zero depth entry pool: A water attraction having a sloped entrance to where the water depth is zero inches at the shallowest point.

West St Paul Pool



AREA NEEDING RE-STABILIZATION FOR FENCE REPAIR

NEW EMERGENCY EXIT GATE (1/2)

NEW EMERGENCY EXIT GATE (2/2)

PRELIMINARY

TITLE	PROPOSED SITE CHANGES P1-S1	OWNER	CITY OF WEST ST. PAUL 1616 HUMBOLDT AVE WEST ST. PAUL, MINNESOTA 55118	CONSULTANT	BURBACH AQUATICS, INC. ARCHITECTS & ENGINEERS 5974 STATE HIGHWAY 80 SOUTH - PO BOX 721 MILWAUKEE, WISCONSIN, 53186 PH: 414.348.5202 SUPPORT@BURBACHINC.COM BURBACHAQUATICS.COM	NO.	DATE	REVISION	BY
PROJECT	WEST ST. PAUL								
DATE	02/06/2025								
SHEET	101								