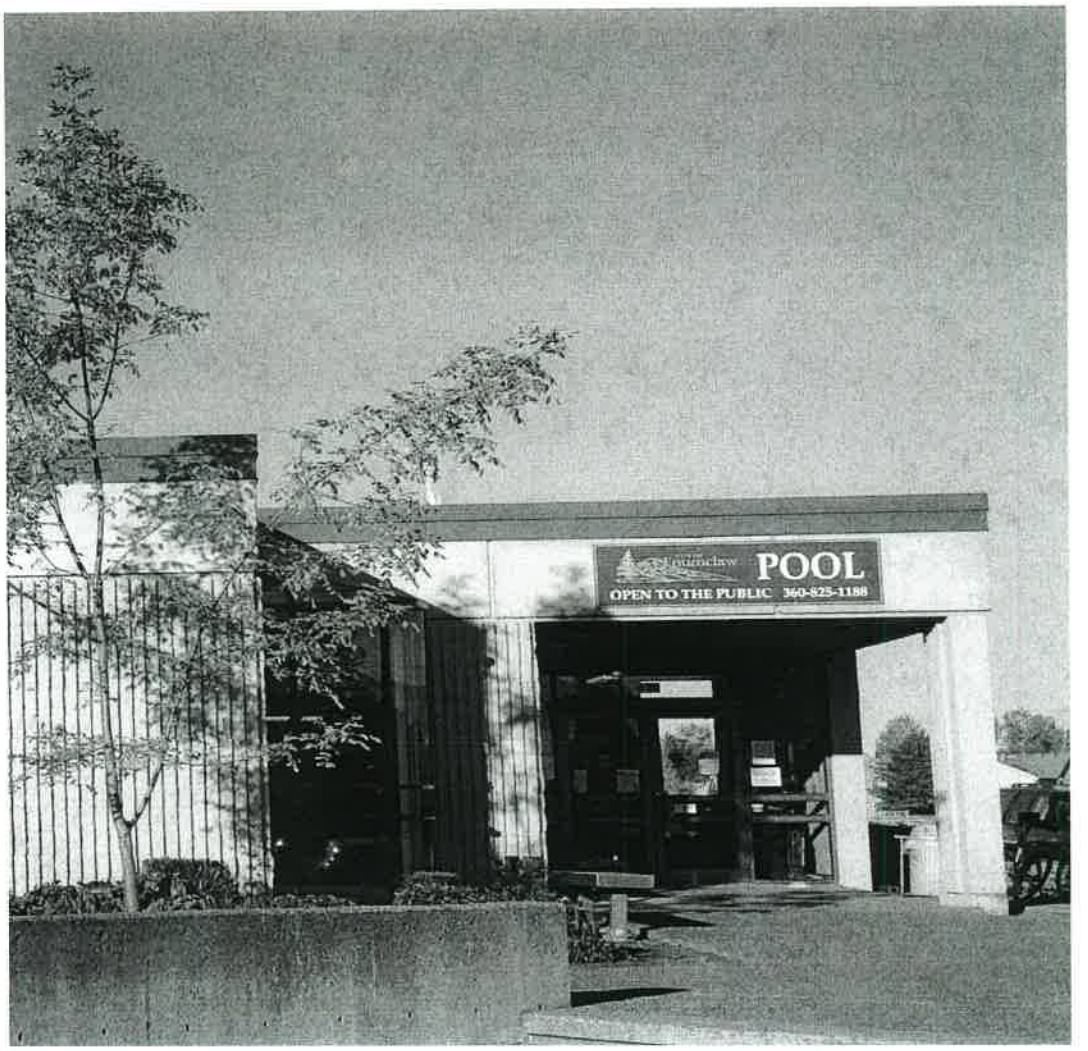
City of Enumclaw
Pool Evaluation



October, 2017

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Preface:

This report has been prepared to provide City staff information about the overall condition of the association pool located at 420 Semanski St S, Enumclaw, WA 98022. Areas of evaluation included the decks, pool vessels deck equipment, mechanical systems and related items with respect to: (Abbreviations are listed for the various items used in the report)

Washington State Aquatic Health & Safety Codes: WAC
National Virginia G. Baker bottom drain code
Article 80, Uniform Fire Code: UFC-80
National Plumbing Code: NPC
National Electrical Codes: NEC
Washington Occupational Safety Regulations: WOSHA
National Swimming Institute Guidelines: (Industry Standards): IS
National Energy Standards ES
American Disabilities Act: ADA
Consumer Product Safety Commission: CPSC
National Aquatic Health Code NAHC

Although this report does not address every aspect of the pool construction and operation, it does evaluate the facility with respect to the current codes and regulations listed above as well as:

Operation Cost Effectiveness
Labor and simplicity of operation
Present condition and useful life.

This report provides information on areas that fall short of the above listed codes, regulations, guidelines and manufacturer warranties. Additional information concerning areas of compliance is also provided. Some might view this as a "negative" report, however, our purpose here is to help raise awareness concerning especially code related issues as well as other areas that will help the facility operate more safely and efficiently and provide a working knowledge of issues that may need to be addressed in the planned future facility renovation.

The information for this report was obtained through staff interviews and on-site inspection completed in October, 2017 and was followed by research with local swimming pool suppliers and contractors.

Photos of various items and issues are included where appropriate. Not all items have photos.

We had the opportunity to interview both the Aquatic Director, maintenance and coaching staff during our visits at the pool and they provided valuable input.

Priority:

Each major category has a high priority a list items that should be considered for immediate attention.

Cost Estimates:

All cost estimates have been rounded up to the nearest $100.00
Larger cost estimates are rounded up to the nearest $1,000.00

Cost estimates for major renovation work include: design, permit, labor rates, materials and equipment costs. Cost estimates are calculated to be good through 2019.

REPORT CONFIGURATION

Section I. Entry

Section II. Dressing Rooms and Shower Areas

Section III. Pool Deck issues

Section IV. Pool Vessel Issues

Section V. Pool Mechanical System Issues

Section VI. Water Chemistry Review

Section VII. Other issues

Section VIII. Final Comments

NOTE: This report does not address areas such as:

Air handling
Building and central heating
Building structural
Fire protection needs
Seismic compliance

General Pool Data:

Perimeter: 313 linear feet
Surface Area: 3,325 Sq. Ft.
Volume: 244,800 Gallons
Required flow rate: 680 GPM for a 6 hour Turnover
Surface Collection: Perimeter Gutter
Filter Type: Vacuum D.E.
Sanitizer: Calcium Hypochlorite
pH Control chemical: CO-2 gas
Heating System: Natural gas with submerged heat exchanger
(See Appendix "A")

I. FACILITY ENTRY:

1. At present, there are no ADA compliant parking spaces near the pool entrance.
2. The facility does provide an ADA compliant ramp to the entry.
3. There are several severe concrete cracks and voids in the concrete surrounding the pool outside entrance that present a trip hazard.

4. The steps have several cracks many of which have been patched and are somewhat unsightly.

5. The facility entry is fitted with an ADA push button, automatic door.
6. The lobby is laid out well with entry doors to the men's and women's dressing room clearly labeled.
7. The entry doors to the dressing rooms are not ADA compliant presenting difficulty for especially wheel chair patrons to access the dressing rooms.

8. There are various vending machines and bulletin boards.
9. There is adequate lighting.

Recommendations:

1. Provide an adequate number of handicapped parking spaces nearest to the ramp that are in the front of the facility. Check local City requirements.

   Estimated Cost: $1,000

2. Fill the cracks that present the tripping hazard with concrete and appropriate concrete patch. Long term, replace the concrete entry area including the steps.

   Estimated Cost: Short Term Filling of Cracks with a like material to match the existing concrete surface: Nominal
   Long Term: removal and replacement of the entry concrete with Cracks: $24,000

3. Install new ADA compliant doors on the dressing room entries. A less costly option would be to remove the doors and install a visual barrier blocking any view of the dressing rooms from the foyer.

   Estimated Cost: Install ADA compliant doors: $8,000
   Install visual barriers: $2,000

PRIORITY ITEMS:

1. The installation of all ADA issues.
2. The trip hazards in the front walkway

II. DRESSING ROOM / SHOWER AREAS

NOTE: The facility was open allowing for the review of the men's locker room only. Staff provided additional information concerning the women's room, which is virtually identical.

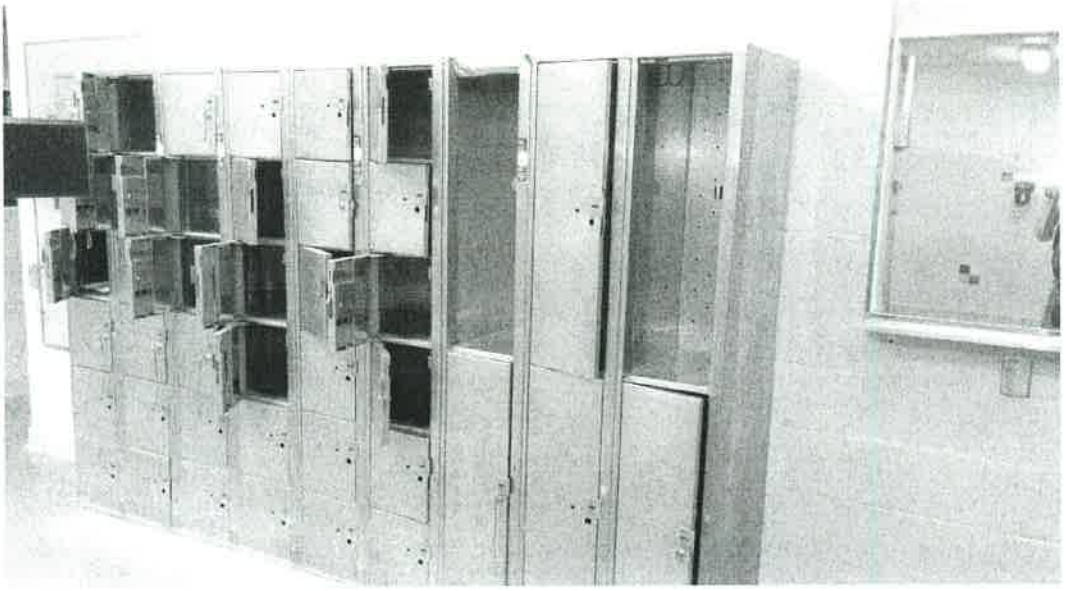
1. Theses spaces were re-tiled several years ago. For the most part the tile is in good shape and provides a slip resistant surface.
2. There are ample benches, adequate lighting large shower areas with stainless steel shower posts.

3. The tile and drains immediately around the bases of the shower posts have failed and the drains are loose.

Recommendation: Complete replacement of the missing tile and properly secure the drain with stainless steel screws.

Estimated Cost: $300

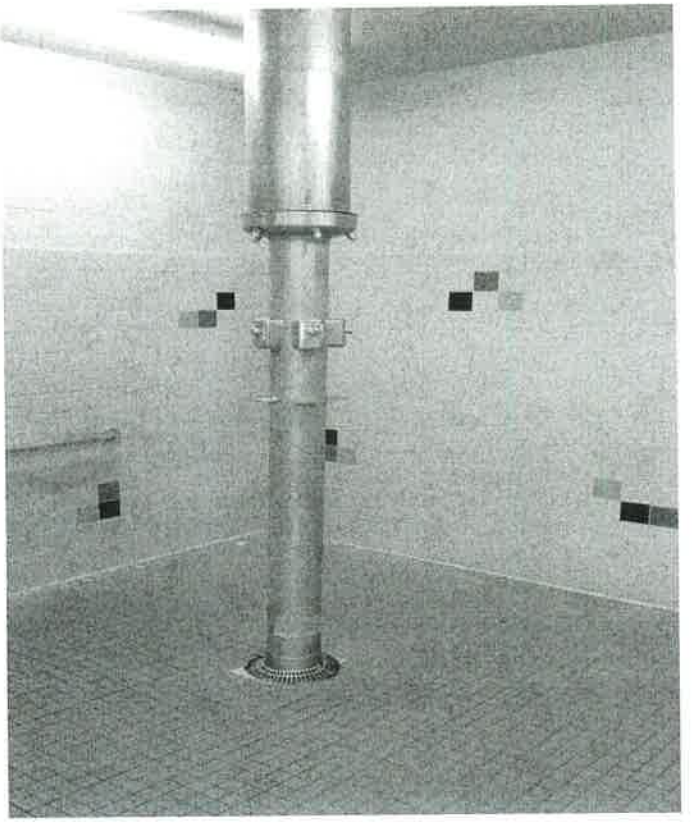
4. The existing stainless steel lockers are of various sizes, in reasonable condition, but are missing many of the locks and several doors. Staff reports new fixtures and doors are being pursued.



Recommendation: These lockers are in good condition but are requiring Replacement locks and several locker doors. Replace the locks and doors as required.

Estimated Cost: $1,6 00

5. There is no compliant ADA shower in the men's locker room, however, staff reports the women's shower area is fitted with a hand held shower and bench. The existing shower handles are too high for wheel chair bound patrons.



Recommendation: Retrofit at least one shower nozzle to a hand held shower head with an operating handle on the flexible head.

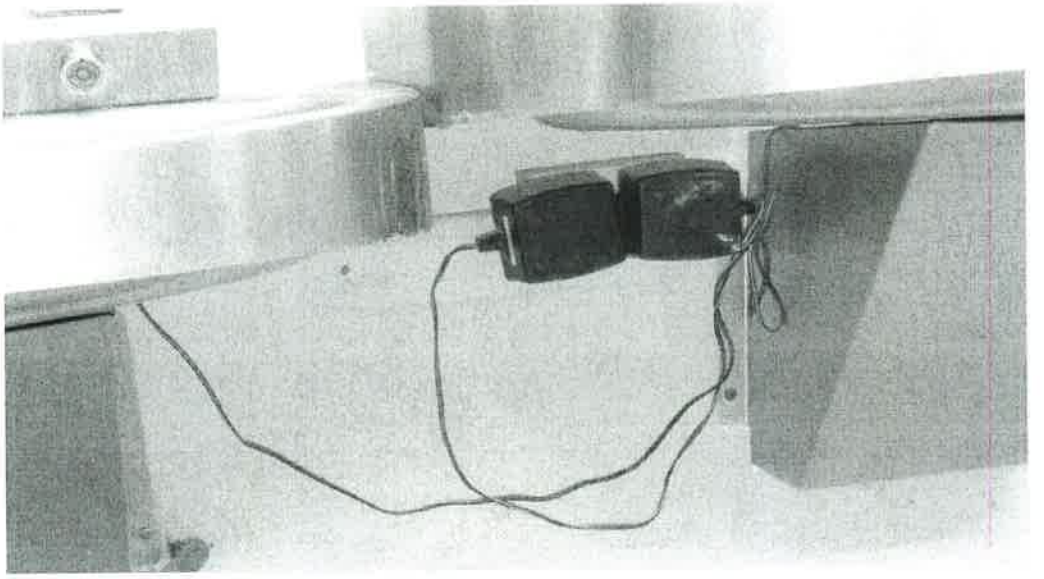
Estimated Cost: $200

6. There are ADA compliant toilets, however, there are no ADA compliant men's urinal.

Recommendation: Install an ADA urinal.

Estimated Cost: $1,200

7. There is an ADA compliant drinking fountain, however, the units plug into a non-GFCI wall receptacles. This does not comply with WAC or NEC.



Recommendation: Install an appropriate GFCI receptacle.
Estimated Cost: $100

8. There are other non-compliant electrical receptacles that are not GFCI protected.

Recommendation:

Install appropriate GFCI receptacles or install a GFCI breaker and appropriately label the receptacle that it is GFCI protected.

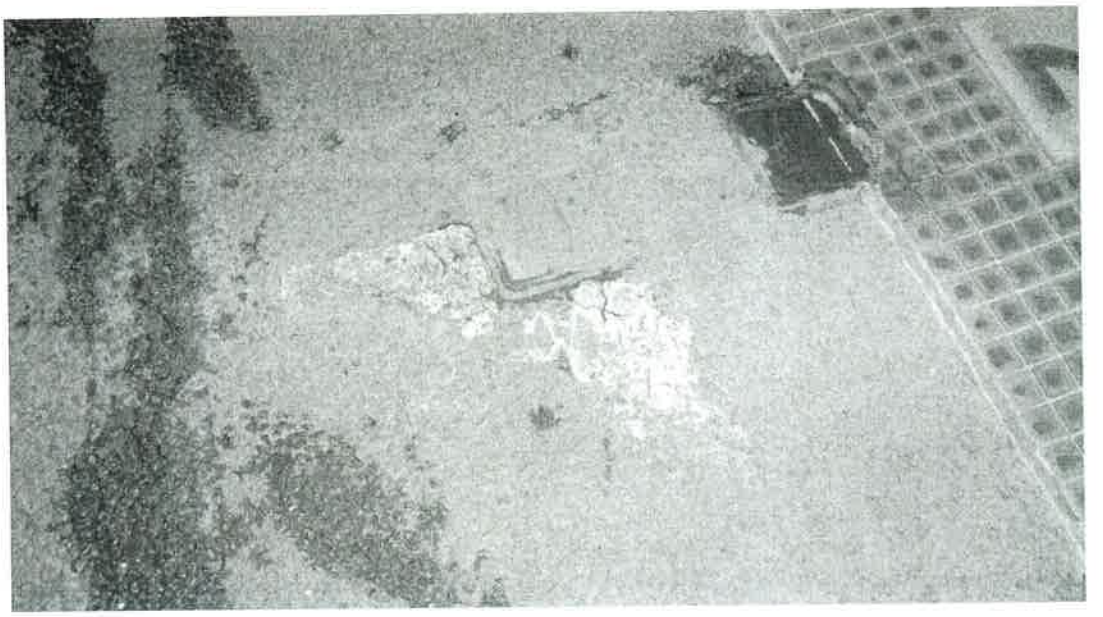
Estimated Cost: $100

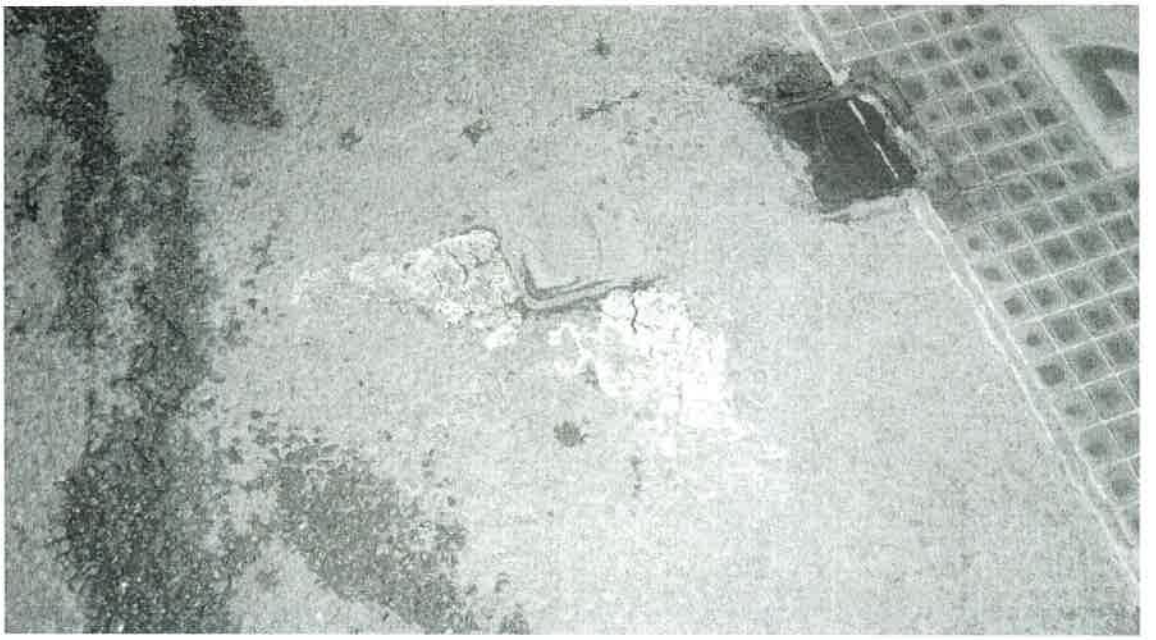
High Priority Items:

1. Complete all non-compliant ADA issues
2. Complete electrical code / GFCI issues

III. DECK ISSUES:

1. The deck is tired. There are many areas that harbor deck cracks, voids, significant unsightly stains or deck patches. There is approximately 5,500 square feet of deck and seating area.



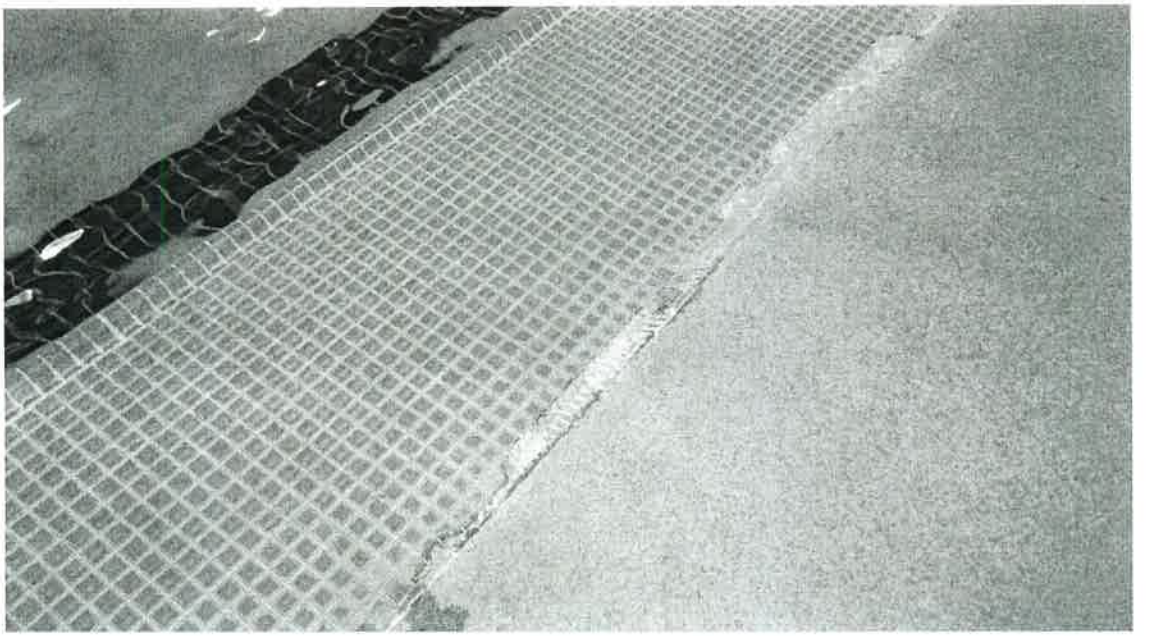


2. Many of the existing deck anchors have been abandoned with many others still in use that do not having covers and present a "toe-stub" hazard. It is worthy to note that the diving platform anchors are still in place in the shallow end. Staff reports they have not been used. Most all swimming sanctioning agencies call for a minimum of 6 feet of water for racing lane dive stands.

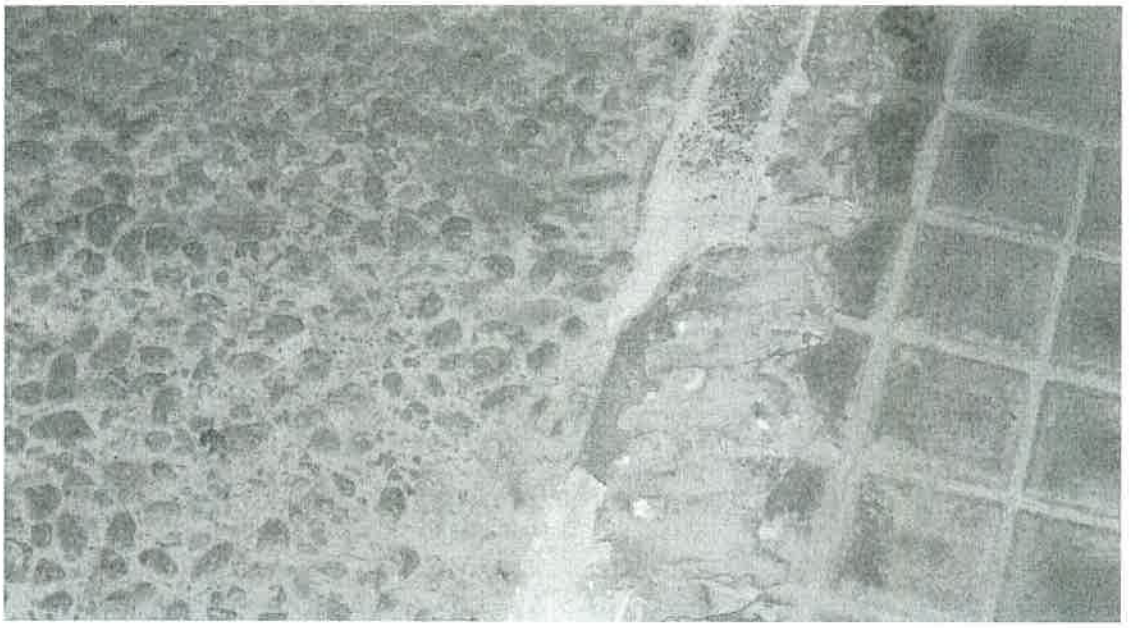
3. Several of the pool handrail anchors show significant rust staining and may have been fitted with something other than bronze or stainless steel fasteners. They are unsightly and many are missing parts.

4. Several of the handrails are loose and are not in compliance with WAC and IS.

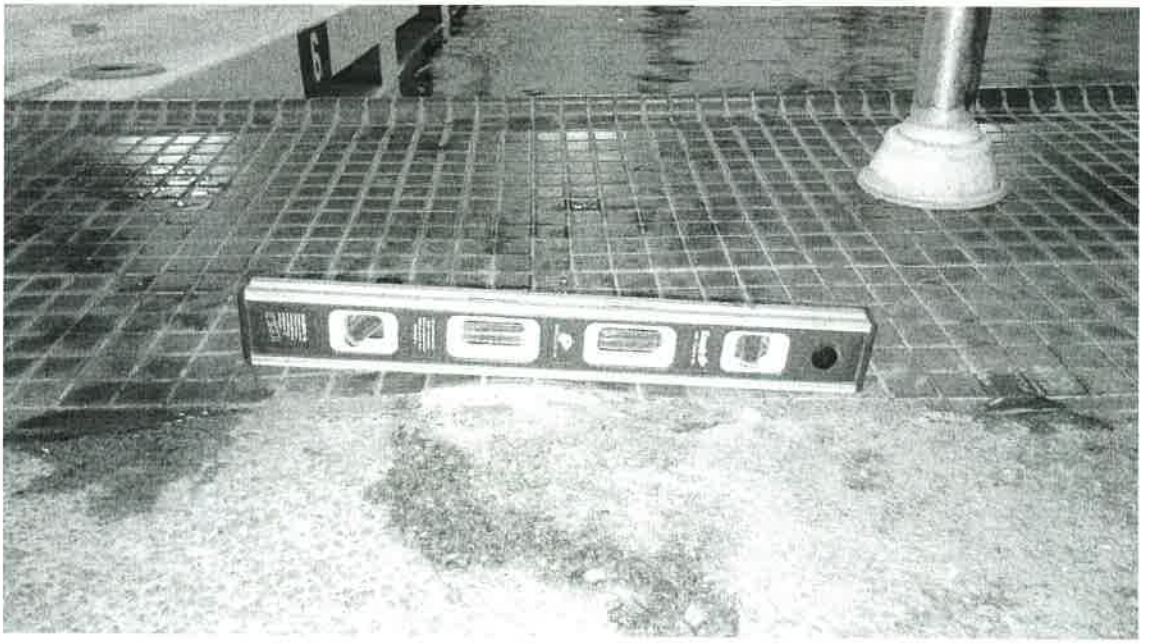
5. The expansion joint between the tile and the deck is failing in several areas.

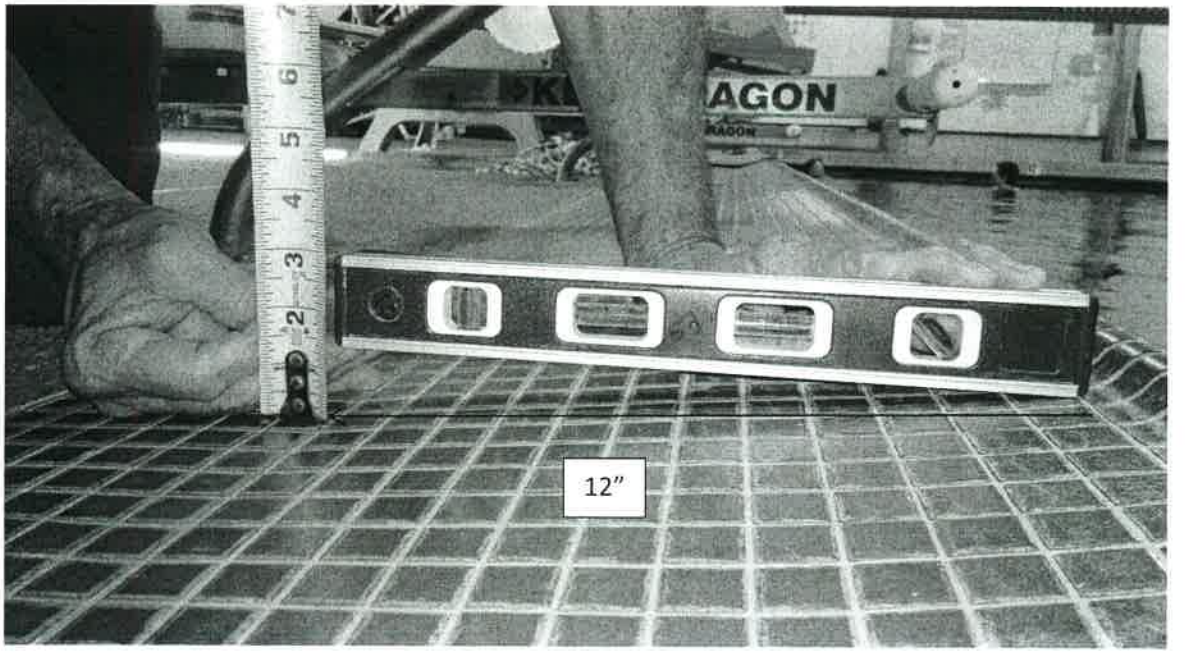


6. Many of the 1" square pool tiles are missing or are cracked around the pool edge.

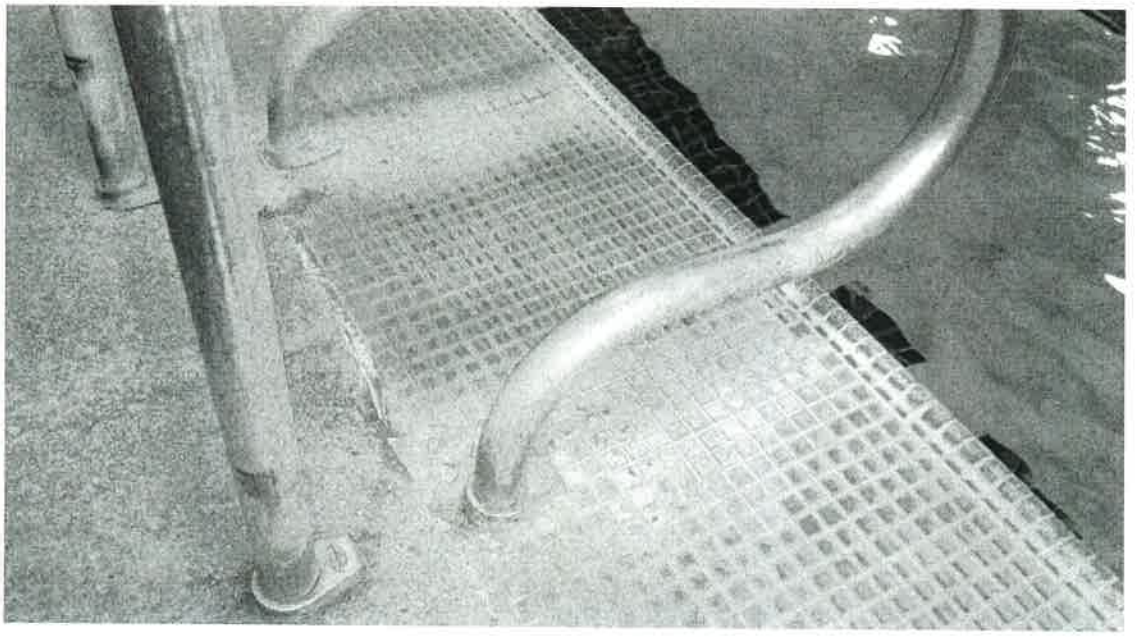


7. The tile edge around the pool has a slope significantly greater than the ADA minimum of ¼" per linear foot and is non-compliant. In some areas the slope is more than 5 times the maximum slope.

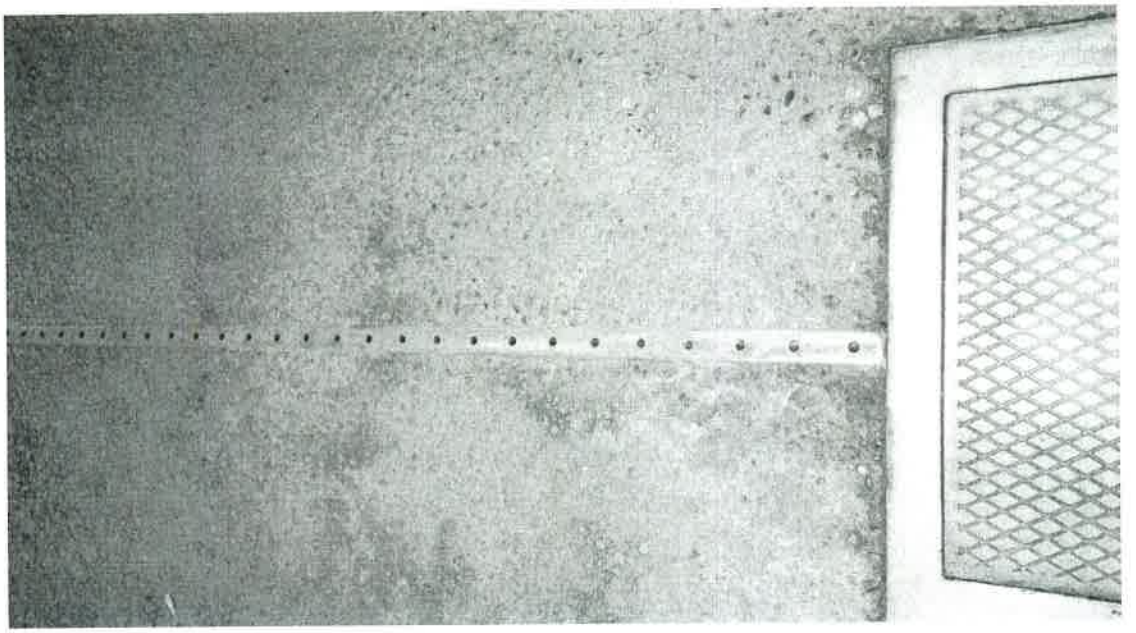




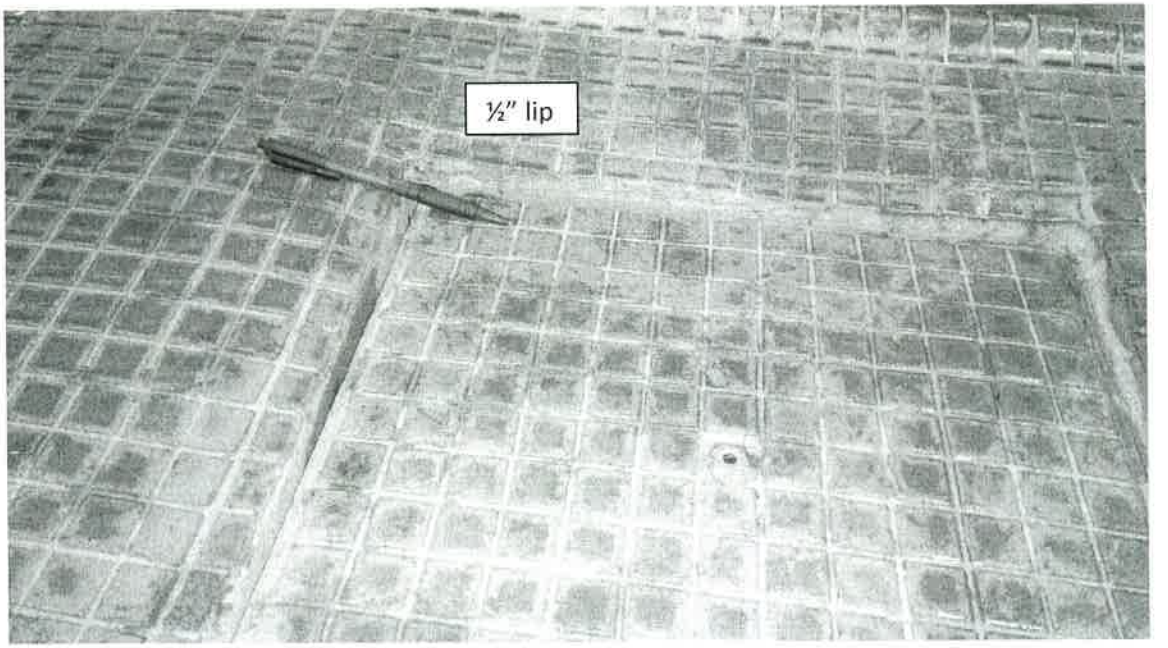
8. Most all of the tile section is well stained with calcium deposits and is unsightly.



9. The stainless steel deck drain is reported by staff to function adequately for the most part, however, there were areas of standing water and the openings need cleaning.

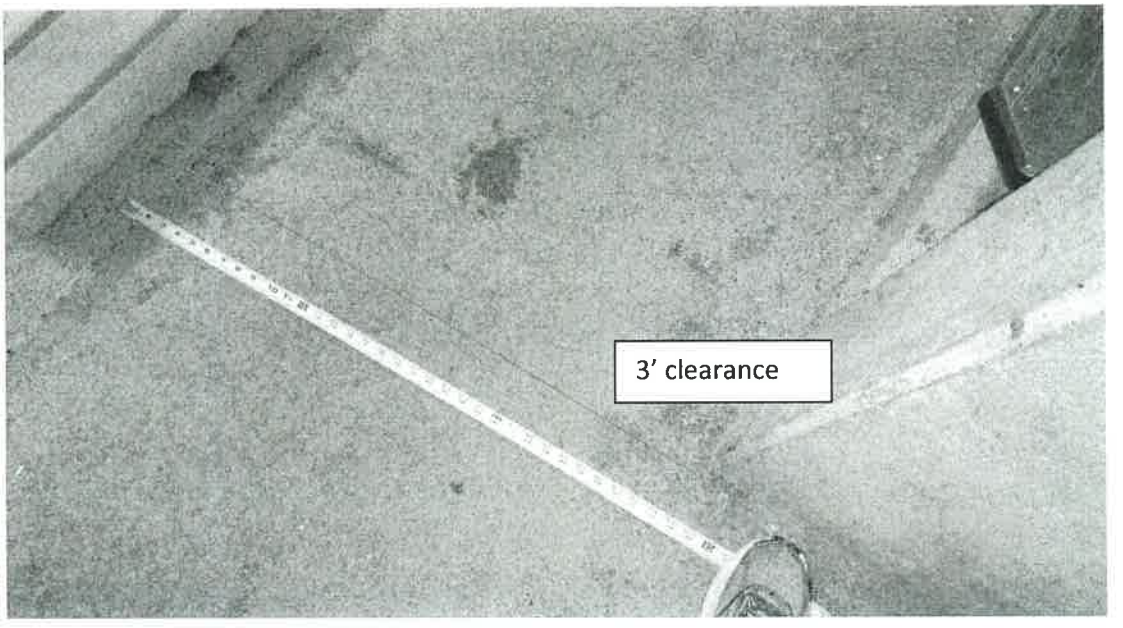


10. The cover over the gutter access port is considerably uneven with the deck and presents a trip hazard.



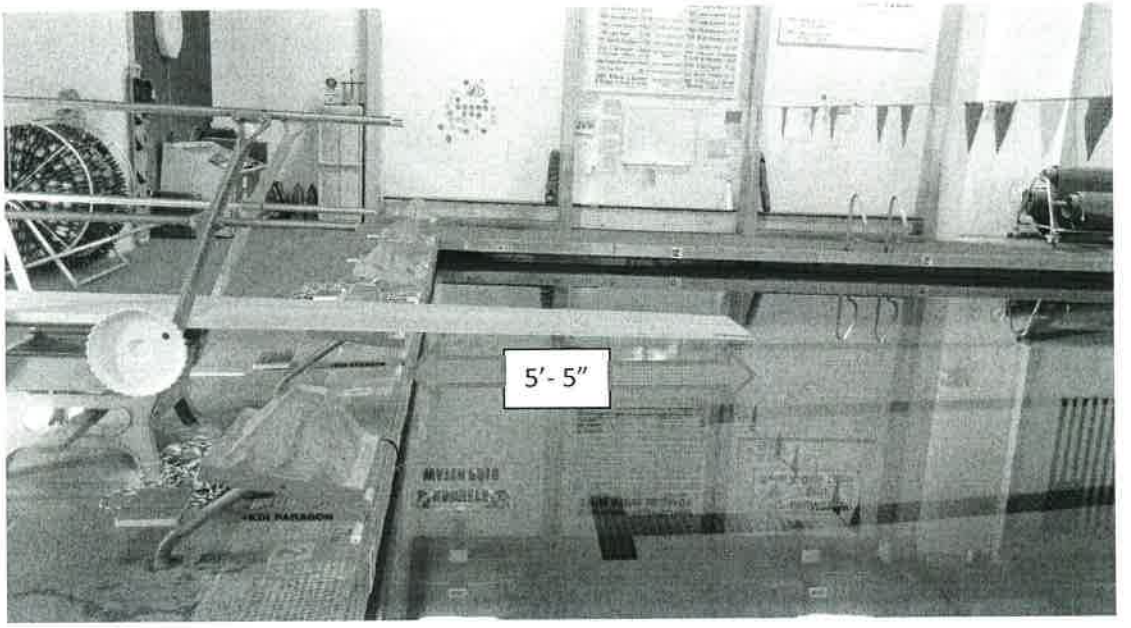
11. Several of the depth and no diving markers are considerably scaled and are unsightly.

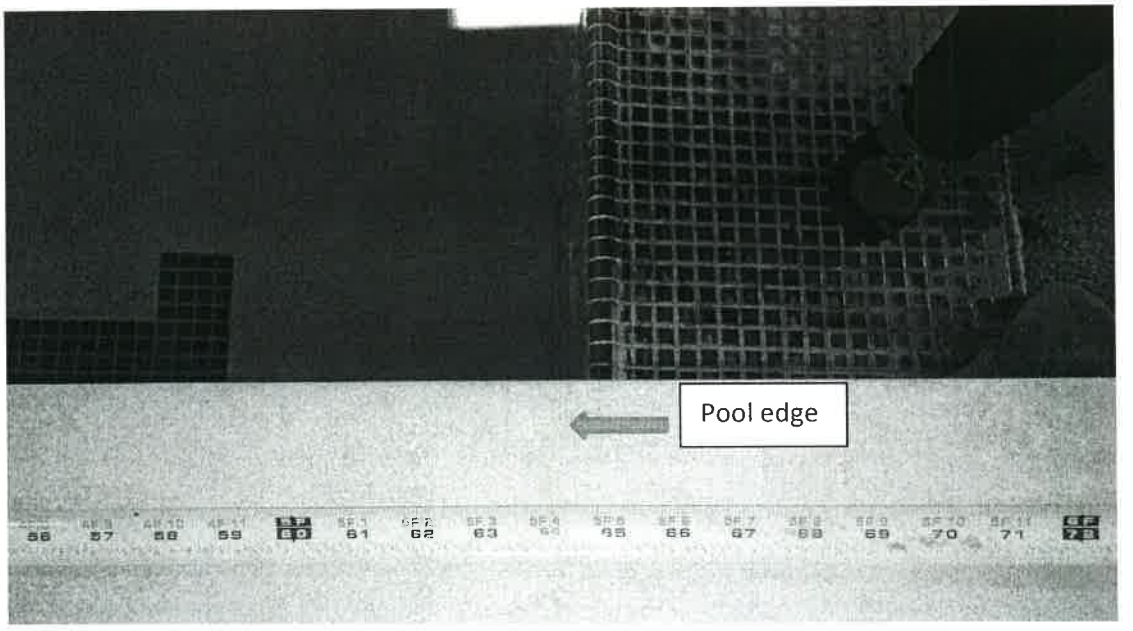
12. In some areas the deck does not comply with the WAC which requires six (6) feet of clearance. Deck apparatus such as the pool lift and the basketball hoop stand block access and provide less than three (3) feet of clearance.



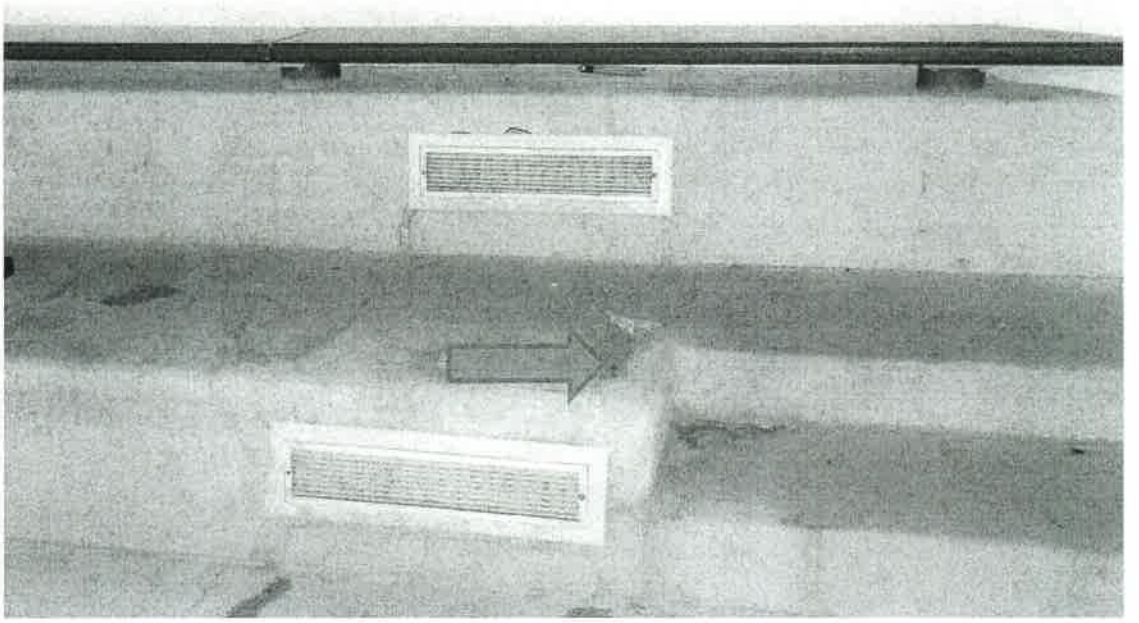
13. The diving board stand is set too far away from the pool edge and the diving board does not extend the code required six (6) feet beyond the pool edge per WAC, FIMA, NFHS

and IS. The board end is only 5'- 5" beyond the pool edge and only 5' beyond the vertical pool wall "standing" ledge.

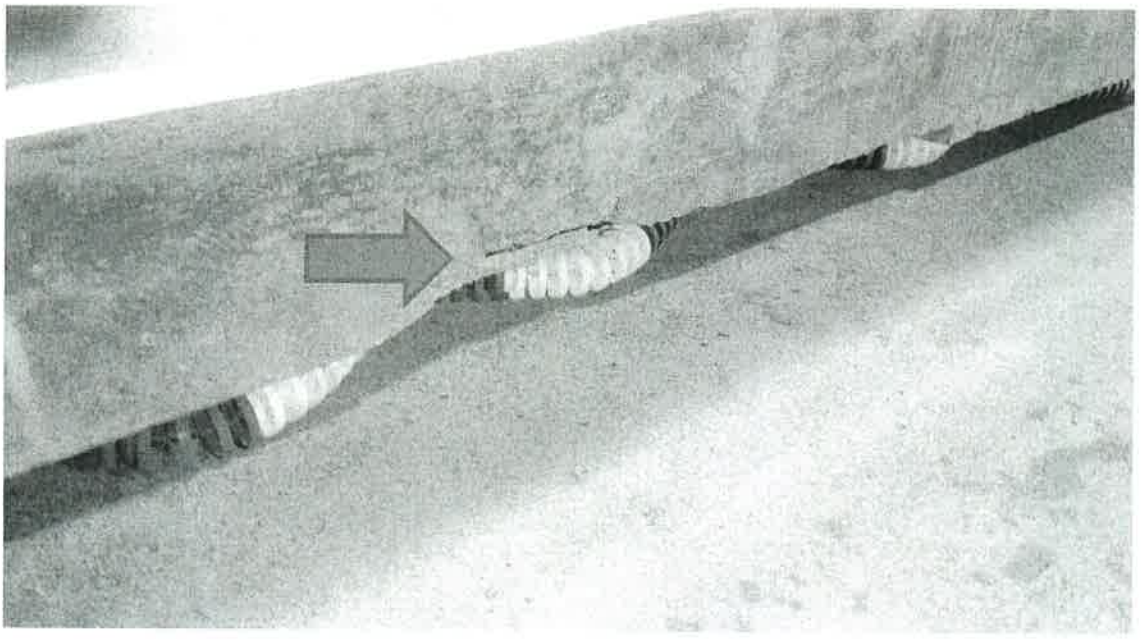




14. The seating area concrete and rail footing has failed in several areas with several cracks and voids. The seating area concrete is also cracked in several places.



15. The concrete footing in front of the spectator area is failing and has exposed rebar. NOTE: This failure may require a structural engineer to evaluate and make recommendations for permanent repair.



Recommendations for deck related issues:

There are many reasons why the pool deck should be replaced or at least significant repairs completed, related to both code, safety and appearance:

-uneven areas, non-compliant ADA deck
-failing concrete surfaces
-failing expansion joint
-out of compliance slope
-corroding anchors
-abandoned deck anchors
-unsightly appearance
-failing concrete footing near the seating area
-failing concrete in the seating area.
-diving structure needing relocation

Short term:
1. Fill any cracks or voids that present a trip hazard
2. Install covers on all anchorage not being used.
3. Tighten loose grab rails. Install new anchor wedges if necessary
4. Repair / level the gutter deck box cover

5. Replace missing and cracked tile
6. Replace failing expansion joint caulk
7. Install an ADA compliant drinking fountain
8. Relocate the diving board stand to provide for compliant board end to wall compliance.
9. De-scale the depth markers and no diving signage
10. Move deck toys and apparatus to provide 6' clearance per WAC
11. Have structural engineer evaluate spectator footing concrete.
12. Remove and polish all of the stainless steel grab rails, stanchion posts and lifeguard stand.

Estimated Costs: $24,000

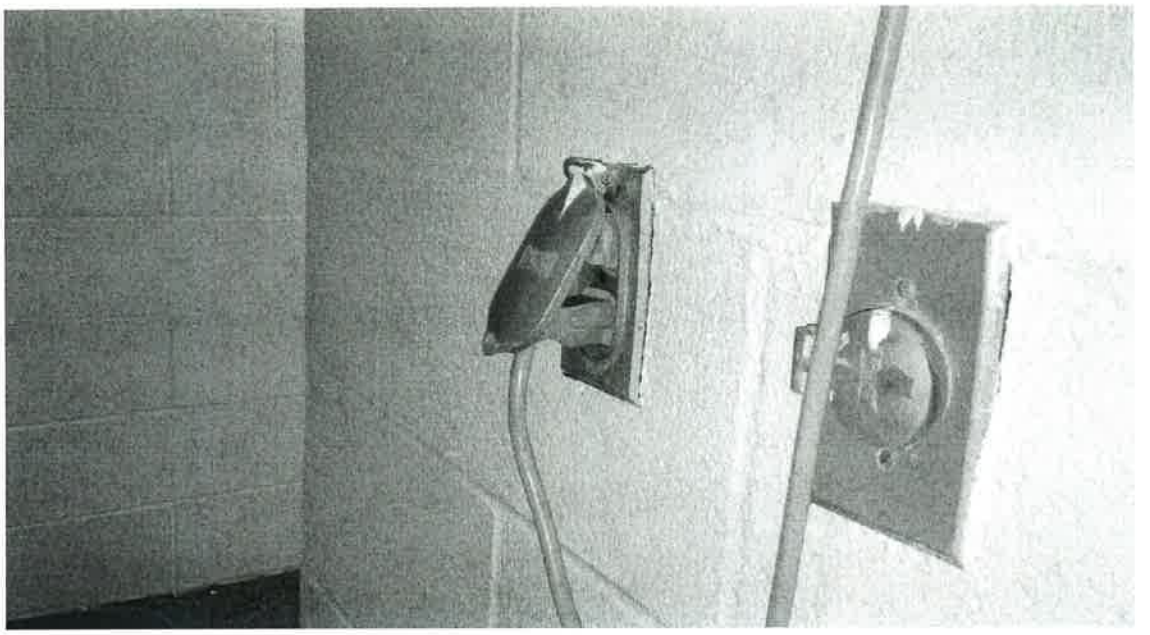
Long term: 1. Replace the entire deck with new deck anchorage for all the deck equipment, install a new deck drain, new tile, new safety signage new dive standard anchors. Include spectator area.

Estimated Cost: $225,000

2. OPTION: Make repairs to all deck anchors, replace broken and missing tiles, level deck to be ADA compliant. Repair failing concrete area by exposing the rusting steel and epoxy coat, patch all concrete failure areas. Move diving stand. Install epoxy, slip resistant coating to all deck surfaces.

Estimated Cost: $120,000

16. Several of the deck electrical receptacles are not GFCI protected per NEC, WAC and IS.

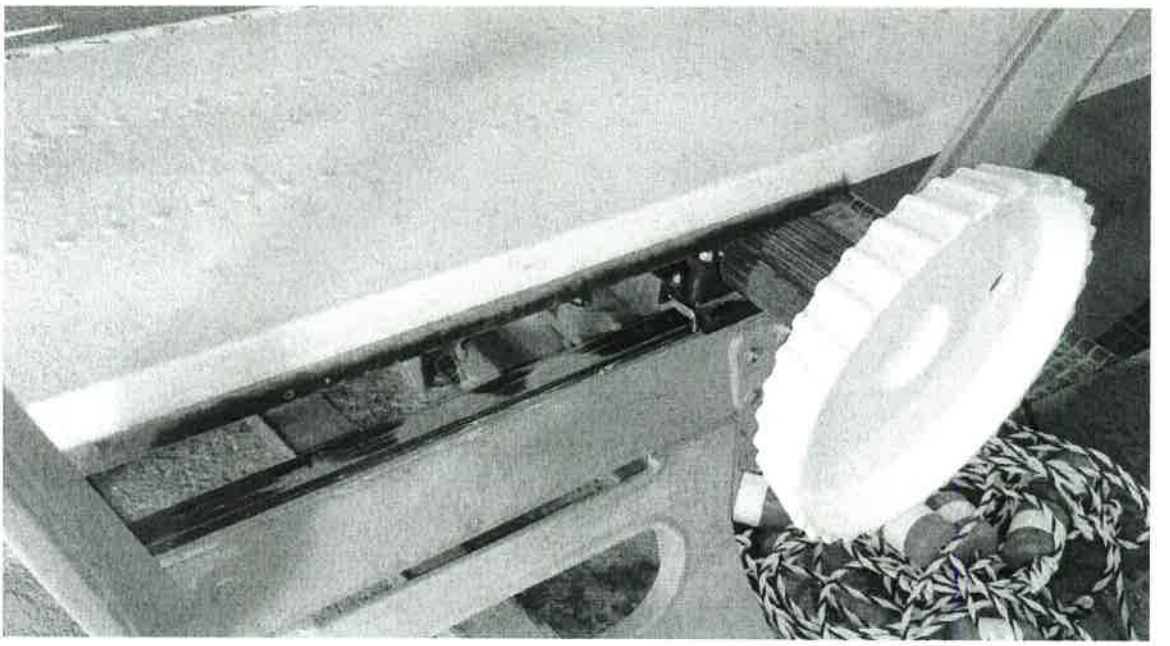


Recommendation: Install GFCI receptacles on all power locations or install a GFCI breaker in the electrical panel, placing labels on all units that they are GFCI protected.

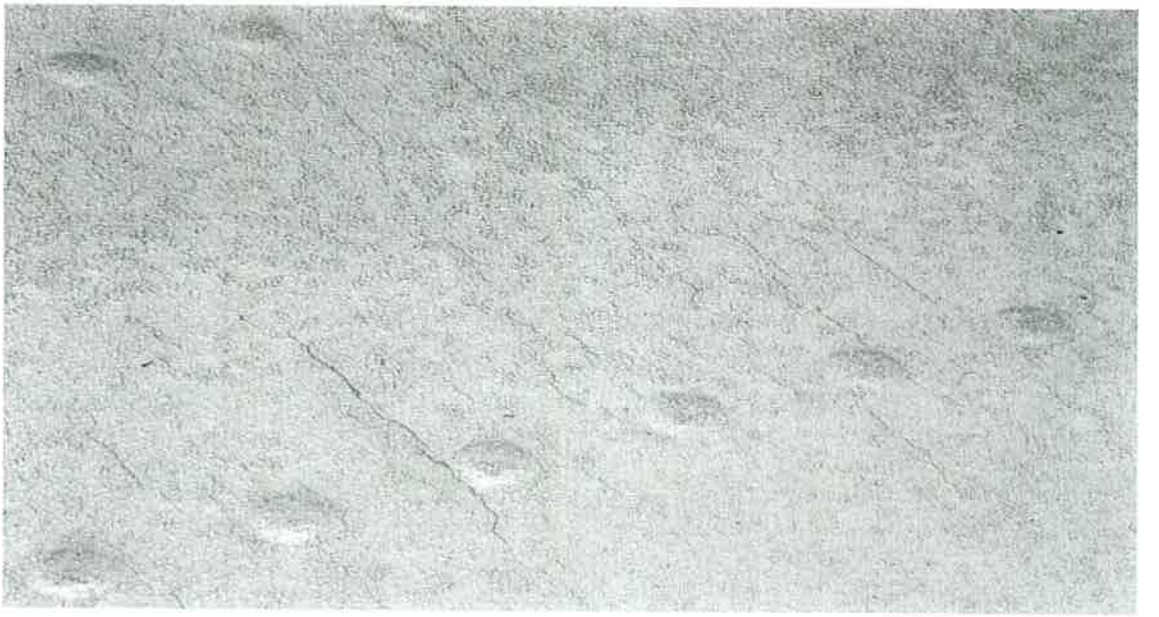
Estimated Cost: $300

17. The diving board fulcrum and hinges do not appear to have been lubricated for some time IS.

18. The adjustable fulcrum was found to be in the forward position but is not locked in place per ARC lifeguard training manuals to prevent inexperienced users from using the board in an unsafe manner.



19. The diving board surface is delaminating and part of the board coating is peeling.



Recommendations for Diving Board/Stand issues:

1. Remove and send the board back to Duraflex to have it re-surfaced

   Estimated Cost: $ 3,000

2. Lubricate the board hinges and fulcrum

   Estimated Cost: Nominal

3. Install a stainless steel cable and water-resistant lock for the fulcrum

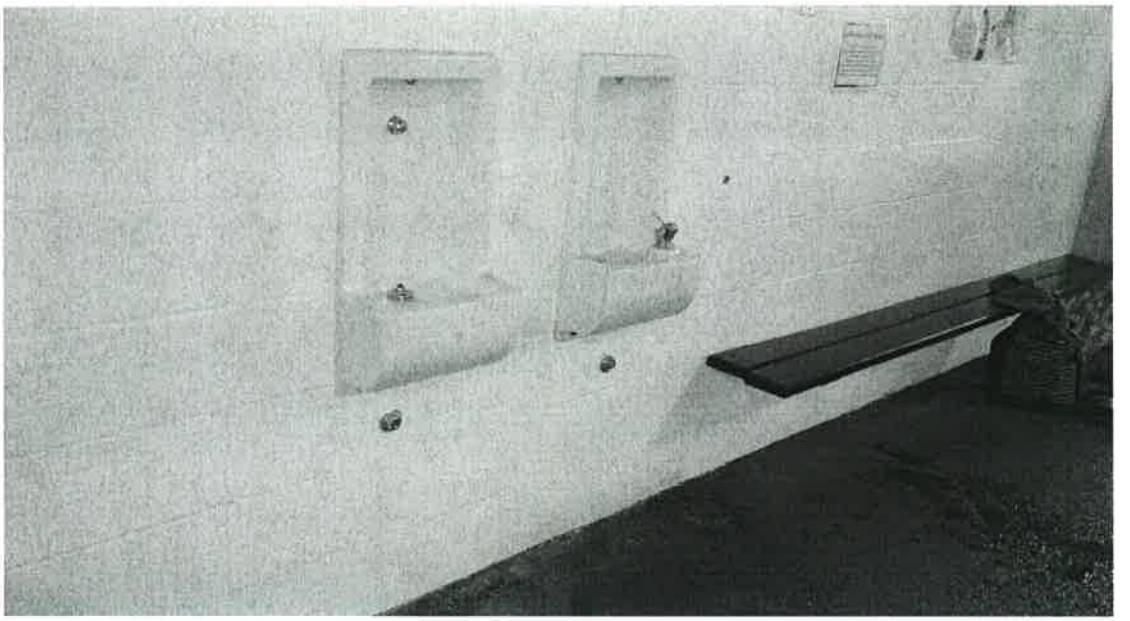
   Estimated Cost: $100

20. There is an existing, battery-operated pool lift, however, the Federal ADA calls for at least two lifts for swimming pools having over 300 linear feet of pool edge.

Recommendation: Install a second ADA compliant pool lift on the pool.

Estimated Cost: $4,000

21. The drinking fountains located on the deck are not ADA compliant.



Recommendation: Install a new ADA compliant drinking fountain

Estimated Cost: $2,000

22. There is a safety line on the bottom of the pool at the 4.5' depth in compliance with the WAC, however, the code also calls for a rope with floats with recessed wall anchors to provide a location for a rope with anchors to be attached. NAHC and IS call for this safety line.

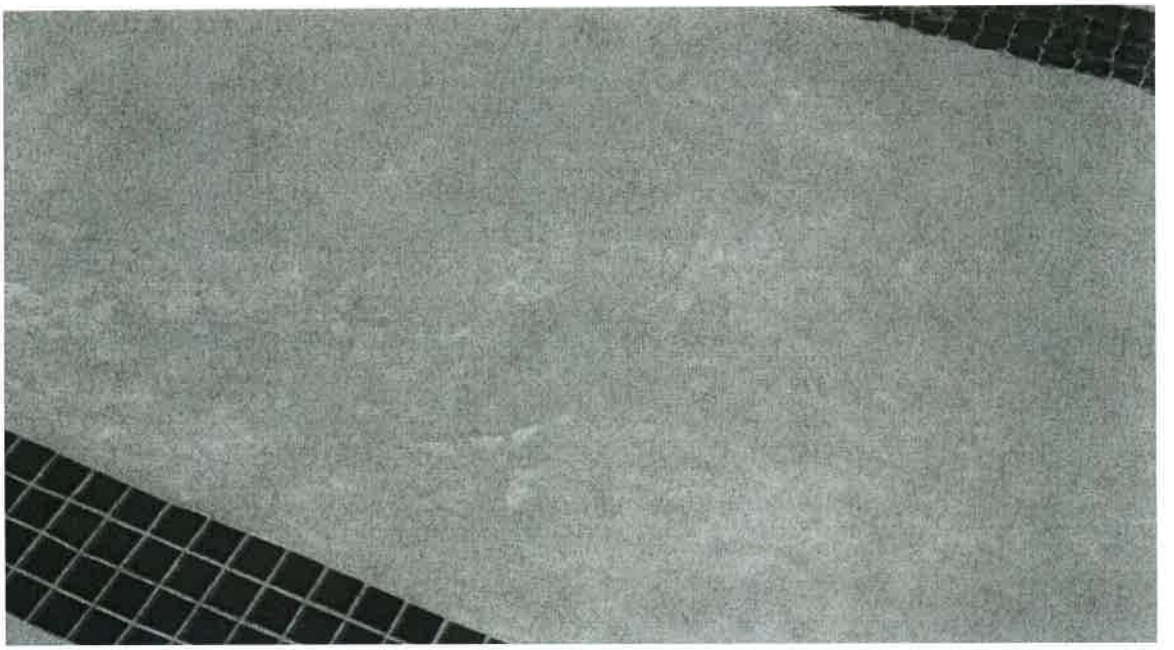
HIGH PRIORITY ITEMS.

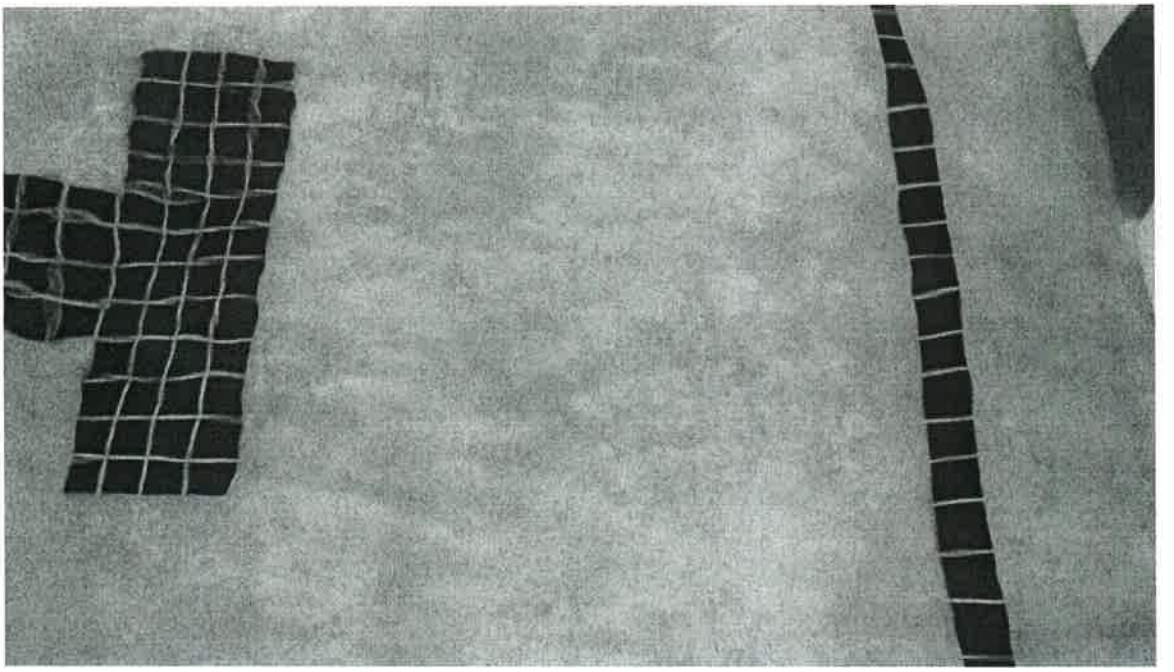
1. All code issues should be considered high priority:
   - Deck trip hazards
   - Diving board position
   - Diving board resurfacing
   - Diving board fulcrum lock
   - ADA issues
   - Electrical GFCI issues
   - Deck clearance

2. The "failed water barrier" allowing the structural steel to rust and stain the plaster should be repaired as soon as possible to avoid structural steel damage.

IV. POOL VESSEL ISSUES

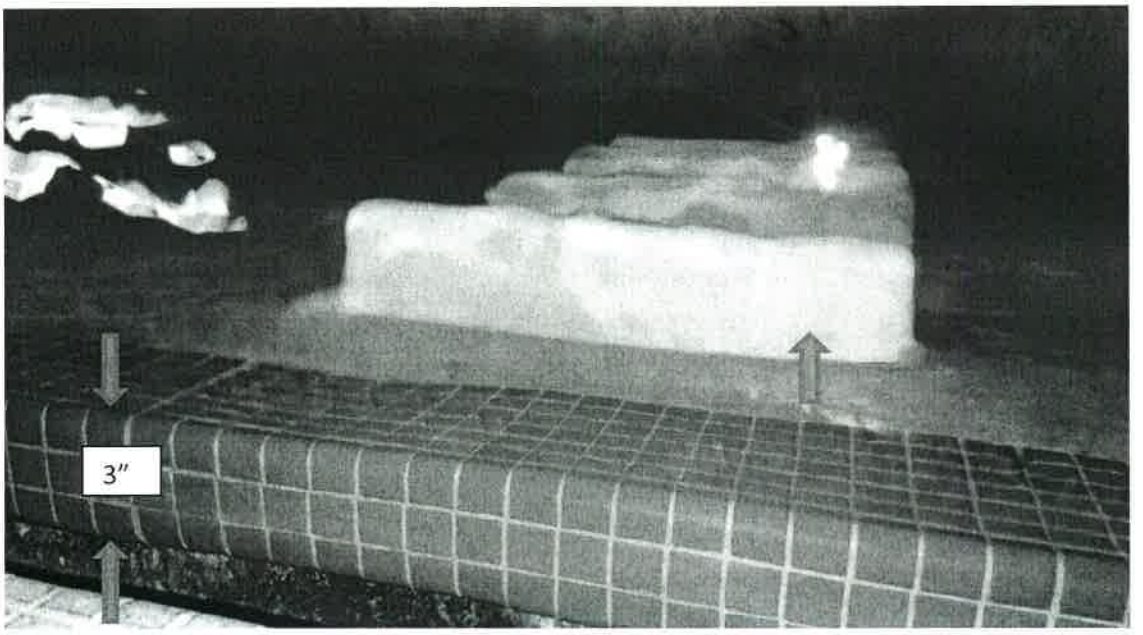
1. The pool plaster is well stained and has several areas with plaster patches. Plaster cracks and several voids are visibly evident.





2. In at least one area that was visible, the steel rebar has "bled" through the plaster indicating the water barrier integrity has failed. Such a failure will allow water to penetrate the concrete, corrode the steel reinforcement. This corrosion will often travel to the adjacent rebar and over time will weaken the structural integrity of the vessel.

3. At least one of the recessed steps is broken and has been patched with epoxy.



4. The hand hold is 3" wide falling short of industry standards and the National Aquatic Health Code recommendations of a maximum of 2.5". (see above photo)

5. The grout in the water-line and gutter tile is well stained and is missing in some areas.

6. Staff must move portable platforms in and out of the water for teaching lessons and there is a fiberglass step for those needing steps for entry and leaving the pool. This pool does not offer young children an areas to swim as the pool most shallow point is 3.5 feet which slopes to 4 feet and more. Staff expressed a desire to eliminate the fiberglass steps and also provide zero depth entry.

   Unfortunately, there is not ample room for zero depth entry, however, installing wide (3 to 6 feet) steps from the shallow end of the pool, would accomplish both access, a play area and teaching area. (see attached sketch).

Recommendations:

1. The listed issues make it clear the pool is ready for re-coating.
2. The repairs to the steps can be completed at that time, or can be repaired under water by an experienced diver.
3. The repairs to the "bleeding" rebar must also be addressed.
   The rebar must be fully exposed, wire brushed and ground to bare metal and epoxy coated. Once cured, the area patched with plaster or non-shrink grout. This can be accomplished underwater by an experienced diver.
4. Remove one row of tile around the gutter lip on the gutter side and grind smith to provide an industry compliant hand hold.
5. Remove all old plaster and re-plaster the entire pool, re-grouting all tile surfaces.

Estimated Cost: $134,000

Option: Other pool epoxy coatings may be an option.

Estimated Cost: $102,000

HIGH PRIORITY ITEMS:

1. Expose and repair the rusting rebar and provide a plaster patch.
2. Replace the cracked recessed step
3. Provide a 2" wide hand hold on the gutter rim

V. MECHANICAL ROOM AND EQUIPMENT ISSUES

General:

The pool maintains excellent water clarity even though the recirculation flow rate falls more than 10% below the WAC required flow to achieve a minimum 6 hour turnover .

1. The doors to the electrical room, chemical storage area, filter/surge pit are not marked clearly as an "authorized personnel" only designation per IS and WOSHA. Hazardous chemicals are stored and used inside the mechanical room spaces. The doors from the pool deck into the mechanical area or from the outside do not carry the required UFC safety placards.

Recommendation: Install appropriate safety/warning signs and UFC/WOSHA mandated placards on all doors entering the pool mechanical/filter room.

Estimated Cost: $400

2. The electrical panel is blocked with various equipment in storage and other items contrary to NEC, IS and WOSHA.

Recommendation: Remove the equipment and other materials from in front of the electrical panel and store elsewhere.

Estimated Cost: None

3. The surge/filter pit is fitted with a vacuum diatomaceous earth filter comprised of 30 each 26""diameter filter elements which each carry 7.8 sq. ft. of filter area; total 221 Sq. Ft of filter area. At the filter-rate capacity of 2.5 GPM/Sq. Ft filter rate (maximum D.E. Filter rate), they are capable of only 552 GPM . This filter is sized for an 8 hour turnover not 6 hours as the WAC specifies. However, the pool remains clear and there are no cloudy issues reported by staff reports sections are routinely replaced on an annual basis.

Recommendation: Upon a major renovation, install larger or more filter elements to achieve a minimum of 272 square feet of filter area.

Estimated Cost: $ $2,000

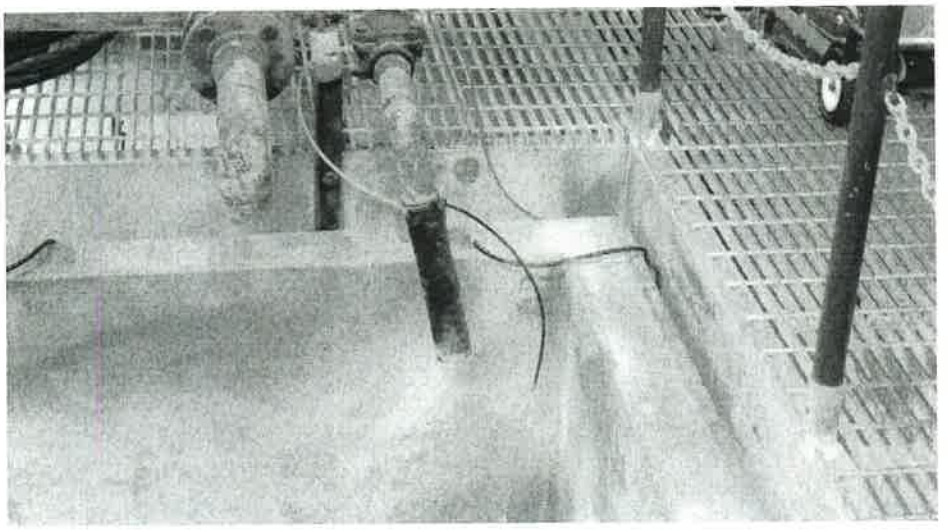
4. The D.E. pre-coat tank is comprised of a converted 50 gallon trash can.

5. There is no D.E. slurry or body feed system per industry standards. Staff reports the filters are cleaned approximately every two to three weeks on average. This falls short of IS and can be dramatically improved. D.E. slurry of body feed system can extend the filter run to eight weeks or more. The slurry system is comprised of a 150 to 200 gallon tank, slow speed mixer and a feed pump to allow for a D.E. and water solution to be fed into the filter pit.

Recommendation: Install a new fiberglass or polyethylene tank of approximately 150 to 200 gallons with a 2" drain valve for pre-coating the filters, a slow speed mixer and industrial-grade solution feed pump with an automatic flush device to "body" feed D.E. into the surge/filter pit 24 hours per day.

Estimated Cost: $2,000

6. The automatic fill system makes use of a simple float valve assembly and Cla-Valve, however, the discharge into the pit is located well below the rim of the surge pit and is in violation of WAC and NPC and IS. NPC and WAC call for an air gap between the fill line and the highest pit level possible to insure no pool water can mix with the domestic water source in the event of a domestic water line failure (siphon back pool water).

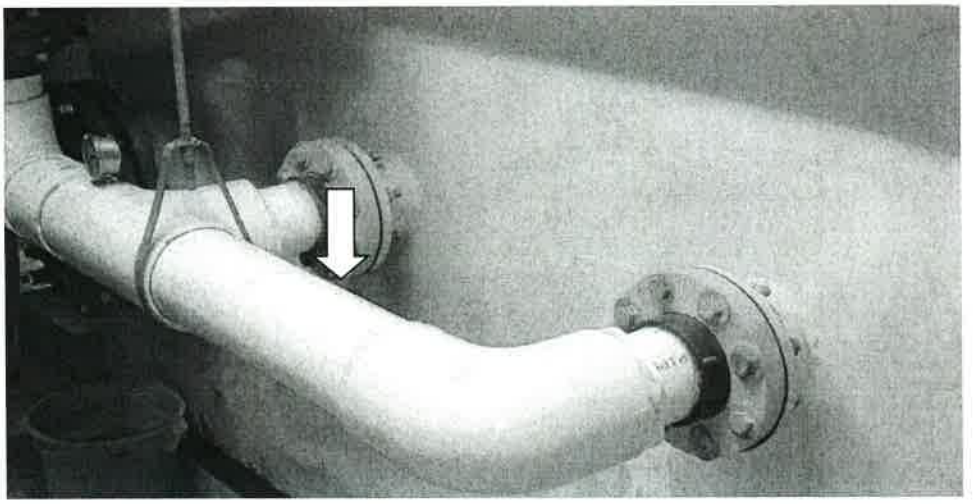


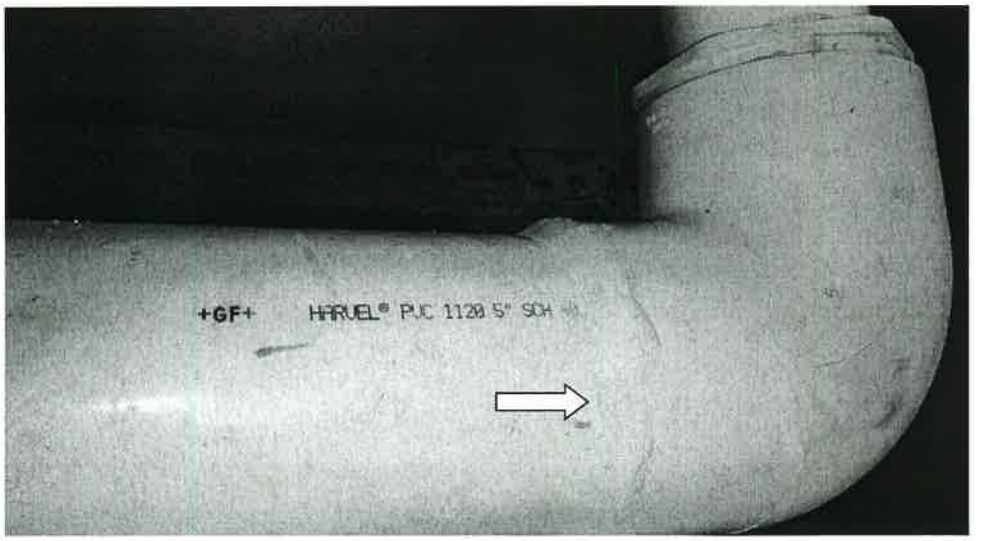
Recommendation: Extend the fill line further over the tank edge and reduce the vertical line so to insure the pipe end provides a 2" air gap between the tank and the pipe.

Estimated Cost: $100

7. The suction manifold from the filter to the pump is only 5 inches and is undersized for the flow rate for this pool. The industry standard for maximum flow for 5 inch suction pipe (6-7 feet per second) is approximately 450 GPM, measurably short of the WAC design flow rate needed.

This manifold has also developed a leak which has been patched with epoxy.





Recommendation: Install a new 6" manifold with 6" x 4" tee and 90 degree elbow to decrease the suction velocity to below 6 feet per second. Connect to the pump with a concentric reducer to the 5" flange at the pump. With the limited space this will require some additional plumbing to achieve the proper plumbing connections.

Estimated Cost: $800

8. The pump discharge flange is four inch and connects to 4 inch pluming. The maximum flow in 4 inch pipe is only 400 GPM, however, the short section of 4 inch pipe allows for the higher flow rate now being achieved. A connection to a concentric reducer would be far better and allow for high flow rates. The amount of filter area does limit the flow and the present setting must remain until changes can be made to the filter.

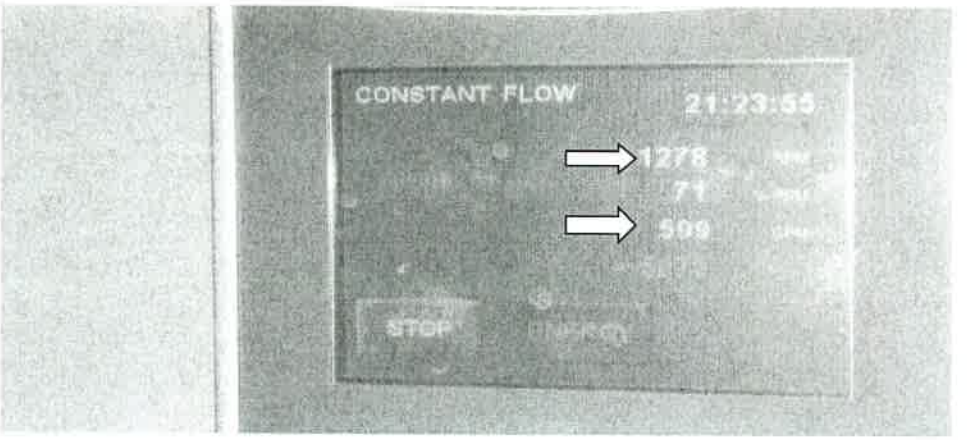
   Recommendation: Install a concentric 4" x 6" reducer at the 4" flanged pump discharge port to eliminate the 4" plumbing. Because of the limited space, this may require some minor plumbing changes to the existing lines.

   Estimated Cost: $300

9. The pump Variable Frequency Drive (VFD) control is programmed presently to operate the recirculation pump at 1,278 RPM. The pump has the capacity to operate at 1,750 RPM and should have the capacity to increase the recirculation flow rate to achieve the filter maximum filter capacity and WAC required recirculation flow rate. However, the 5 inch suction manifold and the pump discharge plumbing presents a bottleneck that may prevent this from occurring. (see also comments concerning filter size in item #8)

10. The existing flow indicated on the pump control flow meter is approximately 600 GPM. The design recirculation flow rate to achieve the code required six hour turnover is 680 GPM. . The existing turnover is approximately 6 hours 45 minutes. The pool remains clear. Nevertheless , the existing flow rate falls short of WAC and IS.

    This particular 20 HP pump is well capable of the design flow rate of 680 GPM. Again the pump RPM setting and the bottle-neck created by the five inch suction manifold could very well be the difference in flow.

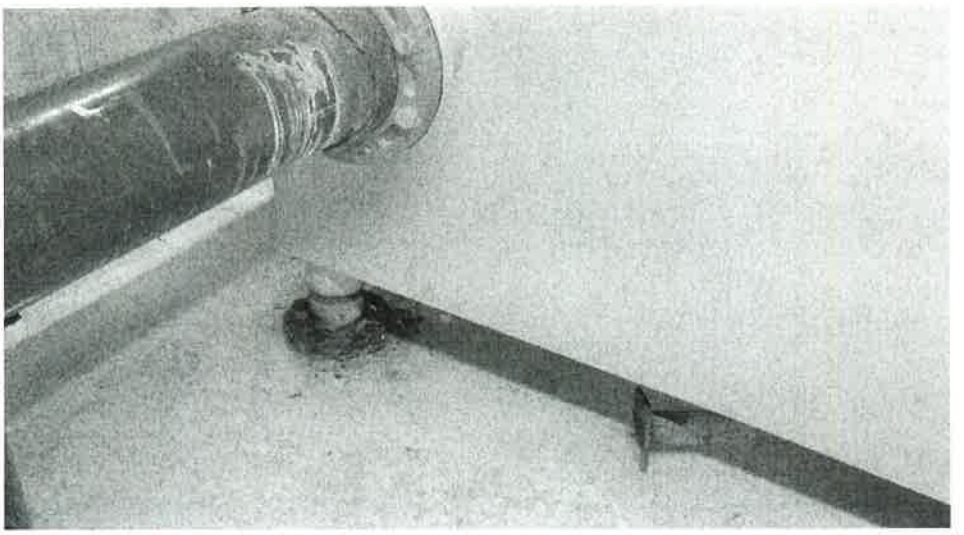


11. According to this display, the pump is only operating at 1,278 RPM, yet is capable of 1,750 RPM allowing for a higher flow that may very well achieve the WAC required flow rate to achieve the six hour turnover.

Recommendation: Upon increasing the pump suction manifold and discharge plumbing changes, reprogram the VFD to operate at a higher RPM to achieve the 680 GPM WAC-required recirculation flow rate.

Estimated Cost: None

The filter/surge tank is a coated steel tank that appears to be in good shape, however, this tank sits on flanged supports onto the concrete floor. The supports are significantly corroded.



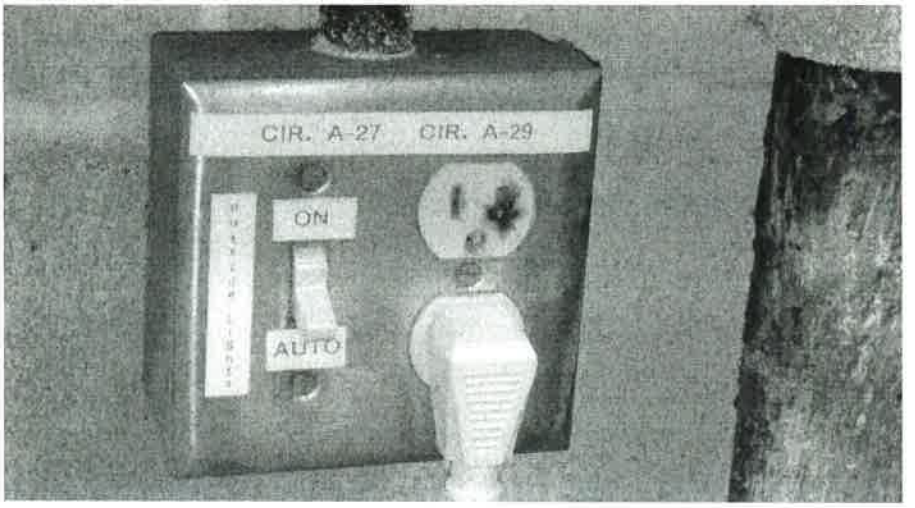
Recommendation: Remove the rust and corrosion and inspect the flange supports for integrity. Paint the flanges and supports with an epoxy paint to protect them from further corrosion. Replace them and the concrete anchors if necessary.

Estimated Cost:

-Clean, inspect and paint: Nominal

-Replace the flanges and anchors: $1,400

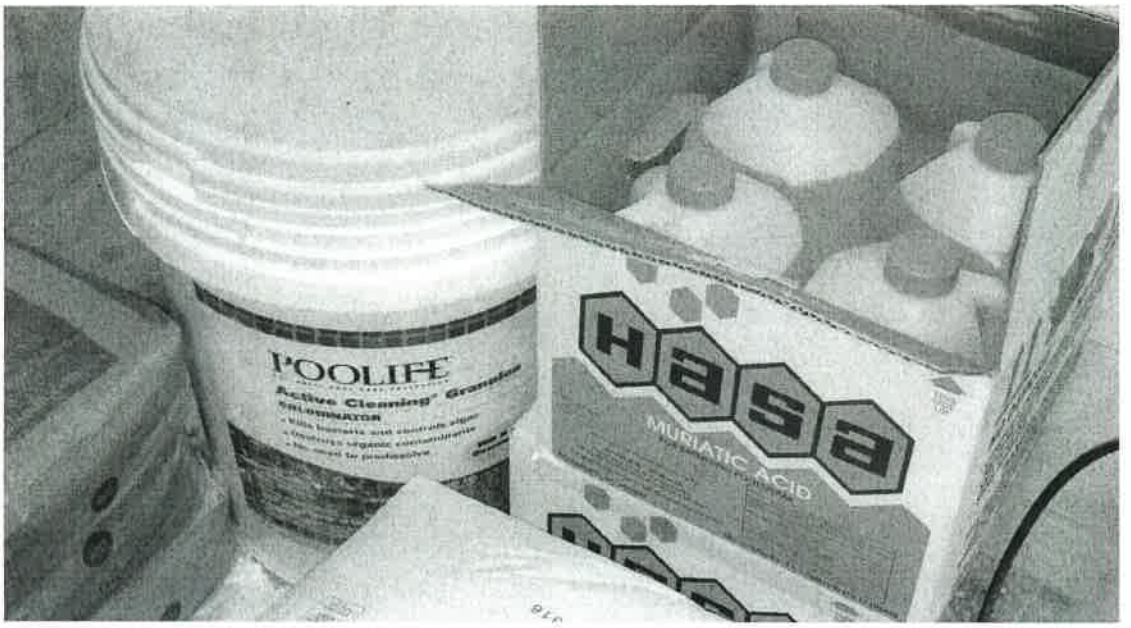
12. There is a junction box for the outside lights in the mechanical room that has a non-GFCI receptacle. This receptacle shows signs of an electrical short, however, staff did not know if the short had been repaired. This does not appear to be GFCI protected.



Recommendation: Investigate the short, make repairs and insure the receptacle is GFCI protected either by installing an GFCI receptacle or breaker with a proper label located at the receptacle.

Estimated Cost: 100

13. There are dissimilar chemicals (chlorine, muriatic acid, sodium bicarbonate and cleaning chemicals) stored side by side on the mechanical room floor. WOSHA, and UFC call for such chemicals to be stored separately. The acid should be stored on a double contained floor pallet.



Recommendations: Separate and properly store chemicals per the Material Safety Data Sheets, UFC-80 and IS. Purchase and make use of containment pallets for acids and other liquids. An approved organic vapor mask was not evident.

Estimated Cost: $400

14. Other chlorine (calcium hypochlorite) containers are stored in the basement area for the dry chorine feeder. No eye wash or shower station is available in the chemical storage or use areas per WOSHA, UFC and IS.

Recommendation: Install an approved eyewash/shower station at both locations, pool filter deck level and on the basement. Insure proper dust mask is available for both handling the calcium hypochlorite which does develop dust when handled and for the handling of any D.E.

Estimated Cost: $1,200

HIGH PRIORITY ITEMS:

1. Complete code related issues immediately:
   - Chemical storage
   - Fill line air gap
   - Clearing electrical panel
   - Installing GFCI receptacles
   - Installing a 6" filter manifold to the pump and repair and repair the plumbing patch
   - Reprogram the recirculation pump to achieve the code-required flow rate. (this should only be attempted after the filter manifold pipe has been upsized to 6".
   - Install proper UFC-80 and OSHA signage and placards on all doors
   - Further examine the filter supports for integrity

2. Install a proper pre-coat and "body" feed D.E. system

VI WATER CHEMISTRY REVIEW

General Comments:

The results of the water testing revealed the following:

pH: 7.4

Free Chlorine: 2.5 PPM

Total Chlorine: 2.5 PPM

Combined Chlorine: 0.0

Total Alkalinity: 120 PPM

Calcium Hardness: 700

Temperature: 81 F

Calculated Saturation Index: +0.4

Overall the water quality is excellent.

Staff did mention that the total alkalinity (TA) rises over time and adjustments are necessary with the use of muriatic acid which is dosed directly to the pool during non-use hours. This TA increase is the result of adding Carbon Dioxide gas to the pool water. The primary chemical

developed is carbonic acid, which helps influence the pH downward, however, the secondary reaction is the formation of "bicarbonate" which influences the TA upwards. The hand dosing of the fuming and hazardous muriatic acid is not A-typical, however, there may be a safer and easier means of controlling the TA.

The total alkalinity of the water acts as a "buffer for pH change". Lower TA (below 60 PPM) allows the pH to fluctuate considerably, whereas, high TA values make the pH very stubborn to change. Both make the pH less manageable.

Using the existing automatic chemical controller, the 120V control signal can be used to not only control the CO-2 feeder, but also a muriatic acid feeder at the same time. Muriatic acid also influences pH downward, however, it also lowers the TA.

The feeding of both CO-2 and muriatic acid at the same time results (with very minor adjustments) and a near constant TA value without the handling of muriatic acid with manual doses.

Muriatic acid is a fuming-liquid, however, there is a device which eliminates fuming while being able to feed the fuming liquid directly from the shipping container.

Recommendation:

1. Install a small NSF and UL listed acid solution feeder with a vapor-shield device to allow for the feeding of both CO-2 and muriatic acid during the chemical controller feed cycle.

Estimated Cost: $800

VII OTHER ISSUES:

Staff mentioned several items of concern and or desire.

1. Pool Drain valves handles: There are drai- valves located outside of the facility in a drain vault of which the handles are completely corroded and are in operable unless maintenance staff climb into the vault and operate the valves from below.

Recommendations: Replace the valves and valve handles with stainless steel units.

Estimated Cost: $2,000

2. The teaching staff is forced to make use of portable platforms which provide a temporary "shelf" for toddlers to stand on during swim lessons. The portable platforms must be installed and removed after each class and stored on the deck. Instructors have reported The drop off" from the platforms is not desirable and have been an issue to both instructors banging their shins on them and children stepping off into deeper water.

Recommendation: Install wide permanent steps on at least 50% of the pool to provide both a permanent teaching area, but also provide a play area for small children. (see Appendix B). This would also allow for the removal of the portable fiberglass step which must be periodically removed and cleaned.

Estimated Cost: $40,000

3. Staff also reported a desire to have floating water polo goals in lieu of the wall mounted units now in use. Floating goals are far more desirable for many water polo play reasons, but would require the installation of additional recessed rope hooks for securing the goals properly. The floating bulkhead location could be moved to allow for a full 30 meter playing field.

Estimated Cost: $5,000

4. The pool overhead lights fall short of industry standards for efficiency. LED lighting would provide a significant reduction in electrical consumption and may provide better overall lighting. Studies by the City electrical supplier should be available at no cost and can provide return on investment reports.

   Estimated Cost: None

SECTION VIII. FINAL COMMENTS AND RECOMMENDATIONS:

This aquatic facility has served the community well over the past many decades but now is in need of a number of improvements to bring the facility into several areas of code non-compliance. These include both WAC and ADA issues. In addition, other recommended improvements such as the addition of the step areas for teaching and small children play would add a measurable enhancement to the facility and should attract additional patronage. A rough budget of just short of $500,000 would not only bring the facility up to current code, but also industry standard. Such an expenditure would allow for a decade of operation without any additional expenditures.

SUMMARY:

ENTRY ISSUES:	ADA parking:	$ 1,000
	Concrete work:	$ 24,000
	Dressing room entry doors:	$ 8,000

TOTAL: $33,000

DRESSING ROOM ISSUES:	Tile & drains:	$ 300
	Locker improvements:	$ 1,600
	ADA shower:	$ 300
	ADA urinal:	$ 1,200
	Misc. electrical:	$ 200

TOTAL: $4,000

DECK ISSUES:	Short term repairs: $24,000	
	Deck replacement:	$ 225,000
	Optional coating & repairs $120,000	
	Misc. electrical:	$ 300
	Diving standard and board:	$ 3,100
	Additional ADA pool lift:	$ 4,000
	ADA drinking fountain:	$ 2,000
TOTAL: $235,000		
POOL VESSEL ISSUES:	Re-plaster with repairs:	$ 134,000
	Option: $102,000	
TOTAL: 134,000		
POOL MECHANCIAL ISSUES:	Door signage:	$ 400
	D.E. pre-coat and slurry system:	$ 2,000
	Fill system repairs:	$ 100
	Filter plumbing improvements:	$ 1,100
	Filter supports:	$ 1,400
	Electrical issues:	$ 100
	Double containment:	$ 400
	Eyewash / shower:	$ 1,200
	Filter expansion:	$ 2,000
TOTAL: $9,000		
CHEMICAL ISSUES:	Add acid feed system:	$ 800

TOTALL $1,000

OTHER ISSUES:	Pool drain valve repairs:	$ 2,000
	Addition of pool steps:	$ 40,000
	Floating water polo goals:	$ 5,000

TOTAL: $ 47,000

TOTAL ESTIMATED REPAIRS AND IMPROVEMENTS: $463,000

END