

2013

FACILITY EVALUATION

Date: 24 September 2013

TO: Village of Villa Park
Greg Gola, CPRP
Director of Parks and Recreation
Marlon Hummell
Superintendent of Parks, Buildings & Grounds

PROJECT NAME: Facility Evaluation
Lufkin & Jefferson Pools

WA PROJECT NUMBER: 2013-010

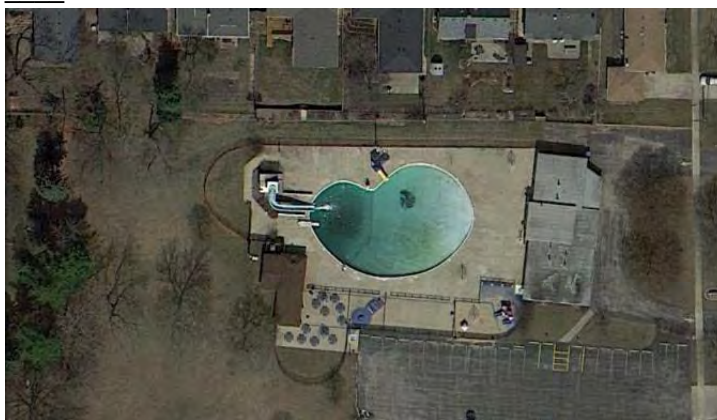


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EXECUTIVE SUMMARY

SCOPE

The Villa Park Parks and Recreation Department commissioned Williams Architects/Aquatics to provide an audit of Lufkin Pool and Jefferson Pool. The intent of the evaluation was to determine the present condition of the facilities in order to assist with the planning for future repairs/replacements.

TIME OF STUDY

The site investigation for this study was conducted in the spring of 2013, prior to the pools being prepared by staff for the upcoming swim season. Therefore, some of the noted deficiencies and associated photographs may not be representative of current conditions as they may have been corrected by staff.

HISTORY

Lufkin Pool

The pool opened in 1954. The original filtration system was a vacuum sand filter. In the late 1960's to early 1970's the filter system was converted to a vacuum DE filter. In 1997 the pool received a significant renovation which included a new stainless steel perimeter gutter system, a new PVC pool liner to address the deteriorating leaking pool vessel and new site amenities including: water slide, drop slide, spray features and a sand play area with a playground.

Jefferson Pool

The pool opened in 1966. The original filter system, a vacuum DE filter, is still in use today. In 1997 a new body flume slide and drop slide were added to the main pool and a new zero depth entry wading pool was constructed, with its own filter building, a new playground was also added adjacent to the new wading pool.

METHODOLOGY

The evaluation consisted of an on-site visual inspection of the facilities and discussions with the staff regarding areas of specific concerns. The investigation included a visual examination of the buildings, mechanical, plumbing and electric systems, structure and finish for the pools, pool gutter systems, exposed piping, pool filtration systems, chemical control and feed systems, deck areas and related equipment. This report will help identify items that require ongoing maintenance or repair and items that do not meet the current codes and regulations including the Illinois Department of Public Health Swimming Pool and Bathing Beach Code and current industry design standards. Reference to violations of the current Codes, in the body of this report, should not necessarily be construed as grounds for pool closure.

The state administrative code referred to in this pool audit report is:

State of Illinois Administrative Code
Title 77: Public Health
Chapter 1: Department of Public Health (IDPH)
Subchapter n: Recreational Facilities
Part 820 Illinois Swimming Pool and Bathing Beach Code

OBSERVATIONS

Both Lufkin and Jefferson pool facilities have serviced the community well for many years. Over the years staff has done a commendable job of maintaining and repairing the pools. However, with age come problems and both pools currently have significant physical issues that require major repairs or complete replacement. The pools are not compliant with current codes, state swimming pool regulations and in some areas may pose hazards to patrons. Facilities such as these were built under previous codes and therefore are allowed to continue operation without improvements to bring them into compliance with current codes (referred to as grandfathering). The exception would be a hazardous or unsafe condition or when renovations are made.

CONCLUSION

Lufkin Pool

Pool / Decks -

The findings of our facility assessment indicate that the pool and associated decks have a number of deficiencies that require major repairs. The primary deficiencies include:

- Severe deterioration of existing concrete pool structure
- Existing PVC pool liner has exceeded its useful life and requires replacement
- Extensive issues/conditions that do not meet current IDPH code requirements
- The concrete DE filter requires continual repair to stop it from leaking.
- Poor condition of decks and associated deck drainage. Deck drainage does not meet current IDPH code requirements.
- Age of original underground main drain piping

Repairs/replacements of the deficient items listed in this report could be done and the Village could continue to operate the facility. However, with a pool that is nearly 50 years old, it is not advisable or a suitable long term investment solution to make major repairs to the pool. It is our opinion that the facility has reached the end of its useful life and it is our recommendation that it should be replaced in the near future.

Site (Outside pool fence) –

The parking lot is in generally good condition however requires some crack repair and should be seal-coated and restriped. Missing and / or damaged wheel stops should be replaced and damaged concrete apron and walks should be repaired.

Buildings -

Bathhouse - the Bathhouse is in fair condition and with proper maintenance can continue to support the pool use. The building layout adequately serves the public's needs; however, has a cramped, outdated staff area. Current trends suggest you may want to consider a renovation to include improvements to the staff areas and the addition of

family changing rooms. As part of these improvements you should include ADA upgrades and mechanical, plumbing, electrical and energy code improvements.

Filtration / Concessions Building - When the pool undergoes major renovation or replacement, we recommend demolition and replacement of this building. This will not only provide an improved, code updated space for the new pool filtration equipment, but also an opportunity to provide a state-of-the-art concessions operation.

Jefferson Pool

Pool / Decks-

The findings of our facility assessment indicate that the pool and associated decks have a number of deficiencies that require major repairs. The primary deficiencies include:

- Deterioration of existing concrete pool structure
- Severe deterioration of existing painted pool finish
- Major water loss
- Poor floor inlet supply design
- Condition of original underground main drain piping
- The decks are in fair to poor condition. Deck drainage does not meet current IDPH code requirements.
- Existing perimeter gutter does not skim uniformly and runs in a flooded condition in some areas.
- Extensive issues/conditions that do not meet current IDPH code requirements

Repairs/replacements of the deficient items listed in this report could be done and the Village could continue to operate the facility. However, with a pool that is 47 years old, it is not advisable or a suitable long term investment solution to make major repairs to the pool and facility. We feel that the facility has reached the end of its useful life and it is our recommendation that it should be replaced in the near future.

Site –

The parking lot and much of the concrete walks and drive surfaces should be replaced. There is an asphalt walk along the perimeter fence that is much deteriorated. It doesn't appear this walk serves any necessary function and therefore we recommend its removal and the area restored with lawn and / or landscaping.

Buildings –

The Bathhouse is in fair condition and with proper maintenance can continue to support the pool use. The building adequately serves the public's needs and while tight for space, also provides staff space. The attached pool mechanical room has signs the roof panels are rusting which will need to be addressed in the very near future. This room is small and if the pool undergoes a major renovation or complete replacement it will most likely require an addition. The building's south exterior wall is in need of immediate repairs including brick replacement and tuck-pointing. The building also needs a new

roof and fascia work. If and when the pool is renovated or replaced, current trends suggest you may want to consider the addition of family changing rooms. As part of these improvements you should consider ADA upgrades and mechanical, plumbing, electrical and energy code improvements.

The spray pad filtration building is in generally good condition and with regular maintenance should continue to serve its intended use. Consideration should be given to providing containment for acid storage to prevent further corrosion of metal objects.

LUFKIN POOL OBSERVATIONS– 1000 S. Ardmore Avenue

General

Facility was built in 1955. The property is located on the west side of Ardmore Avenue in a residential neighborhood. The property is irregularly shaped, is approximately 6 acres and is +/- 475 feet wide along Ardmore and +/- 460 feet deep along the north property line.

The property includes the pool on the north side, parking south of the pool and an open park on the south side of the site. There is an entrance / drop-off drive in front of the bathhouse. The bathhouse extends in the north / south direction and is approximately 95 feet wide by 50 feet deep with a gross floor area of +/- 4,800 SF. The pool area is west of the bathhouse and the filtration building is situated at the southwest corner of the pool.

OBSERVATIONS / ASSESSMENT

Pool, Pool Systems and Decks

The following are observations and discussions regarding the condition and function of the pool structure, pool equipment and decks. Reference to violations per the current Illinois Department of Public Health Code (IDPH) should not be construed as grounds for pool closure because the facility was built and operates under a previous code.

Main Pool

1. The pool structure under the PVC pool liner has significant deterioration. High ridges protrude out and can be felt and seen in many areas. This condition is occurring on both the floor and walls of the pool structure. In some areas sharp edges can be felt. The deteriorating walls behind the liner protrude up to 2" out in some areas, indicating severe deterioration. Refer to photos #1, #2 and #3.



Photo # 1



Photo # 2



Photo # 3

2. The PVC pool liner is over 10 years old and is in poor condition. It has required patching and repair over the years. Pool liners typically last between 10 to 15 years. The pool liner will need to be replaced in the near future.
3. Anchors have been installed in the deep end of the pool to hold the liner down when ground water seeps in underneath.
4. At the transition to the deep portion of the pool there is a 12" vertical step down. Refer to photo #4. *This is a violation of current IDPH code requirements: Section 820.200.f Slope of Pool Floor - The floor of a pool shall slope downward toward the main drain. The slope in shallow areas shall not exceed one foot vertical in 12 feet horizontal except for a slope directed downward from a transition point, which shall not exceed one foot vertical in 3 feet horizontal. In portions of the pool with a depth greater than 5 feet, the front slope of the deep area shall not be steeper than one foot in 3 feet.*



Photo # 4

5. The grab rail at the shallow end of the pool does not incorporate a recessed step. The rise to get out of the pool is approximately 18", which could make it very difficult to use for many patrons. Refer to photo #5.



Photo # 5

6. The safety line in the pool, at the transition to the deep end, is not set back 12" from the transition point. *This is a violation of current IDPH code requirements: Section 820.200.g Transition Point - Transition points shall be marked with a stripe on the pool floor having a width of at least 4 inches and a color that contrasts with that of the floor, and with a buoyed safety rope with colored buoys, installed at least one foot on the shallow side of the transition point. In other pools having adjoining shallow and deep areas, a safety rope with colored buoys shall be installed where the water depth reaches 5 feet.*
7. The dive stand is in poor condition, having significant deterioration. Refer to photo #6 and #7.



Photo # 6

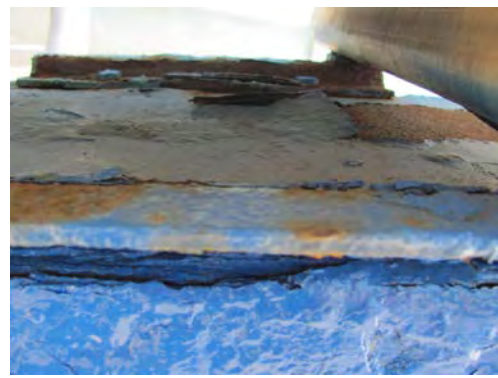
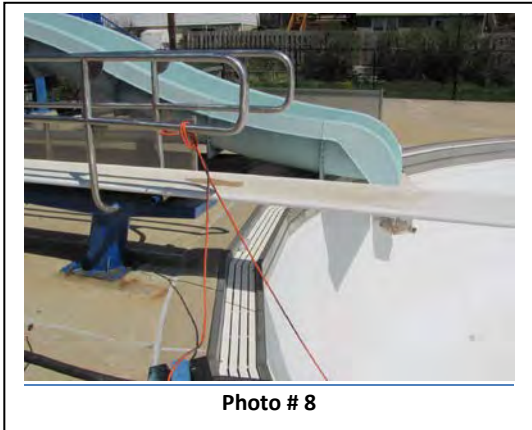


Photo # 7

8. The hand rails on the dive stand do not extend to the pool wall. Refer to photo #8. *This is a violation of current IDPH code requirements: Section 820.200.m Diving Area – 1) Handrails shall be provided at all steps and ladders leading to diving boards, except for those ladders set at 15° or less from the vertical. Platforms and diving boards that are one meter or higher shall be protected with guard railings. One meter diving board guard rails shall be at least 30 inches above the diving board and extend to the pool water's*

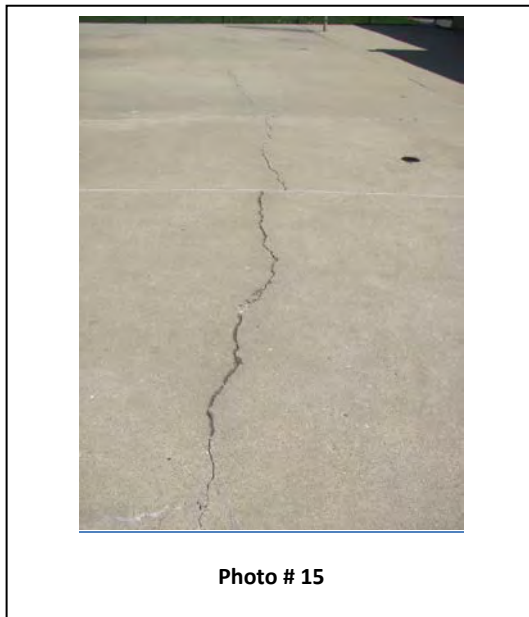
edge. All platforms or diving boards higher than one meter shall have guard rails that are at least 36 inches above the diving board or platform and extend to the pool water's edge. Three-meter platforms and boards shall have a side rail barrier.



9. The pool decks do not have adequate deck drainage. Water sheets in excess of 15'-0". *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 6) Except for linear drains, deck drains shall be located so that not more than 900 square feet of deck area is tributary to each drain, and deck drains shall not be more than 30 feet apart. Deck drains shall be located so that water does not drain more than 15 feet in any one direction. Where deck widths are 15 feet or less, deck drains are not required, provided that the deck drains to the ground surface. The deck drains shall not be connected to the pool water recirculation system. Pools designed to operate where the pool water level is at the deck level may be allowed to drain the first 4 feet of deck into the pool perimeter overflow system. Up to 10 feet of the deck adjacent to a zero-depth edge may be drained into the pool.*
10. The decks have differential settlement which effects drainage and creates water ponding. Additionally, the settlement creates tripping/toe stubbing hazards for patrons. Refer to photos #9 and #10.



11. The decks are cracked in many areas. Refer to photo #15.



12. Some of the decks around the deep end of the pool slope up to 2-3/4" per 2'-0". In many areas the deck directly adjacent to the gutter slopes up to 3-1/2" per foot. *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 5) The deck shall slope at least one inch per 10 feet to deck drains or to the surrounding ground surface. The maximum slope of the pool deck shall not exceed one inch per foot.*

13. In many areas on the deck the caulk joints are deteriorating. Refer to photo #11.



14. The deck area around the flume slide does not have a 4" drop to the planting area. *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 8) The outer perimeter of the deck for outdoor pools shall be at least 4 inches higher than the surrounding ground surface except where access is provided to adjacent turf areas.*

15. Hose bibs on the deck are located more than 150 feet apart. *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 10) Hose bibbs shall be provided for cleaning all parts of the pool and deck (maximum separation 150 feet).*
16. The gates into the pool area are not self-closing and self-latching. *This is a violation of current IDPH code requirements: Section 820.200.a Enclosures – 2) Each entrance into the pool enclosure shall be equipped with a door or gate that is self-closing and self-latching. This requirement is not necessary when people enter the pool area through the bathhouse and lifeguards are provided in the pool area. Doors and gates at all entrances to the pool enclosure must be equipped with hardware that permits secure locking of the entrance.*
17. There are no depth markers on the perimeter stainless steel gutter or on the perimeter enclosure fence. *This is a violation of current IDPH code requirements: Section 820.200.i Depth Markers – 1) The water depth shall be marked at or above the water surface on the wall of the pool and on the edge of the deck next to the pool so as to be readable by persons entering or in the pool. Where depth markers cannot be placed on the walls at or above the water level such that at least 50% of the marking is above water level, they shall be placed on the pool wall as high as practicable and also on the fencing or pool enclosure so as to be plainly visible to persons in the pool. Depth markings shall be provided at the shallow and deep ends of the pool, the transition point, and the point of maximum depth, and shall be spaced at not more than 25 foot intervals measured peripherally, except that depth markings are not required at a zero-depth edge.*
18. The stairs leading to the top of the slide tower have a 3'-6 1/2" clear width. *This is a violation of current IDPH code requirements: Section 820.250.b Water Slides – 2) Walkways. Walkways or stairs leading to the top of water slides shall be slip-resistant, rigid, and have a 4 feet minimum clear width.*

Spray Area

1. The safety surface is severely deteriorated. Weeds are growing in the safety surface. Refer to photos #12 and #13. *This is a violation of current IDPH code requirements: Section 820.240 Spray Pools – a) Material. Spray pools shall be constructed of impervious material that has a slip-resistant finish.*

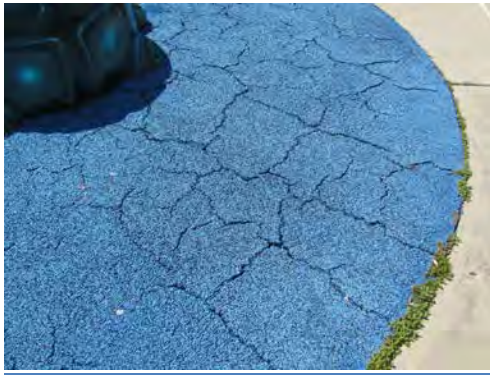


Photo # 12



Photo # 13

2. The decks around the spray area slope away from the deck drains. This condition has occurred due to settlement. *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 6) Except for linear drains, deck drains shall be located so that not more than 900 square feet of deck area is tributary to each drain, and deck drains shall not be more than 30 feet apart. Deck drains shall be located so that water does not drain more than 15 feet in any one direction. Where deck widths are 15 feet or less, deck drains are not required, provided that the deck drains to the ground surface. The deck drains shall not be connected to the pool water recirculation system. Pools designed to operate where the pool water level is at the deck level may be allowed to drain the first 4 feet of deck into the pool perimeter overflow system. Up to 10 feet of the deck adjacent to a zero-depth edge may be drained into the pool.*

3. The Turtle spray feature is in poor condition. The finish is peeling and faded. Refer to photo #14.



4. The entrance to the spray area does not have a gate. This is a violation of current IDPH code requirements. *This is a violation of current IDPH code requirements: Section 820.240 Spray Pools – g) Barrier. A fence or other effective barrier at least 3 1/2 feet in height, shall totally enclose the spray pool and shall separate the spray pool from other pools. Except with regard to height, the barrier shall comply with the requirements of Section 820.200(a). Each entrance into the spray pool enclosure shall be equipped with a self-enclosing, self-latching door or gate.*
5. The spray area is not completely surrounded by a deck area. *This is a violation of current IDPH code requirements: Section 820.240 Spray Pools – f) Walk Area. The spray pool shall be entirely surrounded by a walk constructed of impervious material which has a slip-resistant finish.*

Main Pool Mechanical

1. A vacuum DE filter is used for filtration. When the filter is backwashed, a pump is used to pump out the spent DE. The discharge goes directly to sewer without passing through a separation pit. *This is a violation of current IDPH code requirements: Section 820.210.h Filtration – 10) Prior to disposal, wash or backwash water from diatomaceous earth filters shall be passed through a separation tank designed for removal of suspended diatomaceous earth and solids.*
2. The concrete vacuum DE filter requires continual repair due to leaks developing and water flowing into the basement. This type of filter is difficult and time consuming to back-wash. Elements on these types of filters require periodic replacement.
3. The filtration piping is a mix of schedule 40 and schedule 80 PVC piping.
4. Muriatic Acid is stored in the mechanical room, allowing off-gassing and producing a corrosive atmosphere.

5. There is no containment for the muriatic acid, which creates a hazardous situation if a leak or a spill occurred. Refer to photo #16.



Photo # 16

6. Sodium hypochlorite is used as a disinfectant. There is no containment for the chlorine, which creates a hazardous situation if a leak or a spill occurred. Refer to photo #17.

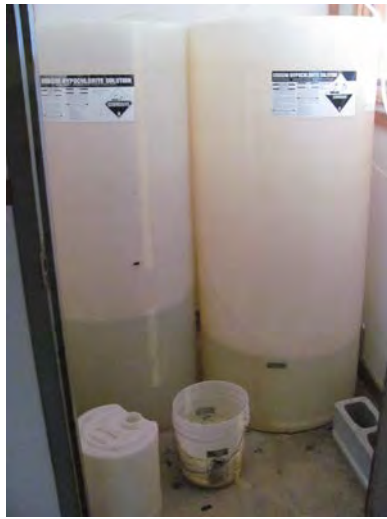


Photo # 17

7. The main flow is less than 5 pipe diameters upstream from any source of turbulence (chemical injection point). *This is a violation of current IDPH code requirements: Section 820.210.d Flowmeter. Flowmeters shall be located so that the rate of recirculation and the backwash rate of sand filters can be read. In a multiple pool system, flowmeters shall be provided for each pool. Separate flowmeters shall be provided to monitor the flow for each area of a pool with a turnover rate that differs from adjacent areas according to subsection (b)(1). Flowmeters shall be provided on inlet supply piping in accordance with subsection (f)(2)(F). Flowmeters shall be installed on a straight length of pipe with no valves, elbows or other sources of turbulence within 10 pipe diameters upstream or 5 diameters downstream from the flowmeter.*

8. The original existing main drain piping coming into the mechanical room is severely corroded. Refer to photo #18. The condition of the underground piping that cannot be viewed is most likely the same.



Photo # 18

9. There is no hose bib in the mechanical room. *This is a violation of current IDPH code requirements: Section 820.200.t Equipment Rooms - 3) A hose bibb shall be installed in the equipment room.*
10. There is no thermometer on the blended water supply to the pool. *This is a violation of current IDPH code requirements: Section 820.210.c Water Heater. 3) Thermometers shall be provided in the piping to check the temperature of the water returning from the pool and the temperature of the blended water returning to the pool.*
11. An external temperature limiting device is not provided to prevent the introduction of water in excess of 115 degrees Fahrenheit to the pool. *This is a violation of current IDPH code requirements: Section 820.210.c Water Heater. 4) The design of the water heating system shall prevent the introduction of water in excess of 115° F. to the pool.*
12. There is minimal surge capacity in the vacuum DE filter. It does not meet the current IDPH code requirements. *Section 820.210.f.4. C) Surge Capacity. Perimeter overflow systems shall be provided with a surge capacity of at least 0.6 gallon per square foot of pool water surface area. Surge capacity shall be provided either in a vacuum filter tank, a surge tank, or combination thereof. Valving shall be provided to maintain the proper operating water level in the pool.*

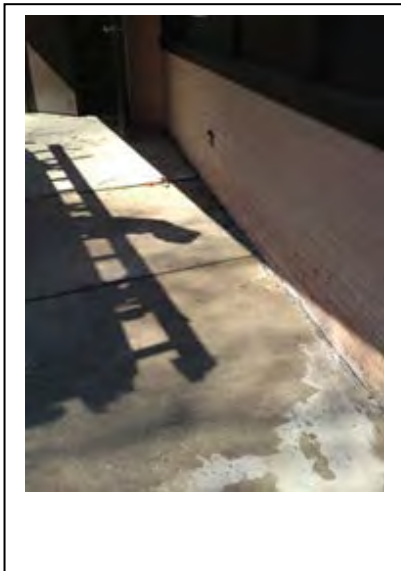
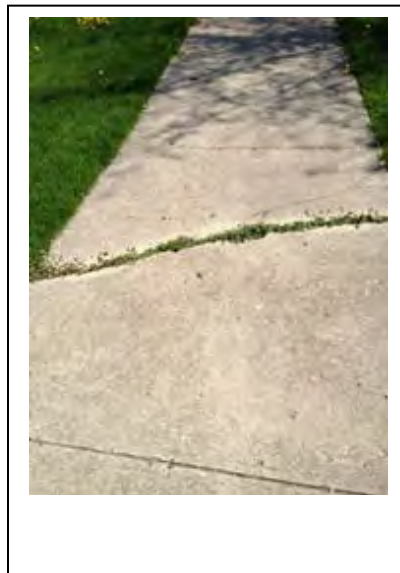
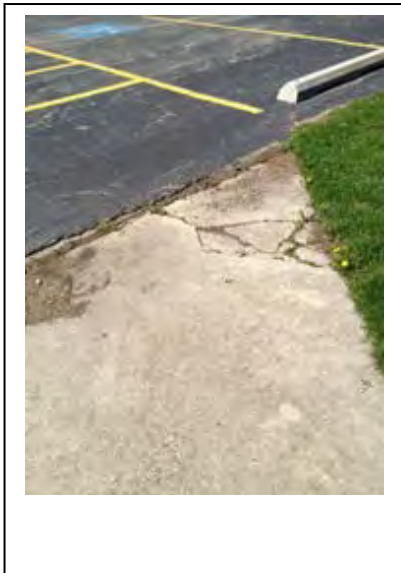
SITE

We performed a cursory review of the site outside the pool zone.

- Parking Lot
 - o The Parking lot and drives are asphalt. The lot is in fair condition.
 - o The lot and drives require some crack repair and should be sealcoated and restriped in the near future.
 - o We noted several deteriorated and missing wheel stops.
 - o The concrete apron in the R.O.W. exhibited significant cracking and should be replaced.



- Concrete Walks
 - o Several concrete walks are in poor condition and require replacement.



BUILDINGS

- Bathhouse – Interior
 - o The bathhouse consists of a large, partially open air lobby, a central staff / storage area and men's and women's locker rooms.
 - o The construction consists of concrete floor on grade, exterior face brick with load bearing concrete block back up and interior concrete block walls, concrete roof planks with a built-up roof.

- Lobby
 - o Floors – 12 x 12 tile. Fair to poor condition.
 - o Walls – painted concrete block – peeling and flaking.
 - o Ceiling – painted plaster on underside of concrete roof plank – generally good condition



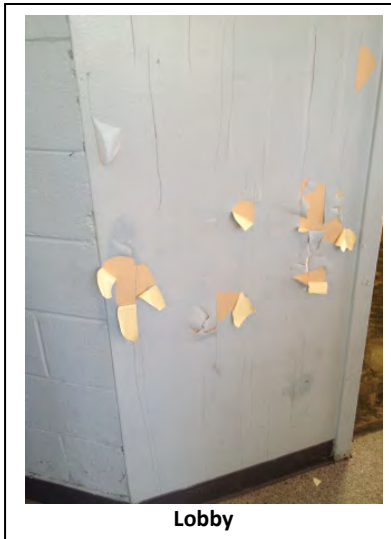
Lobby



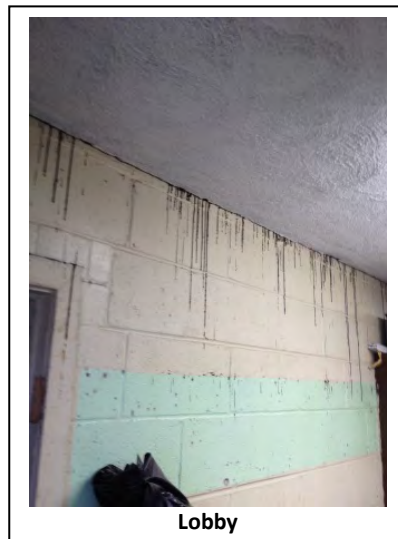
Lobby



Room off Lobby



Lobby



Lobby



Lobby

- Men's Locker Room (including toilet rooms and showers)
 - o Floors – epoxy – approximately 12 years old in fair condition.
 - o Solid plastic benches with steel pedestals in good condition.
 - o Exterior Walls – sandblasted, exposed masonry (block with brick bands) in generally good condition.
 - o Interior Walls – painted plaster on masonry in generally good condition.
 - o Ceiling – painted plaster on underside of concrete roof plank in good condition.
 - o Toilet and Shower Partitions – solid plastic – good condition.



Men's Toilet



Men's Locker Room

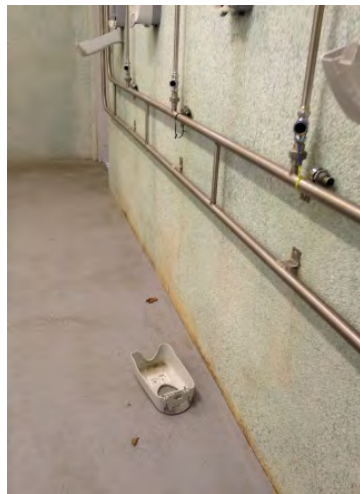


Men's Locker Room

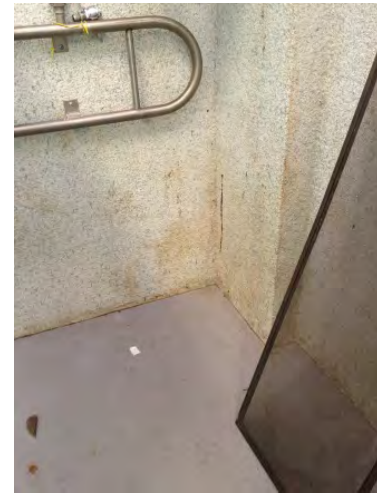
- Women's Locker Room
 - o Floors – epoxy – fair condition.
 - o Walls – painted plaster – generally good condition with some staining.
 - o Ceiling – painted plaster on underside of concrete roof planks – generally good condition with some minor flaking. One area shows water damage.
 - o Benches – solid plastic on metal pedestals – good condition.
 - o Toilet Partitions – solid plastic in good condition.



Women's Shower



Women's Shower



Shower

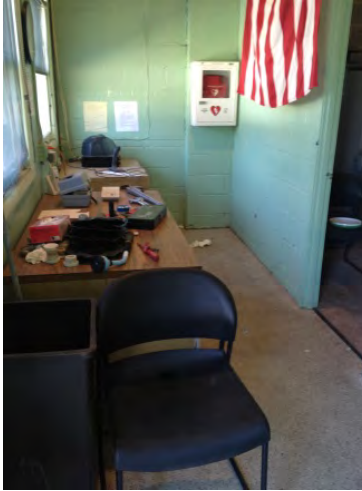


Women's Shower



Women's Shower

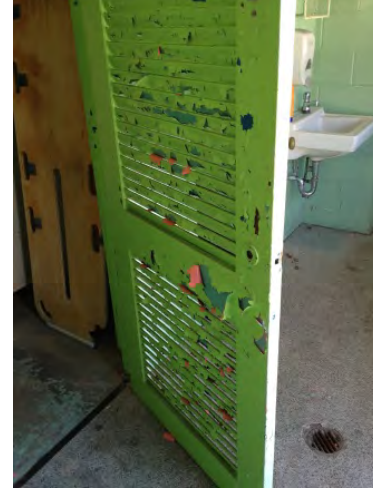
- Guard Office
 - o Floor – 12 x 12 tile – fair condition.
 - o Walls – painted block – fair condition.
 - o Ceiling – exposed concrete roof plank.



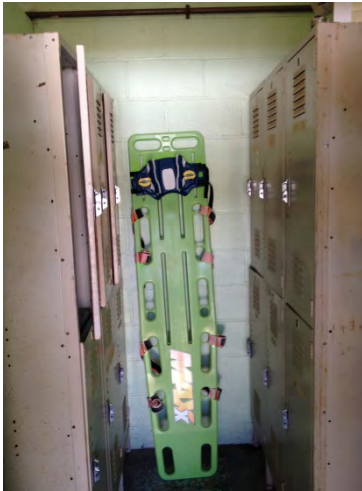
Guard Office



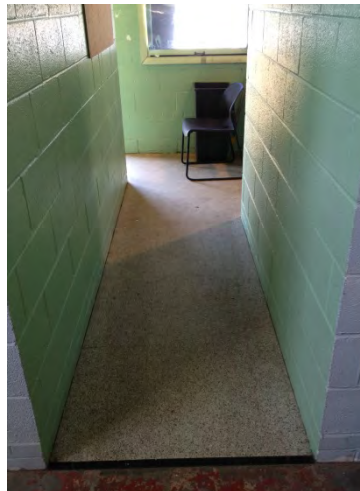
Guard Office



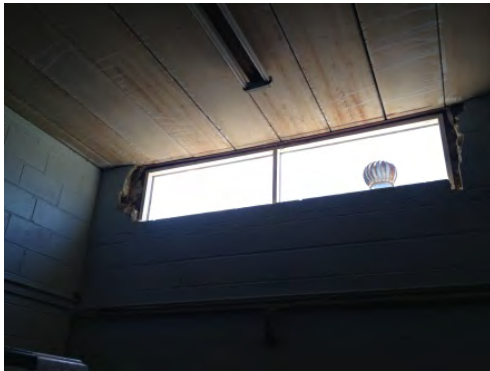
Guard Office



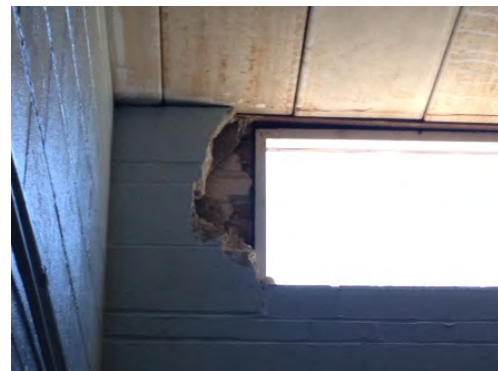
Guard Lockers



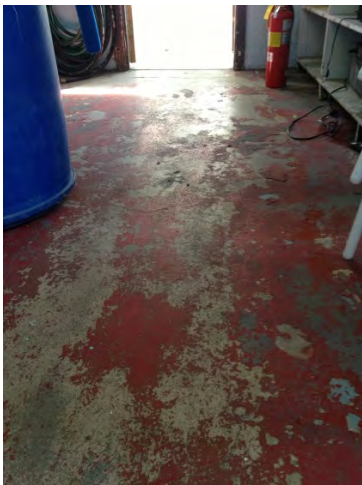
- Staff Storage Room
 - o Floor – painted concrete – poor condition.
 - o Walls – painted concrete block – fair condition.
 - o Noted deterioration above south facing windows where support of roof planks is failing and roof plank is partially bearing on top of window frame. We recommend immediate temporary support to avoid further deterioration / collapse until a permanent solution is found.
 - o Ceiling – exposed concrete roof planks in generally good condition.



Staff Storage Room



Staff Storage Room



Staff Storage Room

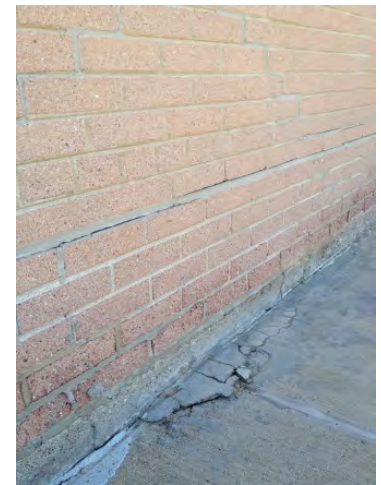
- Bathhouse Exterior
 - o Walls –
 - Face brick – signs of deterioration along base of wall – overall in fair condition.
 - West wall at south corner has bulging / shifting face brick – should be repaired in the near future.
 - o Wood slats – east wall at Lobby – overall in poor condition with peeling and flaking paint and some dry rot.
 - o Soffits – painted wood in fair condition. Some peeling, flaking and deterioration.
 - o Fascia – prefinished aluminum in good condition.
 - o Windows – prefinished aluminum in good condition. Exception is window pnm west wall at guard office. This is a wood window and is in poor condition.
 - o Stone sills at windows in good condition.
 - o Downspouts – prefinished aluminum in fair condition – missing downspout at southwest corner.



**Soffit / Downspout at NE
Corner**



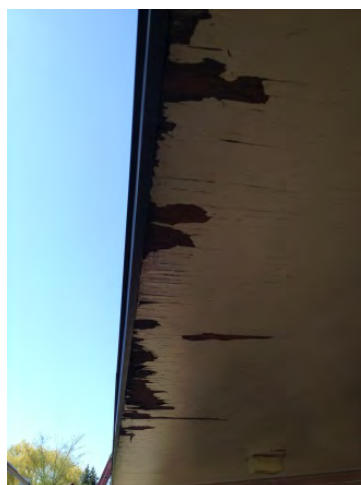
West Wall



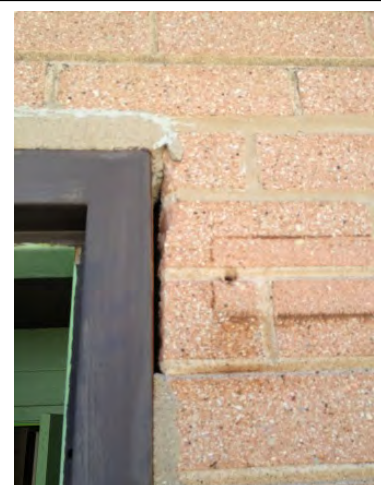
West Wall



Soffit at West



Soffit



Door Jamb at West



Window at West



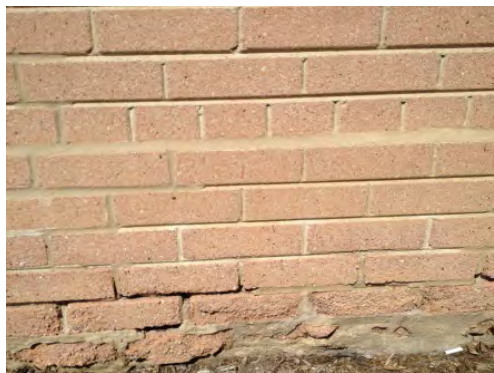
Wood Slats at East



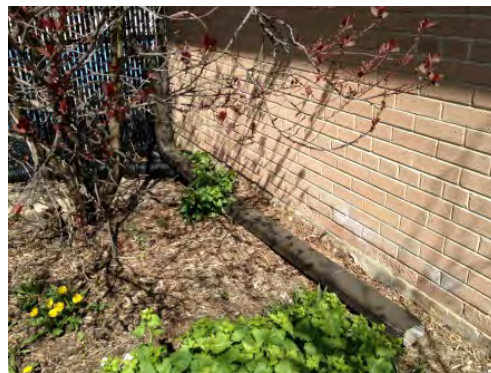
Soffit



Soffit at SW Corner



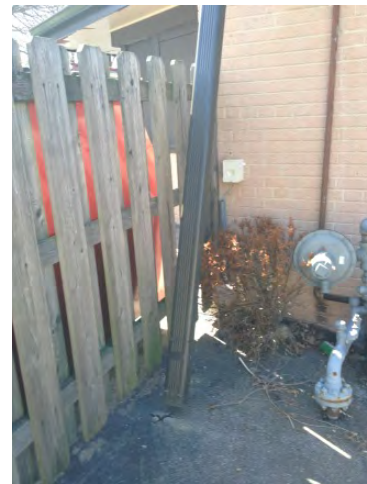
South Wall



South Wall



South Wall

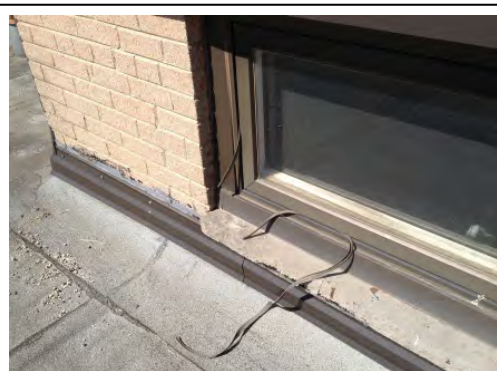


Downspout at NE Corner

- Doors – exterior doors are painted hollow metal generally in poor condition.

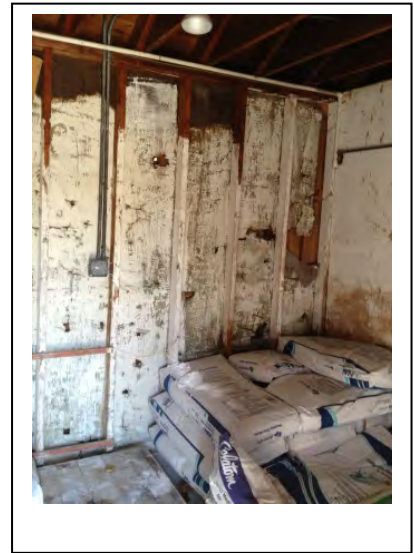
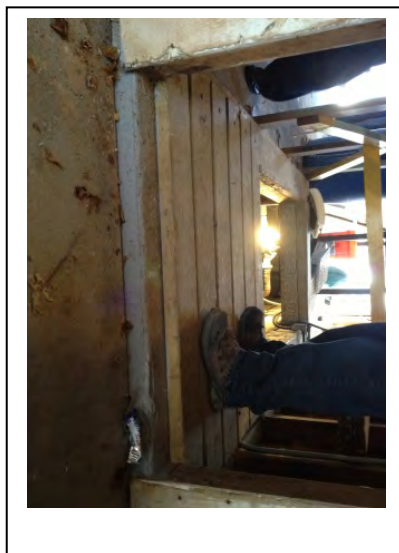


- Roof – asphalt roll roofing (installed in 1996) in fair condition.
 - o Flashing in good condition.
 - o Ventilators in fair to poor condition.
 - o Clearstory windows – east windows are pre-finished aluminum in good condition.
 - o Some weather-stripping has dislodged and should be re-installed.
 - o South windows are wood in poor condition.
 - o Brick in fair condition.



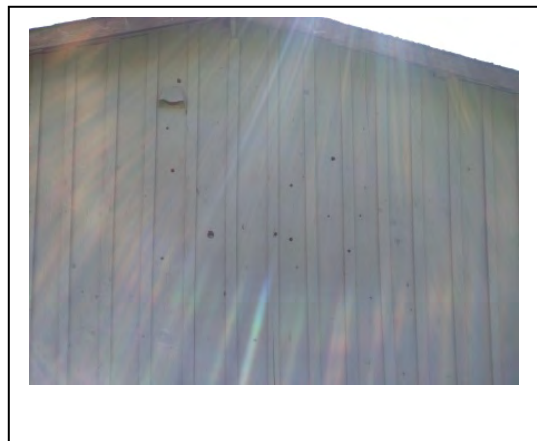
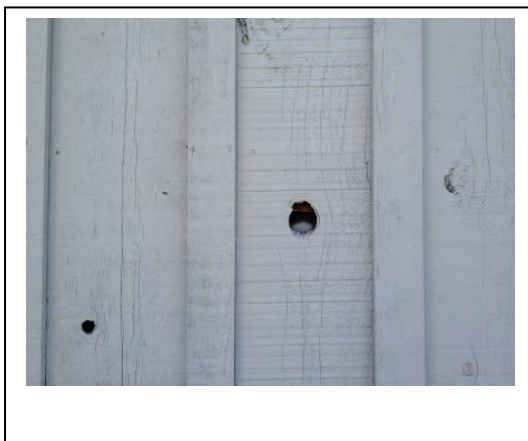


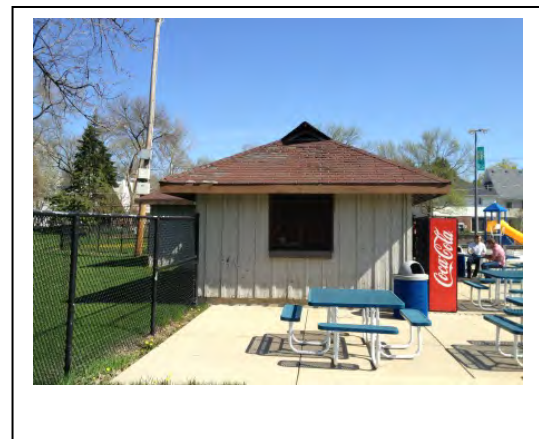
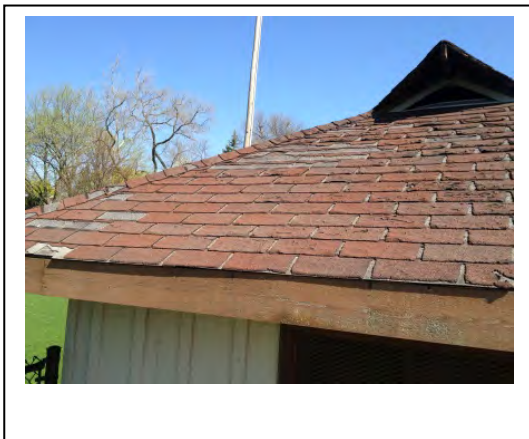
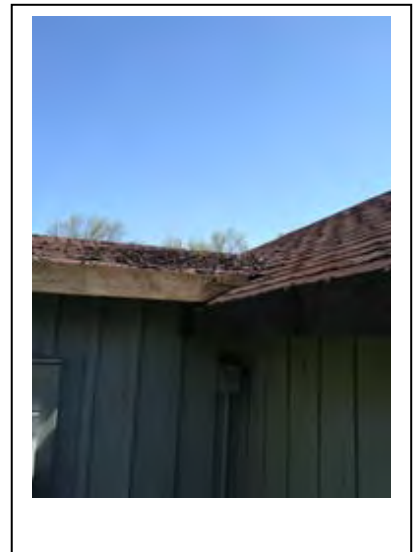
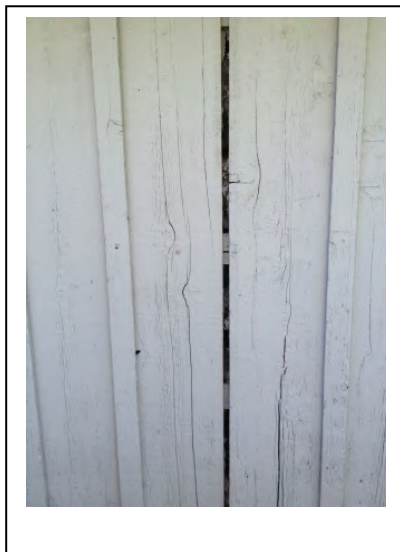
- Filter / Concessions Building – Building is at rear (west) side of site and is approximately 860 GSF.
 - o Interior
 - Floor – exposed concrete
 - Walls - exposed construction – wood studs with partial drywall. Overall poor condition.
 - Concessions currently not operational.
 - Overall poor condition.
 - OSHA – confined space at filtration pit.



o Exterior

- Walls – board and batten wood – in poor condition with signs of deterioration.
- Fascia / soffits – painted wood in deteriorated condition.
- Roof – asphalt shingles – significant deterioration.

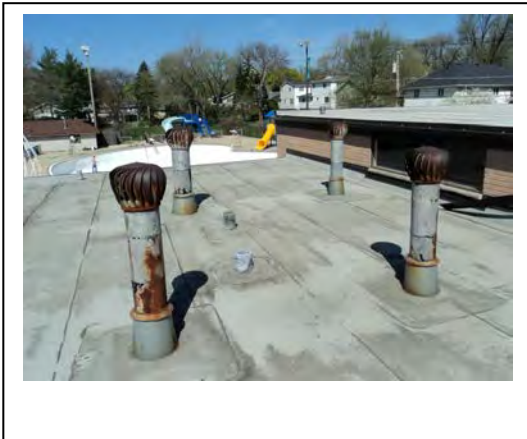




MECHANICAL

EXISTING SYSTEM DESCRIPTION

- Filter Building
 - o Gas fired unit heater in pool equipment room.
 - o Galvanized exhaust duct in chemical storage room ducted to floor.
 - o Duct routed out to gable end louver at roof.
 - o Pool heater mounted at grade outside pool equipment room
- Bathhouse
 - o Ceiling grates connected to draft inducer roof vents. All natural ventilation in bathhouse. No heating or cooling in bathhouse.



CONDITION OF EQUIPMENT

- Filter Building
 - o Gas fired unit heater in pool equipment room in good condition.
 - o Galvanized exhaust duct in chemical storage room badly corroded.
 - o Associated duct to gable louver in poor condition with sagging flexible ductwork.
 - o Pool heater mounted at grade in fair to poor condition.
 - o Opening in roof exposed to weather, appears to be from removed roof mounted equipment.
- Bathhouse
 - o Ceiling grates are in poor condition
 - o Associated draft inducer vents on roof are badly corroded.

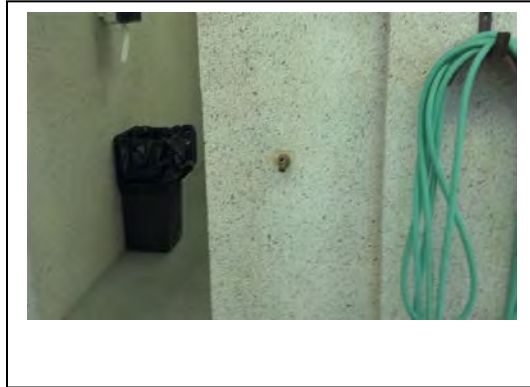
CODE VIOLATIONS

- Filter Building
 - o Improper combustion air openings for unit heater.
- Bathhouse
 - o No code violations observed.

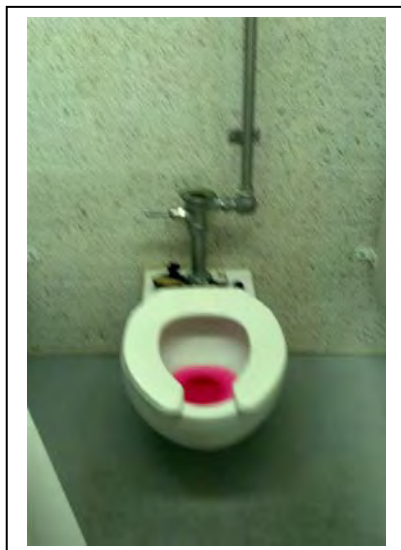
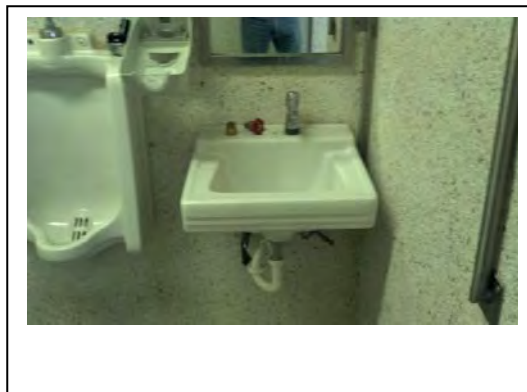
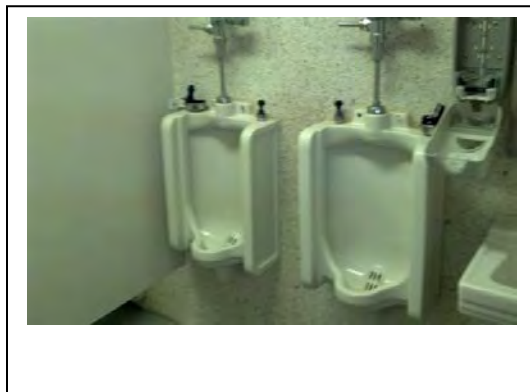
PLUMBING

EXISTING SYSTEM DESCRIPTION

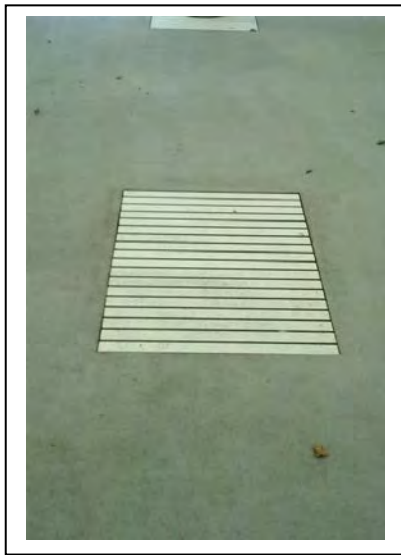
- Bathhouse
 - o Men's Locker Room consists of one (1) hose bibb and three floor drains.



- o Men's Dry Toilet Room consists of one (1) wall hung china lavatory with metering faucet, two (2) urinals with manual flush valves, two (2) wall hung water closets with manual flush valves and one (1) floor drain.



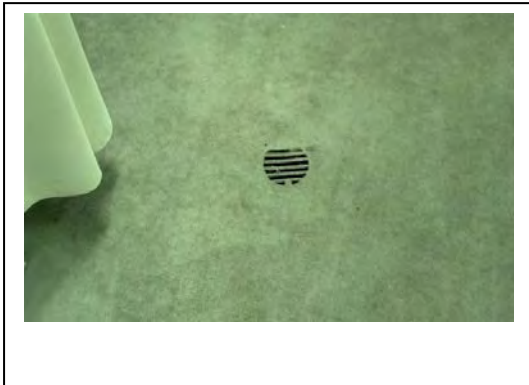
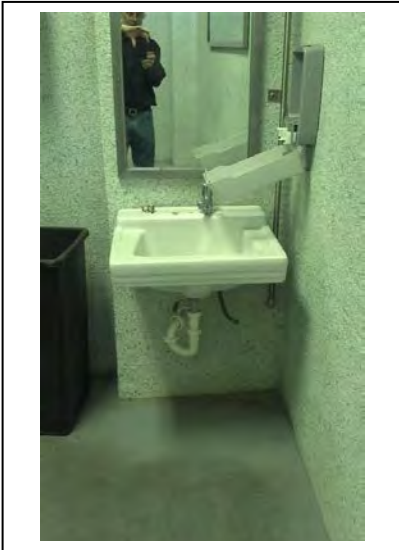
- o Men's Shower Room consists of eight (8) shower valves with heads, two (2) floor drain grate systems.



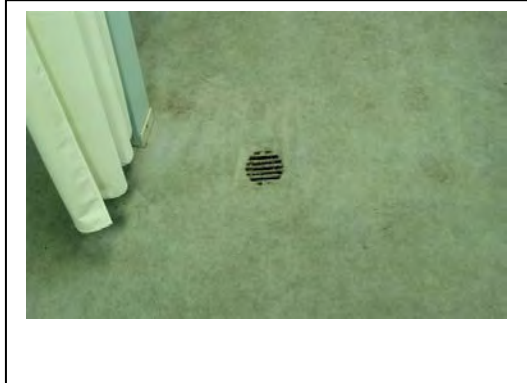
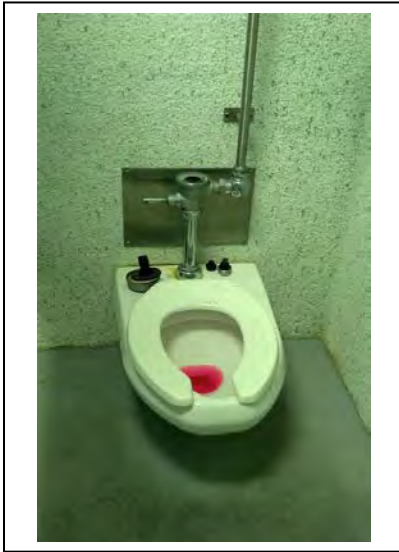
- o Men's Wet Toilet Room consists of one (1) wall hung flush water closet with manual flush valve, one (1) urinal with manual flush valve and one (1) one floor drain.



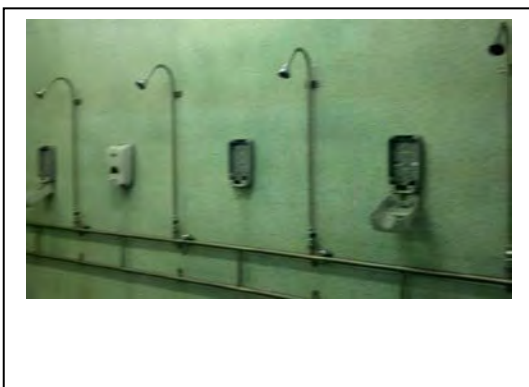
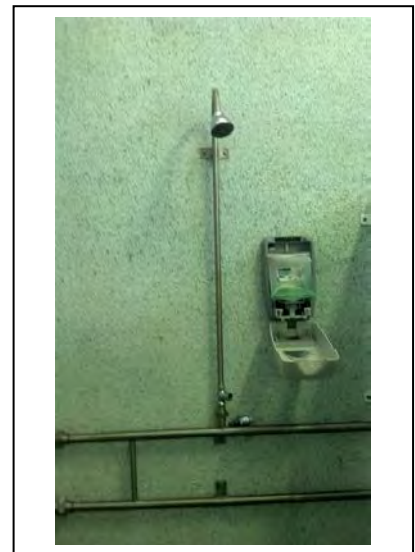
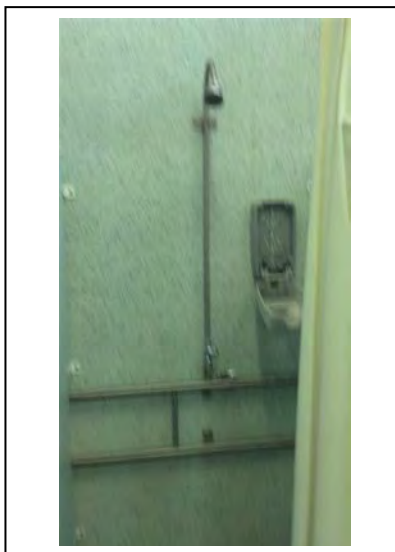
- o Women's Locker Room consists of one (1) hose bibb and three (3) floor drains.
- o Women's Dry Toilet Room consists of one (1) wall hung china lavatory with single handle faucet, two (2) wall hung water closets with manual flush valves and one (1) floor drain.

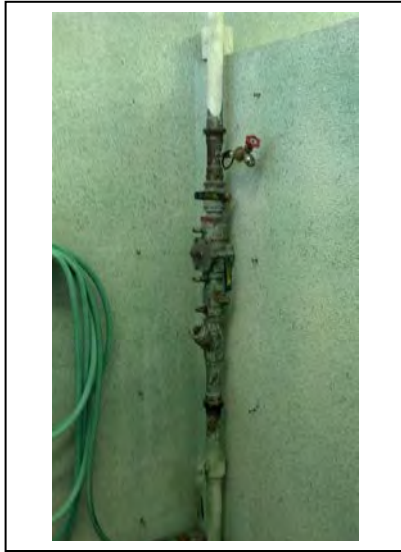


- o Women's Wet Toilet Room consists of one (1) wall hung flush water closet with manual flush valve and one (1) one floor drain.

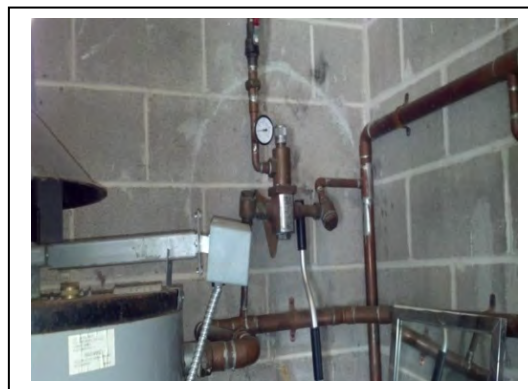


- o Women's Shower Room consists of seven (7) shower valves with heads, seven (7) floor drains and one (1) one 2" RPZ with no meter.



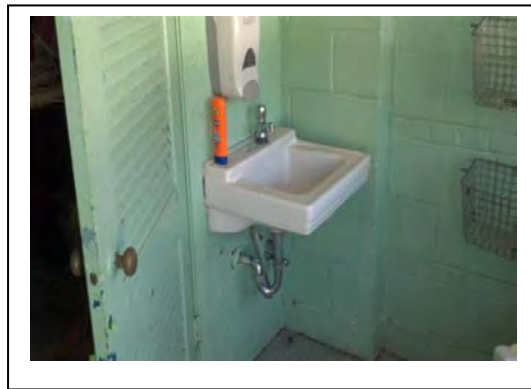
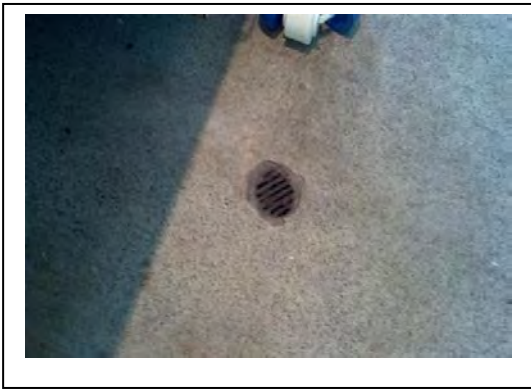


- o Mechanical Room consists of one (1) 199,000 80 gallon gas fired water heater, one (1) expansion tank, one (1) recirculation, two (2) mixing valves and one (1) floor drain.

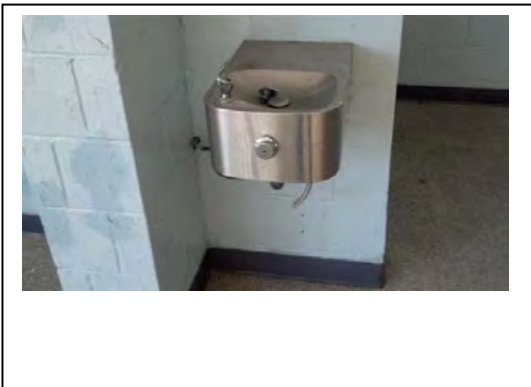




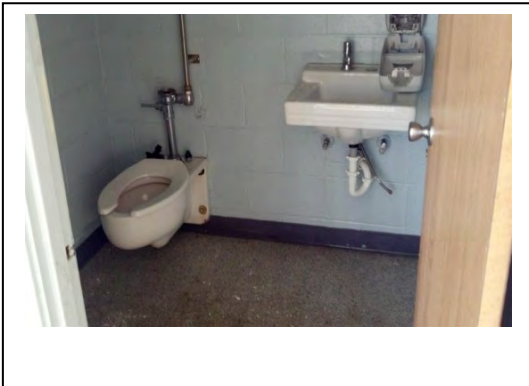
- o Guard Room consists of one (1) wall hung china lavatory with single handle faucet and three (3) floor drains.



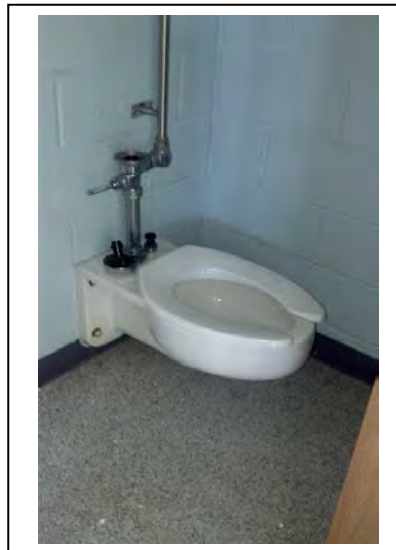
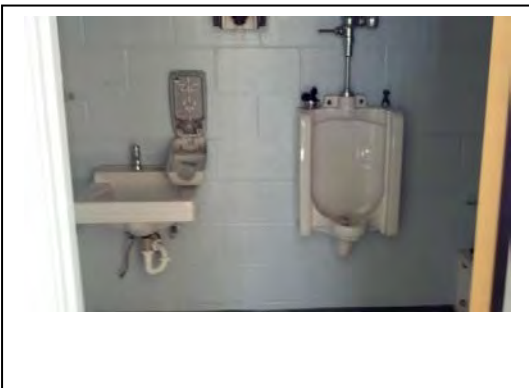
- o Entry consists of one (1) single level drinking fountain.



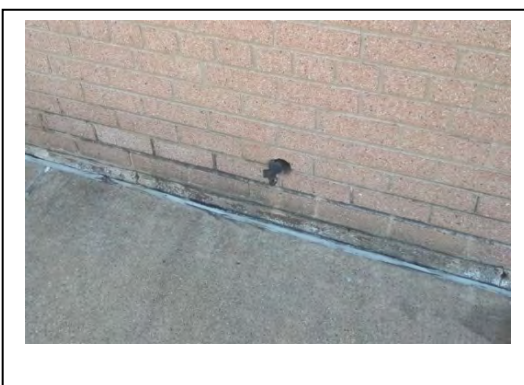
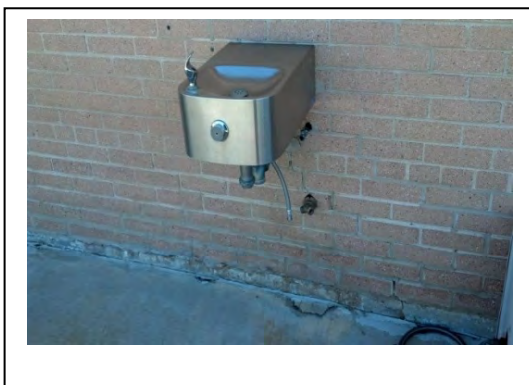
- o Women's Toilet Room consists of one (1) wall hung water closet with manual flush valve, one (1) wall hung china lavatory with metering faucet and one (1) floor drain.



- o Men's Toilet Room consists of one (1) wall hung water closet with manual flush valve, one (1) urinal with manual flush valve, one (1) wall hung china lavatory with metering faucet and one (1) floor drain.

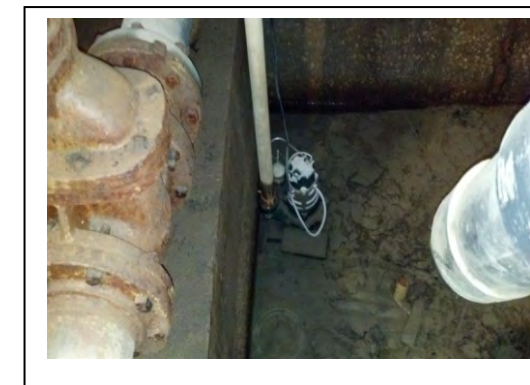
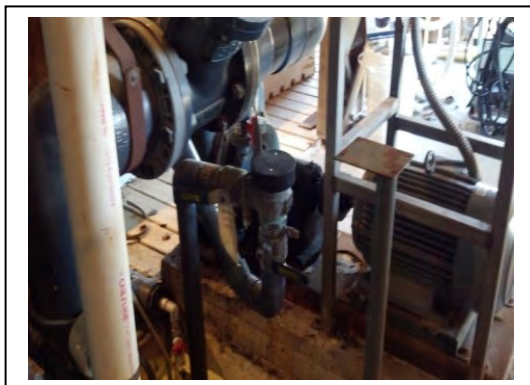


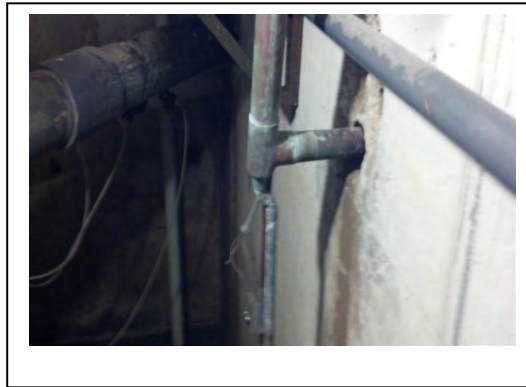
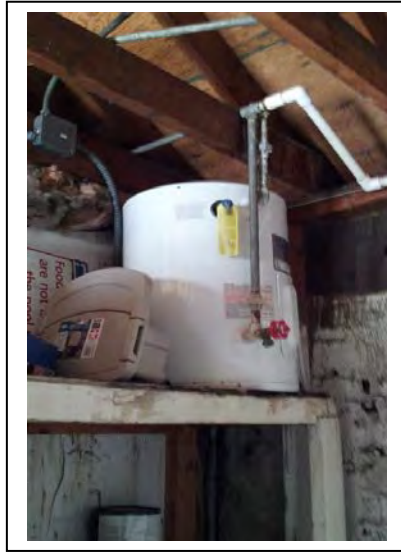
- o Bathhouse Exterior consists of one (1) stainless steel drinking fountain, two (2) hose bibs and one (1) shower tower with drain.





- Equipment Building
 - o Equipment Building consists of one (1) 1-1/2" water service, one (1) double bowl stainless steel sink with single handle faucet, one (1) floor drain, one (1) 15 gallon electric water heater, one (1) sump pump with 2" discharge, one (1) 1-1/2" pool fill and two (2) hose bibs on exterior.



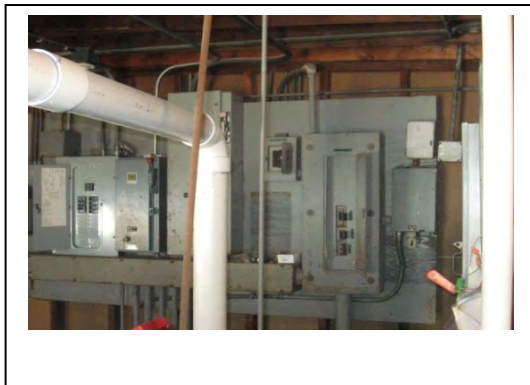


- Building Systems
 - o The building storm drainage system consists of some gutters with downspouts that splash to grade.
 - o The building water distribution system consists of copper and stainless steel piping.
 - o The building waste and vent system consists of cast iron and galvanized piping.
- Condition of Fixtures and Equipment
 - o The majority of the existing fixtures are in fair to good condition.
 - o The water heating system appears to be fair to poor condition.
 - o The waste vent and water piping systems appear to be in good condition and working properly.
- Code Violations
 - o No ADA compliant fixtures.
 - o No expansion tank at water heater in equipment building.
 - o No vacuum breakers on hose bibs.
 - o No hose bibb in equipment building
 - o No water meter for facility
 - o The pool fill is directly connected to the pool equipment.

ELECTRICAL

EXISTING SYSTEM DESCRIPTION

- Filter Building
 - o The existing electrical service meter and C/T are mounted on the wall of the pool Filter room, within main electrical panel located in the Pool Filter Room. The electrical service is 1200 AMPS, 120/208V, 3-phase, 4-Wire. The service is sufficient and all electrical equipment are in good condition except for minor rust spots on some equipment enclosures. The main Panel feeds a single- phase, 100 Amp, 3W panel that is feeding the building on the other side of the pool. The lighting consists of porcelain sockets with incandescent lamps. Existing abandoned energized panel mounted on the wall with exposed wires.
 - o All interior lighting is controlled with wall switches.
 - o Receptacles are present and fed from 20A circuits.
 - o No fire alarm present.
 - o No Exit and EM battery lights present.



- Bathhouse
 - o All lighting and receptacle power in this building is fed from a 100Amp, 120/208V, 1-phase, 3W panel that is fed from the main panel in the Filter Building.
 - o Lighting in the storage area where the panel is located consists of 4' strip light fixtures with (2) T8 lamps.
 - o The rest of the building including the toilets, locker rooms, shower areas for both men and women and corridors consists of 4 ft. wraparound fluorescent ceiling fixtures.
 - o All interior lighting is controlled by wall switches.



- Exterior
 - o Based on visual observation, exterior lighting consists of:
 - Wall mounted incandescent fixtures around the exterior walls of both buildings and (2) fixtures mounted on the roof of the Filter Building pointed to the pool.
 - HID shoe box Headfixtures mounted on 30' poles around the pool.
 - o Half of the poles are controlled from the panel in the filter building and the other half controlled by from the panel in the bathhouse.



- Condition of System
 - o Electrical panels are in average condition in general.
 - o The capacity of the electrical service is adequate.
 - o The interior lighting fixtures are in average to poor condition in both buildings.
 - o Receptacles range from average to good condition
 - Exterior lighting is in average condition but does not meet dark sky friendly code requirements.
 - All receptacles are in poor conditions.
 - Abandoned energized equipment on the wall with exposed wires.
- Code Violations
 - o No EM or Exit lighting.
 - o Receptacles within 6' of water not GFCI protected.
 - o Receptacles outside not GFCI protected & weatherproof.
 - o Open boxes on the walls were noticed.
 - o GFCI receptacles are not present anywhere in both buildings even within 6' from water.
 - o Exit and emergency lighting are not present.
 - o Fire alarm system is not present.

RECOMMENDATIONS – LUFKIN POOL

If the direction taken is to renovate and continue to operate the facility, the following items should be corrected. Each recommendation has been assigned a priority level which determines the importance of the repair/replacement. The priority level assigned to a recommendation is generally based on the following criteria:

<u>Priority</u>	<u>Time Frame</u>	<u>Assessment Criteria</u>
1	Immediate to 1 year	Substantial deterioration; health and human safety deficiencies. Items that will reduce future maintenance. Repairs necessary to prevent further deterioration and/or failure.
2	Within 3 years	Repairs that will be required in the near future; improvements that will reduce future maintenance; Code compliance items.
3	Within 5 years	Improvements that will need to be made to maintain good working order. Code compliance items. Improvements that will improve the performance of the facility.
4	Within 10 years	Improvements that will need to be made but can be held off for a period of time. Ongoing upkeep.
5	Indefinite time frame (beyond 10 years)	Non-priority items that would be an enhancement to the facility. Long range replacement items.

	<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
1.	Remove existing pool liner and repair deteriorating pool concrete structure. (assume 50% of wall/floor surface, 4,030 sq. ft.)	1	\$160,000 to \$320,000
2.	Replace existing PVC pool liner with new PVC pool liner and all new compressions strips.	1	\$80,000 to \$90,000
3.	Replace existing dive stand with hand rails that extend to the pools edge.	2	\$10,000 to \$12,000
4.	Replace existing decks and provide new deck drainage (based on 10,740 sq. ft.)	2	\$170,000 to \$214,000
5.	Replace existing vacuum DE filter with a new pressure DE filter, surge tank and all associated valves, piping and controls. Provide DE separation prior to sewer discharge.	2	\$200,000 to \$225,000
6.	Provide depth markers on the perimeter enclosure fence	1	\$500 to \$600
7.	Provide containment pallet for acid storage	1	\$500 to \$600
8.	Provide containment pallet for chlorine storage	1	\$500 to \$600
9.	Provide a thermometer on the blended water supply to the pool	1	\$400 to \$500

10.	Provide external temperature limiting device, interlock with pool heater	1	\$400 to \$500
11.	Replace existing main drains and existing main drain piping to mechanical room	2	\$30,000 to \$40,000
12.	Replace safety surface in wet play area (based on 230 sq. ft.)	2	\$8,000 to \$9,000
13.	Replace existing perimeter fencing (based on 580 linear feet)	2	\$24,000 to \$26,000
14.	Replace interior fencing (based on 170 linear feet)	2	\$7,000 to \$9,000

Building and Site

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
Parking Lot		
• Repair cracks, sealcoat and restripe	2	\$4,000 to \$4,500
• Replace damaged or missing wheel stops	2	\$1,000 to \$1,500
• Replace concrete apron in R.O.W. (600 SF)	2	\$8,000 to \$10,000
Sidewalks		
• Replace damaged and settled portions of walk (allow 200 SF)	1	\$2,000 to \$3,000
Bathhouse		
• Interior		
o Lobby		
▪ Replace floor tile. Add floor tile where missing. (allow 300 SF)	2	\$2,500 to \$3,500
▪ Remove flaking and peeling paint and repaint walls.	1	\$1,000 to \$2,000
o Men's and Women's Locker Rooms		
▪ Remove flaking and peeling paint at ceiling. Repair water damaged area at ceiling. Repaint.	1	\$1,000 to \$2,000
▪ Clean walls at showers.	1	\$500 to \$800
o Guard Area		
▪ Replace floor tile (allow 150 SF)	2	\$1,000 to \$1,500
▪ Remove flaking and peeling paint and repaint walls and doors and repaint.	1	\$800 to \$1,000
o Storage Area		
▪ Prepare and repaint floor. (allow 150 SF)	1	\$500 to \$800
▪ Make structural repair above south window and repaint as required. (allowance)	1	\$2,000 to \$2,500
▪ Refinish Walls	4	\$3,000 to \$5,000

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
o Exterior		
▪ Repair / replace damaged brick and mortar. Significant repairs needed at southwest corner of building, both on the west wall and the south wall. Should confirm structural stability of wall prior to making repairs to prevent further deterioration.	1	\$8,000 to \$12,000
▪ Replace all exterior hollow metal doors and frames with new galvanized and painted hollow metal. (assume six doors) Consideration should be given to FRP doors with aluminum frames.	2	\$10,000 to \$15,000
▪ Replace west facing windows at guard office and south clerestory window above storage room. Option to wrap exterior of windows and frames with pre-finished aluminum.	2	\$3,000 to \$4,000
▪ Repair soffits by replacing damaged areas and removing flaking and peeling paint. (allow 20 LF)	2	\$800 to \$1,000
▪ Repaint all wood.	4	\$3,000 to \$4,000
▪ Reinstall downspouts at southwest corner and northeast corner of building.	1	By staff (NIC)
▪ Repair damaged wood slats at east wall and remove flaking and peeling paint and repaint wood.	1	\$1,500 to \$3,000
▪ Replace Roof	4	\$35,000 to \$40,000
▪ Tuckpoint	5	\$5,000 to \$10,000
o Filter Building		
▪ Lower Level – OSHA confined space provide required stair.	1	?
▪ Exterior Walls – Repair / replace damaged wood. (Assume 100 SF)	1	\$2,000 to \$2,500
▪ Paint exterior.	1	\$2,000 to \$2,500

- | | | |
|--|---|----------------------|
| ▪ Soffits and Fascias – repair/replace damaged wood. (assume 30 LF) | 1 | \$1,200 to \$1,800 |
| ▪ Roof – Replace existing shingles. | 1 | \$3,000 to \$4,000 |
| o Accessibility Improvements | | |
| ▪ We referenced a report completed by ACT Services which specifically identified items to complete to comply with the Accessibility codes. | 1 | \$30,000 to \$50,000 |

MECHANICAL

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
<u>Filter Building</u>		
• Provide code required combustion air openings for unit heater	1	\$900 to \$1,000
• Replace corroded ductwork.	1	\$500 to \$600
• Cap opening in roof.	1	\$500 to \$600
• Replace pool heater.	3	\$6,500 to \$7,000

Bathhouse

- | | | |
|--|---|------------------|
| • Replace ceiling grills and corroded roof vents | 1 | \$900 to \$1,000 |
|--|---|------------------|

ELECTRICAL

- | | | |
|--|---|----------------------|
| • Change the light fixtures in the Filter room to gasketed fluorescent surface mounted fixtures. | 2 | \$2,000 to \$2,500 |
| • Provide GFCI receptacles. | 2 | \$1,500 to \$2,000 |
| • Change the lighting in the filter room to gasketed fluorescent fixtures. Clean, re-lamp all the 1'X4' wraparound light fixtures. | 2 | \$3,000 to \$3,500 |
| • Provide emergency and exit lighting. | 3 | \$5,000 to \$5,500 |
| • Install new addressable Fire Alarm System. | 3 | \$15,000 to \$16,000 |

PLUMBING

- | | | |
|---|---|----------------------|
| • Provide ADA compliant fixtures | 1 | \$40,000 to \$45,000 |
| • Provide Expansion tanks on water heater. | 2 | \$500 to \$700 |
| • Provide vacuum breathers on hose bibs. | 3 | \$150 to \$300 |
| • Provide hose bibs in Filter building. | 3 | \$150 to \$ 300 |
| • Remove pool fill so it is not directly connected to pool equipment. | 3 | \$500 to \$700 |

NOTES

1. Pool liner would need to be removed and entire pool walls and floor inspected to determine extent of repairs. For purposes of this report we have assumed 50% of the wall/floor surface will require some type of repair.
2. Pool structural repairs may range from epoxy injection of cracks to complete removal of deteriorated concrete, installation of stainless steel reinforcement, application of bonding agent and regrouting.
3. If the choice is made not to replace the existing vacuum DE filter, continual repairs will be required as is the current situation.
4. Perimeter and interior fencing would be replaced in conjunction with deck replacement.
5. It is recognized that the Consultant has no control over the cost of labor, materials or the competitive bidding market. Accordingly, the Consultant cannot warrant that bids or negotiated prices will not vary from the opinion of probable cost presented in this report.
6. Costs are estimated based on 2013 and work being contracted to qualified companies paying prevailing wage rates. Costs are rough estimates to be used for budgeting purposes only and actual costs will vary and can be better defined at time work is performed.
7. Accessibility Improvements reference the ACT Services Report completed in 2012. We have included an allowance to complete the recommended upgrades and acknowledge there may be some overlap with other recommended improvements and associated costs. If and when this work proceeds, actual scope and costs can be better defined at that time.

JEFFERSON POOL OBSERVATIONS – 331 N. Harvard Avenue

GENERAL

Jefferson Pool was built in 1967. The property is located on the south side of Harvard Avenue in a primarily residential neighborhood. The site is an irregular shape, is approximately 3 acres and is +/- 320 feet in the east west direction and +/- 370 feet in the north south direction. The pool is situated on the south side of the property adjacent to the railroad to its south. The bathhouse extends in the east west direction and sits north of the pool and is approximately 35 feet wide by 110 feet long. There is a drop off lane north of the bathhouse and parking at the north end of the site.

OBSERVATIONS / ASSESSMENT

The following are observations and discussions regarding the condition and function of the pool structure, pool equipment and decks. Reference to violations per the current Illinois Department of Public Health Code (IDPH) should not be construed as grounds for pool closure because the facility was built and operates under a previous code.

Main Pool

1. The pool structure has significant deterioration. The pool walls and floor have cracking and spalling throughout the pool structure. Hollow spots were found in the pool structure. Refer to photos #19 and # 20.



Photo # 19



Photo # 20

2. The painted finish on the pool is in very poor condition. Paint is peeling and cracked. Staff indicated that the pool has been repainted over the years without ever removing the old paint. Refer to photo #21.

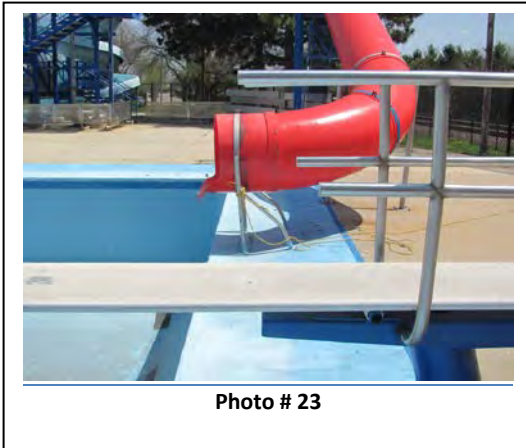


3. Staff was questioned about pool water loss. Staff indicated that the pool is losing 2" of water in less than 24 hours.
4. The pool utilizes floor inlets which run down the center of the pool. This design does not provide an even distribution of filtered chlorinated water. Refer to photo #22. *This is a violation of current IDPH code requirements: Section 820.210.f.2.- E) Where floor inlets are used, inlets shall be uniformly spaced at a distance of no greater than 20 feet apart, and rows of inlets shall be within 15 feet of each side wall. Floor inlets shall be flush with the pool floor and shall include a diffuser plate to evenly distribute the flow in all directions.*



5. Depth markers on the walls are below water level. Deck markers are spaced more than 25'-0" apart. Some spacing approaches 60'-0". Some of the depth markers are faded to the point that they cannot be read. *This is a violation of current IDPH code requirements: Section 820.200.i. Depth Markers – 1) The water depth shall be marked at or above the water surface on the wall of the pool and on the edge of the deck next to the pool so as to be readable by persons entering or in the pool. Where depth markers cannot be placed on the walls at or above the water level such that at least 50% of the marking is above water level, they shall be placed on the pool wall as high as practicable and also on the fencing or pool enclosure so as to be plainly visible to persons in the pool. Depth markings shall be provided at the shallow and deep ends of the pool, the transition point, and the point of maximum depth, and shall be spaced at not more than 25 foot intervals measured peripherally, except that depth markings are not required at a zero-depth edge.*
6. The pool access ramp allows access under the ramp. This creates a hazardous situation for patrons. *This is a violation of current IDPH code requirements: Section 820.200.e. Obstruction - An obstruction creating a safety hazard shall not extend into or above the pool, or shall not protrude from the floor of the pool. Certified safety covers for suction outlets shall not protrude more than two inches from the floor or walls of the pool.*
7. The stainless steel landing on the access ramp protrudes and has very sharp edges, which is a hazard for patrons.
8. The safety line in the pool, at the transition to the deep end, is not set back 12" from the transition point. *This is a violation of current IDPH code requirements: Section 820.200.g Transition Point - Transition points shall be marked with a stripe on the pool floor having a width of at least 4 inches and a color that contrasts with that of the floor, and with a buoyed safety rope with colored buoys, installed at least one foot on the shallow side of the transition point. In other pools having adjoining shallow and deep areas, a safety rope with colored buoys shall be installed where the water depth reaches 5 feet.*
9. The perimeter gutter has settled. Skimming is not uniform.
10. Staff was questioned about the gutter flooding. Staff indicated that the gutter does flood in certain areas when the pool is in use (low spots). *This is a violation of current IDPH code requirements: Section 820.210.f.2.4.B.- vi) Provide for the removal of all surface debris skimmed from the pool; ix) Be provided with drains and piping that will not allow the overflow channel to become flooded when the pool is in use;*
11. The body flume slide tower is in fair condition. Some corrosion is present.
12. The body flume slide is faded and requires a new gelcoat finish. Some hairline stress cracks are present.

13. The stairs leading to the top of the slide tower have a 3'-7 1/2" clear width. *This is a violation of current IDPH code requirements: Section 820.250.b Water Slides – 2) Walkways. Walkways or stairs leading to the top of water slides shall be slip-resistant, rigid, and have a 4 feet minimum clear width.*
14. The hand rails on the dive stand do not extend to the pool wall. Refer to photo #23. *This is a violation of current IDPH code requirements: Section 820.200.m Diving Area – 1) Handrails shall be provided at all steps and ladders leading to diving boards, except for those ladders set at 15° or less from the vertical. Platforms and diving boards that are one meter or higher shall be protected with guard railings. One meter diving board guard rails shall be at least 30 inches above the diving board and extend to the pool water's edge. All platforms or diving boards higher than one meter shall have guard rails that are at least 36 inches above the diving board or platform and extend to the pool water's edge. Three-meter platforms and boards shall have a side rail barrier.*



15. The pool decks do not have adequate deck drainage. Water sheets in excess of 15'-0". *This is a violation of current IDPH code requirements: Section 820.200.j Walkways and Deck Areas – 6) Except for linear drains, deck drains shall be located so that not more than 900 square feet of deck area is tributary to each drain, and deck drains shall not be more than 30 feet apart. Deck drains shall be located so that water does not drain more than 15 feet in any one direction. Where deck widths are 15 feet or less, deck drains are not required, provided that the deck drains to the ground surface. The deck drains shall not be connected to the pool water recirculation system. Pools designed to operate where the pool water level is at the deck level may be allowed to drain the first 4 feet of deck into the pool perimeter overflow system. Up to 10 feet of the deck adjacent to a zero-depth edge may be drained into the pool.*
16. The decks are in fair to poor condition. There are areas where the decks are cracking and settlement is occurring.

Wading Pool

1. The pool structure has some cracking.
2. Staff was questioned about water loss and indicated that the wading pool is losing a lot of water.
3. The pool finish is faded and cracking.
4. The gates to the wading pool are not self-closing and self-latching (they were at one time). *This is a violation of current IDPH code requirements: Section 820.200.a Enclosures – 2) Each entrance into the pool enclosure shall be equipped with a door or gate that is self-closing and self-latching. This requirement is not necessary when people enter the pool area through the bathhouse and lifeguards are provided in the pool area. Doors and gates at all entrances to the pool enclosure must be equipped with hardware that permits secure locking of the entrance.*

Main Pool Mechanical

1. A vacuum DE filter is used for filtration. When the filter is backwashed, a pump is used to pump out the spent DE. The discharge goes directly to sewer without passing through a separation pit. *This is a violation of current IDPH code requirements: Section 820.210.h Filtration – 10) Prior to disposal, wash or backwash water from diatomaceous earth filters shall be passed through a separation tank designed for removal of suspended diatomaceous earth and solids.*
2. There is no thermometer on the blended water supply to the pool. *This is a violation of current IDPH code requirements: Section 820.210.c Water Heater. 3) Thermometers shall be provided in the piping to check the temperature of the water returning from the pool and the temperature of the blended water returning to the pool.*
3. The filter appears to be in fair to good condition and working properly. Elements on these types of filters need to be replaced periodically.
4. An external temperature limiting device is not provided to prevent the introduction of water in excess of 115 degrees Fahrenheit to the pool. *This is a violation of current IDPH code requirements: Section 820.210.c Water Heater. 4) The design of the water heating system shall prevent the introduction of water in excess of 115° F. to the pool.*
5. There is minimal surge capacity in the vacuum DE filter. It does not meet the current IDPH code requirements. *Section 820.210.f.4. C) Surge Capacity. Perimeter overflow systems shall be provided with a surge capacity of at least 0.6 gallon per square foot of pool water surface area. Surge capacity shall be provided either in a vacuum filter tank, a surge tank, or combination thereof. Valving shall be provided to maintain the proper operating water level in the pool.*

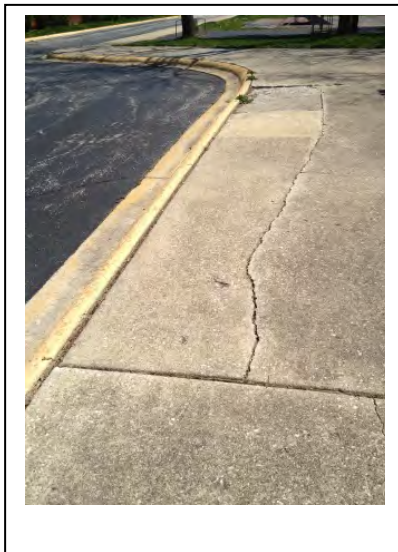
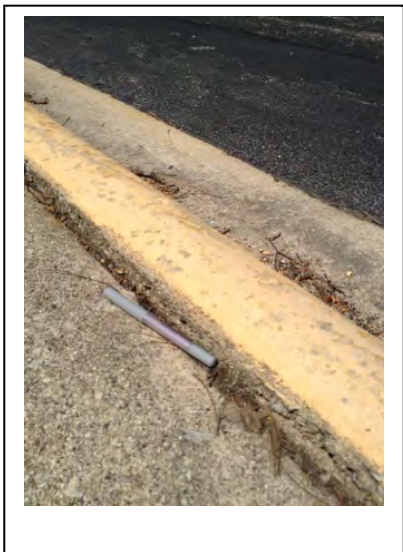
Wading Pool Mechanical

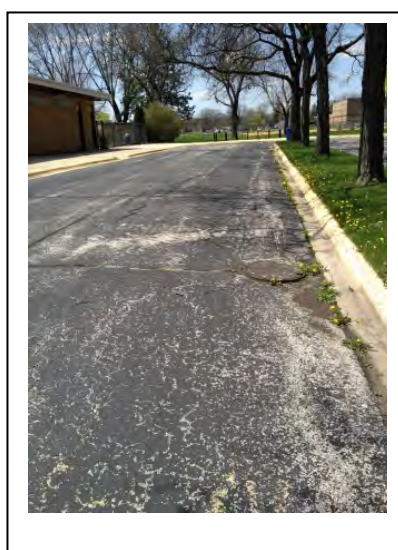
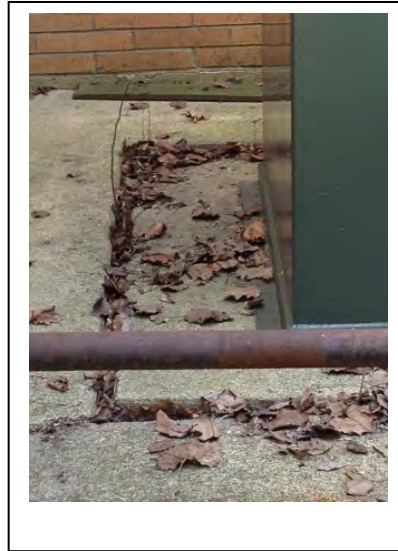
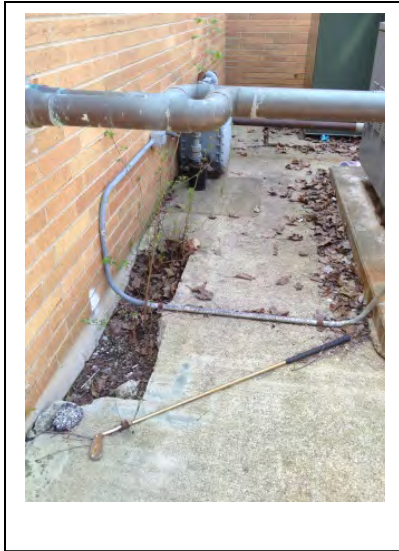
1. The mechanical system is in fair to good condition and operating properly. The valves are corroded.
2. There is no containment for the muriatic acid, which creates a hazardous situation if a leak or a spill occurred.

SITE

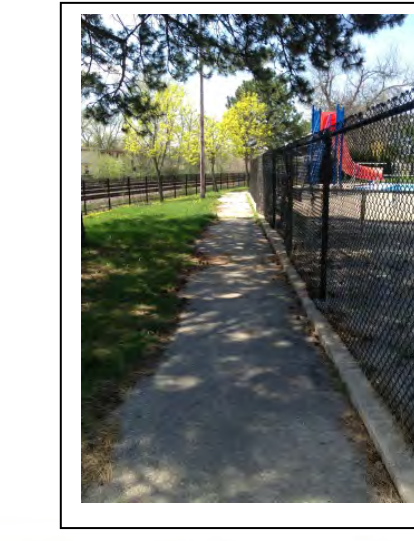
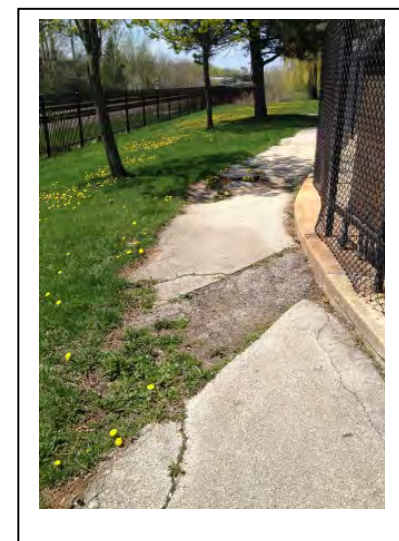
We performed a cursory review of the site outside the pool zone.

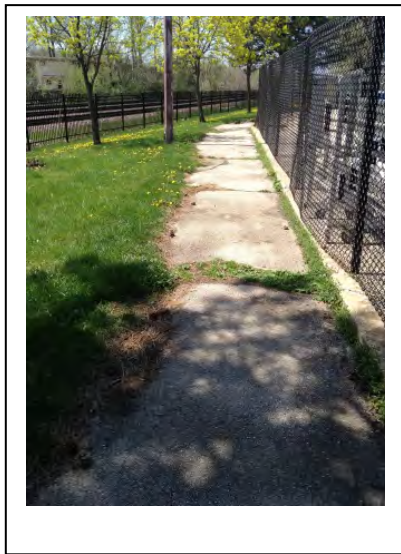
- Parking Lot
 - o The parking lot and drives are asphalt.
 - o The drive is in fair condition and the parking lot in fair to poor condition with many areas exhibiting significant alligator cracking and in some instances missing asphalt.
 - o Lot should be resurfaced in the near future to avoid further, more significant deterioration.
 - o The drive is in fair condition and should have cracks repaired and be sealcoated.
 - o Concrete curb – in fair condition.
 - o Concrete walk – walk in front of building is in poor condition with significant cracking and settling.
 - o Concrete slab under pool heater has settled. Missing concrete in the enclosure.





- o Perimeter walk – walk along outside of pool fence is asphalt and in poor condition exhibiting settling, weed growth and overall deterioration.





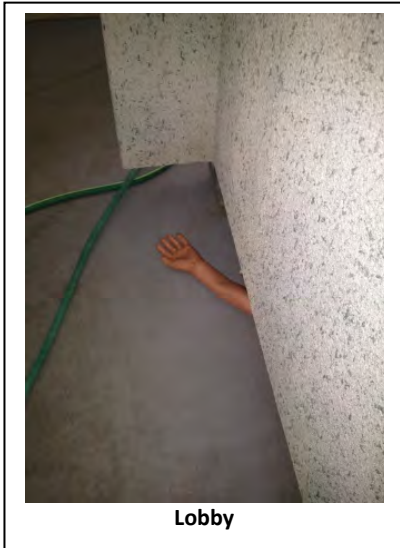
- o Pool Fence – chain link fence in fair condition.



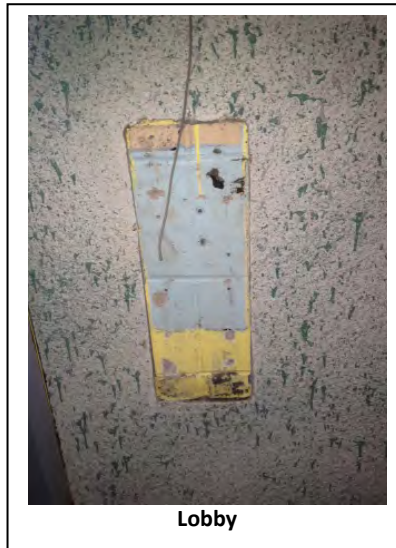
BUILDINGS

- Bathhouse - Interior
 - o The Bathhouse consists of a lobby / admissions area, central guard / staff area and Men's and Women's locker rooms.
 - o There is a connected filter room on the east end of the building and concessions on the west end of the building.
 - o The construction consists of concrete slab on grade load bearing brick and block composite exterior walls and concrete block interior walls.
 - o Metal roof panels with built up roofing.

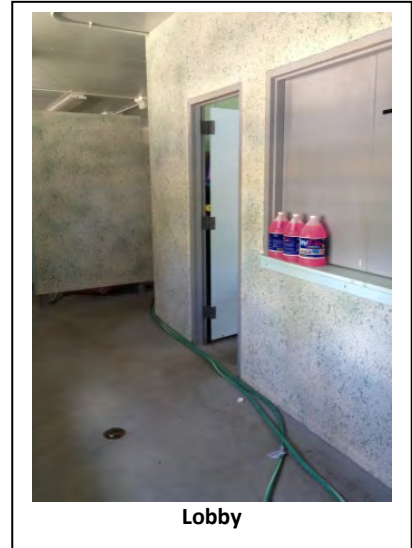
- Lobby
 - o Floor – epoxy in fair condition.
 - o Walls – painted plaster in fair to good condition.
 - o Ceiling – painted metal panels in generally good condition.



Lobby

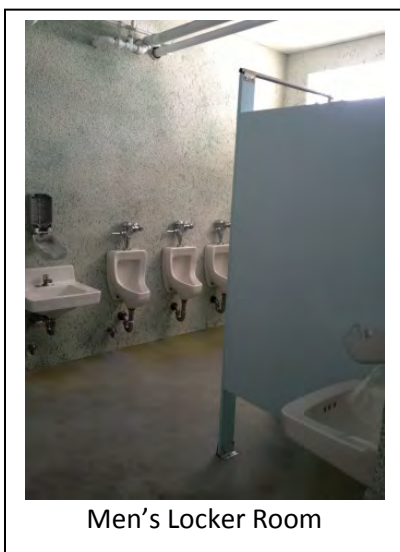


Lobby

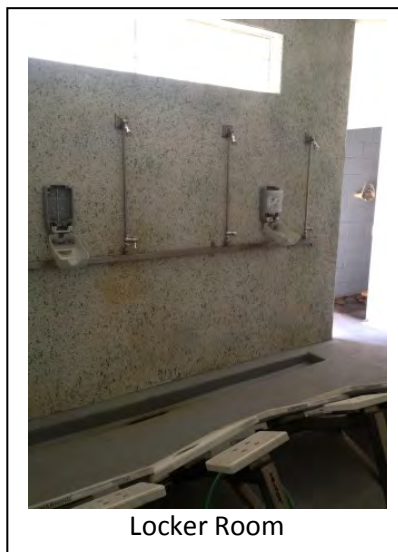


Lobby

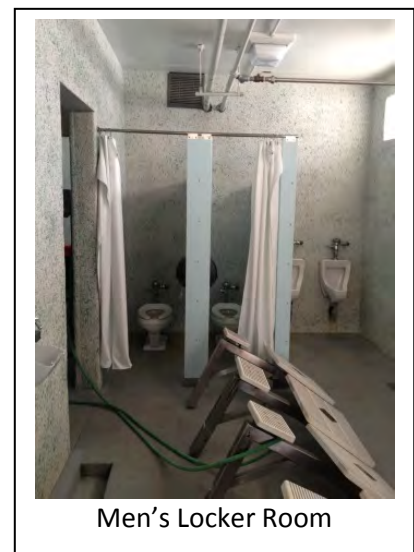
- Men's Locker Room
 - o Floors – epoxy in fair condition.
 - o Walls – painted plaster in fair to good condition.
 - o Ceiling – painted metal panels in generally good condition.
- Women's Locker Room
 - o Floors – epoxy in fair condition.
 - o Walls – painted plaster in fair to good condition.
 - o Ceiling – painted metal panels in generally good condition.



Men's Locker Room



Locker Room



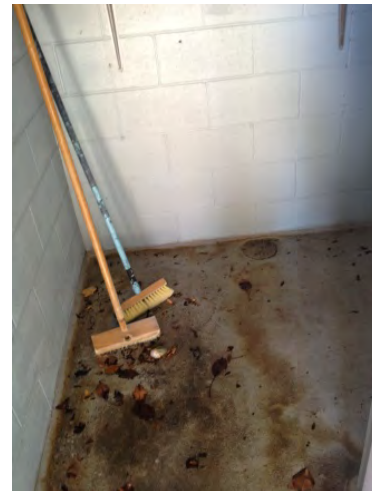
Men's Locker Room



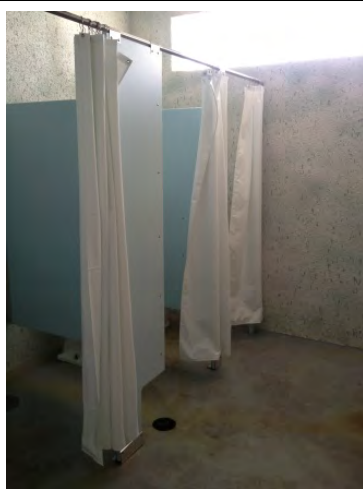
Locker Room



Locker Room



Janitor Closet



Locker Room



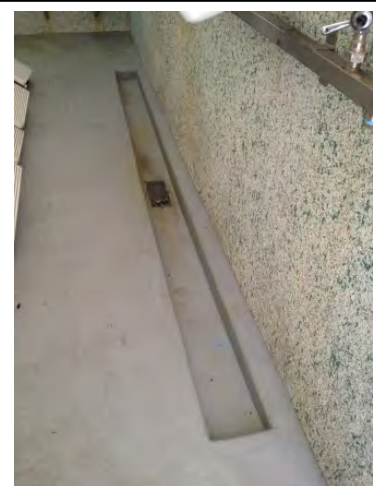
Locker Room



Locker Room

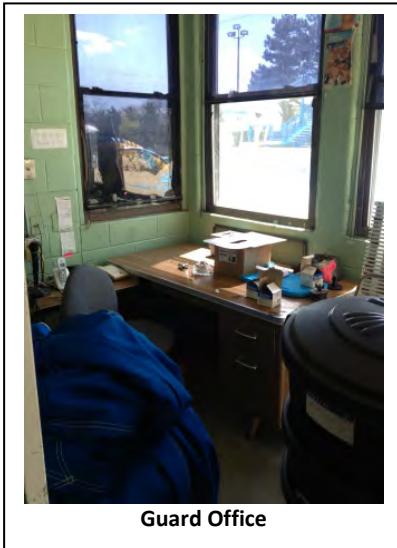


Lobby



Shower

- Guard / Staff Area
 - o Floors – painted concrete in fair condition.
 - o Walls – painted concrete block in generally good condition.
 - o Ceiling – painted metal panels in good condition.



Guard Office



Guard Office

- Filtration Room
 - o Floor – exposed concrete in fair to poor condition.
 - o Walls – exposed concrete block in good condition.
 - o Ceiling – painted metal panels in fair to poor condition exhibiting areas of rust / deterioration.
 - o Door – significant rust.



Mechanical Room - Door jamb

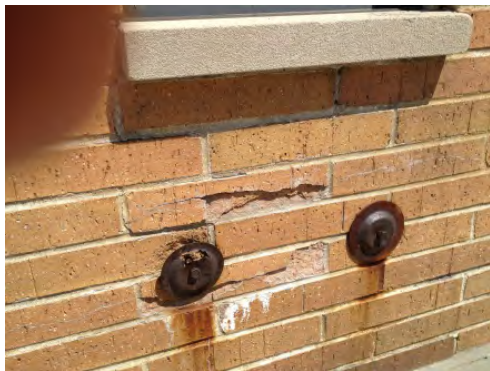


Mechanical Room – Door jamb



Mechanical Room Ceiling

- Bathhouse – Exterior
 - o Walls
 - Face Brick
 - South wall has spalling brick, loose / missing mortar (10% to 20% of wall surface).
 - East wall – good condition except for two small holes.
 - North wall – good condition.
 - o Soffits – painted roof plank – rusting at south wall, otherwise in good condition. Some flaking paint along north side of building.
 - o Fascia – painted metal.
 - South side in fair to poor condition. One section has been replaced and is a different color. Soffit is dented and sagging and has rusted fasteners.
 - Balance of fascia is in fair to good condition.



South Wall



South Wall



South Wall



South Wall Door Frame



South Wall Door Frame



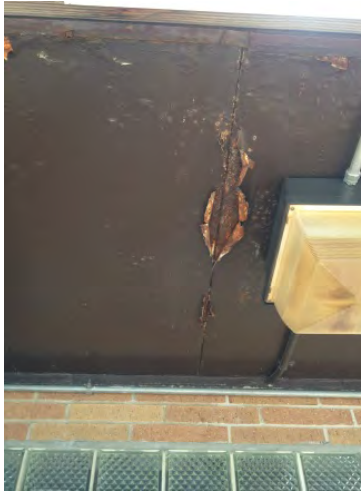
South Wall Door Frame



South Soffit



South Soffit



South Soffit



South Fascia



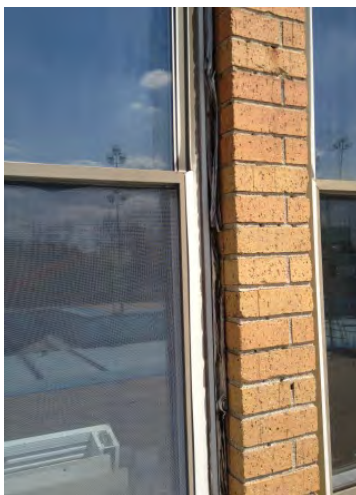
South Fascia



South Fascia



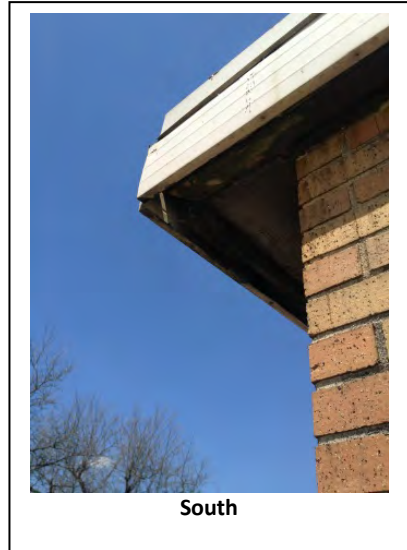
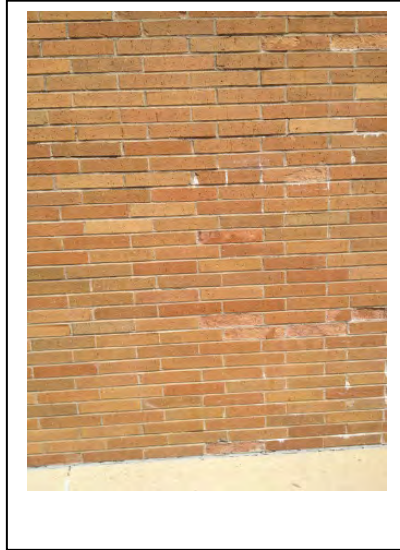
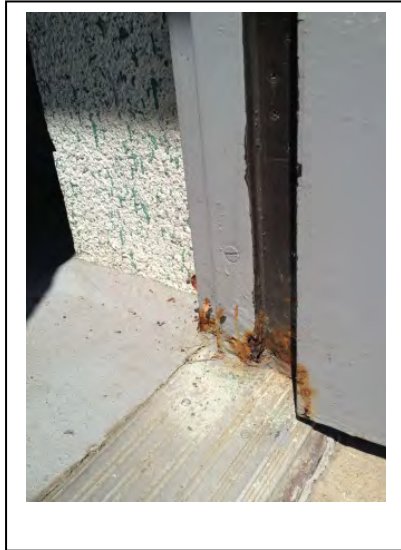
South Window Sill



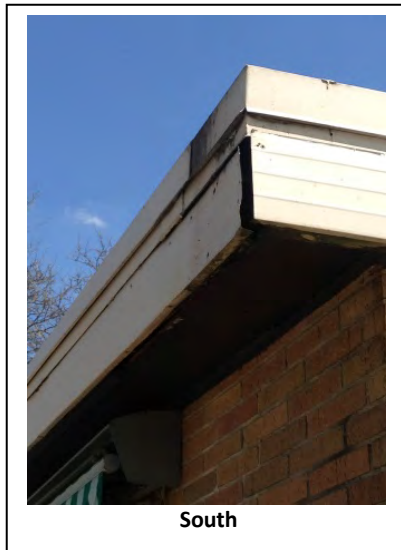
South Window



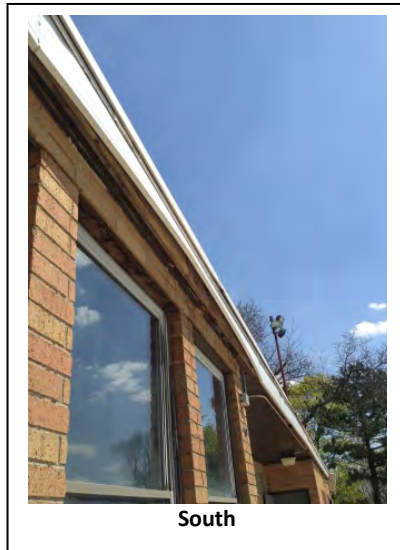
South Wall



South



South

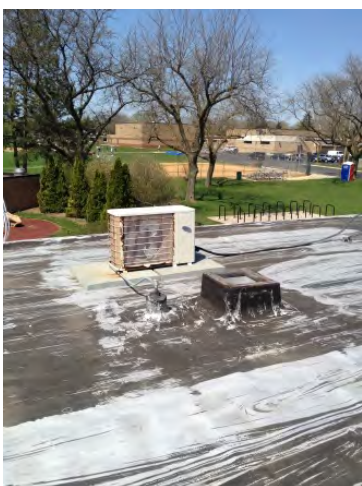
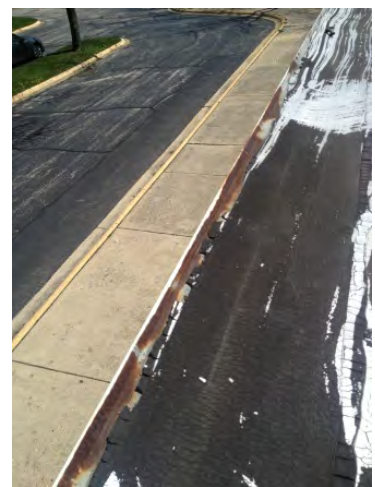


South

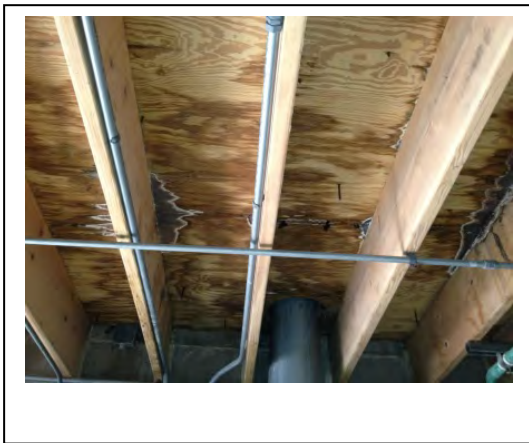
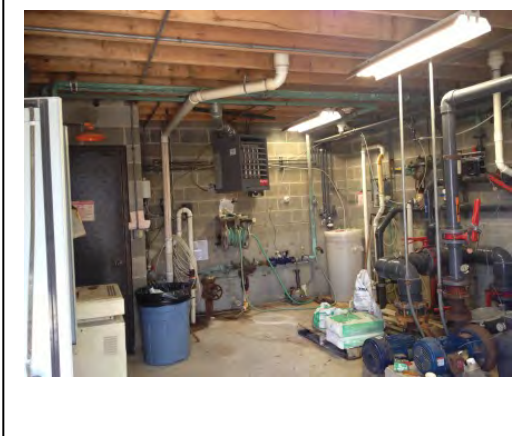


East

- o Roof
 - Asphalt painted silver in poor condition

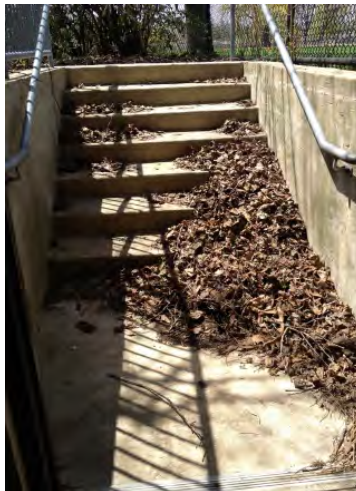


- New Filter Building at Tot Pool
 - o Interior
 - Exposed concrete slab on grade – good condition.
 - Unpainted concrete block walls – good condition.
 - Exposed Wood Roof – good condition.
 - Water stained which is indicative of leak.



o Exterior

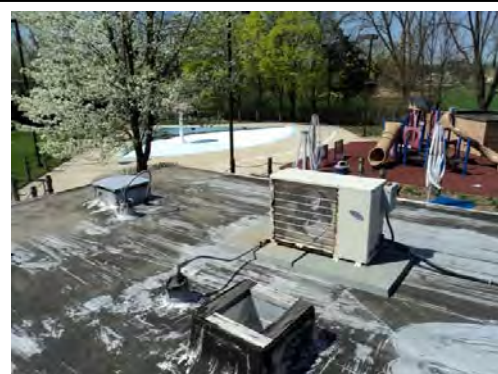
- Brick Walls – good condition.
- Aluminum Coping – good condition.
- Roof – rubber membrane – good condition.
 - Missing vent caps and drain cover – should be replaced. Much debris – should be cleaned to prevent deterioration.
- Door – FRP with aluminum frame – good condition.
- Exterior stair – good condition.
 - Evidence drain at base of stair is clogged, most likely due to leaves. Should be cleaned and checked to be sure it drains properly to avoid water back-up into floor of building.
- Stair railing – galvanized steel in good condition – showing signs of minor rusting.

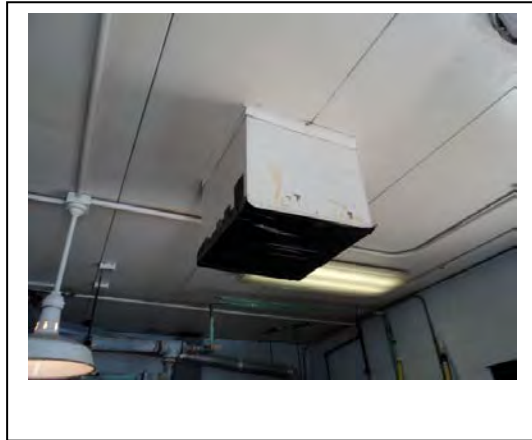
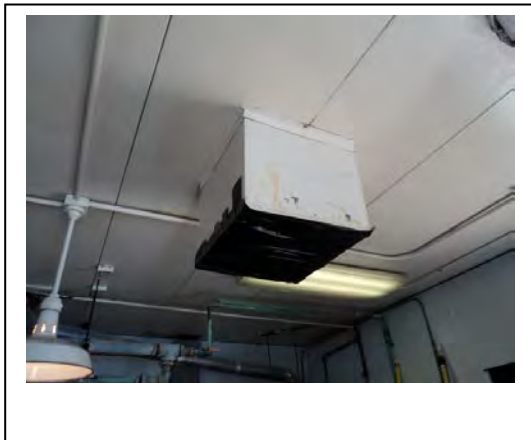
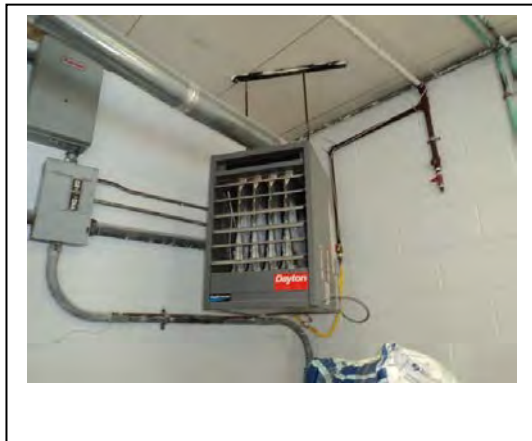
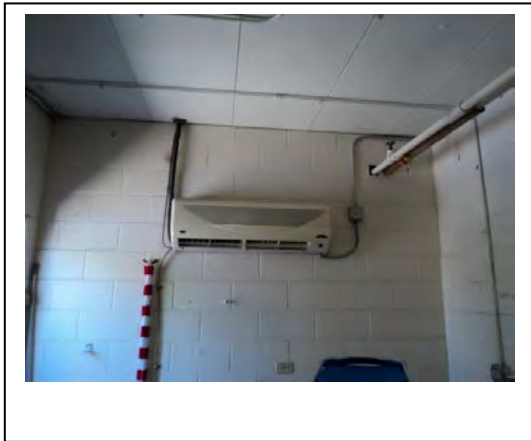
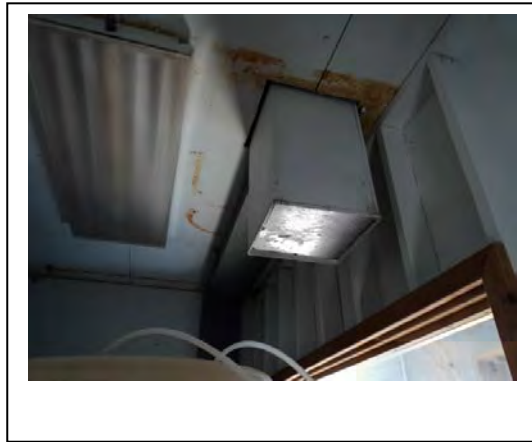
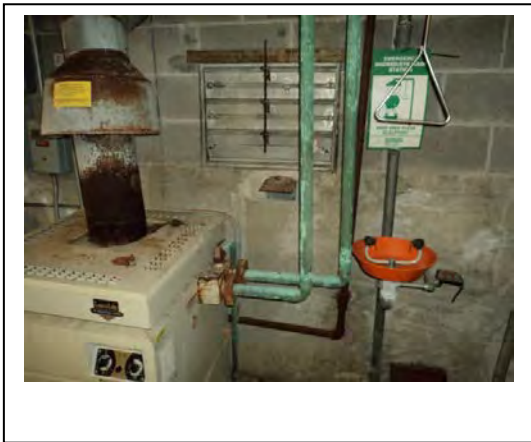


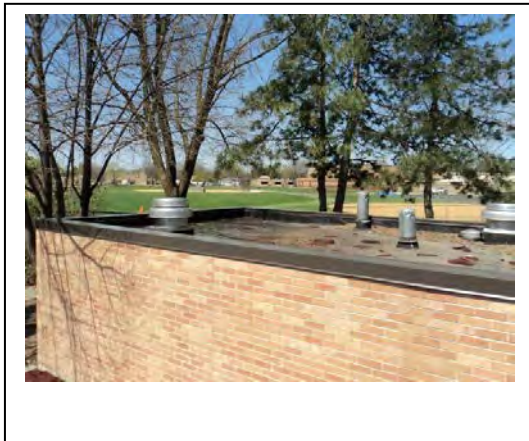
MECHANICAL

EXISTING SYSTEM DESCRIPTION

- Bathhouse /Filter Building
 - o Gas fired unit heater in pool equipment room with wall mounted thermostat.
 - o Pool heater mounted at grade outside of pool equipment room.
 - o Aluminum exhaust and intake ductwork in chemical storage room routed down to floor and connected to a rooftop exhaust fan.
 - o Supply hood for pool equipment room on roof, duct capped below with plastic.
 - o Sidewall exhaust grilles in toilets, janitor closet and shower rooms, connected to ductwork up to exhaust fans on roof.
 - o Supply ductwork routed tight to bottom of ceiling with supply registers, connected to intake hoods on roof.
 - o Wall mounted ac unit serving concessions, associated condensing unit mounted on roof.
 - o Roof mounted exhaust fan serving private toilet rooms adjacent to concessions.
- Spray Pad Filter Building
 - o Pool heater mounted in room on concrete pad.
 - o Electric unit heater suspended from ceiling.
 - o High and low combustion air dampers for pool heater mounted in wall.
 - o Gas fired unit heater with wall mounted thermostat, vented thru roof.
 - o Coated exhaust ductwork in chemical storage room, door grille for intake.
 - o Roof mounted exhaust fans.







Condition of Equipment

- Bathhouse /Filter Building
 - o Gas fired unit heater in pool equipment room is in good condition.
 - o Pool heater mounted at grade outside of pool equipment room is in poor condition.
 - o Aluminum exhaust and intake ductwork in chemical storage room has some corrosion, however is in fair condition.
 - o Excessive corrosion on flue piping and water heater in equipment room.
 - o Supply hoods and exhaust fans on roof appear to be in fair to poor condition.
 - o Exhaust fan serving the concession room is removed and roof opening is open to the weather, see photos
 - o Wall mounted ac unit serving concessions appears to be in good condition. The associated condensing unit is in fair to poor condition. It is reported that this system is not used.
- Spray Pad Filter Building
 - o Pool heater flue badly corroded as are most metal surfaces in the room.
 - o New electric unit heater is in good condition.
 - o Gas fired unit heater is in good condition. Staff reported it will soon be removed to save from corrosion.
 - o Coated exhaust ductwork in chemical storage room is in fair condition, door grille for intake corroded.
 - o Roof mounted exhaust fans are in fair condition.
 - o Vent caps from pool heater and unit heater have been removed and roof openings are exposed to weather, see photos.

Code Violations

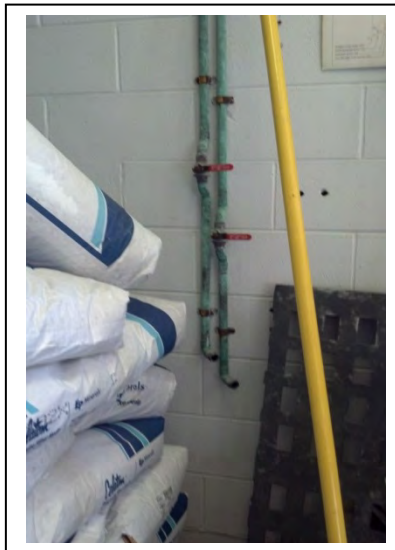
- Bathhouse /Filter Building
 - o No combustion air intakes for water heater or unit heater in pool equipment room.
- Spray Pad Filter Building
 - o Lower combustion air damper not within 12" of floor.

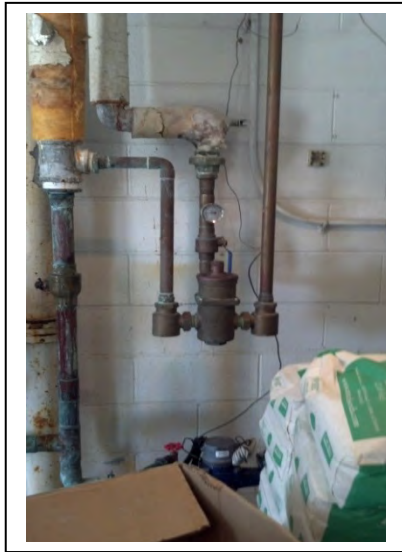
PLUMBING

EXISTING SYSTEM DESCRIPTION

Bathhouse

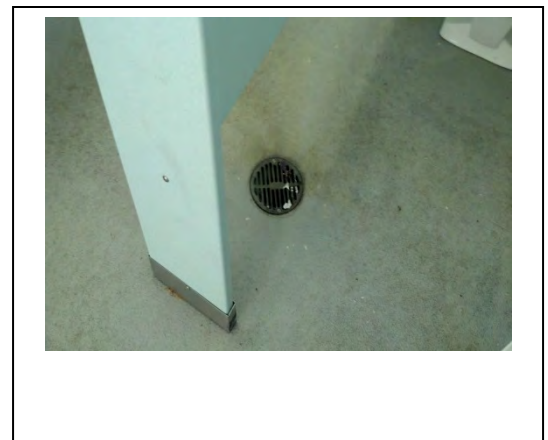
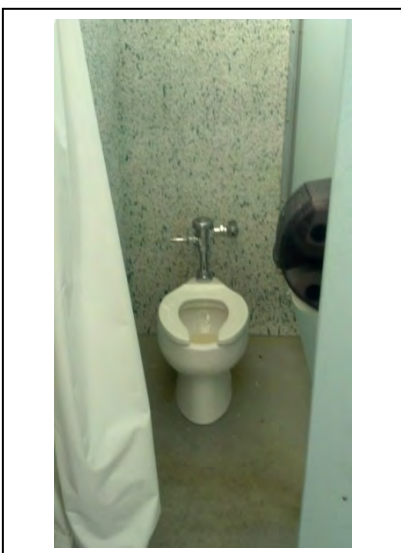
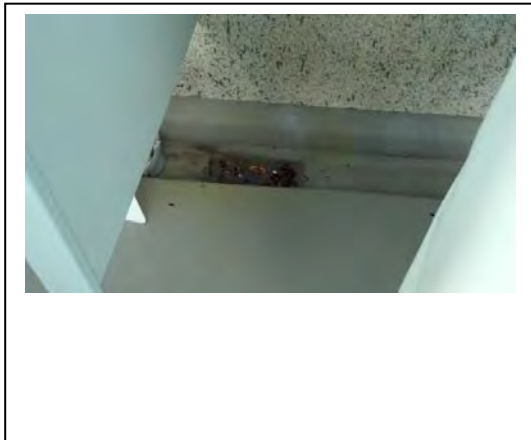
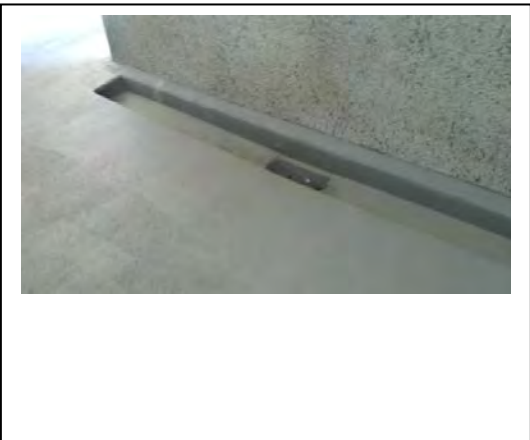
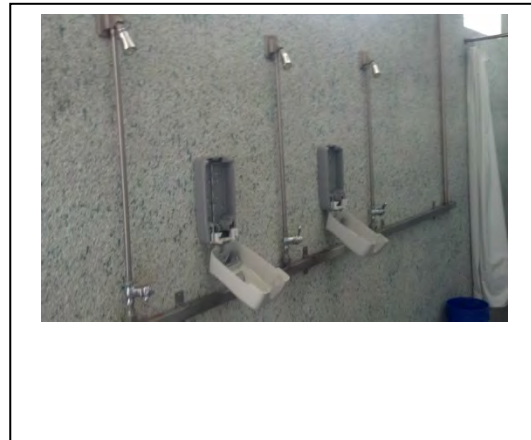
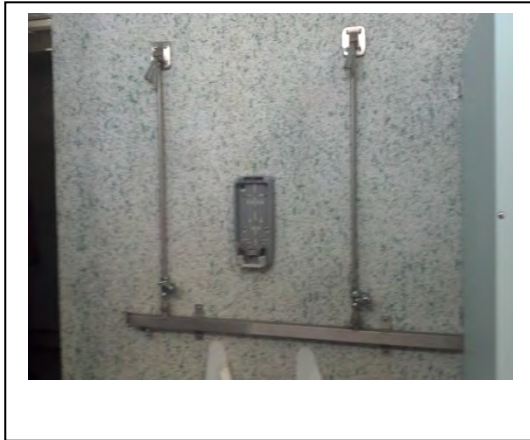
- Equipment Room consists of one (1) 199,00 BTU 81 gallon gas water heater, one (1) thermostatic mixing valve, one (1) 3" water main, one (1) 2" water meter and valving, one (1) hose bibb and one (1) floor drain.



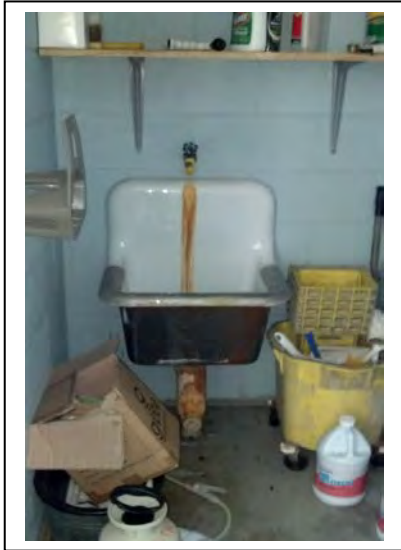


- o Women's Wet Toilet Room/Shower room consists of seven (7) shower valves with heads, two (2) trench drains, two (2) floor set manual flush valve water closets and on (1) floor drain.

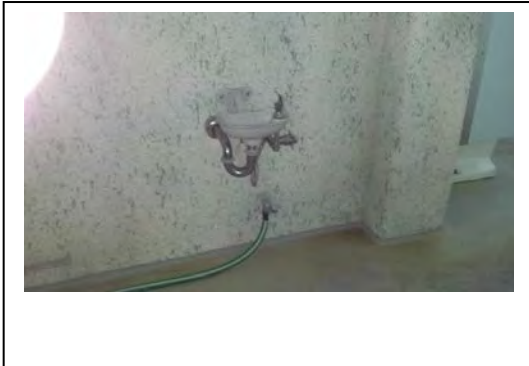




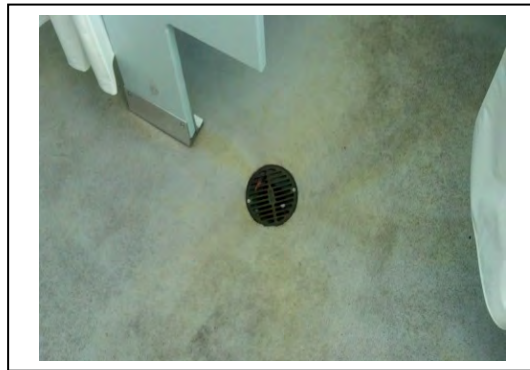
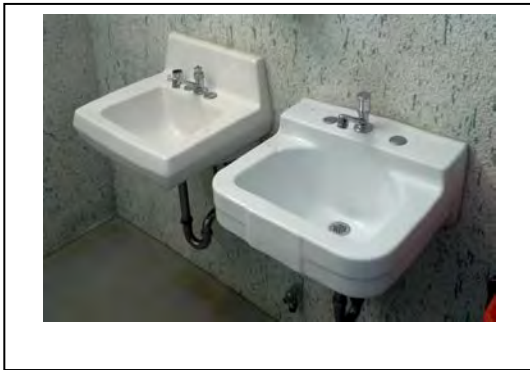
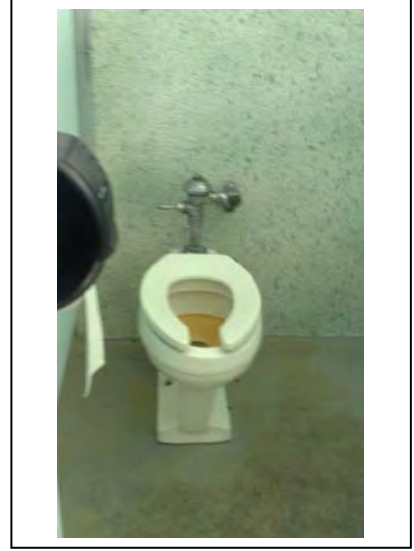
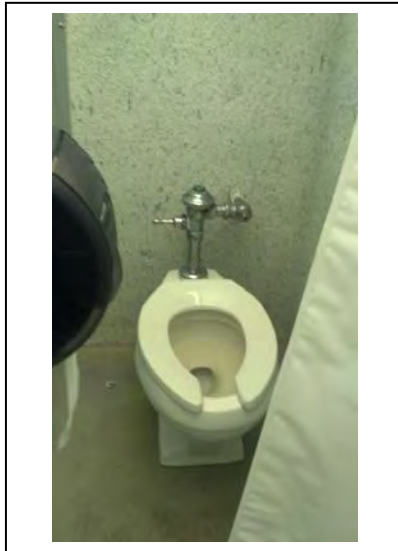
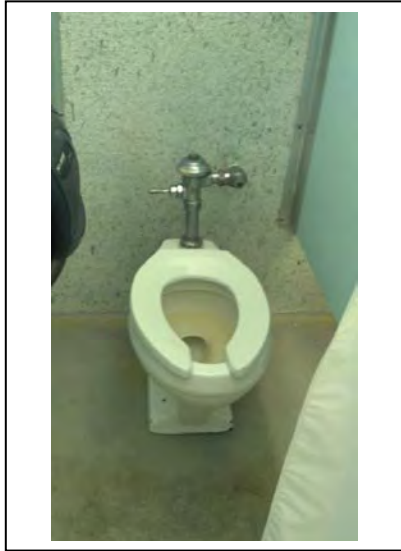
- Janitor Closet consists of one (1) service sink with hose bib for faucet.



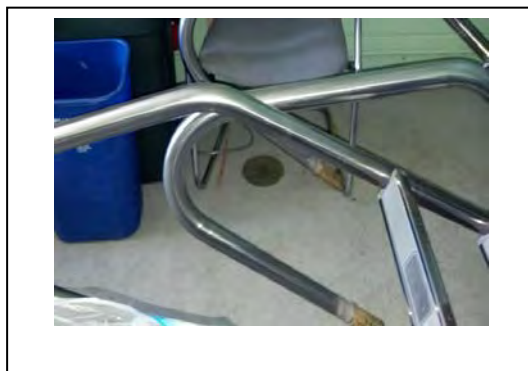
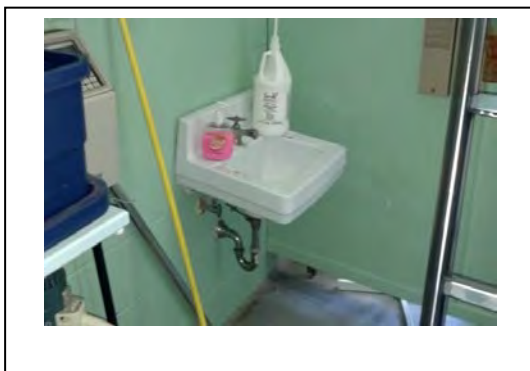
- Women's Locker Room consists of two (2) floor drains, one (1) drinking fountain and one (1) hose bibb.



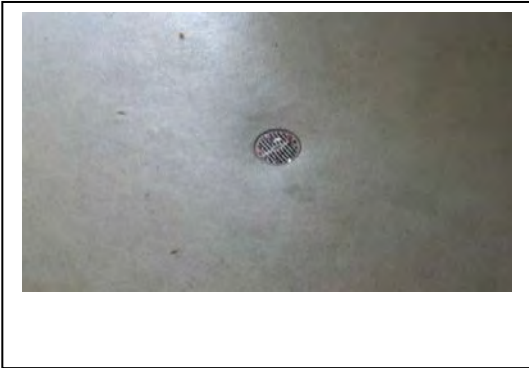
- Women's Dry Toilet consists of three (3) floor set manual flush valve water closets, two (2) wall hung china lavatories with metering faucets, one (1) hose bibb and one (1) floor drain.



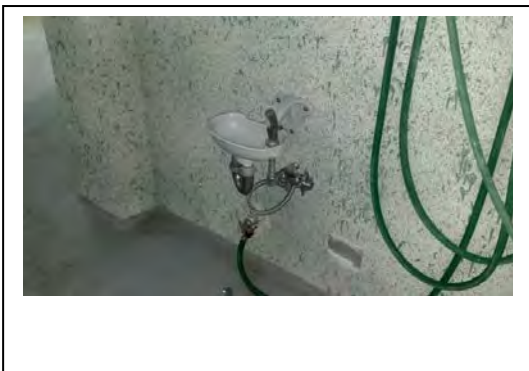
- Guard Room consists of one (1) wall hung china lavatory with metering faucet and one (1) floor drain.



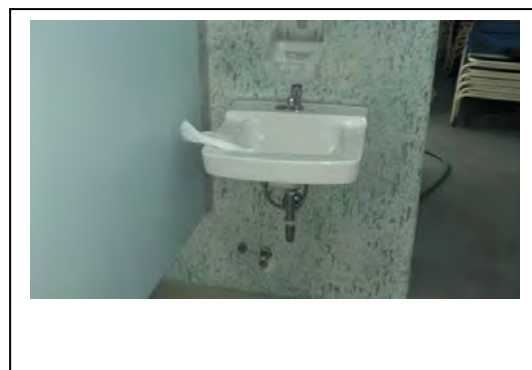
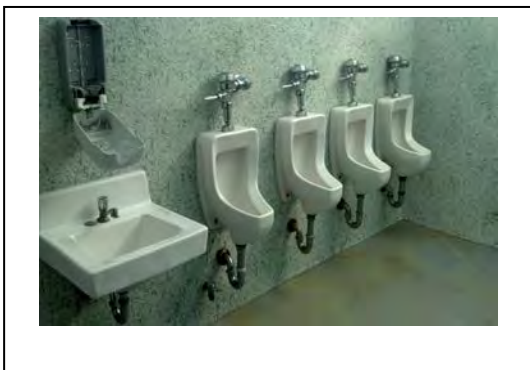
- Entry consists of one (1) floor drain.

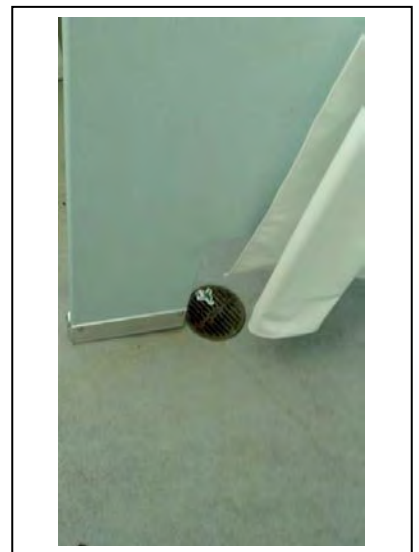
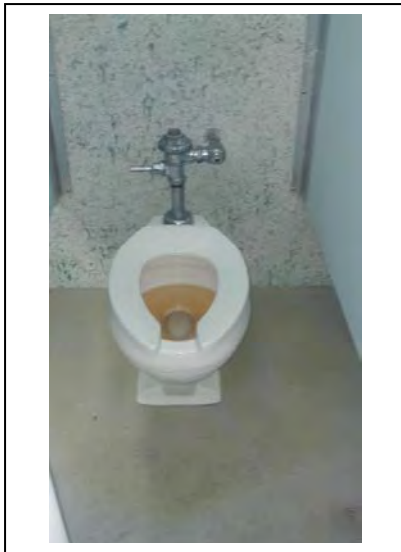


- Men's Locker Room consists of one (1) drinking fountain, two (2) floor drains and one (1) hose bibb.

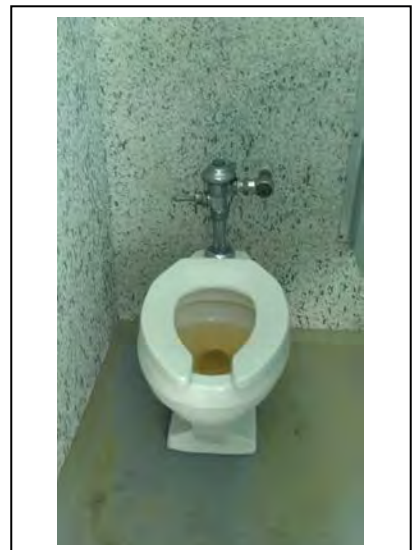
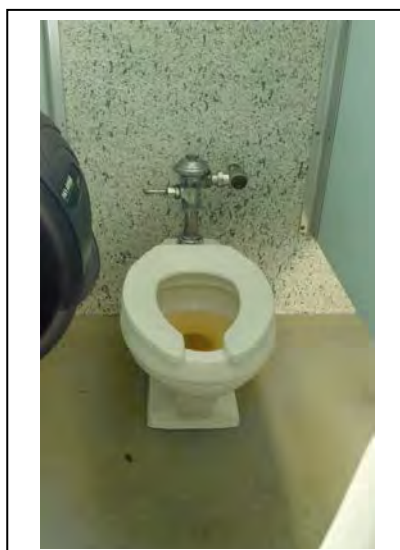
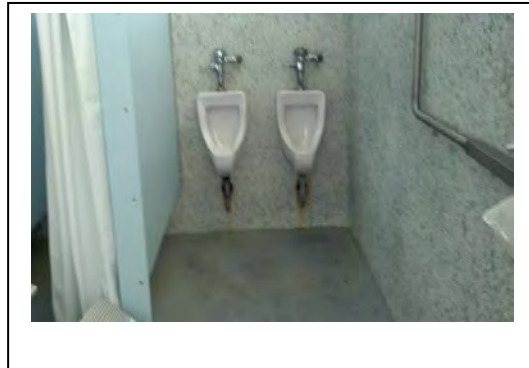
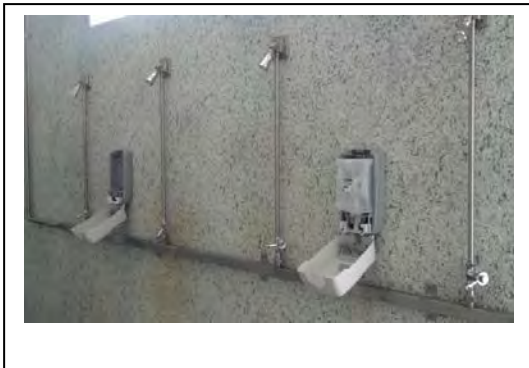


- Men's dry Toilet consists of two (2) floor set tank manual flush valve water closets, four (4) urinals with manual flush valves, two (2) wall hung lavatories with metering faucets, three (3) hose bibbs, one (1) capped water closet and one (1) floor drain.





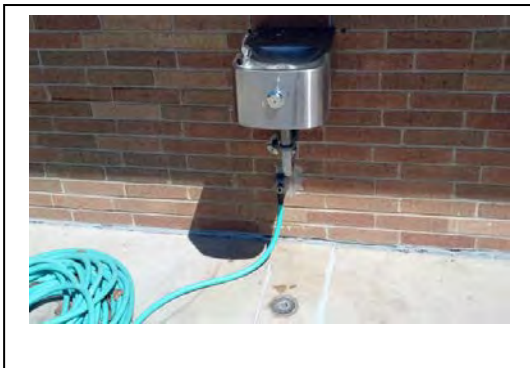
- Men's Wet Toilet consists of eight (8) showers, two (2) trench drains, two (2) floor set manual flush valve water closets and two (2) urinals with manual flush valves.



- Janitor Closet consists of one (1) service sink with hose bibb for faucet.



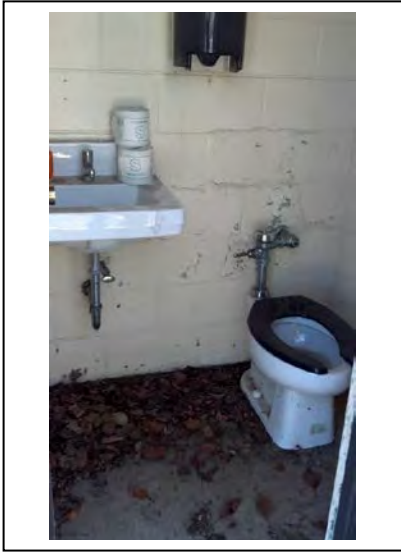
- Building Exterior consists of one (1) drinking fountain and one (1) hose bibb.



- Concession Area consists of one (1) double bowl stainless steel sink with dual handle faucet.



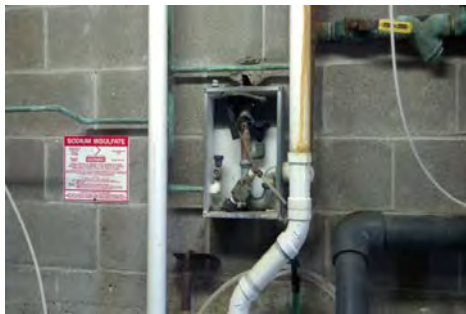
- Exterior Men's Toilet Room consists of one (1) floor set manual flush valve water closet and one (1) wall hung china lavatory with meter faucet.

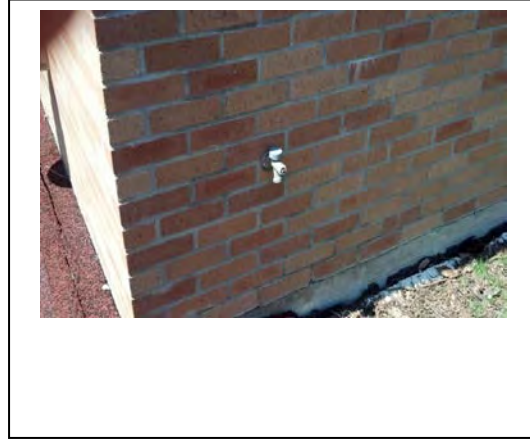
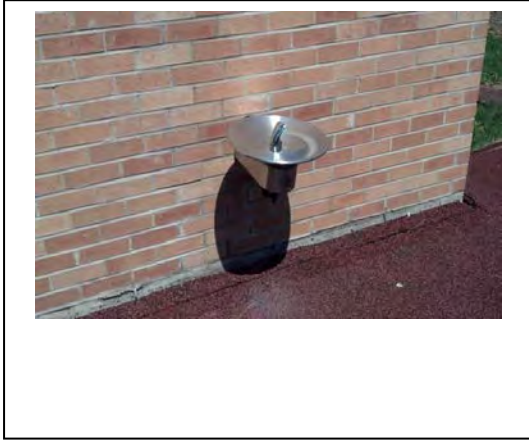


- Exterior Women's Toilet Room consists of one (1) floor set manual flush valve water closet and one (1) wall hung china lavatory with meter faucet.



- Pump House
 - o Pump House consists of one (1) exterior drinking fountain, one (1) 3" water service, one (1) 2" water meter, one (1) 2" reduced pressure backflow preventer, one (1) simplex sewage ejector, one (1) 1-1/2" pool fill with air gap, one (1) sillcock on exterior, one (1) hose bibb, one (1) emergency eye wash, one (1) area drain and four (4) floor drains.





- Building Systems
 - o The building storm drainage system consists of some gutters with downspouts that splash to grade.
 - o The building water distribution system consists of galvanized and stainless steel piping with some copper piping.
 - o The building waste and vent system consists of cast iron and galvanized piping.
- Condition of Fixtures and Equipment
 - o The majority of the existing fixtures are in fair to good condition.
 - o The water heating system appears to be fair to poor condition.
 - o The waste vent and water piping systems appear to be in good condition and working properly.
- Code Violations
 - o No ADA compliant fixtures.
 - o No RPZ one water bathhouse water service.
 - o No expansion tank at water heater.
 - o No vacuum breakers on hose bibs.
 - o No floor drains in exterior toilet rooms
 - o No mixing valve on emergency eye wash.

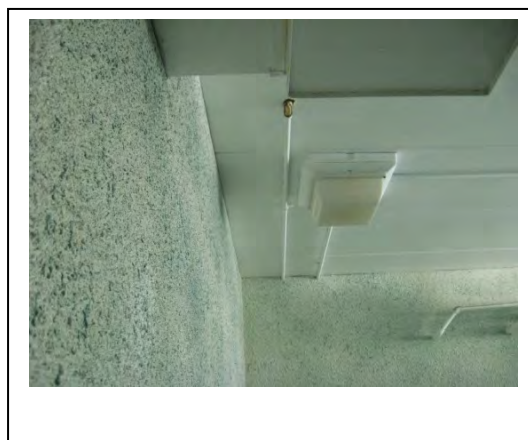
ELECTRICAL

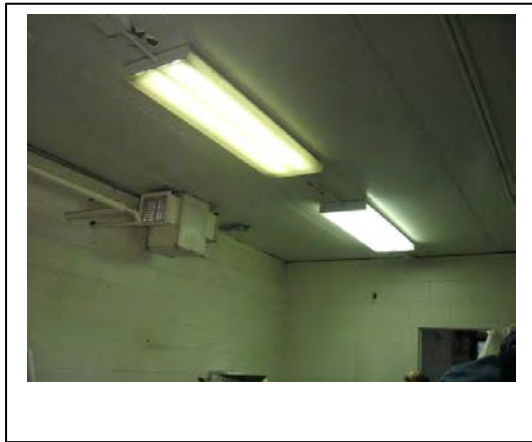
EXISTING SYSTEM DESCRIPTION

- Bathhouse /Filter Building
 - o The existing electrical service meter and C/T are mounted on the wall next to the main electrical panel located in the filter room. The electrical service is 800 AMPS, 120/208V, 3-phase, 4-Wire.

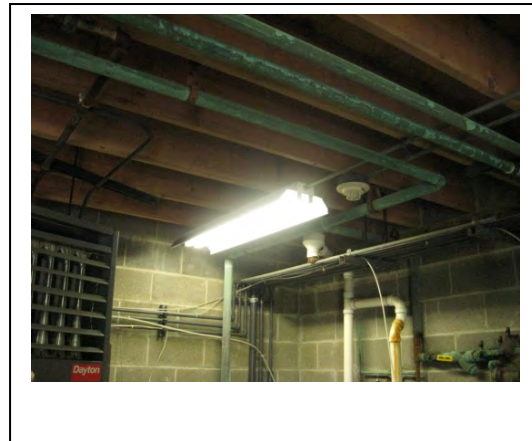
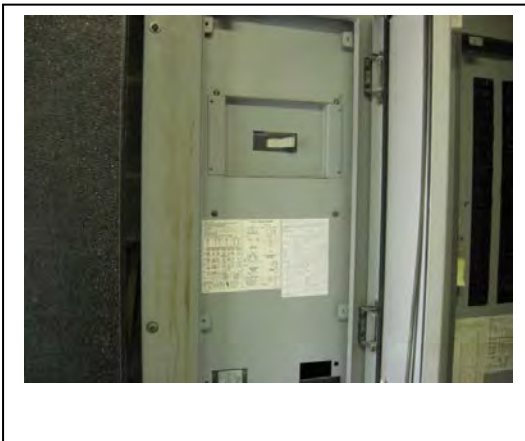


- o The Lap pool power and exterior lighting and the Bathhouse/ Filter Building are connected to this service and panel.
- o Interior lighting consists of 4' wraparound fluorescent ceiling fixtures in the lockers and toilets. The lighting in the filter room consists of pendant mounted porcelain sockets with incandescent lamps.
- o The lighting in the corridors consists of surface mounted fluorescent square fixtures.
- o Receptacles are fed from 20 A circuits.
- o The capacity of the electrical service is adequate.
- o All lighting and receptacles in this building are fed from this panel.
- o All lights are controlled by switches in the interior and 2-pole contactors to control the parking and pool light pole fixtures.
- o Fire alarm system not present.
- o No exit signs or EM battery lights are present.



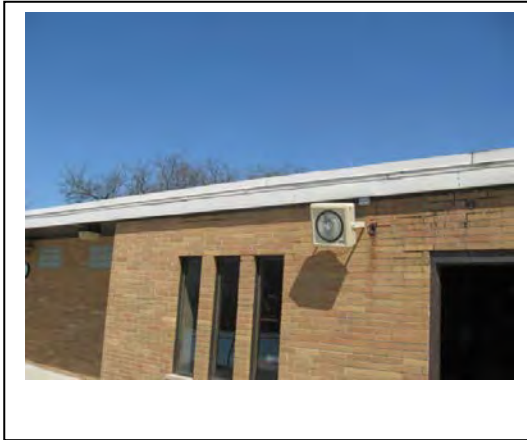


- Spray Pad Filter Building
 - o The existing electrical service meter and C/T are mounted on the exterior wall of the building. The main panel is located within the utility room. The electrical service is 400AMP, 120/208V, 3- phase, 4-W. All equipment, lighting and receptacles are fed from this panel.
 - o Interior Lighting consists of (2) 4' industrial strip light fixtures, pendant mounted.
 - o Exit signs are present.
 - o No EM Battery lights present.
 - o Fire alarm system is present but not addressable.
 - o Interior light fixtures are controlled by wall switches.
 - o A 2-pole contactor controls the pool light pole fixtures.



- Exterior

- o Based on visual observation:
- o The exterior lighting in the Bathhouse/Filter Building consists of:
- o Wall mounted incandescent fixtures on the exterior wall.
- o HID surface mounted box fixtures in the front canopy.
- o HID Flood Light fixtures mounted on a 30' poles in the parking lot.



- o The exterior lighting in the Spray Pad Filter Building consists of:
- o Wall mounted incandescent fixture on the exterior wall.
- o HID shoe box fixtures mounted on a 20' poles in the parking lot

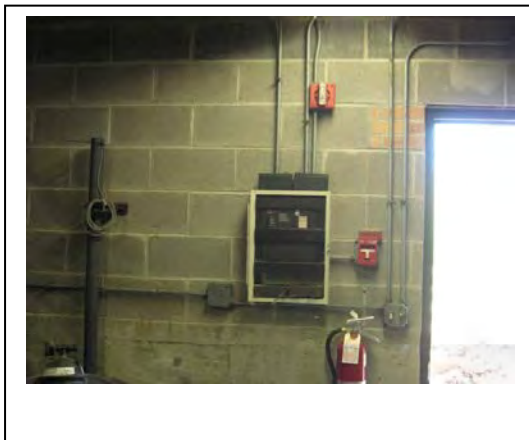


- o There is a pad mounted transformer located behind the Spray Pad Filter Building feeding both building services.



- Condition of System

- o Interior lighting fixtures are in average to poor condition. Lighting levels seemed adequate,
- o Receptacles range from average to good condition. Although, the receptacle layout in the building meets the minimum code requirement, extensive use of extension cords was noticed.
- o Exit sign in average condition.
- o The electrical panels are in good condition.
- o The capacity of the electrical services in both buildings is adequate.
- o Exterior lighting is in average condition but does not meet dark sky friendly code requirements in the Bathhouse/Filter building.
- o No fire alarm system in the Bathhouse/Filter building.
- o The enclosures of few electrical disconnects are corroded



- Code Violations

- o The electrical room is used for storage.
- o There are water pipes above the electrical panels
- o Fire alarm system is not present in the Bathhouse/Filter.
- o No 3'-0" clearance in front of panels and other equipment.

RECOMMENDATIONS – JEFFERSON POOL

If the direction taken is to renovate and continue to operate the facility, the following items should be corrected. Each recommendation has been assigned a priority level which determines the importance of the repair/replacement. The priority level assigned to a recommendation is generally based on the following criteria:

<u>Priority</u>	<u>Time Frame</u>	<u>Assessment Criteria</u>
1	Immediate to 1 year	Substantial deterioration; health and human safety deficiencies. Items that will reduce future maintenance. Repairs necessary to prevent further deterioration and/or failure.
2	Within 3 years	Repairs that will be required in the near future; improvements that will reduce future maintenance; Code compliance items.
3	Within 5 years	Improvements that will need to be made to maintain good working order. Code compliance items. Improvements that will improve the performance of the facility.
4	Within 10 years	Improvements that will need to be made but can be held off for a period of time. Ongoing upkeep.
5	Indefinite time frame (beyond 10 years)	Non-priority items that would be an enhancement to the facility. Long range replacement items.

	<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
1.	Main Pool – Provide new PVC pool liner to eliminate significant water loss.	1	\$90,000 to \$120,000
2.	Main Pool - Perform leak detection tests on piping and pool structure.	1	\$3,000 to \$6,000
3.	Main Pool - Repair leaks found in pool piping and pool structure (assume 20% of wall/floor surface, 1,920 sq. ft.)	1	\$76,000 to \$115,000
4.	Main Pool – Replace existing perimeter gutter with new stainless steel perimeter gutter	1	\$143,000 to \$184,000
5.	Main Pool - Replace existing main drains and existing main drain piping to mechanical room	1	\$30,000 to \$50,000
6.	Main Pool - Provide depth markers on the perimeter enclosure fence and building walls per IDPH code requirements	1	\$600 to \$800
7.	Main Pool - Replace existing dive stand with hand rails that extend to the pools edge.	2	\$10,000 to \$12,000

8.	Main Pool - Replace existing decks and provide new deck drainage (based on 10,610 sq. ft.)	2	\$159,000 to \$212,000
9.	Replace perimeter enclosure fencing	2	\$24,000 to \$26,000
10.	Wading Pool - Perform leak detection tests on piping and pool structure.	1	\$3,000 to \$6,000
11.	Wading Pool - Repair leaks found in pool piping and pool structure (assume 15% of the total wall/floor surface, 215 sq. ft.)	1	\$10,000 to \$12,000
12.	Wading Pool - Sand-blast pool finish down to bare concrete. Prime and repaint pool (based on 1,430 sq. ft.)	1	\$17,000 to \$20,000
13.	Main Pool Mechanical - Provide DE separation prior to sewer discharge.	2	\$3,000 to \$4,000
14.	Main Pool Mechanical - Provide a thermometer on the blended water supply to the pool	1	\$400 to \$500

15.	Main Pool Mechanical - Provide external temperature limiting device, interlock with pool heater	1	\$400 to \$500
16.	Provide containment pallet for acid storage	1	\$500 to \$600

BUILDING AND SITE

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
Parking Lot and Drives		
• Parking lot should be resurfaced.	1	\$70,000 to \$80,000
• Drive at drop-off should have cracks repaired and resealed.	1	\$1,500 to \$2,000
Sidewalks		
• Sidewalks in front of building should have damaged areas replaced. (allow 100 SF)	1	\$1,000 to \$1,500
• Sidewalks along perimeter of pool fence should be replaced or permanently removed. (assume remove and restore grade)	2	\$2,000 to \$2,500
Bathhouse		
• Interior		
o Refinish Walls	4	\$3,000 to \$5,000
o Lobby		
▪ Repair wall and repaint where phone removed.	2	\$200 to \$300
o Men's and Women's Locker Rooms		
▪ Clean stained walls and floors	1	\$500 to \$800
o Pool Filtration Room		
▪ Repair damaged roof plank (allowance)	1	\$2,000 to \$3,000

- Exterior
 - o Repair / replace damaged brick and mortar mostly on south wall. (allow 200 SF) 1 \$6,000 to \$8,000
 - o Repair damaged soffits and repaint. 1 \$1,000 to \$1,500
 - o Repair / replace damaged fascia. 2 \$1,000 to \$2,000
 - o Replace all hollow metal doors and frames with new galvanized hollow metal door and frames. (assume 8 doors) Consider replacing with FPP doors with aluminum frames. 2 \$16,000 to \$20,000
 - o Repair aluminum at south window. 1 \$300 to \$400
 - o Replace roof. 2 \$35,000 to \$40,000
 - o Tuckpoint brick. 5 \$5,000 to \$10,000
 - o Paint exterior metal and wood. 4 \$3,000 to \$4,000
- ADA Improvements
 - o We referenced a report completed by ACT Services which specifically identified items to complete to comply with the Accessibility codes 1 \$30,000 to \$50,000

MECHANICAL RECOMMENDATIONS

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
<u>Bathhouse /Filter Building</u>		
• Provide code required combustion air openings in equipment room.	1	\$1,000 to \$1,200
• Replace corroded flue piping in equipment room.	1	\$800 to \$1,000
• Cap open roof curb	1	\$200 to \$300
<u>Spray Pad Filter Building</u>		
• Replace corroded flue piping.	1	\$500 to \$600
• Provide vent caps on flues.	1	\$200 to \$300
• Provide ducting down to 12" a.f.f. for lower combustion air opening in equipment room per code requirements.	1	\$500 to \$600

PLUMBING RECOMMENDATIONS

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
• Provide ADA compliant fixtures.	2	\$30,000 to \$35,000
• Provide RPZ on water service.	2	\$2,000 to \$2,500
• Provide expansion tank on water heater.	2	\$500 to \$600
• Provide vacuum breakers on hose bibs.	3	\$250 to \$300
• Provide floor drains in exterior bathrooms.	5	\$3,000 to \$3,500
• Provide mixing valve on eyewash.	2	\$1,800 to \$2,000

ELECTRICAL RECOMMENDATIONS

<u>Recommendation</u>	<u>Priority</u>	<u>Probable Cost Range</u>
• Upgrade the lighting and controls for the Community room.	3	\$4,000 to \$4,500
• Upgrade Fire Alarm System to addressable type and correct code violation in the Spray/Filter Building.	3	\$4,000 to \$4,500
• Install Addressable Fire Alarm System in the Bathhouse/Filter Building.	3	\$10,000 to \$11,000
• Change the disconnect switches with corroded enclosures.	2	\$1,300 to \$1,500
• Provide emergency and exit lighting.	3	\$5,000 to \$5,500

NOTES

1. Perimeter and interior fencing would be replaced in conjunction with deck replacement.
2. It is recognized that the Consultant has no control over the cost of labor, materials or the competitive bidding market. Accordingly, the Consultant cannot warrant that bids or negotiated prices will not vary from the opinion of probable cost presented in this report.
3. Costs are estimated based on 2013 and work being contracted to qualified companies paying prevailing wage rates. Costs are rough estimates to be used for budgeting purposes only and actual costs will vary and can be better defined at time work is performed.
4. Accessibility Improvements reference the ACT Services Report completed in 2012. We have included an allowance to complete the recommended upgrades and acknowledge there may be some overlap with other recommended improvements and associated costs. If and when this work proceeds, actual scope and costs can be better defined at that time.

DETERIORATION MECHANISMS

INTRODUCTION

Concrete deterioration is generally evident by cracking, delamination, spalling and scaling. These signs of distress are the most common deterioration problems of reinforced concrete facilities.

CRACKING

Concrete cracking is caused by tensile stresses. These stresses may be due to load, as a flexural member, or other causes such as shrinkage or temperature drop. Some cracking is usually anticipated and the effects can be minimized by reinforcement or joints. Properly positioned reinforcement arrests crack development by keeping cracks short and tightly closed. Control joints are positioned to keep cracking only where it is planned. It is common practice to provide sealed crack control joints in concrete members when exposure to water is expected. Cracking can be detrimental when it occurs to an extent and frequency not expected. If abnormal or uncontrolled cracking develops, then steps are necessary to minimize the effect of cracking on long-term structure durability.

Uncontrolled construction cracking is usually caused by improper control joint detailing or concrete placement, insufficient consolidation, inadequate curing of the concrete, premature removal of form supports or by plastic shrinkage of the concrete. Service related cracking is usually due to temperature changes, load, settlement or internal stress. Corrosion or reinforcing bars and aggregate chemical reactions are common causes of internal stress.

SPALLING

Most concrete spalling associated with concrete structures is the end result of corrosion-induced stress, but can also be caused by extensive freeze-thaw deterioration. It is preceded by internal horizontal fractures which eventually migrate to the nearest surface. When fractures reach the surface, the concrete breaks away leaving an open spall or pothole.

SCALING

Concrete scaling is deterioration which attacks the mortar portion (paste) of the concrete mix. It first appears as minor flaking and disintegration of the concrete surface. Scaling progresses deeper into the concrete, exposing the aggregate, which eventually breaks away. This aggravates the process by exposing more paste to the elements. In extreme cases, apparently sound concrete can be reduced to a gravel-like condition in a short period of time.

Concrete scaling is usually caused by freeze-thaw action. If concrete is frozen in a saturated state, excess water freezing in the concrete causes high stress and weakens the mortar. Cyclic exposure to freeze-thaw actions is very destructive to concrete in a saturated state.

Air entrained concrete is much more resistant to scaling than non-air entrained types. Air entrainment consists of microscopic air bubbles in the concrete. These bubbles, created by the addition of an admixture at the time of mixing, when properly sized and distributed, can act as small shock absorbers to cushion stresses caused by freezing and thawing.

JOINT DETERIORATION

The most common method for providing crack control or relief of restraint in concrete slabs is control joints. Control joints deteriorate for reasons usually associated with failure of the sealant or failure of the adjacent concrete. Joint sealants which fail prematurely may not have the required degree of flexibility, bond strength or durability for a particular application. If concrete adjacent to the joint is not sufficiently durable, then local scaling will cause joint sealant failure.

SURFACE POPOUTS

Popouts in the concrete surface result from freezing of the coarse aggregate. Certain aggregates are porous and become saturated with water. Upon freezing, the water expands, fracturing the aggregate. A pit or spall up to several inches in diameter results on the concrete surface.