City of Cordova

Multi-Building

Condition Assessment:

Bob Korn Memorial Swimming Pool

Prepared For:

The City of Cordova

Prepared By:

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1. INTRODUCTION

The City of Cordova engaged Coffman Engineers and Burkhart Croft Architects to assess and report on the condition of City-owned buildings and structures to establish a baseline of their current assets and better forecast future needs.

The team performed a multi-discipline condition assessment of thirteen facilities including:

1. Bob Korn Memorial Swimming Pool
2. Bidarki Recreation Center
3. Eyak Skaters Cabin
4. Cordova Jr/Sr High School
5. Odiak Pond Gazebo and Boardwalk
6. Odiak Camper Park Restroom
7. Parks Maintenance Shop
8. City Maintenance Shop
9. Ballfield Restroom / Concession Stand
10. Cordova Chamber of Commerce
11. Hollis Heinrichs Park Restroom
12. Flemning Spit Restroom
13. Fire Department Sub Station

The team also visited the Bob Korn Memorial Swimming Pool and evaluated the feasibility of relocating the building to a new site.

The team consisted of an architect, cost estimator, civil, structural, mechanical, and electrical engineers.

Due to the amount of information and quantity of sites, a separate report has been developed for each facility. This condition assessment report is for the Bob Korn Memorial Swimming Pool.

2. EXECUTIVE SUMMARY

The Bob Korn Memorial Swimming Pool was evaluated by the team on September 27-28, 2022. This report provides:

- A description and assessment of the various building components.
- A list of deficiencies, ordered by urgency for repair or correction.
- Rough order of magnitude cost estimate for the listed deficiencies, as well as building replacement.
- A routine and preventative maintenance plan.

Overall, the building structure was in relatively good condition considering the 49-year age and the destructive nature of natatorium environments. The condition of the building is a testament to the staff and their pride in the facility. The majority of the recommendations are for code compliance and enhancing the longevity of the building. The primary structural recommendation is to repair cracks in the Concrete Masonry Unit (CMU) joints by epoxy injection.

3. BOB KORN MEMORIAL SWIMMING POOL

3.1. Description and Summary

The Bob Korn Memorial Swimming Pool is a City of Cordova owned and operated recreational facility. Built in the early 1970's the facility features a 25-yard, 6-lane indoor saltwater pool. The facility is open year-round to the public and offers lap swim, family swim, recreational swim, and is available for event rental. There have been building and maintenance projects conducted at the facility since it was originally constructed, but much of the facility appears original.

3.2. Building System Assessments

3.2.1. Architectural

3.2.1.1. IBC Code Summary

Model Code Application

This facility was constructed under the *Uniform Building Code*. Since 2000, the *Uniform Building Code* has been replaced by the *International Building Code (IBC)* family as the acting model building code in Alaska.

The IBC restricts the size of buildings depending on what they are built from and what life safety components they are equipped with. For example, a steel framed building can be as much as 5 times larger than a wood framed building. The facility is approximately 7,790 square feet, with an 1,850 square foot mechanical space located above the locker rooms. The walls are constructed out of CMU and there are exposed, combustible structural members and frames present that classify the Building as Type V-B Construction. The minimum allowable area for Type V-B Construction is 9,000 sf, without taking into consideration Fire Protection, which this facility is equipped with. There are no deficiencies for building construction type or area.

Occupancy Groups

Pool Area: All portions of this facility are designated as an "A" Assembly Occupancy. Pools are classified as A-4 Occupancies. The locker rooms, storage, and office functions are accessory uses to the main occupancy.

Egress System

The existing egress system appears to be adequate in terms of number of exit points, exiting logic, and egress width.

- *Exit Access Doors: The exit leading out of the northwest rear corner of the pool, while properly signed, is in poor condition and warrants replacement. This includes door, frame, and hardware.*
- *Electrical Room Door: At this same exit, there is a life safety concern that requires correction: The door leading into the electrical room has no hardware. Door hardware shall be installed at the owner's earliest convenience. Both this door and the adjacent Pool Pump Room doors shall be locked during normal business hours.*

- *<u>Pump Room Door:</u> There is no cylinder installed at the water sprinkler room. Install cylinder and keep door locked during normal business hours. The egress hardware to the exterior also has extensive corrosion (possibly from chemical storage over the years) and should be replaced in its entirety.*
- *<u>Locker Room Doors:</u> The existing locker rooms are equipped with exit signage from the pool, but the doors have deficiencies. They have been cut in half and are equipped with residential closures. Recommend replacement of the doors, frames, and hardware.*

3.2.1.2. Sprinkler System Protection

General

Fire Protection addresses overall description and condition of the fire suppression systems installed in the building.

Sprinkler System Requirements

Sprinkler system requirements are addressed in Chapter 9 of the IBC. In some cases, Chapter 9 specifically requires the building to be protected due to the type of use and code-defined occupancy group. In this case, all A-4 Occupancies are required to be sprinklered throughout if the Fire Area exceeds 12,000 SF or occupant load is greater than 300. Neither are applicable to this facility. **While fire protection is provided in this facility, it is not a requirement for this building.**

3.2.1.3. Accessibility / ADA / ANSI A117 Compliance

General

All major phases of construction for this facility were completed prior to enactment of the Americans with Disabilities Act (ADA) in 1990, or subsequent inclusion of accessibility requirements into building codes. The IBC now references ANSI A117 as the recognized design standard for accessibility concerns.

Existing buildings are exempt from current requirements, so long as owners conduct simple and prudent improvements. Full compliance is directly tied to the size and scope of the proposed projects. The International Existing Building Code (IEBC) drives this level of compliance. For example, the facility can be painted, and flooring replaced without making the toilet facilities accessible. However, if there was a building addition or major renovation of the facility, then the facility would be required to comply. In existing facilities, enforcement of ADA deficiencies is punitive, and if complaints or claims are made against the facility the City of Cordova might be required to make a Reasonable Accommodation to correct the deficiency for the public requiring accessibility improvements.

Existing Conditions

The building currently has no accommodations for accessibility. This starts at the parking lot and extends into the facility. Key deficiencies are as follows:

- *There is no ADA accessible parking at the entrance to the facility. There is also no accessible way into the facility. Correction to transfer into the building would be to construct a pedestrian*

ramp. There appears to be an area immediately adjacent to the existing stairs to accomplish this. Ramp would be approximately 12-feet long and 4-feet wide and would be equipped with handrails on both sides. While the strategy above is easy to accommodate, Civil has identified that the parking lot grading exceeds maximum allowable slopes. See Civil for grading correction.

- *No accessible toilet stalls have been provided. A possible correction is to renovate the toilet facility at the main entry to be ADA complaint. While currently not laid out correctly, there is adequate area to bring this room into compliance.*
- *None of the locker room toilets are currently ADA accessible. If the main entry toilet room was made into an accessible, unisex toilet room, fixtures in the locker rooms would not be required to be compliant. There does appear to be adequate room to reconfigure the locker toilet rooms to be accessible, however, this is an owner decision.*
- *The existing showers are not ADA accessible. There is an approximate 4-inch curb up into the showers. These are required to be barrier-free stalls. Correction is demolishing the slap, and recreating showers at grade.*
- *If the existing locker room toilet fixtures are to remain, protective insulation would be required on water piping to protect from contact.*
- *The number and distribution of Fire Extinguishers appeared compliant. The one deficiency noted while onsite was in the sprinkler riser room; both the fire extinguisher and the fire alarm panel were obstructed by stored materials. Restore access to fire extinguisher and fire panel at the owner's earliest convenience.*

3.2.1.4. Building Exterior

The building is clad with vinyl siding throughout. We do not know when, but this was added after the original construction. Wood siding was detailed in the record documents we have. For the existing vinyl siding, there is a mix of horizontal siding and some vinyl siding that mimics shingle siding. There was also some recently installed metal siding at a portion of the mechanical room at the rear of the facility.

- *Siding appears to be in serviceable condition. There was some flashing that was damaged, but only minor corrections would be needed. Siding replacement was not included in the cost estimate, but when discussing repurposing the facility for the next 20-30 years, siding replacement would be advisable.*

The roofing is in poor condition and requires replacement. While some portions of the roofing were replaced, onsite staff reported there were still roof leaks. The existing roofing is a standing seam metal roof with concealed fasteners. There have been numerous patches and corrections over the years. There were signs of major leaks in the northern mechanical rooms where Gypsum Wall Board (GWB) was removed on the interior. The roofing itself is starting to show deterioration in the form of surface rusting. Over time, this corrosion will start to develop pinhole leaks which could be the cause of the current water infiltration.

- *Replace the existing metal roof with a similar, standing seam metal roof with concealed fasteners.*

While most of the walls in the facility are constructed out of CMU, the northern mechanical rooms are wood framed. There was extensive decay noted in the interior of these spaces. This was a

non-destructive inspection, but some GWB removal is advisable to access the condition of the wood stud exterior wall. GWB repair should be executed on all damaged areas.

Exterior doors were all in serviceable condition and all had required existing hardware.

3.2.1.5. Building Interior

General

The building interior appears to be in FAIR to POOR condition overall. Several renovation and upgrade projects have replaced or improved floor and wall finishes over time. Interior renovation is sporadic throughout the facility. Renovations and corrections have been developed as the need has required.

3.2.1.6. Locker Rooms

All toilet and locker rooms are in FAIR to POOR condition. This is largely due to the age of the facility. There is damage to existing finishes, specifically at the ceiling GWB. There has been sporadic replacement of finishes and fixtures throughout the facility; these appear to have been completed out of a need to keep the room operational, or maintenance type work. The largest deficiency in the locker rooms is the lack of ADA accessibility. No ADA accessibility has been provided in either the toilet or shower rooms. Strategy for compliance is below.

- S*hower accessibility should be executed at the minimum. While the toilet fixtures are not compliant either, a compliant path forward would be to make the main entry toilet room accessible, which would not require accessibility for the remainder. For the showers, the concrete floor itself would be removed, and recreated at existing grade. New floor slopes would provide water control for the new installation.*

The ceiling is T&G wood members that also serve as the walking surface from the mechanical space above. In some areas you can see daylight into the locker rooms below when traversing the mechanical space. These areas are not separated with any vapor or air barrier. No locker room ventilation is currently provided (see mechanical) but even equipped with ventilation the system would always be subjected to the shared air space with the mechanical space and would affect system performance.

- *Install a vapor barrier and GWB ceiling to separate the spaces, size fasteners such that they do not penetrate the upper wood layer/walking surface.*

There are some general paint finish and touchups that could occur in the lockers to create more visual appeal. There are areas of existing wall coverings, wood, and rubber trim, added wall trim. Depending on level of remediation, replacing with a cohesive covering would be advisable.

Toilet fixtures and toilet partitions are in fair condition. If ADA compliance is requested by the owner they should be replaced.

The wall area around the mezzanine mechanical area had exposed batt insulation. Neither a vapor barrier or gypsum wall board was present.

- *Install vapor barrier and GWB. Or install plenum rated vapor barrier only.*

3.2.1.7. Office Areas and Main Entry

The administration areas of the facility are in FAIR condition. As with the rest of the facility, there has been sporadic improvements over the years. Finishes are generally worn and would warrant replacement in any future project. The main entry has carpet; this should be replaced with a resilient floor since the area often has bather traffic. The only swimsuit extractor is in the main entry.

- *Replace carpet in Main Entry with resilient, slip resistant flooring.*

The service window is a standard vinyl window and does not work for its intended purpose. Staff must come around the doorway to engage customers.

- *Replace service window with purpose-built unit.*

3.2.1.8. Pool

A pool designer was not in attendance for the inspection. The summary below is based on past pool projects our firms have completed.

Pool staff did not report any water loss at time of inspection. That said, water level is automatically corrected so some water loss could be occurring but not noted by staff. Documented water loss is a deficiency that speaks to the subsurface piping condition, and overall condition of the pool shell. While no water loss was reported it was noted that the existing liner has exceeded its service life and warrants replacement. There are areas with liner adhesion loss, and air pockets and bubbles. Liner service life is approximately 10-15 years, and operator could not remember last time the liner was replaced.

- *Replace the existing pool liner. While this work is being done, all inlets and outlets should be inspected and/or replaced as well as ensuring there is a compliant VGB cover over the existing main drain.*

The existing water filtration system has been replaced in the past 5-10 years. The system is providing clean water with correct chemistry for bathers. That said, pool staff noted the labor-intensive process it takes to ensure water quality and noted that service is very difficult to obtain in the geographic location. While not a noted deficiency, owner could complete a cost benefit analysis to determine if labor savings would warrant a different, more user-friendly system.

The current pool deck is exposed concrete, no deficiencies were noted. There has been crack repair over the years that has kept the walking surface clean. There is corrosion over much of the pool deck and accessories. All accessories are stainless steel, and corrosion should be removed at time of liner replacement.

The existing pool does have a diving board. During inspection it was asked if there is a process for inspection or recertification. After consulting with a pool designer, only a visual inspection can be completed in lieu of replacement. All surface corrosion should be removed as noted with the liner replacement. The other inspection point would be at the fulcrum. This area should be periodically inspected for cracking. No excessive cracking was observed during the inspection but should be periodically inspected in the future.

While not a deficiency, the pool deck has a significant number of stored materials. Removing and finding a new location for the materials would result in a cleaner visual appearance.

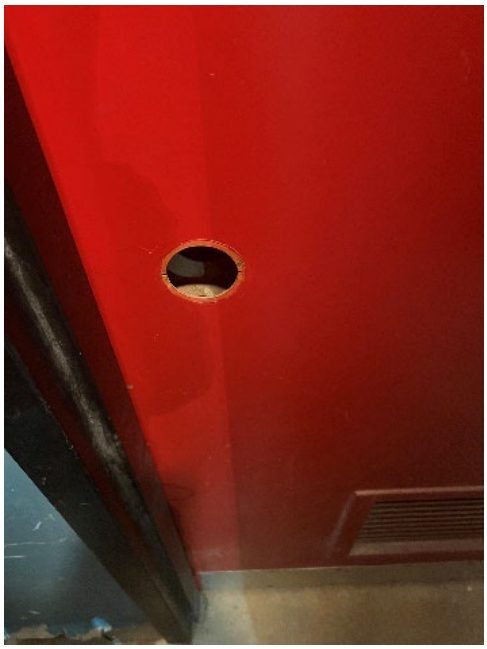

Fig. 1. Missing Harware at Electrical Room

Fig. 2. Typical Curb at Entrance to Showers

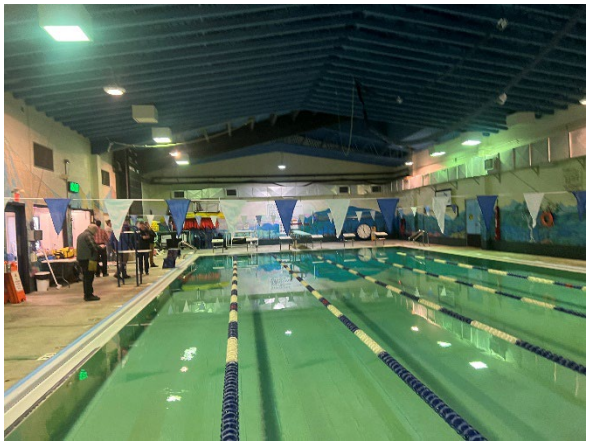

Fig. 3. Overall of Pool

Fig. 4. Siding Damage

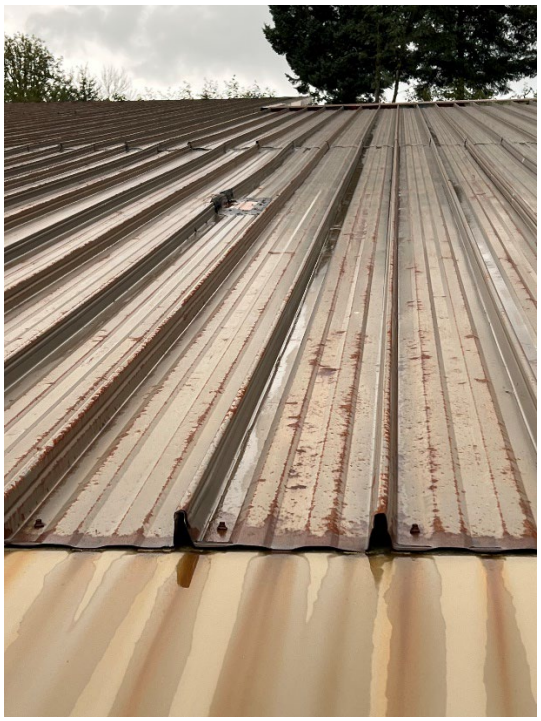

Fig. 5. Typical Roof Conditions

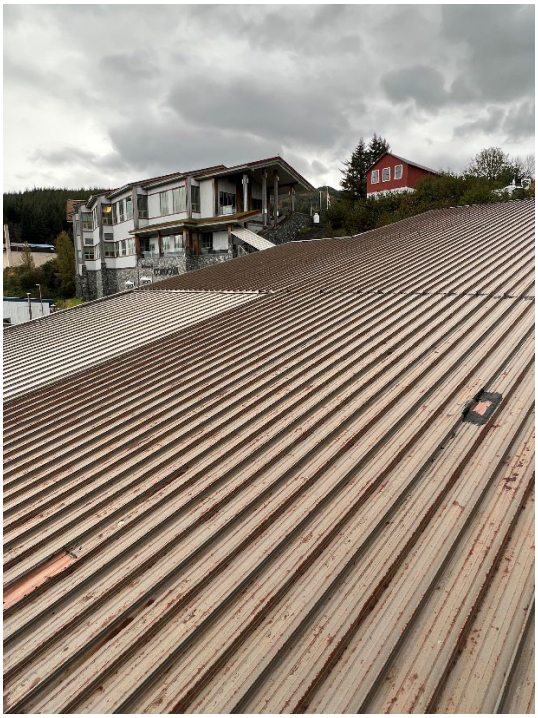

Fig. 6. Roof Overall

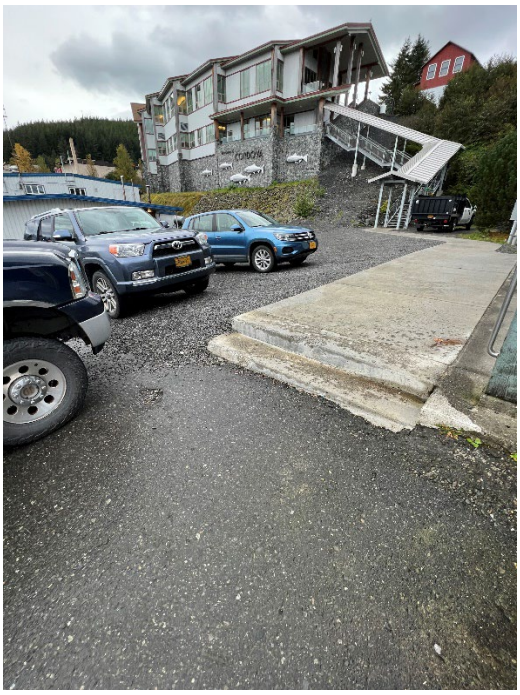

Fig. 7. Possible ADA Ramp Location

Fig. 8. Pool Liner – Note Delamination

3.2.2. Structural

The pool building roof is constructed with a combination of pre-engineered wood trusses with plywood sheathing and heavy timber glue-laminated girders and beams with 2x6 nominal tongue

and groove wood decking. Roof framing bears on Reinforced Concrete Masonry (CMU) bearing walls. The bearing walls are laid-up in stack-bond coursing and feature concrete unit pilasters at bearing ends of the glue-laminated beams. CMU walls bear on continuous reinforced concrete spread footings. The pool basin is manufactured aluminum bearing on concrete pad footings with aluminum bracing posts, backfilled with gravel. The pool deck is cast-in-place concrete placed over gravel backfill.

The condition of the pool roof trusses is good. Moisture readings of the truss bottom chord, taken at northeast corner of the pool at the temporary extension ladder to the fan room, indicate the painted members of the trusses are at less than 6%, which is acceptable and not a condition for mold or wood deterioration. Corrosion of the galvanized steel pipe truss web members was not observed. There are several water stains on the glue-laminated beams indicting previous roof leakage. Repairs or replacement of the roofing is recommended. During roof replacement, verification of the roof deck and sheathing condition should be performed, and any rotting or deterioration should be replaced with like material.

The original roof structure had no eave extensions past the outside face of exterior walls. During a previous roofing replacement approximately 2-foot-wide eave extensions were added to the low roof eaves along the east and west walls. The eave extension along the west wall of the mechanical and chemical storage rooms has been reinforced with exposed 4x beams and 4x4 treated wood posts bearing on concrete pier blocks at grade. We recommend all roof eave extensions be inspected and replaced as needed during roofing replacement. The exposed beams, posts and pier blocks should be eliminated after installation of properly designed outriggers, with back-spans sistered to the existing rafters.

The CMU walls are also in good condition. However, there appear to be mortar joint and block cracks in the 16-inch square pilasters supporting the glue-laminated roof girders. The cracks are predominately within the upper third of the pilaster height and near the beam seat. The cracks should be repaired by epoxy injection and fiber-reinforced polymer (FRP) wrap. The concrete masonry unit pilaster repairs should be assigned a high priority in the list of repairs.

Based on record drawings, the wall foundations are continuous reinforced concrete and approximately 4 feet below grade. There were only a few signs of cracking of the masonry walls which can form from shrinkage, high seismic stress, or differential settlement. Differential settlement of the pool foundations is not evident and not a concern for this building. The CMU joint cracks should be repaired by repointing and cracks in masonry blocks by epoxy injection.

Fig. 9. Propped East Eave

Fig. 10. CMU Cracked Block in Attic Mech Room

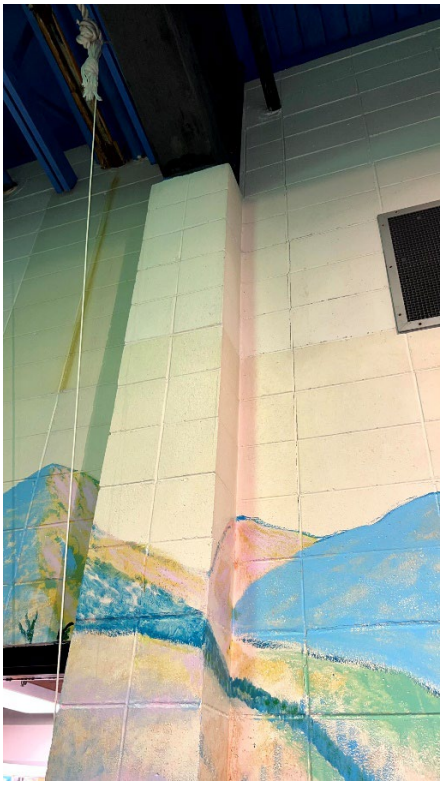

Fig. 11. CMU Wall Joint Crack Near Pilaster

Fig. 12. Pilaster Crack at GL Girder Bearing

3.2.3. Civil

The pool building is located on a parcel owned by the City of Cordova, parallel to Railway Avenue to the west. The site consists of paved and gravel parking to the north and west. Vegetation with natural bedrock is present to the south and east. The north area of the site shares a parking lot with the emergency services building, which has a steep slope away from the pool entrance.

The Owner stated the pool is on City water and sewer service and reported no issues with the services. Exterior utilities were not observed as part of this inspection.

Pavement adjacent to the pool area is in fair condition, with minor cracking and deterioration near Railway Ave. Gravel parking to the north looks to be newer and in good condition. See Figure 13.

Two ADA accessible parking stalls are present near the main entrance to the pool, however there is no striping, accessible aisles, or routes to the main entrance. No ramps exist at the concrete apron entrance. Grades in this area are greater than ten percent, which is a code violation. The owner reported this area to be dangerous in the winter months when icy, and users have been hurt while walking here. See Figure 14.

The surrounding grass and vegetation to the east and south of the building is very wet, with landscape damage from roof runoff. Gutters were not observed on the building, and runoff ponds around the back sides with nowhere to go.

A storm drain inlet is present at the northwest corner of the parking lot which collects runoff from the north and west of the site. Positive slopes in these areas allow runoff to be transported to the system with no issues observed.

Fig. 13. Asphalt parking adajcent to pool building.

Fig. 14. Gravel parking with steep slopes.

3.2.4. Mechanical

The swimming pool building heat originates from a single oil-fired boiler and a 1,000 gallon aboveground fuel oil storage tank. The boiler serves the heating and ventilation systems, a shell and tube heat exchanger for the pool water, and three stacked indirect-fired domestic hot water tanks. The heating system is comprised of heating coils for the air handlers, unit heaters in support spaces and locker rooms, and baseboard in the offices. The ventilation system includes an Air Handling Unit (AHU) for the natatorium (AHU-1) that is coupled with three exhaust fans, and a second air handler, AHU-2, that serves the administrative rooms. A list of major equipment, condition, and life expectancy is shown in Appendix A.

Components of the Heating and Ventilating system range from original construction (49 years old) to about 15 years old when the boiler was replaced. Most of the equipment is near or past its predicted useful life. The control system consists of local electronic controllers in varying condition, many of which are not functioning correctly and are manually adjusted by maintenance staff as needed. The ventilation and dehumidification method for the pool consists of an air handler that mixes outside and with return air, heats it, and distributes to the pool space. Exhaust fans that formerly cycled on as needed to control humidity are now manually operated to control humidity as the humidistat control is not functioning correctly. This system, especially in its partially functional state, is inefficient and adds significant operating costs compared to other system options. The pool ductwork distribution system is not up to current standards for pool ventilation design, resulting in less effective chloramine capture and removal from the breathing zone, which may create health concerns for regular occupants. Additionally, the humidity levels likely swing out of the desired 40%-60% recommended range due to the nonfunctioning controller. Humidity above the 60% range can exacerbate water damage to the building insulation, structure, and wall/roof assemblies. While outside airflow was not measured, or listed in the available building plans, it appears based on equipment size that the air handler is capable of supplying the recommended 6 air changes per hour of ventilation and 0.48 CFM/SF of outside air to maintain the pool environment air quality, if it is functioning correctly.

The locker rooms and restrooms were originally exhausted by a dedicated fan, which has been abandoned in place. Two small bathroom exhaust fans were installed at one time, but were disconnected and not operational during this investigation, leaving the locker/restrooms with no ventilation.

The fuel oil tank is located approximately a foot from the building, and is required by NFPA 30 to be at least 5 feet from the building. The tank is near a parking lot and a door into the building, a new location for the tank will require coordination to ensure code compliance, as well as minimal disruption to parking and fueling operations. This tank has buried fuel lines, depending on tank location new lines may be run above or below grade.

Fig. 15. Oil-fired Vitorond 200 boiler.

Fig. 16. Boiler vent pipe.

Fig. 17. 1,000 gallon fuel oil storage tank located outside the building.

Fig. 18. The three exhaust fans located with AHU-1.

3.2.5. Plumbing

Plumbing in this facility includes a men's and women's locker room and restroom. The locker rooms each have a common shower area with 6 shower heads per pole. The water closets and urinals use flushometer valves. It was reported onsite that the drain piping is likely clogged with sediment, and the water closets take multiple attempts to flush.

The domestic hot water is heated via three stacked indirect water heaters, heated from the boiler loop. It was reported onsite that the tempering valve for the locker rooms and restroom does not hold the temperature setting and must be manually adjusted on a regular basis; it is in the attic space and requires a ladder to access.

The swimming pool filtration system was replaced approximately 7 years ago. It was reported to function and provide the correct water chemistry but requires more maintenance and specialized knowledge to operate than other pool water treatment options. This is a concern in Cordova due to the availability of qualified operators in the area.

Fig. 19. Domestic hot water tempering valve located in the attic.

Fig. 20. Three stacked domestic hot water storage tanks.

Fig. 21. Pool filtration system and shell and tube heat exchanger for the pool water.

Fig. 22. Abandoned pool filtration and treatment system in the sprinkler room.

3.2.6. Fire Protection

As stated above in the *Architectural* section, the pool building does not require a sprinkler system, but one is currently installed and maintained. The design team did not determine whether insurance requirements necessitate a sprinkler system. This may be a driver for the current sprinkler system being installed. The building has a 6” domestic cold-water line coming into the building. From this 6” line, there is a 4” line that serves the Fire Department Connection (FDC) on the exterior portion of the pool. There is a 2” sprinkler riser that tees off the 6” main that feeds into a backflow preventer then out to the sprinkler system.

The *International Building Code* requires Group A occupancies to have a manual fire alarm if the occupant load is 300 or more. The pool building occupant load is over 300 people; therefore, a manual fire alarm is required. Manual fire alarm boxes are normally required at any exterior exit

for the building, but these are not required in buildings equipped with an automatic sprinkler system and occupant notification appliances.

The building is equipped with a Notifier NFW-50X Honeywell system. Each of the exit doors are marked with exit signs, there is a heat detector in the pool room, and the sprinklers span every area in the building, including the attic space. The building does not require manual fire alarm boxes at the exits due to the automatic sprinkler system and occupant notification appliances. There are two speakers located in the pool area and one in each of the locker rooms.

Fig. 23. 6” domestic cold water incoming to sprinkler riser.

Fig. 24. 2” sprinkler line with backflow preventor.

Fig. 25. Building fire alarm panel.

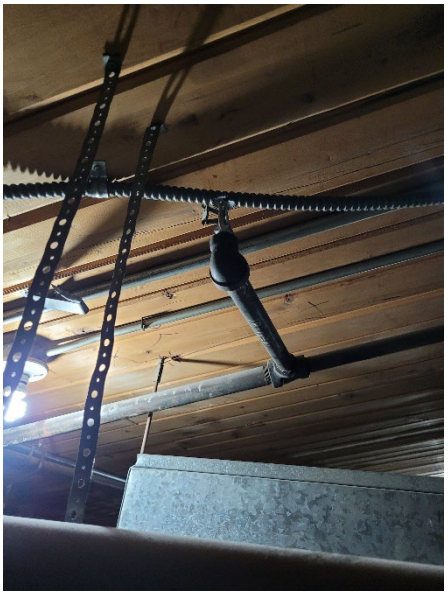

Fig. 26. Sprinkler head located in attic.

3.2.7. Electrical

The facility is served by a 208Y/120V, 3-phase, 4-wire, 600A electrical service provided by Cordova Electric Co-Op. The incoming utility service equipment, including Current Transformer (CT) cabinet, disconnect switch, and meter are rack-mounted north of the building. Distribution for the building is provided by a 600A, 208/120V switchboard located in the facility electrical room. Branch circuit panels are provided adjacent to the switchboard and provide all circuit distribution for the facility. The electrical distribution system is original construction and should be replaced.

There are no arc flash labels on the electrical panels and equipment as required by NEC 110.16. It is recommended that an Arc Flash Risk Assessment be performed on power systems for employee safety and compliance with OSHA regulations. OSHA requires employers provide a place of employment which is free from recognized hazards that are likely to cause death or serious physical harm to employees. OSHA also requires employers employ safety-related work practices to prevent electrical shock or other injuries resulting from direct or indirect electrical contact. This should be completed as part of replacement.

Lighting throughout the facility is a mix of fluorescent, Light Emitting Diode (LED), and metal halide fixtures. Most interior lighting fixtures are T8 fixtures converted to LED retrofit lamps. The pool area is a mix of metal-halide and LED fixtures. Per discussion with facility maintenance, it is understood that LED fixtures were added recently to increase lighting within the pool area. Lighting levels in the pool appeared very low at the time of the site visit. All interior lighting in the facility is switch controlled.

Exterior lighting is provided at the entry area canopy only. These fixtures have been retrofit with LED lamps but are in poor condition with yellowed lenses. Exterior lighting is controlled via a photocell located on the northwest corner of the building. The site visit took place during the daytime so functionality of the exterior lighting was not verified; however, all lighting covers appeared to be burned due to age and heat produced by the lamps used in the fixtures.

Facility maintenance indicated there haven't been significant issues with the electrical system except for the starter for the supply fans of the pools which appear to trip the breakers feeding the circuits.

Fig. 27. Electrical room door opens inward posing an egress hazard.

Fig. 28. Panel schedules for panel A section 1 do not match panel circuiting.

Fig. 29. Exhaust fan located within NEC required panel clearance

Fig. 30. Panelboards located within NEC required working clearance of facility switchboard

Fig. 31. Panel A Section 2 does not have a panel schedule

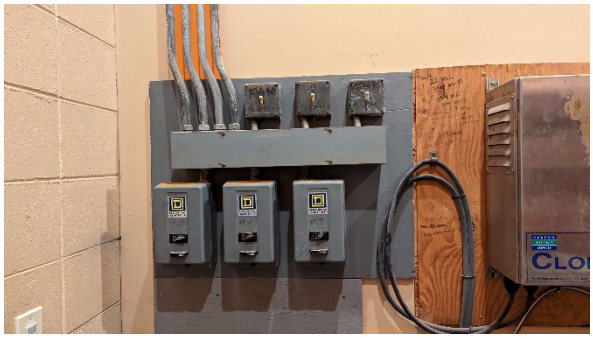

Fig. 32. Pool exhaust fan starters are causing the breakers to trip

Fig. 33. Exterior lighting fixture with burned cover

Fig. 34. Canopy lighting with damaged covers

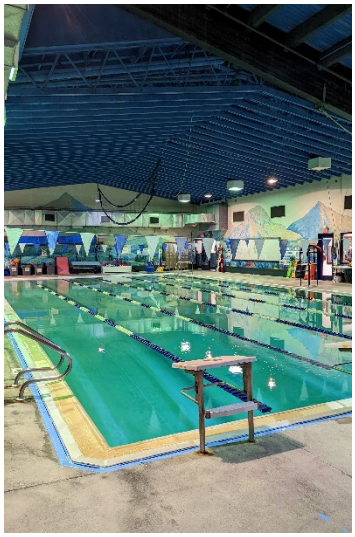

Fig. 35. Pool lighting – with mix of metal halide and LED fixtures

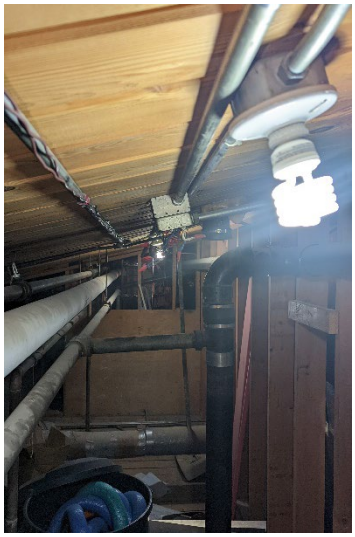

Fig. 36. Uncovered junction boxes in attic area

3.2.8. Deficiencies and Recommendations

The following list of deficiencies and items requiring maintenance are grouped into four categories: Life Safety, Structural, Code Compliance, and Maintenance or Facility Improvements. A rough order of magnitude cost is included but does not factor into the order in this list. See Appendix C for detailed cost estimate information.

Total building replacement, including demolition of the existing facility is estimated to cost $16,158,000. The total cost of all recommendations below is $5,215,000.

3.2.9. Life Safety Recommendations

Some of the recommendations below relate to life safety, however, there are no specific deficiencies warranting immediate action.

3.2.10. Phase 1

1. **Fuel Tank Location.** The fuel tank is currently located directly adjacent to the building wall. Move the fuel tank a minimum of 5-feet from building to get the required NFPA 30 setback from the structure. Evaluate new locations to minimize disruption to parking or fueling operations. Provide new fuel oil piping as needed.

   Estimated Cost: $40,629

2. **CMU joint cracks.** Repoint CMU joint cracks and epoxy inject block cracks in walls and pilasters. Estimate 100 linear feet of joint repointing and 20 liner feet of epoxy injection.

   Estimated Cost: $13,830

3. **Electrical room door lock.** The exit leading out of the rear corner of the pool, while properly signed, has a life safety concern: The door leading into the electrical room has

no hardware. Door hardware shall be installed at owners' earliest convenience, and both this door and the pool pump room shall be locked during normal business hours. Exterior door is in poor condition and warrants replacement; this includes door, frame and hardware.

Estimated Cost: $12,966

4. **Sprinkler room door lock.** There is no cylinder installed at the water sprinkler room. Install cylinder and keep door locked during normal business hours. The egress hardware to the exterior also has extensive corrosion (possibly from chemical storage over the years) and should be replaced in its entirety.

   Estimated Cost: $7,325

5. **Pool liner replacement.** Replace the existing pool liner. While this work is being done, all inlets and outlets should be inspected and/or replaced as well as ensuring there is a compliant VGB cover over the existing main drain.

   Estimated Cost: $164,760

Total Cost Phase 1: $240,000

3.2.11. Phase 2

6. **Pool cover replacement.** Recommend pool cover replacement with new motorized unit, spanning the full width of pool. This will require relocation of the handicap lift. Ideally, the pool cover could be deployed by a single person but two max.

   Estimated Cost: $123,084

7. **Roofing replacement.** Replace the existing metal roofing with a similar, standing seam metal roof with concealed fasteners. While replacing roofing, inspect roof sheathing / decking for water damage and replace in kind if deteriorated. Verify and improve roof eave cantilever members along east and west walls and remove post and beam shoring on east eave along mechanical / chemical storage rooms**.**

   Estimated Cost: $801,459

8. **Siding repairs.** Siding appears to be in serviceable condition. There was some flashing that was damaged, but only minor corrections would be needed. In context of a larger project, siding replacement would be advisable**.**

   Estimated Cost: $15,752

   Total Cost Phase 2: $940,300

3.2.12. Phase 3

1. **Restore bathroom exhaust functionality**. Recommend demolishing the original (abandoned in place) fan and installing a new 500 CFM exhaust fan and associated ductwork in the attic space above the locker/restrooms, to operate continuously during occupied hours.

Note: this recommendation should only be implemented if recommendations 9 or 10 below are not planned. Recommendations 9 or 10 below would capture this scope of work.

Estimated Cost: $23,092

2. **Ventilation remodel**. Demolish and replace the primary ventilation systems. Demolish AHU-1, AHU-2, the hydronic coils and dedicated coil pumps and valves, the three exhaust fans in the clearstory, the exhaust fans in the attic area, and all associated ductwork and controls. Design and install a Heat Recovery Ventilation (HRV) unit to provide ventilation to the natatorium, locker/restroom, and admin areas. The HRV should contain a hydronic heating and preheating coil for outside air (along with any recirculation pumps needed), and a return air connection and mixing box. This allows the natatorium to achieve the recommended 4-8 air changes per hour (ACH) of ventilation air for circulation and humidity control, and provide the recommended outside air volume, which is less than the 6 ACH, approximately 0.5 CFM/SF depending on pool activities. The new system and ductwork should be designed to current natatorium design standards such as those provided by the American Society of Heating, Refrigeration, and Ventilation Engineers (ASHRAE). Evaluate the pressure relationships of the building airflows and balance so the natatorium is negative, the locker/restrooms are neutral, and the admin and support spaces are positively pressurized in relation to ambient outdoor air. This will help protect the building envelope from moisture intrusion and improve air quality within the administrative spaces and restrooms.

   The new design will be more effective at removing chloramine contaminants from the air and controlling humidity which results in a safer, more comfortable atmosphere and less damage to building components from corrosion and moisture intrusion. Using an HRV will substantially reduce operating costs and was a recommendation in a biomass feasibility study performed in 2015 and also in a 2016 energy audit.

   Note: this recommendation should only be implemented if recommendation 4 below is not planned. Recommendation 4 below would capture this scope of work.

   Estimated Cost: $941,447

3. **Full HVAC remodel.** Include the full scope of the “Ventilation remodel” recommendation above and add the demolition of all heating pumps, controls, piping, valves, terminal heating units, glycol-to-pool water shell and tube heat exchanger, and fuel tank, piping, and valves. Design and replace with new equipment, including a standalone control system. Recommend the new fuel oil piping be routed above grade or provide leak detection. This would likely require a day tank and pumps be added to the mechanical room. The boiler and domestic hot water tanks are midway through their life and appear in decent condition. It is recommended these are retained for ongoing use until maintenance or reliability dictate replacement.

   Estimated Cost: $1,850,249

   Total Cost Phase 3: $23,000 to $1,850,000 depending on which option is selected. Selection of option 8 or 9 will result in mechanical components being on varying lifecycles, which may be acceptable if annual maintenance budgets can capture replacement costs as they arise.

3.2.13. Phase 4

1. **Replace all exterior light fixtures.** Replace all exterior light fixtures with LED fixtures. Provide additional fixtures on the exterior of the building for parking areas. Replace exterior lighting photocell.

   Estimated Cost: $13,042

2. **Replace all interior light fixtures.** Replace all interior light fixtures with LED fixtures. Provide occupancy sensor control for non-pool areas.

   Estimated Cost: $189,553

3. **Replace electrical distribution system**. This includes replacement of a 600A switchboard, (3) 225A panelboards, and associated feeders. Provide accurate as-built drawings and panel schedules for the electrical system. This includes reconfiguring the electrical room to remediate current NEC working clearance issues. Recommend an Arc Flash Risk Assessment is performed on power systems for employee safety and compliance with OSHA regulations. Install arc flash hazard labels to all panels and equipment per NEC 110.16.

   Estimated Cost: $125,795

   Total Cost Phase 4: $328,400

3.2.14. Phase 5

1. **Parking Area Grades.** Grades immediately adjacent to the main entrance concrete apron are steep and present a safety risk to users, especially during freezing conditions. Parking spaces are uncontrolled, and vehicles typically park on the north and west sides of the building. The west side of the building is paved, while the north is compacted gravel. Slopes on the west side of the building are generally around five to 10 percent, while slopes on the north of the building exceed 20 percent in select areas, both of which are too high for ADA accessibility.

   To correct the parking area on the north side of the building, it is recommended that a 100-foot long eco block style retaining wall, approximately 10-feet high be installed between the pool building and emergency services building. The area will be backfilled with approximately 2,500 cubic yards of ADOT Selected Material Type A and finished with an E1 type material surface wearing course for durability (approximately 325-square feet). ADA accessible parking will be present in this area next to the building, in conjunction with the new ramp described in the ADA Accessibility recommendation below.

   Estimated Cost: $631,768

2. **Locker room doors.** The existing locker rooms are equipped with exit signage from the pool, however the doors have deficiencies. They have been cut in half and are equipped with residential closures. Recommend replacement of the doors, frames, and hardware.

   Estimated Cost: $12,066

3. **ADA Accessibility.** There is no ADA accessible parking at the entrance to the facility. There is also no accessible way to the facility. Correction to transfer into the building would be to construct a pedestrian ramp. There appears to be an area

immediately adjacent to the existing stairs to accomplish this. Ramp would be approximately 12-feet long and 4-feet wide and would be equipped with handrails on both sides. While the strategy above is fairly easy to accommodate, Civil has identified the parking lot grading exceeds maximum allowable slopes in the Grading correction deficiency.

Estimated Cost: $23,878

4. **ADA Shower accessibility.** The existing showers are not ADA accessible. There is an approximate 4-inch curb up into the showers. These are required to be barrier free stalls. Correction is demolishing the slab, and recreating showers at grade.

   Estimated Cost: $72,667

5. **ADA accessible restroom.** No ADA accessible toilet stalls have been provided. A possible correction is to renovate the toilet facility at the main entry to be ADA complaint. While currently not laid out correctly, there is adequate area to bring this room into compliance.

   Estimated Cost: $41,672

6. **Damaged sheet rock.** There is damaged GWB throughout the facility, but largely in mechanical and storage rooms.

   Estimated Cost: $23,911

7. **Space separation.** Install a vapor barrier and GWB ceiling to separate the spaces, size fasteners such that they do not penetrate the upper wood layer/walking surface.

   Estimated Cost: $71,964

8. **Entryway carpet.** Replace carpet in Main Entry with resilient, slip resistant flooring.

   Estimated Cost: $8,841

9. **Service window.** Replace service window with purpose-built unit (assume 4x4 sliding service window, with some framing manipulation).

   Estimated Cost: $5,435

Total Cost Phase 5: $892,200

APPENDIX A – EQUIPMENT CONDITION AND LIFE EXPECTANCY

Major HVAC Equipment List				
Equipment	**Description**	**Age (yrs)**	**Life Expectancy (yrs)[1]**	**Notes**
Boiler (B-1)	Viessman Vitorond 200, series VD2-700, cast iron sectonal oil fired boiler, 2,693 MBH output, 22.4 GPM Riello burner	15	35	Boiler appears in decent condition and was manufacturered in 2005. It is unclear if piping or flue material was replaced at this time. Piping joints may require maintenance, and flue may require replacement at an earlier date depending on leaks and corrosion observations. It was reported onsite that the boiler will shutdown on windy days, possbly due to the boiler venting.
Air Handler (AHU-1)	Custom air handler with preheat coil and heating coil, each with dedicated pumps and three way valves. The 12,000 CFM fan mixes return air from the pool with outside air, conditions it with the heating coil, and dischagres into the natatorium ductwork.	39	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced. It was reported onsite that the AHU is under manual control.
Air Handler (AHU-2)	Trane CC-3-LP, 1350 CFM @ 1.1" TSP. 12 GPM heating coil with dedicated pump. Mixes outside air with return air, filters, distributes to office, admin, locker areas.	49	Fan: 25 Coils: 20 Dampers: 20 Ductwork: 30 Actuators: 15	It is unknown which components, if any, have been replaced. It appears the fan was replaced in the 1983 remodel, and may have been replaced again since then.
Exhasut Fans (EF-1,2,3)	Three wall-mounted propeller fans located in the clearstory mechancial space. Make and model of fans are unknown, no nameplates were visible and plans do not identify details. Motors are 1/2 HP and fans likely move around 3500 CFM each.	39	25	It was reported that one fan does not work, and an electrical buzzing noise can be heard at the starter in the fire room below when energized. One fan was running, and it was reproted a second fan is manually turned on as needed for humidity control.
Pump (AHU-2 heat coil)	Gundfos UP 43-75, AHU-2 heating coil circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (AHU-1 heat coil)	Gundfos UMC 80-80, AHU-1 heating coil circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (AHU-1 preheat coil)	Gundfos UPS 50-80, AHU-1 pre-heating coil circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (Building heat circ.)	Gundfos UPS 50-160, building heat circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (Building heat circ.)	Gundfos UPS 40-80/4, building heat circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (Building heat circ.)	Gundfos UPS 80-160 double motor, building heat circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (DHW circ.)	Gundfos UPS 15-58 domestic hot water circulation pump	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (Hydronic side of pool heat exchanger)	Gundfos UPS 32-80 heating water circulation pump for hot side of pool heat exchanger	39	10	This pump has likley been replaced since the 1983 remodel, age is unknown, condition appears fair.
Pump (pool water circ.)	G&L SSH 23sH2J5F0 5 HP pool water circulation pump	7	10	It is believed this pump was replaced with the pool filtration system, reported at 7 ago.
Terminal heating equipment	Three hydronic unit heaters	39	20	Age is unknown, appears original and condition is fair to poor with visible corrosion.
Heat exchanger (pool water heat)	Shell and tube heat exchanger, hydronic heat to pool water	39	24	Functional condition is unknown, there is likely scaling on both sides of the heat exchanger.
Domestic Hot Water Heater	Viessman Vitocell 300 (three stacked sections)	15	25	Appears in decent condition and is it believed these were installed along with the new boiler in 2005.

1. Life expectancy is based on the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) 2019 Applications Handbook, Chapter 38, Table 4: Comparison of Service Life Estimates. These values are based on historical survey data, and are heavily dependant on maintenance, usage, cycling, and application, but form a basis to accompany site observation notes.

APPENDIX B – ROUTINE MAINTENANCE TASKS

Fan Maintenance (Exhaust, Supply, Return)				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check fan-belt tension, check for belt wear, and check sheaves for evidence of improper alignment or evidence of wear.	Correct tension and sheave alignment	Semiannually	Replace belts and sheaves as needed to ensure proper operation.
b	Check variable-frequency drive for proper operation.	Correct as needed. Clean housing and tighten connections as needed. Clean or replace air filter.	Semiannually	Repair, replace, or restore as needed to ensure proper operation.
c	Check control system and devices for evidence of improper operation.	Clean, lubricate, adjust	Semiannually	Repair or replace components as needed to ensure proper operation.
d	Check fan drive for problems due to poor alignment or poor bearing seating.	Adjust and lubricate as necessary	Annually	Repair or replace components as needed to ensure proper operation.
e	Check fan blades and fan housing.	Clean as needed.	Annually	Repair or replace components as needed to ensure proper operation.
f	Asses field-serviceable bearings.	Lubricate as necessary.	Annually	Replace as needed.
g	Check control box for dirt, debris, and/or loose terminations.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
h	Check motor contractor for pitting or other signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
i	Check integrity of all panels on equipment.	Replace fasteners as needed to ensure proper integrity and fit/finish of equipment.	Annually	Repair or replace damaged panels.
j	Inspect exposed ductwork and external piping for insulation and vapor barrier integrity.	Record location of damage.	Annually	Repair or replace as needed.
k	Check damper for condition, setting, and operation.	Adjust and lubricate as necessary	Annually	Repair or replace as needed to ensure proper operation.
l	Inspect flexible connections.	Clean as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.

Air Handling Unit Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check for accumulation on filters.	Clean or replace as needed to ensure proper operation.	Quarterly	Evaluate frequency of change requirement.
b	Check P-trap.	Prime as needed to ensure proper operation.	Quarterly	Replace damage P-trap.
c	Check drain pain, drain line, coil, and other areas of moisture accumulation for visible signs of biological growth.	Clean and verify proper operation.	Quarterly	Disinfect as needed.
d	Check control system and devices for evidence of improper operation.	Clean, lubricate, adjust.	Semiannually	Repair or replace components as needed to ensure proper operation.
e	Check fan-belt tension, check for belt wear, and check sheaves for evidence of improper alignment or evidence of wear.	Correct tension and sheave alignment.	Semiannually	Replace belts and sheaves as needed to ensure proper operation.
f	Check variable-frequency drive for proper operation.	Correct as needed. Clean housing, and tighten connections as needed. Clean or replace air filter.	Semiannually	Repair, replace, or restore as needed to ensure proper operation.
g	Check for damage or evidence of leaks on the refrigeration-cycle indoor heat exchanger, chilled-water-coil heat exchanger, or steam or hot-water-coil heat exchanger surfaces.	Record location of identified leaks.	Semiannually	Repair, replace, or restore as needed to ensure proper operation.
h	Check air filter fit and housing seal integrity.	Clean and verify proper fit/finish.	Annually	Repair, replace, or restore as needed to ensure proper operation.
i	Check control box for dirt, debris, and/or loose terminations.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
j	Check motor contractor for pitting or other signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair, replace, or restore as needed to ensure proper operation.
k	Check fan blades and fan housing.	Clean as needed.	Annually	Repair or replace as needed to ensure proper operation.
l	Check refrigerant system temperatures.	When outside of recommended levels, find and record the cause.	Annually	Repair and adjust refrigerant to achieve optimal operating levels.
m	Check integrity of all panels on equipment.	Replace fasteners as needed to ensure proper integrity and fit/finish of equipment.	Annually	Repair or replace damaged panels.
n	Assess field-serviceable bearings.	Lubricate as necessary.	Annually	Replaced as needed.
o	Check for fin damage and evidence of fouling on the refrigeration cycle indoor heat exchanger, chilled water coil heat exchanger or steam or hot water coil heat exchanger surfaces.	Clean and restore as needed to ensure acceptable condition.	Annually	Repair or replaced as needed to ensure proper operation.
p	Inspect for evidence of moisture carryover beyond the drain pan from cooling coils.	Clean as needed.	Annually	Repair or replace as needed to ensure proper operation.
q	Check damper for condition, setting, and operation.	Adjust and lubricate as needed.	Annually	Repair or replace as needed to ensure proper operation.
r	Inspect exposed ductwork for insulation and vapor barrier integrity.	Record location of damage.	Annually	Repair or replace as needed to ensure proper operation.

Boiler Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Visually inspect fuel filter.	Clean and verify proper operation.	Monthly	Repair or replace.
b	Perform chemical testing of system water.	Verify water treatment target levels are being maintained.	Monthly	Repair equipment and treat water to proper water chemistry.
c	Check fuel pump for proper operation.	Clean and verify proper operation.	Quarterly	Repair or replace.
d	Inspect blowdown or drain valve.	Clean and verify proper operation.	Quarterly	Repair or replace.
e	Check for evidence of leakage of fuel supply, heat transfer fluid, and flue gas.	Record location of identified leaks.	Quarterly	Repair or replace.
f	Check control system and devices for evidence of improper operation.	Clean and verify proper operation.	Semiannually	Repair or replace.
g	Check control box for dirt, debris, and/or loose terminations.	Clean, lubricate, and verify proper operation.	Annually	Repair or replace.
h	Check motor contactor for pitting or other signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.
i	Check for evidence of buildup or fouling, corrosion, or degradation on heat exchange surfaces.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.
j	Check for proper damper operation.	Clean and restore as needed to ensure acceptable condition.	Annually	Repair or replace.
k	Check combustion chamber, burner, and flue for deterioration, moisture problems, condensation, and combustion products.	Clean and adjust combustion process for operation.	Annually	Repair or replace.
l	Inspect refractory for damage or wear.	Clean combustion side. Record location of damage and wear.	Annually	Repair or replace.
m	Observe burner flame at high load for correct clearance from refractory	Clean and adjust.	Annually	Repair or replace.
n	Verify proper operation of safety devices per manufacturer's recommendations.	Clean, lubricate, and adjust.	Annually	Repair or replace.

Pumps Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check variable frequency drive.	Correct as needed. Clean housing, and tighten connection as needed. Clean or replace air filter.	Semiannually	Repair or replace.
b	Inspect pump and electrical components.	Clean and verify proper operation.	Semiannually	Repair or replace.
c	Check control system and devices for evidence of improper operation.	Clean, lubricate, adjust.	Semiannually	Repair or replace.
d	Check motor contractor for signs of damage.	Clean and tighten electrical connections as needed.	Annually	Repair or replace.
e	Check pump drive for wear or problems based on alignment or bearing seating.	Lubricate and adjust and record evidence of wear.	Annually	Repair or replace.
f	Check proper fluid flow.	Clean, adjust, as needed to restore proper flow.	Annually	Repair or replace.
g	Asses field serviceable bearings.	Lubricate as necessary.	Annually	Repair or replace.
h	Check insulation, vibration isolators, and flexible connections for integrity.	Clean as needed. Record location of damage.	Annually	Repair or replace.

Terminal Heating Units Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check fans, wiring, and vent systems for damage.	Correct as needed. Clean housing, and tighten connection as needed. Clean or replace air filter.	Semiannually	Repair or replace.
b	Check and adjust manifold gas pressure.	Adjust as needed to restore proper flow.	Semiannually	Repair or replace.
c	Inspect all gas connections for proper fitting.	Adjust as needed.	Semiannually	Repair or replace.
d	Inspect that the motor shaft turns correctly and power connections.	Adjust as needed.	Annually	Repair or replace.
e	Examine thermostats for correct temperature settings and connectivity.	Verify that unit kicks on with temperature adjustment.	Annually	Repair or replace.
f	Inspect burner tubes.	Correct as needed. Clean housing, and tighten connection as needed. Clean or replace air filter.	Annually	Repair or replace.
g	Verify venting system is free of obstructions.	Clean as needed.	Annually	Repair or replace.

Heat Exchanger Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check for physical and external leaks.	Inspect the physical damage or leaks on the unit.	Monthly	Repair or replace.
b	Check for signs of fouling or corrosion.	Inspect the physical damage or leaks on the unit.	Monthly	Repair or replace.
c	Check frame is tightened.	Verify and tighten frame.	Monthly	Repair or replace.
d	Check for pressure drop.	Verify and adjust for proper pressure.	Quarterly	Repair or replace.
e	Check for blowdown pressure.	Verify and adjust for proper pressure.	Quarterly	Repair or replace.
f	Check pressure gauges.	Verify and adjust for proper pressure.	Quarterly	Repair or replace.
g	Inspect thermometers.	Verify accurate temperature is showing.	Quarterly	Repair or replace.
h	Test the inlet and outlet temperatures.	Verify and adjust for propre temperatures in the inlet and outlet.	Quarterly	Repair or replace.
i	Check the tubes.	Inspect tubes for any signs of wear, damage, leaks, and corrosion.	Annually	Repair or replace.
j	Clean the heat transfer area.	Clean surrounding area around equipment.	Annually	Repair or replace.
k	Flush heat exchanger, eliminate and clean debris and build up.	Flush the system.	Annually	Repair equipment and treat water to proper water chemistry.
l	Inspect relief valves.	Verify and adjust relief valves.	Annually	Repair or replace.

Water Heater Maintenance				
Item No.	**Inspection Task**	**Maintenance Task**	**Frequency**	**Recommended Action**
	Mechanical			
a	Check water pressure.	Verify and adjust for proper pressure.	Monthly	Repair or replace.
b	Check control water pressure.	Verify and adjust for proper pressure.	Monthly	Repair or replace.
c	Check thermal expansion tank.	Verify tank is working correctly, pressurized, and no damage.	Monthly	Repair or replace.
d	Inspect T&P relief valve.	Inspect and verify that valve is functioning properly.	Quarterly	Repair or replace.
e	Drain and flush tank.	Drain tank and verify water is clean. If milky, drain entire tank and refill.	Annually	Repair or replace.
f	Check anode rod.	Inspect and verify that anode rod is function and doesn't have significant damage/wear.	Annually	Repair or replace.

APPENDIX C – COST ESTIMATE

HMS Project No. 22130-A

MULTI-BUILDING CONDITION ASSESSMENTS
CONSTRUCTION COST ESTIMATE (REVISION 4)

CITY OF CORDOVA
BOB KORN MEMORIAL POOL
CORDOVA, ALASKA

PREPARED FOR:

Coffman Engineering
800 F Street
Anchorage, Alaska 99501

March 3, 2023

4103 Minnesota Drive • Anchorage, Alaska 99503 p: 907.561.1653 • f: 907.562.0420 • e: mail@hmsalaska.com

NOTES REGARDING THE PREPARATION OF THIS ESTIMATE

DRAWINGS AND DOCUMENTS

Level of Documents:	(27) page condition assessment document, record drawings, and narratives
Date:	Undated
Provided By:	Coffman Engineers of Anchorage, Alaska

RATES

Pricing is based on current material, equipment and freight costs.

Labor Rates:	A.S. Title 36 working 60 hours per week
Premium Time:	16.70% (included with unit rates)
Subcontractor Mark-Up:	35.00%

BIDDING ASSUMPTIONS

Contract:	Standard construction contract without restrictive bidding clauses
Bidding Situation:	Competitive bid assumed
Bid Date:	See individual phases
Start of Construction:	See individual phases
Months to Complete:	See individual phases

EXCLUDED COSTS

1. Administrative and management costs
2. Furniture, furnishings and equipment (except those specifically included)
3. Remediation of contaminated soils or abatement of any hazardous materials

GENERAL

When included in HMS Inc.'s scope of services, opinions or estimates of probable construction costs are prepared on the basis of HMS Inc.'s experience and qualifications and represent HMS Inc.'s judgment as a professional generally familiar with the industry. However, since HMS Inc. has no control over the cost of labor, materials, equipment or services furnished by others, over contractor's methods of determining prices, or over competitive bidding or market conditions, HMS Inc. cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from HMS Inc.'s opinions or estimates of probable construction cost.

This estimate assumes escalation based on a 12-month rolling average of the U.S. Consumer Price Index. HMS Inc. will continue to monitor this, as well as other international, domestic and local events, and the resulting construction climate, and will adjust costs and contingencies as deemed appropriate.

Due to the lingering effects of the COVID-19 pandemic on the global supply chain and labor market, as well as ongoing geopolitical impacts to energy prices, HMS Inc. has included an additional contingency titled 'Unique Market Risk'. This amount provided for in the estimate will be adjusted as the situation continues to change and the effect on construction pricing becomes better understood.

HMS Project No.: 22130-A

GROSS FLOOR AREA

First Floor	7,790	SF
Mechanical Mezzanine	1,850	SF
TOTAL GROSS FLOOR AREA:	**9,640**	**SF**

HMS Project No.: 22130-A

CONDITION ASSESSMENT GENERAL COST SUMMARY

REPLACEMENT	$ 16,157,688
REPAIRS	5,215,189

REPLACEMENT

CONDITION ASSESSMENT COST SUMMARY

01 - SITE WORK		$ 769,930
02 - SUBSTRUCTURE		829,641
03 - SUPERSTRUCTURE		477,913
04 - EXTERIOR CLOSURE		445,720
05 - ROOF SYSTEMS		287,630
06 - INTERIOR CONSTRUCTION		500,798
07 - CONVEYING SYSTEMS		0
08 - MECHANICAL		1,156,945
09 - ELECTRICAL		479,093
10 - EQUIPMENT		143,064
11 - SPECIAL CONSTRUCTION		1,502,550
SUBTOTAL:		*$ 6,593,284*
12 - GENERAL CONDITIONS, OVERHEAD, AND PROFIT	45.00%	2,966,978
SUBTOTAL:		*$ 9,560,262*
13 - CONTINGENCIES		
Estimator's Contingency	30.00%	$ 2,868,079
Unique Market Risk	5.00%	621,417
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	10.55%	1,376,749
A/E Design Fee	12.00%	1,731,181
TOTAL ESTIMATED CONSTRUCTION COST:		***$ 16,157,688***
COST PER SQUARE FOOT:		*$ 1,676 /SF*
GROSS FLOOR AREA:		*9,640 SF*

REPLACEMENT ***01 - SITE WORK***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
DEMOLITION				
Demolish existing pool building, complete	115,680	CF	0.45	52,056
Hazmat abatement allowance	9,640	SF	3.00	28,920
Demolish concrete pool tank and slab	7,790	SF	1.50	11,685
Demolish building substructure	7,790	SF	1.10	8,569
Load, haul, and dispose of debris	90	LDS	650.00	58,500
NEW WORK				
Note: Fill and surface course prices per quote from Wilson Construction.				
SWPPP plan and maintenance	1	EA	10000.00	10,000
Site survey and staking	2.7	AC	6000.00	16,200
Temporary construction fencing	500	LF	16.00	8,000
Excavate and dispose unsuitable at building site				Existing
Select fill in place (minimal)	500	CY	60.00	30,000
Parking and sidewalks	1	LOT	356000.00	356,000
Ramps, stairs, and railings	1	LOT	40000.00	40,000
Landscaping	1	LOT	15000.00	15,000
Connect to community sanitary sewer	1	LOT	35000.00	35,000
Connect to community water service	1	LOT	35000.00	35,000
Fuel oil system allowance	1	LOT	30000.00	30,000
Connect to community power/provide conduit for data connections	1	LOT	35000.00	35,000

TOTAL ESTIMATED COST:	***$ 769,930***

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REPLACEMENT ***02 - SUBSTRUCTURE***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Standard foundations	7,790	SF	32.00	249,280
Slab on grade (6" assumed)	4,890	SF	14.90	72,861
Pool tank slab and wall construction	2,900	SF	175.00	507,500

TOTAL ESTIMATED COST: ***$ 829,641***

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REPLACEMENT ***03 - SUPERSTRUCTURE***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Long span roof structure	8,218	SF	49.60	407,613
Floor structure	1,850	SF	38.00	70,300

TOTAL ESTIMATED COST: ***$ 477,913***

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REPLACEMENT ***04 - EXTERIOR CLOSURE***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Exterior wall construction and finishes	6,300	SF	55.00	346,500
Single door assembly	3	EA	6140.00	18,420
Windows and curtain walls (minimal)	300	SF	179.00	53,700
Soffits and finishes	200	SF	35.50	7,100
Design detail and finish	1	LOT	20000.00	20,000

TOTAL ESTIMATED COST: ***$ 445,720***

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REPLACEMENT ***05 - ROOF SYSTEMS***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Insulated roofing system and flashings	8,218	SF	35.00	287,630

TOTAL ESTIMATED COST: ***$ 287,630***

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REPLACEMENT ***06 - INTERIOR CONSTRUCTION***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Partitions and doors	9,640	SF	18.30	176,412
Finishes	9,640	SF	19.00	183,160
Specialties	9,640	SF	8.00	77,120
Subcontractor's overhead and profit on finishes only	35.00%			64,106

TOTAL ESTIMATED COST: ***$ 500,798***

REPLACEMENT ***08 - MECHANICAL***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Plumbing	9,640	SF	16.00	154,240
HVAC	9,640	SF	55.00	530,200
Controls and programming	9,640	SF	12.40	119,536
Fire protection	9,640	SF	5.50	53,020
Special systems	9,640	SF		With Element 11
SUBTOTAL:				*$ 856,996*
Subcontractor's Overhead and Profit on Materials and Labor	35.00%			299,949

TOTAL ESTIMATED COST:	***$ 1,156,945***

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REPLACEMENT ***09 - ELECTRICAL***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Service and distribution	800	AMP	105.00	84,000
Lighting and power	9,640	SF	17.50	168,700
Special systems	9,640	SF	10.60	102,184
SUBTOTAL:				*$ 354,884*
Subcontractor's Overhead and Profit on Materials and Labor	35.00%			124,209

TOTAL ESTIMATED COST:	***$ 479,093***

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REPLACEMENT ***10 - EQUIPMENT***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Fixed and movable equipment allowance	9,640	SF	12.00	115,680
Furnishings allowance	9,640	SF	0.60	5,784
Bleacher construction	96	SEATS	225.00	21,600

TOTAL ESTIMATED COST: ***$ 143,064***

REPLACEMENT ***11 - SPECIAL CONSTRUCTION***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
POOL CONSTRUCTION				
Lap pool structure	2,900	SF		With Element 02
Pool finishes, targets, etc.	2,900	SF	40.00	116,000
Fixed and embedded equipment for lap pool	1	LOT	175000.00	175,000
Pool accessories	1	LOT	35000.00	35,000
Pool covers and storage reels	1	LOT	17000.00	17,000
Allowance for waterslide, pool, play structures, and related	1	LOT	50000.00	50,000
Pool circulation and filtration systems, including perimeter drains	1	LOT	700000.00	700,000
Testing, commissioning, training, etc.	1	LOT	20000.00	20,000
SUBTOTAL:				*$ 1,113,000*
Subcontractor's Overhead and Profit on Materials and Labor	35.00%			389,550

TOTAL ESTIMATED COST:	***$ 1,502,550***

REPAIRS

CONDITION ASSESSMENT COST SUMMARY

	Total
DEFICIENCY 1 - CMU JOINT CRACKS	$ 13,831
DEFICIENCY 2 - RESTORE RESTROOM EXHAUST FUNCTIONALITY	23,093
DEFICIENCY 3 - VENTILATION REMODEL	941,447
DEFICIENCY 4 - FULL HVAC REPLACEMENT	1,850,250
DEFICIENCY 5 - PARKING AREA GRADES	631,768
DEFICIENCY 6 - POOL COVER REPLACEMENT	123,085
DEFICIENCY 7 - ELECTRICAL ROOM DOOR LOCK	12,964
DEFICIENCY 8 - SPRINKLER ROOM DOOR LOCK	7,326
DEFICIENCY 9 - LOCKER ROOM DOORS	12,066
DEFICIENCY 10 - ADA ACCESSIBILITY	23,878
DEFICIENCY 11 - ADA SHOWER ACCESSIBILITY	72,667
DEFICIENCY 12 - SIDING REPAIRS	15,752
DEFICIENCY 13 - ROOFING REPLACEMENT	801,459
DEFICIENCY 14 - ADA ACCESSIBLE RESTROOM	41,673
DEFICIENCY 15 - DAMAGED SHEET ROCK	23,912
DEFICIENCY 16 - SPACE SEPARATION	71,964
DEFICIENCY 17 - ENTRYWAY CARPET	8,840
DEFICIENCY 18 - POOL LINER REPLACEMENT	164,760
DEFICIENCY 19 - SERVICE WINDOW	5,435
DEFICIENCY 20 - REPLACE EXTERIOR LIGHT FIXTURES	13,042
DEFICIENCY 21 - REPLACE INTERIOR LIGHT FIXTURES	189,553
DEFICIENCY 22 - REPLACE ELECTRICAL DISTRIBUTION SYSTEM	125,795
DEFICIENCY 23 - RELOCATE FUEL TANK	40,629
TOTAL ESTIMATED CONSTRUCTION COST:	***$ 5,215,189***

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REPAIRS ***DEFICIENCY 1 - CMU JOINT CRACKS***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Rake and clean joints in preparation for repointing or injection	120	LF	3.50	420
Repoint CMU joints	100	LF	5.00	500
Epoxy injection crack repair at CMU walls	20	LF	8.50	170
Repaint at areas of repair (allowance)	1,500	SF	2.20	3,300
SUBTOTAL:				*$ 4,390*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,537
SUBTOTAL:				*$ 5,927*
General Requirements, Overhead, and Profit	45.00%			2,667
Estimator's Contingency	30.00%			2,578
Unique Market Risk	5.00%			559
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			618
A/E Design Fee	12.00%			1,482

TOTAL ESTIMATED COST: ***$ 13,831***

REPAIRS ***DEFICIENCY 2 - RESTORE RESTROOM EXHAUST FUNCTIONALITY***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing exhaust fan	1	EA	85.00	85
Demolish existing exhaust air ductwork	550	LBS	2.10	1,155
Dispose of debris	2	LDS	600.00	1,200
New exhaust fan, 500 CFM	1	EA	1250.00	1,250
Motor connection	1	EA	250.00	250
Duct accessories, grille, and diffuser	14	EA	135.00	1,890
Test and balance	1	LOT	1500.00	1,500
SUBTOTAL:				*$ 7,330*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			2,566
SUBTOTAL:				*$ 9,896*
General Requirements, Overhead, and Profit	45.00%			4,453
Estimator's Contingency	30.00%			4,305
Unique Market Risk	5.00%			933
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			1,032
A/E Design Fee	12.00%			2,474

TOTAL ESTIMATED COST:	***$ 23,093***

REPAIRS ***DEFICIENCY 3 - VENTILATION REMODEL***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing primary ventilation system, complete	9,640	SF	1.50	14,460
New ventilation system, complete	9,640	SF	29.50	284,380
SUBTOTAL:				*$ 298,840*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			104,594
SUBTOTAL:				*$ 403,434*
General Requirements, Overhead, and Profit	45.00%			181,545
Estimator's Contingency	30.00%			175,494
Unique Market Risk	5.00%			38,024
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			42,081
A/E Design Fee	12.00%			100,869

TOTAL ESTIMATED COST:	***$ 941,447***

REPAIRS ***DEFICIENCY 4 - FULL HVAC REPLACEMENT***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing HVAC system with the exception of boiler	9,640	SF	2.45	23,618
Demolish existing fuel oil system	1	LOT	3500.00	3,500
New HVAC system, complete	9,640	SF	55.00	530,200
New fuel oil system, complete	1	LOT	30000.00	30,000
SUBTOTAL:				*$ 587,318*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			205,561
SUBTOTAL:				*$ 792,879*
General Requirements, Overhead, and Profit	45.00%			356,796
Estimator's Contingency	30.00%			344,903
Unique Market Risk	5.00%			74,729
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			82,702
A/E Design Fee	12.00%			198,241

TOTAL ESTIMATED COST: ***$ 1,850,250***

REPAIRS ***DEFICIENCY 5 - PARKING AREA GRADES***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Note: Fill and surface course prices per quote from Wilson Construction.				
48"x24"x24" eco blocks retaining wall	125	EA	350.00	43,750
Classified fill material	2,500	CY	60.00	150,000
Surface course	61	CY	110.00	6,710
Finish grade	400	SF	0.20	80
SUBTOTAL:				*$ 200,540*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			70,189
SUBTOTAL:				*$ 270,729*
General Requirements, Overhead, and Profit	45.00%			121,828
Estimator's Contingency	30.00%			117,767
Unique Market Risk	5.00%			25,516
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			28,239
A/E Design Fee	12.00%			67,689

TOTAL ESTIMATED COST:	***$ 631,768***

REPAIRS ***DEFICIENCY 6 - POOL COVER REPLACEMENT***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove/reinstall handicap lift at new location	1	EA	250.00	250
Remove and dispose of existing pool cover assembly	2,900	SF	0.80	2,320
New motorized pool cover assembly	2,900	SF	12.50	36,250
Motor connection	1	EA	250.00	250
SUBTOTAL:				*$ 39,070*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			13,675
SUBTOTAL:				*$ 52,745*
General Requirements, Overhead, and Profit	45.00%			23,735
Estimator's Contingency	30.00%			22,944
Unique Market Risk	5.00%			4,971
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			5,502
A/E Design Fee	12.00%			13,188

TOTAL ESTIMATED COST: ***$ 123,085***

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REPAIRS ***DEFICIENCY 7 - ELECTRICAL ROOM DOOR LOCK***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove existing single exterior hollow metal door assembly, complete	1	EA	65.00	65
Install complete hardware set at existing single door assembly	1	EA	1150.00	1,150
New exterior single door assembly, complete, including panic hardware	1	EA	2900.00	2,900
SUBTOTAL:				*$ 4,115*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,440
SUBTOTAL:				*$ 5,555*
General Requirements, Overhead, and Profit	45.00%			2,500
Estimator's Contingency	30.00%			2,417
Unique Market Risk	5.00%			524
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			579
A/E Design Fee	12.00%			1,389

TOTAL ESTIMATED COST:	***$ 12,964***

REPAIRS ***DEFICIENCY 8 - SPRINKLER ROOM DOOR LOCK***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Install lock cylinder at sprinkler room door	1	EA	150.00	150
Remove door hardware at exterior door	1	EA	45.00	45
New door hardware at exterior door, including panic hardware	1	EA	2130.00	2,130
SUBTOTAL:				*$ 2,325*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			814
SUBTOTAL:				*$ 3,139*
General Requirements, Overhead, and Profit	45.00%			1,413
Estimator's Contingency	30.00%			1,366
Unique Market Risk	5.00%			296
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			327
A/E Design Fee	12.00%			785

TOTAL ESTIMATED COST: ***$ 7,326***

REPAIRS ***DEFICIENCY 9 - LOCKER ROOM DOORS***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove existing single door assembly, complete	2	EA	65.00	130
New interior single door assembly, complete, including panic hardware	2	EA	1850.00	3,700
SUBTOTAL:				*$ 3,830*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,341
SUBTOTAL:				*$ 5,171*
General Requirements, Overhead, and Profit	45.00%			2,327
Estimator's Contingency	30.00%			2,249
Unique Market Risk	5.00%			487
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			539
A/E Design Fee	12.00%			1,293

TOTAL ESTIMATED COST: ***$ 12,066***

REPAIRS ***DEFICIENCY 10 - ADA ACCESSIBILITY***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Construct pedestrian ramp	48	SF	120.00	5,760
Guardrails	28	LF	65.00	1,820
SUBTOTAL:				*$ 7,580*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			2,653
SUBTOTAL:				*$ 10,233*
General Requirements, Overhead, and Profit	45.00%			4,605
Estimator's Contingency	30.00%			4,451
Unique Market Risk	5.00%			964
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			1,067
A/E Design Fee	12.00%			2,558

TOTAL ESTIMATED COST:	***$ 23,878***

REPAIRS ***DEFICIENCY 11 - ADA SHOWER ACCESSIBILITY***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish and dispose of existing CMU walls	450	SF	2.50	1,125
Break and remove 4" concrete curb at shower entrance	12	LF	3.95	47
Break and remove 4" concrete slab on grade	135	SF	3.75	506
New 4" concrete slab at shower area, grade to drain	135	SF	11.50	1,553
New CMU walls	450	SF	32.00	14,400
New ceramic floor tile	135	SF	21.00	2,835
Paint CMU walls	900	SF	2.10	1,890
Reset floor drains at new grade	2	EA	105.00	210
Remove/reset shower stands	2	EA	250.00	500
SUBTOTAL:				*$ 23,066*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			8,073
SUBTOTAL:				*$ 31,139*
General Requirements, Overhead, and Profit	45.00%			14,013
Estimator's Contingency	30.00%			13,546
Unique Market Risk	5.00%			2,935
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			3,248
A/E Design Fee	12.00%			7,786

TOTAL ESTIMATED COST:	***$ 72,667***

REPAIRS ***DEFICIENCY 12 - SIDING REPAIRS***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Miscellaneous siding repairs	1	LOT	5000.00	5,000
SUBTOTAL:				*$ 5,000*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,750
SUBTOTAL:				*$ 6,750*
General Requirements, Overhead, and Profit	45.00%			3,038
Estimator's Contingency	30.00%			2,936
Unique Market Risk	5.00%			636
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			704
A/E Design Fee	12.00%			1,688

TOTAL ESTIMATED COST: ***$ 15,752***

REPAIRS ***DEFICIENCY 13 - ROOFING REPLACEMENT***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing metal roofing assembly	7,790	SF	1.50	11,685
Temporary weather protection allowance	1	LOT	2500.00	2,500
Inspection and allowance for miscellaneous repairs to substrate	1	LOT	5000.00	5,000
Ice and water shield	7,790	SF	2.00	15,580
Concealed fastener metal roofing assembly	7,790	SF	27.63	215,238
Flashings	464	LF	8.00	3,712
Roof/wall flashings	81	LF	8.50	689
SUBTOTAL:				*$ 254,404*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			89,041
SUBTOTAL:				*$ 343,445*
General Requirements, Overhead, and Profit	45.00%			154,550
Estimator's Contingency	30.00%			149,399
Unique Market Risk	5.00%			32,370
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			35,824
A/E Design Fee	12.00%			85,871

TOTAL ESTIMATED COST:	***$ 801,459***

REPAIRS ***DEFICIENCY 14 - ADA ACCESSIBLE RESTROOM***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing toilet partition	1	EA	75.00	75
Remove plumbing fixture	2	EA	130.00	260
Demolish toilet accessories	6	EA	15.00	90
Demolish floor and wall finishes	240	SF	1.95	468
New water closet	1	EA	1150.00	1,150
New lavatory	1	EA	795.00	795
Rough-ins at new fixture location	2	EA	1650.00	3,300
New toilet accessories (small bathroom)	1	EA	720.00	720
New lockset at existing door	1	EA	460.00	460
New ceramic tile floor and wall finishes	240	SF	21.00	5,040
Patch and paint existing	300	SF	2.90	870
SUBTOTAL:				*$ 13,228*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			4,630
SUBTOTAL:				*$ 17,858*
General Requirements, Overhead, and Profit	45.00%			8,036
Estimator's Contingency	30.00%			7,768
Unique Market Risk	5.00%			1,683
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			1,863
A/E Design Fee	12.00%			4,465
TOTAL ESTIMATED COST:				***$ 41,673***

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REPAIRS ***DEFICIENCY 15 - DAMAGED SHEET ROCK***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Patch and repair existing damaged sheet rock, various locations	300	SF	3.30	990
Paint existing drywall (100 SF per repair area)	3,000	SF	2.20	6,600
SUBTOTAL:				*$ 7,590*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			2,657
SUBTOTAL:				*$ 10,247*
General Requirements, Overhead, and Profit	45.00%			4,611
Estimator's Contingency	30.00%			4,457
Unique Market Risk	5.00%			966
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			1,069
A/E Design Fee	12.00%			2,562

TOTAL ESTIMATED COST:	***$ 23,912***

REPAIRS ***DEFICIENCY 16 - SPACE SEPARATION***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove/reinstall ceiling mounted equipment	1	LOT	500.00	500
Remove light fixture (allowance)	20	EA	65.00	1,300
New gypsum wall board ceiling on existing structure	1,850	SF	2.80	5,180
New vapor retarder	1,850	SF	0.30	555
Epoxy paint	1,850	SF	3.00	5,550
New light fixture at celling	20	EA	295.00	5,900
Conduit and conductors	300	LF	12.86	3,858
SUBTOTAL:				*$ 22,843*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			7,995
SUBTOTAL:				*$ 30,838*
General Requirements, Overhead, and Profit	45.00%			13,877
Estimator's Contingency	30.00%			13,415
Unique Market Risk	5.00%			2,907
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			3,217
A/E Design Fee	12.00%			7,710

TOTAL ESTIMATED COST:	***$ 71,964***

REPAIRS ***DEFICIENCY 17 - ENTRYWAY CARPET***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove and dispose of existing carpet at entry	220	SF	0.85	187
Prep subfloor	220	SF	0.45	99
New slip resistant rubber flooring	220	SF	10.50	2,310
New 4" rubber base	70	LF	3.00	210
SUBTOTAL:				*$ 2,806*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			982
SUBTOTAL:				*$ 3,788*
General Requirements, Overhead, and Profit	45.00%			1,705
Estimator's Contingency	30.00%			1,648
Unique Market Risk	5.00%			357
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			395
A/E Design Fee	12.00%			947

TOTAL ESTIMATED COST:	***$ 8,840***

REPAIRS ***DEFICIENCY 18 - POOL LINER REPLACEMENT***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove existing pool liner	3,300	SF	1.35	4,455
Replace existing main drain cover	1	EA	300.00	300
Remove corrosion from existing pool accessories	80	HRS	75.00	6,000
New pool liner	3,462	SF	12.00	41,544
SUBTOTAL:				*$ 52,299*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			18,305
SUBTOTAL:				*$ 70,604*
General Requirements, Overhead, and Profit	45.00%			31,772
Estimator's Contingency	30.00%			30,713
Unique Market Risk	5.00%			6,654
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			7,364
A/E Design Fee	12.00%			17,653

TOTAL ESTIMATED COST: ***$ 164,760***

REPAIRS ***DEFICIENCY 19 - SERVICE WINDOW***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove existing 4'0"x4'0" service window	1	EA	75.00	75
New 4'0"x4'0" sliding glass window	1	EA	1520.00	1,520
Prep/resize existing opening as required	1	EA	130.00	130
SUBTOTAL:				*$ 1,725*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			604
SUBTOTAL:				*$ 2,329*
General Requirements, Overhead, and Profit	45.00%			1,048
Estimator's Contingency	30.00%			1,013
Unique Market Risk	5.00%			220
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			243
A/E Design Fee	12.00%			582

TOTAL ESTIMATED COST: ***$ 5,435***

REPAIRS ***DEFICIENCY 20 - REPLACE EXTERIOR LIGHT FIXTURES***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove and dispose of exterior light fixture	7	EA	70.00	490
New LED canopy fixture	4	EA	500.00	2,000
New LED exterior wall mounted light fixture	3	EA	550.00	1,650
SUBTOTAL:				*$ 4,140*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			1,449
SUBTOTAL:				*$ 5,589*
General Requirements, Overhead, and Profit	45.00%			2,515
Estimator's Contingency	30.00%			2,431
Unique Market Risk	5.00%			527
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			583
A/E Design Fee	12.00%			1,397

TOTAL ESTIMATED COST: ***$ 13,042***

REPAIRS ***DEFICIENCY 21 - REPLACE INTERIOR LIGHT FIXTURES***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Demolish existing high-bay fixture at pool area	12	EA	250.00	3,000
Demolish existing typical fixture	107	EA	65.00	6,955
New high-bay LED light fixture	12	EA	900.00	10,800
New typical LED light fixture	107	EA	295.00	31,565
Allowance for scaffolding rental	1	LOT	1500.00	1,500
Allow for occupancy sensor control at non pool areas	12	EA	350.00	4,200
SUBTOTAL:				*$ 58,020*
Subcontractor's Overhead and Profit on Material and Labor	45.00%			26,109
SUBTOTAL:				*$ 84,129*
General Requirements, Overhead, and Profit	40.00%			33,652
Estimator's Contingency	30.00%			35,334
Unique Market Risk	5.00%			7,656
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			8,473
A/E Design Fee	12.00%			20,309

TOTAL ESTIMATED COST: ***$ 189,553***

REPAIRS ***DEFICIENCY 22 - REPLACE ELECTRICAL DISTRIBUTION SYSTEM***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Remove 600 amp MDP	1	EA	550.00	550
Remove 225 amp sub-panel	3	EA	210.00	630
Remove existing conductors (conduits to remain for reuse)	1	LOT	750.00	750
New 600 amp main distribution panel	1	EA	17000.00	17,000
New 225 amp sub-panel	3	EA	4500.00	13,500
New conductor pulled in existing conduit (allowance)	1	LOT	3500.00	3,500
Modify- add to existing conduits to allow reconfiguration of electrical room	1	LOT	1500.00	1,500
As-built the electrical service and distribution system	1	LOT	2500.00	2,500
SUBTOTAL:				*$ 39,930*
Subcontractor's Overhead and Profit on Material and Labor	35.00%			13,976
SUBTOTAL:				*$ 53,906*
General Requirements, Overhead, and Profit	45.00%			24,258
Estimator's Contingency	30.00%			23,449
Unique Market Risk	5.00%			5,081
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			5,623
A/E Design Fee	12.00%			13,478

TOTAL ESTIMATED COST:	***$ 125,795***

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REPAIRS ***DEFICIENCY 23 - RELOCATE FUEL TANK***	*QUANTITY*	*UNIT*	*UNIT RATE* *$*	*TOTAL* *$*
Relocate fuel tank adjacent to building	1	EA	9000.00	9,000
1" diameter black steel pipe	120	LF	19.80	2,376
1" diameter black steel fitting	20	EA	53.00	1,060
SUBTOTAL:				*$ 12,436*
Subcontractor's Overhead and Profit on Material and Labor	45.00%			5,596
SUBTOTAL:				*$ 18,032*
General Requirements, Overhead, and Profit	40.00%			7,213
Estimator's Contingency	30.00%			7,574
Unique Market Risk	5.00%			1,641
Escalation to Summer 2024 at 7.91% per Annum (16 Months)	5.27%			1,816
A/E Design Fee	12.00%			4,353

TOTAL ESTIMATED COST:	***$ 40,629***