

**MINUTES  
PARK BOARD  
REGULAR MEETING  
MONDAY, NOVEMBER 22<sup>ND</sup>, 2021  
5:30 P.M.**

THE PARK BOARD MET IN REGULAR SESSION IN THE COUNCIL CHAMBER, 12 NORTH ROWE STREET, PRYOR, OKLAHOMA AT THE ABOVE-MENTIONED DATE AND TIME.

BOARD MEMBERS: \*\* BILL KANNEGIESSER, MELINDA MARKS, \_\_\_\_\_, CASEY KING, LORI SIEVER, CHRIS GRAVES, KEITH SHELBY.

**1. CALL MEETING TO ORDER.**

Kannegiesser called the Park Board meeting to order at 5:30 p.m. Members present: Bill Kannegiesser, Melinda Marks, Chris Graves and Keith Shelby. Members absent: Casey King and Lori Siever.

Others present: Park Superintendent Frank Powell and Golf Superintendent Dennis Bowman.

**2. PETITIONS FROM THE AUDIENCE.**

There were no petitions.

**3. DISCUSS, POSSIBLY APPROVE THE MINUTES OF THE OCTOBER 25<sup>TH</sup>, 2021, REGULAR MEETING.**

Motion was made by Shelby, second by Graves to approve the minutes of the October 25<sup>th</sup>, 2021, regular meeting. All voted yes.

Siever arrived at 5:36 p.m.

**4. DISCUSS, POSSIBLY RECOMMEND COUNCIL ACTION REGARDING ANOTHER DECEMBER SPECIAL AT THE PRYOR CREEK GOLF COURSE FOR A 15-MONTH MEMBERSHIP FOR THE COST OF ONE (1) YEAR.**

Motion was made by Shelby, second by Marks to recommend Council action regarding another December special at the Pryor Creek Golf Course for a 15-month membership for the cost of one (1) year. All voted yes.

**5. PARK REPORT – SUPERINTENDENT FRANK POWELL:**

**a. PARK**

Powell reported that they are winterizing everything. The Christmas lights are up and they are working to do the last few things to finish them.

He reported that people have been driving into the park, so he has ordered signs that read, “No Unauthorized Vehicles,” which reference the city code on them. He may have to put up a few barricades, as well. He stated that part of this issue arises during Trader’s Days, and he would eventually like to make some changes to Trader’s Day.

He also reported that they will be working on the shelter at Bobby Buck Park soon.

**b. CEMETERY**

No report.

**6. GOLF COURSE REPORT – DIRECTOR DENNIS BOWMAN.**

Bowman reported that the Golf Course is doing well. Revenue is good and weather is good.

When asked if he will be looking into getting any equipment before long, he stated a greens roller is needed, so he will address that once he sees what funds he will have available. The maintenance building is in good shape now, but they will need to get a heat source in the cart building before the cold of winter.

Bowman reported that BooHaHa went “terrific,” although there were a few learning curves. They operated with 99% volunteers, generated approximately \$14,000.00 and incurred expenses of approximately \$7,000.00. They had over 1,000 people on Friday night, well over 2,000 on Saturday (closer to 2,300-2,400), and 600-800 on Sunday. He stated he will have a full report at the next meeting. The committee plans to meet in January to begin planning next year’s event.

Bowman reported that he recently went to Turf Grass Conference, which is where he receives his spraying certification. He stated that Alan Null went with him this year and will be receiving his certification, as well.

Bowman reported that the Reincarnation Cottages Inaugural Tournament went very well. They had 48 players. They have already started planning next year’s tournament.

**7. UNFORESEEABLE BUSINESS.**

There was no unforeseeable business.

**8. ADJOURN.**

Motion was made by Shelby, second by Siever to adjourn at 5:57 p.m. All voted yes.

**INSPECTION REPORT  
FOR THE EXISTING  
OUTDOOR MUNICIPAL  
SWIMMING POOL  
IN  
Pryor, Oklahoma**

**November, 2019**

**PADDOCK ENTERPRISES, INC.  
4201 N. MERIDIAN - P.O. BOX 12693  
OKLAHOMA CITY, OKLAHOMA 73157**

## INTRODUCTION

### SUBJECT

This study outlines our findings as a result of our inspection of the existing outdoor Municipal Swimming Pool located in Pryor, Oklahoma, and our investigations and discussions with the City of Pryor, Oklahoma. The report includes the views and recommendations of Paddock Enterprises, Inc.

### PURPOSE

The basic objective of this report is to present a complete and comprehensive planning guide to allow the City to make the very difficult decision of how to approach repairs to the existing swimming pool. In addition we will look at replacement of the facility.

### SCOPE

This study will address what we feel are the major problems with the facility, the circumstances that resulted in its present condition and what must be done to restore and correct items regarding the pool.

### DEFINITIONS

The word "pool" is used in this report to describe your pool complex which consists of the pool structure, concrete area around it, the total filtration and piping system, chemical feeding system, deck equipment, bathhouse, the total expendable or movable items, and in fact everything that is described as a part of a swimming pool in current Public Bathing Codes.

American with Disabilities Act (ADA) - 2010 Americans with Disabilities Act (ADA). As of 2012 ADA requires all public pool facilities to be accessible to persons with disabilities. There are currently no exceptions to this law. In order to bring a facility into compliance the following areas need to be addressed in order of importance.

Access to the bathing facility including:

1. Parking to be a firm stable flat surface with virtually no slopes, permanent pavement marking indicating access and path of travel to the facility.
2. Curb ramps and sidewalks with clearances to provide proper entry into the facility.
3. Signage.

After access is provided the functions and services in the building need to be made accessible. These include:

1. Attendant counter
2. Entry clearances to provide proper access into the bath facilities and swimming pool.
3. Accessible feature in the bath/changing area such as toilets, urinals, sinks and showers.
4. Exit clearances from the bathhouse into the pool.

Thirdly is access to the pool including:

1. Stable even and no slip deck surface.
2. Chair lift or ramp required. Larger facilities require two points of access; accessible steps can meet requirements for secondary access point.
3. Handicap drinking fountain is required at Public Bathing Places.
4. Wading pools are required to be zero entry. No rails required on wading pool zero entry.

## **BACKGROUND**

The pool was built, in 1955 with additions to the second floor in 1959. The facility was renovated in 1996. Upgrades have been accomplished since initial installation to keep the facility in a good operating condition. There are items that need to be addressed at this time. To help identify the items and address solutions needed to bring your pool to good operating standards, it was requested that we inspect the swimming pool complex. In this report, we have detailed all of the problems that were readily apparent and suggested the most economical and efficient method for correcting them.

The information for this report was obtained by visual inspection. The on-site inspection was supplemented by interviewing employees and others.

**POOL INSPECTION REPORT**  
**PRYOR OUTDOOR MUNICIPAL SWIMMING POOL**  
**PRYOR, OKLAHOMA**

**Project:** Pryor Outdoor Municipal Swimming Pool

**Date:** November, 2019

**SWIMMING POOL**

Area: 8,803 square feet  
Volume: 483,464 gallons  
Depths: pool 3'-0" to 13'-0"  
Perimeter: pool 458'-2"  
Capacity: 522 bathers  
Filter Rate: Minimum pool 1,007 gallons per minute  
Construction: Sectional poured concrete

**MAJOR PROBLEMS**

Water Loss – (approximately 4" per day = 21,861 gallons per day) expansion joints.  
E.P.A. Discharge Violations – Main drain direct connection to lift station with direct tie to sanitary sewer.  
American w/ Disabilities ACT– pool & bathhouse.  
Main Drain Grates & Sumps – Not in compliance with Virginia Graeme Baker Act.

**GENERAL CONDITION AND APPEARANCE** – See items in report for details

- |                                   |   |
|-----------------------------------|---|
| 1. Pool Structural Concrete Shell | Fair – shifted, not level, cracks, exp. jts |
| 2. Concrete Decks                 | Good – showing age, areas water standing    |
| 3. Deck Equipment                 | Fair - showing age                          |
| 4. Finishes                       | Fair – paint thin, deteriorating            |
| 5. Filter                         | Good –                                      |
| 6. Piping                         | Good –                                      |
| 7. Chemical Treatment             | Good –                                      |
| 8. Electrical                     | Good – Filter area panel, starter upgraded  |
| 9. Wading Pool                    | Poor – not in use, not in compliance        |
| 10. Bathhouse                     | Poor – needs renovation or replacement      |

## REPORT

It is our intention to itemize problems with the Pryor outdoor Municipal Swimming facility in Pryor, OK and provide information to determine what is necessary to bring the pool in compliance with regulations and standards including bring the pool to a good operating condition.

Recommendations in this report are based on:

- Paddock Enterprises current design criteria
- The Model Aquatic Health Code 2015. The MAHC is a national effort by CDC and the industry to provide guidance in design and operation of Recreational Water Venues with an emphasis on prevention of Recreational Water Illnesses and Drowning & Injuries associated with these facilities. It provides a national standard of care for these facilities. The MAHC is available on the CDC website "healthyswimming" and on the CMAHC website
- Americans With Disabilities ACT 2010
- Virginia Graham Baker ACT (entrapment)
- Local & State Codes in force at this time

The following Report is the result of our observations and discussions with the pool operating personnel, the State Health Department and the above standards. It includes comments and repair suggestions on existing problem areas and items.

## VIOLATIONS

General: This project contains numerous violations and problems. We realize that when the pool was originally designed and constructed, the facility was reviewed and approved based on current codes and standards at that time.

Some of the items are as follows;

- 1) E.P.A. Discharge – The overflow gutter trough, pool drains, and the filter backwash water discharge have direct connections to a lift station with a direct connection to the sanitary sewer. This is an EPA violation. There should be an indirect connection to the sanitary sewer.
- 2) Pool needs to have new main drain sumps and grating that comply with the Virginia Graeme Baker Act.
- 3) Stainless Steel Gutter- If pool is renovated I would recommend the installation of a stainless steel gutter. It would incorporate the inlet feed system, overflow system and would eliminate the majority of buried piping. It would trim out the pool edge and in addition level the pool. (note: see stainless steel gutter isometric ).
- 4) Lifeguards Stands – Four lifeguard stands are recommended on this size of pool.
- 5) Signs, safety equipment, telephone required.
- 6) A.D.A – Approved A.D.A. handicap access is required to the swimming pool.
- 7) Bathhouse – The bathhouse is required to meet A.D.A. accessibility requirements.
- 8) Wading Pool – The wading pool does not meet piping and recirculation requirements and does not meet zero entry or perimeter decking requirements. We would look at eliminating the wading pool and either adding a new larger wading pool with zero entry or possibly adding zero entry to the main swimming pool.

## POOL STRUCTURE

General: The pool structure is sectional poured concrete walls and floor. The structure has shifted over the years. The pool structure is approximately three inches out of level. The deep end is approximately three inches lower. If renovated the pool will be leveled.

Structural: There are numerous cracks in the walls and floor of the pool. At the time of our inspection there was at least one wall crack that was leaching water, see photo.

Subsurface Drain: There is a 3/4 inch drain in main drain sump at the deepest point of the pool. The City leaves this subsurface drain open when the pool is empty and caps it closed prior to fill the pool with water.

Overflow: Expansion joint open in gutter overflow should be caulked to aid in gutter operation.

Water comes up through the expansion joints and cracks in the pool floor during the winter months when water is below the pool.



Expansion Joints: The pool is a sectional poured structure. The expansion joints are failing in areas.



Cracks in deep end floor.





Crack leaching water.



Perimeter overflow.

Standard note on crack repairs: It is not recommended to cut out crack and create a caulk joint. This usually increases maintenance and repairs to this joint. Sandblast and expose crack, then inspect prior to determining method of repair.

Crack showing deformation and continual movement: This type of crack is addressed differently, depending on individual situation.

Virginia Graeme Baker Act: Main drain piping, flow rate, piping size, free board between pipe and grating, sump size and main drain covers are required to meet federal requirements of the Virginia Graeme Baker Act. This act was enacted to eliminate entrapment on suction fittings, and main drains.

Main drain sumps need to be inspected and frames and grates that conform to the Virginia Graeme Baker Act installed.

## **WADING POOL AREA**

General: The wading pool is not in use. The wading pool does not meet current requirements including piping, Virginia Graeme Baker Act and zero-entry ADA access. With zero entry added to the main pool many communities are doing away with wading pools.

The wading pool will require complete renovation or replacement prior to wading pool being open.

Emergency Drain: The wading pool does not have an emergency drain. With major renovation this can be corrected.

Inlet Piping: The wading pool is required to have its own inlet system with a flowmeter to monitor gallons per minute to the wading pool (filtered and chemically treated).

Perimeter Decking: There is not the required perimeter decking around the wading pool.



Wading pool.

## **FINISHES**

General: The pool is a poured concrete structure with a painted interior finish. With renovation the pool

should be sandblasted to remove the existing paint coating with joints and cracks repairs and walls rubbed out to an architectural finish prior to paint application.

Paint jobs should be accomplished with addressing proper cleaning, drying, conditions and mil thickness. If repainting, preparation as required by manufacturer instructions and insuring the compatibility of the new paint with the existing paint.

Accent Stripes: There needs to be six inch accent stripes with a contrasting color around suction outlets and at the pool transition from shallow to deep water. If there are steps into the pool, two inch accent stripes are required on face and top of step tread edges.



## **POOL DECK**

General: The overall appearance is poor. The concrete decking has been white washed or painted in the past with finish wearing or oxidizing off. The pool decks are structurally in good condition and are a structural slab for the filter area and the roof of a tunnel and pipe chase that extends around the perimeter of the pool making pool piping accessible.

Coping and curbs have been painted in the past. Curb paint is peeling and spalling and needs to be sandblasted, concrete repaired and rubbed out and new paint or coating applied.

Deck Drains: The decks have some areas that are not draining properly and letting water stand. With shifting of the pool there is some effect on deck elevations which could affect drainage in areas.



Perimeter decking

### **DECK EQUIPMENT**

General: Ladders have been replaced at some point since the pool was built. The dive stands and lifeguard stands are showing their age. If the pool is renovated the deck equipment will be replaced.

Diving Stands: The two dive towers are operational, but do not meet current requirements. The dive stands are required to have hand rails that meet requirements. Both stand should be removed and replaced.

Lifeguard Stands: (3) 5 required. Lifeguard stand rails and boards should be cleaned and painted.

Ladders: (7) Stainless steel cross braced ladders with cycloc treads. They appear in good condition. Rails and treads should be checked regularly to make sure they are secure.

Depth markers Depth markers are on the face of the pool gutter haunch and located on the concrete decking.

Handicap lift: Handicap access is required. A handicap lift should be installed.

### **SAFETY AND LIFESAVING EQUIPMENT**

General: To comply with published and acceptable safety standards, the following safety equipment should be installed on this pool

1. Life Line with floats separating the deep end from the shallow end.

2. One ring buoy, with 40' of heaving line attached, at each lifeguards chair.
3. Two rescue tubes.
4. Two shepherd crooks attached to a 16' life pole.
5. One industrial first-aid kit.
6. Red Cross approved backboard with straps and head immobilizer.
7. Depth markers painted on the pool deck and face of the pool coping at the appropriate locations.
8. One non-coin operated telephone accessible to the general public. Sign posting 911 service or emergency numbers if 911 is not available.

## **POOL PIPING**

General: The pool piping is located in an accessible tunnel under the pool perimeter concrete decking. Piping is cast iron.

Main drain, gutter overflow, and backwash piping have direct connections to pump station which has a direct connection to the sanitary sewer. This is an EPA violation and should be corrected.

**Main Drain sump and grates** – Main drain sumps at the deepest point of the pool are required to meet Virginia Graeme Baker Act requirements. This is federal legislation that addresses suction entrapment.

**Main drain Piping** – The main drain piping from the deepest point of the pool has a direct line to the lift station. The lift station requires an air gap as it feeds into the sanitary sewer.

**Gutter Piping** – Cast iron piping located in the pipe chase tunnel below the perimeter concrete decking. The overflow gutter piping is recovered and fed back into the pool system through a pipe connection on the pump suction.

**Deck Drains** – Deck drains collect rain and surface water from concrete decks around the pool perimeter. This water is fed into the pool gutter line which is introduced back into the filter system. Cleaning of decks washes all items collected on the concrete decking, including any surface cleaners being used. Staff and operators should be aware so they can insure what is being used is acceptable for this purpose.

**Inlet Piping** – Branch arms at each inlet fitting have been replaced with PVC piping from the cast iron Trunk piping.



## FILTER AND MECHANICAL AREA

General: The pool has dual 78 inch steel filters located in the filter room below deep end concrete deck (Our pool calculation show slightly more water volume in the pool than you have listed). This shows the filter system slightly undersized. Because of the age and volume you have shown we would not address at this time.

The chemical room located outside of the filter room has deteriorated because of chemicals.

### Chemical feed system:

General: The chemical feed system has been kept updated and an automatic controller to aid in monitoring and feeding of chlorine and pH levels is in use. The pool is sanitized with "Pulsar" chlorine tablets. This is calcium hypochlorite tablets. PH is being kept at required levels with introduction of muriatic acid.



Filters



Pump motor, strainer, filter, chlorinator



Electrical and Pool Controller.

Chemical storage building:

The structure has shifted showing cracks in the block walls. The acid has corroded metal items such as the door and frame.

The exhaust fan is not operating. This item should be replaced and be in operational condition.



Chemical storage building.

Mechanical Room: The park and mechanical room have been flooded in the past. It appears the retaining wall outside of entrance to the filter room and change in the grade of the ground was accomplished outside the doors entering the subgrade room in the past. I assume it was some time ago and was done about the same time the chemical room was added (speculation).

Grades and flooding will need to be addressed in this area if renovation is accomplished.

**ELECTRICAL**

It appears the electrical has been upgraded at the filter area.

Underwater lighting has been removed for years. Overhead lighting was not inspected at night, but does not appear to be sufficient for any night swimming.

**FENCING:**

Fence is required to have self-closing, self-latching gates.

**BATHHOUSE:**

The existing bathhouse is of the age and condition that changes are needed to meet current requirements. The facility is required to conform to the Americans with Disabilities ACT. If the facility is renovated the bathhouse should be replaced in its entirety.



Bathhouse.



Parking, entrances, counters are not in A.D.A. compliance





Bathroom



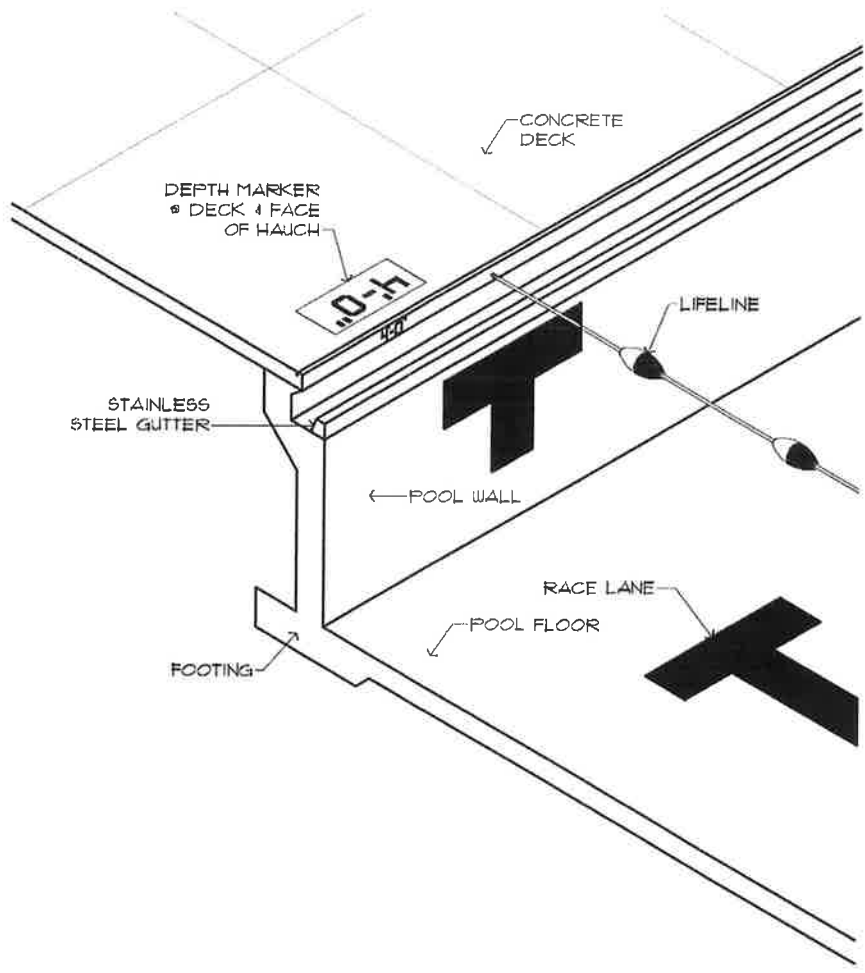
Abandoned upstairs in bathhouse.

**CONCLUSION:**

The existing swimming facility has served The City of Pryor since 1955 (65 years). The facility is in need of major items of work. The pool was built, in 1955 with additions to the second floor in 1959. The facility was renovated in 1996. With the age of the facility, compliance issues, and cosmetic issues complete renovation or replacement is recommended.

If renovation is accomplished we would save the pool structure, eliminate pipe chase around the structure, install a stainless steel recirculation system, new mechanical and lighting system, new perimeter decking, shade structures, replace the bathhouse in its entirety, eliminate the wading pool, add a zero entry inside of the pool, add some attractions, commercial flume water slide, one meter diving and look at three meter diving. We are assuming any competitive swimming will be accomplished at the indoor facility.

We have provided preliminary estimated cost of renovation which will be discussed at the January Pryor Park Board meeting. The preliminary estimated costs will give us a starting point to discuss size, options, layout, and cost of the facility. With input and discussions we will prepare a preliminary drawing and preliminary estimate for renovation or a new facility based on those discussions which we will present for review and we will make changes as per that review.



**PADDOCK**  
 ENTERPRISES, INC.  
 OKLAHOMA CITY, OKLAHOMA 73157  
 4201 N. MERIDIAN - P.O. BOX 12332  
 DON@PADDOCKENTERPRISES.COM  
 WWW.PADDOCKENTERPRISES.COM  
 PH: 405.789-4210

ISOMETRIC  
 WALL DETAIL

PROJ. NO.	
NO.	DATE
SHEET NO.	
<b>A1</b>	
OF	1

**Isometric showing stainless steel recirculation system at the top of the pool wall this incorporates inlet system and pool overflow.**

**ESTIMATED COSTS: ESTIMATES WILL BE DISCUSSED AT MEETING WITH SAMPLE OF A COUPLE PROJECTS THAT BID RECENTLY.**

**ESTIMATES ARE PRELIMINARY.**

Pool Renovation – including but not limited to the following; (saving the structural shell of the pool)

1. Removal and replacement of the existing bathhouse.
2. Stainless Steel Gutter-removal of the top of the pool wall and installation of Stainless Steel Recirculation System.
3. New pool floor accommodating zero-entry, 3-meter and 1-meter diving.
4. Removal and replacement of all concrete perimeter decking.
5. Interior Finish-sandblasting, wall repair, epoxy paint finish.
6. New Mechanical and filter area, including filters, pump & motor, chemical feed systems, main drain and all piping, piping, mechanical room electrical, etc.
7. New deck equipment (ladders, dive towers & lifeguard chairs).
8. New area lighting.

Our estimated cost for this work is ..... \$2,619,448.00 to \$3,128,274.00

Design Services ..... \$248,847.00 to \$297,186.00

New Pool and Bathhouse – including but not limited to the following;

1. New swimming pool structure with zero-entry, 3-meter and 1-meter diving.
2. New bathhouse with covered area.
3. Stainless Steel Recirculation System.
4. Concrete decking.
5. Epoxy paint Interior Finish.
6. New Mechanical and filter area, including filters, pump & motor, chemical feed systems, main drain and all piping, piping, mechanical room electrical, etc.
7. New area lighting.
8. Elevated Play structure in zero-entry or flume slide

Our estimated cost for this work is (will discuss at meeting) ..... \$1,500,000.00 to \$2,500,000.00

Design Services ..... \$142,500.00 to \$237,500.00

ESTIMATED COSTS:



ESTIMATES ARE PRELIMINARY. *Updated 10/Nov/21*

Pool Renovation - including but not limited to the following: (saving the structural shell of the pool)

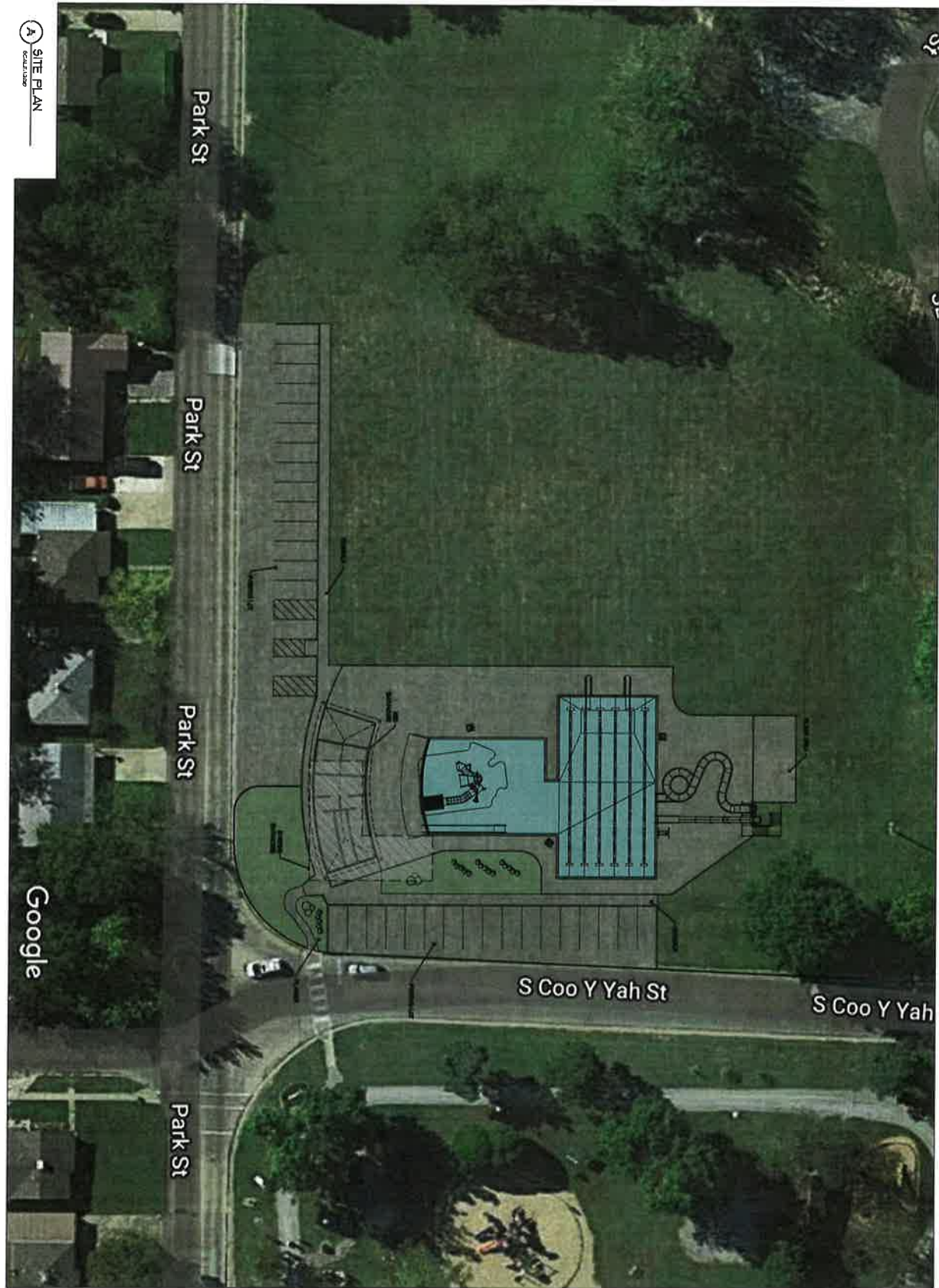
1. Removal and replacement of the existing bathhouse.
2. Stainless Steel Gutter-removal of the top of the pool wall and installation of Stainless Steel Recirculation System.
3. New pool floor accommodating zero-entry, 3-meter and 1-meter diving.
4. Removal and replacement of all concrete perimeters decking.
5. Interior Finish-sandblasting, wall repair, epoxy paint finish.
6. New Mechanical and filter area, including filters, pump & motor, chemical feed systems, main drain and all piping, piping, mechanical room electrical, etc.
7. New deck equipment (ladders, dive towers & lifeguard chairs).
8. New area lighting.

Our estimated cost for this work is \$3,128,274.00 to \$4,692,400.00  
Design Services \$297,186.00 to \$445,778.00

New Pool and Bathhouse - including but not limited to the following:

1. New Swimming pool structure with zero-entry, 3-meter and 1-meter diving.
2. New bathhouse with covered area.
3. Stainless Steel Recirculation System.
4. Concrete decking.
5. Epoxy paint Interior Finish.
6. New Mechanical and filter area, including filters, pump & motor, chemical feed systems, main drain and all piping, piping, mechanical room electrical, etc.
7. New area lighting.
8. Elevated Play structure in zero-entry or flume slide.

Our estimates cost for this work is (will discuss at meeting) \$2,500,000.00 to \$4,000,000.00  
Design Services \$237,500.00 to \$380,000.00



**A** SITE PLAN  
Scale: 1/8" = 1'-0"

Google



DATE	03/03/20
TITLE	NEW SWIMMING POOL
PROJECT NO.	P1.1

**NEW SITE PLAN**

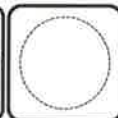
NEW SWIMMING POOL  
 PRYOR, OKLAHOMA

**J&A**  
 Architects & Engineers, PC  
 11100 N. Lincoln Ave., Suite 200  
 Oklahoma City, OK 73120  
 (405) 241-1100  
 www.jandaa.com

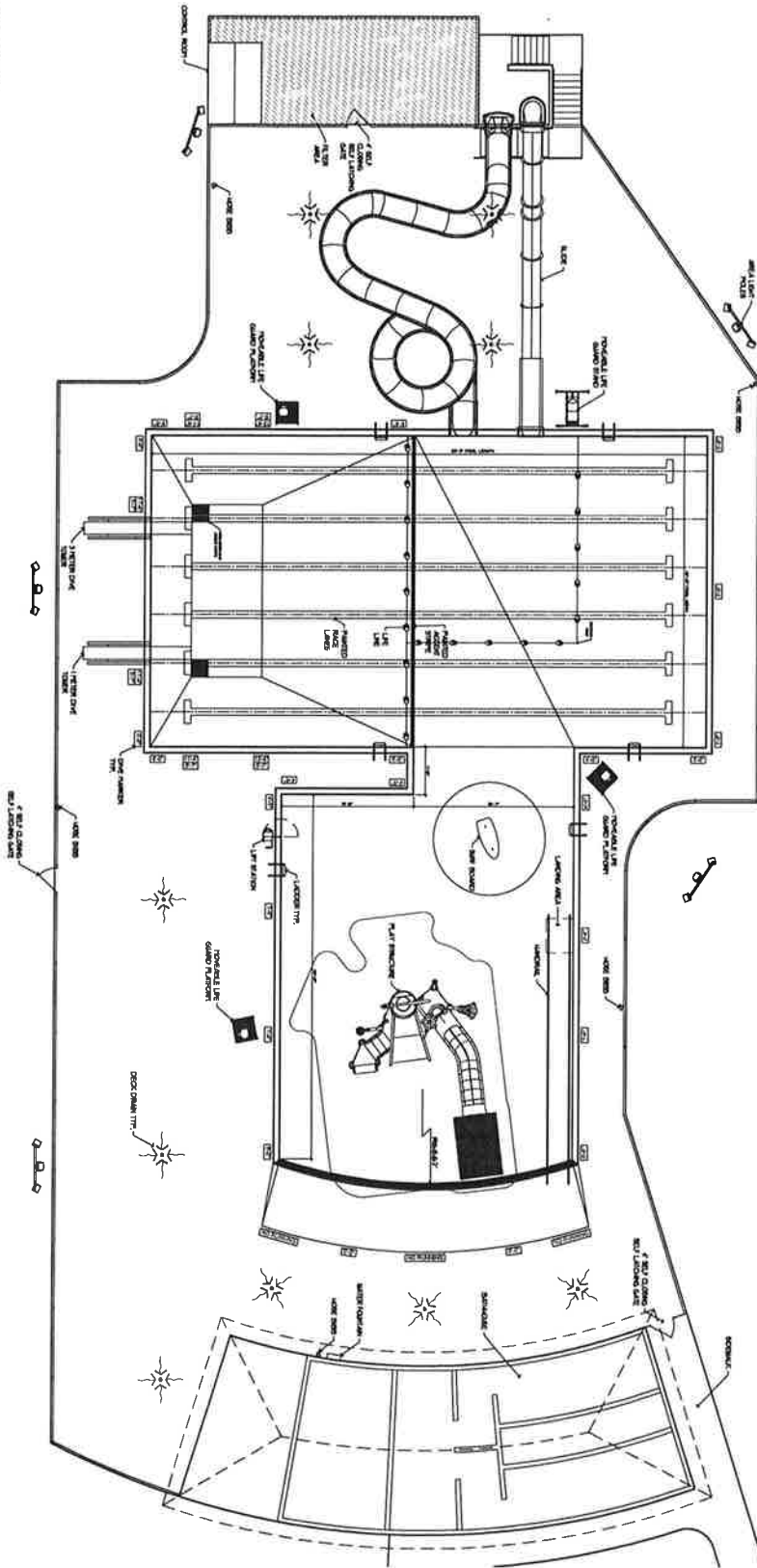
**TRINITY GROUP ARCHITECTS**  
 4000 N. Lincoln Ave., Suite 200  
 Oklahoma City, OK 73120  
 (405) 241-1100  
 www.trinitygroup.com

**PADDOCK ENTERPRISES, INC.**  
 CONSULTING - DESIGN - CONSTRUCTION

4201 N. MERIDIAN - P.O. BOX 12332  
 OKLAHOMA CITY, OKLAHOMA 73117  
 405@PADDOCKENTERPRISES.COM  
 WWW.PADDOCKENTERPRISES.COM  
 PH: 405-762-4210



**A** POOL PLAN  
SCALE: 1/8" = 1'-0"



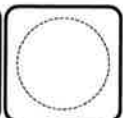
SWIMMING POOL DATA:	
6,221 SQ. FT.	AREA
419' LN. FT.	PERIMETER
221,859 GAL.	VOLUME
371 BATHERS	CAPACITY

DATE	03/02/20
DESIGNER	P.2.0
CHECKER	
DATE	

**POOL PLAN**  
NEW SWIMMING POOL  
PRYOR, OKLAHOMA



**PADDOCK ENTERPRISES, INC.**  
CONSULTING ENGINEERS  
4801 N. MERIDIAN - P.O. BOX 12933  
OKLAHOMA CITY, OKLAHOMA 73117  
701.253.4000 CENTER PERI@PBI.COM  
WWW.PADDOCKENTERPRISES.COM  
PH: 405.768.4810





---

TECHNICAL MEMORANDUM  
WHITAKER PARK SWIMMING POOL  
LIMITED STUDY  
Pryor, Oklahoma

**A. Project Overview**

Project History

The Whitaker Park Pool was constructed in 1958 under the design of W.R. Holway & Associates, Engineers of Tulsa, Oklahoma. The pool is constructed of reinforced concrete cast against prepared sub-grade and naturally occurring soils. Backfill behind pool walls and under decks was low shrink-swell select borrow. Since the original construction, the pool structure has remained unchanged with only above ground dressing facilities, parking areas, and mechanical equipment upgrades.

Periodic repairs to the concrete during the off season have occurred on numerous occasions with varied results. All concrete surfaces within the pool are coated (painted) and over time the only changes have been to the color.

The water recirculation system begins with concrete troughs built into the structural walls of the pool. This trough collects water and directs waters to a series of drains that flow into a pressure tight header system and directed to the pumping system located under the deck near the NW corner of the facility. There water is physically filtered through multiple pressure filters with graded sand media. After filtration, water is chemically treated to reduce pathogens, soluble organics, and suspended particles. Water is returned to the pool via a closed pressurized header of pipes to multiple return nozzles around the pool perimeter. Make up water is manually added as needed to account for leakage, evaporation, and miscellaneous other losses.

The pool has experienced settlement throughout the life of the facility. Recent observations show the west end of the pool to be approximately 2-3 inches lower than the east end of the pool. This unequal level of the pool has dramatically impacted the overflow water return system putting more pressure on the weir flows and creates areas of the pool where water is not efficiently recycled. Long Term, this situation should be rectified or a new system more balanced should be installed.

Project Purpose and Limitations

The project scope is to evaluate the pool for limited repairs to reduce leakage through construction joints and micro-cracks within the pool bottom slab. The goal of this project is to determine if it is cost effective to undertake concrete repairs and construction joint replacements to a point where leakage is mitigated.

## Project Procedures

1. **Subgrade Investigation:** A ground penetrating radar unit was used to evaluate the immediate area below the pool floor to determine if void areas exist to the point that subsurface stabilization is required as part of any rehabilitation project. A copy of the report from TerraCon Consultants is attached to this report which includes procedures and findings.

In summary, voids were found at numerous locations, but the depth of these voids were only a few inches which does not indicate an immediate need to expose and fill those voids. Therefore, all work shall be associated with observed issues found during the inspections and based on sound engineering practices.

2. **Concrete Floor Repair:** - The visual inspection of the concrete bottom indicated all const. joints throughout the pool have visible signs of leakage. With the pool empty, the joints are leaking water into the pool, during daily operation these same joints will leak water out of the pool to the lowest levels where historical wet grounds and constant pump station operation of the French drain system supports the active leakage. The caulk within the joints has become brittle and cracked throughout the pool. Some joints have experienced freeze and spauling which is an annual occurrence, but due to the extreme cold weather of the winter of 2020-21 joint degradation has increased. The ultimate repair shall include saw cutting, removal of all joint material, clean up, and replace all joints with marine grade polysulfide joint system to sound concrete. Concrete spauling along the joints shall be brought back to grade with water proofing patching compound which is especially composed to adhere to existing concrete and create a water proof connection.

In addition, specific sections of the concrete floor have experienced more extensive damage to just seal the joints. We have isolated three sections of concrete slab that must be saw cut removed and replaced including sub grade use of flowable fill and drilled dowels to surrounding concrete flooring. The three sections occur primarily in the deep end of the pool where subterranean water migration has collected and during the very cold winter months have caused extensive movement due to freeze expansion. Water proofing the pool bottom mitigating subterranean water movement or improved collection of that water is needed to minimize such slab damage in the future.

**In Summary-** Concrete repair of the joints and isolated concrete slab repairs are required. A change in winter operation is also suggested. Leaving at least 2 feet of water in the pool at the shallow end which will provide over 6 feet of water in the deep end of the pool will reduce joint deuteriation thus extending the life of the caulked joints. Water in the pool during winter months requires special preparation. Expansion floating pillows shall be anchored to the partially filled pool to allow expansion of the ice that will form on the water. These pillows rise and fall with ice presence to avoid damage or undue forces on pool walls. In addition, the partially filled pool water should be periodically treated with anti-freeze material specifically formulated for such applications. All valves and piping should be drained and water should not be filled to such a height as to enter the overflow weirs and return nozzles. The change in pool winterization procedure requires preparation, capital expenditure of funds for expansion prevention equipment, chemical and repeated visitation to replenish chemicals, adjust pillow blocks and break up ice.



**Need for Project:** The above identified repairs and operational modifications are required as a minimum to allow the pool to be filled for operation. This study does not address the several other items that must occur to bring the pool back to operation. The re-start of mechanical filtration and pumping equipment may find additional repairs or replacements required to meet current Oklahoma Department of Health guidelines for municipal pool operation. Deck repairs, fencing repairs, above water ladders, lifeguard stands, and pool house dressing room improvements have been observed as needing attention. The entire pool area needs to be water blasted and re-painted with heavy coats of marine grade oil-based paints formulated for application over concrete and body contact pool areas.

All of the above items should be considered prior to undertaking the pool bottom concrete and joint repair project. These improvements require a long-term commitment to the existing structure. The Ground penetrating Radar results have shown that large voids under the pool do not exist. Some settlement of the pool has occurred and at some point, in the future this settlement should be arrested by the addition of driven piles to bedrock even to the point of raising the pool back to level. However, this undertaking is not warranted at this time.

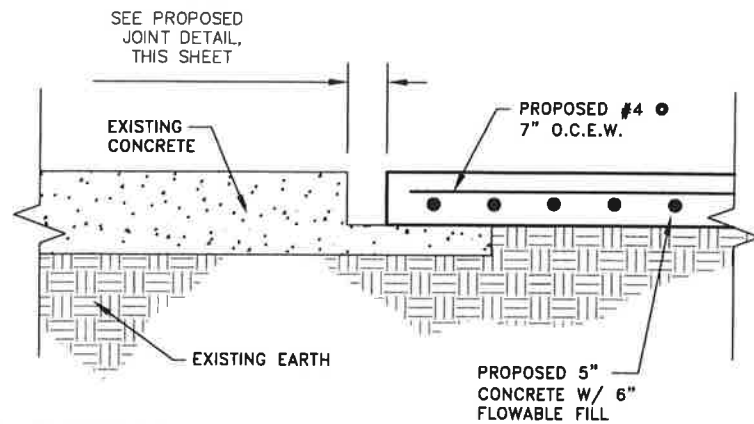
This report summarizes the needed repairs to allow the filling of the pool with a reliability that leakage due to joint and cracks have been mitigated. The ultimate decision to make these repairs or to remove the pool in its entirety for replacement with a more current pool design is not a decision this engineer is prepared to make.

**Cost Estimate for Concrete Bottom and Joint Repairs**

ITEM	QUANTITY	UNIT	UNIT COST	ITEM TOTAL
<b>Concrete Repairs</b>				
Sub Grade – Flowable Fill	261	SF	\$12.000	\$3,132.00
R&R Conc. Slab, in place	30	SY	\$1,600.00	\$48,000.00
Dowel Connections	206	EA	\$20.000	\$4,120.00
<b>Joint Repairs</b>				
Clean & Prep Joints	740	LF	\$6.00	\$4,440.00
Type I Joint Repair	50	LF	\$30.00	\$1,500.00
Type II and III Joint Repairs	680	LF	\$20.00	\$13,600.00
<b>Subtotal</b>				
				\$74,792.00
10% Contingency	\$74,792.00		0.10	\$7,480.00
Engineering & Inspection	\$82,272.00		0.10	\$8,200.00
<b>Project Total</b>				<b>\$90,472.00</b>

# **APPENDIX 1**

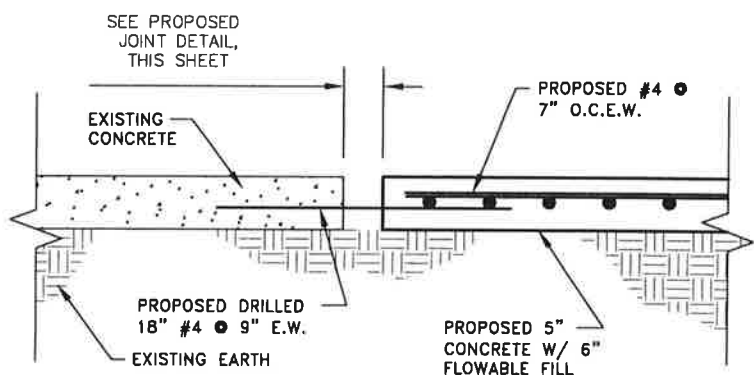
## **SWIMMING POOL EXHIBIT**



\*\* NOTE: 6" FLOWABLE FILL UNDER EXISTING AND PROPOSED SLAB THROUGH OUT.

XYPEX PATCH N PLUG, SURFACES PRIOR TO CONCRETE REPLACEMENT

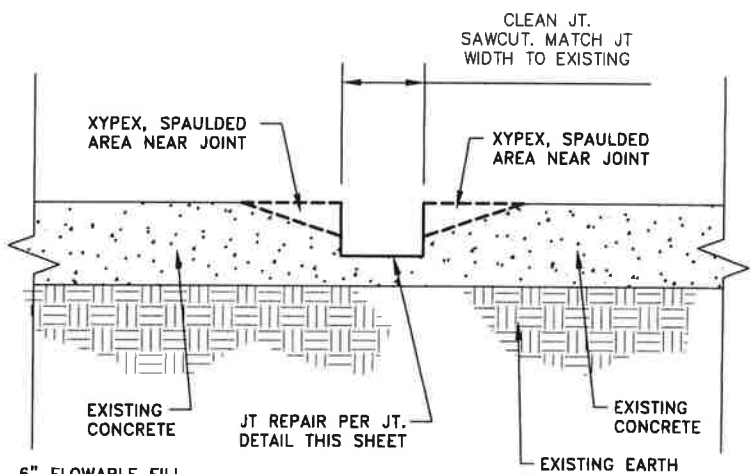
**TYPE I JT REPAIR**  
SCALE: NTS



\*\* NOTE: 6" FLOWABLE FILL UNDER EXISTING AND PROPOSED SLAB THROUGH OUT.

XYPEX PATCH N PLUG, SURFACES PRIOR TO CONCRETE REPLACEMENT

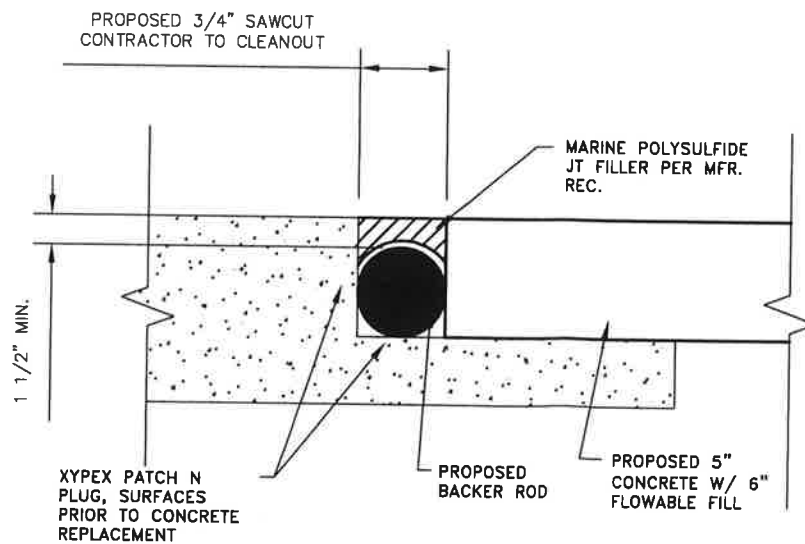
**TYPE II JT REPAIR**  
SCALE: NTS



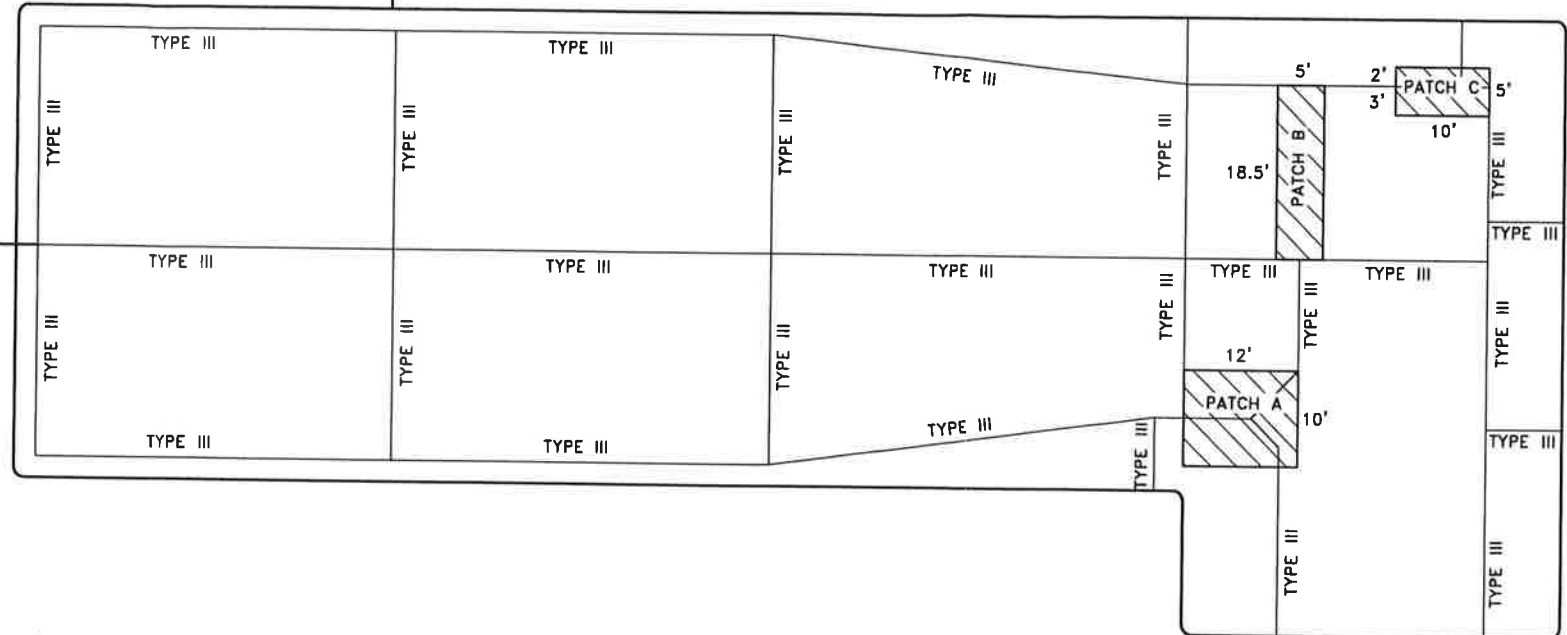
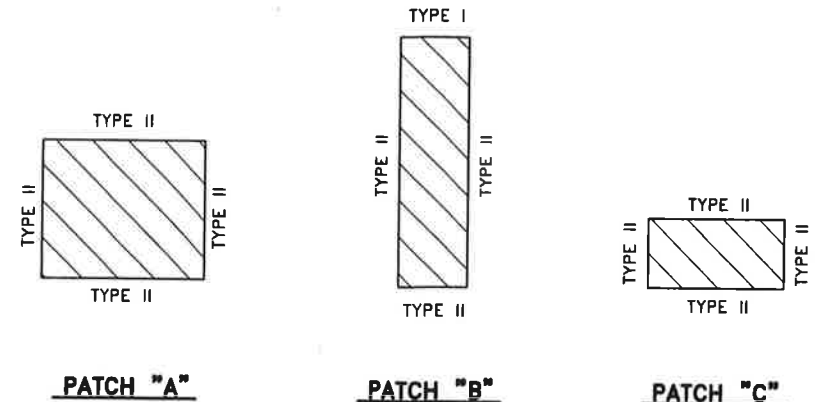
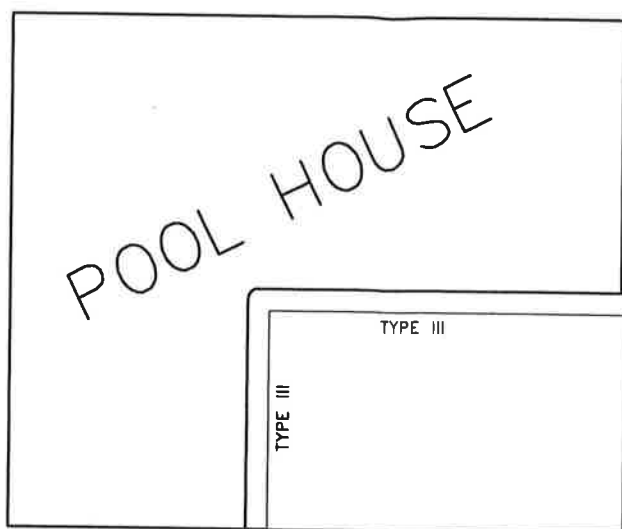
\*\* NOTE: 6" FLOWABLE FILL UNDER EXISTING AND PROPOSED SLAB THROUGH OUT.

XYPEX PATCH N PLUG, SURFACES PRIOR TO CONCRETE REPLACEMENT

**TYPE III JT REPAIR**  
SCALE: NTS



**JT DETAIL**  
SCALE: NTS



**JOINT AND CONCRETE REPAIR LAYOUT**  
SCALE: 1"=10'

LENGTH OF JOINTS:	740 L.F.
AREA OF REPAIRS:	
AREA A	120 SF
AREA B	90.5 SF
AREA C	50 SF
TOTAL AREA	260.5 SF



Date	Notes	By

Designed	SAP
Checked	SAP
Drawn	CDP
Approved	SAP

CITY OF PRYOR  
PRYOR CREEK, OKLAHOMA

SWIMMING POOL  
REPAIRS

Job:	PRY-19-02
Scale:	1"=20'
Sheet:	1 OF 1

**APPENDIX 2**  
**PICTORIAL RECORDS**

*Figure 1 GPR UNIT*



*Figure 2 TEAM EXPLORING SPAULING JOINT*



*Figure 3 CLOSE UP OF WEATHERED JOINT*



*Figure 4 CONCRETE STRUCTURAL CRACK*



Figure 5 LEAKING BRITTLE CONST. JOINT





*Figure 6 DEEP END POOL WATER LEAKAGE*



*Figure 7 JOINT WITH DETACHED CONCRETE SEAM*



**APPENDIX 3**  
**GPR STUDY**

May 5, 2021

City of Pryor  
12 North Rowe, Suite B  
Pryor, Oklahoma 74361

Attn: Larry Lees  
P: 918.825.0888  
E: larryl@pryorcreek.org

Re: Geophysical Exploration Services Report  
City of Pryor Public Swimming Pool  
401 Park St  
Pryor, Oklahoma  
Terracon Proposal No. 03201070

Dear Mr. Lees:

On April 30th, 2021 Terracon Consultants, Inc. (Terracon) performed geophysical exploration services on the bottom of the City of Pryor Public swimming pool located near 401 Park Street in Pryor, Oklahoma. Our services were performed in accordance with the scope of services outlined in our proposal number P03211070 dated April 20th, 2021. This report discusses the methods and findings of the exploration project.

## 1.0 PROJECT DESCRIPTION

The purpose of the exploration was to use ground penetrating radar (GPR) to explore the subsurface to evaluate the presence of subsurface anomalies and voids that may be present under the grade supported concrete slab of the pool bottom. The area of concern measured approximately 160 feet long by 65 feet wide at the deep end of the pool. Visible signs of distress at some of the joints and an area with spalled concrete were noted in a brief visual assessment of the area of concern.

## 2.0 EXPLORATION METHODS

**Field Services** – Our primary method of investigation included a Geophysical Survey Systems, Inc. (GSSI) ground penetrating radar (GPR) system consisting of a 1600 MHz antenna. In general, ground-penetrating radar (GPR) field collection follows the procedures referenced in ASTM D6432, and more information on both the general method and collection procedures can be found in the standard. GPR utilizes radio waves to detect changes in the subsurface of the area being scanned. Changes or reflections in the signal generally indicate



material property changes, such as, but not limited to electromagnetic conductivity and dielectric constant, which in some cases can be qualitatively linked to other material properties such as density. These changes can be effective in identifying the presence and location of items such as subsurface voids, lithology changes and embedded reinforcing steel or cables in concrete and masonry structures, among other things.

The 1600 MHz GPR antenna is a useful tool for detecting reinforcing steel in concrete and subsurface anomalies immediately under a floor slab or paving with high resolution. The depth of GPR signal penetration is determined by the soil/slab composition, current conditions and the frequency of the antenna used. At this site, the 1600 MHz antenna could investigate to a depth of approximately 20 inches.

The Geophysical exploration was conducted as follows:

- The GPR was setup and calibrated for the local concrete conditions
- Example GPR data was recorded for processing and reporting.
- GPR data was processed and interpreted for voids.

### **3.0 FINDINGS AND CONCLUSIONS**

The GPR indicated concrete thickness of 10 to 12 inches with reinforcement at 8 inches on center around the perimeter and 5 to 6 inches of concrete thickness with reinforcement at 6 inches on center for the remainder of the slab. The GPR indicated data signatures consistent with voids along several of the joints and in larger areas, primarily on the south and southwest portion of the pool. The GPR cannot quantitatively measure the vertical airspace in a void but based on prior experience we estimate the voids likely range from ½ inch to 3 inches of vertical expression. No significant subsurface soil or fill anomalies were noted in the GPR data to a depth of 20 inches below surface. Please see the attached exhibits for the locations of potential voids.

### **4.0 LIMITATIONS**

It should be noted that, as with any geophysical testing method, the process relies on instrument signals to indicate physical conditions in the field. Signal information can be affected by on-site conditions beyond the control of the operator, such as, but not limited to, concrete types, concrete moisture, and/or reinforcing steel spacing. Interpretation of those signals is based on a combination of known factors combined with the experience of the operator and geophysical scientist evaluating the results. Utilizing conventional observation, sampling and testing (“truthing”) of select areas is recommended to confirm the results from the GPR scans. As with all geophysical methods, the GPR results provide a level of confidence, but should not be considered absolute. We cannot be responsible for the misinterpretation of unverified GPR results by others.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding our findings, please contact us.

Sincerely,

**Terracon Consultants, Inc.**

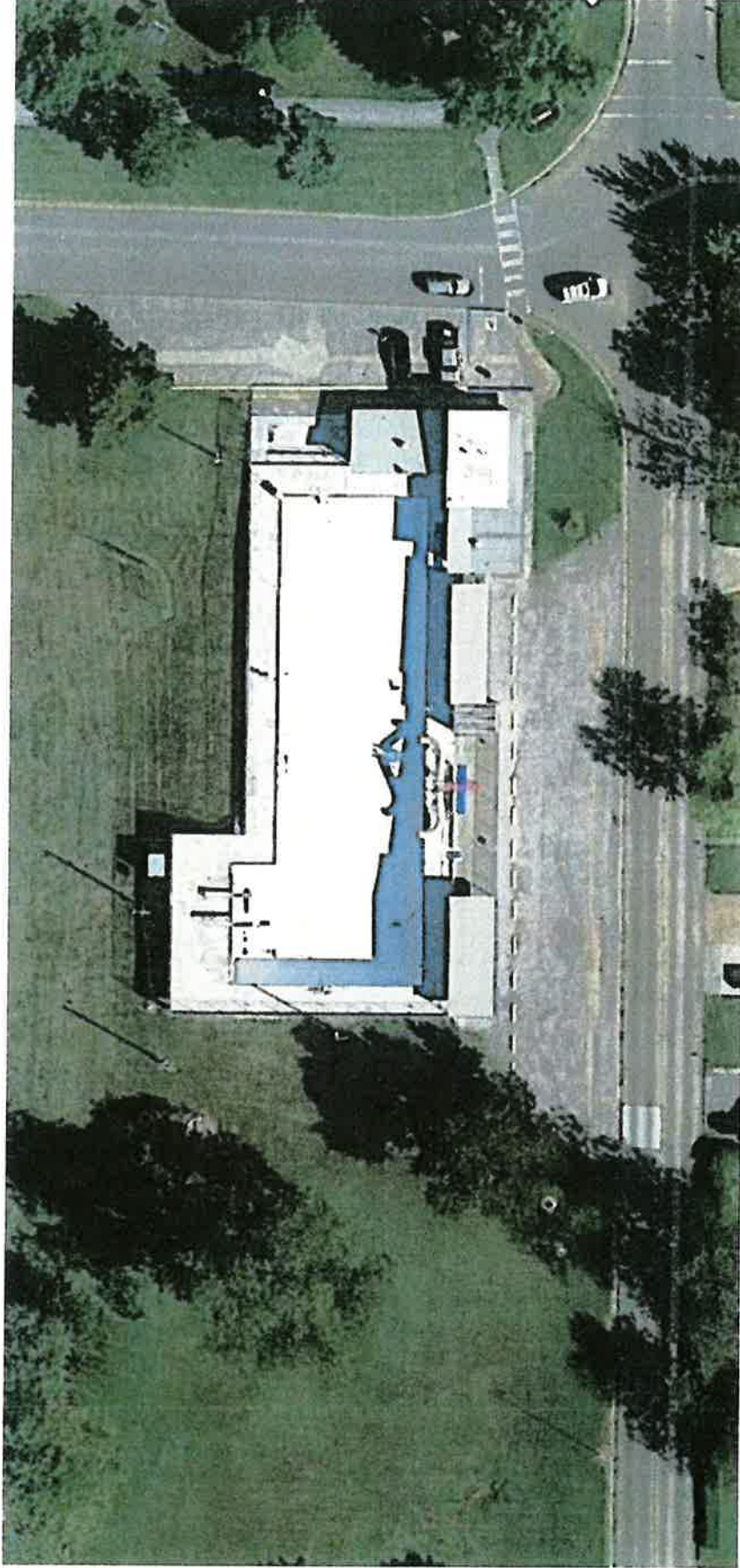


John W. Adamson  
Geophysical Project Manager



Nicholas Schuessler  
Department Manager II, Materials

Copies to: Addressee (1)  
Attachments: Figure 1

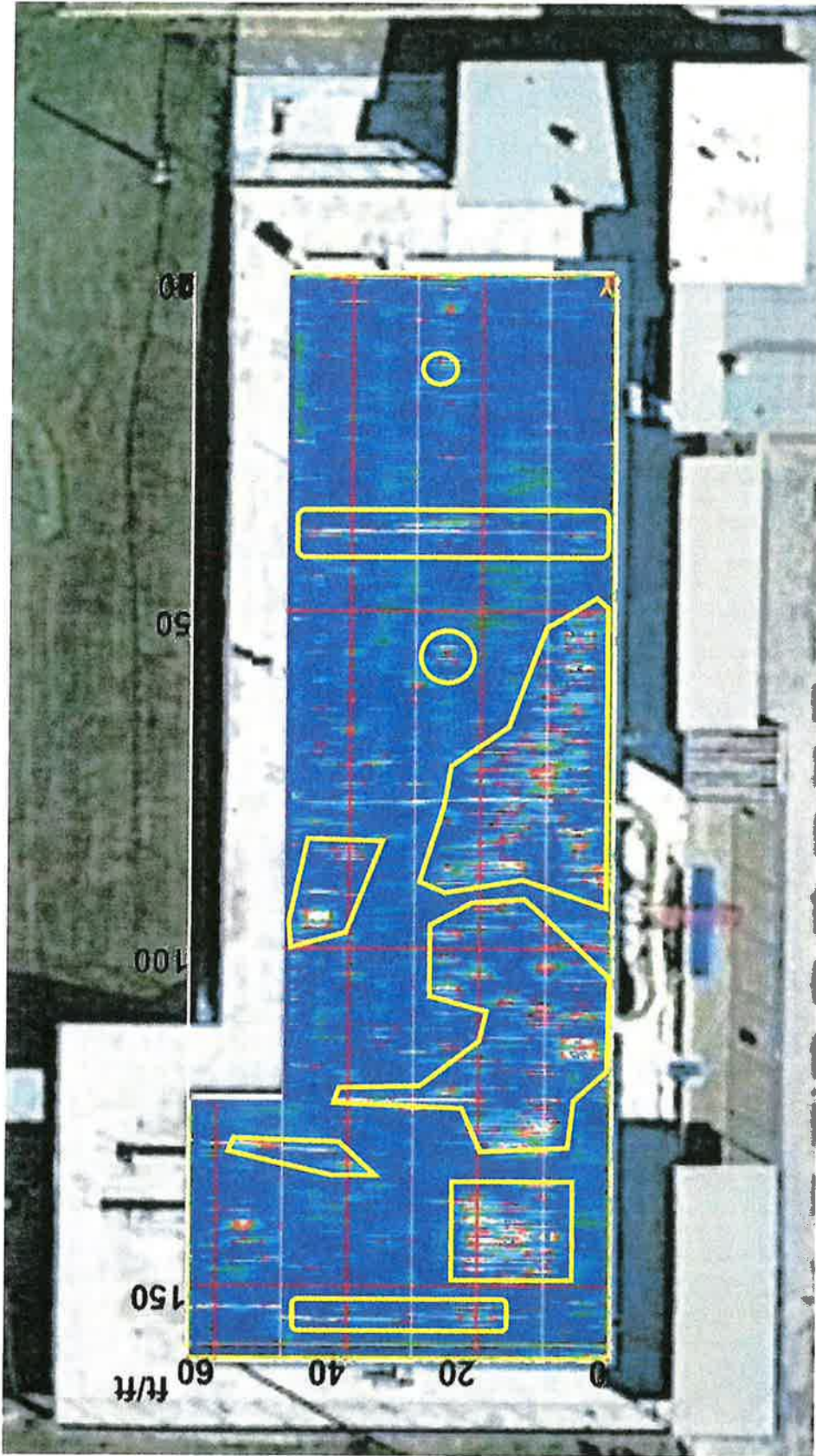


The area of concern included the bottom slab of the pool measuring approximately 160 feet by 65 foot wide.

Project Manager:	JWA	Project No.	03211070
Drawn by:	JWA	Scale:	N.T.S.
Checked by:	RMAK	File Name:	GPR
Approved by:	SAR	Date:	APR 2021

**Terracon**  
 Consulting Engineers & Scientists  
 4425 N. Durbin Ave. Oklahoma City, Oklahoma 73109  
 Tel: (405) 231-0800 Fax: (405) 231-0808

Location Diagram  
 Public Swimming Pool  
 Pryor, Oklahoma



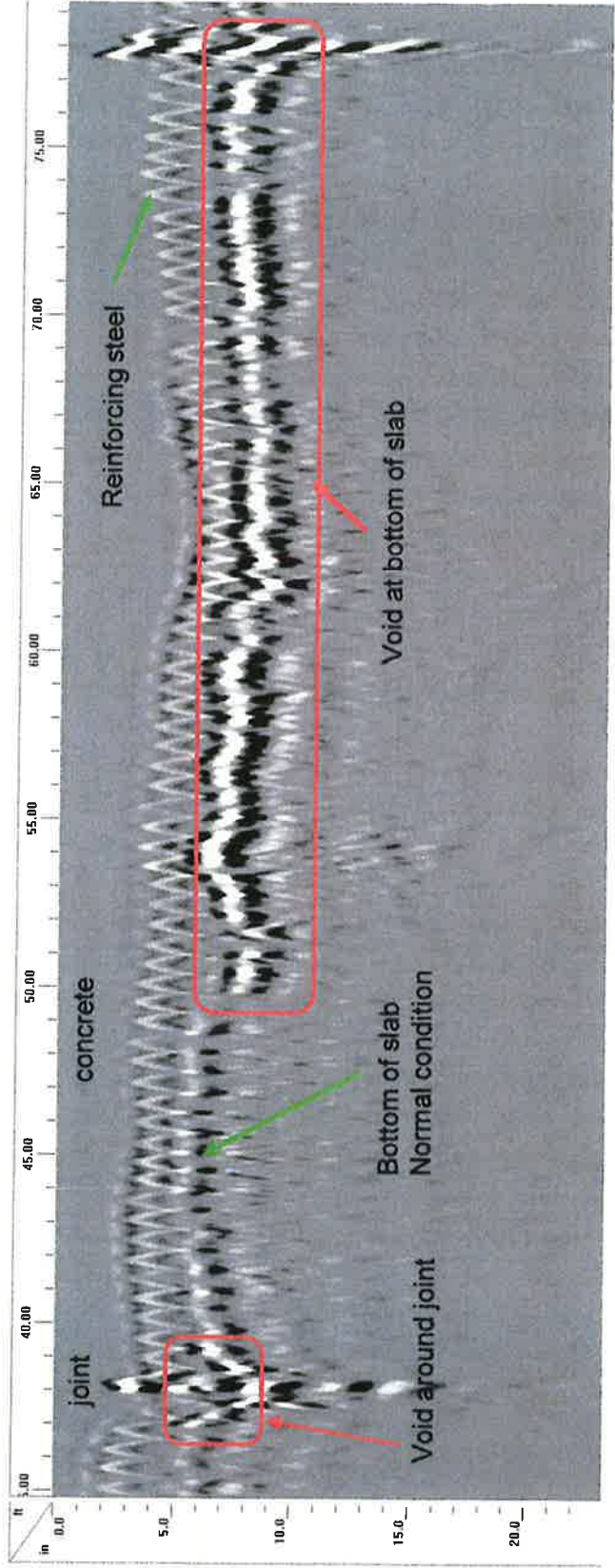
Areas circled in yellow are potential voids under the slab. The GPR cannot quantitatively measure the vertical airspace in a void but based on prior experience we estimate the voids likely range from 1/2 inch to 3 inches of vertical expression.

Project Manager:	JWA	Project No.	03211070
Drawn by:	JWA	Scale:	N.T.S.
Checked by:	RMK	File Name:	GPR
Approved by:	SAR	Date:	APR 2021

**Terracon**  
 Consulting Engineers & Scientists  
 402 N. STEEL AVE. OKLAHOMA CITY, OKLAHOMA 73102  
 PH (405) 557-0843 FAX (405) 557-0849


GPR Results Diagram  
 Public Swimming Pool  
 Pryor, Oklahoma





The GPR indicated concrete thickness of 10 to 12 inches with reinforcement on center around the perimeter and 5 to 6 inches of concrete thickness with 6 inch on center spacing on the remainder of the slab. The GPR data indicated data signatures consistent with voids along several of the joints and in larger areas primarily on the south and southwest portion of the pool. The GPR cannot quantitatively measure the vertical airspace in a void but based on prior experience we estimate the voids likely range from 1/2 inch to 3 inches of vertical expression. No significant subsurface soil or fill anomalies were noted in the GPR data to a depth of 20 inches below surface.



Project Manager: JWA		Project No. 03211070	 <small>4015 N. STEVENS AVE. OKLAHOMA CITY, OKLAHOMA 73104          PH: (405) 527-8951 FAX: (405) 527-2448</small>
Drawn by: JWA		Scale: N.T.S.	
Checked by: RMK		File Name: GPR	
Approved by: SAB		Date: APR 2021	
Example GPR Profile		Public Swimming Pool Pryor, Oklahoma	
		Exhibit <b>3</b>	