



**CITY OF LAKE WORTH,
AQUATICS AND BEACH COMPLEX**
Supplement to Property Condition Assessment

May 16, 2017

Kimley»»Horn

Kimley»»Horn

May 16, 2017

Mr. Michael Bornstein
Office of the City Manager
City of Lake Worth
7 North Dixie Highway
Lake Worth, FL 33411

**RE: *Supplement to Aquatics and Beach Complex Baseline Property Condition Assessment
KH Job #140335001***

Dear Mr. Bornstein,

The following is a Supplement to the City of Lake Worth, Aquatics and Beach Complex Property Condition Assessment Report by Kimley-Horn dated May 9, 2017.

The Supplement is in response to the following additional information and requests:

1. Request to provide additional backup to Table 1 - Opinion of Probable Cost (OPC) included in the PCA report.
2. Review of Additional information received from the City on May 12, 2017: *Inspection of Lake Worth Casino Pool Report by Sinclair Engineering Company dated July 9, 2012.*
3. Request to expand the discussion on the out of Scope considerations.

The opinions and conclusions expressed in this report are based on a view of the noted material, as well as my education, training, and experience as a licensed professional engineer. These opinions and conclusions are based on the information currently available to me and may be amended or supplemented should new information become available. This report has been prepared in accordance with the applicable professional standard of care. No other warranties or guarantees, expressed or implied, are made or intended. This report has been prepared solely for the City of Lake Worth for the purposes stated herein and should not be relied upon by any other party or for any other purpose.

Please contact me at (561) 840-0854 or david.stewart@kimley-horn.com should you have any questions.

Sincerely,

Kimley-Horn and Associates, Inc.
CA00000696



David W. Stewart, P.E.
Florida 31180



Angelina Fairchild, P.E.
Florida 43958



SUPPLEMENT TO PCA REPORT ISSUED ON MAY 9, 2017

Expanded OPC Table

The Aquatics and Beach Complex Property Condition Assessment Report by Kimley-Horn dated May 9, 2017 (PCA) includes a summary table of the Opinion of Probable Cost to Correct Observed Deficiencies (OPC). An expanded version of this table, including estimated quantities, unit prices, contingencies, and other considerations used to develop the OPC is attached as Appendix A. Adjustment of unit prices to more closely follow RS Means Cost Data for Commercial Reconstruction projects and additional surface preparation when refinishing the Main Lap Pool increased the OPC in several areas. A revised Table 1 is provided below.

Table 1 – Opinion of Probable Cost to Correct Observed Deficiencies

Facility	OPC
Main Lap Pool	\$186,400*
Wading Pool	\$2,800
Pool Deck	\$46,600
Pool Restrooms	\$125,000*
Beach Restrooms	\$5,500
Pool Filter Equipment Building	\$141,100*
Chlorine Storage Building	\$1,700*
Total	\$509,100*

[*] – Revised May 16, 2017

Additional Information from Client

Appendix B attached to this report is a copy of the Inspection of Lake Worth Casino Pool Report by Sinclair Engineering Company (SECO) dated July 9, 2012 provided to us on May 12, 2017.

The observations noted in the SECO report were reviewed, evaluated, and compared to our field notes and findings summarized in the PCA. Of particular interest were SECO's observation numbers 6 and 7 referring to a "horizontal cracks in the pool beam". After reviewing that photos in exhibit 4 of SECO's report, the mentioned horizontal crack is actually the cold joint between the structural wall of the pool and the precast coping. The coping is adhered to the top of the wall, similar to a tile installation, so a joint occurs at that interface. This joint is located at or near the finished grade elevation of the surrounding pool deck pavers and is located above the waterline. This is not a structural joint and it is not meant to be watertight.

The observations noted in the SECO report do not have an impact on our original opinions and conclusions in our PCA report.



Discussion on the Out of Scope Considerations in the PCA

The scope of our project in accordance with our agreement dated July 1, 2014 and Task Order dated April 10, 2017 was to perform a baseline Property Condition Assessment (PCA) of the Lake Worth Casino Pool and the adjacent facilities in accordance with standard ASTM criteria.

Opinions, conclusions, and recommendations provides in the PCA address the structural integrity of the pool and facilities and their potential remaining useful life based on the purpose for which these structures were created. Assessment of the functional layout of the aquatic center and marketing strategies is beyond our current scope.

Based on our original observations and additional information received, we still believe the pool and adjacent facilities can be repaired and re-used from a structural standpoint to satisfy the original needs of the facility in compliance with the Florida Building Code for Existing Buildings,

Re-use of these buildings is constrained by the existing limits of the building footprint because of their location. Changing the footprint of the buildings could require a significant permitting process because the Aquatic Complex is seaward of the Coastal Construction Control Line (CCCL).

To upgrade the pool and adjacent facilities to meet current code criteria, a change in footprint of the buildings is most likely required. An architectural evaluation would need to be performed to determine how much added square footage would be necessary to meet current code in terms of functionality, based on projected occupancy.

Programmatic and functional changes to the pool itself to attract other types of users would also need to be evaluated. Potentially, a new family-oriented complex could be designed to take advantage of the outer shell of these buildings. Desired changes in the overall complex could re-use these buildings for other purposes, such as storage, box office facilities, concessions, lifeguard lockers, etc.

The cost to restore or re-purpose these facilities would need to be weighed against the overall ultimate plan for the pool complex. A separate financial feasibility study would determine if the investment to update and maintain these facilities for the remainder of their useful life provides any benefit based on their proximity to the beach.

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APPENDIX A – EXPANDED OPC TABLE

OPINION OF PROBABLE CONSTRUCTION COST

Table 1 - expanded

The City of Lake Worth
 Aquatics and Beach Complex
 Opinion of Probable Cost
 KH 140335001

	Material				Labor			Total Cost	OPC
	Q	Unit	Unit Price	Material Cost	Hours	Rate	Labor Cost		
4.2 Main Lap Pool									
demolition	16801	sf	0.48	8064			0	8064	[a]
sandblast surface prep	16801	sf	2.1	35282			0	35282	[a]
floor	12300	sf	2	24600			0	24600	[a]
wall	1673	sf	2	3346			0	3346	[a]
wall	1394	sf	2	2788			0	2788	[a]
gutter	478	ft	2	956			0	956	[a]
tile	956	ft	5	4780			0	4780	
misc accessories	1	ls	2000	2000			0	2000	
Refinish the pool, including the gutters, up to the precast concrete coping.				81817			0	81817	[a]
demolition/repair pool deck	500	sf	19	9500	96	45	4320	13820	
excavation	135	cy	20	2700			0	2700	
testing	5	ls	500	2500	120	45	5400	7900	
repairs	200	lf	15	3000	240	45	10800	13800	
Remove the pool deck at the four corners of the pool and at the main lines to the Filter Building to expose the return water distribution piping. Isolate and pressure test each piping leg to determine the approximate location of the leak. Inspect the pipe interior for joint separation, breaks or other defects.				17700			20520	38220	[a]
Replace the underwater lights.	22	ea	250	5500	88	65	5720	11220	[a]
4.2 Main Lap Pool								\$ 186,400	[a]
4.3 Wading Pool									
Monitor Wading Pool temperatures to prevent unsafe conditions. Consider options to regulate heated water flow or provide an Independent heater.					40	50	2000	2000	[a]
4.3 Wading Pool								\$ 2,800	[a]
4.4 Pool Deck									
demolition	800	sf	4	3200	160	45	7200	10400	
excavation	59	cy	20	1185			0	1185	
repairs	200	lf	10	2000			0	2000	
restore deck	800	sf	15	12000	160	45	7200	19200	
Remove the pool deck to expose the deck drainage piping. Replace the piping and verify clear flow to the storm drain. Inspect with a plumber's camera all deck drain lines for blockage, separated joints or other defects.				18385			14400	32785	[a]
4.4 Pool Deck								\$ 46,600	[a]
4.5 Bathhouse and Offices (Pool Restrooms)									
tear off	4392	sf	1	4392			0	4392	[a]
mod bit roof	4392	sf	2.28	10013.76			0	10013.76	[a]
perimeter detail and expansion joint	438	lf	10	4380			0	4380	[a]
stacks, hoods, mechanical vents	1	ls	2000	2000			0	2000	[a]
Replace the roof covering with a modified bitumen built-up roof.				20786			0	20786	[a]
Install board insulation on the roof to meet FBC requirements.	4392	sf	4	17568			0	17568	[a]
Reconstruct ADA stalls to meet FAC.	4	ea	2000	8000			0	8000	[a]
Verify the number of fixtures based on the projected occupancy of the pool.				0	8	200	1600	1600	[a]
Redesign and replace the interior lighting to meet current FBC requirements.	4392	sf	5	21960			0	21960	[a]
demolish curb	12	lf	5	60	2	45	90	150	
slope floor topping	225	sf	2	450			0	450	
Remove the concrete curb at the men's shower room. Slope the floor to drains.				510			90	600	[a]
Repair damaged concrete masonry.	5.34	sf	30	160	4	45	180	340	[a]
The Life Guard room: Replace missing or damaged mechanical, electrical and plumbing equipment.	1	ls	500	500	4	45	180	680	[a]
The Pool Office: Replace the air conditioner with a roof mounted split system.	1	ea	800	800	8	45	360	1160	[a]
windows	8	ea	1500	12000			0	12000	
doors	3	ea	1000	3000			0	3000	
The Pool Office, Life Guard room and Manager' Office: Replace windows with Impact rated windows with a Florida Product Approval or provide protective covers.				15000			0	15000	[a]
The Pool Office raise the drain.	1	ls	250	250			0	250	[a]
4.5 Bathhouse and Offices (Pool Restrooms)								\$ 125,000	[a]
4.5 Bathhouse and Offices (Ocean Restrooms)									
Install mechanical ventilation in mechanical room.	1	ea	500	500			0	500	[a]
Inspect sanitary drain lines and building sewer. Clear any blockage.	1	ls	500	500			0	500	[a]
Replace pipe supports.	1	ls	500	500	32	45	1440	1940	[a]
Replace missing insulation.	4	ea	150	600			0	600	[a]
Lower the floor drain.	1	ls	250	250			0	250	[a]
4.5 Bathhouse and Offices (Pool Restrooms)								\$ 5,500	[a]

OPINION OF PROBABLE CONSTRUCTION COST

Table 1 - expanded

The City of Lake Worth
 Aquatics and Beach Complex
 Opinion of Probable Cost
 KH 140335001

	Material				Labor			Total Cost	OPC
	Q	Unit	Unit Price	Material Cost	Hours	Rate	Labor Cost		
4.6 Pool Filter Equipment Building									
temp support equipment	1	ls	500	500	16	45	720	1220	
truck crane	5	days	2400	12000			0	12000	
demolition	1032	sf	3	3096			0	3096	
hollow core slabs	1032	sf	12	12384			0	12384	
Remove the cast-in-place concrete roof and replace with precast, prestressed hollow core slabs.				27980			720	28700	\$ 40,800
tear off	1032	sf	1	1032			0	1032	
insulation board	1032	sf	1	1032			0	1032	
mod bit roof	1032	sf	2.28	2353			0	2353	
roof top ventilators	3	ea	750	2250			0	2250	
Replace the roof covering with a modified bitumen built-up roof over 1 inch insulation board. Replace all sheet metal stacks and flashings.				6667			0	6667	\$ 9,500
Clean the corroded steel and apply a patching mortar.	2	sf	30	60	4	45	180	240	\$ 300
demolish/replace pool deck	615	sf	19	11685	96	45	4320	16005	
excavation/backfill	136.6667	cy	30	4100			0	4100	
wall penetrations	8	ea	500	4000	64	45	2880	6880	
pipng	100	lf	15	1500	640	45	28800	30300	
instrumentation and controls start-up	1	ls	5000	5000			0	5000	
Remove the pool deck adjacent to the building and expose the piping serving the Main Pool and the Wading Pool. Replace the pool drain and return lines inside the pump room and a minimum of 5 feet outside the building.				26285			37440	63725	\$ 90,500
4.6 Pool Filter Equipment Building - Total									\$ 141,100 [a]
4.7 Chlorine Storage Building									
Replace the roof covering.	220	sf	2.28	502			0	502	\$ 700 [a]
Replace damaged roof sheathing. Inspect roof framing and repair if required.	1	sht	500	500			0	500	\$ 700
Install missing fasteners into tie-beam.	1	ls	50	50	4	45	180	230	\$ 300
4.7 Chlorine Storage Building - Total									\$ 1,700 [a]
									\$ 509,100 [a]

Opinions of Cost notes:

[a] - Revised May 16, 2017

- The costs shown in the OPC column include a construction contingency, plus an allowance for contractor insurance and bonds, and soft costs.
- Unit prices used in the table are based on a combination of RS Means data and local price information.
- Because Kimley-Horn (KHA) does not control the cost of labor, materials, equipment or services furnished by others, methods of determining prices, or competitive bidding or market conditions, all opinions rendered as to costs, including but not limited to opinion as to the costs of construction and materials, shall be made on the basis of its experience and represent its judgement as an experienced and qualified professional, familiar with the industry. KHA cannot and does not guarantee that proposals, bids or actual costs will not vary from opinions of cost prepared by it.



APPENDIX B – SINCLAIR REPORT



July 9, 2012

Mr. Timothy Ehmke
City of Lake Worth
50 South Ocean Drive
Lake Worth, FL 33460

**Re: Inspection of Lake Worth Casino Pool
10 Ocean Avenue, Lake Worth, FL 33460**

Dear Mr. Ehmke:

Sinclair Engineering Company performed an inspection of the above-referenced public pool on June 13, 2012 in your presence and in the presence of Mr. Jamie Brown, City of Lake Worth Public Services Director.

INTRODUCTION:

Sinclair Engineering Company received your request on May 30, 2012 to inspect crack damage, an out-of-level gutter condition and related items at the Casino Pool and deck. Specifically, you requested that we determine the nature, extent and cause, if known, of pool and deck damage. You further requested that we make recommendations for repair of observed damages.

PROCEDURES:

1. The pool and deck area was examined to gain a general understanding of the layout, construction materials, overall condition and areas of damage.
2. The pool shell was examined for evidence of crack damage.
3. The pool coping was examined for evidence of damaged or missing coping stones.
4. The pool rollout gutter was examined for evidence of damage.
5. The waterline and gutter tiles were examined for evidence of damaged or missing tiles and for evidence of an out-of-level condition.
6. The pool beam was examined for evidence of damage.
7. The pool deck was examined for evidence of damage from settlement or other causes.

PROCEDURES (Continued):

8. A Geotechnical Engineering Study by Tierra South Florida dated February 1, 2011, provided by you, was reviewed for content.
9. The Casino Pool file, provided by you, was reviewed for content.

OBSERVATIONS:

1. The pool can generally be described as a 3' to 12' deep, inground, gunite, rectangular-shaped public pool with a rollout gutter and raised precast coping. A sandset paver deck, over a concrete slab substrate, had been installed in association with the pool.
2. Examination of the pool shell revealed no visible evidence of cracks in the pool floor or walls.
3. Continued examination of the pool shell and gutter revealed missing bullnose tile on the inner face of the gutter, primarily adjacent to the steps in the Northeast corner of the pool.
4. Examination of the pool rollout gutter revealed that the water level was slightly higher along the West side of the pool than in the center and East side of the pool, indicating that the West side of the pool shell may have settled unevenly relative to the remainder of the pool shell.
5. Examination of the waterline tiles revealed a horizontal crack at approximately the mid-height of the waterline tiles at the back of the gutter. This condition was noted in several areas.
6. Examination of the pool beam in the Northwest corner of the pool, where a waterline tile was missing, revealed a horizontal crack in the pool beam.
7. Examination of the horizontal crack in the pool beam revealed that it appeared to be a cold joint between the previously existing concrete pool beam and a concrete overpour.
8. Continued examination of the horizontal crack in the pool beam revealed the presence of a caulking material along the crack, presumably installed to prohibit water seepage and/or prevent the crack from telegraphing into the waterline tile. It was noted that the caulking material did not extend along the entire length of the crack.
9. Examination of the precast coping stones revealed a number of cracks in the mortar joints. Further, a number of the coping stones were "hollow" and had disbonded from the pool shell.
10. Examination of the pool deck revealed that the sandset pavers had been removed in the Northeast corner of the pool. Examination of the deck in this area revealed a concrete slab substrate, portions of which had been removed, presumably to facilitate repairs in the pool perimeter gutter plumbing.

OBSERVATIONS (Continued):

11. Continued examination of the pool deck revealed no visible evidence of damage due to uneven settlement.
12. Review of the Geotechnical Engineering Study by Tierra South Florida dated February 1, 2011 revealed, in 1.0 Executive Summary, that (soil) borings B-10, B-11 and B-15 indicated the presence of about 10 feet of peat (organic soils) between a depth of about 7 and 22 feet below the ground surface. It was indicated that the borings where organic soils were encountered were on the West side in areas accessible to a truck mounted drill rig or about 75 feet away from the existing building.
13. Review of the Casino Pool file revealed numerous permits relating to the performance of routine maintenance and other work at the pool facility. Swimming Pool Alteration plans by Edgar S. Wortman, Architect, and Chester F. Wright, Engineer, were reviewed. Specifically, Drawing No. 1 of 2 dated November 1954 and Drawing No. 2 of 2 dated April 1956 were reviewed. Note that Drawing No. 2 of 2 was stamped "Approved, City of Lake Worth, 09/07/56" by Edward H. Gregory, Building Inspector.
14. Review of the Swimming Pool Alteration plans revealed that, among other alterations to be performed at that time, a rollout-type gutter was proposed to be installed on top of the existing pool wall such that it would increase the depth of the water by approximately 1 foot. Note that the pool beam details showed a monolithic pour that included the gutter and a 6" raised coping section. Further note that the horizontal crack discussed in Observation 7. did not correspond to the construction joint between the existing pool shell and the concrete beam overpour. Rather, the horizontal crack discussed in Observation 7. was in the upper area of the pool beam below the coping.

CONCLUSIONS:

Based on field-observed conditions and related experience, the conclusions of this inspection are, to the best of my professional understanding and belief, as follows:

1. There is evidence of uneven settlement of the pool which may be the result of organic soils underlying the pool and deck. Soil testing in locations proximal to the settled section of the pool would be required to confirm this condition.
2. There are horizontal cracks in the pool beam at a cold joint from previous alterations.
3. The proper repair of the pool beam is as follows:
 - a. Remove the precast coping stones (reserve for re-use) and waterline tiles from the entire perimeter of the pool.
 - b. Remove the portion of the pool beam above the crack from the entire perimeter of the pool.
 - c. Acid-etch and neutralize the top of the pool beam.

CONCLUSIONS (Continued):

- d. Install a properly-reinforced and attached pool beam.
 - e. Replace the precast coping stones and install new waterline tiles.
4. There are disbonded / loose precast coping stones which are to be reinstalled with an elastomeric thinset.
 5. It is also recommended that the precast coping stone mortar joint be filled with elastomeric grout to allow for expansion and contraction forces between the coping and the pool shell. Note that this expansion joint is to be installed on 10' to 12' centers and at the corners.
 6. If future soil testing confirms the presence of organic soils underlying the pool and deck, a piling foundation would be required to properly support the pool and prevent future movement. This office can produce pool and deck repair plans, including a pool piling plan, as requested. Alternately, the pool beam elevation can be monitored periodically (every one to three years) to determine if pool settlement is ongoing.

CLOSURE:

The professional services and independent opinions provided are based on the standards generally accepted within my area of expertise and in accordance with industry professional and ethical guidelines applicable to structural engineering. The opinions stated herein are my own and, if necessary, I will testify in support of the conclusions contained in this report.

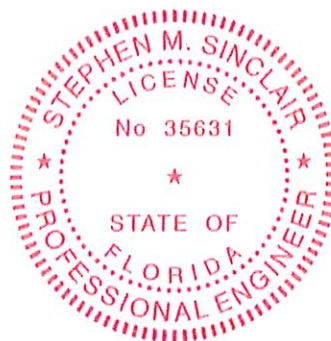
Thank you for selecting Sinclair Engineering for your engineering needs. Please feel free to contact this office for further information as the need arises.

Respectfully submitted,



July 9, 2012

Stephen M. Sinclair, P.E.
FL Lic. No. 35631



Copy: 12-06000

06-13-12 Inspection Report 07-09-12



EXHIBIT 1. OVERALL VIEW OF POOL AND DECK LOOKING NORTHWEST



EXHIBIT 2. OVERALL VIEW OF POOL AND DECK LOOKING SOUTHWEST



EXHIBIT 3. VIEW OF NORTHWEST AREA OF POOL



EXHIBIT 4. VIEW OF CRACKED WATERLINE TILES AND CRACKED POOL BEAM

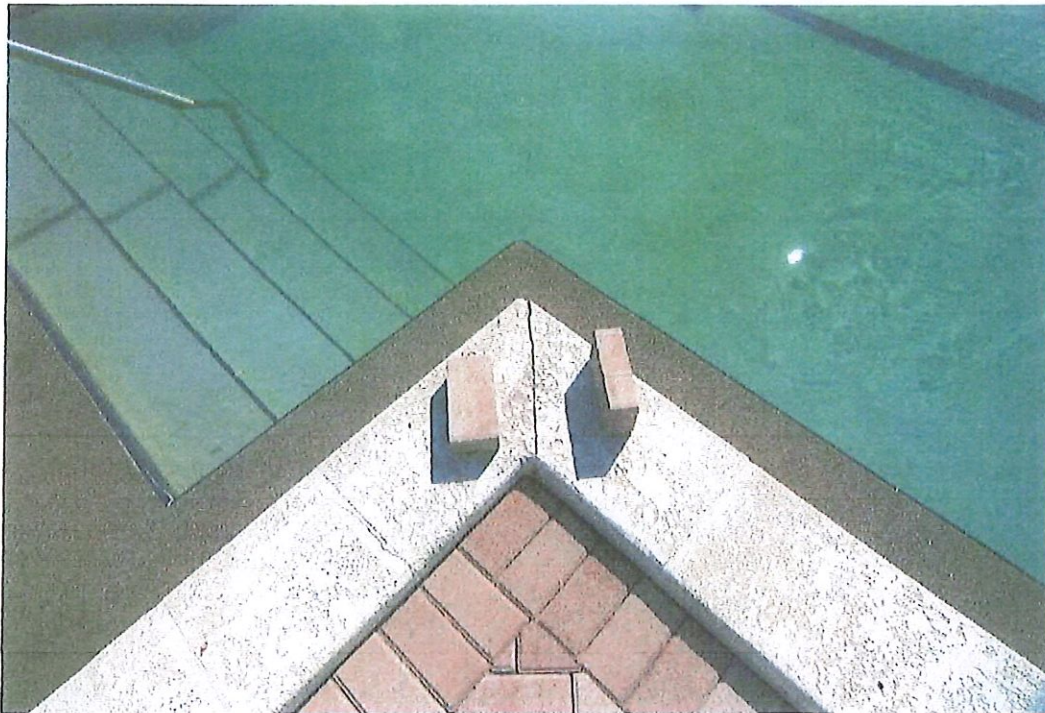


EXHIBIT 5. VIEW OF CRACKED MORTAR JOINT BETWEEN ADJOINING COPING STONES



EXHIBIT 6. VIEW OF STEPS IN NORTHEAST AREA OF POOL



EXHIBIT 7. VIEW OF MISSING BULLNOSE TILE (REFERENCE EXHIBIT 6.)

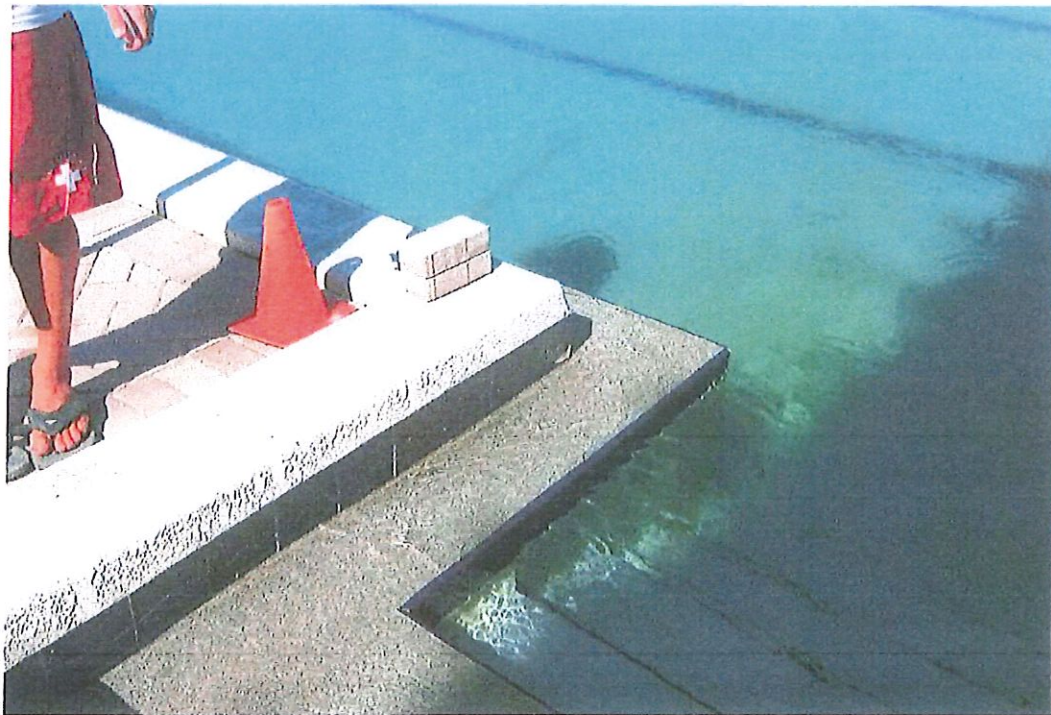


EXHIBIT 8. VIEW OF HORIZONTAL CRACK IN WATERLINE TILES (REFERENCE EXHIBIT 6.)



October 1, 2012

Mr. Jamie Brown, Public Services Director
City of Lake Worth
1749 3rd Avenue South
Lake Worth, FL 33460

**Re: Cost of Pool Repairs
Lake Worth Casino Pool, 10 Ocean Avenue, Lake Worth, FL 33460**

Dear Mr. Brown:

Sinclair Engineering Company received your request to provide the cost associated with repairs to the Lake Worth Casino Pool.

The information contained herein is provided as supplemental information to my Inspection Report dated July 9, 2012.

Please note that the Scope of Work in the Estimate provided by Barrow Pools includes:

1. Remove and replace existing pool beam above crack
2. Remove (2) layers of waterline tile and replace with new tile
3. Remove (2) layers of gutter bullnose and replace with new tile
4. Remove existing pool finish as needed in areas of delamination
5. Remove and replace step tile
6. Install cast in place 12" x 24" x 3" coping
7. Remove and replace new lane markers
8. Pressure test plumbing lines as needed (this test is not included in the price, time and material)
9. Prepare pool liner
10. Plaster pool with Petite Pearl, owner to choose color
11. Fill pool with carbon tanks

Mr. Jamie Brown
October 1, 2012
Cost of Pool Repairs - Lake Worth Casino Pool
Page 2 of 2

The cost for the above Scope of Work, excluding pressure-testing of the plumbing lines, is \$198,761.00.

If, during removal of the pool beam, more extensive damage is found, the beam and gutter will be rebuilt as needed to 6" below the existing gutter at an additional cost of \$24,600.00, see Option.

Lastly, please note the Upgrade of plastering the pool with Pebble Sheen Finish at an additional cost of \$71,520.00 which would allow the pool to remain empty when not in use.

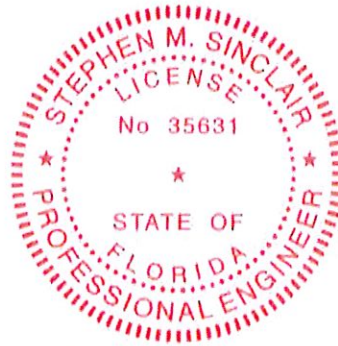
Thank you for selecting Sinclair Engineering for your engineering needs with your pool project. Please feel free to contact this office for further information as the need arises.

Respectfully submitted,



October 1, 2012

Stephen M. Sinclair, P.E.
FL Lic. No. 35631



Attachment: Barrow Pools Estimate

Copy: Job 12-06000, Chief T. Ehmke (by E-mail to Ehmke@LakeWorth.org)

Barrow Pools

720 Kittyhawk Way
North Palm Beach, Florida 33408

Estimate

Name / Address
Lake Worth Casino Attn: Steve Sinclair

Date

9/13/2012

Description	Total
Scope of work to include: Remove and replace existing pool beam above crack Remove two (2) layers of waterline tile and replace with new tile Remove two (2) layers of gutter bullnose and replace with new tile Remove existing pool finish as needed (delimitation) Remove and replace step tile Cast in place 12" x 24" x 3" coping Remove and replace new lane markers Pressure test plumbing lines as needed (Not included in price, time and material) Prep pool liner Plaster swimming pool with Petite Pearl color choice by owner Fill pool with carbon tanks Option: Rebuild beam and gutter as needed to 6" below existing gutter - \$24,600.00 Upgrade: Plaster pool with Pebble Sheen Finish - \$71,520.00	198,761.00

Phone #	Fax #	E-mail
561-582-5200	561-745-2266	barrowpools@bellsouth.net