



March 30, 2017

Mr. Brandon Comeaux E.I.,  
Region 1 Engineer Intern  
OPH – District 1

RE: Wax Museum Condominiums Class C Swimming Pool  
New Orleans, Louisiana

Mr. Comeaux,

In response to your review letter dated March 21, 2017 regarding concerns about the subject pool plans, the following is provided:

1. Plans page PL-2.2 does not have an engineer's seal, signature, or date. Please provide this page with an engineer's seal, signature, and date in the response.  
*Response: This page of the plan set is from the manufacture and provided as information only, basically a large cut sheet. It is not needed within the scope of work to be accomplished and can be removed from the plan set.*
2. Please provide the surface area and volume of hot tubs and number of living units utilizing them. LAC.51 :XXIV.103.A.Swimming Pool (Pools) .b, "Residential Pool- a residential pool shall be defined as any constructed pool, permanent or non-portable, that is intended for noncommercial use as a swimming pool by not more than five owner families and their guests and that is over 24 inches in depth, has a surface area exceeding 250 square feet and/or a volume over 3,750 gallons. (Residential pools are excluded from the provisions of these regulations.)"  
*Response: The hot tubs are not in our contract and we are not asking for the hot tubs to be reviewed in these documents. I have requested the information on the hot tubs and provided them as an attachment, but they are not part of this review.*
3. Please clarify if the Munsell scale rating of the pools finish will be at least 6.5 or greater. LAC.51 :XXIV.301.B. In part, "The floor of all pools shall be white, light colored, or light colored patterns in order to facilitate the identification of any objects within the pool." Model Aquatic Health Code 2nd edition, 4.5 .11.1.1, "The finish shall be at least 6.5 on the Munsell color value scale."  
*Response: Note #3 on Sheet G-1.1 has been revised to state: " The floor of the pool shall be white, light colored, or light colored patterns.*
4. Plans Page G-1.1 Note 4 indicates that the pool walls will be vertical and plumb. Drawings and details on plans page PL-2.1, indicate differently. If the pools walls are to be sloped from plumb please provide a typical detail which demonstrates that they will not be sloped greater than 11 degrees from plumb for a minimum of 2 feet 3 inches. LAC.51:XXIV.305.A, "Walls in Class Band Class C pools shall not be greater than 11° from plumb for a minimum depth of 2 feet 9 inches from the waterline in deep areas, or for a minimum depth of 2 feet 3 inches in the shallow areas. Below these depths, the wall may be radiused to join the floor. Class A pools, where racing lanes terminate, shall have plumb walls. (A maximum 1° from plumb construction tolerance shall be allowed.)".

*Response: Note #4 on Sheet G-1.1 has been revised to state: "All pool walls shall not be greater than 11° from plumb for a minimum depth of 2 feet 9 inches from the waterline in deep areas, or for a minimum depth of 2 feet 3 inches in the shallow areas". The drawings have been revised to show that the pool shell is set with a maximum slope of 5°.*

5. Please provide justification for not having the pool coping flush with the deck. This creates the potential for a obstruction hazard. Model Aquatic Health Code 2nd edition, sections 4.8.1.5.1.1.2, "PERIMETER DECK areas shall be flush with POOL walls/copings except where special conditions exist, such as elevated beam or parapet, raised transfer walls, or as permitted by other sections of this CODE."

*Response: The decking height has been set by the Architect and does not allow for the decking to be at the same level as the top of coping. There is in-sufficient area to increase the height of the deck to match the level of the coping.*

6. The pool does not have a deck on the sundeck side. There is a height difference of approximately 47 inches between the pools coping and the sun deck. Please provide a means to prevent bathers from falling from the pool coping to the sun deck.

*Response: A custom built safety rail has been added to sheet PL-2.1 Detail #1.*

7. Please clarify if the deck will be sloped away from the pool to drainage or that the deck will allow for water to pass through to the floor drains underneath. Please reference LAC.51:XXIV.323.G, H, O, and P for more information.

*Response: The 1-1/2" thick silica system above the 2' x 2' honed engineered stone pavers is a permeable system. Rain water and splashes from the pool will pass through the permeable silica system to the floor drains below. The surface of the concrete floor below will be sloped to a floor drain as shown on sheet PL-1.1.*

8. Plans page PL-2.1 detail C shows that the smaller set of steps are un-uniform and exceeds the maximum 12 inches at least once in its rise. The bottom riser is greater than 2 inches difference from the rise of the other steps. Please adjust design to conform with code. LAC.51:XXIV.327.A.2, "Risers at the centerline of the treads shall have a maximum uniform height of 12 inches, with the bottom riser height allowed to vary plus or minus 2 inches from the uniform riser height."

*Response: Sheet PL—2.1, Detail C has been revised to show a uniform step. A note has been added to the detail, "NOTE: ALL STEPS SHALL HAVE A UNIFORM HEIGHT EXCEPT THE BOTTOM STEP MAY VARY +/- 2".*

9. Plans page PL-2.1 detail A shows a drain valve assembly with a note that it will not be used for suction. This drain line is closed to the pump suction by a single valve. This arrangement allows for the possibility of the drain assembly valve to be left open and for the drain assembly to act as a main drain. Per VGBA all single main drains must be equipped at a minimum with an additional safety feature as listed below. VGBA-2011, In part, "The effective date of this incorporation is September 6, 2011, so that drain covers manufactured, distributed, or entered into commerce in the United States must conform to ANSI/APSP-16 2011 as of that date. See 16 CFR 1450.3) Section 1404(c)(1)(A)(ii) of the VGB Act requires that each public pool and spa in the United States with a single main drain, other than an unblockable drain, be equipped, at a minimum, with one or more of the following:

1. Safety vacuum release system;
2. Suction-limiting vent system;
3. Gravity drainage system;
4. Automatic pump shut-off system;
5. Drain disablement; and/or

6. Any other system determined by the Commission to be equally effective as, or better than, the enumerated systems at preventing or eliminating the risk of injury or death associated with pool drainage systems."

*Response: Sheet PL-2.1, Detail A has been revised to connect the floor main drain to the side main drains and skimmers as part of the suction system.*

10. The equalizer line covers and the main drain cover provided are not VGBA APSP-16 2011 listed. The certificate of conformance shown is for cover model #SPC-3VP with wall flow rate of 251 gpm. The cut sheets provided were for cover model# SPC-3V / SPC-3MV with wall flow rates of 180 gpm. Please provide information that the covers chosen are VGBA APSP-16 2011 compliant. Also please provide additional information of the main drain sump to clarify that it is VGBA APSP-16 2011 compliant. Model Aquatic Health Code 2nd edition, 4. 7.1.6.1, "Submerged suction outlets, including sumps and covers, shall be listed and labeled to the requirements of ANSI/ APSP-16 2011."

*Response: The manufacture has provided a blanket statement to the effect that all of their manufactured products meet the new requirements of ANSI/ APSP-16 2011, see attached.*

11. Please provide at least one dedicated main drain in the lowest part of the pool as required by LAC and MAHC. LAC.51 :XXIV.509.C.1, "All pools shall be provided with main drain suction outlet(s) in the lowest point of the pool floor. The spacing of the main drain(s) for suction outlet(s) shall not be greater than 20 feet on centers nor more than 15 feet from each side wall." AND Model Aquatic Health Code 2nd edition, sections 4.7.1.6.2.1 and 4.7.1.6.2.1.1, "A minimum of two hydraulically balanced filtration system outlets are required in the bottom."; "One of the outlets may be located on the bottom of a side/end wall at the deepest level."

*Response: Sheet PL-2.1, Detail A has been revised to connect the floor main drain to the side main drains and skimmers as part of the suction system..*

12. The two return inlets for the pool both serve more than 15ft of pool parameter each. Please provide additional inlets to comply with code. LAC. 51 :XXIV.511.B.3, "In smaller pools when the distance across the shallow end is as great as 15 feet, multiple inlets at the shallow end shall be provided. These inlets must serve not more than 15 linear feet each. In spoon-shaped rectangular pools where outlets are located more than 5 feet from the end walls, inlets must be placed at both ends of the pool."

*Response: Please refer to your comment above "In smaller pools when the distance across the shallow end is as great as 15 feet". This pool has no shallow end as the bottom of the entire pool is flat. The distance across the pool, not the length of the pool, is 10ft from the 1<sup>st</sup> step to the other side; therefore the statement above does not apply. The code requires a minimum of 2 inlets for small pools and 2 are being supplied.*

13. Please provide calculations that the velocity through the drain valve assembly cover will not exceed 6 fps and that the cover will have an effective opening at least 4 times suction pipe area. LAC.51:XXIV.503.A and 509.C.1. 503.A, "The water velocity in the pool piping shall not exceed 10 feet per second for discharge piping, (except for copper pipe where the velocity should not exceed 8 feet per second), and 6 feet per second for suction piping, unless summary calculations are provided to show that the greater flow is possible with the pump and piping provided. Pool piping shall be sized to permit the rated flows for filtering and cleaning without exceeding the maximum head of the pump." 509.C.1, "The main drain outlet grating shall have an area of openings four times the area of the discharge pipe to prevent objectionable suction effects."

*Response: 503A : The water velocity through both the supply and return piping is shown on G1.1; why are you asking for the calculations, the code does not require that calculations are to be submitted when the flow rates are at or below the stated velocities?*

511.C.1 – The piping to the sidewall drains has been reduced to 1-1/2” which has a cross-section area of 1.77 in<sup>2</sup>, the side wall drain cover has an opening surface area of 9.02 in<sup>2</sup> therefore a 1-1/2” pipe meets the requirement of 511.C.1. There are 5 suction devices in this pool and each sidewall main drain will handle no more than 50% of the flow for the system. The velocity through the 1-1/2” pipe with 50% flow is 4.1 fps which is less than the maximum 6 fps. The bottom main drain will have a 1” pipe installed; with a maximum of 10% flow through 1” pipe flows at 2.25 fps. See sheet G-1.1 note 16.

14. Plan page PL-2.1 detail 1 shows that the pool depth markers are spaced greater than every 25 feet. Please adjust according to code. LAC. 51 :XXIV. 70 I.A.6, "Depth markers shall be installed at intermediate increments of water depth not to exceed 2 feet, nor spaced at distances greater than 25 foot intervals."

*Response: Additional depth markers have been added.*

15. Plans do not show that underwater lighting is used. Please confirm that the illumination values will meet the minimum foot candles as listed. Model Aquatic Health Code 2<sup>nd</sup> edition, section 4.6.1.3, "POOL water surface and DECK light levels shall meet the following minimum maintained light levels:

1. Indoor Water Surface: 30 horizontal footcandles (323 lux)
2. Outdoor Water Surface: 10 horizontal footcandles (108lux)
3. Deck: 10 horizontal footcandles (108lux)."

*Response: Note 27 on G1-1 states “ PER 715.A - THIS POOL WILL BE OPEN FOR USE DURING NON-DAYLIGHT HOURS, AND THEREFORE REQUIRES 0.5 WATTS OF LIGHTING PER SQUARE FOOT OF POOL AREA. THE DECK AREA LIGHTING SHALL BE PROVIDED WITH A MINIMUM OF 0.6 WATTS PER SQUARE FOOT OF DECK AREA”. Since this pool does not have an underwater light the surface of the pool water surface area will require 0.5 watts per sq ft. of lighting as required by the LAC code and the deck will requires 0.6 watts per sq ft. See note on sheet PL-1.1 detail #3.*

If you have any questions, or require additional information, please feel free to call.

Sincerely,



David Dammon, President  
Dammon Engineering, Inc.

