



August 18, 2015

Mr. Travis J. Heathman
RCI
894 Robert Blvd.
Slidell, LA 70458

RE: Scarlet Pearl Pool Structural Design

Mr. Heathman,

In reference to the project referenced above the following information is presented to clarify additional pool construction parameters.

The area where the referenced pool is to be constructed shall be over-excavated to remove the upper soft clay and replaced with engineered fill according to the instructions from BHATE Geosciences Corp. The depth of excavation is estimated to be at an elevation of 5.5 ft, however an onsite geotechnical company shall be hired to ensure that proper excavation depth has been reached to ensure that any pockets of expansive soils have been removed. It is recommended that RCI contract with BHATE to observe the excavation and compaction of the engineered fill. All engineered fill shall be compacted to 95% proctor.

The referenced pool shall be constructed utilizing a steel grid matrix of Number 4 (#4) bar size steel deformed rebar, grade 60 conforming to ASTM A615, (rebar with protrusions to provide a mechanical bond) spaced 10" on centers in both directions to insure the structural integrity of the pool shell. There shall be two (2) layers of rebar, the top layer shall be 3" below the top of concrete and the second layer shall be 2" above the bottom of the concrete. There shall be a minimum clearance between parallel running reinforcement bars of 2 1/2 inches. Steel rebar must be held in place (tied) to prevent movement & vibration.

Overlap of steel bars, especially around corners, side to bottom, side to deck, and linear extensions shall be a minimum of 18" overlap and secured in such a manner to prevent movement.

Care shall be taken so that reinforcement bars shall be free from mud, oil or other nonmetallic coatings that decrease the concrete/rebar bond.

Pool facets such as inlets, outlets, drains, lighting fixtures and additional appurtenances shall be supported by diagonal grids (#4 rebar) superimposed on the 10" grid matrix. Diagonal grids shall be secured in such a manner as to prevent movement.

The concrete shell of the pool shall be a spray shotcrete type, either wet-mix or dry-mix. (Dry-mix type is commonly referred to by the onetime trademark name of *Gunite*.) The thickness of the pool sides and bottom shall be a minimum of 8 inches. Surrounding deck, (a minimum of 4' from the pool edge) shall be 4" thick reinforced concrete.

Compressive strength for pool shell shall meet ASTM C109 / ASTM C39 :

	Shotcrete Fine	Shotcrete MS Fine	Shotcrete MS Coarse	Shotcrete MS Fine w/polypropylene fiber	Shotcrete MS Coarse w/Steel Fibers
1 day	1500 psi (10.3 MPa)	1750 psi (12.1 MPa)	1750 psi (12.1 MPa)	1750 psi (12.1 MPa)	2500 psi (17.2 MPa)
7 days	3050 psi (21.0 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	3500 psi (24.1 MPa)	4000 psi (27.6 MPa)
28 days	5075 psi (35.0 MPa)	5500 psi (37.9 MPa)	5500 psi (37.9 MPa)	5500 psi (37.9 MPa)	7000 psi (48.3 MPa)

The Geotechnical Engineering Report from BHATE states that ground water was not encountered during the borings for the pool, therefore the area will not require to be dewatered.

Should you have any questions or if further information is required, please feel free to contact Dammon Engineering, Inc .

Respectfully,



Brian A. Mistich, P.E.