

**PETITION FOR DECLARATORY STATEMENT
BEFORE THE FLORIDA BUILDING COMMISSION**

Petitioner:

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Petitioner G.B. Collins Engineering, P.A. ("Petitioner"), by and through its undersigned legal counsel, hereby requests a declaratory statement from the Florida Building Commission (the "Commission") and as grounds therefore states the following:

I. CODE PROVISION IN QUESTION

DS 2018-040

Florida Building Code, 6th Edition (2017)

**Chapter 4 – Special Detailed Requirements based on Use and Occupancy
Section 454 – Swimming Pools and Bathing places (Public and Private)**

454.1 Public swimming pools and bathing places.

454.1.6 Plumbing systems.

454.1.6.1 Sanitary facilities.

454.1.6.1.1 Required fixtures.

Fixtures shall be provided as indicated on Table 454.1.6.1. The fixture count on this chart is deemed to be adequate for the pool and pool deck area that is up to three times the area of the pool surface provided. When multiple fixture sets are required and separate facilities are provided for each sex, the fixtures used in ancillary family-style restrooms can be used to meet the requirements of this section.

One diaper changing table shall be provided at each restroom. Diaper changing tables are not required at restrooms where all pools served are restricted to adult use only. Swim diapers are recommended for use by children that are not toilet trained. Persons that are ill with diarrhea cannot enter the pool.

Exception: When a public swimming pool meets all of the following conditions the following shall apply:

1. The pool serves only a designated group of dwelling units,
2. The pool is not for the use of the general public, and
3. A building provides sanitary facilities;

The fixture requirement for the building shall be determined and if it exceeds the requirement in Table 454.1.6.1 then the building requirement shall regulate the fixture count, otherwise the fixture count shall be based on the requirement for the pool. Under no circumstances shall the fixture counts be cumulative.

An additional set of fixtures shall be provided in the men's restroom for every 7,500 square feet (697 m²) or major fraction thereof for pools greater than 10,000 square feet (929 m²).

Women's restrooms shall have a ratio of three to two water closets provided for women as the combined total of water closets and urinals provided for men.

Lavatory counts shall be equal.

II. ADDITIONAL RELEVANT CODE PROVISIONS

Florida Building Code, 6th Edition (2017)

Chapter 4 – Special Detailed Requirements based on Use and Occupancy

Section 454 – Swimming Pools and Bathing places (Public and Private)

454.1 Public swimming pools and bathing places.

454.1.6 Plumbing systems.

454.1.6.1 Sanitary facilities.

Swimming pools with a bathing load of 20 persons or less may utilize a unisex restroom. Pools with bathing loads of 40 persons or less may utilize two unisex restrooms or meet the requirements of Table 454.1.6.1. Unisex restrooms shall meet all the requirements for materials, drainage and signage as indicated in Sections 454.1.6.1.1 through 454.1.6.1.4. Each shall include a water closet, a diaper change table, a urinal and a lavatory. Pools with a bathing load larger than 40 persons shall provide separate sanitary facilities labeled for each sex. The entry doors of all restrooms shall be located within a 200-foot (60 960 mm) walking distance of the nearest water's edge of each pool served by the facilities.

Exception: Where a swimming pool serves only a designated group of residential dwelling units and not the general public, poolside sanitary facilities are not required if all living units are within a 200-foot (60 960 mm) horizontal radius of the nearest water's edge, are not over three stories in height unless serviced by an elevator, and are each equipped with private sanitary facilities.

**TABLE 454.1.6.1
PUBLIC SWIMMING POOL—REQUIRED FIXTURE COUNT**

SIZE OF POOL (square feet)	MEN'S RESTROOM			WOMEN'S RESTROOM	
	Urinals	WC	Lavatory	WC	Lavatory
0 – 2,500	1	1	1	1	1
2,501 – 5,000	2	1	1	5	1
5,001 – 7,500	2	2	2	6	2
7,501 – 10,000	3	2	3	8	3

For SI: 1 square foot = 0.0929 m².

454.1 Public swimming pools and bathing places.

454.1.1.1 Sizing

The bathing load for conventional swimming pools, wading pools, interactive water features, water activity pools less than 24 inches (610 mm) deep and special purpose pools shall be computed on the basis of one person per 5 gpm (0.32 L/s) of recirculation flow. The bathing load for spa type pools shall be based on one person per each 10 square feet (0.9 m²) of surface area. The filtration system for swimming pools shall be capable of meeting all other requirements of these rules while providing a flow rate of at least 1 gpm (0.06 L/s) for each living unit at transient facilities and 3/4 gpm (0.04 L/s) at nontransient facilities. Recreational vehicle sites, campsites and boat slips designated for live-aboards shall be considered a transient living unit. For properties with multiple pools, this requirement includes the cumulative total gpm of all swimming pools, excluding spas, wading pools and interactive water features. All other types of projects shall be sized according to the anticipated bathing load and proposed uses. For the purpose of determining minimum pool size only, the pool turnover period used cannot be less than 3 hours.

III. APPLICABLE CODE DEFINITIONS

454.1 Public swimming pools and bathing places.

454.1.1 Flood hazard areas. *Note that this subsection also contains definitions applicable to Section 454.1

“Bathing load” means the maximum number of persons allowed in the pool or bathing place at one time.

A **“public swimming pool”** or **“public pool”** means a watertight structure of concrete, masonry, or other approved materials which is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances, and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose

pool, interactive water feature or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, but is not limited to, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions, or the cooperative living-type projects of five or more living units, such as apartments, boardinghouses, hotels, mobile home parks, motels, recreational vehicle parks, and townhouses. The term does not include a swimming pool located on the grounds of a private residence.

“Spa pool” means a pool used in conjunction with high-velocity air or water.

“Wading pool” means a shallow pool designed to be used by children.

“Water recreation attraction” means a facility with design and operational features that provide patron recreational activity and purposefully involves immersion of the body partially or totally in the water. Water recreation attractions include water slides, river rides, water course rides, water activity pools, interactive water features, wave pools and any additional pool within the boundaries of the attraction.

“Water activity pool” means a water recreation attraction which has water-related activities such as rope ladders, rope swings, cargo nets and other similar activities.

“Interactive water features” means a structure designed to allow for recreational activities with recirculated, filtered, and treated water; but having minimal standing water. Water from the interactive fountain type features is collected by gravity below grade in a collector tank or sump. The water is filtered, disinfected and then pumped to the feature spray discharge heads. The collector tank and water filtration features required make this structure a type of public swimming pool.

454.1 Public swimming pools and bathing places.

454.1.9 Water recreation attractions and specialized pools.

454.1.9.8 Interactive water features (IWFs).

454.1.9.8.1

Waters discharged from all fountain or spray features shall not pond on the feature floor but shall flow by gravity through a main drain fitting to a below or collection system which discharges to a collector tank. The minimum size of the collector tank shall be equal to the volume of 3 minutes of the combined flow of all feature pumps and the filter pump. Smaller tanks may be utilized if hydraulically justified by the design engineer. Adequate access shall be provided to the sump or collector tank. Stairs or a ladder shall be provided as needed to ensure safe entry into the tank.

IV. QUESTION

For the following prospective projects, whether the proposed interactive water features (“IWFs”) should be considered when calculating the “size of pool” for purposes of determining the type and number of fixtures for sanitary facilities at the subject public pool pursuant to Section 454.1.6.1.1 of the FBC, where each project will also contain a swimming pool?

Prospective Projects:

- (1) *Watergrass Project*
Swimming Pool = 1,330 square feet
IWF = 1,256 square feet¹
- (2) *Sand Lake Sound Project*
Swimming Pool = 1,060 square feet
IWF = 2,490 square feet²

V. ISSUE

Petitioner is a professional design engineer (“P.E.”) who has been in business for over 45 years and has been responsible for the design of hundreds of commercial swimming pools throughout the State of Florida. Accordingly, Petitioner is considering undertaking the two foregoing projects that involve both swimming pools and IWFs and, therefore, this issue substantially affects Petitioner.

If the IWFs’ square footage were to be included in the “size of pool” calculation, it would bump the pool size into a different category that would require additional fixtures to be built. Requiring additional fixtures would cause an increase in the sanitary facility square footage and water consumption, which would have significant widespread effects, including without limitation, increasing impervious areas, storm sewers, parking spaces, and plumbing and HVAC needs. The inclusion of IWFs in the fixture calculation places an inordinate hardship on not only the Petitioner and others in Petitioner’s position, but also the owner, contractors, subcontractors, design professionals, consultants, and all others involved in such a project.

VI. ANALYSIS

A. The Code excludes spa pools, wade pools, and IWFs from the sizing calculation for public pools when a property contains “multiple pools.”

Section 454.1 of the FBC provides special detailed requirements based on use and occupancy for public pools only. Section 454.1.6.1 dictates whether additional sanitary facilities must be constructed specifically for use by persons at a public pool and governs the number of such additional facilities and whether they shall be designated as men’s, women’s, or unisex restrooms. Moreover, Section 454.1.6.1.1 provides the type and number of fixtures that must be included within a given sanitary facility. Generally, such fixtures “shall be provided as indicated in Table 454.1.6.1,” (the “Table”), which Table’s placement in the Code is directly in between the

¹ See prospective plan for the Watergrass Project attached as **Exhibit “A.”**

² See prospective plan for the Sand Lake Sound Project attached as **Exhibit “B.”**

provision for sanitary facilities and the provision for required fixtures. The Table indicates that the required fixtures are to be determined based on the “size of [the] pool,” which is measured by square feet (sq. ft.). Depending on which of the four categories the size of the pool falls into determines the number of urinals, water closets, and lavatories required in both the men’s and women’s restrooms. For instance, if the size of the pool is 2,500 sq. ft. or less, only one water closet is required in the women’s restroom and only one urinal in the men’s. However, just one additional sq. ft. included in the calculation increases the requirement to five (5) water closets in the women’s restroom and two (2) urinals in the men’s.

Furthermore, only one place in Chapter 4 of the FBC provides a calculation for determining the size of a public pool—Section 454.1.1.1 **Sizing**. The Table commands that the fixtures required in sanitary facilities be determined by the size of the pool (based on square footage); however, it provides zero guidance as to the items that should be included in the measurement of such square footage calculation. As such, Section 454.1.1.1’s rules governing the calculation of pool size must be utilized in order to accurately calculate the “size of pool” for purposes of determining pool fixture requirements. Other than providing the guidelines for calculating the bathing load for a pool, Section 454.1.1.1 dictates that **for properties with multiple pools, “spas, wading pools[,] and interactive water features”** shall be specifically excluded from the calculation of the size of the pool.

Because “[a] public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool, interactive water feature or water recreation attraction,” whenever a property possesses more than one of the foregoing, it contains “multiple pools” as envisioned by Section 454.1.1.1. Therefore, when an IWF is planned to be constructed alongside a conventional pool, the IWF is **not** to be considered in the calculation of the size of the pool.

In conclusion, the square footage of the conventional pool should be the only square footage calculated for purposes of determining the “size of pool.” Any additional spa pool, wade pool, and/or IWF contemplated should not be included in the calculation of the “size of pool”; and therefore, should have no impact on the sanitary facility fixtures required.

B. The inclusion of IWFs in the calculation of the “size of pool” is illogical and inconsistent with the Code’s purpose to promote health and safety.

A pool’s “bathing load” is defined as “the maximum number of persons allowed in the pool or bathing place at one time.”ⁱ A “public swimming pool” or “public pool” is defined as “mean[ing] a watertight structure of concrete, masonry, or other approved material which is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, **together with buildings, appurtenances, and equipment used in connection therewith.**”ⁱⁱ Furthermore, under “pool appurtenances,” the FBC includes decks and walkways, which includes wet decks, as well as the fence or barrier surrounding the pool area.ⁱⁱⁱ In other words, the bathing load indicates the maximum number of persons allowed in the entire pool area, not just in the water. Furthermore, when calculating the bathing load, IWFs are not to be included in such calculation if they accompany a conventional swimming pool on the same property—the “multiple pool” exception.

As such, increasing the “size of pool” calculation to account for the square footage of an IWF serves no purpose and would have absolutely no beneficial impact because the inclusion of an IWF does not add to the bathing load, nor the number of persons permitted in the general pool area (which includes the IWF). Simply put, it is counterintuitive to require additional restroom fixtures when additional people will not be permitted to use such restrooms—the added restrooms would be rendered superfluous. Such an interpretation would create an increase in the cost of construction of the extra fixtures, increased utility costs, and increased water consumption by the property, yet would not provide any benefit to the health and/or safety of the bathers, in direct contradiction of the purpose of the Code.

Moreover, an unnecessary increase in the size of a given pool restroom would directly affect an entire project. Specifically, the building’s requirements for HVAC, plumbing, electrical, parking spaces, and green space would be potentially impacted significantly. The foregoing are all needless expenses that would be borne by the owner of the pool, and ultimately by those persons who enjoy the use of same.

In conclusion, because IWFs are not to be considered for purposes of calculating bathing load (i.e., the maximum number of persons allowed in the pool area) in combination with a conventional pool, requiring additional fixtures simply because an IWF is present is in direct contradiction of the Code.

Respectfully submitted,



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On Behalf of:

G. B. COLLINS ENGINEERING, P.A.

ⁱ See Section 454.1.1, FBC.

ⁱⁱ See Section 454.1.1, FBC (emphasis added).

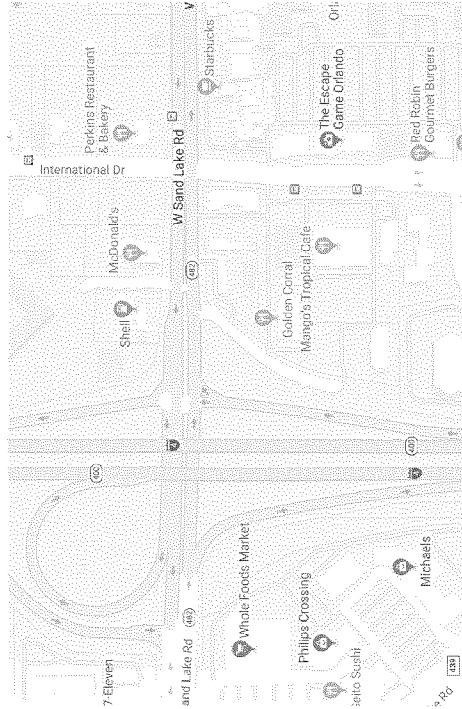
ⁱⁱⁱ See Sections 454.1.3 and 454.1.3.1, FBC.

Exhibit “A”

Exhibit “B”

GB Collins Engineering PA
Certificate of Authorization 2793

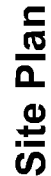
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PROJECT LOCATION MAPS

#	Revision Description	Date
Date:		4/30/18
Drawn by:		J.P

1. RIMSE SHOWER SHALL BE PROVIDED ON THE POOL DECK WITHIN THE PERIMETER OF THE FENCE.
2. HOSE BIBB WITH VACUUM BREAKER REQUIRED ON DECK.
3. WASTE TO FORM COLLECTION SYSTEM WITH AIR GAP. MEET WITH THE OWNER TO DETERMINE PUMP AND WASTE LINE SHALL HAVE A UNIQUE AIR GAP.
4. WASTE LINE TO BE DIFFERENT SOURCES SHALL BE TIED TOGETHER AND DISCHARGE TO THE SAME POINT OF DISCHARGE. AIR RECEPTACLE AFTER AIR GAP. CONTRACTOR TO PROVIDE AND CONTROL LOCATIONS AND ELEVATIONS WITH THE OWNER AND INDICATE CONTRACTOR.
5. PROVIDE A HOSE BIBB WITHIN 12 FEET OF POOL.
6. PROVIDE DIRECTIONAL SIGNALS TO RESTROOMS.
7. NO RECYCLED WATER SHALL BE USED AS AN IRRIGATION.
8. PROVIDE 1/2" MINIMUM SLOPE AWAY FROM THE POOL DECK PAINT LAY-ENGAGED PAINT.
9. OUTDOOR POOL DECK TO HAVE A MINIMUM OF 2" AND A MINIMUM OF 4% UNIFORM SLOPE AWAY FROM POOL TO DECK DRAINING.
10. CONTRACTOR TO PROVIDE A MINIMUM 4" OF CLEARANCE AROUND THE POOL PERMITTER. THIS CLEARANCE DISTANCE INCLUDES ANY STEP AND A DRAIN AND ANCHORS.

SCALE: $\frac{1}{16}$ " = 1'

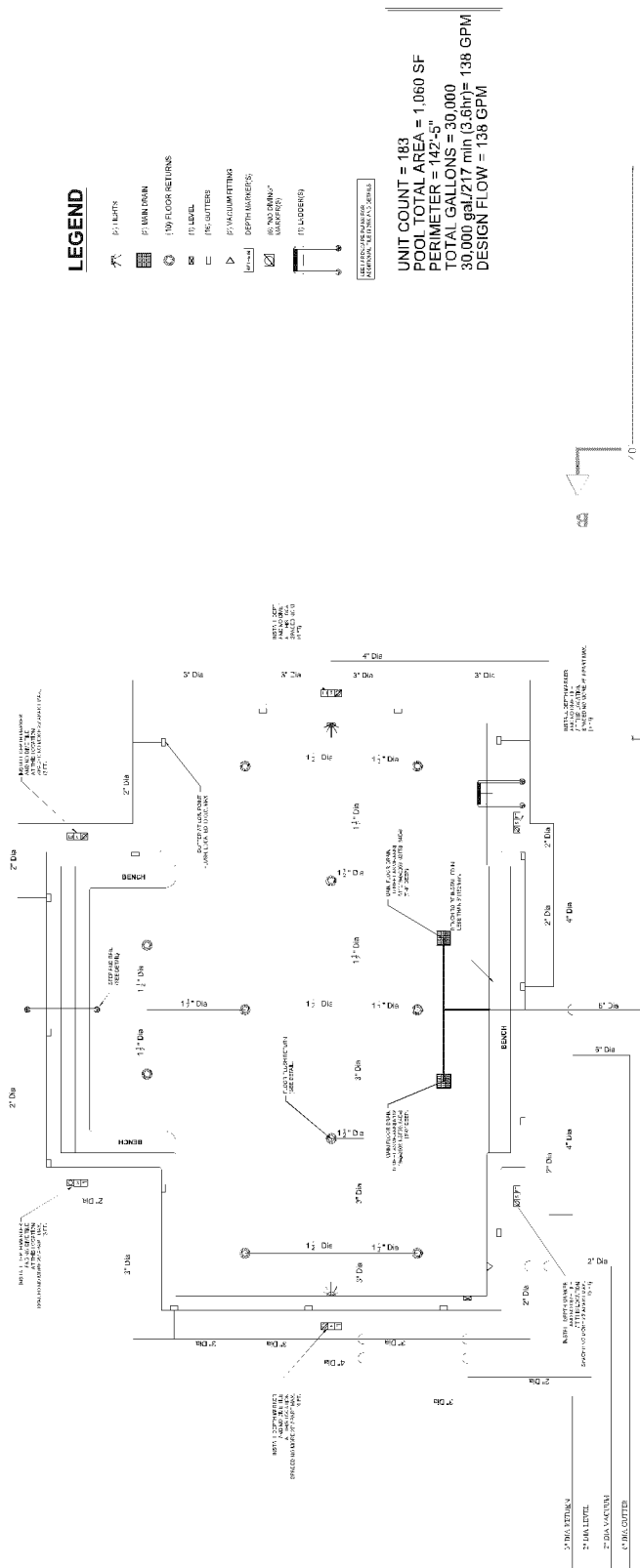
Sheet 2 of 10

#	Revision Description	Date
Date:		4/30/18
Drawn by:		JP

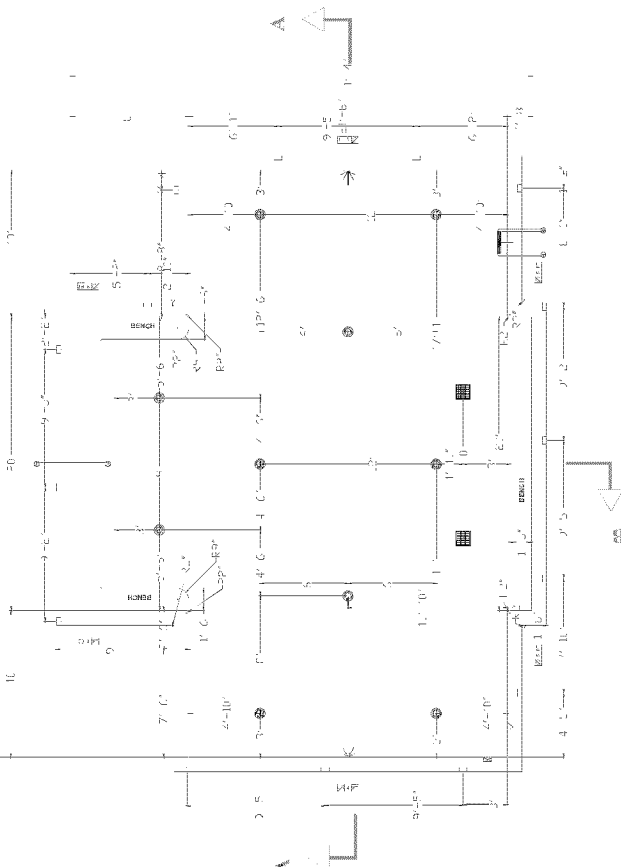
Certificate of Authorization PA
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OF: **OVIDA** Construction Group Inc.
Sand Lake Sound
Amenity Pool &
Interactive Water Feature (I.W.F.)
Site Plan

OT: Sam
Am
Inte
Site



POOL PLUMBING PLAN
 SCALE: 1/4" = 1'



POOL LAYOUT PLAN
 SCALE: 1/4" = 1'

MAXIMUM FLOW VELOCITIES (GPM)			
PIPE DIAMETER	¹ GRAVITY	² SUCTION	³ PRESSURE
1.5	17	33	55
2.0	29	59	98
3.0	66	132	220
4.0	117	235	382
6.0	264	529	881
8.0	470	940	1,557
10.0	794	1,459	2,448

¹ GRAVITY, MAXIMUM FLOW, IN GPM, AT 3.0 FPS
² SUCTION, MAXIMUM FLOW, IN GPM, AT 6.0 FPS
³ PRESSURE, MAXIMUM FLOW, IN GPM, AT 10.0 FPS

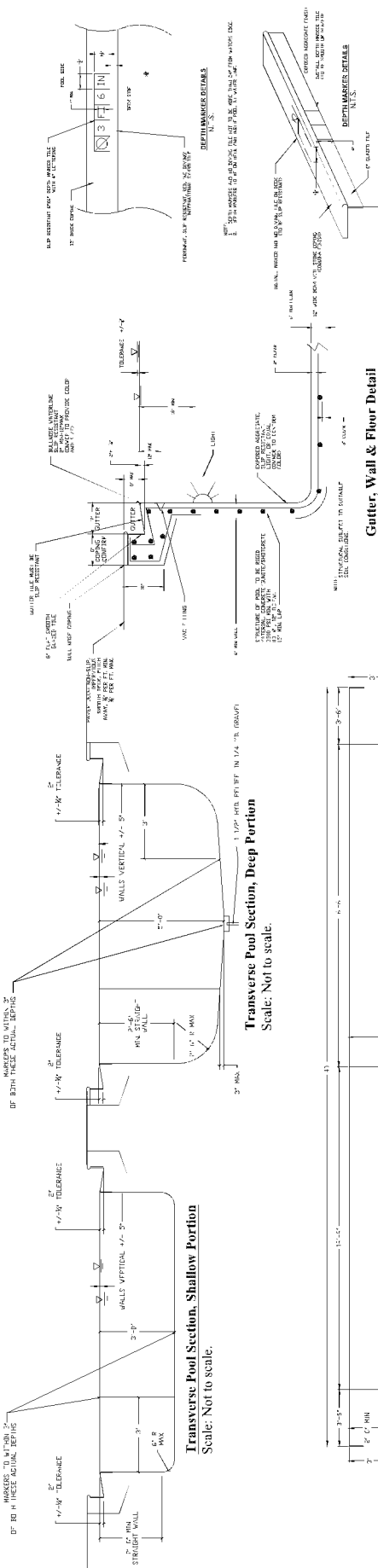
GB Collins Engineering PA
Certificate of Authorization 27934

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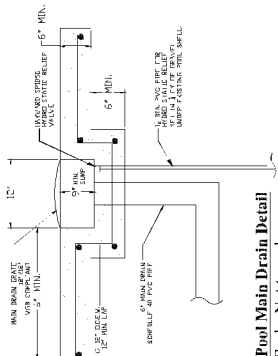
OF: **OVIDA** Construction Group Inc.

#	Revision Description	Date
Date:		4/30/18
Drawn by:		JP

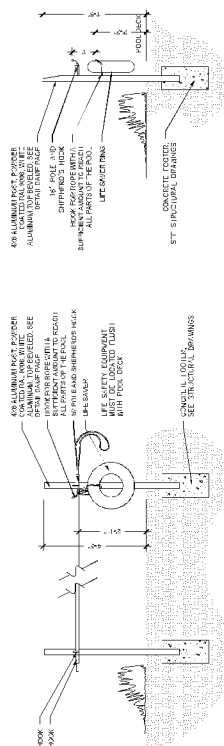
Sheet 5 of 10



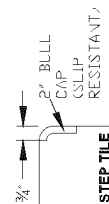
Depth Marker Details
Scale: Not to scale.



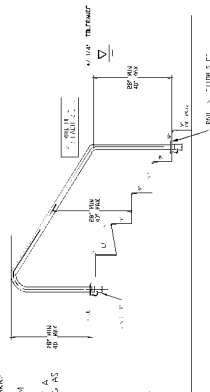
Pool Main Drain Detail
Scale: Not to scale.



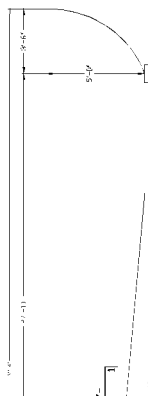
LIFE SAFETY EQUIPMENT
SCALE: N.T.S.



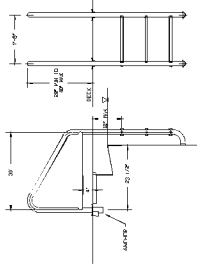
STEP TILE



Pool Step and Rail Detail
N.T.S.



Section B-B
Main Pool Section
N.T.S.



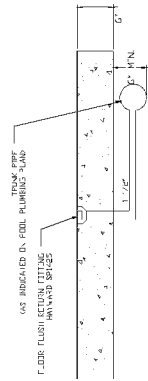
Lower Cretaceous; Big Smith Co. Tex. (Smith et al. 1964).
Length 6.5 mm; from zone 3. Minimum liver width.
Index: Stomach full of small crustaceans; 28° in water; 30° in

Flame, 1.9" O.D. x .065", Type 304 Stainless Steel, available in 25' minimum / 20' max above sea level. In and 5" minimum from vent. 3" Minimum floor vent.

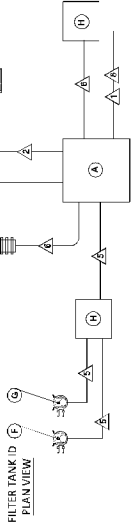
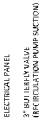
2. ALL STEPS SHALL BE SLIP RESISTANT, UNLESS A LULUR VALUE FOR THE STEPS AND CONTIGUOUS WFOOD ENTIRE STEP.
3. INTERMEDIATE STEPS SHALL BE UNIFORM IN WIDTH AND HEIGHT.
4. ALL STEPS RESISTANT TO SLIP SHALL HAVE A COEFFICIENT OF FRICTION OF AT LEAST 0.6 AS MEASURED USING ASTM C 1028.

Ladder Detail, Model #10135
Scale: Not to scale.

Scale: Not to scale.



Floor Return Detail
Scale: Not to scale.

**FIXTURE SCHEDULE:**

Mark	Description	Voltage	Manufacturer & Model No.
(A)	Welding Inverter panel	110, 160, 200 V	C-1185-L-1/2SP
(B)	Resistor Motor Pump	200 V, 1ϕ	Perfekt VEE 3 1/2
(C)	Vacuum Pump	230 V	Star-Rite Mac-Inte Perfekt 1-HP
(D)	Pool Lights	12 V.	Master
(E)	Chlorine Feeder Pump	115 V.	Shower 4205
(F)	ACF 5000 Pump	115 V.	Shower 4202
(G)	GrCl	110 V.	Pose & Seignie



10430 66th STREET
ST. PETERSBURG, FL 33782
(727) 329-8845
AWPDE200/23 F 200GPM

AWPDE200/23 F 200GPM

ELECTRICAL SCHEMATIC

ELECTRICAL:
All electrical equipment wiring, installation and servicing of pool components that
occurs in national fire protection article 70, national electrical code (N.E.C.), must adhere
to applicable codes
Contractors should be registered with the licensing agency.

FEEDER & CIRCUIT SCHEDULE:						
Mark	Phase	Conductors Neutral	Ground	Conduit	Remarks	
1	A	2 - #12	1 - #12	3/4"	Use Feeder	
2	A	2 - #8	1 - #8	3/4"	Use Feeder	
3	A	1 - #12	1 - #12	1/2"	Schedule To Panel	
4	A	1 - #12	1 - #12	1/2"	Schedule To Light	
5	A	1 - #12	1 - #12	1/2"	Schedule To Ground	

FIXTURE SCHEDULE:

Mark	Description	Voltage	Manufacturer & Model No.
(A)	Welding Inverter panel	110, 160, 200 V	C-1185-L-1/2SP
(B)	Resistor Motor Pump	200 V, 1ϕ	Perfekt VEE 3 1/2
(C)	Vacuum Pump	230 V	Star-Rite Mac-Inte Perfekt 1-HP
(D)	Pool Lights	12 V.	Master
(E)	Chlorine Feeder Pump	115 V.	Shower 4205
(F)	ACF 5000 Pump	115 V.	Shower 4202
(G)	GrCl	110 V.	Pose & Seignie

Conductors and Conduit Installed By Others

PANEL SCHEDULE:				
1 PHASE, 3 WIRE, 120/240VAC, INSULATED/UNINSULATED SPLIT NEUTRAL CURRENT WITHSTANDING RATING MAX. RMS. 500A. 50,000A 120/240V				
Circuit	Fault	Type	Load	Amps
1	2	20A	Rec. Pump or Insulated Chain. Feeders	15.0
2	2	20A	Vacuum Pump	16.0
4	2	20A	GPCI	3
5	1	20A	Feed Lights	1.5
6-10			Spares	
Total Maximum Load				35.5

Sheet 6 of 10

#	Revision Description	Date
Date:		4/30/18
Drawn by:		JP

For:

FOR: **VIDA**
Construction Group Inc.

Sand Lake Sound
Armeny Pool &
Interactive Water Feature (I.W.F.)
Pool Equipment & Details

GB Collins Engineering PA
Certificate of Authorization 27934

NOTES:

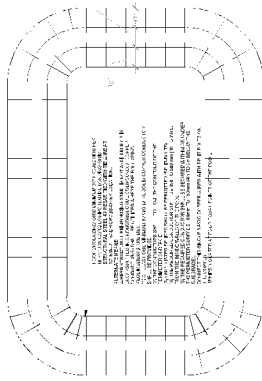
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VACUUM DE FILTER EQUIPMENT LIST - 140 GPM

[illegible]

PIPE AND VALVES CHART

PIPE AND VALVES CHART	
LINE FUNCTION	SIZE
MAIN DRAIN	6"
SKIMMER	6"
STATIC LINE	2"
REDUCATION PUMP SUCTION	4"
REDUCATION RETURN	3"
VACUUM LINE TO PUMP	2"
VACUUM TO FILTER	2"
WASTE LINE	2"
HEATER FREQUENT CIRCULATION (HAF)	2.5"



POTENTIAL GRID REQUIREMENT
 1. Anchor sockets shall be installed in concrete deck around the perimeter of the pool.

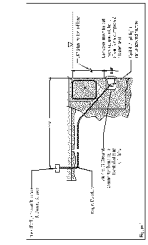
64000 BRONZE ANCHOR SOCKET (AS-1000)

APPLICATION
 1. Anchor sockets shall be installed in concrete deck around the perimeter of the pool.



STANDARD FEATURES

- 1. The 64000 Bronze Anchor Socket (AS-1000) is made of 6061-T6 aluminum alloy.
- 2. The 64000 Bronze Anchor Socket (AS-1000) is designed to be installed in concrete deck around the perimeter of the pool.
- 3. The 64000 Bronze Anchor Socket (AS-1000) is made of 6061-T6 aluminum alloy.
- 4. The 64000 Bronze Anchor Socket (AS-1000) is designed to be installed in concrete deck around the perimeter of the pool.
- 5. The 64000 Bronze Anchor Socket (AS-1000) is made of 6061-T6 aluminum alloy.
- 6. The 64000 Bronze Anchor Socket (AS-1000) is designed to be installed in concrete deck around the perimeter of the pool.
- 7. The 64000 Bronze Anchor Socket (AS-1000) is made of 6061-T6 aluminum alloy.
- 8. The 64000 Bronze Anchor Socket (AS-1000) is designed to be installed in concrete deck around the perimeter of the pool.
- 9. The 64000 Bronze Anchor Socket (AS-1000) is made of 6061-T6 aluminum alloy.
- 10. The 64000 Bronze Anchor Socket (AS-1000) is designed to be installed in concrete deck around the perimeter of the pool.



INSTALLATION
 1. The 64000 Bronze Anchor Socket (AS-1000) shall be installed in concrete deck around the perimeter of the pool.

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- 2. The 64000 Bronze Anchor Socket (AS-1000) shall be installed in concrete deck around the perimeter of the pool.
- 3. The 64000 Bronze Anchor Socket (AS-1000) shall be installed in concrete deck around the perimeter of the pool.
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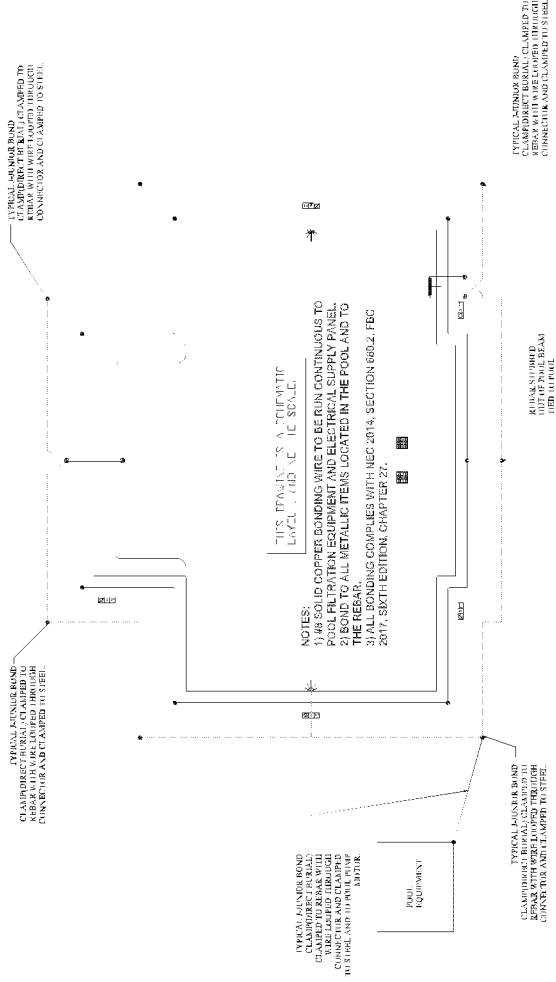
GB Collins Engineering PA
 Certificate of Authorization 27934
 Samuel A. Liberator PE 55740
 300 Alt. 19 North
 Palm Harbor, Florida 34683
 Phone: (727) 442-8443
 gb.collins@vertzon.net

OVIDA
 Construction Group Inc.
 For: Sand Lake Sound
 Amenity Pool &
 Pool/Feature Bonding
 Interactive Water Feature (I.W.F.)

#	Revision	Date
1	1	4/30/18
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	

Drawn by: JP
 Date: 4/30/18

Sheet 7 of 10

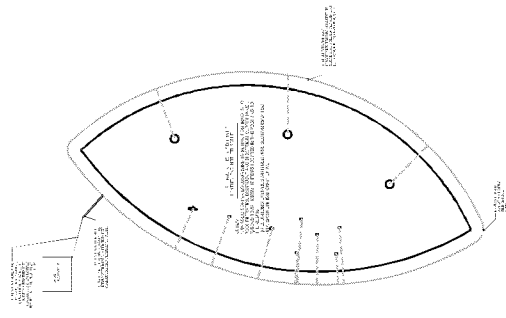


NOTES:
 1. ALL SOLID COPPER BONDING WIRE TO BE RUN CONTINUOUS TO POOL FILTRATION EQUIPMENT AND ELECTRICAL SUPPLY PANEL.
 2. ALL BONDING TO ALL METALLIC ITEMS LOCATED IN THE POOL AND TO THE POOL DECK.
 3. ALL BONDING COMPLIES WITH NEC 2014, SECTION 680.4, FCC 2017, SIXTH EDITION, CHAPTER 27.

TYPICAL ANCHOR BOND
 CLAMPED TO REBAR WITH WIRE CLAMPED THROUGH CONNECTOR AND CLAMPED TO STEEL.

TYPICAL ANCHOR BOND
 CLAMPED TO REBAR WITH WIRE CLAMPED THROUGH CONNECTOR AND CLAMPED TO STEEL.

POOL BONDING PLAN
 SCALE: NOT TO SCALE.

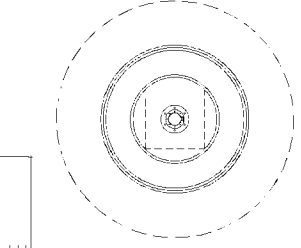


Note: All pool bonding to comply with NEC 2014, Section 680.26 and FCC 2017, Sixth Edition, Chapter 27.

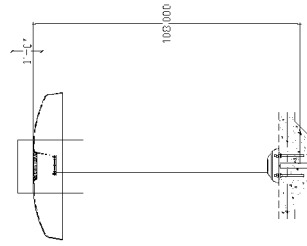


AQUASROOM 5				FEATURE PIPE	
WIDTH	HEIGHT	GPM	SPLASH AREA	PIPE	PIPE
5'-0"	4'-0"	100	150'	150'	3"

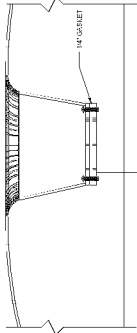
PLAN VIEW



ELEVATION

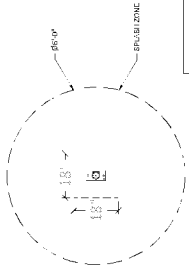


ENLARGED DETAIL
N.T.S.

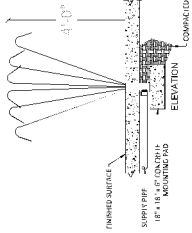


AQUA SPIDER				FEATURE PIPE	
WIDTH	HEIGHT	GPM	SPLASH AREA	PIPE	PIPE
3'-0"	4'-0"	10	60'	60'	1"

PLAN VIEW

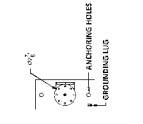


ELEVATION

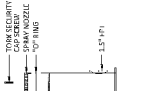


AQUA SPIDER
11/2" = 1'

PLAN VIEW



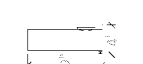
EXPLODED VIEW



FRONT ELEVATION

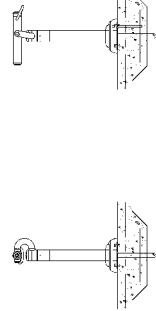
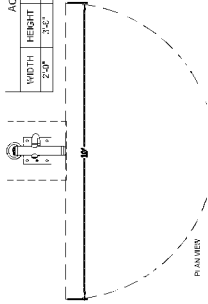


SIDE ELEVATION



1400 60th STREET NORTH
 PALM HARBOR, FL 34682
 (888) 442-5311

AQUA CANNON				FEATURE PIPE	
WIDTH	HEIGHT	GPM	SPLASH AREA	PIPE	PIPE
2'-0"	3'-0"	10	100'	100'	1 1/2"

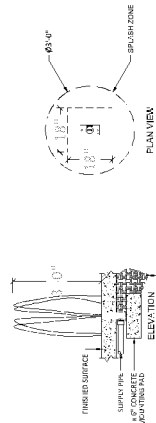


FRONT ELEVATION

SIDE ELEVATION

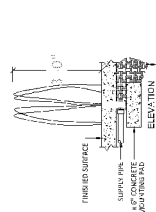
11/2" = 1'

AQUA BUBBLER				FEATURE PIPE	
WIDTH	HEIGHT	GPM	SPLASH AREA	PIPE	PIPE
2'-0"	5'	5	20'	20'	1 1/2"



PLAN VIEW

ELEVATION



AQUA BUBBLER				FEATURE PIPE	
WIDTH	HEIGHT	GPM	SPLASH AREA	PIPE	PIPE
2'-0"	5'	5	20'	20'	1 1/2"



