SECTION 13 1305 – WATER FEATURE ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Underwater Light Fixtures
 - 2. Handrails
 - 3. Ladders
 - 4. Portable Vacuum Systems
 - 5. Pool Access Lifts
 - 6. Thermal Pool Covers
 - 7. Lane Dividers, Anchors, and Safety Lines
 - 8. Starting Platforms
 - 9. Maintenance Kit
 - 10. Safety Kit
 - 11. Safety Signage
- B. Related Sections:
 - 1. SECTION 13 1204 WATER FEATURE CAST IN PLACE CONCRETE
 - 2. SECTION 13 1205 WATER FEATURE SHOTCRETE
 - 3. SECTION 13 1301 WATER FEATURE PLASTER FINISHES
 - 4. SECTION 13 1302 WATER FEATURE TILE FINISHES
 - 5. SECTION 13 1401 WATER FEATURE PIPE AND FITTINGS
 - 6. SECTION 13 1404 WATER FEATURE WHITE GOODS
 - 7. SECTION 13 1502 WATER FEATURE PUMPS AND MOTORS
 - 8. SECTION 13 1503 WATER FEATURE FILTERS
 - 9. SECTION 13 1511 WATER FEATURE VALVES, GAUGES, AND METERS
 - 10. SECTION 13 1608 WATER FEATURE UNDERWATER LIGHTING CONTROLS
 - 11. SECTION 13 1611 WATER FEATURE GROUNDING
- C. References:
 - 1. ASTM A967 STANDARD SPECIFICATION FOR CHEMICAL PASSIVATION TREATMENTS FOR STAINLESS STEEL PARTS
 - 2. ASTM D751 STANDARD TEST METHODS FOR COATED FABRICS
 - 3. ASTM D3773 STANDARD TEST METHODS FOR LENGTH OF WOVEN FABRICS
 - 4. ASTM D3774 STANDARD TEST METHODS FOR WIDTH OF WOVEN FABRICS
 - 5. ASTM D3775 STANDARD TEST METHODS FOR WARP (END) AND FILLING (PICK) COUNT OF WOVEN FABRIC
 - 6. ASTM D3776 STANDARD TEST METHODS FOR MASS PER UNIT AREA (WEIGHT) OF FABRIC
 - 7. ASTM G154 STANDARD PRACTICE OF OPERATING FLUORESCENT ULTRAVIOLET LAMP APPARATUS FOR EXPOSURE TO NONMETALLIC MATERIALS
 - 8. National Sanitation Foundation (NSF) Standard 50 Specifications
 - 9. National Fire Protection Association (NFPA) 70 National Electrical Code (NEC) Article 680-21
 - 10. Underwriters Laboratories (UL)
 - 11. 2010 ADA Standards for Accessible Designs
- 1.2 SUBMITTALS FOR REVIEW
 - A. SECTION 01 3300 SUBMITTAL PROCEDURES
 - B. Product Data Sheets: Submit manufacturer's product data sheets on all products contained in this section for approval. Data sheets must substantiate conformance with applicable standards and include printed recommendations, dimensions, ratings, and capacities.

- 1. Indicate on submittal which materials, models, data, ratings, and options are being selected.
- C. Shop Drawings: Indicate layout, general assembly, components, dimensions, clearances, and method of assembly.
- D. Maintenance Data: Include manufacturer's literature, maintenance recommendations, and replacement parts list.
- 1.3 DELIVERY, STORAGE, AND HANDLING
 - A. Accept components on site in factory packing and inspect for damage.
 - B. Protect all components received at site from physical damage, including effects of weather, water, and construction.

PART 2 - PRODUCTS

- 2.1 Underwater Light Fixtures
 - A. Incandescent Fixtures
 - 1. Acceptable Manufacturers
 - a. Hydrel Model 4425 SWM or 4800 SWM
 - b. Pentair Amerilite or SpaBrite
 - c. Jandy White Pool or Spa Light
 - 2. Niche
 - a. Stainless Steel, Cast Bronze, or High Strength PVC with provisions for positive locking of fixture in position.
 - b. Minimum of four tie locations to form work or steel structural rods.
 - c. Pressure grounding lug on interior and exterior surfaces.
 - d. Conduit entrance shall be 3/4-inch (20mm) NPT with 3/4-inch x 1/2-inch (20mm x 12mm) NPT reducer bushing supplied.
 - e. Niche shall be appropriately sized to the fixture.
 - 3. Lamp
 - a. 12 Volt, PAR56, 300 Watt maximum.
 - b. 12 Volt, MR-16, 75 Watt maximum, Quartz Halogen.
 - 4. Socket
 - a. 12 Volt, ring terminal connectors with 200 °C insulated leads (for PAR56 Lamps).
 - b. 12 Volt, bipin mount GX5.3 (for MR-16 Lamps).
 - 5. Lens
 - a. Heat resistant tempered glass with 30° spread and 15° downward deflection.
 - 6. Gasket
 - a. Single-piece molded U-shape silicone.
 - 7. Cord
 - a. Minimum 35-feet (10.7m) of #10-3 STW for US Standard.
 - b. Cord entrance shall be brass, water-tight seal and epoxy encapsulated.
 - c. Contractor shall determine the required cord length prior to ordering the fixture.
 - d. Sufficient cord must be coiled in the niche to allow for the removal of the fixture to above water level for relamping.
 - 8. Factory Leak Tested

- a. All fixtures shall be tested at 10 PSI (0.7 kPa) internal pressure while total submerged in water.
- 9. Low Water Cut-Off
 - a. Temperature sensing Low Water Cut-Off standard.
- B. White LED Fixtures
 - 1. Acceptable Manufacturers
 - a. Pentair Intellibrite 5G
 - b. Hydrel Model 4426 LED Monochromatic
 - 2. Niche
 - a. Stainless Steel, Cast Bronze, or High Strength PVC with provisions for positive locking of fixture in position.
 - b. Minimum of four tie locations to form work or steel structural rods.
 - c. Pressure grounding lug on interior and exterior surfaces.
 - d. Conduit entrance shall be 3/4-inch (20mm) NPT with 3/4-inch x 1/2-inch (20mm x 12mm) NPT reducer bushing supplied.
 - e. Niche shall be appropriately sized to the fixture.
 - 3. LED Type
 - a. System shall be composed of two components
 - i. LED Array Board
 - ii. Driver
 - b. Lamp life shall be rated at a minimum 50,000 hours.
 - c. LED light shall be capable of producing a 100- to 300-Watt incandescent equivalency
 - 4. Voltage shall be 12-volts provided on a GFCI circuit.
 - 5. Lens
 - a. Shall be capable of producing a wide or narrow beam by rotating the lens.
 - 6. Gasket
 - a. Single-piece molded U-shape silicone.
 - 7. Cord
 - a. Minimum 35-feet (10.7m) of #16-3ST submersible cord for standard 12VAC line.
 - b. Cord entrance shall be epoxy encapsulated.
 - c. Contractor shall determine the required cord length prior to ordering the fixture.
 - d. Sufficient cord must be coiled in the niche to allow for the removal of the fixture to above water level for maintenance.
 - 8. Factory Leak Tested
 - a. All fixtures shall be tested at 10 PSI (0.7 kPa) internal pressure while total submerged in water.
 - 9. Low Water Cut-Off
 - a. Temperature sensing circuit to reduce power to LEDs to prevent damage.
- C. Color Changing LED Fixtures
 - 1. Acceptable Manufacturers

- a. Crystal Fountains LED Series
- b. Pentair Intellibrite 5G Color LED
- c. Hydrel Model 4426 LED RGB Color Changing
- 2. Niche
 - a. Stainless Steel, Cast Bronze, or High Strength PVC with provisions for positive locking of fixture in position.
 - b. Minimum of four tie locations to form work or steel structural rods.
 - c. Pressure grounding lug on interior and exterior surfaces.
 - d. Conduit entrance shall be 3/4-inch (20mm) NPT with 3/4-inch x 1/2-inch (20mm x 12mm) NPT reducer bushing supplied.
 - e. Niche shall be appropriately sized to the fixture.
- 3. LED Type
 - a. System shall be composed of two components
 - i. RGB LED Array Board
 - ii. Driver
 - b. Lamp life shall be rated at a minimum 50,000 hours.
 - c. LED light shall be capable of producing a 100- to 300-Watt incandescent equivalency.
- 4. Voltage shall be 12-volts provided on a GFCI circuit.
- 5. Control
 - a. Standard DMX512.3
 - i. 3-Channel per Fixture: Red, Green, Blue
 - ii. 4-Channel per Fixture: Red, Green, Blue, Intensity
 - b. Communication shall be DMX512.3 direct
 - i. Provide secondary conduit for DMX control lines
 - c. Compatible Proprietary Controller
 - i. Waterproof outdoor rated enclosure
 - ii. Color Changing Options
 - iii. Preprogrammed light changing routines
- 6. Lens
 - a. Shall be capable of producing a wide or narrow beam by rotating the lens.
- 7. Gasket
 - a. Single-piece molded U-shape silicone.
- 8. Cord
 - a. Minimum 35-feet (10.7m) of #16-3ST submersible cord for standard 12VAC line
 - b. Cord entrance shall be epoxy encapsulated.
 - c. Contractor shall determine the required cord length prior to ordering the fixture
 - d. Sufficient cord must be coiled in the niche to allow for the removal of the fixture to above water level for maintenance.
- 9. Factory Leak Tested
 - a. All fixtures shall be tested at 10 PSI (0.7 kPa) internal pressure while total submerged in water.

- 10. Low Water Cut-Off
 - a. Temperature sensing circuit to reduce power to LEDs to prevent damage.
- D. Alternative Fixture Mounts
 - 1. Acceptable Manufacturers
 - a. Crystal Fountains
 - b. Hydrel
 - c. Delta Fountains
 - d. PEM Fountains
 - 2. Contractor shall use mounts provided by the fixture manufacturer.
 - 3. Stand Mounts
 - a. Contractor shall verify stand dimensions with the intended application.
 - b. Stand shall be capable of securely anchoring the fixture.
 - 4. Slab Mounts
 - a. Shall be used in conjunction with a false floor system.
 - b. Fixture shall be anchored securely with a "foot friendly" mounting ring.

2.2 HANDRAILS

- A. Approved Manufacturers and Suppliers
 - 1. Spectrum Aquatics
 - 2. Lincoln Aquatics
 - 3. Recreonics
 - 4. SR Smith
 - 5. Custom Fabrication
- B. Handrails shall be constructed of 316L stainless steel.
 - 1. All welds shall be hand cleaned and all stainless steel mechanically buffed to a near #6 finish or 500 grit surface finish.
 - 2. Units shall be hand passivated to ASTM A967 for maximum corrosion resistance.
 - 3. Units shall be treated with a final coating to seal the stainless steel's surface from water and oxygen.
- C. Stair handrails shall extend at least 32-inches (800mm) above the pool deck and any other local code requirements.
- D. All bends shall be wrinkle free.
- E. Handrail anchors shall be H. D. bronze with bronze wedge and stainless-steel bolt. Anchor shall be cast in concrete deck, stairs, and/or pool shell.
- F. Handrails and accessories must be approved by the architect prior to ordering.
- G. Handrails shall be grounded according to the latest NEC requirements.

2.3 LADDERS

- A. Approved Manufacturers and Suppliers
 - 1. Spectrum Aquatics
 - 2. Lincoln Aquatics
 - 3. Recreonics
 - 4. Custom Fabrication

- B. Grab rails shall be constructed of 316L stainless steel. Stair handrails shall extend at least 28-inches (700mm) above the pool deck and any other local code requirements.
- C. Provide number of rungs necessary for the depth of pool in location shown on Constructions Documents. Rungs shall be constructed of HDPE with molded nut inserts.
- D. Grab rail anchors shall be H. D. bronze with bronze wedge and stainless-steel bolt. Anchor shall be cast in concrete deck, stairs, and/or pool shell.
- E. Grab rails, recess treads, and accessories must be approved by the architect prior to ordering.
- F. Grab rails shall be grounded according to the latest NEC requirements.

2.4 PORTABLE VACUUM SYSTEMS

- A. Approved Manufacturer's
 - 1. Recreonics, Maxi Sweep II
 - 2. Lincoln Aquatics
 - 3. Spectrum Aquatics
- B. Portable Vacuum System shall be fully self-contained, portable with a wheeled cart, and shall include one self-priming pump with hair and lint strainer, one filter housing, 50-feet (15m) of vacuum hose, minimum 100-feet (30.5m) of electrical power cord, pool vacuum head, and telescoping pole with 20foot (6m) minimum reach.
- C. Provide two (2) spare filter cartridges for each filter for each vacuum system.

2.5 POOL ACCESS LIFT

- A. Approved Manufacturers and Suppliers
 - 1. S. R. Smith
 - 2. Aqua Creek Products
 - 3. Spectrum Aquatics
 - 4. Global Lift Corporation
 - 5. Recreonics
 - 6. Lincoln Aquatics
- Pool lift shall be compliant with all aspects of the 2012 ADA Standards for Accessible Design, Sections 242 and 1009.
- C. The Contractor shall provide the appropriate number of ADA lifts to comply with the 2010 ADA Standards for Accessible Designs.
- D. The Contractor shall provide an installation drawing from the pool lift manufacturer showing the as-built edge condition and the interaction of the specified pool lift.
- E. The Contractor shall follow all manufacturer recommendations for installation of pool lift and associated anchors.
- F. Stainless steel components shall meet the following criteria:
 - 1. All welds shall be hand cleaned and all stainless steel mechanically buffed and electropolished to a near #7 finish or 600 grit surface finish.
 - 2. Units shall be hot dip passivated to ASTM A967 for maximum corrosion resistance.
 - 3. Units shall be treated with a final coating to seal the stainless steel's surface from water and oxygen.
- G. Powder coated components shall meet the following criteria:
 - 1. Base metal shall be prepared in accordance with manufacturer recommendations to ensure proper primer adhesion.
 - 2. Base metal shall be coated with a zinc rich primer with a thickness ranging from 2-2.5 mil.

- 3. Primer coat shall be covered with an exterior grade TGIC polyester powder with a thickness ranging from 2-2.5 mil.
- 4. Base coat shall be covered with an exterior grade TGIC polyester clear coat with a thickness range of 1-2 mil.
- 5. All coating layers shall be baked in a manner ensuring successful cross linking of all layers.
- 6. The total thickness of the final coating shall be between 5 and 7 mil over the entire part surface.

2.6 Thermal Pool Covers

- A. Approved Suppliers
 - 1. Spectrum Aquatics
 - 2. T-Star Enterprises EnergySaver XER
 - 3. Approved Equal
- B. Contractor shall submit manufacturer's shop drawing showing layout of cover segments as needed and required heat loss calculation.
- C. Material shall be woven 10 x 14 count per inch, high density polyethylene (HDPE) ultraviolet stabilized film, permanently laminated to both sides of 1/8-inch (3mm) thick, closed cell, medium density, white polyethylene foam.
- D. The cover polyethylene film shall be coated on the side not laminated to the foam with at least 3 mils UV inhibitor, blue in color.
- E. The layers making up the finished blanket shall be non-toxic, non-absorbent, non-permeable, and buoyant.
- F. Edging material shall be PVC coated Tarpaulin, 100-percent stabilized polyester woven 20 x 20 count 1000D, coated and UV stabilized on both sides. The weighting for the edging shall be extruded black vinyl. The edging system shall have drain holes punched every three (3) feet (1m).
- G. The pool cover shall meet or exceed the following criteria:
 - 1. Thickness: 1/8-inch (3mm) +/- 10% of total thickness
 - 2. Foam Density: 2 lbs./ft³ +/- 10% (ASTM D1910)
 - 3. Tensile Strength: 260 lbs. (118 kg) warp x 330 lbs. (150 kg) weft (ASTM D751, grab)
 - 4. Weight: 0.08 lbs./ft² (1/8-inch blanket without edging)
 - 5. Tear Strength: 80 lbs. (36 kg) warp x 84lbs. (38 kg) weft (ASTM D751, tongue)
 - 6. Bursting Strength: 640-pounds (290 kg) (ASTM D751, Mullen)
 - 7. UV Weathering: 90% Retained Strength 2,000 hours exposure (ASTM G154)
 - 8. Service Temperature: -40 °F / 180 °F (-40 °C / 82 °C)
 - 9. K Factor: 0.25 BTU in/hr·ft²·F
 - 10. Grommet Tear Strength: 1,928 pound-force (8.58 kN) (minimum) Tension per Section

H. Loop Tie Assembly

- The Assembly shall consist of two (2) components: a plasticized, non-slip, UV inhibited HDPE loop tie handle, and a 12 strand 5/16-inch (8mm) synthetic rope joined to the loop tie handle with two (2) flame sealed knots.
- 2. Rope shall have the following properties:
 - a. High strength to weight ratio
 - b. High resistance to abrasion
 - c. Tensile strength of 9,000 pound-force (40 kN)
 - d. High resistance to chemicals and pH imbalance
 - e. Specific gravity of 0.95
 - f. Heat resistance (melting point 384 °F (196 °C))
- I. Grommets shall be 305 Stainless Steel passivated to ASTM A967.

- J. Threading Material shall be non-wicking, ultra-bonded polyester thread, with UV protection. The singleend strength shall be approximately 21.2 -pounds (9.6 kg) with a melting point between 480-500 °F (249-260 °C).
- K. Pool Cover shall carry a warranty of a minimum of four (4) years.
- L. Contractor shall provide the appropriate number of storage reels. Reels shall be movable with the option for fixed installation as shown in the Contract Documents.

2.7 LANE DIVIDERS, ANCHORS, AND SAFETY LINES

- A. Approved Suppliers
 - 1. Recreonics
 - 2. Lincoln Aquatics
 - 3. Spectrum Aquatics
- B. Provide anti-wave lane dividers, safety lines, and anchors as shown in the Contract Documents.
 - 1. Lane Dividers and Safety Lines shall be anchored with a stainless steel cup with crossbar with the following properties:
 - a. Anchor Body: The stainless steel cup anchor shall be fabricated entirely of type 316L series stainless steel. The cup and flange portion of the anchor body shall be stamped or drawn for a single piece of material. The cup portion shall be 3" inside diameter with a depth of 2.5". The face flange shall be 4" square and shall fit flush with the finished pool wall. A standoff shall be provided which shall secure the eyebolt, support an anchoring flange and bonding screw attachment.
 - b. Welds: All welds shall be the TIG type and shall be applied using type 300 series welding rod to enhance corrosion resistance.
 - c. Crossbar: A crossbar shall be provided. The crossbar shall be 300 series stainless steel. The crossbar shall be slightly subflush with the flange face of the anchor body. The crossbar shall be 3/8" bar.
 - d. Bonding: A bonding screw shall be provided. The bonding screw will be 18-8 stainless steel. Minimum size of bonding screw shall be 0.24" diameter.
 - e. Material: All components of the cup anchor shall be stainless steel. No dissimilar metallic components will be allowed.

2.8 Starting Platforms

- A. Approved Suppliers
 - 1. Spectrum Aquatics
 - 2. Lincoln Aquatics
 - 3. Recreonics
- B. Starting platform shall be the rear mount type, with either single or double post design, allowing for ease of removal. Anchor assemblies shall be supplied with a cover for use when starting platform is removed.
- C. The platform shall be designed and tested to not deflect when burdened with a 350-pounds (160 kg) dynamic load.
- D. Color and graphic selections shall be confirmed with the architect, prior to ordering.
- E. Starting platform shall consist of the following components.
 - 1. Platform Frame

- a. Fabricated of 2.5-inch (62mm) O.D. x 1/4-inch (6mm) wall thickness, 300 series stainless steel and is to be formed in one continuous length, no welded mitered joints will be allowed.
- b. Shall be designed to support a starting surface at 30-inches (762mm) from water level
- c. A backstroke bar shall be 300 series stainless steel and shall be 18-inches (457mm) wide and will be located 14.75-inches (375mm) from the water surface.
- d. Access step attachment bracket shall be 300 series stainless steel.
- e. All welds associated with the fabrication process are to be fusion TIG type.
- 2. Platform Top
 - a. High density polyethylene (HDPE) top shall be 23-inches (584mm) by 25-inches (635mm) and shall have a non-slip textured surface.
 - b. The platform shall slope toward the pool edge at a 10-degree angle with the front edge 29.5-inches (749mm) from water surface.
- 3. Step
 - a. Shall be an 8-inch (203mm) by 10-inch (254mm) molded HDPE with a non-slip textured surface.
- 4. Anchor
 - a. Single Anchor 3.5-inch (89mm) O.D. x 2.5-inch (63mm) bronze anchor sleeve shall support the starting platform assembly. The anchor shall have a 2.5-inch (63mm) diameter locating slot in its top surface. The locating slots are to receive the rotation retention rod of the starting platform.
 - b. Double Anchor two (2) 2.06-inch (52mm) O.D. x 1.9-inch (48mm) I.D., 300 series stainless steel anchor sleeves shall support the starting platform assembly. The sleeves shall be mounted to a 12-gauge, 300 series stainless steel channel, 20-inches (508mm) on center. The top of the sleeve shall be reinforced with a 3/8-inch (10mm) stainless steel rod.
 - c. The anchor shall be fitted with a grounding bolt for proper bonding.
 - d. A tamper resistant lid(s) and lid removal tool shall be provided.
- 5. Numbering
 - a. Lane numbers shall be applied so that they are visible from all four (4) sides of the platform. The number shall be dark blue in color and shall be chemical and UV resistant vinyl.
- F. Warranty
 - 1. Platform shall be supplied with a minimum two (2) year limited warranty .

2.9 MAINTENANCE KIT

- A. Acceptable Suppliers
 - 1. Recreonics
 - 2. Lincoln Aquatics
- B. Provide one (1) maintenance kit for each swimming pool over 200 sq. feet (18.5 sq. m) of surface area, with a minimum of one (1) kit per pool area.
- C. Each kit shall include the following:
 - 1. Three (3) 8-foot (2.5m) sections of 1.25- inch (32mm) diameter heavy-duty stainless-steel handles
 - 2. One (1) 24-inch (0.6m) heavy duty nylon bristle wall brush
 - 3. One (1) 18-inch (0.45m) algae brush

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- 4. One (1) nylon bristle corner brush
- 5. One (1) heavy duty leaf skimmer
- 6. One (1) heavy duty leaf rake

2.10 SAFETY KIT

- A. Acceptable Suppliers
 - 1. Recreonics
 - 2. Lincoln Aquatics
- B. Provide one (1) safety kit for each swimming pool over 200 sq. feet (18.5 sq. m) of surface area, with a minimum of one (1) kit per pool area.
- C. Each kit shall include one (1) of each of the following items for pools under 50-feet (15m) in both directions and two (2) if any direction is over 50-feet (15m).
 - 1. 20-inch (0.5m) Ring Buoy, U. S. Coast Guard approved, PFD Type IV with integral rope and holder.
 - 2. 18-foot (5.5m) heavy duty yellow aluminum pole with shepherd's hook.

2.11 SAFETY SIGNAGE

- A. Approved Suppliers
 - 1. Recreonics
 - 2. Lincoln Aquatics
 - 3. Custom Fabricator
- B. Signage shall be coordinated with the architect and facility operator for layout and format of each sign.
- C. Signage shall comply with local code requirements as to size of lettering and content.
- D. The following are minimum recommendations:
 - 1. POOL RULES: Provide one (1) sign for each pool listing the following rules, coordinate with owner and architect for additional rules for each pool:
 - a. All persons using the Pool do so at their own risk. Owner and Management are responsible for accidents or injuries.
 - b. No Food or Beverages may be served on the Pool wet deck.
 - c. No Animals allowed in the Pool or on the Pool Deck.
 - d. No Running or Rough Play in Pool Area.
 - 2. NO LIFEGUARD ON DUTY: Provide a minimum of one (1) warning sign indicating there is NO LIFEGUARD ON DUTY.
 - 3. POOL CAPACITY: Provide one (1) sign for each pool stating the maximum number of people allowed in each pool.
 - 4. POOL HOURS: Provide one (1) sign for each fenced pool area stating the hours of operation for the Pool.
- PART 3 EXECUTION
- 3.1 GENERAL
 - A. Install products, equipment, and accessories in accordance with manufacturer's recommendations, local building codes, and Public Health Department requirements.
 - B. Locate Underwater Light Fixtures, Handrails, Ladders, and Accessories in locations shown in the Contract Documents.
- 3.2 UNDERWATER LIGHT FIXTURES

- A. Install Light Fixtures a minimum of 18-inches (450mm) below water level unless fixture is specifically designed for shallower water.
- B. All metal niches shall be positively grounded according to NEC requirements.
- C. All conduits shall be watertight.
- D. All floor mounted fixtures shall have "foot friendly" mounting rings to prevent foot entrapment or injury.
- E. The Contractor shall provide the necessary junction boxes, potting compound, low voltage transformers, and LED control systems required for complete operation of the lights.

3.3 HANDRAILS AND LADDERS

- A. Install Handrails and Ladders in locations shown on the Contract Documents and in compliance with local code requirements.
- B. Contractor shall verify that all elements are properly grounded in accordance with NEC and local codes.
- 3.4 PORTABLE VACUUM SYSTEMS
 - A. Contractor shall provide at a minimum one (1) portable vacuum system per pool area at the close of the project.
- 3.5 POOL ACCESSIBLE LIFTS
 - A. Contractor shall provide the appropriate number of ADA lifts to comply with the 2010 ADA Standards for Accessible Design.
- 3.6 THERMAL POOL COVERS
 - A. Contractor shall install the pool covers in accordance with manufacturer recommendations.
 - B. Contractor shall verify that the pool covers accommodates vertical elements in the pool such as, handrails, ladders, etc.
- 3.7 STARTING PLATFORMS
 - A. Contractor shall install anchors as per manufacturer recommendations and as shown in the Contract Documents.
 - B. Contractor shall verify with the architect and owner on color and graphic selections.
 - C. Contractor shall verify that all elements are properly grounded in accordance with NEC and local codes.

3.8 POOL SIGNAGE

- A. Contractor shall locate Pool Signage as shown on the Contract Documents.
- B. When Signage is not shown on the Contract Documents, the Contractor shall refer to the architect or landscape architect for placement.

END OF SECTION