

## SWIMMING POOL OUTLINE SPECIFICATIONS

**PART 1 - GENERAL****1.01 SUMMARY OF WORK** *(for general guidance-not all inclusive)***A. Introduction**

1. Furnish all labor, materials, equipment and services necessary to renovate the following pool mechanical room. This work shall include all products listed in Part 2 of Section 13150/131100.

**B. Work included in this section**

1. It is the intent of this section to place the entire responsibility for the renovation of the pool mechanical room under one vested contractor. The contractor will actually do the work noted below. Under this section the contractor will provide but is not necessarily limited to the following:
  - a. Provide all equipment and services required for erection and delivery onto the premises of any equipment or apparatus furnished. Remove equipment from premises when no longer required.
  - b. Provide all electrical conduit, wiring, junction boxes etc. to all low voltage pool equipment within pool filter/chemical rooms per Division 16/26 - Electrical. (Low voltage is considered less than 115 V.)
  - c. Furnish and install all necessary piping and valving as shown on the drawings and specified herein.
  - d. Provide winterization services for the outdoor swimming pool for a period of 12 months including a closing and opening through one winter period. The contractor shall include winterization procedures with owner training.
  - e. Provide for the storage of all pool related equipment, materials and systems. All items are the responsibility of the contractor until accepted by owner.
  - f. Obtain final acceptance by jurisdictional health department(s).
  - g. Start, test, calibrate and adjust all mechanical equipment, electrical equipment, recirculation, chemical, and other supplied systems including deck, loose, maintenance, and safety equipment. Instruct the Owner's representative in the systems operation and maintenance as described herein.

**1.02 SUBMITTALS**

- A. Six (6) sets of shop drawings and engineering data shall be tabbed, indexed, referenced to the specifications, bound in 3 ring binders and submitted. Provide 8 1/2" x 11" cover sheet for each item submitted identifying item and product number. Only complete sets will be reviewed.

**1.03 OPERATION AND MAINTENANCE MANUALS AND CLOSE-OUT SUBMITTALS**

- A. Detailed operation and maintenance information shall be supplied for all equipment requiring maintenance or other attention. The equipment supplier and/or contractor shall prepare an operation and maintenance manual for all equipment. Parts lists and operating and maintenance instructions shall be furnished.

**1.04 WARRANTIES**

- A. The contractor warrants to the Owner and Architect that materials and equipment furnished under the contract will be of good quality and new unless otherwise required or permitted by the contract documents, that the work will be free from defects not inherent in the quality required or permitted, and that the work will conform with the requirements of the contract documents. Work not conforming to these requirements, including substitutions not properly approved and authorized may be considered defective. The Contractor's warranty may exclude remedies for damage or defect caused by abuse, improper or insufficient maintenance, improper operations, modifications not executed by the contractor or improper wear and tear under normal use. If required by the Architect, the contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. All warranties shall be for a period of one year from the date of substantial completion or the owner begins using the pool unless otherwise specified.

#### 1.05 RECORD DRAWINGS

- A. Provide a complete set of record drawings of the entire renovated mechanical system including all sub-systems. All record drawings shall be prepared in accordance with the requirements of Section 01720 and shall be a complete, stand-alone set. The CONTRACTOR shall be permitted to obtain original documents and copy them for this purpose only. Furnish the record set on compact disk (AutoCAD Release 2004 or compatible software).

### PART 2 – PRODUCTS

#### SECTION 13150/131100 – SWIMMING POOLS

##### 2.01 PUMPING EQUIPMENT

- A. Horizontally mounted centrifugal pumps shall be utilized for the pool recirculation pump, and shall be certified by the National Sanitation Foundation (NSF) and bear the certification mark. Pump casing shall be cast iron fitted with a replaceable bronze case wear ring. Pump impeller shall be enclosed type of cast bronze, statically and dynamically balanced, and trimmed for the specified design conditions. Provide a hair and lint strainer, for each pump, of fiberglass or epoxy coated stainless steel construction with a clear observation top. Pressure gauges shall be installed on the discharge of the pumps and compound gauges shall be provided at the intake port of the pumps, after the hair and lint strainer.

##### 2.02 FILTRATION EQUIPMENT

- A. Horizontal, high rate, pressure sand filters will filter the pool water every 6 hours (at a rate not to exceed 15 gallons per minute per square foot). An eleven-foot minimum (12 ft. desirable) high ceiling in the filter room should be provided for ample clearance for the filters and piping above. Filters will backwash individually.

##### 2.03 RECIRCULATION FITTINGS

- A. Main drain outlets shall have 12 gauge stainless steel frames with PVC or fiberglass grating. Grate openings shall not exceed 1 1/32 inch in width, providing an open flow area to allow water velocity not to exceed 1.0 fps. The grate shall be PVC and fit closely and flush with top surface of frame, and secured to frame with vandal proof fasteners. All exposed edges of main outlets shall be rounded and smooth, free of burrs and sharp edges. All main drain covers shall comply with the Virginia Graeme Baker Act and ASME A112.19.8-2007.
- B. The stainless steel converters shall be fabricated from 316 stainless steel.

- A. Static water line inlet fitting for the automatic water level controller shall be provided consisting of a Cyclocac body, grate and construction shield. The body shall have a 1-1/2 inch solvent weld connection and provided with an integral molded "knock-out" membrane to facilitate line pressure testing.
- B. Anti-vortex plates shall be provided at the suction points of the main recirculation pump(s) in the surge tank(s). Each plate shall be connected to the suction pipe via a PVC flange and shall be 24 in. x 24 in. x 1 in. thick.

#### 2.04 PIPING SYSTEMS

- A. Exposed piping in the filter room and surge tank will be Schedule 80 PVC for strength and resistance to corrosion. All piping below the floor of the pool shell shall be encased in concrete and will be Schedule 40 PVC.
- B. Valves 3 inches and larger shall be butterfly type valves, with PVC body, 150# SWP with stainless steel shaft, polypropylene disc and replaceable resilient seat bonded to a rigid shaft and guaranteed for bubble tight shutoff from 27 inch vacuum to 150 PSI. Extended neck 2 inch beyond flanges for any insulated piping shall be provided with handle for manual operation. All valve components shall be suitable for swimming pool chlorinated water service. Butterfly valves shall be Georg Fischer Type 563, Asahi/America Type SP Pool-Pro, Chemtrol Model-B, Simtech VP series, Colonial Valve 411 Series, or approved equal.
- C. Valves smaller than 3 inches shall be PVC true union ball valves, full port, three-piece construction, blowout-proof stem, Viton seal with socket end connectors.
- D. Modulating float valve in the surge tank(s) shall have PVC body and stainless steel wafer disc. All hardware shall be non-corrodible. The float-operated valves shall be provided horizontally on the main drain lines in the surge tank(s). Valve shall consist of all non-corrosion components including shaft, float arm, pins and floats. Valve shall be suitable for mounting on a 125E class standard PVC flange. The float arm leverage weight and pivot lengths shall be adjustable to obtain desired ratio of surge tank level change to pool gutter overflow level change. Two floats and stabilizer required. Valve shall be Model FV-D XWB (Extra Weight Ball) as manufactured by MerMade Filter, Inc. or approved equal manufactured by EPD.
- E. All valves will be identified in the filter room. Valves will be described as to their function and referenced in the operating instruction manual and wall mounted piping diagram to be prepared by the contractor.

#### 2.05 CHEMICAL TREATMENT SYSTEMS

- A. Calcium Hypochlorite (Chlorinator Briquettes)
  - 1. Contractor to remove and reinstall existing calcium hypochlorite feeder.
- B. pH Buffering System (CO<sub>2</sub>)
  - 1. Provide a system for feeding and regulating carbon dioxide for pH reduction for the pool. The system shall consist of CO<sub>2</sub> storage tanks, a lockable fill box for bulk delivery, a pressure reducing/automatic changeover valve, a feed unit with rate of flow adjustment, diffusion injection fittings, duckbill check valves, and all necessary interconnection tubing.
- C. Ultraviolet Dechloramination and Disinfections System
  - 1. It is the intent of these specifications that the swimming pool water be routinely monitored and treated by UV sterilization in the range of 220nm to 400nm to kill bacteria, viruses, molds and their spores and to continuously remove chloramines. The concentration of free chlorine residual shall at all times meet the requirements of the Health Department authority having jurisdiction over the swimming pool.

Any proposed UV system must have a UL listing on the complete system, and be listed under NSF Standard 50.

## 2.06 WATER CHEMISTRY MONITORING AND CONTROL SYSTEMS

- A. A programmable chemical automation system shall be furnished for the pool for continuous monitoring of water chemistry (ORP/HRR, PPM, pH and temperature), Langelier Saturation Index, and for automatic control of the chemical feeders, heater, and water level. Installation of the system shall be as specified by the manufacturer and no exceptions shall be taken. A factory-authorized representative shall provide training to the owner and the training shall be video taped per 13150/131100 specifications.

## 2.07 FLOW METER AND WATER METER

- A. Flow meters will be installed in the filtered water return lines to the pool and installed in the backwash piping. Signet flow meters will be specified.
- B. A water meter shall be furnished by the contractor and installed by the plumbing contractor. The water meter shall be installed downstream of the slow closing solenoid valve located at the fresh water supply over the fill funnel as shown on swimming pool drawings. The water meter shall have a non-corrodible main case, measuring chamber, and hermetically sealed register.
- C. Refill flow meter shall be installed on dilution piping to backwash tank. Flow meter shall be one piece meter body of injected molded polysulfone adapters, viton o-ring seals, and 316 stainless steel floats and float guide, impact resistant machined acrylic plastic body.

## 2.08 WATER LEVEL CONTROLLERS

- A. An automatic water level controller will be provided to maintain the correct water level in the pool at all times. It will consist of a proximity switch type control unit and a coaxial control wire to be connected to the plumbing system's make up water solenoid valve. A manual fill valve will also be available to bypass the automatic system.

## 2.09 THERMOMETERS

- A. Portable thermometer shall be a molded ABS plastic tube body type with the ability to measure temperature in both degrees Fahrenheit and Celsius. A 3 ft. polyethylene cord is to be attached to thermometer.
- B. Inline thermometer to be near the heating loop and shall have a 9 inch adjustable angle with a minimum 6 inch stem.
- C. Digital temperature indicator shall be a 115 volt, wall mounting case, sensor and a stainless steel immersion well.

## 2.10 WATERPROOFING

- A. The interior surfaces of surge tank(s) and backwash pit as well as all other on or in grade water containing vessels not otherwise required to be waterproofed shall be coated with either a high build 100% solids epoxy specifically intended for the application, or other approved waterproofing materials as noted below. The color shall be white or an approved light color.

## 2.11 SEALANTS

- A. Sealants shall be installed by the contractor.

**PART 3 - EXECUTION****3.01 EQUIPMENT AND SYSTEMS INSTALLATION**

- A. The contractor shall assemble and install all equipment, special parts and accessories as shown on pool drawings, specifications and shop drawings of the equipment suppliers.
- B. The Contractor shall furnish all anchors and inserts to be imbedded in the deck including all fittings, inserts and structure sleeves and required anchorage's as shown on the plans and as indicated in this section of specifications. Equipment shall be set true and plumb, using factory jigs where available. Removable equipment items shall be easily removable from anchors and shall fit without noticeable wobble.
- C. Provide templates for all equipment anchors. Provide anchor bolts of the size and spacing as required by the equipment manufacturer. All anchor bolts shall be stainless steel Type 316 and of a length capable of adequate anchorage into rough slab-on-grade allowing for finish deck tile and setting bed. Anchors shall be set and cast into place during building concrete work. Inspect all anchor settings for horizontal and vertical alignment prior to placing concrete.
- D. The contractor is to install all equipment and systems in accordance with manufacturer's directions. Equipment shall all be assembled and in place for final observation.
- E. All items necessary to complete this section are shown on the plans or described in the specifications including items that may be purchased by the Owner. Items are detailed and specified as a guide for dimensional purposes. The contractor must make provisions accordingly and submit shop drawings and submittals based on that data.

END OF SWIMMING POOL OUTLINE SPECIFICATIONS

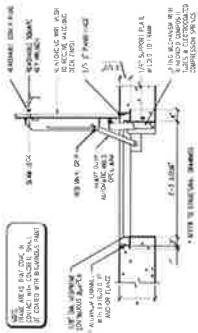




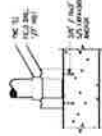




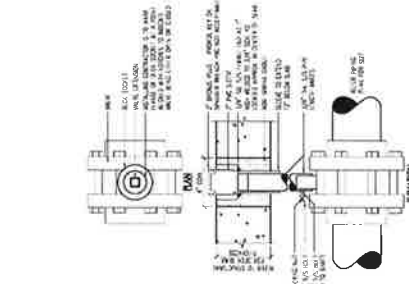




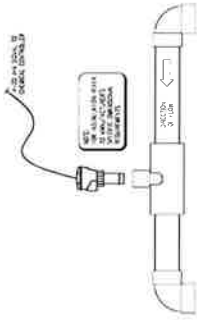
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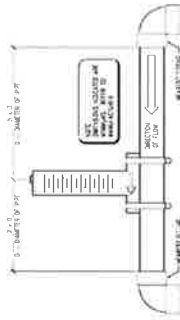
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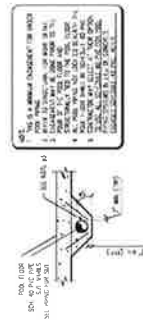
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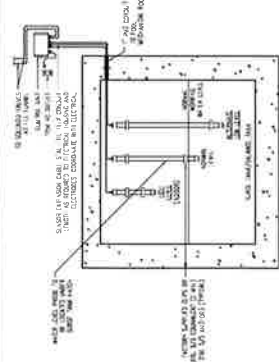
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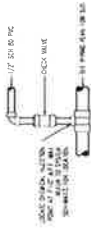
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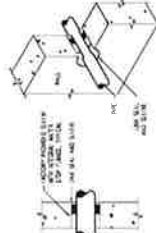
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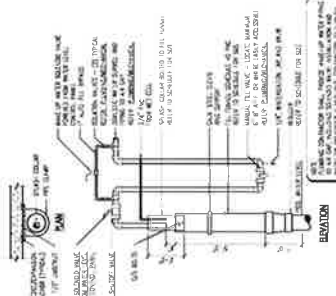
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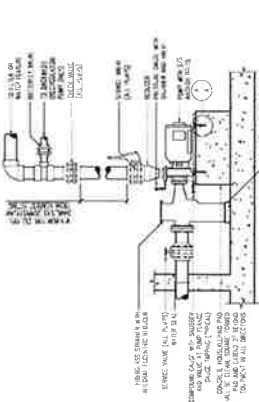
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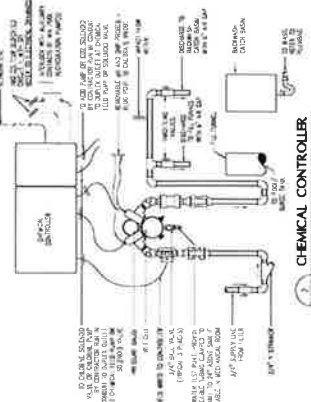
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RATING EXPLANATION GUIDE	
1	GOOD
2	FAIR
3	POOR
4	HAZARD

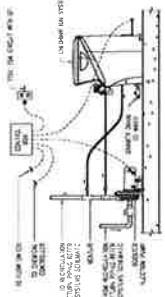
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RATING EXPLANATION GUIDE	
1	GOOD
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