

## SECTION 13 1100



### SWIMMING POOLS – STAINLESS, FULL TILE, OR TILE TRIM

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word 2007: Click the OFFICE button, select Word Options, select Display, THEN select or deselect the HIDDEN TEXT option.

Microsoft Word (earlier versions): From the pull-down menus select TOOLS, then OPTIONS. Under the tab labeled VIEW, select or deselect the HIDDEN TEXT option.

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#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Pool shell.
  - 2. Pool mechanical system.
  - 3. Pool heating system.
  - 4. Interior pool finish.
  - 5. Final testing and demonstration to Owner.
- B. Related Sections:
  - 1. Division 01: Administrative, procedural, and temporary work requirements.
  - 2. Section [03 3000 - Cast-in-Place Concrete:] [\_\_\_\_ - \_\_\_\_]: Concrete deck.
  - 3. Section [\_\_\_\_ - \_\_\_\_]: Water supply.
  - 4. Section [\_\_\_\_ - \_\_\_\_]: Drainage system.
  - 5. Section [\_\_\_\_ - \_\_\_\_]: Power supply.

##### 1.2 REFERENCES

- A. American National Standards Institute (ANSI) A108/A118/A136.1 - American National Standard for Installation of Ceramic Tile.
- B. American National Standards Institute/National Spa and Pool Institute (ANSI/NSPI) ANSI/NSPI 1 - American National Standard for Public Swimming Pools.
- C. American National Standards Institute/American Society of Mechanical Engineers (ANSI/ASME) A112.19.8 - Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs, Includes Addenda A.
- D. American Welding Society (AWS):
  - 1. D1.1 - Structural Welding Code - Steel.
  - 2. D1.6 - Structural Welding Code - Stainless Steel.
- E. ASTM International (ASTM):
  - 1. A36/A36M - Standard Specification for Carbon Structural Steel.

2. D1784 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
  3. D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
  4. D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
  5. D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
- F. International Association of Plumbing and Mechanical Officials (IAPMO).
- G. National Fire Protection Association (NFPA) 70 - National Electric Code.
- H. National Sanitary Foundation/American National Standards Institute (NSF/ANSI) Standard 50 - Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

### 1.3 SYSTEM DESCRIPTION

- A. Pool Walls and Floors: [Stainless steel.] [Stainless steel with tile trim finish.] [Fully tiled finish.]

### 1.4 SUBMITTALS

- A. Submittals for Review:
1. Shop Drawings:
    - a. Show pool layout, dimensions, wall and floor panel layout, and stiffeners.
    - b. Include diagrammatic layout for equipment and piping.
    - c. Show termination and finish details for interface with adjacent construction.
  2. Product Data: Manufacturer's descriptive data for:
    - a. Piping.
    - b. Filters.
    - c. Pumps and strainers.
    - d. Heaters.
    - e. Chemical controller, feeder, and storage tank.
    - f. Valves.
    - g. Gauges, thermometers, and flow meters.
    - h. Inlets and gratings.
  3. Performance Criteria: For products specified by performance criteria only, document conformance with design calculations or past performance records with list of previous installations and contact information.
- B. Quality Control Submittals:
1. Certificates of Compliance: Submit certification that pool system complies with requirements of applicable codes, ordinances, rules, and regulations, ANSI/NSPI 1, and ANSI/ASME A112.19.8.
- C. Closeout Submittals:
1. Operation and Maintenance Data: Include data for pool and pool equipment, and warranty information.
  2. Project Record Documents.
  3. Owner's Certificate of Instruction.

### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
1. Minimum [5] [ ] years experience in work of this Section, or successful completion of minimum [5] [ ] projects of similar scope and complexity within past [5] [ ] years.
  2. Manufacture all stainless steel components in-house.
  3. Certification – Manufacturer shall be ISO 9001 certified.

- B. Installer Qualifications:
  1. Minimum [5] [ ] years experience in work of this Section, or successful completion of minimum [5] [ ] projects of similar scope and complexity within past [5] [ ] years.
  2. Trained by manufacturer of pool system.
- C. Regulatory Requirements: Perform work in accordance with applicable codes, ordinances, rules, and regulations.
- D. Pool Equipment System:
  1. Tested to NSF/ANSI 50.
  2. [Bear NSF Approval Rating.]
  3. Tested to ANSI/NSPI 1; certified by IAPMO.
- E. Pre-Installation Conference:
  1. Convene at site [2] [ ] weeks prior to beginning work of this Section.
  2. Attendance: Architect, Contractor, pool installer, [pool manufacturer's representative,] and related trades who's work affects pool installation.
  3. Review and discuss: Scheduling, delivery, installation, protection, and related work.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Store pool system components off ground and protect with waterproof covering.
- B. Protect piping and accessories from exposure to ultraviolet and from contact with chemicals that could cause damage or deterioration.

## 1.7 WARRANTIES

- A. Furnish pool system manufacturer's 25 year warranty providing coverage for:
  1. Workmanship, materials, and performance of pool wall and floor system.
  2. Structural stainless steel bracing system, stainless steel gutter, stainless steel floor, stainless steel skimmer, and stainless steel wall panel systems against structural failure.
- B. Furnish tile setting material manufacturer's 1 year warranty against loss of tile adhesion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Contract Documents are based on products by Bradford Products LLC.
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

### 2.2 MATERIALS

- A. Stainless Steel: ASTM A240, Type [304L,] [316L,] buffed non-directional finish where exposed.
- B. Steel: ASTM A36/A36M, hot-rolled.

### 2.3 EQUIPMENT

- A. Filtration and Sanitation System:
  1. Provide complete filtration system with all components.
  2. Include pumps, filters, flow meters, gages, valves, and controls as required.
- B. Pumps and Motors:
  1. Type and capacity as dictated by pool design to meet required flow rate.
  2. Filtration pumps: Sized to pool capacity.
  3. Motors:

- a. Totally enclosed, fan-cooled (TEFC) or open drip-proof (ODP), with hygroscopic insulation, service factor 1.15, insulation Class F, sized to operate at full load and speed, designed for continuous operation.
  - b. Motor starter with current interrupter overload.
  - c. Combination motor starters: Hand-off auto switch and positive overload heater coil; as manufactured by Furnas, Square D, or Westinghouse.
  - d. Electrical enclosures: NEMA 12 type, suitable for surface mounting.
- C. Heater: [Electric] [Gas] [Heat exchanger] type, sized to suit pool capacity.
- D. Valves and Piping:
- 1. Piping: Polyvinyl chloride (PVC) composition; ASTM D1784 or ASTM D1785, Schedule 40 or 80.
  - 2. Cement: ASTM D2564.
  - 3. Provide check and ball valves as required; by same manufacturer when practical.
  - 4. Valve connections: Suitable for connection of adjoining pipe; of pipe size values.
  - 5. Hangers and supports: Sized to project conditions.
- E. Pool Fittings:
- 1. Compatible with pool system components.
  - 2. Sized to code requirements; ensure proper hydraulic balance.
  - 3. Stainless steel skimmer: NSF approved.

## 2.4 ACCESSORIES

- A. Fasteners: Stainless steel.
- B. Tile:
- 1. Type: [Frostproof ceramic.] [Frostproof porcelain.] [Glass.] [\_\_\_\_.]
  - 2. Source: [\_\_\_\_] by [\_\_\_\_].
  - 3. Size: [\_\_ x \_\_] inches by [\_\_] inch thick.
  - 4. Color: [\_\_\_\_].
- C. Tile Setting Materials: ANSI A118.3, epoxy type, as manufactured by Laticrete International, Inc.

## 2.5 FABRICATION

- A. Fabricate interior of pool using manufacturer's standard processes and quality control.
- B. Perform welding using AWS certified welders in accordance with AWS D1.1 and D1.6.
- C. Utilize Type 316L stainless steel filler metal at welded joints to produce uniform raised weld. Do not grind raised welds.
- D. Wall Panels:
- 1. Precision fabricated for welded installation.
  - 2. Cut perforations for skimmers, lights, and fittings into panels using CNC laser technology.
  - 3. Support panel-to-panel joints using prefabricated support brace manufactured from 10 gage stainless steel.
  - 4. Prevent dissimilar metals from direct contact with stainless steel.
  - 5. Support panels on rust inhibited, stainless steel clad, steel base support.
  - 6. Use stainless steel couplings; plastic through-wall fittings not permitted.
- E. Floor Panels: 3/16 inch stainless steel plate.
- F. Tie stainless steel wall stiffeners to floor structure for maximum structural rigidity.
- G. Fabricate structural pool frame to accommodate pool floor slope.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Prior to beginning installation verify that pool slab:
  - 1. Has minimum 3-1/2 inches of leveled concrete over waterproofing layer.
  - 2. Is level within 1/8 inch from high to low point across entire floor.

### **3.2 INSTALLATION**

- A. Install equipment and system in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Perform welding using AWS certified welders in accordance with AWS D1.1 and D1.6.
- C. Set equipment on secure foundations.
- D. Make piping joints in accordance with ASTM D2855.
- E. Support overhead piping and at connections to valves, pumps, and equipment.
- F. Install electrical components in accordance with NFPA 70.
- G. Install tile in accordance with ANSI A108.6, thin set with epoxy adhesive.

### **3.3 FIELD QUALITY CONTROL**

- A. Piping Testing:
  - 1. After installation and before covering piping, test to minimum 20 PSI pressure for 12 hours.
  - 2. If necessary, repair leaks and retest. Do not cover piping until proven watertight.
  - 3. Furnish test results prior to covering piping.
- B. Flushing: Flush completed piping with clean water prior to making final connections.
- C. Water Treatment:
  - 1. Submit chemical analysis of source water supply showing:
    - a. Total alkalinity in PPM.
    - b. Calcium hardness in PPM.
    - c. Chlorine in PPM.
    - d. pH.
  - 2. Treat and balance pool water just prior to Substantial Completion.
    - a. Establish total alkalinity of 80 to 150 PPM and calcium hardness of 175 to 250 PPM.
    - b. Balance pool water to local health code requirements.

### **3.4 ADJUSTING**

- A. Adjust pool system for proper operation through all cycles.

### **3.5 CLEANING**

- A. Clean pool, equipment, and related surfaces.

### **3.6 DEMONSTRATION**

- A. Demonstrate proper operation and maintenance of pool system to Owner.

END OF SECTION