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ARTICLE 680 — SWIMMING POOLS

680-1. Scope. The provisions of this Article apply to the construction and installation of electric wiring for equipment in or adjacent to swimming pools, to metallic appurtenances in or within 5 feet of the pool, and to the auxiliary equipment such as pumps, filters and similar equipment. No electric appliances or wiring shall be installed in the water or in the enclosing walls of a swimming pool, except as provided for in this Article.

680-2. Approval of Equipment. All equipment shall be approved for the purpose.

680-3. Application of Other Articles. Except as modified by this Article, wiring and equipment in or adjacent to swimming pools shall comply with the applicable requirements of Chapters 1 to 4, inclusive, of this Code.

See Article 720 for low voltage lighting.

680-4. Lighting.

(a) The provisions of this Section apply to lighting fixtures installed below the pool surface.

(b) No lighting fixture shall be installed for operation at more than 150 volts between conductors.

(c) Lighting fixtures mounted in walls shall be installed with the top of the fixture lens at least 18 inches below the normal water level of the pool. A lighting fixture facing upward shall have the lens adequately guarded to prevent contact by any person.

(d) All exposed noncurrent-carrying metal parts of lighting fixtures shall be grounded. The fixture shall be secured and grounded to the forming shell by a positive locking device which will assure a low resistance contact and which will require a tool to remove the fixture from the forming shell.

Definition. A forming shell is a metal housing designed to contain a lighting fixture assembly for mounting into a swimming pool structure. The forming shell provides a bond between the raceway and the non-current-carrying metal parts of the fixture.

(e) Fixtures approved for the purpose may be installed outside the walls of the pool in closed recesses which are adequately drained and accessible for maintenance.

(f) Approved metal forming shells shall be installed for the mounting of all wet niche underwater fixtures and shall be equipped with provisions for threaded conduit entries. A rigid conduit of brass or other approved corrosion-resistant metal shall extend from the forming shell to a suitable junction box located as provided in Section 680-5. Metal parts of the fixture and forming shell in contact with the pool water shall be of brass or other approved corrosion-resistant metal.

(g) Underwater lighting fixtures supplied either directly from a branch circuit or by a transformer meeting the requirements of Section

680-4(h) shall perform reliably under any likely combination of fault conditions so that there is no shock hazard. Compliance with this requirement shall be assured by one of the following:

- (1) The design and construction of the fixtures; or
(2) The use of a ground-fault circuit interrupter.

Definition. A ground-fault circuit-interrupter is a device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

(3) Other acceptable means.

(h) Transformers used for the supply of fixtures, together with the transformer enclosure, shall be approved for the purpose. The transformers shall be a two-winding type having a grounded metal barrier between the primary and secondary voltage windings.

(i) The end of the flexible cord jacket and the flexible cord conductor terminations within a fixture shall be covered with or encapsulated in a suitable potting compound to prevent the entry of water into the fixture through the cord or its conductors. In addition, the grounding connection within a fixture shall be similarly treated to protect such connection from the deteriorating effect of pool water in the event of water entry into the fixture.

(j) Conductors on the load side of a ground-fault circuit-interrupter or of a transformer, used to comply with the provisions of Section 680-4(g), shall be kept entirely independent of all other wiring and electrical equipment.

680-5. Junction Boxes and Transformer Enclosures.

(a) Junction boxes installed on the supply side of conduits extending to underwater pool lights shall be provided with threaded hubs for conduit connection. The box that is directly connected to the conduit extending to the underwater pool light shall be located not less than 8 inches, measured from the inside of the bottom of the box above the ground level, pool deck, or maximum pool water level, whichever provides the greatest elevation. The junction box shall be located not less than 4 feet from the perimeter of the pool unless separated from the pool by a fence, wall or other permanent barrier. Junction boxes mounted above the grade of the finished walkway around the pool shall not be located in the walkway unless afforded additional protection such as by location under diving boards, adjacent to fixed structures, and the like. Junction boxes shall be of corrosion-resistant material. There shall be electrical continuity between every connected conduit and the grounding terminals by means of copper, brass, or other approved corrosion-resistant metal that is integral with the box.

(b) An enclosure for a transformer, ground-fault circuit interrupter or other device shall be located not less than 12 inches, measured from the inside bottom of the enclosure to the ground level, pool deck, or maximum pool water level, whichever provides the greatest elevation. The enclosure shall be located not less than 4 feet from the perimeter of the pool unless separated from the pool by a fence, wall or other perma-

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nent barrier. These enclosures mounted above the grade of the finished walkway around the pool shall not be located in the walkway unless afforded additional protection such as by location under diving boards, adjacent to fixed structures, and the like. Where these enclosures are installed on supply side of conduits extending to underwater pool lights, they shall be of corrosion-resistant material. There shall be electrical continuity between every connected conduit and the grounding terminals by means of copper, brass, or other approved corrosion-resistant metal that is integral with the enclosure.

(c) Boxes shall be provided with means for independently terminating not less than two grounding conductors.

680-6. Attachment Plug Receptacles. No attachment plug receptacles shall be installed within 10 feet of the inside walls of the swimming pool.

Exception: Attachment plug receptacles of other than the standard 15 ampere parallel slot type may be installed where an integral part of the lighting fixture assembly and where used for the installation, maintenance, or servicing of the fixture.

NOTE: In determining the 10-foot dimension, the distance to be measured is the shortest path which the supply cord of an appliance connected to the receptacle would follow without piercing a building floor, wall or ceiling. It is recommended that all attachment plug receptacles in the area adjacent to the swimming pool be installed on a circuit protected by a ground-fault circuit-interrupter.

680-7. Grounding.

(a) The following parts shall be bonded together by a copper conductor not smaller than No. 8 AWG:

(1) Pool reinforcing steel, metal parts of ladders, diving boards and their supports, and the like, and metal parts of electrical equipment associated with the pool water circulating system.

Exception No. 1: The usual steel tie wires are considered suitable for bonding the reinforcing steel together and welding or special clamping will not be required.

Exception No. 2: Structural reinforcing steel may be used as a common bonding grid for non-electrical parts where connections can be made in accordance with Section 250-113.

(2) All fixed metallic parts that are within 5 feet of the inside walls of the swimming pool and that are not separated from the pool area by a permanent barrier.

(b) Where the swimming pool lighting is supplied directly from a panelboard, which is part of the service equipment, an insulated unbroken No. 12 AWG copper wire shall be installed as the grounding conductor from the underwater light fixture junction box to the service equipment ground terminal. The grounding conductor shall be installed with the circuit conductors in an approved rigid metallic or rigid non-metallic conduit.

Where the swimming pool lighting is supplied by a panelboard remote from the service equipment, an insulated copper grounding conductor

sized in accordance with Section 250-95, but not smaller than No. 12 AWG, shall be installed between the panelboard and the service equipment grounding terminal. In addition, an insulated unbroken No. 12 AWG copper grounding conductor shall be installed with the circuit conductors in an approved rigid metallic or rigid nonmetallic conduit from the underwater light fixture junction box to the panelboard ground terminal.

Exception: Where the swimming pool lighting is supplied from existing panelboards, the grounding conductor may be terminated in an approved manner provided that the panelboard is properly grounded to the service equipment with an insulated copper conductor in a conduit or cable assembly.

(c) Metallic raceways shall not be depended upon for grounding except between the forming shell and the junction box. Where exposed to pool water and in other corrosive areas such as a pump house or adjacent to water treating and other equipment, the grounding of the non-current-carrying metal parts shall be by means of an insulated copper conductor sized in accordance with Section 250-95 and not smaller than No. 12 AWG.

680-8. Methods of Grounding and Bonding.

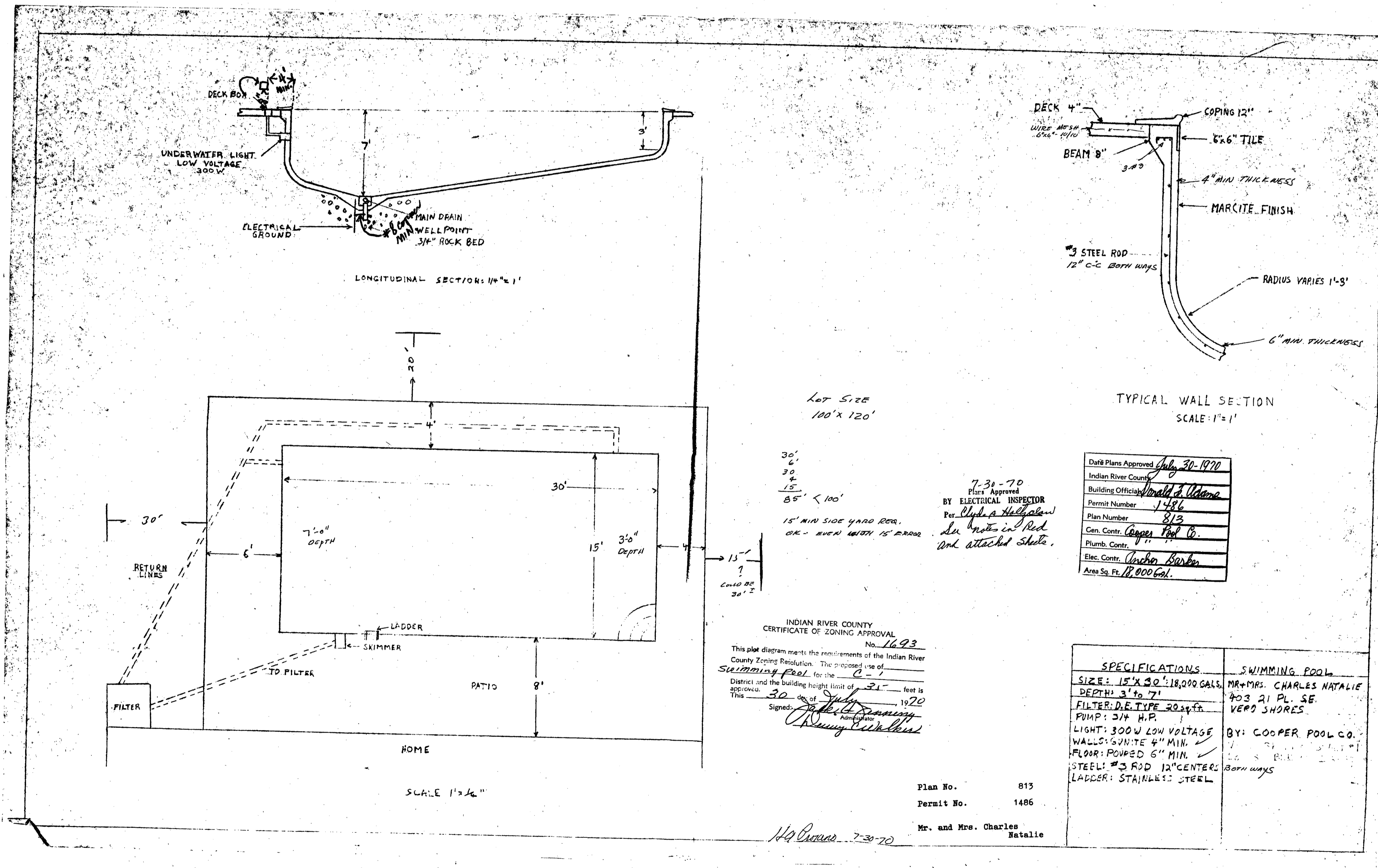
(a) Metal wiring enclosures shall be grounded in accordance with Article 250, in addition to other requirements of this Article.

(b) In addition to other requirements of this Article, lighting fixtures that are supplied by flexible cord or cable shall have all exposed non-current-carrying metal parts grounded by means of an insulated grounding conductor that is an integral part of the cord or cable. This grounding conductor shall be connected to a grounding terminal in the supply junction box. This conductor shall be equal in size to the supply conductors but not smaller than No. 16 AWG.

680-9. Clearances. Service drop conductors and any other open overhead wiring shall not be installed above the swimming pool or surrounding area extending 10 feet horizontally from the pool edge, or diving structure, observation stands, towers or platforms.

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Lot Size
100' x 120'

30'
6'
30'
15'
85' < 100'
15' MIN SIDE YARD REQ.
OK - EVEN WITH 15' FRONT

7-30-70
Plans Approved
BY ELECTRICAL INSPECTOR
Per *Clyde A. Hedges*
See notes in Red
and attached sheets.

Date Plans Approved	July 30-1970
Indian River County	
Building Official	<i>Donald A. Adams</i>
Permit Number	1486
Plan Number	813
Gen. Contr.	Cooper Pool Co.
Plumb. Contr.	
Elec. Contr.	Unshon Barber
Area Sq. Ft.	12,000 Gal.

INDIAN RIVER COUNTY
CERTIFICATE OF ZONING APPROVAL
No. 1693
This plot diagram meets the requirements of the Indian River
County Zoning Resolution. The proposed use of
Swimming Pool for the C-1
District and the building height limit of 21 feet is
approved. This 30 day of July 1970
Signed: *Donna G. Manning*
Administrator

SPECIFICATIONS	SWIMMING POOL
SIZE: 15' x 30' 18,000 GALS.	MR. & MRS. CHARLES NATALIE
DEPTH: 3' to 7'	403 21 PL. SE.
FILTER: D.E. TYPE 20 sq. ft.	VERO SHORES.
PUMP: 3/4 H.P.	
LIGHT: 300W LOW VOLTAGE	BY: COOPER POOL CO.
WALLS: GUNITE 4" MIN.	
FLOOR: POURED 6" MIN.	
STEEL: #3 ROD 12" CENTERS	
LADDER: STAINLESS STEEL	

Plan No. 813
Permit No. 1486

Mr. and Mrs. Charles Natalie

H.A. Curran 7-30-70