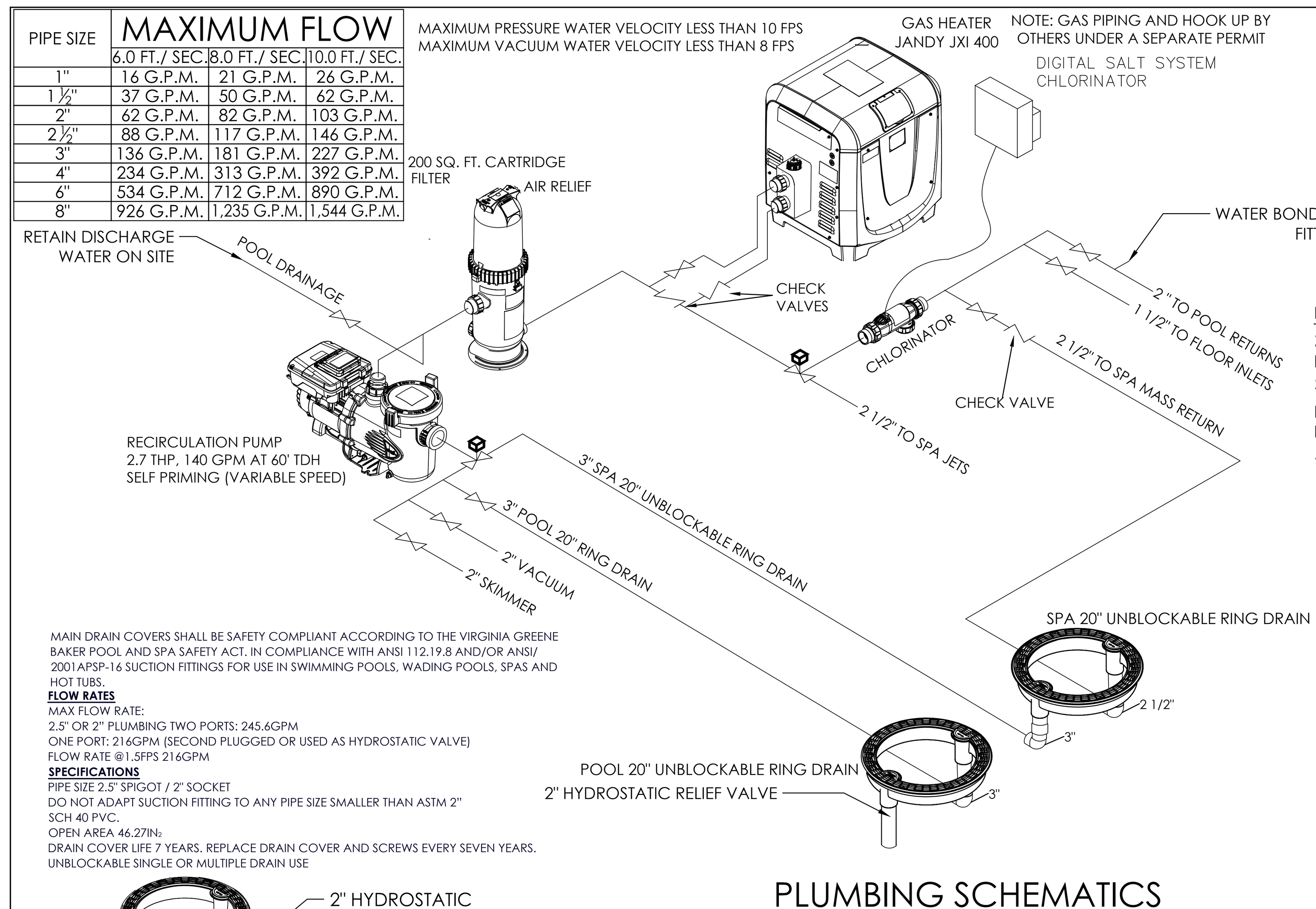
PIPE SIZE	MAXIMUM FLOW		
	6.0 FT./ SEC.	8.0 FT./ SEC.	10.0 FT./ SEC.
1"	16 G.P.M.	21 G.P.M.	26 G.P.M.
1 ½"	37 G.P.M.	50 G.P.M.	62 G.P.M.
2"	62 G.P.M.	82 G.P.M.	103 G.P.M.
2 ½"	88 G.P.M.	117 G.P.M.	146 G.P.M.
3"	136 G.P.M.	181 G.P.M.	227 G.P.M.
4"	234 G.P.M.	313 G.P.M.	392 G.P.M.
6"	534 G.P.M.	712 G.P.M.	890 G.P.M.
8"	926 G.P.M.	1,235 G.P.M.	1,544 G.P.M.

MAXIMUM PRESSURE WATER VELOCITY LESS THAN 10 FPS
MAXIMUM VACUUM WATER VELOCITY LESS THAN 8 FPS



MAIN DRAIN COVERS SHALL BE SAFETY COMPLIANT ACCORDING TO THE VIRGINIA GREENE BAKER POOL AND SPA SAFETY ACT. IN COMPLIANCE WITH ANSI 112.19.8 AND/OR ANSI/ 2001APSP-16 SUCTION FITTINGS FOR USE IN SWIMMING POOLS, WADING POOLS, SPAS AND HOT TUBS.

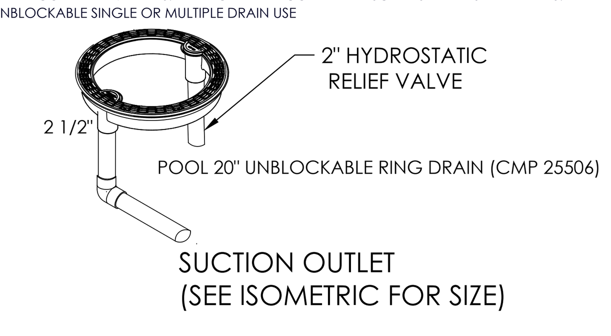
FLOW RATES

MAX FLOW RATE:
2.5" OR 2" PLUMBING TWO PORTS: 245.6GPM
ONE PORT: 216GPM (SECOND PLUGGED OR USED AS HYDROSTATIC VALVE)
FLOW RATE @1.5FPS 216GPM

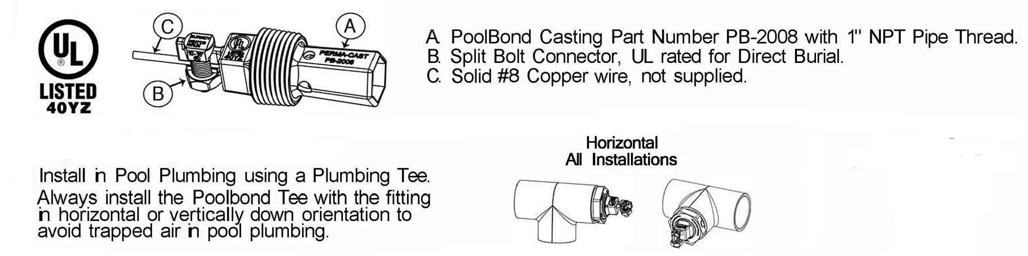
SPECIFICATIONS

PIPE SIZE 2.5" SPIGOT / 2" SOCKET
DO NOT ADAPT SUCTION FITTING TO ANY PIPE SIZE SMALLER THAN ASTM 2" SCH 40 PVC.
OPEN AREA 46.27IN2
DRAIN COVER LIFE 7 YEARS. REPLACE DRAIN COVER AND SCREWS EVERY SEVEN YEARS.
UNBLOCKABLE SINGLE OR MULTIPLE DRAIN USE

PLUMBING SCHEMATICS
NOT TO SCALE



TYPICAL MAINDRAIN DETAIL
NOT TO SCALE



PLUMBING NOTES:

2023 FBC 8TH EDITION R4501.6.3 WATER VELOCITY. POOL PIPING IS DESIGNED SO THE WATER VELOCITY WILL NOT EXCEED 10 FEET PER SECOND FOR PRESSURE PIPING AND 8 FEET PER SECOND FOR SUCTION PIPING. MAIN SUCTION OUTLET VELOCITY MUST COMPLY WITH **ANSI/APSP/ICC 7.** EXCEPTION: JET INLET FITTINGS SHALL NOT BE DEEMED SUBJECT TO THIS REQUIREMENT

POOL PIPING SHALL BE **N.S.F.** APPROVED AND MINIMUM **SCHEDULE 40. 2023 FBC 8TH EDITION B454.2.6.5 PIPING INSTALLATION:** ALL PIPING MATERIAL SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION STANDARDS. EXCEPTION: PRIMER AND GLUE ON EXPOSED ABOVE-GROUND PIPING ARE NOT REQUIRED TO BE COLORED

POOL EQUIPMENT ELEVATION, ANCHORING AND LOCATION:

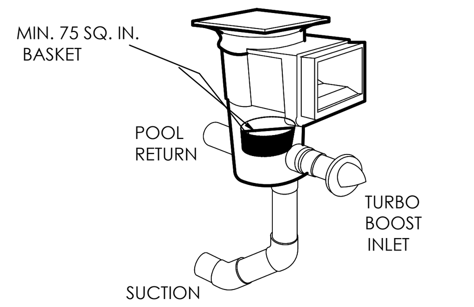
POOL EQUIPMENT ELEVATION SHALL BE AT A MINIMUM OF THE DESIGN FLOOD ELEVATION PER **2023 FBC 8TH EDITION R322.1.4.** HOWEVER, PER **2023 FBC 8TH EDITION R322.1.6 EXCEPTION: ASCE 24**, POOL/SPA/FEATURE EQUIPMENT SHALL BE PERMITTED BELOW THE ELEVATION REQUIRED IN **2023 FBC 8TH EDITION R322.2 &3**, PROVIDED IT IS ELEVATED TO THE EXTENT PRACTICAL, IS ANCHORED TO PREVENT FLOTATION AND RESIST FLOOD FORCES, AND IS SUPPLIED BY BRANCH CIRCUITS THAT HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION. ELECTRICAL WIRING SYSTEMS ARE PERMITTED TO BE LOCATED BELOW THE REQUIRED ELEVATION PROVIDED THAT THEY CONFORM TO THE PROVISIONS OF THE ELECTRICAL PART OF THIS CODE FOR WET LOCATIONS

POOL EQUIPMENT ANCHORING SHALL BE DESIGNED, CONSTRUCTED, AND INSTALLED TO MEET THE REQUIREMENTS OF **ASCE 7**. EQUIPMENT TIE DOWNS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS OR A MINIMUM OF: HEATERS 4 TOTAL (1 PER SIDE OR 2 PER OPPOSITE SIDES); OTHERS 2 TOTAL: 3-1/2" MINIMUM THICK, 3000 PSI CONCRETE SLAB, 3" LARGER THAN ON EACH SIDE THAN THE EQUIPMENT; ¼" DIAMETER TAPCON® CONCRETE SCREWS (1600# TENSION, 1290# SHEAR, 1-1/2" EMBEDMENT IN 2000 PSI CONCRETE) OR EQUAL WITH STAINLESS STEEL FENDER WASHER INTO FACTORY PROVIDED HOLD DOWNS OR 1" WIDE, 14 GAUGE GALVANIZED STRAPS WITH 2 STAINLESS STEEL, #10 X ¾" PAN HEAD PHILLIPS SS SCREWS EACH STRAP INTO METAL FRAME OF EQUIPMENT

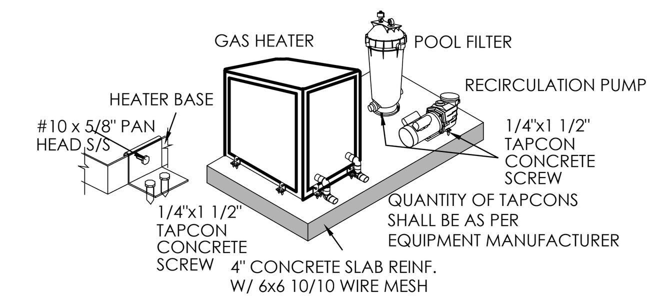
2023 FBC 8TH EDITION BUILDING 1907.1 GENERAL THE THICKNESS OF CONCRETE EQUIPMENT SLAB SUPPORTED DIRECTLY ON THE GROUND SHALL NOT BE LESS THAN 3-1/2 INCHES THICK AND SHALL NOT REQUIRE A VAPOR BARRIER

EQUIPMENT LOCATION AND SCREENING: THE EQUIPMENT AND PIPING PHYSICAL LOCATION MAY DIFFER IN THE FIELD DUE TO UNFORESEEN CONDITIONS OR OTHER FACTORS. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND INSTALL ITEMS IN A LOCATION THAT MEETS LOCAL ZONING CODE AND TO PROVIDE CODE COMPLIANT LANDSCAPE OR FENCE SCREENING. DISTANCE TO HOUSE OPENINGS (4 FEET) AND AIR CONDITIONING UNITS (10 FEET) SHALL BE MAINTAINED FOR GAS HEATERS.

NOTE: BY DESIGN, SKIMMER BOXES INCLUDE ALL PIPING AND FITTINGS. UNDER SKIMMER SHALL BE EMBEDDED IN CONCRETE.

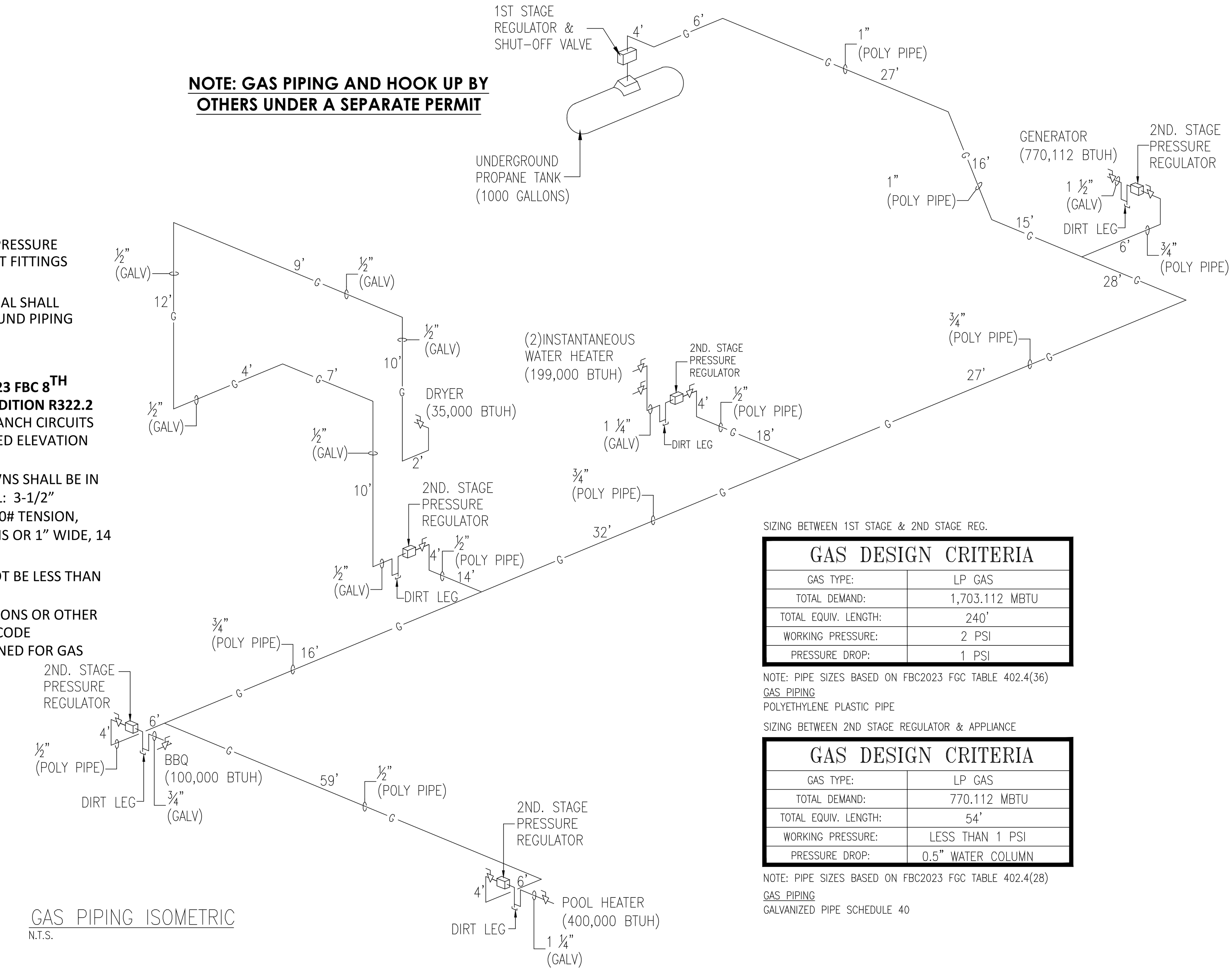


TURBO SKIMMER SECTION
NOT TO SCALE



TYPICAL EQUIPMENT HOLDDOWN
NOT TO SCALE

NOTE: GAS PIPING AND HOOK UP BY OTHERS UNDER A SEPARATE PERMIT



GAS PIPING ISOMETRIC
N.T.S.

SIZING BETWEEN 1ST STAGE & 2ND STAGE REG.

GAS DESIGN CRITERIA	
GAS TYPE:	LP GAS
TOTAL DEMAND:	1,703.112 MBTU
TOTAL EQUIV. LENGTH:	240'
WORKING PRESSURE:	2 PSI
PRESSURE DROP:	1 PSI

NOTE: PIPE SIZES BASED ON FBC2023 FGC TABLE 402.4(36)
GAS PIPING
POLYETHYLENE PLASTIC PIPE

SIZING BETWEEN 2ND STAGE REGULATOR & APPLIANCE

GAS DESIGN CRITERIA	
GAS TYPE:	LP GAS
TOTAL DEMAND:	770.112 MBTU
TOTAL EQUIV. LENGTH:	54'
WORKING PRESSURE:	LESS THAN 1 PSI
PRESSURE DROP:	0.5" WATER COLUMN

NOTE: PIPE SIZES BASED ON FBC2023 FGC TABLE 402.4(28)
GAS PIPING
GALVANIZED PIPE SCHEDULE 40

LEGEND

	TURBO SKIMMER
	FLOOR DRAIN
	WALL INLET
	FLOOR INLET
	VACUUM
	SPA JETS
	L.E.D. LIGHT
	G.F.I.
	L.E.D. BUBBLER
	RETURN LINE
	SUCTION LINE
	VENTILATION LINE

ELECTRICAL CODE AND NOTES:

2020 NFPA 70 NATIONAL ELECTRICAL CODE, SHALL SPECIFICALLY GOVERN AND **ARTICLE 680 SWIMMING POOLS, FOUNTAINS, AND SIMILAR INSTALLATIONS**

ARTICLE 430.32 CONTINUOUS-DUTY MOTORS. EACH MOTOR USED IN CONTINUOUS DUTY APPLICATION SHALL BE PROTECTED AGAINST OVERLOAD

ARTICLE 680.6 GROUNDING. ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH PARTS V, VI AND VII OF ARTICLE 250 AND CONNECTED BY WIRING METHODS OF CHAPTER 3, EXCEPT AS MODIFIED BY THIS ARTICLE. THE FOLLOWING EQUIPMENT SHALL BE GROUNDED: (1) THROUGH-WALL LIGHTING ASSEMBLIES AND UNDERWATER LUMINAIRES, OTHER THAN THOSE LOW-VOLTAGE LIGHTING PRODUCTS LISTED FOR THE APPLICATION WITHOUT A GROUNDING CONDUCTOR (2) ALL ELECTRICAL EQUIPMENT LOCATED WITHIN 1.5 M (5 FT) OF THE INSIDE WALL OF THE SPECIFIED BODY OF WATER (3) ALL ELECTRICAL EQUIPMENT ASSOCIATED WITH THE RECIRCULATING SYSTEM OF THE SPECIFIED BODY OF WATER (4) JUNCTION BOXES (5) TRANSFORMER AND POWER SUPPLY ENCLOSURES (6) GROUND-FAULT CIRCUIT INTERRUPTERS (7) PANELBOARDS THAT ARE NOT PART OF THE SERVICE EQUIPMENT AND THAT SUPPLY ANY ELECTRICAL EQUIPMENT ASSOCIATED WITH THE BODY OF WATER

ARTICLE 680.9 OVERHEAD CONDUCTOR CLEARANCES. OVERHEAD CONDUCTORS SHALL MEET THE CLEARANCE REQUIREMENTS IN THIS SECTION. WHERE A MINIMUM CLEARANCE FROM THE WATER LEVEL IS GIVEN, THE MEASUREMENT SHALL BE TAKEN FROM THE MAXIMUM WATER LEVEL OF THE SPECIFIED BODY OF WATER. (A) POWER. WITH RESPECT TO SERVICE-DROP CONDUCTORS, OVERHEAD SERVICE CONDUCTORS, AND OPEN OVERHEAD WIRING, SWIMMING POOL AND SIMILAR INSTALLATIONS SHALL COMPLY WITH THE MINIMUM CLEARANCES GIVEN IN TABLE 680.9(A) AND ILLUSTRATED IN FIGURE 680.9(A). (B) COMMUNICATIONS SYSTEMS. COMMUNICATIONS, RADIO, AND TELEVISION COAXIAL CABLES WITHIN THE SCOPE OF ARTICLES 800 TO 820 SHALL BE PERMITTED AT A HEIGHT OF NOT LESS THAN 3.0 M (10 FT) ABOVE SWIMMING AND WADING POOLS, DIVING STRUCTURES, AND OBSERVATION STANDS, TOWERS, OR PLATFORMS. (C) NETWORK-POWERED BROADBAND COMMUNICATIONS SYSTEMS. THE MINIMUM CLEARANCES FOR OVERHEAD NETWORK-POWERED BROADBAND COMMUNICATIONS SYSTEMS CONDUCTORS FROM POOLS OR FOUNTAINS SHALL COMPLY WITH THE PROVISIONS IN TABLE 680.9(A) FOR CONDUCTORS OPERATING AT 0 TO 750 VOLTS TO GROUND

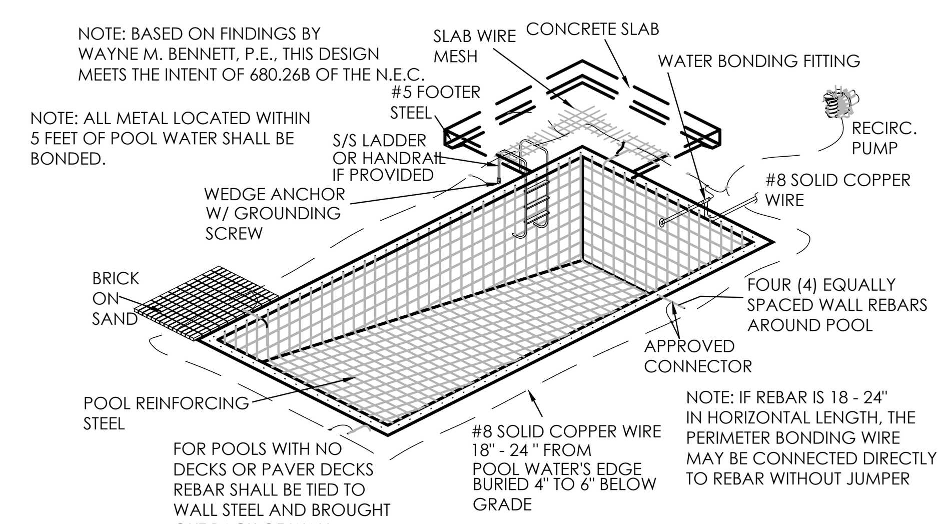
ARTICLE 680.10 ELECTRIC POOL WATER HEATERS. ALL ELECTRIC POOL WATER HEATERS SHALL HAVE THE HEATING ELEMENTS SUBDIVIDED INTO LOADS NOT EXCEEDING 48 AMPERES AND PROTECTED AT NOT OVER 60 AMPERES. THE AMPACITY OF THE BRANCH-CIRCUIT CONDUCTORS AND THE RATING OR SETTING OF OVERCURRENT PROTECTIVE DEVICES SHALL NOT BE LESS THAN 125 PERCENT OF THE TOTAL NAMEPLATE-RATED LOAD

ARTICLE 680.11 UNDERGROUND WIRING LOCATION. UNDERGROUND WIRING SHALL BE PERMITTED WHERE INSTALLED IN RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, RIGID POLYVINYL CHLORIDE CONDUIT, REINFORCED THERMOSETTING RESIN CONDUIT, OR TYPE MC CABLE, SUITABLE FOR THE CONDITIONS SUBJECT TO THAT LOCATION. UNDERGROUND WIRING SHALL NOT BE PERMITTED UNDER THE POOL UNLESS THIS WIRING IS NECESSARY TO SUPPLY POOL EQUIPMENT PERMITTED BY THIS ARTICLE. MINIMUM COVER DEPTHS SHALL BE AS GIVEN IN TABLE 300.5

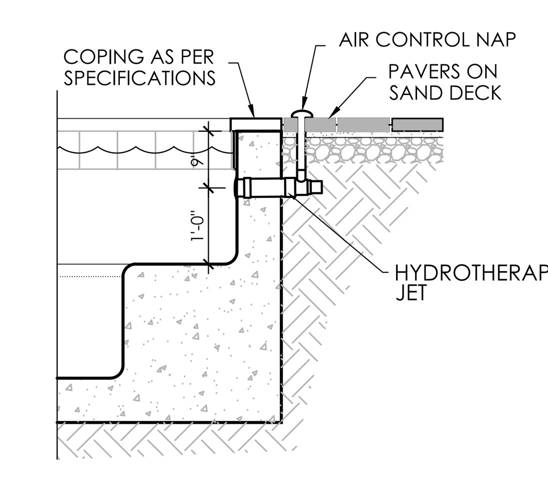
ARTICLE 680.22 LIGHTING, RECEPTACLES, AND EQUIPMENT. (A) RECEPTACLES. (1) REQUIRED RECEPTACLE, LOCATION. WHERE A PERMANENTLY INSTALLED POOL IS INSTALLED, NO FEWER THAN ONE 125-VOLT, 15- OR 20-AMPERE RECEPTACLE ON A GENERAL-PURPOSE BRANCH CIRCUIT SHALL BE LOCATED NOT LESS THAN 1.83 M (6 FT) FROM, AND NOT MORE THAN 6.0 M (20 FT) FROM, THE INSIDE WALL OF THE POOL. THIS RECEPTACLE SHALL BE LOCATED NOT MORE THAN 2.0 M (6 FT 6 IN.) ABOVE THE FLOOR, PLATFORM, OR GRADE LEVEL SERVING THE POOL. (2) CIRCULATION AND SANITATION SYSTEM, LOCATION. RECEPTACLES THAT PROVIDE POWER FOR WATER-PUMP MOTORS OR FOR OTHER LOADS DIRECTLY RELATED TO THE CIRCULATION AND SANITATION SYSTEM SHALL BE LOCATED AT LEAST 1.83 M (6 FT) FROM THE INSIDE WALLS OF THE POOL. THESE RECEPTACLES SHALL HAVE GFCI PROTECTION AND BE OF THE GROUNDING TYPE. (3) OTHER RECEPTACLES, LOCATION. OTHER RECEPTACLES SHALL BE NOT LESS THAN 1.83 M (6 FT) FROM THE INSIDE WALLS OF A POOL. (4) GFCI PROTECTION. ALL 15- AND 20-AMPERE, SINGLE-PHASE, 125-VOLT RECEPTACLES LOCATED WITHIN 6.0 M (20 FT) OF THE INSIDE WALLS OF A POOL SHALL BE PROTECTED BY A GROUND-FAULT CIRCUIT INTERRUPTER

ARTICLE 680.26 EQUIPOTENTIAL BONDING. (A) PERFORMANCE. THE EQUIPOTENTIAL BONDING REQUIRED BY THIS SECTION SHALL BE INSTALLED TO REDUCE VOLTAGE GRADIENTS IN THE POOL AREA. (B) BONDED PARTS (CONDUCTIVE POOL SHELLS, PERIMETER SURFACES, METALLIC COMPONENTS, METAL FITTINGS, ELECTRICAL EQUIPMENT AND FIXED METAL PARTS) SHALL BE BONDED TOGETHER USING SOLID COPPER CONDUCTORS, INSULATED COVERED, OR BARE, NOT SMALLER THAN 8 AWG OR WITH RIGID METAL CONDUIT OF BRASS OR OTHER IDENTIFIED CORROSION-RESISTANT METAL. CONNECTIONS TO BONDED PARTS SHALL BE MADE IN ACCORDANCE WITH 250.8. AN 8 AWG OR LARGER SOLID COPPER BONDING CONDUCTOR PROVIDED TO REDUCE VOLTAGE GRADIENTS IN THE POOL AREA SHALL NOT BE REQUIRED TO BE EXTENDED OR ATTACHED TO REMOTE PANELBOARDS, SERVICE EQUIPMENT, OR ELECTRODES. VINYL LINERS AND FIBERGLASS COMPOSITE SHELLS SHALL BE CONSIDERED TO BE NONCONDUCTIVE MATERIALS AND BONDING AT FOUR POINTS SHALL NOT BE REQUIRED. (C) POOL WATER. WHERE NONE OF THE BONDED PARTS IS IN DIRECT CONNECTION WITH THE POOL WATER, THE POOL WATER SHALL BE IN DIRECT CONTACT WITH AN APPROVED CORROSION-RESISTANT CONDUCTIVE SURFACE THAT EXPOSES NOT LESS THAN 5800 MM SQUARED (9 SQUARE INCHES) OF SURFACE AREA TO THE POOL WATER AT ALL TIMES. THE CONDUCTIVE SURFACE SHALL BE LOCATED WHERE IT IS NOT EXPOSED TO PHYSICAL DAMAGE OR DISLODGEMENT DURING USUAL POOL ACTIVITIES, AND IT SHALL BE BONDED IN ACCORDANCE WITH 680.26(B)

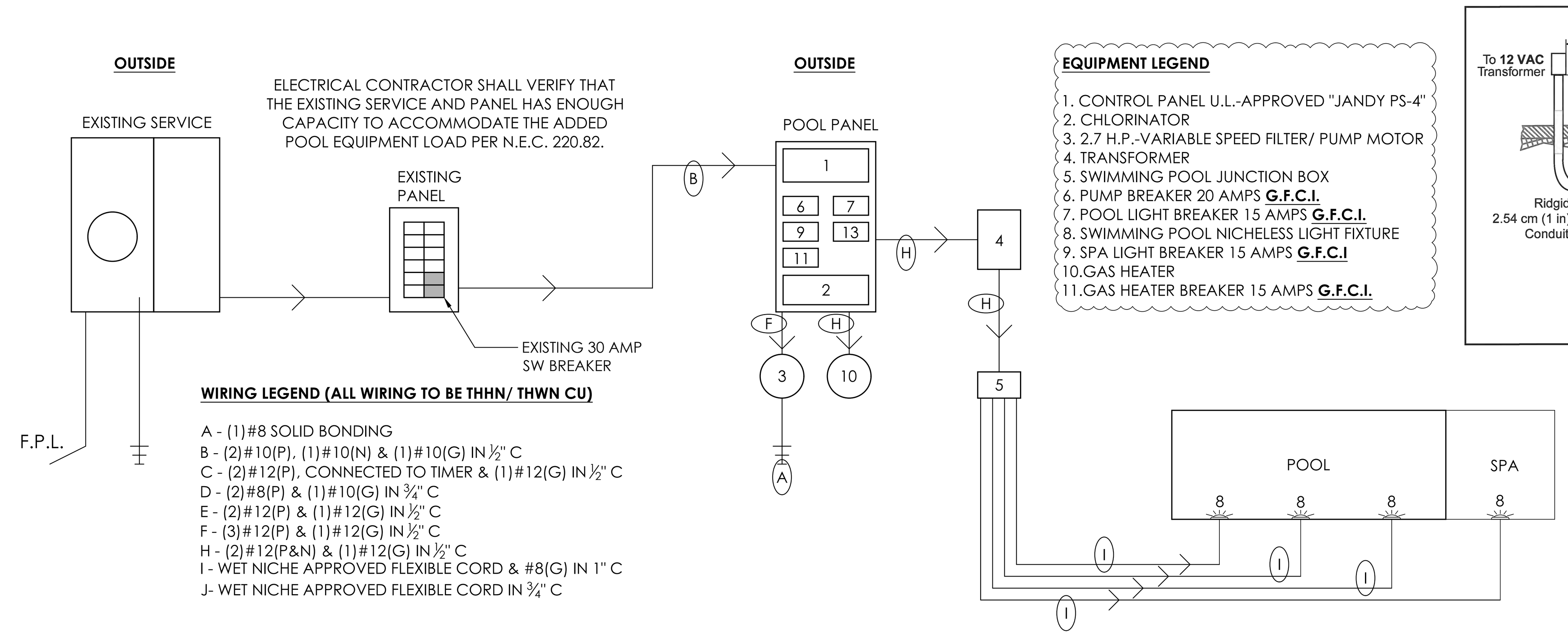
ARTICLE 680.28 GAS-FIRED WATER HEATER. CIRCUITS SERVING GAS-FIRED SWIMMING POOL AND SPA WATER HEATERS OPERATING AT VOLTAGES ABOVE THE LOW-VOLTAGE CONTACT LIMIT SHALL BE PROVIDED WITH GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL



BONDING DETAIL
NO SCALE



TYPICAL HYDROTHERAPY JET
NOT TO SCALE



EQUIPMENT LEGEND

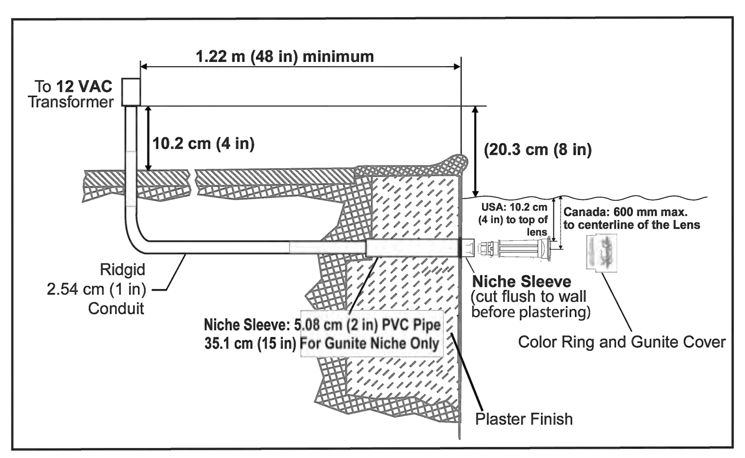
1. CONTROL PANEL U.L.-APPROVED "JANDY PS-4"
2. CHLORINATOR
3. 2.7 H.P.-VARIABLE SPEED FILTER/ PUMP MOTOR
4. TRANSFORMER
5. SWIMMING POOL JUNCTION BOX
6. PUMP BREAKER 20 AMPS **G.F.C.I.**
7. POOL LIGHT BREAKER 15 AMPS **G.F.C.I.**
8. SWIMMING POOL NICHELESS LIGHT FIXTURE
9. SPA LIGHT BREAKER 15 AMPS **G.F.C.I**
10. GAS HEATER
11. GAS HEATER BREAKER 15 AMPS **G.F.C.I.**

WIRING LEGEND (ALL WIRING TO BE THHN/ THWN CU)

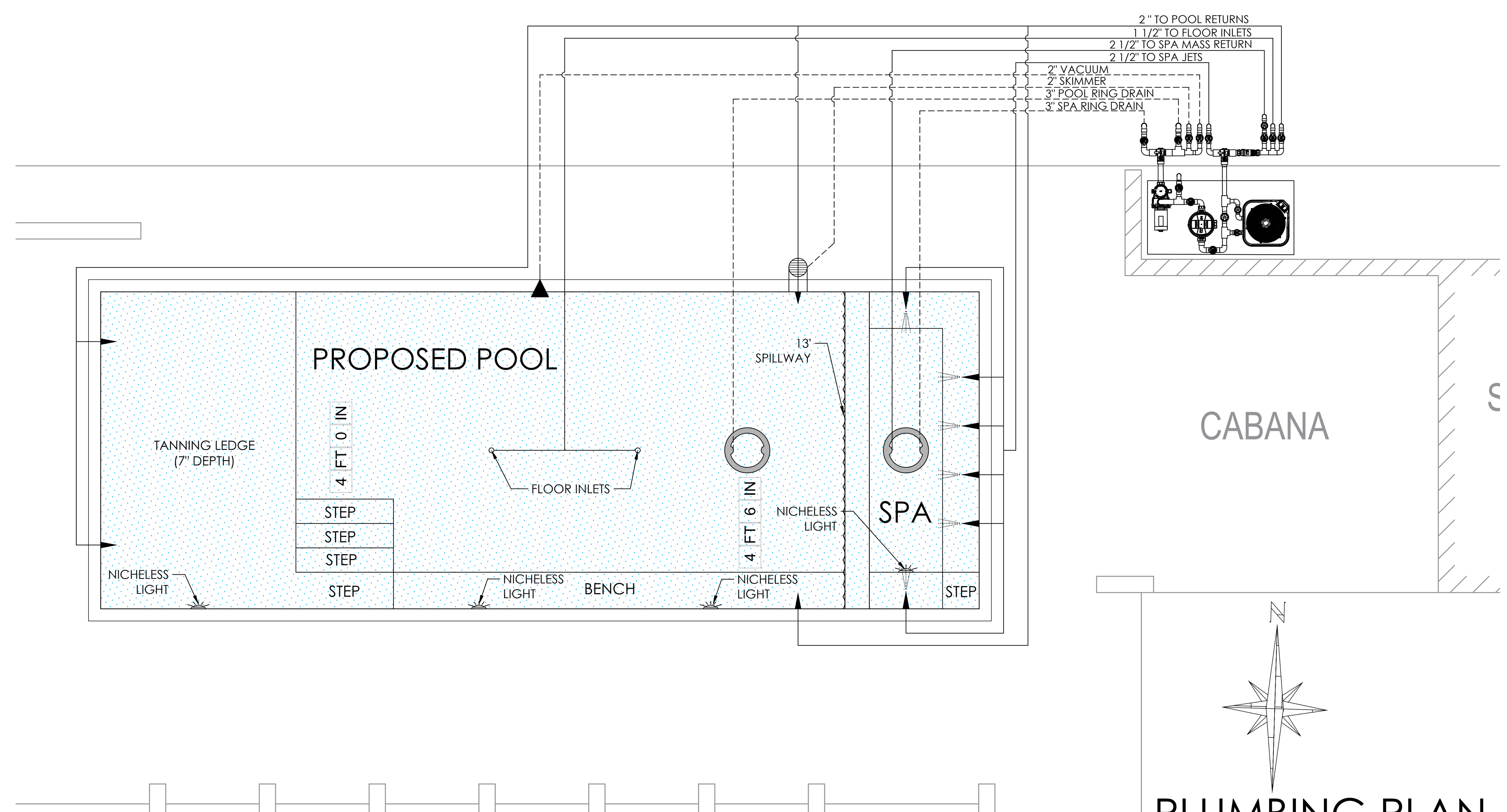
A - (1)#8 SOLID BONDING
B - (2)#10(P), (1)#10(N) & (1)#10(G) IN ½" C
C - (2)#12(P), CONNECTED TO TIMER & (1)#12(G) IN ½" C
D - (2)#8(P) & (1)#10(G) IN ¾" C
E - (2)#12(P) & (1)#12(G) IN ½" C
F - (3)#12(P) & (1)#12(G) IN ½" C
H - (2)#12(P&N) & (1)#12(G) IN ½" C
I - WET NICHE APPROVED FLEXIBLE CORD & #8(G) IN 1" C
J- WET NICHE APPROVED FLEXIBLE CORD IN ¾" C

ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE EXISTING SERVICE AND PANEL HAS ENOUGH CAPACITY TO ACCOMMODATE THE ADDED POOL EQUIPMENT LOAD PER N.E.C. 220.82.

ELECTRICAL DIAGRAM



NICHELESS LIGHT DETAIL
NOT TO SCALE



PLUMBING PLAN
SCALE: ¼" = 1'-0"

SHEET 3 OF 3

PLUMBING & ELECTRICAL

PROJECT NAME:

FERNANDA ROCA RESIDENCE

13125 SW 63 AVENUE,
PINECREST, FL 331156

CONTRACTOR:

ESSIG POOLS
FOUNDED IN 1981

11511 INTERCHANGE CIRCLE SOUTH
MIRAMAR, FLORIDA 33025
305-949-0000

REVISIONS:

6/16/26 G.F.C.I. BREAKERS.

CHECKED BY: E.R.

WAYNE MARKHAM BENNETT
LICENSE
No. 57216
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Digitally signed by Wayne Markham Bennett
Date: 2026.06.19 15:50:34 -04'00'

6/16/2026

Wayne Markham Bennett, P.E. #57216
Markham Services, Inc. (ca 33018)
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Jensen Beach, FL 34957
(954) 818-3825
wayne@wmb-pe.com

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