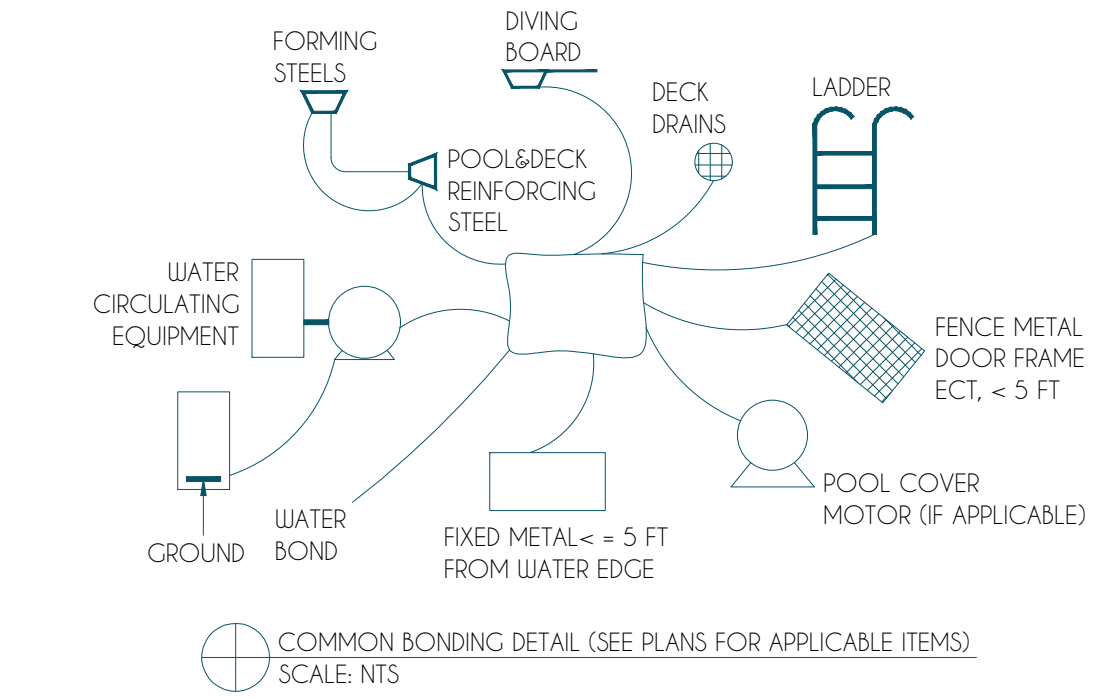


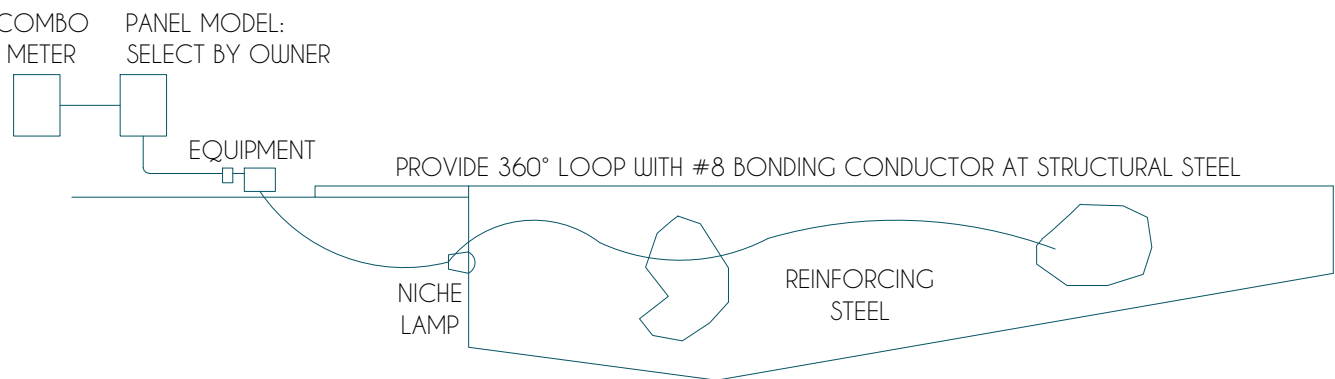
ELECTRICAL NOTES:

- ALL ELECTRICAL WIRING SHALL BE IN ACCORDANCE WITH NEC-NFPA -70-2020-680.
- PROVIDE GROUND WIRE SYSTEMS LOOP WITH #8 COOPER WIRE FOR THE POOL DECK WIRE MESH AND STRUCTURAL STEEL.
- ALL WIRING SHALL BE COPPER THIN.
- ALL SWIMMING POOL EQUIPMENTS SHALL BE THRU GFCI BREAKER (NEC 68022b)
- CONTRACTOR SHALL ESTABLISH LOCATIONS OF UTILITIES AT THE SITE. MINIMUM CLEARANCE DIMENSIONS SHALL BE HELD AND SHALL BE AS REQUIRED BY THE LOCAL REGULATORY AGENCY IN GENERAL. HOLD A DISTANCE OF 10 FEET FROM OVERHEAD ELECTRIC LINES TO OPEN POOL WATER EDGE AND 5 FEET FROM UNDERGROUND ELECTRIC LINES.
- ELECTRICAL EQUIPMENT-METAL PARTS OF ELECTRICAL EQUIPMENT ASSOCIATED WITH THE POOL WATER CIRCULATING SYSTEM INCLUDING PUMP MOTORS AND METAL PARTS OF EQUIPMENT ASSOCIATED WITH THE POOL COVERS, INCLUDING ELECTRIC MOTOR, SHALL BE BONDED EXCEPT: METAL PARTS OF LISTED EQUIPMENTS INCORPORATING AN APPROVED SYSTEM OF DOUBLE INSULATION SHALL NOT BE BONDED.(NEC 68026.5)
- POOL MOTORS REQUIRE OVERLOAD PROTECTION TO COMPLY WITH NEC 430.32.
- BURIAL DEPTH OF ELECTRICAL CONDUIT AND GROUNDING WIRES TO COMPLY WITH NEC 300-5 TABLE. PROTECT THE GROUNDING WIRE WHERE SUBJECT TO DAMAGE.
- ALL JUNCTION BOXES, EQUIPMENT, LIGHTING, ETC SHALL BE UL LISTED.
- METAL WIRING METHODS AND EQUIPMENT. METAL SHEATHED CABLES AND RACEWAYS, METAL PIPING, AND ALL FIXED METAL PARTS THAT ARE WITHIN THE FOLLOWING DISTANCES OF THE POOL, EXCEPT THOSE SEPARATED FROM THE POOL BY A PERMANENT BARRIER, SHALL BE BONDED:
 - WITHIN 5M (15FT) HORIZONTALLY OF THE INSIDE WALLS OF THE POOL.
 - WITHIN 3.1M (12FT) MEASURED VERTICALLY ABOVE THE MAXIMUM WATER LEVEL OF THE POOL, OR ANY OBSERVATION.



BONDING NOTES

EQUIPOTENTIAL BONDING SHALL BE REQUIRED. THE PARTS (CONDUCTIVE POOLS SHELLS, PERIMETER SURFACES, METAL COMPONENTS (SUCH AS LIGHT NICHE OR HANDRAIL), UNDERWATER LIGHTING, METAL FITTINGS, ELECTRICAL EQUIPMENT AND ALL FIXED METAL PARTS) SHALL BE BONDED USING A SINGLE SOLID #8 ALUIG BONDING WIRE, PLACED AROUND THE PERIMETER 18" TO 24" FROM THE POOLS WATER EDGE, PLACED 4" TO 6" BELOW GRADE, FOLLOWING THE CONTOUR OF THE PERIMETER SURFACE, CONNECTED TO THE STRUCTURAL STEEL REINFORCING IN FOUR (4) UNIFORMLY SPACED LOCATIONS BY EXOTHERMIC WELDING OR BY LISTED PRESSURE CONNECTORS OR CLAMPS THAT ARE LABELED AS BEING SUITABLE FOR THIS PURPOSE AND ARE OF STAINLESS STEEL, BRASS, COPPER OR COPPER ALLOY. THIS SINGLE SOLID #8 ALUIG WIRE WILL EXTEND UNDER CONCRETE, PAVERS AND UNPAVED SURFACES, 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 9 IN2 (5800 MM2) OF SURFACE AREA TO THE POOL WATER AT ALL TIMES. IF 9 SI IS NOT ACCOMPLISHED BY THE BONDED ITEMS ABOVE, A POOL BOND PB-2008 (10.1.50), OR EQUAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS IN A RETURN LINE. GFCI PROTECTION SHALL BE PROVIDED FOR POOL PUMP MOTORS. FBC 8TH EDITION RESIDENTIAL R4501.16 ELECTRICAL. ELECTRICAL EQUIPMENT WIRING AND INSTALLATION, INCLUDING THE BONDING AND GROUNDING OF POOL COMPONENTS SHALL COMPLY WITH CHAPTER 27 OF THE FLORIDA BUILDING CODE, BUILDING. OUTLETS SUPPLYING POOL PUMP MOTORS CONNECTED TO SINGLE-PHASE 120-VOLT THROUGH 240-VOLT BRANCH CIRCUITS, WHETHER BY RECEPTACLE OR BY DIRECT CONNECTION, AND OUTLETS SUPPLYING OTHER ELECTRICAL EQUIPMENT AND UNDERWATER LUMINARIES OPERATING AT VOLTAGES GREATER THAN THE LOW VOLTAGE LIMIT, CONNECTED TO SINGLE-PHASE 120 VOLT THROUGH 240 VOLT BRANCH CIRCUITS, RATED 15 OR 20 AMPERES, WHETHER BY RECEPTACLE OR BY DIRECT CONNECTION, SHALL BE PROVIDED WITH GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL. 2020 NATIONAL ELECTRICAL CODE (NEC), NFPA 70 SHALL GOVERN OUTSIDE OF THE PROVISIONS ABOVE. NEC 430.32 CONTINUOUS-DUTY MOTORS SUCH AS POOL PUMP MOTORS SHALL HAVE OVERLOAD PROTECTION.

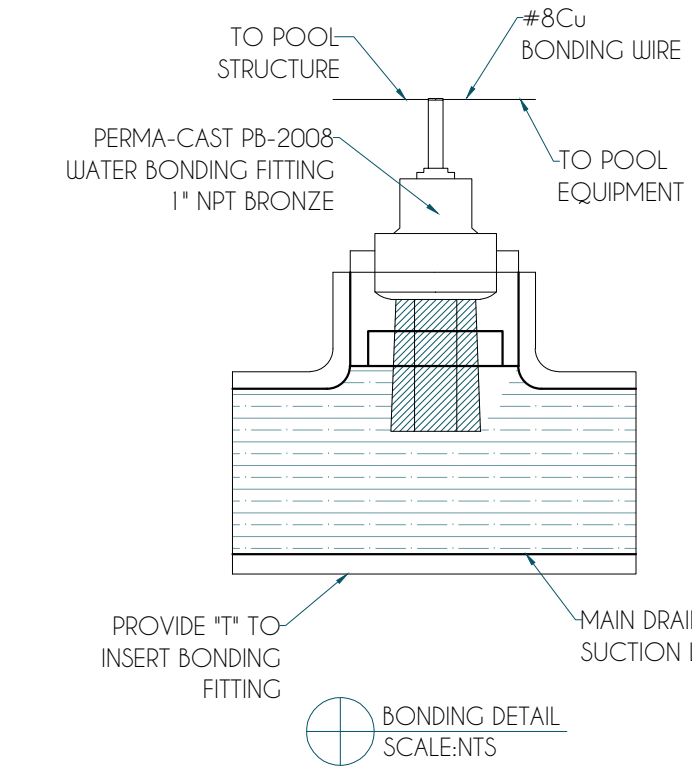


NEC 2020 EDITION CHAPTER 680-25

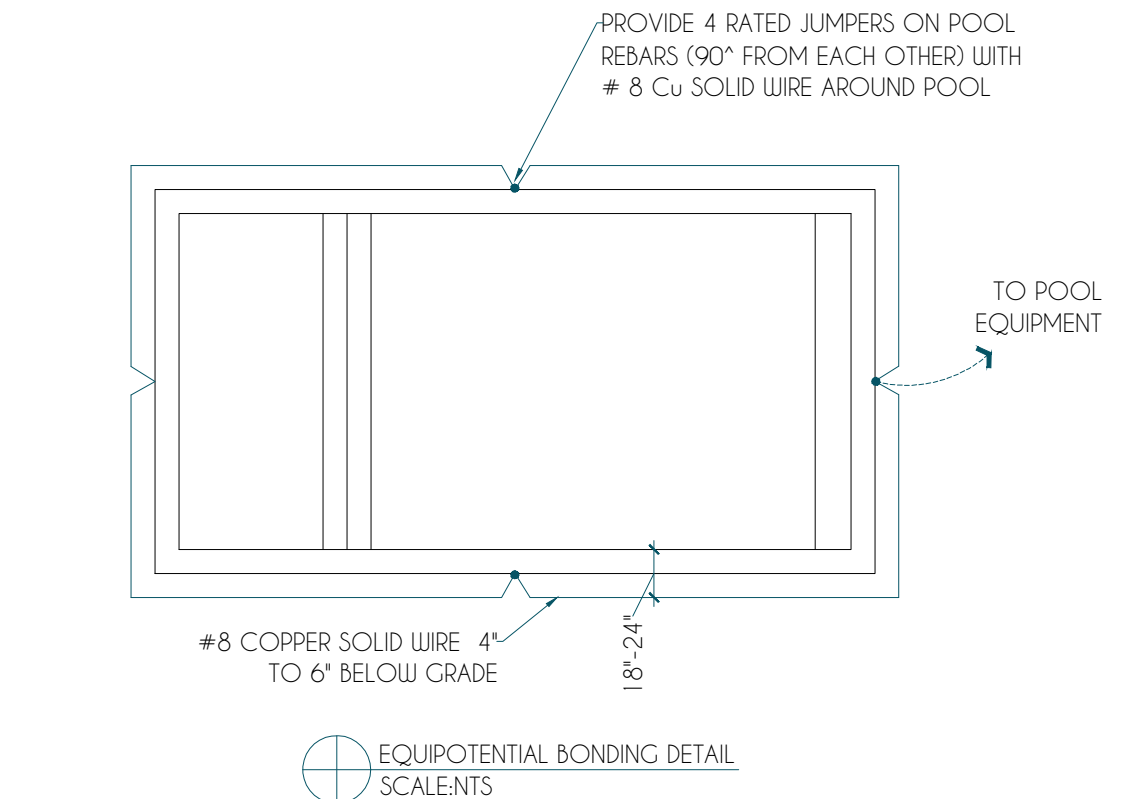
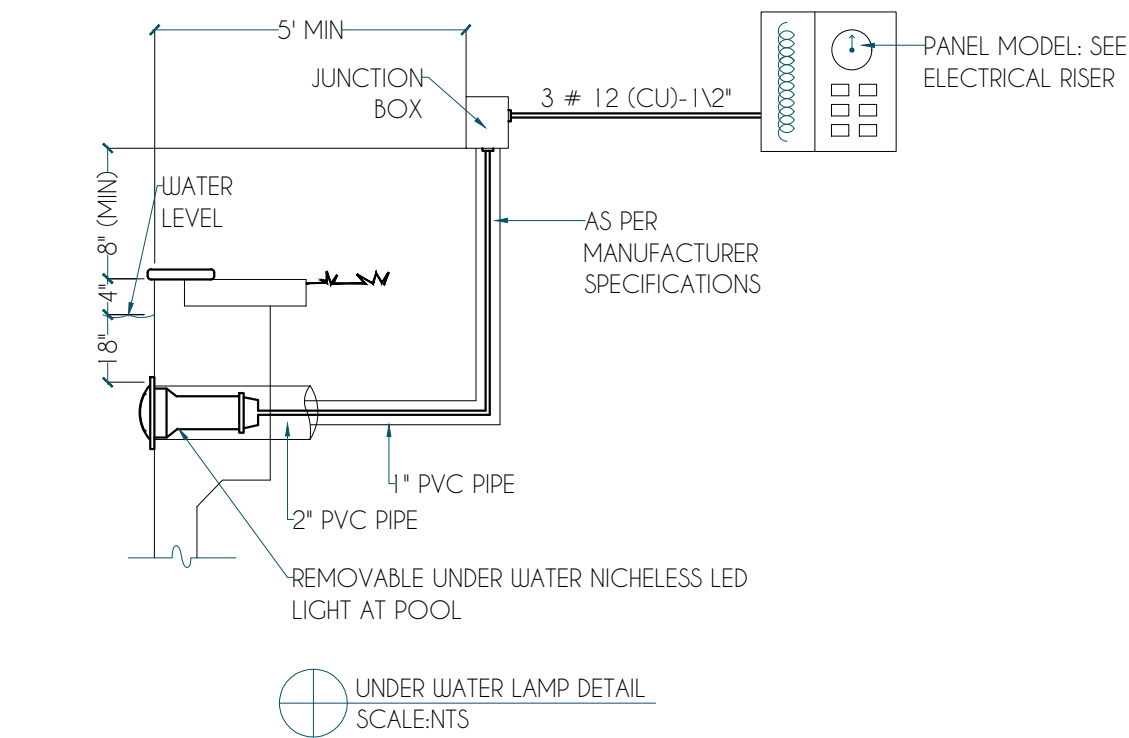
680.25 FEEDERS. THESE PROVISIONS SHALL APPLY TO ANY FEEDER ON THE SUPPLY SIDE OF PANELBOARDS SUPPLYING BRANCH CIRCUITS FOR POOL EQUIPMENT COVERED IN PART II OF THIS ARTICLE AND ON THE LOAD SIDE OF THE SERVICE EQUIPMENT OR THE SOURCE OF A SEPARATELY DERIVED SYSTEM.
(A) WIRING METHODS. FEEDERS SHALL BE INSTALLED IN RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, LIQUIDTIGHT, FLEXIBLE NONMETALLIC CONDUIT, OR RIGID NONMETALLIC CONDUIT. ELECTRICAL METALLIC TUBING SHALL BE PERMITTED WHERE INSTALLED ON OR WITHIN A BUILDING, AND ELECTRICAL NONMETALLIC TUBING SHALL BE PERMITTED WHERE INSTALLED WITHIN A BUILDING.
EXCEPTION: AN EXISTING FEEDER BETWEEN AN EXISTING REMOTE PANEL BOARD AND SERVICE EQUIPMENT SHALL BE PERMITTED TO RUN IN FLEXIBLE METAL CONDUIT OR AN APPROVED CABLE ASSEMBLY THAT INCLUDES AN EQUIPMENT GROUNDING CONDUCTOR WITHIN ITS OUTER SHEATH. THE EQUIPMENT GROUNDING CONDUCTOR SHALL COMPLY WITH 250.24(A)(5).
(B) GROUNDING. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED WITH THE FEEDER CONDUCTORS BETWEEN THE GROUNDING TERMINAL OF THE POOL EQUIPMENT PANEL BOARD AND THE GROUNDING TERMINAL OF THE APPLICABLE SERVICE EQUIPMENT OR SOURCE OF A SEPARATELY DERIVED SYSTEM. FOR OTHER THAN (1) EXISTING FEEDERS COVERED IN 680.25(A), EXCEPTION, OR (2) FEEDERS TO SEPARATE BUILDINGS THAT DO NOT UTILIZE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH 680.25(B)(2), THIS EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSULATED.

WEATHERPROOF GFCI OUTLET LOCATED NOT CLOSER THAN 6 FEET NOR MORE THAN 20 FEET FROM WATER'S EDGE.

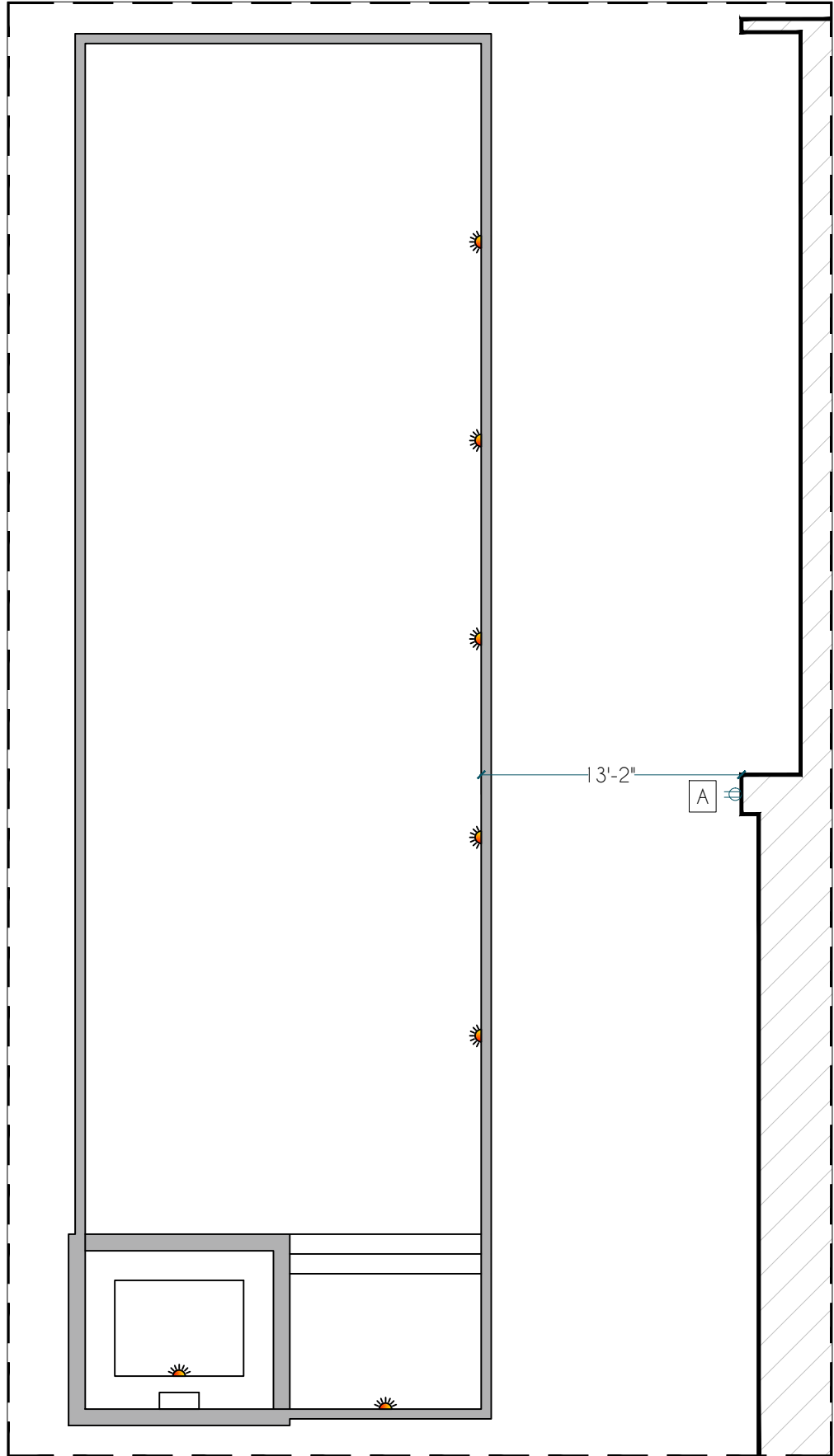
CIRCUIT BALANCE NOTE:
IT IS THE ELECTRICAL CONTRACTOR RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM.



AN APPROVED CORROSION-RESISTANT CONDUCTIVE ELEMENT THAT EXPOSES NOT LESS THAN 9 SQ.IN PART OF THE POOL BONDING SYSTEM MUST BE IN DIRECT CONTACT WITH THE POOL WATER AT ALL TIMES. IN THE ABSENCE OF RAILS, LADDERS OR NICHES, A WATER BONDING SHALL MEET THE REQUIREMENT. NEC 680.26 (C)



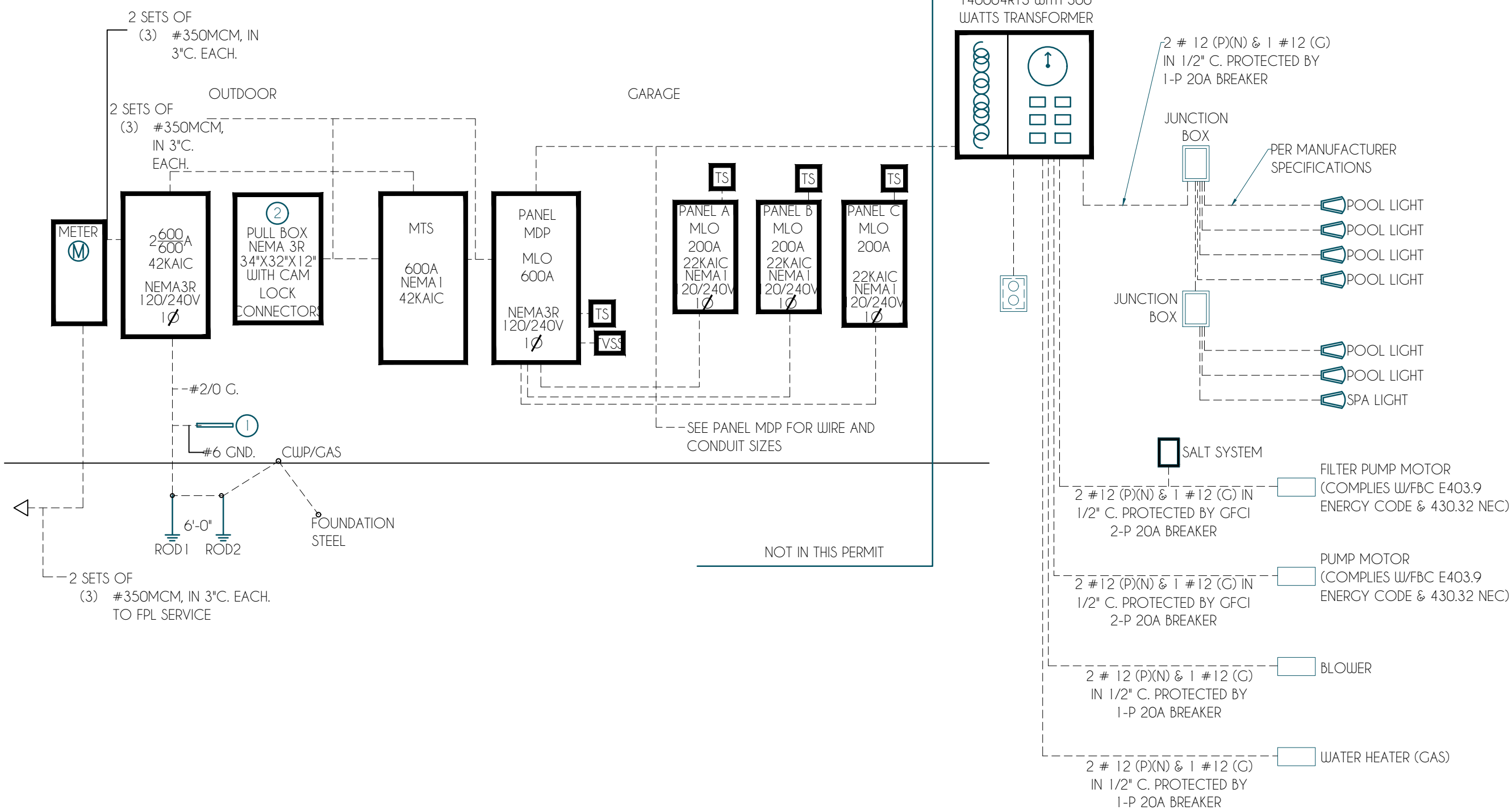
680.26 NEC 2020 EDITION:
ALTERNATE: EQUAL POTENTIAL BONDING GRID OF ONE #8 SOLID COPPER PLACED 18" TO 24" FROM THE INSIDE EDGE OF POOL ENCOMPASSING 360 DEGREES WITH 4 EQUAL BONDING POINTS TO THE STEEL. THE EQUAL POTENTIAL BONDING NEEDS TO BE 4" TO 6" BELOW GRADE AND SECURED IN PLACE.



PROPOSED GFCI & LIGHTS LOCATION
SCALE: 1/8"=1'-0"

ELECTRICAL SERVICE CALCULATIONS	
TOTAL HOUSE AREA =	5,860 SF
3W/SF.....	17580 W
SMALL APP (2).....	3000 W
RANGE.....	8500 W
WATER HEATER.....	4500 W
MICROWAVE.....	1000 W
OVEN.....	1000 W
DRYER.....	5000 W
REFRIGERATOR.....	1000 W
WASHER.....	1500 W
POOL PANEL @125%.....	6025 W
TOTAL CONNECTED LOAD =	49105 W
POOL HEATER @100%.....	1000 W
FIRST 10KW @100%.....	10000 W
REMAINDER @40%.....	15642 W
A/C OR HEATING AT 100%.....	6000 W
SERVICE AMPS =	136.01 AMPS
TOTAL DERATED/240VOLTS	136.01 AMPS

POOL LOAD CALCULATIONS	
SERVICE	DEMAND UNIT
POOL PUMP	2,520 W
POOL PUMP	2,520 W
POOL LIGHTS	300 W
GFCI INTERRUPTER	1,000 W
BLOWER	1,000 W
WATER HEATER (GAS)	1,000 W
TOTAL	8,340 W
TOTAL LOAD @ 125% / 240 V	43.44 AMP



POOL SPECIFICATION TABLE		
SIZE	20 X 69	FT
SHALLOW END	3.00	FT
BOTTOM OF POOL	5.00	FT
PERIMETER	178	LF
AREA	1380	SQFT
CAPACITY	41,290	GLS
PUMP*	2.7	HP
FILTER	300	SQ.FT
TILE	6" (BY OWNER)	
TYPE OF PATIO	SLIP RESISTANT	
BLOWER	N/A	HP
WATER HEATER (GAS)	400,000	BTU
TURNOVER RATE	5.93	HRS

SPA SPECIFICATION TABLE		
SIZE	8 X 9.5	FT
DEPTH	3.00	FT
PERIMETER	35.00	LF
AREA	76	SQFT
CAPACITY	1706	GLS
PUMP*	1.50	HP
FILTER	SAME AS POOL	SQ.FT
TILE	6" (BY OWNER)	
TYPE OF PATIO	SLIP RESISTANT	
BLOWER	2	HP
WATER HEATER (GAS)	400000	BTU
TURNOVER RATE	0.52	HRS

*RESIDENTIAL POOL FILTER PUMP MOTORS WITH A CAPACITY OF 1 HP OR GREATER SHALL HAVE THE CAPABILITY OF OPERATING AT TWO OR MORE SPEEDS PER FBC RE R403.12

REVISION: NO. DESCRIPTION

ENGINEER VICTOR RAMOS P.E. LIC No: 87496
7700 N KENDALL DR, SUITE 706, MIAMI FL 33156
(786) 830-3551

Victor Ramos
Date: 2025.05.19
Time: 14:02:55 -04'00'

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY VICTOR RAMOS, P.E. ON THE DATE AND/OR TIME STAMP SHOWN USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED BY A 3RD PARTY CERTIFICATE AUTHORITY ON ANY ELECTRONIC COPY.

DESIGNER:



PROJECT:

NEW CONCRETE SWIMMING POOL & SPA

ADDRESS:

6200 SW 123RD TERRACE, MIAMI, FL 33156

PROJECT DATE: 5.9.2025
DRAWING BY: MR
CHECKED: FD

SHEET TITLE:

ELECTRICAL PLAN

SHEET No:

E.1