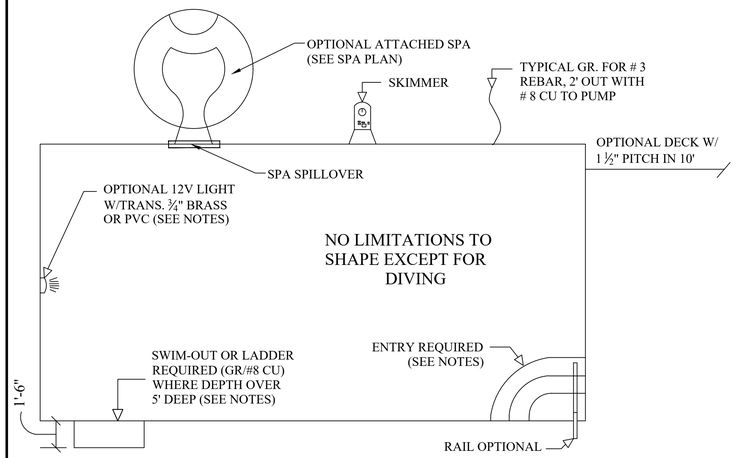
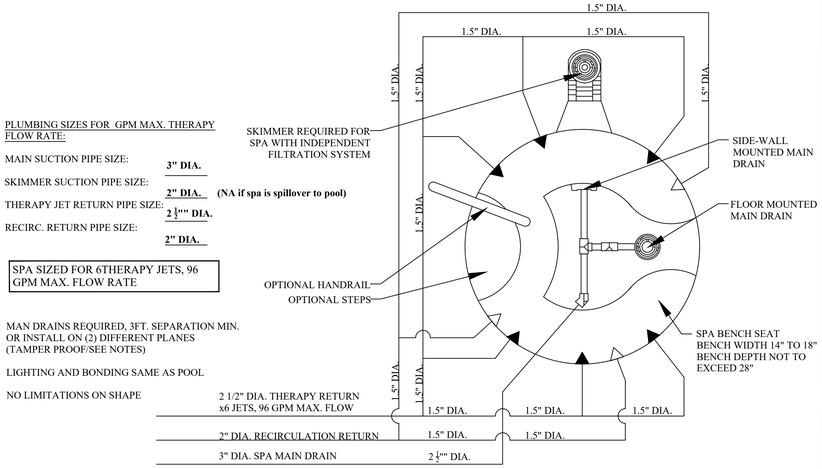


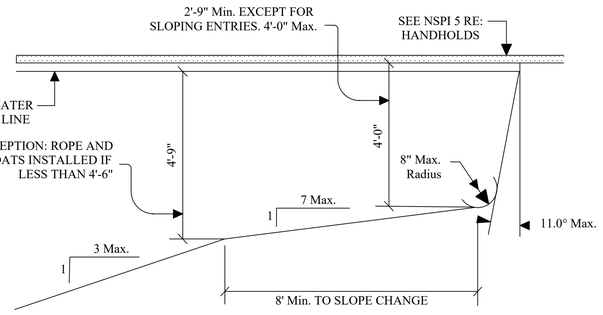
Pool Plan with Attached Spa - Sample Layout

(Refer to Attached Design Plan for Specific Dimensions)



Spa Plumbing Plan - Sample Layout

(Refer to Attached Design Plan for Specific Dimensions)

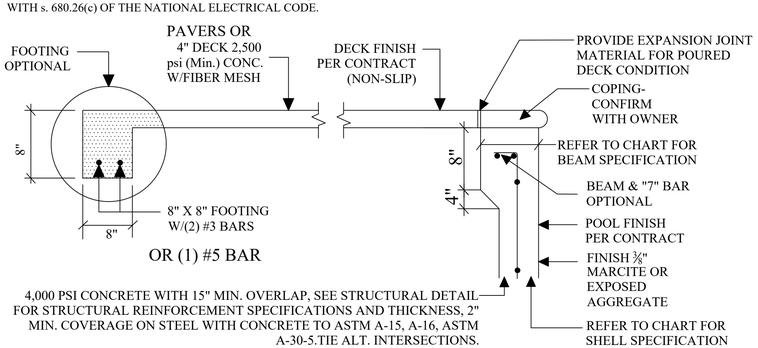


Pool Section Detail

Scale: Not shown to scale

APPROVED

SB836, 6-20-07
FOR BONDING AND GROUNDING SYSTEMS FOR SWIMMING POOLS, THE USE OF AN UNDERGROUND BONDING CONDUCTOR MADE OF #8 AWG. BARE SOLID COPPER WIRE BURIED TO A MINIMUM DEPTH OF 4 INCHES TO 6 INCHES BELOW SUBGRADE, AND 18 TO 24 INCHES FROM INSIDE WALL OF A SWIMMING POOL OR SPA, IS DEEMED A PERMISSIBLE ALTERNATIVE OR EQUIVALENT TO COMPLIANCE WITH s. 680.26(e) OF THE NATIONAL ELECTRICAL CODE.

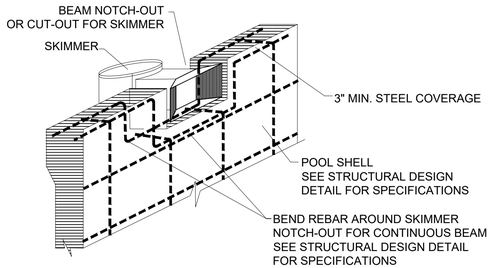


STRUCTURAL SUBJECT TO SUITABLE SOIL CONDITIONS

Pool/Spa Deck, Beam, Wall, & Floor

Scale: Not shown to scale

COMPLIES WITH 2023 FLORIDA BUILDING CODE, 8TH EDITION



Steel at Skimmer Beam Detail

Scale: Not shown to scale

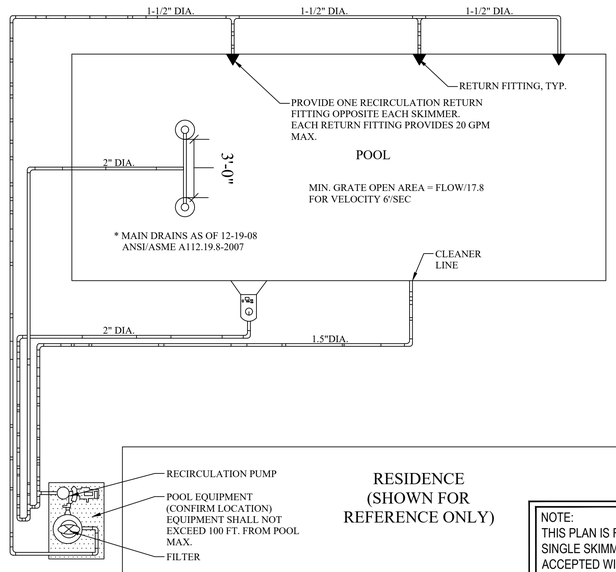
Design Parameters for System Flow Rate Calculation for Single Skimmer Pool:
Flow Rate Required For Single Skimmer: 35gpm minimum, 62 gpm maximum
Sample Pool Design based on Maximum Flow Rate for Single Skimmer Pool:
Pool Volume Calculation: 120 sq. ft x 3' ave depth x 7.481 gal/cf = 2,693 gallons
Turnover Time in Hours: 0.7 hours x 60 min/hr = 43 minutes
Flow Rate: 2,693 gallons / 43 minutes = 62 GPM (min.)

PIPE SIZING CHART (MAXIMUM)
FLOW BASED ON HAZEN-WILLIAMS FORMULA FOR STANDARD SIZE SCHEDULE 40 PVC PIPE

PIPE	SUCTION 6 FPS MAX. VELOCITY BRANCH LINE	PRESSURE 10 FPS MAX. VELOCITY RETURN LINE
1 ½"	37 GPM	62 GPM
2"	62	103
2 ½	88	146
3"	138	227
4"	234	392

PLUMBING SIZE FOR SINGLE SKIMMER POOL (50 GPM MAX.)
POOL MAIN SUCTION PIPE SIZE: 2" DIA.
POOL SKIMMER SUCTION PIPE SIZE: 2" DIA.
CLEANER/VAC PIPE SIZE: 1 ½" DIA.
RETURN PIPE SIZE: 1 ½" DIA.

THIS DOCUMENT IS FOR SINGLE SKIMMER POOL APPLICATIONS ONLY.



Single Skimmer Pool Plumbing Plan - Sample Layout

(Refer to Attached Design Plan for Specific Dimensions)

NOTE:
THIS PLAN IS FOR GENERAL CONSTRUCTION OF A SINGLE SKIMMER POOL. THIS PLAN IS NOT TO BE ACCEPTED WITHOUT APPROVAL FROM THE ENGINEER OF RECORD OF THE ATTACHED POOL PLANS PROVIDED BY THE BUILDER.

SHELL SPECIFICATIONS

POOL DEPTH	MINIMUM STRENGTH	WALLS	WALL THICKNESS	FLOORS	FLOOR THICKNESS	MIN. BEAM THICKNESS
3' - 5'	4,000 PSI	#3 REBAR 10" O.C.E.W.	6" MIN.	#3 REBAR 10" O.C.E.W.	6" MIN.	8" MIN.
5'-6'	4,000 PSI	#4 REBAR 6" O.C.E.W.	8" MIN.	#4 REBAR 6" O.C.E.W.	8" MIN.	10" MIN.
6'-7'	4,000 PSI	#5 REBAR 6" O.C.E.W.	10" MIN.	#5 REBAR 6" O.C.E.W.	8" MIN.	12" MIN.

NOTES:

THE SPECIFICATIONS PROVIDED ON THIS PLAN ARE FOR SINGLE SKIMMER POOLS. THE ABOVE SHELL SPECIFICATIONS ARE NOT APPLICABLE FOR POOLS EXCEEDING 800 SQ. FT. SPECIFIC DESIGN PLANS OR DETAILS WILL NEED TO BE OBTAINED.

THE STRUCTURAL SPECIFICATIONS PROVIDED SHALL NOT BE SUBSTITUTED DURING BIDDING OR CONSTRUCTION.

THE HOMEOWNER IS RESPONSABLE TO PROVIDE ANY SITE INFORMATION NECESSARY TO DESIGN THE POOL (SUCH AS GEOTECNICAL REPORTS, SURVEYS, ARCHITECTURAL PLANS (ETC.)).

ANY EXISTING BUILDING FOUNDATIONS OR STRUCTURES THAT MAY BE EFFECTED BY THE POOL CONSTRUCTION NEED TO BE PROTECTED TO AVOID DAMAGE OR UNDERMINING. ALL SUBSOILS NEED NEED TO BE STABILIZED, COMPACTED AND DEWATERED AS NECESSARY PRIOR TO CONSTRUCTION.

FLORIDA BUILDING CODE R-4501

THE POOL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL DETAIL DESIGN REQUIREMENTS FOR EACH INDIVIDUAL POOL IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, AND ALL CONSTRUCTION SHALL MEET ALL APPLICABLE CODES INCLUDING PLUMBING, ELECTRICAL AND GAS. PIPING SHALL BE SCH. 40 PVC, NSFpw, MAX. PRESSURE VELOCITY 10 FPS, SUCTION 6 FPS.
THE POOL PLAN SHALL SHOW THE DESIGN PLUMBING AS PER THE SAMPLE WITH THE INFORMATION REQUIRED SHOWN. MAIN DRAIN PLUMBING SHALL BE TWO DRAINS SEPARATED BY 3' WITH APPROVED ANSI/ASME A112.19.8.2009 COVERS. AS AN ALTERNATE THE APPROVED DRAINS MAY BE PLACED ON DIFFERENT PLANES. THE TWO DRAINS SHALL HAVE A COMMON SUCTION LINE. SUCTION GRATES MAY BE USED IF APPROVED AT A MAXIMUM OF 1 ½ FPS AND THE SUCTION PIPING IS RECESSED FROM THE GRATE THE DISTANCE EQUAL TO THE SUCTION PIPE SIZE. SKIMMERS DO NOT REQUIRE PROTECTION AND
MUST BE DESIGNED FOR A MINIMUM 25 gpm.
THE FOLLOWING SHALL BE LABELED WITH LABEL MARKER TAPE AT THE FILTER LOCATION: PIPES, VALVES, PUMP(S) OFF SWITCH.

ELECTRICAL REQUIREMENTS

-WIRING AND BONDING AND ALL ELECTRICAL TO COMPLY WITH CHAPTER 27, 2023 FLORIDA BUILDING CODE 8TH EDITION-RESIDENTIAL AND NEC 2020.
-NO OUTLET OR OVERHEAD POWER WITHIN 10' IF WITHIN 15' PROTECT BY GFI, TRANSFORMER MIN. 10' FROM POOL, 8" ABOVE WATER, J BOX 4' FROM POOL, BRASS TO J BOX OR TRANSFORMER WHICH EVER IS FIRST EXCEPT WHERE PVC IS APPROVED.

SPECIAL SPA REQUIREMENTS

-MAXIMUM WATER DEPTH 4', MAXIMUM SEAT DEPTH 28", MAX.
-FLOOR SLOPE 1:12
-STEPS: MIN. TREAD 10" X 12", 7" MIN. RISER, 12" MAX. RISER EXCEPT THE BOTTOM STEP MAY BE 14" IF IT IS THE SEAT. INTERMEDIATE TREADS AND RISERS TO BE UNIFORM. IF THE SPA IS OPERATED INTERMITTENTLY IT SHALL HAVE A ONE HOUR TURNOVER, IF CONTINUOUS A SIX HOUR TURNOVER.
-MAXIMUM TEMPERATURE 104 DEGREES.
-MEET ANSI/NSPI ARTICLE XVII, SAFETY INSTRUCTION/SAFETY SIGNS.
-PRESSURE TEST PIPING AT 35 PSI FOR 15 MINUTES OR MEET LOCAL CODE IF GREATER.

GENERAL DESIGN REQUIREMENTS

-DESIGN, CONSTRUCTION AND WORKMANSHIP SHALL BE IN CONFORMITY WITH THE REQUIREMENTS OF APSP/ICC 3, APSP/ICC 4, APSP/ICC 5, AND APSP/ICC 6 AND APSP/ICC 7 BASED ON THE POOL TYPE.
-SEE NSPI FOR DIVING WATER ENVELOPES.
-SLIDES SHALL MEET THE MANUFACTURE'S INSTALLATION REQUIREMENTS.
-ALL POOLS WHETHER PUBLIC OR PRIVATE SHALL BE PROVIDED WITH A LADDER OR STEPS IN THE SHALLOW END WHERE THE WATER DEPTH EXCEEDS 24 INCHES (610 MM). IN PRIVATE POOLS WHERE WATER DEPTH EXCEEDS 5 FEET (1524 MM) THERE SHALL BE LADDERS, STAIRS OR UNDERWATER BENCHES/ SWIM-OUTS IN THE DEEP END. WHERE MANUFACTURED DIVING EQUIPMENT IS TO BE USED, BENCHES OR SWIM-OUTS SHALL BE RECESSED OR LOCATED IN A CORNER.
-CIRCULATION SYSTEMS, COMPONENTS AND EQUIPMENT SHALL COMPLY WITH NSF 50.
-THE MAXIMUM TURNOVER RATE IS 12 HOURS.
-FILTERS SHALL HAVE AN AIR RELEASE AND PRESSURE GAGE.
-PUMPS 3 HP AND LESS SHALL MEET ANSI/UL1081 CORROSION RESISTANT WITH STRAINER AND MEET THE REQUIRED FLOW.
-SURFACE SKIMMERS SHALL MEET NSF 50 AND THERE SHALL BE ONE FOR EVERY 800 SQUARE FEET OF SURFACE AREA.
-APPROVED MANUFACUTRED INLET FITTNGS FOR THE RETURN OF RECIRCULATED POOL WATER SHALL BE PROVIDED ON THE BASIS OF AT LEAST ONE PER 300 SQUARE FEET (28 m2) OF SURFACE AREA. SUCH INLET FITTINGS SHALL BE DESIGNED AND CONSTRUCTED TO INSURE AN ADEQUATE SEAL TO THE POOL STRUCTURE AND SHALL INCORPORATE A CONVENIENT MEANS OF SEALING FOR PRESSURE TESTING OF THE POOL CIRCULATION PIPING. WHEN MORE THAN ONE INLET IS REQUIRED, THE SHORTEST DISTANCE BETWEEN ANY TWO REQUIRED INLETS SHALL BE AT LEAST 10 FEET (3048 MM).
-HEATER SHALL MEET ANSI-Z21.56 OR UL 1261 OR UL 559.
-DISINFECTANT EQUIPMENT SHALL COMPLY WITH NSF 50.
-PRESSURE TEST PIPING AT 35 PSI FOR 15 MINUTES OR MEET LOCAL CODE IF GREATER.
-RESIDENTIAL SWIMMING BARRIER REQUIREMENTS TO MEET SECTONS 4501.17
-WASTE DISPOSAL TO COMPLY WITH SECTION 454.2.10 R403.10 (MANDATORY)
POOLS & PERMANENT SPA ENERGY CONSUMPTION
- THE ENERGY CONSUMPTION OF POOLS AND PERMANENT SPAS SHALL BE IN ACCORDANCE WITH SECTIONS R403.10. THROUGH R403.10.5.
IT HAS BEEN CERTIFIED THAT THESE DESIGN REQUIREMENTS ARE IN COMPLIANCE WITH THE 2023 FLORIDA BUILDING CODE 8TH EDITION; R4501, ANSI/APSP/ICC 3, ANSI/APSP/ICC 4, ANSI/APSP/ICC 5, AND ANSI/APSP/ICC 6 AND ANSI/APSP/ICC 7, ANSI/APSP/ICC 14, ANSI/APSP/ICC 15.

PIPE SIZING AND TDH REQUIREMENTS

REFER TO ATTACHED SIMPLIFIED TOTAL DYNAMIC HEAD WORKSHEET (STDH) FOR MAXIMUM SYSTEM FLOW RATE CALCULATIONS BASED ON ANSI~/ASP-7 SPECIFICATIONS.

PLEASE NOTE:
THE PARAMETERS SET FOR THIS POOL ARE BASED ON THE MANUFACTURES SPECIFICATIONS FOR A SINGLE SKIMMER POOL WITH A 2" DIAMETER PORT. MAXIMUM SYSTEM FLOW RATE (MSFR) FOR A SINGLE SKIMMER POOL IS 62 GPM.

THE MAXIMUM FLOW OF THE VARIABLE SPEED PUMP CAN NOT BE DETERMINED WITHOUT CALCULATING THE TOTAL DYNAMIC HEAD (TDH) FOR THE SYSTEM WHICH IS BASED ON THE POOL DIMENSIONS PROVIDED BY THE CLIENT.

THE TOTAL FLOW RATE OF THE SYSTEM IS CALCULATED BY THE POOL VOLUME DIVIDED BY THE TURNOVER RATE OR THE MAXIMUM FLOW OF THE DESIGN FITTINGS .

ONCE THE MSFR IS DETERMINED, PIPES CAN BE SIZED BASED ON THE MAXIMUM VELOCITY REQUIREMENTS. FRICTION LOSS IN THE PIPES, FILTER AND HEATER ARE CALCULATED TO DETERMINE THE TDH.

THE TDH WILL BE TRANSLATED ON THE VARIABLE SPEED PUMP CURVE TO DETERMINE THE MAXIMUM PUMP FLOW AT THE MSFR. IF THE MAXIMUM PUMP FLOW EXCEEDS THE MSFR. THE PIPES WILL BE UPSIZED TO ACCOMMODATE THE PUMP FLOW. (REFER TO ATTACHED STDH WORKSHEET TO CONFIRM PIPE SIZES).

THE FLOW RATE OF THE VARIABLE SPEED PUMP WILL BE PROGRAMMED NOT TO EXCEED THE MSFR FOR A SINGLE SKIMMER POOL OR THE FLOW RATE BASED ON THE TDH CALCULATIONS.

PIPE SIZES ARE BASED ON THE MSFR CALCULATED BY THE ENGINEER OF RECORD (EOR) AND IN COMPLIANCE WITH ALL CODE REQUIREMENTS. NO OTHER DOCUMENTS MAY BE USED TO OBTAIN A PERMIT THAT ARE NOT APPROVED BY THE EOR.

G.B. COLLINS ENGINEERING P.A.
CERTIFICATE OF AUTHORIZATION 27934
AQUATIC ENGINEERING CONSULTANTS
32707 US HIGHWAY 19 NORTH
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For: NORTH FLORIDA POOLS

CASTAGNA RESIDENCE
1023 SW ARBOR LANE
LAKE CITY, FLORIDA 32024
RESIDENTIAL POOL AND SPA - DESIGN PLAN

SAMUEL A. LIBERATORE LICENSE No. 55740 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Sam Liberatore PE using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Samuel A Liberatore
2025.03.05 12:37:19 -05'00'

SAMUEL A. LIBERATORE, P.E. #55740

DATE	SCALE
03-04-2025	As Shown