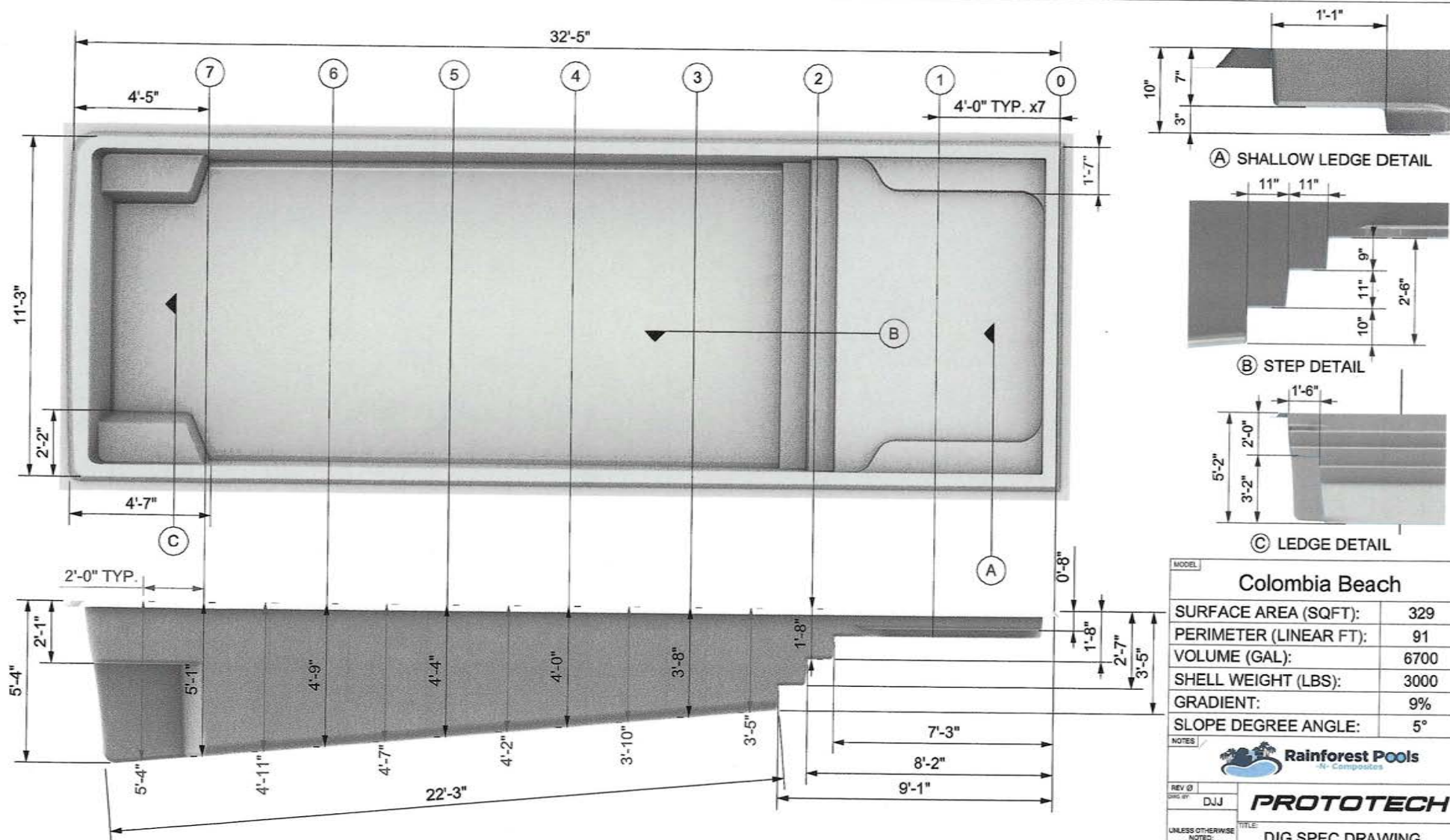


Samuel A. Liberatore P.E. #55740
GB Collins Engineering, P.A.
32707 US Hwy 19 N
Palm Harbor, FL 34684
727-442-8443



This item has been electronically signed and sealed by Sam Liberman, PE using iSign Documents software. Printed copies of this document are a true and correct representation of the original and the signature must be verified on any electronic copies.

Samuel A
Liberatore
2026.05.1
2 10:17:32
-04'00'



MODEL		Colombia Beach	
SURFACE AREA (SQFT):		329	
PERIMETER (LINEAR FT):		91	
VOLUME (GAL):		6700	
SHELL WEIGHT (LBS):		3000	
GRADIENT:		9%	
SLOPE DEGREE ANGLE:		5°	
NOTES			
 Rainforest Pools <i>- Composites</i>			
REV @		BY	
D.JJ			
UNLESS OTHERWISE NOTED: ALL DIMENSIONS ARE IN INCHES		 PROTOTECH TITLE: DIG SPEC DRAWING	
DATE: 03/15/2025		PART NO.	
SCALE: N/A		DWG. NO.	
		SIZE: B	
		SHEET: 1 OF 1	
THIS DOCUMENT CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION THAT CANNOT BE REPRODUCED OR DIVULGED, IN WHOLE OR IN PART, WITHOUT WRITTEN AUTHORIZATION.			

GENERAL DESIGN REQUIREMENTS

DESIGN DIMENSIONS SHALL COMPLY WITH SPECIFICATION IN ANSI/NSPI 5, ANSI/NSPI 6, AND ANSI/APSP 7,ANSI/APSP/ICC 14, ANSI/APSP/ICC15. RESIDENTIAL INGROUND SWIMMING POOLS BASED ON THE POOL TYPE AND NSPI 3 PERMANENTLY INSTALLED RESIDENTIAL SPA.

SEE ANSI/NSPI 5 ANSI/NSPI 6, AND ANSI/APSP 7FOR DIVING WATER ENVELOPES REQUIREMENTS.

SLIDES SHALL MEET THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

ENTRY/EXIT: SHALL COMPLY WITH ANSI/NSPI 5 AND NSPI 3.

LADDERS, UNDERWATER SEATS, AND SWIMMOUTS

(MAX.20" BELOW WATER)

CIRCULATION SYSTEM, COMPONENTS AND EQUIPMENT SHALL COMPLY WITH NSF 50.

THE MAXIMUM TURNOVER RATE IS 12 HOURS.

FILTERS SHALL HAVE AN AIR RELIEF 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 SF OF SURFACE AREA.

RETURN INLETS SHALL BE A MINIMUM OF ONE FOR EVERY 600 SF.

HEATERS SHALL MEET ANSI-Z21.56 OR UL1261 OR UL559

DISINFECTANT EQUIPMENT SHALL COMPLY WITH NSF 50.

PRESSURE TEST PIPING AT 35 PSI FOR 15 MINUTES OR

MEET LOCAL CODE IF GREATER.

ADDITIONAL NOTES

1. POOL INSTALLATION SHALL BE BY A QUALIFIED AND LICENSED (APPROVED BY LOCAL BUILDING DEPARTMENT) POOL CONTRACTOR, THE INSTALLATION SHALL CONFORM TO ALL LOCAL BUILDING CODES, IE, PERMITS SPECIFICATIONS, CODES, RULES, RULES, INSPECTION, WORKMANSHIP, ETC.

2. TYPICAL PROPERTIES OF A REINFORCES FIBERGLASS POOL:

GEL COAT/ISO-NPG MIL APPLICATION	25
GLASS CONTENT BY WEIGHT	35%
TENSILE STRENGTH, PSI	16733
TENSILE ELONGATION	1-2%
FLEXURAL STRENGTH, PSI	43123
FLEXURAL MODULUS, PSI (X10 ^ 6)	1.37
COMPRESSIVE STRENGTH, PSI	25300
TYPICAL THICKNESS, INCHES	$\frac{1}{4}$

3. POOL SHELL SHALL BEAR ON UNDISTURBED SOIL, FREE OF PEAT, MUCK, OR OTHER DELETERIOUS MATERIAL OF ANY SIGNIFICANT AMOUNT.

4. BACKFILL MATERIAL MUST NOT CONTAIN ROCKS OR OTHER MATERIALS THAT COULD DAMAGE POOL WALLS.

5. POOL TURNOVER SHALL BE 12 HOURS MAXIMUM WITH HI-RATE RAPID SAND FILTER (MIN. 18" DIAMETER OR 1.75 S.F.) AND PROPERLY GROUNDED. APPROVED PUMP (MIN. $\frac{3}{4}$ HP W/29 GPM @ 60 TDH) HAYWARD OR EQUAL.

6. STEPS OR A LADDER SHALL BE PROVIDED AT THE SHALLOW END OF THE POOL.

7. HANDRAILS REQUIRED ON SOME POOLS.

8. INSTALL LOW VOLTAGE LIGHT AS PER NEC 680.

9. DIVING PLATFORMS OR DIVING BOARDS ARE NOT TO BE INSTALLED ON THESE POOLS EXCEPT FOR "THE BIG BLUE KEY" POOL PLAN. THIS POOL MEETS THE ANSI/NSPI-5, 2003. DIVING POOL REQUIREMENTS FOR TYPE 1 & TYPE 2 POOLS.

10. DURING A HURRICANE WARNING OR ALERT, THIS POOL SHALL BE FILLED WITH WATER.

11. THESE POOL PLANS MEET OR EXCEED THE ANSI/NSPI 5 2003 RESIDENTIAL INGROUND SWIMMING POOL AND ANSI/NSPI 3 1999 PERMANENTLY INSTALLED RESIDENTIAL SPA STANDARDS.

THE FOLLOWING CODES ARE TO BE MET WHERE REQUIRED:

FLORIDA BUILDING CODE, EIGHTH EDITION - BUILDING 2023

FLORIDA BUILDING CODE, EIGHTH EDITION - MECHANICAL 2023

FLORIDA BUILDING CODE, EIGHTH EDITION - PLUMBING 2023

FLORIDA BUILDING CODE, EIGHTH EDITION - FUEL 2022

2020 NATIONAL ELECTRICAL CODE

98-76 BUILDING CONSTRUCTION ADMINISTRATIVE CODE W/2006 REVISIONS

ALL APPLICABLE CITY/COUNTY CODES AND ORDINANCES.

FLORIDA BUILDING CODE R4501

THE POOL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL DETAIL DESIGN REQUIREMENTS FOR EACH INDIVIDUAL POOL IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 8TH EDITION 2023, 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. 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. NO MAIN DRAIN POOLS MUST HAVE 2 SKIMMERS AND INLETS LOW ON THE WALL.

SB2836, 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(c) OF THE NATIONAL ELECTRICAL CODE.

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.

ELECTRICAL REQUIREMENTS:

- WIRING AND BONDING AND ALL ELECTRICAL TO COMPLY WITH CHAPTER 42, FLORIDA BUILDING CODE, 8TH EDITION, FBC 2023 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.

PIPE SIZING CHART (MAXIMUN)

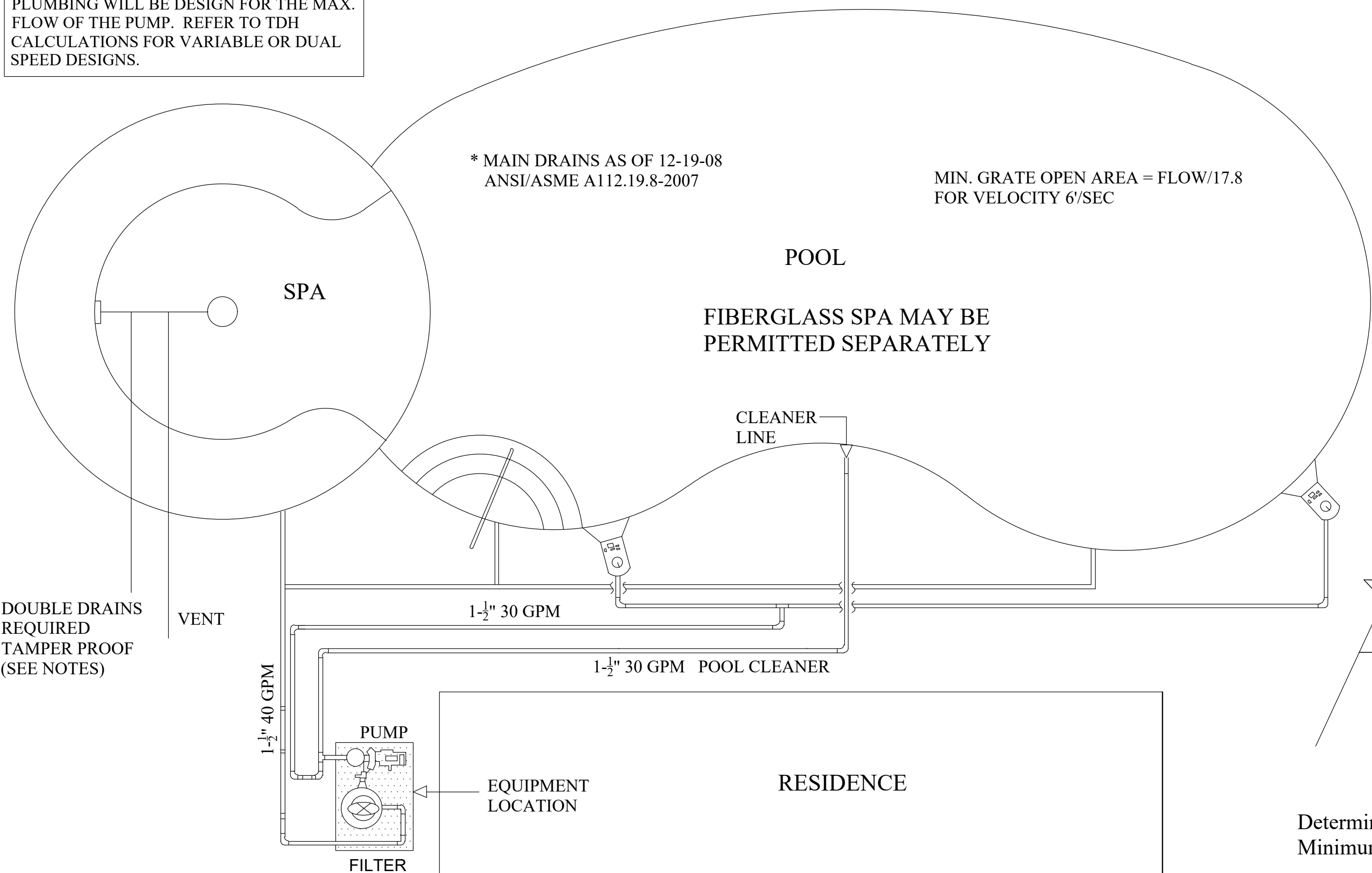
PIPE	SUCTION	PRESSURE
1 ½"	35 GPM	65 GPM
2"	60	105
2 ½"	90	147
3"	135	230
4"	235	396

SKIMMER SUCTION PIPE SIZE 2"

CLEANER/VAC PIPE SIZE 1-1/2"

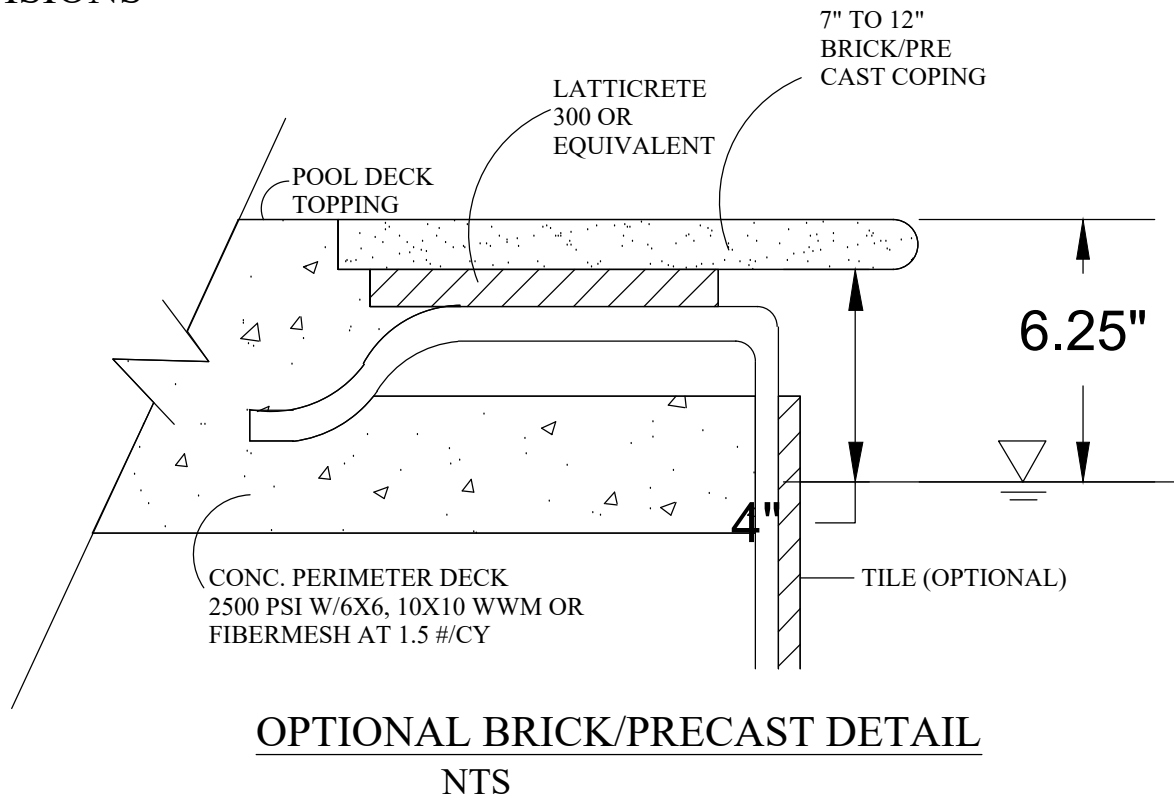
RETURN PIPE SIZE 1-1/2"

VARIABLE OR DUAL SPEED PUMPS ARE REQUIRED IF THE PUMP EXCEEDS 1 HP. PLUMBING WILL BE DESIGN FOR THE MAX. FLOW OF THE PUMP. REFER TO TDH CALCULATIONS FOR VARIABLE OR DUAL SPEED DESIGNS.

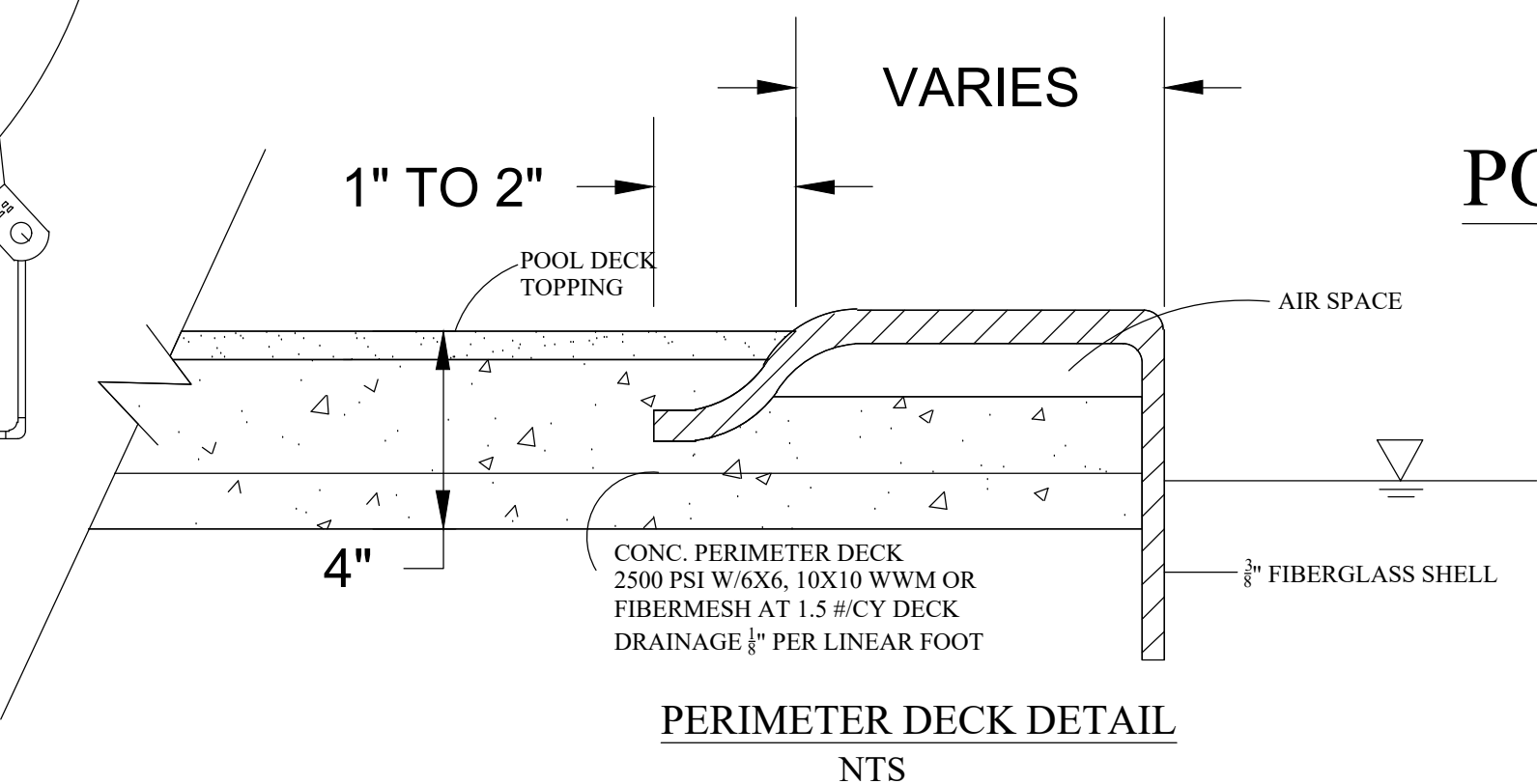


GENERAL POOL PLAN

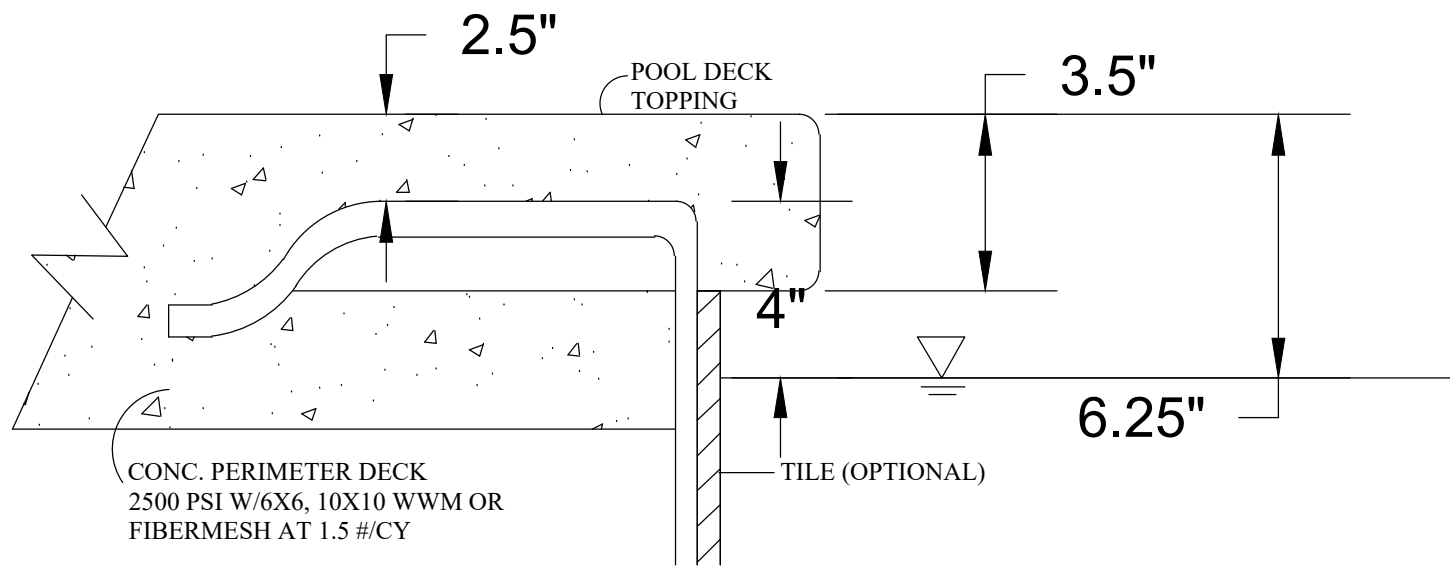
NTS



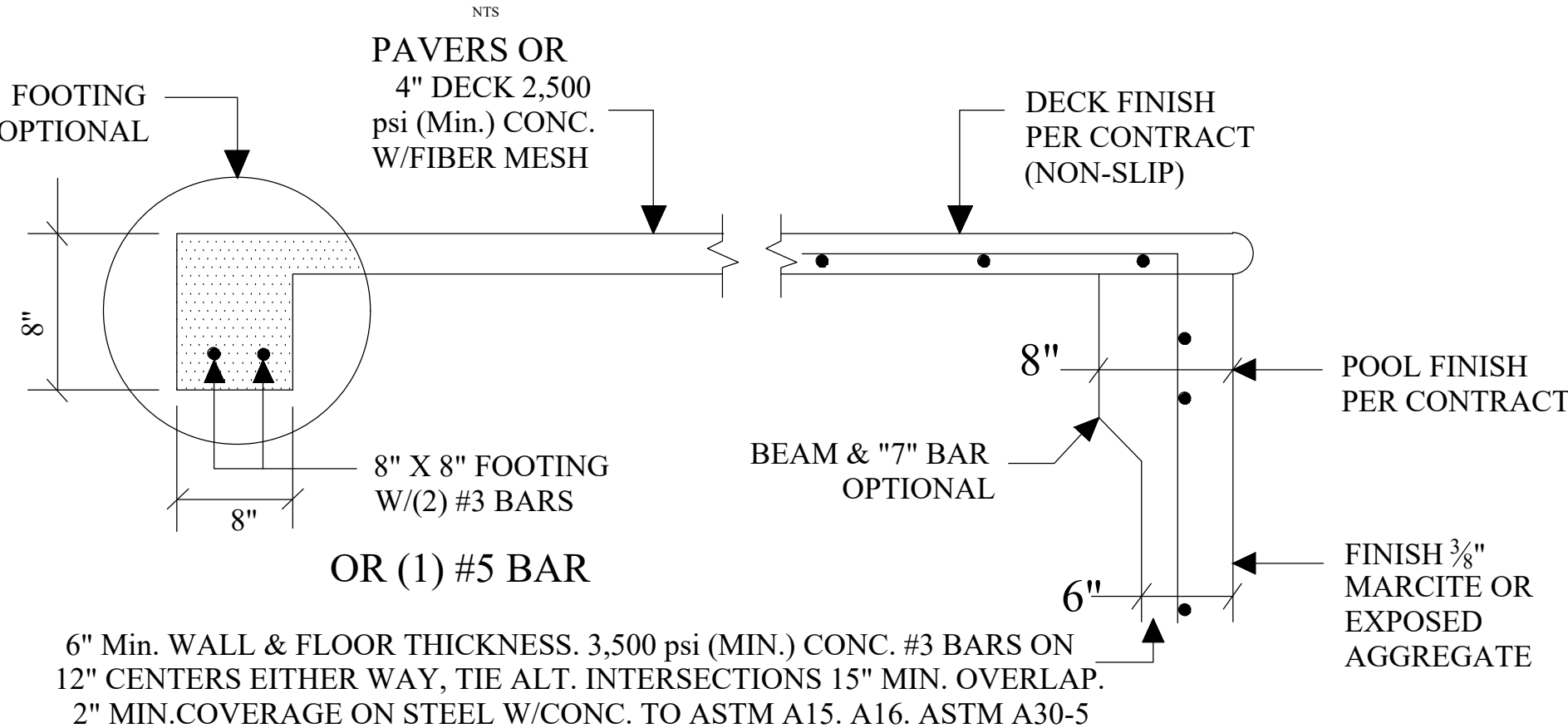
OPTIONAL BRICK/PRECAST DETAIL
NTS



PERIMETER DECK DETAIL
NTS



OPTIONAL CANTILEVER DECK OR PATIO DETAIL
NTS



Structural subject to suitable soil conditions.

POOL/SPA, DECK, BEAM, WALL, FLOOR

N.T.S.

Determine System Flow Rate:

Minimum Flow Rate Required: 35gpm per skimmer (Required: 1 Skimmer per 800 sf)

Pool Volume: 500 sq. ft x 4 ave depth x 7.481 gal/cf = 15,000 gallons

Turnover Time in Hours: 6 hours x 60 min/hr = 360 minutes

Flow Rate: 15,000 gallons / 360 minutes = 42 gpm

COMPLIES WITH 2023 FLORIDA BUILDING CODE, 8TH EDITION

G.B. COLLINS ENGINEERING P.A.

CERTIFICATE OF AUTHORIZATION 27934

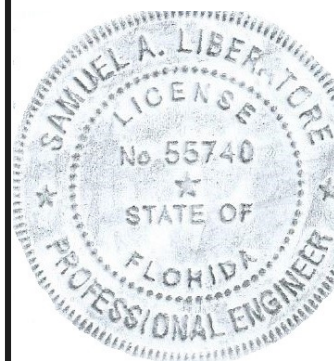
AQUATIC ENGINEERING CONSULTANTS
32707 US HIGHWAY 19 NORTH
PALM HARBOR, FLORIDA 34684
GB_COLLINS@VERIZON.NET
(727)-442-8443

COPYRIGHT PROTECTED: © VA 2-280-307

For: SUMMERWAVES

Parnell Residence
299 SW Bryce Terrace
Fort White, FL 32038

STANDARD RESIDENTIAL FIBERGLASS
POOL AND/OR SPA DESIGN



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 the signature must be verified on any electronic copies.

Samuel A

Liberatore

2026.05.12

10:17:54 -04'00'

SAMUEL A. LIBERATORE, P.E.
#55740

DATE

SCALE

5-12-2026

AS SHOWN

Simplified Total Dynamic Head (TDH)Calculation Worksheet

Minimum Flow Rate Required: 35 GPM Per Skimmer. (Required: 1 Skimmer per 800 Square Feet of Surface Area)

Determine Maximum System Flow Rate

1. Calculate Pool Volume $\frac{396}{\text{(Surface Area)}} * \frac{3.6}{\text{(Avg. Depth)}} * 7.481 \text{ (Gal/Cubic Foot)} = \frac{10,665}{\text{(Vol. In Gallons)}}$

2. Determine Preferred Turnover Time in Hours: $\frac{6}{\text{(Hours)}} * 60 \text{ (Min./Hou)} = \frac{360}{\text{(Turnover In Mins.)}}$

3. Determine Max. Flow Rate $\frac{10,655}{\text{(Vol. In Gallons)}} / \frac{360}{\text{(Turnover In. Mins)}} + \frac{\text{N/A}}{\text{(Feature Flow)}} = \frac{30}{\text{(Total Flow Rate)}}$

4. Spa Jets $\frac{0}{\text{(No. Of Jets)}} * \frac{15}{\text{(Jet Flow)}} \text{ GPM Per Jet} = \frac{0}{\text{(Total Jet Flow)}}$

For single pump pool/spa combo, use the higher of No. 3 or No. 4 in the following calculations for pool & Spa

Determine Maximum System Flow Rate

Branch Piping to be 2.5" Inch to keep velocity at 6 FPS max at 80 GPM Max. System Flow Rate

Trunk Piping to be 2.5" Inch to keep velocity at 8 FPS max at 80 GPM Max. System Flow Rate

Return Piping to be 2" Inch to keep velocity at 8 FPS max at 80 GPM Max. System Flow Rate

Determine Simplified TDH

1. Distance From Pool to Pump in feet 50

2. Friction Loss (In Suction Pipe)In 2.5' Inch Pipe per 1 Foot at 80 GPM = .117 (From Pipe Flow/Fricton Loss Chart)

3. Friction Loss (In Return Pipe) In 2" Inch Pipe per 1 Foot at 80 GPM = .16 (From Pipe Flow/Fricton Loss Chart)

4. $\frac{50}{\text{(Length of Suction Pipe)}} * \frac{.17}{\text{(Friction Loss)}} = \frac{8.5}{\text{(Friction Loss)}}$

5. $\frac{50}{\text{(Length of Return Pipe)}} * \frac{.16}{\text{(Friction Loss)}} = \frac{8}{\text{(Friction Loss)}}$

Determine Simplified TDH

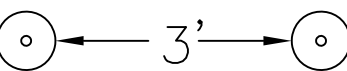
Pump Selection Jandy Flo Pro 1.65 Using Pump Curve for TDH & System Flow Rate

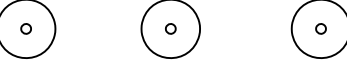
Main Drain Cover None (System Flow Rate must not exceed approved cover flow rates)

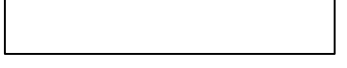
Note: Minimum System Flow Rate based on minimum flow per skimmer of 35 GPM.

Determine The Number & Type of Required In-Floor Suctions

(Check all that apply)

☐  None Suction Outlets At _____ GPM Max. Flow (See Note 2)

☐  _____ Suction Outlets At _____ GPM Max. Flow (See Note 3)

☐  _____ Suction Outlets At _____ GPM Max. Flow (See Note 4)

ANSI/APSP-7 2006 Specifies three methods for determining the maximum system flow rate. The following TDH calculation is one of the methods specified.

TDH Calculation Options

☒ Simplified Total Dynamic Head (STDH)
Complete STDH Worksheet - Fill in all blanks

☐ Total Dynamic Head (TDH)
Complete Program or other Calcs. Fill in required blanks on worksheet & attach calcs.

☐ Maximum Flow Capacity
Of the new or replacement pump

Notes

1. If a variable speed pump is used, use the max. pump flow in calculations

2. For side wall drains, use appropriate side wall drain flow as published by manufacturer.

3. Insert manufacturer's name and approved maximum flow.

4. See installation instructions for number of ports to be used.

5. In-Floor suction outlet cover/grate must conform to most recent edition of ASME/ANSI A112.19.8 and be embossed with that edition approval.

6. Pump, Filter & Heater make and model cannot change, and equipment location cannot be moved closer to the pool without submitting a revised plan and TDH calculation worksheet for approval.

FLOW & FRICTION LOSS PER FOOT SCH. 40 PVC PIPE						
PIPE SIZE	6 FPS - BRANCH		8 FPS - TRUNK		10 FPS - RETURN	
1"	16 GPM	0.14'	21 GPM	0.23'	26 GPM	0.35'
1.5"	37 GPM	0.08'	50 GPM	0.14'	62 GPM	0.21'
2"	62 GPM	0.06'	82 GPM	0.10'	103 GPM	0.16'
2.5"	88 GPM	0.05'	117 GPM	0.09'	146 GPM	0.13'
3"	138 GPM	0.04'	181 GPM	0.07'	227 GPM	0.10'
4"	234 GPM	0.03'	313 GPM	0.05'	392 GPM	0.07'
6"	534 GPM	0.02'	712 GPM	0.03'		

COMPLIES WITH 2023 FLORIDA BUILDING CODE, 8TH EDITION

Date _____

Contractors Signature _____

Contractors Printed Name _____

Contractors Telephone _____

SWIMMING POOL SPECIFICATION FOR:

Parnell Residence

299 SW Bryce Terrace Fort White, FL 32038



Samuel A Liberatore
2026.05.12 10:18:05
-04'00'

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AQUATIC ENGINEERING CONSULTANTS
32707 US HWY 19 N
PALM HARBOR, FLORIDA 34684
gb_collins@verizon.net
(727)-442-8443

For: Summerwaves

SIMPLIFIED TOTAL DYNAMIC HEAD
CALCULATION

REV.	DESCRIPTION	DATE
DRAWN		CHECKED
DATE		SAL
5-11-2026		SCALE
		N/A
SHEET <u>1</u> OF <u>1</u>		