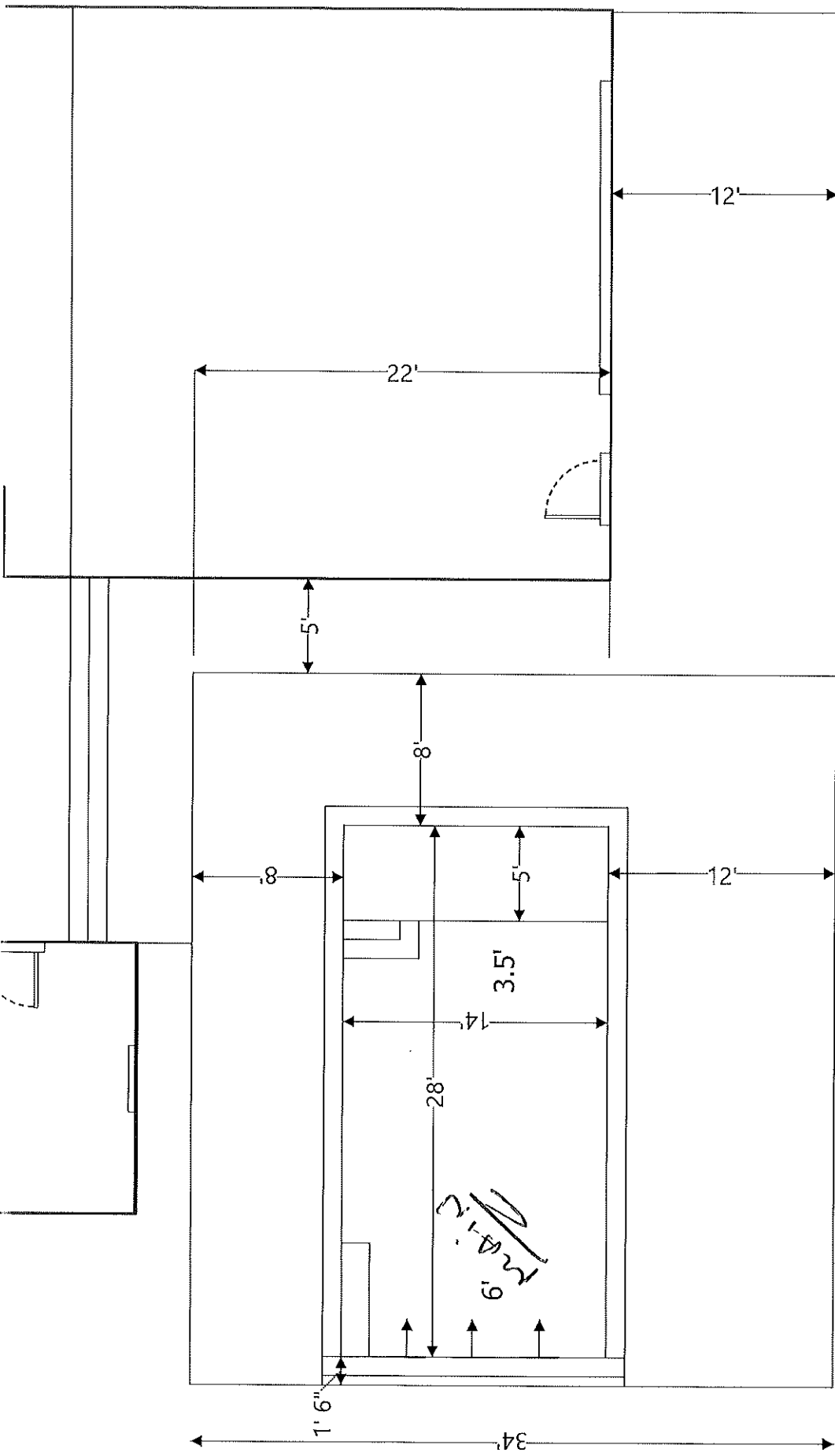




① 14' x 28' POOL - 55,000.00

② NO FLOOR

③ PERIMETER FENCE + GATE

Lewis Walker
11394 SE CR 345
Lulu FL 32601



ENGINEERING REPORT INDEX SHEET

pursuant to Rule 61G15-23.001(4)(b), F.A.C.

SUPPLEMENTAL INFORMATION TO THE SUBJECT
RESIDENTIAL POOL/SPA PERMIT APPLICATION meeting
2020 FBC 7th Ed, Section 454.2 Private Swimming Pools

SPECIFICALLY:

- WORKSHEET SHOWING COMPLIANCE WITH ANSI 15
- SITE SPECIFIC INFORMATION SHOWING COMPLIANCE WITH ANSI 7
- TDH CALCULATION SUPPORTING ANSI 7 SUCTION OUTLET INFORMATION
- ATTACHED PRODUCT SHEETS WITH INFORMATION SUPPORTING
ANSI 7 AND 15 WORK SHEETS

PROJECT INFORMATION

PROJECT CLIENT: **SOUTHERN ESCAPES**
PROJECT NAME: **LEWIS WALKER**
PROJECT ADDRESS: **11394 SE CR 245**
LOT:
AREA:

Jeffrey Wanko, PE, #79935
Professional Engineer

SKS

This document has been electronically signed
& sealed by Jeffrey Wanko, PE employed by
Kimes Engineering on the date & time stamp
shown using a digital signature. Printed
copies of this document are not considered
signed & sealed and the signature must be
verified on a true electronic copy.



Digitally signed by Jeffrey Wanko
Reason: I am approving this document
Date: 2023.05.17 14:39:23 -0400

- For Client Use Only -



CLIENT SOUTHERN ESCAPES
NAME LEWIS WALKER
ADDRESS 11394 SE CR 245
LOT:
AREA:

WORKSHEET SHOWING DATA FOR COMPLIANCE WITH ANSI/APSP- 15

ANSI 15 Filtration

Volume of Pool Area SF x Avg Depth FT = Vol CF
Vol in CF x 7.48 gal/CF = GALLONS

Calculate Maximum Filtration Flow Rate: Pool Volume/ 360 = GPM [If <13,000 MAY use 36 gpm]

ANSI 15 Auxiliary Flow

Calculate Maximum Auxiliary Load Design Flow Rate: MAY USE LESS THAN THIS MAXIMUM
IF AT LEAST ANSI 5 12 HR TURNOVER

Number of Spa Jets 0 @ 10 gpm ea. = GPM

Or Water Feature Flow:

GPM

ANSI 15 Flow:

[maximum ANSI 15 Filtration Flow, minimum 12 hour turnover] GPM

Actual Turnover at ANSI 15 Flow HR

PUMP FROM APSP LISTING

Select a pump with Curve A (pools <17,000 gal) or Curve C (pools >17,000 gal) flow equal to or less than ANSI 15 Filtration Flow. May select a multi speed pump with flows acceptable for the ANSI 15 Auxiliary Flow, with acceptable Curve A or C listed flows. Curve A or C flows listed have no relationship or requirement related to ANSI 15 Auxiliary Flow.

Pump Make & Model:

Pump Flow Rate(s) from Listing: @ Low/Single speed GPM, & @ High Speed GPM

Pump Control: Filtration Pump has no auxiliary load: ☒ X, time clock to be installed.

Filtration Pump with auxiliary load: Control for low speed default w/in 24 hrs:

Make/model

Size filter on "FILTRATION Flow"

Filter Rates: Cartridge= 0.375 gpm/sf; Sand= 15 gpm/sf; DE= 2 gpm/sf

Filter size: ANSI 15 Flow GPM / gpm/sf = SF Min Filter Size

See pool plan for filter model or show here:

ANSI 7 Flow: See Site Specific Information Sheet

ANSI 5 Flow: Depending on the pipe, use any of the ANSI 15 Filtration, or ANSI 15 flows or the flow at 60 ft TDH on the

See flow vs velocity vs pipe size on Standard Engineering.

See summary of pipe sizes on ANSI 7 Site Specific Information Sheet

HEATER MODEL:

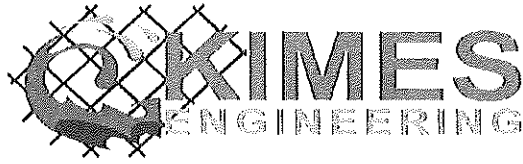
GAS HEATER EFFICIENCY RATING:

with no pilot light [min 82%]

HEAT PUMP EFFICIENCY C.O.P.:

[min 4.0]

- For Client Use Only -



CLIENT SOUTHERN ESCAPES
NAME LEWIS WALKER
ADDRESS 11394 SE CR 245

Lot:

Area:

SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH ANSI/APSP-7

METHOD OF DETERMINING ANSI 7 PUMP FLOW

Detailed TDH
Curve & Calc

X

SUCTION OUTLET FOR:	FILTRATION PUMP
Manufacturer & Model:	PENTAIR INTELLIFLO VS 3HP
Pump Flow from Pump Curve with method indicated:	114 GPM

ANSI/APSP/ICC-7 2013 ADOPTED IN 2020 FBC 7TH ED NO LONGER SIZES BRANCH OR TRUNK SUCTION BASED ON ANSI 7 FLOW

LISTED SUCTION OUTLET COVER/GRATE- POOL OUTLET			
DRAIN INFO: CMP CHANNEL DRAIN			
APPROVED Maximum Outlet Flow (GPM)	Floor:	182 GPM	Wall: 144 GPM
BRANCH DRAIN		NA	
TRUNK SUCTION 6 FPS @ ANSI 15 FLOW	2 (in) -- USE	2.5 (in)	

SUCTION OUTLET FOR:	NOT USED
Manufacturer & Model	
Pump Flow from Pump Curve with method indicated:	GPM

ANSI/APSP/ICC-7 2013 ADOPTED IN 2020 FBC 7TH ED NO LONGER SIZES BRANCH OR TRUNK SUCTION BASED ON ANSI 7 FLOW

LISTED SUCTION OUTLET COVER/GRATE- SPA OUTLETS			
DRAIN INFO:			
APPROVED Maximum Outlet Flow (GPM)	Floor:	GPM	Wall: GPM
BRANCH DRAIN			
TRUNK SUCTION 6 FPS @ ANSI 15 FLOW	(in) -- USE	(in)	

ANSI 15 FLOW= 39 GPM

MINIMUM CIRCULATION LINES SIZED ON ANSI 15 FLOW PIPE SIZE SUMMARY

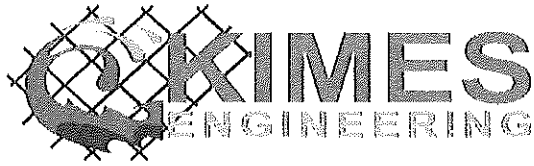
SPA AUX. FLOW	0 GPM	TRUNK/SKIMMER SUCTION:	2 (in) ANSI 15 Flow @ 6 FPS
2 ND AUX. FLOW	60 GPM	FILTRATION RETURNS:	1.5 (in) ANSI 15 Flow @ 8 FPS
		SPA AUXILIARY RETURN:	(in) ANSI 5 Flow @ 8 FPS
		2 ND AUXILIARY RETURNS:	2 (in) ANSI 5 Flow @ 8 FPS
		OPTIONAL VACUUM OR SWEEP LINE:	1.5 (in) ANSI 5 Flow @ 8 FPS

NOTES: SUCTION OULET COVER/GRATE AND BRANCH SIZE MEETS ANSI 7 FLOW
FOR POOL USE CMP CHANNEL DRAIN - NO BRANCH REQUIRED

USE 2.5" SUCTION TO PUMP

NO CHANGE TO ENGINEERING WITHOUT APPROVAL OF THE ENGINEER

- For Client Use Only -



CLIENT SOUTHERN ESCAPES

NAME LEWIS WALKER

ADDRESS 11394 SE CR 245

LOT:

AREA:

	POOL ONLY		
	Suction	Pressure	Equipment
Pipe Size (in.)	2.5"	2"	2"
Pipe Length (100% flow)	37	27	15
#EL fittings	5	5	5
#T Run fittings	2	2	1
#T Branch fittings	1	1	1
Gate Valves	0	0	0
# 3 Way valves	1	1	1

This calculation assumes worst case with 100% suction from drain and none from skimmer.

This calculation is conservative in that it omits the velocity head on the pressure side beyond the first split of return lines.

Pump Curve PENTAIR INTELLIFLO VS 3HP

Filter: PENTAIR CCRP150, 150SF

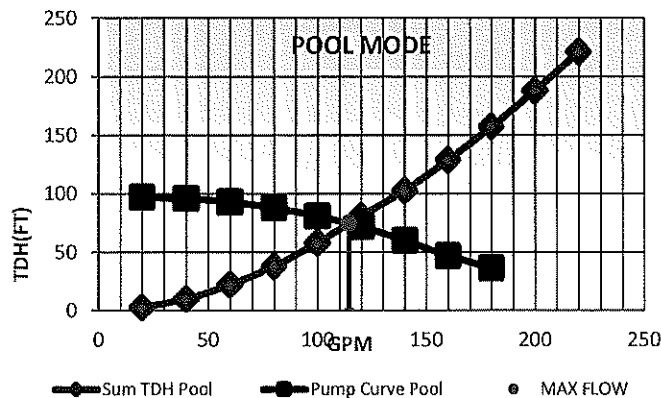
Heater: NA

Return Fittings

Head loss based on Hazen-Williams equation, where $c=150$

Head Loss per 100 ft $= 0.2083 (100/c)^{1.852} * q^{1.852} / d_h^{4.8655}$

	DETAILED TDH POOL MODE											
	2.1	7.5	15.9	27.0	40.9	57.3	76.2	97.6	121.4	147.6	176.1	
Sum of Pipe Friction	2.1	7.5	15.9	27.0	40.9	57.3	76.2	97.6	121.4	147.6	176.1	
Filter(s)	0.0	0.4	1.7	3.7	6.5	9.3	10.3	12.2	14.1	16.0	17.9	
Return Fitting(s)	0.8	1.5	3.3	5.0	7.4	10.0	11.2	13.1	14.9	16.8	18.7	
Salt System	0.0	0.7	1.4	2.3	3.3	4.3	5.0	5.9	6.7	7.6	8.5	
Heater(s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Sum TDH (FT H ₂ O)	2.9	10.1	22.3	38.0	58.1	80.9	102.7	128.8	157.2	188.0	221.1	
Flow (GPM)	20	40	60	80	100	120	140	160	180	200	220	



POOL MODE

MAXIMUM:

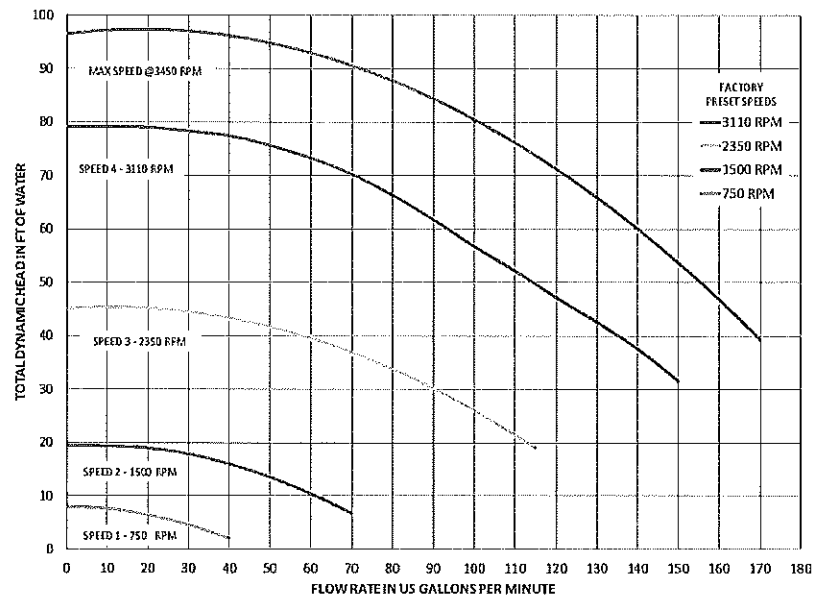
REQUIRED BRANCH SUCTION

RECOMMENDED MIN. TRUNK SUCTION TO EQUIP:

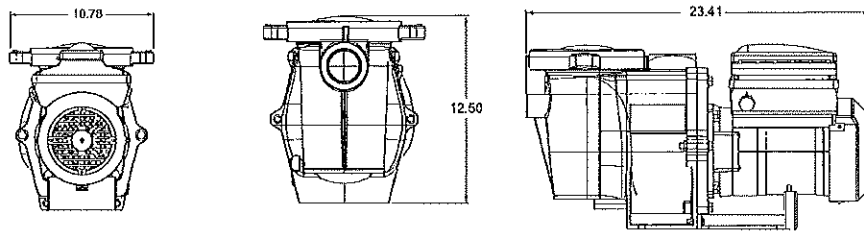
- For Client Use Only -

INTELLIFLO® VARIABLE SPEED HIGH PERFORMANCE PUMP (CONT'D)

Dimensions and Performance



Note: IntelliFlo VS+SVRS minimum speed is 1100 RPM



See page 510 for replacement parts.

B. SIZING & SPECIFICATION REFERENCE

- Suction fitting-configuration specific flow ratings NOT be exceeded at any time the pool is open to bathers.
- A system must install a suction fitting, or combination of multiple suctions, such that the resulting individual suction system flow rating is greater than the pumping system's maximum system flow rate.
- To reduce the risk of drowning from hair and body entrapment, install suction fittings with a marked flow rate in gallons per minute that exceeds the flow rate of your system by at least 25%. Increasing size of the pump may increase flow rate of suction beyond rated safety limits causing entrapment or death.
- Any modification that increases the flow rate of the circulation system shall require reevaluation of the cover/grate and sump to ensure that the flow rating of the Suction Outlet Fitting Assembly is not exceeded.
- The flow rating for pools with single, or multiple unblockable SOFAs shall be determined by combining the flow rating of all SOFAs piped together in one body of water.
- NOTICE: No modification shall be made to a SOFA structure or flow path unless the new configuration has been certified as new SOFA.

TABLE 1: IAPMO LISTED MAX FLOW RATES

PLUMBING SIZE	FORTS	WALL FLOW RATE	FLOOR FLOW RATE
2.5"	OUTER	212 GPM 159	298 GPM 224
2.5"	CENTER	168 GPM 126	200 GPM 150
2"	OUTER	192 GPM 144	242 GPM 182
2"	CENTER	168 GPM 126	184 GPM 138

FLOW RATE VERTICALLY MAX. JOINTED CURVE

**** INSTALL ONLY WITH MIN 16" BEFORE CHANGE IN PIPE SIZE**

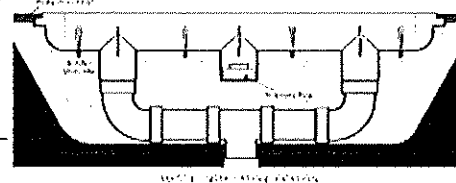


TABLE 2: SPECIFICATIONS

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	38.79in ²
DRAIN COVER LIFE	7 Years Replace drain cover and screws every seven years
SUMP BODY LIFE	30 Years

- Single or multiple drain use
- Floor of wall installation
- PVC Sump Body. Use PVC glue to attach plumbing fittings



**** All Custom Molded Products main drains are listed and tested in strict accordance to the requirements of ANSI/APSP-16 2017, the current standard of reference for the Virginia Graeme Baker Act, and compliant to the latest Consumer Product Safety Commission (CPSC) requirements.**

**** ANNOTATION BY KIMES ENGINEERING**

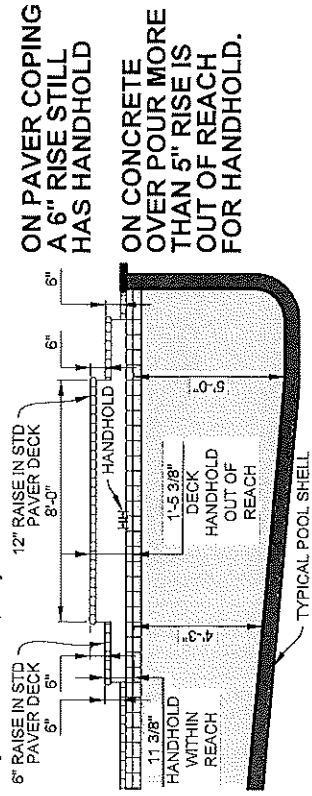


**** IAPMO Listed VGB Suction: Compliant to ANSI/APSP-16 2017 & CPSC Requirements**

RESIDENTIAL POOL AND SPA PLAN REVIEW CHECKLIST FOR CRITICAL SAFETY CODE REQMTS

HANDHOLDS REQUIRED

HANDHOLD(S) PROVIDED WHEN REQUIRED AT RAISED DECK AREAS MORE THAN 12 INCH FROM WATER LINE AND WATER DEPTH MORE THAN 4 FEET FOR LENGTH OF 8 FEET. [2011 ANSI/APSP-5, 17.1]



HANDHOLDS REQUIRED

SCALE: N.T.S.

WHEN POOL WATER CLOSER THAN 5 FT

WINDOWS, DOORS OR OTHER GLASS WITHIN 5 FT OF WATER'S EDGE: MUST HAVE MANUFACTURER'S DESIGNATION OF SAFETY GLAZING AND BE VISIBLY MARKED

ALL FIXED METAL PARTS WITHIN 5 FT HORIZONTAL OR 12 FT VERTICAL- DOOR AND WINDOW FRAMES, CAGE AND FENCE STRUCTURES, STATIONARY EQUIPMENT, METAL AWNINGS- SHALL BE BONDED UNLESS PERMANENT BARRIER

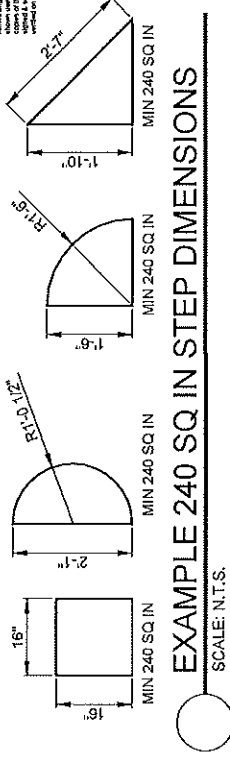
ENERGY CODE REQUIREMENTS RESTATED:

1. GAS HEATER ELECTRICAL FEED SHALL BE THROUGH GFCI.
2. 4X PIPE DIAMETER STRAIGHT PIPE REQUIRED STRAIGHT INTO PUMP, 8" FOR 2" FITTING, 10" FOR 2.5" FITTING.
3. MIN 18" STRAIGHT PIPE REQUIRED AFTER FILTER AN BEFORE HEATER, IF HEATER PROVIDED.

PLAN REVIEWER AND INSPECTOR MUST VERIFY SUCTION OUTLET COVER RATED FLOW GREATER THAN DETAILED TDH CALCULATION AT MAXIMUM PUMP SPEED OR AT LEAST EXCEEDS MAXIMUM FLOW OF PUMP CURVE AND PARTICULARLY VERIFIED FOR SPA SIDEWALL SUCTIONS AND RATED "WALL" FLOWS

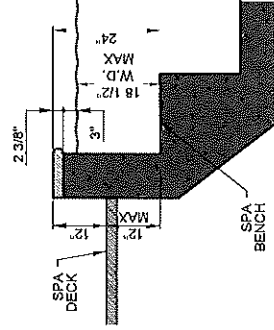
SPA STEP REQUIRED

UNLESS A SPA IS RAISED 12" OR MORE FROM DECK, A SPA STEP IS REQUIRED ON THE BENCH FOR THE MAXIMUM 12" FROM DECK TO ENTRY. [2014 ANSI/APSP-3, 5.6.1]



EXAMPLE 240 SQ IN STEP DIMENSIONS

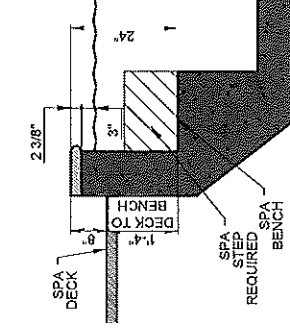
SCALE: N.T.S.



12" RAISED SPA

NO STEP

SCALE: N.T.S.



8" RAISED SPA

STEP REQD.

SCALE: N.T.S.

DIGITAL SIGNATURE
INDEX SHEET FOR SHEETS
S1 S2 S3 PER RULE
61G15-23.001(4)(b), F.A.C.

SUN SHELF AS FIRST STEP
MAXIMUM 12" DECK TO SUN SHELF AS
1ST STEP. LIMITS WATER DEPTH
UNLESS ADDED STEP ON SHELF.
[2011 ANSI/APSP-5, 6.2.2]

SUN SHELF AS 1ST STEP

SCALE: N.T.S.

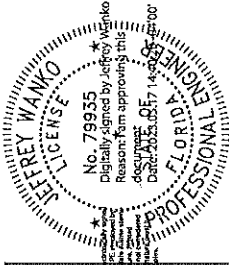
TYPICAL PLAN & SECTIONS
FOR RESIDENTIAL POOL/SPA

11394 SE CR 245
SOUTHERN ESCAPES

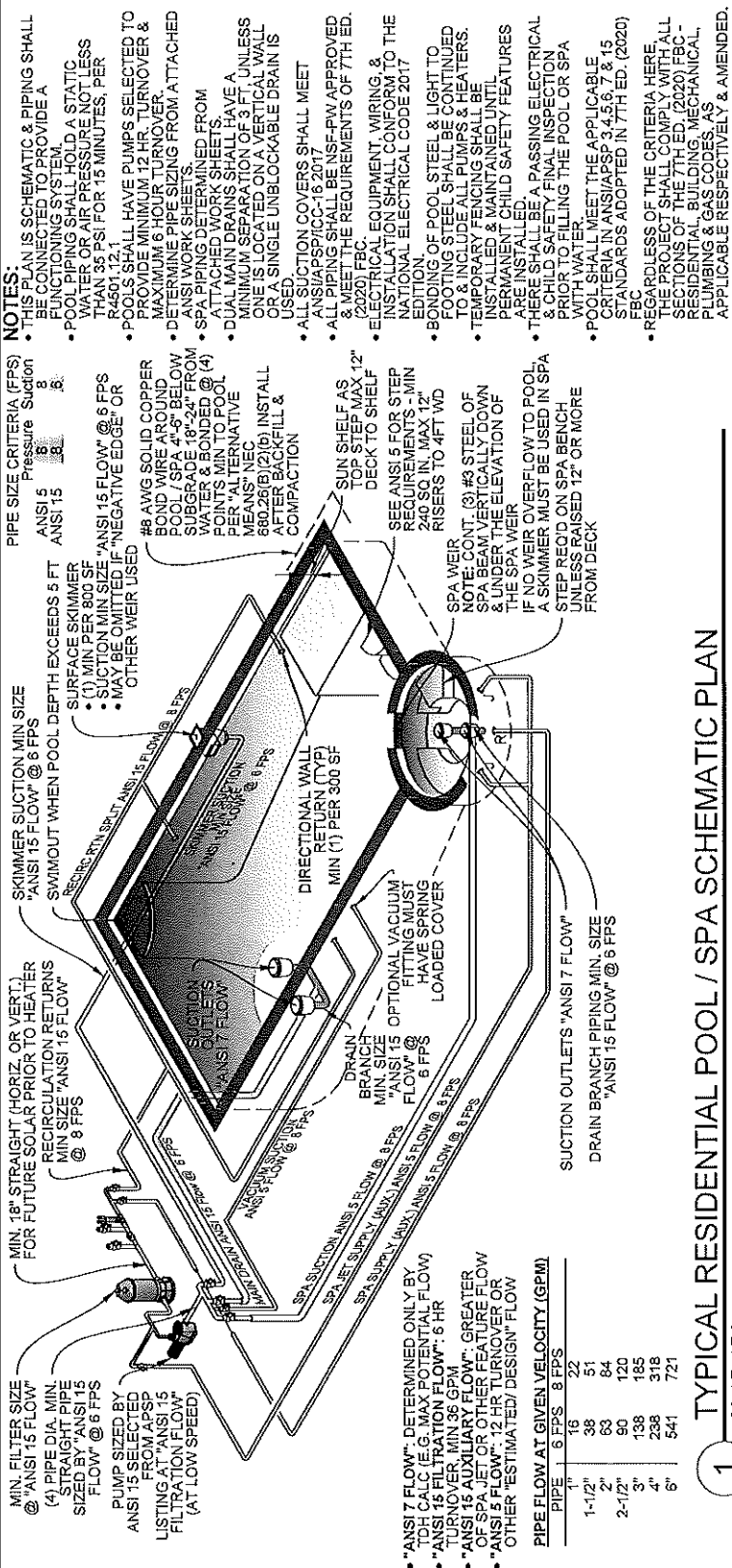
SHEET

S1

SHEET 1 OF 3



1925 Worth Ct
Bradenton, FL 34211
Office: 941-749-0311
C.A. 27189
KIMES ENGINEERING
This drawing is the property of Kimes Engineering and Management Services, Inc. and is not to be reproduced or used in whole or in part. It is only for the project and site specifically identified herein and is not to be used on any other project. It is to be returned upon request.
REV. DATE DESCRIPTION
PROJ. NO. DWG. BY: CKD BY: JKK
MCM 01-Jan-21 3-Feb-22
KE, RSTD



SEE DIGITAL SIGNATURE ON INDEX SHEET S1

11394 SE CR 245
SOUTHERN ESCAPES
TYPICAL PLAN & SECTIONS
FOR RESIDENTIAL POOL/SPA

REV. DATE
PROJ. NO. DWG. BY: MCM
KE, RSTO
2-3-2022 REVISION

DESCRIPTION
CD BY: JKK
DRAWING VERSION: 3-FEB-22

1928 Worth Ct
Bradenton, FL 34211
Office: 941-749-0311
C.A. 27189

KIMES ENGINEERING

- NOTES:**
- THIS PLAN IS SCHEMATIC & PIPING SHALL BE CONNECTED TO PROVIDE A FUNCTIONING SYSTEM.
 - POOL PIPING SHALL HOLD A STATIC WATER OR AIR PRESSURE NOT LESS THAN 35 PSI FOR 15 MINUTES, PER R4501.12.1
 - POOLS SHALL HAVE PUMPS SELECTED TO PROVIDE MINIMUM 12 HR. TURNOVER & MAXIMUM 6 HOUR TURNOVER.
 - DETERMINE PIPE SIZES FROM ATTACHED ANSI WORK SHEETS.
 - SPA PIPING DETERMINED FROM ATTACHED WORK SHEETS.
 - MINIMUM SEPARATION TO 6 FT. UNLESS ONE IS LOCATED ON A VERTICAL WALL OR A SINGLE UNBLOCKABLE DRAIN IS USED.
 - ALL SUCTION COVERS SHALL MEET ANSI/APSP/ICC-15 2017.
 - ALL PIPING SHALL BE NSF-PW APPROVED & MEET THE REQUIREMENTS OF 7TH ED. (2020) FBC.
 - ELECTRICAL EQUIPMENT, WIRING, & INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE 2017 EDITION.
 - BONDING OF POOL STEEL & LIGHT TO FOOTING STEEL SHALL BE CONTINUED TO & INCLUDE ALL PUMPS & HEATERS.
 - TESTED & MAINTAINED PERMANENT CHILD SAFETY FEATURES ARE INSTALLED.
 - THERE SHALL BE A PASSING ELECTRICAL & CHILD SAFETY FINAL INSPECTION PRIOR TO FILLING THE POOL OR SPA WITH WATER.
 - POOL SHALL MEET THE APPLICABLE CRITERIA IN ANSI/APSP 3.4, 5.6, 7 & 15 STANDARDS ADOPTED IN 7TH ED. (2020) FBC.
 - REGARDLESS OF THE CRITERIA HERE, THE PROJECT SHALL COMPLY WITH ALL SECTIONS OF THE 7TH ED. (2020) FBC - RESIDENTIAL BUILDING, MECHANICAL, PLUMBING & GAS CODES, AS APPLICABLE RESPECTIVELY & AMENDED.
- SEE INFORMATION ATTACHED TO THIS PERMIT PACKAGE FOR SITE SPECIFIC DETAILS SHOWING
ANSI 7 & 15 AND FBC COMPLIANCE

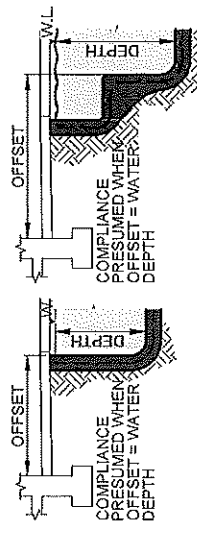
NOTE TO REVIEWER:
DETAILED TDH CALCULATIONS ARE REQUIRED TO DETERMINE ANSI 7-SUCTION ENTRAPMENT COMPLIANCE

COMPLIES WITH 7TH ED. (2020) FBC, ALL VOLUMES

1 TYPICAL RESIDENTIAL POOL / SPA SCHEMATIC PLAN
SCALE: N.T.S.

FBC NO LONGER REQUIRES EXCAVATIONS OUT OF THE "ANGLE OF REPOSE PLUS 1 FT". THE CURRENT REQUIREMENT IN 7TH ED (2020) FBC, SECTION 1804.1 STATES THAT "EXCAVATIONS SHALL NOT REMOVE VERTICAL OR LATERAL SUPPORT FROM ANY FOUNDATION." THEREFORE THE FOLLOWING IS REQUIRED:

1. WHEN THE POOL DECK DISTANCE IS EQUAL TO OR GREATER THAN WATER DEPTH, NO MITIGATION OF THE SHELL STRUCTURE IS REQUIRED, AND NO SHORING OR FOUNDATION SUPPORT INITIALLY REQUIRED.
2. WHEN THE POOL DECK DISTANCE IS LESS THAN THE WATER DEPTH, THE ENGINEER SHALL PROVIDE A MITIGATION SPECIFICATION, EITHER TO PROTECT THE FOUNDATION DURING EXCAVATION OR STRENGTHEN THE SHELL FROM STRUCTURE LOADS.
3. IF DURING EXCAVATION, SOIL CONDITIONS APPEAR TO LEAD TO LOSS OF FOUNDATION SUPPORT, THE CONTRACTOR SHALL CEASE EXCAVATION AND CONTACT THE ENGINEER FOR MITIGATION SPECIFICATIONS.
4. IF AFTER EXCAVATION THE CONTRACTOR FINDS A LOSS OR THREATENED LOSS OF SOIL SUPPORT AT THE FOUNDATION, CONTACT THE ENGINEER FOR A MITIGATION SPECIFICATION.



"ANGLE OF REPOSE" OR SEE CONTRACTOR PLAN

2 PROXIMITY TO STRUCTURE
SCALE: N.T.S.

SCALE: N.T.S.