



CLIENT OF KIMES ENGINEERING Fun State Pools

WORKSHEET SHOWING DATA FOR COMPLIANCE WITH 2010 FBC, ANSI/APSP-15

OWNER Tom Pyne ADDRESS 362 SW Sapling Glen LOT Lake City, FL

ANSI 15 Filtration Flow

VOLUME OF POOL Area 450 x Avg Depth 5 = Vol in CF 2250
Vol in CF x 7.48 gal/CF = 16,830 gallons

Calculate Maximum Filtration Flow Rate Pool Volume/360 = 46.75 GPM [if <13,000 use 36 gpm]

ANSI 15 Auxiliary Flow

Calculate Maximum Auxiliary Load Design Flow Rate
Number Spa Jets X 7 to 15 GPM = GPM
Or Water Feature Flow GPM

ANSI 15 Flow

ANSI 15 Flow GPM [greater of ANSI 15 Auxiliary Flows and ANSI 15 Filtration Flow]

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: Pentair Intellipro VS + SURS

Pump Flow Rate(s) from Listing: @ Low/Single speed 11 GPM, & @ High Speed 73 GPM
VS + SURS Pentair

Pump Control: Filtration Pump has no auxiliary load , time clock to be installed
Filtration Pump with auxiliary load Control for low speed default w/in 24 hrs self contained program
Make/model

Size filter on "ANSI 15 Flow"

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

Filter size ANSI 15 Flow 46.75 GPM / Rate .375 gpm/sf = 125 SF Min Filter Size
[see pool plan for filter model or show here Sta Rite Plm]

Backwash Valve 2" or Return Pipe Size or N/A

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 selected pump curve for the ANSI 5 Flow

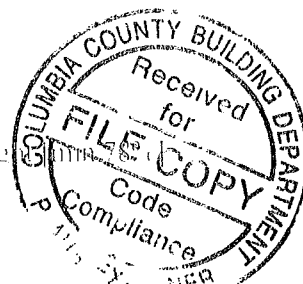
See flow vs velocity vs pipe size on Standard Engineering
See summary of pipe sizes on ANSI 7 Site Specific Information Sheet

HEATER MODEL N/A

GAS HEATER EFFICIENCY RATING N/A

HEATER VENTING TYPE N/A

with no pilot light





Permit #

362 SW Spring

Glen

Area

Lake City

SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH 2010 FBC & ANSI 7

CHOOSE OPTION FOR DETERMINING MAXIMUM SYSTEM FLOW AT SUCTION OF THE PUMP

Maximum Flow from Pump- (Attach product pump curve)

Pump Flow from Pump Curve with method indicated

Simplified TDH- (Attach pump curve & Calculation)

LISTED SUCTION COVER/GRATE

Number of Suction Outlets

$$\text{Maximum Flow Floor (GPM)} / \text{Maximum Flow Wall (GPM)}$$

TRUNK/SUCTION PIPE SIZING

Minimum Trunk Pipe Size given flow above @ 8 FPS

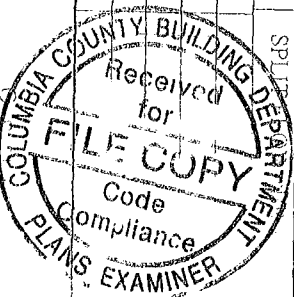
OTHER PIPE SIZE SUMMARY

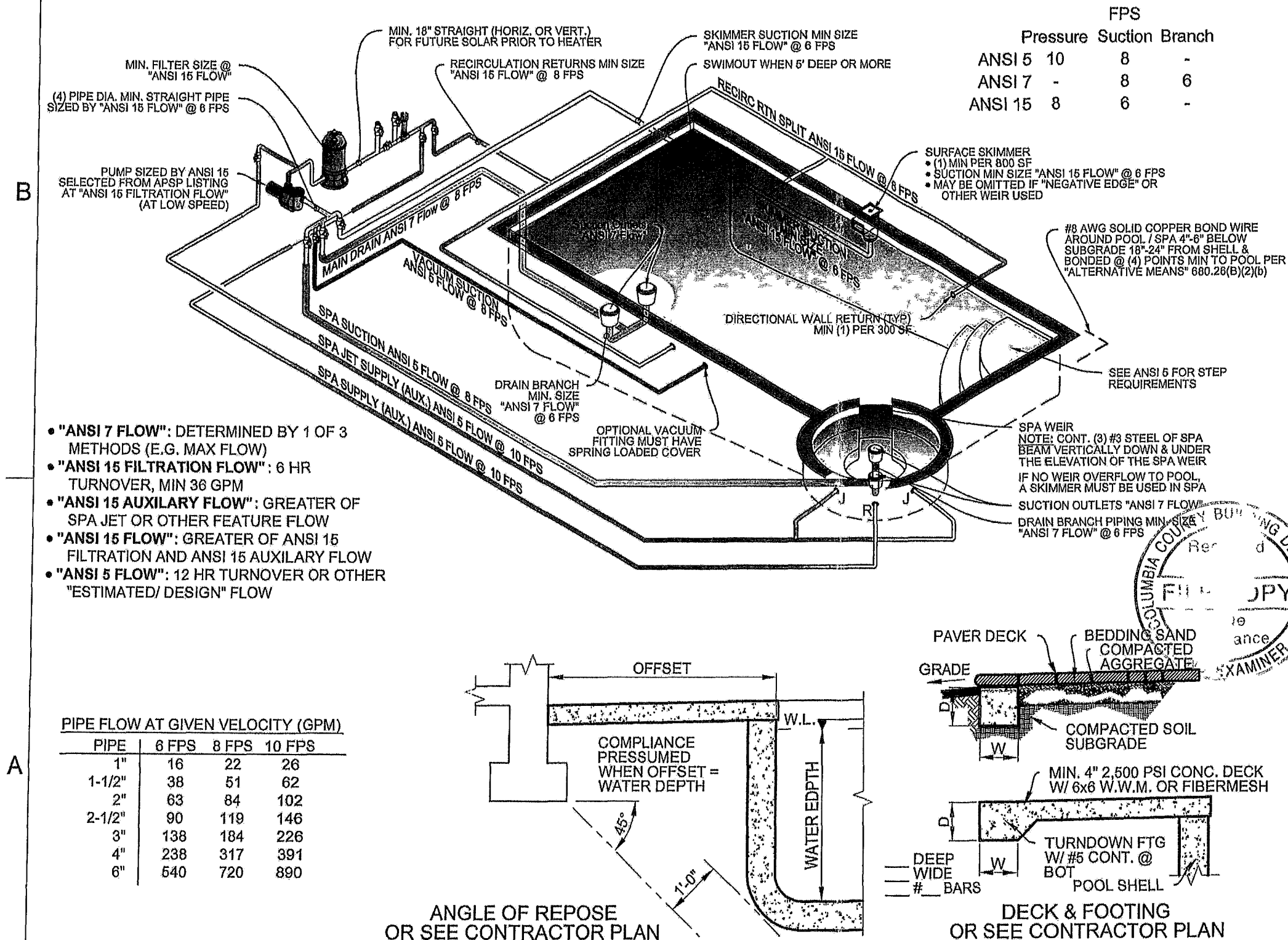
SKIMMER SUCTION-ANSI 15 FLOW @ 6 FPS

NOTES

13410 2ND AVENUE NE / ~~BRIDGENTON~~ FLORIDA 34212 / 941-749-0311

[FOR USE BY CLIENTS OF 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 R4101.12.1
- Pools shall have pumps selected to provide minimum 12 hr. turnover & maximum 6 hour turnover.
- Determine pipe sizing from attached work sheets.
- Spa piping determined from attached work sheets.
- The dual main drains shall have a minimum separation of 3 ft, unless one is located on the vertical wall or a single unblockable drain is used.
- All suction covers shall meet ANSI/ASME A112.19.8-2007
- All piping shall be NSF-PW approved & meet the requirements of Florida Building Code.
- Electrical equipment, wiring, & Installation shall conform to the National Electrical Code 2008 Edition
- Bonding of pool steel & light to footing steel shall be continued to & include all pumps & heaters.
- Temporary fencing shall be installed & maintained until 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.
- Regardless of the criteria here, the project shall comply with all sections of the 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

INFORMATION ON THIS SHEET COMPLIES WITH 2010 FBC INCLUDING 2010 FBC ENERGY CONSERVATION CODE

FUN-STATE POOLS, INC.

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DATE: REVISIONS:

DWG. BY: MCM PRINTED: 13-Apr-12

CHKD. BY: JKK SCALE: AS NOTED

DATE: 13-Apr-12

TYPICAL PLAN &
SECTIONS FOR
RESIDENTIAL
POOL/SPA

S1

SHEET OF

ORIG. DWG: 17"x11" (ANSI B)

ASPE 2006 specifies three methods for determining the required simplified TDH calculation is one of the methods specified.

Simplified Total Dynamic Head (TDH) Calculation Worksheet

Determine Maximum System Flow Rate:

Minimum Flow Rate Required 35 gpm Per Skimmer (Required 1 skimmer per 800 sf of surf area)

- 1 Calculate Pool Volume $\frac{450}{(\text{Surf Area})} \times \frac{5}{(\text{Avg Depth})} \times 7.48 (\text{gal/cubic foot}) = \frac{16,830}{(\text{Vol in gal})}$
- 2 Determine preferred Turnover Time in hours $\frac{8}{(\text{Hours})} \times 60 (\text{min / hr}) = \frac{480}{(\text{Turnover in Min})}$
- 3 Determine Max Flow Rate $\frac{16,830}{(\text{Vol in gal})} / \frac{480}{(\text{Turnover Mins})} = \frac{35.06}{(\text{Pool Flow Rate})} + \frac{35}{(\text{Feature Flow Rate})} = \frac{35.06}{(\text{System Flow Rate})}$
- 4 Spa Jets $\frac{1}{(\text{No. of Jets})} \times \frac{2}{(\text{Jet Flow})} \text{ gpm per jet} = \frac{2}{(\text{Total Jet Flow Rate})} \text{ flow rate}$

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

Determine Pipe Sizes:

Branch Piping to be 1.5 inch to keep velocity @ 6 fps max at 35.06 gpm Maximum System Flow Rate
Trunk Piping to be 2" inch to keep velocity @ 8 fps max at 82 gpm Maximum System Flow Rate
Return Piping to be 2" inch to keep velocity @ 10 fps max at 103 gpm Maximum System Flow Rate

Determine Simplified TDH:

- 1 Distance from pool to pump in feet 10'
- 2 Friction loss (in suction pipe) in 2" inch pipe per 1 ft @ 82 gpm = .10 (from pipe flow/friction loss chart)
- 3 Friction loss (in return pipe) in 2" inch pipe per 1 ft @ 103 gpm = .16 (from pipe flow/friction loss chart)
- 4 $\frac{10'}{(\text{Length of Suct. Pipe})} \times \frac{.10}{(\text{Ft of head/1 ft of Pipe})} = \frac{1.0}{(\text{TDH Suct. Pipe})}$
- 5 $\frac{10'}{(\text{Length of Return Pipe})} \times \frac{.16}{(\text{Ft of head/1 ft of Pipe})} = \frac{1.6}{(\text{TDH Return Pipe})}$

TDH in Piping 2.6

Filter loss in TDH (from filter data sheet) 7

Heater loss in TDH (from heater data sheet) 0

Total all other loss 20.08

Total Dynamic Head (TDH) 30.08

Selected Pump and Main Drain Cover:

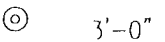
Pump selection USA SURS Pentair 011017 using pump curve for TDH & System Flow Rate
(Pump model and size in Horsepower)

Main Drain Cover Waterway 640-132x~ (System Flow Rate must not exceed approved cover flow rates)
(Make and Model)

Notes Minimum system flow based on min flow per skimmer of 35 gpm

Determine the Number and Type of Required In-Floor Suction Outlets:

Check all that apply

- ☐  suction outlets @ ☐ gpm max flow (see note 2)
- ☐  suction outlets @ ☐ gpm max flow (see note 2)
- ☒ 1'-32" Waterway 640-132x~ barrel drain @ 175 gpm w/ 2/2 ports (see note 4)

TDH Calculation Options

Check one

- ☒ 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 calculations
- ☐ 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 low 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 be changed, and equipment location cannot be moved closer to pool without submitting a revised plan and TDH calculation worksheet for approval

Flow and Friction Loss Per Foot

Schedule 40 PVC Pipe

Pipe Size	Velocity - Feet Per Second					
	6 fps		8 fps		10 fps	
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"	136 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		

This form is the property of funstatepoolsinc and may only be used in conjunction with my Residential Swimming Pool Specification Drawings or by others with my written permission.

4/15/14

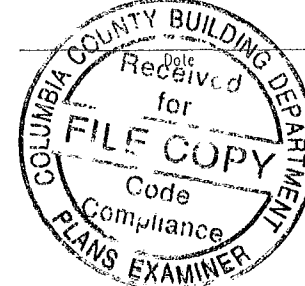
Date

Michael S. Canto

Michael S. Canto

CPC 1457306

352-332-7665



Total Head In Feet Conversion Chart

Inches Mercury (Vacuum Gauge)

	0	2	4	6	8	10	12	14	16	18
0	0.0	2.3	4.5	6.8	9.0	11.3	13.6	15.8	18.1	20.3
1	2.3	4.6	6.8	9.1	11.4	13.6	15.9	18.1	20.4	22.7
2	4.6	6.9	9.1	11.4	13.7	15.9	18.2	20.4	22.7	25.0
3	6.9	9.2	11.5	13.7	16.0	18.2	20.5	22.8	25.0	27.3
4	9.2	11.5	13.8	16.0	18.3	20.5	22.8	25.1	27.3	29.6
5	11.5	13.8	16.1	18.3	20.6	22.8	25.1	27.4	29.6	31.9
6	13.8	16.1	18.4	20.6	22.9	25.2	27.4	29.7	31.9	34.2
7	16.2	18.4	20.7	23.0	25.2	27.5	29.7	32.0	34.3	36.5
8	18.5	20.7	23.0	25.3	27.5	29.8	32.0	34.3	36.6	38.8
9	20.8	23.1	25.3	27.6	29.8	32.1	34.3	36.6	38.9	41.1
10	23.1	25.4	27.6	29.9	32.1	34.4	36.7	38.9	41.2	43.4
11	25.4	27.7	29.9	32.2	34.5	36.7	39.0	41.2	43.5	45.8
12	27.7	30.0	32.2	34.5	36.8	39.0	41.3	43.5	45.8	48.1
13	30.0	32.3	34.6	36.8	39.1	41.3	43.6	45.9	48.1	50.4
14	32.3	34.6	36.9	39.1	41.4	43.6	45.9	48.2	50.4	52.7
15	34.6	36.9	39.2	41.4	43.7	45.9	48.2	50.5	52.7	55.0
16	37.0	39.2	41.5	43.7	46.0	48.3	50.5	52.8	55.0	57.3
17	39.3	41.5	43.8	46.1	48.3	50.6	52.8	55.1	57.4	59.6
18	41.6	43.8	46.1	48.4	50.6	52.9	55.1	57.4	59.7	61.9
19	43.9	46.2	48.4	50.7	52.9	55.2	57.4	59.7	62.0	64.2
20	46.2	48.5	50.7	53.0	55.2	57.5	59.8	62.0	64.3	66.5
21	48.5	50.8	53.0	55.3	57.6	59.8	62.1	64.3	66.6	68.9
22	50.8	53.1	55.3	57.6	59.9	62.1	64.4	66.6	68.9	71.2
23	53.1	55.4	57.7	59.9	62.2	64.4	66.7	69.0	71.2	73.5
24	55.4	57.7	60.0	62.2	64.5	66.7	69.0	71.3	73.5	75.8
25	57.8	60.0	62.3	64.5	66.8	69.1	71.3	73.6	75.8	78.1
26	60.1	62.3	64.6	66.8	69.1	71.4	73.6	75.9	78.1	80.4
27	62.4	64.6	66.9	69.2	71.4	73.7	75.9	78.2	80.5	82.7
28	64.7	66.9	69.2	71.5	73.7	76.0	78.2	80.5	82.8	85.0
29	67.0	69.3	71.5	73.8	76.0	78.3	80.5	82.8	85.1	87.3
30	69.3	71.6	73.8	76.1	78.3	80.6	82.9	85.1	87.4	89.6
31	71.6	73.9	76.1	78.4	80.7	82.9	85.2	87.4	89.7	92.0
32	73.9	76.2	78.4	80.7	83.0	85.2	87.5	89.7	92.0	94.3
33	76.2	78.5	80.7	83.0	85.3	87.5	89.8	92.0	94.3	96.6
34	78.5	80.8	83.1	85.3	87.6	89.8	92.1	94.4	96.6	98.9
35	80.9	83.1	85.4	87.6	89.9	92.2	94.4	96.7	98.9	101.2

NOTE: FIELD TDH MUST BE EQUAL TO OR HIGHER THAN THE CALCULATED TDH

Voice (352) 332 7665

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mike@funstatepoolsinc.com



Michael Canto

www.funstatepoolsinc.com

3601 N W 97th Blvd • Gainesville, Florida 32606

Swimming Pool Specification For:

Thomas Pyne

362 sw Sapling Glen

Lake City FL 32024



332 POOL

3601 N.W. 97th Blvd.
Gainesville, Florida 32606

REF. NO. _____

POOL SHAPE Rectangle JOB NO. _____
SIZE 15' x 30' DEPTH 4' TO 6' PERM 90 AREA 450
DECK 860 / 0 DECK SURFACE Sundeck DECK-O-DRAIN yes
COPING no CANTILEVER yes
TILE 6" x 6" COLOR owner
STEP COLOR no COLOR no
TURNOVER 8h FILTER TYPE PLM SIZE 100 PUMP VS + SVRS
SKIMMER yes INLETS 5 MAIN DRAIN yes
GRAB RAILS no HAND RAIL no LADDER no
POOL LIGHT yes VOLTS 120 WATTS 400
DIVING BOARD no SIZE no
AUTOMATIC CHLORINATOR SALT TIMER no FILL LINE no
CLEANING EQUIPMENT manual SWIMOUT yes SIZE 18' x 6' JETS no
ROPE & FLOATS no ROPE ANCHORS no
AUTOMATIC CLEANING SYSTEM Legend II POOL HEATER no
GAS LINE BY: no SLIDE no SIZE no

SPA SPECIFICATIONS NO SPA
SIZE _____ DEPTH _____ JETS _____
BLOWER _____ SKIMMER _____ LIGHT _____
SPILLWAY _____ HEATER _____ MAIN DRAIN _____
SCREEN ENCLOSURE owner ROOF owner DOORS owner
ALUM ROOF owner GUTTER owner
REMOVE FENCE owner REPLACE FENCE owner TEMP. FENCE owner
TREE REMOVAL owner STUMP REMOVAL owner
SHRUBS owner SAVE owner HAUL AWAY owner
SEPTIC TANK owner SEWER LINE owner
POWER LINE owner RELOCATE owner
GAS LINE owner WATER LINE owner
SPRINKLERS owner REROUTE owner CAP owner
PHONE LINE owner ACCESS PERMISSION owner
RETAINING WALL owner

NAME Custom Design FUN-STATE POOLS
Tom / Darla Pyne
ADDRESS 362 SW Sapling Glen
CITY Lake City PHONE 386-292-5632

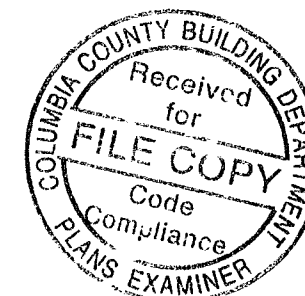
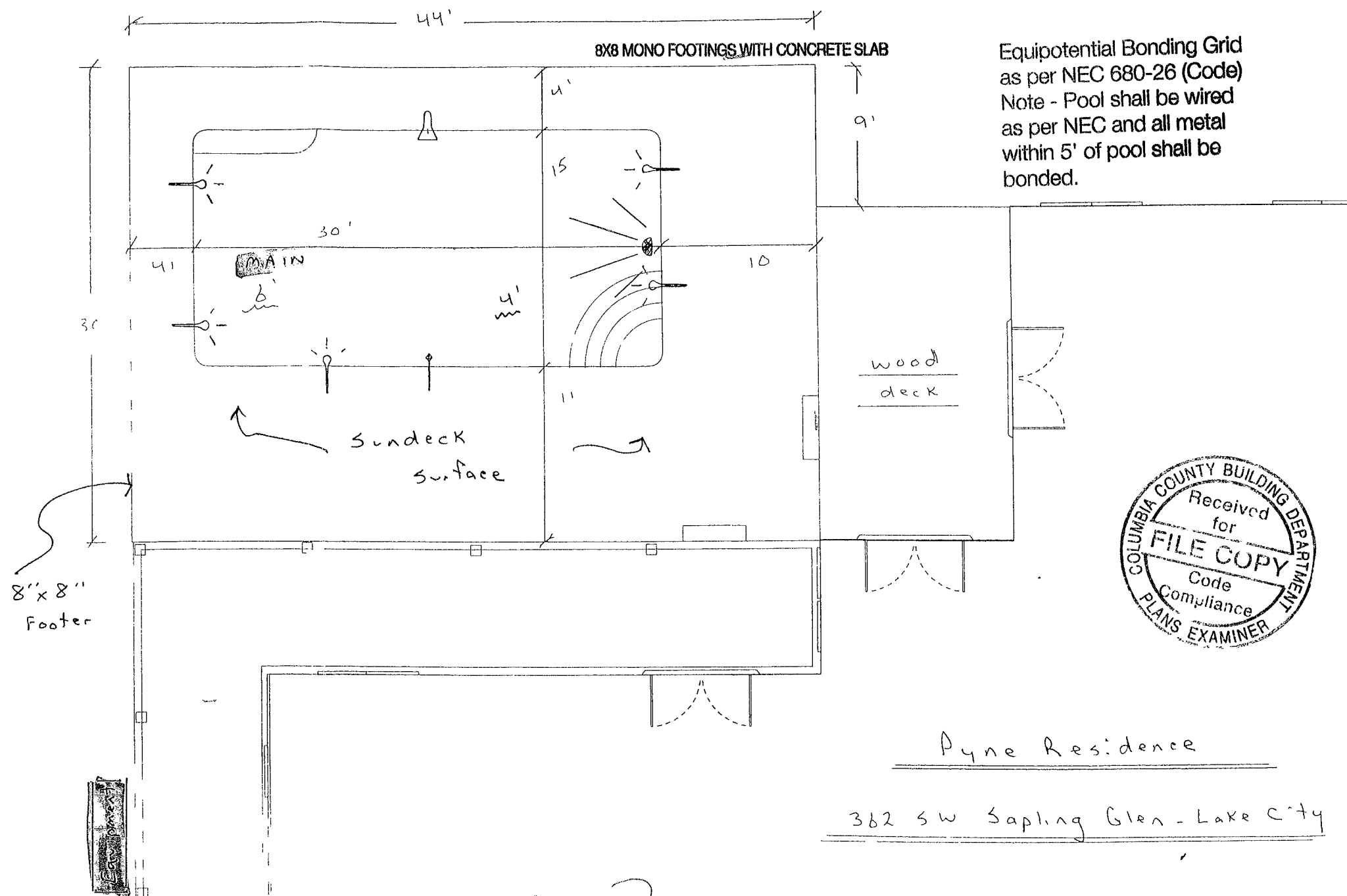
Part 2 of contract dated _____ for pool at
LOT _____ BLOCK _____ SUB _____
BOOK _____ PAGE _____
ALSO DESCRIBED AS _____
CUSTOMER'S SIGNATURE _____
DWN BY Barry DATE 4/11/14 CHK BY _____

- ① 15' x 30' pool - \$25,000
- ② 8' x 8' footer / screen enclosure
- ③ window / door alarms to code

Note - Angle of repose of
existing foundation shall not
be disturbed by pool
excavation without engineering.

Equipotential Bonding Grid
as per NEC 680-26 (Code)
Note - Pool shall be wired
as per NEC and all metal
within 5' of pool shall be
bonded.

PLOT PLAN
SCALE 1/8" = 1'0"

Pyne Residence362 SW Sapling Glen - Lake Cityx: [Signature]

DIRECTION

Note All plan dimensions
are subject to field verification
and modification