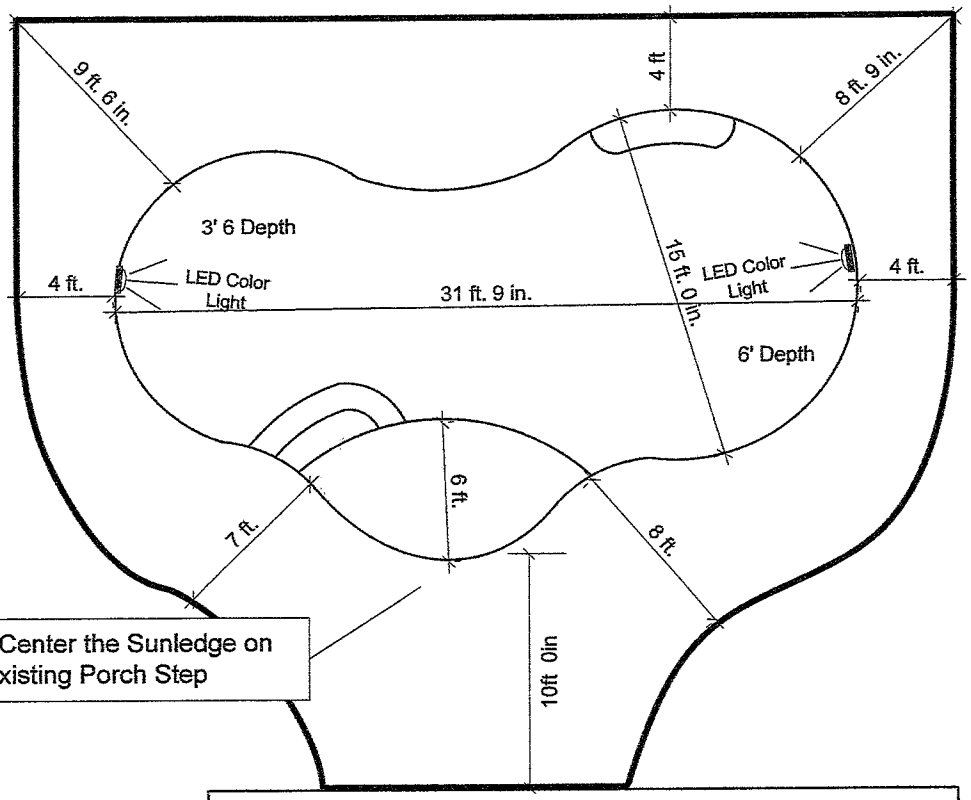


COLUMBIA COUNTY BUILDING DEPARTMENT
REVIEWED FOR
FIELD COPY
CODE COMPLIANCE
PLANS EXAMINER

*Note. Center the Sunledge on existing Porch Step

ACCESS

Existing Deck

House

F

ACCESS

PARAGON Pools

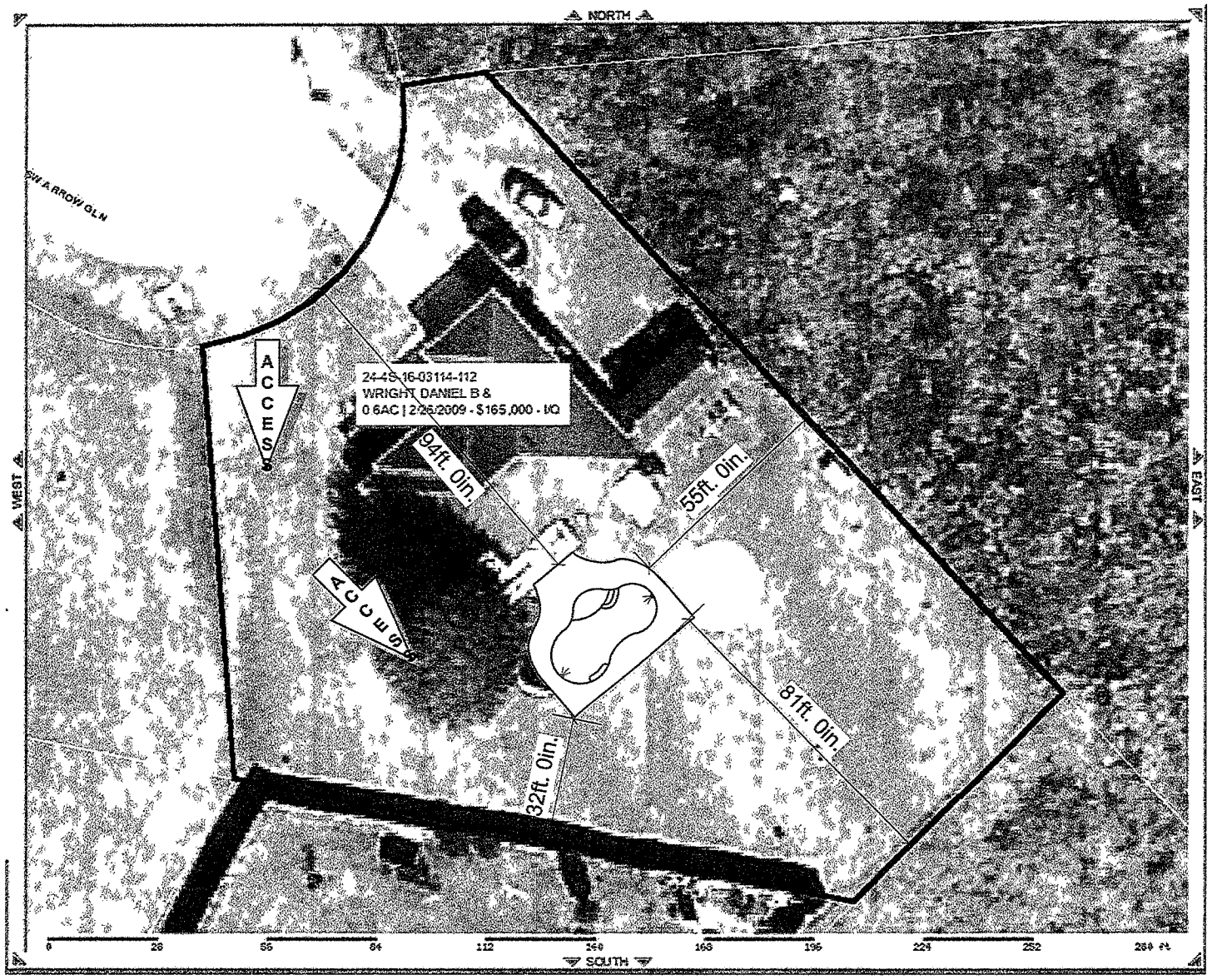
Cindy Rendel
176 SW Arrow Glen
Lake City, FL 32024

Paragon Pools
(386) 755-7300

License	DESIGNER	REV
CPC1456799	**Brent Handy** Brent@ParagonPoolsOnline.com	
SCALE 1/8" = 1'		SHEET 1 OF 1

Final Design - Homeowner Approval:

X _____ Date: _____



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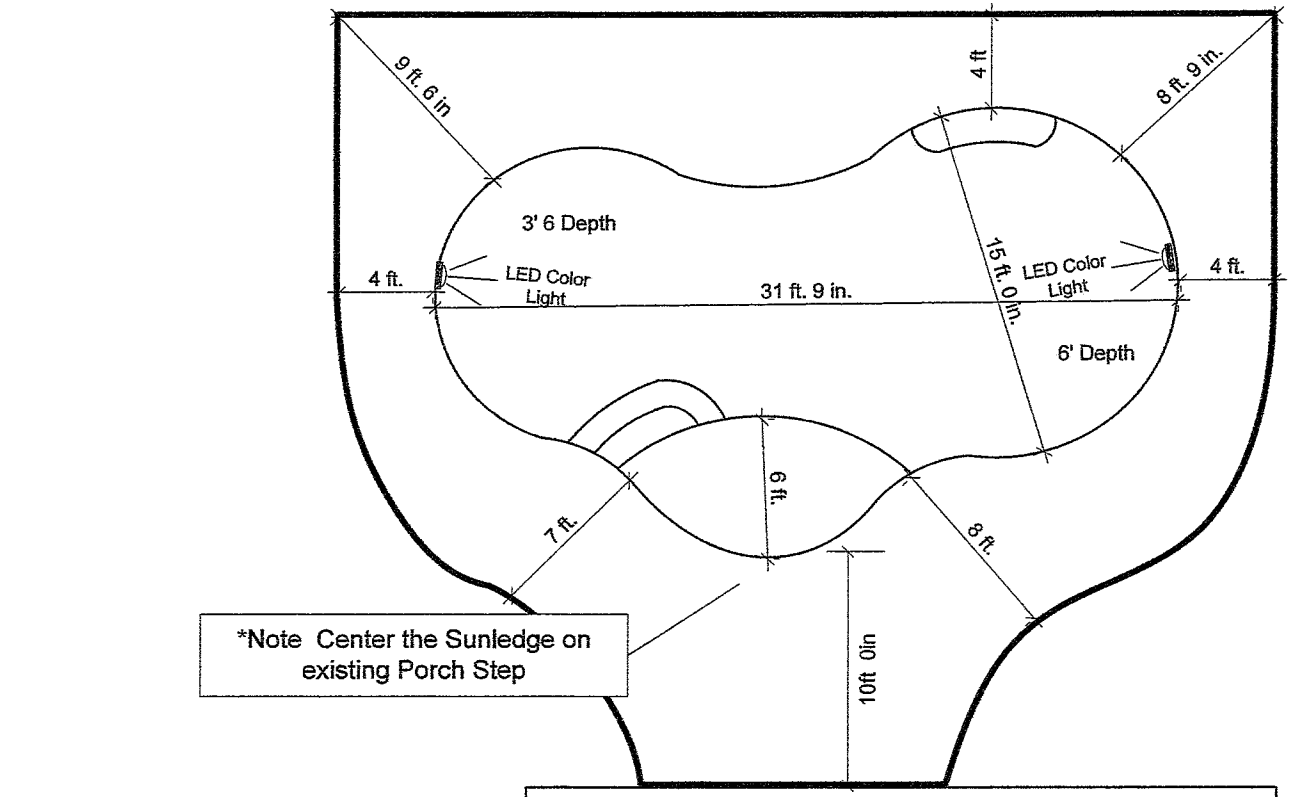

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

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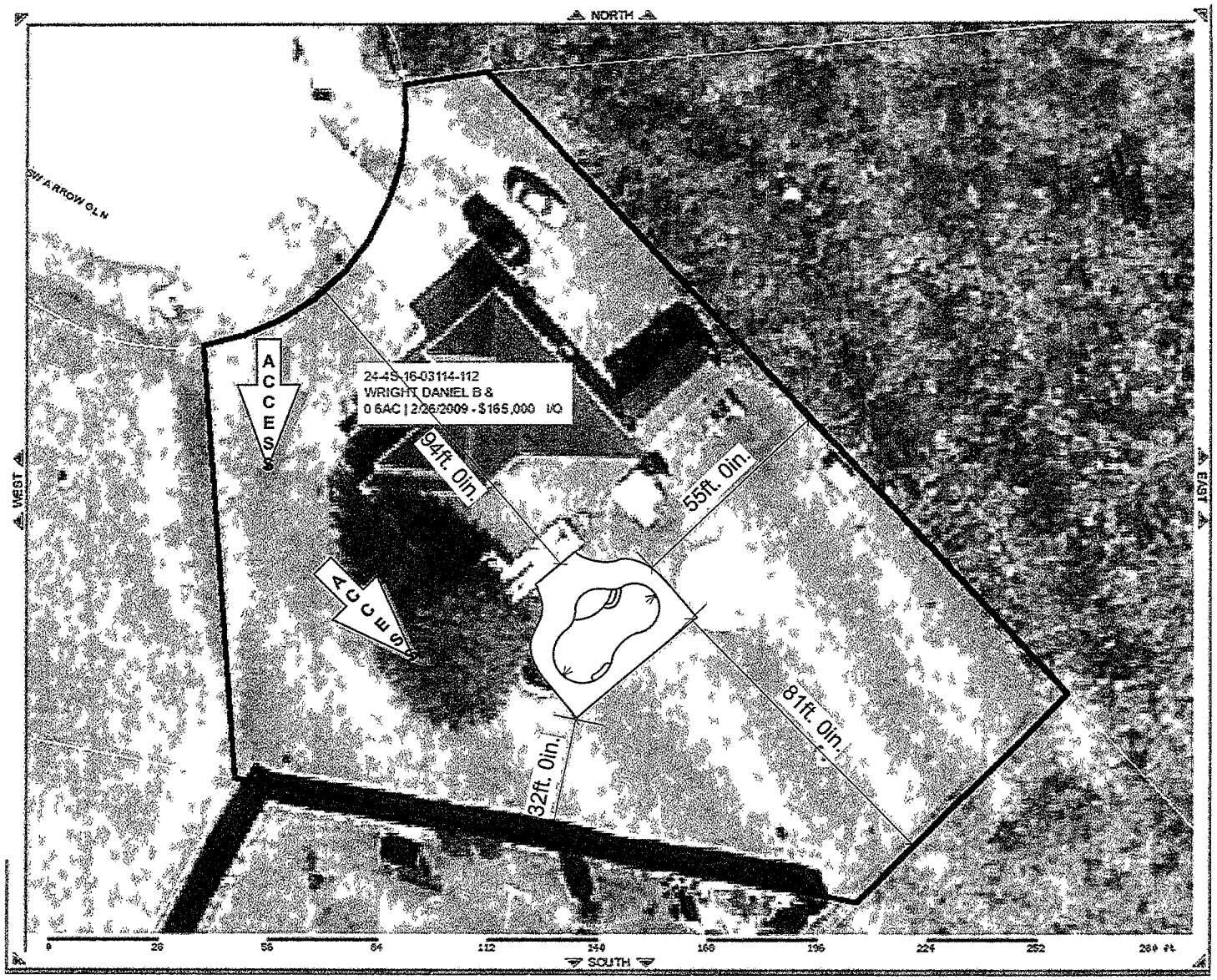

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	SHEET 1 OF 1	

KIMES ENGINEERING
AND MANAGEMENT SERVICES, INC.

PARAGON POOLS OF LAKE CITY
Client of Kimes Engineering:

Worksheet showing data for compliance with 2010 FBC, ANSI/APSP- 15

Owner: CINDY RENDEL Address: 176 SW ARROW GLEN Lot: 12

ANSI 15 Filtration Flow Area: CANNON CREEK PLACE

Volume of Pool Area 420 x Avg Depth 4.75 = Vol in CF 1995

Vol in CF x 7.48 gal/CF = 14923 GALLONS

Calculate Maximum Filtration Flow Rate: Pool Volume/ 360 = 41 GPM [if <13,000 MAY use 36 gpm]

ANSI 15 Auxiliary Flow *MAY USE LESS THAN THIS MAXIMUM*

Calculate Maximum Auxiliary Load Design Flow Rate: *IF AT LEAST ANSI 5 12 HR TURNOVER*

Number Spa Jets X 7 to 15 GPM = X GPM

Or Water Feature Flow: X GPM X

ANSI 15 Flow ACTUAL TURNOVER AT ANSI 15 FLOW= 6.1 HR IF LESS THAN 12 HR MEETS ANSI 5

ANSI 15 Flow : 41 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 INTELLIFLO

Pump Flow Rate(s) from Listing: @ Low/Single speed 11 GPM, & @ High Speed 73 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: SELF CONTAINED
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*** 41 GPM / 0.375 gpm/sf = 110.5 SF Min Filter Size

[see pool plan for filter model or show here: PENTAIR CCRP150, 150SF]

ANSI 7 Flow **see Site Specific Information Sheet**

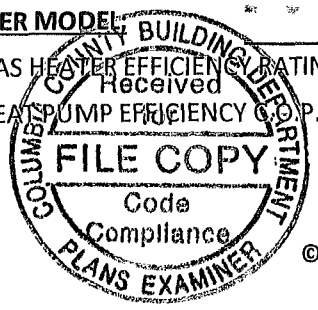
ANSI 5 Flow: Depending on the pipe, use any of the ANSI 15 Filtration, or ANSI 15 flows or the flow at 60 ft TDH on the selected pump curve for the ***ANSI 5 Flow.***

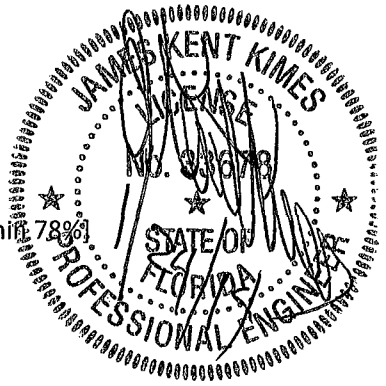
See flow vs velocity vs pipe size on Standard Engineering.
See summary of pipe sizes on ANSI 7 Site Specific Information Sheet

HEATER MODEL: X

GAS HEATER EFFICIENCY RATING: X with no pilot light [min 78%]

HEAT PUMP EFFICIENCY C.O.P.: X [min 4.0]





- For Client Use Only -

3990 SR 64 E | Bradenton, Florida 34208 | ph: (941)749-0311
kent@kimesengineering.com | P.E. 33678, C.A. 27189

KIMES ENGINEERING
AND MANAGEMENT SERVICES, INC.

PARAGON POOLS OF LAKE CITY
Client of Kimes Engineering:

Owner: CINDY RENDEL
Address: 176 SW ARROW GLEN

SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH 2010 FBC ANSI/APSP-7

METHOD OF DETERMINING ANSI 7 PUMP FLOW

Max Flow from Pump Curve Pump Curve Attached		Simplified TDH Curve & Calc		Detailed TDH Curve & Calc	X

SUCTION OUTLET FOR: **FILTRATION PUMP**

Manufacturer & Model: PENTAIR INTELLIFLO

Pump Flow from Pump Curve with method indicated:	111	GPM
d **Maximum** Pump Flow for sizing Branch Pipe & Suction based on number of Suction Outlets used :		GPM
Minimum Branch Pipe Size given flow at **6 FPS:**	3	INCH

LISTED SUCTION OUTLET COVER/GRATE- POOL OUTLET

Number of Suction Outlets: TWO | Manufacturer & Model: SDX

APPROVED Maximum Outlet Flow (GPM) **Floor flow:** 200 | **Wall flow:** 192

TRUNK/SUCTION PIPE SIZING- ANSI 7 FLOW

Minimum Trunk Pipe Size given flow @ **8 FPS** 2.5 **Inch Pipe**

SUCTION OUTLET FOR: **SPA**

Manufacturer & Model: X

Pump Flow from Pump Curve with method indicated:		GPM
d **Maximum** Pump Flow for sizing Branch Pipe & Suction based on number of Suction Outlets used :	X	GPM
Minimum Branch Pipe Size given flow at **6 FPS:**		INCH

LISTED SUCTION OUTLET COVER/GRATE- SPA OUTLETS

Number of Suction Outlets: X | Manufacturer & Model: X

APPROVED Maximum Outlet Flow (GPM) **Floor flow:** | **Wall flow:** GPM

TRUNK/SUCTION PIPE SIZING- ANSI 7 FLOW

Minimum Trunk Pipe Size given flow @ **8 FPS** **Inch Pipe**

ANSI 15 FLOW= 41 GPM

	OTHER PIPE SIZE SUMMARY	PIPE SIZE "INCH" FULL FLOW	SPLIT FLOW
	SKIMMER SUCTION- ANSI 15 FLOW @ 6 FPS :	2	
	FILTRATION RETURN SIDE-ANSI 15 FLOW @ 8 FPS:	MIN 1-1/2	
X GPM	AUXILIARY RETURN SIDE- ANSI 5 FLOW @ 10 FPS:	MIN	
X GPM	2ND AUXILIARY RETURN SIDE- ANSI 5 FLOW @ 10 FPS:	MIN	
	OPTIONAL VACUUM OR SWEEP LINE- ANSI 5 FLOW @ 8 FPS:	TYP 1-1/2	

JAMES KENT KIMES LICENSE No. 33678 STATE OF FLORIDA PROFESSIONAL ENGINEER

NOTES:

SUMMARY: USE DUAL SDX DRAINS FOR POOL, WITH 3" BRANCH PIPE
USE 2.5" SUCTION LINES TO PUMP

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KIMES ENGINEERING
AND MANAGEMENT SERVICES, INC.

PROJECT CLIENT PARAGON POOLS OF LAKE CITY
PROJECT NAME CINDY RENDEL
PROJECT ADDRESS 176 SW ARROW GLEN

Pool ONLY	suction	pressure	equipment
Pipe Size	2.5	2	2
Pipe Length 100% flow	53	36	15
#El fittings	5	4	4
#T Run fittings	0	0	0
#T Branch fittings	1	0	1
Gate Valves	0	0	1
# 3 Way valves	0	0	2

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.

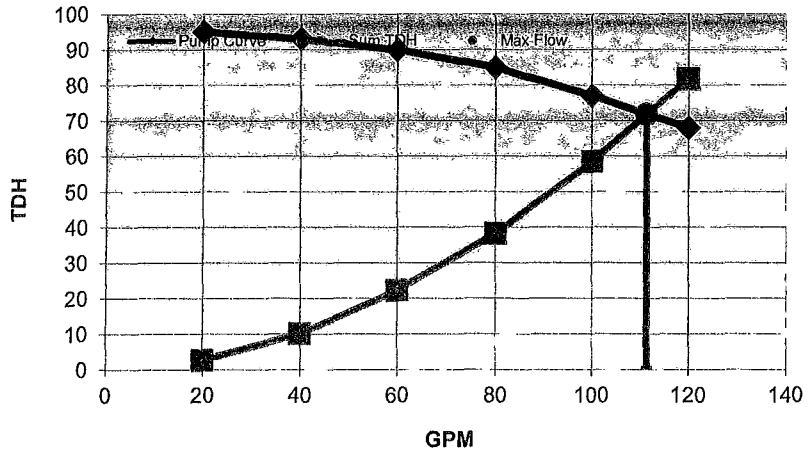
Filter: PENTAIR CCRP150, 150SF
Heater: X
Return Fittings 3

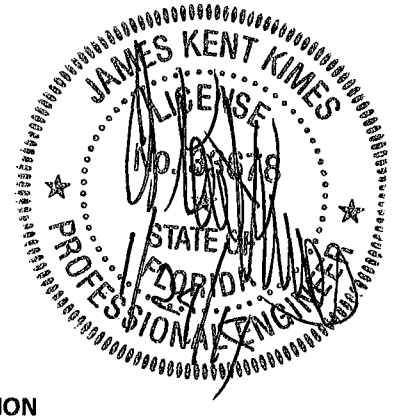
Head loss based on Hazen-Williams equation
Head Loss per 100 ft $=0.2083\,(100/c)^{1.852} * q^{1.852} / d_h^{\,4.8655}$
Using c= 140

SUM PIPE FRICTION HEAD	1.9	8.2	17.3	29.5	44.5	62.4
FILTER HEAD	0.0	0.4	1.7	3.7	6.5	9.3
RETURN FITTING FLOW	0.8	1.5	3.3	5.0	7.4	10.0
SALT CELL	0.0	0.0	0.0	0.0	0.0	0.0
HEATER	0.0	0.0	0.0	0.0	0.0	0.0
SUM TDH	3	10	22	38	58	82
FLOW	20	40	60	80	100	120

DETAILED TDH POOL MODE

Pump Curve **PENTAIR INTELLIFLO VS**





USE MINIMUM **2.5" BRANCH SUCTION**

MAXIMUM FLOW **111** GPM
ANSI 7 SUCTION BRANCH: **3** " MIN IF MULTIPLE OUTLETS- OMIT FOR UNBLOCKABLE OUTLETS
ANSI 7 SUCTION TO EQUIP: **2.5** " TRUNK SUCTION TO EQUIPMENT

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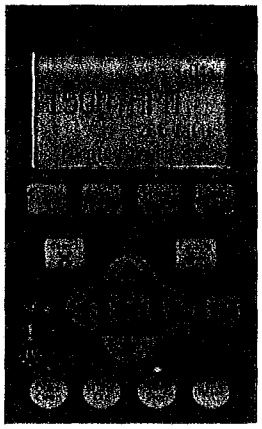
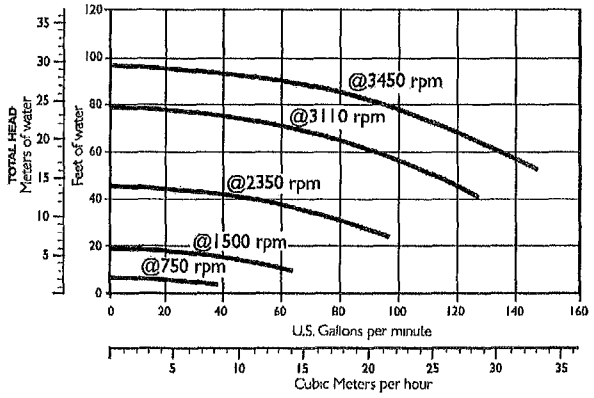
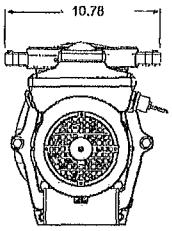
IntelliFlo® Variable Speed High Performance Pump (Cont'd)

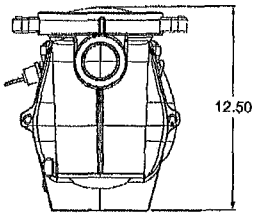


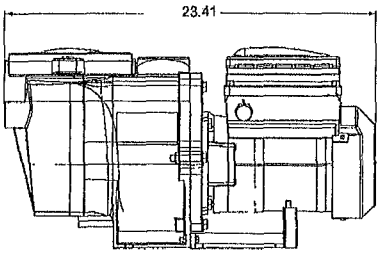
Keypad for IntelliFlo Variable Speed

Dimensions and Performance*









Refer to catalog page 35 for a selection of 1-and-2-Pole GFCI breakers which offer 6 milliamp personnel protection while meeting NEC 2008 Standards for Pool Pumps.

* See page 477 for replacement parts

CINDY RENDEL

With a flow rating of 200 gpm on the floor and 192 gpm on the wall SDX is compatible with pumps up to 3 hp. In most cases this eliminates the need to calculate the system total dynamic head

DESCRIPTION	MAX FLOW FLOOR	MAX FLOW WALL
One SDX Drain	200 gpm (756 lpm)	192 gpm (726 lpm)
Two SDX Drains	200 gpm (756 lpm)	192 gpm (726 lpm)
Three SDX Drains	300 gpm (1136 lpm)	288 gpm (1090 lpm)
Four SDX Drains	400 gpm (1514 lpm)	384 gpm (1456 lpm)

- Order **SDX** for new pool construction or when installing a new plaster ring (such as when a new interior finish is being applied)
- **SDX** is available for concrete, vinyl and fiberglass pools
- Order **SDX Retro** when replacing an existing suction outlet cover up to 10" in diameter
- **SDX Retro** is available for concrete and vinyl pools
- **SDX Equalizer** for skimmer equalizer lines or suction pipes extending through the wall of concrete pools without sumps. Spacer ring provides adequate clearance to eliminate chipping of interior surface to create a sump. Includes concrete anchors.

Available in eight colors to complement any interior surface

WARNING: SDX and SDX Retro must be installed in accordance with Paramount's written instruction manual and in conformity with applicable Federal, State, Local and Swimming pool industry building and safety codes

Paramount
Pool Life Simplified

World's #1 In-Floor Systems Company

295 East Corporate Place, Suite 100
Chandler, Arizona 85225
480.893.7607 | 1.800.621.5886 www.1Paramount.com
Paramount@1Paramount.com

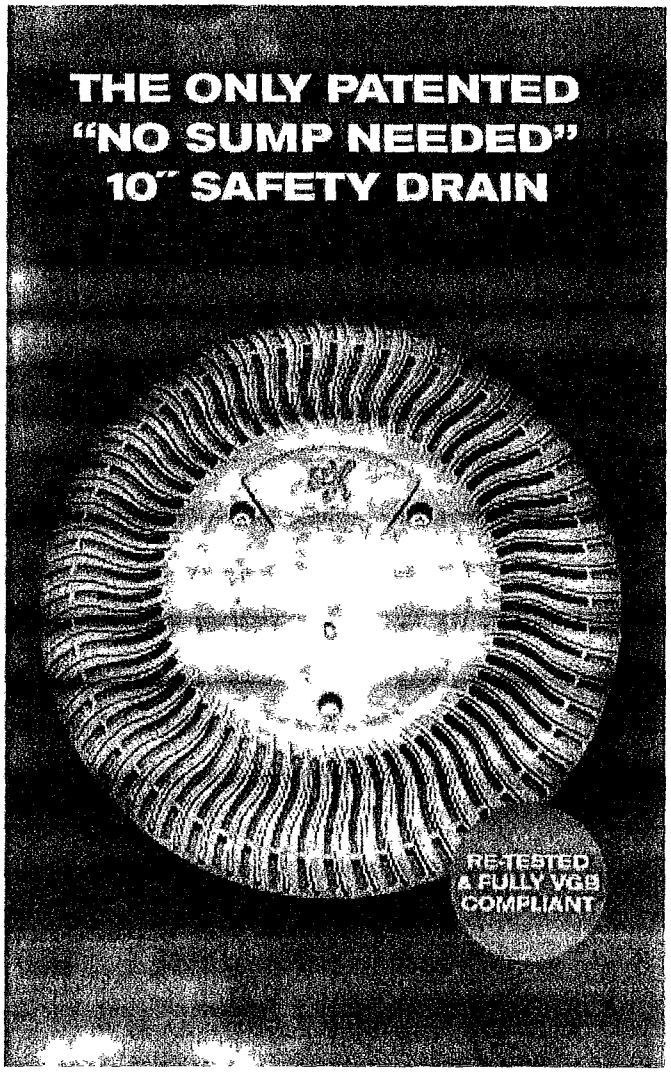
SDX & SDX Retro are Protected by U.S. Patent Numbers 7,178,179 D532,684 D531,866

MADE IN USA

SDX0814 004-022-5630-00 REV060711

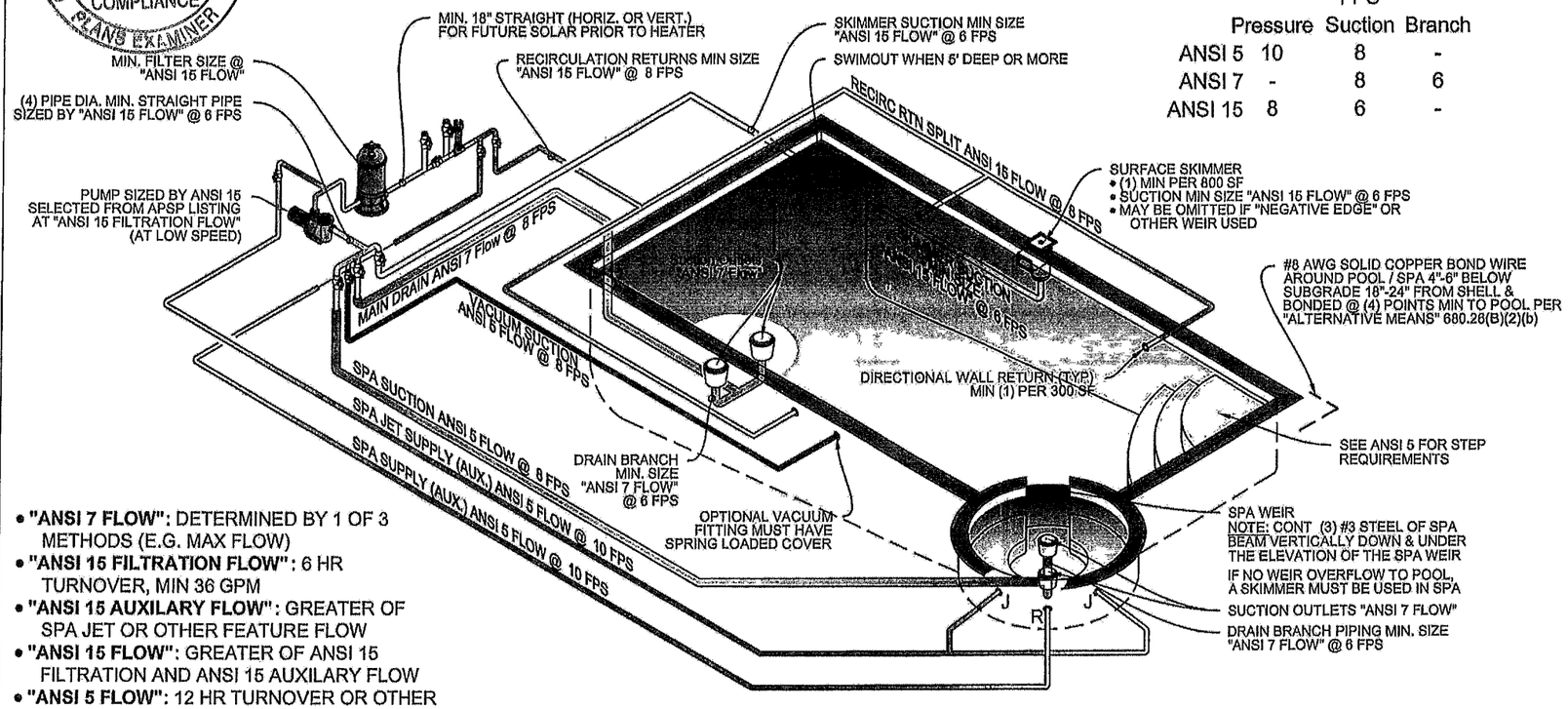
SDX®

VGB HIGH FLOW SAFETY DRAIN



Powered by: Paramount
Pool Life. Simplified.

176 SW ARROW GLEN

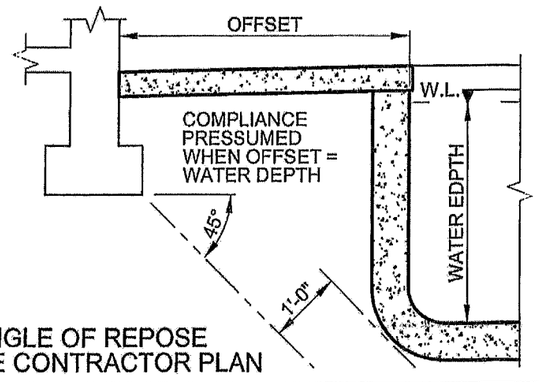


	FPS Pressure	Suction	Branch
ANSI 5	10	8	-
ANSI 7	-	8	6
ANSI 15	8	6	-

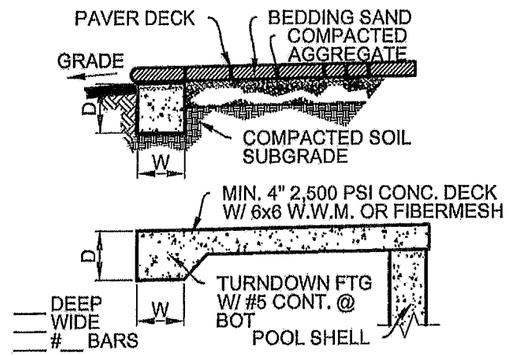
- **"ANSI 7 FLOW"**: DETERMINED BY 1 OF 3 METHODS (E.G. MAX FLOW)
- **"ANSI 15 FILTRATION FLOW"**: 6 HR TURNOVER, MIN 36 GPM
- **"ANSI 15 AUXILARY FLOW"**: GREATER OF SPA JET OR OTHER FEATURE FLOW
- **"ANSI 15 FLOW"**: GREATER OF ANSI 15 FILTRATION AND ANSI 15 AUXILARY FLOW
- **"ANSI 5 FLOW"**: 12 HR TURNOVER OR OTHER "ESTIMATED/ DESIGN" FLOW

PIPE FLOW AT GIVEN VELOCITY (GPM)

PIPE	6 FPS	8 FPS	10 FPS
1"	16	22	26
1-1/2"	38	51	62
2"	63	84	102
2-1/2"	90	119	146
3"	138	184	226
4"	238	317	391
6"	540	720	890



ANGLE OF REPOSE
OR SEE CONTRACTOR PLAN



DECK & FOOTING
OR SEE CONTRACTOR PLAN

EXAMPLE RESIDENTIAL POOL / SPA SCHEMATIC PLAN & NOTES

POOL ONLY ☐
SPA ONLY ☐

SCALE: N.T.S.

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

176 SW ARROW GLEN

KIMES ENGINEERING
AND MANAGEMENT SERVICES, INC
13410 2nd Ave. NE, Bradenton, FL 34212
Office: 941-749-0311, Fax: 941-746-7391
kent@kimesengineering.com
P.E. 33678, C.A. 27189

DATE:	REVISIONS:

DWG. BY:	MCM	PRINTED: 13-Apr-12	
CHKD. BY:	JKK	SCALE: AS NOTED	
DATE:	13-Apr-12		

JAMES KENT KIMES
LICENSE
No. 33678
STATE OF FLORIDA
PROFESSIONAL ENGINEER

TYPICAL PLAN & SECTIONS FOR RESIDENTIAL POOL/SPA

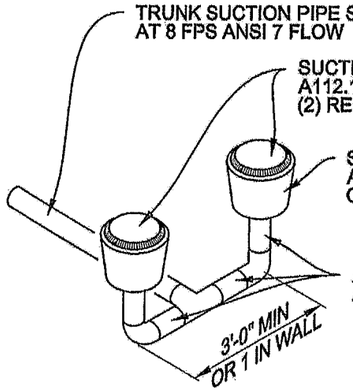
S1

SHEET OF

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

\\SBSDC\Company Shared Docs\File Cabinet-Kent\1 Pool Changes 2011 & 2012\1-2010 KE Std Eng r 4-13-12.dwg

B

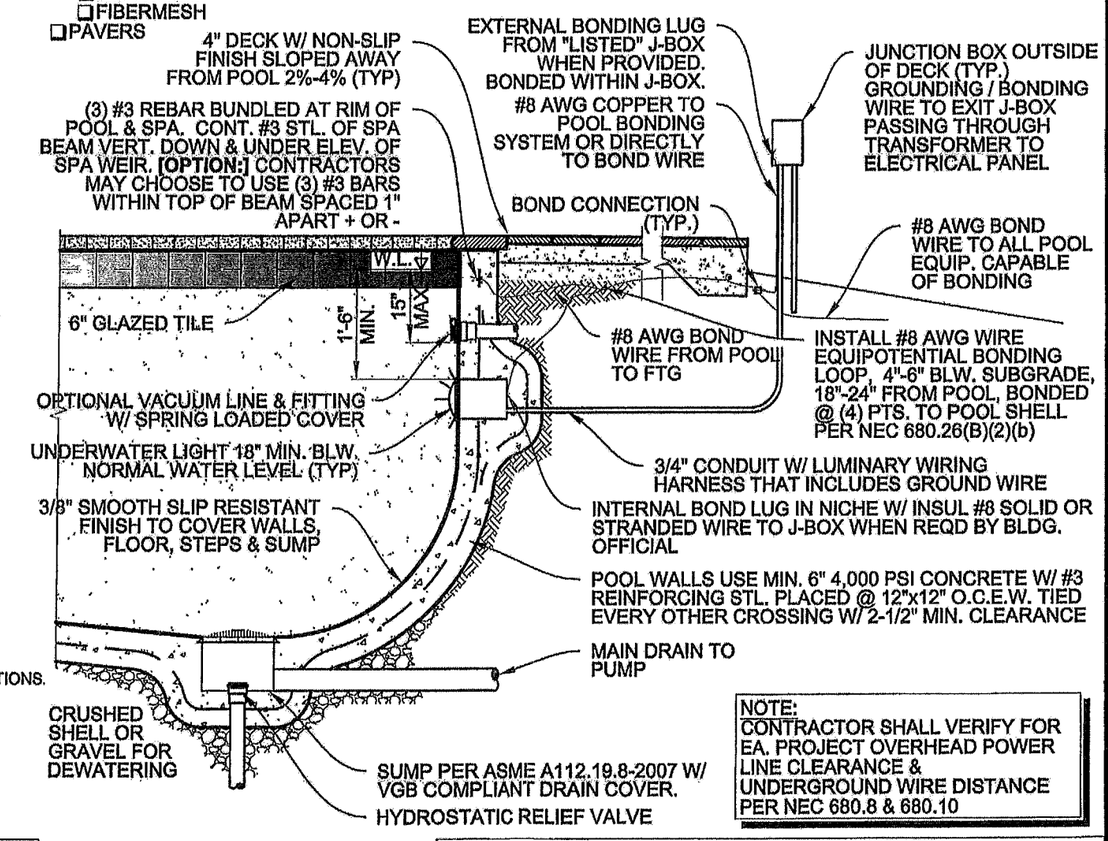


MAIN DRAINS MAY BE OMITTED ENTIRELY

GENERAL NOTES:
a. D = INSIDE DIA. OF PIPE
b. ALL DIMENSIONS SHOWN ARE MINIMUMS.
c. ALL HIDDEN LINES INDICATE SUGGESTED SUMP CONFIGURATIONS.

NOTES:
- FIELD BUILD SUMPS MEETING THESE CRITERIA REQD WHEN MFR POTS NOT USED
- MAY OMIT IF LISTED COVER DOCUMENATION STATES OTHER CLEARANCE TO SUCTION PIPE REQD

A



NOTE:
CONTRACTOR SHALL VERIFY FOR EA. PROJECT OVERHEAD POWER LINE CLEARANCE & UNDERGROUND WIRE DISTANCE PER NEC 680.8 & 680.10

SUMP SECTIONS PER ASME A112.19.8-2007

SCALE: N.T.S.

POOL DEEP END SECTION

SCALE: N.T.S.

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

NOTE

1. APPROVED PRODUCT SPECIFICATION MAY DIFFER FROM FIELD BUILT SUMPS SHOWN ON THIS PAGE

ADDITIONAL STRUCTURAL NOTES

- Use minimum ASTE A815 Grade 40 Steel
- Lap #3 bars minimum 15"
- Lap #5 bars minimum 25"
- 6" Shell thickness and 2-1/2" concrete coverage are minimums
- Use 4,000 psi concrete
- Contractor / Owner required to:
  - Contact Engineer if pool not placed on undisturbed and de-watered earth that can meet 2,000 psf bearing capacity.
  - When buried debris is encountered or questionable conditions are indicated at the work site prior / during construction, a subsurface consultant shall conduct boring(s) in the area of the pool to confirm soil bearing capacity, clear of buried debris, & verifying ground water level
  - All modified soils & earth fill under perspective pool area shall meet a soil density and compaction minimum of 95% modified proctor without settlement.

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

176 SW ARROW GLEN

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KENT KIMES LICENSE NO. 33678 STATE OF FLORIDA PROFESSIONAL ENGINEER

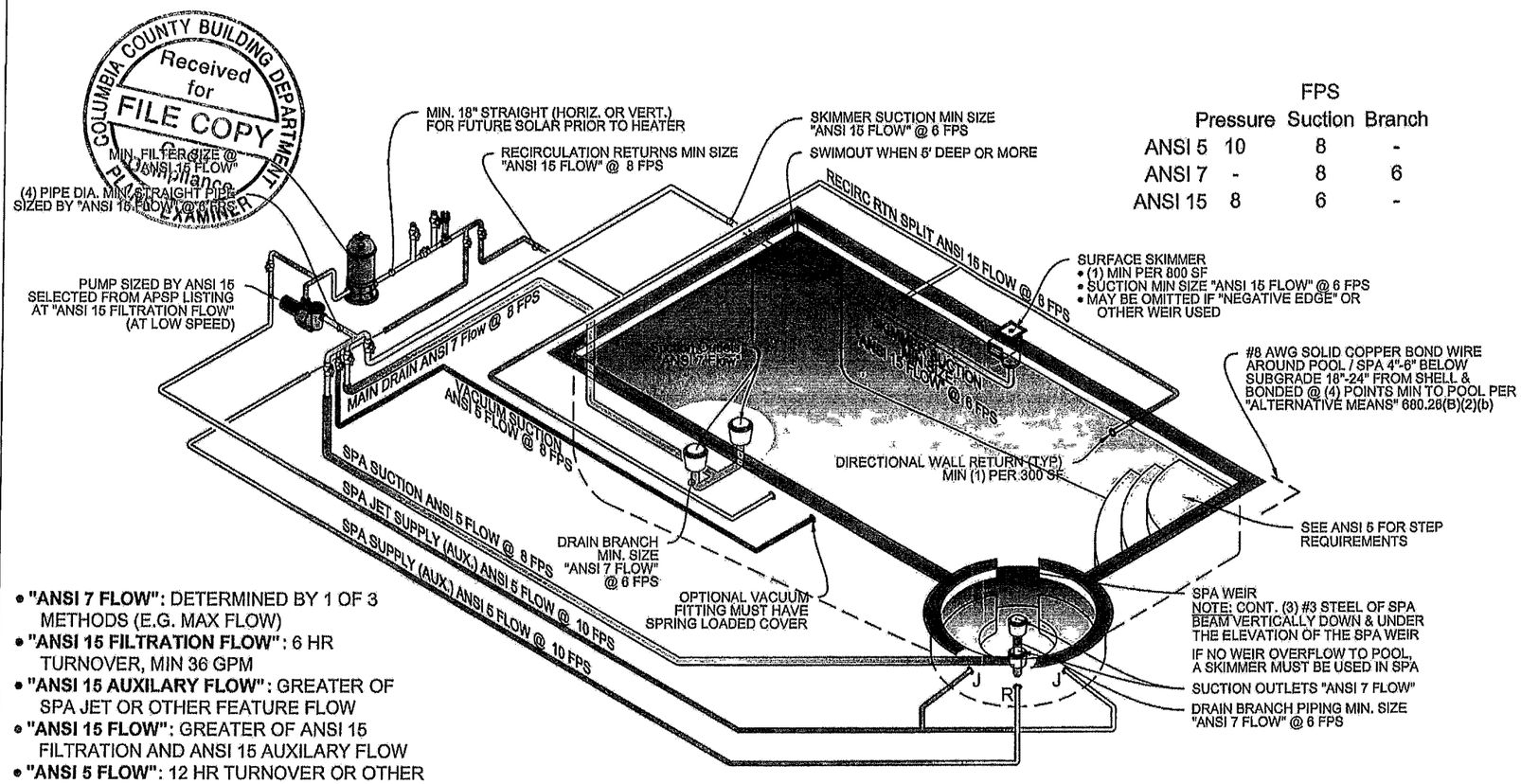
TYPICAL PLAN & SECTIONS FOR RESIDENTIAL POOL/SPA

S2

SHEET OF

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

\\SBSDC\Company Shared Docs\File Cabinet-Kent\1 Pool Changes 2011 & 2012\1-2010 KE Std Engr r 4-13-12.dwg



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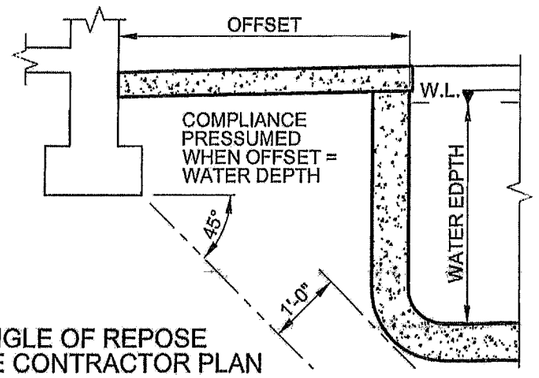
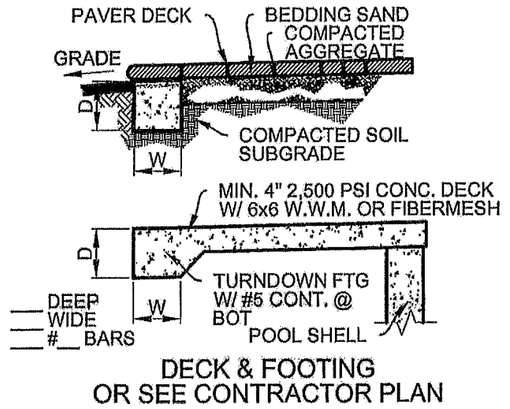
4"	238	317	391
6"	540	720	890



ANGLE OF REPOSE
OR SEE CONTRACTOR PLAN



DECK & FOOTING
OR SEE CONTRACTOR PLAN

EXAMPLE RESIDENTIAL POOL / SPA SCHEMATIC PLAN & NOTES

POOL ONLY ☐
SPA ONLY ☐

SCALE: N.T.S.

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

176 SW ARROW GLEN

KIMES ENGINEERING AND MANAGEMENT SERVICES, INC
13410 2nd Ave. NE, Bradenton, FL 34212
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kent@kimesengineering.com
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DATE:	REVISIONS:

DWG. BY:	MCM	PRINTED: 13-Apr-12	
CHKD. BY:	JKK	SCALE: AS NOTED	
DATE:	13-Apr-12		

JAMES KENT KIMES — 36678 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

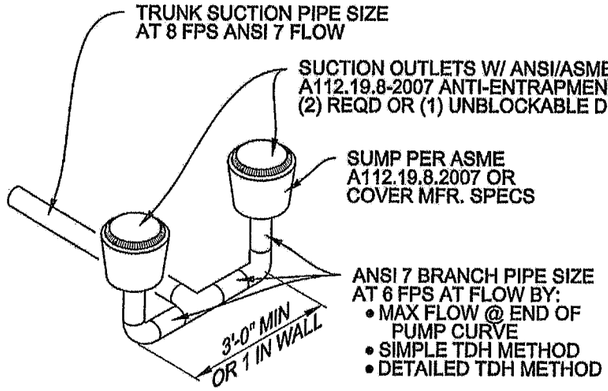
TYPICAL PLAN & SECTIONS FOR RESIDENTIAL POOL/SPA

S1

SHEET OF

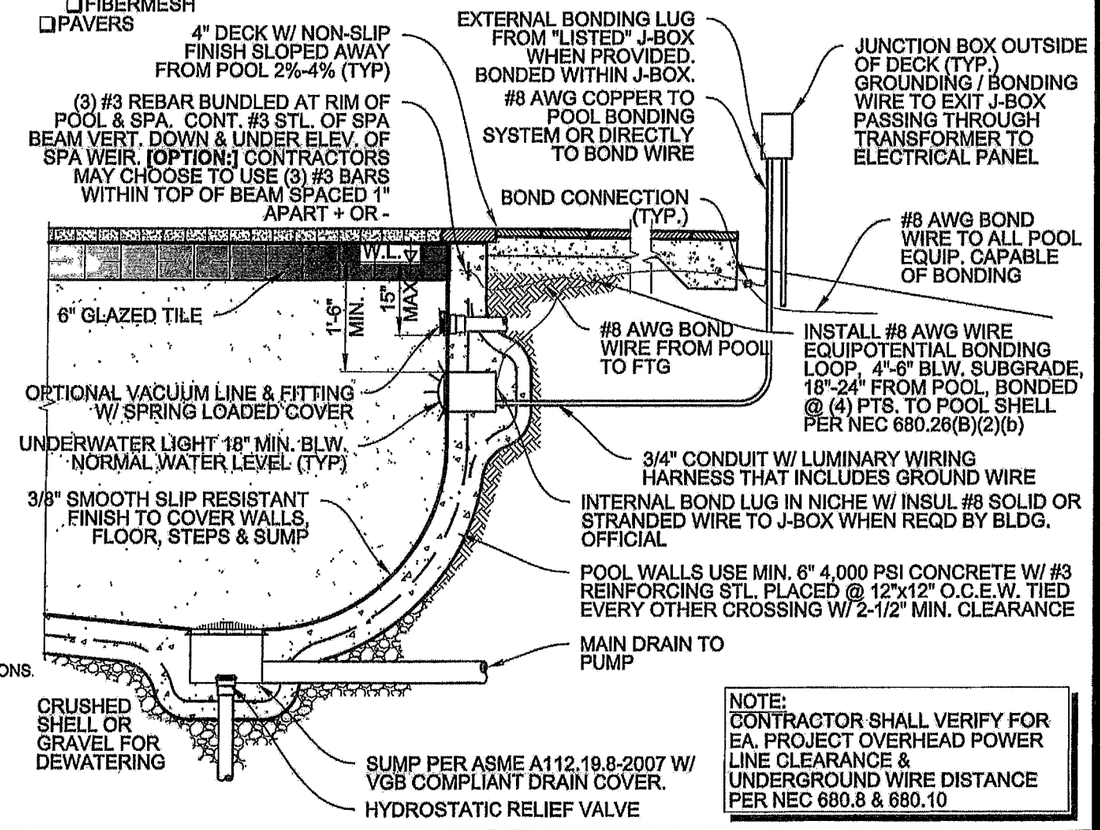
ORIG. DWG: 17"x11" (ANSI B)

B



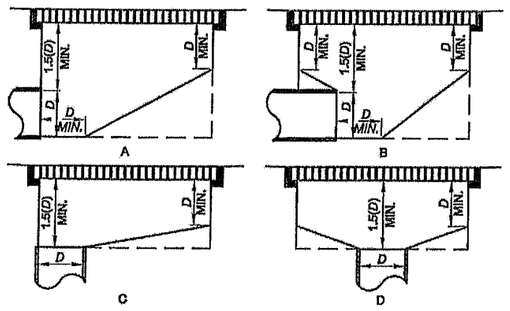
MAIN DRAINS MAY BE OMITTED ENTIRELY

DECK TYPE:
- ❑CONCRETE
  - ❑6x6 W.W.M.
  - ❑FIBERMESH
- ❑PAVERS



NOTE:
CONTRACTOR SHALL VERIFY FOR EA. PROJECT OVERHEAD POWER LINE CLEARANCE & UNDERGROUND WIRE DISTANCE PER NEC 680.8 & 680.10

A



GENERAL NOTES:
a. D = INSIDE DIA. OF PIPE
b. ALL DIMENSIONS SHOWN ARE MINIMUMS.
c. ALL HIDDEN LINES INDICATE SUGGESTED SUMP CONFIGURATIONS.

NOTES:
- FIELD BUILD SUMPS MEETING THESE CRITERIA REQD WHEN MFR POTS NOT USED
- MAY OMIT IF LISTED COVER DOCUMENATION STATES OTHER CLEARANCE TO SUCTION PIPE REQD

SUMP SECTIONS PER ASME A112.19.8-2007

SCALE: N.T.S.

POOL DEEP END SECTION

SCALE: N.T.S.

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NOTE

1. APPROVED PRODUCT SPECIFICATION MAY DIFFER FROM FIELD BUILT SUMPS SHOWN ON THIS PAGE

ADDITIONAL STRUCTURAL NOTES

- Use minimum ASTE A815 Grade 40 Steel
- Lap #3 bars minimum 15"
- Lap #5 bars minimum 25"
- 6" Shell thickness and 2-1/2" concrete coverage are minimums
- Use 4,000 psi concrete
- Contractor / Owner required to:
  - Contact Engineer if pool not placed on undisturbed and de-watered earth that can meet 2,000 psf bearing capacity.
  - When buried debris is encountered or questionable conditions are indicated at the work site prior / during construction, a subsurface consultant shall conduct boring(s) in the area of the pool to confirm soil bearing capacity, clear of buried debris, & verifying ground water level
  - All modified soils & earth fill under perspective pool area shall meet a soil density and compaction minimum of 95% modified proctor without settlement.

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JAMES KENT KIMES — STATE OF FLORIDA — PROFESSIONAL ENGINEER

TYPICAL PLAN & SECTIONS FOR RESIDENTIAL POOL/SPA

S2

SHEET OF

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

\\SBSDC\Company Shared Docs\File Cabinet-Kent\1 Pool Changes 2011 & 2012\1-2010 KE Std Engr r 4-13-12.dwg