DATE 05/18/2007

Columbia County Building Permit

This Permit Expires One Year From the Date of Issue

PERMIT 000025821

APPLICANT ROBERT MAY PHONE 752-0347

ADDRESS 174 SW DALMATION LANE LAKE CITY FL 32024

OWNER ROBERT MAY PHONE 752-0347

ADDRESS 174 SW DALMATION LANE LAKE CITY FL 32024

CONTRACTOR SAME AS APPLICANT PHONE

LOCATION OF PROPERTY 90W, TO PINEMOUNT, TL ON RAY DRIVE, TO THE END
RAY DR AND DALMATION

TYPE DEVELOPMENT SWIMMING POOL ESTIMATED COST OF CONSTRUCTION 8500.00

HEATED FLOOR AREA TOTAL AREA HEIGHT STORIES

FOUNDATION WALLS ROOF PITCH FLOOR

LAND USE & ZONING RSF-2 MAX. HEIGHT

Minimum Set Back Requirments: STREET-FRONT 25.00 REAR 15.00 SIDE 10.00

NO. EX.D.U. 0 FLOOD ZONE NA DEVELOPMENT PERMIT NO.

PARCEL ID 04-4S-16-02764-000 SUBDIVISION WESTWOOD ACRES

LOT 2 BLOCK PHASE UNIT TOTAL ACRES

Culvert Permit No.	Culvert Waiver	Contractor's License Number	Applicant/Owner/Contractor
EXISTING	X07-185	BK	JH	N
Driveway Connection	Septic Tank Number	LU & Zoning checked by	Approved for Issuance	New Resident

COMMENTS: NOC ON FILE

SIGNED REPORT FROM PLANS EXAMINER

Check # or Cash 2232

FOR BUILDING & ZONING DEPARTMENT ONLY

(footer/Slab)

Temporary Power date/app. by | Foundation date/app. by | Monolithic date/app. by

Under slab rough-in plumbing date/app. by | Slab date/app. by | Sheathing/Nailing date/app. by

Framing date/app. by | Rough-in plumbing above slab and below wood floor date/app. by

Electrical rough-in date/app. by | Heat & Air Duct date/app. by | Peri. beam (Lintel) date/app. by

Permanent power date/app. by | C.O. Final date/app. by | Culvert date/app. by

M/H tie downs, blocking, electricity and plumbing date/app. by | Pool date/app. by

Reconnection date/app. by | Pump pole date/app. by | Utility Pole date/app. by

M/H Pole date/app. by | Travel Trailer date/app. by | Re-roof date/app. by

BUILDING PERMIT FEE $ 45.00 CERTIFICATION FEE $ 0.00 SURCHARGE FEE $ 0.00

MISC. FEES $ 0.00 ZONING CERT. FEE $ 50.00 FIRE FEE $ 0.00 WASTE FEE $

FLOOD DEVELOPMENT FEE $ FLOOD ZONE FEE $ CULVERT FEE $ **TOTAL FEE** 95.00

INSPECTORS OFFICE L. H. CLERKS OFFICE CH

NOTICE: IN ADDITION TO THE REQUIREMENTS OF THIS PERMIT, THERE MAY BE ADDITIONAL RESTRICTIONS APPLICABLE TO THIS PROPERTY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. AND THERE MAY BE ADDITIONAL PERMITS REQUIRED FROM OTHER GOVERNMENTAL ENTITIES SUCH AS WATER MANAGEMENT DISTRICTS, STATE AGENCIES, OR FEDERAL AGENCIES.

"WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT."

This Permit Must Be Prominently Posted on Premises During Construction

PLEASE NOTIFY THE COLUMBIA COUNTY BUILDING DEPARTMENT AT LEAST 24 HOURS IN ADVANCE OF EACH INSPECTION, IN ORDER THAT IT MAY BE MADE WITHOUT DELAY OR INCONVIENCE, PHONE 758-1008. THIS PERMIT IS NOT VALID UNLESS THE WORK AUTHORIZED BY IT IS COMMENCED WITHIN 6 MONTHS AFTER ISSUANCE.

The Issuance of this Permit Does Not Waive Compliance by Permittee with Deed Restrictions.

Columbia County Building Permit Application

For Office Use Only Application # 0705-07 Date Received 5/8/07 By LH Permit # 25821

Application Approved by - Zoning Official BLK Date 16.05.07 Plans Examiner OKJTH Date 5-14-07

Flood Zone N/A Development Permit N/A Zoning RSF-2 Land Use Plan Map Category Res. Low Dev.

Comments Accessory use

☑ NOC ☐ EH ☑ Deed or PA ☑ Site Plan ☑ State Road Info ☐ Parent Parcel # ☐ Development Permit

Name Authorized Person Signing Permit Robert W May Phone 752-0347 Fax

Address 174 S.W. Dalmation Lane Lake City, FL 32024

Owners Name Robert W. May Phone 752-0347

911 Address 174 SW Dalmation Lane Lake City, FL. 32024

Contractors Name Self (Homeowner Phone

Address

Fee Simple Owner Name & Address Robert W May

Bonding Co. Name & Address N/A

Architect/Engineer Name & Address N/A

Mortgage Lenders Name & Address N/A

Circle the correct power company - FL Power & Light - Clay Elec. - Suwannee Valley Elec. - Progressive Energy

Property ID Number 04-5-16-02-764-000 Estimated Cost of Construction 8500.00

Subdivision Name Westwood Acres Lot 2 Block D Unit Phase

Driving Directions US 90 W to Pinemount - Right 1 mile to Ray Drive
(follow to Right about .2 mile to end of Street - Dalmation Lane)
174 Dalmation at end of Ray Dr at Dalmation Lane intersect.)

Type of Construction Pool Number of Existing Dwellings on Property

Total Acreage 2.03 Lot Size Do you need a - Culvert Permit or Culvert Waiver or Have an Existing Drive

Actual Distance of Structure from Property Lines - Front 110' Side 80' Side 80' Rear 120'

Total Building Height 22' Number of Stories 2 Heated Floor Area about 3800 Roof Pitch MANSORE 9/12

Application is hereby made to obtain a permit to do work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work be performed to meet the standards of all laws regulating construction in this jurisdiction.

OWNERS AFFIDAVIT: I hereby certify that all the foregoing information is accurate and all work will be done in compliance with all applicable laws and regulating construction and zoning.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

Robert W May — N/A

Owner Builder or Authorized Person by Notarized Letter — Contractor Signature

Contractors License Number

Competency Card Number

STATE OF FLORIDA
COUNTY OF COLUMBIA

LAURIE HODSON
MY COMMISSION # DD 333503
EXPIRES: June 28, 2008
Bonded Thru Notary Public Underwriters

NOTARY STAMP/SEAL

Sworn to (or affirmed) and subscribed before me this 08 day of May 2007.

Personally known ____ or Produced Identification ✓

Laurie Hodson

Notary Signature

(Revised Sept. 2006)

Columbia County Property Appraiser

DB Last Updated: 4/11/2007

2007 Proposed Values

Parcel: 04-4S-16-02764-000 HX 13

Tax Record | Property Card | Interactive GIS Map | Print

Search Result: 1 of 1

Owner & Property Info

Owner's Name	MAY ROBERT W		
Site Address	DALMATION		
Mailing Address	174 SW DALMATION LN LAKE CITY, FL 32024		
Use Desc. (code)	SINGLE FAM (000100)		
Neighborhood	4416.01	**Tax District**	2
UD Codes	MKTA06	**Market Area**	06
Total Land Area	2.030 ACRES		
Description	LOT 2 BLOCK D WESTWOOD ACRES. ORB 392-535, 407-334, 636-044, 845-255,		

GIS Aerial

Property & Assessment Values

Mkt Land Value	cnt: (1)	$24,360.00
Ag Land Value	cnt: (0)	$0.00
Building Value	cnt: (1)	$150,200.00
XFOB Value	cnt: (4)	$3,788.00
Total Appraised Value		$178,348.00

Just Value		$178,348.00
Class Value		$0.00
Assessed Value		$124,202.00
Exempt Value	(code: HX 13)	$124,202.00
Total Taxable Value		$0.00

Sales History

Sale Date	Book/Page	Inst. Type	Sale VImp	Sale Qual	Sale RCode	Sale Price
8/20/1997	845/255	WD	I	U	03	$96,300.00

Building Characteristics

Bldg Item	Bldg Desc	Year Blt	Ext. Walls	Heated S.F.	Actual S.F.	Bldg Value
1	SINGLE FAM (000100)	1975	Common BRK (19)	3312	4598	$150,200.00
	Note: All S.F. calculations are based on exterior building dimensions.					

Extra Features & Out Buildings

Code	Desc	Year Blt	Value	Units	Dims	Condition (% Good)
0166	CONC,PAVMT	0	$300.00	1.000	0 x 0 x 0	(.00)
0190	FPLC PF	0	$1,600.00	1.000	0 x 0 x 0	(.00)
0258	PATIO	0	$160.00	1.000	0 x 0 x 0	(.00)
0060	CARPORT F	1993	$1,728.00	576.000	24 x 24 x 0	AP (40.00)

Land Breakdown

Lnd Code	Desc	Units	Adjustments	Eff Rate	Lnd Value
000100	SFR (MKT)	2.030 AC	1.00/1.00/1.00/1.00	$12,000.00	$24,360.00

Columbia County Property Appraiser

DB Last Updated: 4/11/2007

NOTICE OF COMMENCEMENT FORM
COLUMBIA COUNTY, FLORIDA

THIS DOCUMENT MUST BE RECORDED AT THE COUNTY CLERKS OFFICE BEFORE YOUR FIRST INSPECTION

THE UNDERSIGNED hereby gives notice that improvement will be made to certain real property, and inaccordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.
IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

Tax Parcel ID Number 04-4S-16W-764-000 **Permit Number** _____

1. Description of property: (legal description of the property and street address or 911 address)

Westwood Acres - Lot 2 Block D
174 SW Dalmation Lane
Lake City, Florida 32024

2. General description of improvement: INSTALL INGROUND LINER POOL

3. Owner Name & Address Robert W. May
174 S.W Dalmation Lane Lake City, FL 32024 **Interest in Property** OWNER

4. Name & Address of Fee Simple Owner (if other than owner): N/A

5. Contractor Name Self Robert W May **Phone Number** 386-752-0347
Address 174 S.W Dalmation Lane Lake City FL 32024

6. Surety Holders Name N/A **Phone Number** 386 752-0347
Address _____

Amount of Bond _____

Inst:2007010401 Date:05/09/2007 Time:15:09
D.C.,P.DeWitt Cason,Columbia County B:1118 P:2067

7. Lender Name N/A
Address _____

8. Persons within the State of Florida designated by the Owner upon whom notices or other documents may be served as provided by section 718.13 (1)(a) 7; Florida Statutes:

Name N/A **Phone Number** _____
Address _____

9. In addition to himself/herself the owner designates N/A **of** _____ **to receive a copy of the Lien Notice as provided in Section 713.13 (1) –**

(a) 7. Phone Number of the designee _____

10. Expiration date of the Notice of Commencement (the expiration date is 1 (one) year from the date of recording, (Unless a different date is specified) _____

THE OWNER MUST SIGN THE NOTICE OF COMMENCEMENT AND NO ONE ELSE MAY BE PERMITTED TO SIGN IN HIS/HER STEAD.

Robert W. May
Signature of Owner

Sworn to (or affirmed) and subscribed before day of May 9th, **20** 07.

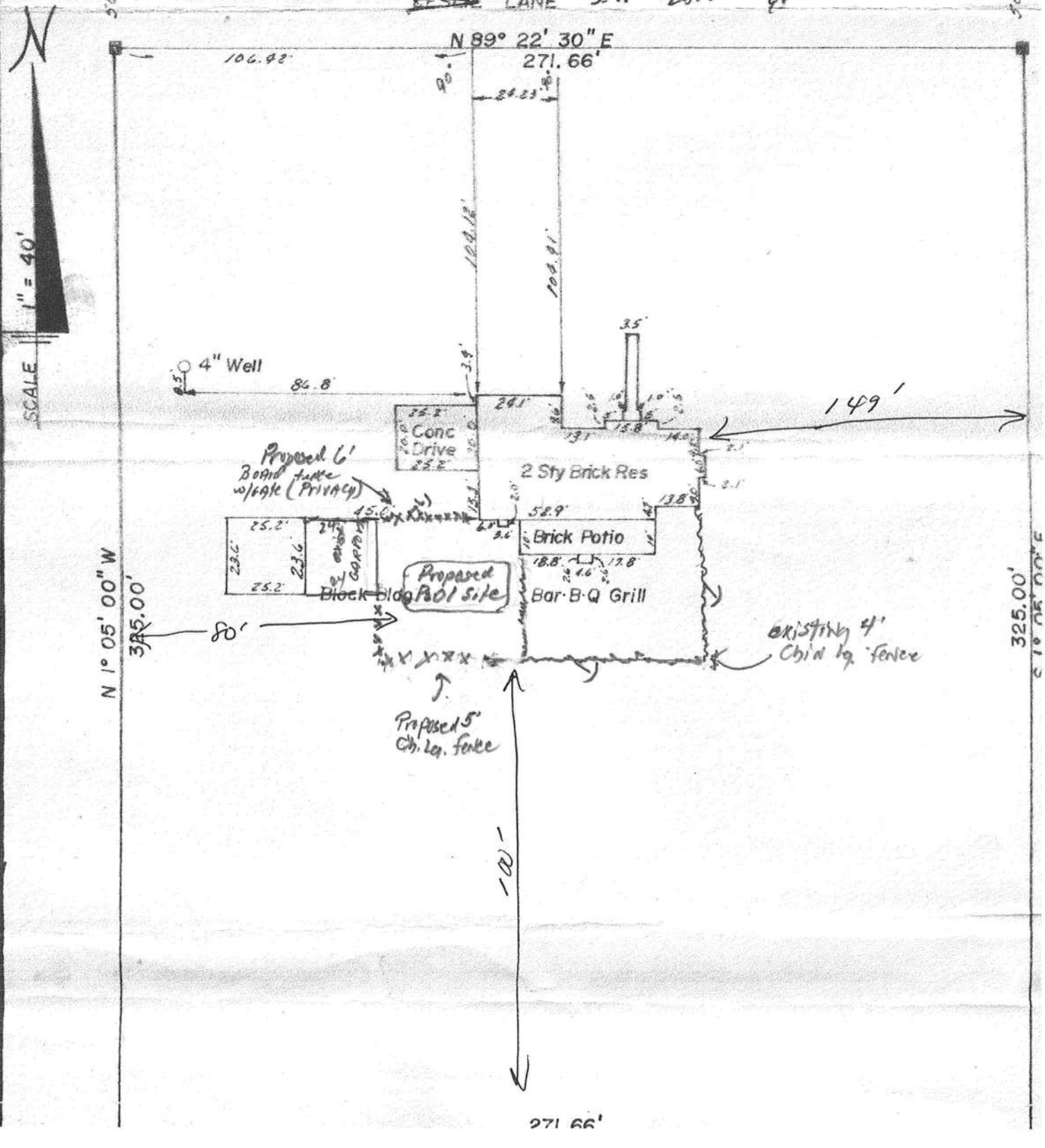
Amy P. Baker
Signature of Notary **NOTARY STAMP/SEAL**

NOTARY PUBLIC
AMY P. BAKER
Notary Public, State of Florida
Commission# DD516833
My comm. expires Feb. 09. 2010

A

LOT 2, B

174 Dalmation ~~LESLIE~~ LANE S.W. Lake City, FL 32024



NOTORIZED DISCLOSURE STATEMENT

FOR OWNER/BUILDER WHEN ACTING AS THER OWN CONTRACTOR AND CLAIMING EXEMPTION OF CONTRACTOR LICENSING REQUIREMENTS IN ACCORDANCE WITH FLORIDA STATUTES, ss. 489.103(7).

State law requires construction to be done by licensed contractors. You have applied for a permit under an exemption to that law. The exemption allows you, as the owner of your property, to act as your own contractor with certain restrictions even though you do not have a license. You must provide direct, onsite supervision of the construction yourself. You may build or improve a one-family or two-family residence or a farm outbuilding. You may also build or improve a commercial building, provided your costs do not exceed $75,000. The building or residence must be for your own use or occupancy. It may not be built or substantially improved for sale or lease. If you sell or lease a building you have built or substantially improved yourself within 1 year after the construction is complete, the law will presume that you built or substantially improved it for sale or lease, which is a violation of this exemption. You may not hire an unlicensed person to act as your contractor or to supervise people working on your building. It is your responsibility to make sure that people employed by you have licenses required by state law and by county or municipal licensing ordinances. You may not delegate the responsibility for supervising work to a licensed contractor who is not licensed to perform the work being done. Any person working on your building who is not licensed must work under your direct supervision and must be employed by you, which means that you must deduct F .I.C.A. and withholding tax and provide workers' compensation for that employee, all as prescribed by law. Your construction must comply with all applicable laws, ordinances, building codes, and zoning regulations.

TYPE OF CONSTRUCTION

(✓) Single Family Dwelling
( ) Farm Outbuilding
( ) Two-Family Residence
(✓) Other_____

NEW CONSTRUCTION OR IMPROVEMENT

( ) New Construction
(✓) Addition, Alteration, Modification or other Improvement

I Robert W. May, have been advised of the above disclosure statement for exemption from contractor licensing as an owner/builder. I agree to comply with all requirements provided for in Florida Statutes ss.489.103(7) allowing this exception for the construction permitted by Columbia County Building Permit Number _____

Owner Builder Signature 5/09/07 Date

The above signer is personally known to me or produced identification Drivers License

Notary Signature Amy P. Baker Date 5-9-07 (Stamp / Seal)

AMY P. BAKER
Notary Public, State of Florida
Commission# DD516833
My comm. expires Feb. 09, 2010

FOR BUILDING USE ONLY

I hereby certify that the above listed owner/builder has been notified of the disclosure statement in Florida Statutes ss 489.103(7).

Date_____ Building Official/Representative_____

BK 0845 PG 0255

OFFICIAL RECORDS

WARRANTY DEED

Documentary Stamp #674.10
Intangible Tax -0-
P. DeWitt Cason
Clerk of Court
By TMK D.C.

THIS WARRANTY DEED, made this 20th day of August, 1997,by CAROLYN L. MAY, (a single woman),of Route 21, Box 74, Lake City, Florida, 32024, Grantor, to ROBERT W. MAY, (a single man) whose address is Route 21, Box 74, Lake City, Florida, 32024,Grantee,

WITNESSETH, That said grantor, for and in consideration of the sum of Ten and no/100's----------DOLLARS, and other good and valuable considerations to said grantor in hand paid by grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee, and grantee's heirs and assigns forever, the following described land, situate, lying and being in Columbia County, Florida, to-wit:

Lots 2 and 3 of Block D, Westwood Acres Subdivision, a subdivision of a part of the SW 1/4 of the NE 1/4 of the NW 1/4 of the SE 1/4, Section 4, Township 4 South, Range 16 East, according to the official map or plat thereof as recorded among the public records of Columbia County, Florida, in Plat Book 3, Page 69.

Subject to Deed of Restriction recorded June 10, 1965 in Official Records 185, Pages 366 370, Public Records of Columbia County, Florida.

Subject to Mortgage from Jim L. McGlamery and his wife, Barbara McGlamery to Firs Federal Savings and Loan Association of Lake City, dated May 19, 1977 and recorded May 2(1977 in Official Records Book 378, Pages 629-632, Public Records of Columbia County, Florid which the Grantee hereby assumes and agrees to pay.

Property Appraisers Parcel Identification Numbers:R02764-000 & R02764-001

And said grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor has hereunto set her hand and seal the day and

Documentary Stamp #74.55
Intangible Tax -0-
P. DeWitt Cason
Clerk of Court
By TMK D.C.

year first above written.

BK 0845 PG 0256

OFFICIAL RECORDS

Signed, sealed and delivered
in our presence:

Carolyn L. May
CAROLYN L. MAY

WILLIAM J. ROBERTS, JR
Witness

Robert F. Collins
ROBERT F. COLLINS
Witness

STATE OF FLORIDA
COUNTY OF COLUMBIA

I HEREBY CERTIFY that on this day, before me, an officer duly qualified to take acknowledgments, personally appeared CAROLYN L. MAY, to me personally known to be the person described in the foregoing instrument as "grantor", and who executed the foregoing instrument and acknowledged before me that she executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this 2nd day of Sept, 19 97.

WILLIAM J. ROBERTS, JR
Notary Public

(NOTARIAL SEAL)

My Commission Expires:

WILLIAM J ROBERTS JR
My Commission CC478306
Expires Jul 05 1999
800-422-1555

THIS INSTRUMENT PREPARED BY
WILLIAM J. ROBERTS, JR.
ATTORNEY AT LAW
1101-C WEST DUVAL STREET
LAKE CITY, FLORIDA 32055

97-12412
2

FILED AND RECORDED IN PUBLIC RECORDS OF COLUMBIA COUNTY.FL

1997 SEP -4 PM 3:57

RECORD VERIFIED
P. DeWitt Cason
CLERK OF COURTS
COLUMBIA COUNTY, FLORIDA
BY MCK D.C

Pool Warehouse
GENERAL NOTES:
1. All pools are N.P.S.I. Type II and only Type II equipment is to be used, unless otherwise noted.
2. Vertical dimensions on all pools are from liner extrusions.
EXCAVATION NOTES:
1. Surrounding land elevation to be 6" lower than top of pool.
2. 2' to be allowed all around pool for working area in excavation. All voids under panels to be filled and compacted in 6" to 8" layers.
3. At no time should compacted backfill exceed water level or vice versa more than 12".
4. Use non-expansive material (no clay content) for backfill (i.e., sand, gravel, etc.).
FOUNDATION NOTES:
1. Footing design based on 1500 PSF soil bearing capacity (minimum).
2. Neither Thompson Engineering Group nor Hydra Pools, a division of Plastic Industries, Inc., shall be responsible for local foundation design, as local conditions must be investigated to determine proper soil bearing capacity.
MATERIAL SPECIFICATIONS:
Pool Panels Polystyrene PS 331
Pool Braces Polypropylene
Pool Liner 20 Mil. PVC Vinyl Liner
Concrete f'c=3000 PSI @ 28 days
Reinforcing Steel ASTM-A615-GR 60
Vermiculite Light-weight aggregate concrete conforming to AQ 613A & AQ 318-95
Standard specifications
Concrete wt. = 75 PCF
I HEREBY CERTIFY THAT I HAVE REVIEWED THIS DRAWING AND THE DESIGN CALCULATIONS FROM WHICH IT WAS MADE AND I AM A REGISTERED ENGINEER IN THE STATES OF AL, AR, AZ, CA, CO, FL, GA, IL, IN, IA, KS, KY, LA, MD, MI, MN, MS, MO, NC, NJ, NM, NY, OH, OK, PA, SC, TN, TX, VA, WV, AND WI.
CARL E. THOMPSON, JR., P. E.
HYDRA
A DIVISION OF PLASTIC INDUSTRIES, INC.
543 South Main Street Sweetwater, TN 37874 (423) 337-7380
STANDARD ASSEMBLY DRAWING
TEG THOMPSON ENGINEERING GROUP, LLC
P.O. BOX 747
ATHENS, TN 37371-0747
(423)745-0644
DRAWN BY:
DATE: 06/16/98
SCALE: AS NOTED
PROJ# 015495
DWG# EB-41R3
TYPICAL SECTION
3/4"=1'-0"
4" TO 6" CONC. DECK, REINFORCE TO LOCAL CODE
BACKFILL USE NON EXPANSIVE MATERIAL FOR BACKFILL
MAX
CONC. FOOTER 4" MINIMUM
2'-0"
ALUMINUM COPING
42" PANEL 2',3',4',5',& 6' LENGTHS
VINYL LINER
1/2"ø x 3" BOLTS & WASHERS
3/8"ø REBAR USE AROUND ENTIRE PERIMETER
2" VERMICULITE OR APPROVED POOL BASE MATERIAL
STANDARD BRACE AND PANEL ASSEMBLY
N.T.S.
PANEL
BRACE
1/2"ø x 3" BOLTS & WASHERS (TYP. 4 PLACES)
PANEL
NOTE: INTERNAL PANEL BRACING OMITTED FOR CLARITY
TYPICAL (90°) CORNER ASSEMBLY
N.T.S.
BRACE
WALL PANEL
CORNER SECTION
12"
12"
WALL PANEL
BRACE
TYPICAL (45°) CORNER ASSEMBLY
N.T.S.
WALL PANEL
BRACE
PANELS MUST TOUCH
WALL PANEL
45° CORNER SECTION

FILE COPY

16'2" x 32'5" DOUBLE ROMAN 6"RADIUS

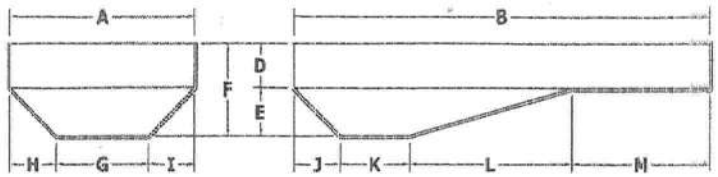
ACCEPTED BY

DATE 4/19/2007

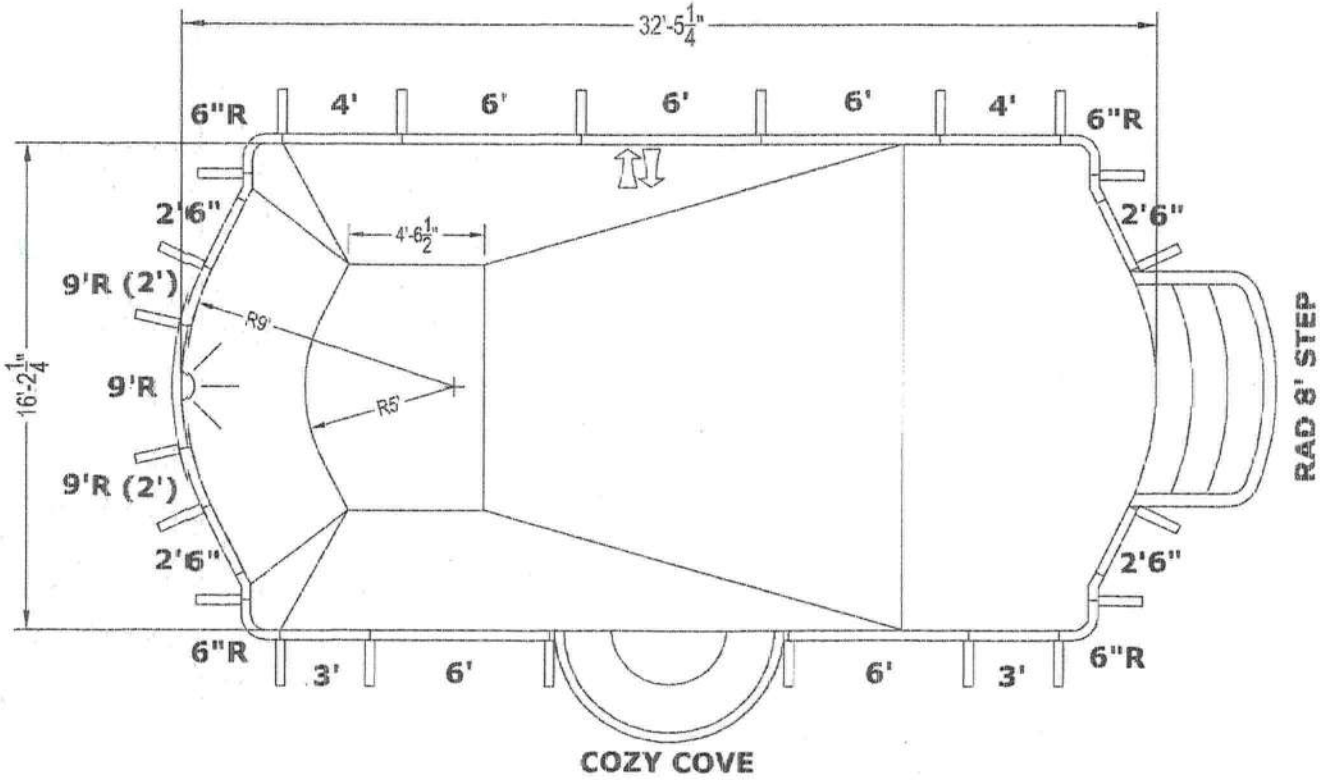
PURCHASE ORDER MAY

A	16'2¼"	K	6'
B	32'5¼"	L	14'
D	3'4"	M	8'5¼"
E	4'8"	M2	-
F	8'	T	-
G	8'2¼"	S	-
H	4'	N	-
I	4'	P	-
J	4'	U	-

APSP TYPE	II	SQ. FOOTAGE	525



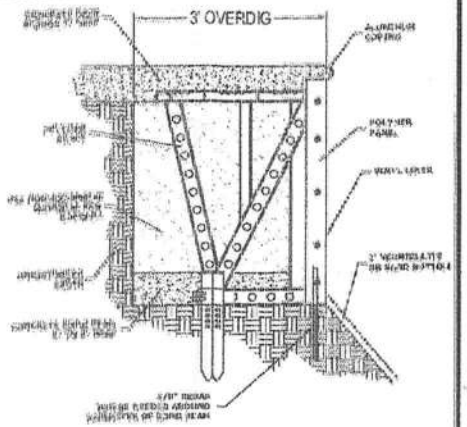
Order 502873211



BILL OF MATERIALS

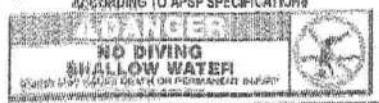
QTY	PART	DESCRIPTION
5	HP306	6' PANEL
1	HP306A	6' PANEL (A/G)
2	HP304	4' PANEL
3	HP303	3' PANEL
4	HP3832	2'8" SPECIAL PANEL
1	HP356LL	5'R PANEL (LIGHT)
2	HP1100	(5'R) 2' OVAL INSERT
4	HP1860	6'R PANEL
4	HP320	REV 30° LAZY-ELL PANEL
22	HP399	BRACE
1	HP404	4' COZY COVE
1	HP106M	RADIUS 8' STEP

PANEL SHELF DETAIL

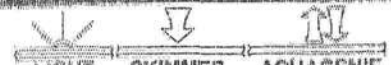


NO DIVING WARNING

"NO DIVING" WARNING STICKERS MUST BE INSTALLED IN NO DIVING AREAS ACCORDING TO APSP SPECIFICATIONS



PRE-CUT PANEL LEGEND



GENERAL NOTES

1. These are finished dimensions ready for the liner.
2. Dimensions are from inside pool panels.
3. The ideal water level should be to the middle of the skimmer opening(s).

EXCAVATION NOTES

1. Rough excavation should be 2" deeper in each instance.
2. Soil to have minimum bearing capacity of 2000 P.S.F.
3. Locate top of pool at least 6" above surrounding land elevation.
4. See 'Panel Shelf Detail' for excavation around pool.
5. Fill voids under base of panels and lamp well.
6. Backfill with non-expansive material.

ADDITIONAL NOTES

THIS DOCUMENT IS FOR ILLUSTRATIVE PURPOSES ONLY.
The dealer or contractor who sells or installs your pool is an independant contractor and is not an agent of the Manufacturer. The construction methods illustrated here are suggestions and apply only to normal ground conditions. There may be additional precautions and/or methods of construction. Proper installation is the responsibility of the dealer/builder/contractor.

HYDRA POOLS
649 South Main Street · Sweetwater, TN 37874

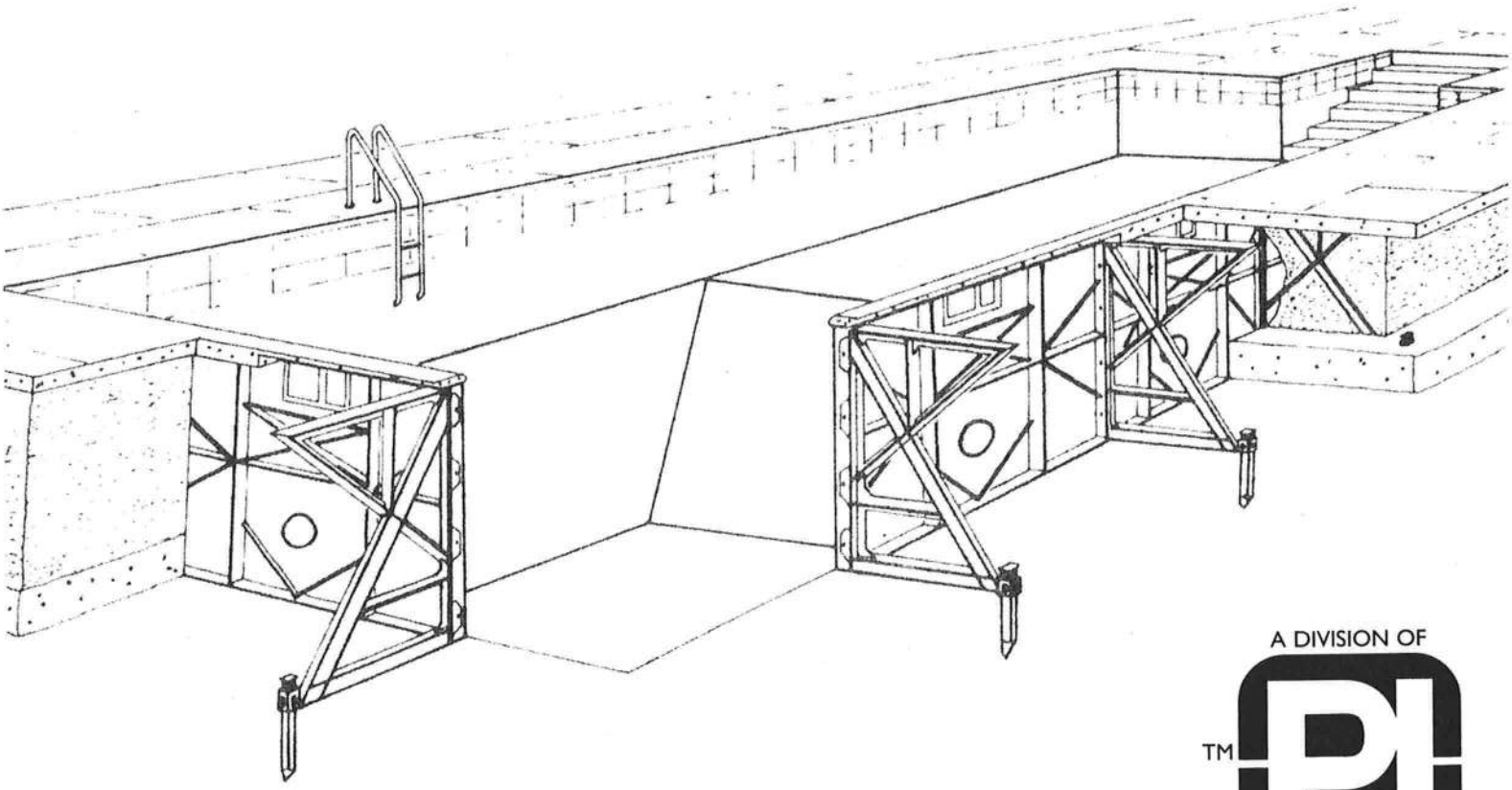
DATE	PANEL LINE	DRAWING NUMBER
APR 2007	CORNERSTONE	DR16326R8C-MAY

File: HF5301, Cornerstone Custom Panel Layout Drawing Rev Date: 12/6/2005 Rev Level: A

800-515-1747 1-877-498-3200

™HYDRA POOLS

STRUCTURAL POLYMER WALL SYSTEMS



A DIVISION OF

™PI INC.

HYDRA CORNERSTONE PINNACLE

INSTALLATION MANUAL

INSTRUCTIONS FOR POOL LOCATION • EXCAVATING • GRADING • WALL AND LINER INSTALLATION • BACK-FILLING • DECKS • LIGHTING • STEPS • PLUMBING AND DRAIN

GENERAL GUIDELINES

Before you begin, check the pool component list and read the entire installation manual. During the various steps of installation, refer to this installation manual, the installation video and the appropriate "dig spec" drawing supplied to you.

CONSTRUCTION SEQUENCE

1. Check with utility company in regards to underground utilities (gas, electric, phone, etc.)
2. Obtain all necessary permits
3. Hire an electrician if needed
4. Arrange for water to be delivered if necessary
5. Arrange for fencing around the pool area and check local codes for requirements
6. Follow this installation manual carefully and complete only the steps that pertain to the Hydra polymer pool you are installing. REMEMBER, Hydra has three polymer pool lines.

TOOLS NEEDED FOR INSTALLATION

Adjustable wrench
Screwdrivers
Socket set
25' and 100' tape measure
Utility knife
Extension chords
String line
Drills and assorted bits
Shovels (flat and round)
Trowels (mags and finish)
Carpenter's square and level
Wheelbarrow
3" hole saw
Hacksaw
2½" hole saw
Large channel-lock pliers
Broom
Tamper
Sledge hammer/regular hammer
Hose
Duct tape
Transit (laser level preferred) (rent)
Rakes
Mighty Vac or commercial shop vac
Pick axe
Caulk gun
Cement mixer/plaster mixer (needed for installation of vermiculite bottom—rent if necessary)
Marking spray paint (for marking ground)

HEAVY EQUIPMENT NEEDED (HIRE IF NECESSARY)

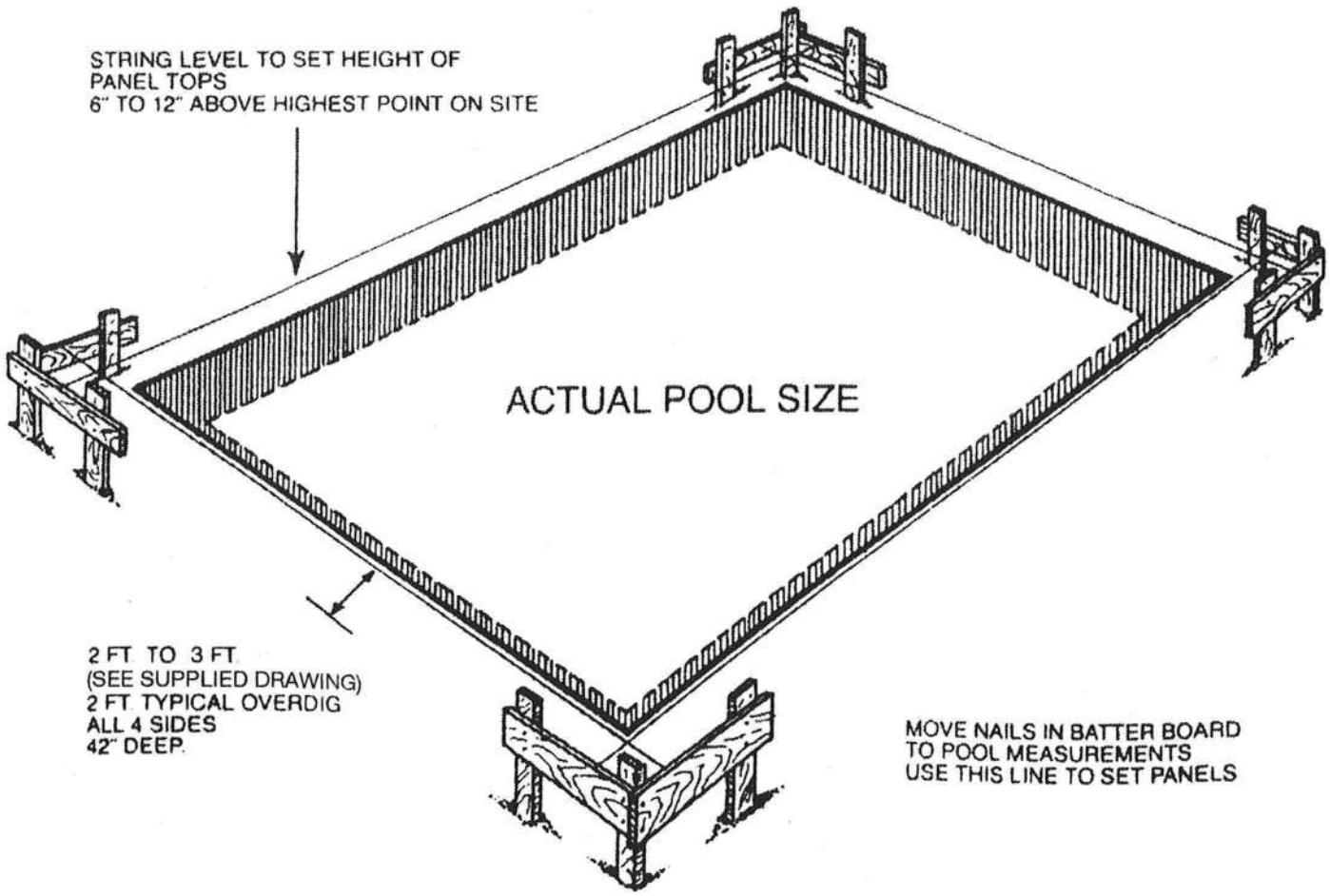
Backhoe
Bobcat
Dump truck

Note: A qualified operator is needed for heavy equipment.

POOL LOCATION/LAYOUT

Choose your pool's location very carefully, as a less desirable site can increase your time, cost and effort during installation. Consider the following when selecting a pool site:

1. Insure the pool is clear of all property lines and variances.
2. Insure a minimum 10' wide opening for access to the pool site by large equipment and concrete truc
3. Insure the pool site is clear of all underground pipes, tanks, wires and overhead wires.
4. Level ground is preferred but not required. Water drainage away from all sides of the pool is necessar
5. The pool site should be in a sunny area with few, if any, trees around the pool.
6. Try to position the long wall with the skimmer facing the prevailing winds.
7. Building on backfill areas is not recommended.



INITIAL LAYOUT

RECTANGLE

All rectangular pools have a two-foot to three-foot overdig (depending on brand of panel) to form a shelf for the panels. Start by driving four stakes in the ground to make a box two feet to three feet larger than the pool you are installing. For example, a 20' x 40' pool requires a box that measures 24' x 44' or 26' x 46'. Square the box by measuring diagonally from stake to stake, ensuring all measurements are the same (see Figure 1).

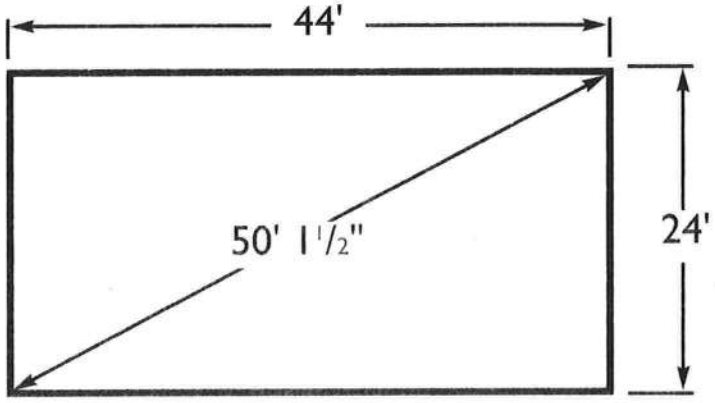


Figure 1: Rectangle Pool Layout

OVAL

All oval pools have a two-foot to three-foot overdig to form a shelf for the panels. Start by driving four stakes in the ground to make a box four feet wider than the pool but only as long as the straight wall. For example, an 18' x 36' pool requires a box that measures 22' x 18' (or larger depending on the panel brand). Square the box by measuring diagonally from stake to stake, ensuring all measurements are the same. To create the radius ends of the pool, locate the center point of the 22' width and drive a stake. Holding the end of a tape measure on the stake, move out 11' and paint an arc, connecting the ends of each straight side (see Figure 2).

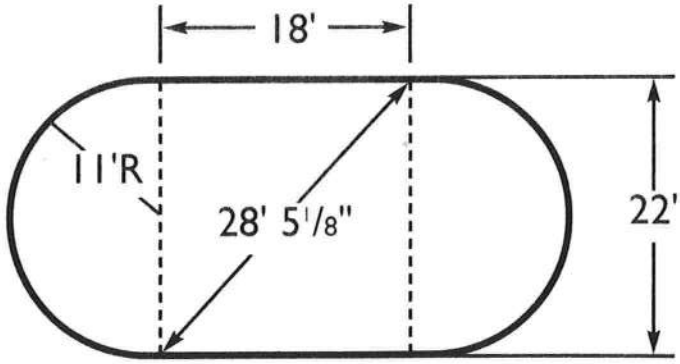


Figure 2: Oval Pool Layout

OCTAGON

All octagon pools have a two-foot or three-foot overdig to form a shelf for the panels. Start by driving a stake at the center point of the pool. Holding the end of a tape measure on the stake, move out one-half the width of the pool, plus two feet for the overdig, and paint a circle around the center stake. For example, a 24' octagon would require a circle 14' from the center stake.

SETTING POOL ELEVATION

The top of the panel should be no less than 8" above the existing grade. Twelve inches is suggested to keep all drainage away from the pool (see Figure 3). Now stretch a string line to each of your layout stakes at the level of the top of the pool (see Figure 4). If using a laser level, set the proper benchmark.

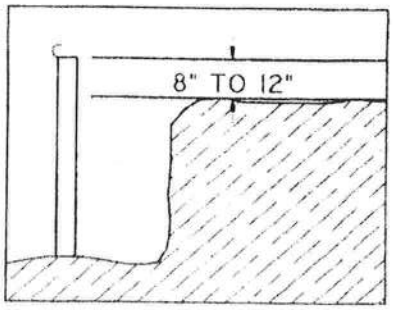


Figure 3: Pool Elevation

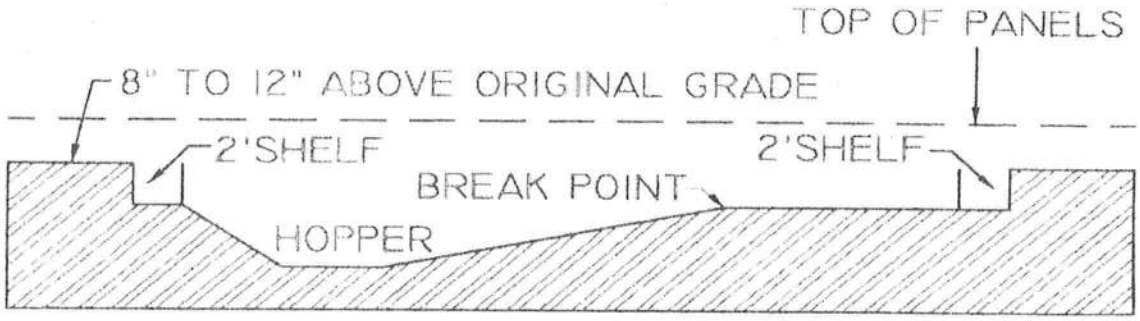


Figure 4: String Level / Pool Layout

EXCAVATION

All dimensions in the Pool Layout and Dig Specification Sheet are finish grades, so your excavation should always be 2" deeper than your Pool Layout and Dig-Dimension drawing. This allows space inside the pool walls for mason sand or hard bottom materials (vermiculite, etc.)

PANEL SHELF

Panels and braces will be assembled, set and leveled on the panel shelf. The panel shelf width will be determined by the panel line you are installing. **THE SHELF IS DUG 42" DOWN FROM THE STRING LINE OR FROM YOUR BENCHMARK.** This should be undisturbed earth, so use caution when digging the shelf. ***DO NOT OVER DIG!!!!*** This is also the finish depth of the shallow end.

GROUND-WATER CONDITIONS

Ground water is the term used for the water table. If you should encounter ground water while digging the hopper, don't panic. Just follow these simple recommendations:

1. Over-dig just the bottom of the hopper by 1' to 2'.
2. Use pea-sized rock to bring the hopper back to grade.
3. Set a foot valve in the pea stone and plumb it to outside of the pool.
4. Run a plumbing line from the hopper to near the filter (see Figure 7).
5. Hook the foot valve to a pump and keep the pump running continuously until the liner has been dropped and the pool is full of water.
6. When installation is complete, cap the plumbing line, leaving it available for use in the future, should the liner need to be replaced.

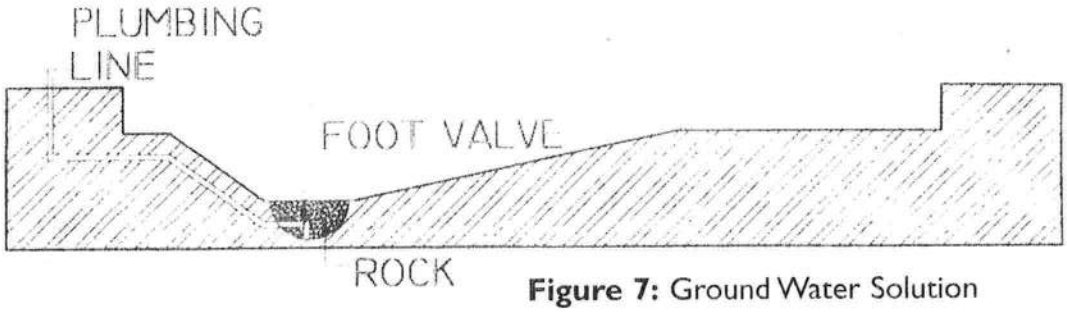


Figure 7: Ground Water Solution

PANEL INSTALLATION

Start by laying out all panels on the panel shelf. Position a brace and 4 or 5 bolts (depending on the brand of panel) at every panel joint, as indicated in the Pool Layout and Dig Dimension Drawing supplied to you.

Starting in the appropriate place for the shape of the pool being built (see below), fasten panels and braces together, using non-corrosive nylon bolts. Align the panel joints for a tight fit and hand-tighten (snug) the non-corrosive bolts. DO NOT OVER TIGHTEN!!

Panels are available with pre-cut holes for most commonly used skimmers. Position the skimmer panel according to the following guidelines:

1. The skimmer should always be placed on the long wall of the pool, with the prevailing winds blowing into the skimmer.
2. If you are building a hopper pool, locate the skimmer as per supplied drawing.
3. Insure the skimmer panel will be clear of the wall-mounted safety-rope anchors.
4. Locate returns on walls opposite the skimmer, to push surface debris towards the skimmer.
5. For Aqua Genie Skimmers, see the Aqua Genie manual.

Starting Point - Rectangular Pools

Begin in a shallow-end corner. In 4' radius pools, start by bolting the two corner panels together, with a brace offset from panel joint. Then connect the corner panel assembly to an end-wall straight panel, with a brace offset from flanges (see Figure 8). Continue to assemble panels and braces according to the Pool Layout and Dig Dimension Drawing. If steps are present, determine their location before starting panel assembly and complete the step-installation process (see below) when you reach their position.

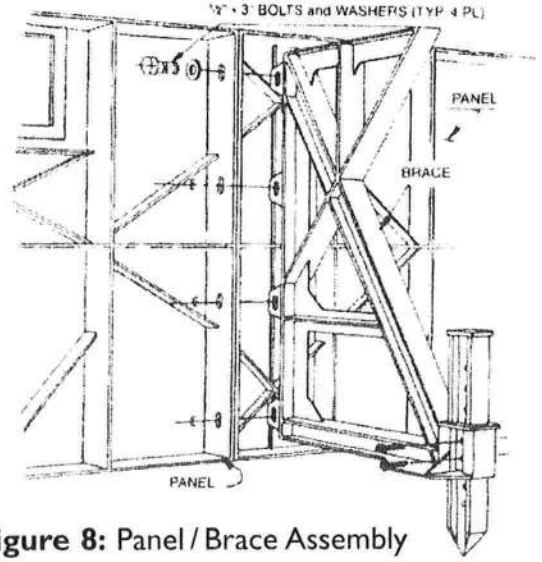


Figure 8: Panel / Brace Assembly

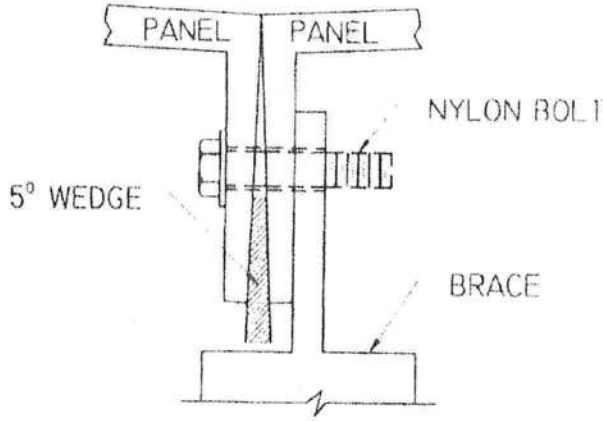


Figure 9: 5° Wedge Installation

Starting Point - Oval Pools

Begin at a straight sidewall and bolt the straight panels and braces together. Repeat this process for the other straight sidewall. Square both sidewalls by measuring diagonally across the pool at both the top and the bottom of the panels. Drive stakes a few inches into the ground at the ends of the straight sections to hold them in place. Begin to assemble the radius ends. Bolt the first curved panel and brace to the end of a straight sidewall. If required, use 5° wedges (see Figure 9) to adjust the radius, as indicated in the Pool Layout and Dig Dimension Drawing. Continue to assemble panels and braces according to the Pool Layout and Dig Dimension Drawing. If steps are present, determine their location before starting panel assembly and complete the step-installation process (see below) when you reach their position. Insure the radius is true by driving a stake halfway between the sidewalls, stretching a tape measure from the stake to the radius panels, and checking the distance at various points on the curve. All measurements should be the same. If not, slightly shift the curved panels until a constant radius is achieved.

SWEETWATER STEP AND SWIM OUT INSTALLATION

Steps and swim outs are installed in the same manner. Start by setting the step in the excavated area according to the Pool Layout and Dig Dimension Drawing. Use supplied step support system. With the step in place, clamp the neighboring pool panel to the step, insuring that the face of the step is flush with the panel and that the top of the panel is flush with the bottom of the step coping-receptor nose.

With the panel and step clamped tightly together, drill 3/8" holes through the panel holes into the step flange. Use stainless-steel bolts to secure the panels/braces to the step.

INSTALLING ALUMINUM COPING

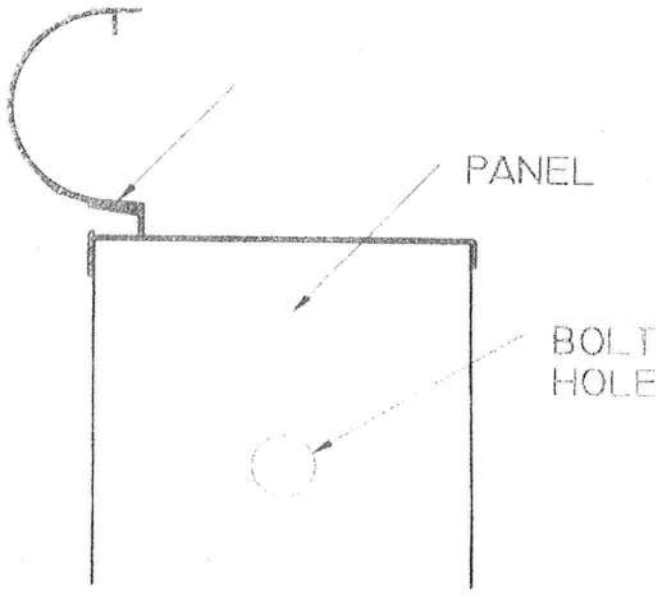


Figure 10: Coping Installation

Two types of coping are provided with your Hydra pool system: alignment and pre-shaped. Start by installing all pre-shaped coping. This includes 6", 2', 4', and 9' radius, Roman End, 45°, Lazy-Ell and True-Ell coping. Start by positioning the pre-shaped coping on the appropriate panels, insuring that the coping lip fits snugly against the face of the panel. Using the self-tapping screws provided, secure the pre-shaped coping to the panels, starting at the ends of each piece of coping and continuing every 12" along the length of the coping. Next, install the alignment coping onto the panels, leaving a 3/8" gap between pieces for expansion. Secure the straight coping to the panels using the self-tapping screws provided. When installing the alignment coping, insure that the coping joints do not line up with any of the panel joints, except at the junction of alignment and pre-shaped coping. Finally, snap the coping clips over all coping joints.

FINAL CHECK–ALL POOLS

Once all panels, braces and steps have been bolted together and the coping has been secured to the panels, it is time for one final check. A few extra minutes spent verifying the shape of the pool at this stage of completion will lead to a proper liner fit and, ultimately, a job well done.

1. Check diagonal measurements across the pool, at both the top and bottom of the panels, and verify that they are the same.
2. Level all panels, using patio block or bricks at the panel joints, so that the top of the panel is level with the benchmark set at the start of construction.
3. Check all panels for vertical alignment using a carpenter's level on the face of the panel.
4. Check all straight walls for horizontal alignment. To do this, stretch a string the entire length of each straight wall, at the top of the panels, insuring that each panel lines up with the string.

STAKE AND SECURE THE POOL

At this point, the panels are ready to be secured to the ground. First, use a hacksaw to detach the polymer stakes from the braces. Place the stakes in the channels at the back of the braces and drive them into the ground, using a sledgehammer. SAFETY GLASSES MUST BE WORN WHEN DRIVING STAKES! Leave 1" of the stake visible above the top of the stake channel. Snap the locking pin off the brace and use it to secure the brace to the stake. (Note: Steel stakes are available as an optional up-charge.) Next, drive 3/8" rebar through the pre-drilled holes in the bottom of each panel. This keeps the bottom of the panels from shifting when pouring the concrete collar. Use 18" pieces of rebar, driven 12" into the ground. Finally, brace the step. Use 3/8" rebar and a 2" x 6" wooden plank, as shown in Figure 11.

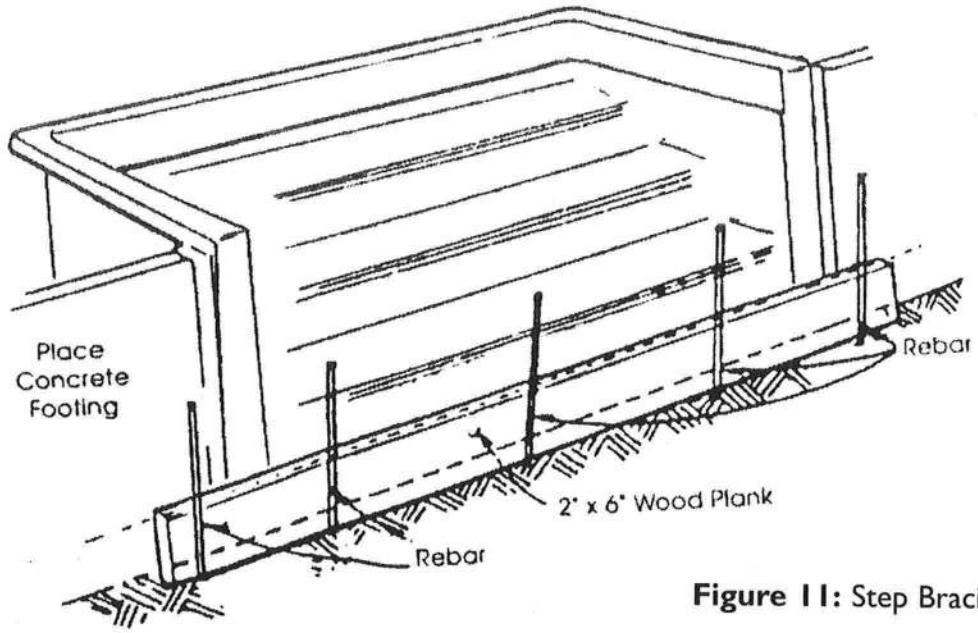


Figure 11: Step Bracing

PLUMBING

MAIN DRAINS

(must be done before bond beam is installed)

Dig a hole in the center of the hopper, 1' in diameter and 18" deep. Partially fill the hole with approximately 14" of rock. When the main drain is correctly positioned in the hole, the top of the drain should be at the finish grade, and there should be 4" to 6" of the drain exposed above the rock. The remainder of the hole must be filled with concrete to secure the drain in place. THE MAIN DRAIN MUST BE SET IN CONCRETE. To install your plumbing line, dig a small trench in the hopper, starting at the main drain, crossing the hopper, up the side- or back-wall slope (whichever is closest to the filter), and out under a panel. Set your line, cover with dirt and tamp. Leave the main drain faceplate and gaskets off until the liner is installed.

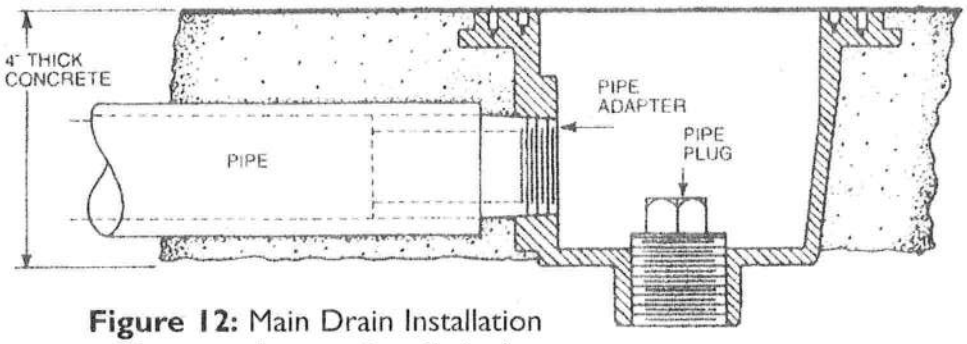


Figure 12: Main Drain Installation
(See manufacturer installation)

SKIMMER

The skimmer panel is pre-cut for your convenience. Simply slip your skimmer through the cutout (see Figure 13), install the shim kit (if a shim kit is needed) and fasten the skimmer to the wall panel following the manufacturer's instructions. Using this method of installation, gaskets are NOT required until liner installation. DO NOT CUT THE LINER UNTIL WATER IS AT LEAST 12" DEEP IN THE SHALLOW END OF THE POOL. For Aqua Genie installation, see the Aqua Genie manual.

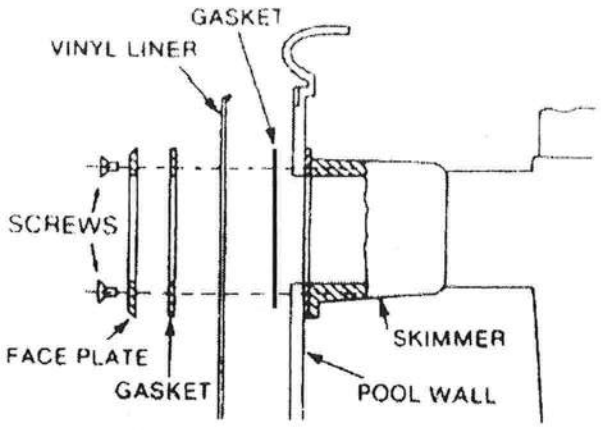


Figure 13: Skimmer Installation

RETURN FITTINGS

Return fittings can be located on any wall, as long as they produce a circular flow pattern (counter clockwise direction) on the surface of the water, toward the skimmer. Drill a 3" hole in the panel, 12" to 14" down from the top of the panel (NOT to the top of the coping). Drill from the back to eliminate hitting the cross bracing on the panels. Slide the return fitting through the hole inside of the pool and install the locknut. Tighten snugly. Leave the fitting faceplate off until the liner has been installed and the water is at least 12" deep in the shallow end of the pool.

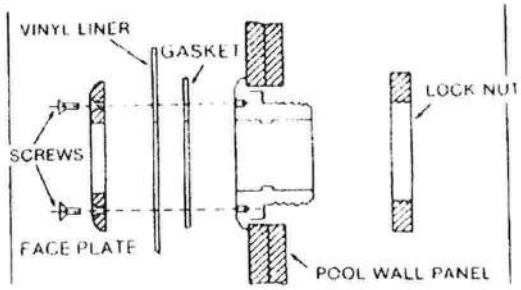


Figure 14: Return Installation

CONCRETE BOND BEAM (COLLAR)

When the main-drain plumbing line is run, you are ready to pour the concrete collar around the pool. Make sure there are no gaps under the panels or step. If there are, tamp dirt to fill the opening. Now stretch a string line down the length of each straight wall at the back edge of the coping and insure all panels are flush with the string. Next, begin pouring your concrete collar. The concrete should be poured 6" to 8" thick. **CHECK WITH YOUR LOCAL BUILDING/ZONING OFFICE FOR APPLICABLE CODES.** Pour concrete SLOWLY to prevent forcing the walls out of alignment. After the concrete is poured, recheck all panels for the proper panel alignment, using a string. When pouring concrete under the step, insure that the concrete touches the underside of the first tread for proper support. You may need to build a form to insure there is enough concrete to support the bottom step.

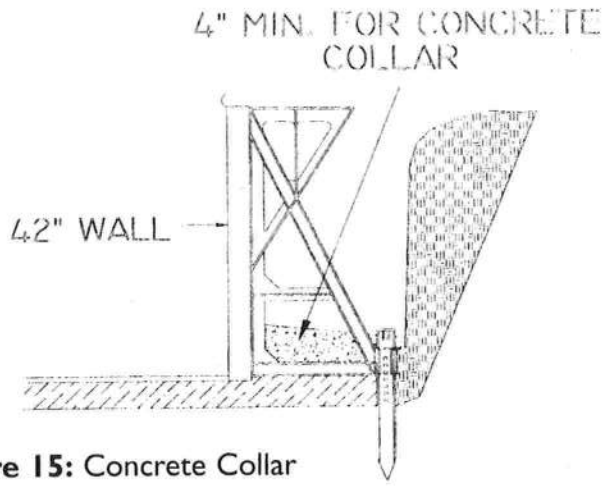
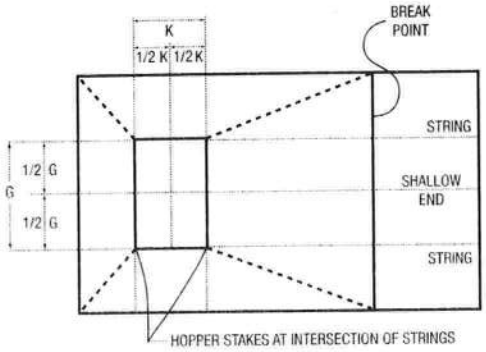


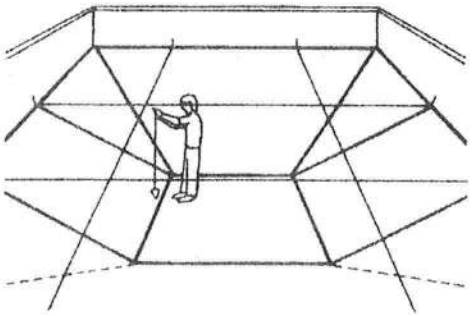
Figure 15: Concrete Collar

GRADING THE POOL BOTTOM FOR SAND AND CEMENT

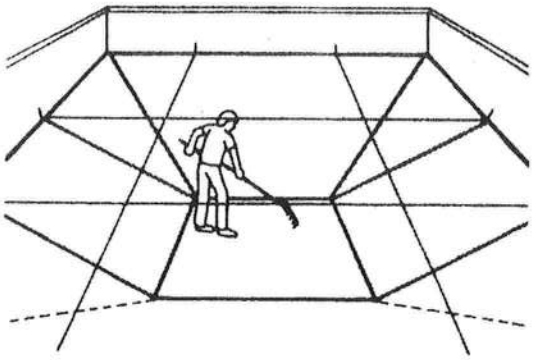
The pool must be graded 2" below the finish dimensions in the Panel Layout and Dig Dimension Drawing. This will be finished with a 2" layer of MASON sand and cement (in a 5-to-1 ratio) or a suitable pool base material (vermiculite, etc.).



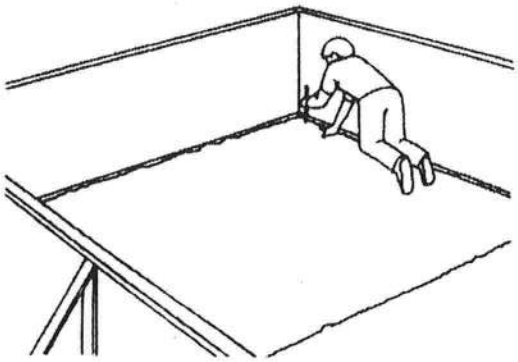
Locate the sides of the hopper pad by stretching parallel strings from the break point to the end wall. At the same time, locate the front and back of the hopper pad by stretching strings between the sidewalls of the pool.



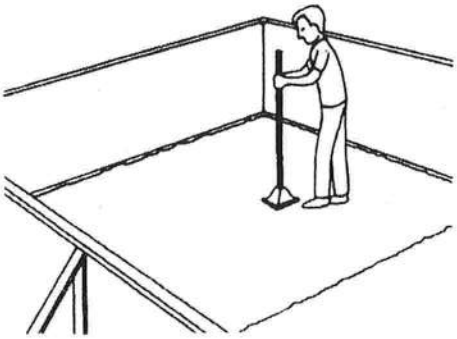
Find the finish grade by dropping a plumb bob at the intersection of the strings to the depth shown on your Dig Dimension Drawing. Drive a stake into each corner of the hopper beneath the plumb line and string a level line between stakes at the required depth to indicate the exact position and finish grade of the hopper.



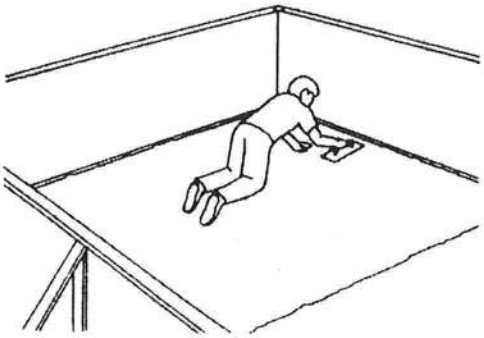
Once you have located the hopper pad, use stakes and strings in the same manner to mark the finish grade of the hopper walls, as shown on your Dig Dimension Drawing.



In each corner of the shallow end, measure the required depth from the top of the panels to the pool bottom and place a marker. String a level line between markers to indicate the finish grade of the bottom.



When the finish grade has been established, remove at least 2" of earth from below the strings. Tamp the entire area thoroughly and take away all stones, twigs and rocks.



Starting in the hopper end, bring the pool bottom up to finish grade with a damp-sand/cement mixture, or vermiculite/cement mixture. Trowel smooth.

PLACEMENT OF SAND/CEMENT MIXTURE

To save effort when adding the sand/cement or vermiculite/cement mixture, dump it near the area to be troweled. A certain amount will roll down. The balance will be easy to rake down. Particular care should be taken with the troweling of the sand/cement bottom. The smoothness and evenness of the bottom will determine the appearance of the liner when it is placed in the pool. (There must be NO exposed aggregate.)

In order to get maximum compaction and surface smoothness, thoroughly washed, mason sand (DO NOT USE RIVER SAND) should be mixed with cement in a 5-to-1 (sand-to-cement) ratio. This will allow the finishing operation to proceed smoothly. Inspect the sand finish for sharp, oversized aggregate.

NOTE: If optional vermiculite is used, follow manufacturer's instructions. Sand/cement: Mix in a mixer. It must be moist enough to form a ball in your hand.

How Much Sand And Cement?

The correct sand-to-cement ratio is 5-to-1. The example below should help.

1. Calculate the surface area of the pool. (Example: 20' x 40' = 800 square feet)
2. Multiply by 15% (.15). (Example: 120)
3. Add lines 1 and 2 to arrive at the area to be covered by sand/cement. (Example: 800 + 120 = 920 square feet)
4. Divide line 3 by 162. This will tell you how many cubic yards of sand you'll need. A cubic yard of sand is equal to one ton in weight. Some suppliers will sell by the cubic yard and some will sell by the ton. (Example: 920 ÷ 162 = 5.7 cubic yards, or 11,400 pounds)
5. Divide the pounds of sand by 5 to arrive at the 5-to-1 ratio. This will determine how much cement you need. (Example: 11,400 ÷ 5 = 2,280 pounds)
6. Divide line 5 by 94 pounds. Most bags of cement are 94 pounds type II (2) Portland cement. This will tell you how many bags of cement you'll need. (Example: 2,280 ÷ 94 = 24.3 bags)

NOTE: Always order a few extra bags of cement. Return what you do not use. If you have any extra sand, use it in plumbing trenches.

VINYL LINER INSTALLATION

General Information

Vinyl liners should be stored in areas with temperatures above 50°F to prevent excessive shrinkage and permanent folds in the vinyl.

Cold Weather Installation

When installing a liner in temperature of 65°F or lower, store the liner at 70°F to 80°F for at least 72 hours prior to installation. When the bottom is finished, bring out the liner and drop it as quickly as possible. Try to drop the liner in direct sunlight to help seat it properly. Do not leave a boxed liner exposed to the elements.

Tools Needed For Liner Installation

Commercial vacuum(s) (Mighty Vac recommended)
Screwdrivers, Phillips and straight
Razor knife
Garden hose
Broom
Two to four people

Liner Installation

Vinyl liner installation can be fast and easy; just follow these guidelines!

1. Before you begin installing the liner, insure that the pool bottom is free of any stones, sticks and footprints. Vacuum with shop-vac thoroughly.
2. Use duct tape to tape all panel joints.
3. Use caulk to secure gaskets to the main drain and skimmer.
4. Insure liner track is clean and free of any sand, concrete, etc.
5. If steps are used, refer to the STEP section before continuing with liner installation.
6. Remove the liner from the box. Place the liner in the deep end of the pool, with arrows facing the shallow end. Carefully unfold the liner. Have two people take the shallow-end corners and pull the liner to the shallow end (see Figure 22), keeping the liner away from any sharp edges. **AVOID DRAGGING THE LINER ACROSS THE POOL BOTTOM.**

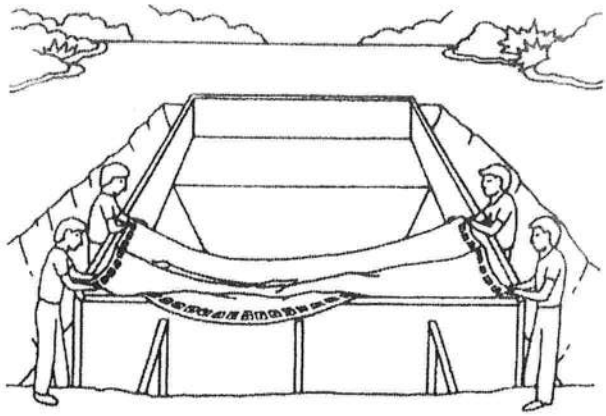


Figure 22: Liner Unfolding

7. From the outside of the pool, snap the liner bead into the liner track in each shallow-end corner (see Figure 23). Continue snapping the bead into the track across the shallow end of the pool. Now, start down the long sides, toward the deep end. **Several feet past the break point, stop and square the liner over the break point, using the seam as a guide.** When the liner is square, continue snapping the bead into the track, being careful not to overstretch the liner. Push the liner bead into the liner track completely to insure proper locking. (Insert Figure 23 from page 15 of the existing manual.)

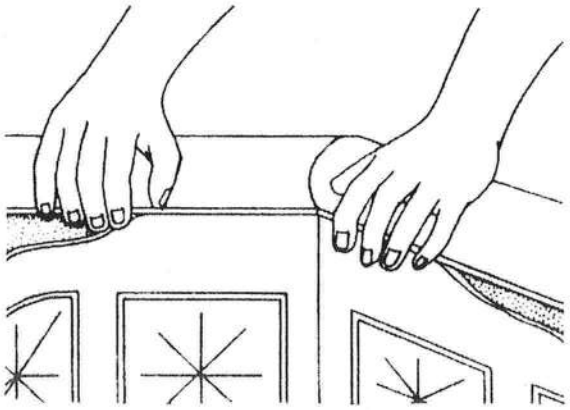


Figure 23: Liner Bead Installation

8. After the liner bead is completely installed in the liner track, adjust the liner in the pool corners, as required, to achieve a smooth, loose fit in the corners. Do not stretch the liner tightly over inside corners.

   Make sure there is enough material in the shallow end to allow the vinyl liner to rest against the entire shallow-end wall containing the step with NO space between the liner and the step at the floor. The material needs to be flat against the step area. Place sand bags (you should have several for the filter) across the entire shallow-end wall if necessary. This area and material have to stay in place. The deep end of your liner has more material than the shallow. It is designed to stretch.

9. When the liner is positioned correctly, remove a small area of the liner bead from the liner track, close to the break point, and insert approximately 36" of vacuum hose behind the liner. DO NOT ALLOW THE VACUUM HOSE TO TOUCH THE POOL BASE! Use duct tape to tape the hose in place and seal the opening around the hose to create a vacuum behind the liner. NOTE: Larger pools may require two vacuums.

10. Turn on the vacuum(s). As suction starts to pull the liner down, continually adjust the fit by pulling the excess material on the floor toward the base of the pool walls. If you can't get all the wrinkles out, shut off the vacuum(s), reposition the liner in the pool, turn the vacuum(s) back on and start the process again.

11. When the liner is pulled down snugly, with no wrinkles, you are ready to finish installing the main drain. By feel, locate the screw holes in the top of the main drain, under the liner. With the gasket in place, screw the faceplate to the main drain, following the manufacturer's instructions. **CAREFULLY**, use a razor knife to cut out the liner material **INSIDE** the main-drain frame and install the main-drain cover.

12. Using a standard garden hose, place the hose end in the hopper and start water flow. Once there is 6" of water in the hopper, the remainder of the pool can be filled from the garden hose or a water truck. **DO NOT ALLOW A STRONG STREAM OF WATER TO DIRECTLY HIT THE POOL BOTTOM.**

13. When the water is 6" deep in the shallow end, remove the vacuum(s) and the sand bags. Install the liner bead in the liner track. If steps are used, install the step faceplate now (step Figure 24). (Insert Figure 24 from page 16 of the existing manual.)

14. When the water is at least 12" to 18" deep in the shallow end, locate the returns and the skimmer(s). Install the gaskets/faceplates, following the manufacturers' instructions. **Carefully,** use a razor knife to cut out the liner material **INSIDE** the returns and skimmer(s).

15. DO NOT REMOVE THE VACUUM(S) WITH LESS THAN 6" OF WATER IN THE SHALLOW END AND DO NOT ALLOW THE VACUUM(S) TO RUN WITH MORE THAN 12" OF WATER IN THE SHALLOW END. IF THE VACUUM(S) ARE SHUT OFF FOR ANY REASON BEFORE THE WATER IS 6" DEEP IN THE SHALLOW END, THE WATER MUST ALSO BE SHUT OFF UNTIL THE VACUUM IS RESTORED.

SWEETWATER STEP AND SWIM-OUT LINER INSTALLATION

Using a thin piece of plywood, cover the top of the step section. Mount a piece of coping to the wood so that the liner will maintain a straight profile over the step. Use duct tape to seal the wood over the steps and seal all openings around the liner. When the water is 6" or more in the shallow end, install faceplates, using stainless-steel screws and following the manufacturer's instructions. Carefully use a razor knife to cut out the liner material **inside** the step faceplates. Install screw covers following the manufacturer's instructions. **Trim the vertical faceplate to meet the bottom of coping.**

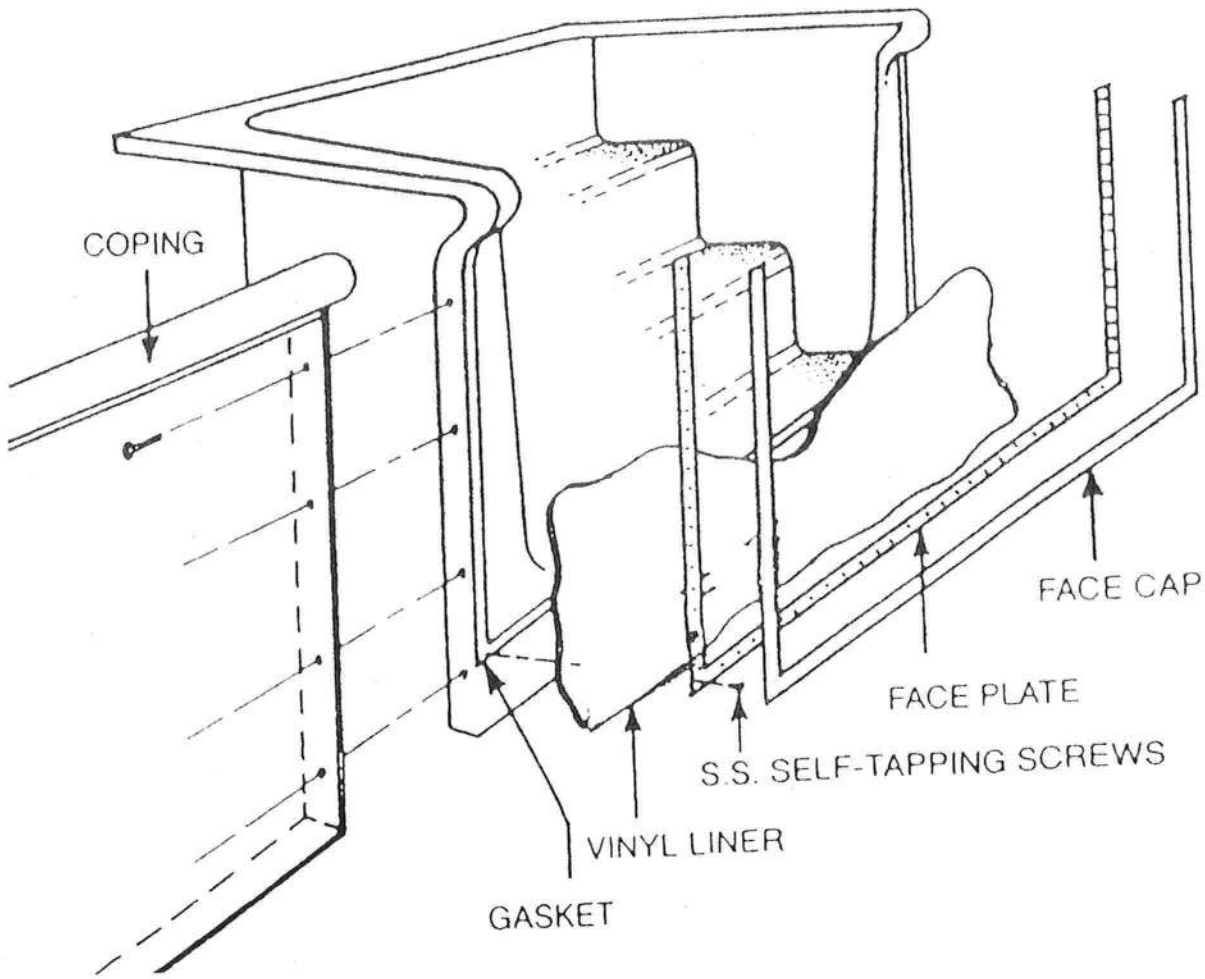


Figure 24: Step Faceplate Installation

BACKFILLING YOUR HYDRA POOL

There are several methods used in backfilling the pool. One method is to backfill as the pool is being filled with water, keeping the water level even with the backfill material. The backfill material should be placed in layers and kept even all around the pool. **USE ONLY NON-EXPANSIVE MATERIALS FOR BACKFILL (SAND, CRUSHED STONE, ETC.). DO NOT USE CLAY, DIRT, SOIL, OR OTHER EARTHEN MATERIALS FOR BACKFILL.** Bring the backfill grade to the top of the braces, leaving the brace top exposed.

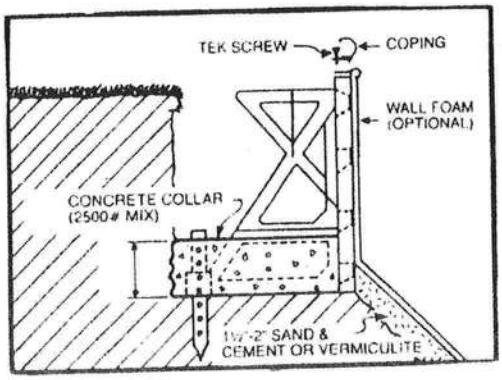
INSTALLING CONCRETE DECK

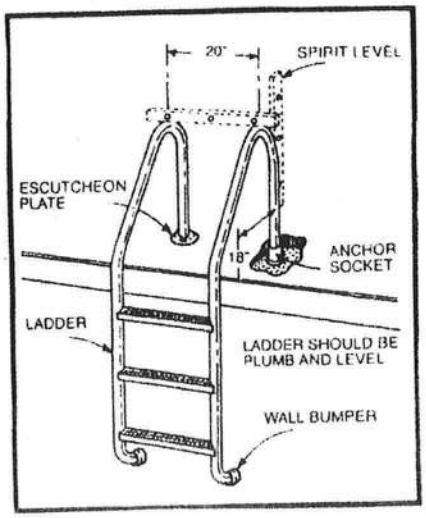
1. Insure the tops of the braces are exposed so the concrete can bond to the brace.
2. Insure the coping clips are installed over the coping joints. Use duct tape to completely cover the face of all coping, protecting it from splashing concrete.
3. Concrete should be reinforced with either wire-mesh or a fiber-mesh additive (available from most concrete companies).
4. Concrete should be a minimum of 6" thick at the pool edge and taper down to 3_" on the outer edge.
5. For proper drainage, the slope must fall 3/4" for every 3' of width.
6. Install ladder/handrail anchors, as required, when forming deck. Follow the manufacturer's instructions.
7. Insure concrete completely fills the coping.
8. Insure concrete completely fills the gap under the lip of the step to provide additional structural support.
9. Broom-finish the concrete for a non-slip surface or apply other concrete toppings, such as cool deck.
10. Edge and groove the expansion joints or use expansion-joint material. Do not position expansion joints directly over the pool wall braces.
11. Use additional support (piers) down to undisturbed earth when the deck extends more than 4' from the pool wall.
12. Pour the deck at least 8' wide where the diving board is installed.

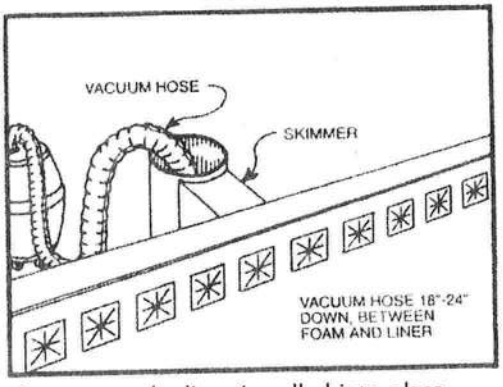
SAFETY ROPE

Use the APSP Guidelines to determine the correct position for the safety rope. Install coping-mounted rope eyes in this position and fasten the safety rope, following the manufacturer's instructions.

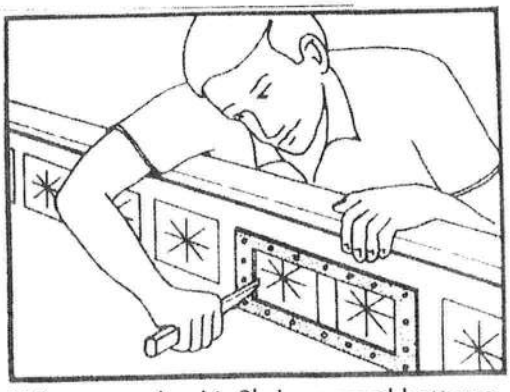
DETAIL DRAWINGS



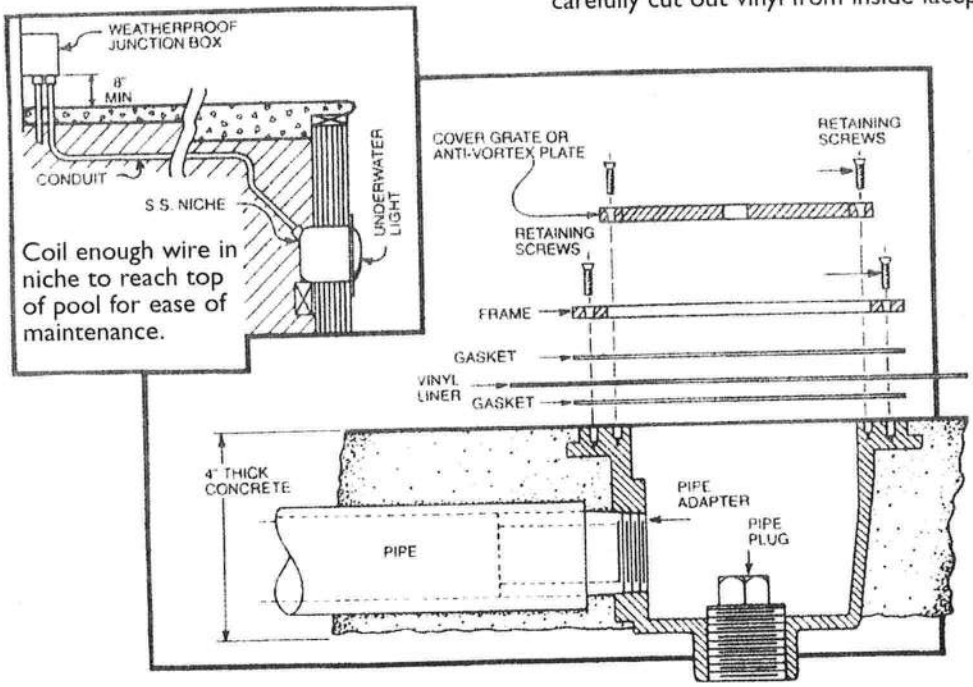




As soon as the liner is pulled into place, start filling the pool. Leave vacuum on until water is 6" deep in the shallow end.

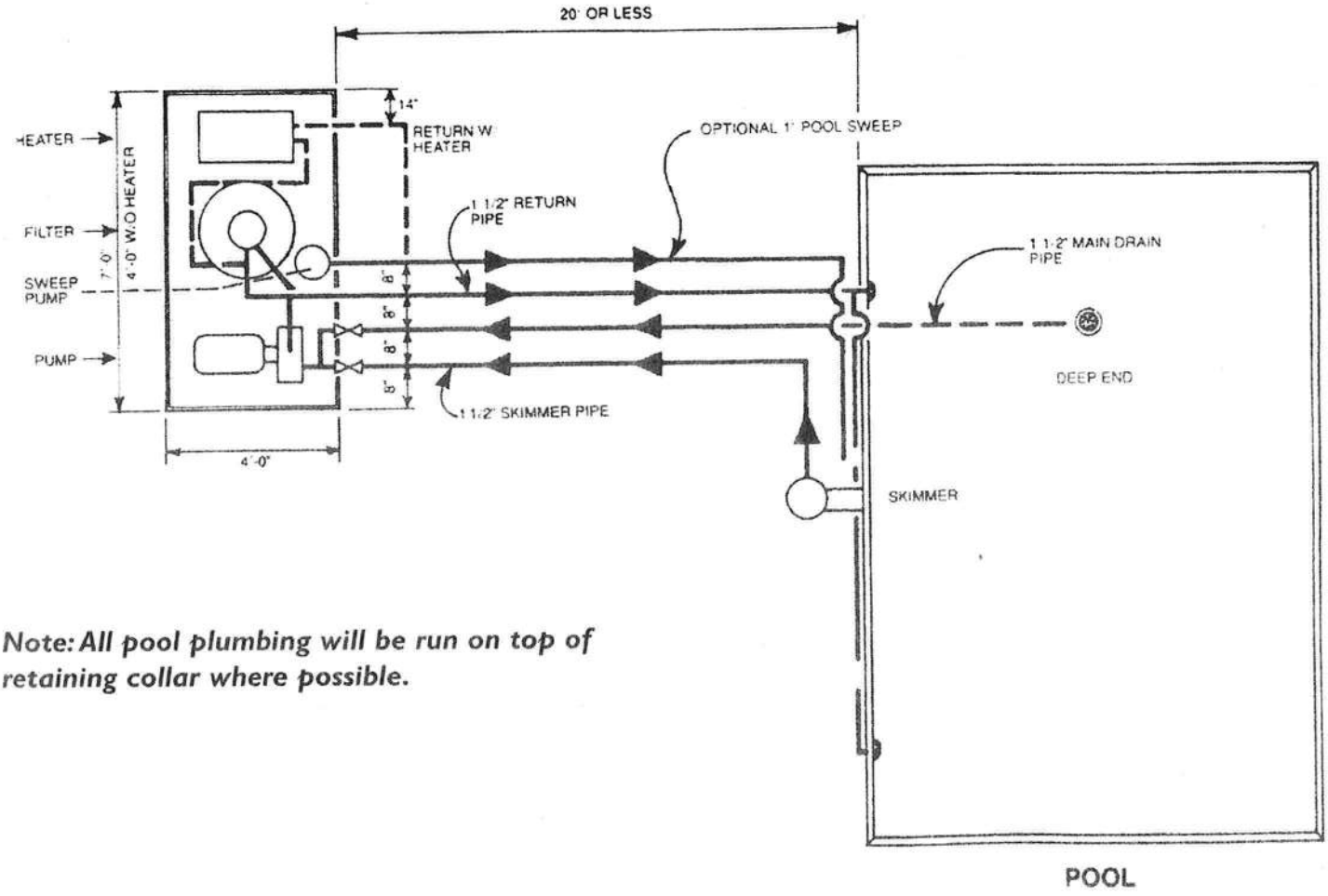


When water level is 2' above panel bottoms, screw skimmer, returns, and light faceplates with gaskets to wall fittings. Using a knife, carefully cut out vinyl from inside faceplates.



The main drain should be mounted in a concrete pad approx. 24" x 24" x 4" thick. The piping from the main drain should be installed and run out from pool area before pouring concrete bond beam around pool.

Pool Plumbing Schematic

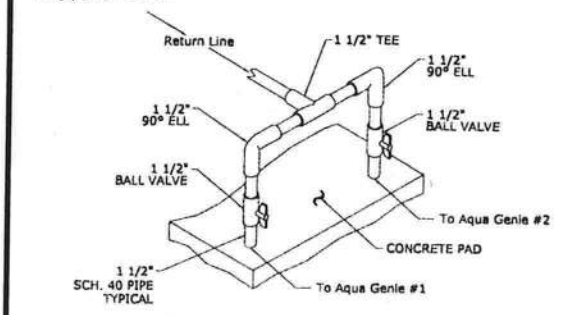


Note: All pool plumbing will be run on top of retaining collar where possible.

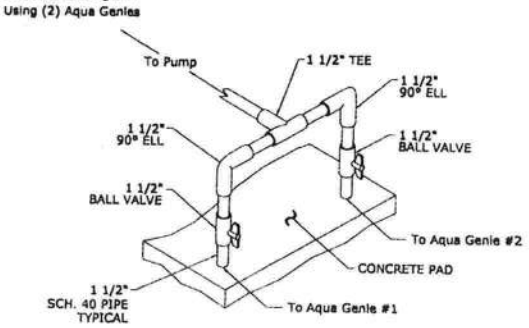
NOTES:

- **Polystyrene is not designed to be exposed to UV rays for a long period of time. Panels should be covered (back-filled) within a one- to two-week period from excavation.**
- **All plumbing lines should be installed at ground level (in overdig area) to eliminate stress from back-fill. Do not hang plumbing.**
- **Valve all suction and return lines independently.**

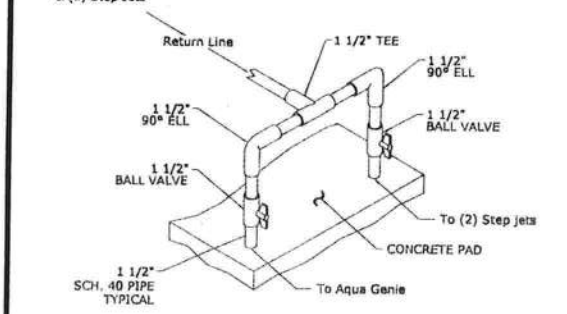
Return Line Diagram
Using (2) Aqua Genies



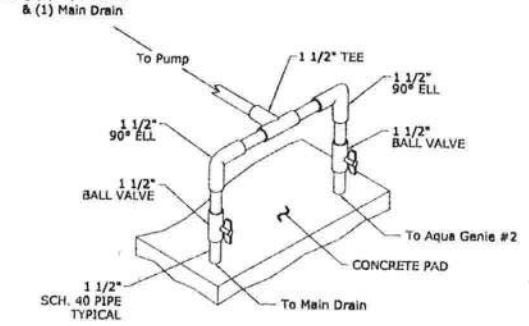
Suction Line Diagram
Using (2) Aqua Genies



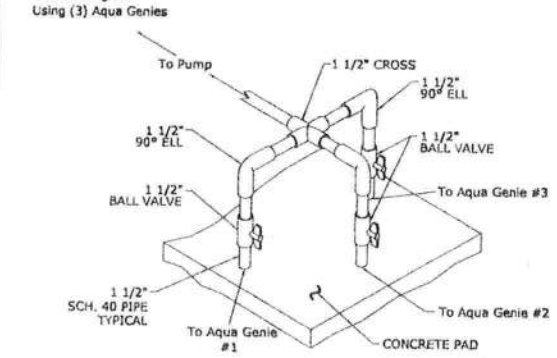
Return Line Diagram
Using (1) Aqua Genie
& (2) Step Jets



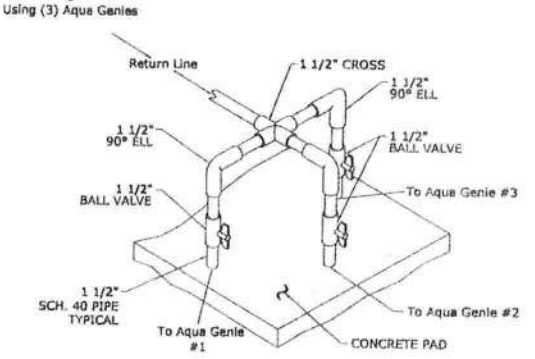
Suction Line Diagram
Using (1) Aqua Genie
& (1) Main Drain



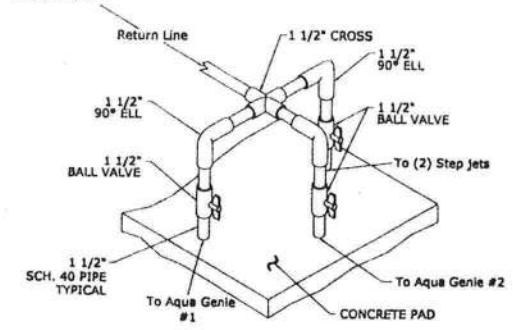
Suction Diagram
Using (3) Aqua Genies



Return Diagram
Using (3) Aqua Genies



Return Line Diagram
Using (2) Aqua Genies
& (2) Step Jets



FREQUENTLY ASKED QUESTIONS

EXCAVATION QUESTIONS

Q. How deep should I excavate the shelf/shallow end of the pool?

A. Once you establish the pool elevation/benchmark, excavate 42" down, which is the height of the Hydra, Pinnacle, or Cornerstone polymer panel without the coping attached. This is the depth of the shelf around the entire pool where the panels will sit. This shelf is the same in the shallow end as well as the deep end. The entire shallow end should be excavated to the same depth as the shelf. You will constantly be using two terms, dig dimensions and finish dimensions. Be sure you understand both terms and how to move between them during the construction of your pool.

Q. How deep should the hopper in the deep end be excavated?

A. Always dig the hopper in the deep end 2" deeper than the pool's finish depth. Example: If the finish depth of deep end is 8', dig hopper area to a depth of 8'2" from the benchmark or the top of the 42" panel without coping installed. This will allow for the installation of 2" of bottom material, such as vermiculite (pool base) or sand-and-cement mixture in the bottom of the hopper.

Q. Will excavating the shelf area around the pool leave enough room for the braces?

A. The panel line you have will dictate the brace size and the amount of overdig in the shelf area. Requirements are as follows: Hydra requires a 24" overdig, Cornerstone requires a 30" overdig and Pinnacle requires a 36" overdig. These are minimum requirements to allow room for the brace and to work in the shelf area.

Q. The installation manual advises not to over dig, what does this mean?

A. Extreme care should be taken when digging any depth or slope of the pool, especially in the hopper or deep end of the pool. Carefully mark the shelf area where the walls will sit using marking paint or strings with pins. Do not let the excavator dig past your marks or strings. You may want to hand shovel (trim) during this procedure to keep the excavator away from the shelf, thus keeping the shelf edge intact where the walls will sit. Keep in mind that all walls in the hopper area slope at various angles, thus the term "hopper bottom".

Q. When digging and encountering ground water, what are some options?

A. The most common option is to use a self-priming pool pump like the one for your pool package. All plumbing should be schedule 40 PVC installed as shown in the installation manual. Cap the pipe and drill as many 3/8" holes as possible in the tailpiece buried in the gravel/rock below grade. Make sure all plumbing joints are tight so you can pump the maximum amount of ground water from beneath the pool during the construction of the pool.

Finish-Dimensions Questions

Q. What do finish dimensions refer to?

A. Finish dimensions refer to several areas of the pool. Most of the time they refer to the interior of the pool, both length and width, as well as depth measurements. Example: A 16' x 32' rectangle pool that is 40" finish in the shallow end and 8' finish in the deep end would measure 16' wide and 32' long on the interior of the pool walls. The depth of the pool would be measured from the top of the wall (without coping attached) to the finish bottom material. The bottom material comes 2" up the wall panels to the finish grade following the entire inside perimeter of the pool.

Q. What standard dimensions are on the drawing you receive with your group?

A. All dimensions on your drawing are finish dimensions, with the exception of the panel-shelf detail. Remember to add 2" to all depth dimensions to allow for the 2" of bottom material needed later. This applies to the panel shelf as well. The panels are 42" high, and the finish inside the pool is 40", up 2" on the panel. All depth measurements are from the top of the panel with no coping installed.

Panel-Installation Questions

Q. How tight should the panel bolts be?

A. All panel lines need to have the bolts tight and secure. Do not over tighten. One of the panel lines (Hydra) has side flanges that are smooth and require fine-tuning to line up the face and top from one panel to the next. Two of the panel lines (Cornerstone and Pinnacle) have stud/socket alignment on the side flanges of every panel. This allows for instant panel alignment and lateral strength.

Q. How level should the panels be?

A. As with any construction project involving walls and footing, the walls need to be level, square and plumb (perfectly vertical) before the footer/collar is poured. After the panels are bolted together, they need to be leveled by using the transit to level all panels to every other panel. While this step is progressing, continue to square the pool also. After the pool panels are level and square, make sure they are plumb. After this is complete, and after the braces are all set, it is time for the collar to be poured.

Q. How do I bolt the panels to the step, in-wall ladder, cozy cove spa or swim out?

A. After leveling the step following the manufacturer's instructions, clamp the wall panel to the steps so that the flanges on the side of the step align with the top and face of the panel. If wall stiffeners are in your way, mark all holes with a marker, remove step from panels and drill holes where marked on step flanges. Remember, two panel lines have an alignment feature on one side that must be removed at this time so the steps will bolt up flush to the panel. The Hydra panel does not require this step.

Q. My soil is too rocky or hard for the polymer stakes, what can I use?

A. Steel stakes are available as an up charge on all panel lines.

Q. What consistency should the concrete for the collar (bond beam) be?

A. When ordering concrete for the bond beam/collar, it should be 3,000 psi rating with a minimum of 5" slump. This allows the concrete to flow around the braces.
NOTE: Always check walls for straightness and plumb before concrete sets.

Aqua Genie Installation Questions

Q. How is the Aqua Genie installed?

A. The Aqua Genie is mounted from the back of the panel with the face of the Aqua Genie extending through the precut hole in the panel. It attaches to the back of the wall using eight number-10x3/4" hex-head screws. You will notice eight dimples molded into the backside of the panel. Use a 3/32" bit and drill each hole 3/8" deep. DO NOT DRILL THROUGH THE PANEL WALL. If the face of the skimmer extends more than 1/4" through the wall of the panel, use the enclosed shim kit.

Q. The Aqua Genie has three holes for plumbing lines, which goes where?

A. There are two holes below the point at which the basket sits in the main body of the Aqua Genie. One is 1-1/2" and the other is 2". One will be your suction going to the front of the pump, located at the equipment pad. The other will be plugged in such a manner to insure a watertight seal. The third hole is located under the throat of the Aqua Genie; this is where the clean filtered water returns from the filter. Two terms used often in the pool industry are suction and return. The pump located at your equipment pad is the center point. If you are standing over the pump, any plumbing lines coming from the pool to the front of the pump are called suction lines. Any lines leaving out of the top of the pump to the filter, heater, salt generator and the like—and eventually going back into the ground and back to the pool—are called return lines. We have suction lines and return lines.

Q. Where should the Aqua Genie be placed in the pool perimeter?

A. Always locate the Aqua Genie as close as possible to the center of the long wall on a rectangle pool. Larger rectangle pools may require two, L-shaped pools may require two or more, and free-form pools have specific requirements that are noted on your layout drawing.

Step-Installation Questions

Q. How do I support my Sweetwater Steps during installation?

A. Your steps come with our new PVC and ABS step-alignment system. This is your leveling system to support the step during and after installation. This leveling feature attaches PVC legs to the injection-molded tread support mounted under the step treads. The legs will be anchored in the concrete collar when poured around the pool perimeter. With the proper backfill installed, this should give you a lasting foundation for your steps.

Q. When I install coping up to the side of the step, the vertical faceplates on each side of the steps get in the way. What should I do?

A. Cut the vertical faceplate and beauty strip off about 1/2" below the liner track on the coping. This will allow the coping an easy transition from the top of the wall to where it butts up to the side of the step.

Q. When should I remove the faceplate extrusions from the step?

A. Leave them attached until you are ready to install the liner. Remove the beauty strip, and before removing the faceplates, mark right/left and top. The horizontal strip across the bottom of the step should be marked right and left also. THEY CAN BE REINSTALLED INCORRECTLY. All screw holes are pre-drilled to match the faceplate. The gasket is installed and covers the pre-drilled holes. You will want to align them perfectly when installing the strips over the liner.

Q. Where should I place the step returns if installed?

A. Installation should be on the flat area on either side of the step, as you walk down into the pool. Placement should be about 12" to 15" down from the top of the step. This fitting is #SP1023. This fitting has three gaskets, two rubber gaskets and one fiber gasket. The hole size for the step return is 2-1/2".

Q. When should I put the faceplates on to secure the liner to the step?

A. The water in the pool (shallow end) should be deep enough to push the liner vertical to the step. The liner at the bottom of the step should be at a 90° angle from the floor to the step, no space. Once this has been accomplished, attach one vertical faceplate and then the other vertical faceplate to the step. Tighten and secure each screw. Once this has been done, install the horizontal faceplate. If there is any doubt as to how the faceplates are to look when installed, take a picture before removal, showing step detail with beauty strips removed.

Coping-Installation Questions

Q. Do I need to cut the coping to fit?

A. Both our bull-nose and cantilever coping require some cutting to fit. This can be done with a hacksaw, sawzall, jigsaw or a compound miter saw with a metal cutting blade.

Q. Some of the coping clips pop off. How can I correct this?

A. Make sure the joint where the coping sections meet is even. You may have to tap one or the other with the palm of your hand to align them evenly. Take the coping clip and bend it slightly into a tighter radius. Take a small amount of clear silicone and apply to the inside of the clip before installation.

Q. I have cantilevered coping, where are my coping clips?

A. Cantilever coping does not require clips. You will need self-tapping screws only.

Q. During installation, my coping was scratched. How could I repair the finish?

A. This can be touched up with paint supplied where you purchased your pool kit. It is a specially formulated paint for the coping.

Q. Can I tape the coping to protect it when pouring the deck?

A. Duct tape can be used along the coping edge. Apply just prior to pouring the deck and remove immediately after deck is done to prevent the adhesive from sticking. If there is adhesive transfer, use a rag and a product called GOOP or GOO GONE. This is available at most major home-improvement centers.

As a owner/builder: Please review the following code requirements and complete the notarized document which will attest that by installing this in ground residential swimming pool on the above described property all code requirements which pertain to construction and swimming pool barrier will be complied with by the owner/ Builder.

SECTION R4101 PRIVATE SWIMMING POOLS

R4101.1 - Definitions - General.

R4101.1.1 Tense, gender and number.

For the purpose of this code, certain abbreviations, terms, phrases, words, and their derivatives shall be construed as set forth in this section. Words used in the present tense include the future. Words in the masculine gender include the feminine and neuter. Words in the feminine and neuter gender include the masculine. The singular number includes the plural and the plural number includes the singular.

R4101.1.2 Words not defined.

Words not defined herein shall have the meanings stated in the Florida Building Code, Building; Florida Building Code, Mechanical; Florida Building Code, Plumbing; Florida Building Code, Fuel Gas; or Florida Fire Prevention Code. Words not defined in the Florida Building Code shall have the meanings stated in the Webster's Third New International Dictionary of the English Language Unabridged.

R4101.2 Definitions.

ADMINISTRATIVE AUTHORITY: The individual official, board, department or agency established and authorized by a state, county, city or other political subdivision created by law to administer and enforce the provisions of the swimming pool code as adopted or amended.

APPROVED: Accepted or acceptable under an applicable specification stated or cited in this code, or accepted as suitable for the proposed use under procedures and power of the administrative authority.

APPROVED SAFETY COVER: A manually or power-applied safety pool cover that meets all of the performance standards of the ASTM International in compliance with ASTM F 1346.

APPROVED TESTING AGENCY: An organization primarily established for the purpose of testing to approved standards and approved by the administrative authority.

BACKWASH PIPING: See "Filter waste discharge piping."

BARRIER: A fence, dwelling wall or nondwelling wall or any combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool, especially access from the residence or from the yard outside the barrier.

FILE COPY

BODY FEED: Filter aid fed into a diatomite-type filter throughout the filtering cycle.

CARTRIDGE FILTER: A filter using cartridge type filter elements.

CHEMICAL PIPING: Piping which conveys concentrated chemical solutions from a feeding apparatus to the circulation piping.

CIRCULATION PIPING SYSTEM: Piping between the pool structure and the mechanical equipment. Usually includes suction piping, face piping and return piping.

COMBINATION VALVE: A multipart valve intended to perform more than one function.

DESIGN HEAD: Total head requirement of the circulation system at the design rate of flow.

DIATOMITE (DIATOMACEOUS EARTH): A type of filter aid.

DIATOMITE TYPE FILTER: A filter designed to be used with filter aid.

DIRECT ACCESS FROM THE HOME: Means any opening which discharges into the "perimeter" of the pool or any opening in an exterior dwelling wall, or interior wall (for indoor pools) which faces the pool.

EXIT ALARM: A device that makes audible, continuous alarm sounds when any door or window which permits access from the residence to any pool that is without an intervening enclosure is opened or left ajar.

FACE PIPING: Piping, with all valves and fittings, which is used to connect the filter system together as a unit.

FILTER: Any apparatus by which water is clarified.

FILTER AID: A nonpermanent type of filter medium or aid such as diatomite, alum, etc.

FILTER CARTRIDGE: A disposable or renewable filter element which generally employs no filter aid.

FILTER ELEMENT: That part of a filter which retains the filter medium.

FILTER MEDIUM: Fine material which entraps the suspended particles and removes them from the water.

FILTER RATE: Average rate of flow per square foot of filter area.

FILTER ROCK: Specially graded rock and gravel used to support filter sand.

FILTER SAND: A specially graded type of permanent filter medium.

FILTER SEPTUM: That part of the filter element in a diatomite type filter upon which a cake of diatomite or other nonpermanent filter aid may be deposited.

FILTER WASTE DISCHARGE PIPING: Piping that conducts waste water from a filter to a drainage system. Connection to drainage system is made through an air gap or other approved methods.

FRESH WATER: Those waters having a specific conductivity less than a solution containing 6,000 ppm of sodium chloride.

HIGH RATE SAND FILTER: A sand filter designed for flows in excess of 5 gpm per square feet.

HOT TUB: See "Swimming pool."

INGROUND POOL: See "Swimming pool."

INLET FITTING: Fitting or fixture through which circulated water enters the pool.

MAIN OUTLET: Outlet at the deep portion of the pool through which the main flow of water leaves the pool when being drained or circulated.

MEDICALLY FRAIL ELDERLY PERSON: Means any person who is at least 65 years of age and has a medical problem that affects balance, vision, or judgment, including but not limited to a heart condition, diabetes, or Alzheimer's disease or any related disorder.

MESH SAFETY BARRIER: A combination of materials, including fabric, posts, and other hardware to form a barrier around a swimming pool.

POOL: See "Swimming pool."

POOL DEPTHS: The distance between the floor of pool and the maximum operating water level.

POOL PERIMETER: A pool perimeter is defined by the limits of the pool deck, its surrounding area including yard area on same property, and any dwelling or nondwelling wall or any combination thereof which completely surrounds the pool.

POOL PLUMBING: All chemical, circulation, filter waste discharge piping, deck drainage and water filling system.

PRECOAT: In a diatomite-type filter, the initial coating or filter aid placed on the filter septum at the start of the filter cycle.

RAPID SAND FILTER: A filter designed to be used with sand as the filter medium and for flows not to exceed 5 gpm per square feet.

RECEPTOR: An approved plumbing fixture or device of such material, shape and capacity as to adequately receive the discharge from indirect waste piping, so constructed and located as to be readily cleaned.

RESIDENTIAL: Means situated on the premises of a detached one-family or two-family dwelling or a one-family townhouse not more than three stories high.

RETURN PIPING: That portion of the circulation piping which extends from the outlet side of the filters to the pool.

SALINE WATER: Those waters having a specific conductivity in excess of a solution containing 6,000 ppm of sodium chloride.

SEPARATION TANK: A device used to clarify filter rinse or waste water sometimes called a reclamation tank.

SKIM FILTER: A surface skimmer combined with a vacuum diatomite filter.

SUCTION PIPING: That portion of the circulation piping located between the pool structure and the inlet side of the pump and usually includes main outlet piping, skimmer piping, vacuum piping and surge tank piping.

SURFACE SKIMMER: A device generally located in the pool wall which skims the pool surface by drawing pool water over a self adjusting weir.

SWIMMING POOL, PRIVATE: Any structure, located in a residential area, that is intended for swimming or recreational bathing and contains water over 24 inches (610 mm) deep including but not limited to inground, aboveground, and onground swimming pools, hot tubs, and nonportable spas.

SWIMMING POOL, INDOOR: A swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR: Any swimming pool which is not an indoor pool.

SWIMMING POOL, PUBLIC: A water-tight structure of concrete, masonry, fiberglass, stainless steel or plastic which is located either indoors or outdoors, used for bathing or swimming by humans, and filled with a filtered and disinfected water supply, together with buildings, appurtenances and equipment used in connection therewith. A public swimming pool or public pool shall mean a conventional pool, spa-type pool, wading pool, special purpose pool or water recreation attraction, to which admission may be gained with or without payment of a fee and includes, pools operated by or serving camps, churches, cities, counties, day care centers, group home facilities for eight or more clients, health spas, institutions, parks, state agencies, schools, subdivisions; or the cooperative living-type projects of five or more living units, such as apartments, boarding houses, hotels, mobile home parks, motels, recreational vehicle parks and townhouses.

SWIMMING POOL, RESIDENTIAL: See "Swimming pool, private."

TURNOVER TIME: The time in hours required for the circulation system to filter and recirculate a volume of water equal to the pool volume.

VACUUM FITTING: A fitting in the pool which is used as a convenient outlet for connecting the underwater suction cleaning equipment.

VACUUM PIPING: The piping from the suction side of a pump connected to a vacuum fitting located at the pool and below the water level.

WASTE PIPING: See "Filter waste discharge piping."

WIDTH AND/OR LENGTH: Actual water dimension taken from wall to wall at the maximum operating water level.

YOUNG CHILD: Means any person under the age of six years.

R4101.3: Mechanical requirements.

Unless otherwise specified in this code, all piping, equipment and materials used in the plumbing system of swimming pools that are built in place shall conform to the Florida Building Code, Plumbing.

R4101.4: Approvals.

R4101.4.1: Compliance.

All materials, piping, valves, equipment or appliances entering into the construction of swimming pools or portions thereof shall be of a type complying with this code or of a type recommended and approved by a nationally recognized testing agency or conforming to other recognized standards acceptable to the administrative authority.

R4101.4.2 Items not covered.

For any items not specifically covered in these requirements, the administrative authority is hereby authorized to require that all equipment, materials, methods of construction and design features shall be proven to function adequately, effectively and without excessive maintenance and operational difficulties.

R4101.4.3 : Applicant responsibility.

It shall be the responsibility of the applicant to provide such data, tests or other adequate proof that the device, material or product will satisfactorily perform the function for which it is intended, before such item shall be approved or accepted for tests.

R4101.5: Alternate materials and methods of construction.

R4101.5.1: Approval and authorization.

The provisions of this code are not intended to prevent the use of any alternate material, method of construction, appliance or equipment, provided any such alternate has been first approved and its use authorized by the administrative authority.

R4101.5.2: Required tests.

When there is insufficient evidence to substantiate claims for alternates, the administrative authority may require tests, as proof of compliance, to be made by an approved agency at the expense of the applicant.

R4101.6 :Engineering design.

R4101.6.1: Conformance standard.

Design, construction and workmanship shall be in conformity with the requirements of ANSI/NSPI 3; ANSI/NSPI 4; ANSI/NSPI 5; and ANSI/NSPI 6.

R4101.6.2: Required equipment.

Every swimming pool shall be equipped complete with approved mechanical equipment consisting of filter, pump, piping valves and component parts.

Exception: Pools with a supply of fresh water equivalent to the volume of the pool in the specified turnover time will be allowed.

R4101.6.3: Water velocity.

Pool piping shall be designed so the water velocity will not exceed 10 feet per second (3048 mm/s) for pressure piping and 8 feet per second (2438 mm/s) for suction piping, except that the water velocity shall not exceed 8 feet per second (2438 mm/s) in copper tubing.

Exception: Jet inlet fittings shall not be deemed subject to this requirement.

R4101.6.4: Piping to heater.

Water flow through the heater, any bypass plumbing installed, any back-siphoning protection, and the use of heat sinks shall be done in accordance with the manufacturer's recommendations.

R4101.6.5 Piping installation.

All piping materials shall be installed in strict accordance with the manufacturer's installation standards.

Exception: Primer and glue on exposed aboveground piping not required to be colored.

R4101.6.6: Entrapment protection for suction inlets.

R4101.6.6.1: Location.

Suction inlets shall be provided and arranged to produce circulation throughout the pool or spa.

R4101.6.6.2: Testing and certification.

All pool and spa suction inlets shall be provided with a cover that has been tested and accepted by a recognized testing facility and comply with ANSI/ASME A112.19.8M, Suction Fittings for Use in Swimming Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances.

Exceptions:

1. Surface skimmers.

2. Grate or grates having a minimum area of 144 square inches (.09 mm2) or greater.

R4101.6.6.3: Entrapment avoidance.

All pools and spas shall have a backup system which shall provide vacuum protection should grate covers become missing or inoperative with respect to their approved use. Vacuum protection devices shall consist of one of the following:

1. Approved safety vacuum release system (SVRS).

2. Approved vent piping.

3. Other approved devices or means.

R4101.6.6.4: Suction inlets per pump.

A minimum of two suction inlets shall be provided for each pump in the suction inlet system, separated by a minimum of 3 feet (914 mm) or located on two different planes; i.e., one on the bottom and one on the vertical wall, or one each on two separate vertical walls. These suction inlets shall be plumbed such that water is drawn through them simultaneously through a common line to the pump. When a skimmer is used in conjunction with a single main outlet to meet the requirements of this section, the common suction line must be in compliance with Section R4101.6.6.3 such that a vacuum cannot be drawn on any single main outlet or skimmer.

R4101.6.6.5 : Cleaner fittings.

Where provided, the vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches (152 mm) and not greater than 12 inches (305 mm) below the minimum operating water level or as an attachment to the skimmer(s). All cleaner suction inlets shall be protected by an approved, permanently installed, self-closing flapper assembly.

R4101.7: Pumps.

R4101.7.1: Strainer.

Pool circulating pumps shall be equipped on the inlet side with an approved type hair and lint strainer when used with a pressure filter.

R4101.7.2: Installation.

Pumps shall be installed in accordance with manufacturer recommendations.

R4101.7.3: Capacity.

Pumps shall have design capacity at the following heads:

1. Pressure Diatomaceous Earth–At least 60 feet (18 288 mm).

2. Vacuum Diatomaceous Earth–20-inch (508 mm) vacuum on the suction side and 40-foot (12 192 mm) total head.

3. Rapid Sand–At least 45 feet (13 716 mm).

4. High Rate Sand–At least 60-feet (18 288 mm).

R4101.7.4: Materials.

Pump impellers, shafts, wear rings and other working parts shall be of corrosion-resistant materials.

R4101.8: Valves.

R4101.8.1 General.

Valves shall be made of materials that are approved in the Florida Building Code, Plumbing. Valves located under concrete slabs shall be set in a pit having a least dimension of five pipe diameters with a minimum of at least 10

inches (254 mm) and fitted with a suitable cover. All valves shall be located where they will be readily accessible for maintenance and removal.

R4101.8.2 Full-way (gate) valves:

Full-way valves shall be installed to insure proper functioning of the filtration and piping system. When the pump is located below the overflow rim of the pool, a valve shall be installed on the discharge outlet and the suction line.

R4101.8.3 Check valves:.

Where check valves are installed they shall be of the swing, spring or vertical check patterns.

R4101.8.4 Combination valves:

Combination valves shall require approval of the administrative authority prior to their installation.

R4101.9 Water supply:

Unless an approved type of filling system is installed, any water supply which in the judgment of the administrative authority may be used to fill the pool shall be equipped with backflow protection. No over the rim fill spout shall be accepted unless located under a diving board, or properly guarded.

R4101.10 Waste water disposal:

R4101.10.1 Connection limitations:

Direct or indirect connections shall not be made between any storm drain, sewer, drainage system, seepage pit underground leaching pit, or subsoil drainage line, and any line connected to a swimming pool unless approved by the administrative authority.

R4101.10.2 Disposal through public sewer:

When the waste water from a swimming pool is to be disposed of through a public sewer, a 3-inch (76 mm) P-trap shall be installed on the lower terminus of the building drain and the tall piece from the trap shall extend a minimum of 3-inches (76 mm) above finished grade and below finished floor grade. This trap need not be vented. The connection between the filter waste discharge piping and the P-trap shall be made by means of an indirect connection.

R4101.10.3 Deviations:

Plans and specifications for any deviation from the above manner of installation shall first be approved by the administrative authority before any portion of any such system is installed. When waste water disposal is to seepage pit installation, it shall be installed in accordance with the approval granted by the administrative authority.

R4101.11 Separation tank:

A separation tank of an approved type may be used in lieu of the aforementioned means of waste water disposal when connected as a reclamation system.

R4101.12 Tests:

R4101.12.1 Pressure test:

All pool piping shall be tested and proved tight to the satisfaction of the administrative authority, under a static water or air pressure test of not less than 35 pounds per square inch (psi) (241 kPa) for 15 minutes.

Exception: Circulating pumps need not be tested as required in this section.

R4101.12.2 Drain and waste piping:

All drain and waste piping shall be tested by filling with water to the point of overflow and all joints shall be tight.

R4101.13 Drain piping.

R4101.13.1 Slope to discharge.

Drain piping serving gravity overflow gutter drains and deck drains shall be installed to provide continuous grade to point of discharge.

R4101.13.2 Joints and connections:

Joints and connections shall be made as required by the Florida Building Code, Plumbing.

R4101.14 Water heating equipment.

R4101.14.1 Labels:

Swimming pool water heating equipment shall conform to the design, construction and installation requirements in accordance with accepted engineering practices and shall bear the label of a recognized testing agency, and shall include a consideration of combustion air, venting and gas supply requirements for water heaters.

R4101.14.2 Water retention: If a heater is not equipped or designed for an approved permanent bypass or antisiphon device, an approved permanent bypass or antisiphon device shall be installed to provide a positive means of retaining water in the heater when the pump is not in operation.

R4101.14.3 Pit drainage:

When the heater is installed in a pit, the pit shall be provided with approved drainage facilities.

R4101.14.4 Connections:

All water heating equipment shall be installed with flanges or union connection adjacent to the heater.

R4101.14.5 Relief valve:

When water heating equipment which is installed in a closed system has a valve between the appliance and the pool, a pressure relief valve shall be installed on the discharge side of the water heating equipment. For units up to and including 200,000 Btu/hour input, the relief valve shall be rated by the American Gas Association.

R4101.15 Gas piping:

Gas piping shall comply with the Florida Building Code, Fuel Gas.

R4101.16 Electrical:

Electrical wiring and equipment shall comply with Chapter 27 of the Florida Building Code.

R4101.17 Residential swimming barrier requirement:

Residential swimming pools shall comply with Sections R4101.17.1 through R4101.17.3.

Exception: A swimming pool with an approved safety pool cover complying with ASTM F 1346.

R4101.17.1: Outdoor swimming pools.

Outdoor swimming pools shall be provided with a barrier complying with R4101.17.1.1 through R4101.17.1.14.

R4101.17.1.1:

The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade the barrier may be at ground level or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

R4101.17.1.2:

The barrier may not have any gaps, openings, indentations, protrusions, or structural components that could allow a young child to crawl under, squeeze through, or climb over the barrier as herein described below. One end of a removable child barrier shall not be removable without the aid of tools. Openings in any barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

R4101.17.1.3

Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

R4101.17.1.4

Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1¾ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1¾ inches (44 mm) in width.

R4101.17.1.5

Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1¾ inches (44 mm) in width.

R4101.17.1.6

Maximum mesh size for chain link fences shall be a 2¼ inch square (57 mm) unless the fence is provided with slats fastened at the top or bottom which reduce the openings to no more than 1¾ inches (44 mm).

R4101.17.1.7

Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1¾ inches (44 mm).

R4101.17.1.8

Access gates, when provided, shall be self-closing and shall comply with the requirements of Sections R4101.17.1.1 through R4101.17.1.7 and shall be equipped with a self-latching locking device located on the pool side of the gate. Where the device release is located no less than 54 inches (1372 mm) from the bottom of the gate, the device release mechanism may be located on either side of the gate and so placed that it cannot be reached by a young child over the top or through any opening or gap from the outside. Gates that provide access to the swimming pool must open outward away from the pool. The gates and barrier shall have no opening greater than ½ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

R4101.17.1.9

Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. All doors and windows providing direct access from the home to the pool shall be equipped with an exit alarm complying with UL 2017 that has a minimum sound pressure rating of 85 dB A at 10 feet (3048 mm). The exit alarm shall produce a continuous audible warning when the door and its screen are opened. The alarm shall sound immediately after the door is opened and be capable of being heard throughout the house during normal household activities. The alarm shall be equipped with a manual means to temporarily deactivate the alarm for a single opening. Such deactivation shall

last no more than 15 seconds. The deactivation switch shall be located at least 54 inches (1372 mm) above the threshold of the door. Separate alarms are not required for each door or window if sensors wired to a central alarm sound when contact is broken at any opening.

Exceptions:

a. Screened or protected windows having a bottom sill height of 48 inches (1219 mm) or more measured from the interior finished floor at the pool access level.

b. Windows facing the pool on floor above the first story.

c. Screened or protected pass-through kitchen windows 42 inches (1067 mm) or higher with a counter beneath.

2. All doors providing direct access from the home to the pool must be equipped with a self-closing, self-latching device with positive mechanical latching/locking installed a minimum of 54 inches (1372 mm) above the threshold, which is approved by the authority having jurisdiction.

R4101.17.1.10

Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections R4101.17.1.1 through R4101.17.1.9 and Sections R4101.17.1.12 through R4101.17.1.14. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

R4101.17.1.11

Standard screen enclosures which meet the requirements of Section R4101.17 may be utilized as part of or all of the "barrier" and shall be considered a "nondwelling" wall. Removable child barriers shall have one end of the barrier nonremovable without the aid of tools.

R4101.17.1.12

The barrier must be placed around the perimeter of the pool and must be separate from any fence, wall, or other enclosure surrounding the yard unless the fence, wall, or other enclosure or portion thereof is situated on the perimeter of the pool, is being used as part of the barrier, and meets the barrier requirements of this section.

R4101.17.1.13

Removable child barriers must be placed sufficiently away from the water's edge to prevent a young child or medically frail elderly person who may manage to penetrate the barrier from immediately falling into the water. Sufficiently away from the water's edge shall mean no less than 20 inches

(508 mm) from the barrier to the water's edge. Dwelling or nondwelling walls including screen enclosures, when used as part or all of the "barrier" and meeting the other barrier requirements, may be as close to the water's edge as permitted by this code.

R4101.17.1.14

A wall of a dwelling may serve as part of the barrier if it does not contain any door or window that opens to provide direct access from the home to the swimming pool.

R4101.17.1.14.1: Adjacent waterways.

Permanent natural or permanent man-made features such as bulkheads, canals, lakes, navigable waterways, etc., adjacent to a public or private swimming pool or spa may be permitted as a barrier when approved by the authority having jurisdiction. When evaluating such barrier features, the authority may perform on-site inspections and review evidence such as surveys, aerial photographs, water management agency standards and specifications, and any other similar documentation to verify, at a minimum, the following:

1. The barrier feature is not subject to natural changes, deviations, or alterations and is capable of providing an equivalent level of protection as that provided by the code.

2. The barrier feature clearly impedes, prohibits or restricts access to the swimming pool or spa.

R4101.17.1.15

A mesh safety barrier meeting the requirements of Section R4101.17 and the following minimum requirements shall be considered a barrier as defined in this section:

1. Individual component vertical support posts shall be capable of resisting a minimum of 52 pounds (229 N) of horizontal force prior to breakage when measured at a 36-inch (914 mm) height above grade. Vertical posts of the child mesh safety barrier shall extend a minimum of 3 inches (76 mm) below deck level and shall be spaced no greater than 36 inches (914 mm) apart.

2. The mesh utilized in the barrier shall have a minimum tensile strength according to ASTM D 5034 of 100 lbf. , and a minimum ball burst strength according to ASTM D 3787 of 150 lbf. The mesh shall not be capable of deformation such that a ¼-inch (6.4 mm) round object could pass through the mesh.

The mesh shall receive a descriptive performance rating of no less than "trace discoloration" or "slight discoloration" when tested according to ASTM G 53 (Weatherability, 1,200 hours).

3. When using a molding strip to attach the mesh to the vertical posts, this strip shall contain, at a minimum, #8 by ½-inch (12.7 mm) screws with a

minimum of two screws at the top and two at the bottom with the remaining screws spaced a maximum of 6 inches (152 mm) apart on center.

4. Patio deck sleeves (vertical post receptacles) placed inside the patio surface shall be of a nonconductive material.

5. A latching device shall attach each barrier section at a height no lower than 45 inches (11 613 mm) above grade. Common latching devices that include, but are not limited to, devices that provide the security equal to or greater than that of a hook and eye type latch incorporating a spring actuated retaining lever (commonly referred to as a safety gate hook).

6. The bottom of the child mesh safety barrier shall not be more than 1 inch (25 mm) above the deck or installed surface (grade).

R4101.17.2: Indoor swimming pools.

All walls surrounding indoor swimming pools shall comply with Section R4101.17.1.9.

R4101.17.3: Prohibited locations.

A barrier may not be located in a way that allows any permanent structure, equipment, or window that opens to provide access from the home to the swimming pool.

R4101.18: Ladders and steps.

All pools whether public or private shall be provided with a ladder or steps in the shallow end where 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/swimouts in the deep end. Where manufactured diving equipment is to be used, benches or swimouts shall be recessed or located in a corner.

Exception: In private pools having more than one shallow end, only one set of steps are required. A bench, swim-out or ladder may be used at all additional shallow ends in lieu of an additional set of steps.

R4101.19 Final inspection:

All swimming pool installations must be completed. The pool shall be completely filled with water and in operation before final inspection.

R4101.20 Filters.

The entire design of matched components shall have sufficient capacity to provide a complete turnover of pool water in 12 hours or less.

R4101.20.1 Sand filters.

R4101.20.1.1 Approved types.

Rapid sand filters (flow up to 5 gpm per square foot) shall be constructed in accordance with approved standards. Where high rate sand filters (flow in excess of 5 gpm per square foot) are used, they shall be of an approved type.

The circulation system and backwash piping shall be adequate for proper backwashing of said filter and shall provide backwash flow rates of at least 12 gpm per square foot or rapid sand filters or 15 gpm per square foot or high rate sand filters.

R4101.20.1.2 Instructions:

Every filter system shall be provided with written operating instructions.

R4101.20.1.3 Filter system equipment:

On pressure type filters, a means shall be provided to permit the release of internal pressure. A filter incorporating an automatic internal air release as its principal means of air release shall have lids which provide a slow and safe release of pressure as part of its design. A separation tank used in conjunction with a filter tank shall have as part of its design a manual means of air release or a lid which provides a slow and safe release of pressure as it is opened.

R4101.20.2 Diatomite type filters.

R4101.20.2.1 Design:.

Diatomite-type filters shall be designed for operation under either pressure or vacuum. The design capacity for both pressure and vacuum filters shall not exceed 2 gpm per square foot of effective filter area.

R4101.20.2.2 Filter aid:

Provision shall be made to introduce filter aid into the filter in such a way as to evenly precoat the filter septum.

R4101.21 Pool fittings:

R4101.21.1 Approved type.

Pool fittings shall be of an approved type and design as to be appropriate for the specific application.

R4101.21.2 Skimmers:

Approved surface skimmers are required and shall be installed in strict accordance with the manufacturer's installation instructions. Skimmers shall be installed on the basis of one per 800 square feet (74 m2) of surface area or fraction thereof, and shall be designed for a flow rate of at least 25 gallons per minute (gpm) (1.6 L/s) per skimmer.

R4101.21.3 Main outlet:

An approved main outlet, when provided, shall be located on a wall or floor at or near the deepest point in the pool for emptying or circulation, or both, of the water in the pool.

R4101.21.4 Hydrostatic relief device:

In areas of anticipated water table an approved hydrostatic relief device shall be installed.

Exception: Plastic liner pools (where there is no structural bottom to the pool).

R4101.21.5 Inlet fittings:

Approved manufactured inlet fittings 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. Where more than one inlet is required, the shortest distance between any two required inlets shall be at least 10 feet (3048 mm).

R4101.22 Equipment foundations and enclosures:

All pool motors and equipment shall be installed in compliance with the manufacturer's recommendations. All heating and electrical equipment, unless approved for outdoor installation, shall be adequately protected against the weather or installed within a building.

R4101.23 :Accessibility and clearances.

Equipment shall be so installed as to provide ready accessibility for cleaning, operating, maintenance and servicing.

I, Robert May have reviewed section R4101 of the Florida Residential Building Code 2004 and attest that all code requirements will be complied with during and after the installation of the in ground residential swimming pool.

Robert May

State Of Florida

County of Columbia

Sworn to (or affirmed) and subscribed before me

this day of May 2007

personally known.

Notary Signature

LAURIE HODSON
MY COMMISSION # DD 333503
EXPIRES: June 28, 2008
Bonded Thru Notary Public Underwriters