



***Swimming Pool • Jacuzzi • Hot Tub • Sauna •
Steamroom • Spa Suites***

Design • Installation • Service • Maintenance

Visit our website : www.arka.ie



Hillcroft House,
Monatrea Ind.Est.,
Celbridge, Co. Kildare.

t 01 627 9095
f 01 627 9096
e info@arka.ie





1. Introduction



2. Completed Contracts

- *Commercial Pools*
- *Hydrotherapy Pools*
- *Private Pools*
- *Hot Tub & Spa Installations*
- *Refurbishments*



3. Current Contracts



4. Equipment



5. Typical Drawings

Introduction

Arka Engineering are a 100% Irish owned company with over 35 years experience in the Irish Leisure Industry.

What We Do.

Arka Engineering design, install, service & maintain commercial Swimming Pools, Spas, Hot Tubs, Saunas & Steamrooms and Pool Covers.

Our work is carried out in Leisure Centres, Hotels, Hospitals and Private Residences

Our installations feature only the latest state of the art equipment.

**We are Irish Agents for Leading Industry Manufacturers such as
Lovibond & Palintest Water Test Equipment,
Dinotec Chemical Control Systems,
Easidose Chemical Dosing Systems,
Spaform Spas, Hot Tubs,
Hanovia UV Systems.**

Picture : Cavan Crystal Leisure Centre

Certificate of ISME Membership

This is to certify that

Arka Engineering

is a member of

The Irish Small and Medium Enterprises Association

May 2011



THE INSTITUTE OF SWIMMING POOL ENGINEERS

This is to certify that

R. Buckley

has been accepted as a

Associate Member

of the Institute

of Swimming Pool Engineers

President

Alan Pugh

Date 28th February 2011





THE INSTITUTE OF SWIMMING POOL ENGINEERS

This is to certify that

L. Ross

has been accepted as a

Member

of the Institute

of Swimming Pool Engineers

Chairman 

Date 5th November 1998





This is to certify that
Arka Engineering
have engineers trained and
approved by Hanovia Ltd

Granted: September 2011

A handwritten signature in black ink, appearing to read "John Ryan", is written over a horizontal line.

John Ryan, Managing Director
Hanovia Ltd



Completed Contracts

The following pages contain a cross section of contracts completed by Arka Engineering in the past.

COMMERCIAL SWIMMING POOLS



Client : Jackie Skelly Fitness.
Project : Charlesland, Greystones, Co. Wicklow.
Contract : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Bailis, Navan, Co. Meath.
Contract : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Park West, Dublin 12.
Facilities : 20m Swimming Pool and Spa.
Automatic Main Pool Cover & Reel System.



Client : Jackie Skelly Fitness.
Project : Applewood Village, Swords, Co.Dublin.
Facilities : 21m Swimming Pool, Kiddies Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Ashbourne, Co.Meath.
Facilities : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Jackie Skelly Fitness, Clarendon Street.
Contract : Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Shelbourne Road, Dublin.
Contract : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Drogheda, Co. Louth.
Contract : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Newbridge, Co. Kildare.
Contract : 20m Swimming Pool and Spa.



Client : Jackie Skelly Fitness.
Project : Nutgrove, Rathfarnham, Co. Dublin.
Contract : 20m Swimming Pool and Spa.



Client : International Leisure Ltd.
Project : Crunch Fitness, Aston Quay, Dublin.
Contract : 20m Swimming Pool, Kiddies Pool,
Commercial Spa.



Client : International Leisure Ltd.
Project : Westmanstown (Garda Sports & Social Club Site).
Facilities : 25m Swimming Pool, 2 No. Commercial Spas.



Client : International Leisure Ltd.

Project : Tallaght, Co. Dublin

Facilities : 25m Swimming Pool and Spa Feature Pool.



Client : Office of Public Works.

Project : Farmleigh House, Pheonix Park, Dublin.

Facilities : Swimming Pool.



Client : Cavan Crystal Hotel.

Project : Cavan Crystal Leisure Club, Cavan.

Facilities : 20m Swimming Pool, Spa, Wall Mounted Remote Control Pool Cover.



Client : The Four Seasons Hotel.

Project : Four Seasons Hotel, Monaghan.

Contract : Swimming Pool, Children's Pool and Jacuzzi.



Client : The Four Seasons Hotel.

Project : The Four Seasons Hotel, Carlingford, Co. Louth.

Contract : 20m Swimming Pool, Jacuzzi, Sauna and Steamroom



Client : Lough Erne Hotel.
Project : Castlehume, Enniskillen, Co. Fermanagh.
Facilities : 20m Swimming Pool, Sauna, Steamroom and Spa.



Client : Dunne Construction Ltd.
Project : Clanree Hotel, Letterkenry, Co. Donegal.
Facilities : 20m Swimming Pool, Children's Pool and Jacuzzi.



Client : Pier Head Hotel.
Project : Pier Head Hotel, Mullaghmore, Co. Sligo.
Contract : 18m Swimming Pool, Commercial Spa, Sauna and Steamroom.



Client : Clarion Hotel Group.
Project : Leisure Centre. Sligo.
Contract : Swimming Pool, Spa, Sauna and Steamroom.



Project : Equine Pool, Dungarvan.
Contract : Equine Exercise pool and Equine Spa.



Client : Liffey Valley Leisure Centre.
Project : Liffey Valley Leisure Centre, Liffey Valley, Dublin.
Facilities : 33m Swimming Pool and Commercial Spa.



Client : Naas Health & Leisure.
Project : Naas Health & Fitness, Naas, Co. Kildare.
Facilities : 25m Swimming Pool, Children's Pool, Commercial Spa, Wall Mounted, Remote Control Pool Cover.



Client : Westgrove Hotel.
Project : Westgrove Hotel, Clane, Co. Kildare.
Contract : 20m Swimming Pool, Commercial Spa, Sauna and Steamroom.



Client : Kerry County Council.
Project : Ballybunion Swimming Pool.
Contract : 25m Swimming Pool, Jacuzzi, Sauna and Steamroom.



Client : Knightsbrook Hotel, Trim, Co. Meath.
Contract : 20m Swimming Pool, Commercial Spa, Sauna and Steamroom.



Client : Abbeyfield Hotel.
Location : Ballaghaderreen, Co. Roscommon.
Contract : 18m Swimming Pool and Hot Tub.



Client : Kilronan Castle.
Location : Co. Roscommon.
Contract : Commercial Swimming Pool



Client : An Chúirt Hotel.
Location : An Chúirt Hotel Leisure Centre
Contract : 20m Commercial Swimming Pool, 20 X 4m Hydro Feature Pool, Commercial Spa, Sauna & Steamroom

HYDRO POOLS



Client : St. John of Gods.
Project : Dunmore House, Glenageary, Co. Wicklow.
Contract : Hydrotherapy Pool.



Client : St. John of Gods.
Project : Blackrock Hospice.
Contract : New Hydrotherapy Pool and Spa.



Client : Tallaght Hospital.
Project : Tallaght Hospital Hydrotherapy Pool.
Facilities : Hydrotherapy Pool.



Project : Tullamore Hospital, Tullamore, Co. Offaly.
Contract : Hydrotherapy Pool.
Facilities : 4.5m x 5m Hydro Pool. Pool hoist cw Stretcher Facility, De-Chlorination Filter & Auto Pool Cover

PRIVATE SWIMMING POOLS

PRIVATE
CLIENT

Client : Private Individual..
Location : Rathgar Private Residence.
Contract : 12m x 3m Deck Level Pool, Jacuzzi and Fully Automatic Chemical Installation

PRIVATE
CLIENT

Client : Private Individual..
Location : Howth Private Residence.
Contract : 12.5m x 6m Deck Level Pool, Counter Current Unit, Auto Pool Cover, Fully Automatic Chemical Chlorine Free System.

PRIVATE
CLIENT

Client : Private Individual..
Location : Westport Private Residence.
Contract : 14 x 6m Deck Level Pool, Jacuzzi, Counter Current Unit, Auto Pool Cover, Fully Automatic Chemical Installation & External Remote Hot Tub.

PRIVATE
CLIENT

Client : Private Individual..
Location : Dalkey Private Residence.
Contract : 12 x 6m Deck Level Pool, Jacuzzi, Counter Current Unit, Fully Automatic Chemical Installation.

PRIVATE
CLIENT

Client : Private Individual..
Location : Ashtown Private Residence.
Contract : 15 x 5m Deck Level Pool, and Counter Current Unit.

PRIVATE
CLIENT

Client : Private Individual..
Location : Wicklow Private Residence.
Contract : 20m x 2m Skimmer Pool.

HOT TUB AND SPA INSTALLATIONS



Client : The Killarney Lake Hotel.
Project : The Killarney Lake Hotel.
Facilities : Outdoor Commercial Hot Tub and Spa.



Client : Newpark Hotel.
Project : Newpark Hotel, Castlecomer Road, Kilkenny.
Contract : 3m Commercial Overflow Jacuzzi.



Client : The Four Seasons Hotel.
Project : The Four Seasons Hotel, Monaghan.
Contract : Commercial Outdoor Timber Hot Tub.



Client : Sarsfields G.A.A.
Project : Sarsfields G.A.A., Newbridge, Co.Kildare.
Contract : New Commercial Spa.



Client : Gibson Hotel.
Project : Point Village Hotel – Dublin..
Facilities : Commercial Sauna, Stemroom, Footbaths and Jacuzzi.



Client : Carrickdale Hotel, Dundalk, Co. Louth.
Project: Commercial Hot Tub & Spa.
Contract : Commercial Overflow Teak Hot Tub Installation incl. Filtration and Chemical Plant.

PRIVATE
CLIENT

Client : Private Client.
Project : Holiday Home – Brittas Bay.
Contract : Domestic Hot Tub Installation.

PRIVATE
CLIENT

Client : Private Client
Project : Holiday Home - Rosslare.
Contract : Teak Hot Tub Installation..

REFURBISHMENTS



Client : Dublin City Council, (Formerly Dublin Corporation).
Project : Rathmines Swimming Pool.
Contract : New Pool Water Chemical Treatment Plant.



Client : Dublin City Council, (Formerly Dublin Corporation).
Project : Ballymun Swimming Pool.
Contract : New Pool Water Chemical Treatment Plant.



Client : Ballyshannon Swimming Pool.
Project : Ballyshannon Swimming Pool.
Contract : New Pool Water Treatment Plant.



Client : Templeogue College Swimming Pool.
Project : Templeogue College Swimming Pool.
Contract : New Pool Water Treatment Plant.



Client : HSE.
Project : Beaumont Hospital Hydro Pool.
Contract : Pool Plant and Filtration Systems Replacement incl. Installation of Fully Auto Chemical Dosing System.



Client : Private Individual.
Project : Private Residence – Donnybrook.
Contract : Outdoor Pool Plant and Pipework Re-furb.





Current Contracts

*The following pages contain a cross section of
Current contracts being undertaken by
Arka Engineering at present.*

CURRENT CONTRACTS - COMMERCIAL



New

Client : Private Investor.

Project : Commercial Leisure Centre - Sandyford.

Contract : 25m Swimming Pool and Jacuzzi



New

Client : Private Investor.

Project : Cherrywood Commercial Leisure Centre

Facilities : 25m Swimming Pool and Commercial Spa.

CURRENT CONTRACTS – PRIVATE

New

Client : Private individual.
Project : Howth Private Residence.
Facilities : Skimmer Pool, Jacuzzi, Sauna, Steamroom and Below Deck Pool Cover

New

Client : Private individual.
Project : Clonmel Private Residence.
Facilities : Deck Level Pool, Jacuzzi, Counter Current and Above Ground Pool Cover

New

Client : Private individual.
Project : Dundrum Private Residence.
Facilities : Skimmer Pool and Counter Current.

New

Client : Private individual.
Project : Rathmines Private Residence.
Facilities : Deck Level Pool, Jacuzzi, Sauna and Steamroom.

New

Client : Private individual.
Project : Wicklow Private Residence.
Facilities : Deck Level Pool, Counter Current and Below Deck Pool Cover

All equipment installed by Arka Engineering state of the art and specifically designed & manufactured for commercial use.

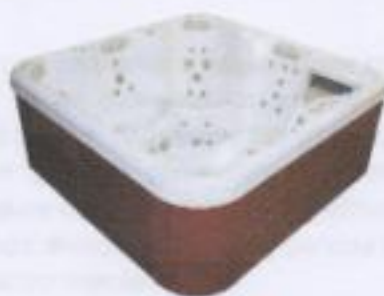
Please contact us for further information on the following :

Swimming Pools	Pool Fittings
Spas	Overflow Channel
Hot Tubs	Chlorine Feeders
Ice Rooms	Chemical Controllers
Salt Grottos	Pool Pumps
Turkish Steam Rooms	Spa / Hot Tub Pumps
Heated Seats & Footbaths	Air Blowers
Adventure Showers	Filters
Rasul	Heat Exchangers
Herb Saunas	Pipework
Saunas	Dehumidifiers
Steamrooms	Counter Current Systems
Pool Covers	Pool Play Features
Heat Recovery Systems	Ladders & Handrails
UV Installations	



Prestige

Prestige 30
Prestige 32
Prestige 35
Prestige 50
Prestige 55
Prestige 75



Classic II

Grand Canyon II
Barcelona II
Odyssey II



Esparanto

SQ526
OC513



PAS

PAS I
PAS II
PAS VI



Commercial

Round 2.2m
Round 2.5m
Round 2.8m cascade
Round 3m
Octagon 2.4m
Octagon 2.7m
Teamspa



Over 90% of a pool's heat is lost through its water surface

Plastica manufacture a range of Heat Retention Covers specifically designed to minimise this loss.

● Supercover

A tried and tested Heat Retention Cover.

Supercover is a 5mm thick, polyethylene, closed cell foam cover. It weighs just 0.42kg per square metre, making it the lightest of our commercial covers. Supercover is competitively priced to ensure a minimum payback period.

Supercovers are supplied with a 3 year pro-rata guarantee.



● Premium Cover

Measuring 9mm in thickness, the Plastica Premium Cover boasts outstanding heat retention characteristics.

The top blue laminate is a tough, polyethylene woven type fabric that will ensure you have many years of service.

Premium Covers are supplied with a 4 year pro-rata guarantee.



Commercial Reel Systems and Heat Retention Covers

The need to reduce carbon emissions has become greater than ever. Most establishments are looking for new ways to reduce their carbon footprint.

Installing a Heat Retention Cover is the single most effective means of reducing swimming pool energy consumption. Fit the right cover on your pool and you will see a reduction in energy bills of up to £18,000 per annum (figures based on a 25m x 12m pool at 2008 prices). Typical payback on our customers' systems is just 12 months.

Once your pool cover is in place you will virtually eliminate evaporation and benefit from reduced humidity and condensation.

Plastica has nearly four decades experience of manufacturing and installing standard and bespoke commercial systems from Olympic competition pools to freedom fun pools. Plastica's comprehensive engineering facility provides you with system specification advantages and cost saving features that others call extras.

We can help you to select the right system for your pool. Contact us for more information and a free site survey.



Plastica

Tel: 01424 857716

commercial@plasticapools.com

COMMERCIAL COVERS & REELS

The single most effective means of reducing energy consumption

Plastica

The UK's Leading Independent
Swimming Pool Manufacturer and Distributor



Why choose a Plastica Heat Retention Cover and Reel System?

- Guarantees on pool covers
- Virtually eliminate evaporation
- Reduce humidity and condensation
- Choice of manual and motorised reels
- Strong reels made in high grade materials
- Quiet and durable motorised systems
- Save money - reduce your energy bills
- Payback achievable in just 12 months
- Hemmed edges as standard for durability
- Strong double welded seams
- Lengthwise seams reduce joint stress
- Reinforced, fully sealed leading edge

www.plasticapools.com

COMMERCIAL REEL SYSTEMS

Motorised Reel Systems

Fully automated cover and reel systems are increasingly popular. The benefits of fast and efficient cover operations include time savings and reduced manual handling for poolside staff. For ease of use, the system can be operated via a key switch or remote control.

Motorised systems include safety features and ultra quiet motors with soft start and stop electronics to prolong the life of the cover.



Commercial Slatted Reel System

Ideal for larger swimming pools with lots of activity.

The Commercial Slatted Reel System has a framework made from polished high-grade stainless steel with a protective hardwood top. It can be positioned using 150mm (6") stainless steel castors or fixed to the deck close to the pool.



This Reel System provides a solid, hardwearing and attractive surround for your cover and is available in sizes up to 10.4m (34') in length. The majority of Reel Systems up to 9.1m (30') are produced with a 127mm (5") diameter aluminium tube. Reel Systems over this size are produced with a 152mm (6") or a 304mm (12") diameter stainless steel tube. A 6:1 reduction gearbox is fitted as standard for ease of use, alternatively, this system can be motorised.

Piggyback Mobile Reel System

The dual tubes allow one reel system to cover a pool almost twice its width with ease.

This system has proved popular with schools and local authorities.

The end stands are manufactured from a high-grade polished stainless steel. The 150mm (6") stainless steel braked castors allow the Reel System to be repositioned for rolling covers on and off the pool.

Cover straps attach to two 127mm (5") diameter aluminium tubes. Simply attach the straps to the tube and roll the first cover onto the Reel System. Move the reel across and repeat the process to remove the second cover from the pool. The Reel System can then be removed from the pool edge and stored when not in use.

Use of a 6:1 reduction gearbox is advised for covers over 140 sq.m. per tube (1500 sq.ft).



Mobile Reel System

This system is ideal for smaller commercial swimming pools and is similar to the Commercial Piggyback Reel but with one tube/axis.

It is manufactured using a 127mm (5") aluminium tube with nylon end bosses, high-grade polished stainless steel end stands on 127mm (5") stainless steel and braked castors.

Use of a 6:1 reduction gearbox is advised for covers over 140 sq.m. per tube (1500 sq.ft).



Contact us for more information
and a free site survey

Tel: 01424 857716
commercial@plasticpools.com

SURECAST

PRACTICAL MANUFACTURING SOLUTIONS

SP RANGE



**CAST IRON OR
BRONZE CASING**

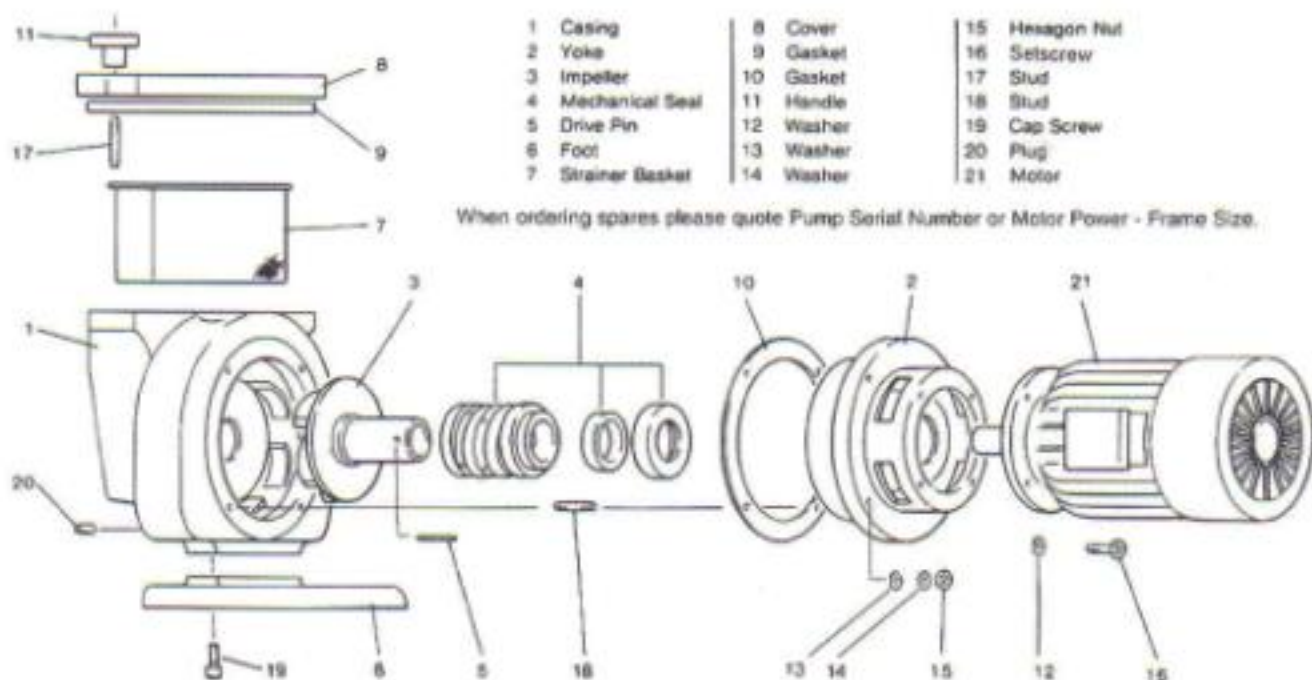
**INTEGRAL
STRAINER BOX**

BRONZE IMPELLER
With integral shaft sleeve

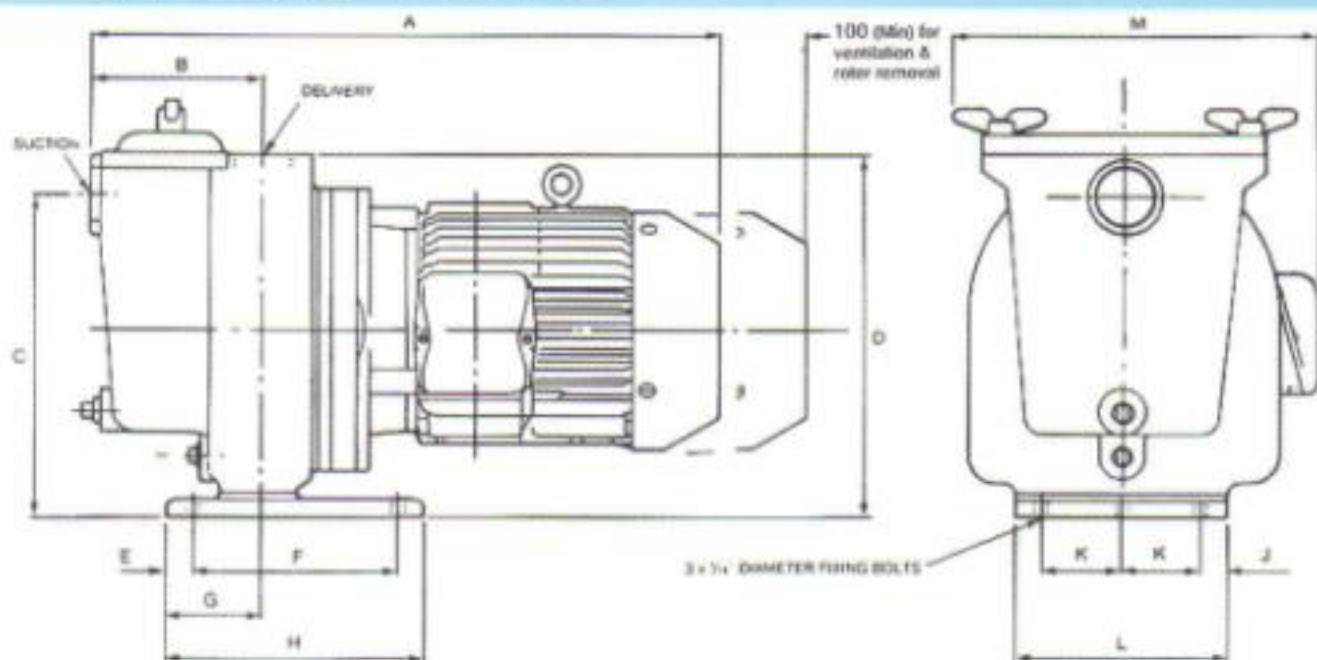
**MECHANICAL
SHAFT SEAL**

**DIRECT COUPLED
TO DRIVE MOTOR**

**STANDARD "METRIC"
FRAME MOTORS**

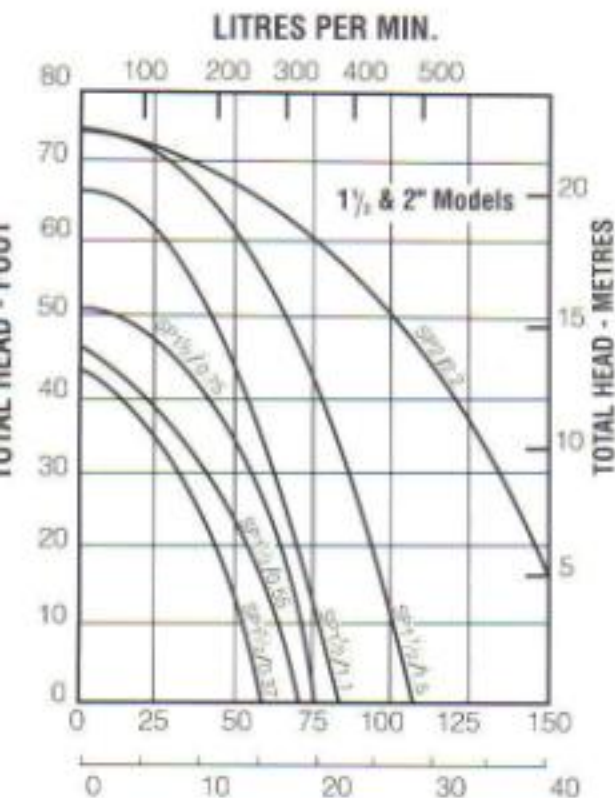


INSTALLATION DIMENSIONS



MODEL		BRANCH SIZE BSP IN X OUT	MOTOR kW (BHP)	Typical Dimensions mm												MOTOR FRAME SIZE	UNIT WT kg
				A	B	C	D	E	F	G	H	J	K	L	M		
SP1½	½.37	1½"x1½"	0.37(½)	480	150	273	305	19	213	75	254	25	79	208	292	56	32
	½.56		500	35													
	½.75		515	38													
	1.1		535														
	1.5		550	45													
SP2	2.2	2"x2"	2.2(3)	560	165	312	356									90	65
SP3	3	3"x3"	3(4)	637	197	330	394	25	197	86	243				394	100	97
	3.6		650	112												102	
	5.5		700	132												110	
	7.5		750														

SP RANGE with 50Hz
2 Pole Motor Driver
(2850 nominal rpm)

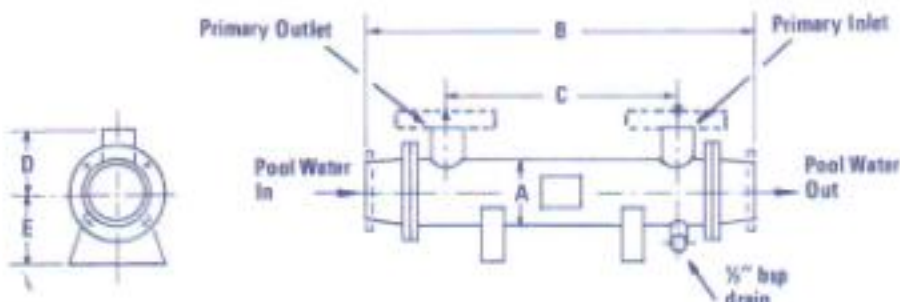


Frequency - 50Hz detailed - 60-HZ and variable speed on request

AQUATHERM

SWIMMING POOL CALORIFIER

SEVERN TYPE

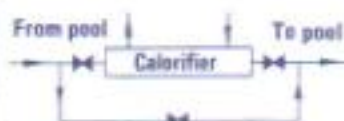


UNIT	MAX. OUTPUT		MAX. FLOW		DIMENSIONS (INCHES & MM)					CONNECTIONS		DRY WEIGHT kg/lb
	BTU/hr	KW	PRIMARY	POOL	A	B	C	D	E	PRIMARY	POOL	
A.101	100,000	29	900 2.3	1750 7.9	3" 80	17 1/2" 444	9" 229	3 1/2" 89	6 1/2" 118	1 1/2" 40	1 1/2" 40	29 12
A.102	160,000	52	890 8	1750 7.9	3" 80	29 1/2" 743	29 1/2" 527	3 1/2" 89	6 1/2" 118	1 1/2" 40	1 1/2" 40	44 20
A.103	200,000	78	1300 9	1750 7.9	3" 80	36 1/2" 895	29 1/2" 575	3 1/2" 89	6 1/2" 118	1 1/2" 40	1 1/2" 40	52 24
A.104	300,000	111	1900 8.5	1750 7.9	3" 80	41 1/2" 1040	32 1/2" 832	3 1/2" 89	6 1/2" 118	1 1/2" 40	1 1/2" 40	60 27
A.106	300,000	88	1545 6.5	2600 10.9	4" 100	21 1/2" 540	18 1/2" 465	4 1/2" 111	6 1/2" 118	2 1/2" 65	2 1/2" 65	52 24
A.106	520,000	145	2510 11.4	2600 10.9	4" 100	21 1/2" 540	29 1/2" 640	4 1/2" 111	6 1/2" 118	2 1/2" 65	2 1/2" 65	57 26
A.107	650,000	240	4290 19.4	3500 15.8	4" 100	40 1/2" 1257	31 1/2" 803	4 1/2" 111	6 1/2" 118	2 1/2" 65	2 1/2" 65	71 32
A.108	920,000	340	2510 11.4	5000 26.2	5" 125	32" 813	16" 403	4 1/2" 124	6 1/2" 146	3" 80	3" 80	66 27
A.109	800,000	234	4020 18.2	5000 26.2	5" 125	26" 660	25" 635	4 1/2" 124	6 1/2" 146	3" 80	3" 80	71 32
A.110	1,200,000	352	4020 27.3	5000 26.2	5" 125	50" 1270	31" 640	4 1/2" 124	6 1/2" 146	3" 80	3" 80	88 40
A.111	1,400,000	410	7040 31.9	6000 26.2	6" 150	41 1/2" 1054	34" 819	5 1/2" 140	6 1/2" 146	4"(100) NP.5	4"(100) NP.5	115 52
A.112	1,600,000	527	8060 41	6000 26.2	6" 150	41 1/2" 1054	30" 762	5 1/2" 140	6 1/2" 146	4"(100) NP.5	4"(100) NP.5	123 56
A.113	2,200,000	644	11,040 50.3	6000 26.2	6" 150	52 1/2" 1339	30" 762	5 1/2" 140	6 1/2" 146	4"(100) NP.5	4"(100) NP.5	141 64

NOTE: OUTPUTS BASED ON PRIMARY 180-160° F. (82-71° C)

SPECIFICATION

Shell:	Mild Steel or Stainless
Tubes:	Copper or Stainless
Tubeplate:	Bronze faced or Stainless
Header:	Cast iron or Stainless



TYPICAL INSTALLATION

DESIGN

	Primary	Pool
Working Pressure.	33 p.s.i.	33 p.s.i.
	2.27 bar	2.27 bar
Test Pressure.	50 p.s.i.	50 p.s.i.
	3.45 bar	3.45 bar

CHEMICAL DOSING SHOULD BE AFTER THE POOL CALORIFIER.

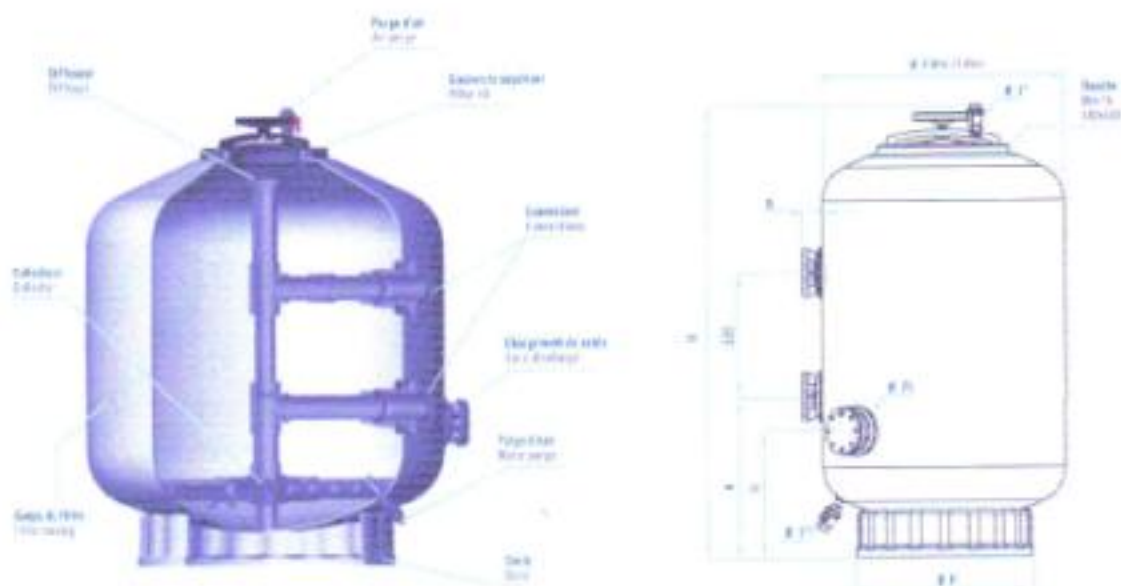
AQUATHERM

4/95



Exeter Road • Pershore • Worcestershire • WR10 2ET

☎ 01296 355708 / 332791 ☎ 01296 361948
 www.aquatherm.co.uk



Codification des filtres industriels

La structure du code du filtre est composée de 8 chiffres. Les cinq premiers chiffres appartiennent au code de filtre et les trois derniers correspondant au modèle, ceux-ci figurent dans le tableau suivant :

Position / Position	1	2	3	4	5	-	6	7	8
---------------------	---	---	---	---	---	---	---	---	---

Position de 1 à 5 : code de 5 chiffres de produit standard.

Coding for industrial filters

The filter code structure is composed of eight digits. The first five digits correspond to the filter code and the last three to the model, which appear according to the charts.

Position 1 to 5: figure code for standard products.

Positions 6 / Position 6 Options de plaque et éclaircisseur Narrow plate and clarifier Accessories		Position 7 / Position 7 Options de trou à trous Manhole options		Position 8 / Position 8 Options d'indicateur de niveau Height indicator options	
0	Filtre sans plaque Filter without narrow plate	0	Sans trou d'homme No manhole	0	Sans indicateur de niveau No sight glass
1	Filtre avec plaque Filter with narrow plate	1	1 trou d'homme de Ø 225 mm 1 x 225 mm manhole	1	1 indicateur de niveau pour filtre lamé 1 x sight glass for laminated filter
2	Filtre avec plaque Filter with narrow plate	2	1 trou d'homme de Ø 400 mm 1 x 400 mm manhole	2	1 indicateur de niveau de Ø 125 mm 1 x 125 mm sight glass
4	Avec plaque et éclaircisseur With narrow plate and clarifier	3	2 trous d'homme de Ø 225 mm 2 x 225 mm manholes	3	2 indicateurs de niveau pour filtre lamé 2 x sight glass for laminated filter
		4	2 trous d'homme de Ø 400 mm 2 x 400 mm manholes	4	2 indicateurs de niveau de Ø 125 mm 2 x 125 mm sight glass

Drawings

The Arka Engineering drawing office can produce or mark up your existing drawings to include Swimming Pool, Spa, Hot Tub, Sauna, Steamrooms, Treatment Rooms and associated equipment.

Please send Drawings to Ronan Buckley :

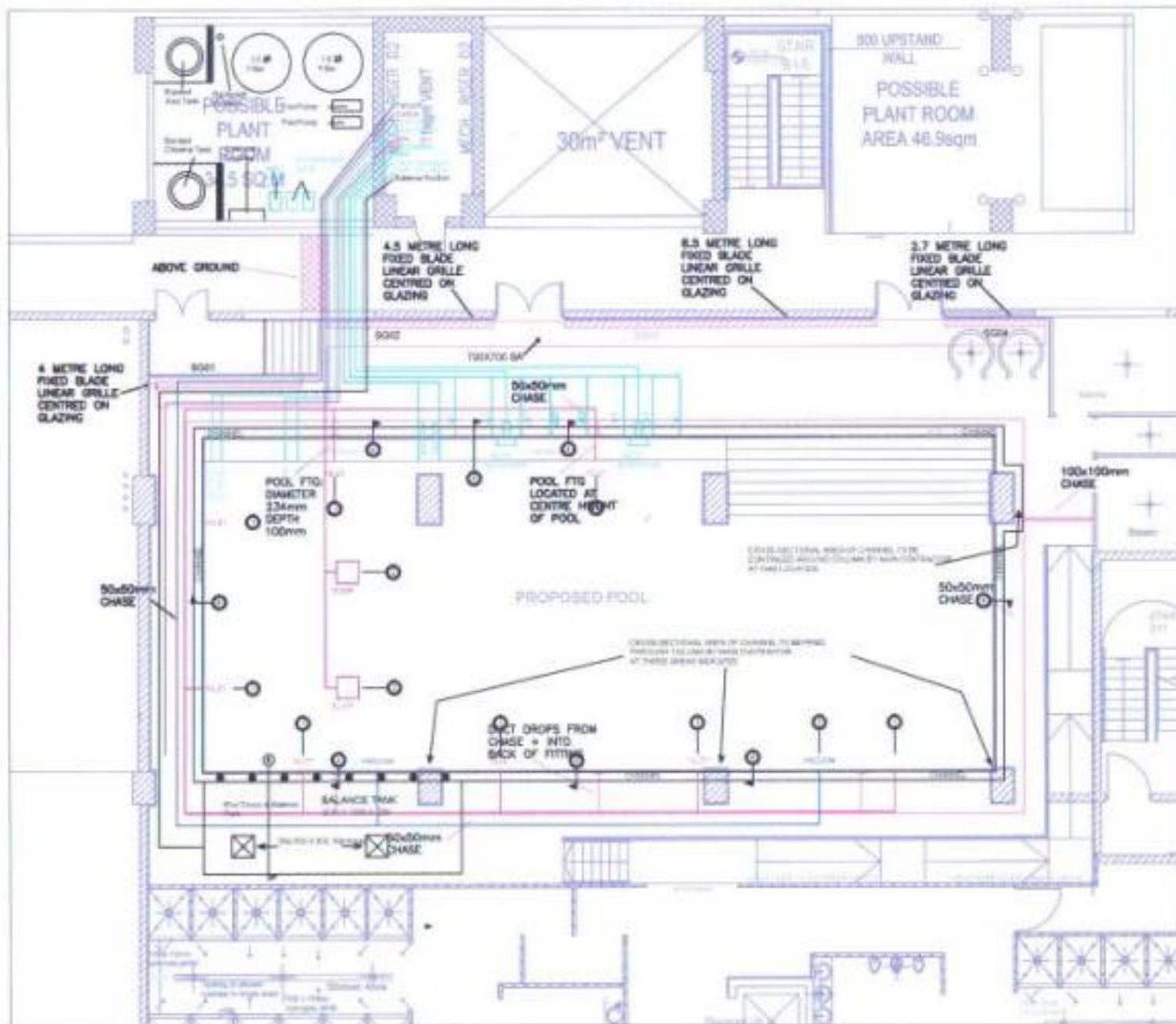
Phone : 01 6279095

Fax : 01 6279096

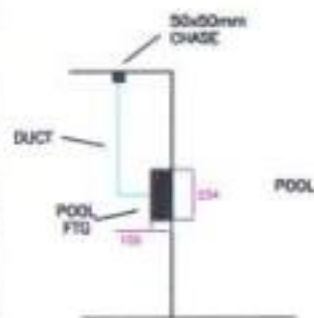
e mail : rbuckley@arka.ie (in Autocad format).

To follow are some typical drawings.





FLOOR DETAIL



DESIGNER GROUP

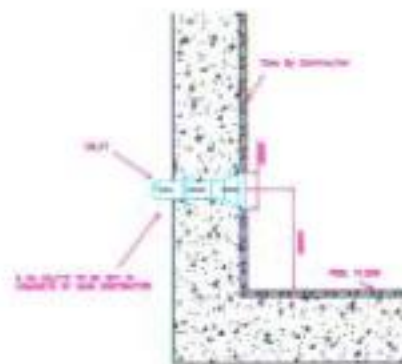


52 New Rd, Outer Industrial Estate, Dublin 11
 Tel: (01) 8480500 Fax: (01) 8480505
 e-mail: info@designergroup.ie

CONSULTANT:	CHECKED:	ARCHITECT:
	RE:	SA
PROJECT:		
Crunch Beach SQ		
CAD FILE:	DRAWING STATUS:	DATE:
	Revisions	07-12-08
SCALE:		
1:100@A3		
LEVEL:		
Ground		
TITLE:		
Rise Ducts		
	REV:	REV:
	POSS:	P

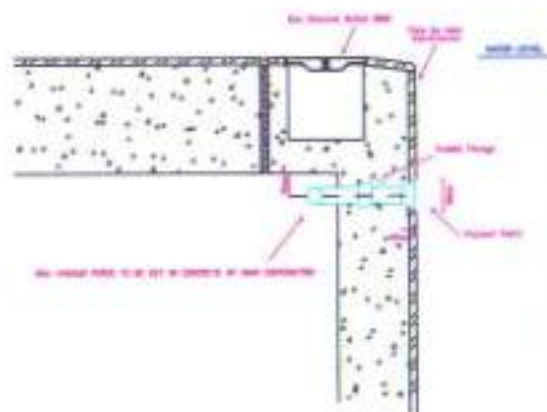
NOTE: ALL CONCRETE DETAILS TO BE AS PER ENGINEER DESIGN

**INLET SPREADER
DETAIL 0001**



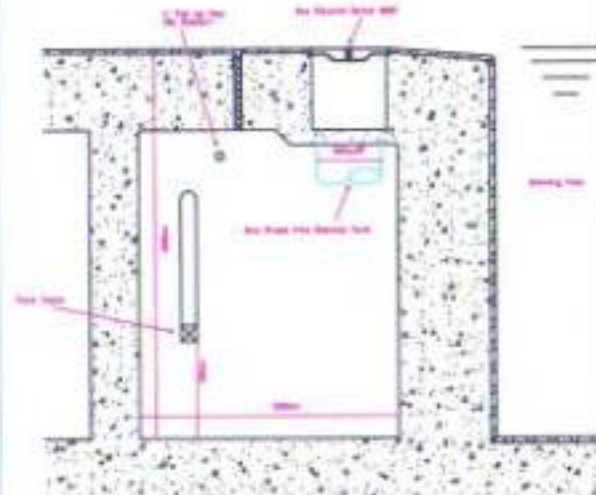
PIPE FLANGE FITTING EMBEDDED IN CONCRETE BY MAIN CONTRACTOR

**VACUUM POINT
DETAIL 0003**



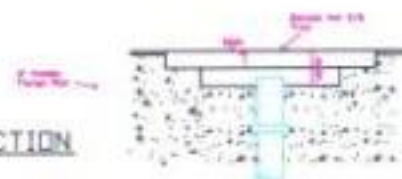
PIPE FLANGE FITTING EMBEDDED IN CONCRETE BY MAIN CONTRACTOR

**BALANCE TANK SECTION
DETAIL 0005**



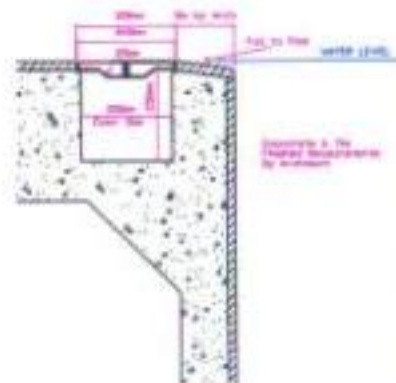
PIPE FLANGE FITTING EMBEDDED IN CONCRETE BY MAIN CONTRACTOR

**FLOOR SUMP
DETAIL 0002**



PIPE FLANGE FITTING EMBEDDED IN CONCRETE BY MAIN CONTRACTOR

**CHANNEL DETAIL
DETAIL 0004**



CHANNEL TO BE SET IN CONCRETE BY MAIN CONTRACTOR

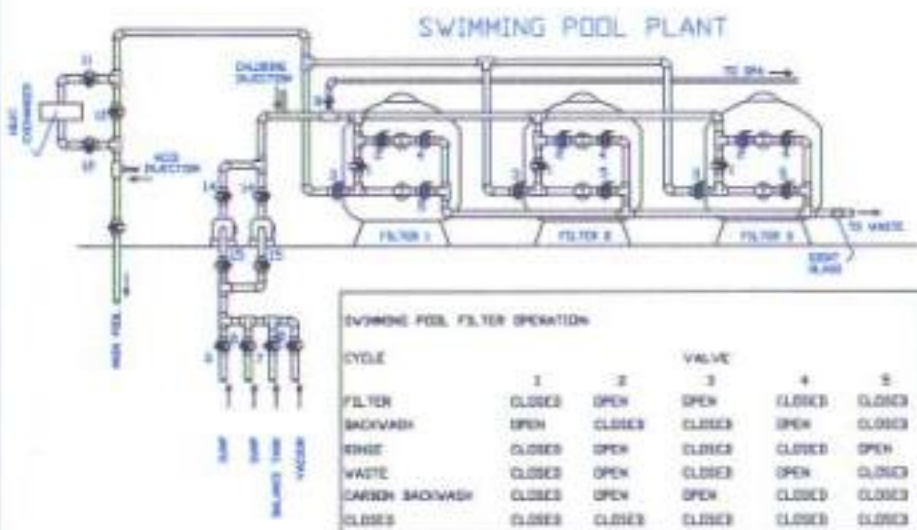
**SECTION THROUGH SPA SEAT
DETAIL 0006**



SECTION

PLAN

General Notes	
1.	USE POLYMER MODIFIED CONCRETE ON ALL WALLS.
2.	THE DRAWING IS FOR INFORMATION PURPOSES ONLY.
3.	CONSTRUCTION/STRUCTURAL DETAILS BY OTHERS.
4.	ANY CHANGES AND CORRECTIONS TO BE APPROVED BY MAIN CONTRACTOR.
5.	IF IN DOUBT, ASK.
Notes	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	
31.	
32.	
33.	
34.	
35.	
36.	
37.	
38.	
39.	
40.	
41.	
42.	
43.	
44.	
45.	
46.	
47.	
48.	
49.	
50.	
51.	
52.	
53.	
54.	
55.	
56.	
57.	
58.	
59.	
60.	
61.	
62.	
63.	
64.	
65.	
66.	
67.	
68.	
69.	
70.	
71.	
72.	
73.	
74.	
75.	
76.	
77.	
78.	
79.	
80.	
81.	
82.	
83.	
84.	
85.	
86.	
87.	
88.	
89.	
90.	
91.	
92.	
93.	
94.	
95.	
96.	
97.	
98.	
99.	
100.	



SWIMMING POOL OPERATION

BACKWASH INSTRUCTIONS (Backwash each Filter separately)

1. Switch off pump
2. Close Valve 7
3. Set the valves for up filters as indicated in the operating chart for BACKWASH
4. Switch on pump. Check stream dirt in the outport sight. Keep backwashing until sight glass clears
5. Switch off pump

RINSE INSTRUCTIONS (AFTER BACKWASH)

1. Set the valves for RINSE
2. Switch on pump. Keep working for 30 seconds
3. Switch off pump

RETURN TO FILTERING

1. Return filtering valves to filtering mode
2. Proceed to top up the pool until water level reaches the overflow channel
3. Open 7
4. Switch on pump

IMPORTANT NOTES:

1. Always switch off pump prior to operating valves
2. Clean pump 'strainer basket' its seal and casing regularly.
Close pump isolation valves (14 & 15 for pool, 16's 1, 2 & 3 and 3 & 4 for spa) prior to opening
3. Air bleed filters regularly
4. Close chemical water supply valves prior to backwash. Always close Return Valve (12) before (that Valve (12) to avoid drawing sample tank, also open seal before return when setting up again

SPA OPERATION

BACKWASH INSTRUCTIONS

1. Switch off pump
2. Close Valves 3 and 4
3. Open 7, valve 2 should be open when proceeding from normal use. Otherwise open now
4. Select BACKWASH in the outport valve
5. Open 5
6. Switch on filter pump. Check stream dirt in the outport sight. Keep backwashing until sight glass clears
7. Switch pump off

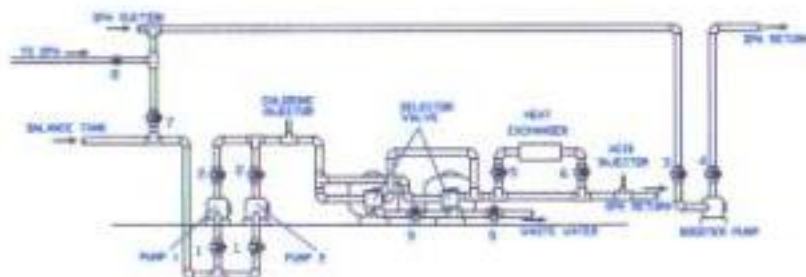
RINSE INSTRUCTIONS (AFTER BACKWASH)

1. Set RINSE in the outport valve
2. Switch on filter pump. Keep working for 30 seconds approx
3. Switch off pump

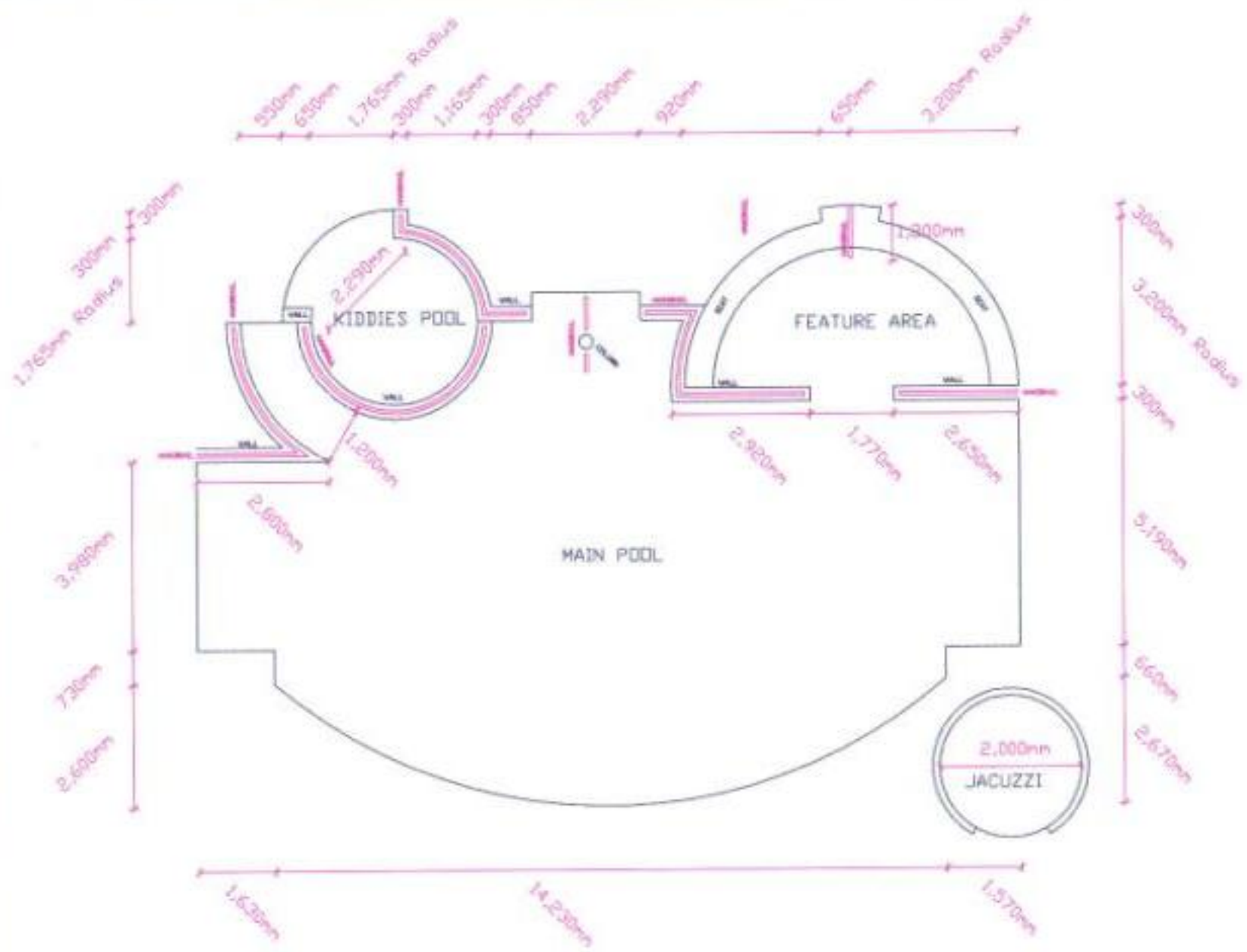
RETURN TO FILTERING (TO TOP UP)

1. Return valves to filtering position open 1 and 3. Make sure 6 is open. Select FILTER in the outport valve
2. Proceed to top up the Spa make sure the catering pool is working in filtering close 5 and open 6. The water level in the spa will rise. Close 6 when it reaches the overflow channel
3. Switch on Pumps

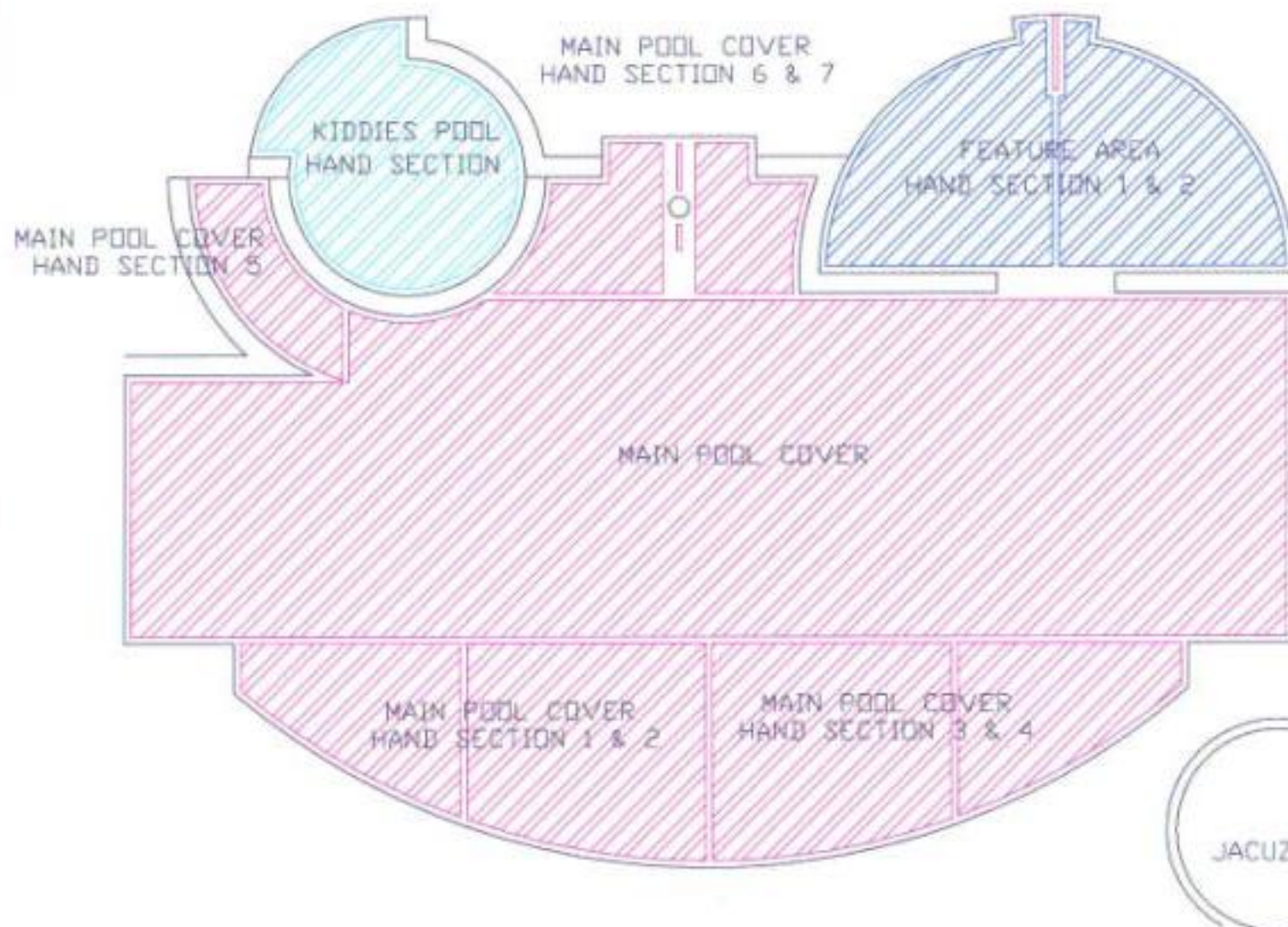
SPA PLANT



General Notes		
1. USE POWERED BACKWASH ONLY TO 2. THE SPASING IS FOR APPROVED 3. CONSTRUCTION/STRUCTURAL WORKING 4. AND CLOSING AND CLOSING TO BE 5. REFERRED TO AND BACKWASH 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000. 1001. 1002. 1003. 1004. 1005. 1006. 1007. 1008. 1009. 1010. 1011. 1012. 1013. 1014. 1015. 1016. 1017. 1018. 1019. 1020. 1021. 1022. 1023. 1024. 1025. 1026. 1027. 1028. 1029. 1030. 1031. 1032. 1033. 1034. 1035. 1036. 1037. 1038. 1039. 1040. 1041. 1042. 1043. 1044. 1045. 1046. 1047. 1048. 1049. 1050. 1051. 1052. 1053. 1054. 1055. 1056. 1057. 1058. 1059. 1060. 1061. 1062. 1063. 1064. 1065. 1066. 1067. 1068. 1069. 1070. 1071. 1072. 1073. 1074. 1075. 1076. 1077. 1078. 1079. 1080. 1081. 1082. 1083. 1084. 1085. 1086. 1087. 1088. 1089. 1090. 1091. 1092. 1093. 1094. 1095. 1096. 1097. 1098. 1099. 1100. 1101. 1102. 1103. 1104. 1105. 1106. 1107. 1108. 1109. 1110. 1111. 1112. 1113. 1114. 1115. 1116. 1117. 1118. 1119. 1120. 1121. 1122. 1123. 1124. 1125. 1126. 1127. 1128. 1129. 1130. 1131. 1132. 1133. 1134. 1135. 1136. 1137. 1138. 1139. 1140. 1141. 1142. 1143. 1144. 1145. 1146. 1147. 1148. 1149. 1150. 1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200. 1201. 1202. 1203. 1204. 1205. 1206. 1207. 1208. 1209. 1210. 1211. 1212. 1213. 1214. 1215. 1216. 1217. 1218. 1219. 1220. 1221. 1222. 1223. 1224. 1225. 1226. 1227. 1228. 1229. 1230. 1231. 1232. 1233. 1234. 1235. 1236. 1237. 1238. 1239. 1240. 1241. 1242. 1243. 1244. 1245. 1246. 1247. 1248. 1249. 1250. 1251. 1252. 1253. 1254. 1255. 1256. 1257. 1258. 1259. 1260. 1261. 1262. 1263. 1264. 1265. 1266. 1267. 1268. 1269. 1270. 1271. 1272. 1273. 1274. 1275. 1276. 1277. 1278. 1279. 1280. 1281. 1282. 1283. 1284. 1285. 1286. 1287. 1288. 1289. 1290. 1291. 1292. 1293. 1294. 1295. 1296. 1297. 1298. 1299. 1300. 1301. 1302. 1303. 1304. 1305. 1306. 1307. 1308. 1309. 1310. 1311. 1312. 1313. 1314. 1315. 1316. 1317. 1318. 1319. 1320. 1321. 1322. 1323. 1324. 1325. 1326. 1327. 1328. 1329. 1330. 1331. 1332. 1333. 1334. 1335. 1336. 1337. 1338. 1339. 1340. 1341. 1342. 1343. 1344. 1345. 1346. 1347. 1348. 1349. 1350. 1351. 1352. 1353. 1354. 1355. 1356. 1357. 1358. 1359. 1360. 1361. 1362. 1363. 1364. 1365. 1366. 1367. 1368. 1369. 1370. 1371. 1372. 1373. 1374. 1375. 1376. 1377. 1378. 1379. 1380. 1381. 1382. 1383. 1384. 1385. 1386. 1387. 1388. 1389. 1390. 1391. 1392. 1393. 1394. 1395. 1396. 1397. 1398. 1399. 1400. 1401. 1402. 1403. 1404. 1405. 1406. 1407. 1408. 1409. 1410. 1411. 1412. 1413. 1414. 1415. 1416. 1417. 1418. 1419. 1420. 1421. 1422. 1423. 1424. 1425. 1426. 1427. 1428. 1429. 1430. 1431. 1432. 1433. 1434. 1435. 1436. 1437. 1438. 1439. 1440. 1441. 1442. 1443. 1444. 1445. 1446. 1447. 1448. 1449. 1450. 1451. 1452. 1453. 1454. 1455. 1456. 1457. 1458. 1459. 1460. 1461. 1462. 1463. 1464. 1465. 1466. 1467. 1468. 1469. 1470. 1471. 1472. 1473. 1474. 1475. 1476. 1477. 1478. 1479. 1480. 1481. 1482. 1483. 1484. 1485. 1486. 1487. 1488. 1489. 1490. 1491. 1492. 1493. 1494. 1495. 1496. 1497. 1498. 1499. 1500. 1501. 1502. 1503. 1504. 1505. 1506. 1507. 1508. 1509. 1510. 1511. 1512. 1513. 1514. 1515. 1516. 1517. 1518. 1519. 1520. 1521. 1522. 1523. 1524. 1525. 1526. 1527. 1528. 1529. 1530. 1531. 1532. 1533. 1534. 1535. 1536. 1537. 1538. 1539. 1540. 1541. 1542. 1543. 1544. 1545. 1546. 1547. 1548. 1549. 1550. 1551. 1552. 1553. 1554. 1555. 1556. 1557. 1558. 1559. 1560. 1561. 1562. 1563. 1564. 1565. 1566. 1567. 1568. 1569. 1570. 1571. 1572. 1573. 1574. 1575. 1576. 1577. 1578. 1579. 1580. 1581. 1582. 1583. 1584. 1585. 1586. 1587. 1588. 1589. 1590. 1591. 1592. 1593. 1594. 1595. 1596. 1597. 1598. 1599. 1600. 1601. 1602. 1603. 1604. 1605. 1606. 1607. 1608. 1609. 1610. 1611. 1612. 1613. 1614. 1615. 1616. 1617. 1618. 1619. 1620. 1621. 1622. 1623. 1624. 1625. 1626. 1627. 1628. 1629. 1630. 1631. 1632. 1633. 1634. 1635. 1636. 1637. 1638. 1639. 1640. 1641. 1642. 1643. 1644. 1645. 1646. 1647. 1648. 1649. 1650. 1651. 1652. 1653. 1654. 1655. 1656. 1657. 1658. 1659. 1660. 1661. 1662. 1663. 1664. 1665. 1666. 1667. 1668. 1669. 1670. 1671. 1672. 1673. 1674. 1675. 1676. 1677. 1678. 1679. 1680. 1681. 1682. 1683. 1684. 1685. 1686. 1687. 1688. 1689. 1690. 1691. 1692. 1693. 1694. 1695. 1696. 1697. 1698. 1699. 1700. 1701. 1702. 1703. 1704. 1705. 1706. 1707. 1708. 1709. 1710. 1711. 1712. 1713. 1714. 1715. 1716. 1717. 1718. 1719. 1720. 1721. 1722. 1723. 1724. 1725. 1726. 1727. 1728. 1729. 1730. 1731. 1732. 1733. 1734. 1735. 1736. 1737. 1738. 1739. 1740. 1741. 1742. 1743. 1744. 1745. 1746. 1747. 1748. 1749. 1750. 1751. 1752. 1753. 1754. 1755. 1756. 1757. 1758. 1759. 1760. 1761. 1762. 1763. 1764. 1765. 1766. 1767. 1768. 1769. 1770. 1771. 1772. 1773. 1774. 1775. 1776. 1777. 1778. 1779. 1780. 1781. 1782. 1783. 1784. 1785. 1786. 1787. 1788. 1789. 1790. 1791. 1792. 1793. 1794. 1795. 1796. 1797. 1798. 1799. 1800. 1801. 1802. 1803. 1804. 1805. 1806. 1807. 1808. 1809. 1810. 1811. 1812. 1813. 1814. 1815. 1816. 1817. 1818. 1819. 1820. 1821. 1822. 1823. 1824. 1825. 1826. 1827. 1828. 1829. 1830. 1831. 1832. 1833. 1834. 1835. 1836. 1837. 1838. 1839. 1840. 1841. 1842. 1843. 1844. 1845. 1846. 1847. 1848. 1849. 1850. 1851. 1852. 1853. 1854. 1855. 1856. 1857. 1858. 1859. 1860. 1861. 1862. 1863. 1864. 1865. 1866. 1867. 1868. 1869. 1870. 1871. 1872. 1873. 1874. 1875. 1876. 1877. 1878. 1879. 1880. 1881. 1882. 1883. 1884. 1885. 1886. 1887. 1888. 1889. 1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901.		



General Notes				
1. ALL DIMENSIONS SHOWN ARE IN METERS.				
2. THIS DRAWING IS FOR INFORMATION PURPOSES ONLY.				
3. CONSTRUCTION/STRUCTURAL DETAILS TO BE DETERMINED BY THE ENGINEER.				
4. ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTERLINE UNLESS OTHERWISE SPECIFIED.				
5. IF IN DOUBT, ASK.				
Notes				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
31.				
32.				
33.				
34.				
35.				
36.				
37.				
38.				
39.				
40.				
41.				
42.				
43.				
44.				
45.				
46.				
47.				
48.				
49.				
50.				
51.				
52.				
53.				
54.				
55.				
56.				
57.				
58.				
59.				
60.				
61.				
62.				
63.				
64.				
65.				
66.				
67.				
68.				
69.				
70.				
71.				
72.				
73.				
74.				
75.				
76.				
77.				
78.				
79.				
80.				
81.				
82.				
83.				
84.				
85.				
86.				
87.				
88.				
89.				
90.				
91.				
92.				
93.				
94.				
95.				
96.				
97.				
98.				
99.				
100.				



General Notes

1. AND COVERING SYSTEMS ONLY: 30' 40' 50' 60' 70' 80' 90' 100' 110' 120' 130' 140' 150' 160' 170' 180' 190' 200' 210' 220' 230' 240' 250' 260' 270' 280' 290' 300' 310' 320' 330' 340' 350' 360' 370' 380' 390' 400' 410' 420' 430' 440' 450' 460' 470' 480' 490' 500' 510' 520' 530' 540' 550' 560' 570' 580' 590' 600' 610' 620' 630' 640' 650' 660' 670' 680' 690' 700' 710' 720' 730' 740' 750' 760' 770' 780' 790' 800' 810' 820' 830' 840' 850' 860' 870' 880' 890' 900' 910' 920' 930' 940' 950' 960' 970' 980' 990' 1000'
2. THE COVERING IS FOR INFORMATION PURPOSES ONLY.
3. CONSTRUCTION/INSTALLATION, DETAILING & STRESS.
4. THE COVERING AND COVERING TO BE INSTALLED TO THE SUBSTRUCTURE.
5. 7' 8' 9' 10' 11' 12' 13' 14' 15' 16' 17' 18' 19' 20' 21' 22' 23' 24' 25' 26' 27' 28' 29' 30' 31' 32' 33' 34' 35' 36' 37' 38' 39' 40' 41' 42' 43' 44' 45' 46' 47' 48' 49' 50' 51' 52' 53' 54' 55' 56' 57' 58' 59' 60' 61' 62' 63' 64' 65' 66' 67' 68' 69' 70' 71' 72' 73' 74' 75' 76' 77' 78' 79' 80' 81' 82' 83' 84' 85' 86' 87' 88' 89' 90' 91' 92' 93' 94' 95' 96' 97' 98' 99' 100' 101' 102' 103' 104' 105' 106' 107' 108' 109' 110' 111' 112' 113' 114' 115' 116' 117' 118' 119' 120' 121' 122' 123' 124' 125' 126' 127' 128' 129' 130' 131' 132' 133' 134' 135' 136' 137' 138' 139' 140' 141' 142' 143' 144' 145' 146' 147' 148' 149' 150' 151' 152' 153' 154' 155' 156' 157' 158' 159' 160' 161' 162' 163' 164' 165' 166' 167' 168' 169' 170' 171' 172' 173' 174' 175' 176' 177' 178' 179' 180' 181' 182' 183' 184' 185' 186' 187' 188' 189' 190' 191' 192' 193' 194' 195' 196' 197' 198' 199' 200' 201' 202' 203' 204' 205' 206' 207' 208' 209' 210' 211' 212' 213' 214' 215' 216' 217' 218' 219' 220' 221' 222' 223' 224' 225' 226' 227' 228' 229' 230' 231' 232' 233' 234' 235' 236' 237' 238' 239' 240' 241' 242' 243' 244' 245' 246' 247' 248' 249' 250' 251' 252' 253' 254' 255' 256' 257' 258' 259' 260' 261' 262' 263' 264' 265' 266' 267' 268' 269' 270' 271' 272' 273' 274' 275' 276' 277' 278' 279' 280' 281' 282' 283' 284' 285' 286' 287' 288' 289' 290' 291' 292' 293' 294' 295' 296' 297' 298' 299' 300' 301' 302' 303' 304' 305' 306' 307' 308' 309' 310' 311' 312' 313' 314' 315' 316' 317' 318' 319' 320' 321' 322' 323' 324' 325' 326' 327' 328' 329' 330' 331' 332' 333' 334' 335' 336' 337' 338' 339' 340' 341' 342' 343' 344' 345' 346' 347' 348' 349' 350' 351' 352' 353' 354' 355' 356' 357' 358' 359' 360' 361' 362' 363' 364' 365' 366' 367' 368' 369' 370' 371' 372' 373' 374' 375' 376' 377' 378' 379' 380' 381' 382' 383' 384' 385' 386' 387' 388' 389' 390' 391' 392' 393' 394' 395' 396' 397' 398' 399' 400' 401' 402' 403' 404' 405' 406' 407' 408' 409' 410' 411' 412' 413' 414' 415' 416' 417' 418' 419' 420' 421' 422' 423' 424' 425' 426' 427' 428' 429' 430' 431' 432' 433' 434' 435' 436' 437' 438' 439' 440' 441' 442' 443' 444' 445' 446' 447' 448' 449' 450' 451' 452' 453' 454' 455' 456' 457' 458' 459' 460' 461' 462' 463' 464' 465' 466' 467' 468' 469' 470' 471' 472' 473' 474' 475' 476' 477' 478' 479' 480' 481' 482' 483' 484' 485' 486' 487' 488' 489' 490' 491' 492' 493' 494' 495' 496' 497' 498' 499' 500' 501' 502' 503' 504' 505' 506' 507' 508' 509' 510' 511' 512' 513' 514' 515' 516' 517' 518' 519' 520' 521' 522' 523' 524' 525' 526' 527' 528' 529' 530' 531' 532' 533' 534' 535' 536' 537' 538' 539' 540' 541' 542' 543' 544' 545' 546' 547' 548' 549' 550' 551' 552' 553' 554' 555' 556' 557' 558' 559' 560' 561' 562' 563' 564' 565' 566' 567' 568' 569' 570' 571' 572' 573' 574' 575' 576' 577' 578' 579' 580' 581' 582' 583' 584' 585' 586' 587' 588' 589' 590' 591' 592' 593' 594' 595' 596' 597' 598' 599' 600' 601' 602' 603' 604' 605' 606' 607' 608' 609' 610' 611' 612' 613' 614' 615' 616' 617' 618' 619' 620' 621' 622' 623' 624' 625' 626' 627' 628' 629' 630' 631' 632' 633' 634' 635' 636' 637' 638' 639' 640' 641' 642' 643' 644' 645' 646' 647' 648' 649' 650' 651' 652' 653' 654' 655' 656' 657' 658' 659' 660' 661' 662' 663' 664' 665' 666' 667' 668' 669' 670' 671' 672' 673' 674' 675' 676' 677' 678' 679' 680' 681' 682' 683' 684' 685' 686' 687' 688' 689' 690' 691' 692' 693' 694' 695' 696' 697' 698' 699' 700' 701' 702' 703' 704' 705' 706' 707' 708' 709' 710' 711' 712' 713' 714' 715' 716' 717' 718' 719' 720' 721' 722' 723' 724' 725' 726' 727' 728' 729' 730' 731' 732' 733' 734' 735' 736' 737' 738' 739' 740' 741' 742' 743' 744' 745' 746' 747' 748' 749' 750' 751' 752' 753' 754' 755' 756' 757' 758' 759' 760' 761' 762' 763' 764' 765' 766' 767' 768' 769' 770' 771' 772' 773' 774' 775' 776' 777' 778' 779' 780' 781' 782' 783' 784' 785' 786' 787' 788' 789' 790' 791' 792' 793' 794' 795' 796' 797' 798' 799' 800' 801' 802' 803' 804' 805' 806' 807' 808' 809' 810' 811' 812' 813' 814' 815' 816' 817' 818' 819' 820' 821' 822' 823' 824' 825' 826' 827' 828' 829' 830' 831' 832' 833' 834' 835' 836' 837' 838' 839' 840' 841' 842' 843' 844' 845' 846' 847' 848' 849' 850' 851' 852' 853' 854' 855' 856' 857' 858' 859' 860' 861' 862' 863' 864' 865' 866' 867' 868' 869' 870' 871' 872' 873' 874' 875' 876' 877' 878' 879' 880' 881' 882' 883' 884' 885' 886' 887' 888' 889' 890' 891' 892' 893' 894' 895' 896' 897' 898' 899' 900' 901' 902' 903' 904' 905' 906' 907' 908' 909' 910' 911' 912' 913' 914' 915' 916' 917' 918' 919' 920' 921' 922' 923' 924' 925' 926' 927' 928' 929' 930' 931' 932' 933' 934' 935' 936' 937' 938' 939' 940' 941' 942' 943' 944' 945' 946' 947' 948' 949' 950' 951' 952' 953' 954' 955' 956' 957' 958' 959' 960' 961' 962' 963' 964' 965' 966' 967' 968' 969' 970' 971' 972' 973' 974' 975' 976' 977' 978' 979' 980' 981' 982' 983' 984' 985' 986' 987' 988' 989' 990' 991' 992' 993' 994' 995' 996' 997' 998' 999' 1000'

Notes

- 1.
- 2.
- 3.

1	COVERING SYSTEM	1/1/18
2	COVERING SYSTEM	1/1/18
3	COVERING SYSTEM	1/1/18



DATE: 1/1/18

PROJECT: COVER SYSTEM

DESIGNER: [Name]

CHECKED: [Name]

APPROVED: [Name]

SCALE: 1/1/18