



D. CLUGSTON



Kilian Engineering, Inc.



PO Box 3301, Healdston, NC 27536 | www.kilianengineering.com
(919) 524-4388 / 8778 | CORPORATE LICENSE C-2277

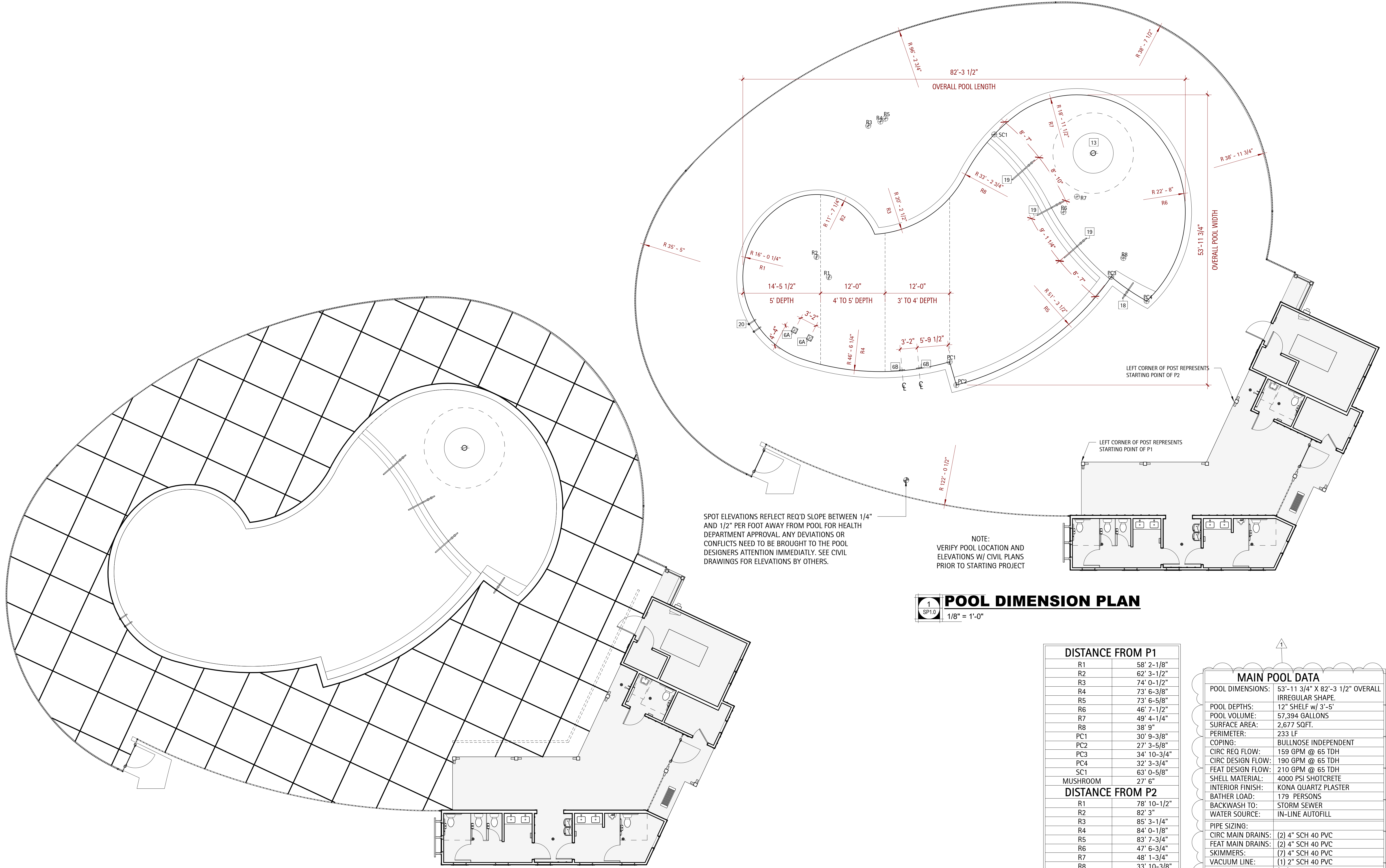
NO. 1
REVISION HEALTH
DATE 09/25/24

SHEET DISCUSSION
POOL DIMENSIONS

PROJECT #: 2023015
DATE ISSUED: 01/22/2024
DRAWING BY: JVD
CHECKED BY: DSC/JLH

POWELL AMENITY
GREENHAWK
BATHHOUSE AMENITY
LILLINGTON, NC

SP1.0



SPOT ELEVATIONS REFLECT REQ'D SLOPE BETWEEN 1/4" AND 1/2" PER FOOT AWAY FROM POOL FOR HEALTH DEPARTMENT APPROVAL. ANY DEVIATIONS OR CONFLICTS NEED TO BE BROUGHT TO THE POOL DESIGNERS ATTENTION IMMEDIATELY. SEE CIVIL DRAWINGS FOR ELEVATIONS BY OTHERS.

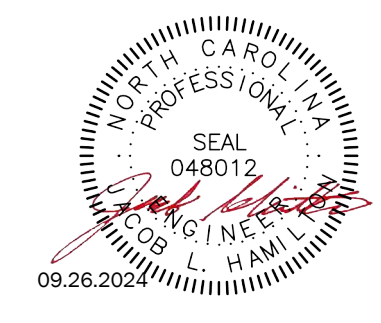
NOTE:
VERIFY POOL LOCATION AND ELEVATIONS W/ CIVIL PLANS PRIOR TO STARTING PROJECT

1 POOL DIMENSION PLAN
1/8" = 1'-0"

DISTANCE FROM P1	
R1	58' 2-1/8"
R2	62' 3-1/2"
R3	74' 0-1/2"
R4	73' 6-3/8"
R5	73' 6-5/8"
R6	46' 7-1/2"
R7	49' 4-1/4"
R8	38' 9"
PC1	30' 9-3/8"
PC2	27' 3-5/8"
PC3	34' 10-3/4"
PC4	32' 3-3/4"
SC1	63' 0-5/8"
MUSHROOM	27' 6"
DISTANCE FROM P2	
R1	78' 10-1/2"
R2	82' 3"
R3	85' 3-1/4"
R4	84' 0-1/8"
R5	83' 7-3/4"
R6	47' 6-3/4"
R7	48' 1-3/4"
R8	33' 10-3/8"
PC1	53' 5-5/8"
PC2	51' 9-1/2"
PC3	32' 8-1/4"
PC4	24' 11"
SC1	66' 10-3/4"
MUSHROOM	53' 3-1/8"

MAIN POOL DATA	
POOL DIMENSIONS:	53'-11 3/4" X 82'-3 1/2" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	12" SHELF w/ 3'-5"
POOL VOLUME:	57,394 GALLONS
SURFACE AREA:	2,677 SQFT.
PERIMETER:	233 LF
COPING:	BULLNOSE INDEPENDENT
CIRC REQ FLOW:	159 GPM @ 65 TDH
CIRC DESIGN FLOW:	190 GPM @ 65 TDH
FEAT DESIGN FLOW:	210 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	KONA QUARTZ PLASTER
BATHER LOAD:	179 PERSONS
BACKWASH TO:	STORM SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
CIRC MAIN DRAINS:	(2) 4" SCH 40 PVC
FEAT MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(7) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(11) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF [EA] = 14.12
SIZE REQUIRED:	14.00 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

2 POOL CONTROL JOINT PLAN
1/8" = 1'-0"



DATE	REVISION	NO.	HEALTH
09/25/24		1	

SHEET DISCUSSION
OVERALL POOL LAYOUT

PROJECT #: 2023015
 DATE ISSUED: 01/22/2024
 DRAWING BY: JVD
 CHECKED BY: DSC/JLH

POWELL AMENITY GREENHAWK BATHHOUSE AMENITY LILLINGTON, NC

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1A	1	PENTAIR	XFET-20	5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA STRAINER
1B	1	PENTAIR	WHISPERFLOX VS	5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA STRAINER
2	2	PENTAIR	147402	TANDEM FILTER PIPING KITS FOR 2 & 3 IN FILTERS
3	2	PENTAIR	TR-140 C3	36 INCH DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4	2	PENTAIR	HC-3315	COMMERCIAL HIGH COMPACTY CHLORINE FEEDER
5	2	FLOW VIS	FV-4-40	4 INCH INLINE COMMERCIAL FLOW METER
6A	2	AQUASTAR	9MF-101 W/ FBS-50-809-3	9" x 9" VGB SUCTION OUTLET COVER W/ A.S.A. MFG FIBERGLASS SUMP
6B	2	AQUASTAR	1216101 W/ FBS-50-812-6	12" x 12" VGB SUCTION OUTLET COVER W/ A.S.A. MFG FIBERGLASS SUMP
7	1	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE
8	7	AQUASTAR	SKR101	WHITE COMMERCIAL GRADE SKIMMER
9	1	AQUASTAR	ES1022SI2001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
10	1	AQUASTAR	GDD101	COMMERCIAL OVERFLOW DRAIN
11	9	AQUASTAR	ES1022SI2001 W/ 8101	WALL RETURN INLET - DIRECTIONAL
12	2	AQUASTAR	ES1022SI2001 W/ BP101	FLOOR RETURN INLET W/ BUBBLER PLATE
13	1	NAT. STRUCT.	1900-17-96	7' 6" DIA MUSHROOM FEATURE (200 GPM @ 3" DIA) - CAP COLOR TBD
14	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
15	3	PENTAIR	LIGHT - 602104	190W EQUIVALENCY GLOBRITE WHITE LED LIGHTS
16	2	PENTAIR	LIGHT - 601108	400W EQUIVALENCY INTELLIBRITE WHITE LED LIGHTS
17	2	INTERMATIC	PJB4175	4 LIGHT CONNECTION POOL & SPA JUNCTION BOX
18	1	SR SMITH	DMS-101B - MG	MARINE GRADE DECK MOUNTED HANDRAIL - SHORT
19	3	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL - STANDARD
20	1	SR SMITH	10054 - MG	MARINE GRADE DECK MOUNTED COMMERCIAL LADDER
21	1	PENTAIR	RCS1 (OR EQ)	COMPOOL REMOTE SWITCH WALL GANG PLATE - TIMER FOR PUSH BUTTON FOR FEATURE
22	1	INTERMATIC	ET90115CR (OR EQ)	ELECTRIC TIMER FOR FEATURE PUMP
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT HANDICAP LIFT

POOL DECK SIGNAGE REQUIREMENTS

POOL SIGNAGE TO BE POSTED IN THE MAIN POOL AREA:

SIGN "A" - 4" TALL LETTERS WARNING - NO LIFE GUARD ON DUTY

SIGN "B" - 1" TALL LETTERS - A MIN. OF (2) THIS PROJECT

POOL SAFETY RULES

- CHILDREN SHOULD NOT USE THE SWIMMING POOL WITHOUT ADULT SUPERVISION.
- ADULTS SHOULD NOT SWIM ALONE.
- PETS ARE PROHIBITED IN THE POOL AREA.
- GLASS CONTAINERS ARE PROHIBITED IN THE POOL AREA.
- NO DIVING IS ALLOWED IN POOL AREA

SIGN "C" - PROVIDE A SIGN VISIBLE UPON ENTERING THE POOL ENCLOSURE DIRECTING POOL USERS TO SHOWER BEFORE ENTERING THE POOL.

SIGN "D" - PROVIDE A SIGN STATING "POOL CLOSED" FOR EVERY POOL ENTRANCE. VERIFY WITH FINAL POOL ENCLOSURE DESIGN FOR FINAL NUMBER OF ENTRANCES.

POOL DECK MARKINGS

DEPTH MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:

- LOCATED ON TOP OF POOL DECK AND AT OR ABOVE THE WATER SURFACE ON THE VERTICAL WALL.
- SHALL BE IN ARABIC NUMERALS AT LEAST 4" HIGH AND OF A COLOR CONTRASTING W/ THE BACKGROUND.
- MARKINGS SHALL INDICATE THE DEPTH OF THE POOL IN FEET AND SHALL INCLUDE THE WORD "FEET" OR THE SYMBOL "FT" TO INDICATE THE UNIT OF MEASUREMENT.
- MARKINGS IN POOL DECK SHALL PROVIDE A SLIP RESISTANT WALKING SURFACE.
- NOT TO EXCEED 25'-0" IN SPACING ALONG THE PERIMETER OF THE POOL.

"NO DIVING" MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:

- NOT TO EXCEED 25'-0" IN SPACING ALONG COPING EDGE.
- DENOTED IN ONE OF THE FOLLOWING MANNERS:
 - CONSISTING OF THE WORDS "NO DIVING" IN LETTERS AT LEAST 4" HIGH AND OF A COLOR CONTRASTING WITH THE BACKGROUND.
 - AT LEAST A 6"x6" IN SIZE INTERNATIONAL SYMBOL FOR NO DIVING IN RED AND BLACK ON A WHITE BACKGROUND. (VERIFY WITH MANICIPALITY)

POOL SAFETY REQUIREMENTS

PROVIDE SAFETY PROVISIONS PER SECTION 2530. THE MINIMUM BEING:

- 12' LONG (MINIMUM) METAL POLE WITH A BODY HOOK SECURELY ATTACHED. THE POLE SHALL BE NON-TELESCOPING, NON-ADJUSTABLE & NON-COLLAPSIBLE. MINIMUM 1/4" DIA THROWING ROPE AS LONG AS 1-1/2 TIMES THE MAX WIDTH OF THE POOL OR 50', WHICHEVER IS LESS, ATTACHED TO A U.S. COAST GUARD APPROVED RING BUOY.
- TWO UNITS OF LIFESAIVING EQUIPMENT MUST BE PROVIDED FOR ANY POOL THAT EXCEEDS 3,000 SQ FT (186 SQ M) OF TOTAL SURFACE AREA.

EMERGENCY TELEPHONE SERVICE:

- TELEPHONE CAPABLE OF DIRECTLY DIALING 911 OR OTHER EMERGENCY NOTIFICATION SYSTEM SHALL BE PROVIDED AND ACCESSIBLE TO ALL POOL USERS.
- THE TELEPHONE SHALL BE PERMANENTLY AFFIXED TO A LOCATION INSIDE THE POOL ENCLOSURE OR OUTSIDE THE ENCLOSURE WITHIN 75' OF THE BATHER ENTRANCE.
- THE TELEPHONE SHALL BE VISIBLE FROM WITHIN THE POOL ENCLOSURE OR A VISIBLE SIGN SHALL BE POSTED INDICATING THE LOCATION OF THE EMERGENCY PHONE.
- AT THE TELEPHONE - PROVIDE A SIGN WITH LEGIBLE LETTERS PROVIDING THE FOLLOWING INFORMATION.
 - DIALING INSTRUCTIONS
 - ADDRESS OF THE POOL LOCATION
 - TELEPHONE NUMBER OF THE POOL LOCATION.

SEE POOL HOUSE PLANS BY OTHERS FOR EXACT LOCATION OF THE TELEPHONE SERVICE.

POOL DESIGN NOTES

- SEE PLANS BY OTHERS FOR CONSTRUCTION OF BATHHOUSE, PUMP & CHEMICAL STORAGE ROOMS, SITE WORK, ETC.
- POOL IS DESIGNED FOR DAWN TO DUSK SWIMMING ONLY

MAIN POOL DATA

POOL DIMENSIONS:	53'-11 3/4" X 82'-3 1/2" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	12" SHELF w/ 3'-5"
POOL VOLUME:	57,394 GALLONS
SURFACE AREA:	2,677 SQFT.
PERIMETER:	233 LF
COPING:	BULLNOSE INDEPENDENT
CIRC REQ FLOW:	159 GPM @ 65 TDH
CIRC DESIGN FLOW:	190 GPM @ 65 TDH
FEAT DESIGN FLOW:	210 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	KONA QUARTZ PLASTER
BATHER LOAD:	179 PERSONS
BACKWASH TO:	STORM SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
CIRC MAIN DRAINS:	(2) 4" SCH 40 PVC
FEAT MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(7) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(11) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF (EA) = 14.12
SIZE REQUIRED:	14.00 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

BUILDING FIXTURE DATA

TOTAL BATHER LOAD = 2,677 /15 = 179
 (50% - 50% SPLIT) = 90
 CLUBHOUSE & PUMP HOUSE REQUIREMENTS:
 MINIMUM FIXTURE REQUIREMENTS ARE:
 90 MEN
 - 1 LAVATORIES
 - 1 WATER CLOSET(S)
 - 1 URINAL(S)
 90 WOMEN
 - 2 LAVATORIES
 - 2 WATER CLOSET(S)
 1 SHOWERS IS REQUIRED

SEE ARCHITECTURAL PLANS BY OTHERS FOR RESTROOM LOCATION & LAYOUTS

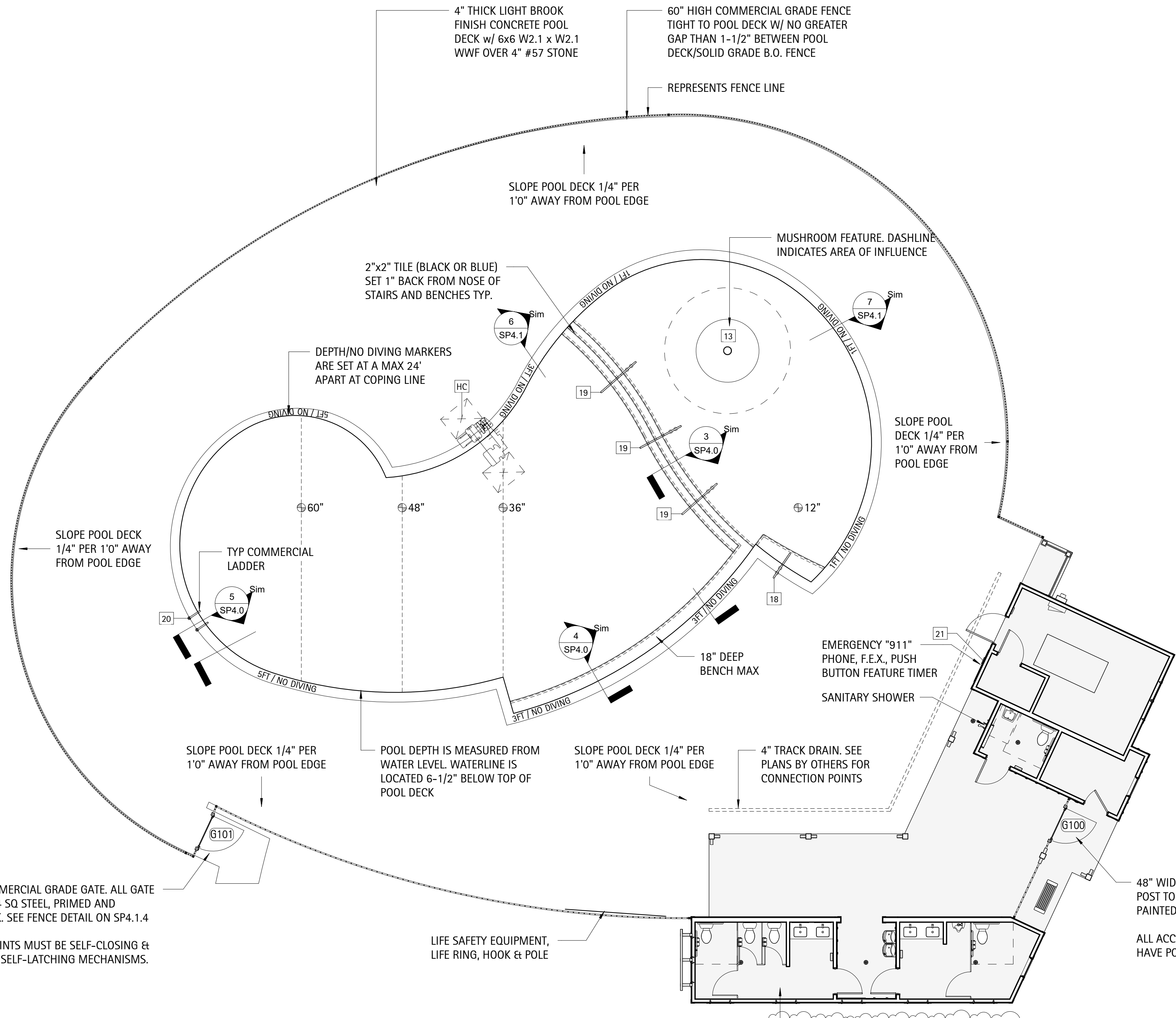
POOL DECK EXIT REQUIREMENTS

POOL DECK AREA - 6,104 SF @ 15 SF PER PERSON
 DECK OCCUPANT LOAD IS 407 PERSONS.

POOL AREA IS 2,677 SF @ 50 SF PER PERSON,
 POOL OCCUPANT LOAD IS 54 PERSONS.

TOTAL POOL & POOL DECK OCCUPANT LOAD IS 461 PERSONS.

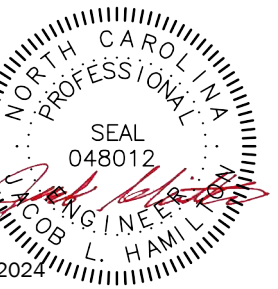
SEE LIFE SAFETY PLANS FOR BUILDING OCCUPANCY & EXIT REQUIREMENTS.



1 POOL LAYOUT PLAN
 SP2.0
 1/8" = 1'-0"



D. CLUGSTON



Kilian Engineering, Inc.



Table with columns: DATE, REVISION, NO., HEALTH

SHEET DISCUSSION PIPING & ELECTRICAL PLAN

PROJECT #: 2023015 DATE ISSUED: 01/22/2024 DRAWING BY: JVD CHECKED BY: DSC/JLH

POWELL AMENITY GREENHAWK BATHHOUSE AMENITY LILLINGTON, NC

SP3.0

POOL EQUIPMENT SCHEDULE

Table with columns: TAG, COUNT, MANUFACTURER, MODEL, COMMENTS

UNDERWATER LIGHTING DATA

MAIN POOL AREA: 2,677 SQFT. 2,677 SF x 0.5 WATTS = 1,338.5 WATTS

PUMP FLOW PIPE SIZING

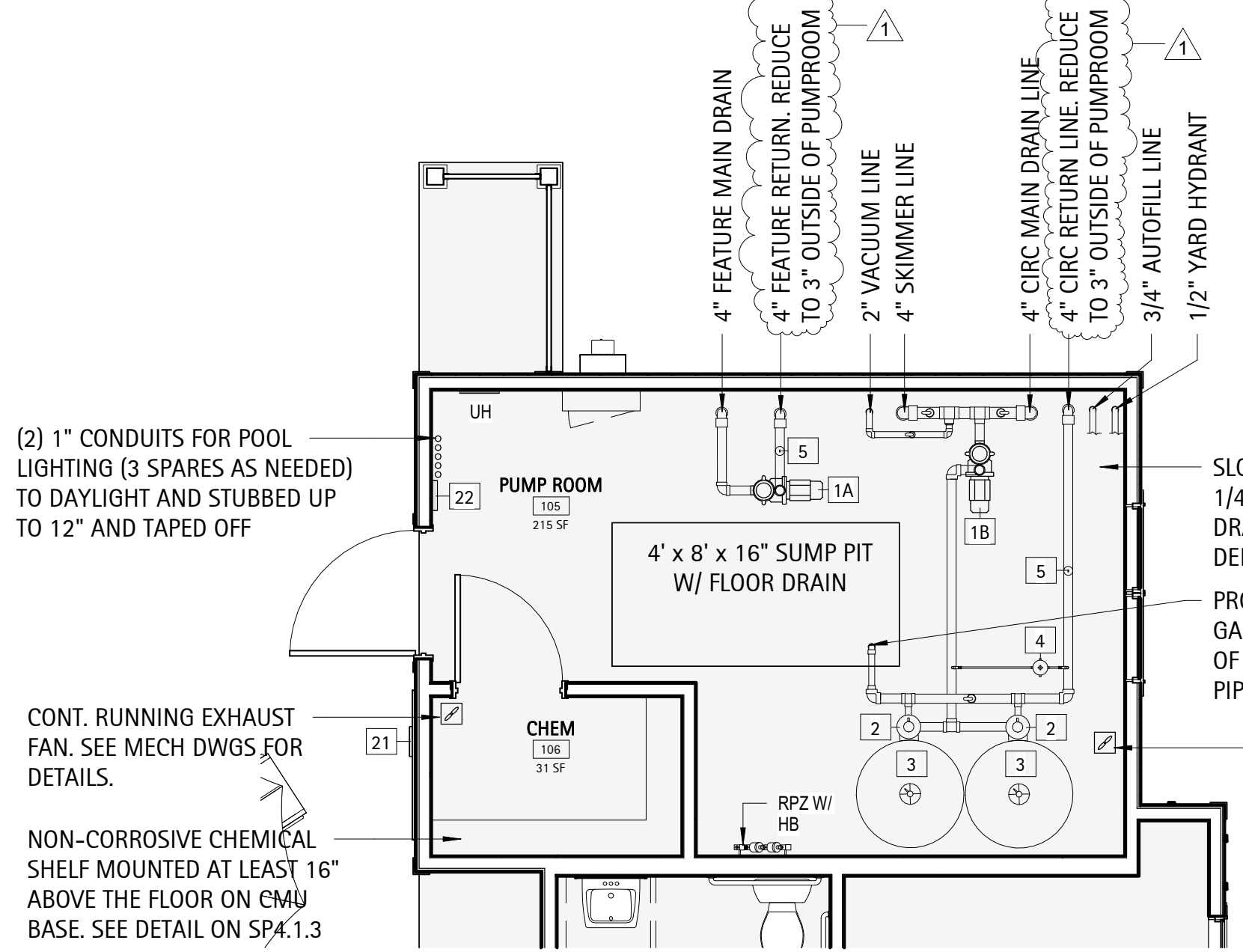
CIRCULATION: WHISPERFLOX VS PUMP FLOW AT 65 FT OF WATER IS 190 GPM, WITH SPECIFIED: 4" MAIN DRAIN PIPING VELOCITY IS 4.79 FPS.

CHEMICAL STORAGE DATA

CHEMICAL STORAGE REQUIREMENTS FOR A 57,394 GALLON POOL ARE: 5 SF FOR FIRST 10,000 GALLONS OF POOL + 1 SF FOR EACH ADDITIONAL 3,000 GALLONS OF POOL UP TO 100 SF OF STORAGE

PUMP ROOM & CHEMICAL ROOM NOTES

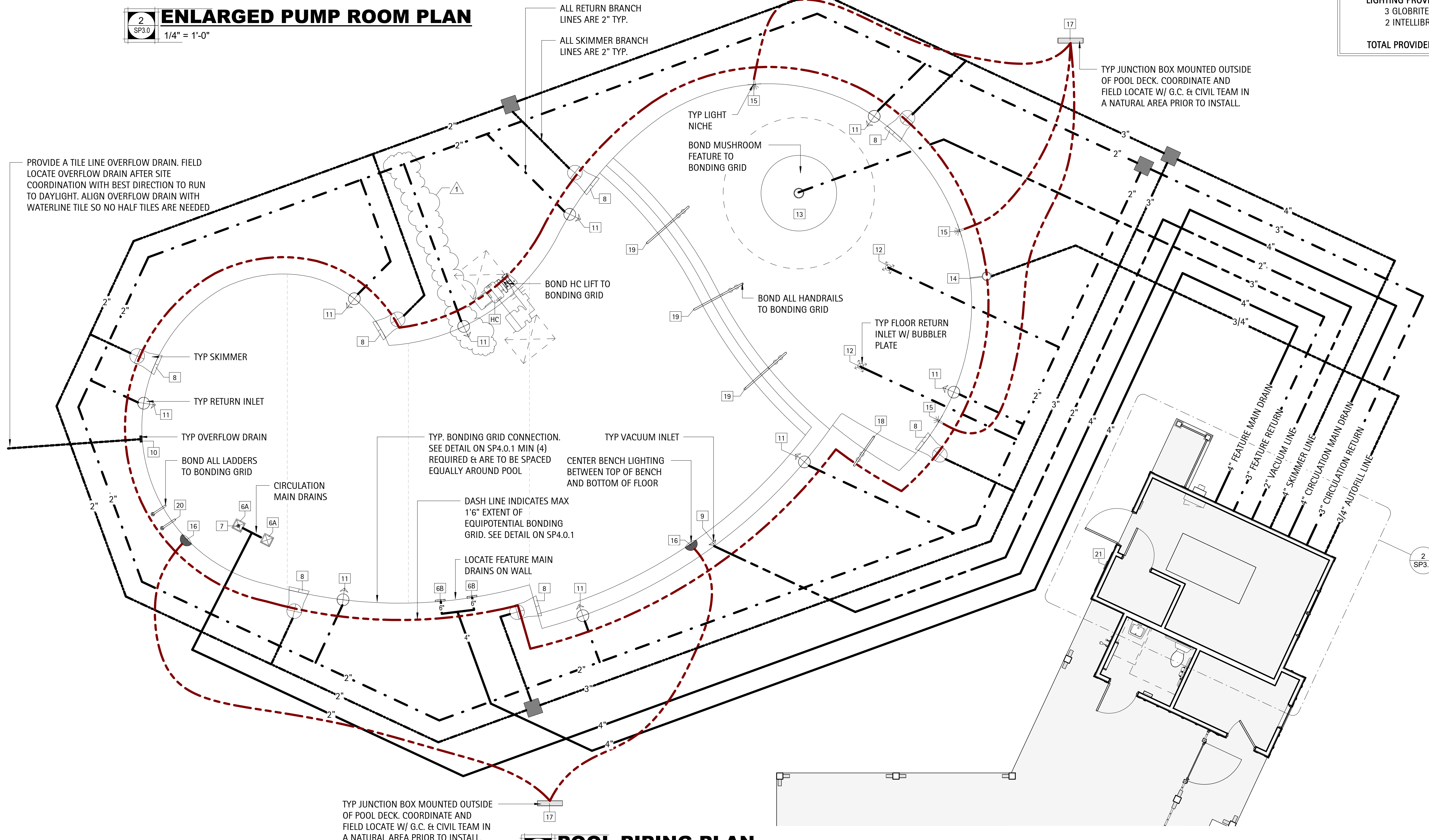
- A. ALL PUMPS, CHEMICAL FEEDING APPARATUS AND OTHER MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ENCLOSED IN A WEATHERPROOF STRUCTURE WITH A MINIMUM CEILING HEIGHT OF SEVEN FEET.



ENLARGED PUMP ROOM PLAN

1/4" = 1'-0"

ALL RETURN BRANCH LINES ARE 2" TYP. ALL SKIMMER BRANCH LINES ARE 2" TYP.



POOL SYMBOLS LEGEND

- SAND FILTER, MAIN DRAINS, OVERFLOW, VACUUM INLET, FLOOR INLET, DIRECTIONAL WALL INLET, LIGHT NICHE, SKIMMER

MAIN POOL DATA

POOL DIMENSIONS: 53'-11 3/4" X 82'-3 1/2" OVERALL IRREGULAR SHAPE. POOL VOLUME: 57,394 GALLONS. SURFACE AREA: 2,677 SQFT.



D. CLUGSTON



Kilian Engineering, Inc.



PO Box 3301, Healdston, NC 27536 | www.kilianengineering.com
(919) 524-4388/8778 | CORPORATE LICENSE C-2277

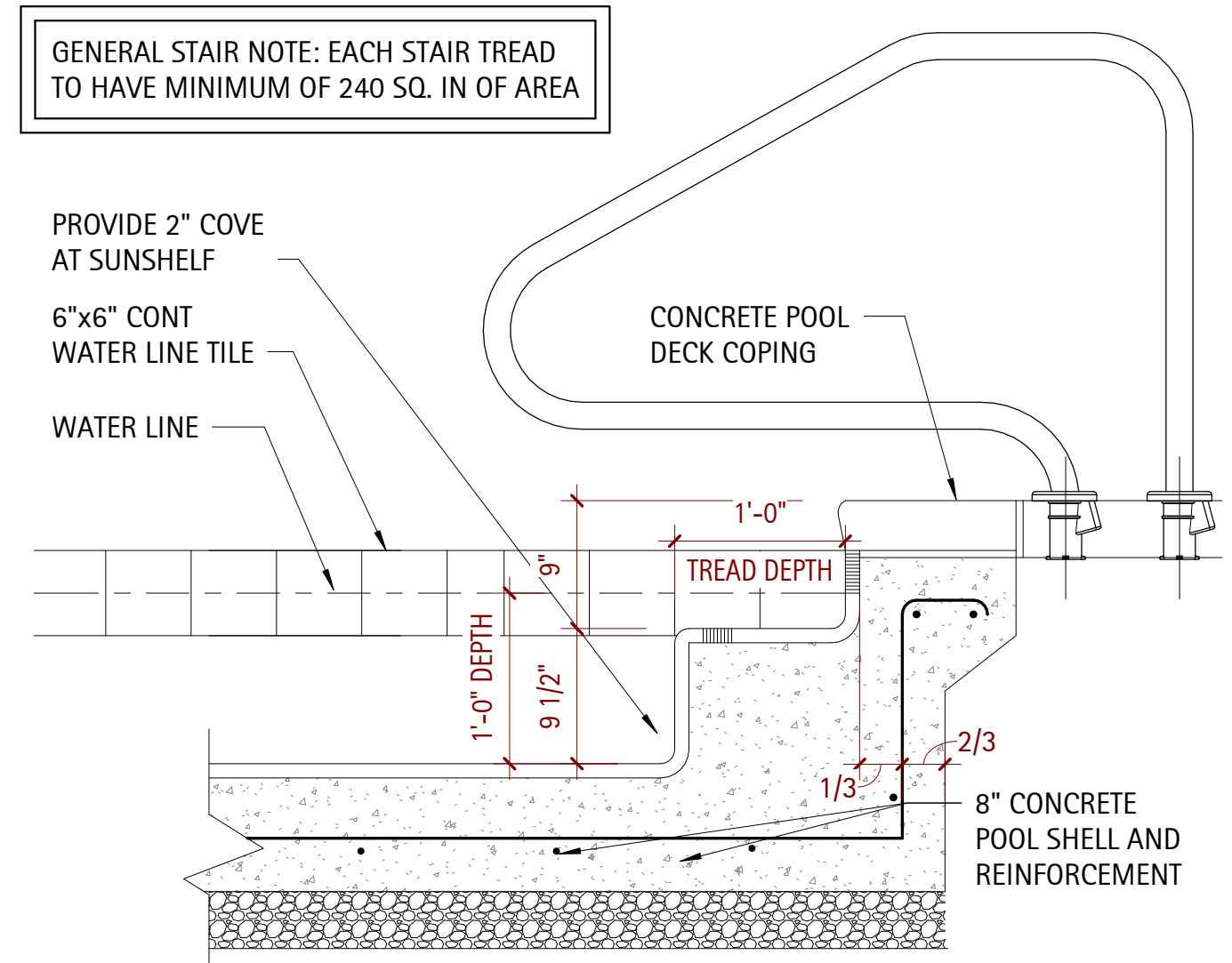
DATE	
REVISION	
NO.	

SHEET DISCUSSION
SECTIONS & DETAILS

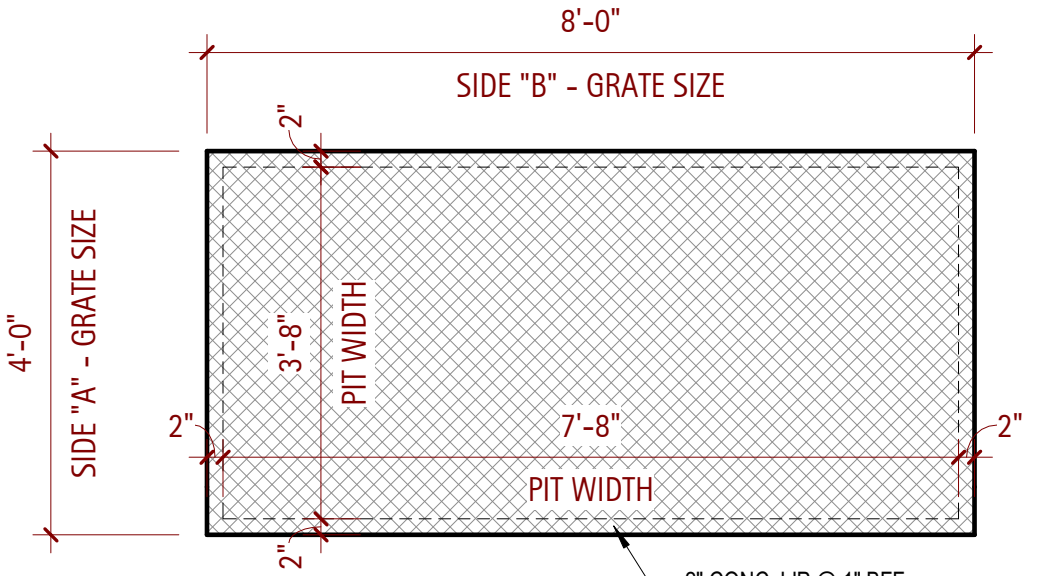
PROJECT #:	2023015
DATE ISSUED:	01/22/2024
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

POWELL AMENITY
GREENHAWK
BATHHOUSE AMENITY
LILLINGTON, NC

SP4.1



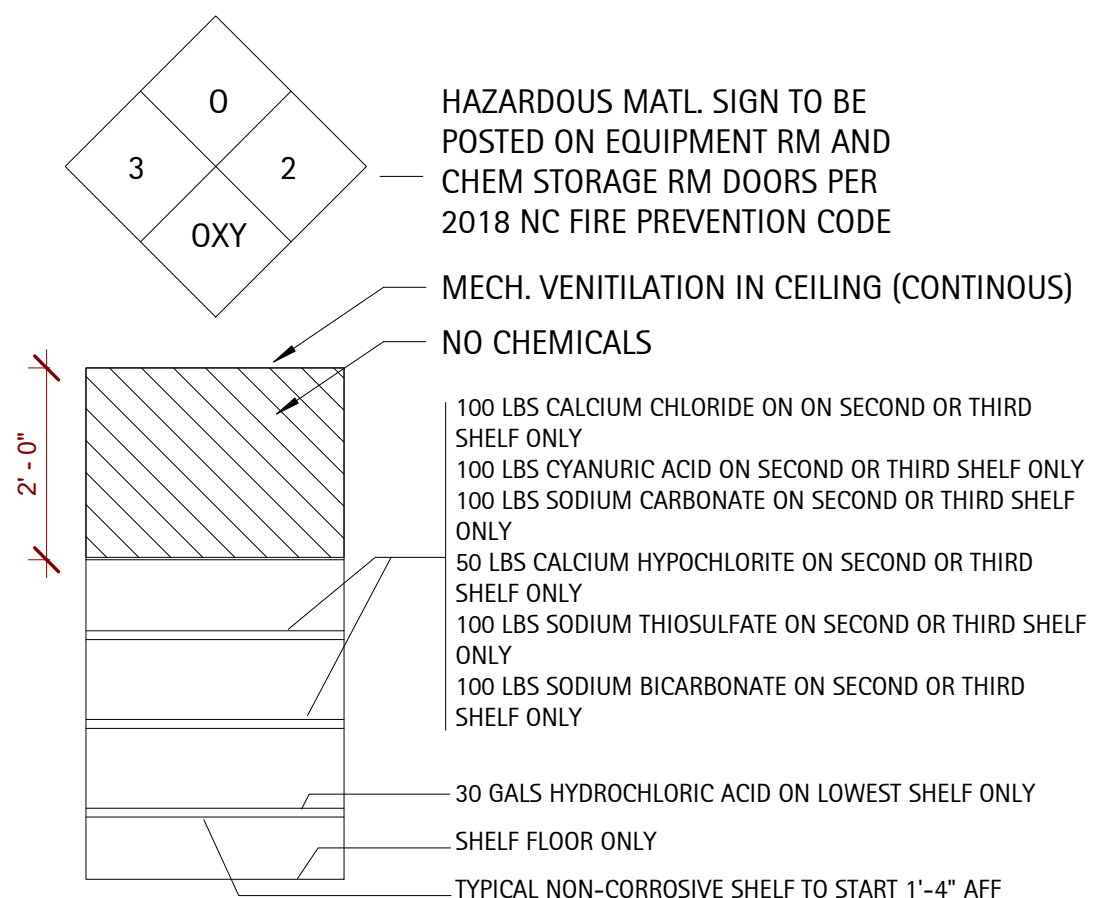
1 Detail - Step Into Pool Shelf
1" = 1'-0"



BACKWASH SUMP SIZING:
PUMP GPM (BACKWASH) = 190 GPM
FILTRATION FRICTION LOSS = 5 GPM
MAX. SUMP DISCHARGE = 50 GPM
AVG. TIME / BACKWASH = 3 MIN 30 SEC.
SUMP PIT GALLON SIZE = 262.5 GALLONS
CUBIC FEET PER GALLON = 0.134
REQUIRED SUMP PIT SIZE: 35.09 CUBIC FT.

SIDE "A" = 44 IN
SIDE "B" = 62 IN
DEPTH = 16 IN
64.788 CUBIC INCHES X 0.000579 CI/CF =
PROVIDED SUMP PIT SIZE: 37.48 CUBIC FEET

5 Detail - Sump Pit
1/2" = 1'-0"



TYPICAL CHEMICAL ROOM SHELVE w/ QUANTITIES

A. Unless otherwise stated, all code references are to the 2018 North Carolina State Building Codes (NCSBC).

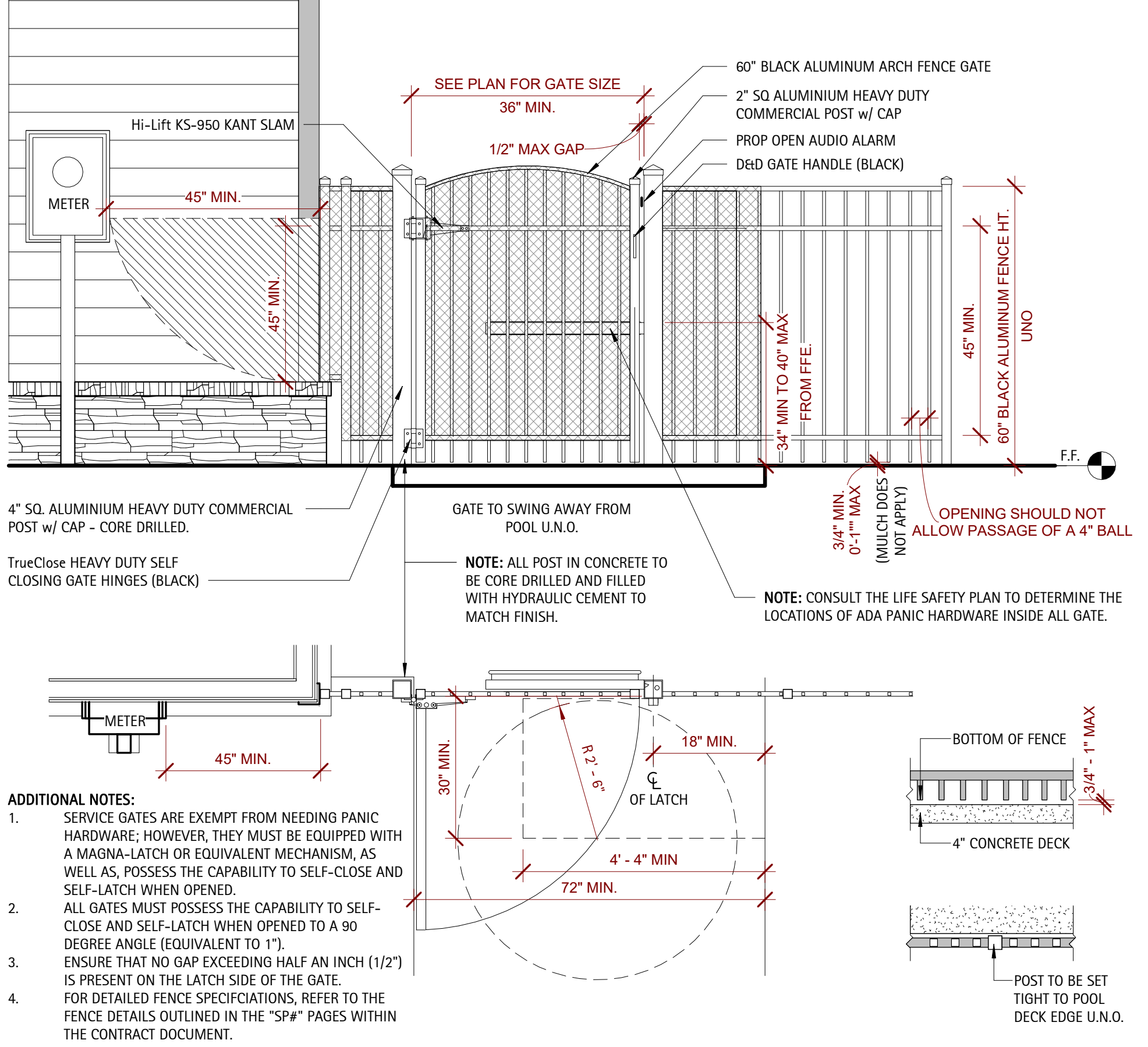
B. North Carolina Building Code (NCSBC) applicable portions include but are not limited to:

- Chapter 3, Section 307 and Tables 307.7(1), 307.1(2)
- Chapter 4, Section 414, 415 and Tables 414.2.2, 414.2.5, 415.8.2.1.1

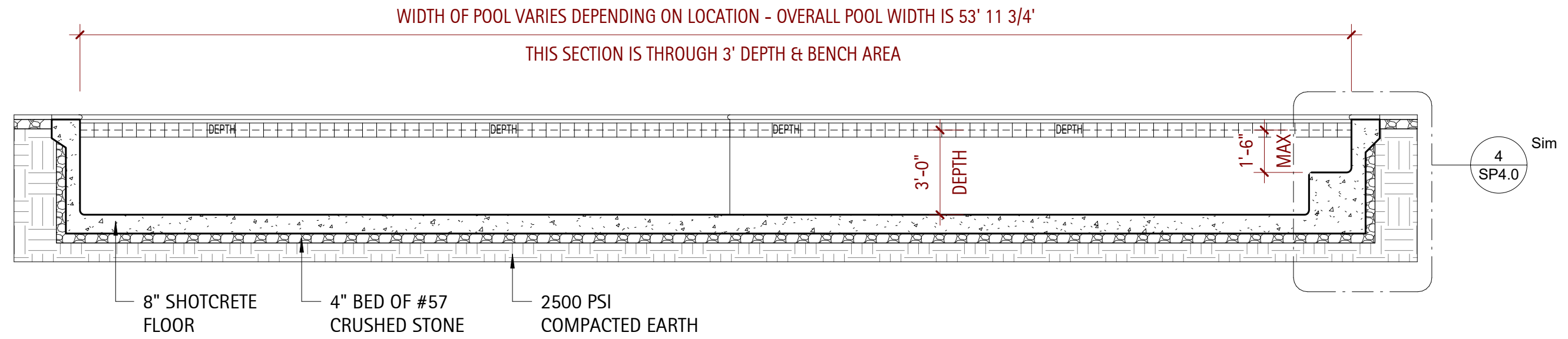
C. North Carolina Fire Code (NCFC) applicable portions include but are not limited to:

- NCFC, Chapter 18, Tables 1804.2.2.1, 1805.2.2
- NCFC, Chapters 27 through 44
- Appendices E and F

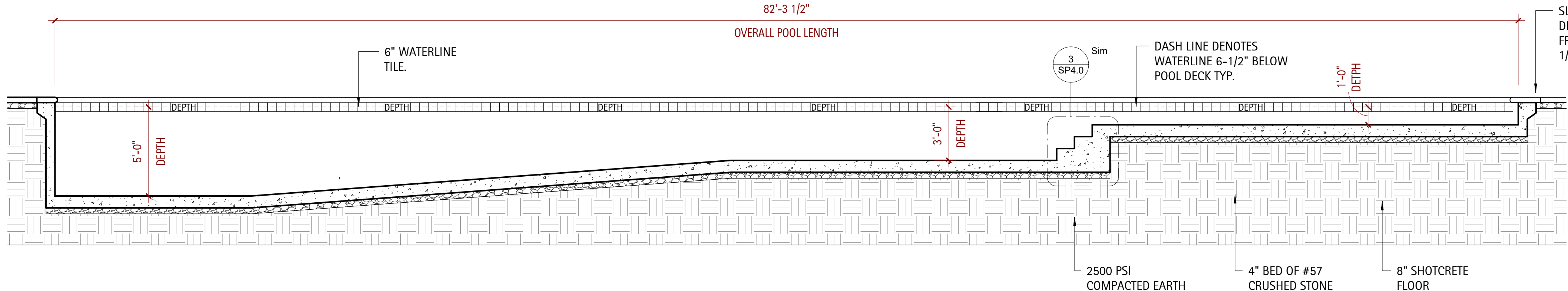
3 Detail - Chemical Storage
1/2" = 1'-0"



4 Detail - Fence
1/2" = 1'-0"



6 North-South Pool Section
1/4" = 1'-0"



7 Detail - Main Pool Section
1/4" = 1'-0"

WHISPERFLOXF[®]

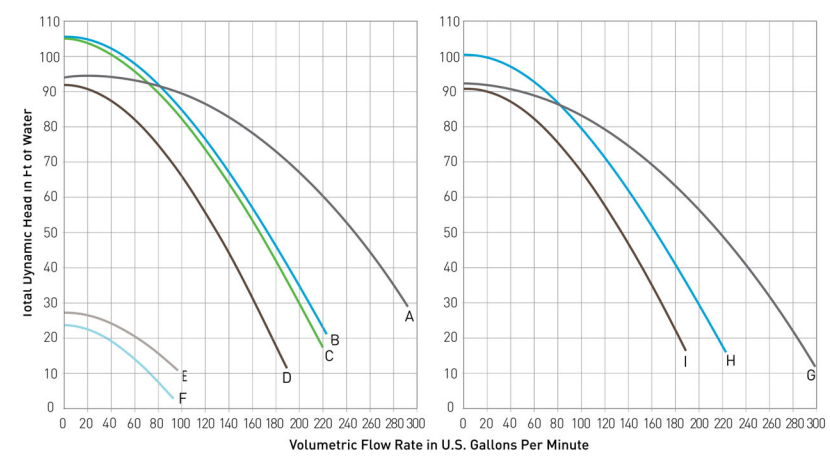
HIGH PERFORMANCE PUMP



KEY FEATURES

- Cam and Ramp™ Lid**
Makes inspection and cleaning simple and quick.
- Built-in handle**
For easy installation.
- Union connectors**
2.5" or 3" union connectors included.
- Overized strainer basket**
Extends time between cleanings.
- TEFC/Super-Duty motor options**
Provide superior performance and longevity.

PERFORMANCE CURVES



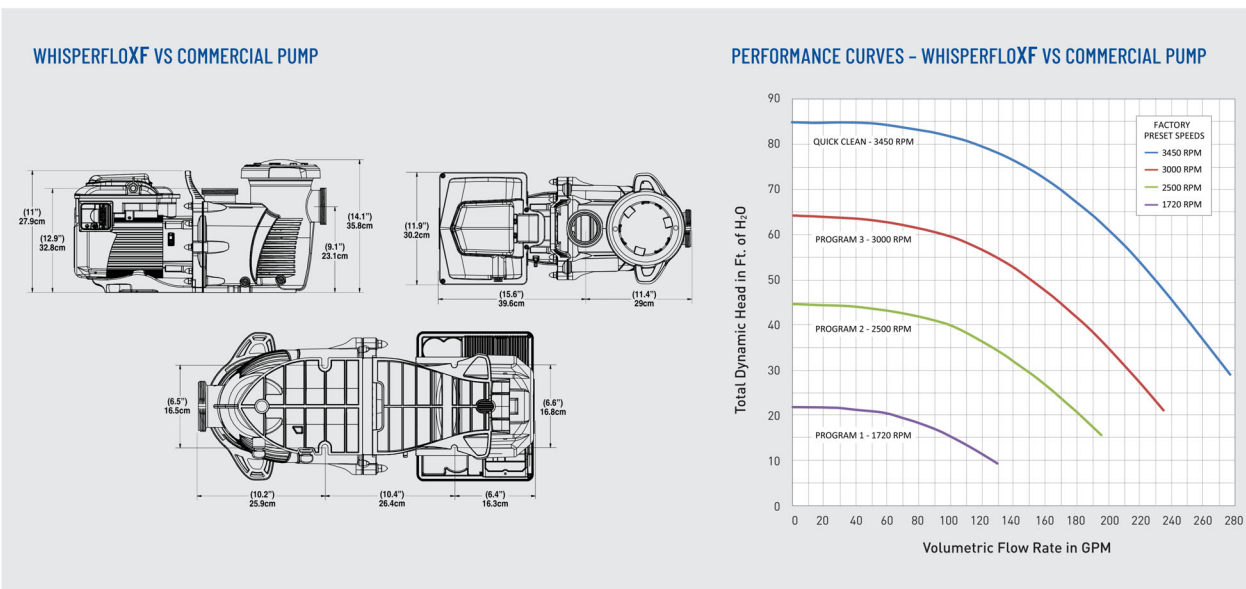
Performance Curve	Model	Description
A	XFE-10	5 HP, Single Speed Full Rated
A	XFE-20	5 HP, TEFC Super-Duty Single Speed
B	XFK-20	5 HP, 3-Phase, Super-Duty Motor
B	XFE-12	3 HP, Single Speed Full Rated
B, E	XFD-12	3 HP, 2-Speed Full Rated
B	XFE-12	3 HP, TEFC Super-Duty Single Speed
B	XFK-12	3 HP, 3-Phase, Super-Duty Motor
C	XFE-12	3 HP, Single Speed Full Rated
D	XFE-8	2 HP, Single Speed Full Rated
D	XFE-8	2 HP, TEFC Super-Duty Single Speed
D	XF-8	2 HP, Single Speed Full Rated
D, F	XFD-8	2 HP, 2-Speed Full Rated
D	XFE-30	2.5 HP, Single Speed Up Rated
D	XF-30	2.5 HP, Single Speed Up Rated
D, F	XFD-30	2.5 HP, 2-Speed, Up Rated
I, F	XFK-8	2 HP, 3-Phase, Super-Duty Motor

Pumps and replacement motors that are single speed and one (1) Total HP or greater cannot be sold, offered for sale, or installed in a residential pool for filtration use in California, Title 20 CCR sections 1801-1809.



1820 Hawkins Ave | Sanford, NC 27330 | United States | 800.831.7133 | pentair.com

All Pentair trademarks and logos are owned by Pentair, Inc. WhisperFloxF, Challenge™ and Cam and Ramp™ are trademarks and/or registered trademarks of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice. Pentair is an equal opportunity employer. PH-08-1718 ©2018 Pentair Water Pool and Spa, Inc. All rights reserved.



MATERIALS AND DESIGN

Pump Body

- Volute type back pull out design for ease of working on impeller, diffuser and seal.
- Port Size**
 - Inlet (suction): 2.5" union can be adapted to 3 inches.
 - Outlet (discharge): 2.5" union can be adapted to 3 inches.
- Material**
 - ~30% glass filled polypropylene materials.
 - ~1/4" NPT thermoplastic drain plug of thumbscrew (no tool required) design on the strainer for winterizing.
- Impeller**
 - ~Glass filled noryl thermoplastic design for corrosion prevention and maximum flow efficiency.
 - ~Threaded brass with stainless steel locking screws.
- Diffuser**
 - ~Glass filled noryl thermoplastic material with bronze impeller wear ring.
 - ~Hydraulic isolator design for maximum efficiency.
- Seal plate**
 - ~Fiberglass reinforced modified PPE thermoplastic material.
- Mechanical Seal**
 - ~Ceramic and carbon seal.
 - ~Stainless steel and EPDM materials.
- Base**
 - ~Fiberglass reinforced modified PPE thermoplastic with slotted holes for easy mounting.
- Gaskets**
 - ~ Buna N rubber compression resistant.
- Bolts, Nuts, and Washers**
 - ~Stainless steel and brass with nickel plating.
- Corrosion Prevention**
 - ~All thermoplastic pump body for maximum hydraulic performance, noise reduction and corrosion prevention.

Hair and Lint Strainer

- Basket**
 - ~HDPE (polyethylene) basket colored white for easy debris removal.
 - ~Securely positioned below the suction inlet of the trap, with access for inspection and cleaning through the removable lid.
- Lid**
 - ~Clear polycarbonate thermoplastic lid for easy view into the basket area.
- Lid Locking Ring**
 - ~Cam and Ramp™ Lid and Locking Ring allow for quick and easy access to the basket.
 - ~O-ring seal.
- Motor**
 - ~Frame and Type
 - ~NEMA Rated 56 Frame totally enclosed fan-cooled construction.
 - ~Variable speed induction motor.
 - ~Shaft
 - ~303 series stainless steel construction.
 - ~Thermal Overload Protection
 - ~Thermal overload protection provided by the integral motor control.
 - ~Sealed Bearings
 - ~Lubricated, double sealed, stainless steel, single row ball bearings.
- Electrical**
 - ~208-230/277-480V single-phase.
 - ~208-480V three-phase.
 - ~50/60Hz.
 - ~WEP 5.0 THP 5.0.
 - ~Single part number to cover all voltage ranges.

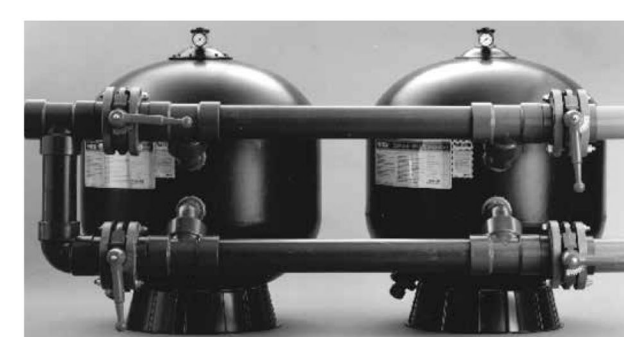
Pump Maximum Thermal Limits

- ~ Ambient air temperature: 122° F (50° C).
- ~ Liquid temperature: 104° F (40° C).

FILTERS - COMMERCIAL

SCH 40 & 80 FOR TR100C, TR140C, TR100C-3 & TR140C-3 TANDEM FILTER PIPING KITS FOR 2 & 3 IN. FILTERS

These Tandem Filter Piping Kits are designed specifically for use with the Triton™ TR100C, TR140C, Triton TR100C-3 and TR140C-3 Sand Filters to make the best even better. We are providing this additional service for your convenient one-stop shopping. Pipe and filters are all you need.



Tandem Filter Piping Kits for Triton TR100C, TR140C, TR100C-3 and TR140C-3 Sand Filters

Pipe is not included in kits.

Ordering Information

Product	Model	Product	Model
For Plumbing Two TR100C or TR140C Filters			
146400	3 in. Two filter kit, SCH 40 (200 GPM)	146406	4 in. Single filter kit, SCH 40
146402	4 in. Two filter kit, SCH 40 (300 GPM)	146408	4 in. Single filter kit, SCH 80
146404	6 in. Two filter kit, SCH 40 (700 GPM)	146409	4 in. Single filter kit, SCH 80
146403	4 in. Two filter kit, SCH 80 (300 GPM)	146407	4 in. Single filter kit, SCH 80
146405	6 in. Two filter kit, SCH 80 (700 GPM)	146409	4 in. Single filter kit, SCH 80
For Plumbing Two TR100C-3 or TR140C-3 Filters			
147400	3 in. Two filter kit, SCH 40 (200 GPM)	147406	4 in. Single filter kit, SCH 40
147402	4 in. Two filter kit, SCH 40 (300 GPM)	147408	4 in. Single filter kit, SCH 40
147404	6 in. Two filter kit, SCH 40 (700 GPM)	147407	4 in. Single filter kit, SCH 80
147401	3 in. Two filter kit, SCH 80 (200 GPM)	147409	4 in. Single filter kit, SCH 80
147403	4 in. Two filter kit, SCH 80 (300 GPM)		
147405	6 in. Two filter kit, SCH 80 (700 GPM)		

Note: All kits include hardware, fittings, gaskets and butterfly valves.

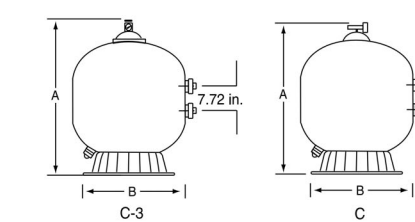
Filters	Filter Area Sq. Ft.	Manifold Pipe Dia.	Filter Rate Sq. Ft.			Turnover Capacity		
			15 GPM	20 GPM	6 Hours	8 Hours	10 Hours	
TANDEM TRITON 140C FILTER INSTALLATION								
6 TR 140's	42.36	6 in.	635	—	228,600	304,800	381,000	
		8 in.	—	847	304,920	406,560	508,200	
7 TR 140's	49.42	6 in.	741	—	266,760	355,680	444,600	
		8 in.	—	988	355,680	474,240	592,800	
8 TR 140's	56.48	8 in.	847	—	304,920	406,560	508,200	
		8 in.	—	1130	406,800	542,400	678,000	

CALIFORNIA PROPOSITION 65 WARNING
▲ **WARNING:** Cancer and Reproductive Harm.
▲ **AVERTISSEMENT:** Peut Causer le Cancer.
 (See Proposition 65, Statewide Reproductive
 ▲ **ADVERTENCIA:** Cáncer y Daño Reproductivo.
 www.p65warnings.ca.gov

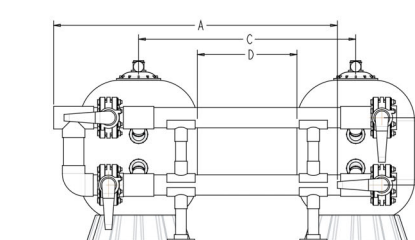
TRITON™ C SERIES COMMERCIAL SAND FILTERS

TRITON HD FILTER

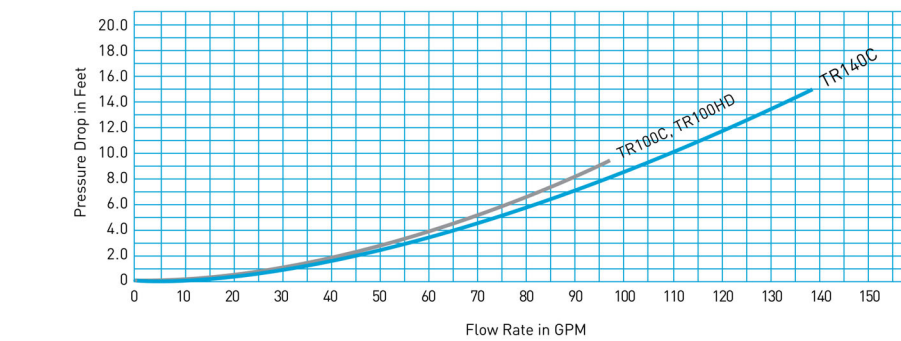
The Triton heavy duty (HD) filter is a thirty-inch fiberglass filter that offers a maximum operating pressure of 75 PSI. This filter is specifically designed for special high-pressure commercial applications that require up to 98 gpm, and is ideal for all heavy-duty commercial applications.



Triton Commercial Series Sand Filter Specifications							
Model Number	Filter Area Sq. Ft.	Flow Rate 15 GPM/Sq. Ft.*	Turnover Capacity Gallons	Dimension		Media Required	
TR100C	4.91	15*	24,442	35.53	39 1/2"	30 1/2"	400 lbs. 400 lbs./750 lbs.
TR140C	7.06	10*	38,140	50,860	45 1/2"	36 1/2"	925 lbs. 450 lbs./775 lbs.
TR100C-3	4.91	7.5*	26,540	35,530	39 1/2"	30 1/2"	400 lbs. 400 lbs./750 lbs.
TR140C-3	7.06	10*	38,140	50,860	45 1/2"	36 1/2"	925 lbs. 450 lbs./775 lbs.



Two Filter System	A	B	C	D	Total Wt.
3" - TR100C	82 1/2"	17 1/2"	48" Min.	18" Min.	2,300 lbs.
3" - TR140C	88 1/2"	17 1/2"	54" Min.	18" Min.	3,200 lbs.
4" - TR140C	95 1/2"	19 1/2"	54" Min.	18" Min.	2,300 lbs.
6" - TR140C	111 1/2"	24 1/2"	54" Min.	18" Min.	3,500 lbs.



1820 HAWKINS AVE, SANFORD, NC 27330 800.831.7133 WWW.PENTAIRCOMMERCIAL.COM

All Pentair trademarks and logos are owned by Pentair, Inc. Triton™ is a registered trademark of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice. Pentair is an equal opportunity employer.

1/173 Part # 151-0313 Pentair Water Pool and Spa, Inc. All rights reserved.

TAG 1A - CIRCULATION PUMP - XFE-20 - 5 HP HIGH EFFICIENCY PUMP

TAG 1B - FEATURE PUMP - WHISPERFLOXF VS - 5 HP HIGH EFFICIENCY PUMP

TAG 2 - BACKWASH KIT - 147402 - TANDEM FILTER PIPING KITS FOR 2 & 3 IN FILTERS

TAG 3 - FILTER - TR-140 C3 - 36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA

RAINBOW™

HIGH CAPACITY CHLORINE/BROMINE FEEDERS



- Designed for ease of use and simple maintenance
- Drain valve allows easier draining for safer recharging or winterizing
- Standard threaded inlet and outlet fittings included for easy installation

THE PERFORMANCE LEADER IN AUTOMATIC SANITIZATION FOR LARGE RESIDENTIAL AND COMMERCIAL POOLS

The INLET control valve side of the feeder connects to the plumbing on the discharge side of the pump, before the filter. The OUTLET side of the feeder connects to the pool return line after the filter and/or heater, pool cleaner, diverter valves, or any other installed equipment. Installation of a corrosion-resistant check valve such as HR172288 by Pentair between the feeder inlet and outlet and the equipment is strongly recommended to check backflow of chemicals. This helps ensure equipment longevity.

AVAILABLE FROM:



1820 HAWKINS AVE, SANFORD, NC 27330 800.831.7133 WWW.PENTAIRPOOL.COM

All Pentair trademarks and logos are owned by Pentair, Inc. Rainbow™ is a trademark of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice. Pentair is an equal opportunity employer.

pumps • filters • heaters • heat pumps • automation • lighting • cleaners • sanitizers • water features • maintenance products

1/14 Part # RS-1012 ©2014 Pentair Water Pool and Spa, Inc. All rights reserved.

MODELS & SPECIFICATIONS

Model	HC-3315	HC-3330	HC-3340
Part Number	8172125	8172120	8172142
Height	21.5"	39.125"	49.75"
Width	8"	8"	8"
Depth	15"	15"	15"
Maintenance Clearance	22.75"	48.375"	51"
Capacity (lbs.)	15	30	40
Flow Rate (GPM)	36	34	11.5
Maximum Output Rate, Chlorine* (lbs./hr.) @ 15' Pool at listed flowrate	2.8	4.4	3.0
Maximum Output Rate, Chlorine* (lbs./hr.) @ 15' Pool at listed flowrate	4.8	7.9	5.7
Maximum Output Rate, Bromine* (lbs./hr.) @ 15' Pool at listed flowrate	0.6	1.1	1.7
Flow rate (GPM)	17.8	17.8	9.2
Output Rate, Chlorine* (lbs./hr.) @ 15' Pool at listed flowrate	2.1	3.4	2.4
Output Rate, Chlorine* (lbs./hr.) @ 15' Pool at listed flowrate	1.8	3.0	5.4
Output Rate, Bromine (lbs./hr.) @ 15' Pool at listed flowrate	0.3	0.6	0.9
Maximum Pool Size @ 34 GPM (Chlorine-Dial)	224,000	349,000	668,500
Maximum Pool Size @ 34 GPM (Bromine-Dial)	99,200	164,000	292,400
Maximum working pressure - 50 psi			
* Ratings based on use of 1" tractor tablets.			

WHEN ACCURACY IS CRITICAL, DON'T JUST TAKE OUR WORD FOR IT!

FlowVis® was the first - and is now the most - NSF 50 certified flow meter in the world! Because when accuracy matters, you should put your trust in the experts.

FLOWVIS® MODELS

Feature	FW15	FW2U	FW2V	FW2U	FW2S	FW3	FW3-40	FW4	FW6	FW8
NSF 50 Certified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pipe Size	1.5"	1.5"	2"	2"	2.5"	3"	3"	4"	6"	8"
Operating Range (GPM)	10-80	10-90	10-100	10-100	10-110	70-240	70-240	150-460	300-1000	600-1800
Average Accuracy	98.7%	98.7%	99.4%	99.0%	99.2%	98.9%	99.2%	99.6%	99.6%	N/A*
NSF 50 Level	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1

*FlowVis® model FW8 is available only with FlowVis® Digital Integration. For accuracy of this model, refer to the FW-8 information in the FlowVis Digital table below.

FLOWVIS® DIGITAL MODELS

Feature	FW15	FW15U	FW2	FW2U	FW2S	FW3	FW3-40	FW4	FW6	FW8
NSF 50 Certified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pipe Size	1.5"	1.5"	2"	2"	2.5"	3"	3"	4"	6"	8"
Operating Range (GPM)	10-80	10-90	10-100	10-100	10-110	70-240	70-240	150-460	300-1000	600-1800
Average Accuracy	98.6%	99.0%	99.8%	98.5%	98.3%	98.4%	98.0%	98.3%	98.9%	98.9%
NSF 50 Level	L1	L1	L1	L1	L1	L1	L1	L1	L2	L1

NOTE: FlowVis is the only NSF 50 certified Level 1 flow meter in the world today.

Guide for NSF 50 Accuracy Levels

- Level 1 (L1):** Average of absolute values of all single point deviations must be <2%. Single point deviations shall not exceed <4%.
- Level 2 (L2):** Average of absolute values of all single point deviations must be <5%. Single point deviations shall not exceed <7.5%.
- Level 3 (L3):** Average of absolute values of all single point deviations must be <10%. Single point deviations shall not exceed <12.5%.
- Level 4 (L4):** Average of absolute values of all single point deviations must be <12.5%. Single point deviations shall not exceed <15%.
- Level 5 (L5):** Average of absolute values of all single point deviations must be <15%. Single point deviations shall not exceed <20%.

AQUASTAR[®] VGBA-2017 PRODUCT SPECIFICATIONS

Suction Outlet Fitting Assembly (SOFA)

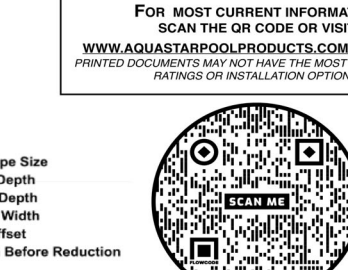
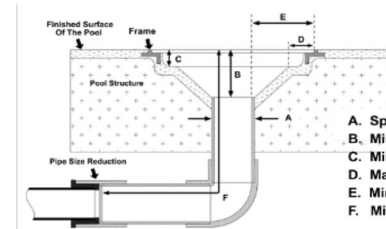
VGBA-2017 Flow Ratings, Sump Dimensions, Sump Flow Path Zone, and Head Loss Curves



DIRECTIONS: Please follow the SOFA specific flow rates, sump specifications, and flow path zone information below. The installation must conform to these minimum/maximum requirements including the SOFA dimension defined in Figure 1. The flow path zone is defined by dimensions A through E. The installed sump may be manufactured or field-built and it may be larger/deeper than Figure 1. Please write the Cover Model Number, orientation, and SOFA Model Flow Rating on the VGBA DRAIN COVER IDENTIFICATION INFORMATION label that comes with each AquaStar Pool Products, Inc. drain cover.

Cover Model Number: 9MFxxx

FIGURE 1 - SOFA MODEL & FLOW PATH



SOFA Model No.	Pipe Size (Nominal)	Pipe Depth (Minimum)	Orientation (Wall/Floor)	Flow Rating (GPM)	Head Loss Curve
9MF-9F_A-2b_B3_C1.6_D0.5_E2.8_F16	2" (b)	3"	Floor (f)	170	A
9MF-9F_A-2b_B3_C1.6_D0.5_E2.8_F16	2.5" (b)	3"	Floor (f)	186	B
9MF-9F_A-3b_B3_C1.6_D0.5_E2.5_F16	3" (b)	3"	Floor (f)	275	C
9MF-9F_A-4b_B9_C1.6_D0.5_E1.7_F16	4" (f)	5.6"	Floor (f)	258	D
9MF-9F_A-4b_B9_C1.6_D0.5_E1.8_F16	4" (b)	9.8"	Floor (f)	275	E
9MF-9W_A-1.5b_B3_C1.6_D0.5_E0.6_F16	1.5" (b)	3"	Wall (w)	126	F
9MF-9W_A-2b_B3_C1.6_D0.5_E2.8_F16	2" (b)	3"	Wall (w)	170	G
9MF-9W_A-2.5b_B3_C1.6_D0.5_E2.6_F16	2.5" (b)	3"	Wall (w)	186	H
9MF-9W_A-3b_B3_C1.6_D0.5_E2.5_F16	3" (b)	3"	Wall (w)</		

Fiberglass Field Built Sumps

- * Premium fiberglass & resin for maximum structural strength
- * Durable smooth gelcoat interior & pebble pipe
- * Exterior perimeter FRP watertight flange
- * Non-Metallic- No grounding
- * Rough sand exterior finish
- * Custom configurations fabricated

- * 2" Bottom (p/t.x fpt) for hydro relief valve
- * Threaded PVC SCH 40 pressure test plug for outlet (up to 8")
- * All PVC connections are ASTM 2466 compliant
- * Designed to ANSI/APSP/ICC-16 2017 for use only with noted SOFA (Suction Outlet Fitting Assembly) Covers



Size (inches)	ASA Part #	A	B	C	D	E	SOFA outer fpt x soc	SOFA List
9 x 9 x 12	FBS-50-809-3	11"	9"	12"	4.5"	6.5"	3"	A
12 x 12 x 12	FBS-50-812-4	14"	12"	12"	4.5"	6.5"	4"	B1
12 x 12 x 18	FBS-50-812-18-6	14"	12"	18"	4.5"	10"	6"	B2
18 x 18 x 20	FBS-50-818-6	20"	18"	20"	4.5"	10"	6"	C
18 x 18 x 24	FBS-50-818-24-8	20"	18"	24"	4.5"	13.5"	8"	D
24 x 24 x 30	FBS-50-824-30-10	26"	24"	30"	4.5"	17"	10" soc x soc	E

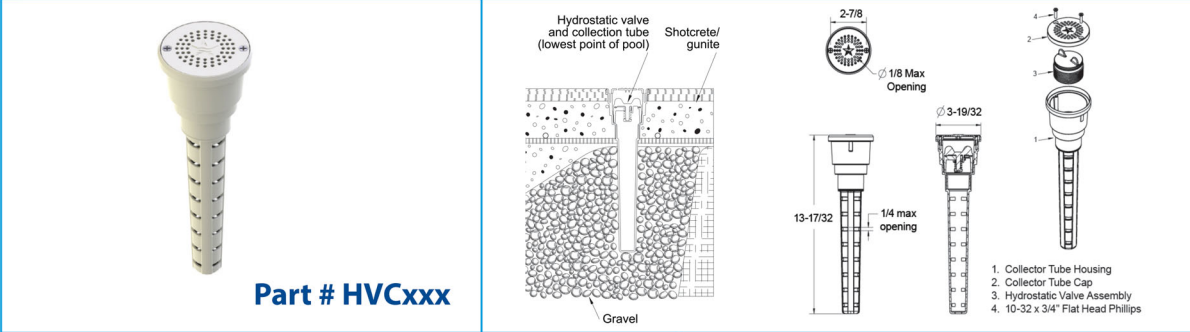
Compatible SOFA for A.S.A. MFG FBS Sumps					
List A	List B1	List B2	List C	List D	List E
9" x 9"	12" x 12" - 4"	12" x 12" - 6"	18" x 18" x 20"	18" x 18" x 24"	24" x 24"
Aquastar 9MFXXX	Aquastar 12MFXXX	Aquastar 12MFXXX	Aquastar 18MFXXX	Aquastar 18MFXXX	Aquastar 24XXX
WAWBRXXX 914XXX	WAV12WRXXX 1216XXX	WAV12WRXXX 1216XXX	WAV18WRXXX P18XXX	WAV18WRXXX P18XXX	WAV24XXX SUN18H9000X
Waterway 640-478V	Waterway 640-472V	Waterway 640-472V	Waterway 640-477V	Waterway 640-477V	Waterway 640-476V
Hayward WG1031HF	Hayward WG1032HF	Hayward WG1033HF			

- All Field Built Sumps shall be installed in accordance with the manufacturer's installation instructions.
- All SOFA covers shall be installed in accordance with the manufacturer's installation instructions.
- The A.S.A. MFG Inc. Fiberglass Field Built Sump is intended only to be installed in a reinforced concrete pool structure.
- Any field modifications made to the SOFA and not authorized by the manufacturer's installation instructions shall void the SOFA certification. No modification shall be made to the SOFA structure or flow path unless a new configuration has been certified as a new SOFA.
- Fiberglass Field Built Sump Life = Life of the Aquatic Center.

A.S.A. MFG INC. 14789 SW 111th St. Dunnellon, FL 34432 352-465-0236 Fax 352-465-0239 email: info@asamfg.com

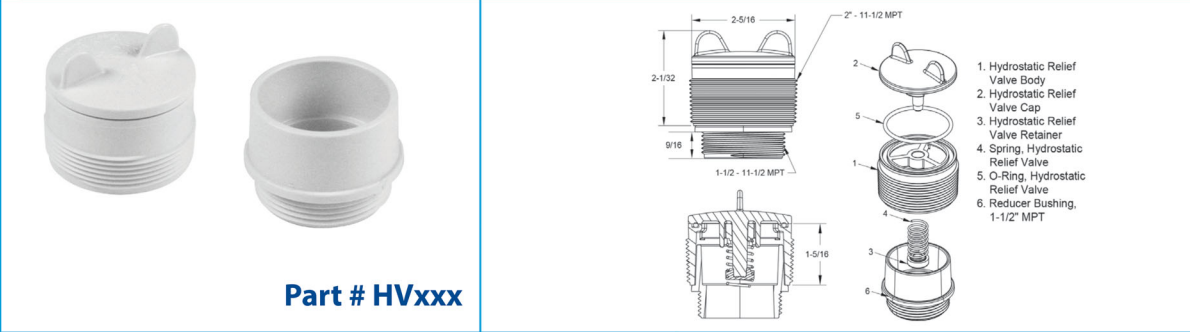
AQUASTAR Hydrstatic Relief Valves

Self-Contained Hydrostatic Valve Assembly



- Part # HVCxxx**
- FEATURES**
- Self-contained unit has a built-in collector tube
 - Installs directly into the pool finish with no additional plumbing connection required
 - Helps prevent swimming pool damage due to hydrostatic pressure beneath the pool shell when the pool is drained
- 12 per case
- HVC05xxx - Cap and Screws
- STANDARD COLORS**
- HVC101
 - HVC102
 - HVC103
 - HVC104
 - HVC105
 - HVC108

2" Hydrostatic Relief Valve



- Part # HVxxx**
- FEATURES**
- Equalizes pressure for high water tables
 - Fits enable easy twist for installation and removal
 - Fits any AquaStar and most other manufacturers' 2" threads
 - Manufactured from superior UV-resistant engineered polymers
 - Includes 2" x 1 1/2" reducer bushing
 - Reducer bushing must be glued into hydrostatic relief valve using ABS glue
- 25 per case
- STANDARD COLORS**
- HV101
 - HV102
 - HV103
 - HV104
 - HV105
 - HV108

P 877-768-2717 F 877-276-POOL Outside the US: P +1-805-620-5060 F +1-949-336-1940 info@aquastarpoolproducts.com www.aquastarpoolproducts.com

FLOW STAR® SKIMMER WITH WATER STOP FACE, FLOAT ASSEMBLY, BASKET, LID AND ADJUSTABLE COLLAR

Built in conformance with NSF 50 and SPS 3 standards

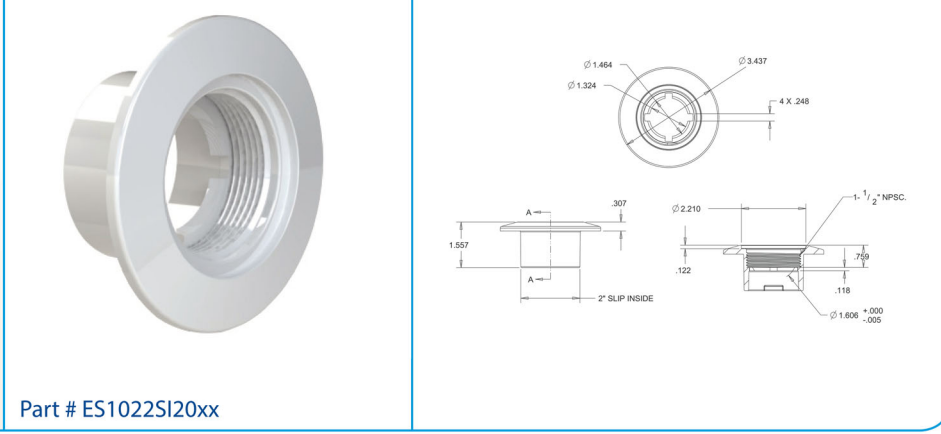
- FEATURES**
- Adjustable collar
New water stop lip secures the dip in the weir door
- Self-contained grille grip, water stop on the faceplate to prevent water leaks
- Large self-contained basket with lock-in feature (not for drain)
- Underwater dampers on the faceplate for noise reduction on weir plate - mounts on windy days
- Super strong engineered polymer upper housing
- Extra heavy duty PVC lower unit (no transitional glue required)
- 2" outside dip and 2" inside lip (outside skimmer)
- 2" thread for pressure testing (inside skimmer)
- Sub-in overflow or FRP line knock out
- Upper housing has pre-cut rear cutouts with pre-drilled holes for the area
- Skimmer Lid and Collar: G154 UV tested NSF 50 approved for commercial use, 25 GPM max, 35 GPM max - approved for residential use up to 100 GPM
- See page 112 for code compliance and listing
- Optional custom name-plates engraved on the lid (requires minimum 200 piece lot order)
- See page 112 for Skimmer with Cleaner Part 1 per case
- Part # SKR1xxx**
- For vinyl and fiberglass options, see pages 138-143

- STANDARD COLORS**
- SKR101 - White
 - SKR102 - Black
 - SKR103 - Light Gray
 - SKR104 - Blue
 - SKR105 - Dark Gray
 - SKR108 - Tan
- 3 lid options available (sold separately): round, square or snap-in round/square
- Optional vacuum plate with snap-in plug can be glued in order lid for easy storage p/n SK43101
- Optional FRP adapter converts skimmer fittings to 4" or 3" tee for improved hydraulics and code compliance p/n BFB101
- Optional vacuum plate with snap-in plug can be glued in order lid for easy storage p/n SK43101
- STANDARD COLORS**
- SKR101 - White
 - SKR102 - Black
 - SKR103 - Light Gray
 - SKR104 - Blue
 - SKR105 - Dark Gray
 - SKR108 - Tan
- Snap-in Round/Square Lid and Collar (sold separately) p/n SK650xx
- Square Lid and Collar (sold separately) p/n SK650xx
- Available without lid and collar SKR1N101 (white only)
1. Skimmer Body
2. 2" Port Plug
3. Float Assembly
4. Basket
5. Basket Rod
6. Collar
7. Lid
8. Weir Assembly
9. Weir Clip Qty 2

112

Large Wall Fitting (Fits Inside 2" Pipe)

- FEATURES**
- Fits inside 2" pipe, 1 1/2" FPT in the front face
 - Large flange camouflages pipe and surface construction variations
 - See also decorative cover p/n DCxx to make existing 1022s like new with different colors
 - Manufactured from engineered polymer UV-resistant ABS material
 - 250 per case
 - Also available in Clear (p/n ES1022S2000)



Part # ES1022S20xx

STANDARD COLORS 01 02 03

39 ProStar # VLK15Txx REPLACES # W4008WHP



Safety Vacuum Lock Wall Fitting (1 1/2" NPT)
Part # VLK20Txx (2" NPT)
Meets SPS-4-2009 Standard

TAG 6A & 6B - MAIN DRAIN SUMP - FBS-50-809-3 & FBS-50-812-4 - A.S.A. MFG FIBERGLASS SUMP

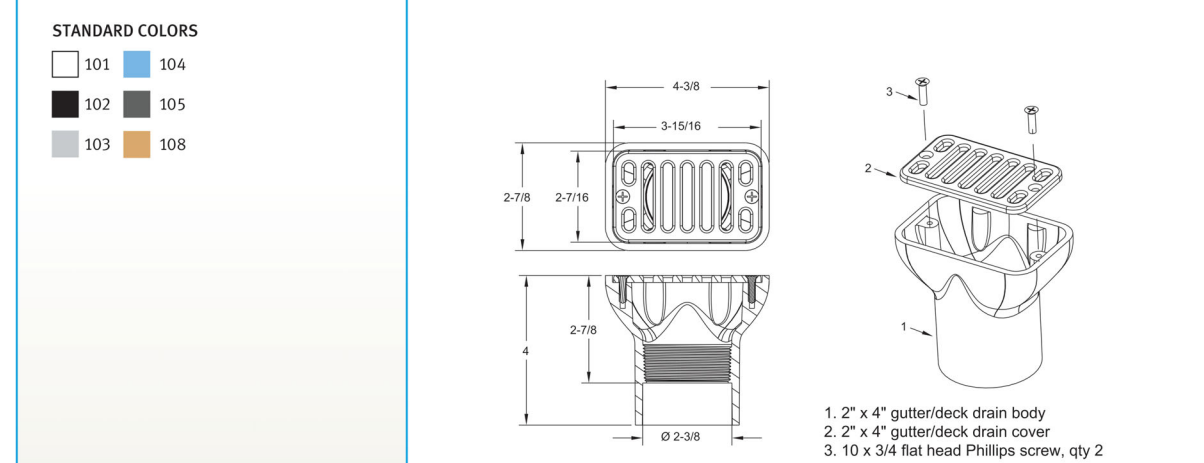
TAG 7 - HYDROSTATIC - HVC101 - SELF-CONTAINED HYDROSTATIC RELIEF VALVE

TAG 8 - SKIMMER - SKR101 - WHITE COMMERCIAL GRADE SKIMMER

TAG 9 - VACUUM INLET - VLK15T01 - VACUUM LINE FITTING W/ LOCK CAP

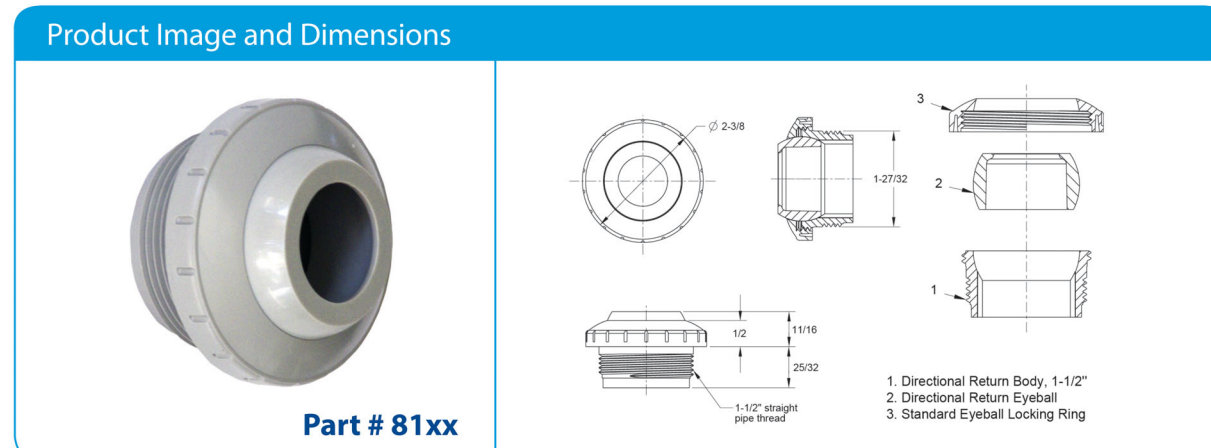
AQUASTAR 2" X 4" GUTTER DECK DRAIN (FITS 2" PIPE)

- FEATURES**
- Fits over 2" pipe
 - 1 1/2" threaded FPT inside for pressurizing/winterizing
 - Manufactured from engineered polymer UV-resistant PVC material (p/n GDD101 is manufactured from engineered polymer UV-resistant ABS material)
 - 1 1/2" reducer bushing available p/n BU1031-24x5
 - 1/2" stackable extender available p/n PE20101
 - Stainless steel screws
 - Also available as grate only with two screws
 - CAUTION: Not to be used as a suction outlet under any circumstances
 - 25 per case
 - Grate only p/n GDD10xx 25 per case
- Part # GDDxxx



P 877-768-2717 F 877-276-POOL Outside the US: P +1-805-620-5060 F +1-949-336-1940 info@aquastarpoolproducts.com www.aquastarpoolproducts.com

AQUASTAR Three-Piece Directional Eyeball Fitting 1 1/2" MPT



- Part # 81xxx**
- FEATURES**
- Screws into 1 1/2" FPT
 - Manufactured from engineered polymer UV-resistant ABS material
- 250 per case
- STANDARD COLORS**
- 8101
 - 8102
 - 8103
 - 8104
 - 8105
 - 8108
- Additional orifice size suffix:
82xx - 3/4"
83xx - 1/2"
84xx - Slotted Down-Jet
(i.e. 8201 = white 3/4" orifice)
Also available in Clear (p/n 8100, 8200, 8300, 8400)

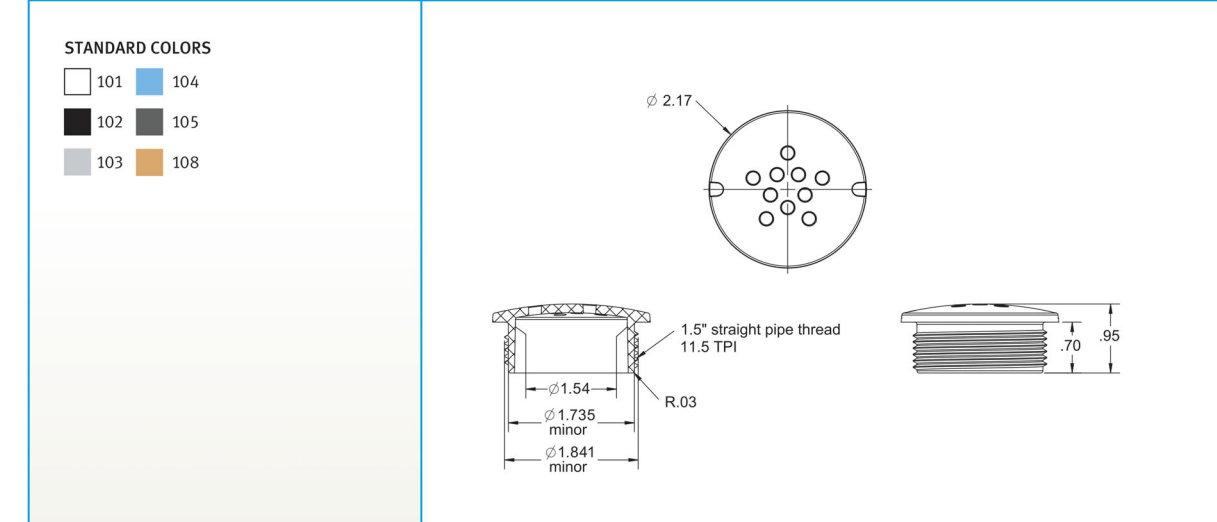
AquaStar Specific Eyeball GPM, Velocity and Head Loss Ratings

GPM	81xx (1")		82xx (3/4")		83xx (1/2")		84xx (Down-Jet)	
	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)	Velocity (fps)	Head Loss (ft)
5	2.2	0.1	3.6	0.5	8.2	2.4	10.1	2.1
10	4.4	0.5	7.3	1.8	16.3	8.7	20.2	8.1
15	6.6	1.1	10.9	3.7	24.5	18.6	30.3	20.7
20	8.8	1.9	14.5	6.2	32.4	32.0		
25	11.0	3.0	18.2	9.4				
30	13.2	4.4	21.8	13.1				
35	15.4	6.1	25.4	17.3				
40	17.6	8.0						
45	19.7	10.2						
50	21.9	12.7						

P 877-768-2717 F 877-276-POOL Outside the US: P +1-805-620-5060 F +1-949-336-1940 info@aquastarpoolproducts.com www.aquastarpoolproducts.com

AQUASTAR BUBBLER PLATE

- FEATURES**
- Available in six standard colors
 - No exposed components
 - Installs flush with bottom of pool/spa
- Part # BPxxx



P 877-768-2717 F 877-276-POOL Outside the US: P +1-805-620-5060 F +1-949-336-1940 info@aquastarpoolproducts.com www.aquastarpoolproducts.com



Mushroom Spray Fountain Model 1800-17

- Specifications**
- Model: 1800-17-96
Size: 7' 6" Diameter
- Features**
- Fiberglass dome
 - 10" Diameter fiberglass stem
 - Water flow: 90-400 gpm (spec)
 - Variety of colors
- Height Options**
- | Model Number | Height | Clearance |
|--------------|--------|-----------|
| 1800-17-84 | 7' 0" | 7' 0" |
| 1800-17-90 | 7' 6" | 7' 6" |
| 1800-17-96 | 8' 0" | 8' 0" |
| 1800-17-114 | 9' 6" | 9' 6" |
- GPM required for Curtain**
- | Length of Curtain in Feet | GPM | Minimum Feed Pipe Size |
|---------------------------|-----|------------------------|
| 8 | 400 | 4" |
| 5.5 | 290 | 4" |
| 3.5 | 200 | 3" |
| 1.5 | 150 | 2.5" |
| Rain Sprinkle | 90 | 2" |
- PO Box 3301, Healdston, NC 27536 | www.naturalstructures.com | info@naturalstructures.com

TAG 10 - OVERFLOW - GDD101 - COMMERCIAL OVERFLOW DRAIN

TAG 11 - RETURN INLET - ES1022S2001 W/ 8101 - WALL RETURN INLET - DIRECTIONAL

TAG 12 - RETURN INLET - ES1022S2001 W/ BP101 - FLOOR RETURN INLET W/ BUBBLER PLATE

TAG 13 - MUSHROOM FEATURE - 1800-17-96 - 7'6" DIA MUSHROOM FEATURE (200 GPM @ 3" DIA)



D. CLUGSTON



Kilian Engineering, Inc.
PO Box 3301, Healdston, NC 27536 | www.kilianengineering.com
(919) 438-8778 | CORPORATE LICENSE C-2277

DATE

REVISION

NO.

SHEET DISCUSSION
SPECIFICATIONS

PROJECT #: 2023015
DATE ISSUED: 01/22/2024
DRAWING BY: JVD
CHECKED BY: DSC/JLH

POWELL AMENITY
GREENHAWK
BATHHOUSE AMENITY
LILLINGTON, NC

SP5.1

AQUASTAR pool products
A Safe Drain is No Accident™

FillStar™ Water Level Control System for Pools and Spas

Durable and reliable

FEATURES
Can be installed alone or with drain/vacuum pool or spa at all times
Easy to install
Overflow protection and adjustable presets
Uses the same size lid and collar as AquaStar skimmers
Includes a 2" to 1½" adapter
¾" plug included if overflow is not needed
¾" water supply inlet
Valve is made of high-strength engineered resin
Float is injection-molded; thread is pre-molded
All fittings are made of PVC
No transition glue needed
Float thread is ½" MPT
1 per case

NEW

Part # AFBxxx Also available float only part # AFBV

STANDARD COLORS
AFB101 - White
AFB102 - Black
AFB103 - Light Gray
AFB104 - Blue
AFB105 - Dark Gray
AFB108 - Tan

Also available without lid and collar p/n AFBNxxx
Also available cover only p/n SKRTOX

P 877-768-2717 F 877-276-POOL Outside the US: P +1-805-620-5060 F +1-949-336-1940
info@aquastarpoolproducts.com www.aquastarpoolproducts.com

PROUDLY MADE IN THE USA

GLOBRITE® POOL AND SPA LED LIGHTS

AMAZING, BRILLIANT WHITE LIGHT THAT MAKES POOL DESIGNS COME ALIVE
Add the magic and vibrancy of Globrite White LED Lights to see your pool take possession of the night. These brilliant white lights are engineered with the most efficient LED lighting technology on the market today, and they can take your pool far beyond the ordinary. Globrite White LED Lights highlight your pool's form and finishes, such as colored glass, aggregate, pebbles, ceramics, stone tile and glass tile. Natural colors and textures are enhanced and spring to life. Plus, you can choose from three adjustable brightness levels to set the perfect mood.

Key Features
LED array
Creates powerful illumination with remarkable energy efficiency.
TS W usage
Delivers the equivalent of 190 W of incandescent light.

Optimized brightness
Globrite White models offer three levels of control. Choose from 100%, 75% or 50% brightness.
Added savings
With extended service life and energy efficiency.

Multiple niches
Available for concrete, vinyl and fiberglass.
Design flexibility
Compact design allows for innovative placement near steps, water features, swim-outs and more. Install in water as shallow as 6 inches.

tradeGrade
The tradeGrade line of products is recommended for use in the pool and spa industry. It is made of high-quality materials and is designed to meet the demands of the pool and spa industry.

400 Regency Forest Dr | Cary, NC 27518 | United States | 800.831.7335 | pentair.com

INTELLIBRITE® 5G WHITE LED UNDERWATER LED LIGHTS FOR SWIMMING POOLS AND SPAS

Featured Highlights

- The brightest most energy efficient white LED pool light on the market
- Energy efficient utilizing up to 56% less energy than comparable incandescent lights
- Superior lens geometry and innovative reflector design combine to create a wider beam and more uniform light distribution
- Pool lens can be rotated to 180 degrees to provide wide beam pattern (standard) or narrow beam pattern
- Compatible with Pentair Stainless steel and plastic niches
- Available in 120V and 12V versions
- Available in 300W, 400W, and 500W incandescent equivalencies

Ordering Information for Pool Lights

Product	Voltage	Cord Length (Ft.)	Incandescent Equivalency	Carton Qty.	Carton Wt. (Lbs.)
INTELLIBRITE 5g WHITE POOL LIGHTS - 300W EQUIVALENT, 120VOLT					
401109	120V	30 Ft.	300W Equivalency	1	
401101	120V	50 Ft.	300W Equivalency	1	
401102	120V	100 Ft.	300W Equivalency	1	
401103	120V	150 Ft.	300W Equivalency	1	
401104	120V	250 Ft.	300W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS - 300W EQUIVALENT, 12 VOLT					
401105	12V	30 Ft.	300W Equivalency	1	
401106	12V	50 Ft.	300W Equivalency	1	
401107	12V	100 Ft.	300W Equivalency	1	
401108	12V	150 Ft.	300W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS - 400W EQUIVALENT, 120VOLT					
401200	120V	30 Ft.	400W Equivalency	1	
401201	120V	50 Ft.	400W Equivalency	1	
401202	120V	100 Ft.	400W Equivalency	1	
401203	120V	150 Ft.	400W Equivalency	1	
401204	120V	250 Ft.	400W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS - 400W EQUIVALENT, 12 VOLT					
401205	12V	30 Ft.	400W Equivalency	1	
401206	12V	50 Ft.	400W Equivalency	1	
401207	12V	100 Ft.	400W Equivalency	1	
401208	12V	150 Ft.	400W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS - 500W EQUIVALENT, 120VOLT					
401300	120V	30 Ft.	500W Equivalency	1	
401301	120V	50 Ft.	500W Equivalency	1	
401302	120V	100 Ft.	500W Equivalency	1	
401303	120V	150 Ft.	500W Equivalency	1	
401304	120V	250 Ft.	500W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS - 500W EQUIVALENT, 12 VOLT					
401305	12V	30 Ft.	500W Equivalency	1	
401306	12V	50 Ft.	500W Equivalency	1	
401307	12V	100 Ft.	500W Equivalency	1	
401308	12V	150 Ft.	500W Equivalency	1	

Please refer to page 117 for CSA listed IntelliBrite Pool Lights.

UL LISTED

Junction Box - PJB4175

INTERMATIC

Junction Box - 4 Light Connection Pool & Spa Junction Box
Item PJB4175

PRODUCT DESCRIPTION
These polymer junction boxes are code compliant and provide safe, reliable connections for low-voltage lights. Specially designed for pools, pool-spa combinations, and landscape applications. Junction boxes are for outdoor use only.

FEATURES

- Accommodates flexible cords and non-metallic conduits from ½" to 1"
- Watertight, multi-lure enclosure
- Easy access ground bar
- PA114 Weather Mounting Bracket (sold separately)
- Complies with NEC Code 690.24 requirements for junction boxes
- 1-year warranty

APPLICATIONS

- Landscape Lighting
- Underwater Lighting

TECHNICAL DATA

General
Model Number: PJB4175
Description: 4 Light Connection Pool & Spa Junction Box
UPC Code: 07827994048
Brand: Intermatic
Country of Origin (Intermatic): NDA
Warranty Period: 1-Year Limited

Control Specifications
Number of Light Connections: 4

Mechanical Specifications
Mounting Options: Bracket, Post, Rod, Wall

Dimensions
Product Dimensions (H x W x D) in: 8.75 x 5 x 4.625
Non-Metallic Conduit Size: 1/2" - 1"

Material Specifications
Body Material: Plastic

Electrical Specifications
Number of Neoprene Knockouts: 5

Packaging
Unit Carton Dimensions (H x W x L) in: 5.25 x 5 x 9 in

Standards and Certifications

Technical specifications and other information are subject to change without notice. Images can vary from original. © 12/22/2022 1/3

D. CLUGSTON

PROFESSIONAL SEAL
048012
Kilian Engineering, Inc.
PO Box 43301, Raleigh, NC 27638 | www.kilianengineering.com
(919) 524-4388/8778 | CORPORATE LICENSE C-2277

TAG 14 - AUTOFILL - AFB101 - FILLSTAR - AUTOFILL LINE - WHITE

TAG 15 - LIGHT - 602104 - 190W EQUIVALENCY GLOBRITE WHITE LED LIGHTS

TAG 16 - LIGHT - 601108 - 400W EQUIVALENCY INTELLIBRITE WHITE LED LIGHTS

TAG 17 - JUNCTION BOX - PJB4175 - 4 LIGHT CONNECTION POOL & SPA JUNCTION BOX

Hand & Stair Rails

DMS-101

- Tubing: 1.90" OD
- Wall Thickness*: .049" or .065"
- Stainless Steel: 304 or 316L Marine Grade** (add -MG to part number)
- Bends: 6" Radius
- Options: Powder-coating and Sealed/Steel Salt Friendly
- Recommended Anchors: AS-100P or AS-100B (order separately)
- Recommended Escutcheon: EP-100F (order separately)
- Sold as a single rail
- * Minimum rail thickness is .065 for Commercial
- ** Minimum requirement for salt pools is 316L Marine Grade

DMS-101

Model No.	Description	Weight	Shipping Length	Width	Height
DMS-101A	48" Center Grab Rail, .049"	13 lbs - 16 lbs	59"	39"	2"
DMS-101B	48" Center Grab Rail, .065"	13 lbs - 16 lbs	59"	39"	2"

SRSmith www.srsmith.com / 800.824.4387

Hand & Stair Rails

DMS-102

- Tubing: 1.90" OD
- Wall Thickness*: .049" or .065"
- Stainless Steel: 304 or 316L Marine Grade** (add -MG to part number)
- Bends: 6" Radius
- Options: Powder-coating and Sealed/Steel Salt Friendly
- Recommended Anchors: AS-100P or AS-100B (order separately)
- Recommended Escutcheon: EP-100F (order separately)
- Sold as a single rail
- * Minimum rail thickness is .065 for Commercial
- ** Minimum requirement for salt pools is 316L Marine Grade

DMS-102

Model No.	Description	Weight	Shipping Length	Width	Height
DMS-102A	54" Center Grab Rail, .049"	15 lbs - 19 lbs	59"	39"	2"
DMS-102B	54" Center Grab Rail, .065"	15 lbs - 19 lbs	59"	39"	2"
DMS-102P	54" Center Grab Rail, .049" w/welded mounting plate	15 lbs - 19 lbs	59"	39"	2"

SRSmith www.srsmith.com / 800.824.4387

Standard Plus Ladder

Stainless Steel Tread Ladder

- Tubing: 1.90" OD
- Wall Thickness*: .065", .109" or .145"
- Stainless Steel: 304
- Treads: LTDF-103 (Stainless Steel)
- Bends: 4" Radius
- Options: Powder-coating and Sealed/Steel Salt Friendly (rails only)
- Recommended anchors: AS-200B for 1.50" and AS-100B for 1.90" (order separately)
- Recommended escutcheons: EP-150 for 1.50" and EP-100F for 1.90" (order separately)
- * Call Customer Service at 800.824.4387 for availability of ladders of 1.50"OD tubing

Model No.	Description	Weight	Shipping Length	Width	Height
10037 to 10039	23" 2-Step Ladder with .065", 109", 145" tubing	30, 42, 54 lbs	61"	29"	2"
10040 to 10042	23" 3-Step Ladder with .065", 109", 145" tubing	14, 20, 24kg	155cm	74cm	5cm
10043 to 10045	23" 4-Step Ladder with .065", 109", 145" tubing	38, 50, 62 lbs	70"	28"	2"
10046 to 10048	23" 5-Step Ladder with .065", 109", 145" tubing	16, 23, 29kg	171cm	71cm	5cm
10049 to 10051	23" 6-Step Ladder with .065", 109", 145" tubing	46, 64, 78 lbs	90"	28"	2"
10052 to 10054	23" 3-Step Ladder with .085", 109", 145" tubing	21, 28, 35kg	228cm	71cm	5cm
10055 to 10057	23" 4-Step Ladder with .085", 109", 145" tubing	42, 58, 72 lbs	85"	39"	2"
10058 to 10060	23" 5-Step Ladder with .085", 109", 145" tubing	20, 28, 33kg	216cm	99cm	5cm
10061 to 10063	35" 2-Step Ladder with .065", 109", 145" tubing	48, 66, 80 lbs	85"	39"	2"
10064 to 10066	35" 3-Step Ladder with .065", 109", 145" tubing	22, 30, 39kg	216cm	99cm	5cm
10067 to 10069	35" 4-Step Ladder with .065", 109", 145" tubing	34, 46, 60 lbs	97"	39"	2"
10070 to 10072	35" 5-Step Ladder with .065", 109", 145" tubing	15, 22, 29kg	150cm	99cm	5cm
10073 to 10075	35" 6-Step Ladder with .065", 109", 145" tubing	38, 56, 70 lbs	70"	40"	2"
10076 to 10078	35" 7-Step Ladder with .065", 109", 145" tubing	17, 25, 32kg	193cm	102cm	5cm
10079 to 10081	35" 8-Step Ladder with .065", 109", 145" tubing	44, 64, 78 lbs	75"	40"	2"
10082 to 10084	35" 9-Step Ladder with .065", 109", 145" tubing	20, 28, 35kg	193cm	102cm	5cm
10085 to 10087	35" 10-Step Ladder with .065", 109", 145" tubing	50, 70, 86 lbs	70"	40"	2"
10088 to 10090	35" 11-Step Ladder with .065", 109", 145" tubing	23, 32, 40kg	193cm	102cm	5cm

SRSmith www.srsmith.com / 800.824.4387

pool access equipment

multilift™

Lift Color

Due to printing technology actual color may differ.

New Construction Jig with Anchors 500-5000A

Wheel-A-Way mobility option provides flexibility to transport the lift if needed.

Optional folding seat assembly

A flanged pool lift, with left or right side mounting and optional folding seat version.
Third-party tested & verified ADA compliant
Integrated armrests
State of California compliant
350 lb/159kg lifting capacity
Retrofit anchor jig is standard
Optional folding seat assembly
LiftOperator® Intelligent Controller
Powder-coated stainless steel and aluminum construction

ADA COMPLIANT

Model No.	Description	Shipping - (Class 150)
675-0000	multilift	Weight: 200 lbs/90kg Length: 59" Width: 28" Height: 120cm 71cm 69cm
675-0000A	multilift, no anchor	

Parts & Accessories

- 100195 Battery
- 500-5200T Cover
- 500-5500 Wheel-A-Way
- 900-1000 Seat Belt
- 300-6700A Anchors, set of 4
- 300-6900 Retrofit Anchor Jig
- 300-6800A Anchor Bolts, set of 4
- 970-5000T Seat Saver Cover
- 900-6000 Stability Strap
- 170-3000A Armrest Replacement (pair)

multilift with Folding Seat

Model No.	Description	Shipping - (Class 77.5)
675-0100	multilift with folding seat*	Weight: 226 lbs/103kg Length: 70" Width: 24" Height: 127cm 61cm 71cm
675-0100N	multilift with folding seat, no anchor*	
675-0105	multilift with armrests and folding seat	
675-0105N	multilift with armrests and folding seat, no anchor	

Parts & Accessories

- 100195 Battery
- 500-5100CT Folding Seat Cover
- 160-4000T Folding Seat
- 900-2000 Stability Vest
- 900-4000 Seat Pad
- 970-0000T Seat Saver Cover
- 170-2320 Armrest Assembly, gray, left & right

New Construction Guidelines

Scenario	Pool Lift	Anchor Jig
Order pool lift and new construction jig at same time	675-3000	500-5000 (no anchors)
Order new construction jig ahead of pool lift	675-3000N	500-5000A (comes with anchors)

SRSmith www.srsmith.com / 800.824.4387

TAG 18 - HANDRAILS - DMS-101B-MG - MARINE GRADE DECK MOUNTED HANDRAIL - SHORT

TAG 19 - HANDRAILS - DMS-102B-MG - MARINE GRADE DECK MOUNTED HANDRAIL - STANDARD

TAG 20 - LADDERS - 10054 MG - MARINE GRADE DECK MOUNTED COMMERCIAL LADDER

TAG HC - MULTILIFT - ADA COMPLIANT HANDICAP LIFT

DATE

REVISION

NO.

SHEET DISCUSSION

SPECIFICATIONS

PROJECT #: 2023015
DATE ISSUED: 01/22/2024
DRAWING BY: JVD
CHECKED BY: DSC/JLH

POWELL AMENITY GREENHAWK BATHHOUSE AMENITY LILLINGTON, NC

SP5.2