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License Number #30782, #60102

Project No. : **2302386**
Project Name : **ISBEL RESIDENCE**
Project Address : **282 SW BREEZY DR, LAKE CITY FL 32025**

A. ANSI/APSP -15 WORKSHEET

1. Calculate Pool Circulation Volume: $V := 13146\ gal + 524\ gal = 13670\ gal$

2. Determine preferred turnover time in hours : $t := 6\ hr = 360\ min$

3. Determine flow rate : $Q_1 := \frac{V}{t} = 37.972\ gpm$

4. Spa : Number of jets, $n := 6$

$Q_2 := n \cdot 12\ gpm = 72\ gpm$

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

Calculated flow rate $Q_c := \mathrm{Trunc}\left(\max\left(Q_1, Q_2\right), 1\ gpm\right) + 1\ gpm = 72\ gpm$

Minimum design flow rate $Q_{min} := 36\ gpm$

Maximum flow rate $Q := \max\left(Q_c, Q_{min}\right) = 72\ gpm$

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Date: 2023.01.24 13:33:55 -05'00'

PIPE SIZE:

Suction Piping to be : 2.5" to keep velocity @ **6 fps** max at flow rate = $88\ gpm$

Return Piping to be : 2.5" to keep velocity @ **8 fps** max at flow rate = $117\ gpm$

FLOW AND FRICTION LOSSES PER FOOT - SCH. 40 PVC PIPE						
Pipe size (in)	Velocity					
	6 ft/s		8 ft/s		10 ft/s	
	gpm	ft	gpm	ft	gpm	ft
1	16	0.14	21	0.23	26	0.35
1 1/2	37	0.08	50	0.14	62	0.21
2	62	0.06	82	0.1	103	0.16
2 1/2	88	0.05	117	0.09	146	0.13
3	138	0.04	181	0.07	227	0.1
4	234	0.03	313	0.05	392	0.07
5	534	0.02	712	0.03	890	0.05

Filter:

(As Listed or Equal): Jandy Cartridge Filter area = $460\ ft^2$

Filter factor (cartridge): $F_f := 0.375 \cdot \frac{gpm}{ft^2}$

Minimum filter size required (area): $F_A := \frac{Q}{F_f} = 192\ ft^2$

Filtration Pump (As Listed or Equal):

- Selection from APSP Database on **Curve A (less than 17000 gallons)**
or,
Curve C (greater than 17000 gallons).

- For multi-speed and variable speed filter pumps, at least one speed shall have the flow listed for flow Curve A/ Curve C less than the maximum filtration flow rate calculated above.

Manufacturer : Jandy | Model : e-Pump VS (VSSHP270AUT) | Size / HP = 2.7

- Flow rate (low speed) $11.4\ gpm$ @ 600 rpm

- Flow rate (high speed) $69.3\ gpm$ @ 3450 rpm

Notes
- Suction piping in front of pump inlet must be 4 pipe diameters in length. Must have 18" of straight pipe after the filter for solar.

B. ANSI/APSP -7 WORKSHEET

Suction Piping to be : 2.5" to keep velocity @ **8 fps** max at flow rate = $117\ gpm$

Return Piping to be : 2.5" to keep velocity @ **8 fps** max at flow rate = $117\ gpm$

Maximum system flow rate $Q = 72\ \boldsymbol{gpm}$

FLOW AND FRICTION LOSSES PER FOOT - SCH. 40 PVC PIPE						
Pipe size (in)	Velocity					
	6 ft/s		8 ft/s		10 ft/s	
	gpm	ft	gpm	ft	gpm	ft
1	16	0.14	21	0.23	26	0.35
1 1/2	37	0.08	50	0.14	62	0.21
2	62	0.06	82	0.1	103	0.16
2 1/2	88	0.05	117	0.09	146	0.13
3	138	0.04	181	0.07	227	0.1
4	234	0.03	313	0.05	392	0.07
5	534	0.02	712	0.03	890	0.05

SIMPLIFIED TDH :

1. Friction loss (in suction/trunk pipe) in 2.5" pipe per ft at $Q = 72\ \boldsymbol{gpm}$ $f_{suction} := 0.09$
2. Friction loss (in return pipe) in 2.5" pipe per ft at $Q = 72\ \boldsymbol{gpm}$ $f_{return} := 0.09$
3. Length of suction pipe $L_{suction} := 80\ \boldsymbol{ft}$

   TDH in suction pipe $TDH_{suction} := L_{suction} \cdot f_{suction} = 7.2\ \boldsymbol{ft}$
4. Length of return pipe $L_{return} := 130\ \boldsymbol{ft}$

   TDH in return pipe $TDH_{return} := L_{return} \cdot f_{return} = 11.7\ \boldsymbol{ft}$
5. TDH in Piping $TDH_{piping} := TDH_{suction} + TDH_{return} = 18.9\ \boldsymbol{ft}$
6. Filter loss in TDH $TDH_{filter} := 7\ \boldsymbol{ft}$
7. Heater loss in TDH $TDH_{heater} := 15\ \boldsymbol{ft}$
8. All other losses $TDH_{other} := 16.0\ \boldsymbol{ft}$ ...head losses in fittings, etc
9. Total simplidied TDH $TDH := TDH_{piping} + TDH_{filter} + TDH_{heater} + TDH_{other} = 56.9\ \boldsymbol{ft}$

Main Drain Cover (As Listed or Equal):

Manufacturer : CMP

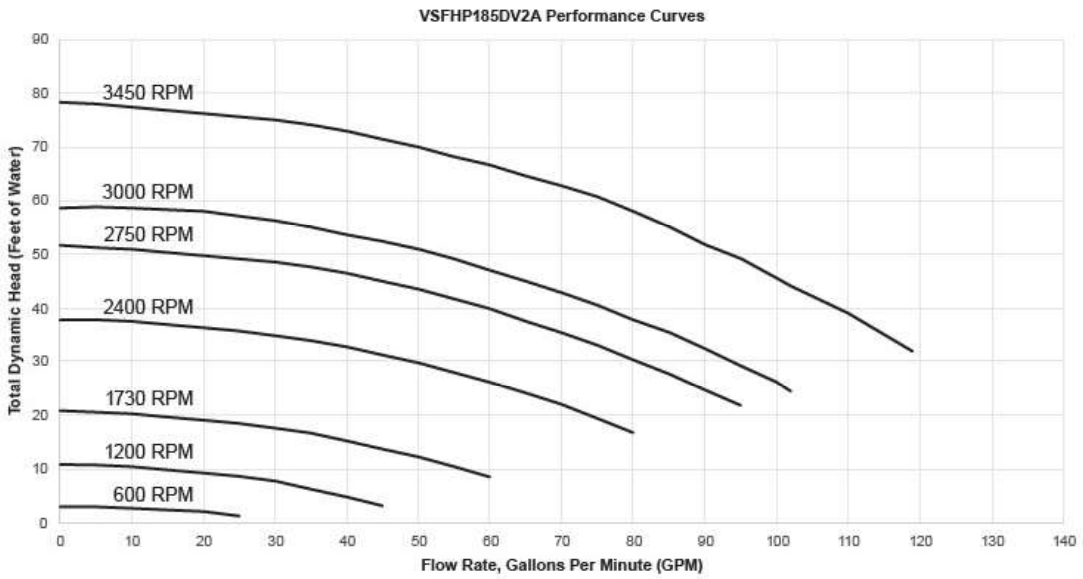
Model : 25215-000-000

Max. cover flow rate (floor) = 175 gpm

Cover Replacement Date = 7 years

Maximum System Flow Rate for Suction Outlet Fitting Assembly (SOFA) at pump full speed pump curve (3450 RPM) and at system $TDH = 56.9\ ft$ is $Q_{max} := 85\ gpm$

PERFORMANCE



CONSTRUCTION CODE REQUIREMENTS

THESE PLANS WERE PREPARED AND SHALL COMPLY WITH THE

a. FLORIDA STATE:

-2020 FLORIDA BUILDING CODE 7th EDITION, RESIDENTIAL, CHAPTER NO. 45, SECTION: E4501
-2020 FLORIDA BUILDING CODE 7th EDITION, ENERGY CONSERVATION, CHAPTER NO. 4
SECTION: R403.10 POOLS AND PERMANENT SPA ENERGY CONSUMPTION (MANDATORY)
SECTION: R403.11 PORTABLE SPA (MANDATORY)
SECTION: R403.12 RESIDENTIAL POOL AND PERMANENT SPA
-2020 FLORIDA STATUTES, CHAPTER NO. 515 RESIDENTIAL SWIMMING POOL SAFETY ACT

b. FEDERAL GOVERNMENT:

-2014 ANSI/ APSP/ ICC-3: AMERICAN NATIONAL STANDARD FOR PERMANENTLY INSTALLED RESIDENTIAL SPAS SWIM SPAS R4501.6.1
-2011 ANSI/ APSP/ ICC-5: AMERICAN NATIONAL STANDARD FOR RESIDENTIAL INGROUND SWIMMING POOLS R4501.6.1
-2013 ANSI/ APSP-7: AMERICAN NATIONAL STANDARD FOR SUCTION ENTRAPMENT AVOIDANCE IN SWIMMING POOLS, WADING POOLS, SPAS, HOT TUBS AND CATCH BASINS R4501.6.1, R4501.6.3, R4501.6.6
-2013 ANSI/ASHRAE-15: SAFETY STANDARDS FOR REFRIGERATION SYSTEMS.
-2012 ANSI/ APSP/ ICC 4-12 AMERICA NATIONAL STANDARD FOR ABOVE-GROUND/ ON-GROUND RESIDENTIAL SWIMMING POOLS R4501.6.1.
-2013-ANSI/ APSP/ ICC 6-13 AMERICA NATIONAL STANDARD FOR RESIDENTIAL PORTABLE SPAS AND SWIM SPAS
-2017 NATIONAL ELECTRICAL CODE (NEC)ARTICLE NO. 680

IMPORTANT NOTE:

POOL CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL ABOVE LISTED CODE REQUIREMENTS AS WELL AS ANY ADDITIONAL REQUIREMENTS PER LOCAL MUNICIPALITY THAT MAY BE MORE STRINGENT THAN THE ABOVE LISTED CODES REQUIREMENTS.

GENERAL POOL / SPA REQUIREMENTS:

- THE POOL CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL DETAIL DESIGN REQUIREMENTS FOR EACH INDIVIDUAL POOL IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, AND ALL CONSTRUCTION SHALL MEET ALL APPLICABLE CODES INCLUDING PLUMBING, ELECTRICAL AND GAS.
- SEE ANSI/ NSPI-5 FOR DIVING WATER ENVELOPS.
- SLIDERS SHALL ALSO MEET THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
- LADDER OR STAIRS ARE TO BE PROVIDED. ENTRY/ EXIT REQUIRED AT THE SHALLOW END AND DEEP END IF OVER 5 FEET DEEP ACCEPTABLE ARE STAIRS (10" MINIMUM TREAD WITH 240 SQUARE INCH MINIMUM AREA, 12" RISER WITH INTERMEDIATE TREADS AND RISERS UNIFORM). LADDERS, UNDERWATER SEATS, AND SWIM-OUTS (MAXIMUM 20" BELLOW WATERLINE
- OUTDOOR SWIMMING POOLS ARE TO HAVE BARRIERS THAT COMPLY WITH THE FLORIDA BUILDING CODE.
- ALL WALL SURROUNDING INDOOR SWIMMING POOLS SHALL COMPLY WITH THE FLORIDA BUILDING CODE.
- FINAL ELECTRICAL, AND BARRIER CODE, INSPECTIONS SHALL BE COMPLETED PRIOR TO FILING THE POOL WITH WATER.

SPECIAL SPA REQUIREMENTS:

-MAXIMUM WATER DEPTH 4', MAXIMUM SEAT DEPTH 28".
-FLOOR SLOPE 1:12
- MIN. TREAD 10" X 12" MAX. RISER.
RISER EXCEPT THE BOTTOM STEP MAY BE 14" IF IT IS THE SEAT.
-INTERMITTENTLY THE SPA SHALL HAVE A ONE HOUR TURNOVER, IF CONTINUOUS A SIX HOUR TURN OVER.
-MAXIMUM TEMPERATURE 104 DEGREES.

GENERAL STRUCTURAL NOTES:

1. TILE MINIMUM CONCRETE COVER FOR #3 REBAR IS TO BE 2".
2. CONTINUOUS #3 REBAR SPLICES SHALL BE 18" (40 BAR DIAMETERS) MINIMUM LAP, STEEL TO BE BENT, LAPPED, AND PLACED IN CONFORMANCE WITH A.C.J. STANDARDS AND SPECS.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI AT 28 DAYS.

ELECTRICAL REQUIREMENTS:

-WIRING AND BONDING AND ALL ELECTRICAL SHALL CONFORM TO NEC ARTICLE 680 (2017).
-NO OUTLET OR OVERHEAD POWER WITHIN 10', IF WITHIN 15' PROJECT WITH GFI.
-BRASS FITINGS TO J-BOX OR TRANSFORMER WHICHEVER IS FIRST WHICHEVER IS FIRST, EXCEPT WHERE PVC IS APPROVED.
-BONDING GRID PER NEC 2017 680, 26
OR
-NEC 2017, 680, 26 (B) (2) (b) ALTERNATE MEANS EQUIPOTENT BONDING CONDUCTOR MUST FOLLOWING REQUIREMENTS:

(1) 8 AWS BARE SOLID COPPER BONDING CONDUCTOR

(2) THE BONDING CONDUCTOR MUST FOLLOW THE CONTOUR OF THE PERIMETER SURFACE

(3) LISTED SPLICING DEVICES

(4) BONDING CONDUCTOR MUST BE 18 TO 24 INC. FROM THE INSIDE WALLS OF THE POOL

(5) BONDING CONDUCTOR MUST BE WITHIN OR UNDER THE PERIMETER SURFACE 4 TO 6 IN. BELOW THE SUBGRADE.

- ALL CONTROL ENCLOSURES (INCLUDING ACCESSORY ELECTRONIC EQUIPMENT WITH METAL ENCLOSURES), PUMP MOTORS, HEATERS, LIGHTS, LIGHT TRANSFORMERS, HANDRAIL AND LADDER DECK ANCHORS, WINDOW AND DORRR FRAMES WITHIN 5 FEET OR LESS OF THE WATER'S EDGE ARE TO BE GROUNDED IN ACCORDANCE WITH ARTICLE 680 OF THE 2017 NEC.

- ALL POOL PUMP MOTOR'(S) TO HAVE GFCI PROTECTION (NEC 680.22 (B), FBC SECTION 27), AND FRC 4101.16 (EXCEPTION FOR SINGLE FAMILY DWELLING IS REMOVED FROM THE 2020 FBC).

VELOCITY AND FLOW RATE NOTES:

- WATER VELOCITY IN FIELD-FABRICATED PIPING IS BASED ON THE MAXIMUM SYSTEM FLOW RATE.

MAXIMUM WATER VELOCITY IN BRANCH SUCTION PIPING (SHOWN IN FIGURE 1) SHALL BE

LIMITED TO 6 FEET PER SECOND (FPS) WHEN ONE OF A PAIR IS BLOCKED. IN NORMAL OPERATION THEN,

THE BRANCH SUCTION PIPING VELOCITY IS 3 FEET PER SECOND. ALL OTHER SUCTION PIPING VELOCITIES

SHALL BE 8 FPS FOR RESIDENTIAL POOLS.

- THE MAXIMUM SYSTEM FLOW RATE SHALL BE DETERMINED BY ONE OF THE FOLLOWING:

TDH CALCULATION FOR THE CIRCULATION SYSTEM OF EACH PUMP, OR A SIMPLIFIED TDH CALCULATION. DETERMINES THE MAXIMUM SYSTEM NOW RATE USING THE SHORTEST DISTANCE BETWEEN THE POOL AND THE PUMP. OMITTING THE CALCULATIONS FOR FIT LINGS/ VALVES, AND USING THE BEST PERFORMANCE RATINGS FOR FILTERS AND HEATERS: OR

THE MAXIMUM FLOW CAPACITY OF THE PUMP, WHICH SHALL BE LIMITED BY THE CRITERIA OF ANSI/ APSP-7-4.4 (NOTE ABOVE).

FILTERS

FILTER SIZE TO BE DETERMINED BASED ON CALCULATED FLOW RATE (GPM) DIVIDED BY THE FOLLWING FILTER CAPACITY (PER APSP -15):

A. CARTRIDGE = 0.375

B. SAND = 15

C. D.E. = 2

-FILTER BACKWASH VALVE (WHEN USED) MUST BE 2" (MIN.)

OR DIAMETER OF THE RETURN PIPE, WHICHEVER IS GREATER.

EQUIPMENT/PIPING REQUIREMENTS:

-THE MAXIMUM SYSTEM FLOW RATE "SEE TDH CALCULATIONS FOR NOTES".

- EQUIPMENT FOUNDATIONS AND ENCLOSURES ALL POOL MOTORS AND EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

-ACCESSIBILITY AND CLEARANCE, EQUIPMENT SHALL BE SO INSTALLED AS TO PROVIDE READY ACCESSIBILITY FOR CLEANING, OPERATING, MAINTENANCE AND SERVICING.

-CIRCULATION SYSTEMS, COMPONENTS AND EQUIPMENT SHALL COMPLY WITH NSF 50.

- THE MAXIMUM TURNOVER RATE IS 12 HOURS.

- ALL FILTERS SHALL HAVE AN AIR RELEASE AND PRESSURE GAUGE.

- SURFACE SKIMMERS SHALL MEET NSF 50 AND THERE SHALL BE ONE FOR EVERY 800 SQUARE FEEL OR SURFACE AREA ANDA 25 GPM MINIMUM EACH.

- RETURN INLETS SHALL BE A MINIMUM OF ONE FOR EVERY 300 SQUARE FEET, RETURN VELOCITY 10FT/S, SPACING OF 10 FEET MINIMUM APART, EXCEPT THERAPY JETS AND SWIM JETS.

- HYDROSTATIC RELIEF DEVICE, IN AREAS OF ANTICIPATED WATER TABLE AN APPROVED HYDROSTATIC REFIEF DEVICE SHALL BE INSTALLED.

VALVES SHALL BE APROVED BY THE FLORIDA BUILDING CODE.

- HEATER SHALL MEET ANSE-Z21.56 OR UL 1261 OU UL 559 AND ANSI/APSP.

- DISINFECTANT EQUIPMENT SHALL COMPLY WITH NSF-50 ANSI/NSPI-4-12 AND ANSI/NSPI-5 2011 BYPASS ON HEATERS.

- PRIMER AND GLUE ON EXPOSED ABOVE-GROUND ARE PIPING NOT REQUIRED TO BE COLORED.

-PIPING SHALL BE SCHEDULE 40 PVC, NSF-PW, MAXIMUM PRESSURE VELOCITY 10 FT/S, AND SUCTION 8 FT/S.

- MAIN DRAINS ARE OPTIONS "SEE TDH CALCULATIONS" OF THIS SET FOR DETAILS AND SPECIFICATIONS.

- VACCUM CLEANER SUCTION FITTINGS SHALL BE PROTECTED BY A PERMANENTLY SELF-CLOSING FLAPPER VALVE MEETING ANSI/ASME A112.12.8M AND ANSI/APSP-7.

- ALL RETURN INLETS MUST BE DIRECTIONAL INLET FITTINGS.

- THE FOLLOWING SHALL BE LABELED AT THE CIRCULATION EQUIPMENT LOCATION:

PIPE

VALVES

PUMP(S) OFF SWITCH

- WHERE REQUIRED MEET FBC 2020 GAS AND MECHANICAL CODES (OR CODES CURRENTLY ENFORCER WITH MUNICIPALITY)

ENTRAPMENT PROTECTION FOR SUCTION INLETS:

- ENTRAPMENT PROTECTION FOR SUCTION OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF ANSI/PPS-7-13

PUMPS:

-HAIR AND LINT STRAINERS ARE TO BE USED WITH RECIRCULATION SYSTEMS.

-FILTRATION PUMPS TO BE SIZED (BASED ON CALCULATED FLOW RATE IN GPM) TO TURNOVER POOL VOLUME IN SIX (6) HOUR MINIMUM OR 36 GPM (MIN.) WHICHEVER IS GREATER.

-FILTER COMPONENTS SHALL HAVE SUFFICIENT CAPACITY TP PROVIDE A COMPLETE TURNOVER OF POOL WATER IM TWELVE (12) HOUR OR LESS.

- RECIRCULATION PUMPS LESS THAN ONE HORSEPOWER (1 HP) SHALL BE TWO OR MORE PUMPS WITH ADEQUATE CONTROLLER. THE DEFAULT CIRCULATION MUST BE THE RESIDENTIAL FILTRATION (SLOWER) SPEED. THE SIMPLIFIED TOTAL DYNAMIC HEAD SHEET TO BE CALCULATED AND PLUMBING SIZE DETERMINED BASED ON (HIGHER) SPEED. THE HIGHER SPEED OVERRIDE IS NOT TO EXCEED ONE NORMAL DAY'S CYCLE OR 24 HOURS, WHICHEVER IS LESS I.E.: CONTROLLER RESETS PUMP TO SLOWER SPEED AT THE START OF THE NEXT CIRCULATIONS CYCLE.

- PUMPS THAT ARE USED FOR CIRCULATION ONLY (WITHOUT FILTRATION). SPA THERAPY PUMPS OR WATER FEATURE PUMPS ARE "EXEMPT" FROM THIS REQUIREMENT.

- POOL FILTRATION PUMPS SUCTION LINE (BEFORE PUMP) SHALL HAVE A STRAIGHT LENGHT OF PIPE (4 PIPE DIAMETERS MIN.) I.E.: 2" SUCTION LINE SHOULD HAVE (4 X 2" DIA.) 8" OF STRAIGHT PIPE FOM SUCTION INLET TO THE FIRST PVC FITTING.

SUCTION TYPE - SKIMMER / VACUUM NOTES:

- MAIN DRAINS ARE NOT REQUIRED. WHEN MAIN DRAINS ARE NOT INCLUDED THE SKIMMER OR SURFACE OVERFLOW MUST BE HYDRAULICALLY DESIGNED TO THE MAXIMUM FLOW RATE OF THE POOL. SKIMMERS SHALL BE VENTED TO ATMOSPHERE THROUGH OPENINGS IN THE LID, OR THROUGH A SEPARATE VENT PIPE, DESIGNED IN ACCORDANCE WITH ANSI-APSP-7 7.2, OR INCORPORATE AN EQUALIZER LINE. (SEE FIGURE ON SHEET 04). SKIMMER EQUALIZER LINES, WHEN USED SHALL BE LOCATED ON THE WALL.

- WITH THE CENTER NO MORE THAN 18 INCHES (457 MM) BELOW THE MAXIMUM OPERATING LEVEL. IT SHALL BE PROTECTED BY A LISTED SUCTION OUTLET COVER/ GRATE WITH A HOW RATING EQUAL TO THE MAXIMUM SYSTEM SLOW DIVIDED BE THE NUMBER OF SKIMMERS WHEN PIPED THROUGH A COMMON SUCTION LINE, OR THE MAXIMUM FLOW RATING OF THE SKIMMER, WHICHEVER IS GREATER (SEE FIGURE ON SHEET 04).

- WALL VACUUM FITTING (S). WHEN USED, VACUUM CLEANER FITTING(S) SHALL BE LOCATED IN AN ACCESSIBLE POSITION(S) AT LEAST 6 INCHES (152 MM) AND NO GREATER THAN 18 INCHES (457 MM) BELOW THE WATER LEVEL AND THE SELF-CLOSING, SELF-LATCHING FITTING SHALL COMPLY WITH IAPMO SPS.

- SPECIAL USE SUCTION FITTING FOR SWIMMING POOLS, SPAS AND HOT TUBS (FOR SUCTION SIDE AUTOMATIC SWIMMING POOL CLEANERS). IN ADDITION, THE VACUUM PIPING SHALL BE EQUIPPED WITH A VALVE TO REMAIN IN THE CLOSED POSITION WHEN NOT IS USE.

SUCTION TYPE - MAIN DRAIN / SUCTION OUTLET NOTES:

- DUAL OUTLETS, I.E., TWO LISTED SUCTION OUTLETS, ARE PIPED TO A SINGLE, COMMON SUCTION LINE TO THE PUMPS(S). THE TEE FEEDING FROM THE COMMON LINE BETWEEN THE SUCTION OUTLETS, TO THE PUMPS(S) SHALL BE LOCATED APPROXIMATELY MIDWAY.

- BETWEEN THE OUTLETS WITH NOW OUT OF THE BRANCH OF THE TEE. SEE FIGURES ON SHEET 04. THE FLOW RATING OF EACH COVER/ GRATE SHALL BE AT LEAST EQUAL TO THE SYSTEMS MAXIMUM FLOW RATE.

- DUAL OUTLETS SHALL BE SEPARATED BY A MINIMUM OF 3 FEET (914 MM) MEASURED FROM CENTER TO CENTER OF THE SUCTION PIPES (SEE FIGURES ON SHEET 04) OR LOCATED ON TWO (2) DIFFERENT PLANES, I.E. ONE (1) ON THE BOTTOM AND ONE (1) ON THE VERTICAL WALL, OR ONE (1) EACH ON TWO (2) SEPARATE VERTICAL WALLS. (SEE SHEET 04).

- THREE OR MORE LISTED SUCTION OUTLETS ARE PIPED IN PARALLEL TWO OF THE OUTLETS SHALL BE PIPED WITH THE TEE FEEDING THE SUCTION LINE TO THE PUMP(S) LOCATED APPROXIMATELY MIDWAY BETWEEN THE TWO OUTLETS. THE ADDITIONAL OUTLET (S) SHALL BE PERMITTED WHEN PIPED ACCORDING TO FIGURES ON SHEET 04.

- A SINGLE LISTED CHANNEL OUTLET SHALL BE CONSIDERED ACCEPTABLE IF THE SIZE OF THE PERFORATED AREA IS 3" OR GREATER IN WIDTH AND 31" OR GREATER IN LENGTH.

- SINGLE OUTLET SWIM-JET SYSTEMS CONSIST OF A COMBINATION FITTING THAT INCORPORATES A SUCTION OUTLET AND INLET IN A SINGLE HOUSING THAT IS DESIGNED TO MOVE A LARGE VOLUME OF WATER AT HIGH VELOCITY IN A SINGLE DIRECTION. SUCH SYSTEMS SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AS CONFORMING TO THE MOST RECENT EDITION OF ASME/ ANSI 112.19.8 AND INCLUDE A PERMANENTLY MARKED FLOW RATING TESTED TO PREVENT HAIR ENTRAPMENT. THEY ARE NOT GOVERNED BY THE VELOCITY LIMITATIONS OF ANSIFAPSP-7-4.4.

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Date: 2023.01.24 13:33:10 -05'00'

SHEET NO.	DRAWING INDEX
S/01	GENERAL NOTES
S/02	PLAN/ ELEVATIONS
S/03	DETAILS
S/04	DETAILS

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PROJECT NO. 2302386

CONTRACTOR:
PREMIER POOLS AND SPAS - JACKSONVILLE

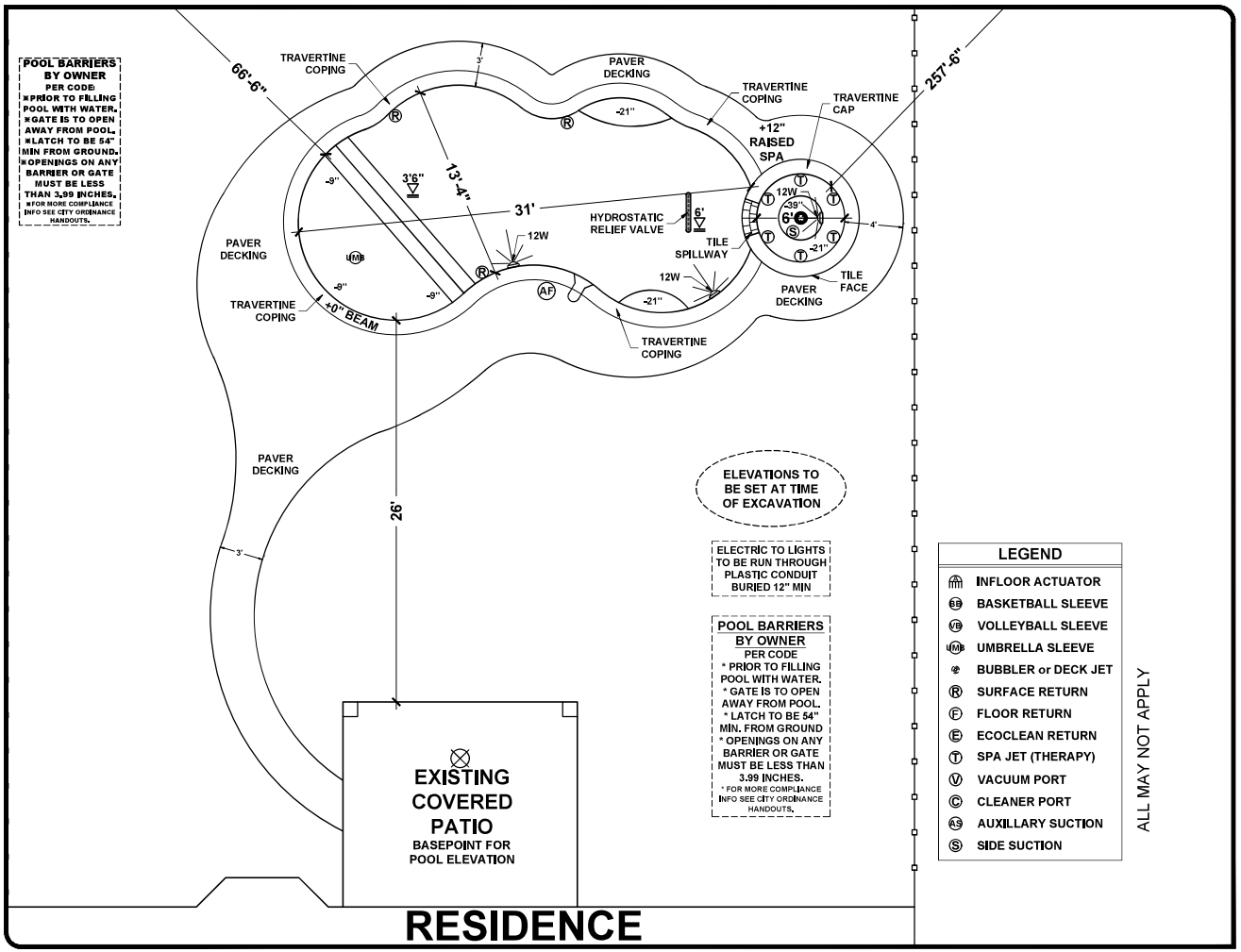
PROJECT ADDRESS:
ISBEL
282 SW BREEZY DR,
LAKE CITY, FL 32025

DESIGN DATE:	01/24/2023
REVISION 1:	REV.D1
REVISION 2:	REV.D2
DRAWN BY:	PD
SCALE:	NTS

SHEET: 01

SCOPE OF WORK:
- RESIDENTIAL SWIMMING POOL ENGINEERING (POOL NOT DESIGNED FOR DIVING)

POOL PLAN



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Date: 2023.01.24 13:33:14 -05'00'

ENTRY/ EXIT REQUIRED AT THE SHALLOW END AND DEEP END IF OVER 5 FEET DEEP. ACCEPTABLE ARE STAIRS (10" MINIMUM TREAD WITH 240 SQUARE INCH MINIMUM AREA, 12" RISER (MAX.) WITH INTERMEDIATE TREADS AND RISERS UNIFORM), LADDERS, UNDERWATER SEATS, AND SWIM-OUTS (MAXIMUM 20" BELLOW WATERLINE).

ANY GLAZING WITHIN 5 FT. OF POOL SHALL BE SHALL CONFORM TO FBC R308.4.5.

EQUIPOTENTIAL BONDING SHALL CONFORM TO 2017 NEC SECTION 680.26.

ENTRAPMENT PROTECTION FOR SUCTION OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/APSP/ICC-7 & 2020 FBC R4501.6.6.

THE NUMBERS OF RETURN INLETS SHALL BE BASED ON A MINIMUM OF (1) RETURN INLET PER 300 SQ. FT. OF POOL SURFACE AREA OR FRACTION THEREOF.

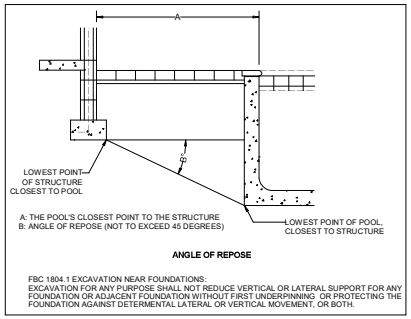
APPROVED SURFACE SKIMMERS ARE REQUIRED AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
SKIMMERS SHALL BE INSTALLED ON THE BASIS OF ONE PER 800 SQUARE FEET (74 M2) OF SURFACE AREA OR FRACTION THEREOF, AND SHALL BE DESIGNED FOR A FLOW RATE OF AT LEAST 25 GALLONS PER MINUTE (GPM) (1.6 L/S) PER SKIMMER.

FOR ALL WALKING SURFACES LOCATED MORE THAN 30" ABOVE GRADE, GUARDS SHALL BE PROVIDED PER 2020 R312.

OUTDOOR RESIDENTIAL SWIMMING POOLS SHALL BE PROVIDED WITH A BARRIER COMPLYING WITH 2020 FBC R4501.17.1.1 THROUGH R4501.17.1.14.

WHERE A WALL OF DWELLING SERVES AS PART OF THE BARRIER, ONE OF THE FOLLOWING SHALL APPLY:
1) ALL DOORS AND WINDOWS PROVIDING DIRECT ACESS FROM THE HOME/ DWELLING TO THE POOL SHALL BE EQUIPPED W/ AN EXIT ALARM COMPLYING W/ UL 2017.
2) ALL DOORS PROVIDING DIRECT ACCESS FROM THE HOME TO THE POOL MUST BE EQUIPPED W/ A SELF-CLOSING, SELF-LATCHING DEVICE W/ POSITIVE MECHANICAL LATHCING/ LOCKING INSTALLED A MIN. OF 54 INCHES ABOVE THE THRESHOLD, WHICH IS APPROVED BY THE AUTHORITY HAVING JURIDICTION.
3) A SWIMMING POOL ALARM THAT COMPLIES TO ASTM STANDARD F2208.

HYDROSTATIC RELIEF DEVICE, IN AREAS OF ANTICIPATED WATER TABLE AN APPROVED HYDROSTATIC REFIEF DEVICE SHALL BE INSTALLED. VALVES SHALL BE APROVED BY THE FLORIDA BUILDING CODE.



FBC 1804.1 EXCAVATION NEAR FOUNDATIONS:
EXCAVATION FOR ANY PURPOSE SHALL NOT REDUCE VERTICAL OR LATERAL SUPPORT FOR ANY FOUNDATION OR ADJACENT FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOUNDATION AGAINST DETERMENTAL LATERAL OR VERTICAL MOVEMENT, OR BOTH.

POOL IN FLOOD HARZARD AREAS (WHEN APPLICABLE, CONTRACTOR TO VERIFY):

A) 2020 FBC R322.1.6 PROTECTION OF MECHANICAL, PLUMBING AND ELECTRICAL SYSTEMS: ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS, HEATING, VENTILATING, AIR CONDITIONING, PLUMBING APPLIANCES AND PLUMBING FIXTURES, DUCT SYSTEMS, AND OTHER SERVICE EQUIPMENTS SHALL BE LOCATED AT OR ABOVE THE ELEVATION REQUIRED IN SECTION R322.2 OR R322.3.
B) 2020 FBC R322.2.1 ELEVATION REQUIREMENTS.
BUILDINGS AND STRUCTURES IN FLOOD HAZARD AREAS, INCLUDING FLOOD HARDARD AREAS DESIGNATED AS COASTAL A ZONES, SHALL HAVE THE LOWEST FLOORS ELEVATED TO OR ABOVE THE BASE FLOOD ELEVATION PLUS 1 FOOT (305 MM), OR THE DESIGN FLOOD ELEVATION, WHICHEVER IS HIGHER.

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PROJECT NO. 2302386

CONTRACTOR:
PREMIER POOLS AND SPAS - JACKSONVILLE

PROJECT ADDRESS:
ISBEL
282 SW BREEZY DR,
LAKE CITY, FL 32025

DESIGN DATE:	01/24/2023
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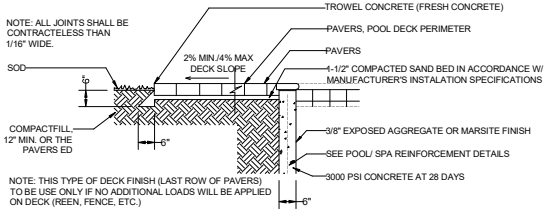
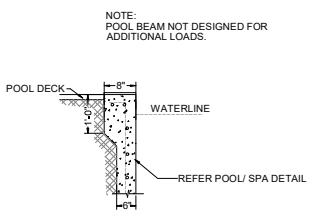
SCALE:	NTS

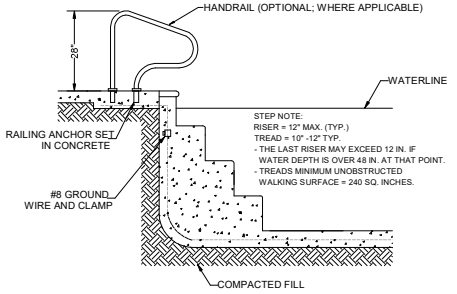
SHEET: 02



INTERLOCKING PAVERS, FOOTING AND TYP. DECK DETAIL



TYPICAL POOL BEAM DETAIL



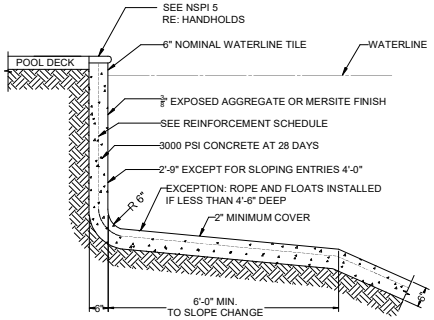
STEP DETAIL

This item has been electronically signed and sealed by Craig E. Gunderson, P.E. on date below using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

CRAIG E. GUNDERSON LICENSE No. 60102 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Craig E Gunderson
Date: 2023.01.24 13:33:20 -05'00'

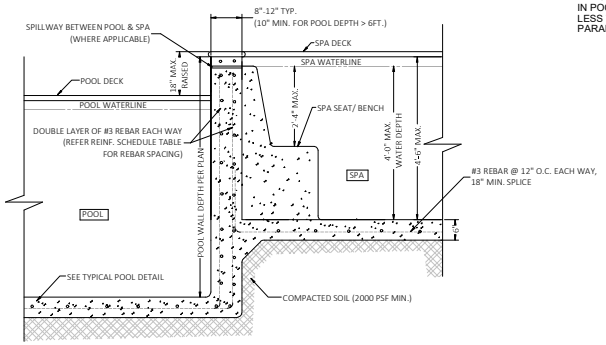
HANDHOLD SHALL BE PROVIDED AROUND THE POOL EDGE IN ANY AREA WHERE THE WATER DEPTH EXCEEDS 4 FT. AS PER ANSI/ APSP -5 SECTION 17.1



TYPICAL POOL/ SPA WALL AND FLOOR DETAIL

MAXIMUM AVERAGE WALL DEPTH	REINFORCEMENT SPACING (O.C. EACH WAY)	
	#3 REBAR (18" MIN. SPLICE)	#4 REBAR (24"MIN. SPLICE)
5'-8"	12"	18"
6'-7"	10"	18"
6'-10"	9"	16"
7'-1"	8"	14"
7'-5"	6"	12"

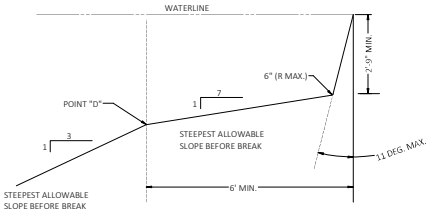
TABLE: REINFORCEMENT SCHEDULE FOR 6" THICK POOL SHELL TYP.



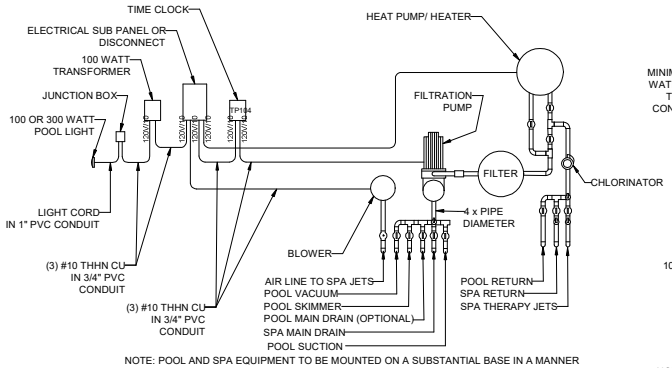
TYP. POOL-SPA SECTION

POOL FLOOR SLOPES NOTE (ANSI/ APSP/ ICC -5)
- THE SLOPE OF THE FLOOR FROM THE SHALLOW END WALL TOWARDS THE DEEP AREA SHALL NOT EXCEED A 1:7 INCLINE TO THE POINT OF THE FIRST SLOPE CHANGE.
- CHANGES IN THE SLOPE BETWEEN SHALLOW AND DEEP AREAS SHALL BE AT A MINIMUM WATER DEPTH OF 2 FT. 9 IN. AND BE AT LEAST 6 FT. FROM SHALLOW END, EXCEPT AS SPECIFIFIED IN PARA. 6.3 ANSI/APSP/ICC-5 "SHALLOW END DETAIL FOR BEACH AND SLOPING ENTRIES".
- THE SLOPE OF THE FLOOR SHALL NOT EXCEED A 1:3 INCLINE FOR DEEPER AREA AFTER 1:7 INCLINATION

ANSI/ APSP- 5 SECTION 17.2 ROPE AND FLOAT:
IN POOLS WHERE THE POINT OF FIRST SLOPE CHANGE (POINT D, FIGURE BELOW) OCCURS IN WATER DEPTHS LESS THAN 4'-6", A ROPE AND FLOAT ASSEMBLY SHALL BE INSTALLED ACROSS THE WIDTH OF THE POOL GENERALLY PARALLEL TO, AND AT A MIN. OF 1 FT. AND A MAX. OF 2 FT. ON THE SHALLOW SIDE OF THE CHANGE IN FLOOR SLOPE.

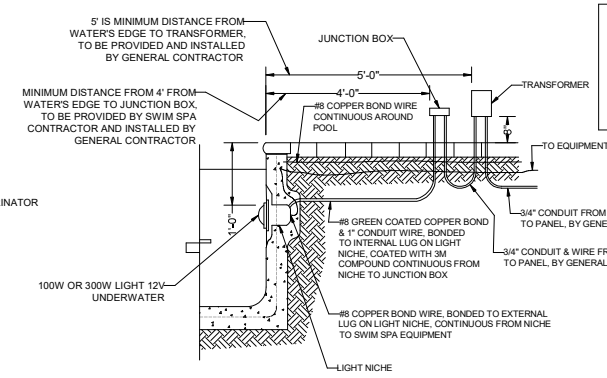


SPECIFIED POOL FLOOR SLOPES



NOTE: POOL AND SPA EQUIPMENT TO BE MOUNTED ON A SUBSTANTIAL BASE IN A MANNER THAT ELIMINATES PIPE STRAIN, AND MAY NEED RATED STRAPPING IN ACCORDANCE WITH LOCAL HURRICANE CODES.

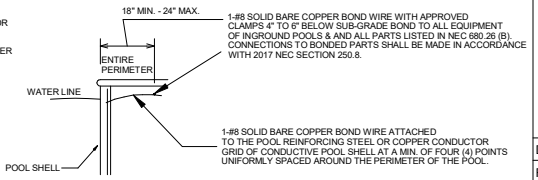
POOL EQUIPMENT SCHEMATIC EXAMPLE



NOTE:
PLACE (1) #8 SOLID COPPER GROUND WIRE WITHIN 6" OF THE POOL BEAM AROUND THE PERIMETER OF POOL BELOW DECK AND GROUNDED TO THE POOL STEEL.

POOL LIGHT & EQUIPOTENT BONDING

680-21 NEC (A) JUNCTION BOXES AND ENCLOSURES FOR TRANSFORMERS OR GROUND-FAULT CIRCUIT INTERRUPTERS.:
5. LOCATED NOT LESS THAN 4 IN. (102 MM), MEASURED FROM THE INSIDE OF THE BOTTOM OF THE BOX, ABOVE THE GROUND LEVEL, OR POOL DECK, OR NOT LESS THAN 8 IN. (203 MM) ABOVE THE MAXIMUM POOL WATER LEVEL, WHICHEVER PROVIDES THE GREATER ELEVATION



EQUIPOTENTIAL BONDING DETAIL (2017 NEC SEC 680.26 (B) 2(b))

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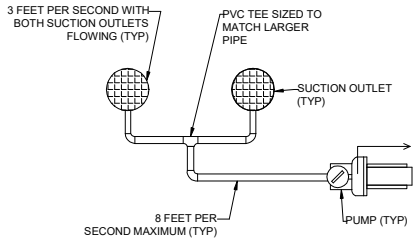
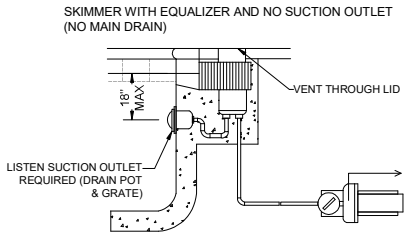
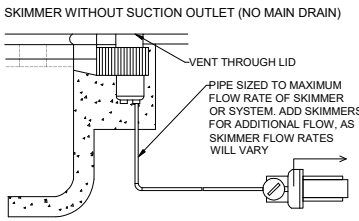


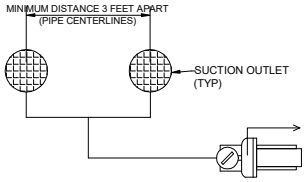
PIPE VELOCITY



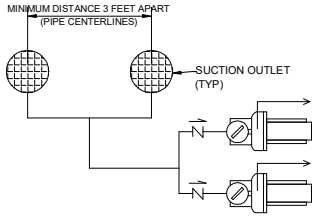
SKIMMER WITH EQUALIZER



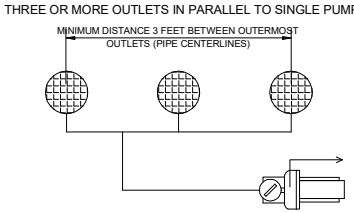
SKIMMER VENT THROUGH LID



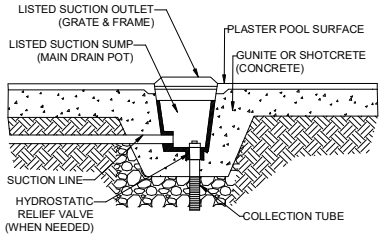
DUAL OUTLETS IN PARALLEL TO ONE PUMP



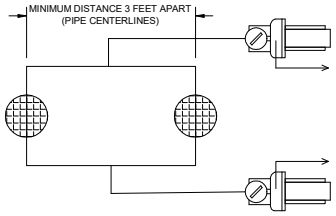
DUAL OUTLETS IN PARALLEL TO DUAL PUMPS IN PARALLEL



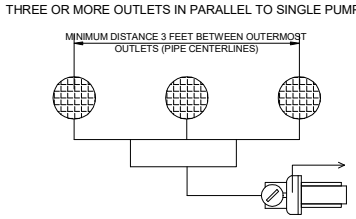
THREE OR MORE OUTLETS IN PARALLEL ECCENTRICALLY TEPPED PIPING



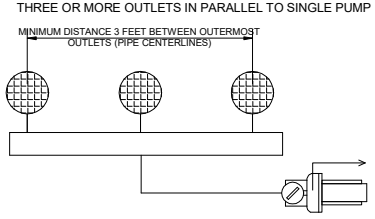
TYPICAL SUCTION OUTLET MAIN DRAIN - FRAME, GRATE & POT DETAIL



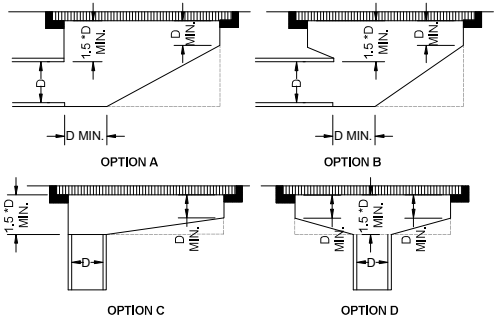
PARALLEL DUAL OUTLETS TO TWO PUMP



THREE OR MORE OUTLETS IN PARALLEL SYMMETRIC PIPING

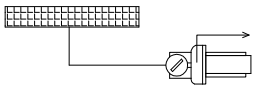


THREE OR MORE OUTLETS IN PARALLEL LOOPED PIPING

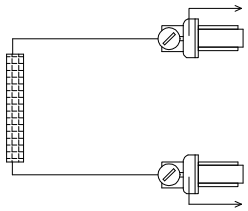


GENERAL NOTES:
(a) D= INSIDE DIAMETER OF PIPE
(b) ALL DIMENSIONS SHOWN ARE MINIMUMS
(c) A BROKEN LINE (- - -) INDICATES SUGGESTED STP CONFIGURATION

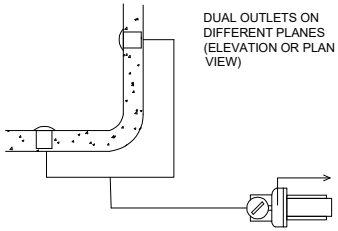
A SINGLE LISTED CHANNEL OUTLET SHALL BE CONSIDERED ACCEPTABLE IF THE SIZE OF THE PERFORATED AREA IS 3" OR GREATER IN WIDTH AND 31" OR GREATER IN LENGTH.



SINGLE UN-BLOCKABLE CHANNEL OUTLET TO SINGLE PUMP



SINGLE UN-BLOCKABLE CHANNEL OUTLET TO TWO PUMP



DUAL OUTLETS ON DIFFERENT PLANES

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