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: 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 R4501.6.1
-2017 NATIONAL ELECTRICAL CODE (NEC)ARTICLE NO. 680

IMPORTANT NOTE:

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

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

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).

ENTRAPMENT PROTECTION FOR SUCTION INLETS

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

SEE SHEET 3 FOR DETAILS

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.

FILTERS

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

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)

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 signture 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: 2021.10.08 13:10:24 -04'00'

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PROJECT NO. 21277152

CONTRACTOR: TROPICAL PAVERS AND STONE, LLC

PROJECT ADDRESS: JIMMY GALVIS + IRIS CALVO
4871 FRATTINA ST
AVE MARIA, FL.

DESIGN DATE: 10/06/2021

REVISION 1: DATE

REVISION 2: DATE

SCALE: NTS

CONSTRUCTION CODE REQUIREMENTS

NEGATIVE EDGE WALL STRUCTURAL NOTES:

1- ONE ROW OF #3 REBAR AT 6" O.C. EACH WAY, STAGGERED (MINIMUM).

2- EXTEND HORIZONTAL #3 REBAR 18" MIN. INTO THE ADJACENT POOL WALL OR BASIN SIDE WALL, AT EACH END.

3- HOOK VERTICAL REBAR 18" MIN. INTO POOL FLOOR AND BASIN FLOOR/ WALL IN ALTERNATING DIRECTIONS.

BASIN AUTOMATIC WATER REFILL NOTES:

1- PROVIDE AUTOMATIC WATER REFILL TO THE BASIN, WATER CONNECTION TO THE HOUSE IS TO HAVE A VACUUM BREAKER IN THE LINE AND IS TO BE DONE BY A LICENSED PLUMBER.

MAIN DRAIN NOTES:

BASIN SIZING NOTE:

THE BASIN IS TO BE SIZED TO HAVE SUFFICIENT VOLUME TO CATCH AND STORE DISPLACED WATER DURING POOL USE. FACTORS TO BE INCLUDED IN THE BASIN SIZING:

1. THE VOLUME OF WATER NEEDED TO FILL THE SUPPLY, RETURN PIPES, AND BASIN TO THE DEPTH SHOWN IN DETAIL.
2. THE VOLUME FOR BATHER SURGE, WHICH IS THE WATER EACH BATHER DISPLACES WITH MOVEMENT.
3. THE VOLUME OF WATER THAT IS NEEDED TO RAISE THE LEVEL OF WATER IN THE POOL ABOVE THE EDGE AND OVERCOME VARIANCES IN EDGE TOLERANCE.

RETAINING WALL STRUCTURAL NOTES:

1. MASONRY SHALL BE ASTM C-90 BLOCK WITH LADDER TYPE HORIZONTAL JOINT REINFORCING AT 16" O.C.
2.GROUT SHALL BE 3000 PSI MIN.
3. USE TYPE "M" OR "S" MORTAR.
4. CONCRETE SHALL BE 3000 PSI MIN.
5. REINFORCING SHALL BE ASTM A615 GRADE 60.
6. VERIFY ALL ELEVATIONS AND LOCATIONS WITH ARCHITECTURAL ELEVATIONS.
7. ALL CELLS ARE TO BE FILL WITH CONCRETE.
8. CONCRETE DECKS ARE TO HAVE 1" DEEP CONTROL JOINTS PERPENDICULAR TO POOL CUT OR TOOLED INTO DECK AT 10' ON CENTER WITH 24 HRS OF PLACEMENT.

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.

PUMP SIZING NOTE:

IF THE NEGATIVE EDGE TOLERANCE IS HELD TO 1/16" FROM HIGH TO LOW POINTS, PROVIDE A MIN. FLOW OF 3 GPM PER LINEAR FOOT OF EDGE. MORE FLOW IS REQUIRED FOR A GREATER EDGE TOLERANCE.

ELECTRICAL REQUIREMENTS:

WIRING AND BONDING AND ALL ELECTRICAL SHALL CONFORM TO NEC ARTICLE 680 (2017).

- NO OUTLET OR OVERHEAD POWER WITHIN 10', IF WITH IN 15' PROTECT BY GFI
- BRASS FITTINGS TO J-BOX OR TRANSFORMER WHICH EVER IS FIRST, EXCEPT WHERE PVC IS APPROVED.
- BONDING GRID PER NEC 2017 680, 26 (C).

ENGINEERS COMPLIANCE STATEMENT:

THIS SWIMMING POOL NEGATIVE EDGE PLAN HAS BEEN DESIGN TO COMPLY WITH ALL APPLICABLE PROVISIONS OF THE 2020 FLORIDA BUILDING CODE, NSPI-5 AND ANSI/ APSP-7, STANDARD FOR RESIDENTIAL SWIMMING POOLS.

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 (SHOWN IN FIGURE 1).
- 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).

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 3). 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 3).

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 4, 5, 6 AND 7. 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 4, 5 AND 6) 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 FIGURE 7).

- 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 8, 9 AND 10.
- 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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CRAIG E. GUNDERSON ★ LICENSE ★ No. 60102 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER

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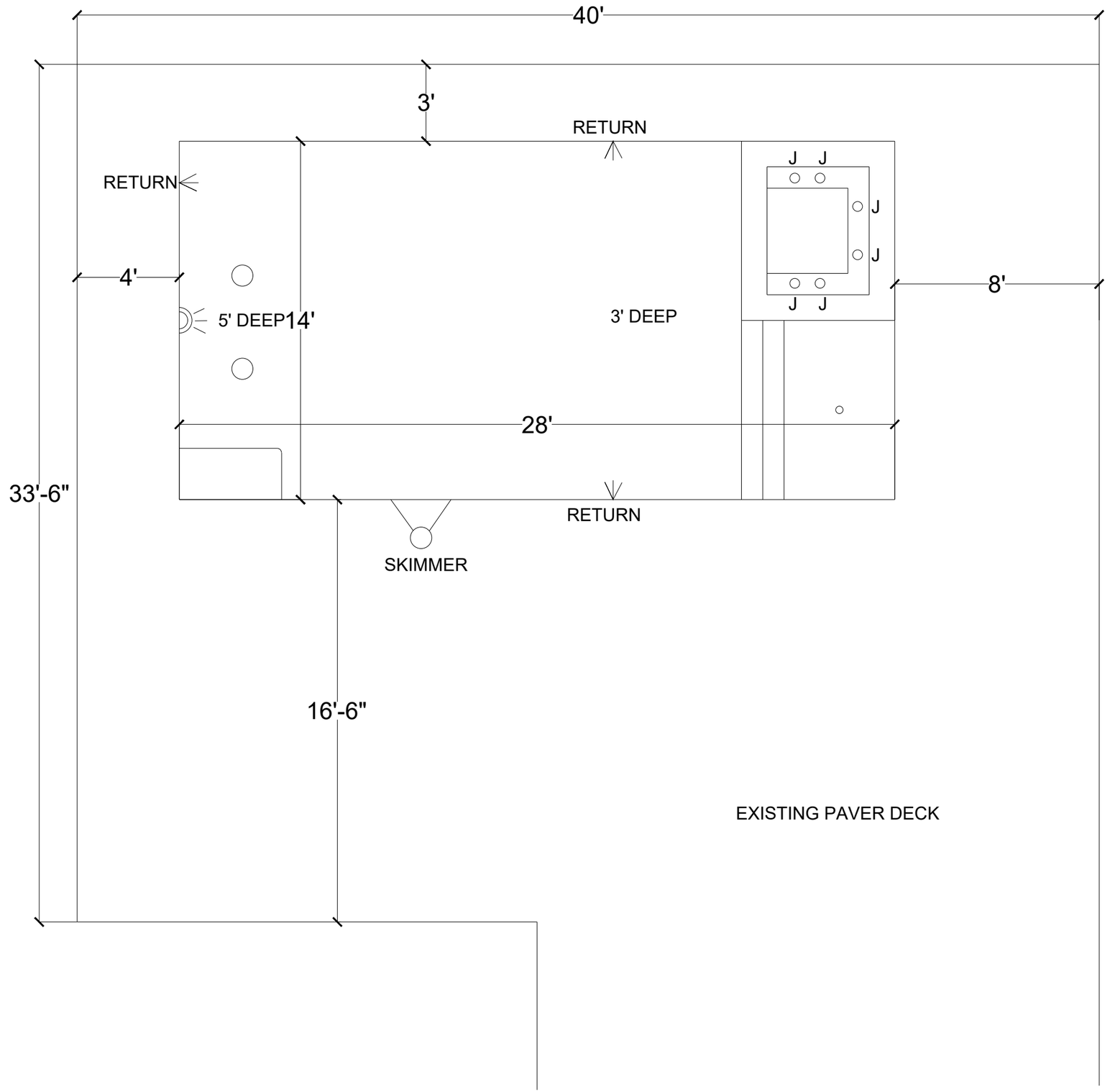
Pool Layout Plan



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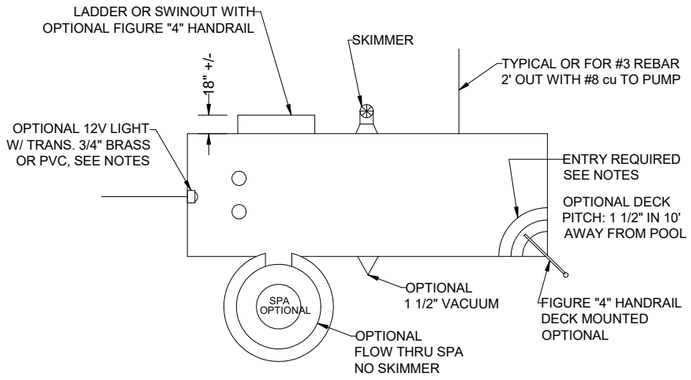
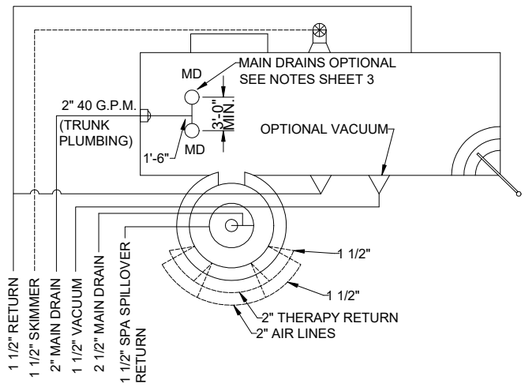
SCH. 40 PVC PIPE MAXIMUM VOLUMETRIC FLOW RATE (GPM)			
NOMINAL PIPE SIZE	VELOCITY 6 FT/S SUCTION-BRANCH	VELOCITY 8 FT/S SUCTION-BRANCH	VELOCITY 10 FT/S SUCTION-BRANCH
1 1/2"	38	50.7	63
2"	62	83.7	104
2 1/2"	89	119.4	149
3"	138	184.2	230
4"	238	317.4	396

PIPE RUNS EXCEEDING 40 FT. AND ELEVATION DIFFERENTIALS OF 5 FT. NEED TO ACCOUNT FOR HEAD LOSS IN PIPE SIZING.

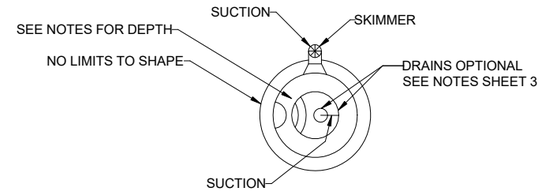
ASME/ ANSI A 112.19.8 - 2007 APPROVED MAIN DRAIN COVERS					
MANUFACTURER	MODEL #	SIZE	OPEN AREA (SQ. IN.)	FLOW RATE (GPM)	
				FLOOR	WALL
HAYWARD INDUSTRIES INC.	WG1048E	8" ROUND	8.1	125	72
	WG1031B	9" X 9"	17.81	112	84
	WG1032B	12" X 12"	32.37	256	112
	WG1033B	18" X 18"	71.25	560	560
REPLACE COVER AND SCREWS 7 YEARS AFTER CERTIFIED MANUFACTURER DATE					
AQUASTAR	8AV-XXX	8" ROUND	8.8	88	70
	10AV-XXX	10" ROUND	11.2	206	96
	WAV9XXX	9" X 9"	44.2	207	207
	RWAV9XXX	9" X 9"	44.2	207	207
	WAV12XXX	12" X 12"	85.2	361	361
	RWAV12XXX	12" X 12"	85.2	361	361
REPLACE COVER AND SCREWS 5 YEARS AFTER CERTIFIED MANUFACTURER DATE					
WATERWAY PLASTICS	640-231XY	8"	11.83	100	64
	640-311XV	10"	14.34	180	100
	640-472XV	12" X 12"	62.4	356	280
	640-470XV	9" X 9"	39.9	289	198
	640-358XV	5" ROUND	9.02	104	104
REPLACE COVER AND SCREWS 7 YEARS AFTER CERTIFIED MANUFACTURER DATE					
LAWSON AQUATIC INC.	MLD-SG-1212	12" X 12"	81.3	400	400
	MLD-SG-1818	18" X 18"	183.1	816	816
REPLACE COVER AND SCREWS 10 YEARS AFTER CERTIFIED MANUFACTURER DATE					



POOL PLAN EXAMPLE

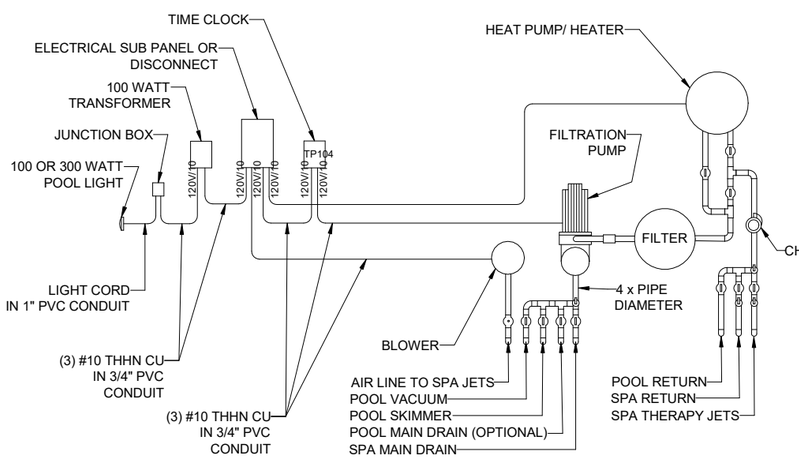


POOL PLAN EXAMPLE



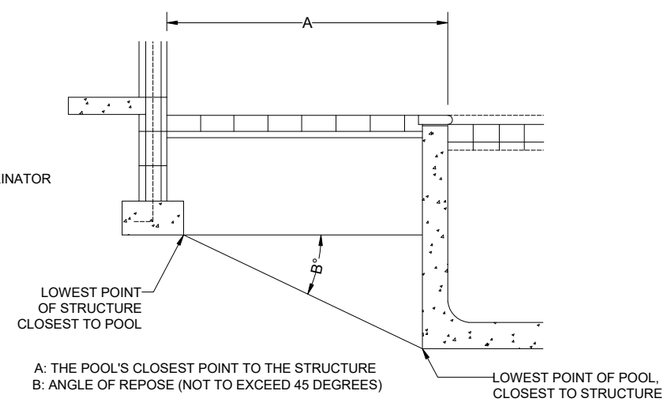
SPA PLAN

NOTE:
1. ALL SUBMERGED SUCTIONS OUTLET FITTINGS AND COVERS MUST COMPLY WITH VIRGINIA GRAHAM BAKER ACT AND ANSI/ APSP-7-13.
2. ENTRAPMENT PROTECTION FOR SUCTION OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF ANSI/ APSO-7-2006. SEE SHEET 3 FOR DETAILS.
3. AIR BREAK-SAFETY VENT-VACUUM RELEASE SYSTEMS ARE ONLY REQUIRED FOR RETROFIT ON EXISTING DUAL SUCTION POOLS/ SPAS PER ANSI/ APSP-7-13.



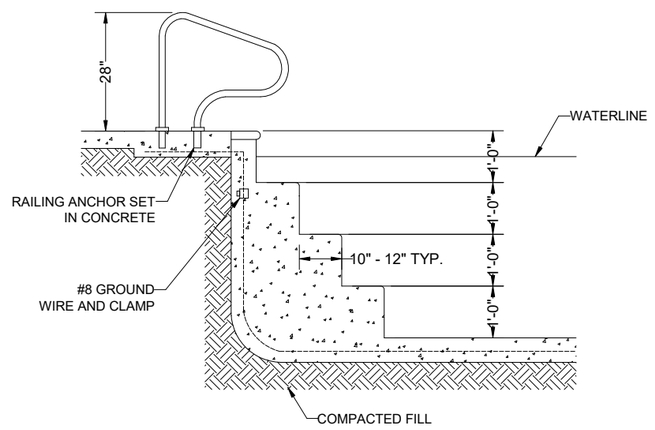
NOTE: POOL AND SPA EQUIPMENT TO BE MOUNTED ON A SUBSTANTIAL BASE IN A MANNER THAT ELIMINATES PIPE STRAIN, AND MAY NEED RATED STRAPPING IN ACCORDANCE WITH LOCAL HURRICANE CODES.

POOL EQUIPMENT SCHEMATIC EXAMPLE



A: THE POOL'S CLOSEST POINT TO THE STRUCTURE
B: ANGLE OF REPOSE (NOT TO EXCEED 45 DEGREES)

ANGLE OF REPOSE



STEP DETAIL

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PROJECT NO. 2127152

CONTRACTOR: TROPICAL PAVERS AND STONE, LLC

PROJECT ADDRESS: JIMMY GALVIS + IRIS CALVO
4871 FRATTINA ST
AVE MARIA, FL.

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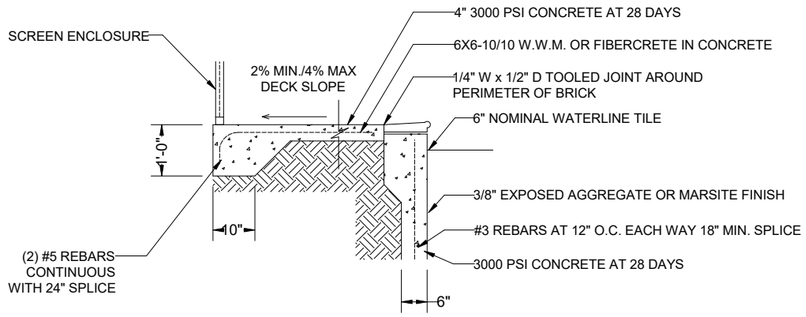
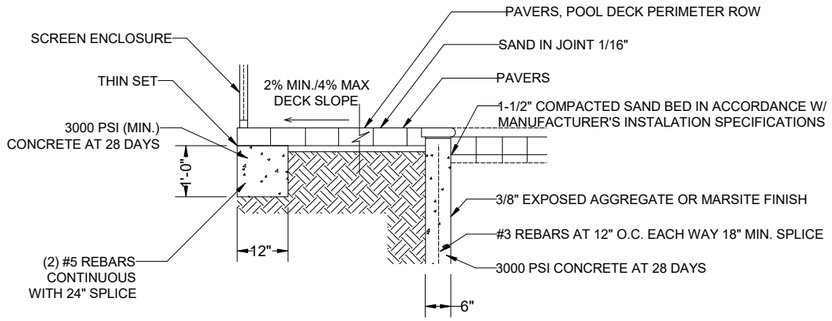
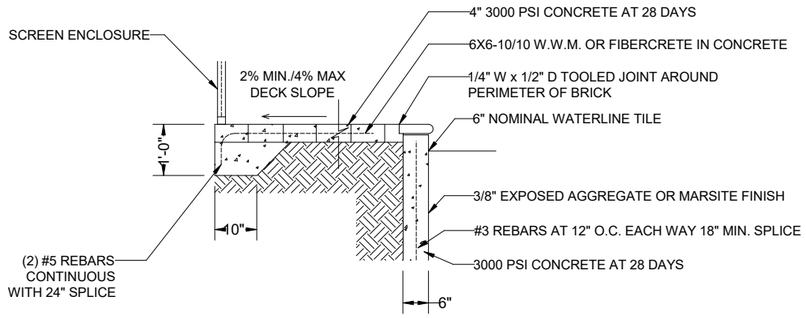


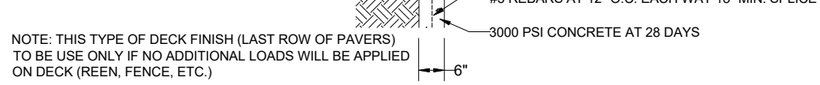
COPING POOL/ SPA, DECK AND BEAM DETAIL



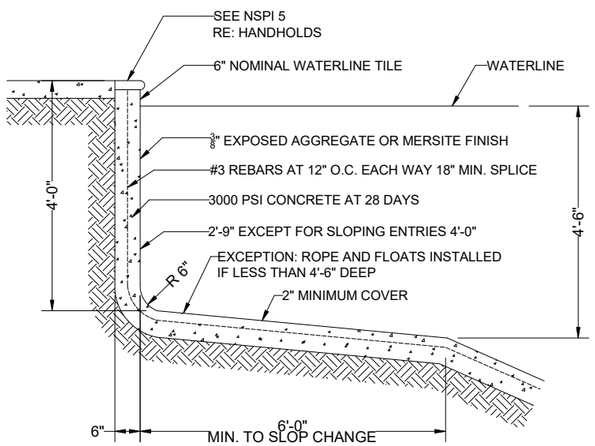
INTERLOCKING PAVERS, FOOTING AND TYP. DECK DETAIL



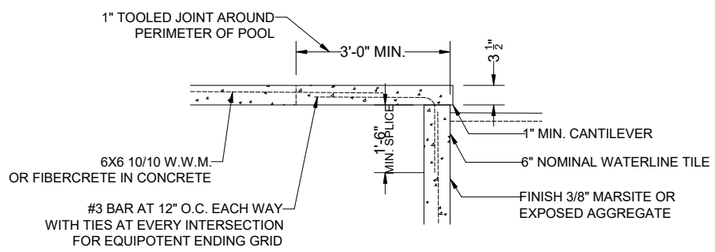
BRICK POOL/ SPA, DECK AND BEAM DETAIL



INTERLOCKING PAVERS, FOOTING AND TYP. DECK DETAIL



TYPICAL POOL/ SPA WALL AND FLOOR DETAIL



CANTILEVER POOL/ SPA DECK, BEAM AND WALL

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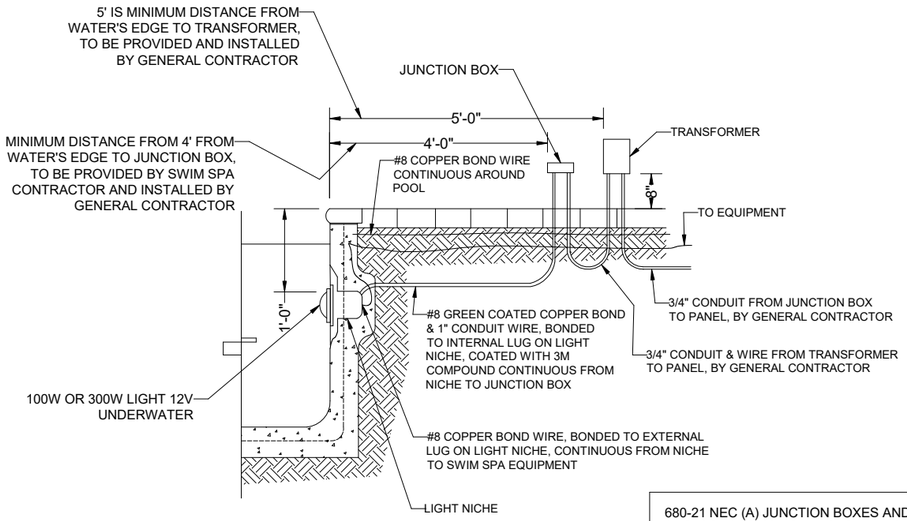
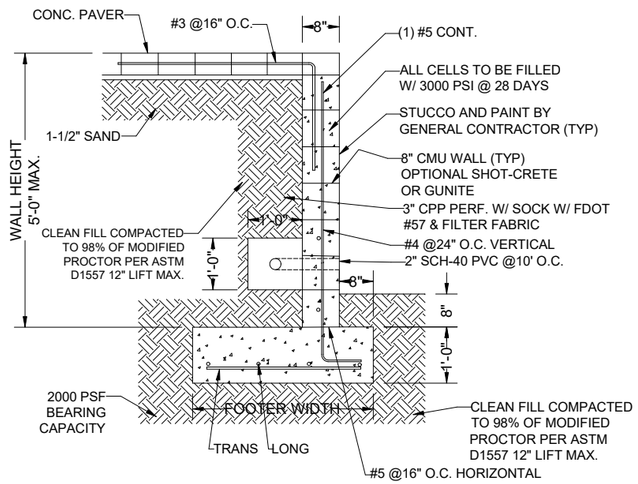


NOTE:
PLACE (1) #8 SOLID COPPER GROUND WIRE WITHIN 6" OF THE POOL BEAM AROUND THE PERIMETER OF POOL BELOW DECK AND GROUNDED TO THE POOL STEEL.

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



RETAINING WALL SECTION - B

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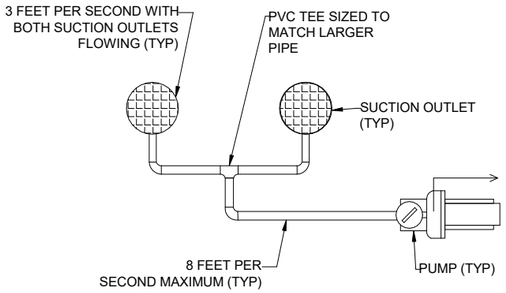
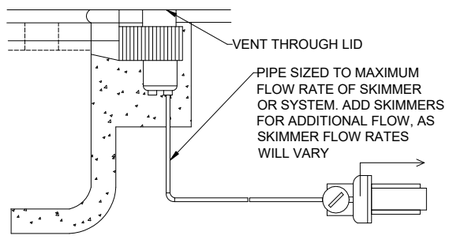


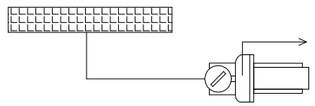
PIPE VELOCITY

SKIMMER WITHOUT SUCTION OUTLET (NO MAIN DRAIN)

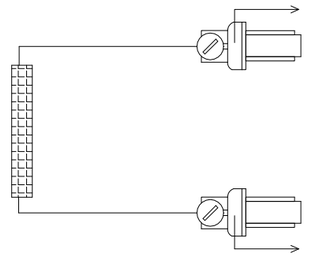


SKIMMER VENT THROUGH LID

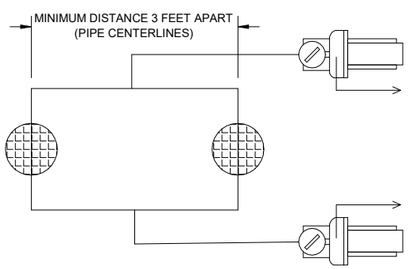
A SINGLE LISTED CHANNEL OUTLET SHALL BE CONSIDERED ACCEPTABLE IF THE SIZE OF THE PERFORATED AREA IS 3" OR GREATER IN WIDTH AND 31" OR GREATER IN LENGTH.



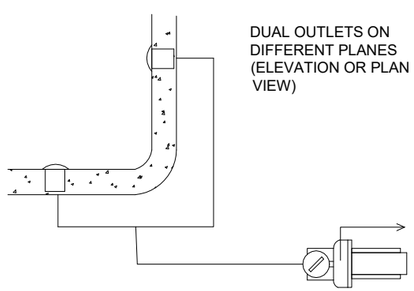
SINGLE UN-BLOCKABLE CHANNEL OUTLET TO SINGLE PUMP



SINGLE UN-BLOCKABLE CHANNEL OUTLET TO TWO PUMP

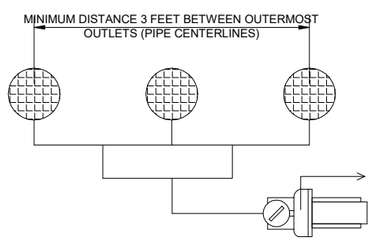


PARALLEL DUAL OUTLETS TO TWO PUMP

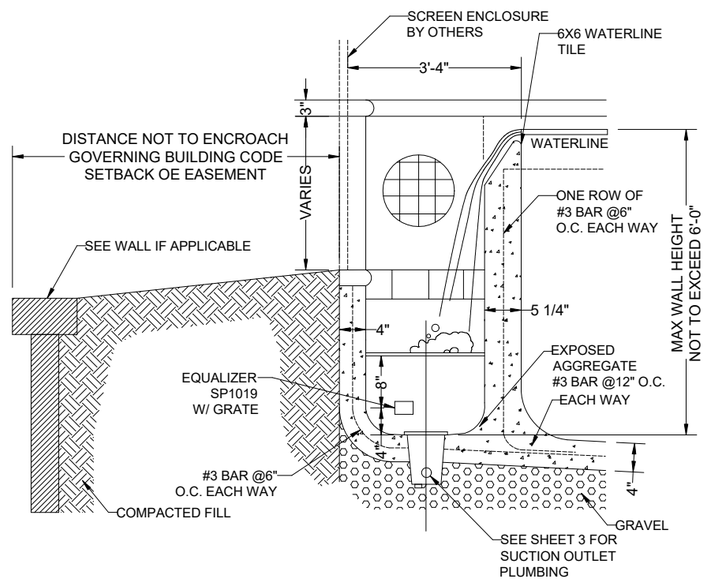


DUAL OUTLETS ON DIFFERENT PLANES

THREE OR MORE OUTLETS IN PARALLEL TO SINGLE PUMP



THREE OR MORE OUTLETS IN PARALLEL SYMMETRIC PIPING



TYPICAL NEGATIVE EDGE DETAIL

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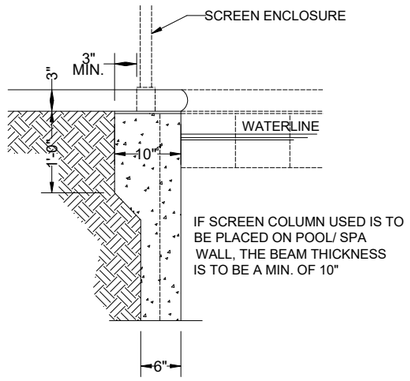
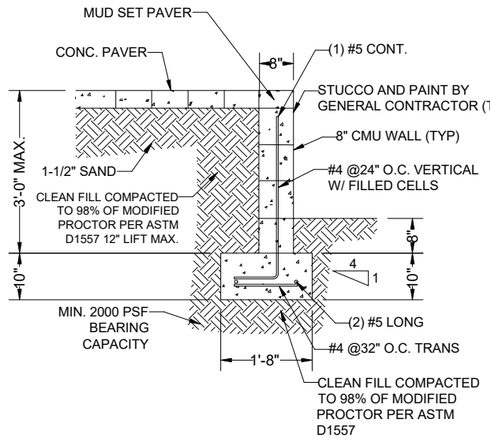
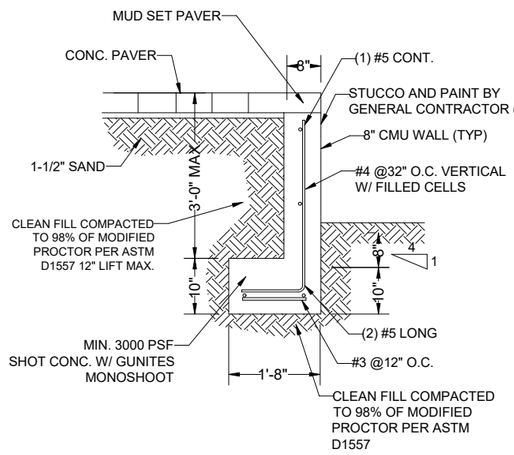


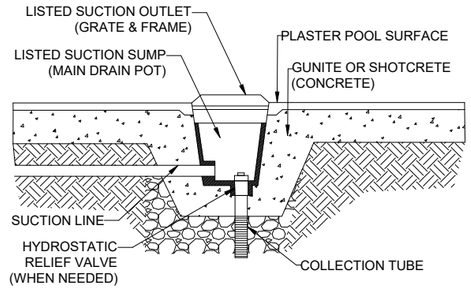
SCREEN ENCLOSURE ON POOL BEAM DETAIL



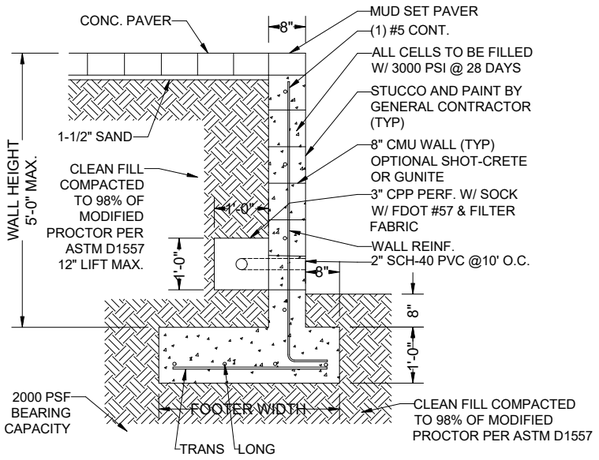
RETAINING WALL SECTION - D



RETAINING WALL SECTION - E

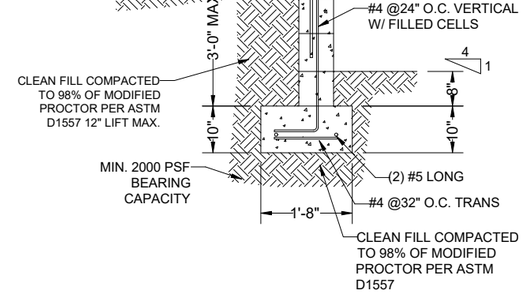


TYPICAL SUCTION OUTLET MAIN DRAIN - FRAME, GRATE & POT DETAIL



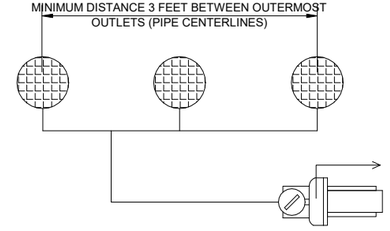
RETAINING WALL SECTIONS A & B					
WALL HEIGHT	FOOTER WIDTH	LONG.	TRANS.	VERT. WALL	HORIZ. WALL REINF.
5'-0"	3'-4"	4 # 5	#4 @16" O.C.	#4 @16" O.C.	#4 @16" O.C.
4'-4"	2'-10"	3 # 5	#4 @24" O.C.	#4 @24" O.C.	#4 @24" O.C.
3'-8"	2'-4"	2 # 5	#4 @24" O.C.	#4 @24" O.C.	#4 @24" O.C.
3'-2"	2'-0"	2 # 5	#4 @32" O.C.	#4 @32" O.C.	NOT REQUIR.

RETAINING WALL SECTION - A



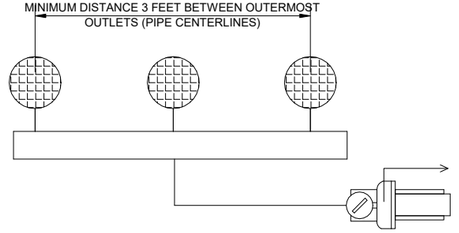
RETAINING WALL SECTION - C

THREE OR MORE OUTLETS IN PARALLEL TO SINGLE PUMP



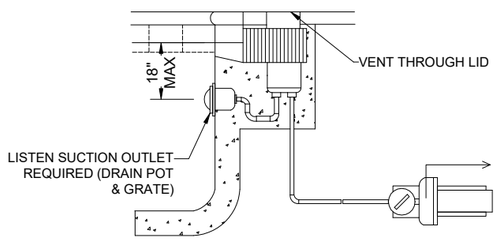
THREE OR MORE OUTLETS IN PARALLEL ECCENTRICALLY TEPPED PIPING

THREE OR MORE OUTLETS IN PARALLEL TO SINGLE PUMP

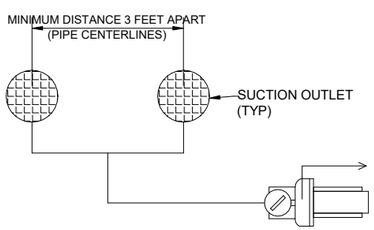


THREE OR MORE OUTLETS IN PARALLEL LOOPED PIPING

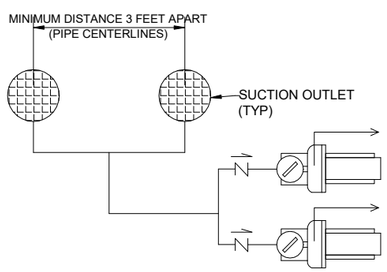
SKIMMER WITH EQUALIZER AND NO SUCTION OUTLET (NO MAIN DRAIN)



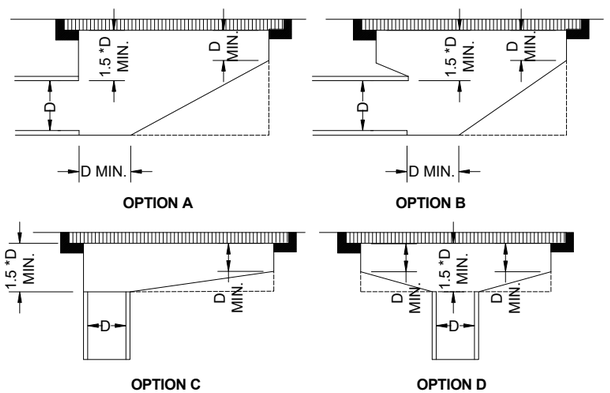
SKIMMER WITH EQUALIZER



DUAL OUTLETS IN PARALLEL TO ONE PUMP



DUAL OUTLETS IN PARALLEL TO DUAL PUMPS IN PARALLEL



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

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