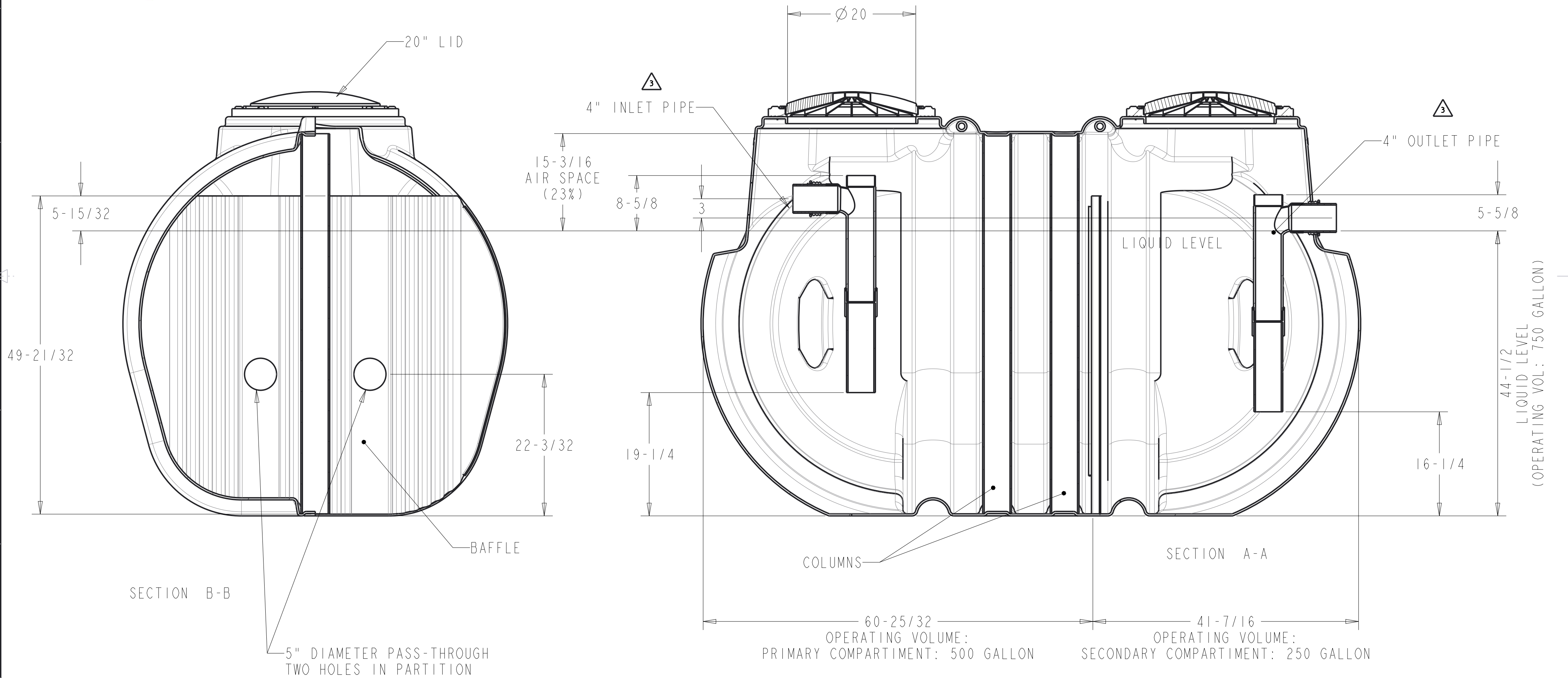


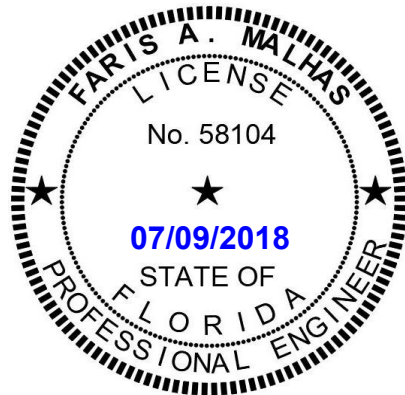
Paris A. Malias

REV.	CHANGE DESCRIPTION	DATE	NAME	APPROVED
1	WE HAVE ADDED SOME DIMENSIONS	14-12-17	M.E.R.	J.P.F.
2	WE HAVE ADDED THE TANK OPEN SIZE, INLET AND OUTLET PIPE SIZE, BAFFLE OPEN SIZE	15-12-17	M.E.R.	J.P.F.
3	WE HAVE ADDED THE 4" PVC INLET/OUTLET BAFFLE, 4" PVC COUPLING AND 4" PVC TUBE (1.1667 FT)	10-01-18	M.E.R.	J.P.F.
4	WE HAVE CHANGED THE COMPARTIMENTS VOLUME TO 500/250 GAL WERE 375/375 GAL	02-07-18	M.E.R.	J.P.F.



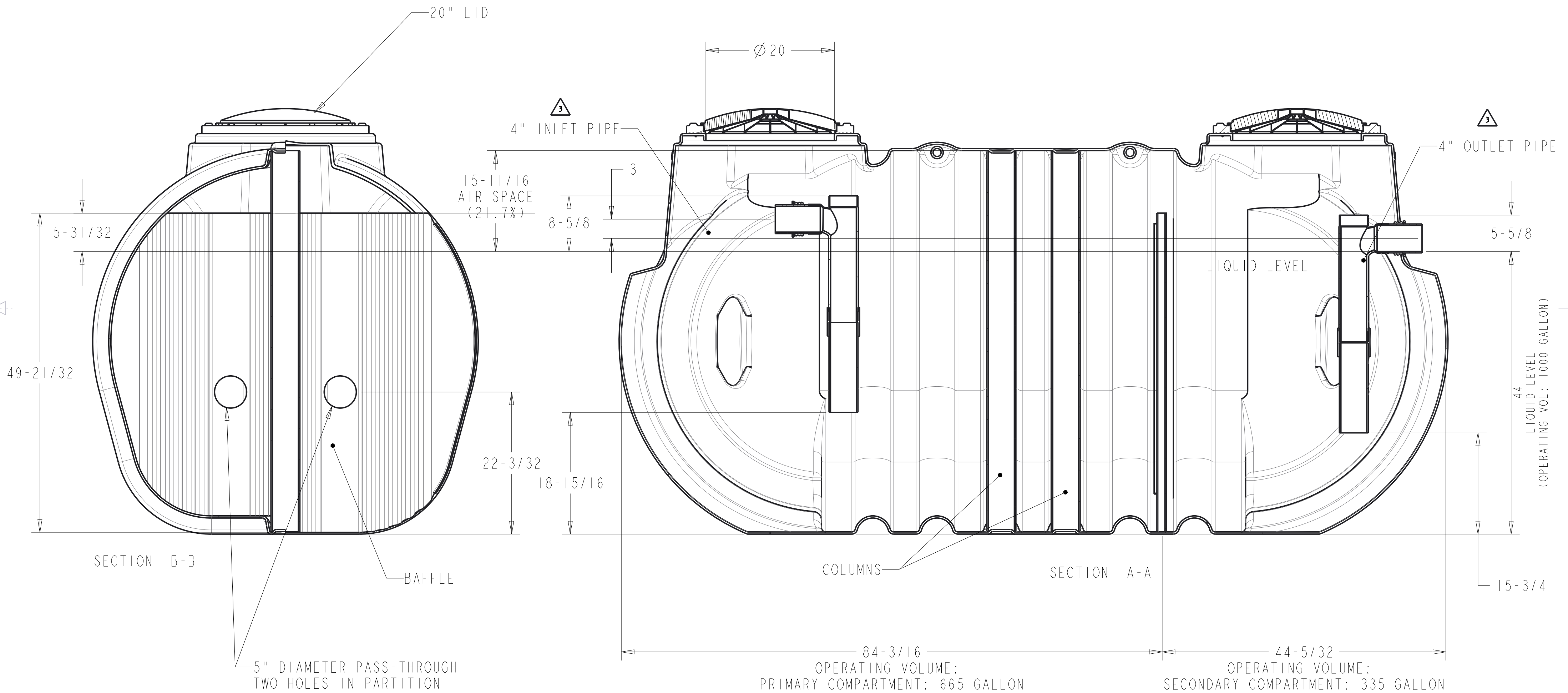
NOTES:
1- MATERIAL OF THE TANK: HIGH-DENSITY POLYETHYLENE
2- WALL THICKNESS: TANK WALL: 0.349"
DIVIDER WALL: 0.197" (5 mm)

ESCALE: 0.09	SIZE: A2	DESIGNER BY: Ing. M. Elias	DATE: Nov-02-17	INNOVATION AND DEVELOPMENT CENTER	MATERIAL: VARIES
UNITS: IN	REVIEWED BY: Ing. F. Guadarrama	DATE:	PROJECT: SEPTICS TANKS USA	FINISHED SURFACE:	
PROJECTION:	APPROVED BY: Ing. Joel Pérez	DATE:	DESCRIPTION: ASSY 750 GALLON SEPTIC TANK	REFERENCE DRAWING:	
	RELEASED BY:	DATE:		CODE: R-B-939	REV: 4



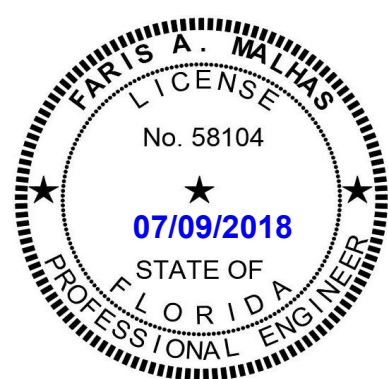
[Signature]

REV.	CHANGE DESCRIPTION	DATE	NAME	APPROVED
1	WE HAVE ADDED SOME DIMENSIONS	14-12-17	M.E.R.	J.P.F.
2	WE HAVE ADDED THE TANK OPEN SIZE, INLET AND OUTLET PIPE SIZE, BAFFLE OPEN SIZE	15-12-17	M.E.R.	J.P.F.
3	WE HAVE ADDED THE 4" PVC INLET/OUTLET BAFFLE, 4" PVC COUPLING AND 4" PVC TUBE (1.1667 FT)	10-01-18	M.E.R.	J.P.F.
4	WE HAVE CHANGED THE COMPARTIMENTS VOLUME TO 665/335 GAL WERE 500/500 GAL	02-07-28	M.E.R.	J.P.F.



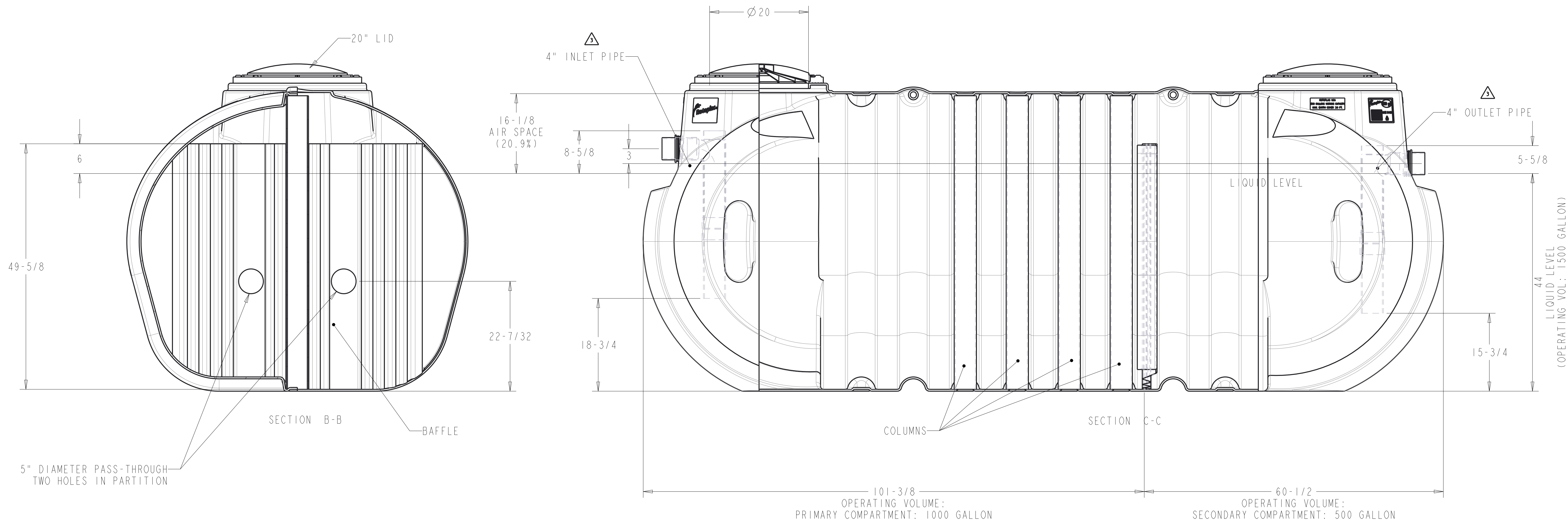
NOTES:
1- MATERIAL OF THE TANK: HIGH-DENSITY POLYETHYLENE
2- WALL THICKNESS: TANK WALL: 0.333"
DIVIDER WALL: 0.197" (5 mm)

ESCALE: 0.09	SIZE: A2	DESIGNER BY: Ing. M. Elias	DATE: Nov-02-17	INNOVATION AND DEVELOPMENT CENTER	MATERIAL: VARIES
UNITS: IN	REVIEWED BY: Ing. F. Guadarrama	DATE:	PROJECT: SEPTICS TANKS USA	FINISHED SURFACE:	
PROJECTION:	APPROVED BY: Ing. Joel Pérez	DATE:	DESCRIPTION: ASSY 1000 GALLON SEPTIC TANK	REFERENCE DRAWING:	
RELEASED BY:	DATE:			CODE: R-B-938	REV: 4



[Signature]

REV.	CHANGE DESCRIPTION	DATE	NAME	APPROVED
1	WE HAVE ADDED SOME DIMENSIONS	14-12-17	M.E.R.	J.P.F.
2	WE HAVE ADDED THE TANK OPEN SIZE, INLET AND OUTLET PIPE SIZE, BAFFLE OPEN SIZE	15-12-17	M.E.R.	J.P.F.
3	WE HAVE ADDED THE 4" PVC INLET/OUTLET BAFFLE, 4" PVC COUPLING AND 4" PVC TUBE (1.1667 FT)	10-01-18	M.E.R.	J.P.F.
4	WE HAVE CHANGED THE COMPARTMENTS VOLUME TO 1000/500 GAL WERE 750/750 GAL	02-07-18	M.E.R.	J.P.F.



NOTES:
1- MATERIAL OF THE TANK: HIGH-DENSITY POLYETHYLENE
2- WALL THICKNESS: TANK WALL: 0.375"
DIVIDER WALL: 0.197" (5 mm)

ESCALE: 0.10	SIZE: A1	DESIGNER BY: Ing. M. Elias	DATE: Nov-02-17	INNOVATION AND DEVELOPMENT CENTER <i>Rotoplas</i>	MATERIAL: VARIES
UNITS: IN	REVIEWED BY: Ing. F. Guadarrama	DATE:	PROJECT: SEPTICS TANKS USA	FINISHED SURFACE:	REFERENCE DRAWING:
PROJECTION:	APPROVED BY: Ing. Joel Pérez	DATE:	DESCRIPTION: ASSY 1500 GALLON SEPTIC TANK	CODE: R-B-940	REV: 4
RELEASED BY:	DATE:				PTC CREO 3.0



3-ENGINEERING, LLC

WATER MANAGEMENT SOLUTIONS

January 31, 2018

International Association of Plumbing and Mechanical Officials
4755 E. Philadelphia St
Ontario, CA 91761

Dear Sir or Madame:

Subject: Structural Analysis for Conformance to IAPMO/ANSI Z1000-2013
Rotoplas 750-Gallon Septic Tank
Rotoplas 1000-Gallon Septic Tank
Rotoplas 1500-Gallon Septic Tank

Attached is report of a structural analysis and review of calculations for the three subject septic tanks. The report was composed by a structural engineer familiar with both fabricated tanks and finite element analysis. The structural analysis and review confirm that the three tanks conform in all respects to IAPMO/ANSI Z1000-2013, Prefabricated Septic Tanks, Section 4.3:

The tanks can withstand internal hydrostatic pressure exerted by a column of water of a height equivalent to the height of the outlet invert;

The tanks can withstand an external earth load equivalent to the pressure exerted by a fluid with a density of 480 kg/m³ (30 lb/ft³); and

The tanks and their covers shall be capable of carrying a vertical earth load of at least 24 kPa (500 lb/ft²) [i.e., equivalent to a burial depth of 900 mm (3 ft)].

Please feel free to contact me if you have any additional questions, concerns, or issues.

Sincerely,

Bennette D. Burks
Principal





TEST REPORT

5001 East Philadelphia Street
Ontario, California – USA 91761-2816

Ph: 909.472.4100 | Fax: 909.472.4243
<http://www.iapmortl.org>

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R□□□r□□□□□□d□

February 1st, 2018

□□□□□□

Rotoplas USA

□

685 John B Sias Memorial Pkwy – Suite 330
Fort Worth, TX 76134

□

□□□□□□□□

Gustavo Forte

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Samples were manufactured at the client's facility in Fort Worth, TX, and witness tested by Dale E. Holloway of IAPMO R&T Lab on January 23rd, 2018. The samples were submitted by the client in good condition.

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January 23rd, 2018□

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The Septic Tanks were manufactured from rotational-molded polyethylene. The inlet and outlet were 4" in diameter. All models listed below are covered under this report.

□

M□d□□□□ 750 gal, 1000 gal, 1500 gal

□

□□□□□□□□□□□□□□

Testing was conducted in accordance with IAPMO/ANSI Z1000-2013 "Prefabricated Septic Tanks".

□□□□□□□□□□

The submitted septic tanks do comply with the requirements in IAPMO/ANSI Z1000-2013 for "Prefabricated Septic Tanks".

By our signatures below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T Lab, unless otherwise noted.

Witness Tested By:

Dale E. Holloway
Regional Technical Manager
IAPMO R&T Lab

□

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Section 4	General Requirements
Section 7	Thermoplastic Septic Tanks
Section 9	Testing Requirements and Performance Criteria
Section 10	Markings and Accompanying Literature

Test Results: All tests and evaluations were conducted per the written procedures specified in the standard.

IAPMO/ANSI Z1000-2013

□ □ □ □ □ r □ □ R □ □ □ □ r □ □ □ □ □ □ □

□

4.1 General: □ □ □ □ □ d □ □

Septic tanks

(a) Shall be watertight-

(b) Shall have a working liquid volume of at least 750 gallons-

(c) Should have at least two compartments-

Findings:

Model	Watertight	Liquid Volume (gal)	Number of Compartments
750	Yes	750	2
1000	Yes	1000	2
1200	Yes	1500	2

4.2 Drawings and Supporting Documentation: □ □ □ □ □ d □ □

Drawings and supporting documentation for septic tanks shall show materials, dimensions, capacities, and other information necessary to demonstrate compliance with this Standard. Supporting documentation, including structural design calculations, shall be signed by a licensed professional engineer.

Findings- See P.E. Report

4.3 Structural Strength: □ □ □ □ □ d □ □

4.3.1 General: □

□

4.3.1.1 Septic tanks shall be capable of withstanding the loads specified in Sections 4.3.2 to 4.3.5 when full and when empty.

Findings- See P.E. Report

4.3.1.2 Structural performance shall be verified by design calculations conducted by a licensed professional engineer in accordance with Sections 4.3.2 and 4.3.3.

Findings- See P.E. Report

- 4.3.2 Exterior Tank Walls: ☐
 Exterior tank walls shall be capable of withstanding
 (a) an internal hydrostatic pressure exerted by a column of water of a height equivalent to the height of the outlet invert; and
 (b) an external earth load equivalent to the pressure exerted by a fluid with a density of 30 lb/ft³.
 Findings- See P.E. Report
- 4.3.3 Vertical Earth Loads: ☐
☐ Septic tanks and their covers shall be capable of carrying a vertical earth load of at least 500 lb/ft² (equivalent to a burial depth of 3 ft.).
 Findings- See P.E. Report
- 4.3.4 Partitions and Baffles: ☐
☐ Partitions and baffles shall be capable of withstanding hydrostatic loads occurring when one compartment is empty and the remaining compartment is full.
 Findings- See P.E. Report
- 4.3.5 Unexpected Load Conditions: ☐
☐ Where the expected earth load's or installation conditions differ from the conditions in Sections 4.3.1 to 4.3.4, septic tank walls and covers shall be designed to withstand all anticipated earth and other loads.
 Findings- See P.E. Report
- 4.4 Access Openings: ☐☐☐☐☒d☐
- 4.4.1 Septic tanks shall have at least two access openings, as follows:
 (a) one access opening shall be located over the inlet device; and
 (b) the second access opening over the outlet device.
 Findings- Number of openings- 2
 Access opening over outlet - Yes
- 4.4.2 Every compartment of a septic tank shall have at least one access opening with a minimum dimension of 20 in. When a compartment exceeds 12 ft in length,
 (a) a second access opening shall be provided; and
 (b) the second opening shall be located over the baffle, when applicable.
 Findings - Opening size- two 20" diameter openings
- 4.5 Inlets and Outlets: ☐☐☐☐☒d☐
- 4.5.1 All septic tanks shall be capable of accommodating an NPS-4 or larger pipe at the inlet. Septic tanks intended for gravity flow shall be capable of accommodating an NPS-4 or larger pipe at the outlet.
 Findings- Pipe size for inlet- 4"
 Pipe size for outlet- 4"
- 4.5.2 Inlet and outlet devices shall
 (a) be open-topped - Yes
 (b) extend below the liquid surface between 50% and 75% of the liquid depth, measured from the inside floor of the septic tanks - 28" (64%)
 (c) extend at least 5 in. above the liquid surface- 6.5"

- 4.5.3 The invert of the inlet pipe shall be at least 2 in. above the invert of the outlet pipe.
Findings- 3"
- 4.6 Risers: ☐ ☐ ☐ ☒ ☐
When applicable, septic tanks shall have a means of connecting with an access opening extension system that is watertight.
- 4.7 Covers: ☐ ☐ ☐ ☒ ☐
☐ Access openings and risers shall be capable of accommodating covers that
(a) are watertight- Yes
(b) are secure- Yes
(c) do not slide, rotate, or flip open- Pass
(d) are capable of supporting anticipated loads- Yes
- 4.8 Pipe Connectors: ☐ ☐ ☐ ☒ ☐
☐
- 4.8.2 Connectors for septic tanks made of materials other than precast concrete shall comply with Section 7 of ASTM C1644.
Findings - Hubless Couplings
- 4.9 Venting: ☐ ☐ ☐ ☒ ☐
☐
- 4.9.1 Partitions, baffles, and inlet and outlet devices shall have a venting area not smaller than the cross-sectional area of the inlet or the outlet, whichever is greater.
Findings- Venting area- two 5" diameter openings
- 4.9.2 There shall be a separation of at least 1 in. between the top of the tank and the top of the inlet and outlet device vent opening.
Findings- Separation distance- 6"
- 4.10 Partitions and Baffles: ☐ ☐ ☐ ☒ ☐
☐
- 4.10.1 Partitions and baffles separate compartments and shall extend at least 5 in. above the liquid surface.
Findings- 6" above the liquid surface.
- 4.10.2 Flow between compartments shall be through a
(a) horizontal slot having a cross-sectional area of at least two times the area of the inlet device- NA
(b) inverted tee, 90° elbow, or similar fitting at least NPS-4 but in no case smaller than the tank inlet- NA
(c) two or more equal spaced openings having a combined cross-sectional areas of at least two times the area of the inlet device- 2 openings that are 5" diameter
- 4.10.3 The fitting inlets or the centroid of the opening shall be located between 50% and 75% of the liquid depth, measured from the inside floor of the tank.
Findings- 50% of liquid depth

4.11 Air Space: □ □ □ □ □ □ **d** □ □

- Septic tanks shall have at least 9 in. of air space above the liquid surface. The air space shall have a volume equivalent to at least 10% of the working liquid volume of the tank.

Findings-

Model	Air space above liquid surface (in.)	Percentage of Air Space of working liquid volume (%)
750	15.19	23
1000	15.69	22
1200	16.13	21

4.12 Installation-Site Assembly:

- Installation-site assembly of tanks and components shall be kept to a minimum. When installation-site assembly of septic tanks is necessary, all materials for proper assembly shall be provided with each tank. Joints made on site shall be as durable and watertight as joints made at the manufacturing or manufacturer-authorized assembly facility.

4.13: Joints:

- ☐ 4.13.1 Joints intended for assembly at a location other than the tank manufacturing or manufacturer authorized assembly facility shall
- (a) be manufactured in such a way that uniform pressure is exerted on the connection along its entire length- Yes
- (b) have a continuous watertight seal- Yes

4.13.2 The means for sealing the joints shall be as specified by the manufacturer.

7 **r**

- ## 7.1 Blow-Molded and Single-Layer Rotationally-Molded Polyethylene Septic Tanks:

7.1.1 Compound: **d**

- ☐ Polyethylene for blow-molded and single-layer rotationally-molded septic tanks shall have at least
- (a) A cell classification of 214230E as specified in ASTM D3350- 314443D (exceeds requirements)
- (b) 1% carbon black as specified in ASTM D1603- Natural with UV Stabilizers

7.1.2 Physical Properties:

7.1.2.1 Environmental Stress Crack Resistance:

The environmental stress crack resistance shall be as specified in Section 9.3.2.

7.1.2.2 Tensile Strength: ☒ ☐

When determined in accordance with ASTM D638, the tensile strength shall be at least 2,400 psi- 3100 psi _____

7.1.2.3 Flexural Modulus of Elasticity: ☒ d

- When determined in accordance with ASTM D790, the flexural modulus of elasticity shall be at least 85,000 psi- 107,000 psi

7.1.3 Wall Thickness: ☒ ☐ ☐ ☐ ☐

Wall thickness of blow-molded and single-layer rotationally-molded tank

- (a) Side wall, tops, bottoms, and covers shall be at least 0.25 in.- 0.33" to 0.38"
- (b) Inlet and outlet ends shall be at least 0.25 in.- 0.33" to 0.38"
- (c) Internal walls (i.e. baffles and partitions) shall be at least 0.19 in.- 0.20"

7.4 Finish: **d**

Interior and exterior wall surfaces of thermoplastic septic tanks shall be smooth and non-porous.

9 □□□□□**R**□□□r□□□□□d□□r□r□□□□□r□□r□□

9.1 Watertightness Tests: ☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐

9.1.1 General:

Septic tanks shall comply with one of the watertightness tests specified in Sections 9.1.2 to 9.1.4.

9.1.2 Vacuum Test:

Findings- NA

9.1.3 Water Test:

Findings- There was no visible leakage after 1 hour.

9.1.4 Air Test:

Findings- NA

9.3 Thermoplastic Septic Tank Tests:

9.3.1 Flexural Stress Crack-Resistance Test:

☐ Findings- Not for Single layer rotational molded thermoplastic.

9.3.2 Environmental Stress Crack-Resistance Test: ☐☐☐☐☐☐☒☐☐

☐ After testing to ASTM D1693, the environmental stress crack resistance shall be at least 150 h using Condition C and 20% failure criteria.

Findings- >1000 hrs. at Condition C

10 Mr [redacted] d [redacted] [redacted] r [redacted] d - D d [redacted] - [redacted]

10.1 Prefabricated septic tanks complying with this Standard shall be marked with the:

- (a) manufacturer's name or trademark- Rotoplas
- (b) model number- Yes
- (c) working liquid volume, expressed at least in gallons- Yes
- (d) date (i.e. month and year), date code, or identifier traceable to the date of manufacture- Yes
- (e) maximum design load and maximum burial depth for which the tank is designed- Yes
- (f) inlet and outlet- Yes

- 10.2 Marking shall be permanent, legible, and visible- Yes
- 10.3 Acceptable means of applying permanent marking shall include permanently-affixed metal plates, etching, mechanical stamping, stamping with a permanent ink, and molding in- Molded into unit
- 10.4 Septic tanks shall be accompanied by instructions for their installation- Yes
- 10.5 Manufacturers of fiber-reinforced polyester septic tanks made of resins evaluated in accordance with Section 6.2.1.1(b) shall make the results of such evaluation available upon request.- NA

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IAPMO RESEARCH AND TESTING, INC.

5001 East Philadelphia Street, Ontario, California 91761-2816 – USA • 909-472-4100 • 909-472-4244 • www.iapmort.org



CERTIFICATE OF LISTING

IAPMO Research and Testing, Inc. is a product certification body which tests and inspects samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

The most updated information on this Certificate of Listing is available online at pld.iapmo.org

Effective Date: April 2018

Void After: April 2019

Product: Prefabricated Septic Tanks

File No. 10903

Issued To: Rotoplas
560 Golf Course Road
Tallapoosa, GA 30176

Identification: Each tank shall be clearly and permanently marked with the manufacturer's name and/or registered trademark, model number, working liquid volume (expressed at least in gallons), date (i.e. month and year), date code, or identifier traceable to the date of manufacture, maximum design load, maximum burial depth for which the tank is designed, inlet and outlet.

The markings shall be applied on permanently-affixed metal plates, etched, mechanically stamped, stamped with permanent (non-water-soluble) ink, or molded. Adhesive labels that comply with UL 969 shall also be considered permanent when placed on a surface that is not normally submerged in water. The product shall also bear the UPC® certification mark.

Characteristics: Prefabricated septic tanks made of concrete, fiber reinforced polyester (FRP), thermoplastic, or steel to be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the


Chairman, Product Certification Committee


CEO, The IAPMO Group



This listing period is based upon the last date of the month indicated on the Effective Date and Void After Date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Production of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing. This document shall be reproduced in its entirety.



IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING

Void After: April 2019

Product: Prefabricated Septic Tanks

File No. 10903

Issued To: Rotoplas

laboratory's compliance to the applicable requirements of ISO/IEC 17025.

Products are in compliance with the following code(s):

Uniform Plumbing Code (UPC®)

Products are in compliance with the following standard(s):

IAPMO/ANSI Z1000-2013



IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING

Void After: April 2019

Product: Prefabricated Septic Tanks

File No. 10903




Issued To: Rotoplas

MODELS:

Model No.

750 gallon ROTATIONAL MOLD PE TANK
1000 gallon ROTATIONAL MOLD PE TANK
1500 gallon ROTATIONAL MOLD PE TANK

UNIVERSAL TECHNICAL SPECIFICATION	CODE: CID-CS-017-ET-210
SEPTIC TANKS	REVIEW: 01
	DATE: 12/20/2017

DONE:  Ing. Gustavo Fuerte Caudillo	CHECK:  Ing. Francisco Guadarrama	APPROVED:  Ing. Joel Pérez Fernández
--	---	---

Introduction.

This technical specification describes the characteristics of all septic tanks manufactured in US plants. The tanks described in this document are finished with all accessories as it is delivered to customers. The manufacturing process for all tanks is described on the following sections of this document: Material; Dimension; Components; Label placing.

Characteristics.

The 300-gallon tank is spherical. 500, 750, 1000, and 1500 gallon tanks are horizontal-cylindrical. They have octagonal necks and round neck frames to receive lids with 20 inch rings. Reinforcement belts are placed along the body; the amount depends on the tank size on the larger side. All tanks must have complete basic accessories indicated on the parts list (SAP).

Material.

All tanks are made of high density polyethylene, in different weights.
Color available: gray.
All tanks manufactured in 1 layer

SKU	MATERIAL DESCRIPTION:
100078	POLYETHYLENE GRAY POWDER HD

Table No. 1 shows all sizes of tanks and kilograms of material that must be used for septic tanks on single layer. The number of SKU tank only is also placed over the table.

<p>UNIVERSAL TECHNICAL SPECIFICATION</p> <p>SEPTIC TANKS</p>	<p>CODE: CID-CS-017-ET-210</p> <p>REVIEW: 01</p> <p>DATE: 12/20/2017</p>
---	--

Table 1. Matrix tanks in different capacities, weights and tank only SKUs.

SKU	702285	702286	702287	702288	702289
Tank Capacity [gal]	300	500	750	1,000	1,500
100078 POLYETHYLENE GRAY POWDER HD [kg]	50	72	116	145	220

Manufacture.

The production process of septic tanks is by rotational molding. Everything can be manufactured in oven machines. See process specifications for adjustments.

Dimensions.

There are five different tank sizes: 300, 500, 750, 1000, and 1500 gal. 300-gal tank is designed as a spherical tank (Figure 1), while the other 4 tanks are presented as horizontal-cylindrical form (Figure 2).

Table 2 shows the overall dimensions of all tanks presented. Table 3 shows the theoretical thickness resulting in weight given in Table 1.

Figure 1

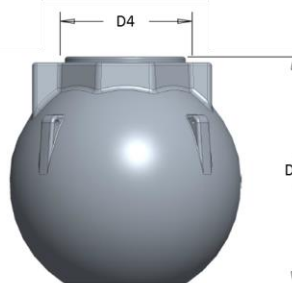
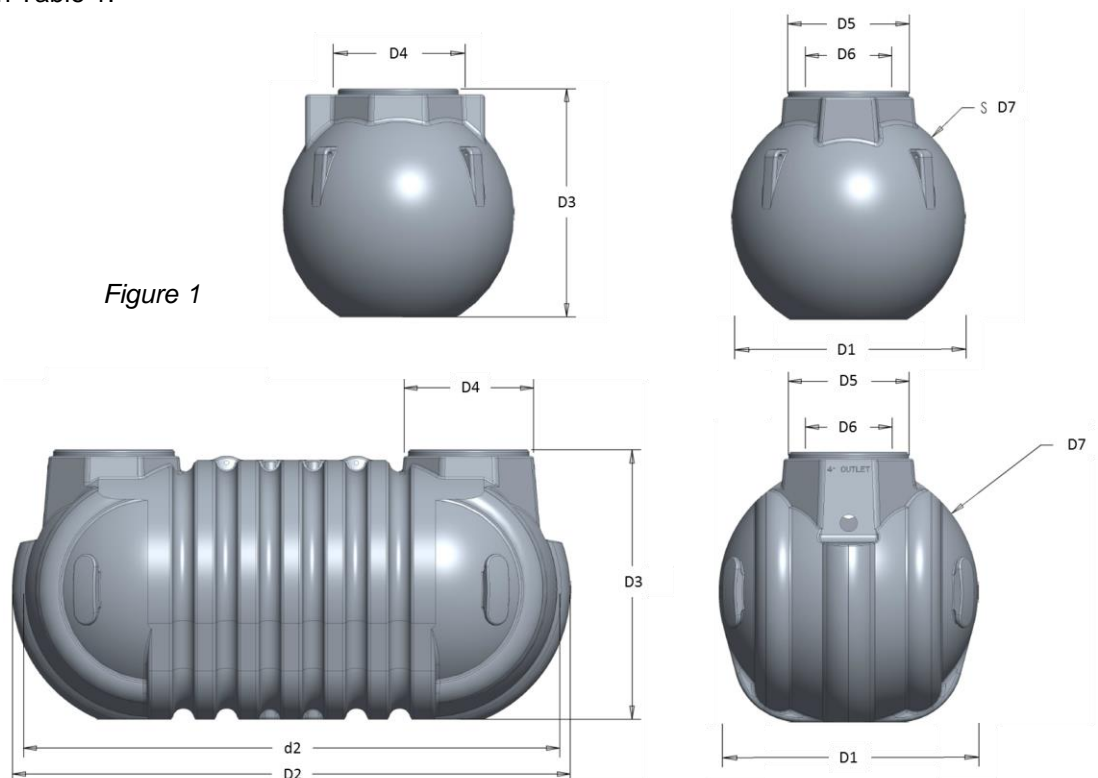


Figure 2



UNIVERSAL TECHNICAL SPECIFICATION SEPTIC TANKS	CODE:	CID-CS-017-ET-210
	REVIEW:	01
	DATE:	12/20/2017

Table 2. Overall dimensions of all tanks.

Tank Capacity [gal]	All dimensions in inches							
	D1	D2	d2	D3	D4	D5	D6	D7
	BODY WIDTH	BODY LENGTH	BODY LENGHT W/OUT BELTS	TOTAL HEIGHT WITHOUT LID	NECK DIAMETER	NECK FRAME DIAMETER	HOLE DIAMETER	SHORT SIDE DIAMETER
300	54	54	N/A	52 25/32	30	28	20	54
500	48	101	96	53	30	28	20	48
750	60	102 7/8	97 7/8	62 5/16	30	28	20	60
1,000	60	129	124	62 5/16	30	28	20	60
1,500	60	161 7/8	157	62 5/16	30	28	20	60

The general tolerances for all dimensions given in Table 2 will be $\pm 2\%$

Table 3. Thicknesses of tanks

Tank capacity [gal]	Thickness [inches]
300	0.331
500	0.258
750	0.348
1,000	0.333
1,500	0.375

Note: Table 3 shows ideal thickness for all tank which should be uniformly distributed along the tank. The distribution could vary $\pm 15\%$ on the different zones in random way. The real thickness in all the tank must be above 0.25" to ensure that IAPMO certification is accomplished.

Drawings

For other dimensions and details see the drawings indicated in table 4:

Table 4. Drawings of detail of tanks

Tank capacity [gal]	Drawing
300	R-D-247
500	R-D-248
750	R-D-257
1,000	R-D-246
1,500	R-D-249

Finish

Sand Blast.

Components.

Table 5 shows the components are presented by capacity.

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Table 5. List of components and amounts per tank.

COMPONENTS							
SKU	MATERIAL DESCRIPTION	TANK CAPACITY					UNITS
		300	500	750	1,000	1,500	
112329	4" SANITARY INLET/OUTLET T-BAFFLE	1	2	2	2	2	PCS
310561	MULTI-TITE PIPE GASKETS 4"	2	2	2	2	2	PCS
112393	4 IN PVC PIPE SCH 40 PLAIN END (1 FT)	2	2	2	2	2	PCS
112393	4 IN PVC PIPE SCH 40 PLAIN END (1.166 FT)			2	2	2	PCS
112969	4 IN COUPLING HXH PVC DWV			2	2	2	PCS
540142	SEPTIC TANK DOME LID 20"	1	2	2	2	2	PCS
110287	STAINLESS STEEL SCREWS #10 X 1 IN	8	16	16	16	16	PCS
540141	20" TAR ADAPTER RING	1	2	2	2	2	PCS
540139	1500 GAL SEPTIC TANK BAFFLE					1	PCS
540140	750-1000 GAL SEPTIC TANK BAFFLE			1	1		PCS
112328	INSTALL INSTRUCTION SEPTIC TANKS	1	1	1	1	1	PCS
112323	CLEAR VINYL ENVELOPE 4 3/4" X 9 1/2"	1	1	1	1	1	PCS
112393	4 IN PVC PIPE SCH 40 PLAIN END (3.958 FT)		2				PCS
112393	4 IN PVC PIPE SCH 40 PLAIN END (4.979 FT)			2	2	4	PCS
112932	SEPTIC AND CISTERN WHITE LOGO STICKER	2	2	2	2	2	PCS
112989	IAPMO STICKER FOR SEPTIC TANKS			1	1	1	PCS

Label placing.

All tanks must include labels as indicated in Table 5. The labels position for 300 gal. tank must be on the neck, on the left faces next to the inlet/outlet faces of the octagon. For graphic reference, see Figure 3, and Figure 5. The labels position for 500, 750, 1000, and 1500 gal. tanks must be on the right faces next to the inlet/outlet faces of the octagon. For graphic reference, see Figure 4 and Figure 6.

Figure 3. Position labels in spherical tank

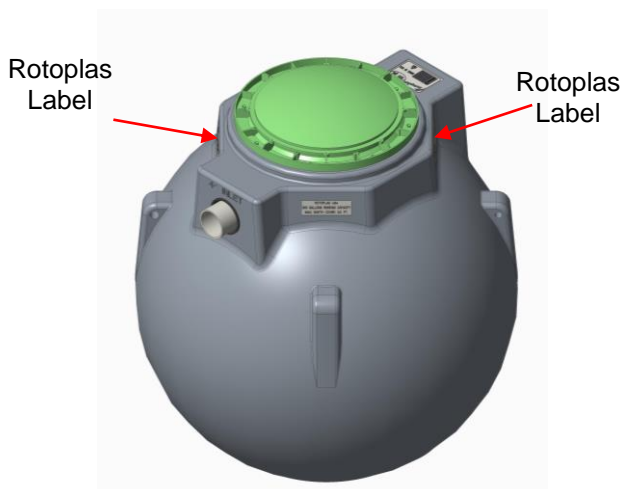


Figure 4. Label position in horizontal-cylindrical tanks

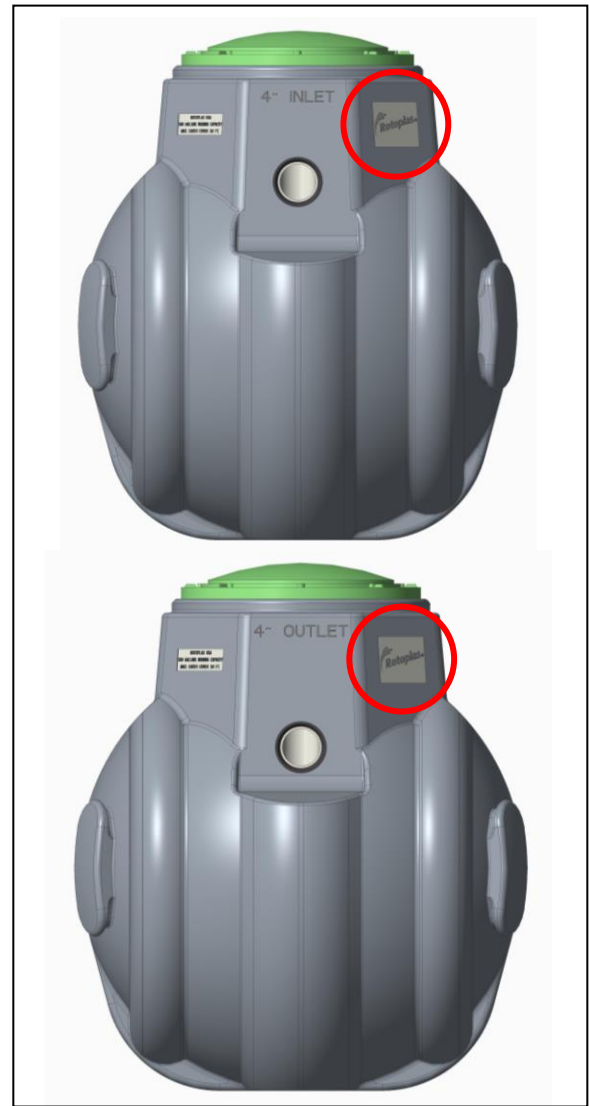


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Figure 5. Label details in spherical tank



Figure 6. Label details in horizontal-cylindrical tank

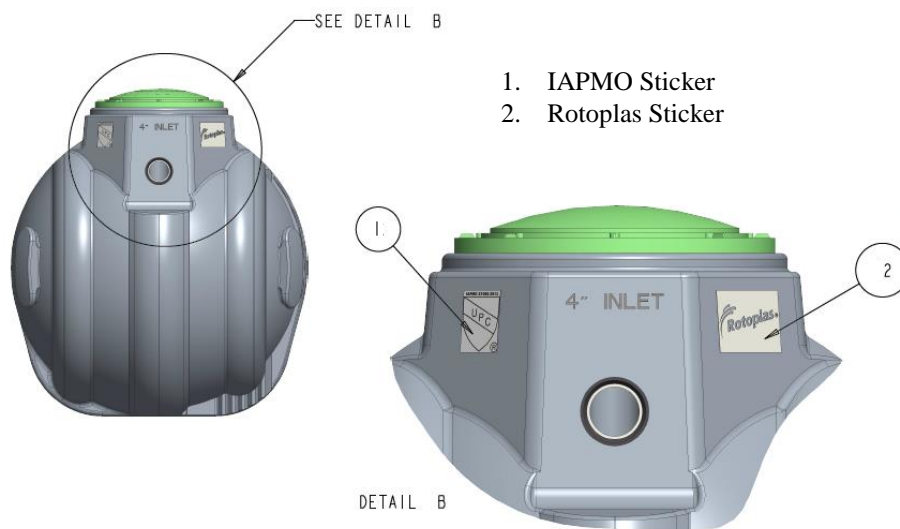


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IAPMO sticker placing.

For 750, 1000, and 1500 gal. tanks, the IAPMO sticker must be included as indicated in Table 5. The labels position must be on the neck located on the inlet side of the tank, on the left side face. For graphic reference, see Figure 7.

Figure 7. IAPMO sticker placing detail

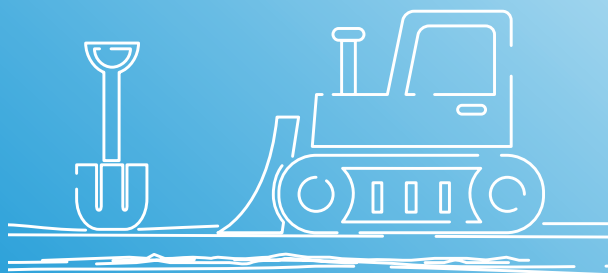


Review	Changes	Date	Done	Approved
01	Label placing updated, New section for placing IAPMO sticker. Material list updated.	12/20/2017	G. Fuerte	G. Tolentino

Before installing your Tank

- Select a site where you are going to install the Tank.
- Ensure you have all the equipment and tools needed for excavation:

- **Excavator**
- **Access port lids**
- **Screws included per lid or riser**
(use type 304 stainless steel)
- **2 inlet /outlet gaskets**
- **2 inlet /outlet tees**
- **Measuring tape**
- **Risers**
- **Socket wrench, shovel, level and utility knife**
- **PVC cement**
- **4" schedule 40 or SDR 35 pipe**
- **Sealant**



Rotoplas Septic and Cistern System Tanks must be installed according to state and / or local regulations. If unsure of the installation requirements for a specific site, contact the health department or permitting authority.



Proudly made



in USA



Only applies for 750, 1000, and 1500 Gal Septic Tanks.

WARRANTY

Rotoplas Septic and Cistern Tanks have a five (5) year manufacturer warranty. Please review the Rotoplas Warranty Policy for additional details. This standard limited warranty does not apply to damages resulting from, misuse, improper application of recommended materials, accident, or improper installation or maintenance.

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Septic and Cistern Tank

Installation instructions

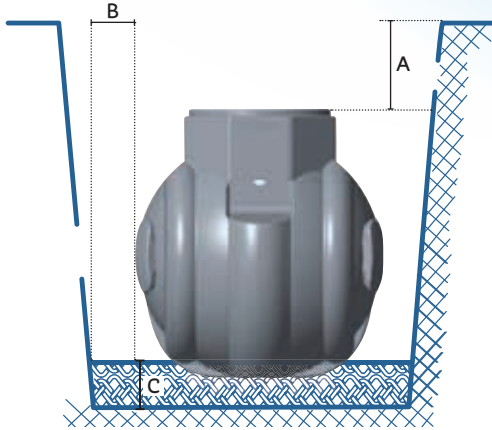


Life-Sustaining Solutions

Where a handshake is your word, hard work ingrained, and where water is life.

1. Excavation

1. Excavate a hole for the Tank considering the following recommendations:
 - A. Excavate to a depth of 6" to 36" from the top of the Tank*.
 - B. Allow 18" to 24" on both sides and both ends of the Tank to allow the installation of Tank accessories*.
 - C. In the base of the excavation, prepare a 6" to 12" leveled bed of compacted sand or soft compactable fill, free of sharp objects. Verify that the installation surface is flat.
2. Carefully lower Tank into excavation, do not drop.
3. For Septic Tanks, align inlet and outlet with pipe trenches, it is important that the outlet is below level of inlet.

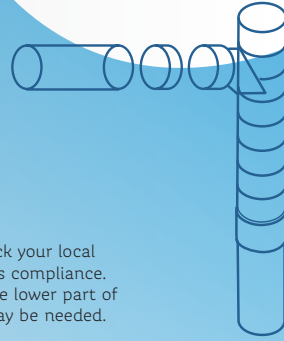


2. Inlet/Outlet Gaskets

(For Septic Tanks only)

1. Identify the Tees (4") and Rubber Gaskets (4") and insert them as follow:
 - A. Insert the Gaskets in the holes on both ends of the Tank (inlet/outlet). Push the pipe into the gasket on each end.
 - B. From inside the Tank slide the Tee into a vertical position.
 - C. Ensure the Tees are firmly connected with the 4" pipe.

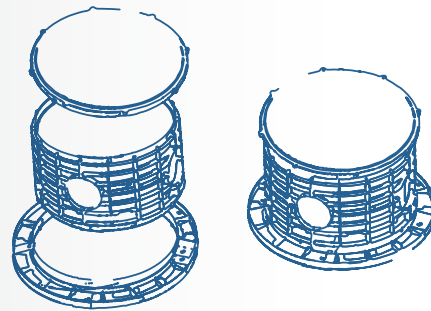
*These points are important to prevent collapse of Tank.



Note: check your local regulations compliance. Cutting the lower part of the tee may be needed.

3. Manhole extensions

1. In sites where it is required to increase the height, you can use a riser***, choose any option to achieve the necessary height.
2. Ensure that all connection surfaces are clean and dry. Before you backfill, install the lids and risers to the Septic and Cistern Tanks.
3. Apply sealant**** to the top of the adapter ring and place the riser over it. Fasten with the included stainless steel screws. Finally drill and fix in position with the supplied stainless steel screws. Do not over tighten screws, this may damage the plastic parts being connected, causing the connection to fail.
4. If additional riser is needed, apply sealant to the top of the riser and stack the new riser over the previous one.

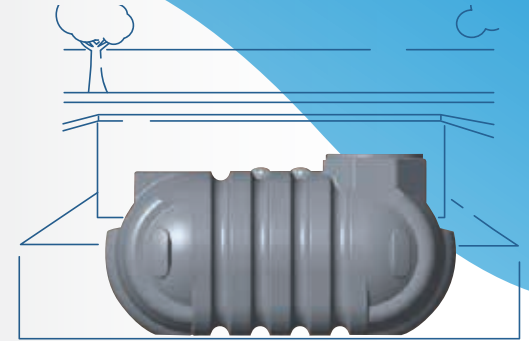


Important: only Rotoplas provided risers are acceptable for the right function of this product.

The risers are stackable. *Sealants vary between manufacturers. The installer must use discretion in determining the size and amount of sealant needed to craft and maintain a watertight seal.

4. Backfilling the Tank

1. No special backfill or water filling is required during installation****. Backfill around the Tank with clean soil; fill and compact thoroughly.
2. Tamp and compact backfill under inlet and outlet pipes.
3. Ensure there are no large or sharp objects in backfill material.
4. The sand/gravel mixture should be: 100% smaller than 1 1/2", and about 50% smaller than 1/4".
5. Maximum backfill over the top of the Tank is 36".



CAUTION

- Do not place under pathway of vehicles or heavy equipment.
- Keep away from large roots and rocks.
- Avoid placing Tank in wet clay location or in a high water table.
- Do not place in very sandy areas.
- Deflect surface run-off away from Tank area.
- Tanks are not fire resistant. Store away from ignition sources.
- Protect the Tank from sharp objects which could puncture it and cause leakage.
- Tanks are designed only for use as underground Tanks.
- Maximum temperature of liquid entering Tank is 120°F
- Maximum bulkhead fitting size is 4".

****For the correct operation of the septic process is essential to fill it with water before you start using it.