FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Jan. 6, 2022

Clark Langmack
IMET Corporation
P.O. Box 470812
Cleveland, OH 44147

Dear Mr. Langmark,

This letter is in response to your request to use the Residential Septic Module (RSM) as an alternative repair method. The Department has no objection to the use of this alternative repair method. Note that this non-objection does **not** recognize any treatment effectiveness and does not allow the product to be used as an aerobic treatment unit (ATU) or as a component of a performance-based treatment system (PBTS). This non-objection is subject to the conditions below:

The proposed alternative repair method is under the scope of rule 62-6.015(3), Florida Administrative Code (F.A.C.). You provided information that this alternative repair method will include the following:

1. Installation of one IMET RSM system model (R14.500.S, R14.600.S, R14.900.S/D, R14.1200.S/D, R14.1500.D, R10.500.S, R10.600.S, R10.900.D, or R10.1200.D), an air pump meeting the manufacturer's specifications, and associated accessories. The IMET modules will be installed at the inlet end or the first of two tanks in series. The modules will be secured to the riser as described by the manual and in compliance with all 62-6 F.A.C. requirements.
2. The IMET-RSM can be installed in residential septic tank up to 1500 gallons effective capacity. Minimum septic tank sizing must meet **both** rule 62-6, F.A.C. Table II as well as the IMET manual specifications.

Specifications of which IMET model is used for estimated sewage flows between 200 and 1500 gpd is provided in the attached design, installation and maintenance manual.

Conditions of Use

1. Use of the product shall be in conjunction with any approved compatible septic tank meeting requirements of rule 62-6, F.A.C. with a riser which meets the 12" or 16" inside diameter size requirements specified by the manual.
2. No structural modifications to the existing tank or lid are allowed beyond installation of a riser. The airline of the unit must be installed through an opening in the riser as described in the manual.
3. Installation of your unit shall be considered an alternative repair subject to rule 62-6.015(3), F.A.C. Please note that alternative repair methods cannot be used where the absorption surface of the drainfield is within six inches of the wet season water table.
4. Installation and use shall be as detailed in the Florida installation manual submitted to the Department by IMET on November 14, 2022.
5. Any changed to the manual must be reviewed by the department prior to distribution in Florida.
6. The unit may be installed in all system construction applications (new, modification, repair).

Be advised that the Department is not a testing agency. This determination of non-objection reflects only a review of the information submitted by you for compliance with Florida Statutes and Florida Administrative Code. The alternative repair method evaluation does not investigate the validity of performance claims. The Department's non-objection must not be interpreted as certifying effectiveness, endorsing or recommending use of the alternative repair method. The alternative repair method must not be advertised as "state approved". The Department also does not assume liability for any promise, guarantee, or expectation from purchasing or using this alternative repair method. The department reserves the right to withdraw acceptance if the alternative repair method is modified to differ from what was considered in this evaluation.

This letter of no objection is limited to Department of Environmental Protection jurisdictional circumstances as defined in Chapter 62-6, Florida Administrative Code and Chapter 381.0065, Florida Statutes. If we may be of further assistance or should you have any additional questions regarding this letter, please contact Debby Tipton at 850-245-8629.

Sincerely,

(delegated)

Eberhard Roeder, PhD, PE, CPM
Program Administrator
Onsite Sewage Programs

ER/sp
Enclosure

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the hearing process may result in a modification of the agency action or even denial of the request for a variance or waiver.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file oridentification number, if known;

(b) The name, address, telephone number, and any e-mail address of the petitioner; the name, address, telephone number, and any e-mail address of thepetitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agencydecision;

(d) A statement of all disputed issues of material fact. If there are none, thepetition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific factsthat the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the actionthat the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing must be filed within 21 days of receipt of this written notice. The failure to file a petitionwithin the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57,F.S., or to intervene in this proceeding and participate as a party to it. Any

subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35,Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

Judicial Review

Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Departmentin the Office of General Counsel, 3900 Commonwealth Boulevard, M.S. 35, Tallahassee,Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

IMET®
TOTAL WATER REUSE

IMET-RSM
ALTERNATIVE REPAIR METHOD

FLORIDA

ALTERNATIVE REPAIR METHOD

revision 2.2 - November 14, 2022

Call: 216-233-5486 or visit www.imet.net

Contents

CERTIFICATION

Introduction

IMET Corporation of Cleveland, Ohio attests that the IMET Residential Septic Module system, or IMET-RSM system, may be used as an Alternative Repair Method (ARM) in typical residential septic wastewater applications (see Appendix) in accordance the with parameters, specifications and prohibitions described herein.

The IMET Residential Septic Module (IMET-RSM) system is designed to work with septic wastewater as a "Drop-In" technology that may be installed in both new and existing septic

systems. Please refer to rule 62-6 Florida Administrative Code the Department of Environmental Protection, STANDARDS FOR ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS as the primary source and examples that follow as the guide for proper installation of the IMET-RSM technology.

Capacity

The IMET-RSM system is sized to handle a broad range of residential septic tank configurations from a single bedroom dwelling to multi-bedroom condominiums treating 200 gallons per day or more. The Standard IMET-RSM Sizing Chart below shows usual applications up to 1500 gpd. Custom sizing of systems can be provided by IMET for applications greater than 1500 gpd and for systems with Tank Operating Liquid Levels less than 34", but that is not addressed within this Alternative Repair Method (ARM).

Standard IMET-RSM System Sizing Chart

Standard IMET-RSM Sizing Chart

custom sized IMET Modules and Systems are available for Tanks and Applications below 200 gpd and above 1500 gpd

* Please refer to rule 62-6 Florida Administrative Code the Department of Environmental Protection, STANDARDS FOR ONSITE SEWAGE TREATMENT AND DISPOSAL

SYSTEM FLOW	Minimum SYSTEM SIZE including ALL Tanks *	Minimum SEPTIC TANK SIZE *	System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level		System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level		System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level
200-360 GPD	500 GAL	300 GAL	R14.500.S	1426	(1)	≥ 16 in.	≥ 34 in.	or	R10.500.S	1036	(1)	≥ 12 in.	≥ 44 in.						
360-600 GPD	800 GAL	500 GAL	R14.600.S	1426	(1)	≥ 16 in.	≥ 34 in.	or	R10.600.S	1036	(1)	≥ 12 in.	≥ 44 in.						
600-900 GPD	1,200 GAL	1,000 GAL	R14.900.D	1426	(2)	≥ 16 in.	≥ 34 in.	or	R10.900.D	1036	(2)	≥ 12 in.	≥ 44 in.	or	R14.900.S	1436	(1)	≥ 16 in.	≥ 44 in.
900-1200 GPD	1,800 GAL	1,200 GAL	R14.1200.D	1426	(2)	≥ 16 in.	≥ 34 in.	or	R10.1200.D	1036	(2)	≥ 12 in.	≥ 44 in.	or	R14.1200.S	1436	(1)	≥ 16 in.	≥ 44 in.
1200-1500 GPD	2,400 GAL	1,500 GAL													R14.1500.D	1436	(2)	≥ 16 in.	≥ 44 in.

A written explanation of the Sizing Table may be found in the Appendix.

Tank Module(s) Installation Location in Solution

IMET-RSM system is installed in the septic tank for a single or a multi-compartment residential septic system application. The elevation of the Module in the septic tank should be at least 2" above the bottom of the tank and submerged such that the top of the Module is at least ½" below the operating solution level of the tank in which it is installed.

IMET-RSM (Residential Septic Modules) Drawings

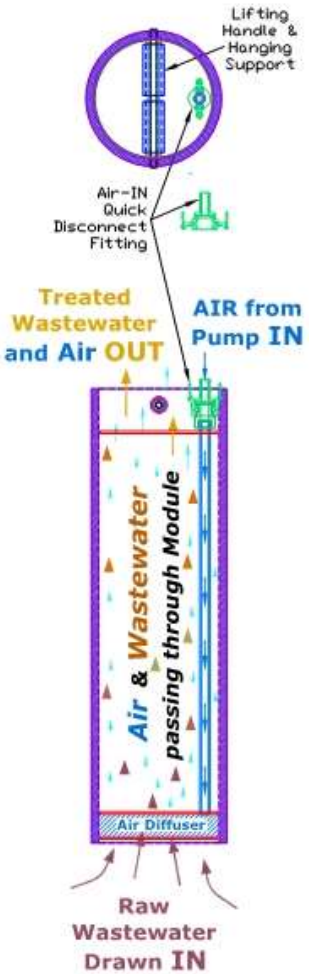
THE FOLLOWING DRAWINGS ARE TYPICAL FOR IMET-RSM (RESIDENTIAL SEPTIC MODULES)

- *PROCESS FLOW DRAWING IS TYPICAL FOR ALL MODELS*
- *MODULE DIMENSIONAL DRAWINGS SHOW EACH INDIVIDUAL RSM MODEL*

IMET Modules Description

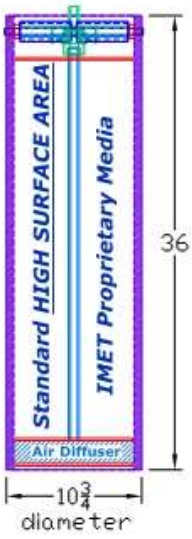
Typical Process Flow Drawing for ALL Models

TOP VIEW

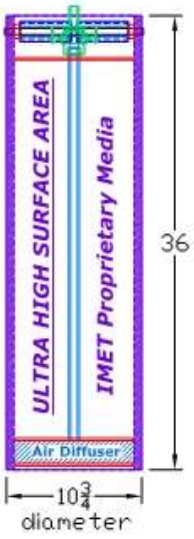


SIDE VIEW

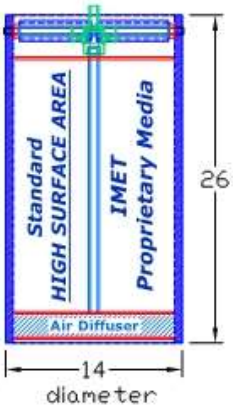
R10.500.S
(1) Module req'd
-
R10.900.D
(2) Modules req'd
-
Model Number Laser Etched onto each Module



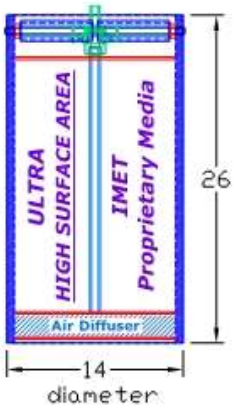
R10.600.S
(1) Module req'd
-
R10.1200.D
(2) Modules req'd
-
Model Number Laser Etched onto each Module



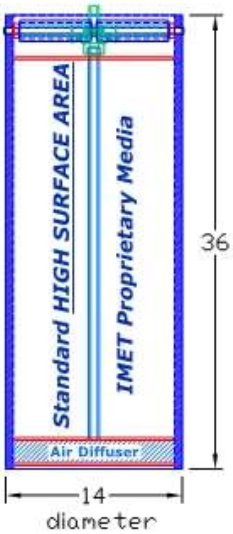
R14.500.S
(1) Module req'd
-
R14.900.D
(2) Modules req'd
-
Model Number Laser Etched onto each Module



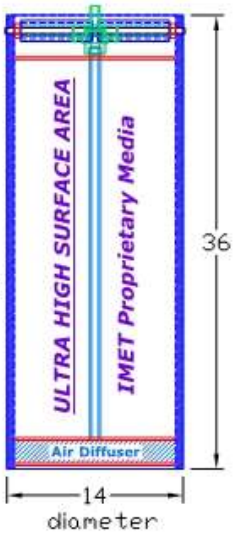
R14.600.S
(1) Module req'd
-
R14.1200.D
(2) Modules req'd
-
Model Number Laser Etched onto each Module



R14.900.S
(1) Module req'd
-
R14.1500.D
(2) Modules req'd
-
Model Number Laser Etched onto each Module



R14.1200.S
(1) Module req'd
-
Model Number Laser Etched onto each Module



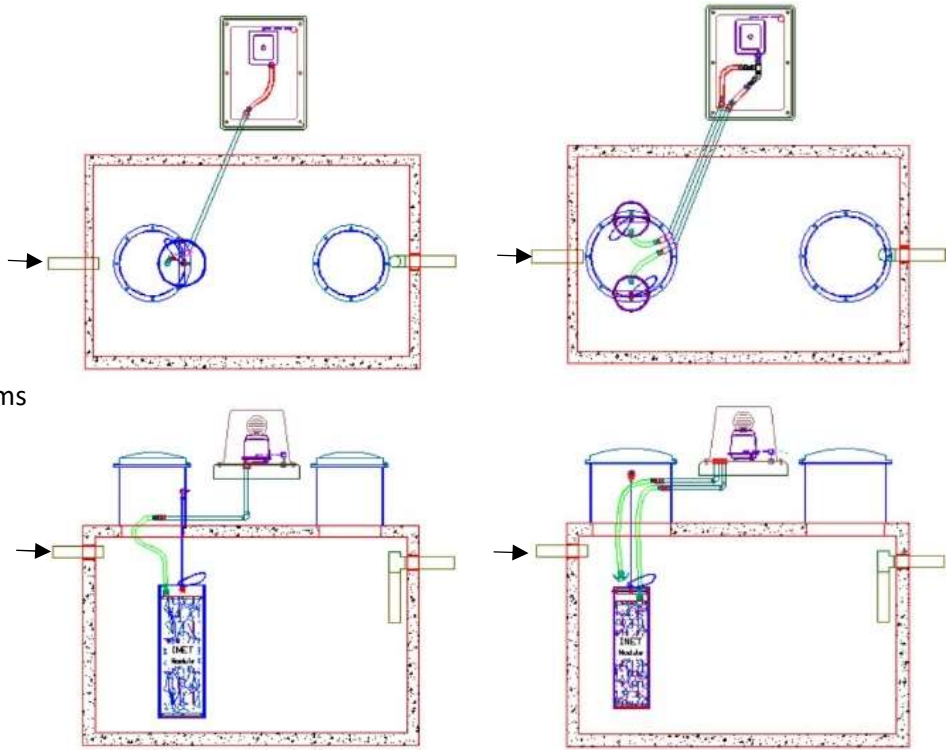
Placement of IMET Module(s)

THE FOLLOWING ARE TYPICAL INSTALLATIONS DIAGRAMS FOR VARIOUS SEPTIC SYSTEMS

One Tank – Single Compartment Septic Tank

Single & Dual IMET Module(s) installed in a Cement Single Septic Tank

(As might be found in some older installations, not per current 62-6 regulations)

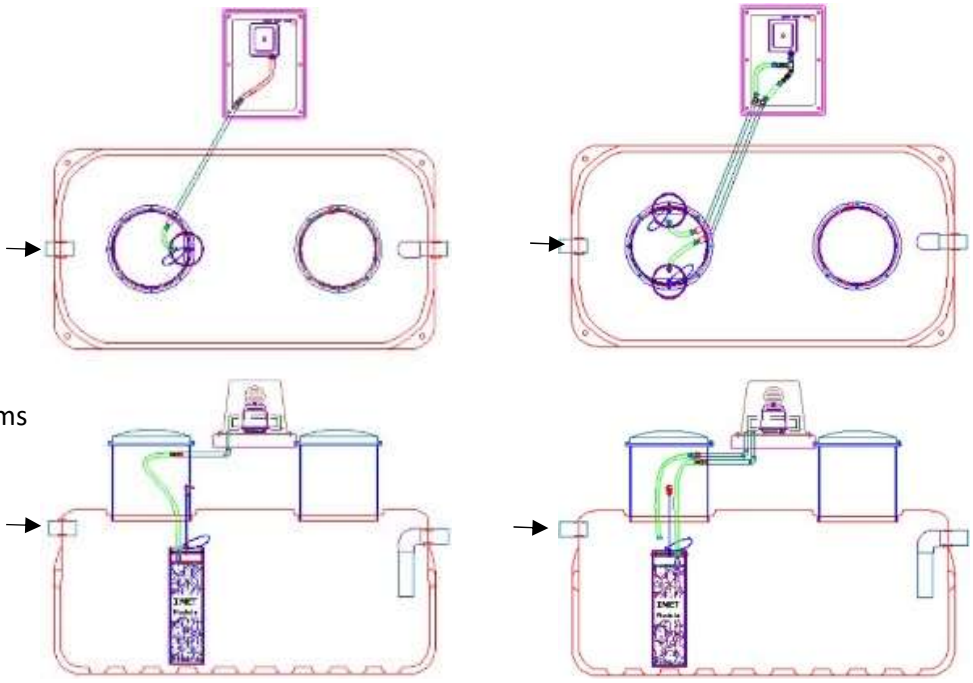


Single IMET Module Systems R10.500.S, R10.600.S, R14.500.S, R14.600.S, R14.900.S, R14.1200.S

Dual IMET Modules Systems R10.900.D, R10.1200.D, R14.500.D, R14.600.D, R14.900.D, R14.1200.D, R14.1500.D

Single & Dual IMET Module(s) installed in a Plastic Single Septic Tank

(As might be found in some older installations, not per current 62-6 regulations)



Single IMET Module Systems R10.500.S, R10.600.S, R14.500.S, R14.600.S, R14.900.S, R14.1200.S

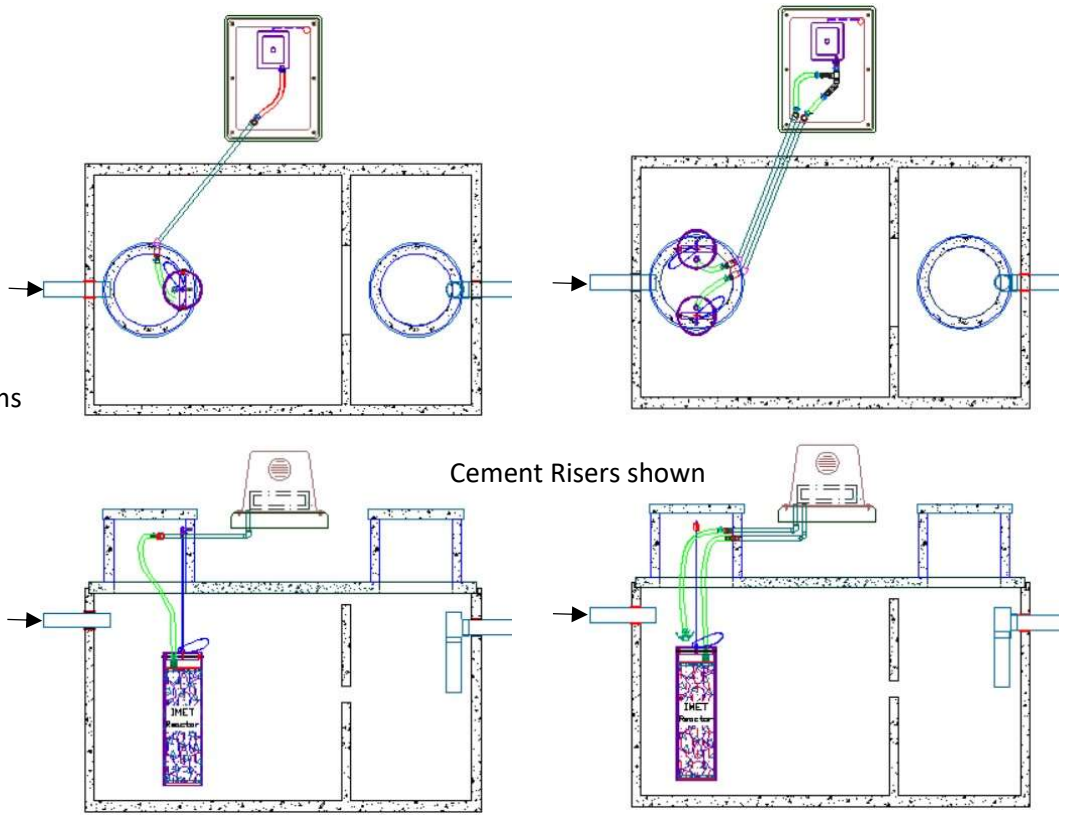
Dual IMET Modules Systems R10.900.D, R10.1200.D, R14.500.D, R14.600.D, R14.900.D, R14.1200.D, R14.1500.D

One Tank – Multi Compartment Septic Tanks

Single & Dual IMET Module(s) installed in a Cement Two-Compartment Single Tank Septic System

(As might be found in some older and all recent installations, per current 62-6 regulations)

Single IMET Module Systems R10.500.S, R10.600.S, R14.500.S, R14.600.S, R14.900.S, R14.1200.S



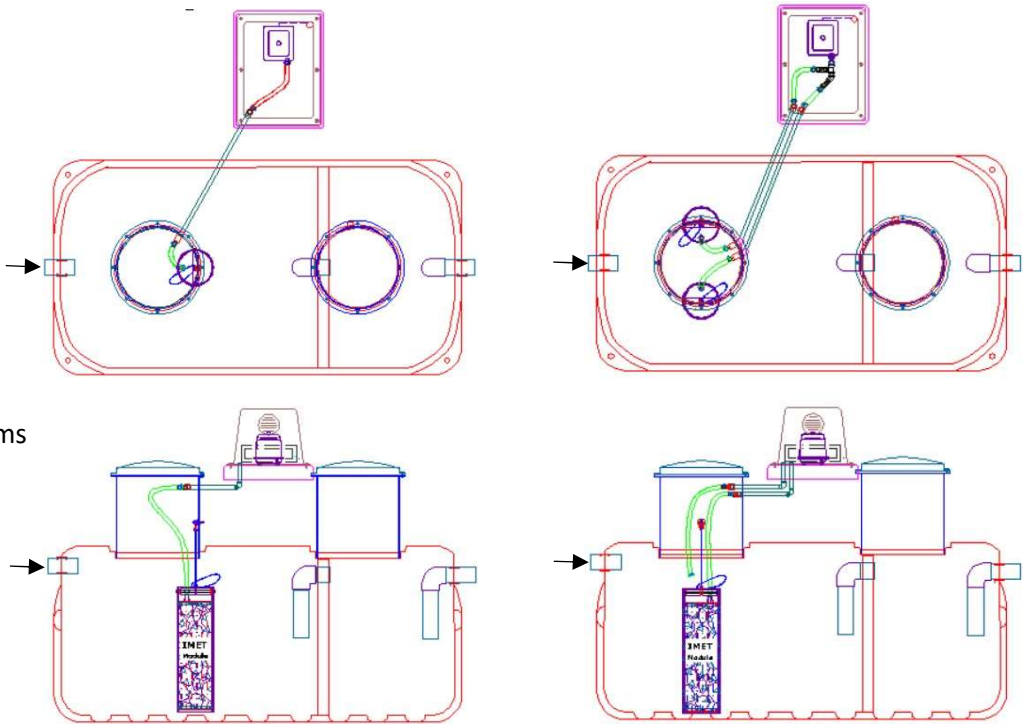
Cement Risers shown

Dual IMET Modules Systems R10.900.D, R10.1200.D, R14.500.D, R14.600.D, R14.900.D, R14.1200.D, R14.1500.D

Single & Dual IMET Module(s) installed in a Plastic Single Tank Septic System with Two or more Risers

(As might be found in some older and all recent installations, per current 62-6 regulations)

Single IMET Module Systems R10.500.S, R10.600.S, R14.500.S, R14.600.S, R14.900.S, R14.1200.S



Dual IMET Modules Systems R10.900.D, R10.1200.D, R14.500.D, R14.600.D, R14.900.D, R14.1200.D, R14.1500.D

IMET-RSM System Components

Component Descriptions

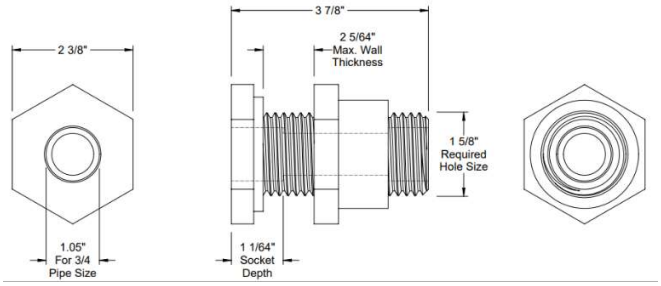
1. **IMET Module(s):** (see "Standard IMET-RSM Sizing Chart") primary made from PVC with 316 stainless steel fasteners and various propriety bio-medias.

2. **Quick-disconnect cam-lock hose-end fitting(s):** for connection to the IMET Module (#1), made from phenolic plastic materials

3. **Flexible Hose(s) ¾" ID** flexible vinyl/rubber/plastic hose with all stainless-steel hose clamps at the connection to (#2) and (#4).

4. **Bulk-head Pipe Fitting(s)**: Provides watertight transition through Riser (#20p,#20c) sidewall for the air-line. It is made from PVC with rubber gasket material. An example drawing is provided of a bulkhead fitting available from McMaster-Carr (item #36895K842) acceptable for working on curved surfaces with a minimum inside diameter of 12" and applications from 0.1" up to 2.07" wall thickness. Bulk-head fittings for wall thickness of 1.75" to 4.25" may be ordered directly from FlexPVC at https://flexpvc.com/ with SKU number from the Table below entered in the web-site Search box.

McMaster-Carr (item #36895K842)
acceptable for working on curved surface applications up to 2" wall thickness.



FlexPVC SKU numbers Table

Riser Wall Thickness	SKU.
1.75" to 2.25"	BH-20-007F
2.25" to 2.75"	BH-25-007F
2.75" to 3.25"	BH-30-007F
3.25" to 3.75"	BH-30-007F
3.75" to 4.25"	BH-40-007F

5. **Air Line(s)**: Provides watertight/airtight connection from #6 to #4 to infeed the air. Air Line(s) may be provided as ¾" PVC rigid pipe with fittings or cross-linked polyethylene PEX pipe. Must be in a secure location, e.g., buried.

6. **Transitions Grommet(s)**: Provides a secure transition through Air Pump Housing Base/Bottom for the Air Infeed Line(s) (#5) to pass into the Air Pump Housing (#9) made from rubber gasket material.

7s **Air pump high-temp tube with ss hose clamps:** rubber/plastic-polymer hose made for at least 200˚F or higher temperature application with stainless steel hose clamp.

8. **Air pump:** with specifications of 110 VAC at 250 watts and air flow of approximately 200 lpm (~7 cfm) at 2 psi (55" back pressure). Examples of acceptable Air Pumps are Alita AL-200, Blue Diamond ETD-200 or ETDA-200 (with low-pressure alarm), Blue Diamond ET-200 or ETA-200 (with low-pressure alarm), High Blow HP-200.

9. **Air Pump Housing with opening/removable cover**: As above, it may be constructed from any non-water absorbing material, e.g., plastic, fiberglass, painted metal, stainless steel, etc. It too should be of sufficient size to accommodate the Air Pump (#8) + #7s

   An air-vent fan is suggested for all application and is required for a hot climate installation.

10. **Air Pump Electrical Cord**: A three wire (line, neutral, ground) cord with standard three pong end for 110VAC service.

11. **Transition for 110VAC Service:** from (#10) to Air Pump Electrical Cord to Electric Service Feed Wire (#13) coming from the Electrical Enclosure.

12. **Submersible Cord Grip**: for outdoor applications to transition Electric Service Feed Wire

13. **Electric System Infeed Wires:** Must a dedicated service infeed of Ground Fault Interrupt (GFI) 110VAC for the Air Pump. Power requirements of no more than 10 amps each is sufficient.

14. through 18. *(intentionally left blank)*

19. **Hanging Loop:** is supplied with the IMET Module for lowering the Module into the tank.

20p. **Riser Plastic or Fiberglass**: Must be at least 12" inside diameter for IMET System Models R10.500.S, R10.500.D, R10.600.S, R10.900.D, R10.1200.D and at less 16" in diameter for IMET System Models R14.500.S, R14.600.S, R14.900.S, R14.1200.S, R14.900.D, R14.1200.D, R14.1500.D to allow passage of the IMET Module(s) into the tank. The Riser height should at least 6" so that hole(s) may be drilled through the Riser for plumbing access and installation of the Bulk-head fitting.

20c. **Riser, Concrete**: Must be at least 12" inside diameter for IMET System Models R10.500.S, R10.500.D, R10.600.S, R10.900.D, R10.1200.D and at less 16" in diameter for IMET System Models R14.500.S, R14.600.S, R14.900.S, R14.1200.S, R14.900.D,

R14.1200.D, R14.1500.D to allow passage of the IMET Module(s) into the tank. The Riser height should be at least 6" so that hole(s) may be drilled through the Riser for plumbing access and installation of the Bulk-head fitting.

21. **Suspension Chain/Cable:** is use for suspending the IMET Module in tank solution. Must be made from 316 stainless steel. Cable or Chain must have a capacity of at least 400 pounds. If Chain, the interior width opening of the link must be at least .38" to accommodate the 3/8" carabiner (#22) supplied by IMET for connection to the 316 stainless steel crossbar at the top of the IMET Module (#1).

22. **Carabiner:** is supplied by IMET and is made from at least 0.31" diameter 316 stainless steel with at least ½" access when opened, having a capacity of at least 400 pounds, and is used for the connection to the 316 stainless steel crossbar at the top of the IMET Module (#1) and the Eyebolt Assembly (#23).

23. **Eyebolt:** (1 required per IMET Module) for use in plastic, fiberglass, and concrete Riser: Made from 316 stainless steel 3/8"-16 x 3" Eyebolt.

24p **Washers:** (2 required per IMET Module) for use in plastic or fiberglass Risers only. Made from 316 stainless steel for 3/8" bolt inside diameter clearance and minimum 1.5" outside diameter. Applied to the 3/8" Eyebolt (#23) on inside and the outside of the Riser (#20).

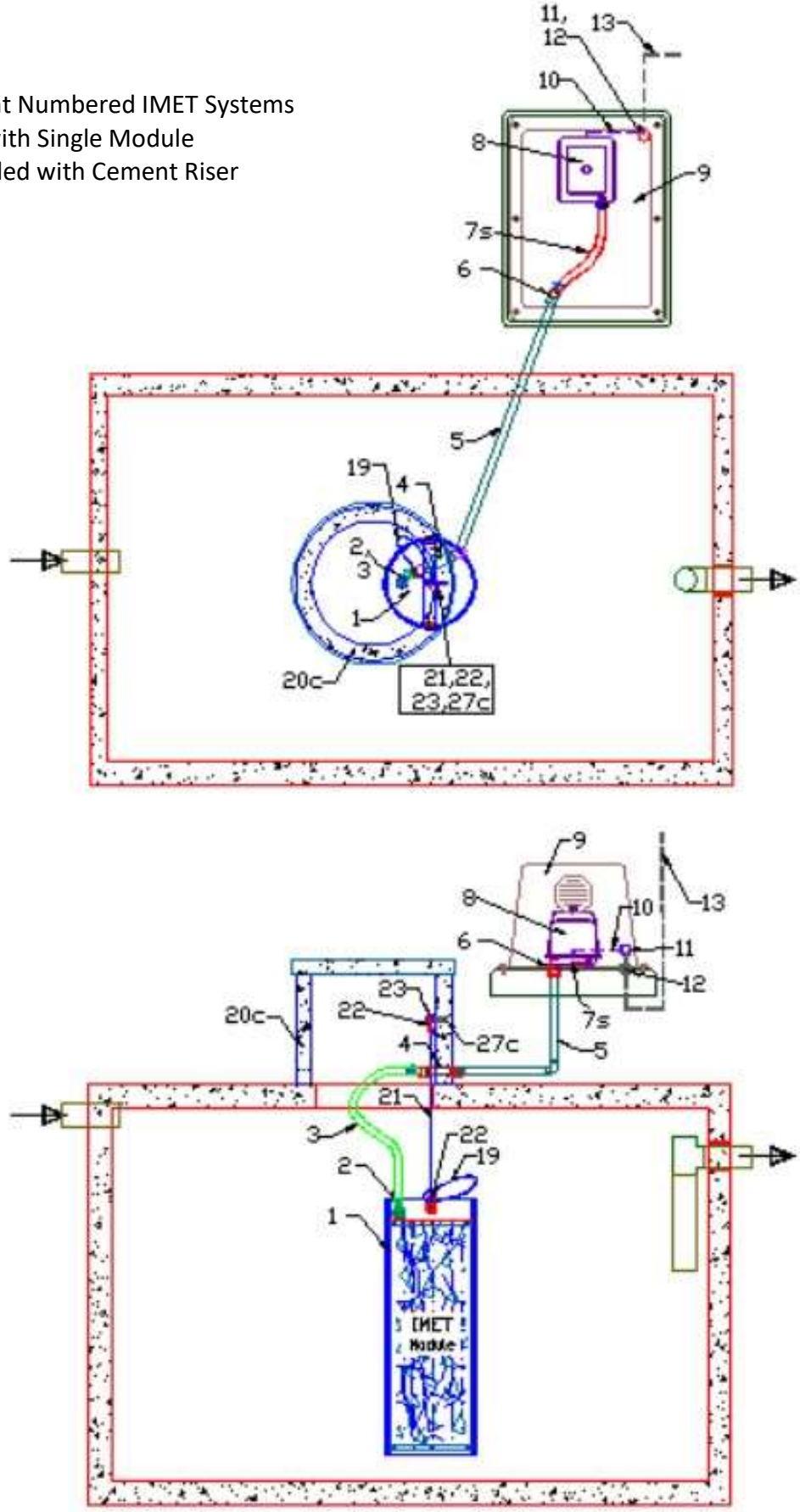
25p **Nut:** Made from 316 stainless steel for 3/8"-16 threads per inch (may be hex-nut or other). Applied to the Eyebolt (#23) on the outside of the Riser (#20).

26p **Sealant for installation of the Suspension Apparatus in the for Plastic/Fiberglass Riser:** (No sealant is required for Concrete Riser applications.) Watertight sealant applied to the space between the inside and the outside of the Riser (#20p) and the inside and outside Washers (#24p) around the Eyebolt (#23) to fully seal the through-hole. For a list of Sealants approved by the State of Florida please refer to https://floridadep.gov/sites/default/files/Seals%20and%20sealants_2022_0606.pdf As examples: Trelleborg Pipe Seals Park Hills Sealants product "C-56" or Henry Company Sealants product "Butyl-Nek" or "Ram-Nek".

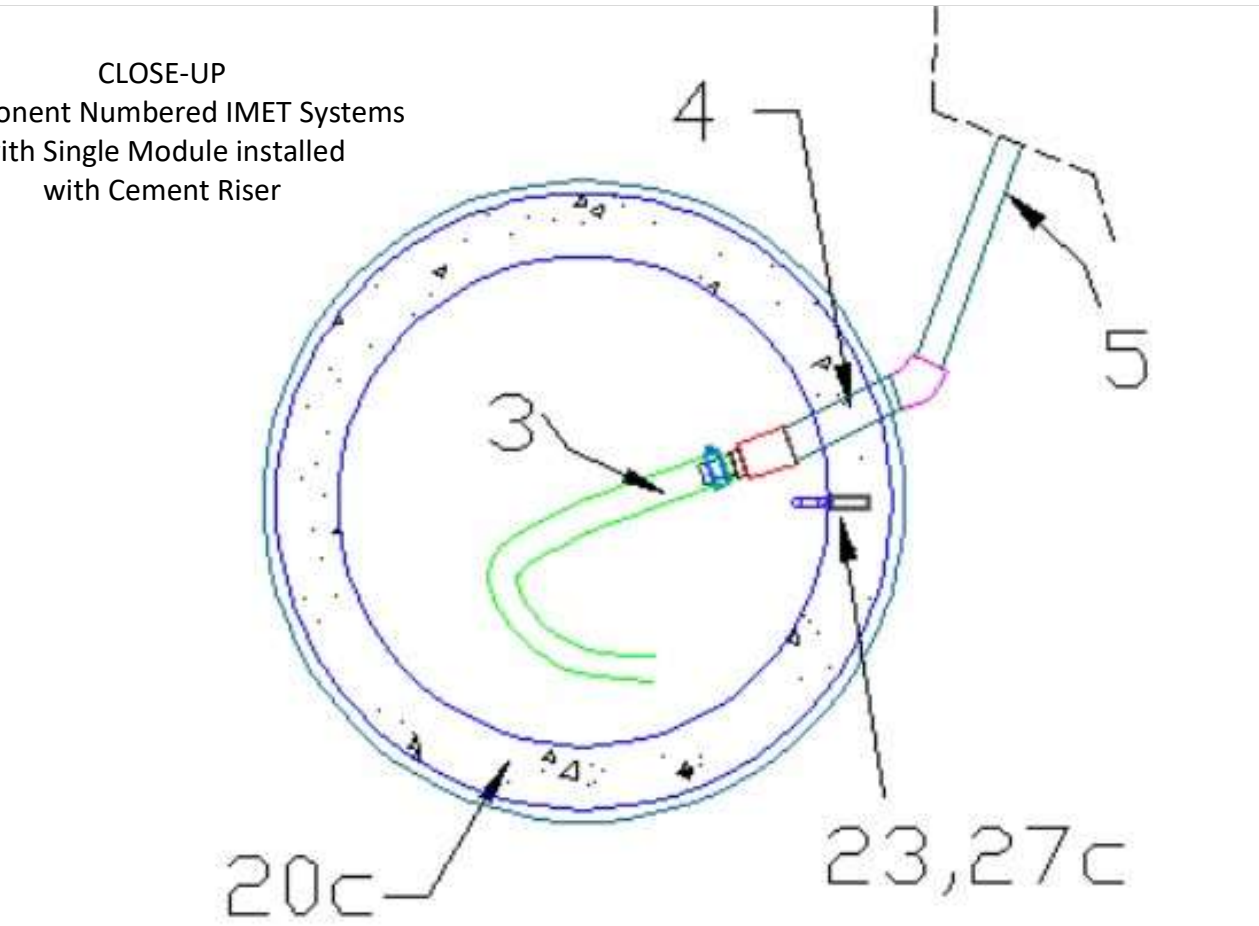
27c **Eyebolt Anchor:** for 3/8"-16 Eyebolt (#23) with 3/8" internal threads made from 316 stainless steel, 1-9/16" long to fit in hole drilled in the concrete Riser (#20c) in the concrete 1-5/8" deep x ½" diameter. Do not penetrate the exterior wall of the Riser.

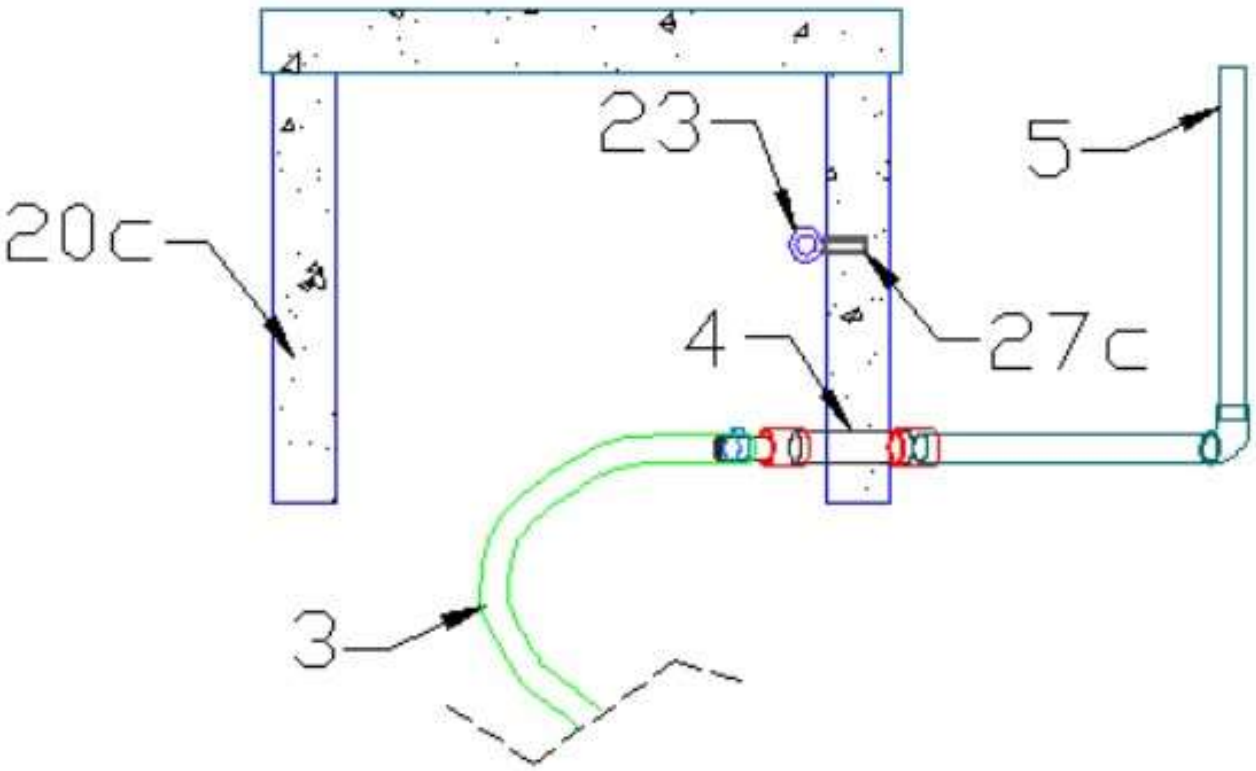
Component Numbered Installation Drawings – refer to numbered list above

Component Numbered IMET Systems
with Single Module
installed with Cement Riser

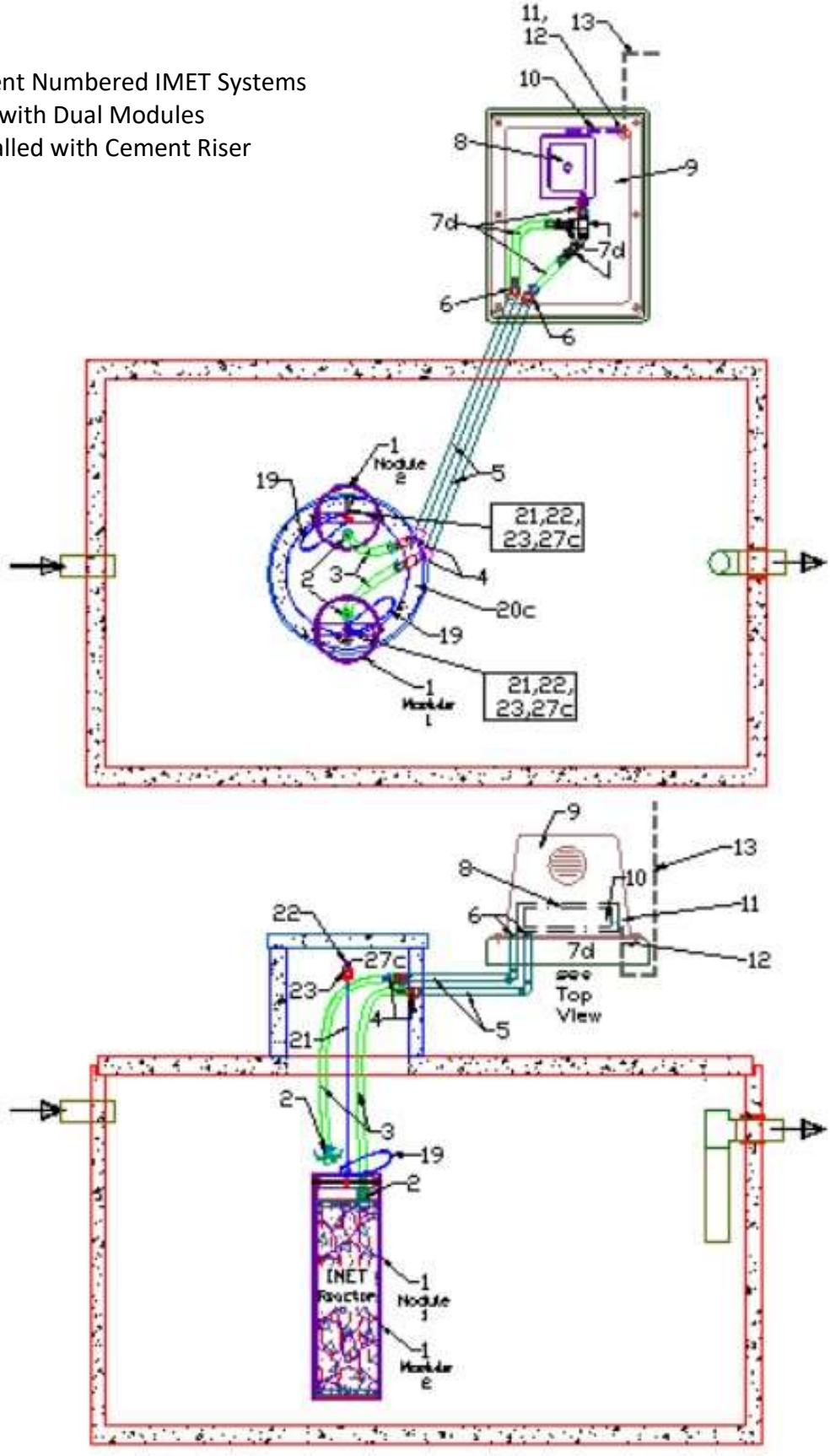


CLOSE-UP
Component Numbered IMET Systems
with Single Module installed
with Cement Riser

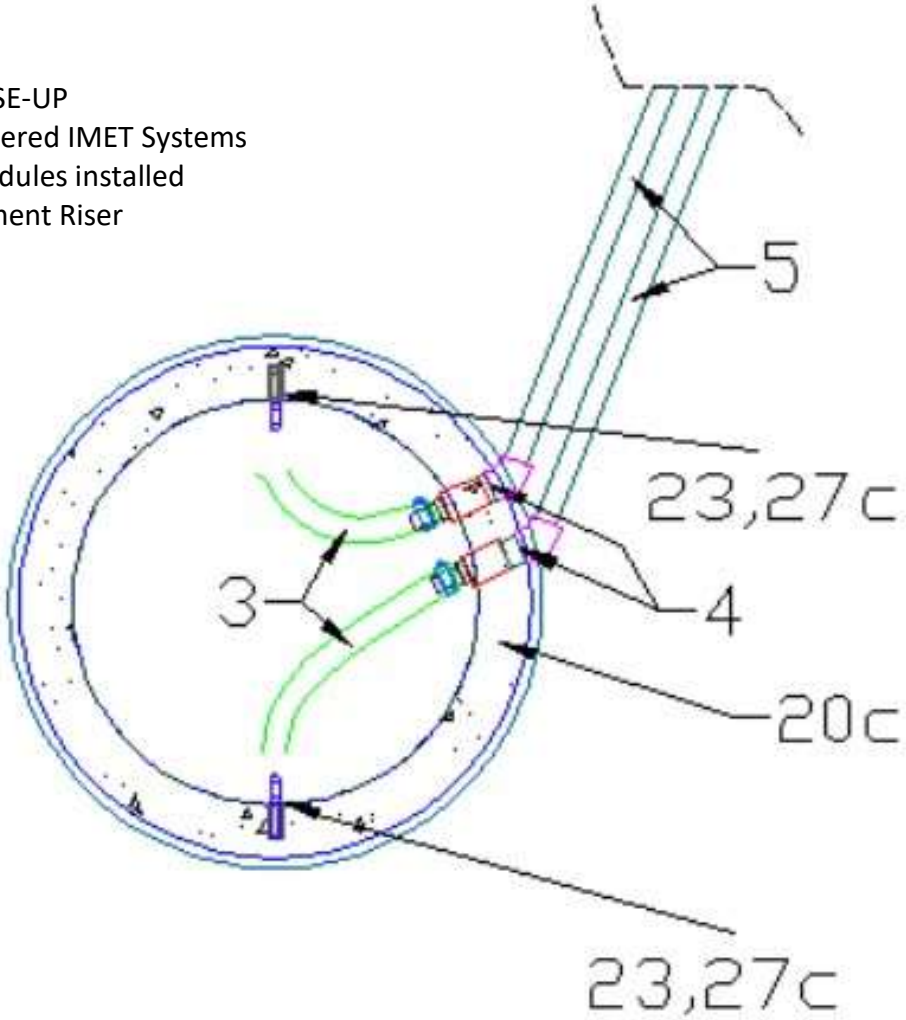


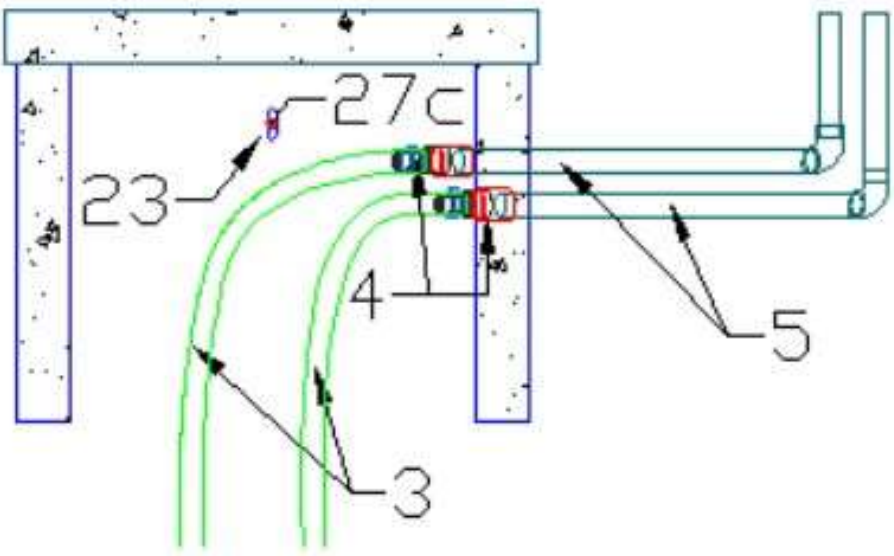


Component Numbered IMET Systems
with Dual Modules
installed with Cement Riser

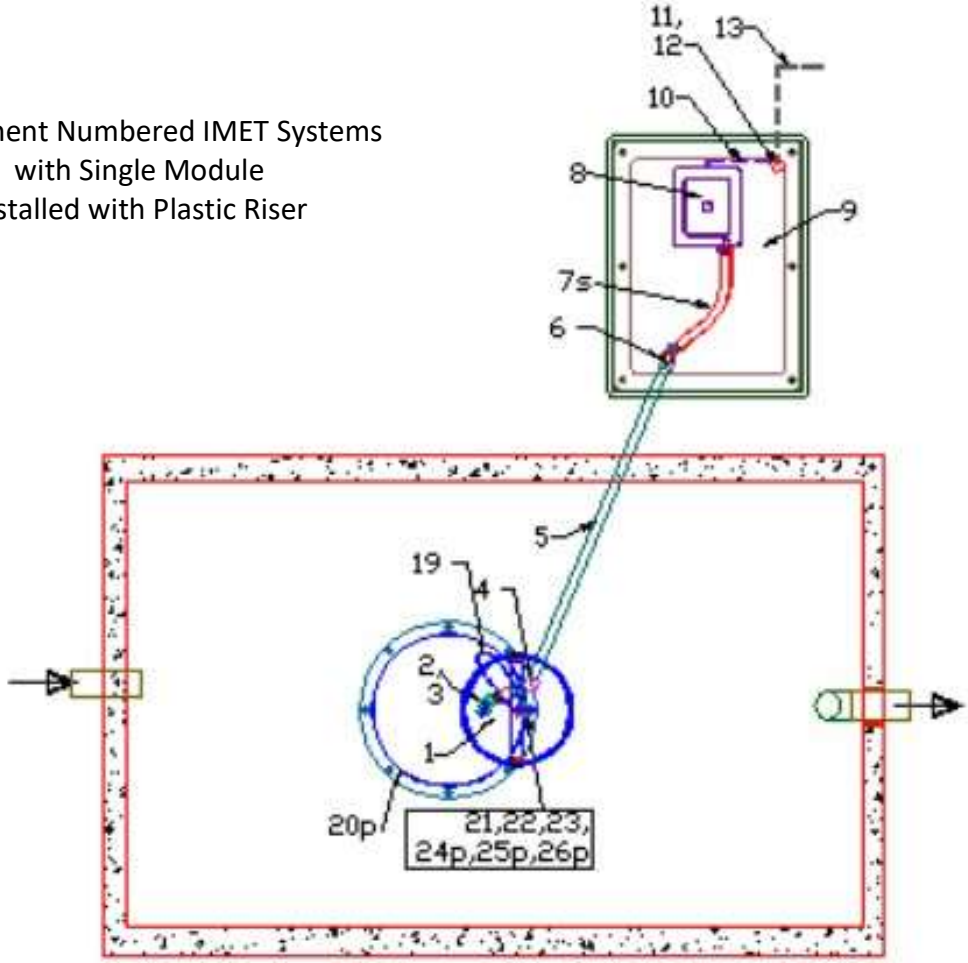


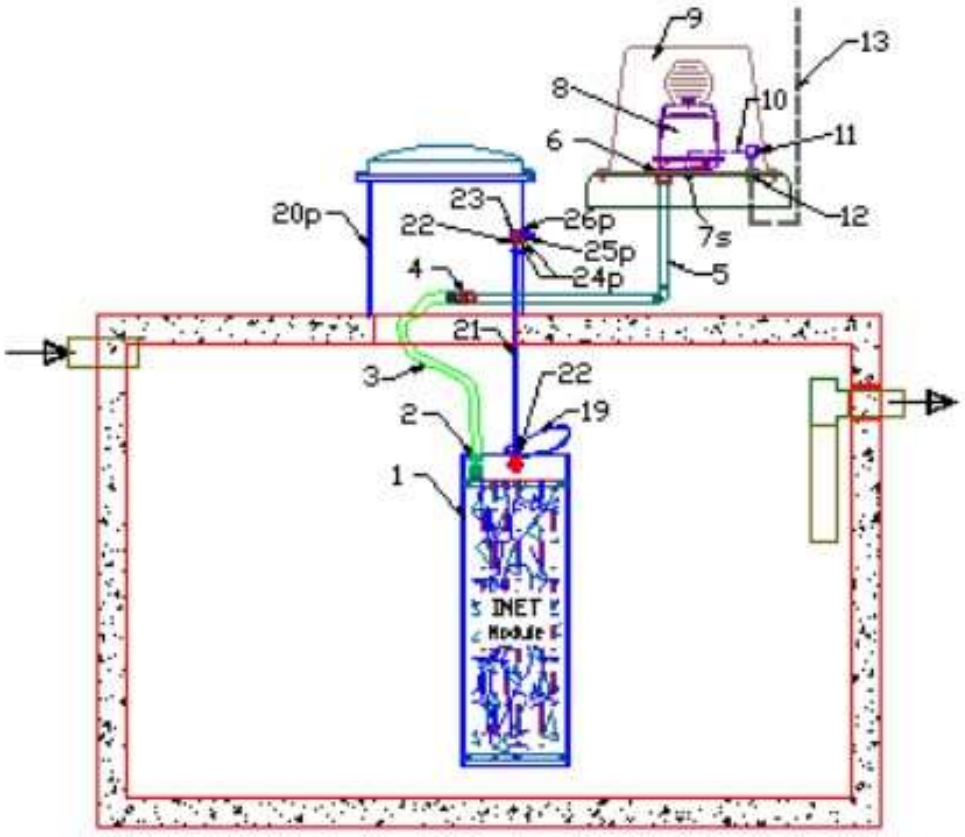
CLOSE-UP
Component Numbered IMET Systems
with Dual Modules installed
with Cement Riser



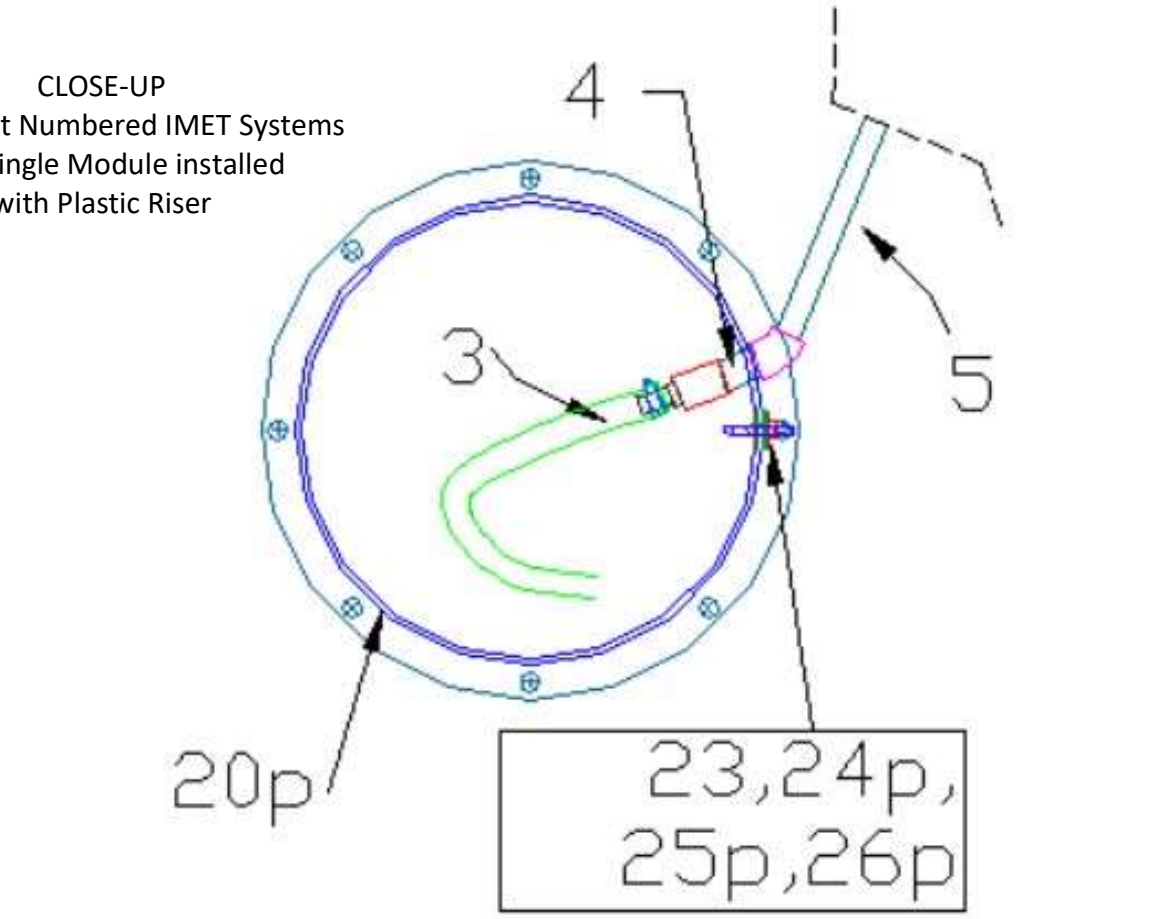


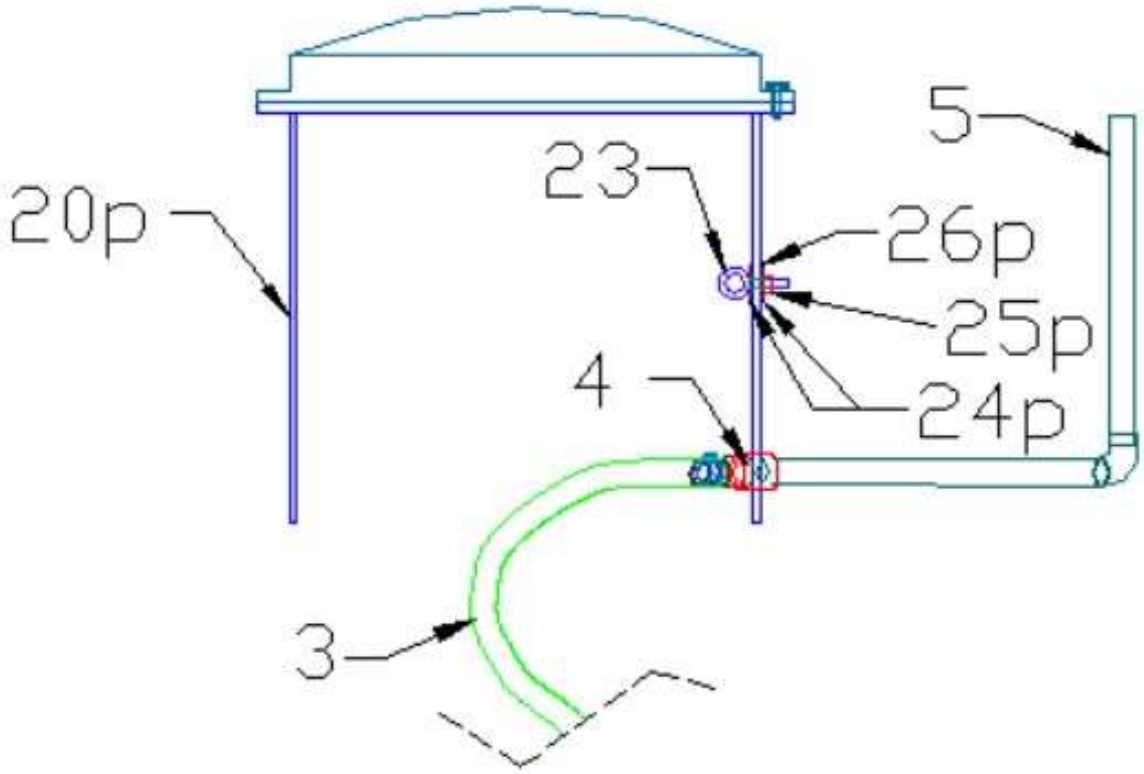
Component Numbered IMET Systems
with Single Module
installed with Plastic Riser



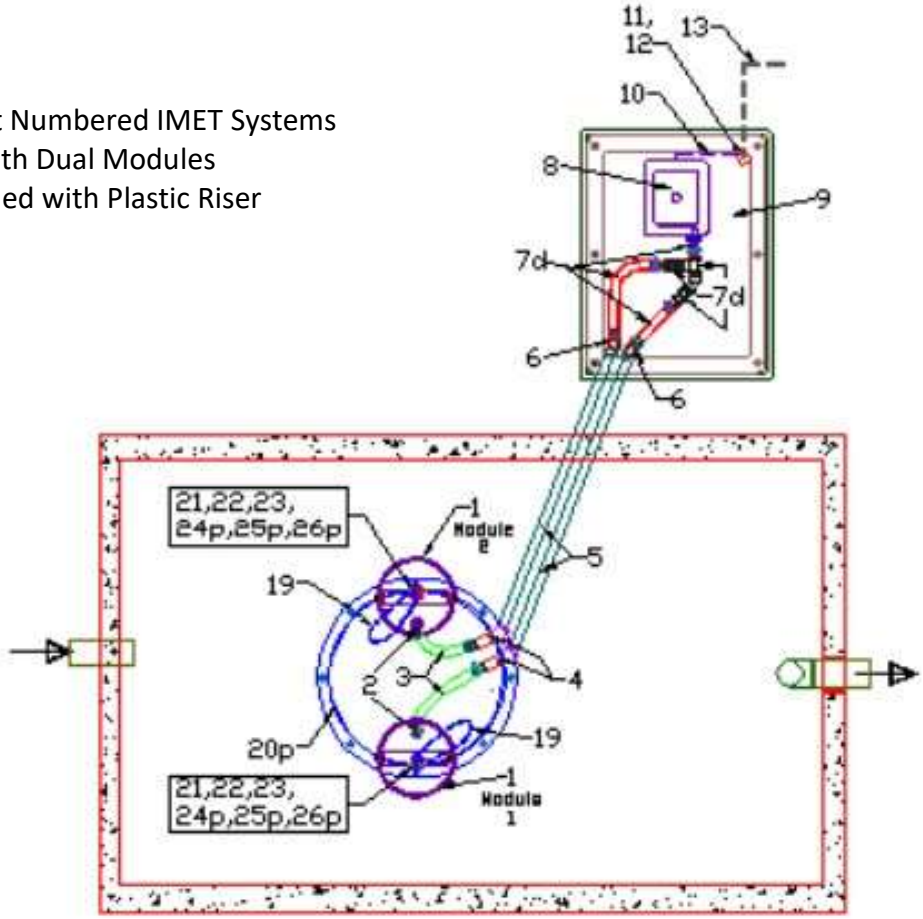


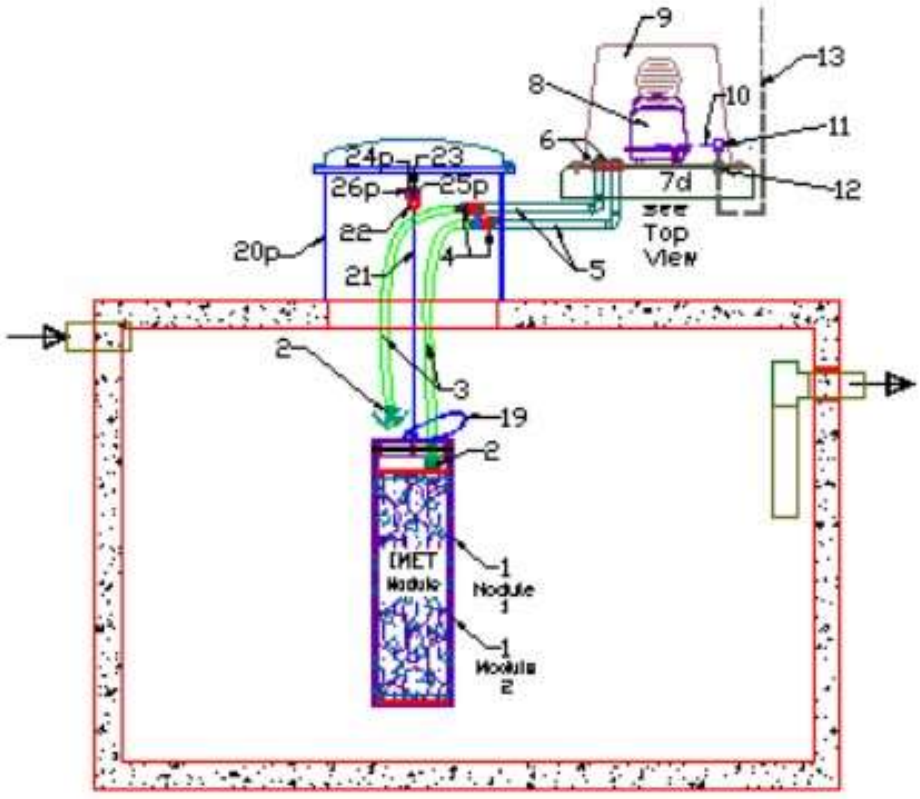
CLOSE-UP
Component Numbered IMET Systems
with Single Module installed
with Plastic Riser

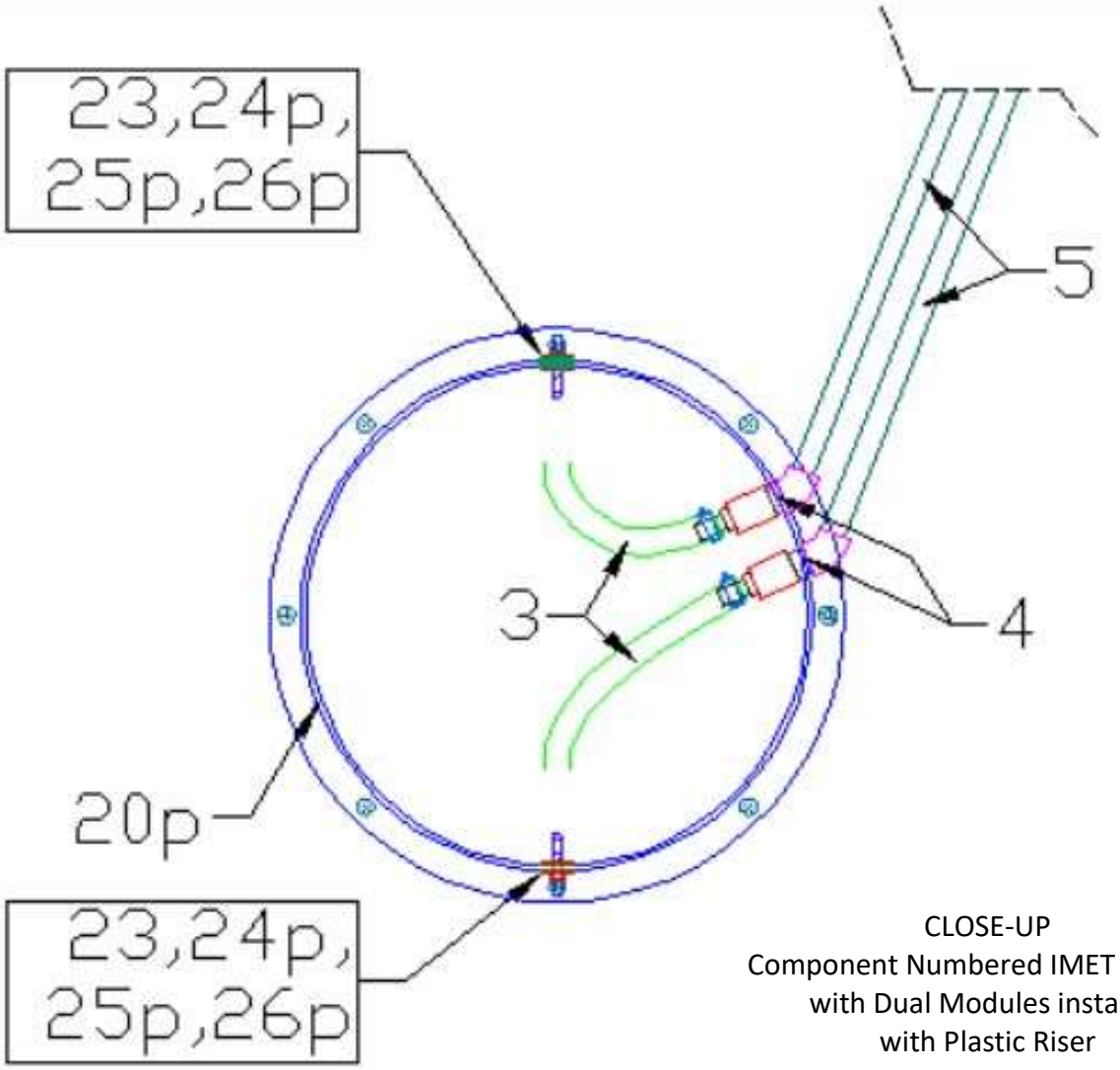




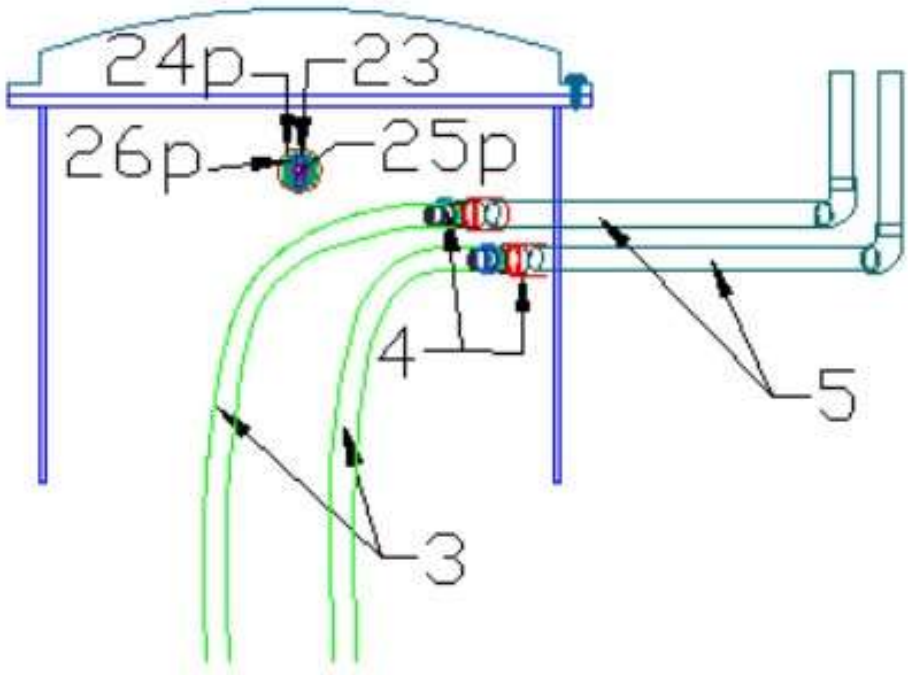
Component Numbered IMET Systems
with Dual Modules
installed with Plastic Riser







CLOSE-UP
Component Numbered IMET Systems
with Dual Modules installed
with Plastic Riser



INSTALLATION

PREPARATIONS

Air Pump: The Air Pump should be housed in a structure without direct exposure to outside weather and within 50 ft. of the IMET-RSM. The structure should be open or have ventilation for the Air Pump. IMET can supply a fan ventilated cabinet or Air Pump Housing for installations in an outdoor environment. The Air Pump can be placed inside an existing structure, e.g., home, garage, barn, shed, etc.

Electrical supply to the Air Pump may be a simple 3-prong 110VAC 16 gauge or larger extension cord for an interior location. If placed in an outside location, 110VAC power (line, neutral, ground) must be run to the Air Pump Housing and connected to the Air Pump. In both cases (inside or outside) the power shall be supplied from a dedicated source of 10 amps with Ground Fault Interrupt. If outside, the run of electrical wire shall follow all state and local codes. The transition of the electrical wire through Air Pump Housing bottom shall be grommeted with a standard weather-tight connector.

From the Air Pump Housing there shall run a ~3/4" id solid PVC pipe, PEX line or other watertight/airtight, non-collapsible, non-kinking Air Line to the Tank Riser. This line may be buried or otherwise placed and shall run to the septic tank Riser secure from breakage, cutting, pinching, or pulling by external influence. The transition of the air line through Air Pump Housing bottom shall be grommeted.

Tank Riser Air Line Transition: A Bulkhead fitting shall be used to transition the Air Line from the Air Pump Housing to the Air Hose internal the tank Riser. A hole of appropriate size for the Bulkhead fitting shall be drilled through the Tank Riser at a location to accommodate the Air Line from the Air Pump Housing. The Bulkhead fitting shall be installed in the Riser to establish a watertight seal and the connections of the Air Line and Air Hose are made to the Bulkhead fitting.

Tank Riser Eyebolt Assembly : There are two different examples of tank Risers discussed herein for suspension of the IMET-RSM, Cement Riser & Plastic/Fiberglass Riser, other tank Riser options may work as well.

Cement/Concrete Riser will have a hole drilled with a ½" masonry bit ~1-5/8" deep into the inside of the side wall of the Riser at an elevation in the Riser convenient for installation. It is important that the drilled hole not penetrate the Riser outside wall to maintain the watertight integrity of the Riser. The 316 stainless steel anchor with internal threads of 3/8"-16 is hammer into the drilled hole using the special installation tool supplied with the anchor. Then the 3/8"-16 Eyebolt made from 316 stainless steel is threaded into the anchor.

Plastic/Fiberglass Riser will have a 13/32" hole drilled through the side wall of the Riser at an elevation in the Riser convenient for installation. A 316 stainless steel wide-washer for 3/8" bolt having outside diameter of 1½" to 2" will be place on the 3/8"-16 Eyebolt made from 316 stainless steel. The 13/32" hole in the Riser will be applied with water-sealing caulk on the inside and outside of the Riser. The Eyebolt with wide-washer is placed through the 13/32" hole with the eye interior to the Riser. A second wide-washer for 3/8" bolt (again made from 316 stainless steel with outside diameter of 1½" to 2") will be place on the Eyebolt. A 3/8"-16 nut (hex-nut or other) made from 316 stainless steel is tightened onto the Eyebolt to secure the assembly. A final application of the Sealant for the Plastic/Fiberglass Riser is applied to the interior and exterior of the Riser at assembly to insure a watertight seal.

IMET-RSM Placement

There are a variety of methods for treating the effluent exiting from the septic tank and while IMET-RSM have shown consistently a greatly improved effectiveness in all these septic methods, no claims as such are made in the Alternative Repair Method.

The IMET-RSM (Module) will be placed into the tank such that it is at least 2" off the bottom of the tank and is at least 1/2" below the liquid level of the tank when filled.

Air Hose Attachment: A flexible vinyl/rubber/plastic hose with all stainless-steel hose clamps is attached to the Bulkhead fitting on the inside of the Riser. The other end of the Air Hose is attached to the Quick-disconnect cam-lock hose-end fitting that will attach to the mating fitting on the top of the IMET-RSM (Module). Sufficient length of Air Hose will be used to have the Module fully placed in the tank or standing upright on the ground when fully removed from the tank; ~4 extra feet of Air Hose is recommended.

Suspension Chain/Cable Attachment: All parts of the Suspension Chain/Cable must be made from 316 stainless steel. The ends of the Suspension Chain/Cable must be able to accept the 0.31" diameter of the Carabineer. The length of the Suspension Chain/Cable is measured from the Eyebolt in the Riser to the top of the Module less the length of the two Carabineers. A range of lengths is acceptable so long as the Module is at least 2" off the bottom of the tank and is at least 1/2" below the liquid operating level of the tank when filled (from above). After preparing the Suspension Chain/Cable to length, clip one end to the Carabineer that is attached to the center of the stainless steel crossbar at the top of the Module. To the other end of the Suspension Chain/Cable clip-in the second Carabineer.

Refill the tank(s) with water to the normal operating level. Each IMET-RSM system Module can weigh between 45 lbs. to 150 lbs., although when aerated and submerged

the Module weight is much less. Appropriate precautions should be taken when handling.

A mechanical lifting device with 400 lbs. or more capacity is recommended for lifting a Module from the ground and lowering it through the Riser into the tank. To the end of the cable on the mechanical lifting device should be an open-hook, which is attached to the Hanging Loop on a Module. Plug-in the Air Pump to supply aeration to each Module. Each Module is then lifted and lowered into the tank. Once a Module is level with the Eyebolt, clip the free-hanging Carabineer on the Suspension Chain/Cable to the Eyebolt. Continue to lower the Module until the Suspension Chain/Cable attached to the Eyebolt is taught. Water and air should be visible coming through the top of the Module. The open-hook is then removed from the Hanging Loop, reeled-in, and the mechanical lifting device is set aside.

OPERATIONS:

The IMET-RSM system is a robust living micro-biological environment. Upon installation, an initial start-up period of 2-3 weeks is required for the aerobic micro-organisms to fully establish themselves in the Module(s). The growth of these micro-organisms occur naturally as sanitary waste is received from the household. Please use your plumbing facilities as you normally would through this start-up period. If you inspect the system during or right after a laundry or dishwasher cycle it is common to see foaming. We recommend that you use biofriendly detergents to further enable the system to perform at the highest level. For suggestions refer to https://www.epa.gov/saferchoice/safer-ingredients for a list of environmentally friendly chemicals for cleaning and other household uses.

You can minimize or eliminate maintenance issues by following a few simple rules to prolong the life and efficiency of your IMET-RSM system.

Do:

- Turn off water sources when they are not in use. Leaving the water running will flush out your system, reducing treatment time for the wastewater
- Fix any leaks in your faucets, showers, and toilets
- Check that your Air Pump is always plugged in and has power
- Avoid flushing non-biodegradable items down the drain (i.e., wet strength paper towels, baby diapers, sanitary napkins, kitty litter, rubber and plastic products, rags, grit, and coffee grounds)
- Use biodegradable detergents
- Always keep your Air Pump running, including when you are on vacation.

Don't:

- Don't use additives in your system.
- Don't discharge a water softener backwash into the system
- Don't pour fats, oils, and grease down the drain. Excessive fats, oils and grease can solidify and plug-up your system.
- Don't pour solvents, paints etc., into your system. These substances can temporarily harm the bacteria in the system, as well as potentially plug any Discharge effluent filter. Follow state in local regulations for the proper disposal of these and other harmful chemical wastes.
- Don't pour bleach or other powerful disinfectants into the system as they can negatively impact the biology in the IMET-RSM.

MAINTENANCE:

Quarterly, check that the Air Pump filter is free from dirt and debris. (See the Owner's Manual that is provided with the air pump.) If the filter is dirty, rinse it in tap water, allow it to dry and replace it in the Air Pump or replace with a new filter from IMET or the air pump manufacturer.

IMET highly recommends the owner hire a local Septic Tank Service Provider to once a year remove the lid from the Riser, in which the IMET-RSM is installed, confirm the aeration only is coming from the top of the Module. Then replace the lid to the riser immediately following inspection.

If any problem is perceived, contact IMET at www.imet.net or 216 799-3135.

Under no circumstance should you or anyone ever enter a tank, stick your head into the top opening of the tank or lean over the opening to a tank. Any one of these actions could result in death. It is IMET's firm recommendation that only trained professionals perform this type of service.

Further, IMET recommends that only a trained Electrician be employed to deal with any electrical inspections and issues that may arise. The IMET air pump utilizes 120 VAC, household current, which can result in death, if not handled properly.

SUMMARY:

IMET Residential Septic Module (IMET-RSM) system is designed to treat septic wastewater having characteristics considered "typical" for residential wastewater. The IMET-RSM is a simple to install and maintain "Drop-In" technology that is installed in both new and existing septic systems. Although no claims for results are made herein, nearly all installations have shown great improvement in the overall function of the residential water septic system.

APPENDIX

Typical Residential Septic Wastewater Composition

also https://www.app4water.com/characteristics-of-residential-wastewater/

Table 1. Composition of Typical Residential Untreated Wastewater

Constituent	Unit	Range	Typical
Total Solids	mg/L	300-1200	700
Dissolved	mg/L	250-1200	500
Fixed	mg/L	150-550	150
Volatile	mg/L	100-300	150
Suspended	mg/L	100-400	220
Fixed	mg/L	30-100	70
Volatile	mg/L	70-300	150
Setteable	mg/L	50-200	100
BOD5	mg/L	100-400	250
TOC	mg/L	100-400	250
COD	mg/L	200-1,000	500
Total Nitrogen	mg/L	15-90	40
Organic	mg/L	5-40	25
Ammonia	mg/L	10-50	25
Nitrite	mg/L	0	0
Nitrate	mg/L	0	0
Total Phosphorous	mg/L	5-20	12
Organic	mg/L	1-5	2
Inorganic	mg/L	5-15	10
Chloride	mg/L	30-85	50
Sulfate	mg/L	20-60	15
Alkalinity	mg/L	50-200	100
Grease	mg/L	50-150	100
Total Coliform	Colonies/100mL	10^6-10^8	10^7
VOCs	µg/L	100-400	250

Explanation of Standard IMET-RSM System Sizing Chart

Standard IMET-RSM Sizing Chart

custom sized IMET Modules and Systems are available for Tanks and Applications below 200 gpd and above 1500 gpd

* Please refer to rule 62-6 Florida Administrative Code the Department of Environmental Protection, STANDARDS FOR ONSITE SEWAGE TREATMENT AND DISPOSAL

SYSTEM FLOW	Minimum SYSTEM SIZE including ALL Tanks *	Minimum SEPTIC TANK SIZE *	System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level		System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level		System Model Number	Module Name	Quantity	Septic Tank Riser dia. OPENING Access	Septic Tank OPERATING Liquid Level
200-360 GPD	500 GAL	300 GAL	R14.500.S	1426	(1)	≥ 16 in.	≥ 34 in.	or	R10.500.S	1036	(1)	≥ 12 in.	≥ 44 in.						
360-600 GPD	800 GAL	500 GAL	R14.600.S	1426	(1)	≥ 16 in.	≥ 34 in.	or	R10.600.S	1036	(1)	≥ 12 in.	≥ 44 in.						
600-900 GPD	1,200 GAL	1,000 GAL	R14.900.D	1426	(2)	≥ 16 in.	≥ 34 in.	or	R10.900.D	1036	(2)	≥ 12 in.	≥ 44 in.	or	R14.900.S	1436	(1)	≥ 16 in.	≥ 44 in.
900-1200 GPD	1,800 GAL	1,200 GAL	R14.1200.D	1426	(2)	≥ 16 in.	≥ 34 in.	or	R10.1200.D	1036	(2)	≥ 12 in.	≥ 44 in.	or	R14.1200.S	1436	(1)	≥ 16 in.	≥ 44 in.
1200-1500 GPD	2,400 GAL	1,500 GAL													R14.1500.D	1436	(2)	≥ 16 in.	≥ 44 in.

Minimum Septic System Requirements for Installation of IMET-RSM Systems

The following is a written explanation describing the Sizing Chart above is written to be used in addition to the primary requirements found in rule 62-6 Florida Administrative Code the Department of Environmental Protection, STANDARDS FOR ONSITE SEWAGE TREATMENT AND DISPOSAL.

All tanks must be approved by the State of Florida for septic use; see
http://ww10.doh.state.fl.us/pub/bos/Tanks/Tank-List.pdf

The "**Minimum Septic Size**" in the case of a two-compartment tank refers to the volume of the septic (1st) compartment into which the IMET Module(s) are placed.
The "**Minimum System Size**" is the full volume of both tank compartments, or in the case of some older installations before current 62-6 regulations, it is the volume of the single-compartment septic tank.

For influent flows **250 gpd to 360 gpd** the "Minimum Septic Size" volume is 300 gallons, and the total "Minimum System Size" is 500 gallons. There are 2 IMET System options:

R14.500.S requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 34" operating solution level in the Septic Tank. One-Module is required.

R10.500.S requires a minimum inside diameter 12" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. One-Module is required.

For influent flows **360 gpd to 600 gpd** the "Minimum Septic Size" volume is 500 gallons, and the total "Minimum System Size" is 800 gallons. There are 2 IMET System options:

R14.600.S requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 34" operating solution level in the Septic Tank. One-Module is required.

R10.600.S requires a minimum inside diameter 12" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. One-Module is required.

For influent flows **600 gpd to 900 gpd** the "Minimum Septic Size" volume is 1000 gallons, and the total "Minimum System Size" is 1200 gallons. There are 3 IMET System options:

R14.900.D requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 34" operating solution level in the Septic Tank. Two-Modules are required.

R10.900.D requires a minimum inside diameter 12" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. Two-Modules are required.

R14.900.S requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. One-Module is required.

For influent flows **900 gpd to 1200 gpd** the "Minimum Septic Size" volume is 1200 gallons, and the total "Minimum System Size" is 1800 gallons. There are 3 IMET System options:

R14.1200.D requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 34" operating solution level in the Septic Tank. Two-Modules are required.

R10.1200.D requires a minimum inside diameter 12" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. Two-Modules are required.

R14.1200.S requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. One-Module is required.

For influent flows **1200 gpd to 1500 gpd** the "Minimum Septic Size" volume is 1500 gallons, and the total "Minimum System Size" is 2400 gallons. There is just 1 IMET System option:

R14.1500.D requires a minimum inside diameter 16" Riser/Tank Access Opening
+ minimum 44" operating solution level in the Septic Tank. Two-Modules are required.

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