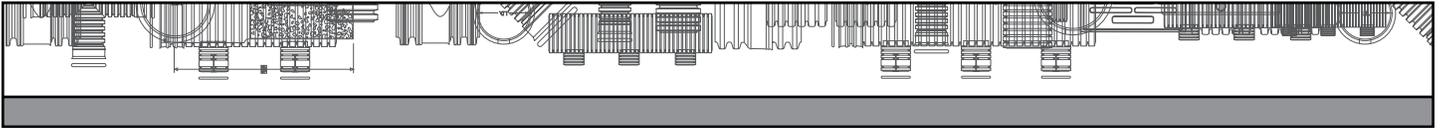


# *On-Site Leaching Chamber Specifications & Features*

*Design & Installation Manual – Rhode Island*





- This manual provides general design and installation information for use of ARC model plastic leaching chambers in the State of Rhode Island.
- ARC chamber designs, configurations, and installations must comply with all applicable RIDEM OWTS and local rules, and the RIDEM Alternative/Experimental component certification.
- This manual contains a brief description for each chamber model and general design and installation procedures. For more detailed Information please contact ADS customer service at 1-866-733-3555.
- .For CAD drawings refer to our website at: [www.ads-pipe.com](http://www.ads-pipe.com).

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**RHODE ISLAND**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

**Alternative/Experimental OWTS Technology Program**

**Vendor Information**

Advanced Drainage Systems, Inc.  
 4640 Trueman Boulevard  
 Hilliard, OH 43026

**Contacts:**

**Dick Bachelder** *On-site Consultant*  
 71 Orchard Farm Lane  
 York, ME 03909  
**Phone:** 207-363-2528  
**Mobile:** 603-498-5306  
**E-mail:** bach@maine.rr.com

**Technology Name:**

ARC 18, ARC 24, ARC 36 and ARC 36 HC

**Technology Type:**

Alternative Leach Field Component  
 Class II

**Certification Date**

**Issued:** May 20, 2011  
**Expires:** May 20, 2016

**CERTIFICATION**

The Rhode Island Department of Environmental Management (RIDEM) has reviewed the Alternative Component Technology application submitted by Advanced Drainage Systems, Inc., hereafter referred to as the "Vendor", for their ARC chambers, hereafter referred to as the "Component". The Component is arc-shaped, molded high-density polyethylene, with a solid roof, louvered sidewalls and an open bottom.

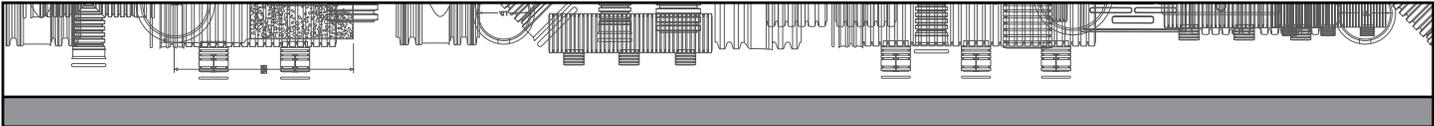
Based upon information contained in the Vendor's application, and the information provided during the presentation to the Technical Review Committee, the RIDEM hereby accepts the Component for listing on the Alternative / Experimental Technology List as a Class II-Component. Design and installation of the Component shall be in accordance with the following terms and conditions:

**I. Design Requirements**

1. The Component shall be installed in stoneless trench configuration; the ends of the trenches shall be interconnected with imperforated PVC pipe.
2. The maximum leaching area rating for the four models is based on the open bottom area of each model, multiplied by 1.72, with a maximum of 4.0 square-feet per linear foot, as specified below:

ARC Chamber Model	Leaching area credit (SF/LF)
ARC 18	1.9
ARC 24	2.7
ARC 36	4.0
ARC 36 HC	4.0

3. The requirements of Rules 32, 33 and 34 shall apply unless otherwise addressed in this certification or in the approved design, installation and operation and maintenance manual".
4. Each System installation shall meet all applicable OWTS Rules for shallow leaching chambers, except those which specifically have been varied by the terms of this Certification, and receive prior approval by RIDEM pursuant to the Rules in effect at the time of application.



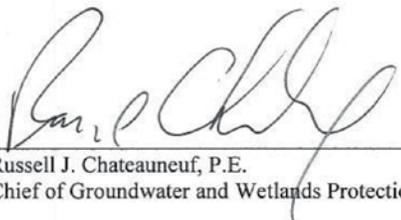
5. Design and installation shall be in strict conformance with the approved Component design, installation manual and shall only be performed by a Rhode Island Designer/Installer or other RIDEM authorized person who has received training and is authorized in writing by the Vendor to design/install the System.
6. The ARC 18 chamber is approved for use as the dome structure in a pressurized shallow-narrow drainfield (PSND). Design and sizing shall be as specified in RIDEM Guidance and the approved Vendor's design, installation and operation and maintenance manual.
7. Installation and operation and maintenance shall be as detailed in the approved Vendor's manuals.
8. The ARC 18 chamber is allowed as a direct substitution for previously approved permitted PSND designs. As-built plans are required upon completion of construction.

## II. General Requirements

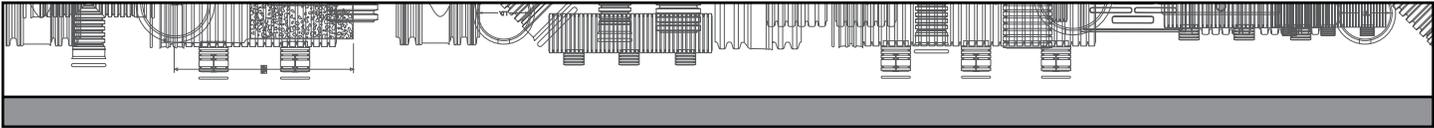
1. The Vendor shall hold two training seminars for RIDEM Licensed Designers, Installers and Service Providers before the expiration or renewal of this certification. The first shall be held within the first six (6) months of the date of this certification.
2. The Vendor shall notify the RIDEM of the date and time of each training seminar and submit to the RIDEM a detailed agenda, material to be distributed to attendees and a list of presenters specifying their credentials at least six weeks in advance of the date of the scheduled seminar. Please consult the RIDEM-issued requirements for Vendors' technology training available on the RIDEM website in the A/E technology section.
3. The Vendor shall notify the RIDEM at least thirty (30) days prior to any proposed transfer of ownership of the Component technology. Notification shall include the name and address of the new owner and a written agreement between the existing and new owner specifying a date for transfer of ownership, responsibility, and liability for the technology. All provisions of this approval shall be applicable to any new owners.
4. The Vendor shall notify the RIDEM in writing of any changes to the Component, including its discontinuation. Modifications deemed by the RIDEM to be substantial, may require re-application to the alternative/experimental program.

## III. Rights of the RIDEM

1. The RIDEM may suspend, modify or revoke this certification for cause, including but not limited to: Non-compliance with any of the provisions or conditions of this approval, misrepresentation or failure to fully disclose all relevant data, or receipt of new information indicating the use of the Component is contrary to the public interest, public health or the environment.
2. This certification does not represent an endorsement of the Component by the RIDEM. This certification may be reproduced only in its entirety.

  
\_\_\_\_\_  
Russell J. Chateaufneuf, P.E.  
Chief of Groundwater and Wetlands Protection

Issuance Date: 5/20/11



## INCLUDED SYSTEMS

### **Arc** ARC 18 System

- 16" Wide Chamber
- Lightweight Design with Articulating Joints
- H-10 load rated with proper installation

*NOTE: The ARC 18 Chamber may be used in a conventional trench configuration receiving septic tank effluent, or in a PSND according to the design parameters in the RIDEM Sand Filter and Pressurized Shallow-Narrow Drainfield Guidance Document" revised March 2010, or updates thereto and the product-specific guidance in this document on pages 3-4.*



### **Arc** ARC 24 System

- 22" Wide Chamber
- Lightweight Design with Articulating Joints
- H-10 load rated with proper installation



### **Arc** ARC 36 System

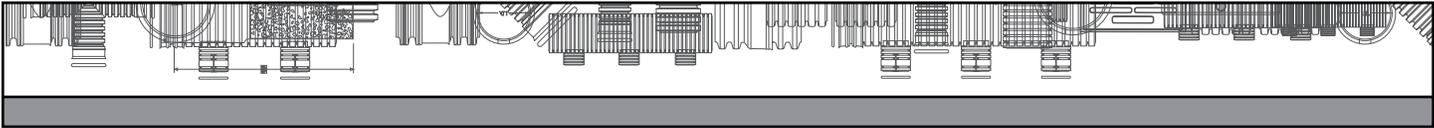
- 34" Wide Chamber
- Lightweight Design with Articulating Joints
- H-10 load rated with proper installation



### **Arc** ARC 36 HC System

- 34" Wide Chamber
- Lightweight Design with Articulating Joints
- H-10 load rated with proper installation





## ARC 18 SYSTEM

Before beginning installation, please note the following engineered features of the ARC 18 model chambers and end caps.

### ARC 18 System

NOTE: The ARC 18 Chamber may be used in a conventional trench configuration receiving septic tank effluent, or in a PSND according to the design parameters in the RIDEM Sand Filter and Pressurized Shallow-Narrow Drainfield Guidance Document” revised March 2010, or updates thereto and the product-specific guidance in this document on pages 3-4.

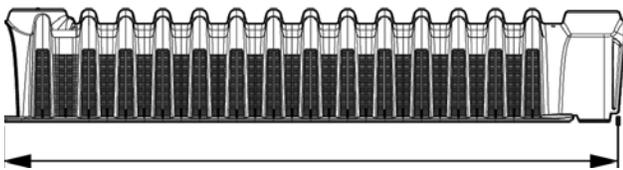
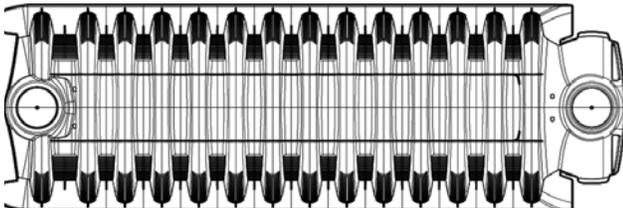
- Each chamber end is either marked “Dome” or “Post” on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

ARC 18 Chamber	
Repeat Length	60"
Overall Width	16"
Sidewall Height	7.6"
Ave. Open Bottom Width	1.12'
Overall Height	12"

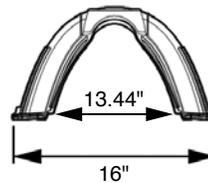
Calculations and dimensions are nominal



### ARC 18 Chamber — Top, Side, and End Views (not to scale)

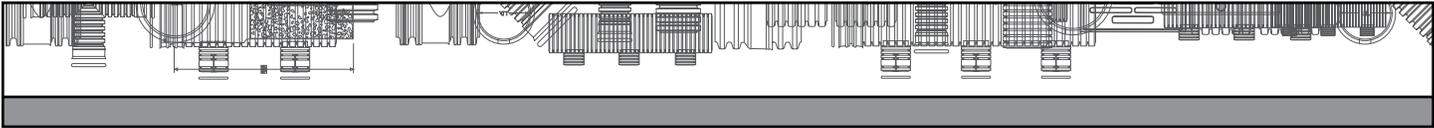


60" Effective Length



### ARC 18 End Cap — Side, and End Views (not to scale)

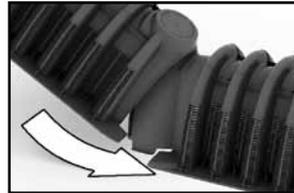




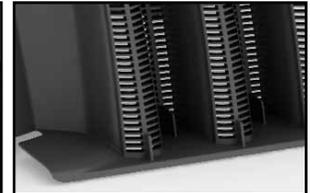
## ARC 18 SYSTEM

NOTE: The ARC 18 Chamber may be used in a conventional trench configuration receiving septic tank effluent, or in a PSND according to the design parameters in the RIDEM Sand Filter and Pressurized Shallow-Narrow Drainfield Guidance Document” revised March 2010, or updates thereto and the product-specific guidance in this document on pages 3-4.

- Base flanges on the chambers ends over lock during final engagement to form a very strong joint.
- The ARC 18 chamber feet are designed with an extra large surface area to provide support particularly in sandy soils.
- Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
- Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
- Each chamber end has small knockouts on the roof positioned in the “Post” end joint. When removed, these knockouts are for the use of zip ties to support piping in dosing systems.



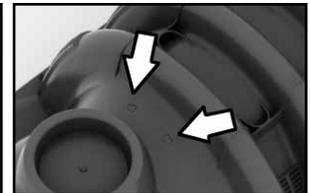
• Overlocking Ends



• Louvers and Feet



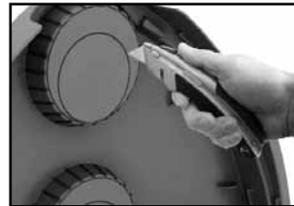
• Observation Port



• Zip Tie Knockouts

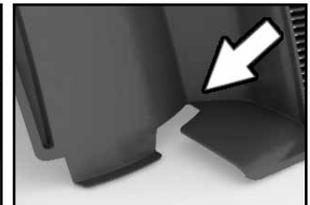
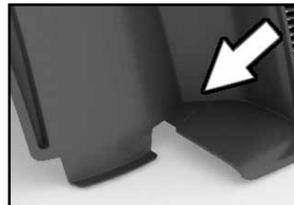
### ARC 18 End Cap

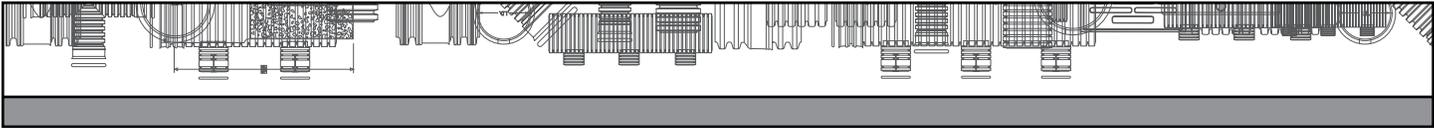
- Upper and lower knockouts accommodate both Schedule 40 and SDR 35 piping. Dimples are also offered for the positioning of hole saw pilot drills.
- End caps are designed to attach the chamber's dome or post end.



### ARC 18 Swivel Feature

- Each chamber's post end has swivel lockout tabs at either base flange. When removed, the incoming chamber will turn up to ten degrees in the direction of the removed lockout tab. Without removal of the swivel lockout tab, the chambers will align in a straight pattern.
- Swivel lockout tabs may be removed carefully with a utility knife.





## ARC 24 SYSTEM

Before beginning installation, please note the following engineered features of the ARC 24 model chambers and end caps.

### ARC 24 System

- Each chamber end is either marked “Dome” or “Post” on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

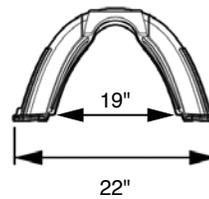
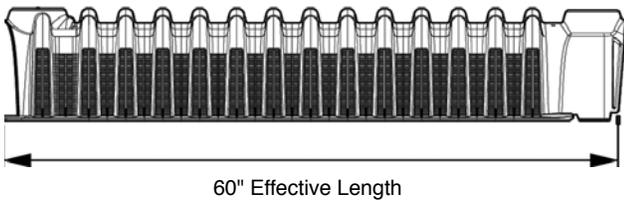
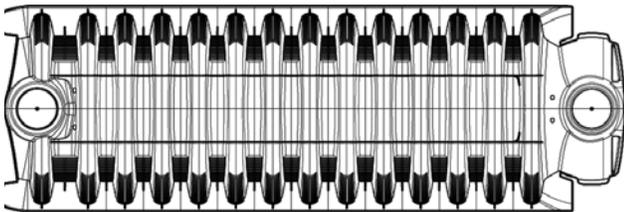
#### ARC 24 Chamber

Repeat Length	60"
Overall Width	22"
Sidewall Height	7.6"
Ave. Open Bottom Width	1.59'
Overall Height	12"



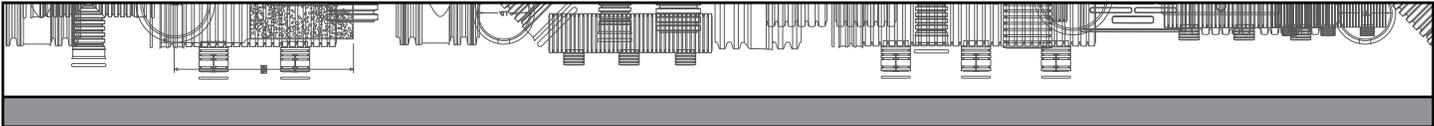
Calculations and dimensions are nominal

#### ARC 24 Chamber — Top, Side, and End Views (not to scale)



#### ARC 24 End Cap — Side, and End Views (not to scale)

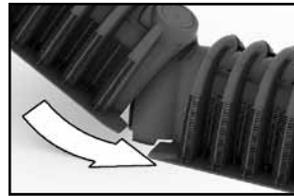




## ARC 24 SYSTEM

### ARC 24 Features

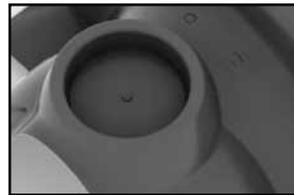
- Base flanges on the chambers ends over lock during final engagement to form a very strong joint.
- The ARC 24 chamber feet are designed with an extra large surface area to provide support particularly in sandy soils.
- Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
- Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
- Each chamber end has small knockouts on the roof positioned in the "Post" end joint. When removed, these knockouts allow for the use of zip ties to support piping in low pressure dosing systems.
- ARC chambers can be installed to meet an H-10 live load (16,000 lbs/axle). Backfilling with a minimum of 12" of properly compacted cover is required for these applications.



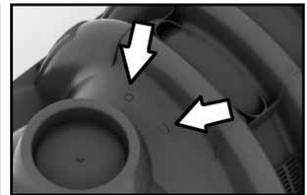
• Overlocking Ends



• Louvers and Feet



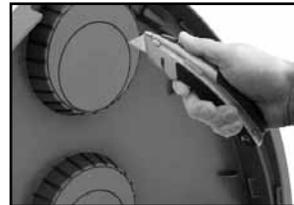
• Observation Port



• Zip Tie Knockouts

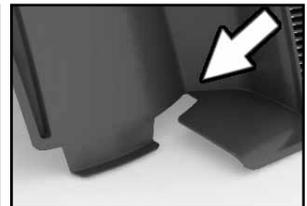
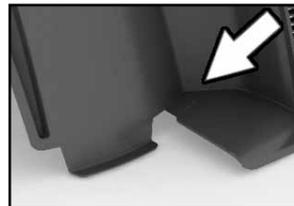
### ARC 24 End Cap

- Upper and lower knockouts expand to accommodate both Schedule 40 and SDR 35 piping in a single hole tap. Dimples are also offered for the positioning of 4.25" hole saw pilot drills.
- End caps are designed to attach the chamber's dome or post end in the same fashion for each end with the ARC 24 logo facing outward.



### ARC 24 Swivel Feature

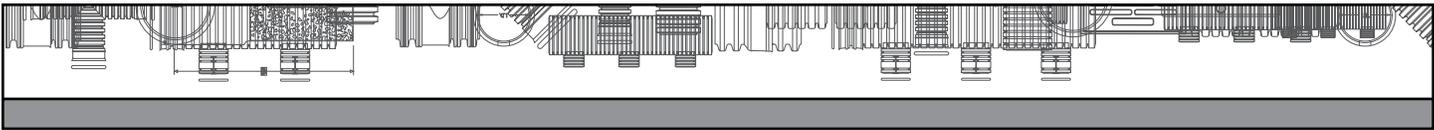
- Each chamber's post end has swivel lockout tabs at either base flange. When removed, the incoming chamber will turn up to ten degrees in the direction of the removed lockout tab. Without removal of the swivel lockout tab, the chambers will align in a straight pattern.
- Swivel lockout tabs may be removed with a striking blow to the tab and then peeling off the remaining piece of plastic, or cut with a knife.



### ARC 24 Side Port Coupler (SPC)

- SPC component snaps in place to allow side entry at any joint throughout the trench line. This accessory provides a variety of design and installation options.





## ARC 36 SYSTEM

Before beginning installation, please note the following engineered features of the ARC 36 model chambers and end caps.

### ARC 36 System

- Each chamber end is either marked “Dome” or “Post” on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

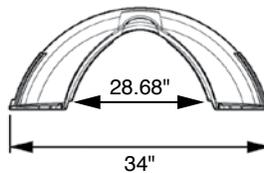
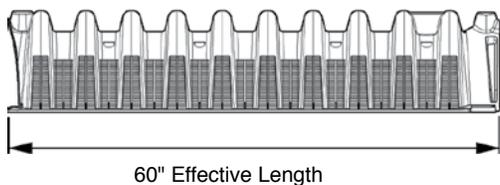
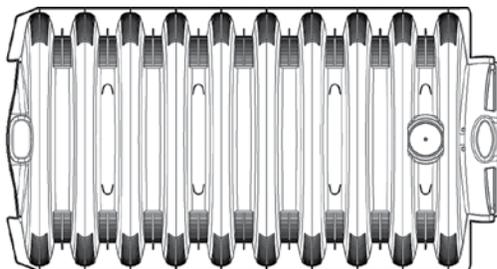


#### ARC 36 Chamber

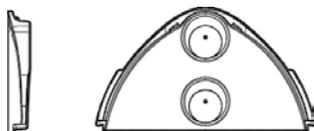
Repeat Length	60"
Overall Width	34"
Sidewall Height	13"
Ave. Open Bottom Width	2.39'
Overall Height	13"

Calculations and dimensions are nominal

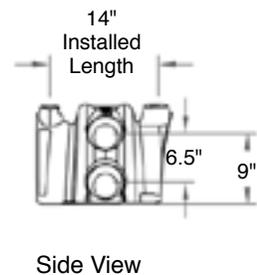
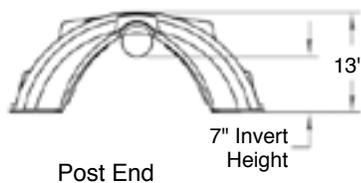
#### ARC 36 Chamber—Top, Side, and End Views (not to scale)

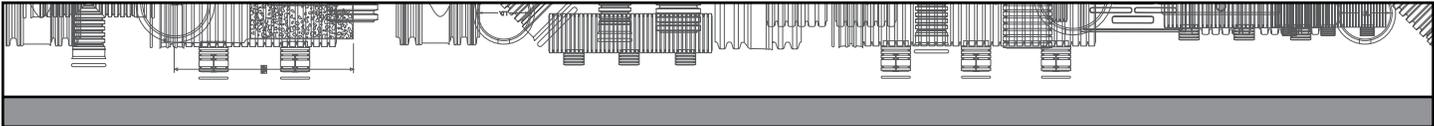


#### ARC 36 End Cap Side, and End Views (not to scale)



#### Side Port Coupler (SPC)





## ARC 36 SYSTEM

### ARC 36 Features

- The post and dome creates a positive lock securing the chambers for final engagement. Lock and drop feature for faster installation.
- The ARC 36 chamber feet are designed with an extra large surface area to provide support, particularly in sandy soils.
- Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
- Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
- Each chamber end has small knockouts on the roof positioned in the "Post" end joint. When removed, these knockouts allow for the use of zip ties to support piping in dosing systems.
- The ARC 36 chamber is approved for use in Rhode Island for H-10 and H-20 load rated applications with proper installation.



• Lock and Drop



• Louvers and Feet



• Observation Port

### ARC 36 Universal End Cap

- Upper and lower knockouts accommodate both Schedule 40 and SDR 35 piping. Knockouts can be removed with a knife or hole saw. Dimples are also offered for the positioning of hole saw pilot drills.
- End caps are designed to attach to the chamber's dome or post end in the same fashion for each end with the ARC 36 logo facing outward.



### ARC 36 Swivel Feature

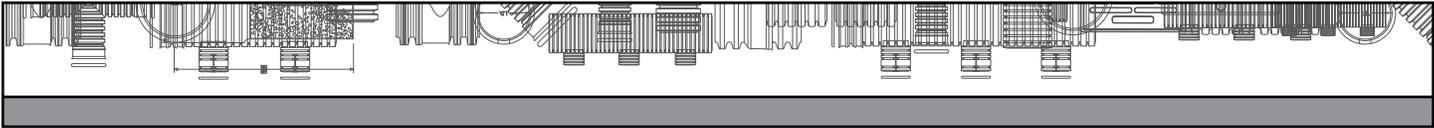
- The engagement mechanism of the ARC 36 chamber is designed to allow for a pivot between joined chambers of up to 10° in either direction.



### ARC 36 Side Port Coupler (SPC)

- SPC component snaps in place to allow side entry at any joint throughout the trench line. This accessory provides a variety of design and installation options.





## ARC 36 HIGH CAPACITY (HC) SYSTEM

Before beginning installation, please note the following engineered features of the ARC 36 HC model chambers and end caps.

### ARC 36 HC System

- Each chamber end is either marked “Dome” or “Post” on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

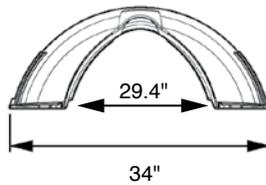
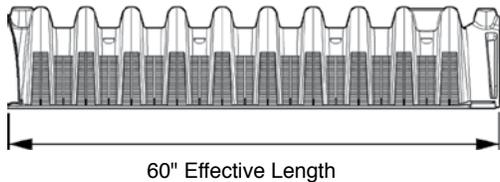
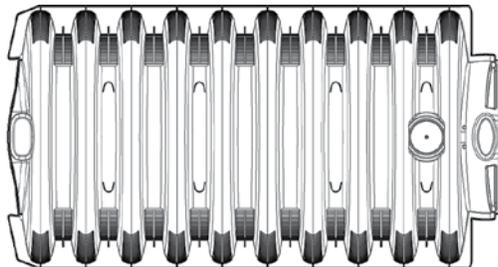


#### ARC 36 HC Chamber

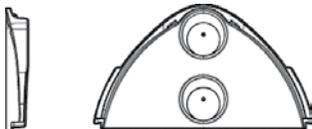
Repeat Length	60"
Overall Width	34"
Sidewall Height	10.25"
Ave. Open Bottom Width	2.45"
Overall Height	16"

Calculations and dimensions are nominal

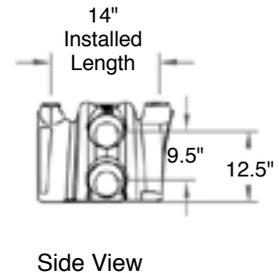
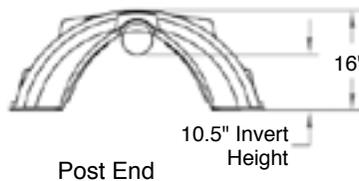
#### ARC 36 HC Chamber—Top, Side, and End Views (not to scale)

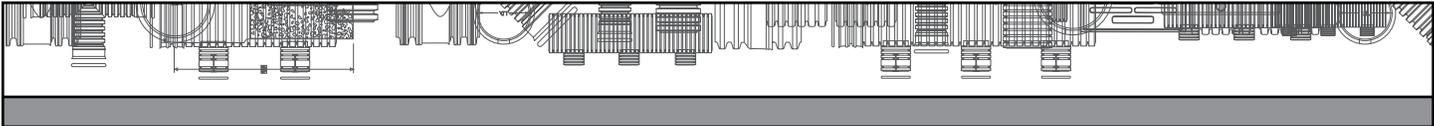


#### ARC 36 HC End Cap Side, and End Views (not to scale)



#### Side Port Coupler (SPC)





## ARC 36 HC SYSTEM

### ARC 36 Features

- The post and dome creates a positive lock securing the chambers for final engagement. Lock and drop feature for faster installation.
- The ARC 36 chamber feet are designed with an extra large surface area to provide support, particularly in sandy soils.
- Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
- Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
- Each chamber end has small knockouts on the roof positioned in the “Post” end joint. When removed, these knockouts allow for the use of zip ties to support piping in dosing systems.
- The ARC 36 HC chamber is approved for use in Rhode Island for H-10 and H-20 load rated applications with proper installation.



• Lock and Drop



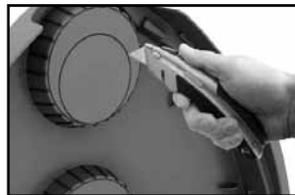
• Louvers and Feet



• Observation Port

### ARC 36 Universal End Cap

- Upper and lower knockouts accommodate both Schedule 40 and SDR 35 piping. Knockouts can be removed with a knife or hole saw. Dimples are also offered for the positioning of hole saw pilot drills.
- End caps are designed to attach to the chamber's dome or post end in the same fashion for each end with the ARC 36 logo facing outward.



### ARC 36 Swivel Feature

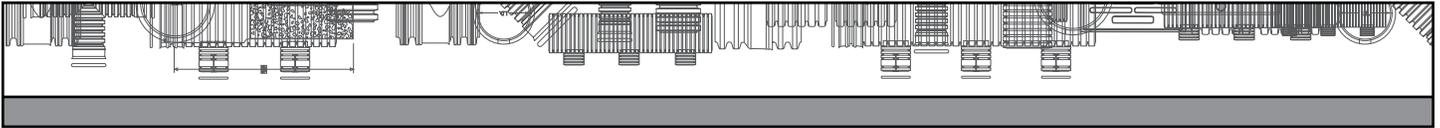
- The engagement mechanism of the ARC 36 chamber is designed to allow for a pivot between joined chambers of up to 10° in either direction.



### ARC 36 Side Port Coupler (SPC)

- SPC component snaps in place to allow side entry at any joint throughout the trench line. This accessory provides a variety of design and installation options.





## ARC CHAMBER SYSTEM DESIGN AND SIZING

ARC chamber systems may be designed in any number of configurations. All applicable RIDEM rules shall apply.

### Trench System Applications

- All trench systems shall be designed in accordance with RIDEM OWTS rules.
- ARC chambers installed in trench systems shall be sized in accordance with Appendix I and the sizing tables herein (pages 15).
- The minimum distance between walls of adjacent ARC chamber trenches shall be at least five feet (5'), with one exception: when the groundwater table is within 2 to 4 feet of the original ground surface, the minimum distance between ARC chamber trench walls shall be at least 10 feet.
- The distal ends of each chamber trench shall be interconnected in accordance with RIDEM OWTS rules.

### Traffic Applications

- The ARC 36 and ARC 36HC chambers are approved for use in traffic (H-20) loadbearing applications in Rhode Island.
- The ARC 36 and ARC 36HC chambers are rated at 3 SF/ LF in these applications. No "reduction" is system sizing is allowed in these applications.
- Per RIDEM OWTS Rule 34.9, systems under paved areas must be vented, located in a protected area and screened. Paving over a system is limited to 25% of the total area without other specific authorization.
- Please reference separate H-20 load installation instructions in these applications.

### ARC Chamber System Sizing

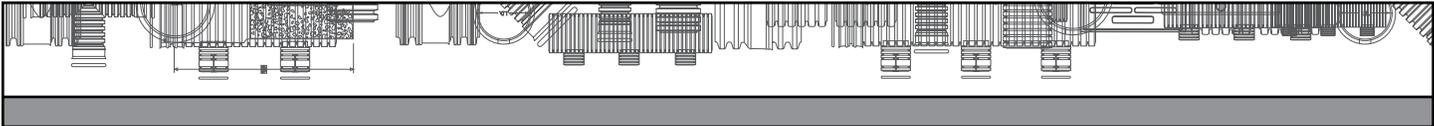
When calculating the size of the ARC chamber system, the system designer shall follow the requirements in the RIDEM OWTS Rules (specifically Rules 15.11, Table 15.11, 21.1, 32.2, 32.3 and 33.1 – as well as all applicable Rules) in assessing site conditions, as well as to determine the requisite leaching area.

**Step #1:** The system designer calculates the requisite leaching area required.

**Step #2:** Referencing Appendix I (below), the system designer simply divides the per-unit rating for the selected ARC chamber model into the requisite leaching area as calculated to determine the number of chambers required.

*Note: The system designer shall "round-up" for any partial chamber that result from these calculations.*

**OR:** Referencing the sizing charts for individual ARC chamber models (below), the system designer simply selects the minimum number of chambers required for a given soil perc rate and number of bedrooms.



## ARC CHAMBER SYSTEM SIZING CHARTS

Table I.

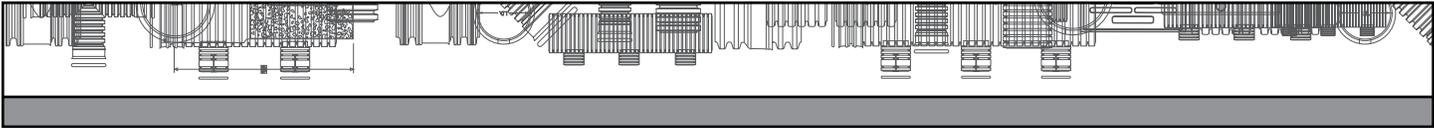
### ARC CHAMBER RATINGS

Model	Dimensions H x W x L (inches)	Invert Height (inches)	Trench Width (inches)	Rating Per Linear Foot (SF/LF)	Rating Per Unit (SF/Unit)
ARC 18	12 x 16 x 60	6.24	18	1.9	9.5
ARC 24	12 x 22.5 x 60	6.25	24	2.7	13.5
ARC 36	13 x 33.5 x 60	7.13	36	4.0	20.0
ARC 36HC	16 x 33.75 x 60	10.25	36	4.0	20.0

Table 2.

### ARC 36 & ARC 36 HC TRENCH SIZING PER OWTS RULE 32.2.2 (SOIL CATEGORY)

Soil Category	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 36 & ARC 36 HC Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Add'l Bedroom (115 GPD)
1	0.7	17	25	9
1m	0.61	19	29	10
2	0.61	19	29	10
3	0.7	17	25	9
4	0.61	19	29	10
4m	0.7	17	25	9
5	0.52	23	34	11
6	0.61	19	29	10
6m	0.7	17	25	9
7	0.52	23	34	11
7m	0.61	19	29	10
8	0.46	25	38	13
8m	0.48	24	36	12
9	0.4	29	44	15
9m	0.43	27	42	14
10	Not Allowed	Not Allowed	Not Allowed	Not Allowed



## ARC CHAMBER SYSTEM SIZING CHARTS

Table 3.

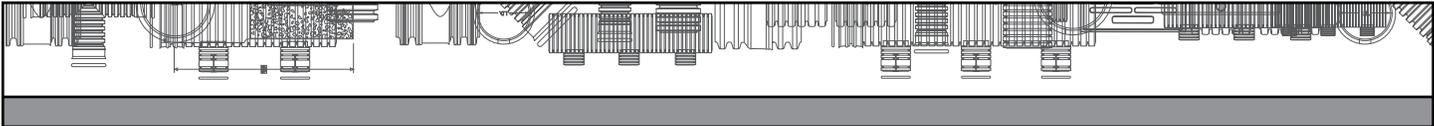
### ARC 36 & ARC 36 HC TRENCH SIZING PER OWTS RULE 32.2.2 (PERCOLATION RATE)

Percolation Rate (min/inch)	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 36 & ARC 36 HC Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
<=5	0.93	13	19	7
10	0.7	17	25	9
15	0.61	19	29	10
20	0.52	23	34	11
25	0.48	24	36	12
30	0.46	25	38	13
40	0.4	29	44	15

Table 4.

### ARC 24 TRENCH SIZING PER OWTS RULE 32.2.2 (SOIL CATEGORY)

Soil Category	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 24 Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
1	0.7	25	37	13
1m	0.61	28	42	14
2	0.61	28	42	14
3	0.7	25	37	13
4	0.61	28	42	14
4m	0.7	25	37	13
5	0.52	33	50	17
6	0.61	28	42	14
6m	0.7	25	37	13
7	0.52	33	50	17
7m	0.61	28	42	14
8	0.46	37	56	19
8m	0.48	36	54	18
9	0.4	43	64	22
9m	0.43	40	60	20
10	Not Allowed	Not Allowed	Not Allowed	Not Allowed



## ARC CHAMBER SYSTEM SIZING CHARTS

Table 5.

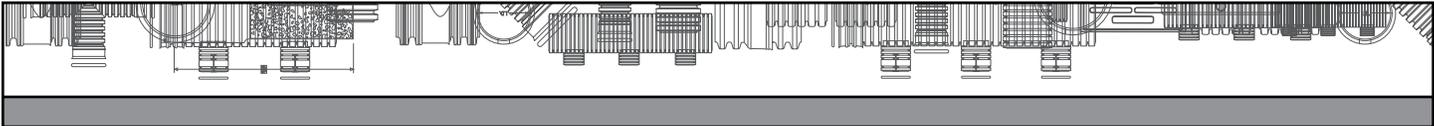
### ARC 24 TRENCH SIZING PER OWTS RULE 32.2.2 (PERCOLATION RATE)

Percolation Rate (min/inch)	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 24 Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
<=5	0.93	19	28	10
10	0.7	25	37	13
15	0.61	28	42	14
20	0.52	33	50	17
25	0.48	36	54	18
30	0.46	37	56	19
40	0.4	43	60	22

Table 6.

### ARC 18 TRENCH SIZING PER OWTS RULE 32.2.2 (SOIL CATEGORY)

Soil Category	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 18 Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
1	0.7	35	52	18
1m	0.61	40	60	20
2	0.61	40	60	20
3	0.7	35	52	18
4	0.61	40	60	20
4m	0.7	35	52	18
5	0.52	47	70	24
6	0.61	40	60	20
6m	0.7	35	52	18
7	0.52	47	70	24
7m	0.61	40	60	20
8	0.46	53	79	27
8m	0.48	51	76	26
9	0.4	61	91	31
9m	0.43	57	85	29
10	Not Allowed	Not Allowed	Not Allowed	Not Allowed

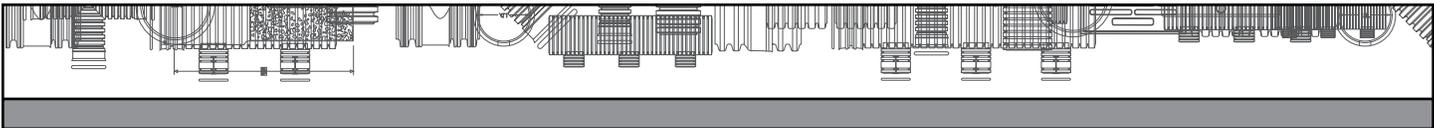


## ARC CHAMBER SYSTEM SIZING CHARTS

Table 7.

### ARC 18 TRENCH SIZING PER OWTS RULE 32.2.2 (PERCOLATION RATE)

Percolation Rate (min/inch)	Loading Rate (gals/ft <sup>2</sup> /day)	Number of ARC 24 Chambers		
		2 Bedrooms (230 GPD)	3 Bedrooms (345 GPD)	Each Additional Bedroom (115 GPD)
<=5	0.93	26	39	13
10	0.7	35	52	18
15	0.61	40	60	20
20	0.52	47	70	24
25	0.48	51	76	26
30	0.46	53	79	27
40	0.4	61	91	31



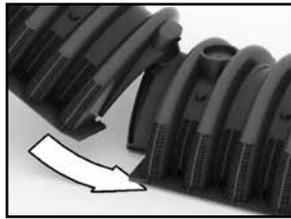
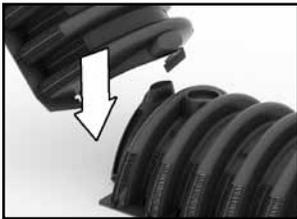
## GENERAL INSTRUCTIONS

### Preparation

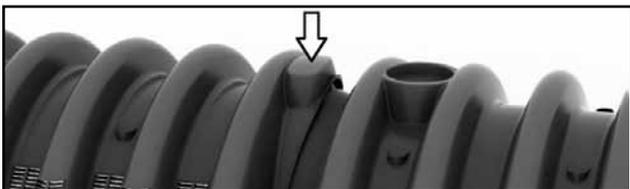
- Excavate to proper width and depth as described in the system plans, design and/or permit. All excavations must comply with state and local rules as well as the appropriate RIDEM system approval.
- Scarify the infiltrative surfaces in the excavation. Clear rocks and debris from the bottom surface area.

### Installation

- Installation of the chamber leaching system begins with laying the first chamber onto the prepared bottom surface area, with the “dome” end of the chamber at the header end of the excavation. Each additional incoming chamber is then installed by placing its dome over the post of the chamber already in place.



A slight tug of the chamber will “lock” the joint to the previously installed chamber. Once “lock” engagement occurs, “drop” (lower) the incoming chamber into place.



- As the incoming chamber is lowered down onto the excavation bottom, the two chambers fully engage in a straight-line pattern creating a very strong joint.

**Note: if the following chamber is simply laid onto the preceding chamber the joint will not be fully engaged.**

### Turns

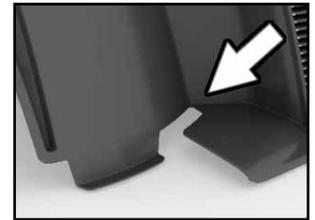
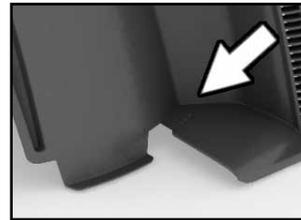
- All ARC chambers are designed with an articulating joint that allows for a turn of up to 20°, with maximum of 10° in either direction.



- To make turn, articulate incoming chamber to side after engagement has been completed.

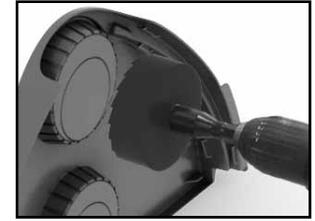
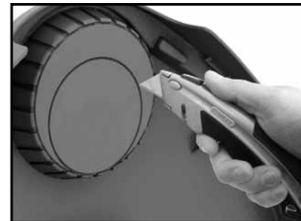
(Note: The ARC 24 is designed with lockout tabs)

- If a turn application is desired with the ARC 24 chamber, the lockout tab should be removed before installing the incoming chamber. The lockout tab is located at the base flange on the Post end of the previously-installed chamber.



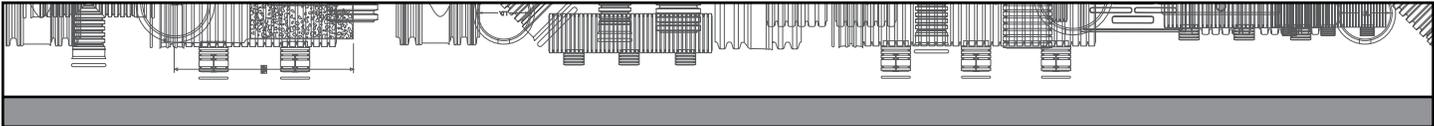
### Installation of End Caps & Pipe Connections

- Prior to installing end caps, remove the appropriate knockout for pipe connections. Snap an end cap on each end of the drain lines with the product or company logo facing out (knockouts can be removed with a knife or a 4" hole saw).



### Splash Plates

- Splash plates may be installed on each inlet end cap.
- Splash plates or equivalent are recommended on all ADS chamber systems where effluent is provided to the system under pressure.
- Company-provided splash plates are installed by simply aligning the holes on the splash plate with the corresponding dimples on the end cap and snapping into place.
- Splash plates are sold separately



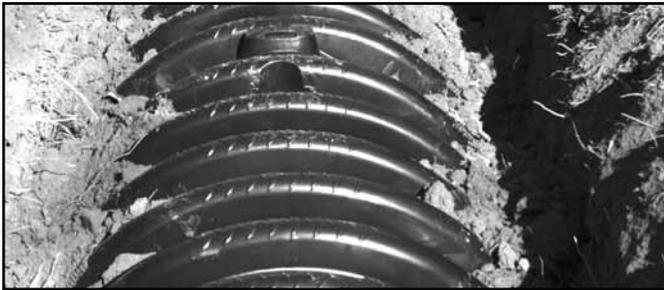
## GENERAL INSTRUCTIONS

### Observation/Inspection Points

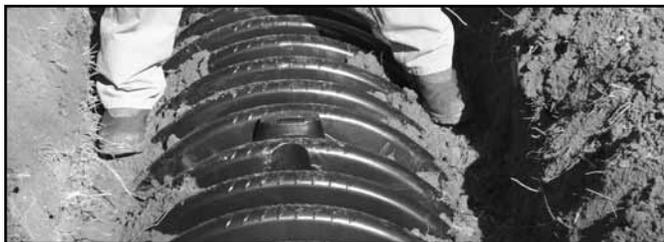
- Observation/inspection ports may be required in certain designs.
- Knockouts are provided on the roof sections of each ADS chamber. These are designed to accommodate Sch. 40 pipe.
- The dome/post feature of the ARC 24 chamber also acts as a knock-out for observation/inspection ports. Here a PVC pipe may be introduced into the chamber and extended to grade.
- Make certain that observation/inspection pipes are assembled in such a fashion as to prevent rainwater from entering and effluent from exiting the chamber line.

### Backfilling

- After chamber assembly is completed, fill that area adjacent to the louvered sidewall with loose soil that is free from clods or rocks.



- Modestly compact the sidewall area backfill material by simply walking down the sides of the chambers. Sidewall compaction is important to begin the stabilization process of the soil, to support the chamber sidewalls, and help prevent fine sand migration into the chamber louvers. This procedure may be accomplished any time during the installation or covering process.



- All ARC chambers are H-10 load rated. Where vehicular loading is anticipated during installation of the system or construction of the facility, H-10 loading (16,000 lbs/axle) is achieved by backfilling with a minimum of 12" of properly compacted cover.

- Do not drive heavy equipment over a system comprised of non-compacted cover material without first bridging the excavation. Use lightweight or tracked equipment to push the soil onto the system to the proper height set forth by local and state codes.

### Cover

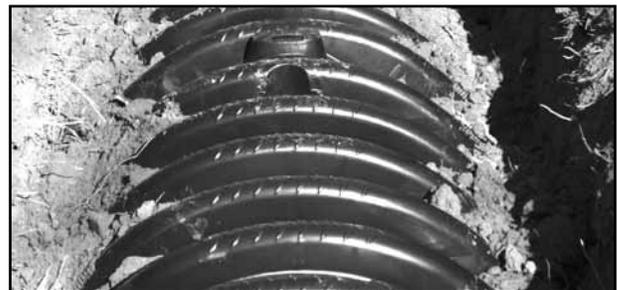
- Install cover as specified in RIDEM-approved plan. Rhode Island rules allow for a minimum of 6" of cover in non-traffic-bearing areas.

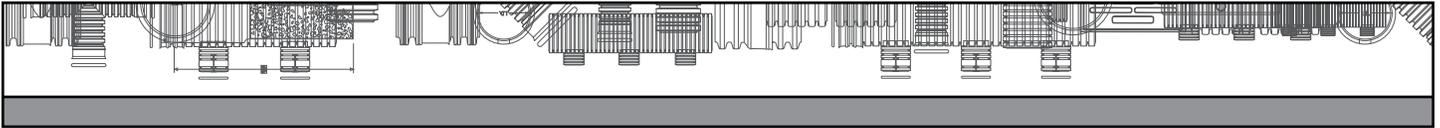
### Final Grade

- Make certain that storm water runoff is diverted away from the drain field. System final grade should be crested or sloped, never left flat or concave, in order to channel water away from the drain field.
- Final grading subcontractors and landscapers should be alerted and instructed to proper covering procedures, cover materials, and finish contours and elevations.
- Final grade material should be shaped and smoothed with minimum equipment traffic to help maintain an aerobic state in the drain field.
- Stabilize the drain field area with grass-type vegetation prior to heavy rains if possible.

### Side Port Coupler (SPC)

- Side Port Coupler (SPC) parts may be installed at the end of, or within any line of, ARC chambers.
- Each SPC is installed in the same manner as chambers are installed – “dome” over “post”.
- SPC parts may be installed in series, and/or with an end cap at the end of a chamber line.





## PRESSURIZED SHALLOW NARROW DRAINFIELD (PSND) SYSTEMS

### Design

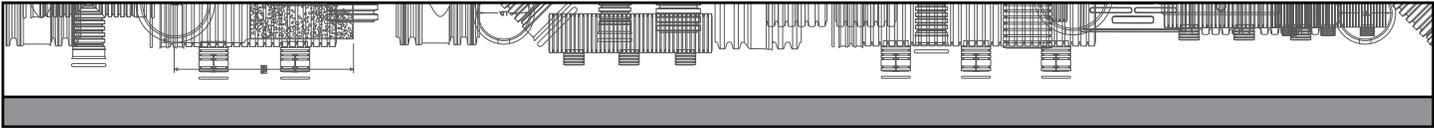
- All Pressurized Shallow Narrow Drainfield (PSND) Systems shall be designed in accordance with the RIDEM Rhode Island Sand Filter Guidance Document, March 2010, or updates thereto.
- All PSND Systems shall utilize the ARC 18 chamber, and shall be sized equivalent in length (foot-for-foot) to that required in the Sand Filter Guidance Document.
- For purposes of sizing a PSND, the infiltrative surface (base of the OSND) is the bottom of the Arc 18 chamber.
- All PSND Systems shall be designed in accordance with RIDEM OWTS rules.
- The maximum chamber line length in all PSND Systems is 50 feet.
- The designer shall choose the size of the pipe based upon all system-specific considerations. Orifices shall be 1/8" diameter in accordance with RIDEM OWTS rules.
- When not specified on the approved plan, installation of the ARC 18 chamber as a PSND must be documented by the designer's submission of "As-Built" plans, to be submitted with the designer's Certificate of Construction.

### Installation

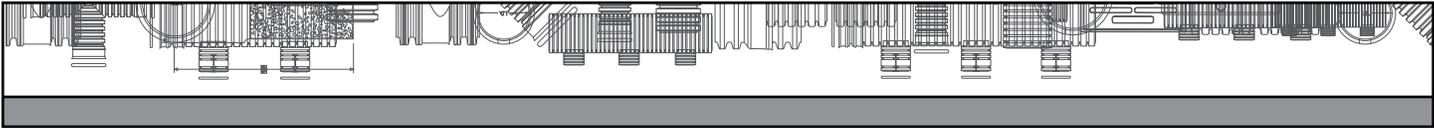
- The ARC 18 chamber is approved for use in PSND Systems with the pressure distribution pipes hung along the underside of the roof aspect of the chambers, with primary orifices facing upward.
- Drill holes in lateral as per the design. Every fifth orifice shall be drilled through both the top and the bottom of the pipe, in accordance with RIDEM OWTS rules.

### Each ARC 18 chamber

- Connect piping in the chamber line, making sure that primary orifices face up.
- Install the ARC 18 chambers in the trench above the pressure pipe, taking care to keep the pipe centered within the trench and beneath the chambers. Choose a hole saw that matches the outside diameter of the specified PVC distribution pipe. Use the provided dimple on the upper knockout as a drill guide to drill the hole.
- Small knockouts or openings are provided on the roof of each chamber's post end to accommodate heavy duty black zip ties for the hanging of distribution pipes under the roof of the chamber lines.
- Pressure pipes should be installed with holes facing upward.
- Cut holes in chamber end caps. Extend pressure pipe on each end of trench through end cap and affix end caps to chambers.
- Attach fittings for maintenance and inspection at distal end of line as per the design.
- Repeat above steps for each chamber/pressure pipe line.
- Connect header assembly as per the design.
- Install cover to specification. Rhode Island rules allow for a minimum of 6" of cover in non-traffic-bearing areas.



**NOTES**



**NOTES**

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