

# RECHARGER® 902HD

## STORMWATER MANAGEMENT SOLUTIONS



## INSTALLATION INSTRUCTIONS

for CULTEC Recharger 902HD Stormwater Management Systems

RETENTION • DETENTION • INFILTRATION • WATER QUALITY





# Installation Instructions for CULTEC Recharger® 902HD

Published by  
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## Contact Information:

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You are using version CULG086 02-19 of our CULTEC Installation Instructions for Recharger® 902HD Stormwater Systems.

*These instructions are for single-layer traffic applications only. For multi-layer applications, contact CULTEC.  
All illustrations and photos shown herein are examples of typical situations. Be sure to follow the engineer's drawings.  
Actual designs may vary.*

## Required Materials and Equipment

- Proper geotechnical soil evaluation by a qualified engineer or soil scientist to determine suitability of structural installation
- OSHA compliance
- CULTEC warning tape, or equivalent
- Assurances from local utilities that no underground gas, electrical or other potentially dangerous pipelines or conduits are already buried at the site
- Acceptable 1– 2 inch (25 - 51 mm) washed, crushed stone as shown in Table 4, page 19. Cleanliness of stone to be verified by engineer.
- Acceptable fill material as shown in Table 5, page 20
- CULTEC No. 410™ non-woven geotextile or equivalent (See Table 3, page 19).
- All CULTEC chambers and accessories as specified in the engineer's plans including CULTEC No. 410™ non-woven geotextile, CULTEC StormFilter® and CULTEC No. 4800™ woven geotextile, where applicable. Check CULTEC chambers for damage prior to installation. Do not use damaged CULTEC chambers. Contact your supplier immediately to report damage or packing list discrepancies.
- Reciprocating saw or router
- Stone bucket
- Stone conveyor and/or tracked excavator
- Transit or laser level measuring device
- Compaction equipment with maximum gross vehicle weight of 12,000 lbs (5,440 kgs).
- Vibratory rollers may only be used on the stone base prior to the installation of chambers.

## Requirements for CULTEC Chamber System Installations

- CULTEC systems must be designed and installed in accordance with CULTEC's minimum requirements. Failure to do so will void the limited warranty. To request a copy and submit the CULTEC limited warranty, call CULTEC at 203-775-4416 or visit [www.cultec.com](http://www.cultec.com).
- Installing contractors are expected to comprehend and use the most current installation instructions prior to beginning a system installation. If there is any question as to whether these are the most current instructions, contact CULTEC at (203) 775-4416 or visit [www.cultec.com](http://www.cultec.com).
- Contact CULTEC at least thirty days prior to system installation to arrange for a pre-construction meeting.
- All CULTEC system designs must be certified by a registered professional engineer.
- Use these installation instructions as a guideline only. Actual design may vary. Refer to approved construction drawings for job-specific details. Be sure to follow the engineer's drawings as your primary guide.
- System cover/backfill requirements will vary based on installation type. (See Table 6 on page 20 and engineer's drawings).
- Any discrepancies with the system sub-grade soil's bearing capacity must be reported to the design engineer.
- Non-woven geotextile must be used as specified in the engineer's drawings.
- CULTEC requires the contractor to refer to CULTEC's Installation Instructions Tables 1 - 6 shown on pages 18-20, concerning vehicular traffic. Responsibility for preventing vehicles that exceed CULTEC's requirements from traveling across or parking over the chamber system lies solely with the contractor throughout the entire site construction process. The placement of warning tape, temporary fencing, and/or appropriately located signs is highly recommended. Imprinted warning tape is available from CULTEC. For Acceptable Vehicle Load information, refer to Tables 1 and 2 on page 18.
- Erosion and sediment-control measures must meet local codes and the design engineer's specifications throughout the entire site construction process.

## CULTEC Recharger® 902HD Specification Information

Recharger 902HD Chamber	
Size (L x W x H)	4.25' x 78" x 48"
	1.30 m x 1981 mm x 1219 mm
Installed Length	3.67'
	1.12 m
Length Adjustment per Row - with two end caps installed	1.03'
	0.31 m
Length Adjustment per Row - when not using end caps	0.58'
	0.18 m
Chamber Storage	17.31 ft <sup>3</sup> /ft
	1.61 m <sup>3</sup> /m
	63.47 ft <sup>3</sup> /unit
	1.80 m <sup>3</sup> /unit
Min. Installed Storage	27.06 ft <sup>3</sup> /ft
	2.53 m <sup>3</sup> /m
	99.28 ft <sup>3</sup> /unit
	2.81 m <sup>3</sup> /unit
Min. Area Required	26.58 ft <sup>2</sup>
	2.47 m <sup>2</sup>
Min. Center-to-Center Spacing	7.25'
	2.21 m
Max. Allowable Cover	8.3'
	2.53 m
Max. Allowable O.D. in Side Portal	11.5"
	292 mm
Compatible Feed Connector	HVLV FC-48 Feed Connector



Recharger 902HD End Cap	
Size (L x W x H)	9.7" x 78" x 48.5"
	246 mm x 1982 mm x 1231 mm
Installed Length	6.2"
	157 mm
End Cap Storage	5.34 ft <sup>3</sup> /ft
	0.50 m <sup>3</sup> /m
	2.76 ft <sup>3</sup> /unit
	0.08 m <sup>3</sup> /unit
Min. Installed Storage	19.88 ft <sup>3</sup> /ft
	1.85 m <sup>3</sup> /m
	10.28 ft <sup>3</sup> /unit
	0.29 m <sup>3</sup> /unit
Max. Inlet Opening in End Cap	24"
	600 mm



All dimensions are nominal. Actual dimensions may vary on-site due to shipping and temperature.



## CULTEC HVLV FC-48 Feed Connector Specification Information

HVLV® FC-48 Feed Connector	
Length	49" 1245 mm
Installed Length when used with Recharger 902HD (exposed)	9" min. 229 mm min.
Width	16" 406 mm
Height	12" 305 mm
Chamber Storage Capacity	0.91 ft <sup>3</sup> /ft 0.08 m <sup>3</sup> /m
Compatible With	Recharger 902HD
Pipe Comparison	Greater flow capacity than 12" (300 mm) pipe



### Site Preparation and Excavation

- Excavate and level the area per engineer's drawings. Refer to plan view and cross-section details and excavate bed to accommodate chambers and manifold system. Be sure to allow for a minimum 12 inch (305 mm) stone border around the perimeter of the system and unforeseen overages in your excavation calculations.
- Remove any standing water and maintain positive drainage of the site throughout the installation. Dewatering procedures must be used if necessary.
- Prepare the sub-grade soil for the chamber bed as specified by the engineer's drawings.
- Place CULTEC No. 410™ non-woven geotextile (or equivalent — see Table 3, page 19) on the excavated bed bottom and perimeter side-walls as specified by the engineer's drawings. CULTEC No. 410™ non-woven geotextile is required on the sides and over the top of the system. It is also recommended on the system bottom. Overlap the geotextile by at least 24 inches (610 mm) where the fabric edges meet.
- Disperse a level base of 1 to 2 inch (25 - 51 mm) diameter washed, crushed stone over the entire area of the bed bottom (see Table 4, page 19 for stone requirements). Refer to the engineer's drawings for sub-grade soil preparation and required stone foundation thickness.
- Compact the stone base to achieve a flat, level surface. **Vibratory rollers may only be used on the stone base prior to the installation of chambers. Use of vibratory rollers is strictly prohibited on all other backfill layers.**



## End Detail Information for Recharger® 902HD

*Directional arrows located on the top of the chamber point towards the Small Rib End.*

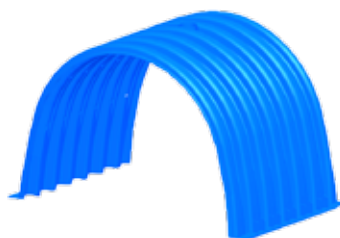


*Directional arrows located on the top of the chamber point towards the Small Rib End.*

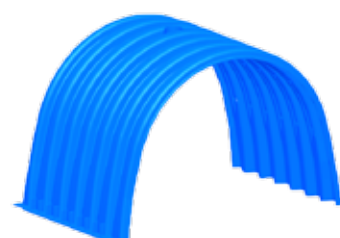
## CULTEC Recharger® 902HD Chamber

The Recharger 902HD chamber comes in only one model type which is fully open on both ends. The Recharger 902HD chamber requires the coordinating Recharger 902HD End Cap (*sold separately*) to cap rows of chambers or to create single stand alone units.

Large Rib  
End Detail



Small Rib  
End Detail



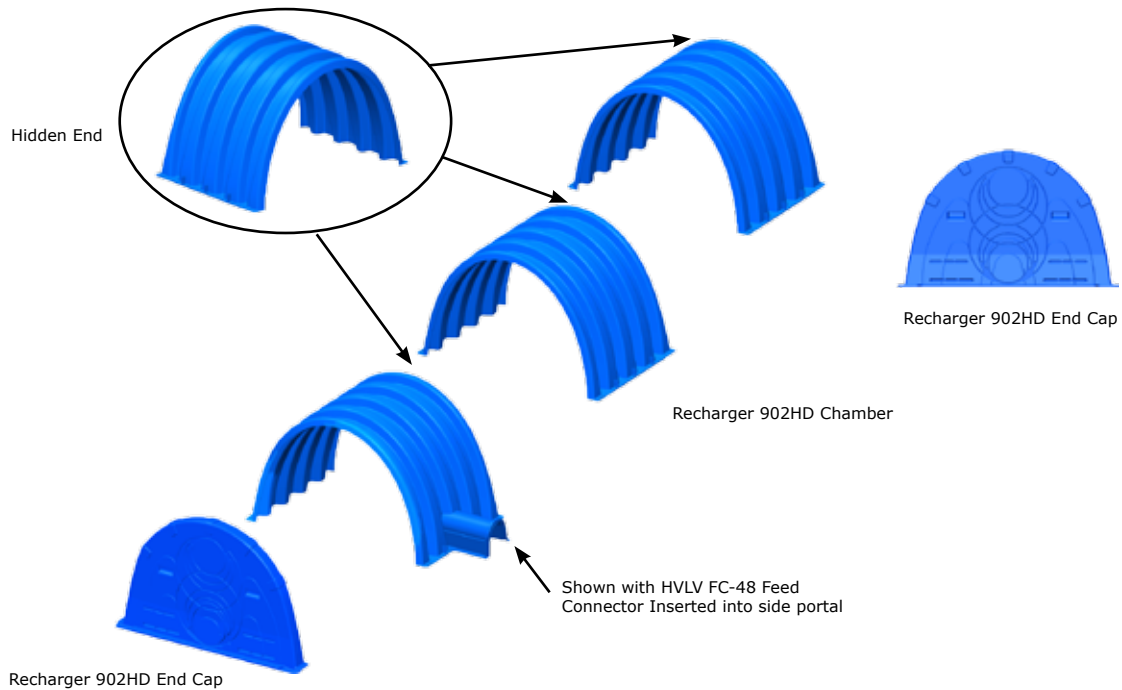
## CULTEC Recharger® 902HD End Cap

The Recharger 902HD End Cap is used in conjunction with the Recharger 902HD chamber to cap rows of chambers or to create single stand alone units.



## Typical Installation Method for Recharger® 902HD

Interlock Recharger 902HD chambers using the overlapping rib connection. Cap the ends of the lines using the Recharger 902HD End Cap.





## Chamber Preparation and Installation

CULTEC Recharger® 902HD chambers have the distinctive features of being fully open on both ends and utilize an overlapping rib connection. CULTEC chamber ribs are dimensionally sized with a large rib and a smaller rib to allow for an easy interlocking rib connection. The chambers require a separate end cap to cap off lines.

- Identify and group the chambers and end caps to ensure proper quantity and usage as outlined on page 6.
- Trim all side portals, end caps and inspection ports prior to installation for easier handling during trimming.
- Place one Recharger 902HD chamber for each row of units to be installed. Directional arrows point towards the small rib end of the chamber - see page 6.
- If using the side portal internal manifold feature, trim the side portal(s) according to guidelines located on the sidewall of the chamber, as required - see page 13. Insert one end of the HVLV FC-48 Feed Connector into the trimmed portal to create the internal manifold. Refer to Installation of Manifold section on page 9.
- Place the next Recharger 902HD chamber so the directional arrow located in the center of the unit points downstream towards the end of the line. Overlap the large rib over the small rib of the preceding chamber's end wall, interlocking the chambers together - see page 7. When placing chambers take care to maintain center-to-center separation requirements, measuring from the base of the chamber.
- To ease backfilling requirements, only install as many chambers as the stone-laying bucket or conveyor can reach.
- Place stone as outlined on page 15 taking care not to drop stone over the last rib to be overlapped.
- Continue chamber and stone placement to extend the length of the row.
- Use the Recharger 902HD End Caps to cap off chamber rows. To install the end cap, lift the end cap above the chamber and slide down the chamber rib - see page 7.
- Prior to the placement of the next line of chambers, the level and alignment of the chamber units shall be checked and corrected, where needed.



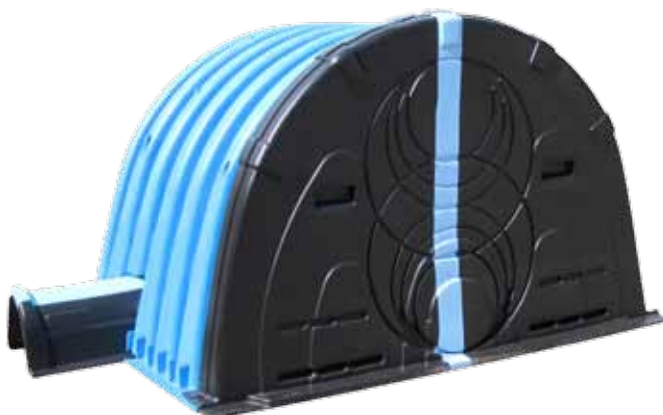


## Installation of Manifold

Utilize the side portals located on the chamber as an internal manifold in locations where indicated on the engineer's drawings. HVLV® FC-48 Feed Connectors are inserted into the portals to promote flow. An additional external manifold is not required unless specified by the engineer's design.

- CULTEC No. 4800™ woven geotextile is to be placed under all chambers utilizing the internal manifold feature and under all chambers accepting inlet/outlet pipe connections per engineer's drawings. If inserting a pipe 18" (450 mm) diameter or larger into the CULTEC chamber, the use of CULTEC No. 4800 woven geotextile is recommended to prevent washout. See page 11.
- Most installations are designed with the internal manifold located at the ends of the chamber bed. However, the side portal internal manifold feature allows for the manifold to be located at any point within the chamber run. Refer to system design for manifold location(s). Install chambers according to directional arrows located in the top center of the unit.
- Using a reciprocating saw or router, trim the side-wall portals of the units that are to receive the HVLV FC-48 Feed Connectors. Feed connectors may be placed on any chamber requiring a manifold, as indicated by the engineer's drawings. See page 13.
- Place the HVLV FC-48 Feed Connector into the side portal of the chambers per engineer's drawings. Maintain a 9" (229 mm) min. separation between chamber rows. See page 13.
- Check for correct center-to-center spacing of chamber runs according to engineer's drawings before proceeding to next row.
- Insert inflow/outflow pipe(s) into end cap or side portal as detailed on engineer's drawings. See pages 10 and 14. Maximum inlet size for end cap is 24" (600 mm). Maximum inlet for side portals is 11.5" (292 mm) O.D. There is no need to feed every row if utilizing the internal manifold feature.

*If the manifold installation detail does not include CULTEC's side portal internal manifold, proceed according to the engineer's drawings for pipe manifold installation.*



## How to Trim CULTEC Chamber to Accommodate Pipe on End Cap

When using a conventional pipe manifold or inlet / outlet pipes, the contractor is required to trim the CULTEC Recharger 902HD End Cap on-site.

Here are some quick steps to ensure a successful outcome:

- Lay out chambers according to engineered plans.
- Directional arrows located at the top of the chamber point towards the small rib end.
- Install end caps on the chambers as detailed on the engineer's drawing.
- Locate the proper diameter pipe outline on the end cap to accommodate the designed pipe size and invert elevation.
- Drill a hole on the chamber endwall large enough to accommodate a saw blade.
- Following the etched outline, use a reciprocating saw to trim out the opening to accommodate the pipe. Trimming should be within 1/4" (6 mm) tolerance of pipe O.D.
- Insert the pipe or fitting a minimum of 8" (203 mm) into the chamber. This is not required to be a watertight connection. Maximum inlet pipe I.D. is 24" (600 mm).
- Backfill as noted in the installation instructions and engineering details.
- **Trimming may only be performed on end caps or within side portal areas. Pipe may not be inserted into the sidewall of the chamber unless it is within the side portal trim lines.**



See pages 13-14 for more information on trimming side portals.

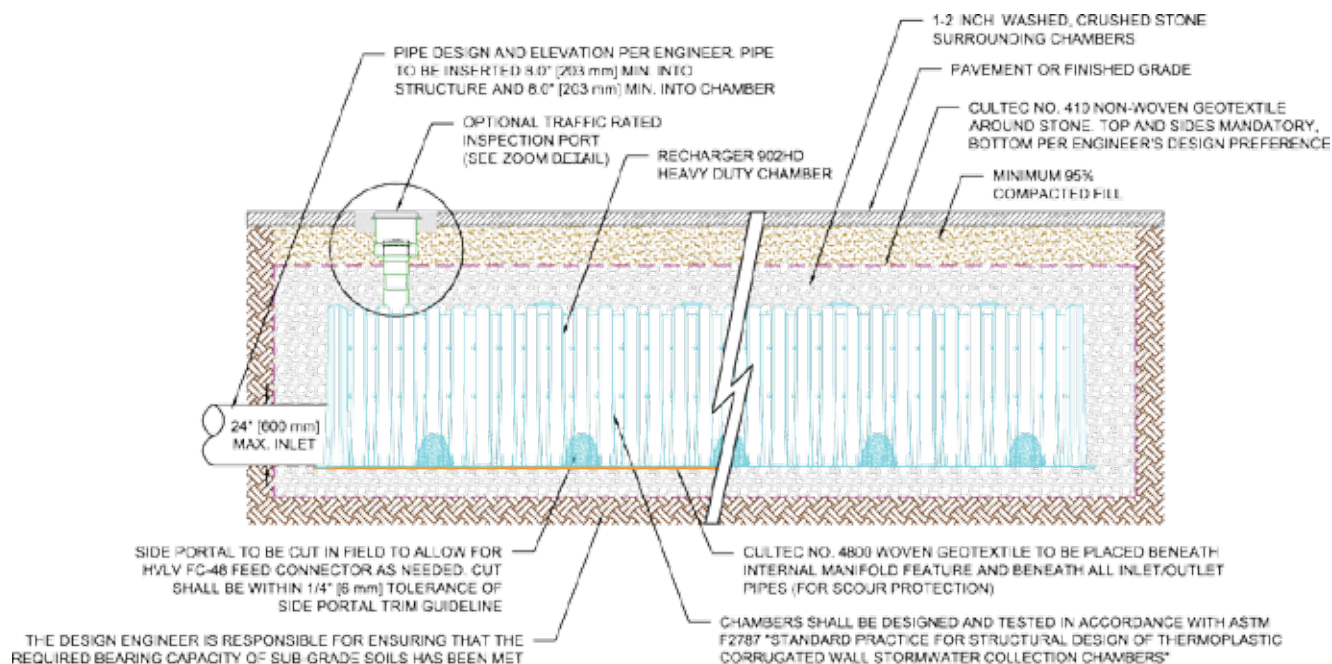


## Typical Cross Section Requirements

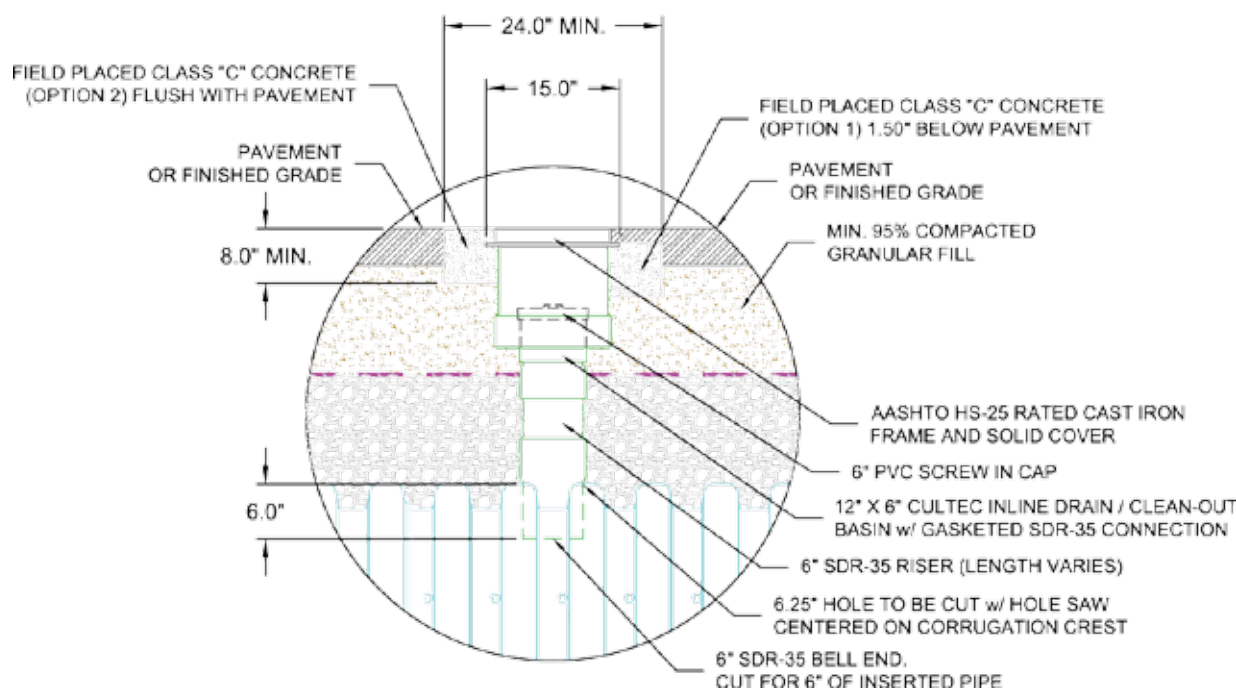
Description	Recharger 902HD
Min. depth of stone base	9" 229 mm
Chamber Height	48" 1219 mm
Min. depth of stone required above units for traffic applications	12" 305 mm
Min. depth of required 95% compacted fill	
For paved applications	12" 305 mm
For unpaved applications	18" 457 mm
Max. depth of cover allowed above crown of chamber	8.3' 2.53 m
Max. inlet/outlet pipe size into the end wall of the chamber	24" 600 mm



## Recharger 902HD Inspection Port Detail for Paved Traffic Applications



\*THE CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.



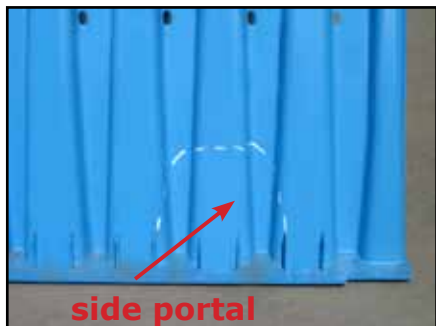
Trim inspection port knock-out with reciprocating saw or hole-saw.

Corrugated pipe is not suitable for inspection port.

A belled end pipe may be used as replacement to configuration depicted. Belled end may rest on outside of chamber.

## How to Trim Side Portal to Accommodate HVLV FC-48 Feed Connector for Internal Manifold

When using the side portal internal manifold feature, the contractor is required to trim the side portal of the CULTEC Recharger 902HD on site.



- Following the guides on the side portal, use a reciprocating saw to trim out the opening to accommodate the HVLV FC-48 Feed Connector. Trimming should be within 1/4" (6 mm) tolerance of HVLV FC-48 Feed Connector.



Trimming may only be performed on the side portal area. Side entry in any other location is unacceptable.



- Insert the HVLV FC-48 Feed Connector a minimum of 8" (203 mm) into the chamber. This is not required to be a watertight connection.

- Maintain proper separation of 9" (229 mm) minimum between chamber rows.



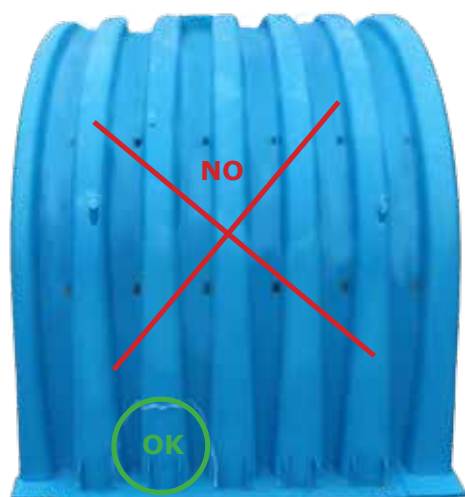
## How to Trim Side Portal to Accommodate Pipe for Side Entry

When using the side portal feature as an inlet /outlet location, the contractor is required to trim the side portal of the CULTEC Chamber on site.

- Line up the pipe on the chamber side portal to the designated pipe elevation as detailed on the engineer's drawing. Pipe outside diameter (O.D.) may not exceed 11.5" (292 mm).
- Using a grease pen, outline the pipe on the side portal of the CULTEC chamber. See Fig. 1 for acceptable trim area. Do not cut outside the side portal area guides.
- Drill a hole on the chamber side portal large enough to accommodate a saw blade.
- Following the grease pen outline, use a re-ciprocating saw to trim out the opening to accommodate the pipe. Trimming should be within 1/4" (6 mm) tolerance of pipe O.D.
- Insert the pipe or fitting a minimum of 8" (203 mm) into the chamber. This is not required to be a watertight connection.



Fig. 1 - Acceptable Trim Area



Trimming may only be performed on the side portal area. Side entry in any other location is unacceptable.





## Embedment Stone Backfill

Backfill using washed, crushed stone as specified in Table 4, page 19 and Table 5, page 20. To maintain row separation distance and prevent chamber displacement, slowly distribute stone on top of the center of the chamber crown so that stone trickles down and builds between chamber rows as required. Stone column differential should not exceed 12" (300 mm) between adjacent chamber rows or between chamber rows and perimeter.

Place the stone carefully over the centerline of the chamber crown. Embedment stone must only be placed by an excavator or telescoping conveyor boom. Placement of embedment stone with a bulldozer is not an acceptable method of installation and may cause damage to the chambers. Any chambers damaged using an unacceptable method of backfill are not covered under the CULTEC limited warranty.

### Excavator-Placed Stone

Typically the most common method, excavator-placed stone is limited by the reach of the arm. To accommodate this issue with larger beds, it is common to prepare a bed by joining just a few chamber units at a time, then placing the stone and fabric before installing the next few units.

The excavator is usually operated within the excavation area. The excavator may work at grade level over recently placed chambers, provided coverage between the chambers and the excavator tracks meets the minimum requirements as shown in Table 2, page 18 and Table 6, page 20.

### Telescoping Conveyor Boom Placement

With booms as much as 120-140 feet (36.6 - 42.7 meters) long, telescoping aggregate conveyors can greatly aid the process of stone placement.

With both stone-placement methods, ladling the stone carefully over the chambers' centers will secure them in place. Evenly distributing the stones will help prevent chamber movement and maintain row separation.

Once secured, stone may be placed to surround the chambers and fill the perimeter areas. Refer to Table 6 on page 20 and engineer's drawings for system cover/backfill requirements.

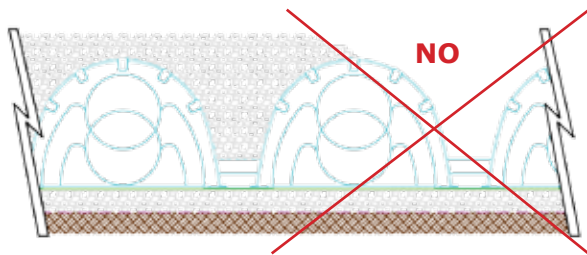


Do not allow equipment to drive over the chambers unless the minimum cover as shown in Table 6, page 20 is in place. Use a warning tape (available from CULTEC) to restrict access.

Repeat steps until all of the last chamber units are in place. Be certain to use the Recharger 902HD End Caps to end the line of chambers as specified by the drawings.

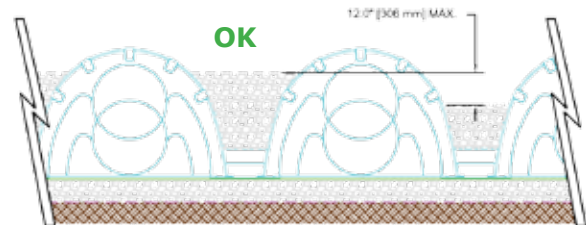
If a manifold system is designed on the back end of the chamber bed, follow manifold installation instructions as described previously.

Stone column height differential should never exceed 12 inches (300 mm) with adjacent chambers or between chamber rows and perimeter. Minimum depth of cover of properly compacted material must be met before allowing vehicles to drive over the bed. Avoid using large rocks and/or organic matter as backfill material. See Table 5, page 20 for acceptable cover materials, or contact the design engineer for approved fill types.



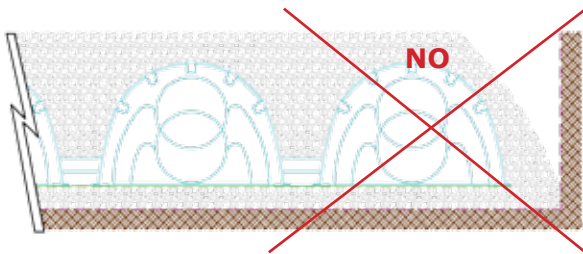
NOTE: CHAMBERS MUST BE BACKFILLED EVENLY.

UNEVEN BACKFILL - **INCORRECT INSTALLATION**



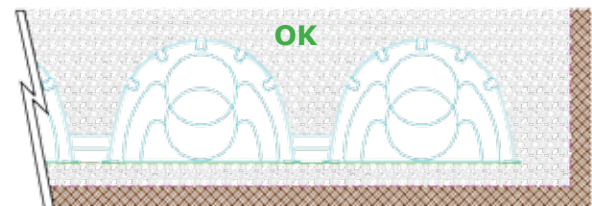
NOTE: STONE HEIGHT IN BETWEEN ROWS AND PERIMETER SHOULD NOT DIFFER BY MORE THAN 12" (300 mm).

EVEN BACKFILL - **CORRECT INSTALLATION**



NOTE: WHEN FILLING IN PERIMETER, STONE MUST BE FILLED IN EVENLY WITH CHAMBER ROWS.

PERIMETER NOT FULLY BACKFILLED  
**INCORRECT INSTALLATION**



NOTE: PERIMETER MUST BE FULLY BACKFILLED WITH STONE AND EXTEND TO THE EXCAVATION WALL.

PERIMETER FULLY BACKFILLED  
**CORRECT INSTALLATION**



## Placement of Top Fabric Layer & System Backfill Process

- Place the stone over the entire bed area as described in previous section (See 2 in Fig. 1, page 21).
- Cover the entire installation area with CULTEC No. 410 non-woven geotextile starting from the perimeter and laying it atop the stone. The geotextile must overlap at least 24 inches (610 mm) at the edges.
- Fill the first 12 inches (305 mm) with enough material (See 3 in Fig. 1, page 21) to meet the requirements as shown in Table 5, page 20. Backfill over the top of the geotextile (See 3 in Fig. 1, page 21) in lifts that do not exceed 6 inches (152 mm), and disperse the fill with a vehicle that meets the maximum wheel loads or ground pressure limits as specified on specified in Tables 1 & 2 on page 18.
- Compact each lift of backfill as specified in the engineer's drawings. CULTEC specifies compacting to a minimum of 95% of the standard proctor density using compaction equipment with a gross vehicle weight of less than of 12,000 lbs (5,400 kg). **The use of vibratory equipment is strictly prohibited and will void any warranties.**
- Backfill over the chamber bed (See 4 in Fig. 1, page 21) in 6-inch (152 mm) maximum lifts until the specified grade is achieved. See Table 3, page 19 for minimum and maximum coverage. For pavement sub-base or special fill requirements, see engineer's drawings.

### NOTE:

Excavation alongside already installed chamber rows backfilled with stone is not acceptable. No chambers may be added or subtracted from previously installed systems.





**Table 1: Maximum allowable axle loads for wheeled vehicles at various cover depths**

	Fill Depth Over Chamber		Max. Axle Load	
	inches	mm	lbs	kN
	6	152	8,000	35.6
	9	305	16,000	71.2
With pavement	24	610	40,000	177.9
Without pavement	30	762	40,000	177.9

*Any load which travels over the system that exceeds the maximum load allowed is strictly prohibited and will void the warranty.  
All depths listed above are based on compacted fill and include min. 12" (305 mm) of stone above the crown of the unit as listed as 3 of Fig. 1, page 21.*

**Table 2: Maximum allowable ground pressures for various vehicle track widths and fill depths**

Fill Depth Over Chamber		Track Width		Max. Ground Pressure <sup>2</sup>	
inches	mm	inches	mm	PSF	kPa
6	152	12	305	1070	51
		18	457	900	43
		24	610	800	38
		30	762	760	36
		36	914	720	34
12	305	12	305	1540	74
		18	457	1190	57
		24	610	1010	48
		30	762	910	43
		36	914	840	40
18	457	12	305	2010	96
		18	457	1480	71
		24	610	1220	58
		30	762	1060	51
		36	914	950	45

**The use of wheeled equipment without proper cover is strictly prohibited.**

<sup>2</sup> Ground pressure is vehicle operating weight divided by total truck contact area for both tracks. Turning should be kept to a minimum.



**Table 3: CULTEC No. 410™ Non-Woven Geotextile Specification Information**

Properties	Test Method	Test Results
Appearance		Black
Grab Tensile	D 4632	90 lbs 400 N
Elongation	D 4632	50%
Trapezoid Tear	D 4533	35 lbs 155 N
Puncture	D 4833	55 lbs 245 N
Mullen Burst	D 3786	175 psi 1205 kPa
AOS	D 4751	70 U.S. sieve .21 mm
Permittivity	D 4491	2.0 sec <sup>-1</sup>
Permeability	D 4491	.2 cm/sec
Water Flow	D 4491	145 gal/min/sf 5908 l/min/sq.m
UV Stability	D 4355	70%

*Substitutions must meet or exceed these minimums. Non-woven geotextile placement is mandatory over top and sides of system. Coverage of system bottom is recommended. However, follow engineer's design preference.*



**Table 4: Criteria for acceptable 1 - 2 inch (25 - 51 mm) washed, crushed, angular stone**

Washed Crushed Stone	Description	Criteria
Acceptable	Angular	Stones have sharp edges and relatively plane sides with unpolished surfaces
	Subangular	Stones are similar to angular description but may have slightly rounded edges
Unacceptable	Subrounded	Stones have nearly plane sides but have well-rounded corners and edges
	Rounded	Stones have smoothly curved sides and no edges

*See Item 1 and Item 2 of Table 5 on page 20 for additional stone requirements.*

**Table 5: Acceptable Fill Materials**

Material Location		Description	AASHTO M43 Classification	Compaction/ Density Requirement
<b>1</b>	Foundation Stone below chambers per engineer's drawing 9" (229 mm) min. required.	Washed, crushed stone with the majority of particles between 1" - 2" (25 - 51 mm)	3,4	Plate compact or roll to achieve a 95% Standard Proctor density
<b>2</b>	Embedment Stone surrounding chambers and to a min. 12" (305 mm) elevation above chamber crown.	Washed, crushed stone with the majority of particles between 1" - 2" (25 - 51 mm)	3,4	No compaction required
<b>3</b>	Fill Material for Layer 3 starts from top of embedment stone (Layer 2) to minimum required depth above top of chamber. Refer to Table 6, page 20 for proper minimum fill requirements.	Granular well-graded soil/aggregate mixtures, <35% fines	3,4, 5, 6, 7, 8, 9, 10, 56, 57, 67, 68, 78, 89, 467	Compact in 6" (152 mm) lifts to a minimum 95% Standard Proctor density. Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN) Dynamic force not to exceed 20,000 lbs. (89 kN)
<b>4</b>	Fill Material for Layer 4 starts from the top of Layer 3 to the bottom of pavement or unpaved finished grade above. Refer to Table 6, page 20 for proper minimum fill requirements.	Any soil/rock materials, native soils or per engineer's plans. Check plans for pavement sub-grade requirements.	Per engineer's drawings	Prepare per engineer's drawing. Paved installations may have strict material and preparation requirements

The listed AASHTO classifications are for gradations. The stone must be washed, crushed and angular. See Table 6, page 20. For example, the stone must be specified as washed, crushed No. 4 stone. Fill materials shall be free of debris, trash, frozen lumps and other deleterious matter. Contact CULTEC for gradation requirements for specific projects that do not fall within the above specifications.

**Table 6: Minimum and Maximum Fill and Separation Requirements for Completed Traffic Installations**

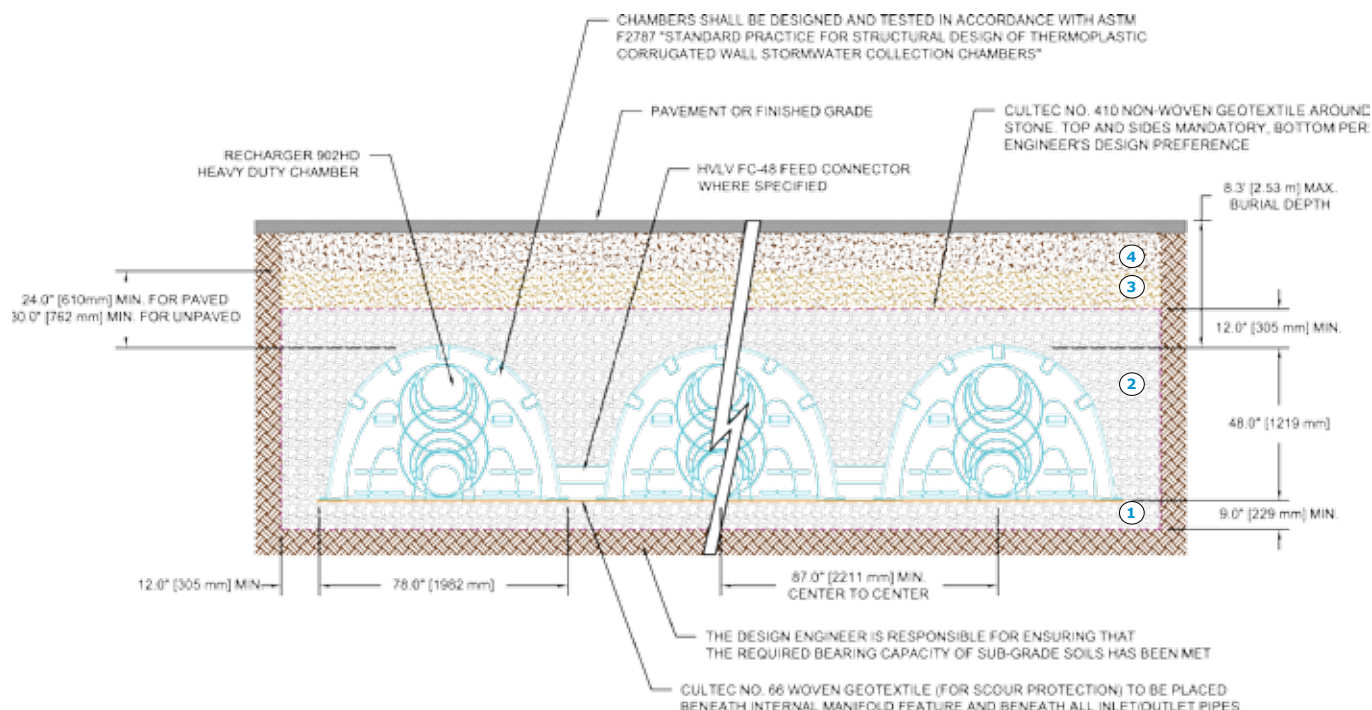
(See Fig. 1 on page 21)

Model	Minimum Fill Requirements				Maximum Fill Requirements		Center-to-Center Separation Requirement	
	For Paved inches	For Paved mm	For Unpaved inches	For Unpaved mm	feet	m	inches	mm
Recharger® 902HD	24	610	30	762	8.3	2.53	87	2210

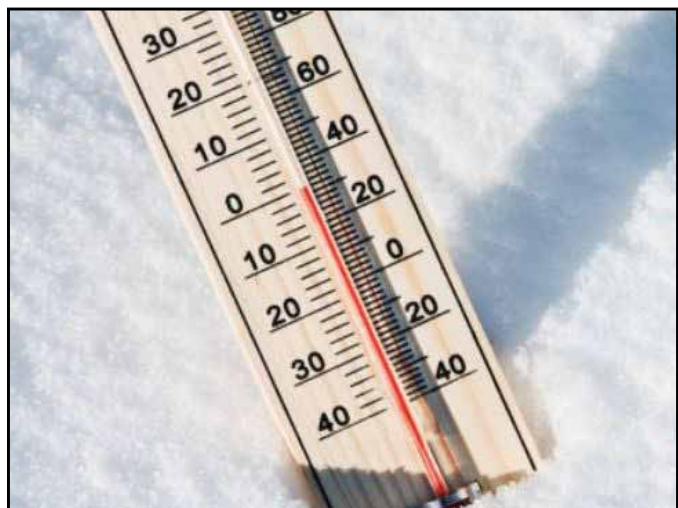
Refer to Table 5 and Fig. 1 page 20 and Table 4 on page 19 for acceptable fill requirements. When fill requirements will exceed Maximum Fill Requirements listed above, contact CULTEC at 203-775-4416. All depths listed above are based on compacted fill and include the required stone above the crown of the unit.



**Fig. 1. Fill Material Locations for Recharger 902HD – refer to Tables 4, 5, and 6.**



### Special Handling Instructions for Polypropylene, Chambers in Colder Temperatures



CULTEC chambers are manufactured of impact-modified polypropylene, which is inherently resistant to corrosion and chemical breakdown and cold weather impact. Additional UV inhibitors and antioxidants increase the chambers' resistance to sunlight degradation. However, CULTEC recommends that, when installed in cold temperatures below 32 degrees F, the installer take special care when removing the chambers from the stacks, not allowing the chambers to fall from height. Avoid using machinery to handle the chambers. When possible, CULTEC recommends that the stone backfill be placed in temperatures above 32 degrees F to minimize depressions or deflections.











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