

# RECHARGER® 360HD & 902HD

## STORMWATER MANAGEMENT SOLUTIONS



## INSTALLATION INSTRUCTIONS

RETENTION • DETENTION • INFILTRATION • WATER QUALITY





# CULTEC RECHARGER® 360HD & 902HD

## Published by

**CULTEC, Inc.**

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¥ `&\$&\$`7l @H97ž'`bW`5`f][ \hg`fYgYfj YX" Df]bhYX`]b`h\Y`l G5"

H\]g`XcW`a Ybh`UbX`Ubm`UWŁ`a dUbm]b[ `7l @H97`dfcXi Vhg`UfY`WŁ`dmf][ \hYX`Vm7l @H97ž'`bW`5bmfYdfcXi W]cb` UbX`#cf`X]ghf]Vi h]cb`k ]h`ci`h`df]cf`k`f]hhYb`WŁ`bgYbh`Zfca`7l @H97ž'`bW`]g`ghf]W]m`dfc\]V]hYX`"

## Disclaimers:

H\Y`XfUk ]b[ gž`d\c]c[ fUd\g`UbX`]i` ghfU]cbg`g\c`k`b`]b`h\]g`XcW`a Ybh`UfY`Zcf`]i` ghfU]j Y`di`fdcgYg`cb`m`UbX` are not necessarily to scale.

Actual designs may vary.

7l @H97`fYgYfj Yg`h\Y`f][ \h`hc`a`U`\_Y`XYg][ b`UbX`#cf`gdYW]UW]h]cb`W`Ub[ Yg`Uh`Ubm]h]a`Y`k`]h`ci`h`bch]W`U]h` CULTEC's sole discretion.

7l @H97ž`h\Y`7l @H97`c[ cž`F`97<5F; 9Fž`7CBH57HCFž`<J @ž`D57ž`GHCF A : =@H9Fž`GHCF A ; 9B =9`UbX`H\Y` 7\Ua`VYf`k`]h`H\Y`Ghf]dY`UfY`fY[ ]ghYfYX`hfUXYa`Uf\_g`cZ7l @H97ž'`bW`

7\Ua`VYf`cZ7\c]Wž`<8ž`%\$ž`%&) ž`%) \$ž`%) \$L @ž`% \$ž`&, \$ž`' '\$ž`' '\$L @ž`' \*\$ž`J, ž`-\$ž`ž`:]Y`X`8fU]b`DUbY`ž` 7!%ž`7!&ž`7!' ž`7!( ž`9N!&( ž`@UbXgW]dY`GYf]Yg`UfY`hfUXYa`Uf\_g`cZ7l @H97ž'`bW`¥`7cdfm][ \h`cb`U`X`fUk ]b[ gž` ]i` ghfU]cbgž`d\c]c]gž`W`Ufhg`!`7l @H97ž'`bW`5`f][ \hg`fYgYfj YX"

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l "G" DUhYbhj` \*ž`&- ž` ( , &/` \*ž` &&ž`&, /` \*ž` ) ( ž`- & ) /` +ž`&\*ž`ž`&( %/` +ž` \$ \*ž`&+ /` , ž` \* \*ž` ( \* /` , ž` & ) ž`%( , /` l "G" 8Yg][ bg` 8 \* % ž` , % - /` 8 \* , ž`\$ - ) /` 8 \* \* , ž` % /` 7UbUX]Ub`DUhYbh`&ž`() \$ž` \* ) /` &ž` - %ž`& ) /` 7UbUX]Ub`8Yg][ bg` %&- %ž` ( /` % ) - , ' /` % - \$ + /` % \* \$ - + + /` UbX`#cf`ch`Yf`l "G" cf` : cfY][ b`DUhYbh]fgŁ`cf`DUhYbh]fgŁ`DYbX]b[ "

## Contact Information:

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: cf`hYW]b]W]gi`ddcfhž`d`YUgY`W]f&\$` Ł++ ) ! ( ( % \* `Yl`h`&\$` `cf`Y!`a`U]`hYW]4`W`hYWŁ`a` "

J ]g]h`k`k`k`"W`hYWŁ`a`#Xck`b`cUXg`\`h` `Zcf`DfcXi`W]8ck`b`cUXg`UbX`758`XYHJ]g"

Doc ID: CLT009 03-20

March 2020

You are using version CLT009 03-20 of our CULTEC Installation Instructions for Recharger® 360HD and 902HD Stormwater Systems.

7KHVH LQVWUXFWLRQV DUH IRU VLQJOH OD\HU WUDÒF DSSOLFDWLRQV RQO\ )RU PXOWL OD\HU \$OO LOOXVWUDWLRQV DQG SKRWRV VKRZQ KHUHLQ DUH H[DPSOHV RI W\SLFDO VLWXDWLRQV % \$FWXDO GHVLJQV PD\ YDU\

## Required Materials and Equipment

- Proper geotechnical soil evaluation by a
- OSHA compliance
- 71 @H97 'k Ufb]b[ 'hUdYžcf'Yei ]j U'Ybh
- Assurances from local utilities that no
- 5WVYdHUV'Y'É' & ]bW' k Ug\ YXž'W' g\ YX' g'cbY' Ug' g\ ck b' ]b' HUV'Y' ' ž' dU[ Y' % ' ' 7' YUb' ]bYgg' cZ g'cbY' hc' VY' j Yf]ÜYX' VmYb[ ]bYYf'
- 5WVYdHUV'Y'Ü'' a UHYf]U'
- 71 @H97 'Bc'' ( %\$™ non-woven geotextile or equivalent
- 71 @H97 'Bc'' ( , \$ \$™ woven geotextile or YeI ]j U'Ybhž' Ug' fYeI ]fYX
- All CULTEC chambers and accessories as
- Reciprocating saw or router
- Stone bucket
- Stone conveyor and/or tracked excavator
- Transit or laser level measuring device
- Compaction equipment

## 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**
- 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
- Contact CULTEC at least thirty days prior to system installation to arrange a pre-construction meeting.
- 5'' 71 @H97 'grghYa 'XYg][ bg'a i ghVY' W'fh]ÜYX' Vm' a registered professional engineer.
- Use these installation instructions as a guideline only. Actual design may vary. Refer to approved construction drawings for job-
- **GrghYa 'Wčj Yf#VUW'Ü'' fYeI ]fYa Ybhg'k ]'' j Ufm' based on installation type.**
- 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
- Erosion and sediment-control measures must meet local codes and the design engineer's
- **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**



# CULTEC RECHARGER® 360HD & 902HD

## &KDPEHU 6SHFL¿FDWLRQ ,QIRUPDWLRQ

	Recharger 360HD Chamber	Recharger 902HD Chamber
Installed Length	3.67'	3.67'
Length Adjustment per Row with two end caps installed when not using end caps	0.00'	0.00'
Chamber Storage	36.66 ft <sup>3</sup> /unit	27.06 ft <sup>3</sup> /unit
Minimum Installed Storage	36.66 ft <sup>3</sup> /unit	27.06 ft <sup>3</sup> /unit
Minimum Area Required	10.17 sq ft	7.67 sq ft
Minimum Center-to-Center Spacing	3.67'	3.67'
Minimum Spacing Between Chambers	0.00'	0.00'
Minimum Cover Requirements	1.00' x 1.00'	1.00' x 1.00'
Maximum Allowable Cover	1.00'	1.00'
Maximum Allowable O.D. in Side Portal	8.00"	8.00"
Compatible Feed Connector	7" x 7" x 7"	7" x 7" x 7"

## (QG &DS 6SHFL¿FDWLRQ ,QIRUPDWLRQ

	Recharger 360HD End Cap	Recharger 902HD End Cap
Installed Length	3.67'	3.67'
End Cap Storage	2.76 ft <sup>3</sup> /unit	2.76 ft <sup>3</sup> /unit
Minimum Installed Storage	2.76 ft <sup>3</sup> /unit	2.76 ft <sup>3</sup> /unit
Maximum Inlet Opening in End Cap	8.00"	8.00"




SOO GLPHQVLRQV DUH QRPLQDO \$FWXDO GLPHQVLRQV PD\ YDU\ RQ VLWH GXH WR VKLSSLQJ DQG WHPSHUDWXUH

HVLV® FC-48 Feed Connector	
Length	( - "
Width	- " a ]b"
Height	%&"
Chamber Storage Capacity	\$" - %Z³/ft
Pipe Comparison	; fYUHYF Úck `WdUVYmih Ub`%&"`d]dY



### 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 excavate 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 followed.
- Prepare the sub-grade soil for the chamber bed.
- Woven geotextile is required on the sides and over the top of the system. It is also recommended on the system bottom. Overlap fabric edges meet.



- Refer to the engineer's drawings for sub-grade soil preparation and required stone foundation thickness.
- Place on an unyielding surface. Refer to the engineer's guidelines.



## Chamber Information for Recharger® Models 360HD & 902HD

'LUHFWLRQDO DUURZV ORFDWHG RQ WKH WRS RI WKH FKDPEHU SRLQW WRZDUGV WKH 6PDOO 5



### CULTEC Recharger® 360HD & 902HD Chambers

The Recharger models 360HD & 902HD chambers come in only one model type which is fully open on both ends. The chamber requires the coordinating End 7Ud'fIV R O G V H S D H ' W W f t O g ' c Z chambers or to create single stand alone units. One rib is dimensionally smaller to be able to interlock with additional units. A directional arrow points towards the ga U ' ' f ] V ' Y b X ' ' H r d ] W ' ' n z ' h Y ' V i ] ' X ' c Z h Y ' row begins with the large rib end facing you.



6KRZQ 5HFKDUJHU + 5HFKDUJHU + &KDPEHU ZLWK RYHUODSSLQJ (QG &DSV

### CULTEC Recharger® 360HD & 902HD End Caps

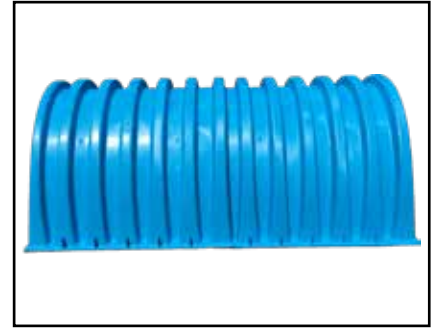
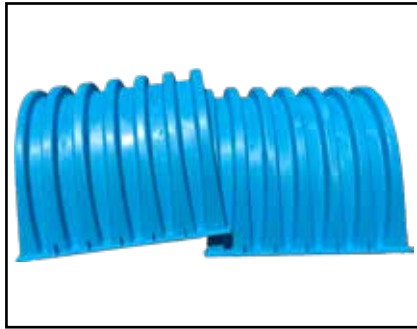
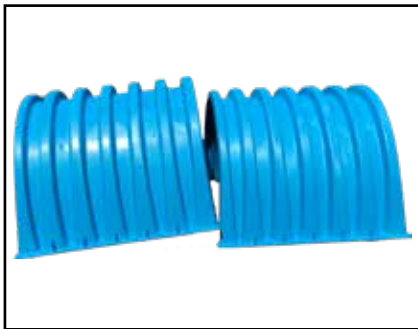
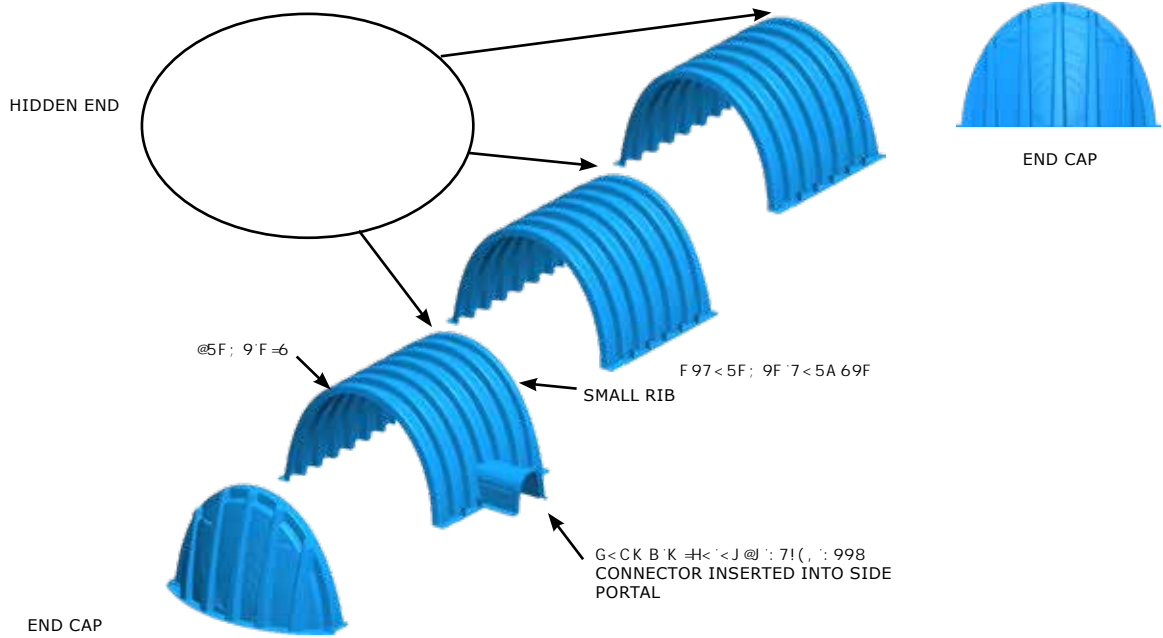
The End Cap is used in conjunction with the chamber to cap rows of chambers or to create single stand alone units.



6KRZQ 5HFKDUJHU + (QG &DS 5HFKDUJHU + (G

## Typical Installation Method

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



## Chamber Preparation and Installation

CULTEC Recharger® 360HD & 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

- Identify and group the chambers and end caps to ensure proper quantity and usage.
- Hf]a`U`g]XY`dcfHJ`gž`YbX`Wd`g`UbX`]bgdYW]cb` ports prior to installation for easier handling during trimming.
- Place one Recharger chamber for each row of units to be installed. Directional arrows point towards the small rib end of the chamber.
- If using the side portal internal manifold ZYUhi`fYž`hf]a`h`Y`g]XY`dcfHJ`fj`UWw`fX]b[` to guidelines located on the sidewall of the W`Ua`VYfž`Ug`fYei`]fYX`" `bgYfh`cbY`YbX`cZ`h`Y` <J`@`:`7!`(`,`:`YYX`7`cbbYW`cf`]bhc`h`Y`hf]a`a`YX` portal to create the internal manifold. Refer to Installation of Manifold section on page 9.
- Place the next Recharger 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 h`Y`dfYWX]b[`W`Ua`VYfž`YbX`k`U`ž`]bhYf`cW]b[` the chambers together. When placing chambers HJ`\_`Y`WfY`hc`a`U]bhU]b`gYdUfUh]cb`fYei`]fYa`Ybhgž` measuring from the base of the chamber.
- Hc`YUgY`VUW`U`]b[`fYei`]fYa`Ybhgž`cb`m]bghU`"Ug` many chambers as the stone-laying bucket or conveyor can reach.
- Place stone 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.
- I`gY`h`Y`FYW`Uf[`Yf`9bX`7`Udg`hc`Wd`c` W`Ua`VYf`fck`g`"Hc`]bghU`"h`Y`YbX`Wdž`"Zh`h`Y` end cap above the chamber and slide down the chamber rib.
- Prior to the placement of the next line of W`Ua`VYfž`W`YW`UbX`W`ffYW`h`Y`Yj`Y`UbX` U`][`ba`YbhicZ`h`Y`W`Ua`VYf`i`b]hgž`k`YfY`bYYXX`"





## Installation of Manifold

Utilize the side portals located on the chamber as an internal manifold in locations where indicated on the drawings. The side portals are located on the chamber as an internal manifold in locations where indicated on the drawings. The side portals are located on the chamber as an internal manifold in locations where indicated on the drawings.

- Place the manifold under all chambers utilizing the internal manifold feature and under all chambers accepting inlet/outlet pipe connections per the drawings. The manifold is placed under all chambers accepting inlet/outlet pipe connections per the drawings. The manifold is placed under all chambers accepting inlet/outlet pipe connections per the drawings.
- Most installations are designed with the internal manifold located at the ends of the chamber run. The internal manifold feature allows for the manifold to be located at any point within the chamber run. Refer to the engineer's drawings for details.
- The side wall portals of the units that are to be connected may be placed on any chamber per the engineer's drawings.
- The side portal of the chambers per the drawings is located on the side of the chamber. The side portal of the chambers per the drawings is located on the side of the chamber.
- Check for correct center-to-center spacing of chamber runs according to engineer's drawings before proceeding to next row.
- The side portal as detailed on engineer's drawings. The side portal as detailed on engineer's drawings. The side portal as detailed on engineer's drawings.



SRUWDO LQWHUQDO PDQLIROG SURFHGG DF  
GUDZLQJV IRU SLSH PDQLIROG LQVWDOODWLF

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

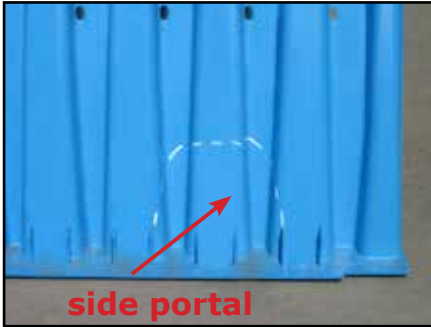
CULTEC Recharger End Cap on-site. Here are some quick steps to ensure a successful outcome:

- 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 end wall large enough to accommodate a saw blade.
- Use a reciprocating saw to trim out the opening to accommodate the pipe. Trimming should be done to prevent stone intrusion.
- Seal the opening into the chamber. This is not required to be a watertight connection. Maximum inlet pipe size is 8 inches. For larger diameters, consult 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.



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

K \Yb'i g]b[ 'h\Y'g]XY'dcfHJ''bhYfbU'a Ub]Zc'X'ZYUhi fYz'h\Y'WcbhfUWcf' ]g'fYei ]fYX'hc'hf'a 'h\Y'g]XY'dcfHJ'' of the CULTEC Recharger chamber on site.



- : c`ck ]b[ 'h\Y' [ i ]XYg'cb'h\Y'g]XY'dcfHJ'ž'i gY'U'fYW'dfcWU]b[ 'gUk'hc'hf'a 'ci h'h\Y'cdYb]b[ 'hc' UWWta a cXUHy'h\Y'<J@ : 7!(, : YYX'7cbbYWcf'HF]a a ]b[ 'g\ci 'X'VY'k ]h]b'%'#( Ĩ'hc'YfUbW'cZ<J@ : 7!(, : YYX'7cbbYWcf'hc'dfYj Ybhgc]' ]b]fi g]cb''



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

- =bgYfh'h\Y'<J@ : 7!(, : YYX'7cbbYWcf'U' a ]b]a i a 'cZ, Ĩ' ]bhc'h\Y'WUa VYF'H\ ]g' ]g'bch' required to be a watertight connection.

- Maintain proper separation cZ-Ĩ'a ]b]a i a 'VYhk YYb' chamber rows.



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

Line up the pipe on the chamber side portal to the designated pipe elevation as detailed on the engineer's drawing. The side portal may be used for side entry of the pipe.

- Line up the pipe on the chamber side portal to the designated pipe elevation as detailed on the engineer's drawing. The side portal may be used for side entry of the pipe.
- Line up the pipe on the chamber side portal to the designated pipe elevation as detailed on the engineer's drawing. The side portal may be used for side entry of the pipe.
- Drill a hole on the chamber side portal large enough to accommodate a saw blade.
- Use a reciprocating saw to trim out the opening to accommodate the pipe. Trimming should be done in a way that prevents soil intrusion.
- Ensure the connection is watertight.



**Fig. 1 - Acceptable Trim Area**



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



## (PEHGP HQW 6WRQH %DFN¿OO

6UWÜ"i g]b[ 'k Ug\YXž'Wfi g\YX'ghcbY''Hc'a U]bHJ]b' row separation distance and prevent chamber X]gd'UW'a Ybhž'g'ck 'mX]ghf]Vi hY'ghcbY'cb'hcd'cZ the center of the chamber crown so that stone trickles down and builds between chamber rows Ug'fYei ]fYX''GhcbY'Vt'i a b'X] YfYbh]U''g\ci 'X'bch' YI WYX' %&Ā 'VYh YYb'UX'UW'bh'WUa VYf'fck g'cf' 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 i bUWVdHUV'Y'a Yh'cX'cZVUWÜ''UFY' bch'Wtj YfYX' under the CULTEC limited warranty.

### Excavator-Placed Stone

Hrd]W' mih'Y'a cgh'Vt'a a cb'a Yh'cXž'YI W]j Uhc'f' placed stone is limited by the reach of the arm. Hc'UWVt'a a cXUh' h'lg' ]ggi Y'k ]h' 'Uf[ Yf'VYXgž' ]h' ]g' common to prepare a bed by joining just a few WUa VYf'i b]hg'Uh'U'hja Yž'h'Yb'd'UW]b[ 'h'Y'ghcbY' and fabric before installing the next few units.

The excavator is usually operated within the excavation area. The excavator may work at grade 'Yj Y'cj Yf'fYW'bh'mid'UW'X'WUa VYfgž'dfcj ]YX' coverage between the chambers and the excavator tracks meets the minimum requirements.

### Telescoping Conveyor Boom Placement

K ]h' Vcca g'Ug'a i W'Ug' %&\$!% \$'ZYh'cb[ ž' telescoping aggregate conveyors can greatly aid the process of stone placement.

K ]h' Vch' ghcbY!d'UW'a Ybh'a Yh'cXgž'UX' ]b[ 'h'Y' stone carefully over the chambers' centers will secure them in place. Evenly distributing the stones will help prevent chamber movement and maintain row separation.

CbW' gYW' fYXž'ghcbY'a UmVY'd'UW'X'hc'gi ffc'i bX' h'Y' WUa VYfg'UbX'Ü''h'Y'dYf]a YHf'UFYUg''6Y' sure to adhere to manufacturer recommendations UbX'Yb[ ]bYYf]g' XfUk ]b[ g'Zcf' gmgh'Ya 'Vtj Yf#VUWÜ'' requirements.



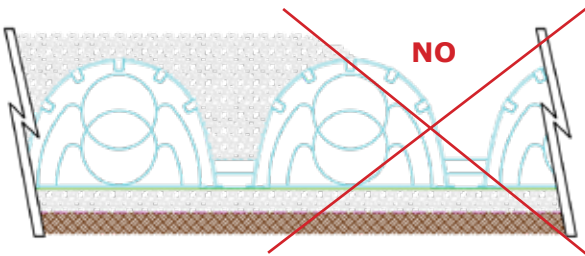
Do not allow equipment to drive over the chambers unless the minimum cover is in place. Use a k Ufb]b[ 'hUdY'fUj U]UV'Y'Zca '7I @H97k'hc'fYghf]Vh' access.

Repeat steps until all of the last chamber units are in place. Be certain to use the Recharger End Caps hc'YbX'h'Y''bY'cZ'VX'Ua VYfg'Ug'gdYV]ÜYX'Vm'h'Y' drawings.

If a manifold system is designed on the back end cZ'h'Y'VX'Ua VYf'VYX'Z'Zc''ck' 'a Ub]Zc'X' ]bghU''Uh]cb' instructions as described previously.

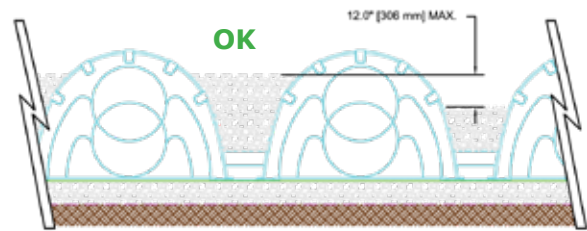


GhcbY'Wè'i a b'\Y] [\hX] YfYbh]U''g\ci 'X'bYj Yf' YI WYX '%&' ]bVX'Yg'k ]h' UX'UW'bh'VX'Ua VYfg'cf' between chamber rows and perimeter. Minimum depth of cover of properly compacted material must be met before allowing vehicles to drive over the bed. Avoid using large rocks and/or organic a UH'Yf'Ug'VUW'Ü''a UH'Yf]U''FYZf'hc' ]5WV'dhUV'Y' : ]''A UH'Yf]U'g' ]cf'WèbhUV'h'Y'XYg] [ b'Yb [ ]bYYf'Zcf' Uddf'cj YX'Ü''hmd'Yg"



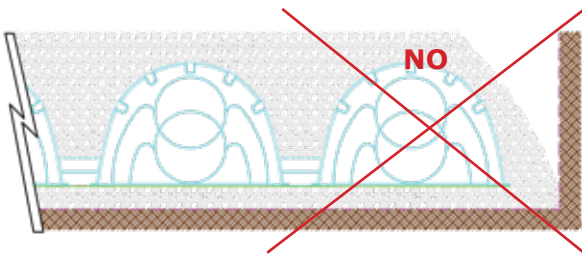
NOTE: CHAMBERS MUST BE BACKFILLED EVENLY.

I B9J 9B '657?: =@@! **INCORRECT INSTALLATION**



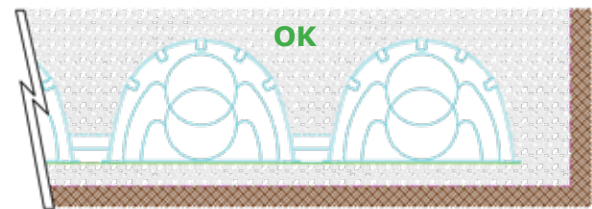
NOTE: STONE HEIGHT IN BETWEEN ROWS AND PERIMETER SHOULD NOT DIFFER BY MORE THAN 12" (306 mm).

9J 9B '657?: =@@! **CORRECT INSTALLATION**



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

D9F -A 9H9F 'BCH': I @M657?: =@@98 **INCORRECT INSTALLATION**

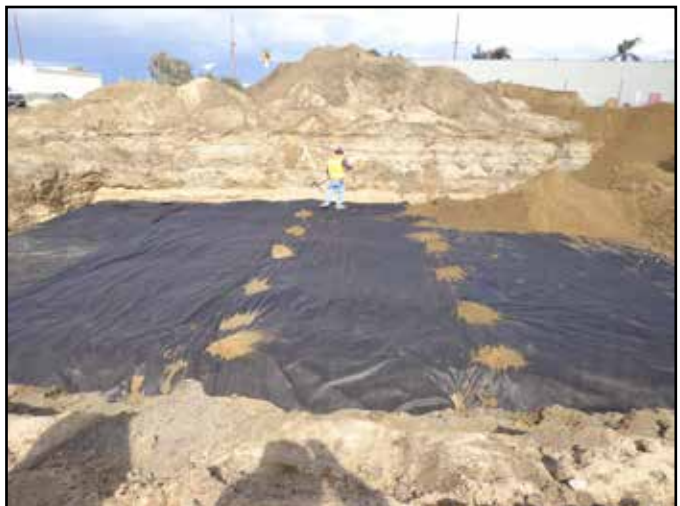


NOTE: PERIMETER MUST BE FULLY BACKFILLED WITH STONE AND EXTEND TO THE EXCAVATION WALL.

D9F -A 9H9F ': I @M657?: =@@98 **CORRECT INSTALLATION**

3 ODFHPHQW RI 7RS )DEULF /D\HU 6\VWHP %DFN¿OO 3URFHV

- Place the stone over the entire bed area as described in previous section.
- Cover the entire installation area with CULTEC Bc" (%\$'bcb!k cj Yb' [ YchYI h'Y'ghUfh]b[ 'Zfca ' the perimeter and laying it on top of the ghcbY" H\Y [ YchYI h'Y'a i gh'cj Yf'Ud'Uh'YUgh'&(' inches at the edges.
- : ]" h\Y'Üfgh%&' ]bWYg'k ]h' Ybci [ \ 'a UhYf]U' fGY' ' ]b' : ][" "%ž'dU[ Y'% Ł'hc'a YYh'h\Y'fYei ]fYa Ybhg' Ug'g'ck b' ]b' HUV'Y" ž'dU[ Y'% "6UW'Ü"cj Yf'h\Y' hcd'cZ'h\Y [ YchYI h'Y'fGY' " ]b' : ][" "%ž'dU[ Y'% Ł' ]b' ]Zhg' h\UhXc' bchYI WYX' \* ]b'WYgž' UbX' X]gdYfgY' h\Y'Ü" k ]h' U'j Y\ ]WY' h\Uha YYhg' h\Y'a UI ]a i a ' wheel loads or ground pressure limits as gdYVW'ÜYX'cb'gdYVW'ÜYX' ]b' HUV'Y'%cb'dU[ Y'%\* "
- 7ca dUW'h'YUW' " ]ZhcZ'VUW'Ü" "Ug'gdYVW'ÜYX' ]b' h\Y'Yb[ ]b'YYf'g' XfUK ]b[ 'g" 71 @H97'gdYVW'ÜYg' VŁ'a dUW' ]b[ 'hc'U'a ]b]a i a 'cZ-) i 'cZ'h\Y' standard proctor density using compaction Yei ]da Ybh'FYZyf'hc' HUV'Y'%ž'dU[ Y'%\* 'Zcf' acceptable equipment.
- 6UW'Ü"cj Yf'h\Y'WUa VYf'VYX'fGY' ( ' ]b' : ][" "%ž'dU[ Y'% Ł' ]b' %&! ]b'W' 'a UI ]a i a ' ]Zhg' i bh' h\Y'gdYVW'ÜYX' [ fUXY' ]g' UW' ]Yj YX" : cf'dUj Ya Ybh' gi V!VUgY'cf'gdYVW'Ü"Ü" fYei ]fYa Ybhgž'gYY' engineer's drawings.



**NOTE:**

Excavation alongside already installed chamber fck g'VUW'Ü"YX'k ]h' ghcbY' ]g'bch'UWV'dhUV'Y" No chambers may be added or subtracted from previously installed systems.





## Table 1: Maximum Allowable Construction Loads

Material Location see Fig. 1, p. 18	Cumulative Cover Depth over Chambers (in)	Maximum Allowable Wheel Loads		Maximum Allowable Track Loads		Maximum Allowable Compaction Loads	
		Max Axle Load for Trucks (lbs)	Max Axle Load for Loaders (lbs)	Track Shoe Width (in)	Max Ground Pressure (psi)	Maximum Centrifugal Force (lbs)	Max Gross Vehicle Weight (lbs)
4 Final Fill Material	36 Compacted	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	30 Compacted	12,000	6,000	30	25.0	1,200	25,000
				30	26.0		
				36	26.0		
3 Initial Fill Material	12 Compacted	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	12 Loose/Dumped	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	12 Compacted	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	12 Loose/Dumped	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
2 Embedment Stone	12	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	12	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		
	6	12,000	6,000	36	23.8	1,200	25,000
				30	25.0		
				36	26.0		

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

RU 7UDFNHG 9HKLFOHV \*URXQG SUHVXUH LV YHKLFOH RSHUDWLQJ ZHLJKW GLYLGHG E\ WRWDO WUXFN FRQWDFW DUHD IRU 1R ZKHHOHG YHKLFOHV DUH DOORZHG SULRU WR FRPSDFWHG 200 SODFHPHQW



**Table 2: Placement Methods and Descriptions**

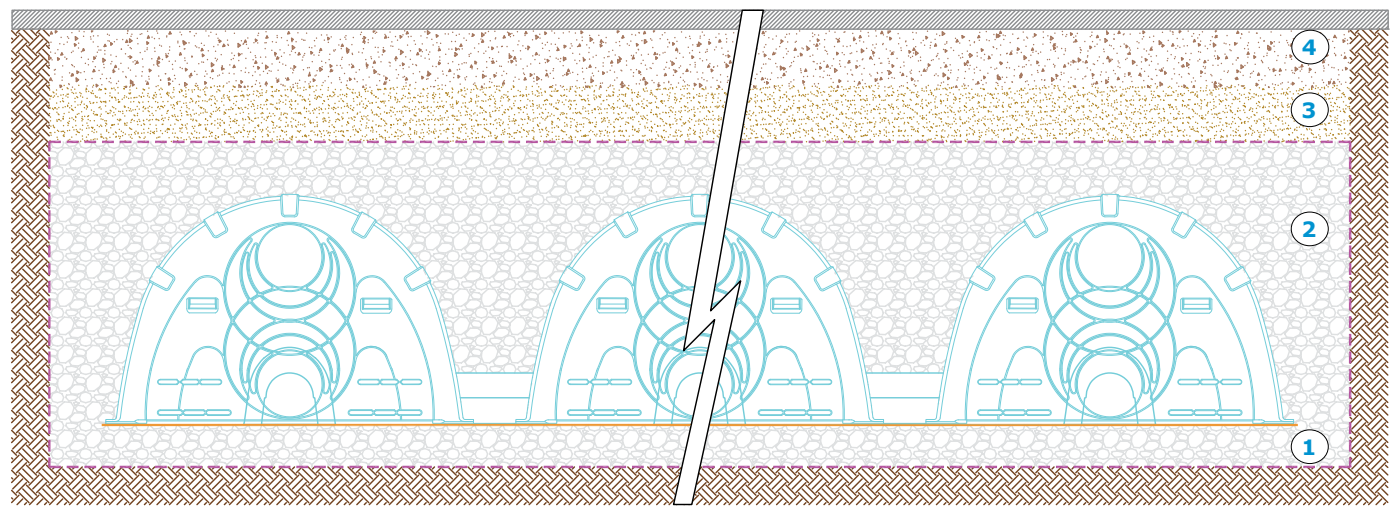
Material Location see Fig. 1, p.18	Placement Method/ Restrictions	Wheel Load Restrictions	Track Load Restrictions	Compaction Restrictions
<p><b>4 Final Fill Material</b></p>	<p>A variety of placement methods may be used.</p> <p>All construction loads shall not exceed the maximum</p>	<p>See Table 1, p. 16 for Maximum Construction Loads</p> <p>- \$&lt;8. ' ' *I' a ]b]a i a ' cover for dump truck and wheel loader travel</p> <p>' *\$&lt;8. '(I' a ]b]a i a ' cover for dump truck and wheel loader travel</p>	<p>Dozers shall push parallel to rows only.</p>	<p>902HD: Roller travel shall be parallel to rows cb'mi bh]' ' *I' cZVej Yf]g' reached</p> <p>360HD: Roller travel shall be parallel to rows cb'mi bh]' &amp;(I' cZVej Yf]g' reached</p>
<p><b>3 Initial Fill Material</b></p>	<p>9l Wlj Uhc f' d'cg]h]cbYX' c' of bed or on foundation stone.</p> <p>Ga U''@ D' fFUW' XcnYfZ' track skid steer loaders may be used.</p> <p>A i gh'a U]bhU]b' %&amp;I' a ]b]a i a ' U'' VY'ck ' fFUW'g' at all times.</p>	<p>902HD: Asphalt can be dumped into paver machine when total W a i 'Uh]j Y' U'' XYdH' 'cj Yf' Vx Ua VYfg fYUW'Yg' &amp;(I'</p> <p>360HD: Asphalt can be dumped into paver machine when total W a i 'Uh]j Y' U'' XYdH' 'cj Yf' Vx Ua VYfg fYUW'Yg' % I'</p>	<p>Equipment direction of travel shall be parallel to rows at all times.</p> <p>Equipment shall not be permitted to turn direction over chambers.</p>	<p>Roller travel shall be parallel to rows only.</p> <p>902HD: Dynamic roller mode shall be used only when total cumulative U'' XYdH' 'cj Yf' Vx Ua VYfg' fYUW'Yg' &amp;(I'</p> <p>360HD: Dynamic roller mode shall be used only when total cumulative U'' XYdH' 'cj Yf' Vx Ua VYfg' fYUW'Yg' % I'</p>
<p><b>2 Embedment Stone</b></p>	<p>No equipment shall be permitted to contact the chambers.</p> <p>Stone conveyor positioned c' cZVYX' cf' cb' foundation stone.</p> <p>9l Wlj Uhc f' d'cg]h]cbYX' c' of bed or on foundation stone.</p> <p>Stone column height X] YfYbh]U'' VYHk YYb' chamber rows shall never Yl WYX' %&amp;I'</p> <p>Stone to be placed at the crown of the chamber.</p> <p>No stone shall be pushed over chambers.</p>	<p>No wheel loads allowed.</p> <p>No wheel loaders permitted to dump stone directly onto chambers.</p>	<p>No tracked equipment is allowed on chambers until %&amp;I' cZYa VYXa Ybh]gcbY' ]g' in place.</p>	<p>No rollers allowed.</p>
<p><b>1 Foundation</b></p>	<p>5 j Uf]YmicZd'UW'a Ybh'a Yh'cXg'a UmVY' i gYX' ]bW' X]b[ 'Vi h'bc]' ]a ]hYX' hc' Yl Wlj Uhc f' d'UW'a Ybh'gcbY' W'ebj Ymcf' placement or dozer placement.</p> <p>D'UH' W'ca dUW'ic f'fc'' hc' UW' ]Yj Y' U' U'U'z' i bn]Y' X]b[ 'gi fZUW''</p> <p>7cbfUW'ic f' ]g' fYgdcbg]V' Y' Z'c f' UbmV' bX]h]cbg' c f'Yei ]f'Ya Ybhg' f'Y' Uh]b[ 'hc' gi V[ fUXY' VYUf]b[ ' WdUW]mz' XYk UH'f]b[ 'cf' dfchYV]cb' cZgi V[ fUXY' ]b' U' f'Uh]j Y' WdUW]m</p>			

### Table 3: Acceptable Fill Materials

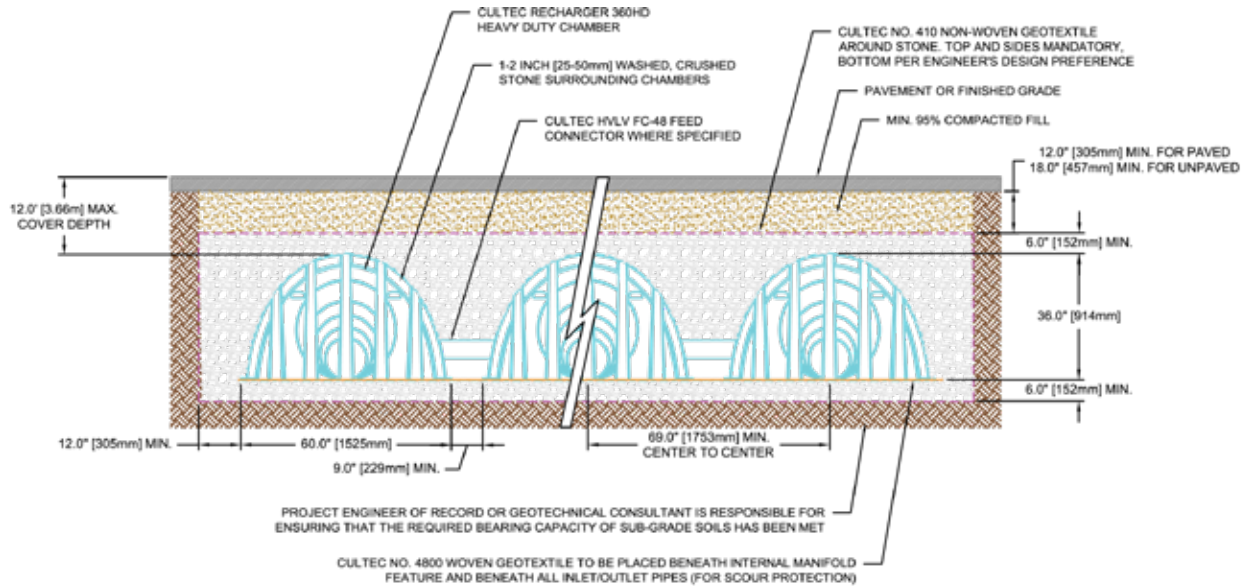
Material Location	Description	AASHTO M43 & ODVVL <sub>2</sub> FDWLRQ	Compaction / Density Requirement
<b>4</b> the top of Layer 3 to the bottom of Layer 2	Fill Material for Layer 3 starts from the top of chamber and extends to minimum required depth above top of chamber.	Per engineer's drawings	Prepare per engineer's drawing. Paved installations may have strict material and preparation requirements.
<b>3</b>	Embedment Stone surrounding chambers and to a minimum elevation above chamber crown.	No compaction required.	
<b>2</b>	Foundation Stone below chambers per engineer's drawing.	Plate compact or roll to achieve a	
<b>1</b>			

7KH OLVDWHG \$S6+72 FODVVL<sub>2</sub>FDWLRQV DUH IRU JUDGDWLRQV 7KH VWRQH PXVW EH ZDVKHG FUXVKHG DQG DQJXODU 6HH 7DE )RU H[DPSOH WKH VWRQH PXVW EH VSHFL<sub>2</sub>HG DV ZDVKHG FUXVKHG 1R VWRQH )LOO PDWHULDOV VKDOO EH IUHH RI GHEULV &RQWDFW &8/7(& IRU JUDGDWLRQ UHTXLUHPHQWV IRU VSHFL<sub>2</sub>F SURMHFWV WKDW GR QRW IDOO ZLWKLQ WKH DERYH VSHFL<sub>2</sub>FDWLRQ

Fig. 1. Fill Material Locations - refer to Tables 1-3



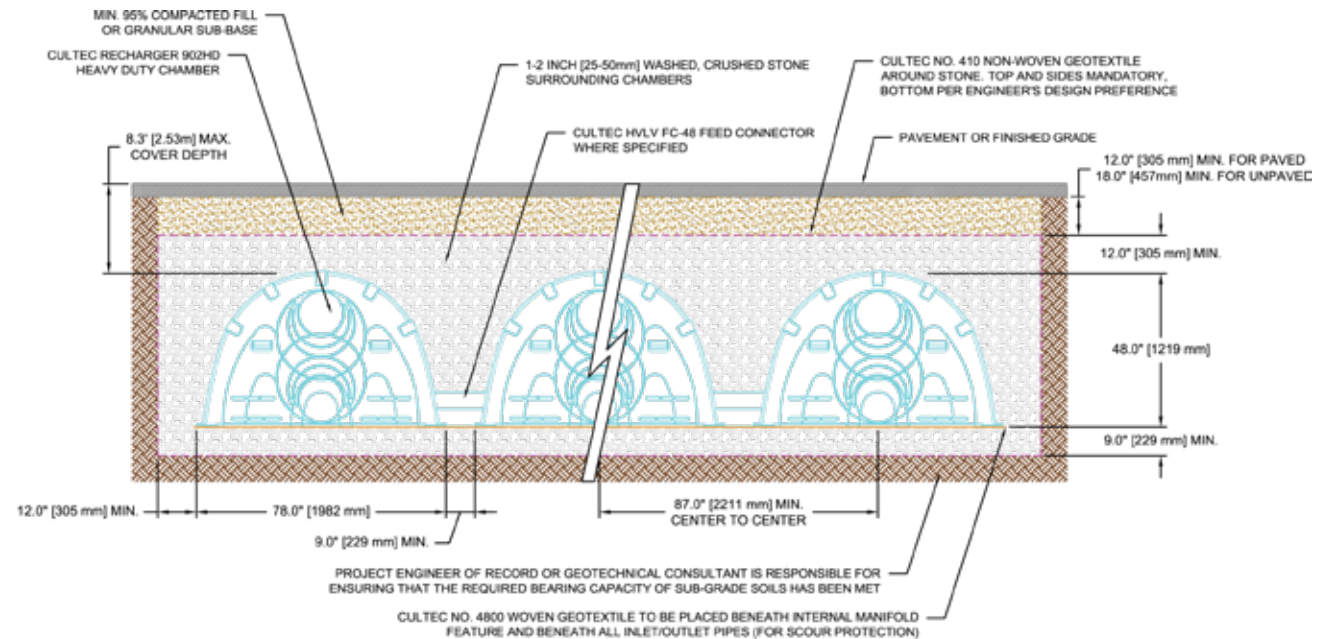
5HFKDUJHU + ' 7\SLFDO &URVV 6HFWLRQ IRU 7UDÒF \$SSOLF



**NOTES:**

- THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE:
  - INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
  - MAXIMUM PERMANENT (50-YEAR) COVER LOAD
  - 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
- THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
- THE INSTALLED 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. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
  - THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
  - THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
  - THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

5HFKDUJHU + ' 7\SLFDO &URVV 6HFWLRQ IRU 7UDÒF \$SSOLF

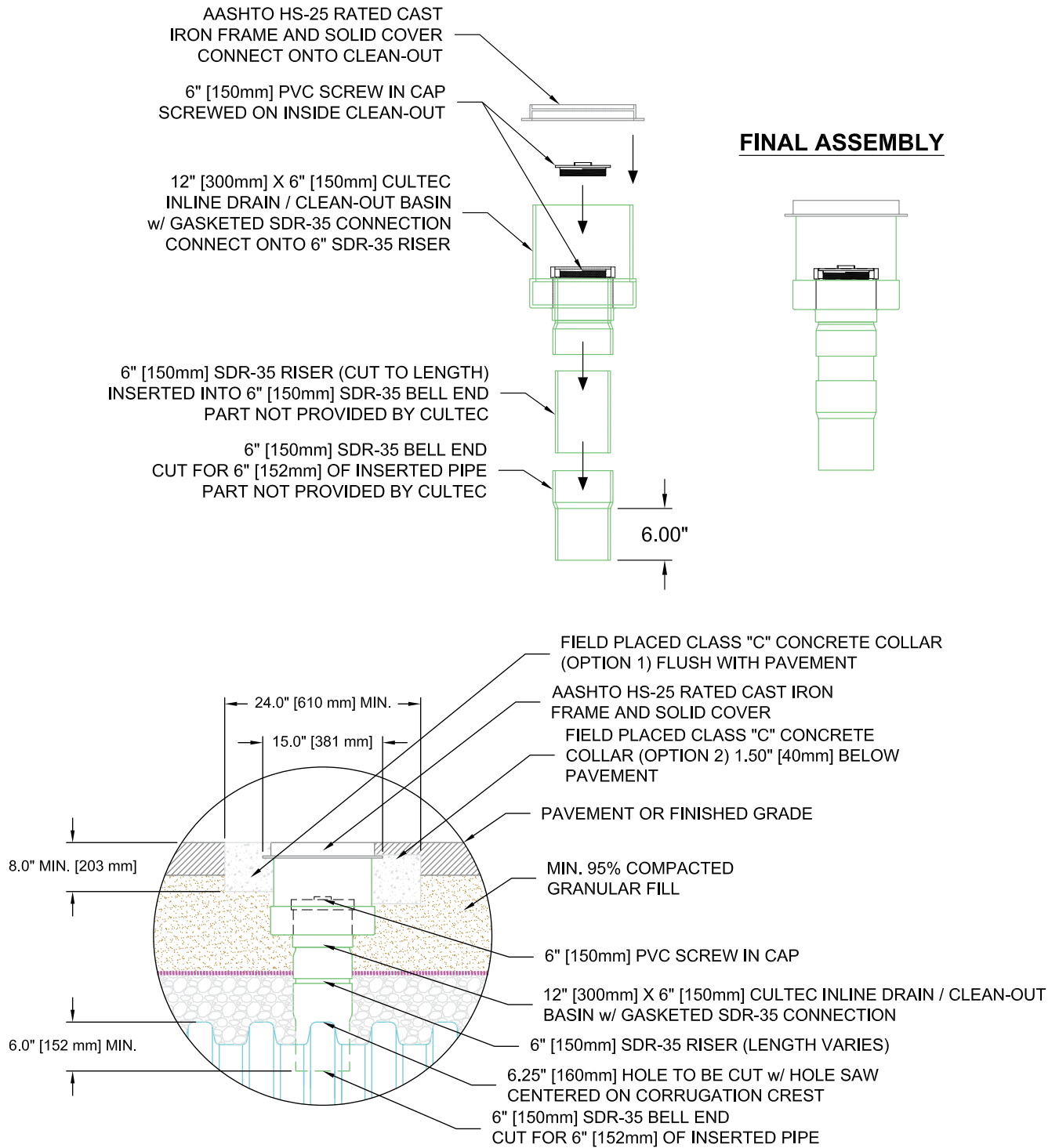


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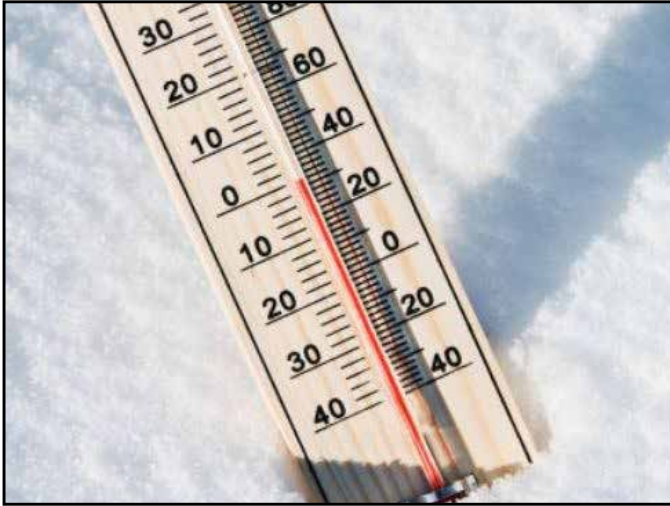


,QVSHFWLRQ 3RUW 'HWDLO IRU 3DYHG 7UDÒF \$SSOLFDWLRQV



Trim inspection port knock-out with reciprocating saw or hole-saw.  
Corrugated pipe is not suitable for inspection port.

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



CULTEC chambers are manufactured of impact-resistant to corrosion and chemical breakdown. Polypropylene and antioxidants increase the chambers' strength and durability. Above 32 degrees Fahrenheit, take special care when removing the chambers from height. Avoid using machinery to handle the chambers above 32 degrees F to minimize depressions or damage.







**CULTEC, Inc.**

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