CULTEC Recharger® 360HD Stormwater Chamber

The Recharger® 360HD is a 36" (914 mm) tall, high capacity chamber. Typically when using this model, fewer chambers are required resulting in less labor and a smaller installation area. The Recharger® 360HD has the side portal internal manifold feature. HVLV® FC-48 Feed Connectors are inserted into the side portals to create the internal manifold.

Recharger 360HD Chamber

Recharger 360HD End Cap

Recharger 360HD Chamber	
Size (L x W x H)	4.17' x 60" x 36" 1.27 m x 1525 mm x 914 mm
Installed Length	3.67' 1.12 m
Length Adjustment per Row - with two end caps installed	2.5' 0.76 m
Length Adjustment per Row - when not using end caps	0.5' 0.15 m
Chamber Storage	10.00 ft^3/ft 0.929 m^3/m 36.66 ft^3/unit 1.038 m^3/unit
Min. Installed Storage	15.199 ft^3/ft 1.412 m^3/m 55.73 ft^3/unit 1.58 m^3/unit
Min. Area Required	21.08 ft^2 1.96 m^2
Chamber Weight	57.0 lbs 25.85 kg
Shipping	20 chambers/skid 1,265 lbs/skid 11 skids/48' flatbed
Min. Center-to-Center Spacing	5.75' 1.75 m
Max. Allowable Cover	12' 3.66 m
Max. Allowable O.D. in Side Portal	10" HDPE, 12" PVC 250 mm HDPE, 300 mm PVC
Compatible Feed Connector	HVLV FC-48 Feed Connector

Calculations are based on installed chamber length.
All above values are nominal.
Min. installed storage includes 6" (152 mm) stone base, 6" (152 mm) stone above crown of chamber and typical stone surround at 5.75 (1.75 m) center-to-center spacing.

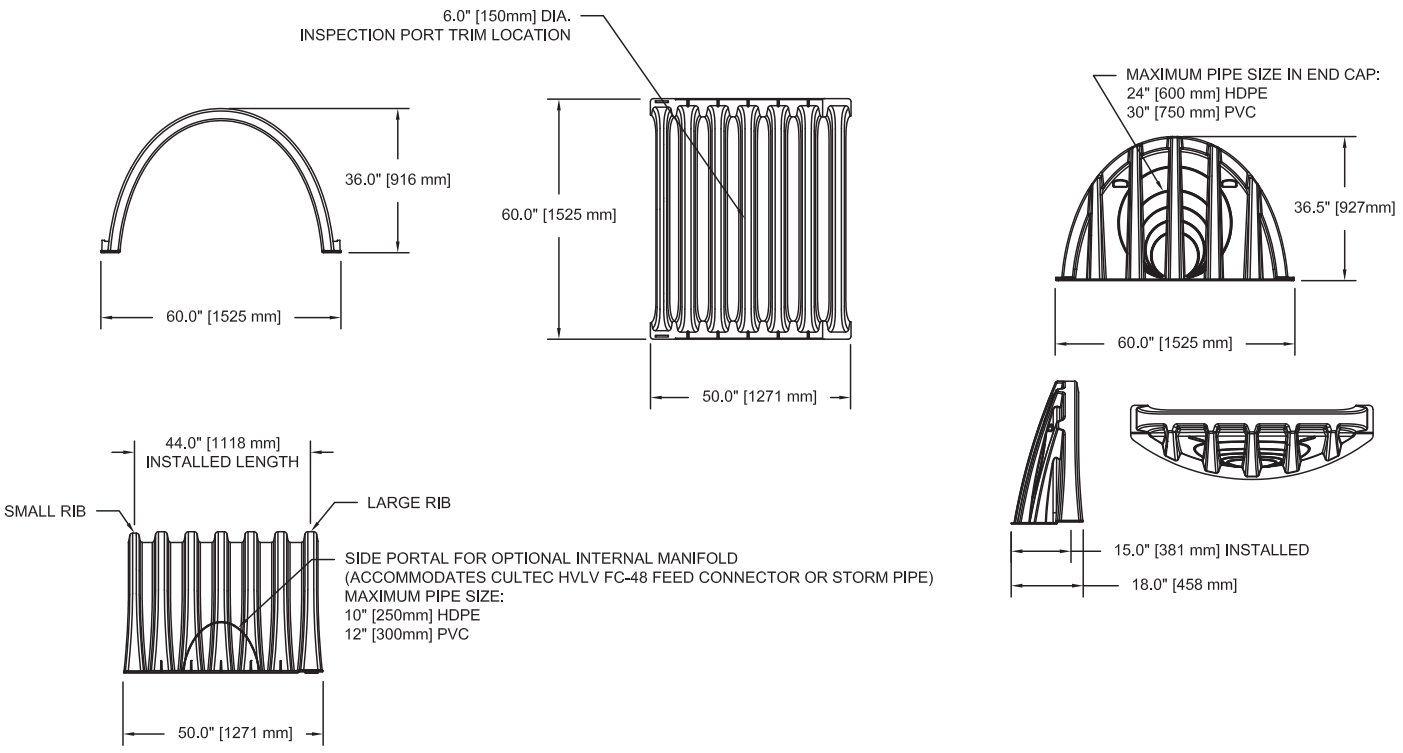
	Stone Foundation Depth		
	6" 152 mm	12" 305 mm	18" 457 mm
Chamber and Stone Storage Per Chamber	55.73 ft^3 1.58 m^3	59.95 ft^3 1.70 m^3	64.17 ft^3 1.82 m^3
Min. Effective Depth	4.00' 1.22 m	4.50' 1.37 m	5.0' 1.52 m
Stone Required Per Chamber	1.77 yd^3 1.35 m^3	2.16 yd^3 1.65 m^3	2.55 yd^3 1.95 m^3

Recharger 360HD End Cap	
Size (L x W x H)	18" x 60" x 36.5" 458 mm x 1525 mm x 927 mm
Installed Length	15" 381 mm
End Cap Storage	5.17 ft^3/ft 0.48 m^3/m 6.46 ft^3/unit (interlocked) 0.183 m^3/unit (interlocked)
Min. Installed Storage	12.40 ft^3/ft 1.15 m^3/m 15.50 ft^3/unit 0.44 m^3/unit
End Cap Weight	22.0 lbs 9.98 kg
Shipping	20 end caps/skid 565 lbs/skid 11 skids/48' flatbed
Max. Inlet Opening in End Cap	24" HDPE, 30" PVC 600 mm HDPE, 750 mm PVC

Calculations are based on installed chamber length.
Includes 6" (305 mm) stone above crown of chamber and typical stone surround at. 5.75' (1.75 m) center-to-center spacing and stone foundation as listed in table.
Stone void calculated at 40%.

For more information, contact CULTEC at (203) 775-4416 or visit www.cultec.com.

Three View Drawing



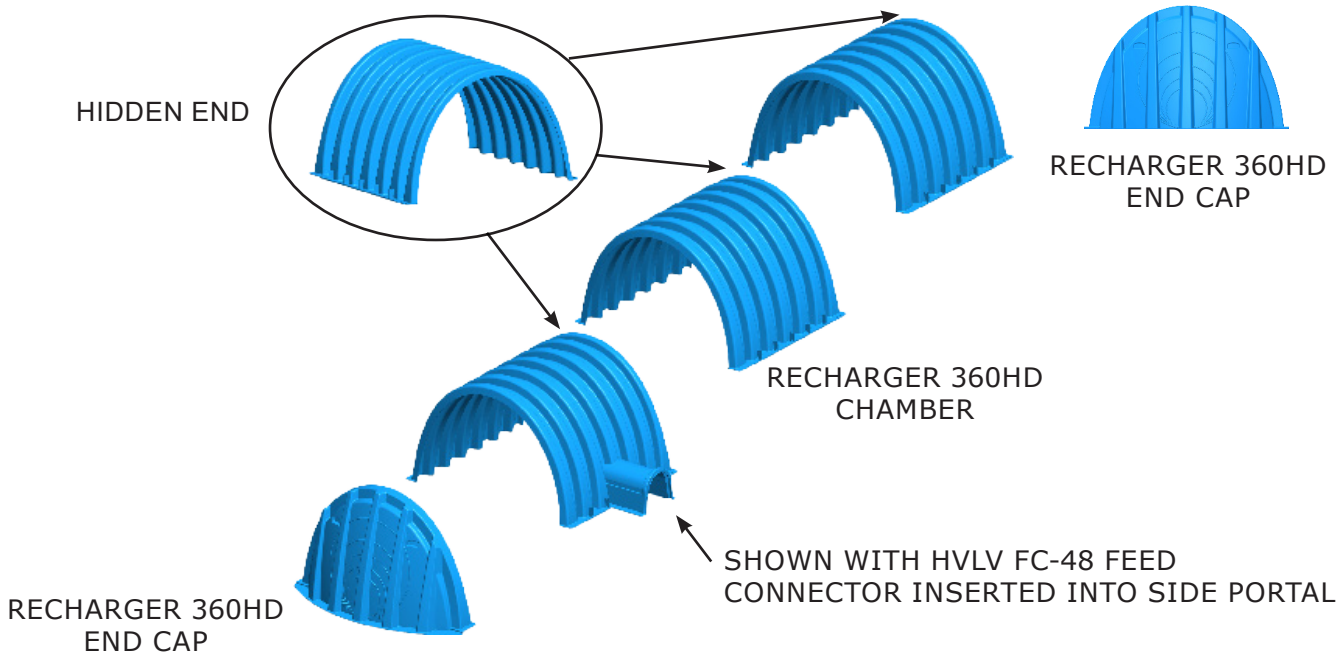
CULTEC RECHARGER 360HD CHAMBER STORAGE = 10.0 CF/FT [.928m³/m]
CHAMBER STORAGE VOLUME = 36.66 CF [1.038m³]
INSTALLED LENGTH ADJUSTMENT = 0.50' [0.15m]
SIDE PORTAL ACCEPTS CULTEC HVLV FC-48 FEED CONNECTOR

Recharger 360HD Chamber

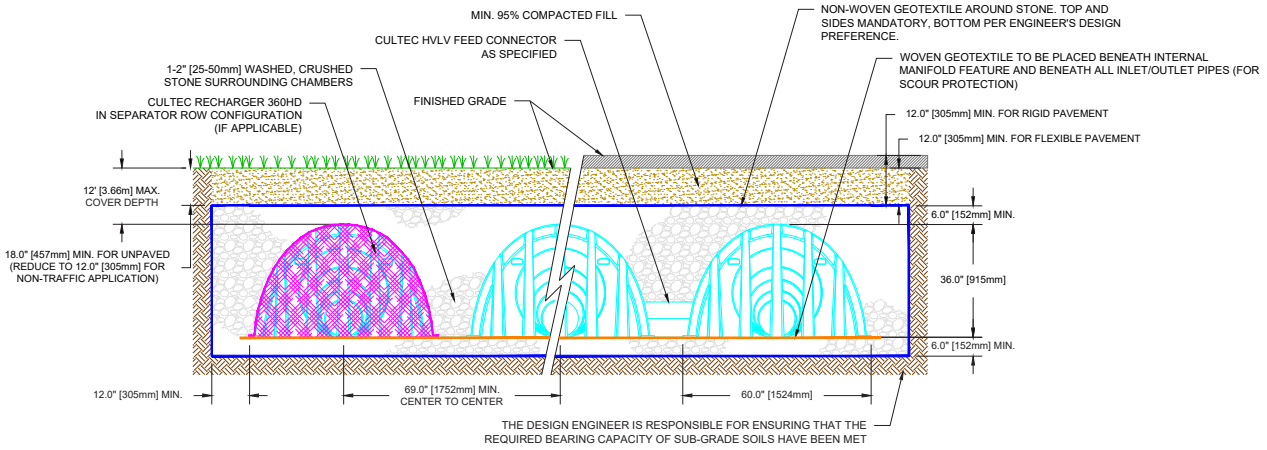
CULTEC RECHARGER 360HD END CAP
STORAGE = 5.17 CF/FT [0.48 m³/m]
END CAP STORAGE VOLUME = 6.46 CF [0.183 m3]
INSTALLED LENGTH ADJUSTMENT = 0.25' [0.08 m]

Recharger 360HD End Cap

Typical Interlock Installation

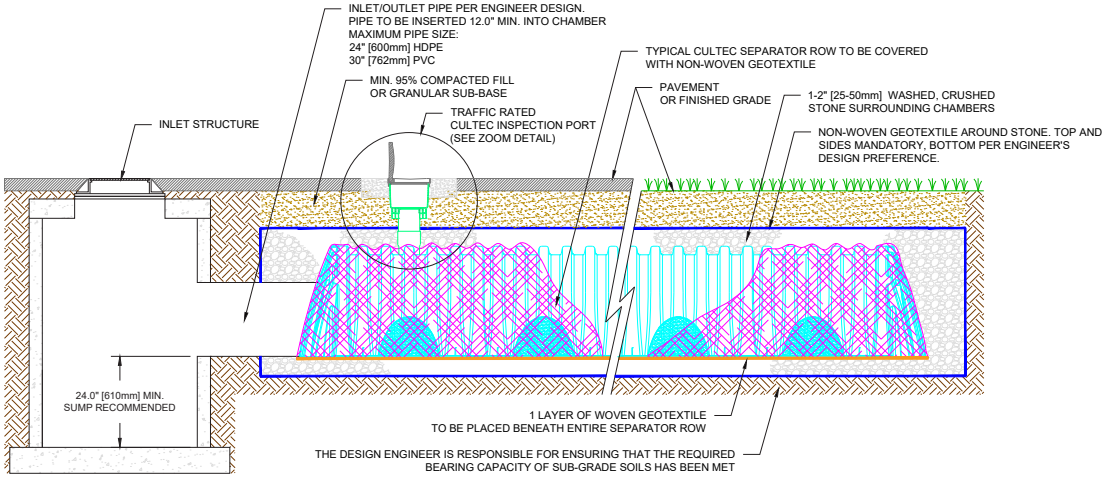


Typical Cross Section for Traffic Application



NOTES:
1. 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:
   1.a. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
   1.b. MAXIMUM PERMANENT (50-YEAR) COVER LOAD
   1.c. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
2. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"
3. 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:
   3.a. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
   3.b. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75
   3.c. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

Typical Profile View for Traffic Application



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Recharger® 360HD Bare Chamber Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
36	914	0.022	0.002	0.08	0.002	3.3658	1.038
35	889	0.046	0.004	0.17	0.005	36.577	1.036
34	864	0.069	0.006	0.25	0.007	36.407	1.031
33	838	0.117	0.011	0.43	0.012	36.154	1.024
32	813	0.148	0.014	0.54	0.015	35.726	1.012
31	787	0.171	0.016	0.63	0.018	35.185	0.996
30	762	0.190	0.018	0.70	0.020	34.560	0.979
29	737	0.206	0.019	0.76	0.021	33.864	0.959
28	711	0.221	0.021	0.81	0.023	33.108	0.938
27	686	0.234	0.022	0.86	0.024	32.298	0.915
26	660	0.246	0.023	0.90	0.026	31.441	0.890
25	635	0.257	0.024	0.94	0.027	30.539	0.865
24	609	0.267	0.025	0.98	0.028	29.598	0.838
23	584	0.276	0.026	1.01	0.029	28.620	0.811
22	559	0.284	0.026	1.04	0.030	27.608	0.782
21	533	0.292	0.027	1.07	0.031	26.565	0.752
20	508	0.300	0.028	1.10	0.032	25.493	0.722
19	483	0.307	0.028	1.12	0.033	24.394	0.691
18	457	0.313	0.029	1.15	0.033	23.239	0.659
17	432	0.319	0.030	1.17	0.033	22.121	0.626
16	406	0.325	0.030	1.19	0.034	20.950	0.593
15	381	0.331	0.031	1.21	0.034	19.757	0.560
14	356	0.336	0.031	1.23	0.035	18.545	0.525
13	330	0.341	0.032	1.25	0.035	17.313	0.490
12	305	0.345	0.032	1.27	0.036	16.064	0.455
11	279	0.350	0.032	1.28	0.036	14.798	0.419
10	254	0.354	0.033	1.30	0.037	13.516	0.383
9	229	0.358	0.033	1.31	0.037	12.219	0.346
8	203	0.361	0.034	1.32	0.038	10.908	0.309
7	178	0.365	0.034	1.34	0.038	9.584	0.271
6	152	0.368	0.034	1.35	0.038	8.247	0.234
5	127	0.371	0.034	1.36	0.039	6.898	0.195
4	102	0.374	0.035	1.37	0.039	5.538	0.157
3	76	0.376	0.035	1.38	0.039	4.168	0.118
2	51	0.379	0.035	1.39	0.039	2.787	0.079
1	25	0.381	0.035	1.40	0.040	1.398	0.040
Total		**9.998**	**0.929**	**36.66**	**1.038**	**36.658**	**1.038**

Calculations are based on installed chamber length of 3.67' (1.12 m).

Recharger® 360HD Bare End Cap Storage Volumes

Elevation		Incremental Storage Volume				Cumulative Storage	
in.	mm	ft³/ft	m³/m	ft³	m³	ft³	m³
36	914	0.008	0.0007	0.01	0.000	6.460	0.183
35	889	0.016	0.0015	0.02	0.001	6.450	0.183
34	864	0.024	0.0022	0.03	0.001	6.430	0.182
33	838	0.032	0.0030	0.04	0.001	6.400	0.181
32	813	0.040	0.0037	0.05	0.001	6.360	0.180
31	787	0.048	0.0045	0.06	0.002	6.310	0.179
30	762	0.056	0.0052	0.07	0.002	6.250	0.177
29	737	0.064	0.0059	0.08	0.002	6.180	0.175
28	711	0.072	0.0067	0.09	0.003	6.100	0.173
27	686	0.080	0.0074	0.10	0.003	6.010	0.170
26	660	0.088	0.0082	0.11	0.003	5.910	0.167
25	635	0.096	0.0089	0.12	0.003	5.800	0.164
24	609	0.112	0.0104	0.14	0.004	5.680	0.161
23	584	0.120	0.0111	0.15	0.004	5.540	0.157
22	559	0.128	0.0119	0.16	0.005	5.390	0.153
21	533	0.136	0.0126	0.17	0.005	5.230	0.148
20	508	0.144	0.0134	0.18	0.005	5.060	0.143
19	483	0.152	0.0141	0.19	0.005	4.880	0.138
18	457	0.160	0.0149	0.20	0.006	4.690	0.133
17	432	0.160	0.0149	0.20	0.006	4.490	0.127
16	406	0.168	0.0156	0.21	0.006	4.290	0.121
15	381	0.176	0.0164	0.22	0.006	4.080	0.116
14	356	0.184	0.0171	0.23	0.007	3.860	0.109
13	330	0.192	0.0178	0.24	0.007	3.630	0.103
12	305	0.192	0.0178	0.24	0.007	3.390	0.096
11	279	0.200	0.0186	0.25	0.007	3.150	0.089
10	254	0.208	0.0193	0.26	0.007	2.900	0.082
9	229	0.208	0.0193	0.26	0.007	2.640	0.075
8	203	0.216	0.0201	0.27	0.008	2.380	0.067
7	178	0.224	0.0208	0.28	0.008	2.110	0.060
6	152	0.232	0.0216	0.29	0.008	1.830	0.052
5	127	0.232	0.0216	0.29	0.008	1.540	0.044
4	102	0.240	0.0223	0.30	0.008	1.250	0.035
3	76	0.240	0.0223	0.30	0.008	0.950	0.027
2	51	0.248	0.0230	0.31	0.009	0.650	0.018
1	25	0.272	0.0253	0.34	0.010	0.340	0.010
Total		**5.168**	**0.480**	**6.46**	**0.183**	**6.460**	**0.183**

Calculations are based on installed end cap length of 15" (381 mm).

CULTEC Recharger® 360HD Specifications

GENERAL

CULTEC Recharger® 360HD chambers are designed for underground stormwater management. The chambers may be used for retention, recharging, detention or controlling the flow of on-site stormwater runoff.

CHAMBER PARAMETERS

1. The chambers shall be manufactured in the U.S.A. or Canada by CULTEC of Brookfield, CT (cultec.com, 203-775-4416).
2. 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:
    a. Instantaneous AASHTO Design Truck live load at minimum cover
    b. Maximum permanent (50-year) cover load
    c. 1-week parked AASHTO design truck load
3. The chambers shall meet the requirements of ASTM F3430-20 "Standard Specification for Cellular Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers".
4. 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:
    a. The Creep Modulus shall be 50-year as specified in ASTM F3430
    b. The minimum safety factor for live loads shall be 1.75
    c. The minimum safety factor for dead loads shall be 1.95
5. The installed chamber system shall be structurally designed to provide resistance to live loads as defined by the AASHTO H-20/HL-93 specification when installed according to CULTEC's recommended installation instructions.
6. The chamber shall be structural foam injection molded of blue virgin high molecular weight impact-modified polypropylene.
7. The chamber shall be arched in shape.
8. The chamber shall be open-bottomed.
9. The chamber shall be joined using an interlocking overlapping rib method. Connections must be fully shouldered overlapping ribs, having no separate couplings.
10. The nominal chamber dimensions of the CULTEC Recharger® 360HD shall be 36 inches (915 mm) tall, 60 inches (1525 mm) wide and 50 inches (1275 m) long. The installed length of a joined Recharger 360HD shall be 3.67 feet (1.12 m).
11. Multiple chambers may be connected to form different length rows. Each row shall begin and end with a separately formed CULTEC Recharger® 360HD End Cap. Maximum inlet opening on the end cap is 24 inches (600 mm) HDPE or 30 inches (750 mm) PVC.
12. The chamber shall have two side portals to accept CULTEC HVLV™ FC-48 Feed Connectors to create an internal manifold. Maximum allowable pipe size in the side portal is 10 inches (250 mm) HDPE or 12 inches (300 mm) PVC.
13. The nominal chamber dimensions of the CULTEC HVLV™ FC-48 Feed Connector shall be 12 inches (305 mm) tall, 16 inches (406 mm) wide and 49 inches (1245 mm) long.
14. The nominal storage volume of the Recharger 360HD chamber shall be 10.0 ft^3 / ft (0.928 m^3 / m) - without stone.
    The nominal storage volume of a joined Recharger 360HD shall be 36.66 ft^3 / unit (1.038 m^3 / unit) - without stone.
15. The nominal storage volume of the HVLV™ FC-48 Feed Connector shall be 0.913 ft^3 / ft (0.085 m^3 / m) - without stone.
16. The Recharger 360HD chamber shall have 7 corrugations.
17. The chamber shall be manufactured in a facility employing CULTEC's Quality Control and Assurance Procedures.
18. Maximum allowable cover over the top of the chamber shall be 12 feet (3.66 m).
19. The installed chamber system shall be structurally designed to provide resistance to live loads as defined by the AASHTO H-20/HL-93 specification when installed according to CULTEC's recommended installation instructions.

END CAP PARAMETERS

1. The CULTEC Recharger® 360HD End Cap (referred to as 'end cap') shall be manufactured in the U.S.A. or Canada by CULTEC of Brookfield, CT (cultec.com, 203-775-4416).
2. The end cap shall be structural foam injection molded of blue virgin high molecular weight impact-modified polypropylene.
3. The end cap shall be arched in shape.
4. The end cap shall be joined at the beginning and end of each row of chambers using an interlocking overlapping rib method. Connections must be fully shouldered overlapping ribs, having no separate couplings.
5. The nominal dimensions of the end cap shall be 36.5 inches (927 mm) tall, 60 inches (1525 mm) wide and 18 inches (458 mm) long. When joined with a Recharger 360HD Chamber, the installed length of the end cap shall be 15 inches (381 mm).
6. The nominal storage volume of the end cap shall be 5.17 ft^3 / ft (0.48 m^3 / m) - without stone. The nominal storage volume of an interlocked end cap shall be 6.46 ft^3 / unit (0.183 m^3 / unit) - without stone.
7. Maximum inlet opening on the end cap is 24 inches (600 mm) HDPE or 30 inches (750 mm) PVC.
8. The end cap shall be manufactured in a facility employing CULTEC's Quality Control and Assurance Procedures.
9. The end cap shall provide resistance to the loads and load factors as defined in the AASHTO LRFD Bridge Design Specifications Section 12.12.