INSTALLATION OF STORMCHAMBER SYSTEMS (can be downloaded and printed from www.stormchambers.com)

TRENCH PREPARATION

1. Do not excavate trench until dry weather is forecast long enough to allow at least coverage of the StormChamber system with filter fabric prior to raining.
2. Excavate to a width and length sufficient to accommodate the number of StormChambers plus a minimum one foot border around the entire bed. The bottom of the bed must be level, unless otherwise specified.
3. Do not use heavy equipment on the excavated trench bed in order to avoid soil compaction.
4. If use of heavy equipment on the excavated trench bed can not be avoided, scarify the trench bottom and break up soil clumps and till smooth before adding the stone base.
5. Line trench walls with a 4-ounce non-woven filter fabric such as Mirafi 140N or 140NC, Synthetic Industries 401, or AMOCCO 4545 or 4535. Overlap adjacent filter fabric by at least 2'. Do not place filter fabric under the StormChambers.
6. Unless otherwise specified, place 6" of crushed, washed, 3/4" - 2" hard, non-calcarious stone on the bottom of the trench. The base must be level and at a zero grade.
7. If it becomes impractical to level the stone base by hand, use a low pressure, tracked dozer, not exceeding 1,100 lbs/sf, maintaining at least 6" of stone under the tracks at all times.

STORMCHAMBER INSTALLATION

1. Separate StormChambers using one or two 2x4 studs for leverage. Do not use any damaged units - contact HydroLogic Solutions immediately.
2. Roll out two rows of the light weight stabilization netting (provided with the StormChambers) perpendicular to the rows of StormChambers where the start StormChambers will be placed. Place the edge of the second row of netting under the first row and underlay 1'.
3. Place 1 piece of the heavy weight stabilization netting (provided with the StormChambers) perpendicular to and under each StormChamber that will be receiving inlet storm drain pipes. Place the front edge of the netting under, but not extending beyond, the closed end wall of the StormChamber. Have the netting extend equally beyond both sides of the StormChamber.
4. Place the Start Model StormChambers (completely closed at the side portal end, partially open at the top portal end), spaced a minimum of 5' 9" apart at the center line of the end walls. Position the closed ends approximately 1' from the trench wall.
5. Cut open the side portals for the inflow storm drain pipes (size and location specified) and lateral connecting pipes (8" I.D. Schedule 40 smooth walled PVC, unless otherwise specified) with a reciprocating saw, router bit on a drill, or keyhole saw along the defined indented circle. If the cut extends more than 0.5" beyond the indented circle, place a piece of the filter fabric over the hole, cut an X just short of the width of the opening, and insert the pipe. The connection does not need to be water tight. 12" ID PVC pipe is the largest diameter pipe that can be inserted into the side portals. 30" O.D. pipe is the largest that can be inserted into the end wall.
6. Mark the midpoints of 4' lengths of 8", 10", or 12" I.D. PVC, as specified, and insert into the adjacent StormChambers where specified so that the marked midpoint is centered between the two adjacent StormChambers. If the locations are not specified, add 8" pipes across all rows directly opposite where the inflow storm drain pipe(s) is inserted. This will typically connect at least all the Start Model StormChambers of each row. Additional connections across all rows of StormChambers should be made so that the total diameter of pipe connections between any pair of rows is almost equal to the total diameter of all inflow storm drain pipes.
7. Roll out additional light weight stabilization netting, over-laying the previous sheet by 1' and place the first rib of a Middle Models (completely open at side portal end, partially open at top portal end) over the last rib of each of the Start Model StormChambers.
8. Screw the Middle Model StormChambers to the Start Models near their base on both sides with regular 3" dry wall screws. The gap between the two StormChambers near their base must be closed enough to prevent stone from migrating into them to prevent the potential for finished surface subsidence.
9. Continue placing and screwing the rest of the StormChambers, one at a time, inserting any additional lateral-connecting 8" pipes as specified (or as instructed above), leaving at least 1' between the end of the End Model (completely open at the side portal end, completely closed at the top portal end) and the trench wall.
10. For PVC risers, cut a hole in the top portal for a 10" ID PVC riser - along the larger of the two indented circles, unless an 8" pipe is specified. If the cut extends more than 1/2" beyond the indented circle, place a piece of the filter fabric over the hole, cut an X slightly shorter than the width of the opening, and insert the pipe. Use smooth walled, bell end, SDR 35 or PVC Schedule 40 pipe. Cut off about 1" of the pipe and insert it into the bell end. Insert the bottom 1' of pipe into the top portal, and backfill. Attach a cap to top of pipe to prevent debris entrance and place an access casting in a concrete pad above, once all fill is placed.
11. Deposit 3/4" - 2" crushed, washed, hard stone directly along the centerline of the StormChambers to evenly flow down each side to keep the StormChambers in proper alignment. Do not place the stone directly against the closed end walls at the start and end of the rows. Let the stone fall in place at the StormChamber end from placement directly on the StormChamber. Add stone to at least 6" above the StormChambers.
12. Compact the stone cover with a vibratory compactor, not to exceed a dynamic force of 10,000 lbs, or with a low pressure, tracked vehicle not exceeding 1,100 lbs/sf.
13. Cover the top of the StormChambers and the 1' perimeter area with 4 ounce non-woven filter fabric. Overlap adjacent sheets by at least 2'.

IMPORTANT: If it is not practical to level the minimum of 6" of stone above the StormChamber by hand, use a low pressure, tracked dozer, not to exceed 1,100 lbs/sf, and do not run dozer on anything less than 6" of stone above the StormChambers. Also, caution must be exercised when placing stone on top of the StormChambers so that excessive pressure is not applied directly on the StormChambers by equipment "buckets".

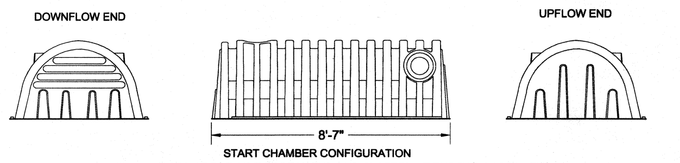
BACKFILLING

1. Backfill soil must be free from large stones and large organic material (e.g. tree limbs and root stumps), and is capable of being compacted to at least 90% of the Standard Proctor Test (AASHTO Method T-99). If not, crusher run or other suitable backfill material must be used. The stone surrounding the StormChambers can also be extended up to the pavement subgrade, if desired.
2. Compaction of the soil backfill must be achieved in 6" - 8" lifts. Grading of lifts should start in one corner of the system with a low pressure, tracked dozer, with a pressure not exceeding 1,100 lbs/sf, keeping at least 1' of fill in front of the blade at all times. Compact lifts to 90% Standard Proctor with tracked vehicles not exceeding 1,100 lbs/sf, or with a hand operated compactor or vibratory roller not exceeding a dynamic force of 20,000 lbs.
3. Keep the StormChamber system closed or protected from receiving sediment until the site is completely stabilized (grass growing and all pavement placed).

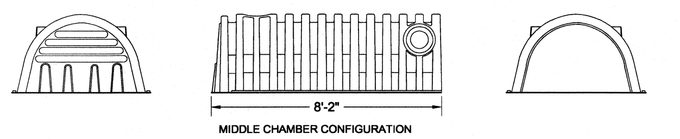
IMPORTANT: After compaction of backfill and setting of final grade, avoid parking on or traversing over the StormChamber installation with heavily loaded trucks and heavy equipment until paved.
IMPORTANT: These instructions assume accepted construction procedures and trucks that do not exceed specified DOT load limits. Uncustomary loads or improper load distributions in vehicles may require additional cover. Contact StormChamber for installation under abnormal conditions. Installations not in compliance with these instructions will void warranty.

ENGINEERING SPECIFICATIONS FOR STORMCHAMBER

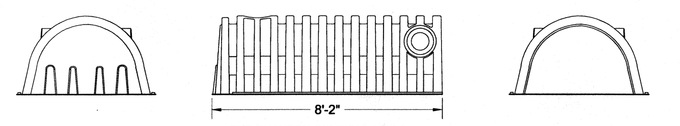
Each unit will be 34.04" high, 60" wide and 102.5" long.
Lay-up length is 97.1" (start and end unit) and 91.1" (middle unit).
Each chamber will be formed from high molecular weight/high density polyethylene.
Use of filter fabric between the soil and stone backfill layer and lining the side walls of the excavated area is required to prevent intrusion of soil or silt into the chambers and surrounding stone.
Each chamber has 14 ribs of approximately 3.6" in height, 3.8" wide at the top and tapering to 4.4" at the bottom. Spacing of the ribs at the bottom of the chamber is approximately 4.9" and approximately 3.2" at the top.
One smaller rib sized dimensionally to effectively nest under and interlock to connect units is 2.9" high, 3.3" wide at the top of rib, and 4.1" wide at the base.
Overall height to the inside rib is 30.44".
Overall height to the outside rib is 34.04".
Invert height for 12" pipe is 16.49".
Invert height for 10" pipe is 17.49".
Invert height for 8" pipe is 18.49".
Each unit has the ability to accept up to an 8", 10", or 12" I.D. feed pipe in the unit's side portal, or up to 30" O.D. pipe into a closed end wall.
Each unit is designed to handle 10 cubic feet of storage per lineal foot. Stone will be 3/4" - 2" crushed, washed, non-calcarious.



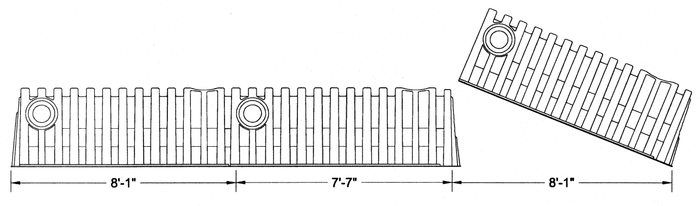
START CHAMBER CONFIGURATION
START CHAMBER IS CLOSED AT THE SIDE PORTAL END AND SLOTTED AT THE TOP PORTAL END



MIDDLE CHAMBER CONFIGURATION
MIDDLE CHAMBER IS COMPLETELY OPEN AT THE SIDE PORTAL END AND SLOTTED AT THE TOP PORTAL END

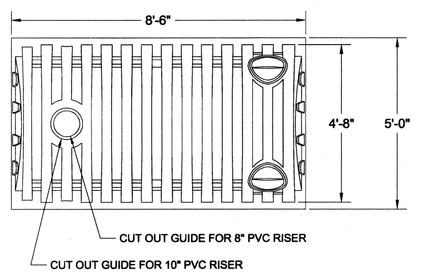


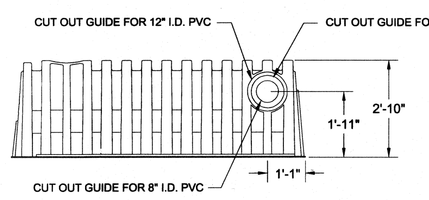
END CHAMBER CONFIGURATION
END CHAMBER IS COMPLETELY OPEN AT THE SIDE PORTAL END AND CLOSED AT THE TOP PORTAL END



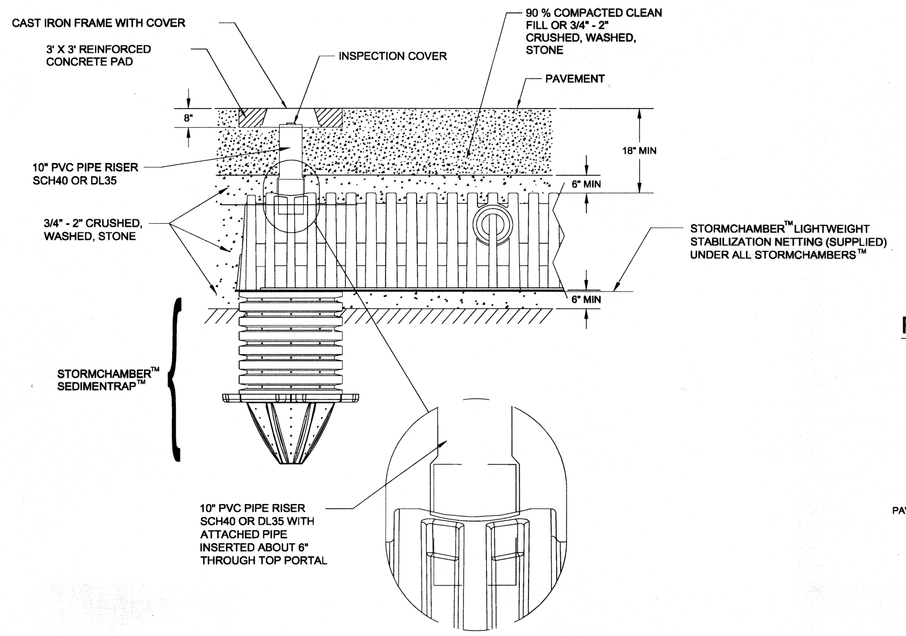
LAY-UP LENGTHS

NOTE: 1. Start chambers (closed at the side portal end) are placed at the inflow end of the rows.
2. Begin placements with Start chambers and end rows with End chambers.
3. Place first rib of next chamber in the row over last rib of previous chamber.

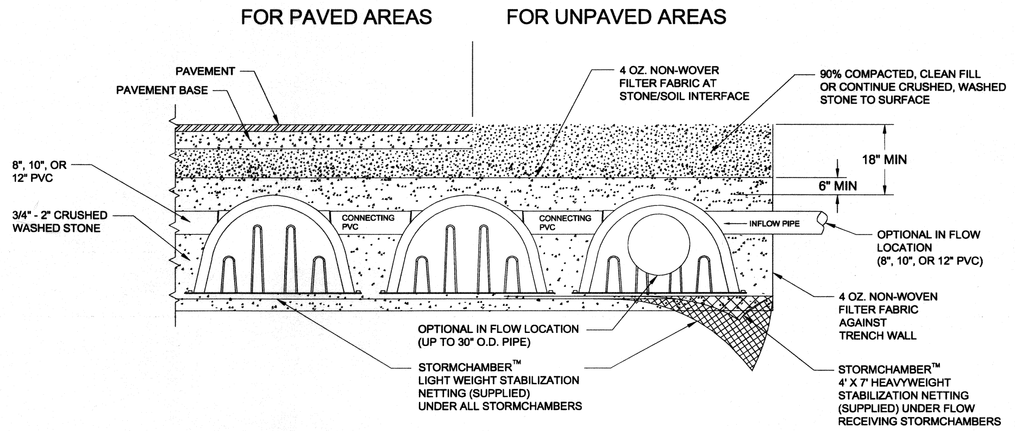




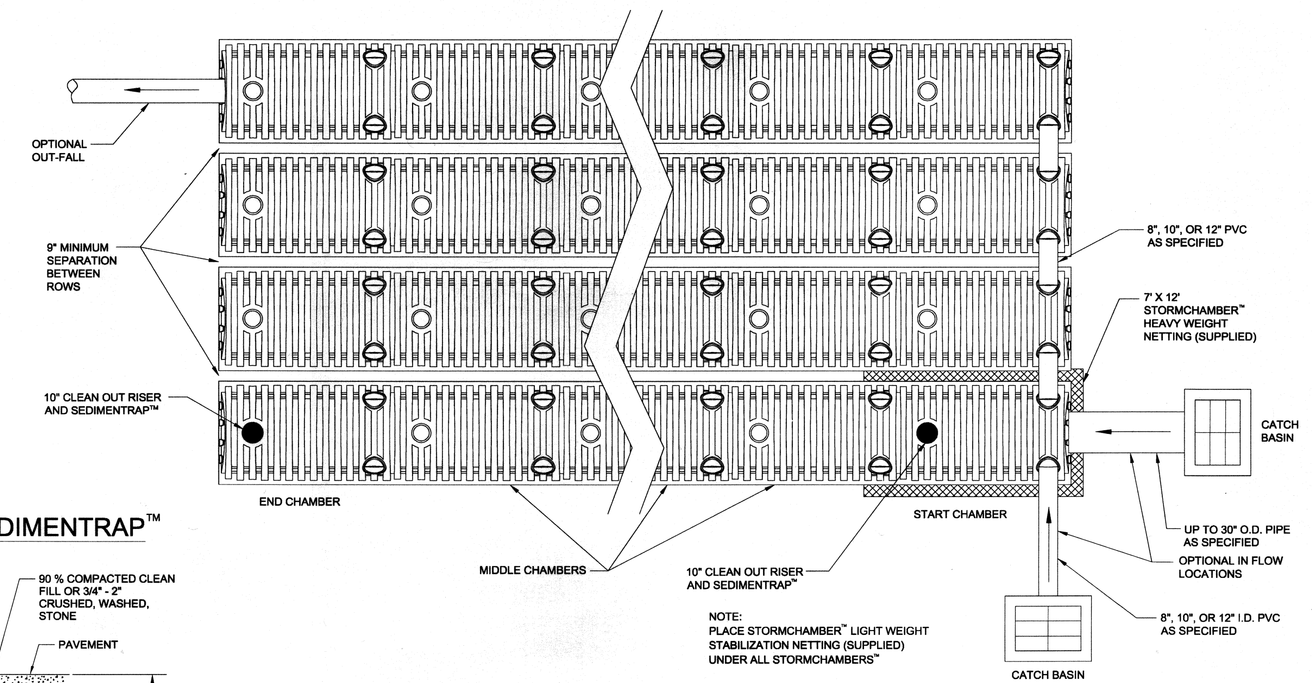
STORMCHAMBER™ WITH SEDIMENTRAP™



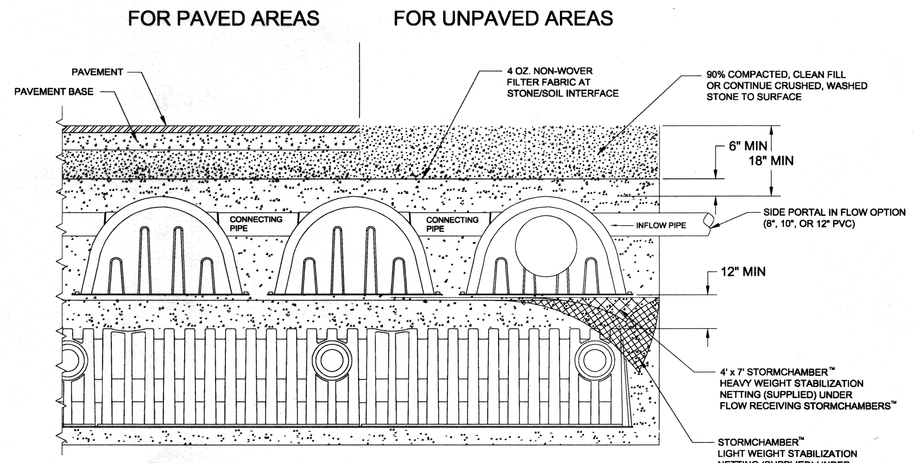
RECOMMENDED INSTALLATION OF STORMCHAMBER™ FOR STORMWATER MANAGEMENT (PROVIDED AS AN ILLUSTRATED EXAMPLE ONLY)



STORMCHAMBER™ EXAMPLE CONFIGURATION



RECOMMENDED STACKED INSTALLATION OF STORMCHAMBER™ FOR STORMWATER MANAGEMENT (PROVIDED AS AN ILLUSTRATED EXAMPLE ONLY)



For Availability and Pricing Please Call:
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DRAWING REVISION 6 07-07-08 | NOT TO SCALE DRAWINGS

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FIRM REG. # F-8601

STORM CHAMBER DETAILS

PROJECT # 302-103

DATE 10/29/09

SHEET C12