

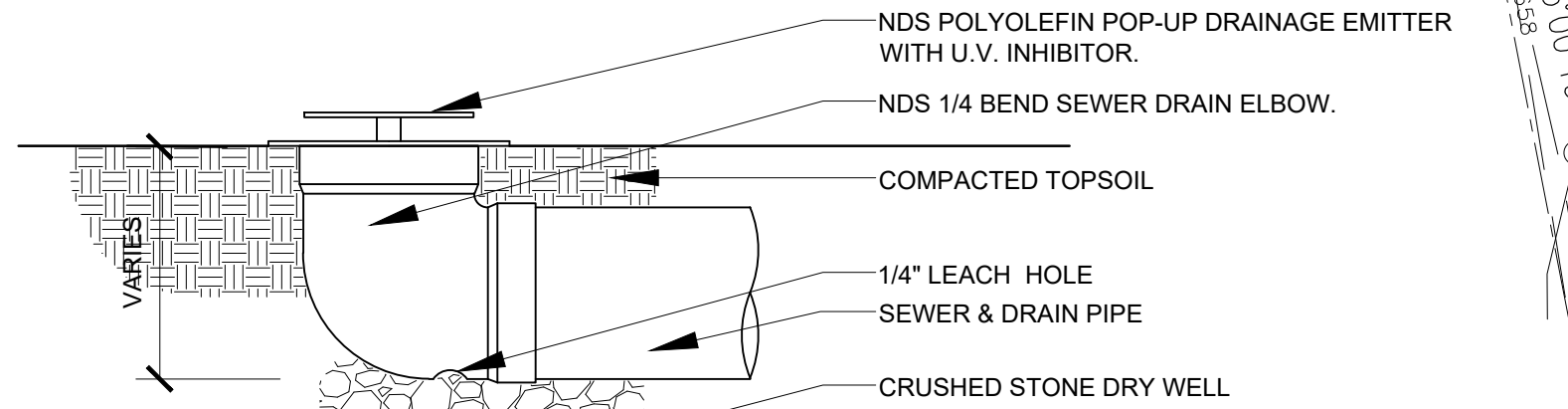
PLANTING REMOVAL SCHEDULE					
NO.	SIZE & SPECIES	REMARKS	NO.	SIZE & SPECIES	REMARKS
1	22" maple	REMOVED	23	25" cedar	REMOVED
2	45" oak	REMOVED	24	21" pine	REMOVED
3	35" oak	REMOVED	25	18" pine	REMOVED
4	31" cedar	REMOVED	26	21" maple	REMOVED
5	33" maple	REMOVED	27	18" maple	REMOVED
6	57" oak	REMOVED	28	16" maple	REMOVED
7	20" pine	REMOVED	29	15" maple	REMOVED
8	27" maple	REMOVED	30	18" maple	REMOVED
9	16" maple	REMOVED	31	36" oak	REMOVED
10	16" pine	REMOVED	32	18" pine	REMOVED
11	15" pine	REMOVED	33	22" pine	REMOVED
12	24" pine	REMOVED	34	16" pine	REMOVED
13	36" pine	REMOVED	35	14" pine	REMOVED
14	24" maple	REMOVED	36	18" pine	REMOVED
15	31" oak	REMOVED	37	31" maple	REMOVED
16	32" maple	REMOVED	38	20" maple	REMOVED
17	35" pine	REMOVED	39	19" pine	REMOVED
18	31" pine	REMOVED	40	34" maple	REMOVED
19	18" pine	REMOVED	41	45" oak	REMOVED
20	24" pine	REMOVED	42	36" oak	REMOVED
21	23" pine	REMOVED	43	36" oak	REMOVED
22	30" cedar	REMOVED	44	36" oak	REMOVED

SITE LOCATION

## STORM WATER DRAINAGE CALCULATIONS

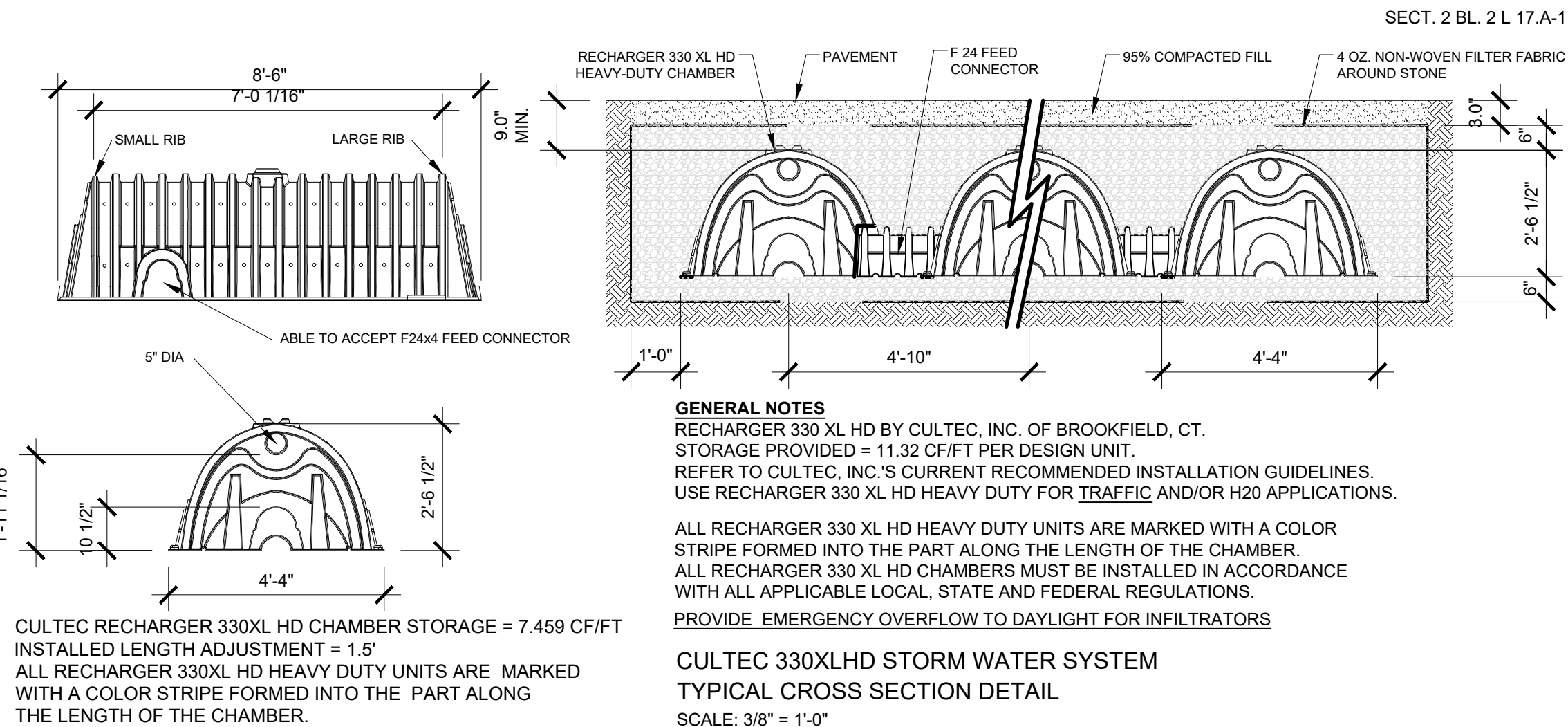
Information to comply with the following: Stormwater Management Westchester County, New York Best Management Practices Manual Series	<b>IMPERVIOUS LOT COVERAGE:</b> PRINCIPAL BUILDING: 1962 S.F. DETACHED GARAGE: 1188 S.F. FRONT PLATFORMS STONE WALKS: 750 S.F. PROPOSED PORCH: 576 S.F. PROPOSED WALK TO THE POND FROM EXISTING STEPS 160 S.F.
<ul style="list-style-type: none"><li>Address: 4 LEDGEWOOD ARMONK, N.Y.</li><li>Deep hole test verified November 27, 2019</li><li>Test holes were presoaked on November 26, 2019</li><li>Percolation test was performed on November 26, 2019</li><li>Test holes @ 12"Ø @ 24" deep</li><li>Weather: clear (no rain)</li><li>Temperature: 70°</li><li>Ground condition: Dry</li></ul>	TOTAL IMPERVIOUS SURFACES AREA= 4636 sf
Measure time for the water level to drop exactly one(1) inch or thirty (6) minutes. Refill to original level and repeat until approximately equal results are obtained on successive tests.  Perc Test #1 start time: 11:53 end time: 11:59 total drop of 1" in: 6 min.  Perc Test #2 start time: 12:00 end time: 12:06 total drop of 1" in: 6 min.  Perc Test #3 start time: 12:10 end time: 12:16 total drop of 1" in: 6 min.  Average drop is 1" in 6 min.	Given: 1. 12" Ø hole 2. Drop AVG. IN 8 MIN = 3" 3. Perc Rate: 8/3 = 2.6 mpi 4. Davg: 8 min.  MINUTES PER INCH: Divide the time interval by the drop in water level to determine the percolation rate in minutes per inch (MPI).

- Select Design Storm:  
Design Storm system: 25 year storm, 24 hour  
NRCC Extreme Precipitation in NY: 6.46 inches
- Select type of subsurface disposal system:  
Infiltration System:  
Recharger 330 xl hd by cultec, inc. of brookfield, ct.  
storage provided = 79.26 cft per design unit.  
Recharger 900 xl hd by cultec, inc. of brookfield, ct.  
storage provided = 190.73 cft per design unit.
- Determine soil percolation rate:  
a. Area of percolation (Ap):  
(1) Area of cylinder (Ac)  
 $Ac = \pi D (hole\ \varnothing)$   
 $Ac = 3.14 (67)(1')$   
 $Ac = 2.09\ ft^2$   
(2) Bottom Area (Ab)  
 $Ab = \pi R^2$   
 $Ab = (3.14)(0.5)^2$   
 $Ab = 0.785\ ft^2$   
Therefore:  
Perc Area (Ap)  
 $Ap = Ac + Ab$   
 $Ap = 2.09 + 0.785$   
 $Ap = 2.875\ ft^2$   
b. Volume of Percolation (Vp):  
 $Vp = Ap \times Davg$   
 $Vp = 0.785 \times (1712\ in/ft)$   
 $Vp = 0.785 \times 0.08\ ft$   
 $Vp = 0.065\ ft^3$   
c. Soil Perc Rate (Sr)  
 $Sr = Vp / Ap / Time$   
 $Sr = 0.065 / 2.875 / 6\ min.$   
 $Sr = 0.0037\ ft^3 / ft^2 / min.$   
 $Sr = 0.0037 \times 60\ min/hr \times 24\ hr/day$   
 $Sr = 5.43\ ft^3/ft^2/day$   
 $Sr = Reduce\ by\ 25\% (clogging\ factor):$   
 $Sr = 5.43 - 25\%$   
 $Sr = 4.07\ ft^3/ft^2/day$
- Calculate volume per drywell (Vp)  
Volume of 330xlhd (Cultec chamber):  
Vc (from cultec info sheet) = 79.26ft³/unit  
Perc Volume per Chamber (Pv)  
 $Vp = (Vc) \times (Sr25\%)$   
 $Vp = 79.26\ ft^3 \times 4.07\ ft^3/ft^2/day$   
 $Vp = 322.58\ ft^3$
- Calculate the total 24-hour volume per drywell (Vt)  
 $Vt = Volume\ of\ drywell\ (Vw) + Percolation\ Volume\ (Vp)$   
 $Vt = 79.26\ ft^3 + 322.58\ ft^3$   
 $Vt = 401.84\ ft^3$
- Determine number of drywells required (DWr)  
 $DWr = \text{required volume of storage (Vs)} / \text{total volume per drywell (Vt)}$   
 $DWr = Vs (storage) 1561\ ft^3 / Vt (chamber) 401.84\ ft^3$   
Use: 4 units
- Calculate volume per drywell (Vw)  
 $Vw = \pi R^2 \times \pi D$   
Given: Volume of 330xlhd (Cultec chamber):  
Vc (from cultec info sheet) = 79.26ft³/unit  
Perc Volume per Chamber (Pv)  
 $Vp = (Vc) \times (Sr25\%)$   
 $Vp = 79.26\ ft^3 \times 4.07\ ft^3/ft^2/day$   
 $Vp = 322.58\ ft^3$



## TYPICAL POP-UP DRAINAGE EMITTER

SCALE: 3" = 1'-0"



### GENERAL NOTES

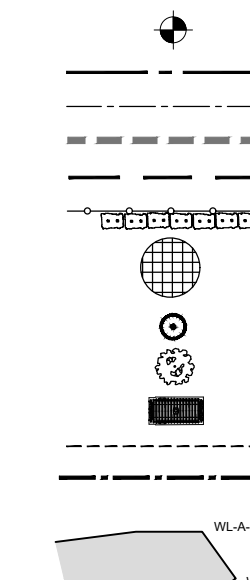
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USE RECHARGER 330 XL HD HEAVY DUTY FOR TRAFFIC AND/OR H2O APPLICATIONS.

ALL RECHARGER 330 XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.  
ALL RECHARGER 330 XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

PROVIDE EMERGENCY OVERFLOW TO DAYLIGHT FOR INFILTRATORS

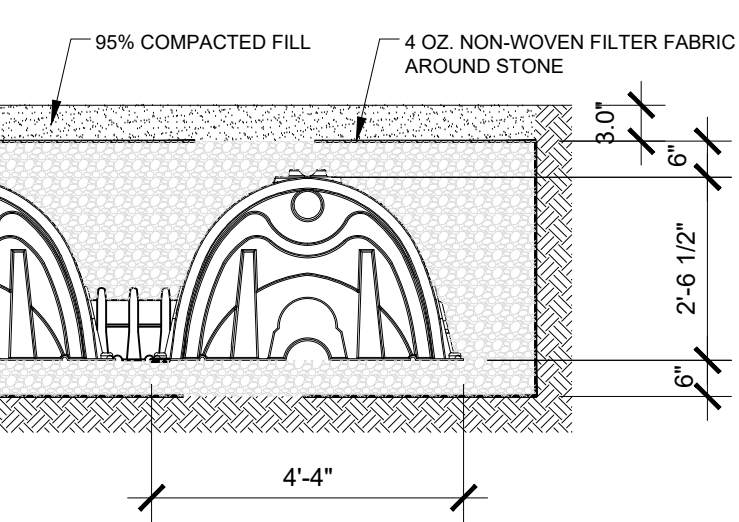
CULTEC 330XLHD STORM WATER SYSTEM  
TYPICAL CROSS SECTION DETAIL  
SCALE: 3/8" = 1'-0"

### LEGEND



NDS POLYOLEFIN POP-UP DRAINAGE EMITTER WITH U.V. INHIBITOR.  
NDS 1/4 BEND SEWER DRAIN ELBOW.  
COMPACTED TOPSOIL  
1/4" LEACH HOLE  
SEWER & DRAIN PIPE  
CRUSHED STONE DRY WELL

SECT. 2 BL. 2 L 17 A-1



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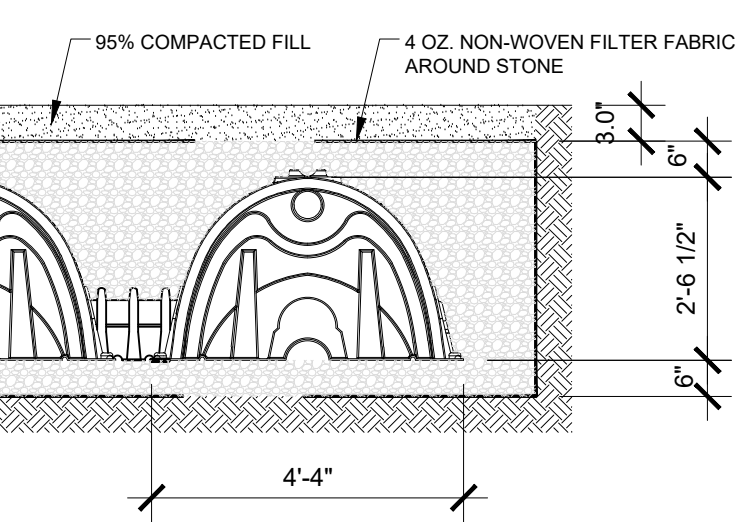
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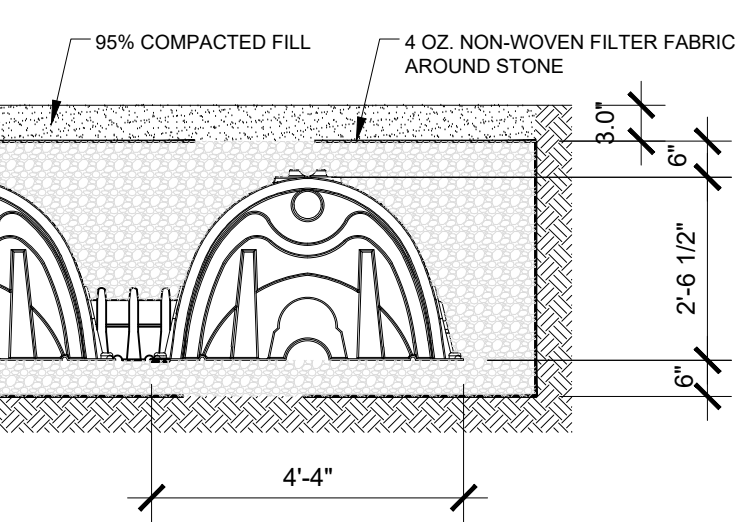
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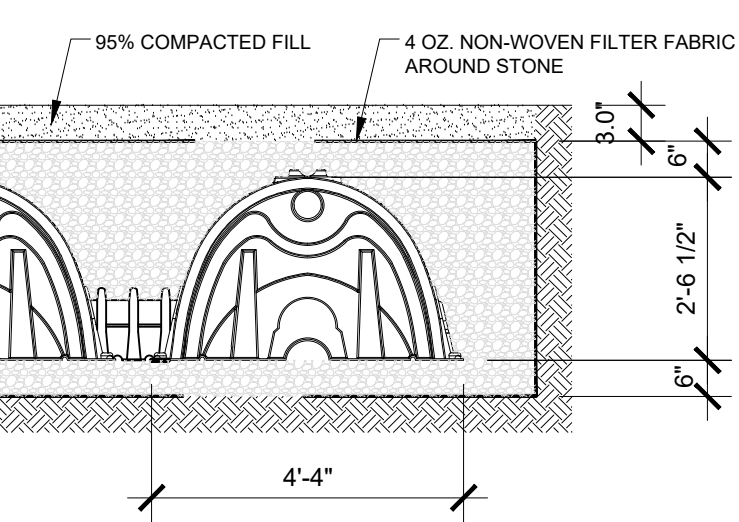
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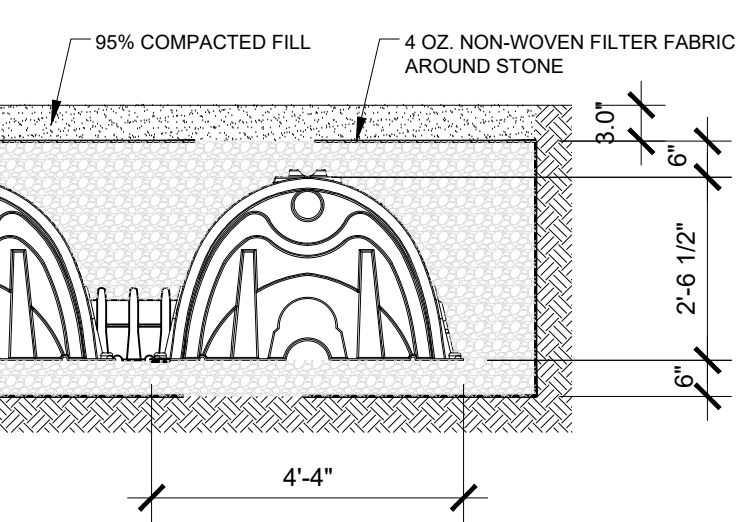
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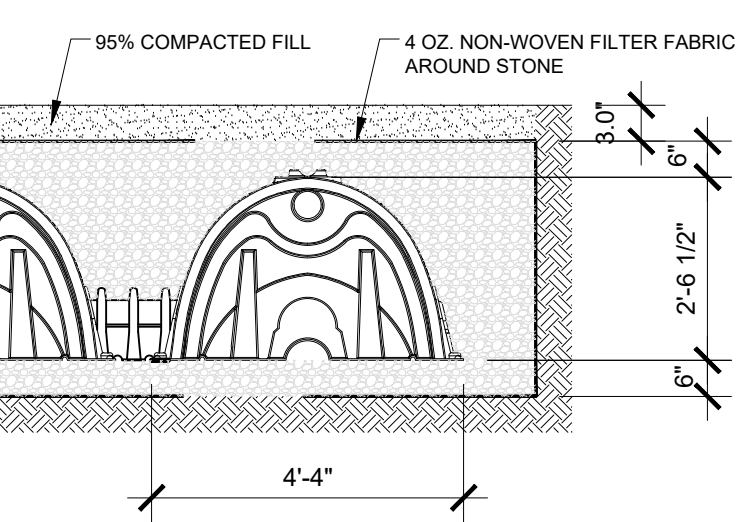
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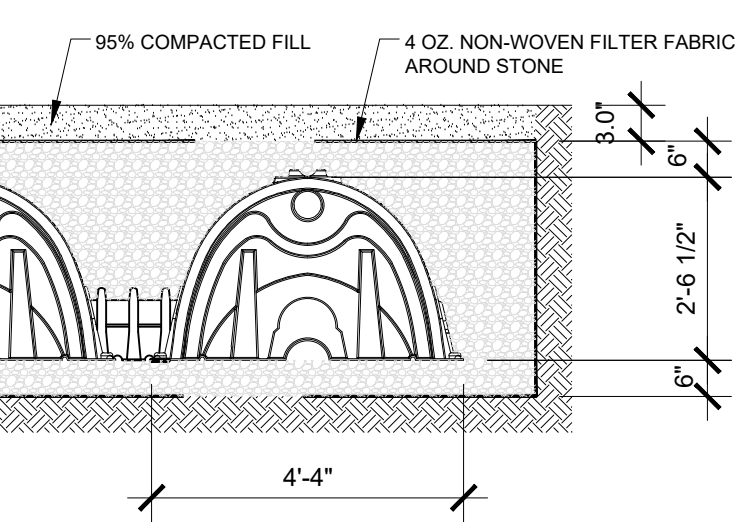
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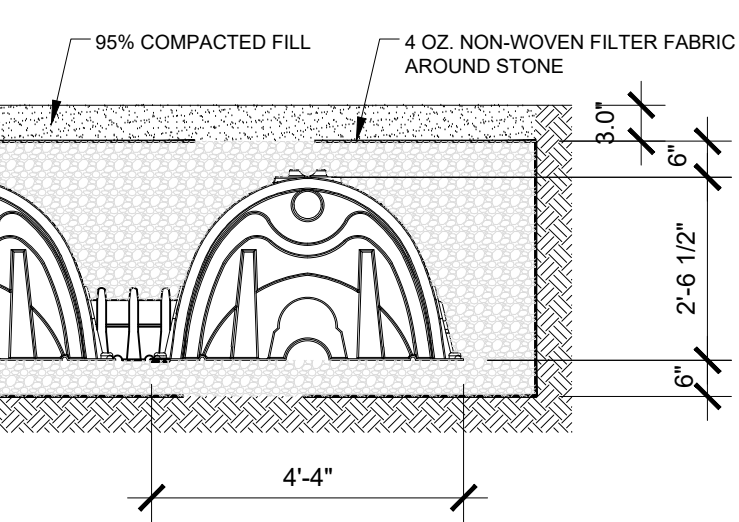
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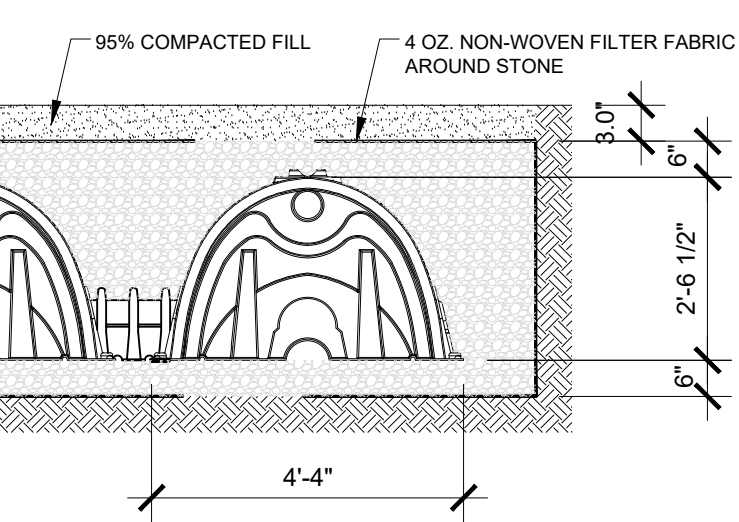
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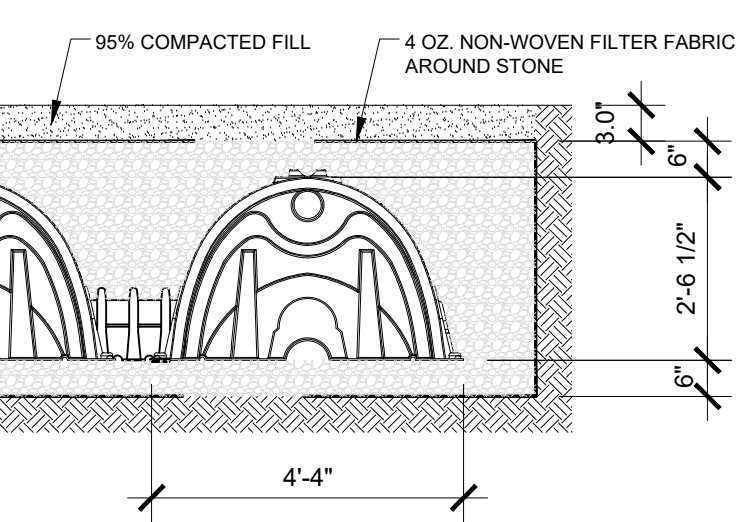
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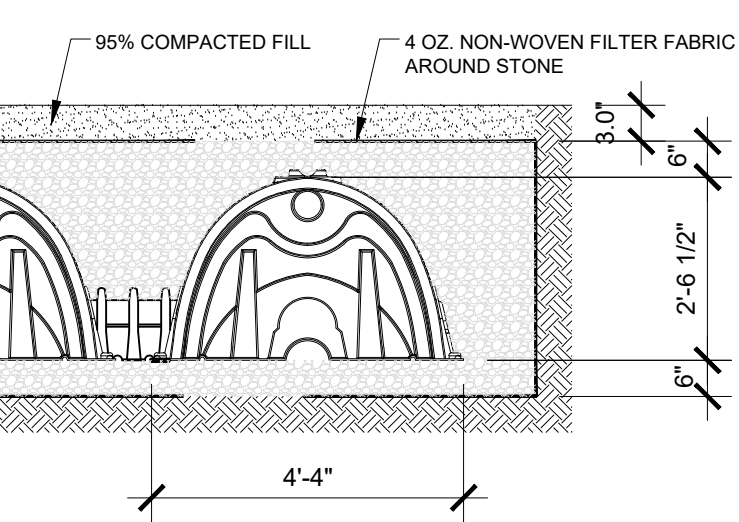
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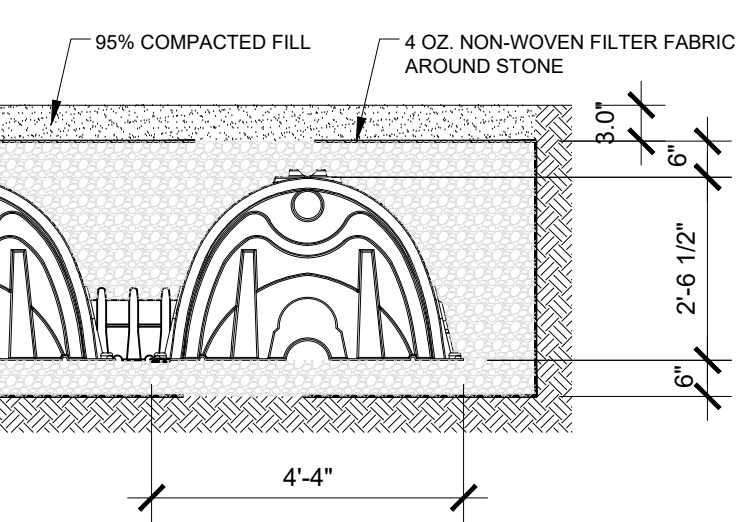
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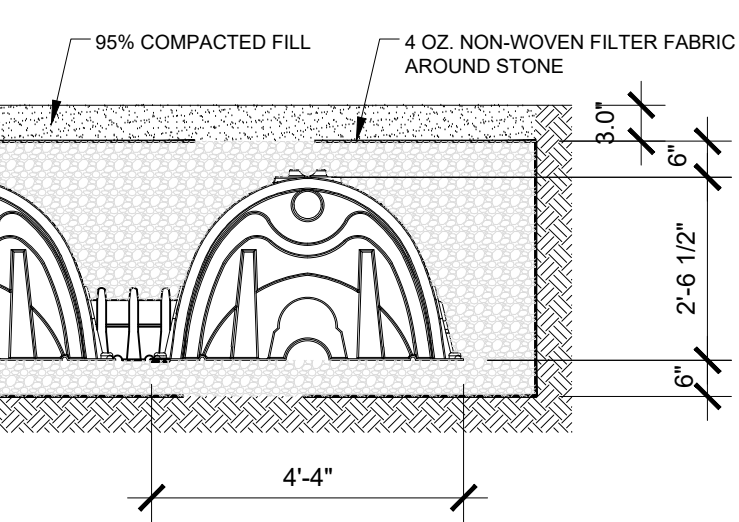
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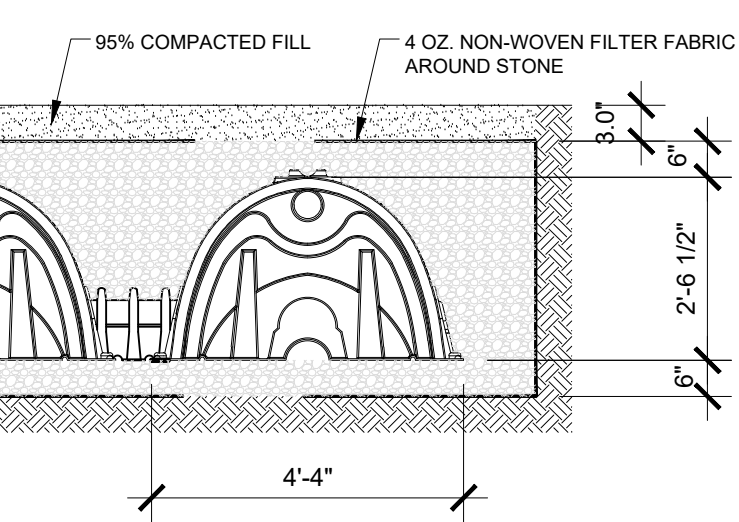
ALL RECHARGER 330 XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.  
ALL RECHARGER 330 XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

PROVIDE EMERGENCY OVERFLOW TO DAYLIGHT FOR INFILTRATORS

CULTEC 330XLHD STORM WATER SYSTEM  
TYPICAL CROSS SECTION DETAIL  
SCALE: 3/8" = 1'-0"

NDS POLYOLEFIN POP-UP DRAINAGE EMITTER WITH U.V. INHIBITOR.  
NDS 1/4 BEND SEWER DRAIN ELBOW.  
COMPACTED TOPSOIL  
1/4" LEACH HOLE  
SEWER & DRAIN PIPE  
CRUSHED STONE DRY WELL

SECT. 2 BL. 2 L 17 A-1



RECHARGER 330 XL HD BY CULTEC, INC. OF BROOKFIELD, CT.  
STORAGE PROVIDED = 11.32 CF/FT PER DESIGN UNIT.  
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.  
USE RECHARGER 330 XL HD HEAVY DUTY FOR TRAFFIC AND/OR H2O APPLICATIONS.

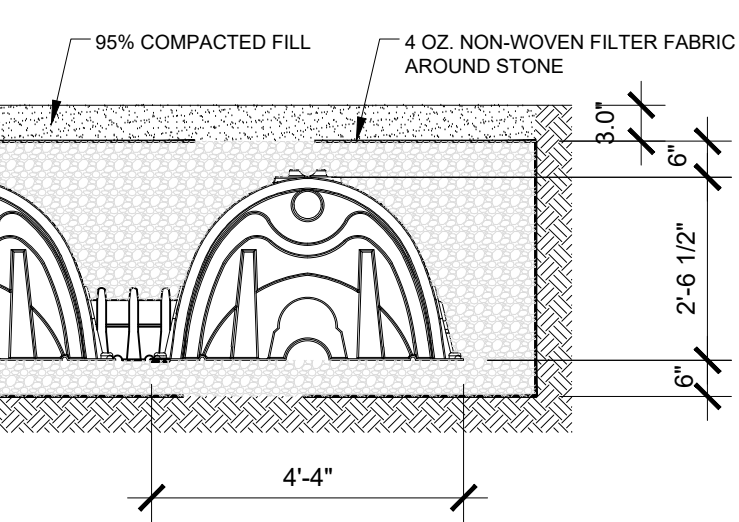
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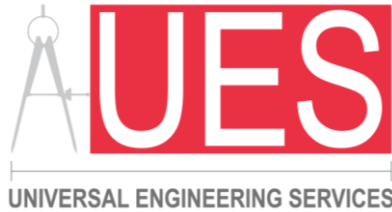
SECT. 2 BL. 2 L 17 A-1











*New York • Connecticut • New Jersey • Florida*

**June 9, 2020**

Joe M. Cermele, P.E.  
Kellard Sessions Consulting  
Consulting Town Engineers  
500 Main St. Armonk NY 10504

**RE: Proposed covered porch addition and alterations  
4 LedgeWood Place  
Armonk NY  
Section 107.02, Block 2, Lot 46**

To Joe Cermele:

Please see the response to your comments made May 7, 2020 for the above referenced application:

1. We have noted the wetland flag locations on the site plan from the wetland report. The owner will contact your office once the boundary has been established in the field.
2. We have updated the Wetland designation and information on drawings and have indicated that the wetlands are locally-regulated.
3. We show a Disturbance limits schedule on drawings and we reflected the mitigation plant schedule and planting schedule on our drawings. Please see Landscape drawings submitted separately. Blythe Yost, Landscape Architect of Yost Design, has submitted a plan to the conservation board that address the mitigation.
4. We have coordinated with the Landscape plan as to the location of the proposed walkway extension to the existing dock.
5. We have updated our tree removal schedule and number each tree on plan as requested.
6. We have verified the scale of the site plan drawings. It is 1" = 30'-0"
7. The existing garage is not in the scope of work.
8. We have reflected the building setback as shown on the Architectural drawings. We listed all the proposed improvements and impervious areas in stormwater drainage schedule on drawings.
9. We have updated the stormwater drainage calculations as required.
10. We show the drainage direction form proposed covered porch discharging to the designed cultic units and have shown the material, size, slope and drainage area.
11. We have shown the proposed walk detail. Details of covered porch are shown on architectural drawings. Details of planting are shown on Landscape drawings. There are no patio and retaining walls proposed in the scope of work.

Should you have questions, please do not hesitate to contact me Joseph Paterno, LEED AP  
@ (914) 419-8525

Sincerely,  
**Universal Engineering Services, P.C.**  
A New York Professional Corporation

Joseph Paterno, LEED AP  
Executive Vice President

cc: Michael R. Gianatasio, P.E. President