

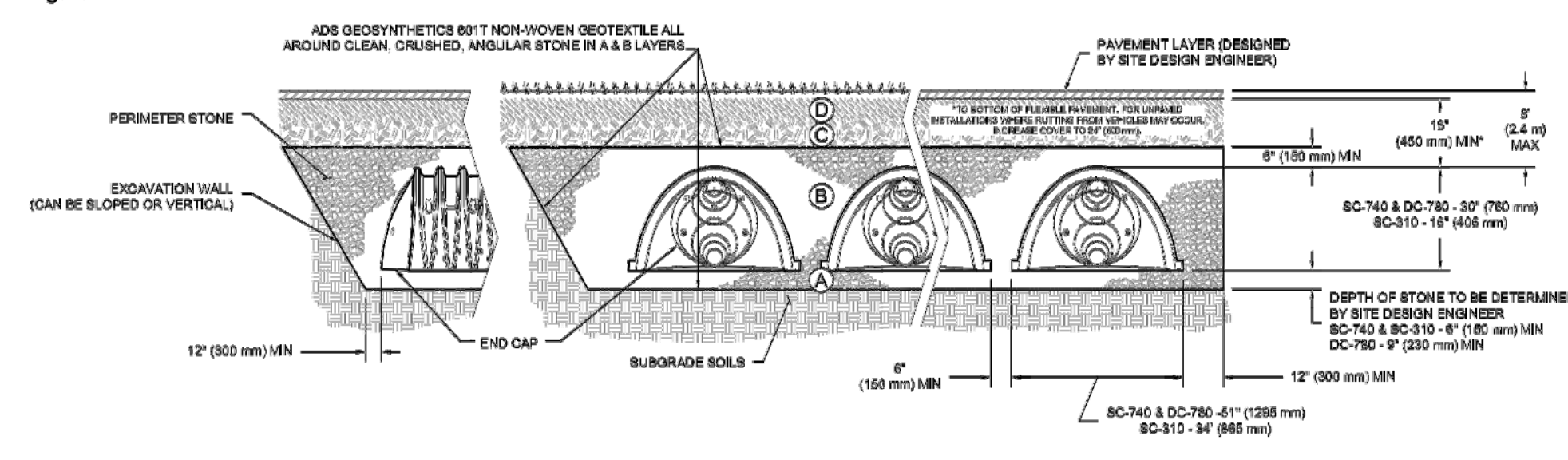
Table 1 - Acceptable Fill Materials

Material Location	Description	AASHTO M43 Designation	Compaction/Density Requirement
Final Fill Material for layer 'C' starts from the top of the 'C' layer to the bottom of flexible pavement or ungraded trench grade above. Make that the pavement subbase may be part of the 'C' layer.	Any soil/rock materials, native soils or per engineer's plans. Check plans for government subgrade requirements.	N/A	Prepare per site design engineer's plans. Paved installations may have stringent material and preparation requirements.
Initial Fill Material for layer 'C' starts from the top of the embedment stone (2' layer to 18" (450 mm) above the top of the chamber. Note that pavement subbase may be part of the 'C' layer.	Granular well-graded soil/ aggregate materials, <20% fines or processed aggregate. Most pavement subbase materials can be used in lieu of the layer.	AASHTO M45 A-1, A-2, A-3 AASHTO M41 3, 3.57, 4, 4.62, 5, 5.6, 5.7, 6, 6.7, 6.8, 7, 7.8, 8, 8.9, 9, 10	Begin compaction after min. 12" (300 mm) of material over the chambers is reached. Compact additional layers in 6" (150 mm) max. lifts to a min. 95% Proctor density for well-graded material and 95% relative density for processed aggregate materials. Saturated gross vehicle weight not to exceed 12,000 lbs (55 kN). Dynamic force not to exceed 20,000 lbs (89 kN).
Embedment Stone: Embedment Stone surrounding chambers from the foundation stone to the 'C' layer above.	Clean, crushed, angular stone	AASHTO M43 3, 3.57, 4, 4.62, 5, 5.6, 5.7	No compaction required.
Foundation Stone: Foundation Stone below the chambers from the subgrade up to the top (bottom) of the chamber.	Clean, crushed, angular stone.	AASHTO M43 3, 3.57, 4, 4.62, 5, 5.6, 5.7	Place and compact in 6" (150 mm) lifts using two full coverages with a vibratory compactor. ^{1,2}

PLEASE NOTE:

- The listed AASHTO designations are for gradations only. The stone must also be clean, crushed, angular. For example, a specification for #4 stone would state: "clean, crushed, angular no. 4 (AASHTO M43) stone".
- StormTech compaction requirements are met for 18" location materials when placed and compacted in 6" (150 mm) (max) lifts using two full coverages with a vibratory compactor.
- Where infiltration surfaces may be comprised by compaction, for standard installations and standard design load conditions, a flat surface may be achieved by raking or dragging without compaction equipment. For special load designs, contact StormTech for compaction requirements.

Figure 2 - Fill Material Locations



STORM TECH 740 INFILTRATOR

NOTE: STORMTECH 740 UNITS TO BE H-20 LOADING FOR USE IN DRIVEWAY, ALL PIPING 6" HDPE.

ROOF & DRIVEWAY DRAINAGE INFILTRATION STUDY
Collier, 2572 Gregory Street - Yorktown (T)

25 Year Design Storm 6.0 in.
25 Year Impervious C Factor CN 98 = 5.7
25 Year Existing C Factor (fair woods) CN 74 = 3.3

Soil Type Hydrologic Group
Rock Depth > 7 feet
Water Depth > 7 feet
Soil Percolation Rate 15 Minutes per Inch

PROPOSED IMPERVIOUS AREA:
House 2,057 SF
Driveway 5,341 SF
Walls, Rear patio & Stairs 1,396 SF

Total proposed impervious 8,794 SF

IMPERVIOUS C FACTOR LESS EXISTING C FACTOR

$$CN_A = CN_{98} - CN_{74} = 5.7 - 3.3 = 2.4$$

INCREASED RUNOFF FROM PROPOSED IMPERVIOUS

$$DRIVEWAY R_i = CN_A (A_i) = 2.4 (5,341 SF) / 12 = 1,068 CF$$

$$ROOF R_i = CN_A (A_i) = 2.4 (2,057 SF) / 12 = 411 CF$$

THESE ARE THE REQUIRED TREATMENT VOLUMES

STORMTECH 740 INFILTRATION SYSTEM DESIGN

$$PERC VOLUME FOR 24 HR PER STORMTECH CHAMBER$$

$$VS = SCR \times AS = 1.14 CF/SF/DAY \times 30.26 SF = 34.5 CF/SF/DAY$$

$$STORMTECH CHAMBER DESIGN VOLUME$$

$$VD = VS + VC = 34.5 CF/DAY + 75 CF = 110 CF/DAY$$

It is proposed to utilize fourteen (14) Storm Tech 740 units with a capacity of 110 CF each.

IT IS PROPOSED COLLECT WATER FROM THE ENTIRE ROOF AND PART OF THE DRIVEWAY AND DIRECT TO 14 STORMTECH 740 CHAMBERS. TOTAL CAPACITY OF 1,640 CF/DAY. PART OF THE DRIVEWAY DRAINAGE, THE WALLS REAR PATIO AND STEPS WILL SHEET FLOW ONTO ADJACENT LAWN AREAS FOR INFILTRATION

DRIVEWAY:	1,068 CF/112 CF	= 9.53 = 10 STORMTECH 740 UNITS FOR DRIVEWAY
HOUSE:	411 CF/112 CF	= 3.66 = 4 STORMTECH 740 UNITS FOR HOUSE
TOTAL:		14 STORMTECH 740 UNITS.

PERCOLATION ANALYSIS

$$PERC AREA AT TEST HOLE BOTTOM (4" RADIUS)$$

$$A_B = 3.14 \times R^2 = 3.14 (4IN/12)^2 = 0.349 SF$$

$$PERC AREA AT TEST HOLE SIDE (AVE. HT. 8.5)$$

$$A_C = 3.14 \times D \times H = 3.14 \times 8' / 12 \times 8.5 IN/12 = 1.48 SF$$

$$TOTAL PERC AREA$$

$$A_P = A_B + A_C = 0.349 SF + 1.48 SF = 1.83 SF$$

$$PERC VOLUME$$

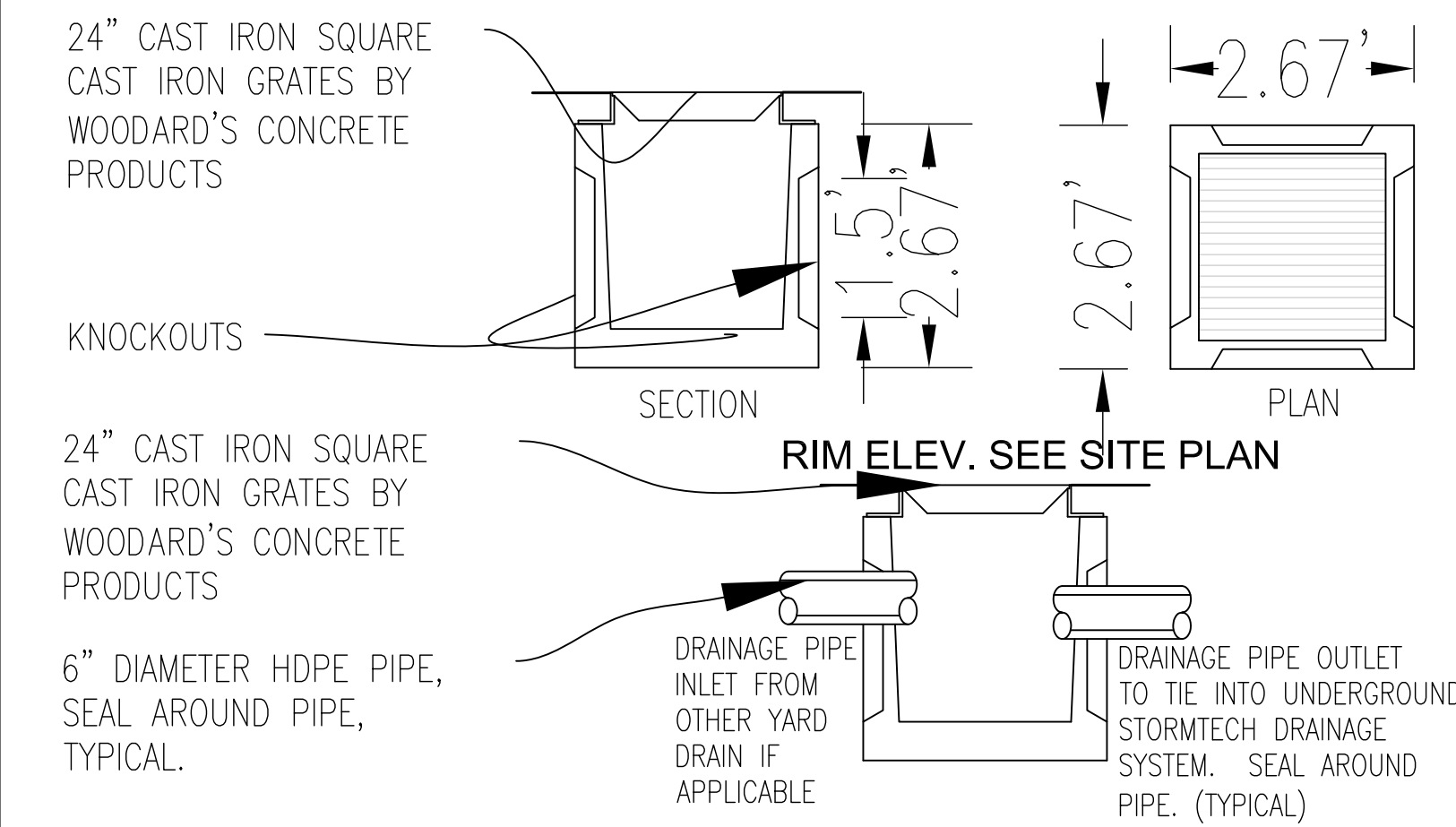
$$V_P = A_P \times PERC HT. = 0.349 SF \times 3 IN/12 = .087 CF$$

$$SOIL PERC RATE (T = 15 MIN/IN \times 3 IN = 45 MIN)$$

$$S_R = V_P / A_P \times T \times 1440 MIN/24 HOUR = .087 CF / 1.83 SF \times 45 \times 1440 = 1.52 CF/SF/DAY$$

$$SOIL PERC RATE REDUCTION FOR CLOGGING$$

$$S_{CR} = S_R \times 75\% = 1.52 CF/SF/DAY \times 0.75 = 1.14 CF/SF/DAY$$



PRECAST YARD DRAIN/ CATCH BASIN WOODWARD'S CONCRETE PRODUCTS MODEL CB-2X2 W/ 24" CAST IRON GRATES

SPECIFICATIONS:
CONCRETE MIN. STRENGTH: 4,000 psi AT 28 DAYS
REINFORCEMENT: #4 REBAR/ ASTM A615

LOAD RATING: H20 WEIGHT= 4,400 LBS
MANUFACTURE: WOODWARD'S CONCRETE PRODUCTS, INC. 629 LYBOLT ROAD, BULLVILLE NY 10915 800-735-3471

WESTCHESTER COUNTY DEPARTMENT OF HEALTH
Bureau of Environmental Quality
25 Moore Ave
Mount Kisco, NY 10549

DESIGN DATA SHEET - SEPARATE SEWAGE SYSTEM FILE NO. _____

Owner Chris Collier Address 2572 Gregory Street

Located at (Street) Gregory ST Sec. 27.14 Block 1 Lot 2

Municipality Town of Yorktown Watershed _____

SOIL PERCOLATION TEST DATA REQUIRED TO BE SUBMITTED WITH APPLICATION

Presoak Date: 12/16/2020 Run Date: 12/17/2020

Hole #	CLOCK TIME				PERCOLATION			
	Run No.	Start	Stop	Elapse Time Min.	Start Inches	Stop Inches	Water Level Drop In Inches	Soil Rate Min/in Drop
1	1	11:30	12:00	30	36	39	3"	30/3=10
	2	12:01	12:31	30	36	38.5	2.5"	30/2.5=12
	3	12:32	1:02	30	36	38.5	2.5"	30/2.5=12
2	1	11:32	12:02	30	36	38.5	2.5"	30/2.5=12
	2	12:03	12:33	30	36	38	2"	30/2=15
	3	12:34	1:04	30	36	38	2"	30/2=15

Perc test done by: Joel Greenberg

Notes:

- Tests to be repeated at same depth until approximately equal soil rates are obtained at each percolation test hole. All data to be submitted for review.
- Depth measurements to be made from top of hole. DO NOT REPORT INCREMENTS OF LESS THAN ONE INCH.

TEST PIT DATA REQUIRED TO BE SUBMITTED WITH APPLICATION
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH G.L.	HOLE NO. 1	HOLE NO. 2	HOLE NO. 3	HOLE NO. 4
6"	Topsoil	Topsoil		
12"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
18"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
24"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
30"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
36"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
42"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
48"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
54"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
60"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
66"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
72"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
78"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		
84"	Sandy Loam w. traces of clay	Sandy Loam w. traces of clay		

WAS GROUNDWATER ENCOUNTERED
INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED
INDICATED LEVEL FOR WHICH WATER LEVEL RISES AFTER BEING ENCOUNTERED
DEEPEST MADE BY Joel Greenberg DATE OF DEEP TESTS 1/4/2021

Soil Rate Used 11-15 Min/1" Drop: _____ S.D. Usable Area Provided _____

No. of Bedrooms _____ Septic Tank Capacity _____ Gals. Masonry _____ Metal _____

Absorption Area Prov. by _____ L.F. x 24" width trench. Other _____

Name _____ Signature _____

Address _____ Seal _____

Westchester County Health Department

Soil Rate Approved _____ Sq. Ft./Gal _____ Checked by _____

S.D. 27.6
4/98

ARCHITECTURAL VISIONS PLLC
A GREENBERG DESIGN GROUP

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JOEL.GREENBERG@ARCHVISIONS.COM P: 845-628-6613 F: 845-628-2807

PROJECT: COLLIER
PROJECT ADDRESS: 2572 GREGORY STREET YORKTOWN HEIGHTS, NY 10598
MAILING ADDRESS: CHRIS & AMANDA COLLIER 397 BARRET HILL RD. MAHOPAC, NY 10541
TAX MAP NO. 27.14-1-2

SITE DETAILS - DRAINAGE

ISSUANCE	DATE
DESIGNED	
CHECKED	
FOR REVIEW	
SCALE AS NOTED	
DRAWN BY/CHKD BY M.S./JLG	
PROJECT NO. 10-19-130	

AS-101