

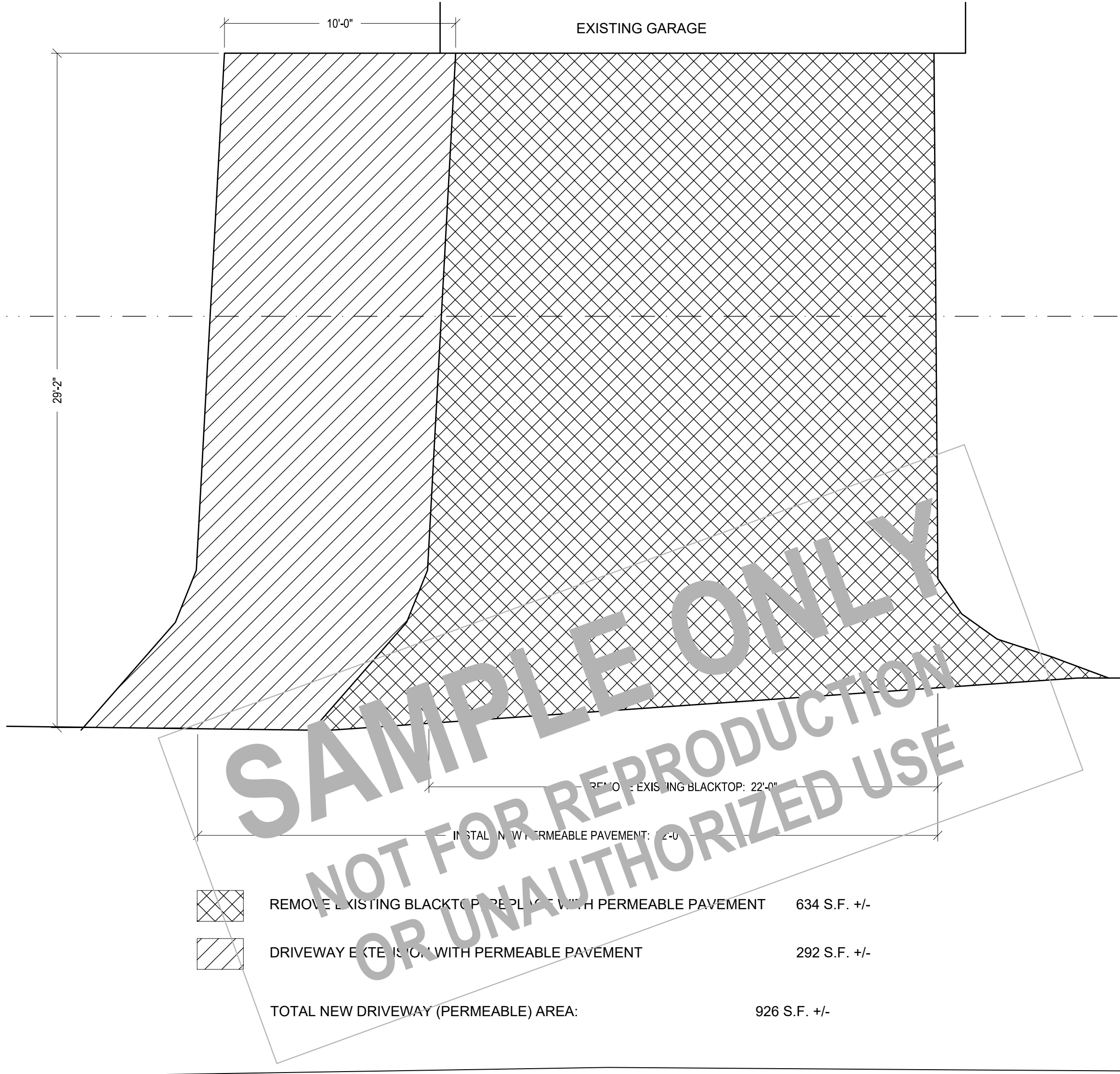
UNILOCK PAVERS
UNILOCK.COM

UNILOCK PERMAEABLE INTERLOCKING PAVERS:

- UNILOCK PERMEABLE INTERLOCKING CONCRETE PAVER
WITH MANY AESTHETICALLY PLEASING COLORS AND TEXTURES, CREATIVE CHOICES ARE NOT COMPROMISED BY FUNCTION. PERMEABLE INTERLOCKING CONCRETE PAVERS (PICPS) ARE THE MOST DURABLE OF ANY POROUS PAVEMENT MATERIAL. UNILOCK MINIMUM 8,500 PSI (57 MPA), HIGH-STRENGTH, NO-SLUMP CONCRETE ALLOWS WATER TO INFILTRATE BETWEEN PAVER UNITS INSTEAD OF THROUGH THE MATERIAL. THE JOINT SIZES VARY BETWEEN PAVER OPTIONS, RANGING FROM 0.25" (6 MM) TO 0.5" (13 MM), WHICH MEET THE AMERICANS WITH DISABILITIES ACT RECOMMENDATION FOR JOINTS OR OPENINGS, AND ALLOWS A MINIMUM OF 100" (2,540 MM) PER HOUR OF SURFACE INFILTRATION.
- JOINT AGGREGATE – ASTM NO. 8
AS THE INITIAL FILTERING LAYER, THE 0.25" CRUSHED, ANGULAR, CHIP STONE CAPTURES APPROXIMATELY 80 PERCENT OF DEBRIS IN THE FIRST 1" (25 MM) TO 2" (51 MM). THE SECONDARY FUNCTION OF THE JOINT AGGREGATE IS TO INCREASE THE POSITIVE INTERLOCK BETWEEN THE PAVER UNITS, WHICH IS ESSENTIAL TO THE STRUCTURAL STABILITY OF THE PICPS. THE JOINT AGGREGATE MUST ALWAYS REMAIN FILLED TO THE LIP OF THE PICP UNITS TO REDUCE UNNECESSARY CLOGGING.
- SETTING BED AGGREGATE – ASTM NO. 8
THE 0.25" CRUSHED, ANGULAR, CHIP STONE PROVIDES A SMOOTH LEVELING COURSE FOR PLACING PAVERS AND ADDITIONAL STRUCTURAL INTERLOCKING OF THE PICPS. SAND MUST BE AVOIDED AS A SETTING BED IN A PICP APPLICATION.
- BASE AGGREGATE – ASTM NO. 57.
MINIMUM THICKNESS IS DESIGNED TO SUPPORT ANTICIPATED LOADS, TO ACCOMMODATE STORMWATER DETENTION IN THE 40 PERCENT VOID SPACE OF THE MATERIAL, AND TO SERVES AS A TRANSITION MATERIAL BETWEEN THE ASTM NO. 8 SETTING BED AND THE ASTM NO. 2 SUBBASE AGGREGATE.
- SUBBASE AGGREGATE – ASTM NO. 2
SUBSOIL CONDITIONS WILL DICTATE THE NECESSITY OF THIS LARGER ASTM NO. 2 CRUSHED, ANGULAR, OPEN-GRADED SUBBASE AGGREGATE. INSTALLATION WILL PROVIDE INCREASED STRUCTURAL STABILITY ON SITES WITH POOR SOIL CONDITIONS TO SUFFICIENTLY SUPPORT ANTICIPATED LOADS AND TEMPORARILY DETAIN STORMWATER RUNOFF IN THE 40 PERCENT VOID-SPACE OF THE MATERIAL.
- SUBGRADE
COMPACTED SUBGRADE SHOULD HAVE A MINIMUM INFILTRATION RATE OF 0.5" PER HOUR.
- EDGE RESTRAINT
AN EDGE RESTRAINT, SUCH AS A CONCRETE CURB, IS REQUIRED.
- UNDERDRAIN
WITH PERMEABLE SUBSOILS (OVER 0.5" PER HOUR), THE UNDERDRAIN PIPE SHALL BE ELIMINATED.
- MECHANICAL BASE STABILIZATION
SUBGRADE CONDITION WILL DETERMINE THE NEED FOR BASE COMPACTION AND/OR STABILIZATION.
SUBSOIL STRENGTH CAN BE DETERMINED BY VISUAL INSPECTION AND REFERENCE TO THE GEOGRID SUBSOIL ASSESSMENT CARD, BY SOIL CLASSIFICATION, OR BY FIELD-TESTING WITH A DYNAMIC CONE PENETROMETER.
GEOGRID STYLE SYSTEMS, SUCH AS DRIVEGRID®, SHALL BE UTILIZED FOR ANY WEAKER SUBSOILS. THE GEOGRID IS PLACED BETWEEN THE ASTM NO. 57 BASE AGGREGATE AND THE SUBGRADE.

THIS DRAWING IS AS A SAMPLE ONLY
*** PERSONAL (CLIENT) INFORMATION WITHHELD

Guide for Estimating Subgrade Soil Strengths (Fine-Grained Soils)										
ESTIMATED CONSISTENCY BY:		TEST BY:					CORRELATES TO:			
Description	Equipment/Visual	Standard Penetration Test (blows/ft)	Dynamic Cone Penetrometer (in/blow)			Shear Strength, C_u		California R Value	R Value	CBR
			SC, SM, SP	CL	CH	(psf)	(kN)			
Very Soft	Man standing sinks >3 inches	<2	—	—	—	<1.7	<0.025	<5	—	<0.4
Soft	Man walking sinks 2-5 inches	2-4	—	—	—	1.7-3.5	0.025-0.25	<5	<0.36	0.4-0.8
Medium	Man walking sinks ~1 inch	4-8	—	>2.6	—	3.5-6.9	0.25-0.50	<5	0.36-2.5	0.8-1.6
Stiff	Medium track ruts ~1/2 - 1 inch	>8	>3.9	2.6-1.8	—	6.9-15.9	0.50-1.0	5-20	2.5-6.8	1.6-3.2
Very Stiff	Loaded dump truck ruts ~1-5 inches	15-30	3.9-2.2	1.8-1.3	>4.3	15.9-32.8	1.0-2.0	20-35	6.8-16.5	3.2-6.4
Hard	Insignificant ruts from loaded dump truck	>30	2.2-1.1	1.3-0.9	4.3-2.1	>32.8	>2.0	>35	>16.5	>6.4
References: Atlas Portland Cement Association, S.J. Delfino literature and McCarthy, David F., Essentials of Soil Mechanics and Foundations, 1977 & Tensar 1998. Webster, Personal Communication 2001, DCP vs. CBR Correlations. AASHTO, 1993 Guide for Design of Pavement Structures, Van Tol et al. MCHRP 108.										
NOTE: For use with Unilock DriveGrid System and for preliminary analysis only. Final design and installation are the responsibility of others based upon site-specific conditions. Unilock and Tensar International Corporation are not responsible for any use or misuse hereof. Thickness results shown on the reverse side are for the specific scenario indicated and are based on the Ground-Fix Design Methodology. For other scenarios, contact your local Unilock representative.										



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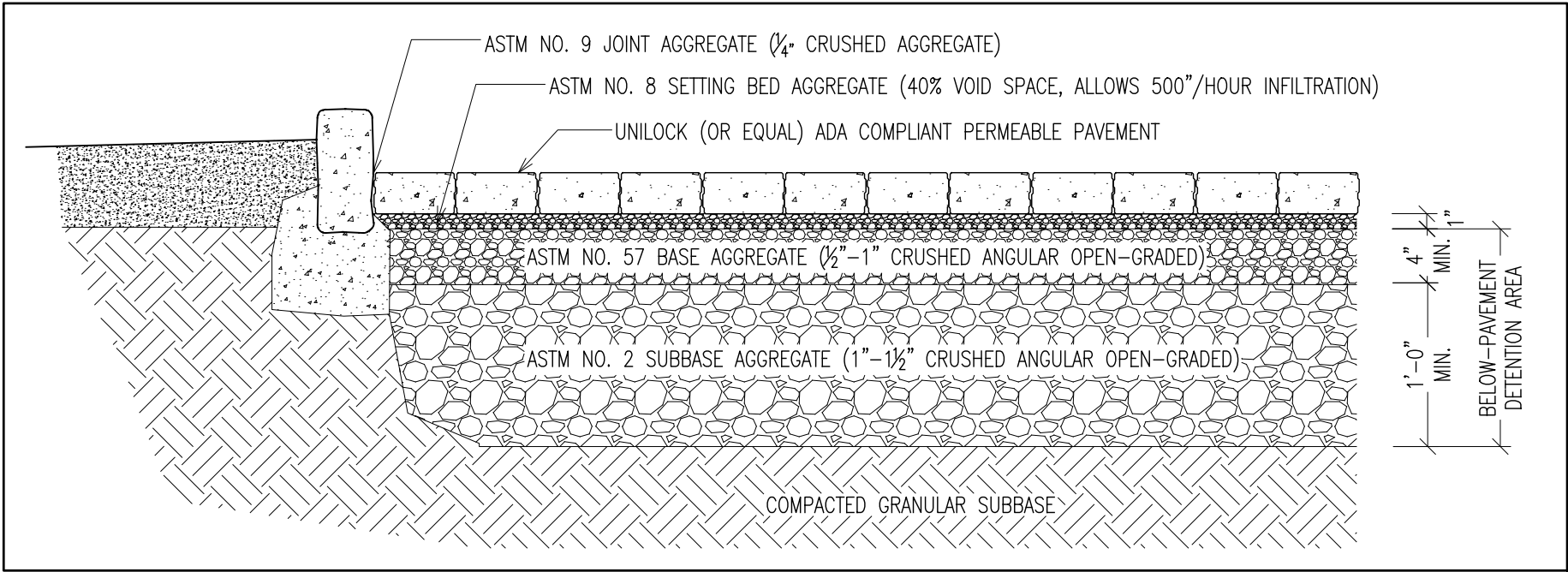
DATE: 03.06.2022 ISSUE: FOR PERMIT

PROJECT NAME:
DRIVEWAY EXTENSION
DRAWING NAME:
PAVERS

DRAWING NUMBER:
G.02

SCALE: AS NOTED DATE: 03.06.2022

NOTE:
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RYE



TYPICAL DRIVEWAY SECTION
1" = 1'-0"

		PAVER	JOINT MATERIAL	JOINT WIDTH*	VOID SPACE*	INFILTRATION RATE**	MINIMUM INFILTRATION RATE** FOR RAINFALL INTENSITY OF:			
							2"/hr	4.5"/hr	6.5"/hr	11"/hr
ADA COMPLIANT	Small: 1/4" Joint	Eco-Line ¹	ASTM # 9 Aqua Rock	5.25mm	5.8%	560	34	73	112	190
		Eco-Promenade ²	ASTM #9 - SEK Chip	7 mm	10.12%	934	20	44	64	109
		Eco-Priora [™] Herringbone	ASTM #9 - SEK Chip	7 mm	7.08%	676	28	64	92	155
		Eco-Priora [™] 5 x10	Kafka - 1/8 to 3/16"	7 mm	6.8%	633	29	66	96	162
		Eco-Priora [™] Pattern H	ASTM #9 - Roscoe Chip	7 mm	5.7%	509	35	79	114	193
		Eco-Priora [™] Pattern H	IDOT TA 22	7 mm	5.7%	347	35	79	114	193
	Medium: 1/2" to 3/4" Joint	Eco-Priora [™] 10 x 10	Kafka - 1/16 to 3/16"	7 mm	4.6%	327	43	98	141	239
		Town Hall [™]	Kafka - 1/8 to 3/16"	9mm	6.5%	784	31	69	100	169
	Large: 3/8" to 1/2" Joint	City Park Paver [™]	ASTM #9 - SEK Chip	10mm	4.2%	934	48	107	155	262
		DuraFlow [™]	ASTM #8 IDOT CA-16	12mm	8%	912	25	56	81	138
Eco-OptiLoc [™]		ILPD	12 mm	7.3%	104	27	62	89	151	
Extra Large: >1/2"	Eco-OptiLoc [™]	ASTM #8 IDOT CA-16	12 mm	7.3%	912	27	62	89	151	
	Tribeca Cobble [™]		10mm	5.6%	400	36	80	116	196	
	Thornbury [™]	ASTM # 9 Aqua Rock	18mm	4.4%	385	45	102	148	250	
	Eco-Stone [™]	ASTM #8 IDOT CA-16	8 mm	10.18%	784	19	42	60	102	
	Ecoloc [®]	Kafka - 1/8 to 3/16"	7 mm	12.18%	1060	18	41	59	99	

NOTE: The 2", 4.5", 6.5" and 11" per hour Rainfall Intensity examples are based on common 5 minute rainfall intensity charts and are not the same as total rainfall quantity.
* Joint Width is measured at the top of the paver. Void Space is calculated at the base of the paver.
** Infiltration rate is inches per hour based on testing done when first installed and is an approximation.

INFILTRATION RATES
UNILOCK PERMEABLE PAVERS

CRITERIA				RAINWATER HARVEST VOLUME			BASE STORAGE CAPACITY			SURPLUS / (DEFICIT) STORAGE			
Rainfall In/Hr (mm/hr)	Surface Area Ft ² (m ²)	Base Depth In (cm)	Void Space	Cubic Ft (m ³)	Acre Feet	Gallons (m ³)	Cubic Ft (m ³)	Acre Feet	Gallons (m ³)	Cubic Ft (m ³)	Acre Feet	Gallons (m ³)	% Used
1 (25 mm)	43,560 (4,047 m ²)	14 (35 cm)	40%	3,630 (103 m ³)	0.08	27,154 (103 m ³)	20,328 (576 m ³)	0.47	152,064 (576 m ³)	16,698 (473 m ³)	0.38	124,910 (473 m ³)	17
1 (25 mm)	43,560 (4,047 m ²)	18 (46 cm)	40%	3,630 (103 m ³)	0.08	27,154 (103 m ³)	26,136 (740 m ³)	0.60	195,511 (740 m ³)	22,506 (637 m ³)	0.52	168,357 (637 m ³)	13.9%
1 (25 mm)	43,560 (4,047 m ²)	22 (56 cm)	40%	3,630 (103 m ³)	0.08	27,154 (103 m ³)	31,944 (905 m ³)	0.73	238,958 (905 m ³)	28,314 (802 m ³)	0.65	211,804 (802 m ³)	13.9%
3.04 (77 mm)	43,560 (4,047 m ²)	14 (35 cm)	40%	11,035 (312 m ³)	0.25	82,548 (312 m ³)	20,328 (575 m ³)	0.47	152,064 (575 m ³)	9292.92 (263 m ³)	0.21	69,516 (263 m ³)	54.3%
3.04 (77 mm)	43,560 (4,047 m ²)	18 (46 cm)	40%	11,035 (312 m ³)	0.25	85,548 (312 m ³)	26,136 (740 m ³)	0.60	195,511 (740 m ³)	15,101 (428 m ³)	0.35	112,963 (428 m ³)	42.2%
7.58 (19 mm)	43,560 (4,047 m ²)	14 (35 cm)	40%	27,515 (779 m ³)	0.63	205,827 (779 m ³)	20,328 (575 m ³)	0.47	152,064 (575 m ³)	(7187) 203 m ³	(0.16)	53,763 (204 m ³)	135.4%
7.58 (19 mm)	43,560 (4,047 m ²)	22 (56 cm)	40%	27,515 (779 m ³)	0.63	205,827 (779 m ³)	31,944 (905 m ³)	0.73	238,957 (905 m ³)	4,429 (125 m ³)	0.10	33,131 (125 m ³)	86.1%

BASE STORAGE CAPACITY
DETENTION VOLUMES; UNILOCK PAVERS

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Modular Block Porous Pavement



Description: Modular block porous pavement is a permeable pavement surface with an underlying stone reservoir designed to temporarily store surface runoff before it infiltrates into the subsoil. Porous pavement options are primarily intended for low vehicle traffic areas such as spillover parking or simply the parking aisle portion of a parking lot.

REASONS FOR LIMITED USE	STORMWATER MANAGEMENT SUITABILITY
<ul style="list-style-type: none">Maintenance record is unclear, and pretreatment cannot be provided.Should not be applied on parking lots that are sanded or salted for snow control.	<div><input type="checkbox"/> Water Quality</div> <div><input type="checkbox"/> Channel/Flood Protection</div>
DESIGN CONSIDERATIONS	SPECIAL APPLICATIONS
<ul style="list-style-type: none">Soil permeability between 0.5 and 3.0 inches per hourDo not locate on slopes > 15% or within fill soilsSite at least 3 feet above the seasonally high groundwater table, and at least 100 feet away from drinking water wellsDirect runoff from pervious or exposed areas away from pavementSize the gravel trench using the same equation provided in Section 6.3 for infiltration trenches.Provide conveyance for larger storms with raised inlet or perimeter gravel trenchSediment-laden runoff must be directed away from the porous pavementMaximum depth should not exceed 4 feetEnsure that the upland drainage is fully stabilized after construction.Use permanent sign(s) containing a short list of maintenance requirementsDo not use excavated stone reservoir as a sediment control deviceAvoid compacting subsoils during constructionEnsure that paving dewaterers between stormsPeriodically inspect the surface for deterioration or spalling	<div><input type="checkbox"/> Pretreatment</div> <div><input checked="" type="checkbox"/> High Density/Ultra-Urban</div> <div><input checked="" type="checkbox"/> Runoff Reduction / Impervious Cover Disconnection</div> <div><input checked="" type="checkbox"/> Other: Overflow Parking</div>

MODULAR BLOCK POROUS PAVEMENT
STORMWATER MANAGEMENT DESIGN MANUAL

STORMWATER MANAGEMENT	
ALL WORK MUST BE IN ACCORDANCE WITH AND CONFORM TO:	
CHAPTER 174, STORMWATER MANAGEMENT OF THE CITY OF RYE CODE	
<ul style="list-style-type: none">THE SUBSTANTIVE REQUIREMENTS OF THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION STATE POLLUTANT DISCHARGE LIMITATION SYSTEM (SPDES) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES GP02-01THE NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL OF THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION	
DESIGN FOR STORM FLOW OF 6.5"	
EXISTING IMPERVIOUS AREA (BLACKTOP):	634 S.F.
EXISTING DETENTION VOLUME:	0 C.F.
PROPOSED ADDITIONAL PAVED AREA (PERMEABLE PAVERS):	292 S.F.
TOTAL PROPOSED PAVED AREA (PERMEABLE PAVERS):	926 S.F.
RUNOFF VOLUME (@ 6.5" OVER 926 S.F.):	501 C.F.
DETENTION VOLUME PROVIDED: (17" @40% VOIDS):	525 C.F.

STORM WATER
1" = 1'-0"

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CLIENT:

DATE: 03.06.2022 **ISSUE:** FOR PERMIT

PROJECT NAME:
DRIVEWAY EXTENSION

DRAWING NAME:
DETAILS

DRAWING NUMBER:
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