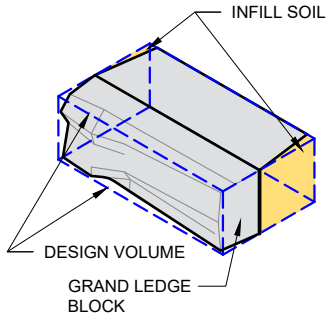
3-FOOT (0.91 m) GRAND LEDGE RETAINING BLOCK

	VOLUME		WEIGHT		CENTER OF GRAVITY		WT x COG
	(FT^3)	(m^3)	(LBS)	(kg)	(IN)	(mm)	(LBS.IN)
BASE BLOCK	2.88	0.0816	412	187	6.09	155	2508
FACE TEXTURE	1.77	0.0501	253	115	15.5	394	3923
SUM CONCRETE =	**4.65**	**0.1317**	**665**	**302**			
SOIL INFILL	0.13	0.0037	13	6	4.00	102	52
SUM TOTAL=			678	308			6483
DESIGN C.O.G.	$COG = \Sigma(WT \times COG)_i / \Sigma WT =$				**9.56**	**243**	
DESIGN VOLUME	3 FT x 1.667 FT 1 FT = **5.00 FT^3** (0.914 m x 0.508 m x 0.305 m = **0.142 m^3**)						
INFILLED UNIT WT	678 LBS / 5.00 FT^3 = **136 LBS/FT^3** (308 kg / 0.142 m^3 = **2172 kg/m^3**)						

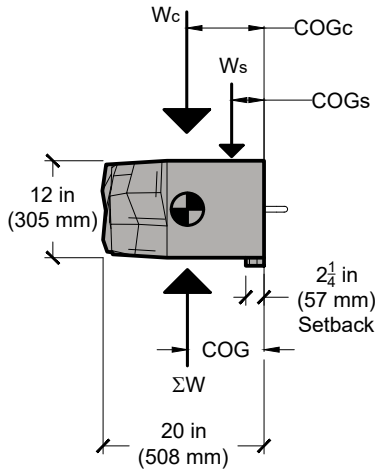
4-FOOT (1.22 m) GRAND LEDGE RETAINING BLOCK

	VOLUME		WEIGHT		CENTER OF GRAVITY		WT x COG
	(FT^3)	(m^3)	(LBS)	(kg)	(IN)	(mm)	(LBS.IN)
BASE BLOCK	3.88	0.110	555	252	6.07	154	3368
FACE TEXTURE	2.31	0.0654	330	150	15.5	394	5120
Σ CONCRETE =	**6.19**	**0.175**	**885**	**402**			
SOIL INFILL	0.13	0.0037	13	6	4.00	102	52
SUM =			898	407			8540
DESIGN COG =	$COG = \Sigma(WT \times COG)_i / \Sigma WT =$				**9.51**	**242**	
DESIGN VOLUME	4 FT x 1.667 FT 1 FT = **6.67 FT^3** (1.22 m x 0.508 m x 0.305 m = **0.189 m^3**)						
INFILLED UNIT WT	898 LBS / 6.67 FT^3 = **135 LBS/FT^3** (407 kg / 0.189 m^3 = **2158 kg/m^3**)						



5-FOOT (1.52 m) GRAND LEDGE RETAINING BLOCK

	VOLUME		WEIGHT		CENTER OF GRAVITY		WT x COG
	(FT^3)	(m^3)	(LBS)	(kg)	(IN)	(mm)	(LBS.IN)
BASE BLOCK	4.88	0.138	698	317	6.05	154	4222
FACE TEXTURE	2.76	0.0782	395	179	15.5	394	6118
Σ CONCRETE =	**7.64**	**0.216**	**1093**	**496**			
SOIL INFILL	0.13	0.0037	13	6	4.00	102	52
SUM =			1106	501			10,391
DESIGN COG =	$COG = \Sigma(WT \times COG)_i / \Sigma WT =$				**9.40**	**239**	
DESIGN VOLUME	5 FT x 1.667 FT 1 FT = **8.33 FT^3** (1.52 m x 0.508 m x 0.305 m = **0.236 m^3**)						
INFILLED UNIT WT	1106 LBS / 8.33 FT^3 = **133 LBS/FT^3** (501 kg / 0.236 m^3 = **2125 kg/m^3**)						



6-FOOT (1.83 m) GRAND LEDGE RETAINING BLOCK

	VOLUME		WEIGHT		CENTER OF GRAVITY		WT x COG
	(FT^3)	(m^3)	(LBS)	(kg)	(IN)	(mm)	(LBS.IN)
BASE BLOCK	5.88	0.167	841	382	6.05	154	5087
FACE TEXTURE	3.43	0.0971	490	222	15.5	394	7603
Σ CONCRETE =	**9.31**	**0.264**	**1331**	**604**			
SOIL INFILL	0.13	0.0037	13	6	4.00	102	52
SUM =			1344	610			12,704
DESIGN COG =	$COG = \Sigma(WT \times COG)_i / \Sigma WT =$				**9.48**	**241**	
DESIGN VOLUME	6 FT x 1.667 FT 1 FT = **10.00 FT^3** (1.83 m x 0.508 m x 0.305 m = **0.283 m^3**)						
INFILLED UNIT WT	1344 LBS / 10.00 FT^3 = **134 LBS/FT^3** (610 kg / 0.283 m^3 = **2153 kg/m^3**)						

AVERAGE DESIGN BLOCK

AVERAGE CENTER OF GRAVITY	(9.56 in + 9.51 in + 9.40 in + 9.48 in) / 4 = **9.49 in** (243 mm + 242 mm + 239 mm + 241 mm) / 4 = **241 mm**
AVERAGE INFILLED UNIT WEIGHT	(136 LBS/FT^3 + 135 LBS/FT^3 + 133 LBS/FT^3 + 134 LBS/FT^3) / 4 = **134 LBS/FT^3** (2172 kg/m^3 + 2158 kg/m^3 + 2125 kg/m^3 + 2153 kg/m^3) / 4 = **2152 kg/m^3**

Note:
Each block size is produced with multiple unique face textures with corresponding differences in volumes, weights, and centers of gravity.
Block dimension tolerance is $\frac{3}{16}$ inch (5 mm) for height and $\frac{1}{2}$ inch (13 mm) for length and width. Face width varies due to realistic texture.
Block weight based on assumed concrete unit weight of 143 lb/ft^3 (2290 kg/m^3) and average face texture volume. Soil infill assumed to be 100 lb/ft^3 (1602 kg/m^3).
Center of gravity (C.O.G.) measured from the back of block.

DRAWN BY: N. LINDWALL	TITLE: **GRAND LEDGE** BLOCK DESIGN PARAMETERS
APPROVED BY:	
DATE: JAN 6, 2021	
SHEET NO. : 1 of 1	DRAWING FILE: Grand Ledge_block parameters_010621.dwg

ROSETTA HARDSCAPES, LLC
05481 US 31 SOUTH CHARLEVOIX, MI 49720
877-777-6558 • 231-237-9656 Fax • www.discoverrosetta.com