

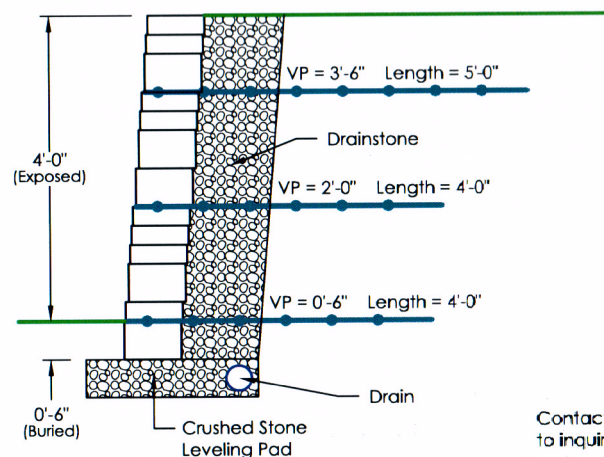
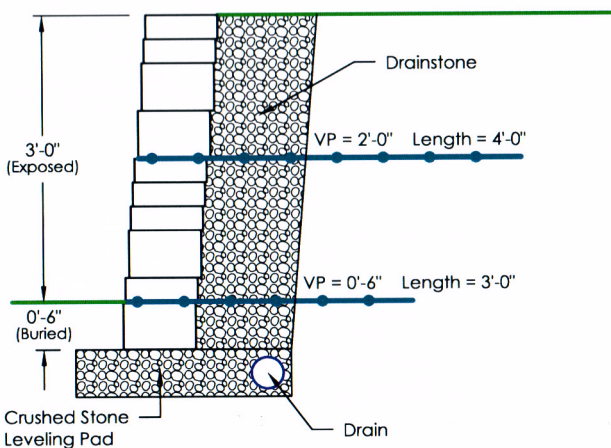
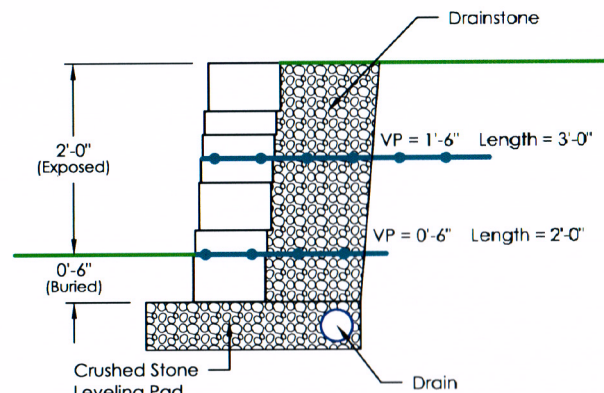
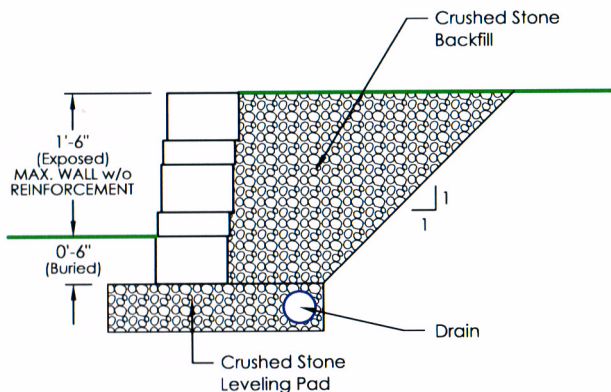
## PRELIMINARY WALL HEIGHT GUIDES

This page shows preliminary guides for soil reinforcement required to construct a wall with Belvedere Collection blocks in the conditions noted below. The geogrid reinforcement is Mirafi Miragrid 2XT. The geogrid layers shall be placed with 100% coverage along the length of the wall (no gaps between sections of grid). See wall installation details for typical construction notes. As always, follow the specific requirements shown in the engineered design for your wall.

**SILTY SAND or CLAYEY SAND** ( $\phi = 28^\circ$ ,  $\gamma = 120$  pcf)

**NO BACKSLOPE**

**NO SURCHARGE**



Contact Brown's Concrete to inquire about taller walls.

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- Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability must be verified for site specific conditions.
- Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design.
- Seismic conditions are not included in these guides and must be analyzed based on site specific conditions.
- Vertical placement (VP) of geogrid is measured up from the bottom of the blocks/top of the stone leveling pad.
- Length of geogrid is measured from the front of the Belvedere blocks.

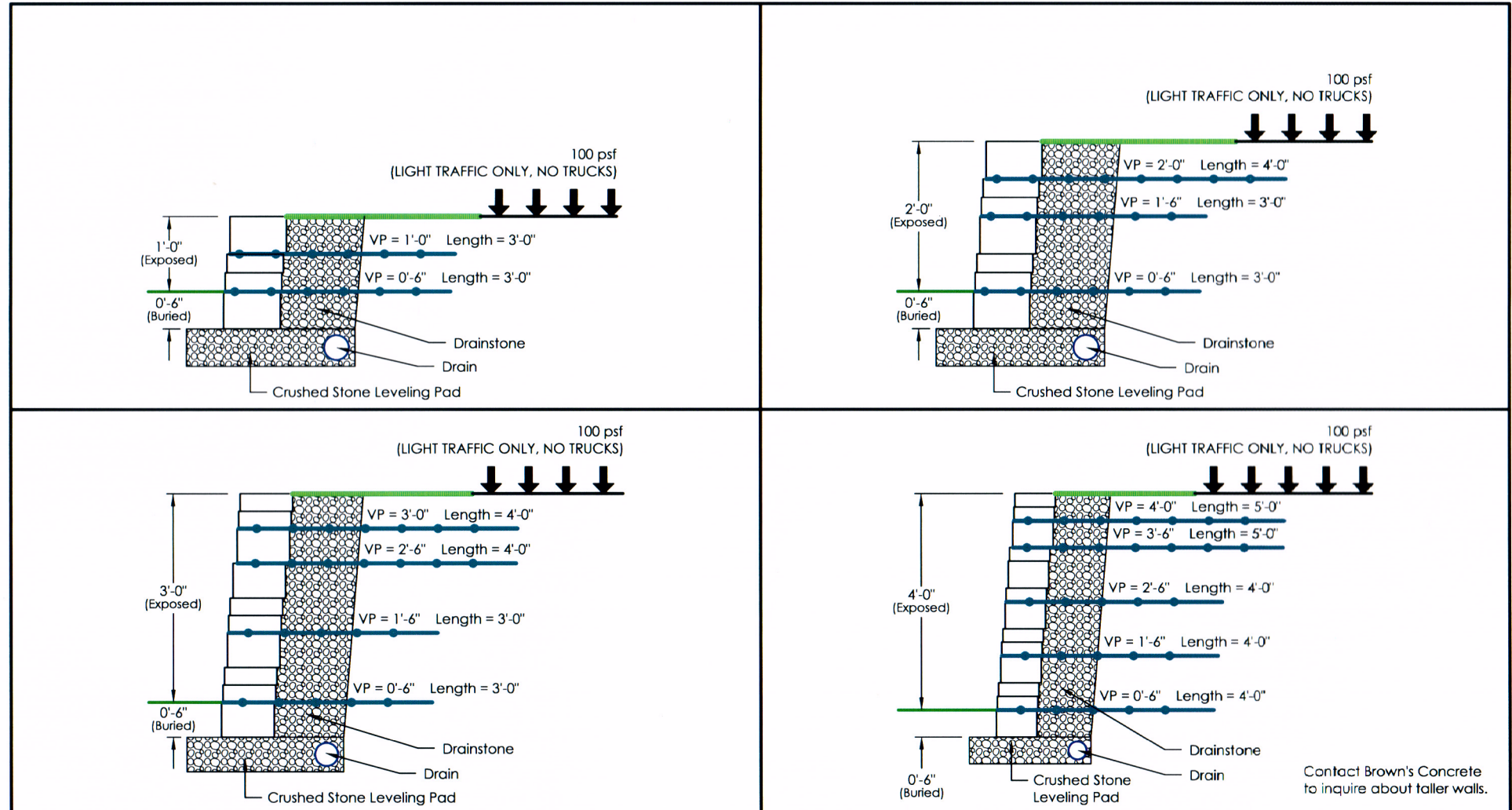
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- Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning, and 2.0 for bearing capacity.
- Designs are in general accordance with NCMA's Design Manual for Segmental Retaining Walls, 2nd Ed.
- Reinforced and Backfill soils are to be compacted to 95% maximum dry density (Standard Proctor).
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**LIGHT TRAFFIC SURCHARGE (NO TRUCKS)** (100 PSF)



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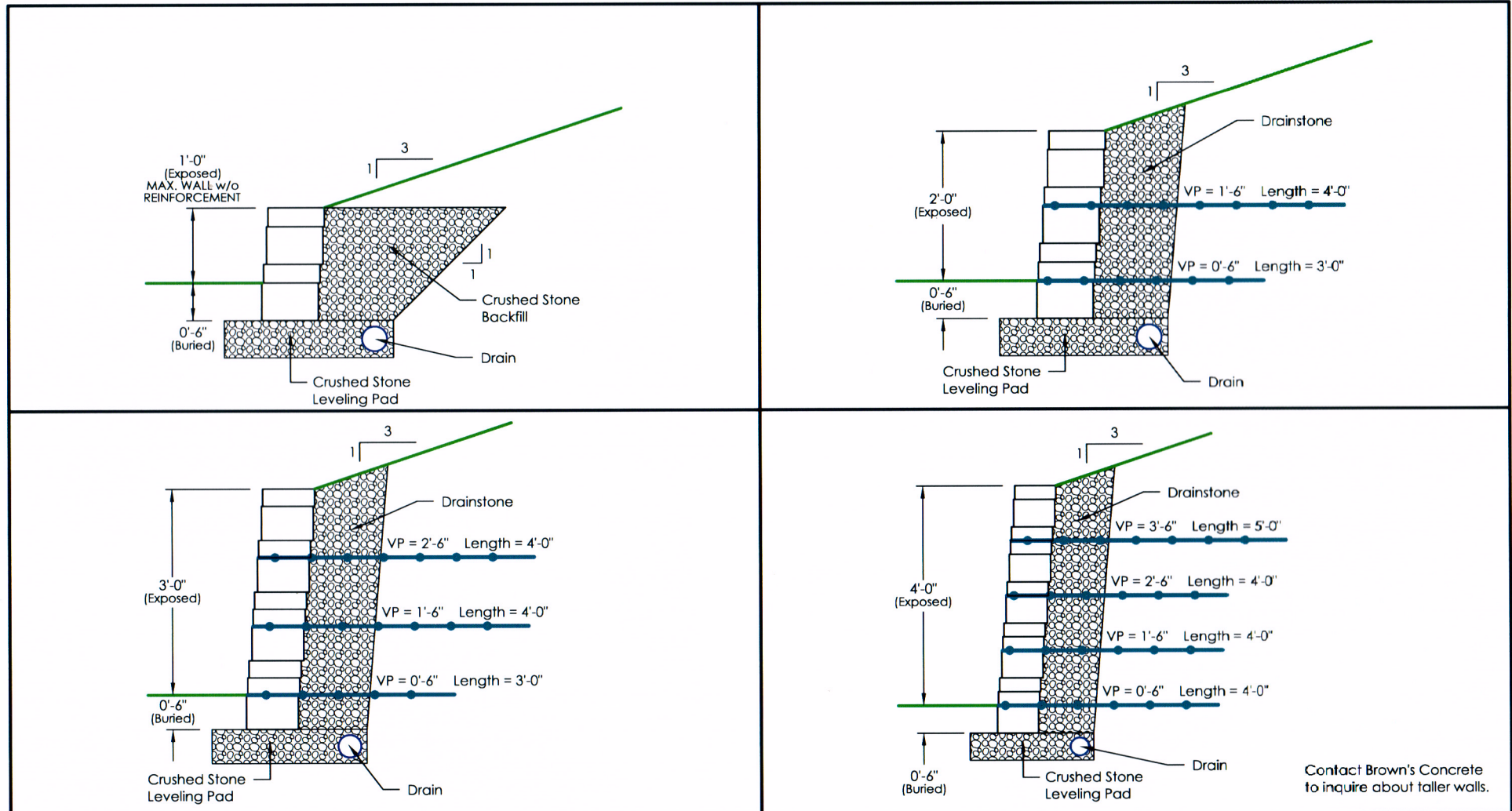


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**SILTY SAND or CLAYEY SAND** ( $\phi = 28^\circ$ ,  $\gamma = 120$  pcf) **1 on 3 (18.5°) BACKSLOPE**

**NO SURCHARGE**



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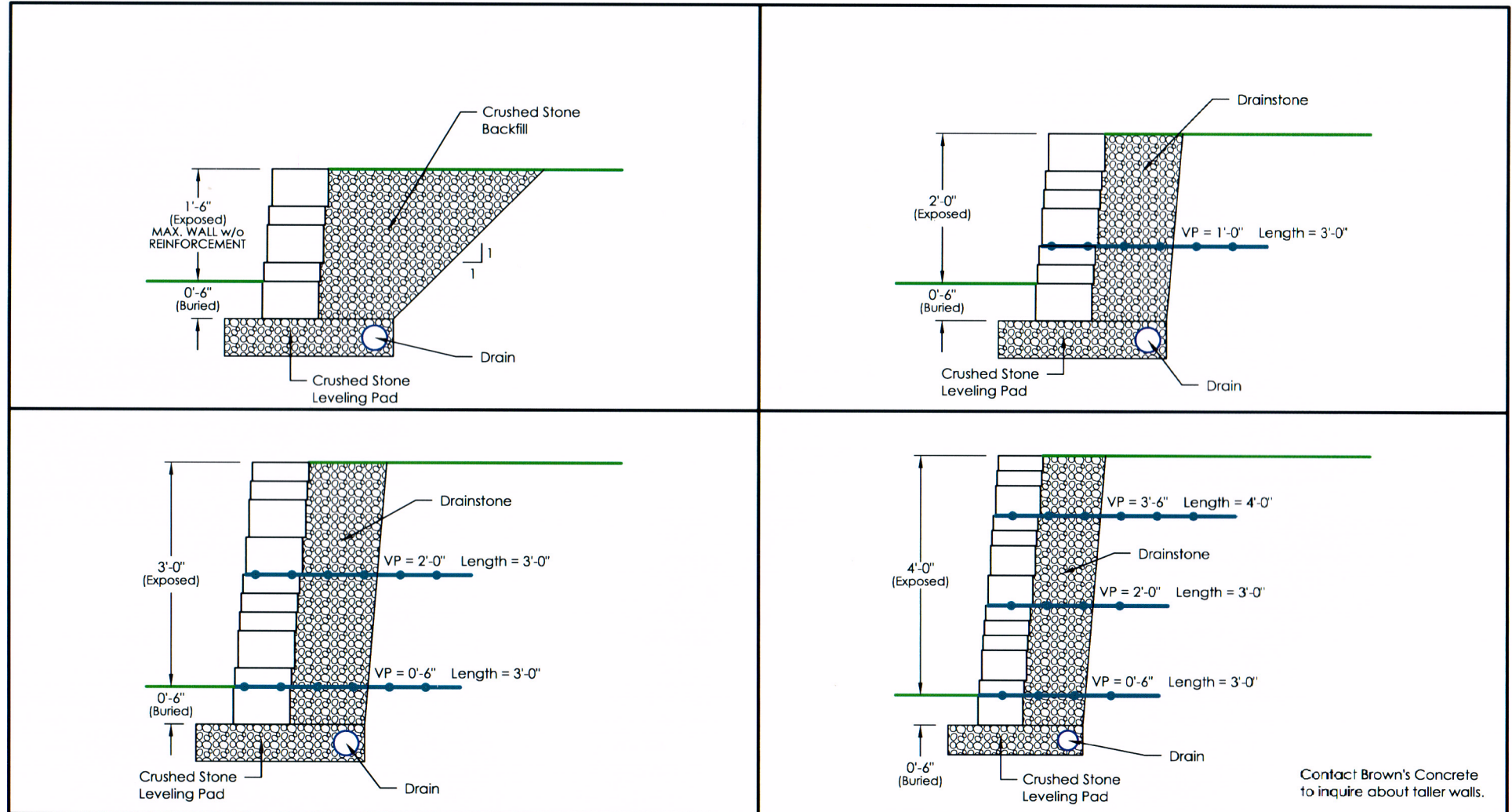
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**FINE TO MEDIUM SAND** ( $\phi = 30^\circ$ ,  $\gamma = 120$  pcf)

**NO BACKSLOPE**

**NO SURCHARGE**



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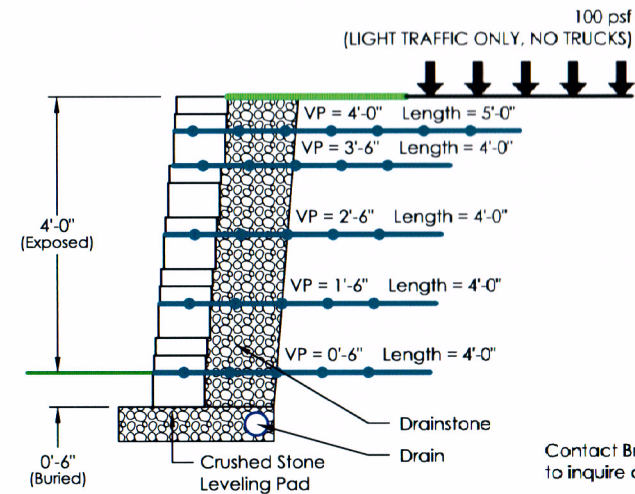
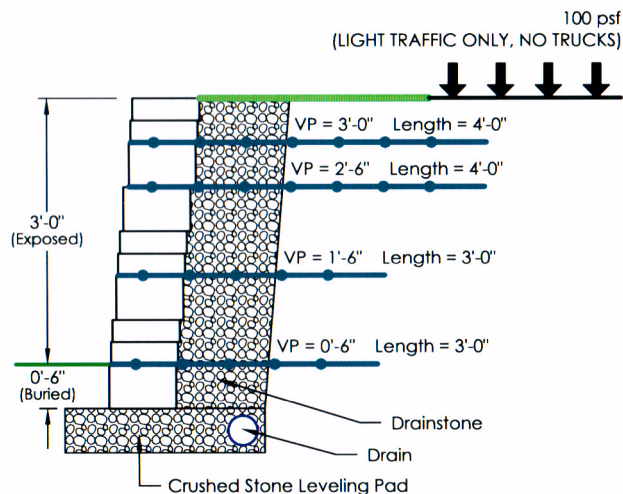
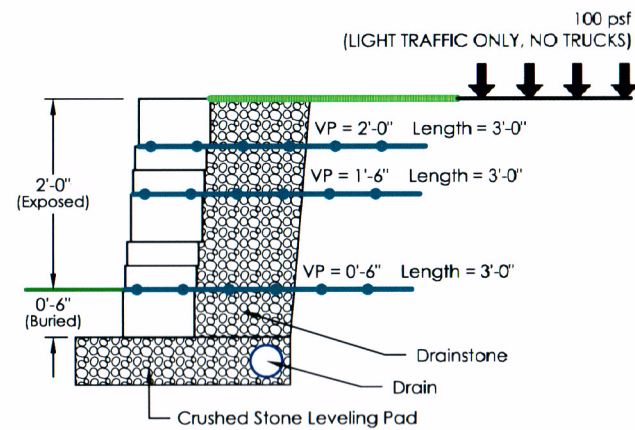
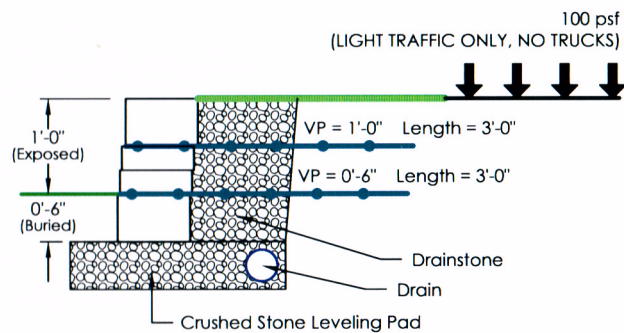


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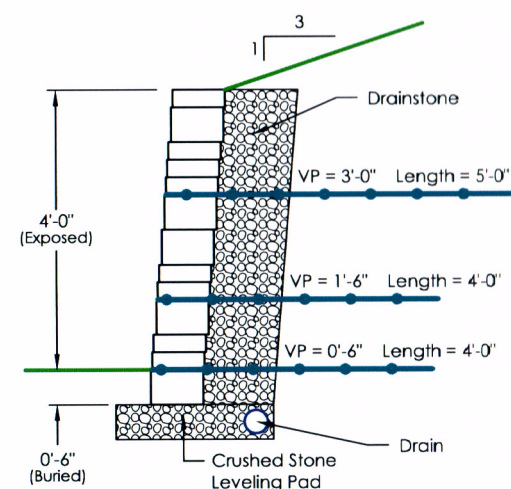
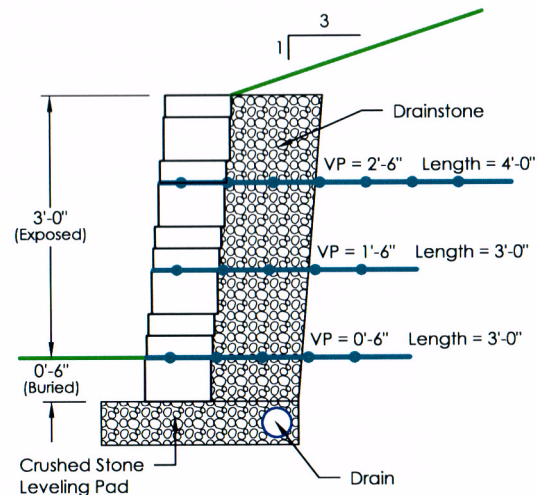
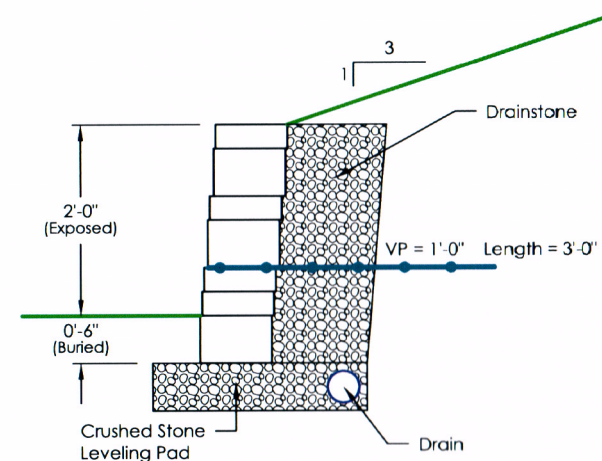
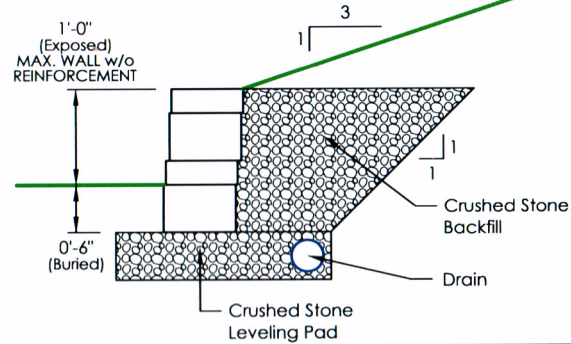
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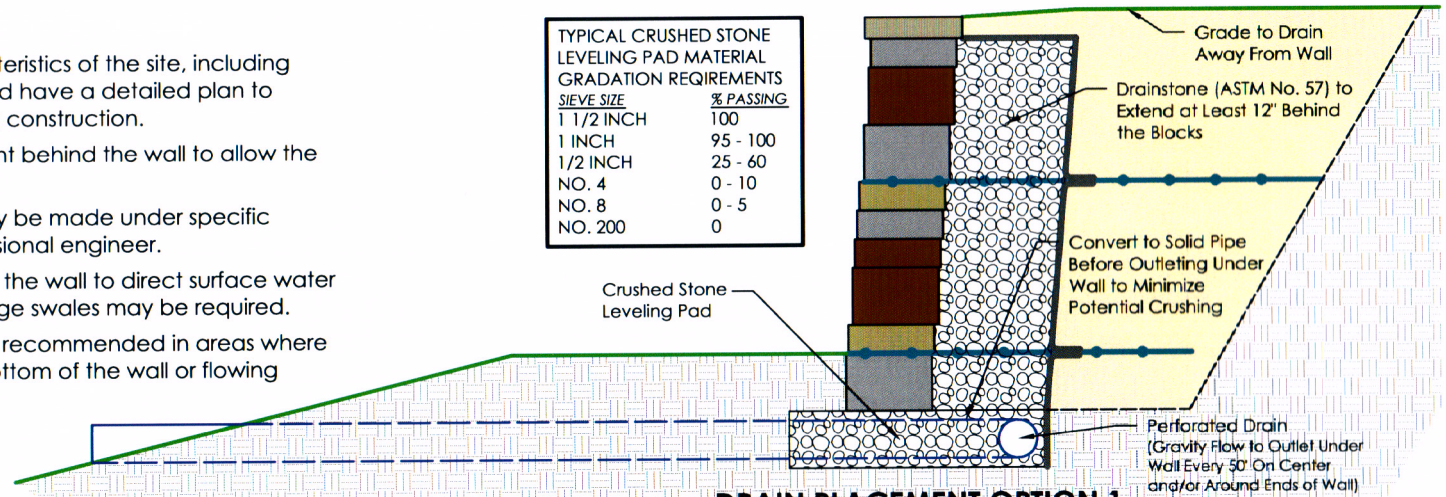
# TYPICAL DRAIN PLACEMENT DETAILS

This page shows typical drainage details for Belvedere retaining walls. These drawings are for reference only. Proper drainage is critical to successful wall construction. Wall drainage details need to address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the wall design.

## Notes:

1. Clearly understand the drainage characteristics of the site, including both surface and subsurface water flow, and have a detailed plan to properly deal with any water before starting construction.
2. Install the drain in the lowest possible point behind the wall to allow the outlet pipe to drain by gravity to daylight.
3. Outlet to a storm drain system should only be made under specific design, oversight, and direction by a professional engineer.
4. Grade areas both on top and bottom of the wall to direct surface water runoff away from the retaining wall. Drainage swales may be required.
5. Use of a blanket and/or chimney drain is recommended in areas where groundwater can be expected near the bottom of the wall or flowing through the retained soil zone.

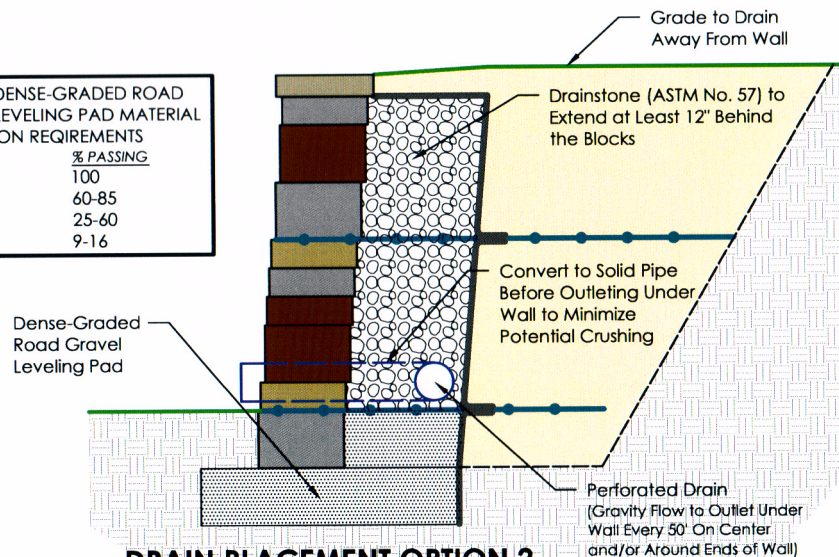
TYPICAL CRUSHED STONE LEVELING PAD MATERIAL GRADATION REQUIREMENTS	
SIEVE SIZE	% PASSING
1 1/2 INCH	100
1 INCH	95 - 100
1/2 INCH	25 - 60
NO. 4	0 - 10
NO. 8	0 - 5
NO. 200	0



## DRAIN PLACEMENT OPTION 1

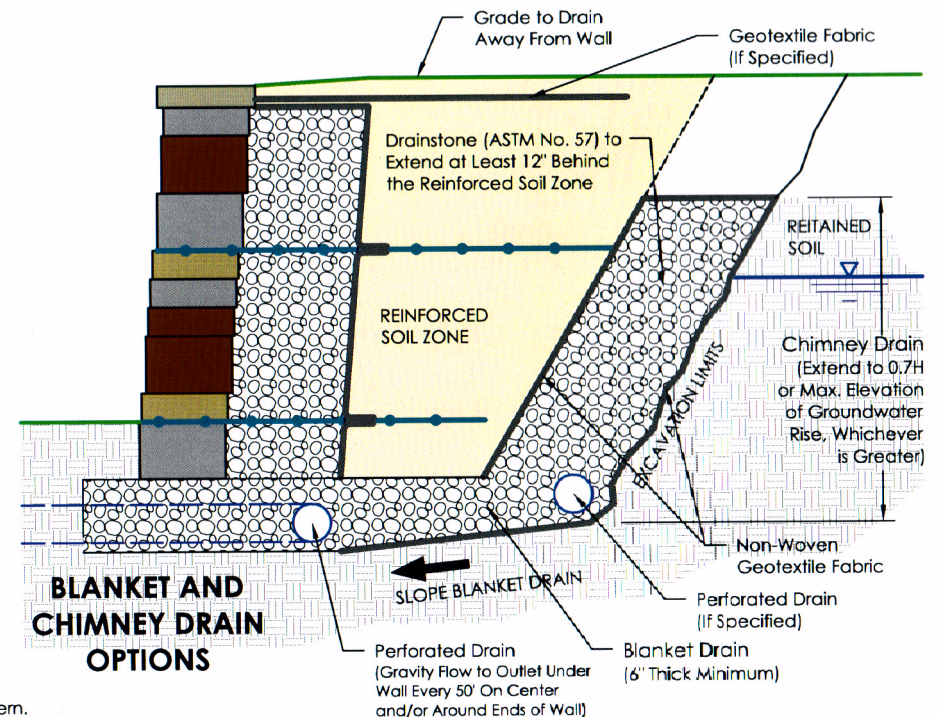
THIS DETAIL IS INTENDED FOR USE WHERE GRAVITY DRAINAGE IS AVAILABLE TO THE BOTTOM OF THE CRUSHED STONE LEVELING PAD

TYPICAL DENSE-GRADED ROAD GRAVEL LEVELING PAD MATERIAL GRADATION REQUIREMENTS	
SIEVE SIZE	% PASSING
1 INCH	100
3/8 INCH	60-85
NO. 8	25-60
NO. 200	9-16



## DRAIN PLACEMENT OPTION 2

THIS DETAIL IS INTENDED FOR USE WHERE GRAVITY DRAINAGE ONLY AVAILABLE TO THE BOTTOM OF THE EXPOSED WALL FACE



## BLANKET AND CHIMNEY DRAIN OPTIONS

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