



GRAVITY WALLS

STANDARD BATTER GRAVITY WALLS

34° | DENSE WELL-GRADED SAND *or* SAND AND GRAVEL.....97

30° | FINE TO MEDIUM SAND *or* SILTY SAND 101

28° | SILTY SAND *or* CLAYEY SAND 105

40° OVER 26° | CRUSHED STONE BACKFILL
REPLACING SILTY OR CLAYEY SAND.....109

IMPORTANT NOTICE

The design specifications for Redi-Rock® blocks suggest maximum installation heights under certain assumed conditions. These wall heights were calculated using the assumed material properties and loading conditions in the *Design Resource Manual* and will vary from location to location depending on the soil properties and terrain. Since soil conditions and topography vary greatly from site to site, an engineering analysis must be performed for each wall installation.

Because Redi-Rock International does not build the blocks or install the wall system, Redi-Rock International does not assume any responsibility regarding structural stability of any particular block or particular wall system. In addition, Redi-Rock International assumes no responsibility in connection with any injury, death, or property damage claim whatsoever whether asserted against a Leasee, Leasor, Purchaser or others, arising out of or attributable to the operation of or products produced with Redi-Rock International equipment.

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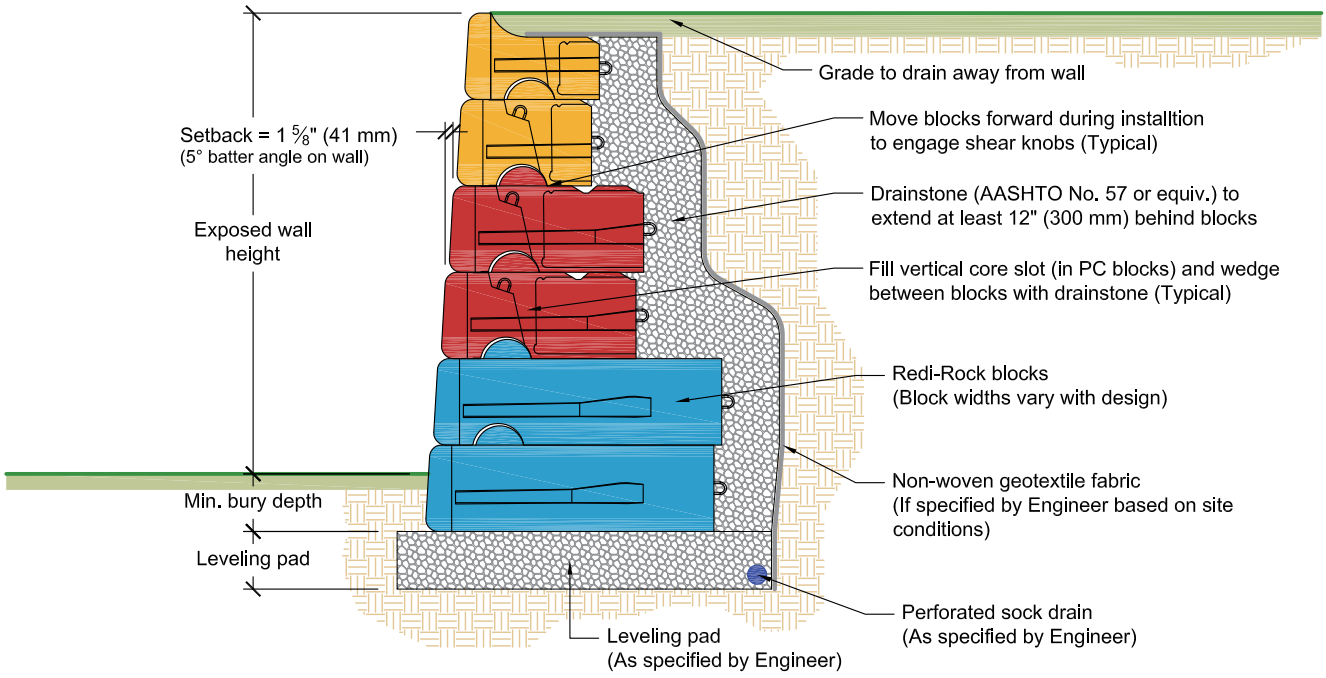
STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

This preliminary height guide has been prepared showing Redi-Rock walls in a variety of assumed conditions. It is intended to give the specifier an idea of what block types are required and what heights are achievable with Redi-Rock in different applications. A combination of Redi-Rock 28" (710 mm), 41" (1030 mm), and 60" (1520 mm) wide blocks with the standard 5° wall batter are used to provide the most efficient cross-section available in the different conditions.

Several assumptions have been made in preparation of the guide. They are listed in the notes below. If these assumptions do not match the wall section under consideration, block selections and achievable heights may vary from the sections shown in this guide. All wall sections for construction must be designed by a registered Professional Engineer using the actual conditions of the site.



Notes:

This preliminary guide has been prepared for three different soil types, three different load conditions, and with three different width blocks to give an indication of the performance of Redi-Rock walls. A wall batter of 5° was used for this preliminary guide. **Redi-Rock walls are not limited to these conditions.** Specific wall sections can incorporate different block setbacks and can be designed for different soil and loading conditions.

Unit weight of soil is assumed to be 120 lb/ft^3 (18.85 kN/m^3) or 130 lb/ft^3 (20.4 kN/m^3) as noted for each section of this preliminary guide.

Minimum factors of safety are 1.5 for sliding, 1.5 for overturning, 2.0 for bearing capacity, and 1.3 for global stability. Other factors of safety will result in changes from the wall heights and block selections shown in this guide.

No seismic or hydrostatic loads were included in this preliminary guide.

Ledgestone texture PC blocks were used to prepare this preliminary guide. Wall heights and block selections for other textures and blocks may vary.

A solid block without the vertical core slot was used for the bottom block on all wall sections shown.

Independent barrier design at the top of the wall must be performed for site specific conditions. Barrier requirements may result in changes to available wall heights and block selections from those shown in this guide.

Wall stability needs to be verified in the final design for site-specific conditions.

The wall design shall address both internal and external drainage and shall be evaluated by the Professional Engineer who is responsible for the final wall design.

Backfill material to be compacted to 90% modified proctor density (ASTM D1557).

All Redi-Rock International Wall System Specifications and installation recommendations should be followed.

Construction oversight should be provided on all walls to ensure proper construction according to your detailed design drawings.

Not tall enough? Greater wall heights are achievable with select backfill, increased wall batter, and/or mechanically stabilized earth Redi-Rock walls.

Redi-Rock products are manufactured by independently owned, licensed manufacturers. Product offerings will vary between manufacturers. Contact your local manufacturer to determine what products are available for your job.

These block selection and height guides were prepared by Redi-Rock International for estimating and conceptual design purposes only. All information is believed to be true and accurate; however, Redi-Rock International assumes no responsibility for the use of these preliminary guides for actual construction. Determination of the suitability of each preliminary guide is the sole responsibility of the user. **Final designs for construction purposes must be performed by a registered Professional Engineer, using the actual conditions of the proposed site.**

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

$\phi = 34°$ | DENSE WELL-GRADED SAND or SAND AND GRAVEL

Standard batter gravity walls	SECTION 1 OF 4
Assumed retained and foundation soils for this Section	SW, GW
Internal angle of friction	$\phi = 34°$
Unit weight	$\gamma = 130$ lb / ft^3 (20.4 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

LOAD CONDITION A | NO LIVE LOAD SURFACE, NO BACK SLOPE, NO TOE SLOPE 97

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE 99

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE 100

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STANDARD BATTER GRAVITY WALLS

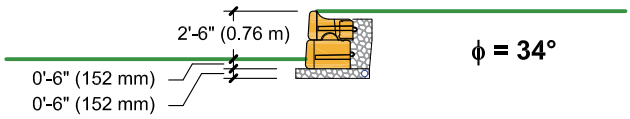
ALLOWABLE STRESS DESIGN

Preliminary Height Guide

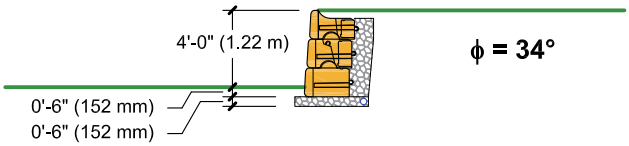
ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

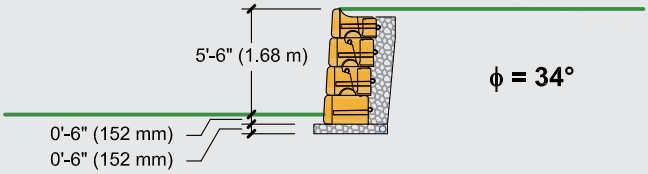
2 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks



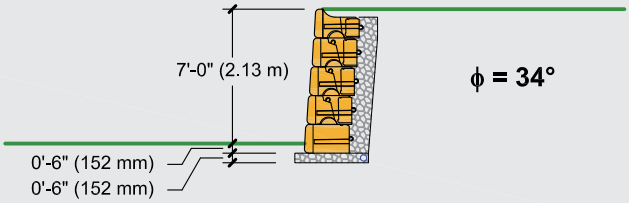
3 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks



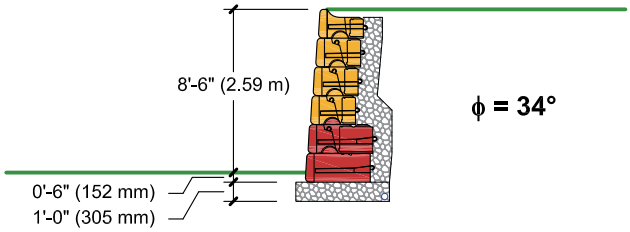
4 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks



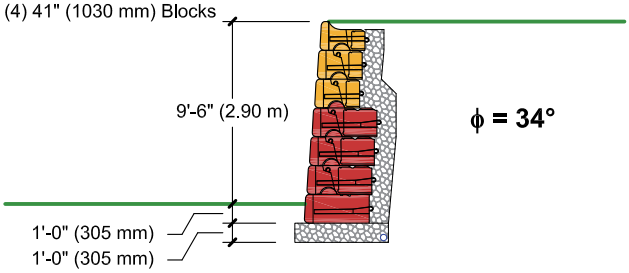
5 BLOCK HIGH SECTION
(5) 28" (710 mm) Blocks



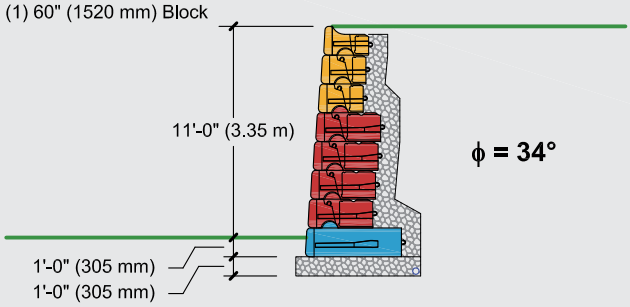
6 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



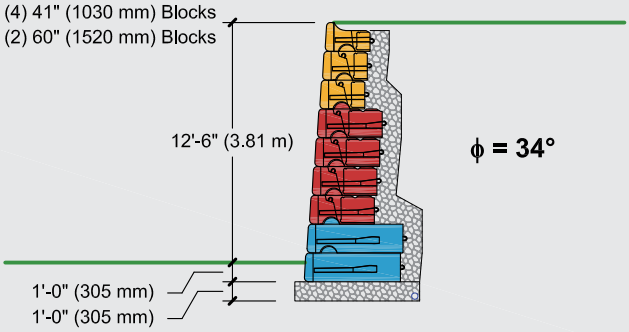
7 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks



8 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



9 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

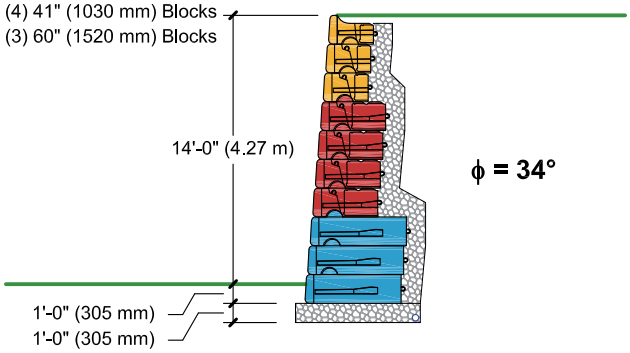
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

10 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

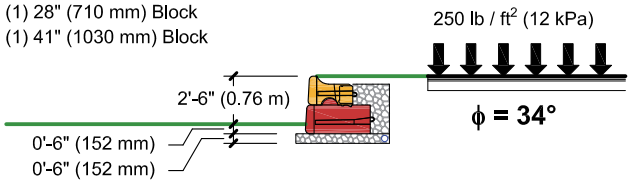
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

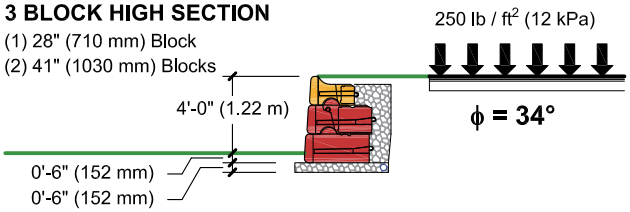
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



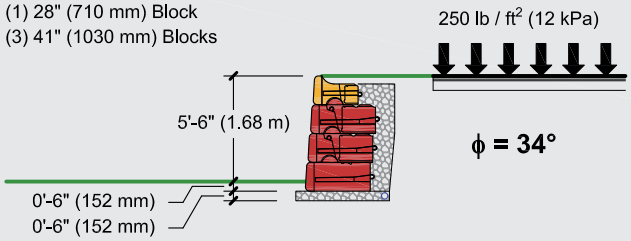
3 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks



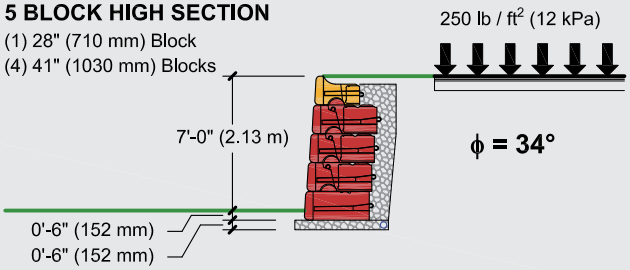
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(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks



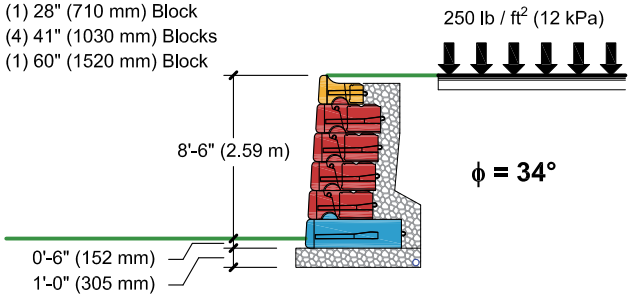
5 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(4) 41" (1030 mm) Blocks



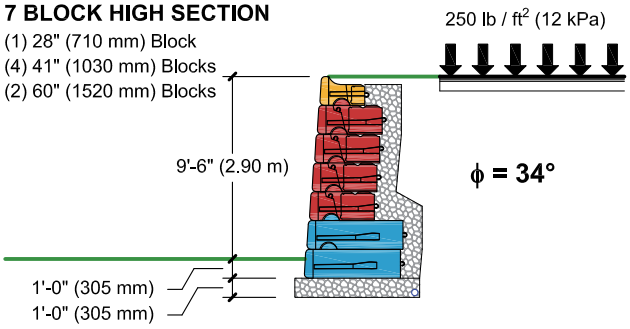
6 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(4) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



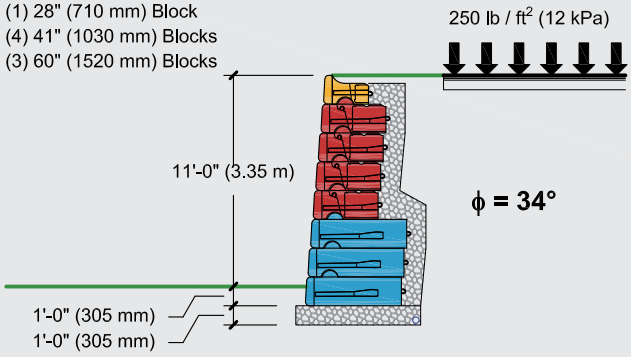
7 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(4) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



8 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(4) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

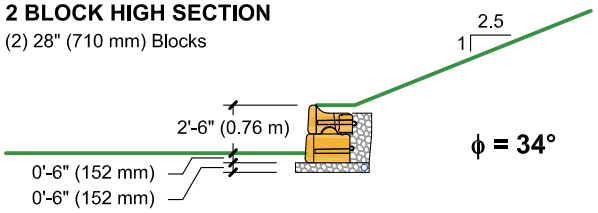
ALLOWABLE STRESS DESIGN

Preliminary Height Guide

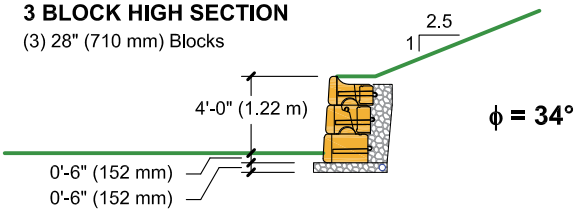
ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

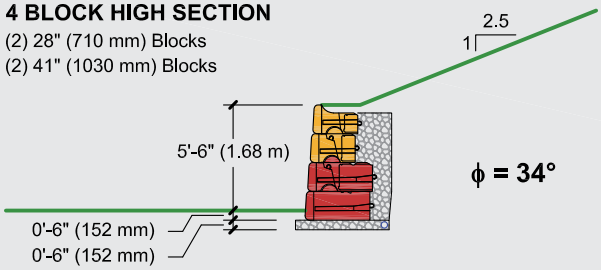
2 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks



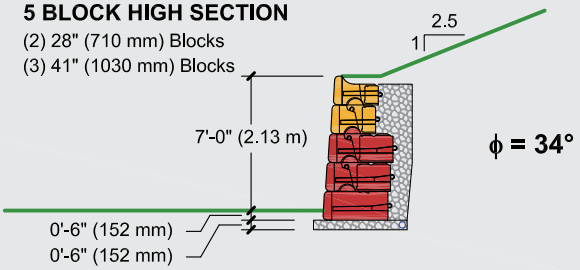
3 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks



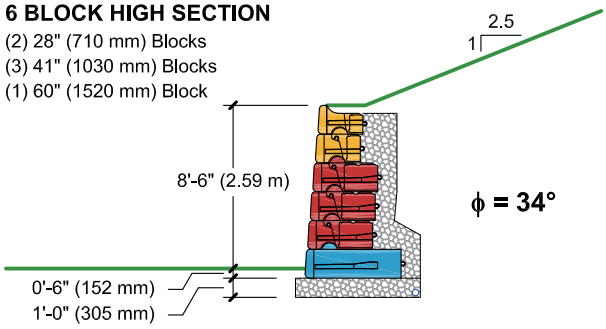
4 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



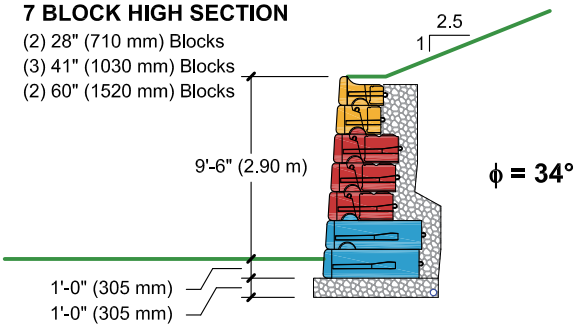
5 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks



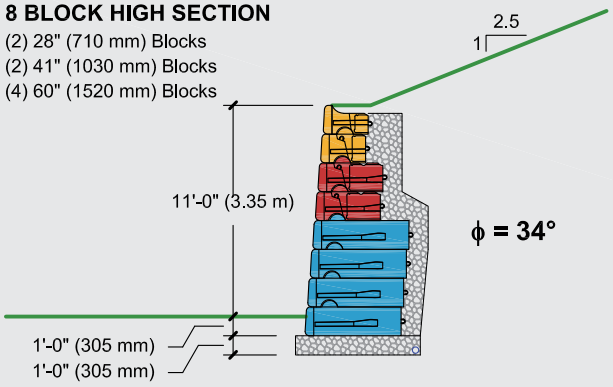
6 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



7 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



8 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(4) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

$\phi = 30°$ | FINE TO MEDIUM SAND or SILTY SAND

Standard batter gravity walls	SECTION 2 OF 4
Assumed retained and foundation soils for this Section	SW, SP, SM
Internal angle of friction	$\phi = 30°$
Unit weight	γ = 120 lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

LOAD CONDITION A | NO LIVE LOAD SURFACE, NO BACK SLOPE, NO TOE SLOPE.....102

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE.....103

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE 104

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STANDARD BATTER GRAVITY WALLS

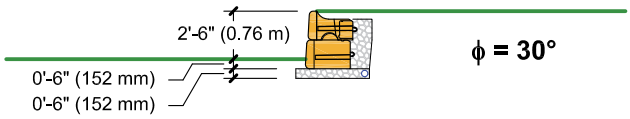
ALLOWABLE STRESS DESIGN

Preliminary Height Guide

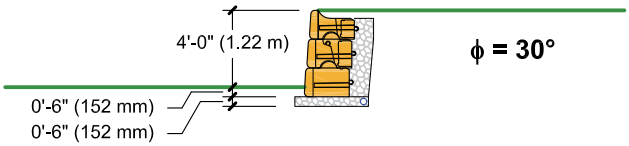
ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

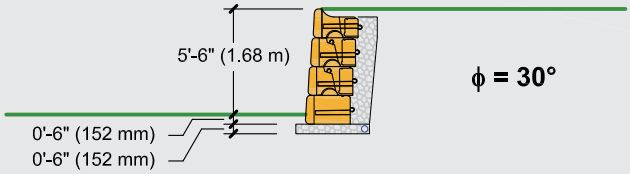
2 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks



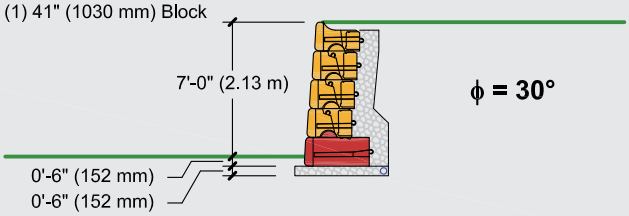
3 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks



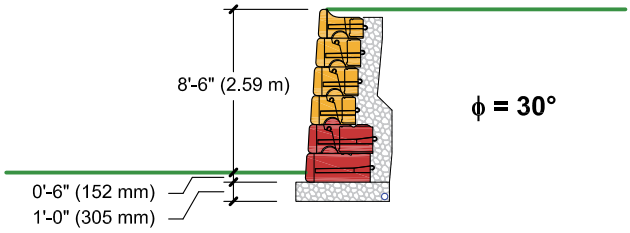
4 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks



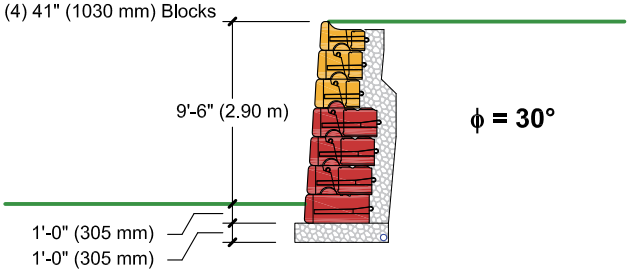
5 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block



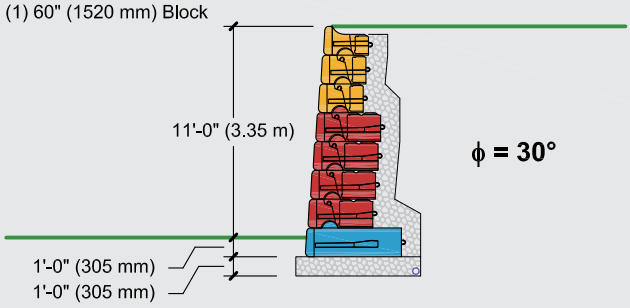
6 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



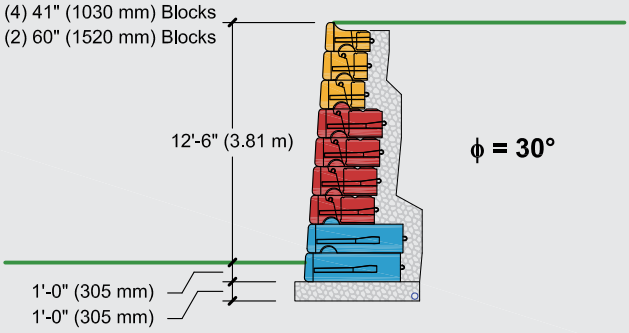
7 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks



8 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



9 BLOCK HIGH SECTION
(3) 28" (710 mm) Blocks
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Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

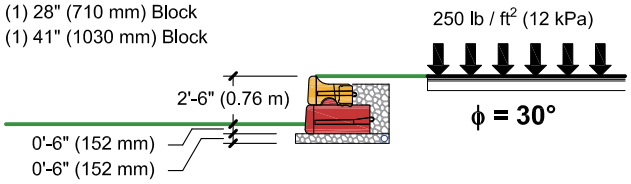
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

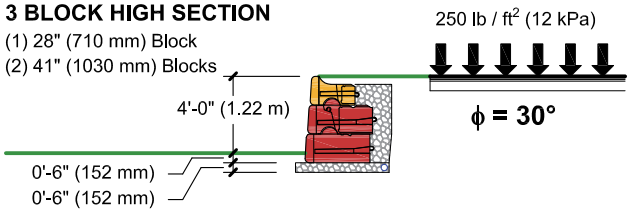
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



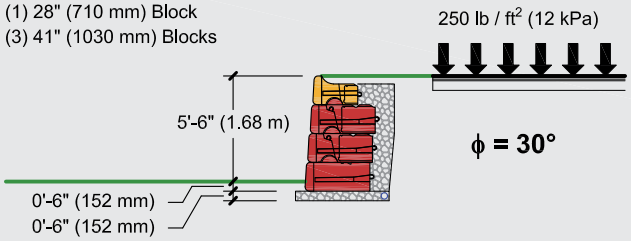
3 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks



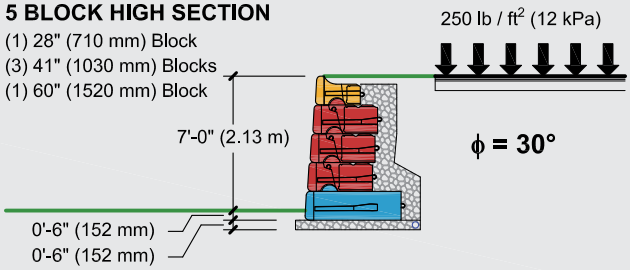
4 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks



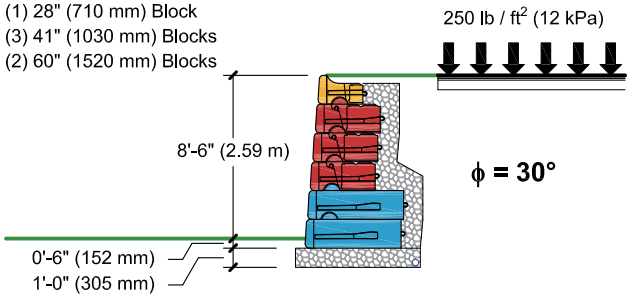
5 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



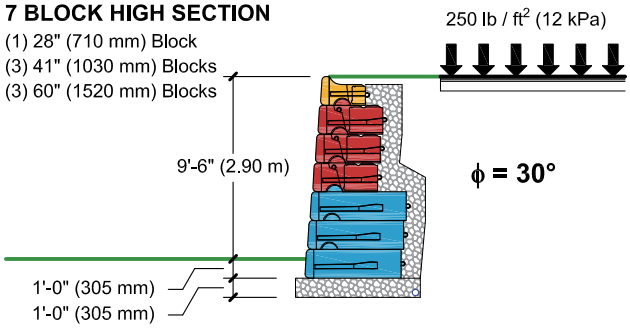
6 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



7 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

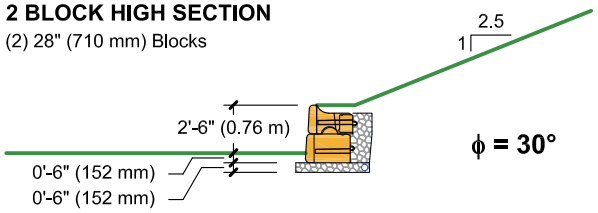
ALLOWABLE STRESS DESIGN

Preliminary Height Guide

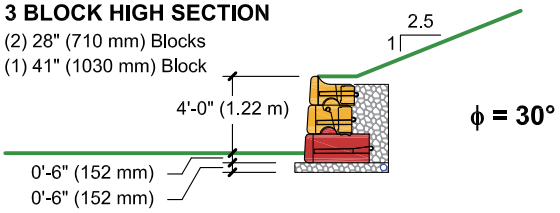
ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

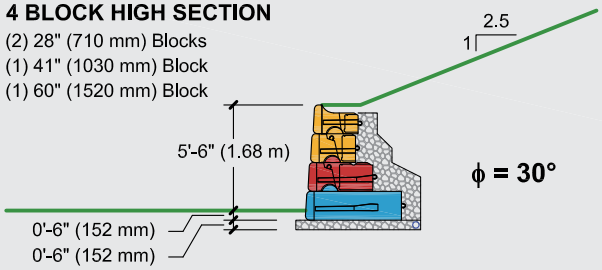
2 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks



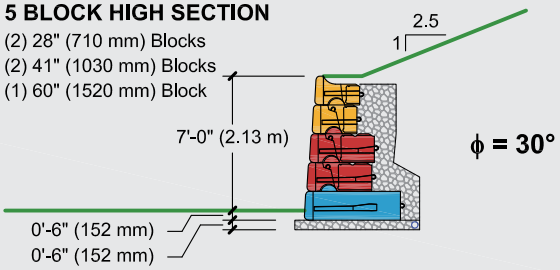
3 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block



4 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 60" (1520 mm) Block



5 BLOCK HIGH SECTION
(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

$\phi = 28°$ | SILTY SAND or CLAYEY SAND	
Standard batter gravity walls	SECTION 3 OF 4
Assumed retained and foundation soils for this Section	SM, SC
Internal angle of friction	$\phi = 28°$
Unit weight	$\gamma = 120$ lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

LOAD CONDITION A | NO LIVE LOAD SURFACE, NO BACK SLOPE, NO TOE SLOPE.....106

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE.....107

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE.....108

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

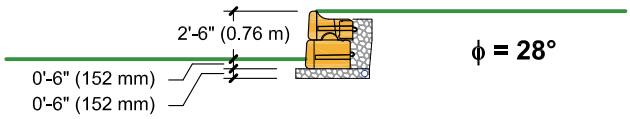
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

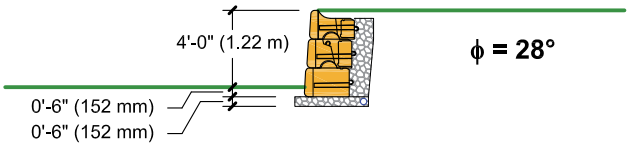
2 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks



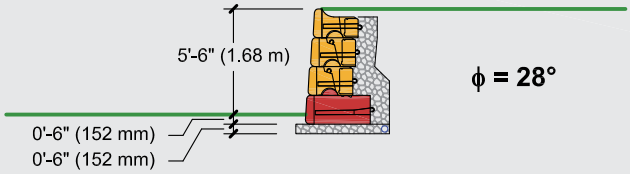
3 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks



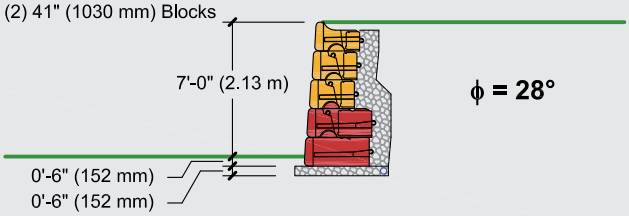
4 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block



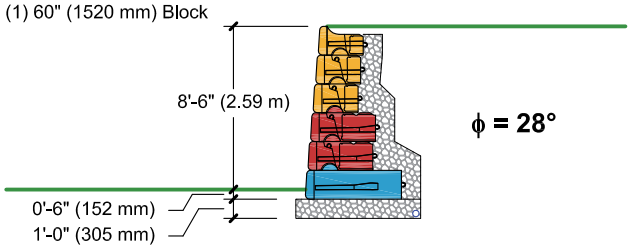
5 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



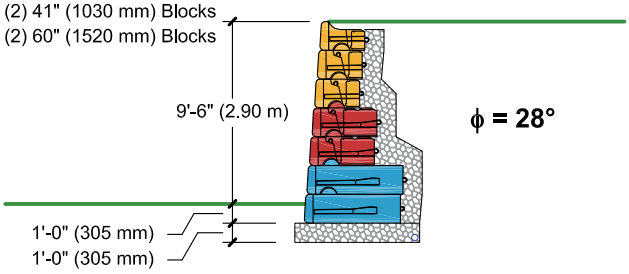
6 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



7 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

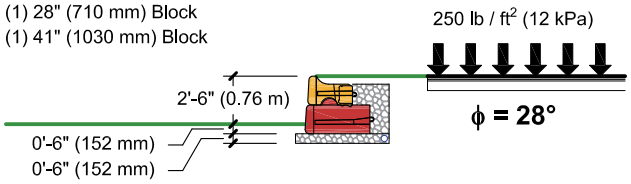
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

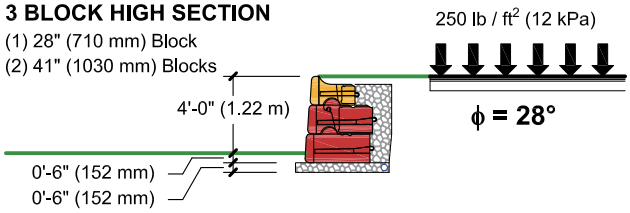
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



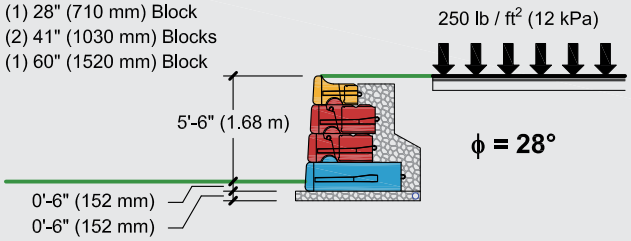
3 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks



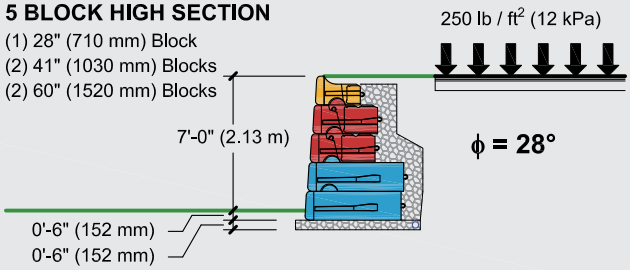
4 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



5 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

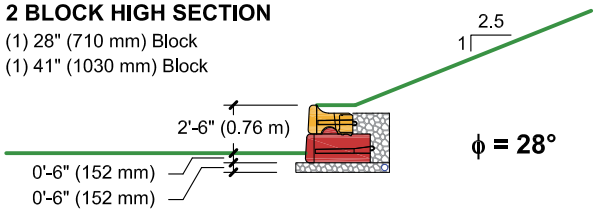
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

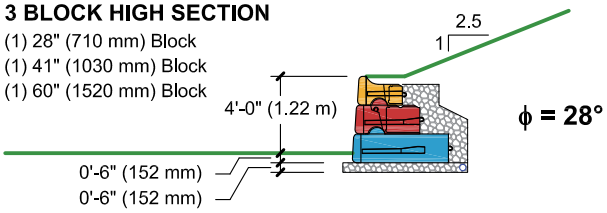
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



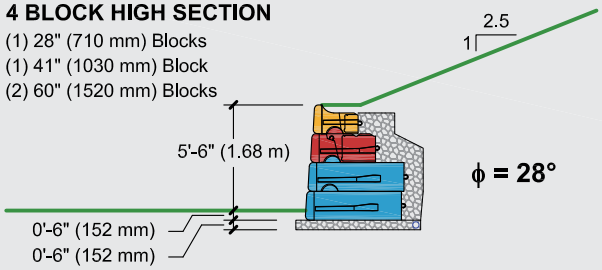
3 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block
(1) 60" (1520 mm) Block



4 BLOCK HIGH SECTION

(1) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACEING SILTY or CLAYEY SAND	
Standard batter gravity walls	SECTION 4 OF 4
Assumed select backfill / retained soil for this Section *	GW, GP
Internal angle of friction	ϕ = 40°
Unit weight	γ = 130 lb / ft^3 (20.4 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)
Assumed native / foundation soil for this Section	SM, SC
Internal angle of friction	ϕ = 26°
Unit weight	γ = 120 lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

* This analysis assumes native material is removed to a 1 on 1 slope or flatter from the back of the proposed retaining wall blocks and replaced with compacted crushed stone.

LOAD CONDITION A | NO LIVE LOAD SURFACE, NO BACK SLOPE, NO TOE SLOPE 110

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE 112

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE 113

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

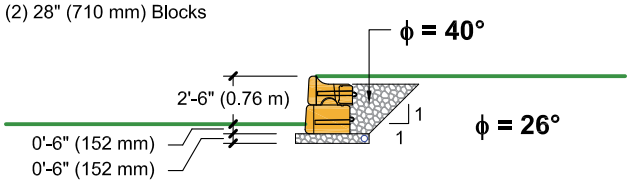
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

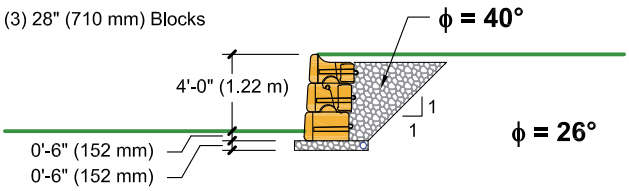
2 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks



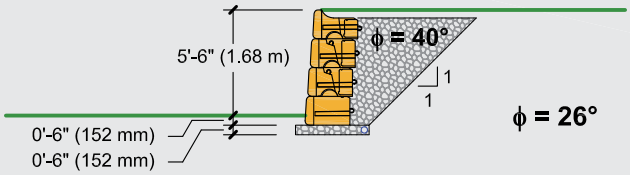
3 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks



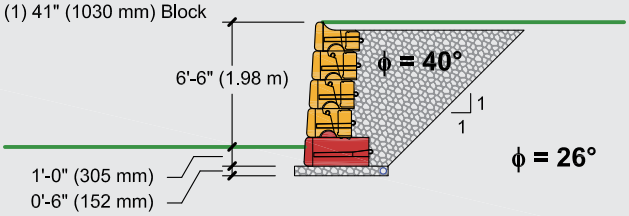
4 BLOCK HIGH SECTION

(4) 28" (710 mm) Blocks



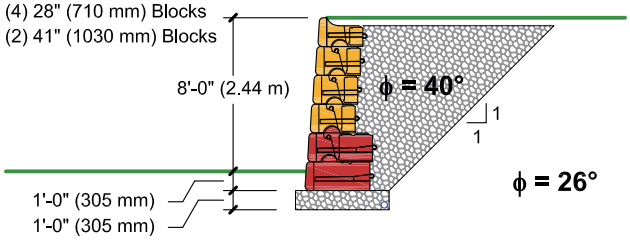
5 BLOCK HIGH SECTION

(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block



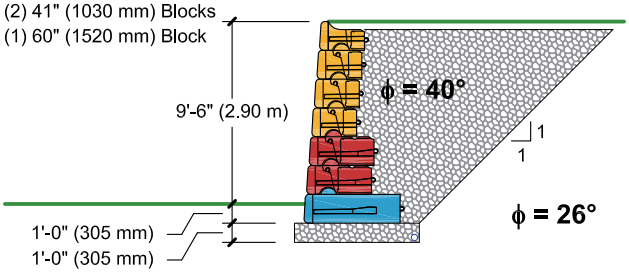
6 BLOCK HIGH SECTION

(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



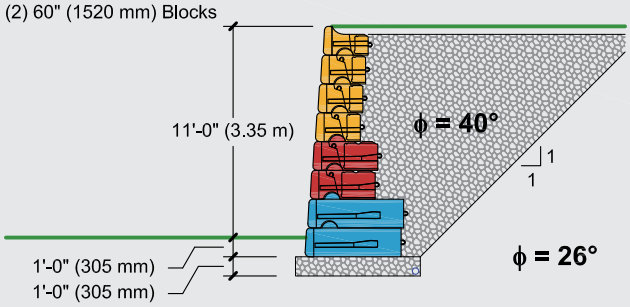
7 BLOCK HIGH SECTION

(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



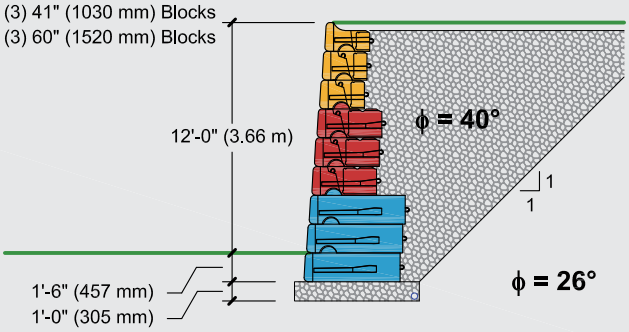
8 BLOCK HIGH SECTION

(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



9 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

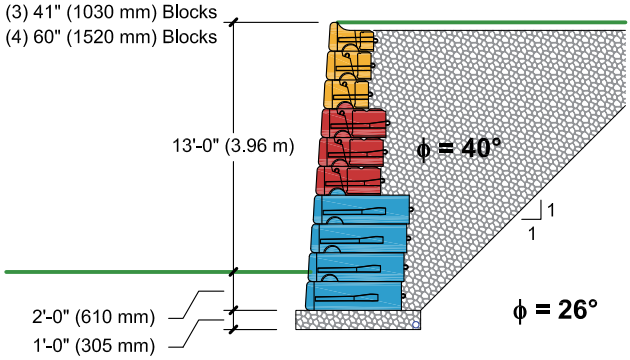
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

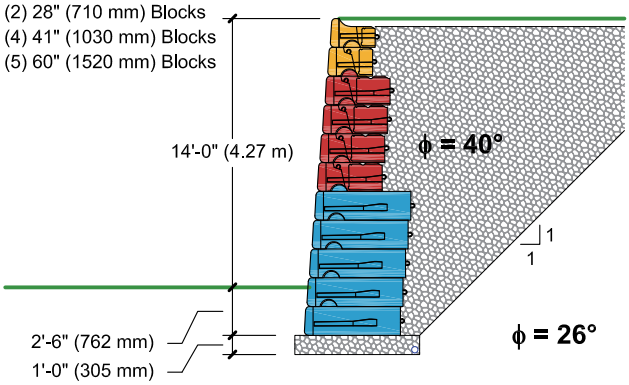
10 BLOCK HIGH SECTION

(3) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks
(4) 60" (1520 mm) Blocks



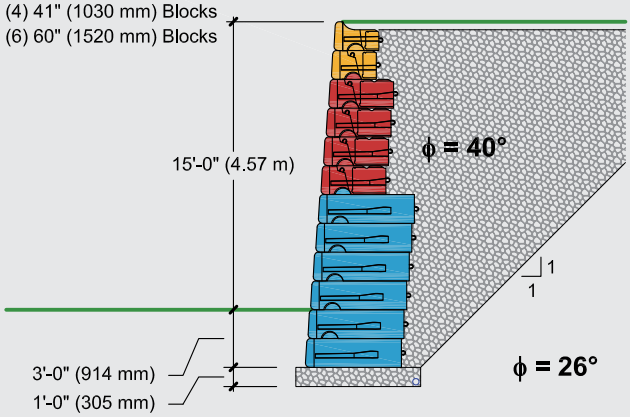
11 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(5) 60" (1520 mm) Blocks



12 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(4) 41" (1030 mm) Blocks
(6) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

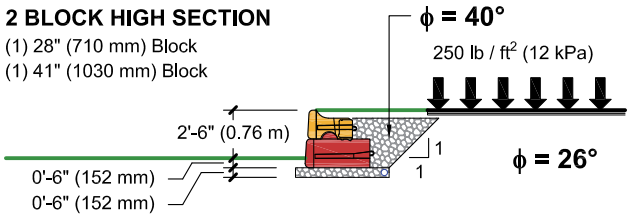
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

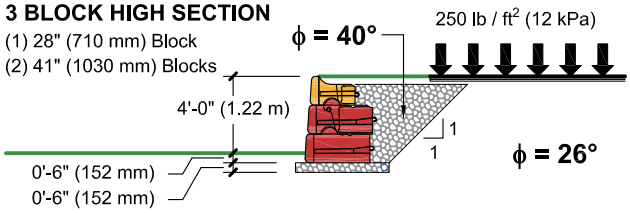
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



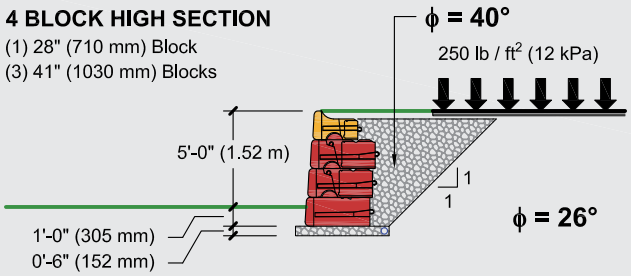
3 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks



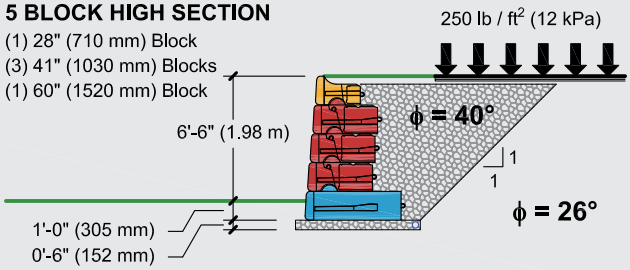
4 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks



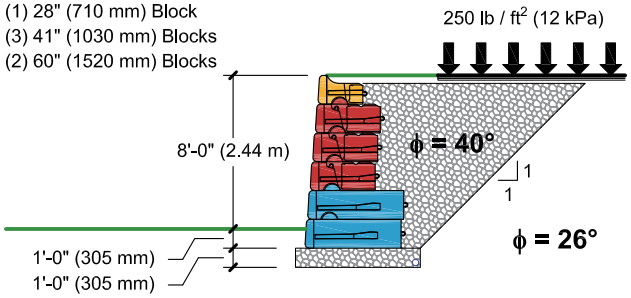
5 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



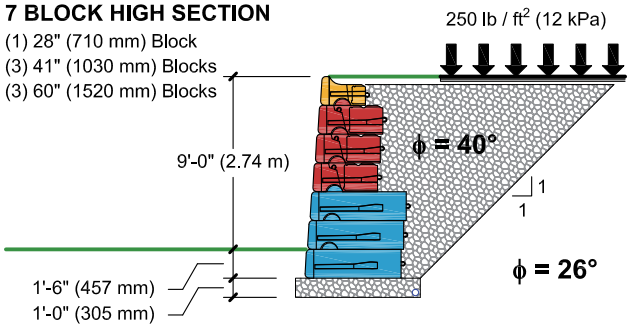
6 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



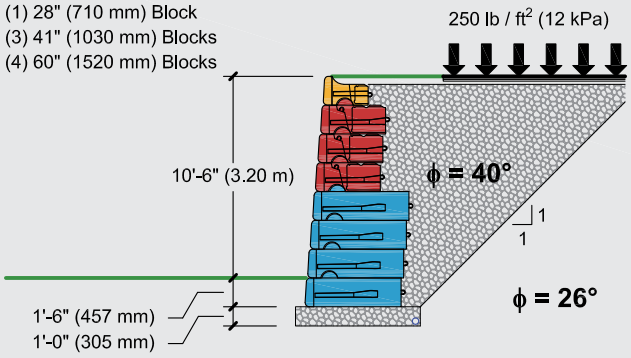
7 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks



8 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(4) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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STANDARD BATTER GRAVITY WALLS

ALLOWABLE STRESS DESIGN

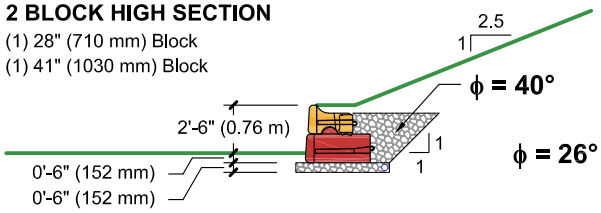
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

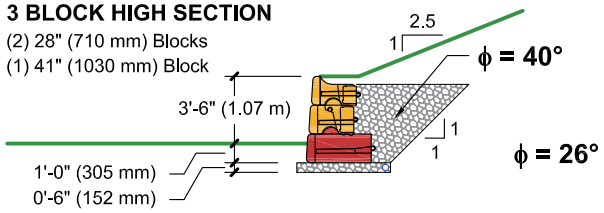
2 BLOCK HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block



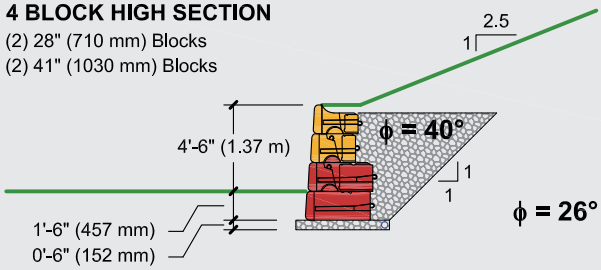
3 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block



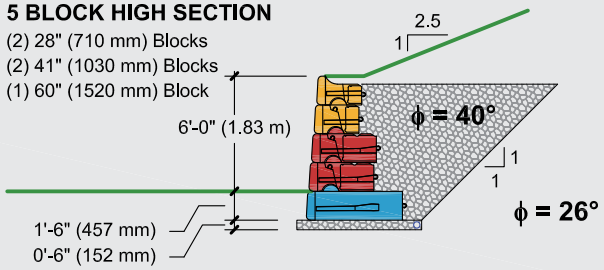
4 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks



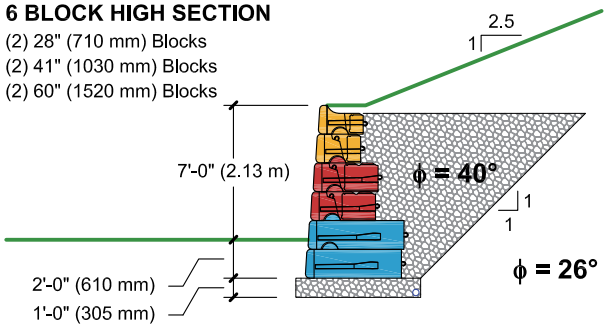
5 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block



6 BLOCK HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 60" (1520 mm) Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

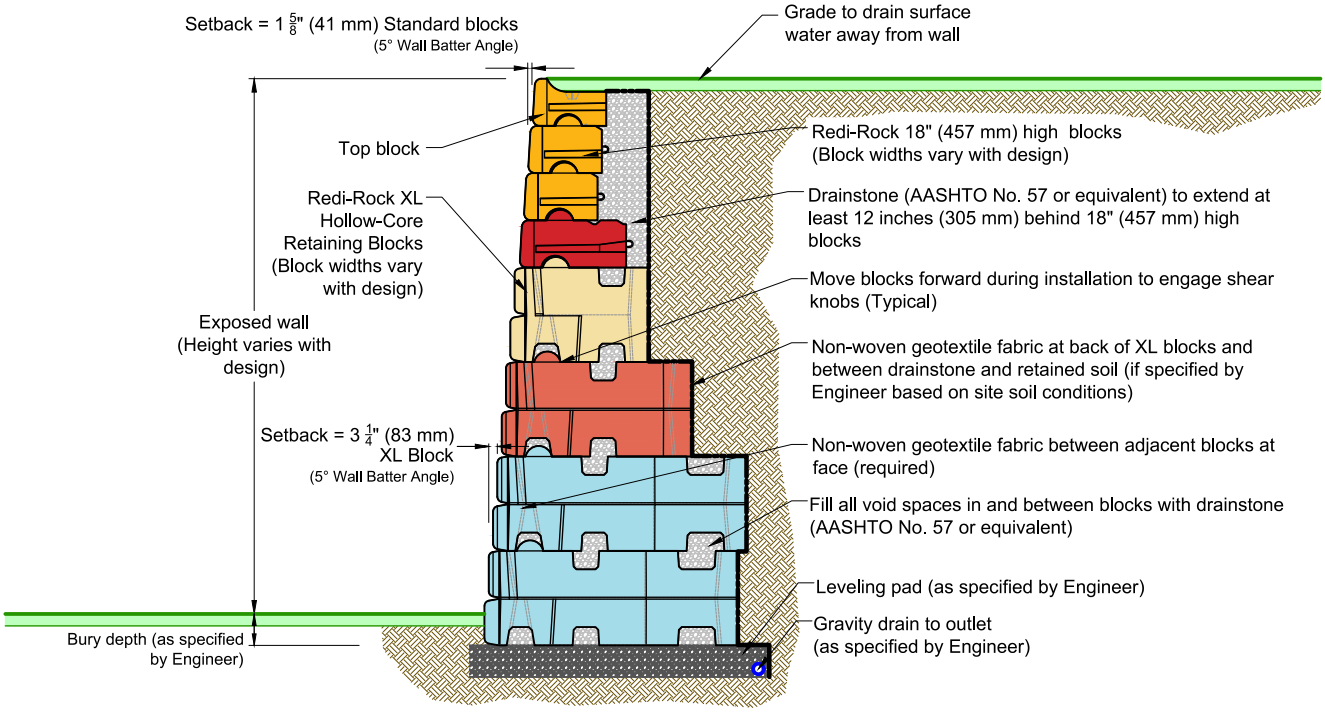
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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

Preliminary Height Guide

This preliminary height guide has been prepared showing Redi-Rock walls in a variety of assumed conditions. It is intended to give the specifier an idea of what block types are required and what heights are achievable with Redi-Rock in different applications. A combination of 52" (1320 mm), 72" (1830 mm), and 96" (2440 mm) XL blocks combined with 18" (457 mm) high Redi-Rock 28" (710 mm), 41" (1030 mm), and 60" (1520 mm) wide blocks are used to provide the most efficient cross-section available in the different conditions.

Several assumptions have been made in preparation of the guide. They are listed in the notes below. If these assumptions do not match the wall section under consideration, block selections and achievable heights may vary from the sections shown in this guide. All wall sections for construction must be designed by a registered Professional Engineer using the actual conditions of the site.



Notes:

This preliminary guide has been prepared for four different soil types, three different load conditions, and with six different width blocks to give an indication of the performance of Redi-Rock walls. **Redi-Rock walls are not limited to these conditions.** Specific wall sections can be designed for different soil and loading conditions.

Unit weight of soil is assumed to be 120 lb/ft^3 (18.85 kN/m^3) or 130 lb/ft^3 (20.4 kN/m^3) as noted for each section of this preliminary guide.

Minimum factors of safety are 1.5 for sliding, 1.5 for overturning, 2.0 for bearing capacity, and 1.3 for global stability. Other factors of safety will result in changes from the wall heights and block selections shown in this guide.

No seismic or hydrostatic loads were included in this preliminary guide.

Ledgestone texture blocks were used to prepare this preliminary guide. Wall heights and block selections for other textures and blocks may vary.

Independent barrier design at the top of the wall must be performed for site specific conditions. Barrier requirements may result in changes to available wall heights and block selections from those shown in this guide.

Wall stability needs to be verified in the final design for site-specific conditions.

The wall design shall address both internal and external drainage, as well as global stability, and shall be evaluated by the Professional Engineer who is responsible for the final wall design.

Backfill material should be compacted to 90% of its maximum dry density (ASTM D1557).

All Redi-Rock International Wall System Specifications and installation recommendations should be followed.

Construction oversight should be provided on all walls to ensure proper construction according to your detailed design drawings.

Not tall enough? Greater wall heights are achievable with select backfill, increased wall batter, and/or mechanically stabilized earth Redi-Rock walls.

Redi-Rock products are manufactured by independently owned, licensed manufacturers. Product offerings will vary between manufacturers. Contact your local manufacturer to determine what products are available for your job.

These block selection and height guides were prepared by Redi-Rock International for estimating and conceptual design purposes only. All information is believed to be true and accurate; however, Redi-Rock International assumes no responsibility for the use of these preliminary guides for actual construction. Determination of the suitability of each preliminary guide is the sole responsibility of the user. **Final designs for construction purposes must be performed by a registered Professional Engineer, using the actual conditions of the proposed site.**

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 34°	DENSE WELL-GRADED SAND or SAND AND GRAVEL
XL hollow-core retaining block gravity walls	SECTION 1 OF 4
Assumed retained and foundation soils for this Section	SW, GW
Internal angle of friction	ϕ = 34°
Unit weight	γ = 130 lb / ft^3 (20.4 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

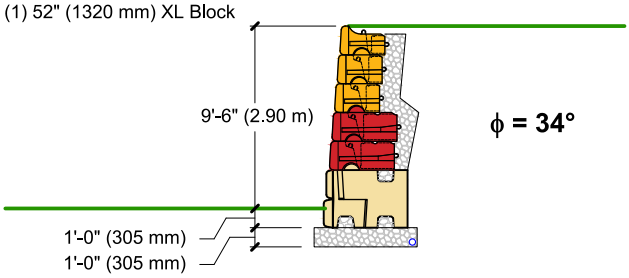
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

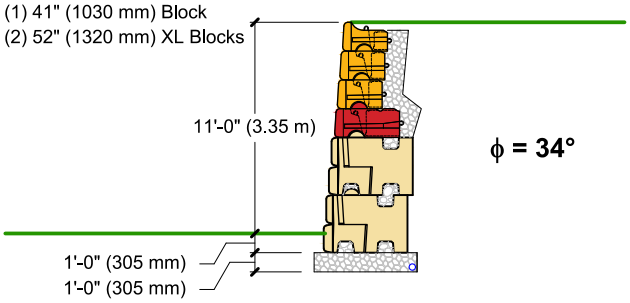
10.5-FOOT (3.20 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



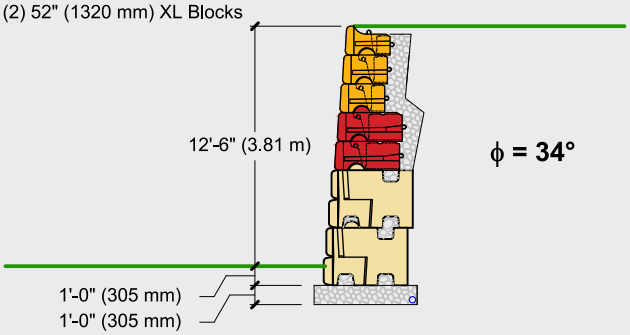
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks



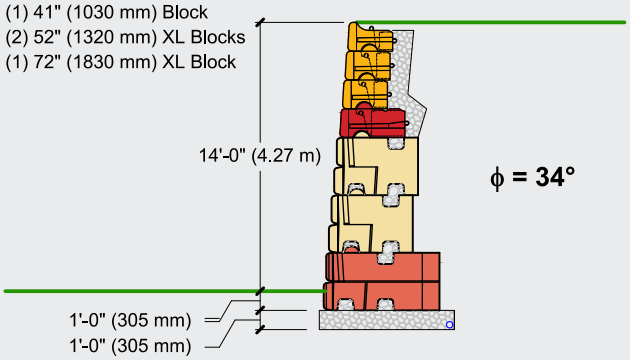
13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks



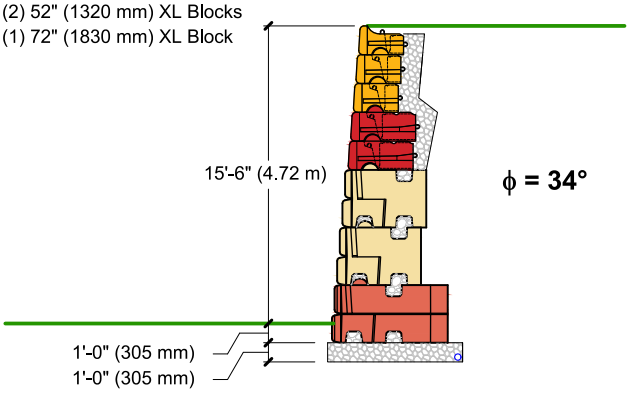
15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block



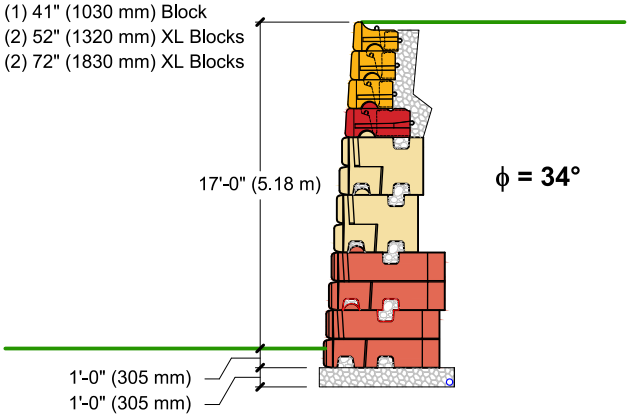
16.5-FOOT (5.03 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block

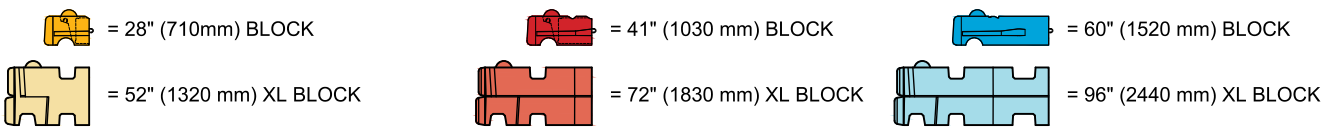


18.0-FOOT (5.49 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(2) 72" (1830 mm) XL Blocks



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

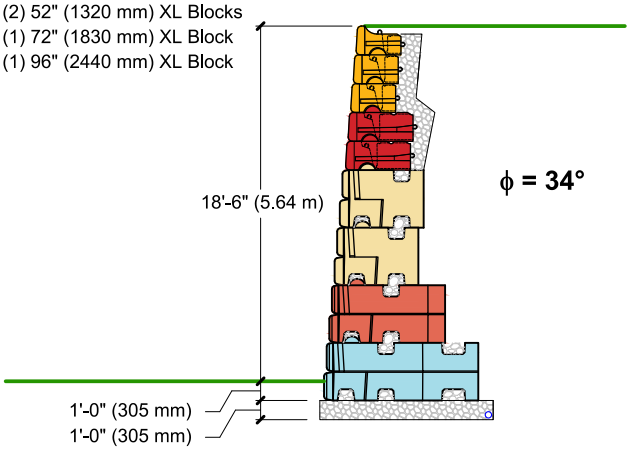
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

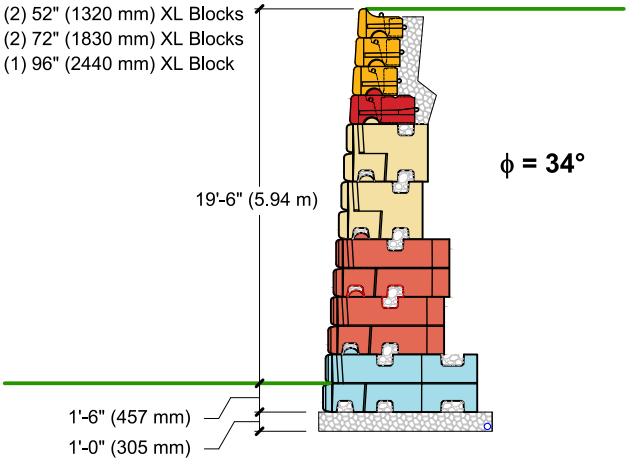
19.5-FOOT (5.94 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



21.0-FOOT (6.40 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(2) 72" (1830 mm) XL Blocks
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

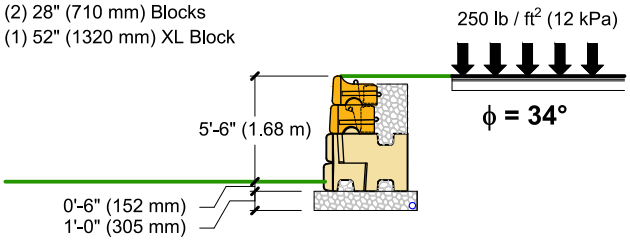
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

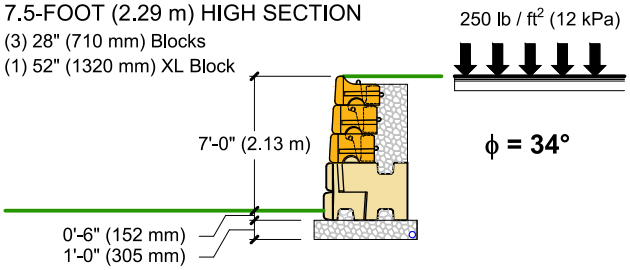
6.0-FOOT (1.83 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



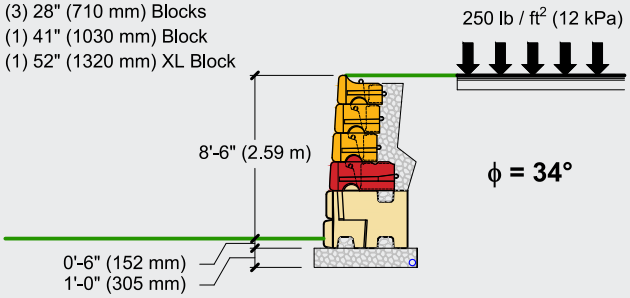
7.5-FOOT (2.29 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



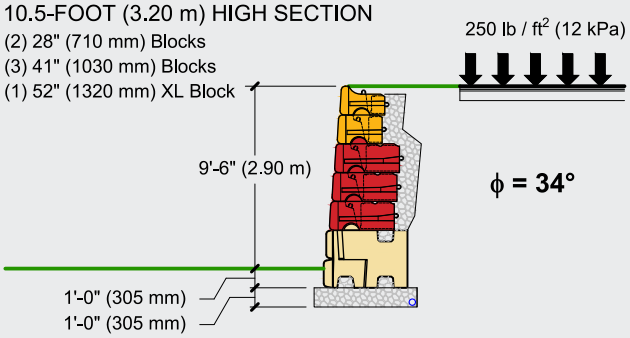
9.0-FOOT (2.74 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block



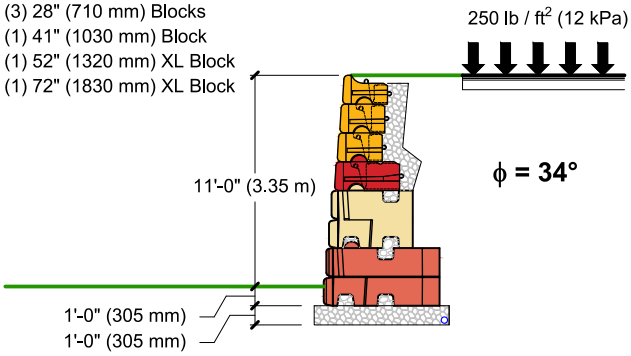
10.5-FOOT (3.20 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(3) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



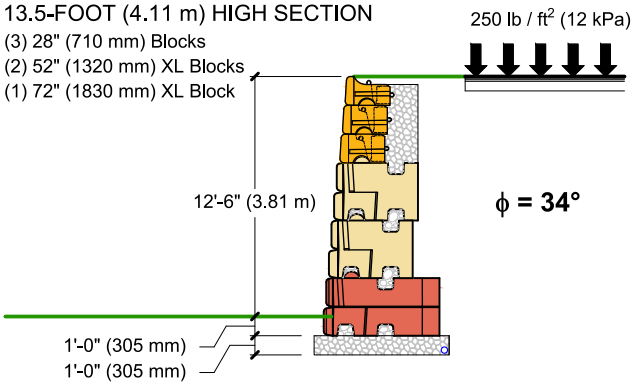
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

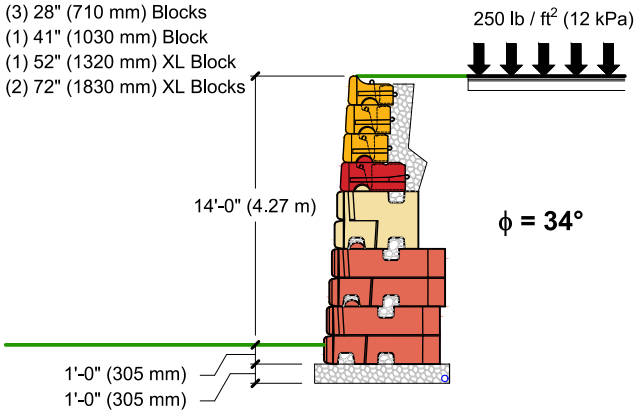
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

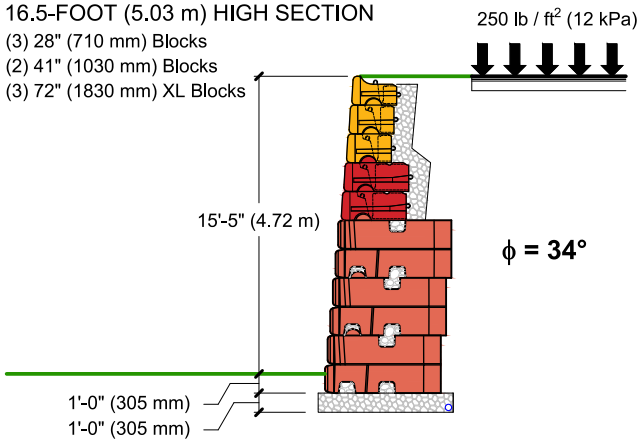
15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(2) 72" (1830 mm) XL Blocks



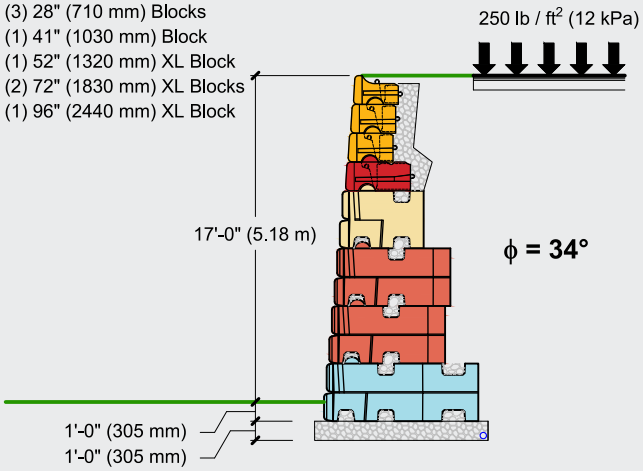
16.5-FOOT (5.03 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(3) 72" (1830 mm) XL Blocks



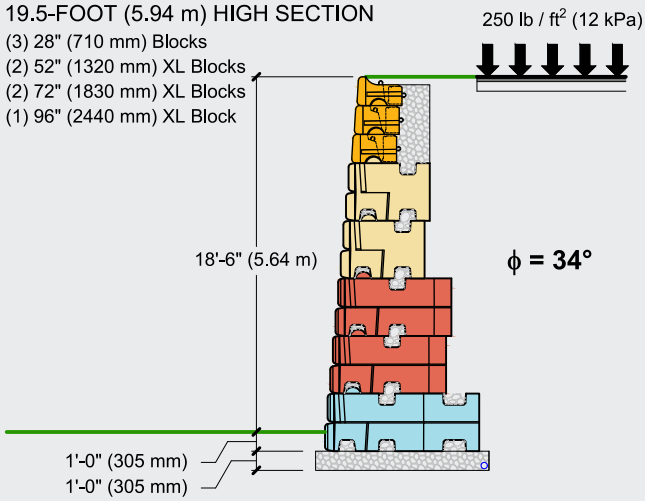
18.0-FOOT (5.49 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(2) 72" (1830 mm) XL Blocks
(1) 96" (2440 mm) XL Block



19.5-FOOT (5.94 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(2) 72" (1830 mm) XL Blocks
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK
= 41" (1030 mm) BLOCK
= 60" (1520 mm) BLOCK
= 52" (1320 mm) XL BLOCK
= 72" (1830 mm) XL BLOCK
= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

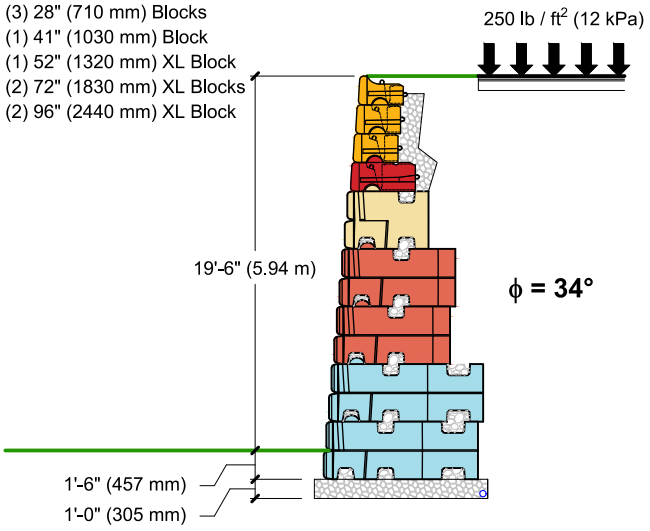
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

21.0-FOOT (6.40 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(2) 72" (1830 mm) XL Blocks
(2) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK
= 41" (1030 mm) BLOCK
= 60" (1520 mm) BLOCK
= 52" (1320 mm) XL BLOCK
= 72" (1830 mm) XL BLOCK
= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

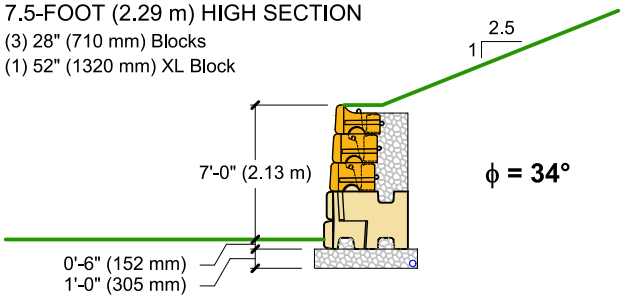
Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

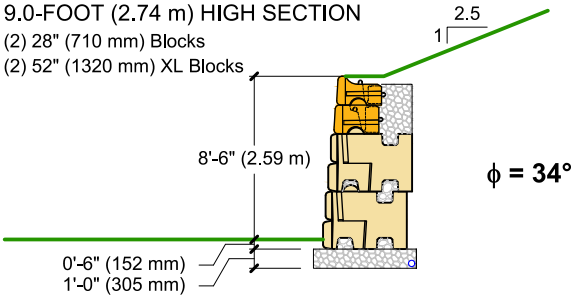
7.5-FOOT (2.29 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



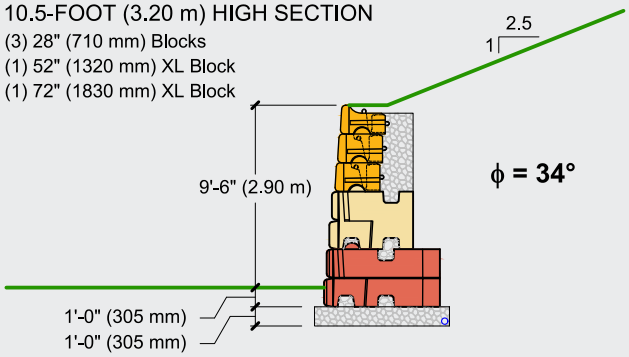
9.0-FOOT (2.74 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks



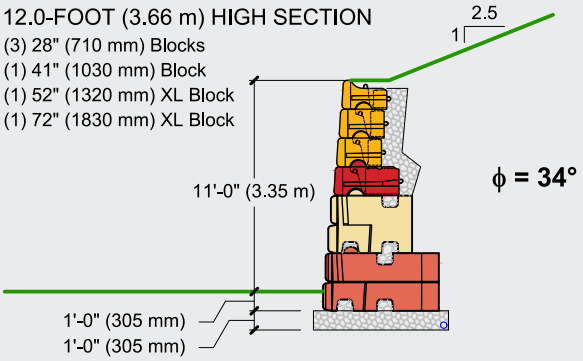
10.5-FOOT (3.20 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



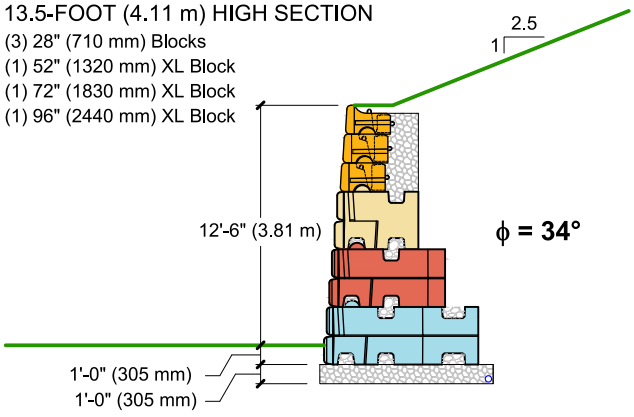
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



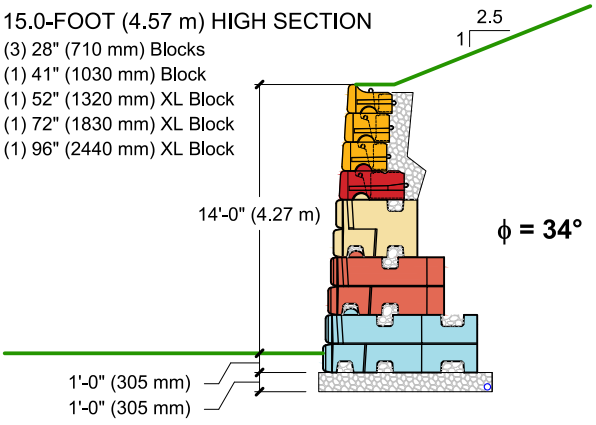
13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block

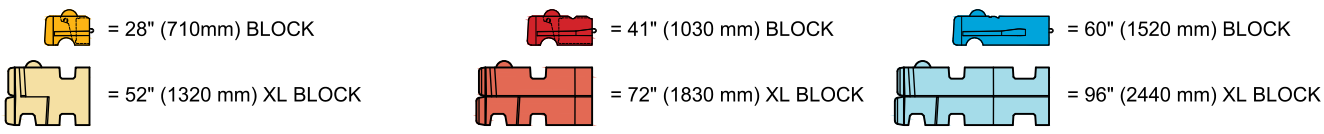


15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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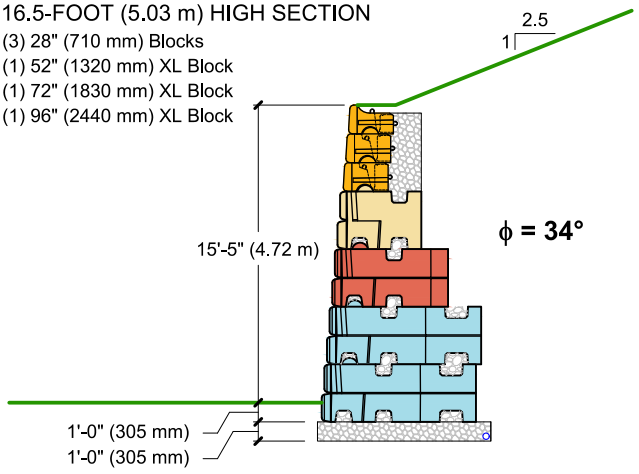
XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 34° | DENSE WELL-GRADED SAND or SAND AND GRAVEL

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

16.5-FOOT (5.03 m) HIGH SECTION
(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK
= 41" (1030 mm) BLOCK
= 60" (1520 mm) BLOCK
= 52" (1320 mm) XL BLOCK
= 72" (1830 mm) XL BLOCK
= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND	
XL hollow-core retaining block gravity walls	SECTION 2 OF 4
Assumed retained and foundation soils for this Section	SW, SP, SM
Internal angle of friction	ϕ = 30°
Unit weight	γ = 120 lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

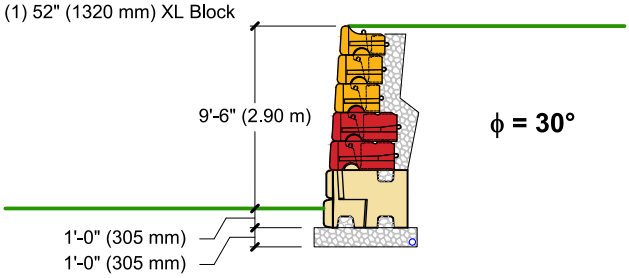
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

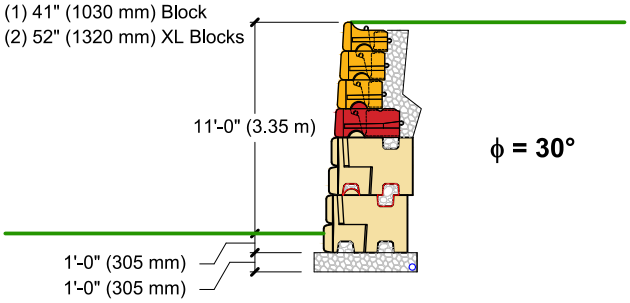
10.5-FOOT (3.20 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



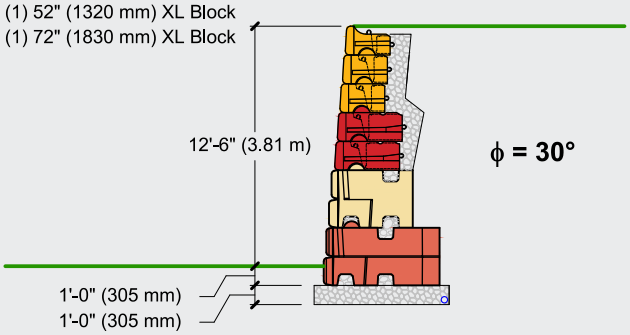
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks



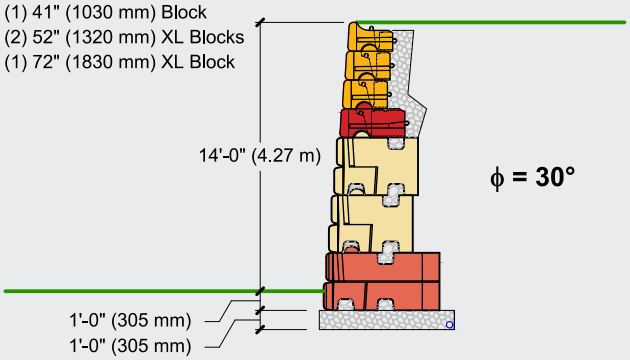
13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



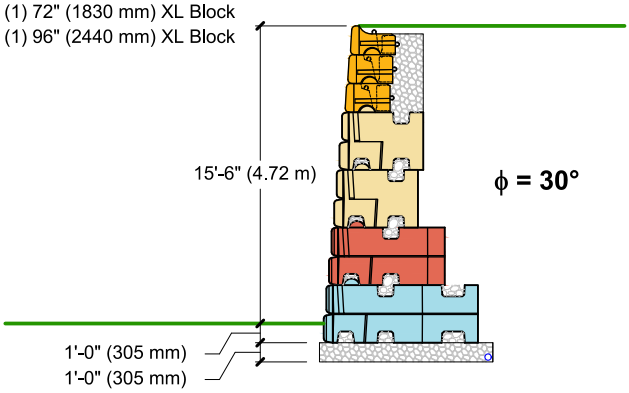
15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block



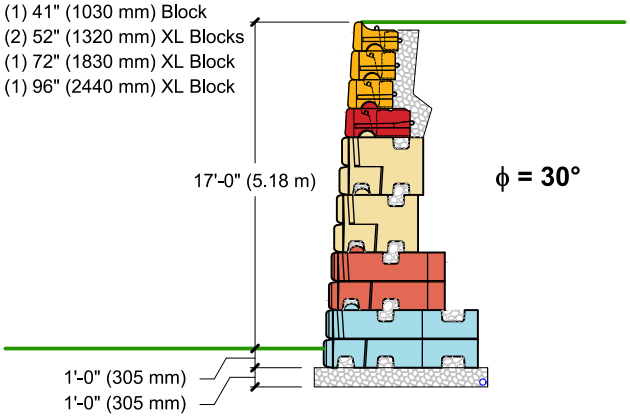
16.5-FOOT (5.03 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block

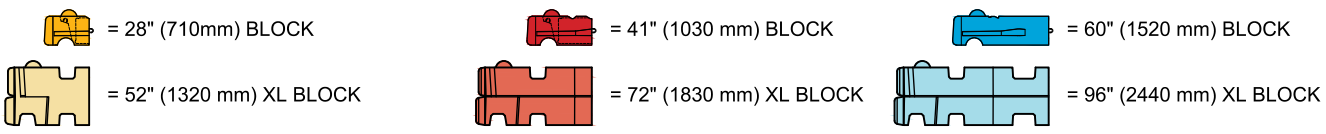


18.0-FOOT (5.49 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

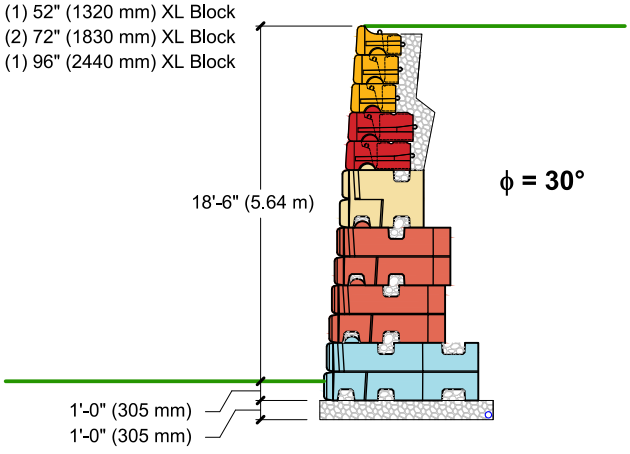
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

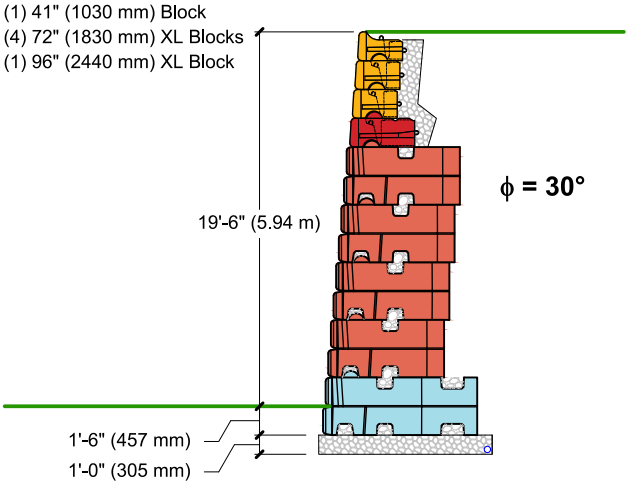
19.5-FOOT (5.94 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block
(2) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



21.0-FOOT (6.40 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(4) 72" (1830 mm) XL Blocks
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

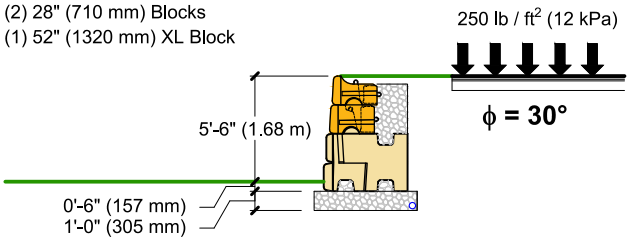
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

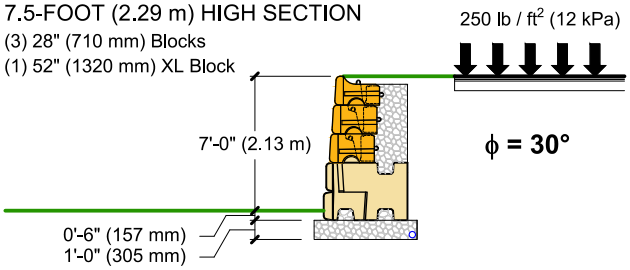
6.0-FOOT (1.83 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



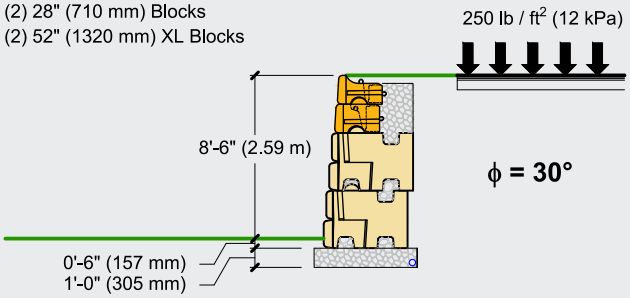
7.5-FOOT (2.29 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



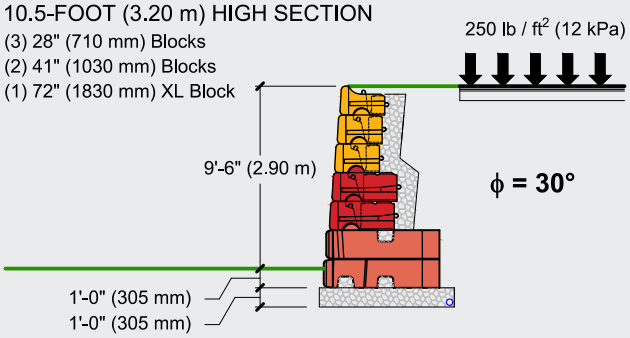
9.0-FOOT (2.74 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks



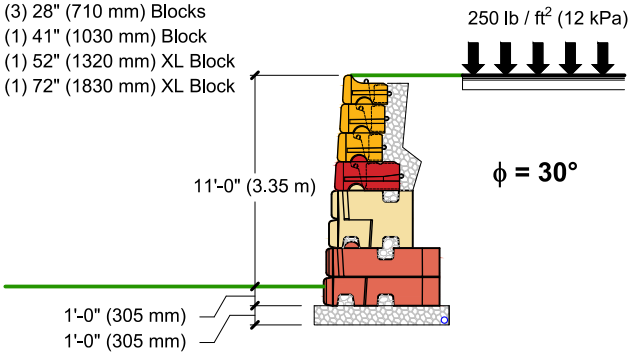
10.5-FOOT (3.20 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 72" (1830 mm) XL Block



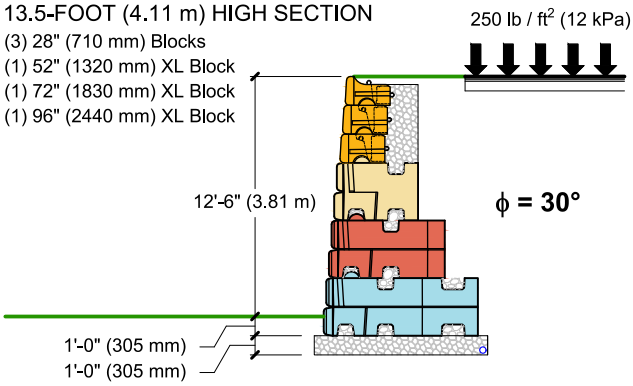
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

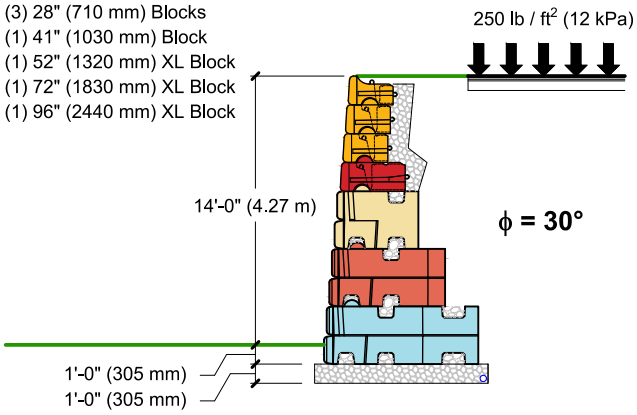
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

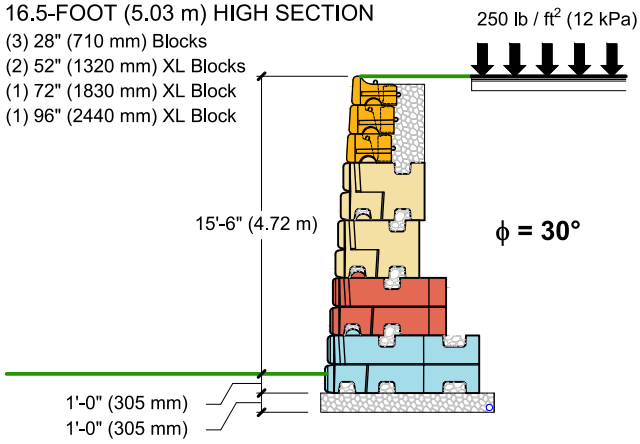
15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



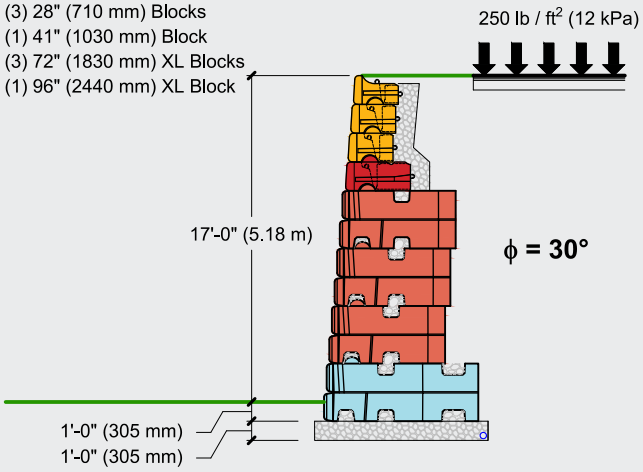
16.5-FOOT (5.03 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



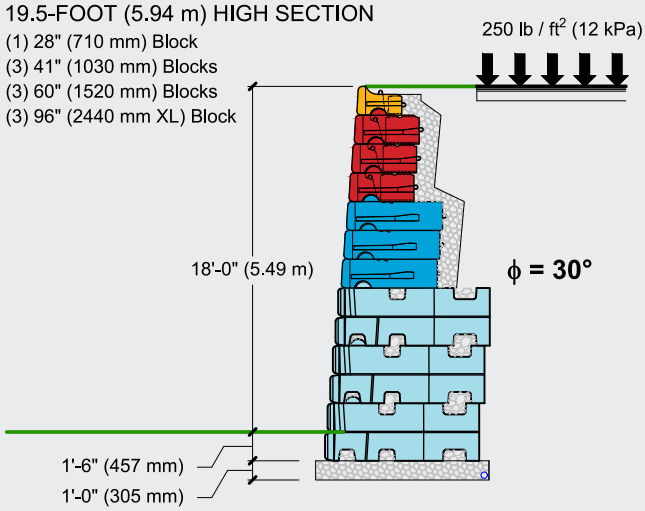
18.0-FOOT (5.49 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(3) 72" (1830 mm) XL Blocks
(1) 96" (2440 mm) XL Block



19.5-FOOT (5.94 m) HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(3) 60" (1520 mm) Blocks
(3) 96" (2440 mm XL) Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

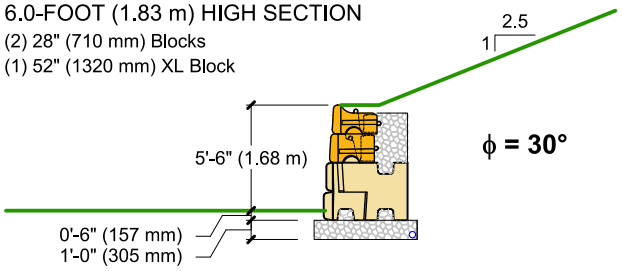
Preliminary Height Guide

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

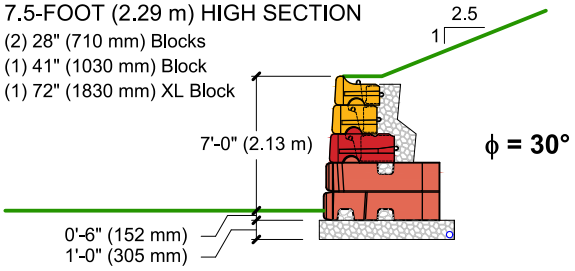
6.0-FOOT (1.83 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



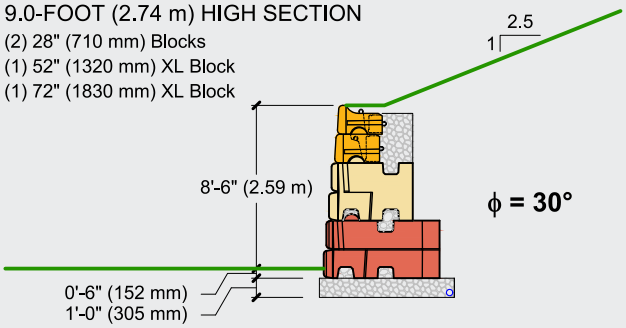
7.5-FOOT (2.29 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block



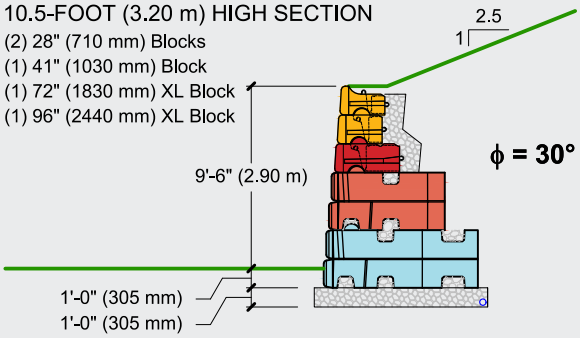
9.0-FOOT (2.74 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



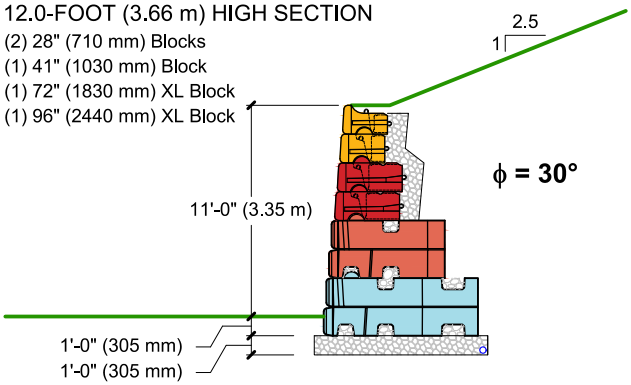
10.5-FOOT (3.20 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



12.0-FOOT (3.66 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND	
XL hollow-core retaining block gravity walls	SECTION 3 OF 4
Assumed retained and foundation soils for this Section	SM, SC
Internal angle of friction	ϕ = 28°
Unit weight	γ = 120 lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

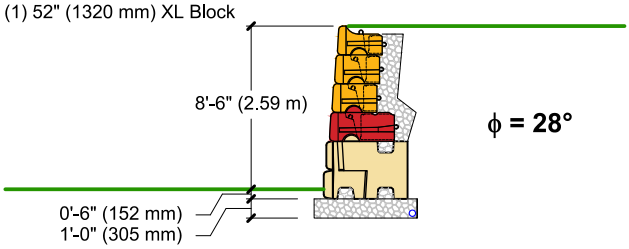
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

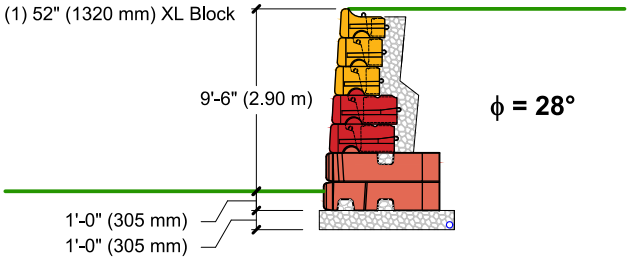
9.0-FOOT (2.74 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block



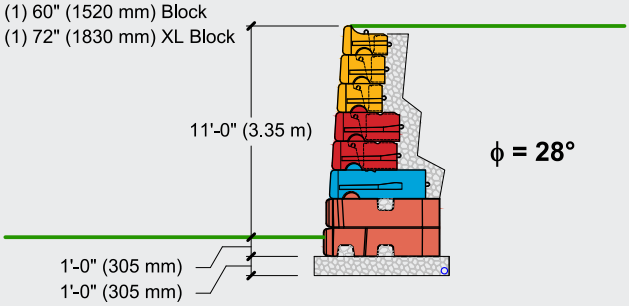
10.5-FOOT (3.20 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



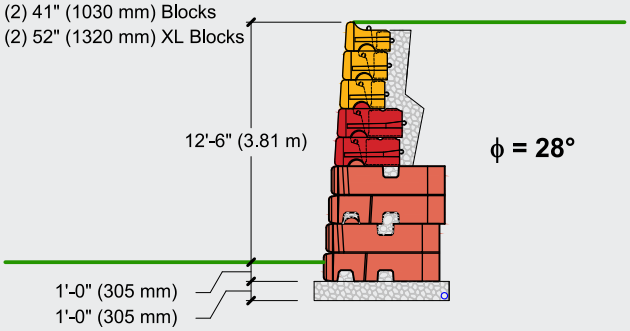
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block
(1) 72" (1830 mm) XL Block



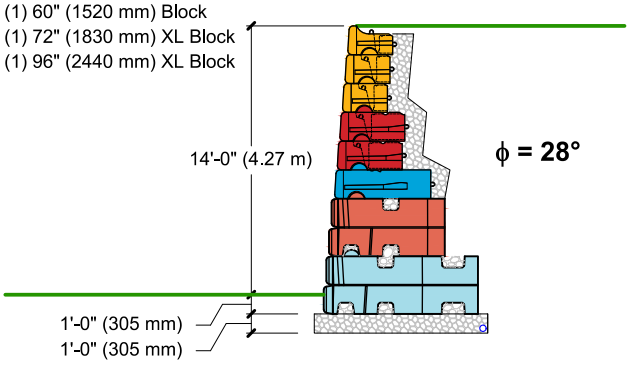
13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks



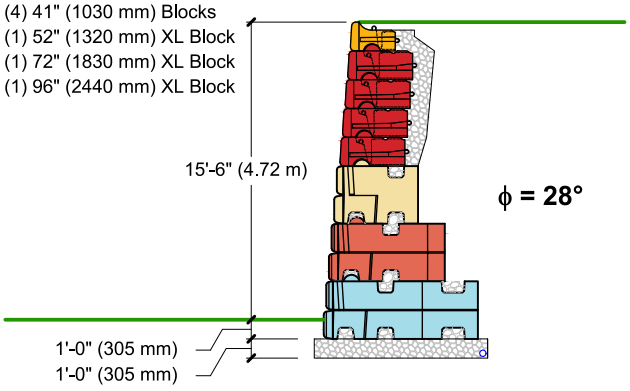
15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 60" (1520 mm) Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block

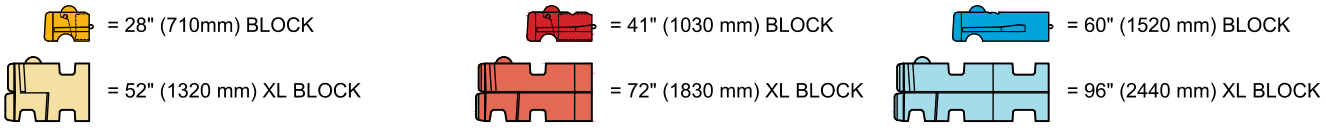


16.5-FOOT (5.03 m) HIGH SECTION

(1) 28" (710 mm) Block
(4) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

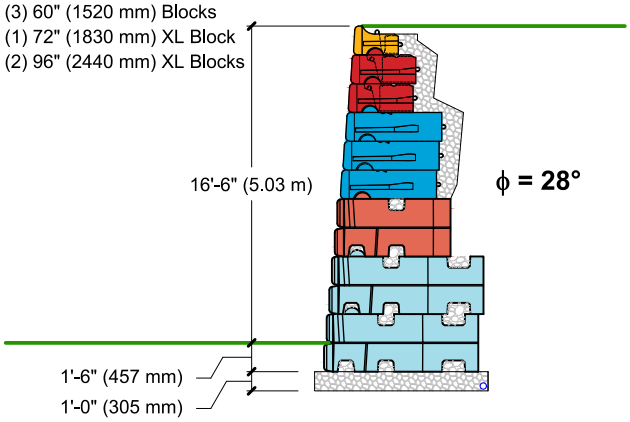
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

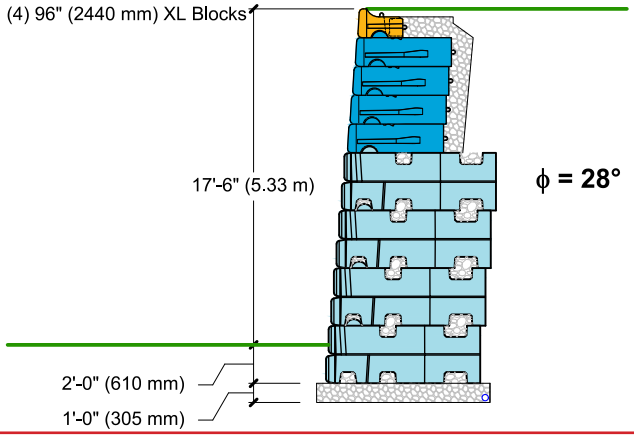
18.0-FOOT (5.49 m) HIGH SECTION

(1) 28" (710 mm) Blocks
(2) 41" (1030 mm) Block
(3) 60" (1520 mm) Blocks
(1) 72" (1830 mm) XL Block
(2) 96" (2440 mm) XL Blocks



19.5-FOOT (5.94 m) HIGH SECTION

(1) 28" (710 mm) Blocks
(4) 60" (1520 mm) Blocks
(4) 96" (2440 mm) XL Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

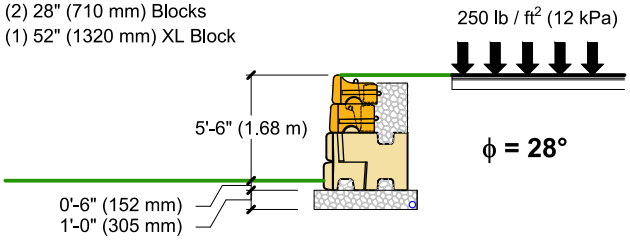
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

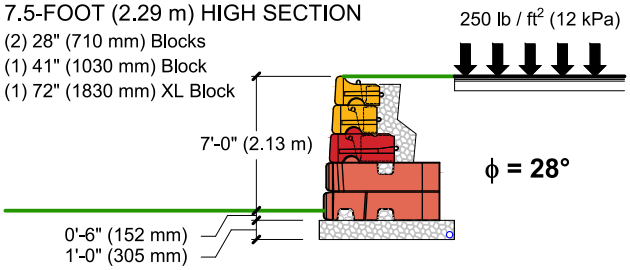
6.0-FOOT (1.83 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 52" (1320 mm) XL Block



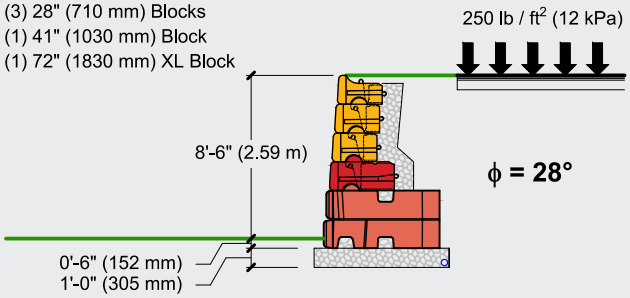
7.5-FOOT (2.29 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block



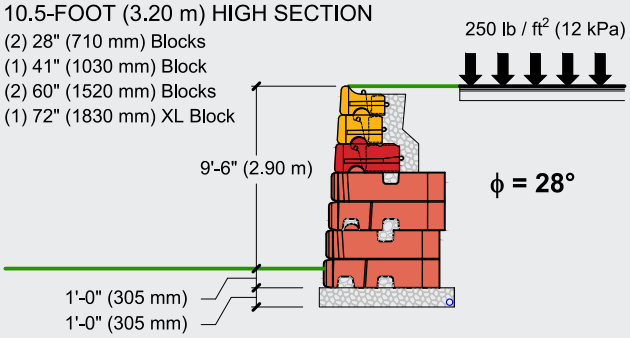
9.0-FOOT (2.74 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block



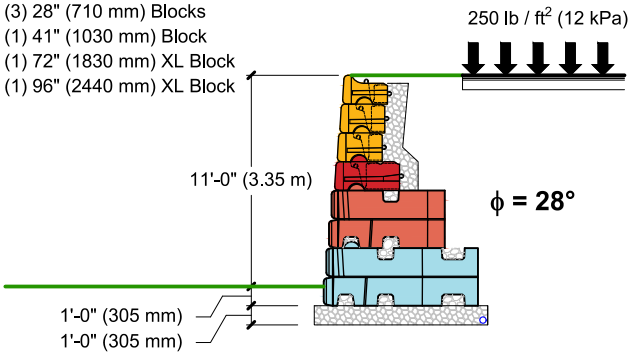
10.5-FOOT (3.20 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 60" (1520 mm) Blocks
(1) 72" (1830 mm) XL Block



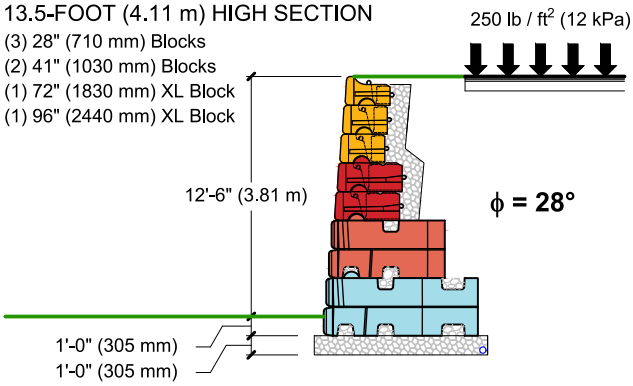
12.0-FOOT (3.66 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block

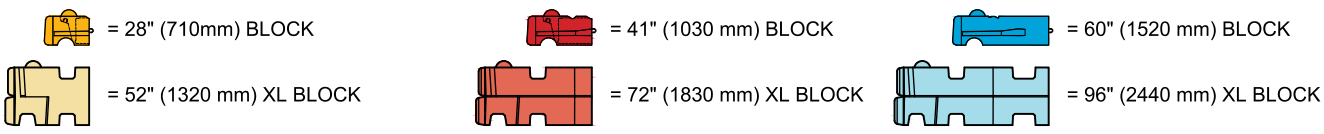


13.5-FOOT (4.11 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

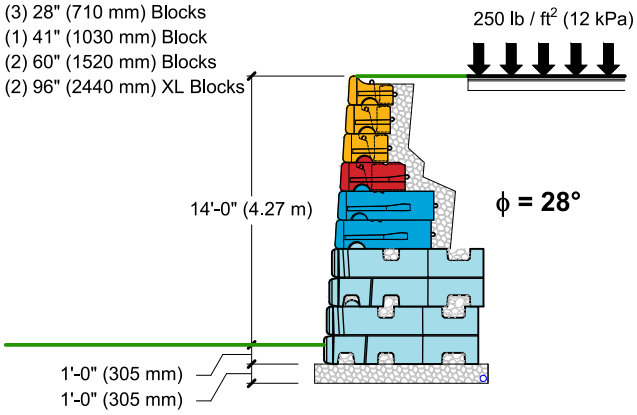
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

15.0-FOOT (4.57 m) HIGH SECTION

(3) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 60" (1520 mm) Blocks
(2) 96" (2440 mm) XL Blocks



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

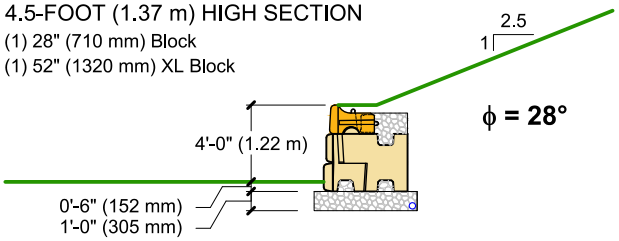
Preliminary Height Guide

ϕ = 28° | SILTY SAND or CLAYEY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

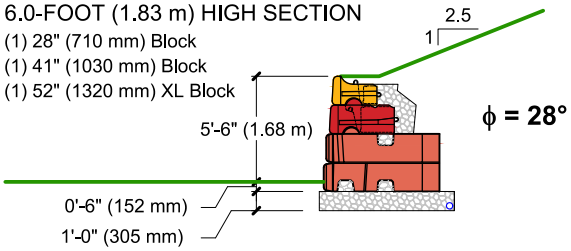
4.5-FOOT (1.37 m) HIGH SECTION

(1) 28" (710 mm) Block
(1) 52" (1320 mm) XL Block



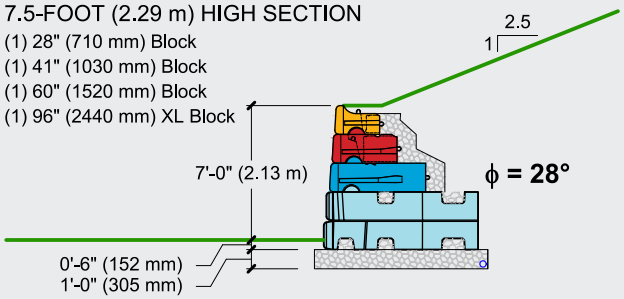
6.0-FOOT (1.83 m) HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block



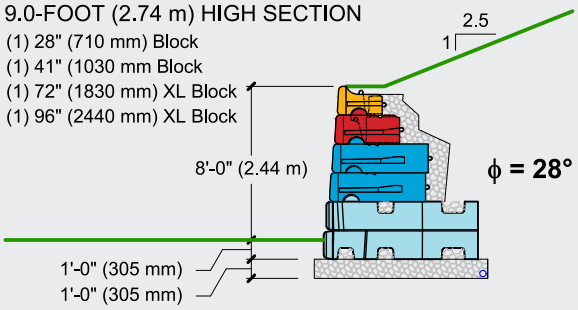
7.5-FOOT (2.29 m) HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block
(1) 60" (1520 mm) Block
(1) 96" (2440 mm) XL Block

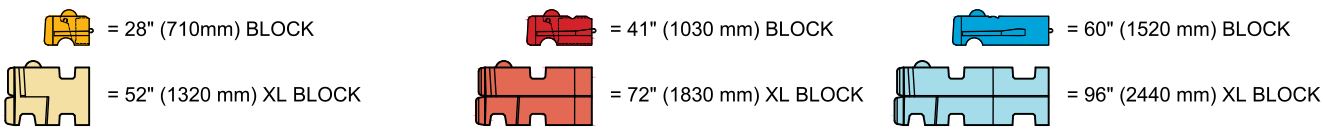


9.0-FOOT (2.74 m) HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm Block
(1) 72" (1830 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND	
XL hollow-core retaining block gravity walls	SECTION 4 OF 4
Assumed select backfill / retained soil for this Section *	GW, GP
Internal angle of friction	ϕ = 40°
Unit weight	γ = 130 lb / ft^3 (20.4 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)
Assumed native / foundation soil for this Section	SM, SC
Internal angle of friction	ϕ = 26°
Unit weight	γ = 120 lb / ft^3 (18.8 kN / m^3)
Cohesion	c = 0 lb / ft^2 (0 kPa)

* This analysis assumes native material is removed to a 1 on 1 slope or flatter from the back of the proposed retaining wall blocks and replaced with compacted crushed stone.

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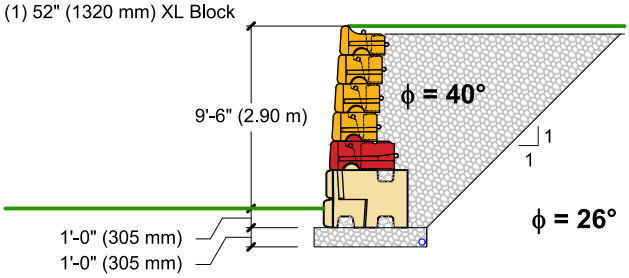
XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

Preliminary Height Guide

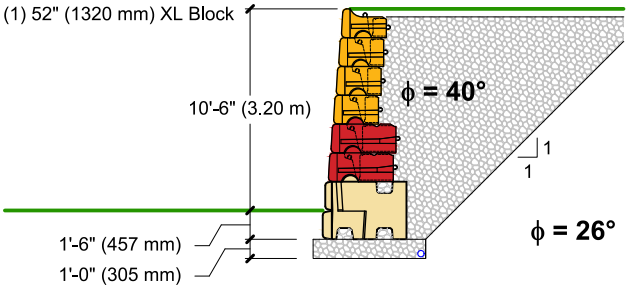
ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

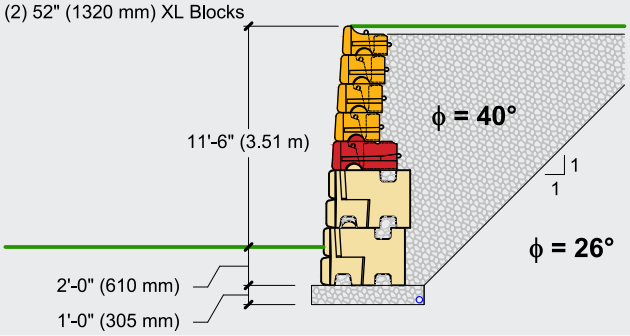
10.5-FOOT (3.20 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block



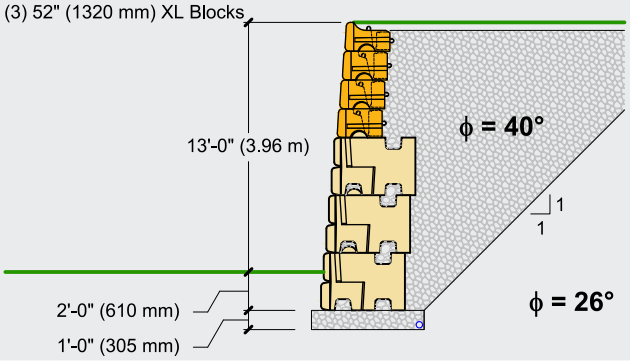
12.0-FOOT (3.66 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



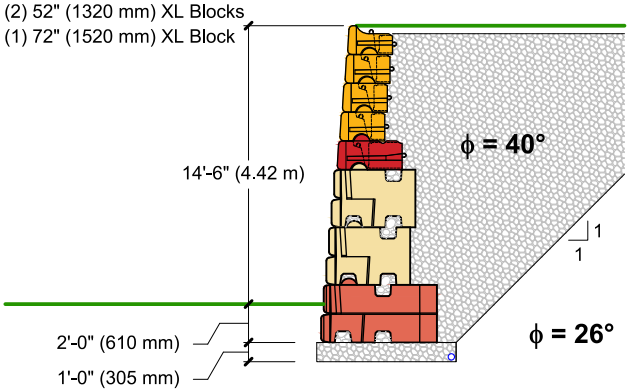
13.5-FOOT (4.11 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks



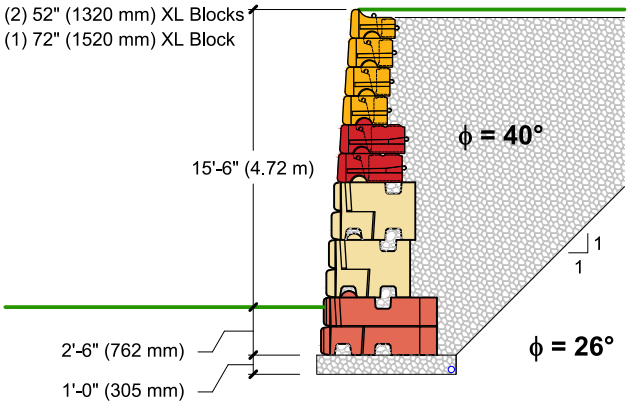
15.0-FOOT (4.57 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(3) 52" (1320 mm) XL Blocks



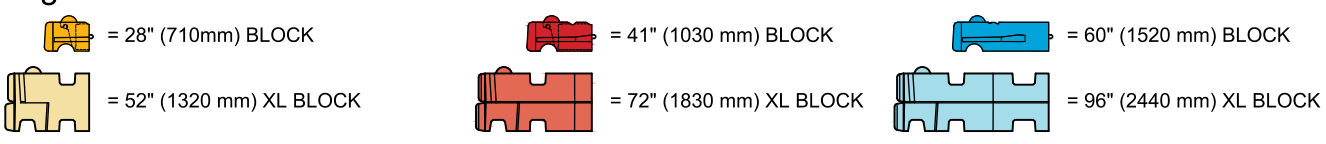
16.5-FOOT (5.03 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block



18.0-FOOT (5.49 m) HIGH SECTION
(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block



Legend:



SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

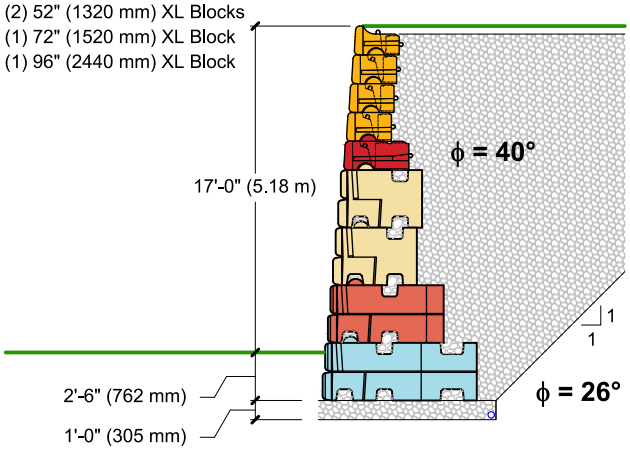
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

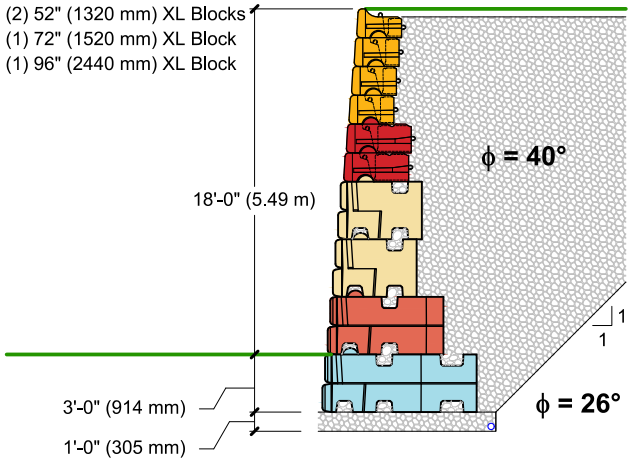
19.5-FOOT (5.94 m) HIGH SECTION

(4) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block
(1) 96" (2440 mm) XL Block



21.0-FOOT (6.40 m) HIGH SECTION

(4) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK

= 41" (1030 mm) BLOCK

= 60" (1520 mm) BLOCK

= 52" (1320 mm) XL BLOCK

= 72" (1830 mm) XL BLOCK

= 96" (2440 mm) XL BLOCK

SEE NOTES AND RECOMMENDED DETAILS AT START OF PRELIMINARY HEIGHT GUIDE.

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

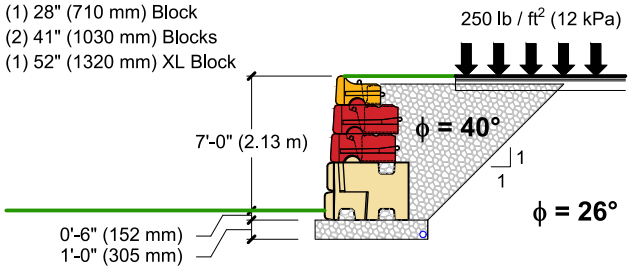
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

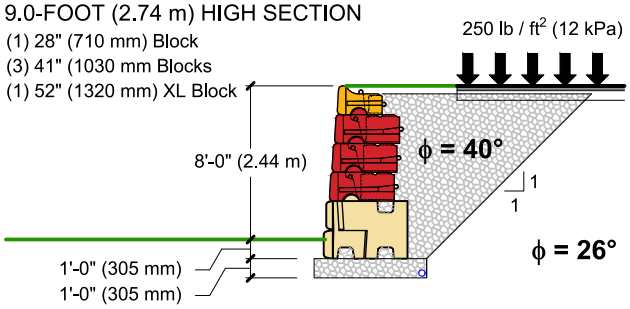
7.5-FOOT (2.29 m) HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



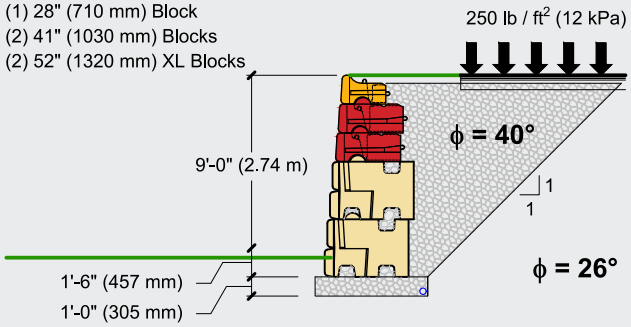
9.0-FOOT (2.74 m) HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm Blocks
(1) 52" (1320 mm) XL Block



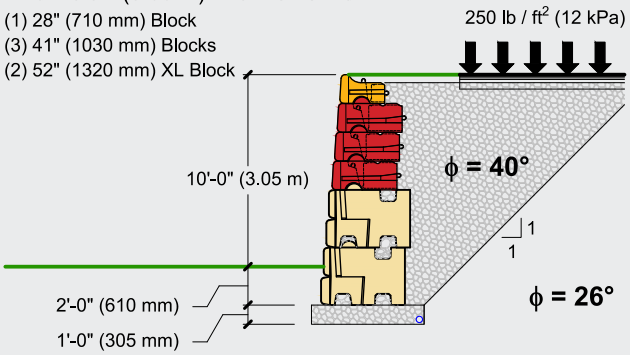
10.5-FOOT (3.20 m) HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks



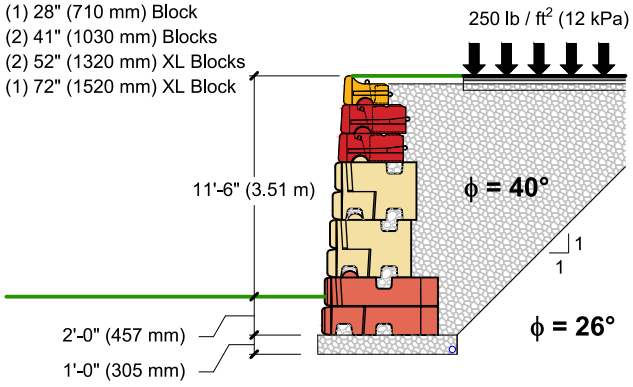
12.0-FOOT (3.66 m) HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Block



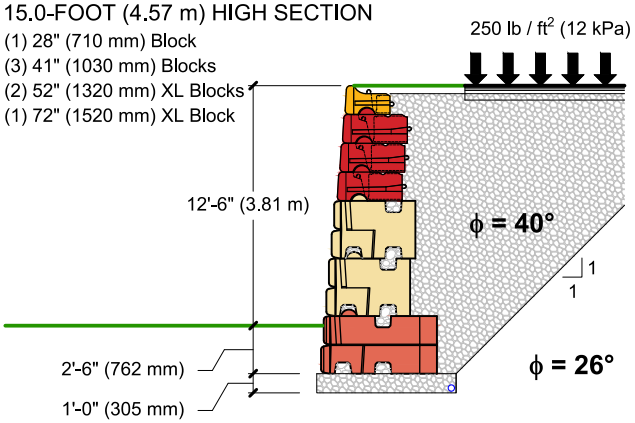
13.5-FOOT (4.11 m) HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block

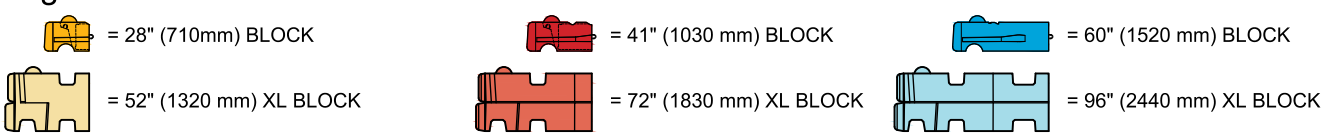


15.0-FOOT (4.57 m) HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block



Legend:



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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS

ALLOWABLE STRESS DESIGN

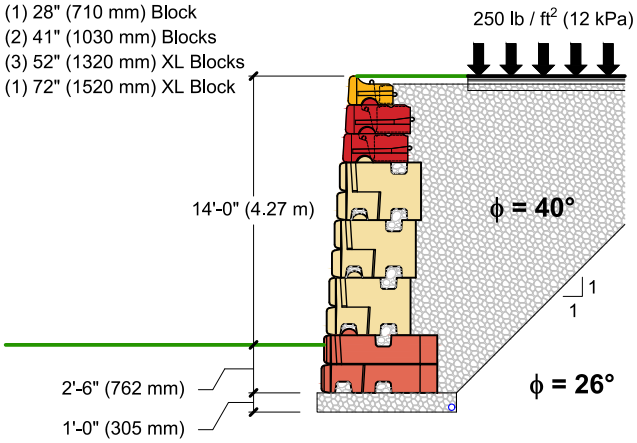
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION B | 250 lb/ft^2 (12 kPa) LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

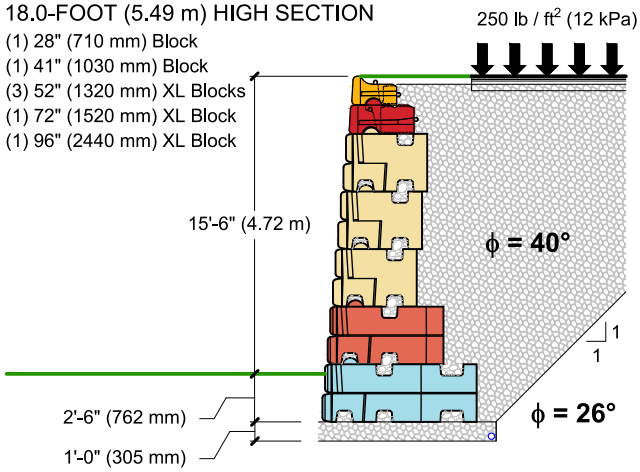
16.5-FOOT (5.03 m) HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(3) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block



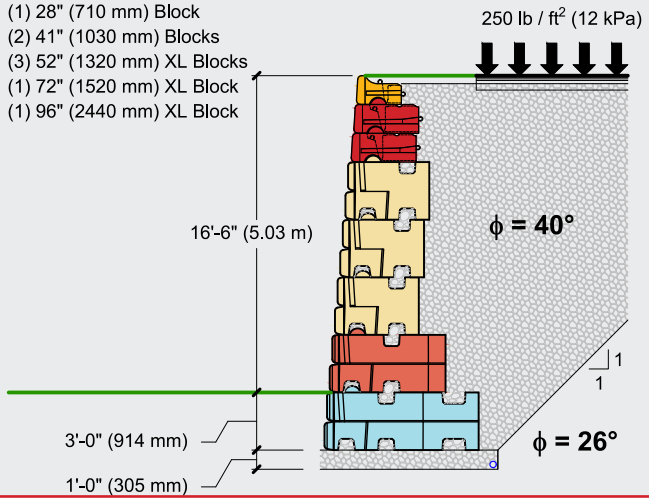
18.0-FOOT (5.49 m) HIGH SECTION

(1) 28" (710 mm) Block
(1) 41" (1030 mm) Block
(3) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block
(1) 96" (2440 mm) XL Block



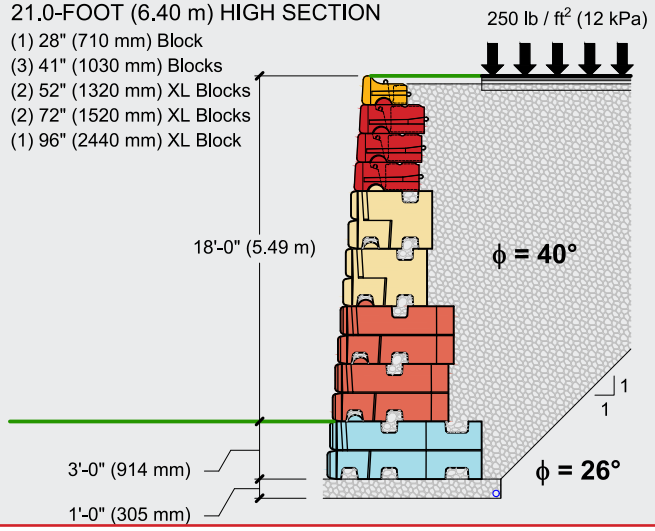
19.5-FOOT (5.94 m) HIGH SECTION

(1) 28" (710 mm) Block
(2) 41" (1030 mm) Blocks
(3) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block
(1) 96" (2440 mm) XL Block



21.0-FOOT (6.40 m) HIGH SECTION

(1) 28" (710 mm) Block
(3) 41" (1030 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(2) 72" (1520 mm) XL Blocks
(1) 96" (2440 mm) XL Block



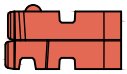
Legend:

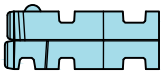
 = 28" (710mm) BLOCK

 = 41" (1030 mm) BLOCK

 = 60" (1520 mm) BLOCK

 = 52" (1320 mm) XL BLOCK

 = 72" (1830 mm) XL BLOCK

 = 96" (2440 mm) XL BLOCK

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XL HOLLOW-CORE RETAINING BLOCK GRAVITY WALLS ALLOWABLE STRESS DESIGN

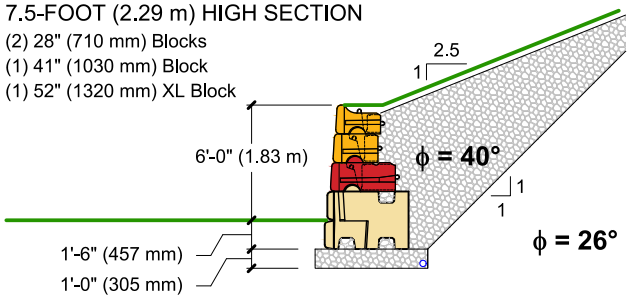
Preliminary Height Guide

ϕ = 40° over 26° | CRUSHED STONE BACKFILL REPLACING SILTY or CLAYEY SAND

LOAD CONDITION C | 1 : 2.5 BACK SLOPE, NO TOE SLOPE, NO LIVE LOAD SURCHARGE

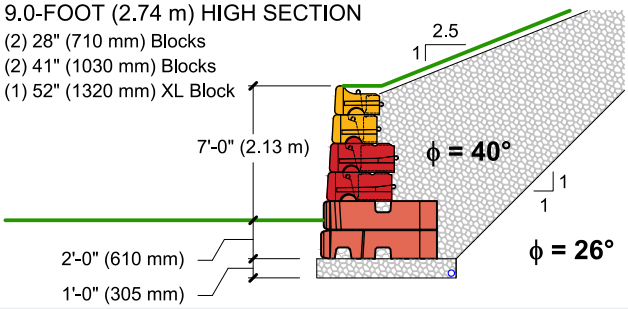
7.5-FOOT (2.29 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block



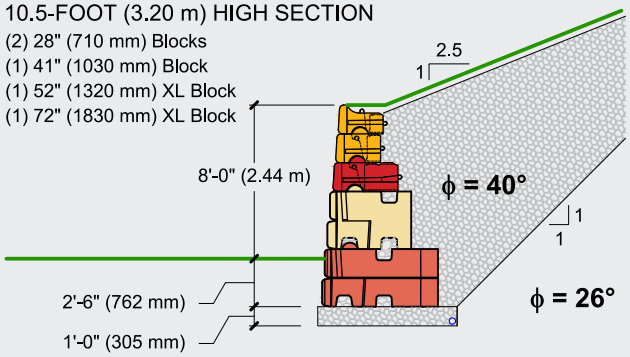
9.0-FOOT (2.74 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 41" (1030 mm) Blocks
(1) 52" (1320 mm) XL Block



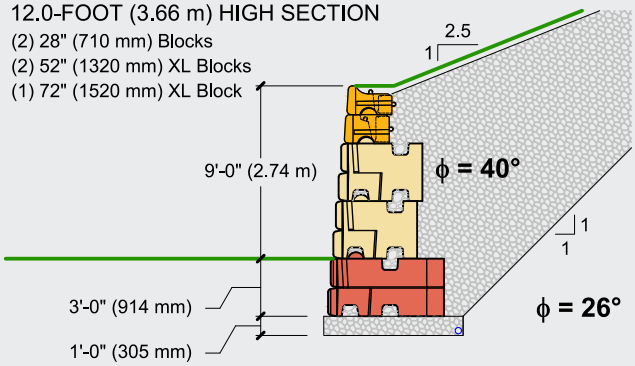
10.5-FOOT (3.20 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1830 mm) XL Block



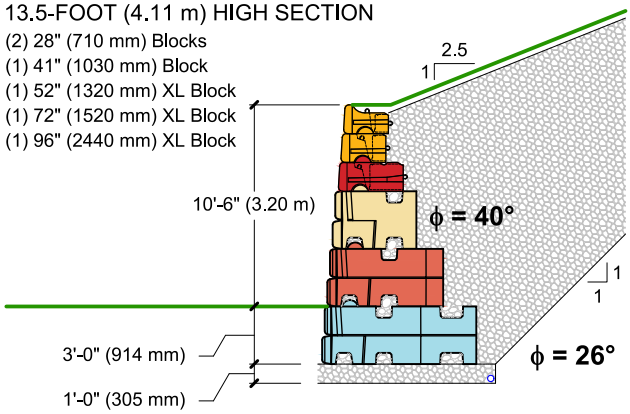
12.0-FOOT (3.66 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(2) 52" (1320 mm) XL Blocks
(1) 72" (1520 mm) XL Block



13.5-FOOT (4.11 m) HIGH SECTION

(2) 28" (710 mm) Blocks
(1) 41" (1030 mm) Block
(1) 52" (1320 mm) XL Block
(1) 72" (1520 mm) XL Block
(1) 96" (2440 mm) XL Block



Legend:

= 28" (710mm) BLOCK
= 41" (1030 mm) BLOCK
= 60" (1520 mm) BLOCK
= 52" (1320 mm) XL BLOCK
= 72" (1830 mm) XL BLOCK
= 96" (2440 mm) XL BLOCK

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Project: Friday Harbour Project #206 ***Owner:*** Geranium, et al ***Engineer:*** SCS Consultants, et al ***Installer:*** Rocky River Construction, et al ***Manufacturer:*** The Sarjeant Co. ***Location:*** Innisfil, Ontario, Canada ***Completed:*** 2017



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