

ROSETTA[®]

BY R.I. LAMPUS COMPANY

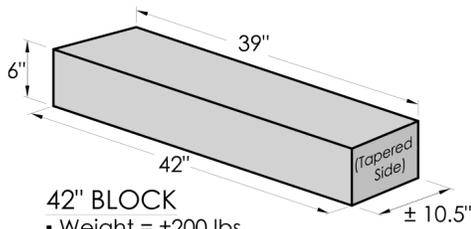


K O D A H

INSTALLATION GUIDE

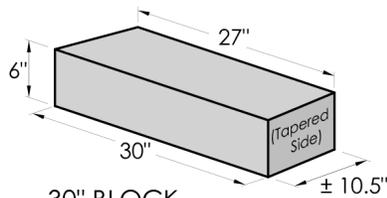
WALL BLOCKS:

Kodah wall blocks are provided in four basic sizes. The blocks are finished on the front and back faces. Both sides of the wall blocks are tapered on each side approximately 1 1/2" from the front to the back of the block. There are multiple face/texture patterns for each basic block size, providing a more random look for your finished project.



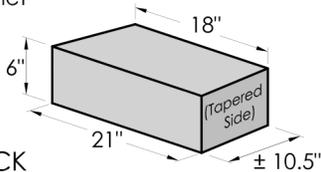
42" BLOCK

- Weight = ±200 lbs
- 6 per Pallet



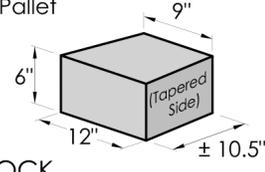
30" BLOCK

- Weight = ±140 lbs
- 3 per Pallet



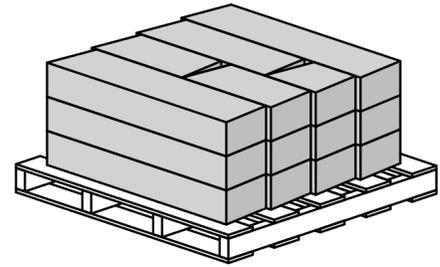
21" BLOCK

- Weight = ±100 lbs
- 6 per Pallet



12" BLOCK

- Weight = ±50 lbs
- 3 per Pallet

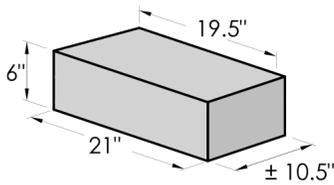


WALL PALLET

- Pallet weight = ± 2,500 lbs (incl. pallet weight)
- Coverage = ± 21 sqft / Pallet when used in a Retaining Wall and ± 20 sqft / Pallet when used in a Freestanding wall

CORNER BLOCKS:

Kodah corner blocks are finished on 3 sides. The 4th side is tapered (left or right) to fit with retaining wall blocks. There are 12 of each taper on the pallet. The corner blocks can be used to construct columns, provide a finished end on a freestanding wall, and to make 90° corners.

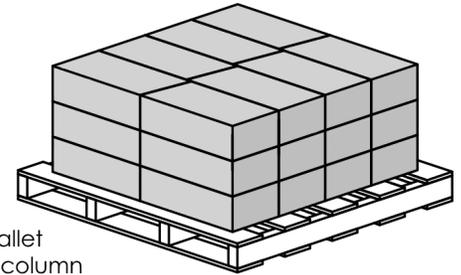


CORNER BLOCK

- Weight = ±100 lbs
- 24 per Pallet

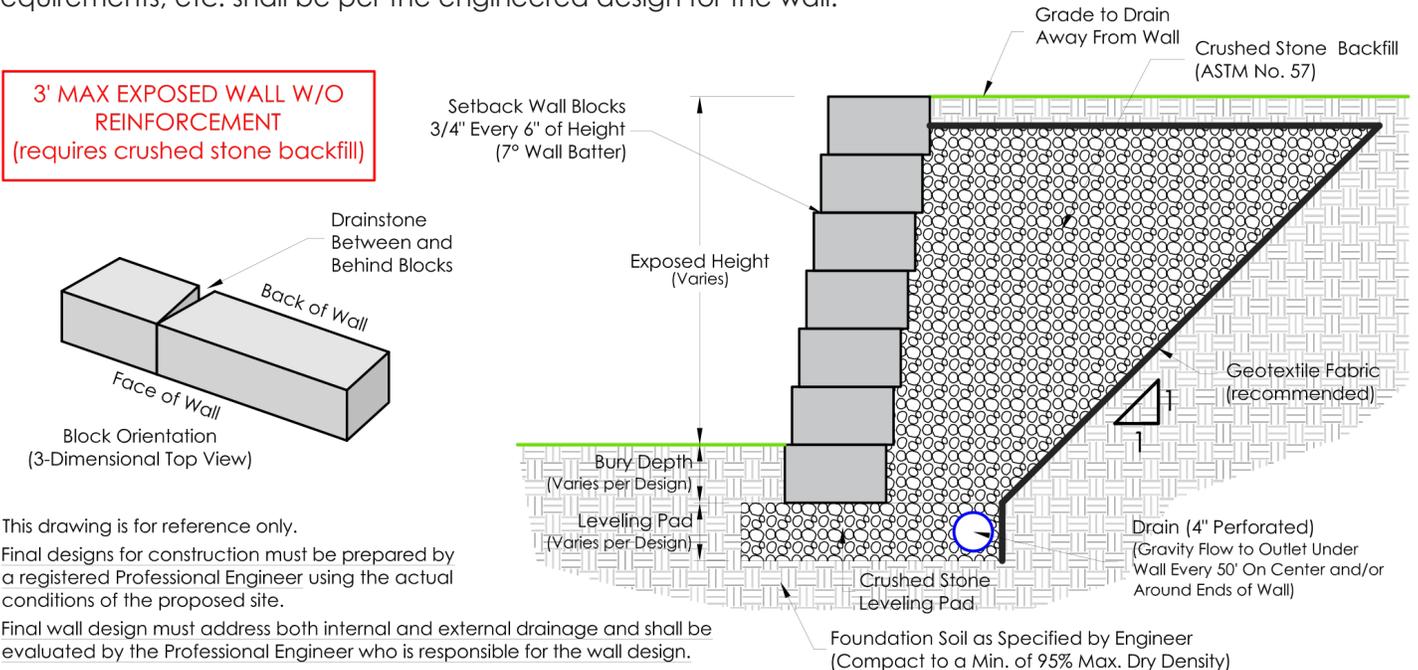
CORNER PALLET

- Pallet weight = ± 2,500 lbs (incl. pallet weight)
- Coverage = ± 31.5 sqft / Pallet
- Makes a 32" x 32" x 36" tall column



TYPICAL WALL CONSTRUCTION DETAILS - GRAVITY INSTALLATION :

The following are typical construction details for Kodah gravity retaining walls. This drawing represents the major components required in wall construction. Specific details including geotextile placement, drainage details, soil requirements, etc. shall be per the engineered design for the wall.



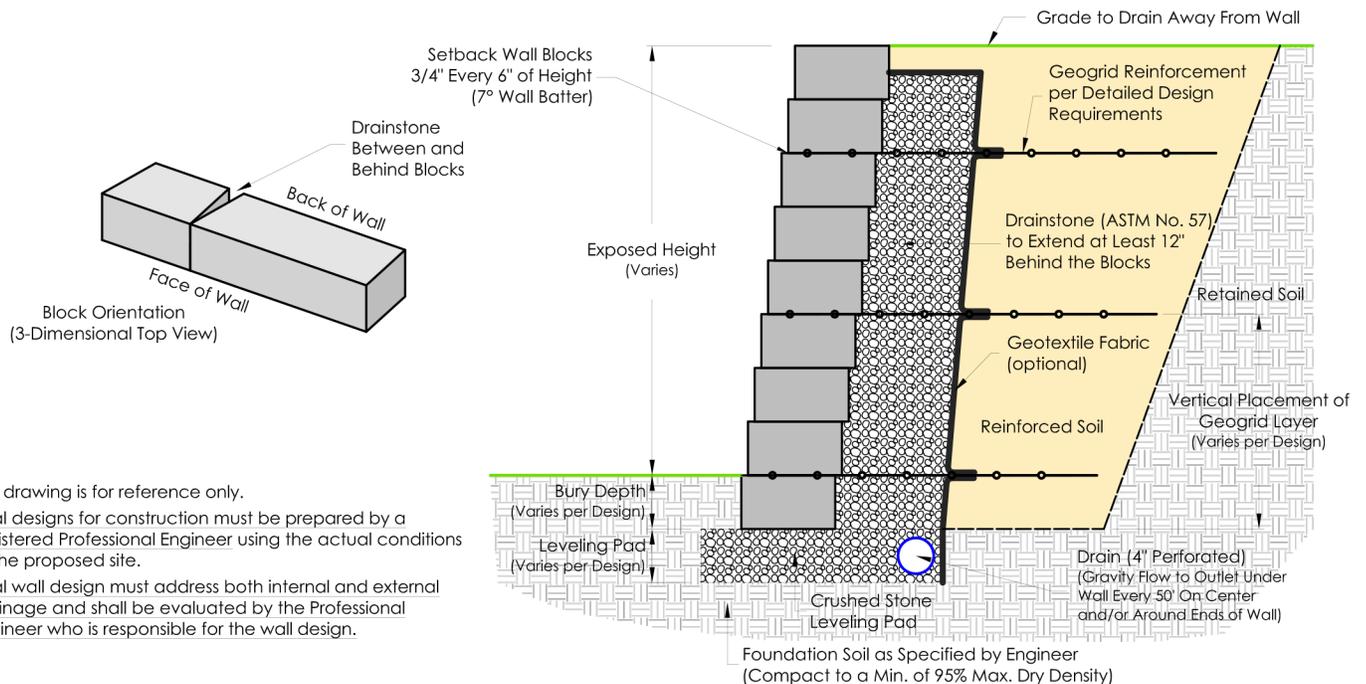
This drawing is for reference only.

Final designs for construction must be prepared by a registered Professional Engineer using the actual conditions of the proposed site.

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

TYPICAL WALL CONSTRUCTION DETAILS -REINFORCED INSTALLATION

This page shows typical construction details for reinforced Kodah retaining walls. This drawing represents the major components required in wall construction. Specific details including geotextile reinforcement layers, drainage details, soil requirements, etc. shall be per the engineered design for the wall.



This drawing is for reference only.

Final designs for construction must be prepared by a registered Professional Engineer using the actual conditions of the proposed site.

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

KODAH RETAINING WALL INSTALLATION NOTES:

1. Review all plans and specifications for the project. Make sure you understand the detailed design for the project before starting construction.
2. Leveling pad excavation should be to the depth shown in the engineered plans for the wall, but at least 6" below the elevation of the bottom block in the wall. Width should be a minimum of 29" which will provide 6" in front of and 12" behind the bottom block.
3. Existing foundation soil (soil below wall) should be compacted to a minimum of 95% of standard proctor. Foundation soil should be firm, dry and free of debris, stones, roots, etc. Consult a soils engineer if in doubt.
4. Place leveling pad material as specified in the wall design. Compact using a vibrator plate compactor.
5. Install a 4" diameter perforated drain pipe in the lowest portion of the free-draining stone, either on the bottom of the crushed stone leveling pad or immediately on top of the slow-draining road gravel leveling pad, depending on the detailed design. Daylight the drain pipe at the ends and/or through the face of the wall to allow for drainage. Connection to an active storm sewer should only be made under the direction of a professional engineer.
6. Walls shall have the bottom course(s) buried to the depth shown on the engineered design. A minimum depth of 6" is required for all walls.
7. Place the bottom course of wall blocks. Take care to level the blocks both parallel and perpendicular to the wall.
8. Backfill the first 12" behind the blocks and triangle shaped areas between the blocks with ASTM No. 57 drainstone. Place a layer of non-woven geotextile fabric immediately behind the drainstone and then place the retained or reinforced soil.
9. Drainstone and backfill shall be placed in maximum 6" lifts and compacted to a minimum of 95% of standard proctor. Hand compaction with a vibratory plate compactor shall be used within 3' of the retaining blocks. All compaction equipment shall be large enough to achieve desired compaction, but not so large as to move the wall blocks. Monitor the wall blocks for movement during compaction and rectify if required prior to proceeding.
10. Place successive units, drainstone, and compacted backfill to the desired grade/ wall height. Make sure the wall blocks are setback a minimum of 3/4" for every 6" of wall height.

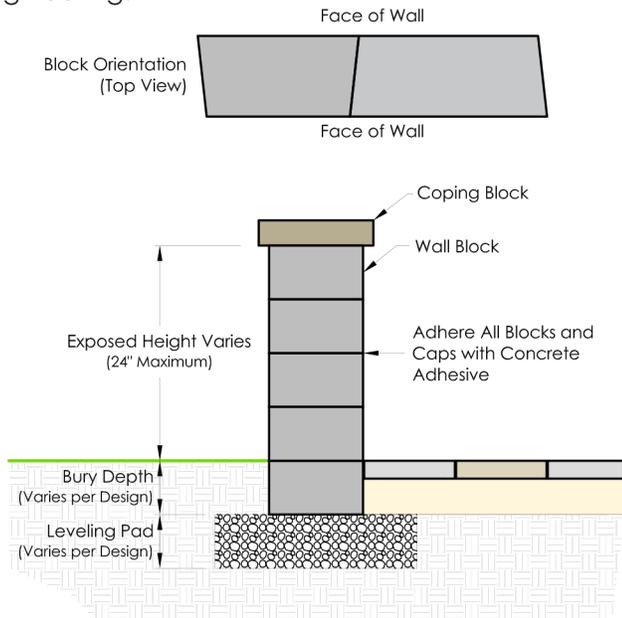
11. The top of wall must be graded to direct surface water away from the wall.
12. Coping layer should be adhered with a concrete adhesive.

ADDITIONAL REQUIREMENTS FOR GEOGRID INSTALLATION (If Required)

13. Geogrid layers shall be installed to the lengths and elevations detailed in the wall design.
14. Geogrid shall be placed starting at the face of the retaining block and extending into the reinforced soil. Take care to install the geogrid with the strong direction (roll direction) into the reinforced soil zone and not parallel to the wall.
15. Use the next layer of blocks to secure the front end of the geogrid. Make sure the geogrid is as close as possible to the front face of the wall without being visible. Pull the geogrid taut to eliminate any folds and pretension the geogrid. Pin or secure the back edge of the geogrid before placing the reinforced fill.
16. Place and compact drainstone and reinforced fill starting at the back of the blocks and continuing back into the retained soil. Drainstone and reinforced fill shall be placed in maximum 6" thick layers and compacted to 95% of standard proctor. Hand compaction with a vibratory plate shall be used within 3 feet of the retaining wall blocks. All compaction equipment shall be large enough to achieve desired compaction, but not so large as to move the wall blocks. Monitor the wall blocks for movement during compaction and rectify if required prior to proceeding.
17. Tracked construction equipment shall not be used directly on the geogrid. A minimum of 6" of fill is required between tracked equipment and geogrid to prevent damage to the grid. Rubber-tired equipment may pass over the geogrid when traveling at low speeds of 5 mph or less.
18. Avoid any sudden stopping or turning of construction equipment in the reinforced fill zone to prevent moving or damaging the geogrid layers.
19. Follow geogrid manufacturer's requirements, including requirements for vertical separation and overlap of geogrid.

TYPICAL FREESTANDING WALL CONSTRUCTION DETAILS:

The following are typical construction details for freestanding Kodah walls. Kodah freestanding walls are intended to be low walls (24" or lower) used in a garden or patio setting. Taller walls, walls intended to act as railings or barriers, walls constructed in other settings, or walls subject to applied loads will require project specific engineering.

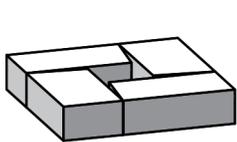


· This drawing is for reference only.
 · Final designs for construction for walls subject to any loading must be prepared by a registered Professional Engineer.

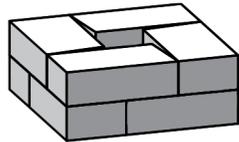
1. Leveling pad excavation should be to the depth shown in the engineered plans for the wall, but at least 6" below the elevation of the bottom block in the wall. Width should be a minimum of 23" which will provide 6" in front of and behind the bottom block.
2. Existing foundation soil should be compacted to a minimum of 95% of standard proctor. Foundation soil should be firm, dry and free of debris, stones, roots, etc. Consult a soils engineer if in doubt.
3. Place crushed stone or well-graded road gravel leveling pad material as specified. Compact using a vibrator plate compactor.
4. Walls shall have the bottom course buried to the depth shown on the design. Walls are typically buried a minimum of 6".
5. Place the bottom course of wall blocks. Take care to level the blocks both parallel and perpendicular to the wall. Adjacent blocks should be placed so the tapers on the sides are going opposite directions to provide a uniform wall face with no gaps on either side of the wall.
6. Place successive units to the desired wall height.
7. Concrete adhesive is required between all blocks and the coping layer of a freestanding wall. Adhesive shall be specially formulated for outdoor use with concrete retaining wall products.

COLUMN CONSTRUCTION DETAILS:

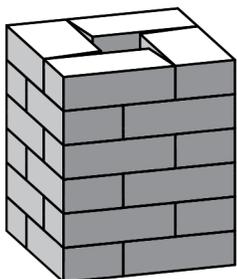
Columns make nice ends to freestanding walls, formal stair openings, stand-alone monuments, and other areas to enhance your Kodah project. The basic steps of column construction are shown here.



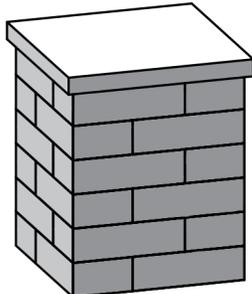
Step 1
 Place (4) Kodah corner blocks with the same taper, facing into the center of the Column.



Step 2
 Place a second row of (4) Kodah corner blocks with the opposite taper, facing into the center of the Column.



Step 3
 Continue with subsequent rows to the desired Column height. One pallet of Kodah corner blocks will create a 32" x 32" x 36" tall column.

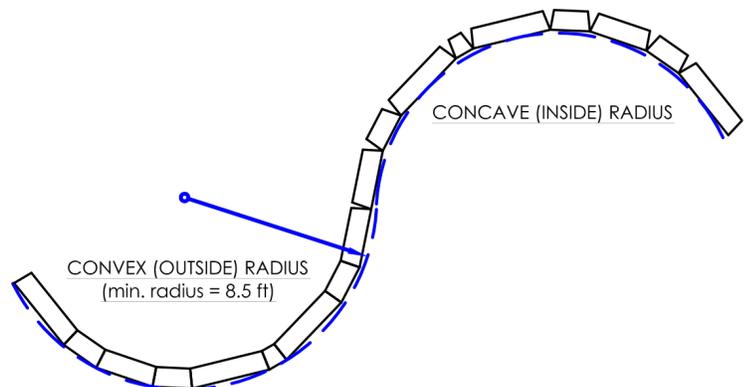


Step 4
 Place a column cap to finish the Column. The column cap can be cored as needed for installation of a lamp.

CURVED WALL DETAILS:

The taper on the sides of Kodah blocks allow for construction of a wide range of curved walls.

1. Minimum radius curves are shown which can be constructed without saw-cutting a significant number of blocks. Larger radius curves can be created by leaving a larger gap between blocks on the back side of the wall. The gaps must be filled with drainstone.
2. When retaining walls are constructed with batter, the radius on outside curves becomes smaller with each course due to the block setback. For proper construction, the radius of the bottom course must be larger than the minimum radius so upper courses will have significant room for construction. Increase the bottom course radius at least 1" for every row of block in the wall.
3. When retaining walls are constructed with batter, the radius on inside curves becomes larger with each course due to the block setback.



KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

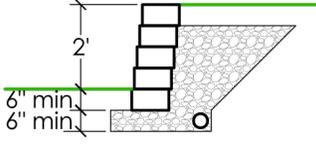
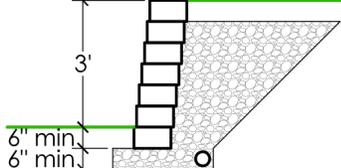
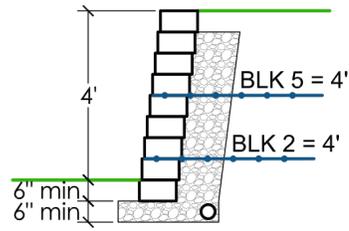
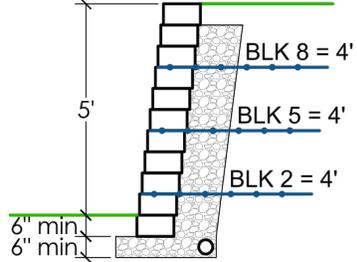
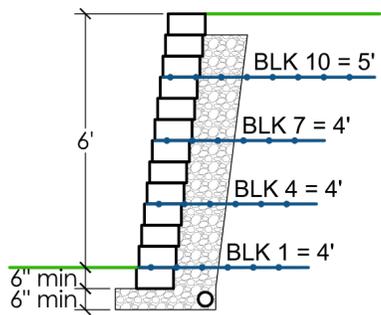
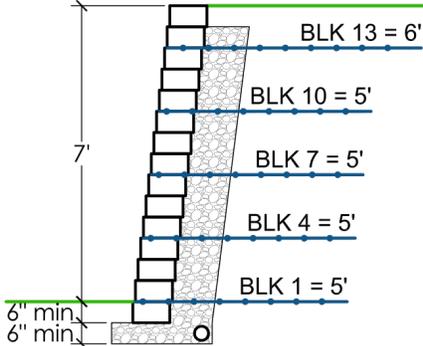
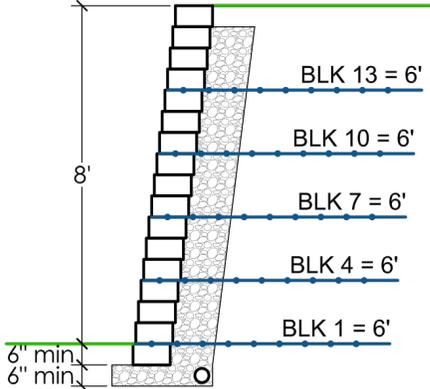
DENSE WELL-GRADED SAND, SAND AND GRAVEL

$(\phi = 34^\circ, \gamma = 120 \text{ pcf})$

NO BACK SLOPE

NO TOE SLOPE

NO SURCHARGE

<p>2' EXPOSED</p> <p style="color: red;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p> <p style="color: red;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

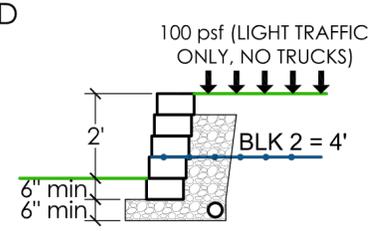
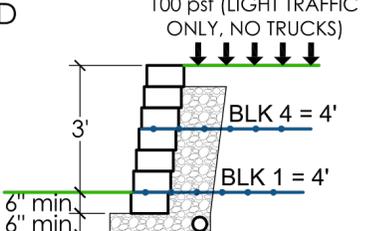
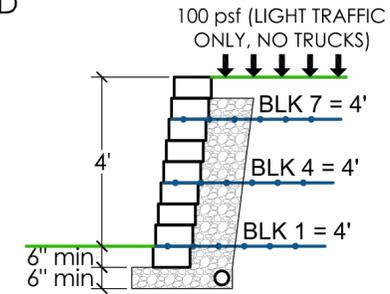
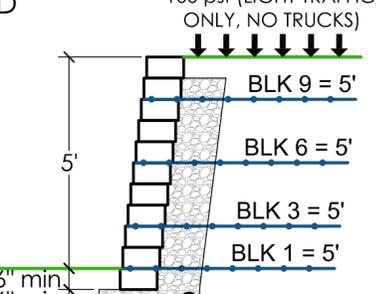
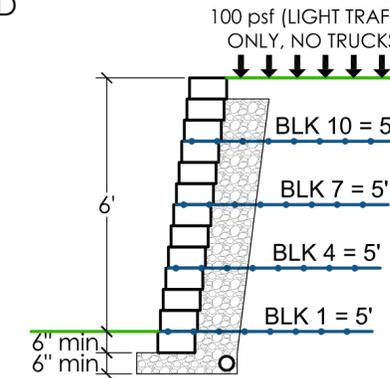
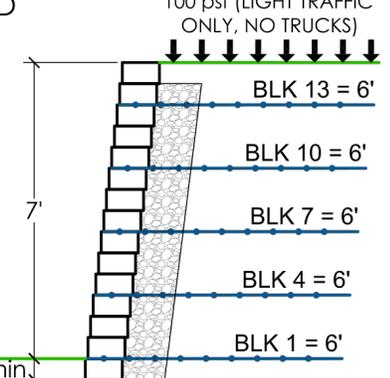
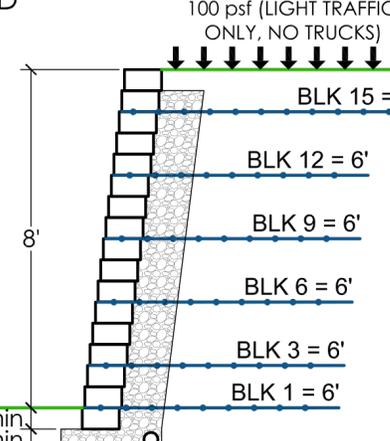
KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

DENSE WELL-GRADED SAND, SAND AND GRAVEL
NO BACK SLOPE

$\phi = 34^\circ, \gamma = 120 \text{ pcf}$
100 psf SURCHARGE

NO TOE SLOPE

<p>2' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>2'</p> <p>6" min. 6" min.</p> <p>BLK 2 = 4'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>3'</p> <p>6" min. 6" min.</p> <p>BLK 4 = 4'</p> <p>BLK 1 = 4'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>4'</p> <p>6" min. 6" min.</p> <p>BLK 7 = 4'</p> <p>BLK 4 = 4'</p> <p>BLK 1 = 4'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>5'</p> <p>6" min. 6" min.</p> <p>BLK 9 = 5'</p> <p>BLK 6 = 5'</p> <p>BLK 3 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>6'</p> <p>6" min. 6" min.</p> <p>BLK 10 = 5'</p> <p>BLK 7 = 5'</p> <p>BLK 4 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>7'</p> <p>6" min. 6" min.</p> <p>BLK 13 = 6'</p> <p>BLK 10 = 6'</p> <p>BLK 7 = 6'</p> <p>BLK 4 = 6'</p> <p>BLK 1 = 6'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>8'</p> <p>6" min. 6" min.</p> <p>BLK 15 = 7'</p> <p>BLK 12 = 6'</p> <p>BLK 9 = 6'</p> <p>BLK 6 = 6'</p> <p>BLK 3 = 6'</p> <p>BLK 1 = 6'</p> <p>$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

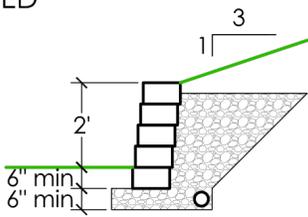
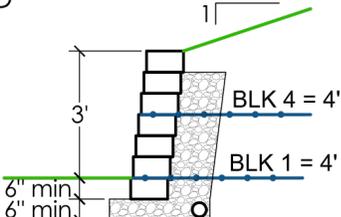
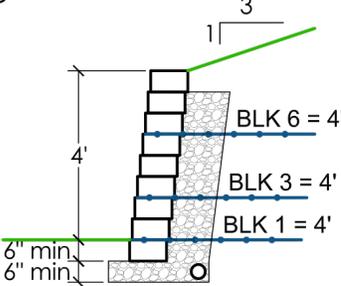
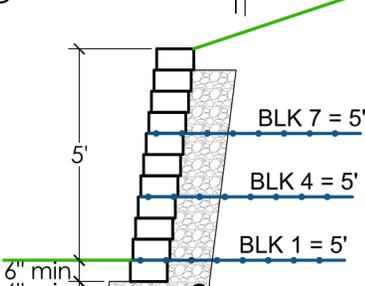
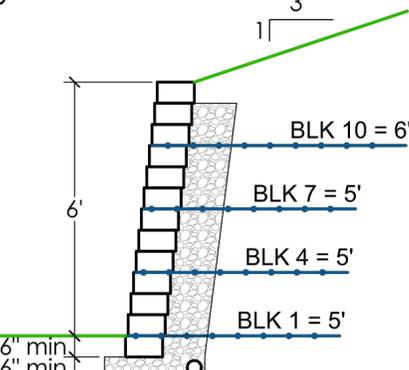
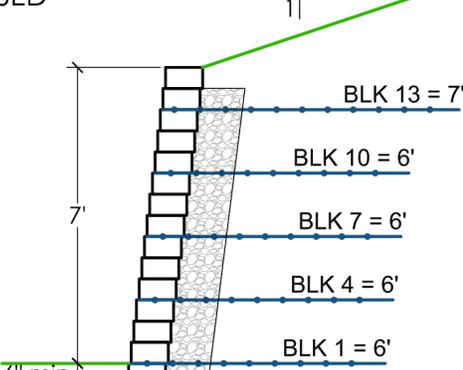
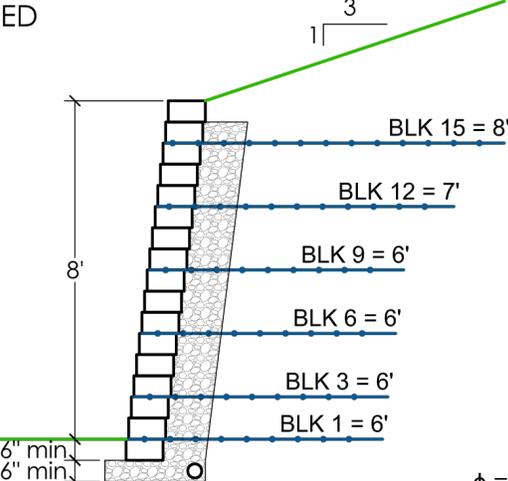
KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

DENSE WELL-GRADED SAND, SAND AND GRAVEL
1:3 (18.4°) BACK SLOPE

NO TOE SLOPE

$(\phi = 34^\circ, \gamma = 120 \text{ pcf})$
NO SURCHARGE

<p>2' EXPOSED</p>  <p style="color: red; text-align: center;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p> <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p style="text-align: right;">$\phi = 34^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

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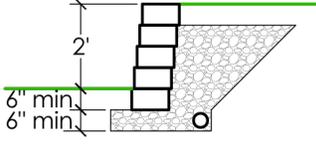
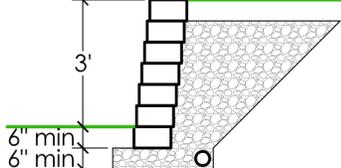
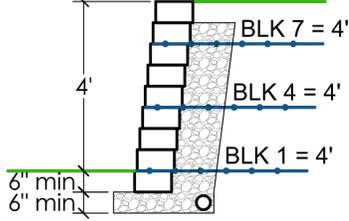
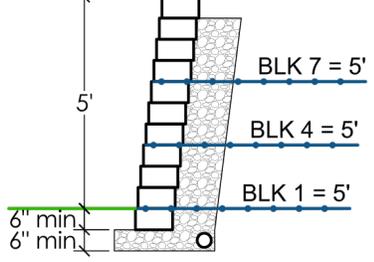
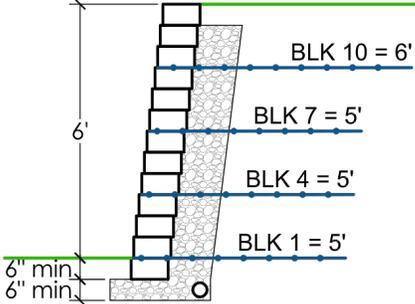
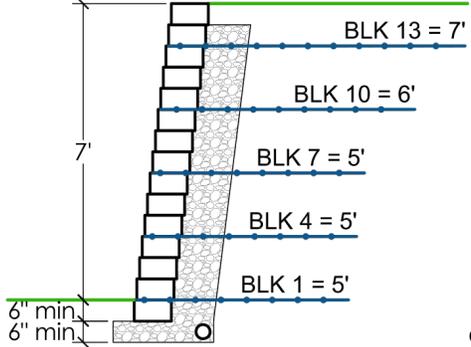
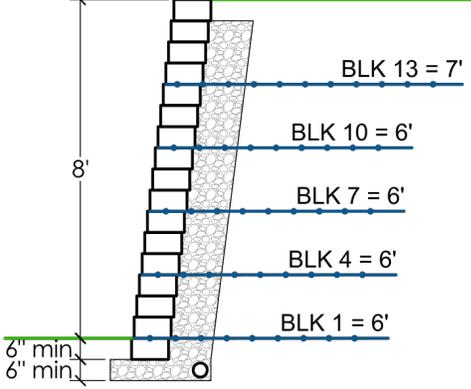
FINE TO MEDIUM SAND

NO BACK SLOPE

NO TOE SLOPE

$(\phi = 30^\circ, \gamma = 120 \text{ pcf})$

NO SURCHARGE

<p>2' EXPOSED</p> <p style="color: red; text-align: center;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p> <p style="color: red; text-align: center;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
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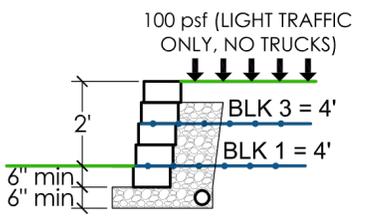
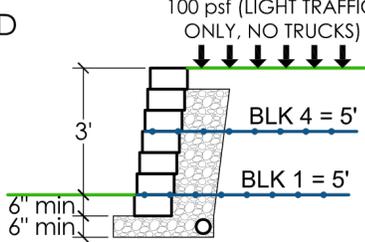
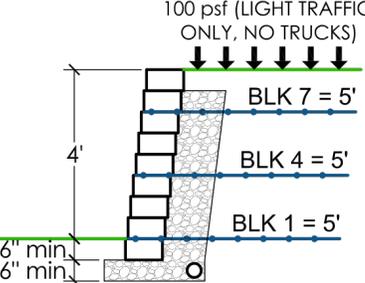
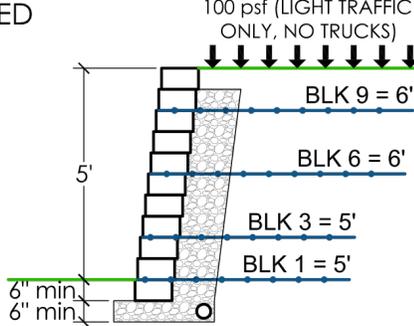
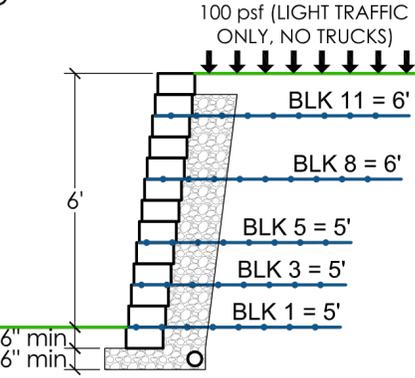
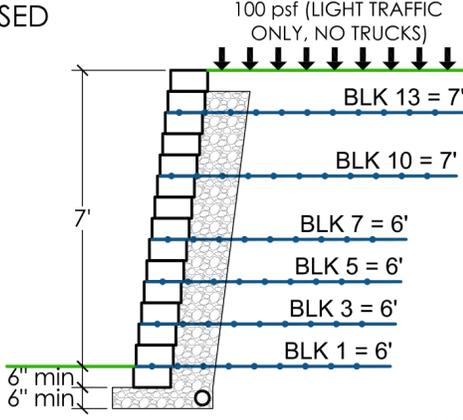
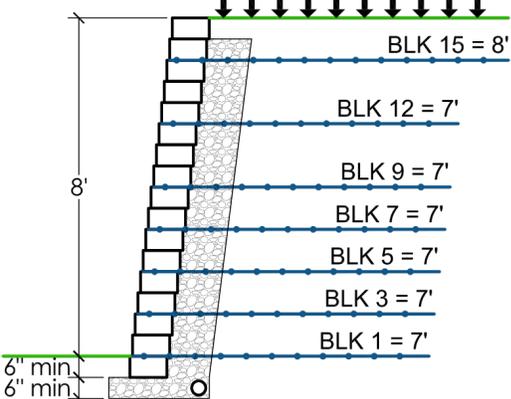
KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

FINE TO MEDIUM SAND
NO BACK SLOPE

$(\phi = 30^\circ, \gamma = 120 \text{ pcf})$
100 psf SURCHARGE

NO TOE SLOPE

<p>2' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 3 = 4'</p> <p>BLK 1 = 4'</p> <p>BLK 1 = 4'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 4 = 5'</p> <p>BLK 1 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 7 = 5'</p> <p>BLK 4 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 9 = 6'</p> <p>BLK 6 = 6'</p> <p>BLK 3 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 11 = 6'</p> <p>BLK 8 = 6'</p> <p>BLK 5 = 5'</p> <p>BLK 3 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 13 = 7'</p> <p>BLK 10 = 7'</p> <p>BLK 7 = 6'</p> <p>BLK 5 = 6'</p> <p>BLK 3 = 6'</p> <p>BLK 1 = 6'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 15 = 8'</p> <p>BLK 12 = 7'</p> <p>BLK 9 = 7'</p> <p>BLK 7 = 7'</p> <p>BLK 5 = 7'</p> <p>BLK 3 = 7'</p> <p>BLK 1 = 7'</p> <p>$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

FINE TO MEDIUM SAND
1:3 (18.4°) BACK SLOPE

$(\phi = 30^\circ, \gamma = 120 \text{ pcf})$
NO SURCHARGE

NO TOE SLOPE

<p>2' EXPOSED</p> <p style="color: red; text-align: center;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p> <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p> <p style="text-align: right;">$\phi = 30^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's Design Manual for Segmental Retaining Walls, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

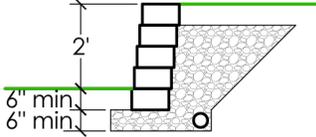
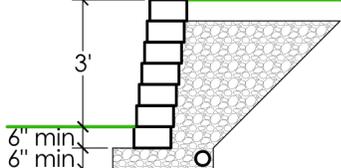
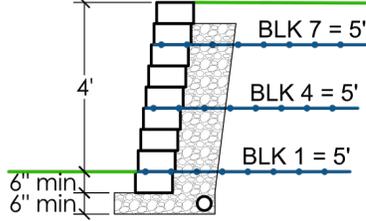
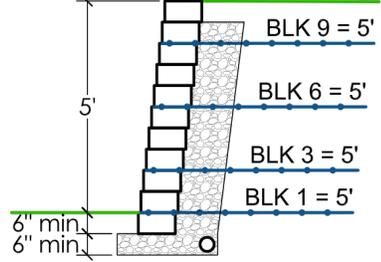
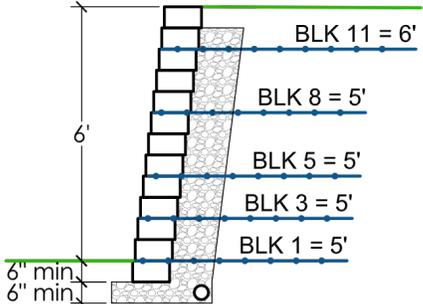
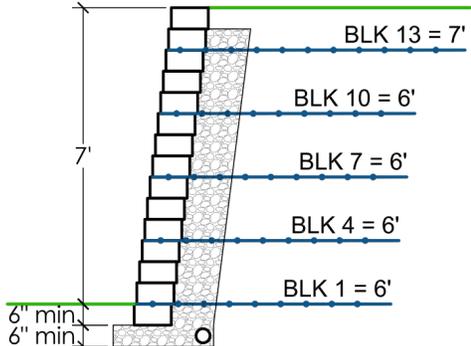
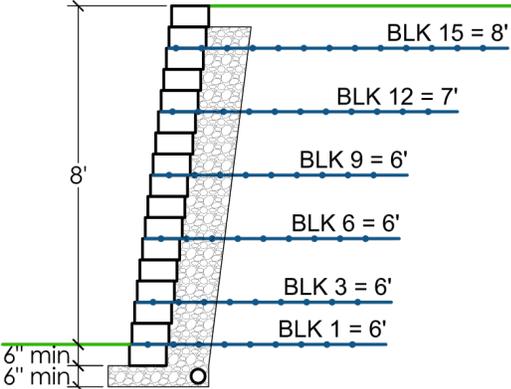
KODAH PRELIMINARY GEOGRID REINFORCEMENT GUIDE

This page shows preliminary guides for soil reinforcement required to construct a wall with Rosetta Kodah blocks in the conditions noted below.

SILTY SAND, CLAYEY SAND
NO BACK SLOPE

$(\phi = 28^\circ, \gamma = 120 \text{ pcf})$
NO SURCHARGE

NO TOE SLOPE

<p>2' EXPOSED</p> <p style="color: red;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p> <p style="color: red;">NO GEOGRID. CRUSHED STONE BACKFILL REQUIRED.</p>  <p style="text-align: right;">$\phi = 40^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p style="text-align: right;">$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p style="text-align: right;">$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p style="text-align: right;">$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p style="text-align: right;">$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p style="text-align: right;">$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

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SILTY SAND, CLAYEY SAND
NO BACK SLOPE

$\phi = 28^\circ, \gamma = 120 \text{ pcf}$
100 psf SURCHARGE

NO TOE SLOPE

<p>2' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 3 = 4'</p> <p>BLK 1 = 4'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 5 = 5'</p> <p>BLK 3 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 7 = 5'</p> <p>BLK 5 = 5'</p> <p>BLK 3 = 5'</p> <p>BLK 1 = 5'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 9 = 6'</p> <p>BLK 7 = 6'</p> <p>BLK 5 = 6'</p> <p>BLK 3 = 6'</p> <p>BLK 1 = 6'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 11 = 7'</p> <p>BLK 9 = 7'</p> <p>BLK 7 = 6'</p> <p>BLK 5 = 6'</p> <p>BLK 3 = 6'</p> <p>BLK 1 = 6'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 13 = 7'</p> <p>BLK 11 = 7'</p> <p>BLK 9 = 7'</p> <p>BLK 7 = 7'</p> <p>BLK 5 = 7'</p> <p>BLK 3 = 7'</p> <p>BLK 1 = 7'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p> <p>100 psf (LIGHT TRAFFIC ONLY, NO TRUCKS)</p> <p>BLK 15 = 8'</p> <p>BLK 13 = 8'</p> <p>BLK 11 = 8'</p> <p>BLK 9 = 8'</p> <p>BLK 7 = 8'</p> <p>BLK 5 = 8'</p> <p>BLK 3 = 8'</p> <p>BLK 1 = 8'</p> <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.

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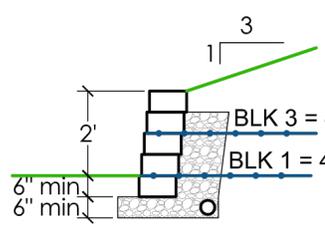
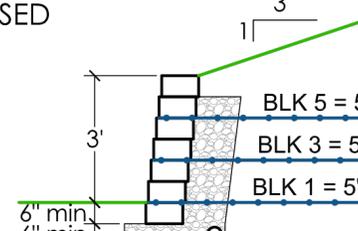
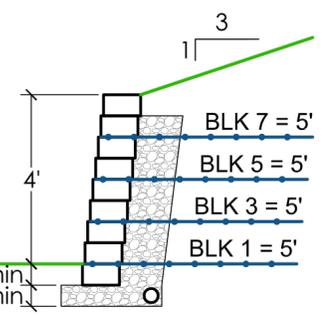
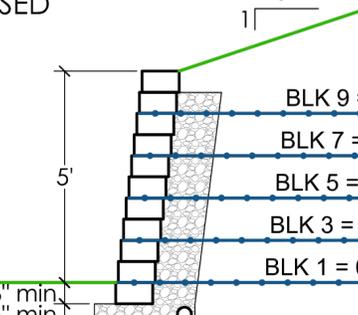
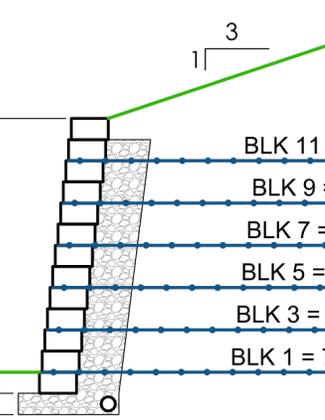
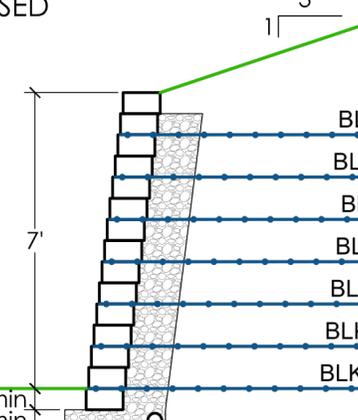
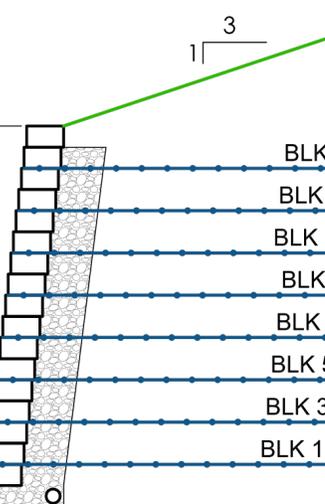
SILTY SAND, CLAYEY SAND

$(\phi = 28^\circ, \gamma = 120 \text{ pcf})$

1:3 (18.4°) BACK SLOPE

NO TOE SLOPE

NO SURCHARGE

<p>2' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>3' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>4' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>5' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>6' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<p>7' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>
<p>8' EXPOSED</p>  <p>$\phi = 28^\circ$ $\gamma = 120 \text{ pcf}$</p>	<ol style="list-style-type: none"> 1. These drawings are for reference only. 2. Final designs for construction must be prepared by a registered professional engineer using the actual conditions of the proposed site. Wall stability, incl. global stability, must be verified for site specific conditions. 3. Final wall design must address both internal and external drainage and shall be evaluated by the professional engineer who is responsible for the wall design. 4. Geogrid Layers are to be placed on TOP of the course of blocks shown. For example, BLK 2 = 5' indicates that you place a 5' long layer of geogrid on top of the 2nd course of blocks. 5. Length of geogrid is measured from the front of the Kodah blocks. 6. Slope Stability and Seismic conditions are not included in these guides and must be analyzed based on site specific conditions. 7. These guides assume a flat "toe" slope at the bottom of the wall. Toe slopes must be analyzed based on site conditions. 8. Minimum Factors of Safety for the assumed conditions shown above are 1.5 for sliding, 2.0 for overturning (1.5 for non-reinforced section), and 2.0 for bearing capacity. 9. Designs are in general accordance with NCMA's <i>Design Manual for Segmental Retaining Walls</i>, 3rd Ed. 10. Reinforced and Backfill soils are to be compacted to 95% maximum density (Standard Proctor). 11. All Kodah Specifications are to be followed.



- 8-10' Serviceberry
- Dwarfform Yew
- 4-5' Viburnum 'Arrowwood'
- Turtlehead 'Hot Lips'
- Turtlehead 'Hot Lips'
- Bellflower
- Natural Stone Outcropping (Stacked)
- Cardi Bells 'Strawberry Ice'
- Veronica 'Red Fox'
- Bellflower
- Aluminum Edging
- Natural Stone Outcropping (Loose Laid)
- Natural Stone Outcropping (Stacked)
- Bluemel 'Bluebeard'
- Maple 'Red Sunset'
- Purple Coneflower
- Autumn 'Pinks'
- 3" Red Oak
- Ostrich Fern
- Saxifrage 'Glow Low'
- Liriodendron
- Geranium 'Daisy'
- Hasta 'Elegans'
- 25' Canadian Cherry

- Geranium 'Daisy'
- 36" Dwarfform Yew
- 3' Norway Maple
- Nepeta 'Sweet Oranges'
- Joe-Pye 'Chocolate'
- Shrub Rose 'Carefree Wonder'
- Liriodendron
- Precast Concrete Steps
- Galunb Fern
- Natural Stone Outcropping

R.I. Lampus
Company

816 R.I. Lampus Avenue, Springdale, PA 15144
 Phone: 412.362.3800 Fax: 724.274.2452
 LAMPUS.COM