

COMMERCIAL INSTALLATION GUIDELINES



Specifications and Viewable Details may be downloaded from our website. Please visit our website @ www.herculesmfg.com



"Any person reading these guidelines may have already purchased one of our families of retaining wall modules or is seriously considering doing so. We would like to take this opportunity to thank you for allowing us to service your needs. All of our retaining wall modules have been carefully designed to be the best and we feel this is one purchase decision you will never regret!"

Mark A. Woolbright
President, St. Louis Retaining Wall Company

SAINT LOUIS
RETAINING WALL COMPANY
A Midwest Products Group Company

HerculesTM is manufactured by or under license from St Louis Retaining Wall Company, LLC
Covered by one or more of the following patents: 5,277,012 D360,475 D340,996,
D362,077 D347,285 D372,106 Other patents pending.

3916 Geraldine Ave. St. Louis, MO 63115
314-389-9255 phone • 314-389-6416 fax • www.herculesmfg.com

Walls requiring a permit: Owners should check with the public works dept. of the county or municipality the proposed wall resides in to determine the need for a permit as well as requirements for a permit. A Hercules™ engineering “masterplan” is available for use in obtaining a permit where applicable. Ask your dealer for assistance or call us at Hercules Mfg, Inc. 314-389-9255 for assistance. We can also refer several qualified engineers to produce custom plans for walls that fall outside the scope of the masterplan, or we can provide the wall design ourselves.

Walls not requiring a permit: Walls too short for a permit need no further explanation. Walls in locations simply not requiring permits should be examined carefully to ensure maximum wall performance. We recommend that the owner consult with an engineer (call for referral) on any wall over five feet tall. Walls can be big investments and should be treated like one. Close attention must be paid to the slope below and above the wall, drainage, soil conditions and any structure at or near the top of the wall. Careful examination of these conditions will determine how the wall should be constructed and will affect how long it will last.

GENERAL RULES

1. Always bury one (1) complete course of modules for each five (5) feet of wall height and more if the grade at the base of the wall slopes downward significantly or if there is a considerable slope remaining above the wall. (Geogrid reinforced walls may not require more than two courses buried, regardless of height.)
2. To increase structural stability of your wall, you can easily change the setback or “batter” of the wall by sliding the units farther back on the side rails of the units below. For example, a wall constructed with a 60 degree setback is stronger than one with a 70 degree setback. A 70 degree wall occurs when the units above are pulled forward just behind the faces of the units below them. (2 7/8” setback per course)
3. Never hesitate to contact your dealer for assistance. They will be glad to help you build a GREAT WALL!
4. It is always wise to use a heavier module or use greater setback when a sizable structure will be resting near the top of the wall. When retaining an elevated drive or parking lot, the type of vehicles likely to be near the top of the wall should be considered.

EXAMPLE: A 5' land based wall would normally be constructed using the HERCULES Standard™ modules with one (1) course below grade and a 70-degree setback. When used to hold up a loading dock or areas used by semi-tractors & trailers, the HERCULES Mega™ modules should be used, still at 70 degree with one (1) course buried. If poor soil conditions exist, then burying additional courses and/or a greater setback would be appropriate.

5. Retaining walls are used for erosion control and allow for leveling of the terrain above or below the wall. Surface water run-off above any retaining wall is an important factor to consider. A three foot (3') retaining wall with a ten foot (10') slope above it can turn into a speed ramp for run-off water, causing serious erosion that may damage the retaining wall below. Whenever possible, a drainage swale should be constructed just behind the top course of units, running parallel to the wall, to move run-off water out from behind any wall. This will prevent unnecessary erosion and trenching. Remember, if you do not choose an easy course for water to run, it will choose the path of least resistance on its own and you will probably not like its choice.
6. Every attempt should be made to establish vegetation quickly on disturbed areas above a new wall. Walls with a slope above should be seeded immediately and covered with an erosion blanket or should be sodded. We prefer sod but recognize that seed and blankets are slightly less expensive.
7. Complete compaction in the wall face and of all disturbed soil/rock is critical to long term performance as is the inclusion of drain pipe at the bottom of every wall!



Manufactured by or under license from
St. Louis Retaining Wall Company, LLC
Covered by one or more of the following patents:
5,277,012 • D360,475 • D340,996 • D362,077 • D347,285 • D372,106



www.herculesmfg.com
314-389-9255 phone • 314-389-6416 fax
3916 Geraldine Ave., St. Louis MO 63115

WALL CONSTRUCTION

Wall Layouts: Once the desired location of the wall is determined and all site specifics considered, attention should be given to setback and any radii necessary so the correct location of the base course can be defined. Setback must be planned ahead so the distance from the face of the base course to the face of the top course can be determined. Take the height of the wall (in inches) including the base units, divide by 8" for all modules (5" for the Mite) to get the number of courses needed. Multiply the number of courses by the setback distance of each course (70 degrees = 2 $\frac{7}{8}$ inches) to determine the distance necessary to lay the wall back from toe (bottom) to top. Don't forget to add the length of the unit you are using to make sure you have clearance on top of the wall with any obstacle you need to clear. The distance needed from bottom to top will help you determine where to start your base course so the wall fits where you're building it. Radii or curves must be considered in order to properly space the units in the base course so you will have room to place units on top. Convex (outside) curves should be placed farther apart in the base (maximum of 14") since the units get closer together as each course is added. As the units get closer a block can be removed from the radius. When a block is removed the course will need to be re-spaced as if it were a base course. Concave (inside) curves should be placed closer together (touching together is maximum) in the base since they get farther apart as you go up. As the units get farther apart a block can be added to the radius. As before, the blocks will need to be re-spaced. **Only tall walls with tight radii will require the addition or removal of modules.**

The Trench: A trench must be dug to accommodate the base course of the wall. The trench should be 6" wider than the width of the unit being installed. The trench must be deep enough to accommodate the number of courses to be buried below grade plus a minimum of 6" of compacted crushed limestone in the bottom for a leveling base. Use $\frac{1}{2}$ " minus size limestone. (For engineered walls see plan details.)

Example: 5' exposed wall height / HERCULES Standard™ units / standard conditions:

Trench Width: 18" (12" length of unit + 6" for ease in construction)

Trench Depth: 14" (8" stacking height + 6" crushed limestone)

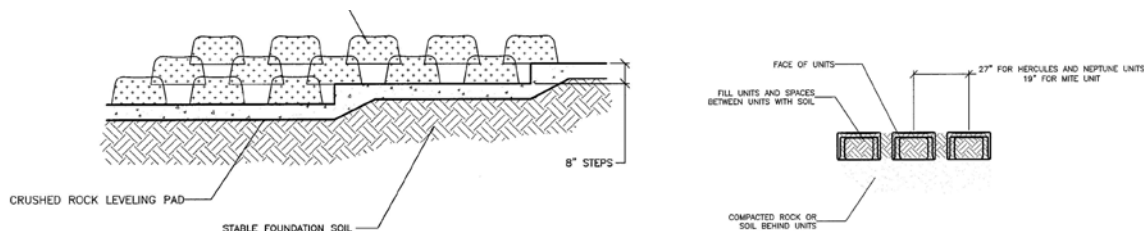
Example: 10' exposed wall height / HERCULES Mega™ units / standard conditions:

Trench Width: 24" (18" length of unit + 6" for ease in construction)

Trench Depth: 22" (16" stacking height for 2 courses below + 6" crushed limestone)

Base Course: Base course units must be placed level "front-to-back," "side-to-side" and spaced 8" apart for a straight run wall. Curves will require different spacing per radius needs. Please call your dealer for assistance. The use of a string line will be very helpful to ensure a straight, good looking wall and will ensure proper placement of your wall when placement is crucial to the project. All Hercules and Neptune walls, except the Mite, are spaced 8" apart. The modules are tapered with the bottom being wider than the top, so all measurements are to be taken from the bottom edge of the module.

***ALWAYS start your wall at the lowest elevation point. It is much easier to step up than to step down!!**
When the base grade changes 8", you can step up and still remain at the required depth with your trench.



Manufactured by or under license from
St. Louis Retaining Wall Company, LLC
Covered by one or more of the following patents:
5,277,012 • D360,475 • D340,996 • D362,077 • D347,285 • D372,106



www.herculesmfg.com
314-389-9255 phone • 314-389-6416 fax
3916 Geraldine Ave., St. Louis MO 63115

Wall Building: Be advised that the labor intensity of building any retaining wall is in the site preparation and base course construction. Don't rush though the preparation of your site or the placement of your base course. If you don't start it right, it will become more difficult to correct down the line as you gain height. Once your base course is finished, completely backfill behind, between and inside each unit. When back-filling with soil, step down on the in-fill and backfill to obtain good compaction in and between each unit. Use vibratory compaction equipment to completely compact all backfill from the modules rearward. Next, make sure the tops of each units side rails are cleaned off so the next course of units will sit flush on the concrete rails. It is important to maintain concrete to concrete contact. You are now ready to put your next course of modules on. Our walls are built one (1) course at a time!

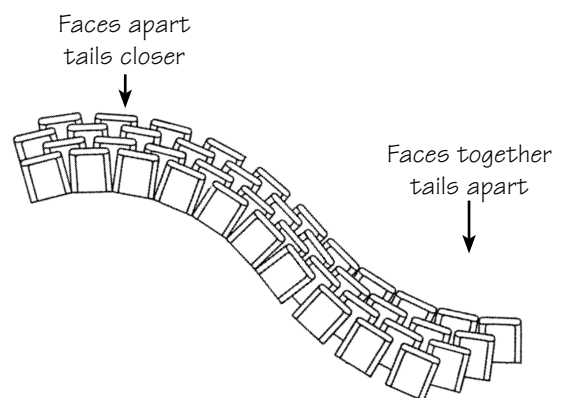
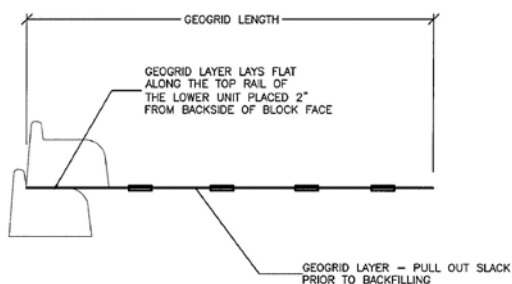
Position each course on top of the preceding one by placing units on top between the two units below (it should evenly straddle the two bottom units). Completely backfill each course before continuing on to the next course. If a unit becomes tilted to one side or the other and doesn't sit level on top, remove that unit and lightly chip the high points on the side rails of the unit(s) below so the unit on top will sit down more evenly. Our wall systems are completely forgiving if they become uneven and are easily corrected without having to go backwards. Correct and continue on with your wall.

You are now a true craftsman, but even if you don't get every unit perfectly level after the base course, don't worry! Flaws in planted or vegetated walls will never be seen, even by the trained eye (you) or by your neighbors. The plants will hide any irregularities and in most cases, the structural stability and integrity of your wall won't be compromised. Step back and look at a planted or rock filled wall and most variations will be undetectable. Once your base course is done, you only have to stack, backfill and compact one course at a time until you reach the top course. Backfill the top units to the peak of the face, not just to the top of the side rails. This will give you an even, smooth finished grade on top.

Note: A properly finished Hercules™ wall should only show module faces and no more. Wherever possible roll in the ends of the wall so the sides of the modules are covered by sloping ground.

Walls with greater set back: A wall inclination of 70 degrees is constructed by pulling the units above up to the backs of the faces of the units below ($2\frac{7}{8}$ inches of batter). If you are building a wall with a greater setback and therefore each course is slid back on the rails of the units below, simply use a piece of wood with the desired width to obtain the setback angle you want. Lay it across the units below, just behind their faces and pull the successive units up to the piece of wood. A piece of wood long enough to span several units at a time will lessen your installation time and assure a consistent, great looking wall.

Walls with reinforcement: The use of our modules with geogrid or woven geosynthetic reinforcement is very simple and doesn't alter the guidelines previously set forth. Simply sandwich the reinforcing material between the units and backfill as required by the engineered drawings and in accordance with the guidelines of the manufacturer of the reinforcing material to be used. Call us for additional information and guidelines.



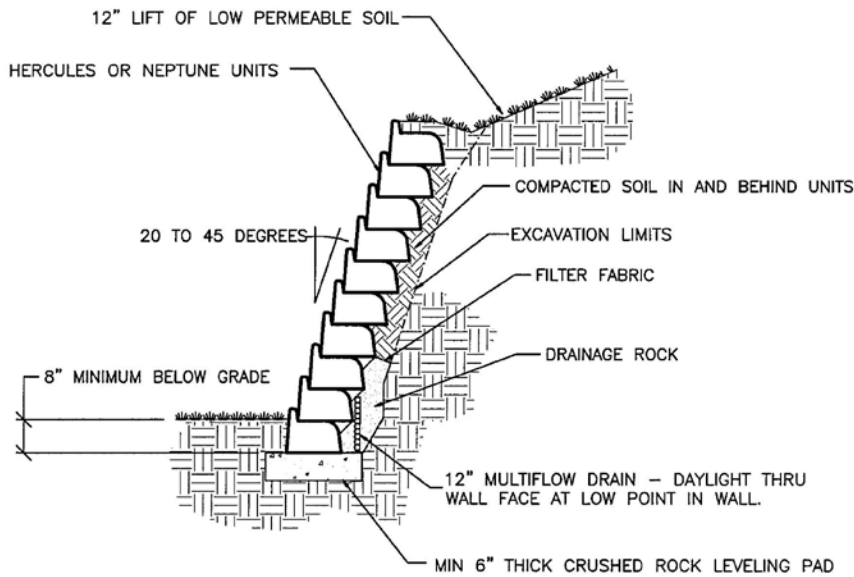


Manufactured by or under license from
St. Louis Retaining Wall Company, LLC
Covered by one or more of the following patents:
5,277,012 • D360,475 • D340,996 • D362,077 • D347,285 • D372,106



www.herculesmfg.com
314-389-9255 phone • 314-389-6416 fax
3916 Geraldine Ave., St. Louis MO 63115

TYPICAL HERCULES AND NEPTUNE CROSS SECTIONS

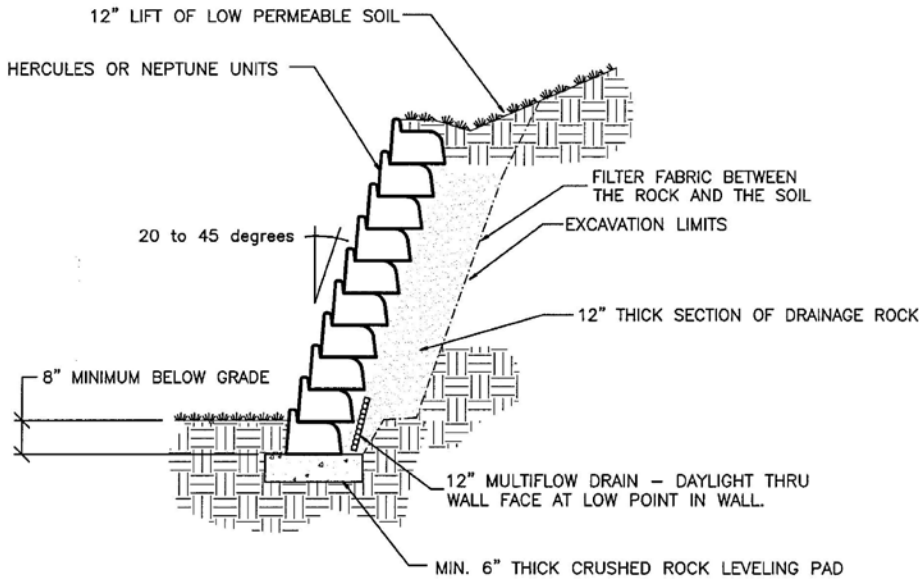


DRAINAGE ROCK

NOT TO SCALE

TYPICAL APPLICATIONS

- * Walls that are max of 5' utilizing Hercules Standard Units
- * Walls that are max of 7' Utilizing Hercules Mega Units
- * Depending on soil and surcharges, max wall height may vary



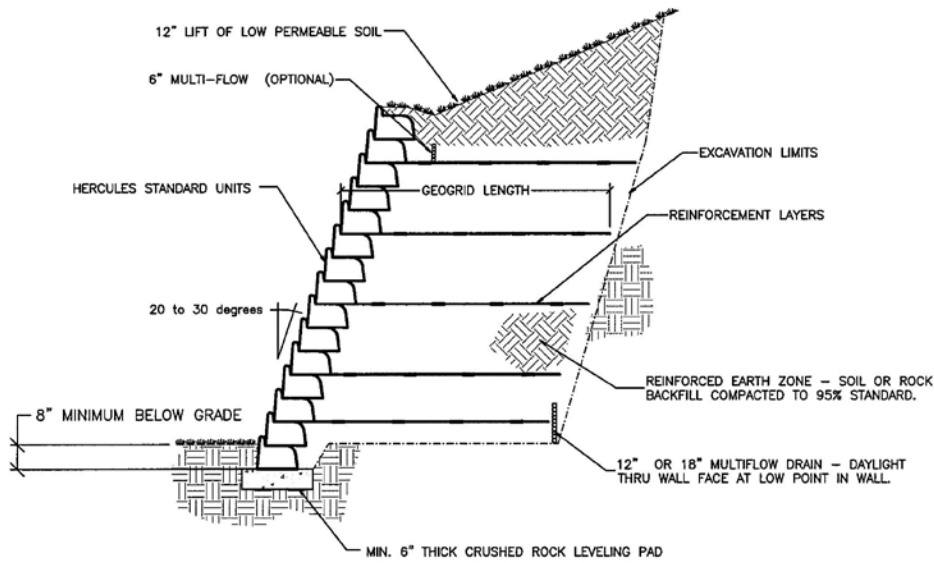
BASE DRAIN SECTION

NOT TO SCALE

TYPICAL APPLICATIONS

- * All walls with anticipated drainage issues
- * Walls that are max of 6' utilizing Hercules Standard Units
- * Walls that are max of 12' Utilizing Hercules Mega or larger Units
- * Depending on soil and surcharges, max wall height may vary

TYPICAL HERCULES AND NEPTUNE CROSS SECTIONS



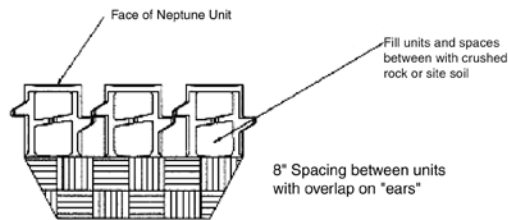
TYPICAL APPLICATIONS

- Tall walls where overdigging for the geosynthesis is not an issue
- Fill applications where the placement of the geosynthetics does not require overdigging
- Hercules and Neptune walls utilize lighter geosynthetics and shorter lengths than other competitive systems

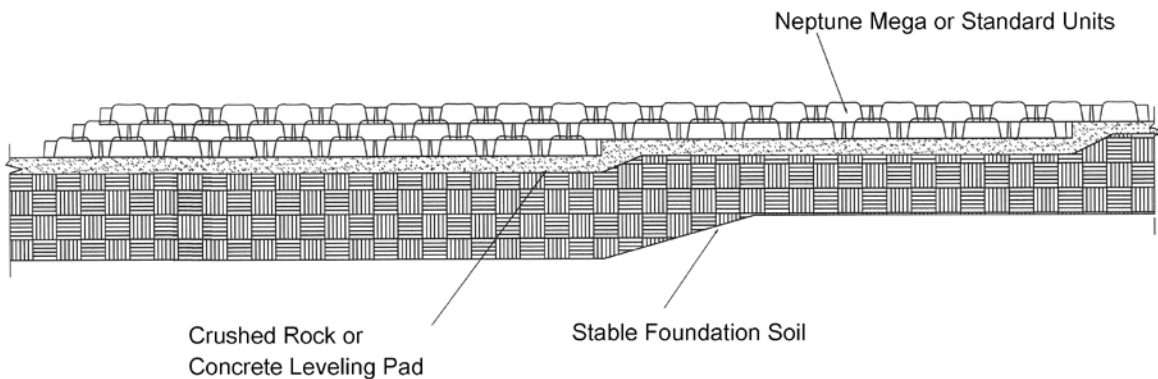
GEOGRID SECTION #1

NOT TO SCALE

NEPTUNE UNIT DETAILS

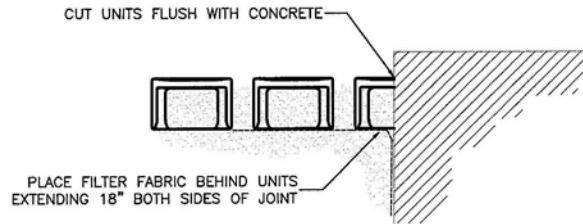
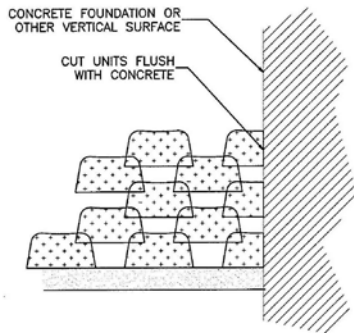


Top View of Neptune Installation

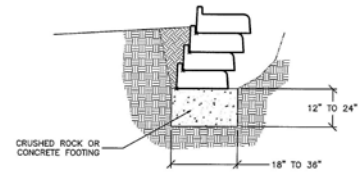
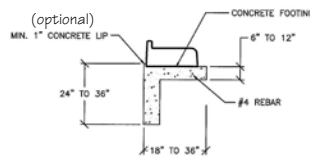
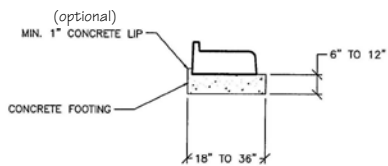


USEFUL HERCULES AND NEPTUNE DETAILS

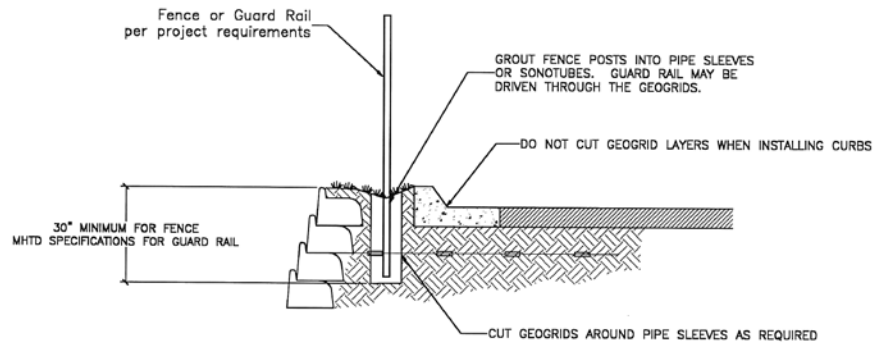
Abutment Details:



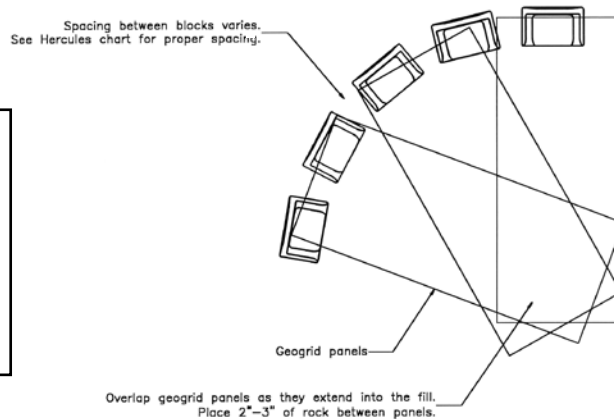
Footing Details:



Fence, Guard Rail, and Curb Detail:



Radius Wall Detail:



Please feel free to contact us for specialty details from our library, or go to www.herculesmfg.com for downloads.