

# ULTRABLOCK™

Manufacturers  
of the  
**LOCK-BLOCK®**  
Retaining Wall  
System



Maryhill Winery, Goldendale, Wa.  
Quarry Stone, MSE Design, supporting the outdoor visitor's wine tasting area and surrounding amphitheater.

Nevada D.O.T. Maintenance Yard  
Virginia City, NV.  
Quarry Stone, MSE wall built to expand storage area.



**WARNING**  
No construction should be undertaken without professionally engineered specifications for the site and issuance of proper permits



Thompson Road Slide Repair, Portland Or.  
Cut stone, wall reinforces the toe of a 1.5 to 1 back slope with a steel fence catchment.



Vancouver Harbor, Vancouver BC.  
Block steps provide the perfect transition between the pedestrian walkway and the water front.

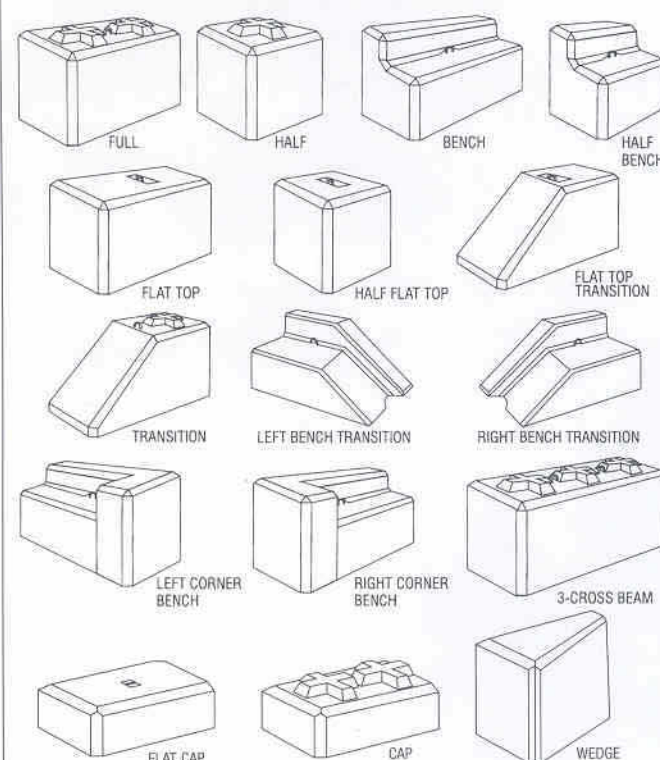


Evergreen Wall Project, Vancouver, WA.  
Quarry Stone, wedge blocks allow for a wall radius.

## INSTALLATION TIPS

- Always start with a smooth base, joint lines in the wall can only be as straight as the base on which they are placed. A six inch blanket of granular material, compacted and raked or screeded smooth is normally a sufficient base.
- If possible, prepare the entire base before placing blocks so that a visual inspection can be made to minimize bumps and hollows.
- If the location is not level or has a stepped bottom surface, place the lowest blocks first, taking care to align the front face of the wall.
- As the surface finish of the blocks is variable, the best face of the block should be turned out.
- IMPORTANT - Begin placing the second layer after no more than 5 or 6 bottom layer blocks have been placed, again taking care to align the front face of the wall. ( remember, there is approximately 1/2" of clearance in every direction in the fit of the keyways)**
- Should the clearance become tight for the second row of blocks, merely place the next block along the bottom row, with a slight gap (1/4"), the second and subsequent rows will then have sufficient clearance. Continue placing subsequent rows, taking care to align the front face.
- Non right-angle corners, or corners where walls have different batters are achieved more easily by building the 2 walls independently and pouring the corner afterwards. Chamfer strips attached to the inside of the formwork will blend the corner in with the rest of the wall.
- If desired, the wall can be curved either vertically, horizontally, or both.
- For speed & convenience a track mounted hydraulic excavator is the best machine to place the blocks.
- Pressure washing & sealing the surface will minimize algae growth and prolong new appearance.**
- Some useful tools to have on the job-site include:
  - A transit to lay out a level base. - Shovels and rakes for base preparation.
  - A lifting jig to hold blocks at the correct batter.
  - A broom to clean the keyways before placing the next layer.
  - One or more 5 foot pry bars for jostling the blocks into position.

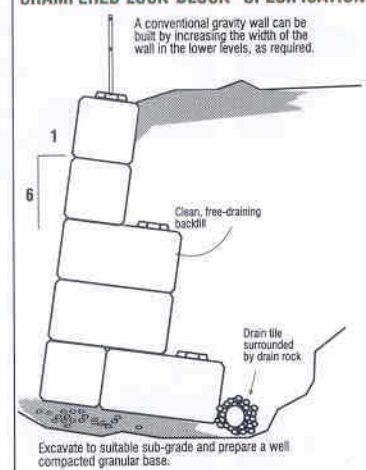
### STANDARD LOCK-BLOCK® CONFIGURATION



Blocks are normally available for immediate delivery, however, some configurations may not be in stock and will therefore require advanced notice. Alternate facing may be added to block face upon request.

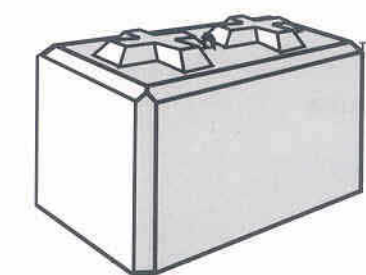
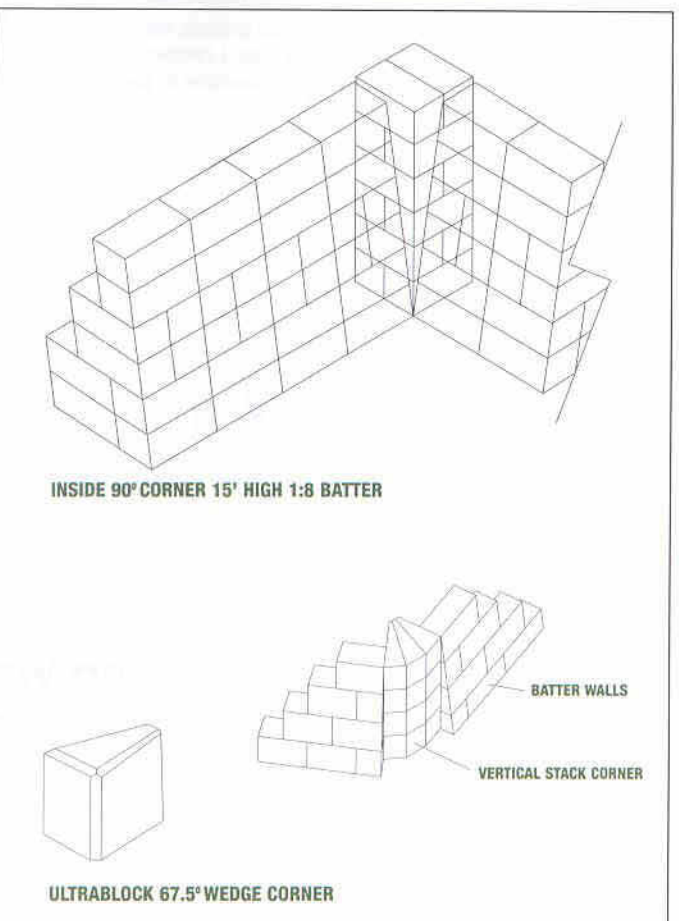
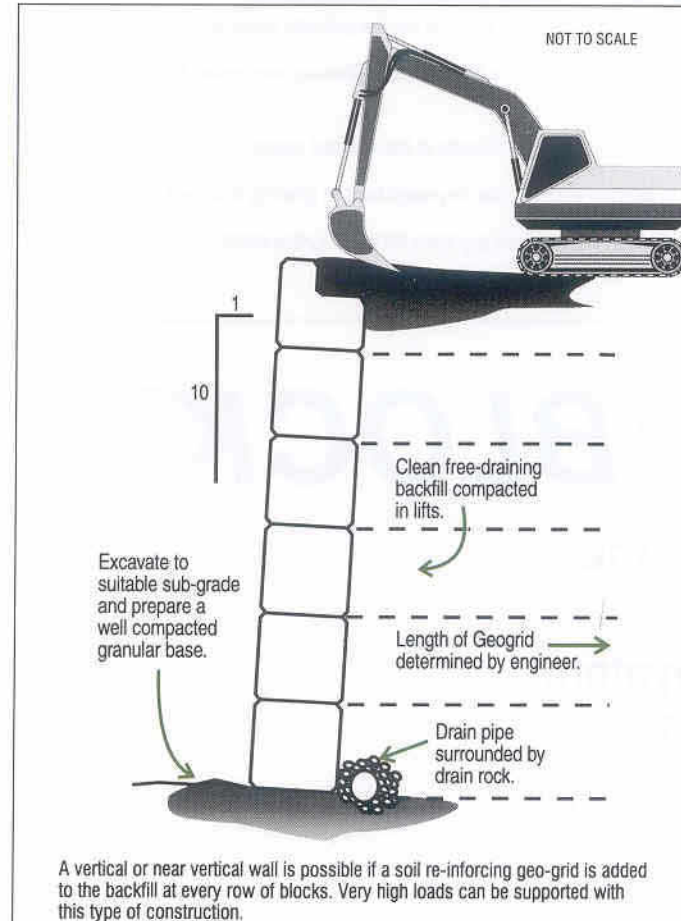
SIZE	29.5" x 29.5" x 59", (750mm x 750mm x 1500mm) approx. 2.5' x 2.5' x 5'
WEIGHT	4320 lbs. (1960 kg)
CLEARANCE AROUND KEY	1/2" (12mm) The chamfered corners provide approximately 8 in <sup>2</sup> of drainage area per block.
LIFTING PROVISION	A standard 7 strand steel loop at top center of each block.
MINIMUM RADIUS OF CURVATURE	100' (30m) for walls one block thick. Call for special blocks to do tighter radii.
SURFACE FINISH	<b>Standard Grade:</b> 1 full face without large blemishes, shade of concrete may vary. <b>Utility:</b> All faces may contain large surface blemishes such as honeycomb, chips, etc. <b>Architectural Face:</b> cistone, quarried stone.
CONCRETE STRENGTH	Blocks are manufactured with return concrete and strength levels will vary. Extra charges will be quoted for guaranteed concrete strength, if required.
AVERAGE PLACING TIME	10 blocks per hour (bottom row), 20 blocks per hour (other rows).

### CHAMFERED LOCK-BLOCK® SPECIFICATIONS



### MINIMUM DESIGN CONSIDERATIONS FOR QUALIFIED ENGINEERS INCLUDE:

- Always use free draining gravel or sand and gravel backfill to allow drainage. Where high groundwater conditions occur in the native ground, chimney or blanket drains may be required.
- Coulomb (sliding wedges) or Rankine (earth pressure) analysis can be used to determine adequate resistance to sliding and overturning of the blocks.
- Analysis must include additional loading effects of sloping backfill.
- Additional transient or permanent loads behind the wall.
- Bearing capacity of foundations including additional loads from backfill on wall should be considered.
- Prevent migration of fines through wall by use of filter material.
- Prevent migration of subgrade into backfill.
- Consider overall stability of retaining wall, backfill and subgrade.



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