INSTALLATION GUIDE - LANDMARK

Before You Start

- Have the engineer confirm that the foundation bearing capacity meets the parameters used in design.
- A setting out engineer should layout the proposed wall base position by offset-staking.

Follow these steps to install the Landmark System

Step 1

Excavation/Levelling Pad Base

- Excavate for the levelling pad to the lines and levels shown on the plans and excavate enough soil behind the wall for reinforcement placement. In 'cut' areas, the trench for the levelling pad should have a minimum width of 600 mm and be 350 mm deep.
- Make sure there is enough room to observe safe working method
- Place base material as shown in the drawings on undisturbed soils. Base material should be a minimum of 150 mm thick and 600 mm wide.
- An aggregate levelling pad base is composed of good, well-graded compactable base material - 20mm down (with fines) is suitable.

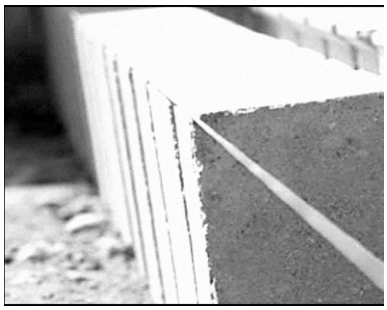
Step 2

Foundation Course Installation

- Placing the foundation units is one of the most important steps in the construction process, both structurally and aesthetically.
- Run a string line along the back of the foundation units and align the units as necessary.
- Begin laying block at the lowest elevation of the wall.
- Place first course of Landmark foundation units on the prepared base material. Place the units side by side.
- Make sure the units are in full contact with the base material.
- Level each unit front to back and side to side.
- Once the foundation course is installed, levelled and aligned, place the first course of full-height units; then place in-fill soil in front and behind the base course.
- Carefully compact in front and behind the foundation units with light-weight hand-operated compaction equipment.
- Recheck the foundation units for level and alignment.
- Errors in the accuracy of the positioning of foundation units will signifi-cantly impact the alignment of wall units in later stages of construction.

Excavation

Levelling pad



Foundation/string line

Foundation course

Foundation/level

Full unit installation

Backfill and compact

Inside curve

Geo-synthetic reinforcement

Step 3

Full-Unit Installation

- Place full-height units into channel, ensure direct contact with immediately adjacent units and pull forward to engage lock flange.
- Place unit in running bond. (Running bond occurs when the units are centred over the vertical joining of the previous course.)
- String line back of block to ensure lateral alignment is achieved.
- Shim as needed to maintain wall batter alignment. The back of the block should be vertical. Strips of reinforcement may be used for shim material. Excessive shims will have a detrimental effect on the overall structural performance of the wall and should be avoided.

Note: Do not use a rubber blow hammer or mallet to move units forward or back. Pull forward by hand to avoid damaging lock flange.

- To build an inside curve, check the wall construction or site grade plans for the dimension of the radius curves to be built. **The minimum inside radius curve, at the base of the wall, is 1.8 m.**
- Begin by driving a stake in the ground at the desired centre of the curve. Attach a string line and rotate it in a circle around the stake to mark the radius at the front to the foundation units. Align each foundation unit with the desired radius curve and ensure level placement from front to back and side to side.
- The setback of the block will cause the radius of each course to gradually increase and eventually affect the running bond of the wall. To maintain proper running bond, use partial units as necessary.
- Outside curves are constructed using the tapered units. **The minimum outside radius curve, at the top of the wall, is 2.75 m.**
- Begin by determining the desired radius at the top of the wall, drive a stake in the ground at the desired centre of the curve. Attach a string line and rotate it in a circle around the stake to mark the radius at the back of the foundation units. Align each foundation unit with the desired radius curve and ensure level placement from front to back and side to side.

Note: To calculate the radius of the foundation course, given the radius at the top of the wall, add 25 mm of radius for each 380 mm of wall height.

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Step 4

Drainage System Construction

- Each project is unique. The site levels will determine at what elevation to install the drainage pipe. Refer to the construction plans for details of drainage system design.
- Place drainage pipe as low as possible behind the wall, so water drains down and away from the wall into a storm drain or to an area lower than the wall.
- The characteristics of the proposed backfill material will have been considered by the wall designer during his calculations and must not be varied without the designers approval. Most often, this backfill will be a well graded granular material with free draining characteristics but imported recycled materials or on-site materials may be used subject to the consideration and approval of the wall designer.
- It is good practice to place a minimum of 300 mm single size drainage aggregate to create a drainage column directly behind the Landmark units.
- If the approved backfill contains fine particles, geotextile separator/ filter fabric should be used to separate the backfill from the drainage stone.

Drainage

Drainage

Step 5

Backfill Placement and Compaction

- Place reinforced soils in 150 to 200 mm of loose lifts where hand-operated compaction equipment is used and in not more than 300 mm of loose lifts where large self-propelled compaction equipment is used.
- Place, spread and compact reinforced backfill in such a manner as to minimise slack and the formation of wrinkles in the reinforcement.
- Only hand-operated compaction equipment is allowed within 1.2 m of the back of the units.
- All backfill should be compacted as specified by the project geotechnical engineer and scheme designer. Refer to the wall construction specifications for specific details regarding compaction.
- Prior to periods of construction inactivity, the backfill should be graded to drain water away from the wall face. Trenches or berms may be needed to control surface drainage in the vicinity of the cut slope, wall backfill or toe area.
- Repeat full-unit installation instructions, backfill, compact and follow reinforcement steps until wall is complete.

Backfill

Repeat full-unit installation

Geo-synthetic reinforcement

Lock bar installation

Backfill and compact

Cap Placement

Step 6

Installation of Geo-synthetic Reinforcement

- Make sure geo-synthetic reinforcement is of the correct type per the wall design drawings.
- Ground should be level with top of Landmark units prior to rolling out geo-synthetic reinforcement.
- Lay geo-synthetic reinforcement flat across top of block, to the front face. The reinforcement has a primary-strength direction, which must be laid perpendicular to the wall face. Do not overlap reinforcement.
- Place the lock bar into the locking channel, flat side up and angled side to back of block. Maintain reinforcement within 25 mm of front of block
- Once the lock bar is in place, roll geo-synthetic reinforcement back to the specified length and tension.
- Use stakes or staples to hold the tension in the geo-synthetic reinforcement. Place a layer of soil on top of the reinforcement, working from the block outward to the back of the geo-synthetic reinforcement.

Note: Never run heavy equipment directly on top of the geo-synthetic reinforcement.

- Place the next course of units and repeat steps above.

Step 7

Cap Placement

- Lay out the Landmark cap units for the entire length of the wall, starting at the lowest elevation.
- Alternate short and long faces on a straight section of the wall.
- Cut cap units as required to obtain proper fit on radius curves and angled corners.
- At steps in wall elevation, stack two cap units.
- Apply an exterior concrete construction adhesive to adhere to the block.
- Use a string line to maintain proper cap alignment.
- Place a minimum of 150mm of impervious backfill to prevent water from running into drainage aggregate.
- Backfill and compact to finished level after cap adhesive has set.

A professional engineer must be consulted for proper design and reinforcement placement. It is the user's responsibility to obtain such design advice. Neither Anchor Wall Systems, Inc., nor its authorised manufacturers assume any responsibility for the design and/or installation of walls.

For additional support during your installation, contact Anchor Wall Systems on Freephone : 0800 032 4033