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Technical Bullet Series on Clay Brick Pavers

#6 – Edge Restraints

Abstract – This Technical Bullet details do's and don't with edge restraints along with providing advice and details on the most common types of edge restraints being used in segmental paving.

A quality paver installation should last for decades. By providing horizontal interlock, edge restraints are an essential element to the longevity of any segmental pavement installation. Without edge restraints, pavers can “unravel” over time resulting in paver movement, open joints and paver damage. Some paver installers ignore the critical role of edge restraints and simply do not install them but the importance of edge restraints cannot be overstated. It is important that the designer specifies edge restraints and follow up to be sure that they are installed.

Edge Restraints To Avoid

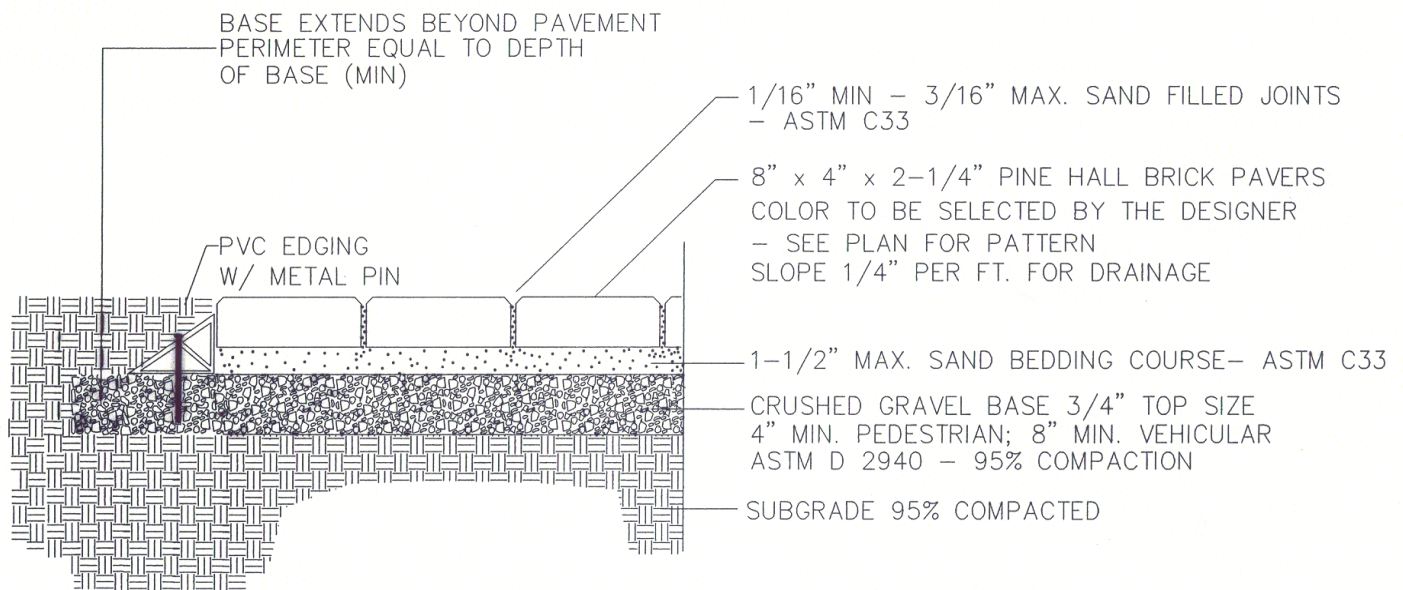
- Common Backfill
- Landscape Timbers
- Planters or Garden Edging

Edge Restraint Tips

- As load increases, the significance of the edge restraint increases.
- A sailor band of full pavers are recommended at the restraint edge in order to move smaller cut pieces to the pavement interior. This increases interlock within the system.
- In any condition where bedding sand may clog a drainage point or migrate into open gaps in the restraint, geotextile fabric should be used to keep bedding sand in place.
- Building foundations make terrific edge restraints. Depending upon conditions, a drainage system may be required under the pavement at the foundation.

Manufactured Edge Restraints

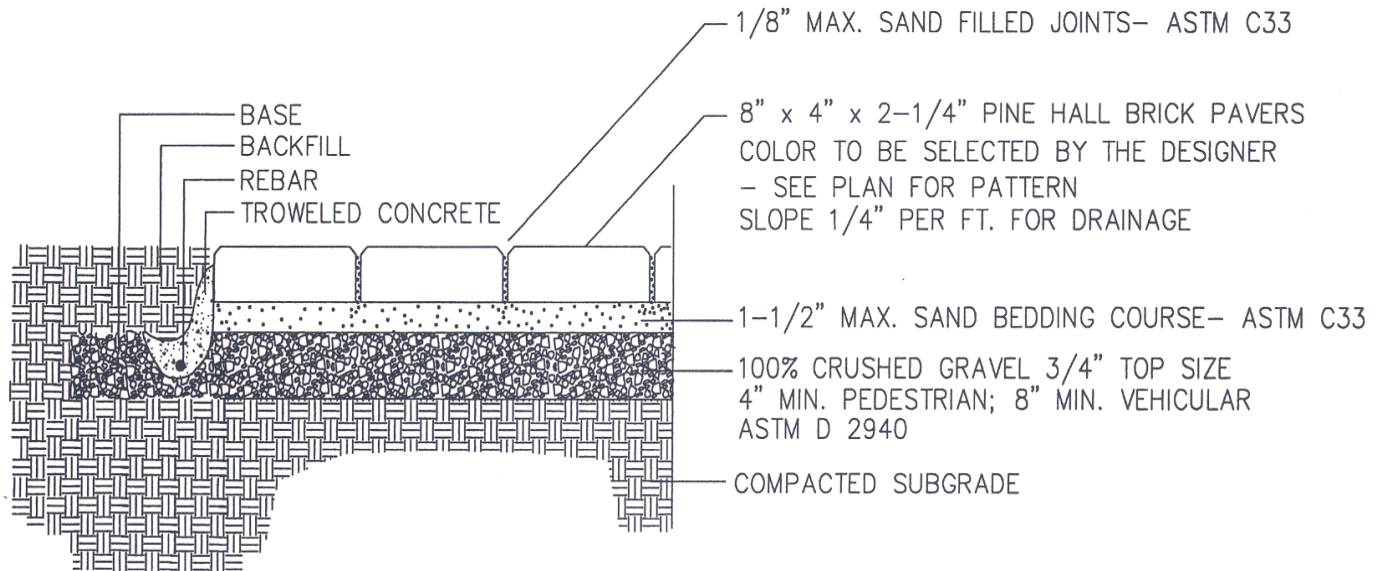
The most common edge restraints used today are manufactured restraints made of PVC plastic or metal that are installed by nailing landscape spikes into your crushed gravel base and backfilling with topsoil. Manufactured edge restraints can be used in both straight and curved application. Manufactured edge restraints should be installed on top of the base not the bedding sand. PVC edge restraints are the most economical and can be installed easily by a DIYer.



Detail 1: PVC Edge Restraint

Troweled Concrete Edge Restraints

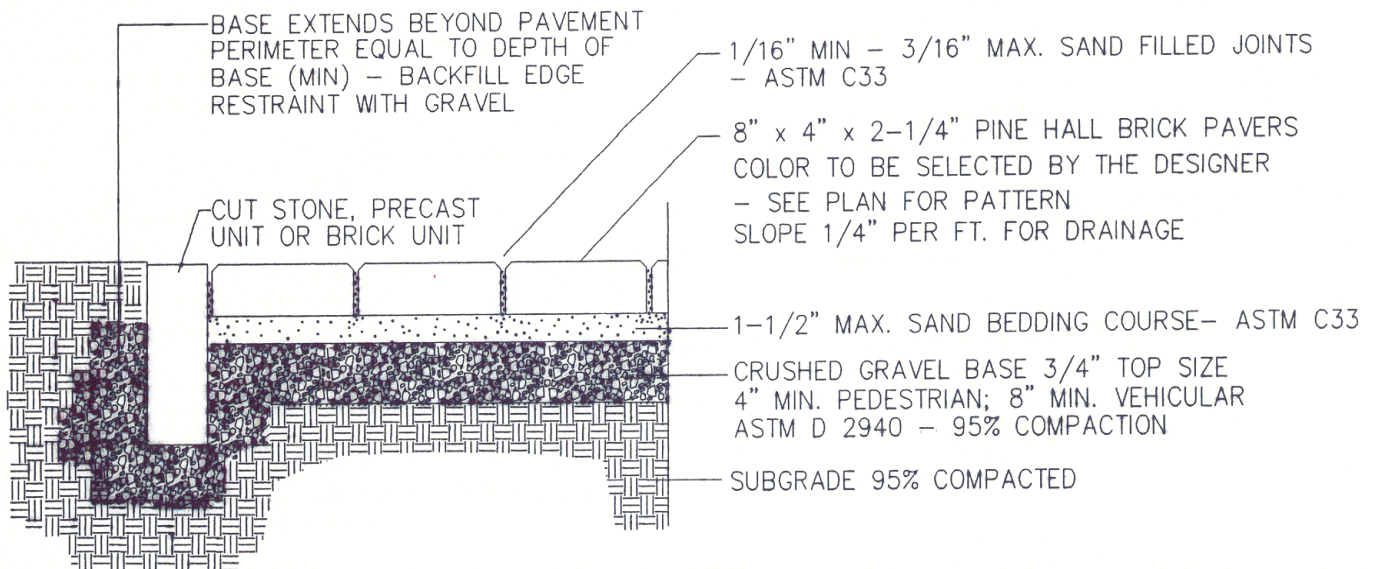
Another common type of edge restraint is troweled concrete. For many years this was considered the least expensive edge restraint requiring only a bag of concrete and limited labor to install. Over time this method of installation proved to be inadequate. The concrete would crack and break down and the edge restraint would fail. Contractors looked for ways to improve this method and today often lay steel rebar in the concrete to provide additional strength to this type of edge restraint.



Detail 2: Troweled Edge Restraint

Masonry Edge Restraints

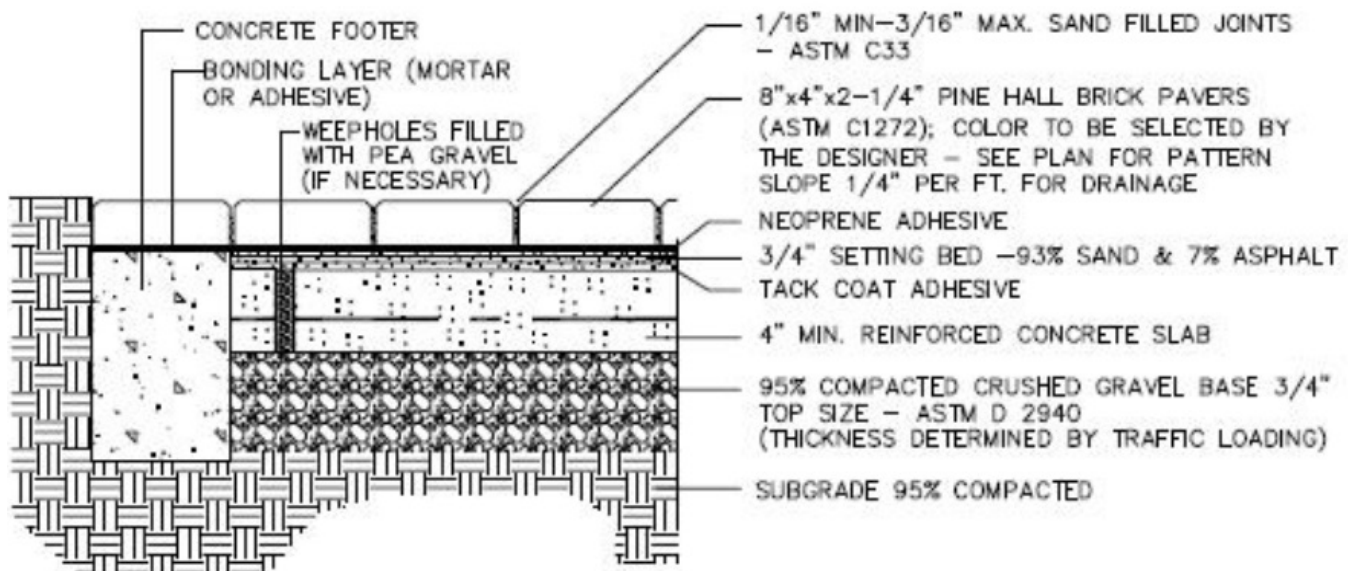
There are many masonry materials used as edge restraints. Some of these include granite block, precast concrete or brick adhered/mortared to a concrete curb. It is important for the edge restraint to extend into the crushed gravel base and to backfill with crushed gravel to provide support to the edge restraint.



Detail 3: Masonry Edge Restraint

Heavy Vehicular Edge Restraint

A DOT approved concrete curb is recommended in heavy vehicular applications. The typical width is at least 8" with a depth that extends into the subgrade. Curb should be vertical, so that the width of the joint is consistent. Angled curbing will result in a wide joint, which can result in sand loss and subsequent loss of interlock. Cut asphalt has proven to not be sufficient under heavy vehicular loading. Edge restraint must be backfilled appropriately to withstand loading.



Detail 4: Heavy Vehicular Edge Restrain – Bituminous Setting System