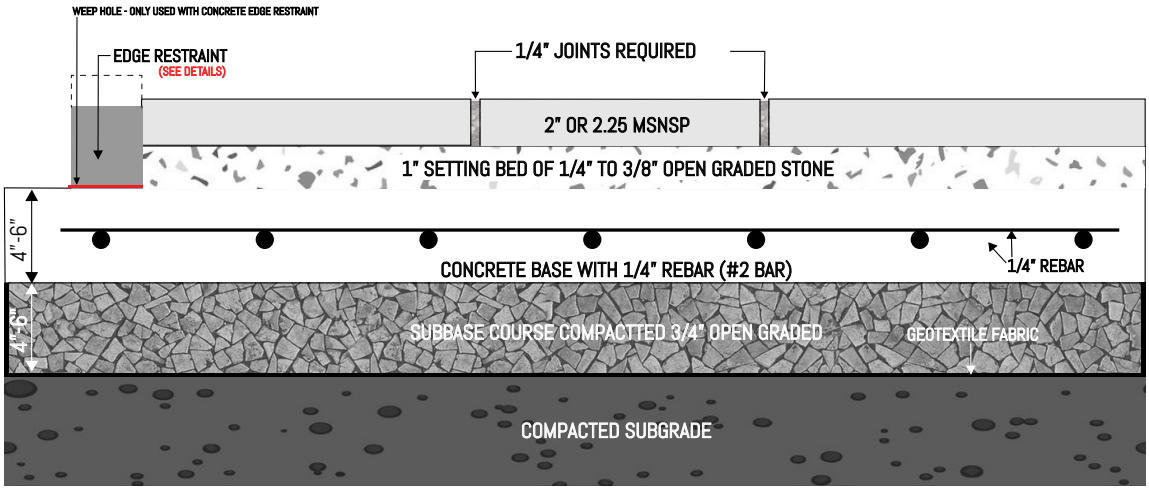
LOBASCIO SYSTEM: 2”-2.25"

MSNSP – Marmiro Stones Natural Stone Pavers – Light Vehicular Application



WARNING
Installation of material is sign of acceptance.
No returns on open crates, custom orders, & products with custom packaging.
For unique job conditions, soil types and concrete slab reinforcement additional engineering may be needed.
Concrete sand or any additives mixed with sand and screenings hold moisture under Marmiro Stones® Natural Stone Pavers (MSNSP) and can affect the integrity of the stone. They are prohibited from being used as a bedding layer.
Tamping sandblasted marble is not recommended. This will cause chipping along the edges of the stone.

1) SITE PREPARATION & EXCAVATION

a. **Call Before You Dig**
- Always contact 811 or your local utility locating service to mark underground utilities before any excavation. Include discussions with the client about irrigation lines, drainage, and sprinkler heads.

b. **Excavation & Slope**
- Excavate to a depth of 10.5”–12.5”, accounting for all layers, and maintaining a consistent slope of 3/16” per foot away from structures for effective drainage. This slope must be consistent from sub grade to final grade.

c. **Sub Grade Preparation**
- Compact native sub grade soil using a vibratory plate compactor to achieve a uniform, stable base.
- Maintain slope throughout compaction.
- Install a woven geotextile fabric, fully encapsulating the excavated area, including vertical sidewalls, to stabilize soil and prevent sub-base migration. **(Refer to Diagram)**

d. **Sub Base Installation**
- Place and compact a minimum of 4” of ASTM #57 stone (3/4" clean angular stone) as the sub-base layer.
- This should extend ½ the total depth of the bass and sub-base outside the finished edge.
  - Example: 4” sub-base + 6” base = 10”. 5” should extend beyond the finished width.

e. **Concrete Slab (Bonded or Unbonded Systems)**
- Pour a 3500-PSI concrete slab, reinforced with ½” rebar on 12” centers.
- For heavy-duty applications, a minimum thickness of 6” is recommended.
- Finish the concrete with a slope matching final grade: 3/16” per foot minimum.

2) SETTING BED & PAVER INSTALLATION

a. Elevation Allowance
- Ensure the finished concrete surface sits 2-1/4” below finished grade to accommodate setting bed and stone thickness

b. **Setting Bed Material**
- Use clean, angular stone, such as AASHTO #8, #89, #9 (1/8”–3/8” stone) for the setting bed.
- ►DO NOT use concrete sand or stone screenings beneath Marmiro Stones Natural Stone Pavers (MSNSP), as per TCNA and industry recommendations. These materials retain moisture and increase risk of efflorescence or freeze-thaw damage.

c. **Screed Rail Setup**
- Use 1” metal screed pipes set to working widths and aligned with finished elevation.
- Set screed rails parallel to a fixed reference line or hard edge for consistent layout. **(See Diagram)**

d. **Screeding the Bed**
- Screed the bedding layer using a straight aluminum edge.
- After screeding, remove the rails and fill voids with additional setting stone. Level with a trowel.

3) STONE INSTALLATION

a. **Layout & Staging**
- Select your starting point based on pattern and logistics.
- Use string lines or laser alignment to ensure square, straight runs. Maintain consistent joint spacing across the project.

b. **Joint Spacing**
- MSNSP MUST be laid with a 1/4” - 3/8” joint using spacers maintaining straight lines. If laid with tight joint, point loading and chipping will occur.
- Use spacers to maintain consistent joint width.

c. **Blending & Aesthetic Consistency**
- Due to natural variation in stone, blend from multiple crates during installation to ensure color and texture consistency.

d. **Cutting**
- Use a wet-cut diamond blade saw for all modifications. Wet cutting reduces dust, prevents chipping, and creates cleaner edges.

e. **Setting & Tapping**
- Use a white non-marking rubber mallet to set travertine and marble – this is especially important for tight joint applications.
- Avoid dark-colored mallets to prevent marking or staining.

f. **Edge Restraint**

a. Options
- Natural stone edging placed in mortar bed.
  - ⊙ Weep holes should be placed through edge restraint to allow water to escape.
- Poured in place concrete curb
  - ⊙ Weep holes should be placed through edge restraint to allow water to escape.
- Crete-Rail™ (or similar), as it allows for water permeability and prevents shifting or heaving.

4) BEST PRACTICES

a. A good practice would be to place screed rails parallel to a fixed finished grade edge.

b. During installation of MSNSP, it is best practice to use string lines or laser equipment to maintain square at the starting point.

c. Due to variations in natural stone, it is required to pull from multiple crates.
- French Pattern – Pull from 2-3 crates for proper blending.
- Single Size – Pull from 4 crates for proper blending.

d. Antiqued travertine application: Use a vibratory plate compactor with rubber mat or vibratory roller.

e. Antiqued & Vintage marble application: Use a vibratory plate compactor with rubber mat or vibratory roller.

f. Sandblasted marble application: use a white non-marking mallet to set the stones.

g. Perform all cutting using a diamond blade. Cutting wet can provide a smoother cut and may decrease chipping on MSNSP.