

CONSTRUCTION SPECIFICATION
NATURAL RESOURCES CONSERVATION SERVICE
HEAVY USE AREA PROTECTION

SCOPE

This item shall consist of the installation of heavy use area protection measures and shall include clearing, earth work, foundation treatment, construction of surface treatments, vegetative measures, and all other operations incidental to construction of the planned measures. Construction operations shall be done in such a manner that soil erosion and air, water, and noise pollution will be minimized and held within legal limits as specified by state regulations.

CLEARING AND GRUBBING

All trees, stumps, roots, brush, weeds, and other objectionable material will be removed from the work area as required for proper installation of the planned measures. Disposal shall be by stacking at approved locations, burning, burying at approved locations, or removing from the site. All burning shall conform to Alabama laws and regulations.

MATERIALS

Materials shall be as shown on the drawings or as described in this specification. Other materials equivalent in quality and function may be substituted for those specified if approved by the engineer.

Concrete – Concrete shall be a mix designed to provide a minimum compressive strength of 3000 psi at 28 days. On-site batching will be allowed if approved by the engineer. Concrete mixed on site shall have a maximum water content of 6 gallons per bag of cement and a minimum cement content of 5.5 bags per cubic yard for concrete. The mix design for on-site batching shall be approved by the engineer.

Geotextile – Geotextile shall be non-woven, needle-punched fabric having a minimum Grab Tensile Strength of 157 lbs. as determined by the Grab Test Method of ASTM D 4632. The minimum puncture strength shall be 309 lbs. as determined by procedures of ASTM D 6241.

Rock Riprap – Unless otherwise specified, rock riprap shall conform to the requirements of Section 814 of ALDOT Standard Specifications for Highway Construction for the class specified.

Graded Aggregate Base – Unless otherwise specified, or approved, graded aggregate base shall conform to the requirements of Section 801 or 825 of ALDOT Standard Specifications for Highway Construction for the type or gradation specified.

Other Materials – Requirements for other materials shall be stated on the drawings or in supplemental specifications.

CONSTRUCTION

Structures and surface treatment shall be installed to the lines, grades, and dimensions shown on the drawings. Unless otherwise specified, the finished surface of the treated area at its outside edge shall be level with the adjacent soil surface. If the heavy use area is for concentrated livestock use, such as a watering trough or hay ring, the finished surface should be nearly level with a slight grade away from the center of the area.

Remove all organic materials and soft soil that would be detrimental to the installed measures, from the subgrade area. Back fill the subgrade area with compacted fill to the planned subgrade surface elevation. Compact the subgrade as necessary to provide uniform bearing for the planned measures. Where controlled compaction is required, follow the specified procedures as stated on the drawings or in supplemental specifications.

Geotextile should be placed on a relatively smooth surface to minimize fabric creep when placing stone on the fabric. Where subgrade surfaces are near horizontal and gravel will be placed on the geotextile, fabric overlap should be a minimum of 12 inches. For all other situations, the minimum overlap should be 18 inches. Secure the fabric to the ground with pins (staples) to hold it in place while placing stone or other materials on the fabric. Pins (staples) are to be at least every 5 ft. and 3 ft. at overlaps. Do not operate equipment directly on the geotextile.

Crushed stone aggregate shall be spread and smoothed to provide the thickness and dimensions shown on the drawings. Unless otherwise approved, the aggregate shall be compacted by traversing the entire surface of the spread aggregate with the tracks of the spreading equipment or other heavy equipment, leaving a smooth uniform surface.

Other materials such as bark mulch, shredded rubber, limestone screenings, and similar materials will not require compaction unless otherwise specified.

Bituminous materials shall be placed and compacted according to the appropriate sections of ALDOT Standard Specifications for Highway Construction.

Concrete shall be placed and worked into the corners of the forms and around reinforcement and embedded items. Immediately after placing, the concrete shall be consolidated by spading, hand tamping, or vibration as necessary to provide a smooth surface and dense concrete. The surface smoothness shall be appropriate for the intended use. Surfaces intended for use by livestock shall have a broomed finish. For slabs up to 4.5" thick and having a dimension greater than 12 feet, formed or sawn contraction joints shall be placed at maximum intervals of 10 feet. Contraction joints shall have a minimum depth of $\frac{3}{4}$ inch. For slab thickness greater than 4.5", space joints according to the design.

Concrete shall be prevented from drying for a curing period of at least 7 days after pouring. Exposed surfaces shall be kept moist, continuously during the curing period or they may be coated with curing compound as soon as free water has disappeared from the surface. The compound shall be applied uniformly at a rate of 1 gallon per 175 square feet of surface.

Concrete shall not be placed when the daily minimum atmospheric temperature is less than 40°F.

VEGETATION

After installation of heavy use area measures is complete, the disturbed areas shall be smoothed and vegetated. Soil surfaces shall be graded to eliminate ponding and provide complete surface drainage around and away from the installed measures. Vegetative measures shall be applied in accordance with Alabama NRCS conservation practice standard, Critical Area Planting, Code 342.