

3. All proposed roadways must conform to the following minimum construction standards: (GSCPC Subdivision and Development Regulations – Article X, Section I.)

a) Subgrade construction

- i) Subgrade areas for all proposed roadways are to be thoroughly compacted to the specifications listed in this article and the approved construction drawings.
- ii) No organic material to be permitted in any roadway subgrade.
- iii) All roadway subgrades are to have California Bearing Ratio (CBR) tests performed. Tests are to be representative of the site.
- iv) Compact the subgrade and embankments to a density of at least 95 percent of standard proctor. During compaction, maintain the moisture content of embankment or subgrade material within ± 2 percent of the optimum moisture content. Compact each lift as required before depositing for the next lift. Soil is to be compacted in lifts not exceeding one foot unless directed otherwise by the design engineer.
- v) The cross slope of the proposed subgrade is to be $\frac{1}{4}$ inch per foot fall, except in cases of superelevated crowns.
- vi) Finished subgrades must be proof rolled with a loaded 20 ton vehicle, minimum. All lanes and cul-de-sac areas are to be rolled tested. Proof roll test is only applicable prior to any increase in moisture content due to weather conditions or other water-related circumstances, for example, rain, snow, waterline breaks, groundwater intrusion, etc.
- vii) If pumping or rutting of the subgrade occurs, then the noted area is to be remediated by one of the following means:
 - 1) Synthetic: geotextiles.
 - 2) Mechanical: replacing unacceptable material with #2 stone (open graded material is to be separated with KYTC Type II fabric from the subgrade and drained off). The minimum layer thickness shall be 8 inches of #2 stone.
 - 3) Chemical: lime stabilization, etc.
 - 4) Reworking existing material: if material ruts during proof roll then this method is unacceptable; also after material is reworked it is subject to another proof roll test.
- viii) At any given time, the Planning Commission Engineer can require verification that the remediation method meets the design parameters based on the subgrade conditions in the field.

b) Base material

i) Base material for all proposed roadways is to be either Dense Graded Aggregated or Crushed Stone Base (DGA/CSB), as defined by the Kentucky Transportation Cabinet (KYTC).

ii) Each lift of DGA base material is not to exceed 6" maximum. After each subsequent lift string line will be pulled to check for proper depth and cross slope (1/4 inch per foot fall). Each lift will also require a check of the density and moisture content. The density shall be 84% of solid volume, or 140 lbs. per cubic foot. The acceptable moisture content range shall be from 3% to 5%.

iii) Before constructing a CSB base, complete a control strip to determine the level of compaction necessary to achieve the target density for the remaining base course. Construct additional control strips whenever a change is made in the source, gradation, type of subgrade, type of base aggregate, or layer thickness. Leave each control strip in place to become part of the project. Complete at least one control strip for each layer of base material. Construct a control strip a minimum length of 500 feet and to the full width of the aggregate base course. Use the same equipment and procedures intended for the construction of the remainder of the base course. After two passes the Development Inspector will require (3) density measurements at randomly selected sites, at least two feet from the edge of the base. The Development Inspector will require density measurements at the same (3) locations after subsequent passes of the compaction equipment. Compact the control strip until no further increase in density can be obtained from additional passes. The inspector will visually inspect the material after each pass to determine if the aggregate is being crushed into fine material. If the aggregate is being crushed, cracked, shoved, or shows other signs of distress, cease compaction efforts. If compaction of the base is not satisfactory, use other methods to achieve satisfactory results. After completing compaction of the control strip, the Development Inspector will require 10 field density measurements at random locations in the control strip and require the averaging of the 10 measurements to obtain the target density for the compaction of the base. Once the target density is obtained the remaining base course, equal to that same depth of the control strip, will be checked by nuclear gage at various locations. The density of these test sections shall average 98 percent of the target density or greater with no individual measurement less than 95 percent of the target density. When the average density of a test section does not meet the required density, cease laydown operations, and either provide additional compaction effort or rework the material to obtain the required average density. Do not add fines to meet the target density.

iv) Density tests cannot be performed on any base layers that have standing water on them.

v) During times of the year where base moisture is a concern, the designer can substitute the bottom 4 inch base layer with a 7 inch layer of #2 stone. This layer must be separated from the subgrade with KYTC Type II fabric and drained off (this layer cannot be applied toward any subgrade remediation).

c) Asphalt layers

- i) All asphalt base and/or binder layers are to comply with KYTC Specifications.
- ii) Any proposed asphalt courses are to adhere to the following temperature limitations:

Bituminous Mixtures	Minimum Ambient Air Temperature for Placing (Degrees Fahrenheit)
Asphalt Mixture, Surface (one inch thick or less)	45
Asphalt Mixture, Surface (thicker than one inch)	40
Asphalt Mixture, Base and Binder	35
Leveling and Wedging	45

- iii) Asphalt pavement sections are to have overlapping longitudinal joints of 6 inches. This can be achieved at either the base/binder or surface coat.
- iv) Proposed surface coats abutting existing surfaced roadways are to be milled and keyed into existing roadways, at least one foot.
- v) Asphalt base material may only be used with pavement specifications using a minimum base thickness of 4 inches. Excluding the use of surface material, asphalt layers less than 4 inches are to be KYTC Binder Class I materials.