

TOWN OF COOPERTOWN, TENNESSEE

RESOLUTION SR 2026-003

**A RESOLUTION TO AMEND THE SUBDIVISION REGULATIONS OF
THE TOWN OF COOPERTOWN, TENNESSEE**

WHEREAS, the Town is granted power to exercise authority over these regulations as granted in Tennessee Code Annotated, 13-4-301 thru 309, including any amendments, which provides the Town the power by resolution to exercise general regulations over planning in Coopertown; and

WHEREAS, amendments to the Subdivision Regulations need to be made to deal with the more complex development opportunities that are now emerging in Coopertown; and

WHEREAS, these changes provide a developer or contractor with more efficient options to construct appropriate subgrades while providing the Town with more reliable pavement structures; and,

WHEREAS, these additions and updates to the existing criteria in the Coopertown Subdivision Regulations are necessary to provide appropriate subgrade stability for any streets or roads that become the responsibility of the Town after the completion of the development.

NOW THEREFORE BE IT RESOLVED BY THE TOWN OF COOPERTOWN PLANNING COMMISSION, that this Resolution amends the Town of Coopertown Subdivision Regulations, Section 4.8 Undercutting, Section 4.8.3 Backfill, and Section 4.9.3 Soil Placement, by adding the following language:

See ATTACHMENT A

And amends Subdivision Regulations Appendix B, diagram ST-8 by adding the following language:

See ATTACHMENT B

This Resolution shall take effect upon its passage, the public welfare requiring it.

Date of Public Hearing: March 16, 2026

Approved by Planning Commission: March 16, 2026



Planning Commission Chairman

3-16-2026

Date

ATTACHMENT A

4.7.4 Channel Excavation

Excavation within waterways will require approved permits prior to commencing operations, and the equipment shall be kept out of the waterway to the greatest extent possible.

4.7.5 Blasting

Rock excavation requiring blasting shall be performed in accordance with all State requirements. Blasting operations shall be performed only by experienced, licensed blasting Contractors. Blast areas shall be protected with mats or earth overburden to prevent flying debris. When blasting near public areas or motorists, blast zones are to be set up with proper signing and flagmen to secure the blast area prior to detonating explosives. The Contractor shall be responsible for all damages and shall repair or replace any and all damages at no expense to the Town. A pre-blast survey and blasting monitoring is required by the Town. The Contractor and Developer are responsible for making sure these items are accomplished.

4.8 Subgrade Stabilization

After grading and excavation, the Contractor shall conduct the appropriate subgrade evaluation tests, such as proof-rolling, to verify the stability of the subgrade. If areas of weak or soft soil are encountered, the subgrade must be improved to provide a stable foundation for pavement construction.

Vehicles for proof-rolling shall be tandem axle dump trucks fully loaded with a minimum material payload of 23 tons. Please refer to section 1.7.3 for more detail. Areas of severe failure during the proof rolling may require the opinion of a geotechnical engineer from the testing firm hired by the Developer.

The Contractor will need to determine the appropriate subgrade stabilization method- **undercutting and backfilling, mechanical stabilization, or chemical stabilization**- to accomplish the 99% dry density maximum density (ASTM D698). The Developer's Contractor may use any of these three subgrade stabilization methods during construction. However, the Developer's Consulting Engineer may prescribe a chemical or mechanical solution as part of the final construction drawings to address poor subgrade conditions that exist within the subdivision or development site. The selection of subgrade stabilization methods generally depends on the following conditions:

a) Undercutting and Backfilling

- (1) Where unsuitable soils are shallow and localized in extent.
 - a. Unsuitable material – organic matter, tree roots, debris, construction waste, etc.

b) Mechanically Stabilization with Geogrids

- (1) Recommended for moderately weak soils (when N_{60L} is less than 6).
- (2) Suitable where rapid installation is desired.

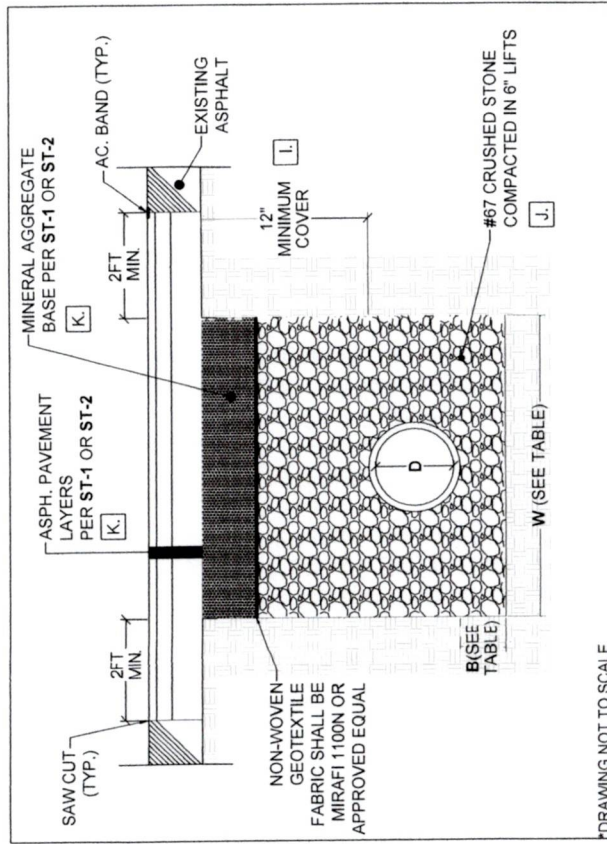
c) Chemical Stabilization

- (1) Used in high-plasticity clay soil or areas where undercutting is not feasible.

4.8.1 Undercutting

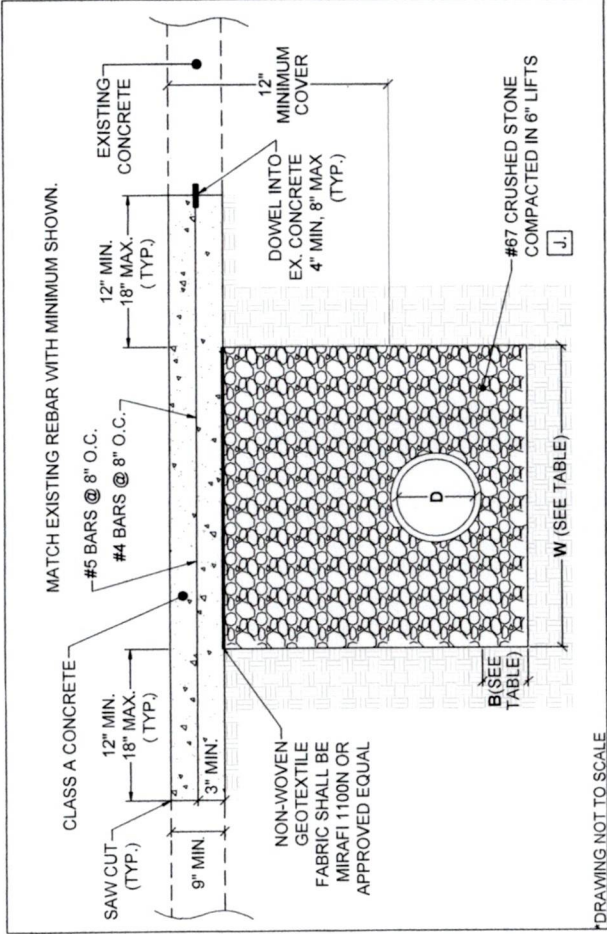
When unsuitable material to include but not limited to, tree roots, trash, concrete and asphalt fragments or soft organic or plastic clays are encountered in the subgrade, the area shall be undercut and backfilled with suitable material which is discussed in Section 4.8 (c) The Contractor and the Developer are responsible for executing required undercutting and re-establishing the subgrade to the satisfaction of the Town. The Developer and the Contractor will need to address these matters within their private contract. The Developer and Contractor shall address how undercutting will be accomplished prior to commencing construction.

ATTACHMENT B



DRAWING NOT TO SCALE

UNDER ASPHALT PAVEMENT



DRAWING NOT TO SCALE

UNDER CONCRETE PAVEMENT

NOTES:

- A. ALL WORK SHALL BE FIELD CHECKED AND APPROVED BY THE TOWN ENGINEER PRIOR TO ITS BEGINNING AND AFTER COMPLETION THEREOF.
- B. THE TOWN ENGINEER SHALL BE NOTIFIED AT LEAST TWO (2) DAYS PRIOR TO COMMENCING WORK.
- C. ALL WORK PERFORMED SHALL BE WORKMANSHIP DEFECT FREE FOR A PERIOD OF ONE (1) YEAR AFTER COMPLETION.
- D. ALL EXISTING PAVEMENT, BASE, CURB AND GUTTER, AND SIDEWALKS SHALL BE CUT AND BROUGHT TO A NEAT LINE BY USE OF AN AIR HAMMER, SAW OR OTHER SUITABLE EQUIPMENT. EXPANSION JOINTS REMOVED SHALL BE REPLACED.
- E. ALL EXCAVATIONS MADE WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRE EXCAVATION AND STREET CLOSURE PERMITS FROM THE BUILDING COMMISSIONER PRIOR TO COMMENCING WORK.
- F. FLOWABLE FILL SHALL MEET REQUIREMENTS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATION SECTION 204.
- G. ALL RCP SHALL BE CLASS III UNLESS NOTED OTHERWISE.
- H. SUBGRADE SHOULD BE EXCAVATED, OR OVER EXCAVATED IF NECESSARY, SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED.
- I. THE MINIMUM COVER UNDER ASPHALT PAVEMENT IS MEASURED FROM THE BOTTOM OF THE DEEPEST ASPHALT LAYER TO THE TOP OF PIPE. THE MINERAL AGGREGATE BASE IS INCLUDED IN THE MINIMUM PIPE COVER.
- J. ALL BACKFILL AND BEDDING SHALL BE PLACED IN 6-INCH LIFTS AND COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY PER AASHTO T99.
- K. STANDARD DETAIL ST-1 APPLIES TO LOCAL RESIDENTIAL STREETS, STANDARD DETAIL ST-2 APPLIES TO COMMERCIAL STREETS, COLLECTOR ROADS, AND INDUSTRIAL STREETS. THE PAVEMENT COMPOSITION FOR ARTERIALS SHALL MATCH THE EXISTING BUT SHALL NOT BE LESS THAN ST-2.

FLEXIBLE CONDUIT (CMP, HOPE, & PVC)		RIGID CONDUIT (RCP & VCP)	
NOMINAL INSIDE DIAMETER "D" (IN.)	TRENCH WIDTH "W" (INCHES)	NOMINAL INSIDE DIAMETER "D" (IN.)	TRENCH WIDTH "W" (INCHES)
3	27	4	22
4	28	4	22
6	30	6	24
8	32	8	26
10	34	10	28
12	36	12	30
15	39	15	33
18	42	18	36
24	48	24	42
36*	72	36*	60

*NOTE: FOR PIPE DIAMETERS GREATER THAN 36 INCHES, CONTACT THE TOWN ENGINEER FOR MINIMUM REQUIREMENTS



COOPERTOWN
SUBDIVISION REGULATIONS
APPENDIX B

INSTALLATION AND REPAIR OF UTILITIES
UNDER PAVED ROADS AND SHOULDERS

246634.1
SHEET NO. ST-8

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
ISSUED DATE	

REMARKS

process that produces rock of the required gradation. Rock shall meet soundness requirements for degradable or non-degradable rock under a 60,000-pound roller compactor as stated in the Standard Specifications.

4.10 Underdrains

In addition to stormwater drainage structures and appurtenances, subgrade underdrains may be required by the Town during construction due to site specific subsurface conditions or drainage issues. Underdrains shall consist of free draining crushed stone, 4-inch diameter perforated pipe and filter cloth. All underdrains shall be constructed in accordance with TDOT standard drawing RD-UD-3 for underdrains with pipe and filter cloth.

4.11 Street Damages

Damage to existing or new Streets/subgrade, and structures, utilities, trees, or private property shall be repaired and restored to its original condition by the Contractor due to hauling or otherwise moving equipment, spills of concrete, paint, oil or any other debris which damages the Street or results in cleanup costs for the Town.

4.12 Dust Control

The Contractor/Developer shall sprinkle the Street construction surfaces with water or apply a dust-allaying material when such operations are necessary to prevent a dust nuisance or if directed by a Town representative.

4.13 Final Dressing

Street side slopes and ditches shall be shaped within reasonably close conformity to the specified lines, grades and cross-sections. Ditches shall be fine graded to eliminate areas of ponded water. All rock cuts shall have all loose fragments removed and left in a neat, safe and workmanlike manner.

4.14 Seeding and Sodding

All slopes, ditches and detention ponds shall be stabilized with seeded grass or preferably sod. Stabilizing of disturbed areas shall be accomplished in accordance with the requirements of the Tennessee Department of Environment & Conservation permits, requirements and guidelines. Stabilized areas shall be considered acceptable for final inspection when the seeded or sodded area has an 80 percent or better establishment of grass coverage.

Use average gradation values for the subgrade. If both criteria are met, no geotextile fabric is necessary. Otherwise, include a fabric at the bottom of the excavation.

4.8.3 Chemical Stabilization

Chemical stabilization involves mixing lime or cement into the in-place soil to enhance strength and durability. This method is best suited for high-clay-content soils or where deep undercutting is impractical. The engineer will need to use engineering judgement to decide which chemical is the best to use. In general,

- (1) Cement is used on subgrades that have a Plasticity Index (PI) of 20 or less
- (2) Lime is used on subgrades which have a Plasticity Index (PI) of 16 or greater
- (3) Chemical stabilization is not recommended for soils with an $N_{60L} < 4$
- (4) Avoid chemical stabilization if soil has sulfate content greater than 5,000 ppm due to the risk of expansive chemical reactions

4.8.3.a Minimum Requirements

If the Contractor chooses to apply lime, they must adhere to the specific sections within Tennessee DOT Standard Specifications for Road and Bridge Construction.

For submission quantities and percentages of lime and cement need to be submitted to the Town for review. For projects that are bigger than 40,000 square yards please ensure that the submittal includes a lump sum for materials, engineering work, and laboratory testing.

4.8.3.b Additional Requirements

Chemical stabilization operations shall always maintain a minimum buffer of 250 feet with any occupied building, driveway, parking lot, park, and playground. The Developer or Contractor shall submit a safety plan for review by the Town prior to the commencement of any chemical stabilization operations. The safety plan shall include methods for controlling dust from the chemical stabilization operation and other measures to protect the properties neighboring the development site. Any construction activity where chemical stabilization is being implemented for subgrade stabilization must be carried out in a way that prevents violations of Tennessee's water quality criteria. This means preventing discharges that cause visible solids, deposits, or turbidity that impair the water's usefulness.

4.9 Embankment

Embankment material shall consist of approved soil or rock obtained from on-site excavations or hauled from an acceptable borrow pit area and shall be placed in fill embankments in reasonably close conformance with the lines, grades, side slopes and typical cross-sections shown on the approved plans. All embankments shall be placed in accordance with the TDOT Standard Specifications. For information about soil and rock placement see section 4.8.

4.9.1 Soil Materials

All borrowed material used shall be AASHTO M145 classification A-6 or better or of the same classification or better than the predominant soil comprising the street excavation. Borrow material shall be free of organic material and shall not be obtained from wetland areas.

4.9.2 Rock Materials

Embankments comprised of shot rock shall be processed from an acceptable screening and or selection

4.8.2 Mechanical Stabilization

If the Contractor elects to stabilize the subgrade using geogrids with a granular aggregate base, the following requirements and installation procedures next to take place accordingly. Again generally, reinforcement is recommended for moderately weak soils (when N_{60L} is less than 6) or where rapid installation is desired.

a) Geogrid Requirements

The only geogrids that will be allowed in the town of Coopertown, TN are Tensar geogrids. It is recommended that the following grids are used:

(1) Tensar InterAx

- a) Tensar InterAx
- b) NX650
- c) NX750
- d) NX850

(2) Other TENSAR products may be considered with submission of full-scale test data and written approval from the Town.

b) Geogrid Installation with Granular Aggregate Base Material

Please prep the subgrade and compact to design line and levels. After proof-rolling to identify any soft areas.

Do the following when using geogrids:

- (1) If the replacement is ≤ 18 inches, place the geogrid at the bottom of the excavation
- (2) If the replacement is > 18 inches, place the geogrid in the middle of the granular material and a fabric on the bottom of the excavation.
- (3) Use only well-graded and suitable aggregate (top size of 2 to 3 inches) for the replacement material. Determine if the granular material meets the natural filter criteria for the subgrade as follows:

Filter Criteria:

$$\frac{D_{15,subgrade}}{D_{85,aggregate}} \leq 5 \quad \text{criteria 1}$$

$$\frac{D_{50,subgrade}}{D_{50,aggregate}} \leq 25 \quad \text{criteria 2}$$

Where D_{xx} is the diameter of the soil particle measured in millimeters (mm) at which $xx\%$ of the sample is finer by weight.

As an example, for a subgrade that has D_{15} 0.4 mm and the D_{50} is 7 mm, so:

$$0.4/D_{85,aggregate} \leq 5, \text{ so the } D_{85,aggregate} \geq 0.08 \text{ mm} \quad \text{criteria 1}$$

$$7/D_{50,aggregate} \leq 25, \text{ so the } D_{50,aggregate} \geq 0.28 \text{ mm} \quad \text{criteria 2}$$

a) Limits of Undercutting

Areas and depths of undercutting required for existing streets will be determined by Town officials during inspections of subgrade or street fill construction and for final acceptance of Town streets. The extent of undercut areas shall primarily be determined by proof-rolling the subgrade and marking the areas of distress with marking paint or other means.

b) Backfill for Undercutting

Any backfill placed without observation and documentation by the testing firm is subject to removal and replacement. No fill is ever to be placed on surfaces with standing water or frozen material. Any fill, regardless of the fill material to be placed, which is less than 2 ft. deep, shall be placed in lifts no greater than 8” and the particle size shall not exceed 8”. The backfill material identified must be based on site-specific conditions, design requirements, and characteristically known for its stability and good compaction properties. Please refer to Section 1.7.3 for all field-testing activities.

Cuts or undercutting in the street shall be backfilled with

- (1) **Soils:** Fill material comprised of soils with less than 20% rock content must be placed in 8” compacted lifts, with the compaction effort being made by a sheepsfoot roller or equivalent size tractor. Soil fill shall consist of a fine-grained soil with a UCS designation of ML, CL or CH. The soil shall consist of no more than 5% by weight of organic material and no rocks larger than 4”. The plasticity index shall be less than 35 (ASTM D 4318).
- (2) **Shot Rock: *For backfill sections greater than 10 ft.:*** Maximum particle size and maximum lift thickness is 36 inches. The top 2 feet of fill should be constructed in the same manner as specified for fill sections less than 10 feet. ***Fill sections less than 10 ft.:*** Maximum particle size is 18” and lift thickness should be no more than 24 inches. Larger rocks shall be placed flat and not overlap each other. All shot rock fills shall be placed with at least 6 passes with a fully loaded tandem axle dump truck. Fill lifts should be level and smaller size rocks filling voids.
- (3) **Soil & Rock Mixtures:**
 - (i) 20-50% Soil/Fine Material:
 1. Maximum particle size should not exceed 12”.
 2. Fill shall be placed in lifts no greater than 18”.
 3. Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in section 1.7.
 4. These fills shall be placed with at least 6 passes with a fully loaded tandem axle dump truck.
 - (ii) 50-70% Soils Fine Material:
 1. Maximum particle size should not exceed 6”.
 2. Fill shall be placed in lifts no greater than 12”.
 3. Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in section 1.7.
 4. These shall be placed with at least 6 passes with a fully loaded tandem axle dump truck

In any case the Contractor is responsible for placing materials to achieve an acceptable proof-roll or the undercutting operations will be repeated until it is done to the satisfaction of the Town. The testing firm and the City may assess soil/rock combination fill material and adjust the maximum particle size and lift thickness based on the condition of the material and size of the fill.