

PROPOSED ORDINANCE NO. 71-4

AN ORDINANCE TO ESTABLISH REQUIREMENTS FOR CONSTRUCTION OF NEW ROADS AND STREETS IN THE CITY OF BELLE MEADE; AND PROVIDING FOR THE APPOINTMENT OF A FIELD REPRESENTATIVE TO INSPECT AND DETERMINE COMPLIANCE; AND REQUIRING REPORT OF SUCH COMPLIANCE BEFORE APPROVAL SHALL BE GRANTED, AND PROVIDING THAT APPROVAL MAY BE BY RESOLUTION OF BOARD OF COMMISSIONERS.

BE IT ORDAINED BY THE CITY OF BELLE MEADE AS FOLLOWS:

SECTION 1. The following procedures, directions and requirements are established and shall be complied with in the case of every new road or street constructed for approval, acceptance and maintenance by the City of Belle Meade:

A. PREPARATION OF SUBGRADE

Before grading is started, the area within the limits of construction shall be cleared of all objectionable matter, such as trees, stumps, roots, weeds, heavy vegetation, etc. Topsoil shall be removed and stock piled for later use as a toppling-out material for seeding and sodding. If rock is encountered, it shall be removed to a depth of at least 12 inches below the grade of the road, and suitable backfill material will be used to build the cut section up to proposed grade. Fills shall be compacted to 95 per cent of the standard optimum Proctor density. (Soil testing shall be accomplished by an approved testing laboratory). To attain this compaction, it will be necessary to adhere to the following procedures. Fill material shall be evenly and uniformly spread in layers not to exceed 8 inches in thickness over the entire width and thickness of the embankment section. Each layer shall be thoroughly rolled with an approved sheeps foot or pneumatic tired roller. If, in the opinion of the field representative of the City of Belle Meade, the soil is too dry, water will be added by a pressure distributor or other approved method. Soils which are too wet will be allowed to dry before compaction is attempted. After grading is completed and approved by the City of Belle Meade and before any base is applied, all of the underground work--water mains, gas mains, telephone cable, and service connections from any of the above--shall be installed completely throughout the length and width of the road. Where the sub-grade is cut for installation of underground utilities, the backfill shall be thoroughly compacted in layers not to exceed 8 inches in thickness by hand or by pneumatic tamping equipment. Backfills shall be compacted to a density not less than that of the original compacted fill. The finished subgrade shall provide for superelevation and crown of the roadway.

B. BASE

After the subgrade has been inspected and approved by a representative of the City of Belle Meade, a base shall be constructed 8 inches thick and twenty feet wide. The base material shall be a crushed stone of quality and gradation specified by Item 303-01 Mineral Aggregate (Type "A" Base), Grading "D", standard specifications, Tennessee State Highway Department. The stone shall be deposited and uniformly spread in layers not to exceed 4 inches in compacted thickness. Each layer of the stone shall be sprinkled with water in sufficient quantity to moisten all particles but not with an amount that would cause segregation of sizes nor softening of the subgrade. Immediately following the application of water, the stone shall be bladed and turned with a motor patrol grader to obtain a uniform mixture; after which it shall be re-spread to the required lines, grades and cross-section. The base course material shall be placed on the subgrade in two or more layers and each course shall be shaped and immediately compacted before the succeeding course is placed.

The compacted dry weight per cubic foot of material in each layer shall not be less than 98% of that determined as an average of maximum compaction for the materials in use. The determination of the average maximum compacted dry weight pounds per cubic foot shall be calculated by multiplying the Specific Gravity of the mineral aggregate by 53.

C. PRIME COAT

The base, prepared as outlined above, shall be sprinkled lightly with water to settle loose dust. A bituminous prime coat shall then be uniformly applied over the entire width of the base (excluding shoulders) by the use of an approved pressure distributor at a pressure between 25 and 75 pounds per square inch. The distributor shall be equipped with spray bars that will cover as much as 20 feet of width in one pass of the machine. It shall also be supplied with at least one accurate asphalt thermometer which shall be maintained in good condition at all times. The prime coat shall be applied at the rate of three-tenths (0.3) gallons per square yard, using one of the following materials:

Material	Tenn. State Hwy. Dept. Specifications	Temperature of Material at application
Asphalt Emulsion - A E P	904.03	50 deg. F-140 deg. F
Cut back Asphalt - RC-2	904.02	80 deg. F-150 deg. F

The bituminous material shall conform to the quality specifications indicated above and shall be applied at a temperature within the range specified. Unless otherwise directed, the prime coat shall be applied only when the air pressure in the shade and away from artificial heat is more than 60 deg. F. and only between April 1st and November 1st. Immediately after application of the prime coat, the primed area shall be uniformly covered with crushed stone chips (Tenn. Hwy. Dept. Size No. 15 or 16) at the rate of ten (10) pounds per square yard. Twenty four hours shall elapse after the application of the prime before subsequent asphaltic treatments are applied. All traffic shall be excluded from the road until it has dried sufficiently not to pick up under traffic.

D. ASPHALTIC CONCRETE BINDER COURSE

After the prime coat has properly cured, dust, clay, and other foreign or loose material shall be removed with hand brooms, shovels, etc., well beyond the construction limits onto the shoulders, but care shall be exercised not to loosen, tear or otherwise injure the primed surface. After the surface has been thus cleaned, and before subsequent paving operations are commenced, the surface shall be inspected by the City of Belle Meade or their representative. If, in the opinion of the Inspector the primed area is not sufficiently viscous to form a complete and thorough bond with the binder course, the surface shall be sprayed with a Tack Coat (RC-1 or RC-2) in an amount not less than 0.05 gallon nor more than 0.15 gallon per square yard. The Tack Coat shall be consistently uniform over the entire area treated, and shall be allowed to cure until it is thoroughly viscous. The City of Belle Meade or its representative will determine the completion of the curing period after which further construction shall proceed. Unless otherwise directed by the City of Belle Meade, the Asphaltic concrete Binder Course shall conform to the Tennessee State Highway Specifications, Section 307.01 - Grading "C". However, the asphaltic concrete mixture shall be spread only when the prepared surface is intact, firm, properly cured, dry and the tack coat is in satisfactory condition; only between March 1st and December 1st; and unless otherwise directed, only when the air temperature, in the shade and away from artificial heat, is above 40 degrees F. After the Asphaltic Concrete Binder Course has been completed, crushed stone (303.01) shall be uniformly applied to the shoulders in a quantity to provide an additional 2 inch compacted thickness. The stone shall be thoroughly rolled, and primed and chipped. The completed surface shall be true to the line, grades and cross-sections specified by the plans and by these regulations and shall provide a smooth uniform riding surface.

E. SHOULDERS

Shoulders shall be compacted to the thickness and width as shown on the Typical Section Plan.

Shoulders shall be compacted in accordance with the provisions for construction of the base and of the same quality and gradation of stone. The shoulders shall be finished, primed and chipped after the Asphaltic Concrete Binder Course has been completed.

F. CEMENT CONCRETE DITCH PAVING

Section 703 - Tennessee State Highway Department Specifications

703.01 - Description. Cement Concrete Ditch Paving shall consist of the construction of paved ditches on a prepared subgrade. The pavement shall be constructed to the specified thickness and within reasonably close conformity to the lines, grades, and cross-sections indicated on the Plans or as directed by the Engineer, and in conformity with the requirements and provisions set out in these Specifications.

MATERIALS

703.02 - Materials. Materials used in this construction shall meet the applicable requirements of Section 604, Concrete Structures.

Concrete for cement concrete ditch paving shall be Class A concrete, meeting all the requirements prescribed in Section 604.

703.03 - Equipment.

(a) Forms.

Forms may be either wood or metal, meeting the requirements prescribed in Subsection 701.03 (a). A strike-off template of the form and shape of the ditch section shall be used to shape the top surface of the paved ditch.

(b) Compaction Equipment.

Compaction of subgrade shall be accomplished by any type of tamping or rolling equipment that will produce the required results.

(c) Mixing and Finishing Equipment.

Mixers shall meet the requirements of Subsection 501.04 (b) of these Specifications, except that the stipulation requiring the use of the boom and bucket will be waived. Mechanical ditch paving machines may be used when approved by the Engineer.

Finishing equipment shall include satisfactory floats, edgers, spades and tamps.

CONSTRUCTION REQUIREMENTS

703.04 - Preliminary Work. Clearing and Grubbing, Removal of Structures and Obstructions, Excavation and Undercutting, and Embankment Construction shall be performed in accordance with the provisions of Sections 201, 202, 203, and 205, respectively, of these Specifications.

703.05 - Subgrade Preparation. Subgrade preparation for ditch paving shall be made to the required depth, and to a width that will permit the installation and bracing of forms. The subgrade shall be shaped and compacted to a firm, even surface, in reasonably close conformity with the grade and section shown on the Plans or as directed by the Engineer. All soft and yielding material shall be removed and replaced with acceptable material, which shall then be compacted as directed.

703.06 - Joints. Joints shall be formed at the intervals and locations shown on the Plans. Joint filler for expansion joints shall be cut to the full cross-section of the ditch pavement.

703.07 - Limitations on Mixing. Limitations on the mixing of concrete shall be as prescribed in Subsection 501.11.

703.08 - Mixing, Placing, and Finishing Concrete. Concrete shall be mixed in accordance with the requirements of Subsection 501.10.

Immediately before placing the concrete the subgrade shall be thoroughly wetted and the forms given a coating of light oil. When removed and reused, the forms shall be thoroughly cleaned and oiled each time before using.

The concrete shall be placed immediately after mixing; the edges shall be spaded and the concrete thoroughly consolidated, after which the surface shall be finished smooth and even by means of a wooden float.

The edges of the paved ditch shall be rounded to a radius of 1/2-inch, and edges along expansion and contraction joints shall be finished with an edging tool with a radius of not over 1/4-inch and then all edging tool marks removed with a float and brush.

703.09 - Protection and Curing. Immediately after finishing the concrete, it shall be cured as specified under Subsection 501.18.

The Contractor shall protect the ditch paving until final acceptance of the project. Any concrete that is damaged prior to acceptance shall be repaired by removing and reconstructing the damaged sections. Such reconstruction shall be at the Contractor's expense.

703.10 - Backfilling. Immediately after the concrete has set sufficiently, and the forms have been removed, the spaces on each side of the ditch paving shall be filled with suitable material and thoroughly compacted; or when sod is specified, it shall be laid in accordance with the provisions of Section 803.

703.11 - Final Cleanup. Final cleaning up shall be performed in accordance with the requirements of Subsection 104.08.

G. SEEDING

Section 801 - Tennessee State Highway Department Specifications

801.01 - Description. Seeding shall consist of furnishing and placing seed, commercial fertilizer, agricultural limestone, and mulch material when specified, all in accordance with these Specifications, on all newly graded earthen areas that are not to be paved, stabilized or sodded, unless otherwise indicated on the Plans or directed by the Engineer.

MATERIALS

801.02 - Materials. Materials used in this construction shall meet the requirements of the following Subsections of these Specifications:

<u>Material</u>	<u>Subsection</u>
Grass Seed	918.14
Commercial Fertilizer	918.15
Agricultural Limestone	918.17
Mulch Material	918.18
Inoculant for Legumes	918.24
Mulch Binder:	
Cut-Back Asphalt, Grade RC-70 or RC-250	904.02
Emulsified Asphalt, Type SS-1 or AE-3	904.03
Water	802.02 (b) (5)

EQUIPMENT

801.03 - Equipment. All equipment necessary for the satisfactory performance of this construction shall be on the project and approved before work will be permitted to begin.

CONSTRUCTION REQUIREMENTS

801.04 - General. The Contractor shall notify the Engineer at least 48 hours in advance of the time he intends to begin sowing seed and shall not proceed with such work until permission to do so has been granted by the Engineer. Before starting seeding operations on any area, final dressing shall have been completed in accordance with the provisions of Subsection 203.08, and the placing of topsoil shall have been completed in accordance with the provisions of Subsection 203.06.

All seeding and related operations shall be continuous operations.

801.05 - Preparing the Seedbed. The seedbed shall be prepared in the following manner and sequence:

Each area to be seeded shall be scarified, disced, harrowed, raked, or otherwise worked until it has been loosened and pulverized to a depth of not less than one inch.

This operation shall be performed only when the soil is in a tillable and workable condition. Fertilizer, at the rate of not less than 10 pounds of grade 15-15-15, or equivalent, per 1,000 Square Feet and agricultural limestone, at the rate of not less than 75 pounds per 1,000 square feet, shall be distributed evenly over the seedbed, unless other rates are specified in the proposal or on the Plans. The limestone and fertilizer shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of approximately 1/2 inch. Fertilizer need not be incorporated in the soil as specified above when mixed with seed in water and applied with power sprayer equipment.

801.06 - Time of Seeding: The seed group mixture shall be as specified under Subsection 918.14, Group "A" seed shall be used for seeding from February 1st to August 1st, and Group "B" seed shall be used from August 1st to December 1st, except that either Group "A" or "B" may be used during the month of August. Group "C" seed shall be used from February 1st to December 1st and only when specified on the Plans.

Seeding shall be performed only when the soil is in a tillable and workable condition and no seeding shall be performed between December 1st and February 1st, unless otherwise permitted.

801.07 - Seeding. Seed of the specified group shall be sown as soon as preparation of the seedbed has been completed. It shall be sown uniformly by means of a rotary seeder, wheelbarrow seeders, hydraulic equipment, or other satisfactory means, and unless otherwise specified on the Plans or in the Special Provisions, at the rate of 1 1/2 pounds per unit (1,000 square feet).

Group "C" seed and seeds of legumes when sown alone shall be inoculated before sowing in accordance with the recommendations of the manufacturer of the inoculant and as directed by the Engineer.

No seeding shall be done during windy weather, or when the ground surface is frozen, wet or otherwise nontillable.

801.08 - Mulching. When seeding with mulch is specified, the mulch material shall be spread evenly over the seeded areas at an approximate rate of 100 pounds per 1,000 square feet immediately following the seeding operations. This rate may be varied by the Engineer, depending on the texture and condition of the mulch material and the characteristics of the area seeded. All portions of the seeded areas shall be covered with a uniform layer of mulch, so that approximately 25 per cent of the ground is visible.

The mulch shall be held in place by the use of an approved mulch binder. Cutback asphalt or emulsified asphalt shall be applied at the approximate rate of 4 gallons per unit (1,000 square feet) as required to hold the mulch in place. Mulch in medians and other areas affected by traffic shall be held in place by applying asphalt binder at the approximate rate of 11 gallons per unit. The Contractor shall cover bridges, guardrails, signs, and appurtenances, if the mulch binder is applied in such a way that it would come in contact with or discolor the structures.

801.09 - Care During Construction. All seeded areas shall be cared for properly to the Engineer's satisfaction until acceptance of the work. Such care shall include mowing to seeded areas when required by the Engineer. When mowing is required, mower blades shall be set at sufficient height to protect the vitality of the growth. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed.

H. SODDING

Section 803 - Tennessee State Highway Department Specifications

803.01 - Description. Sodding shall consist of furnishing and placing sod at all locations shown on the Plans or where directed, and in conformity with these specifications.

Ordinarily, the work will consist of the furnishing and placing of new sod originating from sources outside the rights-of-way. In some cases, however, the work will include removing sod from areas where the requirements of the improvement would destroy existing sod, storing the sod so removed, and resetting it in areas shown on the Plans or designated by the Engineer.

MATERIALS

803.02 - Sod. New sod shall consist of live, dense, well-rooted growth of permanent grasses, free from Johnson grass, nutgrass, and other obnoxious grasses, or weeds, well-suited for the intended purpose and for the soil in which it is to be planted.

All sod, whether new or intended for resetting, shall be cleanly cut in strips having a reasonably uniform thickness of not less than 2 1/2 inches, a reasonably uniform width of not less than 8 inches, and a length not less than 12 inches.

803.03 - Fertilizer Grade. Fertilizer shall conform to the requirements of Subsection 918.15, and shall be Grade 15-15-15 or a 1-1-1 formula unless otherwise specified on the Plans or in the special provisions.

803.04 - Ammonium Nitrate. Ammonium nitrate shall conform to the requirements of Subsection 918.16.

803.05 - Limestone. Agricultural limestone shall conform to the requirements of Subsection 918.17.

EQUIPMENT

803.06 - Equipment. All equipment necessary for satisfactory performance of this work shall be on the project, and approved before work will be permitted to begin.

CONSTRUCTION REQUIREMENTS

803.07 - Weather Limitations. Sod shall be set or reset only when the soil is moist and favorable to growth. No setting or resetting shall be done between October 1st and April 1st, unless weather and soil conditions are considered favorable and permission is granted by the Engineer.

803.08 - Removing and Storing Sod for Resetting. Sod removed from such areas as lawns, yards, lots, etc., shall be so cut, handled and stored that the sod can be reset in the same locations from which it was removed. No interchange of sod will be permitted unless approved by the Engineer. Unless reset immediately after cutting, sod shall be stacked in piles and kept moist until reset. Sod shall be reset within 7 days from removal, unless specifically permitted by the Engineer.

803.09 - Sodding. The area to be sodded shall be brought to the lines and grades shown on the Plans or as directed by the Engineer. The surface of the ground to be sodded shall be loosened to a depth of not less than one inch with a rake or other device. If necessary, it shall be sprinkled until saturated for a minimum depth of one inch and kept moist until the sod is placed. Immediately before placing the sod, fertilizer and lime shall be applied uniformly to the prepared surface of the ground. Fertilizer shall be applied at the rate of 8 pounds of Grade 15-15-15, or equivalent, per 1,000 square feet. Agricultural limestone shall be applied at the rate of 75 pounds per 1,000 square feet.

Sod shall be placed as soon as practical after removal from the point of origin and shall be kept in a moist condition during the interim. The sod shall be carefully placed by hand on the prepared ground surface with the edges in close contact and, as far as possible, in a position to break joints. Each strip of sod laid shall be fitted and pounded into place using 10-inch by 10-inch wooden tamps, or other satisfactory implements. Immediately after placing, the sod shall be thoroughly wetted and rolled with an approved roller or hand-tamped, as approved by the Engineer. On slopes of two to one or steeper, pinning or pegging may be required to hold the sod in place.

803.10 - Care and Establishment. The sod shall be watered as directed by the Engineer for a period of two weeks, after which, ammonium nitrate shall be applied at the rate of 3.5 pounds per 1,000 square feet, and the sod given a final watering.

The Contractor shall not allow any equipment or material placed on any planted area and shall erect suitable barricades and guards to prevent his equipment, labor, or the public from traveling on or over any area planted with sod.

If, on contracts involving sodding and other items or construction, the other items have already been completed, the time required for establishment under this item will not be charged against the time stipulated in the contract for completion of the project.


803.11 - Disposal of Surplus Material. All surplus material shall be disposed of as directed by the Engineer.


SECTION 2. The Mayor is authorized to appoint a field representative for the City to inspect and approve such procedures and construction work in progress, such field representative shall be an engineer licensed by the Board of Licensing Engineers and Architects with experience in road and street construction, or shall have had not less than ten (10) years experience in the construction of roads and streets in Tennessee and the inspection of same, or shall be designated as qualified to perform and inspect work by the Commissioner of Highways of the State of Tennessee.


SECTION 3. No road, street or highway shall be approved for acceptance and maintenance by the City of Belle Meade until same shall have been approved by an inspector appointed in conformity with the provisions

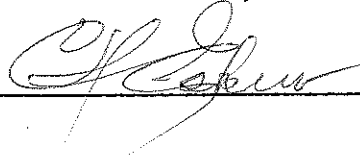
hereof. Upon notification of such approval, the Board of Commissioners, may, by appropriate resolution adopted by a majority vote, consummate approval and acceptance for maintenance by the City.

SECTION 4. All ordinances and resolutions and parts thereof in conflict herewith are hereby repealed.









Passed First Reading 21 day of July, 1971.

Passed Second Reading 2nd day of August, 1971.

Passed Third Reading and Adopted 9th day of August, 1971.