

**CITY OF WOODLAND PARK, COLORADO**

**TITLE 5  
STREET SYSTEM SPECIFICATIONS**

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## 5.1 DESIGN

### 5.1.1 LAYOUT

Layout of all street systems (public or private) shall conform to City subdivision requirements as defined in the subdivision ordinance and the City of Woodland Park Engineering Specifications.

#### A. GEOMETRIC CROSS SECTION.

Local residential roadway elements, symmetrical about the centerline, shall conform to the following cross section: from the center line twelve foot of asphalt; 30 inch curb and gutter section; minimum six (6') foot bench section; slope graded to catch point at three (3) horizontal to one (1) vertical maximum without slope stabilization. Bench section (bench) width may be increased to accommodate utility installation. Generally, local residential cross sections shall be used in areas where average daily traffic (ADT) is not likely to exceed 1,000 vehicles per day. Collector and arterial streets shall be constructed whenever engineered traffic analysis of the future traffic volumes indicates the need of a cross section greater than that of a local service street.

Refer to Figure 5.3.2.

Additional R.O.W. and/or easements may be required to satisfy other criteria contained in these Engineering Specifications. Areas outside the R.O.W shall be contour graded, compacted, and sloped, as required for proper drainage, soil stability, and maintenance accessibility. Cuts and fills proposed on slopes greater than three horizontal to one vertical shall require supporting calculations prepared by a licensed Geotechnical Engineer based on a soils analysis and approved by the City Engineer or appointed representative.

#### B. DESIGN ELEMENT COORDINATION.

Horizontal and vertical alignment continuity shall be provided between new and existing streets to achieve safe transitions. Sufficient data on existing infrastructure shall be depicted on plans, and limits of construction shall be designated to assure that the desired continuity is achieved. Drainage and utility facilities are to comply with all applicable sections of these Engineering Specifications and are to be fully coordinated with the street design and proposed construction.

#### C. TRAFFIC IMPACT STUDY.

All subdivision, zoning and other site developments shall provide a Traffic Impact Study using the Institute of Transportation Engineers (ITE) -

Manual and report, giving information and details as required by the City Engineer or appointed representative, in a form specified by the City Engineer or appointed representative. In certain instances with the permission of the City Engineer, a Traffic Letter may be substituted for the full Traffic Impact Study.

### **5.1.2 DRIVEWAY CONSTRUCTION REGULATIONS**

Every driveway hereafter constructed, reconstructed or altered, in the City right-of-way, shall conform to the following regulations:

- A. No driveway shall be so located as to create a hazard to pedestrians or motorists, or to invite or compel illegal or unsafe traffic movements.
- B. Unless otherwise approved by the City Engineer or appointed representative, all driveways shall be constructed within lines at right angles from the curb or street line to property line.
- C. No driveway shall be constructed in such a manner as to create a hazard to any existing street lighting standard, utility pole, traffic regulating device or fire hydrant. The cost of relocating any such street structure when necessary to do so shall be borne by the abutting property owner. Relocation of any street structure shall be performed only by or through the person holding authority for the particular structure involved.
- D. No property shall be allowed more than two (2) driveways on any particular street without permission from the City Engineer or appointed representative.
- E. All driveways shall be so constructed that they shall not interfere with the drainage system of the street.
- F. Where curbs exist, or are required, driveways shall be paved for their full width from the back of curb to the property line.
- G. Where a driveway crosses a sidewalk, the sidewalk shall be increased to a minimum thickness of six (6") inches of concrete.
- H. A driveway or curb cut on a corner lot shall be set back a minimum of 10 feet from the property line at the corner or shall be a minimum of 20 feet from the cross street curb line whichever is greater.
- I. There shall be a minimum of 30 feet between any two (2) driveways whether on one (1) or more properties, except common driveways may be used on adjoining properties. Distance between driveways will be such as to maximize the amount of on-street parking.

- J. Driveways greater than 150 feet in length from the public street will require review by the Northeast Teller County Fire Protection District.
- K. Runoff from the driveway must enter improved drainage-ways such as curb and gutter, not on to the street. Erosion from the lot and driveway must not enter the street. Provide the City with the proposed erosion control measures that will accomplish this in accordance with Section 18.40 of the City Code.
- L. The proposed grade(s) of the driveway shall be indicated on the driveway plan or site plan. The driveway grade may not exceed six (6) percent within the public right-of-way, and 17 percent between the right-of-way line and garage or structure.
- M. The materials and thickness of the proposed driveway shall be indicated on the plan. The minimum gravel thickness is four (4”) inches. The gravel material shall be crushed stone or an aggregate that does not track on to the City street. The minimum asphalt thickness for single resident driveways is two (2”) inches and concrete driveway thickness is four (4”) inches. Driveways servicing more than a single residence shall conform with Table 5.1.
- N. The following widths are permitted for driveways:

<b>ZONING DISTRICT</b>	<b>WIDTH OF DRIVEWAYS</b>
<b>Single Family</b>	<b>12’ – 24’</b>
<b>Multiple Family</b>	<b>16’ – 25’</b>
<b>Commercial &amp; Industrial</b>	<b>25’ – 35’</b>

- O. No curb cuts shall be allowed on State Highway except with written permission of Colorado Department of Transportation.
- P. Where curbs do not exist and a driveway crosses a drainage ditch, a culvert shall be installed by the property owner at a diameter sized according to the ditch capacity, but in no case less than 18 inches without written approval from the City Engineer or appointed representative. The minimum length of any culvert shall be five (5’) feet greater than the driveway width or 20 feet whichever is greater. Culvert installation shall include flared end sections with geomembrane beneath riprap to prevent erosion.
- Q. Where a sewer clean-out or water valve is located in a culvert or paved driveway, a six (6”) inch valve box top section shall be installed over the clean-out or valve.

- R. Any deviation from those standards shall be allowed only by special written permission of the City Engineer or appointed representative.

### **5.1.3 CURB CUTS FOR RECESSED DIAGONAL PARKING**

- A. No portion of a parked car shall extend on to a sidewalk unless the sidewalk is widened by the same width that the car extends into the sidewalk or two (2') feet, whichever is greater.
- B. Flow line of gutter will be maintained.
- C. Rear portion of parked car will not extend more than six (6') feet from original curb line where parallel parking was in effect.
- D. Not allowed on State Highway or City arterial street.
- E. Must comply with Model Traffic Code which includes the following:
1. No parking within five (5') feet of public or private driveway
  2. No parking within 15 feet of a fire hydrant
  3. No parking within 20 feet of a crosswalk at an intersection
  4. No parking within 30 feet of flashing beacon, stop sign, yield sign or traffic control signal
- F. Design, location, and construction subject to the approval of the City Engineer or appointed representative.
- G. No construction or design expense to be borne by the City.
- H. It will be understood that completed parking area is for use of the general public and not solely for the private use of the person requesting it.

### **5.1.4 SUBGRADE INVESTIGATION AND PAVEMENT DESIGN (REPORT)**

The report shall be prepared by or under the supervision of and signed by a Professional Engineer registered in the State of Colorado and shall include the following information:

- Vicinity map to locate the investigated area.
- Scaled drawings showing the location of borings.
- Scaled drawings showing the estimated extent of subgrade soil types for each street.
- Pavement design alternatives for each street on a scaled drawing.

- Tabular listing of sample designation, sample depth, Group Number, Liquid Limit, Plasticity Index, percent passing the No.200 sieve, Group Index, Unified and AASHTO Classification, and soil description.
- Proctor Compaction Curves.
- R-value test results of each soil type used in the design.
- Pavement design nomographs properly drawn to show Soil Support - EDLA -SN.
- Design calculations.
- A discussion regarding potential subgrade soil problems including, but not limited to: heave or settlement prone soils, frost susceptible soils, ground water, drainage considerations (surface and subsurface), cold weather construction (if appropriate), and other factors, properties, or fill areas which could affect the design or performance of the pavement system.
- Recommendations to alleviate or mitigate the impact of problems discussed above.

#### **5.1.5 MINIMUM ASPHALT REQUIREMENTS**

##### **A. MIMINUM REQUIREMENTS**

The following table provides the minimum acceptable pavement sections for each roadway classification. These pavement thicknesses may be used for preliminary planning purposes. Final pavement designs should be in accordance with the current version of the CDOT Pavement Design Manual, and actual subgrade support test results. In addition, strength coefficient calculations resulting in lower pavement section depths than shown in Table 5-1 may be acceptable with the following conditions being addressed:

Additional field investigations consisting of borings or other suitable methods of sampling subgrade soils to a depth of at least five (5') feet below proposed subgrade elevation, at intervals not to exceed 250 feet. Samples are to be taken after grading is completed and the subgrade is rough graded. Pavement design shall address special site specific problems which may be encountered such as value of material when subjected to frost action, frost susceptibility of in-situ material, frost heave, and groundwater potential.

**TABLE 5-1**

**MINIMUM ACCEPTABLE PAVEMENT SECTIONS**

<b>Classification</b>	<b>Composite Section</b>		<b>Full Depth</b>
	<b>Asphalt Inches</b>	<b>Roadbase Inches</b>	<b>Asphalt Inches</b>
<b>Commercial (Parking Lots)</b>	<b>3.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Local Street</b>	<b>3.0</b>	<b>6.0</b>	<b>5.0</b>
<b>Collector Street</b>	<b>4.0</b>	<b>6.0</b>	<b>6.0</b>
<b>Arterial Street</b>	<b>5.0</b>	<b>6.0</b>	<b>7.0</b>

- Common driveways serving three (3) or fewer homes will have a pavement section the same as for Commercial Parking Lots.
- Common driveways serving more than three (3) dwellings are required to meet the Local Street designs.

**5.1.6 STREET SIGNAGE**

All street signage shall be in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.), Latest Edition.

**5.2 ASPHALT PAVEMENT MATERIALS AND CONSTRUCTION**

**5.2.1 REQUIRED INSPECTIONS FOR ROADWAYS**

Adequate inspections assure compliance to City requirements and are the basis for the City's recommendation that said streets be given initial acceptance. It is the responsibility of the Responsible Party to contact the City Engineer or appointed representative two (2) business days in advance of the required inspections. Required inspections shall include:

- A. **CULVERTS** - trenching, grade, bedding, installation, backfill and compaction. Inspection is to be requested when backfill is completed to ½ the depth of the culvert.
- B. **CONCRETE** - finished excavation, grade, forming, reinforcing steel, and compaction.
- C. **STRUCTURES** - concrete pour, surface finish, and test cylinders. Three (3) inspections are required: (1) prior to placing steel; (2) prior to concrete pour; and (3) after final pour.
- D. **STREET** - Five (5) inspections are required: (1) subgrade, (2) subbase, (3) base course, (4) prime, and (5) paving; all of which are required prior

to proceeding with the next phase. The City Engineer or appointed representative shall designate locations of required samples for testing.

## **5.2.2 SUBGRADE**

### **A. PAVEMENT SUBGRADE**

The bottom of the excavation for the pavement, or top of fill, shall be known as the pavement subgrade and shall conform to the lines, grades, and cross sections shown on the approved plans. All subgrade material shall be free of organic matter or other deleterious material.

### **B. EXCAVATION**

Excavation shall consist of removal of all material necessary for the construction of the subgrade to the elevation, line, and grade shown on the plans. All tree stumps and roots shall be removed to a depth of two (2') feet below subgrade and disposed of in accordance with applicable City, State, and Federal requirements. The Contractor shall dispose of all excavated material unless otherwise directed by the City Engineer or appointed representative. All excavation shall conform to Title 7 – Excavation in the Public Right-Of-Way.

### **C. EMBANKMENT**

Where fill is required, it shall consist of earth, sand, or gravel that is free of organic matter or other deleterious material. A Geotechnical Engineer shall approve all fill material. The original surface shall be stripped of all vegetation prior to beginning the embankment operation, also scarify and compact the top six (6") inches. The fill shall be placed in a maximum of six (6") inch lifts, uncompacted thickness, and shall be compacted in accordance with the requirements of CDOT Standard Specifications for Road and Bridge Construction, Section 203.

The subgrade for the pavement structure shall be graded to conform to the cross section and profile required by the approved set of plans. The top six (6") inches of the subgrade shall be scarified and recompact to a density not less than 95 percent of Modified Proctor. After the subgrade has been prepared, it shall be maintained to drain and be kept free of erosion until the City Engineer or appointed representative has checked and approved it for the placement of base course material.

### **D. SLOPES**

Side slopes of all excavations and embankments within the street section shall generally not exceed the ratio of three-to-one (3:1) (3' horizontal to 1' vertical) unless otherwise approved by the City Engineer or appointed

representative. Special consideration will be given to allow steeper slopes where said slopes are shown to be stable by engineering analyses.

**E. UTILITY TRENCHES**

Prior to approval to place base course, all utility services and main lines shall be backfilled in accordance with Title 7 – Excavation in the Public Right-Of-Way.

**F. COMPACTION**

See Section 7.5.

**G. FINAL PROOF-ROLLING**

After the subgrade has been compacted, tested and found to meet specifications, the entire subgrade shall be proof-rolled with a heavily loaded vehicle. The vehicle must have a certified loaded GVW of 50,000 pounds with a loaded single axle weight of at least 18,000 pounds and a tire pressure of 90 psi. Subgrade which is pumping or deforming must be reworked, replaced or otherwise modified to form a smooth, stable, non-yielding base for subsequent paving courses. The City Engineer or appointed representative shall be notified at least 48 hours before final proof-rolling of the subgrade.

**5.2.3 BASE COURSE**

**A. MATERIAL**

The aggregates for the base course material shall be composed of crushed stone, crushed slag, crushed gravel, or natural gravel which conforms to the quality requirements of AASHTO M-147. The material shall conform to the following gradation requirements:

**Table 5-2  
Percent by Weight Passing  
(Current CDOT standards)**

<b>Sieve Size</b>	<b>Class 2</b>	<b>Class 5</b>	<b>Class 6</b>
<b>4"</b>	<b>100</b>		
<b>3"</b>	<b>95-100</b>		
<b>1-1/2"</b>		<b>100</b>	
<b>1"</b>		<b>95-100</b>	
<b>3/4"</b>			<b>100</b>
<b>No. 4</b>		<b>30-70</b>	<b>30-65</b>
<b>No. 8</b>			<b>25-55</b>
<b>No. 200</b>	<b>3-15</b>	<b>3-15</b>	<b>3-12</b>

The liquid limit shall not exceed 35 for Class 2 or 30 for Class 5 and Class 6 when tested in accordance with AASHTO T-89 and AASHTO T-90. The plastic index shall not exceed six (6) for Classes 2, 5 and 6. The aggregate shall have a Los Angeles Abrasion Test (AASHTO T-96) percentage of wear not exceeding 45 percent. Gradation shall be Class 5 (1½ inch maximum) or Class 6 (¾ inch maximum).

## B. CONSTRUCTION METHODS

1. Materials shall be placed on an approved subgrade, which has been proof-rolled within the past 24 hours and found to be stable and non-yielding. Should weather conditions change, such as freezing, precipitation, etc., aggregate base materials shall not be placed until the subgrade is reapproved.

The base course material shall be placed on the previously prepared subgrade at the locations and in the proper quantities to conform to the typical cross sections as shown on the plans and as directed by the City Engineer or appointed representative. Placing and spreading shall be done by means of a spreader machine, moving vehicle, motor grader, or by other approved equipment methods. The material shall be placed without segregation. Any segregated areas shall be removed and replaced with uniformly graded material at the Responsible Party's expense.

The base material may be placed in lifts of up to six (6") inches, providing that after compaction, uniform density is obtained throughout the entire depth of the lift. If the required depth exceeds six (6") inches, it shall be placed in two (2) or more lifts of approximate equal thickness. If uniform density cannot be obtained by six (6") inch lifts, the maximum lift shall not exceed four (4") inches in final thickness.

Base material shall not be placed on a foundation that is soft or spongy or one that is covered by ice or snow. Base material shall not be placed on a dry or dusty foundation where the existing condition would cause rapid dissipation of moisture from the base material and hinder or preclude its proper compaction. Such dry foundations shall have water applied to them and shall be reworked or recompacted.

Rolling shall be continuous until the base material has been compacted thoroughly in accordance with Section 304 of the CDOT Standard Specifications. Water shall be uniformly applied as needed during compaction to obtain optimum moisture content and to aid in consolidation. The surface of each layer shall be maintained during the compaction operations in such a manner that

a uniform texture is produced and the aggregates are firmly placed.

The finished base course surface shall be smooth and free of ruts and irregularities, and shall be true to grade and crown as shown on the plans. The base course shall be maintained in this condition by watering, drying, rolling, or blading or as the City Engineer or appointed representative may direct until the surfacing is placed.

2. Hauling and Placing - Care shall be exercised in the hauling and placing of base course so as to avoid segregation of the course and fine materials. The base course material shall be placed on the previously prepared and approved subgrade in sufficient quantity to conform to the thickness specified on the approved plan and profile. The material shall be mixed and watered to obtain a uniform mixture at optimum moisture.

If the required compacted thickness exceeds six (6") inches, the base course shall be constructed in two (2) or more layers of equal thickness. The maximum thickness of any layer to be compacted shall not exceed six (6") inches. The minimum depth of base course on streets and alleys shall be six (6") inches.

The required thickness of the base course may be reduced only when specified in an approved Pavement Report prepared by a State of Colorado licensed Professional Engineer.

Class 5 and 6 material shall be classified as base course. Class 2 materials shall be classified as subbase course and used only when the base requirement is greater than six (6") inches.

Class 2 materials shall have a minimum "R" value of 68. Class 5 and Class 6 material shall have a minimum "R" value of 80.

All material shall be placed and compacted at optimum moisture ( $\pm$  2 percent). The compaction shall be continued until the base course has a density of not less than 95 percent of its Modified Proctor at optimum moisture. At least 20 percent of the test shall be taken within one (1') foot of a manhole or valve. Nuclear testing equipment and methods are acceptable when performed by an approved certified testing laboratory and when performed in accordance with the requirements of ASTM D-222 and ASTM D-3017.

3. Surface and Thickness Tolerances. The surface of the prepared base course material shall be free from depressions exceeding  $\frac{1}{4}$  inch in 10 feet when measured with a straight edge. The surface shall be smooth and true to the established crown and grade. Any

areas not complying with these tolerances shall be reworked to conform. Blue top staking and string lining shall be required for all roadway construction.

4. Final Proof-Rolling. After the subbase has been compacted, tested and found to meet specifications, the entire subbase shall be proof-rolled with a heavily loaded vehicle. The vehicle must have a certified loaded GVW of 50,000 pounds with a loaded single axle weight of at least 18,000 pounds and a tire pressure of 70 psi. Subbase which is pumping or deforming must be reworked, replaced or otherwise modified to form a smooth, stable, non-yielding base for subsequent paving courses. The City Engineer or appointed representative shall be notified at least 48 hours before final proof-rolling.
5. The results of field density tests and proof-rolling shall be submitted and reviewed by the City Engineer or appointed representative. Provided all tests are acceptable, compaction shall be approved for the placement of the next paving course. Should testing indicate unsatisfactory work, the necessary reworking, compaction or replacement shall be required prior to continuation of the paving process. The approval is valid for 24 hours. Changes in weather, such as freezing or precipitation, shall require reapproval of the subgrade.

#### **5.2.4 ASPHALT PRIME COAT AND TACK COAT**

##### **A. PRIME COAT**

1. Surface Preparation. Before applying the prime coat all loose material shall be removed from the surface. That portion of the surface prepared for treatment shall be dry and in satisfactory condition.
2. Emulsified Asphalt. Emulsified asphalt of any of the following grades may be used: SS-1, SS-1h, CSS-1, CSS-1h. All of these should be diluted 1:1 with water. A certificate of compliance must be provided by the supplier.
3. Application. Prior to prime coat application, the surface should be allowed to dry to approximately 80 percent of optimum moisture. The asphalt material shall be applied in the range of 0.05 to 0.15 gallons/square yard. The prime coat shall be carefully applied. If excessive amounts of curb, sidewalks, or other structures are sprayed with liquid asphalt, they shall be cleaned at the Contractor's expense. The prime coat shall not be applied when

the surface is wet or when the atmospheric temperature is less than 40 degrees Fahrenheit, or when precipitation is imminent.

4. Curing. Curing shall be required for all prime and tack coats. The prime or tack coat shall be sticky, or tacky, when cured. The length of time required for curing shall depend on the air temperature, humidity and wind conditions and shall be black when cured. The prime coat shall be allowed to cure for a minimum of 24 hours prior to the paving operation. If after the curing period the prime coat has not penetrated the base material, and the surface must be used by traffic, a suitable blotter material shall be applied in amounts needed to absorb excess liquid asphalt. The blotter material shall be dry, gritty sand. Dust or contamination of prime or tack coats shall require brooming and reapplication.

#### B. TACK COAT

1. When a tack coat is specified on the approved plans or required by the City Engineer or appointed representative, all materials and construction shall be in accordance with the requirements of the CDOT Standard Specifications, Section 407. Tack coat shall be applied where additional HBP is to be placed over existing asphaltic or Portland cement surfaces. Tack coats shall not be required where HBP is less than 24 hours old and remains free of dust, dirt or debris. A 1:1 dilution should be applied at the rate of 0.05 to 0.15 gallons per square yard. A wand or hand spray nozzle attached to the spray bar can be used for applying tack to gutter faces, valve boxes, manholes and rings.
2. Surface Preparation.  
  
Refer to 5.2.4.A.1.
3. Liquid Asphalt. The liquid asphalt used for tack coat shall be an emulsified asphalt grade CSS-1h or SS-1h and shall satisfy the requirements of ASTM 977. Other emulsified asphalts may be used upon written permission of the City Engineer or appointed representative.
4. Application. The surface shall be allowed to cure to permit drying and setting of the tack coat prior to the paving operation.

Refer to 5.2.4.A.3

## 5.2.5 ASPHALT CONCRETE PAVEMENT

### A. HOT BITUMINOUS PAVEMENT

All pavement shall be hot bituminous pavement of the plant mix type unless otherwise approved in writing by the City Engineer or appointed representative. Materials and construction shall be in accordance with the Pikes Peak Region “Asphalt Paving Specifications,” and the following requirements:

### B. CONSTRUCTION METHODS

1. Hauling Equipment. Trucks used for hauling the asphaltic concrete mixture shall be equipped with tight, clean, smooth metal beds. When directed by the City Engineer or appointed representative the beds shall be coated with an oil or other approved material to prevent the mixture from adhering to the beds. Each load shall be covered with canvas or other suitable material of sufficient size to protect it from weather conditions.
2. Paving Machines. Paving machines shall meet the minimum requirements of Pikes Peak Region “Asphalt Paving Specifications.”
3. Rollers. Rollers shall be steel wheeled and pneumatic tire type and be in good condition, capable of reversing without backlash. They shall weigh not less than eight (8) tons. All rollers shall have a water system capable of keeping the wheels properly moistened to prevent adhesion of the mixture to the wheels.
4. Paving Surface. After the pavement base has been prepared, it shall be made ready for paving by clearing any loose material off as directed by the Engineer and applying a prime coat as specified in Section 5.2.4.A. of these specifications. Each lift of compacted asphalt pavement shall be of uniform thickness. The minimum uncompacted lift thickness shall be three times the nominal aggregate size of the mixture. The maximum lift thickness shall be three (3”) inches unless the Contractor can demonstrate the ability to achieve required compaction of thicker lifts.
5. Spreading, finishing and compaction. The mixture shall be laid upon the approved base surface, spread, and struck off to the grade and elevation required. Pavers shall be used to distribute the mixture over the entire surface except where hand placing is necessary.

Segregation of materials shall not be permitted. If segregation occurs, the spreading operation shall be immediately suspended until the cause is determined and corrected. Placing the mixture shall be as continuous as possible. All surface irregularities shall be adjusted by the addition or removal of mixture prior to rolling. After the mixture has been spread, struck off and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction while the mixture is in a workable condition. Heavy equipment or rollers shall not be allowed to stand on freshly placed pavement.

Unless otherwise directed, rolling shall begin at the sides and proceed longitudinally parallel to the street centerline, each pass overlapping  $\frac{1}{2}$  the roller width, gradually progressing to the crown of the street. When paving adjacent to a previously placed lane, the longitudinal joint shall be rolled first followed by the regular rolling procedure.

Rolling shall be continued until all roller marks are eliminated and no further compression is possible.

Along forms, curbs, manholes, and other places not accessible to rollers, the mixture shall be thoroughly compacted with hand tampers or with mechanical tampers. The joints between these structures shall be effectively sealed.

Any asphalt that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh hot mixture, which shall be compacted to conform to the surrounding area.

6. Joints. Transverse joints shall be formed by cutting through the previously laid course to expose the full depth of the course. A coat of tack coat material shall be used on contact surfaces of all joints just before additional mixture is placed.
7. Weather Conditions. Weather conditions shall meet the minimum requirements of Pikes Peak Region "Asphalt Paving Specifications."
8. Surface and Thickness Tolerances. The surface of the finished pavement shall be free from depressions exceeding  $\frac{3}{16}$  inch in ten (10) feet, when tested with a straight edge. All depressions exceeding the specified tolerances shall be corrected by removing

defective work and replacing it with new material as directed. The surface shall be smooth and true to the established crown and grade.

#### **5.2.6 ASPHALTIC OVERLAY (Plant-Mix Seal)**

- A. The work to be performed under this section shall be in accordance with CDOT Standard Specifications for Road and Bridge Construction, Section 410.
- B. **GEOTEXTILE FABRIC.** All Geotextile fabric shall meet pavement design criteria and that set forth by the Colorado Department of Transportation and subject to the approval of the City Engineer or appointed representative.

#### **5.2.7 SEAL COAT**

When seal coat is required, all materials and construction shall be in accordance with the requirements of the CDOT Standard Specifications for Road and Bridge Construction, Section 409. The type of bituminous material, cover aggregate, and rates of application shall be as shown on the approved construction plans.

#### **5.2.8 CONTROL OF MATERIALS**

##### **A. APPROVAL OF SOURCES OF SUPPLY OF MATERIALS**

The source of supply of each of the materials required shall be approved by the City Engineer or appointed representative before delivery is started. Representatives of preliminary samples shall be submitted by the subdivider, producer, or owners of the supply for inspection or tests. The results obtained from testing such samples may be used for preliminary approval but will not be used as a final acceptance of the materials.

##### **B. APPROVAL AND ACCEPTANCE OF MATERIALS**

Samples of all materials for testing upon which acceptance or rejection is to be based, shall be taken by the City Engineer or appointed representative, at the discretion of the City Engineer or appointed representative. Materials may be sampled either prior to shipment or after being received at the place of construction. All sampling, inspections, and testing shall be done in accordance with the methods herein prescribed at the Contractor's expense.

The contractor shall provide such facilities as required by AASHTO and/or ASTM for performing the specified field tests and forwarding samples to an approved testing laboratory. Only materials conforming to the requirements of these specifications and which have been approved by

the City Engineer or appointed representative shall be used in the work. Any material, which, after approval, has for any reason become unfit for use, shall be removed from the site and shall not be incorporated into the work.

**C. METHODS OF SAMPLING AND TESTING**

Except as otherwise provided, sampling and testing of all materials, and the laboratory methods and testing equipment required under these specifications shall be in accordance with the “Standard Specifications for Highway Materials and Methods of Sampling and Testing” of AASHTO or with the Standards and Testing Methods of the ASTM using the latest editions.

All sampling and testing shall be performed by a laboratory and personnel approved by the City Engineer or appointed representative. All testing laboratories must comply with ASTM E-329 standard practices for inspection and testing.

**5.2.9 INITIAL ACCEPTANCE**

Refer to Title 1, Section 1.3.7.2 for Initial Acceptance Requirements.