

**Public Street Facilities Construction Standards
Table of Contents
Chapter 6**

6.1	<u>General</u>
	(6.1.1) Street Construction Activities
	(6.1.2) Prerequisite For Pavement Construction
6.2	<u>Compaction of Fills and Backfills</u>
	(6.2.1) Compaction
	(6.2.2) Standard Proctor Test
	(6.2.3) Lift Thickness
	(6.2.4) Compaction Tests
	(6.2.5) Incomplete Testing
	(6.2.6) Test Results
	(6.2.7) Cost of Testing
6.3	<u>Construction of Street Pavement Structure</u>
	(6.3.1) Subgrade
	(6.3.2) Curb And Gutters
	(6.3.3) Compaction Tests
	(6.3.4) Cost of Testing
6.4	<u>Seeding</u>
	(6.4.1) Permanent Or Temporary Treatment of Disturbed Areas
	(6.4.2) Stockpiles
	(6.4.3) Topsoil
	(6.4.4) Seed Mixtures
	(6.4.5) Seeding Methods
6.5	<u>Survey Monuments</u>
	(6.5.1) Locations
	(6.5.2) Installation
6.6	<u>Street Lights</u>

6.7

Signs

- (6.7.1) Installation
- (6.7.2) Stop Signs
- (6.7.3) Street Name Signs
- (6.7.4) Sign Mounting
- (6.7.5) Sign Locations

6.8

Traffic Signals

- (6.8.1) Installation
- (6.8.2) As-Built Drawings

Chapter 6 Public Street Facilities Construction Standards

6.1 General

(6.1.1) Street Construction Activities

Street construction, including procedures, equipment, materials, workmanship, details, tests and inspections shall comply with the applicable requirements of the most current editions of the following publications:

Virginia Department of Transportation (VDOT) Road and Bridge Specifications; VDOT "Road and Bridge Standards; VDOT "Land Use Permit Manual Manual of Uniform Traffic Control Devices and Minimum Entrances to State Highways.

(6.1.2) Prerequisite For Pavement Construction

Prior to the construction of any part of the street pavement structure, except the placing of embankment material, all underground facilities to be installed within the right-of-way of such street shall be installed, tested, inspected and, where appropriate, placed in service.

6.2 Compaction of Fills and Backfills

(6.2.1) Compaction

Earth fills and utility trench backfills shall be compacted to a minimum of 95% of maximum density within +/- 3 percentage points of optimum moisture as determined by ASTM Standard D-698.

(6.2.2) Standard Proctor Test

The contractor shall, prior to commencing filling or backfilling operations, submit the results of the Standard Proctor Test (ASTM D-698) to the City Engineer. Such test shall be conducted by a materials testing laboratory and shall be certified by a professional engineer licensed in the Commonwealth of Virginia. Such certification shall include recognition that soils sample/s were taken from and are representative of soils to be used in the fill or backfill.

(6.2.3) Lift Thickness

Fill and trench backfill shall be placed in lifts not to exceed an uncompacted thickness of 8 inches and 6 inches, respectively.

(6.2.4) Compaction Tests

Compaction tests shall be performed at the following minimum frequencies:

(6.2.4.1) Fill: One test per lift per 10,000 square feet of lift or fraction thereof.

(6.2.4.2) Backfill: One test per lift, per 500 lineal feet or fraction thereof, of trench backfill.

(6.2.4.3) A succeeding lift shall not commence prior to the successful testing of the previous lift.

(6.2.4.4) The City Engineer or the City's on-site representative may, if in their opinion the workmanship or other conditions are substandard, require additional testing.

(6.2.5) Incomplete Testing

In the event that filling and/or backfilling operations are conducted without completing the testing set out hereinbefore, the contractor shall be required to prove that the required soil densities have been achieved by conducting core boring and/or split-spoon sampling and testing through the entire depth of fill. Such proof testing shall be certified by a materials testing laboratory and a professional engineer as set out above.

(6.2.6) Test Results

Test results shall be submitted to the City Engineer or the City's on-site representative on a daily basis during filling and/or backfilling operations.

(6.2.7) Cost Of Testing

The costs of all testing or retesting set out herein shall be borne solely by the developer or his agent.

6.3 Construction of Street Pavement Structure(6.3.1) Subgrade

Subgrade shall be constructed in strict compliance with the VDOT Road and Bridge Specifications of the latest date of issue. All fill soils shall be approved by the City Engineer or the City's on-site representative prior to placement. Subgrade in cut sections shall be scarified for the top 6 inches and re-compacted to 100% Standard Proctor Density prior to placing stone base. Subgrade sections which have remained dormant for over 30 days shall be proof-rolled with a 20 to 25 ton rubber tire roller in the presence of the City

Inspector. Any unstable subgrade soil found by this process shall be removed and replaced with suitable compacted material.

(6.3.2) Curb And Gutters

Curbs, gutters, combination curbs and gutters and curb cut ramps shall be constructed of hydraulic cement concrete.

(6.3.3) Compaction Tests

Compaction tests for street pavement structure shall be made at the following minimum frequencies:

(6.3.3.1) Sub-Grade: One test per lane per 500 lineal feet.

(6.3.3.2) Stone Base: One test per lane per 6" compacted lift per 500 lineal feet.

(6.3.3.3) Hot Asphaltic Concrete: One test per lane per lift per 500 lineal feet.

(6.3.3.4) Test results shall be submitted to the City Engineer or the City's on-site representative on a daily basis during paving operations. Inadequate tests results shall prompt replacement of pavement, at the developer or his agent's expense, if deemed necessary by the City Engineer.

(6.3.4) Cost Of Testing

The costs of all testing or retesting set out herein shall be borne solely by the developer or contractor.

6.4 Seeding

(6.4.1) Permanent or Temporary Treatment of Disturbed Areas

All disturbed areas that are not otherwise stabilized shall be topsoiled and seeded, temporarily or permanently in accordance with the Virginia Erosion and Sediment Control Regulations. Permanent seeding and grass establishment is required prior to project completion and acceptance of street.

(6.4.2) Stockpiles

Stockpiles and other areas that will not be moved or regraded for 30 days shall be temporarily seeded within 7 days with a seed mix consisting of 150 pounds per acre of Perennial Rye grass.

(6.4.3) Topsoil

All non-paved areas within the street right-of-way and all cut and fill slopes shall be topsoiled to a minimum depth of 4 inches.

(6.4.4) Seed Mixtures

All non-paved areas within the street right-of-way and all cut and fill slopes shall, after spreading of topsoil, be permanently seeded as follows:

(6.4.4.1) From April 15 to May 15 and from September 15 to October 31 - Lawn areas and areas within right-of-way shall be seeded with 75 pounds of Kentucky Blue Grass, 53 pounds of small seed Fescue and 22 pounds of Turf Type Rye grass per acre.

(6.4.4.2) At other times of the year and for other areas, the permanent seed mix shall be 170 pounds of Tall Fescue and 70 pounds of Perennial Rye grass per acre.

(6.4.4.3) All seed mixes shall be 95% pure seed with a minimum germination rate of 85% and a maximum weed content not to exceed 0.50%.

(6.4.4.4) The contractor shall perform supplemental seeding when less than a uniform and stable stand of permanent grass is obtained in the opinion of the City Erosion and Sediment Control Administrator. Supplemental seeding shall consist of overseeding at the rate of 50% of the seed mix specified above.

(6.4.5) Seeding Methods

Seeding methods shall comply with the Virginia Erosion and Sediment Control Handbook.

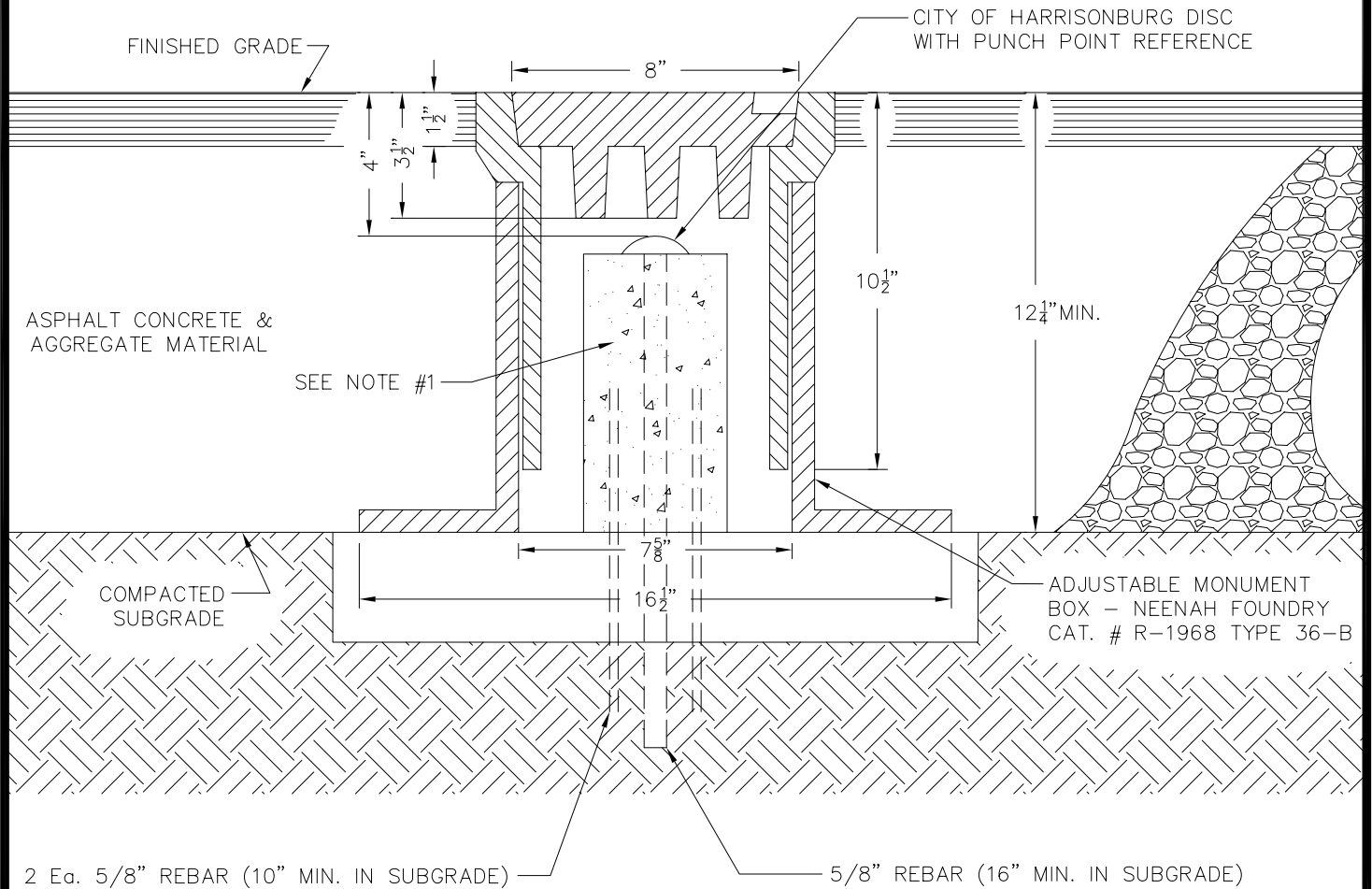
6.5 Survey Monuments

(6.5.1) Locations

Prior to acceptance of the completed public facilities, permanent survey monuments shall be installed at the discretion of the City Surveyor, but in general at the following locations:

(6.5.1.1) Intersection of centerlines of intersecting street right-of-ways.

(6.5.1.2) Points of curvature and tangency on centerline of right-of-way.



NOTES:

1. 5/8" REBAR SET IN CONCRETE (4" DIA.) LENGTH OF REBAR TO BE DETERMINED BY THICKNESS OF PROPOSED ROADWAY.
2. MONUMENT DISC AND ADJUSTABLE MONUMENT BOX TO BE PROVIDED BY THE CITY OF HARRISONBURG.
3. MONUMENT SHALL BE INSTALLED PRIOR TO SURFACE PAVING ON ALL NEW STREETS. ALL WORK IS CONTRACTOR'S RESPONSIBILITY.
4. ON EXISTING CITY STREETS, CITY FORCES WILL APPLY ASPHALT BACKFILL AROUND MONUMENT, THIS WORK WILL BE COORDINATED THROUGH THE CHIEF CITY INSPECTOR.

NOT TO SCALE

REVISIONS

NO.	DATE	DESCRIPTION	INIT.
	10/04	DCSM UPDATE	

**STANDARD STREET
CENTER LINE
MONUMENT**

DWG. NO.

6.5.2

PAGE

(6.5.1.3) Points of tangent and/or points on curve on centerline of right-of-way where necessary to provide intervisible sightings.

(6.5.1.4) Exact locations for monuments shall be determined on a project basis by the City Surveyor, and shall be included on the site plan and plat as appropriate.

(6.5.2) Installation

Monuments shall be provided and installed in accordance with the standard drawing for Street Centerline Monument Installation, at the sole cost of the developer or his agent. Monument locations shall be established and documented by a professional land surveyor or civil engineer licensed to practice in Virginia.

6.6 Street Lights

Street lights shall be required along all new public streets pursuant to installation and cost policies of the Harrisonburg Electric Commission (HEC). Locations of poles, conduits, transformers, wires and easements shall be determined by HEC in coordination with the developer and the design engineer, and shall be shown on the development plans.

6.7 Signs

(6.7.1) Installation

Street name and stop signs shall be installed by and at the sole cost of the developer or his agent and shall comply with the Manual on Uniform Traffic Control Devices (MUTCD) and the Virginia Supplement thereto.

(6.7.2) Stop Signs

Stop Signs shall meet the following minimum specifications:

(6.7.2.1) Construct on 36"x36" aluminum blank with minimum thickness of 0.080 inches.

(6.7.2.2) Face and lettering shall be Diamond Grade Material with company's logo, one-half (1/2) inch in size, in lower right-hand corner.

(6.7.3) Street Name Signs

Street name signs shall comply with MUTCD and Supplement. Street name signs shall be constructed of 6" width extruded aluminum blanks of length sufficient for street name. Signs shall be white letters on green background of reflective material, except in the case of private streets where signs shall be green letters on white background of reflective material.

(6.7.4) Sign Mounting

Each sign shall be mounted on a single 2-H square steel channel post. The appropriate street name sign may be placed above a stop sign provided the top of the post is at least 4 inches above the top of the stop sign. Street name signs shall be mounted on top of the post with an extruded aluminum street sign bracket and at least two set screws.

(6.7.5) Sign Locations

Approximate location of all signs shall be shown on the plans. Exact location shall be coordinated, at the time of erection, with the Public Works Department.

6.8 Traffic Signals

(6.8.1) Installation

Automatic traffic control signals shall be installed in compliance with the MUTCD, VDOT and the City of Harrisonburg.

(6.8.2) As-Built Drawings

If Traffic Signal plans have been revised or changed since approval, the developer must provide to the Director of Public Works as-built drawings reflecting changes. Provision of as-built drawings is a condition of bond release.