

GRAYSON COUNTY, VIRGINIA
Department of Planning & Community Development

Trail System

Project Manual

September 17th, 2015



IFB# 03-2015

Grayson County Administration
P.O. Box 217
129 Davis Street
Independence, VA 24348
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0 0.05 0.1 0.2 Miles



GRAYSON COUNTY RECREATION PARK
TRAIL IMPROVEMENTS
EROSION & SEDIMENT CONTROL PLAN
GRAYSON COUNTY, VIRGINIA

EROSION & SEDIMENT CONTROL PLAN
NARRATIVE DESCRIPTION

PREPARED FOR:

GRAYSON COUNTY
P.O. BOX 217
INDEPENDENCE, VIRGINIA 24348

PREPARED BY:

THE LANE GROUP
119 NORTH MAIN STREET
GALAX, VIRGINIA 24333

MARCH 2015

Responsible Land Disturber: _____ **Certificate No.:** _____

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**GRAYSON COUNTY RECREATION PARK
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PROJECT DESCRIPTION

This Erosion & Sediment Control Plan has been prepared for the Grayson County Parks and Recreation Department. The Department plans to rehabilitate and develop approximately 4,170 LF of walking trails throughout its Recreation Park, located east of the Town of Independence. A Trailhead Bathroom Facility and adjacent parking area are also proposed to be constructed.

The proposed trail system is divided into three segments. Segments 1 & 3 are intended to be 6' wide, gravel surface, and will traverse wooded and cleared. Segment 2 is also 6' wide, will be paved, and will consist of a loop around the softball fields. Minimal finished contour changes are anticipated, as the trails are to be constructed following existing grade as much as possible. The trail corridor is proposed to be 10' wide, with vegetation, stumps, and other obstacles to the path of travel to be cleared from the corridor. The vertical clearance for obstructions is to be 8' tall, meaning that all protruding obstructions into the trail corridor are to be cleared or pruned back from surface grade to 8' high for the entire corridor width. Segments 1 and 3 are to have a cross slope of 2-5% and maximum longitudinal slope of 20%. Segment 2 is to have a cross slope of 2% with 5% maximum longitudinal slope, as this segment is intended to meet ADA design requirements.

The anticipated area of disturbance for the project is estimated as follows:

| | |
|-------------------------------------------------------------|-----------------|
| Trail Segment 1 = 1,505 LF * 10' width = | 15,050 SF |
| Trail Segment 2 = 1,401 LF * 10' width = | 14,010 SF |
| Trail Segment 3 = 1,264 LF * 10' width = | 12,640 SF |
| <u>Trailhead Bathroom Facility and paved parking area =</u> | <u>1,200 SF</u> |
| Total = 42,900 SF = 0.98 acres | |

EXISTING CONDITIONS

The proposed project is located in the Grayson County Recreation Park. Proposed Trail Segment 1 and the latter portion of Segment 3 are primarily in wooded areas; Segment 2 and the remaining portion of Segment 2 are located in open areas adjacent to ball fields and parking lots. The walking trails are to follow the natural contour of the landscape as much as possible. Ground slopes within the work area are flat to steep, falling in the range of 2-35% in wooded locations and 0-5% in open areas.

ADJACENT AREAS

The Recreation Park is located off of Power House Road just outside the limits of the Town of Independence. Wooded areas border the park to the east and south, and an industrial facility is located to the southwest. The west side of the park borders pasture, and light residential development in cleared and wooded areas is across Power House Road from the park. All adjacent areas are to be protected from erosion and/or sedimentation which could result from the proposed construction.

OFF-SITE AREAS

No off-site work areas are specifically planned for this project and this E&S Plan has been prepared for the designated project areas only. However, the contractor completing the work may have an off-site equipment yard and/or waste disposal area(s). The contractor will be required to secure regulatory approval of an erosion control plan and to provide adequate E & S control measures at any off-site areas utilized. Any area disturbed in excess of 10,000 SF is required to have an Erosion & Sediment Control Plan approved by Grayson County.

SOILS

The NRCS Web Soil Survey was used to determine the general soils for the project site. As the project is linear in nature, there are several soils types present, with those being Peaks very gravelly loam and Edneytown loam. A description of the soil types and a map showing their location are included in the Soils Appendix.

CRITICAL AREAS

The most critical areas for potential erosion in this project would be for those areas where the walkways are constructed with ground to slopes greater than 10% and in those locations where culverts are required to be installed. Certainly erosion could become a problem in other locations if disturbed areas are not adequately protected and stabilized. All slopes shall be stabilized with new growth and areas most likely to wash out are to be secured with jute mesh.

EROSION AND SEDIMENT CONTROL MEASURES

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook (VESCH). The minimum standards of VESCH shall be adhered to unless otherwise waived or approved by variance. The proposed walking trail construction plans may not show the location of all necessary erosion and sediment control measures required for the project. During construction, the contractor will be directed to install those measures shown on the plans as well as any additional measures necessary to protect the work and adjacent areas. The Engineer, the Inspector, and/or the Local Building Official will all have authority to direct the contractor to install/maintain erosion and sediment control measures. The decision of what measures to install and where will be based upon the contractor's work methods, weather conditions during construction, and other factors. The Contractor is advised that erosion control practices in addition to those included in this Erosion Control Plan may be required by either the Engineer, Inspector, or other Erosion Control Officials and the Contractor shall comply with any such additional requirements.

The Contractor is required to have a copy of the Virginia Erosion and Sediment Control Handbook and all necessary E&S measures shall be constructed and maintained in accordance with the VESCH guidelines. This Erosion & Sediment Control Narrative is not intended to provide a complete copy of all information pertaining to the VESCH guidelines – the Contractor shall refer to the VESCH Handbook.

CONSTRUCTION SCHEDULE

1. Prior to start of construction, the Contractor shall furnish their Responsible Land Disturber (RLD) certification number to the Grayson County Building Inspector's office.
2. Construction will be sequenced so that trail construction can begin and end as quickly as possible.
3. The sediment fence and any temporary gravel construction entrance/exit at any off-road construction areas shall be installed as the initial work step.
4. Trail construction shall be scheduled and completed only during dry conditions.
5. Temporary seeding and/or other stabilization will follow immediately after trail construction. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
6. Areas which are not to be disturbed will be clearly marked by flags, signs, etc.
7. The job superintendent shall be responsible for the installation and maintenance of all erosion and sediment control practices.
8. After achieving adequate stabilization, the temporary E&S controls will be cleaned up and removed.

MAINTENANCE PLAN

In general, all erosion and sediment control measures are to be checked and repaired as necessary with a minimum frequency being after each significant rainfall. The following items are to be checked in particular:

1. The silt fence barriers will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches about 0.5 ft. deep.
2. The seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and reseeded as needed.
3. If any areas begin to erode with only silt fence and seeding measures in place, additional protective measures shall be implemented. Additional measures that may be required could include erosion control matting, temporary diversion ditches, water bars, rock check dams, and others.
4. Areas where erosion control netting/mats are installed shall be checked regularly and following all rainfall events to ensure that the material remains properly anchored.

EROSION & SEDIMENT CONTROL PRACTICES – This Erosion & Sediment Control Narrative is to be used in conjunction with the project's 24"x 36" construction plan sheets which show the location of the required erosion and sediment control measures. Both Vegetative and Structural Practices are proposed. Descriptions of each measure follows, with reference made to the VESCH standard number for specific construction and maintenance requirements.

Vegetative Practices

All vegetated areas disturbed by construction shall be revegetated. The following vegetative practices are proposed to be completed in accordance with the VESCH as appropriate:

1. **Temporary Seeding - (VESCH 3.31)** All denuded areas which will be left dormant for extended periods of time shall be seeded with fast germinating temporary vegetation immediately following grading. Selection of the seed mixture will depend on the time of year it is applied and is to be in accordance with the VESCH as appropriate.
2. **Permanent Seeding - (VESCH 3.32)** Temporary seeding and/or other stabilization will follow immediately after water line installation. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. In any event, all areas which are to remain permanently grassed shall be seeded in accordance with the VESCH as appropriate.
3. **Mulching - (VESCH 3.35)** Erosion control mulch (straw or fiber) may be required on disturbed slopes which have been brought to final grade and have been seeded to protect the slopes from rill and gully erosion and to allow seed to germinate properly. All disturbed slopes and ditches steeper than 10% shall be protected with jute mesh or other similar erosion control matting, properly anchored.

Structural Practices

1. **Temporary Gravel Construction Entrance/Exit - VESCH 3.02** A temporary gravel construction entrance shall be installed at the contractor's proposed entrance(s) from any off-road work and storage areas onto public streets. The construction entrances will reduce the amount of mud transported onto paved public surfaces by motor vehicles or runoff.
2. **Sediment Fence (Silt Fence) - VESCH 3.05** Silt fence sediment barrier is proposed to be installed on the downhill slope below water lines near streams. Silt fence may also be required in disturbed ditches with excessive slopes (>10%) or locations subject to stormwater erosion. The silt fence will serve to filter sediment laden runoff prior to leaving the site as well as to reduce runoff velocities.

STORMWATER MANAGEMENT

The majority of disturbed land area anticipated for this project will be the construction of the new walking trail. All walking trails will be installed following the natural contour of the property as much as possible. Following the installation of these trails, the surrounding disturbed ground surface is to be restored.

Relative to the size of the drainage areas involved, the proposed improvements are anticipated to create minimal stormwater runoff changes to the existing conditions. The Drainage Area Map in the Appendix shows the four drainage areas throughout the project. The Rational Method was used to determine the Pre- and Post-construction peak runoff values for 2- and 10-year storm events, as shown on the Drainage Area Runoff Summary in the Appendix. The results indicate that construction will not result in significant runoff increases.

Five (5) culverts are proposed to be installed below the trail. In most cases, these culverts are located in areas with minimal runoff and are necessary primarily only to prevent ponding. To ensure that each culvert is adequately sized, its drainage area was analyzed using the Rational Method, as shown on the Culvert Computations worksheet in the Appendix. The results indicated that 15" CMP storm drains will be adequate in the locations proposed.

VIRGINIA STORMWATER MANAGEMENT PERMIT REQUIREMENTS

The proposed project is anticipated to disturb less than 1 acre, therefore a Contractor registration under DEQ's Construction Stormwater General VPDES Permit is not required.

DCR 19 MINIMUM STANDARDS

All land disturbing activities must comply with the 19 minimum standards as established by the Virginia Erosion & Sediment Control Regulations. An abbreviated copy of those standards is included in this E&S Narrative for reference. Not all of those standards are applicable to this project. For the benefit of the Plan approving authority a brief discussion of the applicability of each of the 19 standards follows:

- MS1- Soil Stabilization: (Applicable) – All areas disturbed by construction to be stabilized by temporary and/ or permanent stabilization in accordance with the VESCH.
- MS2 – Soil Stockpile Stabilization: (Applicable) – Any topsoil stockpile or borrow areas required for construction of the walking trails are to be protected by silt fence and located away from runoff paths.
- MS3 - Permanent Stabilization: (Applicable) – All areas disturbed by construction shall be permanently stabilized in accordance with the VESCH.
- MS4 – Sediment Trapping Measures: (Applicable) – Silt fence and the construction entrance shall be installed as the first step in land-disturbing activity.
- MS5 – Stabilization of Earthen Structures: (Not Applicable) – There are no earthen structures anticipated for this project.
- MS6 – Sediment Traps & Sediment Basins: (Not Applicable) – There are no sediment traps or sediment basins anticipated for this project
- MS7 – Cut & Fill Slopes Design & Construction: (Applicable) – Cut & fill slopes for the walking trails shall be protected from eroding by silt fence and temporary/permanent seeding, and matting where necessary.
- MS8 – Concentrated Runoff Down Slopes: (Not Applicable) – There are no cut/fill earthwork slopes with concentrated runoff down slope anticipated for this project.

- MS9 – Slope Maintenance: (Applicable) – Cut & fill slopes for the walking trails shall be protected from eroding by silt fence and temporary/permanent seeding, and matting where necessary.
- MS10 – Storm Sewer Inlet Protection (Not Applicable) – There are no storm sewer inlets near the project area.
- MS11 – Stormwater Conveyance Protection (Not Applicable) – There are no stormwater structures near the project area.
- MS12 – Work in Live Watercourse (Not Applicable) – There are no water crossings anticipated for this project.
- MS13 – Crossing Live Watercourse (Not Applicable) – There are no water crossings anticipated for this project.
- MS14 – Regulation of Watercourse Crossing (Not Applicable) – There are no water crossings anticipated for this project.
- MS15 – Stabilization of Watercourse (Not Applicable) – There are no water crossings anticipated for this project.
- MS16 – Underground Utility Line Installation (Not Applicable) – There are no underground utilities proposed for this project.
- MS17 – Vehicular Sediment Tracking (Applicable) – Sediment tracking from work areas into VDOT roads is to be minimized to the extent practical and sediment removed when this occurs.
- MS18 – Removal of Temporary Measures (Applicable) – Once construction is complete and all disturbed areas are satisfactorily stabilized, any remaining temporary E&S control measures shall be removed and the disturbed areas at those locations stabilized.
- MS19 – Stormwater Management (Applicable) – The proposed construction will not appreciably change the project area's stormwater runoff rates. Culverts have been proposed to prevent ponding of water in areas adjacent to the trail.

SOILS APPENDIX



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Grayson County, Virginia**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

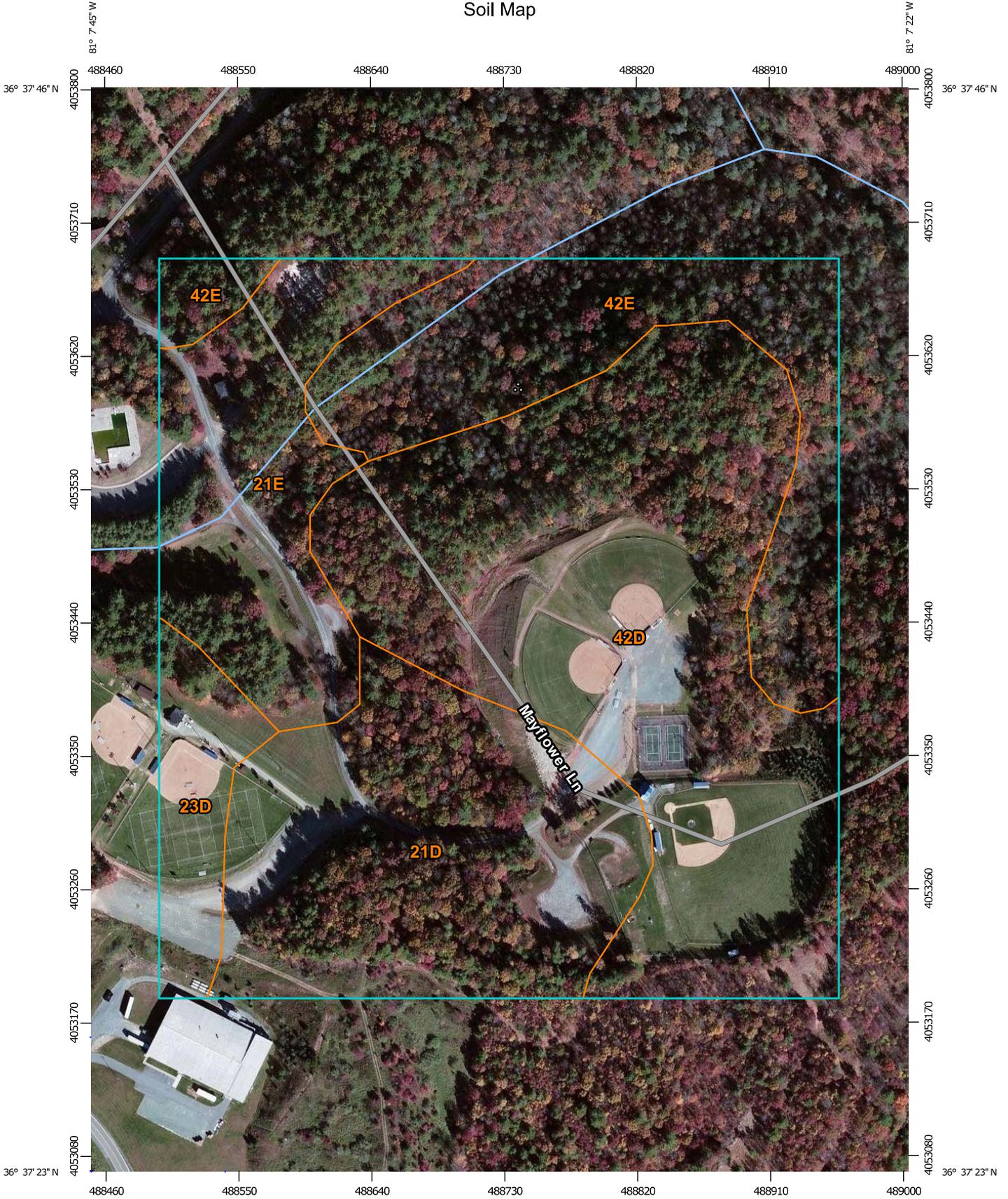
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

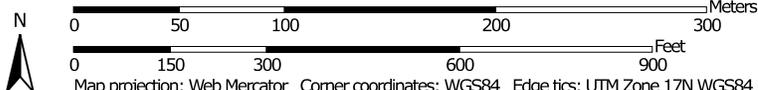
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:3,570 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Grayson County, Virginia
 Survey Area Data: Version 8, Dec 11, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 22, 2010—Mar 17, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map-unit boundaries may be evident.

Map Unit Legend

| Grayson County, Virginia (VA077) | | | |
|------------------------------------|---------------------------------------------------|--------------|----------------|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| 21D | Edneytown loam, 15 to 25 percent slopes | 13.0 | 22.9% |
| 21E | Edneytown loam, 25 to 35 percent slopes | 8.3 | 14.6% |
| 23D | Edneyville loam, 15 to 35 percent slopes | 2.9 | 5.1% |
| 42D | Peaks very gravelly loam, 15 to 35 percent slopes | 22.5 | 39.5% |
| 42E | Peaks very gravelly loam, 35 to 55 percent slopes | 10.2 | 18.0% |
| Totals for Area of Interest | | 57.0 | 100.0% |

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Grayson County, Virginia

21D—Edneytown loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1t2d0

Mean annual precipitation: 46 to 63 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 120 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Edneytown and similar soils: 90 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edneytown

Setting

Landform: Spurs, hills, ridges, ridges, spurs

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountaintop, mountainflank, interfluve, nose slope, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from gneiss and/or granite and/or schist

Typical profile

H1 - 0 to 4 inches: loam

H2 - 4 to 7 inches: loam

H3 - 7 to 20 inches: sandy clay loam

H4 - 20 to 27 inches: sandy loam

H5 - 27 to 62 inches: loamy sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

21E—Edneytown loam, 25 to 35 percent slopes

Map Unit Setting

National map unit symbol: kbsm
Mean annual precipitation: 46 to 63 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Edneytown and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edneytown

Setting

Landform: Ridges, spurs, spurs, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountainflank, mountaintop, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from gneiss and/or granite and/or schist

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 7 inches: loam
H3 - 7 to 20 inches: sandy clay loam
H4 - 20 to 27 inches: sandy loam
H5 - 27 to 62 inches: loamy sand

Properties and qualities

Slope: 25 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

23D—Edneyville loam, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: 1t29g
Mean annual precipitation: 46 to 63 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Edneyville and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edneyville

Setting

Landform: Hills, ridges, ridges, spurs, spurs
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank, interfluve, nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from gneiss and/or schist and/or granite

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 11 inches: loam
H3 - 11 to 34 inches: sandy loam
H4 - 34 to 62 inches: sandy loam

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A

42D—Peaks very gravelly loam, 15 to 35 percent slopes

Map Unit Setting

National map unit symbol: kbs2
Mean annual precipitation: 46 to 63 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Peaks and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peaks

Setting

Landform: Knobs, knobs, ridges, ridges
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Mountaintop, mountainflank, interfluve, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from granite and/or gneiss and/or schist

Typical profile

H1 - 0 to 4 inches: very gravelly loam
H2 - 4 to 8 inches: very gravelly loam
H3 - 8 to 23 inches: very gravelly loam
H4 - 23 to 32 inches: extremely gravelly sandy loam
H5 - 32 to 42 inches: bedrock

Properties and qualities

Slope: 15 to 35 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A

42E—Peaks very gravelly loam, 35 to 55 percent slopes

Map Unit Setting

National map unit symbol: kbs3
Mean annual precipitation: 46 to 63 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Peaks and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peaks

Setting

Landform: Knobs, ridges, ridges, knobs
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Mountainflank, mountaintop, side slope, nose slope, interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and/or gneiss and/or schist

Typical profile

H1 - 0 to 4 inches: very gravelly loam
H2 - 4 to 8 inches: very gravelly loam
H3 - 8 to 23 inches: very gravelly loam
H4 - 23 to 32 inches: extremely gravelly sandy loam
H5 - 32 to 42 inches: bedrock

Properties and qualities

Slope: 35 to 55 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

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SEEDING APPENDIX

**TABLE 3.32-C
SITE SPECIFIC SEEDING MIXTURES
FOR APPALACHIAN/MOUNTAIN AREA**

| <u>Minimum Care Lawn</u> | <u>Total Lbs. Per Acre</u> |
|-------------------------------------------------------------------------------------------------------|--------------------------------|
| - Commercial or Residential | 200-250 lbs. |
| - Kentucky 31 or Turf-Type Tall Fescue | 90-100% |
| - Improved Perennial Ryegrass * | 0-10% |
| - Kentucky Bluegrass | 0-10% |
| <u>High-Maintenance Lawn</u> | |
| Minimum of three (3) up to five (5) varieties of bluegrass from approved list for use in Virginia. | 125 lbs. |
| <u>General Slope (3:1 or less)</u> | |
| - Kentucky 31 Fescue | 128 lbs. |
| - Red Top Grass | 2 lbs. |
| - Seasonal Nurse Crop ** | <u>20 lbs.</u> |
| | 150 lbs. |
| <u>Low-Maintenance Slope (Steeper than 3:1)</u> | |
| - Kentucky 31 Fescue | 108 lbs. |
| - Red Top Grass | 2 lbs. |
| - Seasonal Nurse Crop ** | 20 lbs. |
| - Crownvetch *** | <u>20 lbs.</u> |
| | 150 lbs. |

* Perennial Ryegrass will germinate faster and at lower soil temperatures than fescue, thereby providing cover and erosion resistance for seedbed.

** Use seasonal nurse crop in accordance with seeding dates as stated below:
 March, April through May 15th Annual Rye
 May 16th through August 15th Foxtail Millet
 August 16th through September, October Annual Rye
 November through February Winter Rye

*** If Flatpea is used, increase to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may also be included in any slope or low-maintenance mixture during warmer seeding periods; add 10-20 lbs/acre in mixes.

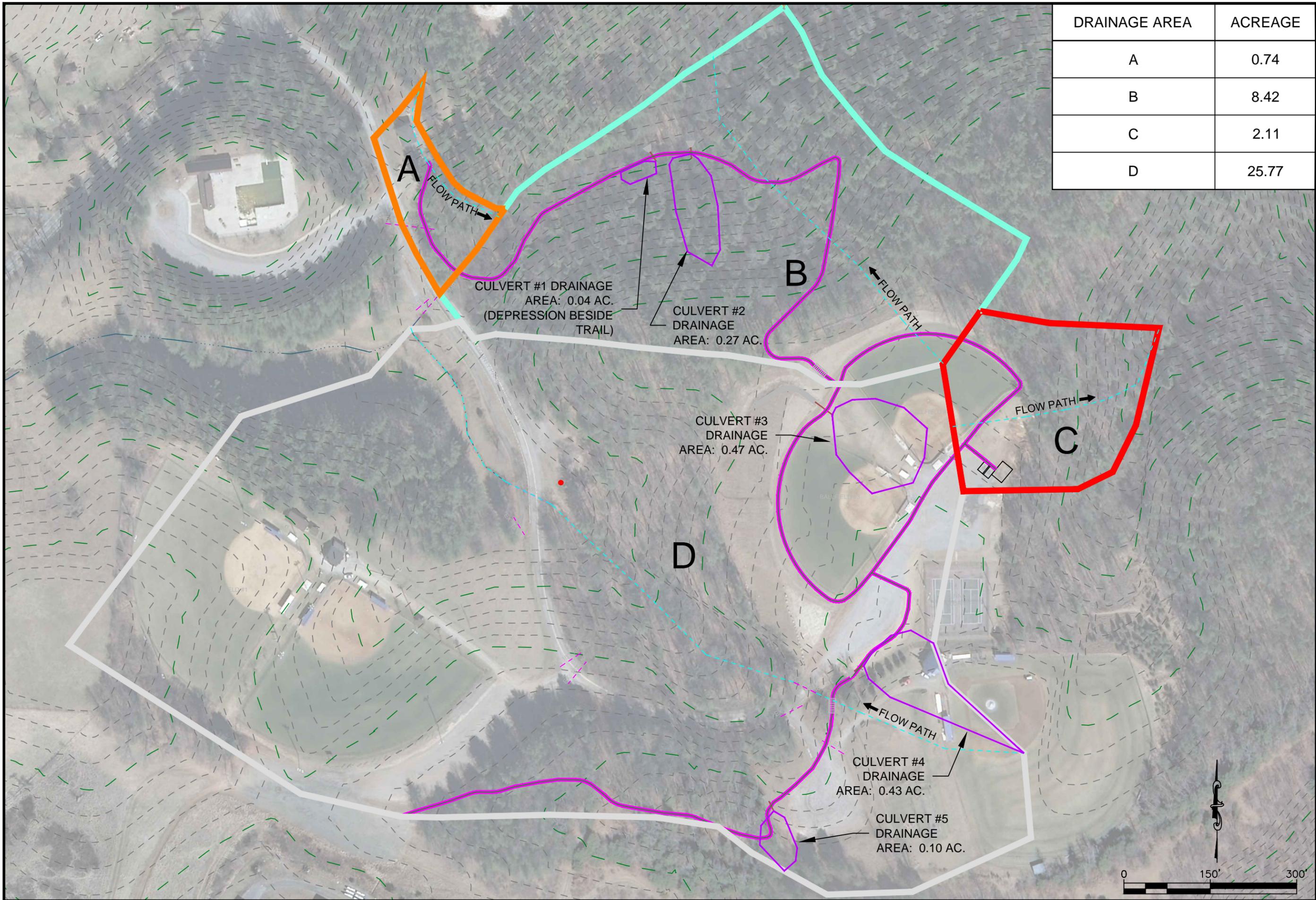
TABLE 3.35-A
ORGANIC MULCH MATERIALS AND APPLICATION RATES

| MULCHES: | RATES: | | NOTES: |
|--------------------------------------|--------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Per Acre | Per 1000 sq. ft. | |
| Straw or Hay | 1½ - 2 tons (Minimum 2 tons for winter cover) | 70 - 90 lbs. | Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand. |
| Fiber Mulch | Minimum 1500 lbs. | 35 lbs. | Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry. |
| Corn Stalks | 4 - 6 tons | 185 - 275 lbs. | Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand. |
| Wood Chips | 4 - 6 tons | 185 - 275 lbs. | Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. |
| Bark Chips or Shredded Bark | 50 - 70 cu. yds. | 1-2 cu. yds. | Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. |

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

Source: Va. DSWC

FIGURES



| DRAINAGE AREA | ACREAGE |
|---------------|---------|
| A | 0.74 |
| B | 8.42 |
| C | 2.11 |
| D | 25.77 |



**GRAYSON COUNTY
 RECREATION PARK
 TRAIL IMPROVEMENTS E&S**

**DRAINAGE AREA MAP
 PRE & POST
 & PROPOSED CULVERTS**

| | |
|----------------------------|------------|
| DATE: | 03/13/2015 |
| SHEET: | A |
| DRAWN BY: | LMH |
| CHECKED BY: | RKH |
| PROJECT NO.: | 1510 |
| THE LANE GROUP INC. © 2014 | |

CALCULATIONS

DRAINAGE AREA RUNOFF SUMMARY

| Drainage Area | Storm | Condition | Area (Ac.) | C | Tc (min) | i | Qpeak (cfs) | Increase (cfs) |
|---------------|---------|-------------|------------|----------------|----------|-------|------------------|----------------|
| A | 2-year | Pre Post | 0.74 | 0.37 0.40 | 14.85 | 2.783 | 0.771 0.829 | 0.058 |
| | 10-year | Pre Post | 0.74 | 0.37 0.40 | 14.85 | 3.763 | 1.042 1.121 | 0.079 |
| B | 2-year | Pre Post | 8.42 | 0.20 0.22 | 27.84 | 1.987 | 3.416 3.700 | 0.284 |
| | 10-year | Pre Post | 8.42 | 0.20 0.22 | 27.84 | 2.754 | 4.733 5.127 | 0.394 |
| C | 2-year | Pre Post | 2.11 | 0.26 0.27 | 20.94 | 2.337 | 1.273 1.344 | 0.070 |
| | 10-year | Pre Post | 2.11 | 0.26 0.27 | 20.94 | 3.197 | 1.742 1.838 | 0.096 |
| D | 2-year | Pre Post | 25.77 | 0.340 0.343 | 29.64 | 1.914 | 16.759 16.928 | 0.168 |
| | 10-year | Pre Post | 25.77 | 0.340 0.343 | 29.64 | 2.661 | 23.299 23.533 | 0.234 |

Explanation of Method

The Rational Method was used to calculate the peak flow for each drainage area. See attached C-factors, Time of Concentration Worksheets, and BDE chart.

DRAINAGE AREA CALCULATIONS - C-FACTORS

DRAINAGE AREA A - PRE

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 0.41 | x | 0.20 | = | 0.08 |
| Turf | 0.17 | x | 0.30 | = | 0.05 |
| Impermeable | 0.16 | x | 0.90 | = | 0.14 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 0.74 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 0.28 |
| | | | C = | | 0.37 |

DRAINAGE AREA A - POST

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 0.38 | x | 0.20 | = | 0.08 |
| Turf | 0.17 | x | 0.30 | = | 0.05 |
| Impermeable | 0.19 | x | 0.90 | = | 0.17 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 0.74 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 0.30 |
| | | | C = | | 0.40 |

DRAINAGE AREA B - PRE

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 8.07 | x | 0.20 | = | 1.61 |
| Turf | 0.35 | x | 0.30 | = | 0.11 |
| Impermeable | 0.00 | x | 0.90 | = | 0.00 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 8.42 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 1.72 |
| | | | C = | | 0.20 |

DRAINAGE AREA B - POST

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 7.90 | x | 0.20 | = | 1.58 |
| Turf | 0.31 | x | 0.30 | = | 0.09 |
| Impermeable | 0.21 | x | 0.90 | = | 0.19 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 8.42 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 1.86 |
| | | | C = | | 0.22 |

DRAINAGE AREA C - PRE

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 1.42 | x | 0.20 | = | 0.28 |
| Turf | 0.60 | x | 0.30 | = | 0.18 |
| Impermeable | 0.09 | x | 0.90 | = | 0.08 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 2.11 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 0.55 |
| | | | C = | | 0.26 |

DRAINAGE AREA C - POST

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 1.42 | x | 0.20 | = | 0.28 |
| Turf | 0.55 | x | 0.30 | = | 0.17 |
| Impermeable | 0.14 | x | 0.90 | = | 0.13 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 2.11 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 0.58 |
| | | | C = | | 0.27 |

DRAINAGE AREA D - PRE

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|-------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 11.59 | x | 0.20 | = | 2.32 |
| Turf | 10.54 | x | 0.30 | = | 3.16 |
| Impermeable | 3.64 | x | 0.90 | = | 3.28 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 25.77 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 8.76 |
| | | | C = | | 0.34 |

DRAINAGE AREA D - POST

| Determine runoff coefficient C | <u>Area (Ac.)</u> | | | | |
|--------------------------------|-------------------------------------------------------------|---|------|---|------------------------------------------------------------|
| Forest | 11.49 | x | 0.20 | = | 2.30 |
| Turf | 10.51 | x | 0.30 | = | 3.15 |
| Impermeable | 3.77 | x | 0.90 | = | 3.39 |
| | <hr style="width: 100%; border: 0.5px solid black;"/> 25.77 | | | | <hr style="width: 100%; border: 0.5px solid black;"/> 8.84 |
| | | | C = | | 0.34 |

PRE-development Time of Concentration (T_c) or Travel Time (T_t) - DRAINAGE AREA A

Project: GRAYSON COUNTY RECREATION PARK T Designed by: LMH Date:
Location: GRAYSON COUNTY, VA Checked by: Date:

Sheet/Overland Flow (Seelye Overland Flow Time $T_c = 0.225(L^{0.42})(S^{-0.19})(C^{-1.0})$)

| Segment ID | 1 | 2 | | |
|----------------------------------------------------------------------|---------|---------|---------|--|
| 1. Surface description..... | Lawn | Forest | | |
| 2. Flow Length (ft), "L" (total L ≤ 300 feet; typical 200 feet)..... | 147 | 43 | | |
| 3. Upper Elevation (msl)..... | 2594.00 | 2560.00 | | |
| 4. Lower Elevation (msl)..... | 2560.00 | 2543.00 | | |
| 5. Land Slope, "s" (ft/ft)..... | 0.231 | 0.395 | #DIV/0! | |
| 6. Runoff Coefficient, "C"..... | 0.30 | 0.20 | | |
| 7. Time of Concentration "T _c " (min)..... | 8.06 | 6.51 | #DIV/0! | |

14.57

Shallow Concentrated Flow (Refer to USDA-SCS Ave. Velocities for Estimating Travel Time for Shallow Concentrated Flow)

Unpaved: $T_t = L/(60*16.1345S^{0.5})$
Paved: $T_t = L/(60*20.3282S^{0.5})$

| Segment ID | 3 | | | |
|--------------------------------------------------------------|---------|---------|---------|---------|
| 8. Surface description (paved or unpaved)..... | Unpaved | | | |
| 9. Flow Length (ft), "L" (up to 1,000 feet)..... | 109 | | | |
| 10. Upper Elevation (msl)..... | 2543.00 | | | |
| 11. Lower Elevation (msl)..... | 2525.00 | | | |
| 12. Watercourse Slope (ft/ft), "s"..... | 0.165 | #DIV/0! | #DIV/0! | #DIV/0! |
| 13. Average Velocity (ft/sec), "V"..... | 6.56 | #DIV/0! | #DIV/0! | #DIV/0! |
| 14. $T_t = L/[60*V]$ (min)..... Compute T_t | 0.28 | #DIV/0! | #DIV/0! | #DIV/0! |

0.28

Channel Flow (Kirpich "Time of Concentration of Small Drainage Basins" $T_c = 0.00948(H^{-0.38})(L^{1.13})$)

Applicable up to 200 acres

| Segment ID | | | | |
|-----------------------------------------------------------------------------------------|---------|------|------|------|
| 15. Length (ft), "L"..... | | | | |
| 16. Upper Elevation (msl)..... | | | | |
| 17. Lower Elevation (msl)..... | | | | |
| 18. Height (ft), "H"..... | 0.00 | 0.00 | 0.00 | 0.00 |
| 19. Overland Flow Adjustment Factor - Natural Channels..... | 1.0 | | | |
| 20. Time of Concentration (min) "T _c " = "..... Compute T_c | #DIV/0! | 0.00 | 0.00 | 0.00 |

0.00

Pipe Flow

| Segment ID | | | | |
|--------------------------------------------------------------|---------|---------|---------|---------|
| 21. Pipe Size and Material..... | | | | |
| 22. Flow Length (ft), "L"..... | | | | |
| 23. Upper Elevation (msl)..... | | | | |
| 24. Lower Elevation (msl)..... | | | | |
| 25. Pipe Slope (ft/ft)..... | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| 26. Pipe Full Average Velocity (ft/sec), "V"..... | #DIV/0! | #DIV/0! | | |
| 27. $T_t = L/[60*V]$ (min)..... Compute T_t | #DIV/0! | #DIV/0! | 0.00 | 0.00 |

0.00

28. Watershed of subarea T_c or T_t (add T_c in Steps 7, 14, 20, and 25).....

14.85

Other Source t_c
Total t_c

14.85



PRE-development Time of Concentration (T_c) or Travel Time (T_t) - DRAINAGE AREA B

Project: GRAYSON COUNTY RECREATION PARK T **Designed by:** LMH **Date:** _____
Location: GRAYSON COUNTY, VA **Checked by:** _____ **Date:** _____

Sheet/Overland Flow (Seelye Overland Flow Time $T_c = 0.225(L^{0.42})(S^{-0.19})(C^{-1.0})$)

| Segment ID | 1 | 2 | | |
|----------------------------------------------------------------------|---------|---------|---------|--|
| 1. Surface description..... | Lawn | Forest | | |
| 2. Flow Length (ft), "L" (total L ≤ 300 feet; typical 200 feet)..... | 102 | 98 | | |
| 3. Upper Elevation (msl)..... | 2605.00 | 2604.00 | | |
| 4. Lower Elevation (msl)..... | 2604.00 | 2600.00 | | |
| 5. Land Slope, "s" (ft/ft)..... | 0.010 | 0.041 | #DIV/0! | |
| 6. Runoff Coefficient, "C"..... | 0.30 | 0.20 | 0.25 | |
| 7. Time of Concentration "T _c " (min)..... | 12.60 | 14.17 | #DIV/0! | |

26.77

Shallow Concentrated Flow (Refer to USDA-SCS Ave. Velocities for Estimating Travel Time for Shallow Concentrated Flow)

Unpaved: $T_t = L / (60 * 16.1345S^{0.5})$

Paved: $T_t = L / (60 * 20.3282S^{0.5})$

| Segment ID | 3 | | | |
|------------------------------------------------------------------|---------|---------|---------|---------|
| 8. Surface description (paved or unpaved)..... | Unpaved | | | |
| 9. Flow Length (ft), "L" (up to 1,000 feet)..... | 484 | | | |
| 10. Upper Elevation (msl)..... | 2600.00 | | | |
| 11. Lower Elevation (msl)..... | 2495.00 | | | |
| 12. Watercourse Slope (ft/ft), "s"..... | 0.217 | #DIV/0! | #DIV/0! | #DIV/0! |
| 13. Average Velocity (ft/sec), "V"..... | 7.52 | #DIV/0! | #DIV/0! | #DIV/0! |
| 14. $T_t = L / [60 * V]$ (min)..... Compute T_t | 1.07 | #DIV/0! | #DIV/0! | #DIV/0! |

1.07

Channel Flow (Kirpich "Time of Concentration of Small Drainage Basins" $T_c = 0.00948(H^{-0.38})(L^{1.13})$)

Applicable up to 200 acres

| Segment ID | | | | |
|-----------------------------------------------------------------------------------------|---------|------|------|------|
| 15. Length (ft), "L"..... | | | | |
| 16. Upper Elevation (msl)..... | | | | |
| 17. Lower Elevation (msl)..... | | | | |
| 18. Height (ft), "H"..... | 0.00 | 0.00 | 0.00 | 0.00 |
| 19. Overland Flow Adjustment Factor - Natural Channels..... | 1.0 | | | |
| 20. Time of Concentration (min) "T _c " = "..... Compute T_c | #DIV/0! | 0.00 | 0.00 | 0.00 |

0.00

Pipe Flow

| Segment ID | | | | |
|------------------------------------------------------------------|---------|---------|---------|---------|
| 21. Pipe Size and Material..... | | | | |
| 22. Flow Length (ft), "L"..... | | | | |
| 23. Upper Elevation (msl)..... | | | | |
| 24. Lower Elevation (msl)..... | | | | |
| 25. Pipe Slope (ft/ft)..... | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| 26. Pipe Full Average Velocity (ft/sec), "V"..... | #DIV/0! | #DIV/0! | | |
| 27. $T_t = L / [60 * V]$ (min)..... Compute T_t | #DIV/0! | #DIV/0! | 0.00 | 0.00 |

0.00

28. Watershed of subarea T_c or T_t (add T_c in Steps 7, 14, 20, and 25).....

27.84

Other Source t_c

Total t_c

27.84



PRE-development Time of Concentration (T_c) or Travel Time (T_t) - DRAINAGE AREA C

Project: GRAYSON COUNTY RECREATION PARK T **Designed by:** LMH **Date:** _____
Location: GRAYSON COUNTY, VA **Checked by:** _____ **Date:** _____

Sheet/Overland Flow (Seelye Overland Flow Time $T_c = 0.225(L^{0.42})(S^{-0.19})(C^{-1.0})$)

| Segment ID | 1 | 2 | | |
|----------------------------------------------------------------------|---------|---------|---------|--|
| 1. Surface description..... | Lawn | Forest | | |
| 2. Flow Length (ft), "L" (total L ≤ 300 feet; typical 200 feet)..... | 127 | 73 | | |
| 3. Upper Elevation (msl)..... | 2618.00 | 2612.00 | | |
| 4. Lower Elevation (msl)..... | 2612.00 | 2603.00 | | |
| 5. Land Slope, "s" (ft/ft)..... | 0.047 | 0.123 | #DIV/0! | |
| 6. Runoff Coefficient, "C"..... | 0.30 | 0.20 | 0.25 | |
| 7. Time of Concentration "T _c " (min)..... | 10.25 | 10.15 | #DIV/0! | |

20.40

Shallow Concentrated Flow (Refer to USDA-SCS Ave. Velocities for Estimating Travel Time for Shallow Concentrated Flow)

Unpaved: $T_t = L/(60*16.1345S^{0.5})$
 Paved: $T_t = L/(60*20.3282S^{0.5})$

| Segment ID | 3 | | | |
|--------------------------------------------------------------|---------|---------|---------|---------|
| 8. Surface description (paved or unpaved)..... | Unpaved | | | |
| 9. Flow Length (ft), "L" (up to 1,000 feet)..... | 232 | | | |
| 10. Upper Elevation (msl)..... | 2603.00 | | | |
| 11. Lower Elevation (msl)..... | 2558.00 | | | |
| 12. Watercourse Slope (ft/ft), "s"..... | 0.194 | #DIV/0! | #DIV/0! | #DIV/0! |
| 13. Average Velocity (ft/sec), "V"..... | 7.11 | #DIV/0! | #DIV/0! | #DIV/0! |
| 14. $T_t = L/[60*V]$ (min)..... Compute T_t | 0.54 | #DIV/0! | #DIV/0! | #DIV/0! |

0.54

Channel Flow (Kirpich "Time of Concentration of Small Drainage Basins" $T_c = 0.00948(H^{-0.38})(L^{1.13})$)

Applicable up to 200 acres

| Segment ID | | | | |
|-----------------------------------------------------------------------------------------|---------|------|------|------|
| 15. Length (ft), "L"..... | | | | |
| 16. Upper Elevation (msl)..... | | | | |
| 17. Lower Elevation (msl)..... | | | | |
| 18. Height (ft), "H"..... | 0.00 | 0.00 | 0.00 | 0.00 |
| 19. Overland Flow Adjustment Factor - Natural Channels..... | 1.0 | | | |
| 20. Time of Concentration (min) "T _c " = "..... Compute T_c | #DIV/0! | 0.00 | 0.00 | 0.00 |

0.00

Pipe Flow

| Segment ID | | | | |
|--------------------------------------------------------------|---------|---------|---------|---------|
| 21. Pipe Size and Material..... | | | | |
| 22. Flow Length (ft), "L"..... | | | | |
| 23. Upper Elevation (msl)..... | | | | |
| 24. Lower Elevation (msl)..... | | | | |
| 25. Pipe Slope (ft/ft)..... | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| 26. Pipe Full Average Velocity (ft/sec), "V"..... | #DIV/0! | #DIV/0! | | |
| 27. $T_t = L/[60*V]$ (min)..... Compute T_t | #DIV/0! | #DIV/0! | 0.00 | 0.00 |

0.00

28. Watershed of subarea T_c or T_t (add T_c in Steps 7, 14, 20, and 25).....

20.94

Other Source t_c
Total t_c

20.94



PRE-development Time of Concentration (T_c) or Travel Time (T_t) - DRAINAGE AREA D

Project: GRAYSON COUNTY RECREATION PARK T **Designed by:** LMH **Date:** _____
Location: GRAYSON COUNTY, VA **Checked by:** _____ **Date:** _____

Sheet/Overland Flow (Seelye Overland Flow Time $T_c = 0.225(L^{0.42})(S^{-0.19})(C^{-1.0})$)

| Segment ID | 1 | 2 | | |
|----------------------------------------------------------------------|---------|---------|---------|--|
| 1. Surface description..... | Lawn | Lawn | | |
| 2. Flow Length (ft), "L" (total L ≤ 300 feet; typical 200 feet)..... | 137 | 63 | | |
| 3. Upper Elevation (msl)..... | 2638.00 | 2636.50 | | |
| 4. Lower Elevation (msl)..... | 2636.50 | 2630.00 | | |
| 5. Land Slope, "s" (ft/ft)..... | 0.011 | 0.103 | #DIV/0! | |
| 6. Runoff Coefficient, "C"..... | 0.30 | 0.20 | 0.25 | |
| 7. Time of Concentration "T _c " (min)..... | 13.96 | 9.87 | #DIV/0! | |

23.83

Shallow Concentrated Flow (Refer to USDA-SCS Ave. Velocities for Estimating Travel Time for Shallow Concentrated Flow)

Unpaved: $T_t = L / (60 * 16.1345S^{0.5})$

Paved: $T_t = L / (60 * 20.3282S^{0.5})$

| Segment ID | 3 | 4 | 6 | |
|------------------------------------------------------------------|---------|---------|---------|---------|
| 8. Surface description (paved or unpaved)..... | Paved | Unpaved | Unpaved | |
| 9. Flow Length (ft), "L" (up to 1,000 feet)..... | 94 | 86 | 159 | |
| 10. Upper Elevation (msl)..... | 2630.00 | 2625.00 | 2610.00 | |
| 11. Lower Elevation (msl)..... | 2625.00 | 2615.00 | 2587.00 | |
| 12. Watercourse Slope (ft/ft), "s"..... | 0.053 | 0.116 | 0.145 | #DIV/0! |
| 13. Average Velocity (ft/sec), "V"..... | 4.69 | 5.50 | 6.14 | #DIV/0! |
| 14. $T_t = L / [60 * V]$ (min)..... Compute T_t | 0.33 | 0.26 | 0.43 | #DIV/0! |

1.03

Channel Flow (Kirpich "Time of Concentration of Small Drainage Basins" $T_c = 0.00948(H^{-0.38})(L^{1.13})$)

Applicable up to 200 acres

| Segment ID | 7 | 9 | | |
|-----------------------------------------------------------------------------------------|---------|---------|------|------|
| 15. Length (ft), "L"..... | 374 | 324 | | |
| 16. Upper Elevation (msl)..... | 2587.00 | 2557.00 | | |
| 17. Lower Elevation (msl)..... | 2560.00 | 2543.00 | | |
| 18. Height (ft), "H"..... | 27.00 | 14.00 | 0.00 | 0.00 |
| 19. Overland Flow Adjustment Factor - Natural Channels..... | 1.0 | 1.0 | | |
| 20. Time of Concentration (min) "T _c " = "..... Compute T_c | 2.19 | 2.39 | 0.00 | 0.00 |

4.58

Pipe Flow

| Segment ID | 5 | 8 | | |
|------------------------------------------------------------------|---------|---------|---------|---------|
| 21. Pipe Size and Material..... | 18" CMP | 48" CMP | | |
| 22. Flow Length (ft), "L"..... | 44 | 89 | | |
| 23. Upper Elevation (msl)..... | 2615.00 | 2560.00 | | |
| 24. Lower Elevation (msl)..... | 2610.00 | 2557.00 | | |
| 25. Pipe Slope (ft/ft)..... | 0.1136 | 0.0337 | #DIV/0! | #DIV/0! |
| 26. Pipe Full Average Velocity (ft/sec), "V"..... | 10.85 | 11.37 | | |
| 27. $T_t = L / [60 * V]$ (min)..... Compute T_t | 0.07 | 0.13 | 0.00 | 0.00 |

0.20

28. Watershed of subarea T_c or T_t (add T_c in Steps 7, 14, 20, and 25).....

29.64

Other Source t_c

Total t_c

29.64



THE LANE GROUP

PROPOSED CULVERT COMPUTATIONS

PROJECT GRAYSON COUNTY RECREATION PARK TRAILS IMPROVEMENTS DESIGN PROP. CULVERTS
 COUNTY GRAYSON
 DESCRIPTION ADEQUACY OF PROPOSED CULVERTS BASED UPON PEAK FLOW OF 10-YEAR STORM

$$Q = CiA$$

$$Q_{cap} = 0.463/n * D^{(8/3)} * S^{(1/2)}$$

| PROP. CULVERT | AREA DRAIN | RUN-OFF | INLET TIME | RAIN FALL | RUNOFF Q | LENGTH | SLOPE | DIA. | DIA. | CAPA-CITY | n |
|---------------|------------|---------|------------|-----------|----------|--------|---------|------|------|-----------|-------|
| | A ACRES | COEF. C | MIN-UTES | IN./HR. | C.F.S. | FT. | FT./FT. | IN. | FT. | C.F.S. | |
| (ALL RCP) | | | | | | | | | | | |
| 1 | 0.04 | 0.25 | 5.00 | 5.49 | 0.05 | 20.00 | 0.0200 | 15 | 1.25 | 4.9 | 0.024 |
| 2 | 0.27 | 0.20 | 5.00 | 5.49 | 0.30 | 20.00 | 0.0200 | 15 | 1.25 | 4.9 | 0.024 |
| 3 | 0.47 | 0.40 | 5.00 | 5.49 | 1.03 | 20.00 | 0.0200 | 15 | 1.25 | 4.9 | 0.024 |
| 4 | 0.43 | 0.50 | 5.00 | 5.49 | 1.18 | 20.00 | 0.0200 | 15 | 1.25 | 4.9 | 0.024 |
| 5 | 0.10 | 0.20 | 5.00 | 5.49 | 0.11 | 20.00 | 0.0200 | 15 | 1.25 | 4.9 | 0.024 |

* Actual time of concentration anticipated to be longer; 5 minutes proposed as conservative figure

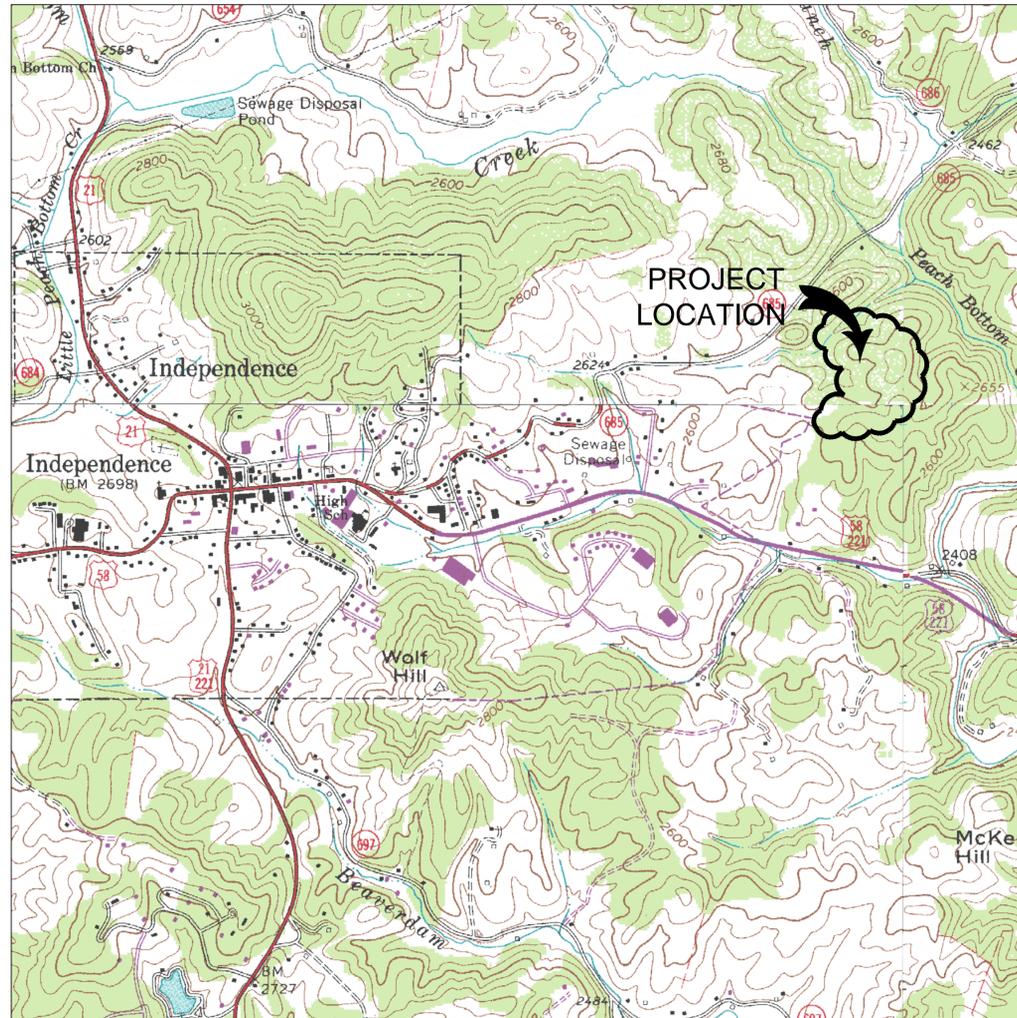
** All proposed culverts to have minimum 2% slope

RAINFALL PRECIPITATION

| County/City | Storm Event | B | D | E |
|--------------------|--------------------|----------|----------|----------|
| Grayson | 2-yr | 43.44 | 11.50 | 0.84 |
| | 10-yr | 38.69 | 9.50 | 0.73 |

$$\text{Intensity, } I = \frac{B}{(D+Tc)^E}$$

GRAYSON COUNTY PARKS & RECREATION TRAIL IMPROVEMENTS EROSION & SEDIMENT CONTROL PLAN GRAYSON COUNTY, VA

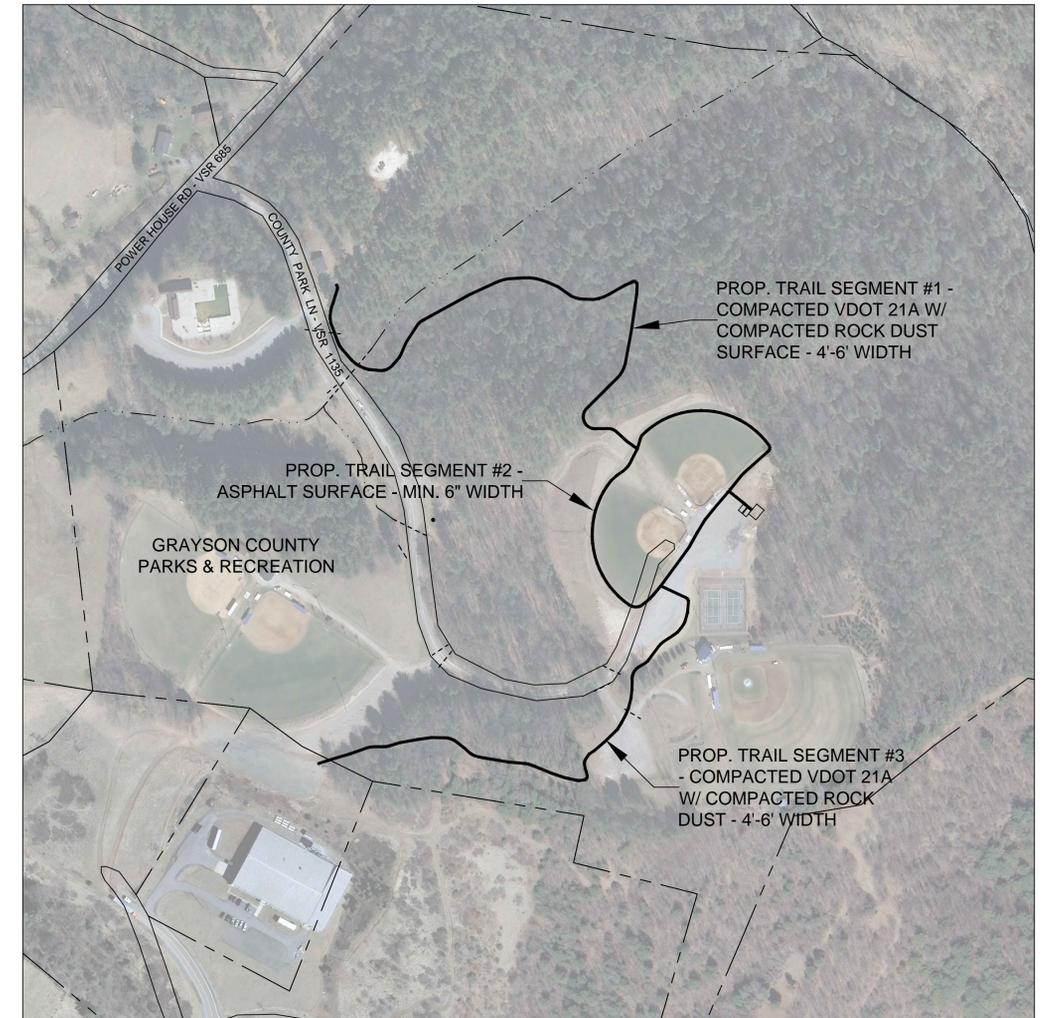


GRAYSON COUNTY
SCALE: 1" = 1,000'



OWNER:
GRAYSON COUNTY PARKS & RECREATION
COUNTY PARK LANE
INDEPENDENCE, VA 24348
PH: 276.773.3841

| LEGEND | |
|-----------|--------------------------------|
| --- | EX. 5' CONTOUR |
| --- | EX. 10' CONTOUR |
| - - - - - | EX. STORM DRAIN |
| — | PROP. STORM DRAIN |
| - - - - - | EX. RIGHT-OF-WAY/PROPERTY LINE |
| — | PROP. TRAIL |
| — | STREAM |



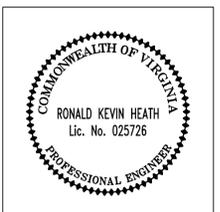
VICINITY MAP
SCALE: 1" = 200'

PLAN SHEET INDEX:
C001 - COVER
C101 - SITE PLAN
C102 - TRAIL SEGMENT PROFILES
C103 - TRAIL EROSION & SEDIMENT CONTROL DETAILS

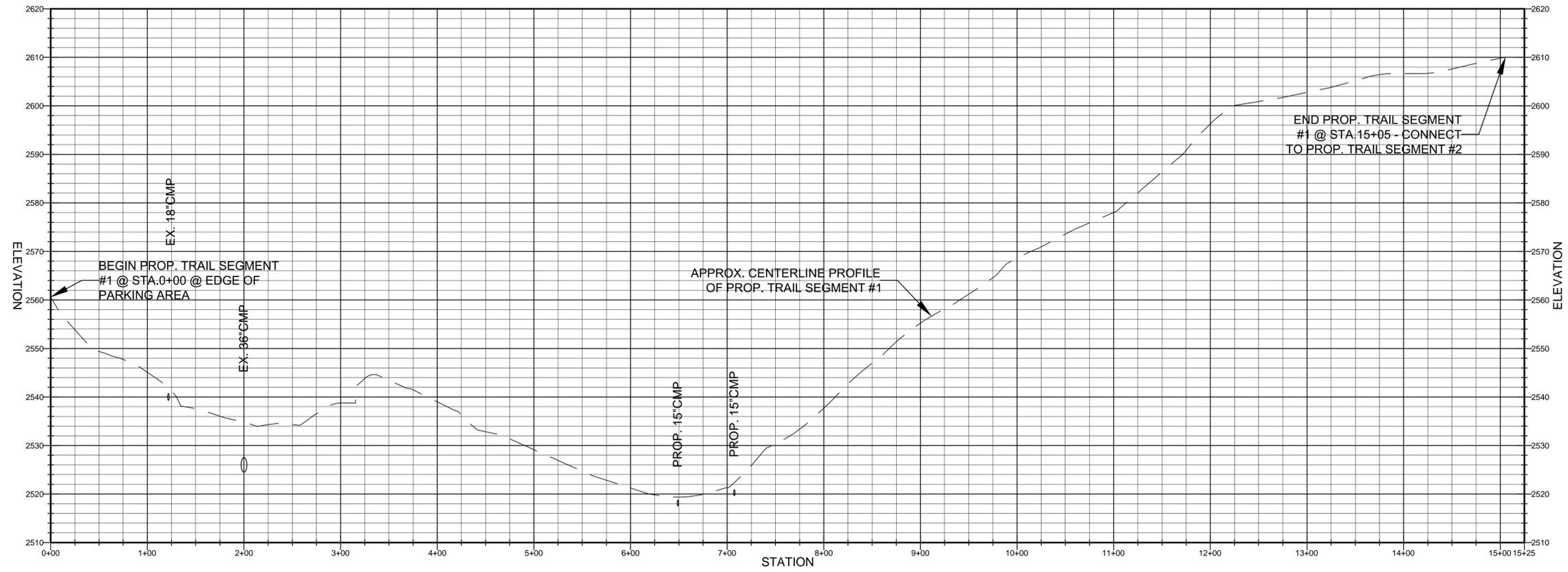
| EROSION CONTROL MEASURES LEGEND | |
|---------------------------------|--------------------------------------------|
| SYMBOL | VESCH NUMBER/DESCRIPTION |
| —(SF)— | 3.05 SILT FENCE |
| —(CIP)— | 3.08 CULVERT INLET PROTECTION |
| —(OP)— | 3.18 OUTLET PROTECTION |
| —(RR)— | 3.19 RIP RAP |
| —(TS)— | 3.31 TEMPORARY SEEDING |
| —(PS)— | 3.32 PERMANENT SEEDING |
| —(MU)— | 3.35 MULCHING |
| —(BM)— | 3.36 SOIL STABILIZATION BLANKETS & MATTING |

THESE PLANS ARE FOR
EROSION & SEDIMENT
CONTROL PURPOSES ONLY

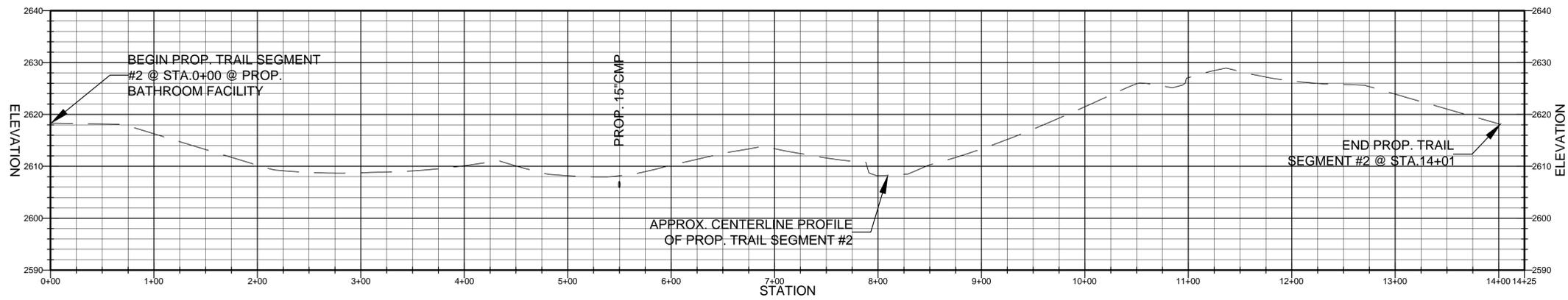
Lg THE LANE GROUP
119 NORTH MAIN STREET • GALAX, VA 24333
P: 276.236.4588 • F: 276.236.0458
WWW.THELANEGROUPINC.COM
BIG STONE GAP, VA • CHILHOWIE, VA • GALAX, VA



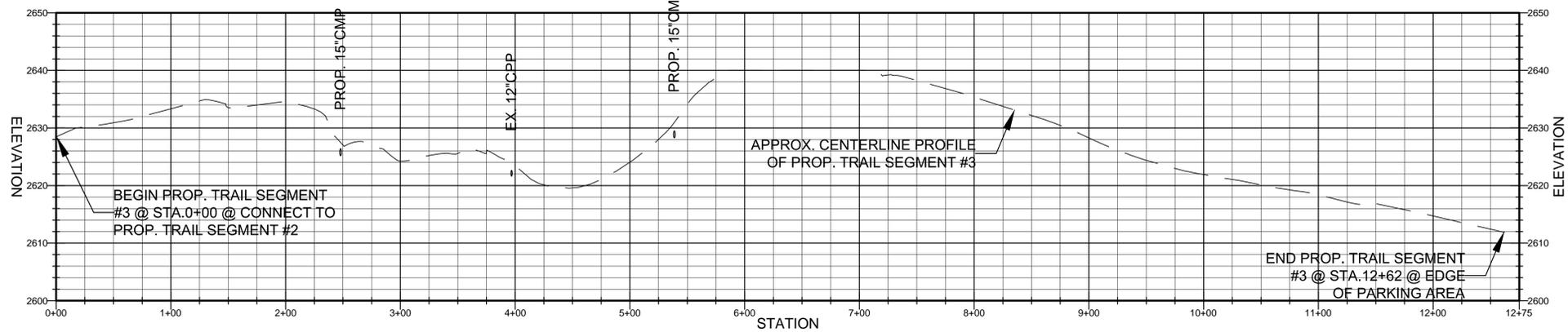
TRAIL SEGMENT #1



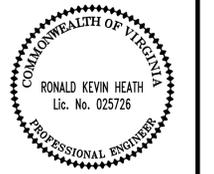
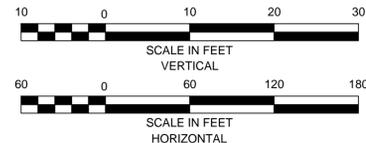
TRAIL SEGMENT #2



TRAIL SEGMENT #3

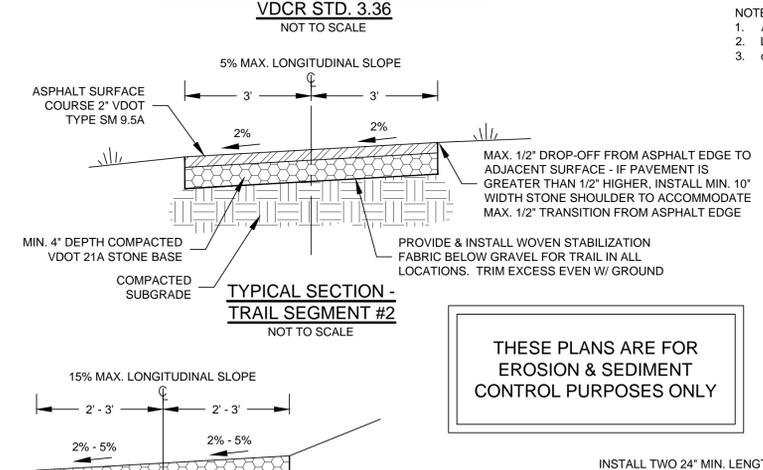
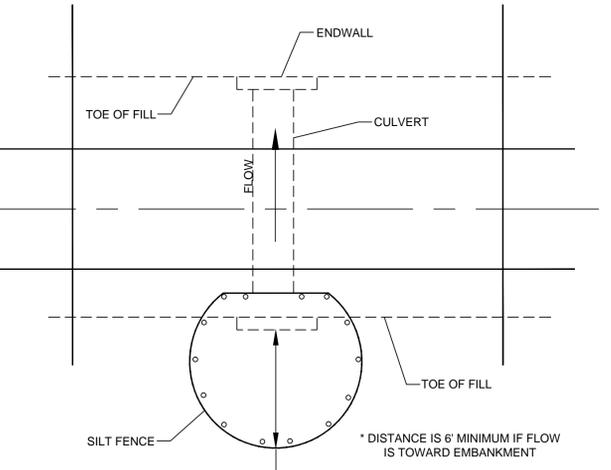
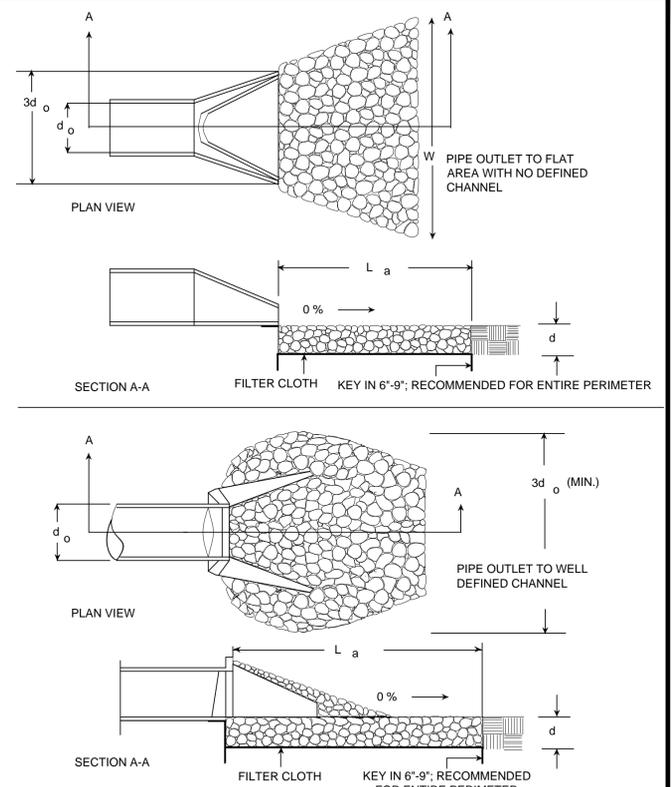
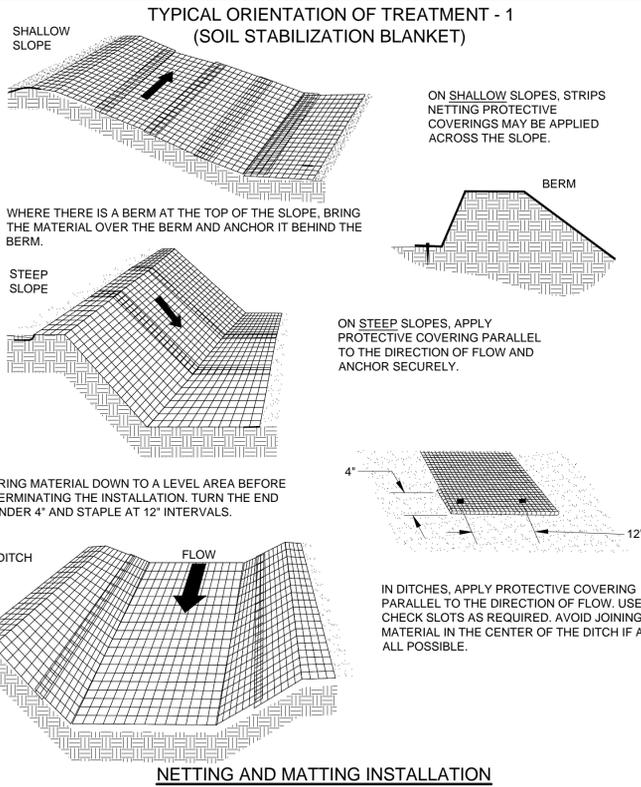
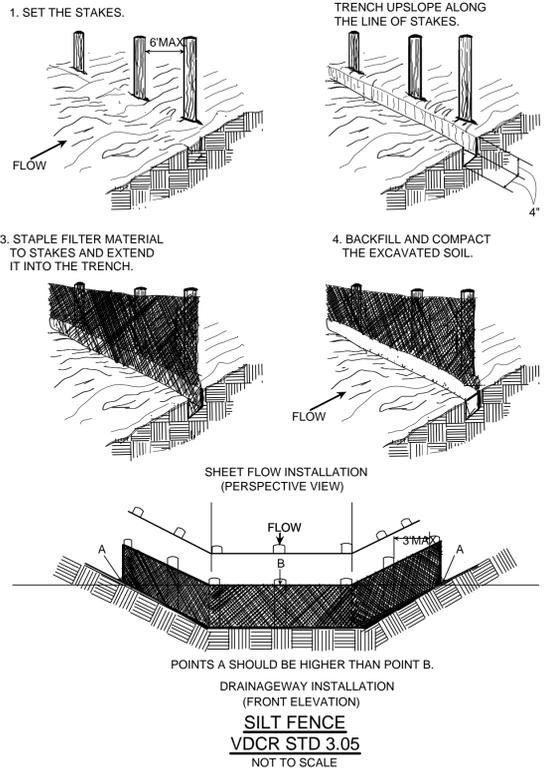


THESE PLANS ARE FOR
EROSION & SEDIMENT
CONTROL PURPOSES ONLY



GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook.
- The plan approving authority must be notified one week prior to the preconstruction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection.
- All erosion and sediment control measures are to be placed prior to or as the first step in clearing.
- A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.
- Any off-site areas that the contractor utilizes for borrow or disposal, other than an approved landfill or area currently covered by an approved E. & S. plan, will require an E. & S. plan and must be conducted and stabilized according to the VESC handbook. Prior to commencing these activities, the contractor shall submit a supplemental erosion control plan to the owner for review and approval by the plan approving authority.
- The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.
- All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved.
- During dewatering operations, water will be pumped into an approved filtering device.
- The contractor shall inspect all erosion control measures periodically and after each runoff-producing rainfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.
- Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain undisturbed for longer than 14 days. The temporary soil stabilization shall be installed in accordance with Standards Specifications 3.31. Permanent soil stabilization shall be applied to disturbed areas within seven days after final grade is reached on any portion of the site. The permanent soil stabilization shall be installed in accordance with Standards and Specifications 3.32.
- A permanent vegetative cover shall be established on disturbed areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, in the opinion of the local program administrator or his designated agent, is uniform, mature enough to survive and will inhibit erosion.
- Earthen structures such as dams, dikes, and diversions shall be stabilized immediately after installation.
- Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.
- All storm drain inlets that are made operable during construction shall have inlet protection so that sediment-laden water cannot enter the storm system without first being filtered or otherwise treated to remove sediment. All existing storm drain inlets and culverts impacted by the project shall have inlet protection.
- Adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel before the newly constructed stormwater conveyance channels are made operational.
- Soil stock piles shall be stabilized or protected with sediment trapping measures (silt fence or temp. traps) during construction of the project. Soil stockpiles that will remain unworked for greater than 30 days must be provided with temporary stabilization.
- Underground utility lines shall be installed in accordance with the following standards:
 - No more than 500 linear feet of trench may be opened at one time.
 - Excavated material shall be placed on the uphill side of trenches.
 - Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
 - Restabilization shall be accomplished in accordance with these regulations.
 - Applicable safety regulations shall be complied with.
- Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner.
- Disturbed portions of slopes on the project site, as well as all adjacent, downslope areas should be considered critical areas throughout construction and additional stabilization should be provided, as needed, to ensure adequate stabilization of these areas.
- All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program administrator. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.
- For disturbed area calculations, a maximum disturbed area width of 10 feet along the proposed trail has been used.
- The proposed project is anticipated to disturb less than 1 acre, so Construction Stormwater VPDES Permit is not required.
- The erosion & sediment control plan prepared by the engineer reflects only those measures directly required for the proposed improvements indicated by the plans. Any storage yards, waste areas, borrow areas, or other areas disturbed by the contractor shall be protected from erosion & the contractor shall be required to obtain an E&S permit for those activities if > 10,000 SF are disturbed.
- All Disturbed areas located on slopes in excess of 10% and/or slopes subject to erosion shall be lined with excelsior matting, jute mesh, or similar product.



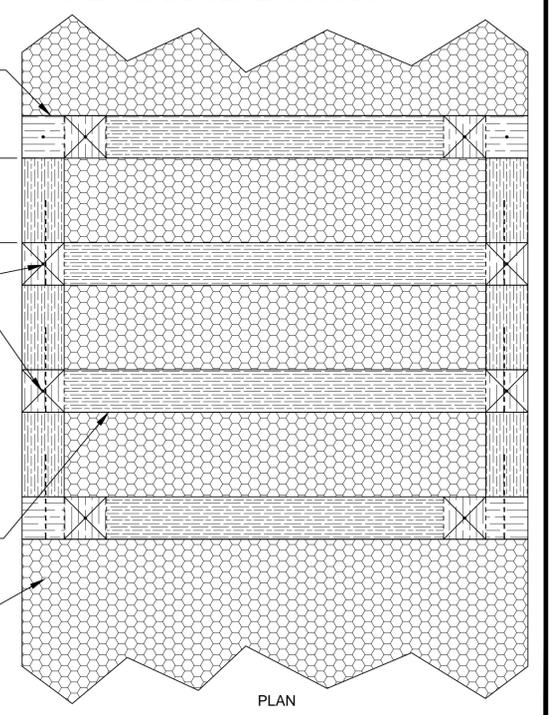
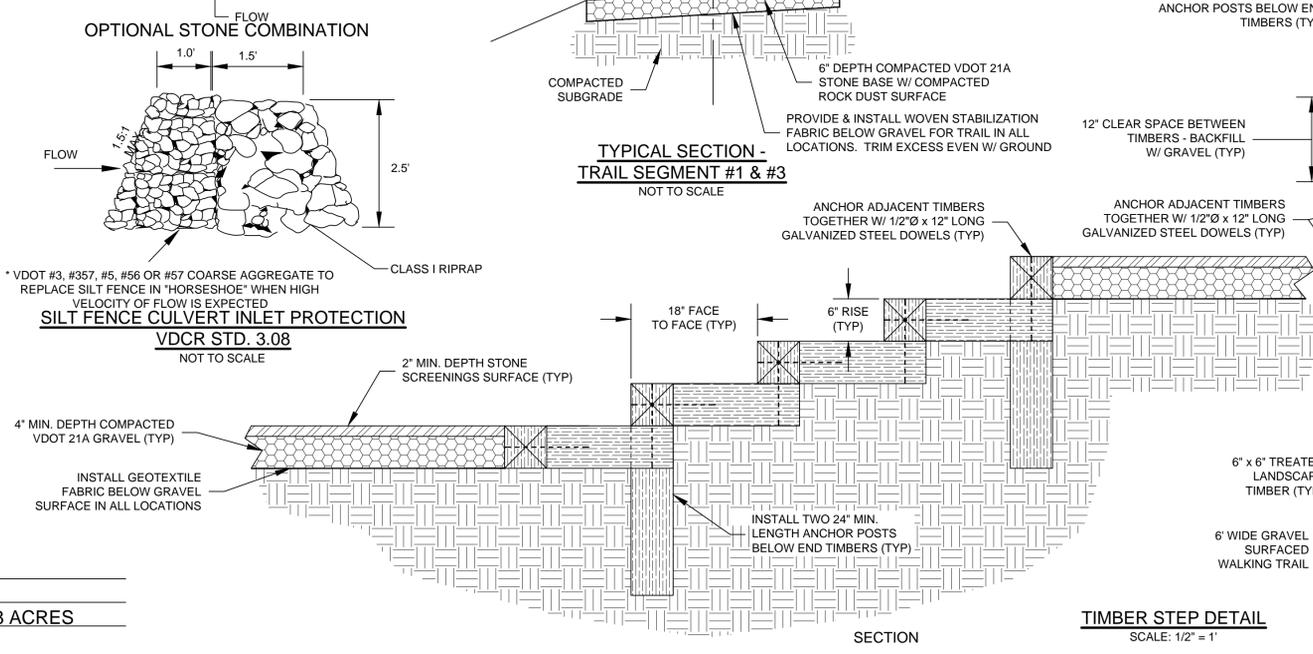
THESE PLANS ARE FOR EROSION & SEDIMENT CONTROL PURPOSES ONLY

- TIMBER STEP NOTES:**
- IN LOCATIONS WHERE GROUND SLOPE EXCEEDS 15%, USE TIMBER STEPS TO CHANGE GRADE AND ADJUST TRAIL SLOPE SO THAT THE FINAL TRAIL SLOPE < 15%.
 - NUMBER OF STEPS WILL VARY BASED UPON SITE CONDITIONS AND LOCATIONS.
 - IF MORE THAN 8 STEPS ARE REQUIRED, DIVIDE STEPS INTO EQUAL NUMBER AND PROVIDE A 5-FOOT LANDING BETWEEN RUNS OF STEPS.

TABLE 3.31-C
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

| SPECIES | Acre | SEEDING RATE | NORTH ^a | | | | SOUTH ^b | | | | PLANT CHARACTERISTICS | |
|------------------------------------------------------|-----------------------------------------------|--------------------|--------------------|-------------|--------------|--------------|--------------------|--------------|--------------|------------|-----------------------|---------------------------------------------------------------------------------------------------------------|
| | | | 3/1 to 4/30 | 5/1 to 8/15 | 8/15 to 11/1 | 2/15 to 4/30 | 5/1 to 9/1 | 9/1 to 11/15 | 2/15 to 4/30 | 5/1 to 9/1 | | 9/1 to 11/15 |
| OATS (Avena sativa) | 3 bu. (up to 100 lbs., not less than 50 lbs.) | 2 lbs. | X | - | - | X | - | - | - | - | - | Use spring varieties (e.g., Noble). |
| RYE ^d (Secale cereale) | 2 bu. (up to 110 lbs., not less than 50 lbs.) | 2.5 lbs. | X | - | X | X | - | X | - | X | - | Use for late fall seedings, winter cover. Tolerates cold and low moisture. |
| GERMAN MILLET (Setaria italica) | 50 lbs. | approx. 1 lb. | - | X | - | - | X | - | - | - | - | Warm-season annual. Dies at first frost. May be added to summer mixes. |
| ANNUAL RYEGRASS ^c (Lolium multi-florum) | 60 lbs. | 1 1/2 lbs. | X | - | X | X | - | X | - | X | - | May be added in mixes. Will mow out of most stands. |
| WEEPING LOVEGRASS (Eragrostis curvula) | 15 lbs. | 5 1/2 ozs. | - | X | - | - | X | - | - | X | - | Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes. |
| KOREAN LESPEDEZA ^c (Lespedeza stipulacea) | 25 lbs. | approx. 1 1/2 lbs. | X | X | - | X | X | - | - | X | - | Warm season annual legume. Tolerates acid soils. May be added to mixes. |

^a Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
^b Southern Piedmont and Coastal Plain.
^c May be used as a cover crop with spring seeding.
^d May be used as a cover crop with fall seeding.
 X May be planted between these dates.
 - May not be planted between these dates.



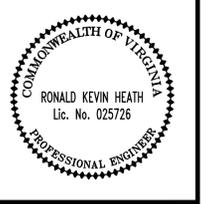
IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE A CERTIFIED RESPONSIBLE LAND DISTURBER FOR THIS PROJECT. THIS NAME MUST BE PROVIDED TO THE BATH COUNTY EROSION & SEDIMENT CONTROL DEPARTMENT BEFORE A GRADING PERMIT MAY BE OBTAINED.

Responsible Land Disturber: _____
 Certificate No.: _____
 Total Anticipated Area Disturbed: **0.98 ACRES**

THE LANE GROUP
 119 NORTH MAIN STREET • GALAX, VA 24333
 P: 757.236.6588 • F: 757.236.0459
 WWW.THELANEGROUP.COM
 BIG STONE GAP, VA • CHILHOWIE, VA • GALAX, VA

GRAYSON CO. PARKS & REC. E & S CONTROL PLAN TRAIL IMPROVEMENTS GRAYSON COUNTY, VA

TRAIL & EROSION & SEDIMENT CONTROL DETAILS



DATE: 3.09.2015
 SHEET: **C103**
 DRAWN BY: MSA CHECKED BY: LMH
 PROJECT NO.: 1510
 THE LANE GROUP INC. © 2014

**Invitation for Bid
IFB# 03-2015
Trail System
County of Grayson, Virginia**

Sealed bids for the Trail System, Grayson County, Virginia in accordance with the conditions, specifications, and instructions below and on the attached sheets hereto, will be received no later than **5:00 PM**, local prevailing time, **October 22nd, 2015** and will be opened and publicly read aloud at **October 23rd, 2015, 9:00 a.m.** at the same location. Sealed bids should be delivered as follows:

IN PERSON OR SPECIAL COURIER
County of Grayson
Department of Finance
Grayson County Courthouse
129 Davis Street
Independence, VA 24348

OR

U.S. POSTAL SERVICE
County of Grayson
Department of Finance
Grayson County Courthouse
P.O. Box 217
Independence, VA 24348

Worksite Address: Grayson County Recreation Park, 432 County Park Lane, Softball Field Area and Wooded Area around Softball Field, Independence, VA 24348

Scope of Work: Trail system – Grayson County Recreation Park

This project is partially funded by the Virginia Department of Conservation & Recreation with grant funding provided by the Federal Highway Administration and Moving Ahead for Progress in the 21st Century (MAP-21). As a local project tied to state and federal funding the locality is interested in working with contractors who are capable of meeting the state and federal requirements listed in this project manual.

The project consists of three trail segments at the Grayson County Recreation Park. Trail segments are identified as: Segment One, Segment Two and Segment Three. The attached map shows the general location of each of the three trail sections. Contractors are encouraged to visit the location.

- 1) **Segment One Description:** The goal of Segment One is to rehabilitate the existing trail that travels from the Recreation Park Office/Pool area to the proposed Segment Two Trail System. Segment One begins at the wooded edge of the parking area for the Grayson County Recreation Park office. The trail will follow the contour of the landscape along the existing trail. As the trail begins to climb it will deviate from the existing trail at a location necessary to improve the trail grade using a switch back along the contour of the landscape. The trail will approach the edge of the Grayson County Softball Fields. At this location a series of landscape timbers will carry the trail to the edge of the softball field to intersect with the Segment Two trail. The approximate length of Segment One is 1500 feet.
- 2) **Segment Two Description:** The goal of Segment Two is to create a paved asphalt surface trail around the perimeter of the softball fields. The trail is to be ADA Handicap Accessible. This trail will connect to both the Segment One and Segment Three Trail Systems. The asphalt trail will begin at the edge of the parking lot in the location shown, the asphalt trail will travel along the edge of the parking area until it travels east along the fenced edge of the softball field. The trail will continue along the perimeter of the softball field fence with

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continuous asphalt surface, making a complete loop. This area was graded for the softball fields and the trail was considered in the original grading plan, as a result minor grading will be required. The asphalt trail shall meet the specifications in (5.i) and the trail must be ADA compliant. The approximate length is 1400 feet.

- 3) **Segment Three Description:** The goal of the Segment Three Trail is to connect with the Segment Two Trail and carry the trail to the original baseball field's parking lot which is the terminus for this trail system project. The area where Segment Three begins is near the existing power pole at the edge of the softball field parking lot. Segment Three Trail will begin in this area and cross the parking lot in this narrow portion of the parking lot. A traffic calming device, signage and parking bollards will be placed here (by county staff and outside the scope of this bid) and this location will identify the path of travel across the softball field parking lot. The trail will continue along the edge of the parking lot. The trail will travel over a new drainage culvert and the path of travel will follow a timber frame stair system up the hillside. The trail will continue across the High School ballfield parking lot and over a new drainage culvert, before entering the wooded area. In the wooded area the trail will follow an existing cleared area along the ridge line and then navigate along the contour down the hill until the trail terminates at the edge of the baseball field near the Industrial Park. In this area, the contractor will need to stay within the Grayson Recreation Park boundary, the property line is identified by tree flagging. The approximate length of Segment Three is 1200 feet.

- 4) **Trail Construction Goals:** The goal for the trail construction is to create a long lasting, low maintenance trail system. The focus will be on creating minimal site disturbance to the natural areas/vegetation to maintain the integrity of the natural area/natural experience associated with the trail system. Trail system shall provide grades and surfaces that are easy to navigate, clearly delineate trail areas from the outdoor space and encourage use of the trail system for outdoor recreation.

- 5) **Trail Specifications:**
 - a) **Segment One and Segment Three Trail- Trail Corridor.** Vegetation, stumps and other obstacles to path of travel shall be cleared from the trail corridor. The trail corridor is defined as 10' wide for the entire length of the trail. The vertical clearance to obstructions shall be 8 feet tall (all protruding obstructions into the trail corridor must be cleared from the surface grade to 8' tall for the entire 10 foot corridor width).

 - b) **Segment One and Segment Three Trail- Trail Surface.** The trail surface is defined as 4-6' wide and is defined as the area to be used for the path cross section. The 6' wide path is preferred, but to accommodate terrain the path can be narrowed to 4' in select areas to avoid major construction obstacles. The surface shall be graded to create a constant and gradual trail grade and the trail grade shall not exceed 15% in any location, unless prior approval is given by the owner. The trail surface along the

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cross section shall be angled at no greater than 5%. Minor slope along the cross section is required to accommodate trail surface drainage off of the trail. The goal is a mostly level trail cross section with enough slope to drain water off of the trail, a 2-5% outslope is required to adequately drain water off the trail.

- c) **All Trail Segments-Path of Travel.** The centerline of the trail segments -path of travel will be flagged or spray painted and available for review prior to the Pre-Bid Conference. The contractor is required to follow this path of travel. In some areas a deviation may be required to maintain a constant grade or to avoid other major obstacles the contractor must get prior approval for any deviation from the trail path of travel.
- d) **All Trail Segments -Drainage pipe.** In areas where drainage pipe is needed to maintain the grade and to accommodate surface runoff, the minimum pipe size shall be 15" cmp, (some areas may require a larger diameter), with earth fill over the pipe, for the entire cross section of the trail corridor and adequate length to protect erosion of the trail. In each of these areas outlet protection is required with an apron width of 4.5' and length of 12.5'. Inlet protection shall be installed and a stone end wall shall be constructed at each end of the culvert. The E&S Plan demonstrates proposed locations where drainage pipe is expected. **If the need for additional drainage pipe is determined during construction the owner and the contractor may address this as a change order to the scope/contract.**
- e) **Segment One and Segment Three Trail- Geotextile.** Trail quality (type and source must be pre-approved by owner) geotextile cloth with factory recommended pins shall be placed along the trail length and width of the trail path of travel. Geotextile must be in place and properly anchored prior to placement of stone/gravel.
- f) **Segment One and Segment Three Trail-Trail Surface.** Surface shall consist of 4-6" of rock sized 21a or equivalent and Surface topped with compacted rock dust. The goal is to create a semi-permeable, non-erodible, stable trail surface for the width of the trail surface (6' wide).
- g) **Segment One and Segment Three Trail -Landscape Timber Stair System.** Required in two locations. Location 1) At the top of the Segment One trail where the grade becomes steep before meeting the Segment two trail at the softball field
Location 2) At the slight incline of the Segment Three trail prior to the Baseball Field parking area. The goal is to create a staired system that will provide solid footing for travelers to safely navigate up the slope and create a system that blends into the natural landscape. Landscape timbers shall consist of treated wood with a size of at least 6x6. The stair system shall not exceed a 7" rise and shall not be less than a 11" run. If an alternate system is proposed it must be approved by the Building Official

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prior to construction. Timbers shall be installed not to exceed a 2% slope. Timbers shall be anchored in place using #4 bar at intervals of every 2' to a depth of 3' or greater. The distance of the landscaped timber stair section will be determined by the length used to bring the trail up the slope, from the base to the top of the grade in the locations identified. Soil fill with trail surface specified by (5.e and 5.f.), will be used in conjunction with the landscaped timber system. The outslope shall be 2-5% to accommodate drainage off of the stair system. Both of these stair systems will require a building permit and the locality will cover these fees. The stair system is also illustrated in the E&S Plan- Page 4. **If the need for additional stair system locations is determined during construction, the owner and the contractor may address this as a change order to the scope/contract.**

- h) **Segment One and Segment Three Trail- Handrails.** The project will require engineered plans for the handrails (per grant guidelines) affiliated with the timber stair systems. The owner will work with the contractor and the owner's engineer to design the handrails prior to construction. **The bid shall not include the cost of the handrails.** This will either be treated as a change order or will be constructed by the owner.
- i) **Segment Two-Paved Asphalt Trail.** Must be ADA compliant. Shall be installed at the location shown on the E&S Plan and Trail Map. The path of travel will follow the perimeter of the softball fields/field fence line and it will connect to Segment One & Segment Two Trails. Specifications shall include the contract provisions below. Placement quality and procedure must also adhere to applicable portions of "Section 315- Asphalt Concrete Pavement with affiliated sections, **2007 Road & Bridge Specifications, VDOT**". Contractors who have the experience/qualifications to meet these standards and the resources to provide their own qualified testing in accordance with ASTM D standards will only be considered.
- 1) Minor site preparation, required aggregate and hot-mix asphalt pavement are expected. ADA compliant shoulders and five (5) paved curb ramps.
 - 2) The asphalt trail surface shall be 6' wide.
 - 3) The asphalt surface, internal edge will be approx. 1-3 feet from softball field fence, dependent on available space and direct lines to provide a continuous/logical path.
 - 4) Any proposed deviations from the E&S Plan, must be approved by the Building Official prior to commencement of this work. This is necessary to ensure E&S compliance and conformance with the construction plans.
 - 5) Site preparation shall include:
 - a. All topsoil must be removed and low quality soils should be identified. Should weak spots, unsuitable material or poor drainage be discovered,

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these areas must be replaced with 12” of No. 1 stone, topped with 21 stone and compacted prior to subgrade.

- b. Asphalt cannot be installed in areas of saturated soil and poor drainage. If poor drainage is discovered during construction, adequate drainage must be installed.
 - c. The subgrade must be compacted and any deficiencies remediated prior to asphalt. Compaction of stone for both the trail and shoulder edge is expected.
 - d. A minimum of 4” of crushed aggregate base 21a or 21b, must be spread and compacted to the uniform thickness and density as required for the entire area to be paved.
 - e. Prior to the paving of the asphalt surface the subgrade will be inspected by the owner’s inspector. Subgrade material must conform to applicable sections of Section 305 -**2007 Road & Bridge Specifications, VDOT.**
 - f. Prior to paving the proper cross section, grades & profile must be confirmed.
 - g. Prior to work on paving a “Pre-Paving Conference” shall be held on site. Topics of discussion will include;
 - 1) Forecasted weather conditions and required accommodations for weather.
 - 2) Proposed sources of paving materials, capabilities and location of hot mix asphalt plant. Transportation & paving equipment (section 315.03).
 - 3) Condition of substrate and preparatory work is satisfactory.
 - 4) Review requirements for protecting the paving work during construction.
 - 5) Review paving equipment and equipment availability during asphalt delivery. Including schedule for paving, availability of materials, personnel and all the factors involved to meet schedule and maintain quality.
 - 6) Paving procedures in accordance with the applicable scope of Section 315.
 - 7) Inspection & Testing requirements, scheduling of both the contractor’s and third party inspectors, QA document submittals and mutual expectations for corrections if required.
- 6) Asphalt Type. Require a “VDOT Approved Mix Design” from a certified plant. The asphalt shall be SM 12.5 and placed in one or more lifts to the true line and grade. Any irregularities should be corrected directly behind the paver. Rolling and compaction shall occur as soon as the asphalt can be compacted without displacement. Procedures in accordance with the applicable portions of Section 305- **2007 Road & Bridge Specifications, VDOT.**

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- 7) Finish roll pave surfaces to remove roller marks, edge shaping required, surface course must be smooth and shall not exceed surface tolerance of 1/8" over 10 ft.
- 8) A **minimum depth of 2" of asphalt** or greater, as required to meet grade.
- 9) The shoulders of the paved surface shall be brought to the standard required to prevent the installation of edge protection on the asphalt trail. A ½ inch height difference between the top of the paved surface and the adjacent grade is allowed. If the paved surface is to be ½" or more above adjacent grade a stone shoulder, with landscape cloth base, minimum 10" wide, shall be required to bring the height difference within ADA standards at the edge of the asphalt.
- 10) Project Conditions. Asphalt shall not be placed with weather or surface conditions will prevent proper handling, finishing or compacted. Surface conditions must comply with Section 315.04 of the 2007 Road Specifications.
- 11) For ADA compliance the cross slope of the asphalt trail can be no greater than 2%. The surface grade of the path of travel cannot exceed 5%.
- 12) Paved curb ramps that meet ADA requirements shall be installed at a) the entrance to the Segment Two trail from the southwestern edge of the gravel parking lot b) at the intersection of Segment 3 and Segment 2 trail near the proposed crosswalk c) both direction (south and north unto the trail) access to the trail at the center location (in area between fields) d) entrance to the trail near site of proposed trailhead bathroom –northeastern edge of gravel parking lot e) intersection of Segment One and Two Trail on north side of softball fields. Curb ramps must be at least 36" wide and a length capable of connecting to the adjacent grade (within ADA grade guidelines).
- 13) The Asphalt Trail scope of work shall be considered in the lump sum bid of the project. Material overages shall not be the responsibility of the county. Contractor must submit invoices for work complete, material receipts and QA documents to the Project Manager for acceptance/payment of work.
- 14) Defective work must be remediated, removed or replaced with new material. Quality issues must be immediately reported to the Project Manager prior to remediation.
- 15) Owner will use third party certified inspector to inspect the Asphalt Trail scope of work. Contractor should expect a level of testing that meets VDOT asphalt QC standards in accordance with Section 210- **2007 Road & Bridge Specifications, VDOT** and contractor must be capable of providing certified personnel for their own internal QC. Test samples/schedules will be discussed/agreed by both parties at the preconstruction meeting. Owner expects, Thickness ASTM D 3549, In Place Density ASTM D 979, Lab Density ASTM D 1559 (four random samples a day), Nuclear Method ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726. Quality, Surface Temperature Placement, Visual inspections will also be involved.

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- 6) **On Site Review:** On site consultation may be necessary to understand the path of travel, considerations for grading/natural construction and expectations of the project prior to bid submittal. A pre-bid conference is scheduled (see below) to allow contractor's an opportunity to view the project area and ask questions about the scope and expectations of the project.
- 7) **Buy America/Other State & Federal Requirements:** The Buy America Requirement is related to purchase of iron or steel products. It is expected that minimal use of these materials will be used in the trail project, with the exception of fasteners and rebar. The locality will require a pre-construction discussion of how the contractor will purchase in line with the Buy America Clause. A complete list of the State & Federal Requirements is listed in the General Construction portion of this project. Compliance with the Federal Davis Bacon Act is not required because this project is not in a highway right of way.
- 8) **Project Schedule:** Construction can begin after the signed contract has been executed and when approval is given to proceed. Owner expects work to begin within 30 days of notice to proceed. Construction activity around the Segment Two trail/softball fields must be coordinated with activities at the softball fields. **The project must be complete by July 1st, 2016. Completion Milestones/Payment Schedules will be developed with the contractor prior to executed contract. Owner expects monthly payment schedule/invoice submittal.**
- 9) **Use of County Staff for Signs and Bollards:** As part of the project, county staff will be used for the installation of the trail signage and for the installation of the parking bollards to be installed. Trail signage and parking bollards will be installed after the contractor has completed the trail system and these materials will be provided by the owner (Grayson Co).
- 10) **Debris disposal:** Grayson County will provide a dumpster for solid waste disposal and provide the fees for the disposal of the assigned dumpster. The dumpster will be located at an area determined by county staff. Vegetative, tree and stump disposal will be addressed as a separate contract or at the discretion of the county staff after bids are received and awarded. Please do not include vegetative debris disposal as part of the bid.
- 11) **Other Contractor Requirements:**
- 1) On site pre construction meeting with Project Manager & Building Official prior to trail construction. Any changes made to the scope of work/bid contract must be submitted and approved in writing prior to construction.
 - 2) It shall be the contactors responsibility to identify any underground and overhead utilities in the work area. The work shall not interfere or disrupt utilities. If a situation arises that requires the relocation of utilities, this work must be approved and agreed to prior to utility relocation and in cooperation with the utility.

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- 3) Limits of grading and vegetative removal shall be marked on site by the contractor and approved by the Project Manager/Building Official prior to commencement of work.
- 4) Appropriate Erosion & Sediment Control Measures must be installed on site prior to site construction and for the duration of the project construction in accordance with the approved E&S Plan & Narrative in this Project Manual.
- 5) Contractor/responsible land disturber is responsible for obtaining the Erosion & Sediment Control Permit. Approved E&S plan and permit fees will be provided by the county.
- 6) Contractor shall get pre-approval of any seed, to ensure compliance with the Virginia Seed Law.
- 7) Area(s) under construction must be secure from public use. All areas under construction must be marked with hazard signage and areas of public entry must be blocked by safety barriers/safety ribbon. The contractor is responsible for safety during the construction of the trail system.
- 8) Contractor must install project sign at the construction staging area.
- 9) Construction should minimize the overall disturbance to the natural environment. Site remediation to include; remove fallen vegetation and provide proper soil and erosion control measures on disturbed areas. Trail surface must be surfaced with rock/rock dust within seven days of finish trail surface grading. Protection to adjacent trees and natural areas outside of the project area must be given by the contractor.
- 10) Construction and scope of work must meet the specifications identified.
- 11) Contractor is responsible for submitting invoices at the time periods and milestones identified in the contract. Payment for work will occur when milestones are met and work is inspected and approved by the Grayson County Building Official and/or Project Manager.
- 12) Contractor is responsible for scheduling the final inspection by the Project Manager.
- 13) Contractor is responsible for all local, state and federal requirements as it relates to work on this project.

Contacts: Project Manager- Elaine Holeton- 276-773-2000
Grayson County Building Official, James Moss- 276-773-2322

Beginning on **September 17th, 2015**, Bid Documents/Project Manual may be obtained by visiting the Grayson County Home Page under “Informational Items” at www.graysongovernment.com The Project Manual is provided in PDF Format, which may be shared electronically with your subcontractors, employees, and suppliers. The failure or omission of any bidder to download, receive or examine any form, instrument, addendum or other documents, or to acquaint itself with conditions existing at the site(s), shall in no way relieve any bidder from any obligations with respect to its bid or to the contract

A **non-mandatory** pre-bid conference will be held at **9 am** on **October 9th, 2015** at the Grayson County Board Room, Grayson County Courthouse, 129 Davis Street, Independence, VA to review the scope of work and clarify any aspects of the work that may be in question. A site visit at the Recreation Park will

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commence after the meeting. Direct any questions, concerning the Project Manual via fax or email to Elaine R. Holeton, eholeton@graysoncountyva.com, 276-773-2000, Fax – 276-773-3673

Time is of the essence, and all bids received after the appointed hour for submission, whether by mail or otherwise, will be returned unopened. The time of receipt shall be noted by the clerk accepting the bid document. Bidders are responsible for insuring that their bid is stamped “received” by Purchasing Office or County Administration personnel and that the time is noted on the document. Envelopes containing bids shall be sealed and marked in the lower left-hand corner with the bid number, project name, hour and due date of the bid and the bidder’s Virginia contractor registration number. All bidders shall use the enclosed Bid Form in submitting their bid prices.

A bid may not be modified, withdrawn or cancelled by the bidder after the time and date designated for the receipt of bids and for 91 days thereafter except as provided by Section 2.2-4330, Procedure (ii), Chapter 7 of the Code of Virginia, as amended. The Owner reserves the right to waive informalities and/or reject all bids. In accordance with Va. Code, Section 2.2-4319, the Owner shall not reject all bids solely to avoid awarding a contract to a particular responsive and responsible bidder.

Subcontracting. If subcontracting, the successful contractor agrees that it will be responsible for this subcontractor and its work. Any subcontracting shall be in accordance with the General Conditions and other contract provisions. The Base Bid shall include all cost associated with the management and coordination of work performed under the Allowances. Work under this allowance shall be provided by an assigned subcontractor to the general contractor. Contractor is required to contract with the selected subcontractor within 30 days of Notice to Proceed or signed contract with the County of Grayson.

The Bidder must be a registered contractor in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a **Virginia Contractor’s License**.

END OF INVITATION FOR BID

COUNTY OF GRAYSON -CONSTRUCTION GENERAL TERMS AND CONDITIONS

All bidders shall note that the Invitation for Bid (IFB) method of procurement does not allow any modifications or exceptions to the County of Grayson Construction General Terms and Conditions. Any modifications or exceptions made to this section may cause your bid response to be considered non-responsive.

A. Addenda:

1. Bidders are welcome to provide comments regarding how the bid documents, specifications or drawings can be improved. Bidders requesting clarification or interpretation of improvements to the bid general terms, conditions, specifications or drawings shall make a written request which must reach the Purchasing Office, Department of Finance, at least eight (8) calendar days prior to the date set for the receipt of bids.
2. Any changes to the bid general terms, conditions, specifications or drawings shall be in the form of a written addendum from the Purchasing Office and it shall be signed by the Purchasing Director of Finance or a duly authorized representative.
3. If changes occur, an addendum shall be issued no later than six (6) calendar days prior to the date set for the receipt of bids. However, an addendum extending the date for the receipt of bids or an addendum withdrawing the Invitation for Bid may be issued any time prior to the date set for the receipt of bids.
4. Each bidder shall be responsible for determining that it has received all addenda for the Invitation for Bid issued by the Purchasing Office before submitting a bid for the work. Bidder shall acknowledge the receipt of each addendum (when issued) on the Bid Form.

B. Annual Appropriations:

It is understood and agreed that this contract shall be subject to annual appropriations by the Board of County Supervisors (the "Board"). Should the Board fail to appropriate funds for this contract, the contract shall be terminated when existing funding is exhausted. The successful bidder ("Successful Bidder") shall not be entitled to seek redress from the County of Grayson, Virginia (the "County") should the Board fail to make annual appropriations for this contract.

C. Authorization to Transact Business in the Commonwealth (Va. Code § 2.2-4311.2):

1. Any business entity that enters into a written contract with the County of Grayson (the "County") that is organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership must be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law.
2. Any business entity described in paragraph C.1 above that enters into a contract with the County shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth of Virginia, if so required under Title 13.1 or

Title 50 of the Code of Virginia, to be revoked or cancelled at any time during the term of the contract.

3. Any business entity organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 of the Code of Virginia must include in its bid or proposal the identification number issued to it by the State Corporation Commission. Any business entity that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.
4. A bidder described in subsection 3 that fails to provide the required information shall not receive an award unless a waiver is granted by the Purchasing Director of Finance, his designee, or the County Manager.
5. Any falsification or misrepresentation contained in the statement submitted by a bidder pursuant to Title 13.1 or Title 50 of the Code of Virginia may be cause for debarment.
6. The County may, in its sole discretion, void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section, entitled "Authorization to Transact Business in the Commonwealth."

D. Award of Contract:

1. The Purchasing Office/County Administration reserves the right to waive any informality in bids and to award in part or in whole or to reject any or all bids. The reasons for the rejection shall be made a part of the contract file.
2. In case of a tie bid, preference shall be given to goods, services, and construction produced in the County of Grayson or the Commonwealth of Virginia or provided by persons, firms or corporations having principal places of business in the County of Grayson or the Commonwealth of Virginia, if such a choice is available; otherwise the tie shall be decided by lot. A County of Grayson business shall be given preference over a Commonwealth of Virginia business, if such a choice is available.
3. The Purchasing Office shall have the right, before awarding the contract, to require a bidder to submit such evidence of its qualifications as it may deem necessary and may consider any evidence available to it concerning the financial, technical, and other qualifications and abilities of a bidder.
4. Project work shall not be awarded to any vendor which is debarred or suspended or is otherwise excluded for or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension". (For Federal Projects only)
5. It is the intent of the County of Grayson to recommend the award of this contract to the lowest responsive and responsible bidder provided the bid does not exceed the funds available for the contract. **This bid will be awarded by Total Bid Amount.** (See the Bid Form).

6. The bidder to whom the contract is awarded (“Successful Bidder”) shall, within fifteen (15) days after prescribed documents are presented for signature, execute and deliver to the Purchasing Office the contract forms and any other forms required by the bid.

E. Bid Security:

1. When a bid security is required, this requirement will be conveyed in the Invitation to Bid.

F. Successful Bidder's Performance:

1. Goods and services must be delivered and rendered strictly in accordance with this bid and shall not deviate in any way from the terms, conditions, prices, quality, quantity, delivery instructions, and specifications of this bid.
2. All goods and/or services delivered and/or rendered shall comply with all applicable federal, state, and local laws, and shall not infringe any valid patent or trademark. The Successful Bidder shall indemnify, keep, save, and hold the County, its officers and employees, harmless from any liability for infringement and from any and all claims or allegations of infringement by the Successful Bidder or the County, its officers and employees, arising from, growing out of, or in any way involved with the goods delivered or services rendered pursuant to this purchase.
3. In the event that suit is brought against the County, its officers and/or its employees, either independently or jointly with the Successful Bidder, the Successful Bidder shall defend the County and the County’s officers and employees in any such suit at no cost to the County and the County’s officers and employees. In the event that final judgment is obtained against the County, its officers, and/or its employees, either independently or jointly with the Successful Bidder, then the Successful Bidder shall pay such judgment, including costs and attorney’s fees, if any, and hold the County, and the County’s officers and employees, harmless therefrom.
4. The Successful Bidder shall ensure that its employees shall observe and exercise all necessary caution and discretion so as to avoid injury to person or damage to property of any and all kinds.
5. The Successful Bidder shall not, in its product literature or advertising, refer to this purchase or the use of the Successful Bidder's goods or services by the County of Grayson, Virginia.
6. The Successful Bidder shall cooperate with County officials in performing the specified work so that interference with the County's activities will be held to a minimum.

Notwithstanding any other language to the contrary contained in the contract documents, in case of an inconsistency between drawings and specifications or within either document and clarified by addendum, the better quality or greater quantity of work shall be provided.

7. The Successful Bidder shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs. The provisions of all rules and regulations

governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and as issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia shall apply to all work under this purchase order.

G. Bidder's Representation:

1. By submitting a bid in response to this Invitation to Bid, the bidder certifies that it has read and understands the bid documents, specifications, and drawings, if any, and has familiarized itself with all federal, state and local laws, ordinances, rules and regulations that in any manner may affect the cost, progress or performance of the work.
2. The failure or omission of any bidder to receive or examine any form, instrument, addendum or other documents, or to acquaint itself with conditions existing at the site(s), shall in no way relieve any bidder from any obligations with respect to its bid or to the contract.

H. Bonds:

1. When a bond is required, this requirement will be conveyed in the Invitation to Bid.

I. Collusion:

By submitting a bid in response to this Invitation for Bid, the bidder represents that in the preparation and submission of this bid, said bidder did not, either directly or indirectly, enter into any combination or arrangement with any person, Bidder or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. § 1) or Va. Code §§ 59.1-9.1 through 59.1-9.17 or §§ 59.1-68.6 through 59.1-68.8.

J. Compensation:

1. The County shall not pay for any goods or services until the same have been actually received by the County.
2. The Successful Bidder/Offeror shall provide the Purchasing Office their social security numbers, upon request. Proprietorships, partnerships and corporations shall provide their federal employer identification numbers, upon request (Va. Code § 2.2-4354.2).
3. The Successful Bidder shall submit a complete itemized invoice for each item or service delivered under the contract and keep copies for their own personal record.
4. Payment shall be rendered to the Successful Bidder for satisfactory performance in compliance with the general terms, conditions and specifications of this bid. The required payment date shall be either: (i) the date on which payment is due under the terms of the contract for the provision of such goods or services; or (ii) if such date is not established by contract, not more than forty-five days after goods or services are received or not more than forty-five (45) days after the Successful Bidder renders a proper invoice to the County, whichever is later (Va. Code § 2.2-4352).

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6. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month (Va. Code § 2.2-4354.4).
- 7) Final payment for services rendered will not occur until all inspections have been certified and the project is complete. Invoices shall be submitted for payment.

K. Contractor's Qualification Statement:

1. When required, the Bidder must be a registered contractor or land disturber in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a **Virginia Contractor's License Classification A or equivalent for the work performed**. The Bidder shall have bid and completed projects of comparable nature, size, complexity, and construction cost.
2. Once the bid document is submitted by the bidder and accepted by the County Purchasing Office, the document will be used by the County in the evaluation of all bids submitted by the bidder during the designated period of time. The County may request additional information as needed to determine if the contractor is qualified.

L. Contractor's Registration:

1. No person shall engage in, or offer to engage in, contracting work or operate as an owner-developer in the Commonwealth of Virginia unless it has been licensed or certified under the provisions of Chapter 11 of Title 54.1 of the Code of Virginia, as amended. See Virginia Code § 54.1-1103(A).
2. Bidders are prohibited from contracting for, or bidding upon the construction, removal, repair or improvements to or upon real property owned, controlled or leased by the County of Grayson without a Virginia contractor's license or certificate when such license is required.
3. Each bidder shall indicate its Virginia contractor's registration number on the bid envelope and the Bid Form.

M. Contract Time:

1. The number of days within which, or the date by which, the work is to be completed (the "Contract Time") is set forth in the Bid Form and will be included in the agreement.
2. The Successful Bidder may obtain an extension of the Contract Time only for an Excusable Delay. An Excusable Delay is one of the following events that delays the Successful Bidder's performance of the Work, when such event is the sole cause of delay and the Successful Bidder is not responsible in whole or in part for the event:
 - (a) an act or omission by the County;
 - (b) an act or omission by a third party employed by the County and not under the Successful Bidder's control;

- (c) fire or extraordinary adverse weather conditions in the County;
 - (d) changes ordered by the County that affect the scope of the Work; and
 - (e) other events beyond the control of the Successful Bidder that were not reasonably anticipated by the Successful Bidder.
3. If the Successful Bidder believes an Excusable Delay has occurred, the Successful Bidder shall notify the County in writing that the Successful Bidder believes an Excusable Delay has occurred and specify the nature of the Excusable Delay within ten (10) calendar days of the beginning of the Excusable Delay. The Successful Bidder's notice of the Excusable Delay shall be a condition precedent to an extension of the Contract Time.
4. The Successful Bidder may recover damages only for an Unreasonable Delay. An Unreasonable Delay is a delay caused by the acts or omissions of the County, its agents or employees that is due to causes within their control.
5. If the Successful Bidder believes there has been an Unreasonable Delay, the Successful Bidder shall notify the County in writing that the Successful Bidder believes an Unreasonable Delay has occurred and specify the nature of the Unreasonable Delay within ten (10) calendar days of the beginning of the Unreasonable Delay. The Successful Bidder's notice of the Unreasonable Delay shall be a condition precedent to the recovery of damages for the Unreasonable Delay.

N. Controlling Law and Venue

This contract is made, entered into, and shall be performed in the County of Grayson, Virginia, and shall be governed by the applicable laws of the Commonwealth of Virginia. Any dispute arising out of the contract resulting from this Invitation for Bid, its interpretations, or its performance shall be litigated only in the County of Grayson General District Court or the Circuit Court of the County of Grayson, Virginia.

O. Default:

If the Successful Bidder fails to make delivery or complete implementation and installation, or if the system fails in any way to perform as specified herein, the County may consider the Successful Bidder to be in default. In the event of default, the County will provide the Successful Bidder with written notice of default, and the Successful Bidder will be provided a set time in which to provide a plan to correct said default ("Cure Plan"). The Cure Plan shall provide for the complete correction of the default within a time period specified by the County ("Cure Period"). The County shall review the Cure Plan and determine, in the County's sole discretion, whether the Cure Plan is satisfactory. If the County determines that the Cure Plan is satisfactory, then the County shall so notify the Successful Bidder and the Successful Bidder shall promptly proceed with performance of the Cure Plan such that the Successful Bidder completely corrects the default within the Cure Period, unless the County otherwise agrees in writing. Should the County determine that the Successful Bidder's Cure Plan is unsatisfactory, or should the Successful Bidder fail to completely correct the default in accordance with the terms of this Paragraph, the County may, among other actions, terminate the Successful Bidder's Contract.

The failure of the County to insist upon, or to delay enforcing the strict performance of the terms and conditions hereof, or any right or remedy, shall not constitute or be construed as a waiver or relinquishment of the County's right to thereafter enforce the same in accordance with the Contract Documents.

P. Drug-Free Workplace to be Maintained by the Contractor (Va. Code § 2.2-4312)

1. As used in this Section, the term "contractor" shall mean "Successful Bidder" as defined herein.
2. During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
3. For the purposes of this section, "*drug-free workplace*" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with the Virginia Public Procurement Act, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

Q. Provision of a Drug-Free Workplace – For Federal Grant Projects

In compliance with the Drug-Free Workplace Act of 1988 (43 CFR Part 12, Subpart D), upon signing the Recreational Trails Program project agreement, the Recipient certifies that is shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Recipient's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
2. Establish an ongoing drug-free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The Recipient's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation and employee assistance programs, and
 - (4)The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
3. Require that each employee be engaged in the performance of a grant be given a copy of the statement required by paragraph (a);
4. Notify the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

- a. Abide by the terms of the statement;
 - b. Notify the employer in writing of his or her convictions for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.
5. Notify the agency in writing, within ten calendar days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the FHWA designates a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
 6. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted;
 - a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended or
 - b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
 7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

R. Other Federal Requirements- For Federal Grant Projects

1. Where required, recipient agrees to comply with the required contract provisions for federal aid construction grants as outlined in the attached form FHWA-1273 and Buy America Special Provisions.

S. Employment Discrimination by Bidder Prohibited:

1. During the performance of this contract, the Successful Bidder agrees as follows (Va. Code § 2.2-4311):
 - (a) The Successful Bidder will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Successful Bidder. The Successful Bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices setting the provisions of this nondiscrimination clause.
 - (b) The Successful Bidder, in all solicitations or advertisements for employees placed by or on behalf of the Successful Bidder, will state that such Successful Bidder is an equal opportunity employer.
 - (c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

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2. The Successful Bidder shall include the provisions of the foregoing paragraphs of this section in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

T. Environmental Impact Management

Contractor shall be responsible for complying with all applicable federal, state, and local environmental regulations. Contractor is responsible for ensuring that all employees conducting activities on behalf of the County are properly trained to carry out environmental responsibilities.

U. Employment of Unauthorized Aliens Prohibited:

As required by Virginia Code § 2.2-4311.1, the Successful Bidder does not, and shall not during the performance of this agreement in the Commonwealth of Virginia knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

V. General Bid Information

1. Sealed bids in accordance with the conditions, specifications, and instructions below and on the attached sheets or drawings hereto, if any, will be received in person or via special courier service in the Purchasing Office, Department of Finance, Grayson County Courthouse, 129 Davis Street, Independence, VA 24348 or through the regular mail by the U.S. Postal Service, P.O. Box 217, Independence, VA 24348, until, but no later than the time and date specified in the Invitation to Bid.
2. In the solicitation or awarding of contracts, the County of Grayson shall not discriminate because of the race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment.
3. The County of Grayson may utilize the Commonwealth of Virginia eVA Supplier Web Site for selection of bidders. If your company is not registered, a supplier application is available on the eVA website.

W. Indemnification:

The Successful Bidder agrees to indemnify, defend and hold harmless the County of Grayson, the County's officers, agents and employees, from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys' fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the Successful Bidder, provided that such liability is not attributable to the County's sole negligence.

X. Insurance:

The Successful Bidder shall maintain insurance to protect itself and the County of Grayson from claims for damages for personal injury, including death, and for damages to property, which may arise from operations under this contract. Such insurance shall conform to the County Insurance Specifications.

Y. Modification of Bids:

1. A bid may be modified or withdrawn by the bidder any time prior to the time and date set for the receipt of bids. The bidder shall notify the Purchasing Office in writing of its intentions.
2. Modified and withdrawn bids may be resubmitted to the Purchasing Office up to the time and date set for the receipt of bids.
3. No bid can be withdrawn after the time set for the receipt of bids and for ninety (90) days thereafter except as provided in the section herein regarding Withdrawal of Bid Due to Error.

Z. Negotiation with the Lowest Bidder:

1. If all bids received exceed the available funds for the proposed purchase, the County, pursuant to County Code provisions, may meet with the lowest responsive and responsible bidder to discuss a reduction in the scope for the proposed purchase and negotiate a contract price within the available funds.
2. After bid negotiations, the lowest responsible bidder shall submit an addendum to its bid, which addendum shall include the change in scope for the proposed purchase, the reduction in price and the new contract value.
3. If the proposed addendum is acceptable to the County, the County may award a contract within funds available to the lowest responsible bidder based upon the amended bid.
4. If the County and the lowest responsible bidder cannot negotiate a contract within available funds, all bids shall be rejected.

AA. No Discrimination Against Faith-Based Organizations:

Grayson County does not discriminate against faith-based organizations as that term is defined in Va. Code § 2.2-4343.1.

BB. Opening of Bids:

1. All bids received on time in the Purchasing Office shall be opened and publicly read aloud.
2. Any competitive sealed bidding bidder, upon request, shall be afforded the opportunity to inspect bid records within a reasonable time after the opening of all bids but prior to award, except in the event that the County decides not to accept any of the bids and to reopen the contract. Otherwise, bid records shall be open to public inspection only after award of the contract (Va. Code § 2.2-4342.C).

Any inspection of procurement transaction records shall be subject to reasonable restrictions to ensure the security and integrity of the records (Va. Code § 2.2-4342.E).

CC. Record Retention/County Audits:

1. The Successful Bidder shall retain, during the performance of the contract and for a period of five years from the completion of the contract, all records pertaining to the Successful Bidder's bid and any contract awarded pursuant to this Invitation to Bid. Such records shall include but not be limited to all paid vouchers including those for out-of-pocket expenses; other reimbursement supported by invoices, including Successful Bidder's copies of periodic estimates for partial payment; ledgers, cancelled checks; deposit slips; bank statements; journals; contract amendments and change orders; insurance documents; payroll documents; timesheets; memoranda; and correspondence. Such records shall be available to the County on demand and without advance notice during the Successful Bidder's normal working hours.
2. County personnel may perform in-progress and post-performance audits of the Successful Bidder's records as a result of a contract awarded pursuant to this Invitation to Bid. Files shall be available on demand and without notice during normal working hours.

DD. Safety:

1. The Successful Bidder shall comply with and ensure that the Successful Bidder's personnel comply with all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the standards of the Virginia Occupational Safety and Health Administration for the industry. The provisions of all rules and regulations governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia/Virginia Occupational Safety and Health shall apply to all work under this contract. The Successful Bidder shall provide or cause to be provided all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the work specified and performed by the Successful Bidder.
2. Each job site shall have a supervisor who is competent, qualified, or authorized on the worksite, who is familiar with policies, regulations and standards applicable to the work being performed. The supervisor must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees or the public, and is capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Successful Bidder's personnel from the work site.
3. Any operations of the Successful Bidder determined to be hazardous by the County, shall be immediately discontinued by the Successful Bidder upon receipt of either written or oral notice by the County to discontinue such practice.

EE. Small, Women-Owned and Minority-Owned (SWAM) Business and Disadvantaged Business Enterprises:

The County welcomes and encourages the participation of small businesses and businesses owned by women and minorities in procurement transactions made by the County. The County of Grayson actively solicits both small business, women-owned and minority (SWAM) and Disadvantaged Business Enterprise (DBE) businesses to respond to all Invitations for Bids and Request for Proposals. All solicitations are posted on the County's Internet site at <http://www.graysongovernment.com/> and may be viewed under the "Informational Items" link on the homepage. The county may advertise for bids through mediums that support SWAM and DBE as part of the bidding process.

FF. Subcontracts:

1. No portion of the work shall be subcontracted without prior written consent of the County of Grayson, Virginia. In the event that the Contractor desires to subcontract some part of the work specified in the contract, the Contractor shall furnish the County the names, qualifications, and experience of the proposed subcontractors. The Contractor shall, however, remain fully liable and responsible for the work to be done by his/her subcontractor(s) and shall assure compliance with all the requirements of the contract.
2. The County encourages the contractor to utilize small, women-owned, and minority-owned business enterprises. For assistance in finding subcontractors, contact the Supplier Relations Manager (804-501-5689) or the Virginia Department of Small Business & Supplier Diversity (SBSD) www.sbsd.virginia.gov.

GG. Submission of Bids:

1. All bidders shall use the enclosed Bid Form in submitting their bid prices. The Purchasing Office shall not accept oral bids or bids received by telephone, telecopier (FAX machine) or other electronic means.
2. All prices must be F.O.B. delivered to the point as indicated in this bid. The County will grant no allowance for boxing, crating, or delivery unless specifically provided for in this bid.
3. The Bid Form must be completed in blue or black ink or by typewriter. Discrepancies in the multiplication of units of work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
4. All erasures, insertions, additions, and other changes made by the bidder to the Bid Form shall be signed or initialed by the bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in the bid, may be rejected by the Purchasing Office as being incomplete or nonresponsive.
5. The Bid Form must be signed in order to be considered. If the bidder is a corporation, the bid must be submitted in the name of the corporation, not simply the corporation's trade name. In addition, the bidder must indicate the corporate title of the individual signing the

bid.

6. The Bid Form, the bid security, if any, and any other documents required, shall be enclosed in a sealed opaque envelope. Any notation or notations on the exterior of the envelope purporting to alter, amend, modify, or revise the bid contained within the envelope shall be of no effect and shall be disregarded.
7. The envelope containing the bid should be sealed and marked in the lower left-hand corner with the bid request number, project name, hour and due date of the bid.
8. The time for the receipt of bids shall be determined by the time and date of delivery at the Purchasing Office. Bidders are responsible for ensuring that their bids are stamped received and dated by Purchasing Office personnel or appointed staff
9. All bids received in the Purchasing Office by the deadline indicated will be kept in a locked location until the time and date set for the opening of bids.
10. All late bids shall be returned unopened to the Bidder.
11. All line items must be filled in. It is understood and agreed, if bidder indicates a "0" dollar amount on the bid form the product or service shall be provided at no charge.

HH. Successful Bidder's Obligation to Pay Subcontractors: When applicable

1. The Successful Bidder awarded the contract for this project shall take one of the two following actions within seven (7) days after the receipt of amounts paid to the Successful Bidder by the County for work performed by the Successful Bidder's subcontractor(s) under the contract (Va. Code § 2.2-4354):
 - (a) Pay the subcontractor(s) for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor(s) under the contract; or
 - (b) Notify the County and subcontractor(s), in writing, of the Successful Bidder's intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
2. The Successful Bidder shall pay interest to the subcontractor(s) on all amounts owed by the Successful Bidder that remain unpaid after seven (7) days following receipt by the Successful Bidder of payment from the County for work performed by the subcontractor(s) under the contract, except for amounts withheld as allowed in subparagraph 1(b) of this section. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent (1%) per month.
3. The Successful Bidder shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor(s).
4. The Successful Bidder's obligation to pay an interest charge to a subcontractor(s) pursuant to the payment clause in this section shall not be construed to be an obligation of the County. A contract modification shall not be made for the purpose of providing reimbursement for

such interest charge and a cost reimbursement claim shall not include any amount for reimbursement for such interest charge

II. Taxes:

1. The County of Grayson is exempt from the payment of federal excise or state sales taxes on all tangible, personal property for its use or consumption except taxes paid on materials that will be installed by the Successful Bidder and become a part of real property.
2. If a bidder is bidding on materials that require installation by the bidder and become a part of real property, the applicable taxes shall be included in the lump sum bid price for the installation of the material and not as a separate charge for taxes. The taxes shall be an obligation of the Successful Bidder and not of the County, and the County shall be held harmless for same by the Successful Bidder.
3. The Purchasing Office will furnish a Tax Exemption Certificate (Form ST-12) upon request and if applicable to this contract.
4. When a bidder lists a separate tax charge on the Bid Form and the tax is not applicable to the purchase by the County, the bidder will be allowed to delete the tax from its bid.

JJ. Termination of the Contract:

1. If the Successful Bidder should be adjudged bankrupt, or make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of the Successful Bidder's insolvency, or if the Successful Bidder should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to deliver the goods or services within the time specified, or if the Successful Bidder otherwise defaults in its performance of the Contract, then the County may without prejudice to any other right or remedy, and after giving the Successful Bidder seven (7) calendar days' written notice, terminate the employment of the Successful Bidder and procure such goods or services from other sources. In such event, the Successful Bidder shall be liable to the County for any additional cost occasioned by such failure or other default.
2. In such cases, the Successful Bidder shall not be entitled to receive any further payment. If the expense of finishing the contract requirements, including compensation for additional managerial and administrative services shall exceed the unpaid balance of the contract price, the Successful Bidder shall pay the difference to the County.
3. Notwithstanding anything to the contrary contained in the contract between the County and the Successful Bidder, the County may, without prejudice to any other rights it may have, terminate the contract for convenience and without cause, by giving 30 days' written notice to the Successful Bidder.

KK. Trade Secrets/Proprietary Information:

Trade secrets or proprietary information submitted by a bidder in response to this Invitation for Bid shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the bidder must invoke the protection of this section prior to or upon submission of data or materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary (Va. Code § 2.2-4342.F).

LL. Use of Brand Names/Product Information:

1. Unless otherwise provided in the Invitation for Bid, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand, make manufacturer named; it conveys the general style, type, character, and quality of the article desired, and any article which the public body in its sole discretion determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted (Va. Code § 2.2-4315).
2. If bidding other than specified, the bidder will clearly and specifically identify the product being offered and enclose complete and detailed descriptive literature, catalog cuts and specifications with the Bid Form to enable the Purchasing Office to determine whether the product offered meets the requirements of the solicitation. Material Safety Data Sheets and descriptive literature will be provided with the Bid Form for each chemical and/or compound offered. Failure to do so may cause bid to be considered nonresponsive/rejected.
3. It shall be understood that the burden of proof for an "equal" product shall be and remain the sole responsibility of the bidder. The County's decision of approval or disapproval of a proposed alternate shall be final. Nothing herein is intended to exclude any responsible bidder, its product or service or in any way restrain or restrict competition.

MM. Withdrawal of Bid Due to Error (Construction):

1. A bidder for a public construction contract, other than a contract for construction or maintenance of public highways, may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. If a bid contains both clerical and judgment mistakes, a bidder may withdraw his bid from consideration if the price bid would have been substantially lower than the other bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid which shall be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. (Va. Code § 2.2-4330.)
2. The Purchasing Office will use procedure set forth in Va. Code § 2.2-4330.B.2 (Virginia Public Procurement Act) for the withdrawal of a bid and the procedure is as follows:

- (a) The bidder shall submit to the Purchasing Office its original work papers, documents and materials used in the preparation of the bid at or prior to the time fixed for the opening of bids. Such work papers shall be delivered to the Purchasing Office by the bidder in person or by registered mail. The bids shall be opened one day following the time fixed by the Purchasing Office for the submission of bids. The bidder shall have two hours after the opening of bids within which to claim in writing any mistake as defined herein and withdraw its bid. The contract shall not be awarded by the County until such two hour period has elapsed. Such mistake shall be proved only from the original work papers, documents, and materials delivered to the Purchasing Office as required herein. The work papers, documents and materials submitted by the bidder shall, at the bidder's request, be considered trade secrets or proprietary information subject to the conditions of subsection F of Va. Code § 2.2-4342.
- (b) No bid shall be withdrawn under this section when the result would be the awarding of the contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five percent (5%).
- (c) No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit directly or indirectly from the performance of the project for which the withdrawn bid was submitted.
- (d) If a bid is withdrawn under authority of this section, the lowest remaining bid shall be deemed to be the low bid.
- (e) When the procedure set forth in the paragraphs above is utilized, original work papers, documents, and materials used in the preparation of the bid must be submitted in an envelope or package separate and apart from the envelope containing the bid marked clearly as to the contents.
- (f) The Purchasing Office shall notify the bidder in writing within five business days of its decision regarding the bidder's request to withdraw its bid. If the Purchasing Office denies the withdrawal of a bid under the provisions of this section, it shall state in such notice the reasons for its decision and award the contract to such bidder at the bid price, provided such bidder is a responsible and responsive bidder. At the same time that the notice is provided, the public body shall return all work papers and copies thereof that have been submitted by the bidder.

NN. Entire Agreement:

The written Contract Document represent the entire and integrated agreement between the County and the Successful Bidder and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract Document may be amended only in writing and such written amendments must be signed by both the County and the Successful Bidder. Upon award of the project, a contract will be drafted and signed by all parties prior to work or payment.

END OF DOCUMENT

September 2015

BID FORM
FIXED PRICE
IFB # 03-2015

Date: _____.

To: County of Grayson
Department of Finance, Purchasing Office
129 Davis Street
PO Box 217, Independence, VA 24348

Project: Recreation Park, Trail System

Contractor Name: _____

Legal Company Name: _____

Mailing Address: _____

Physical Address: _____

Contact Phone: _____

Contact Email or Fax: _____

Subcontractor(s) Name: _____ (N/A if not subcontracting)

For this construction project the bidder must be a registered contractor in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a contractor license. The Bidder shall have bid and completed projects of comparable nature, size, complexity and construction cost.

My/Our Virginia Contractor's registration number is: _____ CLASS _____

EXPERIENCE WITH STATE AND FEDERAL CONSTRUCTION PROJECTS:

(Describe experience with local, state and/or federal construction projects below- use separate sheet if necessary, elaborate on paving, QA testing, Experience in trail construction, timeliness, staff & equipment capacity)

Please indicate below if the bidder is registered with Virginia SCC as a legal business or otherwise:

The bidder or offeror name:

is a corporation or other business entity with the following SCC identification number:

_____ **-OR-**

is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the bidder/offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's/offeror's out-of-state location) **-OR-**

is an out-of-state business entity that is including with this bid/proposal an opinion of legal counsel which accurately and completely discloses the undersigned bidder's/offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

Please check the following box if you have not checked any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for bids/proposals:

PLEASE SPECIFY YOUR BUSINESS CATEGORY BY CHECKING THE APPROPRIATE BOX(ES)

(Check all that apply.)

- SMALL BUSINESS**
- WOMEN-OWNED BUSINESS**
- MINORITY-OWNED BUSINESS**
- SERVICE DISABLED VETERAN**
- LARGE**
- NONPROFIT**
- NONE OF THE ABOVE**

SUPPLIER REGISTRATION – The County of Grayson encourages all suppliers interested in doing business with the County to register with eVA, the Commonwealth of Virginia's electronic procurement portal, <http://eva.virginia.gov>.

eVA Registered? **Yes** **No**

FOR YOUR CONVENIENCE- DEFINITIONS ON NEXT PAGE

DEFINITIONS

For the purpose of determining the appropriate business category, the following definitions apply:

"Small business" means a business, independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or annual gross receipts of \$10 million or less averaged over the previous three years. One or more of the individual owners shall control both the management and daily business operations of the small business.

"Women-owned business" means a business that is at least 51 percent owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest is owned by one or more women who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

"Minority-owned business" means a business that is at least 51 percent owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

"Minority individual" means an individual who is a citizen of the United States or a legal resident alien and who satisfies one or more of the following definitions:

1. "African American" means a person having origins in any of the original peoples of Africa and who is regarded as such by the community of which this person claims to be a part.
2. "Asian American" means a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands, including but not limited to Japan, China, Vietnam, Samoa, Laos, Cambodia, Taiwan, Northern Mariana Islands, the Philippines, a U.S. territory of the Pacific, India, Pakistan, Bangladesh, or Sri Lanka and who is regarded as such by the community of which this person claims to be a part.
3. "Hispanic American" means a person having origins in any of the Spanish-speaking peoples of Mexico, South or Central America, or the Caribbean Islands or other Spanish or Portuguese cultures and who is regarded as such by the community of which this person claims to be a part.
4. "Native American" means a person having origins in any of the original peoples of North America and who is regarded as such by the community of which this person claims to be a part or who is recognized by a tribal organization.

"Service disabled veteran business" means a business that is at least 51 percent owned by one or more service disabled veterans or, in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more individuals who are service disabled veterans and both the management and daily business operations are controlled by one or more individuals who are service disabled veterans.

"Service disabled veteran" means a veteran who (i) served on active duty in the United States military ground, naval, or air service, (ii) was discharged or released under conditions other than dishonorable, and (iii) has a service-connected disability rating fixed by the United States Department of Veterans Affairs.

"Large business" means any non-women- or minority-owned, or service-disabled business as defined above or any business having more than 250 employees or more than \$10 million in gross receipts averaged over the previous three years.

"Nonprofit" means a corporation or an association that conducts business for the benefit of the general public without shareholders and without a profit motive.

If registered as a SWAM with the Virginia Department of Small Business and Supplier Diversity (SBSD) please provide SWAM Certification number here: _____

If registered as DBE with the Federal Disadvantaged Business Enterprise Directory please provide the DBE certification number here: _____

If you are not registered with either agency please indicate this here: _____

This project requires that the contractor is insured in accordance with the Grayson County Insurance Requirements for Contractors. As the bidder, have you read the insurance requirements and are you insured in accordance with this document? _____ **Yes** _____ **No**

This project requires that the contractor understands federal requirements outlined on Form- FHWA 1273 and the "Buy America" (S102CF1-0309) clause. These documents are included in the Project Manual. The "Buy America" program requires a "Certificate of Compliance" regarding any iron or steel products (including fasteners) used in the construction project when such amount of iron/steel products is over \$2500 or one tenth of one percent of the contract amount. Please indicate that you have read and understand these provisions by signing below:

Name

Date

September 2015

It is the intent of the County of Grayson to recommend the award of this contract to the lowest responsive and responsible bidder based upon the **Base Bid (Lump Sum) Amount**, provided the bid does not exceed the funds available for the project. Please submit the Base Bid Amount below for the **Trail System**.

Contractor Name: _____

Business Name (if applicable): _____

Having carefully examined the site, the drawings, specifications and other documents, and in compliance with the Project Package including the Invitation for Bid, County of Grayson, Construction General Terms and Conditions and this Bid Form, the undersigned proposes to furnish all labor, materials, supplies and equipment necessary for the **Trail System**. All shall be in accordance with drawings and technical specifications in the scope of work and in accordance with the **E & S Plan & Narrative**.

My signature certifies that the proposal as submitted complies with all requirements specified in this Invitation for Bid ("IFB") and Project Manual.

My signature also certifies that by submitting a bid in response to this IFB, the Bidder represents that in the preparation and submission of this bid, the Bidder did not, either directly or indirectly, enter into any combination or arrangement with any person or business entity, or enter into any agreement, participate in any collusion, or otherwise take any action in the restraining of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

My/Our lump sum price is as follows:

BASE BID: The Base Bid includes all work and materials required by the Bid Documents for this project, **Trail System**, in strict accordance with the drawings and specifications, for the lump sum of:

\$ _____ (Figure Only)

I hereby certify that I am authorized to sign as a legal representative for the business entity submitting this bid.

Signed: _____ **Date:** _____

Printed Name: _____

Space Reserved for Office Use:

COUNTY OF GRAYSON INSURANCE REQUIREMENTS/CONTRACTORS

The Successful Vendor shall carry Public Liability Insurance in the amount specified below, including contractual liability assumed by the Successful Vendor, and shall deliver a Certificate of Insurance from carriers licensed to do business in the Commonwealth of Virginia and is representative of the insurance policies. The Certificate shall show that the policy has been endorsed to add the County of Grayson named as an additional insured for the Commercial General Liability coverage. The coverage shall be provided by a carrier(s) rated not less than "A-" with a financial rating of at least VII by A.M. Bests or a rating acceptable to the County. In addition, the Successful Vendor shall agree to give the County a minimum of 30 days prior notice of any cancellation or material reduction in coverage.

Workers' Compensation

Statutory Virginia Limits

Employers' Liability Insurance - \$100,000 for each Accident by employee
\$100,000 for each Disease by employee
\$500,000 policy limit by Disease

Commercial General Liability - Combined Single Limit

\$1,000,000 each occurrence including contractual liability for specified agreement
\$2,000,000 General Aggregate (other than Products/Completed Operations)
\$2,000,000 General Liability-Products/Completed Operations
\$1,000,000 Personal and Advertising injury
\$ 100,000 Fire Damage Legal Liability
Coverage must include Broad Form property damage and (XCU) Explosion, Collapse and Underground Coverage

Business Automobile Liability – including owned, non-owned and hired car coverage

Combined Single Limit - \$1,000,000 each accident

Umbrella/Excess Liability

\$2,000,000 Each Occurrence/Aggregate

NOTE 1: The commercial general liability insurance shall include contractual liability. The contract documents include an indemnification provision(s). The County makes no representation or warranty as to how the Vendor's insurance coverage responds or does not respond. Insurance coverages that are unresponsive to the indemnification provision(s) do not limit the Vendor's responsibilities outlined in the contract documents.

December 2014

NOTE 2: The intent of this insurance specification is to provide the coverage required and the limits expected for each type of coverage. With regard to the Business Automobile Liability and Commercial General Liability, the total amount of coverage can be accomplished through any combination of primary and excess/umbrella insurance. This insurance shall apply as primary insurance and non-contributory with respect to any other insurance or self-insurance programs afforded the County of Grayson. This policy shall be endorsed to be primary with respect to the additional insured.

NOTE 3: Title 65.2 of the Code of Virginia requires every employer who regularly employs three or more full-time or part-time employees to purchase and maintain workers' compensation insurance. If you do not purchase a workers' compensation policy, a signed statement is required documenting that you are in compliance with Title 65.2 of the Code of Virginia.

COMMONWEALTH OF VIRGINIA
COUNTY OF GRAYSON, VIRGINIA

C O N T R A C T # XXXX

This contract ("Contract"), made this XXth day of XXXX 2014 between the County of Grayson, hereinafter called the "County" and

Legal name of contractor

and its successors, executors, administrators, and assigns, hereinafter called the "Contractor";

WITNESSETH: That the said Contractor agrees with the County, for the consideration herein mentioned, and at the Contractor's own proper cost and expense to do all the work and/or furnish all the tools, labor, materials, equipment, fees and supervision necessary to carry out this Contract in the manner and to the full extent as set forth in Grayson County Invitation for Bid #03-2015 dated September 17, 2015 and the Contractor's bid dated XXXXXXXXXXXX; to the satisfaction of the County, who shall have at all times full opportunity to inspect the work to be done under this Contract.

All terms and conditions, specifications, general and special provisions, plans, drawings, and all documents referred in the Grayson County Invitation for Bid, Project Manual, and Drawings (the "Contract Documents") are hereby incorporated into and made part of this Contract as though completely set forth herein.

It is agreed that the work to be performed by the Contractor under this Contract is to furnish all tools, labor, materials, equipment, fees and supervision necessary to provide Trail System, Grayson County Recreation Park, in accordance with Invitation for Bid #03-2015 dated, September 17, 2015, Contractor's bid dated XXXXXXXXXXXXXXXX, and the general terms, conditions, and requirements (the "Work").

The Work shall be substantially complete and certified by the Project Manager by **July 1st, 2016**.

The Owner and the Contractor recognize that time is of the essence and that the Owner will suffer financial loss/use of property if the Work is not completed by the Substantial Completion date required by the Contract Documents. Both parties recognize the delays, expense, and damages involved in proving a legal proceeding the actual loss suffered by the Owner if the Work is not completed on time. Accordingly, notwithstanding any other provisions of this Contract, and inclement weather or acts of god, the Owner and the Contractor agree, stipulate and fix as liquidated damages if the work is delayed, but not as a penalty, the sum of **One Hundred Dollars (\$100.00)** that the Contractor together with the Contractor's surety shall pay the Owner for each calendar day or part thereof that expires after the date specified for Substantial Completion, if the Contractor does not complete the Work by the Substantial Completion date required by the Contract Documents. The Contractor hereby waives any defense as to the validity of liquidated damages stated in this Agreement on the grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages, and the parties agree that the Owner's entitlement to liquidated damages shall be determined at the time of Substantial Completion and shall not be subject to the claims provisions of the Contract Documents.

The County shall pay to the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be xxxxxx Dollars (\$xx,xxx.xx). Payment shall be due 45 calendar days after the County receives a properly prepared invoice submitted by the Contractor and accepted by the County for Work performed in accordance with the Contract Documents.

In consideration of the foregoing premises the County agrees to pay the Contractor for all items of work performed and/or materials furnished at the unit prices or lump prices under the conditions set forth in documents herein referred to.

The Contractor and any sub-contractor under the direction of the contractor, agrees to follow the requirements for Federal Aid Construction Contracts as outlined in the Attachment- Form 1273.

FIRM: Legal name of Contractor.

County of Grayson
County Administration

ADDRESS XXXXXXXXXXXXXXXXXXXX

P.O. Box 217
Independence, VA 24348

XXXXXXXXXXXXXXXXXXXX

BY _____

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

TITLE _____

Attachment- FWHA Form 1273
Buy America

Change Order

Bid Information:

Bid Number: _____ PO # : _____

Amendment Number: _____ Date: _____

Name of Project: _____ Owner/Agency: _____

Contractor: _____ Telephone Number: _____

The following changes are hereby made to the above referenced contract documents:

Change to Contract Prices:

Original contract price: _____

Current contract price (adjusted by previous change orders): _____

Contract price due to this change order will be (circle) increased or decreased by: _____

Contract price including this change order will be: _____

Change to Contract Times:

Contract Time will be (circle one) Increased/Decreased by (calendar days): _____

Completion date for all work: _____

Approvals

by: _____ Date: _____
(Authorized Signature of Architect/ Engineer, if required)

by: _____ Date: _____
(Authorized Signature of Agency Head)

by: _____ Date: _____
(Signature of County Manager or Superintendent of Schools if required)

Accepted by: _____ Date: _____
(Authorized Signature of Contractor)

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
USE OF DOMESTIC MATERIAL

July 26, 2013

SECTION 102.05 PREPARATION OF BID of the Specifications is amended to include the following:

In accordance with the provisions of Section 635.410(b) of Title 23 CFR, hereinafter referred to as "Buy America", except as otherwise specified, all iron and steel products (including miscellaneous steel items such as fasteners, nuts, bolts and washers) to be permanently incorporated for use on federal aid projects shall be produced in the United States of America regardless of the percentage they exist in the manufactured product or final form they take. Therefore, "Domestically produced in the United States of America" means all manufacturing processes must occur in the United States of America, to mean, in one of the 50 States, the District of Columbia, Puerto Rico or in the territories and possessions of the United States. Manufacturing processes are defined as any process which alters or modifies the chemical content, physical size or shape or final finish of iron or steel material) such as rolling, extruding, bending, machining, fabrication, grinding, drilling, finishing, or coating whereby a raw material or a reduced iron ore material is changed, altered or transformed into a steel or iron item or product which, because of the process, is different from the original material. For the purposes of satisfying this requirement "coating" is defined as the application of epoxy, galvanizing, painting or any other such process that protects or enhances the value of the material. Materials used in the coating process need not be domestic materials.

For the purposes herein the manufacturing process is considered complete when the resultant product is ready for use as an item in the project (e.g. fencing, posts, girders, pipe, manhole covers, etc.) or is incorporated as a component of a more complex product by means of further manufacturing. Final assembly of a product may occur outside of the United States of America provided no further manufacturing process takes place.

Raw materials such as iron ore, pig iron, processed, pelletized and reduced iron ore, waste products (including scrap, that is, steel or iron no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, or the like and steel trimmings from mills or product manufacturing) and other raw materials used in the production of steel and/or iron products may, however, be imported. Extracting, handling, or crushing the raw materials which are inherent to the transporting the materials for later use in the manufacturing process are exempt from Buy America. The use of foreign source steel or iron billet is not acceptable under the provisions of Buy America. For the purposes of this provision all steel or iron material not meeting the criteria as domestically produced in the United States of America will be considered as "foreign" material. All iron and steel items will be classified hereinafter as "domestic" or "foreign", identified by and subject to the provisions herein.

Domestically produced iron or steel ingots or billets shipped outside the United States of America for any manufacturing process and returned for permanent use in a project would not comply with "Buy America" requirements.

Buy America provisions do not apply to iron or steel products used temporarily in the construction of a project such as temporary sheet piling, temporary bridges, steel scaffolding, falsework or such temporary material or product or material that remains in place for the Contractor's convenience.

Section 635.410(b) of Title 23 CFR permits a minimal amount of steel or iron material to be incorporated in the permanent work on a federal-aid contract. The cost of such materials or products must not exceed one-tenth of one percent of the contract amount or \$2500, whichever is greater. The cost of the foreign iron or steel material is defined as its monetary value delivered to the job site

and supported by invoices or bill of sale to the Contractor. This delivered to site cost must include transportation, assembly, installation and testing.

In the event the total cost of all "foreign" iron and steel product or material does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater, the use of such material meeting the limitations herein will not be restricted by the domestic requirements herein. However, by signing the bid, the Bidder certifies that such cost does not exceed the limits established herein.

Waivers:

With prior concurrence from Federal Highway Administration (FHWA) headquarters, the Federal Highway Division Administrator may grant a waiver to specific projects provided it can be demonstrated:

1. that the use of domestic steel or iron materials would be inconsistent with the public interest; or
2. materials or products requested for use are not produced in the United States in sufficient or reasonably available quantities and are of satisfactory quality for use in the permanent work.

The waiver request shall be submitted with supportive information to include:

1. Project number\description, project cost, waiver item, item cost, country of origin for the product, reason for the waiver, and
2. Analysis of redesign of the project using alternative or approved equal domestic products

In order to grant such a waiver the request for the waiver must be published in the Federal Register for a period not less than 15 days or greater than 60 days prior to waiving such requirement. An initial 15 day comment period to the waiver will be available to the public by means of the FHWA website: <http://www.fhwa.dot.gov/construction/contracts/waivers.cfm>. Following that initial 15 day period of review and comment the request for waiver will be published by the FHWA in the Federal Register. The effective date of the FHWA finding, either to approve or deny the waiver request, will be 15 days following publication in the Federal Register.

Only the FHWA Administrator may grant nationwide waivers which still are subject to the public rulemaking and review process.

Alternative Bidding Procedures:

An alternative bidding procedure may be employed to justify the use of foreign iron and/or steel. To qualify under this procedure the total project is bid using two alternatives, one based on the use of domestic products and the other, the use of corresponding foreign source steel and/or iron materials.

In accordance with the provisions of Section 103.02 the Contract will be awarded to the lowest responsive and responsible bidder who submits the lowest total bid based on furnishing domestic iron or steel unless such total exceeds the lowest total bid based on furnishing foreign iron and/or steel by more than 25 percent, in which case the award will be made to the lowest responsive and responsible bidder furnishing foreign iron and/or steel based upon furnishing verifiable supportive data. The bidder shall submit a bid based on permanently incorporating only domestic iron and/or steel in the construction of the project. The bidder may also submit a bid for the same proposed contract based on being allowed to permanently incorporate corresponding foreign iron and/or steel materials meeting the other contract requirements into the work on the contract. If he chooses to submit such a bid, that alternate bid shall clearly indicate which foreign iron and/or steel items will be permanently

installed in the work as well as contain prices for all other items listed in the corresponding domestic proposal to complete a total "Foreign" bid.

In the event the contract is awarded to the bidder furnishing foreign iron and/or steel materials or items the provision for price adjustment of steel items will be permitted, however, price fluctuations shall use the U.S. index as stated in the Special Provision for Price Adjustment For Steel. The Contractor must indicate which corresponding eligible steel items he chooses price adjustment to apply. In the event the contract is awarded to a bidder furnishing foreign iron and/or steel items and during the life of that contract the Contractor discovers he can not furnish foreign iron and/or steel material as originally anticipated and agreed upon, he shall be responsible to honor the total bid price and furnish such iron and/or steel materials meeting the contract requirements from other sources as necessary to complete the work.

In the event the Contractor proposes to furnish "foreign" iron and steel and can verify a savings in excess of 25 percent of the overall project cost if bid using domestic materials, the Contractor shall submit a second complete paper bid proposal clearly marked "Foreign" including Form C-7 and supportive data supplement on all sheets. Supportive data shall list, but not be limited to, origin of material, best price offer, quantity and complete description of material, mill analysis, evidence or certification of conformance to contract requirements, etc. The "Foreign" bid shall be completed using the best price offer for each corresponding bid item supplying foreign material in the alternative bid and submit the same with the Contractor's "Domestic" bid. The Contractor shall write the word "Foreign" by the bid total shown on Form C-7 as well as last page of Schedule of Items showing the total bid amount. The bidder shall also contact the State Contract Engineer to inform him that he is also submitting an alternate "Foreign" paper bid..

The information listed on the supportive data sheet(s) will be used to provide the basis for verification of the required cost savings. In the event comparison of the prices given, or corrected as provided in Section 103.01 of the Specifications, shows that use of "foreign" iron and steel items does not represent a cost savings exceeding the aforementioned 25 percent, "domestic" iron and/or steel and prices given there for shall be used and the "100 percent Domestic Items Total" shall be the Contractor's bid.

Certification of Compliance:

Where domestic material is supplied, prior to incorporation into the Work, the Contractor shall furnish to the Department a certificate of compliance (such as may be furnished by steel mill test reports) that all steel and/or iron products supplied to the project except as may be permitted (one-tenth of one percent of the total contract cost or \$2,500, whichever is greater) and permanently incorporated into the work satisfies the domestic requirements herein. This certification shall contain a definitive statement about the origin of all products covered under the provisions of Buy America as stated herein.

In lieu of the Contractor providing personal certification, the Contractor may furnish a stepped certification in which each handler of the product, such as supplier, fabricator, manufacturer, processor, etc. furnishes an individual certification that their step in the process was domestically performed.