VIRGINIA RAILWAY EXPRESS
NORTHERN VIRGINIA TRANSPORTATION COMMISSION
POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION
BENCHMARK ROAD SLOPE STABILIZATION

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VICINITY MAP
NOT TO SCALE

END PROJECT
MP CFP 54.3

BEGIN PROJECT
MP CFP 53.5
SCOPE OF WORK
1. Work required in existing CSX right-of-way (ROW) every effort has been made to identify discrepancies and errors in the existing ROW as shown on plans and CSX GIS maps. However, since this is an existing ROW, the Contractor can expect and should plan on encountering unexpected conditions and varying existing site conditions. Actual field conditions may require modifications in construction details and quantities. The Contractor is responsible to check and verify all details including geometry and elevations prior to commencing work.

2. SPECIFICATIONS
   b. Construction specifications: visit road and bridge specifications, 2016

   Virginia work area protection manual, 2nd edition, revision 1, April 1, 2015.

3. The Contractor shall comply with all railroad (CSX), local, state and federal safety and environmental regulations.

4. The Contractor shall comply with all noise ordinances, if applicable.

5. The Contractor shall limit construction equipment and personnel to the areas of embankment stabilization to avoid disruptions to the ROW, adjacent and exist operations.

6. The Contractor shall submit a detailed project schedule and sequencing plan in accordance with Division 1 Specifications.

7. The Contractor shall submit a detailed traffic control plan (where required) a minimum of 15 days prior to start of work.

8. Changes in scope and deviation from plans shall be submitted to VRE. Approval from VRE shall be required prior to construction.

9. Refers to utilities or property damage as a result of contractors negligence or method of operation shall be made at the contractors expense before proceeding with construction.

10. The Contractor shall be responsible to resist any sign posts or other artifacts removed during the construction to facilitate his work, except where specified on the plans or as directed by the Engineer.

11. The Contractor shall be responsible for obtaining all permits required by governing jurisdictions that have not already been obtained by VRE.

12. Where traffic control is required, this project is to be constructed in accordance with the Virginia Work Area Protection Manual, 2nd edition revision 1, April 1, 2015.

13. VRE will obtain VLD and use permit for work within CSX right-of-way.

RAILROAD (CSX) COORDINATION
1. The Contractor shall coordinate with CSX and obtain approvals prior to performing any work on or near the track.
2. The Contractor will construct his work without the existing right-of-entry permit from CSX. The Contractor will be required to obtain railroad protective insurance and to conduct his work in accordance with CSX regulatory requirements.
3. The Contractor must coordinate construction activities with VRE and CSX. Flagging services may take up to 45 days to obtain. Plaques are provided based on availability. There are no guarantees that a plaque will be provided in the time listed.
4. CSX flagging service will be paid for by VRE.
5. The Contractor shall maintain contact with the CSX flaggers and follow their instructions at all times.
6. The Contractor will schedule and coordinate all plaque installations with CSX.
7. The Contractor is responsible for locating all existing utilities and railroad signals throughout the duration of the project. The Contractor must be cooperative with CSX to have their facilities marked in the field. Prior to performing work with the potential to impact railroad infrastructure, a positive response system must be checked by a CSX flagman.
8. The Contractor shall be responsible for protecting railroad facilities from damage during construction.
9. The Contractor must plan and perform the work in a manner such that the CSX tracks at the location remain fully capable of carrying rail traffic during the work period.
10. The Contractor shall not impede CSX access along its track and right-of-way.
11. The Contractor shall not remove any existing CSX owned material, enclosures, but not limited to, stone, concrete, railroad appurtenances, device components, and drainage facilities from CSX right-of-way without prior authorization from CSX.

DRAINAGE
1. The locations of all drainage structures shown on these plans are approximate only.
2. All existing ditches shall be be graded to drain at the direction of the Engineer. The cost incidental to this work shall be included in the contract price for other items.

INCIDENTALS
1. Clearing and grubbing shall be confined to those areas needed for construction. No dikes or shrubs in unsuitable areas shall be cut without the permission of the Engineer.
2. To insure understanding utility survey data shown on these plans was obtained with reasonable care from Virginia Railway Express (VRE) in establishing design controls for the project. VRE has no reason to suspect that such information is not reasonable and adequate as an approximate indication of the utility locations.
3. All underground utilities and railroad signals existing on this site are to be marked with a positive response system as shown on the plans. The Contractor shall coordinate with CSXT to have their facilities marked in the field, prior to performing work with the potential to impact railroad infrastructure and CSXT and finding that all of the following conditions has been met.
   a. CSXT and all notified utilities either managed their lines or reported that no facilities are present in the area of excavation.
   b. CSXT has confirmed the location of all buried communication and miscellaneous utilities that may exist in the area of excavation.
   c. CSXT can produce written confirmation that all underground utilities have been confirmed.
4. The "underground" utility survey data on this project has been processed by consultant and is based on information from CSX and are not necessarily accurate as an approximate indication of the right-of-WAY. VRE does not in any way warrant or guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.
5. The "underground" utility survey data on this project has been provided by consultant and is based on information from CSX and are not necessarily accurate as an approximate indication of the right-of-WAY. VRE does not in any way warranty or guarantee, either expressly or by implication, the sufficiency of the information for bid purposes.
6. Permits: the following permits are in force for this project:
   a. County School Permits
   b. Girl Scout Permits
   c. Temporary Easement
   d. Gas Line Plantation Pipeline
   e. Temporary Easement
   f. Flip Optic Underground cable
   g. Road/Telephone Communication Cable
   h. Telephone underground conduit
   i. Excavation tracks
   j. Bridges
   k. Proposed retaining wall
   l. CULVERTS
   m. Drop inlet
   n. Oversize Load
   o. Overhead Power Lines
   p. Alberta Power Lines
   q. Trees
   r. Utility poles
   s. Miscellaneous
   t. Minor Contour
   u. Gas Line & Plantation Pipe Line
   v. Temporary Erosion & Siltation Controls
   w. Contractor shall comply with all requirements of the applicable permits. The Contractor shall restrict construction activities in wetland areas delineated on the plans unless otherwise noted.

EROSION AND Siltation CONTROL
1. The temporary erosion and siltation controls shown on the plans are intended to provide a general plan for controlling erosion and siltation within the project limits. The erosion and siltation controls are shown on the plans and are based on field conditions at the time of plan development and an assumed sequence of construction. The Contractor shall be responsible for identifying and maintaining erosion and siltation controls. Any additional erosion and siltation controls based on field conditions encountered at the time of construction and the selected sequence of construction.
2. All permanent erosion and siltation controls shall be installed prior to any land disturbing activities. The Contractor shall coordinate with CSXT to have their facilities marked in the field. Prior to performing work with the potential to impact railroad infrastructure, a positive response system must be checked by a CSX flagman.
3. Contractors shall be responsible for erosion and siltation controls and for coordinating with CSX to obtain necessary approvals prior to installation.

GRADING
1. Earth excavation material shall be disposed of on CSX right-of-way in areas shown on plans and as directed by the Engineer. The Contractor shall submit a general site plan for approval in accordance with Section 9 of the VSU road and bridge specifications.

ISSUED FOR BID
BENCHMARK ROAD SLOPE STABILIZATION
PROJECT NO.: 020-003
INVOICE NO.: GN-001
DATE: 8/30/2019
DRAWN BY: KRJ
ISSUED BY: STV
DATE: 8/30/2018
BENCHMARK ROAD SLOPE STABILIZATION
DETAILED DESIGN SHEET
LEGEND
**MINIMUM REQUIREMENTS FOR STABILIZED CONSTRUCTION ENTRANCE**

**PLAN**

- Cap (六十) 10" to crown edge of exist. pavement with No. 68 or 78 aggregate.

- No. 1 Course Aggregate

**PROFILE**

- Surface water shall be piped under the construction entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.

- The entrance shall be maintained in a condition which will prevent tracking onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and/or cleanout of any measures used to trap sediment. All sediment spillage or tracked onto public rights-of-way shall be removed.

- Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.

- Periodic inspection and needed maintenance shall be provided after heavy use and each rain.

- Cost of Stabilized Construction Entrance to be measured and paid for per each and shall include installation, maintenance, and removal.

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**NOTE:**

- Cost of Temporary Silt Fence to be measured and paid for per linear foot and shall include installation, maintenance, and removal.
### Trackside Seeding

**Table: Trackside Seeding**

<table>
<thead>
<tr>
<th>Mix</th>
<th>LBS./Acres</th>
<th>Description</th>
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<tbody>
<tr>
<td>95-106</td>
<td>10</td>
<td>100% Certified Tall Fescue</td>
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<tr>
<td>0</td>
<td>2</td>
<td>Red Top Grass</td>
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<tr>
<td>30</td>
<td>20</td>
<td>100% Winter Rye</td>
</tr>
<tr>
<td>0-5</td>
<td>20</td>
<td>100% Foxtail Millet</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>100% Winter Rye</td>
</tr>
<tr>
<td></td>
<td>100% Crownvetch Legume</td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 900

### Seeding Schedule

**February thru May**
- **Type A:** Use unseeded seed
- **Type C:** Use unseeded seed
- **Type D:** Use unseeded seed

**May thru August 31st:**
- **Type A:** Use seed
- **Type C:** Use seed
- **Type D:** Use seed
- **Type E:** Use seed

**September thru November 15th:**
- **Type A:** Use seed
- **Type C:** Use seed
- **Type D:** Use seed

**November 16th thru February 28th:**
- **Type A:** Use seed
- **Type C:** Use seed
- **Type D:** Use seed

**March thru May:**
- **Type A:** Use seed
- **Type C:** Use seed
- **Type D:** Use seed

**Notes:**
- The size of disturbed areas on this project that will require the establishment of grasses and/or legumes including areas for overseeding is 1.1 acres.
- Overseeding rates shall be 100 percent of the seed mixture supplied without fertilization.
- In areas where vegetation is established and not disturbed, vegetation shall be cut prior to overseeding.
- The engineer will require the contractor to perform supplemental seeding when less than 75 percent uniform stand of the permanent grass species in the mixture is obtained.
- Gleysols species such as rye and millet are temporary varieties and require supplemental seeding.
- Notes apply to schedule.
- Legume seed mixshursop topsoil, organic matter, and seed legume and seeding legume shall not be used on shoulders and other locations flatter than 3:1 slope.
- Legume seed shall be inoculated with the appropriate strain and rate of bacteria for microorganisms to be used on areas that are to be left dormant for more than 15 days.
- Type D erosion control mulch as directed by the engineer is to be used only on areas that are to be regraded or later disturbed, if left vacant for more than 15 days.
- Type E erosion control mulch, as directed by the engineer, is to be used on areas that are to be left vacant for more than 15 days between December 1 and February 28.
- Seedings defined as the purpose of determining whether hulled or unhulled seed is preferable to core mix + additive C.
- May thru October - Use hulled seed
- November thru April - Use unseeded seed
- Type D mulch retreats to be used on newly seeded areas
- Type D mulch shall be applied at 2 tons per acre to provide 100 percent coverage
- Type E mulch shall be applied with premulch at the rate of 100 lbs. per acre and/or mulch tackifier
- Mulch shall be applied at a rate of 1000 lbs. per acre
- Fertilize with 10-20-10 at a rate of 100 lbs. per acre
- For hydroseeding, use five times the dry seeding rate of inoculant
- Legume seed shall be inoculated with the appropriate strain and rate of bacteria
- For hydroseeding, apply five times the dry seeding rate of inoculant
- Erosion control mulch (straw) to be used on new areas
- Erosion control mulch (fiber mulch) may be substituted for type D mulch at the recommendation of the engineer
- Erosion control mulch as listed on the VDOT approved products list shall be applied in accordance with the manufacturer's recommendations
- All seed must be in accordance with VDOT seed specifications for grasses and legumes and be provided at the project site in bags not opened and labeled for use on VDOT projects with a green tag certifying inspection by the Virginia Crop Improvement Association.
NOTE:

1. POSTED SPEED LIMIT ON BENCHMARK ROAD IS 40 MPH.

2. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, 2011 EDITION, 12-31-2014 AND SECTION 62-41 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

3. THE CONTRACTOR SHALL MAINTAIN TWO LANES OF TRAFFIC ON BENCHMARK ROAD DURING CONSTRUCTION OF THE PROJECT UNLESS OTHERWISE APPROVED BY VDOT.

4. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO VDOT FOR APPROVAL PRIOR TO ANY WORK OVERLAP ON BENCHMARK ROAD.

5. LANE CLOSURES OF BENCHMARK ROAD DURING APPROACH TUNNEL WORK SHALL BE SCHEDULED BETWEEN THE HOURS OF 8:00am TO 5:00pm, MONDAY THROUGH FRIDAY.
<table>
<thead>
<tr>
<th>PAY ITEM NUMBER</th>
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<th>PAY ITEM CODE</th>
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<tr>
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<td>GENERAL CONDITIONS</td>
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<td>MOBILIZATION</td>
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<tr>
<td>8</td>
<td>RIPRAP CLASS A1</td>
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<td>TON</td>
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<tr>
<td>9</td>
<td>SLOPE GRADE CUTTING</td>
<td>1</td>
<td>LF</td>
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<tr>
<td>10</td>
<td>REGULAR SEEDING</td>
<td>1</td>
<td>LF</td>
</tr>
<tr>
<td>11</td>
<td>Biotic Soil Media</td>
<td>1</td>
<td>LF</td>
</tr>
</tbody>
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**Method of Measurement and Payment**

- No Measurement Shall Be Made By the Contractor. General Conditions Shall Be PAID At the Contract LUMP SUM Price.
- No Measurement Shall Be Made By the Contractor. Mobilization Shall Be PAID At the Contract LUMP SUM Price. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Traffic Control, SHALL Be PAID For At the Contract LUMP SUM Price. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Underdrain Pipe Shall Be PAID For At the Contract Unit Price Per Each. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Temporary Silt Fence SHALL Be PAID For At the Contract Unit Price Per LINEAR FOOT. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Construction Entrance SHALL Be PAID For At the Contract Unit Price Per Each. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Undercut Excavation SHALL Be PAID For At the Contract Unit Price Per CUBIC YARD. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Underdrain Pipe SHALL Be PAID For At the Contract Unit Price Per LINEAR FOOT. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Riprap Class A1 SHALL Be PAID For At the Contract Unit Price Per TON. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Slope Grade Cutting SHALL Be PAID For At the Contract Unit Price Per LINEAR FOOT. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Regular Seeding Shall Be PAID For At the Contract Unit Price Per POUND. This Price Shall Include Demobilization.
- No Measurement Shall Be Made By the Contractor. Biotic Soil Media SHALL Be PAID For At the Contract Unit Price Per POUND. This Price Shall Include Demobilization.

**Estimation Technical Specifications Section**

- ISSUED FOR BID | 8/30/2019
BENCHMARK ROAD SLOPE STABILIZATION

PLAN
STA. 2948+00 TO STA. 2960+00

GRAPHIC SCALE

AREA OF ERODED SLOPE
LIMITS OF SLOPE STABILIZATION

LIMITS FOR OVERSEEDING OF SLOPE

MATCHLINE ELEV.

AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
AREA 8
AREA 9
AREA 10
AREA 11

AREA OF GRADE & SEED

TO RICHMOND
TO WASHINGTON

MATCHLINE STA 2948+00 SEE DRAWING NO. PP-003
MATCHLINE STA 2960+00 SEE DRAWING NO. PP-005

AREA OF ERODED SLOPE
LIMITS OF SLOPE STABILIZATION

LIMITS FOR OVERSEEDING OF SLOPE
TYPICAL SLOPE STABILIZATION DETAIL

1. **EXISTING SLOPES ARE REINFORCED WITH GEOGRID. THE CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DISTURB OR DAMAGE THE EXISTING GEOGRID.**

2. **GRADE AND SHAPE THE AREA TO BE STABILIZED TO A DEPTH OF APPROXIMATELY 1'-6".**

3. **EXISTING GEOGRID SHALL BE COVERED BY A MINIMUM OF 6" OF COMPACTED MATERIAL.**

4. **AT ERODED AREAS OF THE SLOPE WHERE THE EXISTING GEOGRID IS EXPOSED, THE CONTRACTOR SHALL CAREFULLY PLACE AND COMPACT ON-SITE SOIL AND SHAKE FREE OF EXCESS EXCAVATED MATERIAL.**

5. **PLACE GEOTEXTILE BEDDING MATERIAL AND CLASS A1 DRY RIPRAP IN ACCORDANCE WITH DETAILS ON DRAWING NO. PP-004, PP-005 AND AS MARKED IN THE FIELD BY THE ENGINEER.**

6. **AT ERODED AREAS OF THE SLOPE WHERE THE EXISTING GEOGRID IS EXPOSED, THE CONTRACTOR SHALL CAREFULLY PLACE AND COMPACT ON-SITE SOIL AND SHAKE FREE OF EXCESS EXCAVATED MATERIAL.**

7. **THE SLOPE STABILIZATION REPAIRS DURING THE SAME WORK SHIFT.**

8. **CLEAN OUT EXISTING ROADSIDE DITCH AS REQUIRED TO DRAIN.**

9. **EDGE OF EXIST. BENCH**

**NOTES:**

1. **THE COST OF GEOTEXTILE DRAINAGE FABRIC AND #57 AGGREGATE SHALL BE INCLUDED IN THE COST OF UNDERDRAIN PIPE.**

2. **THE PERFORATED PIPE UNDERDRAIN SHALL BE SLOPED TOWARDS THE SLOPE DRAIN.**

3. **GEOTEXTILE DRAINAGE FABRIC SHALL HAVE AN EQUIVALENT OPENING NOT GREATER THAN US STANDARD NO. 70 SIEVE.**

4. **SLOPE DRAIN (6" Ø NON-PERFORATED PIPE)**

5. **EXISTING GEOGRID SHALL BE COVERED BY A MINIMUM OF 6" OF COMPACTED MATERIAL.**

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**TYPICAL UNDERDRAIN / SLOPE DRAIN DETAIL**

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**UNDERDRAIN DETAIL**

**NOTES:**

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**SLOPE STABILIZATION DETAILS**
THE CROSS SECTIONS SHOWN IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION. THE CROSS SECTIONS SHOWN IN THESE PLANS DEPICT THE EXISTING GROUND CONDITIONS, INCLUDING THE APPROXIMATE LOCATIONS OF EXISTING REINFORCED SLOPES, UTILITIES, AND OTHER MANMADE FEATURES.

BENCHMARK ROAD SLOPE STABILIZATION

CROSS SECTIONS
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DISPOSAL AREA

EXIST. PLANTATION PIPELINE

ACCESS ROAD

ROW

EXIST. TRACK 3

EXIST. TRACK 2

EXIST. TRACK 1

CROSS SECTIONS

IFB NO:

DRAWING NO:

SCALE:

SHEET NO:

BENCHMARK ROAD SLOPE STABILIZATION

10800 Midlothian Turnpike
Richmond, Virginia 23235

STV

DESIGNED BY:

CHECKED BY:

DRAWN BY:

DATE:

REV.NO.

APPROVED BY VRE

1" = 10'

KRJ

KRJ

RCB

9/30/2019

RONALD C. BRIGGS
Lic. No. 011415

ISSUED-FOR-BID

020-003

14 OF 21
The cross sections shown in these plans are for informational purposes only and are not to be used for any type of construction. The cross sections shown in these plans depict the existing ground conditions, including the approximate locations of existing reinforced slopes, utilities, and other manmade features. The cross sections shown in these plans are for informational purposes only and are not to be used for any type of construction.
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BENCHMARK ROAD SLOPE STABILIZATION
CROSS SECTIONS

ISSUED-FOR-BID
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BENCHMARK ROAD SLOPE STABILIZATION

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