COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED PEDESTRIAN ACCESS IMPROVEMENTS

COUNTRYSIDE ELEMENTARY
SAFE ROUTES TO SCHOOL
INDEX OF SHEETS

SHEET INDEX

Sheet Number  Sheet Title
1       TITLE SHEET
1A      LOCATION MAP
1B      SHEET INDEX
1C      RIGHT OF WAY DATA SHEET
1D      SURVEY CONTROL
1E      EROSION & SEDIMENT CONTROL NARRATIVE
1E(1)   EROSION & SEDIMENT CONTROL DETAILS
1E(2)   EROSION & SEDIMENT CONTROL PLAN PHASE I (TRIPLE SEVEN RD)
1E(3)   EROSION & SEDIMENT CONTROL PLAN PHASE I (TRAIL)
1E(4)   EROSION & SEDIMENT CONTROL PLAN PHASE II (TRIPLE SEVEN RD)
1E(5)   EROSION & SEDIMENT CONTROL PLAN PHASE II (TRAIL)
1F      GEOMETRIC DATA
1G      TRANSPORTATION MANAGEMENT PLAN
1G(1)   TRANSPORTATION MANAGEMENT PLAN & SEQUENCE OF CONSTRUCTION
2       GENERAL NOTES
2A      TYPICAL SECTIONS
2B      RAMP PLAN
2C-2C(1) DETAIL SHEETS
03-03A   GRADING, DRAINAGE, AND PAVEMENT PLAN (TRIPLE SEVEN RD)
03B      EXISTING EDGE OF PAVEMENT PLAN & PROFILE (TRIPLE SEVEN RD)
4       GRADING, DRAINAGE, AND PAVEMENT PLAN (TRAIL)
5-5(1)   STORM SEWER PROFILE
5A      STORM SEWER COMPUTATIONS
6       OUTFALL ANALYSIS
6A      OUTFALL ANALYSIS CROSS SECTIONS
7       SIGNAGE AND PAVEMENT MARKING PLAN
### Right of Way Data Sheet

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### References
- Profiles, Details, Drainage
- Description Sheets, etc.

**Project Manager:**

**Surveyed By:**

**Designed By:**

**J2 Engineering, Inc.**

**James C. Bishoff, PE**

**J2 Engineers, Inc.**

**10/01/2021**

**Jonathan D. Wilfong**

**Lic. No. 045058**
EROSION AND SEDIMENT CONTROL

CONSTRUCTION ACTIVITY:

Section 1.02 -- Project Description:

Tripleseven Road Section

Existing conditions along the Trail section of the project are to be designed and classified as an urban local street with two intersecting two-lane shoulders (flowing north to south), classified as an urban local street with two intersecting two-lane shoulders (flowing north to south). Site development in the project area is constrained to the existing site characteristics.

Existing Site Conditions:

Existing Site Conditions:

1. Existing roads that provide construction access to the site will be maintained to stay free of mud and debris.

2. The area to the east is single family detached subdivision Glen Heather.

3. The area to the west is tripleseven Road. The land characteristics seem to be generally impervious as the slopes range from shallow to steep.

4. The area to the north is Countryside Elementary School to the existing asphalt path. A total of approximately 100 feet of the project alignment will be contained within the project.

Project Description:

The area to the north is Countryside Elementary School to the existing asphalt path. A total of approximately 100 feet of the project alignment will be contained within the project.

Adjacent Areas:

Adjacent Areas:

1. Existing conditions along this section consist of a two-lane road with shoulders (flowing north to south), classified as an urban local street with two intersecting two-lane shoulders (flowing north to south).

2. The area to the west is single family detached subdivision Glen Heather.

3. The area to the east is tripleseven Road. The land characteristics seem to be generally impervious as the slopes range from shallow to steep.

4. The area to the north is Countryside Elementary School to the existing asphalt path. A total of approximately 100 feet of the project alignment will be contained within the project.

Existing roads that provide construction access to the site will be maintained to stay free of mud and debris.

5. The area to the east is single family detached subdivision Glen Heather.

6. The area to the west is tripleseven Road. The land characteristics seem to be generally impervious as the slopes range from shallow to steep.

7. The area to the north is Countryside Elementary School to the existing asphalt path. A total of approximately 100 feet of the project alignment will be contained within the project.

Project Description:

The area to the north is Countryside Elementary School to the existing asphalt path. A total of approximately 100 feet of the project alignment will be contained within the project.

Slopes range from shallow to steep.

Section 1.03 -- Purpose:

The purpose of this document is to describe the erosion and sediment control measures to be implemented during the construction of the project. These measures are intended to minimize the impact of construction activities on the natural environment.


drain lines

Site

Geotechnical Notes

Soils Map

Scale: 1" = 500'
NOTES:
1. CONTRACTOR TO PROVIDE TEMPORARY SEEDING & MULCHING (TS & MU) OUTSIDE OF THE PAVED AREA WITHIN LIMITS OF CLEARING.
REFERENCES
(PROFILES, DETAILS, DRAINAGE DESCRIPTION SHEETS, ETC.)

NOTES:
1. CONTRACTOR TO PROVIDE TEMPORARY SEEDING & MULCHING (TS & MU) OUTSIDE OF THE PAVED AREA WITHIN LIMITS OF CLEARING.

EROSION AND SEDIMENT CONTROL LEGEND

COMMENTS

J2 ENGINEERING, INC.

JAMES C. BISHOFF, PE

10/01/2021

JONATHAN D. WILFONG

G
V
O
C
P
S
I
O
F
E
R
N
A
L
A
M
M
O
N
W
L
T
H
A
R
I
E
E
I
R
G
I
N
I
R
A
N
L
E
A
D
S
H
A
T
S
M
O
N
W
L
T
H
A
R
I
E
E
I
R
G
I
N
I
R
A
N
L
E
A
D
S
H
TRANSPORTATION MANAGEMENT PLAN AND SEQUENCE OF CONSTRUCTION

**Lane Changes on a Two Lane Roadway Using Flaggers**

- **Condition:**
  - Portable Temporary Rumble Strips (PTRS) shall be used as noted in Section 6F.99.
  - Regular flagging should be provided for limited access highways. For all other highways, the use of temporary flaggers may be considered in lieu of or in addition to permanent flagging.

- **Procedure:**
  - Temporary flagging shall be used in lieu of or in addition to permanent flagging on a limited access highway.
  - Regular flagging shall be provided for limited access highways.

- **Flags:**
  - All flaggers shall be certified and have their certification used in their possession when working on flagging operations.
  - A pedestrian shall always be used in or near the area of flagging operations when necessary.

- **Standards:**
  - Temporary flagging shall be used in lieu of or in addition to permanent flagging on a limited access highway.
  - Flags shall be maintained at an angle to the roadway.

- **Signs:**
  - Portable temporary rumble strips shall be used as noted in Section 6F.99.
GRADING, DRAINAGE, AND PAVEMENT PLAN
(TRIPLE SEVEN RD)

REFERENCES
(PROFILES, DETAILS, DRAINAGE DESCRIPTION SHEETS, ETC.)

GRAPHIC SCALE
1 INCH = 100 FEET

1 REFERENCE SIDEWALK BUFFER WALK
2 REFERENCE SPILL STUDY FOR SPILL
   PREVENTION ON TRIPLE SEVEN ROAD
3 ALL SPOT SHOTS SHOWN ARE AT TOP OF
   CURB UNLESS OTHERWISE NOTED

FILE NO. 045058

J2 ENGINEERING, INC.
JAMES C. BISHOFF, PE

10/01/2021

JONATHAN D. WILFONG

TRIPLE SEVEN ROAD
6.7M TRIP 1004707 60076-403 3/05-75

10/01/2021

REFERENCES
(GRADING DRAINAGE PAVEMENT PLAN TRIPLE SEVEN RD NO DRAWING SHEET)

GRAPHIC SCALE
1 INCH = 50 FEET
EXISTING EDGE OF PAVEMENT PLAN & PROFILE

TRIPLE SEVEN ROAD

NOTES:
1. REFERENCE SIDEWALK BUFFER WAIVER
2. REFERENCE SPEED STUDY FOR SPEED LIMITATION ON TRIPLE SEVEN ROAD

SECTION A-A

Channel Report

Ditch A-A Cross Section (10 ft)

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Depth (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (in)</td>
<td>2.80</td>
</tr>
<tr>
<td>Diameter (in)</td>
<td>1.50</td>
</tr>
<tr>
<td>Inlet Flow</td>
<td>208.64</td>
</tr>
<tr>
<td>Slope (%)</td>
<td>1.30</td>
</tr>
<tr>
<td>Calculated Water Depth</td>
<td>0.90</td>
</tr>
<tr>
<td>Design Depth (ft)</td>
<td>0.90</td>
</tr>
<tr>
<td>Design Slope (in)</td>
<td>1.30</td>
</tr>
<tr>
<td>Design Water Depth</td>
<td>0.90</td>
</tr>
</tbody>
</table>

GRAPHIC SCALE
1 INCH = 5 FEET VERTICAL

REFERENCES
(DESCRIPTION SHEETS, ETC.)
OUTFALL ANALYSIS

PRE-DEVELOPMENT AND POST-DEVELOPMENT TO OUTFALL A

PRE-DEVELOPMENT

POST-DEVELOPMENT

AREA = 12.96 AC.

Ce = 0.55 AC.

Ce = 0.55 AC.

AREA = 12.96 AC.

Ce = 0.55 AC.

Ce = 0.55 AC.

PRE-DEVELOPMENT AND POST-DEVELOPMENT TO OUTFALL B

PRE-DEVELOPMENT

POST-DEVELOPMENT

AREA = 15.40 AC.

Ce = 0.55 AC.

Ce = 0.55 AC.

AREA = 15.40 AC.

Ce = 0.55 AC.

Ce = 0.55 AC.

TC TO CULVERT 6A TO 7

Table: Flow Rates

<table>
<thead>
<tr>
<th>Flow Type</th>
<th>Area</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Flow</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Capillary</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Surface Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Combined Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
</tbody>
</table>

TC TO CULVERT 6A TO 7

Table: Flow Rates

<table>
<thead>
<tr>
<th>Flow Type</th>
<th>Area</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Flow</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Capillary</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Surface Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Combined Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
</tbody>
</table>

TC TO CULVERT 5A TO 5B

Table: Flow Rates

<table>
<thead>
<tr>
<th>Flow Type</th>
<th>Area</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Flow</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Capillary</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Surface Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Combined Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
</tbody>
</table>

TC TO CULVERT 5A TO 5B

Table: Flow Rates

<table>
<thead>
<tr>
<th>Flow Type</th>
<th>Area</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet Flow</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Capillary</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Surface Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Combined Runoff</td>
<td>0.20</td>
<td>0.05</td>
</tr>
</tbody>
</table>

OUTFALL ANALYSIS CROSS SECTIONS

REFERENCES

(DESIGN, DETAILS, DRAINAGE SYSTEM, ETC.)
OUTFALL ANALYSIS CROSS SECTIONS

**OUTFALL A CROSS-SECTION 1**

- **NOTE:**
  - OUTFALL A CROSS SECTION 1
  - LINED WITH NON-MAINTAINED GRASS USING $n = 0.050$
  - PERMISSIBLE VELOCITY = 4 FPS - CHAPTER 5 OF VESCH
  - SOIL IS NON-EROSIVE K VALUE = 0.24 - CHAPTER 6 APPENDIX C OF VESCH
  - FLOWS COMBINED FROM STORM SYSTEM: $Q_2 = 18.55$ CFS, $Q_{10} = 24.92$ CFS.

**Channel Report**

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Depth</td>
<td>2.0 ft</td>
</tr>
<tr>
<td>Slope</td>
<td>2%</td>
</tr>
<tr>
<td>Erosion</td>
<td>0.24</td>
</tr>
<tr>
<td>Soils</td>
<td>Non-erosive</td>
</tr>
<tr>
<td>Velocity</td>
<td>4 FPS</td>
</tr>
<tr>
<td>Grass</td>
<td>Non-maintained</td>
</tr>
<tr>
<td>$n$ Value</td>
<td>0.050</td>
</tr>
</tbody>
</table>

**OUTFALL B CROSS-SECTION 1**

- **NOTE:**
  - OUTFALL B CROSS SECTION 1
  - LINED WITH NON-MAINTAINED GRASS USING $n = 0.050$
  - PERMISSIBLE VELOCITY = 3 FPS - CHAPTER 5 OF VESCH
  - SOIL IS EROSI VE $K$ VALUE = 0.37 - CHAPTER 6 APPENDIX C OF VESCH
  - FLOWS COMBINED FROM STORM SYSTEM: $Q_2 = 18.93$ CFS, $Q_{10} = 25.45$ CFS.

**Channel Report**

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Depth</td>
<td>2.0 ft</td>
</tr>
<tr>
<td>Slope</td>
<td>2%</td>
</tr>
<tr>
<td>Erosion</td>
<td>0.37</td>
</tr>
<tr>
<td>Soils</td>
<td>Erosive</td>
</tr>
<tr>
<td>Velocity</td>
<td>3 FPS</td>
</tr>
<tr>
<td>Grass</td>
<td>Non-maintained</td>
</tr>
<tr>
<td>$n$ Value</td>
<td>0.050</td>
</tr>
</tbody>
</table>