CITY OF RICHMOND, VIRGINIA
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION ENGINEERING DIVISION

BIKE LANE
Williamsburg Avenue
VHB PROJECT NO. 33965.12

INDEX OF SHEETS

<table>
<thead>
<tr>
<th>Sheet Title</th>
<th>Sheet No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGEND AND GENERAL NOTES</td>
<td>C1.00</td>
</tr>
<tr>
<td>OVERALL EXISTING CONDITIONS PLAN</td>
<td>C2.00</td>
</tr>
<tr>
<td>CENTER LINES PLAN</td>
<td>C2.01 - C2.03</td>
</tr>
<tr>
<td>OVERALL PAVEMENT MARKING AND SIGNS PLAN</td>
<td>C3.00</td>
</tr>
<tr>
<td>PAVEMENT MARKING AND SIGNS PLAN</td>
<td>C3.01 - C3.03</td>
</tr>
<tr>
<td>DETAILS</td>
<td>C4.01</td>
</tr>
<tr>
<td>SITE</td>
<td>C4.02</td>
</tr>
</tbody>
</table>

LOCATION MAP

August 7, 2017

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND
CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY
BY THE CITY OF RICHMOND.

THE PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE 2016 VDOT
ROAD AND BRIDGE SPECIFICATIONS, 2016 VDOT ROAD AND BRIDGE
STANDARD, 2020 FTA MANUAL ON EMPLOYING TRAFFIC CONTROL DEVICES
(MUTC), 2017 VIRGINIA SUPPLEMENT TO THE MUTCD, 2017 VIRGINIA WORK
AREA PROTECTION MANUAL, APPLICABLE CITY OF RICHMOND STANDARDS
AND SPECIFICATIONS, AND AS AMENDED BY CONTRACT PROVISIONS AND THE
COMPLETE ELECTRONIC VERSION OF THE PLAN ASSEMBLY.
SIGNALED INTERSECTION SIGN 
FLEXIBLE DELINEATOR 
BUILDING FACE OF CURB 
RIGHT-OF-WAY/PROPERTY LINE 
MIN 
TYP 
NOT IN CONTRACT 
MAXIMUM EXISTING BROKEN WHITE LANE LINE 
SOLID WHITE EDGE LINE 
TYPICAL ADJUST 

Document Use: Maintenance of Traffic

10. FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN
BY VHB IN AUGUST 2016 AND AGAIN IN JANUARY 2017.

PERMIT INSPECTOR.

FAILURE TO PROVIDE TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE VIRGINIA WORK 
NOT IN CONTRACT 
MAXIMUM EXISTING BROKEN WHITE LANE LINE 
SOLID WHITE EDGE LINE 
TYPICAL ADJUST 

CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR MUST PHASE WORK TO MINIMIZE TIME BETWEEN REMOVING EXISTING MARKINGS AND TRAFFIC 
CONTROL DEVICES.

CONTRACTOR SHALL SEAL ALL ASPHALT AND REPAIR SURFACES AS NECESSARY ALONG BIKE LANES WHERE 
CONTROL DEVICES AND INSTALLATION OF NEW MARKINGS AND TRAFFIC CONTROL DEVICES.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL 
AREA PROTECTION MANUAL SHALL RESULT IN IMMEDIATE CORRECTIVE MEASURES BY THE CONTRACTOR AT

CONTRACTOR SHALL PROVIDE SIGNS AND ANY NECESSARY STANDS TO ENSURE AN

UNRESTRICTED VIEW OF THE WARNINGS.

CONSTRUCTION Shall BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR MUST MAINTAIN SAFE ACCESS TO ALL DRIVEWAYS AND MAINTAIN PEDESTRIAN ACCESS AT THE

CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL 
AREA PROTECTION MANUAL SHALL RESULT IN IMMEDIATE CORRECTIVE MEASURES BY THE CONTRACTOR AT

CONTRACTOR SHALL PROVIDE SIGNS AND ANY NECESSARY STANDS TO ENSURE AN

UNRESTRICTED VIEW OF THE WARNINGS.

CONSTRUCTION Shall BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR MUST MAINTAIN SAFE ACCESS TO ALL DRIVEWAYS AND MAINTAIN PEDESTRIAN ACCESS AT THE

CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL 
AREA PROTECTION MANUAL SHALL RESULT IN IMMEDIATE CORRECTIVE MEASURES BY THE CONTRACTOR AT

CONTRACTOR SHALL PROVIDE SIGNS AND ANY NECESSARY STANDS TO ENSURE AN

UNRESTRICTED VIEW OF THE WARNINGS.

CONSTRUCTION Shall BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR MUST MAINTAIN SAFE ACCESS TO ALL DRIVEWAYS AND MAINTAIN PEDESTRIAN ACCESS AT THE

CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL 
AREA PROTECTION MANUAL SHALL RESULT IN IMMEDIATE CORRECTIVE MEASURES BY THE CONTRACTOR AT

CONTRACTOR SHALL PROVIDE SIGNS AND ANY NECESSARY STANDS TO ENSURE AN

UNRESTRICTED VIEW OF THE WARNINGS.

CONSTRUCTION Shall BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR MUST MAINTAIN SAFE ACCESS TO ALL DRIVEWAYS AND MAINTAIN PEDESTRIAN ACCESS AT THE

CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL 
AREA PROTECTION MANUAL SHALL RESULT IN IMMEDIATE CORRECTIVE MEASURES BY THE CONTRACTOR AT

CONTRACTOR SHALL PROVIDE SIGNS AND ANY NECESSARY STANDS TO ENSURE AN

UNRESTRICTED VIEW OF THE WARNINGS.
Overall Pavement Marking and Signage Plan

City of Richmond, Virginia

100% Package
August 7, 2017

vhb
115 South 15th Street
Suite 200
Richmond, VA 23219
804.343.7100

Lic. No. 055137

MARSHALL B. AGEE
COMO
COM
MOM
MOM
WE
ALTH
OF
VIRGINIA

E Main Street
N 31st Street
Stony Run Road
Williamsburg Avenue
Nicholson Street
Admiral Gravely Boulevard
Orleans Street
Goddin Street
Fulton Street
Louisiana Street
Hatcher Street
Northampton Street
Union Street
Williamsburg Road
Tompkins Street
Malone Street
Williamsburg Avenue - East Main Street to W 31st Street

Pavement Marking Legend

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BIKE LANE BUFFER</td>
<td>WHITE</td>
</tr>
<tr>
<td>2</td>
<td>HELMETED BICYCLIST SYMBOL AND ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>3</td>
<td>SHARED LANE MARKING</td>
<td>WHITE</td>
</tr>
<tr>
<td>4</td>
<td>BICYCLE DETECTOR PAVEMENT MARKING</td>
<td>WHITE</td>
</tr>
<tr>
<td>5</td>
<td>BIKE LANE CROSSING WITHOUT CONFLICT PAINT</td>
<td>WHITE</td>
</tr>
<tr>
<td>6</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>7</td>
<td>BIKE LANE CROSSING WITHOUT CONFLICT PAINT</td>
<td>WHITE</td>
</tr>
<tr>
<td>8</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>9</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>10</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>11</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>12</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>13</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
<tr>
<td>14</td>
<td>BIKE LANE CROSSING</td>
<td>WHITE</td>
</tr>
</tbody>
</table>

Pavement Marking Legend (continued)

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>SOLID LINE (4&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>16</td>
<td>DOUBLE SOLID LINE (4&quot; EACH)</td>
<td>YELLOW</td>
</tr>
<tr>
<td>17</td>
<td>BIKE LANE STOP BAR (12&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>18</td>
<td>VEHICULAR STOP BAR (24&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>19</td>
<td>PARKING LANE ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>20</td>
<td>ENTRANCE</td>
<td>WHITE</td>
</tr>
<tr>
<td>21</td>
<td>ENTRANCE</td>
<td>WHITE</td>
</tr>
<tr>
<td>22</td>
<td>ENTRANCE</td>
<td>WHITE</td>
</tr>
<tr>
<td>23</td>
<td>ENTRANCE</td>
<td>WHITE</td>
</tr>
<tr>
<td>24</td>
<td>ENTRANCE</td>
<td>WHITE</td>
</tr>
<tr>
<td>25</td>
<td>PAVEMENT ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>26</td>
<td>VEHICLE DIRECTION ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>27</td>
<td>VEHICLE DIRECTION ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>28</td>
<td>VEHICLE DIRECTION ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>29</td>
<td>VEHICLE DIRECTION ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>30</td>
<td>VEHICLE DIRECTION ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>31</td>
<td>BIKE LANE STOP BAR (12&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>32</td>
<td>BIKE LANE CROSSING WITH OUTLINED SECTION</td>
<td>WHITE</td>
</tr>
<tr>
<td>33</td>
<td>BIKE LANE CROSSING WITH OUTLINED SECTION</td>
<td>WHITE</td>
</tr>
<tr>
<td>34</td>
<td>BIKE LANE CROSSING WITH OUTLINED SECTION</td>
<td>WHITE</td>
</tr>
</tbody>
</table>

Williamsburg Avenue - East Main Street to W 31st Street

100% Package
August 7, 2017

Pavement Marking and Signage Plan
East Main Street to Stony Run Road

C3.01

115 South 3rd Street
Suite 200
Richmond, VA 23219
804.343.7100

149 South 3rd Street
Suite 200
Richmond, VA 23219
804.343.7100

Pavement Marking and Signage Plan
East Main Street to Stony Run Road

C3.01
Pavement Marking Legend

1. BIKE LANE BUFFER
   - WHITE
2. HELMETED BICYCLIST SYMBOL AND ARROW
   - WHITE
3. SHARED LANE MARKING
   - WHITE
4. BICYCLE DETECTOR PAINT MARKING
   - WHITE
5. CROSSBIKE
   - GREEN
6. BIKE LANE CROSSING WITHOUT CONFLICT PAINT
   - WHITE
7. SOLID LINE (4")
   - WHITE
8. DOUBLE SOLID LINE (4" EACH)
   - YELLOW
9. BIKE LANE STOP (12"
   - WHITE
10. VEHICULAR STOP BAR (24")
    - WHITE
11. PAVEMENT ARROW
    - WHITE
12. CROSSWALK
    - WHITE
13. LANE MARKING - 10' DASH, 30' GAP (4" THICK)
    - WHITE
14. LANE MARKING - 3' DASH, 6' GAP (4" THICK)
    - WHITE
15. BIKE LANE YIELD LINE
    - WHITE
16. SOLID LINE (4"
    - YELLOW
17. PARKING ALLOWED WITHIN HATCHED AREAS
18. VEHICLE DIRECTIONAL ARROW (NOT PAINTED)
19. VEHICLE PAVEMENT ARROW (PAINTED)

Williamsburg Avenue - Stony Run Road to Nicholson Street

Williamsburg Avenue - Admiral Gravely Boulevard to Orleans Street

Williamsburg Avenue Bike Lanes

City of Richmond, Virginia

100% Package

August 7, 2017

Pavement Marking and Signage Plan
Stony Run Road to Orleans Street

C3.02

Pavement Marking Legend

No. Description Color
1. BIKE LANE BUFFER WHITE
2. HELMETED BICYCLIST SYMBOL AND ARROW WHITE
3. SHARED LANE MARKING WHITE
4. BICYCLE DETECTOR PAINT MARKING WHITE
5. CROSSBIKE GREEN
6. BIKE LANE CROSSING WITHOUT CONFLICT PAINT WHITE
7. SOLID LINE (4") WHITE
8. DOUBLE SOLID LINE (4" EACH) YELLOW
9. BIKE LANE STOP (12") WHITE
10. VEHICULAR STOP BAR (24") WHITE
11. PAVEMENT ARROW WHITE
12. CROSSWALK WHITE
13. LANE MARKING - 10' DASH, 30' GAP (4" THICK) WHITE
14. LANE MARKING - 3' DASH, 6' GAP (4" THICK) WHITE
15. BIKE LANE YIELD LINE WHITE
16. SOLID LINE (4") YELLOW
17. PARKING ALLOWED WITHIN HATCHED AREAS
18. VEHICLE DIRECTIONAL ARROW (NOT PAINTED)
19. VEHICLE PAVEMENT ARROW (PAINTED)
Williamsburg Avenue - Hatcher Street to Montebello Circle

Pavement Marking Legend

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BIKE LANE BUFFER</td>
<td>WHITE</td>
</tr>
<tr>
<td>2</td>
<td>HELMETED BICYCLIST SYMBOL AND ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>3</td>
<td>SHARED LANE MARKING</td>
<td>WHITE</td>
</tr>
<tr>
<td>4</td>
<td>BICYCLE DETECTOR PAVEMENT MARKING</td>
<td>WHITE</td>
</tr>
<tr>
<td>5</td>
<td>CROSSBIKE</td>
<td>GREEN</td>
</tr>
<tr>
<td>6</td>
<td>BIKE LANE CROSSING WITHOUT CONFLICT PAINT</td>
<td>WHITE</td>
</tr>
<tr>
<td>7</td>
<td>SOLID LINE (4&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>8</td>
<td>DOUBLE SOLID LINE (4&quot; each)</td>
<td>YELLOW</td>
</tr>
<tr>
<td>9</td>
<td>BIKE LANE STOP BAR (12&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>10</td>
<td>VEHICULAR STOP BAR (24&quot;)</td>
<td>WHITE</td>
</tr>
<tr>
<td>11</td>
<td>PAVEMENT ARROW</td>
<td>WHITE</td>
</tr>
<tr>
<td>12</td>
<td>CROSSWALK</td>
<td>WHITE</td>
</tr>
<tr>
<td>13</td>
<td>LANE MARKING - 10’ DASH, 30’ GAP (4” THICK)</td>
<td>WHITE</td>
</tr>
<tr>
<td>14</td>
<td>LANE MARKING - 3’ DASH, 6’ GAP (4” THICK)</td>
<td>WHITE</td>
</tr>
<tr>
<td>15</td>
<td>BIKE LANE YIELD LINE</td>
<td>WHITE</td>
</tr>
<tr>
<td>16</td>
<td>SOLID LINE (4&quot;)</td>
<td>YELLOW</td>
</tr>
<tr>
<td>17</td>
<td>PARKING ALLOWED WITHIN HATCHED AREAS</td>
<td>WHITE</td>
</tr>
<tr>
<td>18</td>
<td>VEHICLE DIRECTIONAL ARROW (NOT PAINTED)</td>
<td>BLACK</td>
</tr>
<tr>
<td>19</td>
<td>VEHICLE PAVEMENT ARROW (PAINTED)</td>
<td>WHITE</td>
</tr>
</tbody>
</table>

Williamsburg Road - Hatcher Street to Montebello Circle

Pavement Marking and Signage Plan
Orleans Street to Northampton Street

City of Richmond, Virginia

100% Package
August 7, 2017

C3.03
Williamsburg Avenue
Bike Lanes
City of Richmond, Virginia

100% Package  
August 7, 2017

Details

**Painted Pavement Markings - On Site**

**Notations**

1. Refer to MUTCD FIGURE 3B-24 for more information.

**Notes**

- Twenty-four inch (24") lines shall be applied in one application. No combination of lines (two - 12 inch lines, etc.) will be accepted.
- Longitudinal lines to be parallel to curbline.
- All lines to be the same length and properly aligned.
- Where adjacent to ladder painted crosswalk, crossbike stripe thickness and spacing shall match crosswalk and provide a 6" separation minimum between crossbike and crosswalk.
- Width to match bike lane. Refer to plans.
- 2' max. 6" min.
Details

C4.02

Typical Roadway Dimensions and Section

Bike Lane Driveway Crossing

Bike Lane Street Crossing

W9-1(MOD) Bike Lane Ends Warning Sign

W9-XX Bike Merge Warning Sign

Bike Lane Buffer Striping

Shared Lane Marking

Helmeted Bicyclist and Arrow

100% Package
August 7, 2017

Williamsburg Avenue
Bike Lanes

City of Richmond, Virginia