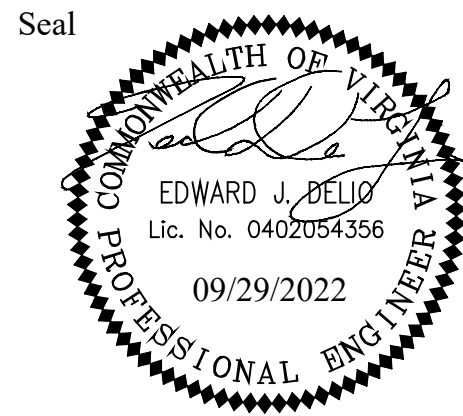


STORMWATER INLET CALCULATIONS

| Appendix 9B-1 LD-204 Stormwater Inlet Computations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------|-----------------|---------|---|------|-------------------------|--------|--------------|--------------|--------------------------------|----------------------------------|-------------------------------------|------------------------------------|----------------------------|--------|------|------------------------|-------------------------------|----------------|--|--------------------------|--|--------------------------------------|--------------------------|------------------|------|----------------------------------|--------------------------------|--------|--------|-----|----------------------------------|-----|-----|-----|
| LD-204 Rev. 6-85 | | PPMS# 110010073 | | PROJ Columbia Pike Multimodal - Segment C | | DATE September 29, 2022 | | SHEET 1 OF 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NUMBER | TYPE | LENGTH (FT) | STATION | DRAINAGE AREA (AC) | C | CA | sum CA | I (IN/HR) | Q INCR (CFS) | Q ₀ CARRYOVER (CFS) | Q _r GUTTER FLOW (CFS) | S ₁ GUTTER SLOPE (FT/FT) | S ₂ CROSS SLOPE (FT/FT) | T ₁ SPREAD (FT) | W (FT) | WIT | S _w (FT/FT) | S _w S _x | E ₀ | a = 12W(S _w - S ₂)/Local Depression | S _w = a/(12W) | S ₀ = S _x + S _w (E ₀) (FT/FT) | COMPUTED LENGTH, L ₁ (FT) | L, SPECIFIED LENGTH (FT) | L/L ₁ | E | Q _i INTERCEPTED (CFS) | Q _b CARRYOVER (CFS) | d (FT) | h (FT) | d/h | T ₁ SPREAD @ SAG (FT) | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | (1) | (2) | (3) |
| INLETS - ON GRADE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0001 | New CB | 10 | 89+11 | 0.71 | 0.65 | 0.462 | 0.462 | 4.0 | 1.846 | 0.000 | 1.846 | 0.0170 | 0.0366 | 5.03 | 1.5 | 0.30 | 0.0833 | 2.28 | 0.69 | 2.84 | 0.158 | 0.146 | 10 | 10 | 1.00 | 1.00 | 1.85 | 0.000 | | | | | | | |
| 0003 | New CB | 8 | 88+66 | 0.17 | 0.75 | 0.128 | 0.128 | 4.0 | 0.510 | 0.000 | 0.510 | 0.0222 | 0.0405 | 2.35 | 1.5 | 0.64 | 0.0833 | 2.06 | 0.97 | 2.77 | 0.154 | 0.189 | 5 | 8 | 1.60 | 1.00 | 0.51 | 0.000 | | | | | | | |
| 0004 | New CB | 12 | 88+34 | 0.58 | 0.77 | 0.447 | 0.447 | 4.0 | 1.786 | 0.000 | 1.786 | 0.0320 | 0.0200 | 6.05 | 1.5 | 0.25 | 0.0833 | 4.17 | 0.68 | 3.14 | 0.174 | 0.139 | 12 | 12 | 1.00 | 1.00 | 1.79 | 0.000 | | | | | | | |
| 0006 | New CB | 10 | 85+56 | 0.60 | 0.65 | 0.390 | 0.390 | 4.0 | 1.560 | 0.000 | 1.560 | 0.0521 | 0.0200 | 4.95 | 1.5 | 0.30 | 0.0833 | 4.17 | 0.78 | 3.14 | 0.174 | 0.156 | 12 | 10 | 0.83 | 0.96 | 1.50 | 0.062 | | | | | | | |
| 23936 | New Top | 14 | 85+56 | 1.10 | 0.65 | 0.715 | 0.715 | 4.0 | 2.860 | 0.000 | 2.860 | 0.0528 | 0.0200 | 6.74 | 1.5 | 0.22 | 0.0833 | 4.17 | 0.63 | 3.14 | 0.174 | 0.130 | 17 | 14 | 0.82 | 0.96 | 2.73 | 0.128 | | | | | | | |
| 23937 | New Top | 8 | 83+91 | 0.20 | 0.85 | 0.170 | 0.170 | 4.0 | 0.680 | 0.126 | 0.806 | 0.0618 | 0.0200 | 2.99 | 1.5 | 0.50 | 0.0833 | 4.17 | 0.95 | 3.14 | 0.174 | 0.186 | 9 | 8 | 0.89 | 0.98 | 0.79 | 0.015 | | | | | | | |
| 23944 | New Top | 10 | 82+90 | 0.45 | 0.68 | 0.306 | 0.306 | 4.0 | 1.224 | 0.062 | 1.286 | 0.0517 | 0.0200 | 4.43 | 1.5 | 0.34 | 0.0833 | 4.17 | 0.83 | 3.14 | 0.174 | 0.164 | 11 | 10 | 0.91 | 0.99 | 1.27 | 0.017 | | | | | | | |
| 0008 | New CB | 8 | 81+25 | 0.17 | 0.68 | 0.116 | 0.116 | 4.0 | 0.462 | 0.017 | 0.480 | 0.0360 | 0.0200 | 2.37 | 1.5 | 0.63 | 0.0833 | 4.17 | 0.98 | 3.14 | 0.174 | 0.192 | 6 | 8 | 1.33 | 1.00 | 0.48 | 0.000 | | | | | | | |
| 0009 | New CB | 8 | 81+26 | 0.41 | 0.71 | 0.291 | 0.291 | 4.0 | 1.164 | 0.015 | 1.180 | 0.0360 | 0.0200 | 4.69 | 1.5 | 0.32 | 0.0833 | 4.17 | 0.80 | 3.14 | 0.174 | 0.160 | 9 | 8 | 0.89 | 0.98 | 1.16 | 0.023 | | | | | | | |
| 0010 | New CB | 8 | 79+87 | 0.28 | 0.72 | 0.202 | 0.202 | 4.0 | 0.806 | 0.023 | 0.829 | 0.0361 | 0.0200 | 3.74 | 1.5 | 0.40 | 0.0833 | 4.17 | 0.89 | 3.14 | 0.174 | 0.175 | 8 | 8 | 1.00 | 1.00 | 0.83 | 0.000 | | | | | | | |
| 23916 | New Top | 10 | 79+58 | 0.35 | 0.80 | 0.280 | 0.280 | 4.0 | 1.120 | 0.000 | 1.120 | 0.0320 | 0.0330 | 3.60 | 1.5 | 0.42 | 0.0833 | 2.53 | 0.85 | 2.91 | 0.161 | 0.171 | 9 | 10 | 1.11 | 1.00 | 1.12 | 0.000 | | | | | | | |
| 23941 | New CB | 8 | 77+77 | 0.70 | 0.65 | 0.455 | 0.455 | 4.0 | 1.820 | 0.000 | 1.820 | 0.0190 | 0.0295 | 5.51 | 1.5 | 0.27 | 0.0833 | 2.82 | 0.67 | 2.97 | 0.165 | 0.141 | 10 | 8 | 0.80 | 0.94 | 1.72 | 0.100 | | | | | | | |
| 0014 | New CB | 8 | 77+23 | 0.36 | 0.85 | 0.306 | 0.306 | 4.0 | 1.224 | 0.000 | 1.224 | 0.0200 | 0.0200 | 5.62 | 1.5 | 0.27 | 0.0833 | 4.17 | 0.72 | 3.14 | 0.174 | 0.146 | 8 | 8 | 1.00 | 1.00 | 1.22 | 0.000 | | | | | | | |
| 0016 | New CB | 8 | 75+75 | 0.19 | 0.83 | 0.158 | 0.158 | 4.0 | 0.631 | 0.100 | 0.731 | 0.0200 | 0.0200 | 4.19 | 1.5 | 0.36 | 0.0833 | 4.17 | 0.85 | 3.14 | 0.174 | 0.168 | 6 | 8 | 1.33 | 1.00 | 0.73 | 0.000 | | | | | | | |
| 23924 | New Top | 8 | 75+44 | 0.10 | 0.81 | 0.081 | 0.081 | 4.0 | 0.324 | 0.000 | 0.324 | 0.0245 | 0.0226 | 1.84 | 1.5 | 0.82 | 0.0833 | 3.69 | 1.00 | 3.09 | 0.172 | 0.194 | 5 | 8 | 1.60 | 1.00 | 0.32 | 0.000 | | | | | | | |
| 0017 | New CB | 8 | 74+71 | 0.31 | 0.75 | 0.233 | 0.233 | 4.0 | 0.930 | 0.000 | 0.930 | 0.0200 | 0.0200 | 4.84 | 1.5 | 0.31 | 0.0833 | 4.17 | 0.79 | 3.14 | 0.174 | 0.158 | 7 | 8 | 1.14 | 1.00 | 0.93 | 0.000 | | | | | | | |
| 0018 | New CB | 8 | 74+71 | 0.44 | 0.75 | 0.330 | 0.330 | 4.0 | 1.320 | 0.000 | 1.320 | 0.0200 | 0.0200 | 5.85 | 1.5 | 0.26 | 0.0833 | 4.17 | 0.70 | 3.14 | 0.174 | 0.142 | 9 | 8 | 0.89 | 0.98 | 1.29 | 0.025 | | | | | | | |
| 0019 | New CB | 8 | 72+69 | 0.17 | 0.72 | 0.122 | 0.122 | 4.0 | 0.490 | 0.000 | 0.490 | 0.0530 | 0.0139 | 2.14 | 1.5 | 0.70 | 0.0833 | 6.00 | 1.00 | 3.25 | 0.181 | 0.194 | 7 | 8 | 1.14 | 1.00 | 0.49 | 0.000 | | | | | | | |
| 14707 | New Top | 10 | 72+93 | 0.15 | 0.90 | 0.135 | 0.135 | 4.0 | 0.540 | 0.025 | 0.565 | 0.0584 | 0.0200 | 2.18 | 1.5 | 0.69 | 0.0833 | 4.17 | 0.99 | 3.14 | 0.174 | 0.193 | 7 | 10 | 1.43 | 1.00 | 0.57 | 0.000 | | | | | | | |
| 80062 | Existing | 20 | 71+46 | 0.62 | 0.70 | 0.434 | 0.434 | 4.0 | 1.736 | 0.000 | 1.736 | 0.0755 | 0.0401 | 3.28 | 1.5 | 0.46 | 0.0833 | 2.08 | 0.87 | 2.78 | 0.154 | 0.174 | 13 | 20 | 1.54 | 1.00 | 1.74 | 0.000 | | | | | | | |
| INLETS - IN SAG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No Inlets in Sag | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STORM STRUCTURE DATA

| | | |
|--|--|---|
| <p>0001 CB-2B OR PCB-2, L=12' REQ'D. TIE TO EXIST. 10" RCP STA: 89+11.23, 124.58RT RIM: 204.41 INV IN: 196.61 15" RCP</p> | <p>0007 MH-1 OR PH-1 REQ'D. STA: 85+56.43, 4.00LT RIM: 191.31 INV IN: 183.04 15" RCP INV IN: 183.04 15" RCP INV OUT: 182.04 18" RCP</p> | <p>0014 CB-2B, L=8" REQ'D. AVOID EXISTING DUCT BANK STA: 77+79.91, 34.63LT RIM: 157.80 INV OUT: 150.41 15" RCP</p> |
| <p>0003 CB-2B OR PCB-2, L=8" REQ'D. STA: 88+74.34, 75.05RT RIM: 203.30 INV IN: 195.38 15" RCP INV OUT: 195.28 15" RCP</p> | <p>0008 CB-2B OR PCB-2, L=8" REQ'D. STA: 81+24.59, 28.50LT RIM: 167.77 INV OUT: 157.95 15" RCP</p> | <p>0016 CB-2B OR PCB-2, L=8" REQ'D. STA: 76+74.74, 23.23RT RIM: 153.72 INV OUT: 148.39 15" RCP</p> |
| <p>0004 CB-2B OR PCB-2, L=12' REQ'D. STA: 88+33.81, 28.50RT RIM: 200.84 INV IN: 194.05 15" RCP INV OUT: 193.95 15" RCP</p> | <p>0009 CB-2B OR PCB-2, L=8" REQ'D. STA: 81+25.83, 28.50RT RIM: 168.10 INV IN: 157.67 15" RCP INV OUT: 157.57 15" RCP</p> | <p>0017 CB-2B, L=8" REQ'D. AVOID EXISTING DUCT BANK STA: 74+83.28, 23.00LT RIM: 151.91 INV OUT: 147.80 15" RCP</p> |
| <p>0005 MH-1 OR PH-1 REQ'D. STA: 88+33.81, 2.79LT RIM: 200.92 INV IN: 192.85 15" RCP INV OUT: 192.75 15" RCP</p> | <p>0010 CB-2B OR PCB-2, L=8" REQ'D. STA: 79+87.07, 28.50RT RIM: 162.61 INV OUT: 156.14 15" RCP</p> | <p>0018 CB-2B OR PCB-2, L=8" REQ'D. STA: 74+83.83, 23.00RT RIM: 151.92 INV IN: 144.58 15" RCP INV OUT: 142.16 15" RCP</p> |
| <p>0006 CB-2B, L=10" REQ'D. AVOID EXISTING DUCT BANK STA: 85+56.44, 28.50LT RIM: 190.75 INV OUT: 183.53 15" RCP</p> | <p>0011 MH-1 OR PH-1 REQ'D. TIE TO EXIST. 27" RCP STA: 79+86.68, 35.43RT RIM: 162.83 INV IN: 152.08 27" RCP INV IN: 156.00 15" RCP INV OUT: 152.08 27" RCP</p> | <p>0019 CB-2B OR PCB-2, L=8" REQ'D. STA: 72+69.22, 44.95LT RIM: 144.37 INV OUT: 138.80 15" RCP</p> |



| | |
|------------------------------------|------|
| Approvals | Date |
| Design Team Engineer Supervisor | |
| Construction Management Supervisor | |
| Water, Sewer, Streets Bureau Chief | |
| Transportation Director | |
| Project Manager | |

| | |
|-----------|------|
| Revisions | Date |
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Designed: DCD
Drawn: MAT
Checked: DCD
Miss Utility Transmittal #:

Filename: 010073-C-STRM-CALCS.dwg
Path: \\s:\projects\110010073\columbia_pike_multimodal_production\110010073\110010073\010073-C-STRM-CALCS.dwg
Plotted: September 29, 2022
Plotted by: Miguel Tyshing

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

STORMWATER CALCULATIONS
COLUMBIA PIKE - ROUTE 244
COLUMBIA PIKE - MULTIMODAL STREET IMPROVEMENTS
SEGMENT C

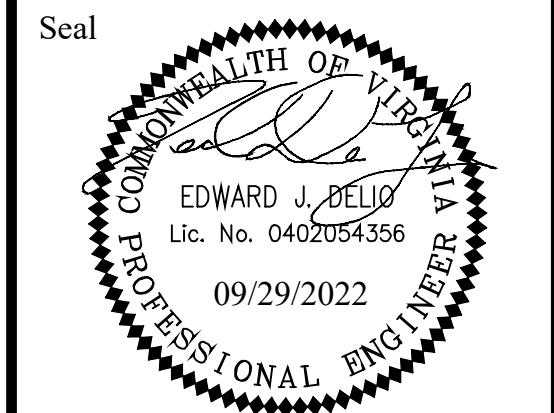
SCALE: SHEET: C11.4 of C11.4

STORMWATER PIPE CALCULATIONS

| Proposed Storm Drain Design Calculations | | | | | | | | | | | | | | | Project: Columbia Pike - Segment C | | | |
|--|----------|---------------|--------------------|-------|-------|------------|----------|--------|-------------------|-----------|--------|--------|------|---------------|--|----------|-----------|------|
| VDOT LD-229 | | | | | | | | | | | | | | | Client: Arlington County | | | |
| Kimley»Horn | | | | | | | | | | | | | | | Project Number: 110010073 | | | |
| | | | | | | | | | | | | | | | Date: 9/29/2022 | | | |
| | | | | | | | | | | | | | | | Designed By/Checked: Miguel Tyshing /Derik Doughty, P.E. | | | |
| FROM POINT | TO POINT | DRAINAGE AREA | RUNOFF COEFFICIENT | CA | | INLET TIME | RAINFALL | RUNOFF | INVERT ELEVATIONS | | LENGTH | SLOPE | SIZE | PIPE CAPACITY | Q / Q _c | VELOCITY | FLOW TIME | |
| | | | | inlet | accum | | | | upper end | lower end | | | | | | | in | ft |
| 0003 | 0004 | 0.17 | 0.75 | 0.13 | 0.98 | 5.00 | 6.75 | 6.66 | 195.28 | 194.05 | 62 | 2.00% | 15 | 9.12 | 73% | 8.11 | 0.13 | 5.13 |
| 0004 | 0005 | 0.58 | 0.77 | 0.45 | 1.43 | 5.00 | 6.70 | 9.64 | 193.95 | 192.85 | 31 | 3.50% | 15 | 12.11 | 80% | 7.85 | 0.05 | 5.26 |
| 0005 | 0007 | (N/A) | (N/A) | 0.00 | 1.43 | 0.00 | 6.68 | 9.61 | 192.75 | 183.04 | 277 | 3.50% | 15 | 12.09 | 79% | 10.93 | 0.42 | 5.32 |
| 0006 | 0007 | 0.60 | 0.65 | 0.39 | 0.39 | 5.00 | 6.79 | 2.67 | 185.70 | 185.21 | 25 | 2.00% | 15 | 9.13 | 29% | 6.46 | 0.06 | 5.00 |
| 0007 | 23936 | (N/A) | (N/A) | 0.00 | 1.82 | 0.00 | 6.54 | 11.98 | 182.04 | 180.42 | 33 | 5.00% | 18 | 23.46 | 51% | 13.35 | 0.04 | 5.75 |
| 23936 | 23937 | 1.10 | 0.70 | 0.77 | 2.59 | 5.00 | 6.53 | 17.03 | 179.92 | 171.98 | 166 | 4.80% | 21 | 34.70 | 49% | 14.35 | 0.19 | 5.79 |
| 23937 | 23943 | 0.20 | 0.85 | 0.17 | 3.46 | 5.00 | 6.47 | 22.56 | 167.66 | 165.30 | 100 | 2.40% | 24 | 34.71 | 65% | 11.76 | 0.14 | 5.98 |
| SP396D | 23937 | 1.21 | 0.58 | 0.70 | 0.70 | 5.00 | 6.79 | 4.80 | 174.23 | 172.29 | 33 | 5.80% | 15 | 15.58 | 31% | 11.19 | 0.05 | 5.00 |
| 23944 | 23943 | 0.45 | 0.68 | 0.31 | 0.31 | 5.00 | 6.79 | 2.09 | 165.53 | 164.80 | 61 | 1.50% | 15 | 7.96 | 26% | 5.47 | 0.19 | 5.00 |
| 23943 | 23939 | (N/A) | (N/A) | 0.00 | 3.76 | 0.00 | 6.43 | 24.39 | 164.10 | 157.62 | 165 | 3.90% | 24 | 44.78 | 54% | 14.56 | 0.19 | 6.12 |
| 23939 | 23938 | (N/A) | (N/A) | 0.00 | 4.17 | 0.00 | 6.31 | 26.54 | 157.54 | 157.17 | 52 | 0.70% | 27 | 26.01 | 102% | 7.45 | 0.12 | 6.52 |
| 0009 | 23939 | 0.41 | 0.71 | 0.29 | 0.41 | 5.00 | 6.33 | 2.59 | 157.57 | 157.54 | 6 | 0.50% | 15 | 4.75 | 55% | 2.11 | 0.02 | 6.47 |
| 0008 | 0009 | 0.17 | 0.68 | 0.12 | 0.12 | 5.00 | 6.79 | 0.79 | 157.95 | 157.67 | 57 | 0.50% | 15 | 4.53 | 17% | 0.64 | 0.26 | 5.00 |
| 23938 | 0011 | (N/A) | (N/A) | 0.00 | 5.20 | 0.00 | 6.28 | 32.94 | 154.42 | 152.08 | 87 | 2.70% | 27 | 50.92 | 65% | 13.62 | 0.11 | 6.64 |
| SP396B | 23938 | 1.64 | 0.63 | 1.03 | 1.03 | 5.00 | 6.79 | 7.07 | 161.22 | 159.32 | 27 | 7.20% | 15 | 17.29 | 41% | 13.38 | 0.03 | 5.00 |
| 0011 | 23940 | (N/A) | (N/A) | 0.00 | 5.41 | 0.00 | 6.25 | 34.05 | 152.08 | 150.53 | 57 | 2.70% | 27 | 50.92 | 67% | 13.72 | 0.07 | 6.74 |
| 0010 | 0011 | 0.28 | 0.72 | 0.20 | 0.20 | 5.00 | 6.79 | 1.38 | 156.14 | 156.00 | 7 | 2.00% | 15 | 9.14 | 15% | 5.37 | 0.02 | 5.00 |
| 23916 | 23940 | 0.35 | 0.80 | 0.28 | 0.28 | 5.00 | 6.79 | 1.92 | 155.79 | 154.40 | 38 | 3.80% | 15 | 12.34 | 16% | 7.30 | 0.09 | 5.00 |
| 23940 | 23941 | (N/A) | (N/A) | 0.00 | 5.69 | 0.00 | 6.23 | 35.70 | 150.33 | 149.43 | 152 | 0.80% | 0 | 31.43 | 114% | 7.18 | 0.40 | 6.81 |
| 23942 | 14767 | (N/A) | (N/A) | 0.00 | 7.26 | 0.00 | 6.06 | 44.34 | 144.12 | 138.17 | 110 | 5.40% | 27 | 72.09 | 62% | 19.06 | 0.10 | 7.44 |
| 23924 | 23942 | 0.10 | 0.81 | 0.08 | 0.66 | 5.00 | 6.78 | 4.49 | 146.96 | 146.44 | 45 | 1.20% | 15 | 6.97 | 64% | 6.04 | 0.12 | 5.04 |
| 0016 | 23942 | 0.19 | 0.83 | 0.16 | 0.16 | 5.00 | 6.79 | 1.08 | 148.39 | 148.02 | 7 | 5.00% | 15 | 14.44 | 7% | 6.90 | 0.02 | 5.00 |
| 86224 | 23924 | 0.80 | 0.72 | 0.58 | 0.58 | 5.00 | 6.79 | 3.94 | 147.65 | 147.43 | 16 | 1.40% | 15 | 7.64 | 52% | 6.28 | 0.04 | 5.00 |
| 14767 | 14707 | (N/A) | (N/A) | 0.00 | 7.75 | 0.00 | 6.03 | 47.10 | 137.54 | 135.67 | 172 | 1.10% | 36 | 69.54 | 68% | 10.57 | 0.27 | 7.54 |
| 0018 | 14767 | 0.44 | 0.57 | 0.25 | 0.48 | 5.00 | 6.76 | 3.29 | 142.16 | 141.44 | 20 | 3.50% | 15 | 12.16 | 27% | 8.42 | 0.04 | 5.09 |
| 0017 | 0018 | 0.31 | 0.75 | 0.23 | 0.23 | 5.00 | 6.79 | 1.59 | 147.80 | 144.58 | 46 | 7.00% | 15 | 17.03 | 9% | 8.70 | 0.09 | 5.00 |
| 0019 | 80056 | 0.17 | 0.72 | 0.12 | 0.12 | 5.00 | 6.79 | 0.84 | 138.80 | 138.40 | 40 | 1.00% | 15 | 6.47 | 13% | 3.63 | 0.18 | 5.00 |
| 80056 | 80062 | 0.06 | 0.90 | 0.05 | 0.18 | 5.00 | 6.73 | 1.20 | 138.30 | 129.62 | 83 | 10.50% | 15 | 20.90 | 6% | 9.24 | 0.15 | 5.18 |
| 14707 | 14700 | 0.15 | 0.85 | 0.13 | 7.87 | 5.00 | 5.96 | 47.33 | 135.55 | 135.24 | 44 | 0.70% | 36 | 55.89 | 85% | 8.87 | 0.08 | 7.81 |
| 14700 | 14648 | 0.61 | 0.57 | 0.35 | 8.22 | 5.00 | 5.94 | 49.24 | 133.41 | 130.52 | 85 | 3.40% | 36 | 122.85 | 40% | 16.42 | 0.09 | 7.89 |
| 80062 | 80070 | 0.62 | 0.67 | 0.42 | 0.59 | 5.00 | 6.68 | 3.98 | 127.47 | 126.99 | 90 | 0.50% | 15 | 4.72 | 84% | 4.31 | 0.35 | 5.33 |
| 23941 | 23942 | 0.70 | 0.65 | 0.46 | 6.45 | 5.00 | 6.13 | 39.85 | 149.42 | 145.67 | 203 | 1.80% | 27 | 42.11 | 95% | 12.05 | 0.28 | 7.16 |
| 0001 | 0003 | 1.17 | (N/A) | 0.00 | 0.85 | 5.00 | 6.79 | 5.83 | 196.61 | 195.38 | 62 | 2.00% | 15 | 9.12 | 64% | 7.88 | 0.13 | 5.00 |
| 0014 | 23941 | 0.36 | 0.85 | 0.31 | 0.31 | 5.00 | 6.79 | 2.09 | 160.41 | 149.94 | 68 | 0.70% | 15 | 5.37 | 39% | 1.71 | 0.26 | 5.00 |

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 Facilities & Engineering Division
 Engineering Bureau
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 Arlington, VA 22201
 Phone: 703.228.3629
 Fax: 703.228.3606

Kimley»Horn
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 ©2022 KIMLEY-HORN AND ASSOCIATES, INC.
 11400 Commerce Park Drive, Suite 400
 Reston, Virginia 20191
 Phone: 703-874-1300
 Fax: 703-874-1300



Approvals _____ Date _____
 Design Team Engineer Supervisor _____
 Construction Management Supervisor _____
 Water, Sewer, Streets Bureau Chief _____
 Transportation Director _____
 Project Manager _____

Revisions _____ Date _____

Designed: DCD
 Drawn: MAT
 Checked: DCD
 Miss Utility Transmittal #:

Filename: 010073-C-STRM-CALCS.dwg
 Path: I:\010073-C-STRM-CALCS\010073-C-STRM-CALCS.dwg
 Plotted: September 29, 2022
 Plotted by: Miguel Tyshing

ARLINGTON COUNTY, VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL SERVICES

STORMWATER CALCULATIONS
 COLUMBIA PIKE - ROUTE 244
 COLUMBIA PIKE - MULTIMODAL STREET IMPROVEMENTS
 SEGMENT C

SCALE: HOR. N/A VERT. N/A SHEET: C11.5 of C11.0

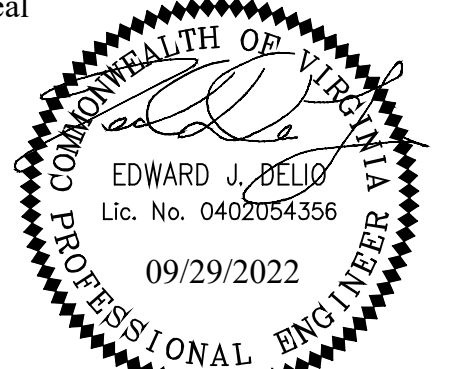
STORMWATER HGL CALCULATIONS

| Proposed Hydraulic Grade Line Calculations | | | | | | | | | | | | | Project: Columbia Pike - Segment C | | | | | | | | | | |
|--|-----------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|-------------------------|--|------------|---------------------|---------------------|-------------------------|-------------------------|------|--------------|----------------|---------------|--------------------------|
| VDOT LD-347 | | | | | | | | | | | | | Client: Arlington County | | | | | | | | | | |
| Kimley»Horn | | | | | | | | | | | | | Project Number: 110010073 | | | | | | | | | | |
| | | | | | | | | | | | | | Date: 9/29/2022 | | | | | | | | | | |
| | | | | | | | | | | | | | Designed By/Checked: Miguel Tyshing /Derik Doughty, P.E. | | | | | | | | | | |
| (1) | DESIGN OUTLET WSE (2) | D _o (3) | Q _c (4) | L _w (5) | S _{no} (6) | H _i (7) | JUNCTION LOSS | | | | | | | | | | | | | FINAL H (19) | INLET WSE (20) | RIM ELEV (21) | AVAILABLE FREEBOARD (22) |
| | | | | | | | V _o (8) | H _o (9) | Q _i (10) | V _i (11) | Q _v (12) | $\frac{V_i^2}{2g}$ (13) | H ₁ (14) | Angle (15) | H ₂ (16) | H ₃ (17) | 1.3 H ₁ (18) | 0.5 H ₁ (19) | | | | | |
| 14700 | 132.92 | 36 | 49.24 | 85 | 0.0340 | 2.90 | 16.42 | 1.05 | 47.33 | 14.59 | 690.54 | 3.31 | 1.16 | 10.92 | 0.46 | 2.66 | 2.66 | 1.33 | 4.23 | 137.15 | 142.81 | 5.66 | |
| 14707 | 137.64 | 36 | 47.33 | 44 | 0.0070 | 0.31 | 8.87 | 0.31 | 47.10 | 7.55 | 355.61 | 0.89 | 0.31 | 11.71 | 0.13 | 0.75 | 0.75 | 0.37 | 0.68 | 138.32 | 145.47 | 7.15 | |
| 14767 | 138.32 | 36 | 47.10 | 172 | 0.0110 | 1.89 | 10.57 | 0.43 | 44.34 | 11.47 | 508.58 | 2.04 | 0.72 | 0.51 | 0.01 | 1.16 | 1.16 | 0.58 | 2.47 | 140.79 | 151.68 | 10.89 | |
| 0018 | 142.44 | 15 | 3.29 | 20 | 0.0190 | 0.39 | 8.42 | 0.28 | 1.59 | 1.30 | 2.07 | 0.03 | 0.01 | 41.98 | 0.01 | 0.30 | 0.38 | 0.19 | 0.58 | 143.02 | 151.92 | 8.90 | |
| 0017 | 145.58 | 15 | 1.59 | 46 | 0.0530 | 2.45 | 8.70 | 0.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.35 | 0.46 | 0.23 | 2.68 | 148.26 | 151.91 | 3.65 | |
| 23942 | 140.79 | 27 | 44.34 | 110 | 0.0350 | 3.84 | 19.06 | 1.41 | 39.85 | 13.61 | 542.38 | 2.88 | 1.01 | 133.01 | 2.51 | 4.93 | 4.93 | 2.46 | 6.31 | 147.10 | 153.86 | 6.76 | |
| 0016 | 149.02 | 15 | 1.08 | 7 | 0.0200 | 0.15 | 6.90 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.22 | 0.29 | 0.14 | 0.29 | 149.31 | 153.72 | 4.41 | |
| 23924 | 147.44 | 15 | 4.49 | 45 | 0.0110 | 0.49 | 6.04 | 0.14 | 3.94 | 5.25 | 20.69 | 0.43 | 0.15 | 83.59 | 0.29 | 0.58 | 0.75 | 0.38 | 0.87 | 148.31 | 152.86 | 4.55 | |
| 86224 | 148.43 | 15 | 3.94 | 16 | 0.0100 | 0.16 | 6.28 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.18 | 0.24 | 0.12 | 0.28 | 148.71 | 150.75 | 2.04 | |
| 23941 | 147.47 | 27 | 39.85 | 203 | 0.0170 | 3.45 | 12.05 | 0.56 | 35.70 | 7.18 | 256.33 | 0.80 | 0.28 | 97.01 | 0.58 | 1.43 | 1.43 | 0.71 | 4.16 | 151.63 | 157.72 | 6.09 | |
| 0014 | 151.63 | 15 | 2.09 | 68 | 0.0010 | 0.07 | 1.71 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.01 | 0.02 | 0.01 | 0.08 | 151.71 | 157.80 | 6.09 | |
| 23940 | 151.63 | 0 | 35.70 | 152 | 0.0080 | 1.21 | 7.18 | 0.20 | 34.05 | 8.56 | 291.47 | 1.14 | 0.40 | 2.88 | 0.04 | 0.64 | 0.64 | 0.32 | 1.53 | 153.16 | 160.78 | 7.62 | |
| 23916 | 155.40 | 15 | 1.92 | 38 | 0.0260 | 0.99 | 7.30 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.25 | 0.32 | 0.16 | 1.15 | 156.55 | 162.51 | 5.96 | |
| 0011 | 153.16 | 27 | 34.05 | 57 | 0.0150 | 0.86 | 13.72 | 0.73 | 32.94 | 8.28 | 272.74 | 1.06 | 0.37 | 0.37 | 0.01 | 1.11 | 1.11 | 0.55 | 1.42 | 154.58 | 162.93 | 8.35 | |
| 0010 | 157.00 | 15 | 1.38 | 7 | 0.0110 | 0.08 | 5.37 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.13 | 0.17 | 0.09 | 0.16 | 157.16 | 162.81 | 5.65 | |
| 23938 | 154.58 | 27 | 32.94 | 87 | 0.0250 | 2.16 | 13.62 | 0.72 | 26.54 | 6.67 | 177.02 | 0.69 | 0.24 | 104.35 | 0.52 | 1.48 | 1.48 | 0.74 | 2.90 | 157.48 | 166.06 | 8.58 | |
| SP396B | 160.32 | 15 | 7.07 | 27 | 0.0330 | 0.87 | 13.38 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.83 | 1.08 | 0.54 | 1.42 | 161.74 | 163.16 | 1.42 | |
| 23939 | 158.97 | 27 | 26.54 | 52 | 0.0070 | 0.37 | 7.45 | 0.22 | 24.39 | 7.76 | 189.27 | 0.94 | 0.33 | 89.18 | 0.65 | 1.19 | 1.19 | 0.60 | 0.96 | 159.93 | 167.92 | 7.99 | |
| 0009 | 159.93 | 15 | 2.59 | 6 | 0.0020 | 0.01 | 2.11 | 0.02 | 0.79 | 0.64 | 0.51 | 0.01 | 0.00 | 0.04 | 0.00 | 0.02 | 0.03 | 0.01 | 0.02 | 159.96 | 167.82 | 7.86 | |
| 0008 | 159.96 | 15 | 0.79 | 57 | 0.0000 | 0.00 | 0.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 159.96 | 167.77 | 7.81 | |
| 23943 | 159.93 | 24 | 24.39 | 165 | 0.0380 | 6.28 | 14.56 | 0.82 | 22.56 | 12.34 | 278.39 | 2.36 | 0.83 | 2.26 | 0.07 | 1.72 | 1.72 | 0.86 | 7.14 | 167.07 | 175.06 | 7.99 | |
| 23944 | 167.07 | 15 | 2.09 | 61 | 0.0010 | 0.06 | 5.47 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.14 | 0.18 | 0.09 | 0.15 | 167.23 | 174.90 | 7.67 | |
| 23937 | 167.07 | 24 | 22.56 | 100 | 0.0180 | 1.81 | 11.76 | 0.54 | 17.03 | 7.08 | 120.57 | 0.78 | 0.27 | 46.63 | 0.37 | 1.18 | 1.18 | 0.59 | 2.40 | 169.47 | 180.68 | 11.21 | |
| SP396D | 173.29 | 15 | 4.80 | 33 | 0.0320 | 1.07 | 11.19 | 0.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.58 | 0.76 | 0.38 | 1.44 | 174.73 | 177.17 | 2.44 | |
| 23936 | 173.38 | 21 | 17.03 | 168 | 0.0380 | 6.29 | 14.35 | 0.80 | 11.98 | 6.78 | 81.22 | 0.71 | 0.25 | 89.73 | 0.50 | 1.55 | 2.01 | 1.01 | 7.30 | 180.68 | 190.73 | 10.05 | |
| 0007 | 181.62 | 18 | 11.98 | 33 | 0.0430 | 1.40 | 13.35 | 0.69 | 9.61 | 8.76 | 84.18 | 1.19 | 0.42 | 89.74 | 0.83 | 1.94 | 1.94 | 0.97 | 2.37 | 183.99 | 191.31 | 7.32 | |
| 0006 | 186.21 | 15 | 2.67 | 25 | 0.0140 | 0.34 | 6.46 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.19 | 0.25 | 0.13 | 0.47 | 186.68 | 190.75 | 4.07 | |
| 0005 | 184.04 | 15 | 9.61 | 277 | 0.0330 | 9.15 | 10.93 | 0.46 | 9.64 | 7.85 | 75.67 | 0.96 | 0.33 | 89.16 | 0.67 | 1.47 | 1.47 | 0.73 | 9.88 | 193.92 | 200.92 | 7.00 | |
| 0004 | 193.92 | 15 | 9.64 | 31 | 0.0220 | 0.69 | 7.85 | 0.24 | 6.66 | 5.43 | 36.16 | 0.46 | 0.16 | 39.65 | 0.20 | 0.59 | 0.77 | 0.39 | 1.08 | 195.00 | 200.84 | 5.84 | |
| 0003 | 195.05 | 15 | 6.66 | 62 | 0.0130 | 0.80 | 8.11 | 0.26 | 5.83 | 5.00 | 29.15 | 0.39 | 0.14 | 2.55 | 0.01 | 0.40 | 0.52 | 0.26 | 1.06 | 196.11 | 203.36 | 7.25 | |
| 0001 | 196.38 | 15 | 5.83 | 62 | 0.0190 | 1.17 | 7.88 | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.29 | 0.38 | 0.19 | 1.36 | 197.74 | 204.41 | 6.67 | |
| 80062 | 127.99 | 15 | 3.98 | 90 | 0.0050 | 0.45 | 4.31 | 0.07 | 1.20 | 0.97 | 1.16 | 0.01 | 0.01 | 10.63 | 0.00 | 0.08 | 0.10 | 0.05 | 0.50 | 128.49 | 135.31 | 6.82 | |
| 80056 | 130.62 | 15 | 1.20 | 83 | 0.0930 | 7.72 | 9.24 | 0.33 | 0.84 | 2.61 | 2.19 | 0.11 | 0.04 | 4.64 | 0.01 | 0.37 | 0.49 | 0.24 | 7.96 | 138.58 | 143.40 | 4.82 | |
| 0019 | 139.40 | 15 | 0.84 | 40 | 0.0100 | 0.40 | 3.63 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 0.06 | 0.08 | 0.04 | 0.44 | 139.84 | 144.31 | 4.47 | |



ARLINGTON VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES
Facilities & Engineering Division
Engineering Bureau
2100 Clarendon Boulevard, Suite 813
Arlington, VA 22201
Phone: 703.228.3629
Fax: 703.228.3606

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11400 Commerce Park Drive, Suite 400
Reston, Virginia 20191
Phone: 703-874-1300
Fax: 703-874-1300

Seal

EDWARD J. BELL
Lic. No. 0402054356
09/29/2022
PROFESSIONAL ENGINEER

Approvals _____ Date _____

Design Team Engineer Supervisor _____

Construction Management Supervisor _____

Water, Sewer, Streets Bureau Chief _____

Transportation Director _____

Project Manager _____

Revisions _____ Date _____

Designed: DCD
Drawn: MAT
Checked: DCD
Miss Utility Transmittal #:

Filename: 010073-C-STRM-CALCS.dwg
Path: \\s:\va\proj\110010073_columbia_pike_multimodal_production\m...
Plotted: September 29, 2022
Plotted by: Miguel Tyshing

ARLINGTON COUNTY, VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES

STORMWATER CALCULATIONS
COLUMBIA PIKE - ROUTE 244
COLUMBIA PIKE - MULTIMODAL STREET IMPROVEMENTS
SEGMENT C

SCALE: HOR. N/A VERT. N/A SHEET: C11.6 of C11.0



ARLINGTON VIRGINIA
DEPARTMENT OF ENVIRONMENTAL SERVICES
Derik Doughty
BUREAU CHIEF, DES - DEVELOPMENT SERVICES
11/15/2022
APPROVAL DATE

STORMWATER MANAGEMENT

TOTAL PROJECT AREA: 3.34 ACRES

EXISTING IMPERVIOUS AREA: 2.94 ACRES

PROPOSED IMPERVIOUS AREA: 3.06 ACRES

THIS PROJECT WAS FUNDED BEFORE 7/1/2012. IT HAS BEEN GRANDFATHERED, THEREFORE NOT SUBJECT TO ARLINGTON'S NEW STORMWATER MANAGEMENT ORDINANCE. IT SHOULD BE GRANTED AN EXEMPTION UNDER THE CHESAPEAKE BAY PRESERVATION ORDINANCE SECTION § 61-15(A). THIS EXEMPTION IS APPLICABLE TO PUBLIC LINEAR PROJECTS THAT CONSIST SOLELY OF TRANSPORTATION AND UTILITY-RELATED INFRASTRUCTURE.

THIS PROJECT MEETS THE THREE EXEMPTION CONDITIONS IN THE CODE OF VIRGINIA FOR LINEAR DEVELOPMENT PROJECTS.

1. THERE WILL BE LESS THAN 1 ACRE DISTURBED PER OUTFALL, WITH EACH OUTFALL BEING DEFINED AS A COLLECTION POINT FOR SURFACE RUNOFF.
2. THE EXISTING HYDRAULIC CHARACTERISTICS AND OUTFALLS REMAIN THE SAME IN THE PROPOSED CONDITIONS, WITH IMPROVEMENTS TO THE ROADWAY DRAINAGE NETWORK. THE IMPERVIOUS AREA SLIGHTLY INCREASES IN THE PROPOSED CONDITIONS, BUT THE INCREASE IN PEAK FLOW RATE IS INSIGNIFICANT AND THE EXISTING STORMWATER NETWORK REMAINS ADEQUATE AS DEMONSTRATED IN THE STORMWATER CALCULATIONS.
3. THERE ARE NO EXISTING OR ANTICIPATED FLOODING OR EROSION PROBLEMS DOWNSTREAM OF THE DISCHARGE POINT. THE PROPOSED STORMWATER NETWORK DISCHARGES INTO THE EXISTING SYSTEM. THE STORMWATER PIPE AND HYDRAULIC GRADE LINE CALCULATIONS DEMONSTRATE THAT THE EXISTING SYSTEM IS ADEQUATE DOWNSTREAM OF THE DISCHARGE POINT.

Arlington, Virginia

COMPLETE ARLINGTON STREETS

FY2009 – FY2014 CIP

Program Description
In November, 2007, the County Board adopted the Master Transportation Plan (MTP) Goals and Policies document and MTP map. One of the three general policies that form the plan's foundation is to "support the design and operation of complete streets." This CIP category, formed primarily, but not exclusively, from the former Arterials category, focuses on multimodal projects integrated with adjacent community uses. Projects in this program range from intersection or interchange improvements, to new street links, to major corridor reconstruction. Although the focus is on major streets, in commercial and mixed-use areas, neighborhood street improvements are included in this category.

Master Plan Impact
Master Transportation Plan, Pedestrian Master Plan, Bicycle Master Plan, Transit Master Plan, Underground Utilities Guidelines

Bond Financing Notes
Costs shown are based on current costs. Future costs are subject to market variables that can either increase or decrease the costs shown. Bond maturity is assumed to be 20 years. The costs shown also reflect the costs as if the full approved bond was sold in the first year following approval by the voters, which may or may not be the case for any particular program.

6 YEAR PROGRAMMED SUMMARY (in \$1,000s)

| | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | FY 14 | 6 Year Total |
|---|--------------|--------------|-------|-------|-------|-------|---------------|
| Columbia Pike Complete Streets | 1,000 | 2,000 | | | | | 3,000 |
| Pentagon City/Hayes Street Corridor Improvements | | 1,000 | | | | | 1,000 |
| Rosslyn Area Multimodal Improvements | | | | | | | 500 |
| Crystal City Street Improvements | | 500 | | | | | 500 |
| Bulltown/Rosslyn Arterial Street Improvements | 2,000 | 500 | | | | | 1,250 |
| Improvements to Major Travel Corridors Outside Principal Business Districts | 2,300 | | | | | | 4,300 |
| Wayfinding Signage | 800 | 300 | | | | | 1,100 |
| Transportation Systems and Traffic Signals | 2,150 | 2,050 | | | | | 4,200 |
| Total Recommendation | 8,250 | 6,350 | | | | | 15,350 |

Footnote: Due to the fluid nature of federal and state Transportation funding, programs and projects will be subject to annual allocation of funds by the County Board. The allocations will maximize the use of available resources and enable the Transportation Investment Fund to flexibly respond to current conditions.

PROGRAM FUNDING SOURCES (in \$1,000s)

| | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | FY 14 | 6 Year Total |
|--------------------------------|--------------|--------------|-------|-------|-------|-------|---------------|
| Revenue from the Commonwealth | 750 | 750 | | | | | 1,500 |
| Developer Contribution | | | | | | | - |
| Other Funding | | | | | | | - |
| Transportation Investment Fund | 6,900 | 5,600 | | | | | 13,250 |
| Commonwealth Loan Funds | | | | | | | - |
| Master Lease | | | | | | | - |
| PAYG | 600 | | | | | | 600 |
| Bond Issue | | | | | | | - |
| Total Funding Sources | 8,250 | 6,350 | | | | | 15,350 |

BOND FINANCING IMPACT (in \$1,000s)

| | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | FY 14 |
|---------------------------|-------|-------|-------|-------|-------|-------|
| Bond Financing Cost (F&I) | 0 | 0 | 0 | 0 | 0 | 0 |

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

2.0 Authorized Non-Stormwater Discharges

Type of Authorized Non-Stormwater Discharge: _____ Likely Present at Your Project Site? _____

External buildings wash down Yes No
 Uncontaminated foundation or footing drains Yes No
 Uncontaminated excavation dewatering Yes No
 Landscape irrigation Yes No
 Others Yes No

STORMWATER POLLUTION PREVENTION PLAN
COLUMBIA PIKE MULTIMODAL STREET IMPROVEMENTS – SEGMENT C

5.0 Potential Sources of Pollution & Pollution Prevention Practices

| Pollutant-Generating Activity | Likely Present at your Project Site? | Pollutants | | | | | | | | Pollution Prevention Practice | Responsible Party | |
|--|---|------------|-----------|--------------|----------------------|-------------------------|--------------|--------------------|-----------------------|-------------------------------|-------------------|---|
| | | Sediment | Nutrients | Heavy Metals | pH (acids and bases) | Pesticides & Herbicides | Oil & Grease | Bacteria & Viruses | Trash, Debris, Solids | | | Other Toxic Chemicals |
| Clearing, grading, excavating, and un-stabilized areas | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | | | | | | | | X | (1) | Construction Activity Operator (See Cover Page of this SWPPP) |
| Paving operations | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | | | | | X | | X | (2) | | |
| Concrete washout and cement waste | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | X | X | | | | X | (3) | | |
| Structure construction, stucco, painting, and cleaning | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | X | X | | | | X | (4) | | |
| Dewatering operations | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | X | | | | | | X | (5) | | |
| Material delivery and storage | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | X | X | X | X | X | X | X | (6) | | |
| Material use during building process | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | X | X | X | X | X | X | X | (7) | | |
| Solid waste disposal | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | X | (8) | | |
| Sanitary waste | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | X | X | | | | X | | (9) | | |
| Landscaping operations | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | X | X | | X | | | X | X | (10) | | |
| Others | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | (11) | | |

Arlington County – SWPPP 7/2014

7.0 Spill Prevention & Response

Most spills can be cleaned up following manufacturer specifications. Absorbent/soil dry, sealable containers, plastic bags, and shovels/brooms are suggested minimum spill response items that should be available at this location.

1st Priority: Protect all people
 2nd Priority: Protect equipment and property
 3rd Priority: Protect the environment

1. Check for hazards (flammable material, noxious fumes, cause of spill) – if flammable liquid, turn off engines and nearby electrical equipment. If serious hazards are present leave the area and call 911. **LARGE SPILLS ARE LIKELY TO PRESENT A HAZARD.**
2. Make Sure the spill area is safe to enter and that it does not pose an immediate threat to health or safety of any person.
3. Stop the spill source.
4. Call co-workers and supervisor for assistance and to make them aware of the spill and potential dangers.
5. If possible, stop spill from entering drains (use absorbent or other material as necessary).
6. Stop spill from spreading (use absorbent or other material)
7. If spilled material has entered a storm sewer, contact locality's storm water department.
8. Clean up spilled material according to manufacturer specifications, for liquid spills use absorbent materials and do not flush area with water.
9. Properly dispose of cleaning materials and used absorbent material according to manufacturer specifications.

Emergency Contacts:

Normal Working Hours
 DEQ Northern Regional Office 703-583-3800

Nights, Holidays & Weekends
 VA Dept. of Emergency Management 804-674-2400
 24 Hour Reporting Service

Local Contacts
 Arlington County Fire & Police 703-558-2222
 DES Water, Sewer, Streets 24-Hour Emergency 703-228-6555
 Washington Gas Emergency 703-750-1400

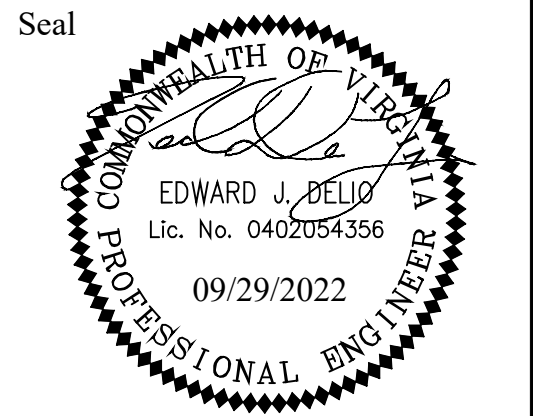
ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

Facilities & Engineering Division
 Engineering Bureau
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 Fax: 703.228.3606

Kimley»Horn
 Kimley-Horn and Associates, Inc.

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 Reston, Virginia 20191
 Phone: 703-874-1500
 Fax: 703-874-1300



Approvals _____ Date _____

Design Team Engineer Supervisor _____

Construction Management Supervisor _____

Water, Sewer, Streets Bureau Chief _____

Transportation Director _____

Project Manager _____

Revisions _____ Date _____

ARLINGTON COUNTY, VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL SERVICES

STORMWATER MANAGEMENT
 COLUMBIA PIKE - ROUTE 244
 COLUMBIA PIKE - MULTIMODAL STREET IMPROVEMENTS
 SEGMENT C

SCALE: _____ SHEET: C11.7 of C11.0

ARLINGTON VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

Rita D. Gray
 RITA D. GRAY
 BUREAU CHIEF, DES - DEVELOPMENT SERVICES

11/15/2022
 APPROVAL DATE

