Project Location Map
Albemarle County
Not to Scale

Barracks

Rivanna Airport

Charlottesville Natural Area

Ivy Creek

River

Hilton Heights Drive

Towncenter Drive

Berkmar Project Area
Project #9999-002-900

These plans are unfinished and are not to be used for any type of construction.
# Preliminary Right Of Way Data Sheet

These plans are unfinished and are not to be used for any type of construction.

## Right Of Way Data Sheet

<table>
<thead>
<tr>
<th>PARCEL NO.</th>
<th>LANDOWNER</th>
<th>TAX MAP ID#</th>
<th>TOTAL</th>
<th>PROPOSED ACQUISITION</th>
<th>FEES</th>
<th>ENDPOINTS</th>
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<td></td>
<td></td>
<td></td>
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<td>ACRES</td>
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<td>200</td>
<td>Commonwealth of Virginia</td>
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<td>3.092</td>
<td>0.343</td>
<td>1.366</td>
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<td>Commonwealth of Virginia</td>
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<tr>
<td>202</td>
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<tr>
<td>203</td>
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<td>5.510</td>
</tr>
</tbody>
</table>

**Notes:**
- Preliminary Right Of Way Data Sheet.
- These plans are unfinished and are not to be used for any type of construction.
- The data includes total, proposed acquisition, and fees for various acres and square feet.
- The endpoints are listed for each parcel.

**City/County:** Albemarle County

**LPC No.:** 10137

Plotted By: dnuckols

**Sheet No.:** 1C(1)
## PRELIMINARY RIGHT OF WAY DATA SHEET

<table>
<thead>
<tr>
<th>PARCEL NO.</th>
<th>LANDOWNER</th>
<th>TAX MAP No.</th>
<th>SHEET No.</th>
<th>PERMANENT LEASING</th>
<th>SANITARY SEWER</th>
<th>UTILITY</th>
<th>TEMPORARY</th>
<th>TEMP ENTRANCES</th>
<th>TEMP ACCESS</th>
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**NOTES:***
- THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
- TEMPORARY ACCESS MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT OF TRANSPORTATION OR TO REGULATION AND CONTROL OF TRAFFIC.
- DESIGN FEATURES RELATING TO CONSTRUCTION OF ROADS AND STRUCTURES MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT OF TRANSPORTATION.

**END OF DRAWING**
### REVISION DATA SHEET

**State Project:** 9999-002-900, PE-101, RW-201, C-501

**From:** HILTON HEIGHTS

**To:** TOWNCENTER DRIVE

**UPC Number:** 106137

**Date:** September 24, 2015

1. **- Revised Parcel 207 Permanent & Temporary Easement areas on Sheet 1C**
   - Modified permanent easement on parcel 207.
   - Added Proposed Acquisition columns on Sheet 1C and added areas for Proposed Acquisition Line.

   This Revision was made in accordance with requests from Harold L. Jones dated 09-16-15

2. **Date:** October 14, 2015

   - Extended PE101 & RW201 project limit due to the changes to the easements.
   - Modified Parcel 218 to show Proposed Acquisition Line.
   - Revised the acreage on Parcel 200.
   - Broke out areas for each kind of easement shown on all Right of Way sheets.
   - Added temporary construction easement on Parcels 229 & 231.
   - Added permanent lighting easement on Parcels 230 & 231.
   - Modified permanent lighting easement on Parcel 222.
   - Modified Parcel 209 to show Proposed Acquisition Line.
   - Added permanent lighting easement and temporary construction easement on Parcel 201.


### DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC

MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

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**Plotted By:** dnuckols
**1:21:42 PM**

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**PROJECT MANAGER**

**SURVEYED BY**

**DESIGN SUPERVISED BY**

**DESIGNED BY**

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**09/24/15**

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THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
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SURVEY ALIGNMENT DATA SHEET

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SURVEY AND CONSTRUCTION ALIGNMENT DATA SHEET
SURVEY AND CONSTRUCTION ALIGNMENT DATA SHEET

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROJECT
9999-002-900

SHEET NO.
R201, C501

STATE ROUTE PROJECT
9999-002-900

D. Covington (434-422-9373)
VDOT
Michael Russell, P.E.
Whitman, Requardt & Associates
VA.

SCALE

REVISED

1403

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
CONSTRUCTION ALIGNMENT DATA SHEET

BERKMAR (Continued)

Curve BERKMAR-04
Chord Bear = N 48° 44' 37.06" E
Pan. Station 132+89.69 N 644,991.22 E 3,291,689.83
Mid. Ord. = 9.37
External = 9.46
Length = 274.08
P.I. Station 131+53.51 N 644,915.30 E 3,291,574.71

Curve BERKMAR-05
Chord Bear = N 36° 34' 54.25" E
Ahead = N 40° 53' 30.45" E
P.C. Station 116+16.58 N 643,746.49 E 3,290,577.49
External = 2.83
Radius = 1,000.00
Length = 150.44
Tangent = 75.36
P.I. Station 116+91.94 N 643,810.22 E 3,290,617.73

Curve BERKMAR-06
Chord Bear = N 15° 50' 36.38" E
Ahead = N 32° 16' 18.054" E
Back = N 0° 35' 05.299" W
P.T. Station 112+78.13 N 643,460.33 E 3,290,396.78
Tangent = 294.85
Curve BERKMAR-02

Curve BERKMAR-07
Course from PT BERKMAR-06 to PC BERKMAR-07 N 40° 12' 15.93" E Dist 613.44
Chord Bear = N 25° 18' 41.82" E
Back = N 10° 25' 07.71" E
Mid. Ord. = 33.59
Long Chord = 514.02
Tangent = 265.94
P.C. Station 149+67.65 N 646,401.56 E 3,292,433.47

BERKMAR (Continued)

Curve BERKMAR-08
Course from PT BERKMAR-07 to PC BERKMAR-08 N 18° 55' 04.91" E Dist 1,547.25
Chord Bear = N 23° 57' 05.05" E
Ahead = N 28° 59' 05.19" E
Mid. Ord. = 17.20
Tangent = 187.92
Delta = 21° 17' 11.02" (LT)
Curve BERKMAR-01

Curve BERKMAR-09
Course from PT BERKMAR-08 to PC BERKMAR-09 N 28° 59' 05.19" E Dist 789.30
Chord Bear = N 23° 57' 05.05" E
Ahead = N 28° 59' 05.19" E
Length = 175.69
Delta = 10° 04' 00.26" (RT)
Curve BERKMAR-08

BERKMAR (Continued)

Curve BERKMAR-10
Course from PT BERKMAR-09 to PC BERKMAR-10 N 0° 52' 07.31" W Dist 567.27
Chord Bear = N 0° 52' 07.31" W
Ahead = N 0° 52' 07.31" W
C.C. = N 650,455.12 E 3,293,312.07
Mid. Ord. = 33.74
Long Chord = 515.16
External = 34.92
Length = 515.16
Tangent = 81.56
Degree = 7° 09' 43.10"
Delta = 36° 02' 20.35 (RT)

BERKMAR (Continued)

Curve BERKMAR-11
Course from PT BERKMAR-10 to PC BERKMAR-11 N 20° 37' 13.99" E Dist 20.24
Back = N 32° 24' 36.49" E
C.C. = N 642,835.28 E 3,289,454.80
P.T. Station 999+76.49 N 642,557.06 E 3,290,194.19
Mid. Ord. = 4.17
External = 4.19
Radius = 790.00
Length = 162.55
Tangent = 81.56
Degree = 7° 09' 43.10"
Delta = 24° 15' 37.48" (LT)
Curve EXISTBERK-01

Curve BERKMAR-12
Course from PT BERKMAR-11 to PC BERKMAR-12 N 0° 52' 07.31" W Dist 264.66
Chord Bear = N 44° 18' 37.68" E
Ahead = N 44° 18' 37.68" E
C.C. = N 653,362.48 E 3,295,746.87
Mid. Ord. = 14.53
Long Chord = 262.52
External = 14.89
Length = 264.66

BERKMAR (Continued)

ENDING CHAIN BERKMAR DESCRIPTION

BEGINNING CHAIN EXISTBERK DESCRIPTION

NECESSARY BY THE DEPARTMENT ANY TYPE OF CONSTRUCTION.

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
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### UNDERGROUND UTILITIES TEST HOLE INFORMATION

<table>
<thead>
<tr>
<th>PLAN SHEET</th>
<th>TEST HOLE</th>
<th>DISTANCE FROM ROADWAY</th>
<th>OWNER</th>
<th>TYPE OF FACILITY</th>
<th>ELEV (FT)</th>
<th>REMARKS</th>
<th>INSTALLATION REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>106+39 BERKMAR</td>
<td>VDOT</td>
<td>12&quot; WATER</td>
<td>465.54</td>
<td>NO</td>
<td>3' ELEV COVER</td>
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</table>

**NOTES:**

1. **ELEVATIONS SHOWN HEREON ARE TO THE TOP OF THE BASELINE UNLESS OTHERWISE NOTED.**
2. **ALL TEST HOLES ARE REFERENCED FROM THE SURVEY BASELINE UNLESS OTHERWISE NOTED.**
3. **YES OR NO INDICATES NO DIRECT CONTACT. REQUIRED CLEARANCE MAY BE LESS THAN ACCEPTABLE TO OTHER OWNERS.**
4. **REQUIRED TO REFUSE CLEARANCE DIMENSION REGARDLESS OF OWNERSHIP.**
5. **YES OR NO, INFORMATION TO BE PROVIDED BY THE VDOT DISTRICT UTILITY ENGINEER.**

**PROJECT MANAGER:**

**SURVEYED BY:**

**DESIGN SUPERVISED BY:**

**DESIGNED BY:**

**Plotted By:** dnuckols

**1:21:54 PM N:\45818-000\CADD\d106137001g.dgn**

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**UNDERGROUND UTILITIES TEST HOLE INFORMATION**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>SHEET NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA 403</td>
<td>9999-002-900</td>
</tr>
</tbody>
</table>

---

**LEGEND:**

- W: T/Tg Duct
- SFM: 
- G: 

**NOTES:**

1. **YES OR NO; INFORMATION TO BE PROVIDED BY THE VDOT DISTRICT UTILITY ENGINEER REGARDLESS OF DISTANCE.**
2. **REMARKS TO INCLUDE CLEARANCE DIMENSION TO UTILITY OWNER.**
3. **HOWEVER, CLEARANCE MAY BE LESS THAN ACCEPTABLE TO OTHER OWNERS.**
4.  **NOTES:**
5. **YES OR NO: NO INDICATES NO DIRECT CONTACT. REQUIRED CLEARANCE MAY BE LESS THAN ACCEPTABLE TO OTHER OWNERS.**

---

**VAGUES:**

1. **DENNIS, VIRGINIA POWER - DISTRIBUTION**
   - MR. ROBERT JONES, SUPERVISOR CUSTOMER SOLUTIONS
   - 1706 EDUCATION ROAD
   - CHARLOTTESVILLE, VIRGINIA 22901
   - O: (434) 272-7734
   - E: RJONES@VIRGINIAPOWER.COM

2. **DENNIS, VIRGINIA POWER - TRANSMISSION**
   - MR. JAMES McGUIRE, TRANSMISSION LINE ENGINEER
   - 1706 EDUCATION ROAD
   - CHARLOTTESVILLE, VIRGINIA 22901
   - O: (434) 272-7734
   - E: JMCGUIRE@VIRGINIAPOWER.COM

3. **CENTRAL VIRGINIA PUBLIC UTILITIES DUBBIN**
   - MR. DAVID BOYD, PUBLIC UTILITIES DUBBIN ENGINEER (WATER & SANITARY SEWER)
   - 202 EAST MAIN STREET
   - NAPLES, VIRGINIA 22718
   - O: (434) 987-4567
   - E: DBOYD@CENTRALPUD.ORG

4. **CITY OF CHARLOTTESVILLE PUBLIC UTILITIES DUBBIN**
   - MR. DAVID HUBERT, PUBLIC UTILITIES DUBBIN ENGINEER (WATER & SANITARY SEWER)
   - 202 EAST MAIN STREET
   - NAPLES, VIRGINIA 22718
   - O: (434) 987-4567
   - E: DHUBERT@CHARLOTTESVILLE.ORG

5. **ALBEMARLE COUNTY SERVICE AUTHORITY**
   - MR. BRIAN CHEY, WATER & SEWER ENGINEER
   - 780 BLUE RIDGE ROAD
   - CHARLOTTESVILLE, VIRGINIA 22901
   - O: (434) 970-3757
   - E: BCHEY@CHARLOTTESVILLE.ORG

6. **DOMINION VIRGINIA POWER - DISTRIBUTION**
   - MR. JIMMIE SMITH, SUPERVISOR CUSTOMER SOLUTIONS
   - 1706 EDUCATION ROAD
   - CHARLOTTESVILLE, VIRGINIA 22901
   - O: (434) 272-7734
   - E: JSMITH@VIRGINIAPOWER.COM

---

**10/30/2015**
MAINTENANCE OF TRAFFIC

TRANSPORTATION OPERATIONS PLAN

A. THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:
1. POSTING A LIST OF LOCAL EMERGENCY RESPONSE AGENCIES INSIDE THE PROJECT'S CONSTRUCTION OFFICE/FACILITY.
2. EMERGENCY INCIDENT MANAGEMENT PLAN AND EMERGENCY FIELD KIT TO BE PLACED IN THE CONSTRUCTION OFFICE/FACILITY.
3. EMERGENCY INCIDENT REPORTING PROCEDURE TO BE CHECKED FOR ACCURATE AND DETAILED REPORTS.
4. THE DEPARTMENT REQUESTS THE CONTRACTOR'S ASSISTANCE IN CLARIFYING THE PROJECT TO PROVIDE AN UNPAID WORK ZONE.
5. THE DEPARTMENT KEYS MAINTENANCE RESPONSIBILITY HONORED THE DEPARTMENT'S REQUESTS CONSTRUCTION ACTIVITIES IN PERFORMING PREVIOUS MAINTENANCE WITHIN THE PROJECT AREA/COORDINATE WITH VDOT OVER/DUTY DISTRICT MAINTENANCE SECTOR OR REGULAR MAINTENANCE ITEM SUCH AS REASSESSING ITEMS INCLUDING ANIMALS, CAGED FROM THE ROADWAY/UN-LAWFUL PROTECTION REGULATIONS AND OTHER LINK MAINTENANCE ACTIVITIES.

B. INCIDENTS SHALL COMPLY WITH THE FOLLOWING:
1. A LANE CLOSURE LOCATION FULFILLMENT SHALL BE AS DESCRIBED IN THE TMP.
2. IT IS THE RESPONSIBILITY OF THE WORK ZONE SUPERVISOR TO DETERMINE THE LANE CLOSURE LOCATION, TO BE ADHERED TO THE TEMPORARY TRAFFIC CONTROL PLAN.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADVANCE CONTROL NOTIFICATION OF LANE CLOSURES VIA PANS AND SIGNS ON-DAY CONFORMITY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.

C. THE PLAN TO NOTIFY THE REGIONAL TRANSPORTATION OPERATIONS CENTER TO PLACE LANE CLOSURE INFORMATION ON THE 511 SYSTEM AND VARTHAH.
1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADVANCE CONTROL NOTIFICATION OF LANE CLOSURES VIA PANS AND SIGNS ON-DAY CONFORMITY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.
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4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADVANCE CONTROL NOTIFICATION OF LANE CLOSURES VIA PANS AND SIGNS ON-DAY CONFORMITY WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.

D. THE VIOLATION OF THE TEMPORARY TRAFFIC CONTROL INSTALLATION REVIEWS SHOULD TAKE PLACE DURING BOTH DAYTIME AND NIGHTTIME. THE CONTRACTOR'S WORK ZONE SAFETY COORDINATOR SHALL ALL BE DOCUMENTED. MAINTENANCE OF TRAFFIC PHASE 3

E. TIMING OF WORK ZONE SAFETY COORDINATOR SHALT ALL BE DOCUMENTED. MAINTENANCE OF TRAFFIC PHASE 3

F. THE PROJECT INSPECTOR AND/OR DESIGN BUILD CONSTRUCTION MANAGER SHALL CALL THE REGIONAL TRANSPORTATION OPERATIONS CENTER ONCE A WEEK.

G. THE PUBLIC COMMUNICATIONS PLAN

1. THIS PROJECT WILL UTILIZE A TUESDAY INCIDENT MANAGEMENT PLAN.
2. THIS PLAN WAS SUBMITTED UNDER SEPARATE COVER AND IS AN ATTACHMENT TO THE TMP PLAN.

H. PROJECT MANAGEMENT PLAN

1. THIS PROJECT WILL UTILIZE A TUESDAY INCIDENT MANAGEMENT PLAN.
2. THIS PLAN WAS SUBMITTED UNDER SEPARATE COVER AND IS AN ATTACHMENT TO THE TMP PLAN.

VIRGINIA STATE POLICE (IF NECESSARY) TO DISCUSS MODIFICATION AND IMPLEMENTATION OF AN IMPROVED TRAFFIC CONTROL PLAN.
THE PLAN THEN A MEETING WILL BE CALLED WITH THE CONTRACTOR, VDOT PROJECT PERSONNEL, VDOT TRAFFIC SAFETY REPRESENTATIVES, AND THE REGIONAL INCIDENT MANAGEMENT COORDINATOR, AND PUBLIC AFFAIRS MANAGER.

THE VIRGINIA STATE POLICE REPORT OF THE INCIDENT WILL BE REVIEWED BY THE AREA CONSTRUCTION ENGINEER TO DETERMINE IF THE MODIFICATION OF THE TEMPORARY TRAFFICCONTROL INSTALLATION IS NECESSARY. IT IS DETERMINED THAT IT IS NECESSARY TO ALTER THE PLAN THEN A MEETING WILL BE CALLED WITH THE CONTRACTOR/PROJECT PERSONNEL/TRAFFIC SAFETY REPRESENTATIVES AND THE VIRGINIA STATE POLICE OF NECESSARY CHANGES MADE.
MAINTENANCE OF TRAFFIC

GENERAL NOTES

WHEN TEMPORARY PAVEMENT MARKINGS ARE USED, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED AS WELL, IN ACCORDANCE WITH TTC-60.0.

IN ADDITION TO THE LIMITATIONS OF OPERATIONS DEFINED BY SECTION 259.0 OF THE ORV/SHOP MANUAL, THE CONTRACTOR IS RESPONSIBLE FOR ALL OPERATIONS WHICH ARE TO BE CONDUCTED IN THE WORK ZONE.

SEQUENCE OF CONSTRUCTION PLANS OR AS APPROVED BY THE ENGINEER.

CONCRETE TRAFFIC BARRIER SERVICE SHALL BE INSTALLED AND REMOVED SO AS TO NOT PRESENT ANY BLUNT END OR HAZARD TO THE MOTORING PUBLIC. THE UNDERGROUND UTILITY SERVICES WILL NOT BE INTERRUPTED.

ALL ENTRANCES, INTERSECTIONS, PEDESTRIAN ACCESS POINTS/ROUTES AND/OR BUS STOPS THAT WILL BE AFFECTED BY THE WORK ZONE OR BY THE TRAFFIC OCCURS, (FIRST CONE, DRUM, OR SIGN INSTALLED). LANE CLOSURES ARE NOT PERMISSIBLE OUTSIDE OF WORK HOURS.

TRAVELING PUBLIC.

PORTIONS OF ROADWAYS IN OTHER PHASES MAY BE CONSTRUCTED PROVIDED THEY DO NOT INTERFERE WITH EXISTING TRAFFIC FLOW AND/OR DO NOT COMPROMISE THE HEALTH, SAFETY AND WELFARE OF THE TRAVELING PUBLIC.

THE UNIVERSITY OF VIRGINIA HOME FOOTBALL GAMES SHALL BE FROM 7:00 AM THE DAY OF THE FOOTBALL GAME TO 7:00 AM THE FOLLOWING DAY.

THE UNIVERSITY OF VIRGINIA HOME FOOTBALL GAMES SHALL BE FROM 7:00 AM THE FOLLOWING DAY TO 7:00 AM THE DAY OF THE FOLLOWING FOOTBALL GAME.

EASTER HOLIDAY SHALL BE FROM 7:00 AM ON GOOD FRIDAY OF EACH CALENDAR YEAR UNTIL 7:00 AM THE FOLLOWING MONDAY AFTER EASTER.

CHRISTMAS DAY HOLIDAY SHALL BE FROM 7:00 AM DECEMBER 23RD OF EACH CALENDAR YEAR UNTIL 7:00 AM DECEMBER 27TH OF EACH CALENDAR YEAR.

FAILURE TO REMOVE LANE CLOSURES WITHIN THE HOURS OUTLINED ABOVE MAY RESULT IN FINES CHARGED TO THE CONTRACTOR AT VDOT'S DISCRETION.

CALCULATION METHODOLOGY AND RATES ARE SET AND AGREED UPON IN DESIGNED CONTRACT.

PROJECT SHEET NO. 1H(2)

TEMPORARY TRAFFIC CONTROL PLAN - GENERAL NOTES

TEMPORARY TRAFFIC CONTROL PLAN - GENERAL NOTES

THIS TEMPORARY TRAFFIC MANAGEMENT PLAN CAPTURES IN DESIGN ACCORDANCE WITH VDOT'S UNIFORM AND THE ZOD WORK AREA PROTECTION MANUALS.THIS PLAN IS DESIGNED TO SUPPORT THE CONSTRUCTION OF EXTRA LANE OF TRAFFIC ADDRESSES THE NEED OF A SHORT-TERM TRAFFIC MANAGEMENT PLAN AT THE SOUTHERN MOST LIMIT OF THE JOB, AS THERE IS NO IMMEDIATE WORK ZONE BEYOND THE PROJECT LIMITS.

WHAT IS THE INTENT OF THIS PLAN TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE CONSTRUCTION OF EACH STAGE, BUT ONLY TO SHOW THE NATURE AND THE SEQUENCE OF CONSTRUCTION PLANS OR AS APPROVED BY THE ENGINEER.

CONTRACTOR TO ENSURE THAT GAPS OR OPENINGS ARE PROVIDED IN THE TRAFFIC BARRIER SERVICE TO COINCIDE WITH VERTICAL SAGS AND HAVE POSITIVE TRAFFIC PROTECTION RELATING TO CONSTRUCTION FEATURES.

ANY TYPE OF CONSTRUCTION.

WHEN TEMPORARY PAVEMENT MARKINGS ARE USED, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE USED AS WELL, IN ACCORDANCE WITH TTC-60.0.

FAILURE TO REMOVE LANE CLOSURES WITHIN THE HOURS OUTLINED ABOVE MAY RESULT IN FINES CHARGED TO THE CONTRACTOR AT VDOT'S DISCRETION.

CALCULATION METHODOLOGY AND RATES ARE SET AND AGREED UPON IN DESIGNED CONTRACT.

PROJECT SHEET NO. 1H(2)
MAINTENANCE OF TRAFFIC

SEQUENCE OF CONSTRUCTION

NOTES:
1. ADVANCED WARNING SIGNS ARE TO BE INSTALLED IN EACH PHASE PRIOR TO THE COMMENCEMENT OF WORK IN EACH STAGE.
2. INSTALL E&S PERIMETER CONTROLS AND INLET PROTECTION AS REQUIRED AND AS SHOWN ON THE PHASED E&S SHEETS PRIOR TO THE COMMENCEMENT OF WORK IN EACH STAGE.
3. BERKMAR DRIVE FROM STATION 000+00 TO STATION 233+00 MAY BE BUILT CONCURRENTLY WITH ANY PHASE OF CONSTRUCTION AS IT IS AN NEW ALIGNMENT AND CLOSED TO ALL TRAFFIC UNTIL THE PROJECT IS COMPLETED.

PHASE 1 - SHEETS IH(4) THRU IH(6)

A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
B) CLOSE THE EXISTING TRUCK ENTRANCE TO SAM'S CLUB WITH PROPOSED CURB AND GUTTER PROTECTION MANIAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
C) INSTALL PROPOSED ROUNDABOUT SIGNING. A) CLOSE THE EXISTING TRUCK ENTRANCE TO SAM'S CLUB WITH PROPOSED CURB AND GUTTER PROTECTION MANIAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
D) INSTALL DRAINAGE ITEMS AS REQUIRED.
E) CLOSE THE EXISTING TRUCK ENTRANCE TO SAM'S CLUB WITH PROPOSED CURB AND GUTTER PROTECTION MANIAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.

PHASE 2A - SHEETS IH(7) THRU IH(9)

A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
B) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
C) INSTALL DRAINAGE ITEMS AS REQUIRED.
D) INSTALL DRAINAGE ITEMS AS REQUIRED.
E) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.

PHASE 2B - SHEETS IH(10) THRU IH(12)

A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
B) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
C) INSTALL DRAINAGE ITEMS AS REQUIRED.
D) INSTALL DRAINAGE ITEMS AS REQUIRED.
E) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.

PHASE 3 - SHEETS IH(13) THRU IH(15)

A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
B) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
C) INSTALL DRAINAGE ITEMS AS REQUIRED.
D) INSTALL DRAINAGE ITEMS AS REQUIRED.
E) INSTALL PROPOSED ROUNDABOUT SIGNING. A) INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES AS SHOWN ON THE TRAFFIC CONTROL SHEETS AND AS REQUIRED BY THE VIRGINIA WORK AREA PROTECTION MANUAL. ERADICATE EXISTING PAVEMENT MARKINGS AS NEEDED.
MAINTENANCE OF TRAFFIC PHASE 2A
MAINTENANCE OF TRAFFIC PHASE 2B
MAINTENANCE OF TRAFFIC PHASE 2B
MAINTENANCE OF TRAFFIC PHASE 3

NOTES:
- Station 3000 to Station 3500 may be built concurrently with any stage of construction. The entrance to Sams Club at Station 3000 must be built in Phase 1A shown.

LEGEND:
- Item 1: Construction pavement marking (Type F, Class II) required.
- Item 2: Construction pavement marking (Type F, Class II) required.
- Item 3: Construction pavement marking (Type F, Class II) required.
- Item 4: Construction pavement marking (Type F, Class II) required.
- Item 5: Traffic direction
- Item 6: Temporary pavement marking
- Item 7: Planned sign
- Item 8: Group 2 controlling devices (Triple, U2T Slow Down, Traffic Light, U2T Slow Down, Traffic Light)
- Item 9: Permanent construction Phase 1B
- Item 10: Permanent construction Phase 2
- Item 11: Traffic signals

These plans are unfinished and are not to be used for any type of construction.
MAINTENANCE OF TRAFFIC PHASE 3
Berkmar Drive Extension
Proposed Two-Lane Section

NOTES:
1. MILL UNITS OF ANY MILLING EROSION AND FILL DEPTH PROVIDED REFER TO THE PLAN SHEETS.
2. REFER TO PROFESSIONAL ENGINEERING DATA REPORT FOR PAVEMENT DESIGN.
3. MILL CONSISTS OF REMOVING THE AGGREGATE WITH GEOTEXTILE DRAINAGE FABRIC.
4. MOD. UD-1 CONSISTS OF WRAPPING THE AGGREGATE WITH HYDRAULIC CEMENT CONCRETE, CLASS A.
5. MOD. UD-1 CONSISTS OF WRAPPING THE AGGREGATE WITH HYDRAULIC CEMENT CONCRETE, CLASS A.
6. AGGREGATE BASE MATERIAL TYPE GD-75.
7. AGGREGATE BASE MATERIAL TYPE UD-1.
8. AGGREGATE BASE MATERIAL TYPE UD-1.
9. AGGREGATE BASE MATERIAL TYPE UD-1.
10. AGGREGATE BASE MATERIAL TYPE UD-1.

1. FOR LIMITS OF MILL AND OVERLAY AND NOTES REFER TO SHEET 2A(3) FOR DETAILS.
2. REFER TO GEOTECHNICAL ENGINEERING DATA REPORT FOR PAVEMENT DESIGN.
3. FULL DEPTH PAVEMENT, REFER TO THE PLAN SHEETS.
4. MOD. CG-3 (SEE SHEET 2A(3) FOR DETAILS)
5. MOD. CG-3 (SEE SHEET 2A(3) FOR DETAILS)

NOTES:
1. ASPHALT CONCRETE SURFACE, TYPE SM-9.5A @ 165 LB/SY.
2. ASPHALT CONCRETE BASE, TYPE BM-25.0A.
3. ASPHALT CONCRETE INTERMEDIATE, TYPE IM-19.0A.
4. HYDRAULIC CEMENT CONCRETE, CLASS A.
5. HYDRAULIC CEMENT CONCRETE, CLASS A.
6. HYDRAULIC CEMENT CONCRETE, CLASS A.
7. HYDRAULIC CEMENT CONCRETE, CLASS A.
8. HYDRAULIC CEMENT CONCRETE, CLASS A.
9. HYDRAULIC CEMENT CONCRETE, CLASS A.
10. HYDRAULIC CEMENT CONCRETE, CLASS A.

INSET A
INSET B
INSET C
INSET D
INSET F

10 /3 0 /2 0 15
PROJECT MANAGER
SURVEYED BY
DESIGN SUPERVISED BY
DESIGNED BY
R201, C501
9999-002-900
Michael Russell, P.E.
VDOT
D. Covington (434-422-9373)
PROJECT
SHEET NO.
9999-002-900
REVISED
STATE ROUTE PROJECT
9999-002-900
STATE ROUTE PROJECT
SHEET NO.
85x97
5405
300
**TYPICAL SECTIONS**

NOT TO SCALE

**REPORT FOR PAVEMENT DESIGN.**

1. **REFER TO GEOTECHNICAL ENGINEERING DATA**

2A(3) FULL DEPTH PAVEMENT, REFER TO THE PLAN SHEETS.

1. **FOR LIMITS OF MILL AND OVERLAY AND**

NOTES:

- **PROFILE GRADE LINE**
- **SBL**
- **NBL**
- **STATION TO STATION**
- **B**
- **L**

- **SBL**
- **NBL**
- **STATION TO STATION**

2. **EXISTING BERMARC DRIVE**

3. **EXISTING HILTON HEIGHTS ROAD**

**PRIVATE AND COMMERCIAL ENTRANCES**

**TYPE I**

- **Crushed Run Aggr.**
- **Aggr. 25 or 26**

**TYPE II**

- **Asphalt Commercial**
- **TYPE III**

- **Concrete**

- **Concrete Entrance Pavement**

- **TYPE IV**

- **Asphalt**

- **Crusher Run Aggr.**

- **NOT TO SCALE**

- **SEE INSET E**

- **INSET C**

- **PRIVATE AND COMMERCIAL ENTRANCES**

- **INSET E**

- **INSET C**

- **NOT TO SCALE**

- **SEE INSET C**

- **SEE INSET E**

- **NOT TO SCALE**

- **PRIVATE AND COMMERCIAL ENTRANCES**

**NOTES:**

1. **THIS ITEM MAY BE PRECAST OR CAST IN PLACE.**

2. **CONCRETE TO BE CLASS AS IF CAST IN PLACE.**

3. **THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 7" UP DEPTH IS INCREASED AS MUCH AS 3" IN DEPTH IN ORDER THAT THE BOTTOM OF THE CURB WILL CONFORM WITH THE TOP OF A COURSE OF THE PAVEMENT'S SUBSTRATE.**

4. **THE MODIFICATION TO THE STANDARD 10.3 IS TO REDUCE THE EXPOSED WEIGHT OF THE CURB AS SHOWN MODIFIED CURB SHALL BE TWO FOR AS STANDARD 10.3.**

**THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.**
## Demolition of Buildings - Clearing of Parcels - Closing of Wells - Underground Storage Tank Removal Summary

<table>
<thead>
<tr>
<th>Sheet Number</th>
<th>Parcel Number</th>
<th>Demolition Number</th>
<th>Landowner</th>
<th>Station</th>
<th>Description</th>
<th>Included in Contract</th>
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<td>200</td>
<td>D-701</td>
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<td>09-7433,0T</td>
<td>Light Pole</td>
<td>Each</td>
<td>I.S.</td>
</tr>
</tbody>
</table>

**TOTAL**

---

**These plans are unfinished and are not to be used for any type of construction.**
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)  
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to apply to all Virginia projects for which a Virginia Department of Transportation (VDOT) Stormwater From Construction Activities (SFOC) Construction Permit is issued. The SFOC Permit is issued by the VDOT. A copy of the SFOC Permit must be included with the site plan and permit. The SFOC Permit contains information regarding the construction site, the construction plan set and other such documents for this land disturbance (construction) activity. 

The SWPPP General Information sheets are to be completed and included in the construction plan set or other such documents for this land disturbance (construction) activity. 

This proposed activity disturbs one acre or greater and requires coverage under the VDOT's Erosion and Sediment Control (ESC) Program, or the VPDES General Permit for Discharges of Stormwater From Construction Activities (VPDES) Permit issued by the DEQ. A copy of the VPDES Permit must be included with the site plan and permit. 

This activity has been developed in accordance with VDOT's Annual Erosion and Sediment Control Permit (VAR10), the registration information (LD-445 form) and the VPDES General Permit for Discharges of Stormwater From Construction Activities (VPDES). These documents for this land disturbance (construction) activity (Note: Individual(s) shall be designated by the contractor) are contained in the applicable sections of the documents identified in the Note 1 of Section 1 of these SWPPP General Information sheets. 

The Virginia Administrative Code: 8. This land disturbance (construction) activity discharges stormwater to the following waters of the commonwealth: POWELL CREEK (BENTHIC MACROINVERTEBRATES BIOASSESSMENTS) 

6. This land disturbance (construction) activity discharges stormwater to the following waters of the commonwealth: 

2. This land disturbance (construction) activity site is located in ALBEMARLE COUNTY and is part of the Shenandoah River Watershed. 

7. A description of interim and permanent stabilization practices for the site are included in the construction plan set or other such documents for this land disturbance (construction) activity. 

1. Activity Description: Approximately 2 miles of new roadway and a new bridge. 

12. The name of the VDOT individual responsible for the inspection of the erosion and sediment control program measures is identified in the applicable sections of the documents identified in the Note 1 of these SWPPP General Information sheets. 

The VDOT RLD will ensure that the information shown on the SWPPP General Information sheets is consistent with the construction plan set or other such documents for the land disturbance (construction) activity. The updated/revised sheets must be maintained with designated VAR10 and DEQ Personnel.

SECTION I  GENERAL INFORMATION

9. A description and schedule of procedures to maintain vegetation, erosion and sediment control measures proposed for this land disturbance (construction) activity are contained in the construction plan set (or other such documents) for this land disturbance (construction) activity. 

XX. The name of the individual or contractor responsible for the installation and implementation of the erosion and sediment control measures is identified in the applicable sections of the documents identified in the Note 1 of these SWPPP General Information sheets. 

10. A description of the variance, the date approved and the approving DEQ Office shall be provided by the contractor in accordance with Section 108.03 of the Virginia Administrative Code. 

XX. The name of the individual or contractor responsible for the installation and implementation of the erosion and sediment control measures is identified in the applicable sections of the documents identified in the Note 1 of these SWPPP General Information sheets. 

The contractor shall maintain and implement the land disturbance operations in order to: 

a. Control the volume and velocity of stormwater runoff within the site to minimize erosion. 

b. Minimize the amount of soil exposed. 

c. Minimize the disturbance of陡峭 slopes. 

d. Minimize sediment discharge from the site. 

e. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas, provide sediment basins and prepare sediment basins to minimize the amount of sediment transported onto a paved public road surface. 

f. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas, provide sediment basins and prepare sediment basins to minimize the amount of sediment transported onto a paved public road surface. 

The contractor shall maintain and implement the land disturbance operations in order to: 

1. The following activities will be performed for the Virginia Erosion and Sediment Control (ESC) Program: a description of the variance, the date approved and the approving DEQ Office shall be provided by the contractor in accordance with Section 108.03 of the Virginia Administrative Code. 

2. The intent of sediment and erosion control activities that occur at the site, such as grading, excavation, construction, and infrastructure installation, etc. should provide for stormwater management practices in accordance with Section 108 of the VPDES General Information sheets and must be included with the other SWPPP documents for this land disturbance (construction) activity. 

3. The name of the VDOT individual responsible for the inspection of the erosion and sediment control program measures is identified in the applicable sections of the documents identified in the Note 1 of these SWPPP General Information sheets. 

4. Areas of soil disturbance and areas of the site which will not be disturbed are identified in the construction plan set for other such documents for this land disturbance (construction) activity. 

5. Locations of major structural and nonstructural ESC measures intended to filter, contain or divert sediment and pollutants are identified in the construction plan set for other such documents for this land disturbance (construction) activity. 

6. Locations where sediment control techniques are expected to occur are identified in the construction plan set for other such documents for this land disturbance (construction) activity. 

7. A certification process for experienced sediment control practitioners for the site is identified in the applicable sections of the documents identified in the Note 1 of these SWPPP General Information sheets. 

8. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stormwater management techniques are initiated will be provided by the contractor and identified on the record set of plans or in other appropriate contract documents. 

9. A description and schedule of procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good and effective operating condition is identified on the DEQ SWPPP forms, which will be maintained with the other SWPPP documents for this land disturbance (construction) activity. 

10. A description of the variance, the date approved and the approving DEQ Office shall be provided by the contractor in accordance with Section 108.03 of the Virginia Administrative Code. 

11. The contractor shall maintain and implement the land disturbance operations in order to: 

a. Control the volume and velocity of stormwater runoff within the site to minimize erosion. 

b. Minimize the amount of soil exposed. 

c. Minimize the disturbance of steep slopes. 

d. Minimize sediment discharge from the site. 

e. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas, provide sediment basins and prepare sediment basins to minimize the amount of sediment transported onto a paved public road surface. 

f. Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas, provide sediment basins and prepare sediment basins to minimize the amount of sediment transported onto a paved public road surface. 

SHEET NO.

9999-002-900

REVISED

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL INFORMATION SHEET

The Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with the requirements of VSMP - Virginia Stormwater Management Program (VSMP) as outlined in the VDOT IIM-LD-195.8 Section 19.3. The SWPPP shall be completed and submitted to the Virginia Department of Transportation (VDOT) prior to the commencement of construction activities that disturb or regrade land to an area equal to or greater than 5,000 square feet or disturb or regrade land that is greater than five acres in Virginia, except as provided in the Virginia Chesapeake Bay Preservation Act.

The SWPPP shall be completed and submitted to the Virginia Department of Transportation (VDOT) prior to the commencement of construction activities that disturb or regrade land to an area equal to or greater than 5,000 square feet or disturb or regrade land that is greater than five acres in Virginia, except as provided in the Virginia Chesapeake Bay Preservation Act.

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The SWPPP shall be completed and submitted to the Virginia Department of Transportation (VDOT) prior to the commencement of construction activities that disturb or regrade land to an area equal to or greater than 5,000 square feet or disturb or regrade land that is greater than five acres in Virginia, except as provided in the Virginia Chesapeake Bay Preservation Act.

The SWPPP shall be completed and submitted to the Virginia Department of Transportation (VDOT) prior to the commencement of construction activities that disturb or regrade land to an area equal to or greater than 5,000 square feet or disturb or regrade land that is greater than five acres in Virginia, except as provided in the Virginia Chesapeake Bay Preservation Act.

The SWPPP shall be completed and submitted to the Virginia Department of Transportation (VDOT) prior to the commencement of construction activities that disturb or regrade land to an area equal to or greater than 5,000 square feet or disturb or regrade land that is greater than five acres in Virginia, except as provided in the Virginia Chesapeake Bay Preservation Act.
STORMWATER POLLUTION PREVENTION PLAN (SWPPP)  
GENERAL INFORMATION SHEET

The information contained in the SWPPP General Information sheets is intended to comply with the requirements of the VDES General Permit for Discharges of Stormwater from Construction Activities (the VDES Construction Permit) issued July 1, 2004 and VDES approved ANVAC and SWM Standards and Specifications.

The SWPPP General Information sheets are to be completed and included in the construction plans (or other such documents for land disturbance activities) that disturb an area equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

**SECTION VI - PERMANENT BMP INFORMATION**

**NOTES:**
1. Unless otherwise noted, all coordinates are to the nearest 15 seconds.
2. For streams with no names, list "(Unnamed Tributary to closest stream name)."
3. Show acres treated to the nearest one tenth or pounds purchased to the nearest one hundredth.
4. Include agreements with off-Site BMP owners.
5. Information pertains to the alternative BMP option location, where applicable.
6. Applies to the purchase of nutrient credits only.
7. 4th Order for Nutrient Credit Banks and 6th order for other BMP types.
8. Pre-approved shop drawings of Manufacturing Devices (MDs) are to be included with the BMP Information submitted with the LO-4450 form.

**ALTERNATIVE BMP INFORMATION**

**Table 2**

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<tr>
<th>BMP Type</th>
<th>Name</th>
<th>County or City</th>
<th>Latitude/Longitude</th>
<th>State Hydrologic Unit Code</th>
<th>Project Acres Treated Per BMP</th>
<th>Nutrient Credits Acquired (lbs./acre/year)</th>
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**STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**

**GENERAL INFORMATION SHEET**

This VDES GP, among other things, requires that the information shown on the SWPPP General Information sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The SWPPP Planning sheets are updated with the geographic record set of plans for other such documentation of the land disturbance (construction) activity.

X Denotes information that is to be provided/completed by the VDES GP.
XX Denotes information that is to be provided/completed by the contractor.

**ACRONYMS**

- BMP: Best Management Practice
- DEQ: Department of Environmental Quality
- EPA: U.S. Environmental Protection Agency
- SWM: Stormwater Management
- RLD: Responsible Land Disturber
- VESCP: Virginia Erosion and Sediment Control Program
- VSMP: Virginia Stormwater Management Program
- SWPPP: Stormwater Pollution Prevention Plan
- R&B: Road and Bridge
- VA: Virginia
- VDOT: Virginia Department of Transportation
- VDES: Virginia Department of Environmental Quality
- VESCP: Virginia Erosion and Sediment Control Program
- VSMP: Virginia Stormwater Management Program
- SWM: Stormwater Management
- RLD: Responsible Land Disturber

**NOTE:**

These plans are unfinished and are not to be used for any type of construction.
HYDRAULIC DATA SHEET

HYDRAULIC DATA

The data presented herein was statistically derived by empirical methods and from field observations. It is presented as an estimate of the hydraulic performance of these facilities during the passage of actual flood events.

1. Estimated 100 year frequency flood data (unless otherwise noted.) This magnitude of flooding may pass through the proposed facility or it may be conveyed by partial inundation of roadways and/or partial bypass of the facility.

2. Specified frequency flood data. It is anticipated that this magnitude of flooding will be conveyed through the proposed hydraulic facility under estimated conditions which satisfy the design criteria applicable to the site.

3. This data was obtained from observations by persons familiar with the area and/or official records combined with an evaluation by empirical methods. The reliability of the data is relative to the accuracy of the source. A future flood of the same magnitude may achieve a significantly different stage elevation from that shown due to changes in the physical characteristics of the watershed.

BASE FLOOD

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<th>Station</th>
<th>Stream Name</th>
<th>Drainage Area</th>
<th>Structure Size</th>
<th>Stage Elevation (Ft.)</th>
<th>Discharge (C.F.S.)</th>
<th>Estimated Exceedance Probability %</th>
<th>Stage Elevation (Ft.)</th>
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DESIGN FLOOD

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<th>Discharge (C.F.S.)</th>
<th>Estimated Exceedance Probability %</th>
<th>Stage Elevation (Ft.)</th>
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OVERTOPPING FLOOD

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<tr>
<th>Station</th>
<th>Stream Name</th>
<th>Drainage Area</th>
<th>Structure Size</th>
<th>Stage Elevation (Ft.)</th>
<th>Discharge (C.F.S.)</th>
<th>Estimated Exceedance Probability %</th>
<th>Stage Elevation (Ft.)</th>
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HISTORICAL DATA

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<th>Drainage Area</th>
<th>Structure Size</th>
<th>Stage Elevation (Ft.)</th>
<th>Discharge (C.F.S.)</th>
<th>Estimated Exceedance Probability %</th>
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REMARKS

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
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PROJECT SHEET NO. R201, C501

D. Covington (434-422-9373) VDOT
Michael Russell, P.E. Whitman, Requardt & Associates VA.

REVISED STATE ROUTE PROJECT VA.

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PROJECT MANAGER SURVEYED BY DESIGN SUPERVISED BY DESIGNED BY

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

DETAILS FOR BACKFILLING ABANDONED CULVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

QUANTITIES

<table>
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<tr>
<th>PIPE SIZE</th>
<th>CYLINDERS BACKFILL SIZE IN EACH LINEAR FOOT</th>
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</table>

CONCRETE TO BE 4000 P. S. I. MIN. COMPRESSIVE STRENGTH. CONCRETE AND REINFORCING STEEL SHALL BE IN ACCORDANCE WITH AASHO M69.

DETAILS ShOWN FOR PRECAST PLUG IS REPRESENTATIVE ONLY. OTHER MANUFACTURER'S DESIGN WILL BE ACCEPTED UPON APPROVAL BY THE ENGINEER.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

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

SECTION A-A

NOTES:

1. TYPICAL ENDWALL TO BE PLACED AT THE ENDS OF ALL UNDERDRAIN OUTLETS BARRING LOCATIONS WHERE UNDERDRAIN IS TIED INTO OTHER DRAINAGE STRUCTURES. ENDWALL TO BE INSTALLED PERPENDICULAR TO ROADWAY AND FLUSH WITH THE SLOPE.

2. OUTLET HOLES SHALL BE DRILLED OR PREFORATED, SMOOTH DRAIN PIPES IN ACCORDANCE WITH THE REQUIREMENTS OF T-I 2023056 2410-3.8.

3. EXPANDED STEEL WIRE ELECTRICAL WIRE. WIRE SHALL BE ELECTRIFIED IN ACCORDANCE WITH T-I 2023056 2410-3.8. THE WIRE MESH SHALL EXTEND AT LEAST 18 INCHES OF THE END OF THE PIPE AND A TAMPER FOR HOLES. ETC.

4. SLIT FOR THE END WALL IS TO BE CONSTRUCTED SO THAT THE MESH CAN BE REMOVED FOR CLEANOUT PURPOSES.

5. PIPE POSTS AND PLATES TO BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS. IF PAINTED THE FINAL COAT SHALL BE NO. 13 ALUMINUM PAINT OR NO. 11 WHITE PAINT.

6. MARKER TO BE PLACED AT ALL ENW-12 UNDERDRAIN INSTALLATIONS.

7. MARKER WILL BE USED IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS.

VDCGT
ROAD AND BRIDGE STANDARDS

A COPY OF THE ORIGINAL SCALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL DIVISION STANDARD ENDWALL FOR PIPE UNDERDRAIN

VERGINIA DEPARTMENT OF TRANSPORTATION

PROJECT MANAGER
SURVEYED BY
DESIGN SUPERVISED BY
DESIGNED BY

<table>
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<tr>
<th>PIPE ID</th>
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PROJECT SHEET NO. R201, C501

D. Covington (434-422-9373)
VDOT
Michael Russell, P.E.
Whitman, Requardt & Associates
VA.

STATE ROUTE PROJECT VA.

REVISED STATE ROUTE PROJECT

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

MULTIGRATE DROP INLET
FOR PIPE SIZES 12" TO 72"

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
233
302

2E(3)

CONCRETE GUTTER TO BE USED WITH DI-12A ONLY.

PLAN

SECTION A-A (CHAMBER NOT SHOWN)
(SLOT MAY BE CAST IN PLACE OR PRECAST)

SECTION B-B (CHAMBER NOT SHOWN)

LONGITUDINAL SECTION

WHEN INLET IS LOCATED ABOVE NORMAL DITCH GRADE.

MULTIGRATE DROP INLET
FOR PIPE SIZES 12" TO 72"

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
233
302

2E(3)
These plans are unfinished and are not to be used for any type of construction.
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**Typical Detail for Temporary Silting Fence/Check Dam at Toe of Fill**

- **SECTION A-A**

**Typical Detail for Temporary Silting Fence/Check Dam at Culvert**

**Note:** Check dams are to be constructed in accordance with the road and bridge specifications and standard EC-4.

**Notes for Silting Fence Type A & B:**

1. **Use of Type A Silting Fence:** The height is limited to a fill height of 20 feet or less. Type B Silting Fence must be used where the fill height exceeds 20 feet.
2. **Posts:** All posts shall be driven 24" in the ground and shall extend 6" above the filter fabric (Type A) or wire fence (Type B). Wooden posts shall be 6" and have a maximum dimension of 2" by 2". Steel posts shall have a minimum weight of 1.33 pounds per linear foot.
3. **Geotextile Fabric:** shall be embedded into the ground 18" vertically and 6" horizontally along the bottom of the trench as shown in details A21B & B21B on sheets 2 and 3. Geotextile shall be replaced according to specification 303 of the road and bridge specifications.
4. **Sliding:** An approved alternative to trenching for anchoring the geotextile fabric is shown in details A21B & B21B on sheets 2 and 3. Sliding shall be accomplished in accordance with section 303 of the road and bridge specifications.
5. **When Two Separate Sections of Geotextile Fabric Adjacent to Each Other:** They shall overlap by 6" and be double folded.
6. **Geotextile Fabric:** shall be fastened securely to the posts (Type A & B) and wire fence (Type B) only. The attachments to the wire fence shall be made with ties spaced every 24" horizontally at both the top and vertical midpoint of the geotextile fabric.
7. **Wire Fence:** Type B only shall be a minimum of 14 gauge welded wire mesh spacing of 2" by 4", alternative mesh spacing may be approved by the engineer, but must be no more than 6" by 6".
8. **For Areas:** Requiring Type B Silting Fence, a minimum length of 100 linear feet shall be installed.
9. **As an Alternative:** To utilizing Type B Silting Fence, two rows of Type A Silting Fence may be placed parallel to each other with 3 to 5 between the two rows. This option may be used at all locations specifying Type B Silting Fence (unless otherwise prohibited by the plans see detail on sheet 3, bottom right).
10. **Materials:** For all Silting Fence shall conform to the requirements of section 242 of the VDOT Road and Bridge Specifications.

**Specification Reference:**

- A copy of the original sealed and signed drawing is on file in the Central Office.
- VDOT Road and Bridge Standards
- Revision Date: 08/14
- Sheet: 1 of 4
- 112.07

**Temporary Silting Barriers**

- Silting Fence (Type A & B) and Brush Barrier
- Virginia Department of Transportation

**These plans are unfinished and are not to be used for any type of construction.**
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PROJECT SHEET NO. R201, C501

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VDOT
Michael Russell, P.E.  
Whitman, Requardt & Associates

STATE ROUTE PROJECT  
VA.

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VA.

10/30/2015

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SILT FENCE TYPE A

SECTION VIEW

PROFILE VIEW

DETAIL A(1)

DETAIL A(2)

TEMPORARY SILT BARRIERS

SILT FENCE (TYPE A & B) AND BRUSH BARRIER

VA. DEPARTMENT OF TRANSPORTATION

A COPY OF THE ORIGINAL SEALLED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SPECIFICATION REFERENCE

701
242
243
353

VDOT ROAD AND BRIDGE STANDARDS

SHEET 2 OF 4  
08/14

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PROJECT SHEET NO. R201, C501

9999-002-900

D. Covington (434-422-9373)

VDOT

Michael Russell, P.E.
Whitman, Requardt & Associates VA.

STATE ROUTE PROJECT
REVISED STATE ROUTE PROJECT SHEET NO.

SILT FENCE TYPE B
SEE SHEET 1 FOR NOTES

SECTION VIEW

PROFILE VIEW

DETAIL B(1) DETAIL B(2)

ALTERNATIVE SILT FENCE TYPE B
(SEE NOTE 10)

TEMPORARY SILT BARRIERS
SILT FENCE (TYPE A & B) AND BRUSH BARRIER

VIRGINIA DEPARTMENT OF TRANSPORTATION

A COPY OF THE ORIGINAL SEATED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

ROAD AND BRIDGE STANDARDS

REVISION DATE 08/14 SHEET 3 OF 4 113.078

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
GENERAL NOTES:

1. The detectable warning shall be provided by truncated domes.

2. Detectable warning shall be from the materials approved for detectable warning surfaces. Products not listed shall be submitted for approval.

3. Sloping sides of curb ramp may be poured monolithically with ramp floor or by using removable construction joint with required slabs.

4. If ramp floor is precast, holes must be provided for dowel bars so that dowel floors and sidewalks can be jointed in place after installation of a concrete floor.

5. Required bases are to be no. 5 x 8" placed at center along curb edge for jointed floors and depth of jointed floor minimum concrete cover 7".

Curb / curb and gutter slope transitions adjacent to curb ramps are to be made in a manner to prevent slip hazard.

6. Curb ramps are to be located as shown on the plans or as directed by the engineer. They are to be provided at intersections wherever they are required for accessibility. The location of curb ramps is at the discretion of the engineer regardless of whether sidewalk is existing, provided, or proposed. They must be located within pedestrian crosswalks as shown on plans or as directed by the engineer and should not be located where vehicle stop lines, existing light poles, fire hydrants, or other obstructions preclude their location at a reasonable distance of the crosswalk.

7. Ramps may be placed on road, or curbside sections provided that the curb opening is placed within the limits of the crosswalk and that the slope at the connection of the curb opening is perpendicular to the curb.

8. Curb ramps are to be designed to meet the requirements of ADA Standards for Accessible Design.

9. The width of the curb ramp shall be at least 5 ft.

10. The vertical clearance of the curb ramp shall be at least 6 ft.

NOTES:

1. Components of curb ramps consist of the following:
   a. Domed concrete (diameter is 8", height is 30"")
   b. Base materials
   c. Adjustable and non-adjustable materials

2. Detectable warning shall be provided by truncated domes. Each of the above items is a separate pay item and should be summarized for each curb cut ramp.
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PROJECT SHEET NO. R201, C501

9999-002-900

D. Covington (434-422-9373)

VDOT

Michael Russell, P.E.
Whitman, Requardt & Associates
VA.

STATE ROUTE PROJECT VA.

REVISED

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PROJECT MANAGER

SURVEYED BY

DESIGN SUPERVISED BY

DESIGNED BY

CG-12 DETECTABLE WARNING SURFACE

TYPE A (PERPENDICULAR) APPLICATION

VDDT ROAD AND BRIDGE STANDARDS

REVISION DATE 07/15 SHEET 2 OF 5 203.06

Virginia Department of Transportation

SPECIFICATION REFERENCE

105 500

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDE SIDEWALK, LANDING OR MEDIAN REQUIRED AT TOP OF CURB RAMP, MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION.

SECTION A-A

PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

TYPICAL DESIGN

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

CROSSWALK CROSSWALK CROSSWALK CROSSWALK CROSSWALK CROSSWALK CROSSWALK

A SQUARE LANDING FRONTAL PLATE SHALL BE PROVIDED WITHIN THE MARKED CROSSWALK AREA

A SQUARE LANDING FRONTAL PLATE SHALL BE PROVIDED WITHIN THE MARKED CROSSWALK AREA

PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

BACK OF CURB 2D-1

TYPICAL PLACEMENT WITH BUFFER STRIP

TYPICAL PLACEMENT WITH BUFFER STRIP

48:1 MAX.

12:1 MAX.

8'-0" MIN.

4'-0" MIN.

SECTION B-B

4'-0" MIN.

8'-0" MIN.

4'-0" MIN.

8'-0" MIN.

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CG-12 DETECTABLE WARNING SURFACE

TYPE A (PERPENDICULAR) APPLICATION

VDDT ROAD AND BRIDGE STANDARDS

REVISION DATE 07/15 SHEET 2 OF 5 203.06

Virginia Department of Transportation

SPECIFICATION REFERENCE

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SECTION A-A

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SECTION B-B

4'-0" MIN.

8'-0" MIN.

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8'-0" MIN.

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CG-12 DETECTABLE WARNING SURFACE

TYPE A (PERPENDICULAR) APPLICATION

VDDT ROAD AND BRIDGE STANDARDS

REVISION DATE 07/15 SHEET 2 OF 5 203.06

Virginia Department of Transportation

SPECIFICATION REFERENCE

105 500

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDE SIDEWALK, LANDING OR MEDIAN REQUIRED AT TOP OF CURB RAMP, MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION.

SECTION A-A

PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

TYPICAL DESIGN

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

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PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

BACK OF CURB 2D-1

TYPICAL PLACEMENT WITH BUFFER STRIP

TYPICAL PLACEMENT WITH BUFFER STRIP

48:1 MAX.

12:1 MAX.

8'-0" MIN.

4'-0" MIN.

SECTION B-B

4'-0" MIN.

8'-0" MIN.

4'-0" MIN.

8'-0" MIN.

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DESIGNED BY

CG-12 DETECTABLE WARNING SURFACE

TYPE A (PERPENDICULAR) APPLICATION

VDDT ROAD AND BRIDGE STANDARDS

REVISION DATE 07/15 SHEET 2 OF 5 203.06

Virginia Department of Transportation

SPECIFICATION REFERENCE

105 500

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THIS DESIGN TO BE USED FOR CONSTRUCTION THAT INCORPORATES WIDE SIDEWALK, LANDING OR MEDIAN REQUIRED AT TOP OF CURB RAMP, MINIMUM CURB RAMP LENGTH 8 FEET FOR NEW CONSTRUCTION.

SECTION A-A

PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

TYPICAL DESIGN

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK (WITH BUFFER STRIP)

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PERMISSIBLE CONSTRUCTION JOINT

PERMISSIBLE CONSTRUCTION JOINT

BACK OF CURB 2D-1

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TYPICAL PLACEMENT WITH BUFFER STRIP

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12:1 MAX.

8'-0" MIN.

4'-0" MIN.

SECTION B-B

4'-0" MIN.

8'-0" MIN.

4'-0" MIN.

8'-0" MIN.
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PROJECT SHEET NO. R201, C501

D. Covington (434-422-9373)

STATE ROUTE PROJECT

REVISED STATE ROUTE PROJECT

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TYPE B PARALLEL APPLICATION

ROADWAY GRADE IN PERCENT MINIMUM RAMP LENGTH IN FEET 5\% CURB 6\% CURB
0 4 6
2 5 8
4 8 12
6 10 15
8 13 18

CG-12 DETECTABLE WARNING SURFACE

TYPE B (PARALLEL) APPLICATION

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

105 502

TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK

DIAGONAL PLACEMENT

WITH BUFFER STRIP

WITHOUT BUFFER STRIP

SECTION A-A

SECTION B-B

NOTES: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.

THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE

ROAD AND BRIDGE STANDARDS

SHEET 3 OF 5 REVISION DATE 07/15

REVISED 203.07

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MEDIAN WITH CUT-THROUGH TYPE M2

SECTION C-C

SEE NOTE 5

REFUGE ISLAND WITH RAMPS TYPE R11

SECTION B-B

SEE NOTE 5

MEDIAN WITH RAMP TYPE M1

SECTION A-A

SEE NOTE 5

REFUGE ISLAND CUT-THROUGH TYPE R12

NOTES:
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 14.
2. CURB SHALL BE SHAPED TO MATCH THE FACE OF ROADWAY CURB.
3. SEE ROADWAY PLANS FOR MEDIAN AND REFUGE ISLAND DIMENSIONS.
4. RAMPS AND CUT THROUGH SHOULDS BE ALIGNED WITH CROSSWALKS.
5. THE RAMPS AND CUT THROUGH SHOULDS SHALL BE INSTALLED AND PAVED TO ASHOT CEMENT CONCRETE SIDEWALK ACCORDING TO SECTION 505.5 OF THE ROAD & BRIDGE SPECIFICATIONS.
6. CUT THROUGHS LESS THAN 6 IN WIDTH SHALL NOT HAVE DETECTABLE WARNING INSTALLED.

CG-12 DETECTABLE WARNING SURFACE

MEDIAN AND REFUGE ISLAND APPLICATIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

ROAD AND BRIDGE STANDARDS

SHEET 5 OF 5

REVISION DATE

7/12
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PROJECT SHEET NO.

STATE ROUTE PROJECT

REVISED STATE ROUTE PROJECT SHEET NO.

D. Covington (434-422-9373)

VDOT

Michael Russell, P.E.
Whitman, Requardt & Associates VA.

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SECTION THRU RAIL ELEMENT AND W BEAM BACK-UP PLATE

DETAIL OF SPLICE JOINT

DETAIL OF BUTTON HEAD BOLT AND RECESS NUT (GUARDRAIL BOLT)

STANDARD GUARDRAIL HARDWARE

SPECIFICATION REFERENCE
221
505

ROAD AND BRIDGE STANDARDS

REVISION DATE 05/14

SHEET 1 OF 3 501.01

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PROJECT SHEET NO. R201, C501

9999-002-900

D. Covington (434-422-9373)

VDOT

Michael Russell, P.E.
Whitman, Requardt & Associates
VA.

STATE ROUTE PROJECT

REVISED STATE ROUTE PROJECT

SHEET NO.

10/30/2015

d106137002e(14).dgn

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PROJECT MANAGER
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DESIGN SUPERVISED BY
DESIGNED BY

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R201, C501

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

MEASURING GUARDRAIL HEIGHT ON FRONT SLOPE RELATIVE TO SHOULDER HINGE POINT

<table>
<thead>
<tr>
<th>TABLE I</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL GUARDRAIL LOCATION-THROUGH TRAFFIC LANE RIGHT OF TRAFFIC</td>
</tr>
<tr>
<td>TOTAL SHOULDER WIDTH</td>
</tr>
<tr>
<td>PAVED SHOULDER WIDTH</td>
</tr>
<tr>
<td>EDGE OF TRaveled WAY TO FACE OF GUARDRAIL</td>
</tr>
<tr>
<td>(D)</td>
</tr>
<tr>
<td>17'</td>
</tr>
<tr>
<td>15'</td>
</tr>
<tr>
<td>13'</td>
</tr>
<tr>
<td>11'</td>
</tr>
<tr>
<td>9'</td>
</tr>
<tr>
<td>7'</td>
</tr>
<tr>
<td>5'</td>
</tr>
</tbody>
</table>

NOTE: PAVED SHOULDER WIDTHS SHOWN ARE MINIMUM REQUIREMENTS AS DESIGNER DEems NEcessary TO ACHIEVE THE DESIRED CONSTRUCTION OR REGULATION. SEE STANDARD MC-4 FOR PAVING UNDER GUARDRAIL.

W-BEAM GUARDRAIL INSTALLATION CRITERIA

SPECIFICATION REFERENCE
221 505

W-Beam Guardrail Installation Criteria

Virginia Department of Transportation

REVISED
07/15 SHEET 6 OF 8
REV 501.39

N:\4589-002-900
RVD0, C500

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MEMBER SYMBOLOGY
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PROJECT SHEET NO. R201, C501

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VA.

WASHINGTON, D.C.

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W-BEAM GUARDRAIL - FIXED OBJECT ATTACHMENT

FOR USE BETWEEN VERTICAL FIXED OBJECTS AND GUARDRAIL (WOOD POSTS)

FOR QUESTION, INQUIRIES AND COMMENTS, PLEASE CONTACT:

WILLIAM L. R-region, Planning & Engineering, 614 Main Street, Richmond, VA 23219-5999

Virginia Department of Transportation

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

NOTES:

1. FIXED OBJECTS MAY CONSIST OF BRIDGE RAILS, RISERS, PIER, RETAINING WALLS, RETAINING WALLS WITH VERTICAL FACE.

2. BRIDGE RAIL ENDS AND BRIDGE PARAPETS MUST BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.

3. GUARDRAIL COMPONENTS SHALL BE IN ACCORDANCE WITH VDOT ROAD AND BRIDGE STANDARDS.

4. POSTS 1, 2, 3, 4, AND 5 REQUIRE AN ADDITIONAL HOE TO ATTACH BLOCKS AND/OR RUBBER, RUBBER IS NOT BOLTED TO POSTS 2 AND 4.

5. BOTTOM WOOD BLOCKS LOCATED OR POSTS THROUGH A HOLE CENTER DRILLED AND CEMENTED WITH GUARDRAIL BOLTS (LENGTH AS REQUIRED).

6. APPROPRIATE LENGTH 3/4" DIAMETER ASTM A 499 HEX BOLTS WITH WASHERS MUST BE NUTTED TO GUARDRAIL POSTS USING 3/4" BEARING PLATE OR THE BACK SIDE OF THE GUARDRAIL PARAPET OR TERMINAL RAIL.

7. DRIVE RAIL, WITHIN 2' OF THE TOP OR BOTTOM OF THE BUILDING ON TOP 6' X 12" BOLT IS INSTALLED.

8. SEE SHEET 3 OF 3 FOR RUBBAGE BLOKOUT DETAILS.

W-BEAM GUARDRAIL - FIXED OBJECT ATTACHMENT

ROAD AND BRIDGE STANDARDS

REVISION DATE 05/14

SHEET 1 OF 3

501.25

1403
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PROJECT SHEET NO. R201, C501

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VDOT

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REVISED STATE ROUTE PROJECT

SHEET NO. 10 /3 0 /2 0 15
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PROJECT MANAGER
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SECTION A-A

NOTES:
1. THE CROSS SLOPE OF THE GRADE APPROACHING THE GUARDRAIL TERMINAL AND ADJACENT TO FOR ITS FULL LENGTH MUST BE 5:1. IF THE EXISTING GRADE IS FLAT OR IS A POSITIVE SLOPE OUT TO THE CURBLINE OR OTHER VARYING VERTICAL ELEVATION, THE MINIMUM OFFSET FROM BEHIND THE POST 3'-0" shall be made in the same manner as for the护斜. WHERE THE ROADWAY ELEVATIONS VA. BEHIND THE POST
2. THE AREA IMMEDIATELY BEHIND AND BEYOND THE TERMINAL SHOULD BE TRANSVERSEABLE AND FREE FROM FIXED OBJECTS. IF A CLEAR RUN OUT IS NOT ATTAINABLE THIS AREA SHOULD AT LEAST BE SIMILAR IN CHARACTER TO THE UPSTREAM UNSHIELDED ROADSIDE AREAS.
3. FOR NEW CONSTRUCTION AND RECONSTRUCTION THE 10:1 SLOPE GRADING MUST EXTEND A MINIMUM OF 5'-0" BEHIND THE END POST.
4. FOR 3R WORK, THE GRADING SHOULD BE AS CLOSE AS POSSIBLE TO THE NEW CONSTRUCTION WITH SLOPE EXTENDING A MINIMUM OF 5'-0" BEHIND THE BLOCKED-OUT POST. FROM THE HINGE POINT THE GRADING SLOPE INTO THE EXISTING DITCH SLOPE TO COVER THE FOUNDATION TUBES AND SLIP PLATES WITHOUT EXCEEDING THIS SLOPE BEYOND THE DITCH BOTTOM. USE 3'-0" AGGREGATE OR OTHER THREE-TO-ONE MATERIAL AS NO OTHER IN THE ROADWAY OR REARWARD LOCATION.
6. FOR PROPERLY GUARDRAIL TERMINALS THE MANUFACTURER'S SITE PREPARATION REQUIREMENTS TAKE PREFERENCE OVER THIS STANDARD.

SECTION B-B

SITE PREPARATION REQUIREMENTS FOR GR-9

SPECIFICATION

GUARDRAIL TERMINAL INSTALLATION SITE PREPARATION REQUIREMENTS FOR GR-9

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISION DATE SHEET 2 OF 2 04/14 50117

These plans are unfinished and are not to be used for any type of construction.
DRAINAGE DESCRIPTION SHEET

SHEET 3
3-1 TO 3-2
46 LF, 30 IN. STORM SEWER PIPE (5" COVER) CONNECT TO EXIST STORM CONC PIPE.

3-5 TO 3-6
77 LF, 30 IN. STORM PIPE (3" COVER) CONNECT TO EXIST STORM CONC PIPE.

3-6 TO 3-7
46 LF, 30 IN. STORM SEWER PIPE (4" COVER) CONNECT TO EXIST STORM CONC PIPE.

3-7 TO 3-8
7 LF, 30 IN. STORM PIPE (3" COVER) CONNECT TO EXIST STORM CONC PIPE.

SHEET 4
4-1 TO 4-2
41 LF, 30 IN. CONC PIPE (4" COVER) (14 LF, 39 FT. RADIUS WITH OPEN JOINTS)

4-2 TO 4-3
58 LF, 30 IN. CONC PIPE (5" COVER) CONNECT TO EXIST STORM PIPE.

4-3 TO 4-4
46 LF, 30 IN. STORM SEWER PIPE (4" COVER) CONNECT TO EXIST STORM PIPE.

4-4 TO 4-5
135 LF, 30 IN. STORM SEWER PIPE (6" COVER) CONNECT TO EXIST STORM PIPE.

4-5 TO 4-6
60 LF, 30 IN. STORM SEWER PIPE (8" COVER) CONNECT TO EXIST STORM PIPE.

4-6 TO 4-7
59 LF, 30 IN. STORM SEWER PIPE (10" COVER) CONNECT TO EXIST STORM PIPE.

SHEET 5
5-1 TO 5-2
199 LF, 36 IN. STORM PIPE (36" COVER) (99 LF, 981 FT RADIUS WITH OPEN JOINTS)

5-2 TO 5-3
105 LF, 36 IN. STORM PIPE (36" COVER) (47 LF, 981 FT RADIUS WITH OPEN JOINTS)

5-3 TO 5-4
118 LF, 36 IN. STORM PIPE (42" COVER) (47 LF, 979 FT RADIUS WITH OPEN JOINTS)

5-4 TO 5-5
130 LF, 36 IN. CONC PIPE (52" COVER) CONNECT TO EXIST STORM CONC PIPE.

5-5 TO 5-6
50 LF, 36 IN. CONC PIPE (52" COVER) CONNECT TO EXIST STORM CONC PIPE.

5-6 TO 5-7
150 LF, 36 IN. STORM SEWER PIPE (52" COVER) CONNECT TO EXIST STORM PIPE.

SHEET 6
6-1 TO 6-2
63 FT, STD MH OR MH-2 REQ'D

6-2 TO 6-3
65 LF, STO MH OR MH-2 (18") REQ'D

6-3 TO 6-4
59 LF, STO MH OR MH-2 (12") REQ'D

6-4 TO 6-5
10 LF, STO MH OR MH-2 (6") REQ'D

6-5 TO 6-6
15 TONS CL. I DRY RIP RAP 24" DEPTH

6-6 TO 6-7
9 TONS CL. I DRY RIP RAP 3' DEPTH

SHEET 7
7-1 TO 7-2
14 TONS CL. I DRY RIP RAP 3' DEPTH

7-2 TO 7-3
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-3 TO 7-4
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-4 TO 7-5
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-5 TO 7-6
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-6 TO 7-7
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-7 TO 7-8
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-8 TO 7-9
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-9 TO 7-10
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-10 TO 7-11
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-11 TO 7-12
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-12 TO 7-13
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-13 TO 7-14
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-14 TO 7-15
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-15 TO 7-16
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-16 TO 7-17
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-17 TO 7-18
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-18 TO 7-19
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-19 TO 7-20
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-20 TO 7-21
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-21 TO 7-22
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-22 TO 7-23
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-23 TO 7-24
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-24 TO 7-25
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-25 TO 7-26
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-26 TO 7-27
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-27 TO 7-28
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-28 TO 7-29
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-29 TO 7-30
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-30 TO 7-31
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-31 TO 7-32
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-32 TO 7-33
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-33 TO 7-34
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-34 TO 7-35
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-35 TO 7-36
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-36 TO 7-37
10 TONS CL. I DRY RIP RAP 3' DEPTH

7-37 TO 7-38
15 TONS CL. I DRY RIP RAP 3' DEPTH

7-38 TO 7-39
10 TONS CL. I DRY RIP RAP 3' DEPTH
DRAINAGE DESCRIPTION SHEET

SHEET 10

1.26 LF; 9" CONC. PIPE REQ'D (7' COVER)
1.26 LF; 90 FT RADIUS WITH OPEN JOINTS
USING 8 FT PIPE JOINT LENGTHS;
JOINTS ARE TO BE OPENED A MAXIMUM OF 25% OF THE SPHOT OR TONGUE LENGTH.
INV.(IN) 352.45
INV.(OUT) 440.25

ST'D DI-3B (L=18') REQ'D

ST'D ES-1 (18'') REQ'D

1 TO 2
2 ST'D ES-1 OR 2 (18'') REQ'D

1 TO 1
1 ST'D ES-1 (18'') REQ'D

ST'D IS-1 REQ'D;
H = 4.1'  INV. 484.47
INV.(IN) 484.47
INV.(OUT) 474.58

1 ST'D DI-3BB (L=8') REQ'D

ST'D IS-1 REQ'D;
H = 4.2'  INV. 475.48
INV.(IN) 475.48
INV.(OUT) 474.90

1 ST'D DI-3C (L=8') REQ'D

1 ST'D DI-3B (L=8') REQ'D

1/2 STEEL PLATE REQ'D

ST'D MH-1 FRAME AND COVER REQ'D

13.8 FT. ST'D MH-1 OR MH-2 REQ'D

20.7 FT. ST'D MH-1 OR MH-2 REQ'D

1 ST'D EW-1 (36'') REQ'D

1 ST'D ES-1 (18'') REQ'D

ST'D CONCRETE CRADLE REQ'D
(WITH RUBBER GASKETS)

68 L.F.; 9" CONC. PIPE REQ'D (10' COVER)
WITH RUBBER GASKETS
INV.(IN) 462.45
INV.(OUT) 458.00

1 ST'D EW-1 (18'') REQ'D

H = 4.4'  INV. 449.00
INV.(IN) 449.00
INV.(OUT) 437.00

1 ST'D ES-1 OR 2 (24'') REQ'D

71 L.F.; 24" STORM SEWER PIPE REQ'D (5' COVER)
ST'D IS-1 REQ'D;
H = 7.4'  INV. 498.00
INV.(IN) 498.00
INV.(OUT) 489.10

1 ST'D DI-3B (L=8') REQ'D

INV. (IN) 499.40
INV.(OUT) 498.20

CONNECT UD-4 TO STRUCTURE

ST'D IS-1 REQ'D;
H = 4.7'  INV. 499.40
INV.(IN) 499.40
INV.(OUT) 498.60

284 L.F.; 15" CONC. PIPE REQ'D (5' COVER)
184 L.F.; 90 FT RADIUS WITH OPEN JOINTS
USING 8 FT PIPE JOINT LENGTHS;
JOINTS ARE TO BE OPENED A MAXIMUM OF 25% OF THE SPHOT OR TONGUE LENGTH.
INV.(IN) 486.70
INV.(OUT) 476.30

ST'D MH-1 FRAME AND COVER REQ'D

2 ST'D SWM-1 (48" DIAMETER)

8 TONS STD. EC-1 CLASS I REQ'D. TYPE A INSTALLATION

INV. 497.50

1 ST'D ES-1 OR 2 (24'') REQ'D

INV.(IN) 497.50
INV.(OUT) 496.00

84 L.F.; 18" STORM SEWER PIPE REQ'D (11' COVER)
1/2" STEEL PLATE REQ'D

H = 12.1'  INV. 497.50
INV.(IN) 497.50
INV.(OUT) 491.40

1 ST'D DI-3BB (L=8') REQ'D

JOINTS ARE TO BE OPENED A MAXIMUM OF 25%
USING 8 FT PIPE JOINT LENGTHS)

285 L.F.; 15" CONC. PIPE REQ'D (2' COVER)

30 L.F.; 24" STORM SEWER PIPE REQ'D (2' COVER)
ST'D IS-1 REQ'D;
H = 4.8'  INV. 498.00
INV.(IN) 498.00
INV.(OUT) 488.10

1 ST'D DI-3B (L=8') REQ'D
### DRAINAGE DESCRIPTION SHEET

<table>
<thead>
<tr>
<th>Sheet</th>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHEET 14</td>
<td>14.1</td>
<td>1 ST'D D-3B (4') REQ'D; H = 4.3' INV. 519.70&lt;br&gt;CONNECT UP PIPE TO WND WALL&lt;br&gt;105 L.F.-15&quot; CONC. PIPE REQ'D (3' COVER)&lt;br&gt;ST'D I-7A (3') REQ'D&lt;br&gt;ST'D CONCRETE CRADLE REQ'D&lt;br&gt;INV. (IN) 519.70&lt;br&gt;INV. (OUT) 518.80</td>
</tr>
<tr>
<td>SHEET 15</td>
<td>15.1</td>
<td>1 ST'D D-3B (4') REQ'D; H = 4.5' INV. 508.10&lt;br&gt;106 L.F.-15&quot; CONC. PIPE REQ'D (3' COVER)&lt;br&gt;ST'D MH-1 FRAME AND COVER REQ'D&lt;br&gt;12.8 FT. ST'D MH-1 OR MH-2 REQ'D&lt;br&gt;INV. (IN) 508.10&lt;br&gt;INV. (OUT) 507.00</td>
</tr>
<tr>
<td>SHEET 16</td>
<td>16.1</td>
<td>1 ST'D D-3B (4') REQ'D; H = 4.5' INV. 508.10&lt;br&gt;CONNECT UP PIPE TO WND WALL&lt;br&gt;105 L.F.-15&quot; CONC. PIPE REQ'D (3' COVER)&lt;br&gt;ST'D I-7A (3') REQ'D&lt;br&gt;ST'D CONCRETE CRADLE REQ'D&lt;br&gt;INV. (IN) 508.10&lt;br&gt;INV. (OUT) 507.00</td>
</tr>
</tbody>
</table>

Note: These plans are unfinished and are not to be used for any type of construction.
# ALLOWABLE PIPE TYPES

## STORM SEWER PIPE

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ALLOWABLE TYPE OF STORM SEWER PIPE (UNLESS OTHERWISE SHOWN ON PLANS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>323000</td>
<td>CONCRETE SPIRAL TYPE 2</td>
</tr>
<tr>
<td></td>
<td>ALUMINUM COATED Type 2</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC Type 2</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC Type 1</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC Type 1</td>
</tr>
<tr>
<td></td>
<td>CONCRETE SPIRAL TYPE 1</td>
</tr>
<tr>
<td></td>
<td>ALUMINUM SPIRAL TYPE 1</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC TYPE 1</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC TYPE 1</td>
</tr>
<tr>
<td></td>
<td>CONCRETE SPIRAL TYPE 1</td>
</tr>
</tbody>
</table>

STORM SEWER PIPE

## CULVERT PIPE

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ALLOWABLE TYPE OF CULVERT PIPE (UNLESS OTHERWISE SHOWN ON PLANS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>323000</td>
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<tr>
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<td>ALUMINUM COATED Type 2</td>
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<tr>
<td></td>
<td>POLYMER COATED PVC Type 2</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC Type 1</td>
</tr>
<tr>
<td></td>
<td>CONCRETE SPIRAL TYPE 1</td>
</tr>
<tr>
<td></td>
<td>ALUMINUM SPIRAL TYPE 1</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC TYPE 1</td>
</tr>
<tr>
<td></td>
<td>POLYMER COATED PVC TYPE 1</td>
</tr>
<tr>
<td></td>
<td>CONCRETE SPIRAL TYPE 1</td>
</tr>
</tbody>
</table>

CULVERT PIPE

These plans are unfinished and are not to be used for any type of construction.
STORM SEWER PROFILES

PROFILE B:1 TO 7:1

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
STORM SEWER PROFILES

PROFILE 5-1 TO 6-4

PROFILE 3-10 TO 3-11

PROFILE 5-5 TO 5-7

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
STORM SEWER PROFILES

PROFILE 14-8 TO 14-11

PROFILE 10-1 TO 10-5

PROFILE 10-3 TO 10-4

PROFILE 11-1 TO 12-4

PROFILE 12-1 TO 12-3

PROFILE 13-1 TO 14-5

PROFILE 14-3 TO 14-4

PROFILE 14-6 TO 14-10

PROFILE 15-1 TO 15-5

These plans are unfinished and are not to be used for any type of construction.
BIORETENTION BASIN #5
(OUTFALL N-5B)

SECTIONS

SECTION A - A

SECTION B - B

SECTION C - C

SECTION D - D

FLAT BOTTOM DITCH
TYPICAL SECTION

LEGEND

- DENOTES LOCATION OF CLEANOUT
- DENOTES LOCATION OF OBSERVATION WELL
- DENOTES IMPERMEABLE LINER LOCATION
- DENOTES LOCATION OF RUBBER GASKET

REFERENCES

- DRAINAGE DESCRIPTION SHEETS, ETC.

NOTES:

- THESE PLANS ARE UNFINISHED
- AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

These plans are subject to change as deemed necessary by the department.
BIORETENTION DETAIL

IMPERMEABLE LINER SPECIFICATIONS

1. MATERIAL SPECIFICATIONS

A. SEPARATION GEOTEXTILE LAYER SHALL BE NON WOVEN NEEDLE PUNCH GEOTEXTILE, PENDING ABDUCTION CLASS 2.
B. BIAS WOVEN GEOTEXTILE SHALL BE NON WOVEN NEEDLE PUNCH GEOTEXTILE WITH A MINIMUM AVERAGE FULL
VALUE WIDTH OF 126 CM (50 IN) AND A MINIMUM HEADING OF 126 CM (50 IN) DIAGONAL.
C. 40 MIL LLDPE GEOMEMBRANE LINER THICKNESS SHALL HAVE A MARV OF 40 MIL AND LOWEST INDIVIDUAL
VALUE (MARV) OF 10.0 OZ/SQY (ASTM D5261). SHALL BE PLACED IN DIRECT CONTACT WITH GEOMEMBRANE.
D. THE GEOMEMBRANE LINER FIELD SEAMS SHALL BE MADE IN CONFORMANCE WITH THE MANUFACTURER'S
RECOMMENDATIONS.
E. WHERE FEASIBLE, GEOMEMBRANE SEAMING SHALL BE DUAL HOT (FUSION) WEDGE SEAMS AND TESTED USING THE
ASTM D5994.
F. THE CUSHION GEOTEXTILE SHALL BE INSTALLED OVER THE GEOMEMBRANE, WITH JOINTS SEWN OR OVERLAPPING A MINIMUM
OF 24 INCHES. THE LAYERS OF STONE AND UNDERDRAIN SHALL BE INSTALLED SO AS NOT TO DAMAGE GEOMEMBRANE.

2. CONSTRUCTION SPECIFICATIONS

A. EXCAVATION, FILLING, BACKFILLING, COMPACTION AND GRADING SHALL BE DONE TO BRING THE AREA
TO THE SHAPES, SIZES, AND ELEVATIONS SHOWN ON THE DRAWINGS TO PROVIDE A UNIFORM SURFACE
FREE OF DEPRESSIONS AND RIDGES THAT WOULD INTERRUPT DRAINAGE.
B. WHERE FEASIBLE, PROOFROLLING OF THE SUBGRADE RECEIVING THE LLDPE SHALL BE DONE IN THE PRESENCE
OF THE ENGINEER WITH AT LEAST FIVE PASSES OF A VIBRATING ROLLER LARGE ENOUGH TO FURNISH A TOTAL APPLIED FORCE OF 10 TONS.
C. THE LLDPE GEOMEMBRANE SHALL BE PLACED ON THE PREPARED SUBGRADE AND INSTALLED AS SHOWN ON
THE DRAWINGS AND DETAILS. NO EQUIPMENT OR TRAFFIC SHALL BE ALLOWED ON THE GEOMEMBRANE LINER.
D. THE GEOMEMBRANE LINER FIELD SEAMS SHALL BE MADE IN CONFORMANCE WITH THE MANUFACTURER'S
RECOMMENDATIONS.
E. WHERE FEASIBLE, GEOMEMBRANE SEAMING SHALL BE DUAL HOT (FUSION) WEDGE SEAMS AND TESTED USING THE
ASTM D5994.
F. THE CUSHION GEOTEXTILE SHALL BE INSTALLED OVER THE GEOMEMBRANE, WITH JOINTS SEWN OR OVERLAPPING A MINIMUM
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STORMWATER MANAGEMENT NOTES

BIORETENTION BASIN MATERIAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Material</th>
<th>Specifications</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Media</td>
<td>Composition &amp; Testing</td>
<td>Criteria</td>
</tr>
<tr>
<td>Top Soil Cover</td>
<td>Stabilized / Treated</td>
<td>Permeable, no less than 1 inch thick.</td>
</tr>
<tr>
<td>Mulch Layer</td>
<td>Organic matter content of level 2</td>
<td>0 to 5%</td>
</tr>
<tr>
<td>Sediment Layer</td>
<td>Same or greater than 80%</td>
<td>0 to 20%</td>
</tr>
<tr>
<td>Stone Jack for Underdrain</td>
<td>3 to 4 inches minimum</td>
<td>For elevation differences</td>
</tr>
<tr>
<td>Erosion Control Vegetation</td>
<td>0.5 to 2 inches below the surface of the filter bed</td>
<td>0 to 20% or 0 to 20% for area of the filter bed</td>
</tr>
<tr>
<td>Plant Materials</td>
<td></td>
<td>Suggested annual maintenance activities for bioretention basins</td>
</tr>
</tbody>
</table>

MATERIAL SPECIFICATIONS

- Several methods can be used to rehabilitate the filter (the easiest thing first, as listed below):
- Use the filter regeneration method or drainage pipe to verify that the undersides are functioning and not clogged or otherwise depressed. To remove the material, a composite sand layer must be installed. The filter regeneration method or drainage pipe must be used to remove the accumulated sediment.
- Remove accumulated sediment and replace the soil media.
- To ensure that the bioretention area is properly functioning, the filter media must be cleaned and the system must be checked for proper drainage.

SOIL COMPOST AMENDMENT SPECIFICATIONS

- The compost shall be derived from plant material and meet the criteria set forth by the U.S. Composting Council. See www.compostingcouncil.org for a list of local providers.
- The compost shall be well composted, free of viable weed seeds, and stable with regard to nutrient levels. If manure is used, it must be aged and meet the criteria set forth by the U.S. Composting Seal of Testing Assurance (STA) program.
- The compost shall be derived from plant material and meet the general criteria listed above.
- The compost shall be incorporated into the construction soils through the use of a rototiller.

BIORETENTION BASIN MAINTENANCE TASKS

- First year maintenance operations
- Successful installation of bioretention areas requires that the following tasks be undertaken in the first year following installation:
- Initial inspections for the first 6 months following construction. The site should be inspected at least twice after storm events that exceed 0.1 inch of rainfall.
- Spot rainwater harvesting systems should be used for backup or during areas in the contributing drainage area or around the bioretention area.
- Monitoring for rainwater harvesting systems is necessary to ensure that they are accurately sized.
- Fertilization should be used for initial plantings.
- Watering may be needed once a week during the first 3 months and then as needed during the first growing season (April-October) depending on rainfall.
- Remove and replace dead plants since they can be a fire hazard.

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First Year Maintenance Operations

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- Fertilization should be used for initial plantings.
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- Remove and replace dead plants since they can be a fire hazard.

REFERENCES

- Materials for Light, Soil & Drainage (Reference Sheet, Design Brief: 2017-08)
STAKING DETAILS

NOTE: SEE SHEET 2J(2) FOR POINT INFORMATION

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STAKING DETAILS

<table>
<thead>
<tr>
<th>POINT</th>
<th>Station</th>
<th>Baseline</th>
<th>Offset (ft)</th>
<th>Base of Curb Elevation (ft)</th>
<th>Station</th>
<th>Baseline</th>
<th>Offset (ft)</th>
<th>Base of Curb Elevation (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-A</td>
<td>100+38.16</td>
<td>Exsit. Berkmar</td>
<td>23.00</td>
<td>464.38</td>
<td>100+53.12</td>
<td>Exsit. Berkmar</td>
<td>23.00</td>
<td>464.64</td>
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<tr>
<td>1-B</td>
<td>100+55.32</td>
<td>Exsit. Berkmar</td>
<td>23.00</td>
<td>464.64</td>
<td>52+52.31</td>
<td>Roundabout</td>
<td>20.31</td>
<td>465.08</td>
</tr>
<tr>
<td>1-D</td>
<td>52+62.38</td>
<td>Roundabout</td>
<td>20.31</td>
<td>465.08</td>
<td>52+66.21</td>
<td>Roundabout</td>
<td>20.90</td>
<td>465.12</td>
</tr>
<tr>
<td>1-C</td>
<td>52+46.25</td>
<td>Roundabout</td>
<td>20.90</td>
<td>465.12</td>
<td>52+56.71</td>
<td>Hilton</td>
<td>20.88</td>
<td>Match Existing</td>
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<td>1-F</td>
<td>104+5.85</td>
<td>Hilton</td>
<td>3.91</td>
<td>464.78</td>
<td>11+31.50</td>
<td>Hilton</td>
<td>1.99</td>
<td>463.24</td>
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<td>Hilton</td>
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<td>465.59</td>
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<td>20.56</td>
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<td>1-K</td>
<td>107-15.95</td>
<td>Berkmar</td>
<td>20.00</td>
<td>466.60</td>
<td>107-30.00</td>
<td>Berkmar</td>
<td>20.00</td>
<td>465.08</td>
</tr>
</tbody>
</table>

FOR RADIAL OFFSETS:

OFFSET 1

- NOTE: FOR RADIAL OFFSETS, RADIAL OFFSETS, CURVE LENGTHS AND CURVE LENGTHS ARE NOT TO SCALE. WHEN TIED TO EXISTING STREETS, CONTRACTOR SHALL VERIFY THAT RADIALS ARE INSTALLED AS SHOWN ON PLANS AND ARE IN LINE WITH EXISTING FACES OF CURB WHERE NECESSARY.

OFFSET 2

STANDARD SPLITTER ISLAND

NOT TO SCALE
UNSUITABLE MATERIAL NOTES

UNSUITABLE MATERIAL

Unsuitable/unsatisfactory soil with the following properties are defined as unsuitable:
- Classified as CH or CL per ASTM D 2487
- Contains more than 5% organic content
- Organic content equal to or greater than 5% of weight
- Classified as SC or SL per ASTM D 2487
- Low CBR and high CBR swell
- California Bearing Ratio (CBR) less than 5.5
- With a swelling index greater than 5%
- Classified as OH or OL per ASTM D 2487

The vertical and horizontal extents of unsuitable soils should be determined by a licensed geotechnical engineer or his/her qualified technical representative. Complete undercut as indicated below for the encountered conditions:

A) Where unsuitable soils are encountered in situ within 3 vertical feet of subgrade, it may be necessary to:
- Complete the embankment fill
- Place a woven geotextile subgrade stabilization fabric and backfill
- Complete the embankment fill

B) Where unsuitable soils are encountered in initial subgrades beneath embankments greater than 5 feet in height, start embankment construction per section 303.04(H) of the specifications.

C) Where unsuitable soils are encountered in initial subgrades beneath embankments less than 5 feet in height, start embankment construction per section 303.04(H) of the specifications.

Acceptable field evaluation methods to determine the extent of lateral and vertical of undercut may include:
- Visual/Manual Classification of Soils
- Test Pit, Hand Auger, Self-Boring Explorations
- Probe/Soils Mixing (using Dynamic Cone Penetrometer)
- Probing/Flushing of Subbase with Appropriately Sized Equipment
- Field Moisture Content Determinations

Failure of soils (embankments and backfill)

General: Unsuitable soils defined as exceeding a CBR value less than 5% and soils with a CBR swell greater than 5% are considered unsuitable. They may be placed and compacted per any applicable sections of the Volpe road and bridge specifications, including but not limited to Section 330.2.

CBR and/or CBR swell soils defined as exceeding a CBR value less than 5% and soils with a CBR swell greater than 5% may be considered for reuse as embankment fill. However, they may be placed and compacted per any applicable sections of the Volpe road and bridge specifications, including but not limited to Section 330.2.

Organic soils defined as equal to or greater than 5% of organic content or classified as CH or CL in accordance with any

Organic soils defined as equal to or greater than 5% of organic content classified as CH or CL in accordance with any

These plans are unfinished and are not to be used for any type of construction.
### Temporary Sediment Trap Table

<table>
<thead>
<tr>
<th>Sheet No.</th>
<th>Station No.</th>
<th>Trap No.</th>
<th>Section thru weir</th>
<th>Elevation</th>
<th>Wet storage (cubic yds)</th>
<th>Dry storage (cubic yds)</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>58</td>
<td>1</td>
<td>6</td>
<td>43.0</td>
<td>435</td>
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<td>65</td>
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<td>6</td>
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<td>435</td>
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<td>3</td>
<td>80</td>
<td>1</td>
<td>7</td>
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<td>435</td>
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<td></td>
</tr>
</tbody>
</table>

**Temporary Sediment Trap Detail Sheet**

**Temporary Sediment Trap**

**Temporary Sediment Trap Table**

These plans are unfinished and are not to be used for any type of construction.

Plan View of Temporary Sediment Trap

Typical Section thru weir

Typical Section (A/A) thru temporary sediment trap

New 6/01

Special Design Section

Shading No. 28-5
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

STA = 108+30.00
EL = 467.17
L = 308.00
K = 66
ex = 1.81'

SECTION FOR DETAILS
SEE ROUNDABOUT TYPICAL

STATION 108+00.00

TRANSITION

EXISTING GROUND

V = 40 MPH
+0.97%
9999-002-900

R201, C501
9999-002-900

END CONSTRUCTION

STATION 108+96.40
EL = 464.75

-2.42 %
-4.30%

EXISTING GROUND

STATION 11+42.64

BEGIN CONSTRUCTION

STATION 10+65.06

BEGIN CONSTRUCTION

STATION 50+00.00
EL = 465.10

-0.76%

L = 64.00
K = 39
ex = 0.13'

STA = 50+38.00

+0.88%
-0.76%

L = 40.00
K = 24
ex = -0.08'

SSD = 679'

STATION 51+68.51

END CONSTRUCTION

STATION 52+82.74

STATION 1000+00.00

997+00.00

467.36
462.37
461.25
460.10
459.05
458.05
457.13
456.35
455.70
455.10
454.55
454.15
453.87
453.66
453.55
453.60
453.94
454.26
454.57
454.88

SPLINE GRADE

+1.25 %

453.12
452.11
451.05
450.05
449.13
448.35
447.70
447.10
446.55
446.15
445.87
445.66
445.55
445.60
445.94
446.26
446.57
446.88

STATION 997+47.39

BEGIN CONSTRUCTION

STATION 1000+63.38

BEGIN PROJECT 9999-002-900

EXISTING GROUND

STATION 1001+82.83

END CONSTRUCTION
These plans are unfinished and are not to be used for any type of construction.

Erosion & Sediment Control Phase II
 THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
These plans are unfinished and are not to be used for any type of construction.
RIVER HEIGHTS ASSOCIATES
UNITED PARTNERSHIP
Place: 0023520/3002 Address: 2205 Seaview

COMMONWEALTH OF VIRGINIA

PROPRIETARY AND CONFIDENTIAL

DESIGNED BY
CREATOR: dnuckols

DESIGN SUPERVISED BY

SURVEYED BY

PROJECT MANAGER

LEGEND

DENOTES CONSTRUCTION LIMITS IN CUTS

DENOTES CONSTRUCTION LIMITS IN FILLS

DENOTES PROPOSED PAVEMENT

DENOTES PAVED PAVING AND MAINTAINING

DENOTES ROADWAY PAVING AND REPAIRING

DENOTES PAVEMENT PLANING AND BUILD-UP

DENOTES PROPOSED PAVEMENT

LINES DENOTE TEMPORARY EASEMENTS.

CONCRETE

ANY TYPE OF CONSTRUCTION.

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Proposed Grade

STA = 112+84.00
EL = 492.89
+5.67%

L = 600.00
K = 44
ex = -10.22'
SSD = 308'

Transition
+81.54
-2% Super-elevation

Existing Ground
V = 40 MPH
 THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

EROSION & SEDIMENT CONTROL PHASE I

REVISED

REFERENCES
PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.
Roadway Profile 4A
Roadway Plan 4C
E&S Phase II 4D
Drainage Description 2F10
 THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
COMMONWEALTH OF VIRGINIA

PROJECT NUMBER 11

DESIGNED BY: Michael Russell, P.E.
DESIGN SUPERVISED BY: Whitman, Requardt & Associates
SURVEYED BY: VDOT
PROJECT MANAGER: D. Covington (434-422-9373)

CREATOR: dnuckols
VIEW: 150x254

Note:
- Denotes Demolition of Pavement
- Denotes Pavement Planing and Build-up
- Denotes Pavement Planing and Resurfacing
- Denotes Proposed Pavement

SCALE: 1/200

REFERENCES:
- Roadway Profiles
- Drainage Descriptions
- Bridge Plans

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PROPOSED GRADE

STA = 123+50.00
EL = 408.01

-7.96%
-0.97%

L = 450.00
K = 64
ex = 3.93'

STATION 122+19.73
BEGIN BRIDGE

SEE BRIDGE PLANS FOR BRIDGE DEPTH

9999-002-900
R201, C501

PROJECT MANAGER

ROADWAY ENGINEER

Whitman, Requardt & Associates

SUBSURFACE UTILITY BY, DATE

Accumark

SURVEYED BY, DATE

DESIGN BY
Michael Russell, P.E.

D. Covington (434-422-9373)

VDOT

STATE

PROJECT

VA.

STATE

ROUTE

PROJECT

SHEET NO.

1403
EROSION & SEDIMENT CONTROL PHASE I
These plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

STA = 132+30.00
EL = 399.50

L = 600.00
K = 67
ex = 6.73'

STATION 129+35.71
END BRIDGE

(1.5) Design High Water 364.0
Sunny Day Dam Breach 374.0

EXISTING GROUND

V = 41 MPH

SEE BRIDGE PLANS FOR BRIDGE DEPTH

PROJECT MANAGER

D. Covington (434-422-9373)
VDOT

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

<table>
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<tr>
<th>Property</th>
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<td>Parcel 3</td>
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### Diagram Notes
- **Legend**:
  - Existing Property Marker
  - Existing Property Line
  - Construction Baseline
  - Existing Monumentation
  - Figure without Brackets and Solid Line: Existing Data
  - Figure in Brackets and Dotted Line: Existing Data
  - Figure in Double Brackets and Double Dotted Line: Existing Data
  - Figure in Brackets and Solid Line: Existing Data
  - Figure in Double Brackets and Dotted Line: Existing Data
  - Figure in Double Brackets and Solid Line: Existing Data
  - Figure in Double Brackets and Double Dotted Line: Existing Data

### General Notes
- These plans are unfinished and are not to be used for any type of construction.

### Figure Information
- Sheet No. 7RW
- Scale 1" = 10'-0"
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
EROSION & SEDIMENT CONTROL PHASE I
EROSION & SEDIMENT CONTROL PHASE II

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
These plans are unfinished and are not to be used for any type of construction.

Legend:
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Denotes Proposed Pavement
- Denotes Pavement Planing and Resurfacing
- Denotes Pavement Planing and Build-up
- Denotes Demolition of Pavement

Notes:
- Figures in brackets and dot-dashed lines denote Permanent Easements.
- Figures in parenthesis and dot-dot-dashed lines denote Temporary Easements.

References:
- Profiles, Detail & Drainage Description Sheets, etc.

Roadway Profile
- BIA

Drainage Description
- E&S Phase I & II

E&S Phase I & II 96.962

Project No.
- 9999-002-900

Sheet No.
- 10 /3 /0 /2 0 15

Client:
- Whitman, Requardt & Associates

Companies:
- CRAFTON CORPORATION
- CRANSTON CORPORATION

Parcel ID:
- 04600-00-00-018D0
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

STA = 143+10.00
EL = 485.90

+8.00%

L = 420.00
K = 44
ex = -4.99'
SSD = 309'

V = 40 MPH

PROJECT MANAGER

ROADWAY ENGINEER

SUBSURFACE UTILITY BY, DATE

Accumark

Michael Russell, P.E.
Richmond, Virginia
Whitman, Requardt & Associates

D. Covington (434-422-9373)
VDOT

Plotted By: dnuckols
1:30:32 PM
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EROSION & SEDIMENT CONTROL PHASE II

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
These plans are unfinished and are not to be used for any type of construction.

Proposed Grade

STA = 149+00.00
EL = 477.05

L = 400.00
K = 66
ex = 3.04'

Existing Grade

147+00.00
148+00.00
149+00.00
150+00.00
151+00.00
152+00.00
153+00.00
154+00.00

VERT. 1"=5'
HOR. 1"=25'
SCALE:

D. Covington (434-422-9373)
VDOT

PROJECT MANAGER

ROADWAY ENGINEER

Richmond, Virginia
Whitman, Requardt & Associates

SUBSURFACE UTILITY BY, DATE

Accumark

1403

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

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PROPOSED GRADE

V = 40 MPH

STA = 161+25.00

EL = 498.58

L = 600.00

K = 64

ex = 7.00'

V = 40 MPH

9999-002-900

R201, C501

9999-002-900

0

25'

5'

VERT. 1"=5'

HOR. 1"=25'

SCALE:

D. Covington (434-422-9373)

VDOT

10 /30 /2015

d106137011A.dgn

Plotted By: dnuckols

1:30:47 PM

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PROJECT MANAGER

VA.

STATE

ROUTE

PROJECT

VA.

REVISED

STATE

ROUTE

PROJECT

SHEET NO.

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

PROJECT

SHEET NO.

SURVEYED BY, DATE

DESIGN BY

Michael Russell, P.E.

ROADWAY ENGINEER

Richmond, Virginia

Whitman, Requardt & Associates

SUBSURFACE UTILITY BY, DATE

Accumark

STATE

ROUTE

PROJECT

VA.

REVISED

STATE

ROUTE

PROJECT

SHEET NO.

1403
These plans are unfinished and are not to be used for any type of construction.
EROSION & SEDIMENT CONTROL PHASE I
Erosion & Sediment Control Phase II

These plans are unfinished and are not to be used for any type of construction.
General Notes:
1. All adjoining/departing boundary lines shown are
drawn from recorded plats or deeds. They do not
represent a field monumentation, metes and bounds
descriptions, and provided by VDOT with portions updated
by Rinker Design Associates, PC and do not
represent a boundary survey. These plans are unfinished
and are not to be used for any type of construction.

2. All areas shown for easements are approximate
and are not to be used for any type of construction.

3. The property line information shown on this
survey datum is based on VDOT project:

4. No cemetery sites were observed on the
subject property. This does not preclude their
completion of construction.

5. Bearings and distances in parentheses are
from recorded plats or deeds.

6. The property line information shown on this
survey datum represents a boundary survey.

7. General notes:

8. No cemetery sites were observed on the
subject property. This does not preclude their
completion of construction.

Special Notes:

1. Full line representing survey lines shown are
drawn from recorded plats or deeds and may not
represent a field monumentation. These plans are
a field survey based on VDOT project:

2. These plans are unfinished and are not to be used
for any type of construction.

3. No cemetery sites were observed on the
subject property. This does not preclude their
completion of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

STA = 168+25.00
EL = 547.50
+6.99%

L = 600.00
K = 45
ex = -9.99'
SSD = 312'

V = 40 MPH

V = 40 MPH

D. Covington (434-422-9373)
VDOT

Michael Russell, P.E.
ROADWAY ENGINEER
Richmond, Virginia
Whitman, Requardt & Associates

Accumark

PROJECT MANAGER
VA.
STATE
ROUTE
PROJECT
REVISED

SUBSURFACE UTILITY BY, DATE

SURVEYED BY, DATE

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

STA = 175+15.00
EL = 503.80
-6.33%
+5.00%
L = 730.00
K = 64
ex = 10.35'

EXISTING GROUND

V = 40 MPH

Berkmar Drive Baseline Sta. 176+93.09
SWM Basin Access Road

STA = 181+10.00
EL = 533.56
L = 360.00
K = 45
ex = -3.60'
SSD = 312'

V = 40 MPH

9999-002-900
R201, C501

Plotted By: dnuckols
1:31:08 PM
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D. Covington (434-422-9373)
VDOT

PROJECT MANAGER

VA.

STATE ROUTE PROJECT SHEET NO.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
These plans are unfinished and are not to be used for any type of construction.

STA = 181+10.00
EL = 533.56
-3.00% L = 360.00 K = 45 ex = -3.60' SSD = 312'

STA = 186+16.00
EL = 518.38 +2.75% L = 370.00 K = 64 ex = 2.66'
EROSION & SEDIMENT CONTROL PHASE II
GENERAL NOTES:

1. ADJUSTMENTS TO THE PRESENT SURVEY COORDINATES SHOWN IN THE EXISTING MONUMENTATION ARE TO BE MADE THROUGH THE USE OF DIGITAL DATA OR FIELD MEASUREMENTS TO A POINT IDENTIFIED AS THE "NEW SURVEY POINT." ALL SURVEY POINTS SHOWN ARE TO BE USED AS A REFERENCE ONLY.

2. AREAS STORM FOR EASEMENTS ARE APPROXIMATE AND MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

3. THE PROPERTY LINE INFORMATION SHOWN ON THIS SHEET WAS PREPARED WITHOUT THE LIMITS OF FIELD MEASUREMENTS PERFORMED BY NXL RINKER DESIGN ASSOCIATES, P.C. AND DO NOT REPRESENT A BOUNDARY SURVEY.

4. THIS PLAN SHEET WAS PREPARED WITHOUT THE COMPILED DATA.

5. ALL ADJOINING/DEPARTING BOUNDARY LINES SHOWN ARE LIMITED FIELD MEASUREMENTS PERFORMED BY NXL RINKER DESIGN ASSOCIATES, P.C. AND DO NOT REPRESENT A BOUNDARY SURVEY.

6. RIGHT OF WAY MONUMENTATION TO BE SET UPON COMPLETION OF CONSTRUCTION.

7. NONE OF THE PROPERTY'S PHYSICAL IMPROVEMENTS FROM RECORDED PLATS OR DEEDS.

8. NO CEMETERY SITES WERE OBSERVED ON THE

These plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
Erosion & Sediment Control Phase I

River Heights Associates Limited Partnership
Parcel ID 04600-00-00-01100
32.125 Ac. (Tax Assessor)
D.B. 1755 PG. 87

Parcel ID 04600-00-00-01100
D.B. 344 PG. 202

These plans are unfinished and are not to be used for any type of construction.
These Plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

STA = 203+95.84
EL = 567.35
+2.75%
-7.00%
L = 430.00
K = 44
ex = -5.24'
SSD = 308'

EXISTING GROUND

V = 40 MPH

BERKMAR DRIVE BASELINE STA. 202+00.00
PRIVATE ENTRANCE

D. Covington (434-422-9373)
VDOT

PROJECT MANAGER

ROADWAY ENGINEER

Whitman, Requardt & Associates

SUBSURFACE UTILITY

Accumark

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT
EROSION & SEDIMENT CONTROL PHASE I
Erosion & Sediment Control Phase II
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE

5 2 8 .9 2
5 13 .2 9
5 13 .1 4
5 13 .0 7
5 13 .1 0
5 13 .2 1
5 13 .3 4
5 13 .4 7
5 13 .5 9
5 13 .7 2
5 13 .8 4
5 13 .9 7
5 14 .1 0
5 14 .2 2
5 14 .3 5
5 14 .4 7
5 14 .6 0
5 14 .7 2
5 14 .8 5
5 14 .9 7
5 15 .1 0
5 15 .2 2
5 15 .3 5
5 15 .4 8
5 15 .6 0
5 15 .7 3
5 15 .8 5
5 15 .9 8
5 16 .1 0
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROPOSED GRADE
STA = 226+10.00
EL = 519.05

+0.50%
+7.00%
L = 460.00
K = 71
ex = 3.73'

V = 42 MPH

BERKMAR DRIVE BASELINE STA. 222+00.48
SWM BASIN ACCESS ROAD

D. Covington (434-422-9373)
VDOT

Plotted By: dnuckols 1:31:59 PM
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

PROJECT MANAGER
VA.

STATE ROUTE PROJECT
REVISED STATE ROUTE PROJECT SHEET NO.

SURVEYED BY, DATE
DESIGN BY
Michael Russell, P.E.
ROADWAY ENGINEER
Richmond, Virginia
Whitman, Requardt & Associates

SUBSURFACE UTILITY BY, DATE
Accumark

9999-002-900
Erosion & Sediment Control Phase I

These plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
BASIN ACCESS ROAD PROFILES

STA. 216+41.29 BERKMAR DRIVE BASELINE, RT
SWM BASIN 7 ACCESS

STA. 222+00.05 BERKMAR DRIVE BASELINE, RT
SWM BASIN 8 ACCESS

STA. 215+34.57 BERKMAR DRIVE BASELINE, RT
SWM BASIN 6 ACCESS

STA. 188+35.72 BERKMAR DRIVE BASELINE, LT
SWM BASIN 5 ACCESS

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

R201, C501

D. Covington (434-422-9373)

VDOT

PROJECT MANAGER

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.
GENERAL NOTES
1. All lighting shall be furnished per manufacturer's standards as noted on the plans.
2. All permanent light poles shall be aluminum unless otherwise noted.
3. All underground luminaires shall be fused in the transformer base or fuse box.
4. All underground lighting standards shall be furnished with manufacturer's transformer bases.
5. All underground lighting standards shall be provided with certification tags bearing the model, phase and control panel number.
6. The contractor shall coordinate locating of all conduit runs with the engineer of record.

LUMINAIRE INFORMATION
1. Conduit and cable information
2. The conductor(s) and cable(s) shall be identified with individual non-ferrous metal tags or nylon tags for power conductors per Section 700.04.
3. Lighting poles shall be furnished with manufacturer's specifications.
4. All roadway lighting standards shall be mounted as noted on the plans.
5. Only approved splice kits shall be allowed at all lightning splice points.
6. Conduit size, phase, and control center number shall conform to field conditions.
7. Where possible, trench for electrical conduits shown on these plans are diagrammatic and actual conduit runs shall be verified by the contractor in the field.

CONDUIT AND CABLE INFORMATION
1. All single conductor cables shall be THHN/THWN.
2. All conduit and cables shall be identified on the lid.
3. All conduit and cables shall be labeled on the plans.
4. Feeder cables shall be identified with individual non-ferrous metal tags or nylon tags for power conductors per Section 700.04.
5. All conduit and cables shall be terminated in control panels with insulated lugs and be properly labeled conforming to wiring diagrams furnished by the contractor.

GENERAL NOTES (cont.)
18. The engineer of record determines the pole lengths based on each location for the structure or structure/structure/structure pole standards.
19. The pole lengths shall be verified by the contractor in the field.
20. All conduits shall be buried as noted on the plans.

ROADWAY LIGHTING LEGEND
1. The plan is for electrical service (std SE-9 type B bore 0.5") to roadway lighting structures.
2. All lighting shall be returned to its original state at the completion of all work.
3. Soil shall be replaced as noted on the plans.
4. All disturbed areas, fencing, and other obstructions shall be returned to their original state at the completion of all work.
5. The contractor shall coordinate routing of all conduit runs with the engineer of record.
6. All conduit and cable runs shall be verified by the contractor in the field.
7. The pole lengths shall be determined by the engineer of record.
8. The conduit and cable run legend is specific for each plan sheet.

CONDUIT INFORMATION
1. Conduit shall be bored as noted on the plans.
2. The engineer of record shall determine the conduit sizes.
3. The conduit shall be bored as noted on the plans.
4. All conduit and cable runs shall be buried as noted on the plans.
5. The contractor shall verify the conduit sizes.

CIRCUIT INFORMATION
1. The circuit, phase, and control center number shall conform to the wiring diagrams furnished by the contractor.
2. The conduit and cable run legend is specific for each plan sheet.
3. All conduit and cable runs shall be verified by the contractor in the field.
4. The pole lengths shall be determined by the engineer of record.
5. The contractor shall coordinate routing of all conduit runs with the engineer of record.
6. The conduit and cable run legend is specific for each plan sheet.
7. All conduit and cable runs shall be verified by the contractor in the field.
8. The pole lengths shall be determined by the engineer of record.
9. The conduit and cable run legend is specific for each plan sheet.
10. All conduit and cable runs shall be verified by the contractor in the field.
11. The pole lengths shall be determined by the engineer of record.
12. The conduit and cable run legend is specific for each plan sheet.
13. All conduit and cable runs shall be verified by the contractor in the field.
14. The pole lengths shall be determined by the engineer of record.
15. The conduit and cable run legend is specific for each plan sheet.
16. All conduit and cable runs shall be verified by the contractor in the field.
17. The pole lengths shall be determined by the engineer of record.
18. The conduit and cable run legend is specific for each plan sheet.
19. All conduit and cable runs shall be verified by the contractor in the field.
20. The pole lengths shall be determined by the engineer of record.
21. The conduit and cable run legend is specific for each plan sheet.
22. All conduit and cable runs shall be verified by the contractor in the field.
23. The pole lengths shall be determined by the engineer of record.
24. The conduit and cable run legend is specific for each plan sheet.
25. All conduit and cable runs shall be verified by the contractor in the field.
26. The pole lengths shall be determined by the engineer of record.
27. The conduit and cable run legend is specific for each plan sheet.
28. All conduit and cable runs shall be verified by the contractor in the field.
29. The pole lengths shall be determined by the engineer of record.
30. The conduit and cable run legend is specific for each plan sheet.

LUMINAIRE DETAILS

These plans are unfinished and unapproved and are not to be used for any type of construction.

PHILIPS-JUMEC
LUMINAIRE - RX2128 SERIES

ISOFOOTCANDLE DIAGRAM

PHILIPS-HADCO LUMINAIRE
RX2128MM5NSN - BISYMETRIC
BUG RATING: (B3-UO-G3)
204W, 17,648 LUMENS, 4000K
TYPE 4, SHORT DISTRIBUTION
**ELECTRICAL SERVICE AND PANEL BOARD DETAILS**

**FRONT VIEW**

- **6" MIN TO 6" MAX DIAMETER GALVANIZED STEEL POLE**
- **200 AMP SERVICE BASE**
- **BREAKER BOX**
- **FEEDER CABLES FOR SERVICE CABLES**
- **STAINLESS STEEL BANDS (3' CENTERS)**
- **4" MIN TO 6" MAX. DIAMETER GALVANIZED STEEL POLE**
- **GROUNDING LUG**
- **BREAKER MINIMUM INTERRUPTING CAPACITY 10,000 AMPS SYMM**

**LIGHTING CONTROL CENTER (CC) DESCRIPTION**

- **CONTROL WIRING**
  - **LUMINAIRE OPERATING VOLTAGE** = 277V
  - **VOLTAGE** = 277/480, SHARED NUETRAL 3-PHASE
  - **MAINS** = 100A MAIN CIRCUIT BREAKER
  - **BREAKER MINIMUM INTERRUPTING CAPACITY** = 10,000 AMPS SYMM

- **LUMINAIRE POLES**
  - **1, 2, 5, 7**
  - **3, 4, 6**
  - **1, 3, 8**
  - **5, 7**

**LIGHTING BRANCH CIRCUITS**

- **DESCRIPTION**
- **CONTROL WIRING**
- **LOAD**
- **TOTAL AMPERAGE**

**PANELED CABINETS AND EQUIPMENT PER VDOT**

- **SE-8 MODIFIED**
- **R201, C501**

**TABLES**

### PANELBOARD SCHEDULE

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**NOTES:**

- No other conduits shall be run in the same conduit with electrical service steel.
- Local power utility company will install service power utility steel from the power source to the meter base.
- Stainless steel bands shall be furnished by the power utility company. The standard is applicable for all electrical works.
- Grounding bushings shall be installed on each end of metal conduits. Empty conduits shall be plugged to prevent moisture and rodent entry.
- Stainless steel bands required for meter base, breaker box, and control center.
- Refer to standard detail 1314.10.
LIGHTING PLAN
BERKMAR DRIVE (ROUTE 1403)
& HILTON HEIGHTS ROAD ROUNDABOUT

SURVEYED BY
Pole HH-005 LP-1, TY. D
Hilton Heights Const. B

Sabra, Wang & Associates
A B N
VDOT
D. Covington (434-422-9373)

EASEMENT
PROP. TEMP. CONSTR.
SE-8 MOD WITH CCW TYPE C (CC-HH)
POWER COMPANY
PULL LINE FOR
PROP. PERM. SLOPE AND
ROP. R

LIGHTING PLAN
BERKMAR DRIVE (ROUTE 1403)
& HILTON HEIGHTS ROAD ROUNDABOUT
NOT TO SCALE

ACRONYMS AND ABBREVIATIONS
EGC = EQUIPMENT GROUNDING CONDUCTOR

HH SPlice DETAILS

Pole HH-005 LP-001
STA. 1001+78.9, 42.6 LT.

Pole HH-006 LP-001
STA. 1003+55.25 LT.

Pole HH-007 LP-001
STA. 1005+19.25 LT.

ALL WIRES ARE #6 AWG
PLAN NOTES:
1. ALL LIGHTING ARMS SHALL BE 50" IN LENGTH.
2. UTILITIES TO SHEET SCHEDULE FOR SCA AND DETAILS
3. THIS SHEET IS DRAWN TO SCALE AND MAY BE FIELD ADJUSTED TO AVOID CONFLICTS WITH RIGHT-OF-WAY OR UTILITIES.

LIGHTING PLAN
BERKMAR DRIVE (ROUTE 1403) & TOWN CENTER DRIVE ROUNDBOUGHT

DESIGNED BY
Sabra, Wang & Associates
D. Covington (434-422-9373)

CIRCUITS 2, 4, 6

CIRCUIT 4

CABLE DETAILS
CONDUIT AND PANELBOARD SCHEDULE.

THIS SHEET FOR
SEE DETAIL A-A FOR SPICE DETAILS
LIGHTING CONDUIT AND CABLE LEGEND CONT.

ALL WIRES ARE #8 AWG
FEEDER CABLES
1 - #8 EGC FOR SYS. GROUNDING
1 - #8 EGC FOR UTILITIES
1 - 1100LBS RATED POWER COMPANY PULL LINE FOR ELECTRICAL CONTRACTOR
2 - #8 AWG FOR STREET LIGHTING OR TO REGULATION AND CONTROL OF TRAFFIC ENGINEER FALLS CHURCH, VIRGINIA

SHEETS
9999-002-900

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PERMANENT SIGNING AND MARKINGS

SIGNING NOTES
1. UNLESS OTHERWISE APPROVED BY THE DESIGN BUILD CONSTRUCTION MANAGER, EXISTING TRAFFIC SIGNS WHICH ARE TO BE REMOVED SHALL REMAIN IN PLACE OR BE RESIZED TO MATCH THE SIZE OF THE NEW SIGN AND APPROPRIATE SIGN MESSAGE ARE IN PLACE.

2. ALL SIGN PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS AND ISSUANCES OF THE 2009 MUTCD, THE 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, AND VDOT SPECIFICATIONS AND STANDARDS.

3. ALL SIGN PANELS SHALL BE MOUNTED OR SUPPORTED IN A MANNER TO BE SECURED BY THE CONTRACTOR FOR THE DEPARTMENT AND SHALL BE DELIVERED AND INSTALLED IN ACCORDANCE WITH THE DEPARTMENT'S AREA SPECIFICATIONS.

4. ALL MATERIALS AND ITEMS REQUIRED TO COMPLETE THE REMOVAL OR MODIFICATION OF EXISTING SIGNS SHALL BE SUBMITTED TO THE DEPARTMENT PRIOR TO APPROVAL.

5. ALL MODIFICATIONS TO EXISTING SIGN PANELS, STRUCTURES, OR FOUNDATIONS SHALL CONTINUE TO SECTION 50 OF THE VDOT SPECIFICATIONS.

6. DEFINITION OF SYMBOLS:

A. THE TOP SECTION INDICATES THE SIGN NUMBER.
B. THE BOTTOM SECTION INDICATES THE SIGN PANEL TYPE.
C. THE LEFT SECTION INDICATES THE MEASUREMENT AND PAINT ITEM.
D. THE RIGHT SECTION INDICATES THE PAYMENT ITEM.

PAVEMENT MARKING NOTES
1. ALL MARKINGS ON THIS PROJECT SHALL BE RETROREFLECTIVE TYPE B, CLASS VI PAVEMENT MARKERS READILY IDENTIFIED.

2. ALL PAINTED MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS AND ISSUANCES OF THE 2009 MUTCD, THE 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, AND VDOT SPECIFICATIONS.

3. THE CONTRACTOR SHALL NOTIFY THE VDOT IDSP PROGRAM MANAGER OF THE REMOVAL AND REUSE OF INDIVIDUAL LOGO PANELS FROM THE EXISTING SIGN PANEL(S) ONCE THE CONTRACTOR HAS BECOME DUE TO DEFECTIVE OR LOST DURING THIS PROCESS, THE CONTRACTOR SHALL REMOVE AND REUSE THE INDIVIDUAL LOGO PANELS FROM THE EXISTING SIGN PANEL(S).

DEFINITION OF TYPES

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**Road and Bridge Standards**

**Sign Panel Design**

**Revision**

**Sheet No.** 2 of 2

**Date** 4/09

---

**Position**

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### Sign Panel Dimensions

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**NOTE:** Values may vary depending on specific requirements and should be reviewed for accuracy.

---

**SIGN PANEL DESIGN**

**ROAD AND BRIDGE STANDARDS**

*VA. 9999-002-900*

*REVISED 4-12-12*

*PROJECT MANAGER*

*WHITMAN, RENARDT & ASSOCIATES*

*SPECIFICATION REFERENCE 701*

*DIMENSIONS VARIES IN VARIOUS CONDITIONS.*

*THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.*

*REVISED 4-09 NEW.*

*NECESSARY BY THE DEPARTMENT MAY BE SUBJECT TO CHANGE AS DEEMED OR TO REGULATION AND CONTROL OF TRAFFIC.*

*STATE OF VIRGINIA DEPARTMENT OF TRANSPORTATION*
These plans are unfinished and are not to be used for any type of construction.

Zee Bars

Type A

Notes:
- Nylon washers shall be #18 plain washers with an outside diameter of 1" and an inside diameter of 1/4".
- To obtain a flush mounting surface for signs, all wood post shall be contained where necessary to access the flange of aluminum angle.
- The type A Zee bars shall be 2" x 1" x 1/4".
- All vertical and horizontal spacing between signs in an assembly shall be minimum (1"). (See Details)
- These are typical sign panel assemblies. All assemblies shall be in accordance with plan details.

Sign Panel Design

Sign Panel Attachment Details

For Sign Panel Attachment to 2 Single Standing Signs

Specifications:

- Nylon Washer
- 1/2" x 1/4" x 1/4" Aluminum Plate

Sign Face

- 2 1/2" x 1/2" x 1/2" Aluminum Angle Bracket

This design features relating to construction or to regulation and control of traffic may be subject to change as deemed necessary by the Department.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

**STIFFENER TO POST ATTACHMENT DETAIL**

<table>
<thead>
<tr>
<th>STRUCTURE TYPE</th>
<th>W</th>
<th>H</th>
<th>c</th>
<th>d</th>
<th>NO.</th>
<th>SIZE</th>
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<td>VA-B</td>
<td>4&quot;</td>
<td>4&quot;</td>
<td>6/1&quot;</td>
<td>2-1/16&quot;</td>
<td>2</td>
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</tr>
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<td>5&quot;</td>
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<td>5&quot;</td>
<td>3&quot;</td>
<td>7&quot;</td>
<td>1-1/16&quot;</td>
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<td>5/16&quot;</td>
<td>8</td>
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<tr>
<td>VA-O</td>
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<td>5&quot;</td>
<td>1/2&quot;</td>
<td>3</td>
<td>MEDIUM</td>
<td></td>
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</table>

NOTE:

- Rivets shall be used for securing the stiffeners to the sign, unless otherwise specified or approved, and shall be No. 4, minimum length 2-3/8", long aluminum oxide rivets spaced 4" on centerline. Rivet spacing for attachment of back-up plates shall be at maximum beginning 11/2" from the ends of the sign panel.

SEE STANDARD SPD-4 FOR POST CLAMP AND BOLT DETAILS.

UNLESS OTHERWISE NOTED THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE SIGN POST NO GREATER THAN THE DISTANCE OF 1/2."
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

### TABLE 2
FOR BRISTOL, SALEM, LYNCHBURG, RICHMOND, FREDERICKSBURG, CULPEPER, STAUNTON, AND NORTHERN VIRGINIA DISTRICTS (SEE NOTE 5)

<table>
<thead>
<tr>
<th>SIZE OF POST</th>
<th>CENTROID (FT)</th>
<th>MINIMUM BASE WIDTH (FT)</th>
<th>MINIMUM BASE DEPTH (FT)</th>
<th>MINIMUM CUSHION (FT)</th>
<th>MINIMUM TOTAL WIDTH (FT)</th>
<th>MINIMUM TOTAL DEPTH (FT)</th>
<th>comments</th>
</tr>
</thead>
</table>
| 2 INCH 14 GA | 8             | 10.7                    | 21.4                    |                     |                          |                          | "YPE A, YPE D OR YPE E FOUNDATION AS SPECIFIED IN HE CONTRACT DOCUMENTS."
|              | 9             | 9.5                     | 18.0                    |                     |                          |                          |          |
|              | 10            | 8.5                     | 17.0                    |                     |                          |                          |          |
|              | 11            | 7.7                     | 10.4                    |                     |                          |                          |          |
|              | 12            | 7.1                     | 14.2                    |                     |                          |                          |          |
|              | 13            | 6.5                     | 13.0                    |                     |                          |                          |          |
|              | 14            | 6.1                     | 12.2                    |                     |                          |                          |          |
| 2 1/2 INCH 12 GA | 8   | 21.5                    |                         |                     |                          |                          | "YPE A OR YPE E FOUNDATION."
|              | 9             | 19.1                    |                         |                     |                          |                          |          |
|              | 10            | 17.2                    |                         |                     |                          |                          |          |
|              | 11            | 15.6                    |                         |                     |                          |                          |          |
|              | 12            | 14.3                    |                         |                     |                          |                          |          |
|              | 13            | 13.3                    |                         |                     |                          |                          |          |
| 2 1/2 INCH 10 GA | 8   | 24.8                    | 49.6                    | 74.4                |                          |                          | "YPE B OR YPE C FOUNDATION AS SPECIFIED IN HE CONTRACT DOCUMENTS."
|              | 9             | 22.0                    | 44.0                    | 66.0                |                          |                          |          |
|              | 10            | 19.8                    | 39.6                    | 59.4                |                          |                          |          |
|              | 11            | 18.0                    | 36.0                    | 54.0                |                          |                          |          |
|              | 12            | 16.5                    | 33.0                    | 49.5                |                          |                          |          |
|              | 13            | 15.2                    | 30.4                    | 45.6                |                          |                          |          |
|              | 14            | 14.1                    | 28.2                    | 42.3                |                          |                          |          |
| 2 1/2 INCH 10 GA. WITH 3 INCH 10 GA. INNER POST (SEE NOTE 9) | 8 | 43.4 | 86.8 | 130.2 |                          |                          | "YPE B OR YPE C FOUNDATION AS SPECIFIED IN HE CONTRACT DOCUMENTS."
|                             | 9 | 38.6 | 77.2 | 110.8 |                          |                          |        |
|                             | 10 | 34.7 | 69.4 | 104.1 |                          |                          |        |
|                             | 11 | 31.6 | 63.2 | 98.8  |                          |                          |        |
|                             | 12 | 28.9 | 57.8 | 90.7  |                          |                          |        |
|                             | 13 | 25.7 | 53.4 | 80.1  |                          |                          |        |
|                             | 14 | 24.8 | 49.6 | 74.4  |                          |                          |        |

**NOTES:**
1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. FENCING SHALL BE AFFIRMITIVE IN ACCORDANCE WITH RVC-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   - 14 GA AND 12 GA - 30 KSI
   - 10 GA - 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 2 SHALL ALSO BE USED FOR THE CITY OF EMPIRIA AND COUNTIES OF GREENVILLE, SUGERED, AND SOUTHAMPTON IN HAMPTON ROADS DISTRICT.

**SPECIFICATION REFERENCE**
700

**SQUARE TUBE SIGN POST**

**ROAD AND BRIDGE STANDARDS**

**REVISED DATE**
01/15

**SHEET 3 OF 12**

**R201, C501**

**9999-002-900**

**R200, C500**

**WHITMAN, REQUARDT & ASSOCIATES**

**VDOT**

**M. WILLIAMS (434-422-9373)**

**PROJECT MANAGER**

**SURVEYED BY**

**DESIGNED BY**

**DESIGN SUPERVISED BY**

**VIEW**

**PRINTER**

**CREATOR**
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED
AND ARE NOT TO BE USED FOR
ANY TYPE OF CONSTRUCTION.

SPECIFICATION
REFERENCE
700

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SQUARE TUBE SIGN POST
FOUNDATION TYPE B DETAILS

Virginia Department of Transportation

ROAD AND BRIDGE STANDARDS
REVISION DATE
NEW 01/3
12/11
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

FOUNDATION TYPE C

8" TRIANGULAR MULTI-DIRECTIONAL COMBINATION ANCHOR/SLIP BASE PLATE - SOIL

SQUARE TUBE SIGN POST

FOUNDER TYPE C DETAILS

A COPY OF THE ORIGINAL SCALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

NOTES:
1. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF DRIVE TUBE FOUNDATION.
2. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTITIOUS MATERIAL AND SHALL BE TAPPED WITH EACH 4" LIFT.
3. THE SQUARE TUBE POST SHALL BE INSERTED INTO THE SLEEVE OF THE DRIVE TUBE FOUNDATION A MINIMUM OF 12".
4. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION WHEN USING A POWER DRIVER, A DRILL SHALL BE MOUNTED TO ITS MOUNTING HOLE.

DRIVE TUBE FOUNDATION TABLE

<table>
<thead>
<tr>
<th>FOUNDATION TYPE</th>
<th>2&quot; INCH 14 GA.</th>
<th>2½&quot; INCH 12 GA.</th>
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<tbody>
<tr>
<td>TYPE D</td>
<td>A 27&quot;</td>
<td>D 2½&quot; X 2½&quot; X ¼&quot; ASTM A360 GRADE B</td>
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<td></td>
<td>B 36&quot;</td>
<td>E 2½&quot; X 2½&quot; X ¼&quot; ASTM A360</td>
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<tr>
<td></td>
<td>C 3½&quot;</td>
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<tr>
<td>TYPE E</td>
<td>A 27&quot;</td>
<td>D 3&quot; X 3&quot; X ¼&quot; ASTM A360 T300</td>
</tr>
<tr>
<td></td>
<td>B 36&quot;</td>
<td>E 3&quot; X 3&quot; X ¼&quot; ASTM A360</td>
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<tr>
<td></td>
<td>C 3½&quot;</td>
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</table>

SQUARE TUBE SIGN POST

FOUNDATION TYPE D AND E DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

SQUARE TUBE SIGN POST
FOUNDATION TYPE F DETAILS

NOTES:
1. CORNER BOLTS SHALL BE 1/4" DIA. TRUSS HEAD BOLTS WITH BUFFED FLANGE ON TWO CORNER BOLTS WILL BE REQUIRED TO CONNECT THE 2 1/2" POST SLEEVE TO THE SOIL STABILIZING PLATE.
2. EXCAVATE TO A DEPTH OF NO LESS THAN 8" AND NO GREATER THAN 12" PRIOR TO INSTALLATION OF SOIL STABILIZING PLATE FOUNDATION.
3. THE EXCAVATED AREA SHALL BE BACKFILLED WITH A CEMENTOUS MATERIAL AND SHALL BE TAPPED WITH EACH 6" LIFT.
4. THE 2" SQUARE TUBE POST SHALL BE INSERTED INTO THE 2 1/2" POST SLEEVE A MINIMUM OF 12".
5. DRIVE CAP SHALL BE UTILIZED FOR INSTALLATION OF DRIVE TUBE FOUNDATION WHICH USING A POWERED DRIVER, A GANGLY SHALL ALSO BE REQUIRED.

A COPY OF THE ORIGINAL DRAWING AND SHEET NUMBER IS IN THE EDITORIAL OFFICE.

SHEET No. 1 OF 12
REVISION DATE:
NEW (2010)
133114

SPCIFICATION
REFERENCE
700

ROAD AND BRIDGE STANDARDS

STATE ROUTE PROJECT
R201, C501
9999-002-900
Whitman, Requardt & Associates

700
9999-002-900
251649
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

SQUARE POST CLAMP & BRACE
(CONNECTING JUNCTION)

NOTES:
1. NYLON WASHER SHALL BE 3/8" THICK MINIMUM WITH AN OUTSIDE DIAMETER OF 1/2" AND AN INSIDE DIAMETER OF 3/8".
2. DRIVE RIVET SHALL BE 3/16" OR 5/32" ALUMINUM FLAT HEAD RIVET WITH NYLON OR RUBBER WASHER.
3. THE HEAD OF ALL DRIVE RIVETS AND HEX HEAD BOLTS SHALL BE POWDER COATED TO MATCH THE COLOR OF THE SIGN SHEETING.
4. DRIVE RIVET SHALL NOT BE USED FOR SIGNS WITHOUT BRACING.

SQUARE TUBE SIGN POST
SIGN BRACING AND SIGN PANEL ATTACHMENT DETAILS

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

REFERENCE
700
THESE PLANS ARE UNFINISHED
AND ARE NOT TO BE USED FOR
ANY TYPE OF CONSTRUCTION.

SINGLE POST - BRACING DIAGRAM
TYPICAL - TWO BRACE

TWO POST - BRACING DIAGRAM
TYPICAL - TWO BRACE

THREE POST - BRACING DIAGRAM
"TYPICAL" - THREE BRACE

DETAIL A - SPACING OF MULTIPLE BRACING

DETAIL 3 - INSTALLATION TOLERANCES

NOTES:
1. SIGN PANEL WIDTHS 36" OR GREATER SHALL REQUIRE SIGN BRACING.
2. VERTICAL SPACING OF SIGN BRACING SHALL NOT EXCEED 12" FROM THE TOP OR BOTTOM EDGE OF SIGN PANEL TO FIRST BRACE AND 18" BETWEEN BRACES. IF THE SPACING BETWEEN BRACES EXCEEDS 36" THEN ADDITIONAL SIGN BRACING SHALL BE ADDED. ALL SIGN BRACING SHALL BE EQUALLY SPACED BETWEEN THE TOP AND BOTTOM BRACE. SEE DETAIL A.
3. MAXIMUM SIGN PANEL AREA PER POST TO BRACE JUNCTION SHALL BE 10 SQ. FT. ADDITIONAL SIGN BRACING SHALL BE INSTALLED IF 10 SQ. FT PER POST TO BRACE JUNCTION IS EXCEEDED.
4. ONE SPlice PER BRACE WILL BE PERMITTED. BRACE SPlice SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. BRACING SHALL NOT BE SPICED WITHIN 6" OF A SIGN PANEL. BRACE JUNCTION SPACES SHALL NOT BE IN VERTICAL ALIGNMENT BUT SHALL BE OFFSET NO LESS THAN 12" FROM EACH OTHER.
5. TOP OF SIGN PANEL SHALL BE MOUNTED 5" TO 2" WITH THE TOP OF THE POST AND 1/2" TO 2" WITH THE SIDE OF THE SIGN BRACING. SEE DETAIL B.
6. SIGN PANEL WIDTHS SHALL NOT EXCEED MAXIMUM SPECIFIED.

SQUARE TUBE SIGN POST
SIGN BRACING DETAILS

700

A COPY OF THE ORIGINAL SEAL AND SIGNATURES IS ON FILE IN THE CENTRAL OFFICE.

ROAD AND BRIDGE STANDARDS

NEW 01/16

SHEET 11 OF 12

1212.20

9999-002-900

9999-002-900

R220, C50

Whitman, Requardt & Associates
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

**Design Features Relating to Construction or to Regulation and Control of Traffic** may be subject to change as deemed necessary by the Department.

---

**VDOT**

**Road and Bridge Standards**

**Sheet 12 of 12**

**Revision Date**

**New 01/15**

**VDOT Project**

**MOUNTING HEIGHTS OF SIGN INSTALLATIONS**

**Virginia Department of Transportation**

**Specification Reference**

700
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

TYPE VA-A


TYPE VA-F

TYPE VA-G

TYPE VA-K

TYPE VA-A2

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SIGN PANEL DESIGN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION
REFERENCE

A 3/8" DIA. x 1" BOLTS (GALV.) WITH HEX NUT AND LOCK WASHER

UNLESS OTHERWISE NOTED, THE TOP OF THE SIGN PANEL SHALL NOT EXTEND ABOVE THE GROUND POST OR GREATER THAN THE DISTANCE TO 3/4" C.

1" FROM TOP OF SIGN TO TOP OF POST

1403
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

**POST CLAMP DETAIL**

CENTERLINE HOLE FOR \( \frac{3}{8} \)" DIAMETER SQUARE HEAD STAINLESS STEEL BOLT + 2\( \frac{1}{2} \)" LONG WITH SELF-LOCKING NUT AND ONE FLAT WASHER.

SERRATE \( \frac{3}{8} \)" DEEP AT \( \frac{1}{4} \)" CENTERS

\( \frac{1}{8} \)" OR \( \frac{3}{8} \)" LEG OF CLAMP IS FOR ADJUSTMENT TO POST FLANGE

Rivets shall be dome head, break maul, blind rivets conforming to Industrial Fasteners Institute Standard IFI-114, Style 1, Grades 10 or 11 except that the minimum ultimate tensile strength shall be 360 pounds. Rivets shall have a grip range accommodating the covered thickness of the sign panel, and tee bar and shall be installed in accordance with the manufacturer's recommendations.

**TEE BAR SPACING CHART**

<table>
<thead>
<tr>
<th>STRUCTURE TYPE</th>
<th>SIGN PANEL DIMENSIONS</th>
<th>TEE 6061-T6</th>
<th>2.5 x 3.0 x 1 1/2&quot; LB/FT.</th>
<th>2.5 x 3.0 x 1 1/2&quot; LB/FT.</th>
<th>NUMBER</th>
<th>LENGTH</th>
<th>CLAMP</th>
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<tbody>
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<td>3&quot; x 3&quot; x 3&quot; 1 1/2&quot;</td>
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<td>-</td>
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</tr>
<tr>
<td>VA-C</td>
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<td>-</td>
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<td>-</td>
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<td>6&quot;</td>
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<td>6&quot;</td>
<td>-</td>
<td>-</td>
<td>4</td>
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</tr>
<tr>
<td>VA-K</td>
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<td>6&quot;</td>
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<td>-</td>
<td>4</td>
<td></td>
</tr>
<tr>
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<td>-</td>
<td>-</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**SPECS PANEL DESIGN**

A COPY OF THE ORIGINAL LABELED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

**SIGN PANEL DESIGN**

**ROAD AND BRIDGE STANDARDS**

**REVISION DATE**

**SHEET 2 OF 2**

**REVISION**

**DATE**

**PAGE**

**NUMBER**

**TITLE**

**INCHES**

**FOOT**

**DEPARTMENT**

**STATE**

**ROUTE**

**PROJECT**

**SHEET NO.**

**PROJECT MANAGER**

**SURVEYED BY**

**DESIGN SUPERVISED BY**

**DESIGNED BY**

**VIEW**

**PRINTER**

**CREATOR**

**9999-002-900**

**1325.41**

**Michael Russell, P.E.**

**D. Covington (434-422-9373)**

**Whitman, Requardt & Associates**

**VDOT**

**Virginia Department of Transportation**

**VIEW**

**PRINTER**

**CREATOR**

**9999-002-900**

**1325.41**
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

PROJECT MANAGER
SURVEYED BY
DESIGN SUPERVISED BY
DESIGNED BY

R201, C501
9999-002-900

Whitman, Requardt & Associates
VDOT
Michael Russell, P.E.
D. Covington (434-422-9373)

NOTES:
1. All pavement markings shall be installed in accordance with these standards, the MUTCD, and the Virginia Supplement to the MUTCD, unless otherwise specified in the contract documents.
2. The location, width, and type of the pavement markings shall be as specified in the contract documents.
3. Crosswalks shall align with curb ramps in accordance with standard C 20. The crosswalk shall be at least as wide as the level landing area of the curb ramp.
4. When longitudinal lines are specified for the crosswalk, the longitudinal lines shall be parallel to the path of thru traffic.
5. Gaps between longitudinal lines shall be between 2 - 5 feet. Gap spacing may vary in order to align lines such that they are outside the wheel paths of thru traffic. The first and last line lines shall be 2' maximum from edge of shoulder on edge of gutter pan.

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

TYPICAL PAVEMENT MARKING
CROSSWALK MARKINGS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
704
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

GENERAL PLACEMENT

1. Exact locations of the markers shall be approved by the engineer prior to installation.

2. Typical spacing shall be 40-60 ft. when used on a tangent section of roadway or on horizontal curves less than 3%, and shall be 40-60 ft. when used on horizontal curves of 3% or more, unless otherwise shown in the contract documents or as directed by the engineer. See Sheet 7 for specific examples.

3. All raised pavement markers shall be installed at least 2 inches from any seam or pavement joint.

4. Raised pavement markers shall be the same color as the adjacent pavement marking. The color of the backside of raised pavement markers shall be as shown in the table below.

5. All raised pavement markers shall be fluorescent raised pavement markers (stripes) unless otherwise noted in the contract documents.

6. Raised pavement markers shall be omitted on bridge decks unless otherwise noted in the contract documents.

TYPICAL RAISED PAVEMENT MARKER

LOCATION DETAILS

TWO-WAY LEFT TURN LANE AND CENTER LANE LEFT TURN

RAISED PAVEMENT MARKER COLOR

<table>
<thead>
<tr>
<th>MARKER TYPE</th>
<th>BACKSIDE COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Way Traffic</td>
<td>White Snowplowable</td>
</tr>
<tr>
<td></td>
<td>Modified to Radial Red</td>
</tr>
<tr>
<td>Temporary</td>
<td>Blank</td>
</tr>
<tr>
<td>Two Way Traffic</td>
<td>Yellow Snowplowable</td>
</tr>
<tr>
<td></td>
<td>Blank</td>
</tr>
<tr>
<td>All Types</td>
<td>White Adjacent</td>
</tr>
<tr>
<td></td>
<td>Pavement Marking</td>
</tr>
</tbody>
</table>

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWINGS IS ON FILE IN THE CENTRAL OFFICE.

TYPICAL RAISED PAVEMENT MARKER

LOCATION DETAILS

704
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

**TYPICAL RAISED PAVEMENT MARKER**

**LOCATION DETAILS**

**VIRGINIA DEPARTMENT OF TRANSPORTATION**

**SPECIFICATION**

**REFERENCE**

**704**

**A COPY OF THE ORIGINAL, SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.**

**KEY:**

- **TWO WAY TRAFFIC MARKER WITH POINTS INDICATING RETROREFLECTIVE FACE**
- **ONE WAY TRAFFIC MARKER, WITH POINT INDICATING RETROREFLECTIVE FACE**
- **INDICATES DIRECTION OF TRAVEL**

**R201, C501**

**9999-002-900**

**9999-002-900**

**Whitman, Requardt & Associates**

**VDOT**

**Michael Russell, P.E.**

**D. Covington (434-422-9373)**

**1403**
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

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

SQUARE FOOT AREAS OF SYMBOLS AND ARROWS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
<th>PAINT APPLICATION</th>
<th>ERADICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>THRU ARROW</td>
<td>12.0</td>
<td>23.0</td>
</tr>
<tr>
<td></td>
<td>SINGLE TURN ARROW (LEFT OR RIGHT)</td>
<td>17.5</td>
<td>51.0</td>
</tr>
<tr>
<td></td>
<td>DOUBLE TURN ARROW (LEFT/THROUGH OR RIGHT/THROUGH)</td>
<td>28.5</td>
<td>96.0</td>
</tr>
<tr>
<td></td>
<td>TRIPLE TURN ARROW (LEFT/THROUGH/RIGHT)</td>
<td>37.5</td>
<td>127.5</td>
</tr>
<tr>
<td></td>
<td>DOUBLE TURN ARROW ARROW (LEFT/RIGHT)</td>
<td>27.0</td>
<td>80.0</td>
</tr>
<tr>
<td></td>
<td>LANE REDUCTION ARROW (LEFT OR RIGHT)</td>
<td>44.0</td>
<td>99.0</td>
</tr>
<tr>
<td></td>
<td>WRONG WAY ARROW</td>
<td>24.0</td>
<td>133.5</td>
</tr>
<tr>
<td></td>
<td>FISH-HOOK LINE USE ARROW FOR ROUNDABOUTS (LEFT)</td>
<td>20.5</td>
<td>81.0</td>
</tr>
<tr>
<td></td>
<td>FISH-HOOK LINE USE ARROW FOR ROUNDABOUTS (LEFT/THROUGH)</td>
<td>31.0</td>
<td>114.5</td>
</tr>
<tr>
<td></td>
<td>FISH-HOOK LINE USE ARROW FOR ROUNDABOUTS (LEFT/THROUGH)</td>
<td>39.5</td>
<td>195.0</td>
</tr>
<tr>
<td></td>
<td>FISH-HOOK LINE USE ARROW FOR ROUNDABOUTS (THROUGH/RIGHT)</td>
<td>31.0</td>
<td>142.0</td>
</tr>
<tr>
<td></td>
<td>OPTIONAL OVAL FOR FISH-HOOK LINE USE ARROW FOR ROUNDABOUTS</td>
<td>3.5</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>HDD DIAMOND SYMBOL (ASPHALT SURFACE)</td>
<td>9.5</td>
<td>59.0</td>
</tr>
<tr>
<td></td>
<td>HDD DIAMOND CONTRAST SYMBOL (CONCRETE SURFACE)</td>
<td>35.5</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>YIELD LINE TRIANGLE (1 x 1.5)</td>
<td>0.75 (EACH)</td>
<td>1.5 (EACH)</td>
</tr>
<tr>
<td></td>
<td>YIELD LINE TRIANGLE (2 x 3)</td>
<td>3.0 (EACH)</td>
<td>6.0 (EACH)</td>
</tr>
</tbody>
</table>

THEORETICAL BOX
ERADICATION AREA EXAMPLE (TRIPLE TURN ARROW)

ERADICATION AREA = 12'-0" x 10'-0" = 127.5 SQFT.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

NOTES:
1. ALL SYMBOLS AND LETTERING SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

ROAD AND BRIDGE STANDARDS

A COPY OF THE ORIGINAL, SEAL, AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ARROW DETAILS

VA. STATE ROUTE PROJECT

R201, C501

9999-002-900

Whitman, Requardt & Associates

VDOT

Michael Russell, P.E.

D. Covington (434-422-9373)

1403
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

NOTES:
1. 1 GRID UNIT = 8 INCHES
2. ALL SYMBOLS/LEGENDS SHALL BE WHITE UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

LANE REDUCTION ARROW (LEFT)

LANE REDUCTION ARROW (HOVM)
SHOWED FOR CLARITY 1 GRID UNIT = 1 FOOT

WRONG-WAY ARROW

FISH-HOOK LANE-USE ARROW FOR ROUNDABOUTS

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

PAVEMENT WORD, SYMBOL, AND ARROW MARKINGS

ARROW DETAILS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
704
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
New sign and structure to be installed

Existing sign and structure to be removed

SNow plowable R aised P avement

These Plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
These plans are unfinished and are not to be used for any type of construction.

Pavement Marking Legend:
1. Existing pavement markings
2. Type B Class V1 yellow pavement line marking
3. Type B Class V1 double yellow pavement line marking
4. Type B Class V1 white pavement line marking
5. Type B Class V1 white pavement line marking, 2' spacing
6. Type B Class V1 white pavement line marking, 6' spacing
7. Type B Class II pavement marking message, through arrow
8. Type B Class II pavement marking message, right turn arrow
9. Type B Class II contrast yellow pavement line marking
10. Type B Class II contrast white pavement line marking
11. Type B Class V1 contrast white pavement line marking
12. Type B Class V1 contrast white pavement line marking, 2' spacing
13. Type B Class V1 contrast white pavement line marking, 6' spacing
14. Type B Class V1 contrast white pavement line marking, 4' spacing
15. Type B Class V1 contrast white pavement line marking, 8' spacing
16. Type B Class V1 contrast white pavement line marking, 12' spacing
17. Type B Class V1 contrast white pavement line marking, 20' spacing
18. Type B Class V1 contrast white pavement line marking, 30' spacing
19. Type B Class V1 contrast white pavement line marking, 40' spacing
20. Type B Class V1 contrast white pavement line marking, 50' spacing
21. Type B Class V1 contrast white pavement line marking, 60' spacing
22. Type B Class V1 contrast white pavement line marking, 80' spacing
23. Type B Class V1 contrast white pavement line marking, 100' spacing
24. Type B Class V1 contrast white pavement line marking, 120' spacing
25. Type B Class V1 contrast white pavement line marking, 150' spacing
26. Type B Class V1 contrast white pavement line marking, 200' spacing
27. Type B Class V1 contrast white pavement line marking, 250' spacing
28. Type B Class V1 contrast white pavement line marking, 300' spacing
29. Type B Class V1 contrast white pavement line marking, 400' spacing
30. Type B Class V1 contrast white pavement line marking, 500' spacing
31. Type B Class V1 contrast white pavement line marking, 600' spacing
32. Type B Class V1 contrast white pavement line marking, 700' spacing
33. Type B Class V1 contrast white pavement line marking, 800' spacing
34. Type B Class V1 contrast white pavement line marking, 900' spacing
35. Type B Class V1 contrast white pavement line marking, 1000' spacing
36. Type B Class V1 contrast white pavement line marking, 1200' spacing
37. Type B Class V1 contrast white pavement line marking, 1500' spacing
38. Type B Class V1 contrast white pavement line marking, 2000' spacing
39. Type B Class V1 contrast white pavement line marking, 2500' spacing
40. Type B Class V1 contrast white pavement line marking, 3000' spacing
41. Type B Class V1 contrast white pavement line marking, 4000' spacing
42. Type B Class V1 contrast white pavement line marking, 5000' spacing
43. Type B Class V1 contrast white pavement line marking, 6000' spacing
44. Type B Class V1 contrast white pavement line marking, 7000' spacing
45. Type B Class V1 contrast white pavement line marking, 8000' spacing
46. Type B Class V1 contrast white pavement line marking, 9000' spacing
47. Type B Class V1 contrast white pavement line marking, 10000' spacing
These plans are unfinished and are not to be used for any type of construction.

**Legend**

- Type B, Class V1, Yellow Pavement Line Marking, 24" Width, 20' Spacing
- Type B, Class V1, White Pavement Line Marking, 4" Width
- Type B, Class V1, Contrast White Pavement Line Marking, 4" Width
- Type B, Class V1, Contrast Double Yellow Pavement Line Marking, 4" Width
- Type B, Class I, Pavement Marking Message, Fish-Hook Arrow
- Type B, Class I, Pavement Marking Message, Right Turn Arrow
- Type B, Class I, Contrast Double Yellow Pavement Line Marking
- Type B, Class I, Contrast White Pavement Line Marking

**Notations**

- Existing sign and structure to be removed
- New sign and structure to be installed in current location
These plans are unfinished and are not to be used for any type of construction.
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THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
3. Type B Class V1, white pavement line marking, 4" width
4. Eradicate existing pavement marking
5. Type B Class V1, yellow pavement line marking, 24" width, 2' spacing
6. Type B Class V1, contrast double yellow pavement line marking, 4" width, 6" spacing
7. Type B Class V1, contrast white pavement line marking, right turn arrow
8. Type B Class V1, contrast white pavement line marking, # both

**Pavement Marking Legend**

**Symology**
- Existing signs and structures to be removed
- Existing signs and structures to be replaced in current location
- New signs and structures to be installed
- Snowplow capable pavement marking (SNAPs)

**Legend**
- Type B, Class V1, white pavement line marking, 4" width
- Type B, Class V1, yellow pavement line marking, 4" width, 6" spacing
- Type B, Class V1, white pavement line marking, 24" width, 2' spacing
- Type B, Class V1, contrast double yellow pavement line marking, 4" width, 6" spacing
- Type B, Class V1, contrast white pavement line marking, right turn arrow
- Type B, Class V1, contrast white pavement line marking, # both

**These plans are unfinished and are not to be used for any type of construction.**

---

**View:**
- Printer:
- Creator:

---

**Project Sheet No.:**
- 9999-032-900

**State Route Project No.:**
- 1403

**Design Features Relating to Construction or to Regulation and Control of Traffic May Be Subject to Change as Deemed Necessary by the Department.**

---

**Whitman, Requardt & Associates**
- Michael Russell, P.E.
- D. Covington (434-422-9373)

---

**State Route Project No.:**
- 9999-032-900

**Surfaced Area:**
- VDOT
- 360' x 140'
- Sheet No. 1 of 4
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
P AVEMENT M ARKING L EGEN D

1. TYPE B CLASS V, WHITE PAVEMENT LINE, WARNING MESSAGE, RIGHT TURN ARROW
2. TYPE B CLASS V, WHITE PAVEMENT LINE, WARNING MESSAGE, THROUGH ARROW
3. TYPE B CLASS V, WHITE PAVEMENT LINE, WARNING MESSAGE, 4" WIDTH, 2' SPACING
4. TYPE B CLASS V, WHITE PAVEMENT LINE, MESSAGE, 4" WIDTH, 6" SPACING
5. TYPE B CLASS I, PAVEMENT MARKING MESSAGE, RIGHT TURN ARROW
6. TYPE B CLASS I, PAVEMENT MARKING MESSAGE, THROUGH ARROW
7. TYPE B CLASS V, WHITE PAVEMENT LINE, MESSAGE, 4" WIDTH, 2' SPACING
8. TYPE B CLASS V, WHITE PAVEMENT LINE, WARNING MESSAGE, RIGHT TURN ARROW
9. TYPE B CLASS V, WHITE PAVEMENT LINE, WARNING MESSAGE, THROUGH ARROW
10. TYPE B CLASS V, WHITE PAVEMENT LINE, MESSAGE, 4" WIDTH, 6" SPACING
11. TYPE B CLASS V, CONTRAST DOUBLE YELLOW PAVEMENT LINE, MESSAGE, 4" WIDTH, 6" SPACING
12. TYPE B CLASS V, CONTRAST WHITE PAVEMENT LINE, WARNING MESSAGE, 4" WIDTH
13. TYPE B CLASS V, CONTRAST WHITE PAVEMENT LINE, WARNING MESSAGE, RIGHT TURN ARROW
14. TYPE B CLASS V, CONTRAST WHITE PAVEMENT LINE, WARNING MESSAGE, THROUGH ARROW
15. TYPE B CLASS V, CONTRAST WHITE PAVEMENT LINE, MESSAGE, 4" WIDTH, 6" SPACING
16. TYPE B CLASS V, CONTRAST WHITE PAVEMENT LINE, MESSAGE, 2' SPACING, 4' SKIPE

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

TRAFFIC ENGINEER
Richmond, Virginia
Rummel, Klepper & Kahl, LLP

PROJECT MANAGER
Michael Russell, P.E.
D. Covington (434-422-9373)

STATE ROUTE VA.

REVISED STATE PROJECT SHEET NO.
9999-002-900

Whitman, Requardt & Associates

VIEW
$VIEW$

Printer:
$USER$

Creator:
$CREATOR$
These plans are unfinished and are not to be used for any type of construction.
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These plans are unfinished and are not to be used for any type of construction.
## PERMANENT SIGN SCHEDULE

### Sign Schedule Details

<table>
<thead>
<tr>
<th>Sign No.</th>
<th>Text</th>
<th>Panel Size</th>
<th>Color</th>
<th>Font Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
<tr>
<td>2</td>
<td>South</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
<tr>
<td>3</td>
<td>East</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
<tr>
<td>4</td>
<td>North</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
<tr>
<td>5</td>
<td>West</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
<tr>
<td>6</td>
<td>South</td>
<td>24&quot; x 48&quot;</td>
<td>BLK/W</td>
<td>M1-V2c</td>
<td>SEE DETAIL</td>
</tr>
</tbody>
</table>

**Note:** The sign schedule may be subject to change as deemed necessary by the designer.
LANDSCAPE SUMMARY

GENERAL PLANTING NOTES


2. PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN UNLESS SPECIFIED OTHERWISE. SUBSTITUTES REQUIRE LANDSCAPE ARCHITECT AND VDOT APPROVAL PRIOR TO PLANTING.

3. PLANT BEDS SHALL BE CONSTRUCTED WITH A SOIL MIXTURE PER THE PROJECT SPECIAL PROVISIONS.

4. PLANT BEDS SHALL BE CONSTRUCTED WITH A SOIL MIXTURE PER THE PROJECT SPECIAL PROVISIONS.

5. THE CONTRACTOR SHALL WATER ALL LIVING PLANTS DURING THE WARRANTY PERIOD.

6. THE CONTRACTOR SHALL WATER ALL LIVING PLANTS DURING THE WARRANTY PERIOD.

7. LOCATION OF PLANT MATERIALS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED IN THE FIELD AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.

8. PLANTS SHALL BE PLANTED AT THE PROPER SPACING PER THE LANDSCAPE SUMMARY OR PLAN, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT.

9. THE LOCATION OF ALL PLANT MATERIALS SHALL BE STATED IN THE FIELD BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATION OR TO REGULATION AND CONTROL OF TRAFFIC DESIGN FEATURES RELATING TO CONSTRUCTION.

10. THE CONTRACTOR SHALL INSTALL THE CONTRACTOR TO SUBMIT A SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT.

11. LARGE CANOPY TREES (TREES TO REACH GREATER THAN 4" CALIPER) SHALL NOT BE PLANTED IN THE CLEAR ZONE.

12. DEFINITION OF ABBREVIATION:

   B & B - Balled & Burlapped
   CAL. - Caliper
   CONT. - Container
   HGT. - Height
   NY -  New York
   QTY. - Quantity
   SCH. - Schedule
   SHAPE & COLOR - Shape and Color
   TPL. - Topo Plan
   VMT. - Volume
   ZONE - Zone

PLANTING CARE NOTES

1. DRIED OR OTHER MATERIAL MAY NOT BE PLACED OR STORED IN PLANTING AREA OR ANYWHERE OUTSIDE THE LIMIT OF WORK.

2. DRIVING, PARKING ON PLACING HEAVY EQUIPMENT ON PLANTING AREAS DURING PLANTING OPERATIONS SHALL NOT BE ALLOWED.

3. CONFIRM ALL UTILITY LOCATIONS PRIOR TO PLANTING.

WATERING SCHEDULE

1. DURING THE INSTALLATION PERIOD THE CONTRACTOR SHALL WATER EACH PLANT WITH THE FOLLOWING MINIMUM QUANTITIES OF WATER FOR EACH INSTALLATION, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT.

   1. DECIDUOUS TREES OVER 4" CAL.
   2. DECIDUOUS TREES 2' TO 4" CAL.
   3. EVERGREEN TREES
   4. SHRUBS 8' OR MORE
   5. SHRUBS 4'-6'
   6. GRASSES
   7. PHORMIUM

2. FOR PLANTING ALONG ROADSIDE, THE CONTRACTOR SHALL WATER ALL LIVING PLANTS EVERY WEEK DURING THE PERIOD BETWEEN JUNE 1 AND SEPTEMBER 30.

   1. DECIDUOUS TREES OVER 4" CAL.
   2. DECIDUOUS TREES 2' TO 4" CAL.
   3. EVERGREEN TREES
   4. SHRUBS 8' OR MORE
   5. SHRUBS 4'-6'
   6. GRASSES
   7. PHORMIUM

3. PLANTS EVERY WEEK DURING THE PERIOD BETWEEN APRIL 1 AND SEPTEMBER 30.

   1. DECIDUOUS TREES OVER 4" CAL.
   2. DECIDUOUS TREES 2' TO 4" CAL.
   3. EVERGREEN TREES
   4. SHRUBS 8' OR MORE
   5. SHRUBS 4'-6'
   6. GRASSES
   7. PHORMIUM
**BIORETENTION FACILITY PLANTING MAINTENANCE PLAN**

**COMPLETE BIORETENTION FACILITY MAINTENANCE PLAN CAN BE FOUND ON SHEET 2H/12**

**FIRST YEAR PLANTING MAINTENANCE OPERATIONS**

1. **INITIAL INSPECTIONS**: FOR 6 MONTHS FOLLOWING CONSTRUCTION, INSPECT SITE AFTER STORM EVENTS THAT EXCEED 10 INCHES OF RAINFALL.

2. **SPRING PLANTING MAINTENANCE INSPECTIONS**
   - CHECK FOR 75% TO 90% COVER (MULCH PLUS VEGETATIVE COVER) HAS BEEN ACHIEVED IN THE BED, SPRING PLANTING MAINTENANCE INSPECTIONS.

3. **FERTILIZATION**: ONE TIME, SPOT FERTILIZATION MAY BE NEEDED FOR INITIAL PLANTINGS.

4. **WATERING**: WATER ONCE A WEEK DURING THE FIRST 2 MONTHS, AND AS NEEDED DURING FIRST GROWING SEASON (APRIL-OCTOBER), DEPENDING ON RAINFALL.

5. **ELEVATION**: WATER CHARGE A FACTOR DURING THE FIRST 2 MONTHS AND AS NEEDED DURING FIRST GROWTH SEASON (APRIL-OCTOBER). (DESCRIPTIONS ON RAINFALL.

6. **REMOVE AND REPLACE DEAD PLANTS**

7. **SPRING PLANTING MAINTENANCE INSPECTIONS**
   - CHECK FOR 75% TO 90% COVER MULCH PLUS VEGETATION HAS BEEN ACHIEVED IN THE BED, SPRING PLANTING MAINTENANCE INSPECTORS.

**ROUTINE AND NON-ROUTINE PLANTING MAINTENANCE TASKS**

A GENERALIZED SUMMARY OF COMMON MAINTENANCE TASKS AND THEIR FREQUENCY IS PROVIDED IN TABLE 1.

**TABLE 1: GENERAL MAINTENANCE TASKS**

<table>
<thead>
<tr>
<th>Maintenance Tasks</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning of glass fiber sheets and connection turf cover</td>
<td>At least 4 times a year</td>
</tr>
<tr>
<td>Visualizing of irrigation system</td>
<td>As needed</td>
</tr>
<tr>
<td>Monitoring of drainage by vegetation</td>
<td>As needed</td>
</tr>
<tr>
<td>Clearing and cleaning excess</td>
<td>As needed</td>
</tr>
<tr>
<td>Maintenance of drainage system</td>
<td>As needed</td>
</tr>
<tr>
<td>Drainage system</td>
<td>As needed</td>
</tr>
<tr>
<td>Disposal of drainage system</td>
<td>As needed</td>
</tr>
<tr>
<td>Debris and leaf removal</td>
<td>As needed</td>
</tr>
<tr>
<td>Removal of invasive plants</td>
<td>As needed</td>
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<tr>
<td>Monitoring of drainage systems</td>
<td>As needed</td>
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<tr>
<td>Debris and leaf removal</td>
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<tr>
<td>Debris and leaf removal</td>
<td>As needed</td>
</tr>
</tbody>
</table>
These plans are unfinished and are not to be used for any type of construction.
**LEGEND:**

- **DECIDUOUS SHADE TREE**
- **ORNAMENTAL TREE**
- **EVERGREEN TREE**
- **PLANT LEGEND**

- **DECIDUOUS SHADE TREE**
  - Red Maple
  - River Birch
  - Smooth Dogwood
  - American Linden
  - Sweetbay Magnolia
  - American Snowbell

- **ORNAMENTAL TREE**
  - Scutellaria
  - Redtwig Dogwood
  - Eastern Redbud
  - Serviceberry

- **EVERGREEN TREE**
  - Eastern Red Cedar
  - Mary Nell Holly
  - Buttonbush

- **PLANT LEGEND**
  - Red Oak
  - White Oak
  - American Holly
  - White Fringetree
  - White Pine
  - Eastern Redbud
  - White Oak
  - American Linden
  - American Snowbell

- **SHRUBS AND GRASSES**
  - Bioretention Seed Mix
  - Liriope
  - Sweetspire
  - Inkberry
  - Summersweet

- **PROP. RIGHT OF WAY**
  - Prop. Permanent Slope
  - Prop. Temp. Constr. Easement

- **PROP. PERM. SLOPE**
  - Prop. Permanent Slope

- **PROP. TEMP. CONSTR. EASEMENT**
  - Prop. Temporary Construction Easement

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

**Denotes Construction Limits in Cuts**

**Denotes Construction Limits in Fills**

**Temporary Easements:** Figures in parenthesis and dot-dot-dashed lines denote Temporary Easements.

**Permanent Easements:** Figures in brackets and dot-dashed lines denote Permanent Easements.

**NOTES:**

- Figures in brackets and dot-dashed lines denote Permanent Easements.
- Figures in parenthesis and dot-dot-dashed lines denote Temporary Easements.

**Note:**

- Figures in brackets and dot-dashed lines denote Permanent Easements.
- Figures in parenthesis and dot-dot-dashed lines denote Temporary Easements.

**THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.**

**SCALE:**

- 25\' = 1" 50\' = 1"
THESE PLANS ARE UNFINISHED AND ARE NOT BE BE USED FOR ANY TYPE OF CONSTRUCTION.

**DESIGN FEATURES RELATING TO CONSTRUCTION AND ARE NOT BE BE USED FOR THESE PLANS ARE UNFINISHED AND ARE NOT BE BE USED FOR ANY TYPE OF CONSTRUCTION.**

*Note: Figures in brackets and gear symbol denote special conditions.\nNotes: Figures denote clear zone setback notes.\nNotes: Denotes Construction Limits in Fills denote Permanent Easements.\nNotes: Denote Clear Zone. Refer to Sheet 26(1)*
DESIGNED BY
Whitman, Requardt & Associates

DESCRIPTION OF LEGEND

- Denotes Clear Zone. Refer to Sheet 26(1)
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Denote Permanent Easements.
- lines denote Temporary Easements.

THESE PLANS ARE UNFINISHED AND ARE NOT BE USED FOR ANY TYPE OF CONSTRUCTION.
ORNAMENTAL TREE

Figures in parenthesis and dot - dot - dashed

PROJECT (N 13°03'38"E 840.61')

EVERGREEN TREE

Figures in brackets and dot - dashed lines

LEGEND

F: CREATOR

C: USER

Denotes Clear Zone. Refer to Sheet 26(1)

Note:

Denotes Construction Limits in Cuts

Denotes Construction Limits in Fills

denote Permanent Easements.

VDOT 16 N T 12 E E H S T A M 7 16

H O R N E  L A N D  C O R P O R A T I O N

Michael Russell, P.E.

5 45 CENTURY LINK

PROP. 20' PERM.

Parcel ID 04500-00-00-018B0

D.B. 624 PG. 191

50 Acre +/-

5 5 5

Red Maple

White Oak

Willow Oak

Winterberry

Buttonbush

Redtwig Dogwood

Summersweet

Sweetspire

Inkberry

Eastern Red Cedar

American Holly

Liriope

Bioretention Seed Mix

White Pine

5 3 0

POT 11+23.05

1')

550

5 3 5

5 40

Red Oak

White Oak

Scarlet Oak

P O T 11+35.99

5 45

5 5 5

5 40

5 3 5

5

3

DECIDUOUS SHADE TREE

5 3 5

Red Oak

White Oak

Scarlet Oak

P O T 11+23.05

1')

550

5 3 5

5 40

Red Oak

White Oak

Scarlet Oak

P O T 11+35.99

5 45

550

5 5 5

5 40

5 3 5

5

3

DECIDUOUS SHADE TREE

5 3 5

Red Oak

White Oak

Scarlet Oak

P O T 11+23.05

1')

550

5 3 5

5 40

Red Oak

White Oak

Scarlet Oak

P O T 11+35.99

5 45

550

5 5 5

5 40

5 3 5

5
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
CONTRACTOR SHALL PERFORM UTILITY RELOCATION WORK PRIOR TO OR CONCURRENT WITH THE RWSA AND ACSA.

FACILITIES ARE INSTALLED AND PLACED INTO OPERATION. ANY DEVIATION MUST BE APPROVED BY WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING FACILITIES THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER AND SEWER

CONSTRUCTION SHALL COMPLY WITH THE VDOT ROAD AND BRIDGE SPECIFICATIONS AND MEET OR EXCEED THE CURRENT EDITION OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS AND THROUGH THE TECHNICAL SUBMITTAL PROCESS, COMPLIANCE WITH THE ACSA AND RWSA STANDARD DETAILS AND SPECIFICATIONS WILL BE SHOWN.

CONSTRUCTION OF THE WATER MAINS AND APPURTENANCES SHALL BE PERFORMED BY A PROFESSIONALLY LICENSED CONTRACTOR AND MEET THE INSTALLATION REQUIREMENTS SHOWN ON THESE PLANS FOR DESTRUCTION OF WATER MAINS AND SYSTEMS.

THE CONSTRUCTION OF THE WATER MAINS AND APPURTENANCES SHALL BE PERFORMED BY A PROFESSIONALLY LICENSED CONTRACTOR AND MEET THE INSTALLATION REQUIREMENTS SHOWN ON THESE PLANS FOR DESTRUCTION OF WATER MAINS AND SYSTEMS.

CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO THE EXISTING PUBLIC WATER FACILITIES OBTAINED FROM AVAILABLE UTILITY RECORDS AND FIELD UTILITY SURVEYS AND ARE NOT THE LOCATIONS, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN ACCURATELY OBTAINED FROM AVAILABLE UTILITY RECORDS AND FIELD UTILITY SURVEYS.

CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ACCOMPLISHING EACH INSTALLATION SHALL BE THE CONTRACTOR'S SEQUENCE OF CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF THE NUMBER AND TYPE OF FITTINGS REQUIRED FOR THE COMPLETION OF WATER RELOCATION AND RELOCATIONS MAY REQUIRE MULTIPLE MOBILIZATIONS OF EQUIPMENT AND MATERIALS SHOWN ON THESE PLANS WITH THE PHASING OF THE ROADWAY AND/OR BRIDGE CONSTRUCTION FOR CONSTRUCTION DETAILS, REFER TO SHEETS 27(22) - 27(23).

CONTRACTOR SHALL NOTIFY MISS UTILITY AT 811 OR (800) 552-7001 TO REQUEST FIELD CONNECTION PRIOR TO ORDERING OF MATERIALS, EXCAVATION, AND INSTALLATION FOR THIS PROJECT.

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CONTRACTOR SHALL NOTIFY MISS UTILITY AT 811 OR (800) 552-7001 TO REQUEST FIELD CONNECTION PRIOR TO ORDERING OF MATERIALS, EXCAVATION, AND INSTALLATION FOR THIS PROJECT.
1. ALL PIPE JOINTS AND APPEARANCES SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE AWWA/ANSI C104/A21.4-03 STANDARD. CONSTRUCTION SPECIFICATIONS ARE SET FORTH ON SHEET 2A. THE AWWA/ANSI C104/A21.4-03 STANDARD SPECIFIES THAT THE PROPOSED PIPE SHALL BE RESTRAINED FROM THE POINT OF CONNECTION TO THE MAIN AS PRACTICABLE. A GRAVEL DRY WELL SHALL BE PROVIDED FOR HYDRANT DRAIN.

2. HYDRANTS SHALL BE OPERATED BY A NATIONAL STANDARD 1-1/2 INCH NUT. A NATIONAL STANDARD 1-1/2 INCH NUT SHALL BE INSERTED AND ALIGNED INTO SOCKET END OF PIPE LINE. GASKET SHALL BE PLACED OVER PLAIN END OF THE PIPE, WHICH SHALL BE CAREFULLY CLEANED WITH A WET SOAP SOLUTION PRIOR TO INSERTION.

3. HYDRANT SHALL BE OPERATED BY A NATIONAL STANDARD 1-1/2 INCH NUT. A NATIONAL STANDARD 1-1/2 INCH NUT SHALL BE INSERTED AND ALIGNED INTO SOCKET END OF PIPE LINE. GASKET SHALL BE PLACED OVER PLAIN END OF THE PIPE, WHICH SHALL BE CAREFULLY CLEANED WITH A WET SOAP SOLUTION PRIOR TO INSERTION.

4. HYDRANT SHALL BE OPERATED BY A NATIONAL STANDARD 1-1/2 INCH NUT. A NATIONAL STANDARD 1-1/2 INCH NUT SHALL BE INSERTED AND ALIGNED INTO SOCKET END OF PIPE LINE. GASKET SHALL BE PLACED OVER PLAIN END OF THE PIPE, WHICH SHALL BE CAREFULLY CLEANED WITH A WET SOAP SOLUTION PRIOR TO INSERTION.

5. HYDRANT SHALL BE OPERATED BY A NATIONAL STANDARD 1-1/2 INCH NUT. A NATIONAL STANDARD 1-1/2 INCH NUT SHALL BE INSERTED AND ALIGNED INTO SOCKET END OF PIPE LINE. GASKET SHALL BE PLACED OVER PLAIN END OF THE PIPE, WHICH SHALL BE CAREFULLY CLEANED WITH A WET SOAP SOLUTION PRIOR TO INSERTION.
13. ADJUSTMENT OR REPLACEMENT OF MATERIAL ONLY. THE USE OF REPAIR CLAMPS METER OR BY PUMPING FROM VESSEL OF KNOWN VOLUME. IF PRESSURE IS NOT AT CONCLUSION OF PRESSURE TEST, VOLUME OF MAKEUP WATER REQUIRED TO BEFORE APPLYING PRESSURE. WHERE CONCRETE THRUST BLOCKS ARE USED, TEST. ALL FITTINGS AND HYDRANTS SHALL BE PROPERLY BRACED OR BLOCKED.

3. ALL HIGH POINTS AND SERVICE LINES IN PORTION OF SYSTEM UNDER TEST SHALL ONLY BE DONE AFTER INSTALLATION OF ALL VALVES AND HYDRANTS.

2. NO WATER LINE SHALL BE PLACED IN SERVICE UNTIL THE LEAKAGE IS LESS THAN 10 GALLONS PER HOUR PER INCH OF NOMINAL PIPE DIAMETER. THE CONTRACTOR SHALL CONDUCT EITHER INFILTRATION OR EXFILTRATION LEAKAGE TESTS OF THE COMPLETED DISTRIBUTION SYSTEM NOT EXCEEDING REGULAR INTERVALS OF 1,200 FEET. THE CONTRACTOR SHALL CONDUCT EITHER INFILTRATION OR EXFILTRATION LEAKAGE TESTS OF THE COMPLETED DISTRIBUTION SYSTEM NOT EXCEEDING REGULAR INTERVALS OF 1,200 FEET.

14. CONSTRUCTION OF DRAINAGE LINES AND APPURtenANCES SHALL BE IN ACCORDANCE WITH THE DRAINAGE PLANS AND SPECIFICATIONS.

15. PRIOR TO THE CONSTRUCTION OF ANY GUTTER THE OWNER OF THE(LogLevel) SYSTEM SHALL BE IN ACCORDANCE WITH THE DRAINAGE PLANS AND SPECIFICATIONS.

16. ALL SEWER LINES SHALL BE LAID TRUE TO LINE AND GRADE WITH FLOW LINES HAVING A MINIMUM OF THREE-FOURTHS (3/4) THE DEPTH OF THE CONTRIBUTING SEWER. INVERTS SHALL BE PILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE COLLECTOR OR STORM DRAIN.

17. DURING THE EXCAVATION OPERATIONS, MATERIAL SUITABLE FOR BACKFILLING SHALL BE CORRECTED AS TO MEET ALL STANDARDS GOVERNING THE CONSTRUCTION OF THE CONTRACTOR.

18. A CONSTRUCTION TEST用车段 MATERIAL FOR USE AS SUBBASE OR SUBGRADE SHALL BE IN ACCORDANCE WITH THE DRAINAGE PLANS AND SPECIFICATIONS.

19. ALL GRAVITY SEWER LINES SHALL BE SUBJECT TO VERTICAL DEFLECTION TESTS. THE CONTRACTOR SHALL CONDUCT VERTICAL DEFLECTION TESTS OF THE COMPLETED DISTRIBUTION SYSTEM NOT EXCEEDING REGULAR INTERVALS OF 1,200 FEET.

20. THE CONTRACTOR SHALL CONDUCT INFILTRATION OR EXFILTRATION LEAKAGE TESTS OF THE COMPLETED DISTRIBUTION SYSTEM NOT EXCEEDING REGULAR INTERVALS OF 1,200 FEET.


22. THE CONTRACTOR SHALL CONDUCT VERTICAL DEFLECTION TESTS OF THE COMPLETED DISTRIBUTION SYSTEM NOT EXCEEDING REGULAR INTERVALS OF 1,200 FEET.
1. Where pipes and appurtenances shall be provided and installed in accordance with the Virginia Water and Sewer Authority Standards and the Virginia Department of Transportation Standards with regard to traffic and drainage, the required minimum width of excavation shall be 48 inches. Adequate shoring and bracing shall be provided at all times during water system construction.

2. All excavation work for the proper depth and width, including the required shoring and bracing, shall be performed in accordance with the Virginia Water and Sewer Authority Standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

3. All excavation shall be performed to the required depth and width specified on the plans, and the trench bottom shall be kept free of organic material, frozen clods, clays, or rocks and asphalt. In non-traffic areas, backfill material shall be clean fill free of organic material and percent fines. Prior to ordering materials, contractor shall perform test to verify that materials are of the required quality.

4. If any deviation is contemplated in location, line or grade of any pipes, the Contractor shall submit to the RWSA for review and approval before the deviation is made. Details of the proposed deviation shall be submitted to the RWSA for review and approval before the deviation is made. The RWSA reserves the right to approve or disapprove the deviation.

5. Excavation operations involving surface movement of soil shall be done in a manner to avoid erosion and to prevent subsidence of streets.

6. All open excavations shall be adequately shored and braced to provide safe working conditions. Dimensional tolerances shall be as approved by written alteration to the Plan previously approved by the Authority.

7. The contractor shall have a representative on site at all times during water system construction to ensure compliance with the applicable OSHA standards and the Virginia Water and Sewer Authority Standards. The contractor is responsible for providing a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

8. Where necessary, the Contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

9. The Contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

10. Where pipes are installed in fill areas, the fill shall be compacted in accordance with the Virginia Water and Sewer Authority Standards and the Virginia Department of Transportation Standards. The fill shall be compacted to a minimum density of 95% of the laboratory density as determined by the contractor. The fill shall be compacted in intervals of not less than 12 inches.

11. The width of the trench at any point below the crown of the pipe shall be determined as vertical nearly as kept possible. Trenches shall be large enough to accommodate the trenching equipment and the trenching operations, to prevent slides or cave-ins. Trenches shall be made as close to the pipe as possible, but not closer than two feet vertically to the installed pipe. Trenches shall be made as close to the pipe as possible, but not closer than two feet vertically to the installed pipe.

12. Where rock is encountered, the contractor shall remove all rock or asphalt over six inches in any dimension shall be placed in accordance with the Virginia Water and Sewer Authority Standards. Rocks adjacent to blasting shall be covered to avoid receiving debris. No rock or asphalt in excess of 6 inches shall be placed in the trench and in no case shall rock or asphalt be placed adjacent to blasting.

13. Where rock is encountered, the contractor shall remove all rock or asphalt over six inches in any dimension shall be placed in accordance with the Virginia Water and Sewer Authority Standards. Rocks adjacent to blasting shall be covered to avoid receiving debris. No rock or asphalt in excess of 6 inches shall be placed in the trench and in no case shall rock or asphalt be placed adjacent to blasting.

14. Where the excavation has been changed due to unforeseen conditions, the contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

15. Figures of all new water and sewer lines shall be given on the plans and any major changes shall be noted on the plans and any major changes shall be noted on the plans for the RWSA's records. The Contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

16. Where the excavation has been changed due to unforeseen conditions, the contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

17. Where the excavation has been changed due to unforeseen conditions, the contractor shall provide a safe working environment. Trench boxes shall be made of wood or other approved material and shall be made to meet the applicable OSHA standards. It is the contractor's responsibility to comply with the applicable OSHA requirements for working in an open trench.

18. Standard construction details of RWSA are shown in Sheet 1720.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.
These plans are unfinished and are not to be used for any type of construction.
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

205 L.F. - 24" STEEL ENCASEMENT PIPE
@ 2.3%

225 L.F - 12" D.I. SAN. SEWER

SEE SHEET 27(21)

225 L.F. - 12" D.I. PIPE

PROFILE SANITARY SEWER PIPE

SANITARY SEWER STA. 10+00 = BERKMAR DR. CONST. BASELINE STA. 224+92.26, 124.6' RT.

IN V. = 516.33
PRO. 15" S.D.

IN V. IN = 478.44
STA. 10+00

IN V. IN = 483.62
STA. 12+25

GRADE PROPOSED
GRADE EXISTING

(SEE ROAD DESIGN SHEET 21)

ST'D. OUTLET PIPE
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

ACSA DETAIL DRAWINGS

GOOD FOUNDATION MATERIAL - ROCKY FOUNDATION MATERIAL

FOUNDATION IN POOR SOIL - UNDER CUT CONDITION

CONCRETE THRUST BLOCKS

TYPICAL THRUST BLOCK IN FILL AREA

TYPICAL FIRE MAIN ASSEMBLY DETAIL

TYPICAL GATE VALVE

CONCRETE BLOCKING FOR APPEX PREDICATE SECTIONS
ACSA DETAIL DRAWINGS

EXTENT OF CASING PIPE TO BE AS SHOWN ON SHEETS 27(21) & 27(21A).

NOTE:
UNDER CASING PIPE AS WELL AS SEWER INSTALLATION. NO BEDDING REQUIRED.

THIS DETAIL IS APPLICABLE TO CASING PIPE INSTALLATION.

NOTE:
THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

DESIGNED BY
SUBSURFACE UTILITY BY
ACCUMARK (804) 550-7740
Whitman, Requardt & Associates (540) 951-3727

UTILITIES ENGINEER
Blacksburg, Virginia

DESIGNED BY
SURVEYED BY
PROJECT MANAGER

NOTE:
THIS DETAIL IS APPLICABLE TO CASING PIPE INSTALLATION AS WELL AS SEWER INSTALLATION AS BEYOND REQUIRED UNDER CASING PIPE.

NOTE:
EXTENT OF CASING PIPE TO BE AS SHOWN ON SHEETS 27(21B) & ITIONAL.
NOTE:
1. FLOOR JOISTS IN VALED AREAS WITHIN EXISTING VINTAGE STRUCTURE SHALL BE BSYDILED ENTIRELY WITH NO. 27 A STONE.

NOTE:
1. ONLY THE CASING PIPE SHALL BE INSTALLED IN THIS PROJECT.
2. PROVIDE STEEL CASING WITH 3500 PSI YIELD STRENGTH SUITED TO FUTURE INSTALLATION OF 8 INCH DUCTILE IRON SEWER THROUGH THE CASING PIPE.
3. PROVIDE TEMPORARY CAPS ON EACH END OF THE CASING.
4. EXTENT OF CASING PIPE TO BE AS SHOWN ON SHEETS 27(5) & 27(5A).
5. FLOWABLE FILL WILL NOT BE REQUIRED.
6. MINIMUM THICKNESS FOR 8" PIPE IS 0.33 INCHES, FOR 12" IS 0.37 INCHES.

RWSA DETAIL DRAWINGS

THESE PLANS ARE UNFINISHED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

NOTE:
1. ERODIBLE SOILS SHALL NOT CONTAIN SOIL MATERIAL LARGER THAN 3 IN ANY DIMENSION.
2. ERODIBLE SOILS (4' LIFTS) TURNOVER COMPACTED MECHANICALLY, TAMPERING MACHINING.
3. FORDING 6" MIN.
4. FOUNDATION SHALL BE REQUIRED WHEN SOIL CONDITIONS ARE UNSTABLE (NO PIPE)

NOTE:
1. STEEL CASING TO EXTEND TO BACK OF CURB, DETAIL, EMBANKMENT, ETC. OR A MINIMUM OF 5 FT DEPENDING THE HEIGHT OF PARAPETS, WALLS, ETC.
2. END OF CASING MAY BE SEALED USING AN RWSA APPROVED END SEAL IN LIEU OF CONCRETE FILL.
3. NUMBER AND PLACEMENT OF SPACERS REQUIRED SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. HOWEVER, A MINIMUM OF FOUR SPACERS AT EQUAL DISTANCE PER PIPE SECTION WILL BE REQUIRED.
4. SEE RWSA DESIGN STANDARDS FOR MINIMUM THICKNESS OF CASING PIPE.
5. FLOWABLE FILL MAY REQUIRE THE INSTALLATION OF DRAINABLE FILL WITHIN THE ANKLE SPACE OF THE CASING PIPE.