

**FRANKLIN COUNTY  
SPECIAL USE PERMIT APPLICATION**

(Type or Print)

I/We, Accupoint Surveying & Design as Owner(s), Contract Purchasers, or Owner's Authorized Agent of the property described below, hereby apply to the Franklin County Board of Supervisors for a special use permit on the property as described below:

Petitioner's Name: Amy Seipp

Petitioner's Address: 6200 Fort Ave, Lynchburg, VA 24502

Petitioner's Phone Number: (434) 610-4334

Petitioner's E-mail: aseipp@accupointsurveying.com

Property Owner's Name: Lakewood Storage

Property Owner's Address: 1060 Pulpit Ln

Property Owner's Phone Number: (540) 309-4170

Property Owner's E-mail: Owner is not an email user

Directions to Property from Rocky Mount: See attached directions from Rocky Mount

Tax Map and Parcel Number: 0300006105

Magisterial District: Gills Creek

Property Information:

A. Size 1.62 acres of \_\_\_\_\_ Property:

B. Existing Zoning: A1

C. Existing Undeveloped Land Use:

D. Is property located within any of the following overlay zoning districts: No  
Corridor District Westlake Overlay District Smith Mountain Lake Surface District

E. Is any land submerged under water or part of a lake? Yes  No If yes, explain.

\_\_\_\_\_

Proposed Special Use Permit Information:

A. Proposed Expansion of existing adjacent facility Land Use:

B. Size of Proposed Use: 1.22 acres

C. Other Details of Proposed Use: The purpose of this project is for the expansion of an existing self-storage facility on Lakewood Forest Rd. This project includes the storage facility with a VDOT entrance, a gravel outdoor storage area, a drainfield, and stormwater management ponds.

**Checklist for completed items:**

- ✓ Application Form
- ✓ Letter of Application
- ✓ Concept Plan
- ✓ Application Fee

**\*\*I certify that this application for a special use permit and the information submitted herein is correct and accurate.**

Petitioner's Name (Print): Amy Seipp

Signature of Petitioner: *Amy Seipp*

Date: 9/30/22

Mailing Address: 6200 Fort Ave, Lynchburg, VA 24502

Telephone: (434) 610-4334

Email Address: aseipp@accupointsurveying.com

Owner's consent, if petitioner is not property owner:

Owner's Name (Print): Shirley Farris

Signature of Owner: *Shirley Farris*

Date: 9/30/22

**Date Received by Planning Staff** \_\_\_\_\_

**Clerk's Initials:** \_\_\_\_\_

**CHECK#:** \_\_\_\_\_

**RECPT.#:** \_\_\_\_\_

**AMOUNT:** \_\_\_\_\_



## Directions from Rocky Mount

9/26/2022

**Project: 21-590**      Lakewood Storage Facility

Starting at the Franklin County Administration Building, Head east on Franklin St toward Dent St. In 1.2 mi turn right onto N Main St. In 0.1 mi turn left onto Pell Ave. Continue on Pell Ave for 0.7 mi, it will turn left into Tanyard Rd. Continue onto Old Franklin Turnpike and turn left onto VA-122 N in 1.4 mi. Continue on VA-122 N for 11.5 mi and you will come upon a traffic circle. At the traffic circle take the 1<sup>st</sup> exit onto VA-122 S. In 2.3 mi turn right onto Scruggs Rd. In 1.6 mi turn left onto Lakewood Forest Rd. In 0.4 mi the destination will be on your left. It is the adjoining property to the right of 325 Lakewood Forest Rd.



## Letter of Application

9/26/2022

**Project: 21-590**      Lakewood Storage Facility

### A. Proposed Use

- The purpose of this project is for the expansion of an existing self-storage facility on Lakewood Forest Road. This project includes the storage facility with a VDOT entrance, a gravel outdoor storage area, a drainfield, and stormwater management ponds.

### B. Reason for the Request

- Currently the parcel is zoned A-1, Agricultural District. The request for the construction of a storage/storage yard is permitted under A-1 per the Special Use permit. The storage facility at the adjacent property, is also owned by Shirley Farris and has been in use for some time. This request is to add an additional site for storage similar to the one next door that is also zoned A-1.

### C. Effect of the Changes on the Surrounding Area

- There will be no effect on the surrounding area with the addition of a storage facility.



# LAKEWOOD STORAGE

LAKWOOD FOREST ROAD  
FRANKLIN COUNTY, VIRGINIA  
JUNE 25, 2022

## GENERAL NOTES

NOTES:

1. THIS PLAN WAS PREPARED AT THE REQUEST OF SHIRLEY F. FARR.
2. NO DELINEATION OF WETLANDS WAS REQUESTED OR MADE AS PART OF THIS PLAN.
3. BY GRAPHIC SCALING ONLY, THIS PROPERTY AS PLATTED FALLS WITHIN THE FLOOD ZONE "X" AS DETERMINED BY FEMA AND SHOWN ON THEIR MAP NUMBER 51607C0292D, BEARING AN EFFECTIVE DATE OF JANUARY 4, 2010.
4. THIS PROPERTY IS ZONED A-1 AGRICULTURAL.
5. THIS PARCEL IS CURRENTLY SERVED BY A PRIVATE WELL AND DRAINFIELD.
6. EXISTING UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION AND DEPTHS PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR SHALL CONTACT FRANKLIN COUNTY AND MES UTILITY (811) AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION OR EXCAVATION ACTIVITY AND ADVISE THE NATURE AND LOCATION OF WORK.
8. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS AND COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
9. THE CONTRACTOR SHALL BE FULLY LIABLE FOR ANY DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY CONSTRUCTION OPERATION AND SHALL RESTORE DAMAGED PROPERTY TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER OR ENGINEER.
10. ALL GRASSED AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDDED AND PROTECTED WITH EROSION CONTROL PRACTICES AND AS SHOWN ON THE PLAN HEREIN.
11. VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED AND MAINTAINED FOR ALL DISTURBED AREAS IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS AND THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED BEFORE EXCAVATION BEGINS.
12. THE CONTRACTOR SHALL REPLACE ALL DISTURBED SURFACES IN KIND, INCLUDING PAVEMENT, STONE, DITCHES, MAILBOXES, SHEDS, ETC. AND/OR AS SHOWN ON THIS PLAN.
13. ALL PROPERTY FIRMS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED LAND SURVEYOR.
14. HORIZONTAL CONTROL IS BASED ON NAV 83 VA SOUTH ZONE. VERTICAL CONTROL IS BASED ON NAVD83 GEOID 18.
15. MAINTAIN OVERHEAD AND UNDERGROUND ELECTRICAL, TELEPHONE, AND GAS SERVICES AND ALL OTHER UNDERGROUND UTILITIES DURING ENTIRE CONSTRUCTION PERIOD. OUTAGES WILL NOT BE ALLOWED. SHOULD OUTAGES BECOME NECESSARY, CONTACT THE ENGINEER OF RECORD IMMEDIATELY.
16. ANY SITEWORK AND DETAILS NOT COVERED BY THESE PLANS SHALL CONFORM TO FRANKLIN COUNTY & THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS, CURRENT EDITIONS.
17. THIS ENGINEER AND/OR SURVEYOR TAKES NO RESPONSIBILITY FOR THE LOCATION OR ACCURACY OF THE UTILITIES AS SHOWN HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES TO SEE IF ANY UTILITIES EXIST WITHIN THE PROJECT AREA BEFORE CONSTRUCTION BEGINS. ANY COST INCURRED BY DAMAGING ANY UTILITY WITHIN THE PROJECT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
18. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH FRANKLIN COUNTY AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE SPECIFICATIONS, CURRENT EDITIONS.
19. IF DURING DEMOLITION OR CONSTRUCTION ANY CONFLICTS OR DISCREPANCIES ARE NOTED WITH REGARD TO ANY PUBLIC WATER SERVICE CONNECTION, THE ENGINEER AND THE FRANKLIN COUNTY PUBLIC UTILITIES SHALL BE NOTIFIED. THIS INCLUDES, BUT NOT LIMITED TO, CONNECTIONS WHICH NEED TO BE ADDED, ABANDONED, CHANGED, OR RELOCATED.
20. IF ANY BACKFLOW PREVENTION ASSEMBLIES ARE FOUND DURING DEMOLITION OR WHILE OTHER WORK IS BEING PERFORMED FOR THIS PROJECT, THEY SHALL NOT BE REMOVED, RELOCATED, OR REPLACED WITHOUT ADVANCE AUTHORIZATION FROM THE FRANKLIN COUNTY PUBLIC UTILITIES.
21. NO SITE WORK, LOGGING, GRUBBING, OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT.
22. ALL EXPOSED SOILS SHALL BE PERMANENTLY SEEDDED AND STABILIZED IN ACCORDANCE WITH VIRGINIA F&S REGULATIONS IMMEDIATELY AFTER REACHING FINISHED GRADE. FINISHED GRADE IS FINAL GRADE OF THE SITE AFTER EXCAVATING OR FILLING WHICH CONFORMS TO THE APPROVAL FINAL GRADING PLAN. THE FINISH GRADE IS ALSO THE GRADE AT THE TOP OF A PAVED SURFACE.
23. APPROXIMATE EARTH QUANTITIES MAY DIFFER FROM ACTUAL CONDITIONS AND THE CONTRACTOR SHALL ENSURE PROPER SHRINK FACTORS.
24. SOIL MATERIALS SHALL BE FREE OF DEBRIS, ROOTS, WOOD, SCRAP MATERIAL, VEGETATION, REFUSE, SOFT UNBOUND PARTICLES, AND FROZEN DELETERIOUS OR OBJECTIONABLE MATERIALS. THE MAXIMUM PARTICLE DIAMETER SHALL BE ONE-HALF THE LIFT THICKNESS. COMMON FILL MATERIAL SHALL BE UNCLASSIFIED SOIL MATERIAL WITH THE CHARACTERISTICS REQUIRED TO COMPLY TO THE SOIL DENSITY SPECIFIED FOR THE INTENDED LOCATION. BACKFILL AND FILL MATERIAL: ASTM D 2487, CLASSIFICATION GW, GP, SW, SP WITH A MAXIMUM OF 10 PERCENT BY WEIGHT PASSING ASTM D 1140, NO. 200 SIEVE.



VICINITY MAP  
SCALE: NTS

## DRAWING INDEX

- C-1 SHEET 1 OF 11: COVER SHEET
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- C-6 SHEET 6 OF 11: DRAINAGE MAP
- C-7 SHEET 7 OF 11: DRAINAGE CALCULATIONS
- C-8 SHEET 8 OF 11: DETAILS
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- C-11 SHEET 11 OF 11: STOPPING SIGHT DISTANCE PLAN AND PROFILES

## GENERAL INFORMATION

SITE DATA:

OWNER INFORMATION:

NAME: SHIRLEY F. FARR  
ADDRESS: 1040 PULPIT LANE  
VINTON, VA 24179

DESIGNER INFORMATION:

NAME: ACCUPOINT SURVEYING & DESIGN, LLC  
ADDRESS: 4200 FORT AVENUE  
LYNCHBURG, VA 24502

PROJECT DESIGNER: AMY K. IGARTA-SEPP, PE  
REGISTRATION NUMBER: 0402 034952  
PHONE: 434-610-4334  
E-MAIL ADDRESS: ASEPP@ACCUPOINTSURVEYING.COM

SOURCE OF SURVEY:

ACCPOINT SURVEYING & DESIGN, LLC

SOURCE OF TOPOGRAPHY:

LIDAR

COUNTY/CITY, STATE:

FRANKLIN COUNTY, VIRGINIA

ACREAGE:

1.62 ACRES

TAX MAP REFERENCES:

PARCEL ID: 0300006105  
D.B. 1160, PG. 1783  
P.B. 876, PG. 2573  
INSTRUMENT #: 5307

ZONING:

A-1 AGRICULTURAL

DISTRICT:

GILLS CREEK

EXISTING PROPERTY USE:

VACANT LOT WITH EXISTING PRIVATE WELL AND DRAINFIELD

PROPOSED PROPERTY USE:

MINI STORAGE BUILDINGS WITH APPARENT TRAVEL WAYS

SETBACKS:

FRONT = 60 FT

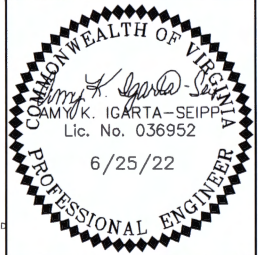
SIDE = 10 FT

REAR = 30 FT



**ACCUPOINT**  
SURVEYING & DESIGN  
SURVEYORS • ENGINEERS • SOIL EVALUATORS  
6200 FORT AVENUE, LYNCHBURG, VA 24502  
PH: 434-610-4334 WWW.ACCUPOINTSURVEYING.COM

LAKWOOD STORAGE  
LAKWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121



REVISION/DATE:

ASD JOB #: 2021-590

FILE #: 2021-590 SITE

PARCEL ID: 0300006105

DATE: JUNE 25, 2022

REVISED:

C-1  
COVER SHEET

SHEET 1 OF 11



Know what's below.  
Call before you dig.  
MBS UTILITY TICKET NUMBER:  
A134902927

LEGEND

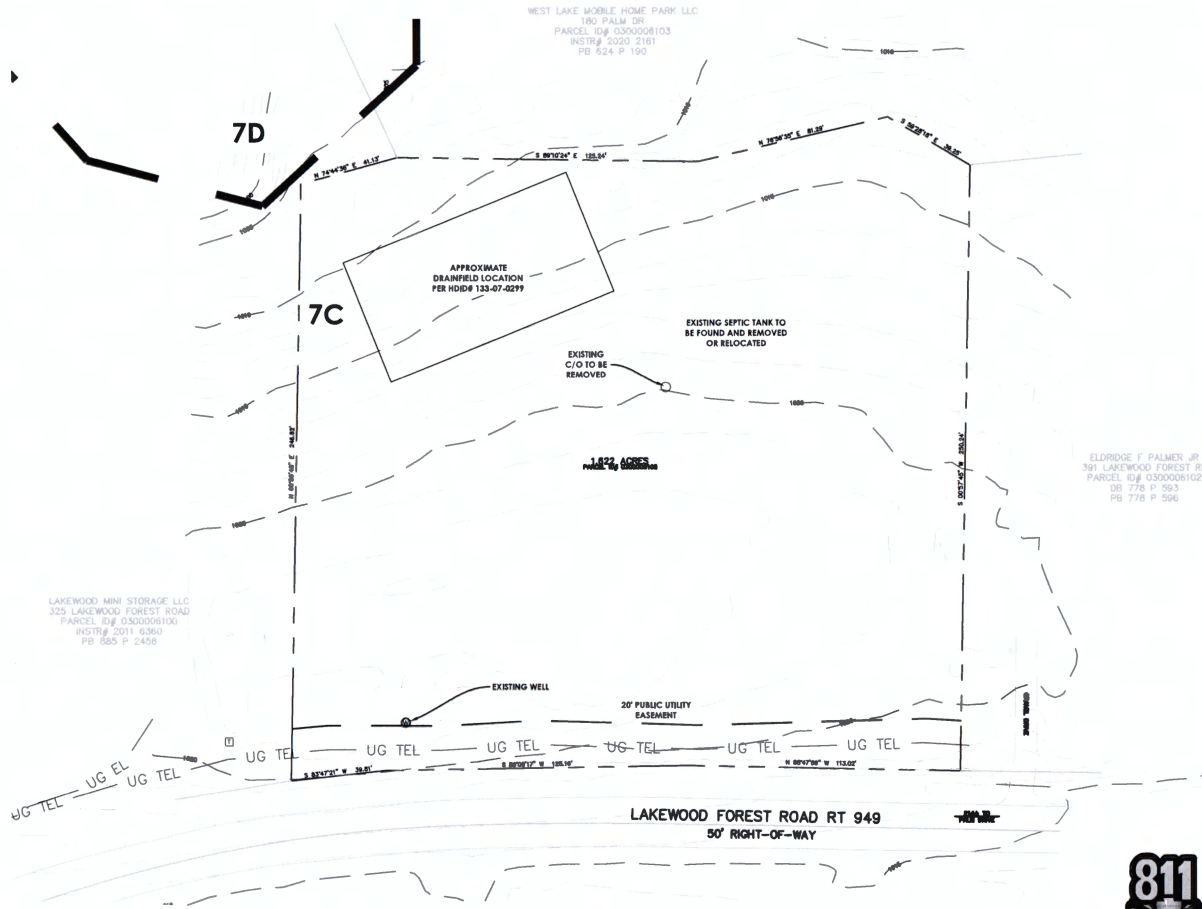
- PROPERTY LINE
- - - PUBLIC UTILITY EASMENT
- SOIL LINE
- - - EXISTING 5' CONTOURS
- - - EXISTING 1' CONTOURS
- UG TEL — UNDERGROUND TELEPHONE LINE
- UG EL — UNDERGROUND ELECTRICAL LINE

DEMOLITION NOTES:

1. CONTRACTOR IS TO WALK THE SITE AND BE FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED FOR THESE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND IS CONSIDERED TO BE UNCLASSIFIED EXCAVATION.
2. THE CONTRACTOR SHALL PROTECT ALL PROPERTY, STRUCTURES, AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO THE PROPERTY DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO THE OWNER OR ENGINEER.
3. EXISTING TREES/VEGETATION AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED, AND UNDISTURBED DURING DEMOLITION.
4. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AS WELL AS OSHA REGULATIONS.
5. CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTROL ACT. AT LEAST ONE LITTER CONTAINER SHALL BE PROVIDED ON SITE.

USDA SOIL SURVEY CHART	
SOIL TYPE	DESCRIPTION
7C	CLIFFORD FINE SANDY LOAM, 8 TO 15% SLOPES, TABULAR & SPATIAL. SOIL GROUP B USDA ESTIMATED KSAT 0.57 TO 1.98. THIS SOIL IS CLASSIFIED AS CRITICAL. NO FIELD KSAT TESTING PERFORMED.
7D	CLIFFORD FINE SANDY LOAM, 15 TO 25% SLOPES, TABULAR & SPATIAL. SOIL GROUP B USDA ESTIMATED KSAT 0.57 TO 1.98. THIS SOIL IS CLASSIFIED AS CRITICAL. NO FIELD KSAT TESTING PERFORMED.

TOTAL ACREAGE:	1.126 ACRES
IMPERVIOUS AREA:	0.00 ACRES
PERVIOUS AREA:	1.126 ACRES



WEST LAKE MOBILE HOME PARK LLC  
190 PALM DR.  
PARCEL ID# 0300006103  
INSTR# 2020 2161  
PB: 624 P: 190

LAKEWOOD MINI STORAGE LLC  
325 LAKEWOOD FOREST ROAD  
PARCEL ID# 0300006100  
INSTR# 2011 6360  
PB: 695 P: 2456

ELDRIDGE F PALMER JR  
581 LAKEWOOD FOREST RD  
PARCEL ID# 0300006102  
DB: 778 P: 563  
PB: 778 P: 590

**ACCUPOINT**  
SURVEYING & DESIGN  
SURVEYORS • ENGINEERS • SOIL EVALUATORS  
6300 FORT AVENUE, LYNCHBURG, VA 24502  
PH: 434-610-4334 WWW.ACCUPOINTSURVEYING.COM

LAKEWOOD STORAGE  
LAKEWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121

COMMONWEALTH OF VIRGINIA  
CAMY K. IGARTA-SEIPPA  
Lic. No. 036952  
6/25/22  
PROFESSIONAL ENGINEER

REVISION/DATE:

SCALE:	1" = 50'
ASD JOB #:	2021-590
FILE #:	2021-590 SITE
PARCEL ID:	0300006105
DATE:	JUNE 25, 2022
REVISED:	

**C-2**  
EXISTING CONDITIONS &  
DEMOLITION PLAN

SHEET 2 OF 11



MSU UTILITY TICKET NUMBER:  
A134902027





LEGEND

- PROPERTY LINE
- UG TEL --- UNDERGROUND TELEPHONE LINE
- BUILDING SETBACK LINE
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED FENCE

UTILITY NOTES:

1. EXISTING AND PROPOSED SERVICE CONNECTIONS SHALL NOT BE USED FOR DEMOLITION, GRADING, LANDSCAPING, OR ANY CONSTRUCTION PURPOSE UNTIL APPROPRIATE BACKFLOW DEVICES HAVE BEEN INSTALLED, TESTED AND TEST RESULTS HAVE BEEN APPROVED BY THE FRANKLIN COUNTY PUBLIC UTILITIES DEPARTMENT.
2. IF ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS ARE DISCOVERED RELATIVE TO EXISTING OR PROPOSED PUBLIC WATER OR SEWER CONNECTIONS, THE FRANKLIN COUNTY PUBLIC UTILITIES DEPARTMENT SHALL BE NOTIFIED IMMEDIATELY.
3. LANDSCAPING AND/OR OTHER SITE FEATURES SHALL NOT BE SUCH THAT THEY IMPACT THE REQUIRED ALLOWANCES FOR ANY RPZ AND/OR RPDA FOR BACKFLOW NOW OR IN THE FUTURE.

UNIT COUNT	
SIZE	#
10' X 15'	10
10' X 20'	13
10' X 30'	11
10' X 30' OFFICE	1

PERIMETER LANDSCAPING PER ARTICLE II, DIVISION 3.8, SECTION 25-100 (a):

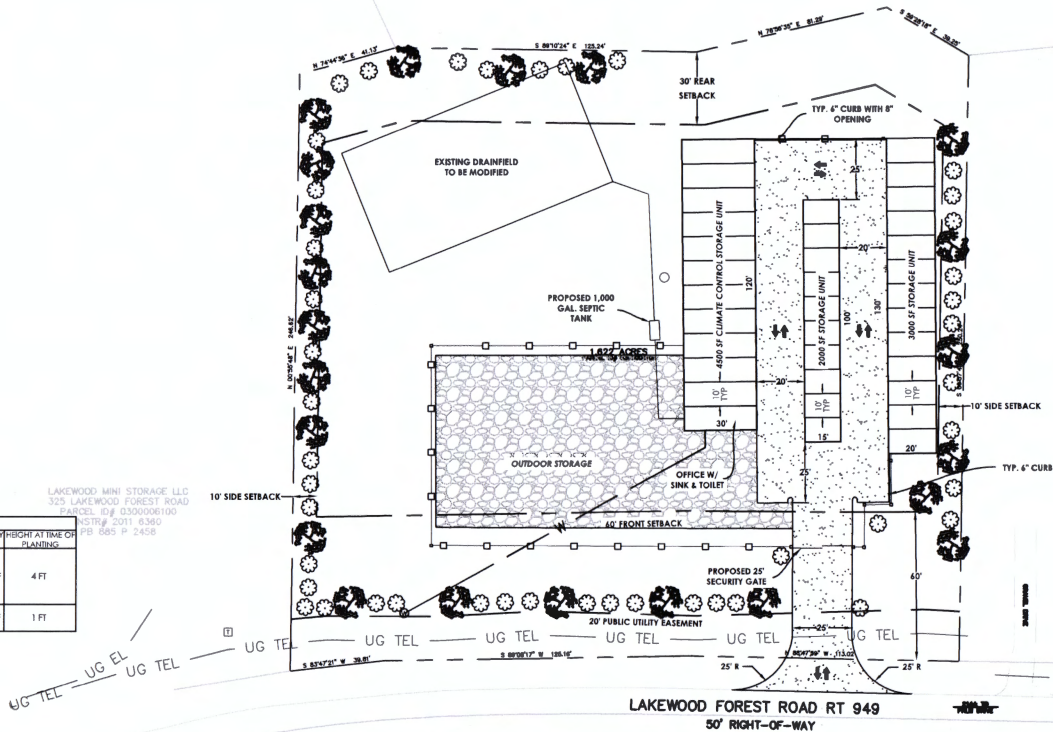
- 1 SMALL DECIDUOUS TREE PER 50 LINEAL FEET =  $1.061/50 = (21.22)$  22 SHADE TREES REQUIRED
- 1 MEDIUM SHRUB PER 25 LINEAL FEET =  $1.061/25 = (42.44)$  43 MEDIUM SHRUBS REQUIRED

LAKEWOOD MINI STORAGE LLC  
 125 LAKEWOOD FOREST ROAD  
 PARCEL ID# 0300006100  
 INSTR# 2011-8360  
 PD 605 P-2459

LANDSCAPE TABULATION (PER ARTICLE V, SECTION 22-12.1 (F))

SYMBOL	TYPE	BOTANICAL NAME	COMMON NAME	SIZE	CANOPY SF	QUANTITY & CANOPY TOTAL SF	RISCH AT TIME OF PLANTING
	SHADE TREE	QUERCUS RUBRA	NORTHERN RED OAK	12' TO 15'	176 (AFTER 10 YRS)	22 X 176 = 3,872 SF	4 FT
	MEDIUM SHRUB	RHODODENDRON	FIREBALL AZALEA	48" - 72" SPREAD	36	43 X 36 = 1,548 SF	1 FT

WEST LAKE MOBILE HOME PARK LLC  
 100 PALM DR  
 PARCEL ID# 0300008103  
 INSTR# 2020-2181  
 PD 624 P-190



ELDRIDGE F PALMER JR  
 381 LAKEWOOD FOREST RD  
 PARCEL ID# 0300008102  
 DB 778 P 593  
 PB 778 P 596

**ACCUPOINT**  
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 6200 FORT AVENUE, LYNCHBURG, VA 24502  
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LAKEWOOD STORAGE  
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COMMONWEALTH OF VIRGINIA  
 CAMY K. IGARTA-SEIPPA  
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DATE:	JUNE 25, 2022
REVISED:	

**C-3**  
 SITE, UTILITIES, &  
 LANDSCAPE PLAN

SHEET 3 OF 11

**811**  
 Know what's below.  
 Call before you dig.  
 MISS UTILITY TICKET NUMBER:  
 A134909027  
 GRAPHIC SCALE: 1" = 50'

**LEGEND**

- PROPERTY LINE
- - - EXISTING 1' CONTOURS
- - - EXISTING 5' CONTOURS
- - - PROPOSED 1' CONTOURS
- - - PROPOSED 5' CONTOURS
- 1010 CONTOUR ELEVATION
- LIMITS OF DISTURBANCE
- OP OUTLET PROTECTION
- TS TEMPORARY SEEDING
- PS PERMANENT SEEDING
- ML MULCHING
- BM BLANKET MATTING
- CE TEMPORARY CONSTRUCTION ENTRANCE
- SF SILT FENCE
- RR RP RAP
- SCC STORMWATER CONVEYANCE CHANNEL
- ST TEMPORARY SEDIMENT TRAP
- DB DETENTION BASIN
- BR BIORETENTION FACILITY

**E&SC GENERAL NOTES:**

- A PRE-CONSTRUCTION CONFERENCE WITH THE PROJECT OWNER OR THEIR AGENT, A VIDEO-CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) AND THE PROJECT DESIGNER/ENGINEER WILL BE REQUIRED PRIOR TO THE ISSUANCE OF THE LAND DISTURBANCE PERMIT. THE RLD SHOULD BE PREPARED TO PROVIDE THEIR CERTIFICATION NUMBER AT THIS MEETING.
- NO SITE WORK, LOGGING, GRUBBING OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT.
- THE LIMITS OF CLEARING AND GRADING, AND ALL CRITICAL AREAS SHOULD BE CLEARLY MARKED/LAGGED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.
- A SOIL TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION TO DETERMINE FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON THE SITE. THE VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES SHALL BE CONTACTED TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.
- ALL E&SC AND STORMWATER MANAGEMENT MEASURES MUST BE DE-WATERED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

TOTAL PROJECT DISTURBED AREA:	1.22 ACRES
PRE-DEVELOPMENT PERVIOUS AREA:	1.22 ACRES
PRE-DEVELOPMENT IMPERVIOUS AREA:	0.00 ACRES
POST-DEVELOPMENT PERVIOUS AREA:	0.64 ACRES
POST-DEVELOPMENT IMPERVIOUS AREA:	0.58 ACRES
NET CHANGE OF IMPERVIOUS AREA:	+ 0.58 ACRES

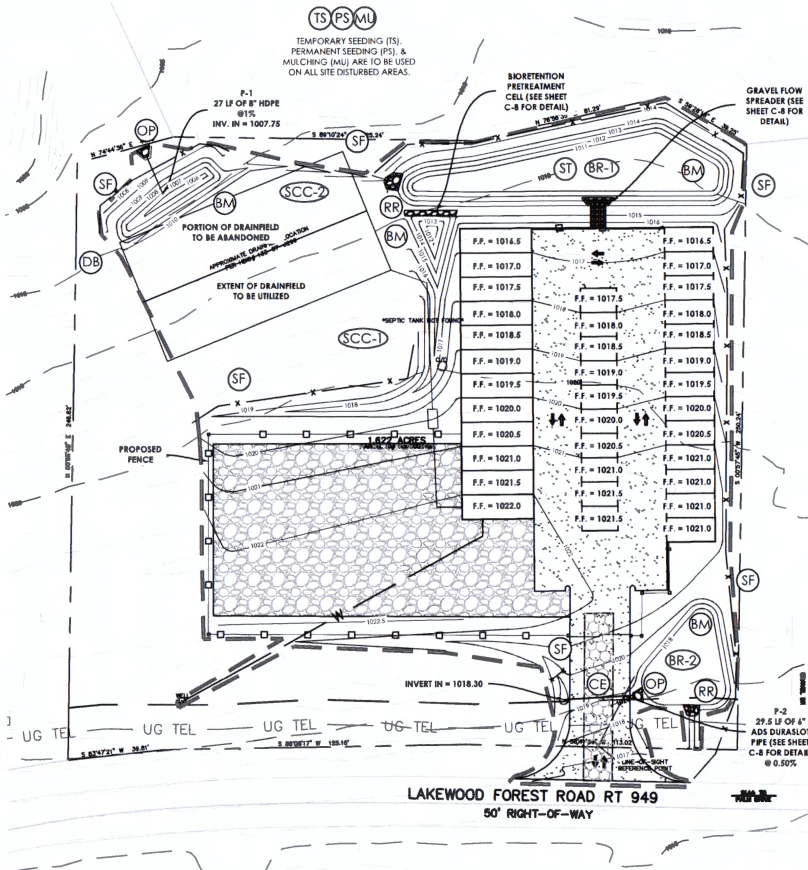
**GRADING GENERAL NOTES:**

- CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
- SUITABLE GRADING MATERIAL SHALL CONSIST OF ALL SOIL ENCOUNTERED ON THE SITE WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE MATERIAL. STOCKPILE TOPSOIL AND GRANULAR FILL AT LOCATIONS DIRECTED BY THE CONTRACTOR.
- SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT.
- CONTRACTOR SHALL CONTACT ACCUPOINT SURVEYING & DESIGN FOR CONSTRUCTION STAKEOUT AND PROJECT CONTROL.
- EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OFF THE CONSTRUCTION SITE.
- COMPLETION OF SITE GRADING OPERATIONS SHALL RESULT IN ALL AREAS BEING GRADED TO "PLAN SUBGRADE ELEVATION". BUILDING PAD AREAS SHALL BE DETERMINED BY REFERRING TO THE ARCHITECTURAL DRAWINGS. THE PARKING LOT AND DRIVEWAY AREAS SHALL BE DETERMINED BY REFERRING TO THE SITE PLAN AND PAVEMENT SECTION DETAILS FOR LOCATION AND LIMITS OF BITUMINOUS PAVEMENT SECTIONS.
- CONTRACTOR IS RESPONSIBLE FOR GRADING AND SLOPING THE FINISHED GROUND SURFACE TO PROVIDE SMOOTH AND UNIFORM SLOPES WHICH PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND PREVENT PONDING IN LOWER AREAS. CONTACT ENGINEER IF FIELD ADJUSTMENTS TO GRADING PLANS ARE REQUIRED.
- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURBS AND GUTTER WITH SMOOTH UNIFORM SLOPES WHICH PROVIDE POSITIVE DRAINAGE. CONTACT ENGINEER IF FIELD ADJUSTMENTS ARE REQUIRED.
- NO SITE WORK, LOGGING, GRUBBING OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT.
- THE LIMITS OF CLEARING AND GRADING, AND ALL CRITICAL AREAS SHOULD BE CLEARLY MARKED/LAGGED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

**SEQUENCE OF CONSTRUCTION**

- INSTALL CONSTRUCTION ENTRANCE (CE).
- INSTALL PERIMETER SILT FENCE (SF).
- EXCAVATE AND STABILIZE THE SEDIMENT TRAP (ST), AND DETENTION BASIN (DB).
- EXCAVATE AND STABILIZE SCC-1 AND SCC-2.
- INSTALL PROPOSED BUILDINGS, PAVING, AND UTILITIES. GRADE SITE TO PLAN.
- TEMPORARY SEEDING, PERMANENT SEEDING, BLANKET MATTING, & MULCH SHALL BE INSTALLED ACCORDING TO E&SC REGULATIONS DURING CONSTRUCTION AND AFTER FINAL GRADES ARE REACHED.
- ONCE SITE IS STABILIZED, INSTALL BIORETENTION FACILITIES (BR-1 AND BR-2). ALL FACILITIES SHALL BE INSTALLED PER VSMF REGULATIONS.
- ALL TEMPORARY MEASURES ARE TO BE REMOVED ONCE SITE HAS BEEN FULLY STABILIZED AND APPROVAL FROM E&SC INSPECTION IS RECEIVED.

CONTRACTOR SHALL FOLLOW AND NOT ALTER THE SEQUENCE OF CONSTRUCTION. HOWEVER, CHANGES TO THE SEQUENCE OF CONSTRUCTION MAY BE NECESSARY AS THE PROJECT PROGRESSES. ANY CHANGES TO THE SEQUENCE OF CONSTRUCTION SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND/OR FRANKLIN COUNTY EROSION AND SEDIMENT CONTROL INSPECTOR PRIOR TO CHANGES BEING MADE. THIS STATEMENT IS NOT INTENDED TO RESTRICT THE USE OF MORE STRINGENT EROSION AND SEDIMENT CONTROL AS NEEDED TO PREVENT EROSION AND SEDIMENT FROM BEING DISCHARGED FROM THE SITE.



**811**  
Know what's below.  
Call before you dig.  
MISS UTILITY TICKET NUMBER:  
#134902027

0 50 100 150  
GRAPHIC SCALE: 1" = 50'

**ACCUPOINT**  
SURVEYING & DESIGN  
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LAKEWOOD STORAGE  
LAKEWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121

COMMONWEALTH OF VIRGINIA  
CAMY K. IGARTA-SEIPPLA  
Lic. No. 036952  
6/25/22  
PROFESSIONAL ENGINEER

REVISION/DATE:

SCALE:	1" = 50'
ASD JOB #:	2021-590
FILE #:	2021-590 SITE
PARCEL ID:	0300006105
DATE:	JUNE 25, 2022
REVISED:	

**C-4**  
GRADING, E&SC, AND  
STORMWATER  
MANAGEMENT PLAN  
SHEET 4 OF 11



EROSION & SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS FOR THE CONSTRUCTION OF A STORAGE FACILITY ON LAKEWOOD FOREST ROAD. THE PROJECT INCLUDES THE STORAGE FACILITY WITH A VEHICLE ENTRANCE, A GRAVEL OUTDOOR STORAGE AREA, AND STORMWATER MANAGEMENT PONDS, DISTURBED AREA 1, 2Z ACRES.

II. EXISTING SITE CONDITIONS

THE SITE IS LOCATED ON LAKEWOOD FOREST ROAD, PARCEL 0300006105. THE SITE IS VACANT, WITH A WELL, CLEANOUT, AND DRAINFIELD PRESENT.

III. ADJACENT PROPERTIES

DIRECTLY TO THE NORTH: H WEST LAKE MOBILE HOME PARK, LLC. TO THE EAST: A RESIDENTIAL LOT. TO THE WEST: LAKEWOOD MINI STORAGE, LLC. AND TO THE SOUTH IS LAKEWOOD FOREST ROAD.

IV. SOILS

ACCORDING TO THE USDA SCS SOIL MAPPING, THE PROJECT SITE LIES ON SOIL TYPE CLIFFORD FINE SANDY LOAM. MAPPING UNIT (7C) IS A CLIFFORD FINE SANDY LOAM WITH 10 TO 15 PERCENT SLOPES. SOILS ARE WELL DRAINDED AND MOSTLY HILLSLOPES. THESE SOILS FALL UNDER HYDROLOGIC GROUP 3 SOILS. MAPPING UNIT (7D) IS A CLIFFORD FINE SANDY LOAM WITH 15 TO 20 PERCENT SLOPES. SOILS ARE VERY WELL DRAINDED AND MOSTLY HILLSLOPES. BOTH THESE SOILS HAVE A KSAT VALUE OF 0.5 TO 1.98.

V. CRITICAL AREAS

(7C) AND (7D) SOILS WITHIN THE SITE DISTURBANCE HAVE A KSAT VALUE OF 0.5 TO 1.98. CARE SHALL BE TAKEN TO STABILIZE ALL SLOPES AND PREVENT EROSION. CARE SHALL ALSO BE TAKEN TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES AND DRAINAGE WAYS.

VI. EROSION AND SEDIMENT CONTROL MEASURES

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. METHODS AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS, LATEST EDITION.

VII. OWNER RESPONSIBLE FOR MAINTENANCE AND IMPLEMENTATION

NAME: SHIRLEY F. FARNS  
ADDRESS: 1060 FULLY LANE VINTON, VA 24179  
PHONE: (540)507-1170

A. STRUCTURAL PRACTICES

- 1. SILT FENCE (SF) & SUPER SILT FENCE (SSF), SPEC 3.05, SILT FENCE BARRIERS SHALL BE PROVIDED WHERE SHOWN AND AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- 2. CONSTRUCTION ENTRANCE (CE), SPEC 3.02, AT A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE SHOWN TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.
- 3. OUTLET PROTECTION (OP), SPEC 3.18, OUTLET PROTECTION SHALL BE PROVIDED WHERE SHOWN TO PREVENT SCOUR AT STORMWATER OUTLETS. TO PROTECT THE OUTLET STRUCTURE, AND TO MINIMIZE THE POTENTIAL FOR DOWNSTREAM EROSION BY REDUCING THE VELOCITY AND ENERGY OF CONCENTRATED STORMWATER FLOWS.
- 4. RIP RAP (RR), SPEC 3.19, RIP RAP SHALL BE INSTALLED AS SHOWN TO PROTECT SOIL FROM EROSION FORCES OF CONCENTRATED RUNOFF AND TO SLOW VELOCITY OF CONCENTRATED RUNOFF WHILE ENHANCING POTENTIAL FOR INFILTRATION.
- 5. TEMPORARY SEDIMENT TRAP (ST), SPEC 3.13, SHALL BE INSTALLED WHERE SHOWN TO DETAIN SEDIMENT-LOADED RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.
- 6. STORMWATER CONVEYANCE CHANNEL (SCC), SPEC 3.17, STORMWATER CONVEYANCE CHANNEL SHALL BE INSTALLED WHERE SHOWN TO PROVIDE FOR THE CONVEYANCE OF CONCENTRATED SURFACE RUNOFF WATER TO A RECEIVING CHANNEL OR SYSTEM WITHOUT DRAINAGE FROM EROSION.

B. VEGETATIVE PRACTICES

- 1. TEMPORARY SEEDING (TS), SPEC 3.31, TEMPORARY SEEDING SHALL BE APPLIED TO REDUCE EROSION AND RESEMINATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS. TEMPORARY SEEDING SCHEDULE SHOULD FOLLOW THE APPROPRIATE PLANNING SCHEDULE FOR THE TIME OF YEARS IN WHICH CONSTRUCTION OCCURS. SEE SHEET C-6 FOR TEMPORARY SEEDING SCHEDULE.
- 2. FERMENT SEEDING (FS), SPEC 3.32, FERMENT SEEDING SHALL BE PROVIDED AND APPLIED AS SHOWN ON THE SEEDING SCHEDULE FOR ALL DISTURBED AREAS TO PERMANENTLY STABILIZE FERTILE AREAS AT FINAL GRADE. SEE SHEET C-6 FOR FERMENT SEEDING SCHEDULE.
- 3. MULCHING (MU), SPEC 3.35, MULCHING SHALL BE APPLIED IN CONJUNCTION WITH FERMENT SEEDING TO HELP POSSESS THE GROWTH OF VEGETATION AND PREVENTING HANDOFF EROSION AND VELOCITY OF OVERLAND FLOW.
- 4. BLANKET MATTING (BM), SPEC 3.36, BLANKET MATTING SHALL BE INSTALLED AS A PROTECTIVE COVERING ON STEEP SLOPES TO PREVENT EROSION AND REINFORCE THE TURF DURING FERMENT SEEDING VEGETATION ESTABLISHMENT. BLANKET MATTING HELPS PREVENT EROSION AND PROTECTS GROWING VEGETATION IMMEDIATELY AFTER BEING BROUGHT TO FINAL GRADE.

C. MANAGEMENT STRATEGIES

- 1. CONSTRUCTION SHALL BE PLANNED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS SOON AS POSSIBLE.
- 2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAFFIC MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. ANY SOIL STOCKPILES SHALL BE TEMPORARILY SEEDD AFTER COMPLETION OF STRIPPING AND BE PROVIDED WITH SILT FENCES ON THE LOWER SIDE OF THE STOCKPILE.
- 3. EROSION CONTROL PRACTICES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES. MEASURES SHALL BE SEEDD AND STRAW MULCHED IMMEDIATELY AFTER INSTALLATION.
- 4. DISTURBED AREAS ON ANY PORTION OF THE SITE SHALL RECEIVE TEMPORARY OR PERMANENT SEEDING WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DISTURBED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

- 6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES IMMEDIATELY AFTER INSTALLATION.
- 7. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUIDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- 8. CUT AND FILL SLOPES FOUND TO BE BROODING EXCESSIVELY WITHIN ONE YEAR OR PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- 9. OTHER CONSTRUCTION VEHICLES USE PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRAFFIC. CONSTRUCTION VEHICLES SHALL ACCESS THE PROJECT SITE BY USE OF THE CONSTRUCTION ENTRANCES AS SHOWN ON THE PLANS.
- 10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WHEN THE TEMPORARY MEASURES ARE NO LONGER NEEDED, OR WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY.

D. MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUOUS PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT.

- 1. DAMAGE TO TEMPORARY CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITIES SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- 2. MAINTAIN ALL SEEDED AREAS UNTIL A UNIFORM STAND IS ACHIEVED.
- 3. SPEC. 3.02 PROVIDE FOR EQUIPMENT WASHING AS NEEDED TO PREVENT THE TRANSPORT OF SOIL ONTO EXISTING ASPHALT ROADWAYS. ANY SEDIMENT ON THE PAVEMENT SHALL BE REMOVED IMMEDIATELY.

E. MINIMUM STANDARDS:

- MS-1: STABILIZATION OF DENUIDED AREAS: PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUIDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUIDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- MS-2: STABILIZATION OF SOIL STOCKPILES: DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAFFIC MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- MS-3: PERMANENT VEGETATIVE COVER: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUIDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- MS-4: TRAP AND STABILIZATION MEASURES: SEDIMENT BASINS AND TRAPS, SLOPE INLET PROTECTION, SILT FENCING, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSTREAM LAND DISTURBANCE TAKES PLACE.
- MS-5: TRAP AND STABILIZATION OF EARTHEN STRUCTURES: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DRES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- MS-6: SEDIMENT TRAPS AND TRAPS: SEDIMENT TRAPS AND BASINS SHALL BE CONSTRUCTED BASED ON THE TOTAL DRAINAGE AREA TO BE SERVED. A. THE MINIMUM CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND SHALL CONTROL A DRAINAGE AREA OF LESS THAN THREE ACRES. B. THE MINIMUM CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND SHALL CONTROL A DRAINAGE AREA OF THREE ACRES OR GREATER.
- MS-7: CUT AND FILL SLOPES: CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE BROODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.
- MS-8: CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- MS-9: WATER SEEPAGE FROM A SLOPE FACE: WHENEVER WATER SEEPS FROM A SLOPE FACE ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- MS-10: STORM SEWER INLET PROTECTION: ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LOADED WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- MS-11: STABILIZATION OF OUTLETS: BEFORE NEWLY CONSTRUCTED STORM WATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- MS-12: WORK IN A LIVE WATERCOURSE: WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE EROSION/SLIDING, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND CONFERMANS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ANCHORED BY NON-ERODIBLE COVER MATERIALS.
- MS-13: CROSSING A LIVE WATERCOURSE: WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIALS SHALL BE PROVIDED.

- MS-14: APPLICABLE REGULATIONS: ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
- MS-15: STABILIZATION OF BED AND BANKS: THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- MS-16: UNDERGROUND UTILITIES: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS, IN ADDITION TO OTHER APPLICABLE CRITERIA. A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. B. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES, EXCEPT FOR EXCAVATION DITCHES. C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY. D. TRENCH BACKFILL MATERIAL SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. F. ALL APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH AT ALL TIMES.

- MS-17: CONSTRUCTION ACCESS ROUTES: WHERE CONSTRUCTION VEHICLES ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT. CONSTRUCTION TRUCKS SHALL BE PROHIBITED FROM TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THE PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- MS-18: TEMPORARY EROSION AND SEDIMENT CONTROL: ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL E&S AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPROPORTION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- MS-19: DOWNSTREAM EROSION AND SEDIMENTATION: PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DISPERSION AND DAMAGE TO INCREASES IN VOLUME, FLOW RATE AND PEAK FLOW RATE OF STORM WATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ALL FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS.
- MS-20: CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL FLOW OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
- MS-21: ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA OF THE PROJECT IN QUESTION IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION. OR (2) (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE BROODING OF CHANNEL BED OR BANKS. (b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS. AND (c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM. (3) IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A 10-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE 10-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN PASSED INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A 10-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL. OR (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE EFFECT OF ADEQUATE CHANNEL IMPROVEMENT.
- MS-22: ALL HYDROLOGICAL STUDIES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
- MS-23: IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESP OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
- MS-24: OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
- MS-25: ALL ON-SITE CHANNELS MUST BE ADEQUATE.
- MS-26: INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE CONSIDERED TO A STABLE OUTFALL TO ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
- MS-27: IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL, OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT AS A WHOLE SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGICAL PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
- MS-28: ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERWAYS OF THE STATE.
- MS-29: ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (1) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (2) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (3) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS promulgated pursuant to 62-144.15(2) or 62-144.15(3) OF THE ACT.
- MS-30: FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF 62-144.15(2) OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUALITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (62-144.15(2) OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 19AC25-870-4B OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (SWMP) REGULATION OR ARE EXEMPT PURSUANT TO SUBSECTION C.7 OF 62-144.15(3) OF THE ACT.
- MS-31: COMPLIANCE WITH THE WATER QUALITY MINIMUM STANDARDS SET OUT IN 19AC25-870-44 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (SWMP) REGULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF THIS SUBSECTION 19.

NO OFFSITE BORROW AREAS ARE NEEDED FOR THIS PROJECT. THIS IS AN EXCESS MATERIAL SITE. EXCESS MATERIAL WILL BE TRANSPORTED OFFSITE TO A LOCATION PROVIDED BY THE CONTRACTOR.

STORMWATER MANAGEMENT NARRATIVE

- 1. PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A STORAGE FACILITY WITH A GRAVEL OUTDOOR STORAGE AREA.
- II. HYDROLOGICAL ANALYSIS: A BIOTENTION BASIN AND A DETENTION BASIN ARE PROPOSED AT THE NORTHERN SIDE OF THE SITE TO MANAGE RUNOFF FROM THE PROPOSED BUILDINGS AND OUTDOOR AREAS. A MICRO-BIOTENTION BASIN IS PROPOSED AT THE SOUTHWEST SIDE OF THE SITE TO MANAGE RUNOFF FROM THE EXISTING PRE AND POST DEVELOPMENT RUNOFF RATES PERMITTED BY THE 1.2, 10, AND 100 YEAR STORM EVENTS UTILIZING THE SCS METHOD AND FRANKLIN COUNTY, VA (RFS) NOAA ATLAS 14 RAINFALL PRECIPITATION FREQUENCY DATA. HYDRA-CAD SOFTWARE WAS UTILIZED FOR ROUTING CALCULATIONS FOR THE NORTHERN AND DETENTION BASINS.
- III. DRAINAGE AREA CHARACTERISTICS: PRE-DEVELOPMENT CONDITIONS DISCHARGED TO THE NORTHWEST AND SOUTHWEST INTO EXISTING STORMWATER CONVEYANCE CHANNELS OFFSITE, WHICH FLOW INTO AN EXISTING WATERCOURSE THE EXISTING SITE IS OPEN AND GRASSY. NO DRAINAGE IS FLOWING INTO THE DISTURBED AREA FROM OFFSITE.
- IV. TIME OF CONCENTRATION: TIME OF CONCENTRATION WAS ANALYZED USING TR-55 METHODS. IT WAS DETERMINED THAT THE TIME OF CONCENTRATION FOR PRE-DEVELOPMENT DRAINAGE AREA IS 1.2 MINUTES FOR PRE AND POST DEVELOPMENT CONDITIONS IS LESS THAN 5.0 MINUTES. A TIME OF CONCENTRATION OF 5 MINUTES WAS USED TO CALCULATE RUNOFF.
- V. PRE AND POST DEVELOPMENT PEAK RUNOFF RATES: DETAILS OF PRE AND POST DEVELOPMENT RUNOFF RATES ARE OBTAINED IN THE DRAINAGE TABLES WITH SUPPORTING HYDROGRAPH DOCUMENTATION FOR RUNOFF ANALYSIS. CALCULATIONS SHOW A NET REDUCTION IN RUNOFF AFTER ROUTING THROUGH THE PROPOSED BASIN FOR THE 1.2, 10, AND 25 YEAR STORMS. SEE TABLES FOR SUMMARY AND HYDRAFLOW ROUTING CALCULATIONS FOR DOCUMENTATION.
- VI. HYDRAULIC ANALYSIS: THE RELEASE RATES FROM THE BASINS FOR THE 1.2, 10, AND 25 YEAR STORMS ARE BELOW THE PRE DEVELOPMENT CONDITIONS.
- VII. WATER QUALITY: TWO BIOTENTION FACILITIES ARE PROPOSED TO MANAGE WATER QUALITY AND QUANTITY. WATER QUALITY CALCULATIONS SHOW A REMAINING REQUIRED PHOSPHORUS LOAD REDUCTION OF 331 LB/MT WHICH WILL BE FURNISHED WITH CREDITS FROM A VIRGINIA NUTRIENT BANK (SEE SHEET C-7 FOR WRM SUMMARY SHEET).



LAKEWOOD STORAGE  
LAKEWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121



REVISION/DATE:

ASD JOB #: 2021-590

FILE #: 2021-590 SITE

PARCEL ID: 0300006105

DATE: JUNE 25, 2022

REVISED:

C-5  
EROSION AND SEDIMENT  
CONTROL AND  
STORMWATER NARRATIVE

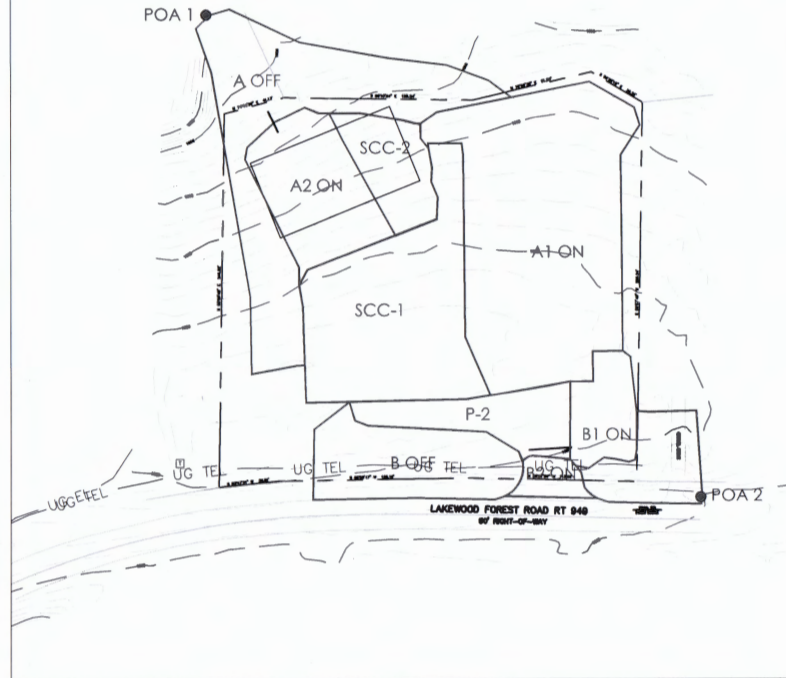
SHEET 5 OF 11



PRE-DEVELOPMENT DRAINAGE AREA



POST-DEVELOPMENT DRAINAGE AREA



DRAINAGE AREA(S)	FOA 1		FOA 2		FOA 3	
	PRE A ON	PRE A OFF	PRE B ON	PRE B OFF	PRE C ON	PRE C OFF
TOTAL DRAINAGE AREA (SQ)	0.87	0.33	0.97	0.27	0.26	0.32
STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32
STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32
STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32
STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32
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STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32
STANDARD DEVIATION (FOOT-CANDLES)	0.87	0.33	0.97	0.27	0.26	0.32

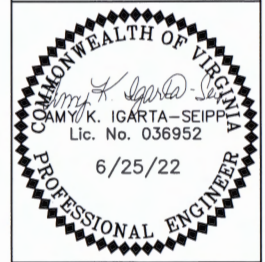
DRAINAGE AREA(S)	FOA 1		FOA 2		FOA 3	
	POST A1 ON	POST A2 ON	POST A OFF	POST B ON	POST B OFF	POST C ON
TOTAL DRAINAGE AREA (SQ)	0.76	0.23	0.31	1.28	0.15	0.22
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21
STANDARD DEVIATION (FOOT-CANDLES)	0.22	0.23	0.31	0.79	0.12	0.21

DRAINAGE AREA(S)	FOA 1		FOA 2	
	SCC-1	SCC-2	P-2	B1 ON
TOTAL DRAINAGE AREA (SQ)	0.28	0.08	0.09	0.09
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00
STANDARD DEVIATION (FOOT-CANDLES)	0.00	0.00	0.00	0.00



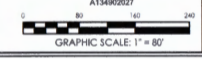
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LAKWOOD STORAGE  
 LAKEWOOD FOREST ROAD  
 FRANKLIN COUNTY, VA 24121



REVISION/DATE:

SCALE:	1" = 80'
ASD JOB #:	2021-590
FILE #:	2021-590 SITE
PARCEL ID:	0300006105
DATE:	JUNE 25, 2022
REVISED:	



**C-6**  
 DRAINAGE MAP



Hydrograph Return Period Recap

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

FF Method

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

PF Method

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Storm Sewer Culvert Summary Table

Structure	Span	Material	Flow	Velocity	Depth
1	10.0	Concrete	1.000	1.000	1.000
2	10.0	Concrete	1.000	1.000	1.000
3	10.0	Concrete	1.000	1.000	1.000

Storm Sewer Inlet Summary Table

Structure	Flow	Velocity	Depth
1	1.000	1.000	1.000
2	1.000	1.000	1.000
3	1.000	1.000	1.000

Detention Basin Detail

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

Hydrograph Return Period Recap

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

FF Method

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

PF Method

Flow	1 Year	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Peak	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Time to Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Storm Sewer Culvert Summary Table

Structure	Span	Material	Flow	Velocity	Depth
1	10.0	Concrete	1.000	1.000	1.000
2	10.0	Concrete	1.000	1.000	1.000
3	10.0	Concrete	1.000	1.000	1.000

Storm Sewer Inlet Summary Table

Structure	Flow	Velocity	Depth
1	1.000	1.000	1.000
2	1.000	1.000	1.000
3	1.000	1.000	1.000

Detention Basin Detail

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

TIME OF CONC NTRATION AND FLOW SUMMARY TABLE FOR PRE DEVELOPMENT AREAS

Area	Area 1	Area 2
Annual Catchment	1.000	1.000
Channel Length	1.000	1.000
Channel Slope	1.000	1.000
Channel Velocity	1.000	1.000
Channel Time	1.000	1.000

Stormwater Conveyance Channel Calculations

Channel	Flow	Velocity	Depth
1	1.000	1.000	1.000
2	1.000	1.000	1.000
3	1.000	1.000	1.000

Boretion #1

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

Micro-Boretion #2

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

TIME OF CONCENTRATION AND FLOW SUMMARY TABLE FOR POST DEVELOPMENT AREAS

Area	Area 1	Area 2
Annual Catchment	1.000	1.000
Channel Length	1.000	1.000
Channel Slope	1.000	1.000
Channel Velocity	1.000	1.000
Channel Time	1.000	1.000

Stormwater Conveyance Channel Calculations

Channel	Flow	Velocity	Depth
1	1.000	1.000	1.000
2	1.000	1.000	1.000
3	1.000	1.000	1.000

Boretion #1

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

Micro-Boretion #2

Parameter	Value
Basin Length	10.0
Basin Width	10.0
Basin Depth	1.0
Basin Volume	100.0
Basin Surface Area	100.0

Energy Balance for Channel Protection and 10 Year Pre Post Protection for Flood Protection

Parameter	Value
Channel Length	10.0
Channel Width	10.0
Channel Depth	1.0
Channel Volume	100.0
Channel Surface Area	100.0

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LAKWOOD STORAGE  
LAKWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121

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CARMYK IGARTA-SEIPP  
Lic. No. 036952  
6/25/22  
PROFESSIONAL ENGINEER

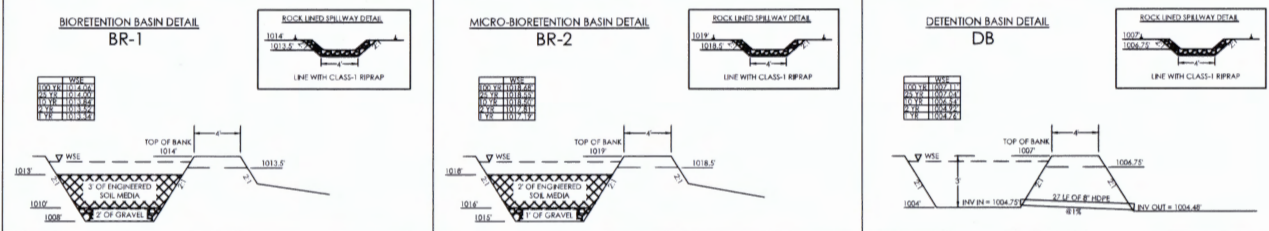
REVISION/DATE:

ASD JOB #: 2021-590  
FILE #: 2021-590 SITE  
PARCEL ID: 0300006105  
DATE: JUNE 25, 2022  
REVISED:

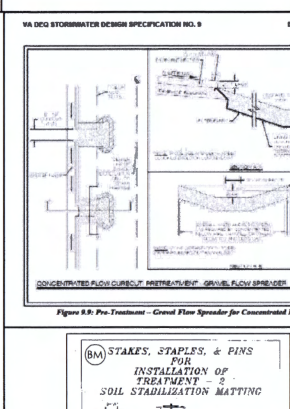
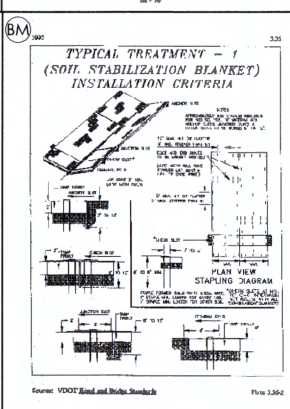
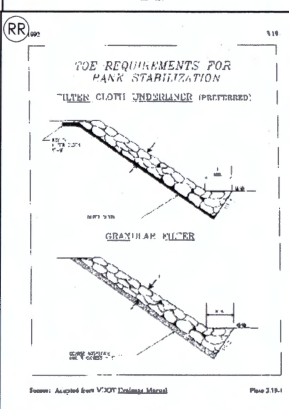
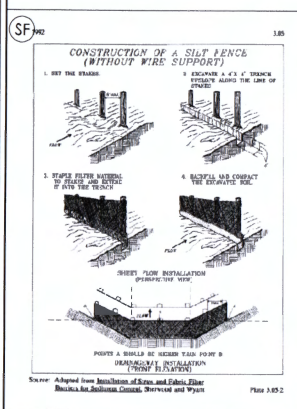
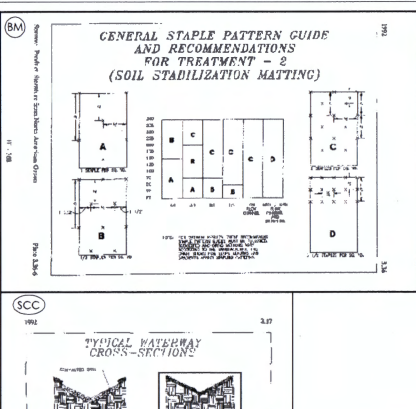
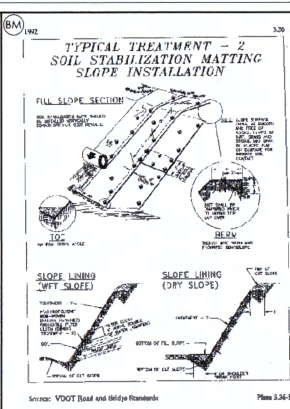
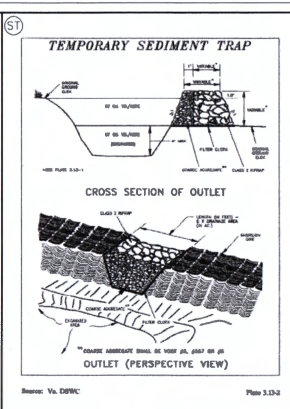
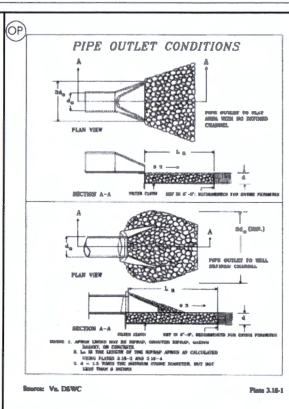
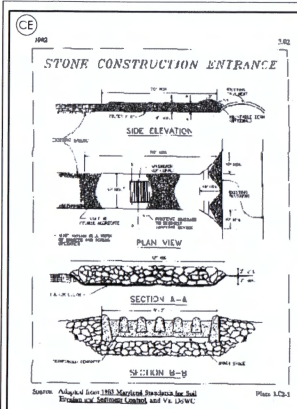
C-7 DRAINAGE CALCULATIONS

SHEET 7 OF 11

NUTRIENT CREDITS SHALL BE PURCHASED TO SATISFY THE REQUIRED TP LOAD REDUCTION, AS THE PHOSPHORUS LOAD FALLS BENEATH THE 10 LB/YR REQUIREMENT, THE NUTRIENT CREDITS MUST BE PURCHASED FROM AN APPLICABLE NUTRIENT BANK IN THE WATERSHED OF THIS SITE THAT COMPLIES WITH VSMFP REGULATIONS. VSMFP REGULATIONS REFERENCE § 62.1-44.15:35



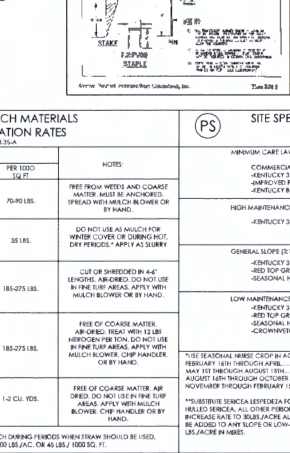
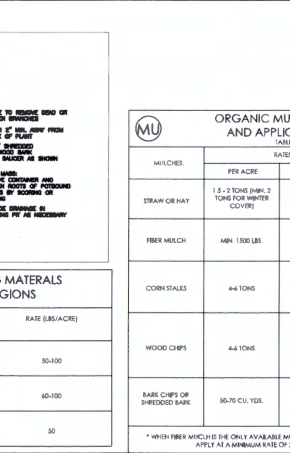
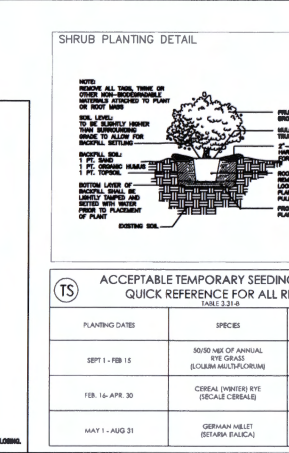
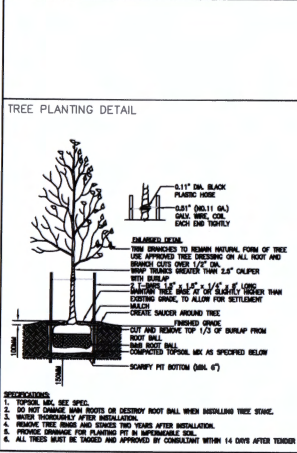




**AGE DURABILITY STANDARD CHANGES**

Material	10	15	20	25	30	35	40	45	50
Concrete	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Steel	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Aluminum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Brick	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Masonry	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Timber	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Asphalt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Gravel	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sand	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Soil	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: VDOT Road and Bridge Standards. Plans 3.3.1-8



**MULCH ORGANIC MULCH MATERIALS AND APPLICATION RATES**

MULCHES	RATES	PER TON	PER 1000 SQ FT	NOTES
STRAW OR HAY	1.5 - 2 TONS (MIN. 2 TONS FOR HAY) COVER	70-90 LBS.		FRESH TWIGS AND COARSE WASTE MATTER SHOULD BE ANCHORED. SPREAD WITH FERTILIZER BLOWER OR BY HAND.
FIBER MULCH	MIN. 1500 LBS.	35 LBS.		DO NOT USE AS MULCH FOR WINTER COVER OR DURING HOT. FOR PESTICIDES, APPLY AS SURF.
CORN STALKS	4-6 TONS	185-275 LBS.		CUT OR SHREDDED IN 4-6 LENGTHS. BRANDED DO NOT USE IN FINE LUMP AREAS. APPLY WITH MULCH BLOWER OR BY HAND.
WOOD CHIPS	4-6 TONS	185-275 LBS.		FREE OF COARSE WASTE. AIR DRIED. TREAT WITH 12 LBS. HYPOCHLORITE PER TON. DO NOT USE IN FINE LUMP AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER OR BY HAND.
BARK CHIPS OR SHREDDED BARK	50-70 CU. YDS.	1-2 CU. YDS.		FREE OF COARSE WASTE. AIR DRIED. DO NOT USE IN FINE LUMP AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER OR BY HAND.

**PS SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA**

MIXTURE	MINIMUM CARE PERIOD
COMMERCIAL OR RESIDENTIAL IDENTIFY 51 OR TURF-TYPE TALL FESCUE IMPROVED PERMANENT BREADST? JENNYCUE BLUEGRASS	12 MONTHS
HIGH MAINTENANCE LAWN: JENNYCUE 51 OR TURF-TYPE TALL FESCUE	12 MONTHS
GENERAL SLOPE (2:1 OR LESS): JENNYCUE 51 FESCUE, JIED TOP GRASS, SEASONAL TURF CROPP*	12 MONTHS
LOW MAINTENANCE SLOPE (GREATER THAN 3:1): JENNYCUE 51 FESCUE, JIED TOP GRASS, SEASONAL TURF CROPP*, CROWNWITCH	12 MONTHS

\*USE SEASONAL TURF CROPP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:  
 FEBRUARY 15TH THROUGH APRIL: ANNUAL RYE  
 MAY 1ST THROUGH AUGUST 15TH: ANNUAL RYE  
 AUGUST 15TH THROUGH OCTOBER: ANNUAL RYE  
 NOVEMBER THROUGH FEBRUARY 15TH: WINTER RYE  
 \*\*SUBSTITUTE SEBECIA LESPEDETA FOR CROWNWITCH EAST OF FARMVILLE, VA (MAY THROUGH SEPTEMBER USE MULLED SEBECIA). ALL OTHER FESCUE USE MULLED SEBECIA. # IF PLANTER IS SEED IN BAG OF CROWNWITCH, INCREASE RATE TO 50 LBS/ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LICHENS MAY BE ADDED TO ANY SLOPE OR LOW MAINTENANCE MIX DURING WARMER SEEDING PERIODS. ADD 10-20 LBS/ACRE IN AREAS.

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**COMMONWEALTH OF VIRGINIA**  
 CAMY K. IGARTA-SEIPPA  
 Lic. No. 036952  
 6/25/22  
 PROFESSIONAL ENGINEER

REVISION/DATE:

ASD JOB #: 2021-590  
 FILE #: 2021-590 SITE  
 PARCEL ID: 0300006105  
 DATE: JUNE 25, 2022  
 REVISED:

**C-8**  
 DETAILS

SHEET 8 OF 11





LAKEWOOD STORAGE  
LAKEWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121

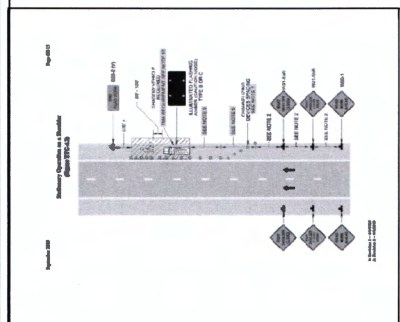


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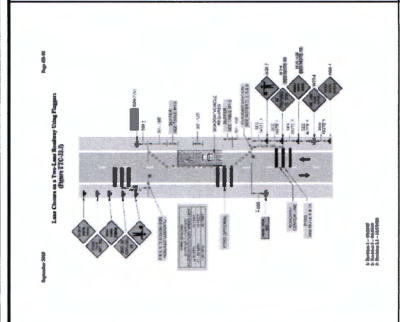
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C-9  
VDOT DETAILS

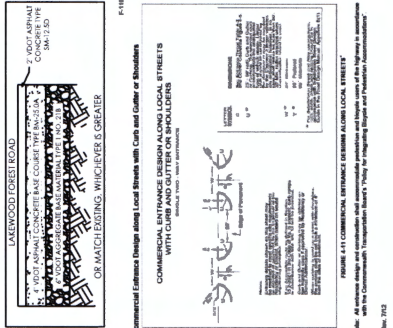
SHEET 9 OF 11



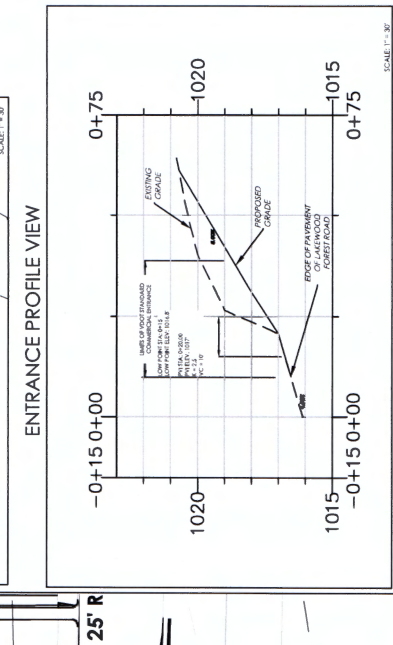
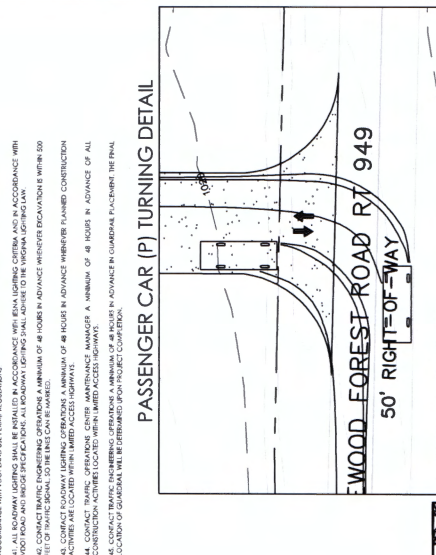
Section 309  
309.01 General  
309.02 Materials  
309.03 Construction  
309.04 Maintenance



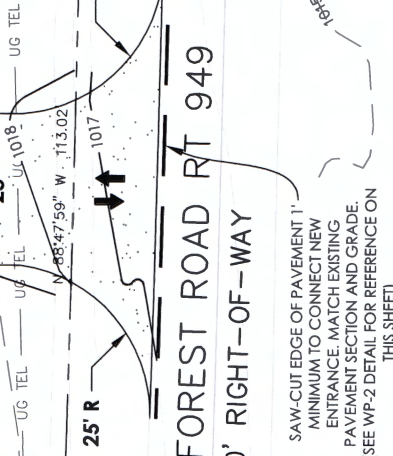
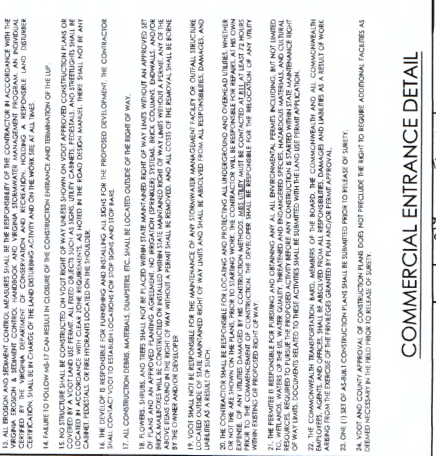
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310.01 General  
310.02 Materials  
310.03 Construction  
310.04 Maintenance



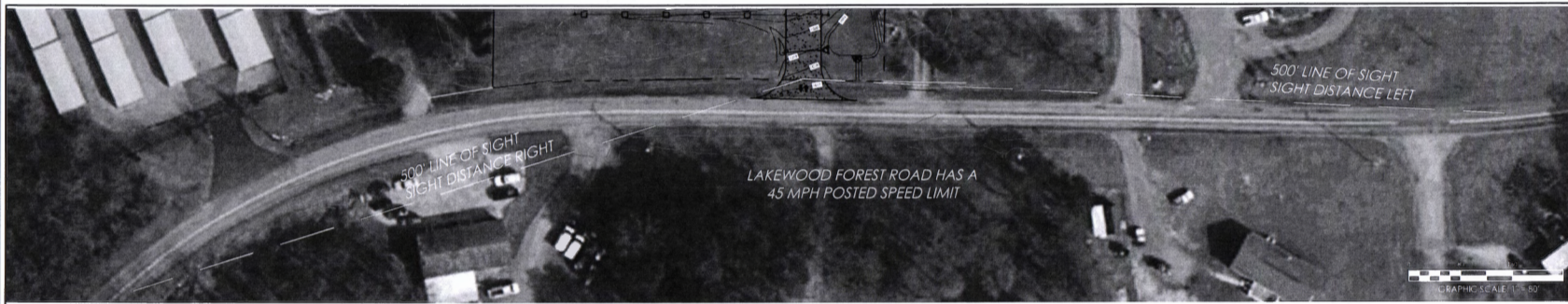
VDOT STANDARD SPECIFICATIONS FOR ROADWORK  
SECTION 202 - PAVEMENT  
SECTION 203 - CURBS AND GUTTERS



VDOT STANDARD SPECIFICATIONS FOR ROADWORK  
SECTION 204 - SIDEWALKS AND BENCHES  
SECTION 205 - BIKEWAYS







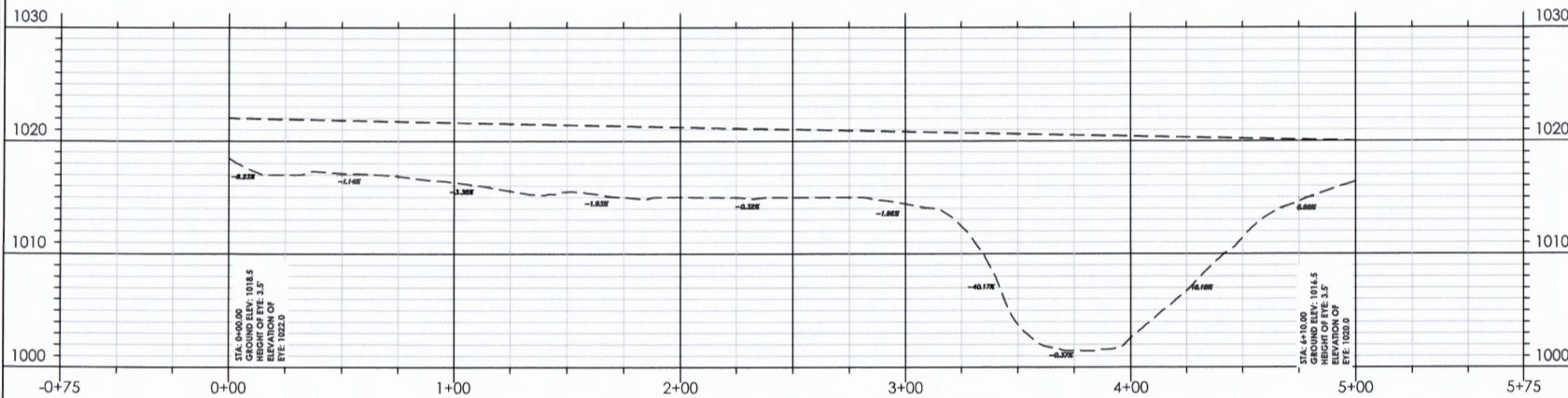
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LAKWOOD STORAGE  
LAKWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121

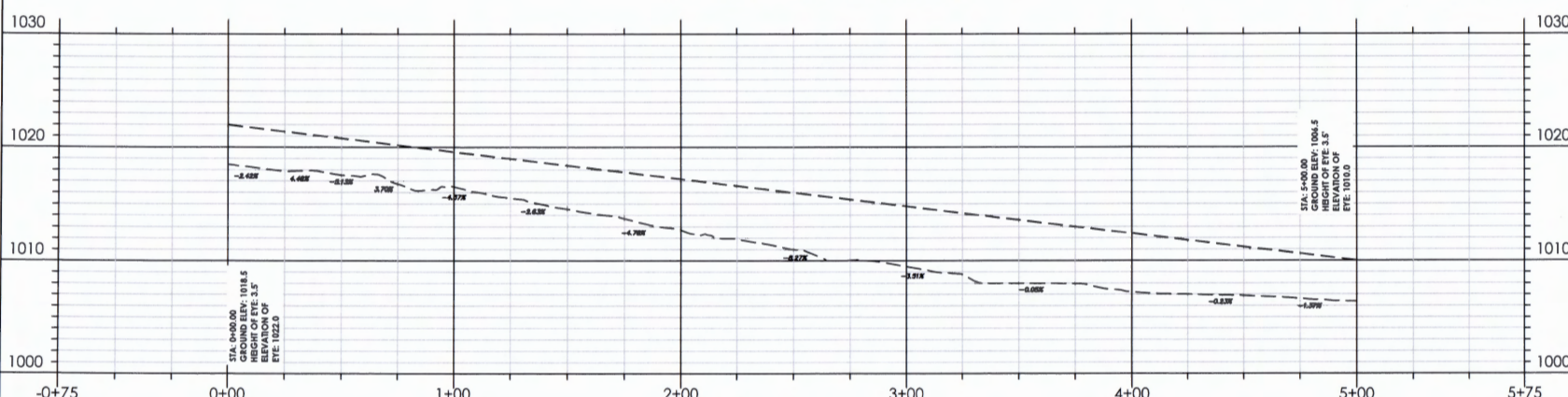
COMMONWEALTH OF VIRGINIA  
CARMY K. IGARTA-SEIPP  
Lic. No. 036952  
6/25/22  
PROFESSIONAL ENGINEER

REVISION/DATE:

SIGHT DISTANCE PLAN VIEW



SIGHT DISTANCE RIGHT PROFILE VIEW

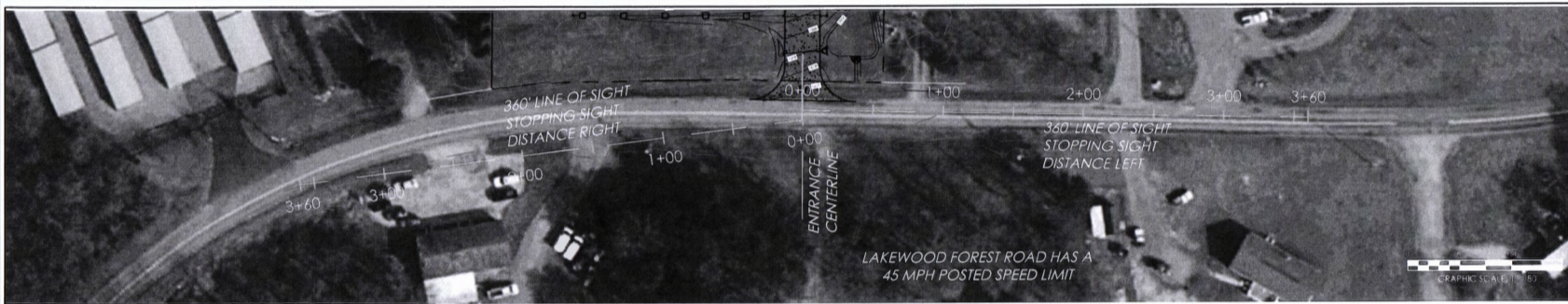


SIGHT DISTANCE LEFT PROFILE VIEW

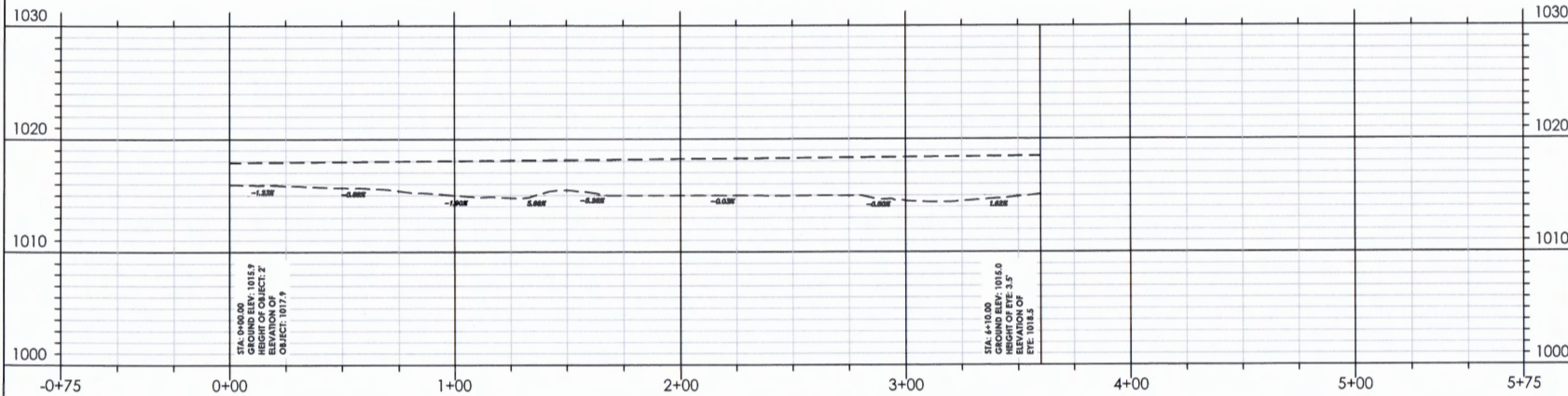
SCALE:	1" = 50'
ASD JOB #:	2021-590
FILE #:	2021-590 SITE
PARCEL ID:	0300006105
DATE:	JUNE 25, 2022
REVISED:	

**C-10**  
INTERSECTION SIGHT  
DISTANCE PLAN AND  
PROFILES



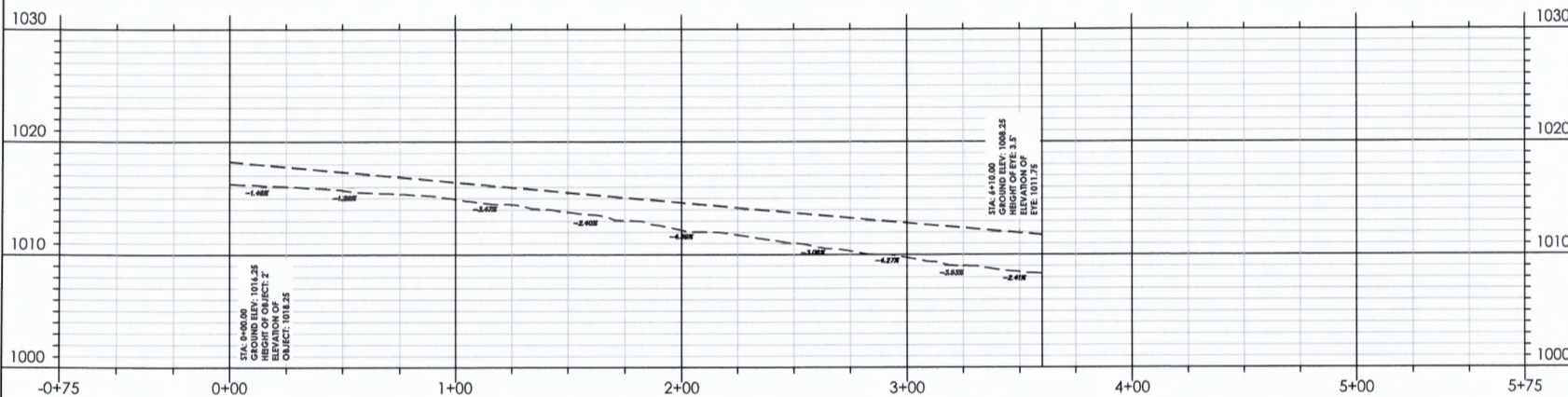


STOPPING SIGHT DISTANCE PLAN VIEW



STOPPING SIGHT DISTANCE RIGHT PROFILE VIEW

HORIZONTAL SCALE 1"=50'  
VERTICAL SCALE 1"=10'



STOPPING SIGHT DISTANCE LEFT PROFILE VIEW

HORIZONTAL SCALE 1"=50'  
VERTICAL SCALE 1"=10'

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LAKEWOOD FOREST ROAD  
FRANKLIN COUNTY, VA 24121



REVISION/DATE:

ASD JOB #:	2021-590
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REVISED:	

**C-11**  
STOPPING SIGHT  
DISTANCE PLAN AND  
PROFILE

SHEET 11 OF 11