SITE PLAN

1613 GROVE STREET E□T

TAX MAP 23, PARCELS 133, 134, 135

CITY OF CHARLOTTESVILLE, VIRGINIA

□EGEND

EXISTING	NEW	DESCRIPTION
		□O□ND□RIES
		BENCHMARK
		SITE PROPERTY OR ROW LINE
		ADJACENT PROPERTY OR ROW LINE
		BUILDING SETBACK
		TBR (TO BE REMOVED)/DEMO
		STETE□T
10	10	PARKING COUNT
		TO□OGR□□□□
		INDEX CONTOUR
		INTERVAL CONTOUR
311.5 x	x	SPOT ELEVATION
311.5 TC x	x	TOP OF CURB ELEVATION
311.5 TW x	x	TOP OF WALL ELEVATION
311.5 BW x	x	BOTTOM OF WALL ELEVATION
		STREAM
		□□□D□NG
		BUILDING
		BUILDING INTERIOR
		RETAINING WALL
		RETAINING WALL RAILING
		EDGE OF PAVEMENT
		ROAD CENTERLINE
		FRONT OF CURB
		BACK OF CURB
		CG-12 TRUNCATED DOME
		SIDEWALK
		BIKE PARKING
		HANDICAP ACCESSIBLE AISLE
		HANDICAP PARKING
		M□TER□□□
		CONCRETE
		RIPRAP
		ASPHALT
		TREELINE
X	X	FENCE
		□T□□T□
		UTILITY POLE
		GUY WIRE
OHU	OHU	OVERHEAD UTILITY
UGU	UGU	UNDERGROUND UTILITY
	UGT	UNDERGROUND TELEPHONE
	UGE	UNDERGROUND ELECTRIC
		STORM
		STORM MANHOLE
		DROP INLET
	RD	STORM SEWER
RD	RD	ROOF DRAIN
UD	UD	UNDERDRAIN
		S□NIT□R□
		SANITARY MANHOLE
S	S	SANITARY SEWER MAIN
S	S	SANITARY SEWER LATERAL
		□□TER
W	W	WATER LINE
	WS	WATER SERVICE LINE
		WATER METER
		WATER METER VAULT
		FIRE HYDRANT
		FIRE DEPARTMENT CONNECTION
GAS	GAS	GAS LINE
		E□SEMENTS
		SANITARY EASEMENT
		SWM/BMP PRIVATE MAINTENANCE EASEMENT
		SWM/BMP ACCESS EASEMENT

O□NER/DEVE□O□ER

Lorven Investments, LLC
4776 Walbern Ct
Chantilly, VA, 20151
nrseri@yahoo.com
703-856-0164

□ONING

Zoned R-3, Proffered ZM20-00003

SO□R□E O□ T□T□E

Instr. # 2020:0578

SO□R□E O□ □O□ND□R□ □ND TO□OGR□□□□

Boundary & topographic survey provided by:
Foresight Survey, PC
912 E High St
Charlottesville, VA 22902

□EN□□M□R□

Datum: NAVD88

□□OOD□ONE

According to FEMA Flood Insurance Rate Map, effective date February 4,2005 (Community Panel 510030C0269D), this property does not lie in a flood plain.

□ □TERS□ED

Moores Creek – HUC 020802040402

□□□D□NG □E□G□TS

Maximum Allowable: 45' per section 34-353 of the Charlottesville Zoning Ordinance
Maximum Proposed: 34'

□□□D□NG SET□□□□S

Valley Rd Front Setback: 25'
Grove St Ext Side Setback: 5'
Rear Setback: 25'
Side Setback: 14'

□IRE □□O□

Fire flow information to be provided.

□IRE M□RS□□□S NOTES

SITE PLAN:
1. VSFPC 505.1-The building street number to be plainly visible from the street for emergency responders.
2. VSFPC 506.1 – An approved key box shall be mounted to the side of the front or main entrance.
3. VSFPC 506.1.2 – An elevator key box will be required if the building has an elevator.
4. VSFPC 507.5.4 – Fire hydrants, fire pump test header, fire department connections or fire suppression system control valves shall remain clear and unobstructed by landscaping, parking or other objects.
2. VSFPC 503.2.1 – Overhead wiring or other obstructions shall be higher than 13 feet 6 inches.
3. VSFPC 3312.1 – An approved water supply for fire protection shall be made available as soon as combustible material arrives on the site. Fire hydrants shall be installed and useable prior to the start of any building construction.
4. All pavement shall be capable of supporting fire apparatus weighing 85,000 lbs.
5. Required vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary pr permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.
6. Buildings four or more stories in height shall be provided with not less than one standpipe for use during construction. Such standpipes shall be installed when the progress of construction is not more than 40 feet in height above the lowest level of fire department access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

CONSTRUCTION & DEMOLITION:
1. VSFPC 310.3: 310.5 – Smoking to be allowed in only designated spaces with proper receptacles.
2. VSFPC 3304.2 – Waste disposal of combustible debris shall be removed from the building at the end of each workday.
3. IFC 1410.1-Access to the building during demolition and construction shall be maintained.
4. VSFPC 3304.6 – Operations involving the use of cutting and welding shall be done in accordance with Chapter 35, of the Virginia Statewide Fire Prevention Code, addressing welding and hotwork operations.
5. VSFPC 3315.1 –Fire extinguishers shall be provided with not less than one approved portable fire extinguisher at each stairway on all floor levels where combustible materials have accumulated.
6. VSFPC 3310.1 – Required vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections, if any. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

□R□T□□□S□O□ES

Critical slopes are present on the property. A waiver has been granted, please reference Sheet C2.

□ □TER DEM□ND

Max Hour Demand = 56 gpm
28 residential units require 2 gmp/unit = 56 gpm total max hour demand

SE□ER DEM□ND

Total Sewer Demand = 4800 gpd
(8) 1 bedroom units, 8 users at 100 gpd = 800 gpd
(2) 2 bedroom units, 40 users at 100 gpd = 4000 gpd

□ □TER □ S□N□T□R□ SERV□□E

1. All materials used for water and sanitary sewer service lines are to comply with requirements as outlined in both the BOCA Code and the regulations used by the Department of Public Works for the City of Charlottesville.
2.All waterline shut downs must be coordinated with and performed by the City. Developer must hand out notices to affected customers at least 48 hours in advance.
3. Per the Virginia Department of Health Waterworks Regulations (Part II, Article 3, Section 12 VAC 5-590 through 630), all buildings that have the possibility of contaminating the potable water distribution system (hospitals, industrial sites, breweries, etc.) shall have a backflow prevention device installed within the facility. This device shall meet specifications of the Virginia Uniform Statewide Building Code, shall be tested in regular intervals as required, and test results shall be submitted to the Regulatory Compliance Administrator in the Department of Utilities.
4. All buildings that may produce wastes containing more than one hundred (100) parts per million of fats, oil, or grease shall install a grease trap. The grease trap shall meet specifications of the Virginia Uniform Statewide Building Code, maintain records of cleaning and maintenance, and be inspected on regular intervals by the Regulatory Compliance Administrator in the Department of Utilities.
5. Please contact the Regulatory Compliance Administrator at 970-3032 with any questions regarding the grease trap or backflow prevention devices.

□T□ O□ □□□R□OTTESV□□E NOTE

This site plan should not be construed or interpreted as the City's verification that the site plan fully complies with all requirements of the Americans with Disabilities Act.

□T□□T M□R□NGS

Utility markings were made under Miss Utility ticket #B218700293

E□ST□NG □SE

Vacant

□RO□OSED □SE

Residential Units, (8) 1-bedroom & (20) 2-bedroom
Residential Density = 43 DUA

□□ND □SE S□□ED□□E

*Parcel Area Only

*EXISTING	Area	%
Building	0 SF	0%
Pavement & Concrete	0 SF	0%
Impervious Area	0 SF	0%
Turf	28393 SF	100%
Open space	SF	0.0%
Total=	28393 SF	(0.65 ac.)

*PROPOSED	Area	%
Building	5390 SF	18.5%
Pavement & Concrete	11162 SF	38.4%
Impervious Area	16552 SF	56.9%
Turf	11841 SF	41.7%
Open space	SF	0.0%
Total=	28393 SF	(0.65 ac.)

□□ND D□ST□R□□N□E

0.80 acres of total land disturbance is proposed with this plan.

STORM□ □TER □OM□□□N□E

Development will meet 9VAC25-870-63 and 9VAC25-870-66 Sections B-1-b by implementing a Stormtech SC-740 underground detention system. Owner responsible for system maintenance.

□T□ □ERM□TS

1.The Contractor shall be responsible for obtaining a street cut permit from the City.
2. A Temporary Street Closure Permit is required for closure of sidewalks,parking spaces and roadways and is subject to approval by the City Traffic Engineer.The Contractor contact information will be provided with the final plans.

□G□T□NG

Street & site lighting will not be provided.

NOTES

1. All excavation for underground pipe installation must comply with OSHA Standards for the Construction Industry (29 CFR Part 1926).
2. The location of existing utilities across or along the line of the proposed work are not necessarily shown on the plans and where shown based on "MISS UTILITY" markings and are only approximately correct. The contractor shall locate all underground lines and structures as necessary.
3. The contractor shall verify the locations of all boundaries, buildings, existing elevations, vegetation and other pertinent site elements. Contractor shall immediately report any discrepancies to the engineer of record.
4. The contractor shall be responsible for notifying "MISS UTILITY" – 1-800-552-7001.
5. Any damage to existing utilities caused by the contractor or its subcontractors shall be the contractor's sole responsibility to repair. This expense is the contractor's responsibility.
6. All paving, drainage related materials and construction methods shall conform to current specifications and standards of the City of Charlottesville unless otherwise noted.
7. An erosion and sediment control plan is required with this site plan.
8. All slopes and disturbed areas are to be fertilized, seeded and mulched. The maximum allowable slope is 2:1. Where it is reasonably obtainable, lesser slopes of 3:1 or better are to be achieved.
9. Paved, rip-rap or stabilization mat lined ditch may be required when in the opinion of the Engineer it is deemed necessary in order to stabilize a drainage channel.
10. All traffic control signs shall conform to the 2011 Virginia Supplement to the 2009 Manual on Uniform Control Devices.
11. Unless otherwise noted all concrete pipe shall be reinforced concrete pipe – Class III.
12. All material inside concrete forms shall be clean and free of all rocks and other loose debris. Sub-base material shall be compacted by mechanical means. Remove all standing water from area inside forms.
13. Concrete and asphalt shall not be placed unless the air temperature is at least 40 degrees in the shade and rising. Material shall not be placed on frozen subgrade.
14. All existing curbs, curb and gutters and sidewalks to be removed shall be taken out to the nearest joint.
15. Existing asphalt pavement shall be saw cut and removed as per VDOT Road and Bridge Specifications 2016. Removal shall be done in such a manner as to not tear, bulge or displace adjacent pavement. Edges shall be clean and vertical. All cuts shall be parallel or perpendicular to the direction of traffic.
16. The contractor shall exercise care to provide positive drainage to the storm inlets or other acceptable drainage paths in all locations.
17. Contact information for any necessary inspections with City:
    E&S inspector, NDS- 970-3182 (for the E&S inspections)
    Project Inspectors, NDS-970-3182 (for other construction items like sidewalk, pavement patches, road, storm sewer etc)
    Water and Sanitary Sewer-Department of Utilities 970-3800
    Street cut, Department of Utilities 970-3800
    Other public ROW issues-City Engineer 970-3182.
18. Any sidewalk and/or curb damage identified in the site vicinity due to project construction activities as determined by City inspector shall be repaired at the contractor's expense.
19. A temporary street closure permit is required for closure of sidewalks, parking spaces and roadways and is subject to approval by the City Traffic Engineer.
20. Per the Virginia Department of Health Waterworks Regulation (Part II, Article 3, Section 12 VAC 5-590 through 630), all buildings that have the possibility of contaminating the potable water distribution system (hospitals, industrial sites, breweries, etc) shall have a backflow prevention device installed within the facility. This device shall meet specifications of the Virginia uniform Statewide Building Code, shall be tested in regular intervals as required, and test results shall be submitted to the Regulatory Compliance Administrator in the Department of Utilities.
21. All buildings that may produce wastes containing more than one hundred (100) perts per million of fats, or grease shall install a grease trap. The grease trap shall meet specifications of the Virginia Uniform Statewide Building Code, maintain records of cleaning and maintenance, and be inspected on regular intervals by the Regulatory Compliance Administrator in the Department of Utilities.
22. Please contact the Regulatory Compliance Administrator at 970-3032 with any questions regarding the grease trap or backflow prevention devices.

□□R□NG S□□ED□□E

Required Parking:
Multifamily dwellings (1BR-2BR units):
1 space per unit: 28 units = 28 spaces req.
Between 26 & 50 spaces = 2 Total HC spaces required, 1 HC van accessible
1 HOV Van Space = 3 Standard Spaces
Total required: 28 spaces
Total provided: 27 spaces (includes 2 HC van accessible spaces and 1 HOV Van Space)

Bicycle Parking:
1 space per 2 units: 28 units = 14 spaces req.
Total required: 14 spaces
Total provided: 14 spaces (short term)

STORM□ □TER □□□□T□ □O□□T□ON

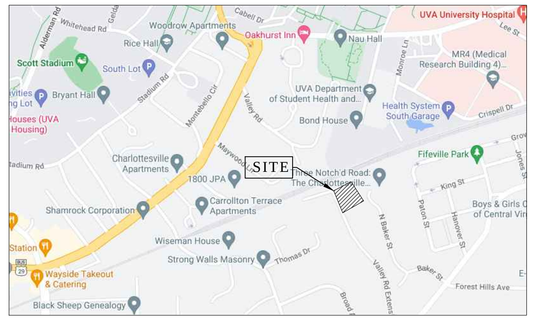
Stormtech SC-740 = 38.027729, -78.504719

S□TE □□□N N□RR□T□VE

The scope of this project is to construct four multi-unit residential buildings with a surface parking lot. The development proposes (8) 1-bedroom units and (20) 2-bedroom units.

V□□N□T□ M□□

SCALE : 1"=500'



Map provided by Google.com

SHEET INDEX

APPROVALS:

DIRECTOR OF NEIGHBORHOOD DEVELOPMENT SERVICES DATE

SHIMP ENGINEERING PC
LAND PLANNING · PROJECT MANAGEMENT
912 E. HIGH ST. 434.227.5140
CHARLOTTESVILLE VA, 22902 JUSTIN@SHIMP-ENGINEERING.COM

COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
10/27/22
PROFESSIONAL ENGINEER

SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

□ O□ ER

C1

#O-22-040

AN ORDINANCE
APPROVING A REQUEST TO REZONE THE PARCEL OF LAND LOCATED AT 1613, 1611, AND 0 GROVE STREET, FROM R-2 (TWO FAMILY RESIDENTIAL) TO R-3 (MULTIFAMILY RESIDENTIAL)

WHEREAS, in order to facilitate a specific development project, Lorven Investments, LLC ("Landowner"), by its representative, Justin Shimp, has submitted rezoning application ZM20-00003, proposing a change in the zoning classification ("rezoning") of certain land known as 1613, 1611, and 0 Grove Street Extended, identified within City tax records as Tax Map 23 Parcels 133, 134, and 135 (collectively, the "Subject Property"), from "R-2" to "R-3", with said rezoning to be subject to several development conditions proffered by Landowner; and

WHEREAS, in connection with the Proposed Rezoning, the Applicants submitted: a site plan to create a specific low-rise multifamily development project along with proffered development conditions and

WHEREAS, a joint public hearing on the Proposed Rezoning was held before the Planning Commission and City Council on March 8, 2022, following notice to the public and to adjacent property owners as required by law; and

WHEREAS, on March 8, 2022, following the joint public hearing, the Planning Commission voted to recommend that City Council should approve the Proposed Rezoning; and

WHEREAS, City Council has considered the development proposal set forth within the Application, the Staff Report, comments received from the public, and the Planning Commission's recommendation; and

WHEREAS, this Council finds and determines that the public necessity, convenience, general welfare and good zoning practice requires the Proposed Rezoning; that both the existing zoning classification (R-2) and the proposed R-3 zoning classification (subject to proffered development conditions) are reasonable; and that the Proposed Rezoning is consistent with the Comprehensive Plan; now, therefore,

BE IT ORDAINED by the Council of the City of Charlottesville, Virginia that the Zoning District Map Incorporated in Section 34-1 of the Zoning Ordinance of the Code of the City of Charlottesville, 1990, as amended, be and hereby is amended and reenacted as follows:

Section 34-1.Zoning District Map. Rezoning from R-2 to R-3 the parcels of land designated on City Tax Map 23 as Parcels 133, 134, and 135 (1613, 1611, and 0 Grove Street Ext.), subject to the following Proffers, which were tendered by the Applicant in accordance with law and are hereby accepted by this City Council:

Approved Proffers

1. **VALLEY ROAD EXTENDED SIDEWALK IMPROVEMENTS:**
   a. Prior to the issuance of certificate of occupancy from the City's building official for the seventh (i11) dwelling unit on the Property, the Owner shall contribute Forty-Eight Thousand Dollars ($48,000.00) to the City of Charlottesville's Capital Improvement Program (CIP) as a cash contribution for construction of infrastructure improvements that support public transit, cycling, walking, or ADA accessibility within the Fifeville Neighborhood. Infrastructure improvements may include, but are not limited to, bus stop improvements for public transit, construction of new sidewalks, or the installation of ADA accessible curb cuts at public street intersections.

2. **AFFORDABLE HOUSING**:

The Owner shall provide affordable housing within the Property, as follows:

a. For the purposes of this Proffer, the term "For-Rent Workforce Affordable Dwelling Unit" means a dwelling unit where the monthly cost of rent, including any tenant paid utilities, does not exceed 125% of the Fair Market Rent by unit bedrooms for the Charlottesville MSA, the aforementioned Fair Market Rent is established annually by the federal Department of Housing and Urban Development (HUD).
   i. For-Rent Workforce Affordable Dwelling Units shall be reserved for rental to low and moderate-income households having income less than 80 percent of the Area Median Income. Area Median income means the median income for Households within the Charlottesville, Virginia HUD Metropolitan FMR Area, as published annually by the U.S. Department of Housing and Urban Development.

b. For the purposes of this Proffer, the term "For-Rent Affordable Dwelling Unit" means a dwelling unit where the monthly cost of rent, including any tenant paid utilities, does not exceed the Fair Market Rent by unit bedrooms for the Charlottesville MSA, the aforementioned Fair Market Rent is established annually by the federal Department of Housing and Urban Development (HUD).
   i. For-Rent Affordable Dwelling Units shall be reserved for rental to low and moderate-income households having income less than 65 percent of the Area Median Income. Area Median income means the median income for Households within the Charlottesville, Virginia HUD Metropolitan FMR Area, as published annually by the U.S. Department of Housing and Urban Development.

c. Fourteen percent (14%) of all dwelling units constructed within the area of the Property shall be For-Rent Workforce Affordable Dwelling Units and an additional fourteen percent (14%) of all dwelling units constructed within the area of the Property shall be For-Rent Affordable Dwelling Units (collectively, the "Required Affordable Dwelling Units") for a total of 28% of dwelling units constructed within the area of the Property provided as Required Affordable Dwelling Units. The Required Affordable Dwelling Units shall be identified on a layout plan, by unit, prior to the issuance of any certificate of occupancy for a residential unit within the Property ("Initial Designation"). The Owner reserves the right, from time to time after the Initial Designation, and subject to approval by the City, to change the unit(s) reserved as For-Rent Workforce-Affordable Dwelling Units and For-Rent Affordable Dwelling Units, and the City's approval shall not unreasonably be withheld so long as a proposed change does not reduce the number of Required Affordable Dwelling Units and does not result in an Affordability Period shorter than required by these proffers with respect to any of the Required Affordable Dwelling Units.
   i. The Required Affordable Dwelling Units shall be reserved as such throughout a period of at least ten (10) years from the date on which the unit receives a certificate of occupancy from the City's building official ("Rental Affordability Period"). All Rental Affordable Dwelling Units shall be administered in accordance with one or more written declarations of covenants within the land records of the Charlottesville Circuit Court, in a form approved by the Office of the City Attorney.

   ii. On or before January 1 of each calendar year the then current owner of each Required Affordable Dwelling Unit shall submit an Annual Report to the City, identifying each Required Affordable Dwelling Unit by address and location, and verifying the Household Income of the occupant(s) of each Required Affordable Dwelling Unit.

d. The land use obligations referenced in 2.c.i and 2.c.ii shall be set forth within one or more written declarations of covenants recorded within the land records of the Charlottesville Circuit Court, in a form approved by the Office of the City Attorney, so that the Owner's successors in right, title and interest to the Property shall have notice of and be bound by the obligations. The Required Affordable Dwelling Units shall be provided as for-rent units throughout the Rental Affordability Period.

	Aye	No
Magill	_x__	____
Payne	____	_x__
Pinkston	_x__	____
Snook	_x__	____
Wade	_x__	____

Approved by Council
April 4, 2022

Kyna Thomas

Kyna Thomas, MMC
Clerk of Council

SP21-00002

#R-22-041

RESOLUTION GRANTING A SPECIAL USE PERMIT
FOR THE PROPERTY LOCATED AT 1613 GROVE STREET (TAX MAP 23, PARCELS 133; 134; AND 135)

WHEREAS Lorven Investments, LLC ("Landowner") is the record owner of certain land identified on Tax Map 23 as Parcels 133, 134, and 135, collectively currently addressed as "1613, 1611, and 0 Grove Street Extended" (the "Property"), and, the Landowner, represented by Shimp Engineering, P.C., is requesting a Re-Zoning of the property, a Special Use Permit, and a Waiver of the Critical Slopes requirements of City Code Sec. 34-1120(b)(6)(b) in connection with Landowner's plan to construct four low-rise apartment buildings on the Property; and

WHEREAS; The Landowner seeks a Special Use Permit under City Code Sec. 34-420 to allow for residential density of up to forty-three (43) dwelling units per acre ("DUA") and an amendment to the yard requirements of City Code Secs. 34-353(a) and 34-353(b)(4); and

WHEREAS the Planning Commission considered and recommended approval of this application at their March 8, 2022 meeting, subject to conditions set forth within the staff report prepared for that meeting;

BE IT RESOLVED by the Council for the City of Charlottesville, Virginia, hereby approves a Special Use Permit for the Property, to allow construction of four low-rise apartment buildings by the Landowner, subject to the following conditions:

(1) Up to 43 dwelling units per acre (DUA) are permitted on the Subject Properties with a maximum of two bedrooms per unit.

(2) The restoration of Rock Creek as presented in the applicant's narrative dated July 14, 2020 and revised September 29, 2021.

(3) Modifications of yard requirements to:
Front yard: Twenty-five (25) feet.
North Side yard: Five (5) feet.
South Side yard: Fourteen (14) feet.
Rear yard: Twenty-five (25) feet.

	Aye	No
Magill	_x__	____
Payne	____	_x__
Pinkston	_x__	____
Snook	_x__	____
Wade	_x__	____

Approved by Council
April 4, 2022

Kyna Thomas

Kyna Thomas, MMC
Clerk of Council

P21-0023

#R-22-042

RESOLUTION GRANTING A CRITICAL SLOPE WAIVER
FOR THE PROPERTY LOCATED AT 1613, 1611, AND 0 GROVE STREET (TAX MAP 23, PARCELS 133; 134; AND 135)

WHEREAS Lorven Investments, LLC ("Landowner") is the record owner of certain land identified on Tax Map 23 as Parcels 133, 134, and 135, collectively currently addressed as "1613, 1611, and 0 Grove Street Extended" (the "Property"), and, the Landowner, represented by Shimp Engineering, P.C. , is requesting a Re-Zoning of the property, a Special Use Permit, and a Waiver of the Critical Slopes requirements of City Code Sec. 34-1120(b)(6)(b) in connection with Landowner's plan to construct four low-rise apartment buildings on the Property; and

WHEREAS existing Critical Slopes located on the Property constitute 0.06 acres, or approximately 9 percent of the area of the parcels; and

WHEREAS the Planning Commission considered and recommended approval of this application at their March 8, 2022 meeting, subject to conditions set forth within the staff report prepared for that meeting;

BE IT RESOLVED by the Council for the City of Charlottesville, Virginia, hereby approves a Waiver of the Critical Slopes requirements for the Property, to allow construction of four low-rise apartment buildings by the Landowner, subject to the following conditions:

(1) Site Plans (VESCP Plans) should include, at a minimum, 4 stages/phases of Erosion and Sediment ("E&S") controls. The first phase shall include "Initial/Preliminary Controls" and also include special consideration and provisions for how the 'creek'/'channel' will be crossed throughout the project and how concentrated flows will outfall to the channel/culvert. Ideally outfall and site access (culvert work/tie in) would be established with rigorous independent E&S controls prior to the establishment of a sediment trap and associated conveyances. Any channels/diversions that convey 'clear' water to the channel shall be stabilized with sod on the 'clear water' side immediately after installation. The sequence shall dictate that no 'benching', or any disturbance of the slopes can occur until after the establishment of the trap and conveyances (Stage/Phase III).

(2) "Super Silt Fence" (chain linked backing) shall be installed where perimeter silt fence is specified.

(3) Any disturbance occurring outside of conveyances to the trap, in either sequence or space, planned or unforeseen, shall be immediately stabilized with sod (for pervious areas, utilities should have other "same day stabilization").

	Aye	No
Magill	_x__	____
Payne	____	_x__
Pinkston	_x__	____
Snook	_x__	____
Wade	_x__	____

Approved by Council
April 4, 2022

Kyna Thomas

Kyna Thomas, MMC
Clerk of Council

SHIMP ENGINEERING P.C.
LAND PLANNING · PROJECT MANAGEMENT
912 E. HIGH ST. 434.227.5140
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COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
10/27/22
PROFESSIONAL ENGINEER

SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

ONIN APPRO ALS

C2

TOPO TAKEN FROM LIDAR
EXTENT OF FIELD SURVEY

II-431.61 (8" CLAY)
IO-431.46 (8" CLAY)

EX. SSMH
RIM-435.8
II-425.99 (8" DI)
II-422.83 (8" DI)
II-422.43 (16" DI)
IO-422.16 (16" DI)

EX. 16" DIP

ASSUMED LOCATION OF 8" DI STUB
BASED ON FIELD SURVEY
TO BE CONNECTED TO

EX. SSMH
RIM-433.39
II-428.93 (8" CLAY)
II-425.06 (8" CLAY)
II-422.05 (16" DI)
IO-421.90 (18" DI)

EX. 16" DIP

EX. SSMH
RIM-452.87'
II-421.53' (18" DI)
IO-421.37' (18" DI)

EX. 8" DIP WATER LINE

EX. 18" DIP

EX. 18" DIP

GROVE STREET (UNDEVELOPED)
50' R/W (DB 166 PG 68)

N 60°15'08" E 181.50' (T)

74.35'

66.39'

40.76'

TMP 23-135
N/F LORVEN INVESTMENTS, LLC
INST.#2020: 0578
0.266 AC

TMP 23-134
N/F LORVEN INVESTMENTS, LLC
INST.#2020: 0578
0.239 AC

TMP 23-133
N/F LORVEN INVESTMENTS, LLC
INST.#2020: 0578
0.147 AC

EXTENT OF FIELD SURVEY
TOPO TAKEN FROM LIDAR

TOE OF STREAM BANK

EX. 60"RCP
INV-425.8

VALLEY ROAD EXT.
VAR. WIDTH R/W (DB 143 PG 463)

N 23°37'11" W 157.90'

EX. 60"RCP
INV-425.5

S 22°53'40" E 157.72'
TO BE VACATED

S 22°53'40" E 157.50'
TO BE VACATED

S 23°01'59" E 157.31'

TMP 23-132
N/F WINSLOW, MARY & LEONARD F, III, TRUSTEES
DB 993 PG 12

CRITICAL SLOPES

TOPO TAKEN FROM LIDAR
EXTENT OF FIELD SURVEY

EX. 8" DIP WATER LINE

73.75'

66.42'

41.16'

S 60°03'29" W 181.33'(T)

EXTENT OF FIELD SURVEY
TOPO TAKEN FROM LIDAR

IF ONLINE @54.21'

10 0 10 20 30
Scale: 1"=10'

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JUSTIN M. SHIMP
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10/27/22
PROFESSIONAL ENGINEER

SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

E ISTIN ON ITIONS

C3

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SITE PLAN

C4

EX. SSMH
RIM=435.8
II=425.99 (8" DI)
II=422.83 (8" DI)
II=422.43 (16" DI)
IO=422.16 (16" DI)

EX. 16" DIP

ASSUMED LOCATION OF 8" DI STUB BASED ON FIELD SURVEY TO BE CONNECTED TO

EX. SSMH
RIM=433.39
II=428.26 (8" CLAY)
II=423.06 (8" CLAY)
II=422.05 (16" DI)
IO=421.90 (18" DI)

WV
WV EX. 6" DIP
BRD
FH
BRD

EX. 16" DIP

NEW 8" SDR-26

NEW 4" SDR-26

EX. 18" DIP

EX. SSMH
RIM=432.87'
II=421.57' (18" DI)
IO=421.32' (18" DI)

EX. 8" DIP WATER LINE

RETAINING WALL

FDC

B0

18" NYOPLAST YARD DRAIN

5' SIDE SETBACK

63.5 LF 10" HDPE

RETAINING WALL

2" TYPE K COPPER

2" CORP STOP

NEW 1.5" WM VAULT

2" SDR-7 WATER SERVICE LINE

EX. 18" DIP

60" CULVERT TO REMAIN, EXTEND 3.5'
35 LF 42" RCP CULVERT INV. 425.80
HEADWALL TOP ELEV. 434.00

EX. 60"RCP
INV=425.8

A3

DI-3B

4" DI FIRE LINE

PROP. PRIVATE DRAINAGE EASEMENT

25 LF 15" HDPE

PROPOSED VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT

PROPOSED VARIABLE WIDTH PRIVATE DRAINAGE EASEMENT

A2
MH-1

ADS STORMTECH SC-740 UNDERGROUND STORAGE SYSTEM
(32) CHAMBERS WITH ISOLATOR ROW
BOTTOM ELEV. 428.50
BOTTOM OF STONE 427.50

5 LF CONC. WEIR
TOP 431.50
BOTTOM 427.50

23.5 LF 15" HDPE

A1

60" MH-1
RIM ELEV. 433.50
4' WEIR WALL TOP 431.50

PROP. PRIVATE DRAINAGE EASEMENT

TMP 23-132
N/F WINSLOW, MARY & LEONARD F, III, TRUS
DB 993 PG 12

RETAINING WALL

EX. 60"RCP
INV=425.5

EXTEND RIP-RAP
TO TOP OF STREAM BANK

A0

FDC

64.5 LF 10" HDPE

2" SDR-7 WATER SERVICE LINE

C/O

NEW 4" SDR-26

14' SIDE SETBACK

4" DI FIRE LINE

18" NYOPLAST YARD DRAIN

B1

PIV

8"X4" DIP TEE CONNECTION

EX. 8" DIP WATER LINE

RETAINING WALL

10 0 10 20 30
Scale: 1"=10'

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UTILITY PLAN

C5

BUILDING A
FFE 435.50

BUILDING B
FFE 437.00

BUILDING C
FFE 436.50

BUILDING D
FFE 437.75

5' SIDE SETBACK

14' SIDE SETBACK

25' FRONT SETBACK

5' REAR SETBACK

RETAINING WALL

TOP OF BERM 434.00

FDC

HOV VAN PARKING

COMPACT

TW 34
BW 28

TW 50
BW 40

TW 51
BW 40

TW 46
BW 40

TW 45
BW 40.5

TW 54
BW 48

TW 54
BW 44

TMP 23-132
N/F WINSLOW, MARY & LEONARD F, III, TRUSTEES
DB 993 PG 12

Scale: 1"=10'

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SUBMISSION:
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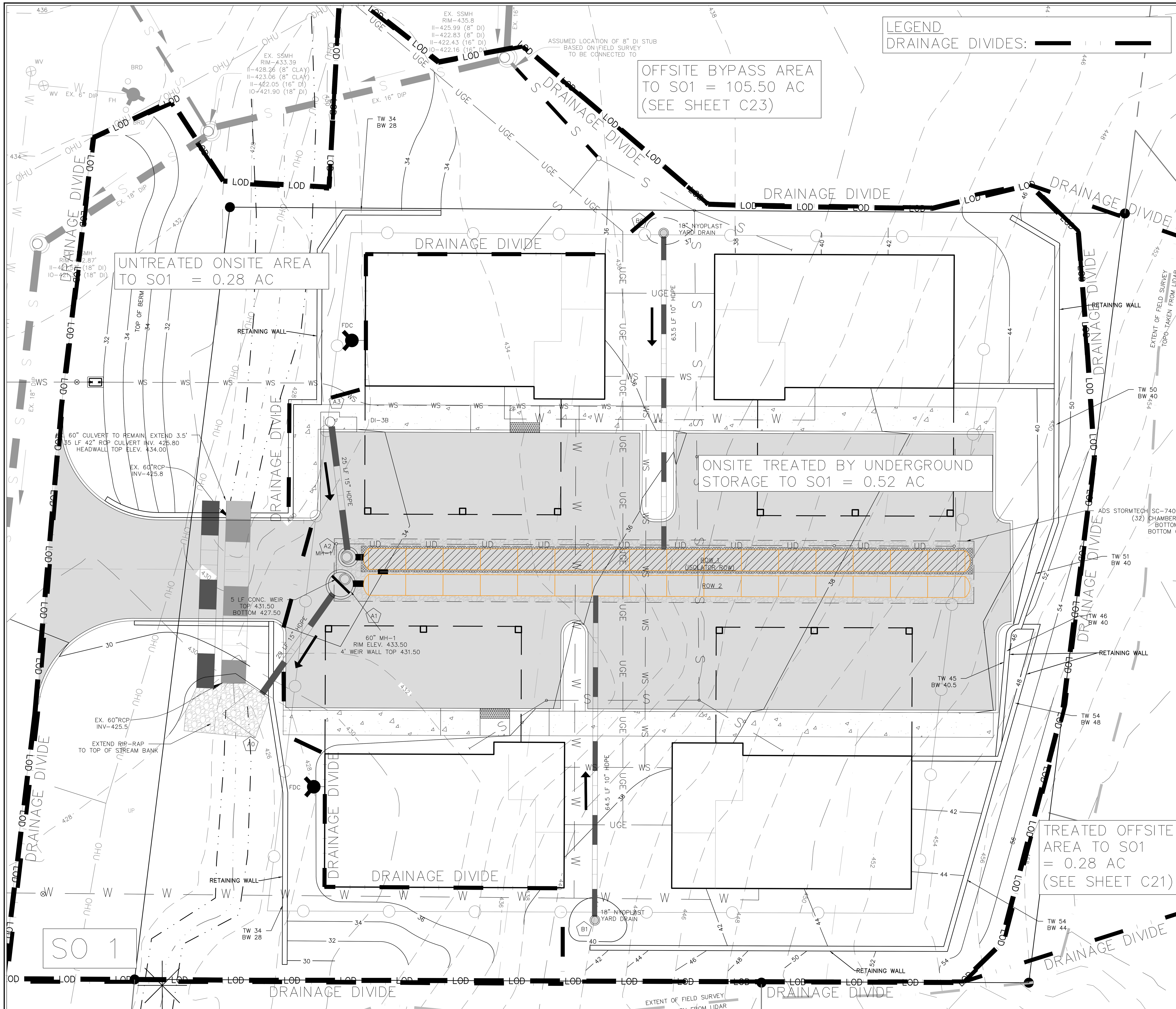
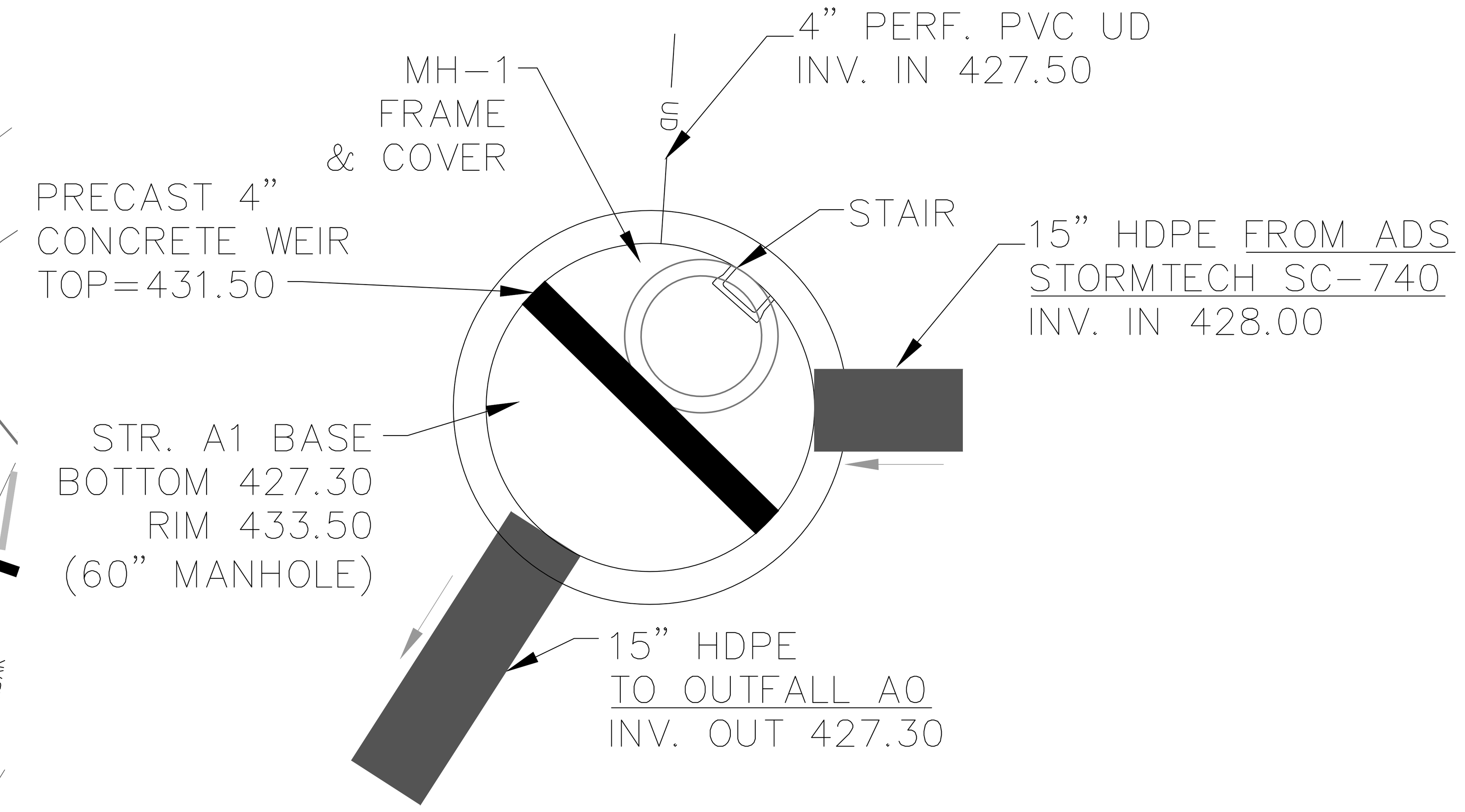
RA IN PLAN

C

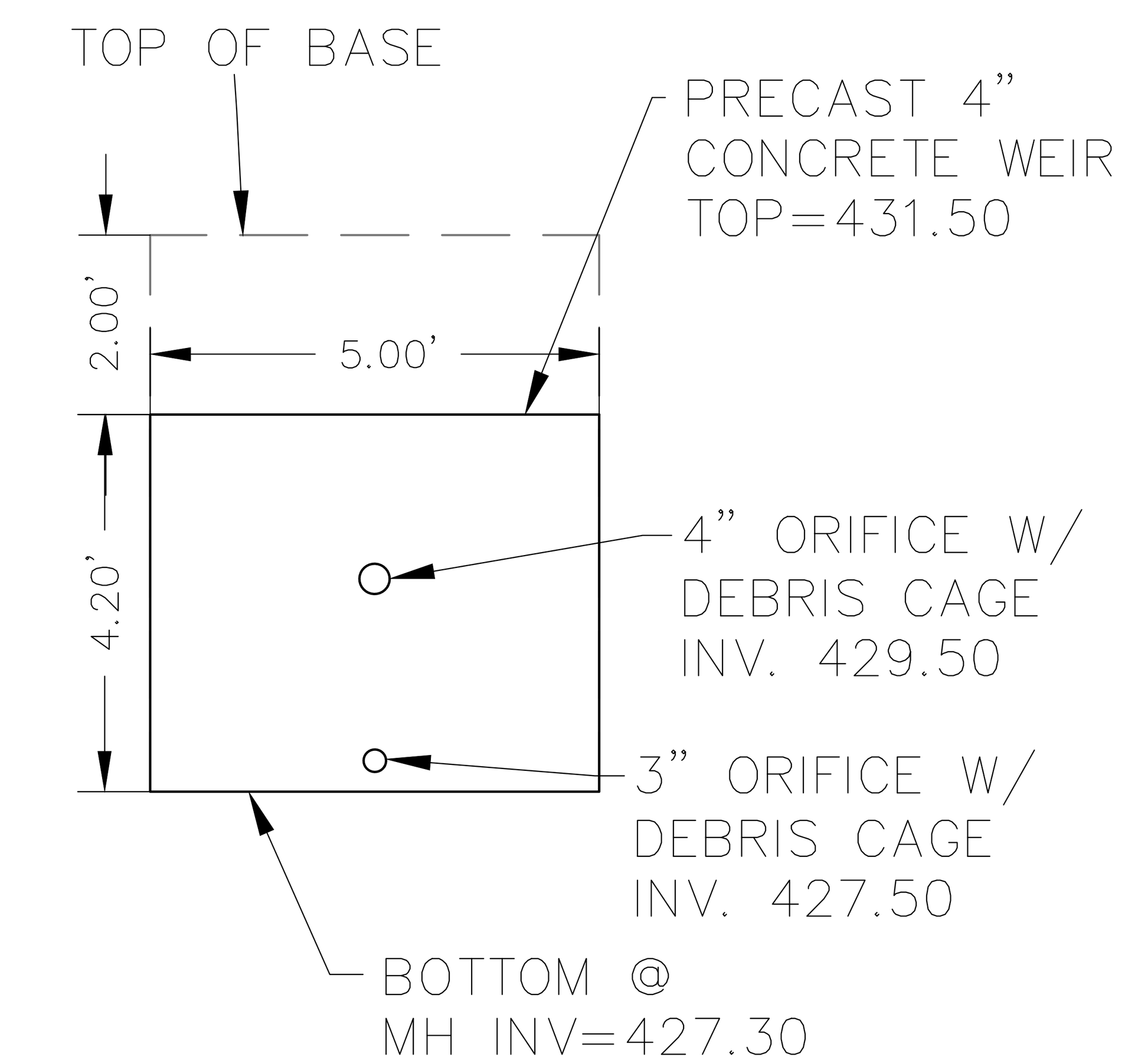


1613 Grove Street																
LD-229 Storm Drain Design Computations																
From Structure	To Structure	Catch. Area (ac)	Runoff Coef	Increment AC	Accum. AC	Total TOC (min)	10-yr Intensity (in/hr)	10-yr Flow (cfs)	Up Invert Elev.	Down Invert Elev.	Pipe Length (ft)	Invert Slope %	Pipe Diameter (in)	Pipe Capacity (cfs)	Velocity (ft/s)	Flow time Increment (min)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A3	A2	0.49	0.80	0.39	0.39	5.00	6.81	**2.67**	429.50	428.50	25.00	4.00%	15	**7.6**	8.8	0.05
A1	A0	0.00	0.00	0.00	0.00	5.00	6.81	**2.75**	427.30	427.00	29.00	1.03%	15	**3.6**	5.1	0.10
B0	UGS	0.13	0.50	0.13	0.13	5.00	6.81	**0.88**	431.50	428.50	63.50	4.72%	10	**3.1**	8.0	0.13
B1	UGS	0.04	0.50	0.04	0.04	5.00	6.81	**0.29**	431.50	428.50	64.50	4.65%	10	**1.1**	5.8	0.19

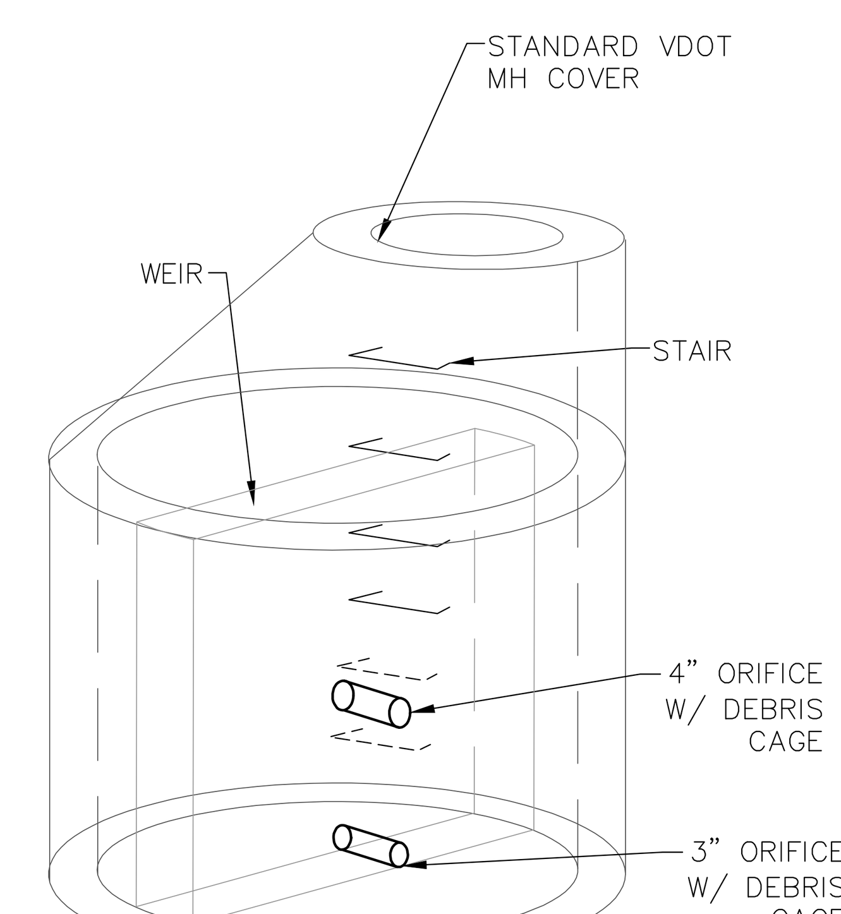
Scale: 1"=10'



1 C7 STR. A1 DETAIL
SCALE: 1"=2'



2 C7 WEIR WALL DETAIL
SCALE: 1"=2'



3 C7 STR. A1 ISOMETRIC VIEW
NOT TO SCALE

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SITE PLAN
1613 GROVE STREET
CITY OF CHARLOTTESVILLE, VIRGINIA
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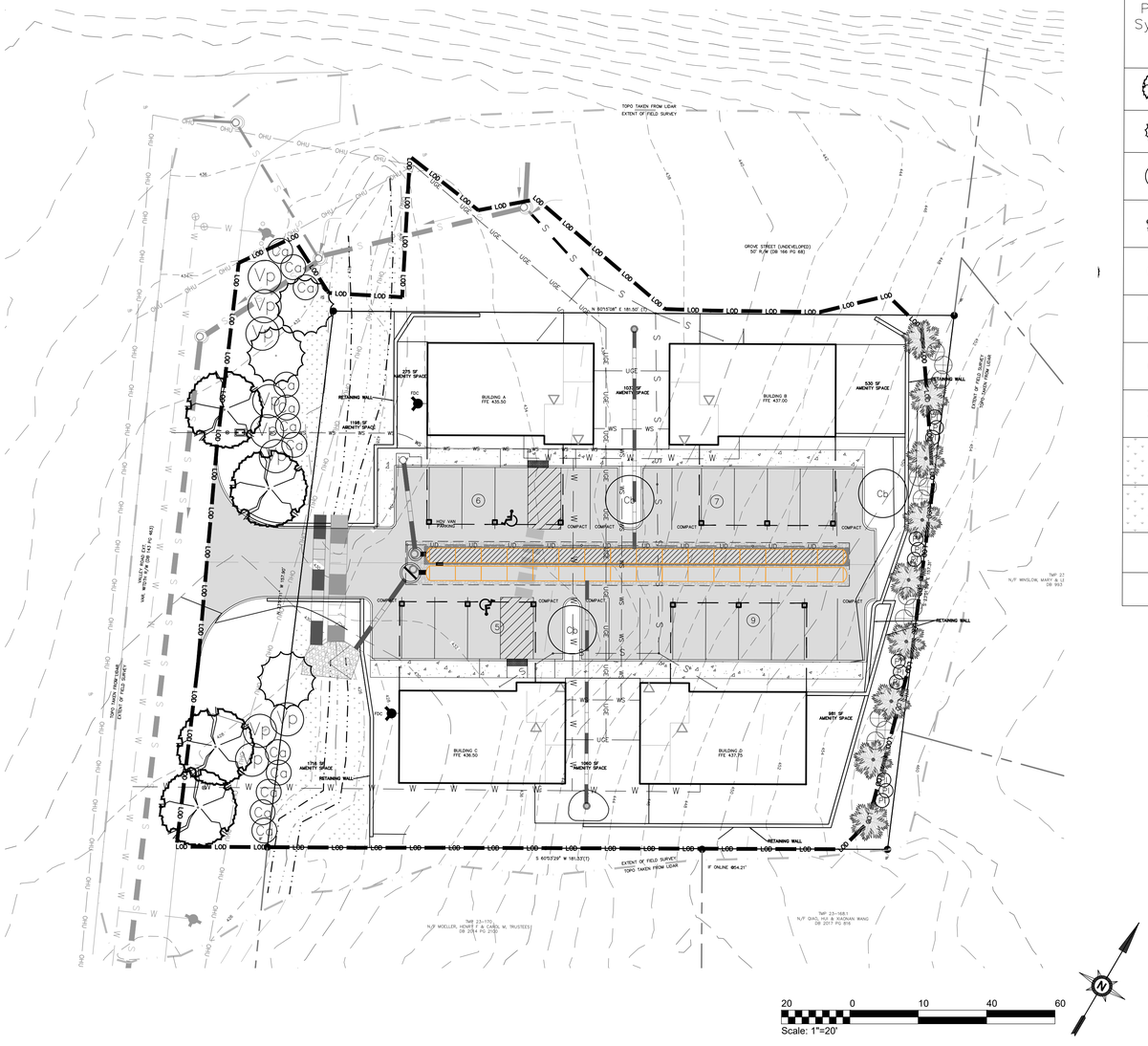
STORMWATER PLAN



LANDSCAPE SCHEDULE

Plant Symbol	Planting Type	Botanical Name	Common Name	Min. Cal./Height	Quantity	Total Height(ft) in 10 Yrs	Canopy SF	Total Canopy SF
	Large Deciduous Tree	Betulus nigra	River Birch	2" Cal.	4	25	397	1588
	Large Deciduous Tree	Taxodium distichum	Bald Cypress	2" Cal.	3	25	123	369
Cb	Medium Deciduous Tree	Carpinus betulus	European Hornbeam	2" Cal.	3	20	177	531
	Large Evergreen Tree	Cryptomeria japonica	Cryptomeria	2" Cal.	9	25	123	1107
	Evergreen Shrub	Myrica cerifera	Southern Wax Myrtle	12" Ht.	12	10	44	528
Pl	Evergreen Shrub	Prunus laurocerasus	Cherry Laurel	12" Ht.	12	4	10	120
Vp	Deciduous Shrub	Viburnum prunifolium	Blackhaw Viburnum	12" Ht.	9	12	64	576
Cd	Deciduous Shrub	Cornus amomum	Silky Dogwood	12" Ht.	12	8	72	864
	Stream Planting Sedge	Carex comosa	Longhair Sedge	–	*	—	—	—
	Stream Planting Grass	Scirpus cyperinus	Woolgrass	–	*	—	—	—
							TOTAL SF:	5683

*Sedges and grasses to be seeded along stream banks

LANDSCAPING REQUIRED:

SITE REQUIREMENT (SEC. 34-869(b)): 10% CANOPY REQUIRED FOR RESIDENTIAL DENSITIES MORE THAN 20 DUA.

PROJECT AREA: 0.652 AC (28,400 SF)
28,400 SF x 10% = 2,840
CANOPY REQUIRED: 2,840 SF
CANOPY PROVIDED: 5,683 SF

STREET TREES (SEC. 34-870): 1 LARGE TREE, 40' O.C. ADJ. TO PUBLIC STREET RIGHT-OF-WAY

158 LF OF PUBLIC STREET FRONTAGE
158 LF / 40 = 4
REQUIRED: 4 LARGE STREET TREES
PROVIDED: 7 LARGE STREET TREES

INTERIOR PARKING AREA (SEC. 24.11.9.7): 5% OF THE PAVED PARKING AREA & 1 MEDIUM SHADE TREE PER 8 PARKING SPACES

7,830 SF x 5% = 392 SF
REQUIRED: 392 SF
PROVIDED: 455 SF

27 SURFACE PARKING SPACES PROVIDED
REQUIRED: 3 LARGE OR MEDIUM SHADE TREES
PROVIDED: 3 MEDIUM SHADE TREES

PARKING LOT SCREENING (SEC. 34-873): A CONTINUOUS LANDSCAPE BUFFER OF AT LEAST 5' IN WIDTH SHALL BE ESTABLISHED BETWEEN THE EDGE OF A PARKING LOT AND AN ADJACENT PROPERTY. ONE LARGE TREE AND THREE SHRUBS SHALL BE PLANTED FOR EVERY 15' OF LENGTH OF THE PROPERTY LINE.

NOTES:

1. All site plantings of trees and shrubs shall be allowed to reach, and be maintained at, mature height; the topping of trees is prohibited. Shrubs and trees shall be pruned minimally and only to support the overall health of the plant.
2. All landscaping and screening shall be maintained in a healthy condition by the current owner or property owners' association and replaced when necessary. Replacement material shall comply with the approved landscape plan.
3. All new planting shown on the plan will be completed after building and road construction to avoid tree planting damage.
4. All disturbed slopes 3:1 or steeper to have low maintenance ground cover.
5. Any existing tree proposed to remain shall be replaced in kind if negatively impacted by improvements associated with this project.

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SITE PLAN

1613 GROVE STREET

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LANDSCAPE PLAN

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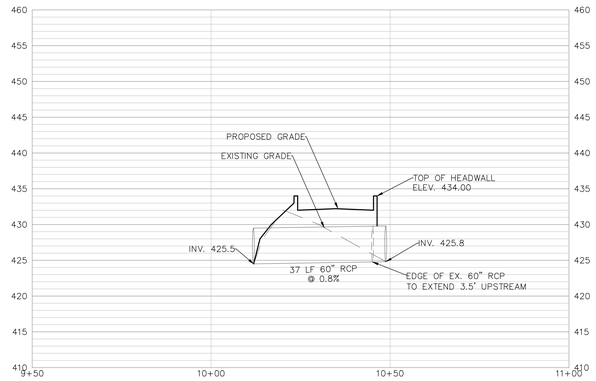
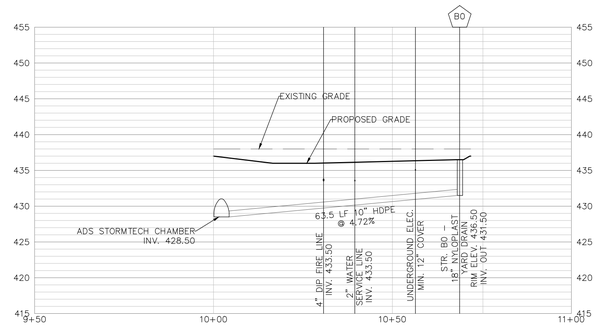
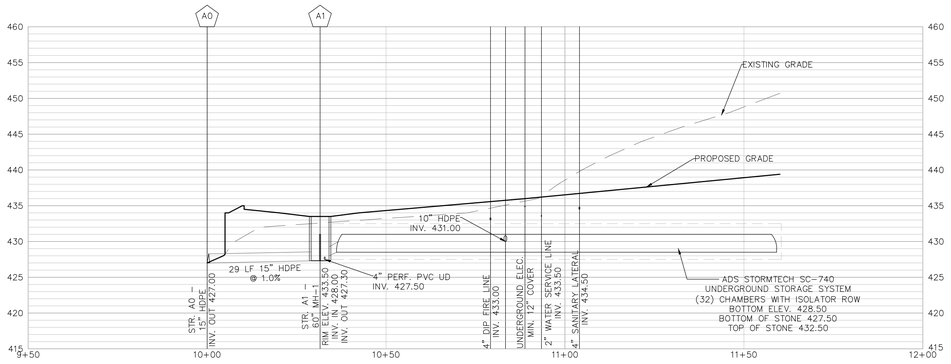


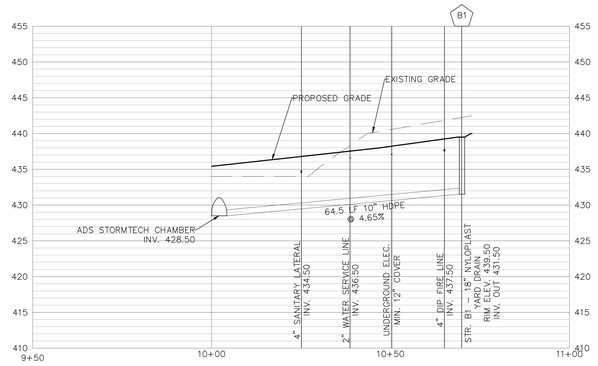
1 C9 60" RCP
SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



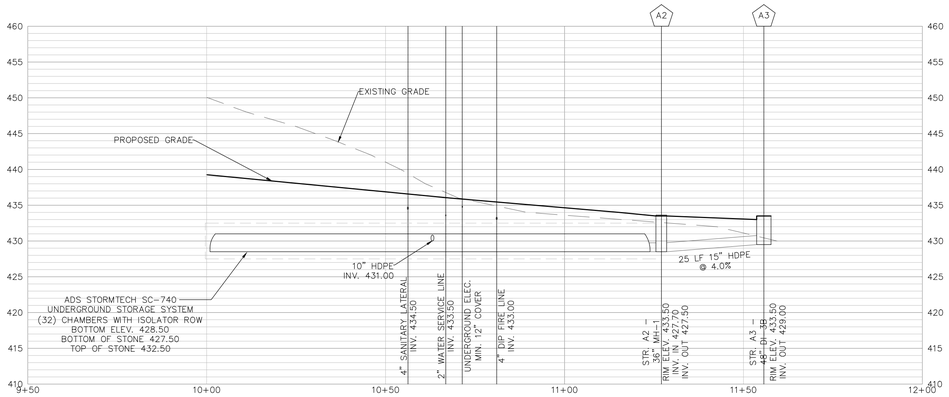
4 C9 ADS STORMTECH SYSTEM – YARD DRAIN STR. B0
SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



2 C9 OUTLET A0 – ADS STORMTECH SYSTEM
SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



5 C9 ADS STORMTECH SYSTEM – YARD DRAIN STR. B1
SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



3 C9 ADS STORMTECH SYSTEM – STR. A3
SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'

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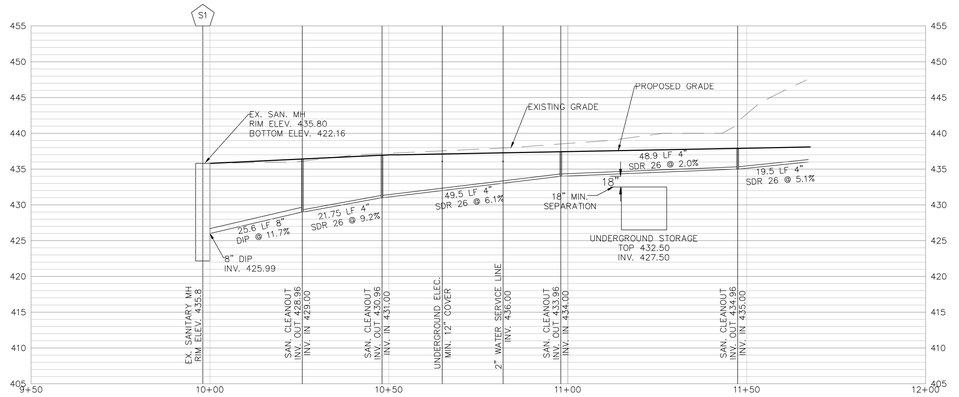
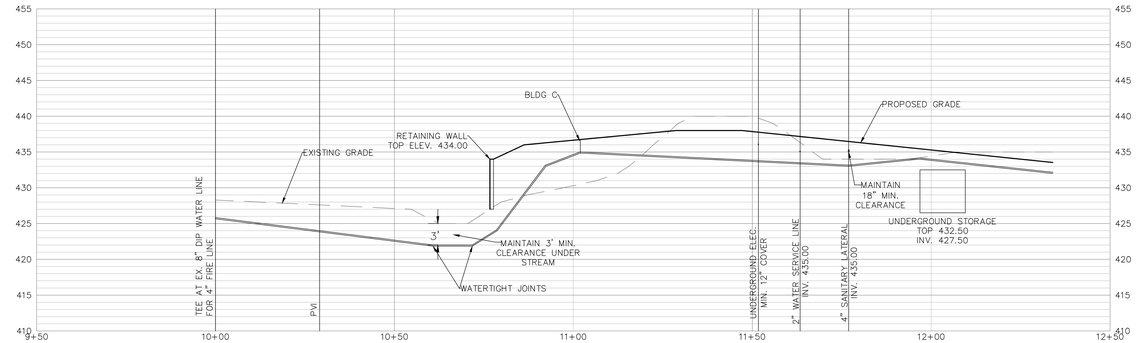
STORM PRO□ ILES

C9



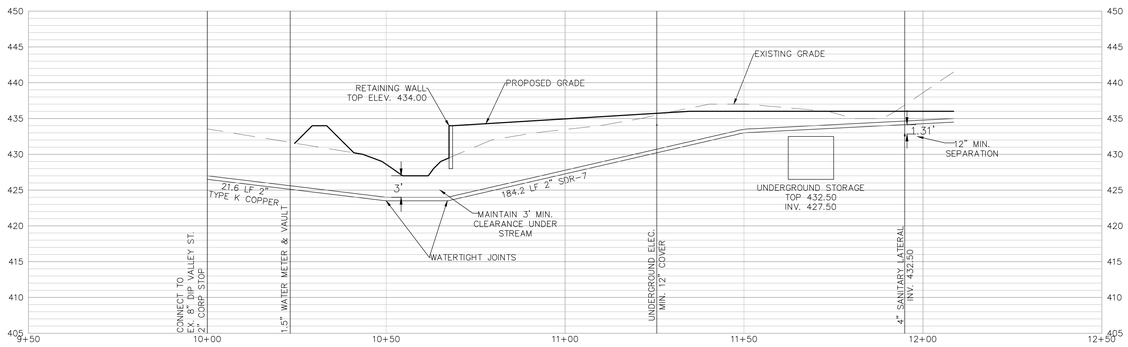
1 C10 SANITARY LATERAL PROFILE

SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



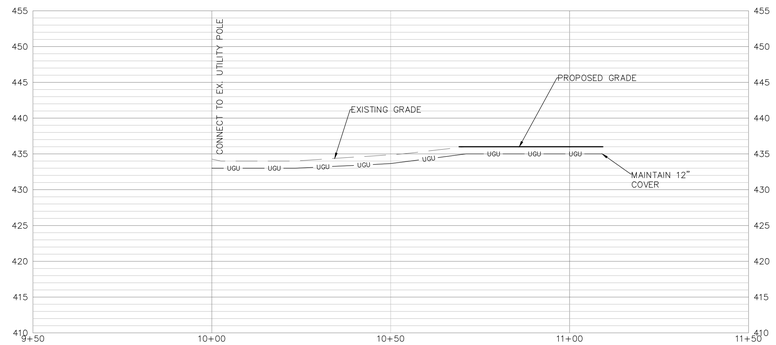
2 C10 FIRE LINE PROFILE

SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



3 C10 WATER SERVICE LINE PROFILE

SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'



4 C10 UGE PROFILE

SCALE: HORIZONTAL 1"=20', VERTICAL 1"=10'

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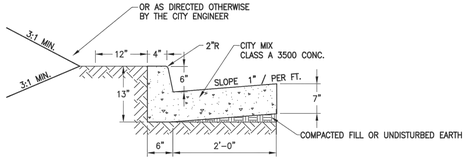
UTILITY PROFILES

C10

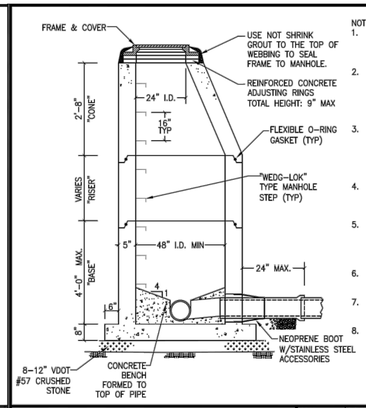


NOTES:
1. THE BOTTOM OF THE CURB AND GUTTER MAY BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUB-SURFACE COURSES PROVIDED A MINIMUM DEPTH OF 7" IS MAINTAINED.
2. COMBINATION CURB & GUTTER HAVING A RADIUS OF 300' OR LESS (ALONG FACE OF CURB) SHALL BE CONSIDERED RADIAL COMBINATION CURB & GUTTER.
3. RULED JOINTS SHALL BE PLACED AT 10' O.C.
4. PLACE 1/2" PREMOLDED EXPANSION JOINT FILLER AT 30' MAX. O.C.

CITY OF CHARLOTTESVILLE

REVISION	DATE

CITY STANDARDS
COMBINATION CURB & GUTTER
SCALE: N.T.S. | STANDARD NUMBER: CG-6



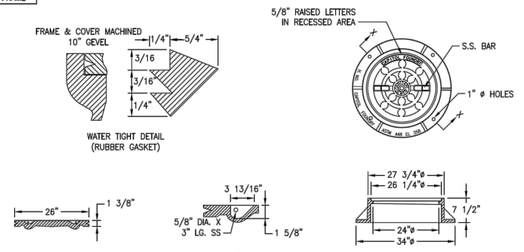
NOTES:
1. ALL JOINTS, LIFT HOLES, INLETS AND OUTLETS SHALL BE GROUTED AND SEALED INSIDE AND OUT.
2. CHANNELS AND MANHOLE "SHELF" TO BE CONSTRUCTED OF 3000 PSI CONCRETE FILL FINISHED SMOOTH WITH STEEL TROWEL. FLOW CHANNELS SHALL BE FORMED TO ALLOW INSERTION OF A ROBOTIC CAMERA.
3. INSIDE OF MANHOLE SHALL BE FACTORY COATED WITH ONE COAT EPOXY COATING, COLOR GRAY. OUTSIDE SHALL RECEIVE ONE COAT COAL TAR EPOXY. MANUAL ON-SITE EXPOXY COATING MAY BE REQUIRED IN SOME SITUATIONS.
4. FOR PRECAST INLETS AND OUTLETS, PIPE TO MANHOLE CONNECTIONS SHALL BE NEOPRENE BOOT WITH STAINLESS STEEL ACCESSORIES.
5. ALL INLET OPENINGS TO EXISTING MANHOLES SHALL BE CORE-DRILLED. ANNULAR SPACE BETWEEN PIPE AND MANHOLE WALL SHALL BE COMPLETELY FILLED WITH NON-SHRINK GROUT.
6. PIPE INLETS WITHIN "CONE" SECTION ARE NOT ACCEPTABLE.
7. PIPES ENTERING MANHOLES SHALL BE ALIGNED WITH CENTER OF MANHOLE BOTTOM.
8. MANHOLE SHALL BE ORDERED WITH MINIMUM GRADE ADJUSTMENT. ORDER BASE, RISER, AND CONE HEIGHTS TO STACK OUT MANHOLE AS CLOSE AS POSSIBLE TO GRADE. MAXIMUM AJUSTMENT SHALL BE 9 INCHES UNLESS APPROVED OTHERWISE.

CITY OF CHARLOTTESVILLE

REVISION	DATE

CITY STANDARDS
CONCRETE MANHOLE - TYPICAL
SCALE: N.T.S. | STANDARD NUMBER: WW 2.0

AVAILABLE IN 4" TALL FRAME

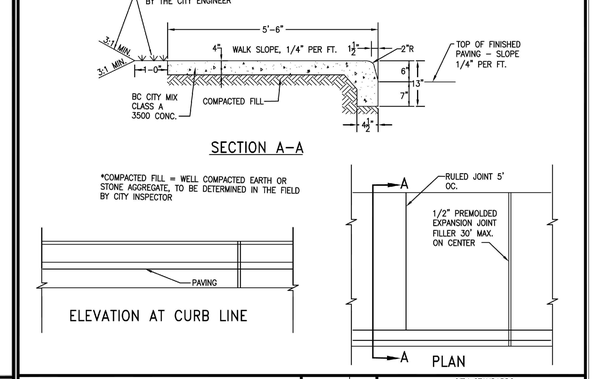


NOTES:
1. ALL MANHOLES WITHIN THE 100-YEAR FLOODPLAIN OR LOCATED IN AREAS SUBJECT TO LOCALIZED FLOODING ARE TO HAVE WATERTIGHT FRAMES AND COVERS.
2. STANDARD 24" X 7" TALL MANHOLE FRAME AND COVER ASTM A-48 CLASS 35B/AASHTO M105 ITEM #MH-3000*WT OR APPROVED EQUAL.

CITY OF CHARLOTTESVILLE

REVISION	DATE

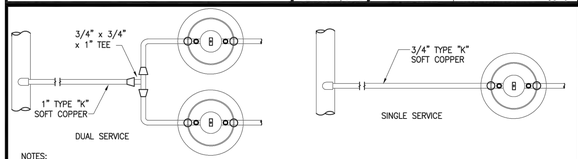
CITY STANDARDS
WATERTIGHT MANHOLE FRAME AND COVER
SCALE: N.T.S. | STANDARD NUMBER: WW 2.5



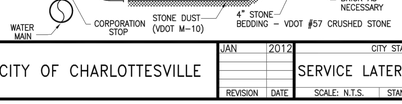
CITY OF CHARLOTTESVILLE

REVISION	DATE

CITY STANDARDS
STANDARD SIDEWALK MONOLITHIC WITH CURB
SCALE: N.T.S. | STANDARD NUMBER: SW-2



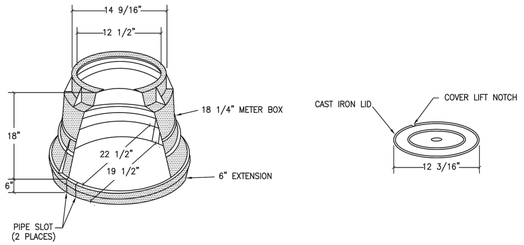
NOTES:
1. THE SERVICE LATERAL, 1/4 BEND COUPLING, AND CORPORATION STOP SHALL BE THE SAME SIZE AS THE COPPERSETTER, EXCEPT AS NOTED ABOVE.
2. METER TO BE INSTALLED BY THE CITY.
3. INSTALL WARNING TAPE WITH SERVICE LATERAL.
4. CORPORATION STOPS THREADED INTO IRON PIPES, FITTINGS, OR SPECIALS SHALL HAVE THEIR THREADS WRAPPED IN TEFLON TAPE PRIOR TO ASSEMBLY.
5. TAPS SHALL NOT BE MADE WITHIN TWO (2) FEET OF A BELL JOINT, FITTING, OR OTHER TAP.



CITY OF CHARLOTTESVILLE

REVISION	DATE

CITY STANDARDS
SERVICE LATERAL - TYPICAL
SCALE: N.T.S. | STANDARD NUMBER: W 5.0



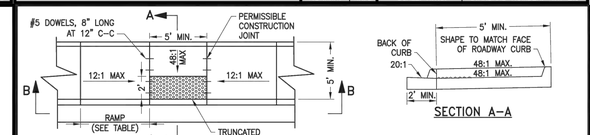
CARSON 2200 SERIES

NOTES:
1. UNPAVED AREAS (PREFERRED LOCATION): PLASTIC BROOKS 2200 SERIES WITH 6" EXTENSION OR APPROVED EQUAL.
2. PAVED AREAS (ALTERNATE LOCATION): CAST IRON BINGHAM AND TAYLOR NO. 6015-B OR APPROVED EQUAL. USE 6" OF BRICK AND/OR BLOCK TO INCREASE DEPTH TO 24".
3. LID MUST BE CAST TO ACCEPT AN ITRON, INC. WATER ERT METER MODULE.

CITY OF CHARLOTTESVILLE

REVISION	DATE

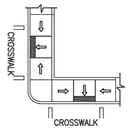
CITY STANDARDS
METER BOX - 5/8" AND 1" METERS
SCALE: N.T.S. | STANDARD NUMBER: W 6.0



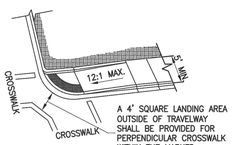
NOTE: FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 3.

TYPE B PARALLEL APPLICATION		
ROADWAY GRADE (%)	MIN. RAMP LENGTH (FT) 4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

NOTE: THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.



TYPICAL PLACEMENT AT INTERSECTION WITHIN CROSSWALK



A 4' SQUARE LANDING AREA OUTSIDE OF TRAVELWAY SHALL BE PROVIDED FOR PERPENDICULAR CROSSWALK WITHIN THE MARKED CROSSWALK AREA.

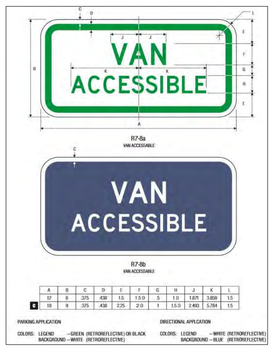
CITY OF CHARLOTTESVILLE

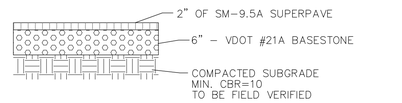
REVISION	DATE

CITY STANDARDS
CG-12 DETECTABLE WARNING SURFACE TYPE B (SHEET 2 OF 3)
SCALE: N.T.S. | STANDARD NUMBER: CG-12

RWSA GENERAL WATER & SANITARY SEWER NOTES (Last Revised April 2016)

1. All materials and methods of construction shall comply with the latest version of the General Water and Sewer Design and Construction Standards – Version 1.0, adopted in December 2015, except as modified below or modified in special notes.
2. RWSA shall approve all construction materials and methods of construction. A preconstruction conference shall be held with RWSA prior to the start of any work.
3. The contractor shall be responsible for notifying Miss Utility (1-800-552-7001).
4. RWSA Engineering (Victoria Fort (434)977-2970 ext. 205) shall be notified three business days prior to the start of construction.
5. All work is subject to inspection by RWSA staff. No tie-ins to the existing system shall be made without coordination with and the presence of RWSA staff. No work shall be conducted on RWSA facilities on weekends or holidays without special written permission from RWSA.
6. For sanitary sewer line construction: RWSA may require bypass pumping for tie-ins to the existing system. All doghouse manholes must be pressure-tested before a connection is made to the system.
7. The location of existing utilities as shown on the plans is from data available at the time of design and is not necessarily complete or accurate. The Contractor shall be responsible for the verification of the location, size, and depth of all existing utilities, both surface and subsurface. The Contractor shall immediately notify the Engineer of any discrepancies between the plans and field conditions. The Contractor shall use due diligence to protect all utilities and structure from damage at all times, whether shown on the plans or not. Damage to any existing utilities shall be repaired by the Contractor to the original condition at no additional cost to the Owner.
8. Erosion and sediment control facilities shall not be permitted in the RWSA easement without special written permission from RWSA. No grading shall be permitted in the RWSA easement unless permitted otherwise by RWSA in writing.
9. No blasting shall be permitted within 100 feet of RWSA facilities without written permission and RWSA approval of the blasting plan. Ground monitoring during blasting and a pre-blast survey may be required. For blasting within 100 feet of any operative RWSA sewerlines, bypass pumping and/or pre- and post- CCTV may be required. RWSA may also require certification from a licensed professional engineer stating that the proposed blasting will not damage any RWSA facilities. Damage to any utilities due to blasting shall be repaired by the Contractor to the original condition at no additional cost to the Owner.
10. The Contractor shall observe minimum separation requirements for utility crossings. When a crossing is made under an existing facility, adequate structural support shall be provided for the existing pipe. The area of the crossing shall be backfilled with compacted 57 stone to the springline of the existing pipe.
11. New water main installations shall be pressure tested, chlorinated, flushed, and have water samples approved prior to making any permanent connection to the public water system. Approved methods of filling and flushing new water mains will be required to prevent any contamination of the public water system.
12. All easement for new RWSA facilities shall be recorded prior to placing the new facilities into service.
13. No permanent structural facilities will be permitted in the RWSA easement. This includes building overhangs, retaining walls, footer for any structure, drainage structures, etc.
14. Trees are not permitted in the RWSA easement.





1 C11 PAVEMENT SECTION FOR PARKING LOT
Not To Scale

SHIMP ENGINEERING PC
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912 E. HIGH ST. 434.227.5140
CHARLOTTESVILLE VA, 22902 JUSTIN@SHIMP-ENGINEERING.COM

COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
Lic. No. 45183
10/27/22
PROFESSIONAL ENGINEER

SITE PLAN

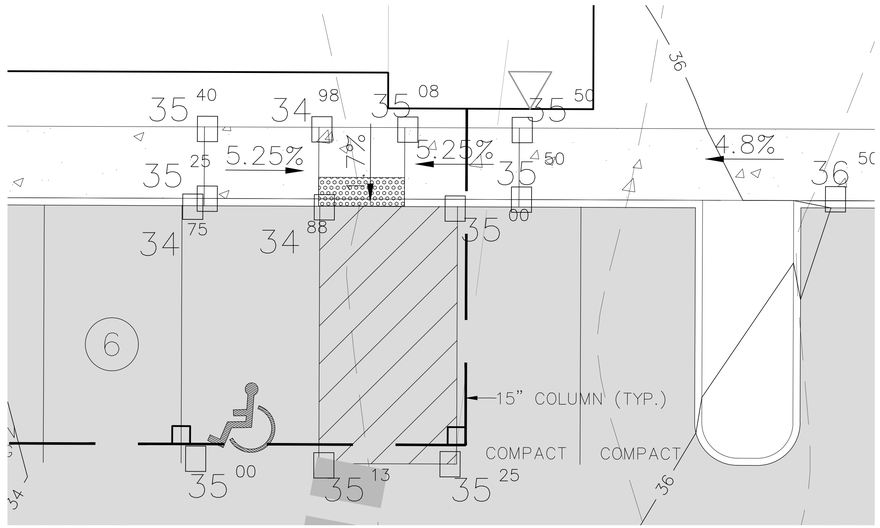
1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

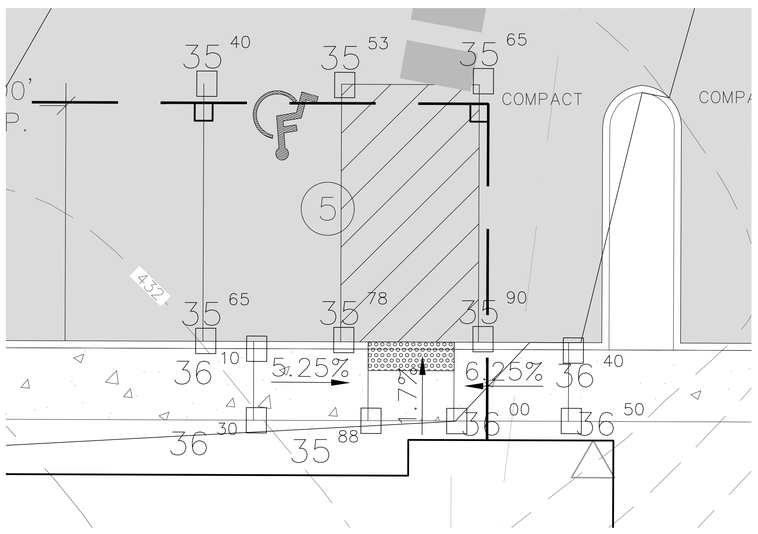
FILE NO. 20.010

SITE DETAILS

C11



1 C12 CG-12 RAMP DETAIL 1
SCALE: 1"=5'



2 C12 CG-12 RAMP DETAIL 2
SCALE: 1"=5'

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COMMONWEALTH OF VIRGINIA
JUSTIN M. SHIMP
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10/27/22
PROFESSIONAL ENGINEER

SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

SITE DETAILS

C12

SiteASSIST by StormTech
FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

StormTech An ADS company

SC-310/SC-740/DC-780

StormTech Construction Guide

REQUIRED MATERIALS AND EQUIPMENT LIST
- Acceptable fill materials per Table 1
- ADS Plus and non-woven geotextile fabrics
- StormTech solid end caps and pre-cored end caps
- StormTech chambers
- StormTech manifolds and fittings

IMPORTANT NOTES:

A. This installation guide provides the minimum requirements for proper installation of chambers. Non-adherence to this guide may result in damage to chambers during installation. Replacement of damaged chambers during or after backfilling is costly and very time consuming. It is recommended that all installers are familiar with this guide, and that the contractor inspects the chambers for distortion, damage and joint integrity as work progresses.

B. Use of a dozer to push embedment stone between the rows of chambers may cause damage to chambers and is not an acceptable backfill method. Any chambers damaged by using the "dump and push" method are not covered under the StormTech standard warranty.

C. Care should be taken in the handling of chambers and end caps. Avoid dropping, prying or excessive force on chambers during removal from pallet and initial placement.

Requirements for System Installation


Excavate bed and prepare subgrade per engineer's plans.


Place non-woven geotextile over prepared soils and up excavation walls. Install underdrains if required.


Place clean, crushed, angular stone foundation 6" (150 mm) min. Compact to achieve a flat surface.

1

Manifold, Scour Fabric and Chamber Assembly


Install manifolds and lay out ADS PLUS fabric at inlet rows [min. 12.5 ft (3.8 m)] at each inlet end cap. Place a continuous piece along entire length of Isolator® PLUS Row(s).


Align the first chamber and end cap of each row with inlet pipes. Contractor may choose to postpone stone placement around end chambers and leave ends of rows open for easy inspection of chambers during the backfill process.


Continue installing chambers by overlapping chamber end corrugations. Chamber joints are labeled "Lower Joint – Overlap Here" and "Build this direction – Upper Joint" Be sure that the chamber placement does not exceed the reach of the construction equipment used to place the stone. Maintain minimum 6" (150 mm) spacing between rows.

Attaching the End Caps


Lift the end of the chamber a few inches off the ground. With the curved face of the end cap facing outward, place the end cap into the chamber's end corrugation.

Prefabricated End Caps


24" (600 mm) inlets are the maximum size that can fit into a SC-740/DC-780 end cap and must be prefabricated with a 24" (600 mm) pipe stub. SC-310 chambers with a 12" (300 mm) inlet pipe must use a prefabricated end cap with a 12" (300 mm) pipe stub. When used on an Isolator Row PLUS, these end caps will contain a welded FLAMP (flared end ramp) that will lay on top of the ADS PLUS fabric (shown above)

Isolator Row PLUS


Place a continuous layer of ADS PLUS fabric between the foundation stone and the Isolator Row PLUS chambers, making sure the fabric lays flat and extends the entire width of the chamber feet. Drape a strip of ADS non-woven geotextile over the row of chambers (not required over DC-780). This is the same type of non-woven geotextile used as a separation layer around the angular stone of the StormTech system.

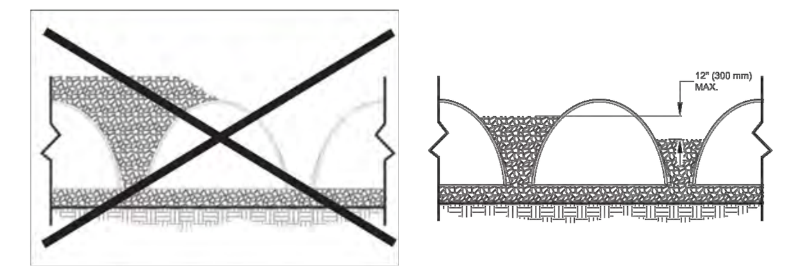
2

Initial Anchoring of Chambers – Embedment Stone


Initial embedment shall be spotted along the centerline of the chamber evenly anchoring the lower portion of the chamber. This is best accomplished with a stone conveyor or excavator reaching along the row.

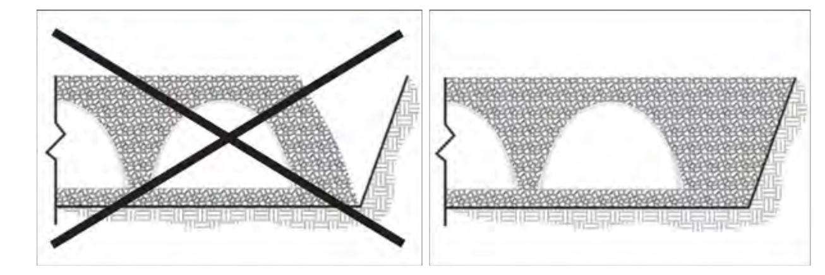

No equipment shall be operated on the bed at this stage of the installation. Excavators must be located off the bed. Dump trucks shall not dump stone directly on to the bed. Dozers or loaders are not allowed on the bed at this time.

Backfill of Chambers – Embedment Stone



UNEVEN BACKFILL EVEN BACKFILL

Backfill chambers evenly. Stone column height should never differ by more than 12" (300 mm) between adjacent chamber rows or between chamber rows and perimeter.


PERIMETER NOT BACKFILLED PERIMETER FULLY BACKFILLED

Perimeter stone must be brought up evenly with chamber rows. Perimeter must be fully backfilled, with stone extended horizontally to the excavation wall.

Backfill - Embedment Stone & Cover Stone


Continue evenly backfilling between rows and around perimeter until embedment stone reaches tops of chambers. Perimeter stone must extend horizontally to the excavation wall for both straight or sloped sidewalls. **Only after chambers have been backfilled to top of chamber and with a minimum 6" (150 mm) of cover stone on top of chambers can small dozers be used over the chambers for backfilling remaining cover stone.**

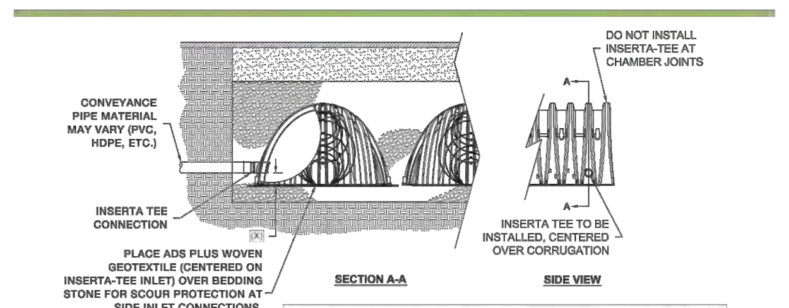

Small dozers and skid loaders may be used to finish grading stone backfill in accordance with ground pressure limits in Table 2. They must push material parallel to rows only. Never push perpendicular to rows. StormTech recommends that the contractor inspect chambers before placing final backfill. Any chambers damaged by construction shall be removed and replaced.

Final Backfill of Chambers – Fill Material



Install non-woven geotextile over stone. Geotextile must overlap 24" (600 mm) min. where edges meet. Compact each lift of backfill as specified in the site design engineer's drawings. Roller travel parallel with rows.

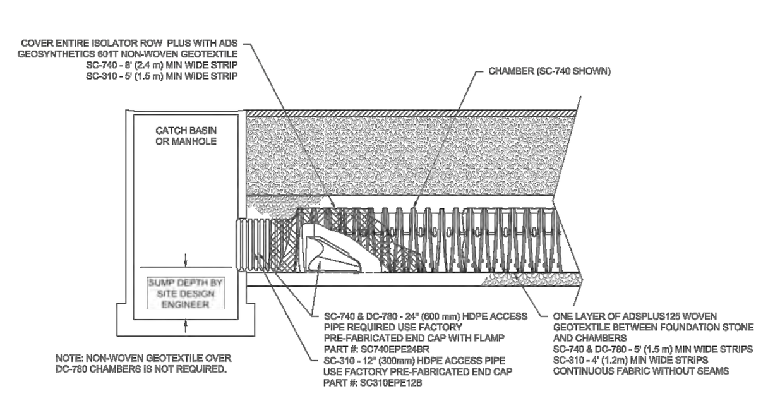
Inserta Tee Detail



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON.		

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

StormTech Isolator Row PLUS Detail



4

Table 1- Acceptable Fill Materials

Material Location	Description	AASHTO M43 Designation[1]	Compaction/Density Requirement
Ⓓ **Final Fill:** Fill Material for layer 'D' starts from the top of the 'C' layer to the bottom of flexible pavement or unpaved finished grade above. Note that the pavement subbase may be part of the 'D' layer.	Any soil/rock materials, native soils or per engineer's plans. Check plans for pavement subgrade requirements.	N/A	Prepare per site design engineer's plans. Paved installations may have stringent material and preparation requirements.
Ⓒ **Initial Fill:** Fill Material for layer 'C' starts from the top of the embedment stone ('B' layer) to 18" (450 mm) above the top of the chamber. Note that pavement subbase may be part of the 'C' layer.	Granular well-graded soil/aggregate mixtures, <35% fines or processed aggregate. Most pavement subbase materials can be used in lieu of this layer.	AASHTO M45 A-1, A-2-4, A-3 or AASHTO M431 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	Begin compaction after min. 12" (300 mm) of material over the chambers is reached. Compact additional layers in 6" (150 mm) max. lifts to a min. 95% Proctor density for well-graded material and 95% relative density for processed aggregate materials. Roller gross vehicle weight not to exceed 12,000 lbs (53 kN). Dynamic force not to exceed 20,000 lbs (89 kN).
Ⓑ **Embedment Stone:** Embedment Stone surrounding chambers from the foundation stone to the 'C' layer above.	Clean, crushed, angular stone	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	No compaction required.
Ⓐ **Foundation Stone:** Foundation Stone below the chambers from the subgrade up to the foot (bottom) of the chamber.	Clean, crushed, angular stone,	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	Place and compact in 6" (150 mm) lifts using two full coverages with a vibratory compactor.[2,3]

PLEASE NOTE:
1. *The listed AASHTO designations are for gradations only. The stone must also be clean, crushed, angular. For example, a specification for #4 stone would state: "clean, crushed, angular no. 4 (AASHTO M43) stone".*
2. *StormTech compaction requirements are met for 'A' location materials when placed and compacted in 6" (150 mm) (max) lifts using two full coverages with a vibratory compactor.*
3. *Where infiltration surfaces may be comprised by compaction, for standard installations and standard design load conditions, a flat surface may be achieved by raking or dragging without compaction equipment. For special load designs, contact StormTech for compaction requirements.*

Figure 1- Inspection Port Detail

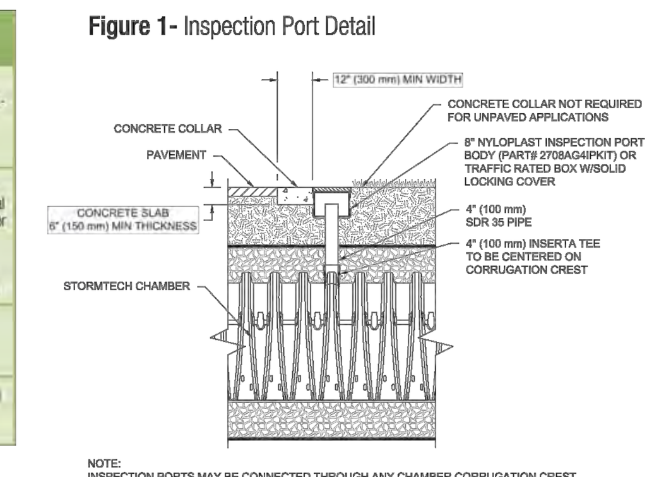
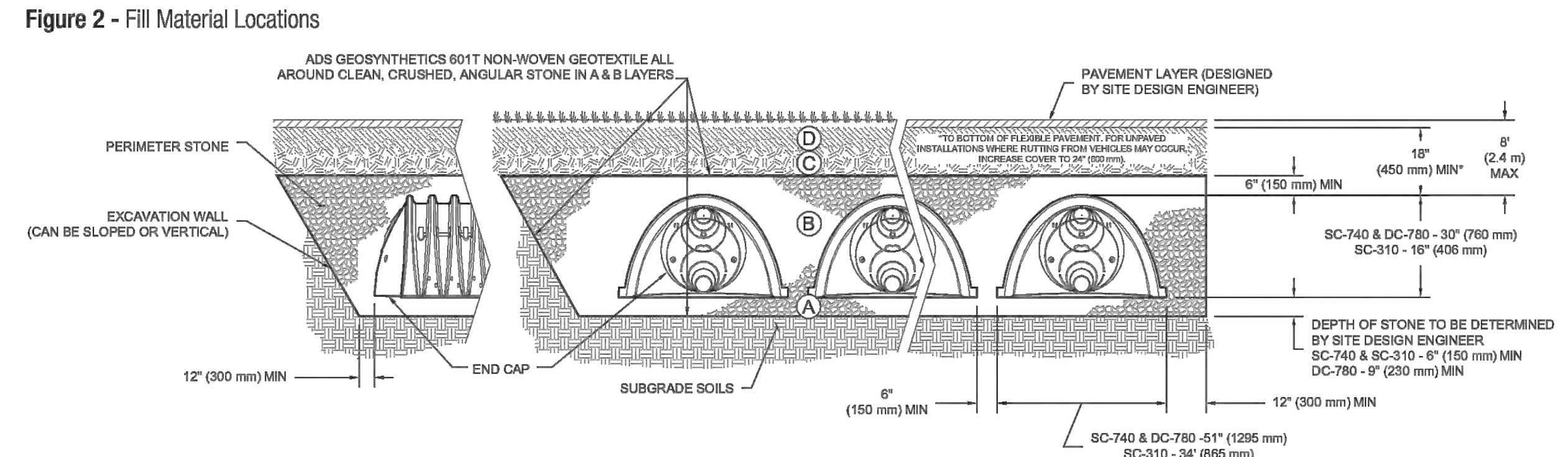


Figure 2 - Fill Material Locations



5

NOTES:
1. *36" (900 mm) of stabilized cover materials over the chambers is required for full dump truck travel and dumping.*
2. *During paving operations, dump truck axle loads on 18" (450 mm) of cover may be necessary. Precautions should be taken to avoid rutting of the road base layer, to ensure that compaction requirements have been met, and that a minimum of 18" (450 mm) of cover exists over the chambers. Contact StormTech for additional guidance on allowable axle loads during paving.*
3. *Ground pressure for track dozers is the vehicle operating weight divided by total ground contact area for both tracks. Excavators will exert higher ground pressures based on loaded bucket weight and boom extension.*
4. *Mini-excavators (< 8,000lbs/3,628 kg) can be used with at least 12" (300 mm) of stone over the chambers and are limited by the maximum ground pressures in Table 2 based on a full bucket at maximum boom extension.*
5. *Storage of materials such as construction materials, equipment, spoils, etc. should not be located over the StormTech system. The use of equipment over the StormTech system not covered in Table 2 (ex. soil mixing equipment, cranes, etc) is limited. Please contact StormTech for more information.*
6. *Allowable track loads based on vehicle travel only. Excavators shall not operate on chamber beds until the total backfill reaches 3 feet (900 mm) over the entire bed.*

Table 2 - Maximum Allowable Construction Vehicle Loads[5]

Material Location	Fill Depth over Chambers in. [mm]	Maximum Allowable Wheel Loads: Max Axle Load for Trucks lbs [kN]	Maximum Allowable Wheel Loads: Max Wheel Load for Loaders lbs [kN]	Maximum Allowable Track Loads[6]: Track Width in. [mm]	Maximum Allowable Track Loads[6]: Max Ground Pressure psf [kPa]	Maximum Allowable Roller Loads: Max Drum Weight or Dynamic Force lbs [kN]
Ⓓ Final Fill Material	36" [900] Compacted	32,000 [142]	16,000 [71]	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	3420 [164] 2350 [113] 1850 [89] 1510 [72] 1310 [63]	38,000 [169]
Ⓒ Initial Fill Material	24" [600] Compacted	32,000 [142]	16,000 [71]	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	2480 [119] 1770 [85] 1430 [68] 1210 [58] 1070 [51]	20,000 [89]
	24" [600] Loose/Dumped	32,000 [142]	16,000 [71]	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	2245 [107] 1625 [78] 1325 [63] 1135 [54] 1010 [48]	20,000 [89] Roller gross vehicle weight not to exceed 12,000 lbs. [53 kN]
	18" [450]	32,000 [142]	16,000 [71]	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	2010 [96] 1480 [71] 1220 [58] 1060 [51] 950 [45]	20,000 [89] Roller gross vehicle weight not to exceed 12,000 lbs. [53 kN]
Ⓑ Embedment Stone	12" [300]	16,000 [71]	NOT ALLOWED	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	1540 [74] 1190 [57] 1010 [48] 910 [43] 840 [40]	20,000 [89] Roller gross vehicle weight not to exceed 12,000 lbs. [53 kN]
	6" [150]	8,000 [35]	NOT ALLOWED	12" [305] 18" [457] 24" [610] 30" [762] 36" [914]	1070 [51] 900 [43] 800 [38] 760 [36] 720 [34]	NOT ALLOWED

Table 3 - Placement Methods and Descriptions

Material Location	Placement Methods/ Restrictions	Wheel Load Restrictions	Track Load Restrictions	Roller Load Restrictions
		See Table 2 for Maximum Construction Loads		
Ⓓ Final Fill Material	A variety of placement methods may be used. All construction loads must not exceed the maximum limits in Table 2.	36" (900 mm) minimum cover required for dump trucks to dump over chambers.	Dozers to push parallel to rows until 36" (900mm) compaced cover is reached.[4]	Roller travel parallel to rows only until 36" (900 mm) compacted cover is reached.
Ⓒ Initial Fill Material	Excavator positioned off bed recommended. Small excavator allowed over chambers. Small dozer allowed.	Asphalt can be dumped into paver when compacted pavement subbase reaches 18" (450 mm) above top of chambers.	Small LGP track dozers & skid loaders allowed to grade cover stone with at least 6" (150 mm) stone under tracks at all times. Equipment must push parallel to rows at all times.	Use dynamic force of roller only after compacted fill depth reaches 12" (300 mm) over chambers. Roller travel parallel to chamber rows only.
Ⓑ Embedment Stone	No equipment allowed on bare chambers. Use excavator or stone conveyor positioned off bed or on foundation stone to evenly fill around all chambers to at least the top of chambers.	No wheel loads allowed. Material must be placed outside the limits of the chamber bed.	No tracked equipment is allowed on chambers until a min. 6" (150 mm) cover stone is in place.	No rollers allowed.
Ⓐ Foundation Stone	No StormTech restrictions. Contractor responsible for any conditions or requirements by others relative to subgrade bearing capacity, dewatering or protection of subgrade.			

ISOLATOR ROW PLUS INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row PLUS should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row PLUS incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row PLUS, clean-out should be performed.

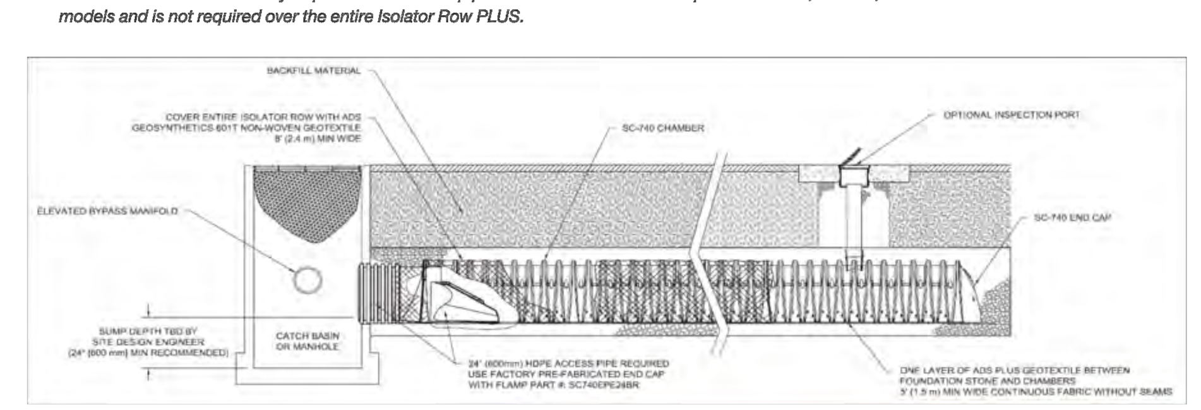
MAINTENANCE

The Isolator Row PLUS was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row PLUS while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row PLUS up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Row PLUS that have ADS PLUS Fabric (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row PLUS (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row PLUS.



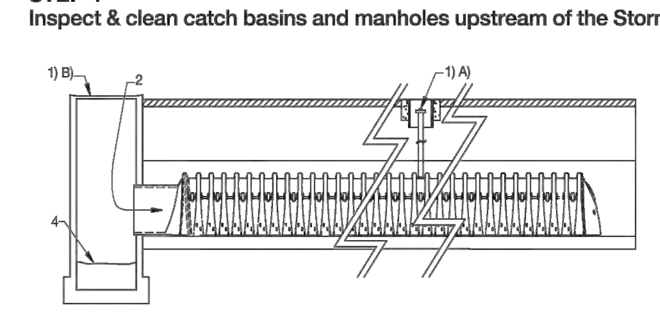
ISOLATOR ROW PLUS STEP BY STEP MAINTENANCE PROCEDURES

STEP 1
Inspect Isolator Row PLUS for sediment.
- A) Inspection ports (if present)
  - i. Remove lid from floor box frame
  - ii. Remove cap from inspection riser
  - iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
  - iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.
- B) All Isolator Row PLUS
  - i. Remove cover from manhole at upstream end of Isolator Row PLUS
  - ii. Using a flashlight, inspect down Isolator Row PLUS through outlet pipe
    1. Mirrors on poles or cameras may be used to avoid a confined space entry
    2. Follow OSHA regulations for confined space entry if entering manhole
  - iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2
Clean out Isolator Row PLUS using the JetVac process.
- A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

STEP 3
Replace all caps, lids and covers, record observations and actions.

STEP 4
Inspect & clean catch basins and manholes upstream of the StormTech system.



SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings: Fixed point to chamber bottom (1)	Stadia Rod Readings: Fixed point to top of sediment (2)	Sediment Depth (1)–(2)	Observations/Actions	Inspector
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row PLUS, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

StormTech An ADS company

ADS

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

SHIMP ENGINEERING, P.C.
LAND PLANNING - PROJECT MANAGEMENT
912 E. HIGH ST.
CHARLOTTESVILLE VA, 22902
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SITE PLAN
1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

BMP INSTALLATION & MAINTENANCE

C13

PROJECT DESCRIPTION, GENERAL NOTES, EROSION & SEDIMENT CONTROL NOTES, AND SEQUENCE OF CONSTRUCTION

PROJECT DESCRIPTION

THE PROJECT PROPOSES FOUR, 7–UNIT RESIDENTIAL BUILDINGS. THE SITE AREA IS 0.65 AC AND THE TOTAL DISTURBED AREA IS 0.80 AC.

THE PROJECT INVOLVES THE FOLLOWING WORK ACTIVITIES:

1. THE CONTRACTOR SHALL OBTAIN ALL LOCAL AND STATE EROSION AND SEDIMENT PERMITTING REQUIREMENTS AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH THE PERMIT REQUIREMENTS.
2. INSTALLATION OF TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN AND DETAILS.
3. INSTALLATION OF DETENTION PIPE FOR SITE DRAINAGE.
4. CONSTRUCTION OF PATIO AND MICRO–BIORETENTION BASINS SHOWN ON THE SITE DEVELOPMENT PLAN.

EXISTING SITE CONDITIONS

THE SITE IS CURRENTLY OVERGROWN WITH TALL GRASS AND BRUSH. THERE IS AN EXISTING 60" RCP CULVERT IN THE STREAM THAT PASSES THROUGH THIS PROPERTY.

ADJACENT PROPERTIES

THIS SITE IS BOUNDED BY VALLEY RD TO THE WEST, RAILROAD TRACKS TO THE NORTH, AND RESIDENTIAL PROPERTIES TO THE EAST AND SOUTH.

OFF–SITE AREAS
THERE ARE NO OFFSITE ACTIVITIES.

SOILS

ELIOAK – URBAN LAND COMPLEX, 7 – 15 PERCENT SLOPES, USG TYPE B
CULPEPPER – URBAN LAND COMPLEX, 7 – 15 PERCENT SLOPES, USG TYPE B

CRITICAL EROSION AREAS

CRITICAL SLOPES ARE PRESENT AS SHOWN. PLEASE REFERENCE THE CRITICAL SLOPES WAIVER ON SHEET C2.

EROSION & SEDIMENT CONTROLS

UNLESS OTHERWISE INDICATED, ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS AS SET FORTH IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY VARIANCE.

TEMPORARY CONSTRUCTION ENTRANCE (CE) – 3.02
A STONE PAD WILL BE CONSTRUCTED AT THE ENTRANCE THE SITE TO PROVIDE A MEANS OF REMOVING SEDIMENT FROM THE TIRES OF CONSTRUCTION VEHICLES LEAVING THE WORK SITE. THE CONTRACTOR SHALL REMOVE ANY MUD FROM THE EXISTING ROAD SURFACE BY MEANS OF SWEEPING AND SHOVELING.

SILT FENCE (SF) – 3.05
SILT FENCING WILL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION ACTIVITIES. LOCATION AND DETAILS ARE SHOWN ON THE PLANS.

INLET PROTECTION (IP) – 3.07
INLET PROTECTION MEASURES AROUND THE NEW DI–3C SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD SPECIFICATION 3.07. SILT FENCE, STRAW BALES OR TEMPORARY STONE APPLICATIONS SHALL BE APPLIED AS APPROPRIATE FOR CURRENT GRADING CONDITIONS.

TEMPORARY DIVERSION DIKE (DD) – 3.09
A RIDGE OF COMPACTED SOIL CONSTRUCTED AT THE TOP OR BASE OF A SLOPING DISTURBED AREA WHICH DIVERTS OFF–SITE RUNOFF AWAY FROM, UNPROTECTED SLOPES AND TO A STABILIZED OUTLET, OR TO DIVERT SEDIMENT–LADEN RUNOFF TO A SEDIMENT TRAPPING STRUCTURE. MAXIMUM EFFECTIVE LIFE IS 18 MONTHS. STD. AND SPEC. 3.09.

TEMPORARY RIGHT–OF–WAY DIVERSION (RWD) – 3.11
A RIDGE OF COMPACTED SOIL OR LOOSE GRAVEL CONSTRUCTED ACROSS A DISTURBED RIGHT–OF–WAY OR SIMILAR SLOPING AREA TO SHORTEN THE FLOW LENGTH WITHIN THE DISTURBED STRIP AND DIVERT THE RUNOFF TO A STABILIZED OUTLET. EARTHEN DIVERSIONS ARE APPLICABLE WHERE THERE WILL BE LITTLE OR NO CONSTRUCTION TRAFFIC WITHIN THE RIGHT–OF–WAY, AND GRAVEL STRUCTURES ARE APPLICABLE WHERE VEHICULAR TRAFFIC MUST BE ACCOMMODATED. STD. AND SPEC. 3.11.

TEMPORARY SEDIMENT TRAP (ST) – 3.13
A SMALL PONDING AREA, FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET ACROSS A DRAINAGE SWALE, TO DETAIN SEDIMENT–LADEN RUNOFF FROM SMALL DISTURBED AREAS FOR ENOUGH TIME TO ALLOW MOST OF THE SUSPENDED SOLIDS TO SETTLE OUT. MAXIMUM EFFECTIVE LIFE IS 18 MONTHS. STD. AND SPEC. 3.13.

OUTLET PROTECTION (OP) – 3.18
THE INSTALLATION OF RIPRAP CHANNEL SECTIONS AND/OR STILLING BASINS BELOW STORM DRAIN OUTLETS TO REDUCE EROSION AND UNDER–CUTTING FROM SCOURING AT OUTLETS AND TO REDUCE FLOW VELOCITIES BEFORE STORMWATER ENTERS RECEIVING CHANNELS BELOW THESE OUTLETS. STD. AND SPEC. 3.18.

TEMPORARY VEHICULAR STREAM CROSSING (SC) – 3.24
A TEMPORARY STRUCTURAL SPAN ACROSS A LIVE STREAM TO PROVIDE VEHICULAR ACCESS TO CONSTRUCTION ACTIVITY ON EITHER SIDE OF THE STREAM WHILE KEEPING SEDIMENT OUT OF THE STREAM AND PREVENTING DAMAGE TO THE CHANNEL BED AND BANKS. STD. AND SPEC. 3.24.

TEMPORARY SEEDING (TS) – 3.31
TEMPORARY SEEDING SHALL BE APPLIED TO ALL DENUDED AREAS WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY OR MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. TEMPORARY SEEDING SHALL BE APPLIED IN CONFORMANCE WITH STD. AND SPEC. 3.31.

PERMANENT STABILIZATION
PERMANENT SEEDING – 3.32
A PERENNIAL VEGETATIVE COVERING SHALL BE ESTABLISHED ON DISTURBED AREAS WITHIN 7 DAYS OF BEING BROUGHT TO FINAL GRADE ON AREAS NOT OTHERWISE PROTECTED. SELECTION OF THE SEED MIXTURE SHALL DEPEND ON THE TIME OF YEAR IT IS TO BE APPLIED ACCORDING TO THE PERMANENT SEED SCHEDULE AS SHOWN ON THE DRAWING. SEEDED AREAS SHALL BE LIMED WHEN NECESSARY AT A RATE OF 2 TONS PER ACRES, AND FERTILIZED AT A RATE OF 1,000 LBS. PER ACRE OF 10–20–10 (10 LBS. PER 1,000 SQUARE FEET) OR EQUIVALENT.

MULCHING – 3.35
ALL SEEDED AREAS SHALL BE MULCHED WITH STRAW IMMEDIATELY FOLLOWING SEEDING OPERATIONS. STRAW MULCH SHALL BE APPLIED AT A RATE OF TWO TONS PER ACRE.

STORM WATER MANAGEMENT:
THE STORMWATER QUANTITY IS SATISFIED BY ANALYZING CONCENTRATED RUNOFF FROM THE DEVELOPMENT AT ONE SITE OUTFALL (SITE OUTFALL 1).

SITE OUTFALL 1
SITE OUTFALL 1 IS LOCATED IN THE EXISTING STREAM AT THE SOUTHWEST CORNER OF THE PROPERTY, DOWNSTREAM OF THE EXISTING 60" RCP CULVERT.

9VAC25–870–66–B(3) REQUIRES THAT CONCENTRATED RUNOFF FROM THE DEVELOPMENT AT THE SITE OUTFALL MEET THE ENERGY BALANCE EQUATION. TO ACHIEVE THIS AT SITE OUTFALL 1, MOST CONCENTRATED RUNOFF FROM THE DISTURBED SITE WILL BE ROUTED TO AN ADS STORMTECH SC–740 UNDERGROUND STORAGE SYSTEM.

THE RUNOFF TO SITE OUTFALL 1 CONSISTS OF 1 DRAINAGE AREA WHICH INCLUDES ONSITE AND OFFSITE AREAS.

WHEN COMBINING THE DRAINAGE AREAS, THE CALCULATIONS SHOW THAT THE ENERGY BALANCE EQUATION IS MET.

9VAC25–870–66–C(2)B REQUIRES THAT THE POST–DEV 10–YEAR 24–HOUR STORM EVENT IS LESS THAN THE PRE–DEV 10–YEAR 24–HOUR STORM EVENT IN AREAS THAT CURRENTLY EXPERIENCE LOCALIZED FLOODING, THIS CONDITION IS MET. SEE TABLE 1 BELOW:

SITE OUTFALL 1:
$Q_{Pre-dev}$ = 103.43 cfs $RV_{Pre-dev}$ = 11.313 $RV_{Post-dev}$ = 11.368
Max $Q_{allowed}$ = 103.32 cfs $Q_{post\ dev}$ = 103.28 cfs
$Q_{10-yr\ pre-dev}$ = 281.83 cfs $Q_{10-yr\ post\ dev}$ = 281.56 cfs

UNDERGROUND STORAGE LOCATION (38.027729, –78.504719)

SWM QUALITY
SWM QUALITY IS SATISFIED BY PROVIDING REQUIRED NUTRIENT TREATMENT FOR THE DEVELOPMENT. 9VAC25–870–65 REQUIRES THAT THE TOTAL PHOSPHOROUS (TP) NUTRIENT LOAD CREATED BY THE SITE DEVELOPMENT BE TREATED IN ACCORDANCE WITH THE VRRM REDEVELOPMENT SPREADSHEET REDUCTION REQUIREMENTS. THE TOTAL AMOUNT OF TP NUTRIENT LOAD REDUCTION REQUIRED IS 0.69 LBS/YR.

TO ACHIEVE THE 0.69 LBS/YR REDUCTION, AN ADS STORMTECH SC–740 SYSTEM WAS USED PROVIDING 0.19 LBS/YR REDUCTION. THE REMAINING 0.50 LBS/YR WILL BE TREATED THROUGH THE PURCHASE OF NUTRIENT CREDITS. THIS SATISFIES THE NUTRIENT TREATMENT REQUIREMENT.

GENERAL NOTES
1. ALL ELEVATIONS INDICATED REFER TO SITE DATUM NAVD88
2. THE INFORMATION AND DATA SHOWN OR INDICATED WITH RESPECT TO THE EXISTING UNDERGROUND UTILITIES AT OR CONTIGUOUS TO THE SITE ARE BASED ON INFORMATION AND DATA FURNISHED TO THE OWNER AND ENGINEER BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR OTHERS. THE OWNER OR ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR CONFIRMING THE ACCURACY OF THE DATA, FOR LOCATING ALL UNDERGROUND UTILITIES, FOR COORDINATION OF THE WORK WITH OWNERS OF SUCH UNDERGROUND UTILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. ALL OF THESE CONDITIONS SHALL BE MET AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL CONTACT "MISS UTILITIES" OF VIRGINIA AT 1–800–552–7001 PRIOR TO THE START OF WORK.
3. WHEN WORKING ADJACENT TO EXISTING STRUCTURES, POLES, ETC., THE CONTRACTOR SHALL USE WHATEVER METHODS THAT ARE NECESSARY TO PROTECT STRUCTURES FROM DAMAGE. REPLACEMENT OF DAMAGED STRUCTURES SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE STRUCTURES FROM DAMAGE AND COORDINATING WORK SO THAT THE OWNER CAN MAKE NECESSARY ARRANGEMENTS TO MODIFY/PROTECT EXISTING STRUCTURES FROM DAMAGES.
5. CONTRACTOR SHALL NOTIFY AND COORDINATE ALL WORK INVOLVING EXISTING UTILITIES WITH UTILITY OWNERS, AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
6. CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONTRACT DOCUMENTS TO THE OWNER AND ENGINEER.
8. CONTRACTOR SHALL ADJUST ALL APPURTENANCES AS REQUIRED TO MATCH NEW GRADES. THE EXACT LOCATION OF APPURTENANCES SHALL BE COORDINATED WITH THE OWNER.
9. CONTRACTOR SHALL SUBMIT FOR THE APPROVAL OF THE OWNER SUBMITTALS OF ALL SPECIFIED MATERIALS LISTED IN THE PLANS, TO INCLUDE SHOP DRAWINGS, MANUFACTURER'S SPECIFICATIONS AND LABORATORY REPORTS. THE OWNER'S APPROVAL OF SUBMITTALS WILL BE GENERAL AND WILL NOT RELIEVE THE THE CONTRACTOR FROM THE RESPONSIBILITY OF ADHERENCE TO THE CONTRACT AND FOR ANY ERROR THAT MAY EXIST.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:
1. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE–CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625–02–00 EROSION AND SEDIMENT CONTROL REGULATIONS.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF–SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
6. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
7. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
8. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
9. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
10. ALL FILL MATERIAL TO BE TAKEN FROM AN APPROVED, DESIGNATED BORROW AREA.
11. ALL WASTE MATERIALS SHALL BE TAKEN TO AN APPROVED WASTE AREA. EARTH FILL SHALL BE INERT MATERIALS ONLY, FREE OF ROOTS, STUMPS, WOOD, RUBBISH, AND OTHER DEBRIS.
12. BORROW, FILL OR WASTE ACTIVITY INVOLVING INDUSTRIAL–TYPE POWER EQUIPMENT SHALL BE LIMITED TO THE HOURS OF 7:00AM TO 9:00PM.
13. BORROW, FILL OR WASTE ACTIVITY SHALL BE CONDUCTED IN A SAFE MANNER THAT MAINTAINS LATERAL SUPPORT, OR ORDER TO MINIMIZE ANY HAZARD TO PERSONS, PHYSICAL DAMAGE TO ADJACENT LAND AND IMPROVEMENTS, AND DAMAGE TO ANY PUBLIC STREET BECAUSE O SLIDES, SINKING, OR COLLAPSE.
14. TEMPORARY STABILIZATION SHALL BE TEMPORARY SEEDING AND MULCHING. SEEDING IS TO BE AT 75 LBS/ACRE, AND IN THE MONTHS OF SEPTEMBER TO FEBRUARY TO CONSIST A 50/50 MIX OF ANNUAL RYEGRASS AND CEREAL WINTER RYE, OR IN MARCH AND APRIL TO CONSIST OF ANNUAL RYE, OR MAY THROUGH AUGUST TO CONSIST OF GERMAN MILLET. STRAW MULCH IS TO BE APPLIED AT 80LBS/100SF. ALTERNATIVES ARE SUBJECT TO APPROVED BY THE CITY EROSION CONTROL INSPECTOR.
15. PERMANENT STABILIZATION SHALL BE LIME AND FERTILIZER, PERMANENT SEEDING, AND MULCH. AGRICULTURAL GRADE LIMESTONE SHALL BE APPLIED AT 90LBS/1000SF, INCORPORATED INTO THE TOP 4–6 INCHES OF SOIL. FERTILIZER SHALL BE APPLIED AT 1000LBS/ACRE AND CONSIST OF A 10–20–10 NUTRIENT MIX. PERMANENT SEEDING SHALL BE APPLIED AT 180LBS/ACRE AND CONSIST OF 95% KENTUCKY 31 OR TALL FESCUE AND 0–5% PERENNIAL RYEGRASS OR KENTUCKY BLUEGRASS. STRAW MULCH IS TO BE APPLIED AT 80LBS/100SF. ALTERNATIVES ARE SUBJECT TO APPROVAL BY THE CITY EROSION CONTROL INSPECTOR.
16. MAINTENANCE: ALL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. ANY DAMAGE OR CLOGGING TO STRUCTURAL MEASURES IS TO BE REPAIR IMMEDIATELY. SILT TRAPS ARE TO BE CLEANED WHEN 50% OF THE WET STORAGE VOLUME IS FILLED WITH SEDIMENT. ALL SEEDED AREAS ARE TO BE RE–SEEDED WHEN NECESSARY TO ACHIEVE A GOOD STAND OF GRASS. SILT FENCE AND DIVERSION DIKES WHICH ARE COLLECTING SEDIMENT TO HALF THEIR HEIGHT MUST BE CLEANED AND REPAIRED IMMEDIATELY.
17. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REMOVED WITHIN 30 DAYS OF FINAL SITE STABILIZATION, WHEN MEASURES ARE NO LONGER NEEDED, SUBJECT TO APPROVAL BY THE CITY EROSION CONTROL INSPECTOR.

MANAGEMENT STRATEGY AND SEQUENCE OF CONSTRUCTION
THE PROPOSED MANAGEMENT STRATEGIES AND DETAILED SEQUENCE OF CONSTRUCTION ARE INCLUDED ON ON EACH PHASE ON SHEET C15 THROUGH C18.
REQUIRED PERMITS MUST BE IN–HAND BEFORE WORK BEGINS:

PHASE 1
1. INSTALL PERIMETER SILT FENCE WITH WIRE SUPPORT.
2. INSTALL TEMPORARY STREAM CROSSING FOR CONSTRUCTION ENTRANCE. EXTEND EXISTING 60" RCP AND INSTALL NEW 42" RCP.
3. INSTALL INLET AND OUTLET PROTECTION FOR 42" AND 60" RCP.
4. INSTALL CLEAN WATER DIVERSION.
5. INSTALL SEDIMENT TRAPS AND DIVERSION DIKES.
6. CONTACT CITY OF CHARLOTTESVILLE AND ENGINEER FOR INSPECTION OF EROSION CONTROL MEASURES.

PHASE 2
1. INSTALL RETAINING WALLS AT REAR OF PROPERTY AS SHOWN.
2. INSTALL UNDERGROUND STORAGE SYSTEM AND MANHOLE STRUCTURES, KEEPING ALL INLETS AND OUTLETS SEALED.
3. INSTALL TEMPORARY CONNECTION BETWEEN INLET AND OUTLET MANHOLES FOR UNDERGROUND STORAGE SYSTEM, ALLOWING RUNOFF ENTERING THE DI–3 INLET TO EXIT THE SITE WITHOUT ENTERING THE STORAGE SYSTEM.
4. INSTALL OTHER UTILITY PIPES AND STRUCTURES. YARD DRAINS ARE TO BE SEALED UNTIL UNDERGROUND STORAGE IS OPERATIONAL.
5. PREPARE GRADE FOR BUILDINGS B AND D AND THE PARKING LOT.
6. MAINTAIN INLET AND OUTLET PROTECTION.

PHASE 3
1. CONVERT DIVERSION DIKES TO RIGHT OF WAY DIVERSIONS.
2. LEAVE SEDIMENT TRAPS IN PLACE WHILE CONSTRUCTION OF BUILDINGS B AND D IS ONGOING.
3. COMPLETE STRUCTURES AND PARKING LOT AND STABILIZE AREA.
4. ONCE COMPLETE, INSTALL DIVERSION DIKE BETWEEN BUILDINGS B/D AND BUILDINGS A/C TO DIVERT RUNOFF FROM STABILIZED AREAS TO THE PARKING AREA.

PHASE 4
1. REMOVE SEDIMENT TRAPS AND INSTALL REMAINING RETAINING WALLS.
2. CONSTRUCT BUILDING A AND C.
3. CLEANOUT SEDIMENT BUILDUP AND UNSEAL UNDERGROUND DETENTION INLETS.
4. SEAL TEMPORARY CONNECTION BETWEEN INLET AND OUTLET MANHOLES FOR UNDERGROUND DETENTION.
5. APPLY SEEDING AND MULCHING AS SHOWN.
6. MAINTAIN PERIMETER CONTROLS UNTIL SITE HAS REACHED PERMANENT STABILIZATION.
7. CONTACT THE CITY OF CHARLOTTESVILLE PRIOR TO REMOVAL OF E&SC MEASURES.

CONSTRUCTION MAINTENANCE
THE FOLLOWING CONSTRUCTION MAINTENANCE PRACTICES SHALL BE FOLLOWED AT THE SITE.

1. ALL E&S CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAIN EVENT. ALL DEFICIENCIES IDENTIFIED DURING THESE INSPECTIONS SHALL BE CORRECTED AS SOON AS PRACTICABLE.
2. THE SILT FENCE BARRIER SHALL BE REGULARLY CHECKED FOR UNDERMINING, DETERIORATION OR SIGNIFICANT EROSION. SEDIMENT SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF THE HEIGHT OF THE CONTROL.
3. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL MAINTENANCE REQUIREMENTS SET FORTH IN THE CURRENT EDITION OF THE VIRGINIA SEDIMENT AND EROSION CONTROL MANUAL, OTHER APPLICABLE COMMONWEALTH OF VIRGINIA REGULATIONS AND THE PROJECT SPECIFICATIONS.
4. ALL SEEDED AREAS WILL BE REGULARLY CHECKED TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED.
5. AREAS WITH RIP–RAP SHOULD BE REGULARLY INSPECTED TO DETERMINE IF HIGH FLOWS HAVE DAMAGED THESE CONTROLS OR CAUSED EXCESSIVE SEDIMENT DEPOSITION. ALL AREAS SHALL BE MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS E&S CONTROL PLAN.

ENVIRONMENTAL CONTROLS

1. CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL ENVIRONMENTAL CONTROL MEASURES SO AS TO COMPLY WITH LOCAL ORDINANCES, STATE AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO WATER POLLUTION IN WATERS OF THE STATE AND IN INTERSTATE WATERS.

2. CONTRACTOR SHALL MINIMIZE THE POTENTIAL FOR AIR POLLUTION BY THE USE OF EMISSION CONTROL EQUIPMENT ON CONTRACTOR OPERATED EQUIPMENT, SHUT–DOWN OF MOTORIZED EQUIPMENT WHEN NOT IN USE, AND ACTIVELY CONTROLLING DUST EMISSIONS THROUGHOUT THE PROJECT.

3. ANY WASTE DISCOVERED DURING THE PROJECT SHALL NOT BE MOVED WITH OUT PRIOR AUTHORIZATION OF THE OWNER AND BE DIRECT–LOADED INTO COVERED ROLL–OFF CONTAINERS FOR TEMPORARY STORAGE PRIOR TO DISPOSAL IN A PERMITTED LANDFILL.

EROSION & SEDIMENT CONTROL PERMITTING

1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL LOCAL AND STATE EROSION AND SEDIMENT CONTROL PERMITS AND MAINTAINING ALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH THE PERMIT REQUIREMENTS.

MINIMUM STANDARDS (MS):
ALL APPLICABLE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND MINIMUM STANDARDS SHALL BE ADHERED TO DURING ALL PHASES OF CONSTRUCTION. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

1. STABLIZATION OF DENUDED AREAS:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO BARE 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 DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 7 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED AT AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 14 DAYS.

2. STABILIZATION OF SOIL STOCKPILES:
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

3. PERMANENT VEGETATIVE COVER
A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVE THAT, IN THE OPINION OF THE CITY INSPECTOR, IS UNIFORM AND MATURE ENOUGH TO SURVIVE TO INHIBIT EROSION.

4. TIMING & STABILIZATION OF SILT TRAPPING MEASURES:
SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS 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 UPSLOPE LAND DISTURBANCE TAKES PLACE.

5. STABILIZATION OF EARTHEN STRUCTURES:
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

6. SEDIMENT TRAPS AND BASINS:
A SEDIMENT BASIN SHALL CONTROL SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FOR THE LAND DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DEVICE SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.

7. CUT AND FILL SLOPES:
CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

8. CONCENTRATED RUN–OFF 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.

9. WATER SEEPS FROM A SLOPE FACE:
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

10. STORM SEWER INLET PROTECTION:
ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

11. STABILIZATION OF OUTLETS:
BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS 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.

12. WORK IN LIVE WATERCOURSES:
WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

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 STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIALS SHALL BE PROVIDED.

14. APPLICABLE REGULATIONS:
ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

15. STABILIZATION OF BED AND BANKS
THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

16. UNDERGROUND UTILITIES:
UNDERGROUND UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER CRITERIA:

a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES

c. EFFLUENT FOR DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.

d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

f. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

17. CONSTRUCTION ACCESS ROUTES:
WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO PAVED SURFACES. WHERE SEDIMENT IS TRANSPORTED ON TO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL LOTS AS WELL AS TO LARGER LAND DISTURBING ACTIVITIES.

18. TEMPORARY E&S CONTROL MEASURE REMOVAL:
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 PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENT.

19. ADEQUACY OF RECEIVING CHANNELS:
PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE, DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATES OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24–HOUR DURATION.LOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE
NATURAL OR MAN–MADE RECEIVING CHANNEL, PIPE 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.
B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL 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 EROSION OF CHANNEL BED OR BANKS.
(B) ALL PREVIOUSLY CONSTRUCTED MAN–MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN–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 TEN–YEAR STORM TO VERIFY THAT STORMWATER
WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
C. 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 TEN–YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO–YEAR
STORM WILL NOT CAUSE EROSION TO CHANNEL THE BED OR BANKS; OR
2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN–YEAR STORM IS CONTAINED WITHIN THE
APPURTENANCES;
3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE–DEVELOPMENT PEAK RUNOFF RATE FROM A TWOYEAR STORM TO
INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE
FROM A TEN–YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MANMADE CHANNEL; OR
4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS
SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT
CONDITION OF THE SUBJECT PROJECT.
F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP
OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE
FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
G. 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.
H. ALL ON–SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE
DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
J. 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. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE
DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
K. 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 WATERS OF THE STATE.
L. 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
I. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS;
II. DETAIN AND RELEASE OVER A 24–HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24– HOUR
STORM; AND
III. 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 § 10.1–562 OR 10.1–570 OF THE ACT.
M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 10.1–561 A
OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER
MANAGEMENT ACT (§ 10.1–603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LANDDISTURBING ACTIVITIES ARE IN ACCORDANCE WITH
4VAC50–60–48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS.
N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50–60–66 OF THE VIRGINIA STORMWATER
MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM
STANDARD 19.

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SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA

SUBMISSION:
2022.10.27

REVISION:

FILE NO. 20.010

EROSION PLAN NARRATI E

C14

SOIL EROSION & SEDIMENT CONTROL SYMBOLS

SYMBOL	NO.	TITLE	KEY
	3.02	CONSTRUCTION ENTRANCE	PCE
— X — X — X — X —	3.05	SILT FENCE	SF
	3.09	TEMPORARY DIVERSION	DD
	3.11	RIGHT OF WAY DIVERSION	RWD
	3.12	TEMPORARY DIVERSION	DV
[DRAWN TO SCALE]	3.13	TEMPORARY SEDIMENT TRAP	ST
	3.18	OUTLET PROTECTION	OP
	3.24	TEMPORARY STREAM CROSSING	SC
TS	3.31	TEMPORARY SEEDING	TS
PS	3.32	PERMANENT SEEDING	PS
MU	3.35	MULCH	MU
DC	3.39	DUST CONTROL	DC
		LIMITS OF DISTURBANCE	
		SEDIMENT TRAP DRAINAGE AREA	

SEQUENCE OF CONSTRUCTION

PHASE 1
1. INSTALL PERIMETER SILT FENCE WITH WIRE SUPPORT.
2. INSTALL TEMPORARY STREAM CROSSING FOR CONSTRUCTION ENTRANCE. EXTEND EXISTING 60" RCP AND INSTALL NEW 42" RCP.
3. INSTALL INLET AND OUTLET PROTECTION FOR 42" AND 60" RCP.
4. INSTALL CLEAN WATER DIVERSION.
5. INSTALL SEDIMENT TRAPS AND DIVERSION DIKES.
6. CONTACT CITY OF CHARLOTTESVILLE AND ENGINEER FOR INSPECTION OF EROSION CONTROL MEASURES.

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1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

E S PLAN P

C15

Scale: 1"=10'

SOIL EROSION & SEDIMENT CONTROL SYMBOLS

SYMBOL	NO.	TITLE	KEY
	3.02	CONSTRUCTION ENTRANCE	PCE
— X — X — X — X —	3.05	SILT FENCE	SF
	3.09	TEMPORARY DIVERSION	DD
	3.11	RIGHT OF WAY DIVERSION	RWD
	3.12	TEMPORARY DIVERSION	DV
[DRAWN TO SCALE]	3.13	TEMPORARY SEDIMENT TRAP	ST
	3.18	OUTLET PROTECTION	OP
	3.24	TEMPORARY STREAM CROSSING	SC
TS	3.31	TEMPORARY SEEDING	TS
PS	3.32	PERMANENT SEEDING	PS
MU	3.35	MULCH	MU
DC	3.39	DUST CONTROL	DC
		LIMITS OF DISTURBANCE	
		SEDIMENT TRAP DRAINAGE AREA	

SEQUENCE OF CONSTRUCTION

PHASE 2

1. INSTALL RETAINING WALLS AT REAR OF PROPERTY AS SHOWN.
2. INSTALL UNDERGROUND STORAGE SYSTEM AND MANHOLE STRUCTURES, KEEPING ALL INLETS AND OUTLETS SEALED.
3. INSTALL TEMPORARY CONNECTION BETWEEN INLET AND OUTLET MANHOLES FOR UNDERGROUND STORAGE SYSTEM, ALLOWING RUNOFF ENTERING THE DI-3 INLET TO EXIT THE SITE WITHOUT ENTERING THE STORAGE SYSTEM.
4. INSTALL OTHER UTILITY PIPES AND STRUCTURES. YARD DRAINS ARE TO BE SEALED UNTIL UNDERGROUND STORAGE IS OPERATIONAL.
5. PREPARE GRADE FOR BUILDINGS B AND D AND THE PARKING LOT.
6. MAINTAIN INLET AND OUTLET PROTECTION.

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SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

E S PLAN P

C1

Scale: 1"=10'

SOIL EROSION & SEDIMENT CONTROL SYMBOLS

SYMBOL	NO.	TITLE	KEY
	3.02	CONSTRUCTION ENTRANCE	PCE
— X — X — X — X —	3.05	SILT FENCE	SF
	3.09	TEMPORARY DIVERSION	DD
	3.11	RIGHT OF WAY DIVERSION	RWD
	3.12	TEMPORARY DIVERSION	DV
[DRAWN TO SCALE]	3.13	TEMPORARY SEDIMENT TRAP	ST
	3.18	OUTLET PROTECTION	OP
	3.24	TEMPORARY STREAM CROSSING	SC
TS	3.31	TEMPORARY SEEDING	TS
PS	3.32	PERMANENT SEEDING	PS
MU	3.35	MULCH	MU
DC	3.39	DUST CONTROL	DC
		LIMITS OF DISTURBANCE	
		SEDIMENT TRAP DRAINAGE AREA	

SEQUENCE OF CONSTRUCTION

PHASE 3

1. CONVERT DIVERSION DIKES TO RIGHT OF WAY DIVERSIONS.
2. LEAVE SEDIMENT TRAPS IN PLACE WHILE CONSTRUCTION OF BUILDINGS B AND D IS ONGOING.
3. COMPLETE STRUCTURES AND PARKING LOT AND STABILIZE AREA.
4. 4. ONCE COMPLETE, INSTALL DIVERSION DIKE BETWEEN BUILDINGS B/D AND BUILDINGS A/C TO DIVERT RUNOFF FROM STABILIZED AREAS TO THE PARKING AREA.

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1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

E S PLAN P

C17

Scale: 1"=10'

SOIL EROSION & SEDIMENT CONTROL SYMBOLS

SYMBOL	NO.	TITLE	KEY
	3.02	CONSTRUCTION ENTRANCE	PCE
— X — X — X — X —	3.05	SILT FENCE	SF
	3.09	TEMPORARY DIVERSION	DD
	3.11	RIGHT OF WAY DIVERSION	RWD
	3.12	TEMPORARY DIVERSION	DV
[DRAWN TO SCALE]	3.13	TEMPORARY SEDIMENT TRAP	ST
	3.18	OUTLET PROTECTION	OP
	3.24	TEMPORARY STREAM CROSSING	SC
TS	3.31	TEMPORARY SEEDING	TS
PS	3.32	PERMANENT SEEDING	PS
MU	3.35	MULCH	MU
DC	3.39	DUST CONTROL	DC
		LIMITS OF DISTURBANCE	
		SEDIMENT TRAP DRAINAGE AREA	

SEQUENCE OF CONSTRUCTION

PHASE 4
1. REMOVE SEDIMENT TRAPS AND INSTALL REMAINING RETAINING WALLS.
2. CONSTRUCT BUILDING A AND C.
3. CLEANOUT SEDIMENT BUILDUP AND UNSEAL UNDERGROUND DETENTION INLETS.
4. SEAL TEMPORARY CONNECTION BETWEEN INLET AND OUTLET MANHOLES FOR UNDERGROUND DETENTION.
5. APPLY SEEDING AND MULCHING AS SHOWN.
6. MAINTAIN PERIMETER CONTROLS UNTIL SITE HAS REACHED PERMANENT STABILIZATION.
7. CONTACT THE CITY OF CHARLOTTESVILLE PRIOR TO REMOVAL OF E&SC MEASURES.

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SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

FILE NO. 20.010

E S PLAN P

C1

Scale: 1"=10'

TABLE 3.31-B

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

"QUICK REFERENCE FOR ALL REGIONS"

Planting Dates	Species	Rate (lbs./acre)
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100
Feb. 16 - Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 - 100
May 1 - Aug 31	German Millet (Setaria italica)	50

1 / C19 TEMPORARY SEEDING (TS)
Not To Scale

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	175-200 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	95-100%
- Improved Perennial Ryegrass	0-5%
- Kentucky Bluegrass	0-5%
High-Maintenance Lawn	200-250 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	100%
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
	150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Fescue	108 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop *	20 lbs.
- Crownvetch **	20 lbs.
	150 lbs.

* Use seasonal nurse crop in accordance with seeding dates as stated below:
February 16th through April ..... Annual Rye
May 1st through August 15th ..... Foxtail Millet
August 16th through October ..... Annual Rye
November through February 15th ..... Winter Rye

** Substitute Sericea lespedeza for Crownvetch east of Farmville, Va. (May through September use hulled Sericea, all other periods, use unhulled Sericea). If Flatpea is used in lieu of Crownvetch, increase rate to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may be added to any slope or low-maintenance mix during warmer seeding periods; add 10-20 lbs./acre in mixes.

2 / C19 PERMANENT SEEDING (PS)
Not To Scale

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES: Per Acre	RATES: Per 1000 sq. ft.	NOTES:
Straw or Hay	1½ - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf aeras. Apply with mulch blower or by hand.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf 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 matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

*** When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.**

3 / C19 MULCHING (MU)
Not To Scale

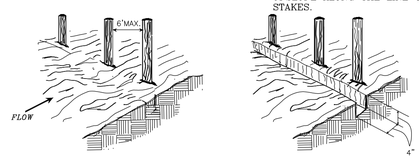
TABLE 3.39-A
ADHESIVES USED FOR DUST CONTROL

Adhesive	Water Dilution (Adhesive: Water)	Type of Nozzle	Application Rate Gallons/Acre
Anionic Asphalt Emulsion	7:1	Coarse Spray	1,200
Latex Emulsion	12.5:1	Fine Spray	235
Resin in Water	4:1	Fine Spray	300
Acrylic Emulsion (Non-Traffic)	7:1	Coarse Spray	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse Spray	350

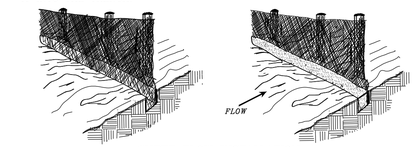
4 / C19 DUST CONTROL (DC)
Not To Scale

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

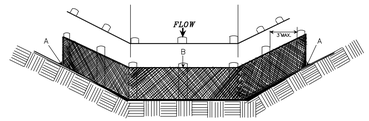
1. SET THE STAKES.
2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

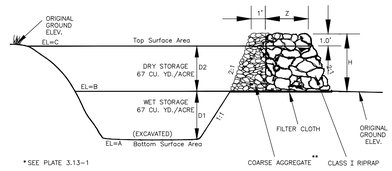


SHEET FLOW INSTALLATION
(PERSPECTIVE VIEW)



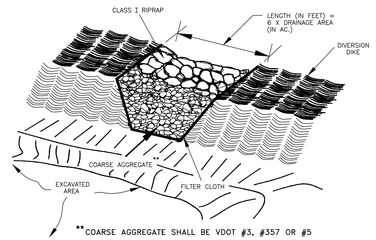
POINTS A SHOULD BE HIGHER THAN POINT B.
DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

5 / C19 SILT FENCE (SF)
Not To Scale



* SEE PLATE 3.13-1

CROSS SECTION OF OUTLET



** COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

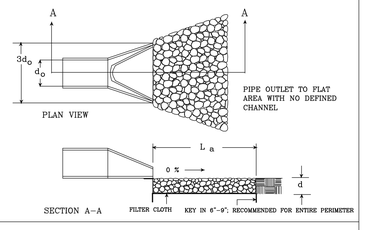
OUTLET (PERSPECTIVE VIEW)

Sediment Trap Design Data

No.	A	B	C	H (ft.)	Z (ft.)	Weir Length (ft.)	DA (Acs.)	Wet Vol. (Req.)	D1 (ft.)	Wet Vol. Cy (Prov.)	Bottom SA (sq. ft.)	Dry Vol. (Req.)	D2 (ft.)	Dry Vol. Cy (Prov.)	Top SA (sq. ft.)
1	428.0	431.0	433.0	3.0	2.0	2.0	0.29	19.4	3.0	19.9	98.0	19.4	2.0	31.4	588.0
2	427.0	430.0	432.0	3.0	2.0	1.5	0.21	14.1	3.0	14.3	60.0	14.1	2.0	25.6	494.0

6 / C8 TEMPORARY SEDIMENT TRAP (ST)
Not To Scale

PIPE OUTLET CONDITIONS



NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

Source: Va. DSWC Plate 3.18-1

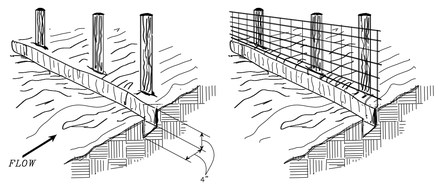
Outlet Protection Calculations - Reference Nomograph 3.18-3

Pipe Outfall #	La (ft)	W (ft)	Do (in)	Do (ft)	3Do (ft)	d50 (ft)	d50 (in)	Depth (in)
A0	8	9.25	15	1.25	3.75	0.5	6	9

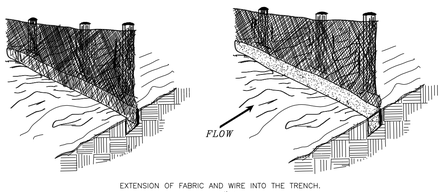
7 / C19 OUTLET PROTECTION (OP)
Not To Scale

CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)

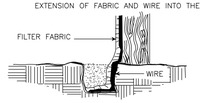
1. SET POSTS AND EXCAVATE A 4"X4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.
2. STAPLE WIRE FENCING TO THE POSTS.



3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

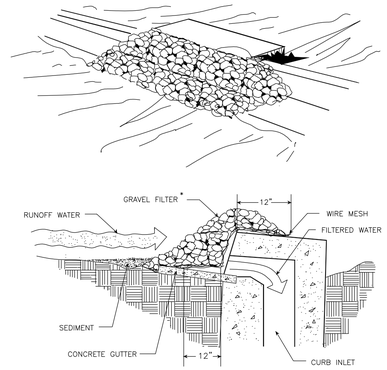


EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.



SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood & Wyant PLATE 3.05-1

GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION

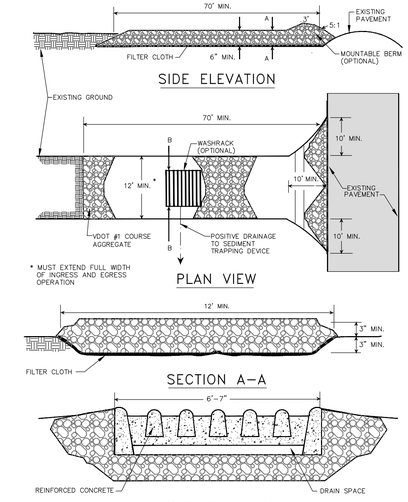
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

SOURCE: VA. DSWC PLATE 3.07-6

13 / C19 INLET PROTECTION (IP)
Not To Scale

STONE CONSTRUCTION ENTRANCE



SOURCE: ADAPTED from 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC Plate 3.02-1

14 / C19 CONSTRUCTION ENTRANCE (CE)
Not To Scale

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10/27/22
PROFESSIONAL ENGINEER

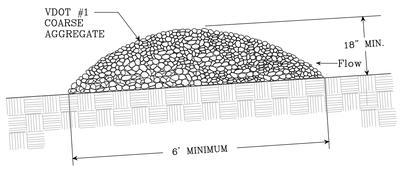
SITE PLAN

1613 GROVE STREET

CITY OF CHARLOTTESVILLE, VIRGINIA
SUBMISSION:
2022.10.27
REVISION:

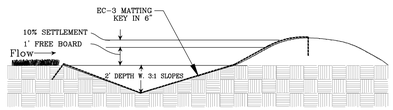
FILE NO. 20.010

C19



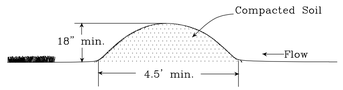
TYPICAL GRAVEL STRUCTURE

1 C20 RIGHT OF WAY DIVERSION (RWD)
Not To Scale



TYPICAL CLEANWATER DIVERSION

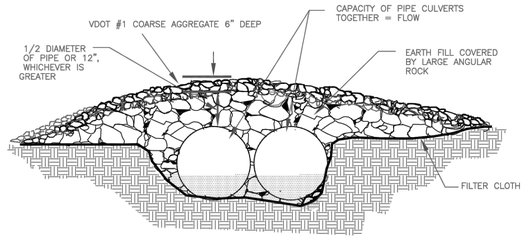
2 C20 CLEAN WATER DIVERSION (CWD)
Not To Scale



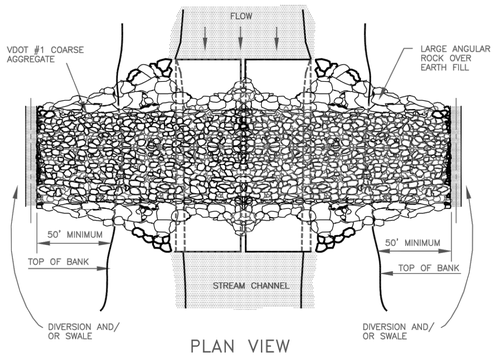
TEMPORARY DIVERSION DIKE

3 C20 DIVERSION DIKE (DD)
Not To Scale

TEMPORARY CULVERT CROSSING



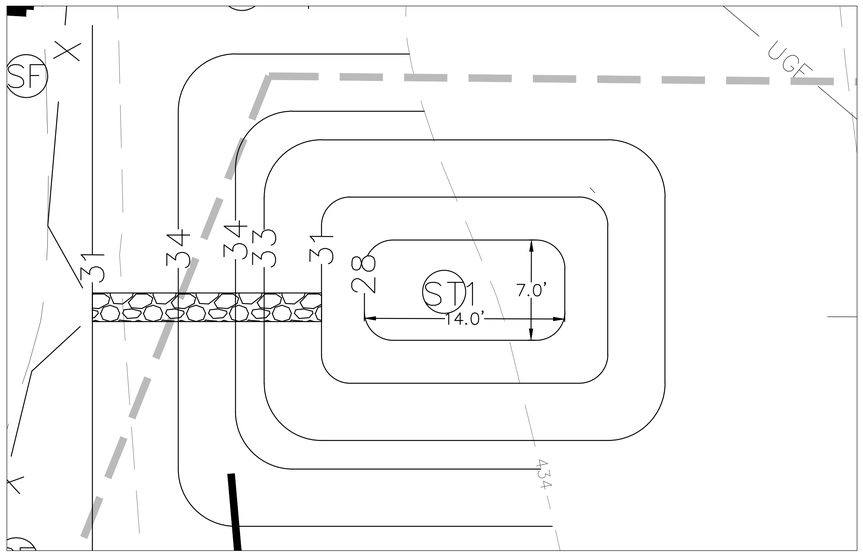
ELEVATION



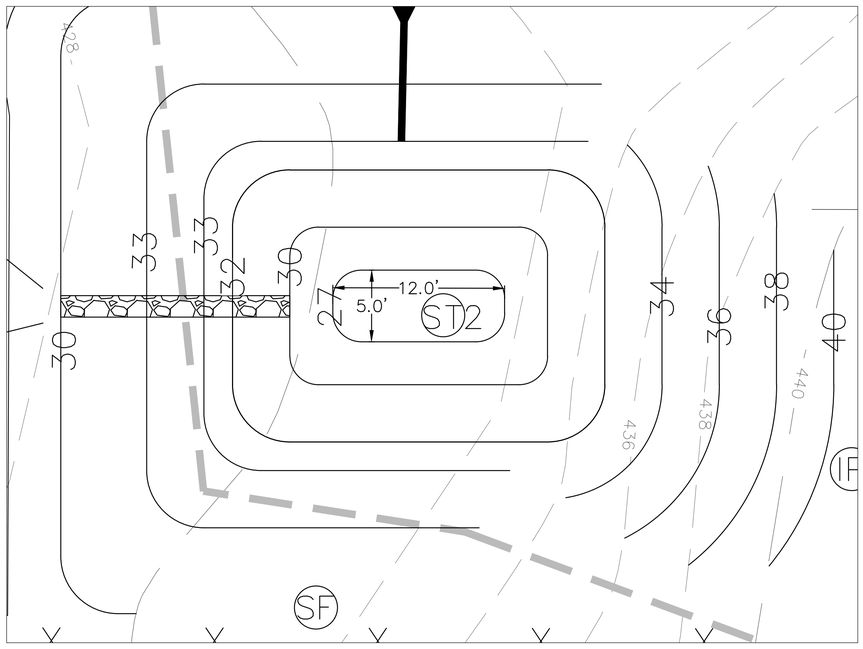
PLAN VIEW

SOURCE: VA. DSWC PLATE. 3.24-2

4 C20 TEMPORARY STREAM CROSSING (SC)
Not To Scale



5 C20 SEDIMENT TRAP 1 DETAIL
Scale: 1" = 5'



6 C20 SEDIMENT TRAP 2 DETAIL
Scale: 1" = 5'

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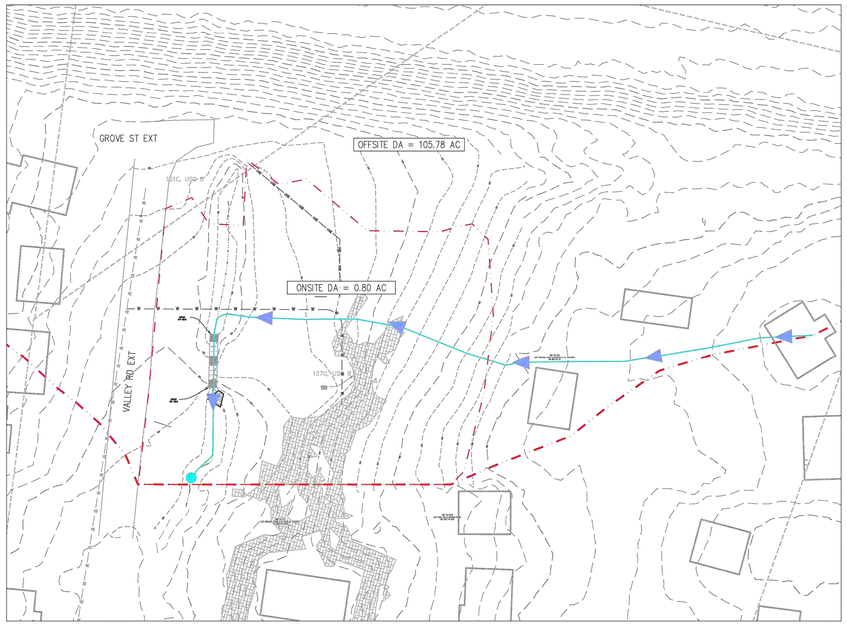
C20



Pre Development Drainage Area Map 1613 Grove Street

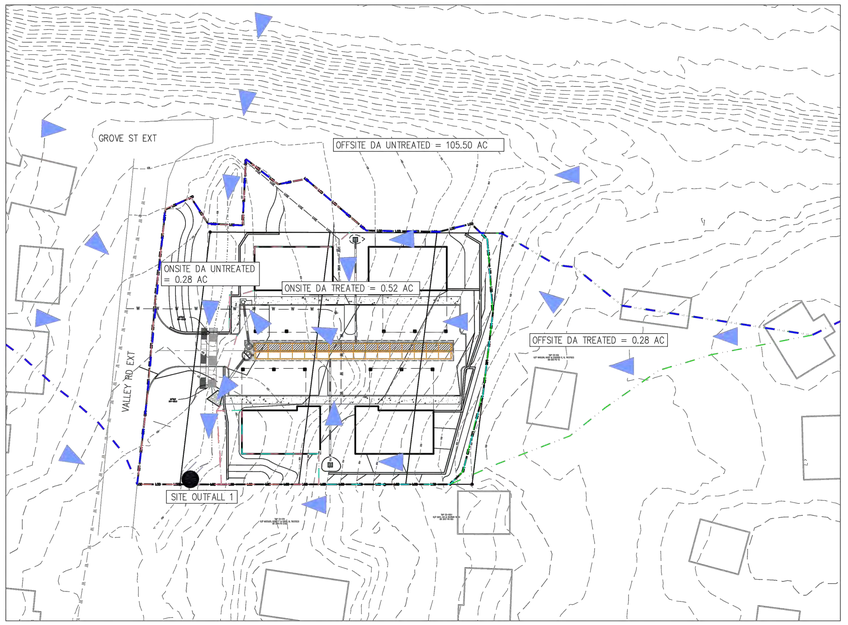
SITE OUTFALL ONE (S.O. 1)

Drainage Area : 106.58 ac

Onsite Area: 0.80 ac
Curve Number: 58
Time of Concentration: 16.2 min

Offsite Area: 105.78 ac
Curve Number : 80
Time of Concentration : 35 min (assumed)

*Ref. VSMP Plan Sheet C23 for overview of entire 106.58 ac drainage area.



Post Development Drainage Area Map 1613 Grove Street

SITE OUTFALL ONE (S.O. 1)

Drainage Area : 106.58 ac

Onsite Area: 0.80 ac
Treated: 0.52 ac
Curve Number: 86
Time of Concentration: 5 min (assumed)

Untreated: 0.28 ac
Curve Number: 65
Time of Concentration: 5 min (assumed)

Offsite Area: 105.78 ac
Treated: 0.28 ac
Curve Number: 80
Time of Concentration: 16.2 min

Untreated: 105.50 ac
Curve Number : 80
Time of Concentration : 35 min (assumed)

*Ref. VSMP Plan Sheet C23 for overview of entire 106.58 ac drainage area.

Channel Protection: Energy Balance Equation with Run-on for Site Outfall 1
1613 Grove St Ext
1 Yr, 24 Hr Storm Comparison

$Q_{1post} \leq Q_{1\,Pre,\,Site}((RV_{1\,Pre,\,Site})/(RV_{1\,Post,\,Site}))(I.F.) + Q_{1\,Pre,\,offsite}((RV_{1\,Pre,\,offsite})/(RV_{1\,Post,\,offsite}))$

I.F. = 0.8 when LOD ≥ 1 ac, I.F.=0.9 when LOD ≤ 1 ac, I.F. = 1.0 when predev site is fully forested

PreDev Site Fully Forested?	=	no
I.F.	=	0.9
Limits of Disturbance	=	0.80 ac

Onsite			Offsite		
Pre Dev Area Onsite	=	0.80 ac	Pre Dev DA Offsite	=	105.78 ac
Post Dev Area Onsite	=	0.80 ac	Post Dev DA OffSite	=	105.78 ac
$Q_{1\,Pre,\,Site}$	=	0.14 cfs	$Q_{1\,Pre,\,Offsite}$	=	103.29 cfs
$RV_{1\,Pre,\,Site}$	=	0.019 af	$RV_{1\,Pre,\,Offsite}$	=	11.284 af
$RV_{1\,Post,\,Site}$	=	0.084 af	$RV_{1\,Post,\,Offsite}$	=	11.284 af

Regulatory Maximum Postdev 1-yr Flow Rate

Max Q_{1post} ≤ 103.32 cfs

Achieved Design Postdev 1-yr Flow Rate

Design Q_{1post} = 103.28 cfs

Energy Balance Equation Compliance Check:

Achieved

Notes:
1. The assumption in the calculation above is that the site equals the land-disturbing activity (LDA). The definition for "site" is not clearly defined in
2. This site discharges to an outfall within a natural channel. Since postdevelopment runoff to this outfall meets the energy balance equation,

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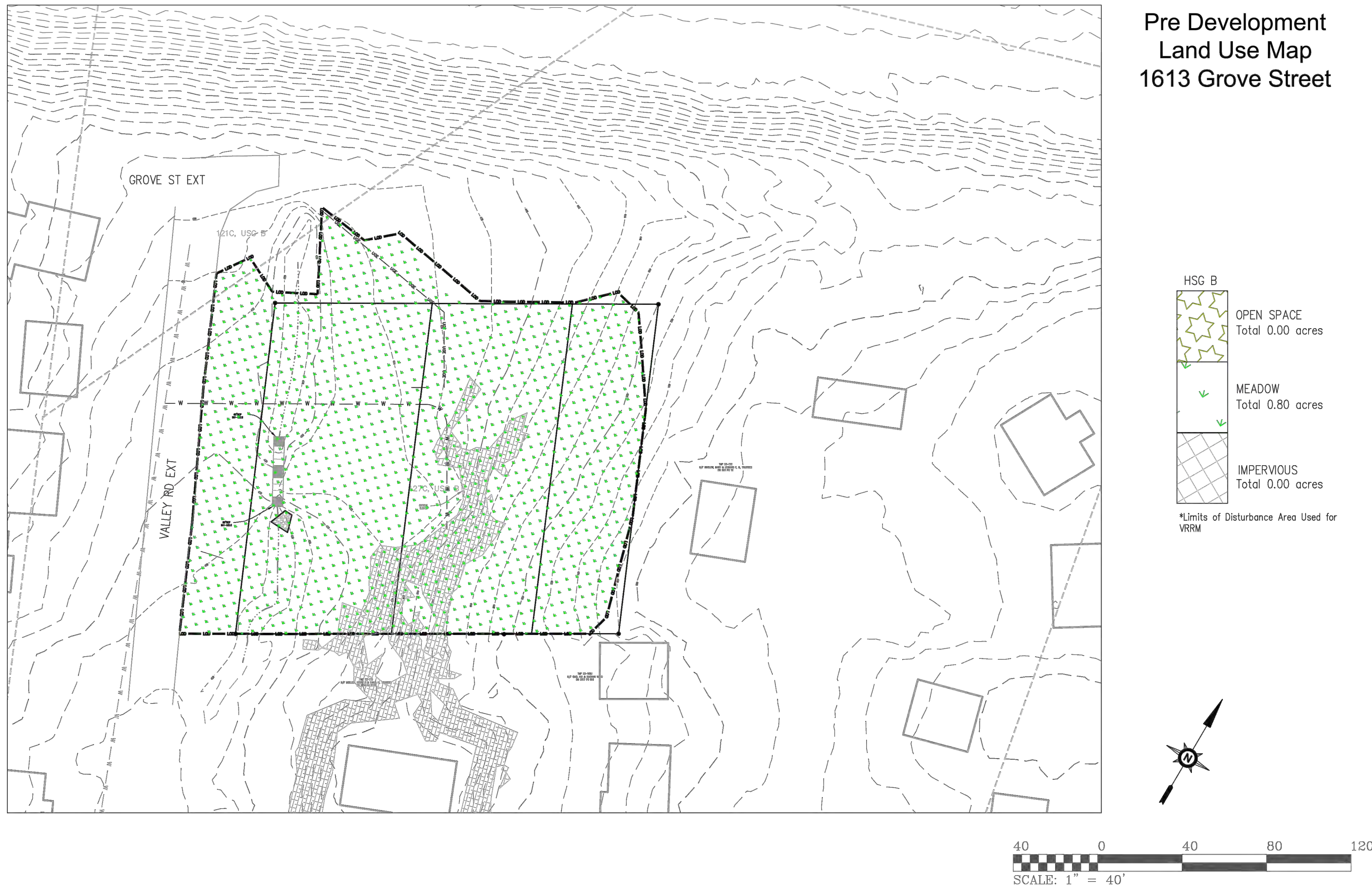
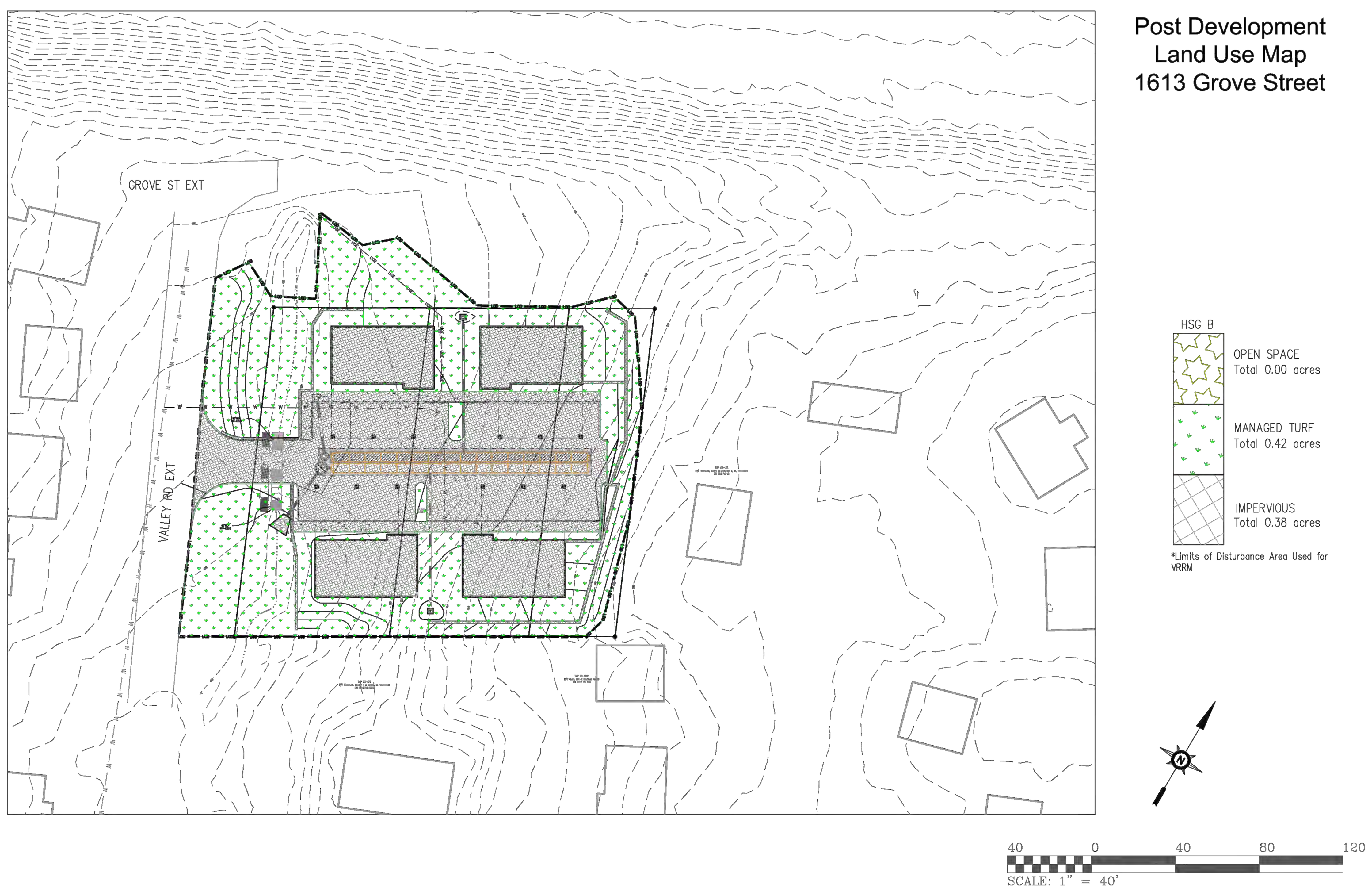
SWM MAPS AL ULATIONS

C21

Pre Development Land Use Map 1613 Grove Street



Post Development Land Use Map 1613 Grove Street



DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

☐ 2011 BMP Standards and Specifications ☒ 2013 Draft BMP Standards and Specifications

Project Name: 1613 Grove St
Date: 10/10/2022
BMP Design Specifications List:

CLEAR ALL (Ctrl+Shift+R)

data input cells | constant values | calculation cells | final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed		0.42			0.42
Impervious Cover (acres)		0.38			0.38
					0.80

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	0.69

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary

Forest/Open Space Cover (acres)	0.00
Weighted Rv (forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.42
Weighted Rv (turf)	0.20
% Managed Turf	53%
Impervious Cover (acres)	0.38
Rv (impervious)	0.95
% Impervious	48%
Site Area (acres)	0.80
Site Rv	0.56

Treatment Volume and Nutrient Loads

Treatment Volume (acre-ft)	0.0371
Treatment Volume (cubic feet)	1,615
TP Load (lb/yr)	1.01
TN Load (lb/yr) (Informational Purposes Only)	7.26

CITY OF CHARLOTTESVILLE-LAND DISTURBANCE MS4 REPORTING CHART

BMP TYPE	PRACTICE (1-15)	LEVEL (1 or 2)	LATITUDE	LONGITUDE	TOTAL DA (AC)	IMP. DA (AC)	PERV. DA (AC)	P REMOVED (LBS)	12 DIG. HUC.	*SWM MAINT. AGR. INST. #
Stormtech SC-740 Underground Storage	14	n/a	38.027729	-78.504719	0.80	0.52	0.28	0.17	020802040402	TBD

TOTAL LOD (AC)	0.8
TOTAL P REMOVED BY BMP'S (LBS)	0.17
TOTAL P CREDITS PURCHASED (LBS)	0.52
TOTAL P CREDITED TO PROJECT (LBS)	0.69
TOTAL P REQUIRED (LBS)	0.69
*LAND DISTURBING #	
* SWM BOND RELEASE DATE	

* TO BE ENTERED BY CITY OF CHARLOTTESVILLE STAFF

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	0.35	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.35	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.17	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.17	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3): 1,615

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.84	0.00	0.00	0.00	0.00	0.84
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.17	0.00	0.00	0.00	0.00	0.17
TP LOAD REMAINING (lb/yr)	0.67	0.00	0.00	0.00	0.00	0.67
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	1.01
TP LOAD REDUCTION REQUIRED (lb/yr)	0.69
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.17
TP LOAD REMAINING (lb/yr):	0.85
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.52

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	7.26
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	0.00
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	7.26

Rivanna River Nutrient Credit Bank **Certificate No. James-039**
October 11, 2022

Chris Marshall
Shimp Engineering
chris@shimp-engineering.com

RE: Request for Bid: Pricing of **.52 lb/yr** Nutrient Credits from the Rivanna River Nutrient Offset Trading Bank HUC No. 02080204 for the following project:

Purchaser: **Lorven Investments, LLC**
4776 Walbern Ct
Chantilly, VA, 20151
nseri@yahoo.com
Narsimha Seri
Operator
Project Jurisdiction: **City of Charlottesville**
Project Name: **1613 Grove Street Ext**
Project Number: TBD
Project Location: **38.129984, -78.435090**
1613 Grove St Ext
Charlottesville, VA 22903
HUC12: 020802040402 – Moores Creek
Parcel ID: **Parcel ID: TM 23 Parcels 133, 134, 135**
Closing Date: **7/1/2023**

Dear Chris,

This letter is to confirm the availability to your project (referenced above) of authorized Nutrient Credits sufficient to meet the your above referenced estimated requirements of Nutrient Credits at our Rivanna River nutrient offset credit bank facility (the "Bank"). The Bank has been registered with the Virginia Department of Environmental Quality (DEQ). These Nutrient Credits are generated and managed under the terms of the Reduction Implementation Plan for the Bank dated November 2017, which was authorized by (DEQ) on September 5, 2018.

The Bank has been authorized to provide Nutrient Credits for use in the James River watershed. These credits are transferable to those entities regulated under DEQ's Storm Water Management program in accordance with VA Code 62.1-44.15:27.

The sale price for.52 credits is $7,800.00.The pricing is valid through July 1, 2023.

Hotel Street Capital, LLC, Bank Sponsor
By Its Manager

Thomas James Ross II
540-687-0171
TJRoss@mrwlawfirm.com
Rivanna River Nutrient Offset Trading Bank, 31 Garrett Street, Warrenton, Virginia 20186

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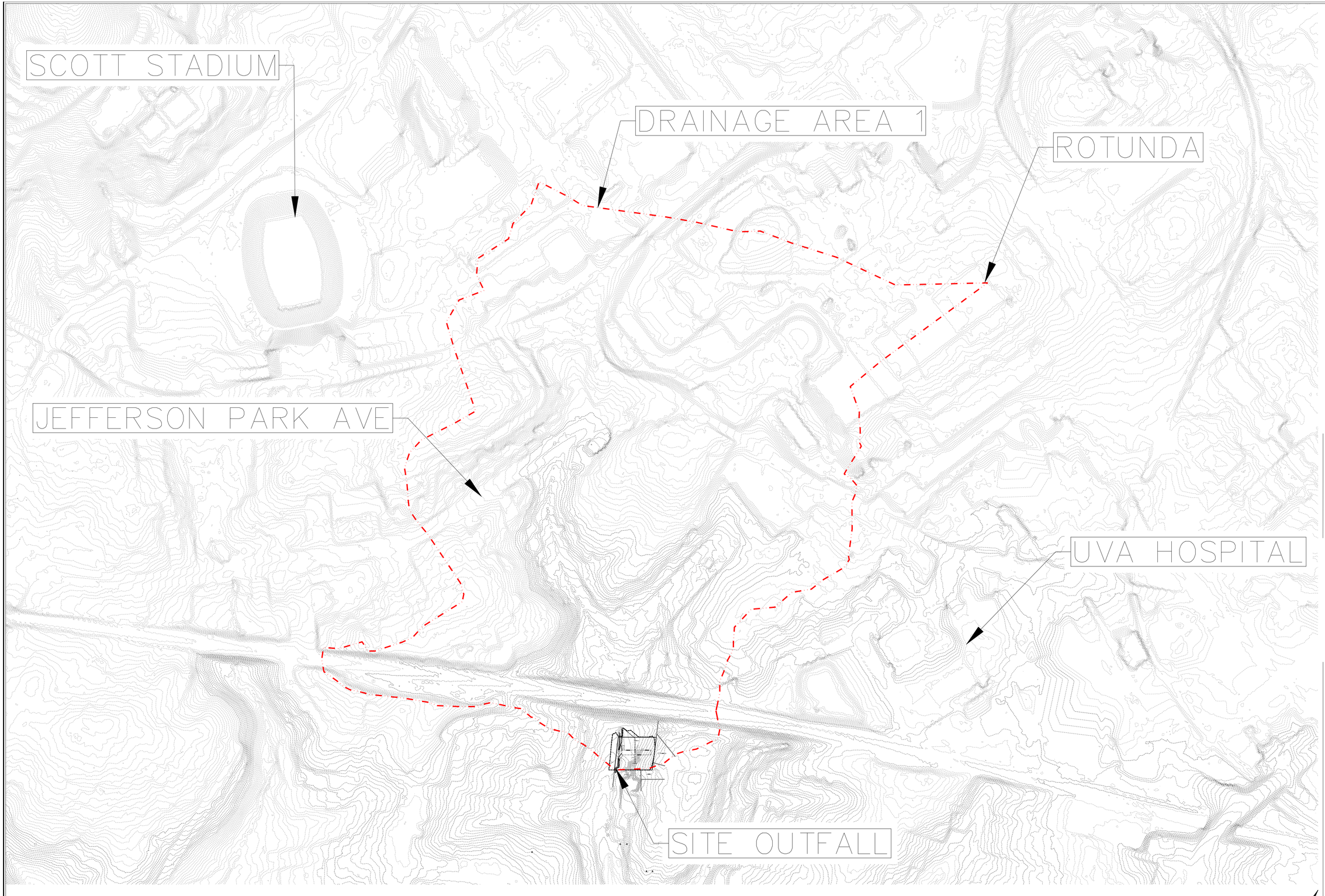
RRM MAPS CALCULATIONS



200 0 200 400 600
Scale: 1"=200'

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DRAINAGE AREA OVERVIEW

C23