

E-FILE STAMP

**PROJECT NARRATIVE:**

- 2 STORY BUILDING
- RETAIL/COMMERCIAL WITH UNDERGROUND PARKING
- NEW SITE STORMWATER FACILITIES AND STORM DRAIN PIPE

**SITE DATA:**

- SITE AREA = 46,875 SF (1.076 AC)
- EXISTING IMPERVIOUS AREA = 29,337 SF (0.673 AC)
- PROPOSED NEW IMPERVIOUS AREA = 8,572 SF (0.20 AC)
- PROPOSED TOTAL IMPERVIOUS AREA = 37,909 (0.873 AC)

**ESD VOLUME SUMMARY:**

(ESD PROVIDED IN CUBIC FEET)

- TOTAL ESDV REQUIRED = 2,953 CF
- GREEN ROOF: 2,005 CF (BASED ON 9,655 SF OF GREEN ROOF @ 8" THICKNESS)
- BIORETENTION: 1,399 CF

TOTAL ESDV PROVIDED = 3,403 CF

**SWM NARRATIVE:**

THE TAKOMA JUNCTION PROJECT HAS BEEN DEVELOPED TO COMPLY WITH THE ENVIRONMENTAL SITE DESIGN REQUIREMENTS AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE). THE STORMWATER MANAGEMENT DESIGN CALCULATIONS FOR THIS PROJECT ARE BASED UPON THE ENVIRONMENTAL SITE DESIGN (ESD) CRITERIA ESTABLISHED BY THE STORMWATER MANAGEMENT ACT OF 2007.

THE ESDV FOR POI-1 WAS CALCULATED BASED ON AN EXISTING SITE IMPERVIOUS AREA OF 0.67 ACRES. THE AREA'S SITE IMPERVIOUSNESS IS 69%, AS THIS IS GREATER THAN 40% THIS PROJECT IS SUBJECT TO REDEVELOPMENT REQUIREMENTS. THE PROJECT SHALL EITHER DECREASE EXISTING IMPERVIOUSNESS WITHIN THE LOD BY 50% OR PROVIDE TREATMENT FOR AN EQUIVALENT AREA. THE PROJECT IS THEREFORE REQUIRED TO TREAT OR REDUCE THE IMPERVIOUS AREA ON SITE BY 0.34 ACRES. THE TOTAL PROPOSED IMPERVIOUS AREA WITHIN THE SITE IS 0.87 ACRES. THERE IS A INCREASE OF 0.20 ACRES OF IMPERVIOUS AREA.

a. 0.34 ACRES MUST BE TREATED AS REDEVELOPMENT BY ESD PRACTICES. BASED ON A TARGET PE OF 1.0, AN RV OF 0.95 AND AN AREA OF 0.34 ACRES.

b. 0.20 ACRES MUST BE TREATED AS NEW DEVELOPMENT BY ESD PRACTICES, BECAUSE THERE IS A INCREASE OF 0.20 ACRES OF IMPERVIOUS AREA.

A MINIMUM ESD VOLUME OF 2,953 CUBIC FEET SHALL BE TREATED WITHIN POI-1.

ESD SHALL BE MET WITH THREE GREEN ROOF FACILITIES AND ONE BIORETENTION FACILITY.

**SWM COMPUTATION SUMMARY**

SITE AREA = 46,875 SF (1.076 AC)  
 EXISTING IMPERVIOUS = 29,337 SF (0.67 AC)  
 EXISTING PERVIOUS = 17,538 SF (0.41 AC)  
 $\% I = 0.67 / 1.076 = 63\%$   
 $\% I > 40\%$

EXISTING SITE IMPERVIOUSNESS IS GREATER THAN 40%, THEREFORE THE SITE IS SUBJECT TO REDEVELOPMENT REQUIREMENTS. THE PROJECT SHALL EITHER DECREASE EXISTING IMPERVIOUSNESS WITHIN THE LOD BY 50% OR PROVIDE TREATMENT FOR AN EQUIVALENT AREA.

PROPOSED IMPERVIOUS = 37,909 SF (0.87 AC)  
 NET INCREASE IN IMPERVIOUS AREA = 0.87 - 0.67 = 0.20 AC

**ESDv TARGETS:**

**REDEVELOPMENT:**  
 $ESDv = (Pe)(Rv)(A)/12$   
 $Pe = 1$  INCH  
 $Rv = 0.05 + (0.009)(I); I = 100\%$   
 $Rv = 0.05 + (0.009 \times 100) = 0.95$   
 $ESDv = (1)(0.95)(0.34)/12$   
 $ESDv = 0.027$  AC-FT = **1,160 CF**

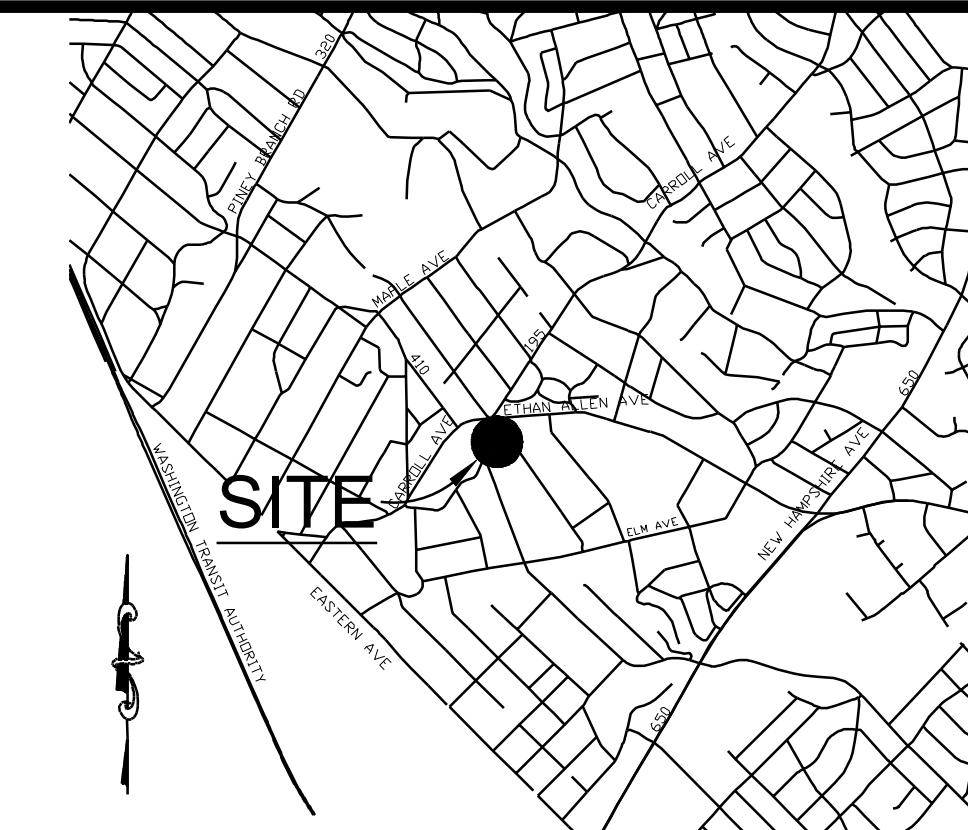
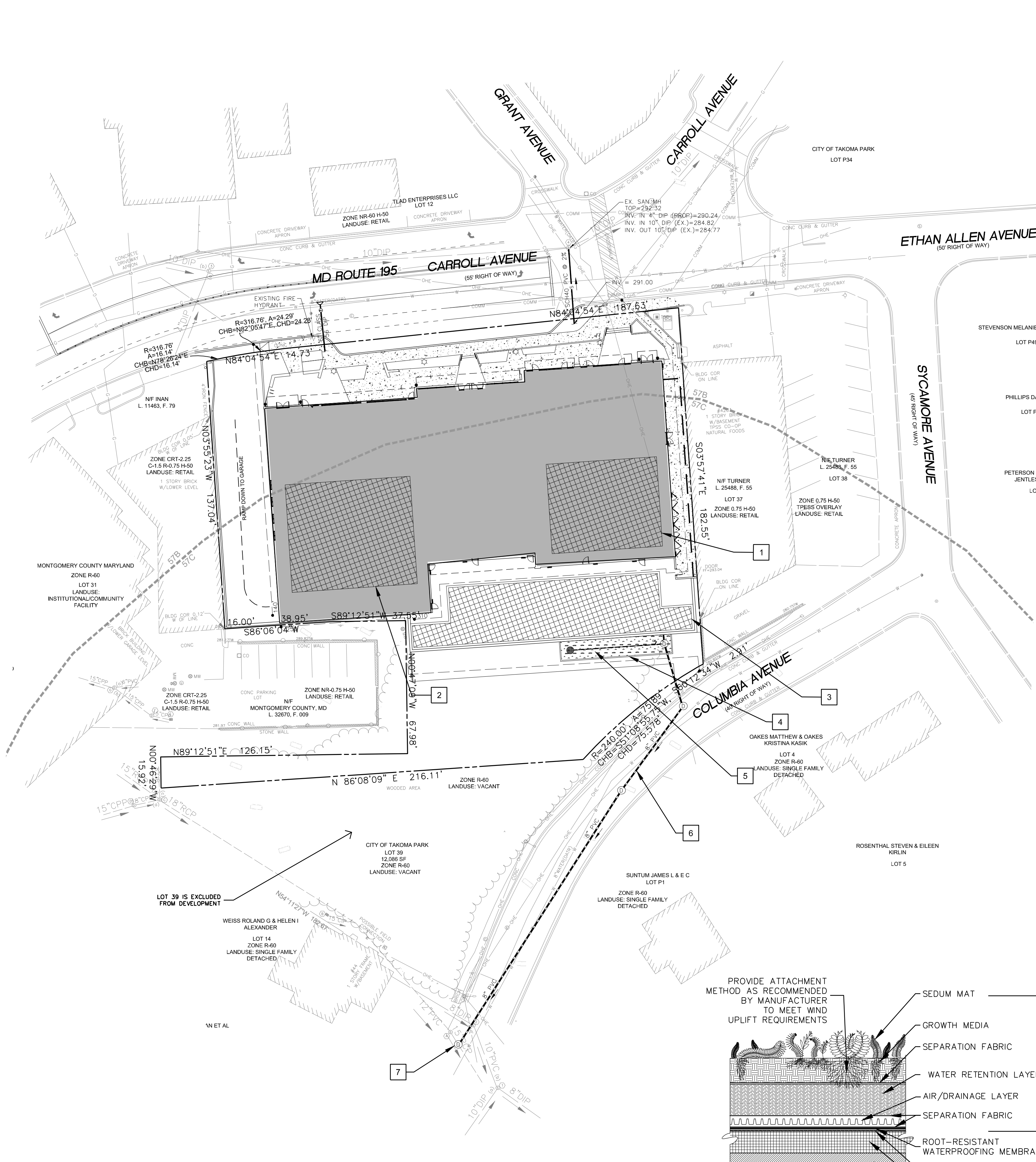
**NEW DEVELOPMENT:**  
 $ESDv = (Pe)(Rv)(A)/12$   
 $Pe = 2.6$  INCH (TABLE 5.3)  
 $Rv = 0.05 + (0.009)(I); I = 100\%$   
 $Rv = 0.05 + (0.009 \times 100) = 0.95$   
 $ESDv = (2.6)(0.95)(0.20)/12$   
 $ESDv = 0.041$  AC-FT = **1,793 CF**

TOTAL ESDv REQUIRED = 2,953 CF

ESD SHALL BE MET WITH THE USE OF ONE GREEN ROOF FACILITY AND ONE BIORETENTION FACILITY.

ESDv PROVIDED = 3,403 CF\*

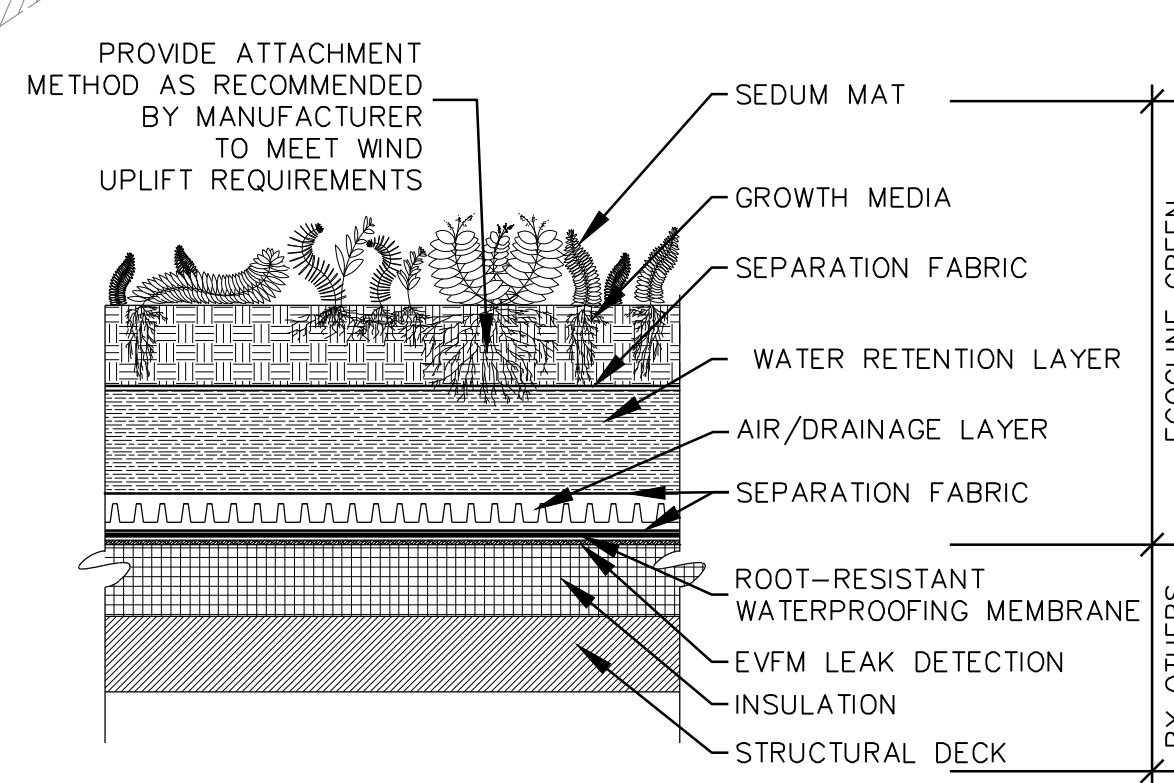
\*ESDv PROVIDED BY SWM FACILITIES EXCEEDS REQUIRED VOLUME BY OVER 13%



- LEGEND**
- UNDERGROUND PARKING GARAGE BOUNDARY
  - PROPOSED BUILDING
  - GREEN ROOF
  - BIORETENTION FACILITY
  - PLANTING AREA
  - NYLOPLAST DRAIN BASIN WITH GRATE INLET TOP
  - STORM DRAIN MANHOLE
  - PROPERTY LINE
  - SOIL LIMITS AND TYPE

- KEYNOTES**
- 1 GREEN ROOF #1 - 2,590 SF
  - 2 GREEN ROOF #2 - 3,525 SF
  - 3 GREEN ROOF #3 - 3,540 SF
  - 4 SWM #2 BIORETENTION (PLANTER BOX)
  - 5 4" PERF. PVC UNDERDRAIN
  - 6 8" PVC STORM DRAIN
  - 7 CONNECT PROP. STORM TO PUBLIC STORM SEWER WITH PROP. DOGHOUSE MANHOLE

**MAPPED SOIL TYPES**  
 SOIL TYPE: 57B - CHILLIUM SILT LOAM, 3-8% SLOPES  
 SOIL TYPE: 57C - CHILLIUM SILT LOAM, 8-15% SLOPES  
 HYDROLOGIC SOIL GROUP: B (BASED ON NRCS)



1. VERIFY FULL ROOF WARRANTY IS IN TACT BASED ON GREEN ROOF SECTION / DESIGN AND LAYOUT SHOWN. DO NOT INSTALL ANY COMPONENT OF GREEN ROOF OR IN ANY FASHION THAT NULLIFIES WARRANTY OF ANY PART OF THE ROOF SYSTEM.
2. VERIFY STRUCTURAL CAPACITY AND WIND UPLIFT COMPLIANCE WITH STRUCTURAL ENGINEER.
3. PROVIDE ROOT PROTECTION LAYER, WATERPROOFING, INSULATION, AND EVFM LAYER AS DIRECTED BY ARCHITECT / BUILDING ENVELOPE CONSULTANT. SHOWN HERE FOR REFERENCE ONLY.

**ECOCLINE 2+2 GREEN ROOF TYPICAL SECTION**  
 NOT TO SCALE

**DEVELOPER'S CERTIFICATE**  
 THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE SITE PLAN APPROVAL NO. 820190090 INCLUDING APPROVAL CONDITIONS, DEVELOPMENT PROGRAM, AND CERTIFIED SITE PLAN.  
 DEVELOPER: NEIGHBORHOOD DEVELOPMENT COMPANY JINGJING LIU COMPANY CONTACT PERSON  
 ADDRESS: 3232 GEORGIA AVENUE NW, SUITE 100, WASHINGTON, DC 20002  
 EMAIL: JLIU@NEIGHBORHOODEVELOPMENT.COM  
 SIGNATURE: Jingjing Liu

**AMT LLC**  
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**SITE PLAN #820190090**  
**TAKOMA JUNCTION**  
 13TH ELECTION DISTRICT  
 CITY OF TAKOMA PARK  
 MONTGOMERY COUNTY, MARYLAND  
 TAX MAP: JN51  
 WSSC GRID: 208NE01 & 209NE01

DATE	REVISION

**SWM CONCEPT PLAN**

DESIGNED: AMC  
 CHECKED: BCJ  
 SCALE: AS SHOWN  
 FILE NO: 114-123  
 DATE: JANUARY 2021

**C3.01**

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A MEMBER IN GOOD STANDING OF THE BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS OF THE STATE OF MARYLAND LICENSE NO. 38317 EXPIRATION DATE: 05/07/2022