E-FILE STAMP

PROJECT NARRATIVE:

- 2 STORY COMMERICAL BUILDING
- RETAIL/COMMERCIAL WITH UNDERGROUND PARKING
- NEW SITE STORMWATER FACILITES 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 = 8,215 SF (0.189 AC)
- PROPOSED TOTAL IMPERVIOUS AREA = 37,552 (0.862 AC)

ESD VOLUME SUMMARY:

(ESDv PROVIDED IN CUBIC FEET)

- TOTAL ESDv REQUIRED= 2,545
- GREEN ROOF #1: 1,546 CF
  (BASED ON 11,535 SF OF GREEN ROOF @ 8" THICKNESS)
- BIORETENTION #2: 1,690 CF

TOTAL ESDv PROVIDED= 3,235 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 PROPOSED IMPERVIOUS AREA WITHIN THE SITE IS 0.86 ACRES. THERE IS A *INCREASE* OF 0.19 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. 0.19 ACRES MUST BE TREATED AS NEW DEVELOPMENT BY ESD PRACTICES, BECAUSE THERE IS A *INCREASE* OF 0.19 ACRES OF IMPERVIOUS AREA.

A MINIMUM ESD VOLUME OF 2,545 CUBIC FEET SHALL BE TREATED WITHIN POI-1.

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

SWM COMPUTATION SUMMARY

SITE AREA = 39,190 SF (0.8997 AC)
EXISTING IMPERVIOUS = (29,337 SF (0.67 AC)
EXISTING PERVIOUS = 13,019 SF (0.18 AC)
%I = 0.67/0.97 = 69%
%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 = 37,552 SF (0.86 AC)
NET *INCREASE* IN IMPERVIOUS AREA = 0.86-0.67 = 0.68 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*100) = 0.95

A = 50% OF EXISTING IMPERVIOUSNESS
A = 0.5*0.67= 0.34 AC

ESDv = (1)(0.95)(0.34)/12
ESDv = 0.027 AC-FT = 1,161 CF

ESDv = (Pe)(Rv)(A)/12
Pe = 2.4 INCH (TABLE 5.3)
Rv = 0.05+(0.009)(I) ; I=88%
Rv = 0.05+(0.009*88) = 0.84

A = 100% OF NEW IMPERVIOUSNESS
A = 1*0.19= 0.19 AC

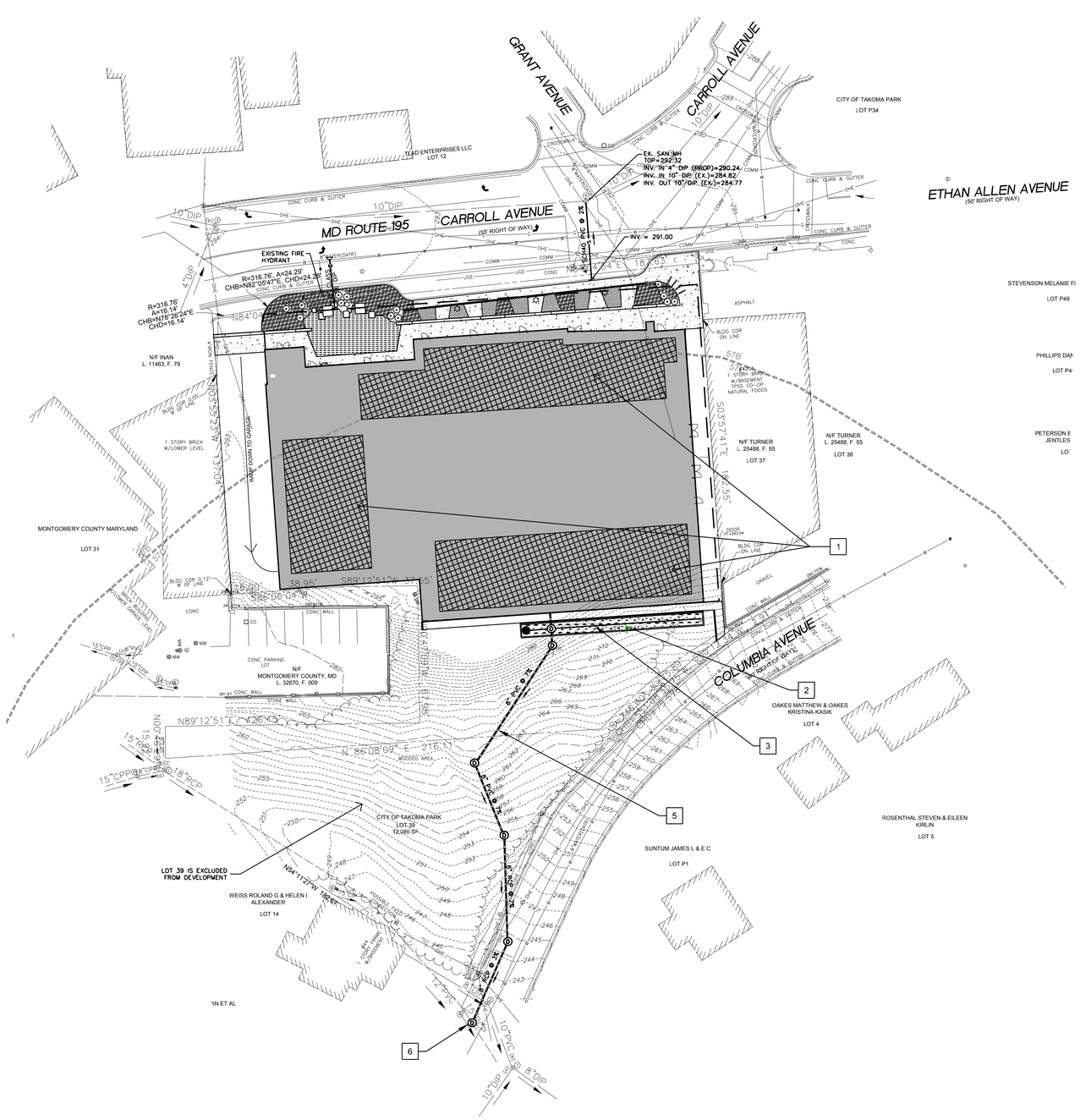
ESDv = (2.4)(0.84)(0.19)/12
ESDv = 0.031 AC-FT = 1,384 CF

TOTAL ESDv REQUIRED = 2,545 CF

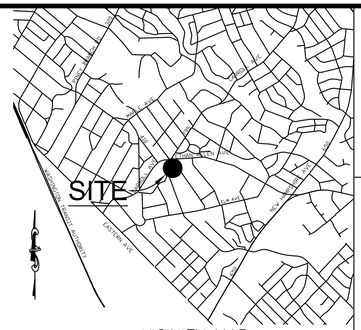
ESD SHALL BE MET WITH THE USE OF ONE GREEN ROOF FACILITY AND ONE BIORETENTION FACILITY.

ESDv PROVIDED = 3,235 CF*

*ESDv PROVIDED BY SWM FACILITIES EXCEEDS REQUIRED VOLUME BY OVER 25%



0 30' 60'
SCALE: 1"=30'



VICINITY MAP
SCALE: 1"=2000'

LEGEND

- PROPOSED BUILDING
- SWM #1 (GREEN ROOF)
- SWM #2 (BIORETENTION -PLANTER BOX)
- NYLOPLAST DRAIN BASIN WITH GRATE INLET TOP
- STORM DRAIN MANHOLE
- PROPERTY LINE
- SOIL LIMITS AND TYPE (2UC)
- UNDERGROUND PARKING GARAGE BOUNDARY

KEYNOTES

1. SWM #1 GREEN ROOF
2. SWM #2 BIORETENTION (PLANTER BOX)
3. 4" PERF. PVC UNDERDRAIN
4. 4" PVC STORM DRAIN
5. 8" PVC STORM DRAIN
6. 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)

PROFESSIONAL CERTIFICATION

"I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND."

DESIGN ENGINEER SIGNATURE	JANUARY 30, 2019 DATE
BRADLEY CHARLES JOB PRINTED NAME	38317 REGISTRATION NUMBER

AMT LLC
PROFESSIONAL ENGINEERS
LAND SURVEYORS
LANDSCAPE ARCHITECTS
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PRELIMINARY PLAN #120190150

TAKOMA JUNCTION
13TH ELECTION DISTRICT
CITY OF TACOMA PARK
MONTGOMERY COUNTY, MARYLAND
TAX MAP: JN51
WSSC GRID: 208NE01 & 209NE01

DATE	REVISION

STATE OF MARYLAND
BRADLEY C. JOB
38317
PROFESSIONAL ENGINEER
11/30/19

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO., 38317 EXPIRATION DATE: 01/07/2020

SWM CONCEPT PLAN

DESIGNED: AMC
CHECKED: BCJ
SCALE: AS SHOWN
FILE NO.: 114-123
DATE: JANUARY 2019

C3.01