

# MAC ZONING PLAN

## FOR

## GENERAL NOTES

1. THE SUBJECT SITE IS LOCATED IN THE TOWN OF VIENNA WITH TAX MAP NO. 03-3-02-0147, AND IS ZONED C-1.
2. NO ENVIRONMENTAL OR HISTORICAL FEATURES EXIST ON SITE.
3. THERE IS NO BUFFER REQUIREMENT FOR THE SUBJECT SITE.
4. EXISTING LANDSCAPING AND TREE AREAS DOES NOT APPLY TO THE SUBJECT SITE.
5. NO EXTERIOR POLE MOUNTED LIGHTS ARE PROPOSED WITH THIS PLAN.
6. STREET TREES ALONG WADE HAMPTON DRIVE SUBJECT TO CHANGES WITH SIGHT DISTANCE REQUIREMENTS.
7. GENERAL STANDARDS FOR ON-SITE EXTERIOR LIGHTING:
  - 7.1. HOURS OF ILLUMINATION: INSTITUTIONAL USES, COMMERCIAL USES, AND MIXED USES THAT ARE ADJACENT TO EXISTING SINGLE-FAMILY RESIDENTIAL DEVELOPMENT SHALL EXTINGUISH ALL EXTERIOR LIGHTING-EXCEPT LIGHTING NECESSARY FOR SECURITY OR EMERGENCY PURPOSES WITHIN ONE HOUR OF CLOSING. FOR THE PURPOSE OF THIS SUBSECTION, LIGHTING "NECESSARY FOR SECURITY OR EMERGENCY PURPOSES" SHALL BE CONSTRUED TO MEAN THE MINIMUM AMOUNT OF EXTERIOR LIGHTING NECESSARY TO ILLUMINATE POSSIBLE POINTS OF ENTRY OR EXIT INTO A STRUCTURE, TO ILLUMINATE EXTERIOR WALKWAYS, OR TO ILLUMINATE OUTDOOR STORAGE AREAS.
  - 7.2. SHIELDING: ALL EXTERIOR LUMINARIES, INCLUDING SECURITY LIGHTING, SHALL BE FULL CUT-OFF FIXTURES AND DIRECTED DOWNWARD. IN NO CASE SHALL LIGHTING BE DIRECTED ABOVE A HORIZONTAL PLANE THROUGH THE LIGHTING FIXTURE.
  - 7.3. MAXIMUM HEIGHT: EXCEPT FOR ATHLETIC FIELDS OR PERFORMANCE AREAS, THE HEIGHT OF OUTDOOR LIGHTING, WHETHER MOUNTED ON POLES, WALLS OR BY OTHER MEANS, SHALL BE NO GREATER THAN 25 FEET ABOVE GROUND.
  - 7.4. MAXIMUM ILLUMINATION VALUE: ALL OUTDOOR LIGHTING AND INDOOR LIGHTING VISIBLE FROM OUTSIDE SHALL BE DESIGNED AND LOCATED SO THAT THE MAXIMUM ILLUMINATION MEASURED IN FOOT-CANDELES AT GROUND LEVEL AT A LOT LINE SHALL NOT EXCEED THE STANDARDS IN TABLE 18-95.15.A.
  - 7.5. MAXIMUM ILLUMINATION: IN NO INSTANCE SHALL ILLUMINATION LEVELS WITHIN A SITE EXCEED 30 FOOT-CANDELES.
8. NO PROFFERS FOR THIS PLAN.
9. THE DEVELOPER IS CURRENTLY IN COORDINATION WITH THE DRY UTILITY PROVIDERS TO DETERMINE FEASIBILITY OF UNDERGROUNDING THE OVERHEAD UTILITIES ON MAPLE AVENUE.

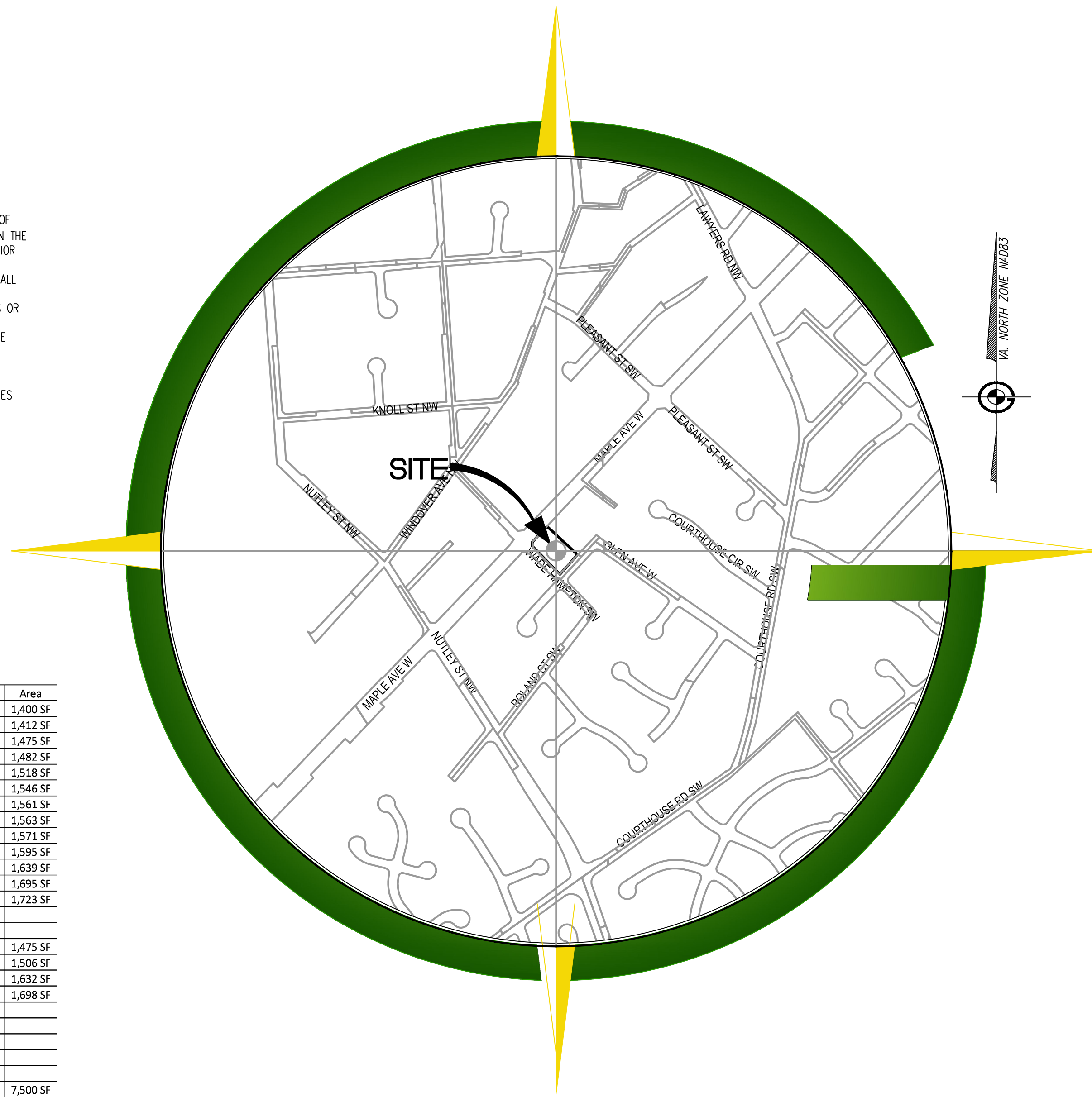
## ZONING REQUIREMENTS

|                                                                    | MAC Zone Regulations | Proposed            |
|--------------------------------------------------------------------|----------------------|---------------------|
| Zoning                                                             | C-1(Commercial)      | C-1(Commercial)     |
| Lot Area                                                           | N/A                  | 35,842 SF/0.84 A.C. |
| Lot Width                                                          | N/A                  | 143.08 ft.          |
| Gross Floor Area                                                   | N/A                  | 150,504 sq. ft.     |
| Net Floor Area                                                     | N/A                  | 73,702 sq. ft.      |
| Min. Yard, Front (on Maple Ave) <sup>1</sup>                       | 20 ft.               | 20.03 ft.           |
| Max. Yard, Front (on Maple Ave) <sup>1</sup>                       | 64 ft.               | 22.11 ft.           |
| Min. Yard, Front (on Side Streets - Wade Hampton Dr.) <sup>1</sup> | 11 ft.               | 15.00 ft.           |
| Max. Yard, Front (on Side Streets - Wade Hampton Dr.) <sup>1</sup> | 64 ft.               | 17.19 ft.           |
| Min. Yard, Front (on Side Streets - Glen Ave.) <sup>1</sup>        | 11 ft.               | 21.06 ft.           |
| Max. Yard, Front (on Side Streets - Glen Ave.) <sup>1</sup>        | 64 ft.               | 29.91 ft.           |
| Min. Yard, Rear <sup>2</sup>                                       | 8 ft                 | 8 ft.               |
| Max. Impervious Area                                               | 80%                  | 86.71%              |
| Min. Pervious Area                                                 | 20%                  | 13.29%              |
| Max. Building Height                                               | 54 ft.               | 52.50 ft.           |
| Min. Building Frontage <sup>3</sup>                                | 25%                  | 96%                 |
| Parking Spaces (Retail)                                            | 38                   | 86                  |
| Parking Spaces (Residential)                                       | 80                   | 74                  |
| Max Offstreet Parking <sup>4</sup>                                 | 95                   | 160                 |
| Total Parking Spaces                                               | 118                  | 160                 |
| Min. Open Space                                                    | 20%                  | 26.18%              |

## UNIT MIX

| Unit Type                  | # Units   | # Bedrooms | Area     |
|----------------------------|-----------|------------|----------|
| Unit A                     | 3         | 2          | 1,400 SF |
| Unit B                     | 1         | 2          | 1,412 SF |
| Unit C                     | 1         | 2          | 1,475 SF |
| Unit D                     | 3         | 2          | 1,482 SF |
| Unit E                     | 3         | 2          | 1,518 SF |
| Unit F                     | 3         | 2          | 1,546 SF |
| Unit G                     | 3         | 2          | 1,561 SF |
| Unit H                     | 3         | 2          | 1,563 SF |
| Unit I                     | 3         | 2          | 1,571 SF |
| Unit J                     | 2         | 2          | 1,595 SF |
| Unit K                     | 3         | 2          | 1,639 SF |
| Unit L                     | 1         | 2          | 1,695 SF |
| Unit M                     | 2         | 2          | 1,723 SF |
| <b>SUBTOTAL 2 BR UNIT:</b> | <b>31</b> |            |          |
| Unit N                     | 2         | 3          | 1,475 SF |
| Unit O                     | 3         | 3          | 1,506 SF |
| Unit P                     | 1         | 3          | 1,632 SF |
| Unit Q                     | 3         | 3          | 1,698 SF |
| <b>SUBTOTAL 3 BR UNIT:</b> | <b>9</b>  |            |          |
| <b>TOTAL ALL UNITS</b>     | <b>40</b> |            |          |
|                            |           |            |          |
| RETAIL SPACE               |           |            | 7,500 SF |

- (1) Yards are measured from face of curb to the edge of the front building walls.
- (2) Assumes the western building wall to be rear yard. To be modified during Zoning Plan.
- (3) At least 25% of the front building wall shall be built within five feet of the minim front setback
- (4) Includes 1.25 adjustment for structured parking



APPLICANT/OWNER  
RED INVESTMENT LLC  
PO BOX 1208  
VIENNA, VA 22183

## VICINITY MAP

SCALE: 1" = 500

# SHEET INDEX

| SHEET # | SHEET TITLE                                  |
|---------|----------------------------------------------|
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| 04      | CONTEXT PLAN                                 |
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| 06      | SWM - POST DEVELOPMENT DRAINAGE DIVIDES      |
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| 08      | BEST MANAGEMENT PRACTICES - POST-DEVELOPMENT |
| 09      | OPEN SPACE EXHIBIT                           |
| 10      | AUTOTURN EXHIBIT                             |
| 11      | PRELIMINARY LANDSCAPE PLAN                   |
| 12      | LIGHTING EXHIBIT                             |
| 13      | ZONING EXHIBIT                               |

TABLE 18-95.15.A.: MAXIMUM ILLUMINATION

| TYPE OF USE ABUTTING PROPOSED DEVELOPMENT                        | MAXIMUM ILLUMINATION LEVEL AT LOT LINE (FOOTCANDLES) |
|------------------------------------------------------------------|------------------------------------------------------|
| RESIDENTIAL USE OR VACANT LAND ZONED FOR RESIDENTIAL DEVELOPMENT | 0.50                                                 |
| INSTITUTIONAL USE                                                | 1.00                                                 |
| MIXED USE                                                        | 2.00                                                 |
| PARKING LOT                                                      | 2.50                                                 |

## PARKING TABULATIONS

|                           |                                               |
|---------------------------|-----------------------------------------------|
| PARKING REQUIRED          |                                               |
| 2 SPACES/RESIDENTIAL UNIT | 40 UNITS X 2 SPACES = 80 SPACES REQUIRED      |
| 1 SPACE/200 SQ FT RETAIL  | 7,500 SQ FT RETAIL / 200 = 38 SPACES REQUIRED |

PARKING PROVIDED\*  
RESIDENTIAL PARKING PROVIDED 74 SPACES  
DETAIL PARKING PROVIDED

RETAIL LEVEL 41 SPACES

|                         |           |
|-------------------------|-----------|
| INTERMEDIATE LEVEL      | 45 SPACES |
| RETAIL PARKING PROVIDED | 86 SPACES |

\*(SEE ARCHITECTURAL DRAWINGS FOR LOWER LEVEL GARAGE PLANS)

|                                           |                          |
|-------------------------------------------|--------------------------|
| BICYCLE PARKING REQUIRED                  |                          |
| RESIDENT BIKE STORAGE                     |                          |
| SHORT TERM STORAGE - 1 SPACE PER 10 UNITS | 40 UNITS / 10 = 4 SPACES |
| LONG TERM STORAGE - 1 SPACE PER 10 UNITS  | 40 UNITS / 10 = 4 SPACES |
| RETAIL BIKE STORAGE                       |                          |
| 1 SPACE / 5,000 SQ FT                     | 7,500 SQ FT / 5,000 = 2  |
| 1 SPACES / 25,000 SQ FT FOR EMPLOYEES     | 7,500 SQ FT / 25,000 = 1 |

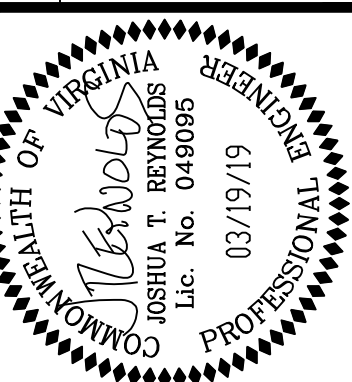
|                              |           |
|------------------------------|-----------|
| BICYCLE PARKING PROVIDED     |           |
| RESIDENTIAL PARKING PROVIDED | 24 SPACES |
| RETAIL PARKING PROVIDED      | 6 SPACES  |

COVER

380 W MAPLE AVE - OPTION 1

# MAC ZONING PLAN

HUNTER MILL TOWN OF VIENNA TRANSPORT  
TOWN OF VIENNA, VIRGINIA

[illegible]

|           |            |
|-----------|------------|
| PLAN DATE | 03/19/2019 |
|-----------|------------|

DATE: FEB 2019

C.I.= N/A

SCALE: AS NOTED

FILE No.  
N131

SHEET  
01  
OF  
13



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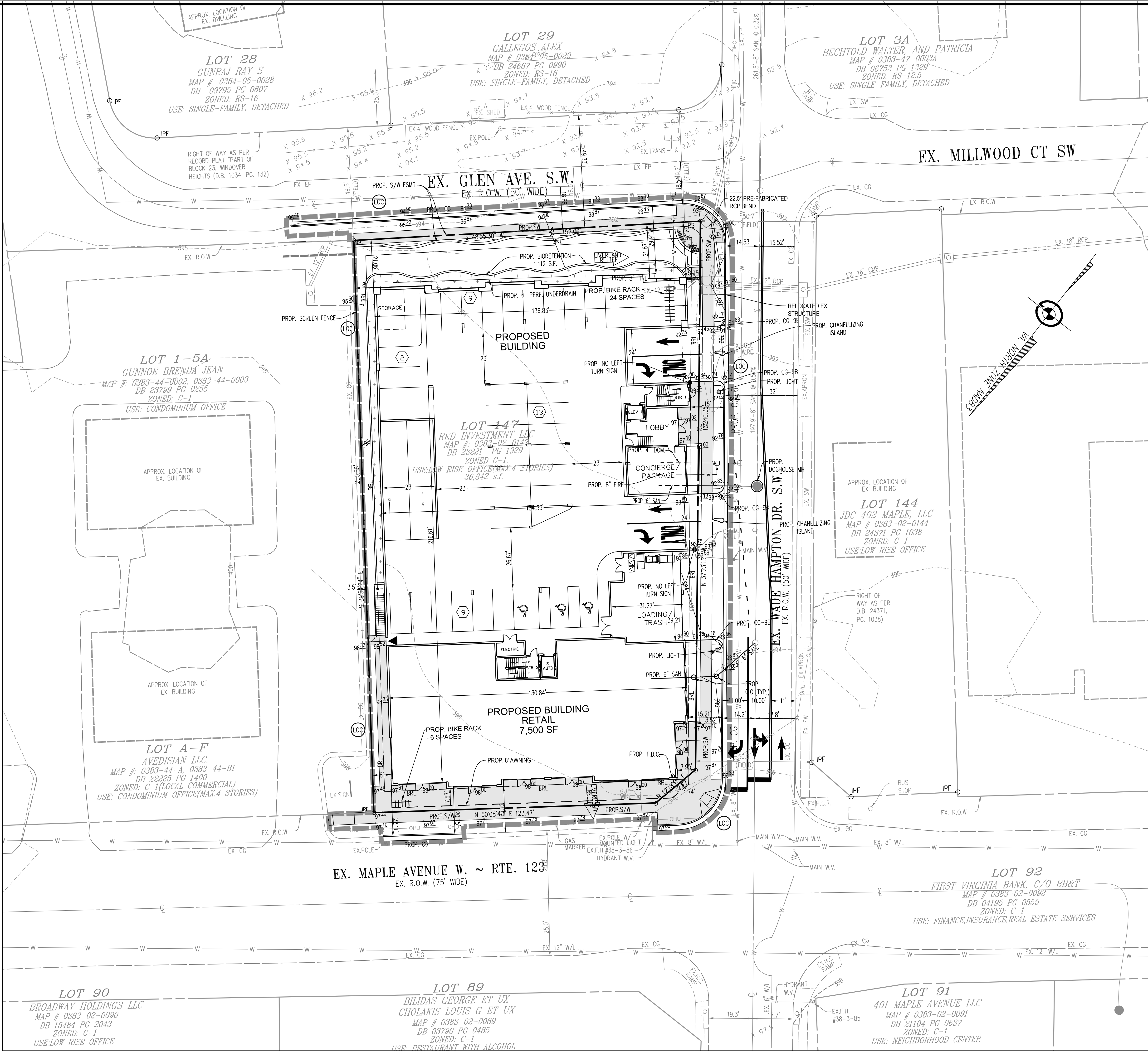


NOTE: THERE ARE NO EXISTING UTILITY EASEMENTS ON-SITE

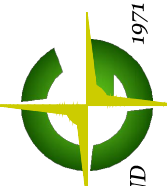




NOTES:  
-THIS APPLICATION PROPOSES A SIDEWALK EASEMENT ALONG  
GLEN AVENUE.  
-THERE AREA NO KNOWN ENVIRONMENTAL OR HISTORICAL  
FEATURES ON SITE



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CONCEPT PLAN

380 W MAPLE AVE - OPTION 1  
MAC ZONING PLAN

HUNTER MILL, TOWN OF VIENNA, TRANSPORT  
TOWN OF VIENNA, VIRGINIA



| No. | DATE | DESCRIPTION | REVISIONS |
|-----|------|-------------|-----------|
|     |      |             |           |
|     |      |             |           |
|     |      |             |           |
|     |      |             |           |
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|     |      |             |           |
|     |      |             |           |

PLAN DATE  
03/19/2019

DATE: FEB 2019

C.I. = 2'

SCALE: 1" = 20'

FILE No.  
N131

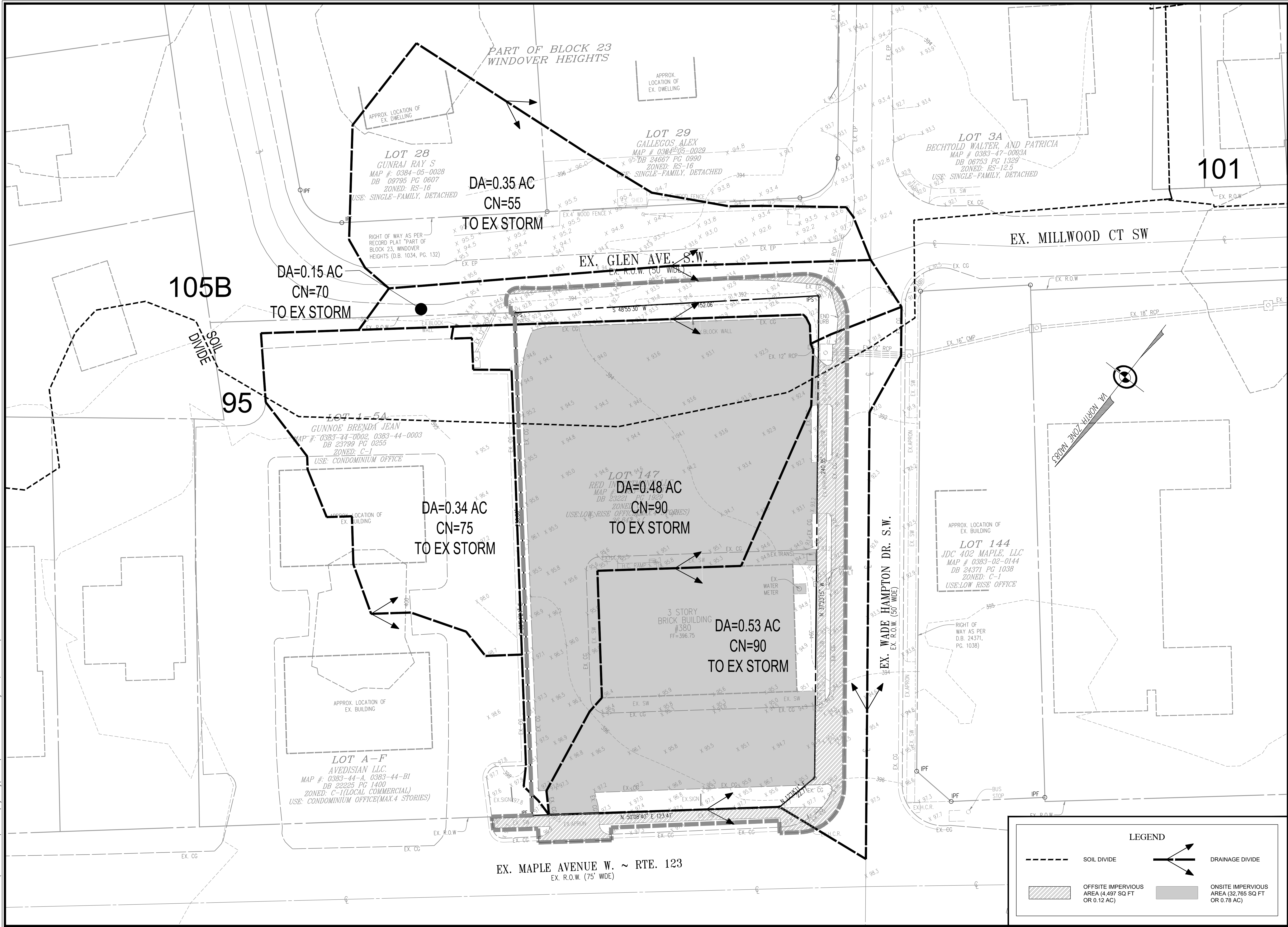
SHEET  
03  
OF  
13







GREENWAY ENG. - Z:\N131 - 380 W Maple Avenue Engineering\Site Plan\N131-20-PRE-DRAINAGE.dwg Mar 19, 2019 - 12:52pm mboffman



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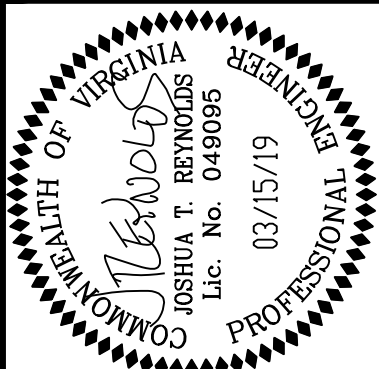
SWM - PRE DEVELOPMENT DIVIDES

380 W MAPLE AVE - OPTION 1

MAC ZONING PLAN

HUNTER MILL TOWN OF VIENNA, TRANSPORT

TOWN OF VIENNA, VIRGINIA



| No. | DATE | DESCRIPTION | REVISIONS |
|-----|------|-------------|-----------|
|     |      |             |           |
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PLAN DATE  
03/15/2019

DATE: FEB 2019

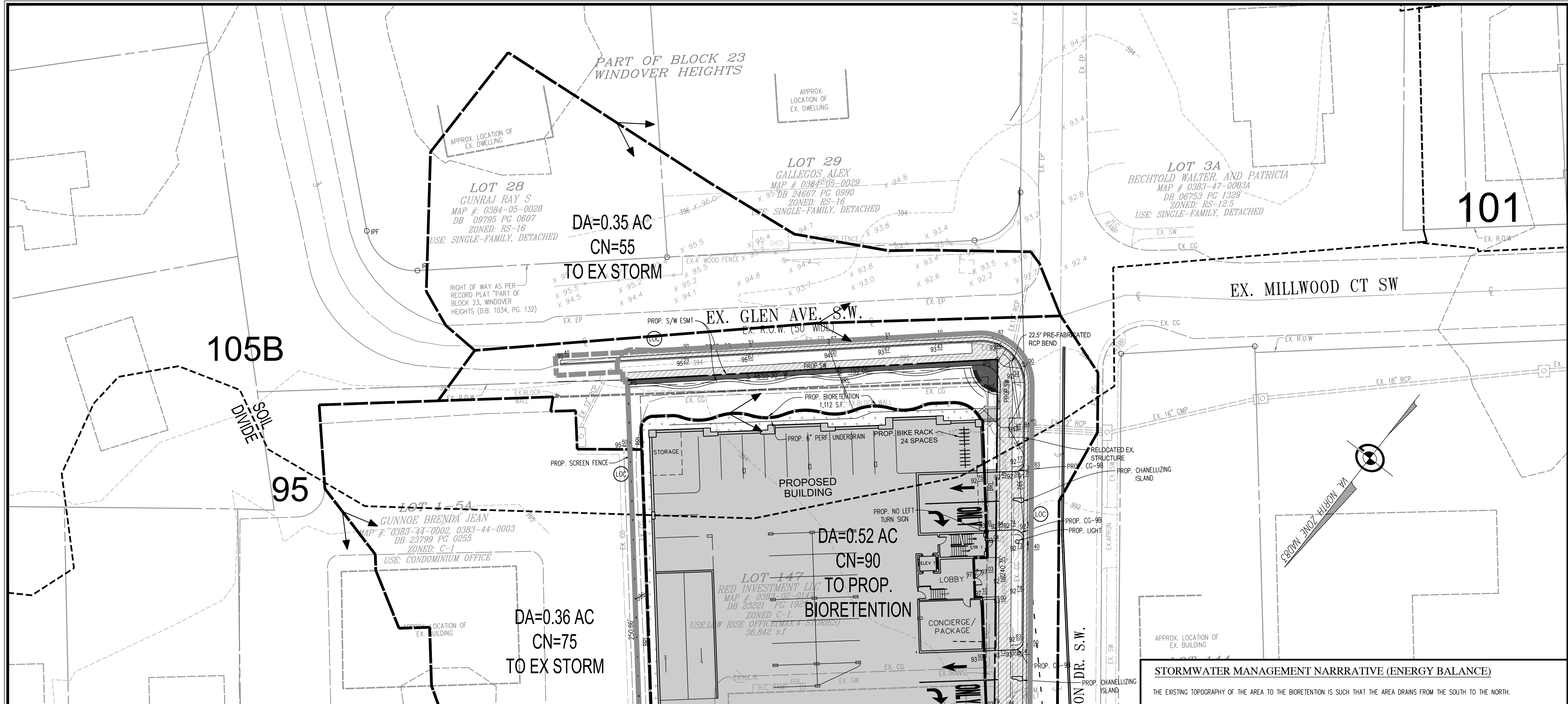
C.I. = 2'

SCALE: 1" =

FILE No.  
N131

SHEET  
05  
OF  
13





THE EXISTING TOPOGRAPHY OF THE AREA TO THE BIORETENTION IS SUCH THAT THE AREA DRAINS FROM THE SOUTH TO THE NORTH

STORMWATER MANAGEMENT IS TO BE PROVIDED IN THE FORM OF A BORTENTENTION IN ACCORDANCE WITH THE SEPTEMBER 2012 VIRGINIA  
STORMWATER MANAGEMENT HANDBOOK, AND UTILIZING THE VIRGINIA RUNOFF REDUCTION METHODOLOGY. THE TREATMENT VOLUME REMOVED BY THE  
PROPOSED BMP FACILITY PROVIDES ADEQUATE VOLUME REDUCTION TO ACCOUNT FOR ALL STORMWATER MANAGEMENT REQUIREMENTS. FOR THE  
OUTFALL POINT, THE ALLOWABLE RELEASE RATE HAS BEEN CALCULATED IN ACCORDANCE WITH SECTION 9VA2C5-870-6 OF THE STATE CODE OF  
VIRGINIA. FOR THE CHANNEL PROTECTION AND LOOD PROTECTION WHEN STORMWATER FROM A DEVELOPMENT IS DISCHARGED TO A NATURAL  
STORMWATER CONVEYANCE SYSTEM, THE MAXIMUM PEAK FLOW RATE FROM THE ONE-YEAR 24-HOUR STORM FOLLOWING THE LAND-DISTURBING  
ACTIVITY SHALL BE CALCULATED WHERE:

$$Q_{\text{DEVELOPED}} \leq \text{I.F.} * (Q_{\text{PRE-DEVELOPED}} * RV_{\text{PRE-DEVELOPED}}) / RV_{\text{DEVELOPED}}$$

AND THE PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PREDEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT. AS SHOWN IN THE FLOW SUMMARY TABLE ON THIS SHEET, THE ALLOWABLE RUNOFF TO STUD POINT WILL BE 3.22 CFS, 4.18 CFS, AND 6.66 CFS FOR THE 1-, 2-, AND 10-YEAR RUNOFFS, RESPECTIVELY, WHILE THE PROPOSED RUNOFF IS CALCULATED AS BEING 3.05 CFS, 3.87 CFS, AND 6.38 CFS.

IT IS THEREFORE THE OPINION OF GREENWAY ENGINEERING THAT AN ADEQUATE OUTFALL EXISTS FOR THE SITE AND THAT NO DOWNSTREAM STRUCTURES OR ROADWAYS SHALL BE ADVERSELY IMPACTED BY THE PROPOSED DEVELOPMENT.

| FLOW SUMMARY      |              | PRE-DEVELOPMENT |             |             | POST-DEVELOPMENT |             |             | QALLOW |
|-------------------|--------------|-----------------|-------------|-------------|------------------|-------------|-------------|--------|
| NODE ID           | RETURN EVENT | QPEAK (HRS)     | QPEAK (CFS) | RV (CU.FT.) | QPEAK (HRS)      | QPEAK (CFS) | RV (CU.FT.) | CFS    |
| ONSITE UNDETAINED | 1            |                 |             |             | 12.11            | 1.63        | 3,956       |        |
|                   | 2            |                 |             |             | 12.11            | 2.07        | 4,327       |        |
|                   | 10           |                 |             |             | 12.11            | 3.42        | 7,405       |        |
| ONSITE DETAINED   | 1            | 12.11           | 3.38        | 7,247       | 12.11            | 1.41        | 2,899       |        |
|                   | 2            | 12.11           | 4.19        | 9,121       | 12.11            | 1.79        | 3,737       |        |
|                   | 10           | 12.11           | 6.67        | 14,948      | 12.11            | 2.96        | 6,397       |        |
| STUDY POINT A     | 1            | 12.11           | 3.38        | 7,247       | 12.11            | 3.05        | 6,255       | 3.22   |
|                   | 2            | 12.11           | 4.19        | 9,121       | 12.11            | 3.87        | 8,064       | 4.18   |
|                   | 10           | 12.11           | 6.67        | 14,948      | 12.11            | 6.38        | 13,802      | 6.66   |

**LEGEND**

|                                                                                       |                                                        |                                                                                       |                                                        |
|---------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------|
|  | SOIL DIVIDE                                            |  | DRAINAGE DIVIDE                                        |
|  | OFFSITE IMPERVIOUS<br>AREA (5.438 SQ FT<br>OR 0.12 AC) |  | ONSITE IMPERVIOUS<br>AREA (32,241 SQ FT<br>OR 0.74 AC) |



Project Title: 380 West Maple  
Date: 43537

|                          |      |
|--------------------------|------|
| Total Rainfall (in):     | 43   |
| Total Disturbed Acreage: | 1.01 |

## Pre-ReDevelopment Land Cover (acres)

|                          | A soils | B Soils | C Soils | D Soils | Totals | % of Total |
|--------------------------|---------|---------|---------|---------|--------|------------|
| Forest/Open (acres)      | 0.00    | 0.00    | 0.00    | 0.00    | 0.00   | 0          |
| Managed Turf (acres)     | 0.00    | 0.00    | 0.08    | 0.08    | 0.16   | 16         |
| Impervious Cover (acres) | 0.00    | 0.00    | 0.16    | 0.69    | 0.85   | 84         |
|                          |         |         |         |         | 1.01   | 100        |

|                          | A soils | B Soils | C Soils | D Soils | Totals | % of Total |
|--------------------------|---------|---------|---------|---------|--------|------------|
| Forest/Open (acres)      | 0.00    | 0.00    | 0.00    | 0.00    | 0.00   | 0          |
| Managed Turf (acres)     | 0.00    | 0.00    | 0.10    | 0.05    | 0.15   | 15         |
| Impervious Cover (acres) | 0.00    | 0.00    | 0.14    | 0.72    | 0.86   | 85         |
|                          |         |         |         |         | 1.01   | 100        |

|                                     | Final Post-Development<br>(Post-ReDevelopment<br>& New Impervious) | Post-<br>ReDevelopment | Post-<br>Development<br>(New Impervious) | Adjusted Pre-<br>ReDevelopment |
|-------------------------------------|--------------------------------------------------------------------|------------------------|------------------------------------------|--------------------------------|
| Site Rv                             | 0.84                                                               | 0.84                   | 0.95                                     | 0.84                           |
| Treatment Volume (ft <sup>3</sup> ) | 3,091                                                              | 3,056                  | 34                                       | 3,056                          |
| TP Load (lb/yr)                     | 1.94                                                               | 1.92                   | 0.02                                     | 1.92                           |

|                                          |      |      |      |
|------------------------------------------|------|------|------|
| Total TP Load Reduction Required (lb/yr) | 0.40 | 0.38 | 0.02 |
|------------------------------------------|------|------|------|

|                 | Final Post-Development Load<br>(Post-ReDevelopment & New Impervious) | Pre-ReDevelopment |
|-----------------|----------------------------------------------------------------------|-------------------|
| TN Load (lb/yr) | 13.89                                                                | 13.79             |

### Drainage Area A Land Cover (acres)

|                           | A Soils | B Soils | C Soils | D Soils | Totals | Land Cover Rv |
|---------------------------|---------|---------|---------|---------|--------|---------------|
| Forest/Open Space (acres) |         |         |         |         | 0.00   | 0.00          |
| Managed Turf (acres)      |         |         | 0.03    |         | 0.03   | 0.22          |
| Impervious Cover (acres)  |         |         | 0.10    | 0.39    | 0.49   | 0.95          |
| Total                     |         |         |         |         | 0.52   |               |

| Practice                                                                      | Runoff Reduction Credit (%) | Managed Turf Credit Area (acres) | Impervious Cover Credit Area (acres) | Volume from Upstream Practice (ft³) | Runoff Reduction (ft³) | Remaining Runoff Volume (ft³) | Total BMP Treatment Volume (ft³) | Phosphorus Removal Efficiency (%) | Phosphorus Load from Upstream Practices (lb) | Untreated Phosphorus Load to Practice (lb) | Phosphorus Removed By Practice (lb) | Remaining Phosphorus Load (lb) | Downstream Practice to be Employed |
|-------------------------------------------------------------------------------|-----------------------------|----------------------------------|--------------------------------------|-------------------------------------|------------------------|-------------------------------|----------------------------------|-----------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------|------------------------------------|
| 6. Bioretention (RR)                                                          |                             |                                  |                                      |                                     |                        |                               |                                  |                                   |                                              |                                            |                                     |                                |                                    |
| 6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9) | 40                          | 0.03                             | 0.49                                 | 0                                   | 685                    | 1,028                         | 1,714                            | 25                                | 0.00                                         | 1.08                                       | 0.59                                | 0.48                           |                                    |

|                                                           |     |
|-----------------------------------------------------------|-----|
| Maximum % Reduction Required Below Pre-ReDevelopment Load | 20% |
|-----------------------------------------------------------|-----|

|                                                       |      |
|-------------------------------------------------------|------|
| <b>Total Runoff Volume Reduction (ft<sup>3</sup>)</b> | 685  |
| <b>Total TP Load Reduction Achieved (lb/yr)</b>       | 0.59 |
| <b>Total TN Load Reduction Achieved (lb/yr)</b>       | 4.92 |
| <b>Remaining Post Development TP Load (lb/yr)</b>     | 1.35 |
| <b>Remaining TP Load Reduction (lb/yr) Required</b>   | 0.00 |

**\*\* TARGET TP REDUCTION EXCEEDED BY 0.19 LB/YEAR \*\***

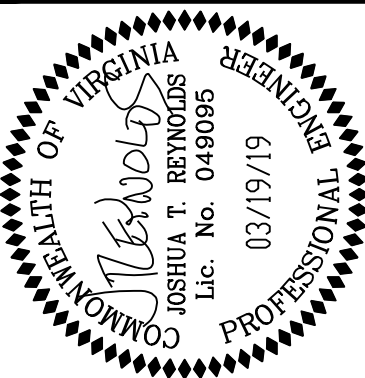
20 Pidgeon Hill Drive, Suite #208

## BEST MANAGEMENT PRACTICES - COMPUTATIONS

380 W MAPLE AVE - OPTION 1

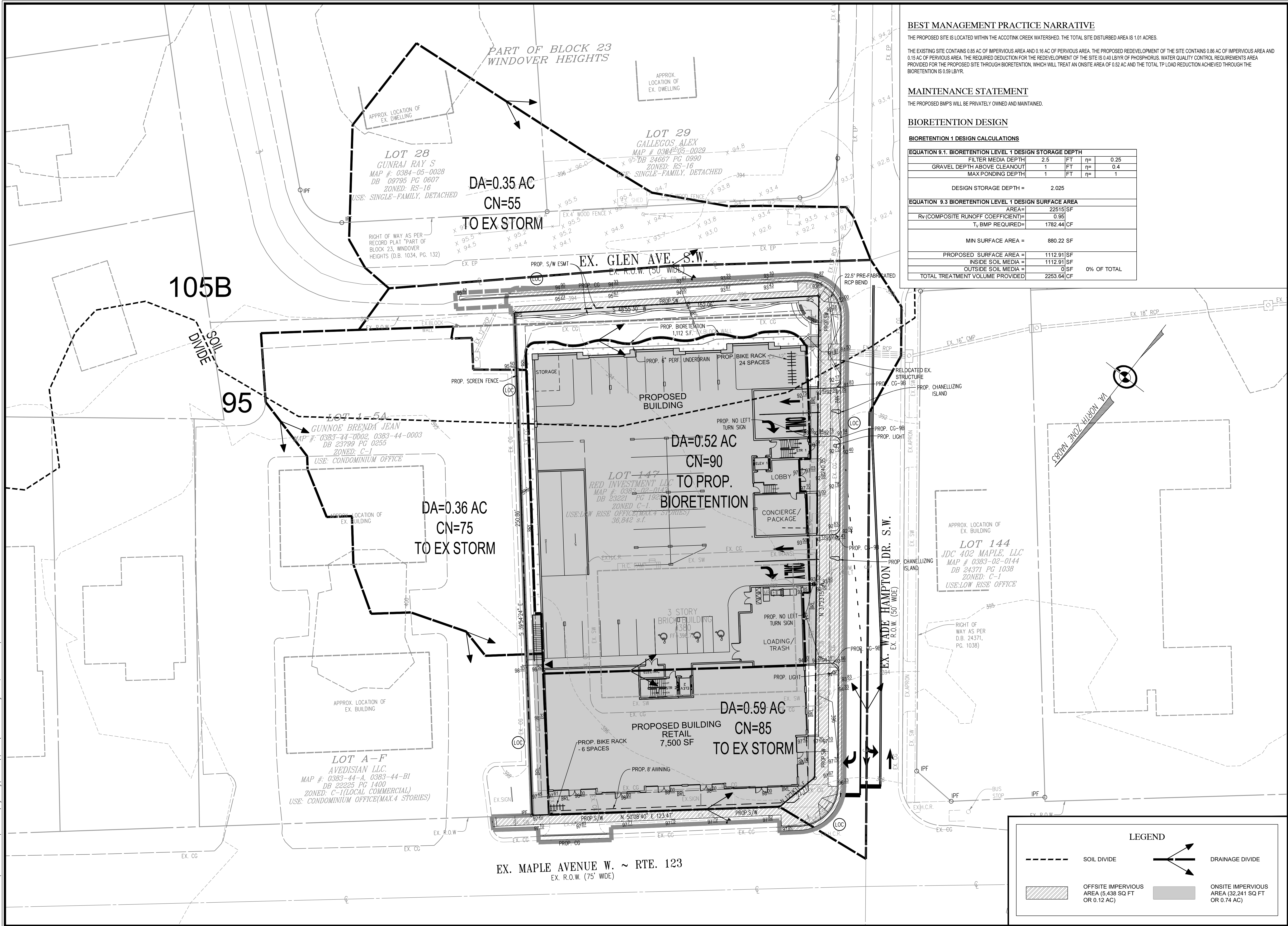
# MAC ZONING PLAN

HUNTER MILL TOWN OF VIENNA TRANSPORT  
TOWN OF VIENNA, VIRGINIA

[illegible]

|                         |            |
|-------------------------|------------|
| PLAN DATE               | 03/19/2019 |
| DATE: FEB 2019          |            |
| C.I.= N/A               |            |
| SCALE: N/A              |            |
| FILE No.<br>N 131       |            |
| SHEET<br>07<br>OF<br>13 |            |





**BEST MANAGEMENT PRACTICE NARRATIVE**

THE PROPOSED SITE IS LOCATED WITHIN THE ACCOTINK CREEK WATERSHED. THE TOTAL SITE DISTURBED AREA IS 1.01 ACRES.

THE EXISTING SITE CONTAINS 0.85 AC OF IMPERVIOUS AREA AND 0.16 AC OF PERVIOUS AREA. THE PROPOSED REDEVELOPMENT OF THE SITE CONTAINS 0.86 AC OF IMPERVIOUS AREA AND 0.15 AC OF PERVIOUS AREA. THE REQUIRED DEDUCTION FOR THE REDEVELOPMENT OF THE SITE IS 0.40 LB/YR OF PHOSPHORUS. WATER QUALITY CONTROL REQUIREMENTS AREA PROVIDED FOR THE PROPOSED SITE THROUGH BIORETENTION, WHICH WILL TREAT AN ONSITE AREA OF 0.52 AC AND THE TOTAL TP LOAD REDUCTION ACHIEVED THROUGH THE BIORETENTION IS 0.59 LB/YR.

**MAINTENANCE STATEMENT**

THE PROPOSED BMP'S WILL BE PRIVATELY OWNED AND MAINTAINED.

**BIORETENTION DESIGN**

**BIORETENTION 1 DESIGN CALCULATIONS**

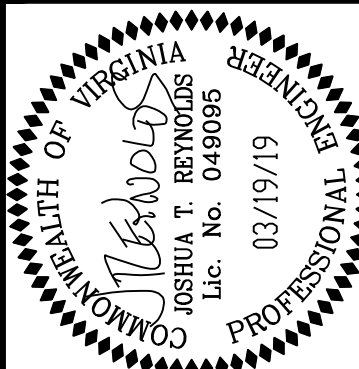
| EQUATION 9.1. BIORETENTION LEVEL 1 DESIGN STORAGE DEPTH |         |    |               |
|---------------------------------------------------------|---------|----|---------------|
| FILTER MEDIA DEPTH                                      | 2.5     | FT | $\eta = 0.25$ |
| GRAVEL DEPTH ABOVE CLEANOUT                             | 1       | FT | $\eta = 0.4$  |
| MAX PONDING DEPTH                                       | 1       | FT | $\eta = 1$    |
| DESIGN STORAGE DEPTH = 2.025                            |         |    |               |
| EQUATION 9.3 BIORETENTION LEVEL 1 DESIGN SURFACE AREA   |         |    |               |
| AREA                                                    | 22516   | SF |               |
| Rv (COMPOSITE RUNOFF COEFFICIENT)                       | 0.95    |    |               |
| Tv BMP REQUIRED                                         | 1782.44 | CF |               |
| MIN SURFACE AREA = 880.22 SF                            |         |    |               |
| PROPOSED SURFACE AREA                                   | 1112.91 | SF |               |
| INSIDE SOIL MEDIA                                       | 1112.91 | SF |               |
| OUTSIDE SOIL MEDIA                                      | 0       | SF | 0% OF TOTAL   |
| TOTAL TREATMENT VOLUME PROVIDED                         | 2253.64 | CF |               |

BEST MANAGEMENT PRACTICES - POST DEVELOPMENT

380 W MAPLE AVE - OPTION 1

MAC ZONING PLAN

HUNTER MILL TOWN OF VIENNA TRANSPORT TOWN OF VIENNA, VIRGINIA



| No. | DATE | DESCRIPTION | REVISIONS |
|-----|------|-------------|-----------|
|     |      |             |           |
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|     |      |             |           |

|           |            |
|-----------|------------|
| PLAN DATE | 03/19/2019 |
| DATE      | FEB 2019   |
| C.I.      | 2'         |
| SCALE     | 1"=20'     |
| FILE No.  | N131       |
| SHEET     | 08         |
| OF        | 13         |

20 Pidgeon Hill Drive, Suite #208  
Sterling, VA 22154  
Tel: (703) 328-0788  
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**GREENWAY**  
ENGINEERING

PROUDLY SERVING VIRGINIA & WEST VIRGINIA  
OFFICES IN: STERLING, VA, WINCHESTER, VA & MARTINSBURG, WV

**LEGEND**

--- SOIL DIVIDE

--- DRAINAGE DIVIDE

OFFSITE IMPERVIOUS AREA (5,438 SQ FT OR 0.12 AC)

ONSITE IMPERVIOUS AREA (32,241 SQ FT OR 0.74 AC)



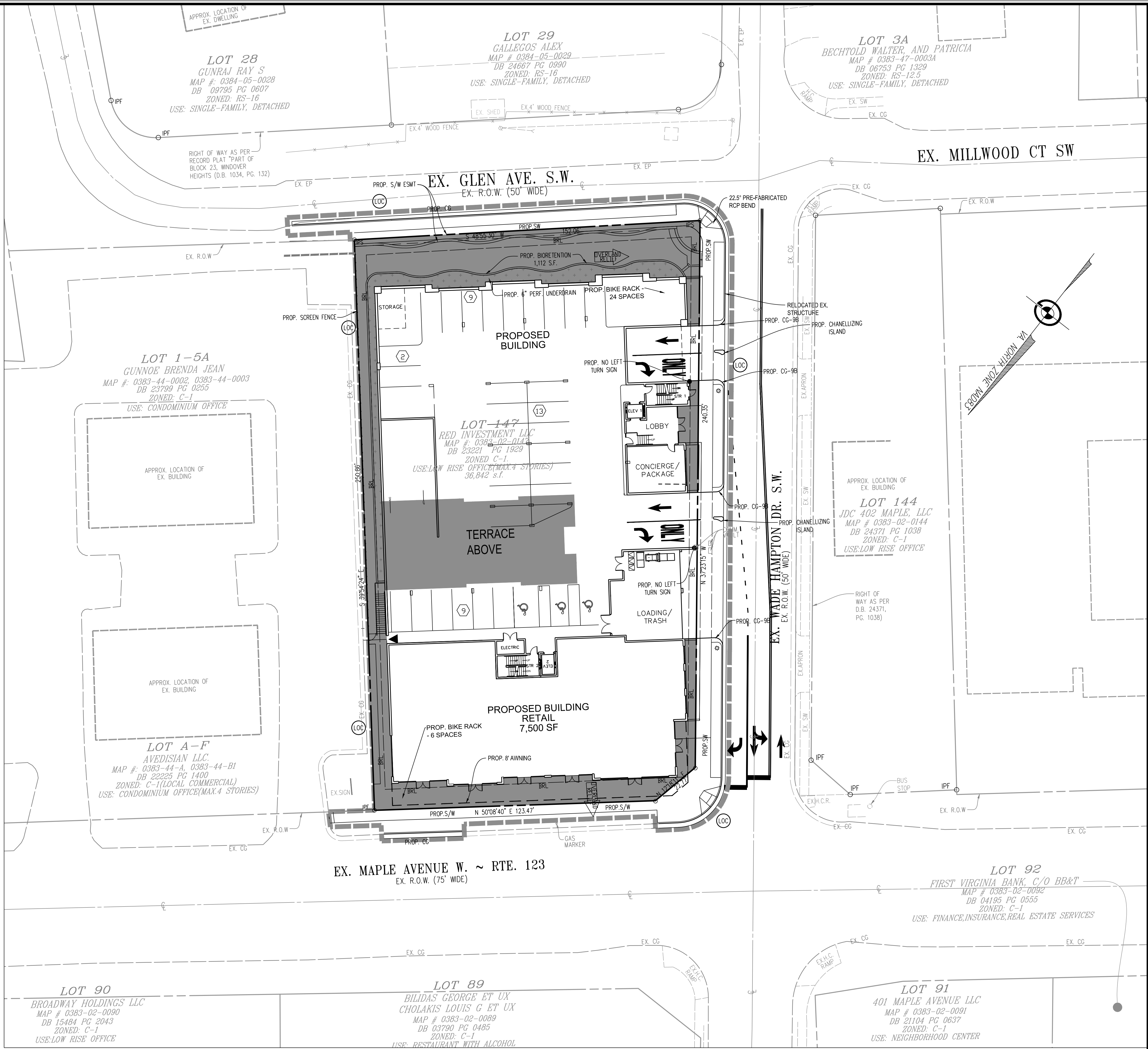
GREENWAY ENG. - Z:\N131 - 380 W Maple Avenue\Engineering\Site Plan\Option 1\N131-90-OPEN SPACE.dwg Mar 19, 2019 - 12:53pm mholifman

LEGEND



PROP. OPEN SPACE

PROP. OPEN SPACE = 9,277 SQ FT  
/36,842 SQ FT  
= 25.18%



20 Elyson Hill Drive, Suite #208  
Springfield, VA 22151  
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OPEN SPACE EXHIBIT

380 W MAPLE AVE - OPTION 1  
MAC ZONING PLAN

HUNTER MILL TOWN OF VIENNA, TRANSPORT  
TOWN OF VIENNA, VIRGINIA

| No. | DATE | DESCRIPTION | REVISIONS |
|-----|------|-------------|-----------|
|     |      |             |           |
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|     |      |             |           |

PLAN DATE  
03/19/2019

DATE: FEB 2019

C.I. = 2'

SCALE: 1"=20'

FILE No.  
N131

SHEET  
09  
OF  
13



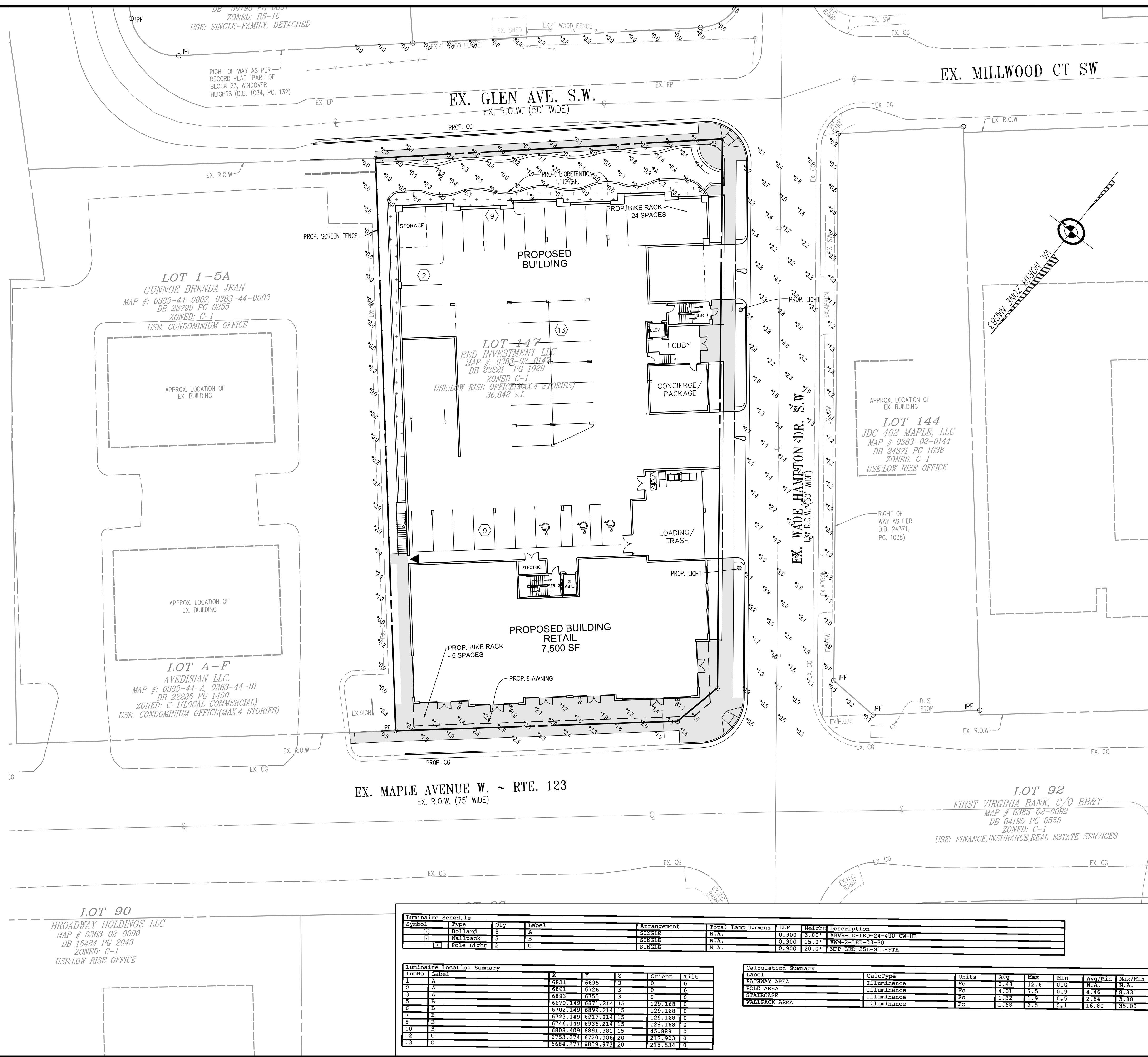




[illegible]

|                         |            |
|-------------------------|------------|
| PLAN DATE               | 03/19/2019 |
| DATE: FEB 2019          |            |
| C.I. = 2'               |            |
| SCALE: 1" =             |            |
| FILE No.<br>N131        |            |
| SHEET<br>11<br>OF<br>13 |            |





| Luminaire Schedule |            |     |       |             |                   |       |                                |
|--------------------|------------|-----|-------|-------------|-------------------|-------|--------------------------------|
| Symbol             | Type       | Qty | Label | Arrangement | Total Lamp Lumens | LLF   | Height/Description             |
| ⊙                  | Bollard    | 3   | A     | SINGLE      | N.A.              | 0.900 | 3.60' XBVR-ID-LED-24-400-CW-UE |
| ⊞                  | Wallpack   | 5   | B     | SINGLE      | N.A.              | 0.900 | 15.0' XWM-2-LED-03-30          |
| ⊞-1                | Pole Light | 2   | C     | SINGLE      | N.A.              | 0.900 | 20.0' MPP-LED-25L-SIL-FTA      |

| Luminaire Location Summary |       |          |          |    |         |      |
|----------------------------|-------|----------|----------|----|---------|------|
| LumNo                      | Label | X        | Y        | Z  | Orient  | Tilt |
| 1                          | A     | 6821     | 6695     | 3  | 0       | 0    |
| 2                          | A     | 6861     | 6726     | 3  | 0       | 0    |
| 3                          | A     | 6993     | 6755     | 3  | 0       | 0    |
| 5                          | B     | 6670.149 | 6911.214 | 15 | 129.168 | 0    |
| 6                          | B     | 6702.149 | 6899.214 | 15 | 129.168 | 0    |
| 7                          | B     | 6723.149 | 6917.214 | 15 | 129.168 | 0    |
| 8                          | B     | 6746.149 | 6936.214 | 15 | 129.168 | 0    |
| 10                         | B     | 6808.393 | 6891.381 | 15 | 15.885  | 0    |
| 12                         | C     | 6753.374 | 6700.028 | 20 | 214.903 | 0    |
| 13                         | C     | 6684.277 | 6809.973 | 20 | 215.534 | 0    |

| Calculation Summary |             |       |      |      |     |         |         |
|---------------------|-------------|-------|------|------|-----|---------|---------|
| Label               | CalcType    | Units | Avg  | Max  | Min | Avg/Min | Max/Min |
| PATHWAY AREA        | illuminance | fc    | 0.48 | 12.6 | 0.0 | N.A.    | N.A.    |
| POLE AREA           | illuminance | fc    | 7.5  | 9.9  | 0.0 | 8.33    | 8.33    |
| STAIRCASE           | illuminance | fc    | 1.32 | 1.9  | 0.5 | 2.64    | 3.80    |
| WALLPACK AREA       | illuminance | fc    | 1.68 | 3.5  | 0.1 | 16.80   | 35.00   |



