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# ENVIRONMENTAL CONCEPT PLAN

## ELKRIDGE CROSSING II

### BUILDABLE LOTS 1 THRU 158

### AND PARCEL 'G'

## ZONING: CAC-CLI (CORRIDOR ACTIVITY CENTER) DISTRICT

## TAX MAP No. 38 GRID Nos. 2 & 3 PARCEL No. 38

## PARCELS 'B-1', 'D-1' & PART OF BULK PARCEL 'F'

#### STORMWATER MANAGEMENT DESIGN NARRATIVE

**INTRODUCTION:**  
The original Elkridge Crossing Project was a redevelopment of the Elkridge Drive-in Theater and designed prior to the objective of Environmental Site Design to the Maximum Extent Practicable. The approved Stormwater Management on the original design was more aligned with Chapter 3 of the Maryland Stormwater Design Manual, Volumes I and II. This site is also subject to the Airport Zone and requires SWM facilities to drain within 24 hours.

With the benefit of discussions with Howard County's Development Engineering Division, the Elkridge Crossing II design will maintain function of the facilities previously proposed under the original Elkridge Crossing design by maintaining the same quantity of runoff entering the original design.

For this reason this project continues as re-development in qualified areas, which has allowed for a credit of 2.56 Acres for existing impervious area. The area where the bulk of new development is proposed will meet the new criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009). The goal of providing Environmental Site Design to the Maximum Extent Practicable, resulting in hydrology similar to that of "Woods in Good Condition", will be accomplished through the use of devices suggested within Chapter 5 of said manual. To maintain proper Channel Protection Volume, Quantity Management will be provided.

**GENERAL SITE CONDITIONS:**  
The Elkridge Crossing II Project is located near the northeast corner of the intersection of Washington Boulevard (U.S. Route 1) and Montgomery Road and is approximately 13.33 acres in size. This project was part of the original Elkridge Crossing Project, which received Sketch Plan Approval in 2004. Forest Conservation requirements were previously addressed under SDP-04-017 by off-site reforestation at Brantwood (F-06-005) and off-site retention at Elliott Meadows (F-15-025). Construction of Four "16 Unit Building" and Ten "2 over 2 Unit" were completed by 2011 given a total Unit count at that time of 178. An Alternative Compliance to extend the approval date for the existing Site Development Plan was denied by the Director of Howard County's Department of Planning and Zoning in 2012. This left the project in a partially completed state until 2014, when 36 additional homes were constructed, bringing the total amount of homes that exist today to 214. At this time, home construction has been completed on the western portion of the site, leaving the eastern portion largely unimproved. This site does not contain a 100 Year Flood Plain.

**I. NATURAL RESOURCE PROTECTION:**  
An NRI Wetlands Investigation and Forest Stand Delineation Report has been provided by Forenivic, dated July 13, 2018 and was followed by a pre application meeting where based on a field inspection by the Maryland Department of Environment on March 1, 2019, a determination was made that there were no regulated wetlands existing on-site, however an intermittent stream was discovered on site and will be removed by MDE permit number 19-NI-3068, tracking number 201960503. There is also an area of forest approximately 0.3 acres in size found near the eastern boundary of the site. The existing forest area is proposed to be removed as part of the Elkridge Crossing II project. Forest Conservation requirements were previously addressed under SDP-04-017 by off-site reforestation at Brantwood and off-site retention at Elliott Meadows.

**II. MAINTENANCE OF NATURAL FLOW PATTERNS:**  
The drainage patterns provided during the design of the original Elkridge Crossing design will be maintained for the new Elkridge Crossing II project. This approach will allow the both the original SWM facilities previously proposed under SDP-07-055 and the new SWM facilities to maintain similar discharge rates as originally intended.

**III. REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES AND NONSTRUCTURAL PRACTICES:**  
Only the minimum impervious areas have been proposed to maintain the design presented to and approved by the Design Advisory Panel.

**IV. INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO STORMWATER STRATEGY:**  
The Elkridge Crossing II project proposes to utilize the existing sediment basins proposed under previous plan submission SDP-04-017. Sediment Basin #1 will be converted to a SWM facility after the site has been stabilized.

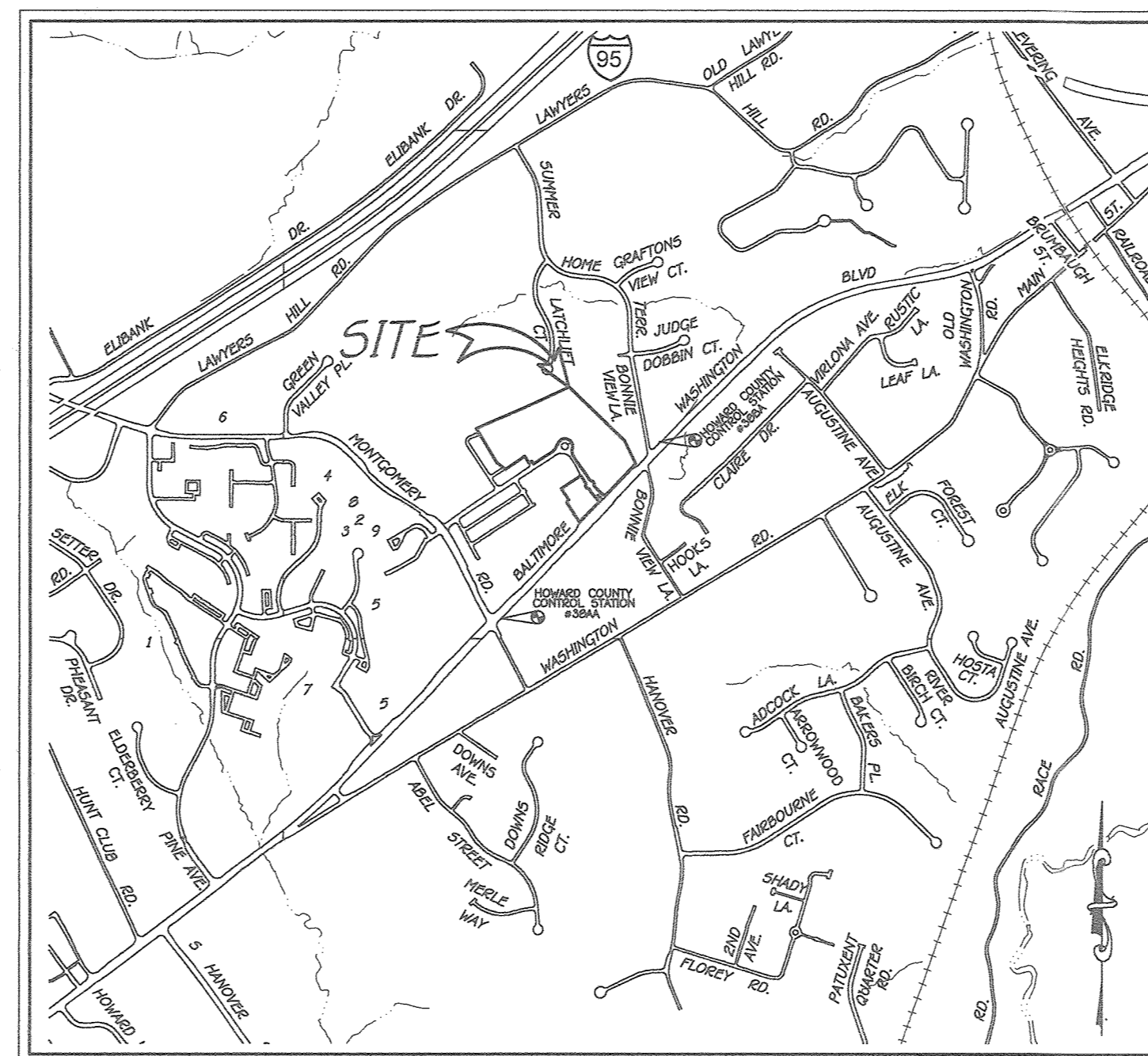
**V. IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM EXTENT PRACTICABLE (MEP):**  
As originally designed, this project will provided treatment in accordance with the re-development criteria in qualified areas. The remaining 828 sq ft of this project that will provided full ESD treatment in accordance with Chapter 5 of the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009), will be through the use of micro-bioretenion and bio-retention to meet and exceed the requirements of Environmental Site Design to the Maximum Extent Practicable (ESD to the MEP).

**VI. REQUEST FOR DESIGN MANUAL WAIVER:**  
No waivers are expected to be requested on this project.

#### SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 13.33 AC.\*
- B. LIMIT OF DISTURBED AREA = 13.99 AC.\*
- C. SWM BASED ON LOD
- D. PRESENT ZONING DESIGNATION = CAC-CLI (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- E. PROPOSED USE: RESIDENTIAL SINGLE FAMILY ATTACHED
- F. PREVIOUS HOWARD COUNTY FILES: 5-04-011, SDP-04-017, WP-04-043, F-04-187, WP-04-150, F-06-013, F-06-005, F-05-188, F-07-132, F-08-067, SDP-07-055, F-08-192, SDP-06-078, WP-11-042, WP-13-010, WP-14-062, F-12-001, AND WP-15-075.
- G. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC.\*
- H. TOTAL AREA OF SLOPES IN EXCESS OF 25% = 1.80 AC.\*
- I. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 2.07 AC.\*
- J. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.\*
- K. TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.33 AC.\*
- L. TOTAL IMPERVIOUS AREA = 7.98 AC.\* (WITHIN LOD, EXCLUDES EXISTING IMPERVIOUS)
- M. AREA OF ERODIBLE SOILS = 6.09 AC.\*

LEGEND	
SYMBOL	DESCRIPTION
[Pattern]	EXISTING PAVEMENT
[Pattern]	EXISTING PAVEMENT TO BE REMOVED
[Pattern]	EXISTING PUBLIC UTILITY EASMENT
[Pattern]	EXISTING ACCESS EASMENT
[Pattern]	EXISTING PRIVATE UTILITY EASMENT
[Pattern]	EXISTING EASEMENT TO BE ABANDONED
[Pattern]	EXISTING TREES TO BE REMOVED
[Pattern]	APPROX. NOISE MITIGATION LINE
[Pattern]	EXISTING TREELINE
[Pattern]	SOILS DELINEATION
[Pattern]	EXISTING TREES
[Pattern]	OPEN SPACE AMENITY AREA
[Pattern]	STEEP SLOPES FROM 15% TO 24.9%
[Pattern]	STEEP SLOPES GREATER THAN 25%



HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 388A  
N 561,158.815 E 1,309,726.426  
ELEVATION: 220.03'

HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 388A  
N 562,553.314 E 1,390,967.956  
ELEVATION: 166.174'

REFER TO HOWARD CO. ADC MAP 35-E1

#### VICINITY MAP

SCALE: 1" = 1200'

# FIRST ELECTION DISTRICT

# HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT PRACTICES											
AREA ID	LOCATION	DRAINAGE AREA	% IMPERVIOUS	ESDV REQUIRED (CUFT)	ESDV PROVIDED (CUFT)	DRY WELLS M-5 (Y/N)	BIO-RETENTION M-6 (Y/N)	BIO-RETENTION F-6 (Y/N)	PERMEABLE A-2 (Y/N)	FILTERBETA INLET FIL (Y/N)	RAINFALL HARVESTING M-1 (Y/N)
F-6(1)	PARCEL 'G'	52,894	64%	4,995	5,658						
F-6(2)	PARCEL 'G'	83,680	40%	3,440	3,497						
F-6(3)	PARCEL 'G'	34,505	69%	3,481	3,337						
M-6(4)	PARCEL 'G'	5,716	76%	828	724						
M-6(5)	PARCEL 'G'	13,941	95%	1,182	1,203						
M-6(6)	PARCEL 'G'	12,603	79%	1,445	1,743						
A-2(1)	PARCEL 'G'	5,797	37%	302	1,091				Y		
A-2(2)	PARCEL 'G'	1,770	63%	180	293				Y		
A-2(3)	PARCEL 'G'	1,782	64%	182	295				Y		
A-2(4)	PARCEL 'G'	2,798	71%	278	445				Y		
A-2(5)	PARCEL 'G'	8,146	60%	699	1,367				Y		
A-2(6)	PARCEL 'G'	2,943	45%	189	922				Y		
LOTS 1-13											
A-2(0)	LOTS 67-79	15,130	64%	1,370	2,506				Y		
LOTS 98-158											
M-5	LOTS 103-115	4,860	100%	377	416	Y					
FIL(1)	PARCEL 'G'	9,014	64%	945	260					Y	
FIL(2)	PARCEL 'G'	4,293	74%	481	260					Y	
FIL(3)	PARCEL 'G'	4,704	89%	575	325					Y	
FIL(4)	PARCEL 'G'	4,797	91%	625	347					Y	
FIL(5)	PARCEL 'G'	4,735	71%	487	275					Y	
FIL(6)	PARCEL 'G'	4,477	77%	493	270					Y	
N-1	PARCEL 'G'	18,336	73%	2,670	2,670						Y

Approved: Department of Planning And Zoning

*Chad Edm* 10-25-19  
Chief, Development Engineering Division JP Date

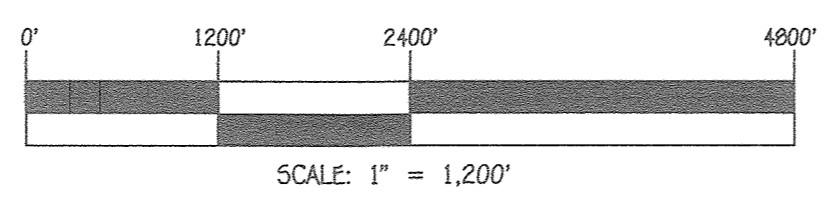
*Kurt Johnson* 10-18-19  
Chief, Division of Land Development MW Date



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

*Frank Malanalis, II* 10/13/19  
Date



- GENERAL NOTES**
- SUBJECT PROPERTY ZONED CAC-CLI PER 10/06/2013 COMPREHENSIVE ZONING PLAN.
  - SITE ANALYSIS
    - ZONING = CAC-CLI
    - GROSS AREA OF TRACT = 13.33 AC.\*
      - D-1 = 3.836 AC.\*
      - D-1 = 5.671 AC.\*
      - PART OF PARCEL 'F' = 3.827 AC.\*
      - (OVERALL PARCEL 'F' = 5.99 AC.)\*
      - AREA OF FLOODPLAIN = 0.00 AC.\*
      - AREA OF STEEP SLOPES (GREATER THAN 25%) = 1.80 AC.\*
      - AREA OF STEEP SLOPES (GREATER THAN 15%) = 2.07 AC.\*
      - NET AREA OF TRACT = 6.46 AC.\*
      - AREA OF PROPOSED PUBLIC ROAD = 0.00 AC.\*
    - PROPOSED DENSITY:
      - TOTAL NUMBER OF UNITS ALLOWED: (9.46 AC. X 25 UNITS/AC) = 237 UNITS
      - TOTAL NUMBER OF UNITS PROPOSED = 206 (159 TOWNHOUSES AND 48 CONDOMINIUMS)
      - TOTAL AREA OF COMMERCIAL REQUIRED = (426 UNITS X 85X X 70 SFT PER UNIT = 25,347 SFT)
      - BASED ON OVERALL AREA OF ELKRIDGE CROSSING PROJECT (Zoning Criteria 127.5 E.C.)
      - TOTAL AREA OF COMMERCIAL PROVIDED = 17,900 SFT ELKRIDGE CROSSING II (BUILDING 'E' CONTAINING 7,900 SFT OF RETAIL AND BUILDING 'D' CONTAINING 10,000 SFT OF DAY CARE)
      - TOTAL AREA OF COMMERCIAL PREVIOUSLY PROVIDED = 19,320 SFT OF OFFICES AND 5,200 OF RETAIL)
      - TOTAL AREA OF COMMERCIAL PROVIDED = 37,220 SFT.
      - TOTAL NUMBER OF MHU REQUIRED: (206 X .15) = 31 UNITS
  - PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS = 5-04-011, SDP-04-017, WP-04-043, F-04-187, WP-04-150, F-06-013, F-06-005, F-05-188, F-07-132, F-08-067, SDP-07-055, F-08-192, SDP-06-078, WP-11-042, WP-13-010, AND WP-15-075.
  - TOPOGRAPHIC CONTOURS ARE BASED ON A FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED ON OR ABOUT AUGUST, 2018.
  - BOUNDARY OUTLINE BASED ON PLATS ENTITLED "RESUBDIVISION PLAT, ELKRIDGE CROSSING, PARCELS A-1, B-1, C-1 & D-1" PLAT NOS. 19565 AND 19566, AND PLATS ENTITLED "ELKRIDGE CROSSING, LOTS 1-36, OPEN SPACE LOT 37 AND BULK PARCEL 'F' PLAT NOS. 23060 THRU 23062.
  - PROPERTY DEED REFERENCE: LIBER 10635 AT FOLIO 563.
  - THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND PUBLIC WATER AND SEWER SHALL BE UTILIZED WITHIN THIS DEVELOPMENT. PUBLIC WATER AND SEWER WILL BE PROVIDED BY CONTRACT NO. MP-105CA3312.
  - EXISTING UTILITIES ARE BASED ON A FIELD RUN SURVEY AND SUPPLEMENTED BY SITE DEVELOPMENT PLANS, SDP-04-017, SDP-06-078 AND SDP-07-055.
  - SOILS INFORMATION TAKEN FROM SOIL MAP NO. 38, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY, 1968 ISSUE.
  - STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. THE PROPOSED STORMWATER MANAGEMENT SYSTEMS SHOWN ON THIS PLAN ARE AN APPROXIMATION OF THE SIZE, SHAPE AND LOCATION. IT IS UNDERSTOOD THAT THESE SYSTEMS HAVE NOT BEEN DESIGNED AND THE ACTUAL DESIGN MAY CHANGE, ALTERING THE NUMBER OF UNITS ALLOCATED FOR THIS DEVELOPMENT. THE PROPOSED STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE EXISTING HOMEOWNERS ASSOCIATION.
  - THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MKJ&H CONSULTING, DATED FEBRUARY 8, 2019, AND WAS APPROVED ON AUGUST 5, 2019.
  - THERE IS NO FLOOD PLAN LOCATED ON THIS PROPERTY.
  - AN NRI WETLANDS INVESTIGATION AND FOREST STAND DELINEATION REPORT HAS BEEN PROVIDED BY FORENVIC, DATED JULY 13, 2018 AND WAS FOLLOWED BY A PRE-APPLICATION MEETING WHERE BASED ON A FIELD INSPECTION BY THE MARYLAND DEPARTMENT OF ENVIRONMENT ON MARCH 1, 2019, A DETERMINATION WAS MADE THAT THERE WERE NO REGULATED WETLANDS EXISTING ON-SITE. HOWEVER AN INTERMITTENT STREAM WAS DISCOVERED ON SITE AND WILL BE REMOVED BY MDE PERMIT NUMBER 19-NI-3068, TRACKING NUMBER 201960503.
  - NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
  - COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL.
    - STATIONS NO. 38AA AND NO. 38BA
    - HOWARD COUNTY MONUMENT NO. 38AA N 561,158.815 FT E 1,309,726.426 FT ELEV. 220.036
    - HOWARD COUNTY MONUMENT NO. 38BA N 562,553.314 FT E 1,390,967.956 FT ELEV. 166.174
  - STORMWATER MANAGEMENT FOR A PORTION OF THE ELKRIDGE CROSSING II PROJECT WAS PROVIDED AS PART OF SDP-06-078. A PERFORMANCE CASH BOND OF \$917,160.00 PLACED BY ELKRIDGE DEVELOPERS, LLC WILL REMAIN WITH HOWARD COUNTY AND BE RELEASED AFTER COMPLETION OF BOTH PREVIOUS QUALITY AND QUANTITY STORMWATER MANAGEMENT FACILITIES OBLIGATIONS HAVE BEEN COMPLETED.
  - THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
  - FORMER SITE OF HO-308 - "CROSSINGS" THAT NO LONGER EXISTS.
  - FOREST CONSERVATION REQUIREMENTS WERE PREVIOUSLY ADDRESSED UNDER SDP-04-017 BY OFF-SITE REFORESTATION AT BRANTWOOD (F-06-005) AND OFF-SITE RETENTION AT ELLICOTT MEADOWS (F-15-025).
  - SOIL BORINGS WILL BE PROVIDED AT THE NEXT PLAN STAGE OF THIS PROJECT.
  - AN ALTERNATIVE COMPLIANCE TO THE SUBDIVISION REGULATIONS FOR SECTION 16.116(a)(2)(i) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN FIFTY FEET OF AN INTERMITTENT STREAM BANK; AND SECTION 16.116(b)(1) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, NEW STRUCTURES, AND PAVING WITHIN EXISTING STEEP SLOPES HAS BEEN SUBMITTED UNDER SEPARATE COVER.
  - A PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON SEPTEMBER 4, 2018 FOR THIS PROJECT.
  - THIS PROJECT RECEIVED AN ENDORSEMENT FROM THE DIRECTOR OF PLANNING AND ZONING ON FEBRUARY 6, 2019 IN RESPONSE TO A DESIGN ADVISORY MEETING HELD ON DECEMBER 5, 2018.
  - APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

ADDRESS CHART	
PARCEL	ADDRESS
B-1	6206 WASHINGTON BOULEVARD
D-1	6210 WASHINGTON BOULEVARD
F	6218 WASHINGTON BOULEVARD

**OWNER**  
CHETAN B. MEHTA, BENEFICIARY OF THE CHETAN MEHTA IRREVOCABLE TRUST  
5192 TALBOTS LANDING  
ELLCOTT CITY, MARYLAND 21046  
443-285-9563

**DEVELOPER**  
ELKRIDGE DEVELOPERS, LLC  
5192 TALBOTS LANDING  
ELLCOTT CITY, MARYLAND 21046  
443-285-9563

**TITLE SHEET**  
ELKRIDGE CROSSING II  
BUILDABLE LOTS 1 THRU 158  
AND PARCEL 'G'

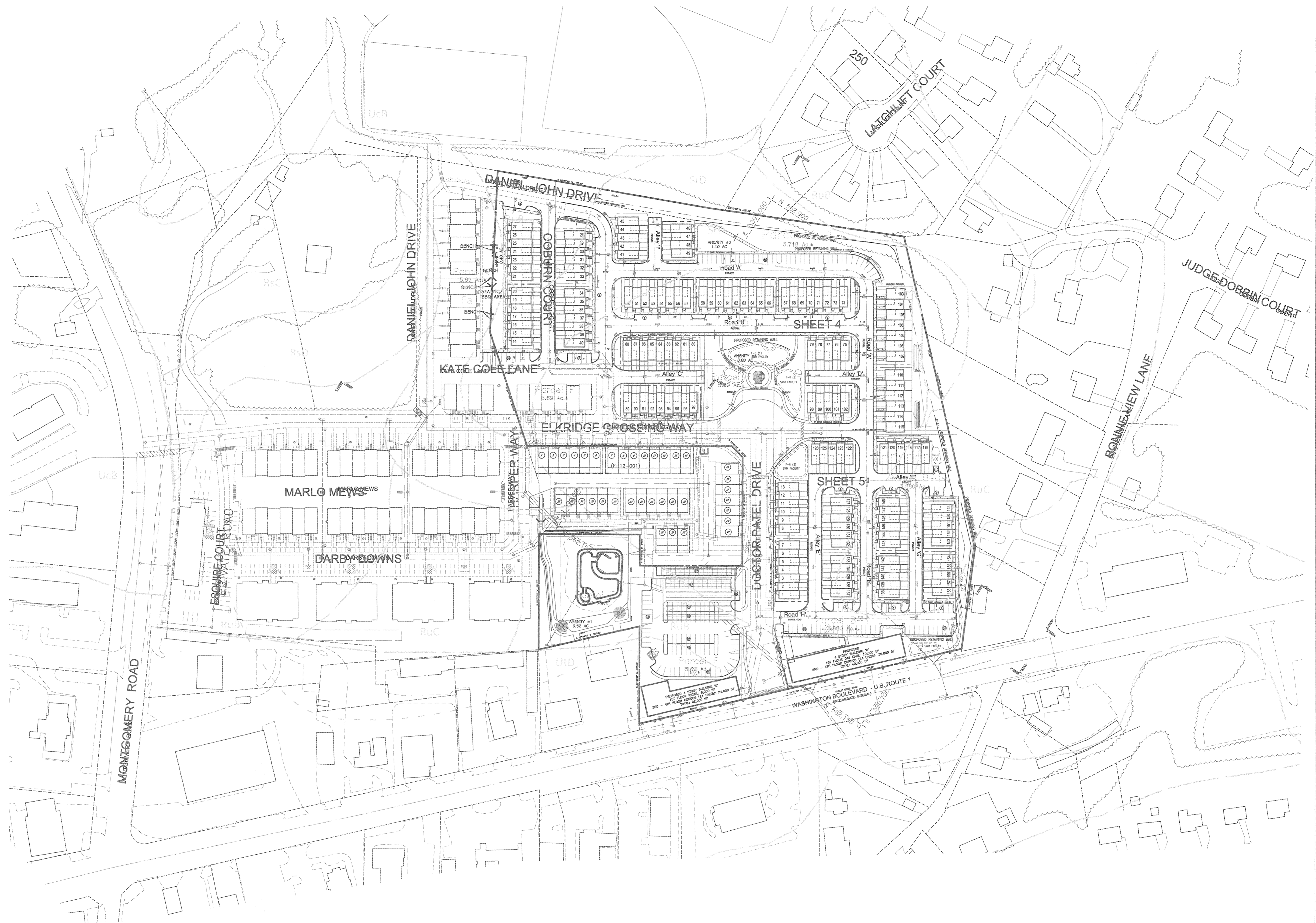
TAX MAP NO. 38 GRID NOS. 2 & 3 PARCEL NO. 38  
ZONED CAC-CLI  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: OCTOBER, 2019  
SHEET 1 OF 8 ECP-19-032





**SOILS LEGEND**

SOIL	NAME	CLASS
Fa	Fallsington sandy loam, 0 to 2 percent slopes	B
RaC	Russett fine sandy loam, 5 to 10 percent slopes	X
RaD	Russett fine sandy loam, 10 to 15 percent slopes	X
RuB	Russett and Beltsville soils, 2 to 5 percent slopes	C
RuC	Russett and Beltsville soils, 5 to 10 percent slopes	C
SrD	Sassafras and Croom soils, 10 to 15 percent slopes	C
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	C
UjD	Urban land-Udorthents complex, 0 to 15 percent slopes	A


NOTES:  
 \* Hydric soils and/or contains hydric inclusions  
 \*\* May contain hydric inclusions  
 † Generally only within 100-year floodplain areas

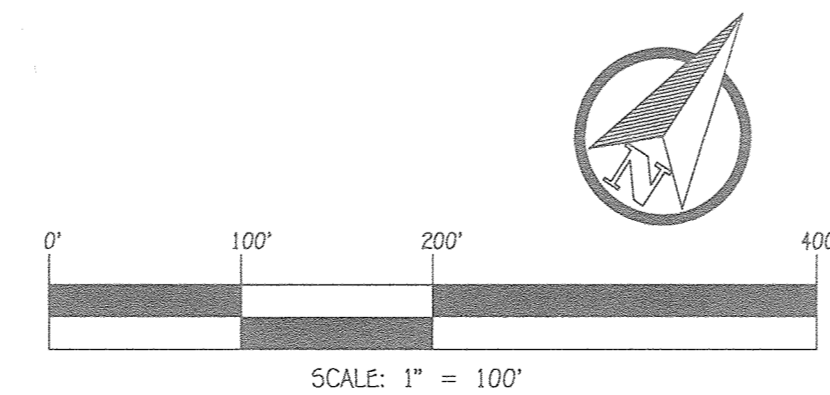


Approved: Department Of Planning And Zoning  
 10-25-19  
 Chief, Development Engineering Division JP Date  
 10-18-19  
 Chief, Division Of Land Development MW Date

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21046  
 (410) 461-2899



**PROFESSIONAL CERTIFICATION**  
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 10/31/19  
 Frank Manuvasan II, P.L.S. Date

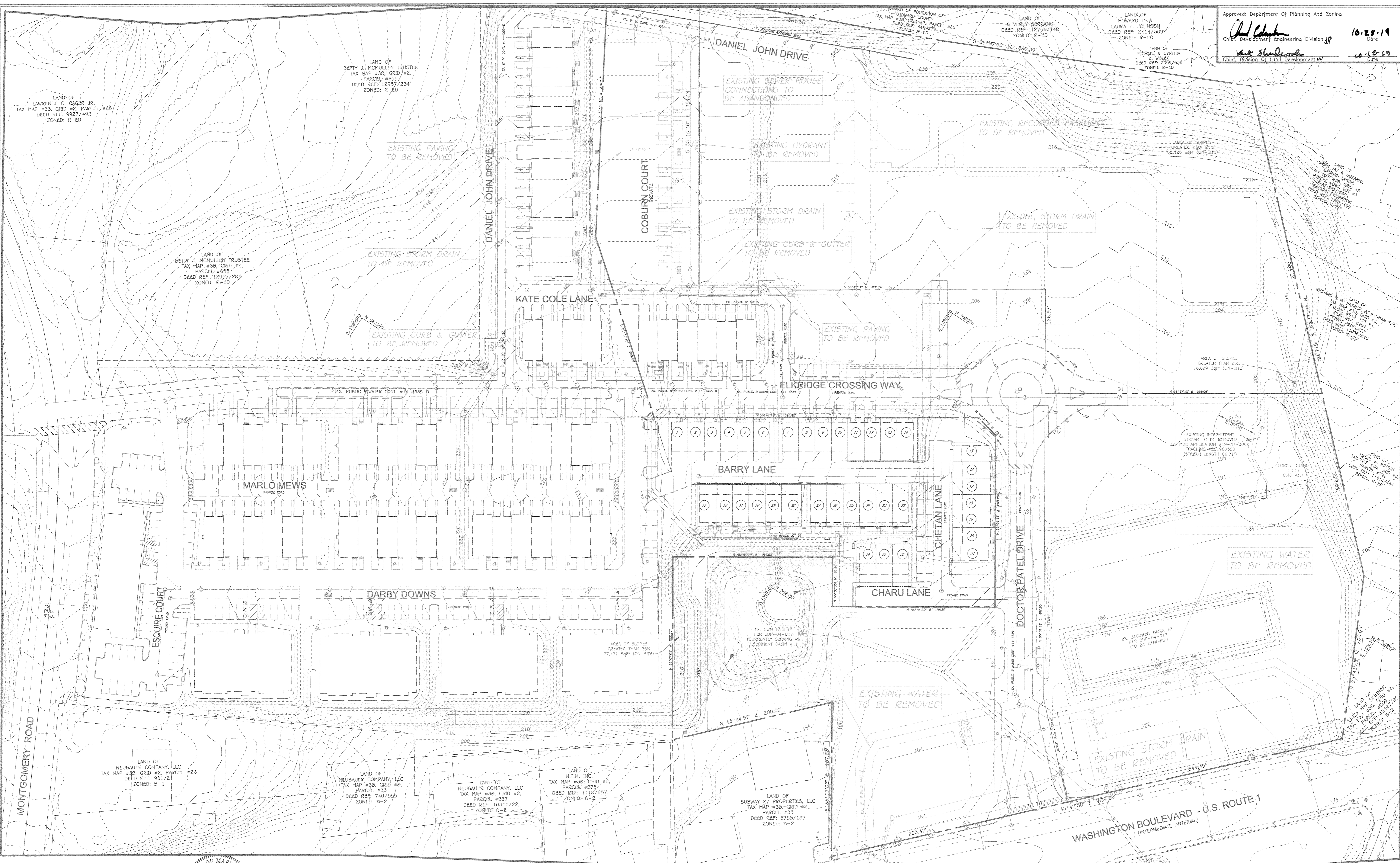


**OWNER**  
 CHETAN B. MEHTA, BENEFICIARY OF THE CHETAN MEHTA IRREVOCABLE TRUST  
 5192 TALBOTS LANDING  
 ELICOTT CITY, MD 21046  
 443-285-9563

**DEVELOPER**  
 ELKRIDGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELICOTT CITY, MARYLAND 21046  
 443-285-9563

**OVERALL SITE AND SOILS MAP**  
**ELKRIDGE CROSSING II**  
**BUILDABLE LOTS 1 THRU 150**  
**AND PARCEL 'G'**  
 TAX MAP NO.: 38 GRID NOS.: 2 & 3 PARCEL NO.: 38  
 ZONED CAC-CL  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 2 OF 8 **ECP-19-032**



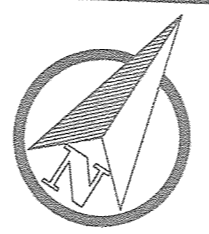
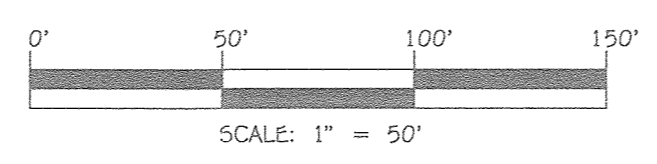


**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10712 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21114  
 (410) 461-2895



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 Frank Manalasan II  
 FRANK MANALASAN, II

10/3/19

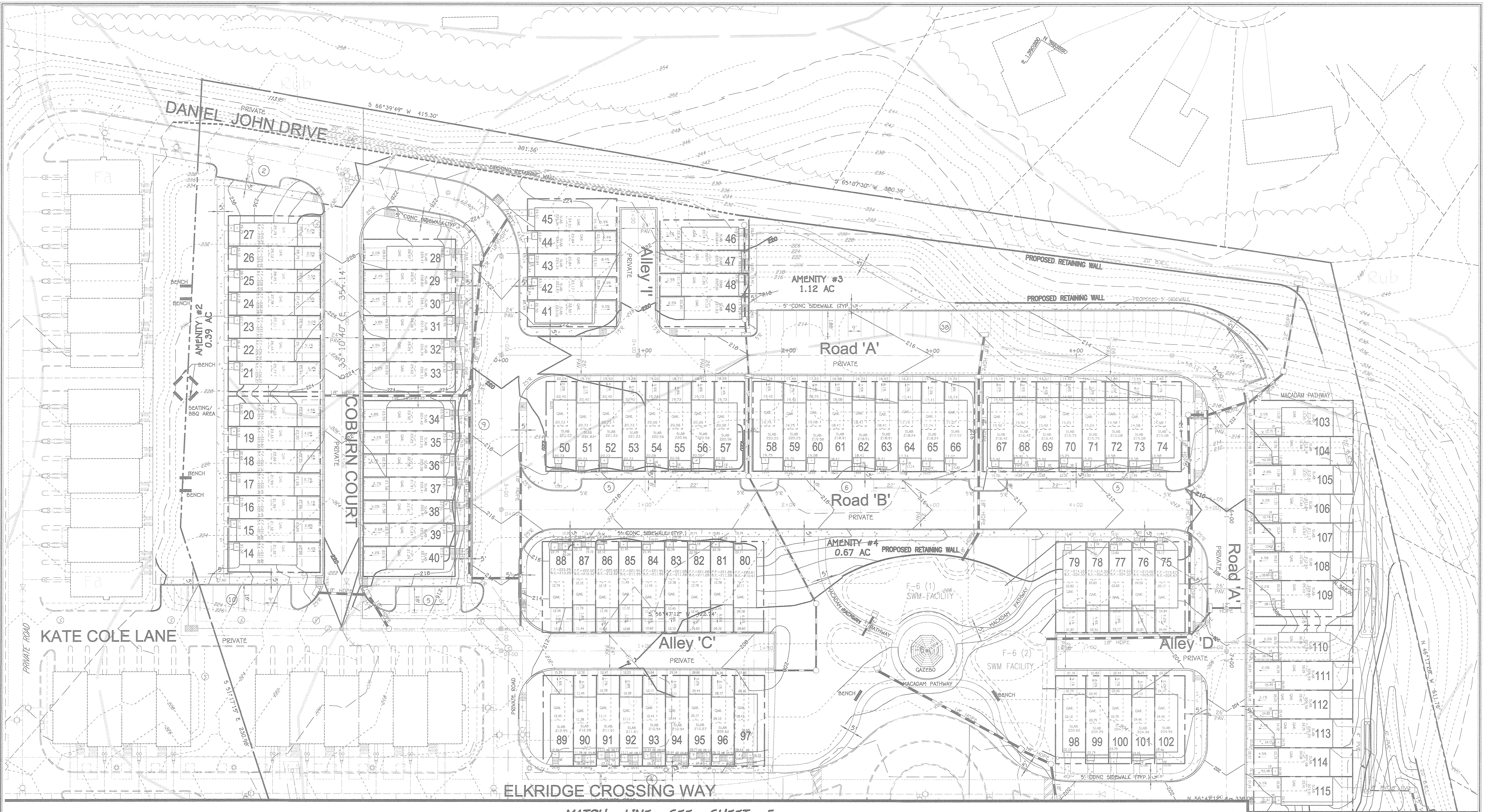


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 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21146  
 443-295-9563

**DEVELOPER**  
 ELKRIDGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MD 21146  
 443-295-9563

**DEMOLITION PLAN**  
**ELKRIDGE CROSSING II**  
**BUILDABLE LOTS 1 THRU 150**  
**AND PARCEL 1G**  
 TAX MAP NO. 38, GRID NOS. 2 & 3, PARCEL NO. 38  
 ZONED CAC-C11  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 3 OF 9 **ECP-19-082**





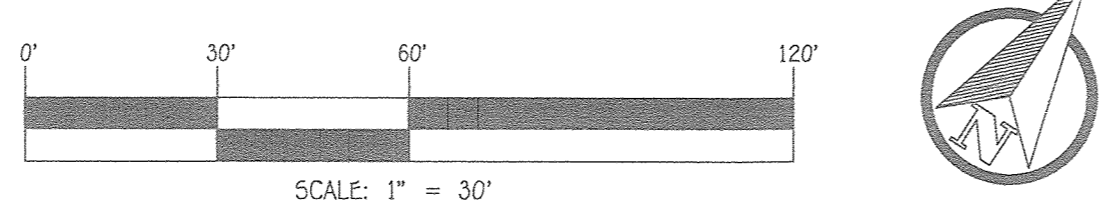
MATCH LINE SEE SHEET 5

Approved: Department Of Planning And Zoning  
 Chief, Development Engineering Division & Date: 10-25-19  
 Chief, Division Of Land Development Date: 10-18-19

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 10772 BALTIMORE NATIONAL PLACE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2899



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 Frank Panalaskan II 10/31/19  
 PEAK MANALASKAN, II



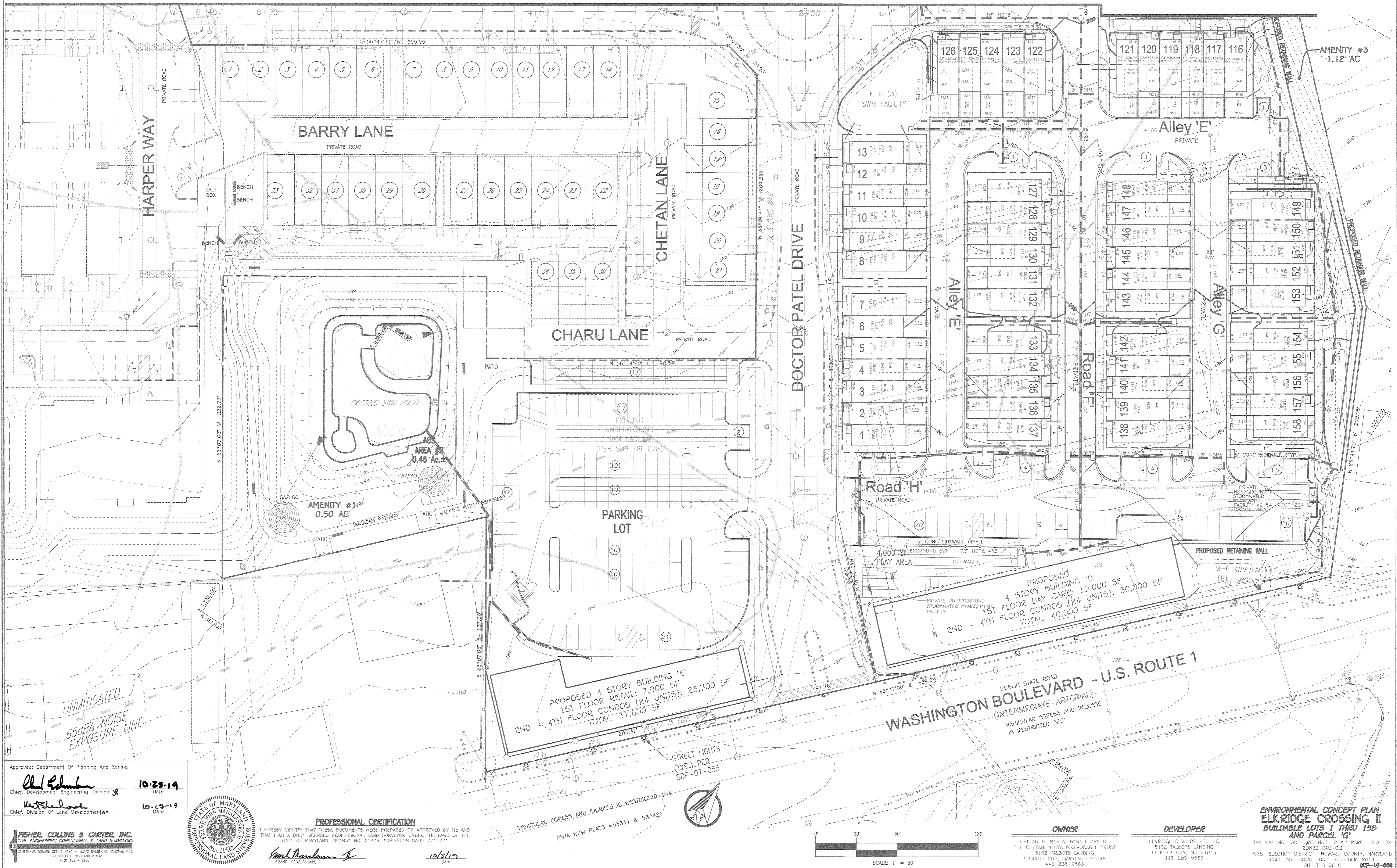
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**DEVELOPER**  
 ELKBRIDGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MD 21046  
 443-285-9563

**ENVIRONMENTAL CONCEPT PLAN  
 ELKBRIDGE CROSSING II  
 BUILDABLE LOTS 1 THRU 150  
 AND PARCEL 'G'**  
 TAX MAP NO.: 38 GRID NOS.: 2 & 3 PARCEL NO.: 38  
 ZONED CAC-CL1  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 4 OF 8 ECP-19-032



MATCH LINE SEE SHEET 4



UNMITIGATED  
65dBA NOISE  
EXPOSURE LINE

Approved: Department Of Planning And Zoning  
*Chetan B. Mehta* 10-25-19  
 Chief, Development Engineering Division  
*Vishal D. Patel* 10-19-19  
 Chief, Division Of Land Development

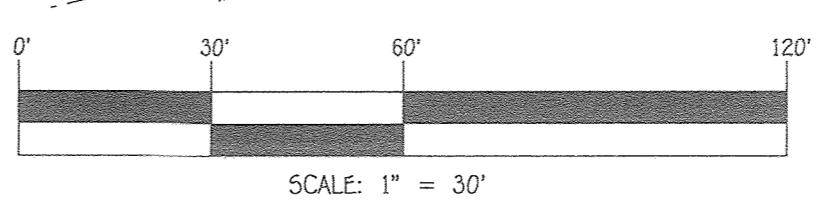


**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21046  
 (410) 461-2999

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.  
*Frank Manalansan II* 10/31/19  
 FRANK MANALANSAN, II

VEHICULAR EGRESS AND INGRESS IS RESTRICTED TO  
 (SHA R/W PLATS #53341 & 53342)

STREET LIGHTS  
 (TYP.) PER  
 SDP-07-055



**OWNER**  
 CHETAN B. MEHTA, BENEFICIARY OF  
 THE CHETAN MEHTA IRREVOCABLE TRUST  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21046  
 443-285-9563

**DEVELOPER**  
 ELKRIDGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MD 21046  
 443-285-9563

**ENVIRONMENTAL CONCEPT PLAN  
 ELKRIDGE CROSSING II  
 BUILDABLE LOTS 1 THRU 150  
 AND PARCEL 'G'**  
 TAX MAP NO: 38 GRID NOS: 2 & 3 PARCEL NO: 38  
 ZONED CAC-CL  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 5 OF 8 ECP-19-022



SOILS LEGEND				
SOIL	NAME	Kw VALUE	CLASS	
Fa	Fallington sandy loam, 0 to 2 percent slopes	.20	B	
RaC	Russett fine sandy loam, 5 to 10 percent slopes	.24	C	
RaD	Russett fine sandy loam, 10 to 15 percent slopes	.24	C	
RuB	Russett and Beltsville soils, 2 to 5 percent slopes	.37	C	
RuC	Russett and Beltsville soils, 5 to 10 percent slopes	.37	C	
SrD	Sassafras and Croom soils, 10 to 15 percent slopes	.32	C	
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	.37	C	
UjD	Urban land-Udorhenta complex, 0 to 15 percent slopes	X	A	

NOTES:  
 \* Hydric soils and/or contains hydric inclusions  
 \*\* May contain hydric inclusions  
 † Generally only within 100-year floodplain areas

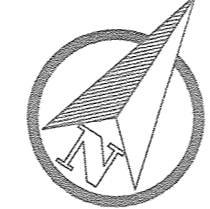
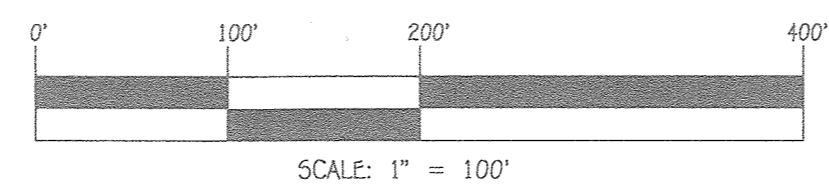


Approved: Department Of Planning And Zoning  
*[Signature]* 10/25/19  
 Chief, Development Engineering Division  
*[Signature]* 10-18-19  
 Chief, Division Of Land Development



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2999

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*Frank Manslow II*  
 FURN. MANAGER, I.  
 10/31/19



**OWNER**  
 CHETAN B. MEHTA, BENEFICIARY OF THE CHETAN MEHTA IRREVOCABLE TRUST  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21046  
 443-295-9563

**DEVELOPER**  
 ELKRIE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MD 21046  
 443-295-9563

**SEDIMENT AND EROSION CONTROL**  
**ELKRIE CROSSING II**  
**BUILDABLE LOTS 1 THRU 150 AND PARCEL 'G'**  
 TAX MAP NO.: 38 GRID NOS.: 2 & 3 PARCEL NO.: 38  
 ZONED CAC-CU  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 6 OF 8 ECP-19-032



SOILS LEGEND				
SOIL	NAME	'Kw'VALUE	CLASS	
Fa	Fallsington sandy loam, 0 to 2 percent slopes	.20	B	
RaC	Russett fine sandy loam, 5 to 10 percent slopes	.24	C	
RaD	Russett fine sandy loam, 10 to 15 percent slopes	.24	C	
RuB	Russett and Beltsville soils, 2 to 5 percent slopes	.37	C	
RuC	Russett and Beltsville soils, 5 to 10 percent slopes	.37	C	
SrD	Sassafras and Croom soils, 10 to 15 percent slopes	.32	C	
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	.37	C	
UjD	Urban land-Udorhents complex, 0 to 15 percent slopes	X	A	

NOTES:  
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 \*\* May contain hydric inclusions  
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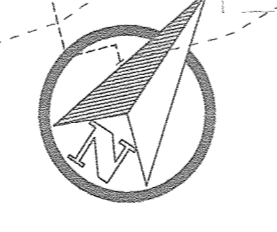


Approved: Department Of Planning And Zoning  
 Chief, Development Engineering Division **10-25-19**  
 Chief, Division Of Land Development **10-18-19**



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 481-2895

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.  
**Frank Manolagas** 10/3/19



PROPOSED 4 STORY BUILDING 'I'  
 1ST FLOOR RETAIL: 7,900 SF  
 2ND - 4TH FLOOR CONDOS (24 UNITS): 23,700 SF  
 TOTAL: 31,600 SF

PROPOSED 4 STORY BUILDING 'D'  
 1ST FLOOR DAY CARE: 10,000 SF  
 2ND - 4TH FLOOR CONDOS (24 UNITS): 30,000 SF  
 TOTAL: 40,000 SF

WASHINGTON BOULEVARD - U.S. ROUTE 1  
 (INTERMEDIATE-ARTERIAL)  
 VEHICULAR ACCESS AND CROSSING IS RESTRICTED

**OWNER**  
 CHETAN B. MEHTA, BENEFICIARY OF THE CHETAN MEHTA IRREVOCABLE TRUST  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21046  
 443-285-9563

**DEVELOPER**  
 ELK RIDGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MD 21046  
 443-285-9563

**SEDIMENT AND EROSION CONTROL**  
**ELK RIDGE CROSSING II**  
**BUILDABLE LOTS 1 THRU 150**  
**AND PARCEL 'G'**  
 TAX MAP NO.: 38 GRID NOS.: 2 & 3 PARCEL NO.: 38  
 ZONED CAC-CU  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 7 OF 8 **ECP-19-032**



**INFILTRATION AND FILTER SYSTEM CONSTRUCTION SPECIFICATIONS**

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH AS SAND FOR W.C. AND R.E.V. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR GP AS WELL AS THE MOST COMMON SYSTEMS INCLUDE INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS.

WHEN PROPERLY PLANTED, VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE, PRE-TREATMENT BUFFERS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHOROUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE ARTERIES FOR STORMWATER TO PERMEATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

**DESIGN CONSTRAINTS:**

- > PLANTING BUFFER STRIPS OF AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE REACHING THE FACILITY, THEREBY REDUCING THE POSSIBILITY OF CLOGGING.
- > DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGY WILL BE SIMILAR TO BIODETENTION FACILITIES, SEE FIGURE A.5 AND TABLE A.4 FOR PLANTING MATERIAL GUIDANCE).
- > PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER FABRIC IS USED AS PART OF FACILITY DESIGN.
- > TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY.
- > PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.
- > STABILIZE HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SO.
- > TEMPORARILY DIVERT FLOWS FROM SEEDING AREAS UNTIL VEGETATION IS ESTABLISHED.
- > SEE TABLE A.5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

**BIO-RETENTION**

**SOIL BED CHARACTERISTICS**

THE CHARACTERISTICS OF THE SOIL FOR THE BIODETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF THROUGH THE MEDIA WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME (ENVIRONMENTAL QUALITY RESOURCES (EQ), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993). SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNITED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.57 IN/D) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUQUORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 18 LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

**TABLE A.3 PLANTING SOIL CHARACTERISTICS**

PARAMETER	VALUE
PH RANGE	5.2 TO 7.00
ORGANIC MATTER	1.5 TO 4.0% (BY WEIGHT)
MAGNESIUM	35 LBS. PER ACRE, MINIMUM
PHOSPHORUS (PHOSPHATE - P2O5)	75 LBS. PER ACRE, MINIMUM
POTASSIUM (POTASH - K2O)	85 LBS. PER ACRE, MINIMUM
SOLUBLE SALTS	500 PPM
CLAY	10 TO 25 %
SILT	30 TO 55 %
SAND	35 TO 60%

**MULCH LAYER**

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIODETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

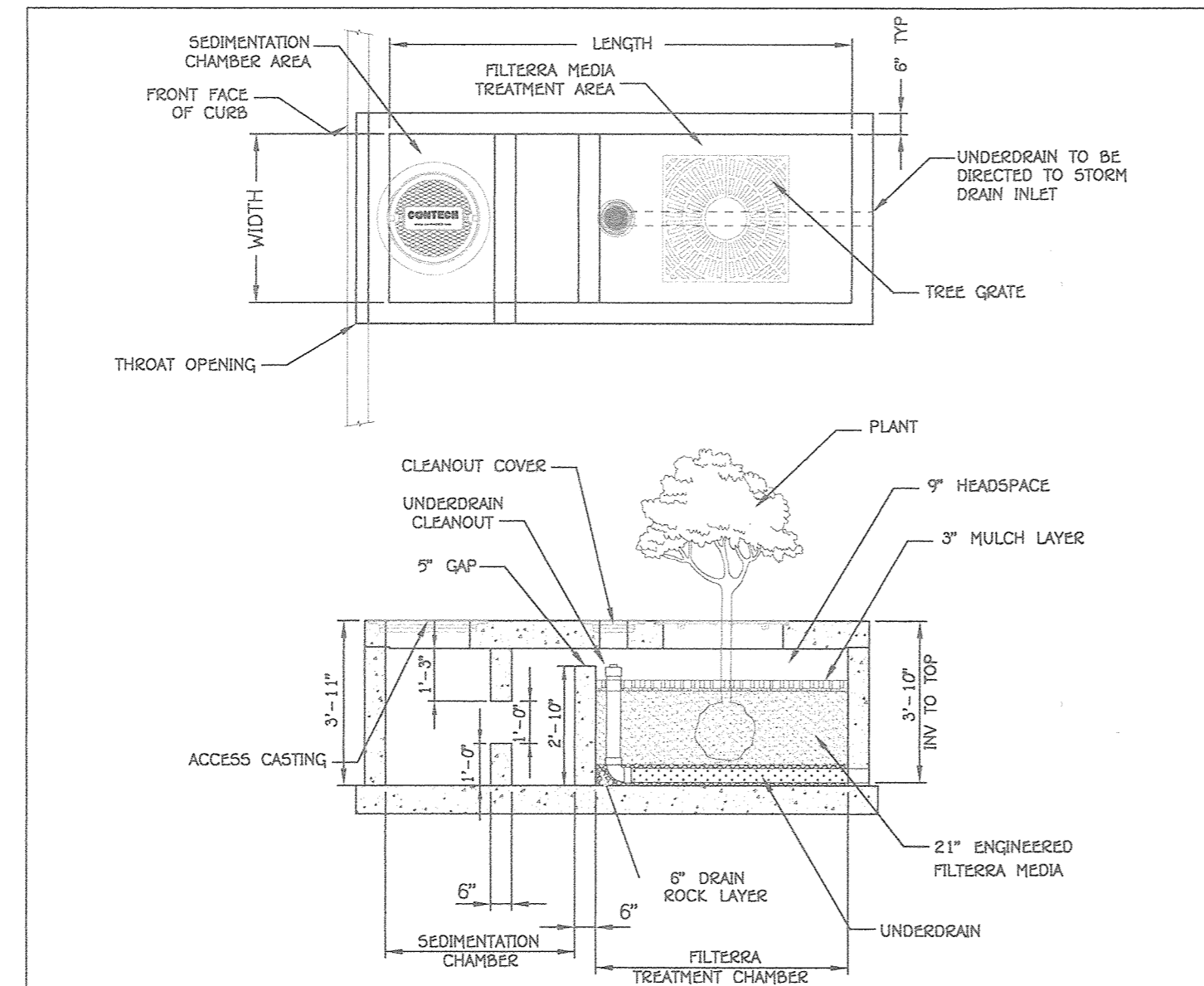
**PLANTING GUIDANCE**

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIODETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIODETENTION FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE ARE ESSENTIALLY THREE ZONES WITHIN A BIODETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRIER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIODETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A RANDOM, AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIODETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTOR AND SCHUELER, 1997.

**OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) AND (F-6)**

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING, REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS. WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



STRUCTURE No.	UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTER MEDIA TREATMENT AREA	MAXIMUM DRAINAGE AREA TREATED (SF)	WQV STORAGE CAPACITY (CF)
-	FTSC 6' x 4'	12' x 4'	6' x 4'	5,216	103
-	FTSC 8' x 4'	16' x 4'	8' x 4'	7,144	141
-	FTSC 6' x 6'	12' x 6'	6' x 6'	7,847	155
-	FTSC 8' x 6'	16' x 6'	8' x 6'	10,734	212
-	FTSC 10' x 6'	19' x 6'	10' x 6'	12,638	250
-	FTSC 10' x 8'	20' x 8'	10' x 8'	18,178	360
-	FTSC 11' x 8'	22' x 8'	11' x 8'	20,000	398

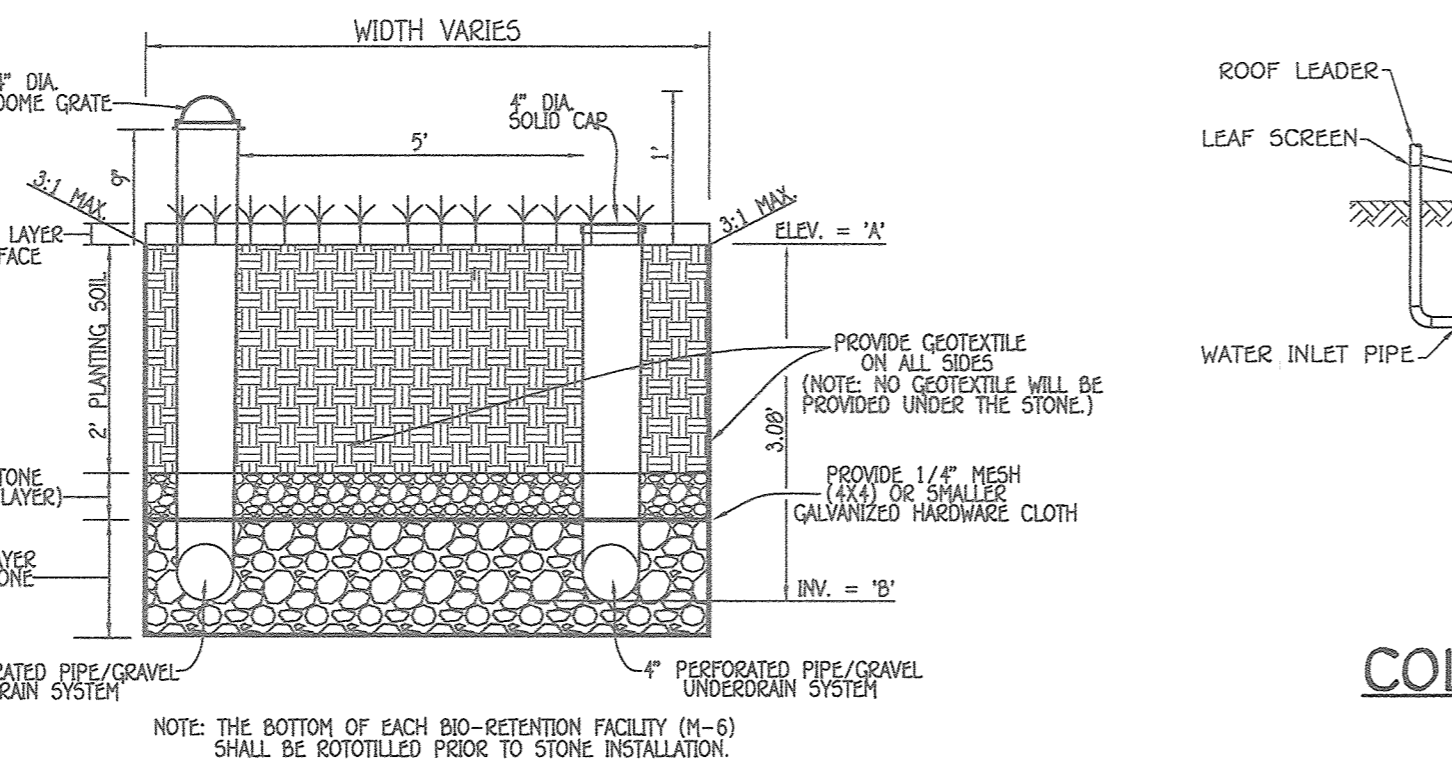
NOTE:  
 1. MAXIMUM DRAINAGE AREA TREATED ASSUMES 25% WQV AND FILTER SURFACE AREA REQUIREMENTS ARE BOTH MET.  
 2. STORAGE CAPACITY ASSUMES 40% VOIDS IN UNDERDRAIN STONE AND 30% VOIDS IN MULCH AND MEDIA.  
 3. ALL INFORMATION IS BASED ON STANDARD 3.83 RIM TO OUTLET DEPTH. CONTACT CONTECH FOR CUSTOM SIZING IF DEPTH IS NOT 3.83. ACCEPTABLE DEPTH IS 3.33 MIN. TO 5.00' MAX. RIM TO INVERT OUT.

**CONTECH ENGINEERED SOLUTIONS LLC**  
 www.contechES.com  
 10000 Greenleaf Drive, Suite 100, Gaithersburg, MD 20878  
 301-984-2200

**FILTERRA WITH SEDIMENTATION CHAMBER**

**FILTERRA: Operation and Maintenance**

- Annual maintenance consists of a maximum of (2) scheduled visits. The visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands. The fall visit helps the system by removing excessive leaf litter.
- Each maintenance inspection consists of the following tasks:
  - Filterra unit inspection
  - Foreign debris, silt, mulch and trash removal
  - Filter media evaluation and recharge as necessary
  - Plant health evaluation and pruning or replacement as necessary
  - Replacement of mulch
  - Disposal of all maintenance refuse items
  - Maintenance records updated and stored

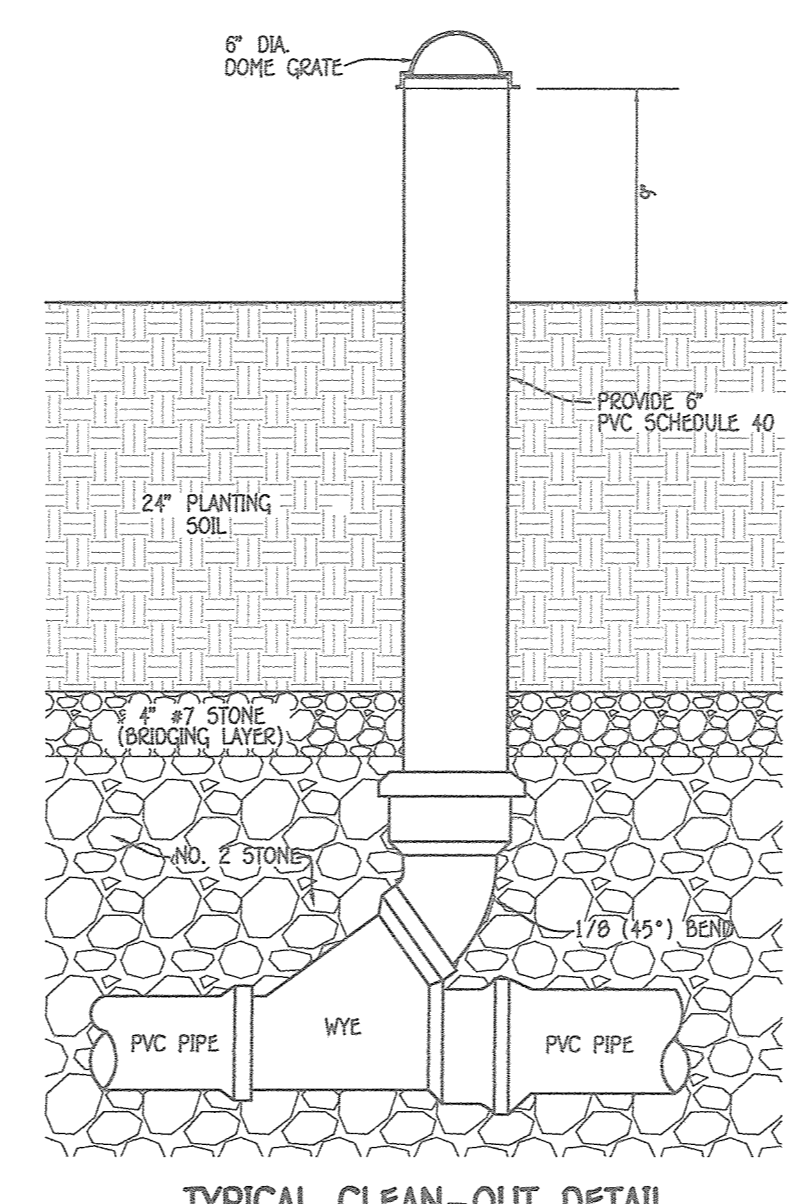


**TYPICAL SECTION BIO-RETENTION FACILITY (F-6)**  
 NO NOT SCALE

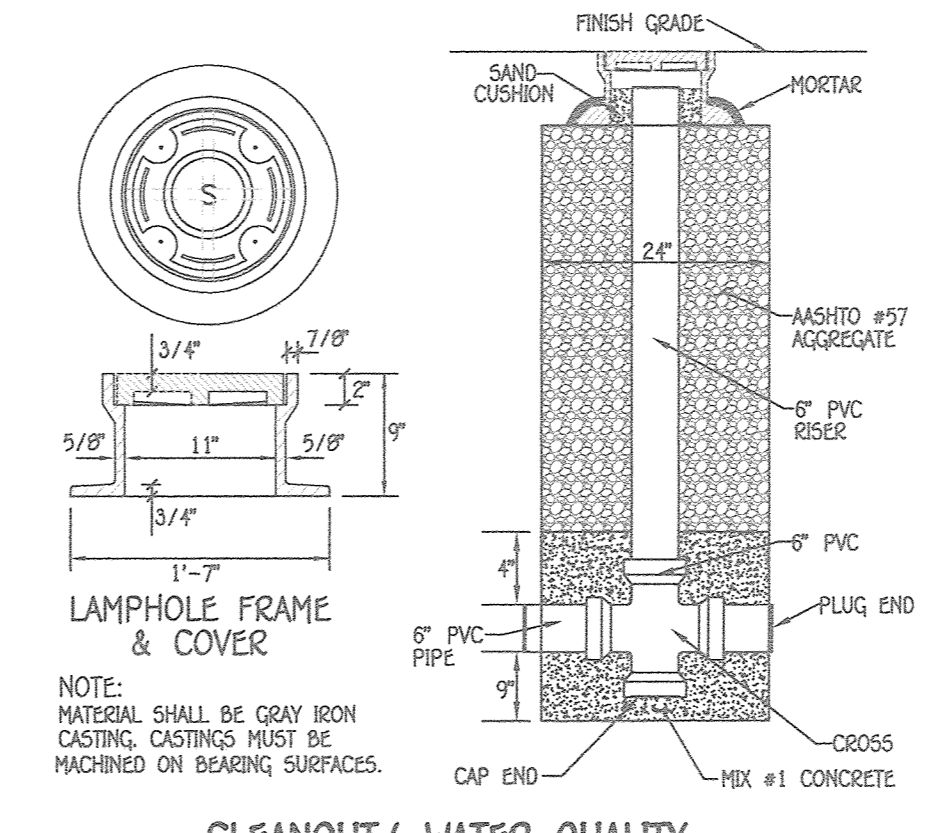
**PROFESSIONAL CERTIFICATION**

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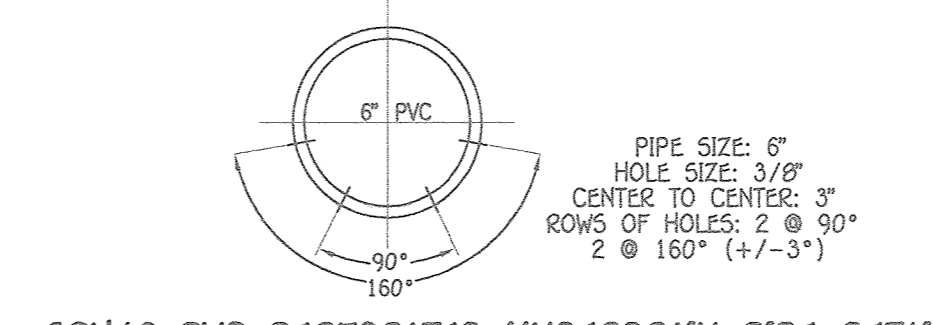
*Frank Manalansan II*  
 FRANK MANALANSAN, II  
 10/31/19  
 Date



**TYPICAL CLEAN-OUT DETAIL**  
 NO TO SCALE

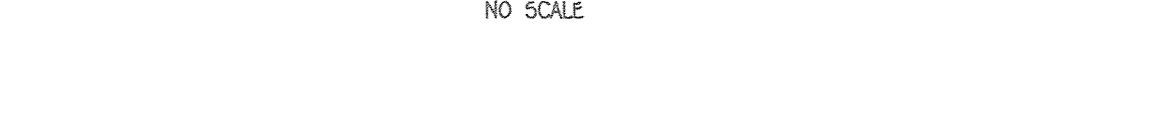


**LAMP HOLE FRAME & COVER**  
 NOT TO SCALE



**SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE**  
 NO TO SCALE

**TYPICAL SECTION - A-2 PERMEABLE SECTION W/ OVERDRAIN & UNDERDRAIN**

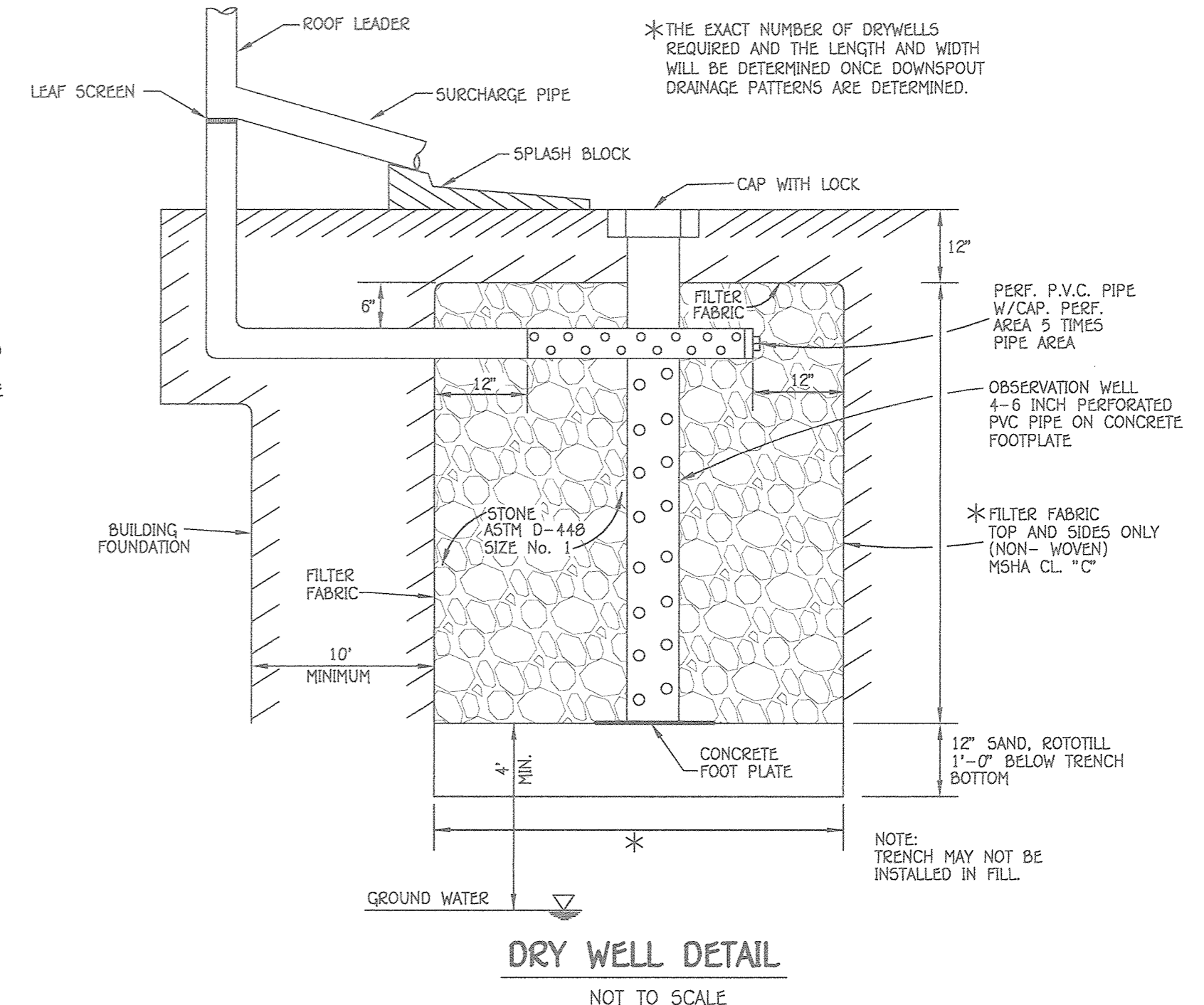


**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)**

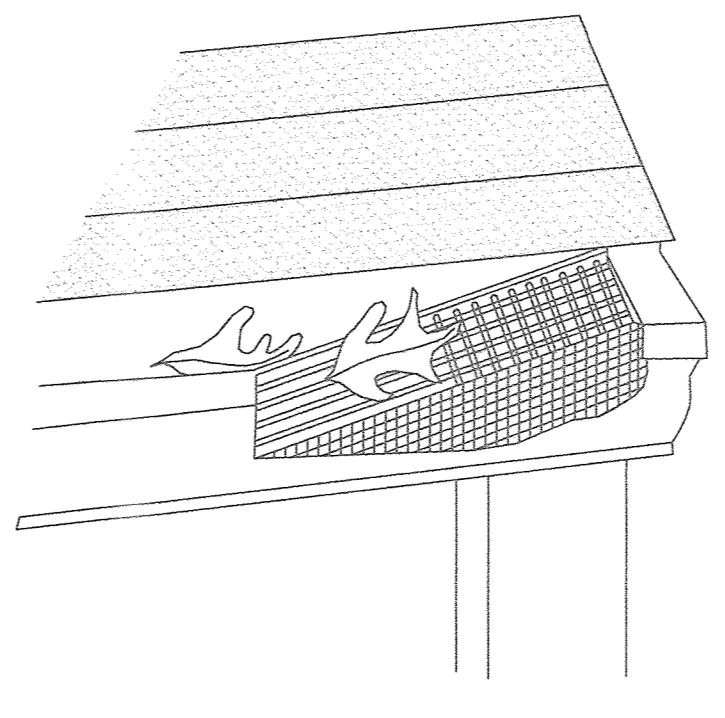
- The owner shall periodically sweep (or vacuum porous concrete pavement) the pavement surfaces to reduce sediment accumulation and insure confined surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.
- The owner shall periodically clean drainage pipes, inlets, stone edge drains and other structures within or draining to the subbase.
- The owner shall use deicers in moderation. Deicers should be non-toxic and be applied either as calcium magnesium acetate or as pretreated salt.
- The owner shall ensure snow plowing is performed carefully with blades set one inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.

**OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)**

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.



**DRY WELL DETAIL**  
 NOT TO SCALE

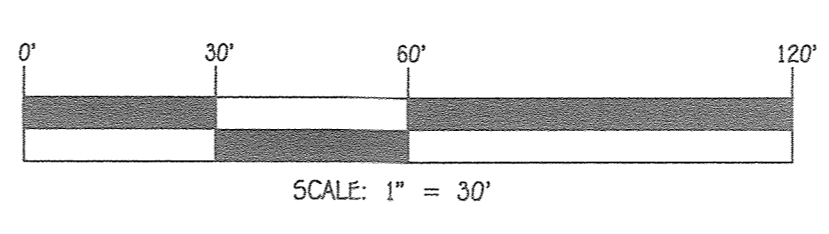


**GUTTER DRAIN FILTER DETAIL**  
 NOT TO SCALE

**RAIN WATER COLLECTION TANK DETAIL**  
 NOT TO SCALE

**OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)**

- THE OWNER SHALL INSPECT CISTERN ON YEARLY BASIS AND CLEAN AS NEEDED.
- THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND REMOVE ANY DEBRIS.
- THE OWNER SHALL REPLACE DAMAGED COMPONENTS AS NEEDED.
- THE OWNER SHALL DISCONNECT CISTERN BARREL PRIOR TO FREEZE DANGER AND WINTERIZE SYSTEM TO MANUFACTURERS SPECIFICATIONS.



**DRY WELL CHART**

LOT NO.	DRYWELL NUMBER	NO. OF DOWNSPOUTS	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF STORAGE	AREA OF TREATMENT	NO. OF DRYWELLS	DIMENSIONS OF DRYWELLS
103	M-5(103A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
104	M-5(104A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
105	M-5(105A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
106	M-5(106A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
107	M-5(107A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
108	M-5(108A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
109	M-5(109A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
110	M-5(110A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
111	M-5(111A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
112	M-5(112A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
113	M-5(113A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
114	M-5(114A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'
115	M-5(115A)	1	360 SqFt	29 CuFt	32 CuFt	100%	100%	1	5' x 4' x 4'

Approved: Department Of Planning And Zoning

*Chad E. Blum*  
 Chief, Development Engineering Division  
 10-25-19  
 Date

*Keft DeLoraine*  
 Chief, Division Of Land Development  
 10-18-19  
 Date



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE: PHASE - 10272 BATHROBE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21046  
 (410) 461-2895

**OWNER**  
 CHETAN B. MEHTA, BENEFICIARY OF THE CHETAN MEHTA IRREVOCABLE TRUST  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21046  
 443-295-9563

**DEVELOPER**  
 ELKRIEGE DEVELOPERS, LLC  
 5192 TALBOTS LANDING  
 ELLICOTT CITY, MARYLAND 21046  
 443-295-9563

**STORMWATER MANAGEMENT NOTES AND DETAILS**

**ELKRIEGE CROSSING II BUILDABLE LOTS 1 THRU 158 AND PARCEL 'G' AND PARCEL 'I'**

TAX MAP NO.: 3B GRID NOS.: 2 & 3 PARCEL NO.: 3B ZONED CAC-CL1  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: OCTOBER, 2019  
 SHEET 8 OF 8 ECP-19-032