

STANDARD DRAWING LEGEND		STANDARD DRAWING LEGEND	
FOR ENTIRE PLAN SET (NOT TO SCALE)		FOR ENTIRE PLAN SET (NOT TO SCALE)	
EXISTING NOTE	PROPOSED NOTE	EXISTING NOTE	PROPOSED NOTE
ON-SITE PROPERTY LINE / R.O.W. LINE	CONSTRUCTION ENTRANCE	STABILIZED CONSTRUCTION ENTRANCE	
NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	SILT FENCE		
EASEMENT LINE	SOILS LINE		
SETBACK LINE	WETLAND BUFFER		
	STREAM BUFFER		
	TREELINE		
CONCRETE CURB & GUTTER	(TBR)	TO BE REMOVED	
	SOIL STABILIZATION MATTING		
UTILITY POLE WITH LIGHT	FOREST CONSERVATION AREA		
POLE LIGHT	OVERFLOW INLET		
TRAFFIC LIGHT	FLOW THROUGH INLET		
UTILITY POLE	SANITARY INLET		
TYPICAL LIGHT	CURB INLET		
ACORN LIGHT	REFORESTATION AREA		
TYPICAL SIGN	SPECIMEN TREE TO BE REMOVED IN ACCORDANCE WITH THE CONDITIONS OF APPROVAL OF WP-15-122		
CONTOUR LINE	CRITICAL ROOT ZONE		
SANITARY SEWER LATERAL	PERENNIAL STREAM		
UNDERGROUND WATER LINE	INTERMITTENT STREAM		
UNDERGROUND ELECTRIC LINE	SEPTIC EASEMENT RESERVE AREA		
UNDERGROUND GAS LINE	WELL AREA		
OVERHEAD WIRE	WELL		
UNDERGROUND TELEPHONE LINE	PROPOSED PERCOLATION HOLE		
UNDERGROUND CABLE LINE	PERCOLATION HOLE (PASSED)		
STORM SEWER	PERCOLATION HOLE (FAILED)		
SANITARY SEWER MAIN	LIMIT OF FIELD RUN SURVEY		
HYDRANT	LIMITS OF FOREST CLEARING		
SANITARY MANHOLE	FLOODPLAIN		
STORM MANHOLE			
WATER METER			
WATER VALVE			
TYPICAL END SECTION			
HEADWALL OR ENDWALL			
YARD INLET			
CURB INLET			
CLEAN OUT			
ELECTRIC MANHOLE			
TELEPHONE MANHOLE			
ELECTRIC BOX			
ELECTRIC PEDESTAL			
MONITORING WELL			
BENCHMARK			
BORING			
FLOODPLAIN			
STEEP SLOPES (>25%)			
STEEP SLOPES (15%-25%)			
IMPERVIOUS AREA			
MICROBIORETENTION FACILITY NUMBER			
WATER QUALITY FACILITY DRAINAGE AREA			
DIVERSION DIKE			
SUPER SILT FENCE			
TREE PROTECTION			

STANDARD DRAWING LEGEND		STANDARD DRAWING LEGEND	
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UNDERGROUND GAS LINE	WELL AREA		
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UNDERGROUND TELEPHONE LINE	PROPOSED PERCOLATION HOLE		
UNDERGROUND CABLE LINE	PERCOLATION HOLE (PASSED)		
STORM SEWER	PERCOLATION HOLE (FAILED)		
SANITARY SEWER MAIN	LIMIT OF FIELD RUN SURVEY		
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MONITORING WELL			
BENCHMARK			
BORING			
FLOODPLAIN			
STEEP SLOPES (>25%)			
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IMPERVIOUS AREA			
MICROBIORETENTION FACILITY NUMBER			
WATER QUALITY FACILITY DRAINAGE AREA			
DIVERSION DIKE			
SUPER SILT FENCE			
TREE PROTECTION			

SOILS TABLE					
SOILS NAME	SOILS DESCRIPTION	HYDROLOGIC SOILS GROUP	HIGHLY ERODIBLE SOIL	K FACTOR	AREA - AC.
BaA	BAILE SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D	YES	0.37	3.90
Co	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES	C	NO	0.32	
GaC	GALL LOAM, 8 TO 15 PERCENT SLOPES	B	YES	0.55	0.40
GgA	GLENELG LOAM, 0 TO 3 PERCENT SLOPES	B	NO	0.28	
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.28	
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.28	
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	YES	0.43	3.40
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	YES	0.43	1.90
GriB	GLENVILLE BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	YES	0.43	1.90
GoB	GLENVILLE-CODORUS SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	YES	0.43	11.50
Ha	HATBORO-CODORUS SILT LOAMS, 0 TO 3 PERCENT SLOPES	B/D	YES	0.37	10.90
MaB	MANOR LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.28	
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.28	
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	NO	0.28	
McD	MANOR LOAM, 15 TO 25 PERCENT SLOPES, VERY ROCKY	B	NO	0.28	
MkF	MANOR-BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	NO	0.32	

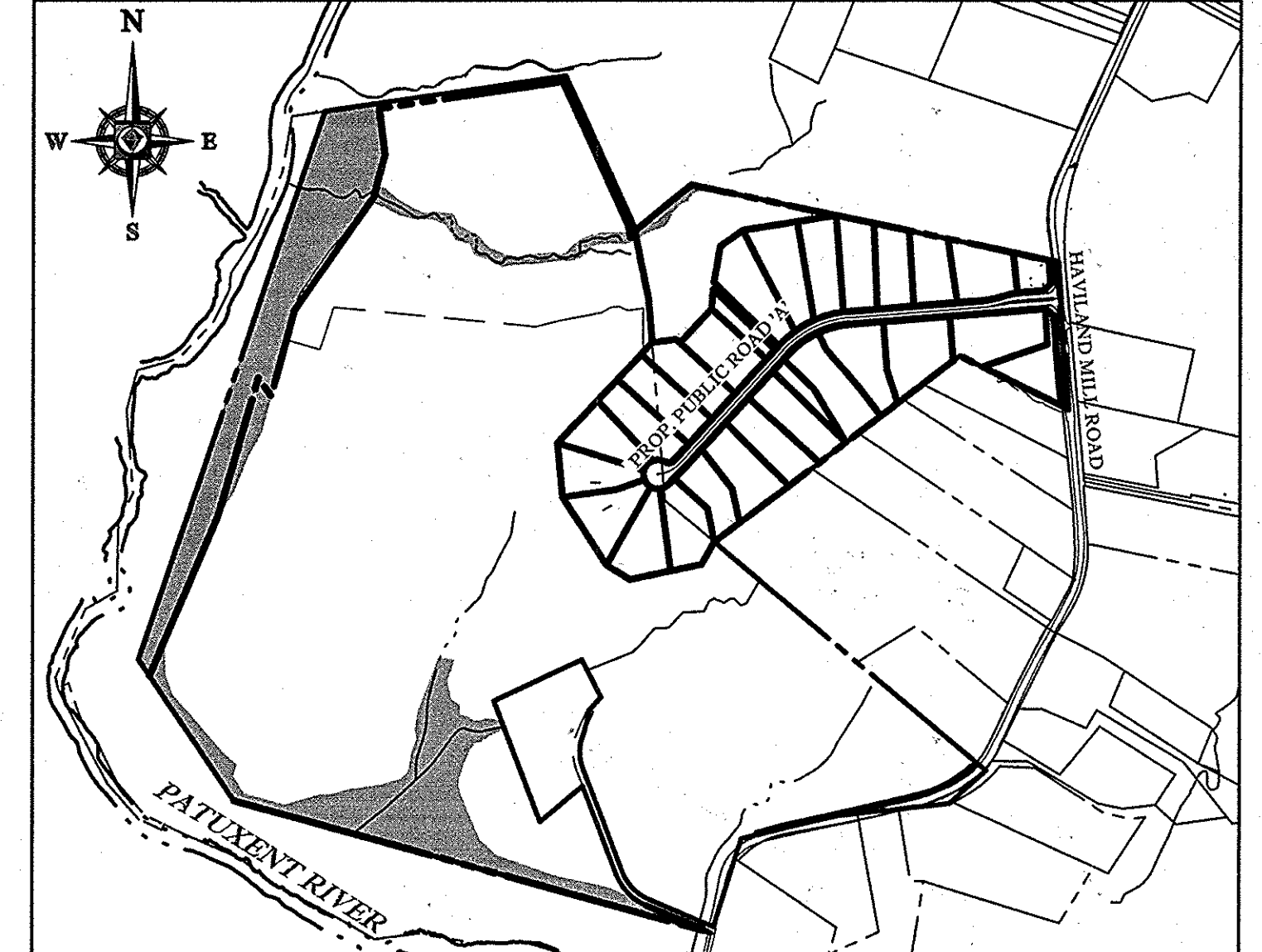
SHEET INDEX	
SHEET TITLE	SHEET NUMBER
COVER SHEET	1
OVERALL SITE PLAN (CRAWFORD & O'KEEFE)	2
OVERALL ENVIRONMENTAL CONCEPT PLAN	3
SEDIMENT CONTROL AND ENVIRONMENTAL CONCEPT PLAN	4-6

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE: 10-9-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] DATE: 10-9-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

ENVIRONMENTAL CONCEPT PLAN

FOR CRAWFORD & O'KEEFE PROPERTIES

LOCATION OF SITE
 5TH ELECTION DISTRICT
 TAX MAP 34, GRID 19, PARCEL 52 &
 TAX MAP 39, GRID 6, PARCEL 1
 HOWARD COUNTY, MARYLAND



PREPARED BY

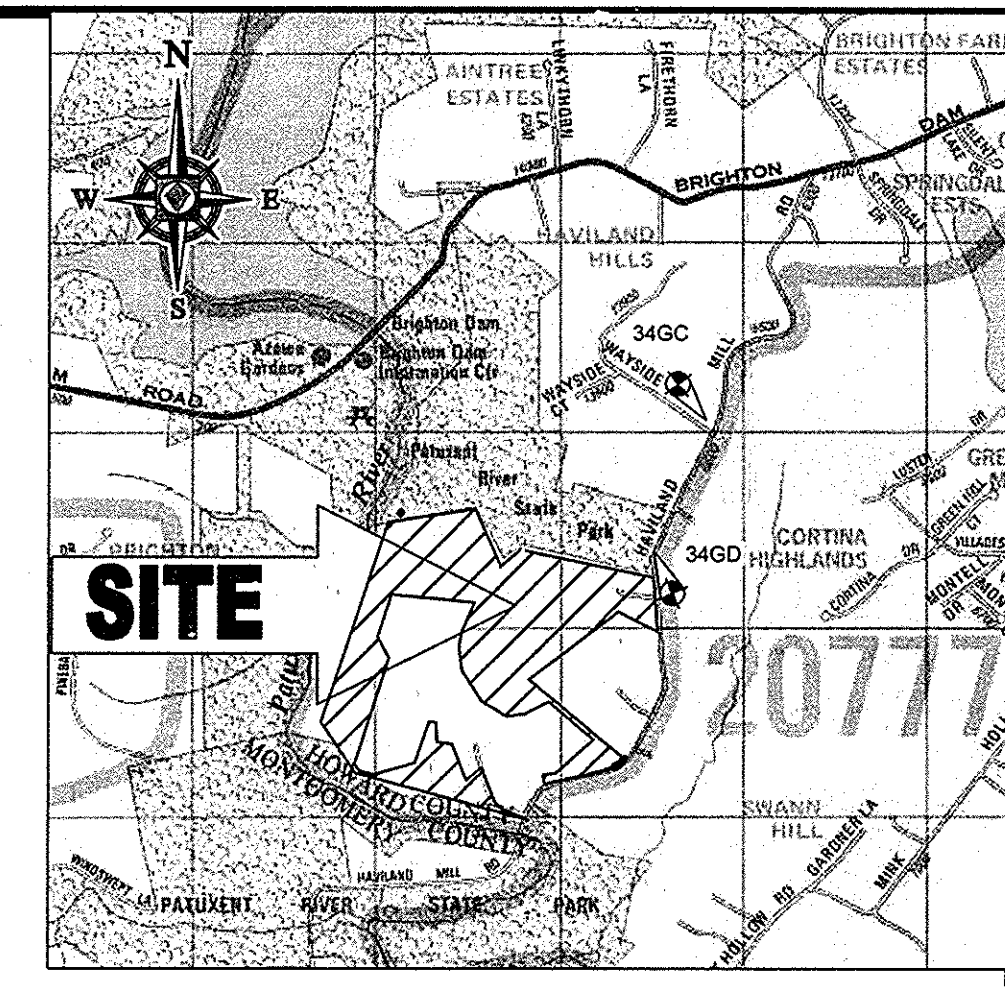
BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

BENCHMARK

GEODETTIC SURVEY CONTROL - 34GD
 ELEV. 465.288'
 N 553,733.762
 E 1,313,736.594

GEODETTIC SURVEY CONTROL - 34GC
 ELEV. 482.873'
 N 554,882.960
 E 1,314,248.668



GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED RR-DEO.
- THE PROPERTY BOUNDARY AND ON-SITE EXISTING TOPOGRAPHY IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY BY BOHLER ENGINEERING, TITLED "BOUNDARY & TOPOGRAPHIC SURVEY, CRAWFORD & O'KEEFE PROPERTIES, 6780 HAVILAND MILL ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND", FILE NO. SD42038, DATED 04-16-15.
- EXISTING OFFSITE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS.
- A WETLAND DELINEATION REPORT WAS COMPLETED FOR THIS PROJECT BY ECO-SCIENCE PROFESSIONALS, INC. ON 2/27/15, AND A FOREST STAND DELINEATION REPORT WAS COMPLETED BY ECO-SCIENCE PROFESSIONALS, INC. ON 5/8/15.
- AN OBVIOUSLY NON-CRITICAL FLOODPLAIN STUDY WAS COMPLETED FOR THIS PROJECT BY BOHLER ENGINEERING DATED FEBRUARY 25, 2015.
- ALL ENVIRONMENTALLY SENSITIVE AREAS SHALL REMAIN UNDISTURBED WITH THE EXCEPTION OF APPROXIMATELY 0.89 AC. OF (15-25%) STEEP SLOPES LOCATED NEAR THE CENTER OF THE SITE.
- THERE ARE NO CEMETERIES OR HISTORICAL FEATURES KNOWN ON-SITE. THE STRUCTURE LOCATED ON THE PROPERTY IS NOT LISTED ON THE HISTORIC REGISTRY BUT IT IS OLDER THAN 50 YEARS. THE DEPT. OF ENVIRONMENTAL & NATURAL RESOURCES HAS DETERMINED THE SITE DOES NOT REQUIRE HISTORIC PRESERVATION COMMISSION APPROVAL PRIOR TO DEMOLITION. THE EXISTING STRUCTURE LOCATED ON THE SITE, BUILT CIRCA 1940 WILL BE REMOVED PRIOR TO PLAT RECORDATION.
- PRIOR CASE NUMBERS ASSOCIATED WITH THIS PROJECT INCLUDE ECP-15-051, WP-15-122 AND WP-10-102.
- APPROVAL OF THE ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS. SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW STAGE. 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.
- ALL DRAINAGE AREAS GREATER THAN 2.0 ACRES WILL BE REQUIRED TO PROVIDE TEMPORARY STORMWATER MANAGEMENT DURING CONSTRUCTION.
- THE SITE IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER WILL BE PROVIDED BY PRIVATE, ON-SITE FACILITIES.
- WAIVER REQUEST WP-15-122 FOR THE FOLLOWING:
 - SECTION 16.1205(A)(7), REQUEST THE REMOVAL OF SIXTEEN (16) SPECIMEN TREES (F, G, H, I, J, K, L, M, O, Y, Z, AA, BB, CC, DD, & E) AS IDENTIFIED ON THIS ENVIRONMENTAL CONCEPT PLAN.
 - THE APPLICANTS ARE SEEKING A WAIVER FROM SECTION 16.147 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS IN ORDER TO PERMIT THE TRANSFER AND CONVEYANCE OF CERTAIN PORTIONS OF THE O'KEEFE PROPERTY TO BE MERGED WITH THE ADJOINING CRAWFORD PROPERTY, WITHOUT THE NECESSITY OF SUBMITTING AND RECORDING A FINAL PLAN AND FINAL PLAT.

DESIGN NARRATIVE

THE AREA OF THIS SUBMISSION IS APPROXIMATELY 99.07 ACRES. THE SITE IS MADE OF TWO (2) PARCELS OF LAND AND IS PARTIALLY WOODED, WITH ONE (1) EXISTING DWELLING AND ASSOCIATED DRIVEWAY. THERE ARE SEVERAL DRAINAGE PATTERNS THAT CONTAIN NON-TIDAL WETLANDS LOCATED WITHIN THE SUBJECT PROPERTIES. THE PROPOSED BUILDABLE LOTS ARE LOCATED PRIMARILY ON THE CRAWFORD PROPERTY AND SITUATED ON HIGH GROUND, WITH A SMALLER NUMBER OF BUILDABLE LOTS BEING LOCATED ON THE O'KEEFE PROPERTY ALONG THE SAME HIGH GROUND.

THE PROPOSED DEVELOPMENT SHALL REMOVE THE EXISTING STRUCTURE(S) AND DRIVEWAY(S) ON THE CRAWFORD PROPERTY ONLY. EXISTING STRUCTURES/DRIVEWAYS WITH THE O'KEEFE PROPERTY WILL REMAIN. THE PROPOSED DEVELOPMENT WILL CONSIST OF 23 SINGLE FAMILY DWELLINGS WITH DRIVEWAYS. IT WILL ALSO CONSIST OF ONE (1) PUBLIC ROAD.

ALL ENVIRONMENTALLY SENSITIVE AREAS (I.E. 100-YEAR FLOODPLAIN, WETLANDS, STREAMS, AND THEIR BUFFERS) SHALL REMAIN UNDISTURBED, WITH THE EXCEPTION OF APPROXIMATELY 0.89 AC. OF (15-25%) STEEP SLOPES LOCATED NEAR THE CENTER OF THE SITE APPROXIMATELY 7.74 AC. OF HIGHLY ERODIBLE SOILS. EXIST ON THE FUTURE NON-BUILDABLE PRESERVATION PARCEL "F", WHICH WILL REMAIN UNDISTURBED.

NATURAL FLOW PATTERNS SHALL BE PRESERVED. ALL PROPOSED PRACTICES SHALL DISCHARGE ON THE SIDES OF THE AFOREMENTIONED HIGH POINT IN WHICH THEY ARE LOCATED. THE PRACTICES ARE GENERALLY DISPERSED THROUGHOUT THE SITE AND SHALL DISCHARGE ALONG THE OUTER EDGE OF THE SITE TO MIMIC THE LAYOUT OF THE NATURAL GROUND AS IT ENTERS THE STREAMS.

SEDIMENT AND EROSION CONTROL SHALL COMPLY WITH THE LATEST EDITION OF THE MDE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL AS SHOWN ON THE ACCOMPANYING ECP AND SUBSEQUENT SITE DEVELOPMENT PLAN.

IT IS CONCLUDED THAT ALL ESD TO THE MDP REQUIREMENTS AS DEFINED IN THE STORMWATER MANAGEMENT ACT OF 2007 HAVE BEEN MET FOR THE PROPOSED DEVELOPMENT. THE WATER QUALITY TREATMENT HAS BEEN PROVIDED BY THE IMPLEMENTATION OF BIO-RETENTION FACILITIES AND DRY WELLS. THE RECHARGE REQUIREMENT HAS BEEN MET BY PROVIDING DRY WELLS FOR EACH BUILDING LOT.

SITE ANALYSIS DATA / TABULATION

	TOTAL	O'KEEFE PROPERTY	CRAWFORD PROPERTY
TOTAL PROJECT AREA (GROSS)	99.07 AC.	69.55 AC.	29.52 AC.
AREA OF WETLANDS AND BUFFER	32.74 AC.	31.30 AC.	1.44 AC.
AREA OF 100-YR FLOODPLAIN	15.84 AC.	15.87 AC.	0.17 AC.
AREA OF FOREST	47.59 AC.	35.59 AC.	11.91 AC.
AREA OF STEEP SLOPES (25% OR GREATER)	7.74 AC.	7.74 AC.	0.00 AC.
NET TRACT AREA: 7.74 AC. OF HIGHLY ERODIBLE SOILS (K > 0.35)	33.90 AC.	33.25 AC.	0.65 AC.
LIMIT OF DISTURBED AREA	75.49 AC.	48.14 AC.	29.35 AC.
RR-DEO	26.33 AC.	4.52 AC.	21.81 AC.
PROPOSED USE: SINGLE FAMILY DETACHED DWELLINGS			
IMPERVIOUS COVER	4.22 AC.	0	4.22 AC.

NOTE: THE TOTAL PROPERTY AREA IS 99.51 ACRES. 100-YR FLOODPLAINS, FORESTED AREAS, AREAS OF STEEP SLOPES, AND ERODIBLE SOILS HAVE BEEN IDENTIFIED WITHIN THE PROJECT AREA. POSSIBLE WETLAND AREAS AND SPECIMEN TREES OUTSIDE THE LIMIT OF DISTURBANCE MAY EXIST BUT WERE NOT FIELD DELINEATED AS THEY WILL NOT BE IMPACTED BY THIS DEVELOPMENT.

DETERMINE TARGET P_e USING TABLE 5.3
 SOIL CONDITIONS "DEVELOPED CONDITION"

HSG	"AREA (Ac)"	IMPERVIOUS (Ac)	PERCENT	TARGET P _e "
A	0.00	0.00		
B	26.25	4.22	0.16%	
C	0.08	0.00		
D	0.00	0.00		
WEIGHTED P _e	26.33	4.22	0.16%	1.20

DETERMINE ESD IMPLEMENTATION GOALS
 SOIL CONDITIONS FOR "WOODS IN GOOD CONDITION"

HSG	RCN	AREA (Ac)	PERCENT
A	38.00	0.00	0.00%
B	55.00	26.25	99.7%
C	70.00	0.08	0.32%
D	77.00	0.00	0.00%
TARGET RCN		55.00	26.33

OWNERS:
 MARJORIE F. CRAWFORD, TRUSTEE DONALD O'KEEFE
 STEPHEN C. CRAWFORD, TRUSTEE SALLY O'KEEFE
 19612 ISLANDER ST. 6950 HAVILAND MILL ROAD
 CLARKSVILLE, MD 20832 CLARKSVILLE, MD 21042
 TEL: (240) 330-2199 TEL: (410) 599-0541

DEVELOPER: ELM STREET DEVELOPMENT
 5074 DORSEY HALL ROAD, SUITE 205
 COLUMBIA, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-9241

TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 40008, EXPIRATION DATE 7/30/15

BOHLER ENGINEERING

CORPORATE OFFICE:
 WARREN, NJ

OFFICES:
 BOSTON, MA
 CHARLOTTE, NC
 CHICAGO, IL
 COLUMBIA, MD
 FORT LAUDERDALE, FL
 HOUSTON, TX
 PHILADELPHIA, PA
 TAMPA, FL

CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

NOT APPROVED FOR CONSTRUCTION

PROJECT No.: MD142338
 DRAWN BY: AVG
 CHECKED BY: JMA
 DATE: 8/29/15
 SCALE: AS NOTED
 CAD ID.: ECP2

ENVIRONMENTAL CONCEPT PLAN

FOR
CRAWFORD & O'KEEFE PROPERTIES

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 CLARKSVILLE, MD
 HOWARD COUNTY, MD

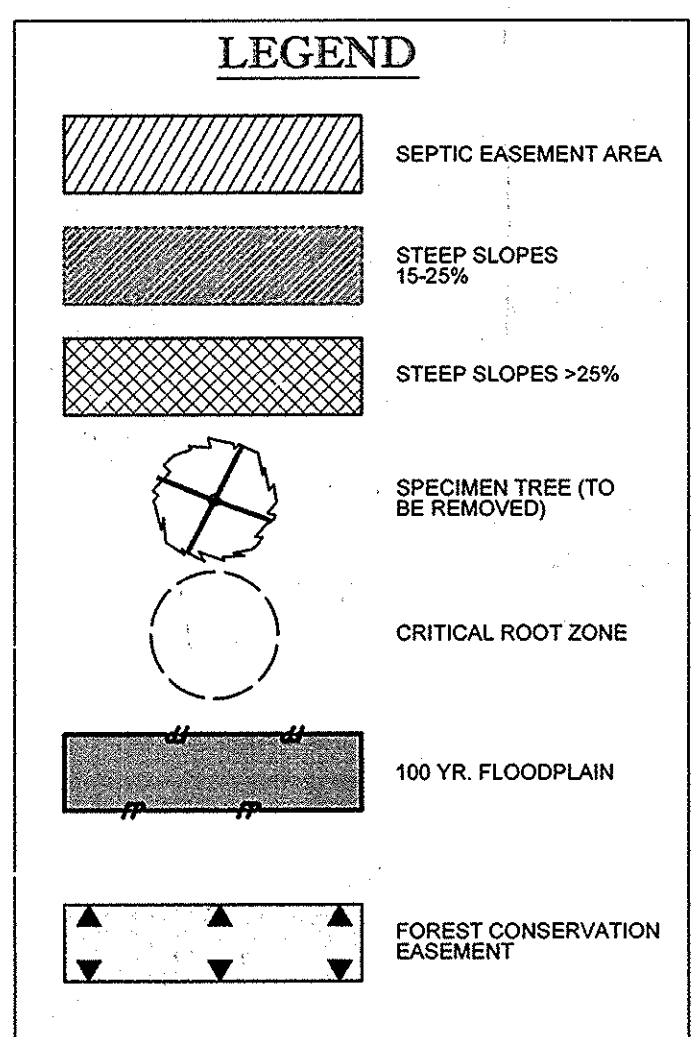
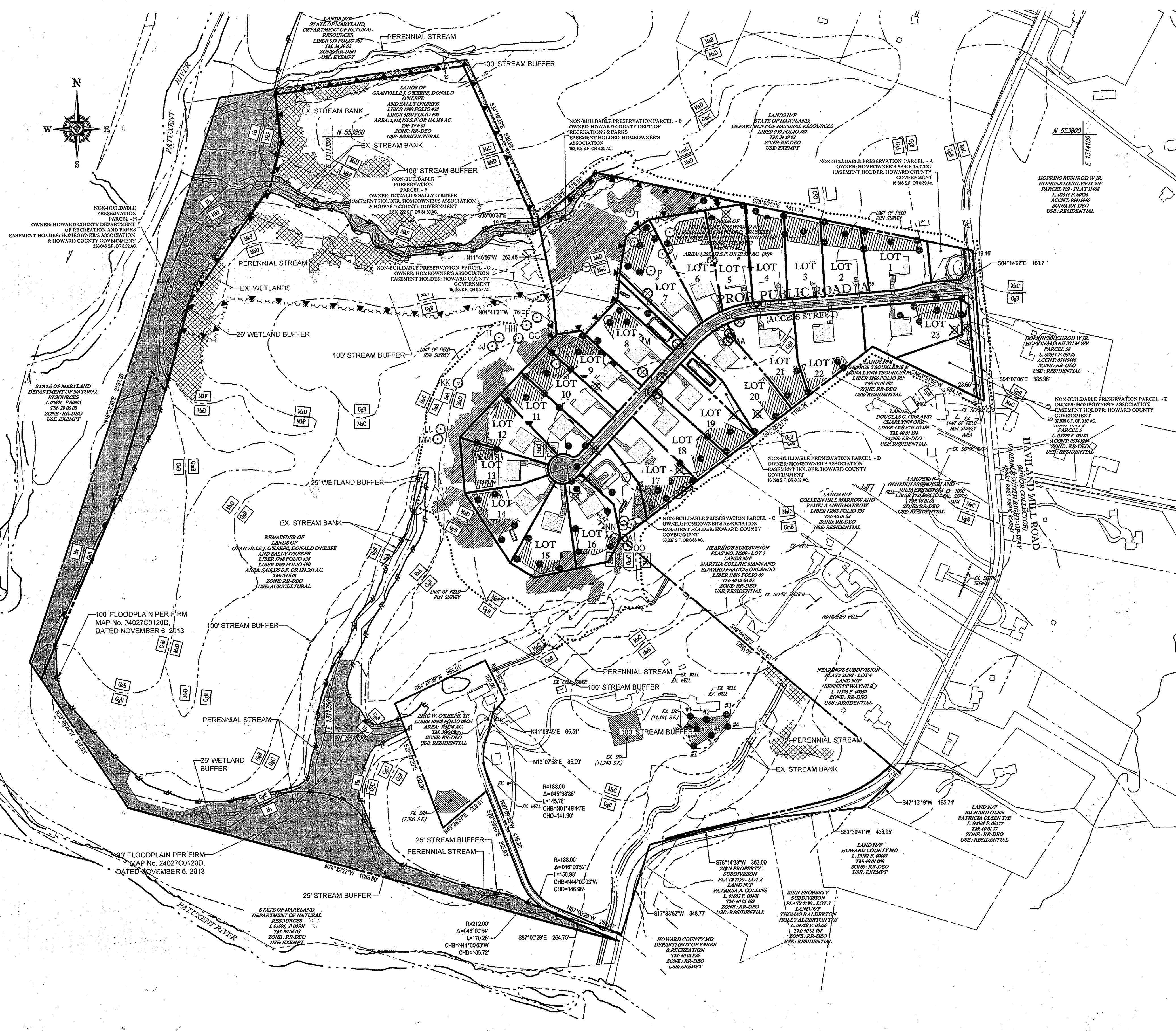
BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21204
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. BOWE
 PROFESSIONAL ENGINEER
 LICENSE NO. 10308
 9/23/15

COVER SHEET

SHEET TITLE:
 SHEET NUMBER:
 1



BOHLER ENGINEERING

CORPORATE OFFICE:
WARREN, NJ

CIVIL & CONSULTING ENGINEERS
SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

OFFICES:
BOSTON, MA
ALBANY, NY
DUNELLEN, VA
CENTER VALLEY, PA
PHILADELPHIA, PA
WILKES BARRE, PA

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EROSION CONTROL PLANS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL - 811 (MV 1-800-245-4244) (PA 1-800-245-1770) (DC 1-800-257-7777) (MD 1-800-552-7001) (DE 1-800-257-7777) (NJ 1-800-282-4555)

NOT APPROVED FOR CONSTRUCTION

PROJECT No.: MD142038
DRAWN BY: AVG
CHECKED BY: JMA
DATE: 8/28/15
SCALE: AS NOTED
CAD I.D.: ECPD

ENVIRONMENTAL CONCEPT PLAN

FOR
CRAWFORD & O'KEEFE PROPERTIES
LOCATION OF SITE
6780 HAVILAND MILL ROAD
CLARKSVILLE, MD
HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 501
TOWSON, MARYLAND 21284
Phone: (410) 821-7900
Fax: (410) 821-7987
www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
M.D. LICENSE NO. 4608

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
2

CRAWFORD & O'KEEFE PROPERTIES

23 SINGLE FAMILY DETACHED UNITS

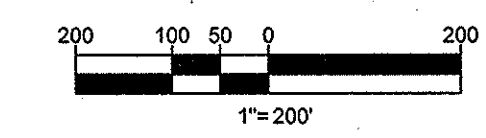
CUT/FILL ANALYSIS

TOTAL CUT = 81,380 CY
TOTAL FILL = 58,800 CY (15% SHRINKAGE FACTOR APPLIED)
TOTAL EXPORT = 22,460 CY

LIMIT OF DISTURBANCE: 28.33 AC.

NOTES

- ALL UNDERGROUND ROOF LEADERS WILL BE 6" PVC PIPE.
- ALL BIO-RETENTION FACILITIES LEADING TO THEIR OWN CUTFALL POINT WILL HAVE OUTFALL PIPES SIZED TO HANDLE THE 10-YR STORM EVENT.
- STORMWATER QUALITY MANAGEMENT WILL BE PROVIDED BY 6 BIO-RETENTION FACILITIES AND 119 DRYWELLS.



SUBDIVISION NAME: TBD SECTION/AREA: N/A DEED # 08957/00552 & 05888/00490	TAX MAP: 34 & 39 PARCEL: 52 & 1	GRID: 19 & 6 ZONED: RR-DEO
PREVIOUS FILE No.:	5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 9-28-15

DATE: 10-9-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK. BEFORE PROCEEDING TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONSULT WITH THE DESIGNER RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND ALL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

LEGEND:

- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- DIVERSION DIKE
- SUPER SILT FENCE
- TREE PROTECTION
- STEEP SLOPES (15%-25%)
- STEEP SLOPES (>25%)
- SOIL DIVIDE
- SOIL LABEL
- SOIL STABILIZATION MATTING
- RIPRAP STABILIZATION
- LIMIT OF DISTURBANCE
- ROOT PRUNING
- SPECIMEN TREE (TO BE REMOVED)
- CRITICAL ROOT ZONE (CRZ)

- KEY A
- KEY B
- KEY C
- KEY D
- KEY E
- KEY F
- KEY G
- KEY H
- KEY I
- KEY J
- KEY K
- KEY L
- KEY M
- KEY N
- KEY O
- KEY P
- KEY Q
- KEY R
- KEY S
- KEY T
- KEY U
- KEY V
- KEY W
- KEY X
- KEY Y
- KEY Z
- KEY AA
- KEY BB
- KEY CC
- KEY DD
- KEY EE

STORMWATER MANAGEMENT PRACTICES

LOT NO.	PERMEABLE PAVING (A2/LY) (H)	ESD FACILITY TYPE AND NUMBER	TOTAL AREA (A ²)	REQUIRED (C.F.)	PROVIDED (C.F.)
1	N	(5) DRYWELLS (M-5)	0.09	554	554
2	N	(5) DRYWELLS (M-5)	0.09	554	554
3	N	(5) DRYWELLS (M-5)	0.09	554	554
4	N	(5) DRYWELLS (M-5)	0.09	554	554
5	N	(5) DRYWELLS (M-5)	3.09	554	554
6	N	(5) DRYWELLS (M-5)	0.09	554	554
7	N	(5) DRYWELLS (M-5)	0.09	554	554
8	N	(5) DRYWELLS (M-5)	0.09	554	554
9	N	(5) DRYWELLS (M-5)	0.09	554	554
10	N	(5) DRYWELLS (M-5)	0.09	554	554
11	N	(5) DRYWELLS (M-5)	0.09	554	554
12	N	(7) DRYWELLS (M-5)	0.16	742	741
13	N	(7) DRYWELLS (M-5)	0.16	754	754
14	N	(5) DRYWELLS (M-5)	0.09	554	554
15	N	(5) DRYWELLS (M-5)	0.09	554	554
16	N	(5) DRYWELLS (M-5)	0.09	554	554
17	N	(5) DRYWELLS (M-5)	0.09	554	554
18	N	(5) DRYWELLS (M-5)	0.09	554	554
19	N	(5) DRYWELLS (M-5)	0.09	554	554
20	N	(5) DRYWELLS (M-5)	0.09	554	554
21	N	(5) DRYWELLS (M-5)	0.09	554	554
22	N	(5) DRYWELLS (M-5)	0.09	554	554
23	N	(5) DRYWELLS (M-5)	0.09	554	554
PUBLIC ROAD	N	BIORETENTION FACILITY #1	1.36	1540	1904
PUBLIC ROAD	N	BIORETENTION FACILITY #2	2.37	2065	4104
PUBLIC ROAD	N	BIORETENTION FACILITY #3	3.17	1933	4197
PUBLIC ROAD	N	BIORETENTION FACILITY #4	3.30	3594	4484
"DRIVEWAYS 14 & 15"	N	MICRO-BIORETENTION FACILITY #5	0.42	344	757
TOTALS			12.86	22,610	28,579

DRAINAGE AREA INFORMATION

D.A.	IMPERVIOUS	PERVIOUS	TOTAL (AC)
1-1	0.19 *	1.01	1.20
1-2	0.12	0.08	0.20
2	0.37 *	1.94	2.31
3	0.34 *	2.81	3.15
4-1	0.27 *	0.9	1.17
4-2	0.22 *	1.47	1.69
4-3	0.22 *	0.21	0.44
5	0.07	0.35	0.42
6-1	0.0172	0.0065	0.0237
6-2	0.0135	0.0028	0.0163
7-1	0.0181	0.0082	0.0263
7-2	0.0135	0.0028	0.0163

SPECIMEN TREES

KEY	SPECIES NAME	SIZE	CONDITION
A	TULIP POPLAR	36"	GOOD
B	TULIP POPLAR	38"	GOOD
C	TULIP POPLAR	32"	POOR
D	TULIP POPLAR	33"	GPPD
E	TULIP POPLAR	51"	POOR
F	BLACK OAK	34"	FAIR
G	BLACK OAK	47"	F. GOOD
H	SCARLET OAK	31"	POOR
I	TULIP POPLAR	32"	GOOD
J	TULIP POPLAR	33"	GOOD
K	TULIP POPLAR	32"	GOOD
L	TULIP POPLAR	32"	GOOD
M	BLACK OAK	35"	F. GOOD
N	RED OAK	42"	GOOD
O	TULIP POPLAR	30"	F. GOOD
P	TULIP POPLAR	31"	F. GOOD
Q	TULIP POPLAR	35"	POOR
R	TULIP POPLAR	34"	F. GOOD
S	WHITE OAK	36"	GOOD
T	RED OAK	37"	F. GOOD
U	WHITE OAK	41"	V. POOR
V	WHITE OAK	31"	V. POOR
W	WHITE OAK	30"	GOOD
X	SCARLET OAK	31"	F. GOOD
Y	TULIP POPLAR	34"	GOOD
Z	TULIP POPLAR	32"	GOOD
AA	TULIP POPLAR	43"	FAIR
BB	TULIP POPLAR	30"	GOOD
CC	TULIP POPLAR	34"	GOOD
DD	TULIP POPLAR	33"	GOOD
EE	TULIP POPLAR	30"	GOOD

SPECIMEN TREES

KEY	SPECIES NAME	SIZE	CONDITION
FF	TULIP POPLAR	32"	FAIR
GG	TULIP POPLAR	33"	F. GOOD
HH	AM. SYCAMORE	35"	F. GOOD
II	TULIP POPLAR	32"	GOOD
JJ	AM. SYCAMORE	30"	FAIR
KK	AM. SYCAMORE	52"	GOOD
LL	AM. SYCAMORE	31"	F. GOOD
MM	AM. SYCAMORE	34"	F. GOOD
NN	TULIP POPLAR	56"	F. GOOD
OO	TULIP POPLAR	31"	FAIR
PP	TULIP POPLAR	34"	FAIR
QQ	BLACK OAK	31"	FAIR

CONCEPT PLAN NOTES

- THIS PLAN IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY BY BOHLER ENGINEERING, TITLED "BOUNDARY & TOPOGRAPHIC SURVEY, CRAWFORD & O'KEEFE PROPERTIES, 6780 HAVILAND ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND", FILE NO. SD142038, DATED 01-16-15.
- THE CONCEPT REPRESENTED HEREIN IDENTIFIES A DESIGN CONCEPT RESULTING FROM LAYOUT PREFERENCES IDENTIFIED BY OWNER COUPLED WITH A PRELIMINARY REVIEW OF ZONING AND LAND DEVELOPMENT REQUIREMENTS AND ISSUES. THE FEASIBILITY WITH RESPECT TO OBTAINING LOCAL, COUNTY, STATE, AND OTHER APPLICABLE APPROVALS IS NOT WARRANTED AND CAN ONLY BE ASSESSED AFTER FURTHER EXAMINATION AND VERIFICATION OF SAME REQUIREMENTS AND PROCUREMENT OF JURISDICTIONAL APPROVALS.
- THE CONCEPTUAL PLAN IS PREPARED FOR CONCEPTUAL PRESENTATION PURPOSES ONLY AND IS NOT INTENDED FOR UTILIZATION AS A ZONING AND/OR CONSTRUCTION DOCUMENT. THE EXISTING CONDITIONS SHOWN HEREON ARE BASED UPON INFORMATION THAT WAS SUPPLIED TO BOHLER ENGINEERING AT THE TIME OF PLAN PREPARATION AND MAY BE SUBJECT TO CHANGE UPON AVAILABILITY OF ADDITIONAL INFORMATION.

CRAWFORD & O'KEEFE PROPERTIES
23 SINGLE FAMILY DETACHED UNITS

CUT/FILL ANALYSIS
TOTAL CUT = 80,160 CY
TOTAL FILL = 59,800 CY (15% SHRINKAGE FACTOR APPLIED)
TOTAL EXPORT = 19,360 CY
LIMIT OF DISTURBANCE: 25.33 AC.

NOTES

- ALL UNDERGROUND ROOF LEADERS WILL BE 8" PVC PIPE.
- ALL BIO-RETENTION FACILITIES LEADING TO THEIR OWN OUTFALL POINT WILL HAVE OUTFALL PIPES SIZED TO HANDLE THE 10-YR STORM EVENT.
- STORMWATER QUALITY MANAGEMENT WILL BE PROVIDED BY 5 BIO-RETENTION FACILITIES AND 119 DRYWELLS.

CONCEPT PLAN NOTES

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 9-25-15

DATE: 10-9-15

CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

STORMWATER MANAGEMENT PRACTICES

LOT NO.	PERMEABLE PAVING (A2/LY) (H)	ESD FACILITY TYPE AND NUMBER	TOTAL AREA (A ²)	REQUIRED (C.F.)	PROVIDED (C.F.)
1	N	(5) DRYWELLS (M-5)	0.09	554	554
2	N	(5) DRYWELLS (M-5)	0.09	554	554
3	N	(5) DRYWELLS (M-5)	0.09	554	554
4	N	(5) DRYWELLS (M-5)	0.09	554	554
5	N	(5) DRYWELLS (M-5)	3.09	554	554
6	N	(5) DRYWELLS (M-5)	0.09	554	554
7	N	(5) DRYWELLS (M-5)	0.09	554	554
8	N	(5) DRYWELLS (M-5)	0.09	554	554
9	N	(5) DRYWELLS (M-5)	0.09	554	554
10	N	(5) DRYWELLS (M-5)	0.09	554	554
11	N	(5) DRYWELLS (M-5)	0.09	554	554
12	N	(7) DRYWELLS (M-5)	0.16	742	741
13	N	(7) DRYWELLS (M-5)	0.16	754	754
14	N	(5) DRYWELLS (M-5)	0.09	554	554
15	N	(5) DRYWELLS (M-5)	0.09	554	554
16	N	(5) DRYWELLS (M-5)	0.09	554	554
17	N	(5) DRYWELLS (M-5)	0.09	554	554
18	N	(5) DRYWELLS (M-5)	0.09	554	554
19	N	(5) DRYWELLS (M-5)	0.09	554	554
20	N	(5) DRYWELLS (M-5)	0.09	554	554
21	N	(5) DRYWELLS (M-5)	0.09	554	554
22	N	(5) DRYWELLS (M-5)	0.09	554	554
23	N	(5) DRYWELLS (M-5)	0.09	554	554
PUBLIC ROAD	N	BIORETENTION FACILITY #1	1.36	1540	1904
PUBLIC ROAD	N	BIORETENTION FACILITY #2	2.37	2065	4104
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PUBLIC ROAD	N	BIORETENTION FACILITY #4	3.30	3594	4484
"DRIVEWAYS 14 & 15"	N	MICRO-BIORETENTION FACILITY #5	0.42	344	757
TOTALS			12.86	22,610	28,579

DRAINAGE AREA INFORMATION

D.A.	IMPERVIOUS	PERVIOUS	TOTAL (AC)
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STORMWATER MANAGEMENT PRACTICES

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2	N	(5) DRYWELLS (M-5)	0.09	554	554
3	N	(5) DRYWELLS (M-5)	0.09	554	554
4	N	(5) DRYWELLS (M-5)	0.09	554	554
5	N	(5) DRYWELLS (M-5)	3.09	554	554
6	N	(5) DRYWELLS (M-5)	0.09	554	554
7	N	(5) DRYWELLS (M-5)	0.09	554	554
8	N	(5) DRYWELLS (M-5)	0.09	554	554
9	N	(5) DRYWELLS (M-5)	0.09	554	554
10	N	(5) DRYWELLS (M-5)	0.09	554	554
11	N	(5) DRYWELLS (M-5)	0.09	554	554
12	N	(7) DRYWELLS (M-5)	0.16	742	741
13	N	(7) DRYWELLS (M-5)	0.16	754	754
14	N	(5) DRYWELLS (M-5)	0.09	554	554
15	N	(5) DRYWELLS (M-5)	0.09	554	554
16	N	(5) DRYWELLS (M-5)	0.09	554	554
17	N	(5) DRYWELLS (M-5)	0.09	554	554
18	N	(5) DRYWELLS (M-5)	0.09	554	554
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TOTALS			12.86	22,610	28,579

STORMWATER MANAGEMENT PRACTICES

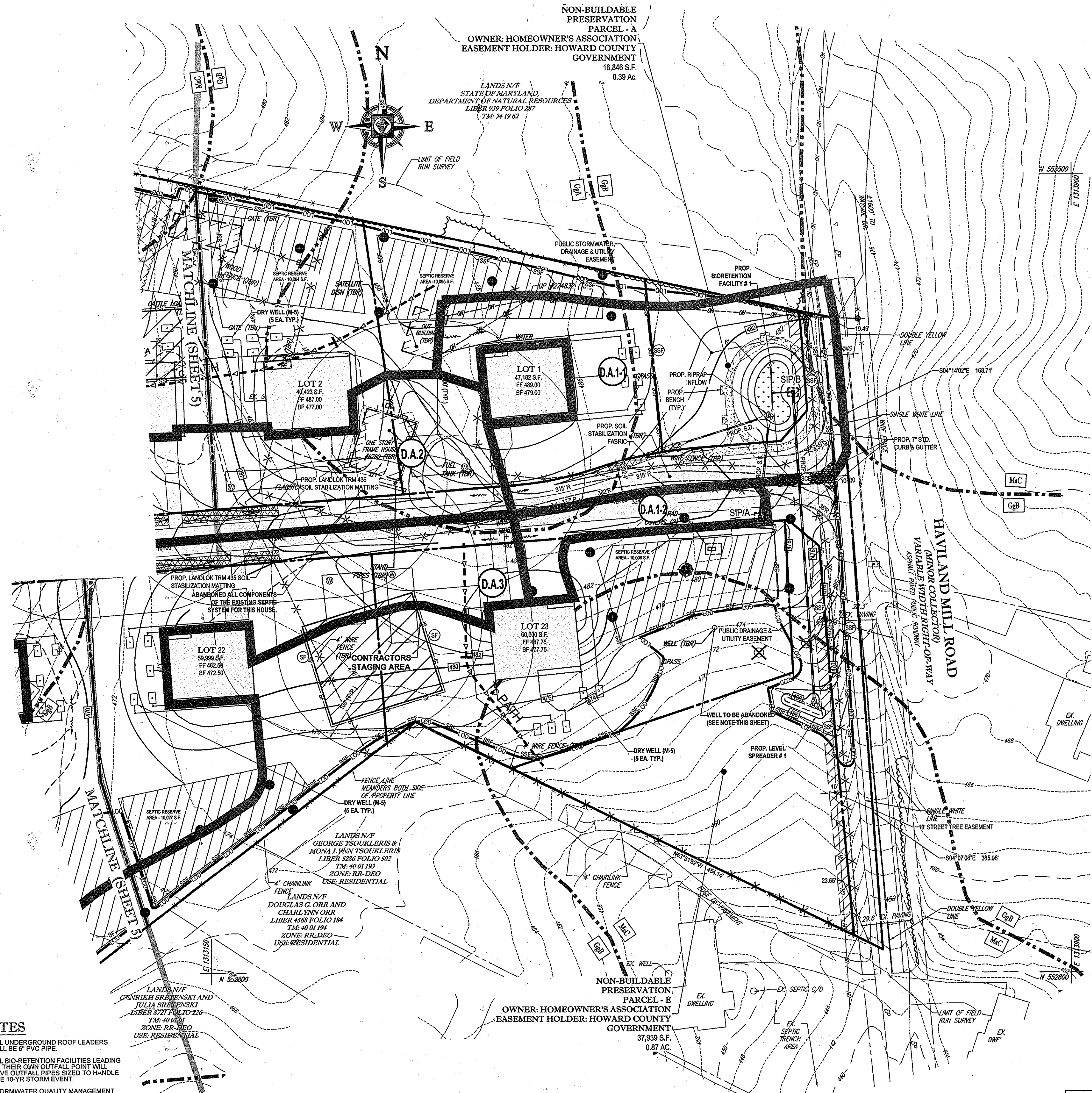
LOT NO.	PERMEABLE PAVING (A2/LY) (H)	ESD FACILITY TYPE AND NUMBER	TOTAL AREA (A ²)	REQUIRED (C.F.)	PROVIDED (C.F.)
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3	N	(5) DRYWELLS (M-5)	0.09	554	554
4	N	(5) DRYWELLS (M-5)	0.09	554</	

LEGEND:

- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- DIVERSION DIKE
- SUPER SILT FENCE
- TREE PROTECTION
- STEEP SLOPES (15%-25%)
- STEEP SLOPES (>25%)
- SOIL DIVIDE
- SOIL LABEL
- SOIL STABILIZATION MATTING
- RIPRAP STABILIZATION
- LIMIT OF DISTURBANCE
- ROOT PRUNING
- SPECIMEN TREE (TO BE REMOVED)
- CRITICAL ROOT ZONE (CRZ)
- LIMIT OF DRAINAGE AREA



CONCEPT PLAN NOTES

- THIS PLAN IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY BY BOHLER ENGINEERING, TITLED "BOUNDARY & TOPOGRAPHIC SURVEY, CRAWFORD & O'KEEFE PROPERTIES, 6780 HAVILAND ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND", FILE NO. SD142038, DATED 01-16-15.
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CRAWFORD & O'KEEFE PROPERTIES

23 SINGLE FAMILY DETACHED UNITS

CUT/FILL ANALYSIS

TOTAL CUT = 81,360 CY
 TOTAL FILL = 53,960 CY (15% SHRINKAGE FACTOR APPLIED)
 TOTAL EXPORT = 27,400 CY

LIMIT OF DISTURBANCE: 26.33 AC.

NOTES

- ALL UNDERGROUND ROOF LEADERS WILL BE 6" PVC PIPE.
- ALL BIO-RETENTION FACILITIES LEADING TO THEIR OWN OUTFALL POINT WILL HAVE OUTFALL PIPES SIZED TO HANDLE THE 10-YR STORM EVENT.
- STORMWATER QUALITY MANAGEMENT WILL BE PROVIDED BY 5 BIO-RETENTION FACILITIES AND 119 DRYWELLS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Katherine Deane 9-23-15
 CHIEF DIVISION OF LAND DEVELOPMENT DATE
John Deane 10-9-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

IF IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONDUCT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION, FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND BY ALL CONSTRUCTION AND LOCAL, STATE, AND FEDERAL CODES.

BOHLER ENGINEERING

CORPORATE OFFICE:
 1100 BROADWAY, SUITE 200
 NEWTON, MA 02459
 TEL: (617) 552-3000

CIVIL & CONSULTING ENGINEERS
 SURVEYORS
 PROJECT MANAGERS
 ENVIRONMENTAL CONSULTANTS
 LANDSCAPE ARCHITECTS

OFFICES:
 BOWIE, MD
 TOWSON, MD
 WASHINGTON, VA
 CHARLOTTE, NC
 CHAMBERS, PA
 TAMPA, FL
 FORT LAUDERDALE, FL

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL - 811

VA 1-800-245-4649 (PA 1-800-245-7777) DC 1-800-257-7777
 MD 1-800-552-7001 (MD 1-800-257-7777) DE 1-800-282-8555

NOT APPROVED FOR CONSTRUCTION

PROJECT No.: MD142038
 DRAWN BY: JMA
 CHECKED BY: JMA
 DATE: 8/7/15
 SCALE: AS NOTED
 CAD I.D.: ECP0

ENVIRONMENTAL CONCEPT PLAN

FOR
CRAWFORD & O'KEEFE PROPERTIES
 LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 CLARKSVILLE, HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD, SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 MARYLAND LICENSE NO. 2006

OWNERS:
 MARJORIE F. CRAWFORD, TRUSTEE DONALD O'KEEFE
 STEPHEN C. CRAWFORD, TRUSTEE SALLY O'KEEFE
 1863 ISLANDER ST. 6950 HAVILAND MILL ROAD
 OLNEY, MD 20832 CLARKSVILLE, MD 21029
 TEL: (240) 330-2199 TEL: (410) 599-6941

DEVELOPER:
 ELM STREET DEVELOPMENT
 5074 DORSEY HALL ROAD, SUITE 205
 COLUMBIA, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

**TAX MAP: 34 & 39 GRID: 19 & 6 ZONED: RR-DEO
 PARCEL: 52 & 1
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND**

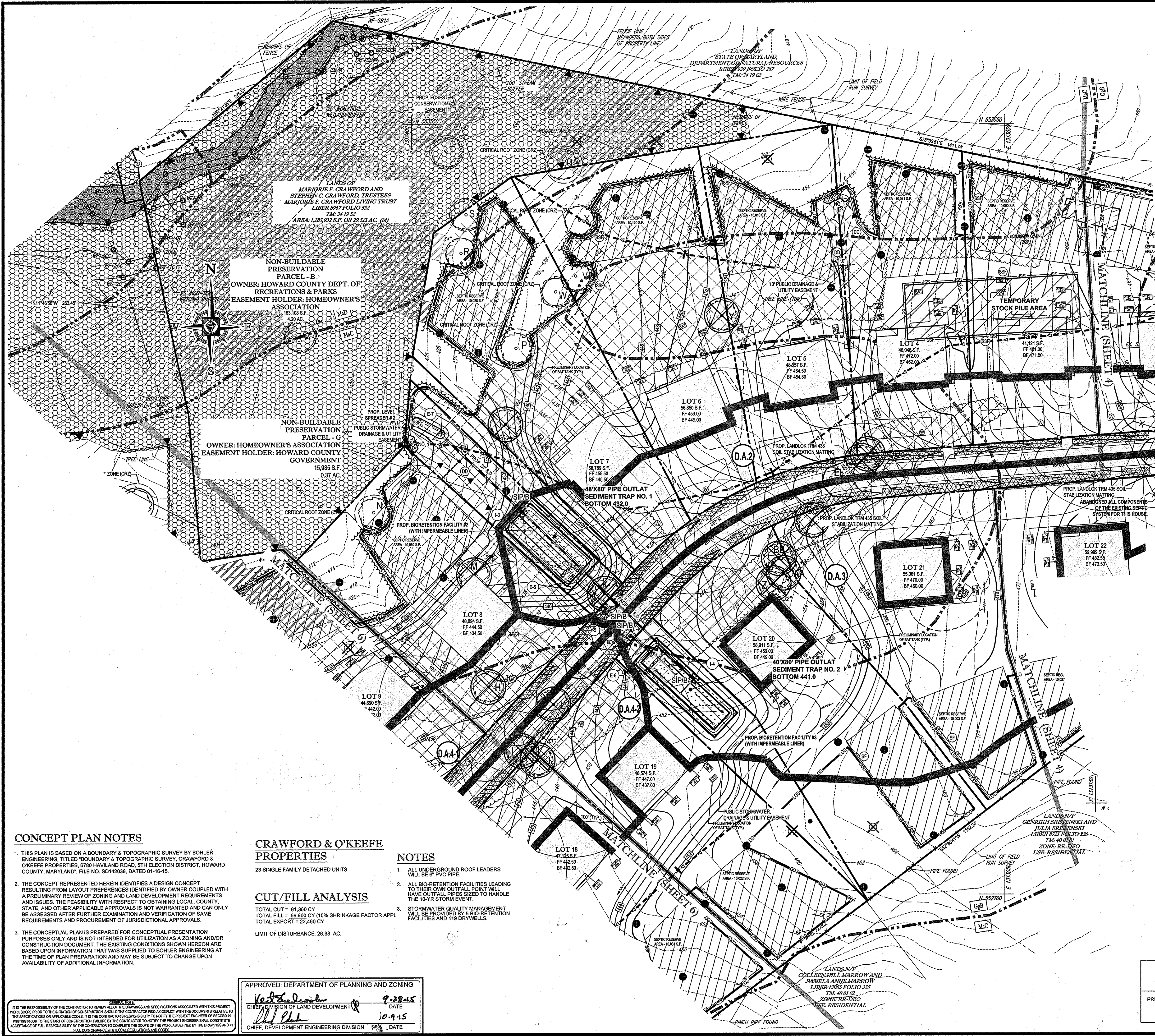
SUBDIVISION NAME: TBD
 SECTION/AREA: N/A
 DEED # 06967/00532 & 05899/00490

PREVIOUS FILE NO.:

PROFESSIONAL CERTIFICATION
 I, BRANDON R. ROWE, 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. 46929, EXPIRATION DATE: 7/20/15.

SEDIMENT CONTROL AND ENVIRONMENTAL CONCEPT PLAN

SHEET NUMBER:
4



LEGEND :

- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- DIVERSION DIKE
- SUPER SILT FENCE
- TREE PROTECTION
- STEEP SLOPES (15%-25%)
- STEEP SLOPES (>25%)
- SOIL DIVIDE
- SOIL LABEL
- SOIL STABILIZATION MATTING
- RIPRAP STABILIZATION
- LIMIT OF DISTURBANCE
- ROOT PRUNING
- SPECIMEN TREE (TO BE REMOVED)
- CRITICAL ROOT ZONE (CRZ)
- FOREST CONSERVATION EASEMENT
- LIMIT OF DRAINAGE AREA

BOHLER ENGINEERING

CORPORATE OFFICE:
 WARRERS, NJ

SURVEYORS:
 SOUTHBRIDGE, MA
 TOWNSON, MD
 ALBANY, NY
 CHALCOTE, PA
 TOWSON, VA
 WAREHOUSES, VA
 PHILADELPHIA, PA

PROJECT MANAGERS:
 ENVIRONMENTAL CONSULTANTS:
 LANDSCAPE ARCHITECTS:
 TOWSON, VA
 WAREHOUSES, VA
 PHILADELPHIA, PA

REVISIONS

REV	DATE	COMMENT	BY

NOT APPROVED FOR CONSTRUCTION

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 (VA 1-800-345-4674 / PA 1-800-242-1773 / DC 1-800-257-7777 / MD 1-800-552-7001 / NJ 1-800-257-7777) (DE 1-800-292-8555)

PROJECT:

PROJECT No.:	MD142038
DRAWN BY:	AVG
CHECKED BY:	JMA
DATE:	8/28/16
SCALE:	AS NOTED
CAD I.D.:	ECPO

ENVIRONMENTAL CONCEPT PLAN

FOR
CRAWFORD & O'KEEFE PROPERTIES

LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 CLARKSVILLE,
 HOWARD COUNTY, MD

BOHLER ENGINEERING

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 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 MARYLAND LICENSE # 43008

SHEET TITLE:
SEDIMENT CONTROL AND ENVIRONMENTAL CONCEPT PLAN

SHEET NUMBER:
5

CONCEPT PLAN NOTES

- THIS PLAN IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY BY BOHLER ENGINEERING, TITLED "BOUNDARY & TOPOGRAPHIC SURVEY, CRAWFORD & O'KEEFE PROPERTIES, 6780 HAVILAND ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND", FILE NO. SD142038, DATED 01-16-15.
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CRAWFORD & O'KEEFE PROPERTIES

23 SINGLE FAMILY DETACHED UNITS

CUT/FILL ANALYSIS

TOTAL CUT = 81,390 CY
 TOTAL FILL = 58,900 CY (15% SHRINKAGE FACTOR APPL)
 TOTAL EXPORT = 22,490 CY

LIMIT OF DISTURBANCE: 28.33 AC.

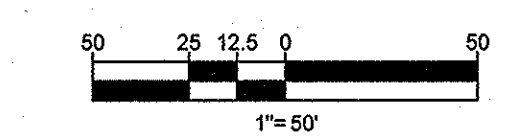
NOTES

- ALL UNDERGROUND ROOF LEADERS WILL BE 6" PVC PIPE
- ALL BIO-RETENTION FACILITIES LEADING TO THEIR OWN OUTLET POINT WILL HAVE OUTLET PIPES SIZED TO HANDLE THE 10-YR STORM EVENT.
- STORMWATER QUALITY MANAGEMENT WILL BE PROVIDED BY 5 BIO-RETENTION FACILITIES AND 119 DRYWELLS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

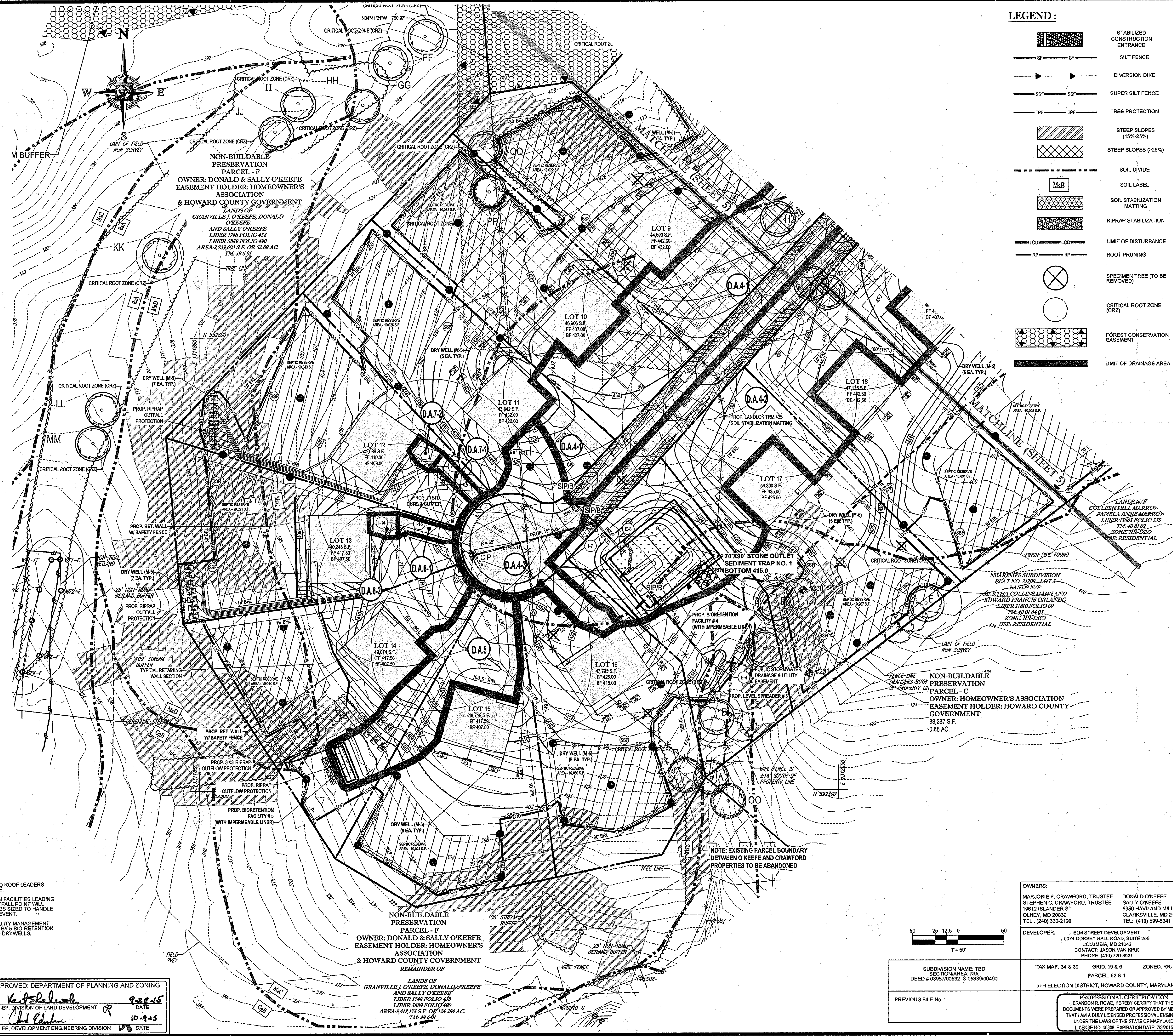
[Signature] 9-28-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 10-9-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



SUBDIVISION NAME: TBD SECTION/AREA: N/A DEED # 098957/00532 & 03889/00490	TAX MAP: 34 & 39 GRID: 19 & 6 PARCEL: S2 & 1 ZONED: RR-DEO
PREVIOUS FILE NO.:	5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION
 I, BRADON R. RYME, 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. 40808, EXPIRATION DATE: 7/31/2015.



LEGEND:

[Symbol]	STABILIZED CONSTRUCTION ENTRANCE
[Symbol]	SILT FENCE
[Symbol]	DIVERSION DIKE
[Symbol]	SUPER SILT FENCE
[Symbol]	TREE PROTECTION
[Symbol]	STEEP SLOPES (15%-25%)
[Symbol]	STEEP SLOPES (>25%)
[Symbol]	SOIL DIVIDE
[Symbol]	SOIL LABEL
[Symbol]	SOIL STABILIZATION MATTING
[Symbol]	RIPRAP STABILIZATION
[Symbol]	LIMIT OF DISTURBANCE
[Symbol]	ROOT PRUNING
[Symbol]	SPECIMEN TREE (TO BE REMOVED)
[Symbol]	CRITICAL ROOT ZONE (CRZ)
[Symbol]	FOREST CONSERVATION EASEMENT
[Symbol]	LIMIT OF DRAINAGE AREA

BOHLER ENGINEERING

CORPORATE OFFICE:
 1000 W. 10TH ST.
 SUITE 200
 TOWSON, MD 21286
 PHONE: (410) 821-7900
 FAX: (410) 821-7987
 WWW.BOHLENGINEERING.COM

SURVEYORS:
 SOUTHBRIDGE, MA
 WESTPORT, MA
 ALBANY, NY
 CHAMFORT, PA
 TOWSON, MD
 WASHINGTON, VA
 PHILADELPHIA, PA
 TAMPA, FL

PROJECT MANAGERS:
 ENVIRONMENTAL CONSULTANTS:
 LANDSCAPE ARCHITECTS

REVISIONS

REV	DATE	COMMENT	BY

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE OF VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AND DELAWARE CALL - 811

OW 1-800-245-4444 (PA) 1-800-245-3777 (DC) 1-800-257-7777 (VA) 1-800-552-7001 (MD) 1-800-257-7777 (DE) 1-800-252-8555

NOT APPROVED FOR CONSTRUCTION

PROJECT No.: MD142038
 DRAWN BY: AVG
 CHECKED BY: JMA
 DATE: 8/28/15
 SCALE: 1" = 50'
 CAD I.D.: ECP0

ENVIRONMENTAL CONCEPT PLAN

FOR
CRAWFORD & O'KEEFE PROPERTIES
 LOCATION OF SITE
 6780 HAVILAND MILL ROAD
 CLARKSVILLE, MD
 HOWARD COUNTY, MD

BOHLER ENGINEERING

901 DULANEY VALLEY ROAD,
 SUITE 801
 TOWSON, MARYLAND 21284
 Phone: (410) 821-7900
 Fax: (410) 821-7987
 www.BohlerEngineering.com

B.R. ROWE

PROFESSIONAL ENGINEER
 MARYLAND LICENSE NO. 49068

SHEET TITLE:
SEDIMENT CONTROL AND ENVIRONMENTAL CONCEPT PLAN

SHEET NUMBER:
6

CONCEPT PLAN NOTES

- THIS PLAN IS BASED ON A BOUNDARY & TOPOGRAPHIC SURVEY BY BOHLER ENGINEERING, TITLED "BOUNDARY & TOPOGRAPHIC SURVEY, CRAWFORD & O'KEEFE PROPERTIES, 6780 HAVILAND ROAD, 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND", FILE NO. SD142038, DATED 01-16-15.
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CRAWFORD & O'KEEFE PROPERTIES

23 SINGLE FAMILY DETACHED UNITS

CUT/FILL ANALYSIS

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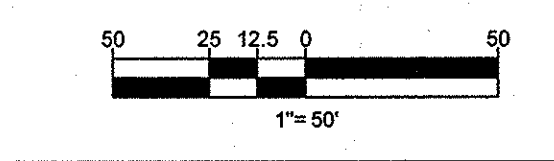
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NOTES

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- STORMWATER QUALITY MANAGEMENT WILL BE PROVIDED BY 5 BIO-RETENTION FACILITIES AND 110 DRYWELLS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development: [Signature] 9-22-15
 Chief, Development Engineering Division: [Signature] 10-9-15



SUBDIVISION NAME: TBD
 SECTION/AREA: N/A
 DEED # 09697/00532 & 05889/00490

TAX MAP: 34 & 39
 GRID: 19 & 6
 PARCEL: 52 & 1
 ZONED: RR-DEO
 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

PREVIOUS FILE NO.:

OWNERS:
 MARJORIE F. CRAWFORD, TRUSTEE
 STEPHEN C. CRAWFORD, TRUSTEE
 19812 ISLANDER ST.
 OLNEY, MD 20832
 TEL: (240) 330-2199

DONALD O'KEEFE
 SALLY O'KEEFE
 6850 HAVILAND MILL ROAD
 CLARKSVILLE, MD 21029
 TEL: (410) 599-6941

DEVELOPER:
 ELM STREET DEVELOPMENT
 5074 DORSEY HALL ROAD, SUITE 205
 COLUMBIA, MD 21042
 CONTACT: JASON VAN KIRK
 PHONE: (410) 720-3021

PROFESSIONAL CERTIFICATION
 I, BRANCON R. ROWE, 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. 49068, EXPIRATION DATE: 7/20/21.