

**GENERAL NOTES**

- BOUNDARY NOTE**  
- BOUNDARY INFORMATION SHOWN HEREON FOR THE HINES PROPERTY IS BASED ON A FIELD RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSO., INC. IN JANUARY 2018.
- TOPOGRAPHY NOTE**  
- TOPOGRAPHY SHOWN HEREON FOR THE HINES PROPERTY IS BASED ON HOWARD COUNTY GIS.
- WETLANDS AND WATERS OF THE U.S. SHOWN HEREON WERE DELINEATED AND GPS LOCATED BY GEO-TECHNOLOGY ASSOCIATES, INC. ON NOVEMBER 9, 2017.**
- THE SPECIMEN TREES WERE LOCATED BY GEOTECHNOLOGY ASSOCIATES INC. IN A SIMPLIFIED FOREST STAND DELINEATION PLAN IN FEBRUARY 2018.**
- THE COORDINATES SHOWN HEREON ARE BASED ON THE PROJECTION OF THE MARYLAND NAD 83 COORDINATE SYSTEM BY THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING. THE BASIS OF CONTROL FOR THE SITE ARE HOWARD COUNTY STATIONS 46CB AND 46FD.**
- EXISTING UTILITIES**  
APPROXIMATE LOCATION OF THE EXISTING WATER LINE WAS OBTAINED FROM HOWARD COUNTY DRAWING NO. 354-W.  
APPROXIMATE LOCATION OF THE EXISTING SANITARY LINE WAS OBTAINED FROM HOWARD COUNTY DRAWING NO. 529-S.
- THE SUBJECT PROPERTY IS ZONED R-20.**
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE ANY APPROVAL OF SUBSEQUENT SUBDIVISION OR SITE DEVELOPMENT PLANS. FURTHER COMMENTS WILL BE GENERATED UPON REVIEW OF THE APPLICABLE DEVELOPMENT PLANS IN ACCORDANCE WITH THE SUBDIVISION AND ZONING REGULATIONS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN AS THE PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.**
- THERE ARE NO STEEP SLOPES 25% OR GREATER ON THIS SITE.**
- THERE ARE NO FLOODPLAINS ON THIS PROPERTY.**
- CONDITIONAL USE PLAN WAS APPROVED BY THE BOARD OF APPEALS BA 18-025C ON 8/17/2020**
- WP-21-068 - ALTERNATIVE COMPLIANCE WAS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING ON 3/1/2021 FOR THE REMOVAL OF SPECIMEN TREES PER SECTION 16.1205(a)(3) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.**
- THIS PROPOSES ON-SITE REFORESTATION MEETING 75% OF ON-SITE OBLIGATION. FOREST CONSERVATION EASEMENTS WILL BE PROVIDED FOR LONG-TERM PROTECTION.**
- ALL ROADS WITHIN THIS DEVELOPMENT WILL BE PUBLIC.**

**DESIGN NARRATIVE**

**NATURAL RESOURCE PRESERVATION**

THE SITE IS 15.8 ACRES IN SIZE, WITH 14.26 ACRES OF DISTURBANCE FOR CLEARING AND GRADING. THE NATURAL RESOURCES WITHIN THE PROPERTY INCLUDES EXISTING SPECIMEN TREES, ENVIRONMENTAL BUFFERS, NON-TIDAL WETLANDS, AND MEADOWS. STORM WATER RUNOFF FROM THE SITE FLOWS NORTHWARD AND EASTWARD VIA SHEET FLOW AND CONCENTRATED FLOW AND DISCHARGES INTO THE EXISTING STORM DRAIN SYSTEMS.

THE EXISTING NATURAL RESOURCES ON THIS PROPERTY INCLUDE MEADOWS AND A SMALL AREA OF NON-TIDAL WETLANDS LOCATED ON THE EAST SIDE BOUNDARY. THE NATURAL RESOURCES WITHIN THE LOD ARE LIMITED TO EXISTING MEADOWS AND FOUR SPECIMEN TREES. THE PROPOSED SITE GRADING IS MINIMIZED AS MUCH AS POSSIBLE ON THE SOUTH, EAST, AND WEST SIDES OF THE PROPERTY TO REDUCE DISTURBANCE. THIS PROPERTY CONTAINS NO FORESTED AREAS.

THE PROPOSED DEVELOPMENT IS DESIGNED BASED UPON PRINCIPLES OF "BETTER SITE DESIGN" AND "ENVIRONMENTAL SITE DESIGN". THIS APPROACH NOT ONLY PRESERVES NATURAL AREAS BUT ALSO USES "ESD TO THE MEP" TO MIMIC THE EXISTING HYDROLOGIC CONDITIONS. IN THE POST-DEVELOPED CONDITION, STORM WATER WILL LEAVE THE SITE IN THE SAME MANNER AS IN THE PRE-DEVELOPED CONDITION BY PROVIDING SHEET FLOW AND CONCENTRATED FLOWS AT THE SAME LOCATIONS. OPEN VEGETATED SWALES AND BIO-FILTERING DEVICES AS WELL AS LEVEL SPREADERS ARE EMPLOYED TO PROMOTE INFILTRATION AND GROUNDWATER RECHARGE.

IN THE PROPOSED DEVELOPMENT, THE NATURAL FLOW PATTERNS AND DRAINAGE AREAS WILL BE MAINTAINED THROUGH THE IMPLEMENTATION OF ESD TO THE MEP AND BY UTILIZING MICRO-SCALE FACILITIES TO DISCHARGE OVERFLOWS TO THE SITE OUTFALLS. THE AREA OF THE PROPOSED DEVELOPMENT OR (LOD) CURRENTLY DRAINS IN 4 SEPARATE LOCATIONS AND WILL JOIN 2 SEPARATE PUBLIC STORM DRAIN SYSTEMS CROSSING MD 216.

SITE OUTFALL #1 IS LOCATED AT THE SOUTHEAST OF THE SITE AND CONSISTS OF SHEET FLOW TO AN EXISTING NON-TIDAL WETLAND WHICH OUTFALLS TO AN EXISTING DRIVEWAY CULVERT.

SITE OUTFALL #2 IS IN THE NORTHEAST CORNER OF THE SITE AND LEADS TO A DRAINAGE CHANNEL WHICH LEADS TO AN EXISTING SHA STORM DRAIN SYSTEM THAT CROSSES UNDER MD ROUTE 216.

SITE OUTFALL #3 IS LOCATED IN THE SOUTH WEST CORNER OF THE PROPERTY WHICH CONTAINS A SMALL DRAINAGE AREA TO AN EXISTING ROADSIDE DITCH ALONG SCAGGSVILLE ROAD.

SITE OUTFALL #4 IS IN THE WEST SIDE OF THE SITE WHICH WILL CONNECT TO AN EXISTING PUBLIC STORM DRAIN SYSTEM LOCATED IN LOT 17 ON JANDY AVENUE. IN THE DEVELOPED CONDITION, RUNOFF IS BEING DIVERTED TO SITE OUTFALL #2.

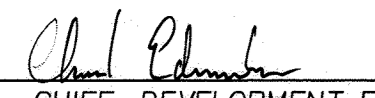

PEAK MANAGEMENT WILL NOT BE REQUIRED PER THE DESIGN MANUAL IN DRAINAGE AREAS A, C & D BECAUSE THE POST-DEVELOPMENT FLOWS ARE LESS THAN THE PRE-DEVELOPMENT FLOWS (SEE TR-55 IN CALCULATIONS). THE POST-DEVELOPMENT FLOWS IN DRAINAGE AREA B IS LARGER THAN THE PRE-DEVELOPMENT FLOW. THE RUNOFF FROM DRAINAGE AREA B FLOWS TO A SHA DRAINAGE CHANNEL THROUGH AN SHA CULVERT UNDER MD 216, OUTFALLING INTO THE EXISTING 100-YEAR FLOODPLAIN. THE RUNOFF FROM DRAINAGE AREA D IS COLLECTED IN A STORMDRAIN, WHICH HAS BEEN DESIGNED TO CONVEY RUNOFF FROM A DEVELOPED CONDITION, AND CONVEYED UNDER MD 216 TO THE 100-YEAR FLOODPLAIN. DRAINAGE AREAS B AND D CAN BE SAFELY CONVEYED TO THE 100-YEAR FLOODPLAIN.

**ESD STORMWATER REQUIREMENTS & PROVISIONS**

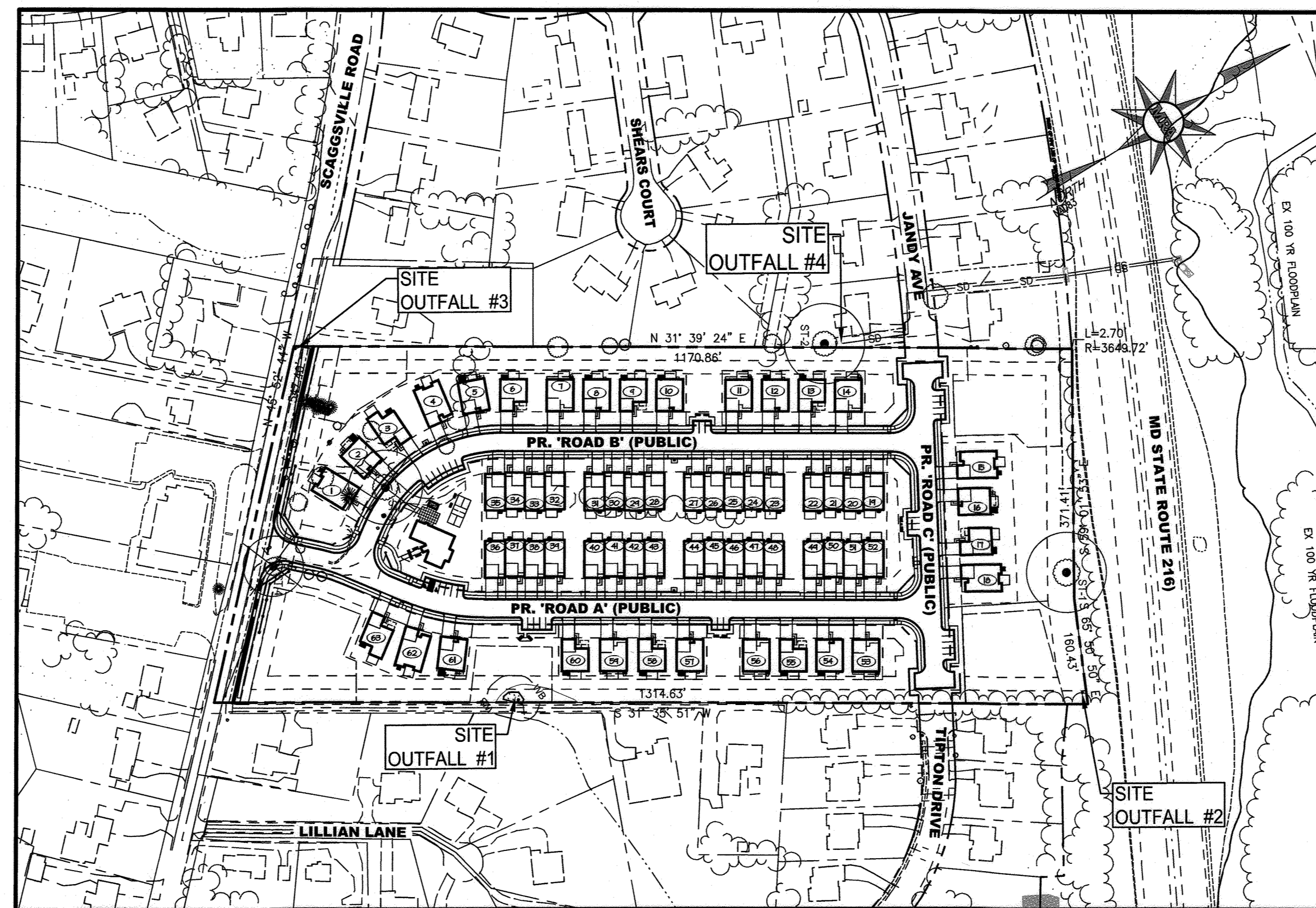
THE STORM WATER MANAGEMENT REQUIREMENT FOR THIS PROJECT INCLUDES A PE TARGET OF 1.8" AND ESD VOLUME OF 40,679 OF TO MEET ESD TO THE MEP FOR 14.26 ACRES OF DISTURBED AREA. THE PE TARGET AND ESD VOLUMES ARE MET THROUGH THE IMPLEMENTATION OF VARIOUS MICRO-SCALE PRACTICES. THESE INCLUDE: 30 MICRO-BIORETENTION, 1 AREA OF PERMEABLE PAVEMENT, AND 16 DRY WELLS.

BY MEETING THE PE TARGET AND ESD VOLUMES THE GOAL OF "WOODS IN GOOD HYDROLOGIC CONDITION" WHILE MAINTAINING THE NATURAL FLOW PATTERNS, RESOURCE PROTECTION, AND CONVEYING RUNOFF THROUGHOUT THE SITE AT A NON-EROSIVE VELOCITY HAS BEEN ACHIEVED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 3/31/21  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 3/30/21  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

# HINES PROPERTY ENVIRONMENTAL CONCEPT PLAN HOWARD COUNTY, MARYLAND



**LOCATION PLAN**

SCALE: 1" = 150'



Scale 1" = 150'

**SITE DATA**

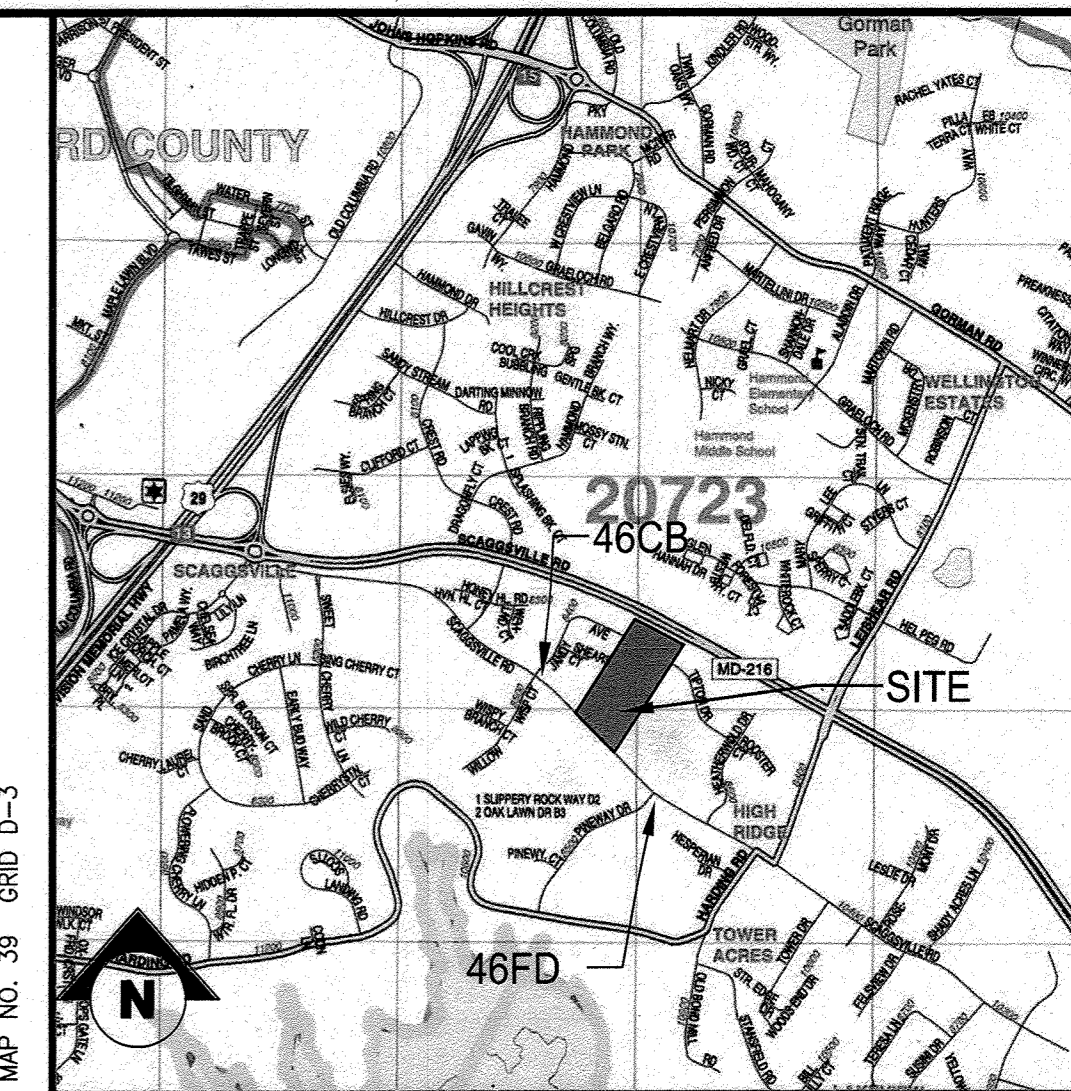
EXISTING SITE AREA:	15.8 AC.
PROPOSED DISTURBED AREA:	14.26 AC.
EXISTING IMPERVIOUS AREA:	0.37 AC.
PROPOSED IMPERVIOUS AREA:	6.13 AC.
HYDROLOGICAL SOIL GROUP:	B (82%) C (18%)
WETLAND AREA:	0.01 AC.
WETLAND BUFFER AREA:	0.05 AC.
EX. STREAM BUFFER AREA:	0.05 AC.
EX. FLOODPLAIN AREA:	0.00 AC.
FORESTED AREA:	0.07 AC.
EX. STEEP SLOPE AREA (15%-24.9%):	0.04 AC.
EX. STEEP SLOPE AREA (>24.9%):	0.00 AC.
PROPOSED SITE USE:	SINGLE FAMILY AND TOWNHOUSE RESIDENTIAL

**BENCH MARKS**

46CB  
N 537,123.037 E 1,344,291.422  
NAD 83 (Adj 11)  
NAVD 88

46FD  
N 535,892.901 E 1,345,540.058  
NAD 83 (Adj 11)  
NAVD 88

© ADC, THE MAP PEOPLE, INC. PERMISSION ON 12/06/23  
MAP NO. 39 GRID P-3



**VICINITY MAP**  
SCALE: 1" = 2,000'

**LEGEND**

- EX. PROPERTY LINE
- EX. RIGHT-OF-WAY
- EX. ADJACENT PROPERTY LINE
- EX. EASEMENT
- EX. NON-TIDAL WETLAND
- EX. WETLAND BUFFER
- EX. NON-TIDAL WETLAND
- EX. BUILDING
- EX. WALK
- EX. WALL
- EX. CONCRETE
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. GUARDRAIL
- EX. SPECIMEN TREE
- EX. TREE
- EX. SHRUB
- EX. STORM DRAIN
- EX. SANITARY LINE
- EX. WATERLINE
- EX. GAS LINE
- EX. UNDERGROUND ELECTRIC
- EX. UNDERGROUND CABLE TELE.

**ADDRESS CHART**

PARCEL #	STREET ADDRESS
5	10752 SCAGGSVILLE ROAD, LAUREL MD

**SHEET INDEX**

1	COVER SHEET
2-3	EXISTING FEATURES & NATURAL RESOURCES MAP
4-5	CONCEPT PLAN

SHEET: ECP-01

**ECP-21-015**



**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

14280 PARK CENTER DRIVE  
LAUREL, MD 20707  
(410) 792-9792 / (301) 776-1690  
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**HINES PROPERTY  
ENVIRONMENTAL CONCEPT PLAN**

**COVER SHEET**

TAX MAP 46 GRID 11 PARCEL 5 ZONED: R-20  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MD 20723

DATE	REVISIONS	JOB NO.:	SCALE:
		19990	AS SHOWN
			DATE: 12/09/2020
			DRAWN BY: MBF
			DESIGN BY: ATS
			REVIEW BY: DJ
			SHEET: 1 OF 5

**OWNER:**  
THE ESTATES OF JOHN T. HINES  
C/O MONICA HALTMEYER  
ADDRESS: 7535 FLAMEWOOD ROAD  
CLARKSVILLE, MD 21029  
CONTACT: MONICA HALTMEYER  
PHONE: 410-258-3229  
EMAIL: MHALTMEYER@VERIZON.NET

**APPLICANT / DEVELOPER:**  
WILLIAMSBURG HOMES  
ADDRESS: 5485 HARPERS FARM ROAD  
SUITE 200  
COLUMBIA, MD 21044  
CONTACT: BRUCE HARVEY  
PHONE: 410-997-8800 X23

**MD PROFESSIONAL CERTIFICATION:**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19918, EXPIRATION DATE: 01/14/2023.

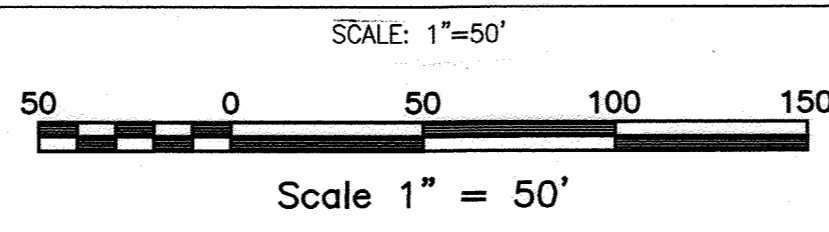




**LEGEND**

- EX. PROPERTY LINE
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- EX. ADJACENT PROPERTY LINE
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- EX. NON-TIDAL WETLAND
- EX. WETLAND BUFFER
- EX. NON-TIDAL WETLAND
- EX. BUILDING
- EX. CURB
- EX. PAVEMENT/EDGE OF CUTTER
- EX. WALK
- EX. WALL
- EX. CONCRETE
- EX. METAL FENCE
- EX. WOOD FENCE
- EX. GUARDRAIL
- EX. STREAM/POND
- EX. TREELINE
- EX. SPECIMEN TREE
- EX. TREE
- EX. SHRUB
- EX. STORM DRAIN
- EX. SANITARY LINE
- EX. WATERLINE
- EX. GAS LINE
- EX. UNDERGROUND ELECTRIC
- EX. UNDERGROUND CABLE TELEVISION
- EX. OVERHEAD ELECTRIC
- EX. OVERHEAD TELEPHONE
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. WATER METER
- EX. POWER POLE
- EX. LIGHT POLE
- ERODIBLE SOILS TO BE EXPOSED DURING GRADING OPERATIONS
- EXISTING SHEET FLOW
- EXISTING CONCENTRATED FLOW
- EX. SOILS DELINEATION
- EX. SOILS CLASSIFICATION LABEL

**EX FEATURES & NATURAL RESOURCES MAP**



SOILS LEGEND		
SYMBOL	NAME/DESCRIPTION	SOIL TYPE 'K' VALUE
MgC	MANOR LOAM, 8-15% SLOPES	B 0.32
GhB	GLENELG-URBAN LAND COMPLEX, 0-8% SLOPES	B 0.43
GhC	GLENELG-URBAN LAND COMPLEX, 8-15% SLOPES	B 0.43
GgC	GLENELG LOAM, 8-15% SLOPES	B 0.43
GhB	GLENVILLE-BAILE SILT LOAM, 0-8% SLOPES	C 0.49
GhC	GLENVILLE SILT LOAM, 8-15% SLOPES	C 0.49

HOWARD COUNTY SOIL CONSERVATION DISTRICT MAP NUMBER 14-036

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Edwards* 3-31-21  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 3/30/21  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SHEET: ECP-02

**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

14280 PARK CENTER DRIVE  
LAUREL, MD 20707  
(410) 792-9792 / (301) 776-1690  
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**HINES PROPERTY**  
ENVIRONMENTAL CONCEPT PLAN

EX. FEATURES & NATURAL RESOURCES MAP

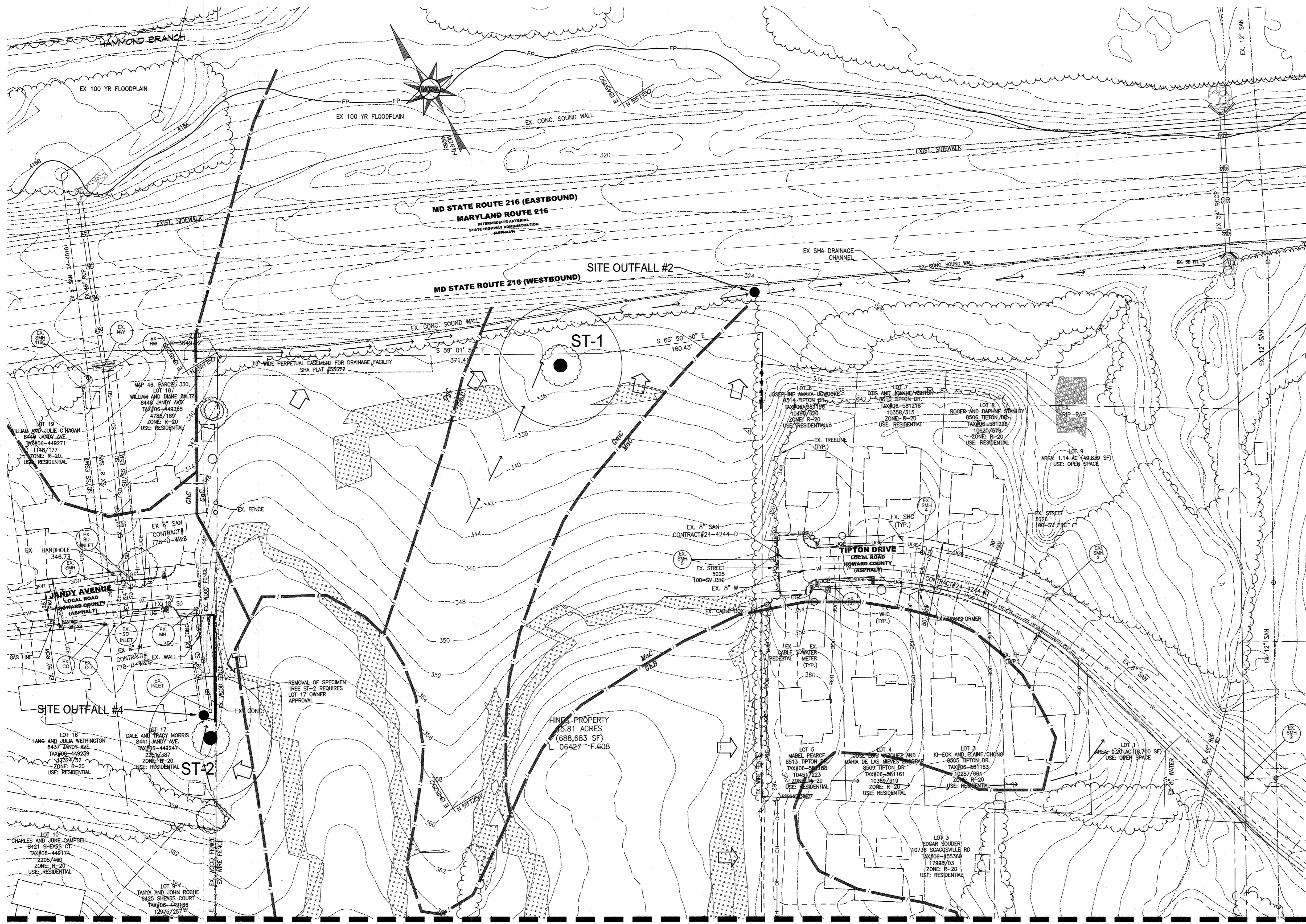
TAX MAP 46 GRID 11 PARCEL 5 ZONED: R-20  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MD 20723

DATE	REVISIONS	JOB NO.:
		19990
		SCALE: 1" = 50'
		DATE: 12/09/2020
		DRAWN BY: ATS
		DESIGN BY: RAH
		REVIEW BY: TCN
		SHEET: 2 OF 5

MD PROFESSIONAL CERTIFICATION:  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19916, EXPIRATION DATE: 01/14/2023.

**ECP-21-015**

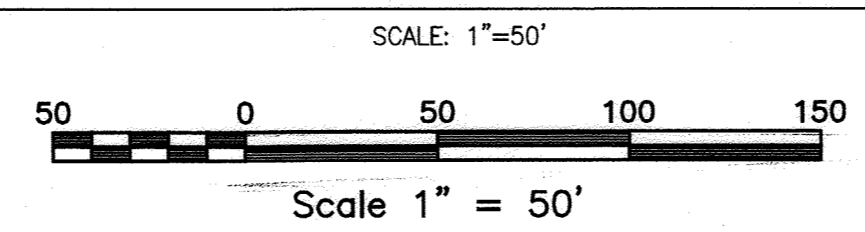




**LEGEND**

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- EX. ADJACENT PROPERTY LINE
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- NW NW EX. NON-TIDAL WETLAND
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- SD SD EX. STORM DRAIN
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- FP FP EX. 100-YR. FLOODPLAIN
- EXISTING SHEET FLOW
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- EX. SOILS DELINEATION
- EX. SOILS CLASSIFICATION LABEL

**EX FEATURES & NATURAL RESOURCES MAP**



SEE MATCHLINE SHEET ECP-02

ECP-21-015

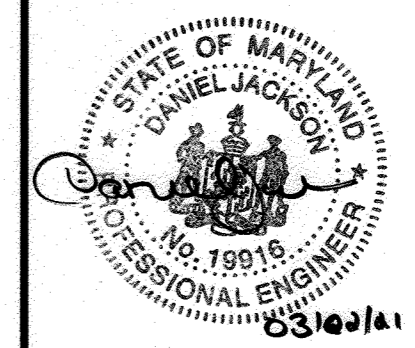
SHEET: ECP-03



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ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

14280 PARK CENTER DRIVE  
LAUREL, MD 20707  
(410) 792-9792 / (301) 776-1690  
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**HINES PROPERTY**  
ENVIRONMENTAL CONCEPT PLAN

EX. FEATURES & NATURAL RESOURCES MAP

TAX MAP 46 GRID 11 PARCEL 5 ZONED: R-20  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MD 20723

DATE	REVISIONS	JOB NO.:
		19590
		SCALE: 1" = 50'
		DATE: 12/09/2020
		DRAWN BY: MBF
		DESIGN BY: ATS
		REVIEW BY: DJ
		SHEET: 3 OF 5

**OWNER:**  
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/31/21  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 3/31/21  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE





**DRAINAGE AREA**

Total LOD / Drainage Area (DA) =	621,032 sf	14.26 acres
Total Impervious Area =	266,805 sf	06.13 acres
Impervious Percentage (I) =	43.0%	
Runoff Coefficient (Rv) =	0.437	
Soil Type =	B	

**ENVIRONMENTAL SITE DESIGN REQUIREMENTS**

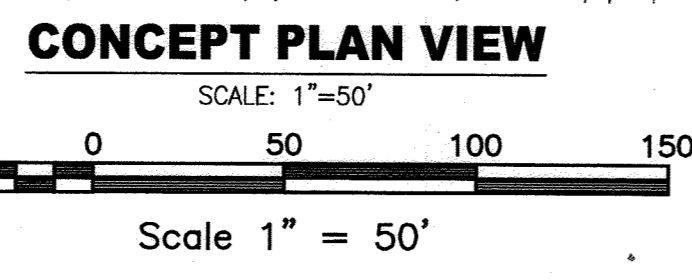
Target Rainfall Event (P<sub>2</sub>) = 1.8"  
 Required ESD Volume (ESD<sub>v</sub>) = 40,676 cf

**SUMMARY OF ESD FACILITIES**

Label	Drainage Areas			Label	Environmental Site Design Practices								
	DA	A <sub>i</sub>	%		Type	A <sub>p</sub>	Depth	A <sub>p</sub> *	Ponding	REV Depth	REV	ESD <sub>v</sub>	P <sub>2</sub>
A	13,187 sf	8,575 sf	65%	SWM#1	M-8: Micro-Bioretenion	715 sf	12"	1,210 sf	963 sf	10 in.	238 sf	1,201 cf	1.72"
B	14,306 sf	4,784 sf	33%	SWM#2	M-8: Micro-Bioretenion	520 sf	12"	758 sf	639 sf	10 in.	173 sf	812 cf	1.94"
C	15,757 sf	4,072 sf	26%	SWM#3	M-8: Micro-Bioretenion	350 sf	12"	535 sf	443 sf	10 in.	117 sf	559 cf	1.51"
D	15,684 sf	5,880 sf	37%	SWM#4	M-8: Micro-Bioretenion	859 sf	12"	1,219 sf	1,039 sf	10 in.	286 sf	1,325 cf	2.60"
E	12,766 sf	7,454 sf	58%	SWM#5	M-8: Micro-Bioretenion	960 sf	12"	1,345 sf	1,153 sf	10 in.	320 sf	1,473 cf	2.41"
F	15,300 sf	9,859 sf	64%	SWM#6	M-8: Micro-Bioretenion	811 sf	12"	1,285 sf	1,048 sf	10 in.	270 sf	1,318 cf	1.64"
G	19,356 sf	10,437 sf	54%	SWM#7	M-8: Micro-Bioretenion	1,189 sf	12"	1,536 sf	1,363 sf	10 in.	396 sf	1,759 cf	2.04"
H	14,067 sf	5,840 sf	42%	SWM#8	M-8: Micro-Bioretenion	492 sf	12"	697 sf	595 sf	10 in.	164 sf	759 cf	1.53"
I	13,296 sf	7,565 sf	57%	SWM#9	M-8: Micro-Bioretenion	702 sf	12"	1,020 sf	861 sf	10 in.	234 sf	1,095 cf	1.76"
J	12,160 sf	8,078 sf	66%	SWM#10	M-8: Micro-Bioretenion	842 sf	12"	1,224 sf	1,033 sf	10 in.	281 sf	1,314 cf	2.00"
K	12,111 sf	8,125 sf	67%	SWM#11	M-8: Micro-Bioretenion	811 sf	12"	1,180 sf	995 sf	10 in.	270 sf	1,266 cf	1.92"
L	4,851 sf	2,601 sf	54%	SWM#12	Permeable Pavement	739 sf	12"	145 sf	145 sf	6 in.	75 sf	219 cf	2.50"
M	19,031 sf	12,042 sf	63%	SWM#13	M-8: Micro-Bioretenion	1,296 sf	12"	1,630 sf	1,463 sf	10 in.	432 sf	1,895 cf	1.93"
N	11,975 sf	8,473 sf	71%	SWM#14	M-8: Micro-Bioretenion	721 sf	12"	1,054 sf	887 sf	10 in.	240 sf	1,128 cf	1.65"
O	11,848 sf	6,681 sf	57%	SWM#15	M-8: Micro-Bioretenion	457 sf	12"	687 sf	662 sf	10 in.	152 sf	814 cf	1.48"
P	12,284 sf	9,017 sf	73%	SWM#16	M-8: Micro-Bioretenion	722 sf	12"	1,056 sf	889 sf	10 in.	241 sf	1,130 cf	1.55"
Q	18,878 sf	11,858 sf	63%	SWM#17	M-8: Micro-Bioretenion	1,037 sf	12"	1,374 sf	1,205 sf	10 in.	346 sf	1,551 cf	1.60"
R	14,528 sf	10,252 sf	71%	SWM#18	M-8: Micro-Bioretenion	877 sf	12"	1,273 sf	1,075 sf	10 in.	292 sf	1,367 cf	1.65"
S	14,814 sf	10,686 sf	72%	SWM#19	M-8: Micro-Bioretenion	833 sf	12"	1,212 sf	1,022 sf	10 in.	278 sf	1,300 cf	1.50"
T	15,747 sf	4,446 sf	28%	SWM#20	M-8: Micro-Bioretenion	798 sf	12"	1,030 sf	877 sf	10 in.	266 sf	1,180 cf	2.60"
U	19,996 sf	12,760 sf	64%	SWM#21	M-8: Micro-Bioretenion	1,357 sf	12"	1,641 sf	1,499 sf	10 in.	452 sf	1,951 cf	1.88"
V	16,841 sf	11,397 sf	68%	SWM#22	M-8: Micro-Bioretenion	1,310 sf	12"	1,648 sf	1,479 sf	10 in.	437 sf	1,915 cf	2.07"
W	12,788 sf	6,445 sf	50%	SWM#23	M-8: Micro-Bioretenion	758 sf	12"	1,089 sf	924 sf	10 in.	253 sf	1,176 cf	2.19"
X	18,089 sf	12,336 sf	68%	SWM#24	M-8: Micro-Bioretenion	1,247 sf	12"	1,574 sf	1,410 sf	10 in.	416 sf	1,826 cf	1.82"
Y	19,749 sf	12,693 sf	64%	SWM#25	M-8: Micro-Bioretenion	1,626 sf	12"	2,127 sf	1,877 sf	10 in.	542 sf	2,419 cf	2.34"
Z	19,009 sf	5,615 sf	30%	SWM#26	M-8: Micro-Bioretenion	675 sf	12"	888 sf	781 sf	10 in.	225 sf	1,008 cf	2.01"
AA	19,987 sf	3,485 sf	17%	SWM#27	M-8: Micro-Bioretenion	360 sf	12"	625 sf	493 sf	10 in.	120 sf	613 cf	1.78"
BB	39,635 sf	16,392 sf	41%	SWM#28	M-8: Micro-Bioretenion	2,243 sf	12"	3,259 sf	4,068 sf	10 in.	748 sf	3,243 cf	1.61"
CC	7,590 sf	4,268 sf	56%	SWM#30	M-8: Micro-Bioretenion	514 sf	12"	696 sf	605 sf	10 in.	171 sf	777 cf	2.21"
DD	12,757 sf	6,681 sf	52%	SWM#46	M-8: Micro-Bioretenion	537 sf	12"	1,007 sf	772 sf	10 in.	179 sf	951 cf	1.72"
EE	15,355 sf	6,682 sf	44%	SWM#47	M-8: Micro-Bioretenion	503 sf	12"	947 sf	725 sf	10 in.	168 sf	893 cf	1.58"
DW1	500 sf	500 sf	100%	SWM#31	M-5: Dry well	90 sf						107 cf	2.70"
DW2	829 sf	829 sf	100%	SWM#32	M-5: Dry well	90 sf						107 cf	2.70"
DW3	787 sf	787 sf	100%	SWM#33	M-5: Dry well	90 sf						107 cf	2.70"
DW4	980 sf	980 sf	100%	SWM#34	M-5: Dry well	90 sf						107 cf	2.70"
DW5	959 sf	959 sf	100%	SWM#35	M-5: Dry well	90 sf						107 cf	2.70"
DW6	549 sf	549 sf	100%	SWM#36	M-5: Dry well	90 sf						107 cf	2.70"
DW7	596 sf	596 sf	100%	SWM#37	M-5: Dry well	90 sf						107 cf	2.70"
DW8	899 sf	899 sf	100%	SWM#38	M-5: Dry well	90 sf						107 cf	2.70"
DW9	539 sf	539 sf	100%	SWM#39	M-5: Dry well	90 sf						107 cf	2.70"
DW10	960 sf	960 sf	100%	SWM#40	M-5: Dry well	90 sf						107 cf	2.70"
DW11	940 sf	940 sf	100%	SWM#41	M-5: Dry well	90 sf						107 cf	2.70"
DW12	960 sf	960 sf	100%	SWM#42	M-5: Dry well	90 sf						107 cf	2.70"
DW13	960 sf	960 sf	100%	SWM#43	M-5: Dry well	90 sf						107 cf	2.70"
DW14	960 sf	960 sf	100%	SWM#44	M-5: Dry well	90 sf						107 cf	2.70"
DW15	960 sf	960 sf	100%	SWM#45	M-5: Dry well	90 sf						107 cf	2.70"
DW16	960 sf	960 sf	100%	SWM#45	M-5: Dry well	90 sf						107 cf	2.70"
None	124,617 sf	00 sf	0%	None	None	00 sf						00 cf	0.00"
Total	621,032 sf	266,805 sf	43.0%	Total ESD Provisions		28,136 sf						40,942 cf	1.81"
Total ESD Required												40,676 cf	1.80"

**LEGEND**

--- 203 ---	EX. 1' CONTOUR	---	PR. DRAINAGE DIVIDE
--- 202 ---	EX. 2' CONTOUR	---	PR. MICRO-BIORETENTION FACILITY (M-6)
--- 200 ---	EX. 10' CONTOUR	---	PR. PERMEABLE PAVEMENT (A-2)
•	EX. SPOT	○	PR. DRYWELL (M-5)
--- 15% ---	EX. STEEP SLOPES 15%-25%	□	PR. DRAINAGE AREA
--- 25% ---	EX. STEEP SLOPES +25%	□	PR. IMPERVIOUS
--- 50' ---	EX. STEEP SLOPES BUFFER	---	PR. STABILIZED CONSTRUCTION ENTRANCE (SCE)
--- 200.50 ---	PR. 1' CONTOUR	---	PR. TREE PROTECTION FENCE
--- 200 ---	PR. 2' CONTOUR	---	PR. EARTH DIKE A
---	PR. 10' CONTOUR	---	PR. EARTH DIKE B
---	PR. LIMIT OF DISTURBANCE	---	PR. TEMPORARY SWALE
---	PR. 100'-1P	---	PR. TEMPORARY GABION OUTLET STRUCTURE
---	PR. SPOT ELEVATION	---	
---	PR. TREE PROTECTION FENCE	---	
---	PR. SILT FENCE	---	
---	PR. SUPER SILT FENCE	---	
---	PR. ESC DA	---	



**LEGEND (CONT.)**

---	EX. PROPERTY LINE	---	EX. OVERHEAD TELEPHONE
---	EX. RIGHT-OF-WAY	---	EX. FIRE HYDRANT
---	EX. ADJACENT PROPERTY LINE	---	EX. WATER VALVE
---	EX. EASEMENT	---	EX. WATER METER
---	EX. NON-TIDAL WETLAND	---	EX. POWER POLE
---	EX. WETLAND BUFFER	---	EX. LIGHT POLE
---	EX. NON-TIDAL WETLAND	---	---
---	EX. BUILDING	---	---
---	EX. CURB	---	---
---	EX. PAVEMENT/EDGE OF GUTTER	---	---
---	EX. WALK	---	---
---	EX. WALL	---	---
---	EX. CONCRETE	---	---
---	EX. METAL FENCE	---	---
---	EX. WOOD FENCE	---	---
---	EX. GUARDRAIL	---	---
---	EX. STREAM/POND	---	---
---	EX. TREELINE	---	---
---	EX. SPECIMEN TREE	---	---
---	EX. TREE	---	---
---	EX. SHRUB	---	---
---	EX. STORM DRAIN	---	---
---	EX. SANITARY LINE	---	---
---	EX. WATERLINE	---	---
---	EX. GAS LINE	---	---
---	EX. UNDERGROUND ELECTRIC	---	---
---	EX. UNDERGROUND CABLE TELEVISION	---	---
---	EX. OVERHEAD ELECTRIC	---	---
---	EX. 100-YR. FLOODPLAIN	---	---

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chief Development Engineering Division* 3/31/21 DATE

*Chief, Division of Land Development* 3/30/21 DATE

**OWNER:**  
 THE ESTATES OF JOHN T. HINES  
 C/O MONICA HALTMEYER  
 ADDRESS: 7535 FLAMWOOD ROAD  
 CLARKSVILLE, MD 21029

**CONTACT:** MONICA HALTMEYER  
 PHONE: 410-258-3229  
 EMAIL: MHALTMEYER@VERIZON.NET

**APPLICANT / DEVELOPER:**  
 WILLIAMSBURG HOMES  
 ADDRESS: 5485 HARPERS FARM ROAD  
 SUITE 200  
 COLUMBIA, MD 21044  
**CONTACT:** BRUCE HARVEY  
 PHONE: 410-997-8800 X23

**ECP-21-015**

**MORRIS & RITCHIE ASSOCIATES, INC.**  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

14280 PARK CENTER DRIVE  
 LAUREL, MD 20707  
 (410) 792-9792 / (301) 776-1690  
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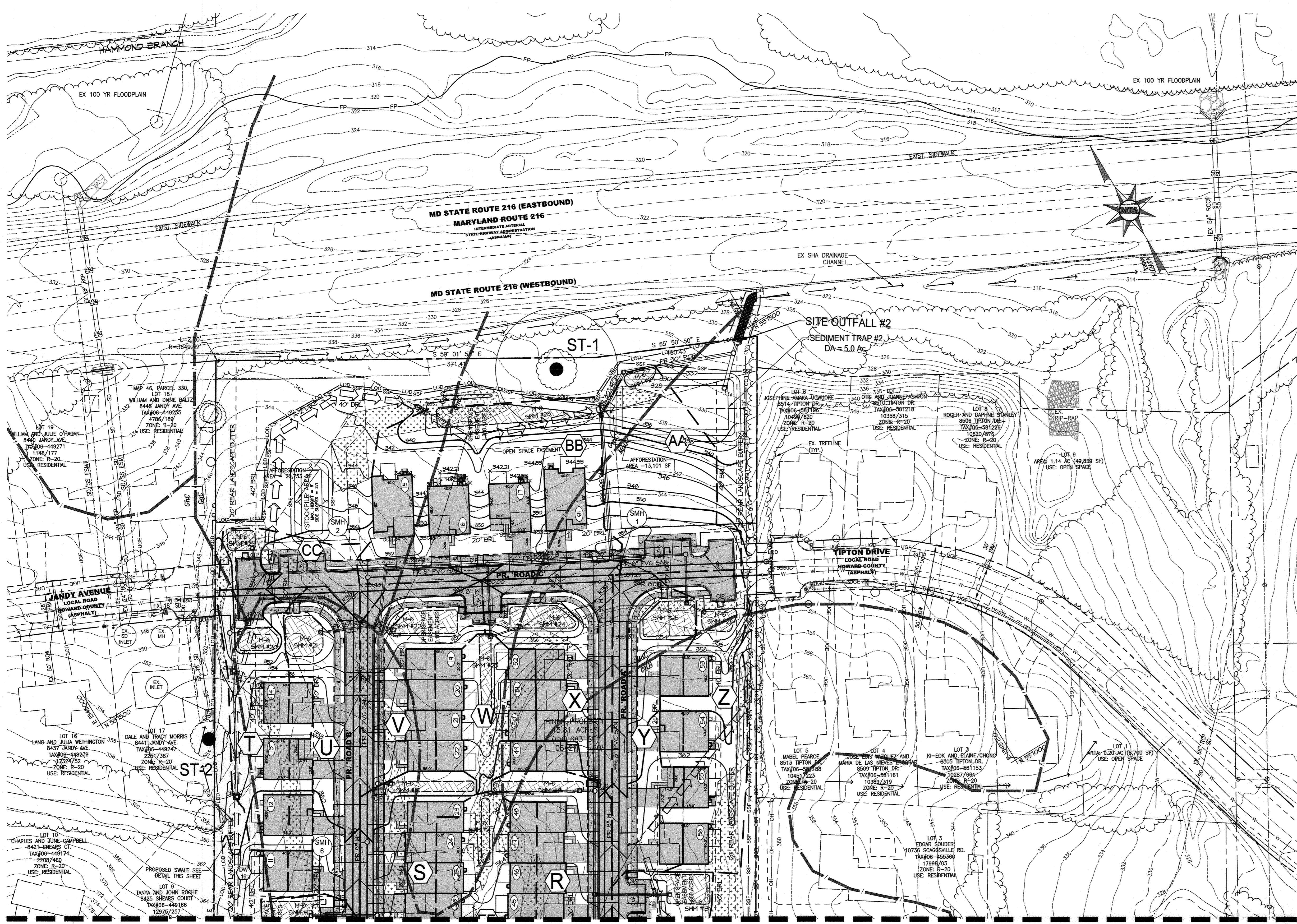
**HINES PROPERTY ENVIRONMENTAL CONCEPT PLAN**

TAX MAP 46 GRID 11 PARCEL 5 ZONED: R-20  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MD 20723

DATE	REVISIONS	JOB NO.:
		19590
		SCALE: 1" = 50'
		DATE: 12/09/2020
		DRAWN BY: ATS
		DESIGN BY: RAH
		REVIEW BY: TON
		SHEET: 4 OF 5

**ECP-21-015**

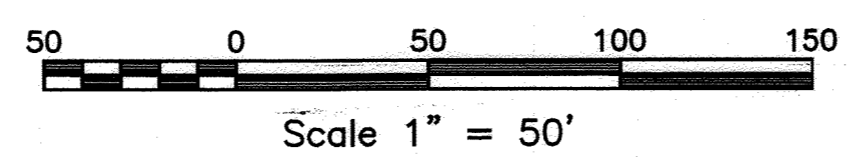




- ### LEGEND
- EX. PROPERTY LINE
  - EX. RIGHT-OF-WAY
  - EX. ADJACENT PROPERTY LINE
  - EX. EASEMENT
  - NW - NW EX. NON-TIDAL WETLAND
  - WB - WB EX. WETLAND BUFFER
  - EX. NON-TIDAL WETLAND
  - EX. BUILDING
  - EX. CURB
  - EX. PAVEMENT/EDGE OF GUTTER
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  - EX. SHRUB
  - EX. STORM DRAIN
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  - EX. OVERHEAD TELEPHONE
  - EX. FIRE HYDRANT
  - EX. WATER VALVE
  - EX. WATER METER
  - EX. POWER POLE
  - EX. LIGHT POLE
  - ERODIBLE SOILS TO BE EXPOSED DURING GRADING OPERATIONS
  - EX. 1' CONTOUR
  - EX. 2' CONTOUR
  - EX. 10' CONTOUR
  - EX. SPOT
  - EX. STEEP SLOPES 15%-25%
  - EX. STEEP SLOPES +25%
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  - PR. ESC DA

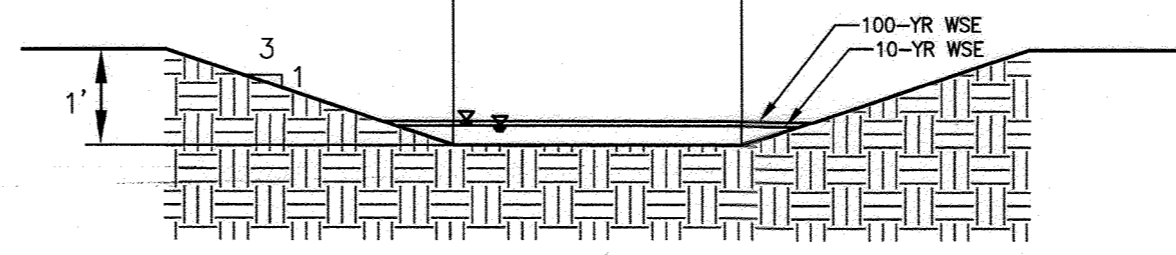
SEE MATCHLINE SHEET ECP-04

**CONCEPT PLAN VIEW**  
SCALE: 1"=50'



3.3% SLOPE LOTS 13-14  
 Q10 = 1.6 CFS  
 V10 = 2.6 FPS  
 dn = 0.2'  
 Q100 = 2.4 CFS  
 V100 = 2.75 FPS  
 dn = 0.25'

6% SLOPE LOTS 4-12  
 Q10 = 1.6 CFS  
 V10 = 1.72 FPS  
 dn = 0.16'  
 Q100 = 2.4 CFS  
 V100 = 2.97 FPS  
 dn = 0.22'



**SWALE DETAIL**  
N.T.S.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 3.31.21  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 162 DATE  
 [Signature] 3/31/21  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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ECP-21-015 SHEET: ECP-05

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CONCEPT PLAN

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DATE	REVISIONS	JOB NO.:
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SCALE: 1" = 50'

DATE: 12/09/2020  
 DRAWN BY: ATS  
 DESIGN BY: RAH  
 REVIEW BY: TCN  
 SHEET: 5 OF 5

MD PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19916, EXPIRATION DATE: 01/14/2023.