

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
21	41,967 SF	379 SF	41,588 SF
22	44,701 SF	982 SF	43,719 SF
23	49,929 SF	1,466 SF	48,463 SF
24	49,992 SF	2,683 SF	47,309 SF
25	49,374 SF	3,609 SF	45,765 SF

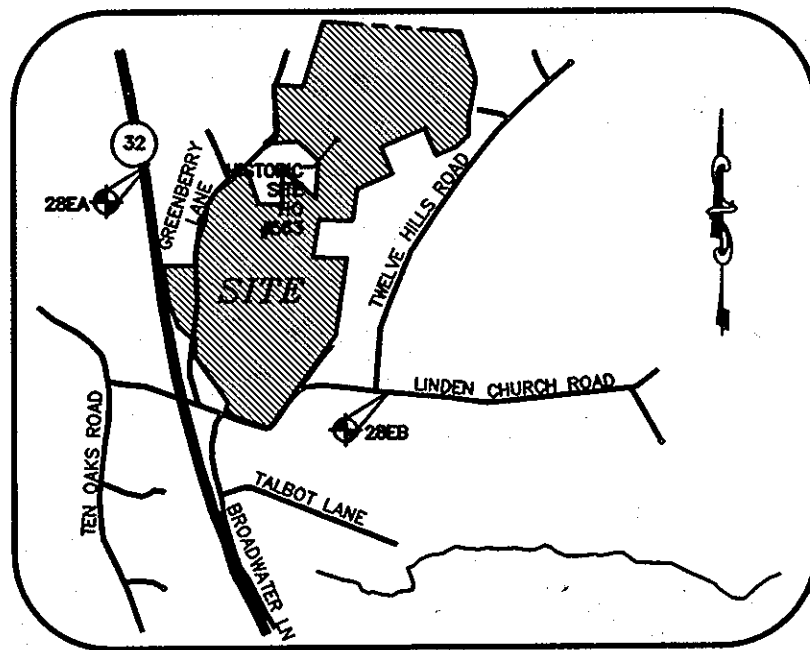
PRELIMINARY EQUIVALENT SKETCH PLAN GREENBERRY

LOTS 1 THRU 25, NON-BUILDABLE PRESERVATION PARCELS 'A' AND 'B', NON-BUILDABLE BULK PARCELS 'C' AND 'D', AND BUILDABLE PRESERVATION PARCEL 'E' FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HOWARD COUNTY HEALTH DEPARTMENT NOTES:

- THE SUBJECT PROPERTY IS ZONED RR-DEO PER THE 2/2/2004 COMPREHENSIVE ZONING PLAN.
- PARCEL BACKGROUND:**
TAX MAP : 28, PARCELS : 48
ELECTION DISTRICT : FIFTH
ZONING : RR-DEO
AREA : 133.64 ACRES
- TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL TOPOGRAPHY PERFORMED BY WINGS AERIAL MAPPING ON OR ABOUT 2005. TOPOGRAPHY WAS FIELD VERIFIED IN NOVEMBER, 2012.
- PRIVATE WELL AND SEPTIC WILL BE UTILIZED.
- SOILS DATA BASED ON HOWARD COUNTY SOIL SURVEY DATED 1968, SHEET 10.
- THIS AREA DESIGNATES A SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE SEWAGE DISPOSAL AREA, & RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- THIS AREA DESIGNATES AN EXISTING SEWAGE DISPOSAL AREA
- REPRESENT PROPOSED POTABLE WATER WELL LOCATIONS
- REPRESENT PROPOSED POTABLE WATER WELL ZONES
- THIS SYMBOL DESIGNATES A PASSING PERCOLATION TEST LOCATION
- THIS SYMBOL DESIGNATES A FAILING PERCOLATION TEST LOCATION
- TO THE BEST OF OUR KNOWLEDGE ALL ADJACENT WELL AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY HAVE BEEN SHOWN.
- THE LOTS SHOWN HEREON COMPLY WITH MINIMUM OWNERSHIP LOT WIDTH AND AREA
- THIS SYMBOL DESIGNATES AN EXISTING MONITORING WELL
- THIS SYMBOL DESIGNATES AN EXISTING TEST WELL
- THIS SYMBOL DESIGNATES A FOREST CONSERVATION EASEMENT (RETENTION)
- THIS SYMBOL DESIGNATES A FOREST CONSERVATION EASEMENT (AFFORESTATION)
- THIS SYMBOL DESIGNATES A SOIL DIVISION LINE
- TOPOGRAPHY WITHIN 200' OF SITE BOUNDARY SHOWN HEREON IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. DATED ON OR ABOUT MARCH 2007. OTHER TOPOGRAPHY SHOWN IS BASED ON HOWARD COUNTY GIS AND ANY WELLS 200' DOWNGRADE OF SEPTIC SYSTEMS HAVE BEEN SHOWN.
- LOW-PRESSURE DISTRIBUTION (LPD) DESIGN WILL BE IMPLEMENTED FOR ALL SEPTIC SYSTEM DRAINFIELDS INSTALLED ON LOTS 1 THRU 25.
- THIS SYMBOL DESIGNATES AN EXISTING WELL
- THIS SYMBOL DESIGNATES AN EXISTING TELEPHONE POLE
- ALL WELLS SHALL BE DRILLED PRIOR TO FINAL PLAT RECORDATION. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENTAL DELAY" IF THE WELL DRILLING HOLDS UP SIGNATURE OF THE RECORD PLAT.
- A GROUNDWATER APPROPRIATIONS PERMIT (GAP) SHALL BE OBTAINED PRIOR TO SUBMITTAL OF RECORD PLAT FOR SIGNATURE.
- ANY CHANGES TO A PRIVATE SEWAGE AREA SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.

ON DECEMBER 20, 2013, MILDENBERG BOENDER AND ASSOCIATES, INC. CERTIFIED THAT THE EXISTING WETLANDS AND THEIR BUFFERS WITHIN BUILDABLE PRESERVATION PARCEL A WILL NOT BE IMPACTED BY THIS DEVELOPMENT, AND THEREFORE, IN ACCORDANCE WITH SECTION 16.116 (a) (4) OF THE SUBDIVISION REGULATIONS ARE NOT REQUIRED TO BE DELINEATED ON THIS PLAN



VICINITY MAP
SCALE : 1" = 2000'
ADC MAP 24 GRID F6

SHEET INDEX

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1	COVER SHEET
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4	PRELIMINARY EQUIVALENT SKETCH PLAN
5	PRELIMINARY EQUIVALENT SKETCH PLAN
6	PRELIMINARY EQUIVALENT SKETCH PLAN
7	PRELIMINARY GRADING PLAN
8	PRELIMINARY GRADING PLAN
9	PRELIMINARY GRADING PLAN
10	PRELIMINARY SEDIMENT AND EROSION CONTROL PLAN
11	PRELIMINARY SEDIMENT AND EROSION CONTROL PLAN
12	PRELIMINARY SEDIMENT AND EROSION CONTROL PLAN
13	PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN
14	PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN
15	PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN
16	PRELIMINARY LANDSCAPE NOTES AND DETAILS
17	PRELIMINARY ROAD PLAN AND PROFILES
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23	PRELIMINARY STORMWATER MANAGEMENT DETAILS

SEE INDIVIDUAL PLAN SHEETS FOR ADDITIONAL LEGENDS

MARYLAND DEPARTMENT OF THE ENVIRONMENT HAS APPROVED A VARIANCE TO ALLOW SEWAGE DISPOSAL AREAS (SDA) ON LOTS 18 AND 19 TO BE UPGRADIENT OF THE WELL ON LOT 21 OF TWELVE HILLS SUBDIVISION, SECTION 2, SDA ON LOT 20 TO BE UPGRADIENT OF THE WELL ON LOT 24 OF TWELVE HILLS SUBDIVISION SECTION 2, AND SDA ON LOTS 20 AND 21 TO BE UPGRADIENT OF THE WELL ON TAX MAP 28, PARCEL 162.

EXISTING MONITORING WELLS AND TEST WELLS TO BE SEALED PRIOR TO HEALTH DEPARTMENT APPROVAL OF FINAL PLAT.

- GENERAL NOTES:**
- THIS SUBJECT PROPERTY IS ZONED RR-DEO PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
 - THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
 - TOPOGRAPHY WITHIN 200' OF SITE BOUNDARY SHOWN HEREON IS BASED ON AERIAL SURVEY FLOWN BY WINGS TOPOGRAPHY INC. DATED ON OR ABOUT MARCH 2007. OTHER TOPOGRAPHY SHOWN IS BASED ON HOWARD COUNTY GIS.
 - BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT NOVEMBER 2012 BY MILDENBERG, BOENDER AND ASSOC.
 - COORDINATES BASED ON NAD '83 (HORIZONTAL) AND NAVD '88 (VERTICAL) MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS
STA. No. 28EA N 572,158.9652 E 1,319,400.6816 EL. 485.012
STA. No. 28EB N 569,357.3657 E 1,322,113.5747 EL. 536.733
 - PROJECT BACKGROUND:**
TAX MAP : 28, GRID : 9, PARCEL : 48
ELECTION DISTRICT : FIFTH
ZONING : RR-DEO
DEED REFERENCE : 5891 / 307
PREVIOUS PROJECT NUMBERS: ECP-13-026
BA-05-046C - REQUEST FOR AGE RESTRICTED HOUSING - DENIED 4/20/06.
HISTORIC SITE: HO #563
 - SITE DATA TABULATION**
GROSS AREA OF PROPERTY TRACT: 133.64 AC ±
MINIMUM LOT SIZE PROPOSED: 40,000 SQ.FT.
NUMBER OF BUILDABLE LOTS PROPOSED: 25
NUMBER OF BUILDABLE PRESERVATION PARCELS PROPOSED: 1 (E)
TOTAL BUILDABLE LOTS / PARCELS PROPOSED: 26
NUMBER OF NON-BUILDABLE PRESERVATION PARCELS PROPOSED: 2 (A & B)
NUMBER OF NON-BUILDABLE BULK PARCELS PROPOSED: 2 (C & D)
AREA OF PROPOSED BUILDABLE LOTS: 26.49 AC ±
AREA OF PRESERVATION PARCELS (BUILDABLE AND NON-BUILDABLE): 80.68 AC ± (A, B, & E)
AREA OF BULK PARCELS (NON-BUILDABLE): 22.95 AC ± (C & D)
AREA TO BE DEDICATED FOR USE AS A PUBLIC ROAD: 0.72 AC ±
AREA OF PUBLIC ROADWAY: 2.80 AC ±
DENSITY TABULATION (PROVIDED FOR LOTS, R/W AND PRESERVATION PARCELS)
26.49 AC / 4.25 DWELLING UNITS / AC = 6.22 AC = 110.69 AC
110.69 AC / 4.25 DWELLING UNITS PER ACRE = 26 DWELLING UNITS PROVIDED
DENSITY TABULATION (FOR NON-BUILDABLE BULK PARCEL C)
22.95 AC / 4.25 DWELLING UNITS / AC = 5.2 (5 FUTURE POTENTIAL BUILDABLE LOTS)
THE MAXIMUM DENSITY OF ONE DWELLING UNIT PER 4.25 GROSS ACRES REFERS TO PRINCIPAL DWELLING UNITS AND NOT TO ACCESSORY USES SUCH AS FARM TENANT HOUSES, CARETAKER DWELLINGS OR ACCESSORY APARTMENTS PER SECTION 105.F.1.e OF THE ZONING REGULATIONS.
NON-BUILDABLE BULK PARCELS C & D MAY BE RE-SUBDIVIDED FOR A FUTURE SECTION OF CLUSTERED LOTS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 104.F.1.g OF THE ZONING REGULATIONS.
 - WATER IS PRIVATE.
 - SEWER IS PRIVATE.
 - STORMWATER MANAGEMENT IS PROVIDED BY N-1 ROOFTOP DISCONNECTION, N-2 NON-ROOFTOP DISCONNECTION, M-6 MICRO-BIORETENTION, AND A-2 PERMEABLE PAVEMENT (PERVIOUS CONCRETE) IN ACCORDANCE WITH THE 2007 MARYLAND STORMWATER DESIGN MANUAL.
 - PER SECTION 16.115 (d) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE 100-YEAR FLOODPLAIN HAS NOT BEEN DELINEATED ON THE PLAN SINCE THE PROJECT IS LOCATED IN A RURAL CLUSTER SUBDIVISION AND THE FLOODPLAIN IS OBVIOUSLY NOT CRITICAL TO THE PROPOSED DEVELOPMENT.
 - FOREST STAND AND WETLANDS DELINEATION PREPARED BY ECO-SCIENCE, INC. DATED OCTOBER, 2012. THE SITE CONTAINS AREAS OF WETLANDS, STREAMS, AND THE 100-YEAR FLOODPLAIN. NO STEEP SLOPES (SLOPES OF 25% OR GREATER FOR MORE THAN 10 VERTICAL FEET) EXIST ON-SITE. NO DISTURBANCE TO THE WETLANDS, WETLAND BUFFER, STREAM, STREAM BUFFER, OR 100-YEAR FLOODPLAIN IS PROPOSED.
 - PER SECTION 4.2.A OF VOLUME III OF THE HOWARD COUNTY DESIGN MANUAL, AN APFO ROAD TEST IS NOT REQUIRED FOR THIS PROJECT SINCE THE SITE IS LOCATED MORE THAN TWO MILES FROM A MINOR COLLECTOR-MINOR COLLECTOR INTERSECTION.
 - NOISE STUDY WAS PREPARED BY MILDENBERG, BOENDER AND ASSOC., INC. DATED FEBRUARY, 2013.
 - LOTS 21 THRU 25 WILL BE SERVED BY A PRIVATE USE-IN-COMMON DRIVEWAY & UTILITY EASEMENT.
 - THIS SITE CONTAINS HISTORIC STRUCTURE #HO-563 ("THE WILLIAMS HOUSE"). NO CEMETERIES OR GRAVE SITES EXIST ON SITE. SITE IS NOT ADJACENT TO A DESIGNATED SCENIC ROAD. A PRE-SUBMISSION ADVISORY MEETING WITH THE HISTORIC DISTRICT COMMISSION WAS HELD FOR THIS PROJECT ON FEBRUARY 7, 2013. THE COMMISSION HAD NO OBJECTIONS TO THE PLAN.
 - SOIL DELINEATION IS BASED ON HOWARD COUNTY SOIL SURVEY MAP 2003.
 - FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY ON-SITE FOREST CONSERVATION (RETENTION AND AFFORESTATION). NON-BUILDABLE BULK PARCELS C & D HAVE BEEN EXCLUDED FROM THE FOREST CONSERVATION OBLIGATION CALCULATION IN ACCORDANCE WITH "OPTION A OF APPENDIX L - GUIDELINES FOR RURAL CLUSTER SUBDIVISIONS" AS OUTLINED IN THE FOREST CONSERVATION MANUAL. THE FOREST CONSERVATION OBLIGATION FOR NON-BUILDABLE BULK PARCELS C & D MUST BE ADDRESSED AT THE TIME OF RESUBDIVISION OF THESE PARCELS.
 - ALL LANDSCAPING REQUIREMENTS SHALL BE FULFILLED AT THE FINAL PLAN STAGE, IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - PER SECTION 16.121(c) OF THE HOWARD COUNTY SUBDIVISION AND LAND USE REGULATIONS, OPEN SPACE IS NOT REQUIRED FOR THIS PROJECT SINCE IT IS A RURAL RESIDENTIAL CLUSTER SUBDIVISION.
 - A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY FOR EACH ENTRANCE SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATE.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO 1.2-1.2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 30' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - BA-05-046C DENIED 4/20/2006 TO ALLOW AGE-RESTRICTED HOUSING.
 - A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON DECEMBER 5, 2012.
 - THIS PROJECT IS GRANDFATHERED TO STATE OF MARYLAND SENATE BILL SB-236 AS THE SOIL PERCOLATION TEST APPLICATION FOR THE PROPOSED SUBDIVISION WAS SUBMITTED PRIOR TO JULY 1, 2012.
 - THIS DEVELOPMENT PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003 ON CONSTRUCTION ON LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING / GRADING PERMIT.
 - WRITTEN AUTHORIZATION BY BGE OF THE PROJECT LANDSCAPE PLAN WILL BE OBTAINED PRIOR TO SIGNATURE APPROVAL OF THE FINAL ROAD CONSTRUCTION PLANS.
 - THE DESIGN OF THIS CLUSTER SUBDIVISION REFLECTS THE INTENDED PRINCIPAL USE OF THE PRESERVED AREAS; PRESERVATION PARCEL 'A' (A VISUAL AND LEGAL BUFFER TO THE EXISTING COLUMBIA GAS MAIN); PRESERVATION PARCEL 'B' (RETENTION OF EXISTING FOREST AND LEGAL BUFFER TO THE EXISTING BGE EASEMENT); BULK PARCEL 'C' (POTENTIAL SUBDIVISION) AND PRESERVATION OF PARCEL 'D' (FARMING OPERATIONS). THE PRESERVATION AREAS, AS DESIGNED, WILL FUNCTION FOR THEIR INTENDED USE, AND THE CLUSTER LOT ARRANGEMENT WILL MINIMIZE ADVERSE IMPACTS TO PRESERVATION AREAS INCLUDING UNIQUE AND SENSITIVE ENVIRONMENTAL CONDITIONS AND ADJACENT FARM OPERATIONS.
 - THIS MAJOR SUBDIVISION PLAN IS LOCATED IN THE DESIGNATED TIER III GROWTH AREA OF HOWARD COUNTY PER THE PLAN HOWARD 2030 TIER MAP AND IT WOULD BE SUBJECT TO THE STATE'S BILL SB-236; HOWEVER, IT IS CONSIDERED TO BE GRANDFATHERED BECAUSE THE PROPERTY OWNER HAD APPLIED FOR A SOIL PERCOLATION TEST APPLICATION AND HAD SUBMITTED A PERCOLATION TEST PLAN TO THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO JULY 1, 2012.

STORMWATER MANAGEMENT PRACTICES

LOT #	ADDRESS	GREEN ROOF		REINFORCED TURF	DISCONNECTION OF ROOFTOP RUNOFF		SHEETFLOW TO CONSERVATION AREAS	RAINFALL HARVESTING	SUBMERGED GRAVEL WETLANDS		LANDSCAPE INFILTRATION		DRY WELLS		MICRO-BIORETENTION	RAIN GARDENS		SWALES	ENHANCED FILTERS
		A-1 (Y/N)	A-2 (Y/N)		A-3 (Y/N)	M-1 (NUMBER)			M-2 (NUMBER)	M-3 (NUMBER)	M-4 (NUMBER)	M-5 (NUMBER)	M-6 (NUMBER)	M-7 (NUMBER)		M-8 (NUMBER)	M-9 (NUMBER)		
1	BEE FRANCES WAY	N	Y	N	5	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
2	BEE FRANCES WAY	N	Y	N	5	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
3	BEE FRANCES WAY	N	Y	N	5	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
4	BEE FRANCES WAY	N	Y	N	6	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
5	BEE FRANCES WAY	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
6	CATHERINE CLOSE ROAD	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
7	CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	0	0	0	0	0	0	0	0
8	CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	0	0	0	0	0	0	0	0
9	CATHERINE CLOSE ROAD	N	Y	N	0	N	N	0	0	0	0	0	0	0	0	0	0	0	0
10	CATHERINE CLOSE ROAD	N	Y	N	0	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
11	CATHERINE CLOSE ROAD	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
12	CATHERINE CLOSE ROAD	N	Y	N	2	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
13	CATHERINE CLOSE ROAD	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
14	NORTHERN BELL	N	Y	N	2	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
15	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
16	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
17	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
18	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
19	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
20	NORTHERN BELL	N	Y	N	0	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
21	NORTHERN BELL	N	Y	N	0	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
22	NORTHERN BELL	N	Y	N	3	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
23	NORTHERN BELL	N	Y	N	2	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
24	NORTHERN BELL	N	Y	N	0	Y	N	0	0	0	0	0	0	0	0	0	0	0	0
25	NORTHERN BELL	N	Y	N	0	Y	N	0	0	0	0	0	0	0	0	0	0	0	0

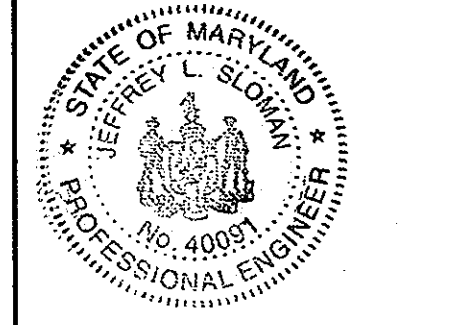
OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

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. 40091, EXP DATE 2/13/15.

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
[Signature] 11/2/14
PLANNING DIRECTOR DATE

[Signature] 11/5/13
JEFFREY SLOMAN, P.E. DATE

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT



[Signature] 11/25/2013
HOWARD COUNTY HEALTH OFFICER DATE

date	OCT 2013	approval	RH
project	12-022	illustration	JIS
scale	JIS	revision	1"=50'

description	PERCOLATION CERTIFICATION PLAN (RELAYED WELL-ZONE ON LOT 7)
date	
no.	

GREENBERRY
LOTS 1 THRU 25, NON-BUILDABLE PRES. PARCELS 'A' AND 'B', NON-BUILDABLE BULK PARCELS 'C' AND 'D', AND BUILDABLE PRES. PARCEL 'E'
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
COVER SHEET

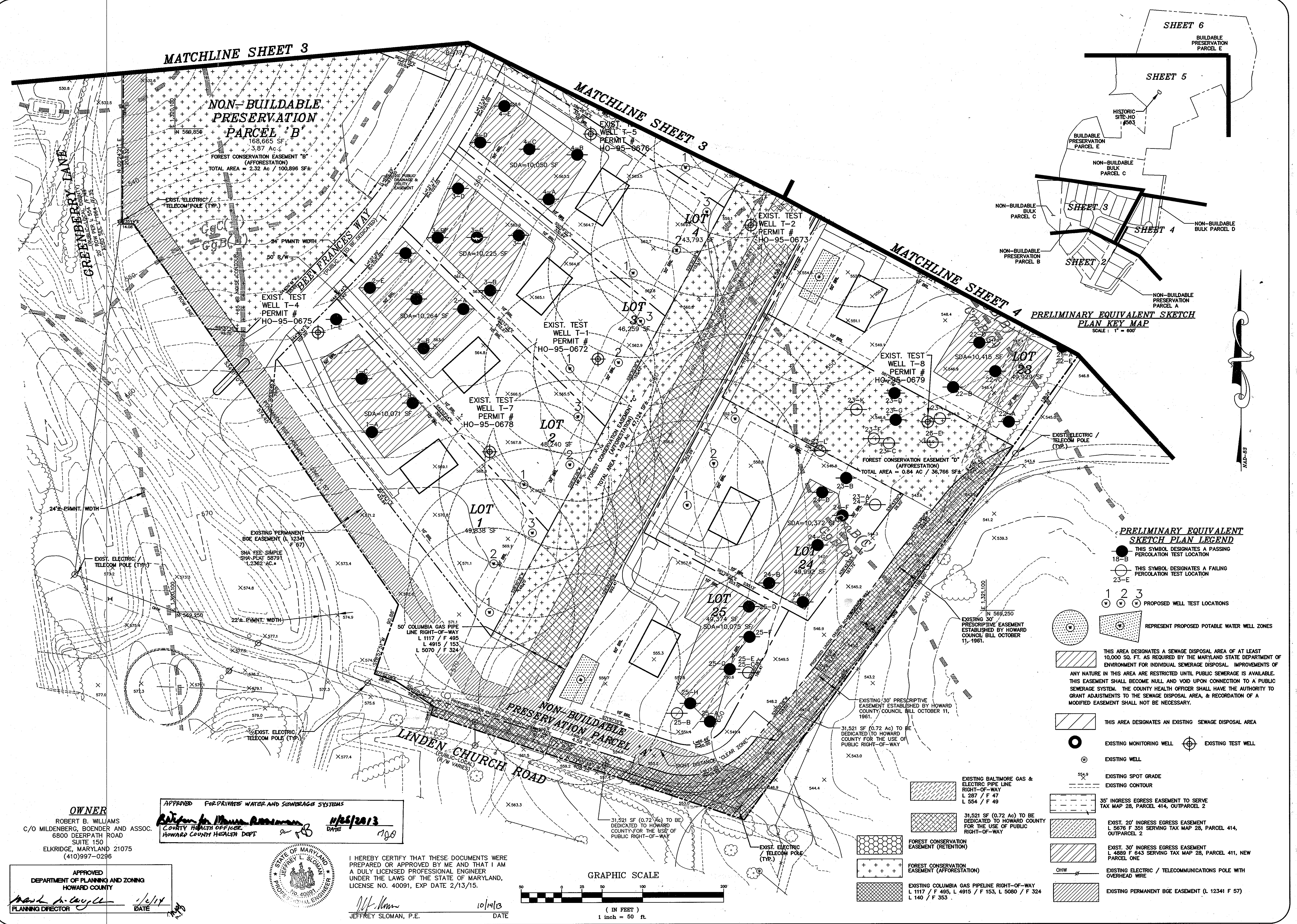
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Fax (410) 997-0296 Ext.

date	OCT 2013	engineering	JIS	approval	RJH
project	12-022	illustration	JIS	scale	1"=50'

no.	description	revisions	date
1	PERCOLATION CERTIFICATION PLAN (RELOCATED WELL ZONE ON LOT 7)		

GREENBERRY
 ENGINEERS PLANNERS SURVEYORS
 6800 Deepwater Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax

MILDENBERG, BOENDER & ASSOC., INC.
 ENGINEERS PLANNERS SURVEYORS
 6800 Deepwater Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax



MATCHLINE SHEET 3

MATCHLINE SHEET 3

MATCHLINE SHEET 4

SHEET 6

SHEET 5

SHEET 3

SHEET 4

SHEET 2

PRELIMINARY EQUIVALENT SKETCH PLAN KEY MAP

SCALE: 1" = 60'

PRELIMINARY EQUIVALENT SKETCH PLAN LEGEND

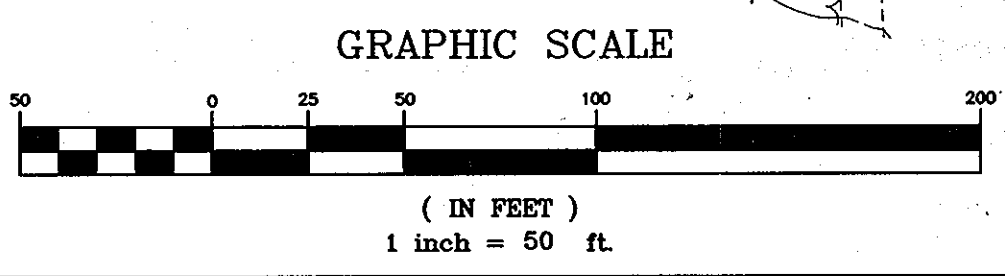
- THIS SYMBOL DESIGNATES A PASSING PERCOLATION TEST LOCATION
- THIS SYMBOL DESIGNATES A FAILING PERCOLATION TEST LOCATION
- 1 2 3 PROPOSED WELL TEST LOCATIONS
- REPRESENT PROPOSED POTABLE WATER WELL ZONES

- ▨ THIS AREA DESIGNATES A SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IS AVAILABLE. ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE SEWAGE DISPOSAL AREA, & RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- ▨ THIS AREA DESIGNATES AN EXISTING SEWAGE DISPOSAL AREA
- ⊙ EXISTING MONITORING WELL
- ⊕ EXISTING TEST WELL
- ⊙ EXISTING WELL
- 564.9 EXISTING SPOT GRADE
- EXISTING CONTOUR
- 35' INGRESS EGRESS EASEMENT TO SERVE TAX MAP 28, PARCEL 414, OUTPARCEL 2
- ▨ EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2
- ▨ EXIST. 30' INGRESS EGRESS EASEMENT L 4889 F 643 SERVING TAX MAP 28, PARCEL 411, NEW PARCEL ONE
- OHW EXISTING ELECTRIC / TELECOMMUNICATIONS POLE WITH OVERHEAD WIRE
- ▨ EXISTING PERMANENT BGE EASEMENT (L 12341 F 57)
- ▨ EXISTING BALTIMORE GAS & ELECTRIC PIPE LINE RIGHT-OF-WAY L 287 / F 47 L 554 / F 49
- ▨ 31,521 SF (0.72 AC) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY
- ▨ FOREST CONSERVATION EASEMENT (RETENTION)
- ▨ FOREST CONSERVATION EASEMENT (AFFORESTATION)
- ▨ EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 485, L 4915 / F 153, L 5080 / F 324 L 140 / F 53

APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS
 Robert B. Williams
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPT
 DATE 11/25/2013



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. 40091, EXP DATE 2/13/15.
 Jeffrey S. Soman, P.E. DATE 10/14/13

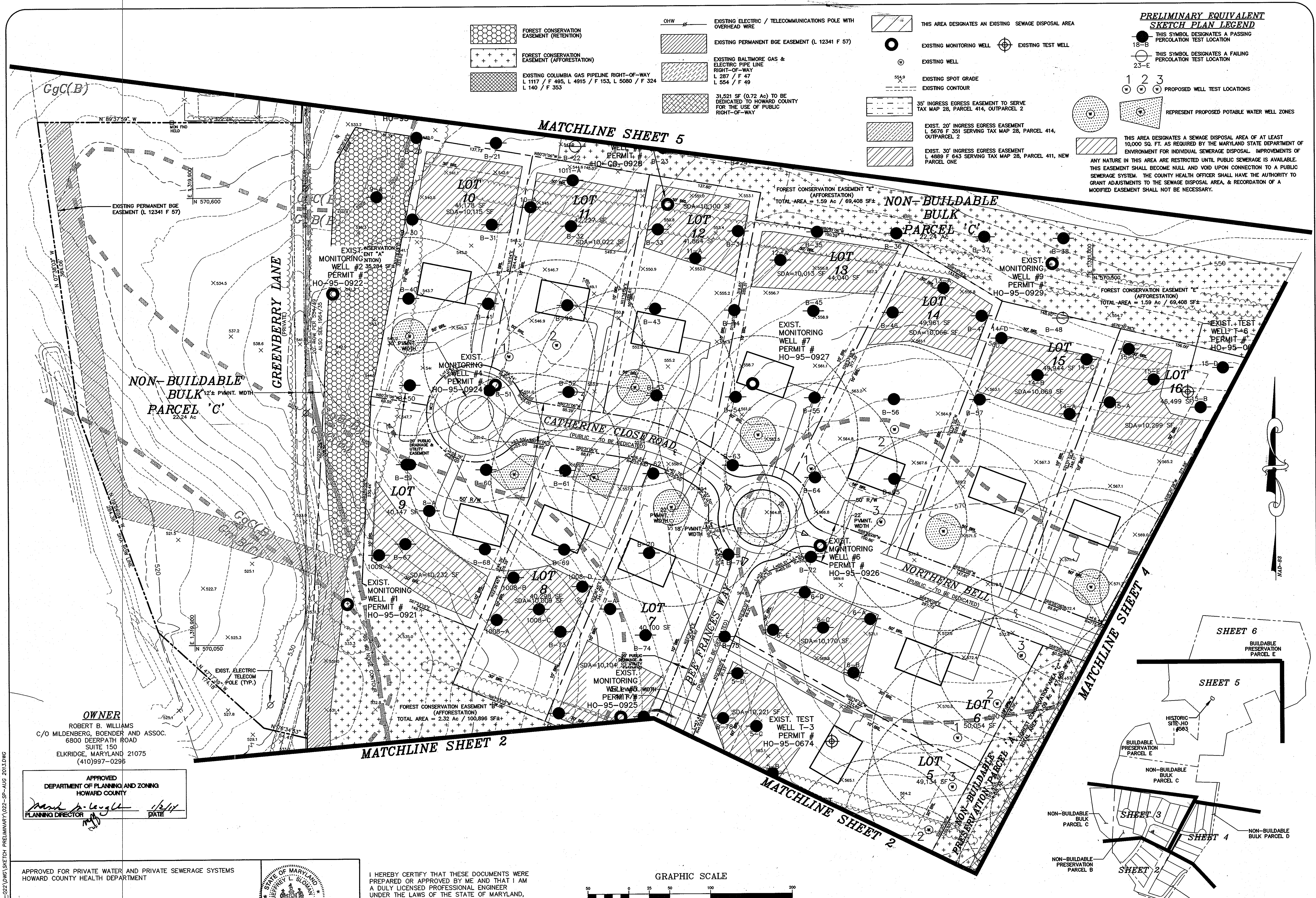


OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Planning Director DATE 11/14/13

H:\12-022\DWG\SKECH PRELIMINARY\022-SP-AUG 2013.DWG

H: 12-022.DWG SWITCH PRELIMINARY 022-SP-AUG 2013.DWG



- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 485, L 4915 / F 153, L 5080 / F 324 L 140 / F 353
- EXISTING ELECTRIC / TELECOMMUNICATIONS POLE WITH OVERHEAD WIRE
- EXISTING PERMANENT BGE EASEMENT (L 12341 F 57)
- EXISTING BALTIMORE GAS & ELECTRIC PIPE LINE RIGHT-OF-WAY L 287 / F 47 L 554 / F 49
- 31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY
- THIS AREA DESIGNATES AN EXISTING SEWAGE DISPOSAL AREA
- EXISTING MONITORING WELL
- EXISTING TEST WELL
- EXISTING WELL
- EXISTING SPOT GRADE
- EXISTING CONTOUR
- 35' INGRESS EASEMENT TO SERVE TAX MAP 28, PARCEL 414, OUTPARCEL 2
- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2
- EXIST. 30' INGRESS EGRESS EASEMENT L 4889 F 643 SERVING TAX MAP 28, PARCEL 411, NEW PARCEL ONE

- PRELIMINARY EQUIVALENT SKETCH PLAN LEGEND**
- THIS SYMBOL DESIGNATES A PASSING PERCOLATION TEST LOCATION
 - THIS SYMBOL DESIGNATES A FAILING PERCOLATION TEST LOCATION
 - PROPOSED WELL TEST LOCATIONS
 - REPRESENT PROPOSED POTABLE WATER WELL ZONES
 - THIS AREA DESIGNATES A SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL ARE AVAILABLE. ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE SEWAGE DISPOSAL AREA, & RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.

date	OCT 2013	approval	RH
project	12-022	illustration	JLS
scale	1"=50'	revision	

PERCOLATION CERTIFICATION PLAN (Relocated Well Zone on Lot 7)

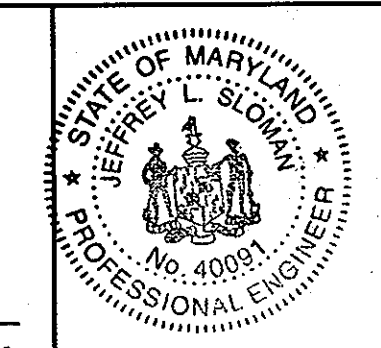
GREENBERRY BOENDER & ASSOC., INC.
 ENGINEERS PLANNERS SURVEYORS
 6800 Deeppath Road, Suite 150, ElkrIDGE, Maryland 21075
 (410) 997-0296 Fax

MILDENBERG, BOENDER & ASSOC., INC.
 ENGINEERS PLANNERS SURVEYORS
 6800 Deeppath Road, Suite 150, ElkrIDGE, Maryland 21075
 (410) 997-0296 Fax

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0296

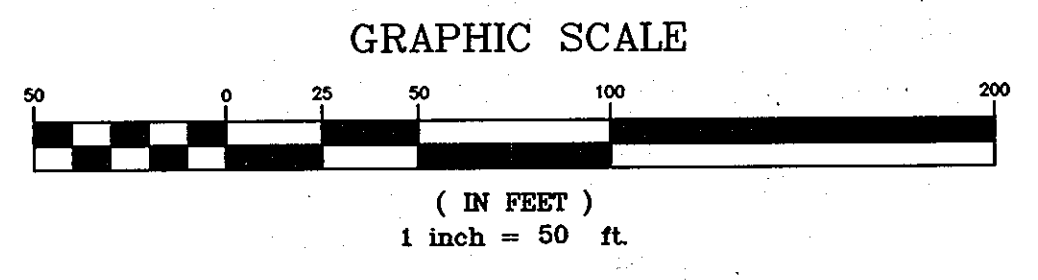
APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 [Signature]
 PLANNING DIRECTOR
 DATE 11/21/13

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT



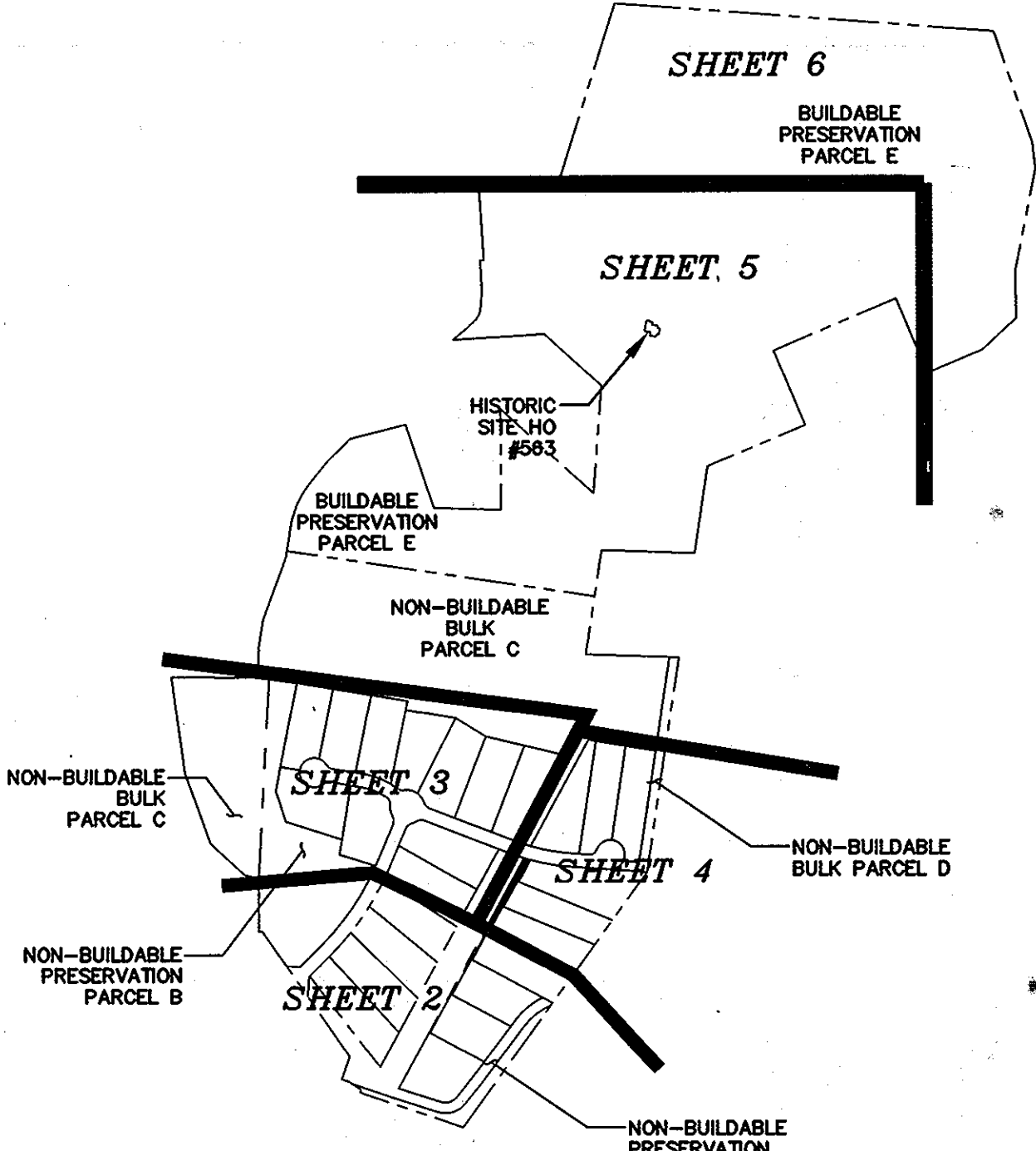
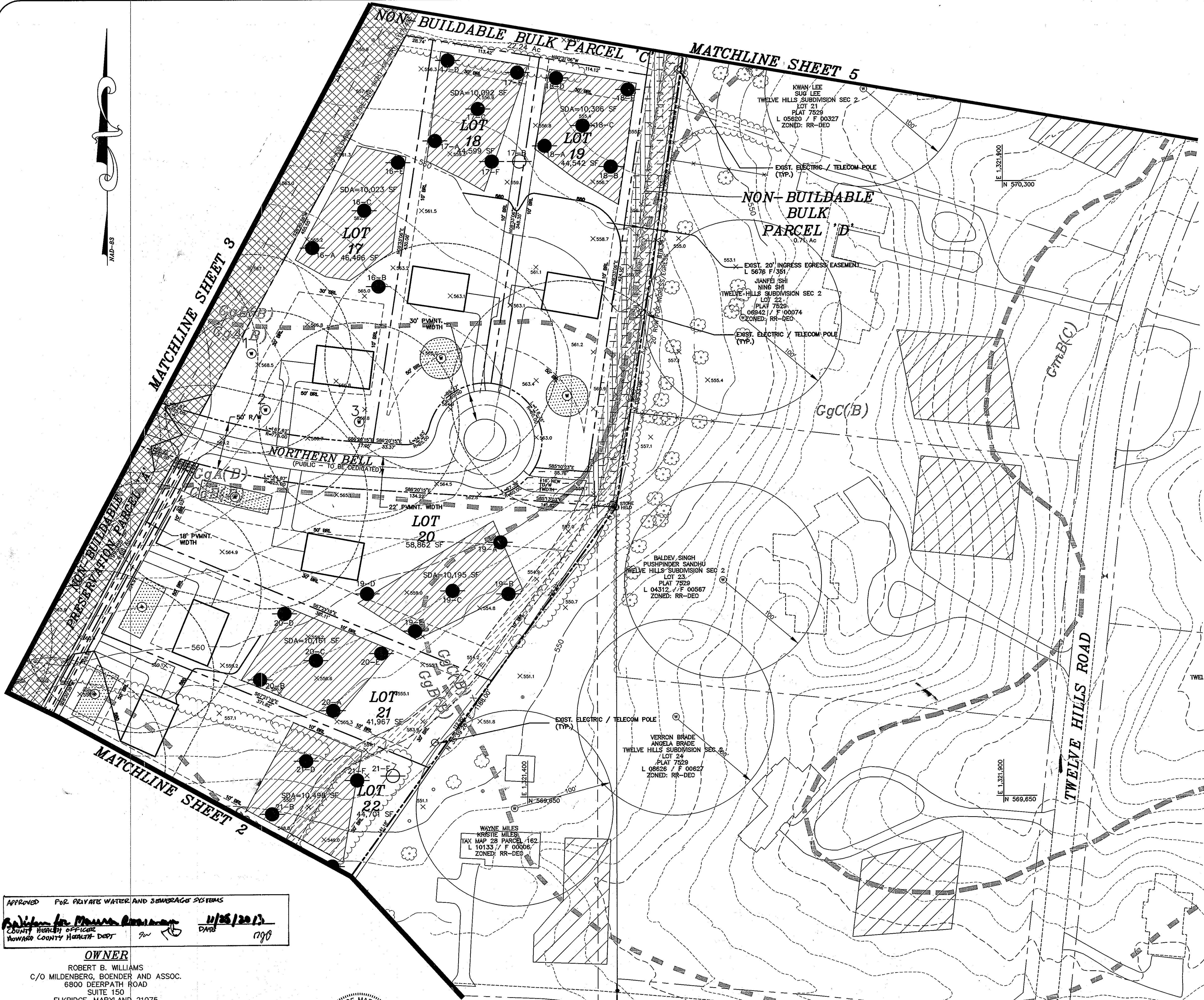
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40091, EXP DATE 2/13/15.

[Signature]
 JEFFREY L. SLOMAN, P.E.
 DATE 11/20/13



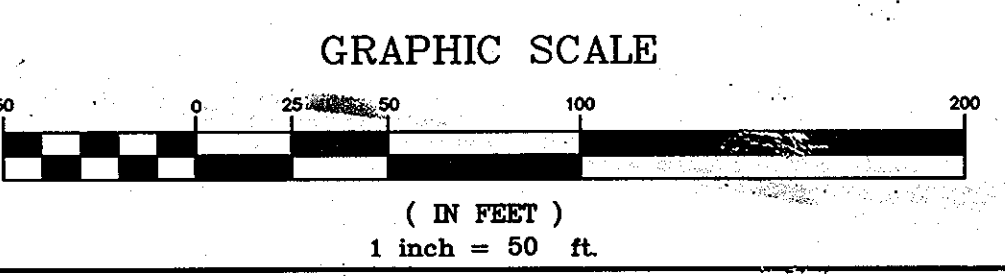
PRELIMINARY EQUIVALENT SKETCH PLAN KEY MAP
 SCALE: 1" = 600'

H: 12-022 DWG SKETCH PRELIMINARY 022-SP-AUG 2013.DWG



PRELIMINARY EQUIVALENT SKETCH PLAN KEY MAP
SCALE: 1" = 600'

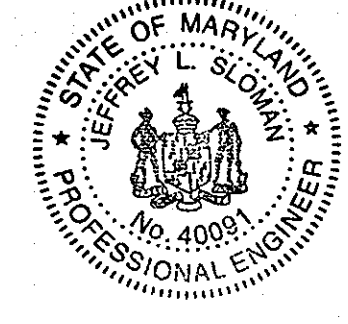
- PRELIMINARY EQUIVALENT SKETCH PLAN LEGEND**
- THIS SYMBOL DESIGNATES A PASSING PERCOLATION TEST LOCATION
 - THIS SYMBOL DESIGNATES A FAILING PERCOLATION TEST LOCATION
 - 1 2 3 PROPOSED WELL TEST LOCATIONS
 - REPRESENT PROPOSED POTABLE WATER WELL ZONES
 - ▨ THIS AREA DESIGNATES A SEWAGE DISPOSAL AREA OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE SEWAGE DISPOSAL AREA, & RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
 - ▨ THIS AREA DESIGNATES AN EXISTING SEWAGE DISPOSAL AREA
 - EXISTING MONITORING WELL
 - EXISTING WELL
 - 554.8 EXISTING SPOT GRADE
 - EXISTING CONTOUR
 - 35' INGRESS EGRESS EASEMENT TO SERVE TAX MAP 28, PARCEL #14, OUTPARCEL 2
 - ▨ EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2
 - ▨ EXIST. 30' INGRESS EGRESS EASEMENT L 4889 F 643 SERVING TAX MAP 28, PARCEL 411, NEW PARCEL ONE
 - OHW EXISTING ELECTRIC / TELECOMMUNICATIONS POLE WITH OVERHEAD WIRE
 - ▨ EXISTING PERMANENT BOE EASEMENT (L 12341 F 57)
 - ▨ EXISTING BALTIMORE GAS & ELECTRIC PIPE LINE RIGHT-OF-WAY L 287 / F 47 L 554 / F 49
 - ▨ 31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY
 - ▨ FOREST CONSERVATION EASEMENT (RETENTION)
 - ▨ FOREST CONSERVATION EASEMENT (AFFORESTATION)
 - ▨ EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 495, L 4915 / F 153, L 5080 / F 324 L 140 / F 353



APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS
 Robert B. Williams
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPT
 DATE 11/05/2013
 10/8

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKBRIDGE, MARYLAND 21075
 (410)997-0295

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Jeffrey L. SLOMAN
 PLANNING DIRECTOR
 DATE 10/14/13



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. 40091, EXP DATE 2/13/15.
 Jeffrey L. SLOMAN, P.E.
 DATE 10/14/13

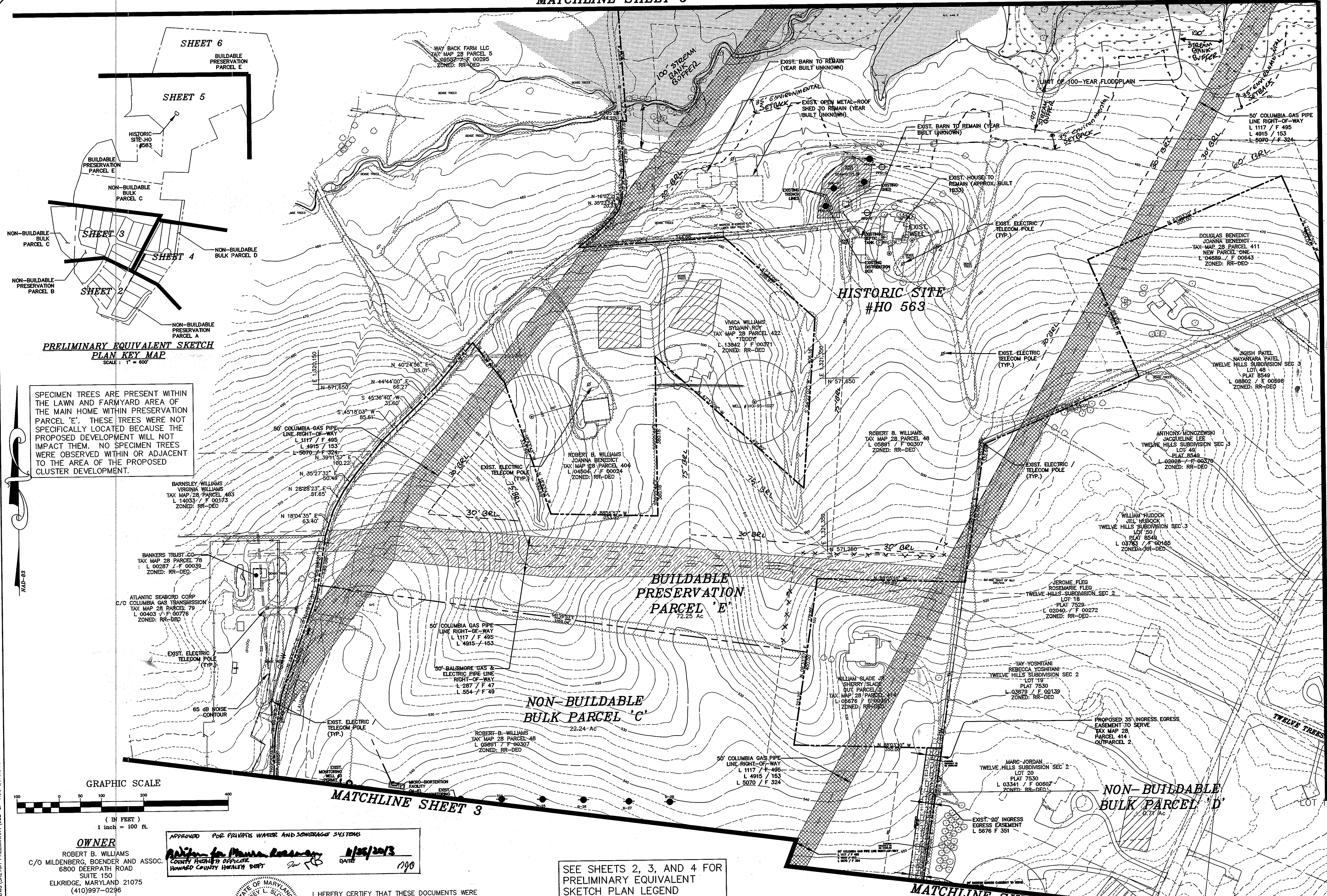
date	OCT 2013	engineering	JIS	approval	RH
project	12-022	illustration	JIS	scale	1"=60'

no.	description	revisions	date
1	PERCOLATION CERTIFICATION PLAN (RELOCATED WELL ZONE ON LOT 7)		

GREENBERRY
 LOTS 1 THRU 25, NON-BUILDABLE PARS. A AND B, NON-BUILDABLE BULK PARCELS C AND D, AND BUILDABLE PARS. PARCEL Y
 1310 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
PRELIMINARY EQUIVALENT SKETCH PLAN

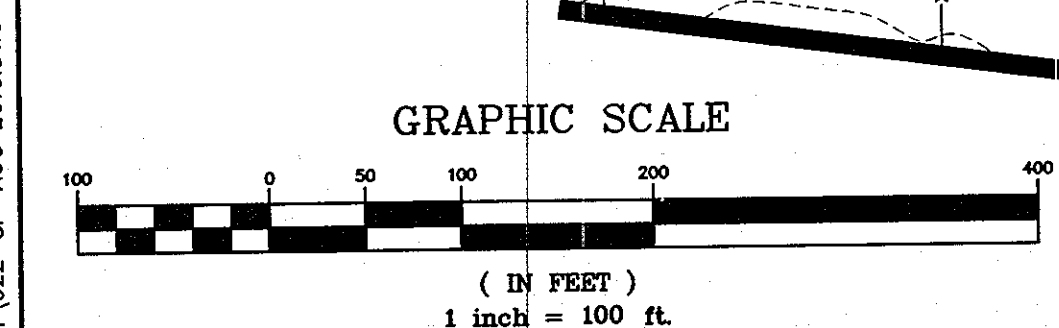
MILDENBERG, BOENDER & ASSOC., INC.
 Surveyors
 Engineers Planners
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Ext. (410) 997-0298 Fax

MATCHLINE SHEET 6



SPECIMEN TREES ARE PRESENT WITHIN THE LAWN AND FARMYARD AREA OF THE MAIN HOME WITHIN PRESERVATION PARCEL 'E'. THESE TREES WERE NOT SPECIFICALLY LOCATED BECAUSE THE PROPOSED DEVELOPMENT WILL NOT IMPACT THEM. NO SPECIMEN TREES WERE OBSERVED WITHIN OR ADJACENT TO THE AREA OF THE PROPOSED CLUSTER DEVELOPMENT.

PRELIMINARY EQUIVALENT SKETCH PLAN KEY MAP SCALE: 1" = 600'



OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKBRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS
Robert B. Williams 1/25/2013
 COUNTY PUBLIC HEALTH DEPT
 DATE 1/25/2013



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. 40091, EXP DATE 2/13/15.
Jeffrey L. SLOMAN 10/14/13
 JEFFREY SLOMAN, P.E. DATE

SEE SHEETS 2, 3, AND 4 FOR PRELIMINARY EQUIVALENT SKETCH PLAN LEGEND

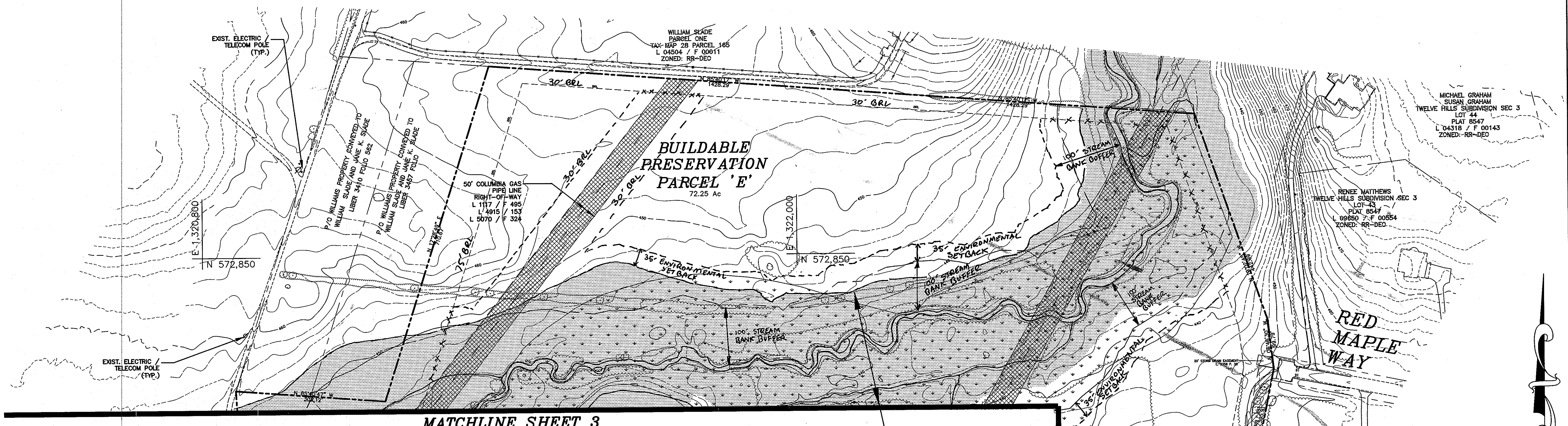
MATCHLINE SHEET 6

project	12-022	date	OCT 2013
illustration	JLS	engineering	JLS
scale	1"=100'	approval	RH

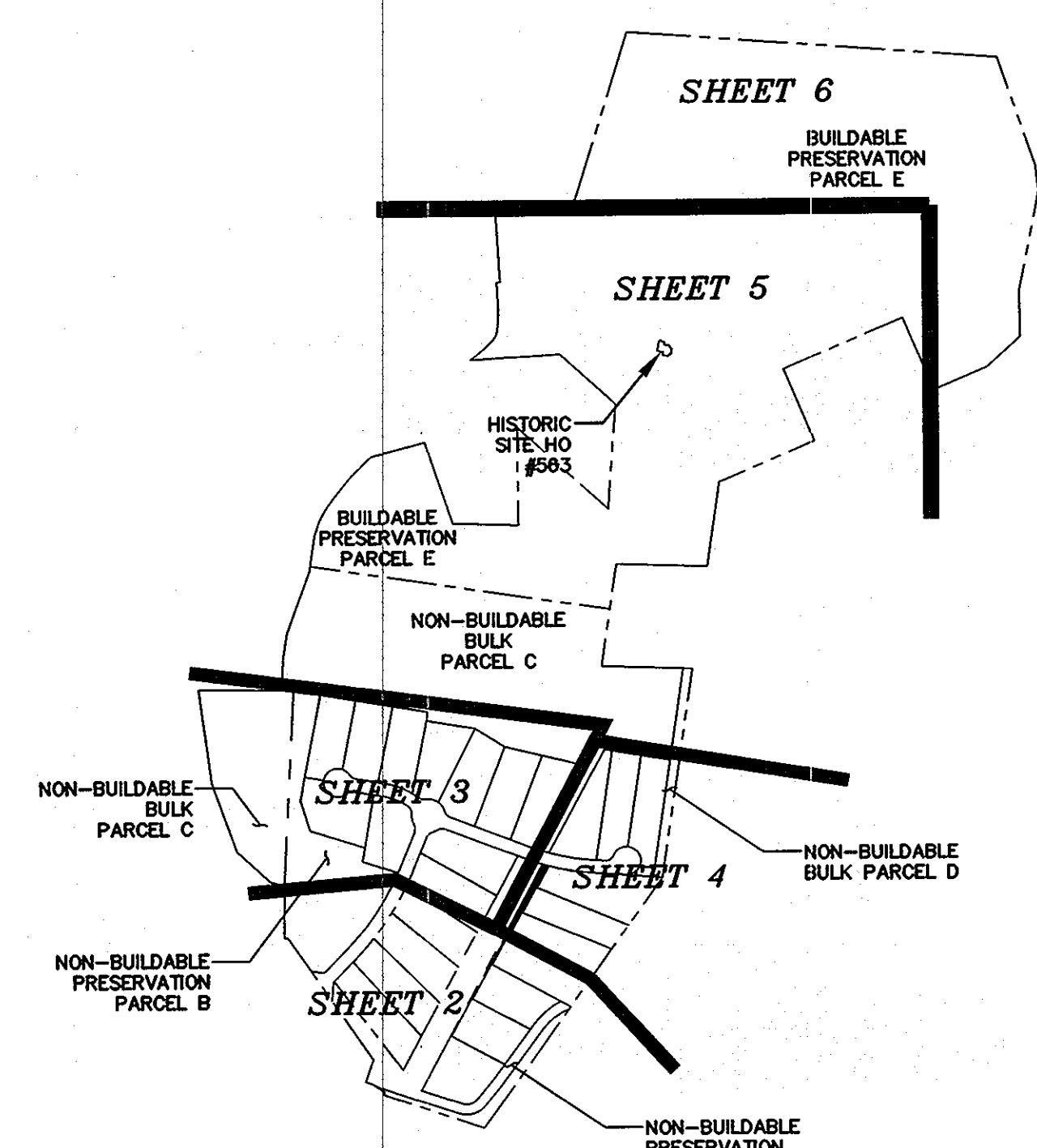
REGULATION CERTIFICATION PLAN (RELOCATED DEEL POWER ON LOT 7)

GREENERBERRY
 DOS I THRU 25, NON-BUILDABLE PRES. PARCELS X AND Y, AND BUILDABLE PRES. PARCEL Y
 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 PRELIMINARY EQUIVALENT SKETCH PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax

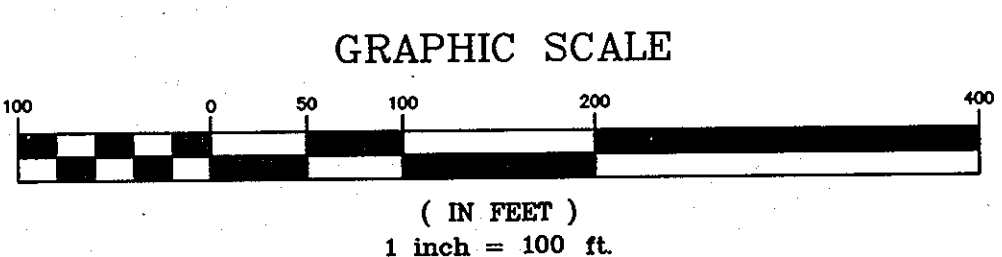


MATCHLINE SHEET 3



PRELIMINARY EQUIVALENT SKETCH PLAN KEY MAP
 SCALE: 1" = 600'

SPECIMEN TREES ARE PRESENT WITHIN THE LAWN AND FARMYARD AREA OF THE MAIN HOME WITHIN PRESERVATION PARCEL 'E'. THESE TREES WERE NOT SPECIFICALLY LOCATED BECAUSE THE PROPOSED DEVELOPMENT WILL NOT IMPACT THEM. NO SPECIMEN TREES WERE OBSERVED WITHIN OR ADJACENT TO THE AREA OF THE PROPOSED CLUSTER DEVELOPMENT.



APPROVED FOR PRIVATE WATER AND SEWERAGE SYSTEMS
Robert B. Williams 10/15/2013
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPT. DATE

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKBRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
Paul J. Wright 10/14/13
 PLANNING DIRECTOR DATE



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. 40091, EXP DATE 2/13/15.
Jeffrey L. Sloman 10/14/13
 JEFFREY SLOMAN, P.E. DATE

PRELIMINARY EQUIVALENT SKETCH PLAN LEGEND

- PASSED PERCOLATION TEST HOLE
- FAILED PERCOLATION TEST HOLE
- PROPOSED WELL TEST LOCATIONS
- PROPOSED SEPTIC EASEMENT AREA (10,000 SF MIN.)
- EXISTING WELL
- EXISTING SEPTIC EASEMENT AREA
- EXISTING SPOT GRADE
- EXISTING CONTOUR
- 35' INGRESS EGRESS EASEMENT TO SERVE TAX MAP 28, PARCEL 414, OUTPARCEL 2
- EXIST. 20' INGRESS EGRESS EASEMENT L 5676 F 351 SERVING TAX MAP 28, PARCEL 414, OUTPARCEL 2
- EXIST. 30' INGRESS EGRESS EASEMENT L 4889 F 643 SERVING TAX MAP 28, PARCEL 411, NEW PARCEL ONE
- EXISTING ELECTRIC / TELECOMMUNICATIONS POLE WITH OVERHEAD WIRE
- EXISTING PERMANENT BOE EASEMENT (L 12341 F 57)
- EXISTING COLUMBIA GAS PIPELINE RIGHT-OF-WAY L 1117 / F 495, L 4915 / F 153, L 5080 / F 324 L 140 / F 353
- EXISTING BALTIMORE GAS & ELECTRIC PIPE LINE RIGHT-OF-WAY L 287 / F 47 L 554 / F 49
- 31,521 SF (0.72 AC) TO BE DEDICATED TO THE USE OF PUBLIC RIGHT-OF-WAY
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)

PH: 12-022.DWG SKETCH PRELIMINARY 022-SF-AUG 2013.DWG

MATCHLINE SHEET 8

MATCHLINE SHEET 8

MATCHLINE SHEET 9

GRADING PLAN KEY MAP
SCALE: 1" = 600'



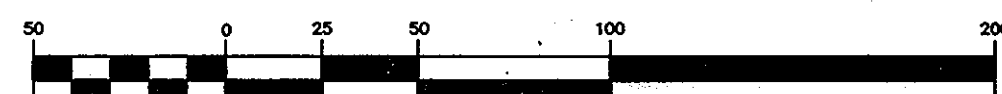
SEE SHEETS 2 THROUGH 6 FOR
TEST WELL AND MONITORING WELL
LOCATIONS

GRADING PLAN LEGEND

- 1 2 3
○ ○ ○ PROPOSED WELL TEST LOCATIONS
- ▨ PROPOSED SEPTIC EASEMENT AREA (10,000 SF MIN.)
- ⊙ EXISTING WELL
- ▨ EXISTING SEPTIC EASEMENT AREA
- 100 PROPOSED CONTOUR
- 62x27 PROPOSED SPOT GRADE
- 55x9 EXISTING SPOT GRADE
- EXISTING CONTOUR
- LIMIT OF DISTURBANCE

31,521 SF (0.72 AC) TO BE
DEDICATED TO HOWARD
COUNTY FOR THE USE OF
PUBLIC RIGHT-OF-WAY

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

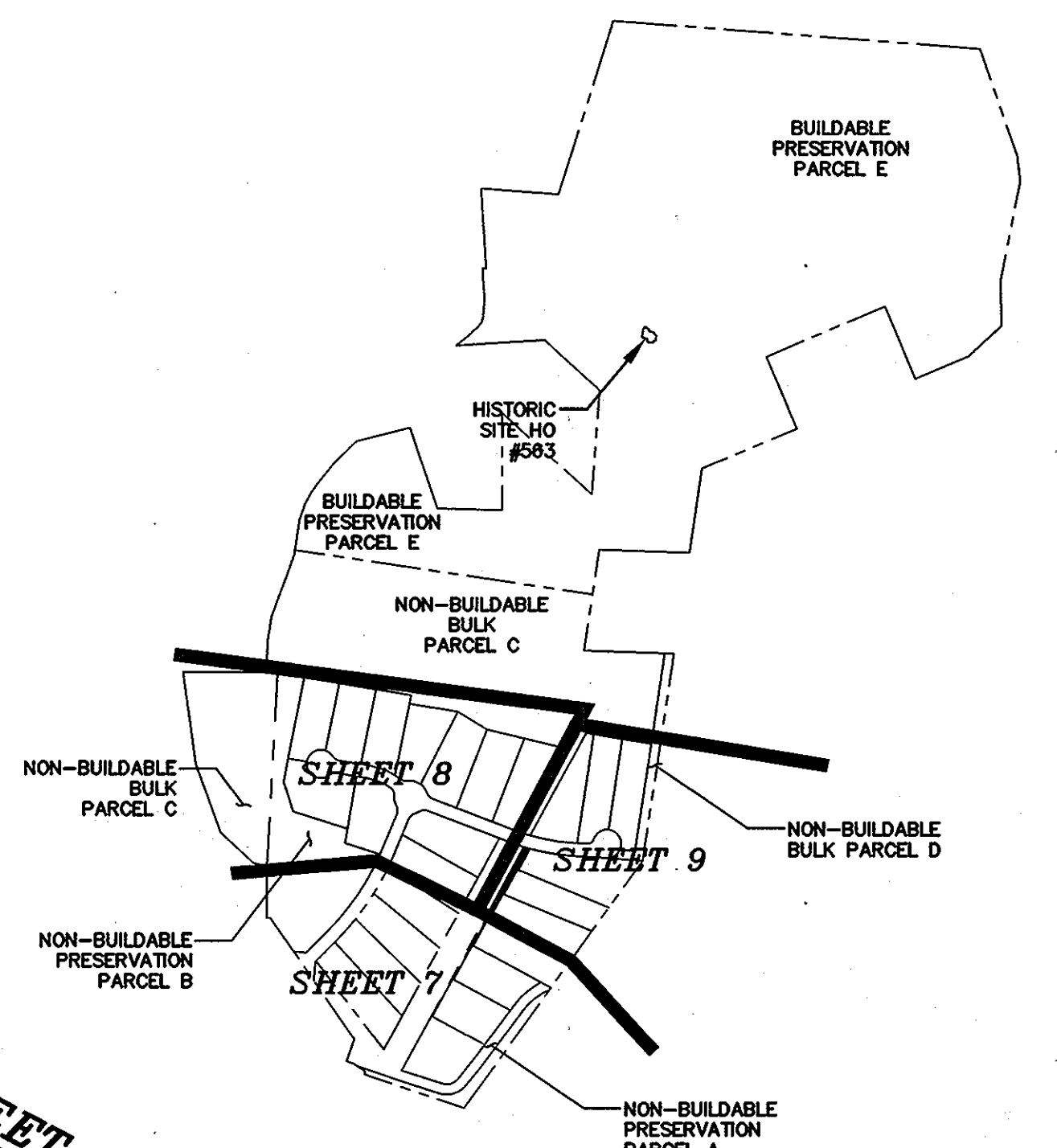
OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410) 997-0296



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A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 40091, EXP DATE 2/13/15.

Jeffrey L. SLOMAN
JEFFREY SLOMAN, P.E. 10/14/13
DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
David L. Light 10/14/13
PLANNING DIRECTOR DATE



Project	date	approval
12-022	OCT 2013	RH
illustration	engineering	
JLS	JLS	
scale	1" = 50'	
no.		
description		
revisions		
no.	date	

GREENBERRY
LOTS 1, 2, 3, 4, 5, NON-BUILDABLE PRES. PARCELS A AND B, AND BUILDABLE PRES. PARCELS C, D, E, AND F, AND BUILDABLE PRES. PARCELS G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AND BUILDABLE PRES. PARCELS AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, ElkrIDGE, Maryland 21075
(410) 997-0296 Fax: (410) 997-0296 Fax

SEE SHEETS 2 THROUGH 6 FOR TEST WELL AND MONITORING WELL LOCATIONS

GRADING PLAN LEGEND

1	2	3
(Symbol: Circle with dot)	(Symbol: Circle with cross)	(Symbol: Circle with dot and cross)
PROPOSED WELL TEST LOCATIONS	EXISTING WELL	PROPOSED WELL TEST LOCATIONS
(Symbol: Diagonal lines /)	(Symbol: Diagonal lines \)	(Symbol: Diagonal lines / and \)
PROPOSED SEPTIC EASEMENT AREA (10,000 SF MIN.)	EXISTING SEPTIC EASEMENT AREA	EXISTING SEPTIC EASEMENT AREA
(Symbol: Dashed line)	(Symbol: Solid line)	(Symbol: Dotted line)
PROPOSED CONTOUR	PROPOSED SPOT GRADE	EXISTING SPOT GRADE
(Symbol: Dashed line)	(Symbol: Solid line)	(Symbol: Dotted line)
EXISTING CONTOUR	EXISTING CONTOUR	LIMIT OF DISTURBANCE
(Symbol: Dashed line)	(Symbol: Solid line)	(Symbol: Dotted line)

date	OCT 2013	approval	RH
project	12-022	scale	1"=50'
illustration	JLS	description	
revisions		no.	

date	
description	
revisions	

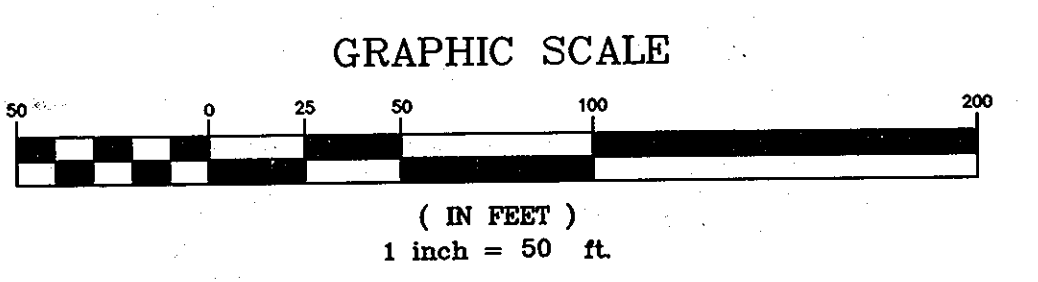
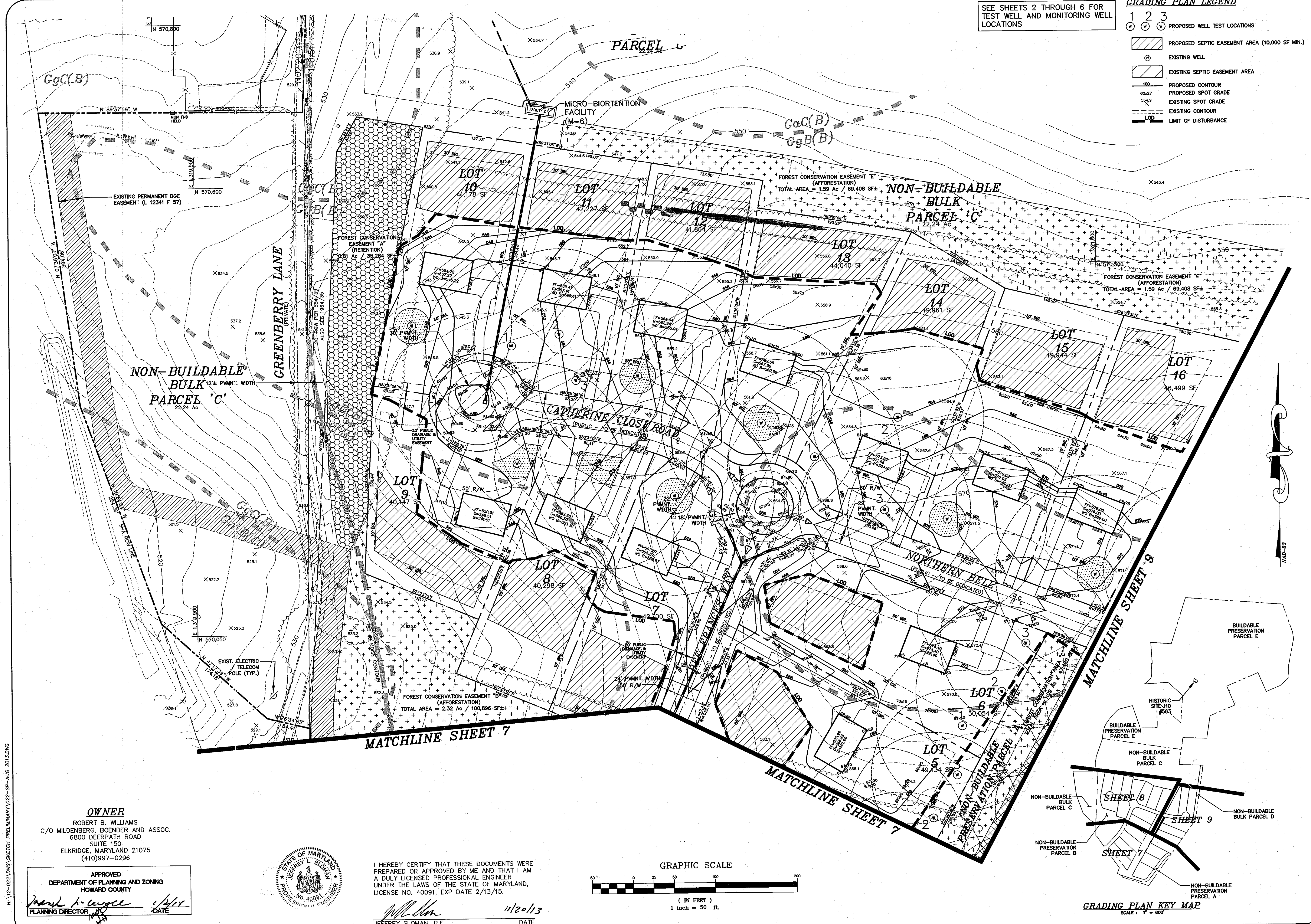
GREENBERRY PRELIMINARY GRADING PLAN

LOTS 1 THRU 25, NON-BUILDABLE BULK PARCELS A, B, C, D, E AND BUILDABLE PRES. PARCEL F, 1310 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MILDENBERG, BOENDER & ASSOC., INC.

Engineers Planners Surveyors

6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0286 Bldg. (410) 997-0288 Fax.



OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Jeffrey L. Soman
PLANNING DIRECTOR

Robert Williams
DATE

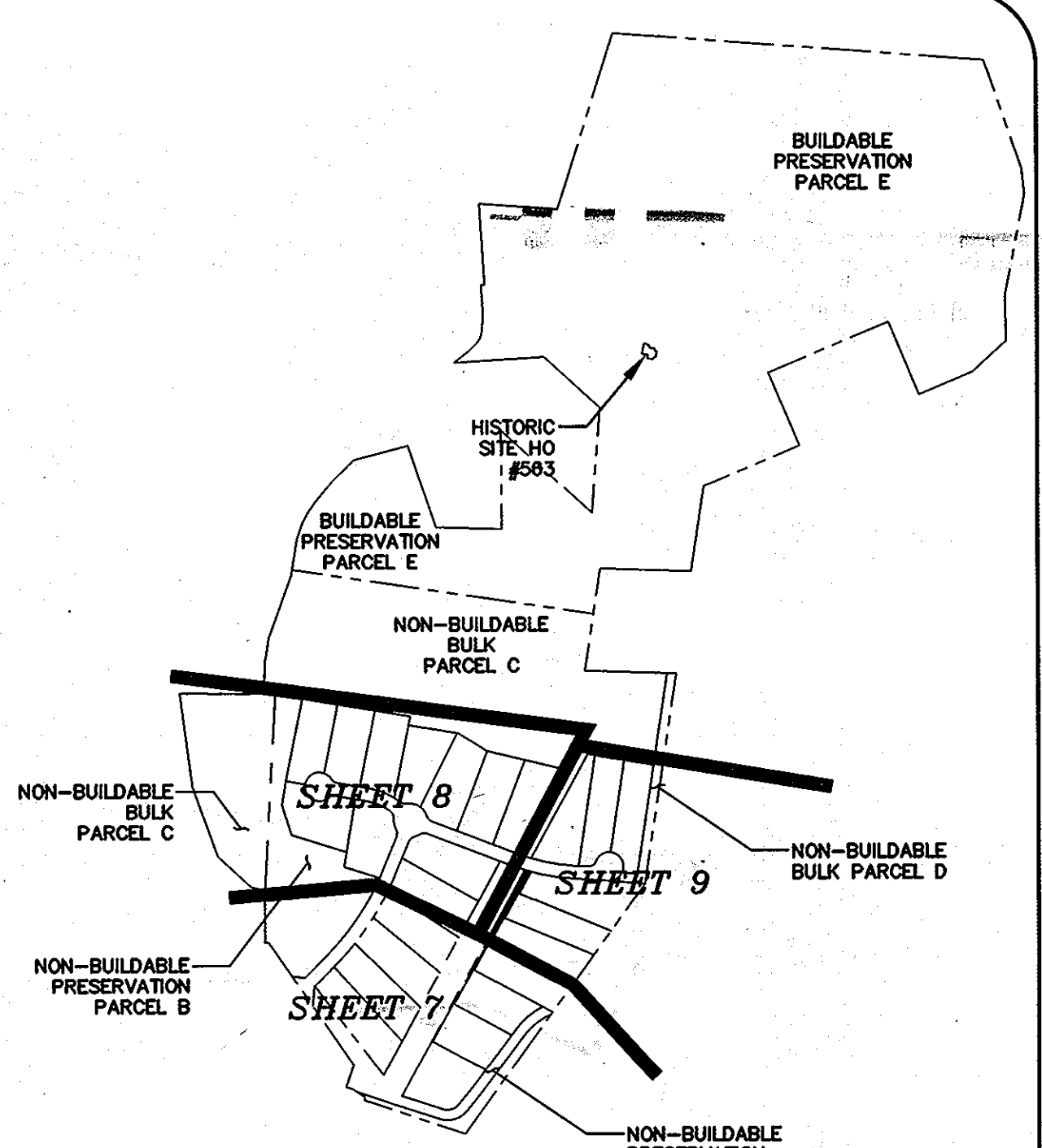
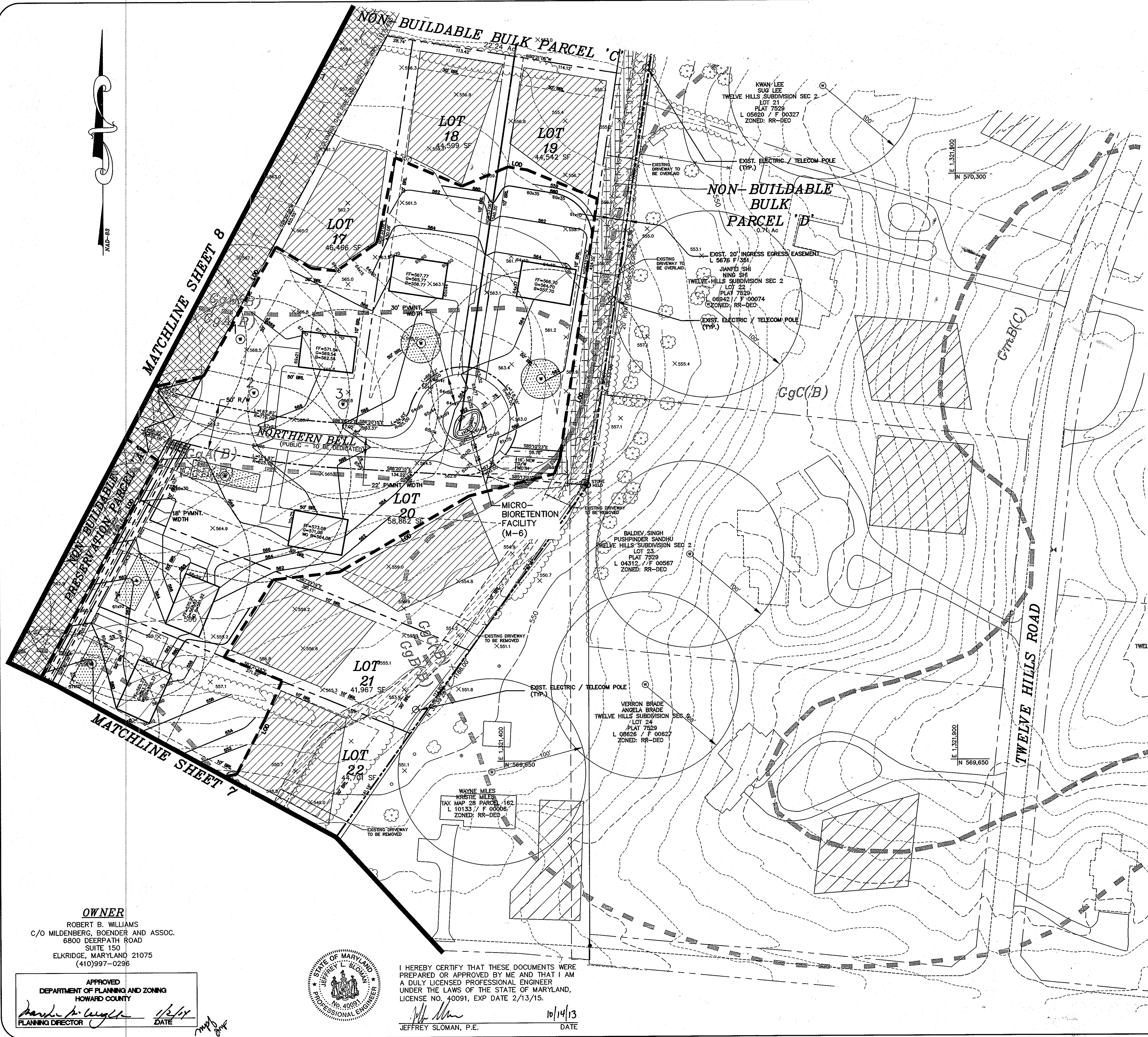


I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40091, EXP DATE 2/13/15.

Jeffrey L. Soman
JEFFREY SLOMAN, P.E. DATE 11/20/13

H:\12-022\DWG\SKETCH PRELIMINARY 022-SP-AUG 2013.DWG

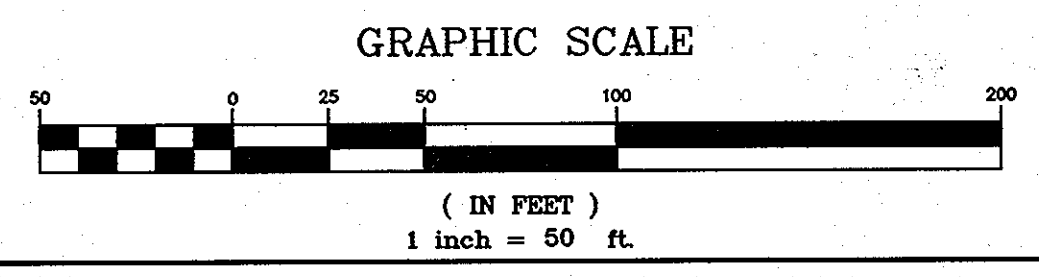
H: 12-022.DWG SKETCH PRELIMINARY 022-SP-AUG 2013.DWG



GRADING PLAN KEY MAP
SCALE: 1" = 600'

GRADING PLAN LEGEND

- 1 2 3
○ ○ ○ PROPOSED WELL TEST LOCATIONS
- ▨ PROPOSED SEPTIC EASEMENT AREA (10,000 SF MIN.)
- EXISTING WELL
- ▨ EXISTING SEPTIC EASEMENT AREA
- 100 PROPOSED CONTOUR
- 62.27 PROPOSED SPOT GRADE
- 55.9 EXISTING SPOT GRADE
- EXISTING CONTOUR
- 100 LIMIT OF DISTURBANCE



OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKBRIDGE, MARYLAND 21075
(410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Jeffrey L. Sloman
PLANNING DIRECTOR
DATE 12/14



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Jeffrey L. Sloman
JEFFREY SLOMAN, P.E. DATE 10/14/13

date	OCT 2013
project	12-022
illustration	JIS
scale	JIS
approval	JIS
scale	1"=50'
revision	RRH

no.	
description	
revisions	
date	

GREENBERRY
LOTS 1 THRU 26, NON-BUILDABLE PARS. A AND B, NON-BUILDABLE BULK PARCS C AND D, AND BUILDABLE PARS. E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
PRELIMINARY GRADING PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
8800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Fax: (410) 997-0298 Fax.

MATCHLINE SHEET 11

MATCHLINE SHEET 11

MATCHLINE SHEET 12

NON-BUILDABLE PRESERVATION PARCEL 'B'
 168,665 SF ±
 3.87 Ac.
 FOREST CONSERVATION EASEMENT 'B' (AFFORESTATION)
 TOTAL AREA = 2.32 Ac / 100,896 SF ±

EXIST. TEST WELL T-4
 PERMIT # HO-95-0675

EXIST. TEST WELL T-1
 PERMIT # HO-95-0672

EXIST. TEST WELL T-7
 PERMIT # HO-95-0678

EXIST. TEST WELL T-3
 PERMIT # HO-95-0676

EXIST. TEST WELL T-2
 PERMIT # HO-95-0673

EXIST. TEST WELL T-6
 PERMIT # HO-95-0679

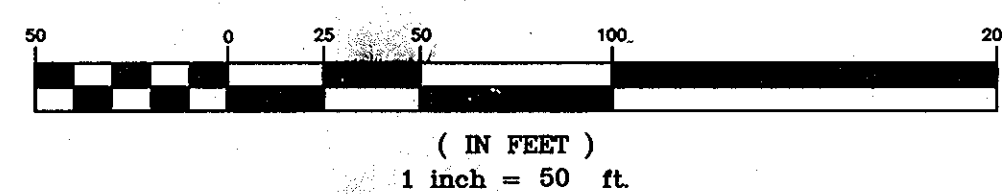
EROSION AND SEDIMENT CONTROL PLAN KEY MAP
 SCALE: 1" = 500'

LEGEND

- LOD LIMIT OF DISTURBANCE
- CWD-18 CLEAN WATER DIVERSION PIPE (WITH PIPE DIA.)
- PSD-18 PIPE SLOPE DRAIN (WITH PIPE DIA.)
- SDF SILT DIVERSION FENCE
- SSF SUPER SILT FENCE
- SF SILT FENCE
- SIP STANDARD INLET PROTECTION
- SCE STABILIZED CONSTRUCTION ENTRANCE

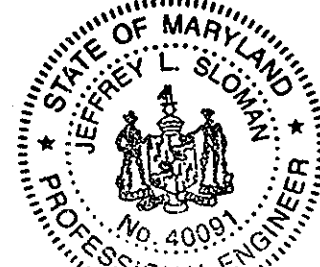
31,521 SF (0.72 Ac) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY

GRAPHIC SCALE



OWNER

ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKCRIDGE, MARYLAND 21075
 (410)997-0296



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Jeffrey L. Sloman, P.E. 10/14/13 DATE

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Paul J. Coughlin 12/11
 PLANNING DIRECTOR DATE

H:\12-022\DWG\SKETCH PRELIMINARY\022-SP-AUG 2013.DWG

date	AUG 2013	approval	RJH
project	12-022	illustration	JLS
scale	1" = 50'		

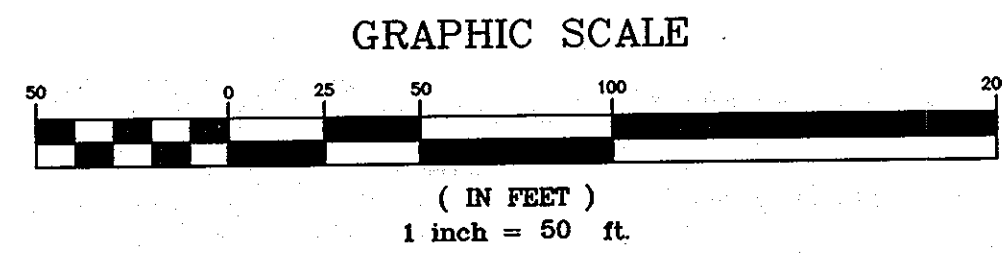
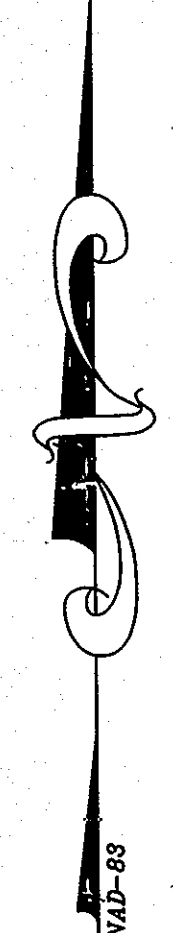
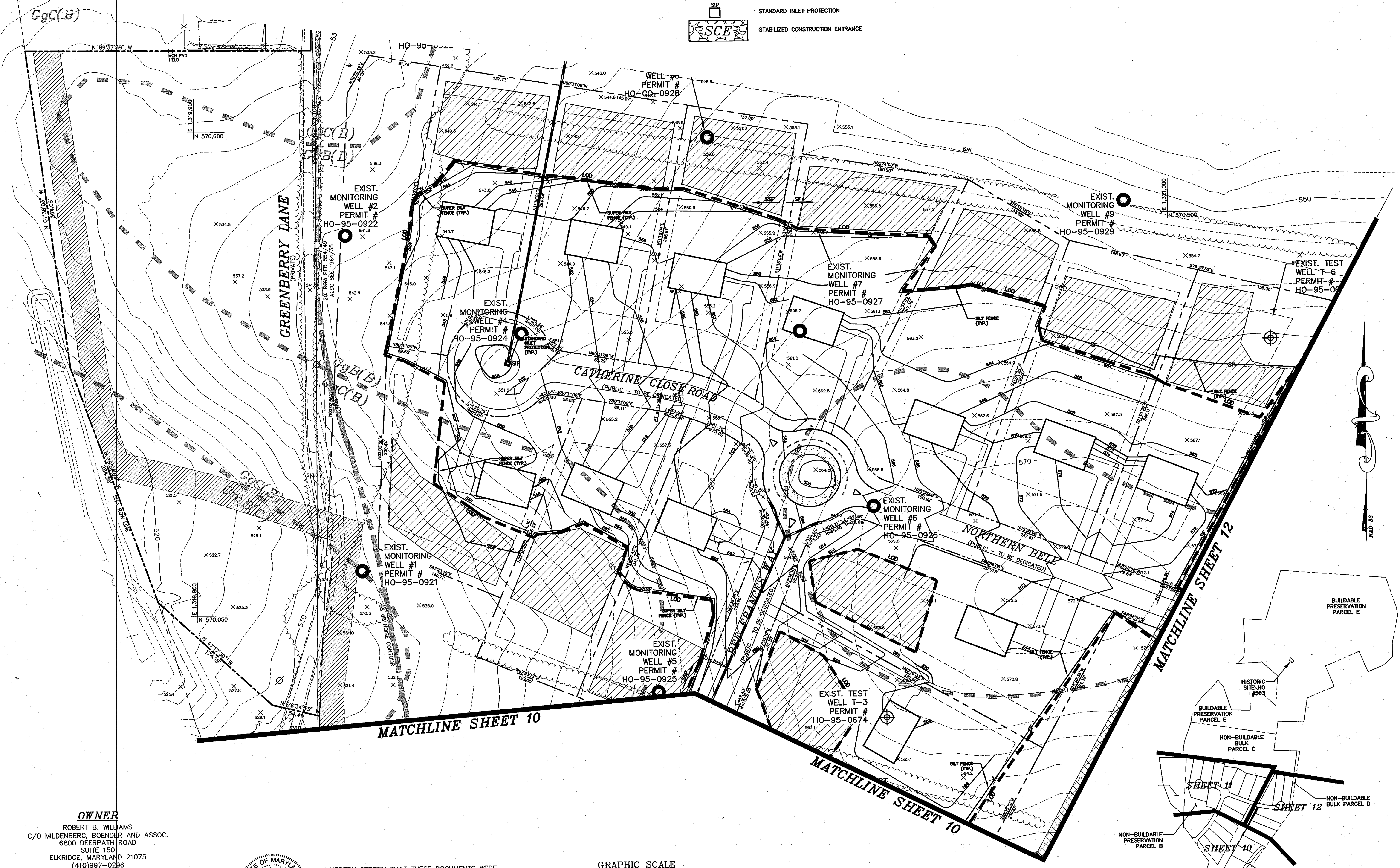
no.	description	revisions

GREENBERRY
 LOTS 1 THRU 25, NON-BUILDABLE PRES. PARCELS A AND B, AND BUILDABLE PRES. PARCELS C, D, E, AND F, GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY EROSION AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax (410) 997-0298

LEGEND

- LOD --- LIMIT OF DISTURBANCE
- CWD-18 --- CLEAN WATER DIVERSION PIPE (WITH PIPE DIA.)
- PSD-18 --- PIPE SLOPE DRAIN (WITH PIPE DIA.)
- SDF --- SILT DIVERSION FENCE
- SSF --- SUPER SILT FENCE
- SF --- SILT FENCE
- SIP --- STANDARD INLET PROTECTION
- SCE --- STABILIZED CONSTRUCTION ENTRANCE



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Jeffrey S. Sloman
 JEFFREY SLOMAN, P.E. 10/14/13 DATE



OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKBRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Paul D. Long
 PLANNING DIRECTOR DATE

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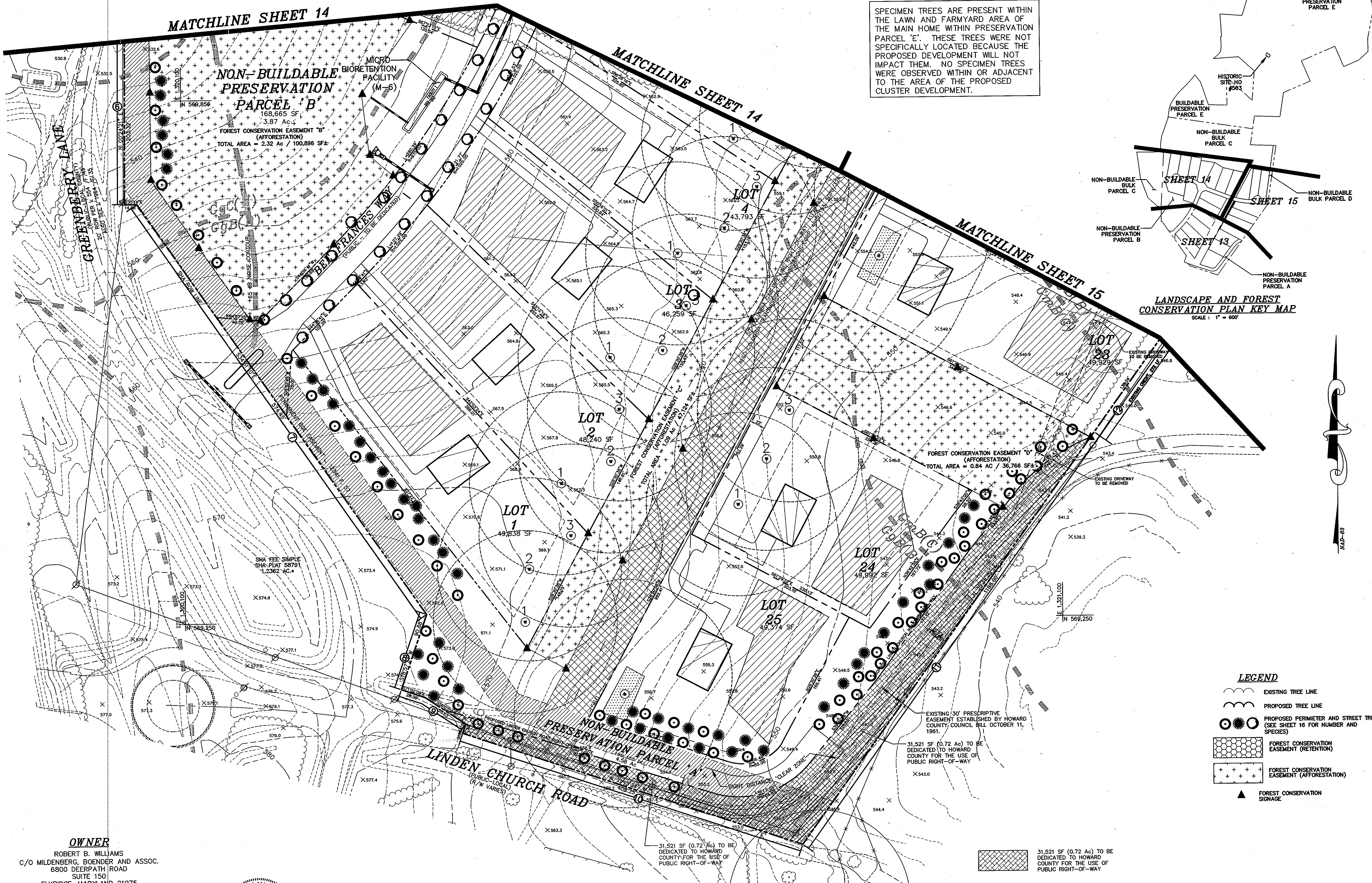
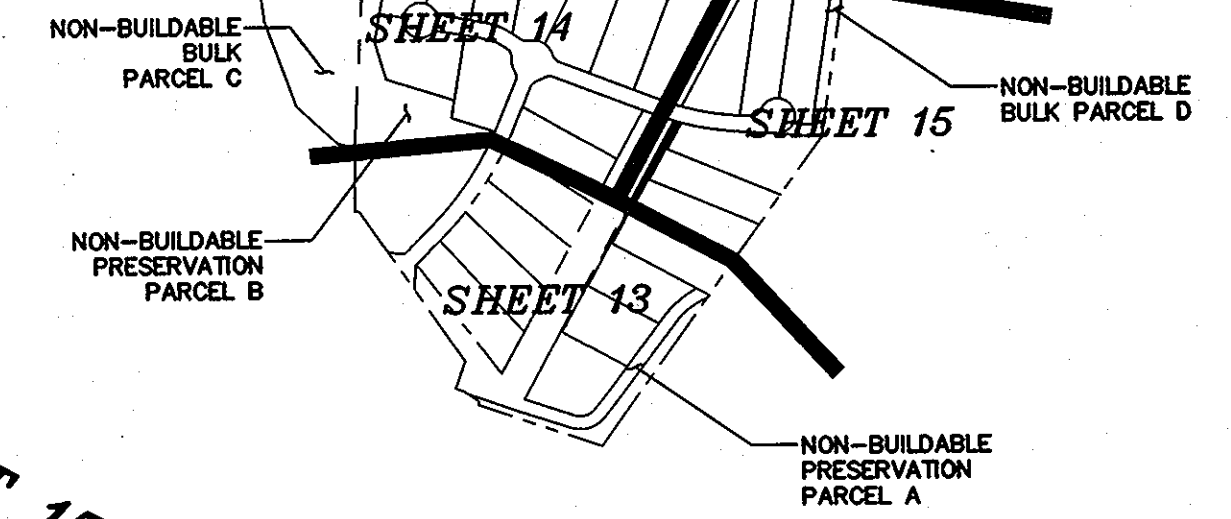
MATCHLINE SHEET 14

MATCHLINE SHEET 14

MATCHLINE SHEET 15

SPECIMEN TREES ARE PRESENT WITHIN THE LAWN AND FARMYARD AREA OF THE MAIN HOME WITHIN PRESERVATION PARCEL 'E'. THESE TREES WERE NOT SPECIFICALLY LOCATED BECAUSE THE PROPOSED DEVELOPMENT WILL NOT IMPACT THEM. NO SPECIMEN TREES WERE OBSERVED WITHIN OR ADJACENT TO THE AREA OF THE PROPOSED CLUSTER DEVELOPMENT.

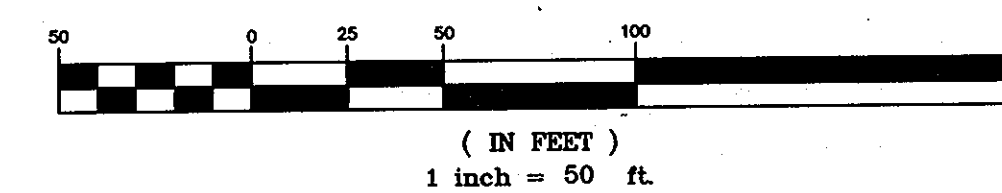
LANDSCAPE AND FOREST CONSERVATION PLAN KEY MAP
SCALE: 1" = 600'



LEGEND

- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED PERIMETER AND STREET TREES (SEE SHEET 16 FOR NUMBER AND SPECIES)
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- FOREST CONSERVATION SIGNAGE

GRAPHIC SCALE



Washed King 10/14/13
DNR QUALIFIED PROFESSIONAL

date	AUG 2013	approval	RH
project	12-022	illustration	JLS
scale	1" = 60'		

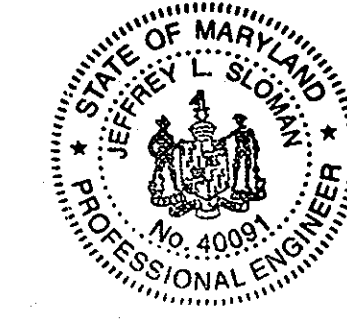
no.		description	revisions

GREENBERRY
 LOTS 1, 2, 24, 25, NON-BUILDABLE PRES. PARCELS V AND W, AND BUILDABLE PRES. PARCEL Y
 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Ellicott City, Maryland 21075
 (410) 997-0286 Bldg. (410) 997-0288 Fax.

H: 12-022.DWG SKETCH PRELIMINARY 022-SP-AUG 2013.DWG

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0286



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Jeffrey L. Sloman
 JEFFREY L. SLOMAN, P.E.
 10/14/13
 DATE

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
Paul A. Lynch
 PLANNING DIRECTOR
 DATE

HA 12-022 (DWG) SKETCH, PRELIMINARY 022-SP-AUG 2013.DWG



LEGEND

- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED PERIMETER AND STREET TREES (SEE SHEET 16 FOR NUMBER AND SPECIES)
- FOREST CONSERVATION EASEMENT (RETENTION)
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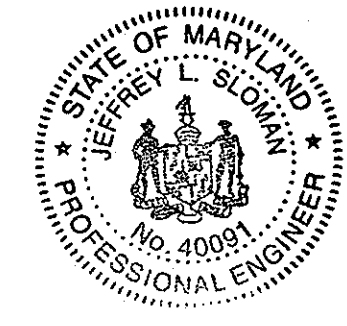
Project	date	approval
12-022	AUG 2013	RJH
Illustration	engineering	
JIS	JIS	
scale	1" = 60'	

no.	description	date
	revisions	

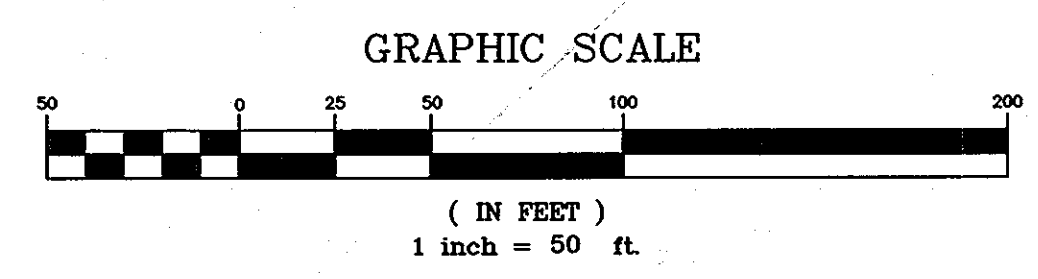
GREENBERRY
 LOTS 1 THRU 23, NON-BUILDABLE PRES. PARCELS 'A' AND 'D', AND BUILDABLE PRES. PARCEL 'E'
 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN

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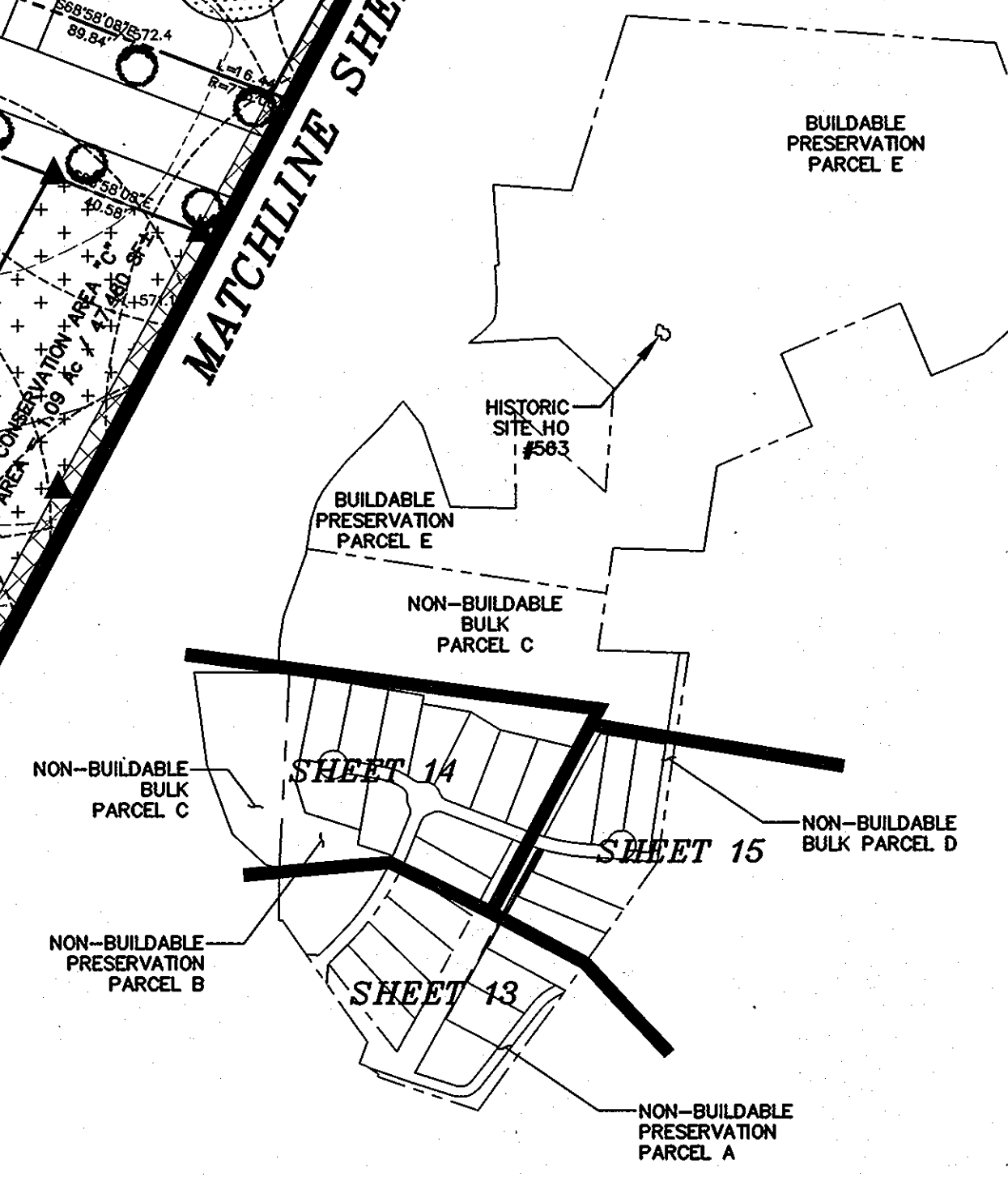


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 JEFFREY L. SLOMAN, P.E. 12/13/13 DATE



DNR QUALIFIED PROFESSIONAL

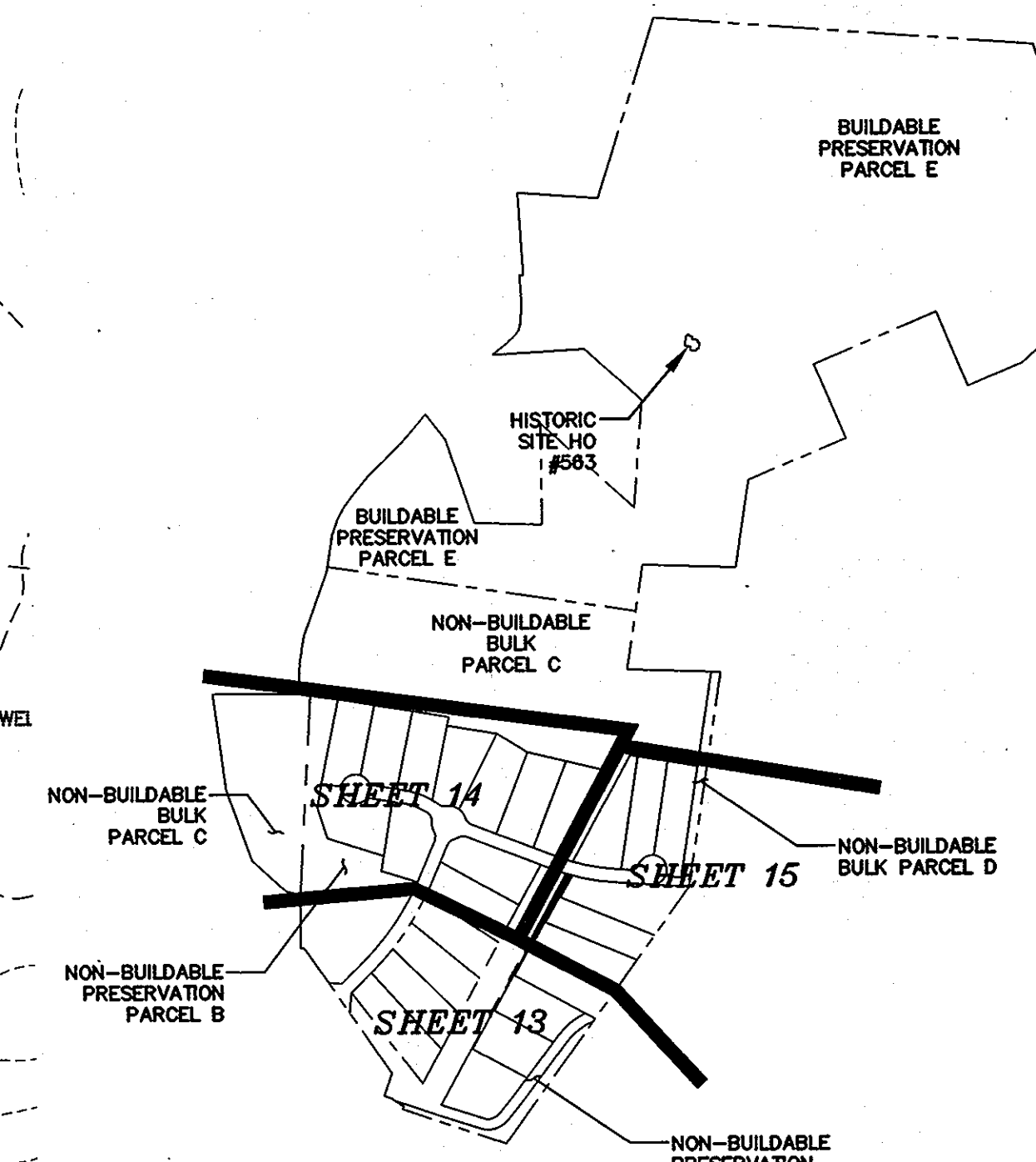
LANDSCAPE AND FOREST CONSERVATION PLAN KEY MAP
 SCALE: 1" = 600'





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- LEGEND**
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 - PROPOSED TREE LINE
 - PROPOSED PERIMETER AND STREET TREES (SEE SHEET 16 FOR NUMBER AND SPECIES)
 - FOREST CONSERVATION EASEMENT (RETENTION)
 - FOREST CONSERVATION EASEMENT (AFForestation)
 - FOREST CONSERVATION SIGNAGE



date	AUG 2013	engineering	JLS	approval	RH
project	12-022	illustration	JLS	scale	1"=50'

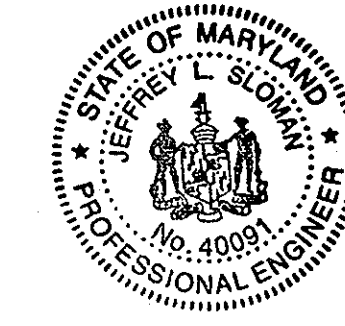
no.		description	revisions

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 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
PRELIMINARY LANDSCAPE AND FOREST CONSERVATION PLAN

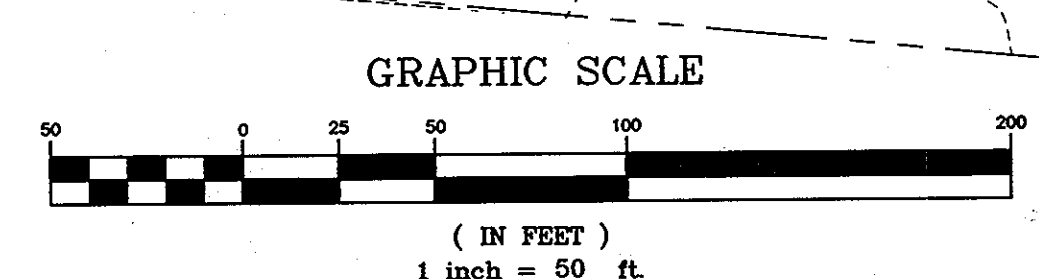
MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Balt. (410) 997-0296 Ftz.

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
David A. Leavelle
 PLANNING DIRECTOR
 DATE: 10/14/13



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Jeffrey L. Soman
 JEFFREY SLOMAN, P.E.
 DATE: 10/14/13



H: 12-022.DWG (SKETCH) PRELIMINARY 022-SP-AUG 2013.DWG

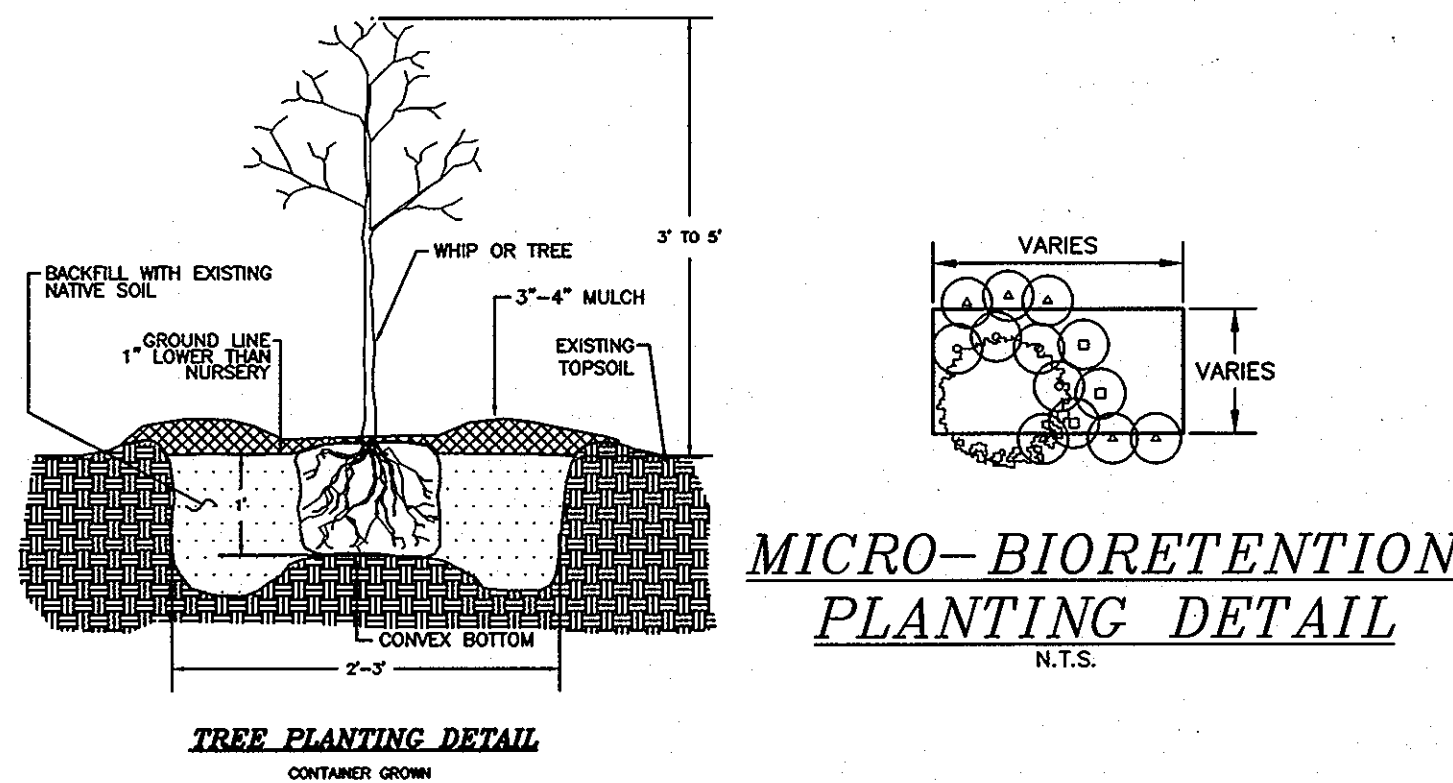
STREET TREE CALCULATIONS

STREET NAME	PERIMETER LENGTH	PLANTING REQUIREMENT	TREES REQUIRED	TREES PROVIDED
BEE FRANCES WAY	1,428 L.F.	1 TREE / 40 L.F.	36	36
CATHERINE CLOSE ROAD	816 L.F.	1 TREE / 40 L.F.	21	21
NORTHERN BELL	1,635 L.F.	1 TREE / 40 L.F.	41	41
LINDEN CHURCH ROAD WIDENING	939 L.F.	1 TREE / 40 L.F.	24	24
TOTAL			122	122

STREET TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
105	○	PYRUS CALLERYANA 'REDSPIRE' OR APPROVED EQUIVALENT	REDSPIRE PEAR	2 1/2" - 3" CAL.
2	⊙	ACER GRiseum OR APPROVED EQUIVALENT PER BOE "GREEN ZONE"	PAPERBARK MAPLE	2 1/2" - 3" CAL.

TOTAL
107 STREET TREES



MICRO-BIORETENTION PLANTING DETAIL

PLANT LIST

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
1	○	ILEX GLABRA	INK BERRY	2" - 3" HT.
6	⊙	LOBELIA SPHULTICA	GREAT BLUE LOBELIA	1 GAL. CONTAINER
4	⊙	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL. CONTAINER
3	⊙	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER

TOTAL: 13 PERENNIALS, 1 SHRUB

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES											TOTAL	
	A (PERIMETER 1)	A (PERIMETER 12)	A (PERIMETER 13)	B (PERIMETER 2)	B (PERIMETER 3)	B (PERIMETER 4)	B (PERIMETER 5)	B (PERIMETER 6)	B (PERIMETER 7)	B (PERIMETER 8)	B (PERIMETER 9)		
LANDSCAPE TYPE	322.79 LF	610.32 LF	818.34 LF	364.06 LF	284.36 LF	174.18 LF	54.41 LF	203.32 LF	574.45 LF	90.88 LF	83.23 LF	408.25 LF	577.68 LF
LINEAR FEET OF PERIMETER	YES, 323 LF	YES, 272 LF	NO	YES, 364.06 LF	YES, 284.36 LF	YES, 174.18 LF	YES, 54.41 LF	NO	NO	NO	NO	NO	NO
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	14 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREES 6 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 15 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 15 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	14 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREES 6 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 15 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	2 SHADE TREES 3 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 15 EVERGREEN TREES 0 SHRUBS

PERIMETER TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
20	○	FAGUS GRANDIFOLIA OR APPROVED EQUIVALENT	AMERICAN BEECH	2 1/2" - 3" CAL.
42	⊙	ACER GRiseum OR APPROVED EQUIVALENT PER BOE "GREEN ZONE"	PAPERBARK MAPLE	2 1/2" - 3" CAL.
53	⊙	ILEX OPACA	AMERICAN HOLLY	5' - 6' HT.

FOREST CONSERVATION DATA

FOREST CONSERVATION WORKSHEET

NET TRACT AREA: 133.64

A. Total tract area = 133.64

B. Area to remain in agricultural production (Pres. Parcels A, B and E) = 80.88

C. Area of Future Development (Non-Buildable Bulk Parcels C and D) = 22.95

D. Net tract area (Area of Lots 1-25, Road right-of-way and right-of-way dedication) = 30.01

LAND USE CATEGORY: 0 1 0 0 0 0

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

APR. MDR (DA-HOR-MPO-CA) 0 1 0 0 0 0

E. Afforestation Threshold: 20% x D = 6.00

F. Conservation Threshold: 25% x D = 7.50

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain) = 0.24

H. Area of forest above afforestation threshold = 0.00

I. Area of forest above conservation threshold = 0.00

J. Forest retention above threshold with no mitigation = 0.00

K. Clearing permitted without mitigation = 0.00

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared = 0.24

M. Total area of forest to be retained = 0.00

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold = 0.00

O. Reforestation for clearing above afforestation threshold = 0.48

P. Credit for retention above conservation threshold = 0.00

R. Total reforestation required = 0.48

S. Total afforestation required = 0.76

T. Total reforestation and afforestation required = 0.24

Total reforestation and afforestation provided = 0.24

LANDSCAPE NOTES

- NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
- THE OWNER, TENANT AND / OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH CREDIT IS GIVEN, BE REMOVED OR DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL.

PLANTING SPECIFICATIONS AND NOTES

- SITE PREPARATION AND SOILS**
- PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
 - DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
 - SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
 - SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
 - ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

- AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
- NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

- FOREST RETENTION BOUNDARY AND AROUND ISOLATED POTENTIAL SPECIMEN TREES PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.**
- SUPER SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLAN. BLAZE ORANGE PLASTIC MESH FENCING SHALL BE INSTALLED ALONG THE REFORESTATION BOUNDARY WHERE THERE IS NO SUPER SILT FENCE PROVIDED. AFTER THE PLANTING OF THE EASEMENT.
 - THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES. IT IS UNDERSTOOD THAT THE INSTALLATION OF THE FENCING IN THIS MANNER WILL CREATE AN IRREGULAR EDGE.
 - ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
 - ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THE PROTECTED AREAS.
 - INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
 - THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
 - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL FORESTED AREAS. PLEASE REFER TO ROOT PRUNING DETAIL SHEET.

- PRE-CONSTRUCTION MEETING**
- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
 - TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
 - INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
 - MAKE ALL NECESSARY ADJUSTMENTS;
 - ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

- CONSTRUCTION MONITORING**
- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
 - LIMITS OF WORK
- THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

- PLANT STORAGE AND INSPECTION**
- FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
 - FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
 - PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
 - UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

- POST CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**
- ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
 - ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
 - VOLUNTEER SEEDING OF NATIVE LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
 - REMOVE THROUGHOUT MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
 - REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
 - REMOVE AND DISPOSE OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

- SUPERVISION**
- ALL FOREST CONSERVATION ACTIVITIES SHALL BE DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

- STANDARD SPECIMEN TREE NON-DISTURBANCE NOTE:**
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY HOWARD COUNTY.
- CONSTRUCTION PERIOD PROTECTION AND MANAGEMENT PROGRAM**
- ALL FOREST RETENTION AREAS AND ISOLATED POTENTIAL SPECIMEN TREES SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED, BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE

- PLANT INSTALLATION**
- THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCK SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREE.
 - PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
 - CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2" INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
 - CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
 - FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
 - FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING. NOT DAMAGE AREAS WITHIN MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.

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- FOREST CONSERVATION WORKSHEET**
- NET TRACT AREA: 133.64
- A. Total tract area = 133.64
- B. Area to remain in agricultural production (Pres. Parcels A, B and E) = 80.88
- C. Area of Future Development (Non-Buildable Bulk Parcels C and D) = 22.95
- D. Net tract area (Area of Lots 1-25, Road right-of-way and right-of-way dedication) = 30.01
- LAND USE CATEGORY: 0 1 0 0 0 0
- Input the number "1" under the appropriate land use zoning, and limit to only one entry.
- APR. MDR (DA-HOR-MPO-CA) 0 1 0 0 0 0
- E. Afforestation Threshold: 20% x D = 6.00
- F. Conservation Threshold: 25% x D = 7.50
- EXISTING FOREST COVER:
- G. Existing forest cover (excluding floodplain) = 0.24
- H. Area of forest above afforestation threshold = 0.00
- I. Area of forest above conservation threshold = 0.00
- J. Forest retention above threshold with no mitigation = 0.00
- K. Clearing permitted without mitigation = 0.00
- PROPOSED FOREST CLEARING:
- L. Total area of forest to be cleared = 0.24
- M. Total area of forest to be retained = 0.00
- PLANTING REQUIREMENTS:
- N. Reforestation for clearing above conservation threshold = 0.00
- O. Reforestation for clearing above afforestation threshold = 0.48
- P. Credit for retention above conservation threshold = 0.00
- R. Total reforestation required = 0.48
- S. Total afforestation required = 0.76
- T. Total reforestation and afforestation required = 0.24
- Total reforestation and afforestation provided = 0.24

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OWNER

ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKCRIDGE, MARYLAND 21075
(410)997-0296

APPROVED

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

[Signature]
PLANNING DIRECTOR

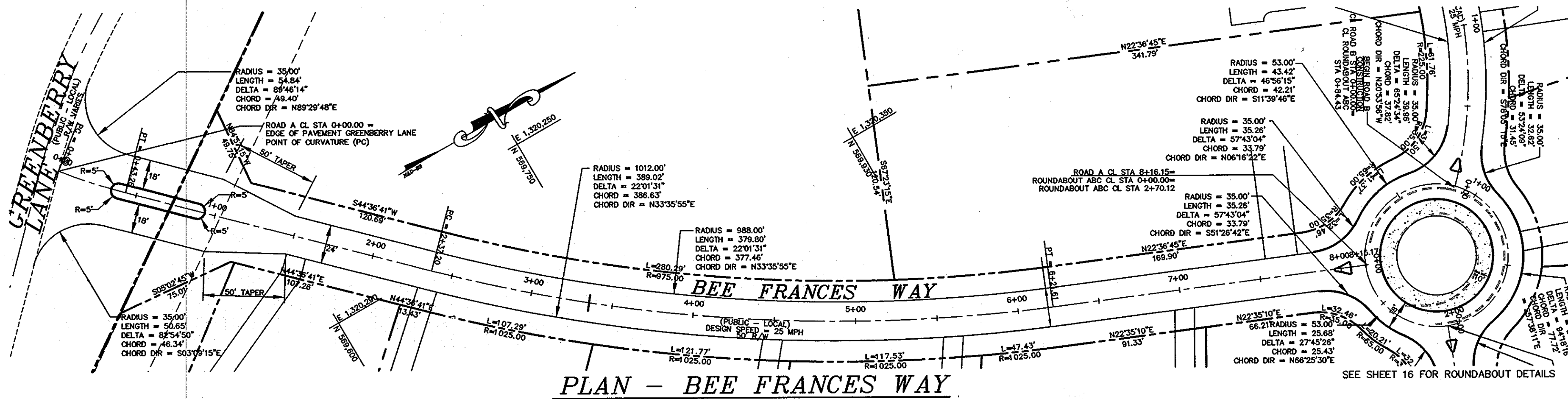
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DATE

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. 40091, EXP DATE 2/13/15.

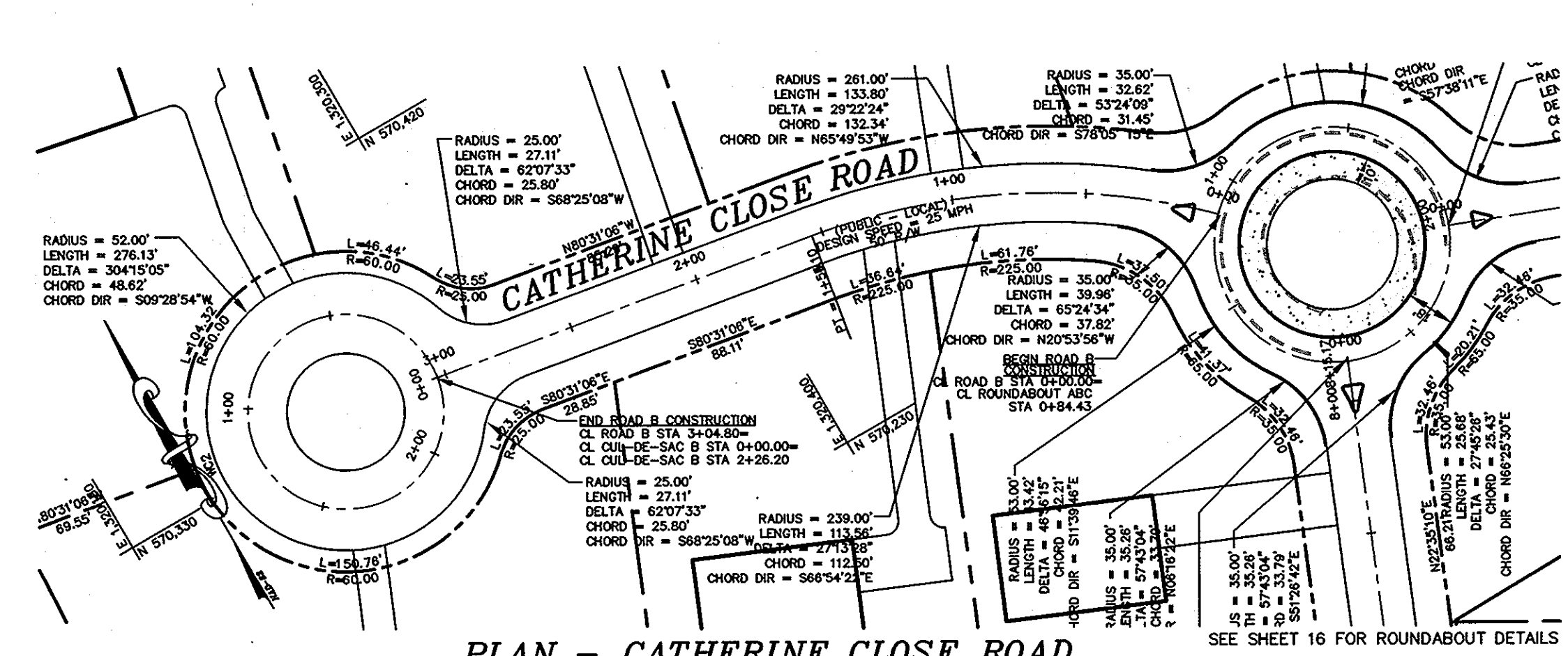
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JEFFREY SLOMAN, P.E.
DATE 10/14/13

- AFFORESTATION PLANT LIST (FCE B - 2.32 Ac)**
- | QTY. | SPECIES | SHADE | MOIST. | WET. | MIN.O.C. | SIZE & SPACING | REMARKS |
|------|-------------------------|-------|--------|-------|----------|----------------|------------|
| 86 | Acer rubrum | VT | D-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 50 | Red Maple | VT | D-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 40 | Lindera benzoin | T | M | FACW- | 15' | 3'-5' HEIGHT | |
| 65 | Liquidambar styraciflua | I | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 100 | American Sweet Gum | I | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 100 | Liriodendron tulipifera | MT | D-M | FAC | 15' | CONT/B & B | 1" CALIPER |
| 100 | Tuliptree | MT | D-M | FAC | 15' | CONT/B & B | 1" CALIPER |
| 100 | Nyssa sylvatica | T | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 60 | Black Gum | T | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 63 | Quercus alba | MT | D-M | FACU | 15' | CONT/B & B | 1" CALIPER |
| 44 | White Oak | MT | D-M | FACU | 15' | CONT/B & B | 1" CALIPER |
- TOTAL 464 - 1" CALIPER TREES
- NOTE: WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3" - 5". IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 1.75 TO DETERMINE THE NUMBER OF TREES REQUIRED.

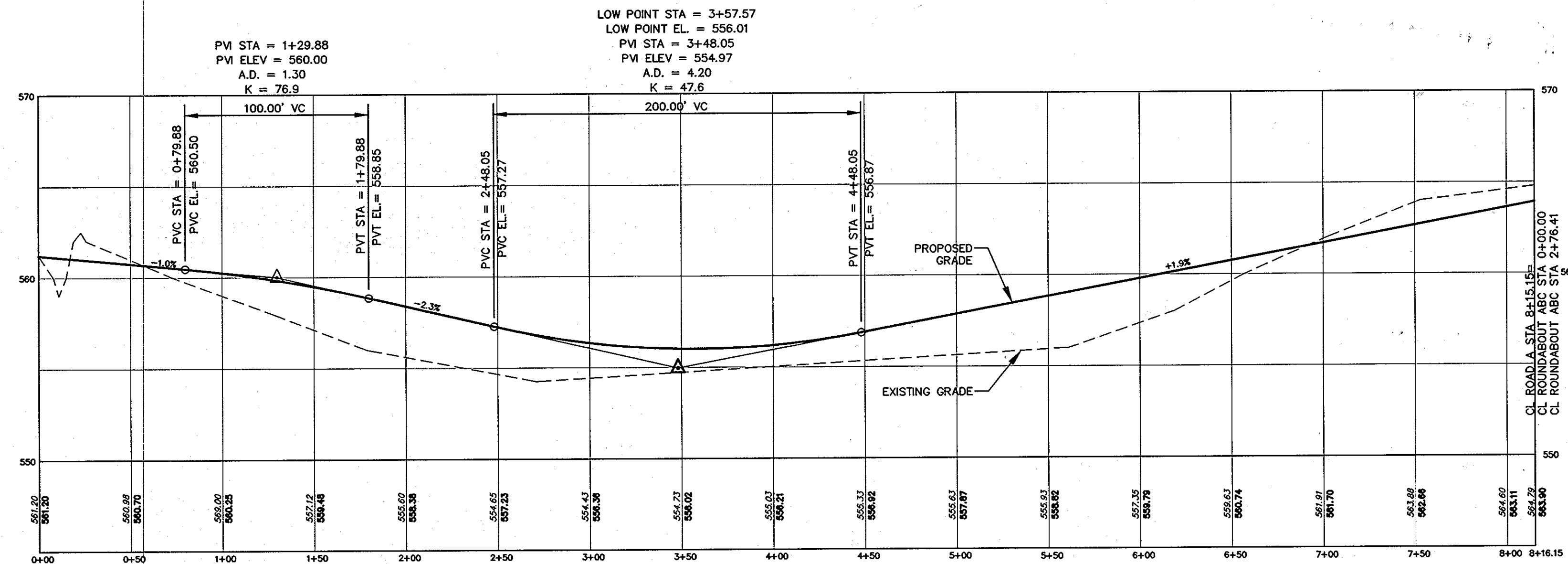
- AFFORESTATION PLANT LIST (FCE E - 1.59 Ac)**
- | QTY. | SPECIES | SHADE | MOIST. | WET. | MIN.O.C. | SIZE & SPACING | REMARKS |
|------|-------------------------|-------|--------|-------|----------|----------------|------------|
| 50 | Acer rubrum | VT | D-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 40 | Red Maple | VT | D-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 40 | Lindera benzoin | T | M | FACW- | 15' | 3'-5' HEIGHT | |
| 65 | Liquidambar styraciflua | I | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
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| 100 | Liriodendron tulipifera | MT | D-M | FAC | 15' | CONT/B & B | 1" CALIPER |
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| 100 | Nyssa sylvatica | T | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 60 | Black Gum | T | M-W | FAC | 15' | CONT/B & B | 1" CALIPER |
| 63 | Quercus | | | | | | |



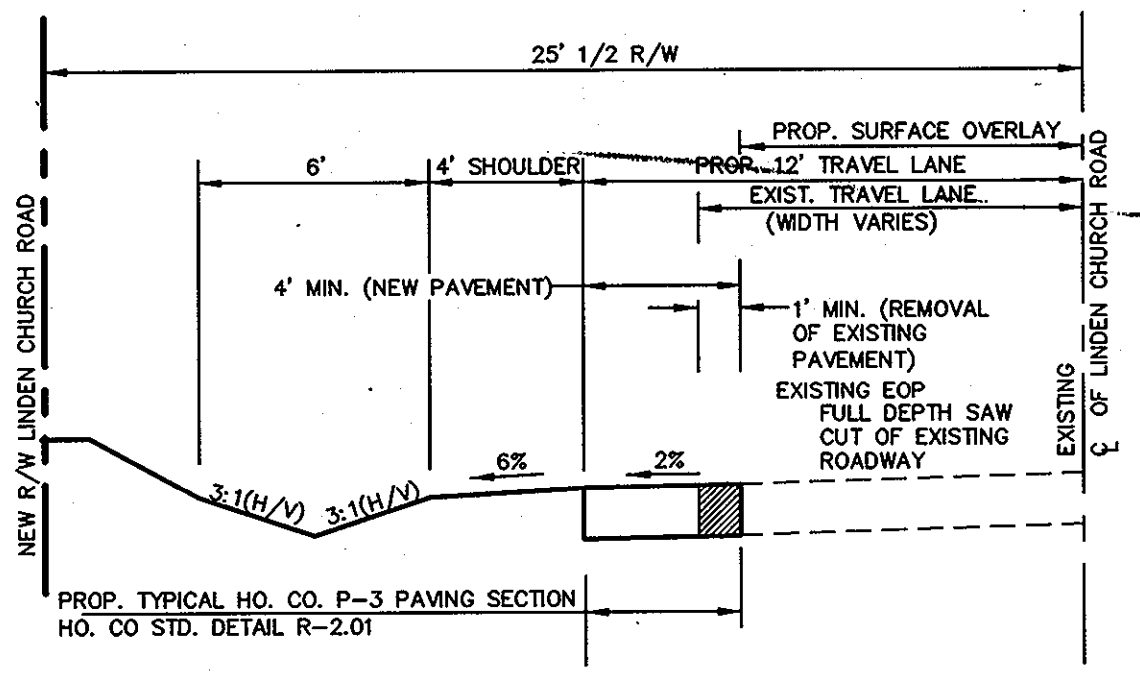
PLAN - BEE FRANCES WAY
SCALE: 1" = 50'



PLAN - CATHERINE CLOSE ROAD
SCALE: 1" = 50'



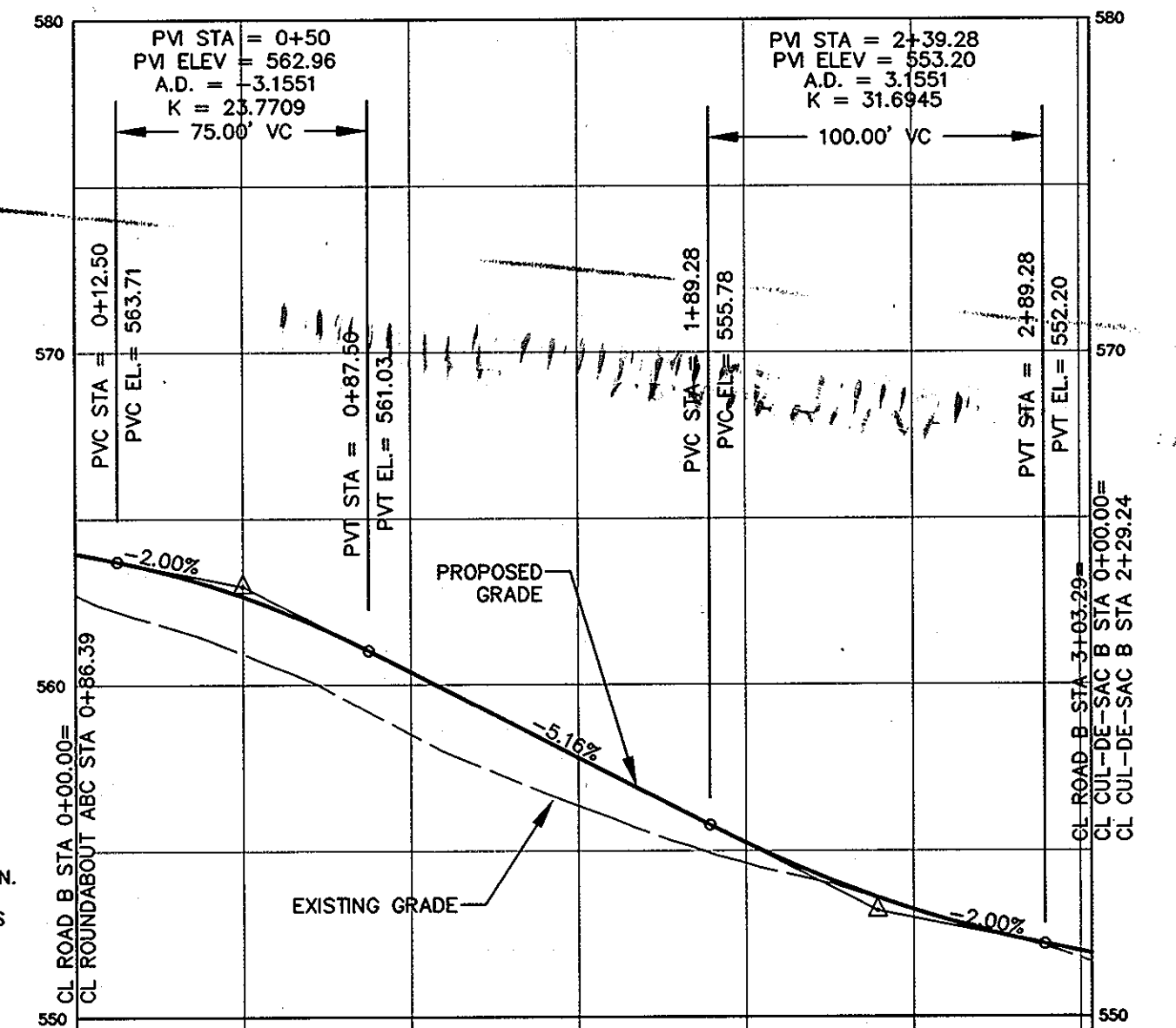
PROFILE - CENTERLINE BEE FRANCES WAY
SCALE: 1" = 50' HOR
1" = 5' VER



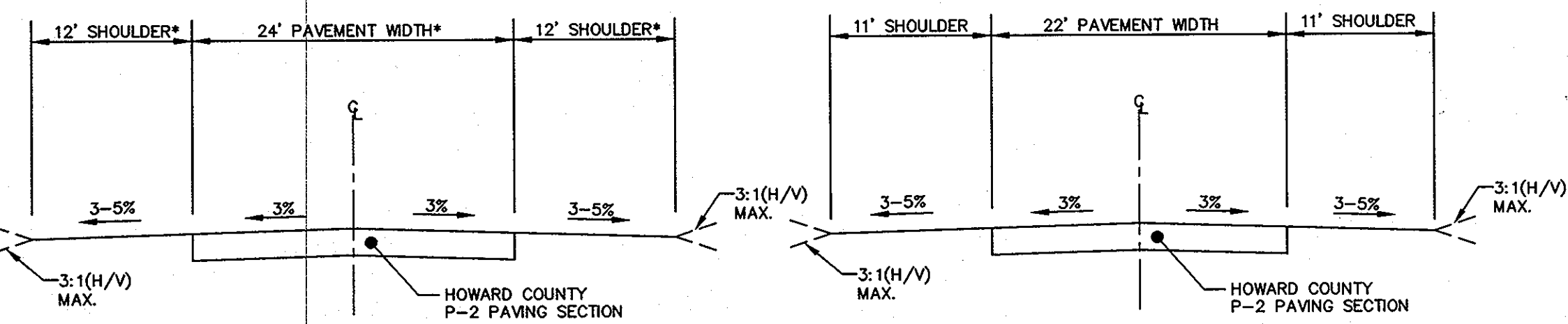
LINDEN CHURCH ROAD IMPROVEMENTS DETAIL
NOT TO SCALE

1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE A MINIMUM OF 1" FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4" OF WIDENING FROM FACE OF GUTTER PAN.
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT A DEPTH OF 1.5" (MINIMUM).
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.
5. REFER TO HO. CO. DESIGN MANUAL VOLUME IV, STANDARD DETAIL R-1.08 FOR ADDITIONAL DETAILS.

COMBINATION CURB AND GUTTER SHALL BE USED ON DOWNGRADE CUL-DE-SACS.

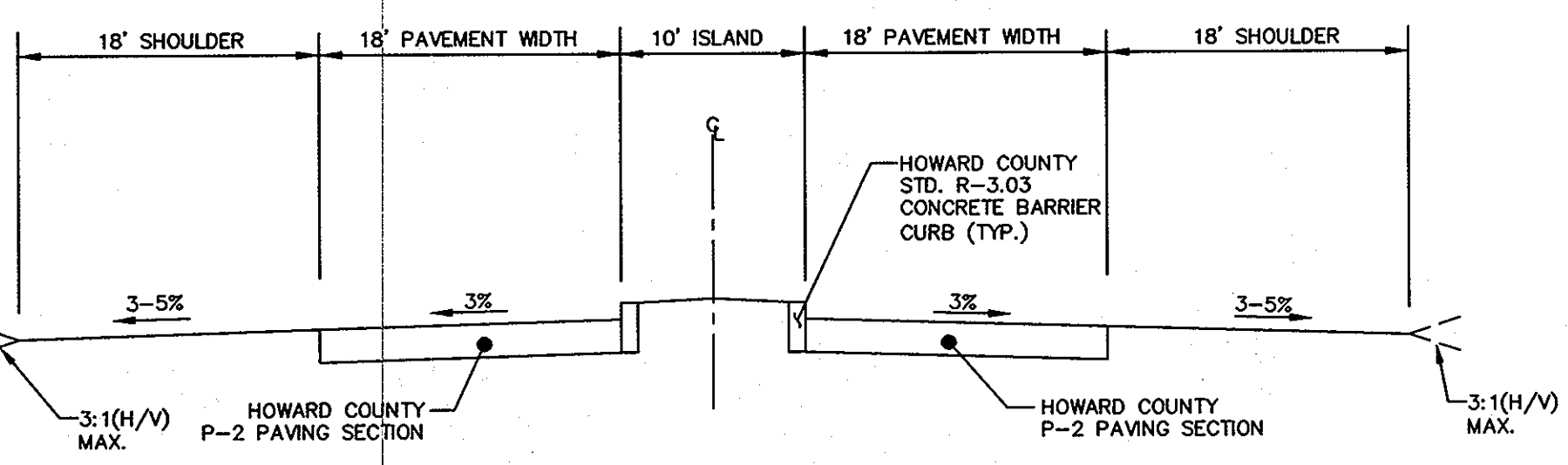


PROFILE - CATHERINE CLOSE ROAD
SCALE: 1" = 50' HOR
1" = 5' VER

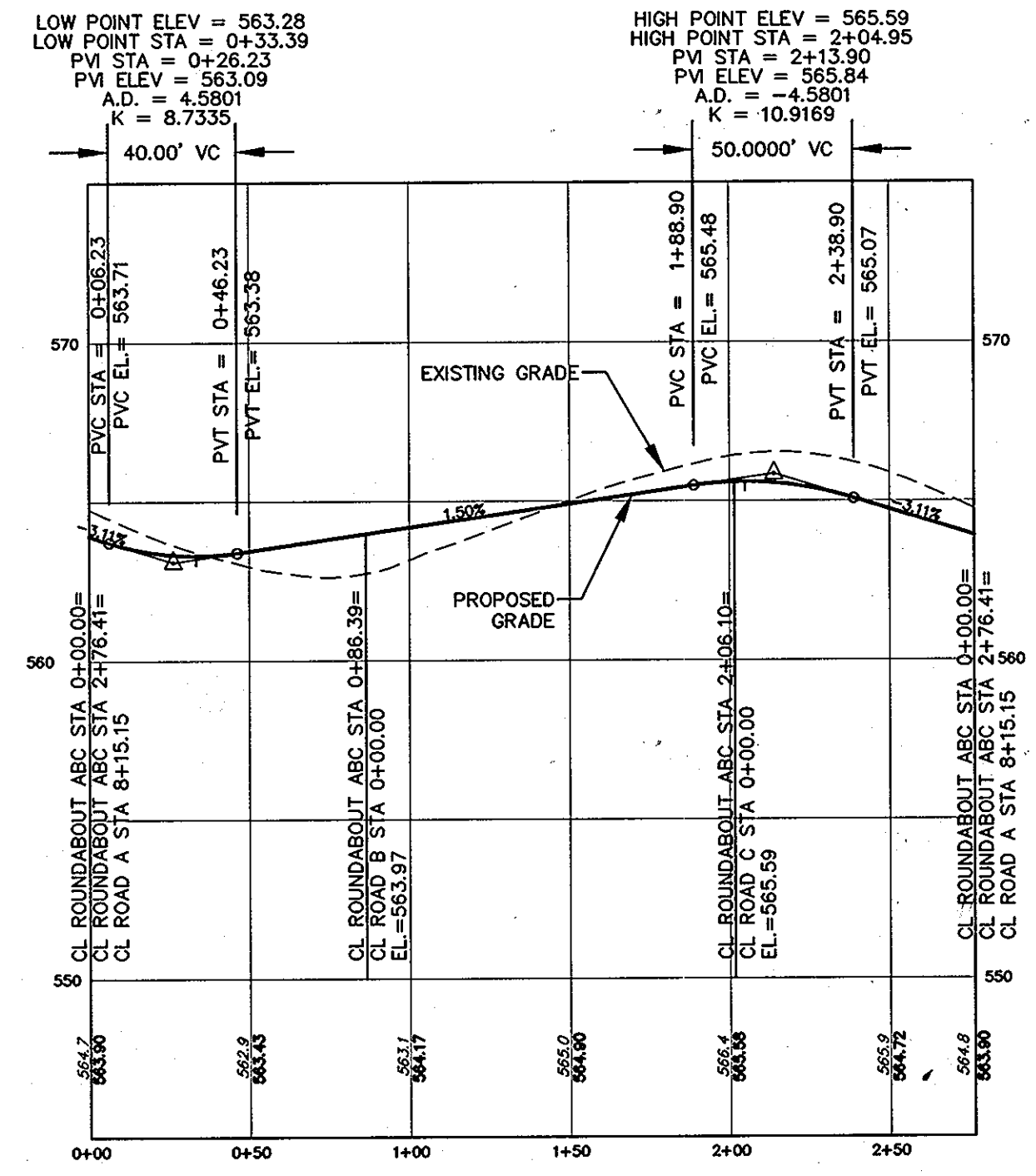


TYPICAL SECTION - BEE FRANCES WAY
STA 0+93.85 TO STA 8+16.15
NOT TO SCALE

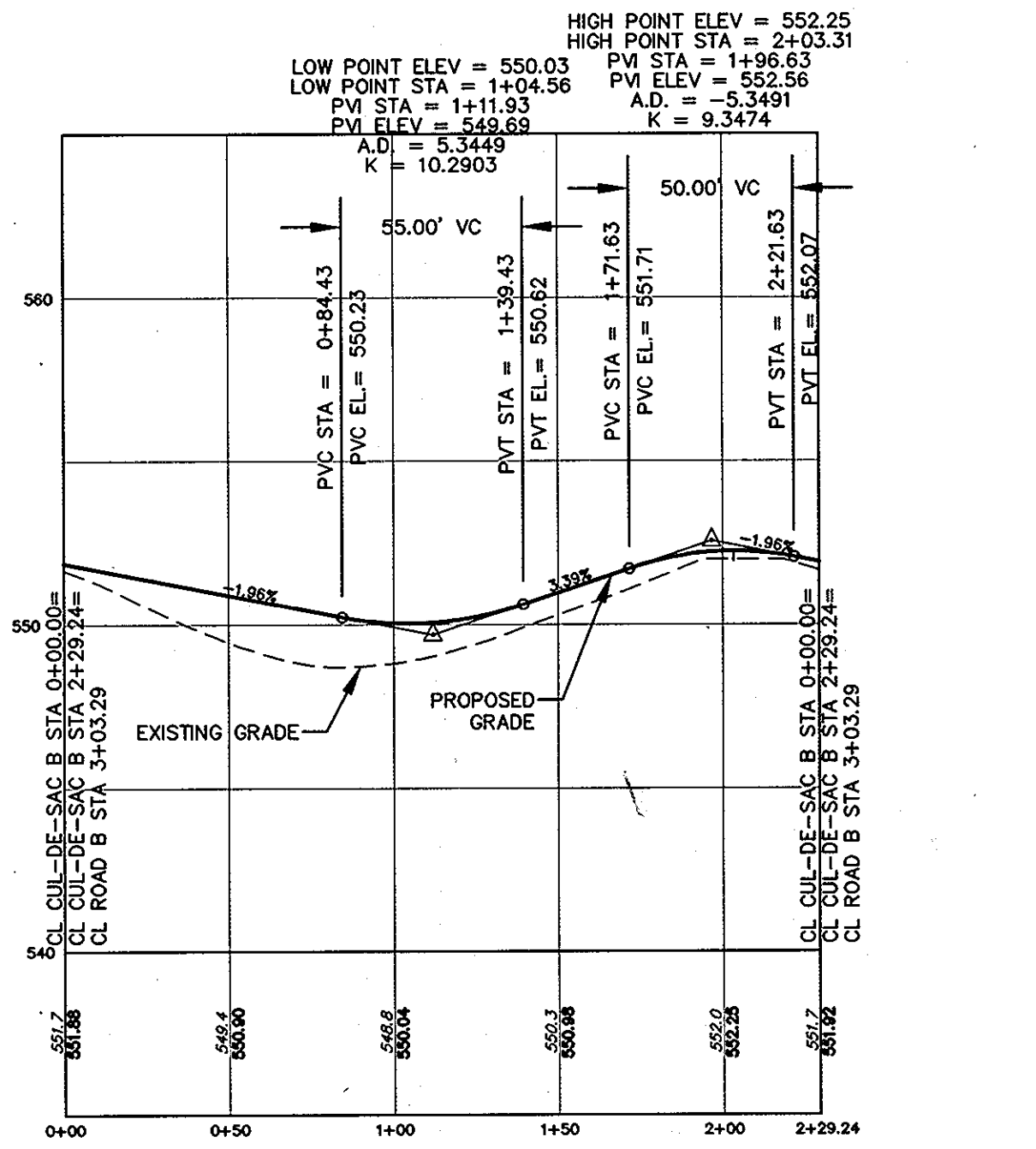
TYPICAL SECTION - CATHERINE CLOSE ROAD
STA 0+00.00 TO STA 3+04.80
NOT TO SCALE



TYPICAL SECTION - BEE FRANCES WAY
STA 0+00.00 TO STA 0+93.85
NOT TO SCALE

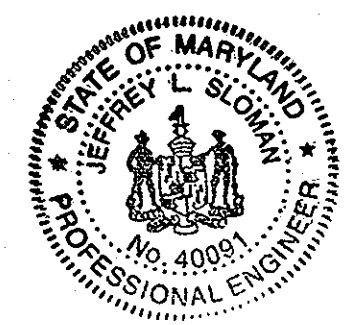


PROFILE - CENTERLINE ROUNDABOUT BEE FRANCES WAY
SCALE: 1" = 50' HOR
1" = 5' VER



PROFILE - CENTERLINE CUL-DE-SAC CATHERINE CLOSE ROAD
SCALE: 1" = 50' HOR
1" = 5' VER

OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

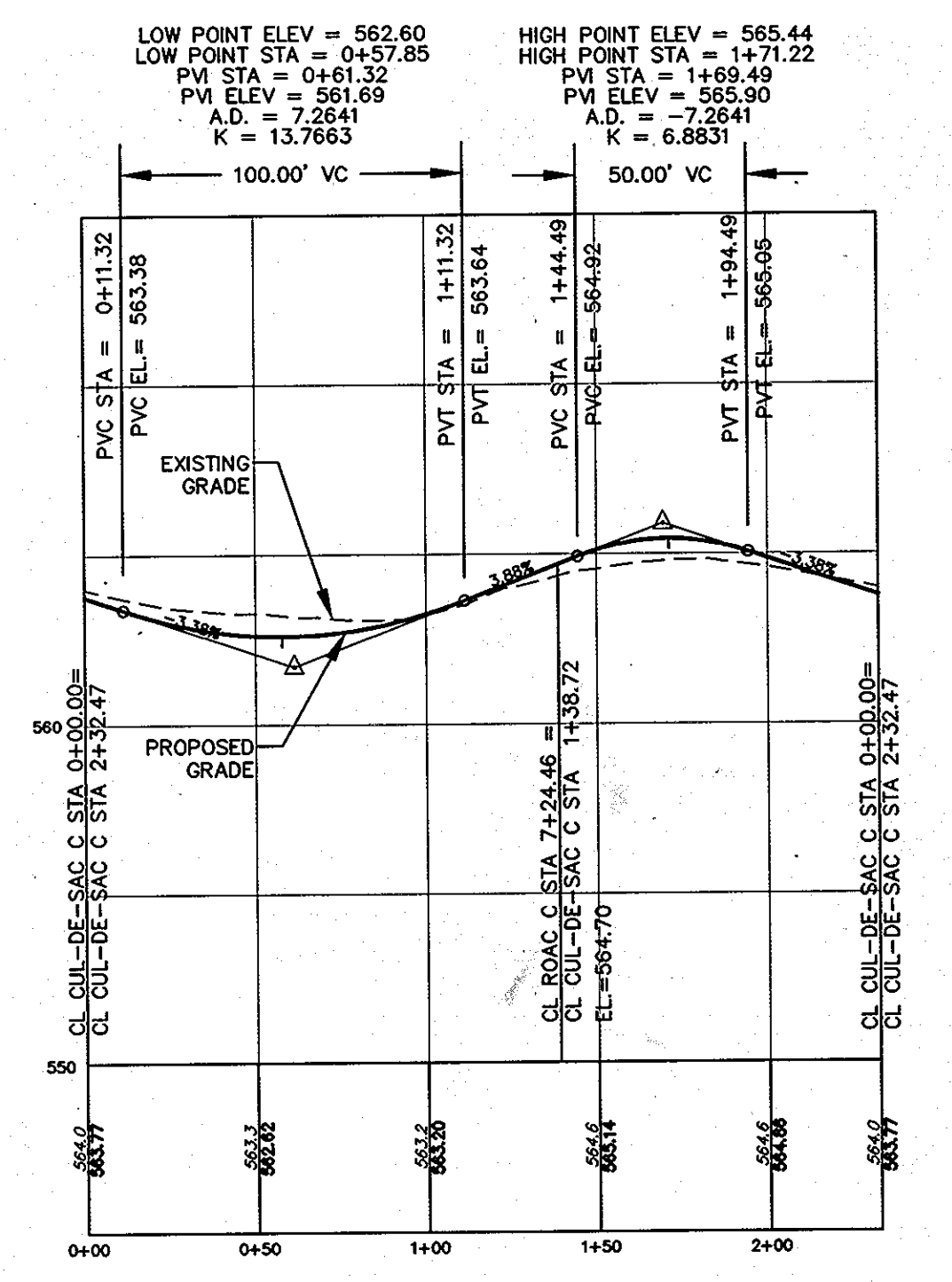


I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40091, EXP DATE 2/13/15.
Jeffrey S. Sloman
JEFFREY SLOMAN, P.E. 10/14/13
DATE

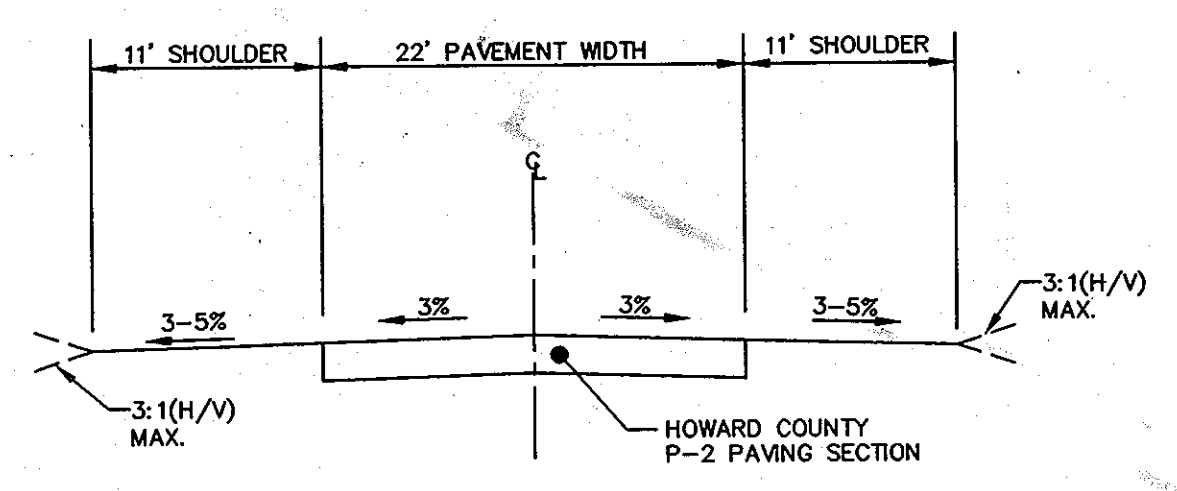
APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Paula M. Lyle
PLANNING DIRECTOR 12/14
DATE

GREENBERRY
LOTS 1 THRU 25, NON-BUILDABLE PLOTS PARCELS A AND B, NON-BUILDABLE BULK PARCELS C AND D, AND BUILDABLE PLOTS PARCELS Y
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
HOWARD COUNTY, MARYLAND
FIFTH ELECTION DISTRICT

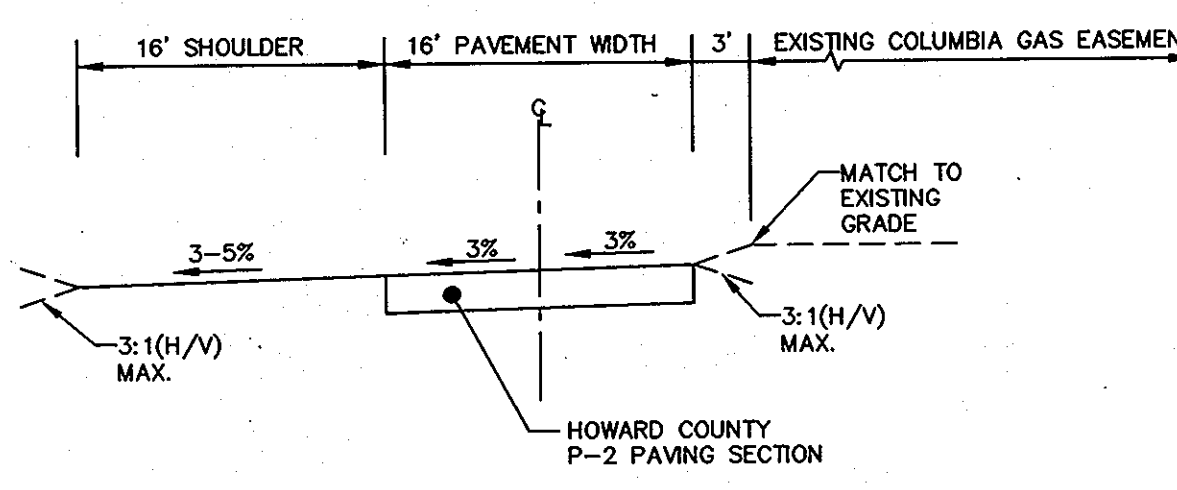
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Fax (410) 997-0298 Fax



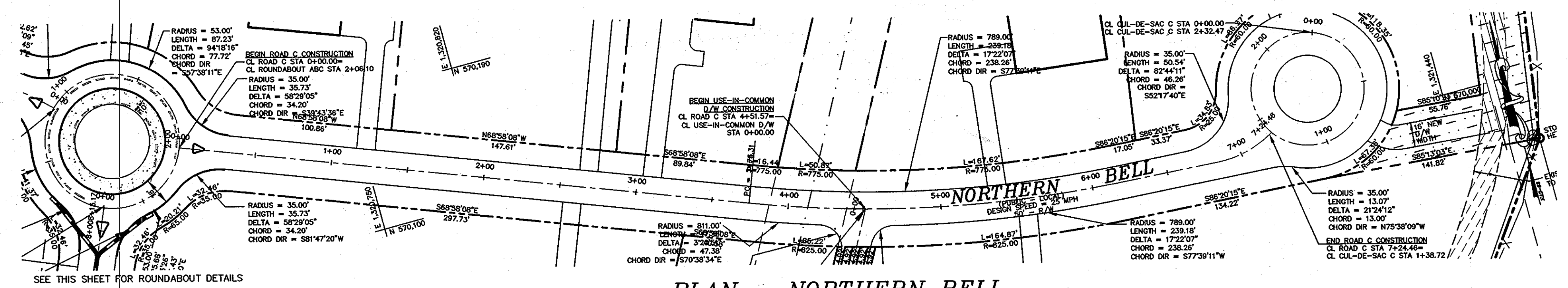
PROFILE - CENTERLINE CUL-DE-SAC NORTHERN BELL
 SCALE: 1" = 50' HOR
 1" = 5' VER



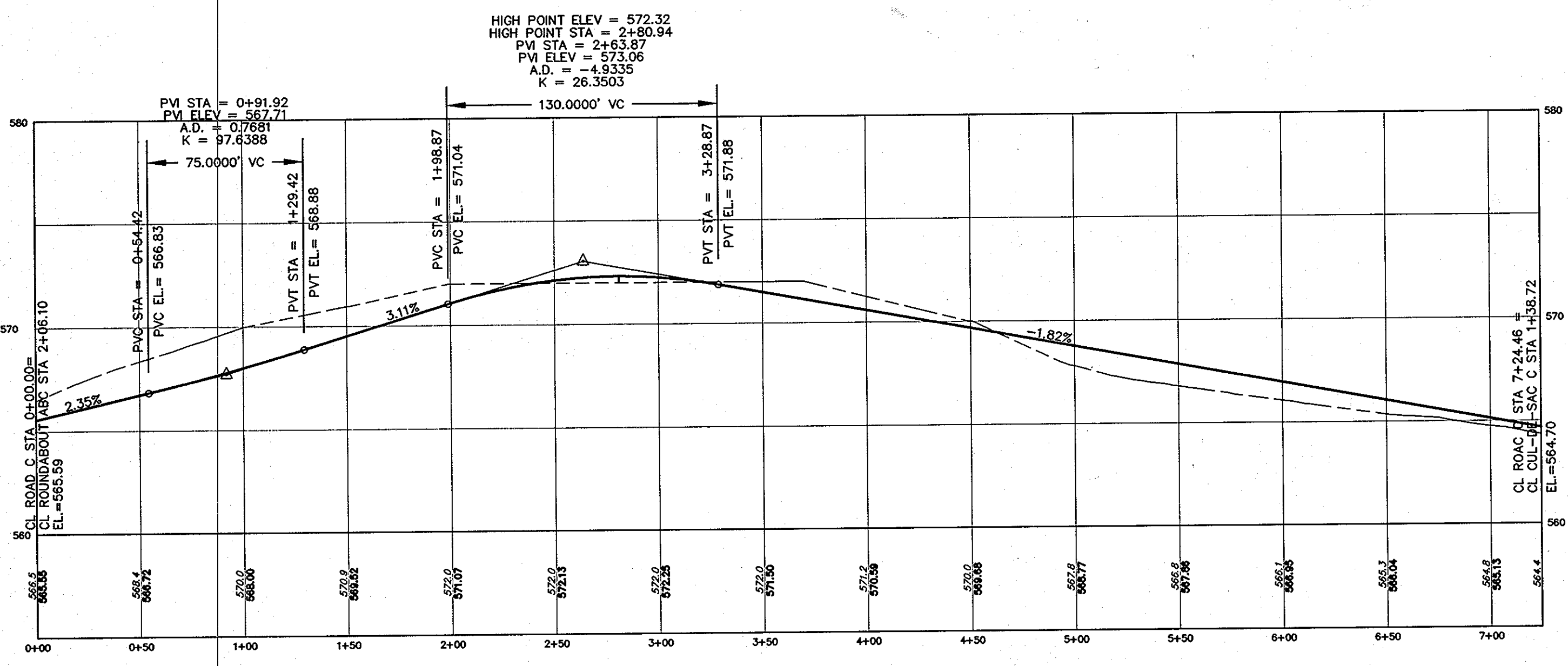
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 NOT TO SCALE



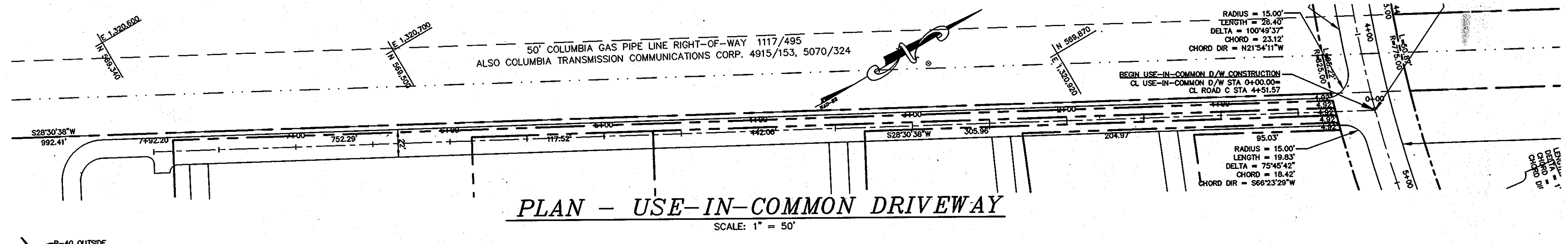
TYPICAL SECTION - USE-IN-COMMON DRIVEWAY
 STA 0+00.00 TO STA 7+23.56
 NOT TO SCALE



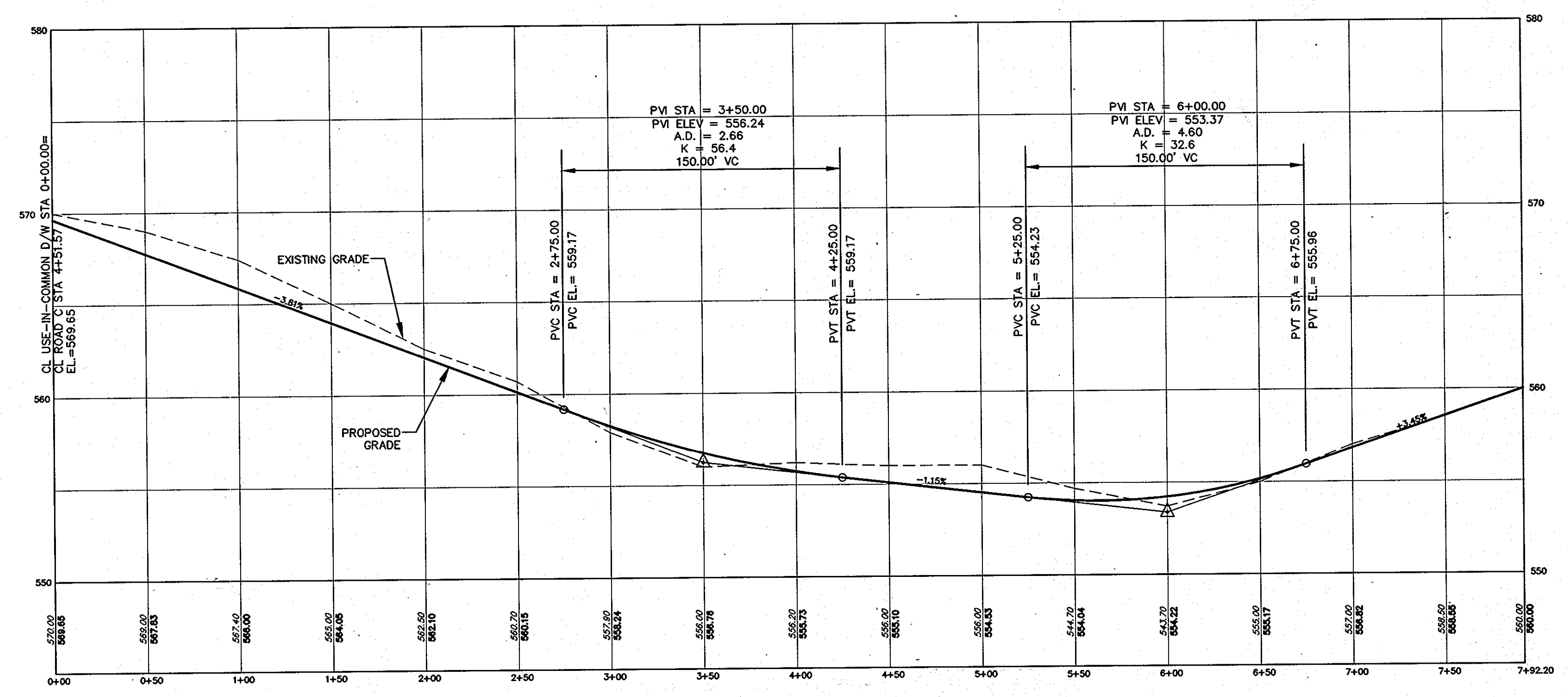
PLAN - NORTHERN BELL
 SCALE: 1" = 50'



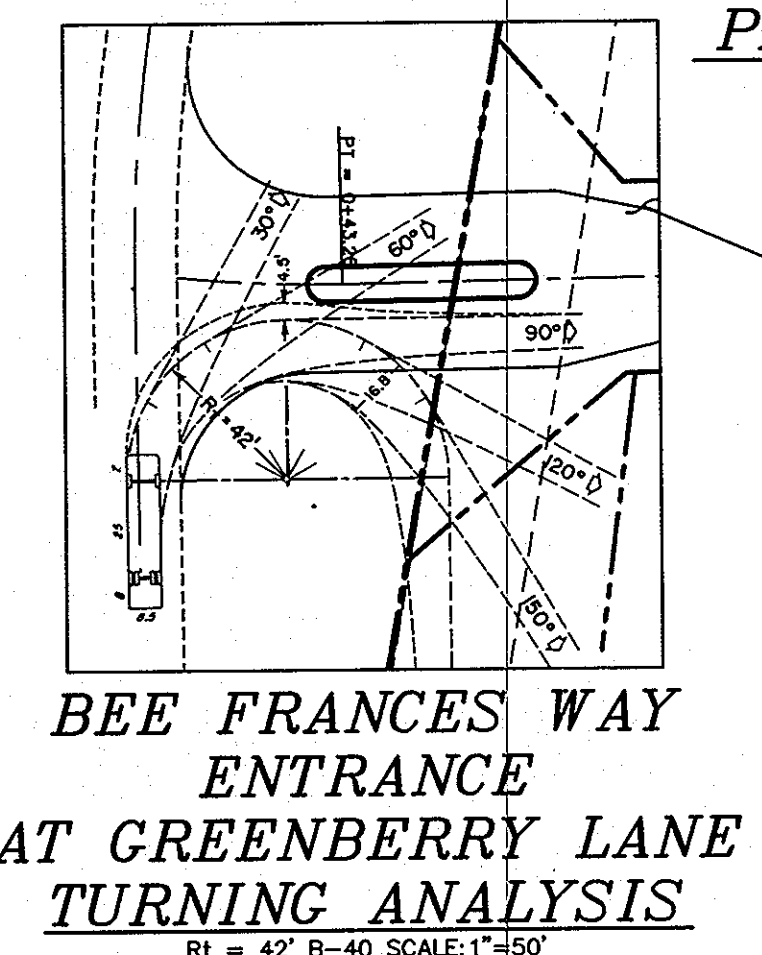
PROFILE - CENTERLINE NORTHERN BELL
 SCALE: 1" = 50' HOR
 1" = 5' VER



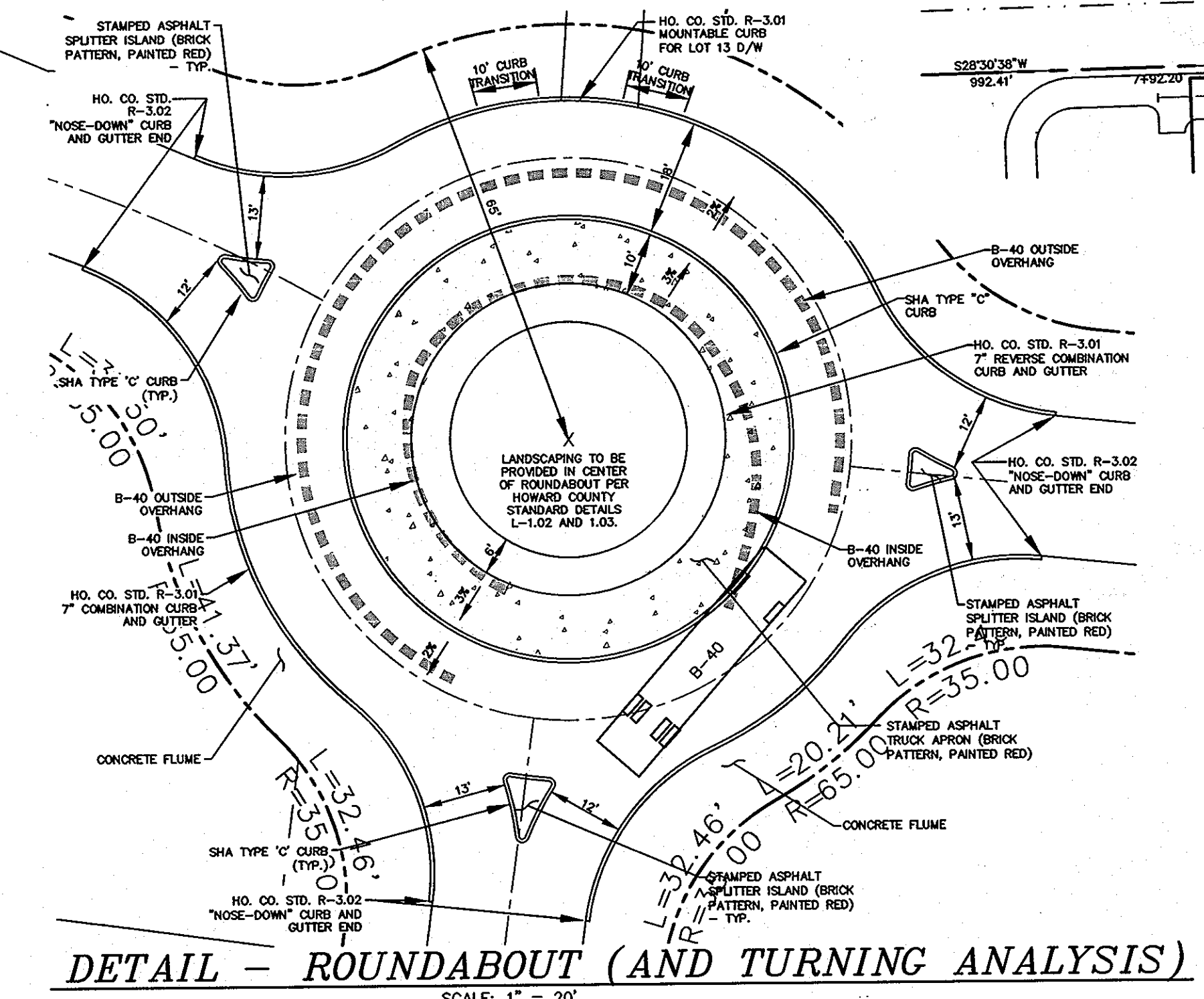
PLAN - USE-IN-COMMON DRIVEWAY
 SCALE: 1" = 50'



PROFILE - CENTERLINE USE-IN-COMMON DRIVEWAY
 SCALE: 1" = 50'



BEE FRANCES WAY ENTRANCE AT GREENBERRY LANE TURNING ANALYSIS
 Rt = 42' B-40 SCALE: 1"=50'



DETAIL - ROUNDABOUT (AND TURNING ANALYSIS)
 SCALE: 1" = 20'
 Rt = 42' B-40

OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSO
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0296



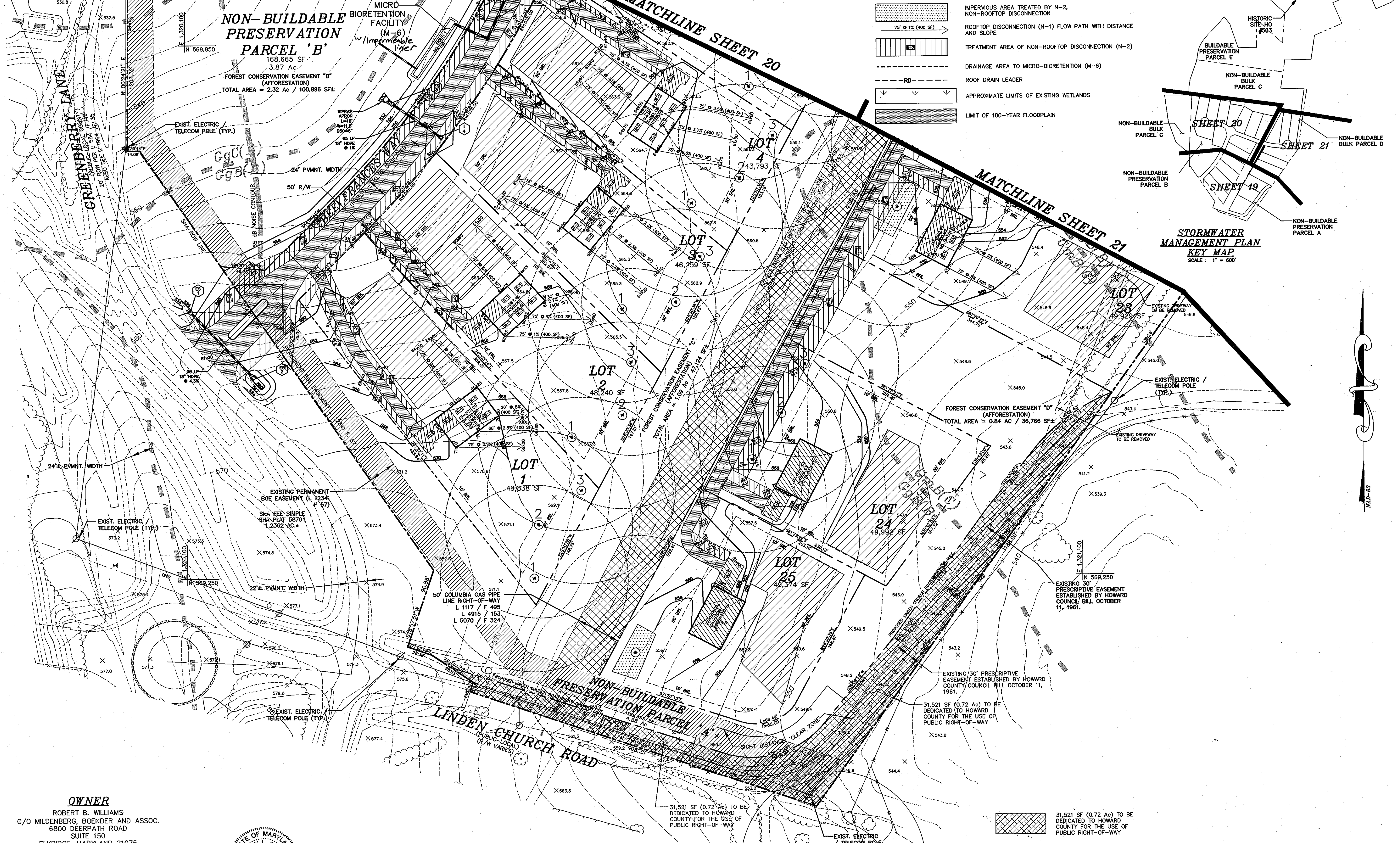
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 JEFFREY SLOMAN, P.E. DATE 10/14/13

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Frank D. Lough
 PLANNING DIRECTOR DATE 10/14/13

MATCHLINE SHEET 20

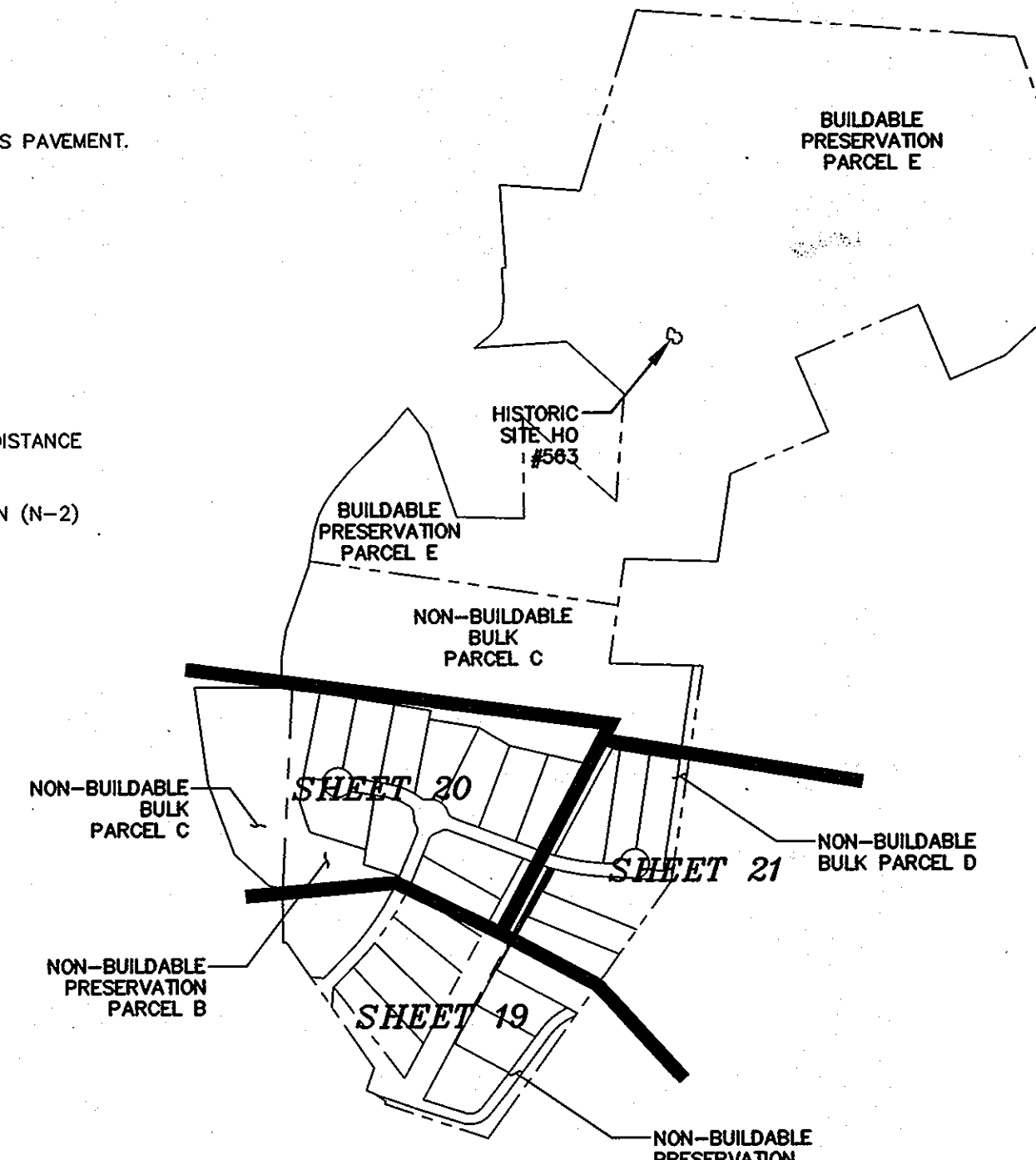
MATCHLINE SHEET 20

MATCHLINE SHEET 21



LEGEND

- IMPERVIOUS AREA TREATED BY A-2 PERVIOUS PAVEMENT (ALSO INCLUDES AREAS OF PERVIOUS PAVEMENT). THIS SHADING ALSO DELINEATES THE DRAINAGE AREAS TO THE PERVIOUS PAVEMENT.
- IMPERVIOUS AREA TREATED BY M-6, MICRO-BIORETENTION
- IMPERVIOUS AREA TREATED BY N-1, ROOFTOP DISCONNECTION
- IMPERVIOUS AREA TREATED BY N-2, NON-ROOFTOP DISCONNECTION
- ROOFTOP DISCONNECTION (N-1) FLOW PATH WITH DISTANCE AND SLOPE
- TREATMENT AREA OF NON-ROOFTOP DISCONNECTION (N-2)
- DRAINAGE AREA TO MICRO-BIORETENTION (M-6)
- ROOF DRAIN LEADER
- APPROXIMATE LIMITS OF EXISTING WETLANDS
- LIMIT OF 100-YEAR FLOODPLAIN



STORMWATER MANAGEMENT PLAN KEY MAP
SCALE: 1" = 600'



date	AUG 2013	approval	RH
project	12-022	illustration	JLS
scale	1"=50'	approval	JLS

no.		description	revisions

GREENBERRY
LOTS 1 THRU 25, NON-BUILDABLE PRES. PARCELS A AND B, AND BUILDABLE PRES. PARCEL Y
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY STORMWATER MANAGEMENT PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elthridge, Maryland 21075
(410) 997-0296 Cell. (410) 997-0288 Fax.

NON-BUILDABLE PRESERVATION PARCEL 'B'
168,665 SF
3.87 Ac.
FOREST CONSERVATION EASEMENT "B" (AFFORESTATION)
TOTAL AREA = 2.32 Ac / 100,896 SF±

LOT 1
49,838 SF

LOT 2
48,240 SF

LOT 3
46,259 SF

LOT 4
43,793 SF

LOT 5
49,374 SF

LOT 24
49,992 SF

LOT 25
49,374 SF

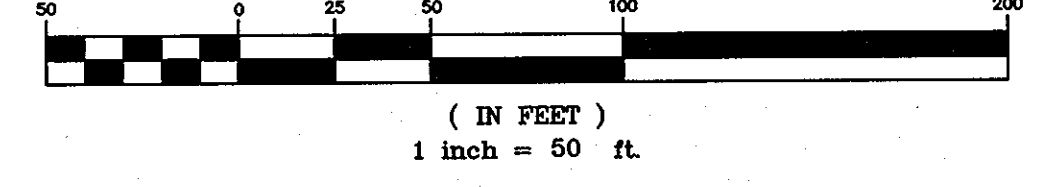
FOREST CONSERVATION EASEMENT "D" (AFFORESTATION)
TOTAL AREA = 0.84 AC / 36,766 SF±

EXISTING 30' PRESERVATIVE EASEMENT ESTABLISHED BY HOWARD COUNTY COUNCIL BILL OCTOBER 11, 1961.

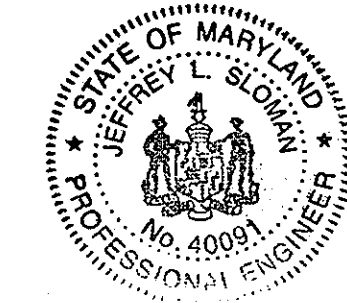
31,521 SF (0.72 AC) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY

31,521 SF (0.72 AC) TO BE DEDICATED TO HOWARD COUNTY FOR THE USE OF PUBLIC RIGHT-OF-WAY

GRAPHIC SCALE



OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

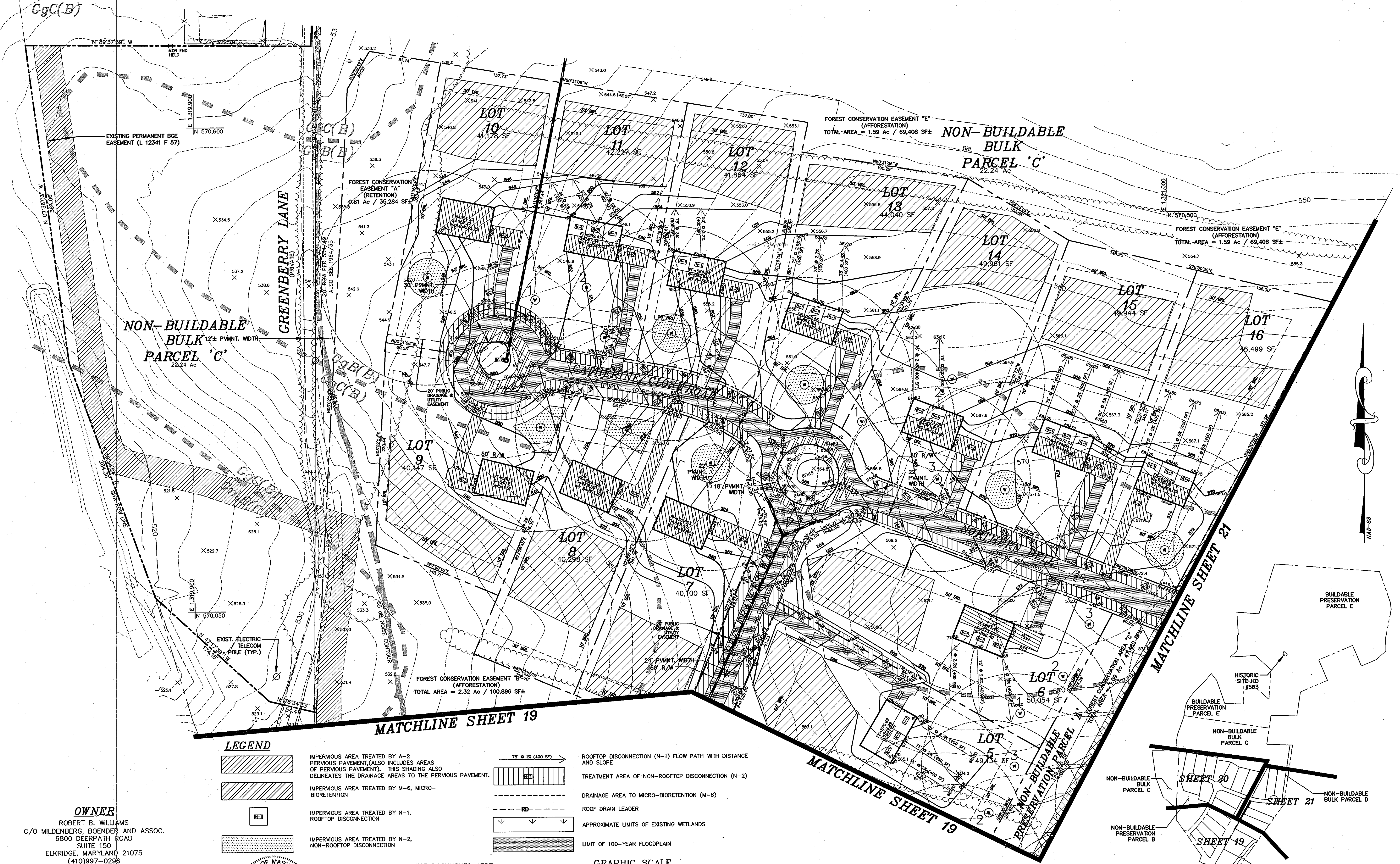


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Jeffrey L. Sloman
JEFFREY SLOMAN, P.E. 11/20/13
DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Mark A. Long
PLANNING DIRECTOR 11/20/13
DATE

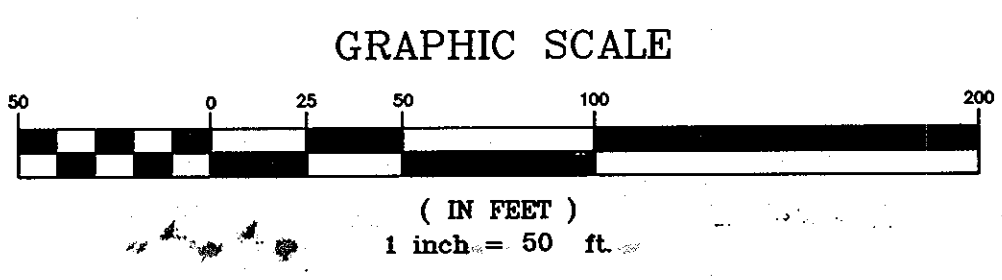
H: 12-022.DWG (SKETCH) PRELIMINARY 022-SP-AUG 2013.DWG

H: 12-022.DWG(SW) PRELIMINARY 022-SP-AUG 2013.DWG



LEGEND

- | | | | |
|--|--|--|---|
| | IMPERVIOUS AREA TREATED BY A-2 PERVIOUS PAVEMENT (ALSO INCLUDES AREAS OF PERVIOUS PAVEMENT). THIS SHADING ALSO DELINEATES THE DRAINAGE AREAS TO THE PERVIOUS PAVEMENT. | | ROOFTOP DISCONNECTION (N-1) FLOW PATH WITH DISTANCE AND SLOPE |
| | IMPERVIOUS AREA TREATED BY M-6, MICRO-BIORETENTION | | TREATMENT AREA OF NON-ROOFTOP DISCONNECTION (N-2) |
| | IMPERVIOUS AREA TREATED BY N-1, ROOFTOP DISCONNECTION | | DRAINAGE AREA TO MICRO-BIORETENTION (M-6) |
| | IMPERVIOUS AREA TREATED BY N-2, NON-ROOFTOP DISCONNECTION | | ROOF DRAIN LEADER |
| | | | APPROXIMATE LIMITS OF EXISTING WETLANDS |
| | | | LIMIT OF 100-YEAR FLOODPLAIN |



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Jeffrey Sloman
JEFFREY SLOMAN, P.E. 11/20/13 DATE

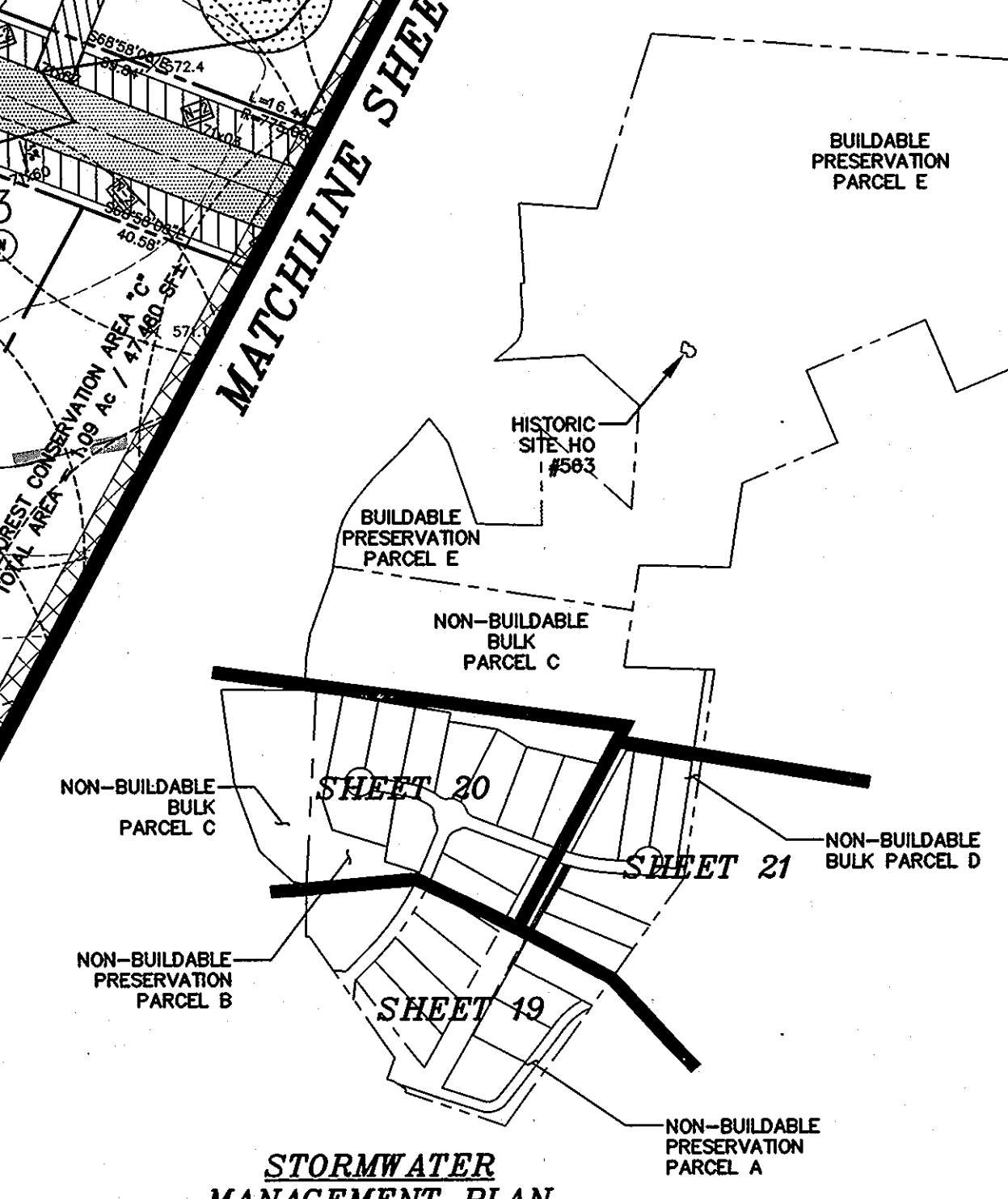
OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Paula...
PLANNING DIRECTOR DATE



STORMWATER MANAGEMENT PLAN
KEY MAP
SCALE: 1" = 600'



Project	12-022	date	AUG 2013
Illustration	JIS	engineering	JIS
scale	1"=50'	approval	RH

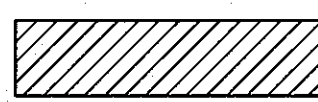
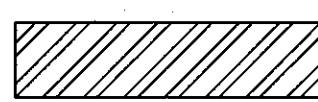
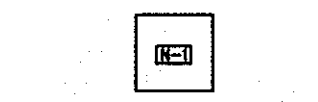

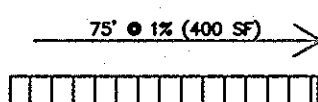
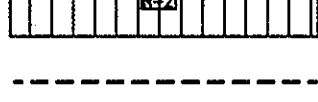
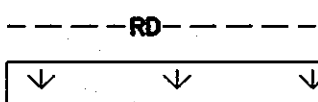



no.	description	date

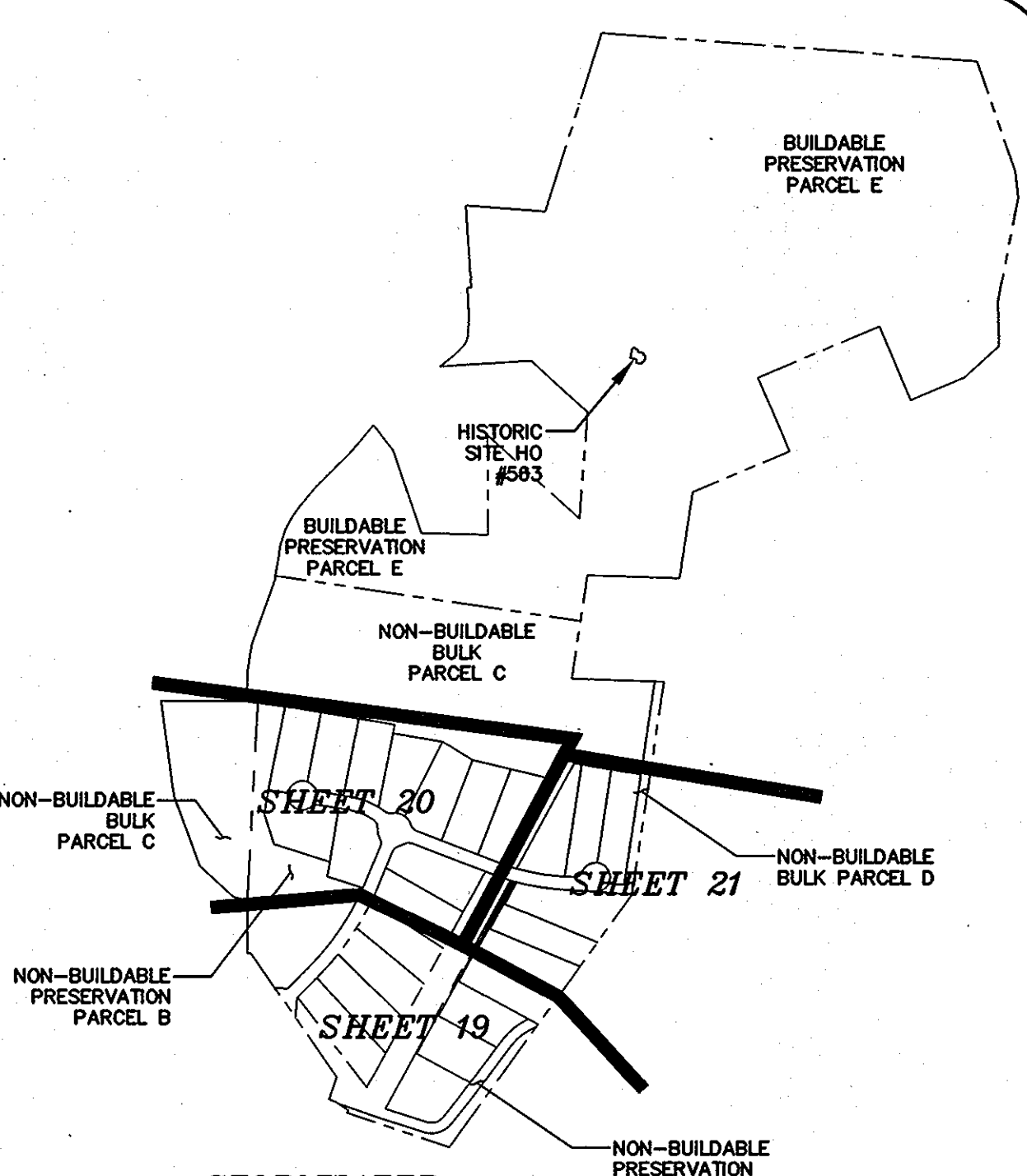
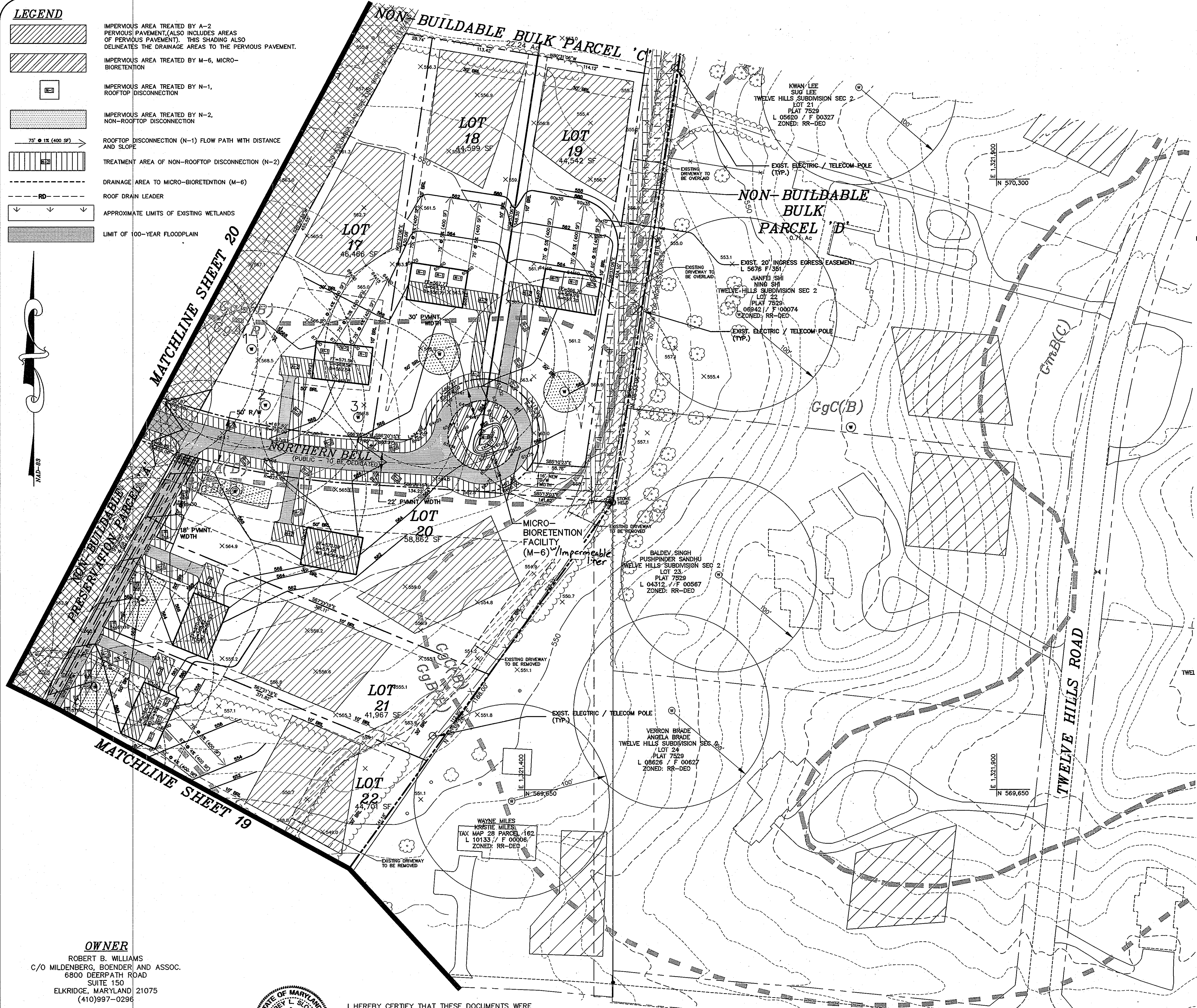
GREENBERRY
LOTS 1 THRU 24, NON-BUILDABLE PRES. PARCELS C AND D, AND BUILDABLE PRES. PARCEL E
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PRELIMINARY STORMWATER MANAGEMENT PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Ext. (410) 997-0298 Fax.

LEGEND

-  IMPERVIOUS AREA TREATED BY A-2 PERVIOUS PAVEMENT (ALSO INCLUDES AREAS OF PERVIOUS PAVEMENT). THIS SHADING ALSO DELINEATES THE DRAINAGE AREAS TO THE PERVIOUS PAVEMENT.
-  IMPERVIOUS AREA TREATED BY M-6, MICRO-BIORETENTION
-  IMPERVIOUS AREA TREATED BY N-1, ROOFTOP DISCONNECTION
-  IMPERVIOUS AREA TREATED BY N-2, NON-ROOFTOP DISCONNECTION
-  ROOFTOP DISCONNECTION (N-1) FLOW PATH WITH DISTANCE AND SLOPE
-  TREATMENT AREA OF NON-ROOFTOP DISCONNECTION (N-2)
-  DRAINAGE AREA TO MICRO-BIORETENTION (M-6)
-  ROOF DRAIN LEADER
-  APPROXIMATE LIMITS OF EXISTING WETLANDS
-  LIMIT OF 100-YEAR FLOODPLAIN



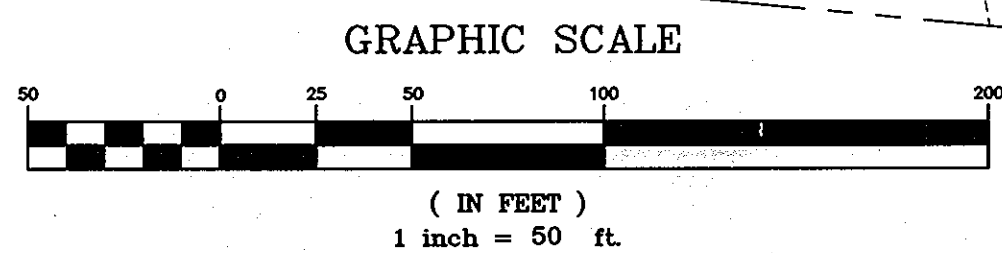
STORMWATER MANAGEMENT PLAN KEY MAP
SCALE: 1" = 600'

OWNER
ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKBRIDGE, MARYLAND 21075
(410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Mark P. Lough
PLANNING DIRECTOR
DATE: 1/24/14



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. 40091, EXP DATE 2/13/15.
Jeffrey L. Sloman
JEFFREY SLOMAN, P.E.
DATE: 11/20/13



H:12-022.DWG SKETCH PRELIMINARY 10-22-SP-AUG 2013.DWG

date	AUG 2013	approval	R.H.
Project	12-022	illustration	JLS
Project	JLS	scale	1" = 50'

description	revisions	date

GREENBERRY
LOTS 1 THRU 26, NON-BUILDABLE PLOTS PARCELS A AND D, AND BUILDABLE PLOTS PARCELS Y
13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY STORMWATER MANAGEMENT PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
(410) 997-0296 Fax



H: 12-022.DWG(S) SKETCH PRELIMINARY 022-SP-AUG 2013.DWG

OWNER

ROBERT B. WILLIAMS
C/O MILDENBERG, BOENDER AND ASSOC.
6800 DEERPATH ROAD
SUITE 150
ELKRIDGE, MARYLAND 21075
(410)997-0296

APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

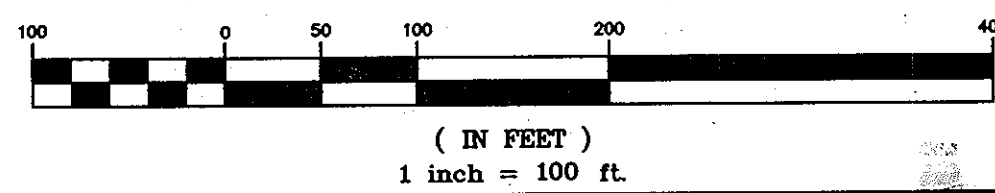
Frank H. W. [Signature]
PLANNING DIRECTOR DATE 12/14



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[Signature]
JEFFREY SLOMAN, P.E. DATE 12/29/13

GRAPHIC SCALE



date	AUG 2013	engineering	JLS	approval	RH
project	12-022	illustration	JLS	scale	1"=100'

no.	description	date

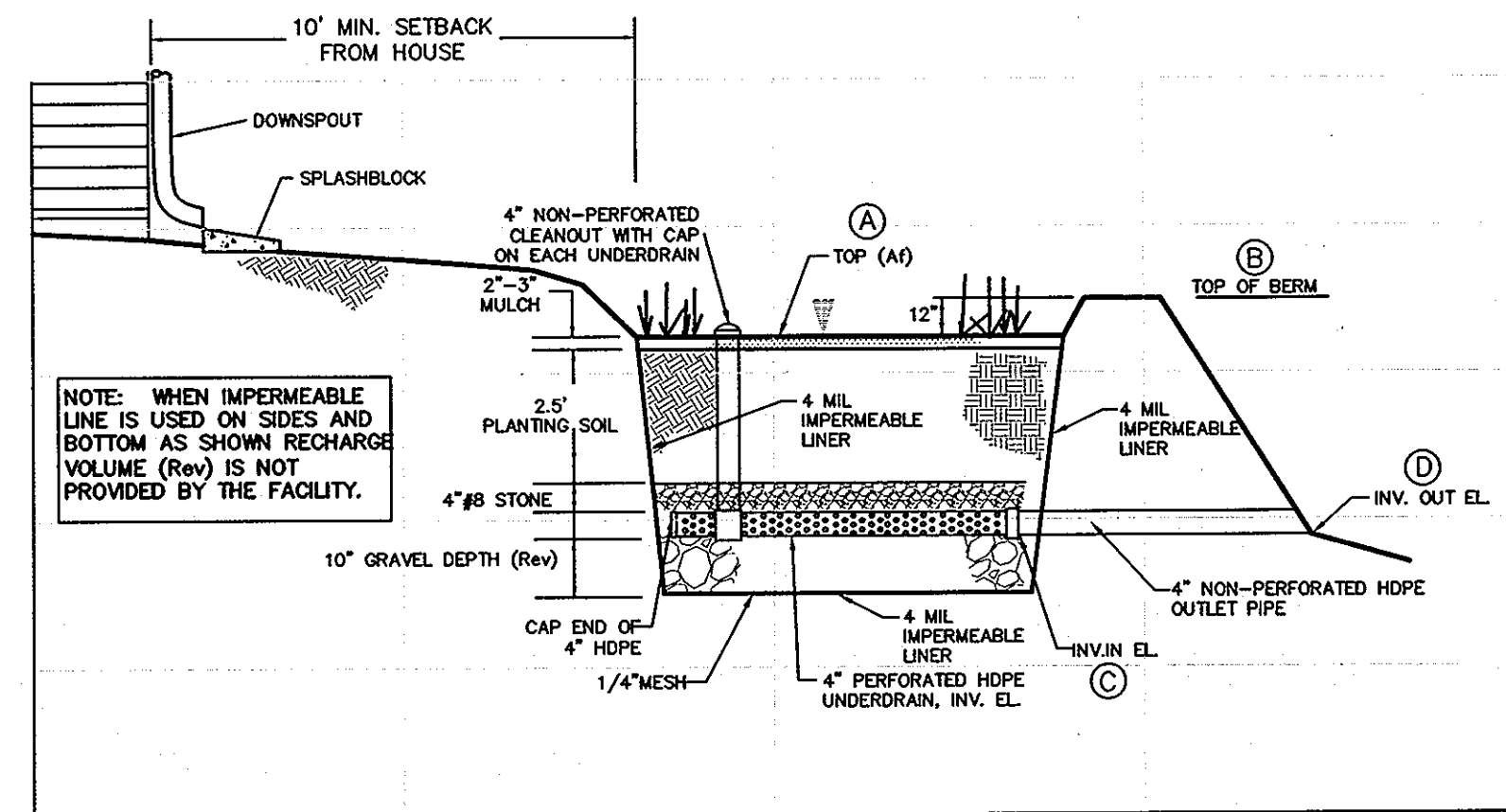
GREENBERRY
 LOTS 1 THRU 28, NON-BUILDABLE PRES. PARCELS C AND D, AND BUILDABLE PRES. PARCEL Y
 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY STORM DRAIN AND CULVERT DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 6800 Deerpath Road, Suite 150, Elkridge, Maryland 21075
 (410) 997-0296 Fax (410) 997-0298 Fax

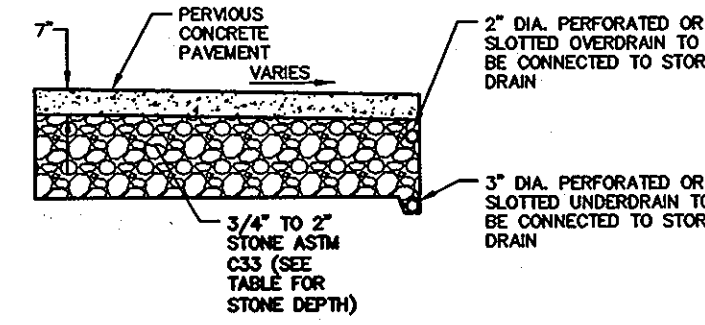
SWM PRACTICES SCHEDULE

AREA	ESD METHOD	TREATED AREA TYPE	ESDv (REQ) (PROVIDED)	Pe (REQUIRED) Pe (PROVIDED)
LOT 1	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	732 CF	
LOT 2	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	718 CF	
LOT 3	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	753 CF	
LOT 4	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	642 CF	
LOT 5	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	698 CF	
LOT 6	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	559 CF	
LOT 7	PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	515 CF	
LOT 8	PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	909 CF	
LOT 9	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	527 CF	
LOT 10	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	583 CF	
LOT 11	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	620 CF	
LOT 12	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	596 CF	
LOT 13	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	641 CF	
LOT 14	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	611 CF	
LOT 15	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	932 CF	
LOT 16	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	562 CF	
LOT 17	ROOFTOP DISC. (N-1), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	766 CF	
LOT 18	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	556 CF	
LOT 19	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	603 CF	
LOT 20	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	629 CF	
LOT 21	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	587 CF	
LOT 22	ROOFTOP DISC. (N-1), NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	661 CF	
LOT 23	NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	625 CF	
LOT 24	NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	623 CF	
LOT 25	NON-ROOFTOP DISC. (N-2), PERMEABLE PAVEMENT (A-2)	HOUSE, DRIVEWAY (PERVIOUS & IMPERVIOUS)	650 CF	
BEE FRANCES WAY	NON-ROOFTOP DISC. (N-2)	ROADWAY (IMPERVIOUS)	1961 CF	
CATHERINE CLOSE ROAD	NON-ROOFTOP DISC. (N-2)	ROADWAY (IMPERVIOUS)	407 CF	
NORTHERN BELL	NON-ROOFTOP DISC. (N-2)	ROADWAY (IMPERVIOUS)	1111 CF	
USE-IN-COMMON DW	NON-ROOFTOP DISC. (N-2)	ROADWAY (IMPERVIOUS)	905 CF	
ROUNDABOUT - BEE FRANCES WAY	NON-ROOFTOP DISC. (N-2), MICRO-BIORETENTION (M-6)	ROADWAY (IMPERVIOUS)	796 CF	
CUL DE SAC - CATHERINE CLOSE ROAD	NON-ROOFTOP DISC. (N-2), MICRO-BIORETENTION (M-6)	ROADWAY (IMPERVIOUS)	668 CF	
CUL DE SAC - NORTHERN BELL	NON-ROOFTOP DISC. (N-2), MICRO-BIORETENTION (M-6)	ROADWAY (IMPERVIOUS)	668 CF	
TOTAL			20,814 CF	22,814 CF 1.18" 1.29"

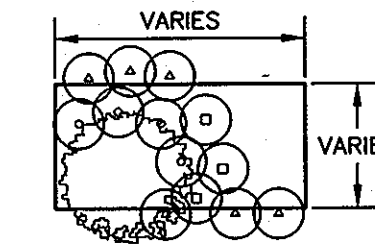
* BY DESIGNING ESD MEASURES FOR "WOODS IN GOOD CONDITION", Cp REQUIREMENTS ARE MET
 ** STORMWATER MANAGEMENT QUANTITY CONTROL FOR THE 10- AND 100-YEAR (Qp, Q1) STORM EVENTS IN NOT REQUIRED.



MICRO-BIORETENTION (M-6) DETAIL
 NOT TO SCALE



PERVIOUS CONCRETE DRIVEWAY (A-2) DETAIL
 NOT TO SCALE



MICRO-BIORETENTION PLANTING DETAIL
 N.T.S.

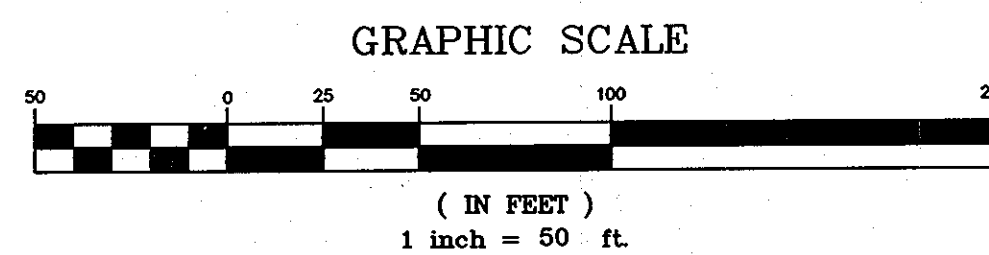
PLANT LIST

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
1	○	ILEX GLABRA	INK BERRY	2' - 3' HT.
6	⊙	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1 GAL. CONTAINER
4	⊙	ONOCLEA SENSIBILIS	SENSITIVE FERN	1 GAL. CONTAINER
3	⊙	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GAL. CONTAINER

TOTAL: 13 PERENNIALS, 1 SHRUB

PERVIOUS CONCRETE DRIVEWAY (A-2) STONE DEPTH TABLE

LOT	TOTAL STONE DEPTH (IN)	STONE DEPTH FOR DRIVEWAY TREATMENT (IN)	STONE DEPTH FOR HOUSE TREATMENT (IN)
1	18	12	8
2	18	12	8
3	18	12	8
4	12	12	0
5	18	12	8
6	18	12	8
7	24	12	12
8	24	12	12
9	18	12	12
10	18	12	12
11	20	12	8
12	18	12	10
13	20	12	8
14	18	12	10
15	18	12	8
16	18	12	8
17	18	12	8
18	18	12	8
19	24	12	8
20	24	12	12
21	18	12	12
22	20	12	8
23	24	12	10
24	24	12	12
25	24	12	12



OWNER
 ROBERT B. WILLIAMS
 C/O MILDENBERG, BOENDER AND ASSOC.
 6800 DEERPATH ROAD
 SUITE 150
 ELKRIDGE, MARYLAND 21075
 (410)997-0296

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
 Planning Director: [Signature]
 DATE: 1/2/14



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. 40091, EXP DATE 2/13/15.

[Signature]
 JEFFREY SLOMAN, P.E. 11/20/13
 DATE

H: 12-022.DWG, SKETCH, PRELIMINARY, 022-SP-AUG 2013.DWG

Project: 12-022
 date: AUG 2013
 illustration: JLS
 scale: 1"=50'
 approval: JLS
 approval: RH

date: []
 description: []
 revisions: []

GREENBERRY
 LOTS 1, THRU 25, NON-BUILDABLE PLOTS PARCELS A AND D, AND BUILDABLE PLOTS PARCELS Y
 13110 GREENBERRY LANE, CLARKSVILLE, MD 21029, TAX MAP 28, PARCEL 48
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
PRELIMINARY STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
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