

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

SAMUEL'S GRANT

LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'

ZONING: R-20

TAX MAP No. 37, GRID No. 5, 11 & 12 PARCEL Nos. 104 AND 94

APPROVED: DEPARTMENT OF PUBLIC WORKS	8/10/2015	
CHIEF, BUREAU OF HIGHWAYS	DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	8-24-15	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	8-17-15	
DATE		
REVISIONS		
NO.	DESCRIPTION	DATE
1	REMOVE STREET NAME	7/2/16
2	REMOVE SHEET INDEX	7/2/16

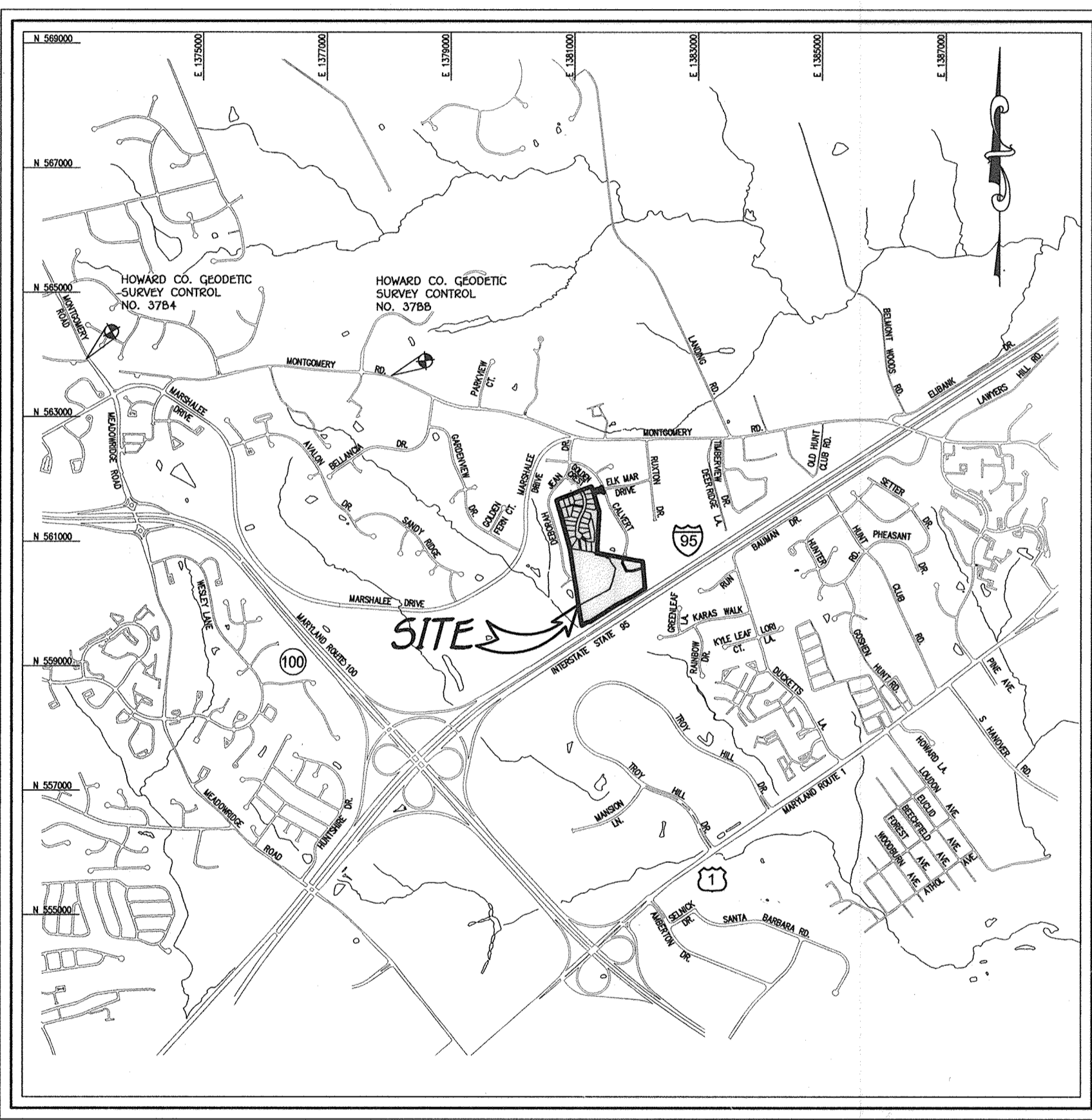
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GOLDEN CREST PLAN AND PROFILE
3	ROADWAY DETAILS
4-5	GRADING AND SEDIMENT CONTROL PLAN
6-7	STREET TREE & LANDSCAPE PLAN
8-10	STORMWATER MANAGEMENT PLAN VIEWS & DETAILS
11	NOISE FROM HIGHWAY APPROXIMATE NOISE LEVELS & LOT 4 BIO-RETENTION FACILITY
12	DEMO PLAN
13-14	STORM DRAIN PROFILES
15-16	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
17-18	FOREST CONSERVATION PLAN
19	FOREST CONSERVATION DETAILS
20-21	SOIL BORINGS
22-23	STORM DRAIN DRAINAGE AREA MAP & SOILS MAP
24	FINAL GRADING PLAN

ROADWAY INFORMATION CHART			
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
GOLDEN CREST	PUBLIC ACCESS STREET	30 M.P.H.	50'

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
GOLDEN CREST	0+00	15'R	SPEED LIMIT 25	R2-1

STREET LIGHT CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
GOLDEN CREST	0+29	15'L	100-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
GOLDEN CREST	3+22	15'R	100-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
GOLDEN CREST	5+55	15'R	100-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
GOLDEN CREST	L.P. 1+87	3' BEHIND CURB	100-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

STORMWATER MANAGEMENT PRACTICES		
LOT No.	DRY WELLS (NUMBER)	NON-ROOFTOP DISCONNECTION N-2 (Y/N)
1	2	Y
2	2	Y
3	2	Y
4	2	Y
5	2	Y
6	2	Y
7	2	Y
8	2	Y
9	2	Y
10	2	Y
11	2	Y
12	2	Y
13	2	Y
14	2	Y
15	2	Y
16	2	Y
17	2	Y
18	2	Y
19	2	Y
20	2	Y
21	2	Y
22	2	Y
23	2	Y
24	2	Y
25	2	Y



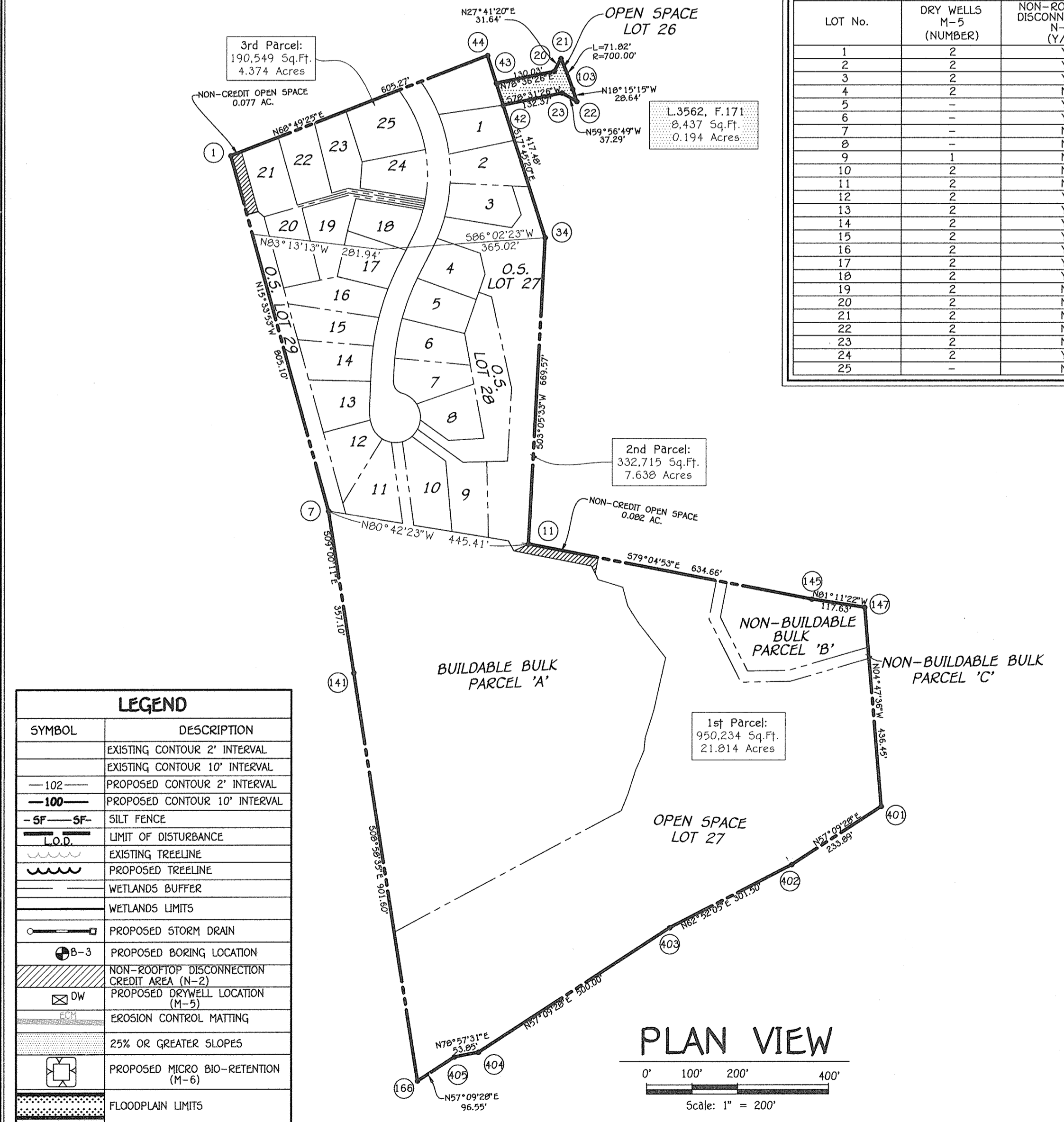
VICINITY MAP
SCALE: 1" = 2000'

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GENERAL NOTES CONTINUED:

36. THIS PLAN IS SUBJECT TO WP-14-007 WHICH THE PLANNING DIRECTOR ON AUGUST 6, 2013 APPROVED A WAIVER REQUEST FROM SECTION 16.144 (c), SECTION 16.144 (p) AND SECTION 16.144 (q) WHICH ESTABLISHES DEADLINE DATES TO SUBMIT FINAL CONSTRUCTION DRAWINGS, TO SUBMIT PAYMENT OF FEES, TO POST FINANCIAL OBLIGATIONS AND TO SUBMIT FINAL SUBDIVISION PLATS WITH THE FOLLOWING CONDITIONS:

1. THE DEVELOPER MUST SUBMIT THE FINAL CONSTRUCTION DRAWINGS IN ASSOCIATION WITH F-13-042 WITHIN TWO YEARS OF JULY 22, 2013.
2. THE DEVELOPER MUST COMPLETE ANY APPLICABLE DEVELOPER'S AGREEMENTS AND PAY ANY REMAINING OPF FEES IN ASSOCIATION WITH F-13-042 WITHIN TWO YEARS OF SEPTEMBER 20, 2013.
3. THE DEVELOPER MUST SUBMIT FINAL PLAT ORIGINALS IN ASSOCIATION WITH F-13-042 FOR SIGNATURE AND RECORDATION WITHIN TWO YEARS OF NOVEMBER 19, 2013.
4. CONTACT CAROL STRIN AT 410-313-2350 TO SET UP SUBMITTAL APPOINTMENT FOR THE CONSTRUCTION DRAWINGS AND FINAL PLAT MYLANS WITHIN THIS ALLOTTED TIME PERIOD.

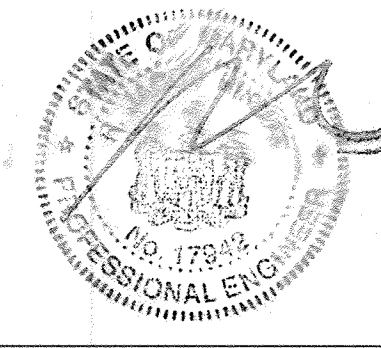


FISHER COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL FILE
ELICOTT CITY, MARYLAND 21042
(410) 461-2895

OWNER
Mr. David Paplauckas,
Mr. Gregory Paplauckas and
Mrs. Sarah Shimulunas
6532 Montgomery Road
Elkridge, Maryland 21075
Ph# (410)-442-5613

DEVELOPER
Carman Associates
c/o Mr. Ron Carter
1750 Daisy Road
Woodbine, Maryland 21797
Ph# (410)-442-5613

I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 22745, Expiration Date 2-22-17.

SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
ZONING: R-20
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 1 OF 24

Q CURVE DATA
GOLDEN CREST
 STA. 0+00 TO STA. 0+37.73
 RADIUS = 625.00'
 ARC LENGTH = 37.73'
 TAN. = 18.97'
 DELTA = 03° 27' 31"
 CHORD = 5 34' 12" 36" E. 37.72'

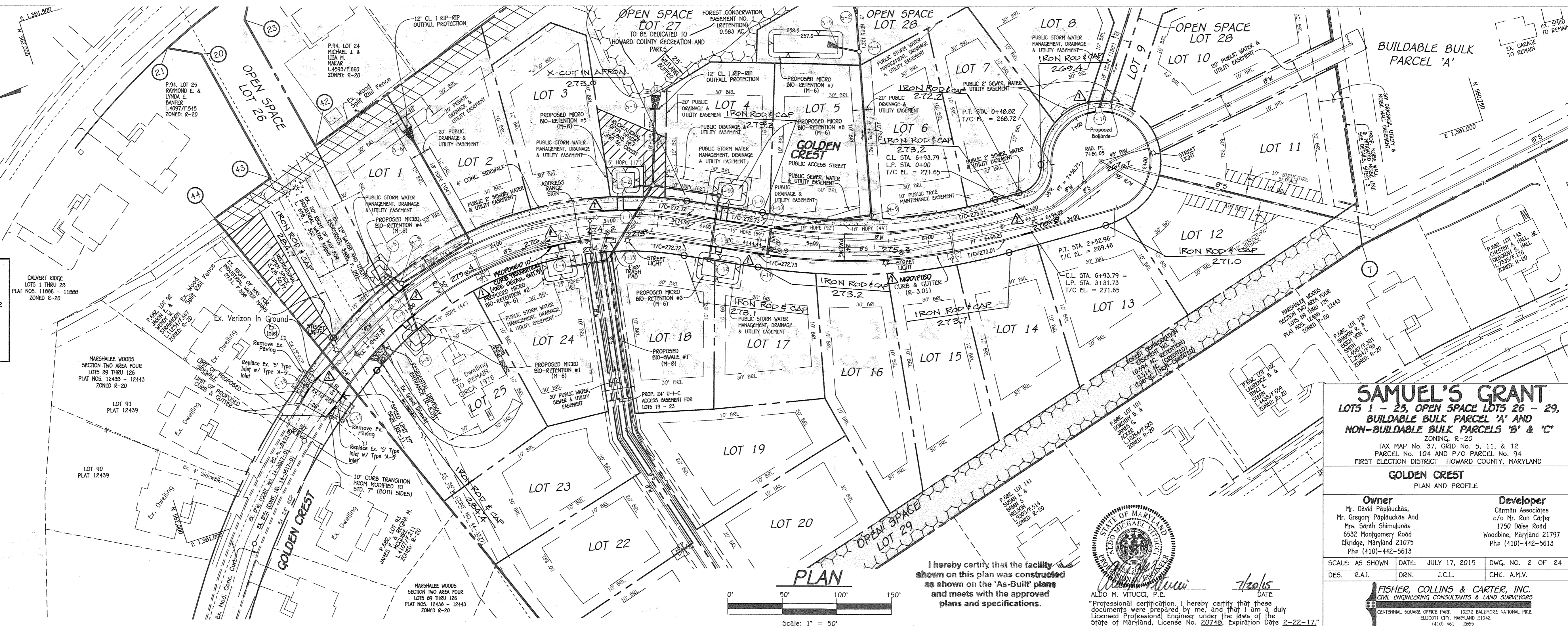
Q CURVE DATA
GOLDEN CREST
 STA. 0+37.73 TO STA. 3+74.90
 RADIUS = 325.00'
 ARC LENGTH = 37.17'
 TAN. = 18.55'
 DELTA = 59° 26' 27"
 CHORD = 5 02' 45" 37" E. 322.25'

Q CURVE DATA
GOLDEN CREST
 STA. 4+44.44 TO STA. 8+69.25
 RADIUS = 525.00'
 ARC LENGTH = 223.10'
 TAN. = 114.16'
 DELTA = 24° 32' 07"
 CHORD = 5 14' 41" 33" E. 223.10'

Q CURVE DATA
GOLDEN CREST
 STA. 6+94.02 TO STA. 7+56.73
 RADIUS = 101.00'
 ARC LENGTH = 62.71'
 TAN. = 32.40'
 DELTA = 35° 34' 26"
 CHORD = 5 15' 21" 43" E. 61.71'

- NOTES:**
- SEE SHEET 3 FOR GOLDEN CREST ROAD EXTENSION BLOW UP.
 - SEE SHEETS 8 - 10 FOR STORMWATER MANAGEMENT PLANS & DETAILS.
 - HOWARD COUNTY ONLY MAINTAINS THE INLET STRUCTURES AND THE-IN STORM DRAIN FOR THE (M-6) MICRO BIO-RETENTION FACILITIES.

NO.	DESCRIPTION	DATE
1	CHANGE CURVE TO MODIFIED, SHOWN TRANSITIONS	7/18/16
REVISIONS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>K. S. Salomon</i>	DATE	8-24-15
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>Chad Clark</i>	DATE	8-17-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
<i>M. M. M...</i>	DATE	8/10/2015
CHIEF, BUREAU OF HIGHWAYS		



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 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

GOLDEN CREST
 PLAN AND PROFILE

Owner
 Mr. David Papiuckas,
 Mr. Gregory Papiuckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
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Developer
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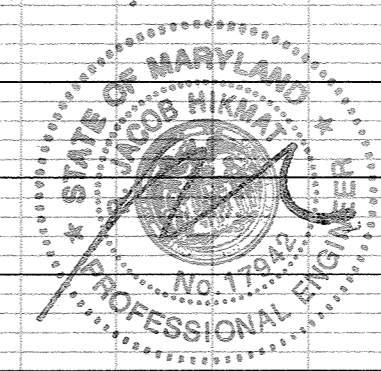
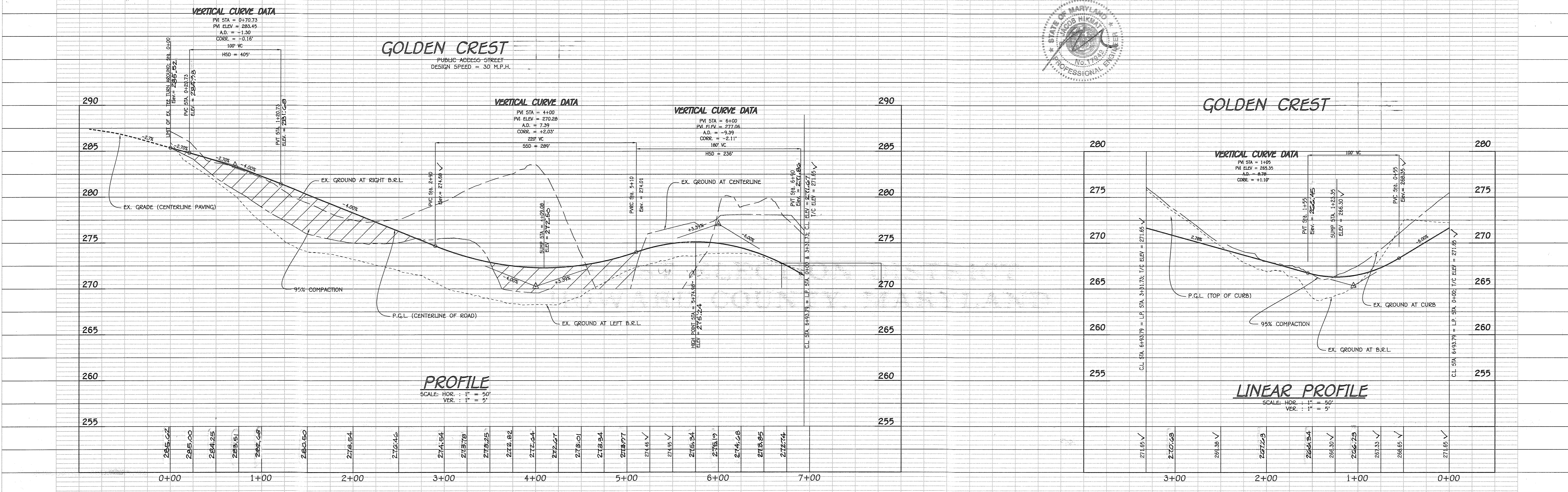
SCALE: AS SHOWN DATE: JULY 17, 2015 DWG. NO. 2 OF 24
 DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 SALTSTONE NATIONAL PIKE
 ELKIDGE CITY, MARYLAND 21042
 (410) 461 - 2925



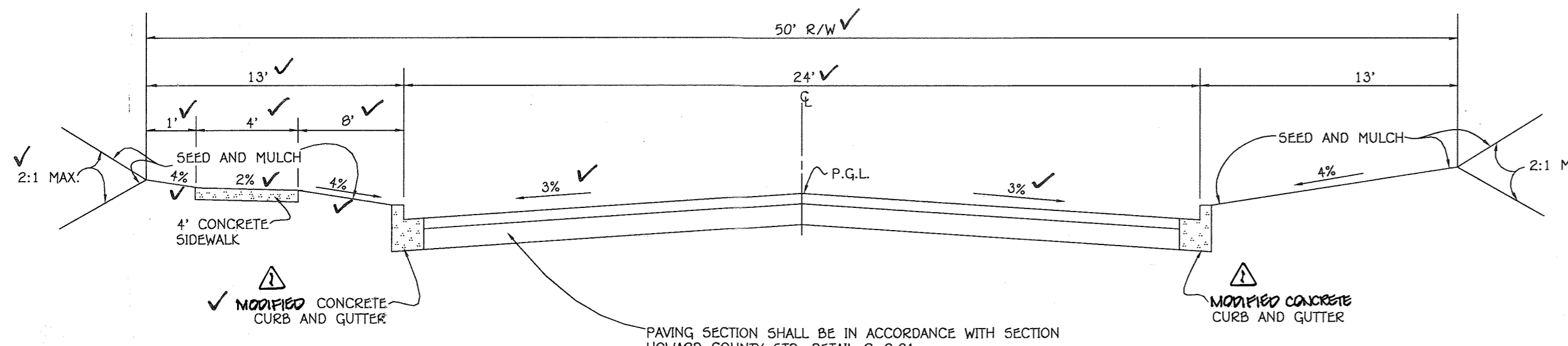
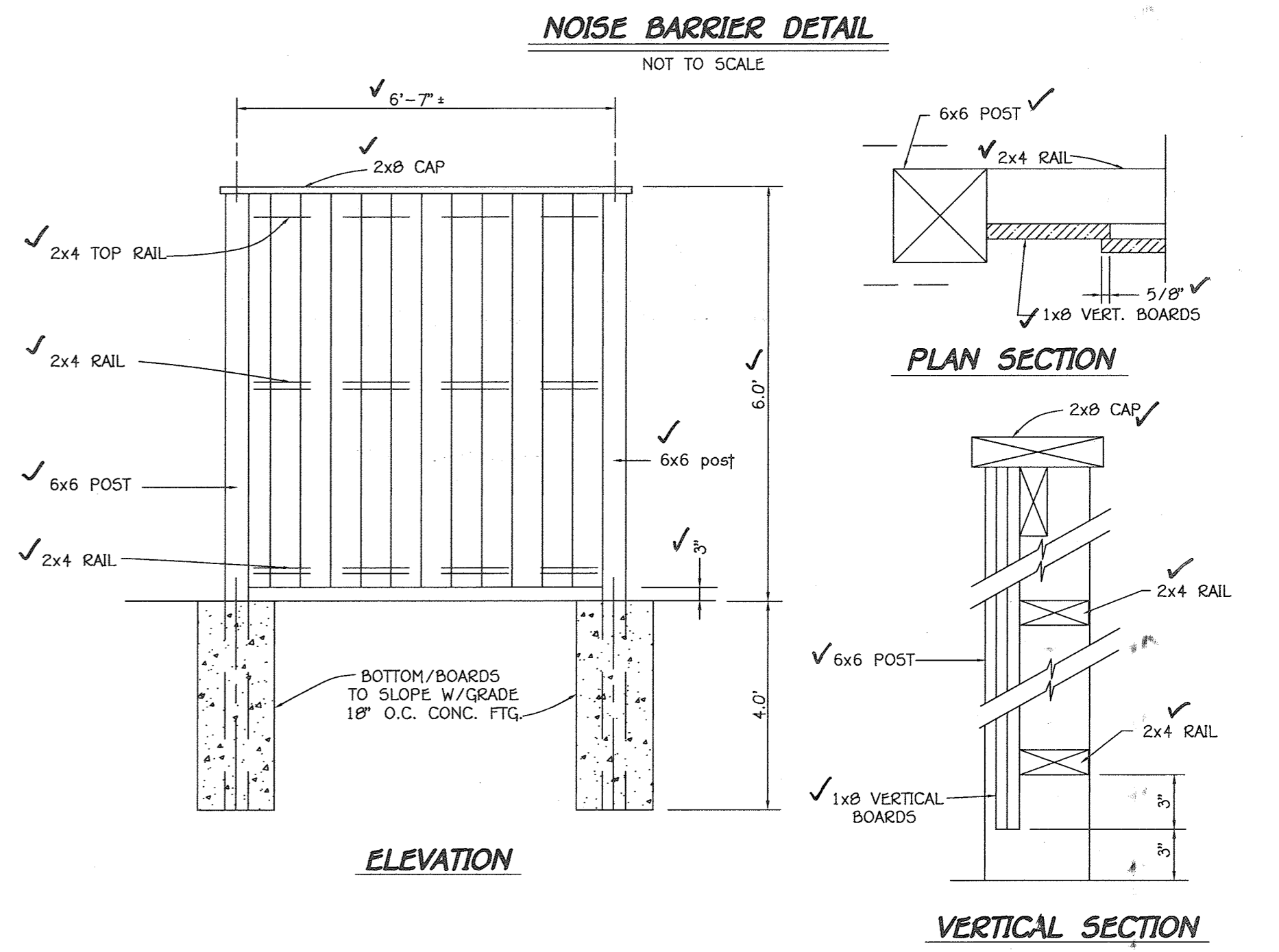
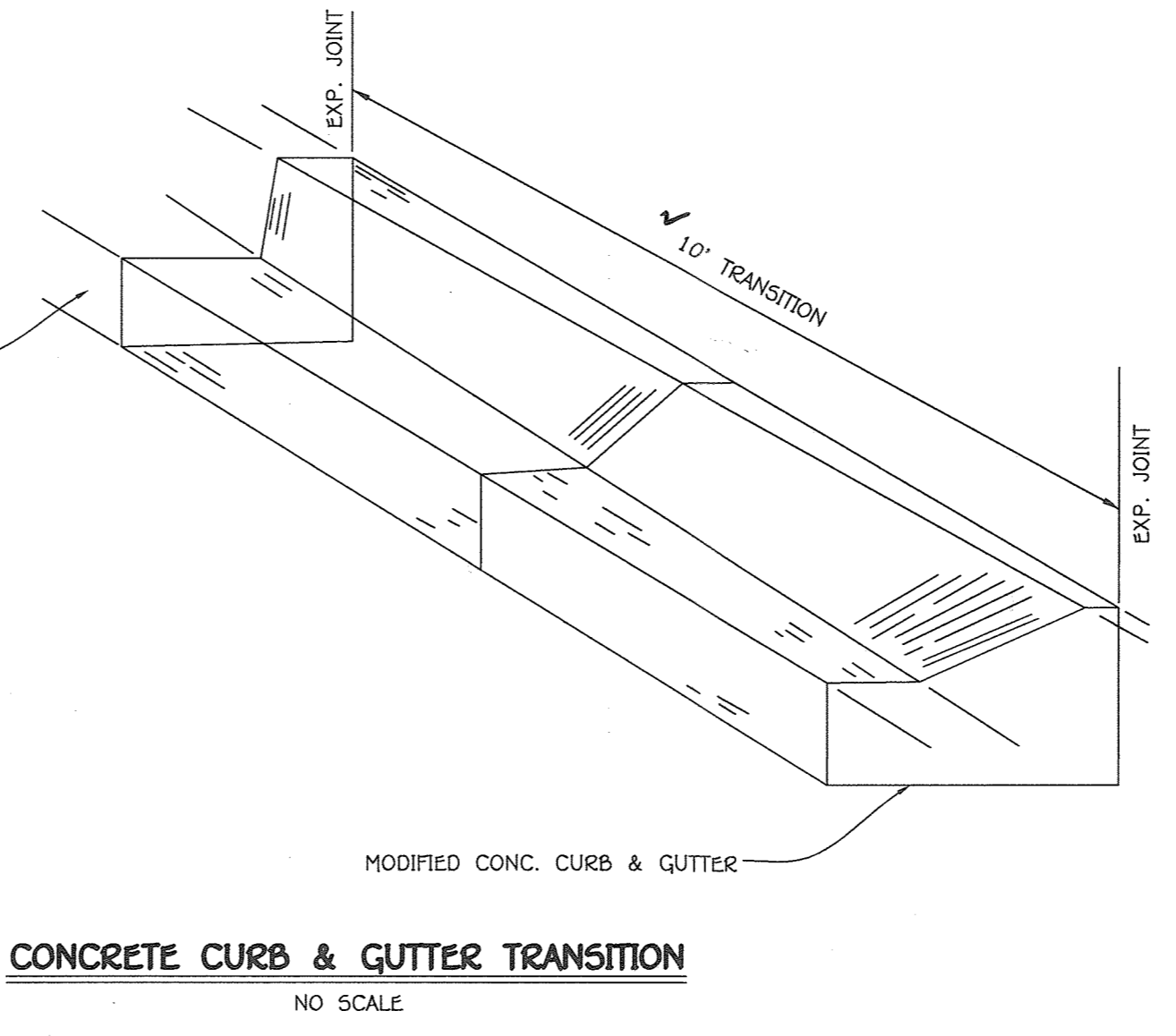
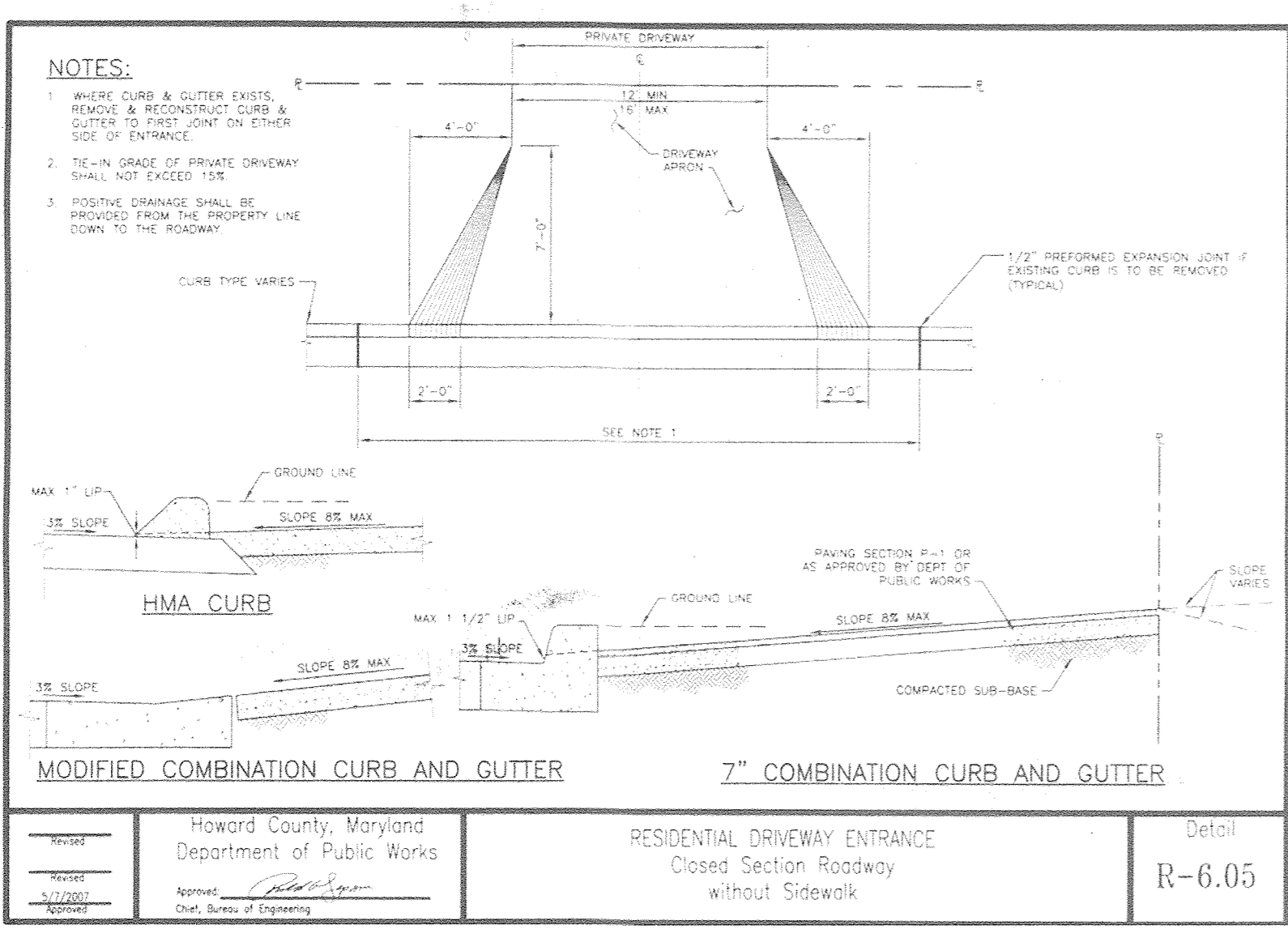
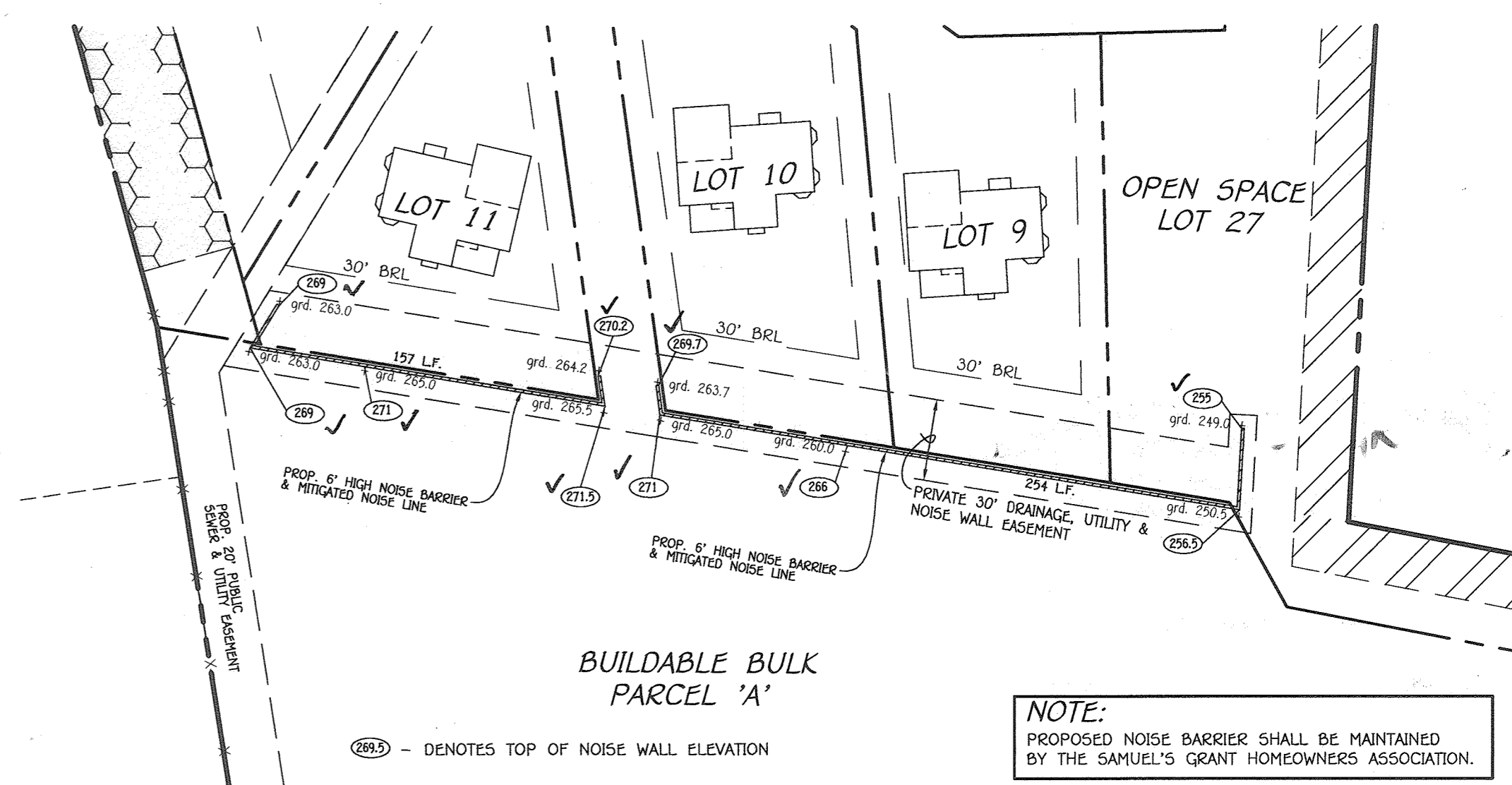
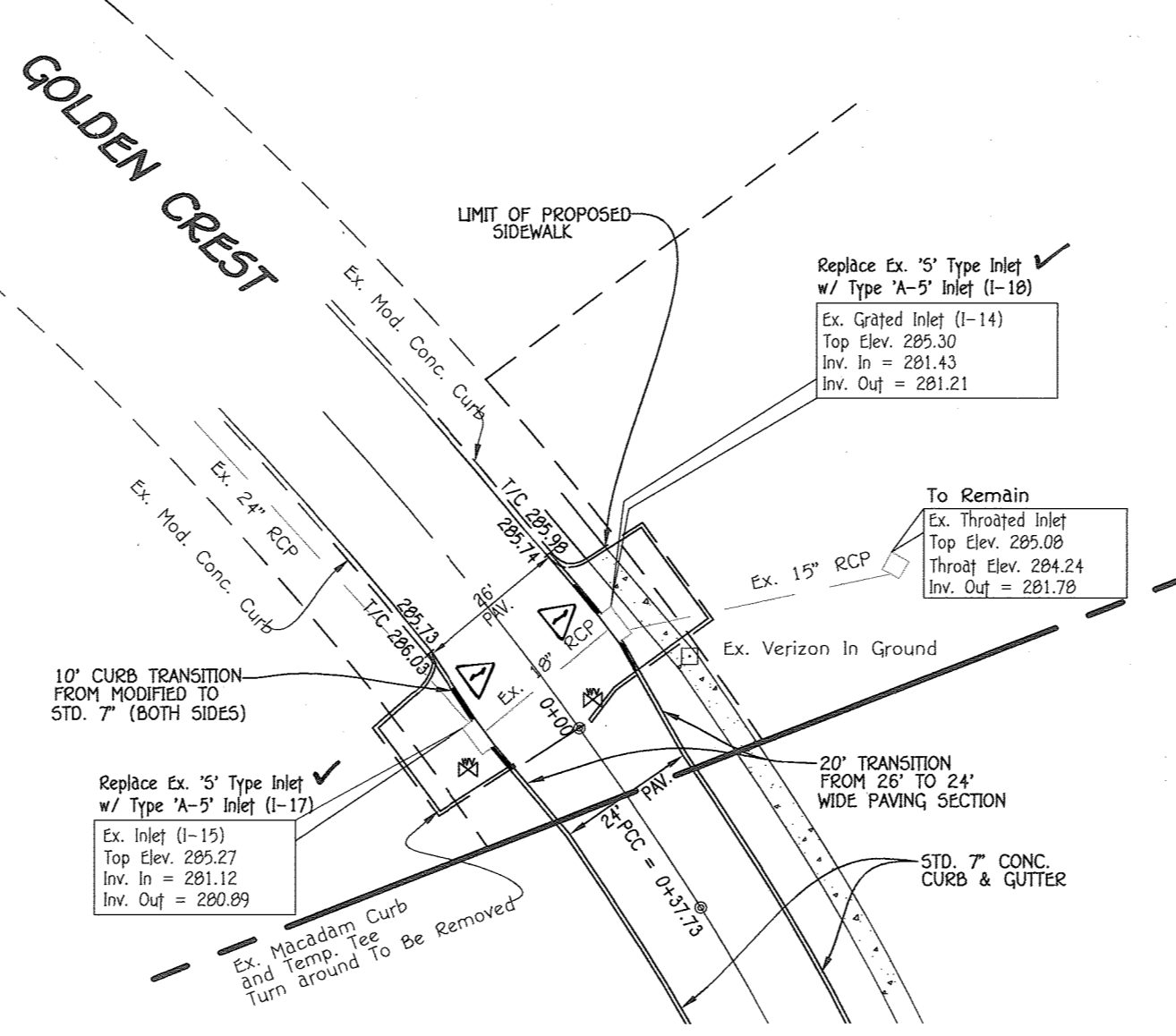
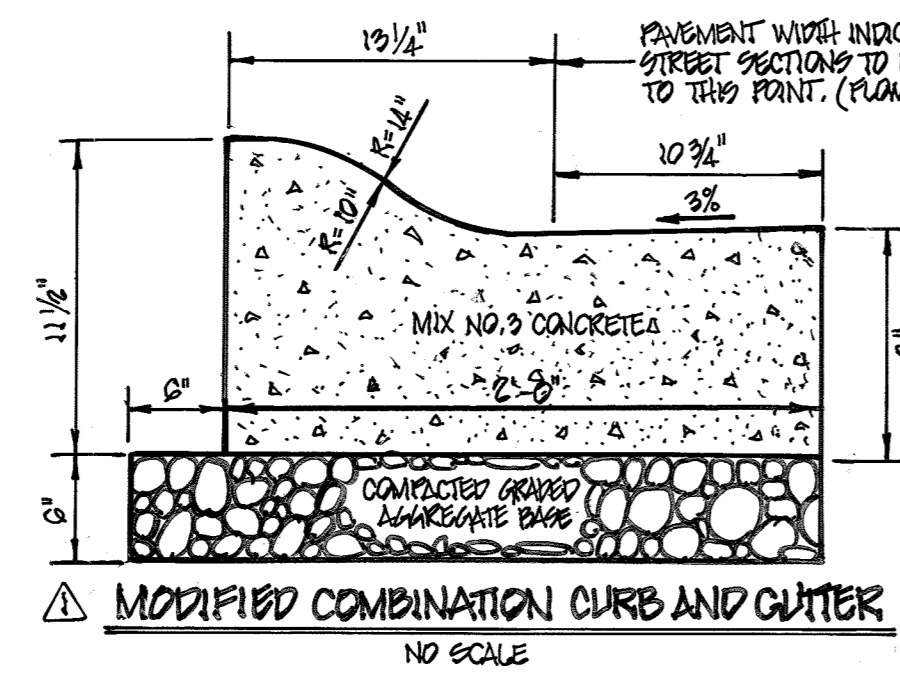
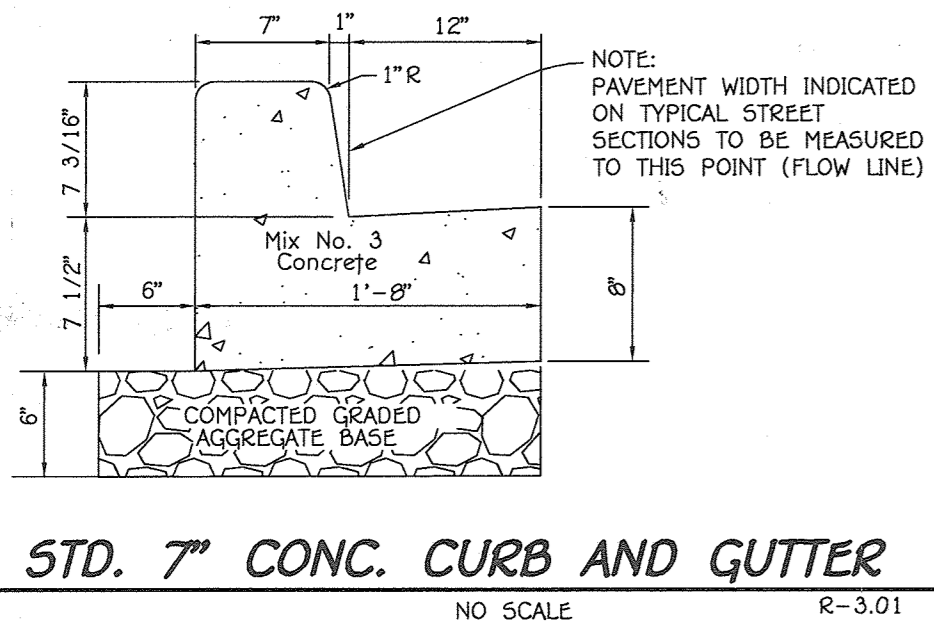
I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

ALDO M. VITUCCI, P.E.
 7/20/15
 Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.



SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO <5			5 TO <7		
		PAVEMENT MATERIAL (INCHES)		MIN HMA WITH GAB		HMA WITH CONSTANT GAB	
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)		1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)		1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)		2.0	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)		8.0	4.0	3.0	4.0

APPROVED: DEPARTMENT OF PUBLIC WORKS	8/10/2015	
CHIEF, BUREAU OF HIGHWAYS	DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	8-24-15	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
APPROVED: DEPARTMENT OF ENGINEERING	8-17-15	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE CURB TO SHOW MODIFIED CURB	7/19/15

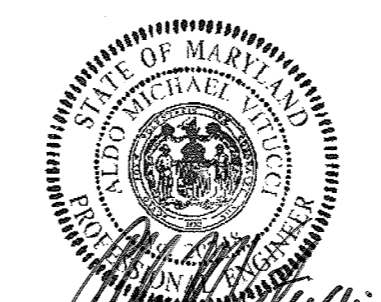
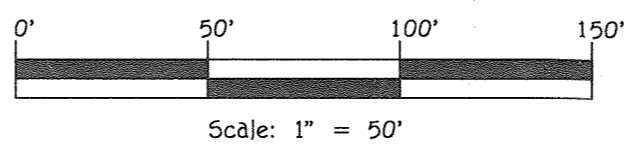


ROADWAY INFORMATION CHART					
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
GOLDEN CREST	PUBLIC ACCESS STREET	30 M.P.H.	R-20	0+00 TO 7+81.05	P-2

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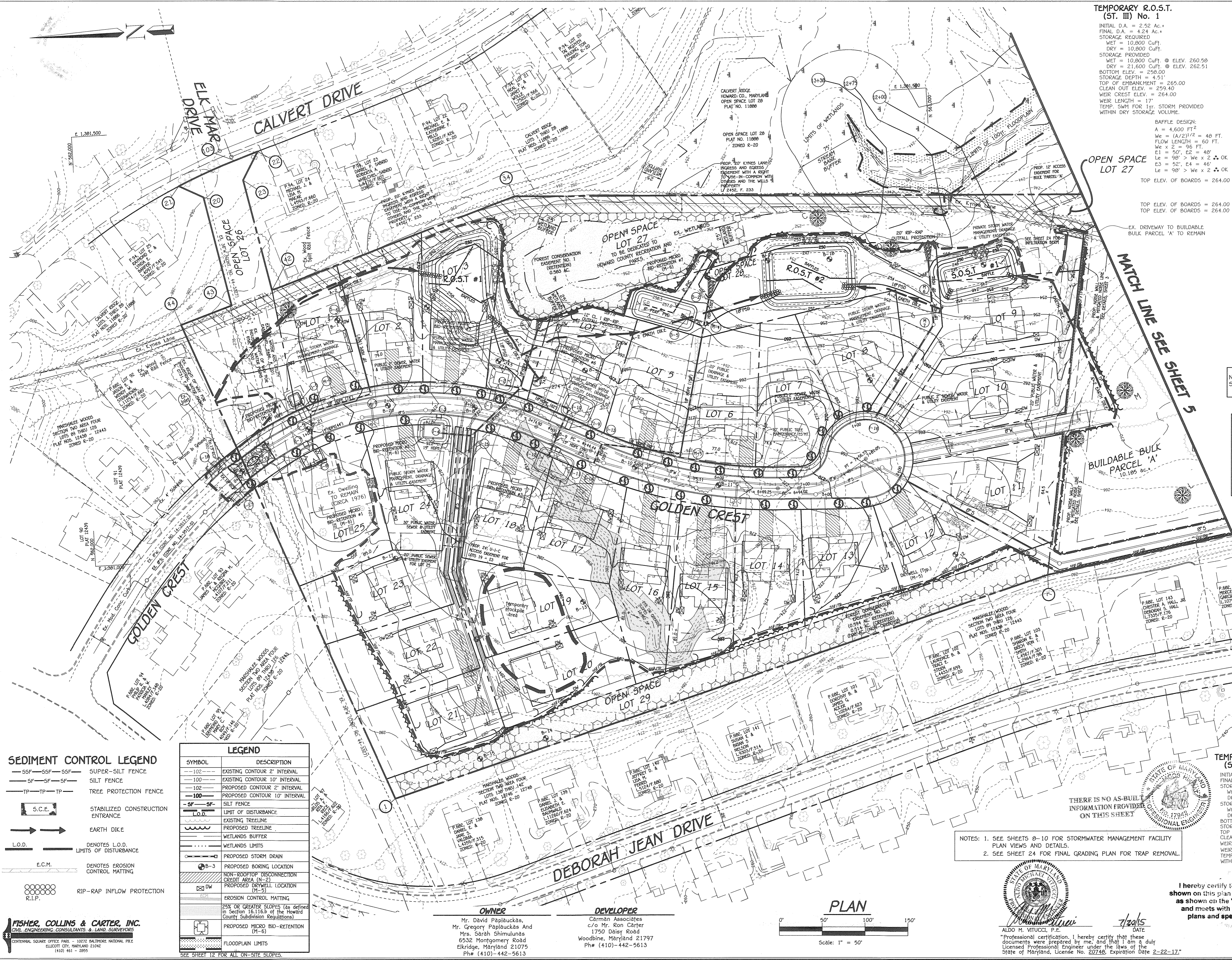
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ALDO M. VITUCCI, P.E. DATE 7/20/15

Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-17.



ROADWAY DETAILS
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
BUILDABLE BULK PARCEL 'A' AND
NON-BUILDABLE BULK PARCELS 'B' & 'C'
ZONING: R-20
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 3 OF 24



TEMPORARY R.O.S.T. (ST. III) No. 1
 INITIAL D.A. = 2.52 Ac.
 FINAL D.A. = 4.24 Ac.
 STORAGE REQUIRED = 10,800 CuFt.
 WET = 10,800 CuFt.
 DRY = 10,800 CuFt.
 STORAGE PROVIDED = 10,800 CuFt.
 WEIR = 10,800 CuFt. @ ELEV. 260.50
 DRY = 21,600 CuFt. @ ELEV. 262.51
 BOTTOM ELEV. = 258.00
 STORAGE DEPTH = 4.51'
 TOP OF EMBANKMENT = 265.00
 CLEAN OUT ELEV. = 259.40
 WEIR CREST ELEV. = 264.00
 WEIR LENGTH = 17'
 TEMP. SWM FOR 1yr. STORM PROVIDED WITHIN DRY STORAGE VOLUME.

OPEN SPACE LOT 27
 TOP ELEV. OF BOARDS = 264.00
 TOP ELEV. OF BOARDS = 264.00
 TOP ELEV. OF BOARDS = 264.00

TEMPORARY 5.0.S.T.
 INITIAL D.A. = 1.06 Ac.
 FINAL D.A. = 1.60 Ac.
 STORAGE REQUIRED = 3,600 CuFt.
 WET = 3,600 CuFt.
 DRY = 3,600 CuFt.
 STORAGE PROVIDED = 3,600 CuFt.
 WEIR = 3,600 CuFt. @ ELEV. 246.62
 DRY = 7,200 CuFt. @ ELEV. 247.95
 BOTTOM ELEV. = 245.00
 STORAGE DEPTH = 2.95'
 TOP OF EMBANKMENT = 250.00
 CLEAN OUT ELEV. = 245.93
 WEIR CREST ELEV. = 247.95
 WEIR LENGTH = 12'
 TEMP. SWM FOR 1yr. STORM PROVIDED WITHIN DRY STORAGE VOLUME.

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control represents a professional design based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: *Walter J. Vucchi*
 Date: 7/20/15

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a certificate of attendance at a Department of Natural Resources-approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
 Signature of Developer: *Walter J. Vucchi*
 Date: 7/20/2015

Approved: This Development is Approved For Erosion and Sediment Control By the Howard Soil Conservation District.
 Signature: *John R. Robinson*
 District Howard Soil Conservation Dist.
 Date: 8/3/15

Approved: Department of Planning and Zoning
 Signature: *Walter J. Vucchi*
 Chief, Division of Land Development
 Date: 8-24-15

Approved: Department of Public Works
 Signature: *Walter J. Vucchi*
 Chief, Bureau of Highways
 Date: 8/10/2015

REVISIONS

NO.	DESCRIPTION	DATE
1	REMOVE STREET NAME	7/10/16

NOTE: ANY SEDIMENT CONTROL DEVICES DISTURBED BY GRADING OF THE SITE OR STORM DRAIN INSTALLATION ARE TO BE REPAIRED IMMEDIATELY.

HOUSE CONSTRUCTION NOTES:
 1. THE CONSTRUCTION OF THE HOMES AFFECTED BY THE INSTALLATION OF THE SHOWN TRAPS IS TO BE DELAYED UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED OR PERMISSION IS RECEIVED FROM THE SEDIMENT CONTROL INSPECTOR ALLOWING FOR THE REMOVAL OF THE TRAPS.
 2. CONSTRUCTION ON LOTS 19 AND 20 IS TO BE DELAYED UNLESS PERMISSION IS RECEIVED BY THE SEDIMENT CONTROL INSPECTOR TO RELOCATE THE STOCKPILE AREA.

TEMPORARY R.O.S.T. (ST. III) No. 2
 INITIAL D.A. = 3.24 Ac.
 FINAL D.A. = 2.57 Ac.
 STORAGE REQUIRED = 8,100 CuFt.
 WET = 8,100 CuFt.
 DRY = 8,100 CuFt.
 STORAGE PROVIDED = 8,100 CuFt.
 WEIR = 8,100 CuFt. @ ELEV. 248.70
 DRY = 16,200 CuFt. @ ELEV. 250.20
 BOTTOM ELEV. = 247.00
 STORAGE DEPTH = 1.63'
 TOP OF EMBANKMENT = 253.00
 CLEAN OUT ELEV. = 247.85
 WEIR CREST ELEV. = 252.00
 WEIR LENGTH = 14'
 TEMP. SWM FOR 1yr. STORM PROVIDED WITHIN DRY STORAGE VOLUME.
 BAFFLE DESIGN:
 A = 4,800 FT²
 We = (A/2)^{1/2} = 49 FT.
 FLOW LENGTH = 66 FT.
 We x 2 = 98 FT.
 E1 = 52', E2 = 50', E3 = 30'
 Le = 132' > We x 2
 E4 = 72', E3 = 30'
 Le = 102' > We x 2
 TOP ELEV. OF BOARDS = 252.00

TEMPORARY 5.0.S.T. (ST. II) No. 1
 INITIAL D.A. = 1.06 Ac.
 FINAL D.A. = 1.60 Ac.
 STORAGE REQUIRED = 3,600 CuFt.
 WET = 3,600 CuFt.
 DRY = 3,600 CuFt.
 STORAGE PROVIDED = 3,600 CuFt.
 WEIR = 3,600 CuFt. @ ELEV. 246.62
 DRY = 7,200 CuFt. @ ELEV. 247.95
 BOTTOM ELEV. = 245.00
 STORAGE DEPTH = 2.95'
 TOP OF EMBANKMENT = 250.00
 CLEAN OUT ELEV. = 245.93
 WEIR CREST ELEV. = 247.95
 WEIR LENGTH = 12'
 TEMP. SWM FOR 1yr. STORM PROVIDED WITHIN DRY STORAGE VOLUME.
 BAFFLE DESIGN:
 A = 2,400 FT²
 We = (A/2)^{1/2} = 35 FT.
 FLOW LENGTH = 42 FT.
 We x 2 = 70 FT.
 E1 = 49', E2 = 26'
 Le = 74' > We x 2
 TOP ELEV. OF BOARD = 248.00

NOTES: 1. SEE SHEETS 8-10 FOR STORMWATER MANAGEMENT FACILITY PLAN VIEWS AND DETAILS.
 2. SEE SHEET 24 FOR FINAL GRADING PLAN FOR TRAP REMOVAL.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SEDIMENT CONTROL LEGEND

SSF	SSF	SSF	SUPER-SILT FENCE
SF	SF	SF	SILT FENCE
TP	TP	TP	TREE PROTECTION FENCE
S.C.E.			STABILIZED CONSTRUCTION ENTRANCE
E.D.			EARTH DIKE
L.O.D.			DENOTES L.O.D. LIMITS OF DISTURBANCE
E.C.M.			DENOTES EROSION CONTROL MATTING
RIP-RAP			RIP-RAP INFLOW PROTECTION

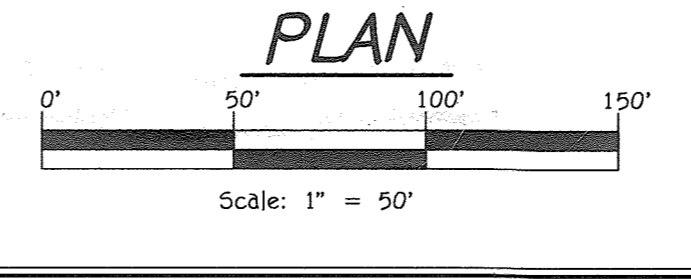
LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
SF	SILT FENCE
L.O.D.	LIMIT OF DISTURBANCE
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	WETLANDS BUFFER
---	WETLANDS LIMITS
---	PROPOSED STORM DRAIN
---	PROPOSED BORING LOCATION
---	NON-ROOFTOP DISCONNECTION CREDIT AREA (N-2)
DW	PROPOSED DRYWELL LOCATION
---	EROSION CONTROL MATTING
---	25% OR GREATER SLOPES (as defined in Section 16.116.B of the Howard County Subdivision Regulations)
---	PROPOSED MICRO BIO-RETENTION (M-B)
---	FLOODPLAIN LIMITS

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ALDO M. VIUCCI, P.E.
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 License No. 20748, Expiration Date 2-22-17

7/20/15
 DATE

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GRADING & SEDIMENT CONTROL PLAN
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCELS 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
 TAX MAP NO. 37, GRID NO. 5, 11, & 12
 PARCEL NO. 104 AND P/O PARCEL NO. 94
 FIRST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 4 OF 24

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Erosion and Sediment Control Represents a Practical and Workable Plan Based on My Personal Knowledge of the Site Conditions and that it was Prepared in Accordance with the Standards of the Howard Soil Conservation District.
 Signature of Engineer: *[Signature]* Date: 7/29/15

DEVELOPER'S CERTIFICATE
 "I/We Certify That All Development And Construction Will Be Done According To This Plan For Erosion And Sediment Control And That All Reasonable Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Reasonable."
 Signature of Developer: *[Signature]* Date: 7/29/2015

Approved: This Development is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
 District Howard Soil Conservation Dist. Date: 8/3/15

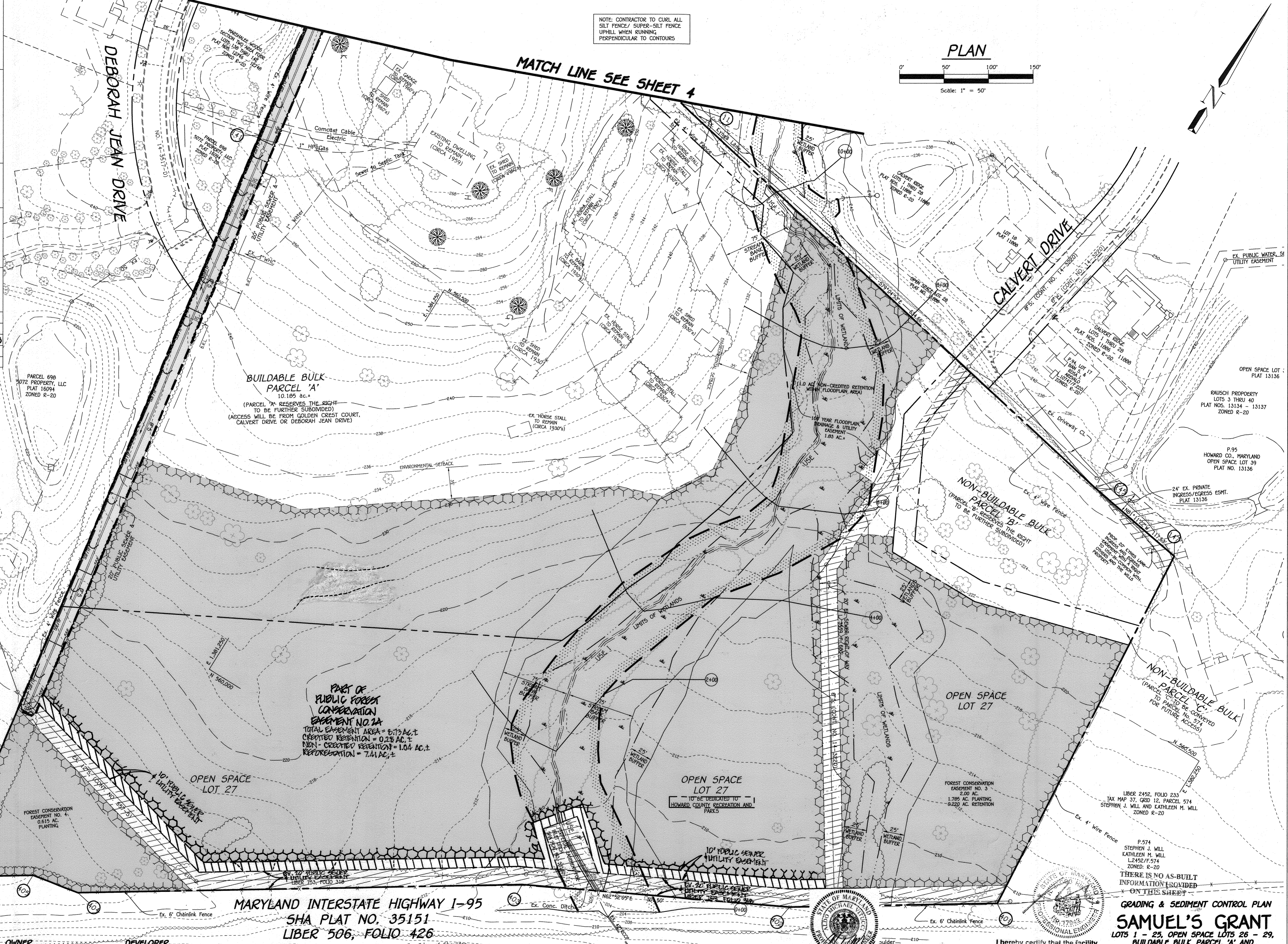
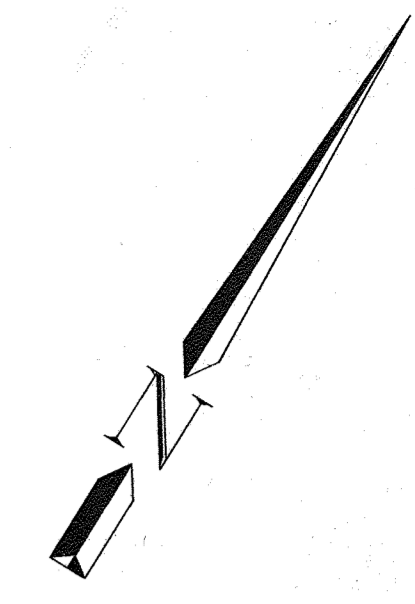
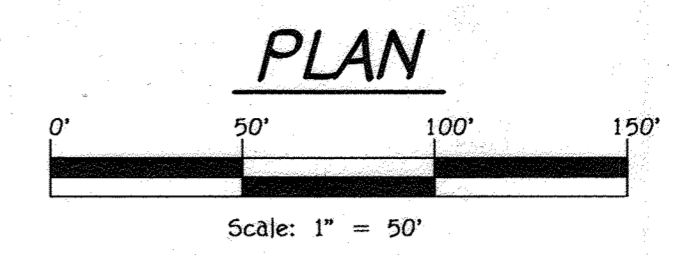
Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development Date: 8-24-15

Chief, Development Engineering Division Date: 8-17-15

Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways Date: 8/10/2015

NO.	REVISIONS	DATE
1	ADD 10' SEWER & UTILITY EASEMENT & REVERSE FOREST CON. EASEMENT TO	8/21/15

NOTE: CONTRACTOR TO CURL ALL SILT FENCE/ SUPER-SILT FENCE UPHILL WHEN RUNNING PERPENDICULAR TO CONTOURS



OWNER
 Mr. David Papipluckas
 Mr. Gregory Papipluckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph: (410)-442-5613

DEVELOPER
 Claiman Associates
 c/o Mr. Ron Carter
 1750 Daley Road
 Woodbine, Maryland 21797
 Ph: (410)-442-5613

MARYLAND INTERSTATE HIGHWAY I-95
SHA PLAT NO. 35151
LIBER 506, FOLIO 426



ALDO M. VITUCCI, P.E.
 I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

I hereby certify that the facility shown on this plan was constructed as shown on the "As-Built" plans and meets with the approved plans and specifications.

GRADING & SEDIMENT CONTROL PLAN
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
BUILDABLE BULK PARCEL 'A' AND
NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 5 OF 24

1:20000000.dwg (FINAL) 08/09/2015 3:00:00 PM SHEET 4 & 5 GRADING PLAN.dwg 7/23/2015 1:59:43 PM 11

STREET TREE SCHEDULE				
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	791/40 = 19.92 19.92 x 2 = 39.05 39 TREES	TILIA CORDATA GREENSPIRE GREENSPIRE LITTLELEAF LINDEN	2 1/2-3" CAL.	40' APART ON PUBLIC R/W

NOTE: FINANCIAL SURETY FOR THE REQUIRED 39 STREET TREES WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$11,700.00.

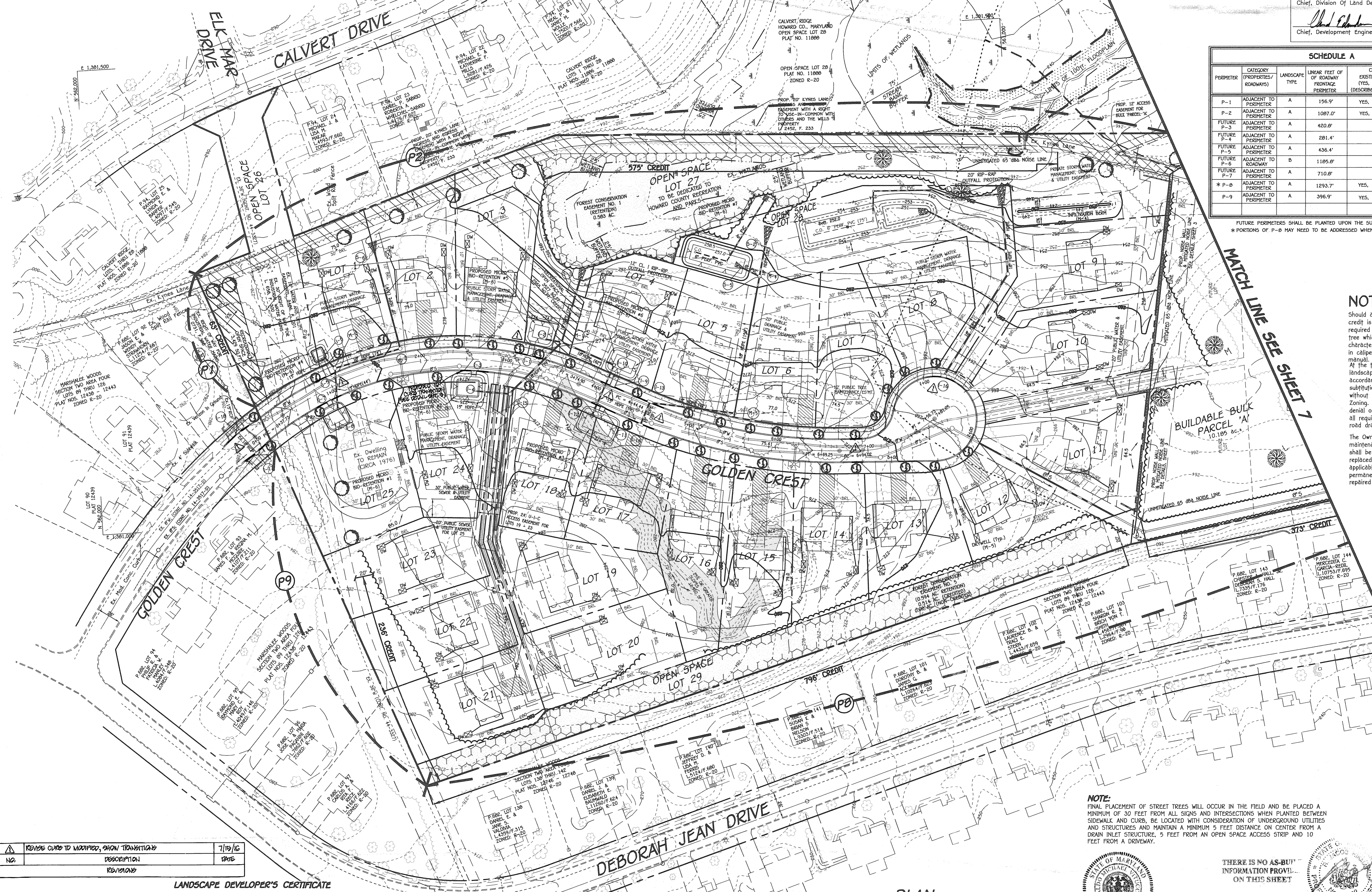
Approved: Department Of Public Works
 Chief Bureau of Highways *M. M. M.* 8/10/2015
 Date

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development *V. H. H.* 8-24-15
 Date

C. H. H. 8/17/15
 Chief, Development Engineering Division

SCHEDULE A PERIMETER LANDSCAPE EDGE								
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BEEM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED AND PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO PERIMETER	A	156.9'	YES, 63' (EX. FOREST)	NO	2	-	-
P-2	ADJACENT TO PERIMETER	A	1087.0'	YES, 575' (EX. FOREST)	NO	9	-	-
FUTURE P-3	ADJACENT TO PERIMETER	A	420.8'	YES, 193'	NO	4	-	-
FUTURE P-4	ADJACENT TO PERIMETER	A	281.4'	YES, 151'	NO	2	-	-
FUTURE P-5	ADJACENT TO PERIMETER	A	436.4'	YES, 324'	NO	2	-	-
FUTURE P-6	ADJACENT TO ROADWAY	B	1189.8'	NO	NO	24	30	-
FUTURE P-7	ADJACENT TO PERIMETER	A	710.8'	YES, 100%	NO	0	-	-
* P-8	ADJACENT TO PERIMETER	A	1293.7'	YES, 1189' (EX. FOREST)	NO	2	-	-
P-9	ADJACENT TO PERIMETER	A	396.9'	YES, 236' (EX. FOREST)	NO	3	-	-

FUTURE PERIMETERS SHALL BE PLANTED UPON THE SUBDIVISION OF PARCEL 'A' & 'B'
 * PORTIONS OF P-8 MAY NEED TO BE ADDRESSED WHEN BUILDABLE BULK PARCEL 'A' IS DEVELOPED.



NOTES:

Should any tree designated for preservation for which landscaping credit is given, 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 Howard County Landscape Manual. At the time of plant installation, all trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations from the 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 the road drawing plans.

The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. 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 the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

PLANT LIST			
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	16	CLADRASTIS KENTUCKIA YELLOWWOOD	2 1/2-3" CAL.

NOTE:
 FINAL PLACEMENT OF STREET TREES WILL OCCUR IN THE FIELD AND BE PLACED A MINIMUM OF 30 FEET FROM ALL SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURBS. BE LOCATED WITH CONSIDERATION OF UNDERGROUND UTILITIES AND STRUCTURES AND MAINTAIN A MINIMUM 5 FEET DISTANCE ON CENTER FROM A DRAIN INLET STRUCTURE, 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.

NO.	REVISIONS	DATE
1	REVISE CURB TO MATCHED, SHOW TRANSITIONS	7/15/16
	DESCRIPTION	DATE
	REVISIONS	

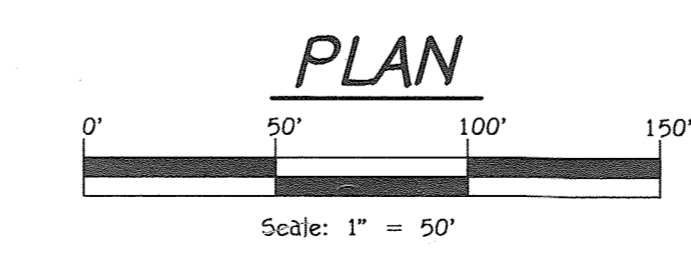
LANDSCAPE DEVELOPER'S CERTIFICATE
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Ronald S. Carter 7/30/2015
 Name Date

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2000

OWNER
 Mr. David Papioukas,
 Mr. Gregory Papioukas &
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph: (410)-442-5613

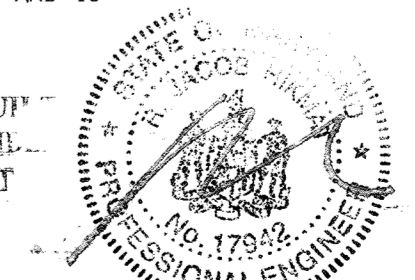
DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph: (410)-442-5613



ALDO M. VIUCCI, P.E.
 Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-17.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

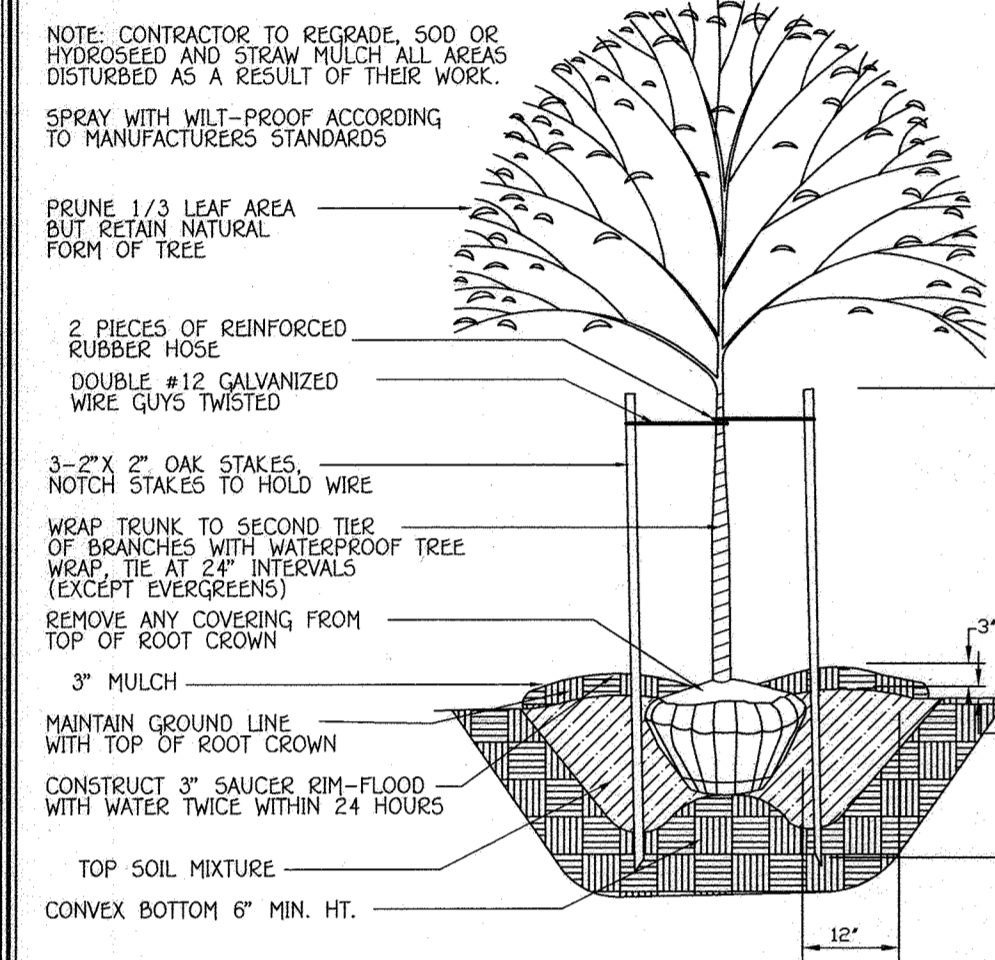
I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



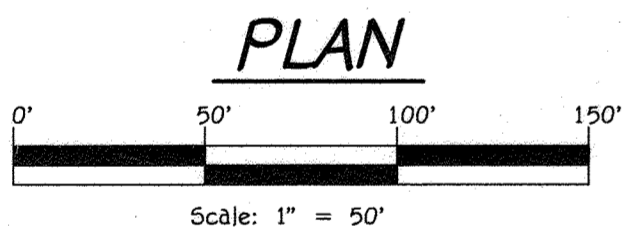
STREET TREE & LANDSCAPE PLAN
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 6 OF 24

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plan and as described herein.
 All plant material, unless otherwise specified, shall be nursery grown, uniform branches, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, debilitating roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable deformations. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug no heated-in plants from cold storage will be accepted.
 Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines For Baltimore-Washington Metropolitan Area", hereinafter "Landscape Guidelines" approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all addenda.
 Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
 Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 Foot High snow fence or blaze orange safety fence at the drip line.
 Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.
 Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
 Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plant list shall prevail.
 All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plan.
 Positive drainage shall be maintained in planting beds 2 percent slope.
 Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard Fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) Fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
 Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its compatibility to the specific ground cover to be treated.
 All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
 This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



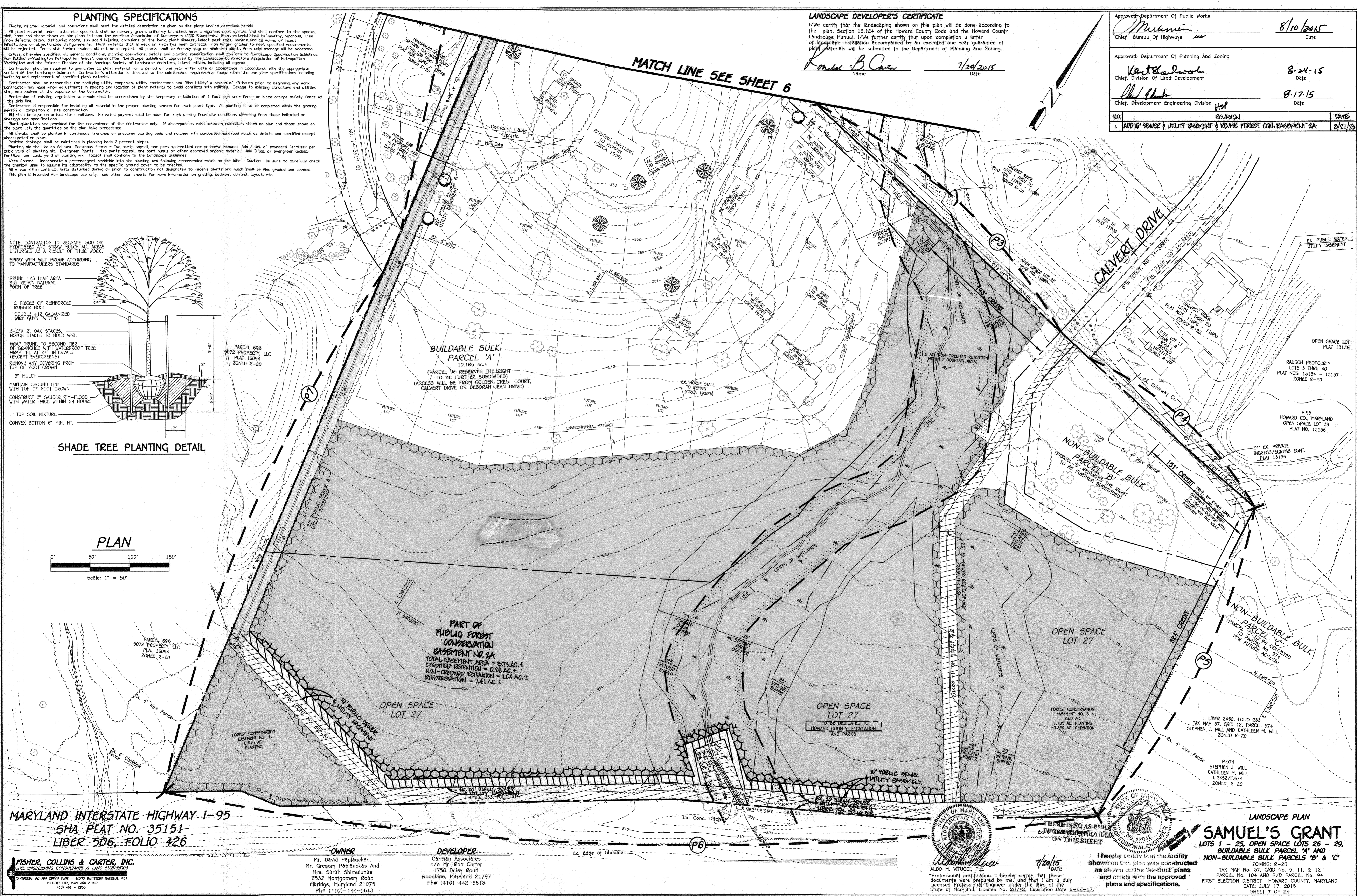
SHADE TREE PLANTING DETAIL



LANDSCAPE DEVELOPER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.
 Name: Ronald B. Carter Date: 7/24/2015

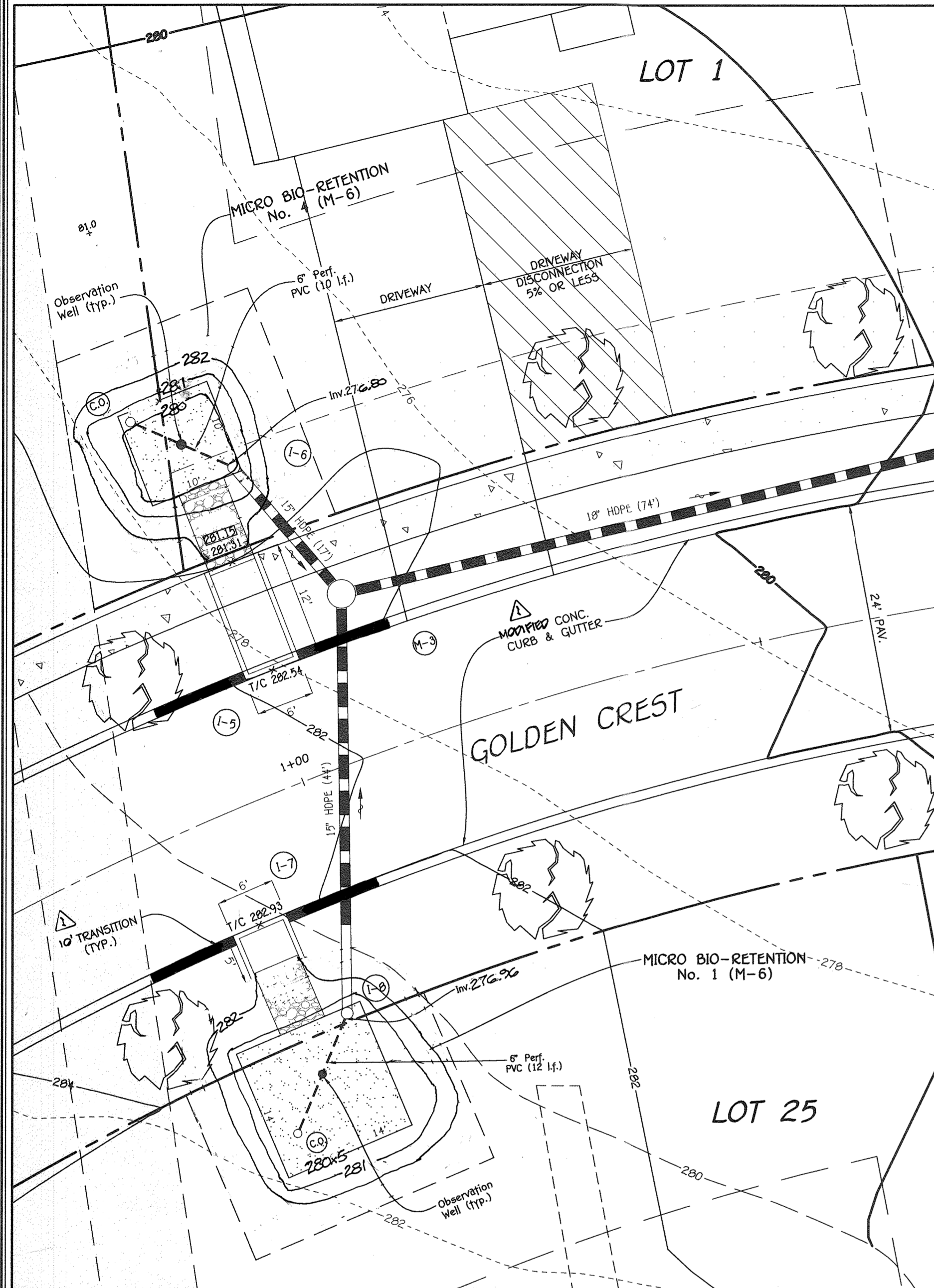
Approved: Department of Public Works Miami Chief, Bureau of Highways	8/10/2015 Date
Approved: Department of Planning and Zoning Kurt Schaefer Chief, Division of Land Development	8-24-15 Date
Chief, Development Engineering Division HSP	8-17-15 Date
NO. 1 REVISION ADD 10' SEWER & UTILITY EASEMENT & REMOVE FOREST CON. EASEMENT 2A	DATE 8/21/15



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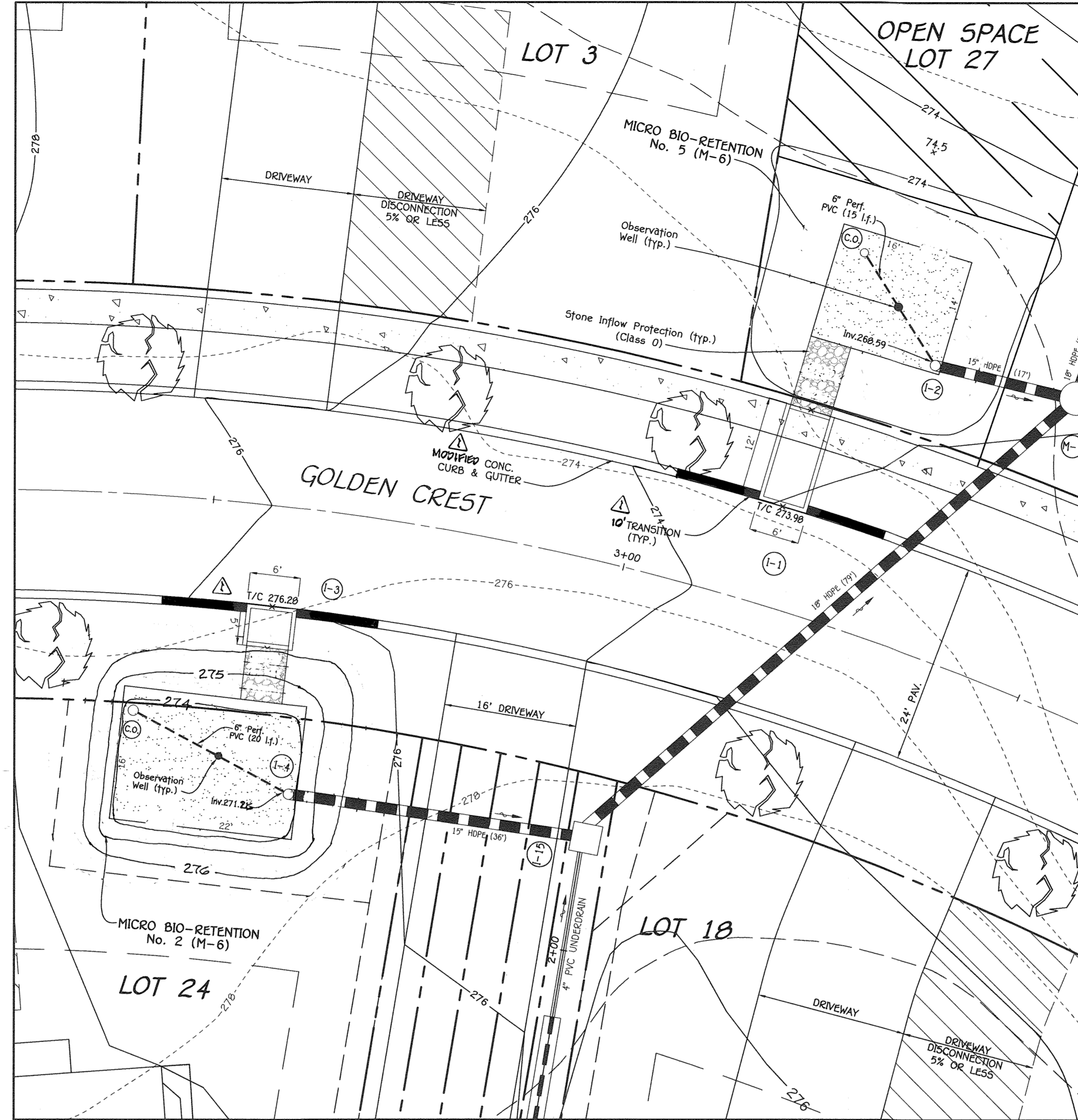
OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (FACILITY NOS. 1 THRU 8)

Approved: Department of Public Works <i>Jac</i> Chief, Bureau of Highways	8/21/2015 Date
Approved: Department of Planning and Zoning <i>K. S. Subudh</i> Chief, Division of Land Development	8-24-15 Date
<i>D. J. ...</i> Chief, Development Engineering Division	8-17-15 Date
REVISIONS	
NO. DESCRIPTION	DATE
1. CHANGE CURB TO WARRIOR, SHOW TRANSITIONS	7/16/16



MICRO BIO-RETENTION (M-6) FACILITY Nos. 1 & 4 PLAN

SCALE: 1" = 10'



MICRO BIO-RETENTION (M-6) FACILITY Nos. 2 & 5 PLAN

SCALE: 1" = 10'

- The owner shall maintain the plant material, mulch layer and soil layer annually; maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, Table A-1.1 and 2.
- The owner shall perform a plant in the spring and in the fall each year. During the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment; replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.
- The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for (M), and 82 v. in some instances where permeability is great, these facilities may be used for (S) as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorus and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide aeration for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

- Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
- Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bio-retention facilities, see Figure A.5 and Table A.4 for planting material guidance).
- Plants known to seed down deep layers should be avoided in systems where filter fabric is used as part of facility design.
- Test soil conditions to determine if soil amendments are necessary.
- Plants shall be located so that access is possible for structure maintenance.
- Stabilize heavy flow areas with erosion control mats or sod.
- Temporarily divert flows from seeded areas until vegetation is established.
- See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics

The characteristics of the soil for the bio-retention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 20% by volume (Environmental Quality Resources (EQE), 1996; Engineering Technology Inc. and Rehabilitation, Inc. (ETRI), 1993). Soils should fall within the SP, ML, SC classifications of the United Soil Classification System (USCS). A permeability of at least 1.0 feet per day (100% infiltration) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Branch or seeds from noxious weeds (e.g., Johnson Grass, Ragwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under C096 15-09.01.05) should be present in the soil. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a handhoe bucket or trowel) by dozer tracks. The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P205)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

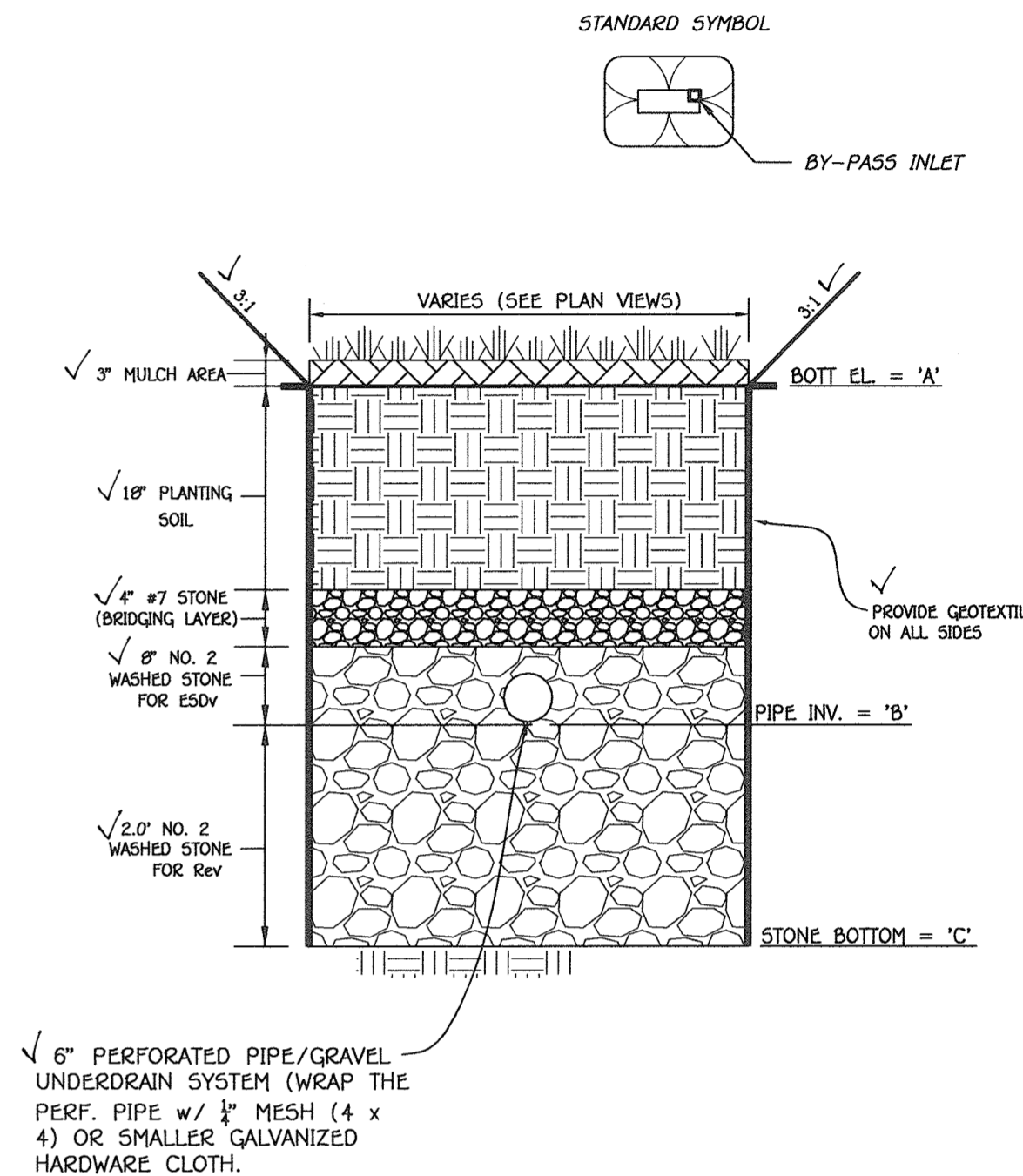
Mulch Layer

The mulch layer plays an important role in the performance of the bio-retention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as mulch material.

Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bio-retention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials; by creating a diverse, dense plant cover, a bio-retention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure. The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bio-retention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge is the highest elevation and generally supports plants adapted to drier conditions. A sample of appropriate plant materials for bio-retention facilities are included in Table A.4. The broad of plant material should be flexible, but should follow the general principles described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bio-retention plan, consult ETR, 1993 or Clapp and Scherer, 1997.



FACILITY NO.	A	B	C
BIO-RETENTION No. 1	280.80	276.92	276.26
BIO-RETENTION No. 2	274.00	271.22	269.61
BIO-RETENTION No. 3	269.70	265.02	265.93
BIO-RETENTION No. 4	279.65	276.82	275.65
BIO-RETENTION No. 5	271.09	268.59	267.09
BIO-RETENTION No. 6	269.42	267.21	265.71
BIO-RETENTION No. 7	257.00	254.50	253.00

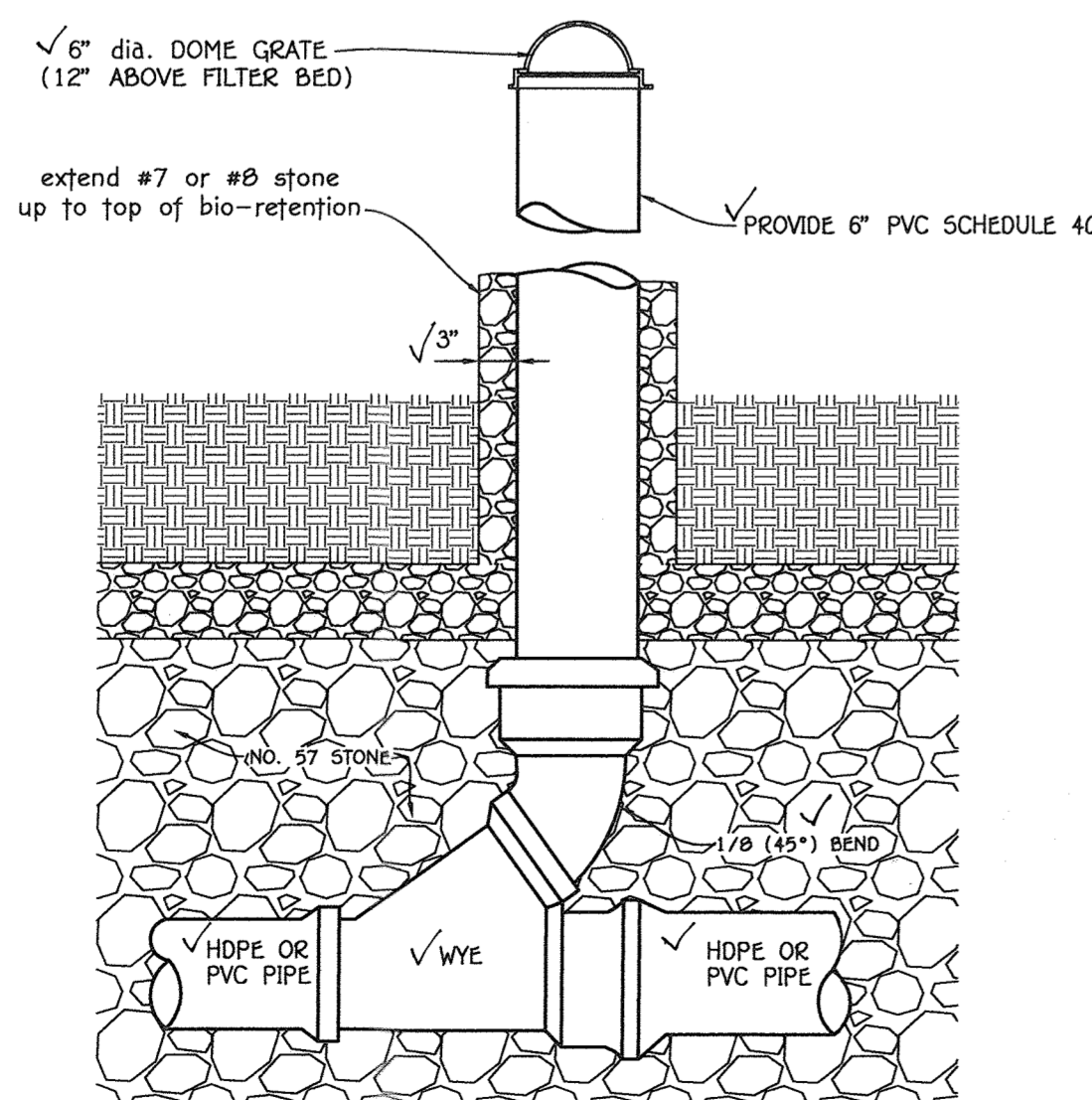
NOTE: PERFORATIONS SHOULD BE 3" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW.

(FACILITY Nos. 1 THRU 7) MICRO BIO-RETENTION (M-6) SECTION

NO SCALE

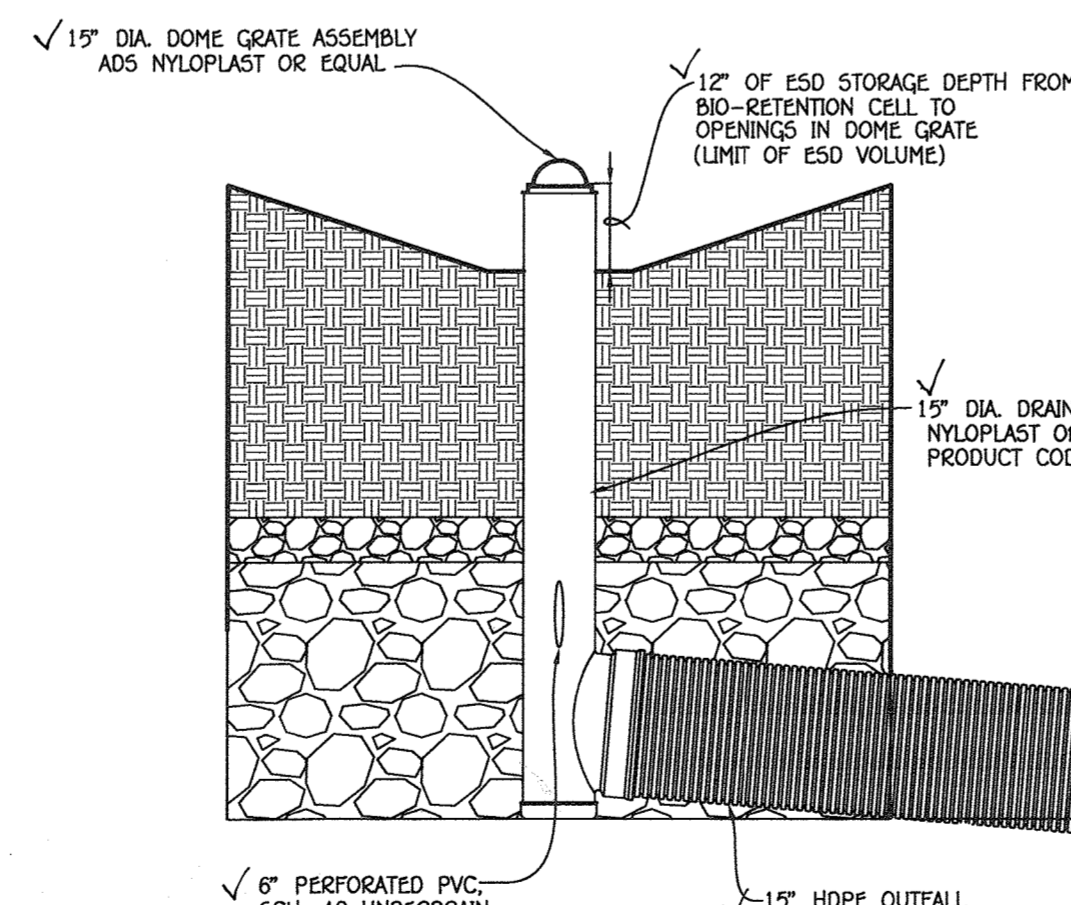
*NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7" REINFORCED CONCRETE) A MINIMUM OF 25' ON EITHER SIDE OF THE PROPOSED COQ/COS INLET OPENING.

NOTE: SEE SHEET 11 FOR DETAILS OF THE PRIVATE STORMWATER MANAGEMENT FACILITIES TO BE BUILT UNDER THE SDP.



TYPICAL CLEAN-OUT DETAIL

NO SCALE

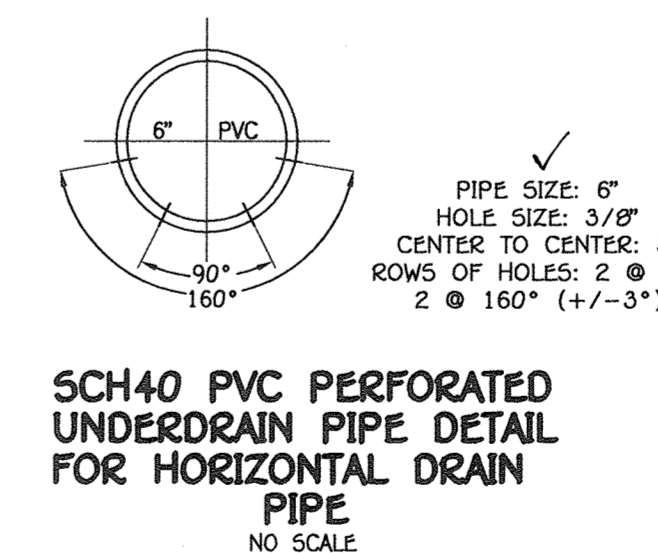


TYPICAL INLET STRUCTURE DETAIL * BIO-RETENTION

NO SCALE

I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

*NOTE: USE TYPE 'D' INLET AT SUMP CONDITION. (FACILITY 3 & 6)



SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 752, TYPE PS 28 OR A5010-N-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (e.g., PVC OR HDPE).

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (No. 4 OR 4 x 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE (No. 57 STONE PREFERRED) AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN. THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

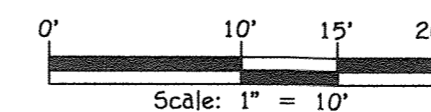
A RIGID, NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

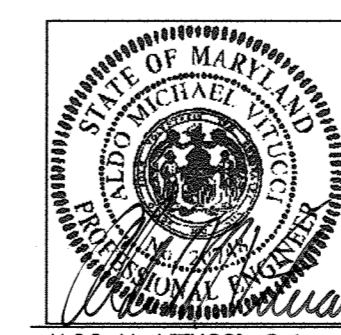
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE: PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21144
(410) 461 - 2999

OWNER
Mr. David Pajlauckas,
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Mrs. Sarah Shimulunas
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DEVELOPER
Carmán Associates
c/o Mr. Ron Carter
1750 Daisy Road
Woodbine, Maryland 21797
Ph# (410)-442-5613



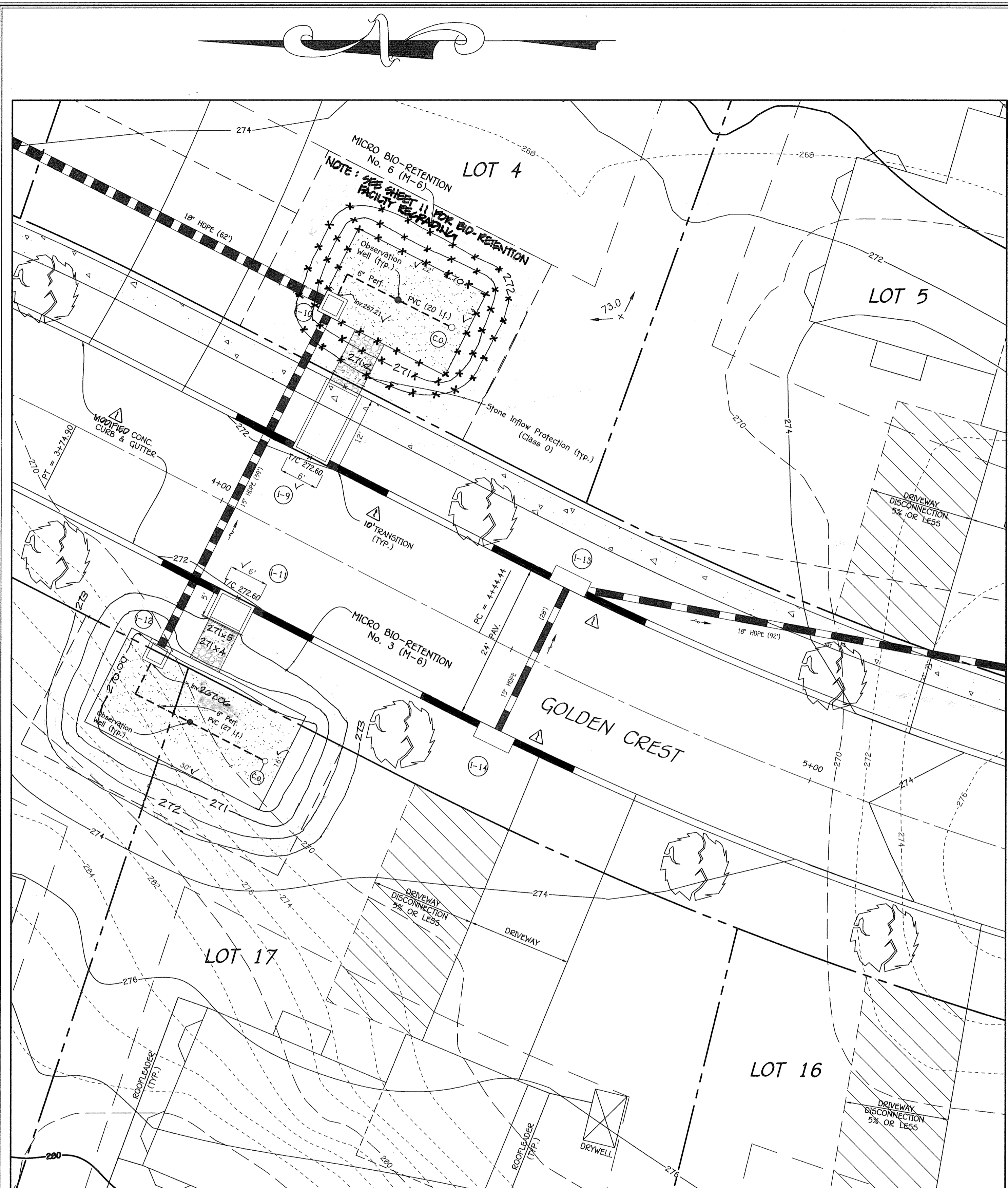
Scale: 1" = 10'



ALDO M. VIUCCI, P.E.

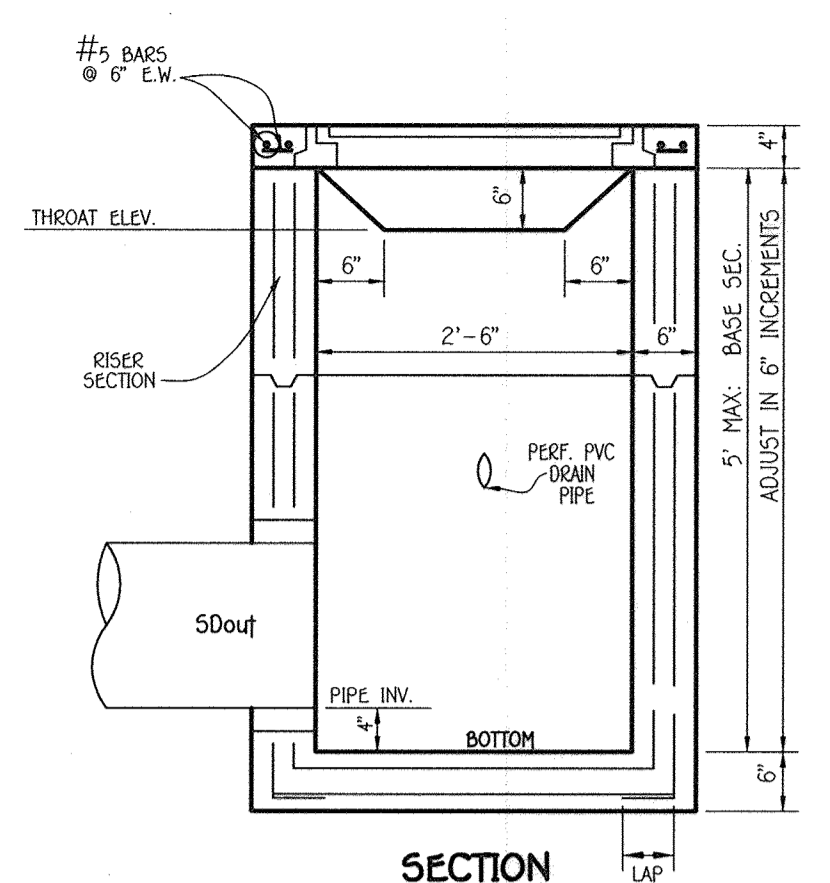
DATE: 8/17/15
"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 82248, Expiration Date 2-22-17."

STORMWATER MANAGEMENT PLANS
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
BUILDABLE BULK PARCEL 'A' AND
NON-BUILDABLE BULK PARCELS 'B' & 'C'
ZONING: R-20
PAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 8 OF 24



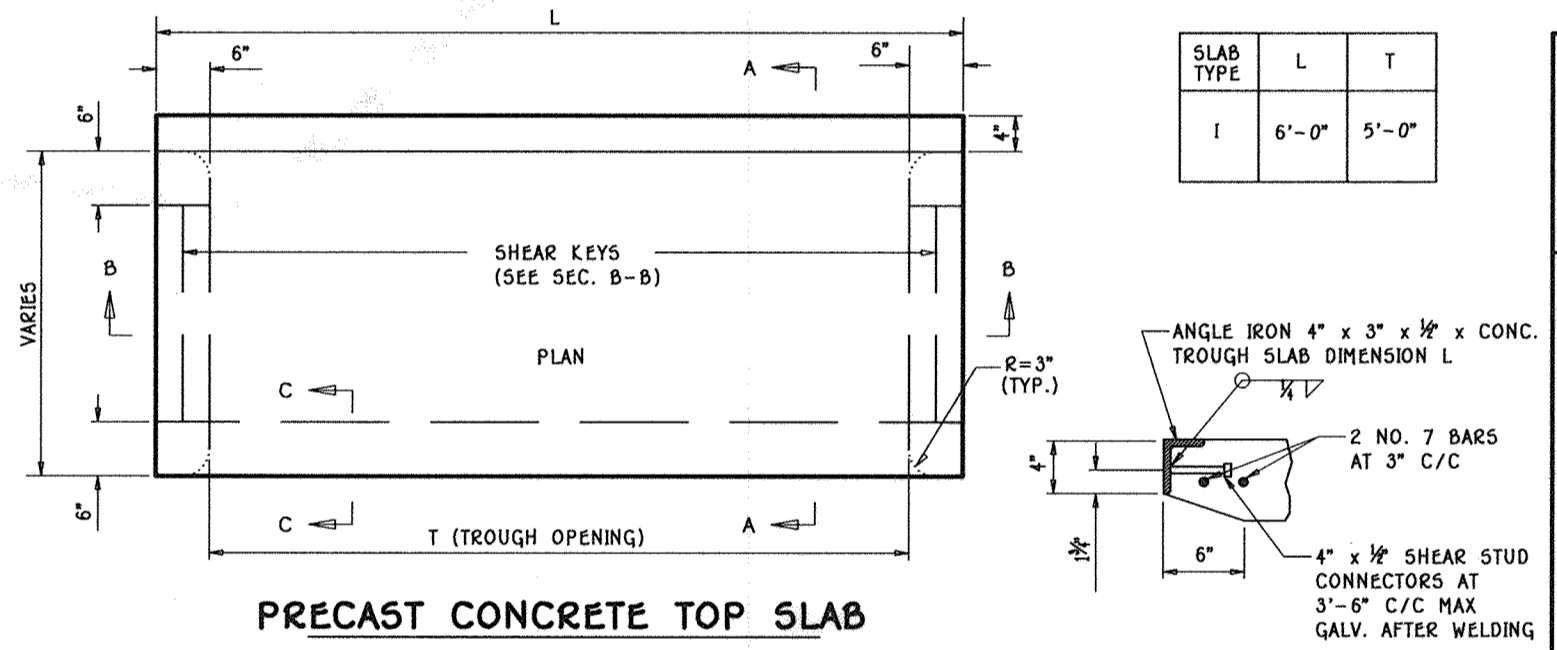
MICRO BIO-RETENTION (M-6) FACILITY Nos. 3 & 6 PLAN

SCALE: 1" = 10'

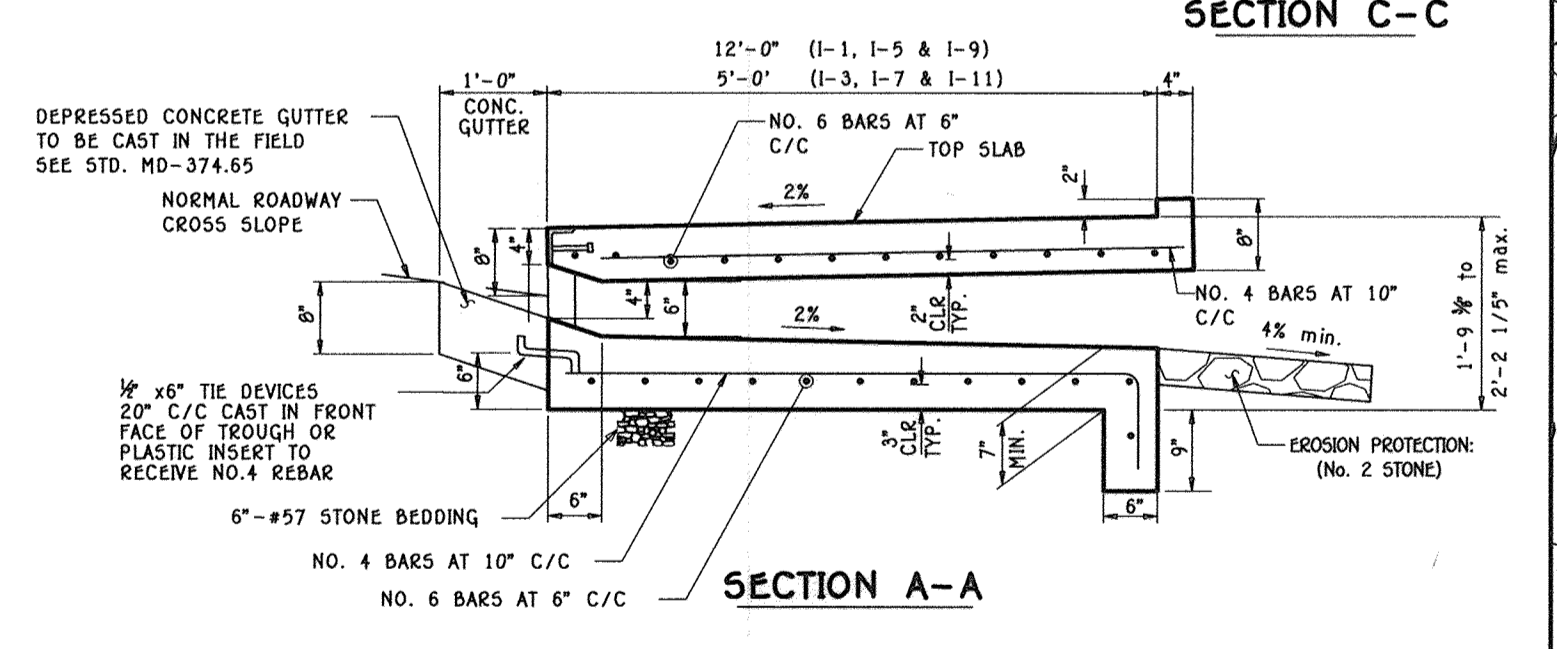


PRECAST STANDARD TYPE "D" INLET (Facility No. 3 & 6)

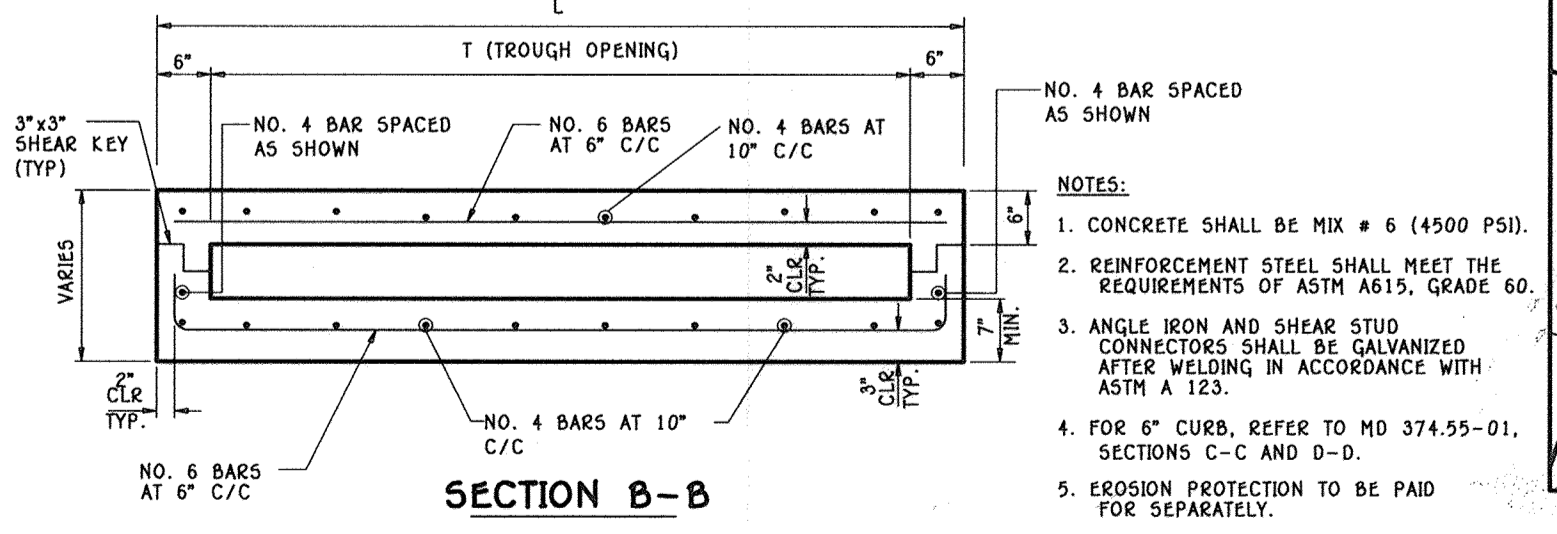
- NOTES
1. CONCRETE SHALL CONFORM TO THE MARYLAND D.O.T. S.H.A. STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, 1988 REC. NO. 6, EXCEPT THAT TYPE III CEMENT AND A.S.T.M. C33 NO. 8 COARSE AGG. SHALL BE USED.
 2. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-186, LAP SPICES SHALL BE A MIN. OF 1 1/2 TRANSVERSE WIRE SPACES. WIRE CAGES SHALL BE TIED, WELDED TO PRODUCE A RIGID UNIT.
 3. OVERALL HEIGHT OF PRECAST IS ADJUSTABLE IN 6" INCREMENTS. FINAL GRADE ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR WITH BLOCK AND MORTAR.



PRECAST CONCRETE TOP SLAB



SECTION A-A



SECTION B-B

PRECAST OR CAST IN PLACE COG/COS OPENING FOR 8" CURB (5' ONLY)

PLANT MATERIAL-BIO-RETENTION FILTER No. 1		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
16	MIXED PERENNIALS	1 FT.
8	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 2		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
15	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 3		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
66	MIXED PERENNIALS	1 FT.
33	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 4		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
25	MIXED PERENNIALS	1 FT.
12	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 5		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
25	MIXED PERENNIALS	1 FT.
12	SHRUBS	2 FT.

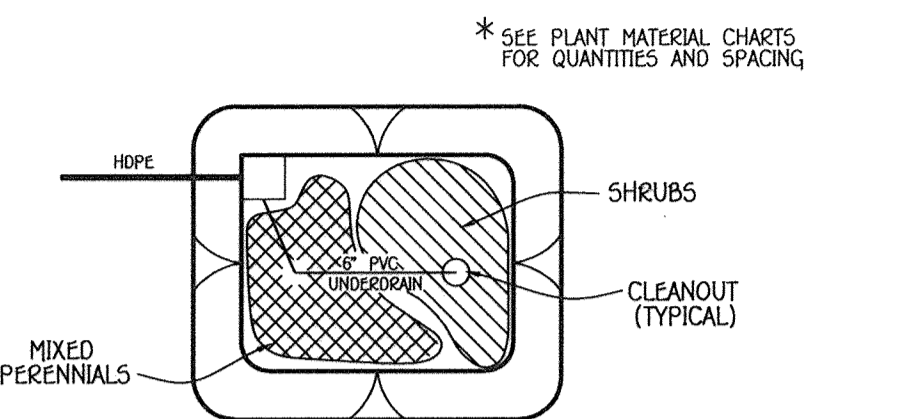
PLANT MATERIAL-BIO-RETENTION FILTER No. 6		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
35	MIXED PERENNIALS	1 FT.
18	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 7		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
100	MIXED PERENNIALS	1 FT.
50	SHRUBS	2 FT.

Approved: Department of Public Works
 Chief, Bureau of Highways
 Approved: Department of Planning and Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division

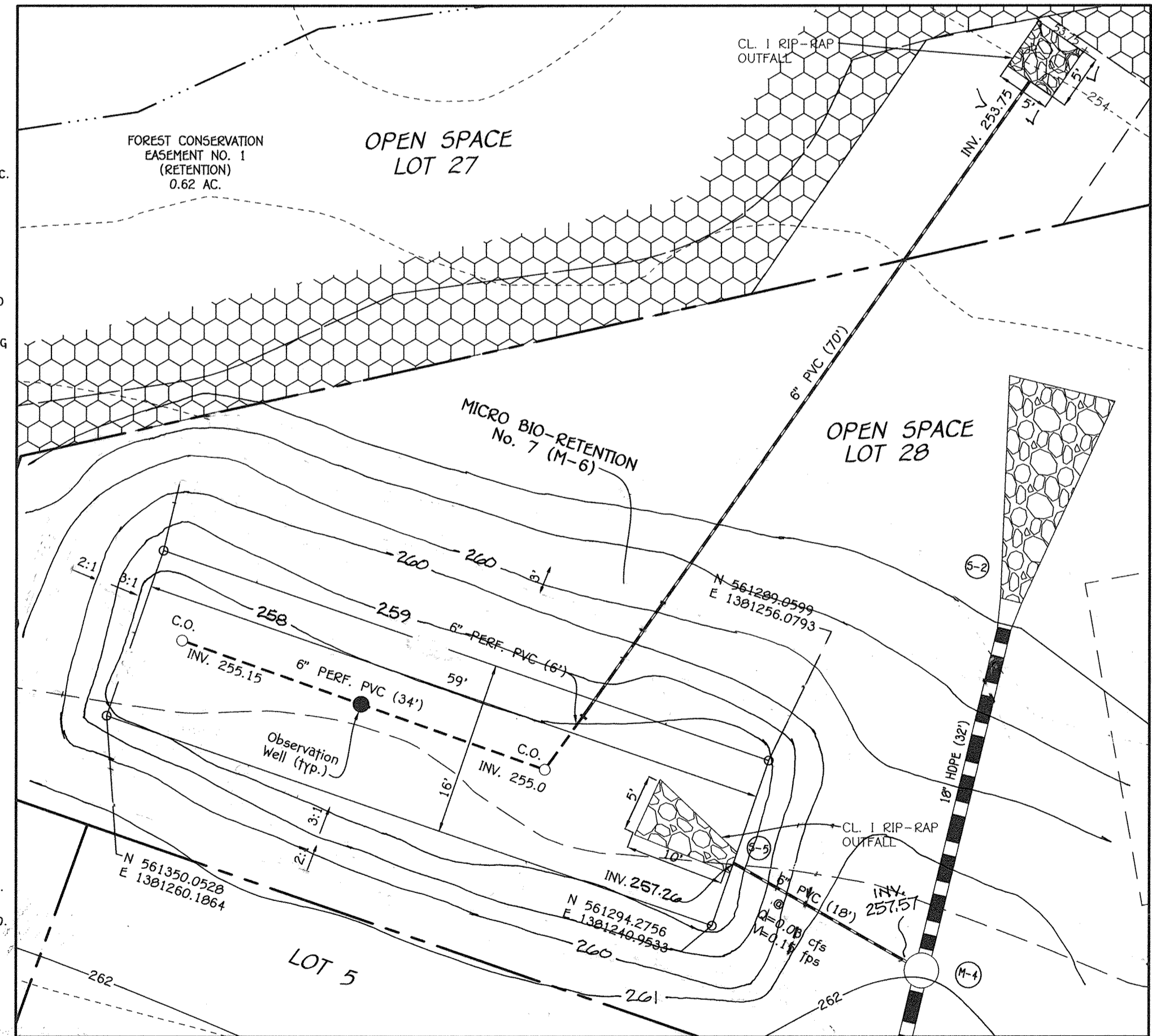
8/21/2015
 8-24-15
 8-17-15

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISE CURB TO MODIFIED, SHOW TRANSITIONS	7/15/16
2	REVISE BIO-RETENTION FACILITY NO. 6 (M-6)	7/16/16



NOTE: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE BIO-RETENTION

- MIXED PERENNIALS
 CUT-LEAF CONEFLOWER
 COMMON FLOPPY TRANSPARENT ASTER
- SHRUBS
 BAYBERRY
 SPICEBUSH
 BURNING BUSH
 WINTERBERRY
 INKBERY
 WITCH HAZEL
 BUTTERNUT
 BUCKEYE
 BOTTLEBRUSH BUCKEYE
- ANY OF THE SHRUBS LISTED MAY BE USED



MICRO BIO-RETENTION (M-6) FACILITY No. 7 PLAN

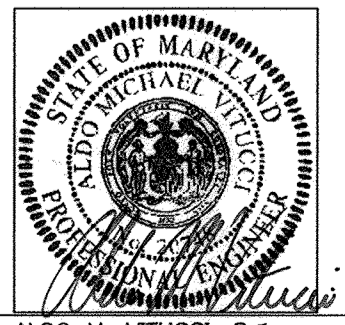
SCALE: 1" = 10'



I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

OWNER
 Mr. David Papiuckas,
 Mr. Gregory Papiuckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph# (410)-442-5613

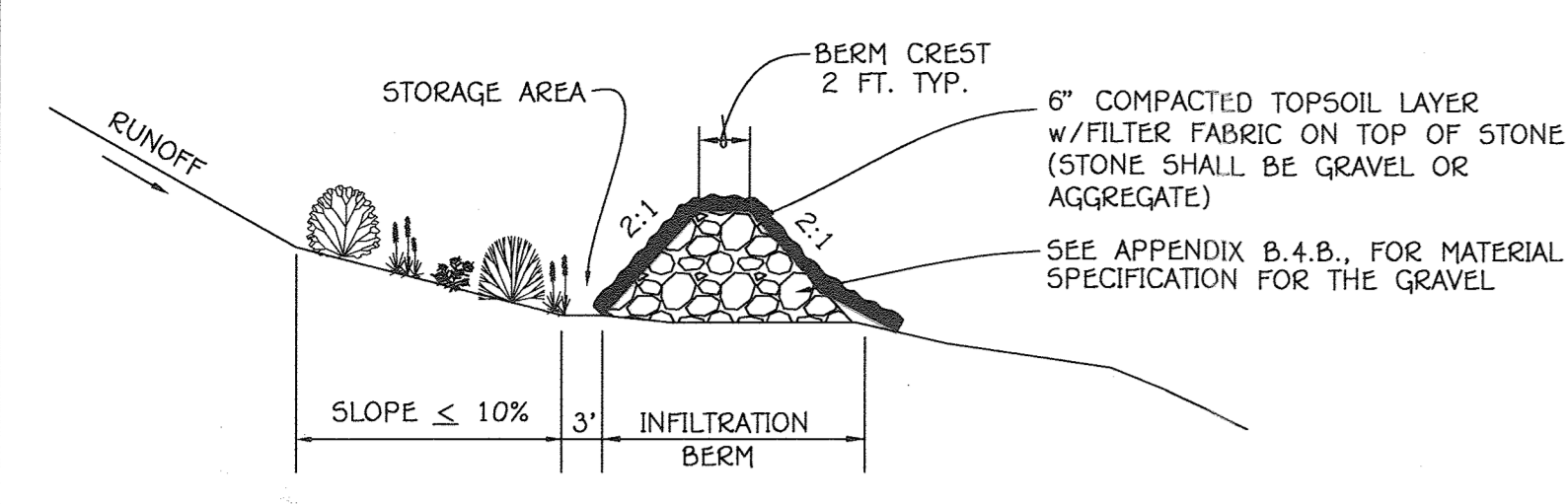
DEVELOPER
 Carman Associates
 c/o Mr. Ron Carfer
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph# (410)-442-5613



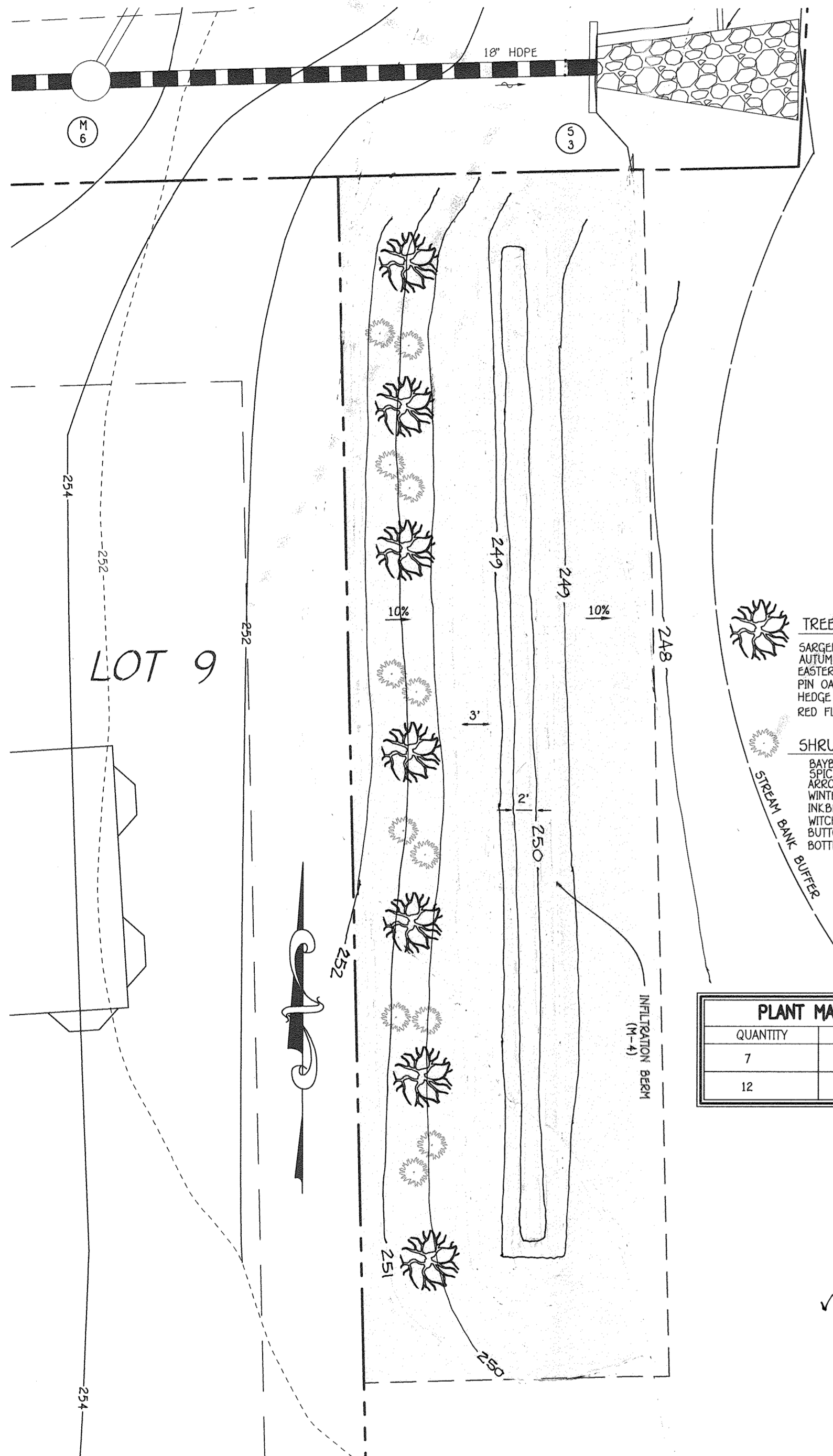
ALDO M. VITUCCI, P.E.
 DATE: 8/16/15
 "Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STORMWATER MANAGEMENT & STORM DRAIN DETAILS
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'

ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 9 OF 24



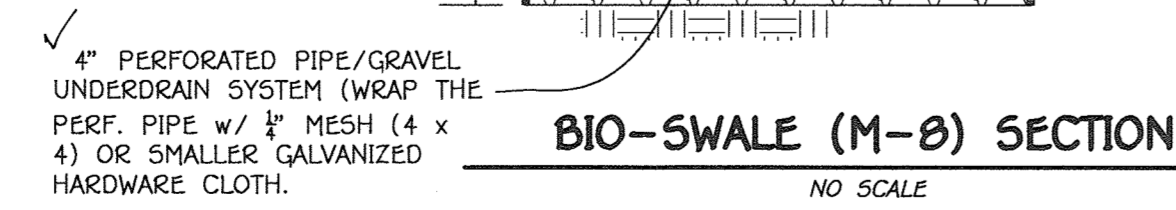
TYPICAL SECTION - INFILTRATION BERM
NO SCALE



INFILTRATION BERM (M-4) PLAN
SCALE: 1" = 10'

OPERATION AND MAINTENANCE SCHEDULE FOR INFILTRATION BERMS (M-4)

- BERM SHOULD BE INSPECTED REGULARLY TO ENSURE THAT PONDING WATER DOES NOT CREATE NUISANCE CONDITIONS.
- SIGNS OF CONCENTRATED FLOW AND OTHER SURFACE EROSION SHOULD BE REPAIRED TO PROMOTE SHEET FLOW.
- A DENSE MAT OF VEGETATION SHOULD BE PRESENT AT ALL TIMES. VEGETATION SHOULD BE REPLACED AS NEEDED.
- WHEN INFILTRATION BERMS ARE INCORPORATED IN A SYSTEM USING OTHER PRACTICES, THE MAINTENANCE CRITERIA FOR THAT PRACTICE SHALL ALSO BE CONSIDERED.



BIO-SWALE (M-8) SECTION
NO SCALE

PLANT MATERIAL-BIO-RETENTION FILTER		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
350	MIXED PERENNIALS	1 FT.
175	SHRUBS	2 FT.

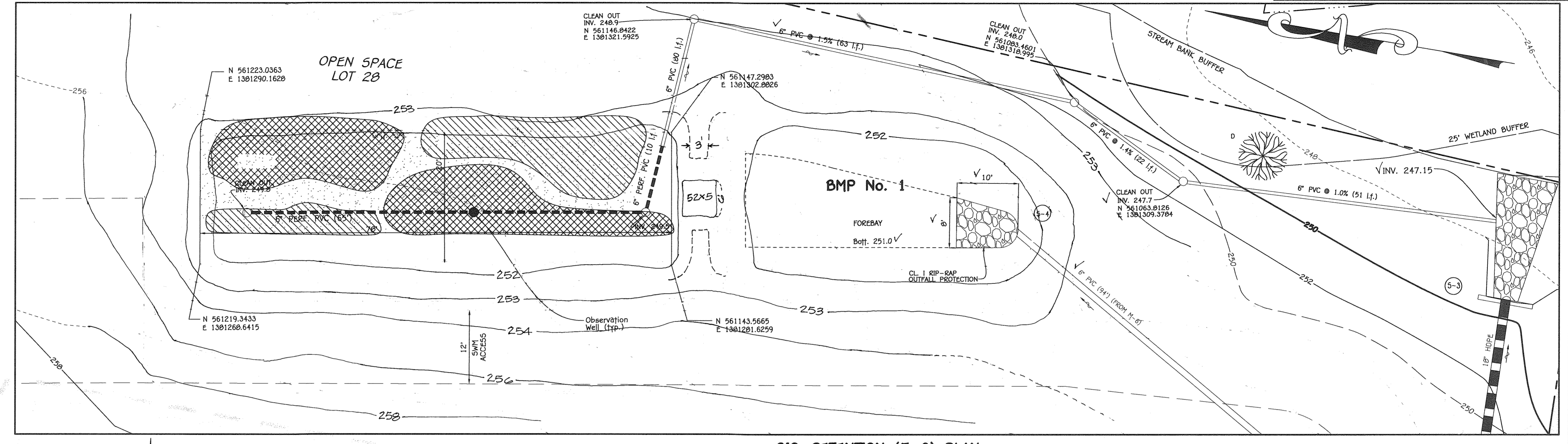
NOTE:
PLANT MATERIAL MUST COVER AT LEAST 90% OF THE SURFACE AREA OF THE BIO-RETENTION

- MIXED PERENNIALS*
CUT-LEAF CONEFLOWER
CARDINAL FLOWER
TRADISCANT ASTER
- SHRUBS*
BAYBERRY
SPICEBUSH
ARROWWOOD
WINTERBERRY
INBERBERRY
WITCH HAZEL
BUTTONBRUSH
BUCKEYE
BOTTLEBRUSH
BUCKEYE
- ANY OF THE PERENNIALS LISTED MAY BE USED
- ANY OF THE SHRUBS LISTED MAY BE USED

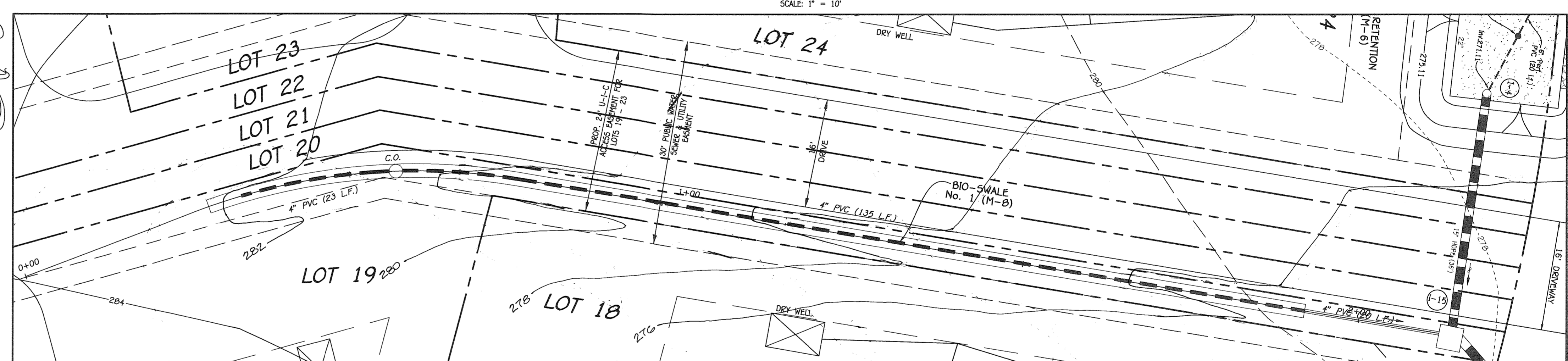
OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- The owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1, and 2.
- The owner shall perform a plant in the spring and in the fall each year. During the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.
- The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

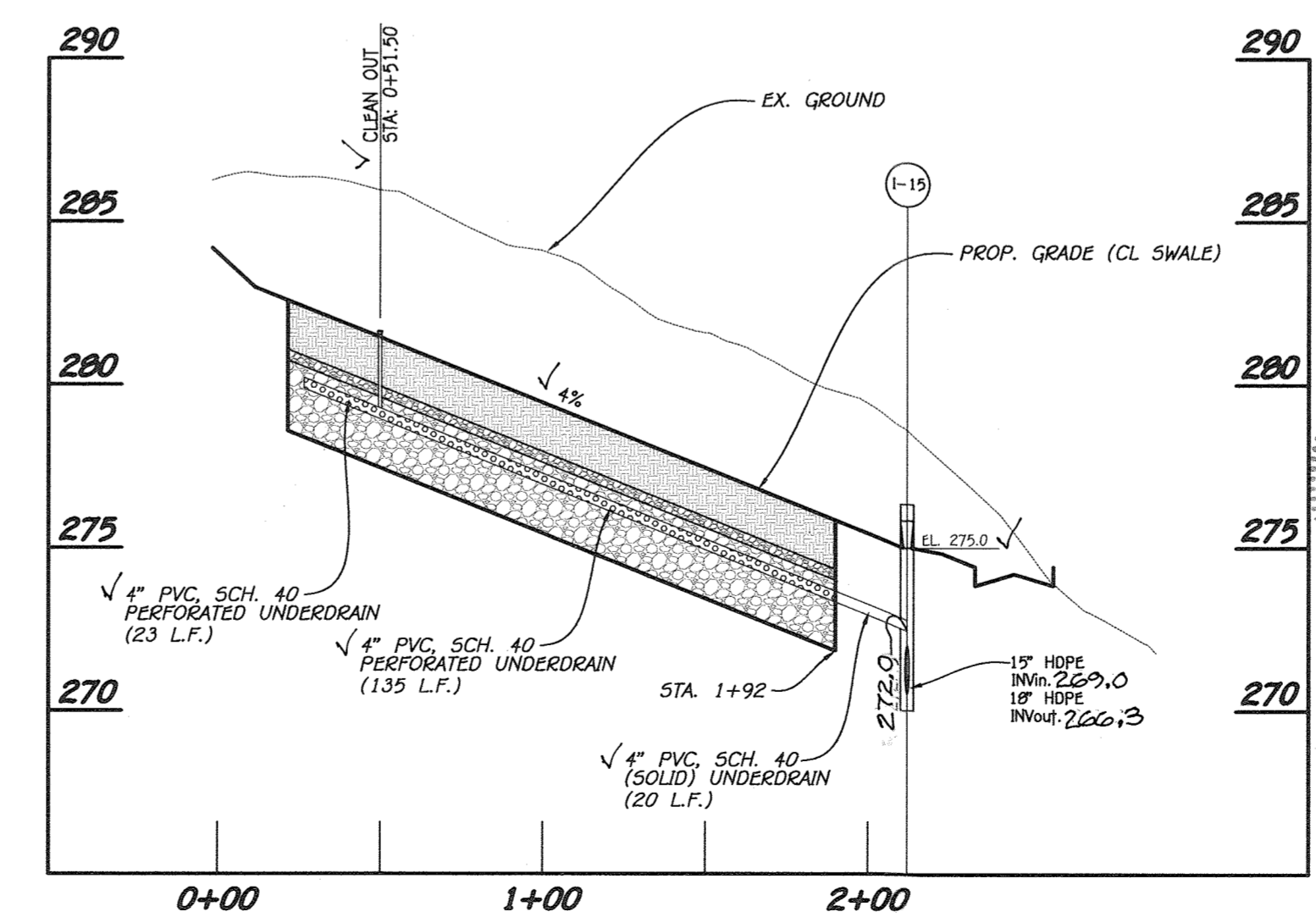
Approved: Department of Public Works Chief, Bureau of Highways <i>[Signature]</i>	9/21/2015 Date	
Approved: Department of Planning and Zoning Chief, Division of Land Development <i>[Signature]</i>	9-24-15 Date	
Approved: Department of Engineering Chief, Development Engineering Division <i>[Signature]</i>	9-17-15 Date	
NO.	DESCRIPTION	DATE



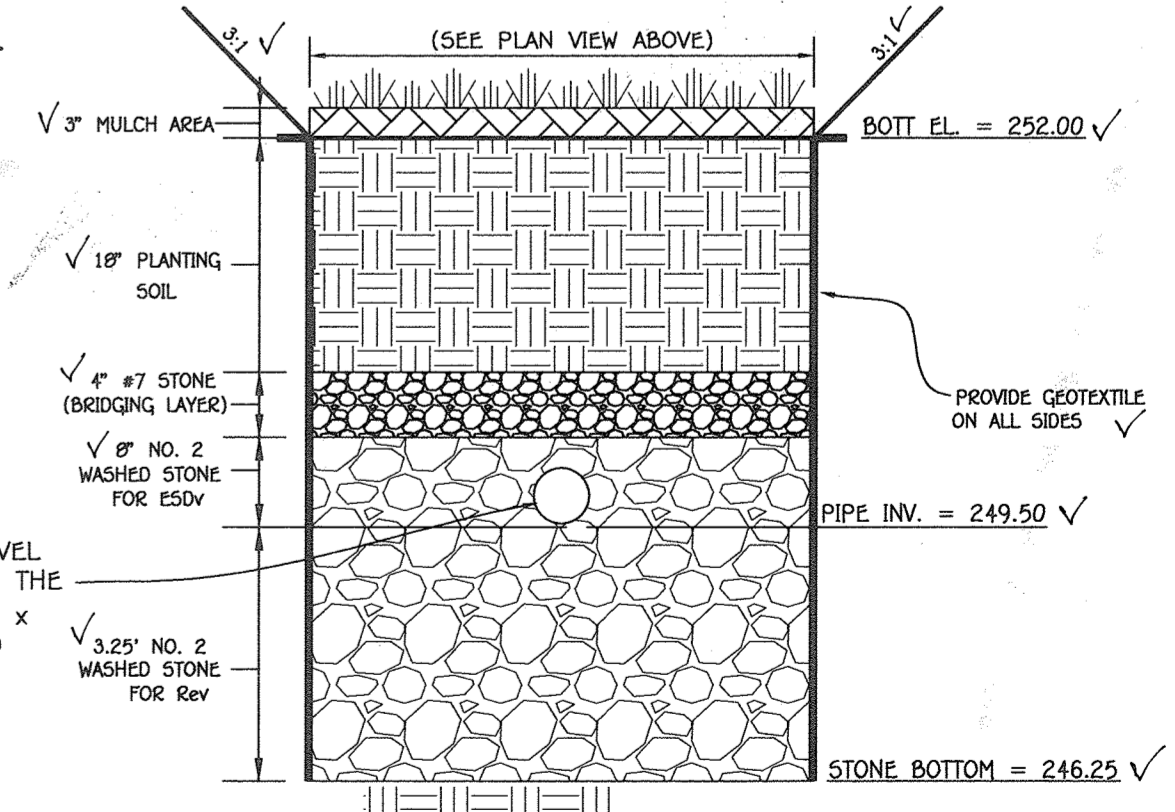
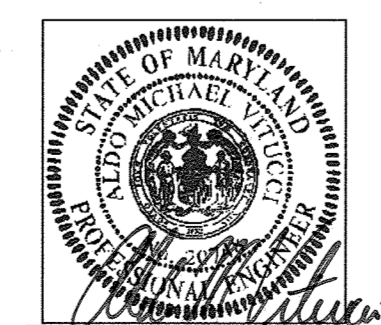
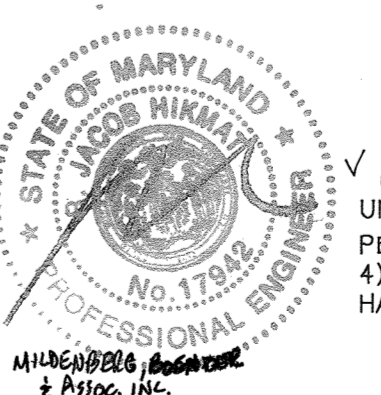
BIO-RETENTION (F-6) PLAN
SCALE: 1" = 10'



BIO-SWALE (M-8) PLAN
SCALE: 1" = 10'



BIO-SWALE ALONG USE-IN-COMMON SECTION
SCALE: HOR. : 1" = 50'
VER. : 1" = 5'



BIO-RETENTION (BMP No. 1) SECTION
NO SCALE

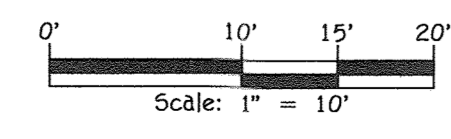
STORMWATER MANAGEMENT PLAN & DETAILS
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
BUILDABLE BULK PARCEL 'A' AND
NON-BUILDABLE BULK PARCELS 'B' & 'C'

ZONING: R-20
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 10 OF 24

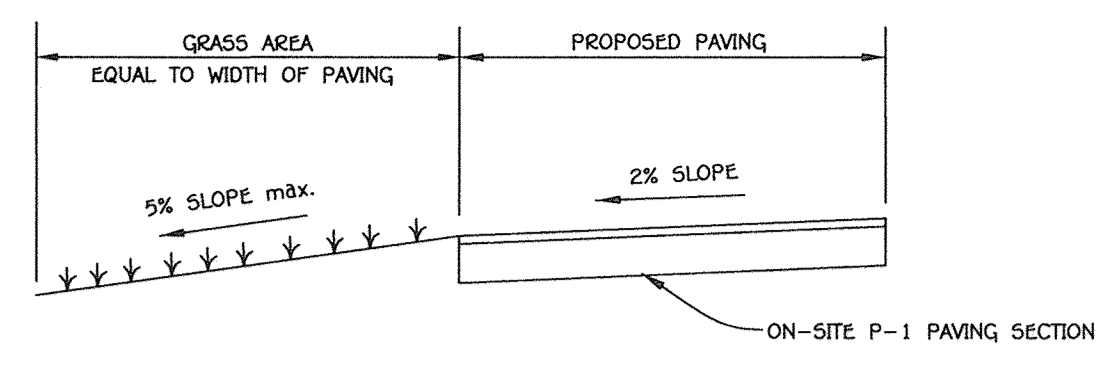
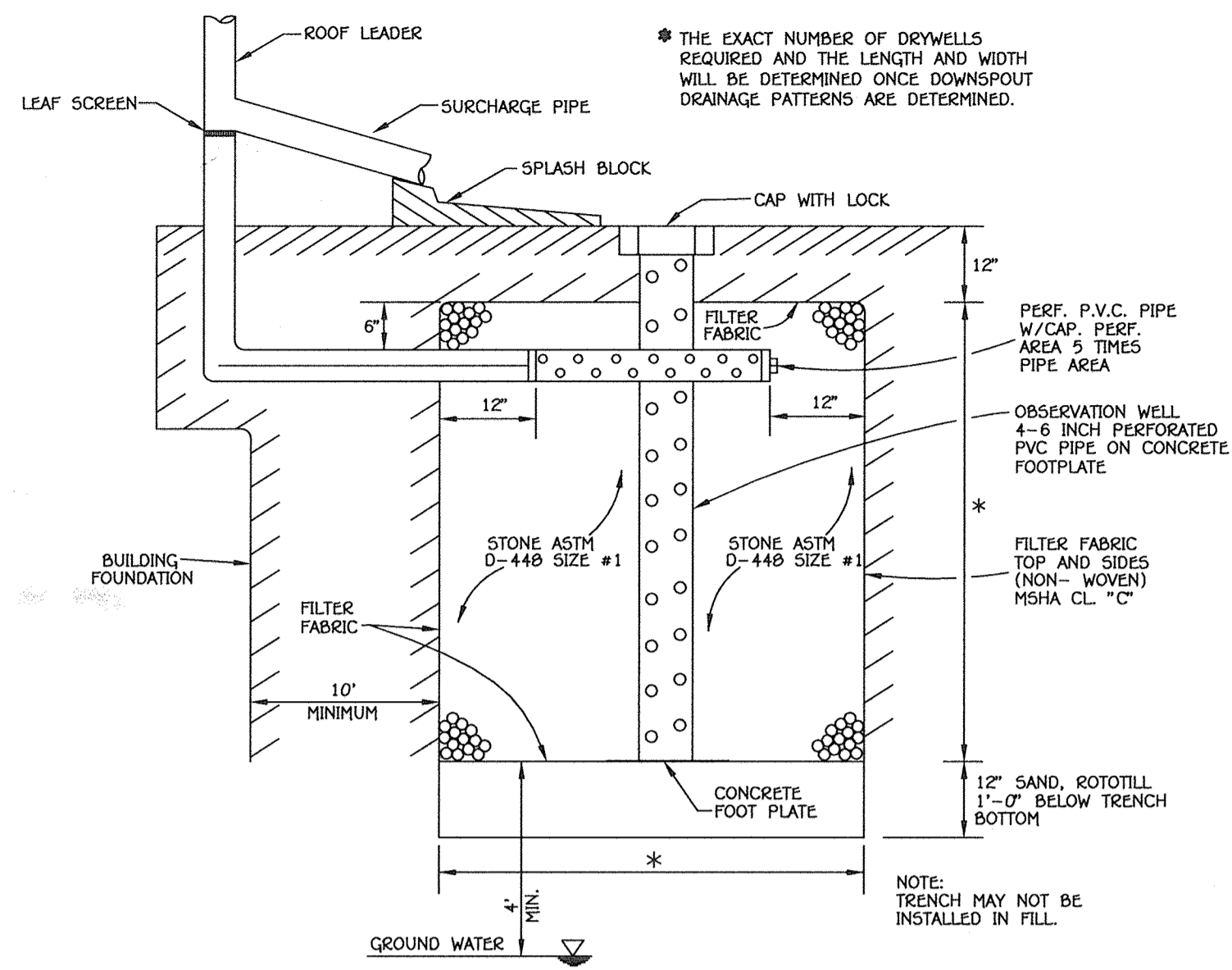
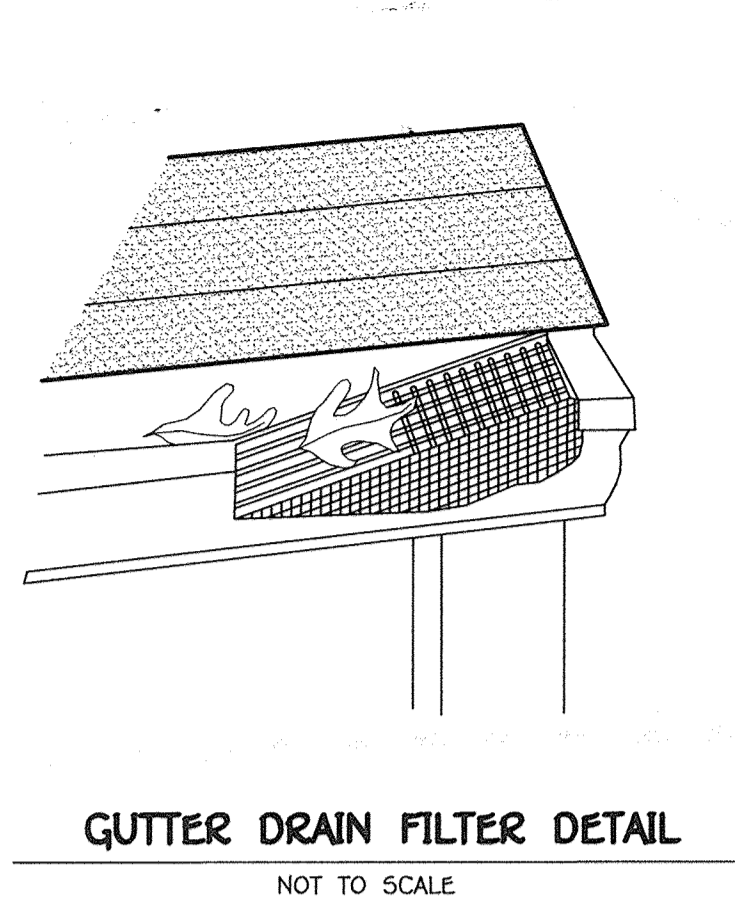
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FRIE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2000

OWNER
Mr. David Papiiuckas,
Mr. Gregory Papiiuckas And
Mrs. Sarah Shimulunas
6532 Montgomery Road
Elkridge, Maryland 21075
Ph: (410)-442-5613

DEVELOPER
Carman Associates
c/o Mr. Ron Carter
1750 Daisy Road
Woodbine, Maryland 21797
Ph: (410)-442-5613



Approved: Department Of Public Works		8/21/2015
Chief, Bureau Of Highways		Date
Approved: Department Of Planning And Zoning		8-24-15
Chief, Division Of Land Development		Date
Approved: Chief, Development Engineering Division		8-17-15
Date		
REVISIONS		
NO.	DESCRIPTION	DATE



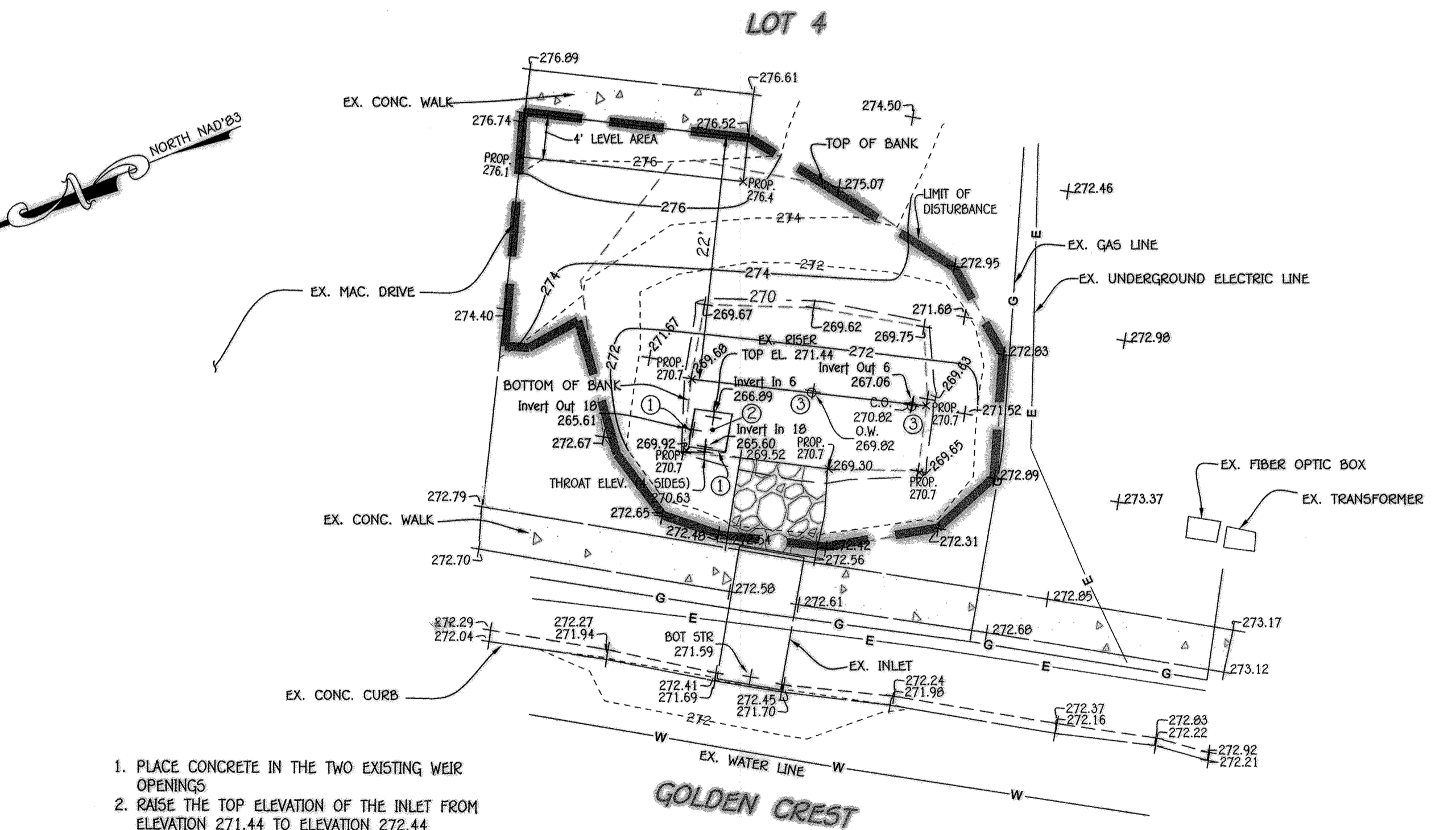
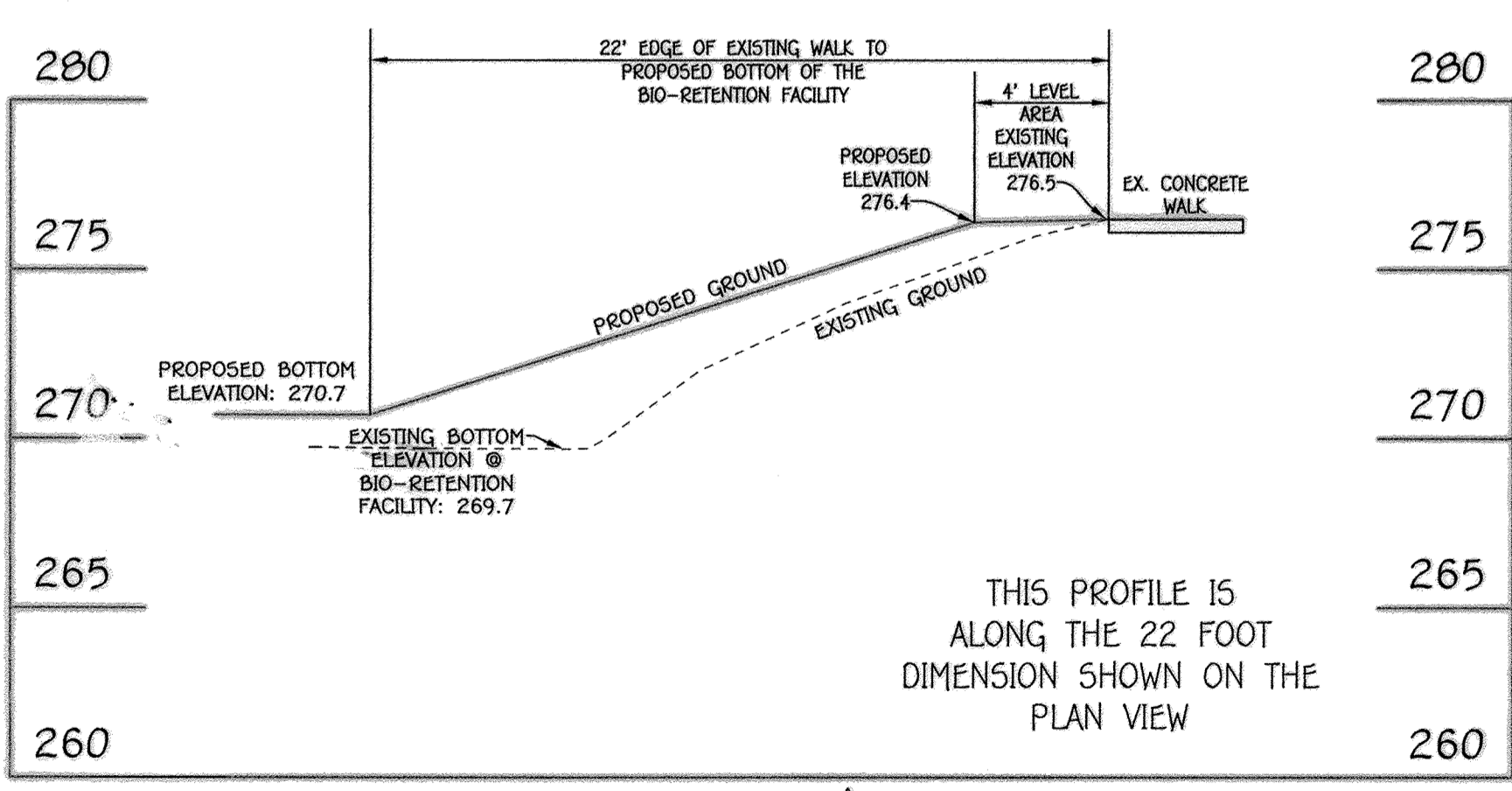
- STORMWATER MANAGEMENT NOTES**
1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL.
 2. CREDITS ARE GIVEN FOR DISCONNECTION OF IMPERVIOUS COVERS.
 3. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE LESS THAN 500 SQ. FT.
 4. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5% SLOPE. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE FIGURE 5.2 OF THE MANUAL AND THE DETAIL SHOWN ON THIS SHEET.
 5. FINAL GRADING WILL BE SHOWN ON PLOT PLAN OR SITE PLAN.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)

1. The owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy storm event.
2. The owner shall record the water levels and sediment build up in the monitoring wells over a period of several days to insure trench drainage.
3. The owner shall maintain a log book to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within a seventy two (72) hour time period, corrective action shall be taken.
5. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.



1. PLACE CONCRETE IN THE TWO EXISTING WEIR OPENINGS
2. RAISE THE TOP ELEVATION OF THE INLET FROM ELEVATION 271.44 TO ELEVATION 272.44
3. RAISE THE EXISTING CLEANOUTS AND THE OBSERVATION WELL 1 FOOT IN ELEVATION

NOTE: THE EXISTING RIP RAP WILL NEED TO BE REMOVED AND REPLACED BASED ON THE REVISED GRADING

- NOTES:
- a) RAISE INVERTS OF WEIR TO ONE FOOT (1') ABOVE MULCH.
 - b) ADDITIONAL SOIL ADDED TO BOTTOM OF FACILITY SHALL MATCH BIO SOIL SPECIFICATIONS.
 - c) REPLACE BIO-RETENTION PLANTS.

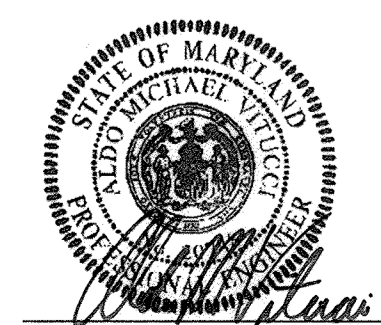
REVISIONS		
NO.	DESCRIPTION	DATE
1	ADDED PLAN AND PROFILE OF REVISED BIO ON LOT 4	7/17/19



I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

PRIVATE FACILITIES
NOTE: ALL PRIVATE FACILITIES ARE TO BE CONSTRUCTED & DETAILED AT THE SITE DEVELOPMENT PLAN PHASE, ONCE ACTUAL HOUSE TYPES ARE SELECTED.



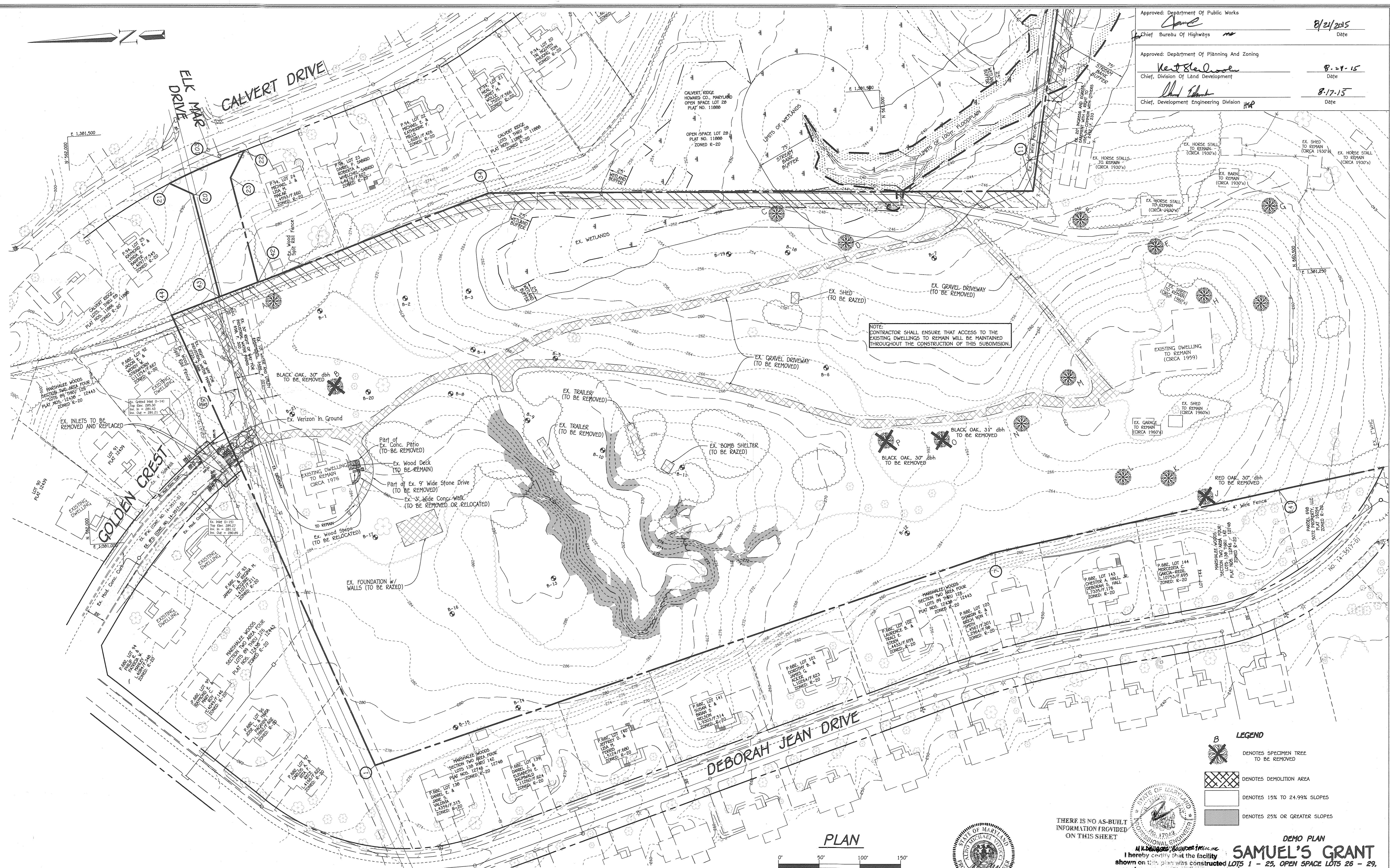
ALDO M. TUCCI, P.E.
"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 22742, Expiration Date 2-22-17."

FUTURE STORMWATER MANAGEMENT DETAILS
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
BUILDABLE BULK PARCEL 'A' AND
NON-BUILDABLE BULK PARCELS 'B' & 'C'
ZONING: R-20
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 11 OF 24

Approved: Department Of Public Works
James
 Chief Bureau Of Highways
 Date: 8/21/2015

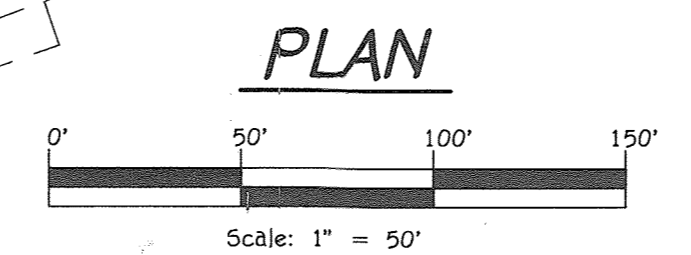
Approved: Department Of Planning And Zoning
Kent E. O'Neal
 Chief, Division Of Land Development
 Date: 8-21-15

David E. Smith
 Chief, Development Engineering Division
 Date: 8-17-15

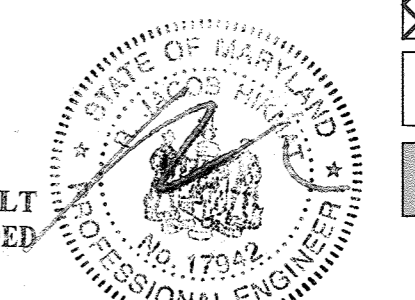


NOTE: CONTRACTOR SHALL ENSURE THAT ACCESS TO THE EXISTING DWELLINGS TO REMAIN WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION OF THIS SUBDIVISION.

- LEGEND**
- DENOTES SPECIMEN TREE TO BE REMOVED
 - DENOTES DEMOLITION AREA
 - DENOTES 15% TO 24.99% SLOPES
 - DENOTES 25% OR GREATER SLOPES



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



DEMO PLAN
SAMUEL'S GRANT
 I hereby certify that the facility shown on this plan was constructed as shown on the approved plans and meets with the approved plans and specifications.

LOT 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCELS 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'

ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 12 OF 24

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE
 ELKDRIFT CITY, MARYLAND 21042
 (410) 461-2095

NO.	REVERSE STREET NAME	DESCRIPTION	DATE
1	REVERSE STREET NAME	7/10/10	
		REVISIONS	

OWNER
 Mr. David Paplauckas,
 Mr. Gregory Paplauckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph: (410)-442-5613

DEVELOPER
 Cairman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph: (410)-442-5613

E:\2006\06100\06100-3001-SHEET 12 DEMO PLAN.dwg 7/20/2015 7:59:59 AM 11

STRUCTURE SCHEDULE

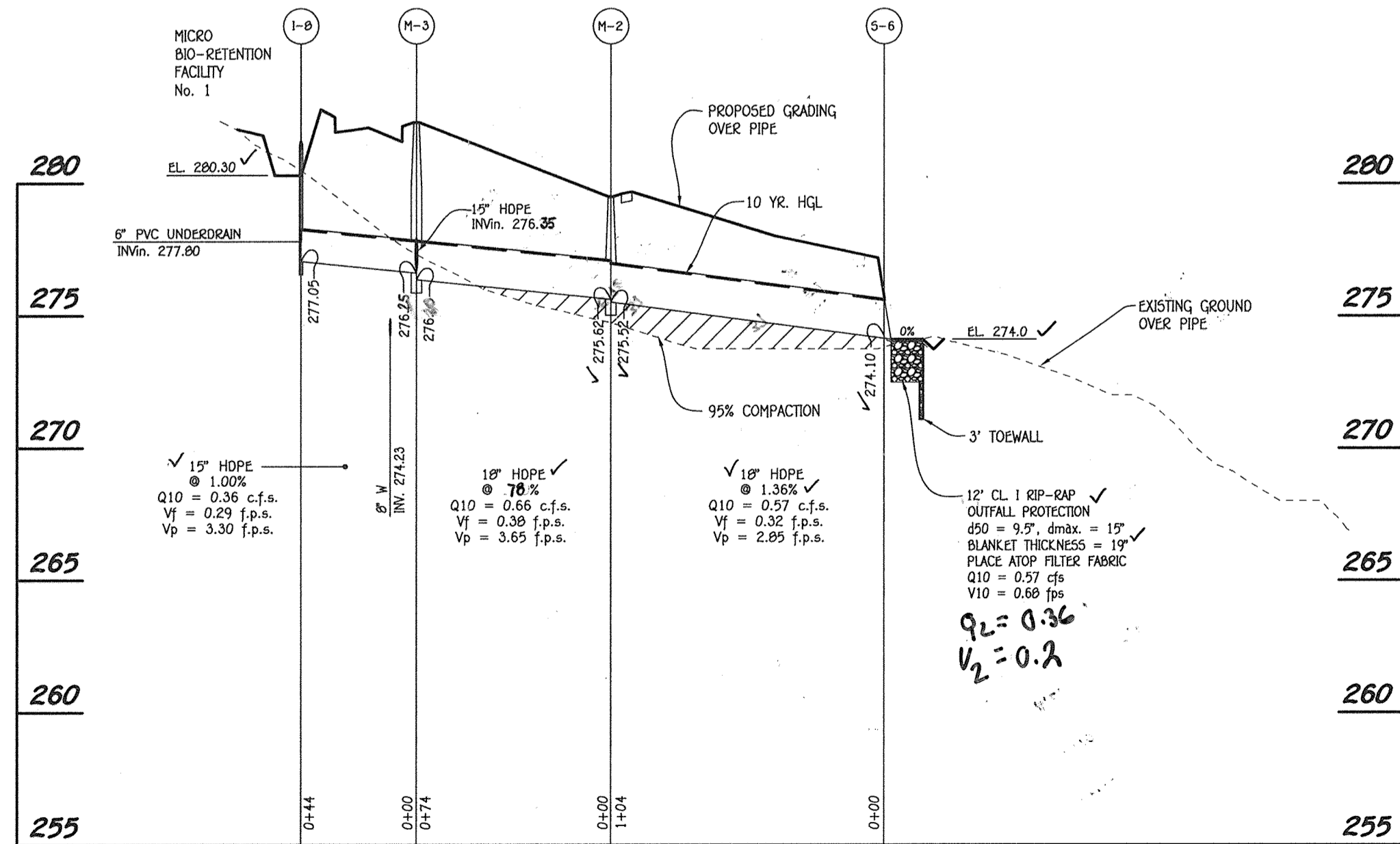
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION	ROAD STA./COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
I-1	273.90			GOLDEN CREST	3+16.2	12.0' L	COG/COS OPENING	MD - 374.60
I-2	* 272.09	268.59 (6")	267.84	GOLDEN CREST	3+27.7	33.7' L	15" BASIN	Nyloplast OR EQUAL
I-3	276.20			GOLDEN CREST	2+58.4	12.0' R	COG/COS OPENING	MD - 374.60
I-4	* 274.76	271.26 (6")	269.76	GOLDEN CREST	2+63.5	34.1' R	15" BASIN	Nyloplast OR EQUAL
I-5	282.54			GOLDEN CREST	1+01.3	12.0' L	COG/COS OPENING	MD - 374.60
I-6	* 280.80	276.80 (6")	276.70	GOLDEN CREST	1+04.7	33.2' L	15" BASIN	Nyloplast OR EQUAL
I-7	282.93			GOLDEN CREST	0+90	12.0' R	COG/COS OPENING	MD - 374.60
I-8	* 281.46	276.96 (6")	276.21	GOLDEN CREST	0+95	24.1' R	15" BASIN	Nyloplast OR EQUAL
I-9	272.60			GOLDEN CREST	4+09.00	12.0' L	COG/COS OPENING	MD - 374.60
I-10	* 272.09	267. (6"), 265.84	265.74	GOLDEN CREST	4+02	34.2' L	"D" INLET	D - 4.10
I-11	272.60			GOLDEN CREST	4+09.00	12.0' R	COG/COS OPENING	MD - 374.60
I-12	throat = 271.06	267.43 (6")	266.06	GOLDEN CREST	4+02	25.3' R	"D" INLET	D - 4.10
I-13	272.94	263.59	265.39	GOLDEN CREST	4+54	12.0' L	A-5	D - 4.01
I-14	272.96		266.06	GOLDEN CREST	4+54	12.0' R	A-5	D - 4.01
I-15	throat = 275.00	272.00 (4"), 269.00	266.66	GOLDEN CREST	3+04	32.5' R	"D" INLET	D - 4.10
I-16	266.30		261.65	GOLDEN CREST	L.P. STA. 1+25.86		A-5	D - 4.01
I-17	285.85	281.12 (EX. 18")	280.89 (EX. 24")	GOLDEN CREST	-0+09.37	13.6' R	A-5	D - 4.01
I-18	286.01	281.43 (EX. 15")	281.21 (EX. 18")	GOLDEN CREST	-0+10.70	14.3' L	A-5	D - 4.01
M-1	274.00	267.63, 265.35, 265.85	265.35	GOLDEN CREST	3+43.4	33.1' L	4" DIA. MANHOLE	G - 5.12
M-2	279.67	275.62	275.52	GOLDEN CREST	1+80.6	18' L	4" DIA. MANHOLE	G - 5.12
M-3	282.30	276.35, 276.24	276.20	GOLDEN CREST	1+10.3	18' L	4" DIA. MANHOLE	G - 5.12
M-4	262.37	258.37	258.57, 257.87 (6")	GOLDEN CREST	5+40.8	178.7' L	4" DIA. SHALLOW MH	G - 5.12
M-5	276.76	264.40	264.30	GOLDEN CREST	5+48.6	29.0' L	4" DIA. MANHOLE	G - 5.12
M-6	257.06	253.00	253.00, 251.75 (6")		N 561,207.54 E 1,381,248.15		4" DIA. MANHOLE	G - 5.12
M-7	257.75	253.35	253.25		N 561,208.69 E 1,381,224.48		4" DIA. SHALLOW MH	G - 5.12
S-1	265.37	262.60			N 561,469.11 E 1,381,244.87		TYPE 'C' ENDWALL	D - 5.21
S-2	258.00	256.50			N 561,257.33 E 1,381,268.68		18" FLARED END SECTION	**
S-3	250.01	247.24			N 561,208.67 E 1,381,259.67		TYPE 'C' ENDWALL	D - 5.21
S-4		251.00			N 561,268.90 E 1,381,262.34		6" MITERED PIPE END	
S-5		257.26			N 561,262.34 E 1,381,268.69		6" MITERED PIPE END	
S-6	275.60	274.10			N 561,268.69 E 1,381,280.99		18" FLARED END SECTION	**

NOTE: TOP ELEVATION OF COG/COS OPENING IS AT 12" OFFSET FROM CENTERLINE ON GOLDEN CREST
 * - DENOTES TOP OF BASIN ELEVATION
 ** - ADS (ADVANCED DRAINAGE SYSTEMS) OR EQUAL
 NOTE: SEE SHEET 9 FOR COG/COS OPENING DETAIL FOR SLAB TYPES

PIPE SCHEDULE

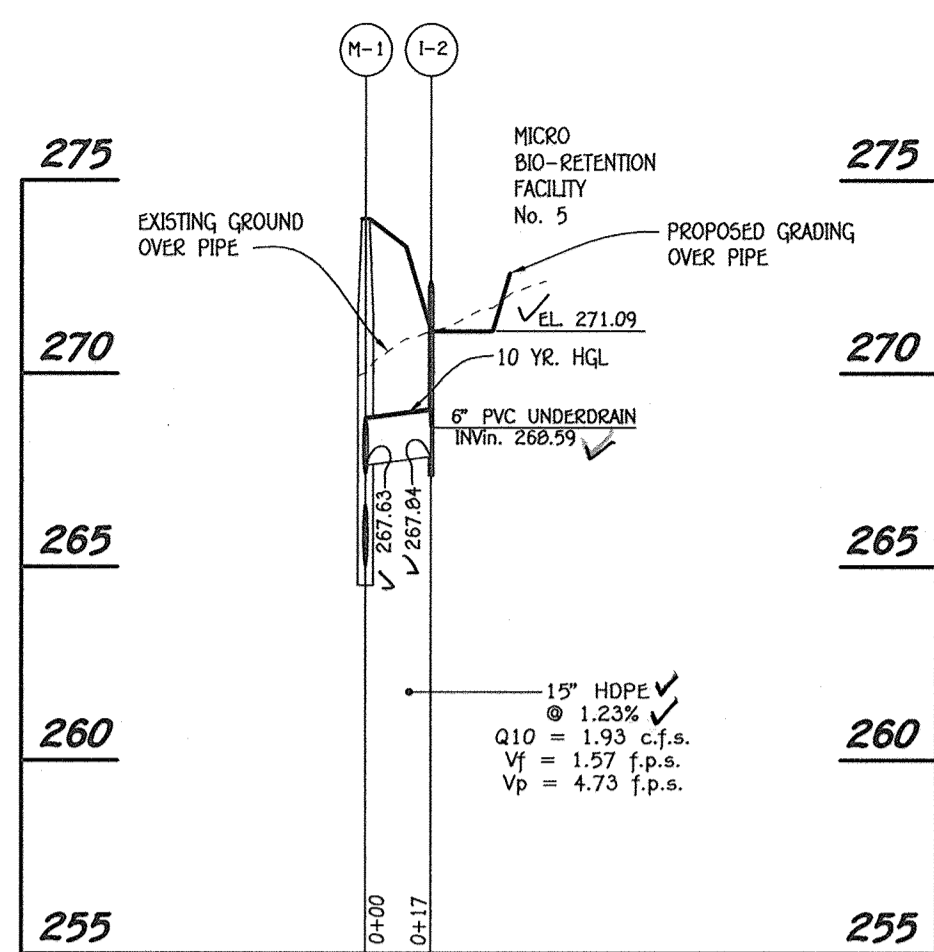
SIZE	CLASS	LENGTH
15"	HDPE	142 L.F.
18"	HDPE	929 L.F.
4"	SOLID PVC, SCH. 40	20 L.F.
4"	PERFORATED PVC, SCH. 40	165 L.F.
6"	SOLID PVC, SCH. 40	398 L.F.
6"	PERFORATED PVC, SCH. 40	218 L.F.

NOTE: HDPE MAY BE SUBSTITUTED WITH RCCP, CL. IV PIPE MATERIAL.



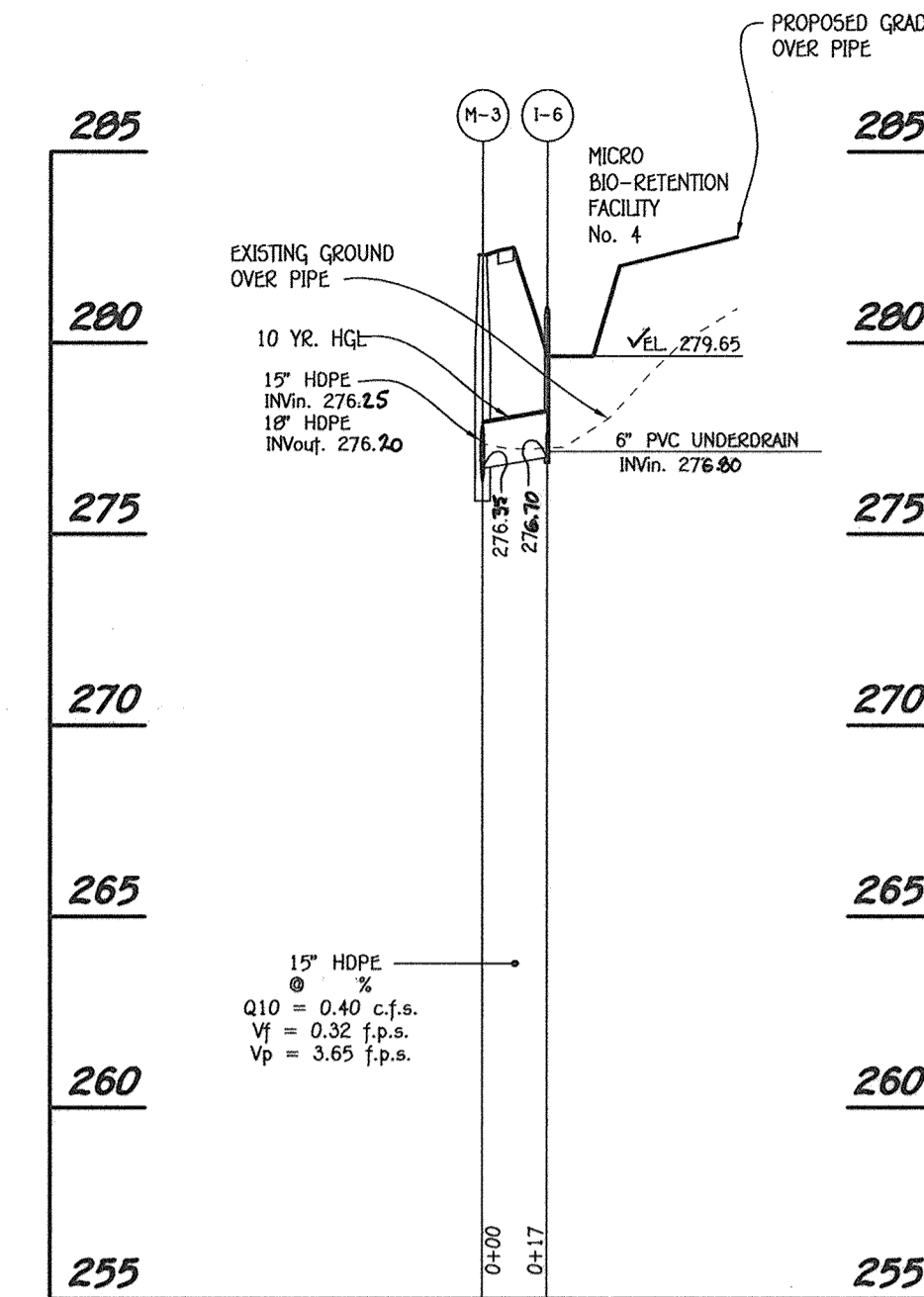
PROFILE

SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



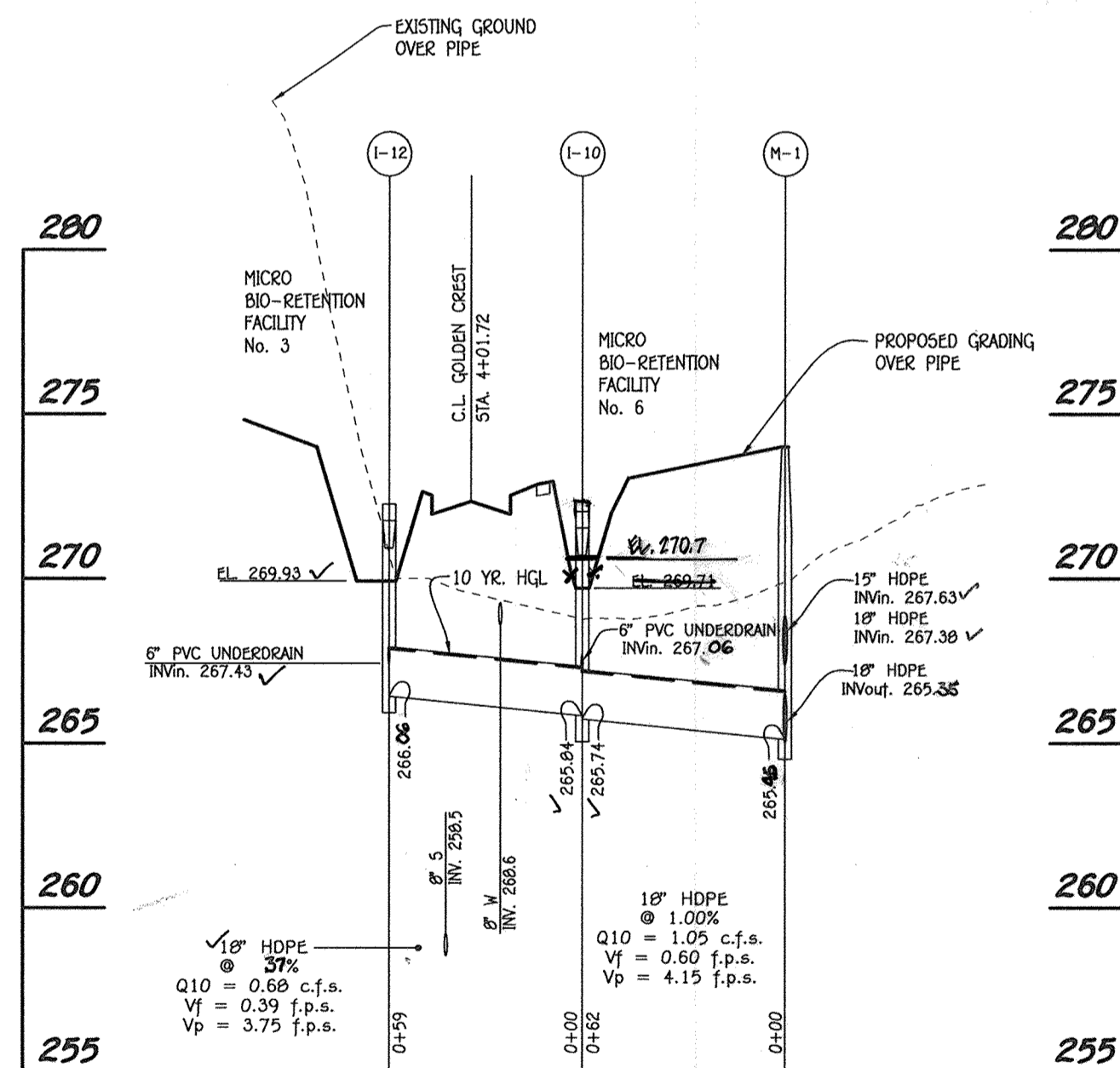
PROFILE

SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



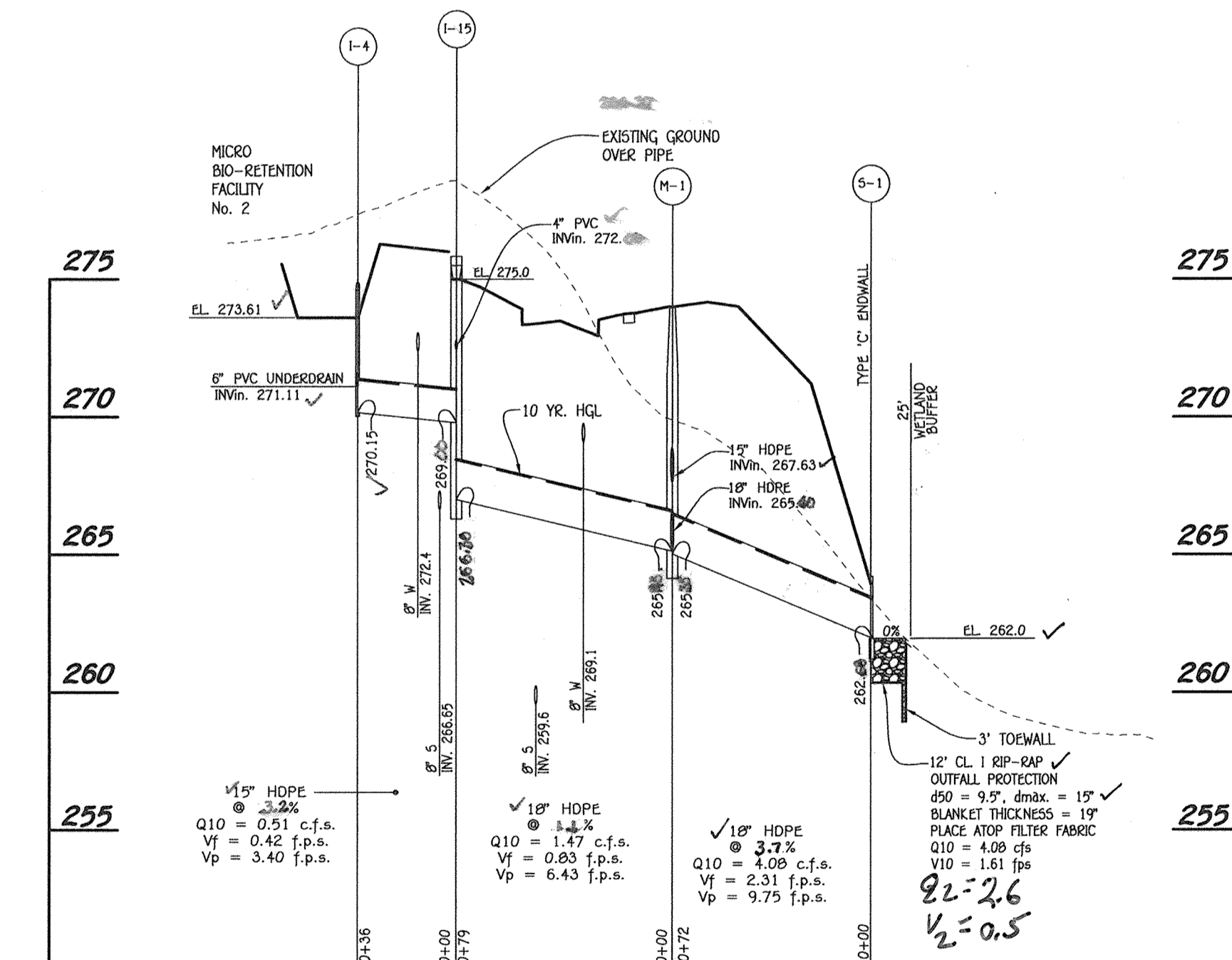
PROFILE

SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



PROFILE

SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'



PROFILE

SCALE: HORIZ. : 1" = 50'
 VERT. : 1" = 5'

I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



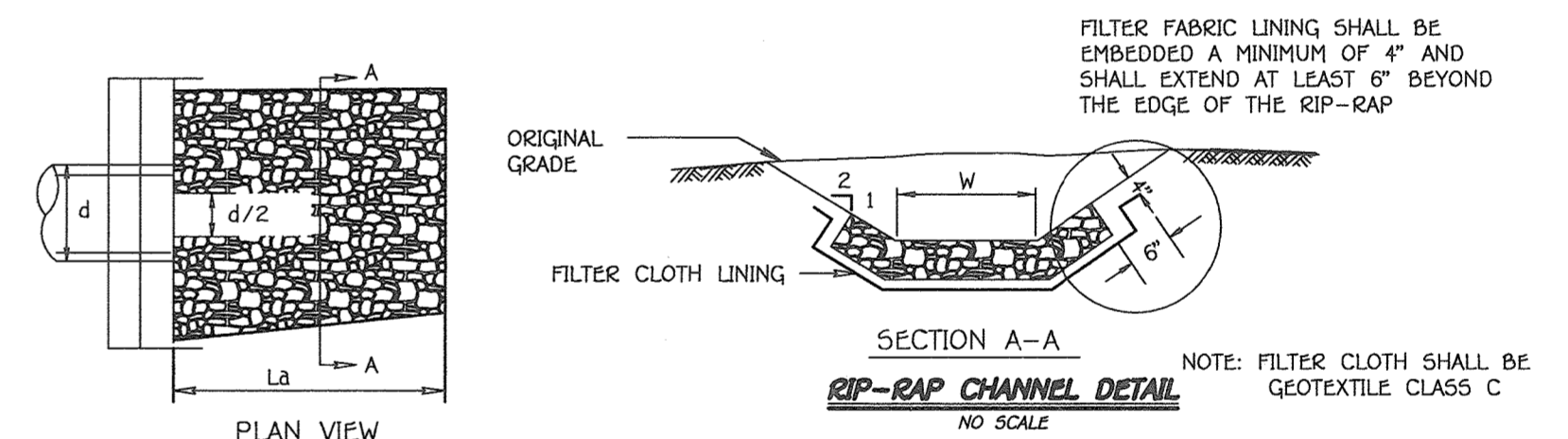
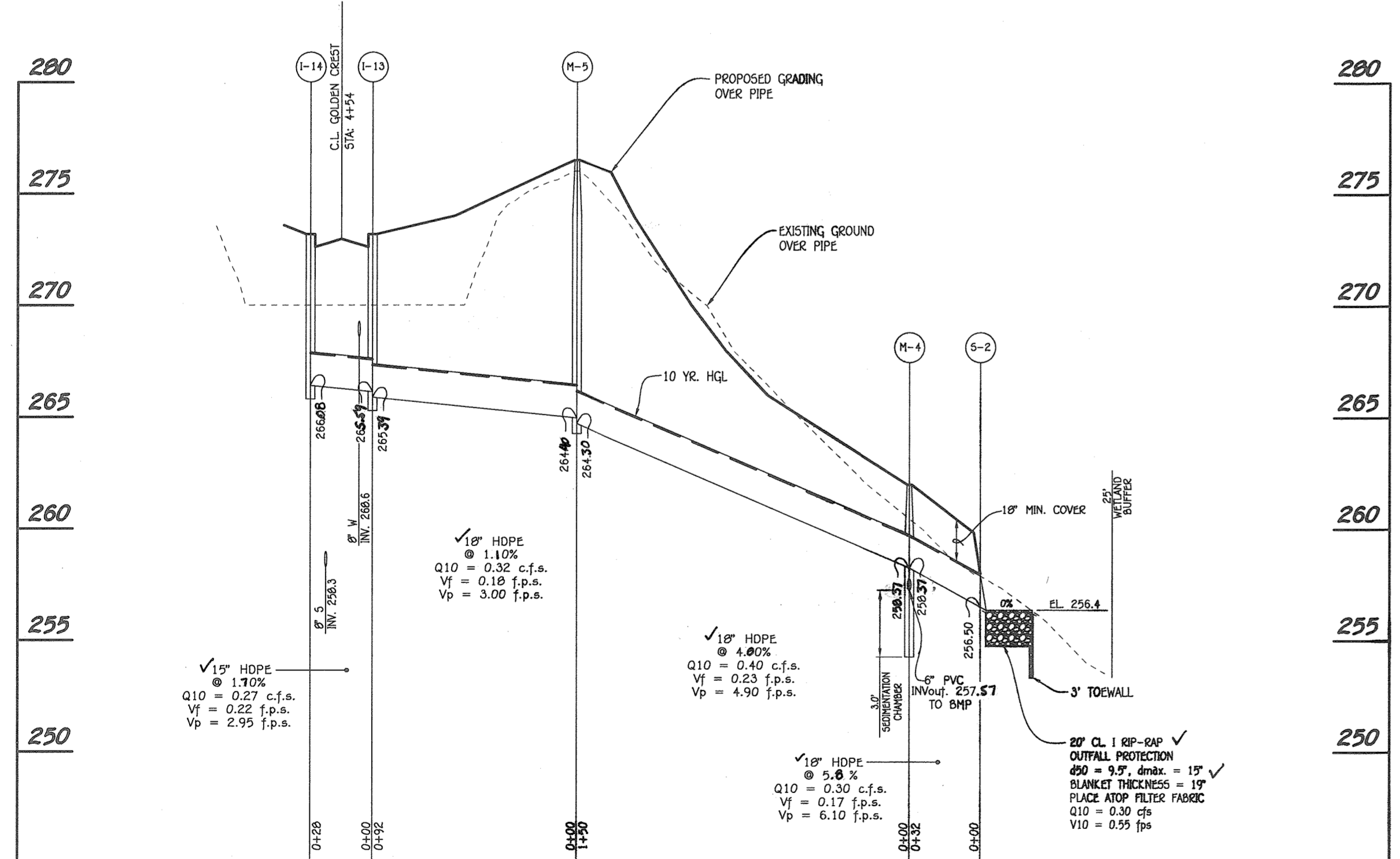
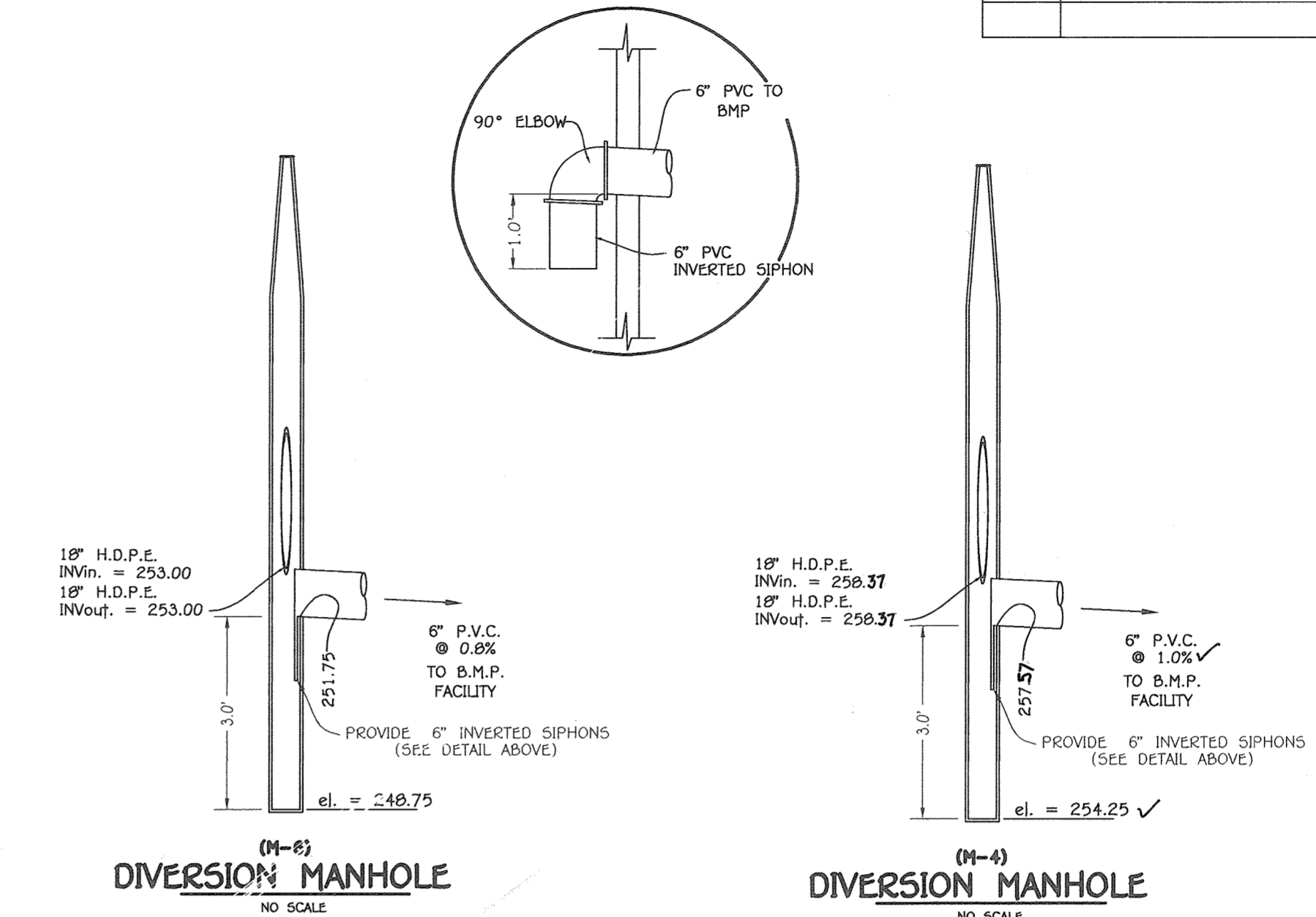
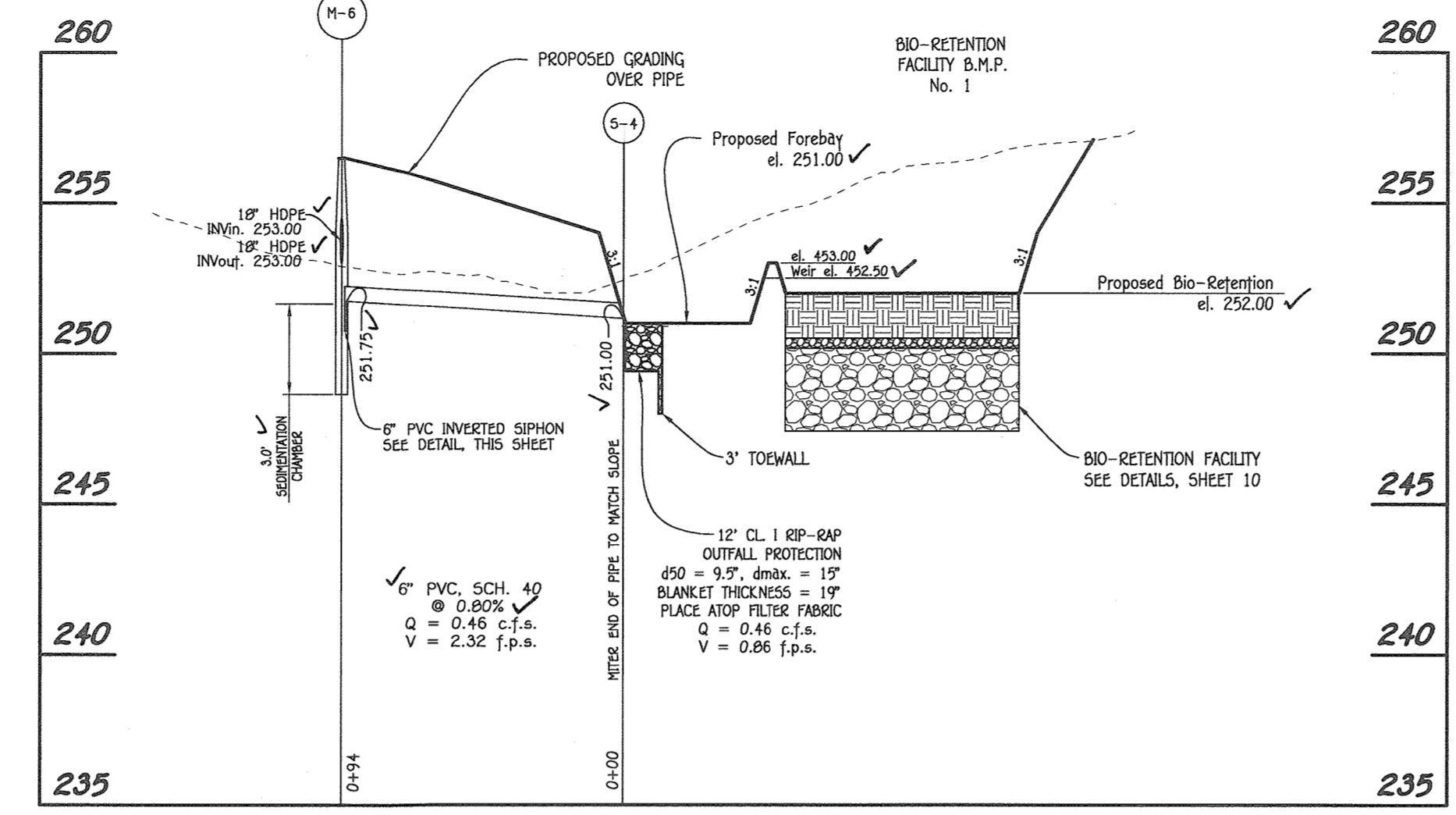
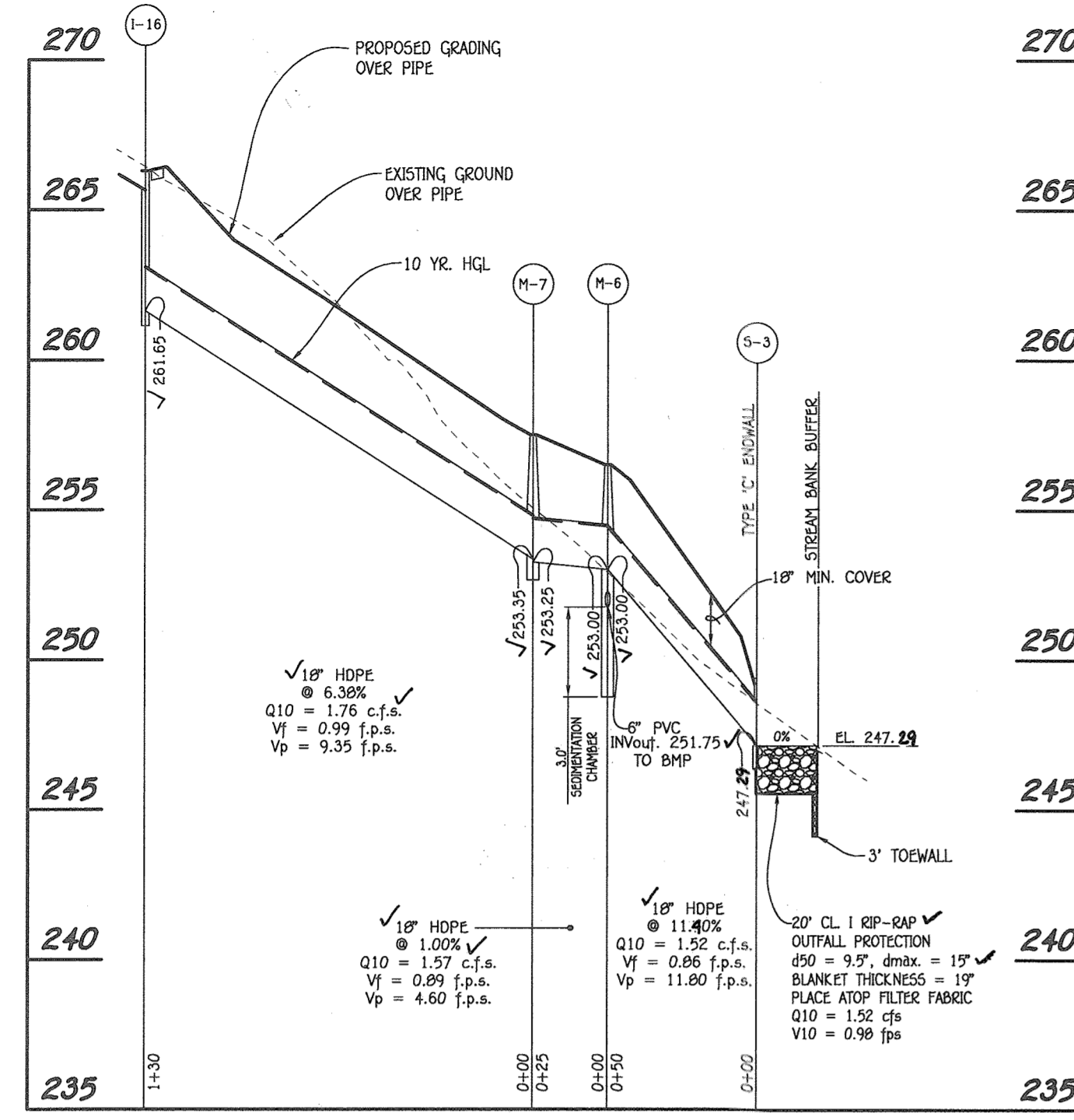
STORM DRAIN PROFILES
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 13 OF 24

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 8/21/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 8-24-15

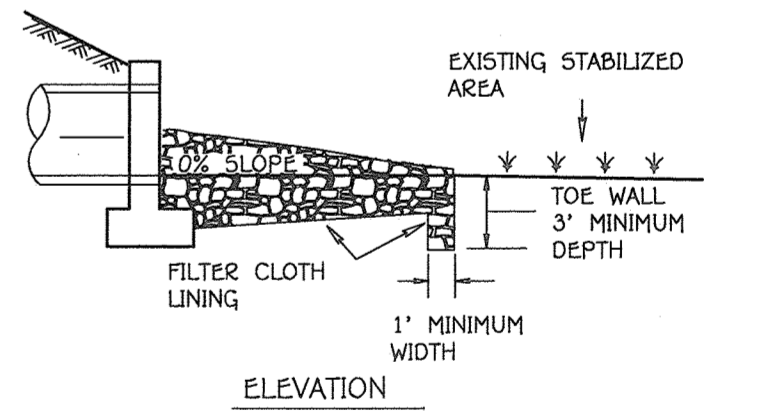
CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 8-17-15

REVISIONS		
NO.	DESCRIPTION	DATE
1	CHANGE STREET NAME	7/10/16



CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stones for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

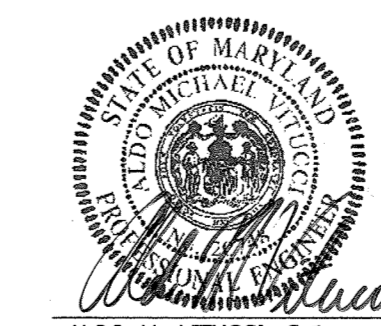


RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R ^{2/3}	S	S ^{1/2}	W	d	n	V	Q	Ø ₅₀	Ø _{max}	BLANKET THICKNESS	PIPE SIZE	La
S-1	2.53	5.26	0.4810	0.6124	0.005	0.0707	2.0'	0.73'	0.04	1.61	4.08	9.5"	15"	19"	18"	12'
S-2	0.62	6.45	0.0961	0.2083	0.005	0.0707	6.0'	0.10'	0.04	0.55	0.30	9.5"	15"	19"	18"	20'
S-3	1.63	7.12	0.2289	0.3724	0.005	0.0707	6.0'	0.25'	0.04	0.98	1.52	9.5"	15"	19"	18"	20'
S-4	0.57	3.03	0.1881	0.3265	0.005	0.0707	2.0'	0.23'	0.04	0.86	0.46	9.5"	15"	19"	6"	12'
S-6	0.88	6.63	0.0001	0.0026	0.005	0.0707	6.0'	0.14'	0.04	0.68	0.57	9.5"	15"	19"	18"	12'

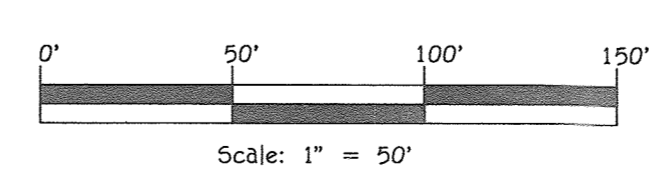
I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

M. H. DEWITT, ENGINEER; P.E. INC.



ALDO M. VITUCCI, P.E.
 DATE: 8/10/15

Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21046
 (410) 481-2099

OWNER
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 6532 Montgomery Road
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 Carman Associates
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 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph (410)-442-5613

STORM DRAIN PROFILES
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND 170 PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 14 OF 24

I:\2006\06100\06100-3001_SHEET 13 & 14 STORM DRAIN PROFILES.dwg 8/18/2015 2:27:02 PM, 11

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

A. Soil Preparation

- Temporary Stabilization
 - Seeded preparation (areas of loose soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment such as disc harrows or chisel plows or ripers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disk or other suitable means.
- Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay and enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if loessites will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
 - Mix soil amendments into the top 3 to 5 inches of soil by disk or other suitable means. Make lawn areas to provide surface, remove large objects like stumps and branches, and ready the area for seed application. Loosen surface soil by disking with a heavy chain or other equipment to roughen the surface where other conditions will not permit normal seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 2 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of various levels, low water content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textures and must contain less than 5 percent by volume of clodds, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, net sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Topsoil Application
 - Uniform and sediment control practices must be maintained when applying topsoil.
 - Erosion and sediment control topsoil in a 5 to 8 inch layer and tightly compacted to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Fertilizer may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must be delivered to the site fully baled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 90 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is other highly acidic or composed of heavy clay, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

TEMPORARY SEEDING NOTES (B-4-4)

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To establish growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria
1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not part of the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having disturbed areas of 5 acres, use and show the recommended rates by the testing agency. Soil tests are not required for temporary seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Hardness Zone (from Figure B.3):	SB	Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth
BARLEY	96	3/1 - 5/15	1"
OATS	72	3/1 - 5/15	1"
RYE	112	3/1 - 5/15	1"

PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures

- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site conditions or purpose listed in Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USGS-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the testing agency. For areas receiving low maintenance, apply one ton fertilizer 16-0-0 @ 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
 - Areas where turfgrasses may be desired include lawns, parks, playgrounds, and commercial sites which receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that require intensive maintenance, irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultures Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Certified Perennial Ryegrass Cultures/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium maintenance in full sun to medium shade. Recommended mixture includes, Certified Tall Fescue Cultures 9% to 100 percent, Certified Kentucky Bluegrass Cultures 0 to 5 percent. Seeding Rate: 5 to 6 pounds per 1000 square feet. One or more cultivars may be blended.
 - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality areas, use only certified turf area. Mixture includes Certified Kentucky Bluegrass Cultures 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1.1/2 to 3 pounds per 1000 square feet.

Notes:
Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Culture Recommendations for Maryland".
Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and insures a pure genotype.

Hardness Zone (from Figure B.3):	SB	Fertilizer Rate (10-20-20)	Lime Rate
No. Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth
B	TALL FESCUE	100 Mar. 1-May 15 Aug. 1-Oct. 15	1 1/4-1 1/2 in. 1.0 lb./1000 sq. ft.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

a.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, CHANNELS, EROSION CONTROL STRUCTURES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

b.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, NOT UNDER ACTIVE GRADING.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition
The mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
- The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
- Runoff from the stockpile area must drain to a suitable sediment control practice.
- Access the stockpile area from the up-slope side.
- Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
- Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to interrupt the discharge.
- Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
- If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance
The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition
The application of seed and mulch to establish vegetative cover.

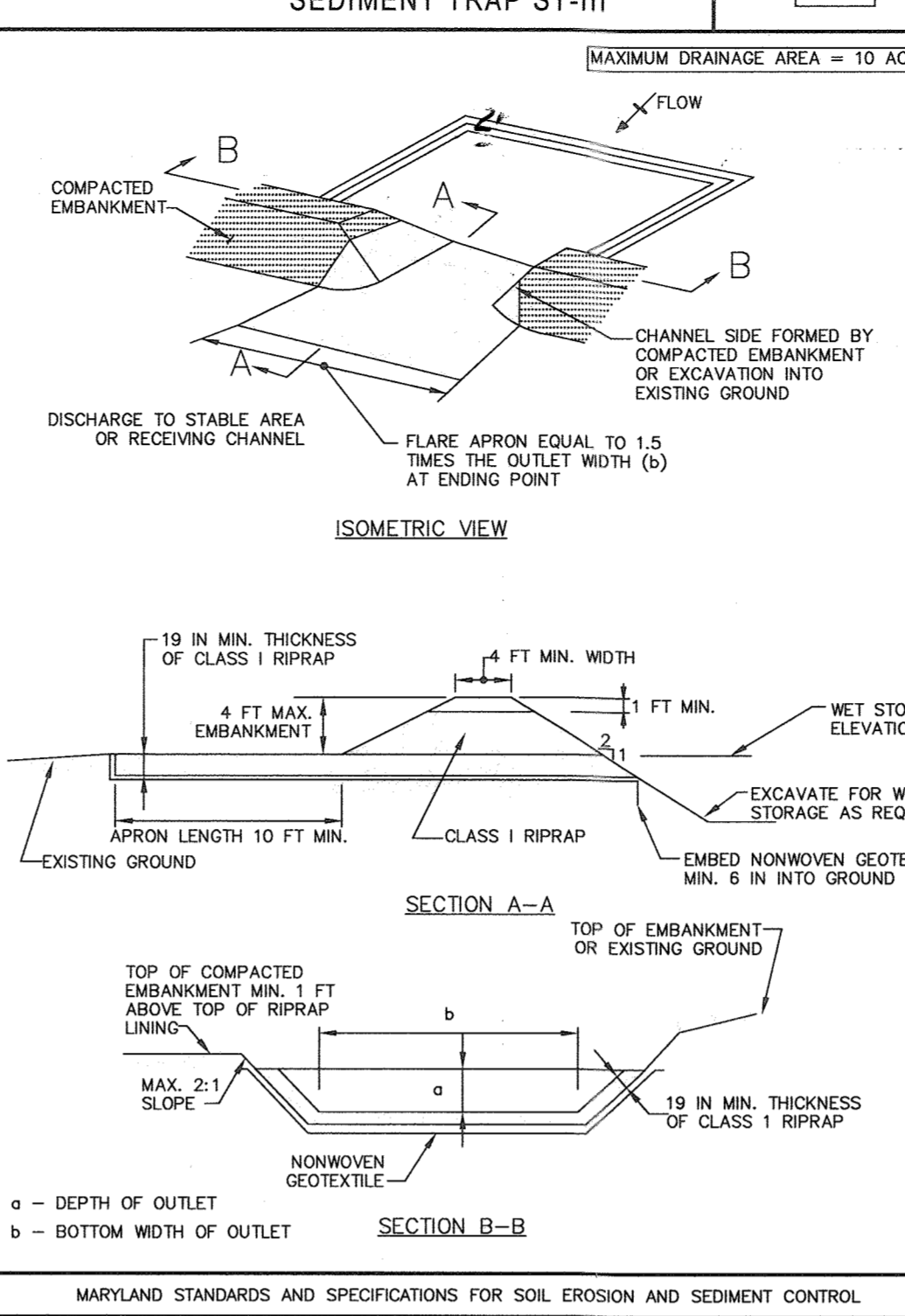
Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

- Seeding
 - Specifications
 - All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for seeding legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Seed or seed mix must not be placed on soil which has been treated with soil sterilants or chemicals used for woody control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
 - Application
 - Dry Seeding: This includes use of conventional drop or broadcast sowers.
 - Incorporate seed into the subsoil at the rate prescribed in Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with weighted roller to provide good seed to soil contact.
 - Dill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
 - Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
 - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P₂O₅ (phosphorus), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
 - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
 - Mix seed and fertilizer on site and seed immediately and without interruption.
 - When hydroseeding do not incorporate seed into the soil.
- Mulching
 - Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dirty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedings.
 - WCFM material must not contain elements or compounds of concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: Fiber length of approximately 10 millimeters; diameter approximately 1 millimeter; pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

DETAIL G-1-3 RIPRAP OUTLET SEDIMENT TRAP ST-III



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL G-1-3 RIPRAP OUTLET SEDIMENT TRAP ST-III

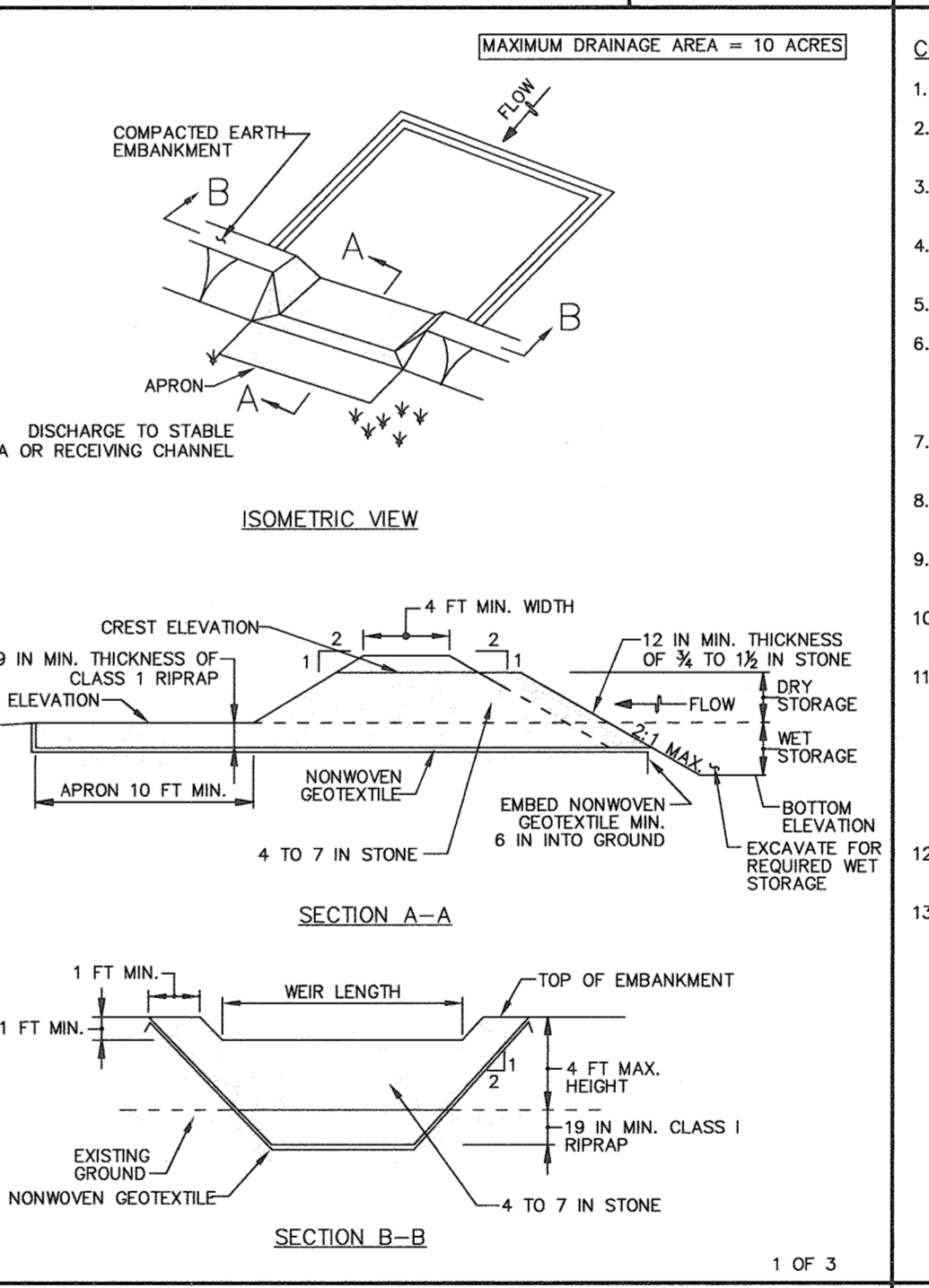
CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
- CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
- CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE TOP OF RIPRAP OUTLET. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- USE CLEAN CLASS 1 RIPRAP PLACED 19 INCHES IN DEPTH FOR THE OUTLET AND APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
- CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
- STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
- REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (20% OF NET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION AND REMOVED ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
- WHEN DEWATERING TRAP, PASS THE REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
- UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
--	------	---

ENGINEER'S CERTIFICATE

I hereby certify that this Plan for Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

[Signature]
Signature of Engineer 7/20/15
Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

[Signature]
Signature of Developer 7/20/2015
Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
[Signature] 8/13/15
Date
District Howard Soil Conservation Dist.

[Signature] 8-24-15
Date
Chief, Division Of Land Development

[Signature] 8-19-15
Date
Chief, Development Engineering Division

Approved: Howard County Department Of Public Works
[Signature] 8/10/2015
Date
Chief, Bureau Of Highways

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
- CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
- CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS 1 RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
- PLACE 1 FOOT OF CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
- CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
- STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
- REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF NET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION AND REMOVED ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
- WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
- UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

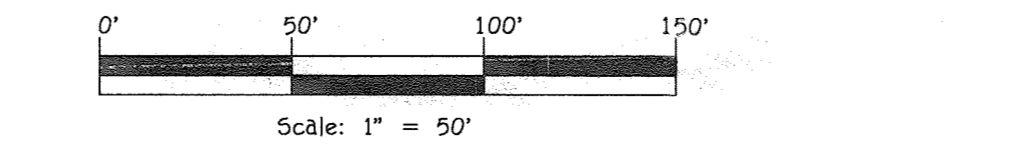
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
--	------	---

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENAL SOURCE OFFICE: PARC - 10272 ANLORKE NATIONAL PLACE
ELLSWORTH CITY, MARYLAND 21042
(410) 461 - 2999

OWNER
Mr. David Papiukakis,
Mr. Gregory Papiukakis And
Mrs. Sarah Shimulunas
6532 Montgomery Road
Elkridge, Maryland 21075
Ph# (410)-442-5613

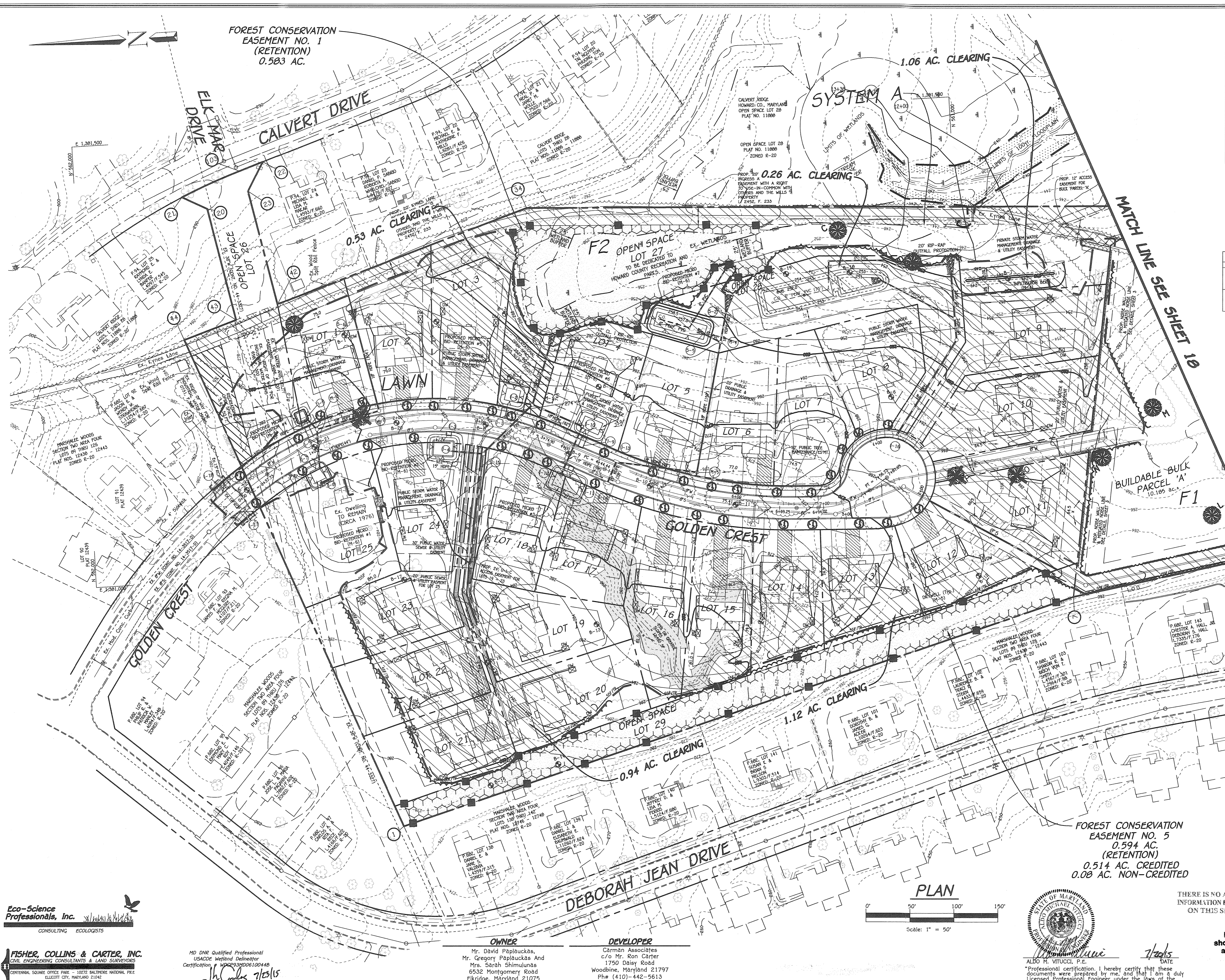
DEVELOPER
Carman Associates
c/o Mr. Ron Carter
1750 Daisy Road
Woodbine, Maryland 21797
Ph# (410)-442-5613



ALDO M. VITUCCI, P.E.
Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, expiration Date 2-22-17.
7/20/15 DATE

SEDIMENT CONTROL NOTES & DETAILS

SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
ZONING: R-20
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 15 OF 24



Approved: Department Of Public Works
 Chief Bureau of Highways
 Date: 8/10/15

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development
 Date: 8-24-15

Chief, Development Engineering Division
 Date: 8-17-15

NO.	REVISIONS	DATE
1	REVISE STREET NAME	7/19/16

WETLAND DATA		
WETLAND SYSTEM	COMBINED CLASSIFICATION	DOMINANT VEGETATION
A	PEM1A/PFO1A/R3UB1	ACER RUBRUM, FRAXINUS PENNSYLVANICA, IRIOPETIS CANADENSIS, SYMPLOCARPUS FOETIDUS, BOMBYCERIA CYLINDRICA, CINNA ARUNDINACEA, SAMBUCUS CANADENSIS

FOREST STAND DATA					
KEY	COMMUNITY TYPE	AGECLASS	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY AGECLASS
F1	OAK-POPLAR	5.9	QUERCUS ALBA, QUERCUS RUBRA, UROSAURON TULIPIFERA, CARYA GLABRA, ACER RUBRUM, FAGUS AMERICANA, LIX OXYCA	Good	0.00 BUFFERS
F2	MIXED SUCCESSIONAL	2.6	ACER RUBRUM, UROSAURON TULIPIFERA, PINUS VIRGINIANA, JUGLANS NIGRA, SALIX NIGRA	Good	1.0+ BUFFERS

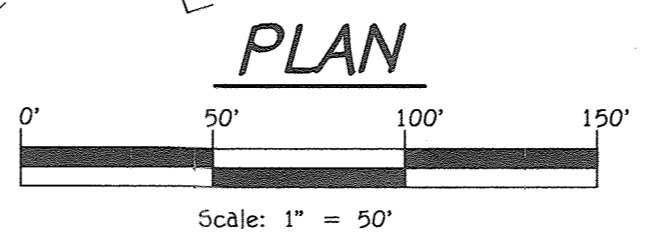
NOTE: FOREST STAND DATA IS FROM THE UPDATED WETLAND DELINEATION, FOREST STAND DELINEATION & FOREST CONSERVATION PLAN REPORT DATED SEPTEMBER 27, 2011.

- NOTES:**
- NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
 - NO HISTORIC STRUCTURES OR CEMETERIES EXIST ON THE PROPERTY.
 - SURROUNDING LAND USE IS PRIMARILY MEDIUM DENSITY RESIDENTIAL DEVELOPMENT AND INTERSTATE 95.
 - THE PROPOSED FOREST CONSERVATION EASEMENT AREAS MUST BE DEVOID OF TRASH/DEBRIS.
 - WATERSHED NAME: PATAPSCO RIVER
 - ONE LISTING No.: 021309061015
 - AREA OF CONTIGUOUS FOREST: 23.6 AC.±

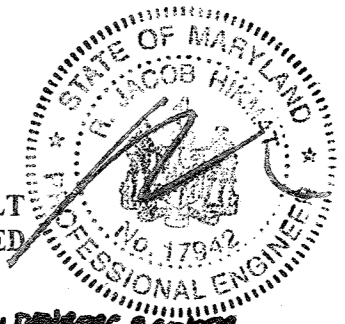
SPECIMEN TREE DATA		
KEY	SPECIES, SIZE	COMMENT
A	BLACK OAK, 30" dbh	
B	BLACK OAK, 30" dbh	TO BE REMOVED
C	TULIP POPLAR, 33" dbh	
D	RED MAPLE, 30" dbh	
E	BLACK OAK, 48" dbh	
F	BLACK OAK, 46" dbh	
G	BLACK OAK, 54" dbh	TWIN STEM, BROKEN TRUNK
H	BLACK OAK, 30" dbh	
I	RED OAK, 30" dbh	
J	RED OAK, 30" dbh	TO BE REMOVED
K	WHITE OAK, 32" dbh	
L	BEECH, 33" dbh	TRUNK DAMAGE NOTED
M	RED OAK, 38" dbh	
N	BLACK OAK, 30" dbh	
O	BLACK OAK, 31" dbh	TO BE REMOVED
P	BLACK OAK, 30" dbh	LHDS DIEBACK NOTED TO BE REMOVED

- FCE LEGEND**
- Diagonal hatching: DENOTES CLEARING AREA
 - Star symbol: DENOTES SPECIMEN TREE
 - Star with 'A' symbol: DENOTES SPECIMEN TREE TO BE REMOVED
 - Solid black square: DENOTES (RETENTION) FOREST SIGN, SEE DETAIL, SHT. 19

FOREST CONSERVATION EASEMENT NO. 5
 0.594 AC. (RETENTION)
 0.514 AC. CREDITED
 0.08 AC. NON-CREDITED



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



FOREST CONSERVATION PLAN
SAMUEL'S GRANT
 I hereby certify that the facility LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, shown on this plan was constructed BUILDABLE BULK PARCEL 'A' AND as shown on the 'As-Built' plans NON-BUILDABLE BULK PARCELS 'B' & 'C' and meets with the approved plans and specifications.

TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 17 OF 24

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

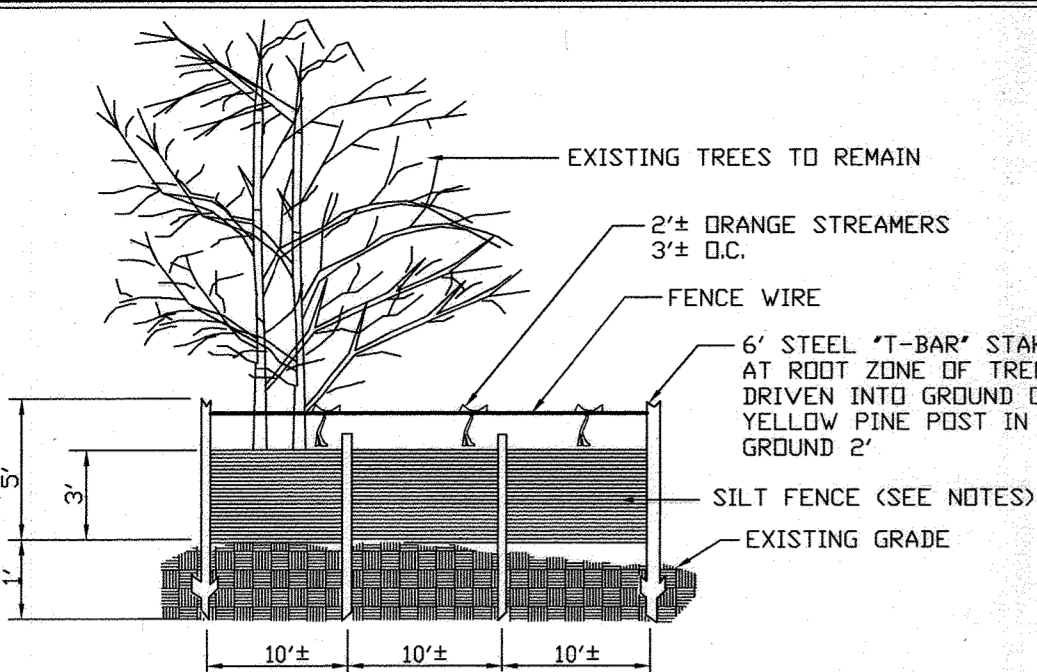
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

Mr. David Papiuckas, USACE Wetland Designer
 Certification: WPA62933006100448
 JOHN P. CANOLDS
 7/25/15

OWNER
 Mr. David Papiuckas, Mr. Gregory Papiuckas And Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph# (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph# (410)-442-5613

132006106100448/FINALS/08100-3001_SHEET 17 OF 18 FOREST PLAN.dwg, 7/20/2015 8:02:28 AM, 11



1. SILT FENCE TO BE HELED INTO THE SOIL.
2. WIRE, SNOW FENCE, ETC. FOR TREE PROTECTION ONLY.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
7. PROTECTION SIGNS ARE ALSO REQUIRED, SEE FIGURE C-4. 8. LOCATE FENCE OUTSIDE THE CRITICAL ROOT ZONE.

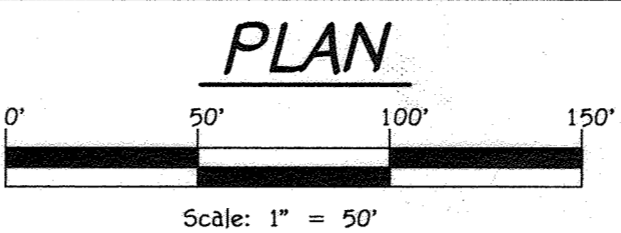
SILT FENCE AND TREE PROTECTION

NOT TO SCALE

FCP NARRATIVE
 THE FOREST CLEARED WITHIN F1 IS A SPARSE WOODED AREA AND IS CONSIDERED A MODERATE PRIORITY AREA FOR RETENTION DUE TO THE NUMBER OF SPECIMEN TREES LOCATED WITHIN. IN ADDITION, THERE IS 0.0 ACRES OF SENSITIVE ENVIRONMENTS LOCATED IN THIS FOREST AREA AND NO HABITAT WOULD BE SUPPORTED BY THIS FOREST AREA. SPECIMEN TREES 'O' & 'P' ARE LOCATED WITHIN THIS AREA AND WILL REQUIRE REMOVAL. SPECIMEN TREE 'O' NEEDS TO BE REMOVED FOR HOUSE CONSTRUCTION AND SPECIMEN TREE 'P' FOR ACCESS TO BUILDABLE PARCEL 'A'. SPECIMEN TREE 'P' ALSO CONTAINS LIMB DIE BACK. SPECIMEN TREE 'B' NEEDS TO BE REMOVED FOR ROADWAY CONSTRUCTION AND SPECIMEN TREE 'J' FOR THE PROPOSED SEWER MAIN. THE SWM FACILITY WILL BE BEST LOCATED WHERE THE TREES ARE CLEARED WITHIN F2 AND IS NECESSARY TO SUPPORT A PROPOSED ENHANCED FILTER AT THIS LOCATION. THIS FILTER IS NEEDED TO PROVIDE THE REQUIRED SWM TREATMENT OF RUNOFF FROM THE PROPOSED ROADWAY AREA AND LOTS 6-9. IN ADDITION, THE LOT SIZES HAVE BEEN REDUCED TO INCREASE THE OPEN SPACE AREA AS PERMITTED UNDER THE R-20 ZONING REGULATIONS. THE WOODED AREAS TOWARD THE REAR OF THE SITE ARE TO BE RETAINED. IN ADDITION, THERE IS NO DISTURBANCE TO ANY WETLANDS, STREAMS OR THEIR BUFFERS WITHIN THIS SUBDIVISION.

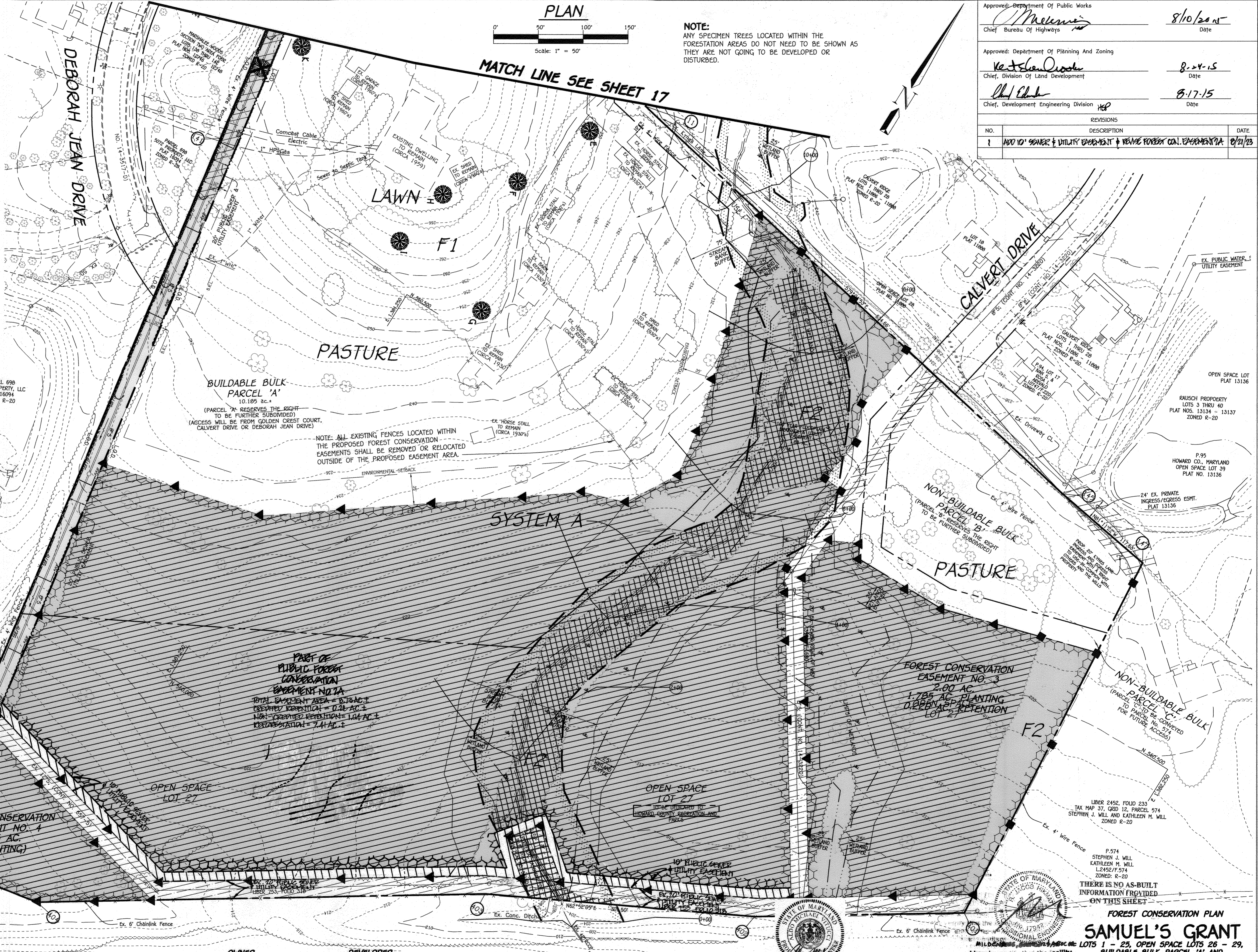
FCE LEGEND

- DENOTES PLANTING AREA
- DENOTES NON-CREDIT FOREST AREA
- DENOTES CLEARING AREA
- DENOTES SPECIMEN TREE
- DENOTES SPECIMEN TREE TO BE REMOVED
- DENOTES (RETENTION) FOREST SIGN, SEE DETAIL, SHT. 19
- DENOTES (PLANTING) FOREST SIGN, SEE DETAIL, SHT. 19



NOTE:
 ANY SPECIMEN TREES LOCATED WITHIN THE FORESTATION AREAS DO NOT NEED TO BE SHOWN AS THEY ARE NOT GOING TO BE DEVELOPED OR DISTURBED.

Approved: Department of Public Works		8/10/2015
Chief, Bureau of Highways		Date
Approved: Department of Planning And Zoning		8-24-15
Chief, Division Of Land Development		Date
Chief, Development Engineering Division		8-17-15
Date		
NO.	DESCRIPTION	DATE
1	ADD 10' GOWER & UTILITY EASEMENT & REMOVE FOREST CON. EASEMENT NO. 3	8/21/23



PARCEL 698
 5072 PROPERTY, LLC
 PLAT 16094
 ZONED R-20

PARCEL 698
 5072 PROPERTY, LLC
 PLAT 16094
 ZONED R-20

PARCEL 698
 5072 PROPERTY, LLC
 PLAT 16094
 ZONED R-20

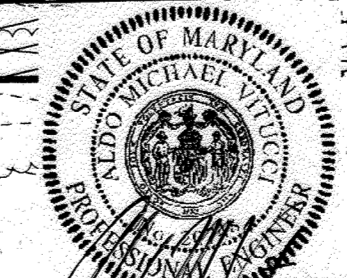
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 10222 WATKINS NATIONAL FLYE
 ELLESMOUTH CITY, MARYLAND 21042
 (410) 461-2955

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

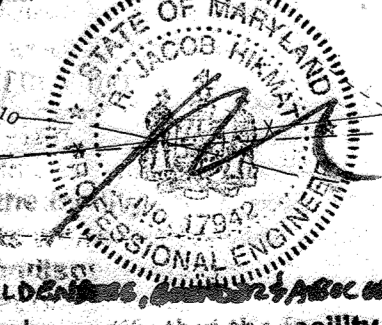
MD DNR Qualified Professional
 USACOE Wetland Delineator
 Certification # W1000000100416
 John P. Canoles

OWNER
 Mr. David Papiulckas,
 Mr. Gregory Papiulckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph# (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph# (410)-442-5613



ALDO M. VITUCCI, P.E.
 I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.



FOREST CONSERVATION PLAN
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'
 as shown on the 'AS-BUILT' plans
 and meets with the approved
 plans and specifications.

TAX MAP NO. 37, GRID NO. 5, 11, & 12
 PARCEL NO. 104 AND P/O PARCEL NO. 94
 FIRST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 18 OF 24

APPROVED: DEPARTMENT OF PUBLIC WORKS
DATE: 8/21/2015
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
DATE: 8-24-15
CHIEF, DIVISION OF LAND DEVELOPMENT
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 8-17-15

Tree Shelters - Installation Specifications

After planting the tree in accordance with proper tree planting directions, pound or press the stake into the ground to a distance from the tree equal to about one-half the diameter of the protector.

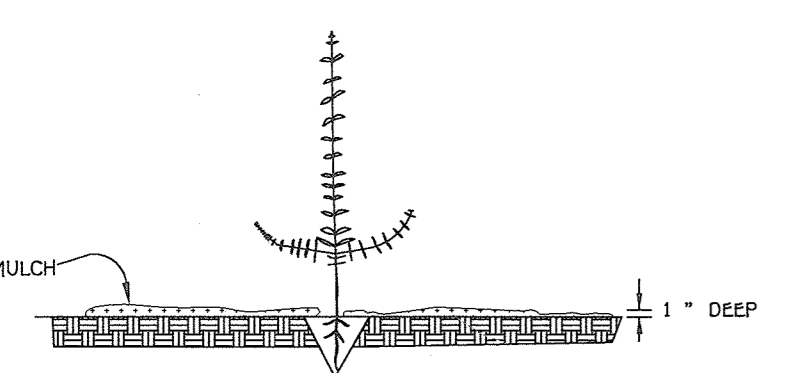
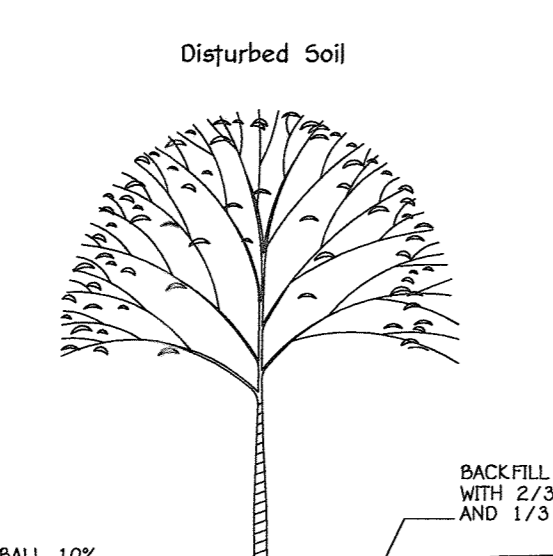
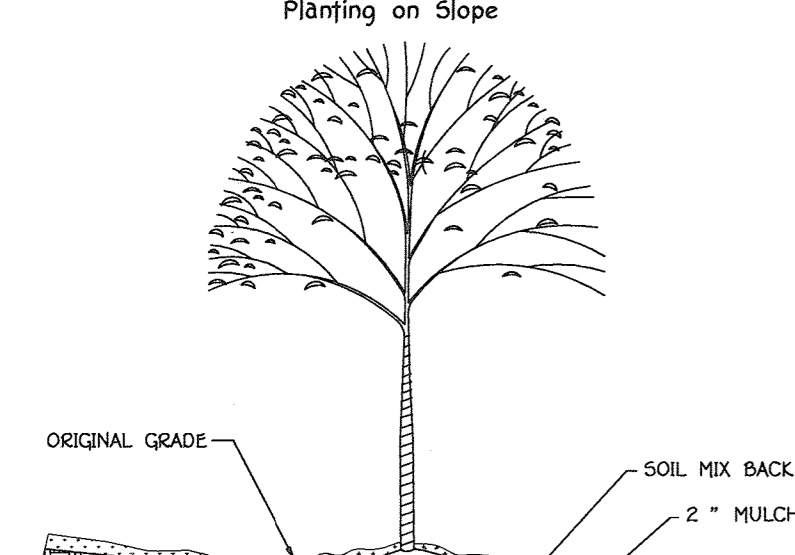
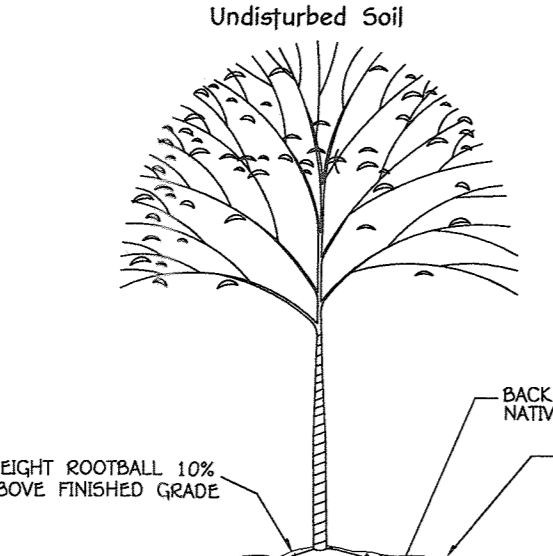
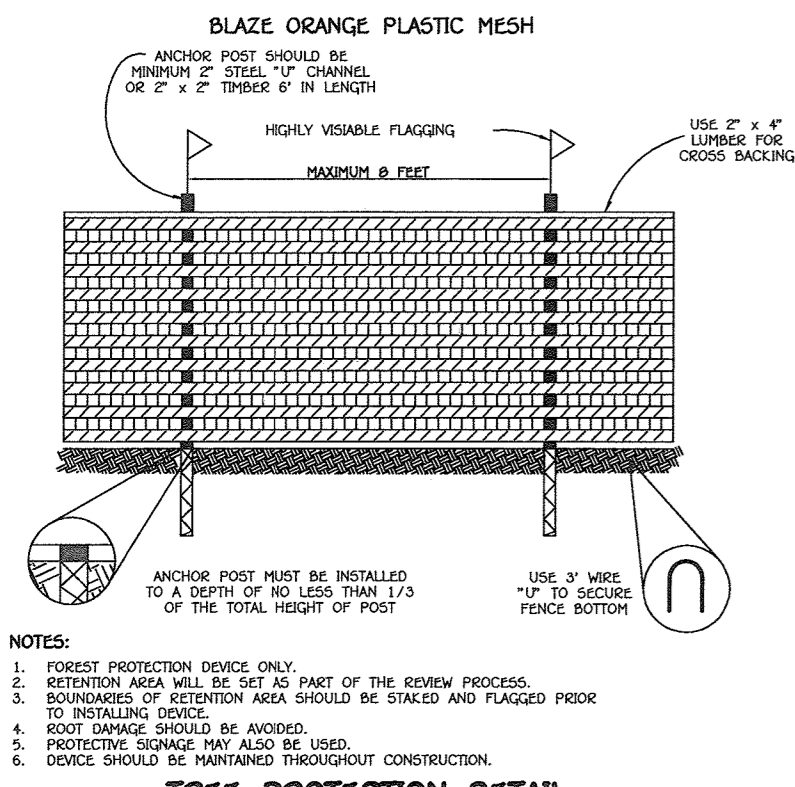
- 1. Fold the collar back over the outside of the protector, with the smooth side of the protector on the inside. The purpose of the collar is to provide a soft rim so the tree's bark won't be damaged.

Table with 3 columns: Protector Size, Number of Ties, Minimum Stake Size. Rows include sizes like 12", 18", 24", 30", 36", 48", 60", 72" with corresponding tie counts and stake sizes.

BIRO NETS

Now are provided for 48", 60" and 72" protectors only. They are usually not necessary for smaller sizes. Installing protectors without Bird Nets is hazardous to bluebirds and other insect-eating birds.

Without bird nets, birds trapped inside protectors will not only die, they can also destroy the tree as they try to escape. Please inspect your trees periodically to make sure the net is in place.



Seeding and Whip Planting Specification

Construction Period Protection Program

A. Forest Protection Techniques
1. Soil Protection Area (Critical Root Zone)
The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found.

B. Pre-Construction Meeting
Upon signing of final deed and installation of all signage, a pre-construction meeting will be held between the developer, contractor and appropriate County Inspector.

C. Storage Facilities/Equipment Cleaning
All equipment, parking, stability facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance.

D. Sequence of Construction
The following timetable represents the proposed timetable for construction of the proposed project. The construction start date for this project has not been finalized.

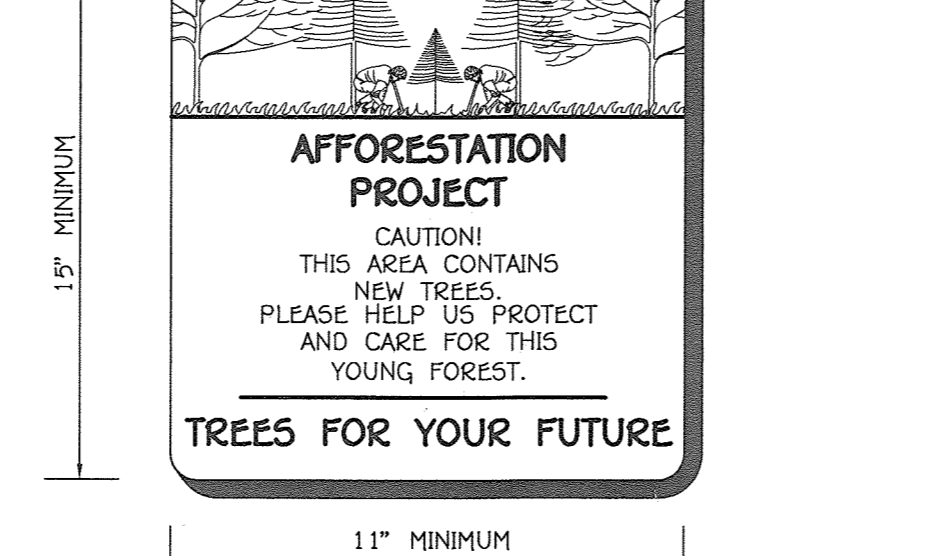
E. Construction Monitoring
Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

F. Activities Permitted During Construction
The Forest Conservation Plan will allow the following activities within forest resources during the construction phase of the project:

G. Post-Construction Meeting
Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site.

Post-Construction Management Plan

The post-construction management plan will further ensure that all Forest Conservation Element Areas are maintained. The developer will be responsible for implementation of the post-construction management plan.



NOTE: SIGNAGE SHALL REMAIN IN PERPETUITY.

Planting/Soil Specifications

- 1. Installation of bare-root plant stock shall take place between March 15 - April 20, b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project.

Maintenance of Plantings
1. Maintenance of plantings shall last for a period of 2 years.

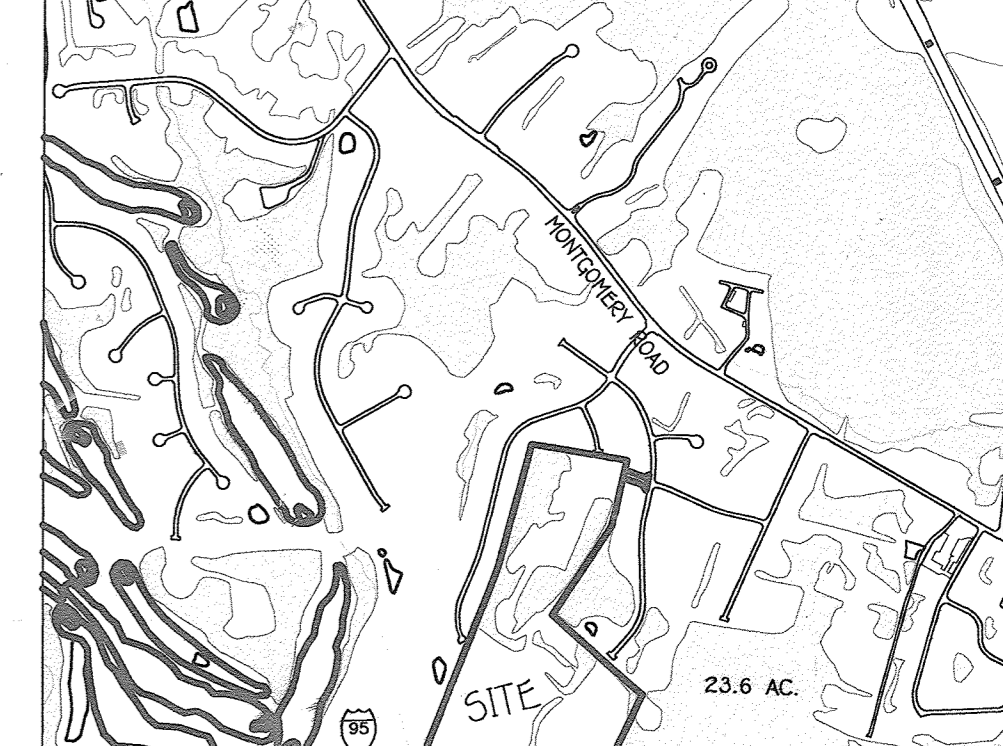
Guarantee Requirements
1. A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons.

Surety for Forestation
The forest conservation act requirements for this project will be met through the retention of 1,632 acres of on-site forest and the planting of 10,200 acres of forest on-site.

Planting Note per B.G.&E.
Trees with mature heights greater than 22' shall not be planted within 20' of either side of the utility pole line.

FCE Planting Area #2 - 7.720 acres

Table with 4 columns: Qty, Species, Size, Spacing. Lists planting requirements for FCE Planting Area #2, including species like Acer rubrum, Quercus alba, and Cornus florida.



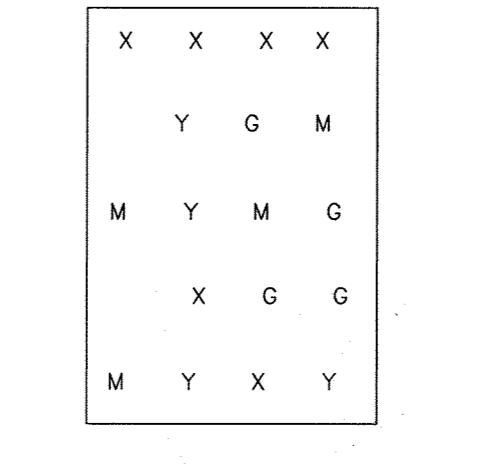
FCE Planting Area #3 - 1.705 acres

Table with 4 columns: Qty, Species, Size, Spacing. Lists planting requirements for FCE Planting Area #3, including species like Acer rubrum, Quercus alba, and Cornus florida.

FCE Planting Area #4 - 0.615 acres

Table with 4 columns: Qty, Species, Size, Spacing. Lists planting requirements for FCE Planting Area #4, including species like Acer rubrum, Cornus florida, and Prunus serotina.

Plant Spacing Diagram



FOREST CONSERVATION WORKSHEET

Table with 2 columns: Category and Value. Lists basic site data such as total tract area, area within 100 year floodplain, and net tract area.

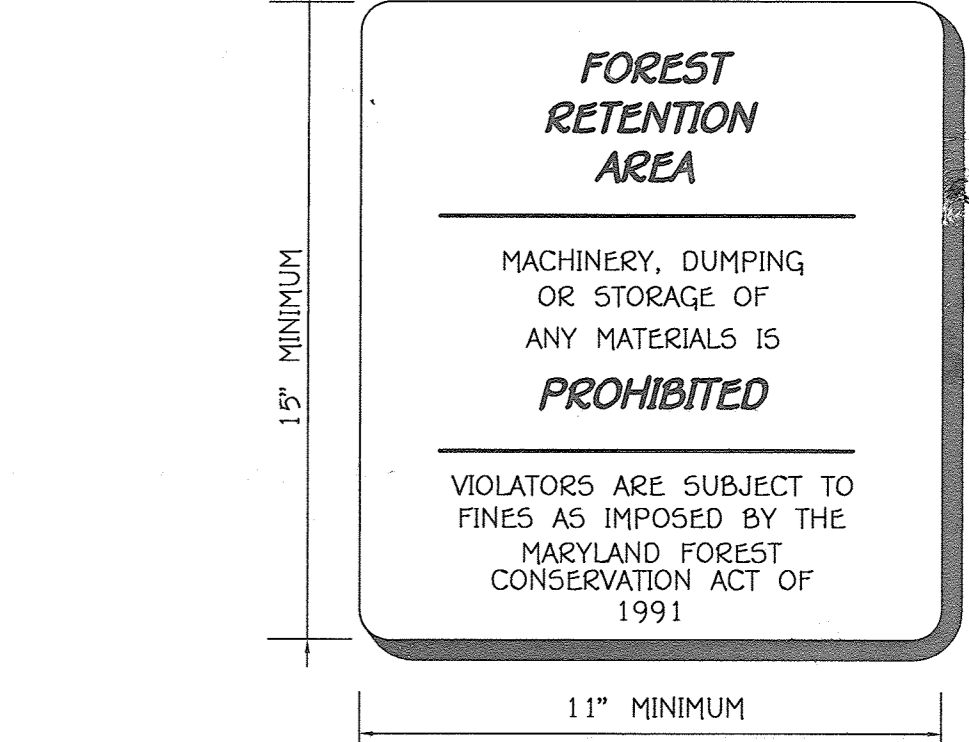
INFORMATION FOR CALCULATIONS:
A. AFFORESTATION THRESHOLD 15% x 0 = 4.8
B. CONSERVATION THRESHOLD 20% x 0 = 6.4

BREAK EVEN POINT:
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION 6.99
K. CLEARING PERMITTED WITHOUT MITIGATION 1.69

PROPOSED FOREST CLEARING:
L. TOTAL AREA OF FOREST TO BE CLEARED/RETAINED OUTSIDE OF FCE (ACTUAL FOREST CLEARING = 3.91 AC.) 6.9
M. TOTAL AREA OF FOREST TO BE RETAINED WITHIN FCE 1.6

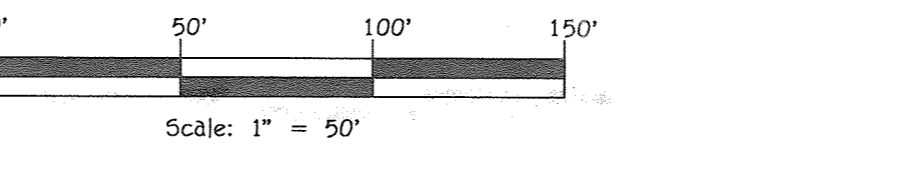
PLANTING REQUIREMENTS:
N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD 0.56
O. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD 9.67

ON-SITE SIGNAGE



NOTE: SIGNAGE SHALL REMAIN IN PERPETUITY.

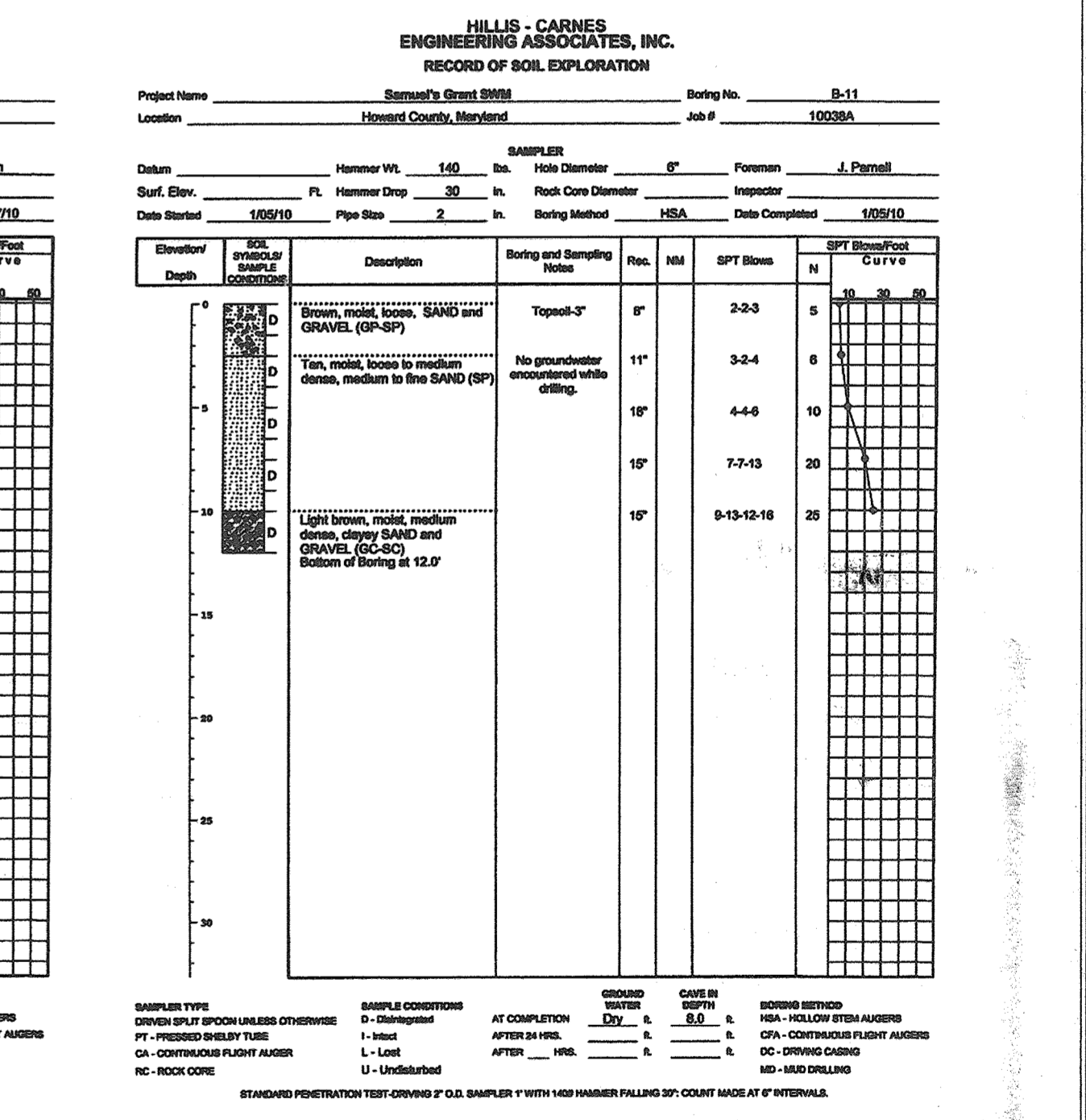
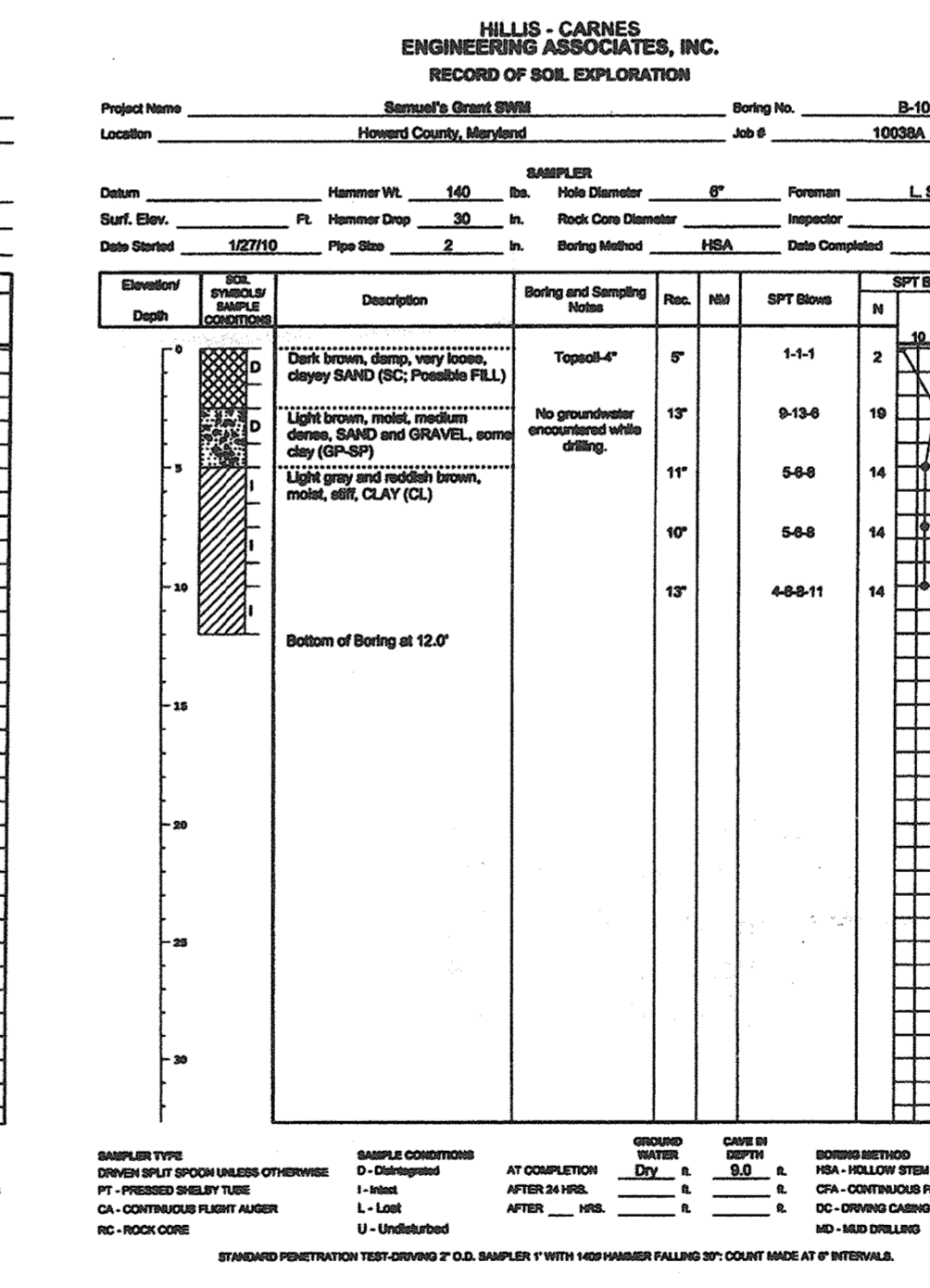
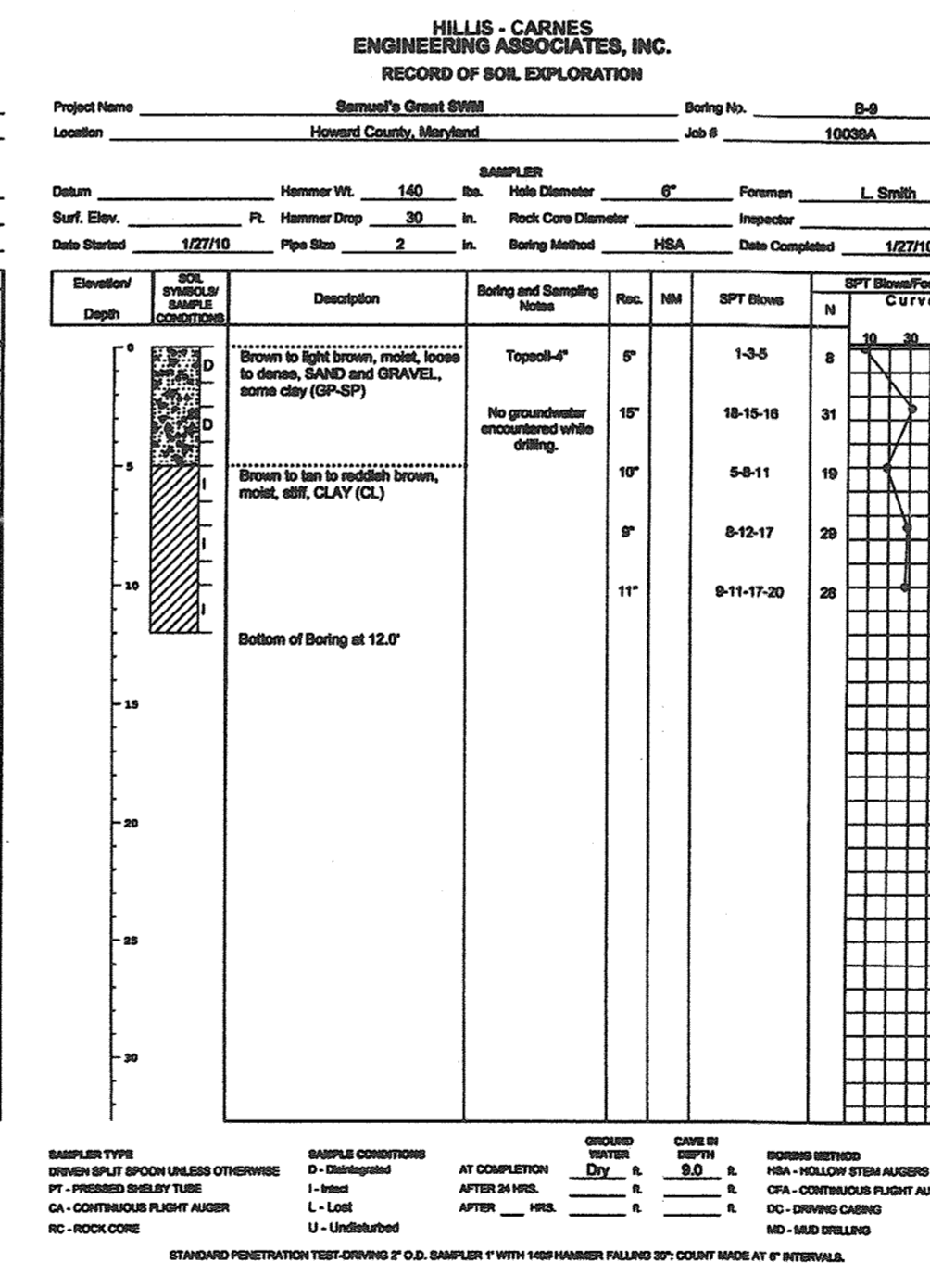
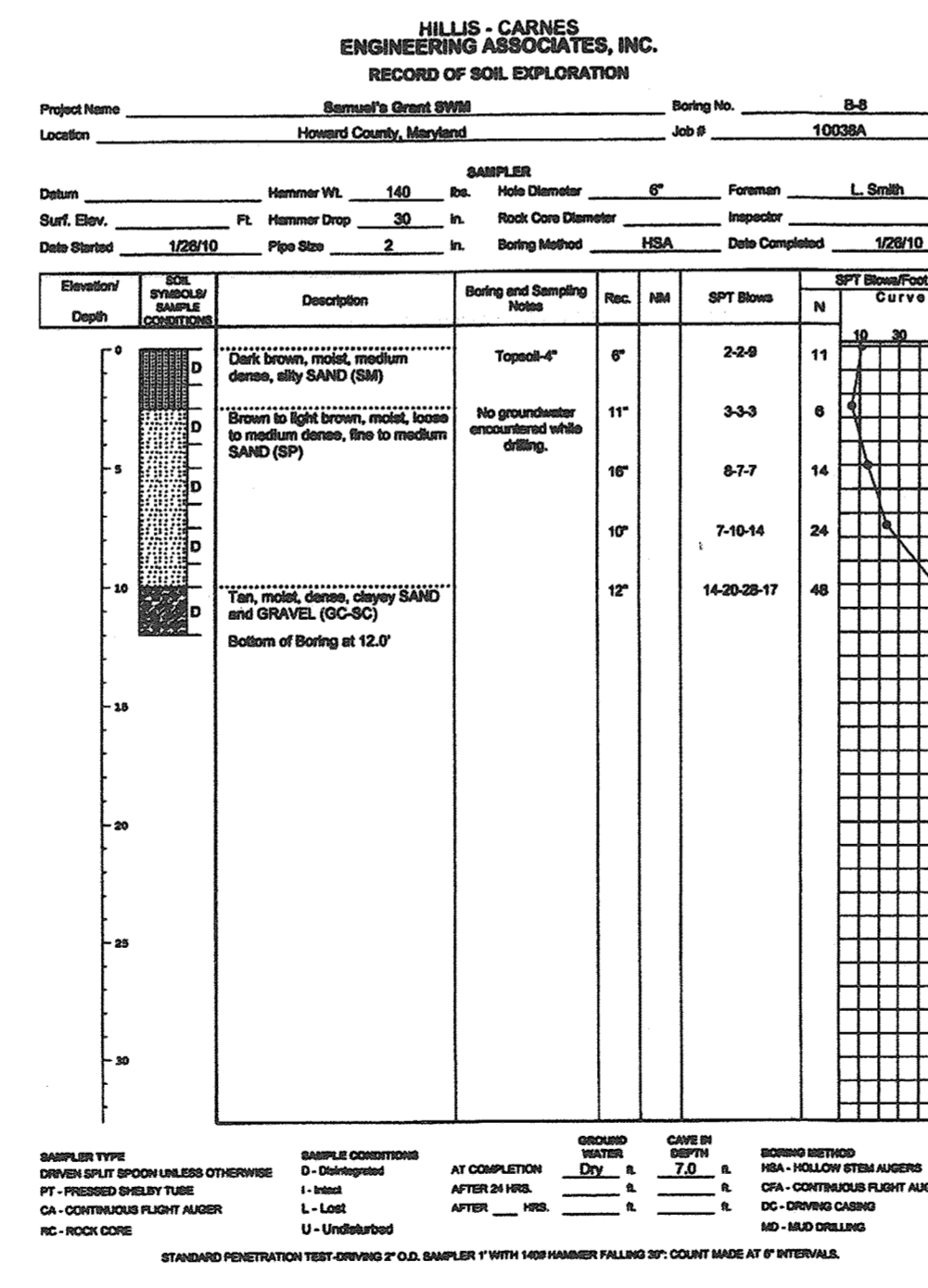
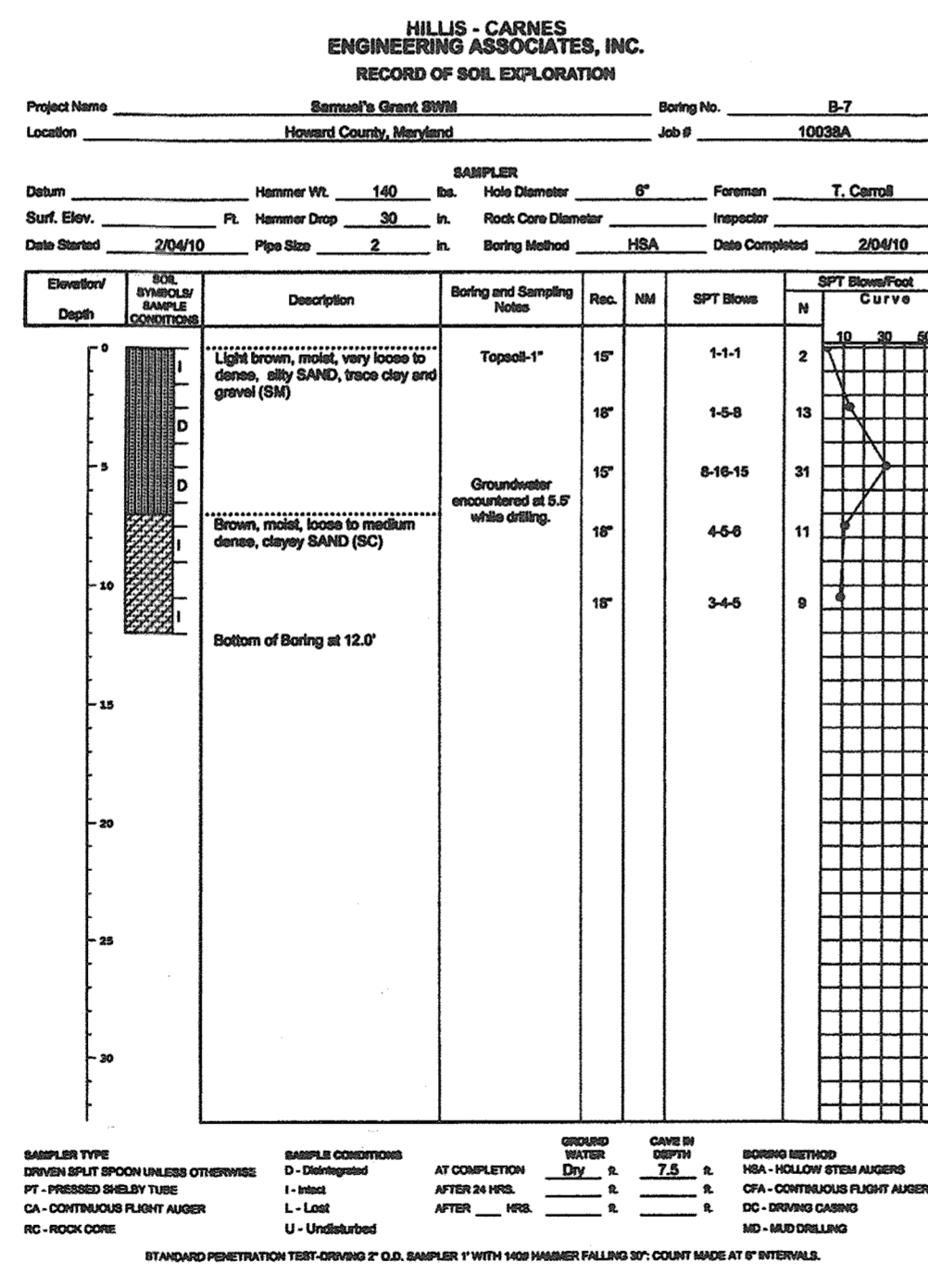
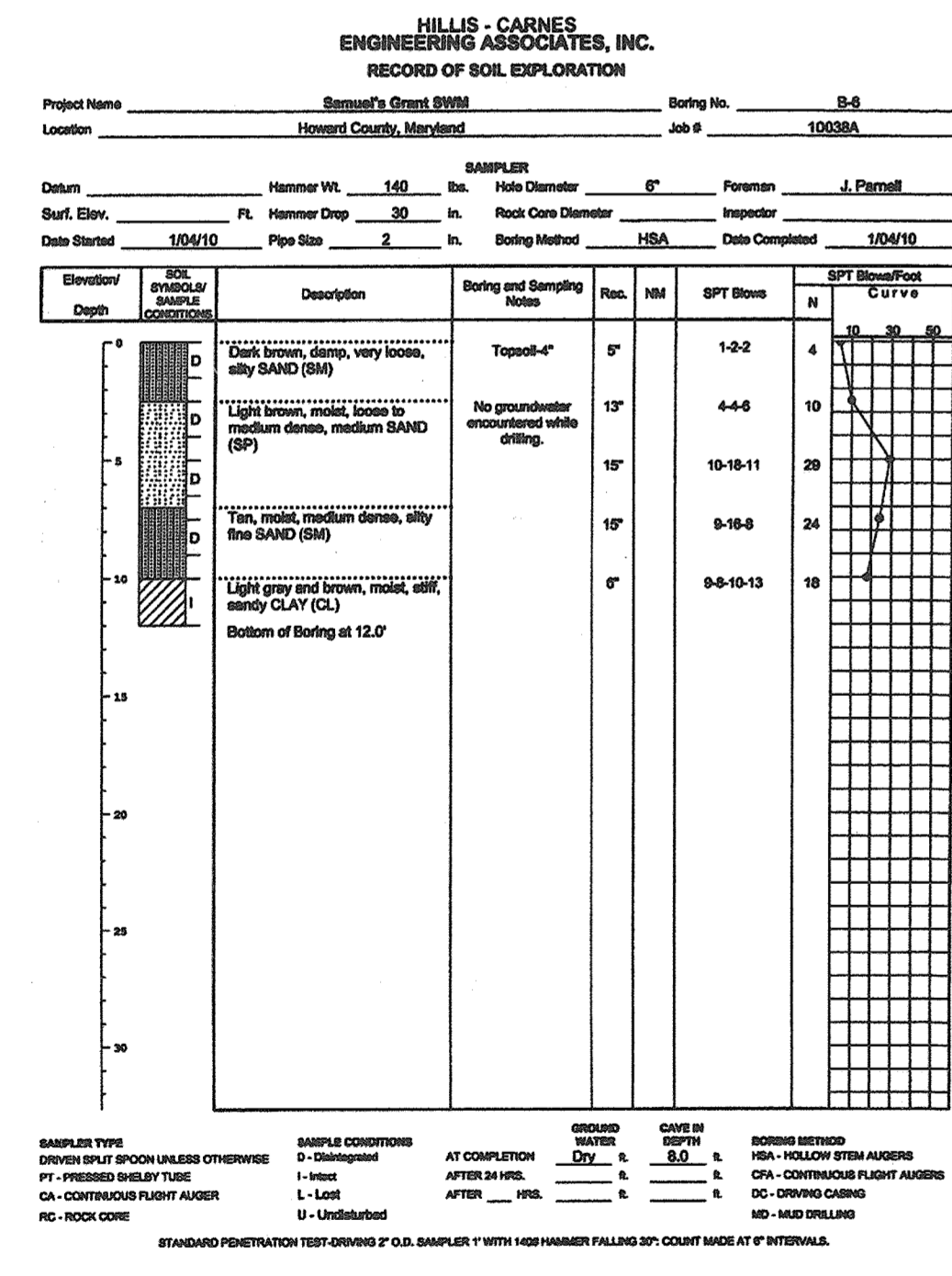
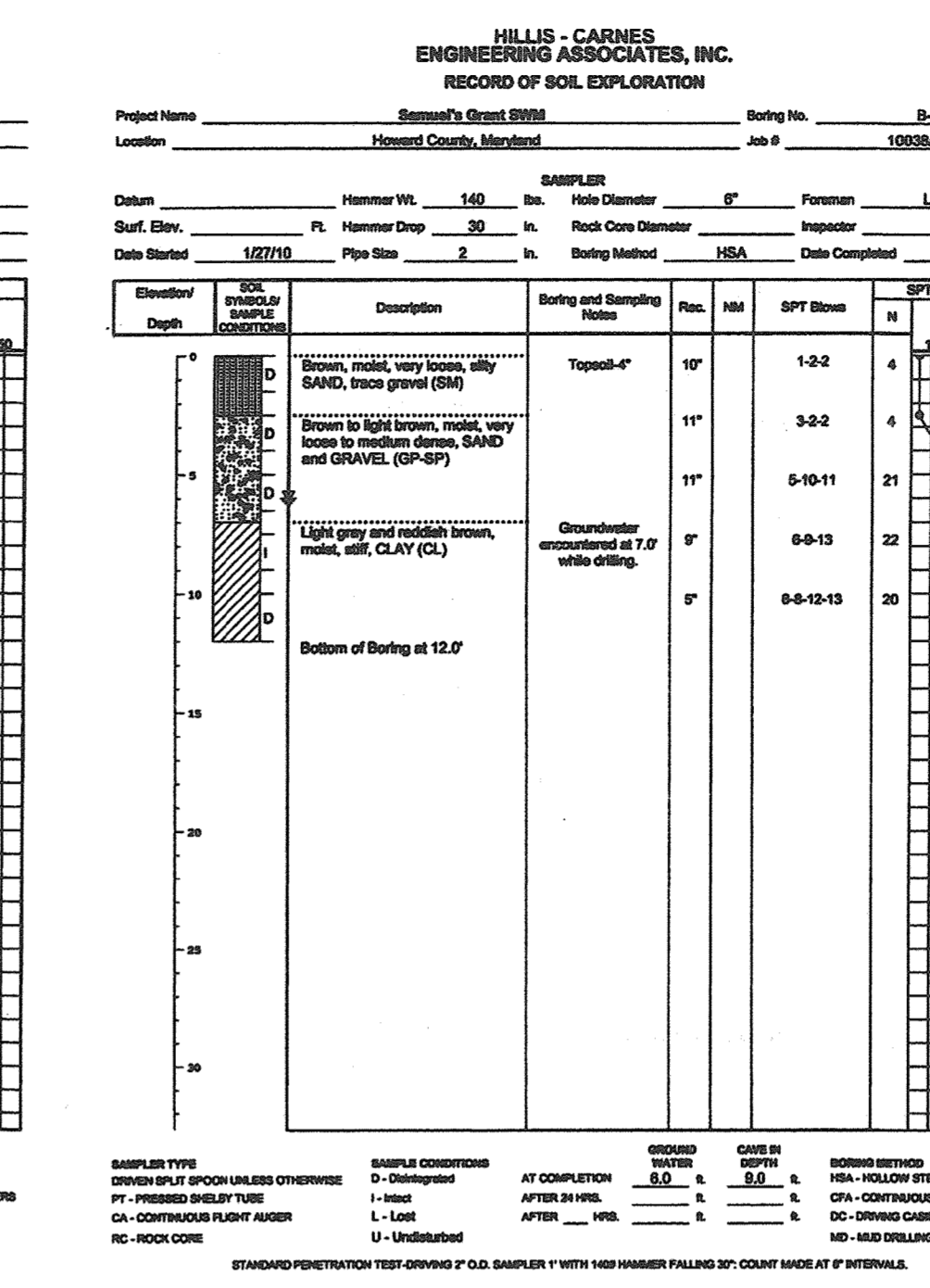
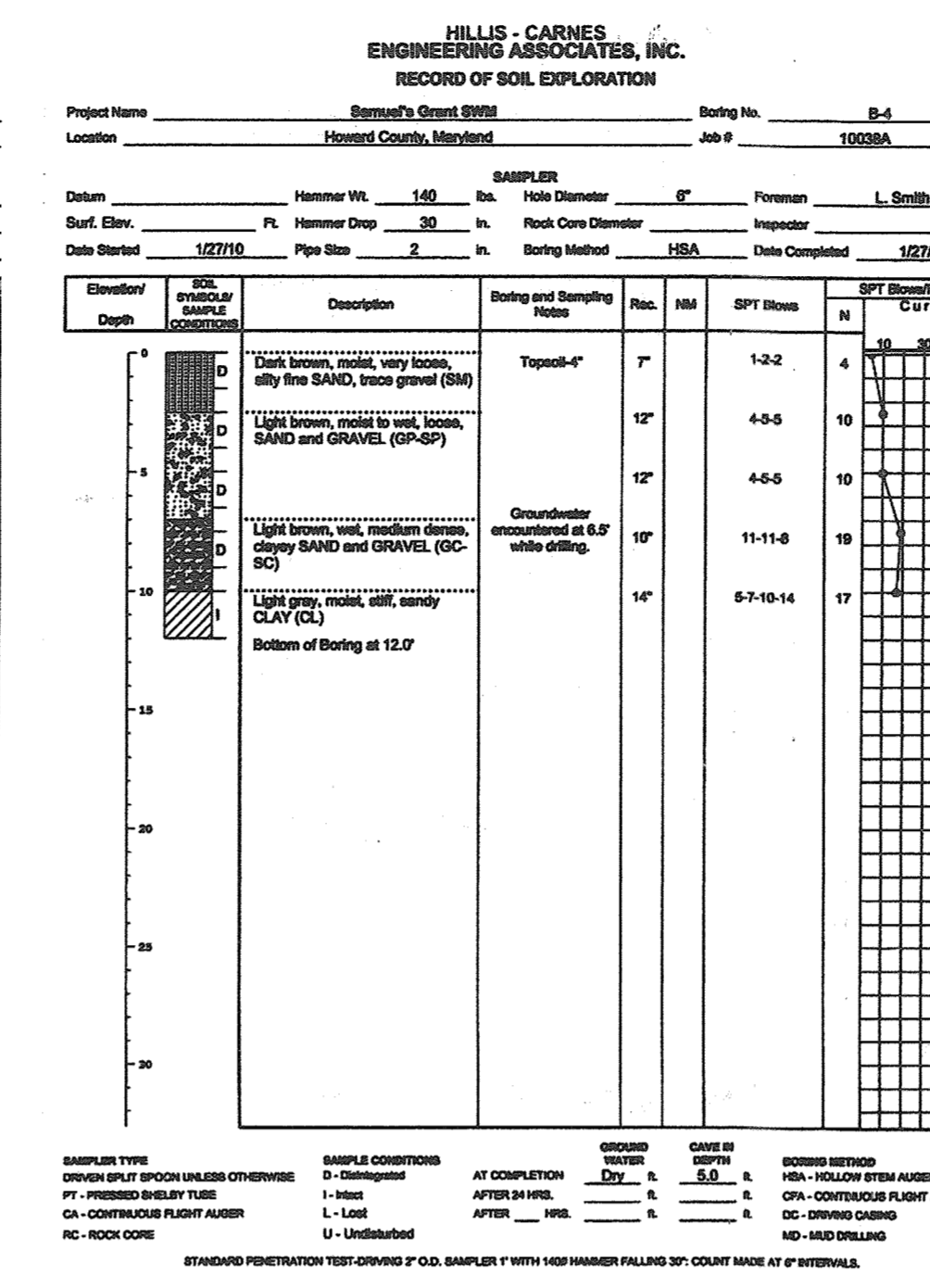
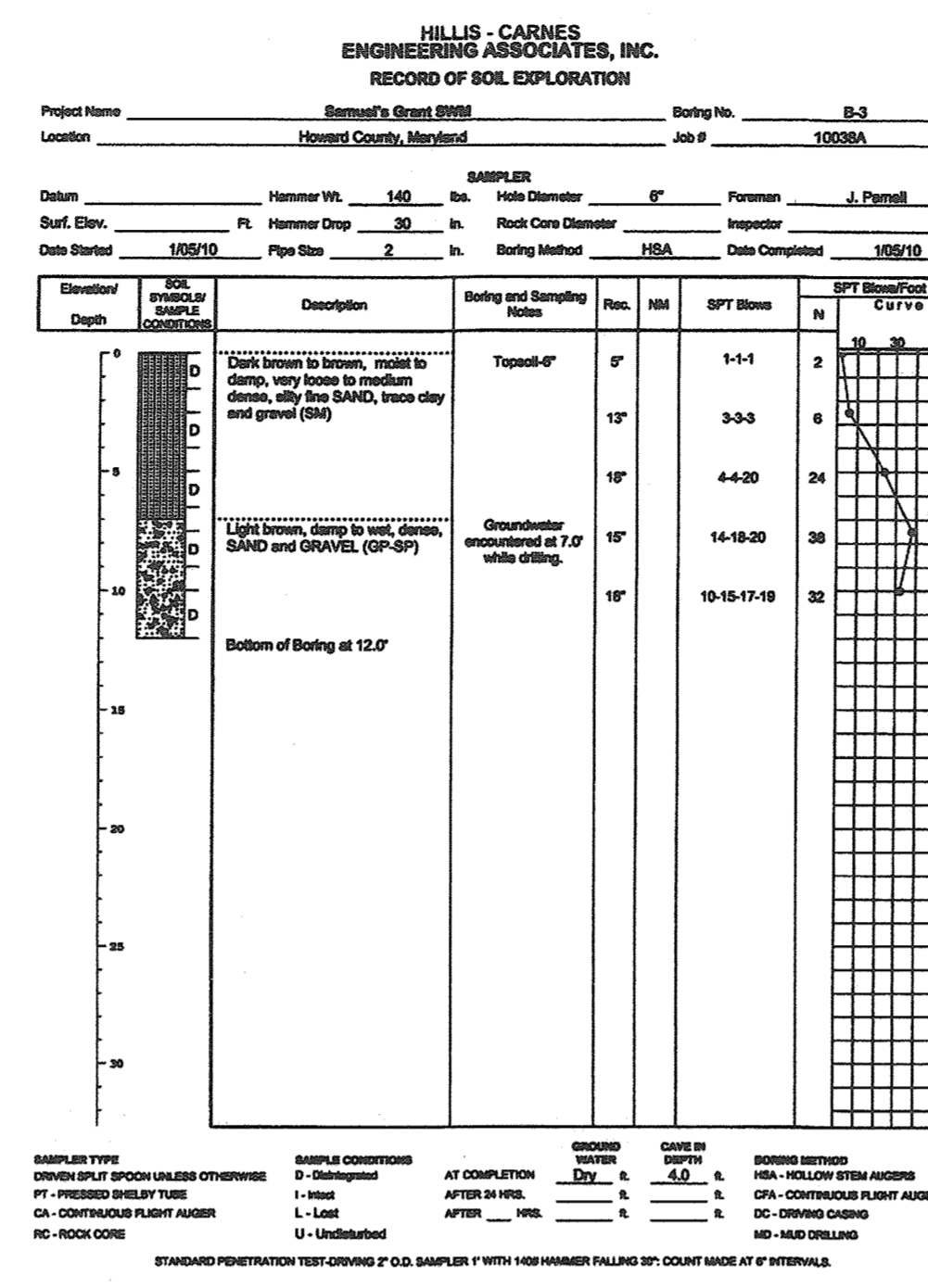
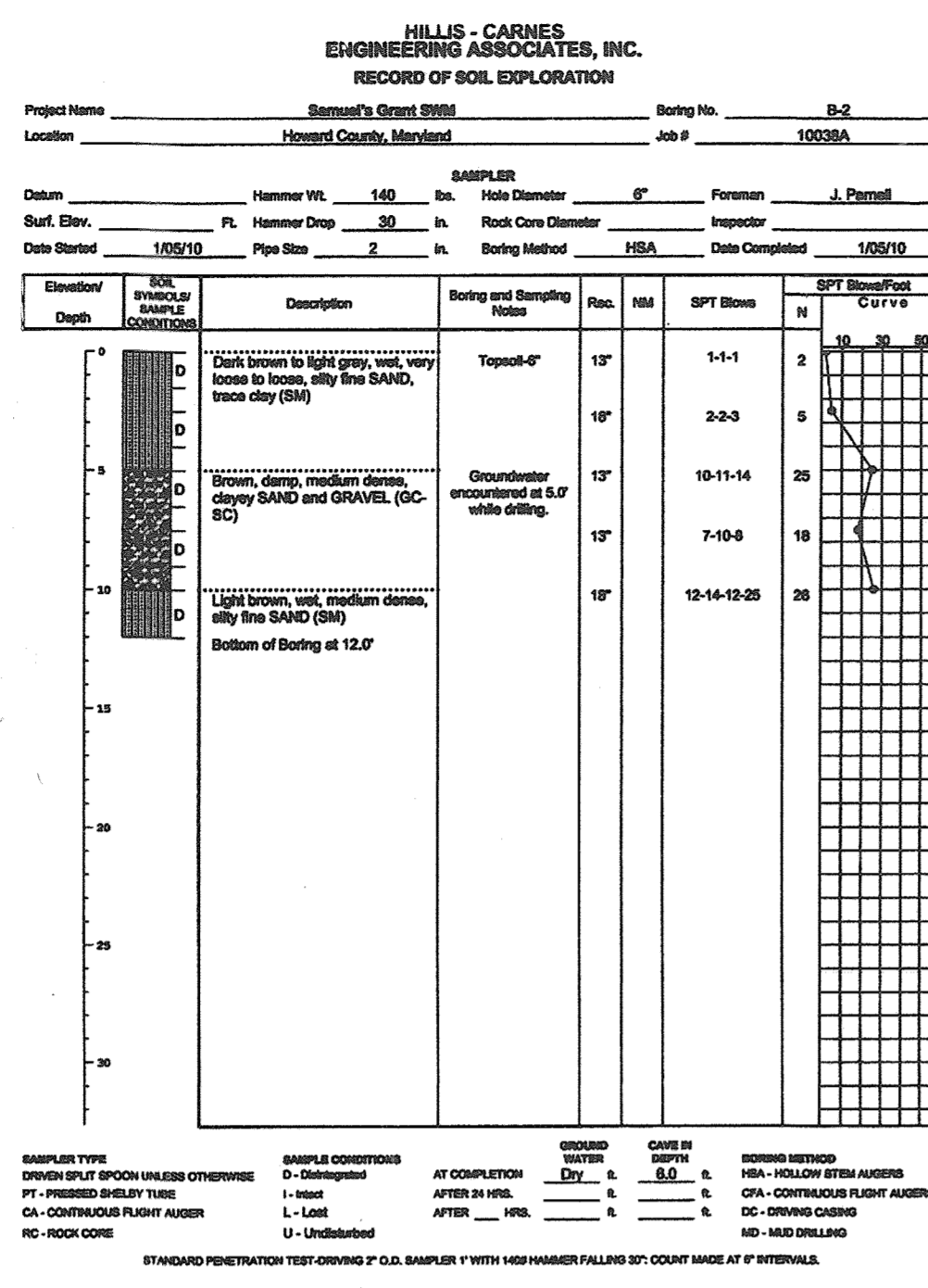
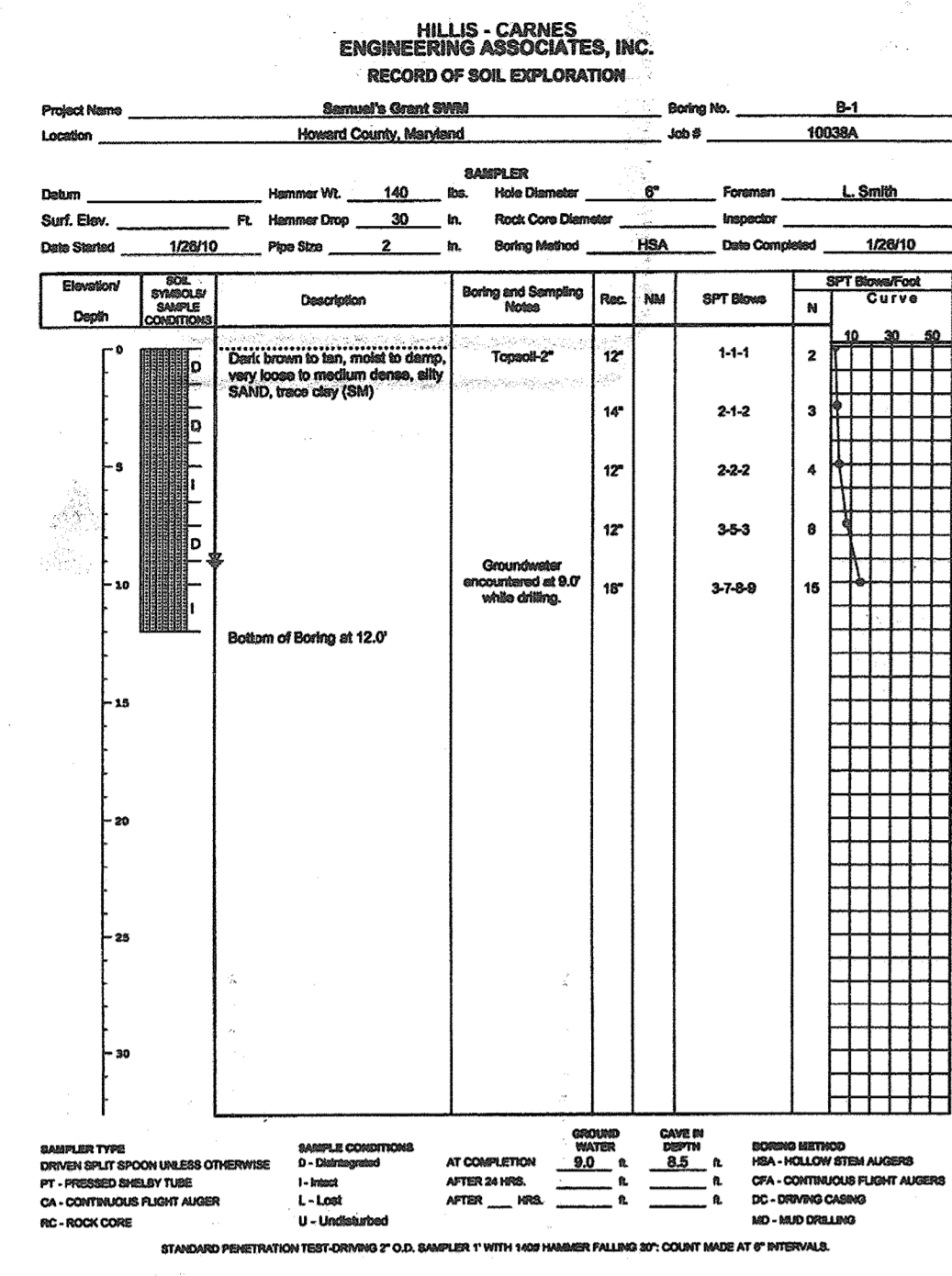
FOREST CONSERVATION DETAILS
SAMUEL'S GRANT
LOTS 1 - 23, OPEN SPACE LOTS 28 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
TAX MAP No. 37, GRID No. 5, 11, & 12
PARCEL No. 104 AND P/O PARCEL No. 94
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 17, 2015
SHEET 19 OF 24



STATE OF MARYLAND
ALDO M. VITUCCI, P.E.
Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

MILWAUKEE ENGINEERING & ASSOCIATES, INC.
I hereby certify that the facility shown on this plan was constructed as shown on the "As-Built" plans and meets with the approved plans and specifications.
DATE: 8/18/15

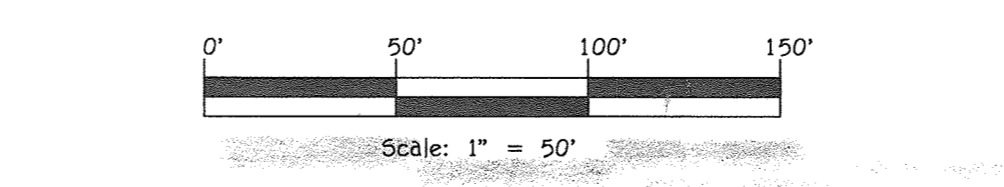
Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development
K. Edwards
 Date: 8-24-15
 Chief, Development Engineering Division
John Edwards
 Date: 8-17-15
 Approved: Howard County Department Of Public Works
M. Williams
 Chief, Bureau Of Highways
 Date: 8/10/2015



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2000

OWNER
 Mr. David Paplucakis,
 Mr. Gregory Paplucakis And
 Mrs. Sarah Shimulundis
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph# (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph# (410)-442-5613



Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 207240, Expiration Date 2-22-17.
ALDO M. VITUCCI, P.E.
 DATE: 7/2/15

SEAL OF MARYLAND PROFESSIONAL ENGINEER
 ALDO M. VITUCCI, P.E.
 No. 207240
 EXPIRES 2-22-17

ALDO M. VITUCCI, P.E., INC.
 I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.
THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SOIL BORINGS
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 20 OF 24

1:200608100.dwg/FINALS/08100-3001 SHEET 20 OF 21 SOIL BORINGS.dwg 7/2/2015 9:26:31 AM, 11

Approved: Department of Planning And Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Approved: Howard County Department of Public Works
 Chief, Bureau of Highways

8-24-15
Date

8-17-15
Date

8/10/2015
Date

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Samuel's Grant B298
 Location: Howard County, Maryland
 Boring No.: B-12
 Job #: 10039A

Date: Hammer Vt. 140
 Surf. Elev. Ft. Hammer Drop 30
 Date Started 2/24/10
 Date Completed 2/24/10

Elevation/Depth	SOIL SAMPLE COLLECTION	Description	Boring and Sampling Note	Rel.	Ham.	SPT Blows	SPT Blow/Feet	CUTVE
0	D	Topsoil-1"				1-33	1.33	
12	D	Dark brown, very loose, clayey sand (SC)	No groundwater encountered while drilling.			6-8	0.67	
16	D	Tan, moist, medium dense, silty fine to medium sand, trace gravel (SM)				13	0.81	
17	D	Brown to tan, damp, loose to medium dense, medium sand and gravel (GP-SP)				18	1.06	
19	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				21	1.05	
20	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				25	1.25	
21	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				29	1.38	
22	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				32	1.45	
23	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				36	1.56	
24	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				40	1.67	
25	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				44	1.76	
26	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				48	1.85	
27	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				52	1.93	
28	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				56	2.00	
29	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				60	2.07	
30	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				64	2.13	
31	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				68	2.20	
32	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				72	2.27	
33	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				76	2.33	
34	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				80	2.40	
35	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				84	2.47	
36	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				88	2.53	
37	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				92	2.60	
38	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				96	2.67	
39	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				100	2.73	
40	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				104	2.80	
41	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				108	2.87	
42	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				112	2.93	
43	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				116	3.00	
44	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				120	3.07	
45	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				124	3.13	
46	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				128	3.20	
47	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				132	3.27	
48	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				136	3.33	
49	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				140	3.40	
50	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				144	3.47	
51	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				148	3.53	
52	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				152	3.60	
53	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				156	3.67	
54	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				160	3.73	
55	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				164	3.80	
56	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				168	3.87	
57	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				172	3.93	
58	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				176	4.00	
59	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				180	4.07	
60	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				184	4.13	
61	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				188	4.20	
62	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				192	4.27	
63	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				196	4.33	
64	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				200	4.40	
65	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				204	4.47	
66	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				208	4.53	
67	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				212	4.60	
68	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				216	4.67	
69	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				220	4.73	
70	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				224	4.80	
71	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				228	4.87	
72	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				232	4.93	
73	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				236	5.00	
74	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				240	5.07	
75	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				244	5.13	
76	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				248	5.20	
77	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				252	5.27	
78	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				256	5.33	
79	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				260	5.40	
80	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				264	5.47	
81	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				268	5.53	
82	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				272	5.60	
83	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				276	5.67	
84	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				280	5.73	
85	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				284	5.80	
86	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				288	5.87	
87	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				292	5.93	
88	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				296	6.00	
89	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				300	6.07	
90	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				304	6.13	
91	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				308	6.20	
92	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				312	6.27	
93	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				316	6.33	
94	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				320	6.40	
95	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				324	6.47	
96	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				328	6.53	
97	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				332	6.60	
98	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				336	6.67	
99	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				340	6.73	
100	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				344	6.80	
101	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				348	6.87	
102	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				352	6.93	
103	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				356	7.00	
104	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				360	7.07	
105	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				364	7.13	
106	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				368	7.20	
107	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				372	7.27	
108	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				376	7.33	
109	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				380	7.40	
110	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				384	7.47	
111	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				388	7.53	
112	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				392	7.60	
113	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				396	7.67	
114	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				400	7.73	
115	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				404	7.80	
116	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				408	7.87	
117	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				412	7.93	
118	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				416	8.00	
119	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				420	8.07	
120	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				424	8.13	
121	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				428	8.20	
122	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				432	8.27	
123	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				436	8.33	
124	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				440	8.40	
125	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				444	8.47	
126	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				448	8.53	
127	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				452	8.60	
128	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				456	8.67	
129	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				460	8.73	
130	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				464	8.80	
131	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				468	8.87	
132	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				472	8.93	
133	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				476	9.00	
134	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				480	9.07	
135	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				484	9.13	
136	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				488	9.20	
137	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				492	9.27	
138	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				496	9.33	
139	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				500	9.40	
140	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				504	9.47	
141	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				508	9.53	
142	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				512	9.60	
143	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				516	9.67	
144	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				520	9.73	
145	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				524	9.80	
146	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				528	9.87	
147	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				532	9.93	
148	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				536	10.00	
149	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				540	10.07	
150	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				544	10.13	
151	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				548	10.20	
152	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				552	10.27	
153	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				556	10.33	
154	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				560	10.40	
155	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				564	10.47	
156	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				568	10.53	
157	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)				572	10.60	
158	D	Light brown, moist, medium dense, silty sand and gravel (GP-SP)						

Approved: Department of Public Works
Murphy
 Chief, Bureau of Highways
 Date: 8/10/2015

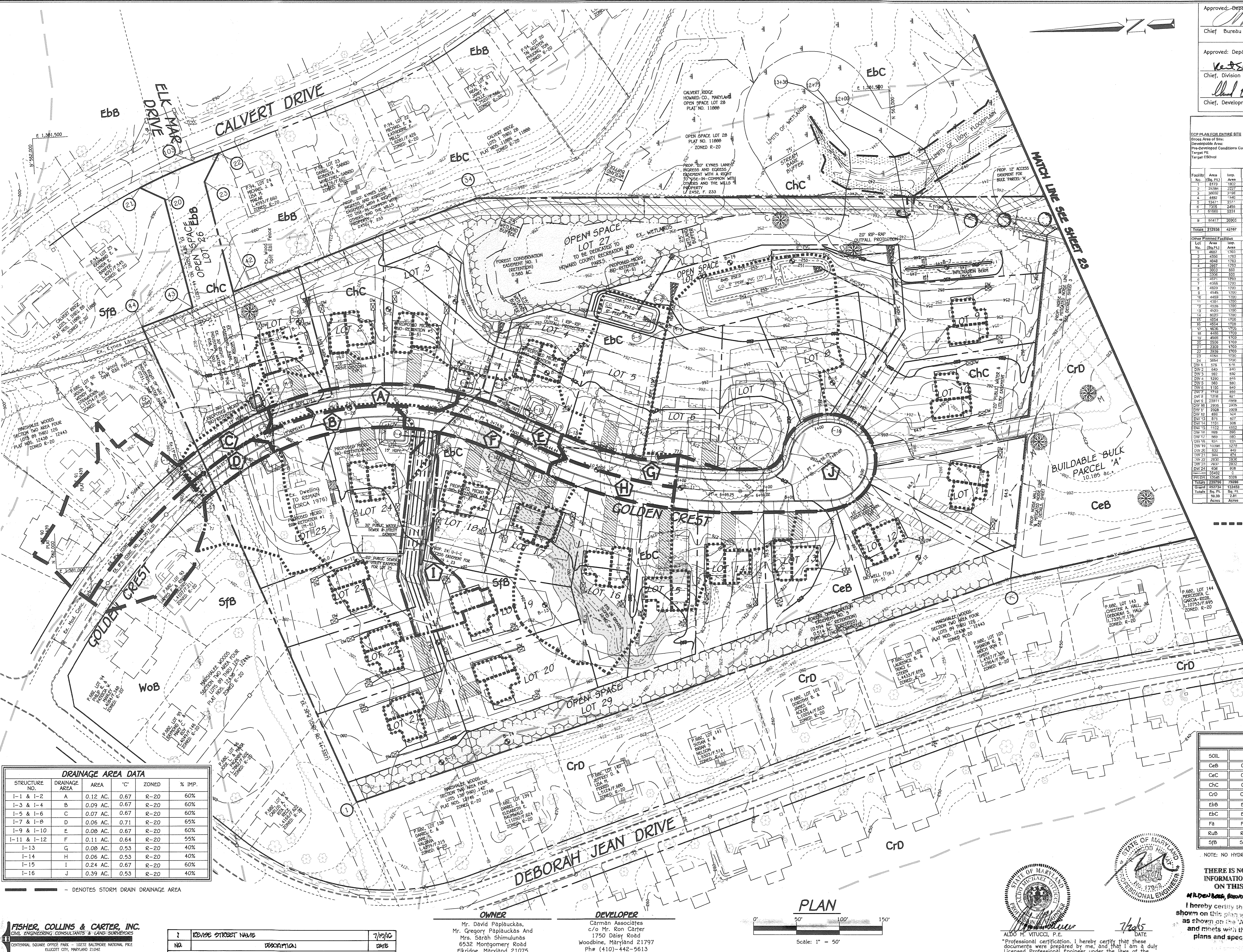
Approved: Department of Planning and Zoning
Vest
 Chief, Division of Land Development
 Date: 8-24-15

Chen
 Chief, Development Engineering Division
 Date: 8-17-15

PAULAUCKAS PROPERTY

DCP PLAN FOR ENTIRE SITE		Non-Markable Logging	
Overall Area of Map:	34.82 Acres	DCP Area:	9.76 Acres
Developable Area:	9.76 Acres	Non-Markable Logging Area:	0.15 Acres
Pre-Developed Conditions Composite RCN:	48	Non-Markable Logging Condition:	1 (1-4)
Target ESD:	1.80 inches	Non-Markable Logging Condition:	10 (10-1)
	0.416 Ac. Ft. 18,148 Cu. Ft.	Non-Markable Logging Condition:	20 (20-1)

Facility No.	Area (Sg. Ft.)	Imp.	Law	% of Total	ESD Practice	Unretained	Retained	ESD vol	ESD vol	Rev	%	
				Site Area		Area (Sg. Ft.)	Area (Sg. Ft.)	(CF)	(CF)	Provided (CF)	Provided (%)	
1	1387	1000	1.00	100	Dual Dry Well	0	72	198	N/A	200	0	99%
2	2388	2227	2319	218	Dual Dry Well	0	362	403	204	350	84	81%
3	3892	2298	2252	213	Micro Bio-React	0	487	453	328	350	87	83%
4	4482	1541	2842	115	Micro Bio-React	0	309	215	163	208	89	94%
5	1247	2111	1950	184	Micro Bio-React	0	224	289	150	205	87	87%
6	1255	2485	2280	217	Micro Bio-React	0	308	343	291	338	246	203%
7	6760	2251	2239	212	Micro Bio-React	0	1068	1147	1241	2208	971	85%
8	10217	26501	42972	1574	Non-Recup D	0	1500	2920	2700	4353	1795	59%
9	212938	42187	168771	30.84	N/A	N/A	4312	8473	4781	12268	3240	N/A



DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
1-1 & 1-2	A	0.12 AC.	0.67	R-20	60%
1-3 & 1-4	B	0.09 AC.	0.67	R-20	60%
1-5 & 1-6	C	0.07 AC.	0.67	R-20	60%
1-7 & 1-8	D	0.06 AC.	0.71	R-20	65%
1-9 & 1-10	E	0.08 AC.	0.67	R-20	60%
1-11 & 1-12	F	0.11 AC.	0.64	R-20	55%
1-13	G	0.08 AC.	0.53	R-20	40%
1-14	H	0.06 AC.	0.53	R-20	40%
1-15	I	0.24 AC.	0.67	R-20	60%
1-16	J	0.39 AC.	0.53	R-20	40%

- - - DENOTES STORM DRAIN DRAINAGE AREA

SOILS LEGEND

SOIL	NAME	CLASS	Kw
CeB	Chillum loam, 2 to 5 percent slopes	B	.37
CeC	Chillum loam, 5 to 10 percent slopes	B	.37
Chc	Chillum-Russell loams, 5 to 10 percent slopes	B	.37
Crd	Croom and Evesboro soils, 10 to 15 percent slopes	C	.28
EbB	Evesboro loamy sand, 0 to 2 percent slopes	A	.15
EbC	Evesboro loamy sand, 2 to 10 percent slopes	A	.15
Fa	Fallsington sandy loam, 0 to 2 percent slopes	B	.02
RuB	Russell and Beltsville soils, 2 to 5 percent slopes	C	.24
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes	B	.24

NOTE: NO HYDRIC SOILS WERE INDICATED ON SITE.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FIDELITY CITY, MARYLAND 21142
 (410) 461-2000

NO.	REVISION	DATE
1	REVISE STREET NAME	7/3/15
2	REVISION	DNB

OWNER
 Mr. David Paulaukas,
 Mr. Gregory Paulaukas, and
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph: (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph: (410)-442-5613

PLAN
 Scale: 1" = 50'

ALDO M. VITUCCI, P.E.
 PROFESSIONAL ENGINEER
 No. 1792
 State of Maryland
 7/26/15 DATE
 Professional certification, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

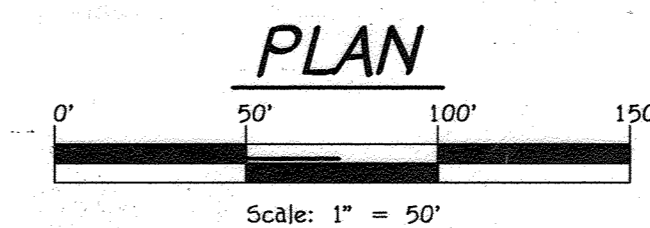
I, the undersigned, hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.

**DRAINAGE AREA MAP & SOILS MAP
 SAMUEL'S GRANT**
 LOTS 1 - 29, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 22 OF 24

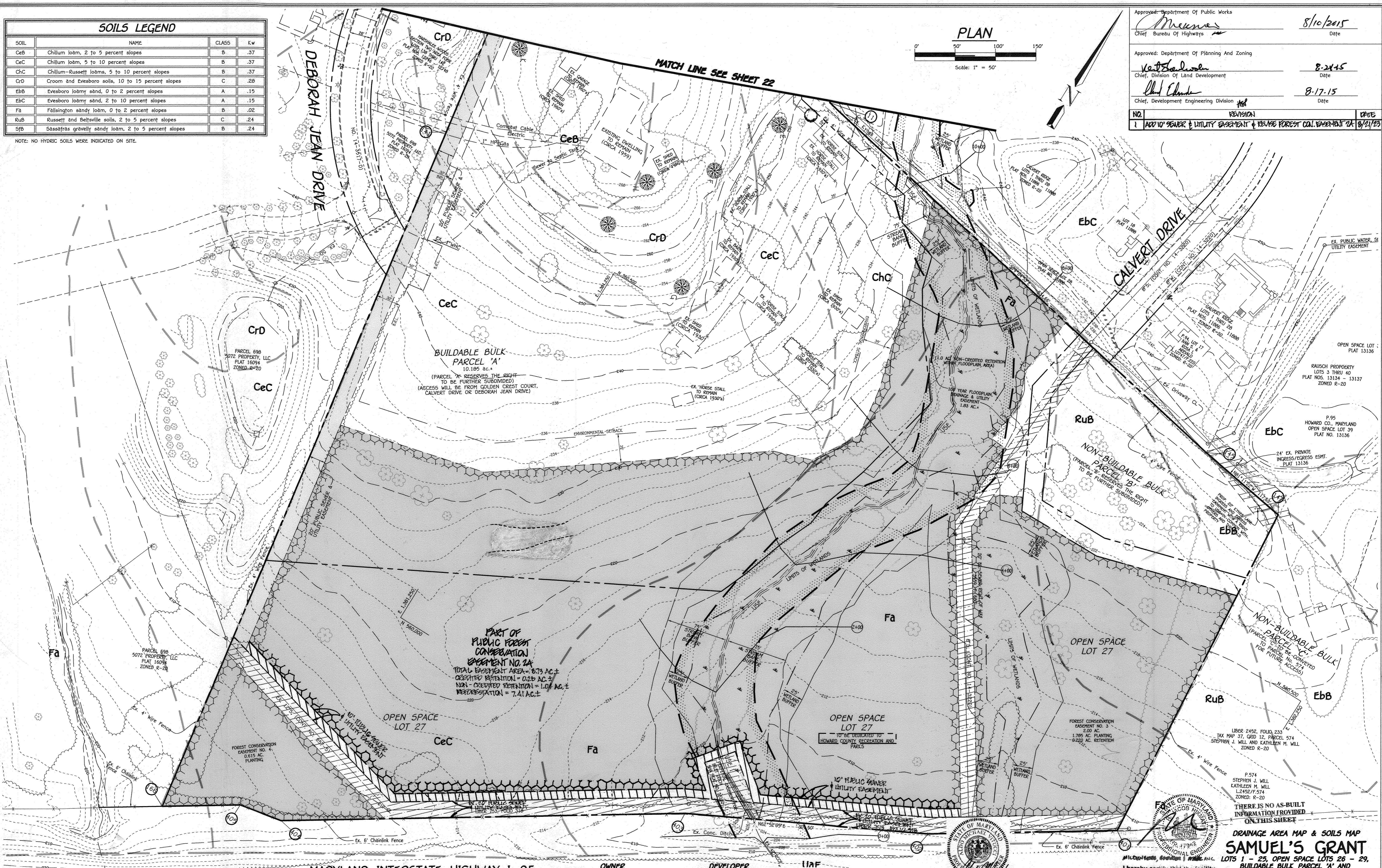
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SOILS LEGEND			
SOIL	NAME	CLASS	Kw
CeB	Chillum loam, 2 to 5 percent slopes	B	.37
CeC	Chillum loam, 5 to 10 percent slopes	B	.37
ChC	Chillum-Russett loams, 5 to 10 percent slopes	B	.37
CrD	Croom and Evesboro soils, 10 to 15 percent slopes	C	.28
EbB	Evesboro loamy sand, 0 to 2 percent slopes	A	.15
EbC	Evesboro loamy sand, 2 to 10 percent slopes	A	.15
Fa	Fallington sandy loam, 0 to 2 percent slopes	B	.02
RuB	Russett and Beltsville soils, 2 to 5 percent slopes	C	.24
SaB	Sassafras gravelly sandy loam, 2 to 5 percent slopes	B	.24

NOTE: NO HYDRIC SOILS WERE INDICATED ON SITE.



Approved: Department Of Public Works		Date
<i>M. M...</i>		8/10/2015
Chief, Bureau Of Highways		
Approved: Department Of Planning And Zoning		Date
<i>V. S. ...</i>		8-24-15
Chief, Division Of Land Development		
<i>D. E. ...</i>		8-17-15
Chief, Development Engineering Division		
NO.	REVISION	DATE
1	ADD 10' POWER & UTILITY EASEMENT & REMOVE FOREST CONSERVATION EA	8/21/15



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2995

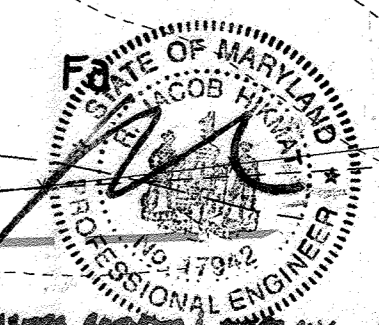
MARYLAND INTERSTATE HIGHWAY I-95
SHA PLAT NO. 35151
LIBER 506, FOLIO 426

OWNER
 Mr. David Papiuckas,
 Mr. Gregory Papiuckas And
 Mrs. Sarah Shimulunas
 6532 Montgomery Road
 Elkridge, Maryland 21075
 Ph# (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
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 Woodbine, Maryland 21797
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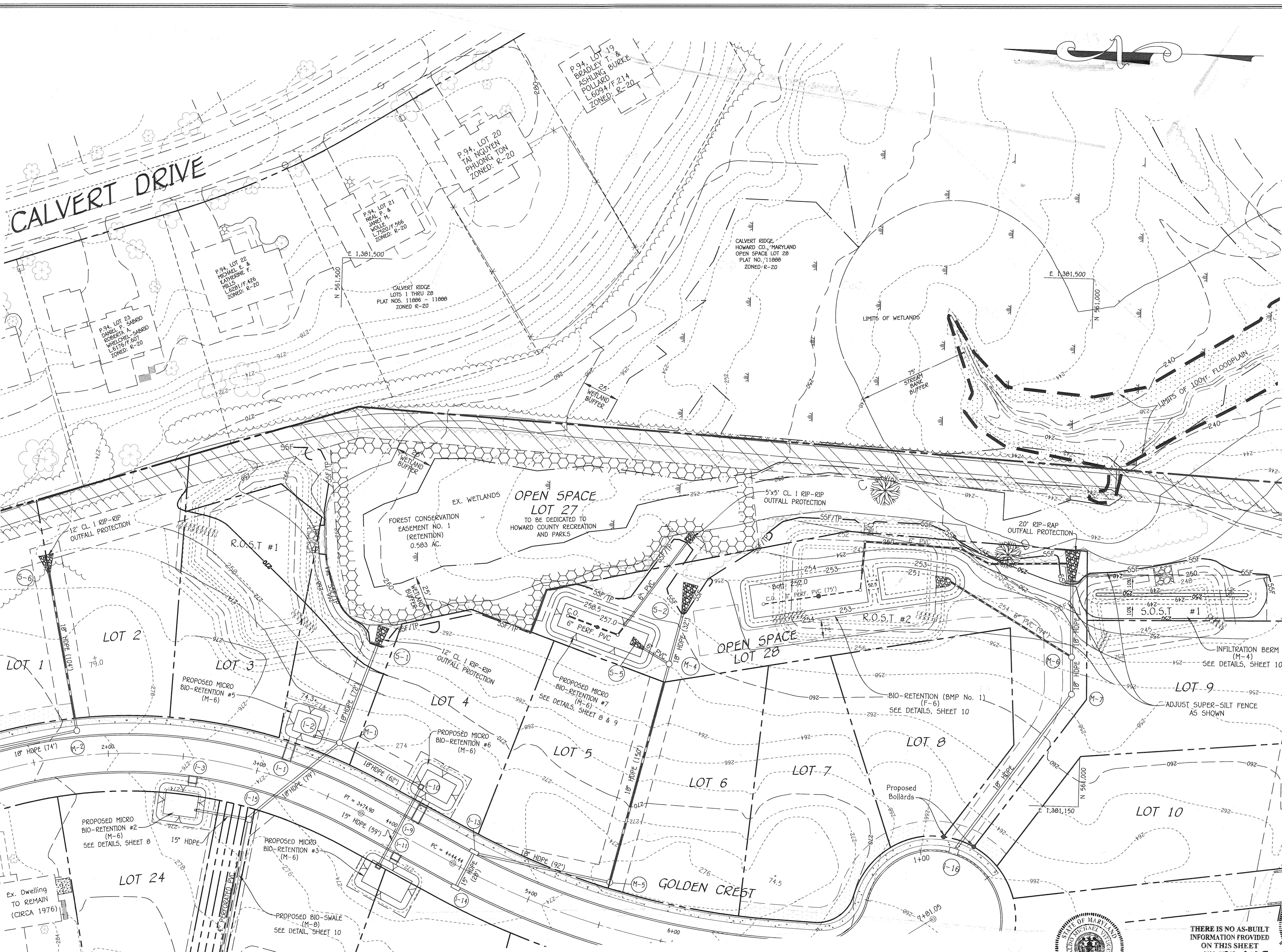


ALDO M. VITUCCI, P.E.
 DATE 7/30/15
 I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-17.



I hereby certify that the facility shown on this plan was constructed as shown on the RE-BUILT plans and meets with the approved plans and specifications.

DRAINAGE AREA MAP & SOILS MAP
SAMUEL'S GRANT
LOTS 1 - 25, OPEN SPACE LOTS 26 - 29, BUILDABLE BULK PARCEL 'A' AND NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 23 OF 24



ENGINEER'S CERTIFICATE

I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer: *[Signature]* Date: 7/20/15

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents As Are Deemed Necessary."

Signature Of Developer: *[Signature]* Date: 7/20/15

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

[Signature] Date: 8/3/15
District Howard Soil Conservation Dist.

Approved: Department Of Planning And Zoning

[Signature] Date: 8-24-15
Chief, Division Of Land Development

[Signature] Date: 8-17-15
Chief, Development Engineering Division

Approved: Howard County Department Of Public Works

[Signature] Date: 8/10/2015
Chief, Bureau Of Highways

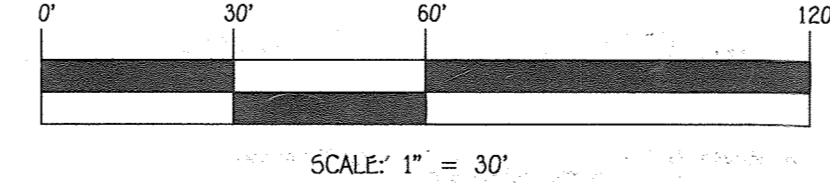
REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE STREET NAME	7/19/16

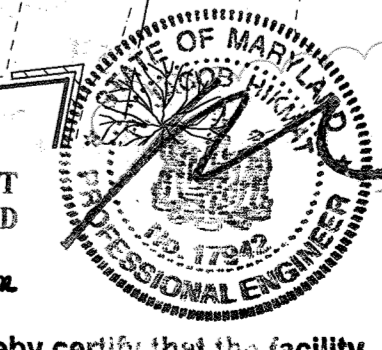
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 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELKBRIDGE CITY, MARYLAND 21074
 (410) 461-2999

OWNER
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 Mr. Gregory Papiłuckas And
 Mrs. Sarah Shimulunas
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 Elkridge, Maryland 21075
 Ph# (410)-442-5613

DEVELOPER
 Carman Associates
 c/o Mr. Ron Carter
 1750 Daisy Road
 Woodbine, Maryland 21797
 Ph# (410)-442-5613



ALDO M. VITUCCI, P.E.
 I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-17.



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 M.H. DEVELOPMENT, INC. & ASSOC. INC.

FINAL GRADING PLAN
SAMUEL'S GRANT
 LOTS 1 - 25, OPEN SPACE LOTS 26 - 29,
 BUILDABLE BULK PARCEL 'A' AND
 NON-BUILDABLE BULK PARCELS 'B' & 'C'
 ZONING: R-20
 TAX MAP No. 37, GRID No. 5, 11, & 12
 PARCEL No. 104 AND P/O PARCEL No. 94
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 17, 2015
 SHEET 24 OF 24