

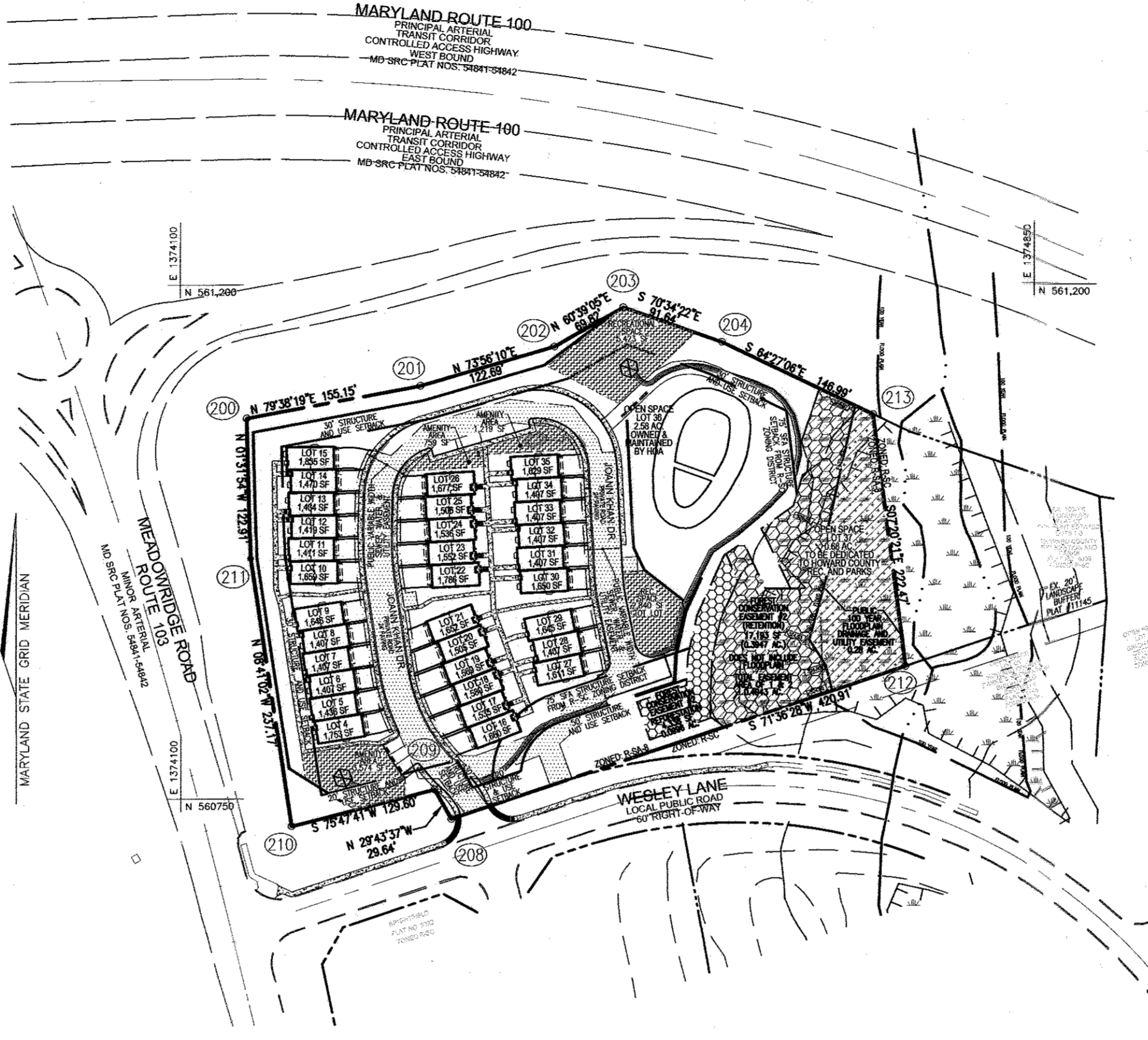
GENERAL NOTES

- 1. THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS...

- 2. PROJECT BACKGROUND: LOCATION: TAX MAP 37, PARCEL 606, GRID 3...

COORDINATE TABLE with columns: POINT, EASTING, NORTHING

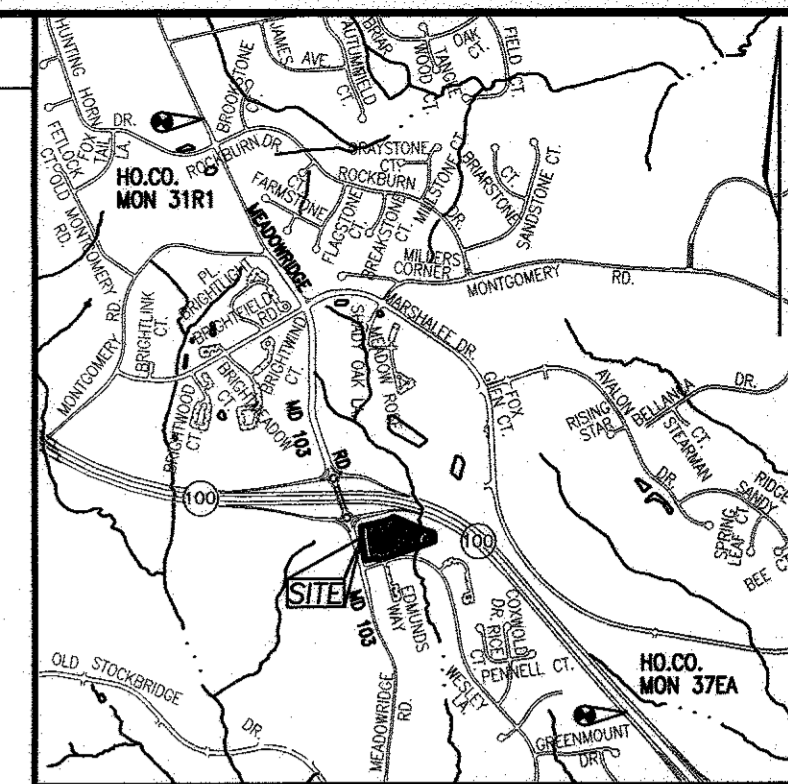
SITE DEVELOPMENT PLAN FOX HUNT ESTATES LOTS 4-35 & OPEN SPACE LOTS 36 & 37 HOWARD COUNTY, MARYLAND



LOCATION PLAN SCALE: 1" = 100'

BENCHMARK INFORMATION

BENCHMARK NO. 1: COUNTY CONTROL #37EA N 559,149.111 E 1,376,916.213 ELEV. = 291.757'



VICINITY MAP SCALE 1"=2000'

LEGEND:

- PROPERTY LINE, RIGHT-OF-WAY LINE, ADJACENT PROPERTY LINE, EXISTING CURB AND GUTTER, CENTERLINE OF EXISTING STREAM, PROPOSED SIDEWALK, PROPOSED CURB, VARIABLE WIDTH PUBLIC SEWER, WATER, AND UTILITY EASEMENT, PUBLIC SWM CREDIT EASEMENT, FOREST CONSERVATION EASEMENT (RETENTION), FOREST CONSERVATION EASEMENT (RESTORATION), 100-YEAR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT, RECREATIONAL OPEN SPACE AND AMENITY AREA, EXISTING WETLANDS, 25' WETLAND BUFFER, STREAM BUFFER

SITE ANALYSIS: DENSITY TABULATION

GROSS AREA: 4.39 AC. (191,074 SF) 100-YEAR FLOODPLAIN: 0.28 AC. (12,261 SF) STEEP SLOPES OUTSIDE OF THE FLOODPLAIN: 0.00 AC. (0.00 SF) NET AREA: 4.11 AC. DENSITY: 8.0 DWELLING UNITS/NET AREA...

*SEE GENERAL NOTE NUMBER 33.

10% MODERATE INCOME HOUSING REQUIRED: 4 UNITS 10% MODERATE INCOME HOUSING PROVIDED: 4 UNITS (7, 13 & 28, 33)

LOT COVERAGE CALCULATION

SMALLEST LOT SIZE (LOTS 6, 7, 8, 28, 31, 32, 33, & 34) 1,407 SF PERCENTAGE OF LOT COVERED BY HOUSE FOOTPRINT 57.15%

GENERAL SITE DATA

PROPOSED USE OF SITE: SINGLE FAMILY ATTACHED PROPOSED WATER SYSTEM: PUBLIC PROPOSED SEWER SYSTEM: PUBLIC

AREA TABULATION

TOTAL PROJECT AREA: 191,074 SF (4.39 AC.) NET AREA OF SITE: 4.11 AC. TOTAL AREA OF BUILDABLE LOTS: 49,412 SF (1.13 AC.) AREA OF OPEN SPACE LOT 36: 112,208 SF (2.58 AC.)

PARKING TABULATION

TOTAL NUMBER OF UNITS ALLOWED AND PROPOSED 32 REQUIRED AT 2.0 SPACES PER DU 64 PARKING SPACES REQUIRED: 2 SPACES PER UNIT = 64 SPACES 0.3 SPACES PER UNIT FOR GUEST/OVERFLOW PARKING = 10 SPACES TOTAL PARKING SPACES REQUIRED: 74 SPACES

TOTAL PARKING SPACES PROVIDED: 135 SPACES *DPZ HAS APPROVED DRIVEWAY PARKING FOR 3 REQUIRED OVERFLOW SPACES

SUPPLEMENTARY BULK REGULATIONS

THE FOLLOWING SUPPLEMENTARY REGULATIONS SHALL APPLY IN ADDITION TO THE REQUIREMENTS OF THE APPLICABLE ZONING DISTRICT.

- 1. EXCEPTIONS TO SETBACK REQUIREMENTS a. IN ALL DISTRICTS EXCEPT THE NT DISTRICT, CORNICES, EAVES AND CANTILEVERED BUILDING FEATURES MAY PROJECT NOT MORE THAN THREE FEET INTO ANY REQUIRED SETBACK AREA...

STORMWATER MANAGEMENT SUMMARY TABLE AREA with columns: AREA, REQUIREMENT, VOLUME REQUIREMENT, CREDITS, VOLUME CREDITS, NOTES

PERMIT INFORMATION CHART

Table with columns: PROJECT NAME, SECTION/AREA, LOT/PARCEL, DEED REF., BLOCK NO, ZONE, TAX MAP, ELECT DIST, CENSUS TR, WATER CODE, SEWER CODE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division; Chief, Division of Land Development; Director

DATE: 6/26/12; DATE: 7/2/13; DATE: 7/9/13

ADDRESS CHART

Table with columns: LOT NO, STREET ADDRESS

Table with columns: NO., REVISION, DATE

REVISED SITE DEVELOPMENT PLAN COVER SHEET FOX HUNT ESTATES LOTS 4-35 & OPEN SPACE LOTS 36 & 37

TAX MAP 37 GRID 3 1ST ELECTION DISTRICT PARCEL 606 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS - SURVEYORS - PLANNERS

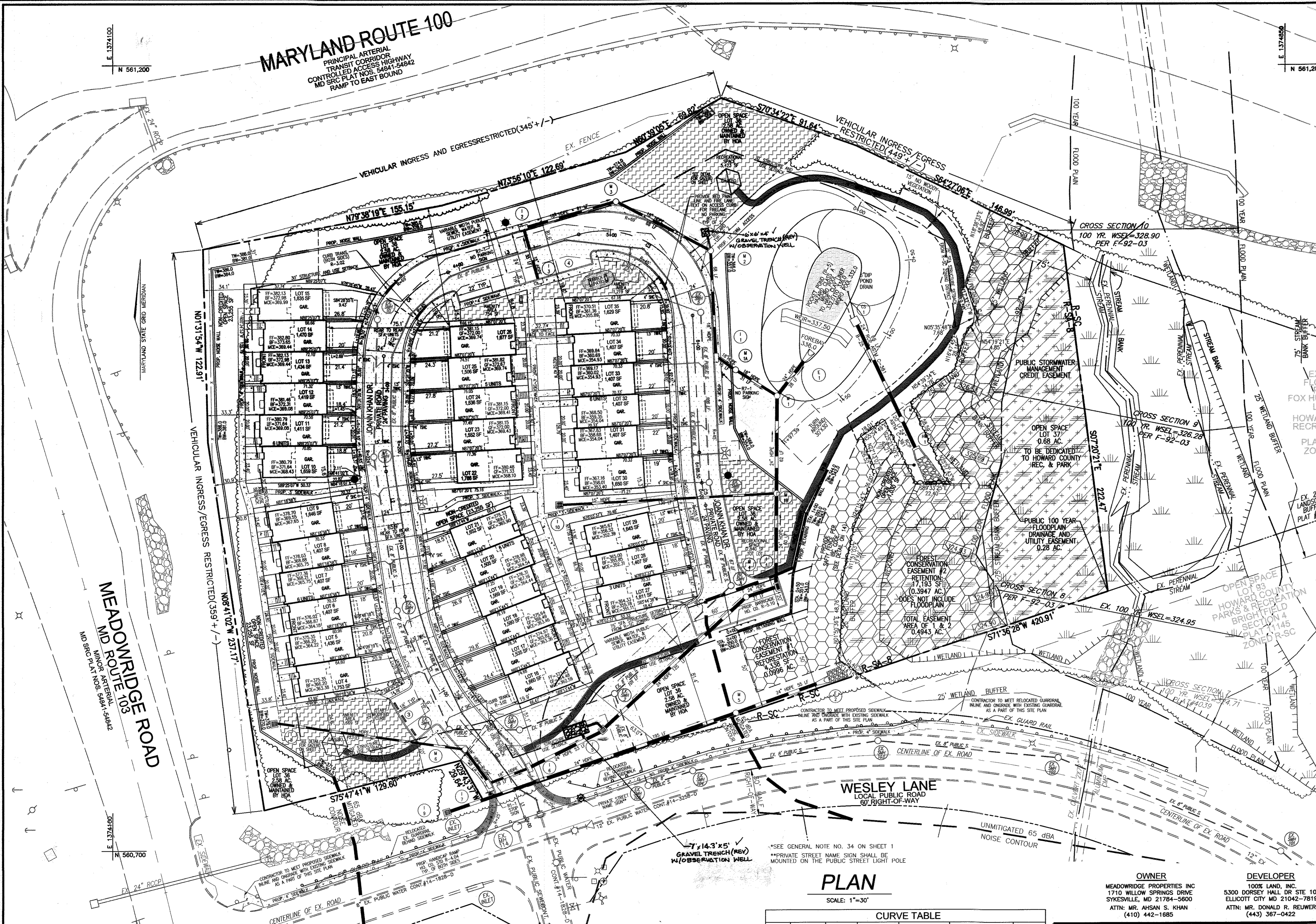
Professional Engineer seal and contact information for Robert H. Vogel, PE No. 16193.

NO AS-BUILT INFORMATION THIS SHEET

AS-BUILT 6/15/16 SDP-07-007

MARYLAND ROUTE 100
 PRINCIPAL ARTERIAL
 TRANSPORTATION CORRIDOR
 CONTROLLED ACCESS HIGHWAY
 MD SEC PLAT NOS. 54841-54842
 RAMP TO EAST BOUND

- LEGEND:**
- PROPERTY LINE
 - - - RIGHT-OF-WAY LINE
 - - - ADJACENT PROPERTY LINE
 - - - EXISTING CURB AND GUTTER
 - ⊙ EXISTING UTILITY POLE
 - ⊙ EXISTING LIGHT POLE
 - ⊙ EXISTING MAILBOX
 - ⊙ EXISTING SIGN
 - ⊙ EXISTING SANITARY MANHOLE
 - ⊙ EXISTING FIRE HYDRANT
 - ⊙ EXISTING TREELINE
 - - - EXISTING FENCE
 - - - CENTERLINE OF EXISTING STREAM
 - ▬ PROPOSED STORMDRAIN
 - ▬ PROPOSED STORMDRAIN INLET
 - ▬ PROPOSED SIDEWALK
 - ▬ PROPOSED TREELINE
 - ▬ PROPOSED CURB
 - ⊙ PUBLIC STREET LIGHT
 - ⊙ PRIVATE STREET LIGHT
 - ▬ VARIABLE WIDTH PUBLIC SEWER, WATER, AND UTILITY EASEMENT
 - ▬ PUBLIC SWM CREDIT EASEMENT
 - ▬ FOREST CONSERVATION EASEMENT (RETENTION)
 - ▬ FOREST CONSERVATION EASEMENT (REFORESTATION)
 - ▬ PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE, AND UTILITY EASEMENT
 - ▬ RECREATIONAL OPEN SPACE AND AMENITY AREA
 - ▬ EXISTING WETLANDS
 - ▬ 25' WETLAND BUFFER
 - ▬ STREAM BUFFER



LINE TABLE

LINE	LENGTH	BEARING
L1	31.22	S20°24'01"E
L2	80.65	S08°41'02"E
L3	86.96	S73°56'10"W
L4	92.30	S02°52'40"E
L5	113.36	S11°56'23"E
L6	26.95	N78°03'37"E
L7	18.81	S13°18'53"E
L8	3.17	S11°10'40"W
L9	28.89	S78°03'37"W

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	112.57	182.00	39°48'50"	58.87	S28°35'27"E	110.32
C2	22.05	62.00	20°22'25"	11.14	N38°18'40"W	21.93
C3	102.65	57.00	103°11'11"	71.90	N54°28'15"W	89.33
C4	72.04	57.00	72°24'35"	41.73	S37°43'52"W	67.34
C5	15.25	188.00	4°38'52"	7.63	S09°36'57"E	15.25
C6	24.80	23.00	61°46'41"	13.76	N71°11'13"W	23.62
C7	20.25	43.00	26°59'00"	10.32	N26°48'23"W	20.06
C8	18.38	43.00	24°29'33"	9.33	N01°04'06"W	18.24
C9	26.96	23.00	67°09'58"	15.27	N44°44'40"E	25.44

OWNER
 MEADOWRIDGE PROPERTIES INC
 1710 WILLOW SPRINGS DRIVE
 SYKESVILLE, MD 21784-5600
 ATTN: MR. AHMAN S. KHAN
 (410) 442-1685

DEVELOPER
 100% LAND, INC.
 5300 DORSEY HALL DR. STE 102
 ELLICOTT CITY, MD 21042-7819
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 10/20/13
 Chief, Division of Land Development: *[Signature]* 7/22/13
 Director: *[Signature]* 7/2/13

NO.	REVISION	DATE
1	(RHV) REVISE PROPOSED TOWNHOUSE LAYOUTS	04/05/13
2	DELETE REV TRENCH M-1. ADD REV TRENCH M-2 & I-5	10-26-16

REVISED SITE DEVELOPMENT PLAN
SITE AND UTILITY PLAN
FOX HUNT ESTATES
 LOTS 4-35 & OPEN SPACE
 LOTS 36 & 37

TAX MAP 37 GRID 3
 1ST ELECTION DISTRICT

PARCEL 606
 HOWARD COUNTY, MARYLAND

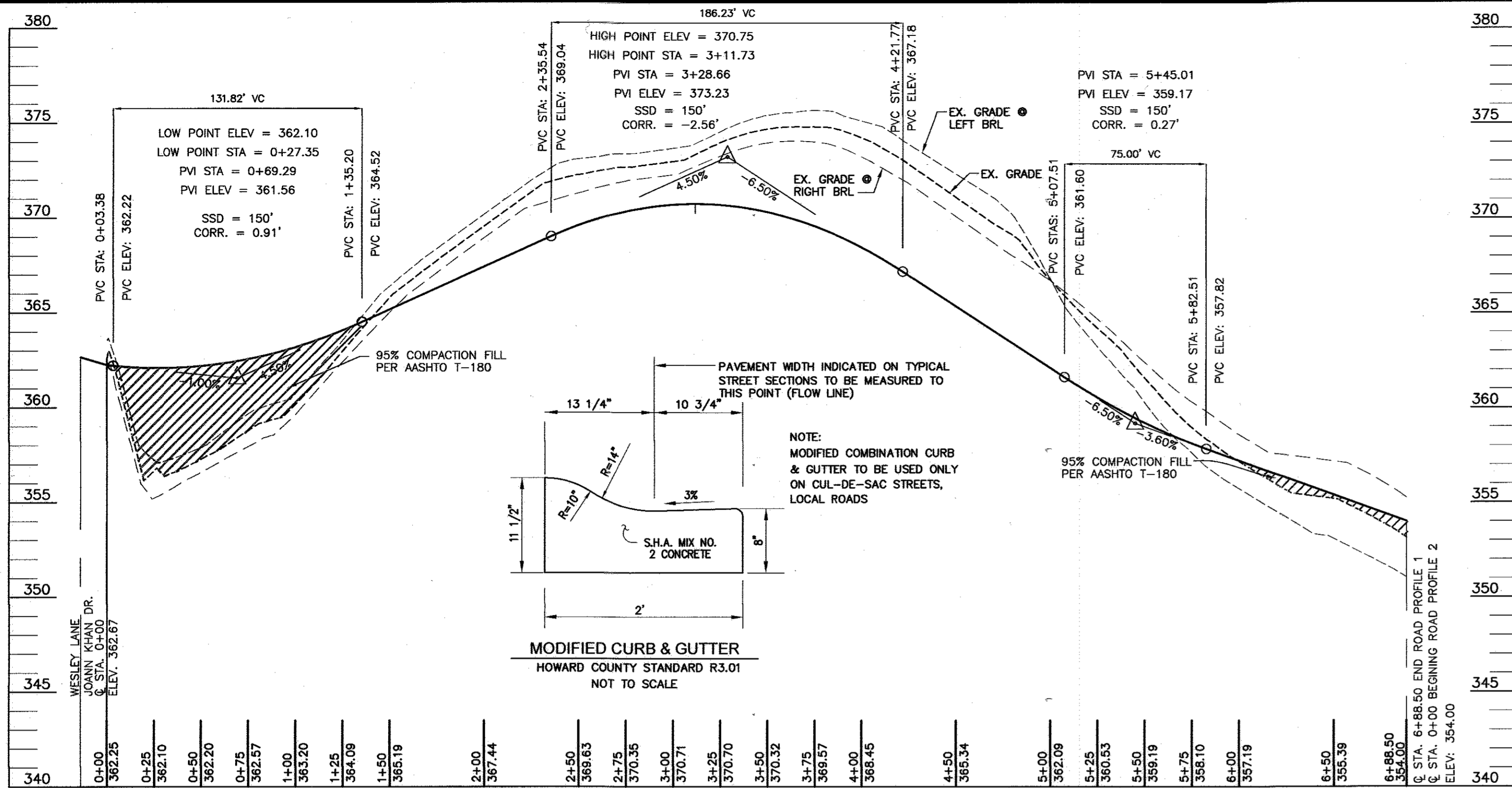
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7866
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

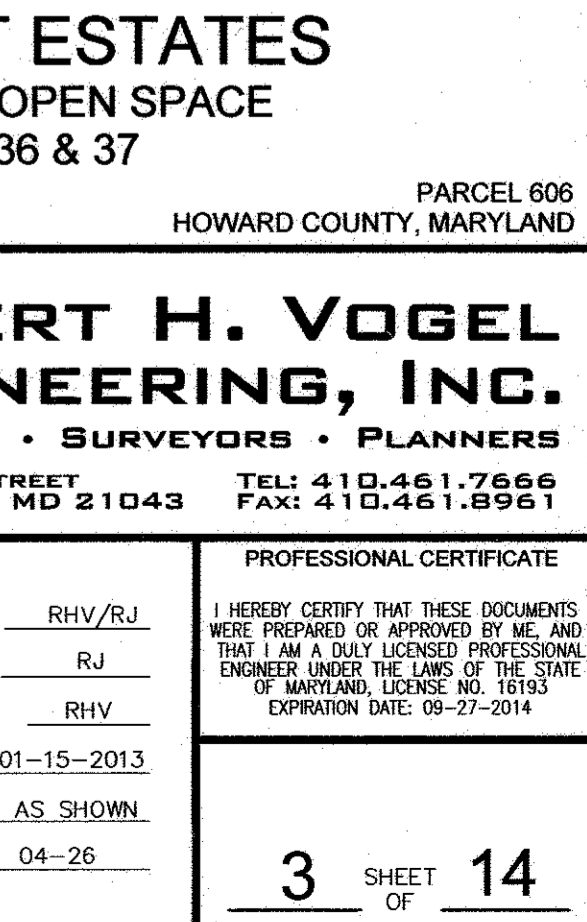
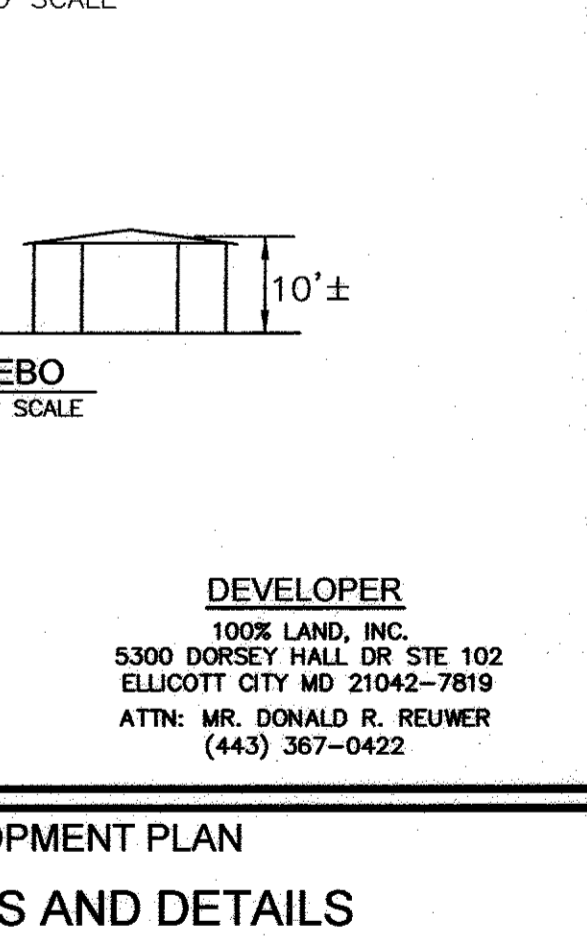
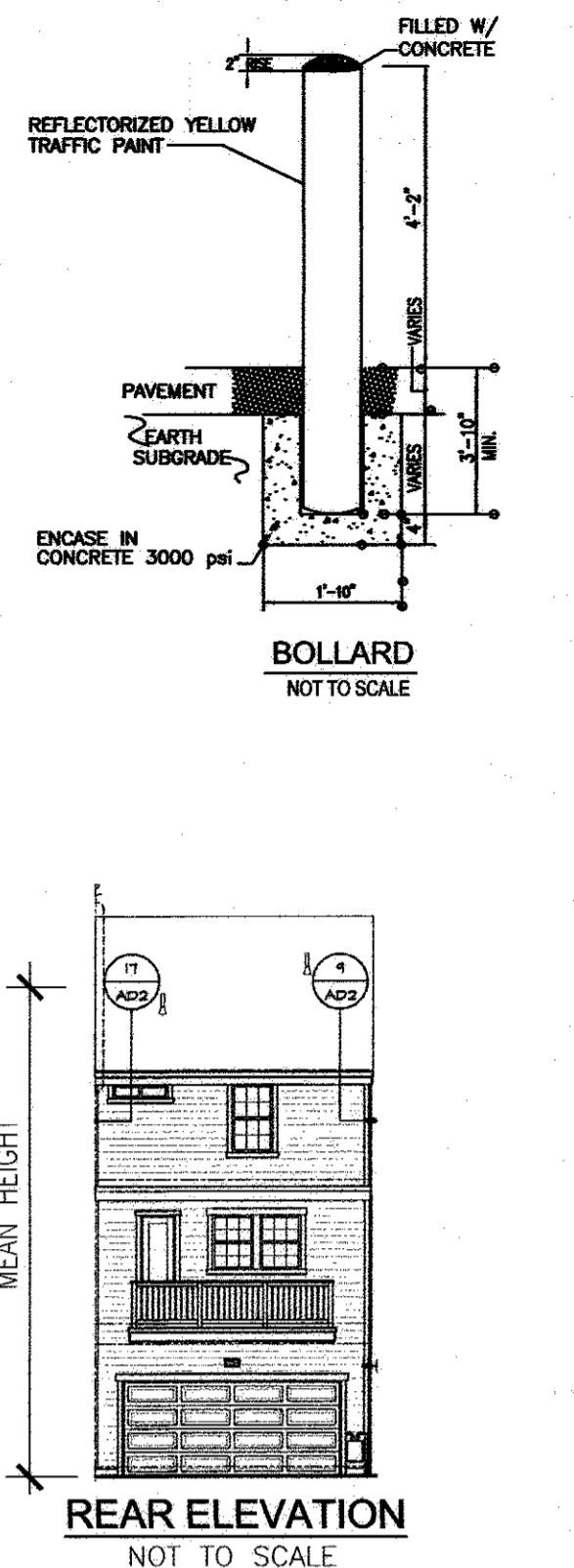
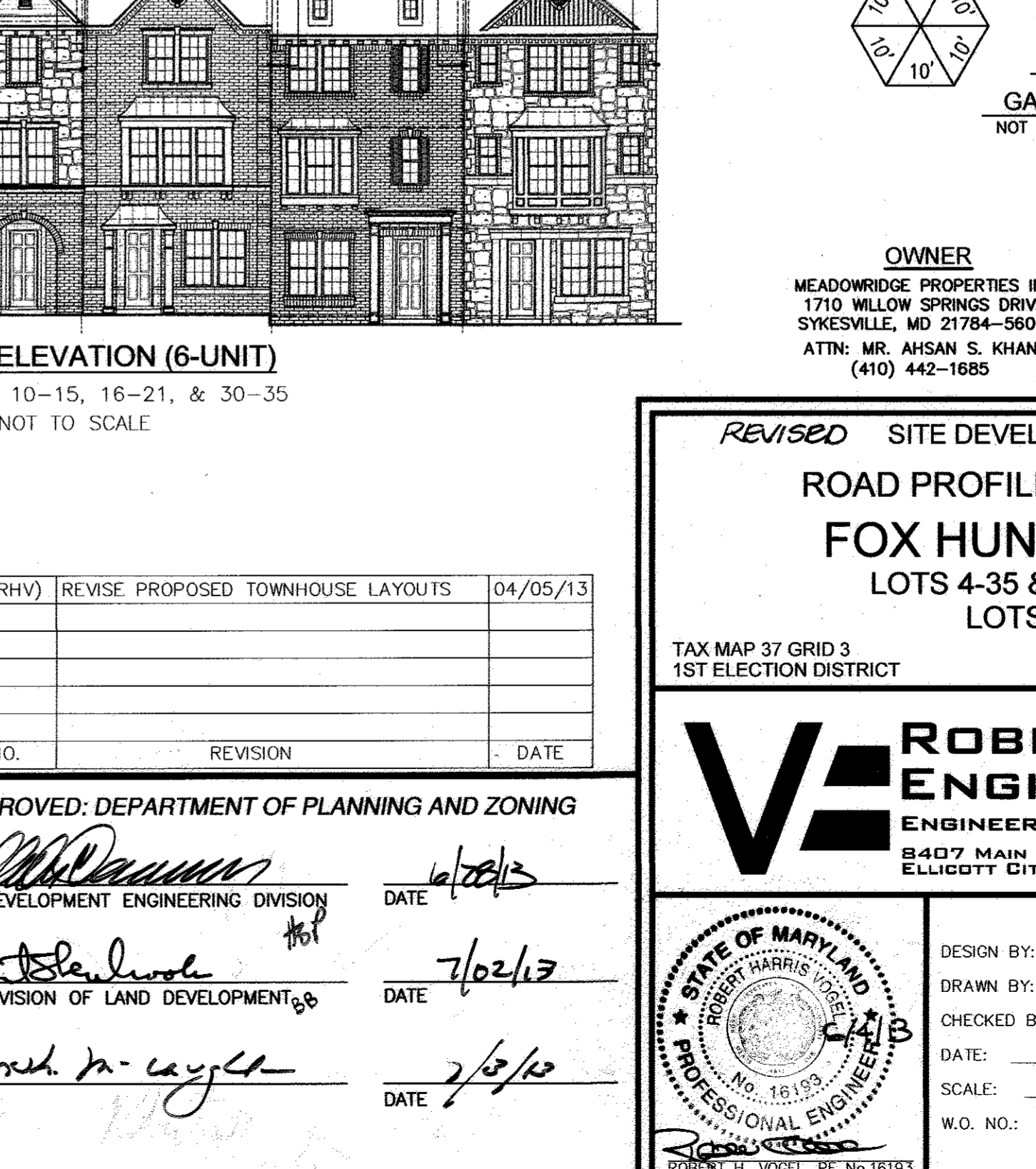
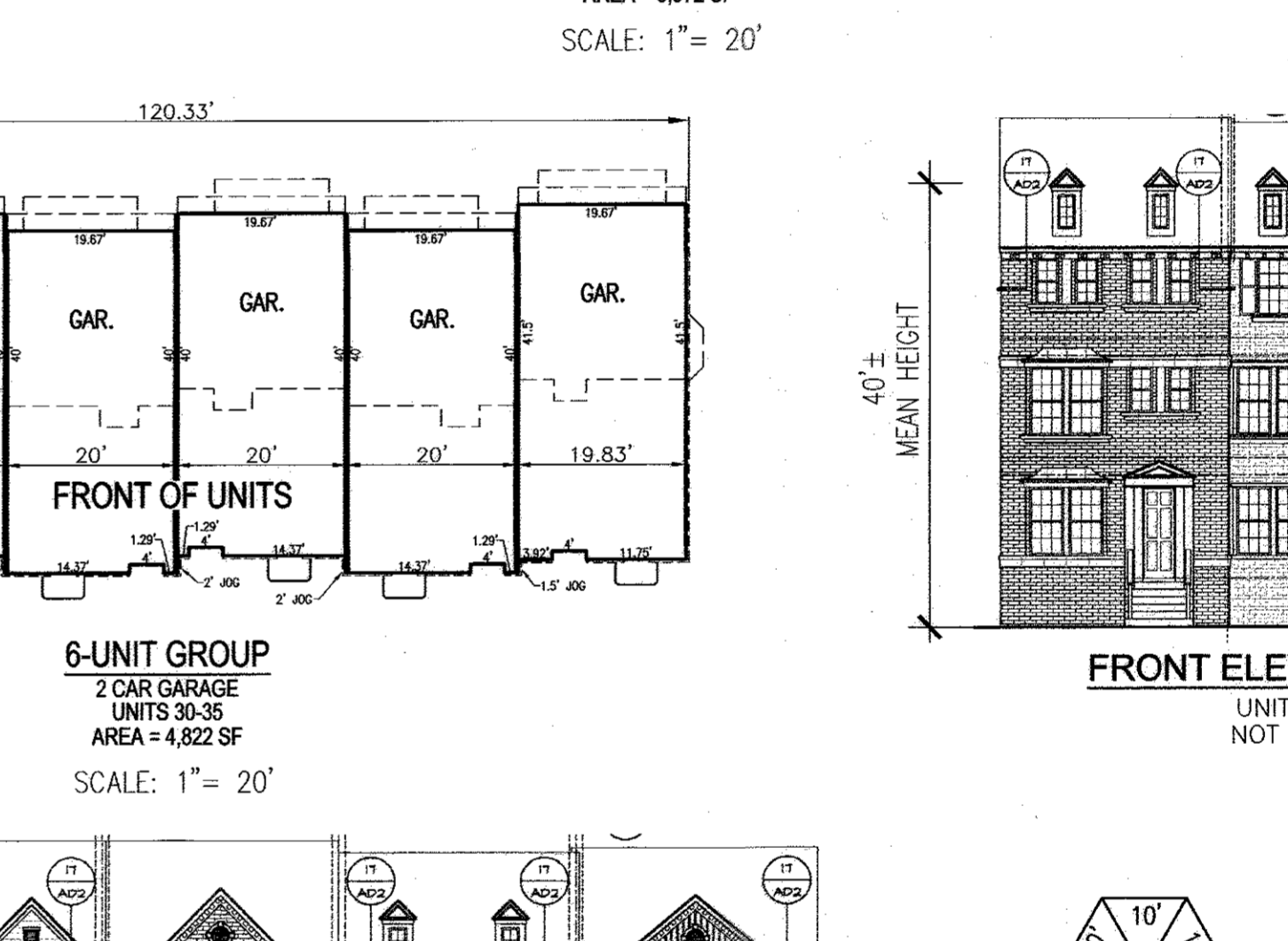
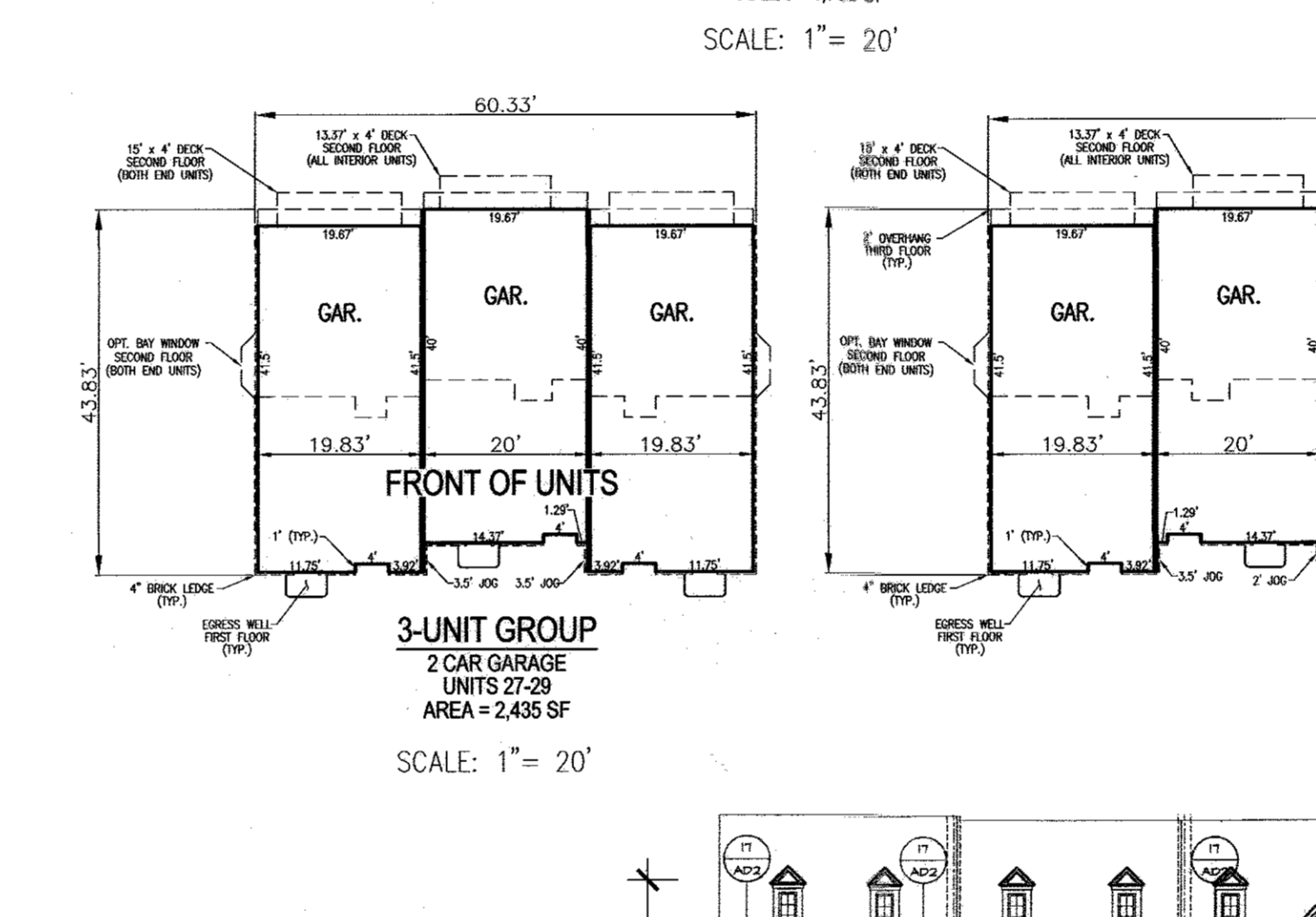
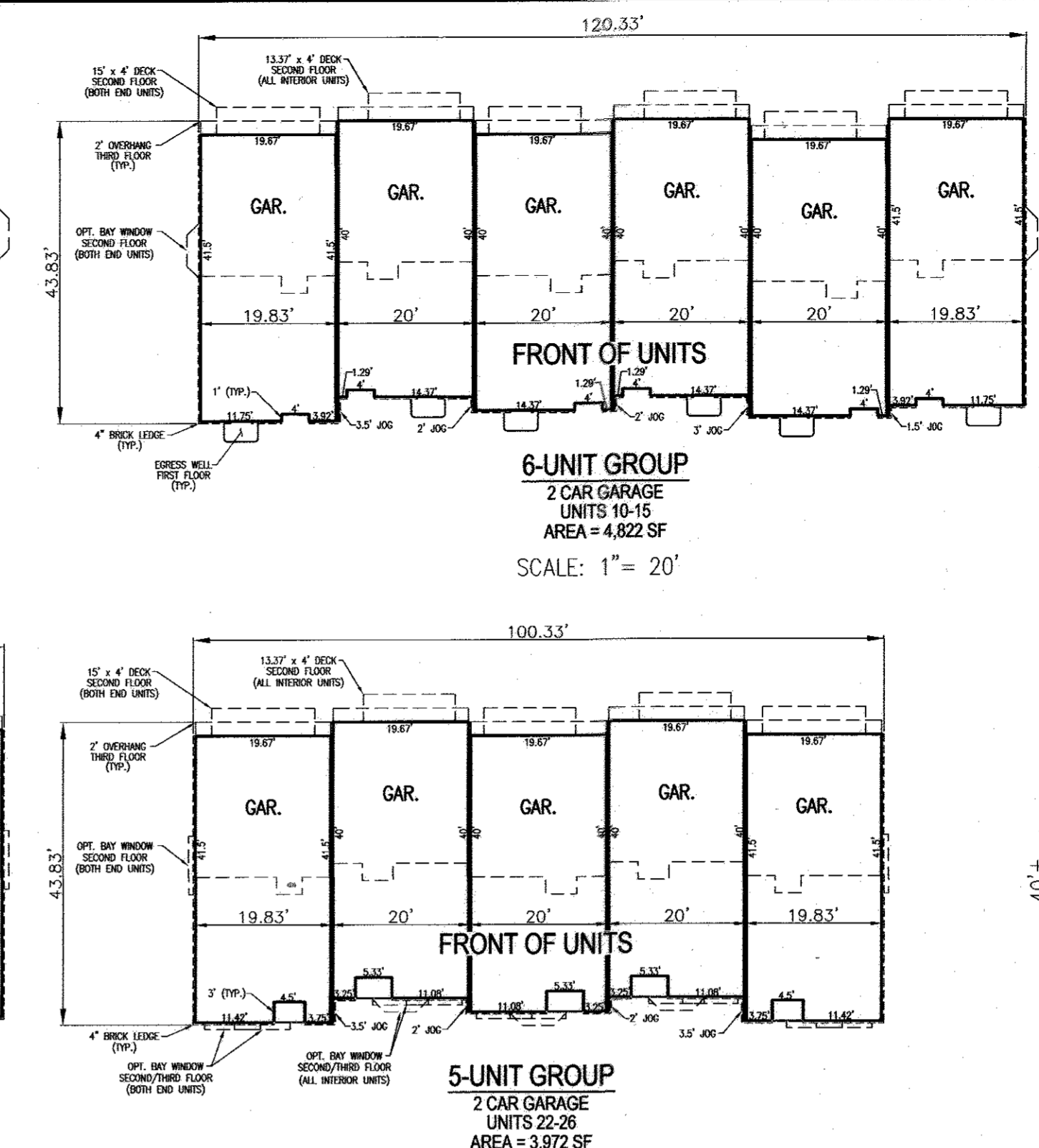
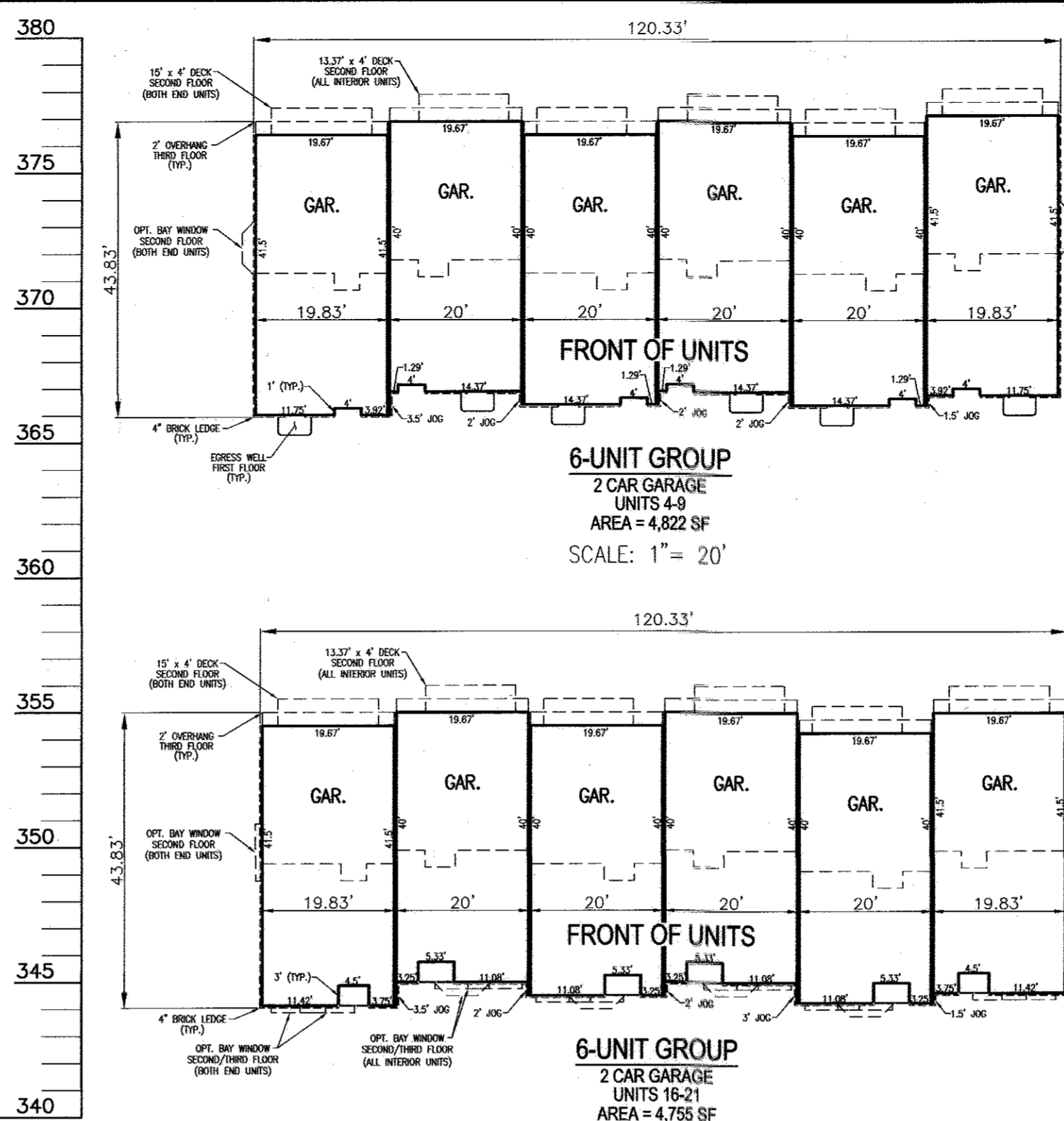
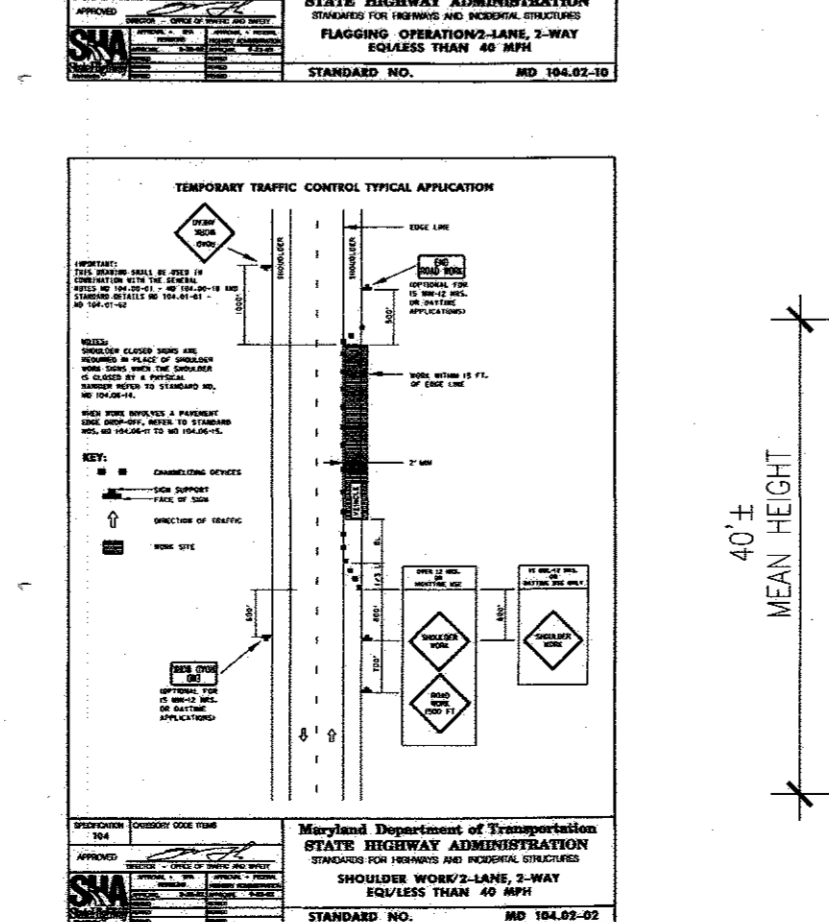
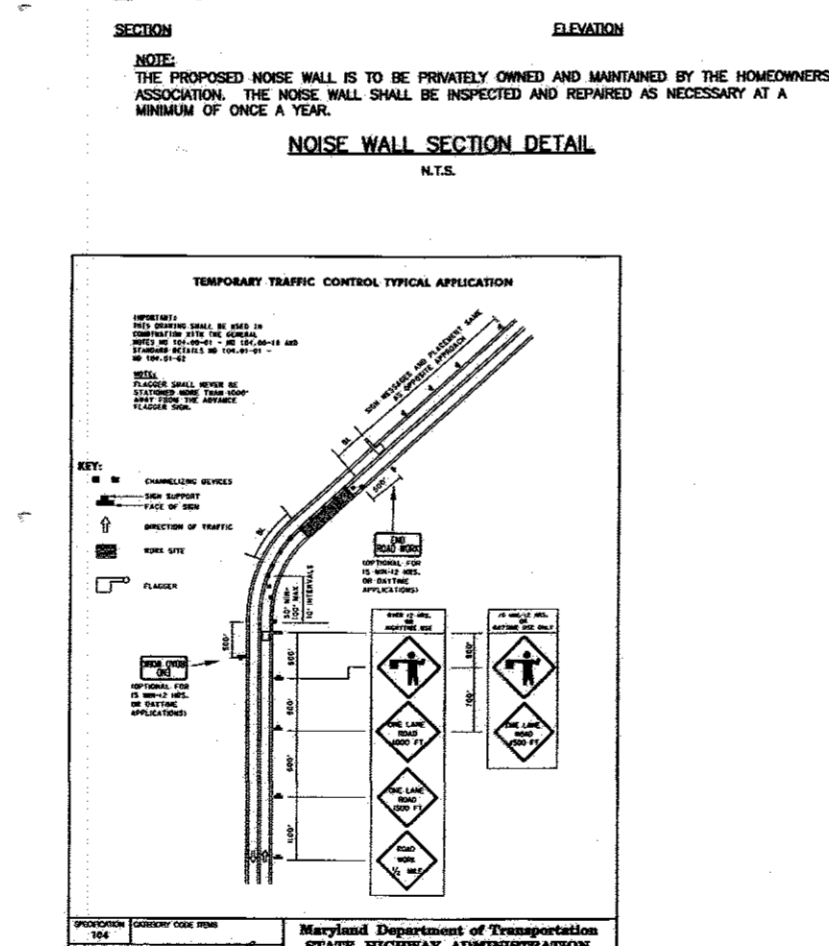
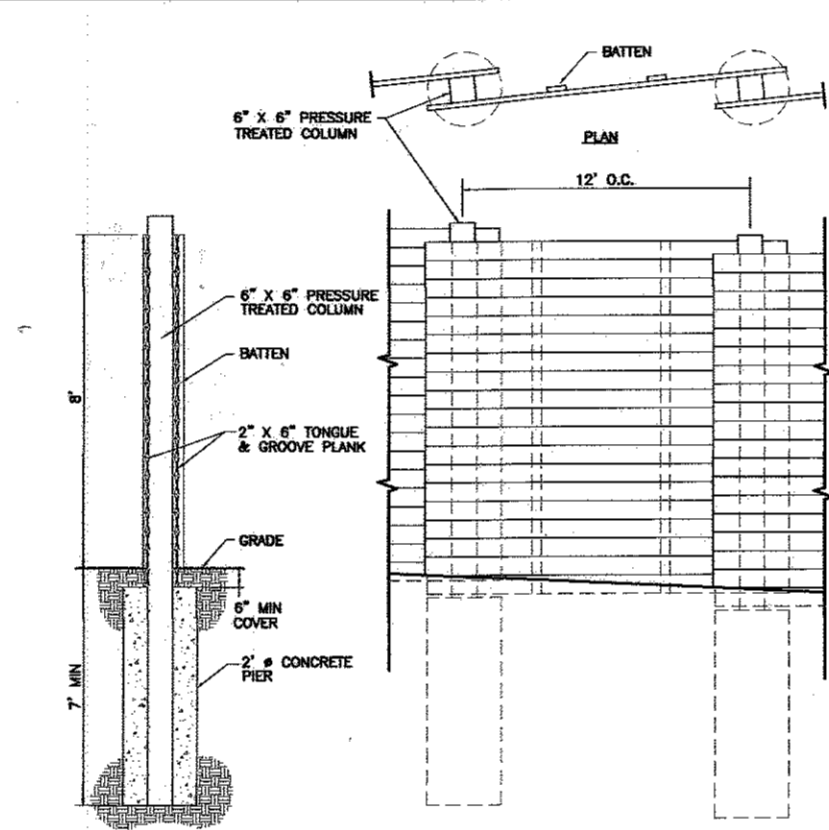
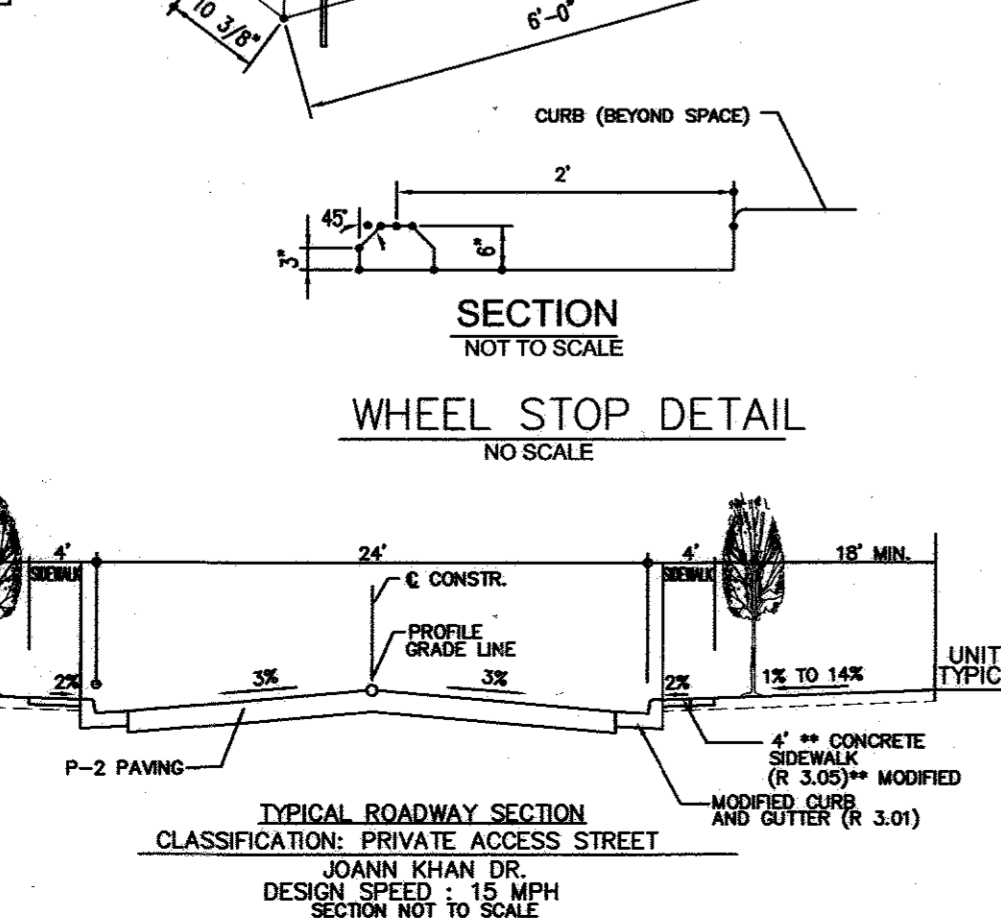
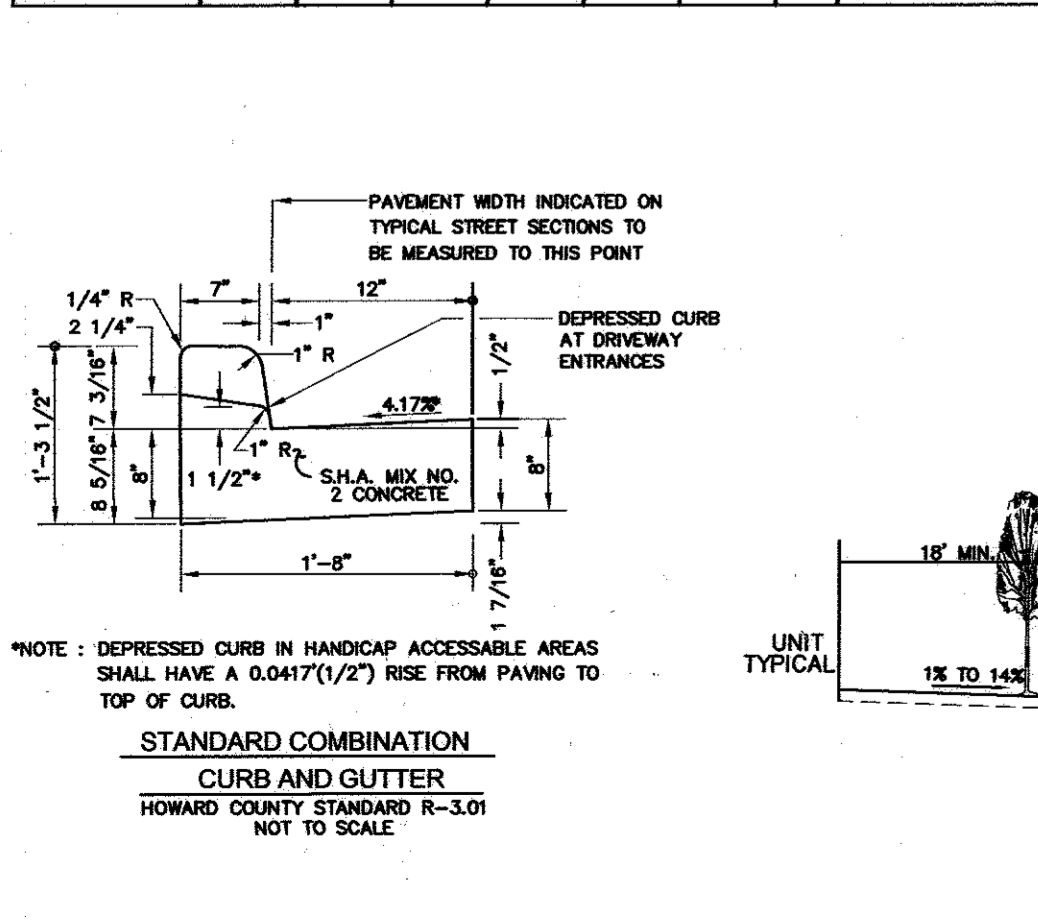
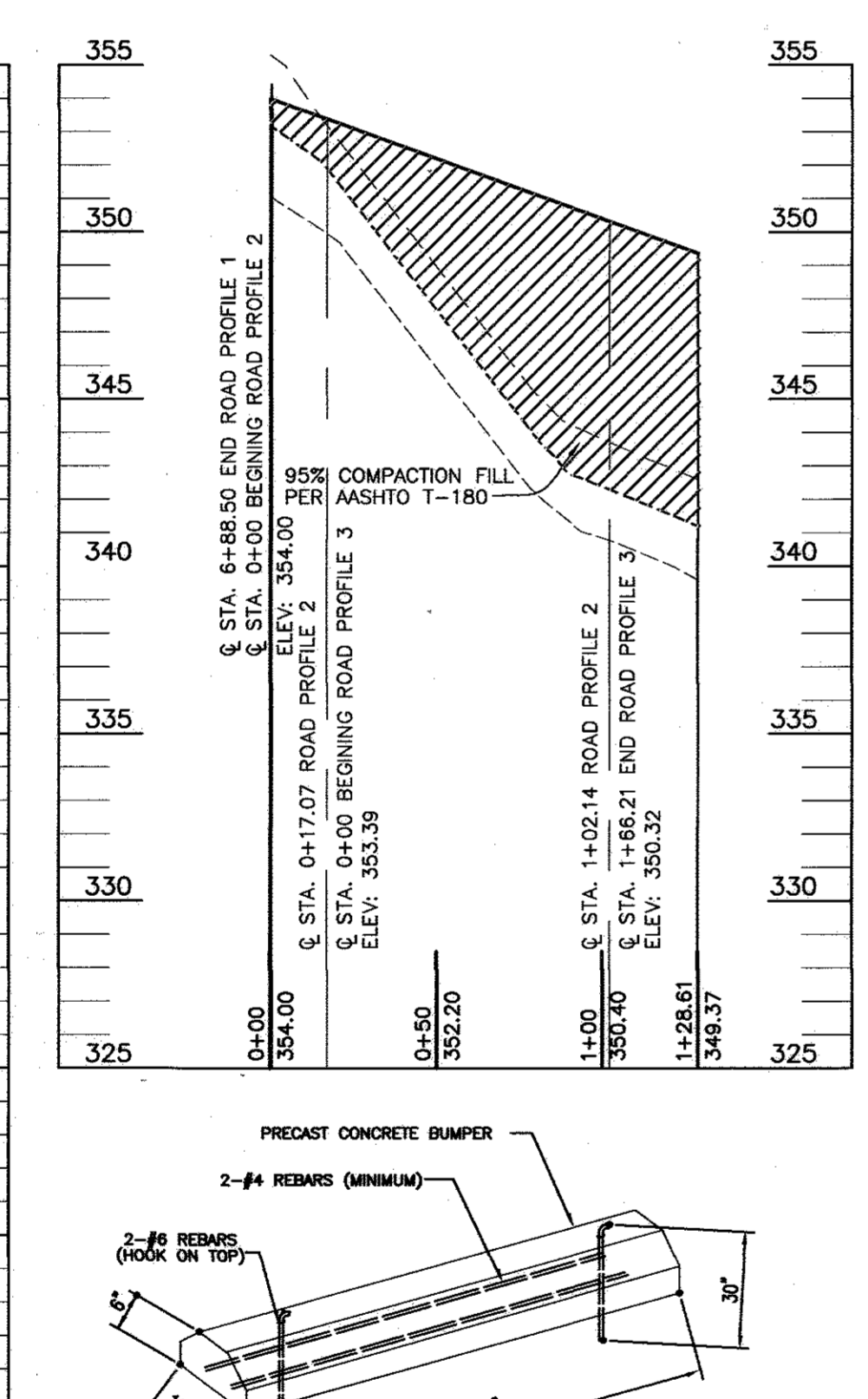
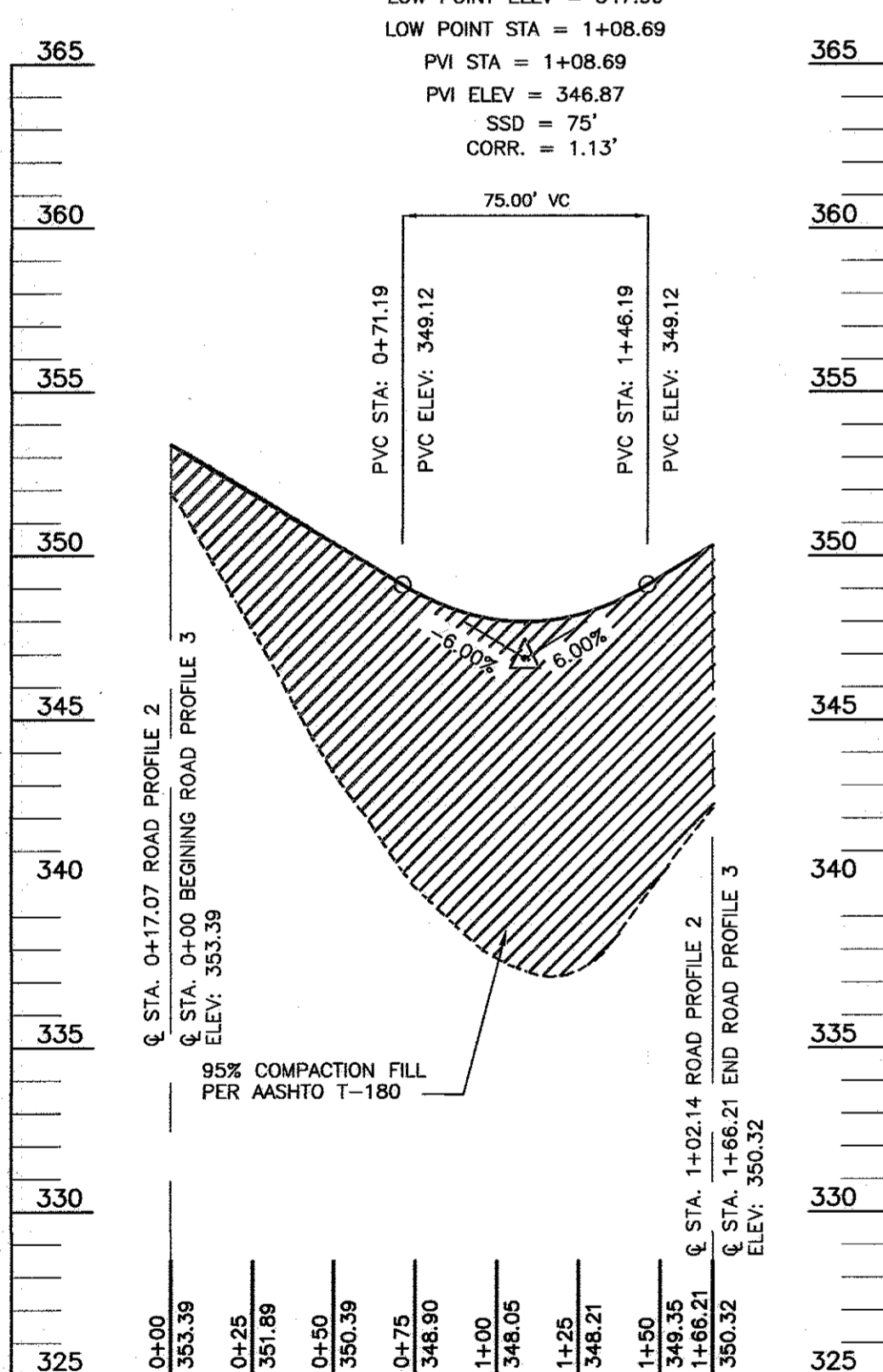
DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-15-2013
 SCALE: AS SHOWN
 W.O. NO.: 04-26

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16183, EXPIRATION DATE: 09-27-2014

2 SHEET OF 14



JOANN KHAN DR.
 SCALE: 1" = 50' HORIZ.
 1" = 5' VERT.



OWNER
 MEADOWBROOK PROPERTIES INC
 1710 WILLOW SPRINGS DRIVE
 SYKESVILLE, MD 21784-5600
 ATTN: MR. AHSAN S. KHAN
 (410) 442-1685

DEVELOPER
 100% LAND, INC.
 5300 DORSEY HALL DR STE 102
 ELLICOTT CITY MD 21042-7819
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

REVISED SITE DEVELOPMENT PLAN
ROAD PROFILES AND DETAILS
FOX HUNT ESTATES
 LOTS 4-35 & OPEN SPACE
 LOTS 36 & 37

TAX MAP 37 GRID 3
 1ST ELECTION DISTRICT

PARCEL 606
 HOWARD COUNTY, MARYLAND

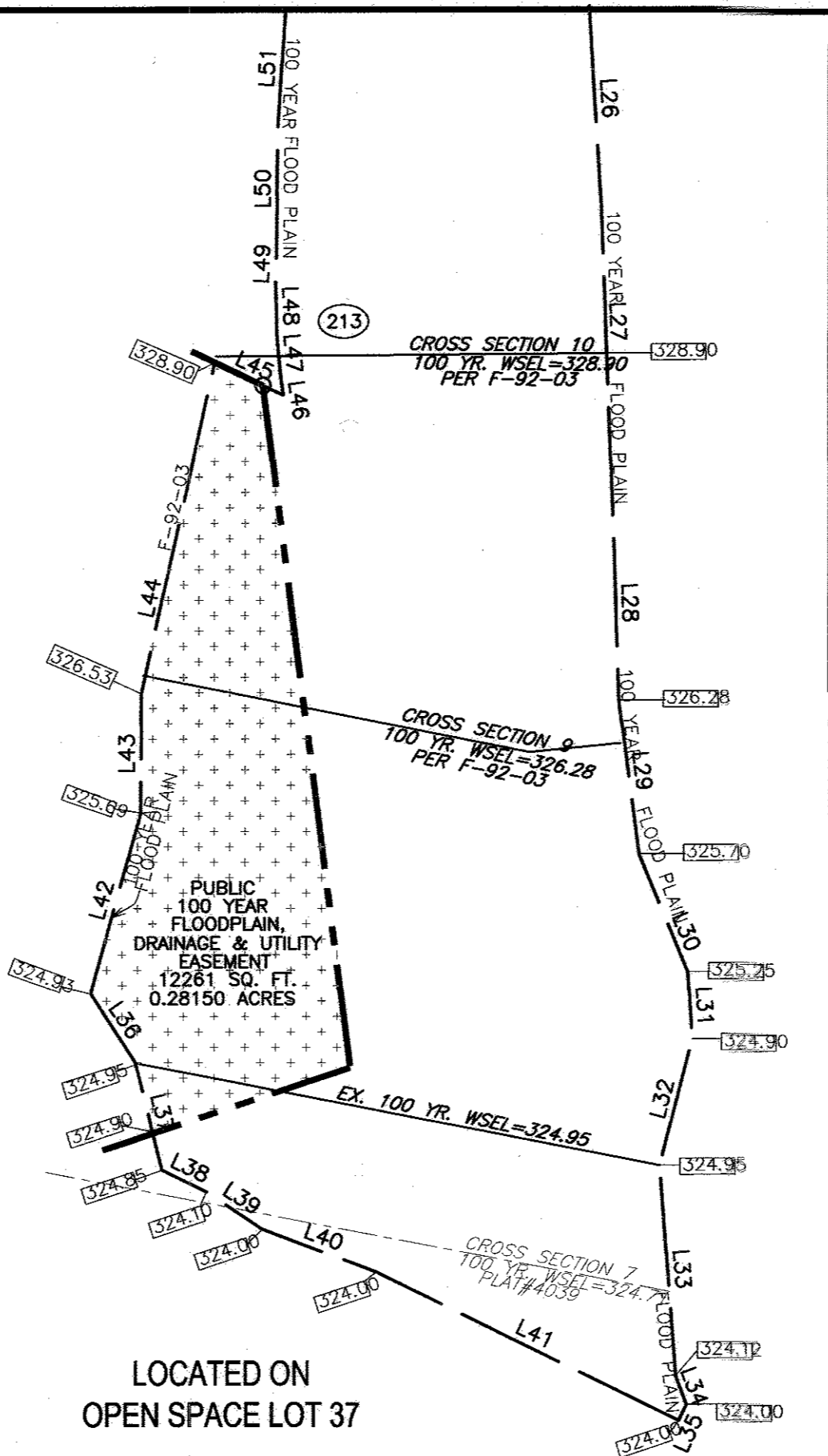
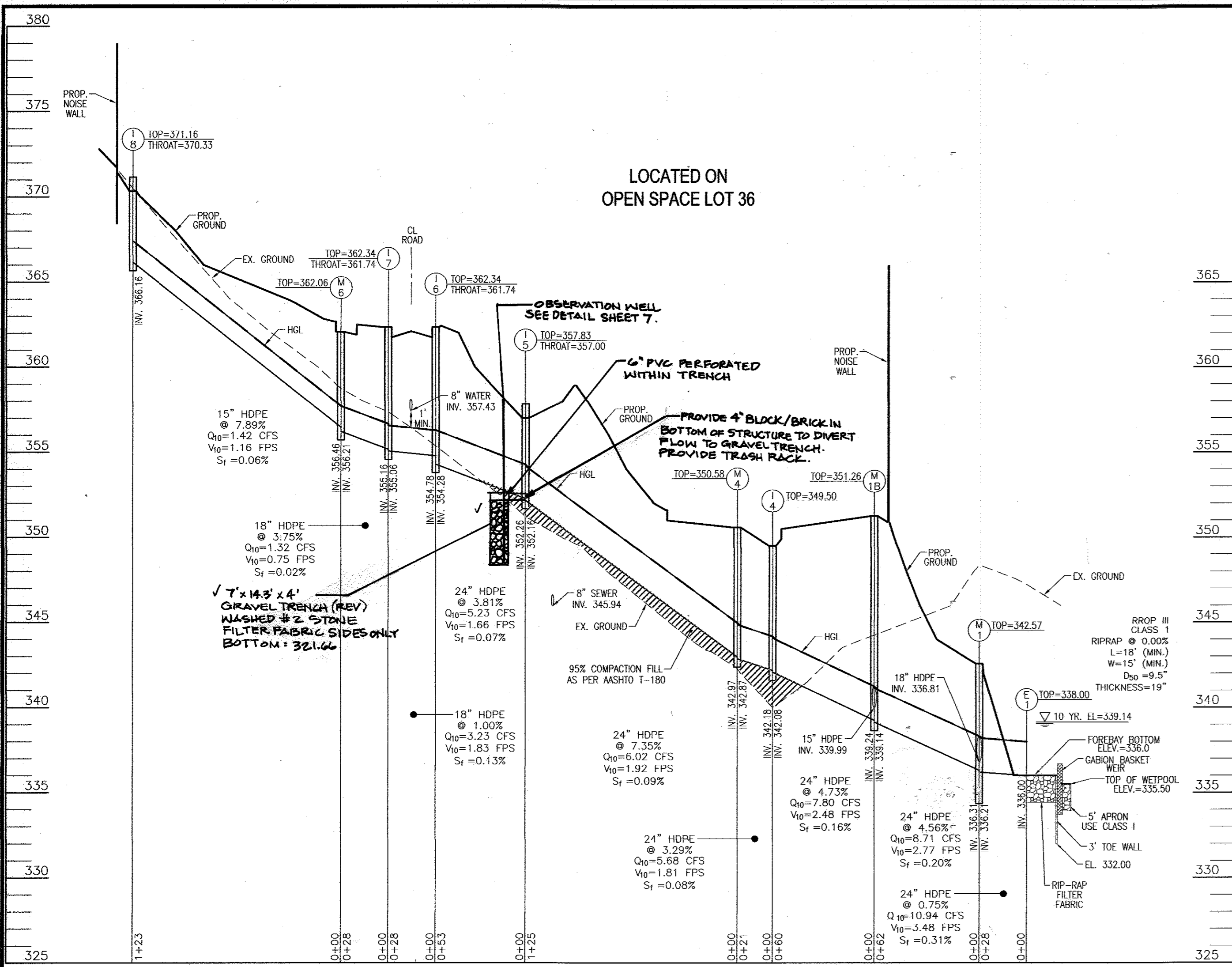
ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8951

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-15-2013
 SCALE: AS SHOWN
 W.O. NO.: 04-26

3 SHEET OF 14

NO AS-BUILT INFORMATION THIS SHEET

AS-BUILT G-15-16 SDP-07-007



LINE TABLE

LINE	LENGTH	BEARING
L26	60.72	S02°42'22"E
L27	101.75	S02°12'23"E
L28	92.68	S01°57'38"E
L29	50.28	S07°29'38"E
L30	41.46	S22°38'27"E
L31	21.90	S03°33'39"E
L32	42.15	S14°20'58"W
L33	68.58	S04°23'11"E
L34	9.94	S02°53'53"E
L35	5.85	S24°44'51"W
L36	26.65	S33°02'38"E
L37	35.95	S14°11'59"E
L38	16.07	S8°54'38"E
L39	21.78	S89°23'07"E
L40	39.63	S89°22'20"E
L41	109.84	S67°54'35"E
L42	60.92	N15°26'07"E
L43	38.61	N00°25'43"E
L44	110.07	N127°22'28"E
L45	24.82	S84°27'06"E
L46	6.36	N08°03'41"W
L47	13.72	N05°06'40"W
L48	17.71	N01°53'23"W
L49	9.70	N02°28'38"E
L50	39.34	N00°28'33"E
L51	37.30	N03°37'48"E

COORDINATE LIST

POINT	NORTH	EAST
213	561085.30148	1374708.15896

STORM DRAIN INLET SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	THROAT	INV. IN	INV. OUT	REMARKS
I-1	TYPE 'A-S'	CL RD STA. = 6+09.72, 12' LT.	357.06	356.46	347.66	347.56	HO. CO. D-4.01
I-2	TYPE 'A-S'	CL RD STA. = 4+46.60, 12' LT.	365.78	365.18	358.42	358.17	HO. CO. D-4.01
I-3	TYPE 'A-S'	CL RD STA. = 4+46.60, 20' RT.	365.54	364.94	-	358.77	HO. CO. D-4.01
I-4	DOUBLE TYPE 'S'	N 560867.78 E 1374525.19	349.50	-	342.18	342.08	HO. CO. D-4.23
I-5	TYPE 'D' INLET- 4 OPENINGS	N 560776.99 E 1374413.44	357.83	357.00	352.26	352.16	HO. CO. D-4.10
I-6	TYPE 'A-S'	CL RD STA. = 0+31.20, 12' RT.	362.34	361.74	354.78	354.28	HO. CO. D-4.01
I-7	TYPE 'A-S'	CL RD STA. = 0+32.91, 12' LT.	362.34	361.74	355.16	355.06	HO. CO. D-4.01
I-8	TYPE 'D' INLET- 4 OPENINGS	N 560780.89 E 1374203.12	371.16	370.33	-	366.16	HO. CO. D-4.10
I-9	TYPE 'D' INLET- 4 OPENINGS	N 560724.51 E 1374313.86	360.83	360.00	-	352.71	HO. CO. D-4.10
I-10	TYPE 'D' INLET- 4 OPENINGS	N 560920.23 E 1374385.84	364.58	363.75	-	359.58	HO. CO. D-4.10

NOTES

*TOP ELEV.=TOP OF THE GRATE AT CENTER OF THE INLET FOR TYPE S INLET.

*TOP ELEV.=TOP OF THE CURB AT CENTER OF THE INLET FOR A-5 & A-10 INLET.

*TOP ELEV.=TOP OF THE FRAME & COVER FOR TYPE D INLET.

STORM DRAIN MANHOLE SCHEDULE

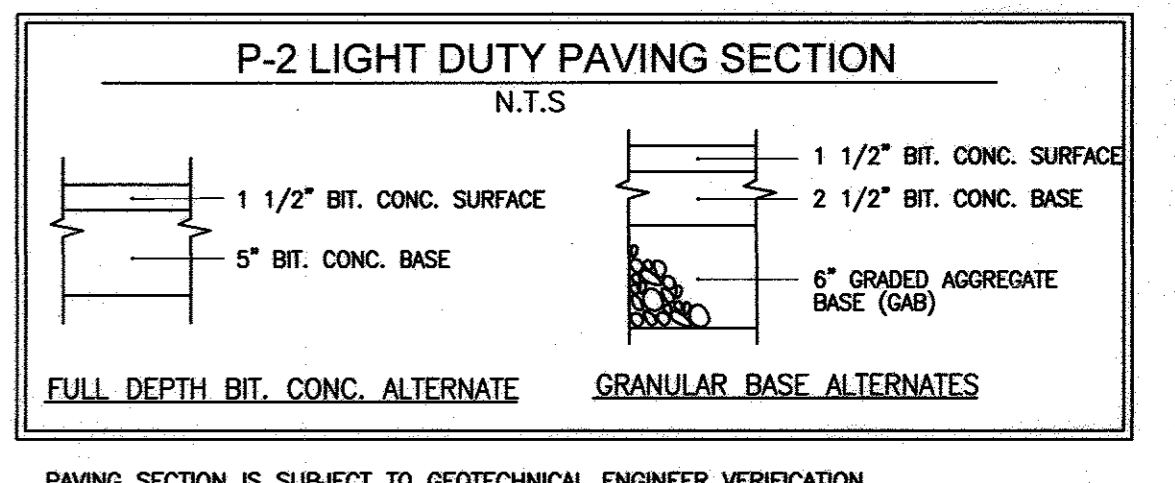
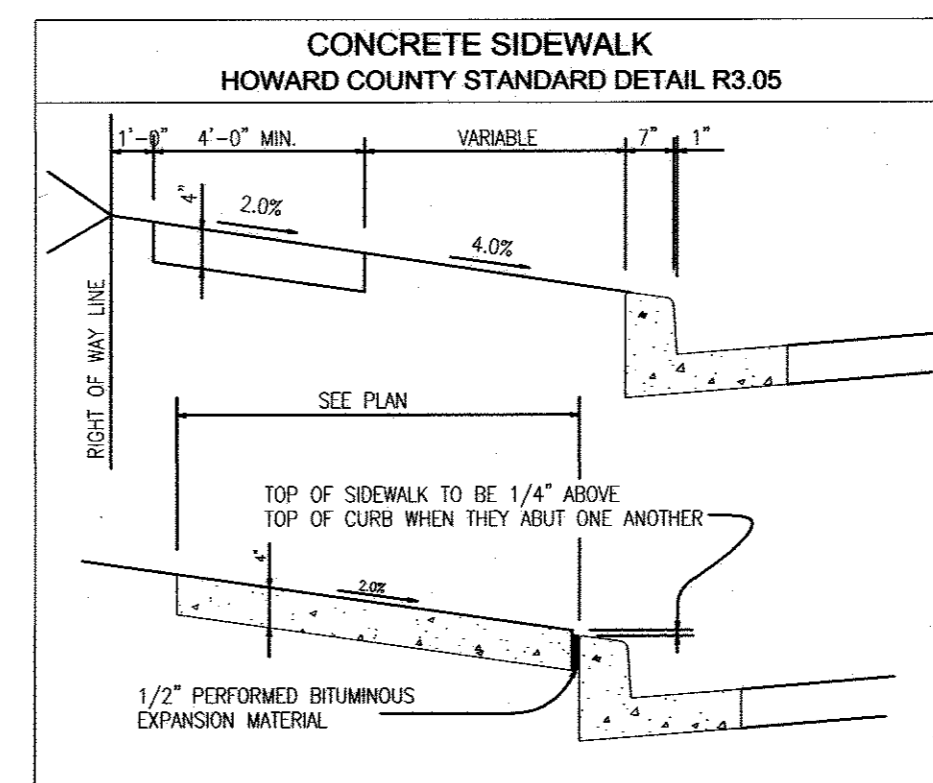
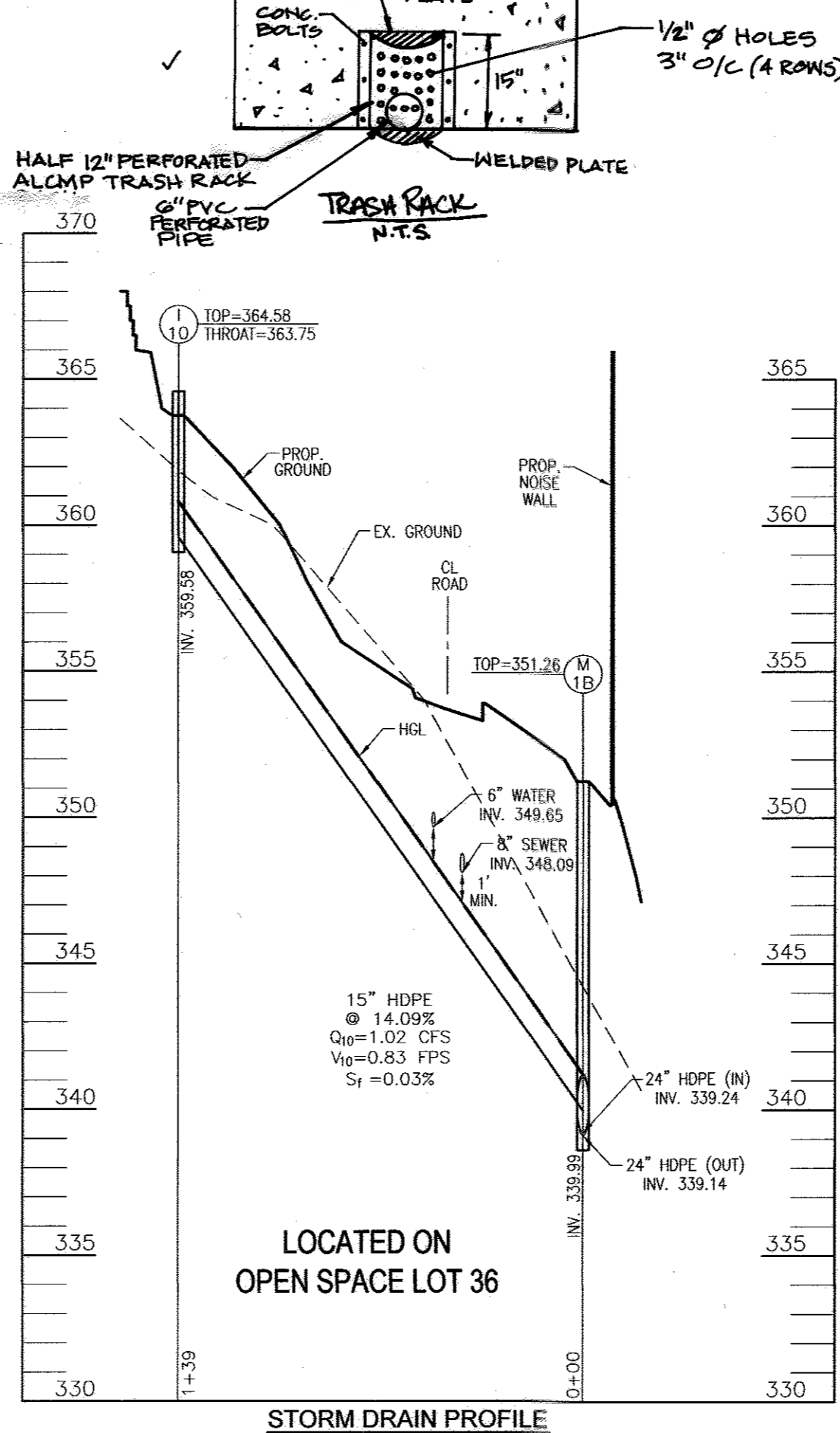
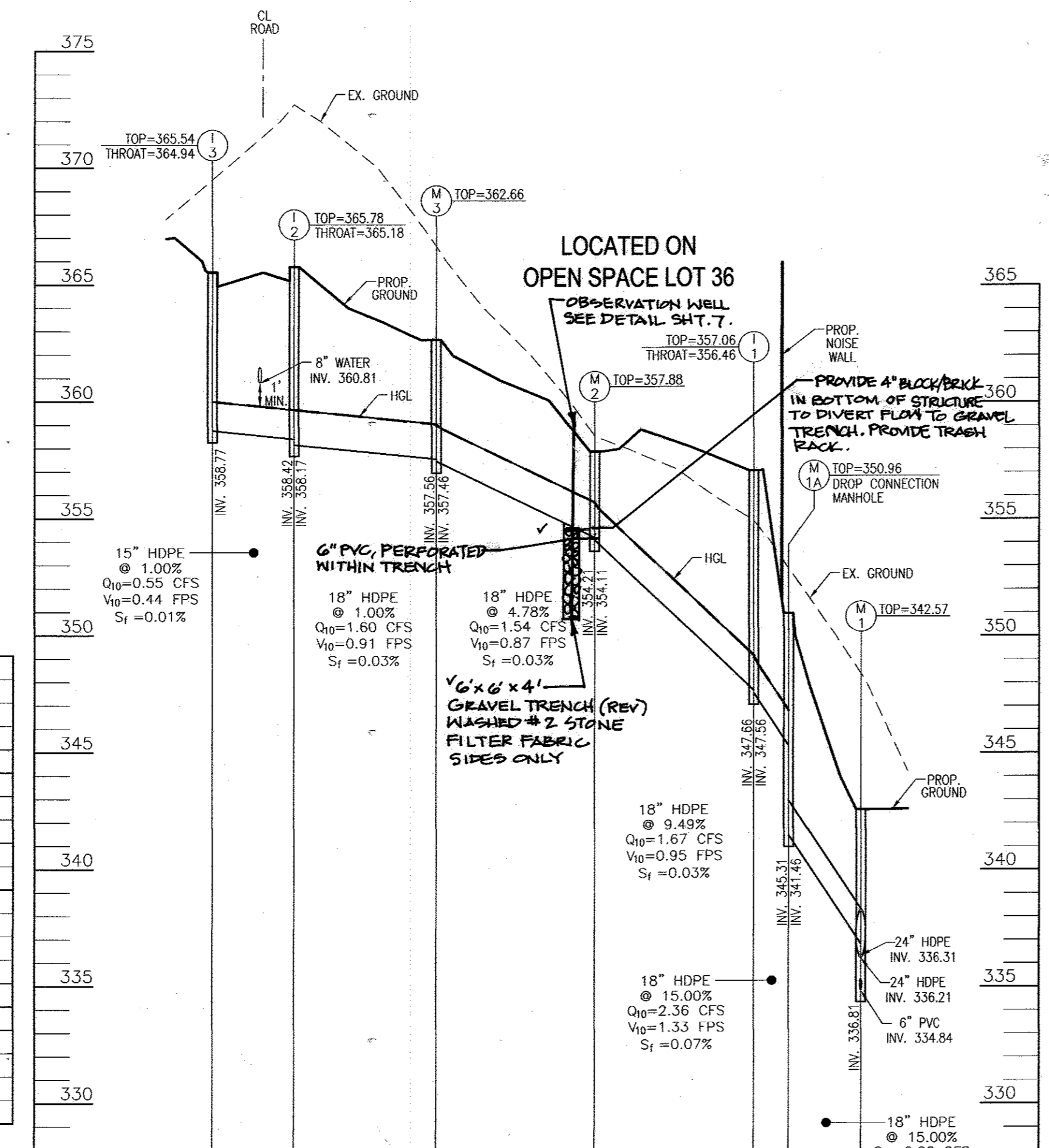
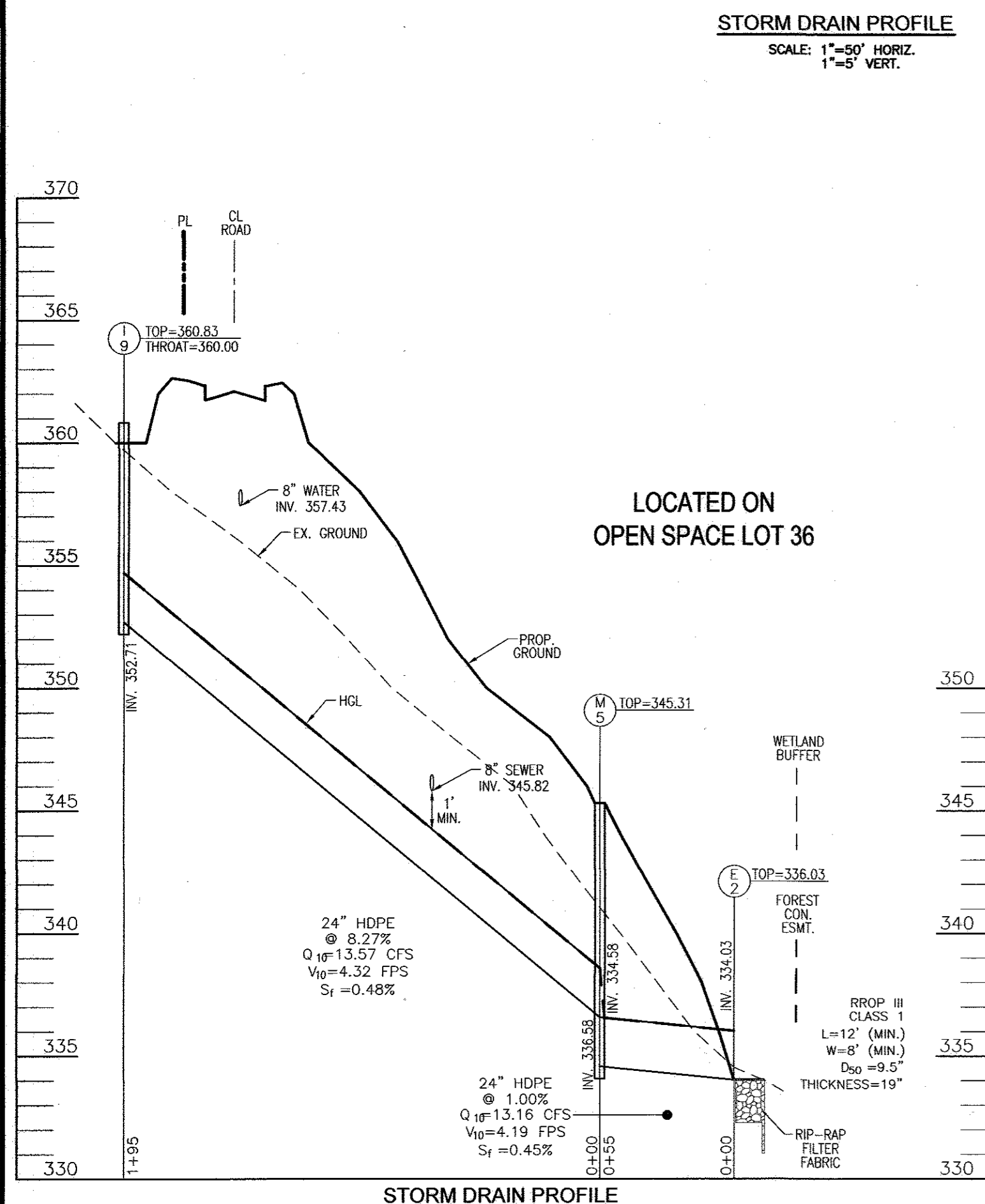
NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
M-1	STANDARD 4' PRECAST MANHOLE	N 560989.33 E 1374525.11	342.57	336.81	336.21	HO. CO. G-5.12
M-1A	DROP CONNECTION MANHOLE STANDARD 4' PRECAST MANHOLE	N 561005.96 E 1374498.54	350.96	345.31	341.46	HO. CO. G-5.12
M-1B	STANDARD 4' PRECAST MANHOLE	N 560927.21 E 1374524.69	351.26	339.99	339.24	HO. CO. G-5.12
M-2	STANDARD 4' PRECAST MANHOLE	N 561081.97 E 1374482.46	357.88	354.21	354.11	HO. CO. G-5.12
M-3	STANDARD 4' PRECAST MANHOLE	N 561113.43 E 1374422.06	362.66	357.56	357.46	HO. CO. G-5.12
M-4	STANDARD 4' PRECAST MANHOLE	N 560861.18 E 1374505.19	350.58	342.97	342.87	HO. CO. G-5.12
M-5	STANDARD 4' PRECAST MANHOLE	N 560787.34 E 1374498.47	345.31	336.58	334.58	HO. CO. G-5.12
M-6	STANDARD 4' PRECAST MANHOLE	CL RD STA. 0+63.06, 10.40' LT.	362.06	356.46	356.21	HO. CO. G-5.12
M-7	STANDARD 4' PRECAST MANHOLE	N 560974.20 E 1374604.69	334.50	329.43	328.74	HO. CO. G-5.12

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
CS-1	CONTROL STRUCTURE	N 561036.68 E 1374575.10	340.60	338.00	332.00	
E-1	24" HDPE END SECTION	N 561011.29 E 1374542.09	338.00	-	336.00	ADS 24" END SECTION
E-2	24" HDPE END SECTION	N 560805.72 E 1374550.17	336.03	-	334.03	ADS 24" END SECTION
HW-1	TYPE 'A' HEADWALL	N 560956.22 E 1374613.36	331.80	-	328.30	HO. CO. D-5.11

PIPE SCHEDULE

PIPE SIZE	TYPE	TOTAL LENGTH
6"	PVC	26 LF
18"	HDPE	297 LF
18"	HDPE	299 LF
24"	HDPE	599 LF
24"	RCP ASTM C-361	86 LF



REVISIONS

NO.	REVISION	DATE
1 (RM)	REVISE TOWNHOUSE MODEL	04/29/13
2	DELETE REV TRENCH M-1. ADD REV TRENCH M-2	10-26-13

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 2/1/13

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/13/13

DIRECTOR DATE 3-13-13

OWNER
MEADOWBRIE PROPERTIES INC
1710 WILLOW SPRINGS DRIVE
SYKESVILLE, MD 21784-5600
ATTN: MR. AHAN S. KHAN
(410) 442-1885

DEVELOPER
100% LAND, INC.
5300 DORSEY HALL DR STE 102
ELICOTT CITY MD 21042-7819
ATTN: MR. DONALD R. REUWER
(443) 367-0422

SITE DEVELOPMENT PLAN
STORM DRAIN PROFILES
FOX HUNT ESTATES
LOTS 4-35 & OPEN SPACE
LOTS 36 & 37

TAX MAP 37 GRID 3
1ST ELECTION DISTRICT

PARCEL 606
HOWARD COUNTY, MARYLAND

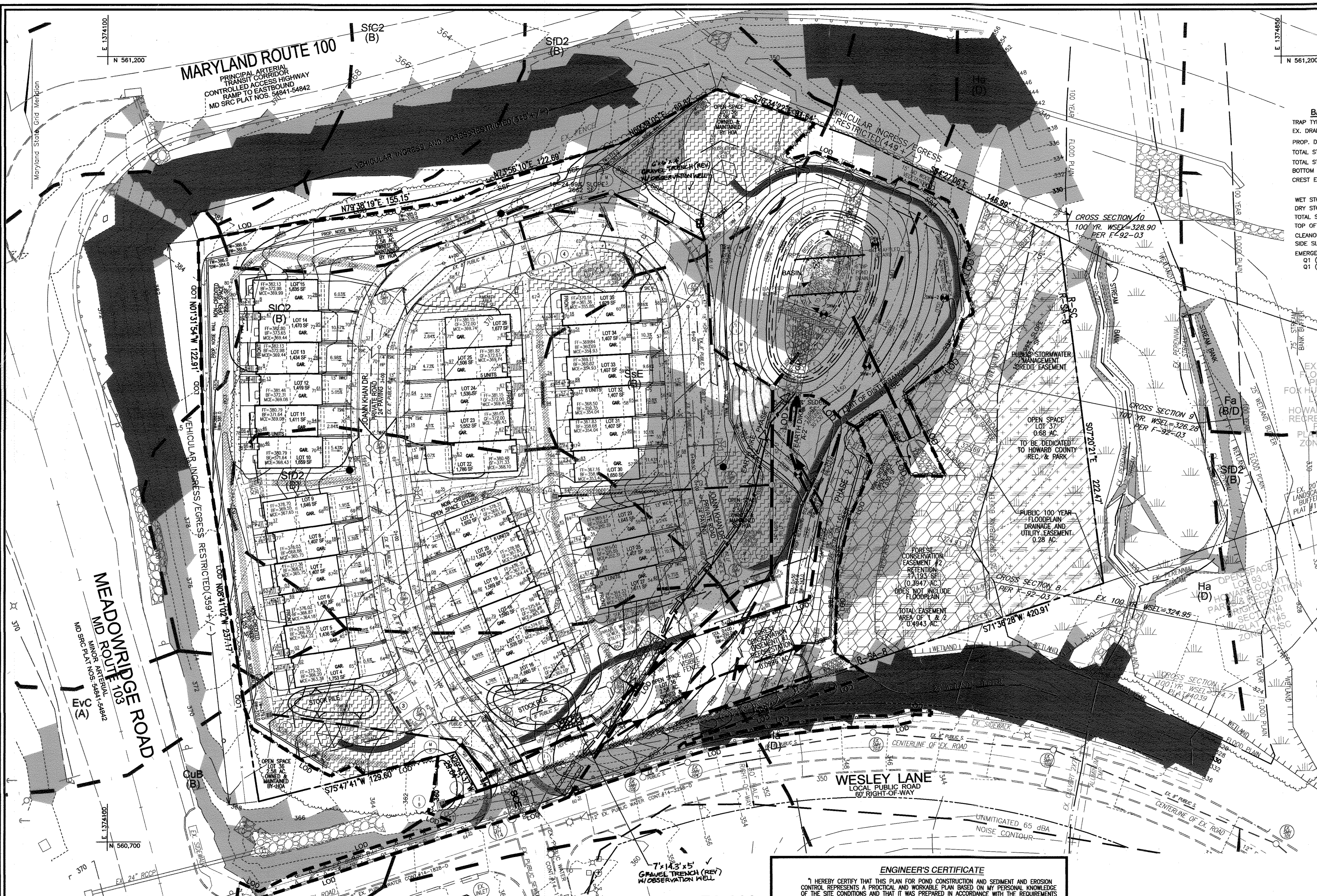
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 01-15-2013
SCALE: AS SHOWN
W.O. NO.: 04-26

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16163, EXPIRATION DATE: 09-27-2014

4 SHEET OF 14



- LEGEND:**
- PROPERTY LINE
 - - - RIGHT-OF-WAY LINE
 - ADJACENT PROPERTY LINE
 - EXISTING CURB AND GUTTER
 - EXISTING UTILITY POLE
 - ☀ EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
 - EXISTING SANITARY MANHOLE
 - EXISTING FIRE HYDRANT
 - EXISTING TRENCH
 - CENTERLINE OF EXISTING STREAM
 - PROPOSED STORMDRAIN
 - PROPOSED STORMDRAIN INLET
 - PROPOSED SIDEWALK
 - PROPOSED TRENCH
 - PROPOSED CURB
 - PUBLIC STREET LIGHT
 - PRIVATE STREET LIGHT
 - VARIABLE WIDTH PUBLIC SEWER, WATER, AND UTILITY EASEMENT
 - PUBLIC SWM CREDIT EASEMENT
 - FOREST CONSERVATION EASEMENT (RETENTION)
 - FOREST CONSERVATION EASEMENT (REFORESTATION)
 - PUBLIC 100-YR FLOODPLAIN, DRAINAGE, AND UTILITY EASEMENT
 - RECREATIONAL OPEN SPACE AND AMENITY AREA
 - EXISTING WETLANDS
 - 25' WETLAND BUFFER
 - STREAM BUFFER
 - EXISTING 10' CONTOUR
 - EXISTING 2' CONTOUR
 - SOILS
 - EXISTING MODERATE SLOPES
 - EXISTING STEEP SLOPES
 - PROPOSED 10' CONTOUR
 - PROPOSED 2' CONTOUR
 - PROPOSED SPOT ELEVATION
 - PROPOSED STABILIZED CONSTRUCTION ENTRANCE
 - GABION INFLOW PROTECTION
 - PROPOSED LIMIT OF DISTURBANCE
 - HIGH VISIBLE FENCE
 - DOUBLE ROW OF SUPER SILT FENCE
 - SUPER SILT FENCE
 - EROSION CONTROL MATTING
 - INTERNAL DIKE
 - EARTHDIKE
 - TREE PROTECTION FENCE
 - REMOVABLE PUMPING STATION

BASIN NO.1

TRAP TYPE: BASIN
 EX. DRAINAGE AREA: 1.02 AC.
 PROP. DRAINAGE AREA: 3.34 AC. BASIN
 TOTAL STORAGE REQUIRED: 12,024 CF
 TOTAL STORAGE PROVIDED: 22,600 CF
 BOTTOM ELEV.: 332.00
 CREST ELEVATION: 339.60
 TEMPORARILY BLOCKED

WET STORAGE ELEVATION: 332.00-336.25
 DRY STORAGE ELEVATION: 336.25-339.60
 TOTAL STORAGE DEPTH: 7.6'
 TOP OF EMBANKMENT: 342.17
 CLEANOUT ELEVATION: 335.00
 SIDE SLOPES: 3:1
 EMERGENCY SPILLWAY: N/A
 Q1 (EX.): 0.10 CFS
 Q1 (TSWM): -0.16 CFS

CROSS SECTION A
 100 YR. WSEL = 328.90
 PER F-92-03

CROSS SECTION B
 100 YR. WSEL = 326.28
 PER F-92-03

CROSS SECTION C
 100 YR. WSEL = 324.95
 PER F-92-03

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES	B
CID2	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES	B
CMB2	CHILLUM SILT LOAM, 7 TO 8 PERCENT SLOPES	B
CHB2	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES	B
CUB	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
ECV	EVEBORO LOAMY SAND, 5 TO 15 PERCENT SLOPES	B
Fo	FALLSINGTON LOAM	B/D
Ho	HATBORO SILT LOAM	D
SB2	SASSAFRAS GRAVELLY SANDY LOAM, 1 TO 5 PERCENT SLOPES	B
SC2	SASSAFRAS GRAVELLY SANDY LOAM, 5 TO 10 PERCENT SLOPES	B
SD2	SASSAFRAS GRAVELLY SANDY LOAM, 10 TO 15 PERCENT SLOPES	B
SB2	SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES	B
SC2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B
RuB2	RUMFORD LOAMY SAND, 1 TO 5 PERCENT SLOPES	B
RuD2	RUMFORD LOAMY SAND, 10 TO 15 PERCENT SLOPES	B

POND NO.1
 (DRAINAGE AREA A)

POCKET POND
 HAZARDOUS GLASS A
 PRIVATELY OWNED & MAINTAINED

1 YR WSE = 338.68
 100 YR WSE = 339.15
 MOW = 1.4 Ac. Ft.
 CP = 0.23 Ac. Ft.
 Rev = 0.067 Ac. Ft.
 Q₁ W/SWM = 0.12 CFS
 Q₁₀ W/SWM = 48.8 CFS
 Q₁₀₀ EX = 15.15 CFS
 Q₁₀₀ W/SWM = 22.41 CFS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 6/28/13

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 7/2/13

DIRECTOR: *[Signature]* DATE: 7/3/13

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 6/4/13
 SIGNATURE OF ENGINEER
 ROBERT H. VOGEL

DEVELOPER'S CERTIFICATE

I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 5-17-13
 SIGNATURE OF DEVELOPER

OWNER
 MEADOWRIDGE PROPERTIES INC
 1710 WILLOW SPRINGS DRIVE
 SYKESVILLE, MD 21784-5600
 ATTN: MR. AHAN S. KHAN
 (410) 442-1885

DEVELOPER
 100X LAND, INC.
 5300 DORSEY HALL DR. STE 102
 ELLICOTT CITY MD 21042-7819
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL.

USDA - NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 6/18/13
 HOWARD SCD

NO.	REVISION	DATE
1	(RHV) REVISE PROPOSED TOWNHOUSE LAYOUTS	04/05/13
2	DELETE REV TRENCH M-1. ADD REV TRENCH M-2 & I-5.	10-20-16

REVISED SITE DEVELOPMENT PLAN
GRADING AND SEDIMENT CONTROL PLAN
FOX HUNT ESTATES
 LOTS 4-35 & OPEN SPACE
 LOTS 36 & 37

TAX MAP 37 GRID 3
 1ST ELECTION DISTRICT

PARCEL 606
 HOWARD COUNTY, MARYLAND

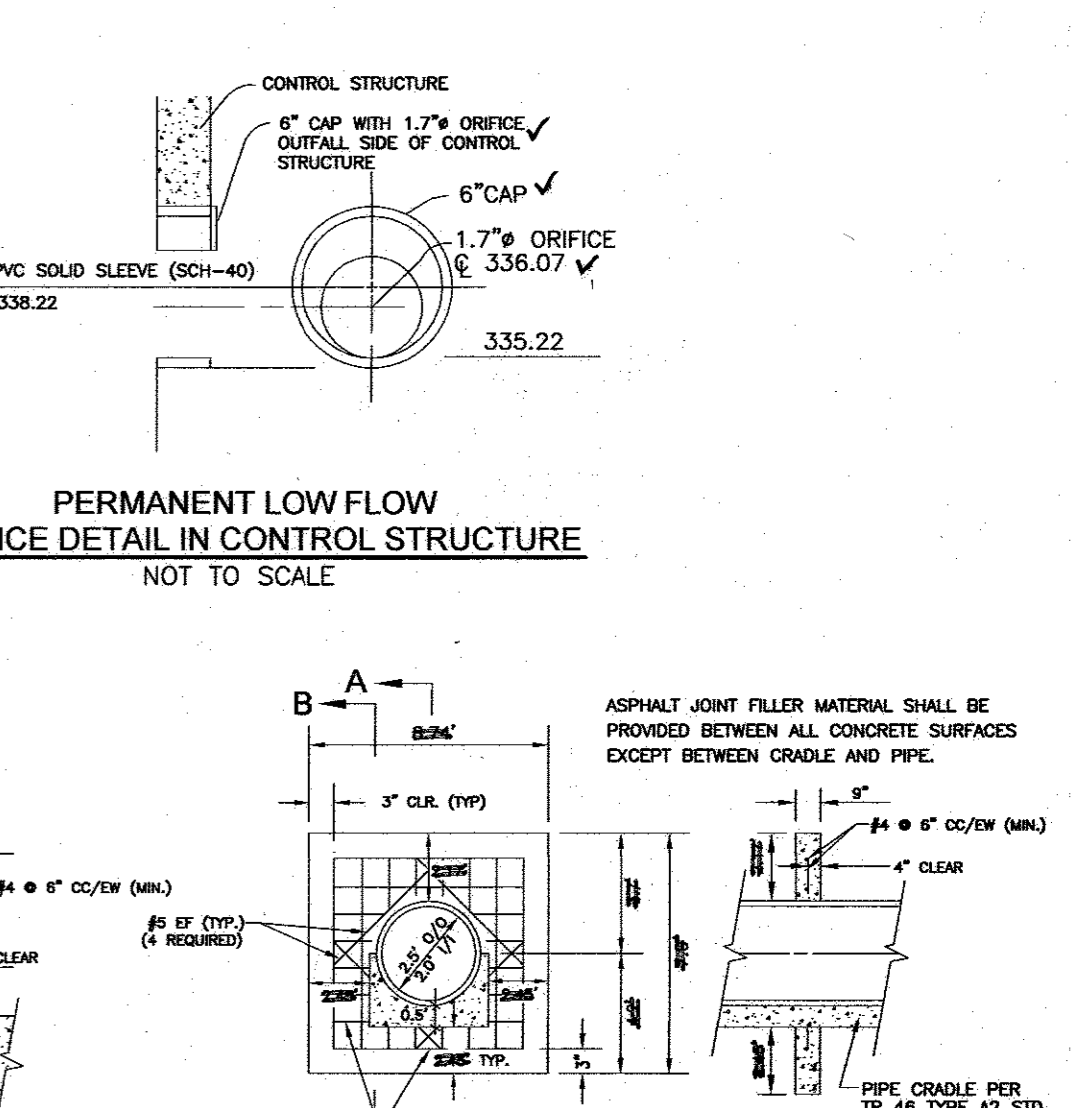
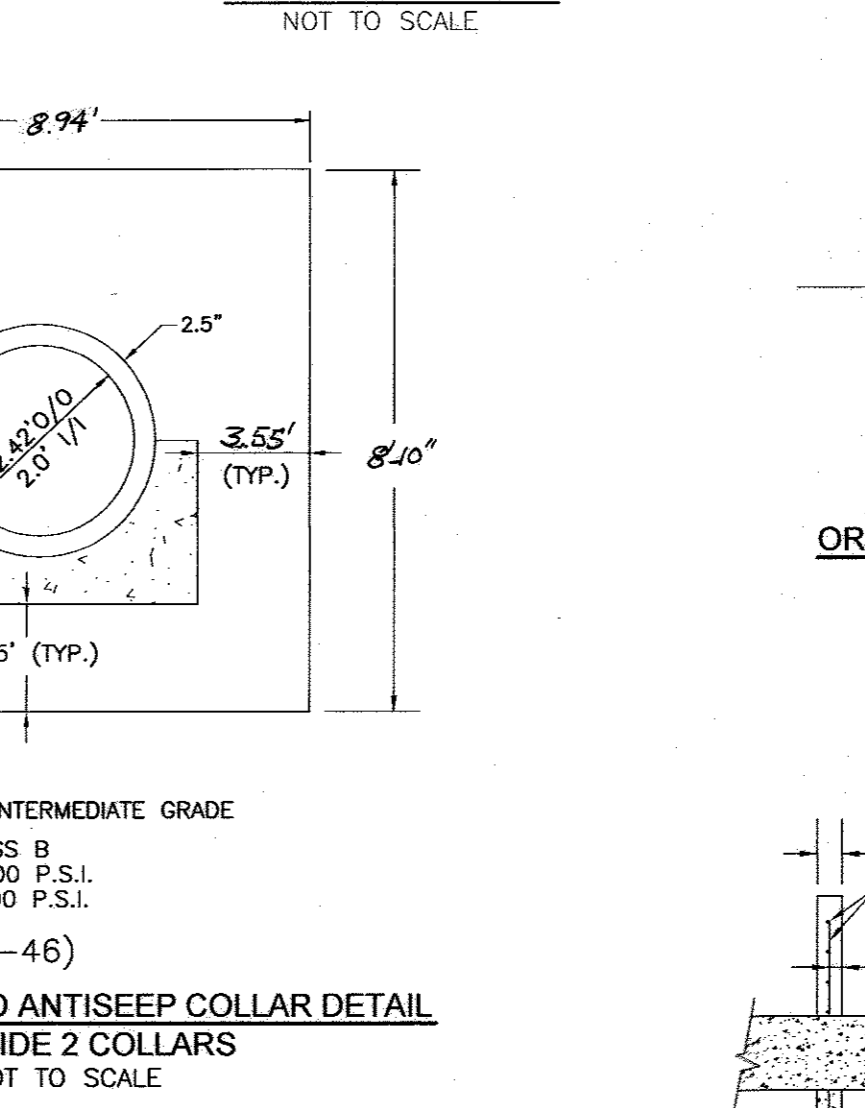
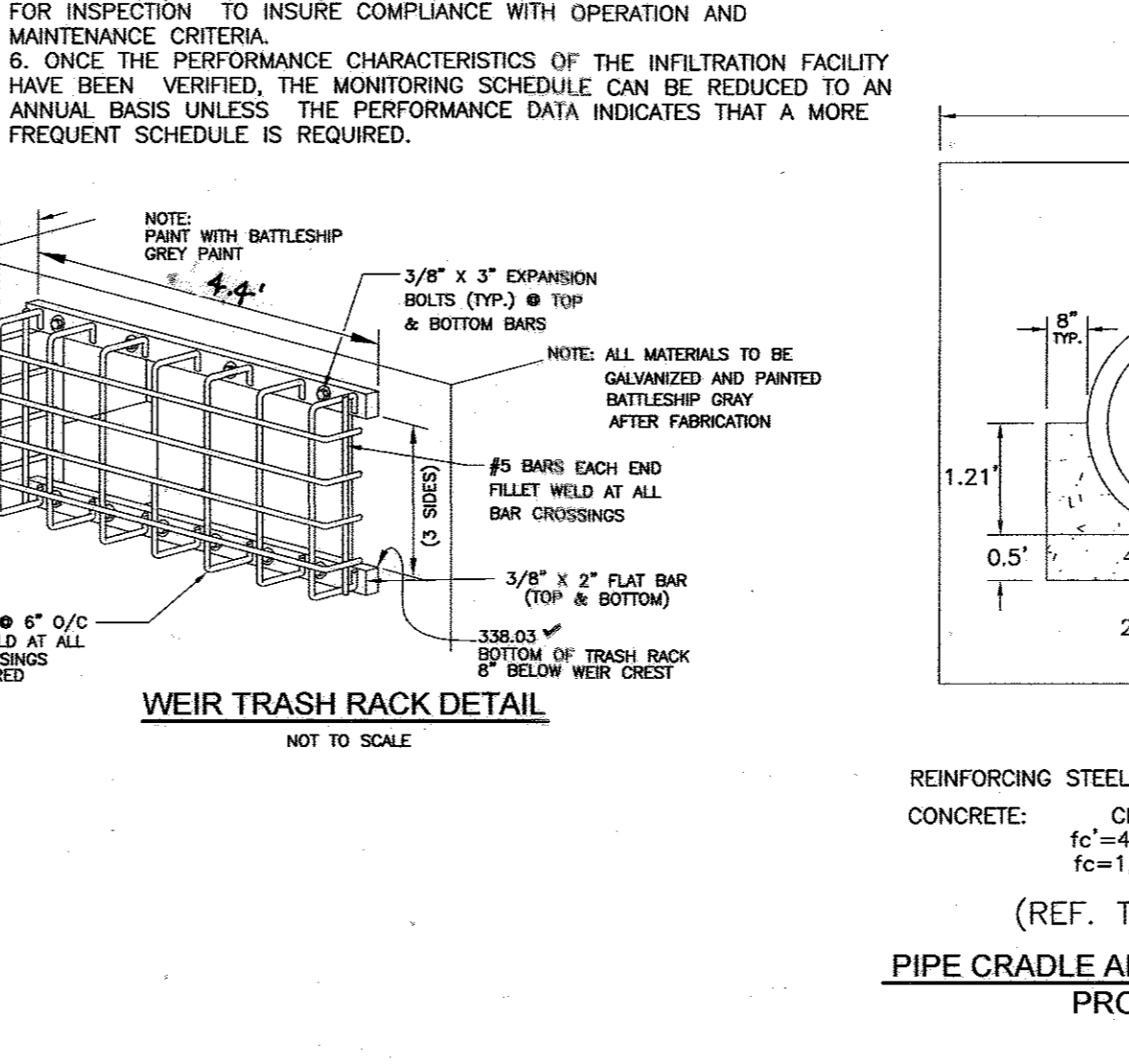
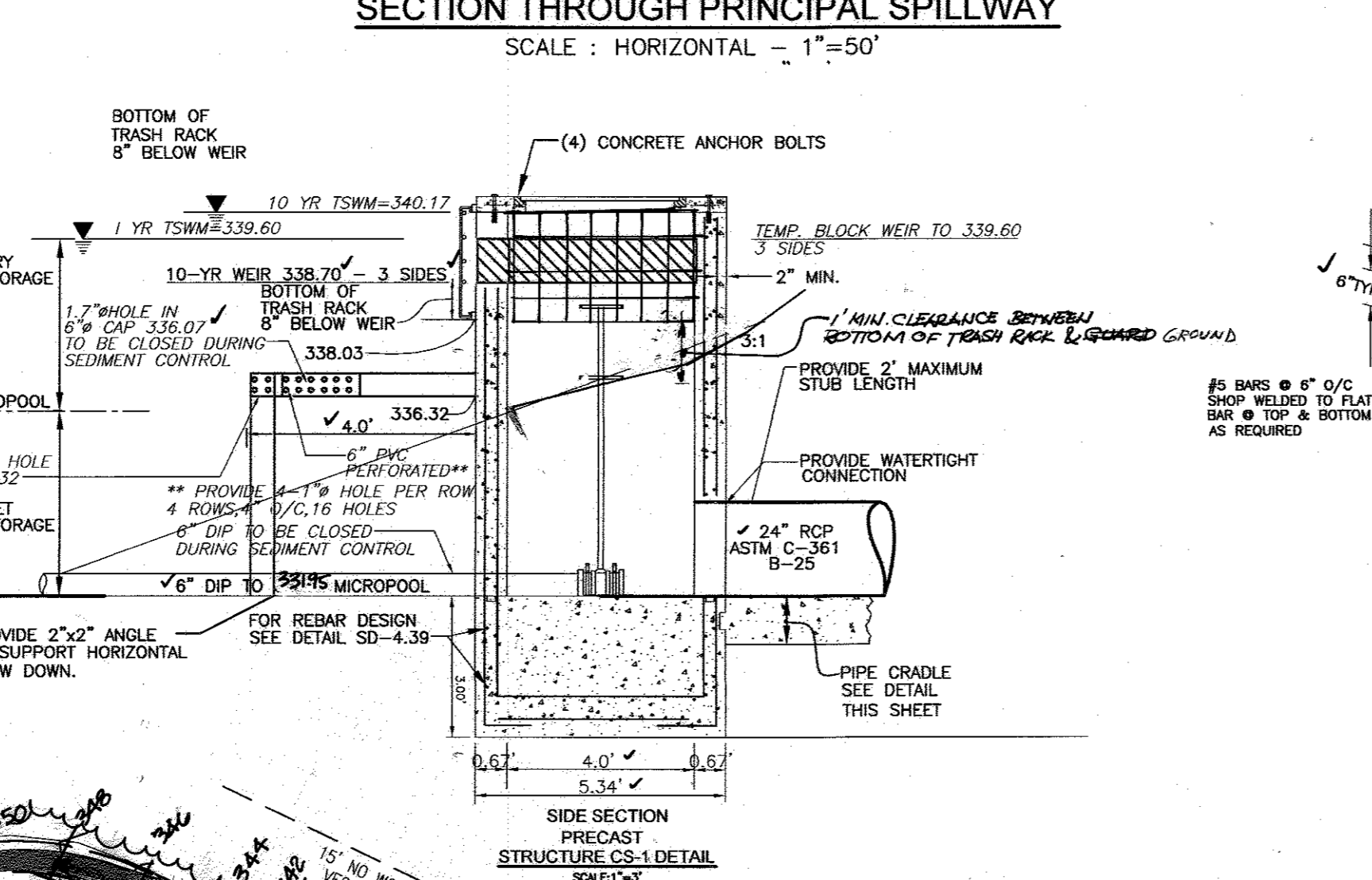
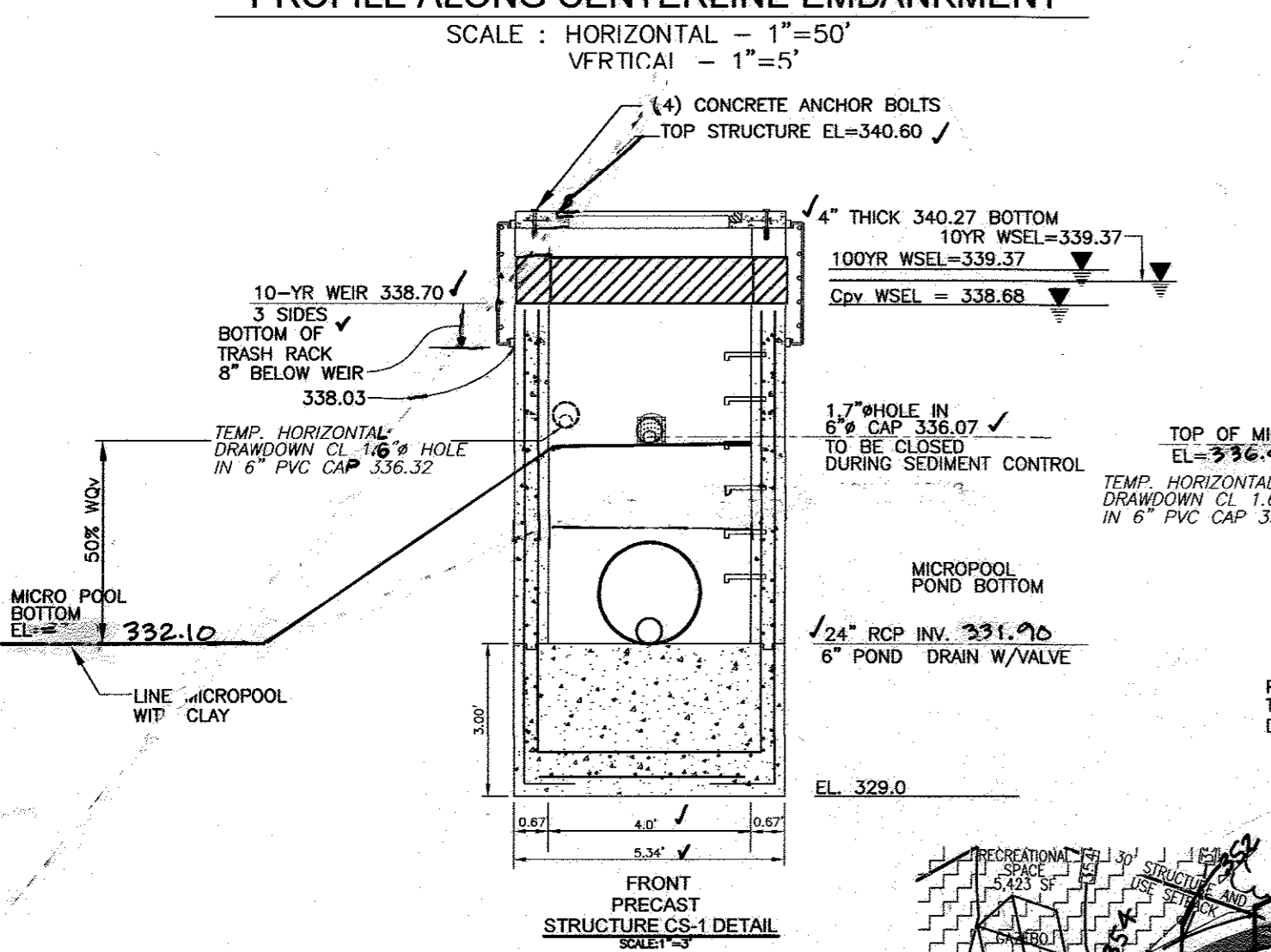
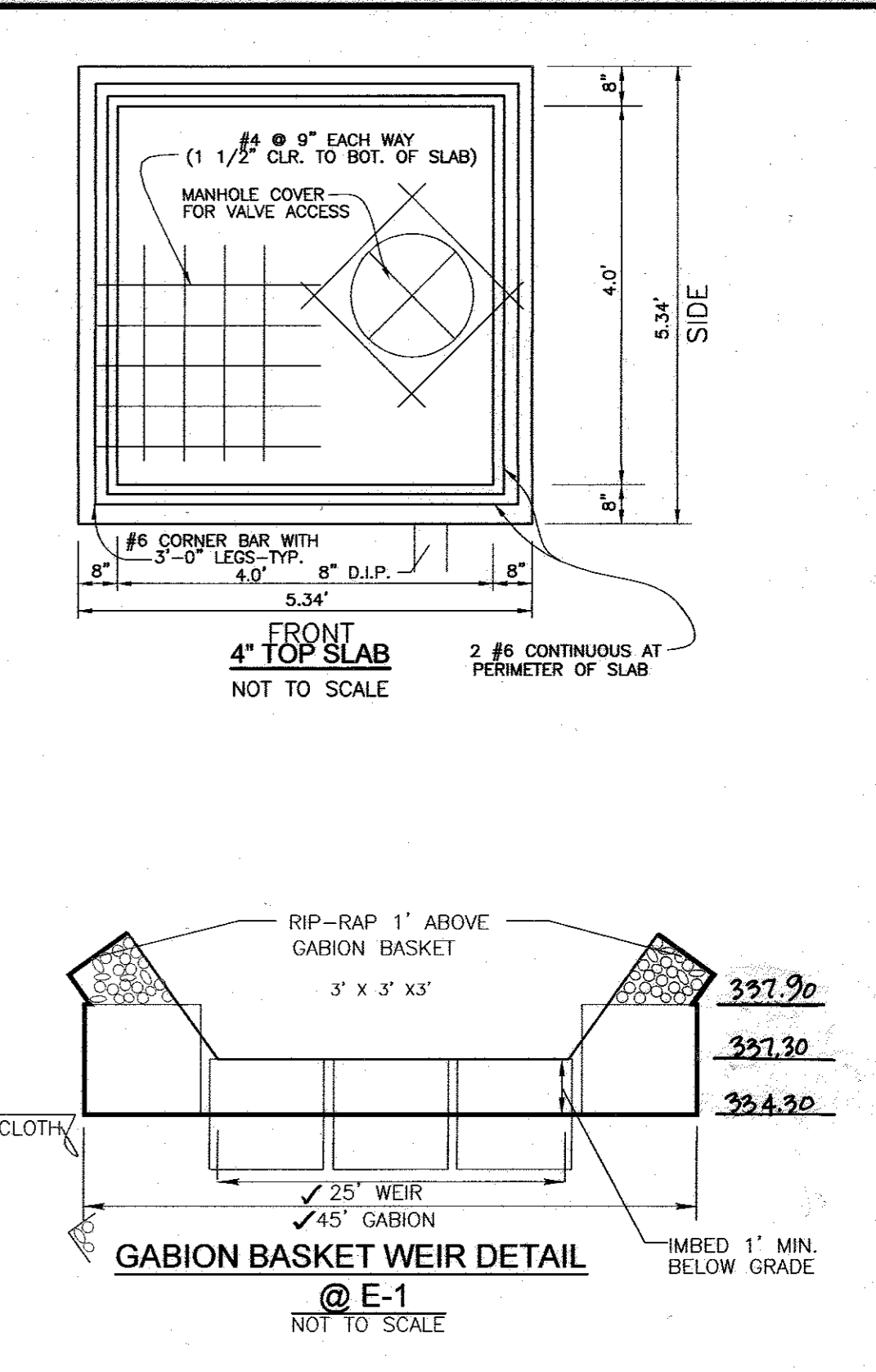
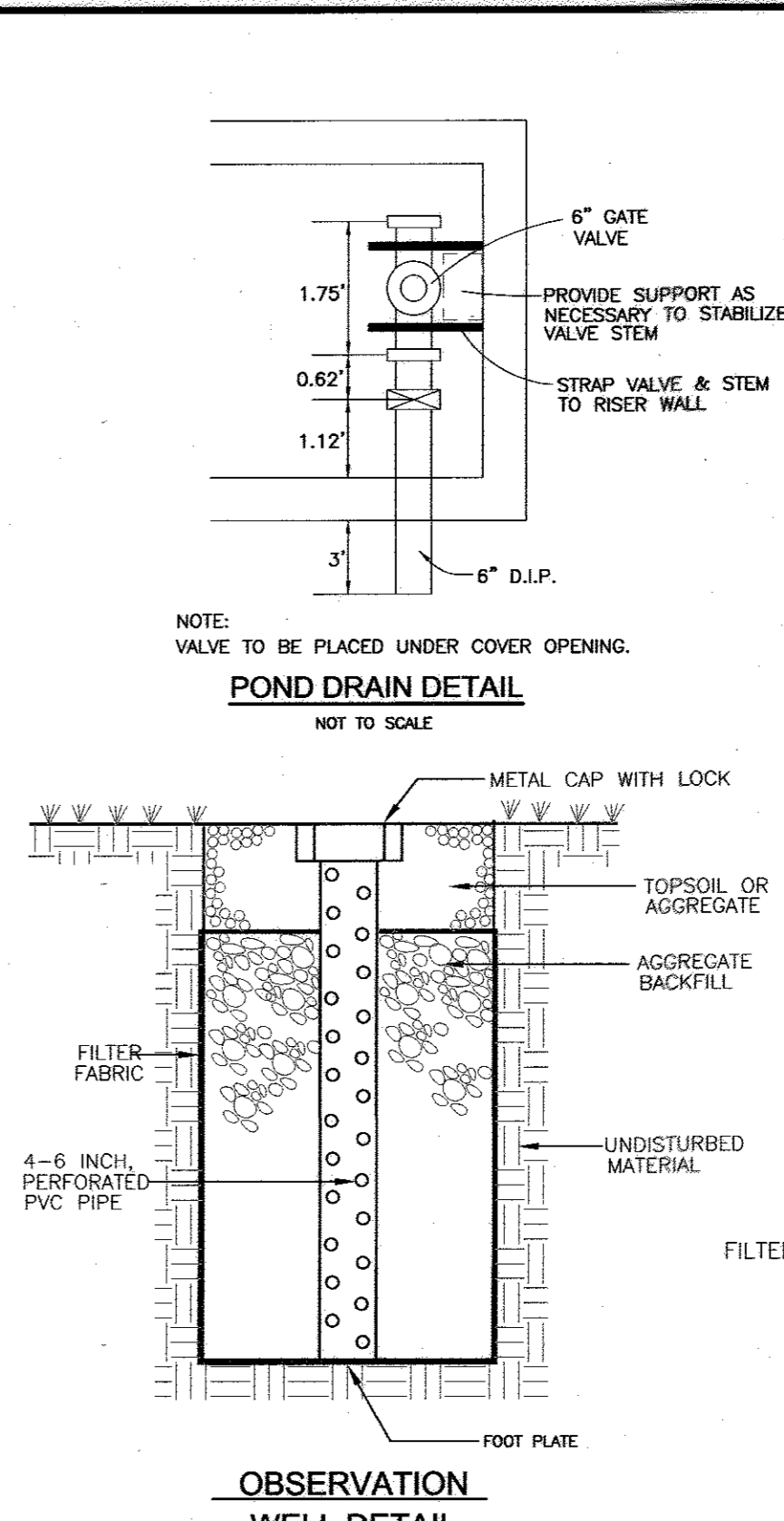
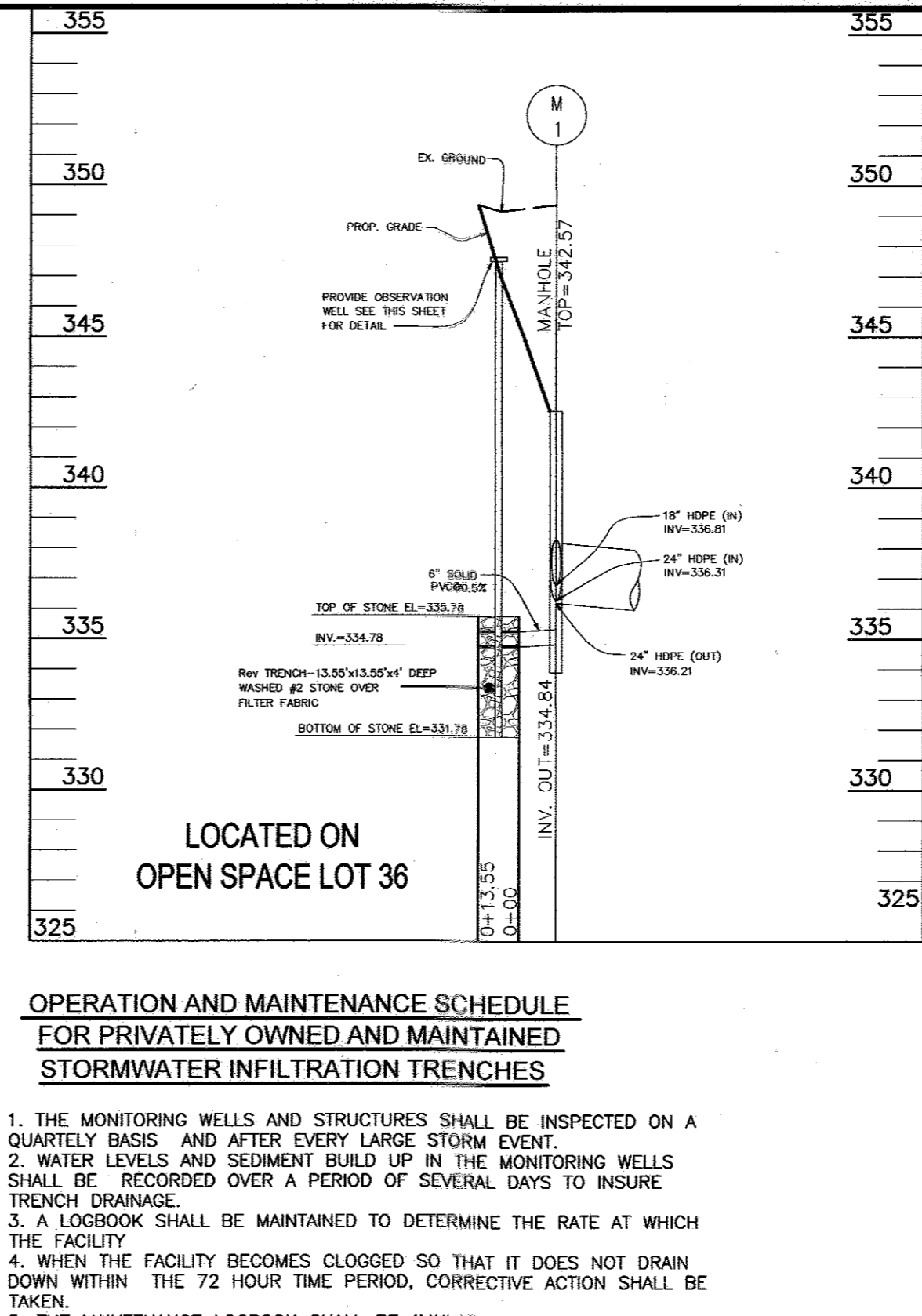
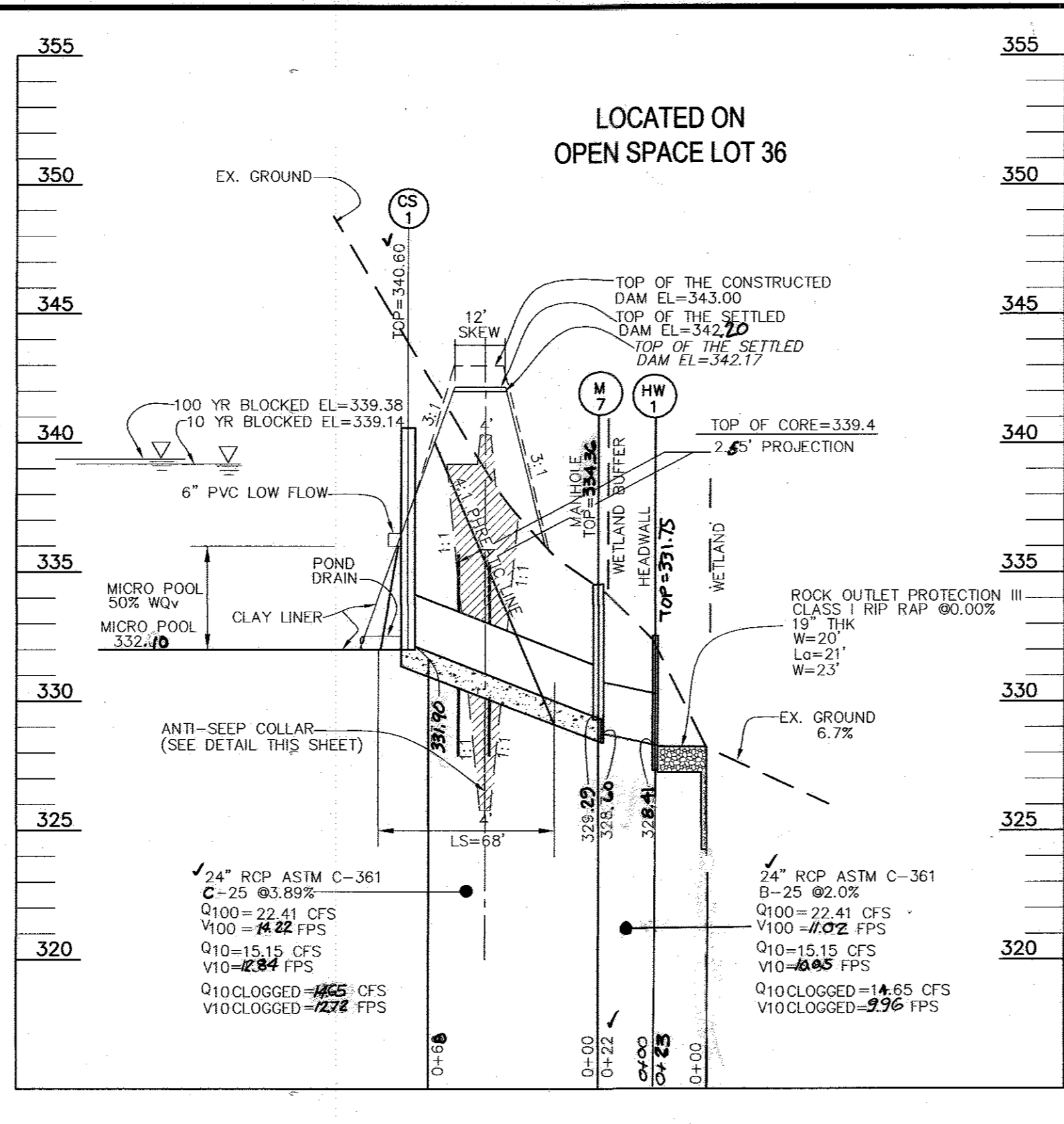
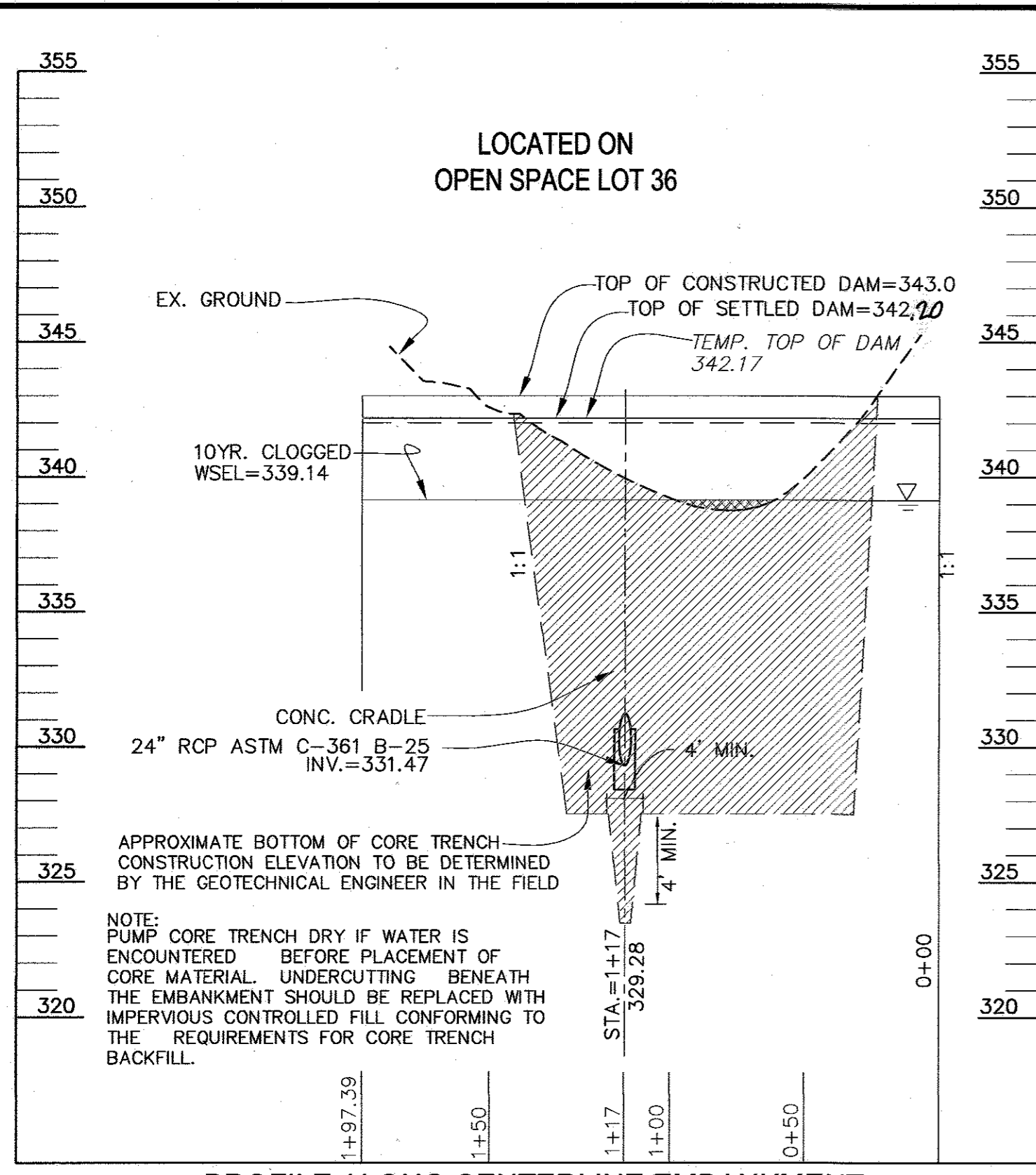
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-15-2013
 SCALE: AS SHOWN
 W.O. NO.: 04-26

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE #16193
 EXPIRATION DATE: 09-27-2014

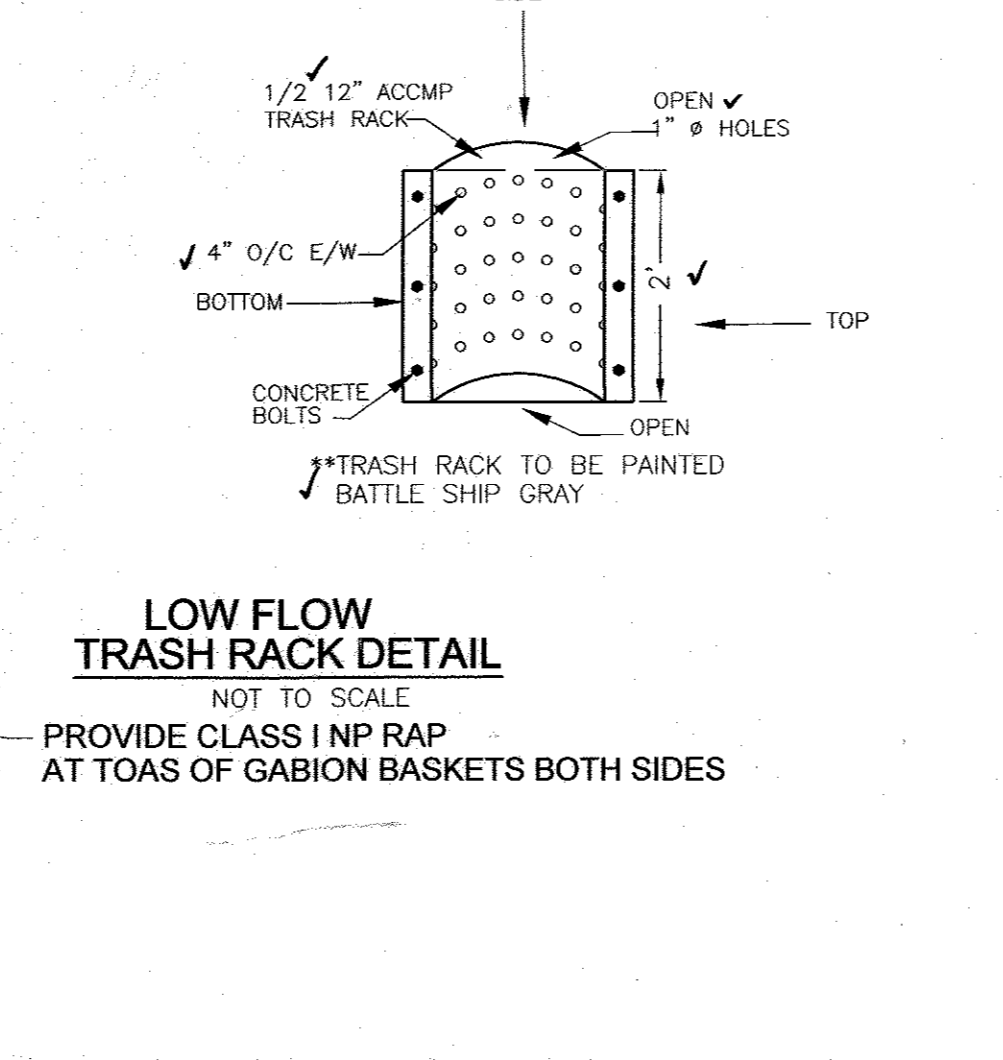
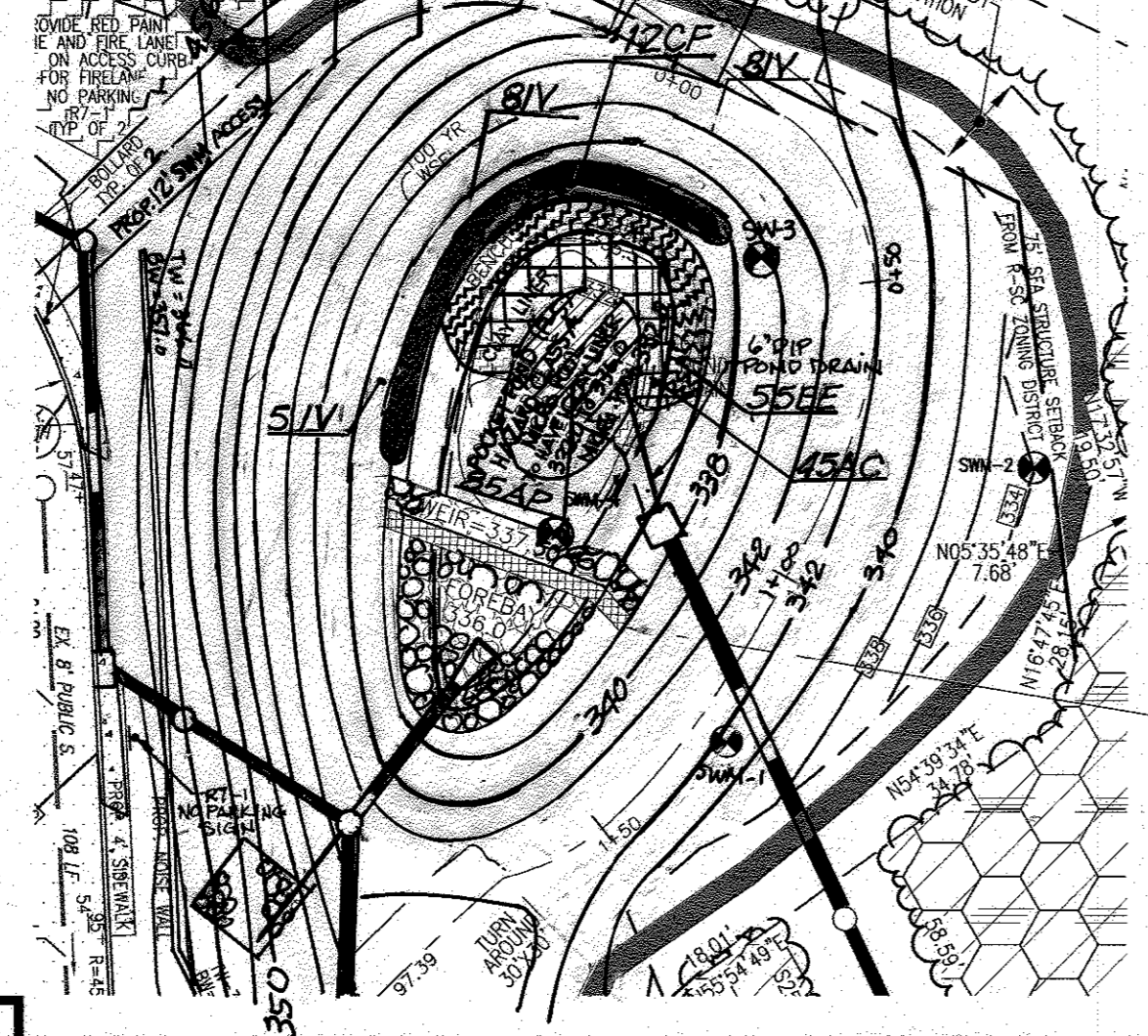
5 SHEET OF 14



FACILITY

2' DEEP STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AP	85	Alisma plantago-aquatica Water Plantain	2' oc	plug
AC	45	Acorus calamus Sweet Flag	2' oc	plug
CE	112	Cyperus esculentus Yellow Nut Sedge	2' oc	plug
EE	55	Fleischchris equisetoides Knotted Spike Rush	2' oc	rhizome
IV	24	Iris versicolor Blue Flag (wear gloves)	1.5' oc	plug



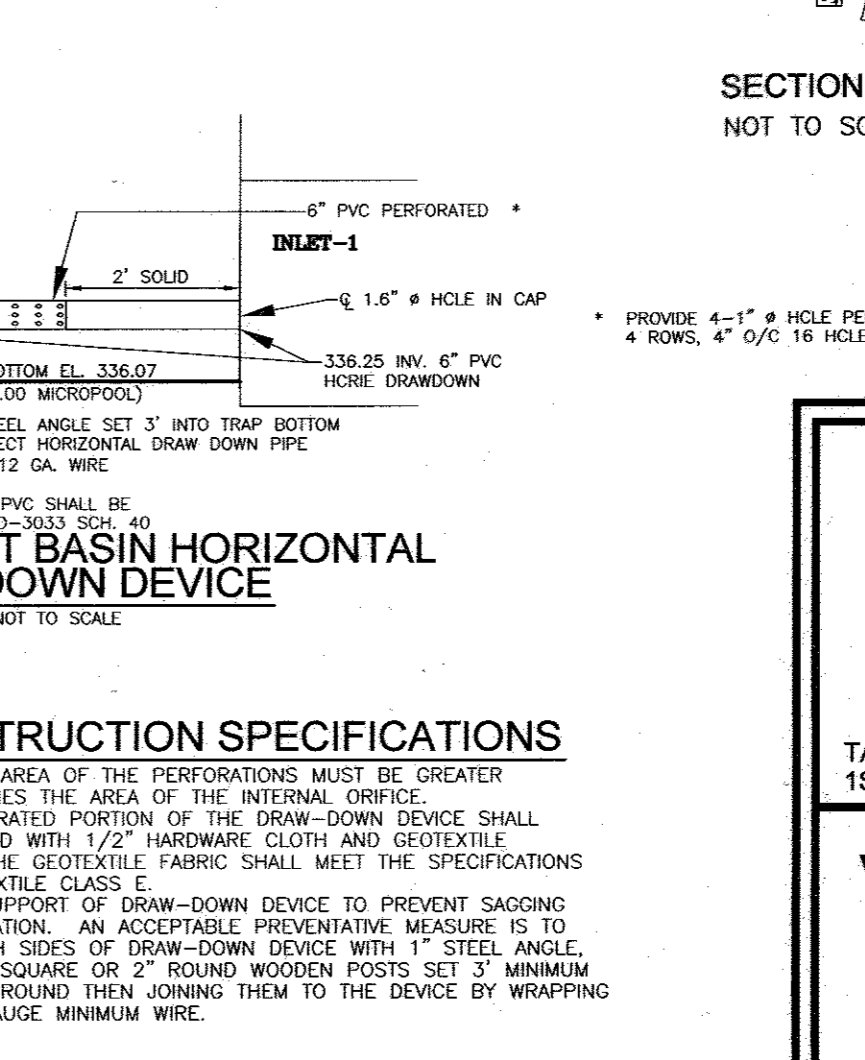
AS-BUILT CERTIFICATION

I hereby certify that the facility shown on the plan was constructed as shown on the as-built plans and meets the approved plans and specifications.

Signature: [Signature]
PE No. 16193
Date: 6/15/16

CONSTRUCTION SPECIFICATIONS

1. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
2. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
3. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE OR 1" x 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.



SITE DEVELOPMENT PLAN

SWM FACILITY DETAILS

FOX HUNT ESTATES

LOTS 4-35 & OPEN SPACE LOTS 36 & 37

TAX MAP 37 GRID 3 1ST ELECTION DISTRICT PARCEL 606 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS, INC.
ENGINEERS - SURVEYORS - PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHJ
DATE: 01-15-2013
SCALE: AS SHOWN
W.O. NO.: 04-26

7 SHEET OF 14

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 3/1/13

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 3/13/13

DIRECTOR
DATE: 3-15-13

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature of Developer: [Signature]
DATE: 1-23-13

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Signature of Engineer: [Signature]
DATE: 1/28/13

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL.

USDA - NATURAL RESOURCES CONSERVATION SERVICE
DATE: [Signature]
DATE: 2/19/13

THESE PLANS FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature]
DATE: 2/19/13

OWNER

MEADOWRIDGE PROPERTIES INC
1710 WILLOW SPRINGS DRIVE
STYVESVILLE, MD 21154-5600
ATTN: MR. ANSAN S. KHAN
(410) 442-1885

DEVELOPER

100% LAND, INC.
5300 DORSEY HALL DR. STE 102
ELLICOTT CITY MD 21042-7819
ATTN: MR. DONALD R. RELIWER
(443) 367-0422

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2014.

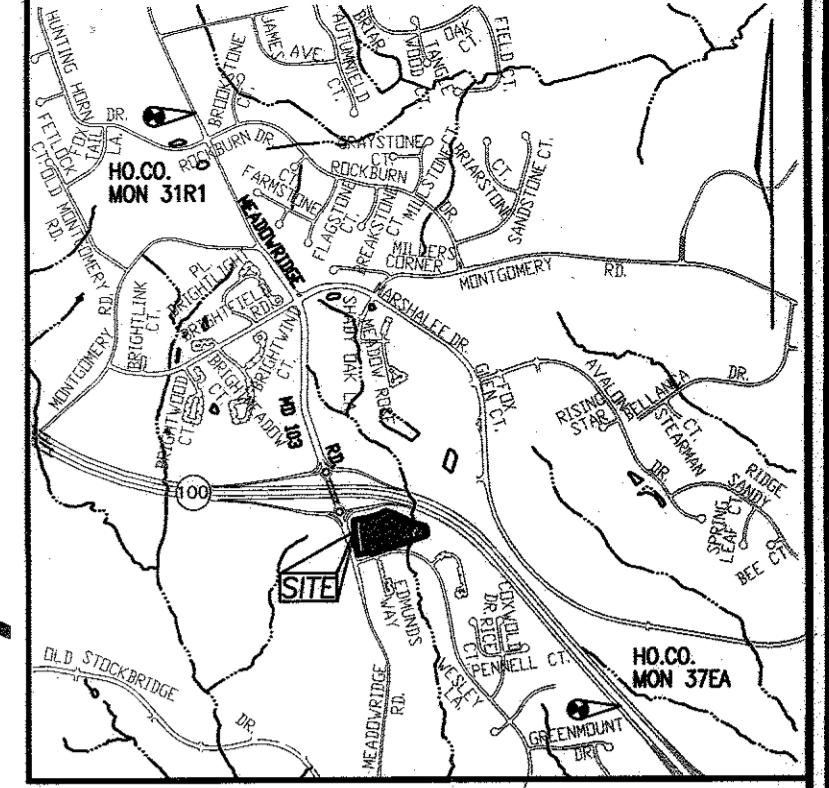
ROBERT H. VOGEL, PE No. 16193



BENCHMARK INFORMATION

BENCHMARK NO. 1: COUNTY CONTROL #37EA
 N 559,149.111 E 1,376,916.213
 ELEV. = 291.757'

BENCHMARK NO. 2: COUNTY CONTROL #31R1
 N 565,303.465 E 1,372,517.678
 ELEV. = 401.748'



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREE LINE
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE, AND UTILITY EASEMENT
- EXISTING WETLANDS
- 25' WETLAND BUFFER
- STREAM BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- SsE
- SfC2
- EXISTING MODERATE SLOPES
- EXISTING STEEP SLOPES

OPEN SPACE
 LOT 94
 BRIGHTFIELD
 SECTION 4
 PLAT 11145
 ZONED R-SC

APPROVED DEPARTMENT OF PLANNING AND ZONING

John Canoles 3/1/13
 Chief, Development Engineering Division

Kristen Lawrence 3/13/13
 Chief, Division of Land Development

Robert H. Vogel 3-13-13
 Director

OWNER
 MEADOWRIDGE PROPERTIES INC
 1710 WILLOW SPRINGS DRIVE
 SYKESVILLE, MD 21784-5600
 ATTN: MR. AHSAN S. KHAN
 (410) 442-1685

DEVELOPER
 100% LAND, INC
 5300 DORSEY HALL DR STE 102
 ELLICOTT CITY MD 21042-7819
 ATTN: MR. DONALD R. REUWER
 (443) 367-0422

SITE DEVELOPMENT PLAN
WETLAND AND FOREST STAND DELINEATION PLAN
FOX HUNT ESTATES
 LOTS 4-35 & OPEN SPACE
 LOTS 36 & 37

TAX MAP 37 GRID 3
 1ST ELECTION DISTRICT

PARCEL 608
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16163, EXPIRATION DATE: 09-27-2014

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 01-15-2013
 SCALE: AS SHOWN
 W.O. NO.: 04-26

9 SHEET OF 14

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES	B
CI22	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES	B
CM22	CHILLUM SILT LOAM, 1 TO 5 PERCENT SLOPES	B
CIB2	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES	B
CIuB	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
EvC	EVESBORO LOAMY SAND, 5 TO 15 PERCENT SLOPES	A
Fa	FALLSINGTON LOAM	B/D
Ha	HATBORO SILT LOAM	D
SfB2	SASSAFRAS GRAVELLY SANDY LOAM, 1 TO 5 PERCENT SLOPES	B
SfC2	SASSAFRAS GRAVELLY SANDY LOAM, 5 TO 10 PERCENT SLOPES	B
SfD2	SASSAFRAS GRAVELLY SANDY LOAM, 10 TO 15 PERCENT SLOPES	B
SfB2	SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES	B
SfC2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B
RuB2	RUMFORD LOAMY SAND, 1 TO 5 PERCENT SLOPES	B
RuD2	RUMFORD LOAMY SAND, 10 TO 15 PERCENT SLOPES	B

FOREST STAND ANALYSIS TABLE

KEY	A. TYPE OF COMMUNITY	B. AREA	C. SOILS INFORMATION				D. EXISTING VEGETATION	E. STAND CHARACTERISTICS			F. FOREST AREA IN SEN. ENV
			1. SOILS TYPES	2. TYPICAL FOREST COVER FOR SOILS TYPE	3. WOODLAND SUITABILITY INDEX	4. HABITAT		1. SIZE (DIA)	2. AGE (YRS)	3. GENERAL CONDITION	
F-1	SUCCESSIONAL FOREST	4.4 AC	SfC2 SfD2 SsE	WATER TOLERANT OAKS AND OTHER WETLAND HARDWOODS	1	1	BLACK LOCUST BLACK CHERRY PRUNUS SEROTINA, ROBINIA PSEUDO-ACACIA, ACER RUBRUM, SASSAFRA ALBIDUM, ROSA MULTIFLORA	4"-8"	20±	GOOD	0.28 AC

NOTES

- THE PROJECT BOUNDARY IS BASED ON A SURVEY PREPARED BY ROBERT H. VOGEL, INC. DATED JUNE 2006.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY ROBERT H. VOGEL, DATED JUNE 2006.

SUPPLEMENTAL INFORMATION

GROSS SITE AREA ZONED: 4.4 ACRES R-SA-8
 EXISTING USE: PREDOMINANTLY WOODED
 PROPOSED USE: HIGH DENSITY RESIDENTIAL

FOREST STAND TOTALS

STAND F-1	4.4 ACRES
TOTAL	4.4 ACRES

NO AS-BUILT INFORMATION THIS SHEET.



LANDSCAPE SCHEDULE THIS SHEET				
QUAN.	BOTANICAL NAME	SIZE	REM.	
10	ACER RUBRUM 'RED SUNSET' RED 'SUNSET' MAPLE (SHADE TREES)	2 1/2"-3" Cal.	B & B	
32	ACER GINNALA AMUR MAPLE	2 1/2"-3" Cal.	B & B	
04	QUERCUS COCCINEA SCARLET OAK (SHADE TREES)	2 1/2"-3" Cal.	B & B	
42	PINUS NIGRA AUSTRIAN PINE (EVERGREEN TREES)	6' - 8' Ht.	B & B	
90	EUONYMUS ALATUS WINGED EUONYMUS	24" X 36" HT. 24" X 36" CANES	B & B	
48	ACER GRISEUM PAPERBARK MAPLE	2 1/2"-3" Cal.	B & B	
2	CORNUS MAS CORNELIAN CHERRY	2 1/2"-3" Cal.	B & B	

SCHEDULE A: PERIMETER LANDSCAPE EDGE											
CATEGORY	ADJACENT TO ROADWAYS			ADJACENT TO PERIMETER PROPERTIES			UNIT 23	UNIT 24	UNIT 32	TOTAL	
	1 C	2 C	3 C	4 C	5 C	6 C					
PERIMETER/FRONTAGE DESIGNATION	348'	239'	63'	167'	360'	222'	323'	42'	42'	42'	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	127'	NO	NO	NO	222'	172'	NO	NO	NO	
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES	292'	NO	NO	YES	334'	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED (LF REMAINING)	86	112	63	129	26	0	151	0	0	0	
SHADE TREES	1:40 3	1:40 3	1:40 2	1:40 4	1:80 3	1:50 0	1:40 3	1:40 1	1:40 1	1:40 1	
EVERGREEN TREES	1:20 5	1:20 6	1:20 4	1:20 7	1:10 3	1:40 0	1:40 4	1:20 2	1:20 2	1:20 2	
SHRUBS	1:10 3	1:10 3	1:10 3	1:10 3	1:10 3	1:40 0	1:40 4	1:20 2	1:20 2	1:20 2	
NUMBER OF PLANTS PROVIDED	3	3	0	0	1	0	3	0	0	0	
SHADE TREES	5	8	4	7	3	0	4	2	2	2	
EVERGREEN TREES	1	1	1	1	1	0	1	1	1	1	
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-	-	
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-	-	-	-	-	
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-	-	-	-	-	-	-	-	

STREET TREE CALCULATIONS						
	STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED	SPECIES	SIZE/ROOT
	JOANN KHAN DR.	1944/40	49	47	ACER GRISEUM PAPERBARK MAPLE	2 1/2" - 3" Cal. B & B
	JOANN KHAN DR.			02	CORNUS MAS CORNELIAN CHERRY (SHADE TREES - GROWTH HEIGHT=25")	2 1/2" - 3" Cal. B & B

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING TREE LINE
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREE LINE
- PROPOSED CURB
- PUBLIC STREET LIGHT
- PRIVATE STREET LIGHT
- VARIABLE WIDTH PUBLIC SEWER, WATER, AND UTILITY EASEMENT
- PUBLIC SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (REFORESTATION)
- PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE, AND UTILITY EASEMENT
- RECREATIONAL OPEN SPACE AND AMENITY AREA
- EXISTING WETLANDS
- 25' WETLAND BUFFER STREAM BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING MODERATE SLOPES
- EXISTING STEEP SLOPES
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR

SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING		
NUMBER OF DWELLING UNITS		32
NUMBER OF TREES REQUIRED (1:1 DU SFA)		32
NUMBER OF TREES PROVIDED		32
SHADE TREES (ACER GINNALA)		
OTHER TREES (2:1 SUBSTITUTION)		

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING		
NUMBER OF PARKING SPACES		7
NUMBER OF ISLANDS/TREES REQUIRED		1
NUMBER OF ISLANDS/TREES PROVIDED		1
SHADE TREES (ACER GRISEUM)		
OTHER TREES (2:1 SUBSTITUTION)		
LANDSCAPE ISLAND	200SF X 1 = 200SF REQ.	PROVIDED

OWNER:
MEADOWRIDGE PROPERTIES INC
1710 WILLOW SPRINGS DRIVE
SYKESTOWN, MD 21154-5600
ATTN: MR. AHAN S. KHAN
(410) 442-1685

DEVELOPER:
100K LAND, INC.
5300 DORSEY HALL DR STE 102
ELICOTT CITY MD 21042-7819
ATTN: MR. DONALD R. REUMER
(443) 367-0422

NO.	REVISION	DATE
1 (RHV)	REVISE PROPOSED TOWNHOUSE LAYOUTS	04/05/13

REVISED SITE DEVELOPMENT PLAN
LANDSCAPE AND FOREST CONSERVATION PLAN
FOX HUNT ESTATES
LOTS 4-35 & OPEN SPACE
LOTS 36 & 37

TAX MAP 37 GRID 3
1ST ELECTION DISTRICT

PARCEL 606
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELICOTT CITY, MD 21043
TEL: 410-461-7666
FAX: 410-461-8951

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 01-15-2013
SCALE: AS SHOWN
W.C. NO.: 04-26

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193
EXPIRATION DATE: 09-27-2014

10 SHEET OF 14

DEVELOPER'S LANDSCAPE CERTIFICATE

I/WE CERTIFY THAT LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF THE PROJECT, 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.

Lisa Dennis
DEVELOPER'S/OWNER'S NAME: MR. DONALD R. REUMER

John Candler
JOHN CANDLER
DNR QUALIFIED FOREST PROFESSIONAL

4/2/13

NOTE:

- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS, AS SHOWN ON THIS PLAN.
- BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENTS LOCATED IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONTEL ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLE WITHHOLD PERMISSION.
- TREES WITH MATURE HEIGHT GREATER THAN 25' SHALL NOT BE PLANTED WITHIN 20' OF EITHER SIDE OF THE UTILITY POLE LINE. TREES WITH MATURE HEIGHT GREATER THAN 40' SHALL NOT BE PLANTED WITHIN 45' OF THE UTILITY POLE LINE.

PLAN
SCALE: 1"=30'

NOTES

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT ANSI SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCAWM PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING. SURETY IN THE AMOUNT OF \$37,800.00 FOR 98 SHADE TREES, 42 EVERGREENS, AND 90 SHRUBS SHALL BE PROVIDED WITH THE DEVELOPERS AGREEMENT FOR THIS SITE PLAN, SDP-07-007.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

DEVELOPER'S AGREEMENT

PERIMETER, SWM, UNIT, PARKING AND PRIVATE STREET TREE PLANTINGS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL. SURETY IN THE AMOUNT OF \$37,800.00 FOR 98 SHADE TREES, 42 EVERGREENS, AND 90 SHRUBS SHALL BE PROVIDED WITH THE DEVELOPERS AGREEMENT FOR THIS SITE PLAN, SDP-07-007.

**POND #1
SCHEDULE D: STORMWATER MANAGEMENT**
PRIVATELY OWNED POCKET POND

**SCHEDULE D: STORMWATER MANAGEMENT
AREA LANDSCAPING-TYPE 'B' BUFFER**

LINEAR FEET OF PERIMETER	335'
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	YES 160'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) (%)	-
NUMBER OF TREES REQUIRED	175'
SHADE TREES	1:50 7
EVERGREEN TREES	1:40 7
NUMBER OF TREES PROVIDED	4
SHADE TREES (QUERCUS COCCINEA)	4
EVERGREEN TREES (PINUS NIGRA)	4
SHRUBS	7

*STORMWATER MANAGEMENT BUFFER LENGTH PERIMETER LENGTH 100 YR WSEL

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mr. Dennis
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 6/28/13

Mr. Vogel
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 7/02/13

Mr. Vogel
DIRECTOR
DATE: 7/3/13

HOWARD COUNTY
FOREST CONSERVATION WORKSHEET

ZONED R-SA-8
NET TRACT AREA:

A. TOTAL TRACT AREA	4.40 AC
B. AREA WITHIN 100 YEAR FLOODPLAIN	0.28 AC
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00 AC
D. NET TRACT AREA	4.12 AC

LAND USE CATEGORY
INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-SA-8.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFOREST THRESHOLD	15% X D = 0.62 AC
F. CONSERVATION THRESHOLD	20% X D = 0.82 AC

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) =	4.12 AC
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD =	3.50 AC
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD =	3.30 AC

BREAK EVEN POINT:
(0.2 X I) + F = BREAK EVEN POINT (1.39 AC)

J. FOREST RETENTION WITH NO MITIGATION =	1.48 AC
K. CLEARING PERMITTED WITHOUT MITIGATION =	2.64 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED =	3.73 AC
M. TOTAL AREA OF FOREST TO BE RETAINED =	0.39 AC

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD =	0.82 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD =	0.87 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD =	0.00 AC
R. TOTAL REFORESTATION REQUIRED (N+P-Q) =	1.69 AC
S. TOTAL AFFORESTATION REQUIRED =	0.00 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED =	1.69 AC

FOREST CONSERVATION REQUIREMENTS IN ACCORDANCE WITH SECTION 16.1202 OF THE FOREST CONSERVATION MANUAL FOR THIS PROJECT SHALL BE FULFILLED BY:

1. PLACEMENT OF 1.59 AC. (69,260 SF) OF REFORESTATION INTO AN OFF-SITE FOREST CONSERVATION BANK, BRIGHTON MILL FOREST MITIGATION BANK, APPROVED SITE DEVELOPMENT PLAN NUMBER 11-056.
2. ON-SITE RETENTION OF 0.3947 AC. (17,193 SF)
3. ON-SITE REFORESTATION OF 0.0996 AC. (4,338 SF)

SURETY REQUIRED:
REFORESTATION INTO AN OFF-SITE FOREST CONSERVATION BANK:

1.59 AC. (69,260 SF) = \$0.00
ON-SITE RETENTION: 0.3947 AC. (17,193 SF) = \$0.00
ON-SITE REFORESTATION: 0.0996 AC. (4,338 SF X 0.50) = \$2,169.00
TOTAL FOREST CONSERVATION SURETY: \$2,178.00. PROVIDED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN, SDP-07-007.

PLANT SCHEDULE			
QUANTITIES FOR REFORESTATION AREAS			
BOTANICAL NAME	FCE1	SIZE	SPACING (FT)
Acer rubrum Red Maple	7	1" Cal.	15 X 15
Liquidambar straciflua American Sweetgum	6	1" Cal.	15 X 15
Platanus occidentalis Sycamore	7	1" Cal.	15 X 15

REFORESTATION PROVIDED - FCE-1

0.10 ACRES OR 4356 SF
1" CALIPER TREES
20 TREES @ 200 TREES PER ACRE

Typical Forest Tree Distribution Patterns

Random Positive Association, Nonrandom Negative Association, Clumped

SPECIES 1, SPECIES 2

Note: Naturally occurring populations of trees tend to be found in informal groups. A cluster of trees is usually a result of different species groups. The objective of an association/interaction test is to detect the appropriate species and distribution pattern for a chosen site that mimics natural patterns.

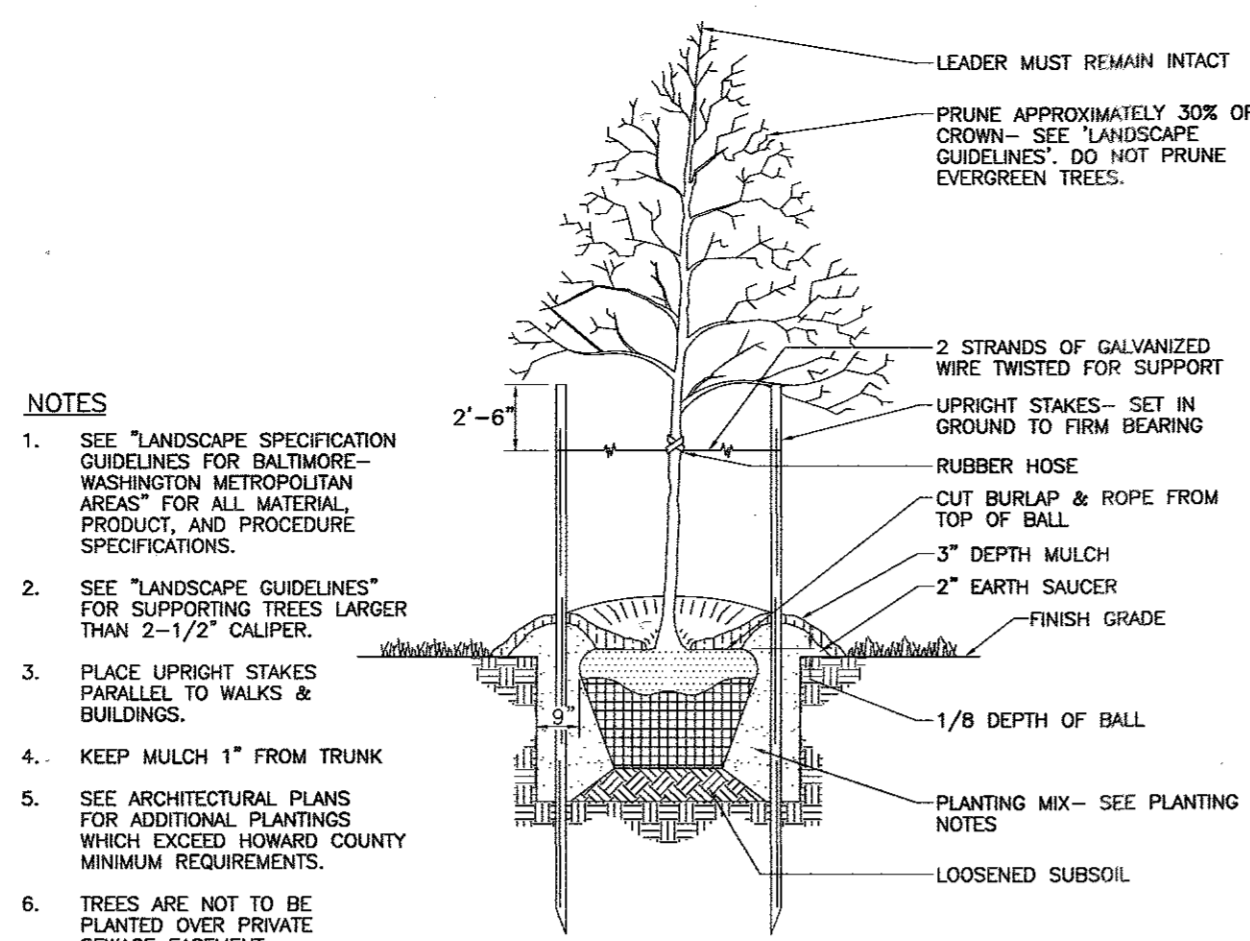
Aggregate Distribution Drift

Note: When used, plant cluster type groupings that occur or happen out along the edges. Clusters often appear as elongated or tear drop shapes.

Mixing Transplant Stock

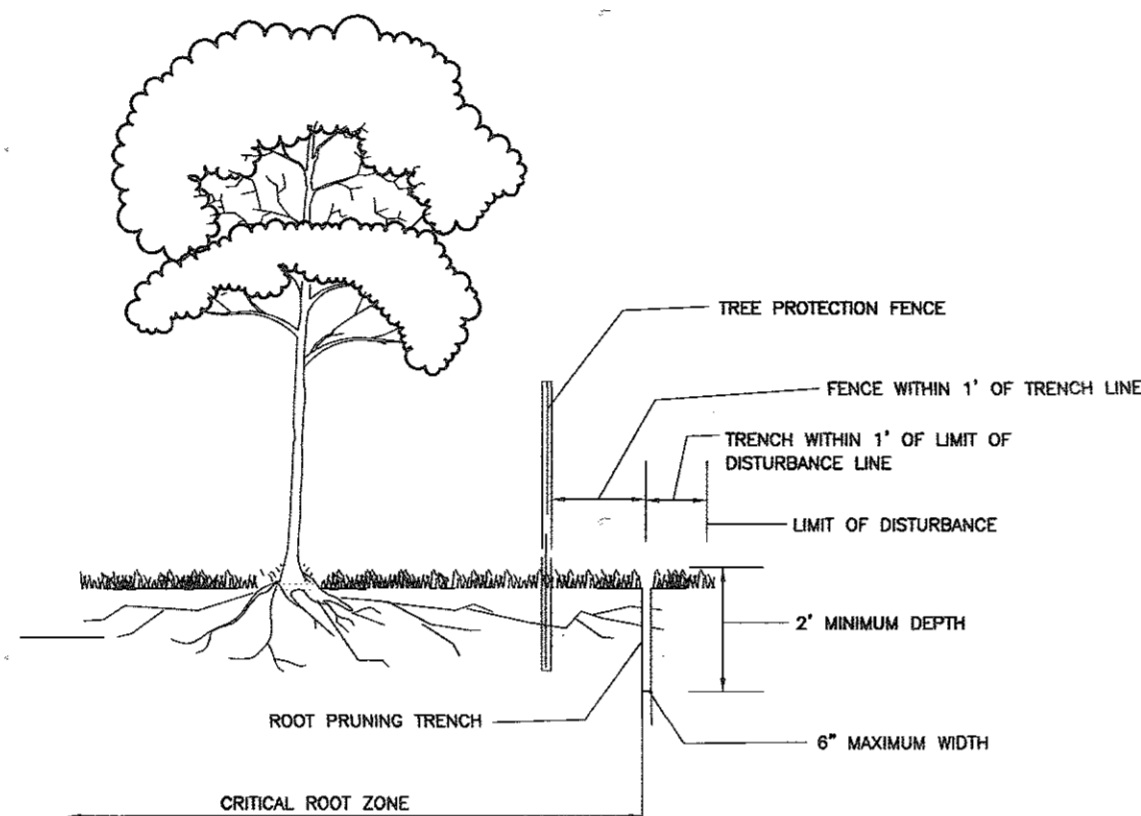
Locate larger trees (B&B or container grown) or transplant stock at the perimeter of reforestation/conservation plantings of edge, seeding, protective fencing, smaller stock.

Planting Distribution Patterns Figure A-18



TREE PLANTING AND STAKING

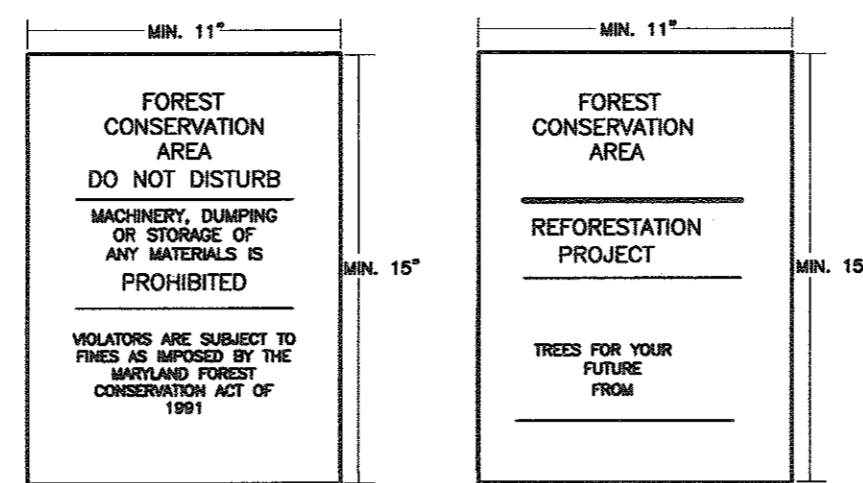
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE



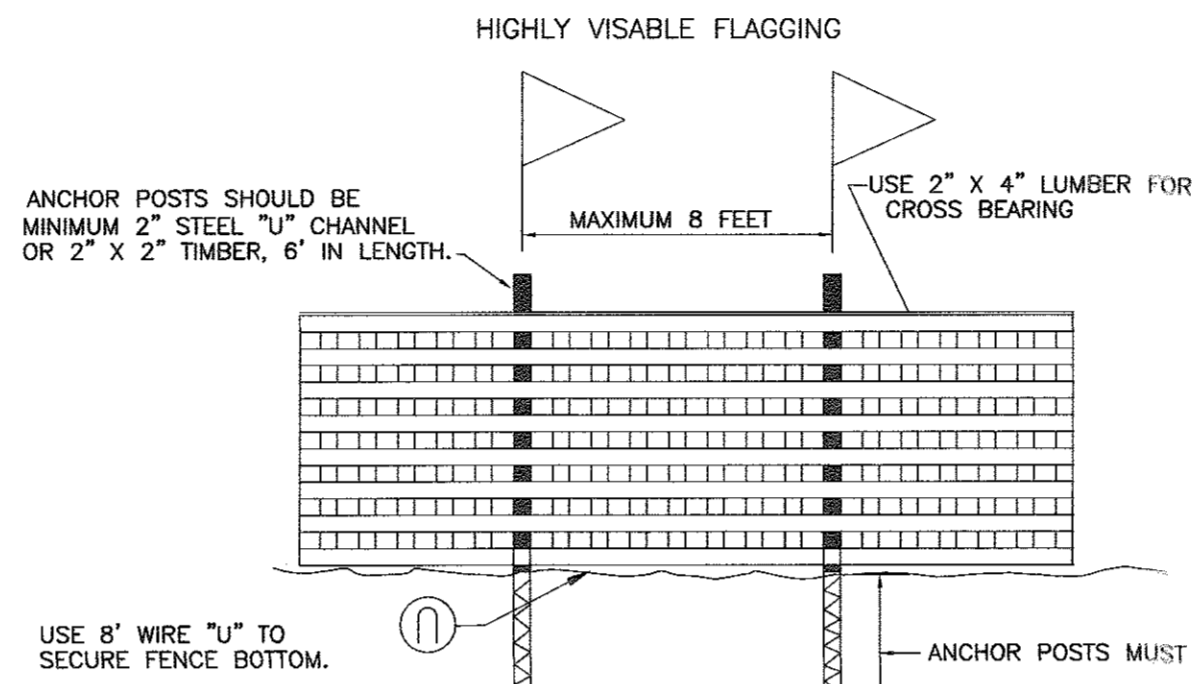
ROOT PRUNING

NOTES:

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.



- NOTE:
1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
 2. SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
 3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.



NOTES:

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOF DAMAGE SHOULD BE AVOIDED.

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL

REFORESTATION PLANTING NOTES

1. REFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR BUT PLANTING MAY GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITION WARRANTS.
2. SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSIS FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND pH. IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE, SOLUBLE 16-8-16 ANALYSIS DESIGNED TO LAST 5-8 YEARS CONTAINED IN POLYETHYLENE PERFORATED BAGS SUCH AS MANUFACTURED BY ADCO WORKS, P.O. BOX 310 HOLLIS, N.Y. 11423 OR APPROVED EQUAL.
3. PLANT MATERIALS WILL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND PLANT SCHEDULE.
4. PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, VIGOR, OR ROOTS, OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICCATION, INSECT OR DISEASE MUST BE REPLACED.
5. PLANTING STOCK MUST BE PROTECTED FROM DESICCATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL SHADED AREAS UNTIL READY FOR PLACEMENT.
6. NEWLY PLANTED TREES MAY REQUIRE WATERING AS LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIAL.
7. MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDDED HARDWOOD BARK MULCH, FREE OF WOOD ALCOHOL.
8. ALL NURSERY STOCK TO BE SPRAYED WITH DEER REPELLENT CONTAINING BITREX, SUCH AS REPELLEX. ALL NURSERY STOCK TO BE GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM, SUCH AS REPELLEX TABLETS.

REFORESTATION AREA MONITORING NOTES

1. MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
2. THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
3. SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
4. EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.

FOREST RETENTION AREAS AND NOTES

1. FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
2. NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
3. FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
4. THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
5. CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES, RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
6. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

FOREST PROTECTION NOTES

PRE-CONSTRUCTION ACTIVITIES

1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
2. FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
3. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.

CONSTRUCTION PHASE

1. NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
2. NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.

POST-CONSTRUCTION ACTIVITIES

1. AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
2. FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
3. DO NOT REMOVE SIGNS.

SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

1. PRE-CONSTRUCTION MEETING /SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
2. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
3. INSTALL TREE PROTECTION FENCING: FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
5. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

1 (REV)	REVISE TO HOUSE MODEL	04/29/13
NO.	REVISION	DATE

SITE DEVELOPMENT PLAN
LANDSCAPE AND FOREST CONSERVATION DETAILS
FOX HUNT ESTATES
LOTS 4-35 & OPEN SPACE
LOTS 36 & 37

TAX MAP 37 GRID 3
1ST ELECTION DISTRICT

PARCEL 606
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
ELICOTT CITY, MD 21043

TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 01-15-2013
SCALE: AS SHOWN
W.O. NO.: 04-26

11 SHEET OF 14

APPROVED: DEPARTMENT OF PLANNING AND ZONING

3/1/13
DNR QUALIFIED FOREST PROFESSIONAL
JOHN CANOLES

3/1/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION

3/13/13
CHIEF, DIVISION OF LAND DEVELOPMENT

3-13-13
DIRECTOR

OWNER
MEADOWRIDGE PROPERTIES INC
1710 WILLOW SPRINGS DRIVE
SYKESVILLE, MD 21784-5600
ATTN: MR. AH-SAN S. KHAN
(410) 442-1885

DEVELOPER
100% LAND, INC.
5300 DORSEY HALL DR STE 102
ELICOTT CITY, MD 21042-7819
ATTN: MR. DONALD R. REUWER
(443) 367-0422



HOWARD COUNTY MAP NO. 25

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	GROUP
CIC3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES	B
CID2	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES	B
CmB2	CHILLUM SILT LOAM, 1 TO 5 PERCENT SLOPES	B
CnB2	CHILLUM-FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES	B
CuB	COMUS SILT LOAM, LOCAL ALLUVIUM, 3 TO 8 PERCENT SLOPES	B
EVC	EVEBORO LOAMY SAND, 5 TO 15 PERCENT SLOPES	A
Fo	FALLSINGTON LOAM	B/D
Hg	HATBORO SILT LOAM	D
SfB2	SASSAFRAS GRAVELLY SANDY LOAM, 1 TO 5 PERCENT SLOPES	B
SfC2	SASSAFRAS GRAVELLY SANDY LOAM, 5 TO 10 PERCENT SLOPES	B
SfD2	SASSAFRAS GRAVELLY SANDY LOAM, 10 TO 15 PERCENT SLOPES	B
SfB2	SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES	B
SfC2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES	B
SsE	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES	B
RuB2	RUMFORD LOAMY SAND, 1 TO 5 PERCENT SLOPES	B
RuD2	RUMFORD LOAMY SAND, 10 TO 15 PERCENT SLOPES	B

STORM DRAIN CHART				
INLET NO.	AREA(AC.)	ZONE	'C' FACTOR	IMP.
I-1	0.17	R-SA-8	0.69	66%
I-2	0.34	R-SA-8	0.51	37%
I-3	0.11	R-SA-8	0.75	80%
I-4	0.45	R-SA-8	0.79	88%
I-5	0.24	R-SA-8	0.64	61%
I-6	0.35	R-SA-8	0.75	81%
I-7	0.43	R-SA-8	0.75	70%
I-8	0.39	R-SA-8	0.55	51%
I-9	3.11	R-SA-8	0.66	34%
I-10	0.24	R-SA-8	0.64	61%

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING FENCE
- CENTERLINE OF EXISTING STREAM
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PUBLIC STREET LIGHT
- PRIVATE STREET LIGHT
- VARIABLE WIDTH PUBLIC SEWER, WATER, AND UTILITY EASEMENT
- PUBLIC SWM CREDIT EASEMENT
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (REFORESTATION)
- PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE, AND UTILITY EASEMENT
- RECREATIONAL OPEN SPACE AND AMENITY AREA
- EXISTING WETLANDS
- 25' WETLAND BUFFER
- STREAM BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING MODERATE SLOPES
- EXISTING STEEP SLOPES
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- DRAINAGE DIVIDE

150 WATT HPS VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14" BLACK FIBERGLASS MOUNTED ON A 14" POLE

1 (RHV)	REVISE PROPOSED TOWNHOUSE LAYOUTS	04/05/13
NO.	REVISION	DATE

OWNER
MEADOWRIDGE PROPERTIES INC
1710 WILLOW SPRINGS DRIVE
SYKESVILLE, MD 21784-5600
ATTN: MR. AHSAN S. KHAN
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ATTN: MR. DONALD R. REUWER
(443) 367-0422

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 6/20/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 7/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT 38 DATE

[Signature] 7/3/13
DIRECTOR DATE

REVISED SITE DEVELOPMENT PLAN
STORM DRAIN DRAINAGE AREA MAP
FOX HUNT ESTATES
LOTS 4-35 & OPEN SPACE
LOTS 36 & 37

TAX MAP 37 GRID 3
1ST ELECTION DISTRICT

PARCEL 606
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLICOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 01-15-2013
SCALE: AS SHOWN
W.D. NO.: 04-26

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2014.

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PLAN
SCALE: 1"=50'

NO AS-BUILT INFORMATION THIS SHEET.

AS-BUILT 6/15/16 SDP-07-007

SPECIFICATIONS MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description

- A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
- B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
- C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling

- A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
- B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units

- A. Modular concrete units shall conform to the following architectural requirements:
 - face color - concrete gray - standard manufacturers' color may be specified by the Owner.
 - face finish - sculptured rock face in angular tri-planer or flat configuration. Other face finishes will not be allowed without written approval of Owner.
 - bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 - exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.

- B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.

- C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
 - compressive strength = 3000 psi minimum; absorption = 8% maximum (8% in northern states) for standard weight aggregates;
 - dimensional tolerances = $\pm 1/8"$ from nominal unit dimensions not including rough split face, $\pm 1/16"$
 - unit height - top and bottom planes; unit size - 8" (H) x 18" (W) x 12" (D) minimum;
 - unit weight - 75 lbs/unit minimum for standard weight aggregates;
 - inter-unit shear strength - 1000 pif minimum at 2 psi normal pressure; at 2 psi normal force.
 - geogrid/unit peak connection strength - 1000 pif minimum

- D. Modular concrete units shall conform to the following constructability requirements: (if applicable)
 - vertical setback = $1/8"$ per course (near vertical) or $1"$ per course per the design;
 - alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
 - maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors (if applicable)

- A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protuded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to +100 degrees F. B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material

- A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill

- A. Unit drainage fill shall consist of #57 crushed stone

2.05 Reinforced Backfill

- A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-40

Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.

- B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

- A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe

- A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation

- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.

- B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

- B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

- C. Install shear/connecting devices per manufacturer's

- recommendations.
- D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.

- E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.

- B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.

- C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.

- D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement

- A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.

- B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.

- C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.

- D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.

- E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.

- F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.

- G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

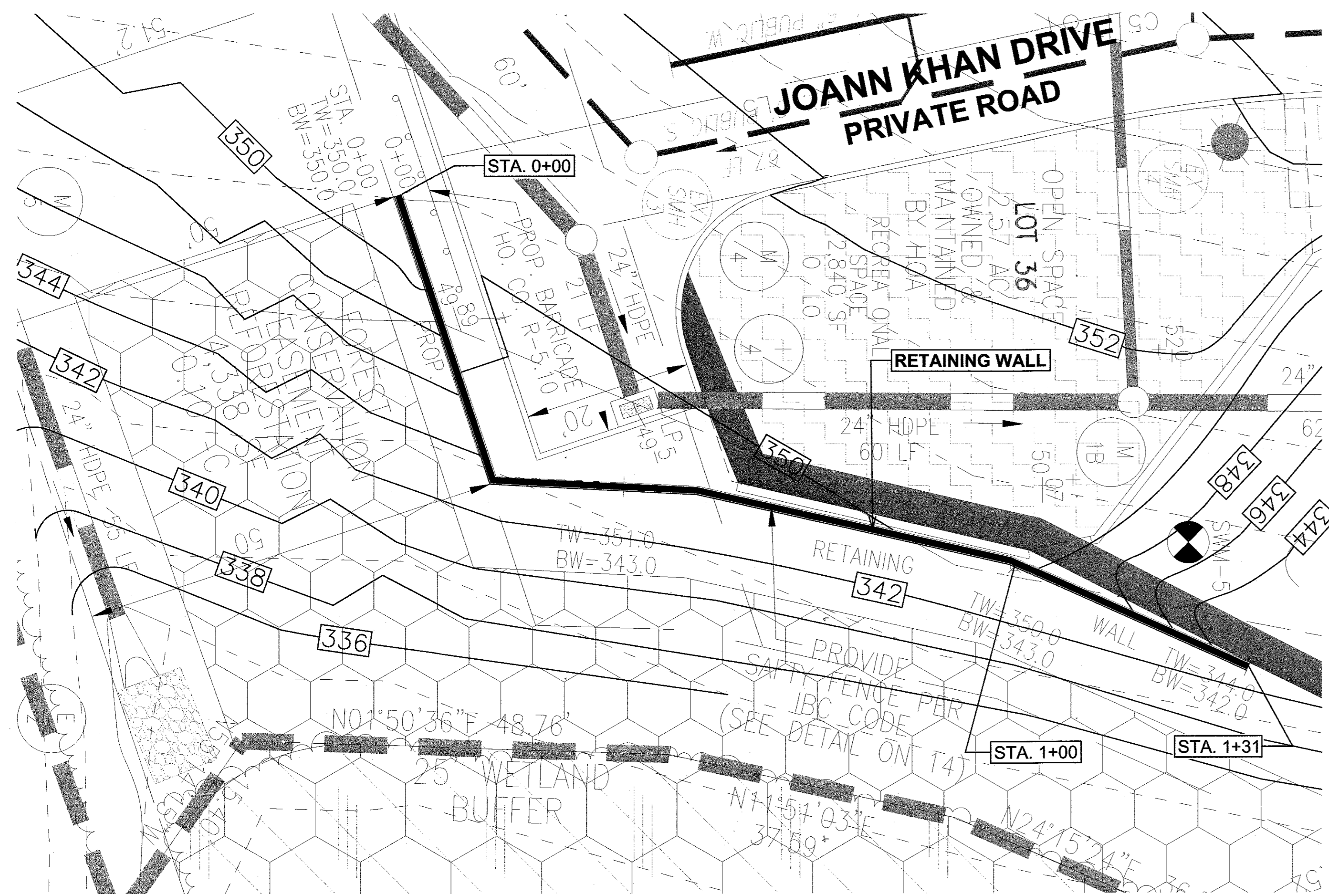
3.06 Cap Installation

- A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

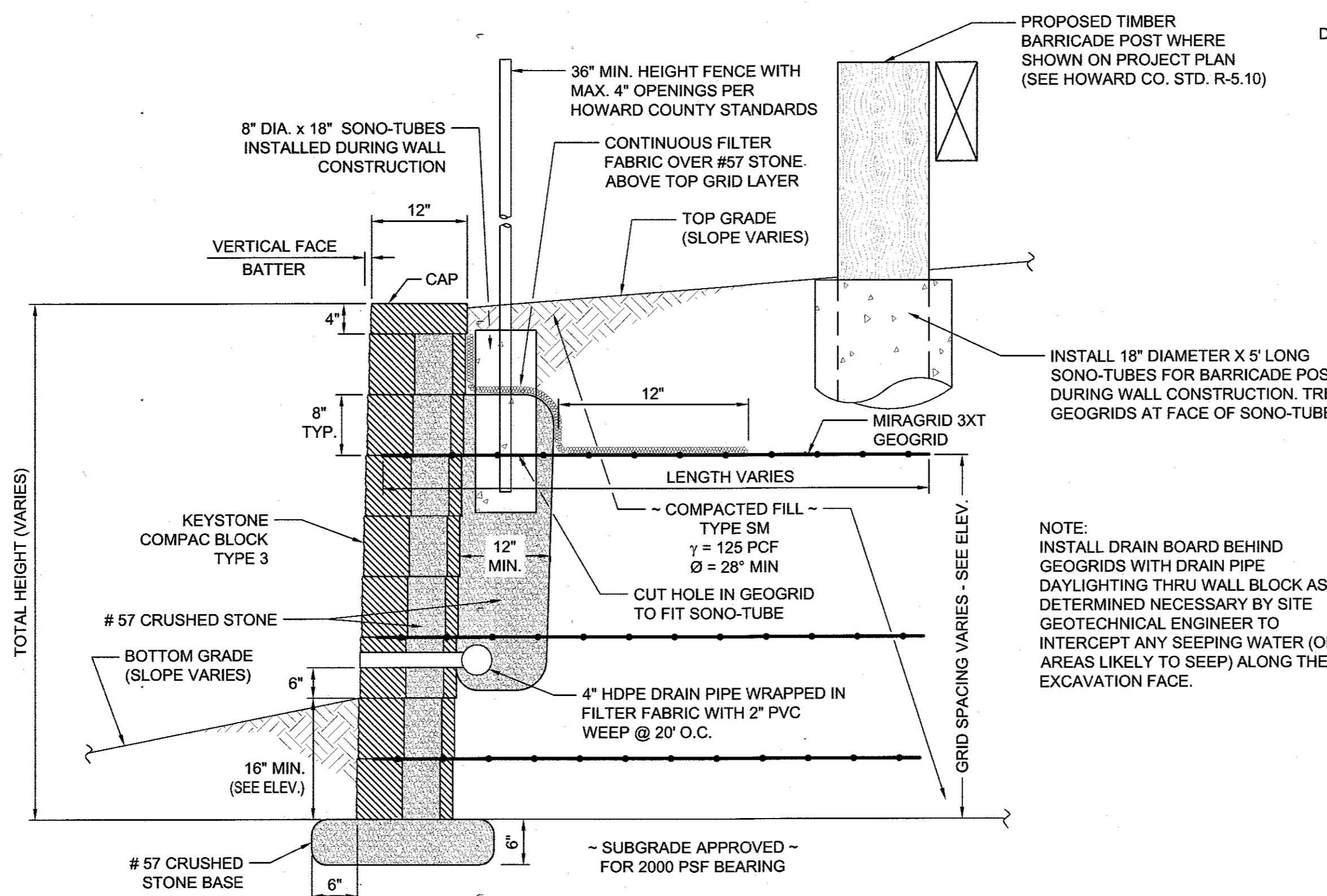
3.07 Field Quality Control

- A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.

- B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.



WALL LOCATION PLAN
1" = 10'



GENERAL NOTES:

1. No trees shall be planted within 10 feet of the top of the retaining wall.
2. Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
3. The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
4. The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
5. Walls shall not be constructed on uncertified fill materials.
6. Walls shall not be constructed within a Howard Co. right-of-way or easement.

OWNER: MEADOWRIDGE PROPERTIES, INC. 1710 WILLOW SPRINGS DRIVE SYKESVILLE, MD 21784-5600 ATTN: MR. AHSAN S. KHAN PHONE: (410) 442-1685

DEVELOPER: 100% LAND, INC. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MD 21042 ATTN: MR. DONALD R. REUWER PHONE: (443) 367-0422

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/11/13

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/13/13

DATE 3.13.13

NO.	REVISION	DATE

RETAINING WALL CONSTRUCTION DETAILS

FOX HUNT ESTATES
LOTS 4-35 & OPEN SPACE
LOTS 36 & 37

TAX MAP 37 GRID 3 PARCEL 606
1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

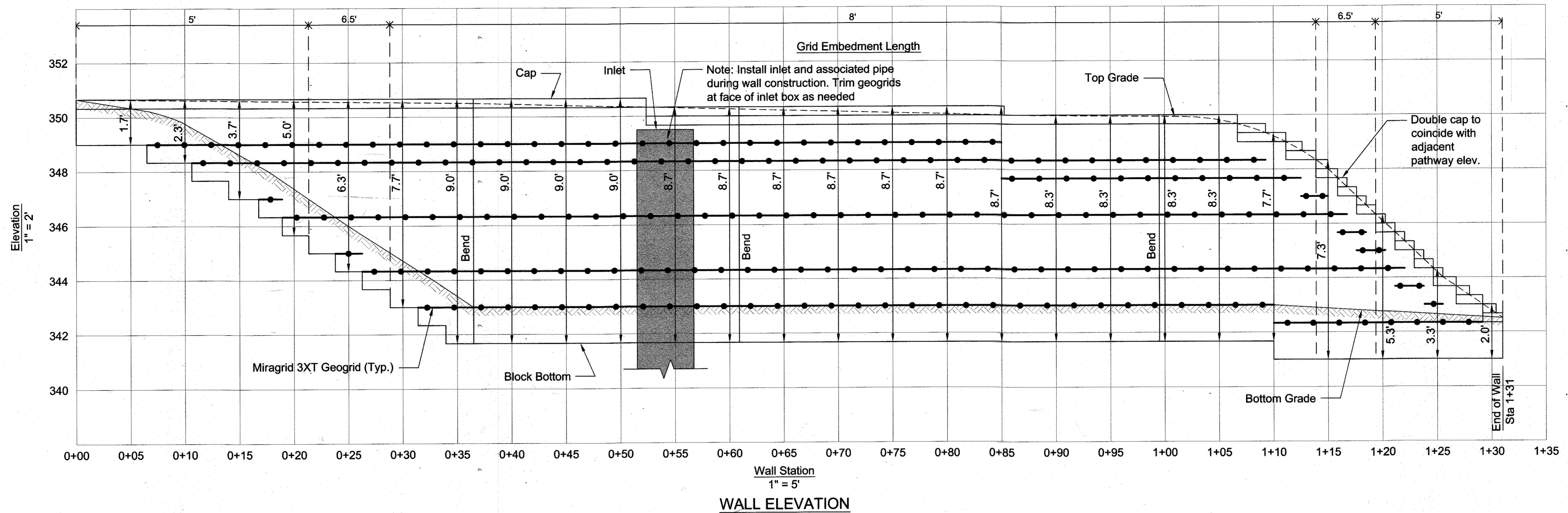
HILLIS-CARNES
ENGINEERING ASSOCIATES

10975 Gullford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098


PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434 EXPIRATION DATE: 05-13-2015


DESIGN BY: AM
DRAWN BY: AM
CHECKED BY: RWS
DATE: 01/04/13
SCALE: AS SHOWN
HCEA NO.: 12475-A


13 SHEET OF 14



APPROVED: DEPARTMENT OF PLANNING AND ZONING


 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/1/13


 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/13/13


 DIRECTOR DATE 3-13-13

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 ATTN: MR. DONALD R. REUWER
 PHONE: (443) 367-0422

NO.	REVISION	DATE

RETAINING WALL ELEVATION
FOX HUNT ESTATES
 LOTS 4-35 & OPEN SPACE
 LOTS 36 & 37

TAX MAP 37 GRID 3
 1ST ELECTION DISTRICT

PARCEL 606
 HOWARD COUNTY, MARYLAND

HILLIS-CARNES
 ENGINEERING ASSOCIATES

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DESIGN BY: AM	PROFESSIONAL CERTIFICATE
DRAWN BY: AM	I HEREBY CERTIFY THAT THESE DOCUMENTS
CHECKED BY: RWS	WERE PREPARED OR APPROVED BY ME, AND
DATE: 01/04/13	THAT I AM A DAILY LICENSED PROFESSIONAL
SCALE: AS SHOWN	ENGINEER UNDER THE LAWS OF THE STATE
HCEA NO.: 12475-A	OF MARYLAND, LICENSE NO. 14434
	EXPIRATION DATE: 05-13-2013

14 SHEET OF 14

NO AS-BUILT INFORMATION THIS SHEET

AS-BUILT 6-15-16 SDP-07-007