LEGEND PROPOSED FIRE HYDRAN

PROPOSED SANITARY TERMINAL MANHOLE

EXISTING SANITARY MANHOL PROPOSED WATER VALVE

> EXISTING WATER VALVE PROPOSED WATER BEND

PROPOSED SEWER HOUSE CONNECTION

PROPOSED WATER HOUSE CONNECTION

UTILITY TEST PIT LOCATION

PUBLIC WATER PROFILES

WATER FITTING CHARTS

1/8° BEND

1 1/2 WHC

12" VALVE

8" VALVE

6" VALVE

4" VALVE

12"X8" TEE

12" x6" TEE

12"X8" CROSS

8"X4" REDUCER

4" SCH. 40 PVC SHC

8" DIP CLASS 52 SAN. LINE

8" SDR 35 PVC SAN. LINE

SANITARY MANHOLE

SAN DROP MANHOLE

AIR RELEASE VALVE

BLOW-OFF VALVE

TAPPING SLEEVE & VALVE

8" TEMPORARY CAP & BUTTRESS

NAME OF UTILITY CONTRACTOR

GEODETIC SURVEY CONTROL -17FA

GEODETIC SURVEY CONTROL - 17F7

ELEV. 476.721'

N 594.948.426

E 1,364,626.770

ELEV. 469.399'

N 595.829.688

E 1,363,088.330

8" TEMPORARY BLOW-OFF, PLUG & BUTTRESS

BENCHMARK

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND

IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE

SPECIFICATIONS AND AS SHOWN ON F-14-124

FIRE HYDRANTS

1/16 ° BEND

STREAM CROSSING DETAILS

1 1/2 COPPER WATERLINE

12" DIP CL 54 WATER

12" DR 18 C900 PVC WATER

8" DR 18 C900 PVC WATER

6" DR 18 C900 PVC WATER

4" DR 18 C900 PVC WATER

SHEET INDEX	
SHEET TITLE	SHEET NUMBER
TITLE SHEET	1
COMPREHENSIVE PLAN VIEW	2
PUBLIC WATER AND SEWER PLAN	3 - 5
PUBLIC SANITARY SEWER PROFILES	6 - 8
PUBLIC SANITARY SEWER STRUCTURE SCHEDULES	9

10 - 13

15 - 16

2255 IF

2835 LF

282 LF

1069 LF

148 LF

10 EA

900

8 EA

8 EA

4 EA

4EA.

ZEA

760 EA

2656 LF

900 UF

3240 LF

25 EA

4 EA

2 EA

BEA

2 EA

4 EA

2 EA

AS-BUILT DATE

DRAFTING DIVISION

1. ALL SEWER MAINS SHALL BE SDR 35 OR SCH. 40 PVC UNLESS OTHERWISE NOTED.

2. ALL MANHOLES SHALL BE 4' - 0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.

4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.

5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT

COVER IS USED, SET TOP OF FRAME 1" - 6" ABOVE FINISHED GRADE UNLESS

6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE

FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT FRAME AND

SURVEY AND

MANUFACTURER SUPPLIER

TYLER /UNION

TYLER/UNION TYLER/UNION

MUELLER

NAT. PIPE+PLASTIC

MCWANE DUCTILE

NAT. PIPE & PLASTK

NAT. PIPE+PLASTY

NAT. PIPE+PLASTIC

MUELLER

MUELLER

MUELLER

MUELLER

TYLER/UNION

THER/UNION

TYLER UNION

TYLER/UNION

TYLER/ UNION

HORNE CONCRETE

NAT PIPE + PLASTIC

MUNAUE DOCTILE

NAT PIPE+PLASTK

CAPITAL FOUNDARY

CAPITAL FOUNDRY

ECLIPSE / KUPFERLE

DEVELOPER

ESTATES AT PATAPSCO PARK, LLC

24012 FREDERICK ROAD

CLARKSBURG, MD 20861

CONTACT: MR. DAN SNYDER

PHONE: (301) 674-8509

SMITH BLAIR

EBAA

EBAA

QUANTITIES TABLE

ESTIMATED

9

59 EA.

2125 L.F.

3101 L.F.

236 L.F.

170 L.F.

9 EA.

8 EA.

9 EA.

4 EA.

2 EA.

2 EA.

76 EA.

2700 L.F

1014 L.F.

3241 L.F.

25 EA.

4 EA

2 EA.

2 EA.

4 EA.

2 EA.

PUBLIC WATER & SEWER FINAL CONSTRUCTION PLANS ESTATES AT PATAPSCO PARK

LOCATION OF SITE ROGERS AVENUE TAX MAP 17, GRID 5, 6, 11 & 12 HOWARD COUNTY, MARYLAND ZONING: R-ED AND R-20, 2ND ELECTION DISTRICT

-TALL POPLAR COURT -SPRING GLEN COURT SAWMILL BRANCH TRAIL CONT. # 10-3500 (ORIGINAL CONSTRUCTION PLANS) CIP # S-6203 CONT. #10-4925-D (PROPOSED UPGRADES) MORNING CHOICE COUR REFERENCE DRAWINGS VICINITY MAP

TYPE OF BUILDING: RESIDENTIAL

NUMBER OF LOTS/PARCELS/UNITS: 59

AREA OF RESIDENTIAL LOT/PARCEL: 113.23 AC

DRAINAGE AREA : PATAPSCO

NUMBER OF S.H.C.: 76 (PHASE

WATER ZONE: 630 W

TEST GRADIENT: 780 PSI

HOWARD COUNTY MONUMENT NO: 17EA ELEV = 476.73 CONTRACT NO. 14-4803-D

GENERAL NOTES

COPYRIGHT ADC THE MAP PEOPLE SCALE: 1"=2000'

DRDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HORIZONTAL AND

AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST

EFOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS

WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL 📆 AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IN INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHA

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLAN

BGE (CONSTRUCTION SERVICES) 410-637-8713 BGE (EMERGENCY) 410-685-0123 BUREAU OF UTILITIES 410-313-4900 COLONIAL PIPELINE COMPANY 410-795-1390 MISS UTILITY 1-800-257-7777

STATE HIGHWAY ADMINISTRATION 410-531-5533 VERIZON 1-800-743-0033

THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE.

2. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, IN A LETTER DATED JANUARY 21, 2015, APPROVED A WAIVER REQUEST OF THE REQUIREMENTS OF SECTION 4.3.B.3.B AND 4.5.E FOR LOTS 61 (NEW 263) THROUGH 66 (NEW 268), LOTS 71 (NEW 273) THROUGH 74 (NEW 276), 97 (NEW 299), AND 101 (NEW 303) (NO BASEMENT GRAVITY SERVICE). AS A RESULT OF TOPOGRAPHY CAUSING DEPTHS OF SEWER IN EXCESS OF 20 FEET, BASEMENT SEWER SERVICE CANNOT BE PROVIDED TO THESE PROPOSED LOTS. FOR THESE LOTS: GRAVITY SEWER SERVICE TO BE PROVIDED TO FIRST FLOOR ONLY; BASEMENT SERVICE TO BE PROVIDED BY PRIVATE ON-SITE PUMP. THE APPROVAL AND INSPECTION OF ON-SITE PUMPING UNITS INCLUDES THE DEPARTMENT OF INSPECTION, LICENSES AND

3. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, IN A LETTER DA (ED JANUARY 21, 2015, APPROVED A WAIVER REQUEST OF THE REQUIREMENTS OF SECTION 3.3.B.5 (DEPTH OF COVER OVER WATER MAINS). THE WAIVER REQUEST TO ALLOW AN INCREASED DEPTH OF COVER OVER THE WATER MAIN CROSSING IN THE FOREST CONSERVATION EASEMENT, BETWEEN STATION 13+23 AND STATION 14+00 OF WATERLINE 'E', TO TEN (10) FEET IS APPROVED WITH THE FOLLOWING LIMITATIONS:

DR-14, C-900 PVC PIPE, WITH RESTRAINED JOINTS, SHALL BE USED BETWEEN STATION 13+06 AND STATION 14+20. THE MAXIMUM COVER WITHIN THE LIMITS DESCRIBED ABOVE SHALL NOT EXCEED TEN (10) FEET.

WATER NOTES

1. ALL WATER MAINS TO BE P.V.C. C900 UNLESS OTHERWISE NOTED.

2. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.

. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES

ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.

FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

TRACER WIRES AND CONTINUITY TEST STATION SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL

FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATIONS TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH PIPE MATERIALS CERTIFICATIONS OR SHOP DRAWING PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT, ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.

UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV. STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINS AND HARNESSES, TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE

PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERT; ON LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.

1. ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFECTION OF 3-DEGREES (1 1/2-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL

FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR18 OR EQUAL.

12. WHEN PVC HIGH DEFECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFECTION COUPLINGS AND 5 DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC.

13. EACH DWELLING WILL BE SERVED BY A 1-1/2" DIAMETER WHC, WITH A 1" METER WHICH WILL BE LOCATED AT THE PROPERTY LINE. THE PREFERRED LOCATION OF THE OUTSIDE WATER METER SETTING IS IN A GRASS AREA WITH THE ROAD RIGHT-OF-WAY AND OUTSIDE OF TRAFFIC BEARING AREAS.

14. THE 12" TAPPING CONNECTION ALONG STONE HOUSE DRIVE WILL RESULT IN SERVICE INTERRUPTION TO THE UNITS LOCATED AT THE FOLLOWING ADDRESSES 8781, 8783, 8784, 8785, 8786, 8787, 8788, 8789, 8790, 8791, 8792, 8794, 8795, 8797, 8798, 8799, 8800, 8801, 8802, 8803, 8804, 8807, 8809, 8811, 8813, 8815, 8817, 882,1 8823 8825 8827, AND 88229. THE EXISTING SERVICE TO THESE UNITS SHALL BE INTERRUPTED ON A WEEKDAY, ONLY BETWEEN THE HOURS OF 9:00AM AND 2:00PM. SHOULD THE TAPPING WORK EXTEND MULTIPLE DAYS, SERVICE MUST BE RESTORED BETWEEN WORKING DAYS. TWO (2) WEEK NOTICE OF SERVICE INTERRUPTION SHALL BE PROVIDED BY THE CONTRACTOR, IN WRITING, TO ALL UNITS IMPACTED BY THE INTERRUPTION.



(A 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-85)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY. MARYLAND

CHIEF, DEVELOPMENT FNGINFERING DIVISION, DAT

901 DULANEY VALLEY ROAD, SUITE 80 **TOWSON. MARYLAND 21204** Phone: (410) 821-7900

(410) 821-7987

www.BohlerEngineering.com



DE0 14			,	
DES: J.A.		-		
DRN: R.L.B.				
	3	4 11/17	AS-BUILTS	RCI
CHK: B.R.R.	2	4/13/16	REDLINE REVISION - PHASED PLAN	BRR
	1	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR
DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY

WP-13-048

F-14-124

CONT. 14-4966-D (PHASE II W&S)

CONT. 14-4967-D (PHASE III W&S)

PHASE I

600' SCALE MAP NO

ESTATES AT PATAPSCO PARK ROGERS AVENUE BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)

BUILDABLE LOTS 321 - 337 (SAN. ONLY) 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO.: 14-4803-D

SHEET

SHOWN

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

3. FORCE MAINS SHALL BE D.I.P. ONLY.

OTHERWISE NOTED ON THE DRAWINGS.

OWNER

ESTATES AT PATAPSCO PARK, LLC

24012 FREDERICK ROAD

CLARKSBURG, MD 20861

CONTACT: MR. DAN SNYDER

ROFESSIONAL CERTIFICATION

I BRANDON R. ROWE, HEREBY CERTIFY THAT THESE

DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND

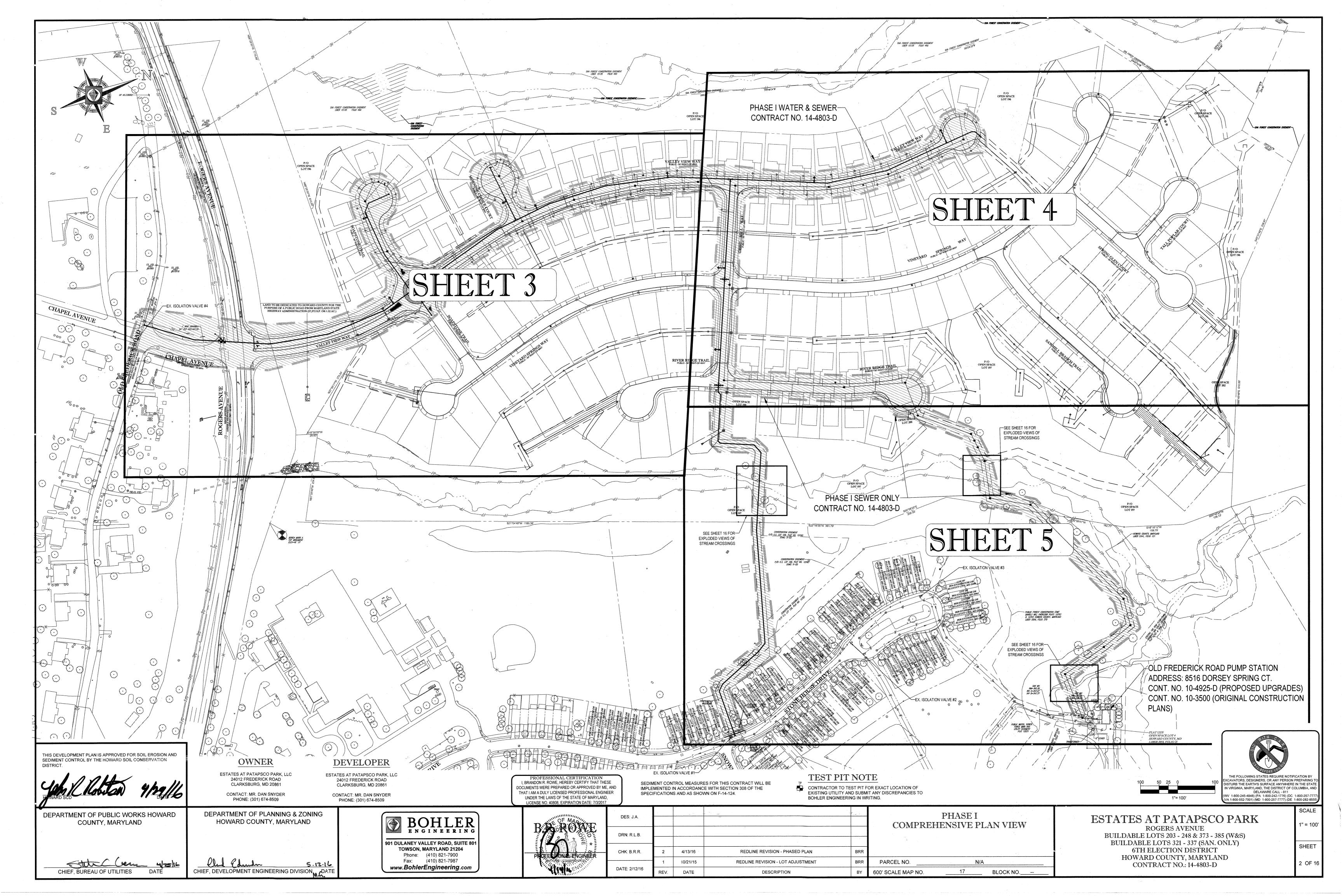
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER

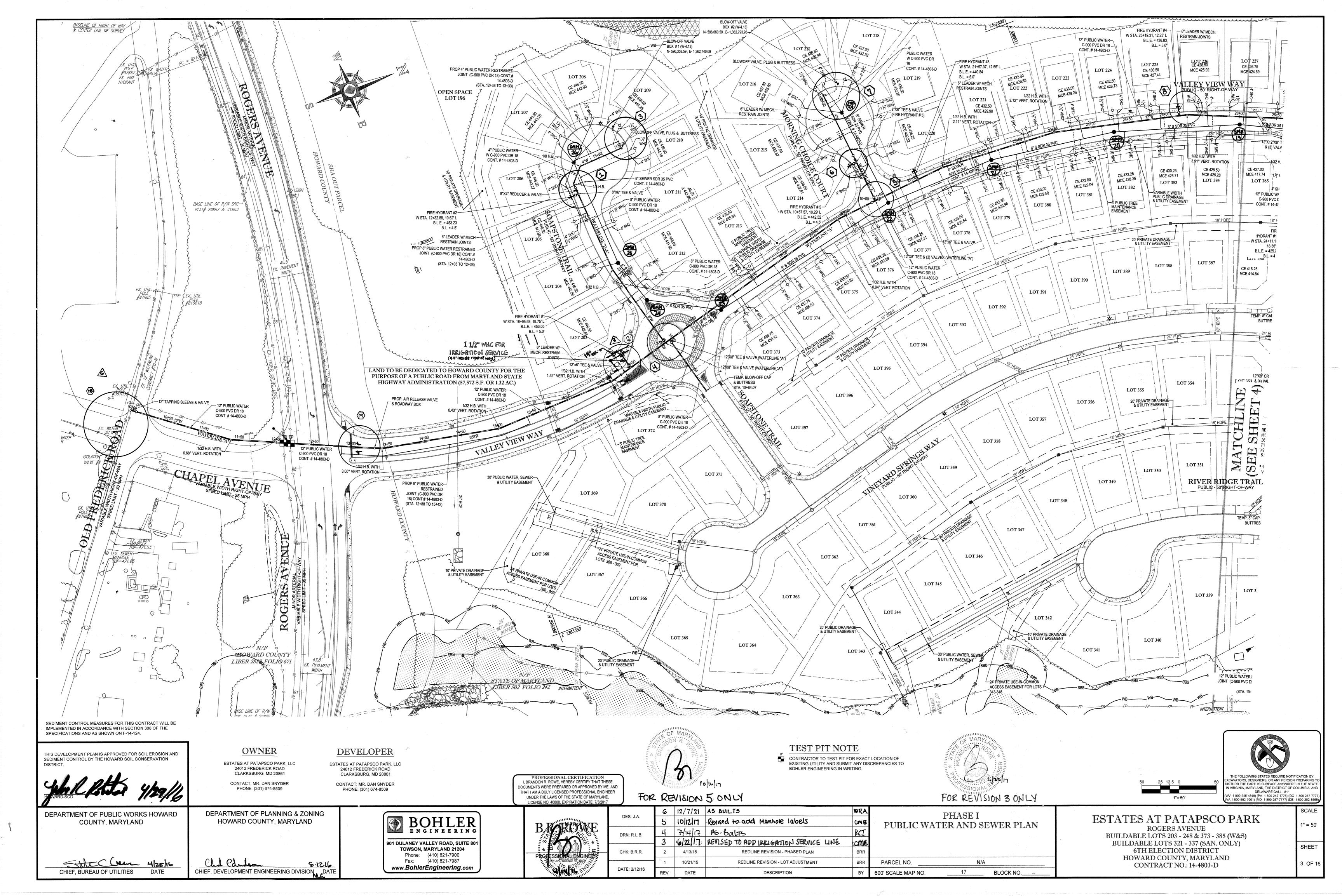
UNDER THE LAWS OF THE STATE OF MARYLAND,

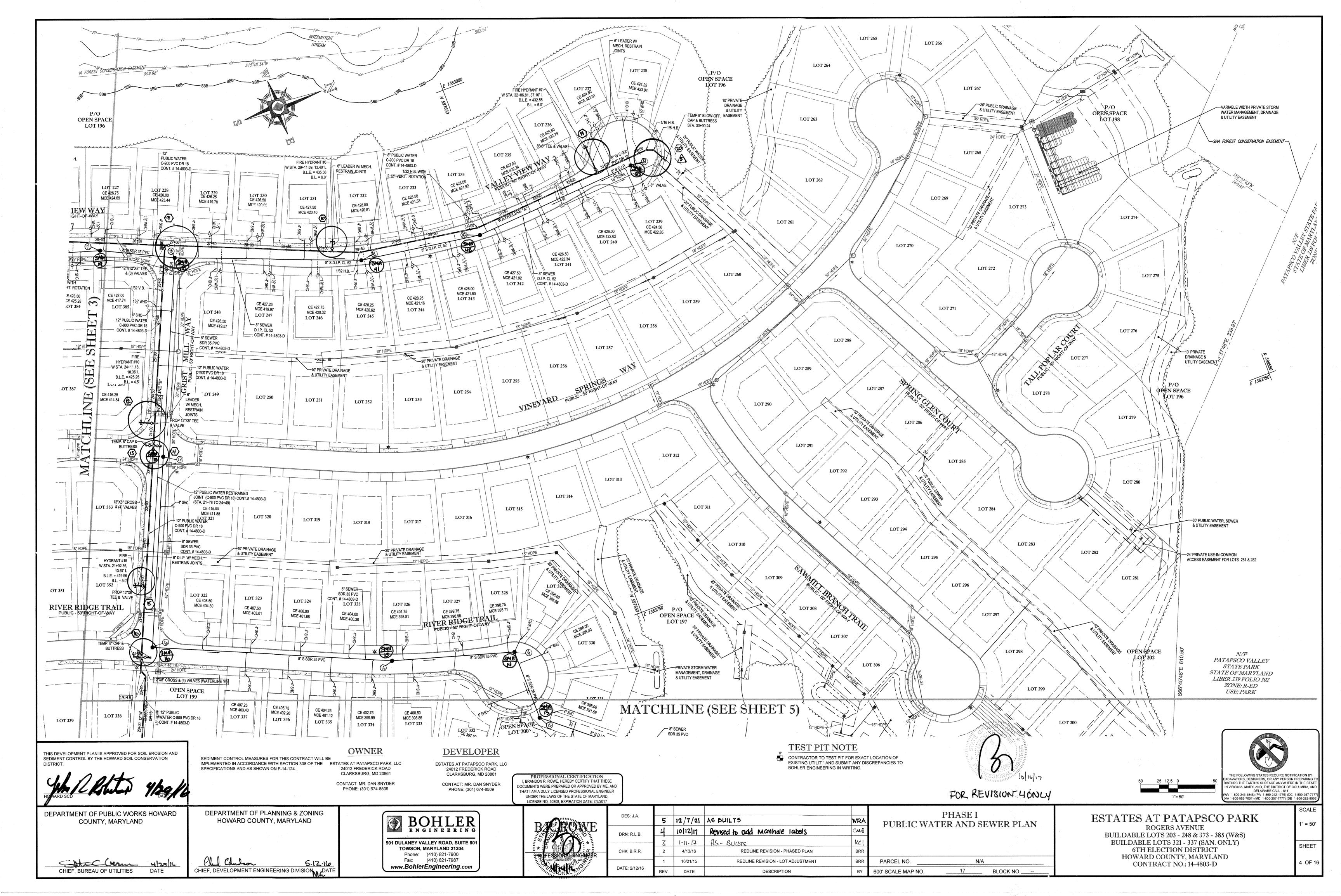
LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

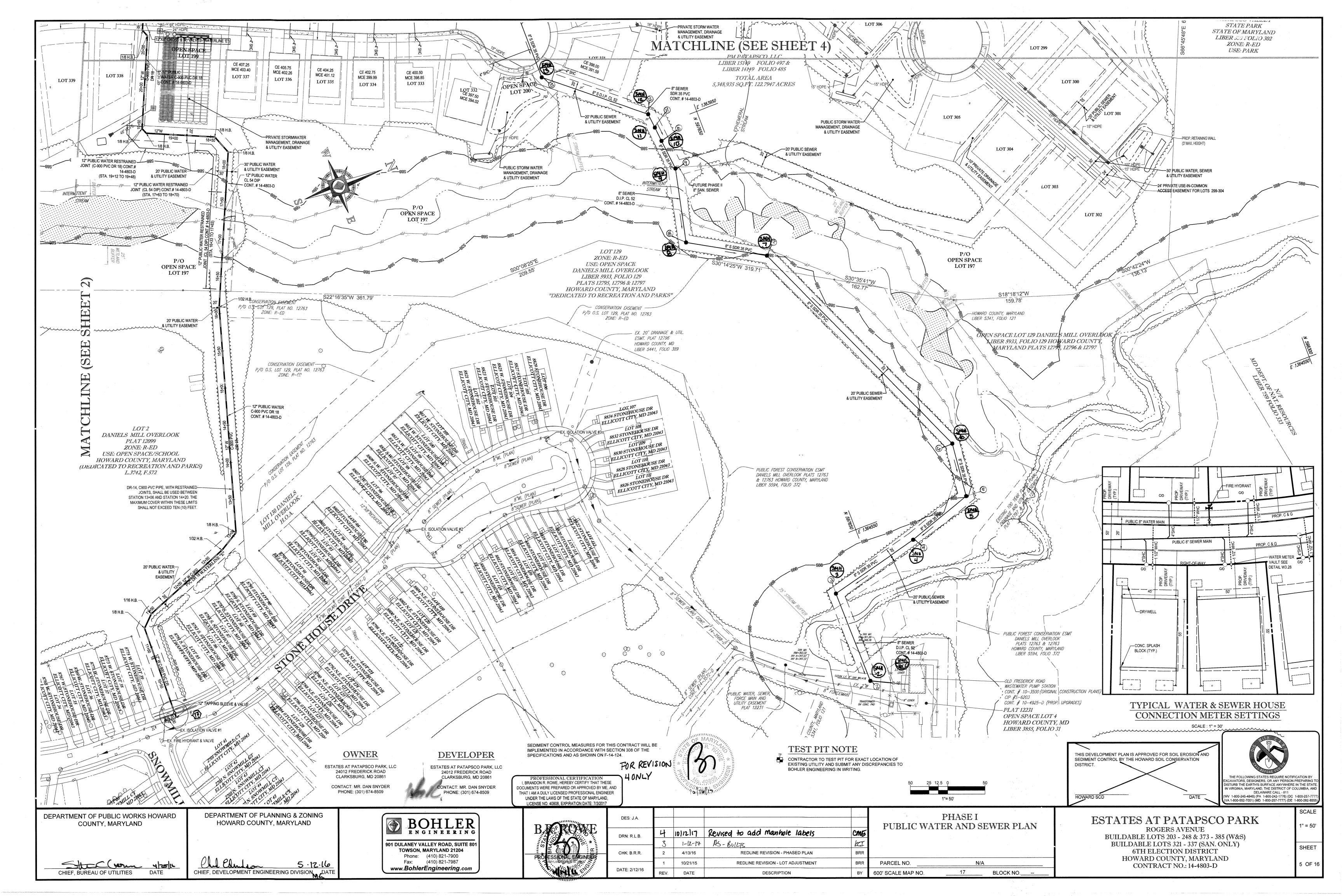
PARCEL NO.

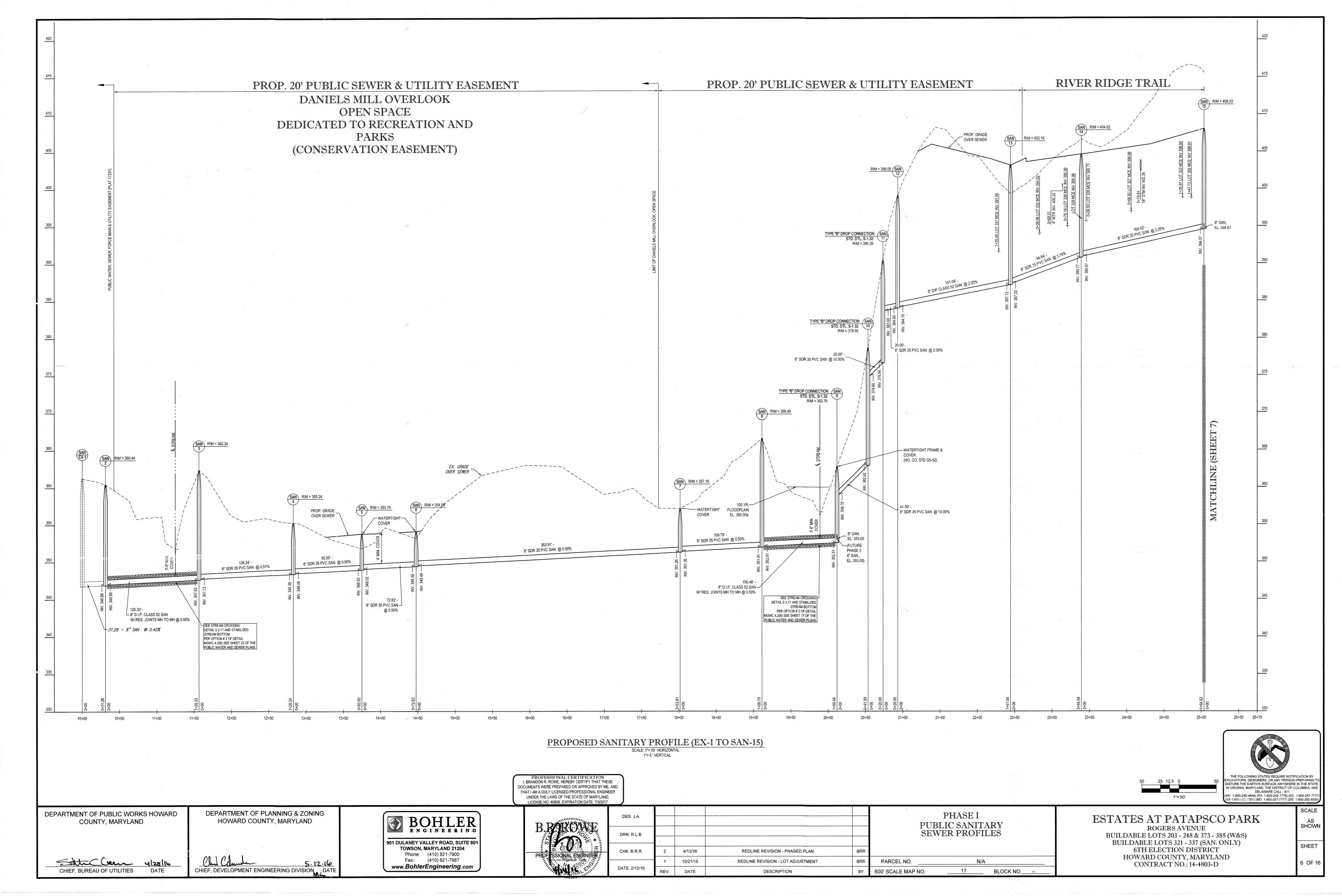
BLOCK NO.

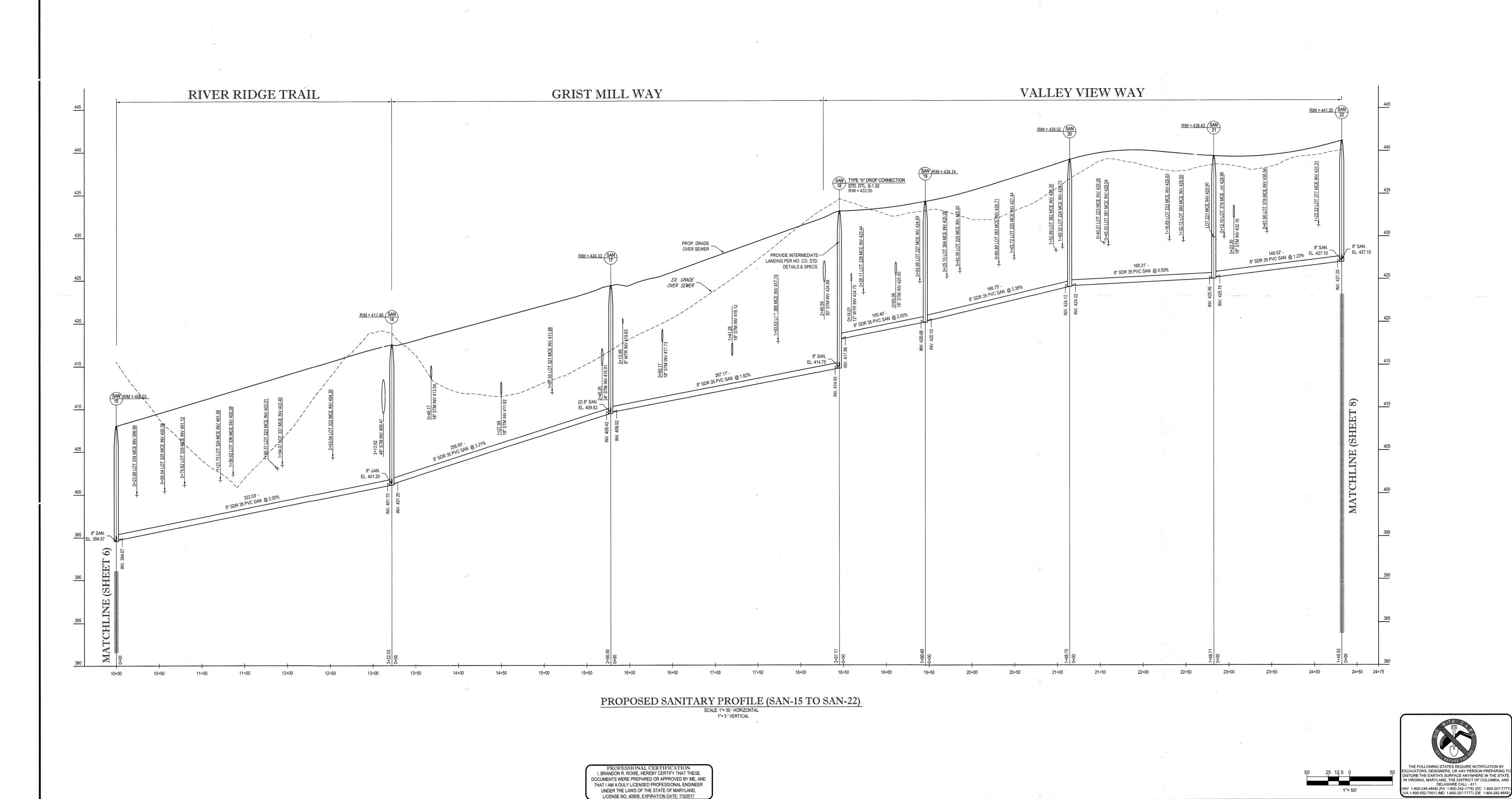












DES: J.A.

4/13/16

10/21/15

REDLINE REVISION - PHASED PLAN

REDLINE REVISION - LOT ADJUSTMENT

DESCRIPTION

PHASE I

PUBLIC SANITARY SEWER PROFILES

BLOCK NO. ____

PARCEL NO.

600' SCALE MAP NO.

ESTATES AT PATAPSCO PARK

ROGERS AVENUE BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S) BUILDABLE LOTS 321 - 337 (SAN. ONLY)

6TH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

CONTRACT NO.: 14-4803-D

AS SHOWN

SHEET

7 OF 16

DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

HOWARD COUNTY, MARYLAND

901 DULANEY VALLEY ROAD, SUITE 801

TOWSON, MARYLAND 21204

Phone: (410) 821-7900

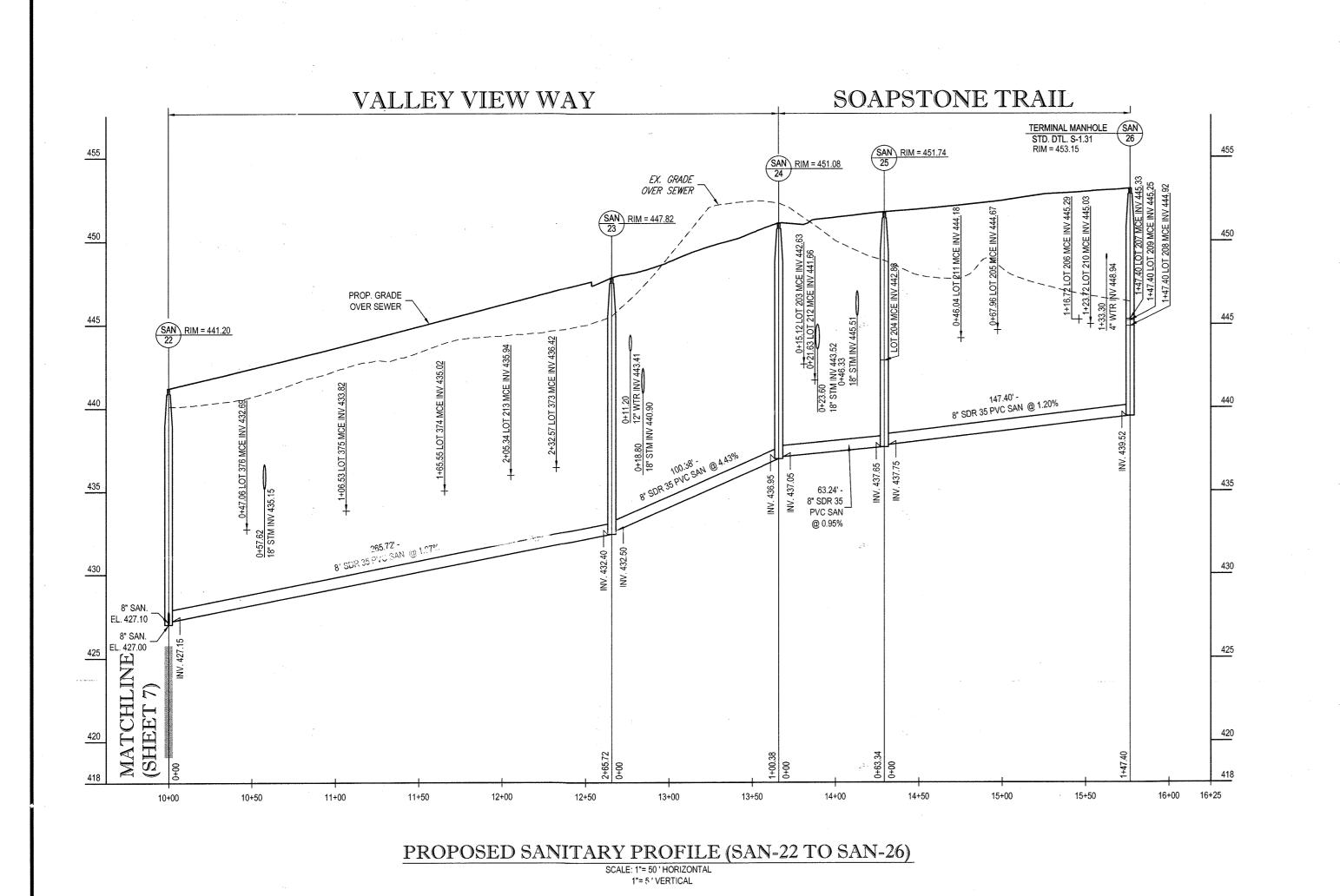
Fax: (410) 821-7987

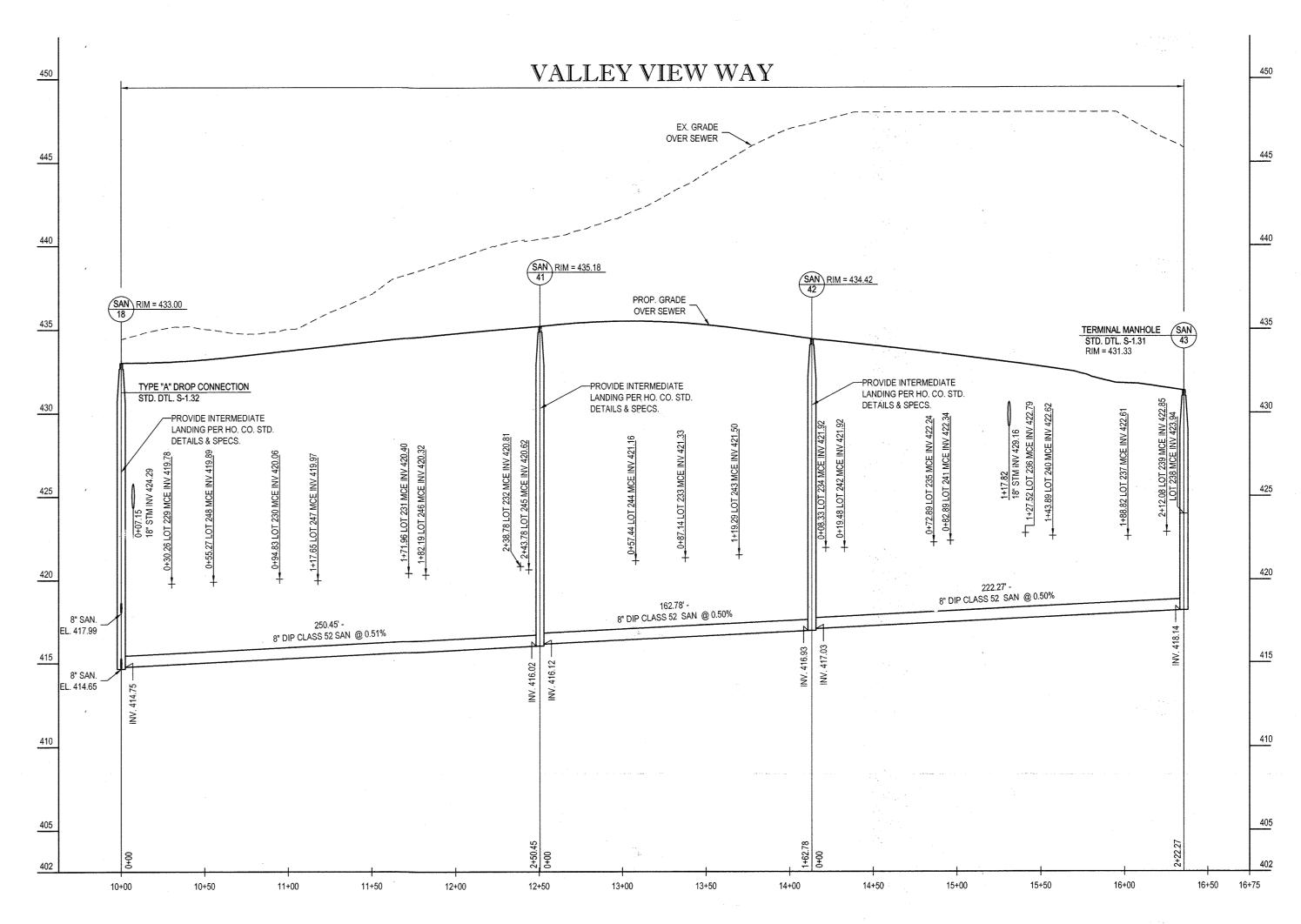
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DEPARTMENT OF PUBLIC WORKS HOWARD

COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

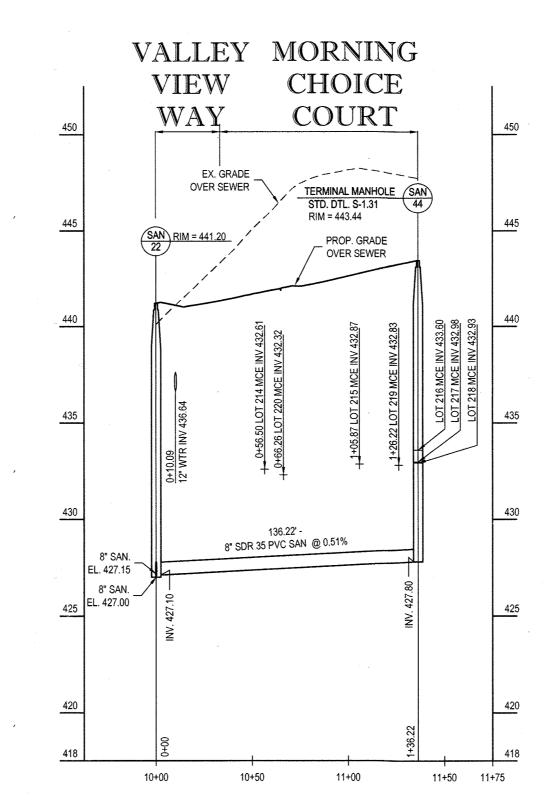




PROPOSED SANITARY PROFILE (SAN-18 TO SAN-43)

SCALE: 1°= 50 ' HORIZONTAL

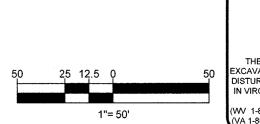
1°= 5 ' VERTICAL



PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE
DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

PROPOSED SANITARY PROFILE (SAN-22 TO SAN-44)

SCALE: 1"= 50' HORIZONTAL
1"= 5' VERTICAL





DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

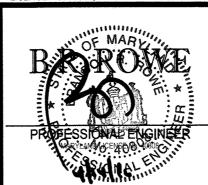
DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE

901 DULANEY VALLEY ROAD, SUITE 801
TOWSON, MARYLAND 21204
Phone: (410) 821-7900

Fax: (410) 821-7987

www.BohlerEngineering.com



DES: J.A.			· · ·		PHASE I PUBLIC SANITARY
DRN: R.L.B.	,				SEWER PROFILES
CHK: B.R.R.	2	4/13/16	REDLINE REVISION - PHASED PLAN	BRR	
	1 .	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR	PARCEL NO. N/A
DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO BLOCK NO

ESTATES AT PATAPSCO PARK ROGERS AVENUE

ROGERS AVENUE
BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)
BUILDABLE LOTS 321 - 337 (SAN. ONLY)
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO.: 14-4803-D

AS SHOWN SHEET 8 OF 16

Š	SANITARY ST	RUCTURE	SCHEDU	LE
NAME	TYPE	NORTHING EASTING	RIM ELEV. (FT.)	INVERTS
2	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597596.52 E 1364745.93	360.44	INV IN = 346.99 INV OUT = 346.89
3	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597594.72 E 1364620.61	362.34	INV IN = 347.72 INV OUT = 347.62
4	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597717.20 E 1364590.03	355.24	INV IN = 348.46 INV OUT = 348.36
5	SHALLOW 48" MANHOLE (HO. CO. STD G-5.12)	N 597804.42 E 1364560.75	353.75	INV IN = 349.02 INV OUT = 348.92
6	SHALLOW 48" MANHOLE (HO. CO. STD G-5.12)	N 597812.12 E 1364488.34	354.08	INV IN = 349.49 INV OUT = 349.39
7	SHALLOW 48" MANHOLE (HO. CO. STD G-5.12)	N 597669.19 E 1364164.57	357.16	INV IN = 351.36 INV OUT = 351.26
8	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597574.24 E 1364109 46	366.49	INV IN = 352.01 INV OUT = 351.91
9	48" MANHOLE DROP CONN. TYPE 'B' (HO. CO. STD S-1.32)	N 597596.19 E 1364011.41	362.76	INV IN = 358.76 INV IN = 353.00 INV OUT = 352.51
10	48" MANHOLE DROP CONN. TYPE 'A' (HO. CO. STD S-1.32)	N 597591.96 E 1363970.03	378.66	INV IN = 374.66 INV OUT = 362.92
11	48" MANHOLE DROP CONN. TYPE 'A' (HO. CO. STD S-1.32)	N 597589.92 E 1363950.13	390.39	INV IN = 383.60 INV OUT = 376.66
12	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597587.88 E 1363930.24	399.05	INV IN = 384.10 INV OUT = 384.00
13	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597472.10 E 1363833.24	403.16	INV IN = 387.22 INV OUT = 387.12
14	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597472.05 E 1363738.60	404.62	INV IN = 390.87 INV OUT = 390.77
15	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597314.42 E 1363691.15	408.03	INV IN = 394.67 INV OUT = 394.57
16	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597020.40 E 1363559.77	417.49	INV IN = 401.20 INV IN = 401.20 INV OUT = 401.10
17	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597124.80 E 1363326.03	424.33	INV IN = 409.52 INV IN = 409.52 INV IN = 409.52 INV OUT = 409.42
18	48" MANHOLE DROP CONN. TYPE 'A' (HO. CO. STD S-1.32) PROVIDE INTERMEDIATE LANDING PER HO. CO. STD. DETAILS & SPECS.	N 597233.76 E 1363082.08	433.00	INV IN = 417.99 INV IN = 414.75 INV OUT = 414.65
19	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 597143.91 E 1363037.27	434.14	INV IN = 420.10 INV OUT = 420.00
20	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596982.95 E 1362986.61	439.02	INV IN = 424.22 INV GUT = 424.12
21	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596816.27 E 1362963.20	439.43	INV IN = 425.16 INV OUT = 425.06
22	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596666.82 E 1362967.61	441.20	INV IN = 427.15 INV IN = 427.10 INV OUT = 427.00
23	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596406.81 E 1363022.39	447.82	INV IN = 432.50 INV OUT = 432.40
24	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596318.57 E 1362974.54	451.08	INV IN = 437.05 INV OUT = 436.95
24	(HO. CO. STD G-5.12)	E 1362974.54	401.00	INV OU

NAME	TYPE	NORTHING EASTING	RIM ELEV. (FT.)	INVERTS
25	STANDARD 48" MANHOLE (HO. CO. STD G-5.12)	N 596299.85 E 1362914.13	451.70	INV IN = 437.75 INV OUT = 437.65
26	TERMINAL MANHOLE (HO. CO. STD S-1.31)	N 596292.24 E 1362766.93	453.15	INV OUT = 439.52
41	STANDARD 48" MANHOLE (HO. CO. STD. G-5.12) PROVIDE INTERMEDIATE LANDING PER HO. CO. STD. DETAILS & SPECS.	N 597466.57 E 1363174.38	435.18	INV IN = 416.12 INV OUT = 416.02
42	STANDARD 48" MANHOLE (HO. CO. STD. G-5.12) PROVIDE INTERMEDIATE LANDING PER HO. CO. STD. DETAILS & SPECS.	N 597627.42 E 1363199.39	434.42	INV IN = 417.03 INV OUT = 416.93
43	TERMINAL MANHOLE (HO. CO. STD S-1.31)	N 597849.19 E 1363184.48	431.33	INV OUT = 418.14
44	TERMINAL MANHOLE (HO. CO. STD S-1.31)	N 596651.67 E 1362832.24	443.44	INV OUT = 427.80

- Parket - P							SHC TABLE						*****	Denotes Lo	ot with SH	IC conne	ction to Sa	an. MH	
	LOT	FF ELEV.	CELLAR ELEV.	INV.@ MAIN	1	SHC SLOPE WITHIN ROW	INVERT@ ROW	SHC SLOPE WITHIN LOT	MAX. SHC LENGTH (FT)	2.50 FT BELOW CELLAR	MIN. CELLAR ELEV. (MCE)	CONNECTION TYPE	LOT	A BETWEEN CE & MCE	INV.OF DHC@ MAIN	SHC SLOPE WITHIN ROW	INVERT @ ROW	CELLAR GRAVITY SERVICE	FLOOR TO FLOOR
-	203	456.50	446.50	437.19	30.26	4.0%	438.40	4.0%	116.60	2.50	445.56	STD SHC	203	0.94		KOAA		YES	10-FT
	204	456.50	446.50	437.75	30.28	4.0%	438.96	4.0%	100.34	2.50	445.47	STD SHC	204	1.03				YES	10-FT
	205	456,50	446.50	438.57	31.67	3.0%	439.52	3.0%	88.30	2.50	444.67	STD SHC	205	1.83				YES	10-FT
-	206	456.50	446.50	439.15	28.33	3.0%	440.00	3.0%	92.98	2.50	445.29	STD SHC	206	1.21				YES	10-FT 10-FT
	207	456.50 456.00	446.50 446.00	439.52 439.52	34.87 66.30	3.0%	440.57 440.85	2.0%	75.30 78.50	2.50	445.33	STD SHC	207	1.08				YES	10-FT
-	209	456.00	446.00	439.52	74.83	2.0%	441.02	2.0%	86.50	2.50	445.25	STD SHC	209	0.75				YES	10-FT
	210	456.00	446.00	439.23	81.11	2.0%	440.85	2.0%	83.80	2.50	445.03	STD SHC	210	0.97				YES	10-FT
	211	455.50	445.50	438.30	17.85	2.0%	438.66	2.0%	150.90	2.50	444.18	STD SHC	211	1.32				YES	10-FT
-	212	455.00	445.00	437.25	19.35	4.0%	438.02	4.0%	76.20	2.50	443.57	STD SHC	212	1.43				YES YES	10-FT 10-FT
F	213	449.00 446.00	439.00 436.00	431.21	32.00	4.0%	432.36 428.67	4.0%	82.60 104.00	2.50	438.16	STD SHC	213	0.84				YES	10-FT
-	215 ′	447,00	437.00	427.64	57.94	4.0%	429.96	4.0%	78.50	2.50	435.60	STD SHC	215	1.40				YES	10-FT
	216	447.50	437.50	427.90	55.60	4.0%	430.12	4.0%	104.30	2.50	436.80	STD SHC	216	0.70				YES	10-FT
-	217	446.50	436.50	427.90	47.80	4.0%	429.81	4.0%	81.00	2.50	435.55	STD SHC	217	0.95				YES	10-FT
-	218	447.00 446.50	437.00 436.50	427.90 427.75	44.70	4.5%	429.91 429.68	4.5%	82.00 79.40	2.50	436.10 435.36	STD SHC	218	0.90				YES YES	10-FT 10-FT
	220	446.25	436.25	427.44	18.90	4.5%	428.29	4.5%	100.00	2.50	435.29	STD SHC	220	0.96				YES	10-FT
	221	442.50	432.50	425.16	27.40	3.5%	426.12	3.5%	84.80	2.50	431.59	STD SHC	221	0.91				YES	10-FT
	222	443.00	433.00	424.80	31.70	4.0%	426.07	4.0%	84.80	2.50	431.96	STD SHC	222	1.04				YES	10-FT
	223	443.00	433.00	424.42	32.06	4.0%	425.70	4.0%	84.80	2.50	431.59	STD SHC	223	1.41				YES	10-FT
-	224	442.50 440.50	432.50 430.50	423.92 422.57	30.49	4.0%	425.14 423.91	4.0%	84.80 84.80	2.50	431.03	STD SHC	224	0.70				YES	10-FT 10-FT
-	226	438.50	428.50	422.57	33.00	3.5%	423.31	3.5%	84.80	2.50	429.60	STD SHC	226	0.82				YES	10-FT
	227	436.75	426.75	419.87	31.16	3.0%	420.80	3.0%	84.80	2.50	425.85	STD SHC	227	0.90				YES	10-FT
	228	436.00	426.00	418.55	34.50	2.0%	419.24	3.0%	84.80	2.50	424.28	STD SHC	228	1.72				YES	10-FT
	229 /	436.25	426.25	414.90	34.30	5.0%	416.62	5.0%	84.80	2.50	423.36	DROP TYPE A	229	2.90	417.80	2.0%	418.48	YES	10-FT
-	230	436.50	426.50	415.23	31.50	5.0%	416.81	5.0%	84.80	2.50	423.55 423.82	DROP TYPE A	230	3.69	418.19	2.0%	418.82	YES	10-FT 10-FT
-	231	437.50 438.00	427.50 428.00	415.62 415.97	28.90 32.17	5.0%	417.58	5.0%	85.00 84.80	2.50	423.82	DROP TYPE A	232	3.68	419.65	2.0%	420.29	YES	10-FT
-	233	438.50	428.50	416.56	28.00	5.0%	417.96	5.0%	85.70	2.50	424.75	DROP TYPE A	233	3.76	420.32	2.0%	420.88	YES	10-FT
	234	438.00	428.00	417.07	31.90	5.0%	418.67	5.0%	85.50	2.50	425.44	DROP TYPE A	234	2.56	419.63	2.0%	420.27	YES	10-FT
_	235	437.00	427.00	417.39	28.80	5.0%	418.83	5.0%	88.50	2.50	425.76	STD SHC	235	1.25				YES	10-FT
-	236	435.50	425.50	417.67	31.00	3.0%	418.60	3.0%	100.00	2.50	424.10	STD SHC	236	1.40				YES	10-FT 10-FT
-	237	434.50	424.50 424.25	417.97	65.40 71.80	2.0%	419.68	2.0%	83.00 88.40	2.50	423.44	STD SHC	238	0.31				YES	10-FT
	239	434.50	424.50	418.09	37.30	2.5%	419.02	2.5%	75.80	2.50	423.42	STD SHC	239	1.08				YES	10-FT
	240	436.00	426.00	417.75	19.40	4.0%	418.53	4.0%	99,00	2.50	424.99	STD SHC	240	1.01				YES	10-FT
-	241	436.50	426.50	417.44	22.80	4.5%	418.47	4.5%	97.00	2.50	425.33	STD SHC	241	1.17				YES	10-FT
-	242	437.50 438.00	427.50 428.00	417.13	20.90	5.0%	418.18	5.0%	93.80	2.50	425.37 424.91	DROP TYPE A	242	3.09	419.81	2.0%	420.26	YES	10-FT 10-FT
-	243 ,	438.25	428.25	416.72	23.20	5.0%	417.57	5.0%	89.50	2.50	424.55	DROP TYPE A	244	3.70	420.12	2.0%	420.58	YES	10-FT
-	245	438.25	428.25	415.99	19.30	5.0%	416.96	5.0%	87.10	2.50	423.81	DROP TYPE A	245	4.44	420.43	2.0%	420.82	YES	10-FT
	246	437.75	427.75	415.67	22.70	5.0%	416.81	5.0%	84.90	2.50	423.55	DROP TYPE A	246	4.20	419.87	2.0%	420.32	YES	10-FT
	247	437.25	427.25	415.35	21.10	5.0%	416.41	5.0%	84.90	2.50	423.15	DROP TYPE A	247	4.10	419.45	2.0%	419.87	YES	10-FT
-	248 321	436.50 429.00	426.50 419.00	407.22	18.40	5.0%	415.93	5.0%	84.70	2.50	422.67 415.11	DROP TYPE A	321	3.83	418.85	2.0%	419.21	YES	10-FT 10-FT
-	322	418.50	408.50	399.72	18.90	5.0%	400.67	5.0%	85.00	2.50	407.42	STD SHC	322	1.08	711,71	2.070	311,40	YES	10-FT
-	323	417.50	407.50	398.43	18.90	5.0%	399.38	5.0%	85.00	2.50	406.13	STD SHC	323	1.38				YES	10-FT
	324	416.00	406.00	397.10	18.90	5.0%	398.05	5.0%	85,00	2.50	404.80	STD SHC	324	1.20				YES	10-FT
	325	414.00	404.00	395.80	18.90	5.0%	396.75	5.0%	85.30	2.50	403.51	STD SHC	325	0.49				YES	10-FT
-	326 327	411.75	401.75 399.75	394.19 392.37	20.70	3.5%	395.02 393.07	4.0% 3.5%	85.50 85.50	2.50	400.94 398.57	STD SHC	326	1.18				YES	10-FT 10-FT
	328	409.75	399.75	391.02	23.85	4.0%	391.97	4.0%	85.50	2.50	397.89	STD SHC	328	0.86				YES	10-FT
	329	408.00	398.00	390.87	24.50	3.0%	391.61	3.0%	106.00	2.50	397.29	STD SHC	329	0.71				YES	10-FT
	330	408.00	398.00	390.08	42.90	3.5%	391.58	3.5%	78,00	2.50	396.81	STD SHC	330	1.19				YES	10-FT
	331	408.00	398.00	386.81	15.80	5.0%	387.60	5.0%	98.00	2.50	395.00	DROP TYPE A	331	3.00	389.81	2.0%	390.13	YES	10-FT
	332	407.50	397.50 400.50	388.68 393.93	61.70 31.80	2.0%	391.15 394.57	4.0% 2.0%	89.00	2.50	396.87 398.85	STD SHC	332	1.65				YES	10-FT 10-FT
-	333	410.50	400.50	393.93	31.80	3.5%	396.26	3.5%	85.30	2.50	401.75	S TD SHC	334	1.00				YES	10-F1
	335	414.25	404.25	396.26	32.80	4.0%	397.57	4.0%	85.00	2.50	403.47	STD SHC	335	0.78				YES	10-FT
	336	415.75	405.75	397.40	32.80	4.0%	398.71	4.0%	85,00	2.50	404.61	STD SHC	336	1,14				YES	10-FT
	337	417.25	407.25	398,54	32.80	4.5%	400.02	4.5%	85.00	2.50	406.34	STD SHC	337	0.91				YES	10-FT
-	373	448.75	438.75	431.75	23.50	3.0%	432.46	3.0%	85.00	2.50	437.51	STD SHC	373 374	1.25			ļ	YES	10-FT 10-FT
-	374	447.75	437.75 435.50	430.42	20.20	3.5% 2.5%	431.13	3.5% 2.5%	85.00 85.00	2.50	436.60	STD SHC	374	1.15				YES	10-FT
	376	445.25	435.25	428.08	19.60	3.5%	428.77	3.5%	85.80	2.50	434.27	STD SHC	376	0.98				YES	10-FT
	377	444.25	434.25	426.66	21.80	4.0%	427,53	4.0%	85.80	2.50	433.46	STD SHC	377	0.79				YES	10-FT
	378	443.00	433.00	425,92	20.60	3.5%	426.64	3.5%	85.60	2.50	432.14	STD SHC	378	0.86				YES	10-FT
-	379	442.50	432.50	425.31	22.50	3.5%	426.10	3.5%	85.00	2.50	431.57	STD SHC	379	0.93				YES	10-FT
-	380	443.00	433.00 433.00	424.88 424.45	20.90	4.5% 5.0%	425.82 425.42	4.5% 5.0%	85.00 85.00	2.50	432.15	S TD SHC	380	0.85			 	YES	10-FT 10-FT
.	382	442.25	432.25	423.74	20.70	5.0%	424.78	5.0%	85.00	2.50	431.53	STD SHC	382	0.72				YES	10-FT
	383	440.25	430.25	422.15	17.80	4.5%	422.95	4.5%	85.00	2.50	429.28	STD SHC	383	0,97				YES	10-FT
	384	438.50	428.50	420.70	19.20	4.0%	421.47	4.0%	85.00	2.50	427.37	STD SHC	384	1.13				YES	10-FT
	385	437.00	427.00	413.28	33.00	5.0%	414.93	5.0%	65.00	2.50	420.68	DROP TYPE A	385	6.32	419.60	2.0%	420.26	YES	10-FT

PROFESSIONAL CERTIFICATION

I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE

DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

5.12.16 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

	BC	OHLER GINEERING
901 DUL	ANEY V	ALLEY ROAD, SUITE 80°
		MARYLAND 21204
	Phone:	(410) 821-7900
	Fax:	(410) 821-7987
	; an.	

B.K. RO	
	m: *
PROF SSIONALEN	ENGITT.

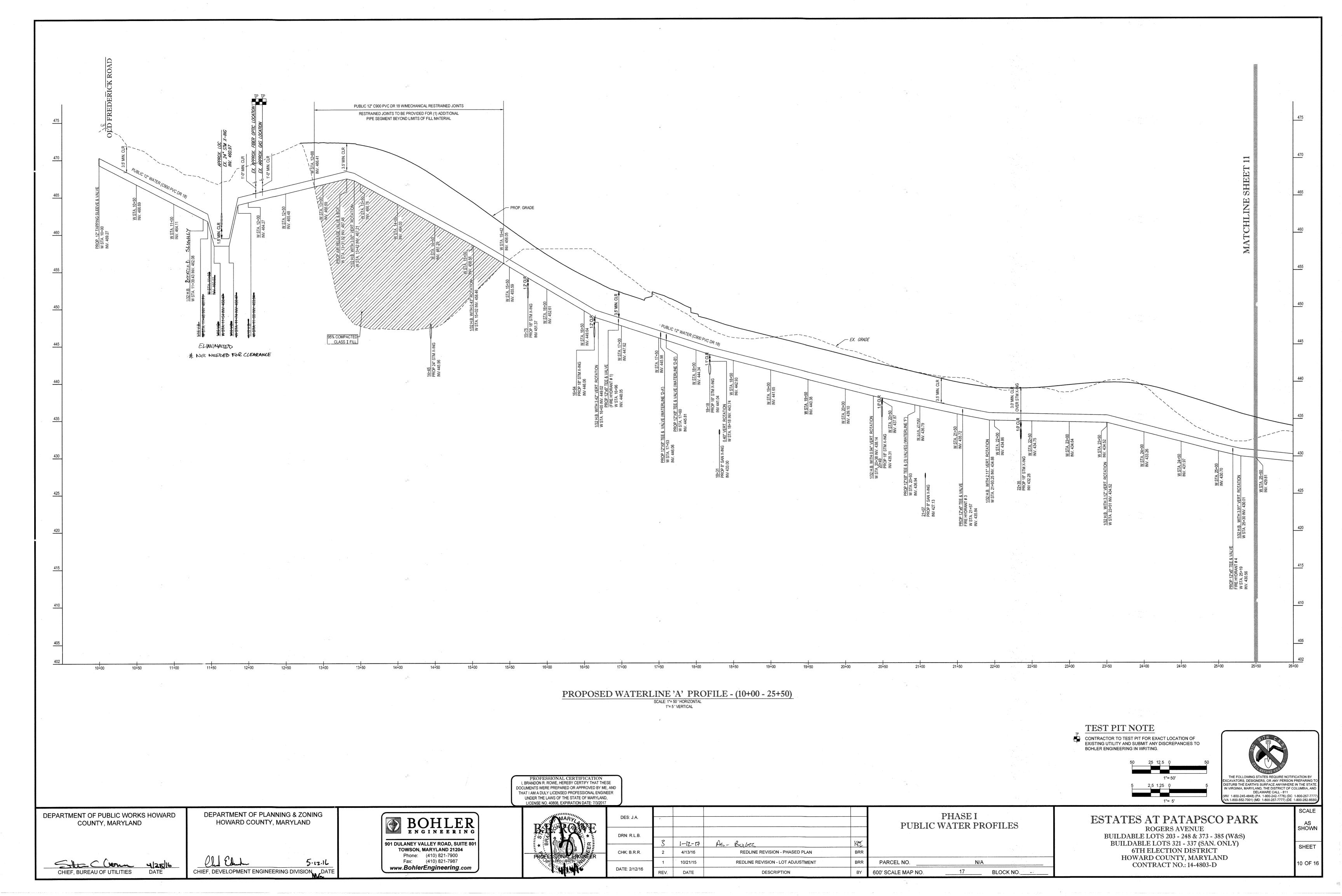
(13/2017				,		······
2	DES: J.A.	,				PUBL
******	DRN: R.L.B.					STRU
THE EN	CHK: B.R.R.	2	4/13/16	REDLINE REVISION - PHASED PLAN	BRR	
		1	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR	PARCEL NO.
	DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO.

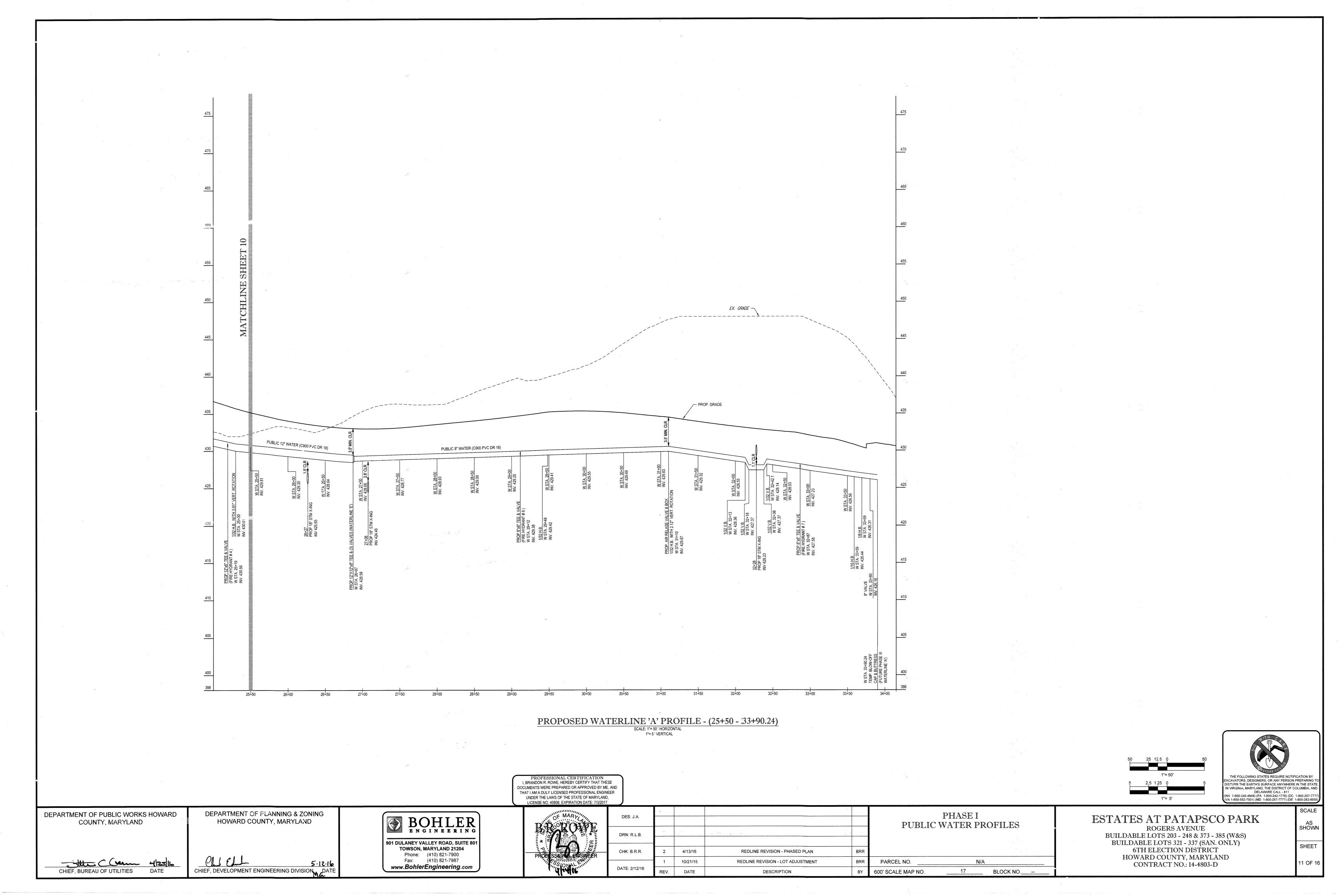
	THE FOLLOWING STATES REQUIRE NOTIFI EXCAVATORS, DESIGNERS, OR ANY PERSON I DISTURB THE EARTH'S SURFACE ANYWHERE IN VIRGINIA, MARYLAND, THE DISTRICT OF CONTINUATION OF CONTINU	PREPARING IN THE ST OLUMBIA, A 1-800-257-7
PHASE I UBLIC SANITARY SEWER CRUCTURE SCHEDULES	ESTATES AT PATAPSCO PARK ROGERS AVENUE BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)	SCAI AS SHO

17 BLOCK NO.__

BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S) BUILDABLE LOTS 321 - 337 (SAN. ONLY) 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND 9 OF 16 CONTRACT NO.: 14-4803-D

SHEET





,		HER SERVICE AS-BUILD	The second second				LOT	ADDRESS	LOCATION DIMENSION		LOCATION T
LOT 203	SOAPSTONE TRAIL	FH STA. 16+95	# 1 13' T	LOCATION DIMENSION &	<u>て</u> た'		203	SOAP STONE TRAIL	DETECTABLE WARNING	91	SMH 24
704 205	SAAP STONE TRAIL	SMH - 25 FH STA. 17+32	31' 11 28' Ti	NCET 4	37' 76'		204 205	SOAP STONE TRAIL	SMH 25 F.H. STA. 12+32	<u>හි'</u> දිරි '	
206	SOAP STONE TRAIL	FA STA. 17+32	17' T		19'		206 207	SOMP STONE TRAIL	F.H. STA. 12+32 SMH 26	141 85'	
207 208	SOMP STONE TRAIL	SMH - 26 BLOWOFF VALVE	34' 5	MH - 26	61'		208	SOAP STONE TRAIL	BLOWOFF VAIVE	26'	SMH 26
209	SOAP STONE TRAIL	BLOWOFF VALVE		MH-26	80 ¹ 82 ¹		269	SOAP STONE TRAIL	BLOWDEF VALUE	44'	SMH 26
211	SOAP STONE TRAIL	SMH - 25 SMH - 24	53' IN	NUET 10 NUET 10	66' 25'		211	SOMP STONE TRAIL	SMH 25 SMH 24	29' 28'	INLET 10
214	MORNING CHOICE COURT	F.H. STA. 10+57	23' 7	73.			214	MORNING CHOICE COURT	F.H. GA 10+57	12'	T.S.
216		4" VALVE AT BLOWDEF		SMH-44	56'		216		4° VALUE AT BLOWDEF	₹ <u>8</u> '	7.5. SMH 44
217	MORNING CHOICE COURT	4" VALVE AT BLOWDEF		SMH - 44 SMH - 44	50' 45'			MORNING CHOICE COR	HOWOFF VALVE	31'	SMH 44 SMH 44
219	MORNING CHOICE COURT	BLOWFF VALVE	(de' 5	SmH-44	50' &'		219	MORNING CHOICE COURT	BLOWDER VALVE	46' 44'	SMH 44 (o" VALVE
213	MORNINGCHOICE COVET VALLEY VIEW WAY	INCET 8	ω' E	e" VALVE Suff - 28	(de'		213	VALLEY VIEW WAY	INLET 8	\$5 ′	SMH 23
221 222	VALLEY VIEW WAY VALLEY VIEW WAY	INVET 40		SMH-21 SMH-21	28' 21'		221 222	VALLEY VIEW WAY	INLET 40	76'	SMH ZI SMH ZI
223 224	VALLEY VIEW WAY	SDNH - 7 SDMH - 7		5MH-20 5MH-20	20'		723	VALLEY VIEW WAY	SOMH 7 SDMH 7	46'	SMH 20 SMH 20
225	VALLEY VIEW WAY	F.H. STA. 25+19	89' 6	o" VALVE	28'		225	VALLEY VIEW WAY	FIR STA. 25+F1	291	CO" VALVE
22.Ce 227	VALLEY VIEW WAY	F.H. SA. 25+19 INLET 29	84′ €	5MH-19	34'		22 G 22 F	VALLEY VIEW WAY	F.H. SA. 25+19 INLET 39	40' 18'	6" VALVE SMH 19
228 229	VALLEY VIEW WAY	IN/ET 38 INVET 38	THE REAL PROPERTY AND ADDRESS OF THE PERSON	SUH-18 WLET 37	40'		228 279	VALLEY VIEW WAY	INLET 38	37' 28'	OMH 18 INJET 37
230	VALLEY VIEW WAY	INCET 38 FH. 994 29+11	105' 11	WET 87 9MH - 41	75' 72'		230 231	VALLEY VIEW WAY	INIET 38 F.H. GA. 29+11	91' 34'	INCET 37 SMH 41
731 232	VALLEY VIEW WAY	FH. STA. 29+11	44' 5	MH-41	32'		232	VALLEY VIEW WAY	F.H. STA. 29+11	₹0 ¹	EMH 41
233 234	VALLEY VIEW WAY	ARMH ARMH	94' S	mH-42 3MH-47	91'		2 33 234	VALLEY VIEW WAY	ARMY	50° Zo′	SM 4 42 SM 4 42
235 2360	VALLEY VIEW WAY VALLEY VIEW WAY	INLET SO		INLET 49 14, StA. 32+86	<i>3</i> 8'		235 236	VALLEY VIEW WAY	INLET SO	47	F.H. STA
237	VALLEY YIELD WAY	Co" VALVE	35' F.	H. SIA. 32486	32'		237	VALLEY VIEW WAY	6" VAVVE	53' 74'	F.H. STA INLET 48
238 239	VALLEY VIEW WAY	SMH-43 SMH-48	36' 11	ULET 48	75' 38'		238 239	VALLEY VIEW WAY	SMH 43 SMH 43	36'	INLET 48
240 240	VALLEY VIEW WAY VAUEY VIEW WAY	INLET SO	<u>44' 11</u> 50' 11	NLET 49 NLET 49 2	35' 9,5'		2 <u>40</u> 241	VALLEY VIEW WAY	INLETSO	43' 53'	INLET 49 INJET 49
242 243	VALLEY VIEW WAY	ARMH SMH-41		SMH-4Z SMH-4Z	34' 31'		242 243	VALLEY VIEW WAY	ARMY SMH 41	34' 172'	SMH 42 SMH 42
244	VALLEY VIEW WAY	SMH-41	59' 3	SMH-42	l∞′		744	VALLEY VIEW WAY	5mH 41	54'	SMH 42
245 246	VALLEY VIEW WAY VALLEY VIEW WAY	SMH-41 SMH-41	62 F.	H. SDA. 29411 H. SDA. 29411	55 / 48'		246 246	VALLEY VIEW WAY	SMH 41 SMH 41	70'	F.H. STA.
247 248	VALLEY VIEW WAY	INLET 37		SMH 18	77' 65'		247 248	VALLEY VIEW WAY	INLET ST INLET ST	76'	SMH 18 SMH 18
373 374	VALLEY VIEW WAY	INLET 8 INLET 8	50' 5	5MH 23 MH 23	<u>る。</u> 921		873	VALLEY VIEW WAY	INLET 8	52'	SMH 23
3 75	VALLEY VIEW WAY	INLET CO	61' 1	NLET 7	701		374 375	VALLEY VIEW WAY	INLET &	52'	SMH 23 INLET 7
376 377	VALLEY WEW WAY	INLET G	68' E	NIET 7 SMH 22	48' 26'		376	VALLEY VIEW WAY	INLET G	151 821	INLET 7 SMH 22
378 379	VALLEY VIEW WAY	INLETS		SMH ZI	COB' 22!		378	VALLEY VIEW WAY	INLETS	371 141	SMH 21 SMH 21
380 381	VALLEY VIEW WAY	INLET 5 SMH 20	64' 5	SMH ZI SDMH 7	22' 48' 72'		379 380	VALLEY VION WAY	INLETS	52'	SMH 21
382	VALLEY VIEW WAY VALLEY VIEW WAY	SMH ZO	28' 8	EDMH 7	32'		<u>381</u> 382	VALLEY VIEW WAY	SMH 20	51	SDMH 7 SDMH 7
383 384	VALLEY VIEW WAY	10LET 4		SDMY 7 SMH 19	ड्रा यय ⁷		383 384	VALLEY VIEW WAY	F.H. STA. 25+19	471	50MH7 5MH 19
385	VAUEY VIEW WAY	INLET 4	67'	emh 18	75'	·		VALLEY VIEW WAY		73'	SMH 18
EH.	13.5 7 6 V	/ 0= 5.5-Q	2"V 5.5' SMH 22	12'V 8.5' 8'V 8.5' 12'V 18'	SMH-18	(3)	Zc 2c	SMH P	Z9'		
, F.(18' 18' (6"V	F.H. 9'	4 V	10' 11' 6"V	7.5.			18) Le' SMH 17	EX. MAIN 18' 0 12" EX. VO. 35' 12"MA		
4*	Blasoff 24' 30' 16' WHC LOT 2	Beaucife 30' Second Se	Records	F.U. 3' 35' 37	1/3.	(E) (1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	S. 15	(a) V	12" MAIN 28' 30' AIR RELEAS VALVE STOP SIGN	5E E	
	8"v slo' 8"v	F.H.	T.S.	(12) T.S.		(6)		SMH-16	8" MAIN		

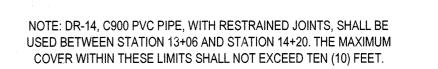
PROFESSIONAL CERTIFICATION

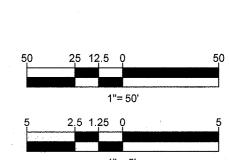
I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE
DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

PUBLIC 12" WATER (C900 PVC DR 18) PROPOSED WATERLINE 'E' PROFILE (10+00 - 14+00)

SCALE: 1"= 50 ' HORIZONTAL

1"= 5 ' VERTICAL







AS SHOWN

SHEET

12 OF 16

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

5.12.16 CHIEF, BUREAU OF UTILITIES DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE BOHLER

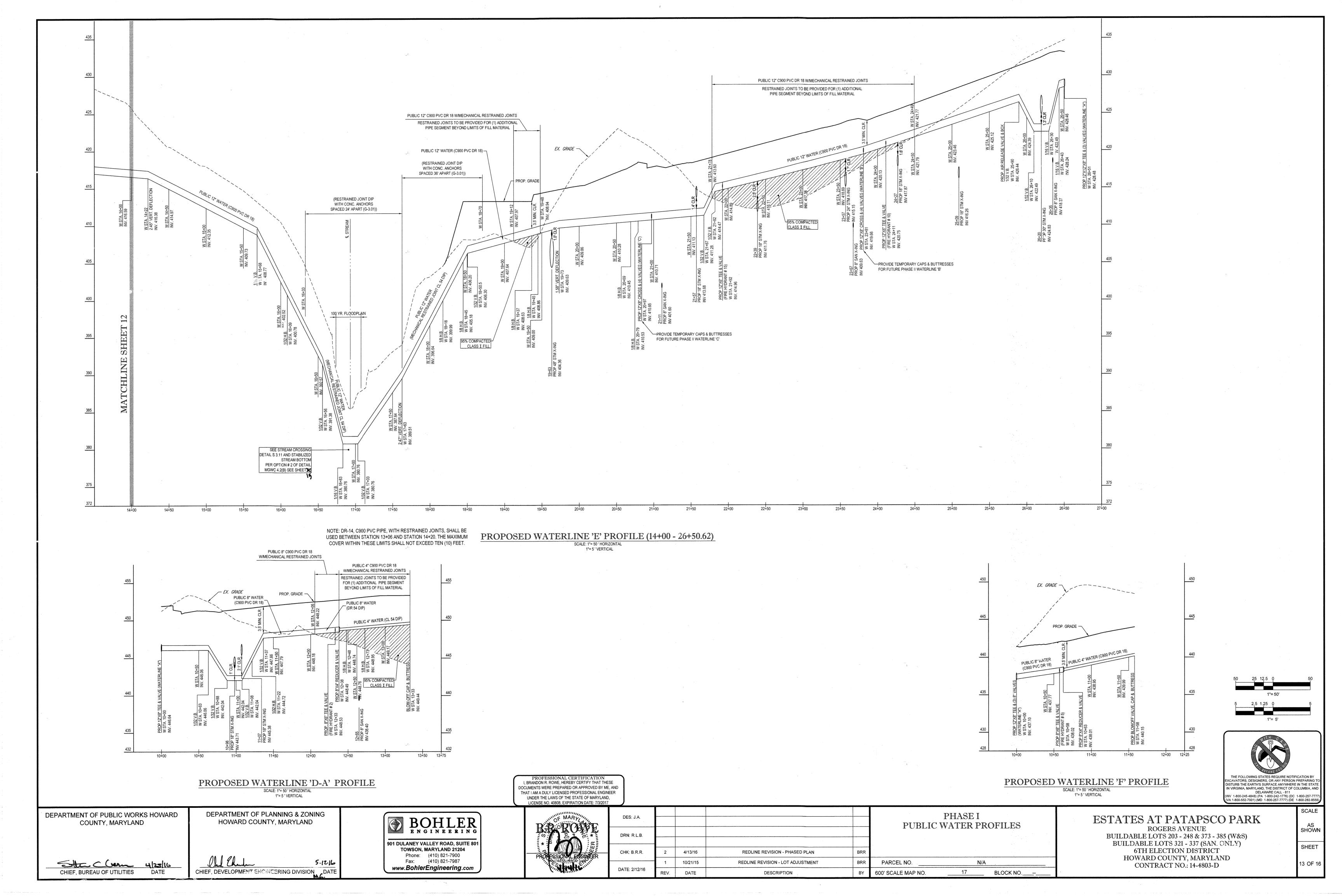
901 DULANEY VALLEY ROAD, SUITE 801 TOWSON, MARYLAND 21204 Phone: (410) 821-7900 Fax: (410) 821-7987 www.BohlerEngineering.com



DES: J.A.					PHASE I PUBLIC WATER PROFILES	
DRN: R.L.B.	4	12/7/21	AS BUILTS	WRA		
	3	1-11-17	As-Bulge	此		
CHK: B.R.R.	2	4/13/16	REDLINE REVISION - PHASED PLAN	BRR		
	1	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR	PARCEL NO. N/A	ĺ
DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO BLOCK NO	

ESTATES AT PATAPSCO PARK					
ROGERS AVENUE					
BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)					
BUILDABLE LOTS 321 - 337 (SAN. ONLY)					

6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO.: 14-4803-D



ATER MAIN CL STATION	FITTING	NORTHING EASTING		
10+00:00 WATERLINE - 'A'	12" TAPPING SLEEVE & VALVE	N 595620.61 E 1362866.36		
11+39.43 WATERLINE - 'A'	1/32 H.B. WITH 0.68° VERT. ROTATION	N 595731.38 E 1362951.04		
11+45.61 WATERLINE - 'A'	1/16 V.B. WITH 4.21° HOR. ROTATION	N 595737.02 E 1362953.57		
11+54.20 WATERLINE - 'A'	1/16 V.B. WITH 4.11° HOR. ROTATION	N 595744.86 E 1362957.09		
11+74.20 WATERLINE - 'A'	1/16 V.B.	N 595763.10 E 1362965.27		
11+86.20 WATERLINE - 'A'	1/16 V.B.	N 595774.05 E 1362970.19		
13+31.92 WATERLINE - 'A'	AIR RELEASE VALVE & ROADWAY BOX	N 595907.00 E 1363029.84		
13+41:92 WATERLINE - 'A'	1/32 H.B. W/ 6.56° VERT. ROTATION	N 595916.13 E 1363033.93		
15+01.79 WATERLINE - 'A'	1/32 H.B. WITH 0.43° VERT. ROTATION	N 596072.96 E 1363064.89		
16+64.96 WATERLINE - 'A'	1/32 H.B. WITH 3.42° VERT. ROTATION	N 596236.06 E 1363059.67		
16+95.93 WATERLINE - 'A'	12"X6" TEE & VALVE (FIRE HYDRANT #1)	N 596265.99 E 1363051.74		
17+52.66 WATERLINE - 'A'	12"X8" TEE & VALVE (WATERLINE 'D-A')	N 596320.83 E 1363037.21		
17+60.22 WATERLINE - 'A'	12"X8" TEE & VALVE (WATERLINE 'D-B')	N 596328.14 E 1363035.28		
18+18.46 WATERLINE - 'A'	0.40° VERT. DEFLECTION	N 596384.44 E 1363020.37		
20+37:64 WATERLINE - 'A'	1/32 H.B. WITH 0.94° VERT. ROTATION	N 596596.31 E 1362964.25		
20+93.35 WATERLINE - 'A'	12"X8" TEE & (3) VALVES (WATERLINE 'F')	N 596651.77 E 1362958.92		
21+57.37 WATERLINE - 'A'	PROP 12"X6" TEE & VALVE (FIRE HYDRANT #4)	N 596715.50 E 1362952.79		
21+93.25 WATERLINE - 'A'	1/32 H.B. WITH 2.11° VERT. ROTATION	N 596751.21 E 1362949.35		
23+50.77 WATERLINE - 'A'	1/32 H.B. WITH 3.12° VERT. ROTATION	N 596908.46 E 1362958.55		
25+19.31 WATERLINE - 'A'	12"X6" TEE & VALVE (FIRE HYDRANT #3)	N 597072.45 E 1362997.46		
25+30.02 WATERLINE - 'A'	1/32 H.B. WITH 3.91° VERT. ROTATION	N 597082.86 E 1362999.94		
26+87.32 WATERLINE - 'A'	12"X12"X8" TEE & (3) VALVES (WATERLINE 'E')	N 597227.61 E 1363061.52		
29+11.69 WATERLINE - 'A'	12"X6" TEE & VALVE (FIRE HYDRANT #6)	N 597434.07 E 1363149.36		
29+48.38 WATERLINE - 'A'	1/32 H.B.	N 597467.83 E 1363163.73		
31+10.45 WATERLINE - 'A'	1/32 H.B. WITH 2.12° VERT. ROTATION	N 597627.88 E 1363189.21		
32+13.17 WATERLINE - 'A'	1/32 V.B.	N 597730.37 E 1363182.32		
32+18.11 WATERLINE - 'A'	1/32 V.B.	N 597735.30 E 1363181.99		
32+38.22 WATERLINE - 'A'	1/32 V.B.	N 597755.36 E 1363180.64		
32+42.09 WATERLINE - 'A'	1/32 V.B.	N 597759.23 E 1363180.38		
32+86.81 WATERLINE - 'A'	8"X6" TEE & VALVE (FIRE HYDRANT #7)	N 597803.84 E 1363177.37		
33+59.06 WATERLINE - 'A'	1/16 H.B.	N 597875.93 E 1363172.52		
33+69.33	1/8 H.B.	N 597885.55 E 1363176.13		
33+80.24	8" VALVE	N 597958.09 E 1363315.61		
WATERLINE - 'A' 33+90.24 WATERLINE - 'A'	TEMPORARY BLOW-OFF CAP & BUTTRESS	N 598007.38 E 1363410.38		

		,	
WATER MAIN CL STATION	FITTING	NORTHIN EASTING	
10+00,00 WATERLINE - 'D-A'	12"X8" TEE & VALVE (WATERLINE "A")	Ñ 596320.83 E 1363037.21	
10+62.82 WATERLINE - 'D-A'	1/32 V.B.	N 596304.75 E 1362976.49	
10+88.01 WATERLINE - 'D-A'	1/32 V.B.	N 596298.30 E 1362952.14	
11+08.01 WATERLINE - 'D-A'	1/32 V.B.	N 596293.18 E 1362932.80	
11+21.51 WATERLINE - 'D-A'	1/32 H.B.	N 596289.73 E 1362919.76	
12+32,88 WATERLINE - 'D-A'	8"X6" TEE & VALVE (FIRE HYDRANT #2)	N 596282.76 E 1362808.60	
12+37.98 WATERLINE - 'D-A'	8"X4" REDUCER & VALVE	N 596282.44 E 1362803.52	
12+47,87 WATERLINE - 'D-A'	1/8 H.B.	Ñ 596281.82 E 1362793.64	
12+72,87 WATERLINE - 'D-A'	1/8 H.B.	N 596298.36 E 1362774.89	
13+33.25 WATERLINE - 'D-A'	BLOWOFF VALVE, PLUG & BUTTRESS	N 596358.66 E 1362771.78	

WATER FITTING CHART					
WATER MAIN CL STATION	FITTING	NORTHING EASTING			
10+00.00 WATERLINE - 'D-B'	12"X8" TEE & VALVE (WATERLINE "A")	N 596328.14 E 1363035.28			
10+84.07 WATERLINE - 'D-B'	TEMPORARY BLOW-OFF CAP & BUTTRESS	N 596349.66 E 1363116.55			

VATER MAIN CL STATION	FITTING	NORTHIN EASTING
10+00.00 WATERLINE - 'E'	12" TAPPING SLEEVE & VALVE	N 596709.73 E 1364460.85
11+27.15 WATERLINE - 'E'	1/8 H.B.	N 596712.48 E 1364333.73
11+47.99 WATERLINE - 'E'	1/16 H.B.	N 596727.53 E 1364319.32
12+75.79 WATERLINE - 'E'	1/32 H.B.	N 596846.63 E 1364272.99
13+05.72 WATERLINE - 'E'	1/8 H.B.	N 596872.44 E 1364257.82
14+22.10 WATERLINE - 'E'	2.45° VERT. DEFLECTION	N 596905.59 E 1364146.26
15+68.38 WATERLINE - 'E'	1/32 V.B.	N 596947.25 E 1364006.03
16+08.76 WATERLINE - 'E'	1/32 H.B.	N 596958.76 E 1363967.33
16+55.94 WATERLINE - 'E'	1/32 V.B.	N 596978.00 E 1363924.25
16+83.16 WATERLINE - 'E'	1/16 V.B.	N 596989.10 E 1363899.40
17+03.16 WATERLINE - 'E'	1/32 V.B.	N 596997.26 E 1363881.14
17+62.74 WATERLINE - 'E'	2.47° VERT. DEFLECTION	N 597021.56 E 1363826.74
18+17.55 WATERLINE - 'E'	1/8 H.B.	N 597043.92 E 1363776.70
18+44.64 WATERLINE - 'E'	1/8 H.B.	N 597034.24 E 1363751.40
18+50.49 WATERLINE - 'E'	1/32 V.B.	N 597028.89 E 1363749.01
19+36.50 WATERLINE - 'E'	1/8 H.B.	N 596950.36 E 1363713.93
19+44.87 WATERLINE - 'E'	1/8 H.B.	N 596947.37 E 1363706.12
19+73.34 WATERLINE - 'E'	1.58° VERT. DEFLECTION	N 596958.98 E 1363680.12
20+69.28 WATERLINE - 'E'	1/8 H.B.	N 596998.11 E 1363592.53
20+79.18 WATERLINE - 'E'	1/8 H.B.	N 596994.57 E 1363583.28
20+97.18 WATERLINE - 'E'	12"X8" CROSS & (4) VALVES (WATERLINE 'C')	N 597001.91 E 1363566.85
21+67.35 WATERLINE - 'E'	1/32 V.B.	N 597030.53 E 1363502.78
21+82.36 WATERLINE - 'E'	1/32 V.B.	N 597036.65 E 1363489.06
21+92.36 WATERLINE - 'E'	12"X6" TEE & VALVE (rICE HYDRANT #15)	N 597040.73 E 1363479.93
23+81.18 WATERLINE - 'E'	12"X8" CROSS & (4) VALVES (WATERLINE 'B')	N 597117.73 E 1363307.53
24+11.18 WATERLINE - 'E'	12"X6" TEE & VALVE (FIRE HYDRANT #10)	N 597129.96 E 1363280.14
25+89.61 WATERLINE - 'E'	PROP. AIR RELEASE VALVE & 1/32 V.B.	N 597202.73 E 1363117.22
26+09.62 WATERLINE - 'E'	1/32 V.3.	N 597210.89 E 1363098.95
26+29.62 WATERLINE - 'E'	1/16 V.B.	N 597219.05 E 1363080.69
26+43.48 WATERLINE - 'E'	1/16 V.B.	N 597224.70 E 1363068.03
26+50.62 WATERLINE - 'E'	12"X12"X8" TEE & (3) VALVES (WATERLINE "A")	N 597227.61 E 1363061.52

WATER FITTING CHART					
WATER MAIN CL STATION	FITTING	NORTHING EASTING			
10+00.00 WATERLINE - 'F'	12"X8" TEE & (3) VALVES (WATERLINE "A")	N 596651.77 E 1362958.92			
10+57.57 WATERLINE - 'F'	PROP 8"X6" TEE & VALVE (FIRE HYDRANT #5)	N 596646.26 E 1362901.61			
10+62.57 WATERLINE - 'F'	PROP 8"X4" REDUCER & VALVE	N 596645.78 E 1362896.63			
11+57.95 WATERLINE - 'F'	BLOWOFF ∀ALVE, CAP & BUTTRESS	N 596636.65 E 1362801.70			

PROFESSIONAL CERTIFICATION
I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE
DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

Chief, DEVELOPMENT ENGINEERING DIVISION COATE





17								· · · · · · · · · · · · · · · · · · ·	
	DES: J.A.	-				PHASE I WATER FITTING CHARTS			
	DRN: R.L.B.					V V A A A A A A A A A A A A A A A A A A			
_	CHK: B.R.R.	2 .	4/13/16	REDLINE REVISION - PHASED PLAN	BRR				
		1	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR	PARCEL NO.	N/A		
	DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO.	17	BLOCK NO	

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

(WV 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-7777) (VA 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-8555)

ESTATES AT PATAPSCO PARK
ROGERS AVENUE
BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)

BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S)
BUILDABLE LOTS 321 - 337 (SAN. ONLY)
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO.: 14-4803-D

SHEET

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Using vegetation as cover for barren soil to protect a gross forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding to quickly establish vegetative cover for short duration (up to one year). and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles. cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas of final grade, former stockpile and staging areas,

EFFECTS OF WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of run-off, infiltration, evaporation, transpiration, percolation, and groundwater recharge Vegetation over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients and other chemicals carried by run-off to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must retain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

i. Install erosion and sediment control structures (either temporary or permanent) such as diversion, grade stabilization structures, berms, waterways, or sediment control basins.

ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis maybe performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposed may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve. iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable

C. Seedbed Preparation

i. Temporary Seeding a. Seedbed preparation shall consist of loosening soil to a depth of 3 to 5 by means of suitable agricultural or construction equipment, such as dice has nows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope. b. Apply fertilizer and lime as prescribed or the plane. c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0. 2. Soluble salts shall be less than 500 parts per million (ppm).

- 3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
- 4. Soil shall contain 1.5% minimum organic matter by weight. . Soil must contain sufficient pore space to permit adequate root penetration.
- 6. If these conditions cannot be met by soils on site, adding topscal is required in accordance with Section 21 Standard and Specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope

c. Apply soil amendments as per soil test or as included on the plans.

d. Mix soil amendments into the top 3-5" ot topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slopee. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specially for the species. Inoculants shall not be used later than the date indicated in the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperature above 75°-80°F. can weaken bacteria amd make the inoculant less effective.

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or dropo seeded, or a cultipacker seeder

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen: P205 (phosphorus); 200 lbs/ac; K20 (potassium); 200 lbs/ac.

b. 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

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders. a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Parmanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact. b. Where practical, seed should be applied in two directions perpendicular

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half

F. Mulch Specifications (In order of preference)

to each other. Apply half the seeding rate in each direction.

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical

b. WCFM shall 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.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors. d. WCFM materials shall 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 shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedings.

E. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic

F. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum. Note: Only sterile straw mulch should be used in areas where one species of grass is desired,

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre. iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lbs./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per iii. Application of liquid binders should be heavier at the edges

The remainder of area should appear uniform after binder application. Synthetic binders- such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to

where wind catches mulch, such as in valleys and crest of banks.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' wide and 300 to 3,000 feet long.

I. Incremental Stabilization - Cut Slopes i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in

ii. Construction sequence (Refer to Figure 3 below):

equal increments not to exceed 15'

1 as necessary

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.

b Perform Phase 1 excavation, dress, and stabilize. c. Perform Phase 2 excavation, dress, and stabilize. Overseed Phase

d. Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary. Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation of completing out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall be constructed in lifts as prescribed on the

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans, a sediment trapping device.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to invercept surface runoff and convey it down the slope in a non-erosive manner to

iv. Construction sequence: Refer to Figure 4 (below).

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slopr silt fence on low side of fill as shown in Figure 5, unless

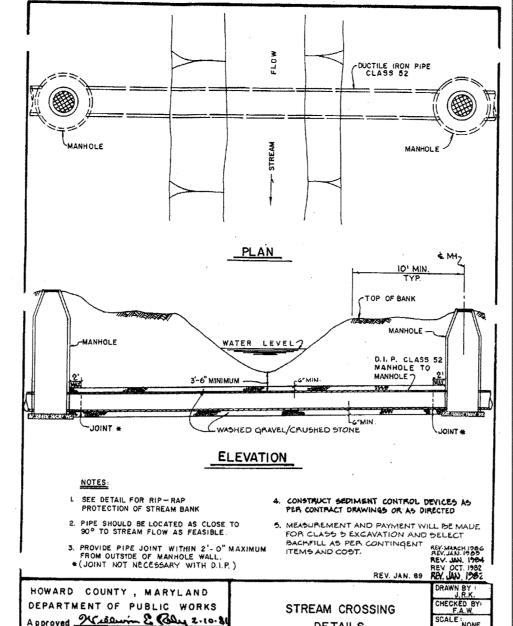
other methods shown on the plans address this area b. Place Phase 1 embankment, dress, and stabilize.

c. Place Phase 2 embankment, dress, and stabilize.

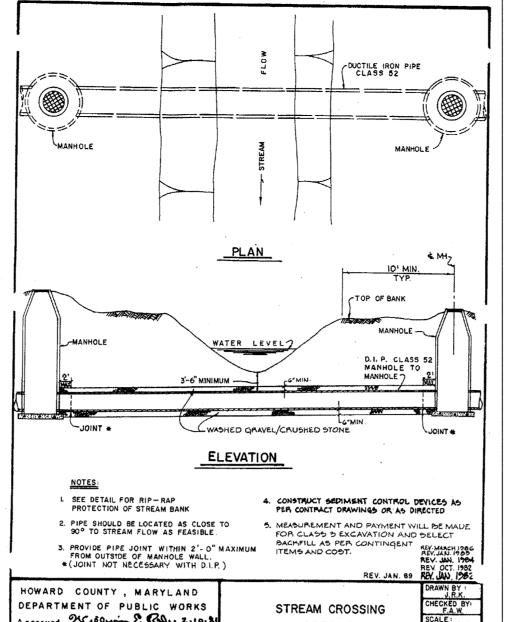
d. Place final phase embankment, dress, and stabilize. Overseed previously seeded areas as necessary. Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

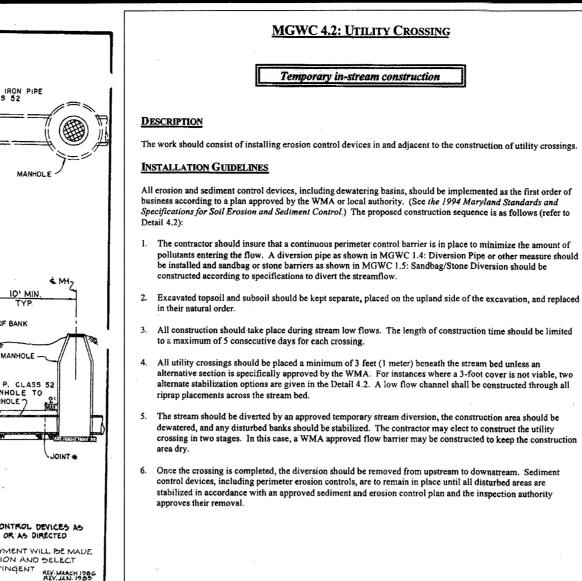
MANHOLE TOP OF BANK MANHOLE -MANHOLE 3'-6" MINIMUM LOMIN LOND JOINT * ELEVATION I SEE DETAIL FOR RIP-RAP 4. CONSTRUCT SEDIMENT CONTROL DEVICES AS PER CONTRACT DRAWINGS OR AS DIRECTED PROTECTION OF STREAM BANK 5. MEASUREMENT AND PAYMENT WILL BE MAI FOR CLASS & EXCAVATION AND SELECT BACKFILL AS PER CONTINGENT ITEMS AND COST. REV. MARCH 1965 REV. LLD. 1965 3. PROVIDE PIPE JOINT WITHIN 2'-O" MAXIMUM FROM OUTSIDE OF MANHOLE WALL. *(JOINT NOT NECESSARY WITH D.I.P.) HOWARD COUNTY , MARYLAND DEPARTMENT OF PUBLIC WORKS STREAM CROSSING

Approved Misserin & Roly 2.1 DETAILS



Chief-Bureau of Engineering





stabilized in accordance with an approved sediment and erosion control plan and the inspection authority STREAM CROSSING

DESCRIPTION

stream construction sites.

IMPLEMENTATION SEQUENCE

completed in the following sequence (refer to Detail 1.2):

local utilities a minimum of 48 hours before starting construction.

SECTION A-A SECTION B-B 3-ft (1 m) 3-ft (1 m) minimum •

25-ft (8-m)

buffer zone

disturbance

Maryland's Guidelines To Waterway Construction

PLAN VIEW

A---

utility pipe

basin

MARYLAND DEPARTMENT OF THE ENVIRONMEN WATER MANAGEMENT ADMINISTRATION

15 to 24-in

(38 to 61-cm) -

access

DETAIL 4.2(a): UTILITY CROSSING

MARYLAND DEPARTMENT OF THE ENVIRONMEN WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000 PAGE 4.2 -

MGWC 4.2: UTILITY CROSSING

Temporary in-stream construction

MGWC 1.2: Pump-Around Practice

Temporary measure for dewatering in-

channel construction sites

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-

Sediment control measures, pump-around practices, and associated channel and bank construction should be

Construction activities including the installation of erosion and sediment control measures should not begin

until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked

in the field prior to construction. The contractor is responsible for any damage to existing utilities that may

The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector

environmental protection and resource management inspection and enforcement division and the provider of

The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the

requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior

to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's

Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.

Construction should not begin until all sediment and erosion control measures have been installed and approved

Upon installation of all sediment control measures and approval by the sediment control inspector and the local

authority. The contractor should only begin work in an area which can be completed by the end of the day

Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans,

by the engineer and the sediment control inspector. The contractor should stay within the limits of the

disturbance as shown on the plans and minimize disturbance within the work area whenever possible

construction entrances. In some cases, work may begin downstream if appropriate. The sequence of

staging areas and flag all trees within the limit of disturbance which will be removed for construction access.

county project manager, and the engineer to review limits of disturbance, erosion and sediment control

result from construction and should repair the damage at his/her own expense to the county's or utility

at least 5 days before beginning construction. Additionally, the contractor should inform the local

MGWC 1.2: PUMP-AROUND PRACTICE

Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided

be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction). All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance

If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should

with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment

flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work

area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same

velocity dissipater used for the main stem pump around. 2. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed work on the main stem should resume. Water from the tributary should continue to be pumped around the

The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.

4. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

environmental protection and resource management inspection and enforcement division, the contractor should construction must be followed unless the contractor gets written approval for deviations from the WMA or local including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events

work area in the main stem.

and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.

MARYLAND DEPARTMENT OF THE ENVIRONMEN

WATERWAY CONSTRUCTION GUIDELINES

REVISED NOVEMBER 20

EMPORARY INSTREAM CONSTRUCTION MEASURE MARYLAND DEPARTMENT OF THE ENVIRONME WATERWAY CONSTRUCTION GUIDELINE

DESCRIPTION

Brush mattresses are formed from live branches which are wired together to create an erosion resistant mat. This mat is then secured to the bank by live and/or dead stakes and partially covered with fill soil to initiate growth of the

MGWC 2.8: BRUSH MATTRESSES

Woody vegetative system for bank

stabilization

EFFECTIVE USES & LIMITATIONS

Brush mattresses provide bank protection soon after establishment. They are generally resistant to wave and current action and function to:

capture sediment and rebuild streambanks facilitate the colonization of native riparian vegetation; and provide long-term durability and erosion control, especially when used on Rosgen stream types B3, B4, B5, B6,

C1, C2, C3, C4, C5, C6, DA, E3, E4, E5, and E6.

conditions whenever possible with the following guidelines:

Conservation Service is presented in MGWC 2.4: Live Stakes.

Brush mattresses should be limited to use on: sites having only low to moderate water level fluctuations and slope gradients not exceeding 2H:1V, streams with low to moderate suspended sediment loads since high loads may precipitate the burial of these bioengineering systems and complicate future planting efforts at the site, and

native fill soils which contain enough fine material to allow the live branches to root and grow readily; key

trenches backfilled with topsoil may be required on rocky slopes. Additionally, this measure should be initiated in conjunction with a revegetation strategy since brush mattresses make it more difficult to propagate vegetative plantings once the mats become established

MATERIAL SPECIFICATIONS When choosing and preparing woody material for brush mattresses, the following guidelines should be followed: Live branches should be cut from fresh, green, healthy, dormant parent plants which are adapted to the site

1. Woody branches up to 2.5 inches (6 centimeters) in diameter and 5 to 10 feet (1 to 3 meters) in length can 2. Commonly used woody plants for this measure include willow, poplar, and alder since they are versatile and have high growth rates with shrubby habits, fibrous root systems, and high transpiration rates. especially when in leaf.

3. A partial listing of woody plants recommended by the United States Department of Agriculture's Soil

Live branch cuttings should be kept covered and moist at all times and should be placed in cold storage if more

LOPE PROTECTION AND STABILIZATION TECHNIQUES MARYLAND DEPARTMENT OF THE ENVIRONMEN WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000 PAGE 2.8 -

PAGE 1.2 - 2

MGWC 2.8: BRUSH MATTRESSES Approximate Cost (\$1999)

\$33.50 per square ft

INSTALLATION GUIDELINES

pulling the mattress firmly to ground.

SLOPE PROTECTION AND STABILIZATION TECHNIQUE

Brush mattresses should be installed as follows (refer to Detail 2.8): Live branches should be oriented in crisscross layers perpendicularly to the flow of water in slight manmaddepressions along the embankment. The butt ends should alternate to provide a uniform mat thickness of at

least 12 inches (0.3 meters) and a minimum percentage of air voids. Approximately 20 to 50 branches should be used per running meter provided their lengths are the same as . If the branches are not long enough to cover the entire slope from the toe to the top of slope, multiple layers

should be utilized with the branches in the lower layers overlapping those in the upper layers by at least 1

Once in position, the mattresses should be bound with wire and secured with 3-foot (0.9-meter) wooden stake spaced at 2 to 3-foot (0.60 to 0.90-meter) intervals. The wire should be tied to notches in the stakes before they are driven into the ground; this allows for tension to develop in the wire when the stakes are driven, thereby

Upon being bound and secured to the embankment, the mattresses should be covered with alternating layers of soil and water until only a portion of the top layer of branches is exposed, but all butt ends must be covered. The use of alternating applications of soil and water helps to insure a proper soil-branch interface to initiate

. Finally, the toe of the embankment should be reinforced against undercutting with a rock toe and vegetative measure such as a live fascine. (Refer to MGWC 2.1: Riprap and Figure 2.1.)

Maryland's Guidelines To Waterway Construction DETAIL 2.8: BRUSH MATTRESSES

REVISED NOVEMBER 2000 MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Maryland's Guidelines To Waterway Construction

DETAIL 4.2(b): UTILITY CROSSING

SECTION VIEW:

- 6 ft (2 m)

SECTION VIEW:

ALTERNATE OPTION

12-in (30-cm) riprap

Maryland's Guidelines To Waterway Construction

DETAIL 1.2: PUMP-AROUND PRACTICE

PLAN VIEW

discharge hoses 🔍

sediment dike

- pumps should discharge

dissipator made of rip ray

onto a stable velocity

or sandbags

intake hose

clean water dike

— work area ------

length not to exceed that which can be

SECTION A-A

impervious sheeting

REVISED NOVEMBER 2000 MARYLAND DEPARTMENT OF THE ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

18 in (46 cm)

low flow channel

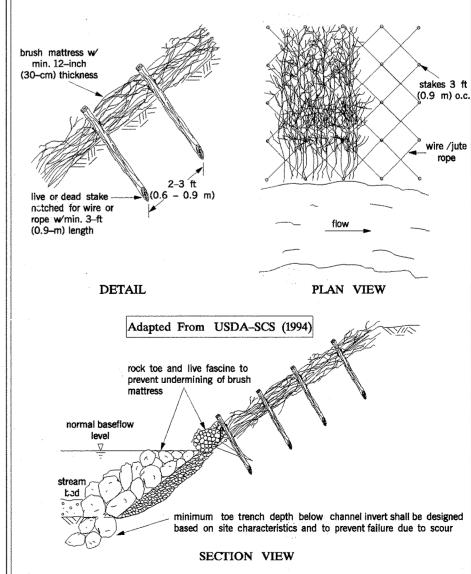
18 in (46 cm)

6 in (15 cm)

diversion pumps

sump-hole

ALTERNATE OPTION



THE FOLLOWING STATES REQUIRE NOTIFICATION BY VATORS, DESIGNERS, OR ANY PERSON PREPARING ISTURB THE EARTH'S SURFACE ANYWHERE IN THE STAT DELAWARE CALL - 811 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-77 /A 1-800-552-7001) (MD 1-800-257-7777) (DE 1-800-282-855

PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME. AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 40808, EXPIRATION DATE: 7/3/2017

DES: J.A DRN: R.L.B. CHK: B.R.R. 4/13/16 **REDLINE REVISION - PHASED PLAN** 10/21/15 REDLINE REVISION - LOT ADJUSTMENT DATE: 2/12/16 DATE

PHASE I

PAGE 2.8 - 2

PARCEL NO. BLOCK NO. 600' SCALE MAP NO.

MARYLAND DEPARTMENT OF THE ENVIRONME

WATERWAY CONSTRUCTION GUIDELINE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

= 1 Clem 4/25/16

CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION.

DATE

901 DULANEY VALLEY ROAD, SUITE 801

TOWSON, MARYLAND 21204

Phone: (410) 821-7900

www.BohlerEngineering.com

(410) 821-7987

STREAM CROSSING DETAILS

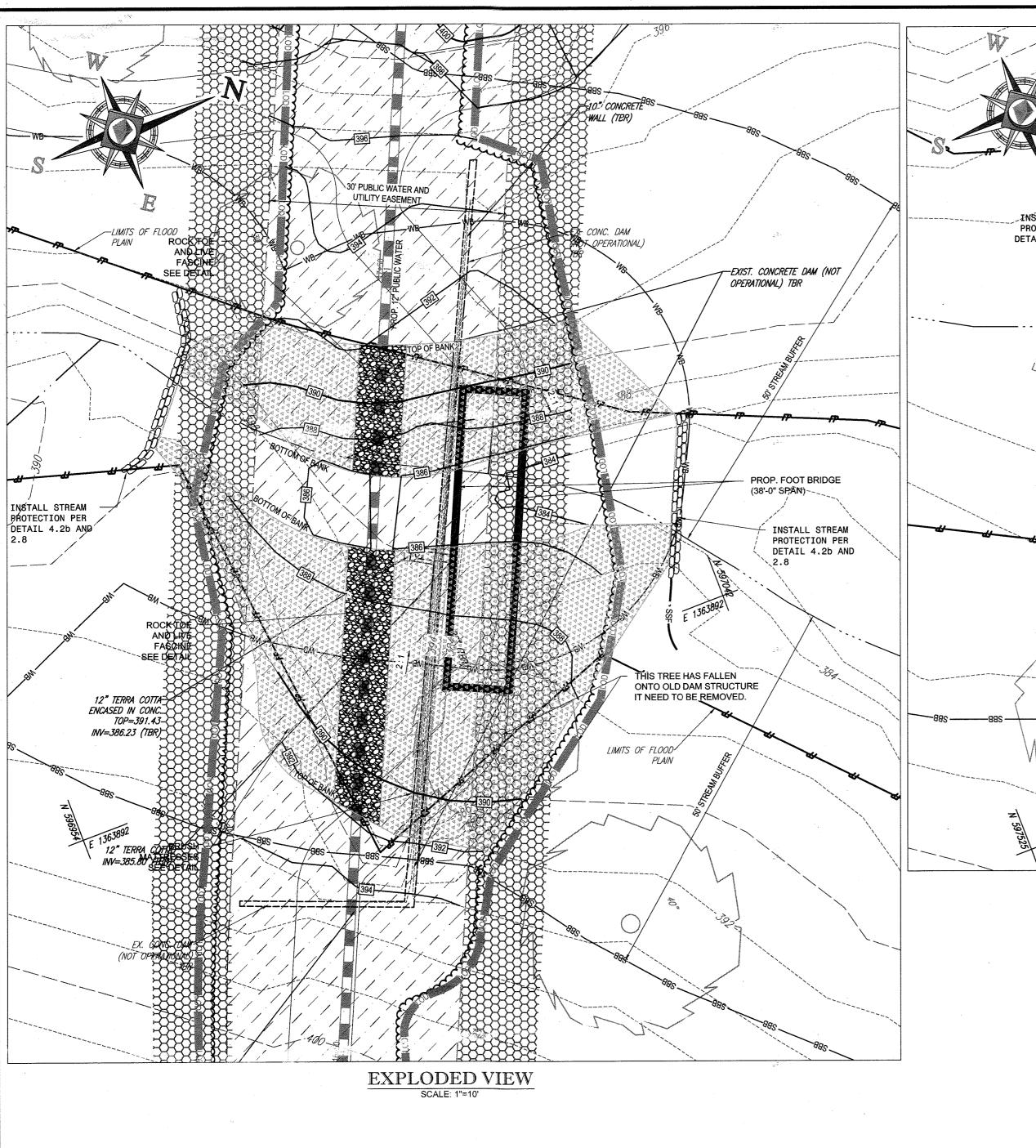
ROGERS AVENUE BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S) BUILDABLE LOTS 321 - 337 (SAN. ONLY) 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO.: 14-4803-D

ESTATES AT PATAPSCO PARK

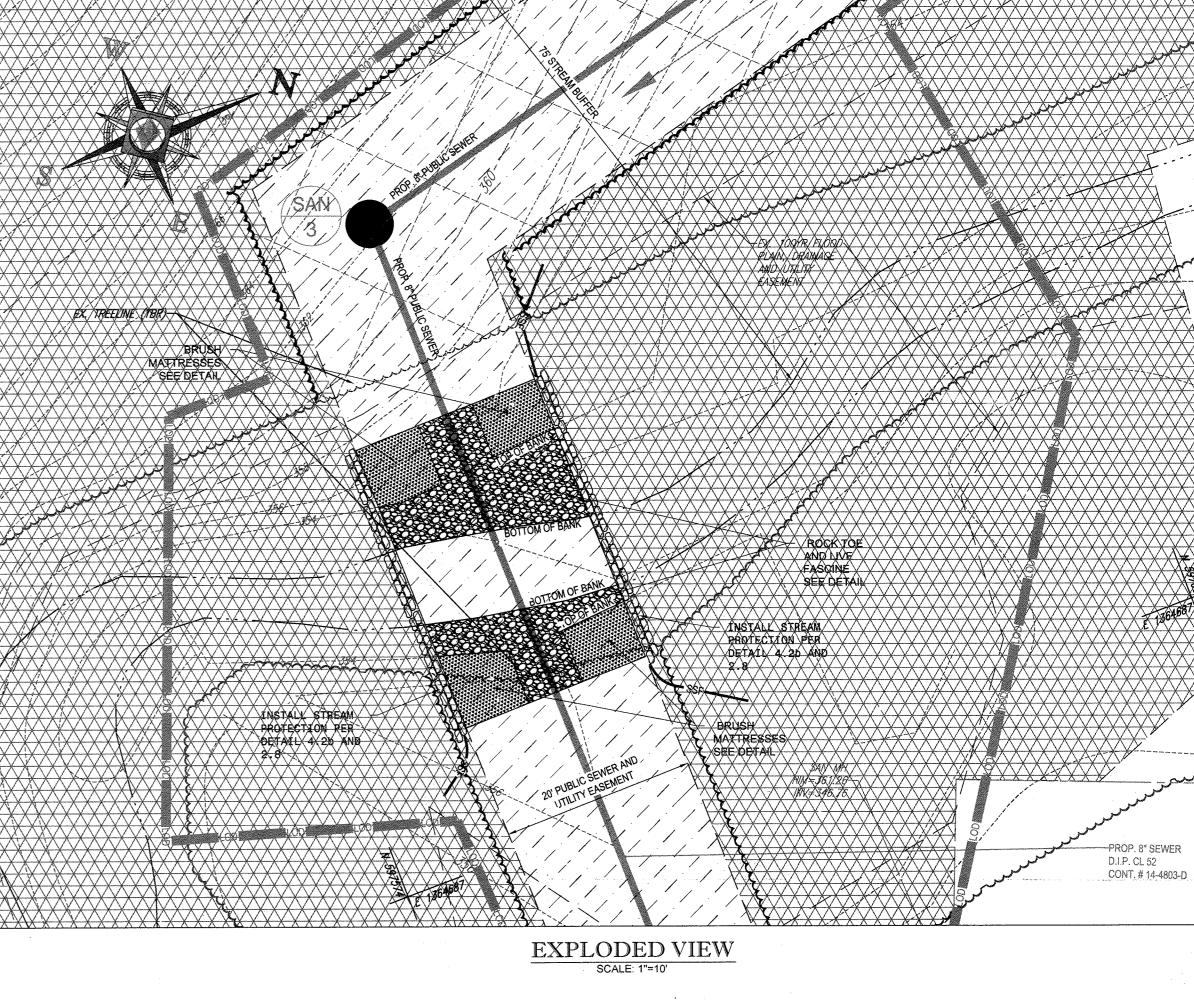
REVISED NOVEMBER 2000 MARYLAND DEPARTMENT OF THE ENVIRONMENT PAGE 2.8 - 3 WATER MANAGEMENT ADMINISTRATION

SHEET

15 OF 16



AND LIVE FASCINE INSTALL STREAM PROTECTION PER DETAIL 4.2b AND BRUSH MATTRESSES SEE DETAIL AND LIVE FASCINE SEE DETAIL EXPLODED VIEW



SEQUENCE OF CONSTRUCTION

- 1. ACTIVITIES WITHIN STREAM CHANNELS ARE PROHIBITED AS DETERMINED BY THIS CLASSIFICATION OF STREAM (COMAR 26.08.02.08): PATAPSCO RIVER AREA 02130900 IS A USE- I WATERWAY; IN-STREAM WORK MAY NOT BE CONDUCTED FROM MARCH 1 THROUGH JUNE 15 INCLUSIVE, OF ANY YEAR. REFER TO MDE'S LETTER OF AUTHORIZATION PERTAINING TO THIS CROSSING FOR ADDITIONAL DETAILS AND INFORMATION.
- 2. OBTAIN GRADING PERMIT.
- 3. ONCE ALL PERMITS ARE IN HAND SCHEDULE MEETING IN THE FIELD WITH THE SEDIMENT CONTROL INSPECTOR. - 1 DAY
- 4. INSTALL STABILIZED CONSTRUCTION ENTRANCE 1 DAY
- 5. INSTALL SILT FENCE AND OTHER EROSION AND SEDIMENT CONTROL MEASURES. 2 DAYS

6. INSTALL SUPER SILT FENCE PARALLEL TO THE STREAM BANKS AS SHOWN. - 1 DAY

- 7. INSTALL PUMP AROUND PRACTICE PER DETAIL MGWC 1.2. 2 DAYS 8. INSTALL 8" SEWER MAIN PIPE. CONSTRUCT ENOUGH FOR ONE DAY'S WORK, INCLUDING
- BACKFILL AND STABILIZING AREA DISTURBED. STABILIZE STREAM BOTTOM PER OPTION # 2 OF DETAIL MGWC 4.2(b). - 1 WEEK
- 9. STABILIZE SLOPES UP GRADIENT OF THE STREAM BOTTOM PROTECTION WITH BRUSH MATTRESSES PER DETAIL MGWC 2.8. 2 DAYS
- 10. SEED AND STABILIZE AREAS OUTSIDE OF THE STREAM BANKS PER "STANDARDS SPECIFICATIONS FOR VEGETATIVE STABILIZATION". - 2 DAYS
- 11. REMOVE TEMPORARY PUMP AROUND PRACTICE. 1 DAY
- 12. ONCE SEDIMENT CONTROL INSPECTOR'S SATISFIED THAT THE DISTURBED AREAS HAVE BEEN STABILIZED REMOVE SEDIMENT CONTROL. - 3 DAYS

SEQUENCE OF CONSTRUCTION

1. ACTIVITIES WITHIN STREAM CHANNELS ARE PROHIBITED AS DETERMINED BY THIS CLASSIFICATION OF STREAM (COMAR 26.08.02.08): PATAPSCO RIVER AREA - 02130900 IS A USE- I WATERWAY; IN-STREAM WORK MAY NOT BE CONDUCTED FROM MARCH 1 THROUGH JUNE 15 INCLUSIVE, OF ANY YEAR. REFER TO MDE'S LETTER OF AUTHORIZATION

PERTAINING TO THIS CROSSING FOR ADDITIONAL DETAILS AND INFORMATION.

- OBTAIN GRADING PERMIT.
- 3. ONCE ALL PERMITS ARE IN HAND SCHEDULE MEETING IN THE FIELD WITH THE SEDIMENT CONTROL INSPECTOR. - 1 DAY
- 4. INSTALL STABILIZED CONSTRUCTION ENTRANCE 1 DAY
- 5. INSTALL SILT FENCE AND OTHER EROSION AND SEDIMENT CONTROL MEASURES. 1 WEEK
- 6. INSTALL SUPER SILT FENCE PARALLEL TO THE STREAM BANKS AS SHOWN. 3 DAYS
- 7. INSTALL PUMP AROUND PRACTICE PER DETAIL MGWC 1.2. 2 DAYS 8. INSTALL 8" SEWER MAIN PIPE. CONSTRUCT ENOUGH FOR ONE DAY'S WORK, INCLUDING BACKFILL AND STABILIZING AREA DISTURBED. STABILIZE STREAM BOTTOM PER OPTION # 2
- OF DETAIL MGWC 4.2(b). 1 WEEK
- 9. STABILIZE SLOPES UP GRADIENT OF THE STREAM BOTTOM PROTECTION WITH BRUSH MATTRESSES PER DETAIL MGWC 2.8. 2 DAYS
- 10. SEED AND STABILIZE AREAS OUTSIDE OF THE STREAM BANKS PER "STANDARDS SPECIFICATIONS FOR VEGETATIVE STABILIZATION". - 2 DAYS
- 11. REMOVE TEMPORARY PUMP AROUND PRACTICE. 1 DAY
- 12. ONCE SEDIMENT CONTROL INSPECTOR'S SATISFIED THAT THE DISTURBED AREAS HAVE PEEN STABILIZED REMOVE SEDIMENT CONTROL - 3 DAYS

SEQUENCE OF CONSTRUCTION

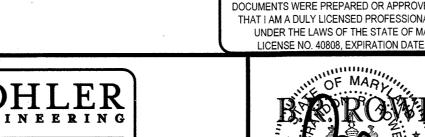
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- PERTAINING TO THIS CROSSING FOR ADDITIONAL DETAILS AND INFORMATION. 2. OBTAIN GRADING PERMIT.
- 3. ONCE ALL PERMITS ARE IN HAND SCHEDULE MEETING IN THE FIELD WITH THE SEDIMENT CONTROL INSPECTOR. - 1 DAY
- 4. INSTALL STABILIZED CONSTRUCTION ENTRANCE 1 DAY
- 5. INSTALL SILT FENCE AND OTHER EROSION AND SEDIMENT CONTROL MEASURES. 2 DAYS
- 7. INSTALL PUMP AROUND PRACTICE PER DETAIL MGWC 1.2, 2 DAYS

BACKFILL AND STABILIZING AREA DISTURBED. STABILIZE STREAM BOTTOM PER OPTION # 2

6. INSTALL SUPER SILT FENCE PARALLEL TO THE STREAM BANKS AS SHOWN. - 1 DAY

- 8. INSTALL 8" WATER MAIN PIPE. CONSTRUCT ENOUGH FOR ONE DAY'S WORK, INCLUDING
- OF DETAIL MGWC 4.2(b). 1 WEEK INSTALL FOOT BRIDGE. 1 WEEK
- 10. STABILIZE SLOPES UP GRADIENT OF THE STREAM BOTTOM PROTECTION WITH BRUSH MATTRESSES PER DETAIL MGWC 2.8. 2 DAYS
- 11. SEED AND STABILIZE AREAS OUTSIDE OF THE STREAM BANKS PER "STANDARDS" SPECIFICATIONS FOR VEGETATIVE STABILIZATION". - 2 DAYS
- 12. REMOVE TEMPORARY PUMP AROUND PRACTICE. 1 DAY
- 13. ONCE SEDIMENT CONTROL INSPECTOR'S SATISFIED THAT THE DISTURBED AREAS HAVE BEEN STABILIZED REMOVE SEDIMENT CONTROL. - 3 DAYS

PROFESSIONAL CERTIFICATION I, BRANDON R. ROWE, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, ICENSE NO. 40808, EXPIRATION DATE: 7/3/2017



901 DULANEY VALLEY ROAD, SUITE 801

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Fax: (410) 821-7987

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CENSE NO. 40000, EXPIRATION DATE. 1/3/20
BAROWE ***
PROFESSIONAL BUCHEER

			,					
DES: J.A.	-				STREAM CF	PHASE I	DETAILS	
DRN: R.L.B.								
CHK: B.R.R.	2	4/13/16	REDLINE REVISION - PHASED PLAN	BRR				
	1	10/21/15	REDLINE REVISION - LOT ADJUSTMENT	BRR	PARCEL NO.	N/A		
DATE: 2/12/16	REV.	DATE	DESCRIPTION	BY	600' SCALE MAP NO.	17	BLOCK NO	

THE FOLLOWING STATES REQUIRE NOTIFICATION BY AVATORS, DESIGNERS, OR ANY PERSON PREPARING 1 IN VIRGINIA, MARYLAND, THE DISTRICT OF COLUMBIA, AN (WV 1-800-245-4848) (PA 1-800-242-1776) (DC 1-800-257-777

ESTATES AT PATAPSCO PARK

ROGERS AVENUE BUILDABLE LOTS 203 - 248 & 373 - 385 (W&S) BUILDABLE LOTS 321 - 337 (SAN. ONLY) 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO.: 14-4803-D

SHEET 16 OF 16

CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PUBLIC WORKS HOWARD

COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DEPARTMENT OF PLANNING & ZONING

HOWARD COUNTY, MARYLAND

DATE