INDEX OF SHEETS

MCPDWT (FULL SET)	MCDPS	
1		TITLE SHEET [1]
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[1] Redline No. 1 - 01/28/14

THE LOCATION OF THE UNDERGROUND AND SURFACE UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-257-777, 48 HOURS PRIOR TO EXCAVATION FOR MARKING AND LOCATION OF UTILITIES.

CONVENTIONAL SYMBOLS
EXISTING CONSTRUCTION

- 100 YEAR FLOODPLAIN
- RIGHT OF WAY LINE
- PROPERTY LINE
- CONCRETE CURB AND GUTTER
- EDGE OF WOODED AREAS
- TREE (FREE STANDING)
- SIGN
- FIRE HYDRANT
- LIGHT POLE
- UTILITY POLE
- STORM DRAIN
- SANITARY (8" SAN)
- WATER (24"W)
- GAS
- ELECTRICAL HAND BOX - SIGNALS (H.B.)
- ELECTRIC (UNDERGROUND) (E)

PROPOSED CONSTRUCTION

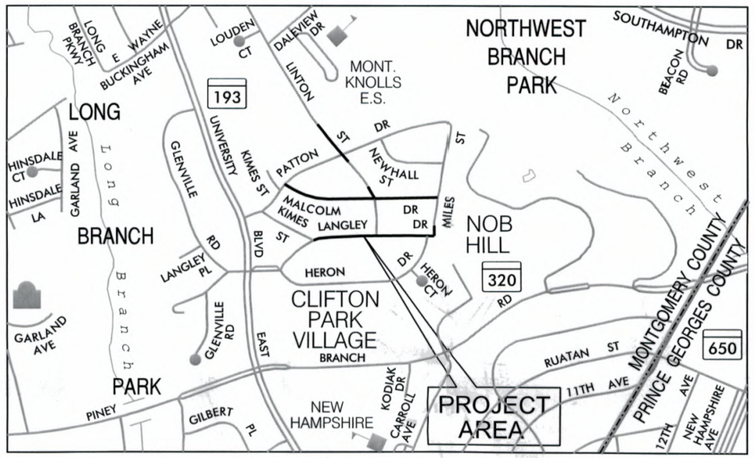
- ℄ CONSTRUCTION (101 +50 102)
- CURB & GUTTER
- TRAVERSE POINT
- SIDEWALK
- PAVEMENT REMOVAL
- APPROXIMATE LIMITS OF CUT AND/OR FILL (C / F)
- LIMIT OF DISTURBANCE (LOD)
- STORM DRAIN PIPE
- TEST PIT (TP-2)
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- PERPETUAL EASEMENT (PE)

MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

FRANKLIN KNOLLS PHASE 1

LOW IMPACT DEVELOPMENT PROJECT

CONTRACT NO. 8803000101-CD
Task Order 13 - Subtask B



VICINITY MAP
SCALE : 1"= 500'

GENERAL NOTES

1. THE CONTRACTOR WILL IMMEDIATELY INFORM THE COUNTY OF ANY DISCREPANCIES FOUND BETWEEN THE PROJECT PLANS AND CONTRACT SPECIFICATIONS.
2. FOR CONSTRUCTION, ALL HORIZONTAL SHALL BE BASED ON NAD 83/91, NAVD 88 DATUM.
3. TYPES OF STORM DRAIN STRUCTURES REFER TO THE "DESIGN STANDARDS" OF MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, UNLESS OTHERWISE NOTED.
4. WHEN THE DROP ON THE MAIN LINE THROUGH A STORM DRAIN STRUCTURE CAN BE ACCOMMODATED BY AN INVERT SLOPE OF 1.5:1 OR FLATTER, A ROUNDED CHANNEL LINED WITH SEWER BRICK ON EDGE SHALL BE BUILT TO THE CROWN OF THE PIPES. WHEN THE INVERT SLOPES WOULD BE GREATER THAN 1.5:1 A SPECIAL INVERT SHALL BE CONSTRUCTED AS NOTED.
5. ALL STORM DRAIN PIPE SHALL BE INSTALLED WITH CLASS "C" BEDDING UNLESS OTHERWISE SPECIFIED.
6. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAIN STRUCTURES, WHEN NECESSARY, TO MEET EXISTING CONDITIONS, AS APPROVED BY MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES RIGHT OF WAY INSPECTOR.
7. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF THE LINES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING. IF CLEARANCES ARE LESS THAN SHOWN OR TWELVE (12) INCHES, WHICHEVER IS LESS, THE CONTRACTOR SHALL CONTACT THE COUNTY.
8. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
9. CALL "MISS UTILITY" AT 1-800-257-7777 FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES.
10. CLEARING IS TO BE LIMITED TO THE "LIMIT OF DISTURBANCE" AS SHOWN ON THE PLANS.
11. ALL GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE.
12. DISTURBED AREAS ADJACENT TO ESTABLISHED LAWNS SHALL BE SODDED. OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
13. THE CONTRACTOR SHALL UTILIZE THE MCDOT'S BLANKET ROADSIDE TREE PERMIT #2013-0557 FOR ANY MAINTENANCE, TREATMENT, PLANTING, REMOVAL, OR ROOT PRUNING ON TREES WITHIN THE PUBLIC RIGHT OF WAY. PERMIT REQUIREMENTS MAY BE OBTAINED FROM THE MCDOT ARBORIST AT (240) 777-7653.
14. CONTACT THE WASHINGTON SUBURBAN SANITARY COMMISSION SYSTEM MAINTENANCE ENGINEER BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING WATER OR SEWER LINES. BACKFILL TO BE DONE UNDER SUPERVISION OF W.S.S.C. CALL 301-699-4420.
    W.S.S.C. UTILITY CONTRACT NUMBERS WITHIN THE PROJECT LIMITS:
    55779 & 582829 (SANITARY) AND 55778 & 582828 (WATER).
15. CONTACT WASHINGTON GAS DISPATCH OFFICER AT (703)750-4831 BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING GAS MAIN AND SERVICE LATERALS.
16. CONTRACTOR SHALL COORDINATE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (DPS) RIGHT OF WAY INSPECTOR AND SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.
17. CONTRACTOR SHALL PROVIDE STANDARD TRAFFIC CONTROL IN ACCORDANCE WITH MCDOT FOR ALL CONSTRUCTION ACTIVITIES.
18. CONTRACTOR SHALL CONSTRUCT PROPOSED IMPROVEMENTS IN COMPLIANCE WITH CURRENT ADA GUIDELINES.

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31204, EXPIRATION DATE: JAN. 13, 2015.

STATE OF MARYLAND · KIMI C. SCHMIDT · No. 31204 · PROFESSIONAL ENGINEER

10/29/13
DATE

KIMI C SCHMIDT, P.E.
P.E. # 31204

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME IN ACCORDANCE WITH MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 31204, EXPIRATION DATE: JANUARY 13, 2015.

I FURTHER CERTIFY THAT THE TOTAL AMOUNTS OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAVE BEEN COMPUTED TO BE ~~505~~ [1] 546 CUBIC YARDS OF EXCAVATION AND 4 CUBIC YARDS OF FILL AND THAT THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE A MAXIMUM OF 17,689 SQUARE FEET OR 0.41 ACRES.

STATE OF MARYLAND · KIMI C. SCHMIDT · No. 31204 · PROFESSIONAL ENGINEER

10/29/13
DATE

KIMI C SCHMIDT, P.E.
P.E. # 31204

10/29/13
DATE

KATHARINE KYLE MUNDY, R.L.A.
R.L.A. # 3565

BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS · 3565 · KATHARINE KYLE MUNDY · STATE OF MARYLAND

CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS TO PREVENT DAMAGE TO THE NEWLY INSTALLED PAVEMENT, CURB AND SIDEWALK BY MCDOT. CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL DEMOLISHED ITEMS NECESSARY FOR THE CONSTRUCTION OF THEIR WORK. REPLACEMENT OF ANY DAMAGED ITEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR NO ADDITIONAL COMPENSATION.

CONTRACTOR SHALL COORDINATE WITH THE COUNTY ARBORIST TO MINIMIZE IMPACTS TO EXISTING TREES AND TO DETERMINE THE LIMITS OF ROOT PRUNING OR TREE REMOVAL AS NECESSARY.

PROPOSED SECTIONS OF CURB AND GUTTER SHOWN ON THIS PLAN SET SHOULD BE CONSTRUCTED AT THE TIE-IN POINTS UNLESS OTHERWISE NOTED. STATION LIMITS ARE APPROXIMATE AND MAY NEED TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION.

OWNER/CONTACT/ADDRESS:
DEPARTMENT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, STE 120
ROCKVILLE MD 20850-4166
(240) 777-7713 CRAIG CARSON

DPS PERMIT NO. 283294 -1.8
MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

PROPOSED LID FACILITY LOCATIONS

SCALE : 1"= 80'

80' 0 80' 160'

SCALE: 1" = 80'

BMP ID	Approximate Address	SWM Practice Proposed	Plan Sheet
N/A	924 Heron Drive	Curb & Gutter (SWM Practice Removed)	6
5	8901 Miles Street	Bioretention & Pavement Removal	6
6	921 Langley Drive	Bioretention	7
7	918 Langley Drive	Rain Garden	8
8	8901 Linton Street (along Langley Dr.)	Bioretention	9
9	902 Langley Drive	Bioretention	10
N/A	9000 Kimes Street	Curb & Gutter (SWM Practice Removed)	11
14	809 & 811 Malcolm Drive	Rain Garden	12
15	806 Malcolm Drive	Rain Garden	12
16	812 Malcolm Drive	Rain Garden	13
17	907 & 909 Malcolm Drive	Rain Garden	14
18	902 Malcolm Drive	Rain Garden	15
22	9009 Linton Street (along Patton Dr.)	Rain Garden	16
23	across from 9015 & 9017 Linton Street	Rain Garden	17
25	9006 Linton Street (corner)	Rain Garden	16
26	807 Patton Drive (along Malcolm Drive)	Rain Garden	18
27	802 Malcom Drive	Rain Garden	18
28	900 Malcolm Drive (along Malcolm Drive)	Rain Garden	15
29	909 Malcolm Drive	Rain Garden	14

**BMPs 1-4, 10-13, 19-21 and 24 have been removed from the project due to major utility and/or tree conflicts or soil and groundwater issues.

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

OVERALL SITE PLAN

FRANKLIN KNOLLS-PHASE 1

SLIGO (13th) ELECTION DISTRICT

MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	

SHEET 2 OF 22

FILE: I:\5152\13 - roadway lid - forest estates and the four corners area\design\engineering\planset\fk p1\pGN-L001_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM

BASELINE CONTROL COORDINATES

℄ CONSTRUCTION	POINT NO.	NORTHING	EASTING	STATION	BEARING AHEAD	RADIUS
LANGLEY DRIVE	POB = 1000	486148.4701	1313652.9949	10+00	N 87° 21'14.34" E	
	PC = 1001	486153.4355	1313760.4364	11+08	N 87° 21'14.34" E	
	PI	486155.2521	1313799.7445	11+47	N 44° 23'40.53" E	
	CC = 1002	486253.3289	1313755.8199			100.00'
	PT = 1003	486183.3693	1313827.2737	11+83	N 44° 23'40.53" E	
	PC = 1004	486224.2086	1313867.2589	12+40	N 44° 23'40.53" E	
	PI	486271.3923	1313913.4559	13+06	N 56° 57'20.08" E	
	CC = 1005	485804.4510	1314295.9821			600.00'
	PT = 1006	486307.3998	1313968.8087	13+71	N 56° 57'20.08" E	
	PC = 1007	486342.9161	1314023.4062	14+36	N 56° 57'20.08" E	
	PI	486373.2720	1314070.0709	14+92	N 88° 03'51.50" E	
	CC = 1008	486175.2665	1314132.4640			200.00'
	PT = 1009	486375.1524	1314125.7085	15+45	N 88° 03'51.50" E	
	PC = 1010	486382.5285	1314343.9570	17+63	N 88° 03'51.50" E	
	PI	486383.3280	1314367.6105	17+87	N 89° 25'12.95" E	
	CC = 1011	484383.6698	1314411.5126			2000.00'
	PT = 1012	486383.5674	1314391.2763	18+11	N 89° 25'12.95" E	
	POE = 1013	486389.1162	1314939.6439	23+59		
PATTON DRIVE	POB = 1014	486522.3519	1313585.7114	50+00	N 70° 42'21.33" E	
	PI	486528.0889	1313602.0990	50+17	N 68° 57'34.24" E	
	PI	486532.4921	1313613.5457	50+30	N 69° 25'27.15" E	
	PI	486540.1237	1313633.8751	50+51	N 69° 44'30.00" E	
	PC = 1015	486551.0531	1313663.4874	50+83	N 69° 44'30.00" E	
	PI	486574.6344	1313727.3787	51+51	N 32° 07'55.76" E	
	CC = 1016	486738.6813	1313594.2367			200.00'
	PT = 1017	486632.3065	1313763.6015	52+14	N 32° 07'55.76" E	
	PC = 1018	486674.7134	1313790.2364	52+64	N 32° 07'55.76" E	
	PI	486800.1133	1313868.9978	54+12	N 68° 33'43.52" E	
	CC = 1019	486435.3701	1314171.3070			450.00'
	PT = 1020	486854.2365	1314006.8353	55+50	N 68° 33'43.52" E	
	PI	486940.4923	1314226.5062	57+86	N 67° 21'29.62" E	
	PI	487085.8494	1314574.9878	61+64	N 68° 55'08.92" E	
	PC = 1021	487121.5951	1314667.7173	62+63	N 68° 55'08.92" E	
	PI	487131.5609	1314693.5699	62+91	N 79° 28'20.90" E	
	CC = 1022	486841.6730	1314775.6228			300.00'
	PT = 1023	487136.6232	1314720.8104	63+19	N 79° 28'20.90" E	
	PC = 1024	487178.8349	1314947.9553	65+50	N 79° 28'20.90" E	
	PI	487192.2071	1315019.9124	66+23	S 10° 47'37.03" W	
	CC = 1025	487129.6765	1314957.0907			50.00'
MALCOLM STREET	POB = 1026	486739.7067	1313839.8266	100+00	S 61° 54'39.45" E	
	PC = 1027	486690.6161	1313931.8074	101+04	S 61° 54'39.45" E	
	PI	486642.1509	1314022.6164	102+07	N 89° 13'37.90" E	
	CC = 1028	487043.5029	1314120.1447			400.00'
	PT = 1029	486643.5392	1314125.5397	103+06	N 89° 13'37.90" E	
	POE = 1030	486654.2230	1314917.5847	110+98		
LINTON STREET	POB = 1031	486384.5600	1314489.3674	200+00	N 0° 34'47.05" W	
	PC = 1032	486488.3578	1314488.3171	201+04	N 0° 34'47.05" W	
	PI	486673.4359	1314486.4443	202+89	N 41° 12'22.78" W	
	CC = 1033	486483.2988	1313988.3427			500.00'
	PT = 1034	486812.6850	1314364.5137	204+58	N 41° 12'22.78" W	
	PI	486981.3653	1314216.8124	206+83	N 40° 48'54.43" W	
	POE = 1035	487185.5400	1314040.4795	209+52		
MILES STREET	POB = 1036	486388.4174	1314870.5890	300+00	N 10° 00'57.21" E	
	PI	486667.4245	1314919.8653	302+83	N 10° 47'37.03" E	
	POE = 1037	487198.3496	1315021.0834	308+24		
HERON DRIVE	POB = 1038	486153.4355	1313760.4364	400+00	N 87° 21'14.34" E	
	PC = 1039	486153.8886	1313770.2414	400+10	N 87° 21'14.34" E	
	PI	486154.8757	1313791.5985	400+31	S 46° 20'34.63" E	
	CC = 1040	486103.9420	1313772.5496			50.00'
	PT = 1041	486140.1162	1313807.0666	400+50	S 46° 20'34.63" E	
	PC = 1042	486070.1063	1313880.4378	401+52	S 46° 20'34.63" E	
	PI	486040.8235	1313911.1266	401+94	N 87° 41'08.61" E	
	CC = 1043	486142.4548	1313949.4719			100.00'
	PT =	486042.5364	1313953.5099	402+32	N 87° 41'08.61" E	
	POE = 1044	486056.6338	1314302.3376	405+81		
KIMES STREET	PC = 1045	486667.3458	1313785.6090	500+00	N 32° 07'55.76" E	
	PI	486693.4552	1313802.0078	500+31	N 31° 11'14.74" W	
	CC = 1046	486693.9395	1313743.2678			50.00'
	PT = 1047	486719.8315	1313786.0417	500+55	N 31° 11'14.74" W	
	POE = 1048	486872.7757	1313693.4612	502+34		

TRAVERSE CONTROL COORDINATES

POINT NO.	STATION	OFFSET	ALIGNMENT	NORTHING	EASTING	ELEVATION
1	601+21.14	358.19	KIMES ST SOUTH	486185.5664	1313585.4211	272.68
2	12+08.40	-424.39	LANGLEY DR	486498.7519	1313542.1247	275.94
3	55+19.59	-13.99	PATTON DR	486854.6504	1313972.5829	278.72
60	18+77.01	-11.57	LANGLEY DR	486395.8036	1314457.5126	225.27
61	21+97.17	133.37	LANGLEY DR	486254.1128	1314779.1195	221.75
100	110+88.45	3.40	MALCOLM DR	486650.6941	1314908.2141	224.68
101	22+90.71	2.52	LANGLEY DR	486385.9002	1314871.3328	210.26
102	14+84.72	7.67	LANGLEY DR	486356.9088	1314069.2483	239.83
103	10+82.43	28.47	LANGLEY DR	486123.8375	1313736.6501	270.78
104	106+57.11	-10.13	MALCOLM DR	486658.4099	1314476.7228	240.73
150	402+61.54	14.17	HERDON DR	486029.5757	1313983.7313	256.36
151	53+21.77	26.88	PATTON DR	486704.2448	1313844.5973	276.04
200	58+06.56	-0.66	PATTON DR	486948.8635	1314244.8698	257.69
201	61+01.12	-0.81	PATTON DR	487062.4023	1314516.6723	245.03
202	65+87.35	-34.80	PATTON DR	487201.0447	1315002.8892	202.10

BASELINE CONTROL COORDINATES (CONTINUED)

℄ CONSTRUCTION	POINT NO.	NORTHING	EASTING	STATION	BEARING AHEAD	RADIUS
KIMES STREET SOUTH	PC = 1049	486542.4570	1313640.1970	600+00	N 69° 44'30.00" E	
	PI	486550.1292	1313660.9841	600+22	S 62° 27'24.61" E	
	CC = 1050	486495.5499	1313657.5097			50.00'
	PT = 1051	486539.8831	1313680.6305	600+42	S 62° 27'24.61" E	
	PC = 1052	486395.3817	1313957.7054	603+54	S 62° 27'24.61" E	
	PI	486371.0511	1314004.3581	604+07	N 88° 03'51.50" E	
	CC = 1053	486572.7142	1314050.1887			200.00'
	PT = 1054	486372.8283	1314056.9443	604+57	N 88° 03'51.50" E	
	POE = 1055	486375.1524	1314125.7085	605+26		

CURVE DATA

							CENTER OF CURVE	
CURVE NO.	DELTA	Dc	R	T	L	E	NORTH	EAST
CURVE-010	42° 57'33.8019"	57° 17'44.8062"	100.00'	39.35'	74.98'	7.46	486253.3289	1313755.8199
CURVE-011	12° 33'39.5411"	9° 32'57.4678"	600.00'	66.03'	131.54'	3.62	485804.4510	1314295.9821
CURVE-012	31° 06'31.4279"	28° 38'52.4031"	200.00'	55.67'	108.59'	7.60	486175.2665	1314132.4640
CURVE-013	1° 21'21.4445"	2° 51'53.2403"	2000.00'	23.67'	47.33'	0.14	484383.6698	1314411.5126
CURVE-050	37° 36'34.2392"	28° 38'52.4031"	200.00'	68.10'	131.28'	11.28	486738.6813	1313594.2367
CURVE-051	36° 25'47.7549"	12° 43'56.6236"	450.00'	148.08'	286.12'	23.74	486435.3701	1314171.3070
CURVE-052	10° 33'11.9770"	19° 05'54.9353"	300.00'	27.71'	55.26'	1.28	486841.6730	1314775.6228
CURVE-053	111° 19'16.1316"	114° 35'29.6125"	50.00'	73.19'	97.15'	38.64	487129.6765	1314957.0907
CURVE-100	28° 51'42.6563"	14° 19'26.2016"	400.00'	102.93'	201.49'	13.03	487043.5029	1314120.1447
CURVE-200	40° 37'35.7274"	11° 27'32.9612"	500.00'	185.09'	354.53'	33.16	486483.2988	1313988.3427
CURVE-400	46° 18'11.0315"	114° 35'29.6125"	50.00'	21.38'	40.41'	4.38	486103.9420	1313772.5496
CURVE-401	45° 58'16.7542"	57° 17'44.8062"	100.00'	42.42'	80.24'	8.62	486142.4548	1313949.4719
CURVE-500	63° 19'10.5012"	114° 35'29.6125"	50.00'	30.83'	55.26'	8.74	486693.9395	1313743.2678
CURVE-600	47° 48'05.3830"	114° 35'29.6125"	50.00'	22.16'	41.71'	4.69	486495.5499	1313657.5097
CURVE-601	29° 28'43.8839"	28° 38'52.4031"	200.00'	52.62'	102.90'	6.81	486572.7142	1314050.1887

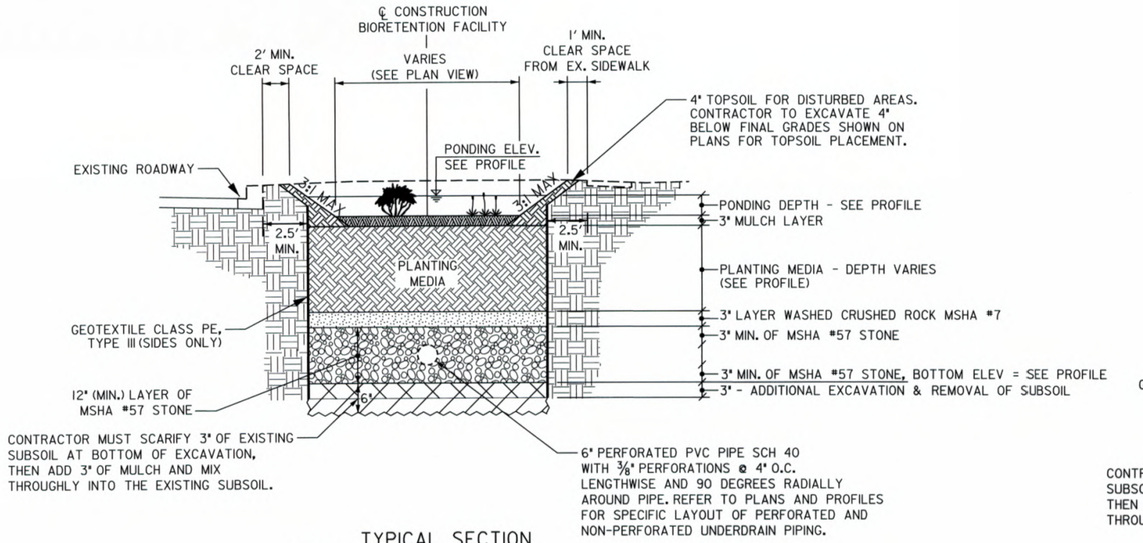
McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

GEOMETRIC LAYOUT
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

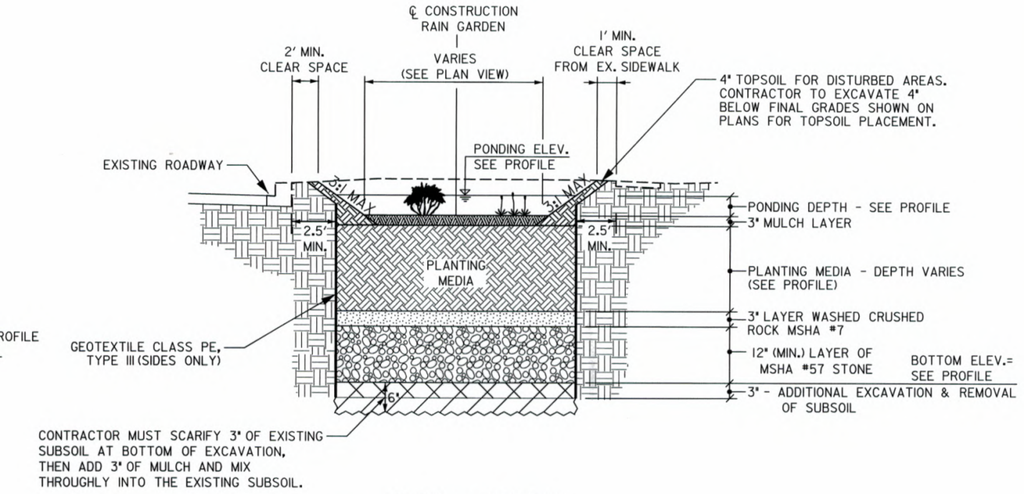
DESIGN
DRAFT WJW
APPROVED HJD
DATE JUNE 12'
SCALE 1"=100'

FILE: I:\5182\13 - roadway lid – forest estates and the four corners area\design\engineering\planset\fk p1\pGS-P001_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM



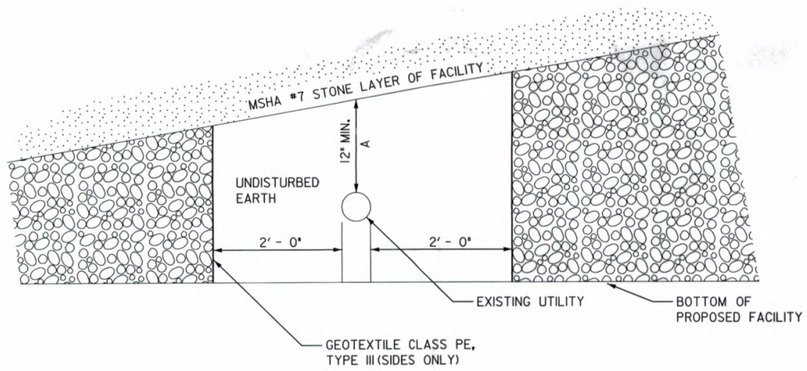
BR / X — TYPICAL SECTION BIORETENTION DETAIL

NOT TO SCALE



RG / X — TYPICAL SECTION RAINGARDEN DETAIL

NOT TO SCALE



NOTES:

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES AND SHALL HAND DIG AROUND UTILITIES LOCATED IN THE VICINITY OF THE PROPOSED EXCAVATION. CONTACT MISS UTILITY 48 HOURS PRIOR TO DIGGING TO HAVE UTILITIES LOCATED.

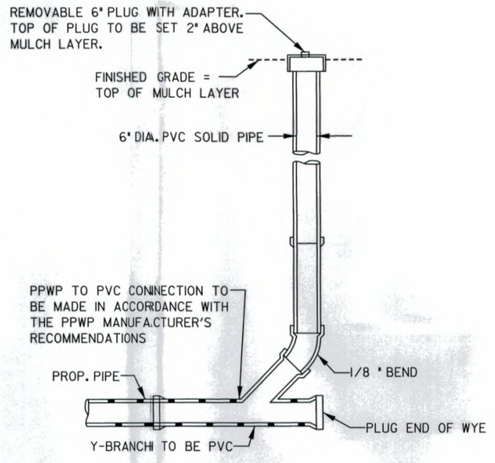
2. WHEN THE CONTRACTOR ENCOUNTERS AN EXISTING UTILITY WITH LESS THAN 12" OF VERTICAL CLEARANCE BETWEEN THE TOP OF UTILITY AND THE BOTTOM OF THE FACILITY, THE TYPICAL UTILITY CROSSING TREATMENT SHALL BE FOLLOWED.

3. WHEN THE VERTICAL CLEARANCE BETWEEN THE TOP OF UTILITY AND THE BOTTOM OF THE NO. 57 STONE LAYER (SHOWN AS DIMENSION A) IS LESS THAN 12", ADJUST MEDIA DEPTH AND CHANNEL SLOPE TO OBTAIN THE REQUIRED COVER DEPTH.

4. UNDISTURBED EARTH AREA SURROUNDING EXISTING UTILITY SHALL EXTEND ACROSS THE ENTIRE FACILITY WIDTH.

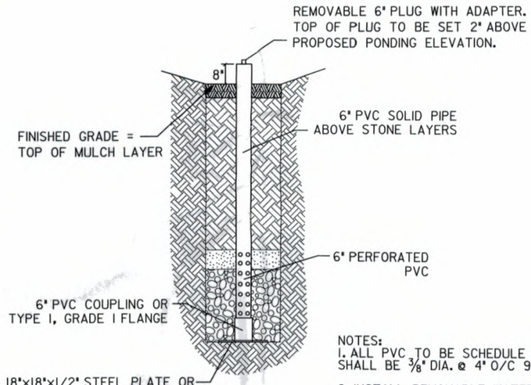
TYPICAL UTILITY CROSSING DETAIL

NOT TO SCALE



CO / X — STANDARD CLEANOUT DETAIL

N.T.S.



NOTES:

1. ALL PVC TO BE SCHEDULE 40. PERFORATIONS SHALL BE 3/8" DIA. @ 4" O/C 90° ALL AROUND PIPE.

2. INSTALL REMOVABLE WATER TIGHT PVC CAP ON TOP OF 6" PVC.

3. BOTTOM EXCAVATION IS TO BE IN NATURAL UNCOMPACTED EARTH.

4. THREE 1" HOLES SHOULD BE DRILLED INTO THE BOTTOM PLATE TO ALLOW WATER TO DRAIN FROM THE OBSERVATION WELL.

5. REFER TO BMP PROFILE FOR SPECIFIC STONE AND PLANTING MEDIA DEPTHS AND ELEVATIONS.

6. PVC PIPE SHALL BE ATTACHED TO THE FLANGE WITH SOLVENT CEMENT PER THE MANUFACTURER'S SPECIFICATIONS.

OW / X — OBSERVATION WELL DETAIL

N.T.S.

DETAILS REVISED 02/13

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

STORMWATER MANAGEMENT DETAILS

FRANKLIN KNOLLS-PHASE 1

SLIGO (13th) ELECTION DISTRICT

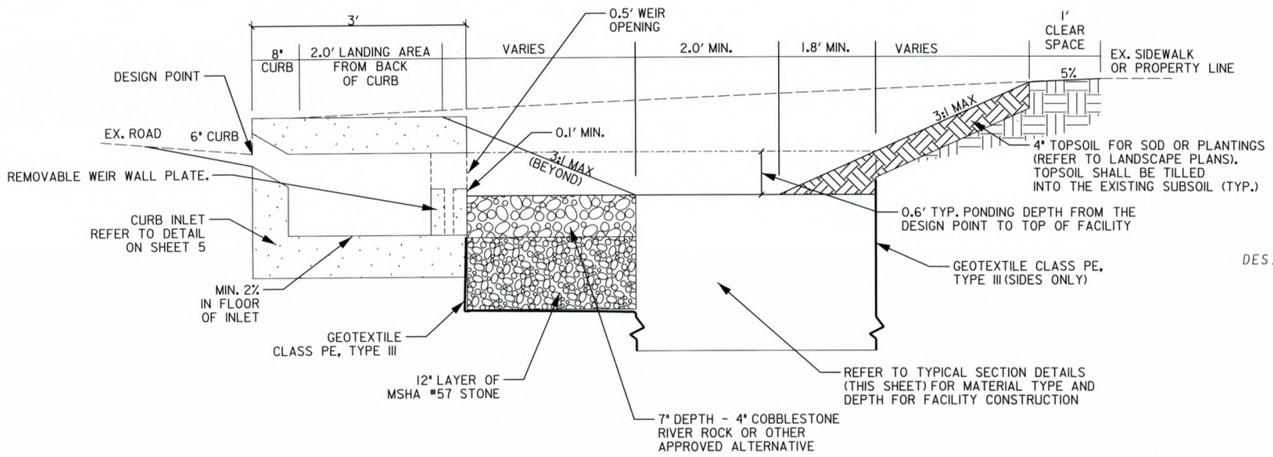
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	DATE	JUNE 12'
DRAFT	WJW	SCALE	NOT TO SCALE
APPROVED	HJD		

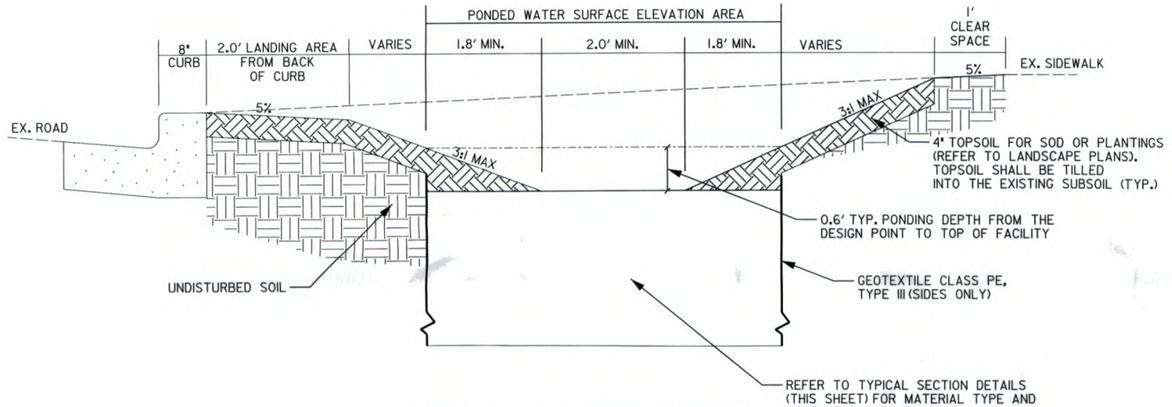
SHEET 4 OF 22

F:\E-10\10213 - Franklin Knolls\Engineering\Sheets\For the four corners area\design\engineering\plansheets\fk_p1pDE-D001_PH1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM



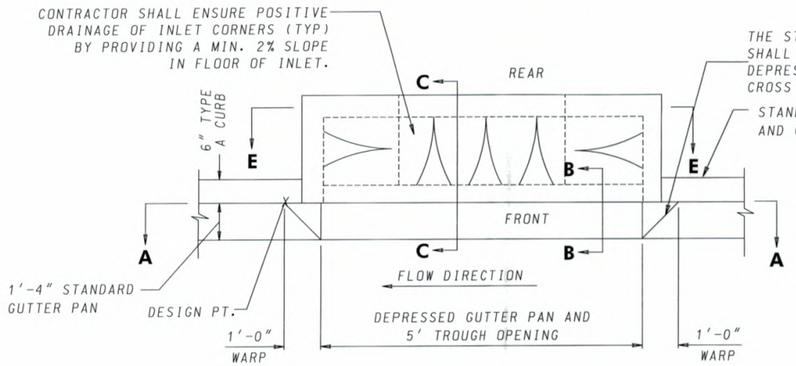
TYPICAL RIGHT OF WAY INLET SECTION

SCALE: 1"=1'



TYPICAL RIGHT OF WAY SECTION

SCALE: 1"=1'

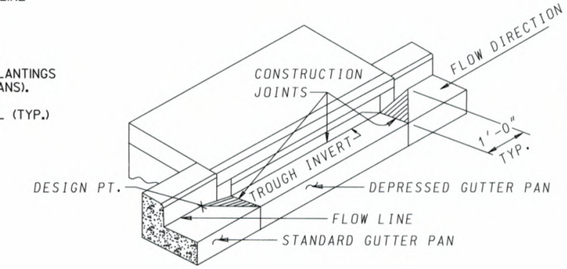


PLAN

WHENEVER STANDARD MC-101.01 CURB IS USED IN CONJUCTION WITH THIS STANDARD, A 10 FOOT TRANSITION SHALL BE PROVIDED FROM THE STANDARD MC-100.01 TO STANDARD MC-101.01 FOR CURB RETURNS AND CURB SECTIONS WHICH INCLUDES INLETS.

I/X MODIFIED CURB OPENING INLET DETAIL

NOT TO SCALE



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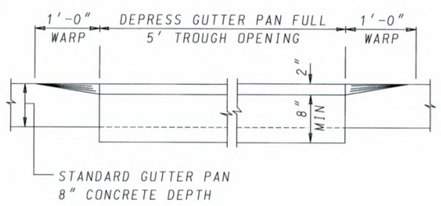
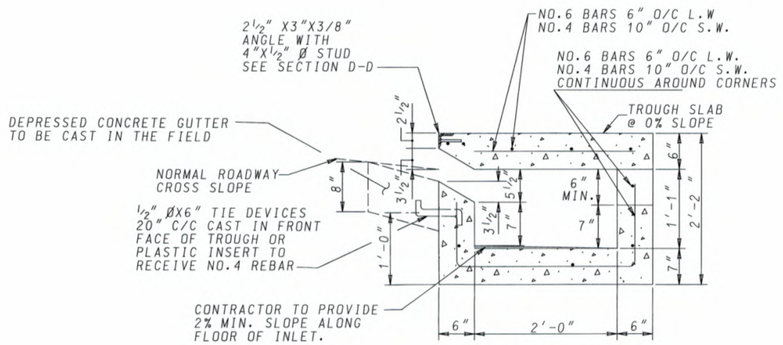


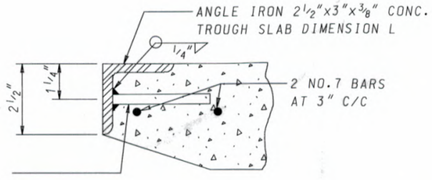
SECTION A-A

(SHOWN LOOKING TOWARD ROADWAY)

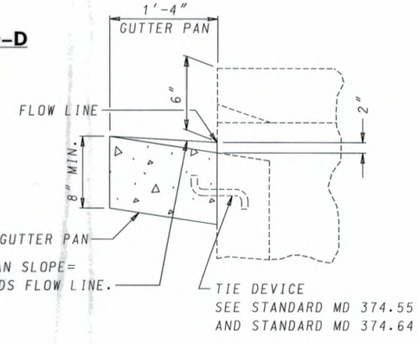


SECTION C-C

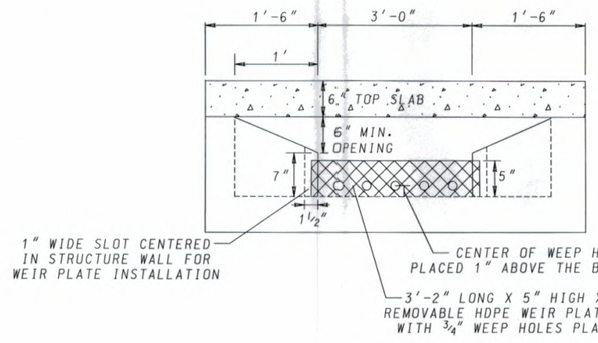
(MODIFIED MSHA STD. NO. MD 374.55-01)



SECTION D-D



SECTION B-B



SECTION E-E

(SHOWN LOOKING TOWARD ROADWAY)

GENERAL NOTES:

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. CONTRACTOR MUST PROVIDE SHOP DRAWINGS AND SEALED COMPUTATIONS FOR THE CURB INLETS TO MONTGOMERY COUNTY DEP FOR APPROVAL.
3. CURB INLET SHALL BE H-20 LOAD RATED.
4. STATIONING, TC/TG AND INVERT ELEVATIONS SHOWN IN THE DRAINAGE STRUCTURE TABLES ARE TAKEN AT THE CENTER OF THE STRUCTURE, ALONG THE CURBLINE.
5. MODIFIED CURB OPENING INLET SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD OF MIX NO. 6 CONCRETE FOR MISCELLANEOUS STRUCTURES.

DETAILS REVISED 02/13

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

STORMWATER MANAGEMENT DETAILS

FRANKLIN KNOLLS-PHASE 1

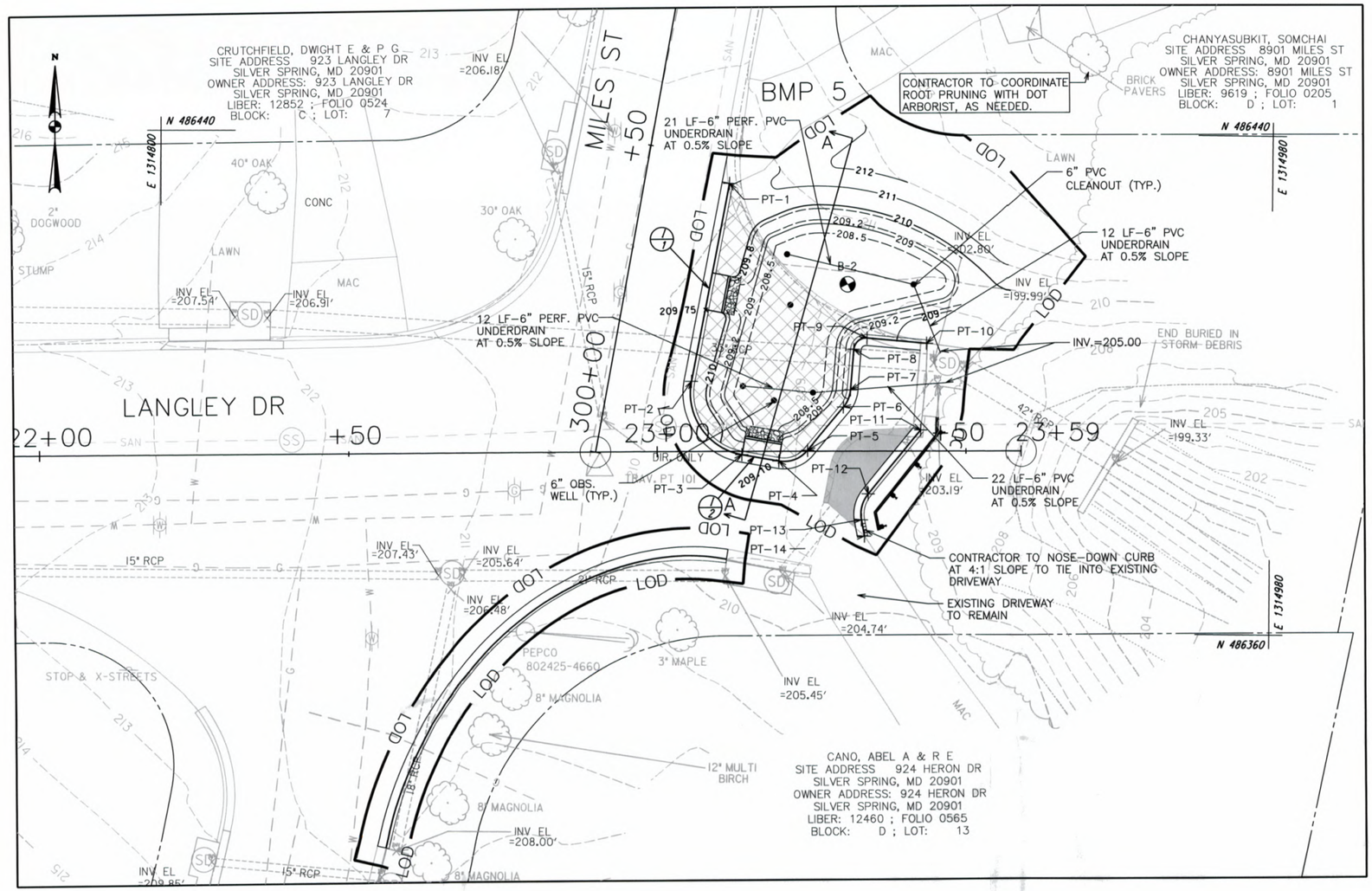
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

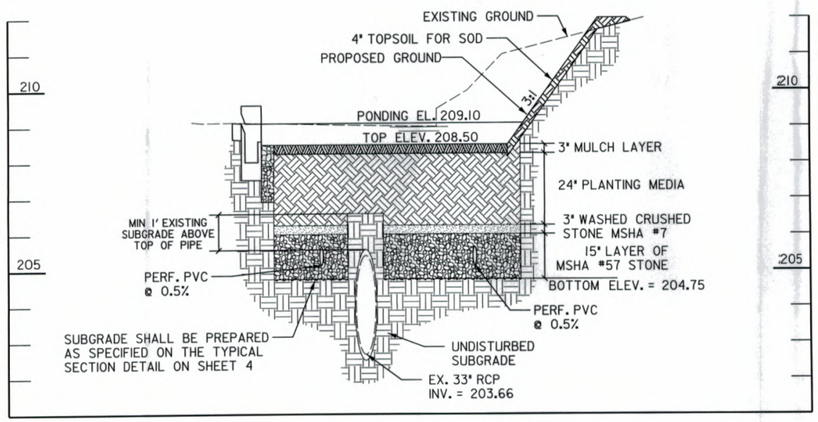
MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	APPROVED	HJD	SCALE	NOT TO SCALE
DRAFT	WJW	DATE	JUNE 12		

SHEET 5 OF 22

FILE: 15152113 - roadway list - Inlets and Pipe four corners area\design\engineering\sheet\fig pl\DE-D002_PAT.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - BIORETENTION FACILITY (BMP 5)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION BMP ID: 5

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.97	
TOTAL IMPERVIOUS AREA (AC)	0.30	
TREATMENT VOLUME PROVIDED (CF)	857	
TARGET WQv TREATMENT VOLUME (CF)	1156	
FILTER BED AREA (SF) [1]	450	
FILTER BED SURFACE ELEVATION	208.50	
DESIGN POINT/MAX. PONDING ELEVATION	209.10	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	631	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	6"/205.00	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
22+55 RT TO 23+11 RT	80	TYPE A, MC-100.01
23+06 LT TO 23+44 LT	80	TYPE A, MC-100.01
23+33 RT TO 23+43 LT	21	TYPE A, MC-100.01

CURB ELEVATIONS

POINT	STATION	BASELINE	OFFSET	FLOWLINE ELEV.	NOTE
1	23+12	LANGLEY	-43.00	210.19	
2	23+06	LANGLEY	-11.28	209.71	
3	23+14	LANGLEY	0.52	209.35	
4	23+20	LANGLEY	1.55	209.10	
5	23+24	LANGLEY	-0.17	208.92	
6	23+30	LANGLEY	-7.08	208.78	
7	23+31	LANGLEY	-9.85	208.71	
8	23+32	LANGLEY	-16.33	208.66	
9	23+34	LANGLEY	-18.14	208.64	
10	23+44	LANGLEY	-17.29	208.21	
11	23+43	LANGLEY	-3.38	208.26	
12	23+34	LANGLEY	6.82	209.02	
13	23+33	LANGLEY	10.96	209.27	
14	23+34	LANGLEY	13.58	209.43	

REMOVAL OF EXISTING PAVEMENT

STATION	C.Y.	REMARKS
23+12 TO 23+40 LT	13	REMOVAL OF 6" OF ASPHALT & SUBBASE

3" BITNUMINOUS CONCRETE SURFACE COURSE

STATION	TONS	REMARKS
23+27 RT TO 23+42 LT	3	

3" BITNUMINOUS CONCRETE BASE COURSE

STATION	S.Y.	REMARKS
23+27 RT TO 23+42 LT	12	

PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (L.F.)
23+21.1	23+42.3	6	PERF. PVC	23
23+42.3	23+45.8	6	PVC	10
21+13.9	23+26.7	6	PERF. PVC	13
23+26.7	23+45.5	6	PVC	20

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-1	23+08, 25.7' LT	210.27	208.67	MODIFIED CURB INLET
I-2	23+16, 1.1' RT	209.72	208.12	MODIFIED CURB INLET
CO-50	23+14, 10.5 LT	-	-	CLEANOUT
CO-51	23+21, 31.6' LT	-	-	CLEANOUT
CO-52	23+25, 9.4' LT	-	-	CLEANOUT
CO-53	23+42, 26.7' LT	-	-	CLEANOUT
OW-50	23+19, 8.2' LT	-	-	OBSERVATION WELL
OW-51	23+22, 23.5' LT	-	-	OBSERVATION WELL

TRAFFIC BARRIER W/ BEAM BARRICADE (MSHA MD-605.27)

STATION / OFFSET	L.F.	REMARKS
23+36, 12.7' RT TO 23+45, 5.4' LT	22	

DPS PERMIT NO. 283294 J.S

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 5

FRANKLIN KNOLLS-PHASE 1

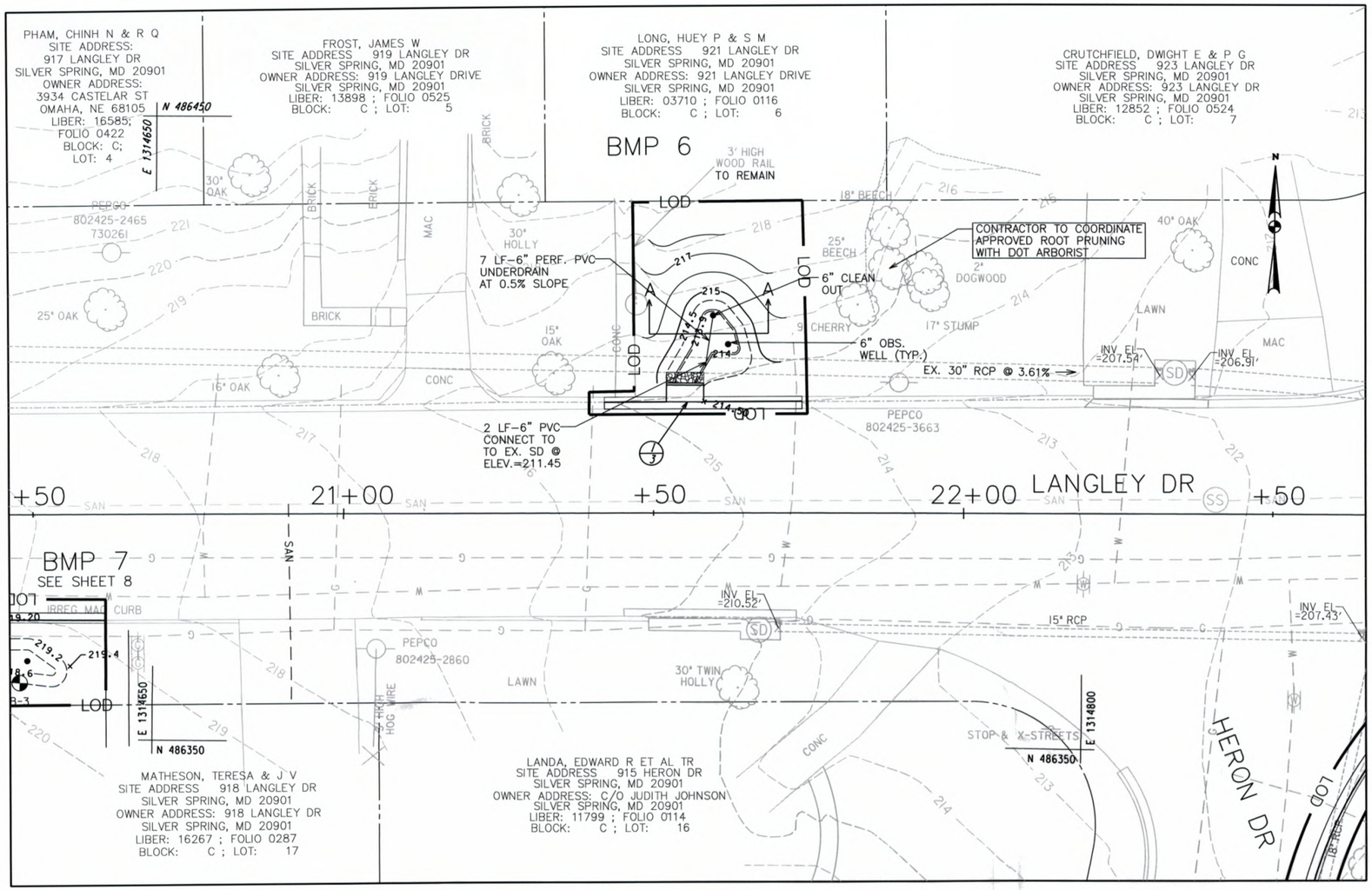
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

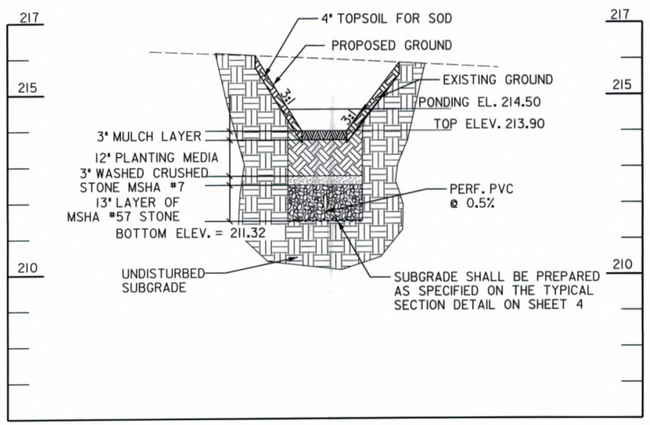
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1"=10'

SHEET 6 OF 22

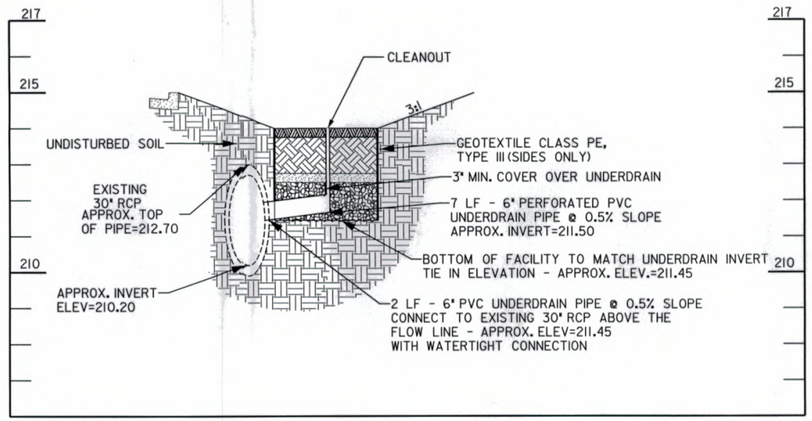
FILE: 15182\13 - roadway fld - boral estates and the four corners area\designengineering\planesheets\ p15pd-fp05_fp01.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - BIORETENTION FACILITY (BMP 6)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



CROSS SECTION AT UNDERDRAIN CONNECTION

SCALE: HORIZ. 1"=5'
VERT. 1"=2'

NOTE:
1. CONTRACTOR TO INVESTIGATE AND COORDINATE FIELD CONNECTION OF POTENTIAL FACILITY UNDERDRAIN SYSTEM INTO THE EXISTING 30" RCP WITH THE ENGINEER.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION — BMP ID: 6

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.92	
TOTAL IMPERVIOUS AREA (AC)	0.26	
TREATMENT VOLUME PROVIDED (CF)	55	
TARGET WQv TREATMENT VOLUME (CF)	1016	
FILTER BED AREA (SF) [1]	34	
FILTER BED SURFACE ELEVATION	213.90	
DESIGN POINT/MAX. PONDING ELEVATION	214.50	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	72	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	6"/211.50	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION - SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN - SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-3	21+55, 17.7' LT	215.0	213.4	MODIFIED CURB INLET
CO-60	21+59.6, 31.6' LT	-	-	CLEANOUT
OW-60	21+62.0, 26.9' LT	-	-	OBSERVATION WELL

PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (L.F.)
21+59.6	21+58.5	6	PERF. PVC	7
21+58.5	21+58.3	6	PVC	2

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
21+42 TO 21+52, LT	10	TRANSITION TYPE C TO TYPE A
21+58 TO 21+64, LT	6	TYPE A, MC-100.01
21+64 TO 21+74, LT	10	TRANSITION TYPE A TO TYPE C

DPS PERMIT NO. 283294 J.S

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 6

FRANKLIN KNOLLS-PHASE 1

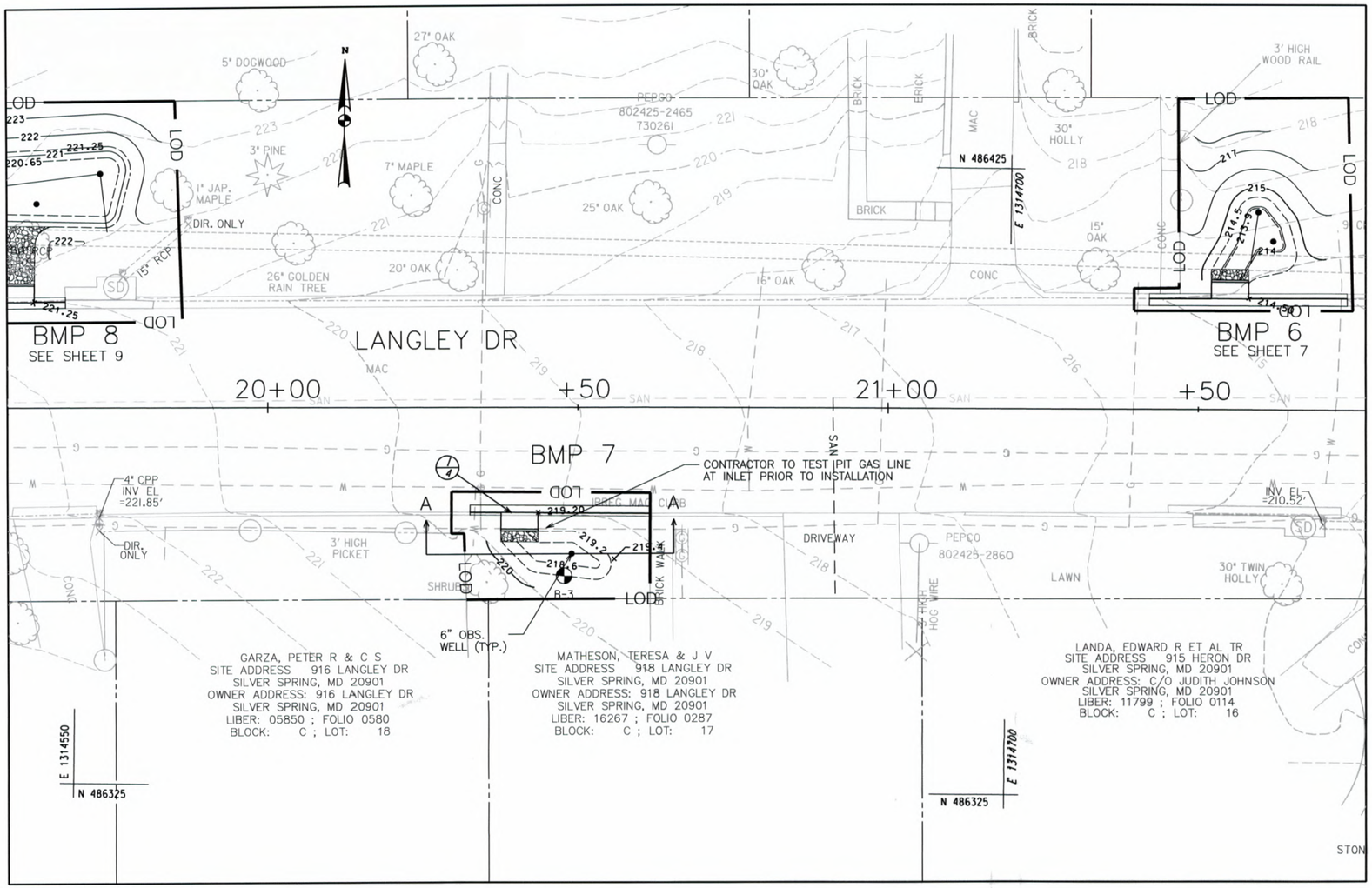
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

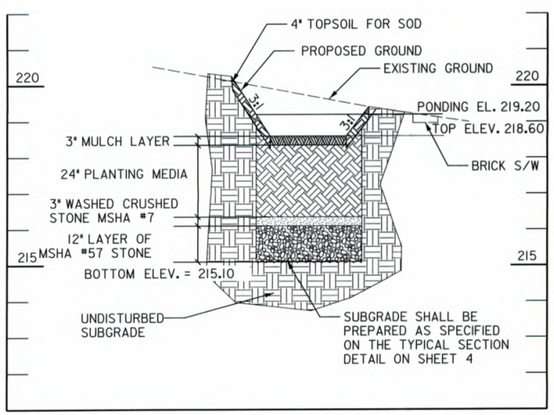
MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	1"=10'

SHEET 7 OF 22

FILE: 1616213 - roadway as - bonet address and by four corners area\Design\Engineering\PlanSet\Pr\Pr10-P006_PA1.dgn
PLOTTED: Tuesday, October 29, 2013 10:11:17 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 7)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 7

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.97	
TOTAL IMPERVIOUS AREA (AC)	0.20	
TREATMENT VOLUME PROVIDED (CF)	123	
TARGET WQv TREATMENT VOLUME (CF)	829	
FILTER BED AREA (SF) [1]	40	
FILTER BED SURFACE ELEVATION	218.60	
DESIGN POINT/MAX. PONDING ELEVATION	219.20	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	101	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:

1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-4	20+41, 16.8' LT	219.70	218.10	MODIFIED CURB INLET
OW-70	20+48.9, 23.3' RT	-	-	OBSERVATION WELL

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
20+33 TO 20+38, RT	5	TRANSITION EX ASHPALT CURB TO TYPE A
20+44 TO 20+57, RT	13	TYPE A, MC-100.01
20+57 TO 20+62, RT	5	TRANSITION TYPE A TO EX ASHPALT CURB

CONTRACTOR SHALL CONSTRUCT TRANSITION BETWEEN ASPHALT CURB AND TYPE A CURB WITH ASPHALT. TRANSITION SHALL MATCH EXISTING ASPHALT CURB TRANSITION AT STA. 21+40, 17' RT (LANGLEY DRIVE).

DPS PERMIT NO. 283294 J.S

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 7

FRANKLIN KNOLLS-PHASE 1

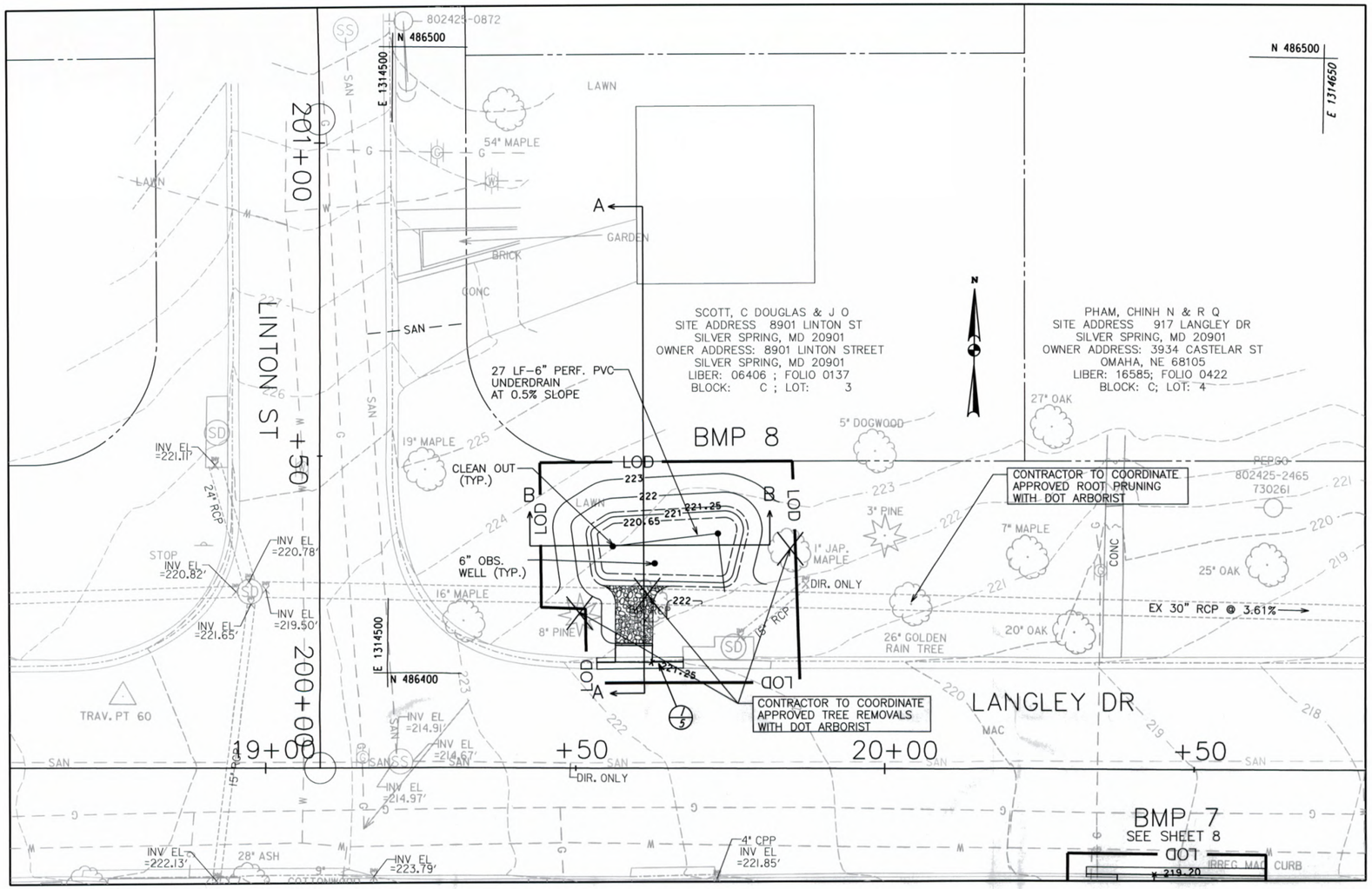
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

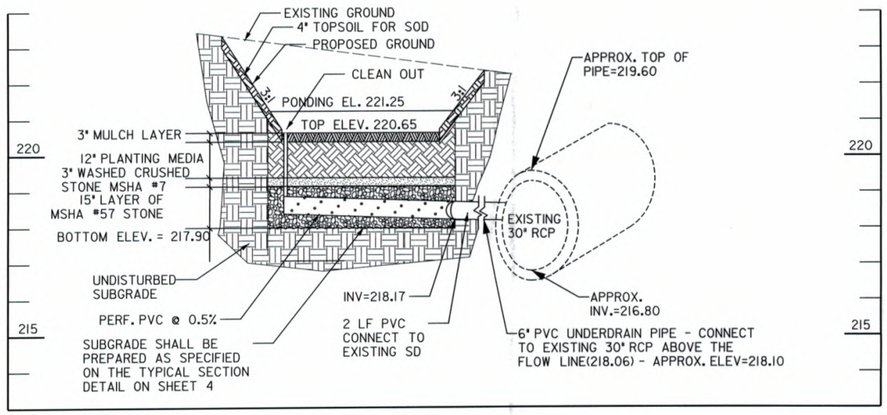
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	DATE	JUNE 12'
DRAFT	WJW	SCALE	1"=10'
APPROVED	HJD		

SHEET 8 OF 22

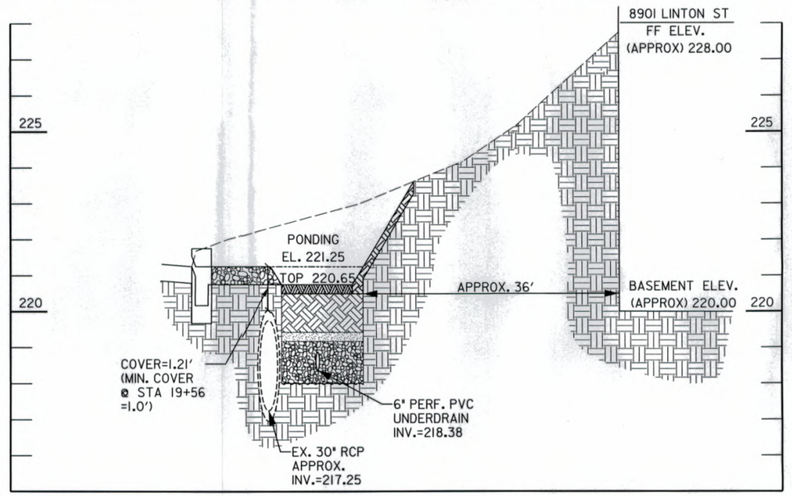
FILE: I:\612\13 - roadway\fd -> forest edates and the four corners area\design\engineering\plansetfk.p1\phD-P007_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (B-B) - BIORETENTION FACILITY (BMP 8)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE (A-A) - BIORETENTION FACILITY (BMP 8)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION BMP ID: 8

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.87	
TOTAL IMPERVIOUS AREA (AC)	0.27	
TREATMENT VOLUME PROVIDED (CF)	264	
TARGET WQv TREATMENT VOLUME (CF)	1040	
FILTER BED AREA (SF) [1]	183	
FILTER BED SURFACE ELEVATION	220.65	
DESIGN POINT/MAX. PONDING ELEVATION	221.25	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	298	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	6"/218.17	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:

1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-5	19+60, 16.9' LT	221.75	220.15	MODIFIED CURB INLET
CO-80	19+56.0, 35.5' LT	-	-	CLEANOUT
CO-81	19+73.0, 37.5' LT	-	-	CLEANOUT
OW-80	19+62.8, 33.0' LT	-	-	OBSERVATION WELL

PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (L.F.)
19+56.0	19+73.0	6	PERF. PVC	27
19+73.0	19+73.9	6	PVC	2

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
19+54 TO 19+57	3	TYPE A, MC-100.01
19+62 TO 19+67	5	TYPE A, MC-100.01

DPS PERMIT NO. 283294 3.3

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
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Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 8

FRANKLIN KNOLLS-PHASE 1

SLIGO (13th) ELECTION DISTRICT

MONTGOMERY COUNTY, MARYLAND

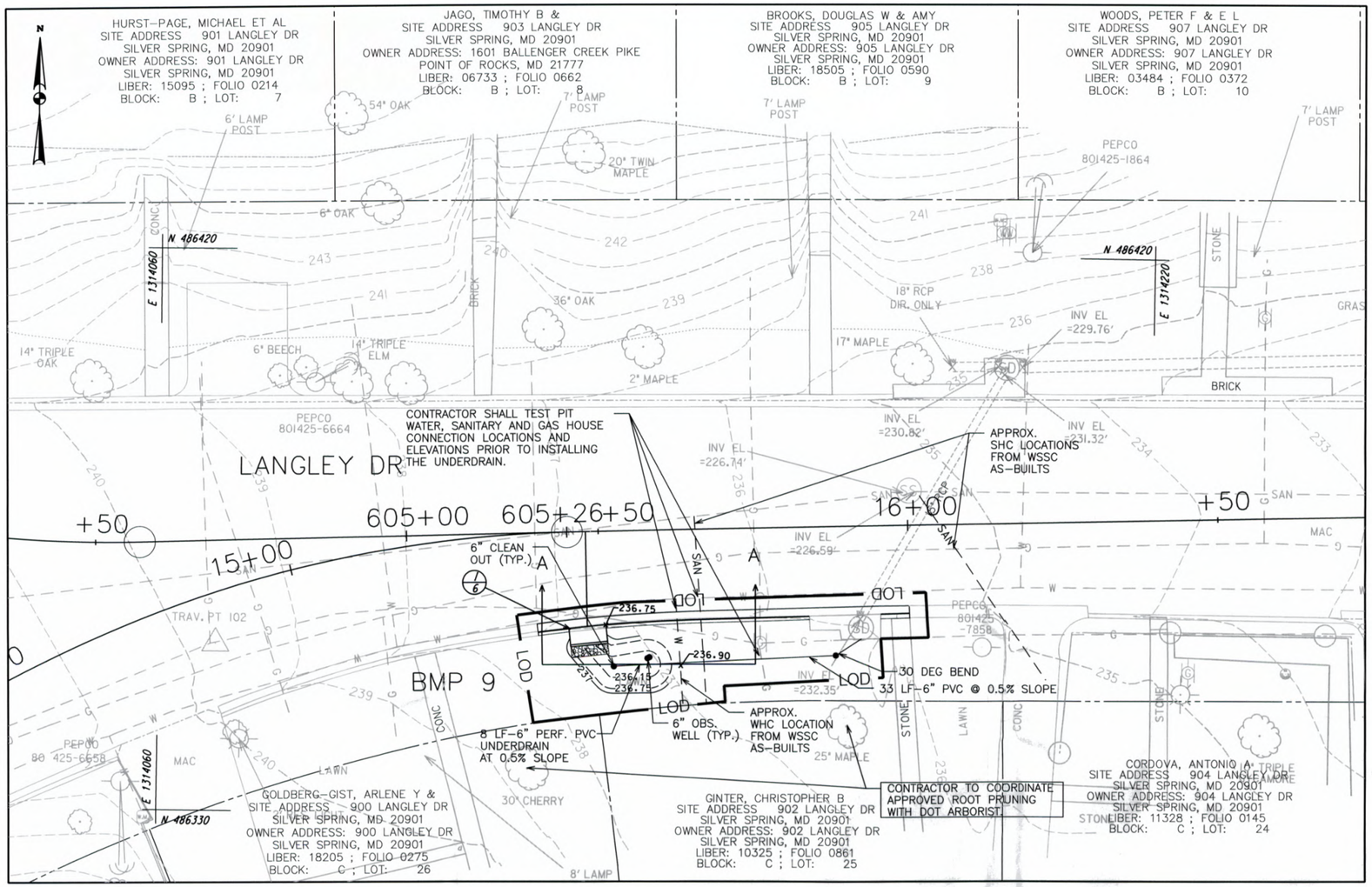
s 7 AND 8

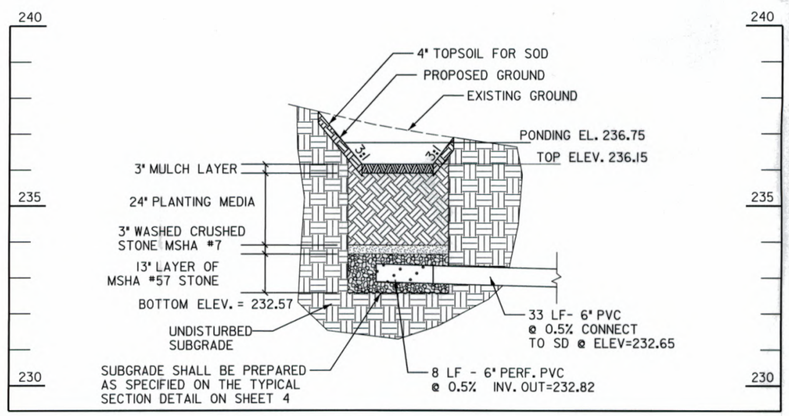
MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	APPROVED	HJD	SCALE	1"=10'
DRAFT	WJV	DATE	JUNE 12'		

SHEET 9 OF 22

FILE: 13152113 - rodbar.tkl - [new] rotation on the four corners area/designing/sheeting/plans/sht9_prpfd0-P008_PA1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 03:11 PM





PROFILE (A-A) - BIORETENTION FACILITY (BMP 9)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: BIORETENTION BMP ID: 9

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.51	
TOTAL IMPERVIOUS AREA (AC)	0.25	
TREATMENT VOLUME PROVIDED (CF)	115	
TARGET WQv TREATMENT VOLUME (CF)	909	
FILTER BED AREA (SF) [1]	38	
FILTER BED SURFACE ELEVATION	236.15	
DESIGN POINT/MAX. PONDING ELEVATION	236.75	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	94	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	6"/232.82	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION - SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN - SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-6	15+48, 15.1' RT	237.25	235.65	MODIFIED CURB INLET
CO-90	15+52.0, 21.6' RT	-	-	CLEANOUT
CO-91	15+87.9, 20.6' RT	-	-	CLEANOUT
OW-90	15+57.8, 20.2' RT	-	-	OBSERVATION WELL

PIPE SCHEDULE

FROM	TO	SIZE (IN.)	TYPE	LENGTH (L.F.)
15+52.3	15+55.8	6	PERF. PVC	10
15+55.8	15+90.0	6	PVC	31

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
15+39 TO 15+45, RT	5	TYPE A, MC-100.01
15+51 TO 15+84, RT	33	TYPE A, MC-100.01
15+95 TO 16+00, RT	5	CONCRETE TRANSITION TYPE A TO EX ASPHALT CURB

NOTE:
1. CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITION OF TREES TO BE ROOT PRUNED PRIOR TO THE START OF CONSTRUCTION.

DPS PERMIT NO. 283294 J.B

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

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10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
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Baltimore, Maryland 21202
(410) 662-7400

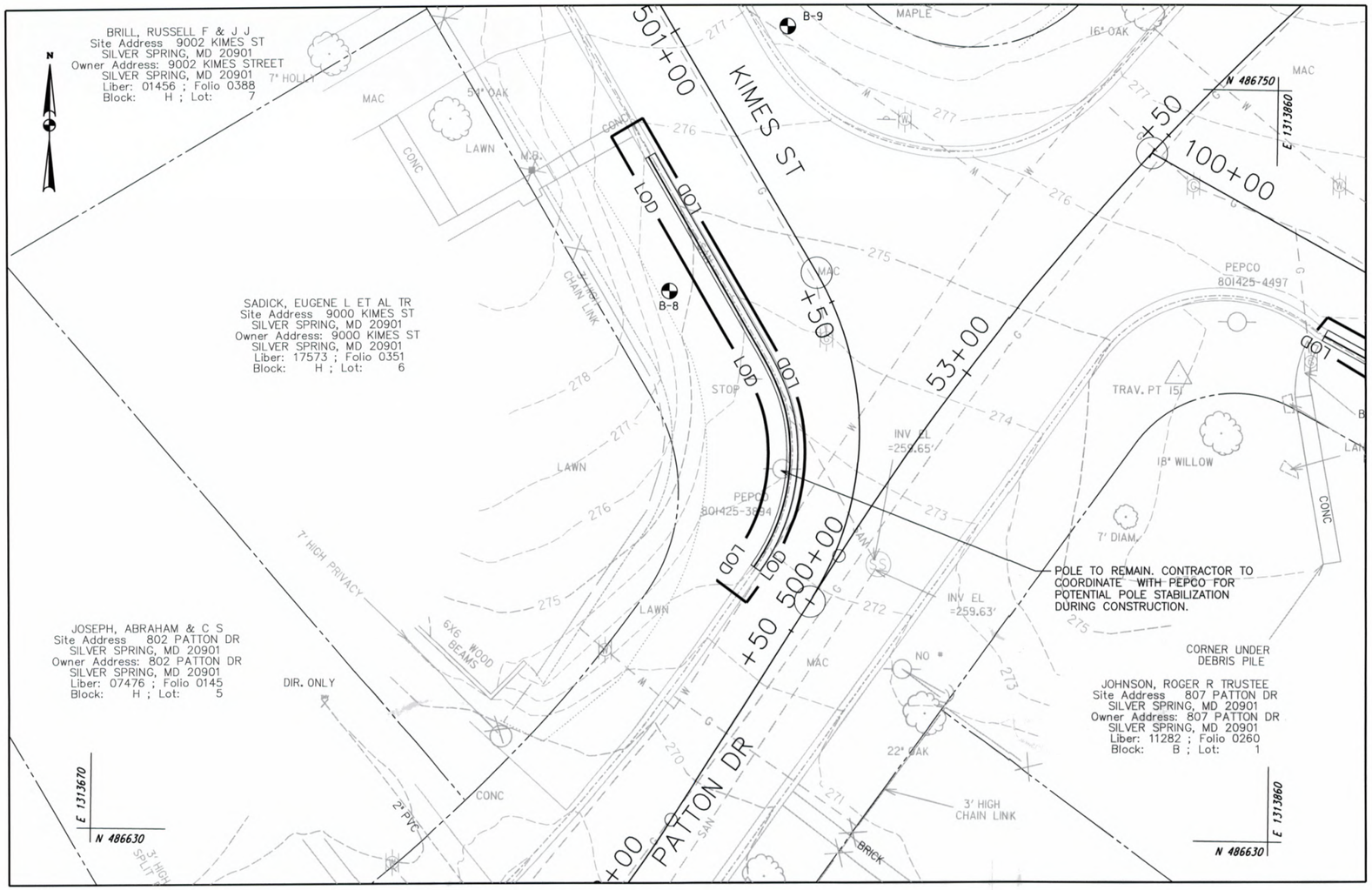
PLAN AND PROFILE - BMP 9
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	1"=10'

SHEET 10 OF 22

FILE: 13152c13 - roadway fd - forest estates and the four corners area\designengineering\plansset\fk_pr1\pH\D-P009_PK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM



COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
499+99 TO 500+85, LT	73	TYPE C, MC-101.01

NOTE: CONTRACTOR TO REMOVE EXISITING CURB AND GUTTER. NEW CURB AND GUTTER SHALL MATCH EXISTING GRADE LINE AND GRADE OF NEW PAVING.

DPS PERMIT NO. 283294 D.3

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

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10' 0 10' 20'
SCALE: 1"=10'

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4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN - CURB REPLACEMENT

FRANKLIN KNOLLS-PHASE 1

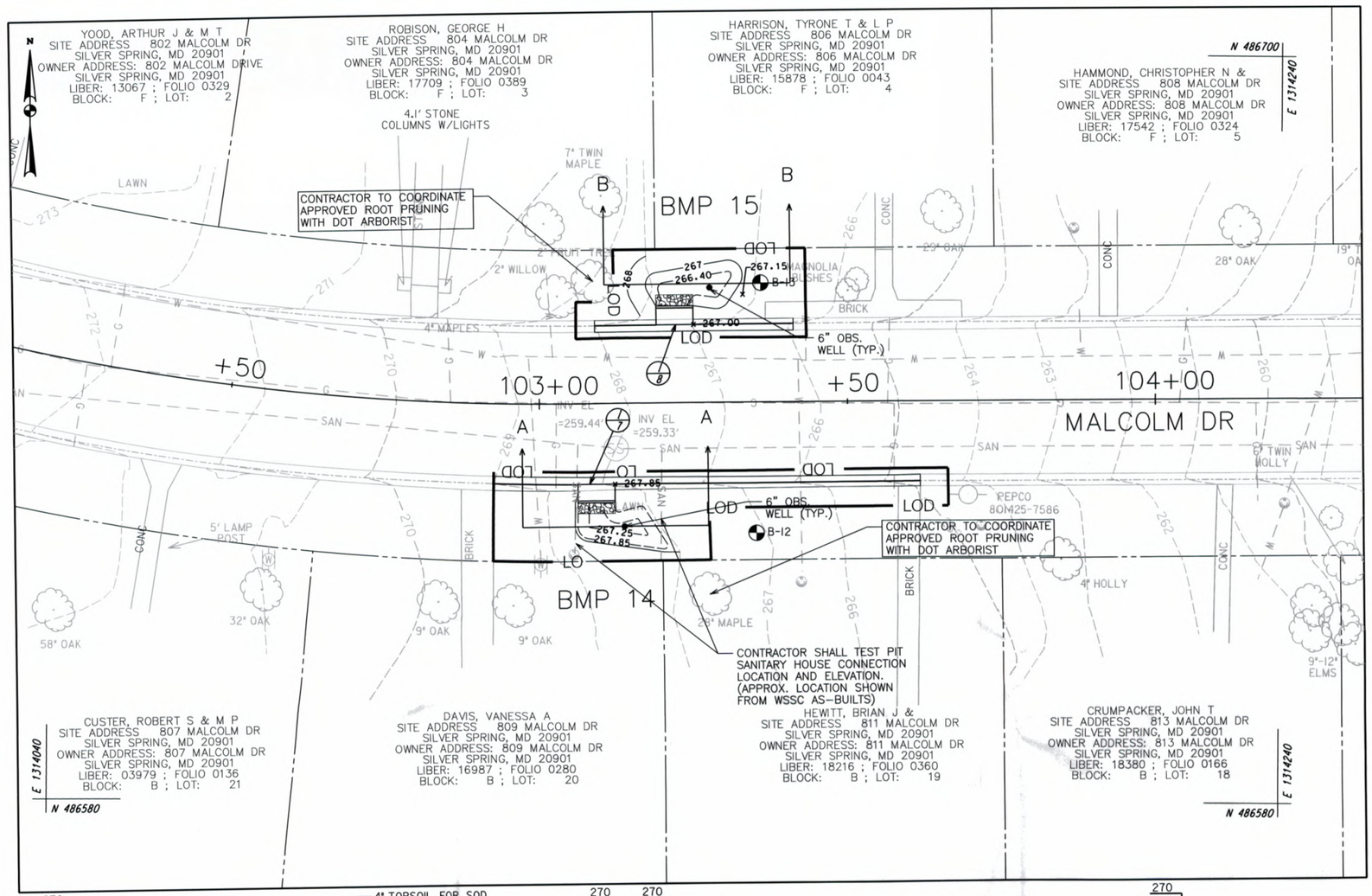
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

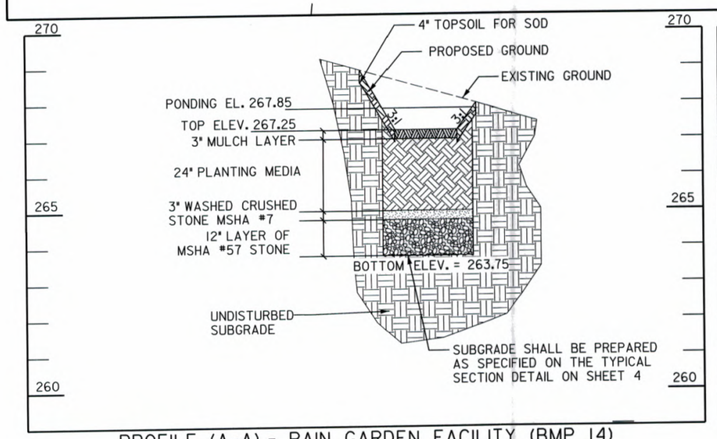
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1"=10'

SHEET 11 OF 22

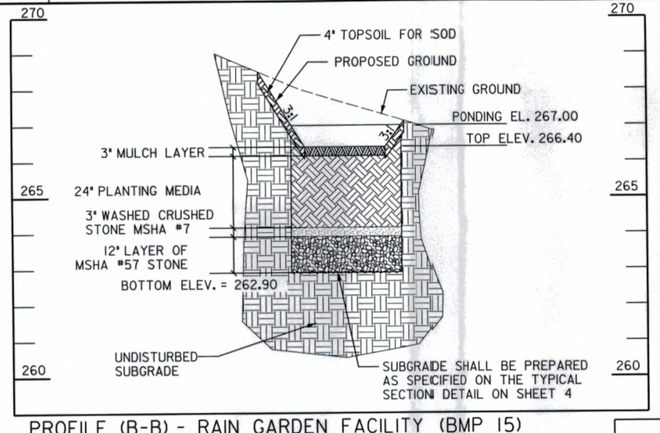
FILE: I:\61621\3 - roadway ltd - 2nd\sheets and the four corners area\design\hang\hangsheet\fk p1\pHD-P013_PK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 14)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE (B-B) - RAIN GARDEN FACILITY (BMP 15)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-7	103+09, 12.9' RT	268.35	266.75	MODIFIED CURB INLET
I-8	103+22, 12.6' LT	267.50	265.90	MODIFIED CURB INLET
OW-140	103+13.7, 19.8' RT	-	-	OBSERVATION WELL
OW-150	103+27.6, 18.5' LT	-	-	OBSERVATION WELL

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 14

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.20	
TOTAL IMPERVIOUS AREA (AC)	0.07	
TREATMENT VOLUME PROVIDED (CF)	89	
TARGET WQv TREATMENT VOLUME (CF)	265	
FILTER BED AREA (SF) [1]	22	
FILTER BED SURFACE ELEVATION	267.25	
DESIGN POINT/MAX. PONDING ELEVATION	267.85	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	75	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 15

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.23	
TOTAL IMPERVIOUS AREA (AC)	0.08	
TREATMENT VOLUME PROVIDED (CF)	113	
TARGET WQv TREATMENT VOLUME (CF)	303	
FILTER BED AREA (SF) [1]	40	
FILTER BED SURFACE ELEVATION	266.40	
DESIGN POINT/MAX. PONDING ELEVATION	267.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	92	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
103+09 TO 103+19, LT	10	TRANSITION TYPE C TO TYPE A
103+25 TO 103+31, LT	6	TYPE A, MC-100.01
103+31 TO 103+41, LT	10	TRANSITION TYPE A TO TYPE C
102+93 TO 103+03, RT	10	TRANSITION TYPE C TO TYPE A
103+03 TO 103+06, RT	3	TYPE A, MC-100.01
103+12 TO 103+21, RT	9	TYPE A, MC-100.01
103+21 TO 103+31, RT	10	TRANSITION TYPE A TO TYPE C
103+31 TO 103+62, RT	31	TYPE C, MC-100.01

DPS PERMIT NO. 283294 3.3

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
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PLAN AND PROFILE - BMP 14 AND 15

FRANKLIN KNOLLS-PHASE 1

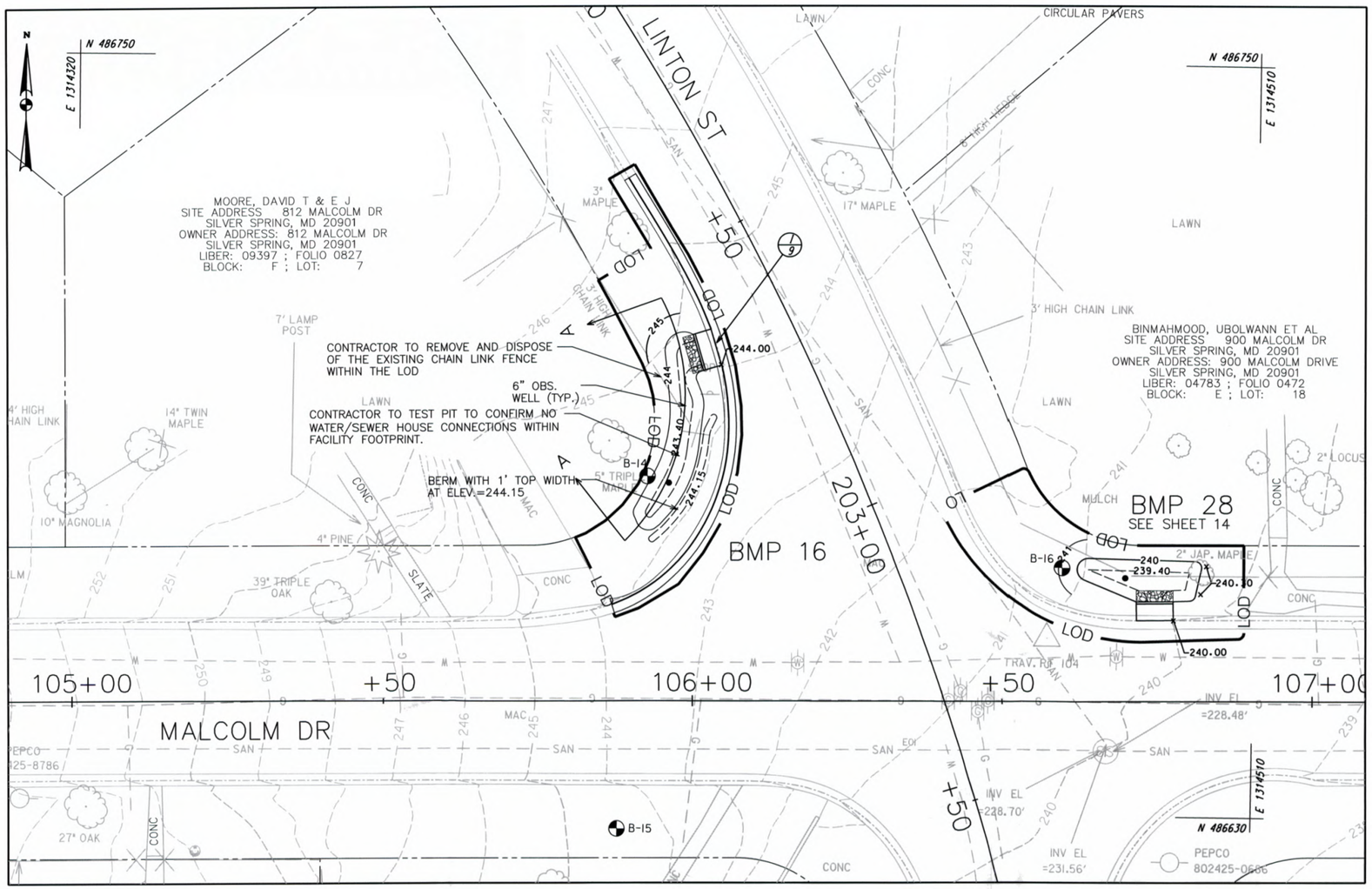
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

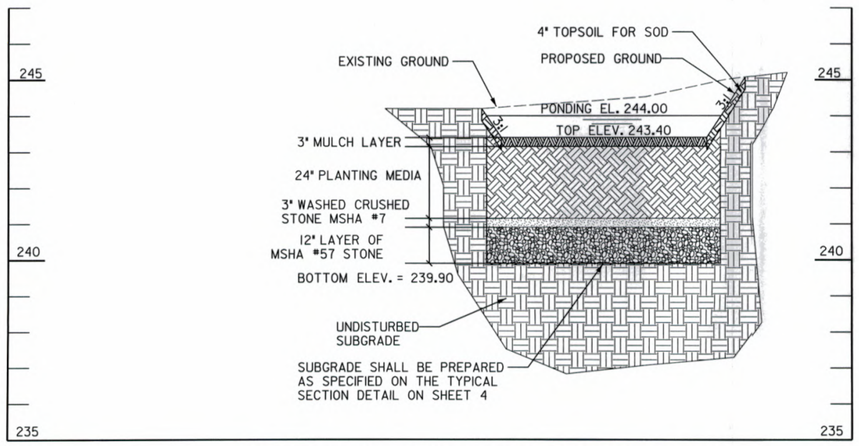
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	DATE	JUNE 12
DRAFT	WJW	SCALE	1"=10'
APPROVED	HJD		

SHEET 12 OF 22

FILE: I:\612\13 - roadway ltd – forest estates and the four corners area\design\engineering\plans\ffs_p1pHD-P014_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 16)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 16

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.48	
TOTAL IMPERVIOUS AREA (AC)	0.20	
TREATMENT VOLUME PROVIDED (CF)	204	
TARGET WQv TREATMENT VOLUME (CF)	741	
FILTER BED AREA (SF) [1]	55	
FILTER BED SURFACE ELEVATION	243.40	
DESIGN POINT/MAX. PONDING ELEVATION	244.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	170	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:

1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
203+01 TO 203+03, LT	10	TRANSITION TYPE C TO TYPE A*
203+03 TO 203+31, LT	36	TYPE A, MC-100.01*
203+37 TO 203+55, LT	18	TYPE A, MC-100.01
203+55 TO 203+65, LT	10	TRANSITION TYPE A TO TYPE C
*		GUTTER PAN TO BE SPILL GUTTER THROUGH THESE SECTIONS

NOTE: CONTRACTOR TO MATCH PROPOSED GUTTER WITH EXISTING LINE AND GRADE OF NEW PAVING. MATCH EX CURB AND GUTTER AT BOTH ENDS OF WORK.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-9	203+34, 12.6' LT	244.5	242.9	MODIFIED CURB INLET
OW-160	203+16.7, 28.8' LT	-	-	OBSERVATION WELL

REMOVAL & DISPOSAL OF EXISTING FENCE

STATION	L.F.	REMARKS
203+22 TO 203+53, LT	31	

DPS PERMIT NO. 283294 3.3

MONTGOMERY COUNTY, MARYLAND
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PLAN AND PROFILE - BMP 16

FRANKLIN KNOLLS-PHASE 1

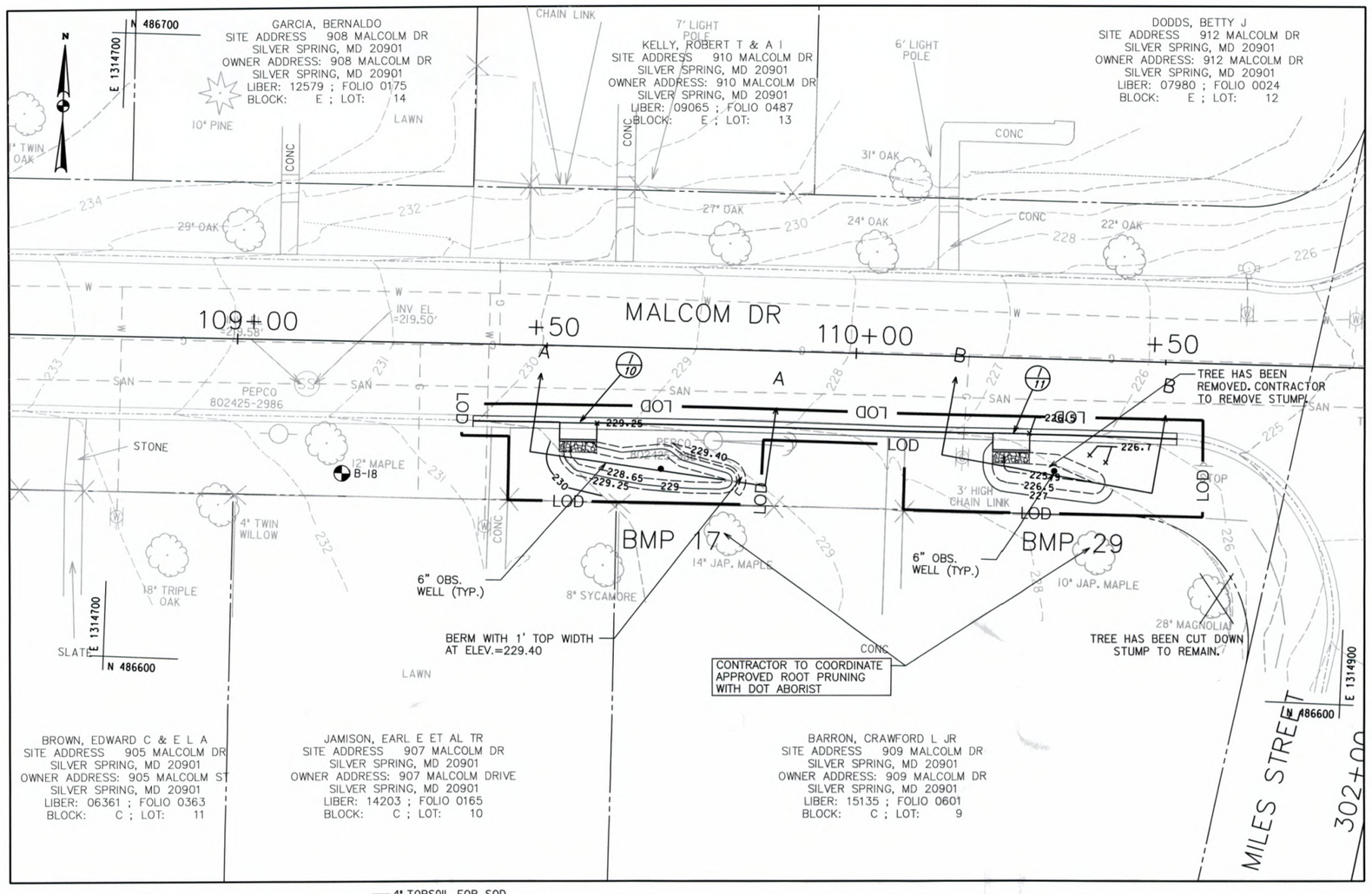
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

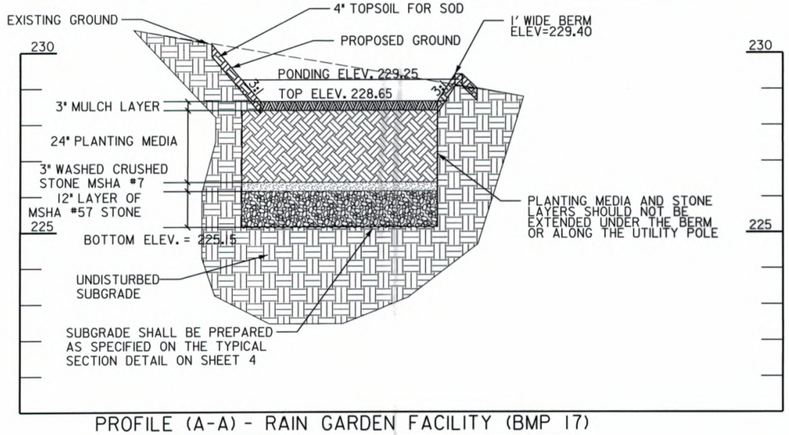
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN KCS
DRAFT WJW
APPROVED HJD
DATE JUNE 12'
SCALE 1"=10'

SHEET 13 OF 22

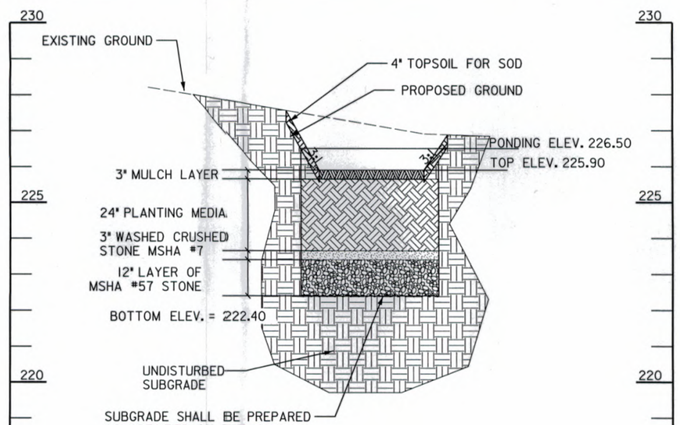
FILE: 151213 - roadway & 2-foot widths in PIs the four corners area\design\engineering\plansetfk.p1\pHD-P016_PK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 12:11 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 17)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE(B-B) - RAIN GARDEN FACILITY (BMP 29)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
109+38 TO 109+48, RT	10	TRANSITION TYPE C TO TYPE A
109+48 TO 109+52, RT	4	TYPE A, MC-100.01
109+58 TO 110+22, RT	64	TYPE A, MC-100.01
110+28 TO 110+52, RT	24	TYPE A, MC-100.01

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)
*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN — BMP ID: 17

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	REFER TO FACILITY 29	
TOTAL IMPERVIOUS AREA (AC)	REFER TO FACILITY 29	
TREATMENT VOLUME PROVIDED (CF)	199	
TARGET WQv TREATMENT VOLUME (CF)	REFER TO FACILITY 29	
FILTER BED AREA (SF) [1]	63	
FILTER BED SURFACE ELEVATION	228.65	
DESIGN POINT/MAX. PONDING ELEVATION	229.25	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	164	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)
*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN — BMP ID: 29

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.30	
TOTAL IMPERVIOUS AREA (AC)	0.11	
TREATMENT VOLUME PROVIDED (CF)	101	
TARGET WQv TREATMENT VOLUME (CF)	414	
FILTER BED AREA (SF) [1]	24	
FILTER BED SURFACE ELEVATION	225.90	
DESIGN POINT/MAX. PONDING ELEVATION	226.50	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	85	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-10	109+55, 12.3' RT	229.75	228.15	MODIFIED CURB INLET
I-11	110+25, 12.1' RT	227.00	225.40	MODIFIED CURB INLET
OW-170	109+68.9, 19.3' RT	-	-	OBSERVATION WELL
OW-290	110+32.4, 17.9' RT	-	-	OBSERVATION WELL

NOTES:
1. CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITION OF TREES TO BE ROOT PRUNED PRIOR TO THE START OF CONSTRUCTION.

STUMP REMOVAL

STATION / OFFSET	REMARKS
110+31, 17.5' RT	

DPS PERMIT NO. 283294 3.3

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

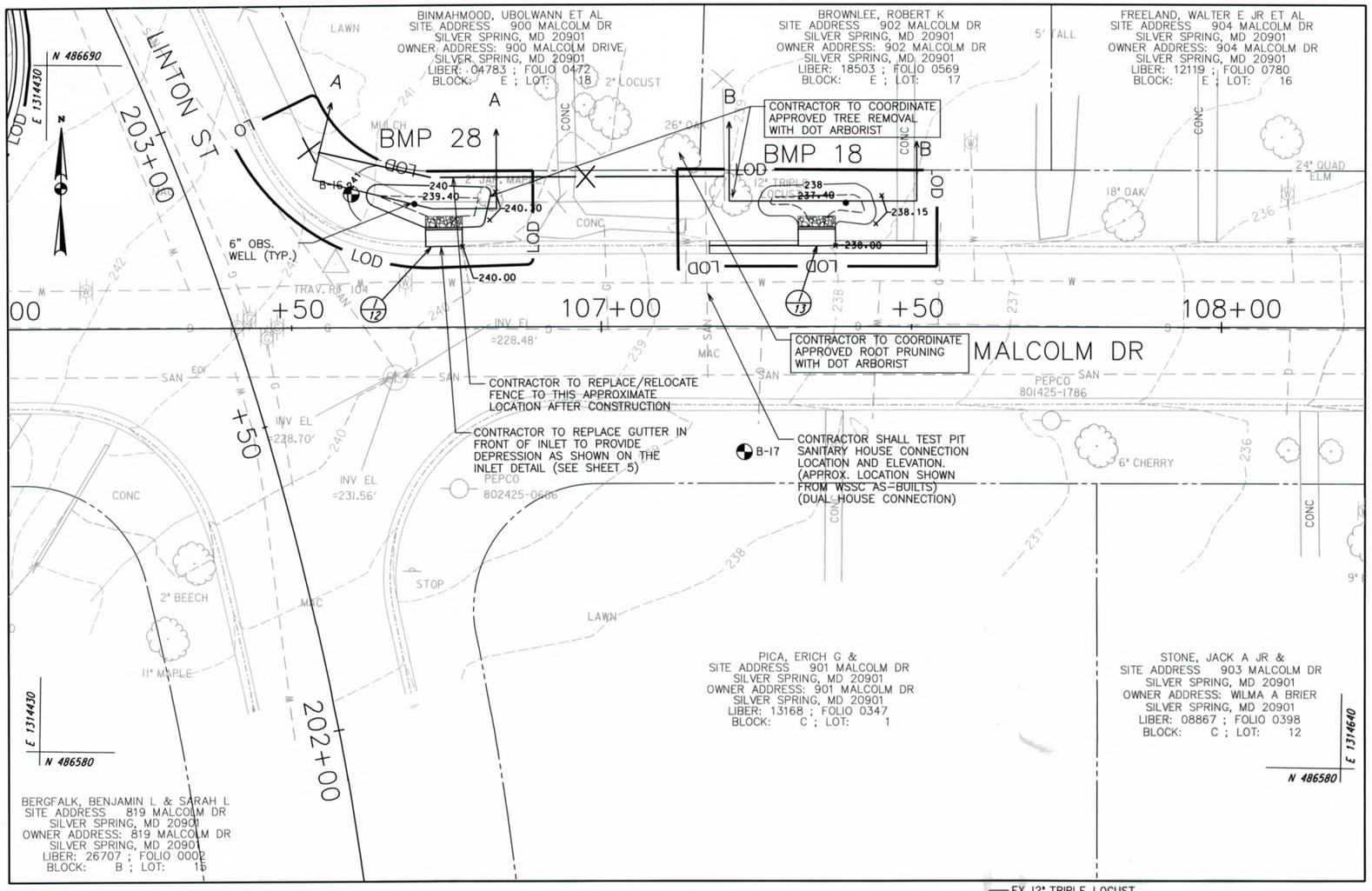
PLAN AND PROFILE - BMP 17 AND 29
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

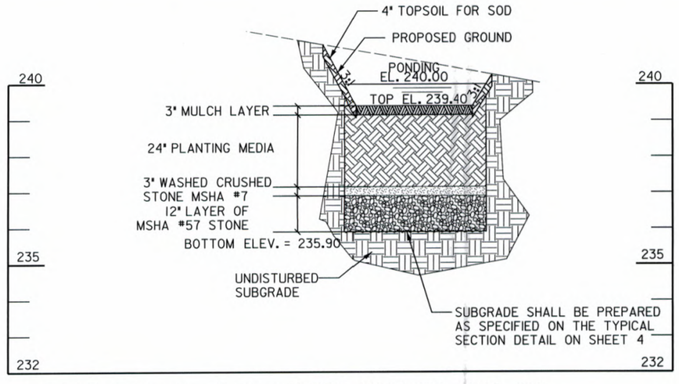
MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	1"=10'

SHEET 14 OF 22

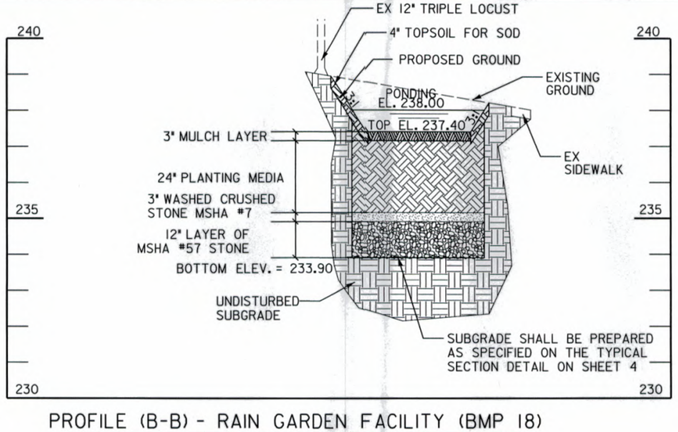
FILE: I:\515\213-roadway &d - forest estates and the four corners area\design\engineering\plansheets\ p1p4S-P017_PKT.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 28)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE (B-B) - RAIN GARDEN FACILITY (BMP 18)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN — BMP ID: 28

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	REFER TO FACILITY 18	
TOTAL IMPERVIOUS AREA (AC)	REFER TO FACILITY 18	
TREATMENT VOLUME PROVIDED (CF)	135	
TARGET WQv TREATMENT VOLUME (CF)	REFER TO FACILITY 18	
FILTER BED AREA (SF) [1]	42	
FILTER BED SURFACE ELEVATION	239.40	
DESIGN POINT/MAX. PONDING ELEVATION	240.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	111	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN — BMP ID: 18

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.38	
TOTAL IMPERVIOUS AREA (AC)	0.17	
TREATMENT VOLUME PROVIDED (CF)	128	
TARGET WQv TREATMENT VOLUME (CF)	624	
FILTER BED AREA (SF) [1]	39	
FILTER BED SURFACE ELEVATION	237.40	
DESIGN POINT/MAX. PONDING ELEVATION	238.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	106	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
107+17 TO 107+27, LT	10	TRANSITION TYPE C TO TYPE A
107+27 TO 107+32, LT	4	TYPE A, MC-100.01
107+38 TO 107+42, LT	5	TYPE A, MC-100.01
107+42 TO 107+52, LT	10	TRANSITION TYPE A TO TYPE C

REMOVE AND RESET EXISTING FENCE

STATION / OFFSET	LF	REMARKS
106+53, 28.4' TO 107+20, 24.1' LT	73	

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-12	106+74, 12.9' LT	240.50	238.90	MODIFIED CURB INLET
I-13	107+35, 12.9' LT	238.50	236.40	MODIFIED CURB INLET
OW-280	106+69.8, 19.7' LT	-	-	OBSERVATION WELL
OW-180	107+39.5, 19.7' LT	-	-	OBSERVATION WELL

DPS PERMIT NO. 283294

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 18 AND 28

FRANKLIN KNOLLS-PHASE 1

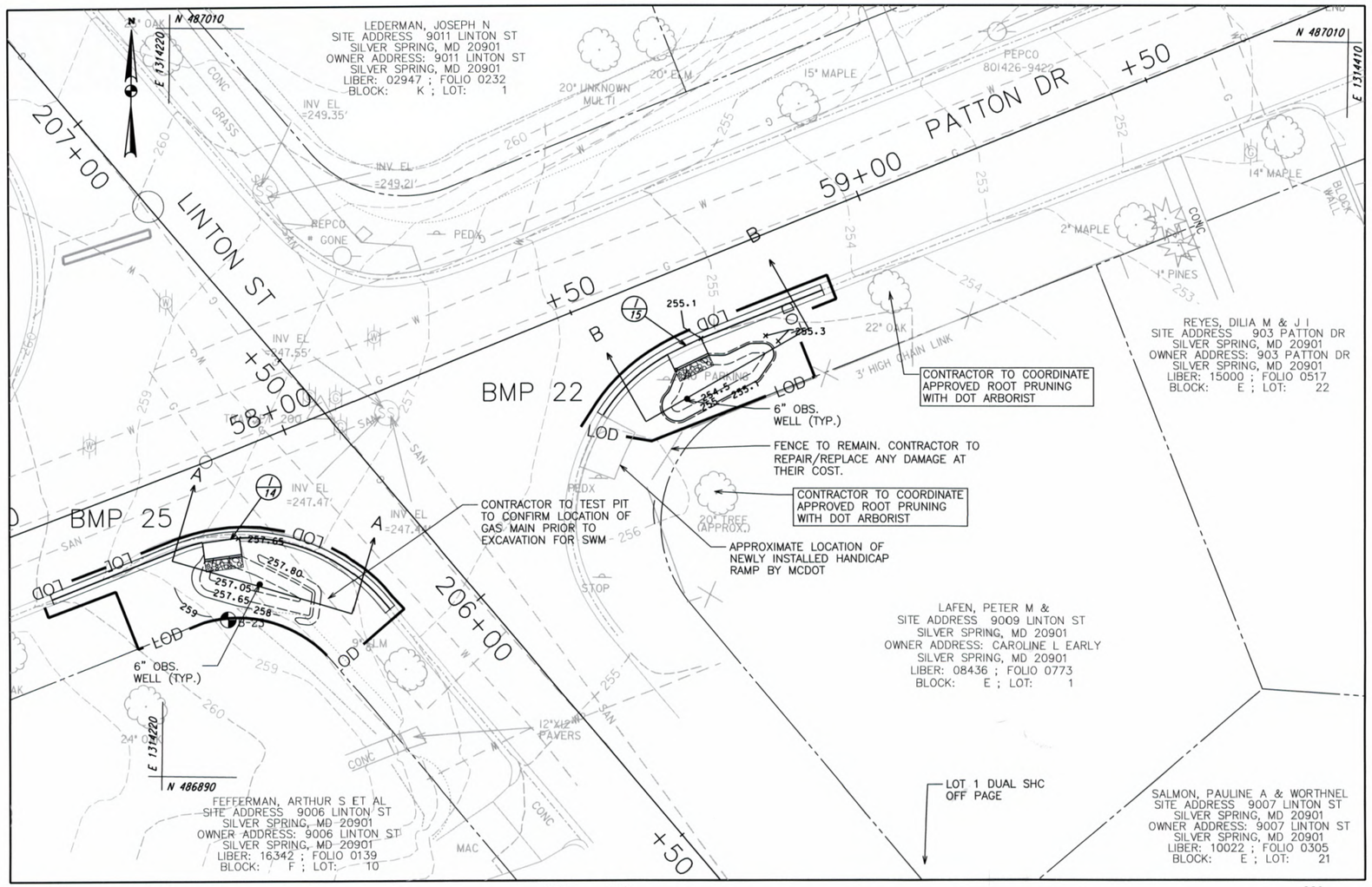
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

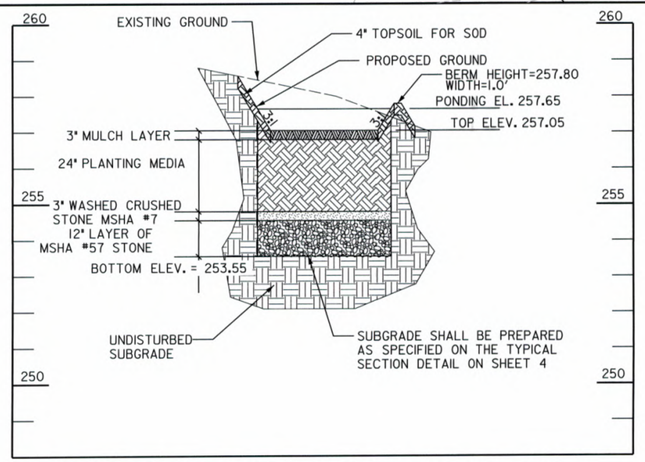
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	DRAFT	WJW	APPROVED	HJD	DATE	JUNE 12'	SCALE	1"=10'

SHEET 15 OF 22

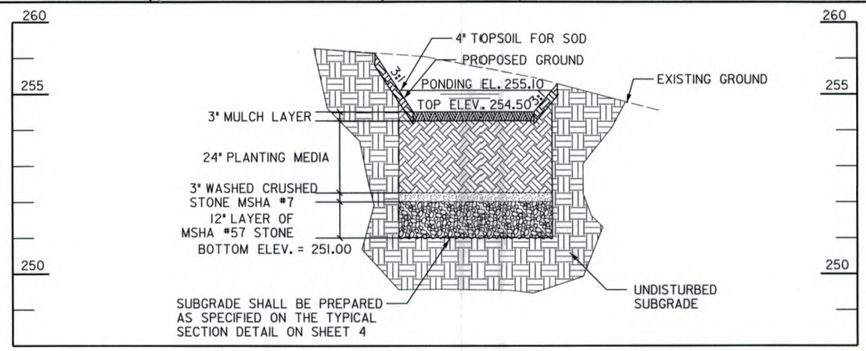
FILE: 13152-13 - roadway bl - forest estates and the four corners area\design\engineering\plansetfk p1\pmD-P018_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 25)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE (B-B) - RAIN GARDEN FACILITY (BMP 22)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS) *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: RAIN GARDEN	BMP ID: 22	
FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.67	
TOTAL IMPERVIOUS AREA (AC)	0.30	
TREATMENT VOLUME PROVIDED (CF)	164	
TARGET WQv TREATMENT VOLUME (CF)	1102	
FILTER BED AREA (SF) [1]	59	
FILTER BED SURFACE ELEVATION	254.50	
DESIGN POINT/MAX. PONDING ELEVATION	255.10	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	133	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS) *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: RAIN GARDEN	BMP ID: 25	
FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.35	
TOTAL IMPERVIOUS AREA (AC)	0.12	
TREATMENT VOLUME PROVIDED (CF)	122	
TARGET WQv TREATMENT VOLUME (CF)	456	
FILTER BED AREA (SF) [1]	36	
FILTER BED SURFACE ELEVATION	257.05	
DESIGN POINT/MAX. PONDING ELEVATION	257.65	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	101	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
57+55 TO 57+65, RT	10	TRANSITION TYPE C TO TYPE A
57+65 TO 57+81, RT	16	TYPE A, MC-100.01
57+87 TO 58+01, RT	18	TYPE A, MC-100.01
58+01 TO 58+05, RT	10	TRANSITION TYPE A TO TYPE C
58+49 TO 58+62, RT	15	TYPE A, MC-100.01
58+68 TO 58+79, RT	11	TYPE A, MC-100.01
58+79 TO 58+89, RT	10	TRANSITION TYPE A TO TYPE C

NOTE:
1. CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITION OF TREES TO BE ROOT PRUNED PRIOR TO THE START OF CONSTRUCTION.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-14	57+84, 12.6' RT	258.15	256.55	MODIFIED CURB INLET
I-15	58+65, 11.9' RT	255.60	254.00	MODIFIED CURB INLET
OW-250	57+87.1, 21.5' RT	-	-	OBSERVATION WELL
OW-220	58+62.3, 19.9' RT	-	-	OBSERVATION WELL

DPS PERMIT NO. 283294

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 22 AND 25

FRANKLIN KNOLLS-PHASE 1

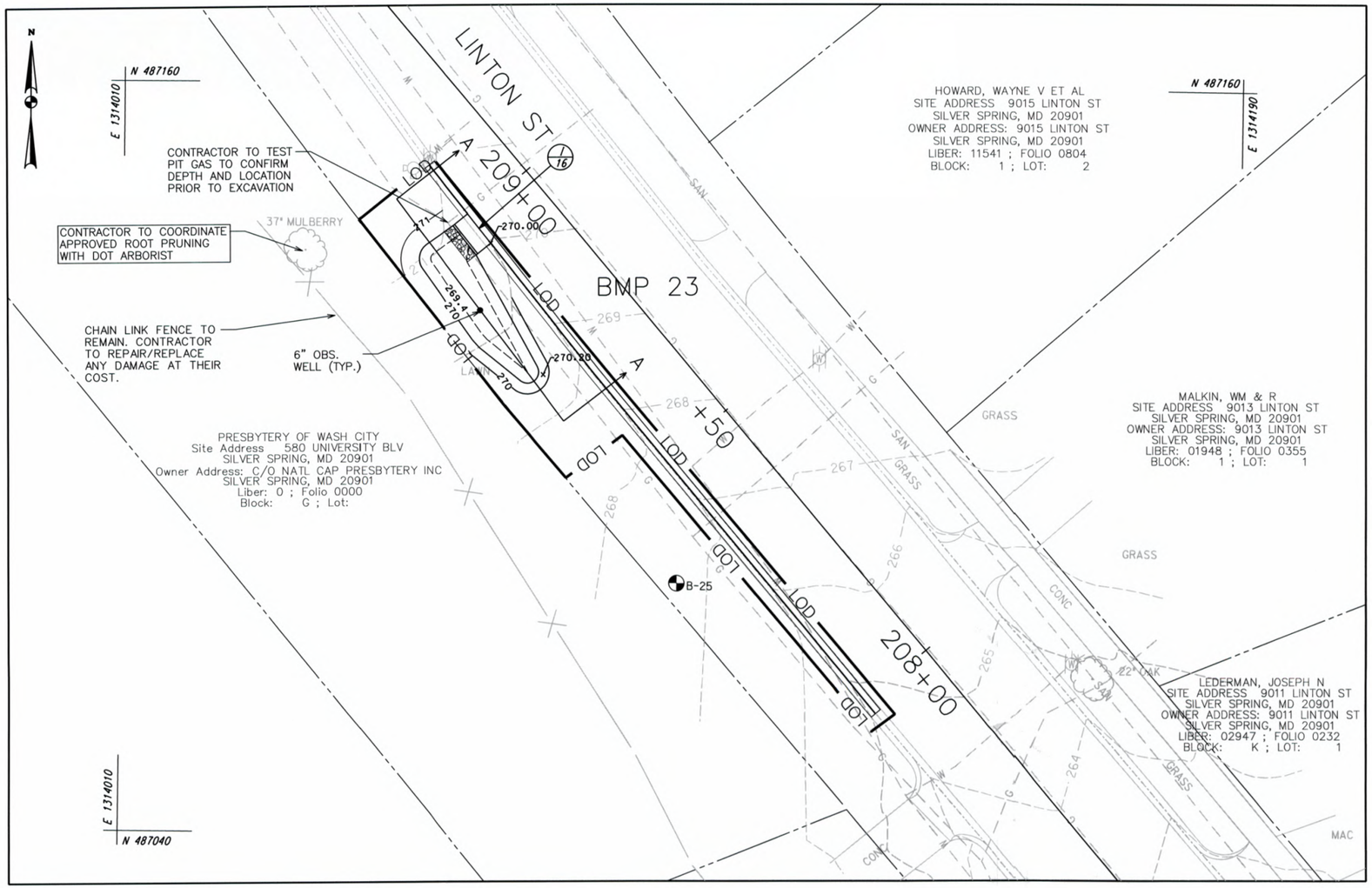
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

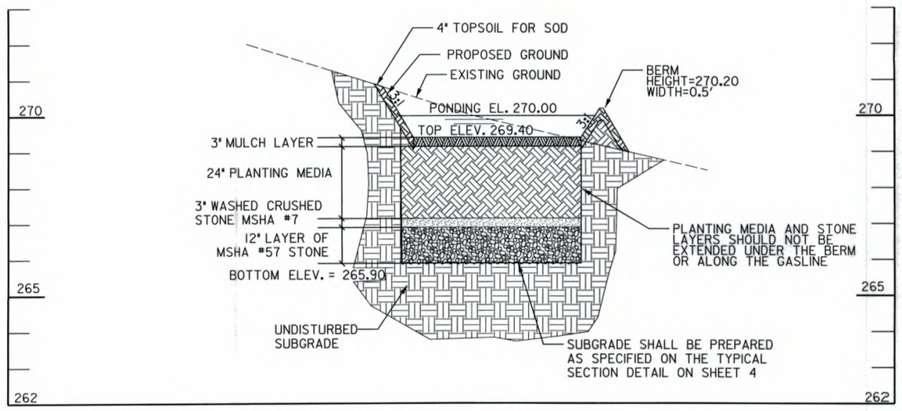
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS	DRAFT	WJW	APPROVED	HJD	DATE	JUNE 12	SCALE	1"=10'

SHEET 16 OF 22

FILE: I:\516213 - Headley Rd - forest estates and the four corners area\design\engineering\plansetfk p1\pHD-PG22_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 03:13 PM





PROFILE(A-A) - RAIN GARDEN FACILITY (BMP 23)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 23

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.38	
TOTAL IMPERVIOUS AREA (AC)	0.08	
TREATMENT VOLUME PROVIDED (CF)	232	
TARGET WQv TREATMENT VOLUME (CF)	330	
FILTER BED AREA (SF) [1]	87	
FILTER BED SURFACE ELEVATION	269.40	
DESIGN POINT/MAX. PONDING ELEVATION	270.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	187	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:

1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
207+98 TO 208+08, LT	10	TRANSITION TYPE C TO TYPE A
208+08 TO 208+95, LT	88	TYPE A, MC-100.01
209+01 TO 209+11, LT	10	TRANSITION TYPE A TO TYPE C

NOTE: CONTRACTOR SHALL COORDINATE WITH DOT FOR THE PROPER GRADE OF CURB AND GUTTER IN THIS AREA. CURB WILL NOT MATCH EXISTING PAVING.

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-16	208+98, 11.7' LT	270.50	268.90	MODIFIED CURB INLET
OW-230	208+87.8, 20.0' LT	-	-	OBSERVATION WELL

DPS PERMIT NO. 283294 D.S

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 23

FRANKLIN KNOLLS-PHASE 1

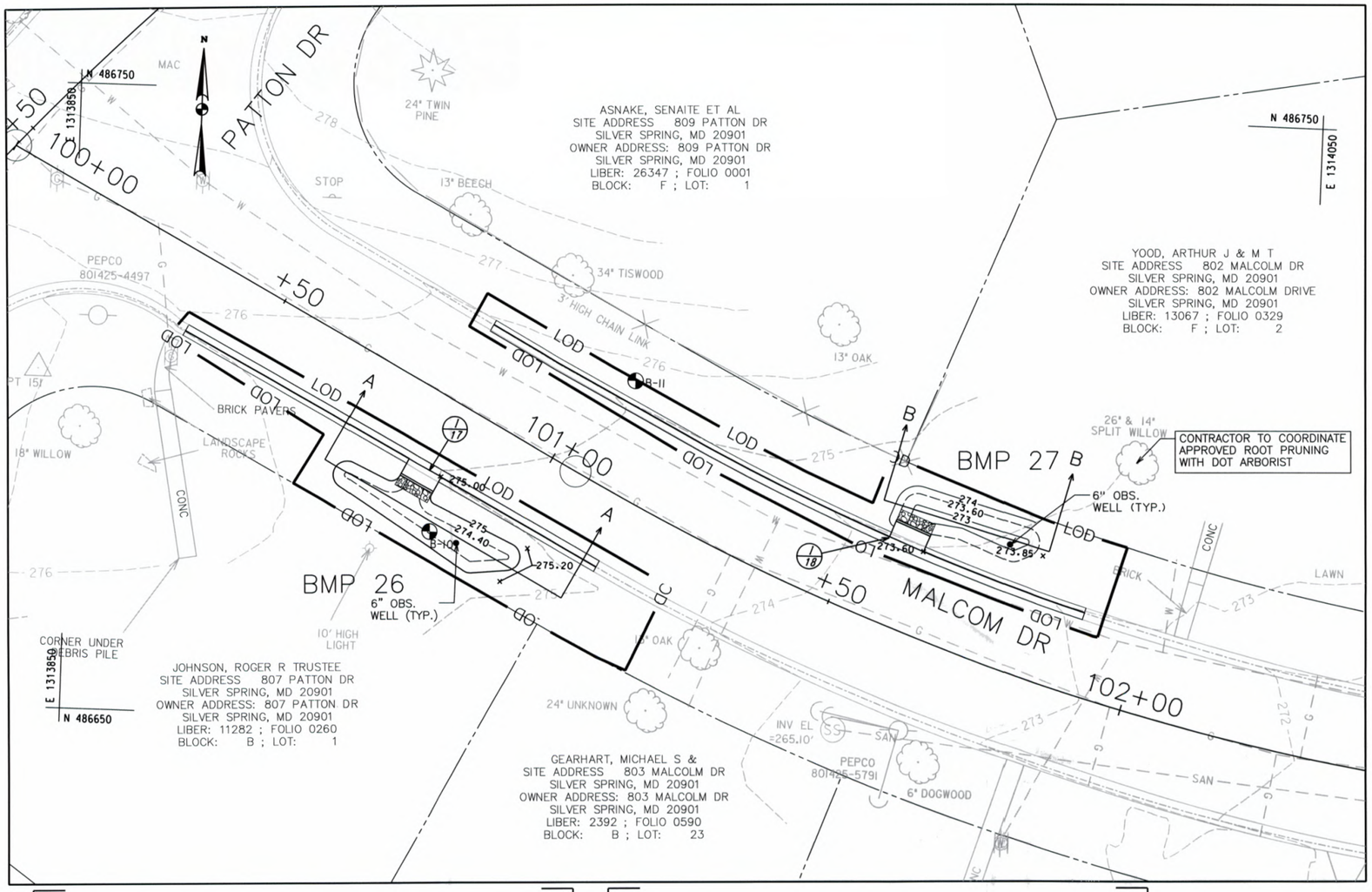
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

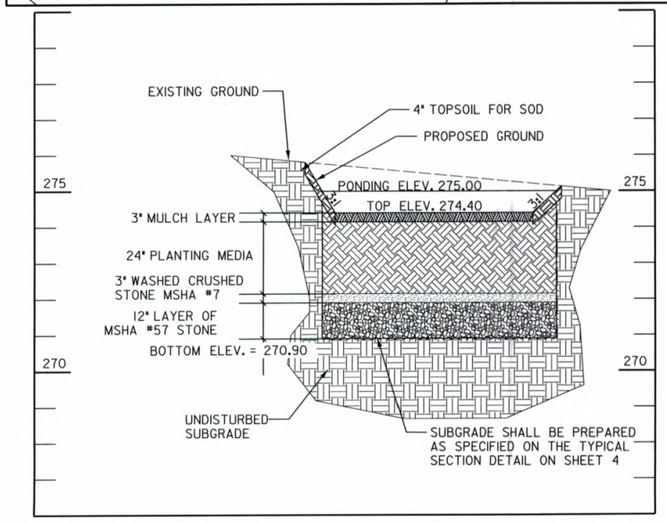
MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1"=10'

SHEET 17 OF 22

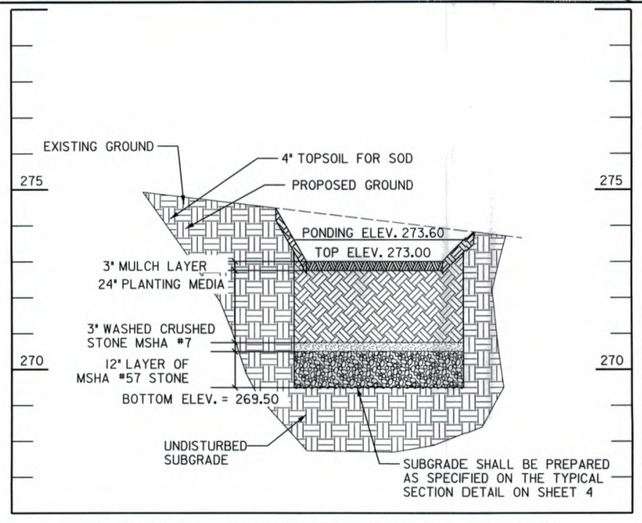
FILE: I:\516213 - cowdery ltd - forest estates and the four corners area\design\engineering\plansheets\fk_p1pHD-P023_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 03:13 PM





PROFILE (A-A) - RAIN GARDEN FACILITY (BMP 26)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



PROFILE (B-B) - RAIN GARDEN FACILITY (BMP 27)

SCALE: HORIZ. 1"=10'
VERT. 1"=2'

NOTE:
1. CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITION OF TREES TO BE ROOT PRUNED PRIOR TO THE START OF CONSTRUCTION.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 26

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.12	
TOTAL IMPERVIOUS AREA (AC)	0.06	
TREATMENT VOLUME PROVIDED (CF)	231	
TARGET WQv TREATMENT VOLUME (CF)	224	
FILTER BED AREA (SF) [1]	73	
FILTER BED SURFACE ELEVATION	274.40	
DESIGN POINT/MAX. PONDING ELEVATION	275.00	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	190	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

*NOTES:
1. "FILTER BED AREA (SF)" REPRESENTS THE EXPOSED SURFACE AREA AT THE PROPOSED "FILTER BED SURFACE ELEVATION".
2. FOR MATERIAL QUANTITY ESTIMATIONS, THE PLANTING MEDIA, STONE, MULCH, ETC. SHOULD BE BASED ON THE AREA OF "PONDED WATER SURFACE ELEVATION AREA (SF)".
3. CONTRACTOR SHALL TEST PIT UTILITIES PRIOR TO CONSTRUCTION. IF UTILITY IS UNAVOIDABLE, CONTRACTOR SHALL REFER TO SHEET 4 FOR UTILITY CROSSING DETAIL WITHIN THE FACILITY.

AS-BUILT DATA FOR FILTERS (BIORETENTION/RAIN GARDENS)

*TO BE COMPLETED BY THE CERTIFYING ENGINEER

TYPE OF FACILITY: RAIN GARDEN BMP ID: 27

FEATURE	DESIGN	*AS-BUILT
DRAINAGE AREA (AC)	0.17	
TOTAL IMPERVIOUS AREA (AC)	0.05	
TREATMENT VOLUME PROVIDED (CF)	144	
TARGET WQv TREATMENT VOLUME (CF)	194	
FILTER BED AREA (SF) [1]	41	
FILTER BED SURFACE ELEVATION	273.00	
DESIGN POINT/MAX. PONDING ELEVATION	273.60	
PONDED WATER SURFACE ELEVATION AREA (SF) [2]	120	
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	N/A	
THICKNESS OF FILTER MEDIA	REFER TO PROFILE	
PLACEMENT OF GEOTEXTILE (SIDES ONLY)	REFER TO FACILITY TYP. SECTION – SHEET 5	
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 22	
COMPOSITION OF FILTER MEDIA	REFER TO SECTION 1026 INCLUDED IN IFB PACKET	

COMBINATION CURB AND GUTTER

STATION / OFFSET	LF	REMARKS
100+38 TO 100+80, RT	42	TYPE A, MC-100.01
100+86 TO 101+05, RT	19	TYPE A, MC-100.01
101+05 TO 101+15, RT	10	TRANSITION TYPE A TO TYPE C
100+81 TO 101+45, LT	62	TYPE C, MC-101.01
101+45 TO 101+55, LT	10	TRANSITION TYPE C TO TYPE A
101+61 TO 101+80, LT	18	TYPE A, MC-100.01
101+80 TO 101+90, LT	10	TRANSITION TYPE A TO TYPE C

DRAINAGE STRUCTURE SCHEDULE

NO.	STATION / OFFSET	TC/TG	INV. OUT	REMARKS
I-17	100+83, 11.7' RT	275.50	273.90	MODIFIED CURB INLET
I-18	101+58, 13.4' LT	274.10	272.50	MODIFIED CURB INLET
OW-260	100+93.9, 19.5' RT	-	-	OBSERVATION WELL
OW-270	101+74.3, 19.5' LT	-	-	OBSERVATION WELL

DPS PERMIT NO. 283294

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF PERMITTING SERVICES
FINAL APPROVAL
DATE 12/6/2013
BY

*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

10' 0 10' 20'
SCALE: 1"=10'

McCormick Taylor
Engineers & Planners Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

PLAN AND PROFILE - BMP 26 AND 27
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1"=10'

SHEET 18 OF 22

FILE: 151521-3 - roadway list - forest estates and the four corners area\design\engineering\plansheets (r1)\HD-PP26_PP1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 03:13 PM

MONTGOMERY COUNTY GOVERNMENT
STANDARD EROSION AND SEDIMENT CONTROL NOTES (REV. August 2008)

1. The permittee shall notify the Department of Permitting Services (DPS) forty–eight (48) hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre–construction meeting between them or their representative, their engineer and an authorized representative of the Department.

2. The permittee must obtain inspection and approval by DPS at the following points:
A. At the required pre–construction meeting.
B. Following installation of sediment control measures and prior to any other land disturbing activity.
C. During the installation of a sediment basin or stormwater management structure at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction is mandatory.
D. Prior to removal or modification of any sediment control structure(s).
E. Prior to final acceptance.

3. The permittee shall construct all erosion and sediment control measures per the approved plan and construction sequence, shall have them inspected and approved by the Department prior to beginning any other land disturbances, shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measure without prior permission from the Department.

4. The permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.

5. The permittee shall inspect periodically and maintain continuously in effective operating condition, all erosion and sediment control measures until such time as they are removed with prior permission from the Department. The permittee is responsible for immediately repairing or replacing any sediment control measures which have been damaged or removed by the permittee or any other person.

6. Following initial soil disturbance or re–disturbance, permanent or temporary stabilization must be completed within:
a) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1); and
b) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization.

7.The permittee shall apply sod, seed, and anchored straw mulch, or other approved stabilization measures to all disturbed areas within seven (7) calendar days after stripping and grading activities have ceased on that area. Maintenance shall be performed as necessary to ensure continued stabilization. Active construction areas such as borrow or stockpile areas, roadway improvements, and areas within fifty (50) feet of a building under construction may be exempt from this requirement, provided that erosion and sediment control measures are installed and maintained to protect those areas.

8. Prior to removal of sediment control measures, the permittee shall stabilize all contributory disturbed areas with required soil amendments and topsoil, using sod or an approved permanent seed mixture and an approved anchored mulch. Wood fiber mulch may only be used in seeding season when the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within seven (7) calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15.

9. The site permit, work, materials, approved SC/SM plans, and test reports shall be available at the site for inspection by duly authorized officials of Montgomery County.

10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing mechanical devices to lower the water down slope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.

11. Permanent swales or other points of concentrated water flow shall be stabilized within 3 calendar days of establishment with sod or seed with an approved erosion control matting or by other approved stabilization measures.

12. Sediment control devices shall be removed, with permission of the Department, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.

13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas or on residential lots. A slope gradient of up to 2:1 will be permitted in non– maintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low–maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.

14. The permittee shall install a splashblock at the bottom of each downspout unless the downspout is connected by a drain line to an acceptable outlet.

15. For finished grading, the permittee shall provide adequate gradients so as to prevent water from standing on the surface of lawns more than twenty–four (24) hours after the end of a rainfall, except in designated drainage courses and swale flow areas, which may drain as long as forty–eight (48) hours after the end of a rainfall.

16. Sediment traps or basins are not permitted within 20 feet of a building which is existing or under construction. No building may be constructed within 20 feet of a sediment trap or basin.

17. All inlets in non–sump areas shall have asphalt berms installed at the time of base paving establishment.

18.The sediment control inspector has the option of requiring additional sediment control measures, as deemed necessary.

19. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.

20.Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control.

21.Sediment trap(s)/basin(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to the point of one–half (1/2) the wet storage depth of the trap/basin (1/4 the wet storage depth for ST–III) or when required by the sediment control inspector.

22.Sediment removed from traps/basins shall be placed and stabilized in approved areas, but not within a floodplain.

23. All sediment basins and traps must be surrounded with a welded wire safety fence. The fence must be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater the two inches in width and four inches in height, with a minimum of 14 gauge wire. Safety fence must be maintained in good condition at all times.

24. No excavation in the areas of existing utilities is permitted unless their location has been determined. Call "Miss Utility" at 1–800–257–7777, 48 hours prior to the start of work.

25.Off–site spoil or borrow areas must have prior approval by DPS.

26.Sediment trap/basin dewatering for cleanout or repair may only be done with the DPS inspector's permission. The inspector must approve the dewatering method for each application. The following methods may be considered:

A. Pump discharge may be directed to another on–site sediment trap or basin, provided it is of sufficient volume and the pump intake is floated to prevent agitation or suction of deposited sediments; or

B. The pump intake may utilize a Removable Pumping Station and must discharge into an undisturbed area through a non–erosive outlet; or

C. The pump intake may be floated and discharge into a Dirt Bag (12 oz. non–woven fabric), or approved equivalent, located in an undisturbed buffer area.

Remember: Dewatering operation and method must have prior approval by the DPS inspector.

27. The permittee must notify the Department of all utility construction activities within the permitted limits of disturbance prior to the commencement of those activities.

28. Topsoil must be applied to all pervious areas within the limits of disturbance prior to permanent stabilization in accordance with MDE *Standards and Specifications for Soil Preparation, Topsoiling, and Soil Amendments*.

TEMPORARY SEEDING SPECIFICATIONS

1. TEMPORARY SEEDING: SHALL BE DONE BETWEEN MARCH 1 – MAY 15 AND AUGUST 15 – OCTOBER 15. ALL OTHER DISTURBED AREAS REQUIRING STABILIZATION NOT WITHIN THE SEEDING DATES SHALL BE MULCHED.

2. ALL TEMPORARY SEEDED AREAS SHALL BE MULCHED IMMEDIATELY AFTER SEEDING. MULCH MATERIALS SHOULD BE UNWEATHERED, UNCHOPPED, SMALL GRAIN STRAW SPREAD AT A RATE OF 2 TONS PER ACRE. THE MULCH SHALL BE ANCHORED IMMEDIATELY AFTER PLACEMENT WITH ASPHALT, PEG AND TWINE, PLASTIC NETTINGS OR BY A MULCH ANCHORING TOOL.

3. LIME AND FERTILIZER SHALL BE REQUIRED FOR TEMPORARY SEEDING IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
   1. PULVERIZED DOLOMITIC LIMESTONE IS TO BE APPLIED AT THE RATE OF 100 LBS. PER 1,000 SQ. FT.
   2. FERTILIZER SHALL BE 10–10–10 OR EQUIVALENT AND APPLIED AT THE RATE OF 15 LBS. PER 1,000 SQ. FT.

PERMANENT SEEDING AND SODDING SPECIFICATIONS

1. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED.

2. SOIL PREPARATION: WEEDS AND UNDESIRABLE GRASSES GROWING ON EXISTING GRADE THAT IS TO BE SEEDED AND/OR SODDED MUST BE CUT AND REMOVED BEFORE SOIL PREPARATION BEGINS. BEFORE SEEDING OR SODDING ALL SOILS SHALL BE LOOSENED BY MEANS OF FILLING AND/OR DISCING. ALL TRASH, DEBRIS, ROOTS, BRUSH, WIRE, ROCKS, STONE AND OTHER FOREIGN DEBRIS OVER ONE INCH IN DIAMETER SHALL BE REMOVED PRIOR TO SEEDING AND/OR SODDING, TO A DEPTH OF FOUR (4) INCHES.

3. TOPSOIL: THE MINIMUM ORGANIC CONTENT IN THE MSHA SPECIFICATION REFERENCED SHALL BE INCREASED TO 10%. ORGANIC MATTER SHALL BE ADDED USING COMPOST MATERIAL MEETING THE STANDARD REQUIREMENTS IN THE SPECS.

4. SEEDED PREPARATION: THE TOP LAYER OF SOIL SHALL BE LOOSENED BY DISCLING OR RAKING (SHALL BE DONE ON CONTOUR) AT A DEPTH OF AT LEAST 3", BEFORE SEEDING OCCURS. APPLY 100LBS PER 1,000 SQ.FT. OF LIME AND 15 LB. PER 1,000 SQ.FT. OF 10–10–10 FERTILIZER OR EQUIVALENT. THOROUGHLY MIX INTO SOIL TO A MINIMUM OF 3".

5. SEEDING: USE 40% KENTUCKY BLUEGRASS, 10% ANNUAL RYE AND 25% RED FESCUE AT THE RATE OF 250 LB. PER ACRE.

6. MULCHING: USE CLEAN, UNWEATHERED, UNCHOPPING SMALL GRAIN STRAW AT THE RATE OF 1.5 TO 2 TONS PER ACRE ANCHORED DOWN WITH CUTBACK ASPHALT AT THE RATE OF 5–8 GALLONS PER 1000 SQ. FT.

7. DISCING AND HARROWING SHALL BE DONE ON CONTOUR.

8. SOD SHALL BE STATE APPROVED SOD INSPECTED AND APPROVED BY MD. DEPT. OF AGRICULTURE. ALL SOD SHALL BE LAID ON SITE NO MORE THAN 36 HOURS AFTER HARVEST, AND SHALL BE A MIXTURE OF 60% (MIN.) TALL FESCUE AND 40% (MIN.) KENTUCKY BLUEGRASS.

9. SOD PEGS OR STAKES BE UNTREATED WOOD PEGS DRIVEN THROUGH, AND FLUSH WITH SOD. ALL SLOPES WITH A GRADE 3 TO 1 OR STEEPER SHALL BE PEGGED AT A MINIMUM OF 4 PEGS PER SQUARE YARD OF SOD.

10.SODDING, SEEDING AND MULCHING MAY BE DONE IMMEDIATELY AFTER FINAL GRADING, PROVIDED THAT THE BED HAS REMAINED IN GOOD, FRIABLE CONDITION AND HAS NOT BECOME MUDDY OR HARD. IF IT HAS BECOME HARD, IT SHALL BE FILLED TO FRIABLE CONDITION AGAIN.

11.SEED SHALL BE WORKED INTO THE TOP 3" OF SOIL BY MEANS OF RAKING, WIRE DRAG OR OTHER APPROVED EQUIPMENT. DURING PERIODS OF HIGH TEMPERATURE AND/OR DROUGHT. THE SOIL SHALL BE WATERED IMMEDIATELY PRIOR TO LAYING THE SOD. ALL SOD SHALL BE LAID AT RIGHT ANGLES TO SLOPES. NO SOD SHALL BE APPLIED TO FROZEN GROUND AND NO FROZEN SOD IS TO BE LAID. WATERING SHALL COMMENCE IMMEDIATELY DURING OR AFTER THE LAYING OPERATION, AND SHALL BE SUFFICIENT TO THOROUGHLY WET THE SOD ROOTS AND THE SOIL BELOW.

12.PERMANENT SEEDING: SHALL BE DONE MARCH 1 – MAY 15 AND AUGUST 15 – OCTOBER 15. IRRIGATION FOR PERMANENT SEEDING SHALL BE DONE BETWEEN MAY 15 AND AUGUST 14.

13.SEDIMENT CONTROL DEVICES (DITCHES, DIKES, TRAPS, ETC.) ARE TO REMAIN IN PLACE UNTIL CONTRIBUTING WATERSHED HAS BEEN STABILIZED. MAINTENANCE TO SEDIMENT CONTROL DEVICES DURING THE UNDER GOING GRADING, CONSTRUCTION AND DEVELOPMENT SHOULD BE DONE AS NECESSARY. REMOVAL OF THESE DEVICES SHALL BE WITH THE APPROVAL OF THE MONTGOMERY COUNTY SEDIMENT CONTROL INSPECTOR.

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES
THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES.

FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS
TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS.

TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5 % BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 " IN DIAMETER. THE SUBSOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 6 INCHES BEFORE PLACEMENT OF TOPSOIL.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4–8 TONS/ACRE (200–400 LBS PER 1000 SQ FT) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL.

TOPSOIL SHALL BE TESTED AND AMENDED AS PER SOIL TEST RECOMMENDATIONS.

TOPSOIL APPLICATION.

1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES.
2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4–8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
3. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

EARTH FILL FOR FACILITY EMBANKMENTS

MATERIAL
THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN SIX INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER AND APPROVED BY MCDPS.

PLACEMENT
AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM EIGHT INCH HEIGHT (BEFORE COMPACTION) LAYERS, WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. PIPES OR UNDERDRAINS MUST BE INSTALLED CONCURRENT WITH EMBANKMENT CONSTRUCTION TO AVOID EXCAVATION INTO THE COMPLETED EMBANKMENT AT A LATER TIME.

COMPACTION
THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MIN. OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT SO WET THAT WATER CAN BE SQUEEZED OUT.

THE DENSITY OF EACH LIFT SHALL NOT BE LESS THAN 95% OF MAX. DRY DENSITY WITH A MOISTURE CONTENT WITHIN $\pm$2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T–99 (STANDARD PROCTOR).

McCormick Taylor
Engineers & Planners
Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662–7400

EROSION AND SEDIMENT CONTROL NOTES
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	NOT TO SCALE

SHEET 19 OF 22

FILE: i:\5182\13 - roadway lid – forest estates and the four corners area\design\engineering\planset\fk p1\pES-N001_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 03:13 PM

DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett
County Executive

Diane R Schwartz Jones
Director

SEDIMENT CONTROL PERMIT

Issue Date: 01/25/2010

Permit No: 236507
Expires: 01/25/2014
Ref. No:
ID: AC1087238

THIS IS TO CERTIFY THAT:	MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION 255 ROCKVILLE PIKE SUITE 120 ROCKVILLE, MD 20850
HAS PERMISSION TO:	DISTURB 0
PURPOSE:	CONSTRUCTION
PERMIT CONDITIONS:	BLANKET PERMIT FOR DEP ROADSIDE LID RETROFITS - ALL PROJECT SITE WILL INVOLVE LESS THAN 5,000 SQ FEET OF LOD -
PREMISE ADDRESS:	VARIOUS LOCATIONS LID RETROFITS

The permittee must contact JOHN THRASHER Field Inspector at (301)370-3633 to obtain an inspection prior to:
1. Commencing land-disturbing activity;
2. Installing sediment-control basins or stormwater-management structures;
3. Removing sediment-control devices; and
4. Changing ownership of the permitted area.

LOT - BLOCK: -	ZONE:	ELECTION DISTRICT:
BOND NO.:	BOND TYPE:	PS NUMBER:
PERMIT FEE: $ 1,155.00	SUBDIVISION: FY2010 - GENL PERMIT ROW LID	

Director, Department of Permitting Services

255 Rockville Pike, 2nd Floor · Rockville, MD 20850 · (240)777-0311 · (240)777-6256 TTY
www.montgomerycountymd.gov/permittingservices

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

ROADSIDE TREE PERMIT- BLANKET (RTB): 2013-0557

Name: Brett Linkletter, Montgomery County

Address: 100 Edison Park Dr, 4th Fl, Gaithersburg, MD. 20878

The applicant is a public agency: Yes

Applicant type: A governmental entity possessing an easement for the public road right-of-way in which the tree(s) are located

Specific crew identifier:

Is hereby granted a permit to perform tree care in the following counties:
MONTGOMERY

The proposed tree care will: Eliminate a hazard to property, public safety, or health

Described as follows:

PARTICULAR TYPES OF TREE CARE PERMITTED:

Tree Removal (Nat Res Art § 5-406), Tree Pruning (COMAR 08.07.02.07.A.), Tree clearance from overhead facilities (COMAR 08.07.02.07.B.), Tree Planting (COMAR 08.07.02.09), Ground disturbance (COMAR 08.07.02.07.C.), Protection of tree roots (COMAR 08.07.02.07.D.), Use of Pesticides (COMAR 08.07.02.08), 8991-55794

LIMITATIONS OR CONDITIONS ON THE TREE CARE OR PLANTING:

All work done under this permit shall be conducted according to the " 2013 Terms and Conditions".

EXCLUDING ANY TREE NOT WITHIN THE RIGHT-OF-WAY OF A PUBLIC HIGHWAY

Provided, that the work authorized by this permit shall not begin until the Forest Warden designated by the Director as his agent shall be present and give their sanction to the means employed, and that the work may be suspended by order of the Forest Warden upon any failure or refusal of the operators to perform it in accordance with the rules and regulations of the Department of Natural Resources - Forest Service.

This permit is granted under authority of the Annotated Code of Maryland, 1973, under Title 5, Subtitle 406, which places the care and protection of all trees growing within the right-of-way of any public road or between the curb and property lines of any street in any incorporated town in Maryland under the Department of Natural Resources - Forest Service. This permit, in no way cancels or contravenes the right of property owners to restrict or prevent the trimming or cutting of trees upon their own properties, except that trees covered by this permit may not be treated in any way other than as herein specified.

Authorized by: Wayne Merkel   Title: Regional Forester   Date: 03/26/2013

Address: 2 South Bond Street, Bel Air, MD. 21014

RTCE performing the workBrett Linkletter

THIS PERMIT IS AN ANNUAL PERMIT

Maryland Forest Service * Tawes State Office Building * 580 Taylor Avenue * Annapolis, Maryland 21401
410.260.8DNR or toll free in Maryland 877.620.8DNR * www.dnr.maryland.gov * TTY users call via Maryland Relay

DETAIL 22 - SILT FENCE

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3 & 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23A - STANDARD INLET PROTECTION

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18' below the notch elevation.

2. Drive the 2' x 4' construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4' frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6' below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2' x 1/2' wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18' below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6' layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6' higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C-CURB INLET PROTECTION (COG OR COS INLETS)

MAX. DRAINAGE AREA = ¼ ACRE

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the ½" x ½" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean ¾" x 1½" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

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NOTES

1. Steel Posts must be Schedule 40 or 'SS-40', 2.5" diameter, galvanived pipe. Post Spacing must not exceed 10 linear feet. Posts do not need to be set in concrete.

2. Chain link fence fabric must be 2" x #9 gauge x 42" KK wire. Chainlink fence fabric must be stretched taut and securely fastened to posts with fence wire.

3. Filter fabric must be MSHA Class 'F' fabric. Filter fabric must be streched taut and securely fastened to chain link fence, front and back. Where two ends of filter cloth meet, they must be overlapped a minimum of 6", folded together and fastened.

4. Maintenance must be performed as needed and silt buildups removed when they reach an 18" depth above existing ground or when "bulges" develop in the silt fence.

5. All other details and specifications shall be in accordance with U.S.D.A.-S.C.S., M.D.E.-W.M.A. and M.S.H.A. specifications.

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES WATER RESOURCES	MODIFIED SUPER SILT FENCE	DATE: 6/03 SCALE: NONE

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31204 , EXPIRATION DATE: 1 / 13 / 2015.

STATE OF MARYLAND KIMI C. SCHMIDT No. 31204 PROFESSIONAL ENGINEER

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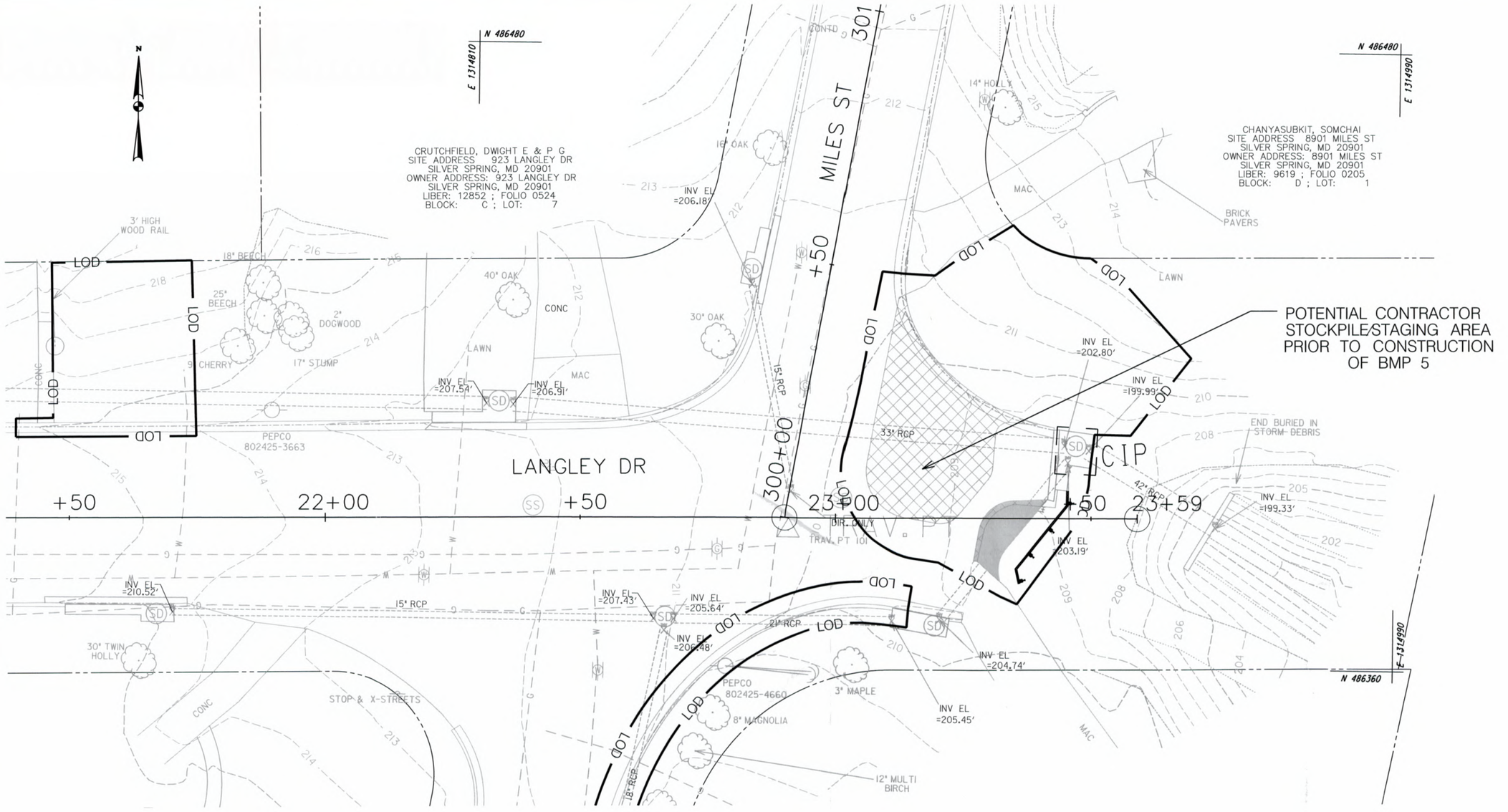
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

EROSION AND SEDIMENT CONTROL NOTES
FRANKLIN KNOLLS-PHASE 1
SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12'
SCALE	NOT TO SCALE

FILE: I:\5182\13 - roadway lid – forest estates and the four corners area\design\engineering\planset\fk p1\pES-N002_FK1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM



SEQUENCE OF CONSTRUCTION

1. PRIOR TO CLEARING OF TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240) 777-6300 (48 HOURS NOTICE), THE MCDPS RIGHT OF WAY INSPECTOR (301) 370-3686 (48 HOURS NOTICE), THE OWNER'S REPRESENTATIVE, THE CONTRACTOR AND THE SITE ENGINEER.

2. CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL MEASURES WITH MCDOT CONTRACTOR. THE CONTRACTOR SHALL COMPLY WITH MCDOT'S WORK ZONE TEMPORARY TRAFFIC CONTROL STANDARDS AND MSHA STANDARDS NO. 104.02-10 AND NO. 104.02-14.

3. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.

4. CLEAR AND GRADE FOR INSTALLATION OF SEDIMENT CONTROL DEVICES, ONLY DISTURBING THE AREA NEEDED FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES.

5. INSTALL SEDIMENT CONTROL DEVICES INCLUDING INLET PROTECTION, SILT FENCE AND TREE PROTECTION FENCING. TREE PROTECTION AREAS ARE SHOWN ON THE PLAN AND PROFILE SHEETS, IF REQUIRED. IMMEDIATELY STABILIZE ANY DISTURBANCE CAUSED BY THIS.

6. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED, THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING OR GRADING.

7. DISTURBED AREAS WITHIN THE PROJECT LIMITS SHALL HAVE EITHER PERMANENT OR TEMPORARY STABILIZATION AT THE END OF EACH WORK DAY.

8. CONTRACTOR MAY COMPLETE WORK IN EACH LOD AREA CONCURRENTLY AS LONG AS THE LOD IS STAKED OUT AND ALL SEDIMENT CONTROLS ARE IN PLACE. THE CONTRACTOR SHALL NOT EXCEED A MAXIMUM OF 5,000 SF OF DISTURBANCE AT ANY ONE TIME PER MCDEP'S SMALL LAND DISTURBANCE PERMIT FOR ROADSIDE LID RETROFITS.

9. THE CONTRACTOR SHALL COORDINATE WITH MCDOT'S CONTRACTOR TO ENSURE ANY CONFLICTS AND/OR CONSTRUCTION ISSUES ARE RESOLVED IMMEDIATELY AND WORK ZONES ARE NOT OVERLAPPING.

10. THE CONTRACTOR SHALL UTILIZE THE DESIGNATED STOCKPILE/STAGING AREA AT THE END OF LANGLEY DRIVE. ANY ADDITIONAL STOCKPILE/STAGING AREA REQUIRES APPROVAL BY THE MCDPS SEDIMENT INSPECTOR PRIOR TO USE.

11. STOCKPILE/STAGING AREAS ARE TO BE REMOVED AND RESTORED TO ORIGINIAL CONDITION UPON COMPLETION OF WORK. STOCKPILE/STAGING AREAS ARE NOT TO BE CONSIDERED PART OF THE LIMITS OF DISTURBANCE AND NOT COUNTED AGAINST THE MAXIMUM 5,000 SF DISTURBED AREA REQUIREMENT OF THE PERMIT.

12. CONSTRUCTION OF EACH BMP FACILITY WILL FOLLOW A BASIC SEQUENCE OUTLINED BELOW:

a. THE LOD SHALL BE FIELD MARKED PRIOR TO INSTALLATION OF ANY SEDIMENT CONTROL MEASURES OR ANY OTHER LAND DISTURBING ACTIVITIES.

b. INSTALL SILT FENCE (SF) OR SUPER SILT FENCE (SSF) FOR STEEP SLOPES, ALONG THE SIDEWALK AND DOWNSTREAM DRIVEWAY ENTRANCES. INLET PROTECTION (IP) SHALL BE INSTALLED AT THE CLOSEST DOWNSTREAM INLET.

c. THE PERMITTEE MUST OBTAIN WRITTEN APPROVAL FROM THE MCDPS SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING WITH CONSTRUCTION.

d. CONSTRUCT THE FACILITY PER THE PLANS AND DETAILS. CURB INLETS TO THE FACILITY SHALL BE BLOCKED WITH SAND BAGS UNTIL THE FACILITY IS STABILIZED AND IS READY TO BE BROUGHT ON LINE. STABILIZE ALL AREAS PRIOR TO PLACEMENT OF THE FILTER MEDIA.

e. THE CONTRACTOR SHALL TAKE EXTREME CAUTION TO NOT ALLOW DISTURBED AREAS TO DRAIN INTO THE FACILITY. ALL DISTURBED AREAS SHALL BE STABILIZED AT THE END OF EACH WORK DAY.

f. FINAL GRADE FACILITY AND PERMANENTLY STABILIZE ALL DISTURBED AREAS AS SHOWN ON THE LANDSCAPE PLANS AND/OR TYPICAL SECTIONS.

h. THE CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM MCDPS SEDIMENT INSPECTOR, PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL DEVICE, THAT THE AREA IS ADEQUATELY STABILIZED AND CAN BE REMOVED FROM THE TOTAL 5,000 SF DISTURBED AREA TABULATION.

i. ANY AREAS DISTURBED DURING THE REMOVAL OF E&S CONTROLS SHALL BE IMMEDIATELY STABILIZED.

10' 0 10' 20'
SCALE: 1" = 10'

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EROSION AND SEDIMENT CONTROL PLAN

FRANKLIN KNOLLS-PHASE 1

SLIGO (13th) ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND

MONTGOMERY COUNTY DEPT OF
ENVIRONMENTAL PROTECTION
255 ROCKVILLE PIKE, SUITE 120
ROCKVILLE, MD 20850-4166
MR. CRAIG CARSON
(240) 777-7713

DESIGN	KCS
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1"=10'

SHEET 21 OF 22

FILE: I:\515213 - roadway ld - forest estates and the four corners area\design\engineering\plans\ef_p1\ES-P001_FK1.dgn
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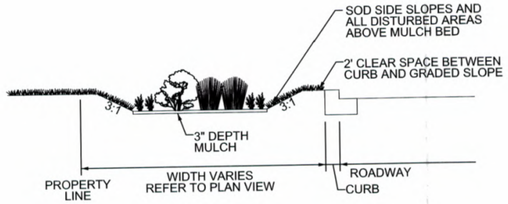
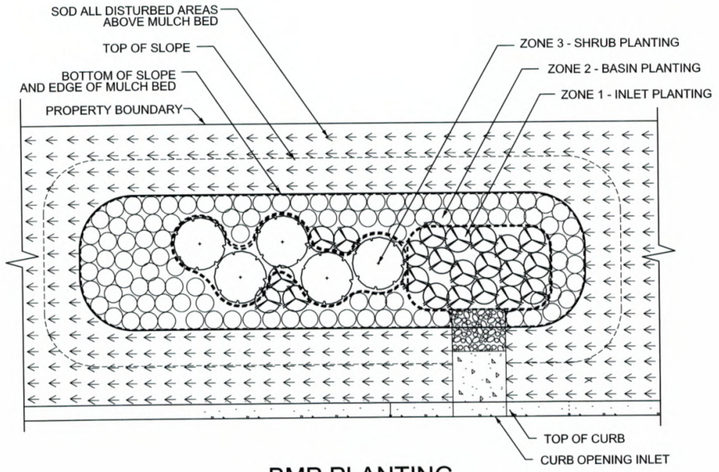


PLANTING
TYPICAL SECTION
NOT TO SCALE



BMP PLANTING
TYPICAL PLAN VIEW
NOT TO SCALE

LEGEND

- ZONE 1 - INLET PLANTINGS ORNAMENTAL GRASS - PLANT 18" ON CENTER
- ZONE 2 - BASIN PLANTINGS PERENNIAL - PLANT 18" ON CENTER
- ZONE 3 - SHRUB PLANTINGS SHRUB - PLANT 3' ON CENTER

CONCEPTUAL ZONE SCHEDULE

ZONE 1	15% BMP AREA
ZONE 2	60% BMP AREA
ZONE 3	25% BMP AREA

NOTES:

1. This plan is for landscape purposes only.
2. All proposed layouts are conceptual.
3. Cluster species in groupings.
4. When no Zone 3 plantings are specified, Zone 2 plantings shall be distributed evenly over Zones 2 and 3.

MASTER ZONE PLANTING SCHEDULE

Zone	Botanical/Common Name	Unit	Size	Spacing	BMP 5	BMP 6	BMP 7	BMP 8	BMP 9	BMP 14	BMP 15	BMP 16	BMP 17	BMP 18	BMP 22	BMP 23	BMP 25	BMP 26	BMP 27	BMP 28	BMP 29	TOTAL
GROUNDCOVERS	Turfgrass Sod	SY			190	88	38	105	66	54	33	70	46	43	31	79	53	75	69	54	57	1151
	Shredded Hardwood Bark Mulch	SY	3" Depth		50	5	4	20	4	2	4	6	7	3	7	10	4	8	5	5	3	148
TOTAL BMP SF		SF			450	45	35	183	38	22	40	55	63	39	59	87	36	73	41	42	24	
ZONE 1 – Inlet Plantings	Chasmanthium latifolium/ River Oats	EA	Gal.	18" O.C.	0	0	0	12	5	5	0	0	0	5	5	0	5	0	0	0	0	37
(15% SF BMP)	Panicum vergatum 'Cheyenne Sky'/ Cheyenne Sky Switchgrass	EA	Gal.	18" O.C.	30	5	5	0	0	0	5	5	5	0	0	6	0	5	5	5	5	81
ZONE 2 – Basin Plantings	Chasmanthium latifolium/River Oats	EA	Gal.	18" O.C.	30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
(60% SF BMP)	Iris versicolor/Blue Flag Iris	EA	Gal.	18" O.C.	50	17	0	29	8	5	13	20	23	13	22	22	12	18	14	14	6	286
	Physostegia virginiana 'Vivid' /Obedient Plant	EA	Gal.	12" O.C.	0	0	0	0	0	0	0	0	0	0	0	25	0	21	0	0	0	46
	Rudbeckia fulgida 'Goldstrum'/Black–Eyed Susan	EA	Gal.	18" O.C.	40	14	7	20	5	0	0	0	0	0	0	0	0	0	0	0	0	86
ZONE 3 – Shrub Plantings	Clethra alnifolia 'Hummingbird'/ Hummingbird Summersweet	EA	18" HT, Cont.	3' O.C.	7	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	10
(25% SF BMP)	Ilex glabra 'Shamrock'/Shamrock Inkberry	EA	18" HT, Cont.	3' O.C.	6	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	9

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LANDSCAPE PLAN

FRANKLIN KNOLLS-PHASE 1

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255 ROCKVILLE PIKE, SUITE 120
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DESIGN	ALN
DRAFT	WJW
APPROVED	HJD
DATE	JUNE 12
SCALE	1" = 10'

SHEET 22 OF 22

FILE: L-0512-13 - Toolbox Jet - layout xrefed yet the four corners area\designmanager\projplans\fk p1pLD-D001_PR1.dgn
PLOTTED: Tuesday, October 29, 2013 AT 02:11 PM