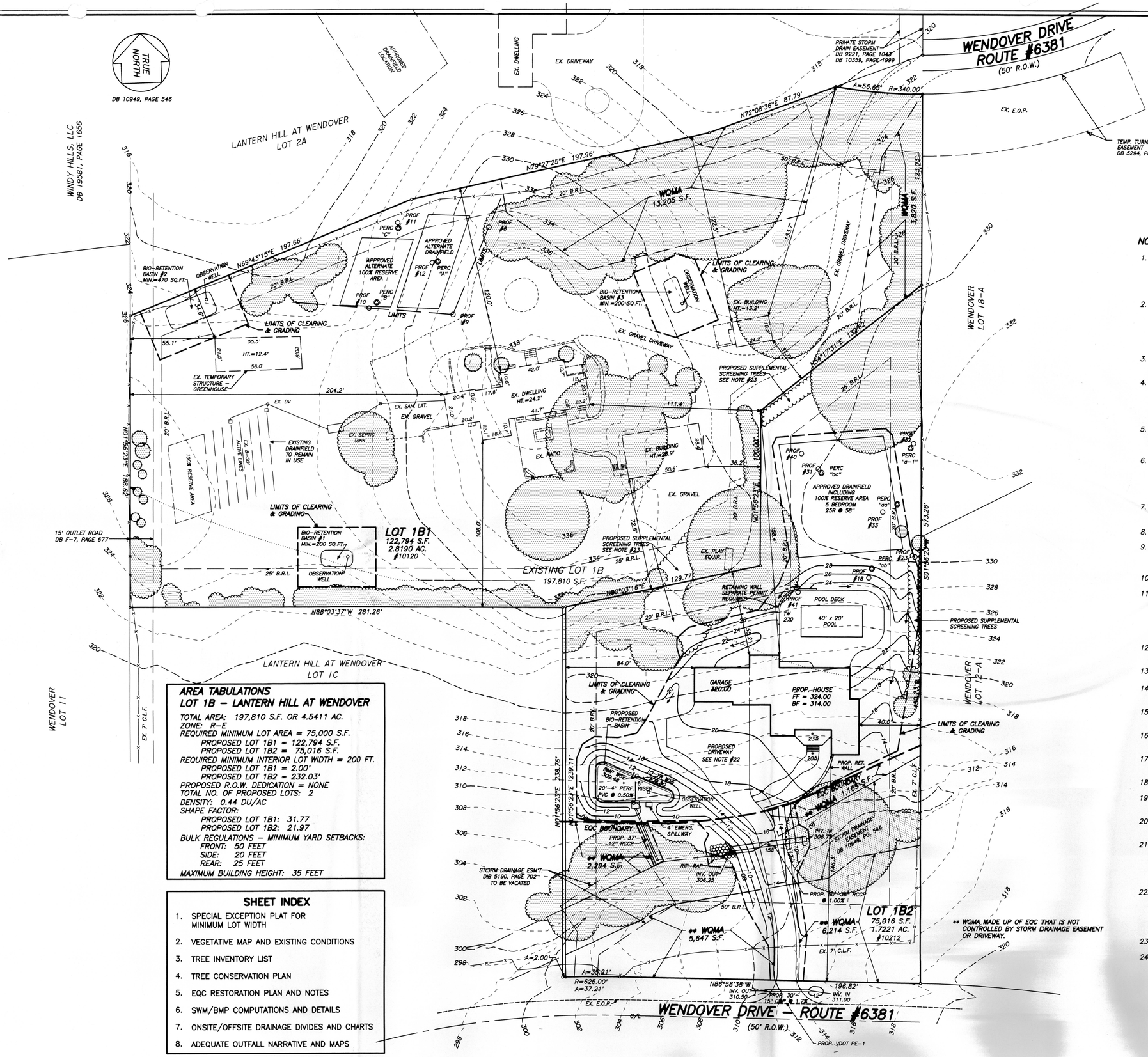


LEGEND	COVER TYPE
	TREE SAVE AREAS AND ASSOCIATED CANOPY

AREA TABULATIONS
LOT 1B – LANTERN HILL AT WENDOVER

TOTAL AREA: 197,810 S.F. OR 4.5411 AC.
ZONE: R-E
REQUIRED MINIMUM LOT AREA = 75,000 S.F.
PROPOSED LOT 1B1 = 122,794 S.F.
PROPOSED LOT 1B2 = 75,016 S.F.
REQUIRED MINIMUM INTERIOR LOT WIDTH = 200 FT.
PROPOSED LOT 1B1 = 2.00'
PROPOSED LOT 1B2 = 232.03'
PROPOSED R.O.W. DEDICATION = NONE
TOTAL NO. OF PROPOSED LOTS: 2
DENSITY: 0.44 DU/AC
SHAPE FACTOR:
PROPOSED LOT 1B1: 31.77
PROPOSED LOT 1B2: 21.97
BULK REGULATIONS – MINIMUM YARD SETBACKS:
FRONT: 50 FEET
SIDE: 20 FEET
REAR: 25 FEET
MAXIMUM BUILDING HEIGHT: 35 FEET

SHEET INDEX

NOTES:

1. THE PROPERTY THAT IS THE SUBJECT OF THE SPECIAL EXCEPTION IS IDENTIFIED ON THE FAIRFAX COUNTY TAX ASSESSMENT MAP AS 27-4-((1))-14C1. THE PROPERTY IS OWNED BY GEORGE B. & CAROLYN E. SAGATOV BY DEED BOOK: 10949, PAGE 546 AND IS CURRENTLY ZONED R-E. THIS APPLICATION IS FOR RELIEF FROM MINIMUM LOT WIDTH REQUIREMENT.
2. THE HORIZONTAL DATUM SHOWN HEREON IS REFERENCED TO PLAT BEARING FROM DB: 10949, PAGE 546. THE EXISTING LOCATION OF STRUCTURES SHOWN HEREON HAS BEEN TAKEN FROM A FIELD RUN SURVEY BY RUNYON, DUDLEY, ASSOCIATES, INC. THE TOPOGRAPHY SHOWN HAS BEEN DONE BY OTHERS. THE CONTOUR INTERVAL IS TWO (2) FEET. THE BOUNDARY INFORMATION SHOWN HEREON HAS BEEN TAKEN FROM A FIELD SURVEY BY RUNYON, DUDLEY, ASSOCIATES, INC.
3. THE PROPERTY IS LOCATED ON LAND UNIT UPS-PLANNING SECTOR OF THE UPPER POTOMAC PLANNING DISTRICT OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN.
4. THE EXISTING HOUSE IS ON PUBLIC WATER AND PUBLIC WATER IS AVAILABLE TO SERVE THE PROPOSED DEVELOPMENT. THE EXISTING HOUSE IS ON PRIVATE SEPTIC SEWER. THE PROPOSED SEPTIC DRAINFIELDS SHOWN HEREON ARE APPROVED. STORMWATER MANAGEMENT SHALL BE PROVIDED AS DESCRIBED IN THE SWM/BMP NARRATIVES. SWM FACILITIES ARE SUBJECT TO FINAL ENGINEERING.
5. TO THE BEST OF OUR KNOWLEDGE, NO GRAVE SITES OR STRUCTURES MARKING A BURIAL SITE ARE PRESENT ON THE SUBJECT PROPERTY. TO THE BEST OF OUR KNOWLEDGE, NO HAZARDOUS OR TOXIC SUBSTANCES ARE KNOWN TO EXIST ON THE SUBJECT PROPERTY.
6. THE SINGLE FAMILY DWELLING AND ACCESSORY STRUCTURES ARE TO REMAIN, BUT IN THE FUTURE CAN BE REPLACED WITH A NEW STRUCTURE IN ACCORDANCE WITH THE FAIRFAX COUNTY ZONING ORDINANCE. THE EXISTING SINGLE FAMILY DWELLING WAS CONSTRUCTED ON THE PROPERTY IN APPROXIMATELY 1940. THE EXISTING ACCESSORY GARAGE STRUCTURE WAS BUILT IN 1996.
7. THE ENTIRE SUBJECT PROPERTY IS LOCATED WITHIN AN RMA ZONE. THERE IS NO RESOURCE PROTECTION AREA (RPA) ON SITE. THE PROPERTY HAS AN ENVIRONMENTAL QUALITY CORRIDOR (EQC).
8. THERE ARE NO PROPOSED TRAILS OR SIDEWALKS INDICATED PER THE FAIRFAX COUNTY COMPREHENSIVE PLAN AND PFM.
9. THE PLANNED DEVELOPMENT DOES NOT REQUIRE ANY ADDITIONAL PUBLIC STREET DEDICATION OR CONSTRUCTION PER THE FAIRFAX COUNTY COMPREHENSIVE PLAN AND THE REVIEW OF FAIRFAX COUNTY DEPARTMENT OF TRANSPORTATION AND THE REVIEW OF VDOT.
10. THE PROJECT WILL BEGIN UPON COMPLETION OF REQUIRED FAIRFAX COUNTY PLAN PROCESSING AND APPROVALS.
11. THE DRIVEWAY ENTRANCE ON LOT 1B2 AND ANY WORK DONE WITHIN VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) RIGHT-OF-WAY IS SUBJECT TO VDOT APPROVAL. THE EXISTING ACCESS FOR LOT 1B1 WILL REMAIN AS SHOWN TO THE TEMPORARY TURNAROUND DB: 5294, PAGE 249 ON WENDOVER DRIVE. ENTRANCES AS SHOWN ON THE SPECIAL EXCEPTION PLAT HAVE ADEQUATE SIGHT DISTANCE BASED ON VDOT AND PUBLIC FACILITIES MANUAL (PFM) STANDARDS.
12. TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THE DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE STANDARDS AND OF THE ADOPTED COMPREHENSIVE PLAN.
13. MINOR MODIFICATION MAY BE MADE TO THE SPECIAL EXCEPTION PLAT PER SECTION 9-004.4 OF THE ZONING ORDINANCE.
14. THE PROPOSED DEVELOPMENT ON THE SUBJECT PROPERTY WILL NOT POSE ANY ADVERSE EFFECT ON ADJACENT OR NEIGHBORING PROPERTIES.
15. THE PROJECT WILL MEET THE PARKING REQUIREMENT SET FORTH IN THE R-E ZONE PER ARTICLE 11 OF THE FAIRFAX COUNTY ZONING ORDINANCE.
16. THERE ARE NO EXISTING UTILITY EASEMENTS HAVING A WIDTH OF TWENTY-FIVE (25) FEET OR MORE, NOR ARE MAJOR UNDERGROUND UTILITY EASEMENTS LOCATED ON SITE.
17. BOTH PROPOSED LOTS MEET THE SHAPE FACTOR LIMITATIONS FOR LOTS IN THE R-E DISTRICT SUCH THAT THE SHAPE FACTOR IS < THAN 35. THE SHAPE FACTOR FOR LOT 1B1 = 31.77 AND FOR LOT 1B2 = 21.97.
18. SEE SEPARATE CALCULATIONS FOR EXISTING SUBDIVISION DENSITY CALCULATIONS.
19. TREE CONSERVATION MEASURES AND 10 YEAR TREE CANOPY COVERAGE ARE ON SHEET 4 OF 8. SEE SHEET 5 OF 8 FOR EQC RESTORATION PLAN.
20. A STORM DRAINAGE STUDY OF THE EXISTING DRAINAGEWAY WITHIN PROPOSED LOT 1B2 WILL BE REQUIRED AT THE TIME OF SUBDIVISION AND SUBDIVISION RECORD PLAT.
21. APPLICANT SHALL REQUEST THAT THE DIRECTOR APPROVE, UNDER SECTION 6-1307.2A OF PFM, THE LOCATION OF BIO-RETENTION FACILITIES ON THE TWO INDIVIDUAL LOTS. APPLICANT SHALL ALSO REQUEST A PARTIAL WAIVER OF THE STRUCTURAL BMP REQUIREMENTS, JUSTIFIED BY THE INCLUSION OF THE WATER QUALTIY MANAGEMENT AREAS (WQMA) AS SHOWN.
22. THE PROPOSED DRIVEWAY ON LOT 1B2 WILL BE CONSTRUCTED OF POROUS MATERIALS SUCH AS PERVIOUS PAVEMENT AND/OR POROUS PAVERS. THE POROUS MATERIALS WILL NOT BE INCLUDED IN CALCULATIONS RELATING TO COMPLIANCE WITH STORMWATER DETENTION OR WATER QUALITY (BMP) REQUIREMENTS UNDER EITHER THE PUBLIC FACILITIES MANUAL, THE SUBDIVISION ORDINACE, OR THE ZONING ORDINANCE.
23. SUPPLEMENTAL SCREENING TREES SHALL BE TAKEN FROM ONSITE NURSERY STOCK AND SHALL BE EVERGREENS A MINIMUM OF 8 FEET HIGH.
24. NO RETAINING WALL SHALL EXCEED 10 FEET IN HEIGHT.

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 1 of 9

RECEIVED
Department of Planning & Zoning
JAN 20 2010
Zoning Evaluation Division

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING – SURVEYING – PLANNING
10650 MAIN STREET – SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS
9-18-2009
10-07-2009
11-11-2009
1-19-2010

SPECIAL EXCEPTION PLAT
FOR
MINIMUM LOT WIDTH
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert. No. 09548
1/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: 1" = 30'
DRAFTED BY: RMD/SKF
FILE #: F-2189 RP
CO. #:
DWG NAME: 2189SE1R
SHEET 1 OF 8

SE 2008-HM-010

CF: F-2189 SF: 2189SE1R; LAYERS 1-20

Point	Description
2730	27"MAPLE 36'R
2731	19"POPLAR 27'R
2732	19"POPLAR 25'R
2733	14" MAPLE 18'R
2734	17"POPLAR 21'R
2735	17"POPLAR 24'R
2736	17"POPLAR 24'R
2737	10"POPLAR 18'R
2738	13" MAPLE 21'R
2739	9" MAPLE 15'R
2740	21"POPLAR 21'R
2741	30" MAPLE 36'R
2742	19" MAPLE 27'R
2743	20" MAPLE 27'R
2744	19" MAPLE 22'R
2745	29" MAPLE 31'R
2746	8" MAPLE 18'R
2747	7" WILLOW 6'R
2748	17" MAPLE 27'R
2749	23" MAPLE 22'R
2750	27" ELM 36'R
2751	23" MAPLE 27'R
2752	19" CEDAR 18'R
2753	30" TREE 21'R
2754	15" POPLAR 21'R
2755	18" POPLAR 24'R
2756	11" CEDAR 12'R
2757	8" CEDAR 10'R
2758	10"CEDAR 12'R
2759	12" MAPLE 15'R
2760	16"POPLAR 24'R
2761	15" CEDAR 14'R
2762	16" CEDAR 15'R
2763	13" MAPLE 22'R
2764	15" TREE 18'R
2765	12" MAPLE 23'R
2766	36"POPLAR 33'R
2767	17" MAPLE 24'R
2769	41"SYCAMORE 36'R
2770	17"POPLAR 21'R
2771	21" CEDAR 18'R
2772	12" CEDAR 12'R
2773	14" CEDAR 15'R
2775	14"POPLAR 23'R
2776	17" MAPLE 21'R
2777	15" MAPLE 25'R
3500	3" MAPLE 6'R
3501	3" MAPLE 6'R
3502	3" MAPLE 6'R
3503	3" MAPLE 6'R
3504	3" MAPLE 6'R
3505	2" DOGWOOD 7'R
3506	3" TREE 10'R
3507	2" MAPLE 4'R.IN CONT
3508	2" MAPLE 4'R.IN CONT
3509	8" POPLAR 15'R
3510	7" MAPLE 14'R
3511	1"TREE 6'R
3512	8" MAPLE 13'R
3513	1" TREE 7'R
3514	9" MAPLE 15'R
3515	3" MAPLE 6'R
3516	3" MAPLE 6'R
3517	6" MAPLE 12'R
3519	7" MAPLE 16'R
3520	3" MAPLE 6'R
3521	2" TREE 6'R
3522	1" TREE 5'R
3523	1" TREE 5'R
3524	10" HICKORY 20'R
3525	9" TREE 18'R
3526	9" TREE 18'R
3527	5" MAPLE 11'R
3528	3" MAPLE 15'R
3529	3" MAPLE 12'R
3530	5" MAPLE 15'R
3531	9" TREE 15'R
3532	9" TREE 15'R
3533	9" TREE 15'R
3534	7" TREE 15'R
3535	9" TREE 16'R
3536	1" TREE 6'R
3537	4" MAPLE 10'R
3538	4" MAPLE 15'R
3539	8" MAPLE 16'R
3540	1" HOLLY 5'R
3541	1" TREE 4'R
3542	1" TREE 4'R
3543	3" MAPLE 6'R
3544	1" TREE 2'R
3545	3" MAPLE 6'R
3673	4" MAPLE 6'R
3674	4" MAPLE 6'R
3675	4" MAPLE 6'R
3676	19" MAPLE 25'R
3677	5" TREE 6'R
3678	4" MAPLE 6'R(INCONT)
3679	20" SYCAMORE 24'R
3680	20" SYCAMORE 24'R
3681	20" SYCAMORE 24'R
3682	18" POPLAR 25'R
3683	12" SYCAMORE 16'R
3684	4" MAPLE 6'R
3685	4" MAPLE 6'R
3686	3" TREE 12'R
3687	18" POPLAR 26'R
3688	5" MAPLE 12'R
3714	1" TREE 5'R
3715	1" TREE 5'R
3716	2" TREE 6'R
3717	3" TREE 8'R
3718	3" MAPLE 5'R
3719	3" DOGWOOD 9'R
3720	3" TREE 9'R
3721	8" MAPLE 17'R
3722	4" HOLLY 6'R(INCONT)
3723	3" HOLLY 4'R(INCONT)
3724	4" HOLLY 5'R(INCONT)
3725	6" TREE 9'R
3726	3" DOGWOOD 12'R
3727	1" MAGNOLIA 3'R
3728	1" MAGNOLIA 3'R
3729	1" MAGNOLIA 3'R
3730	2" MAGNOLIA 3'R
3731	1" MAGNOLIA 3'R
3732	1" MAGNOLIA 3'R
3733	12" SYCAMORE 18'R
3734	1" MAGNOLIA 3'R
3735	1" MAGNOLIA 3'R
3736	1" MAGNOLIA 3'R
3737	1" MAGNOLIA 3'R
3738	1" MAGNOLIA 3'R
3739	1" MAGNOLIA 3'R
3740	3" TREE 6'R
3741	3" TREE 6'R
3742	4" MAPLE 9'R
3743	3" MAPLE 6'R
3744	6" TREE 9'R(INCONT)
3745	6" TREE 10'R
3746	4" DOGWOOD 12'R
3747	8" CEDAR 12'R
3748	3" MAPLE 6'R
3770	21" TREE 15'R
3771	6" TREE 10'R
3772	5" MAPLE 12'R
3773	14" POPLAR 18'R
3774	3" TREE 6'R
3775	30" TREE 22'R
3776	10" POPLAR 18'R
3777	30" POPLAR 26'R
3778	5" MAPLE 12'R
3779	4" MAPLE 6'R
3780	8" MAPLE 10'R
3781	3" HOLLY 9'R
3782	3" MAPLE 6'R
3783	4" HOLLY 5'R
3784	4" HOLLY 5'R
3785	2" HOLLY 3'R
3786	4" HOLLY 5'R
3787	4" HOLLY 5'R
3788	3" TREE 4'R
3789	1" TREE 1'R
3790	1" TREE 2'R
3791	15" CEDAR 15'R
3792	1" TREE 2'R
3793	1" TREE 2'R
3842	2" MAPLE 6'R
3843	3" TREE 6'R
3844	3" MAPLE 6'R
3845	3" MAPLE 6'R
3846	3" MAPLE 6'R
3847	3" MAPLE 6'R
3848	3" MAPLE 6'R
3849	3" TREE 6'R
3850	3" MAPLE 6'R
3851	14" MAPLE 15'R
3852	3" TREE 6'R
3853	6" CYPRESS 10'R
3854	6" CYPRESS 10'R
3855	28" TREE 30'R
3856	3" WILLOW 7'R
3857	6" TREE 12'R
3858	6" MAPLE 15'R
3859	4" TREE 15'R
3860	3" MAGNOLIA 6'R
3861	3" MAGNOLIA 6'R
3862	3" MAGNOLIA 6'R
3863	3" MAGNOLIA 6'R
3864	3" MAGNOLIA 6'R
3865	3" MAGNOLIA 6'R
3866	4" TREE 6'R
3869	4" MAGNOLIA 5'R
3990	28" HICKORY 27'R
3991	34" MAPLE 35'R
3992	3" HOLLY 4'R
3993	3" HOLLY 4'R
3994	3" HOLLY 4'R
3995	18" TREE 18'R
3996	18" TREE 18'R
3997	7" WILLOW 11'R
3998	4" MAPLE 6'R
3999	4" MAPLE 6'R
4000	3" TREE 7'R
4001	4" MAPLE 6'R
4002	42" TREE 39'R
4003	3" MAPLE 5'R
4004	4" TREE 7'R
4005	1" TREE 6'R
4006	6" MAPLE 10'R
4007	12" MAGNOLIA 15'R
4008	4" MAPLE 6'R
4009	4" MAPLE 6'R
4010	4" MAPLE 6'R
4011	4" MAPLE 6'R
4012	7" TREE 5'R
4013	4" MAPLE 6'R
4014	8" TREE 8'R
4015	7" TREE 8'R
4016	7" TREE 8'R
4017	4" MAPLE 6'R
4018	3" TREE 4'R
4019	7" TREE 7'R
4020	7" TREE 7'R
4021	3" TREE 7'R
4022	4" MAPLE 6'R
4023	7" TREE 7'R
4025	7" TREE 7'R
4026	4" HOLLY 5'R
4027	4" HOLLY 5'R
4028	4" MAPLE 6'R
4078	4" MAGNOLIA 5'R
4079	4" MAGNOLIA 5'R
4080	3" MAGNOLIA 3'R
4081	3" MAGNOLIA 3'R
4082	3" MAGNOLIA 3'R
4083	3" MAGNOLIA 3'R
4084	3" MAGNOLIA 3'R
4085	3" MAGNOLIA 3'R
4086	3" MAGNOLIA 3'R
4087	3" MAGNOLIA 3'R
4088	4" MAGNOLIA 6'R
4089	4" MAGNOLIA 6'R
4090	4" MAGNOLIA 6'R
4091	3" MAGNOLIA 3'R
4092	2" TREE 11'R
4093	4" MAGNOLIA 6'R
4094	3" TREE 12'R
4095	5" TREE 4'R(INCONT)
4096	3" MAPLE 4'R
4097	3" MAPLE 4'R
4098	3" MAPLE 4'R
4099	3" MAPLE 4'R
4100	3" MAGNOLIA 4'R
4101	3" MAPLE 6'R
4102	3" MAGNOLIA 5'R
4103	3" MAGNOLIA 5'R
4104	3" MAGNOLIA 5'R
4105	3" MAGNOLIA 5'R
4106	3" MAGNOLIA 5'R
4107	4" TREE 9'R
4108	6" TREE 7'R
4109	6" TREE 7'R
4110	6" TREE 7'R
4111	6" TREE 7'R
4112	6" TREE 7'R
4113	6" TREE 7'R
4114	6" TREE 7'R
4115	1" BIRCH 4'R
4116	6" TREE 10'R
4117	6" TREE 8'R
4118	6" TREE 10'R
4119	3" MAPLE 5'R
4120	3" DOGWOOD 10'R
4121	6" TREE 9'R
4122	2" MAPLE 4'R(INCONT)
4123	3" HOLLY 5'R(INCONT)
4124	3" DOGWOOD 9'R
4125	3" MAPLE 6'R
4126	3" MAPLE 6'R
4127	3" HOLLY 5'R
4128	3" HOLLY 5'R
4129	3" MAPLE 6'R
4130	3" MAPLE 6'R
4131	3" HOLLY 5'R
4132	3" HOLLY 5'R
4133	9" WALNUT 25'R
4134	14" POPLAR 23'R
4135	3" HOLLY 5'R(INCONT)
4136	3" HOLLY 5'R(INCONT)
4137	3" HOLLY 5'R(INCONT)
4138	3" HOLLY 5'R(INCONT)
4139	3" HOLLY 5'R(INCONT)
4140	3" HOLLY 5'R(INCONT)
4141	3" HOLLY 5'R(INCONT)
4142	3" TREE 4'R(INCONT)
4143	3" TREE 4'R(INCONT)
4144	3" TREE 4'R(INCONT)
4181	3" TREE 4'R(INCONT)
4182	3" TREE 4'R(INCONT)
4183	3" TREE 4'R(INCONT)
4184	3" TREE 4'R(INCONT)
4185	3" TREE 4'R
4186	3" TREE 4'R
4187	2" MAPLE 4'R
4188	4" TREE 4'R
4189	3" TREE 4'R
4190	3" TREE 4'R
4191	4" HOLLY 4'R(INCONT)
4192	4" HOLLY 4'R(INCONT)
4193	4" HOLLY 4'R(INCONT)
4194	4" HOLLY 4'R(INCONT)
4195	1" WALNUT 3'R
4196	3" MAPLE 4'R
4197	3" MAPLE 5'R
4198	6" TREE 6'R
4199	8" CYPRESS 9'R
4200	8" CYPRESS 9'R
4201	6" WILLOW 10'R
4202	3" HOLLY 4'R(INCONT)
4203	3"MAPLE 5'R
4204	8" CYPRESS 9'R
4205	8" CYPRESS 9'R
4206	3" TREE 5'R
4207	3" MAPLE 5'R
4208	8" CYPRESS 10'R
4209	8" CYPRESS 10'R
4210	3" MAPLE 4'R
4211	8" CYPRESS 10'R
4212	8" CYPRESS 10'R
4213	1" TREE 2'R
4214	1" TREE 2'R
4215	1" TREE 2'R
4216	1" TREE 2'R
4217	1" TREE 2'R
4218	1" TREE 2'R
4219	1" TREE 2'R
4220	1" TREE 2'R
4221	1" TREE 2'R
4222	1" TREE 2'R
4223	1" TREE 2'R
4224	1" TREE 2'R
4225	1" TREE 2'R
4226	1" TREE 2'R
4227	1" TREE 2'R
4228	1" TREE 2'R
4229	1" TREE 2'R
4230	1" TREE 2'R
4231	1" TREE 2'R
4232	1" TREE 2'R
4233	1" TREE 2'R
4234	1" TREE 2'R
4235	1" TREE 2'R
4236	1" TREE 2'R
4237	1" TREE 2'R
4238	4" MAPLE 6'R
4239	8" CYPRESS 10'R
4240	8" CYPRESS 10'R
4241	8" CYPRESS 10'R
4242	3" TREE 7'R
4243	5" TREE 8'R
4244	5" TREE 8'R
4245	5" TREE 8'R
4246	24" WALNUT 27'R
4247	5" SPRUCE 6'R
4248	3" SPRUCE 6'R
4249	6" SPRUCE 9'R
4250	6" SPRUCE 9'R
4251	8" SPRUCE 12'R
4252	3" PINE 8'R
4253	4" HOLLY 8'R
4254	12" CR.MYRTLE 18'R
4255	12" CR.MYRTLE 18'R
4256	12" CR.MYRTLE 18'R
4261	12" CR.MYRTLE 18'R
4262	12" CR.MYRTLE 18'R
4263	4" SPRUCE 8'R
4264	3" DOGWOOD 8'R
4265	3" TREE 5'R
4266	8" CYPRESS 11'R
4267	8" CYPRESS 11'R
4268	8" CYPRESS 11'R
4269	6" SPRUCE 8'R
4270	6" PINE 6'R
4271	4" SPRUCE 8'R
4272	4" SPRUCE 8'R
4273	6" SPRUCE 8'R
4274	18" PINE 22'R
4327	4" MAPLE 6'R
4328	4" TREE 5'R
4329	4" HOLLY 5'R
4330	6" TREE 8'R
4331	4" TREE 10'R
4332	10" TREE 15'R
4333	3" TREE 3'R
4334	3" MAPLE 6'R
4335	4" TREE 10'R
4336	3" TREE 8'R
4337	4" MAPLE 6'R
4396	6" SPRUCE 6'R
4397	6" SPRUCE 6'R
4398	3" TREE 9'R
4399	18" BIRCH 18'R
4400	6" SPRUCE 5'R
4401	3" HOLLY 4'R
4402	1" PINE 4'R
4403	1" POPLAR 3'R
4404	12" PINE 15'R
4405	4" HOLLY 6'R
4406	6" TREE 6'R
4407	17" BIRCH 19'R
4408	4" HOLLY 6'R
4409	6" TREE 7'R
4410	6" TREE 7'R
4411	6" TREE 7'R
4412	6" TREE 7'R
4413	6" TREE 7'R
4414	19" BIRCH 18'R
4415	4" HOLLY 5'R
4416	56" MAPLE 80'R
4417	5" TREE 6'R
4418	6" TREE 6'R
4419	3" SPRUCE 4'R
4420	4" HOLLY 5'R
4421	4" HOLLY 5'R
4422	4" HOLLY 5'R
4423	3" SPRUCE 5'R
4424	3" SPRUCE 5'R
4425	3" SPRUCE 5'R
4426	5" DOGWOOD 12'R
4427	12" MAPLE 18'R
4428	12" MAPLE 18'R
4429	18" MAPLE 30'R
4430	4" SPRUCE 6'R
4431	3" DOGWOOD 10'R
4432	4" MAPLE 6'R
4433	4" DOGWOOD 11'R
4434	6" TREE 10'R
4436	10" PINE 12'R
4437	15" PINE 15'R
4438	12" PINE 12'R
4439	2" TREE 8'R
4440	12" MAPLE 18'R
4441	2" HOLLY 4'R
4442	3" MAPLE 4'R
4443	18" BIRCH 27'R
4444	1" PINE 2'R
4445	10" POPLAR 18'R
4446	6" TREE 18'R
4447	2" HOLLY 4'R
4448	11" PINE 15'R
4449	2" TREE 8'R
4450	4" TREE 8'R
4451	3" TREE 9'R
4452	1" TREE 6'R
4453	8" PINE 12'R
4454	3" TREE 10'R
4455	11" CEDAR 10'R
4456	5" CEDAR 8'R
4457	3" CEDAR 4'R
4458	3" TREE 5'R
4459	13" TREE 12'R
4460	8" POPLAR 15'R
4461	2" TREE 8'R
4462	10" POPLAR 20'R
4464	10" CEDAR 10'R
4465	10" PINE 12'R
4466	4" CEDAR 6'R
4467	5" CEDAR 8'R
4468	6" PINE 7'R
4469	5" CEDAR 5'R
4470	5" DOGWOOD 12'R
4471	14" PINE 12'R
4472	3" TREE 10'R
4473	6" CEDAR 6'R
4474	6" WILLOW 10'R
4475	3" MAGNOLIA 6'R
4476	3" MAGNOLIA 6'R
4477	19" PINE 15'R
4478	4" MAPLE 12'R
4479	6" CEDAR 8'R
4480	14" CEDAR 12'R
4481	2" CEDAR 3'R
4482	1" HOLLY 3'R
4483	6" PINE 12'R
4484	12" PINE 12'R
4485	7" CEDAR 7'R
4486	5" DOGWOOD 12'R
4487	4" TREE 12'R
4488	5" TREE 12'R
4489	9" WALNUT 20'R
4490	8" POPLAR 22'R
4491	3" TREE 10'R
4492	2" TREE 10'R
4493	1" TREE 2'R
4494	3" HOLLY 4'R
4495	3" HOLLY 4'R
4496	3" HOLLY 4'R
4497	3" HOLLY 4'R
4498	3" HOLLY 4'R
4499	3" HOLLY 4'R
4500	3" HOLLY 4'R
4501	3" HOLLY 4'R
4502	3" MAPLE 6'R
4503	3" HOLLY 4'R
4504	6" CHERRY 8'R
4505	3" HOLLY 4'R
4506	3" HOLLY 4'R
4507	3" HOLLY 4'R
4508	3" HOLLY 4'R
4510	4" MAGNOLIA 6'R
4511	3" MAGNOLIA 5'R
4512	3" MAGNOLIA 5'R
4513	3" MAGNOLIA 5'R
4514	3" MAGNOLIA 5'R
4515	3" MAGNOLIA 5'R
4516	3" MAPLE 6'R
4517	4" TREE 7'R
4518	4" TREE 7'R
4519	3" HOLLY 4'R
4520	3" HOLLY 4'R
4521	3" HOLLY 4'R
4522	3" HOLLY 4'R
4523	3" HOLLY 4'R
4524	3" HOLLY 4'R
4525	3" HOLLY 4'R
4526	4" MAPLE 5'R
4527	4" TREE 5'R(INCONT)
4528	4" TREE 5'R(INCONT)
4529	16" WALNUT 25'R
4530	16" WALNUT 25'R
4531	4" DOGWOOD 12'R
4532	3" MAPLE 6'R
4533	2" BIRCH 3'R
4534	2" BIRCH 3'R
4535	6" DOGWOOD 12'R
4536	3" MAPLE 6'R
4537	20" WALNUT 30'R
4538	6" MAGNOLIA 10'R
4539	6" MAGNOLIA 10'R
4540	6" TREE 12'R
4541	6" TREE 12'R
4542	3" DOGWOOD 8'R
4543	4" MAPLE 8'R
4546	1" TREE 2'R
4547	6" WILLOW 10'R
4555	1" TREE 3'R
4556	3" TREE 5'R
4557	3" TREE 5'R
4558	3" TREE 5'R
4559	3" TREE 5'R
4560	3" TREE 5'R
4561	3" TREE 5'R
4562	3" TREE 5'R
4566	3" MAPLE 6'R
4567	3" MAPLE 6'R
4568	3" TREE 10'R
4569	3" MAPLE 6'R
4570	7" MAPLE 15'R
4571	14" POPLAR 22'R
4572	6" TREE 12'R
4573	2" TREE 5'R
4574	4" TREE 4'R
4575	3" MAPLE 6'R
4576	1" TREE 2'R
4577	1" TREE 2'R
4578	4" MAPLE 8'R
4584	4" MAGNOLIA 5'R
4585	4" MAGNOLIA 5'R
4586	4" MAGNOLIA 5'R
4587	4" MAGNOLIA 5'R
4588	4" MAGNOLIA 5'R
4589	4" MAGNOLIA 5'R
4590	4" MAGNOLIA 5'R
4591	4" HOLLY 7'R
4592	1" TREE 3'R
4593	14" PINE 14'R
4594	2" DOGWOOD 10'R
4595	4" DOGWOOD 12'R
4596	4" HOLLY 5'R
4597	4" HOLLY 5'R
4598	2" BIRCH 7'R
4599	4" TREE 6'R
4601	3" MAPLE 6'R
4612	2" BIRCH 7'R
4613	2" BIRCH 7'R
4614	5" TREE 6'R
4615	4" MAPLE 6'R
4616	4" MAPLE 6'R
4617	4" MAPLE 6'R
4618	4" MAPLE 6'R
4619	4" MAPLE 6'R
4620	3" MAPLE 6'R
4621	3" MAPLE 6'R
4622	3" MAPLE 6'R
4623	3" MAPLE 6'R
4624	3" TREE 10'R
4625	3" TREE 8'R
4627	3" TREE 6'R(INCONT)
4628	3" TREE 6'R(INCONT)
4629	3" TREE 6'R(INCONT)
4630	3" TREE 6'R(INCONT)
4631	3" TREE 6'R(INCONT)
4632	3" TREE 6'R(INCONT)
4633	3" TREE 6'R(INCONT)
4634	3" TREE 6'R(INCONT)
4635	3" HOLLY 7'R(INCONT)
4636	3" HOLLY 7'R(INCONT)
4637	3" HOLLY 7'R(INCONT)
4638	3" HOLLY 7'R(INCONT)
4639	3" HOLLY 7'R(INCONT)
4640	3" HOLLY 7'R(INCONT)
4641	3" HOLLY 7'R(INCONT)
4642	3" HOLLY 7'R(INCONT)
4643	3" HOLLY 7'R(INCONT)
4644	3" HOLLY 7'R(INCONT)
4645	3" HOLLY 7'R(INCONT)
4646	3" HOLLY 7'R(INCONT)
4647	3" HOLLY 7'R(INCONT)
4648	3" HOLLY 7'R(INCONT)
4649	3" HOLLY 7'R(INCONT)
4650	3" HOLLY 7'R(INCONT)
4651	3" HOLLY 7'R(INCONT)
4652	3" HOLLY 7'R(INCONT)
4653	3" HOLLY 7'R(INCONT)
4654	3" HOLLY 7'R(INCONT)
4655	3" HOLLY 7'R(INCONT)
4656	3" HOLLY 7'R(INCONT)
4657	3" HOLLY 7'R(INCONT)
4658	3" HOLLY 7'R(INCONT)
4659	3" HOLLY 7'R(INCONT)
4660	3" HOLLY 7'R(INCONT)
4661	3" HOLLY 7'R(INCONT)
4662	3" HOLLY 7'R(INCONT)
4663	3" HOLLY 7'R(INCONT)
4664	3" HOLLY 7'R(INCONT)
4665	9" SYCAMORE 25'R
4666	9" SYCAMORE 25'R
4667	10" POPLAR 24'R
4668	9" POPLAR 18'R
4669	9" SYCAMORE 25'R
4670	8" POPLAR 16'R
4671	10" SYCAMORE 25'R
4672	3" TREE 5'R(INCONT)

(INCONT) = IN CONTAINERS

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING – SURVEYING – PLANNING
10650 MAIN STREET – SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS
10-7-2009

SPECIAL EXCEPTION PLAT
TREE LIST
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert No.09648
1/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA
2189-SE-XTRA-REVISED

SHEET 3 OF 8

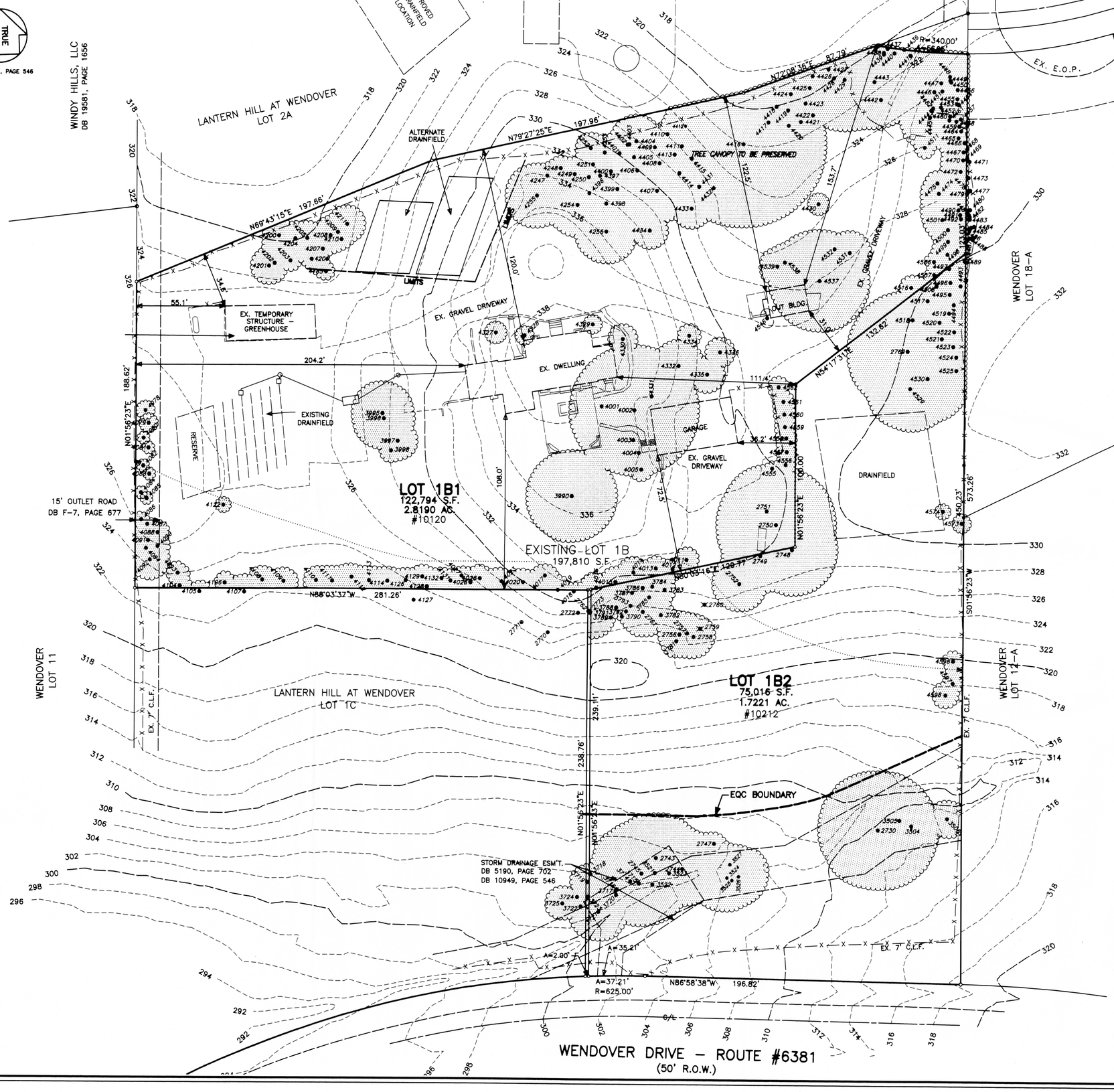
SE 2008-HM-010

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 3 of 9



TREE CONSERVATION PLAN NOTES

1. The developer will provide a Landscape Plan as part of the Subdivision Plan and House Grading Plan on Lot 1B2 for review and approval by the Urban Forest Management Division (UFM) Fairfax County of Public Works and Environmental Services (DPWE&S). The plan will be prepared by a certified Arborist or Landscape Architect. The plan will be made up of the following: the species of trees transplanted from the existing trees within the limits of the EQC and area disturbed; description of interim location; the recommendation of time of year when plant material will be moved; the transplant methods to be used, including the recommended size of tree spade; details regarding after-transplant care, including mulching and watering, and any support measures such as guying or staking. The plan will show new trees and proposed tree location. Native plant species will be used for areas of EQC restoration as much as possible. At the time of Subdivision Plan submission, the applicant shall submit a Tree Designation Plan for review and approval by the UFM that identifies the trunk location, species, size, crown spread and condition analysis rating for all individual and groups of trees shown on the Special Exception Plat. The Tree Designation Plan will also specify maintenance activities to increase the survivability of trees to be preserved. Such maintenance activities include, but not limited to root pruning, crown pruning, mulch, and treatments designated to enhance the root zones of trees and their ability to recover and avoid stress.
2. At the time of Subdivision Plan submission, Tree Notes will be developed by a certified arborist covering all aspects of tree removal, tree planting and maintenance. The Tree Notes will describe methods of all treatments for such trees and vegetation. The Tree Notes will detail Root Pruning and Mulching, Tree Protection Fencing and Signage, and site Monitoring. The Tree Notes will be subject to the review and approval of the UFM.
3. Evaluation of the area will be reviewed and final landscape plan will be under the supervision of a certified Arborist.
4. Prior to commencement of any land disturbance activities, the developer's certified arborist or landscape architect will walk the limits of clearing and grading, that have been flagged with continues line of flagging, with a representatives from the UFM to determine where adjustments to the clearing limits and the changes must be agreed and memorialized in writing by all parties.
5. Super Silt Fence is proposed along the subject clearing and grading limits to ensure sediment laden is not deposited upon the lower lying lots.
6. No more land has been disturbed than is necessary to provided for with the new construction of the single family dwelling.
7. If it becomes necessary to install utilities determined necessary by UFM within areas to be left undisturbed, they shall be located and installed in the least disruptive manner possible.

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING – SURVEYING – PLANNING
10650 MAIN STREET – SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS

SPECIAL EXCEPTION PLAT
TREE CONSERVATION PLAN
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert. No. 006548
1/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: 1" = 30'
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA
2189-SE-XTRA-REVISED

SHEET 4 OF 8

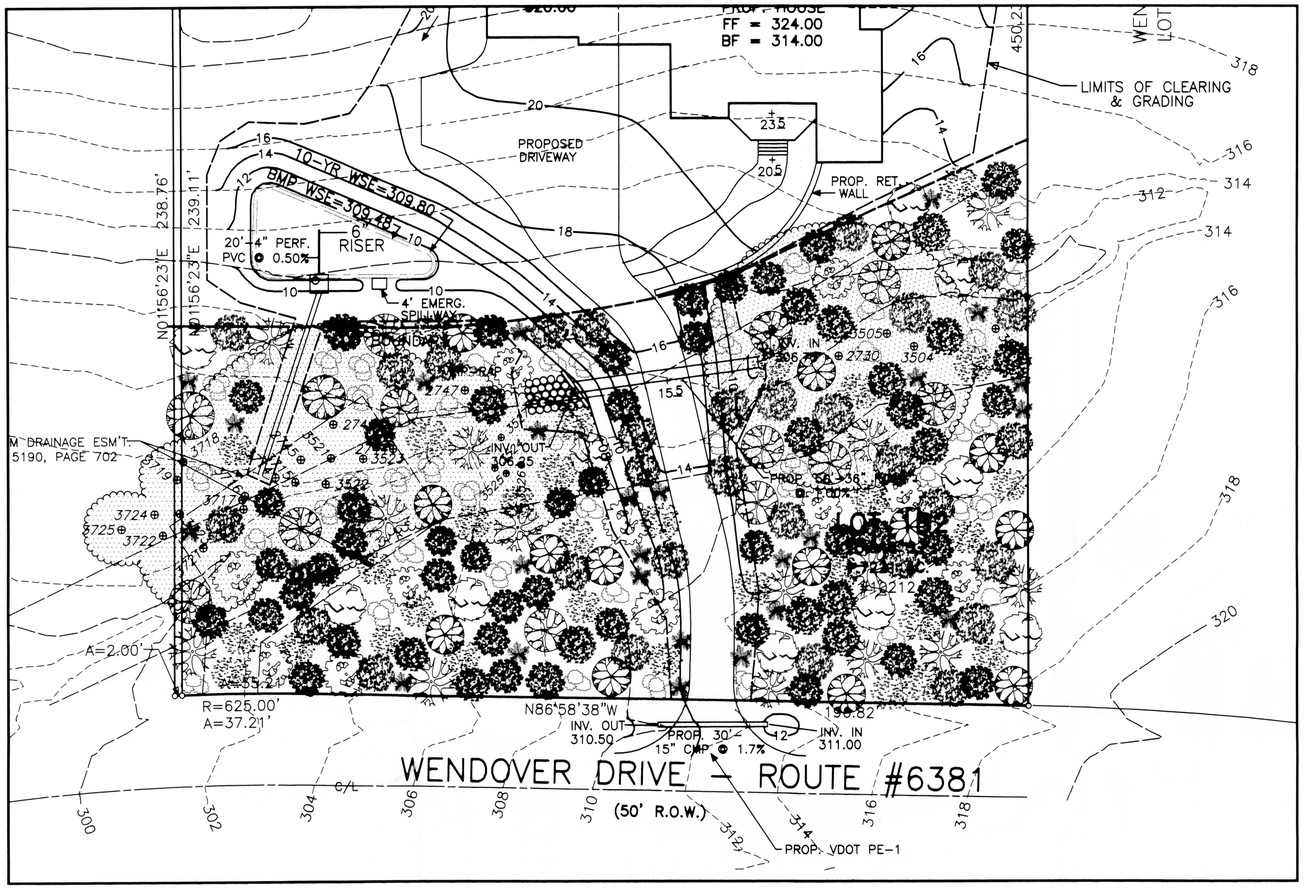
Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 4 of 9

SE 2008-HM-010



20 0 20 40 60
FEET: 1" = 20'

EQC AREA RESTORATION PLAN NOTES

1. *The area within the limits of the EQC, including the slopes on either side of the driveway, will be restored and vegetated consistent with the criteria of the CBPO Section 118-3-3(f). The restoration landscaping will be a mixture of overstory and understory trees, shrubs, and groundcover. The density of overstory trees shall be 100 trees per acre; understory trees, 200 per acre; and shrubs, 1,089 per acre. The area of the EQC is 26,600 sq. ft. (0.62 acres). Consequently, there will be 62 overstory trees, 123 understory trees, and 665 shrubs. Appropriate existing vegetation saved will be included in the count, and appropriate nursery stock relocated to the EQC from elsewhere on the site will be included in the count.*
2. *At a minimum trees planted in the EQC will be 18" high and shrubs will have a 6" spread. Planting will take place during the dormant season.*
3. *Plant material will be randomly placed and will achieve relatively even spacing throughout the area of the EQC. Plant material will be distributed so that existing trees will not be compromised and the plant material will have the best chance for survival.*

TREE LEGEND

	OVERSTORY TREES QTY. = 62
	UNDERSTORY TREES QTY. = 123
	SHRUBS QTY. = 665

Native Plant List for Selection

Trees

boxelder (*Acer negundo*)
red maple (*Acer rubrum*)
red buckeye (*Aesculus pavia*)
black alder (*Alnus glutinosa*)
shadbush (*Amelanchier arborea*) or *A. Canadensis*
paw paw (*Asimina triloba*)
river birch (*Betula nigra*)
hackberry (*Celtis occidentalis*)
Atlantic whitecedar (*Chamaecyparis thyoides*)
persimmon (*Diospyros virginiana*)
spicebush (*Lindera benzoin*)
sweetgum (*Liquidumber styraciflua*)
osage orange (*Maclura pomifera*)
southern magnolia (*Magnolia grandiflora*)
sweetbay magnolias (*Magnolia virginiana*)
black gum (*Nyssa sylvatica*)
sycamore (*Platanus occidentalis*)
swamp white oak (*Quercus bicolor*)
pin oak (*Quercus palustris*)
willow oak (*Quercus phellos*)
willow species (*Salix* spp.)
bald cypress (*Taxodium distichum*)
eastern arborivitae (*Thuja occidentalis*)
slippery elm (*Ulmus rubra*)
winged elm (*Ulmus alata*)
American elm (*Ulmus americana*) Dutch elm disease resistant cultivars only!

Shrubs

red chokeberry (*Aronia arbutifolia*)
buttonbush (*Cephalanthus occidentalis*)
summersweet (*Clethra alnifolia*)
bloodtwig dogwood (*Cornus sanguinea*)
hearts-abustin' (*Euonymus americana*)
fothergilla (*Fothergilla gardenii*)
inkberry (*Ilex glabra*)
winterberry (*Ilex verticillata*)
sweetspire (*Itea* spp.)
northern bayberry (*Myrica pensylvanica*)
ninebark (*Physocarpus opulifolius*)
swamp azalea (*Rhododendron viscosum*)
elder (*Sambucus canadensis*)
highbush blueberry (*Vaccinium coryombosum*)
blackhaw viburnum (*Viburnum prunifolium*)
witherod viburnum (*Viburnum cassinoides*)

Herbaceous Perennials

astilbe (*Astilbe* spp.)
marsh marigold (*Caltha palustris*)
Joe Pye weed (*Eupatorium dubium*)
rose mallow (*Hibiscus moscheutos*)
iris (several but not all species)
cardinal flower (*Lobelia cardinalis*)
golden club (*Orontium aquaticum*)
ironweed (*Veronica noveboracensis*)

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 5 of 9

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING - SURVEYING - PLANNING
10650 MAIN STREET - SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS

SPECIAL EXCEPTION PLAT
EQC RESTORATION PLAN AND NOTES
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUBLEY
Cert. No. 008648
1/19/10
PROFESSIONAL ENGINEER

DATE: 9-21-2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA
2189-SE-XTRA-REVISED

SHEET 5 OF 8

SE 2008-HM-010

POSSIBLE BMP FACILITIES
BMP FACILITIES DESIGN CALCUATIONS

Subdivision Lot 1A Lantern Hill Site 1B1
I. WATER QUALITY NARRATIVE: See attachment
II. WATERSHED INFORMATION

Sub-area	Descriptions	"C"	Acres		
(A-1)	imprev area 3 bio retet	0.90	10769 sqft	0.25 ac	
(A-2)	imprev not control	0.90	11717 sqft	0.27 ac	
(A-3)	previous bio/ret contro	0.30	29823 sqft	0.69 ac	
(A-4)	previous not control	0.30	70385 sqft	1.62 ac	
(A-5)	na	0.30	0 sqft	0.00 ac	
(A-6)	na	0.30	0 sqft	0.00 ac	
(A-7)	na	0.30	0 sqft	0.00 ac	
	totals		122794 sqft	2.82 ac	

PART 1:
LIST ALL OF THE SUB-AREA AND "C" FACTOR USED IN THE BMP COMPUTATIONS

(A-1)	imprev area 3 bio retet	0.90	10769 sqft	0.25 ac	
(A-2)	imprev not control	0.90	11717 sqft	0.27 ac	
(A-3)	previous bio/ret contro	0.30	29823 sqft	0.69 ac	
(A-4)	previous not control	0.30	70385 sqft	1.62 ac	
(A-5)	na	0.30	0 sqft	0.00 ac	
(A-6)	na	0.30	0 sqft	0.00 ac	
(A-7)	na	0.30	0 sqft	0.00 ac	
	totals		122794 sqft	2.82 ac	2.82 ac.

PART 2: COMPUTE THE WEIGHT AVERAGE "C" FACTOR SITE

(A)	AREA OF SITE	122794		(a)
(B)		"C"	Acres	Product
(A-1)	imprev area 3 bio retet	0.90	0.25	0.2226
(A-2)	imprev not control	0.90	0.27	0.2421
(A-3)	previous bio/ret contro	0.30	0.69	0.2061
(A-4)	previous not control	0.30	1.62	0.4847
(A-5)	na	0.30	0.00	0.0000
(A-6)	na	0.30	0.00	0.0000
(A-7)	na	0.30	0.00	0.0000
			(b) total	1.1554
	(b) / (a) = c		C =	0.4699

(C) WEIGHTED AVERAGE "C" FACTOR

PART 3: COMPUTE THE TOTAL PHOPHORUS REMOVAL FOR THE SITE

Sub - area	BMP	Removal	Area	"C" Factor	Product
Designation	Type	Eff	Ratio	Ratio	
	(Area Ratio = (4)= (A-1) / total area; "C"Factor Ratio = (5)="C" factor / Weighted "C")				
(1)	(2)	(3)	(4)	(5)	(6)
(A-1)	bio retention	65	0.09	2.195808	12.5
(A-2)	bio retention	65	0.10	2.195808	13.6
(A-3)	no controlled	0	0.24	0.731936	0.0
(A-4)	no controlled	0	0.57	0.731936	0.0
(A-5)	na	0	0.00	0.731936	0.0
(A-6)	na	0	0.00	0.731936	0.0
(A-7)	na	0	0.00	0.731936	0.0
			1.00	total	26.1

POSSIBLE BMP FACILITIES LOT 1B1
BMP FACILITIES DESIGN CALCUATIONS
"Revised calcuation with partial waiver showing WQMA nominated as an equivalent to that of open space."
I. WATER QUALITY NARRATIVE: See attachment
II. WATERSHED INFORMATION Lot area 122794 sq ft

Sub-area	Descriptions	"C"	Acres		
(A-1)	imprev area 3 bio retet	0.90	10769 sqft	0.25 ac	
(A-2)	imprev not control	0.90	11717 sqft	0.27 ac	
(A-3)	previous bio/ret contro	0.30	29823 sqft	0.69 ac	
(A-4)	previous not control	0.30	53380 sqft	1.22 ac	
(A-5)	WQMA	0.30	17026 sqft	0.39 ac	
(A-6)	na	0.30	0 sqft	0.00 ac	
(A-7)	na	0.30	0 sqft	0.00 ac	
	totals		122794 sqft	2.82 ac	

PART 1:
LIST ALL OF THE SUB-AREA AND "C" FACTOR USED IN THE BMP COMPUTATIONS

(A-1)	imprev area 3 bio retet	0.90	10769 sqft	0.25 ac	
(A-2)	imprev not control	0.90	11717 sqft	0.27 ac	
(A-3)	previous bio/ret contro	0.30	29823 sqft	0.69 ac	
(A-4)	previous not control	0.30	53380 sqft	1.22 ac	
(A-5)	WQMA	0.30	17026 sqft	0.39 ac	
(A-6)	na	0.30	0 sqft	0.00 ac	
(A-7)	na	0.30	0 sqft	0.00 ac	
	totals		122794 sqft	2.43 ac	2.82 ac.

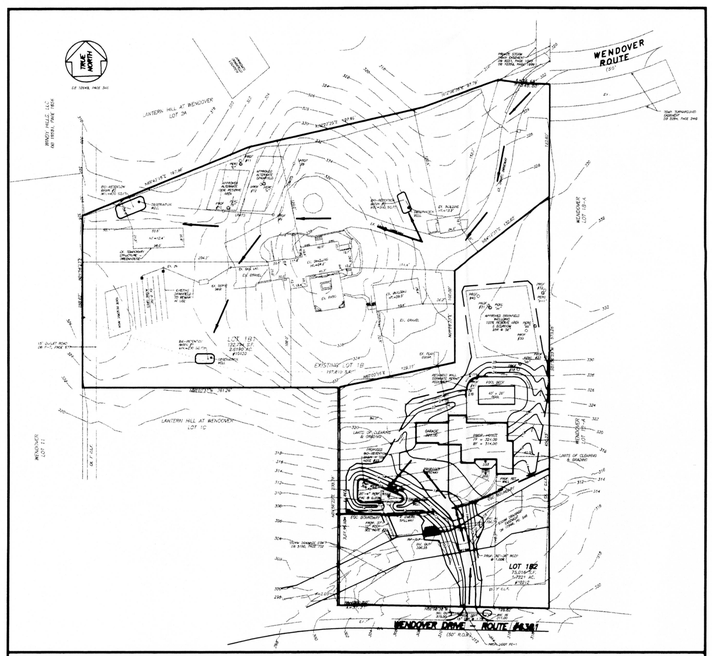
PART 2: COMPUTE THE WEIGHT AVERAGE "C" FACTOR SITE

(A)	AREA OF SITE	122794		(a)
(B)		"C"	Acres	Product
(A-1)	imprev area 3 bio retet	0.90	0.25	0.2226
(A-2)	imprev not control	0.90	0.27	0.2421
(A-3)	previous bio/ret contro	0.30	0.69	0.2061
(A-4)	previous not control	0.30	1.22	0.3675
(A-5)	WQMA	0.30	0.39	0.1173
(A-6)	na	0.30	0.00	0.0000
(A-7)	na	0.30	0.00	0.0000
			(b) total	1.0382
	(b) / (a) = c		C =	0.3663

(C) WEIGHTED AVERAGE "C" FACTOR

PART 3: COMPUTE THE TOTAL PHOPHORUS REMOVAL FOR THE SITE

Sub - area	BMP	Removal	Area	"C" Factor	Product
Designation	Type	Eff	Ratio	Ratio	
	(Area Ratio = (4)= (A-1) / total area; "C"Factor Ratio = (5)="C" factor / Weighted "C")				
(1)	(2)	(3)	(4)	(5)	(6)
(A-1)	bio retention	65	0.09	2.443906	13.9
(A-2)	bio retention	65	0.10	2.443906	15.2
(A-3)	no controlled	0	0.24	0.814603	0.0
(A-4)	no controlled	0	0.43	0.814603	0.0
(A-5)	WQMA	100	0.14	0.814603	11.3
(A-6)	na	0	0.00	0.814603	0.0
(A-7)	na	0	0.00	0.814603	0.0
			1.00	total	40.4



BMP MAINTENANCE ACCESSWAYS
SCALE: 1" = 80'

SOIL TECH INC.
14630-F FLINT LEE ROAD
CHANTILLY, VIRGINIA 20151
(703) 631-9647
(703) 631-2156; FAX

June 9, 2009

Reid Dudley, P.E.
RDA
10860 Main St.
Fairfax, VA 22030

Re: Infiltration Studies at 10120 Wendover Drive, Vienna, Virginia
Fairfax County TM 27-4-0010-14C1

Dear Mr. Dudley,

Soil borings and other observations were made at the referenced tract. The purpose of the study was to determine suitability for onsite storm water detention facilities including infiltration trenches and other related bioretention systems.

The following is a description of the soil materials encountered at the boring locations:

Boring No. 1 (Site A)

Ap 0.0 -0.8' Dark brown (7.5YR 4/2), very friable loam, (medium SILT, ML)

Bw 0.8–2.0' Yellowish red (5YR 5/6), friable heavy loam, (stiff silty SAND, SM).

C1 2.0- 3.9' Yellowish red (5YR 5/6), very friable fine sandy loam (loose silty SAND, SM).

C1 3.9 –6.8' Brownish yellow (10YR 6/6), light yellowish brown (2.5Y 6/4), very friable sandy loam, (loose sandy SILT, ML).

C2 5.0-10.0' Light yellowish brown (2.5Y 6/4), very friable sandy loam, 5 percent hard schist fragments (medium dense silty SAND, SM).

Water Level = dry at 10 feet.

Mapping Unit Glenelg loam (56)

Boring No. 2 (Site B)

Ap 0.0 –1.0' Dark brown (10YR 3/3), very friable loam, (medium SILT, ML) some organics. FILL.

Bw 1.0 -2.5' Strong brown (7.5YR 5/6), friable loam, (stiff sandy SILT, ML), slightly moist.

C1 2.5 - 5.0' Yellowish red (5YR 5/6), very friable loamy sand (loose SAND some silt, SM).

C2 5.0 – 8.0' Brownish yellow (10YR 6/6), reddish yellow (7.5YR 6/6), very friable sandy loam (loose silty SAND, SM).

C3 8.0-10.0' Olive yellow (2.5Y 6/6), very friable sandy loam (loose silty SAND, SM)

Water Level = dry at 10 feet

Mapping Unit Glenelg loam (55)

Boring No. 3 (Site C)

Ap 0.0 –1.8' Dark brown (10YR 3/3), very friable loam, (medium SILT, ML) some organics. FILL.

Bw 1.8 -2.5' Brownish yellow (10YR 6/6), reddish yellow (7.5YR 6/6), very friable loam, (stiff sandy SILT, ML), slightly moist.

C1 2.5 - 5.0' Yellowish red (5YR 5/6), brownish yellow (10YR 6/6), very friable sandy loam (loose silty SAND, SM).

C2 5.0 – 7.0' Reddish yellow (7.5YR 6/6), light brown (7.5YR 6/4), very friable sandy loam (loose silty SAND, SM).

C3 7.0-10.0' Reddish yellow (7.5YR 6/6), light brown (7.5YR 6/4), very friable channery sandy loam (loose silty SAND, SM), 15 percent rock fragments.

Water Level = dry at 10 feet

Mapping Unit Glenelg loam (56)

The soil series at all sites is Glenelg (55). These soils are very deep, well drained, and loamy with GOOD potential for infiltration and bioffiltration trenches. The depth to a water table and bedrock is greater than 10 feet. Infiltration testing may result in "falling head infiltration rates" faster than *8 inches per hour.* The present Fairfax County Guidelines use the "falling head infiltration rate" as the basis for suitability and restrict design and installation to rates between 0.5 and 8 inches per hour.

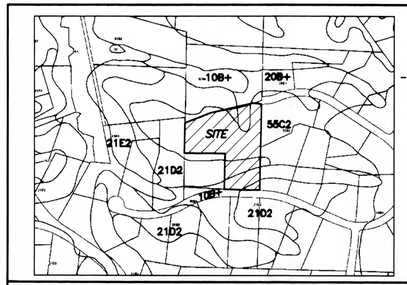
The official NRCS soil series description rates the hydraulic conductivity as moderate to moderately high. The USDA soil textural classification is sandy loam and loamy sand. The Unified classification is silty SAND, SM. The estimated saturated hydraulic conductivity rate for the soil textures is between 1.02 and 2.41 in./hr., which is consistent with the soil series.

NRCS interpretive guides rate these soils as having GOOD potential for the proposed use. The test data including soil profile descriptions and textural analyses confirm suitability.

Very truly yours,

[signature]
Soil Scientist

Note: NRCS "permeability rates" are saturated hydraulic conductivity values which can be estimated from falling head infiltration data.



SOILS DATA

SOILS ID NO.:	SERIES NAME:	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	GEOTECHNICAL REPORT REQUIRED
10B+	GLENVILLE	FAIR	MARGINAL	GOOD	MODERATE	B (NO)
20B+	MEADOWVILLE	FAIR	MARGINAL	GOOD	MODERATE	B (NO)
21D2	MANOR	GOOD	GOOD	GOOD	SEVERE	B (NO)
55C2	GLENELG	GOOD	GOOD	GOOD	SEVERE	B (NO)

SOIL TYPES BY LOT NUMBER

LOT #	SOIL(S) NO(S)	SOIL SERIES NAME(S)	PROBLEM CLASS
1B1	20, 21, 55	MEADOWVILLE, MANOR, GLENELG	B, C, C
1B2	10, 21, 55	GLENVILLE, MANOR, GLENELG	B, C, C

DESIGN OF BIO-BMP FILTER FACILITY #1

GIVEN:
DRAINAGE AREA TO THE FACILITY = = 20630 sqft 0.4736 ac
IMPERVIOUS AREA (Ai) = = 5627 sqft 0.12918 ac
DEPTH OF FILTER (df) = = 2.5 ft
MAXIMUM PONDING DEPTH (Hf) = = 1.00 ft
Coeffient of Permeability of Filter Bed (kf) = = 1.50 in/hr
Field measured rate = 2.4 in/hr
Design infiltration rate of situ soils (ks) = = 1.21 in/hr (3,360 cuft)
(one-half of field measured rate of =)
Porosity of gravel (ng) = = 0.40
Determined the required area of te filter bed (Af) for a water quality volume (WQv) of 1.0 = 1.00 in/hr per impr acre
The Water Quality Volume is:
WQv = 3,630 cuft(5627.00 sqft / 43560 sqft) = 468.92 /1.0 = 469 cuft
The Area of the Filter Bed is:
Af = WQv/hf = 469 sqft
The Drain Time through the Filter for a Filter area of 468.92 sqft (must be less than 24 hrs)
tf = (WQv)(df)/[kf/12)(0.5hf+df)Af] = 6.67 hrs< 24 hrs OK

Required storage volume (Vs) and depth (dg) of the gravel layer to provide for infiltration of the entire water quality volume (WQv). 469 sqft
The design infiltration rate (ks) is equal to half of the field measured rate of 2.4 in/hr.
Assume that the area of the soil bed (As) is equal to the area of the filter (Af). Ignore any additional storage that may be provided by the underdrain pipes and assume that there is no outflow (Qu) through the undrain.

The Required Storage Volume is :
Vs = WQv - [(ks)As)(tf)/12] - [3600(Qu)(tf)]
Vs = 156.0 cuft
The depth of the gravel storage area for a soil bed area of 469 cuft and a storage volume 156.00 cuft.
dg = Vs/[(ng)As)]
0.83 ft
The Total Drain Time for the facility for a Filter area and soil bed area of 468.92 sqft , a storage volume of 156.00 cuft, and a drain time through the filter of 6.67 hrs. < 48 hrs OK
td = Vs/[(ks)(As)/12 + 3600(Qu) +tf
= 10.0 hrs< 48 hrs OK
or
td = WQv/[ks)(As)/12]
= 10.0 hrs< 48 hrs OK

DESIGN OF BIO-BMP FILTER FACILITY #2

GIVEN:
DRAINAGE AREA TO THE FACILITY = = 12415 sqft 0.28501 ac
IMPERVIOUS AREA (Ai) = = 1690 sqft 0.0388 ac
DEPTH OF FILTER (df) = = 2.5 ft
MAXIMUM PONDING DEPTH (Hf) = = 1.00 ft
Coeffient of Permeability of Filter Bed (kf) = = 1.50 in/hr
Field measured rate = 2.4 in/hr
Design infiltration rate of situ soils (ks) = = 1.21 in/hr (3,360 cuft)
(one-half of field measured rate of =)
Porosity of gravel (ng) = = 0.40
Determined the required area of te filter bed (Af) for a water quality volume (WQv) of 1.0 = 1.00 in/hr per impr acre
The Water Quality Volume is:
WQv = 3,630 cuft(1690.00 sqft / 43560 sqft) = 140.83 /1.0 = 141 cuft
The Area of the Filter Bed is:
Af = WQv/hf = 141 sqft
The Drain Time through the Filter for a Filter area of 140.83 sqft (must be less than 24 hrs)
tf = (WQv)(df)/[kf/12)(0.5hf+df)Af] = 6.67 hrs< 24 hrs OK

Required storage volume (Vs) and depth (dg) of the gravel layer to provide for infiltration of the entire water quality volume (WQv). 141 sqft
The design infiltration rate (ks) is equal to half of the field measured rate of 2.4 in/hr.
Assume that the area of the soil bed (As) is equal to the area of the filter (Af). Ignore any additional storage that may be provided by the underdrain pipes and assume that there is no outflow (Qu) through the undrain.

The Required Storage Volume is :
Vs = WQv - [(ks)As)(tf)/12] - [3600(Qu)(tf)]
Vs = 46.6 cuft
The depth of the gravel storage area for a soil bed area of 141 cuft and a storage volume 46.55 cuft.
dg = Vs/[(ng)As)]
0.83 ft
The Total Drain Time for the facility for a Filter area and soil bed area of 140.83 sqft , a storage volume of 46.55 cuft, and a drain time through the filter of 6.67 hrs. < 48 hrs OK
td = Vs/[(ks)(As)/12 + 3600(Qu) +tf
= 10.0 hrs< 48 hrs OK
or
td = WQv/[ks)(As)/12]
= 10.0 hrs< 48 hrs OK

DESIGN OF BIO-BMP FILTER FACILITY #3

GIVEN:
DRAINAGE AREA TO THE FACILITY = = 7647 sqft 0.17555 ac
IMPERVIOUS AREA (Ai) = = 3452 sqft 0.07925 ac
DEPTH OF FILTER (df) = = 2.5 ft
MAXIMUM PONDING DEPTH (Hf) = = 1.00 ft
Coeffient of Permeability of Filter Bed (kf) = = 1.50 in/hr
Field measured rate = 2.4 in/hr
Design infiltration rate of situ soils (ks) = = 1.21 in/hr (3,360 cuft)
(one-half of field measured rate of =)
Porosity of gravel (ng) = = 0.40
Determined the required area of te filter bed (Af) for a water quality volume (WQv) of 1.0 = 1.00 in/hr per impr acre
The Water Quality Volume is:
WQv = 3,630 cuft(3452.00 sqft / 43560 sqft) = 287.67 /1.0 = 288 cuft
The Area of the Filter Bed is:
Af = WQv/hf = 288 sqft
The Drain Time through the Filter for a Filter area of 287.67 sqft (must be less than 24 hrs)
tf = (WQv)(df)/[kf/12)(0.5hf+df)Af] = 6.67 hrs< 24 hrs OK

DESIGN OF BIO-BMP FILTER FACILITY #3 cont.

Required storage volume (Vs) and depth (dg) of the gravel layer to provide for infiltration of the entire water quality volume (WQv). 288 sqft
The design infiltration rate (ks) is equal to half of the field measured rate of 2.4 in/hr.
Assume that the area of the soil bed (As) is equal to the area of the filter (Af). Ignore any additional storage that may be provided by the underdrain pipes and assume that there is no outflow (Qu) through the undrain.

The Required Storage Volume is :
Vs = WQv - [(ks)As)(tf)/12] - [3600(Qu)(tf)]
Vs = 95.1 cuft
The depth of the gravel storage area for a soil bed area of 288 cuft and a storage volume 95.09 cuft.
dg = Vs/[(ng)As)]
0.83 ft
The Total Drain Time for the facility for a Filter area and soil bed area of 287.67 sqft , a storage volume of 95.09 cuft, and a drain time through the filter of 6.67 hrs. < 48 hrs OK
td = Vs/[(ks)(As)/12 + 3600(Qu) +tf
= 10.0 hrs< 48 hrs OK
or
td = WQv/[ks)(As)/12]
=

Application No. SE 2008-HM-010 Staff KGS
APPROVED (SE) (SP) PLAN
SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010
Sheet 6 of 9

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING – SURVEYING – PLANNING
10650 MAIN STREET – SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703–591–4606 FAX: 703–591–3982

REVISIONS
11–12–09 UPDATED BMP FACILITIES CALCUATIONS, ADDED DESIGN OF BIO-BMP FILTER FACILITY I–III & MOVED LOT 1B2 INFO. TO NEW SHEET 6B

SPECIAL EXCEPTION PLAT
SWM/BMP COMPUTATIONS & DETAILS
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert. No. 08648
1/19/10
PROFESSIONAL ENGINEER

DATE: 8–20–2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F–2189 SE
CO. #:
DWG NAME: 2189–SE–XTRA
2189–SE–XTRA–REVISED

SHEET 6A OF 8

SE 2008–HM–010

SOIL TECH INC.
14630-F FLINT LEE ROAD
CHANTILLY, VIRGINIA 20151
(703) 631-9647
(703) 631-2156: FAX

October 14, 2009

George Sagatov
George B. Sagatov, Inc.
10120 Wendover Drive
Vienna, VA 22181

Re: Infiltration Studies at 10120 Wendover Drive, Vienna, VA
Fairfax County TM 27-4-0010-14C1

Dear Mr. Sagatov,

Soil borings, infiltration tests and other observations were made at the referenced tract in the location shown on the sketch plan. The purpose of the study was to determine suitability for onsite storm water detention facilities including infiltration trenches and other related bioretention systems. The test boring was taken to a depth of 10 feet. The infiltration tests were conducted at 6-ft. depths (2 ft. below the proposed facility depth) and were presoaked 24 hours prior to the test.

The following is a description of the soil materials encountered at the location and related infiltration test information:

Boring No. 3

Ap 0.0 – 1.0' Dark reddish brown (5YR 3/4), very friable loam, (medium SILT, ML) FILL.

Bw 1.0- 2.5' Strong brown (7.5YR 5/6), friable silt loam (medium SILT; ML), slightly moist.

C1 2.5–4.2' Strong brown (7.5YR 5/6), yellowish brown (10YR 5/6), very friable loam; (loose sandy SILT, ML).

C2 4.2 – 6.8' Pale brown (10YR 6/3), very friable channery sandy loam (medium dense silty SAND some gravel, SM)

C3 6.8 –10.0' Light olive brown (2.5Y 5/4), firm sandy loam, (medium dense silty SAND, SM) slightly moist (20 percent rock fragments)

Water Level = dry at 10 feet.

INFILTRATION TEST RESULTS
10120 Wendover Drive.
Vienna, Virginia

WATER LEVEL READINGS (IN.)

Ref. Depth	60 In. 72 In.	B1	B3
Time		B1	B3
(hr.)		(in.)	(in.)
0.0		58.6	61.2
0.5		60.6	67.1
1.0		62.3	69.3
1.5		63.6	70.6
2.0		64.7	71.6
2.5		66.0	72.6
3.0		67.1	73.5
3.5		68.1	74.3
4.0		69.1	75.1

FALL OF WATER LEVEL (IN.)

Time (hr.)	B1 (in.)	B3 (in.)
0.5	2.0	5.9
1.0	1.7	2.2
1.5	1.3	1.3
2.0	1.1	1.0
2.5	1.3	1.0
3.0	1.1	0.9
3.5	1.0	0.8
4.0	1.0	0.8

INFILTRATION RATES (IN/HR.)

Time (hr.)	B1 (in./hr.)	B3 (in/hr.)
1.0	3.7	8.1
2.0	2.4	2.3
3.0	2.4	1.9
4.0	2.0	1.6
avg	2.6	3.5
Site ave.	3.1	

The "falling head infiltration tests" indicate an average rate of 3.1 in./hr. at 6.0 ft. The depth to a water table is > 10 feet. The depth to rock or other restricting layers is greater than 10 feet.

Fairfax County Guidelines uses the "falling head infiltration rate" as the basis for suitability and restricts design and installation to rates between 0.5 and 8.0 inches per hour with a minimum of 2 feet below the trench bottom to rock, water table or other restrictions.

The area is suitable for an infiltration trench or other bioretention facilities requiring good internal drainage. Design shall be based on ½ the measured rate or 1.6 in./hr.

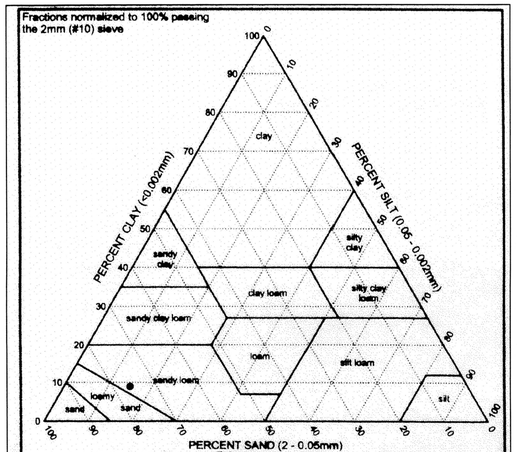
The USDA soil textural classification of the infiltration zone is fine sandy loam. The Unified classification is silty SAND, SM.

Very truly yours,

William E. Shreve, Jr., C.P.S.S.
Soil Scientist

COMMONWEALTH OF VIRGINIA
WILLIAM E. SHREVE, JR.
No. 29
PROFESSIONAL SOIL SCIENTIST

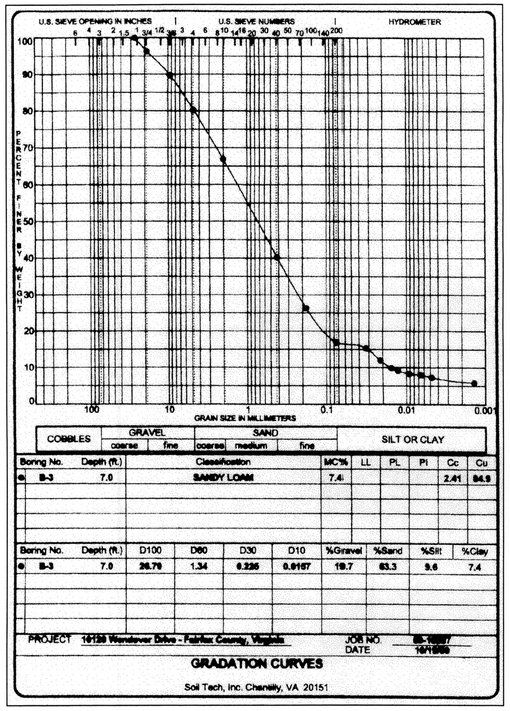
SOIL SCIENCE • GEOLOGY • ENVIRONMENTAL SCIENCE



Borehole	Depth (ft)	USDA Classification	Sand (%)	Silt (%)	Clay (%)
B-3	7.0	SANDY LOAM	75.8	14.8	9.4

Soil Tech, Inc.
14630-F Flint Lee Road
Chantilly, VA 20151
Telephone: (703) 631-9847
Fax: (703) 631-2186

USDA Textural Classification Chart
Project: 10120 Wendover Drive
Location: Fairfax County, Virginia
Number: 09-10807



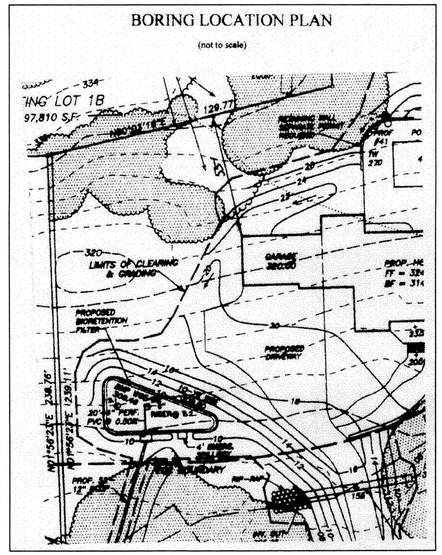
Boring No.	Depth (ft.)	Classification	MC%	LL	PL	PI	Cc	Cu
B-3	7.0	SANDY LOAM	7.4i				2.41	84.9

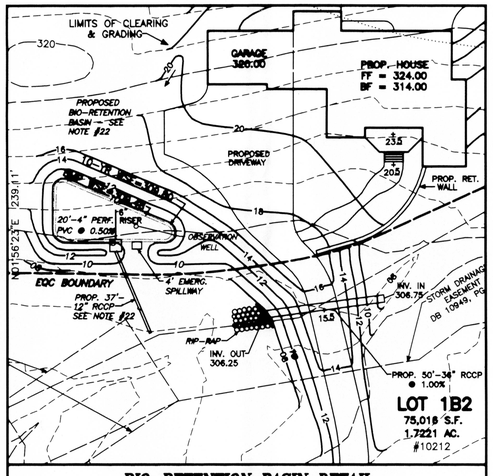
Boring No.	Depth (ft.)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
B-3	7.0	26.70	1.34	0.225	0.0157	19.7	63.3	9.6	7.4

PROJECT 10120 Wendover Drive - Fairfax County, Virginia JOB NO. 09-10807
DATE 10/13/09

GRADATION CURVES
Soil Tech, Inc. Chantilly, VA 20151

BORING LOCATION PLAN
(not to scale)





BIO-RETENTION BASIN DETAIL
LOT 1B2
SCALE: 1" = 30'

POSSIBLE BMP FACILITIES
BMP FACILITIES DESIGN CALCUATIONS

Subdivision Lot 1A Lantern Hill Site 1B2
I. WATER QUALITY NARRATIVE: See attachment
II. WATERSHED INFORMATION

Sub-area	Descriptions	"C"	Acres	
(A-1)	impre control	0.90	6198 sqft	0.14 ac
(A-2)	off control	0.33	7228 sqft	0.17 ac
(A-3)	impre not control	0.90	3080 sqft	0.07 ac
(A-4)	previous control	0.30	16362 sqft	0.38 ac
(A-5)	previos not control	0.30	22710 sqft	0.52 ac
(A-6)	EQC imprev	0.90	1347 sqft	0.03 ac
(A-7)	EQC prev	0.30	25319 sqft	0.58 ac
	totals		82244 sqft	1.89 ac

PART 1:
LIST ALL OF THE SUB-AREA AND "C" FACTOR USED IN THE BMP COMPUTATIONS

(A-1)	impre control	0.90	6198 sqft	0.14 ac
(A-2)	off control	0.33	7228 sqft	0.17 ac
(A-3)	impre not control	0.90	3080 sqft	0.07 ac
(A-4)	previous control	0.30	16362 sqft	0.38 ac
(A-5)	previos not control	0.30	22710 sqft	0.52 ac
(A-6)	EQC imprev	0.90	1347 sqft	0.03 ac
(A-7)	EQC prev	0.30	25319 sqft	0.58 ac
	totals		82244 sqft	1.89 ac 1.89 ac.

PART 2: COMPUTE THE WEIGHT AVERAGE "C" FACTOR SITE

(A)	AREA OF SITE		82244	(a)
(B)		"C"	Acres	Product
(A-1)	impre control	0.90	0.14	0.1281
(A-2)	off control	0.33	0.17	0.0548
(A-3)	impre not control	0.90	0.07	0.0636
(A-4)	previous control	0.30	0.38	0.1127
(A-5)	previos not control	0.30	0.52	0.1564
(A-6)	EQC imprev	0.90	0.03	0.0278
(A-7)	EQC prev	0.30	0.58	0.1744
			(b) total	0.7177
(b) / (a) = c			C =	0.3901

(C) WEIGHTED AVERAGE "C" FACTOR

PART 3: COMPUTE THE TOTAL PHOPHORUS REMOVAL FOR THE SITE

Sub - area Designation	BMP Type	Removal Eff	Area Ratio	"C" Factor Ratio	Product
(Area Ratio = (4)= (A-1) / total area; "C"Factor Ratio = (5)="C" factor / Weighted "C")					
(1)	(2)	(3)	(4)	(5)	(6)
(A-1)	bio-retention	65	0.06	2.367466	11.6
(A-2)	bio-retention	65	0.2	0.09 0.868079	1.0
(A-3)	no controlled	0		0.04 2.367466	0.0
(A-4)	bio-retention	65		0.20 0.789163	10.2
(A-5)	no controlled	0		0.28 0.789163	0.0
(A-6)	no controlled	0		0.02 2.367466	0.0
(A-7)	no controlled	0		0.31 0.789163	0.0
				1.00 total	22.8

POSSIBLE BMP FACILITIES LOT 1B2
BMP FACILITIES DESIGN CALCUATIONS
"Revised calcuation with partial waiver showing WQMA nominated as an equivalent to that of open space."
Subdivision Lot 1A Lantern Hill Site 1B2
I. WATER QUALITY NARRATIVE: See attachment
II. WATERSHED INFORMATION

Sub-area	Descriptions	"C"	Acres	
(A-1)	impre control	0.90	6198 sqft	0.14 ac
(A-2)	off control	0.33	7228 sqft	0.17 ac
(A-3)	impre not control	0.90	4427 sqft	0.10 ac
(A-4)	previous control	0.30	16362 sqft	0.38 ac
(A-5)	previos not control	0.30	22710 sqft	0.52 ac
(A-6)	EQC controlled WQMA	0.30	19000 sqft **	0.41 ac
(A-7)	EQC not WQMA	0.30	7319 sqft	0.17 ac
	totals		82244 sqft	1.89 ac
			82244 sqft	

PART 1:
LIST ALL OF THE SUB-AREA AND "C" FACTOR USED IN THE BMP COMPUTATIONS

(A-1)	impre control	0.90	6198 sqft	0.14 ac
(A-2)	off control	0.33	7228 sqft	0.17 ac
(A-3)	impre not control	0.90	4427 sqft	0.10 ac
(A-4)	previous control	0.30	16362 sqft	0.38 ac
(A-5)	previos not control	0.30	22710 sqft	0.52 ac
(A-6)	EQC controlled WQMA	0.30	19000 sqft	0.41 ac
(A-7)	EQC not WQMA	0.30	7319 sqft	0.17 ac
	totals		82244 sqft	1.89 ac 1.89 ac.

PART 2: COMPUTE THE WEIGHT AVERAGE "C" FACTOR SITE

(A)	AREA OF SITE		82244	(a)
(B)		"C"	Acres	Product
(A-1)	impre control	0.90	0.14	0.1281
(A-2)	off control	0.33	0.17	0.0548
(A-3)	impre not control	0.90	0.10	0.0915
(A-4)	previous control	0.30	0.38	0.1127
(A-5)	previos not control	0.30	0.52	0.1564
(A-6)	EQC controlled WQMA	0.30	0.41	0.1240
(A-7)	EQC not WQMA	0.30	0.17	0.0504
			(b) total	0.7177
(b) / (a) = c			C =	0.3901

(C) WEIGHTED AVERAGE "C" FACTOR

PART 3: COMPUTE THE TOTAL PHOPHORUS REMOVAL FOR THE SITE

Sub - area Designation	BMP Type	Removal Eff	Area Ratio	"C" Factor Ratio	Product
(Area Ratio = (4)= (A-1) / total area; "C"Factor Ratio = (5)="C" factor / Weighted "C")					
(1)	(2)	(3)	(4)	(5)	(6)
(A-1)	bio-retention	65	0.06	2.367466	11.6
(A-2)	bio-retention	65	0.2	0.09 0.868079	1.0
(A-3)	no controlled	0		0.05 2.367466	0.0
(A-4)	bio-retention	65		0.20 0.789163	10.2
(A-5)	no controlled	0		0.28 0.789163	0.0
(A-6)	no controlled	100		0.22 0.789163	17.3
(A-7)	no controlled	0		0.09 0.789163	0.0
				1.00 total	40.1

** WQMA made up of EQC that is not controlled by storm drainage easement or driveway.

LANTERN HILL BIO - RETENTION CALCULATIONS
FILTER LOT 1B2

SITE AREA 75,016 SQ FT/ OR 1.72 AC

ONSITE IMPREVIOUS AREA

HOUSE	3,862 SQ FT
DRIVEWAY	3,979 SQ FY
POOL DECK	2,160 SQ FT
STOOP STEPS	288 SQ FT
WALKWAY	270 SQ FT
RETAINING WALL	66 SQ FT
TOTAL IMP AREA	10,626 SQ FT X 0.9
TOTAL PER AREA	64,391 SQ FT X 0.3
TOTAL SITE Cw = 0.385	

DRIANAGE AREA TO BIO-RETENTION FILTER
29,817 SQ FT = 0.6845 AC X 0.43

ONSITE
22,660 0.517916 @ 0.464

OFFSITE
7,267 0.166688 @.03260

ON-SITE Cw

IMP	6,198 SQ FT X 0.9
PERV	16,362 SQ FT X 0.3
TOTAL	22,560
Cw =	0.4648

OFFSITE Cw

IMP	315 SQ FT X 0.9
PREV	6,942 SQ FT X 0.3
TOTAL	7,267 SQ FT
Cw 0.326	

ELEV	DEPTH	AREA	AV AREA	VOL	T VOL
310.5	0.0	300.0	300.0	0.0	0.0
312.0	0.5	429.0	364.0	182.0	182.0
312.0	1.0	734.0	581.0	581.0	763.0
131.0	1.0	1260.0	997.0	997.0	1760.0

BMP VOL. 476 CU FT @ ELEV 311.5 OK

SWM VOL

311.5	0	573	573	0	0
312	0.5	734	653	653	327
313	1	1260	997	997	1324

Cw BIO FILTER
CW BIO FACILTY
3862
357
2912
2160
9291 SQ FT @ 0.9
9477 SQ FT @ 0.3
Cw = 18,768 SQ FT 0.6

18768 SQ FT = 0.43 AC @ 0.60 = 0.26 IMP ACRES
11,326 IMP SQ FT X 1/2" = 472. SQ FT STORAGE REQUIRED
ELEV 311 VOL = 0
ELEV 312 VOL = 646 CU FT
472 @ ELEV 11.86 = BMP ELEV.
DEPTH = 0.86'

3" VOL FOR 10YR STORM = 2,826 CF
ELEV 131.0 VOL= AREA = 1,212 SQ FT

BMP WSE
ONSITE IMP AREA TO BIO RETENTION = 6,198.16 SF
3630 CU FT / AC
0.1423 AC X 3630 = 516.51
BMP WSE = 309.48

10YR Q TO BIO RETENTION FILTER
AREA = 0.68 @ 0.431
CA = 0.296
I 10Y = 7.27
Q 10Y = 2.145
Q WIER = CLH 3/2
C = 3.33
L= 4.0'
H 3/2 = 0.161 FT
H = 0.36FT
Q = 3.33 X 4 X 0.3 3/2
2.19
10 YR WSE = 309.80
TOP OF BERM = 310.30

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING – SURVEYING – PLANNING
10650 MAIN STREET – SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS
11-12-09 NEW SHEET 6B SHOWING NEW LOT 1B2 SOILS INFO. & BMP FACILITIES DESIGN CALCULATIONS & DETAIL UPDATED FOR LOT 1B2

SPECIAL EXCEPTION PLAT
SWM/BMP COMPUTATIONS & DETAILS
LOT 1B

LANTERN HILL AT WENDOVER

FAIRFAX COUNTY, VIRGINIA
HUNTER MILL DISTRICT

COMMONWEALTH OF VIRGINIA
REID M. DUBLET
Cert. No.08648
11/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA 2189-SE-XTRA-REVISED

SHEET 6B OF 8

SE 2008-HM-010

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 7 of 9

LANTERN HILL AT WENDOVER
DRAINAGE AREA MAP

	C	X	I	X	A	=	Q
1-A							
Q 2yr =	0.48	X	5.45	X	0.47	=	1.19 cfs
Q 10yr =	0.40	X	7.27	X	0.47	=	1.38 cfs
1-B							
Q 2yr =	0.30	X	5.45	X	0.34	=	0.56 cfs
Q 10yr =	0.30	X	7.27	X	0.34	=	0.75 cfs
2-A							
Q 2yr =	0.38	X	5.45	X	0.29	=	0.59 cfs
Q 10yr =	0.38	X	7.27	X	0.29	=	0.79 cfs
2-B							
Q 2yr =	0.30	X	5.45	X	0.35	=	0.57 cfs
Q 10yr =	0.30	X	7.27	X	0.35	=	0.76 cfs
3-A							
Q 2yr =	0.57	X	5.45	X	0.18	=	0.55 cfs
Q 10yr =	0.57	X	7.27	X	0.18	=	0.73 cfs
3-B							
Q 2yr =	0.45	X	5.45	X	1.02	=	2.50 cfs
Q 10yr =	0.45	X	7.27	X	1.02	=	3.34 cfs
3-C							
Q 2yr =	0.30	X	5.45	X	0.24	=	0.40 cfs
Q 10yr =	0.30	X	7.27	X	0.24	=	0.53 cfs
4							
Q 2yr =	0.33	X	5.45	X	0.17	=	0.31 cfs
Q 10yr =	0.33	X	7.27	X	0.17	=	0.41 cfs
5-A							
Q 2yr =	0.48	X	5.45	X	0.52	=	1.30 cfs
Q 10yr =	0.48	X	7.27	X	0.52	=	1.73 cfs
5-B							
Q 2yr =	0.38	X	5.45	X	0.36	=	0.72 cfs
Q 10yr =	0.38	X	7.27	X	0.36	=	0.97 cfs
5-C							
Q 2yr =	0.30	X	5.45	X	0.61	=	1.00 cfs
Q 10yr =	0.30	X	7.27	X	0.61	=	1.33 cfs

SQ FT		
43,560.00	SQ FT	AC
	20,630	0.47
CONTROLLED BY INFILTRATION FOR DETENTION AND BMP		
	15,012	0.34
	12,415	0.29
CONTROLLED BY INFILTRATION FOR DETENTION AND BMP		
	15,427	0.35
	7,647	0.18
CONTROLLED BY INFILTRATION FOR DETENTION AND BMP		
	44,435	1.02
	10,541	0.24
	7,228	0.17
	22,560	0.52
CONTROLLED BY BIO-RETENTION FILTER FOR BMP		
	15,480	0.36
	26,465	0.61

PRE - DEVELOPMENT RUNOFF

	C	X	I	X	A	=	Q
Q 2yr =	0.397	X	5.45	X	4.54	=	9.82 cfs
Q 10yr =	0.397	X	7.27	X	4.54	=	13.10 cfs

POST -DEVELOPMENT RUNOFF W/O DETENTION

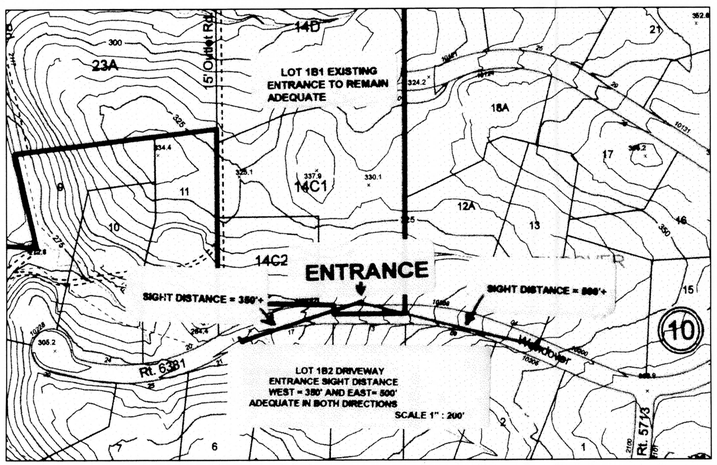
	C	X	I	X	A	=	Q
Q 2yr =	0.400	X	5.45	X	4.54	=	9.90 cfs
Q 10yr =	0.400	X	7.27	X	4.54	=	13.20 cfs

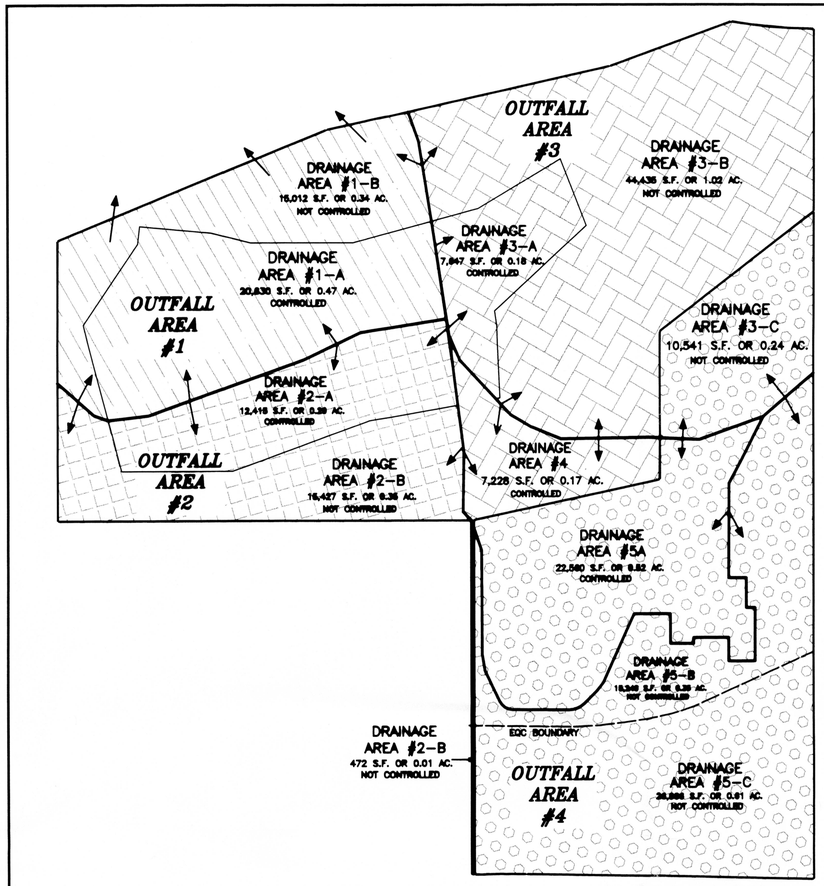
POST - DEVELOPMENT RUNOFF W DETENTION

Q 2yr =	0.356	X	5.45	X	4.54	= 8.81 cfs
Q 10yr =	0.356	X	7.27	X	4.54	= 11.75 cfs

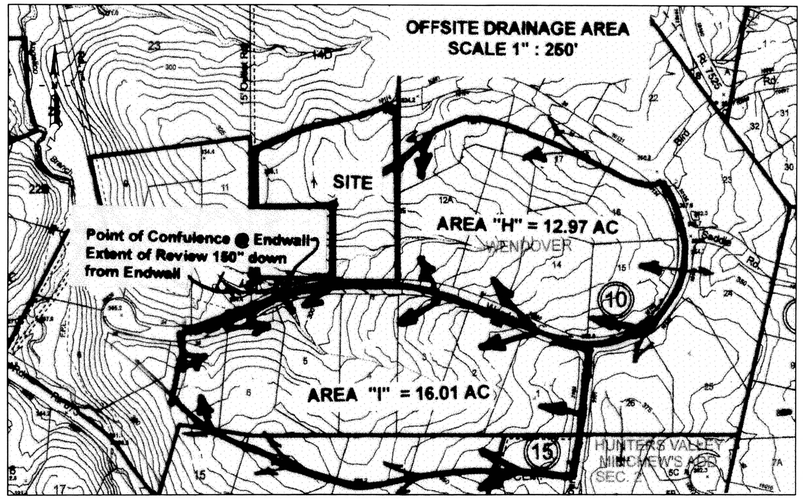
POST DEVELOPMENT OVERALL REDUCTION IN RUNOFF

PRE-DEVELOPMENT	-	POST DEVELOPMENT		REDUCTION
Q 2yr 9.82 cfs	-	8.81 cfs	=	1.01 cfs reduction
Q 10yr 13.10 cfs	-	11.75 cfs	=	1.35 cfs reduction





ONSITE DRAINAGE AREAS
SCALE: 1" = 50'



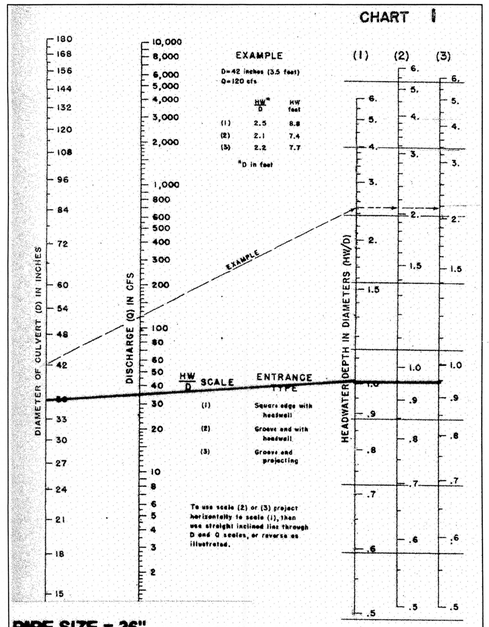
LANTERN HILL C- FACTOR

TOTAL SITE AREA = 197,810 SQ FT / 4.54 AC

AREA #								
1-A	C =[(	5,627	SF X 0.9	)+(	15,003	SQFT X 0.3	)] /	20,630 = 0.46
1-B	C = [(	0	SF X 0.9	)+(	15,012	SQFT X 0.3	)] /	15,012 = 0.30
2-A	C = [(	1,690	SF X 0.9	)+(	10,725	SQFT X 0.3	)] /	12,415 = 0.38
2-B	C = [(	0	SF X 0.9	)+(	15,427	SQFT X 0.3	)] /	15,427 = 0.30
3-A	C = [(	3,462	SF X 0.9	)+(	4,185	SQFT X 0.3	)] /	7,647 = 0.57
3-B	C = [(	11,302	SF X 0.9	)+(	33,133	SQFT X 0.3	)] /	44,435 = 0.45
3-C	C = [(	0	SF X 0.9	)+(	10,541	SQFT X 0.3	)] /	10,541 = 0.30
4-A	C = [(	415	SF X 0.9	)+(	6,813	SQFT X 0.3	)] /	7,228 = 0.33
5-A	C = [(	6,196	SF X 0.9	)+(	16,362	SQFT X 0.3	)] /	22,560 = 0.46
5-B	C = [(	3,080	SF X 0.9	)+(	12,169	SQFT X 0.3	)] /	15,249 = 0.42
5-C	C = [(	1,347	SF X 0.9	)+(	25,319	SQFT X 0.3	)] /	26,666 = 0.33
						TOTAL		197,810 / 4.54 AC

DRIVEWAY CULVERT DESIGN LOT 1B2 : 10YR STORM LANTERN HILL AT WENDOVER

FROM STRUC-TURE	TO STRUC-TURE	DRAINAGE AREA (ACRES) INCREM.	ACCUM.	INCREM. RUNOFF COEFF.	WEIGHTED RUNOFF COEFF.	IMPERVIOUS AREA (ACRES x C) INCREM.	ACCUM.	TIME CONC (MIN.)	INTEN-SITY (INHR)	RUNOFF (CFS) INCREM.	ACCUM.	INVERT ELEVATION UPPER	LOWER	LENGTH (FT.)	SLOPE %	DIA-METER (IN.)	ROUGH COEFF.	PIPE CAP. (CFS)	PARTIAL FLOW VELOCITY
STRUC-		-A-	-A-	-C-	-C-	-CA-	-CA-	-Tc-	-I-	-Q-	-Q-			-L-	-S-	-D-	-n-	-Q-	-V-
PROP #A	PROP #B	13.45	13.45	0.35	0.35	4.71	4.71	5	7.27	34.22	34.22	306.75	306.25	50.0	1.0%	36	0.013	65.77	9.3
PROP #C	PROP #D	0.34	0.34	0.50	0.50	0.17	0.17	5	7.27	1.24	1.24	311.00	310.50	30.0	1.7%	15	0.024	4.51	3.7



PIPE SIZE = 36"
HW/D = 0.95
HW 2.85' ELE = 309.6

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

5-17

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING - SURVEYING - PLANNING
10650 MAIN STREET - SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS
11-12-09 UPDATED TWO ONSITE DRAINAGE AREAS

SPECIAL EXCEPTION PLAT
ONSITE/OFFSITE DRAINAGE DIVIDES & CHARTS
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT *FAIRFAX COUNTY, VIRGINIA*

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert. No.09648
1/19/10
PROFESSIONAL ENGINEER

Application No. SE 2008-HM-010 Staff FCS
APPROVED (SE) (SP) PLAN
SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010
Sheet 8 of 9

DATE: 8-20-2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA 2189-SE-XTRA-REVISED

SHEET 7 OF 8

SE 2008-HM-010

ADEQUATE OUTFALL NARRATIVE:

The Site is a 4.54 acres lot located in the Wendover Subdivision, north of Lawyers Road in the Hunter Mill District of Fairfax County. The runoff from the property outfalls into the upper reaches of Difficult Run Watershed. The site is zoned R-E and with the approval of a Special Exception for lot width, the site will be developed into two conventional R-E zoned single family residential lots. The site is within the existing single family detached Subdivision of Wendover of existing R-E zone. The existing house is proposed to be saved and will remain on a 2.82 acre lot will have direct access to the existing temporary turn around at the end of Wendover Drive, Route 6381. The proposed new lot of 1.72 acres will have direct access to the existing Wendover Drive, Route 6381.

Existing topography shows that runoff from the site generally outfalls into four small drainage outfalls with the drainage divides established by topographic features of a high point where the existing house is located and a ridge bisecting the site east to west. The separated drainage divides are shown on the attached drainage divide map. The pre-development overall site equals 2 year 2 hour = 9.82 cfs; 10 year 2 hour = 13.10 cfs. The post-development site's runoff, with credit for bio retention routing and storage, will reduce the runoff for 2 year and 10 year 2 hour storm events. Therefore, the overall REDUCTION in runoff for the project will be provided.

Each outfall is addressed below:

Discharge from Outfall Area "1" having an area of 0.82 acres, outfalls to the northwest into the adjoining property as sheetflow. Since the runoff leaves the site as sheetflow, the drainage area will be in accordance with Section 6-0202.6 of the PFM. Sheetflow is when the development within the drainage shed is proposed to continue to discharge such that the runoff is not concentrated (i.e. sheetflow) into the lower lying properties. There is no new development or any proposed increase in impervious area in this drainage shed. Within this shed 7,638 sq ft or 0.18 acres of area of the existing graveled access will be removed and become grass. To meet the BMP standard for Lot 1B1, a bio-retention basin with infiltration will be constructed. The area controlled by the bio-retention basin will be a minimum of 20,630 sq ft or 0.47 acres. The design of the bio-retention basin will have a filter bed of minimum of 469 sq ft and a volume of 469 cu ft of water quality storage; providing an overall reduction in runoff. Therefore, it is our opinion that the outfall from this drainage shed is adequate as defined in the Fairfax County Public Facilities Manual, (PFM).

Discharge from Outfall Area "2" having an area of 0.6283 acres, outfalls to the south into the adjoining property as sheetflow. No new impervious area is proposed within this shed. Since the runoff leaves the site as sheetflow, the drainage area will be in accordance with Section 6-0202.6 of the PFM. Sheetflow is when the development within the drainage shed is proposed to continue to discharge such that the runoff is not concentrated (i.e. sheetflow) into the lower lying properties. To meet the BMP standards for Lot 1B1, a bio-retention basin with infiltration will be constructed. The area controlled by the bio-retention basin will be a minimum of 12,415 sq ft or 0.28 acres. The design of the bio-retention basin will reduce the site's overall runoff. With no new development that would be proposing an increase in impervious area within this drainage shed, it is our opinion that the outfall from this drainage shed is adequate as defined in the Fairfax County Public Facilities Manual, (PFM).

Discharge from Outfall Area "3" having an area of 1.19 acres, outfalls to the northeast into the adjoining property as sheetflow. Since the runoff leaves the site as sheetflow, the drainage area will be in accordance with Section 6-0202.6 of the PFM. Sheetflow is when the development within the drainage shed is proposed to continue to discharge such that the runoff is not concentrated (i.e. sheetflow) into the lower lying properties. To meet the BMP standards for Lot 1B1, a bio-retention basin with infiltration will be constructed within this outfall. The area controlled by the bio-retention basin with infiltration will be a minimum of 7,647 sq ft or 0.17 acres. The design of the bio-retention basin will reduce the site's overall runoff. There will be an additional 0.24 acres of Lot 1B2 within this outfall area. There is no development proposed that would increase in impervious area in this drainage shed, including both onsite and offsite area. Therefore, it is our opinion that the outfall from this drainage shed is adequate as defined in the Fairfax County Public Facilities Manual (PFM).

Discharge from Outfall Area "4" an area of 1.65 acres in Lot 1B2 and 0.18 aces of Lot 1B1 for a total of 1.83 acres, outfalls to the south into the adjoining property in a defined bed and banks natural channel. The natural bed and banks channel at the outfall point and through the reach of extended review will be shown to have sufficient capacity and will not have adverse impact upon the land over which the water is conveyed. To meet the BMP standard for Lot 1B2, a bio retention facility will be constructed to control 0.52 acres of Lot 1B2 and 0.17 acres of Lot 1B1 for a total of 1.83 acres. The development will concentrate flow with the construction and installation of a driveway culvert, within the natural outfall. The first point of consideration results where a culvert crosses under Wendover Drive. The extend review will start at this point and at least 150 feet downstream of the culvert crossing Wendover Drive will be improved is necessary to provide an adequate outfall. This point is where the receiving channel is joined by the drainage area that is at least 90% of the size of the first drainage area of the development site (See attached chart). In addition, the infiltration from the bio-retention facilities will provided the required storm water detention through the routing of the required storm events and controlled but the bio-retention outfall structure. Therefore with the bio-retention basin and storm water management in drainage area #2 the outfall will show a reduction to the overall outfall. It is our belief that the final drainage calculations will demonstrate the adequacy of the channel cross sections in accordance with chapter 5 of the VESCH or improvements will be made to the natural channel. The developer also has the ability of adequate outfall under section 6.0203.4C. If required to provide an adequate outfall under section 6.0203.4C, the proposed bio-retention routing storage will be expanded to provide required storage. The development of the natural channel will require a drainage study and onsite stream restoration plan.

DOWNSTREAM IMPOUNDMENT NARRATIVE:

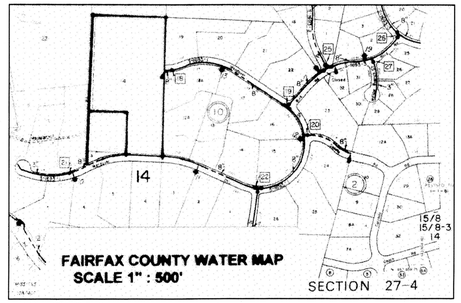
The only area of development of the subject application will be to the outfall in the southern portion of the site. The outfall leads directly to Angelico Branch and then to Difficult Run Flood Plan. Site review indicates that there are no impoundments that will be impacted by the development site.

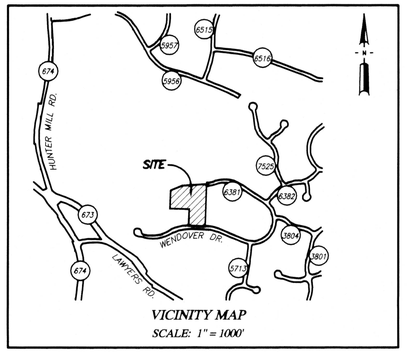
STORMWATER MANAGEMENT NARRATIVE:

Pre Development: the Site is a 4.54 acres lot, located in the Wendover Subdivision north of Lawyers Rood in the Hunter Mill District of Fairfax County. The runoff from the property outfalls in the upper reaches of Difficult Run Watershed. The site is zoned R-E and with the approval of a Special Exception for lot width the site will be developed into two conventional single family residential lots. The site is bordered by existing single family detached residences of the existing R-E zone. The existing house is proposed to be saved and will remain of a 2.82 acre lot. The proposed new lot of 1.72 acres will have direct access to the existing Wendover Drive, Route 6381. This site is in the Fairfax County Chesapeake Bay Resource Management Area but not in any Resource Protection Area or in any Water Supply Overlay District. The County has identified an EQC within the boundary of proposed lot 1B2. The property is presently developed as a single existing house and lawns and landscape gardens around the single residency. The house has a number of accessory structures and private gravel driveways. The existing impervious area including the gravel driveways as impervious area is approximately 23,800 square feet. With the development of the site approximately 9,255 sq ft of gravel area will be removed.
Post-development: An additional single family lot will be create of 75,074 square feet and the existing single family will remain on a reduced lot area of 122,736 square feet. No increases in impervious areas are proposed within Lot 1B1, and approximately 9,255 sq ft of existing gravel area will be removed. The BMP facilities for Lot 1B1 will be that of the three (3) bio-retention basins with infiltration. The BMP facilities for Lot 1B2 will be that of a bio-retention basin with infiltration for the BMP storage and the outlet structure controlling detention with storm water routing. An overall decrease in runoff for the entire project will occur with the resultant, decrease of gravel area, the storage for runoff in the BMP facilities and the surface storage at Structure on Lot 1B2. With these storm water management facilities the proposed project will meet the subdivision developments Storm Water Detention Requirements.

STORMWATER QUALITY CONTROL AND CHESAPEAKE BAY BMP NARRATIVE:

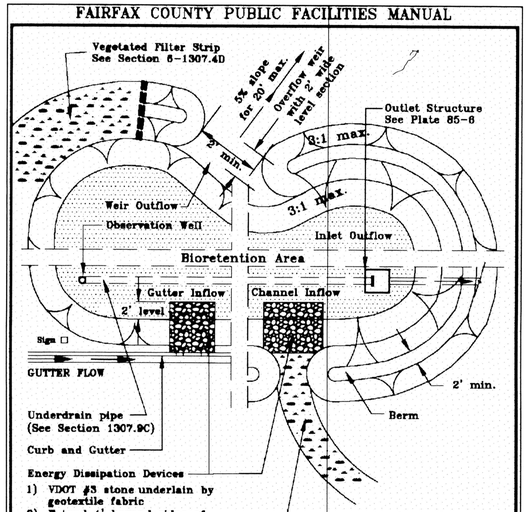
The Site is a 4.54 acres lot located in the Wendover Subdivision, north of Lawyers Road in the Hunter Mill District of Fairfax County. The runoff from the property outfalls into the upper reaches of Difficult Run Watershed. The site is zoned R-E and with the approval of a Special Exception for lot width, the site will be developed into two conventional R-E zoned single family residential lots. The site is bordered by existing single family detached residences of existing R-E zone. The existing house is proposed to be saved and will remain of a 2.82 acre lot. The proposed new lot of 1.72 acres will have direct access to the existing Wendover Drive, Route 6381. The site is locate in a Resource Management Area and is not within the boundaries of the WSPOD established for the Occoquan Watershed. The existing and proposed developed lot will be developed at an impervious area of approximately 18%. For the new development the phosphorus removal requirements will be met onsite with the combination of use of bio-retention basin facilities on Lot 1B1 and bio-retention basin on Lot 1B2 which will include detention with the a control structure. The facilities on Lot 1B1 provide a proposed a phosphorus removal of 26.1%. A partial waiver of the BMP removal requirements will be requested to meet the full 40% removal requirements with the understanding Water Quality Management Areas will be identified on site as a conditional of the waiver approval to make up the remaining %. The facility on Lot 1B2 will provided the proposed a phosphorus removal of 22.8%. A partial waiver of the BMP removal requirements will be requested to meet the full 40% removal requirements with the understanding Water Quality Management Areas will be identified on site to include at the minimum EQC area as a conditional of the waiver approval to make up the remaining %. The subdivision is a two lot subdivision and a Home Owner Association property is not desirable for maintenance therefore, in accordance with the standard in 6-1307.2A, the bio retention basins with infiltration will be located on the given lots. The attached plat shows locations and facility sizes. At the time of subdivision and/or grading plans a final design will be done with the plan submission. The BMP for Lot 1B1 is made up of 3 bio retention basins and approximately 0.37 ac. The BMP for Lot 1B2 is made up of a bio-retention basin.





VICINITY MAP
SCALE: 1" = 1000'

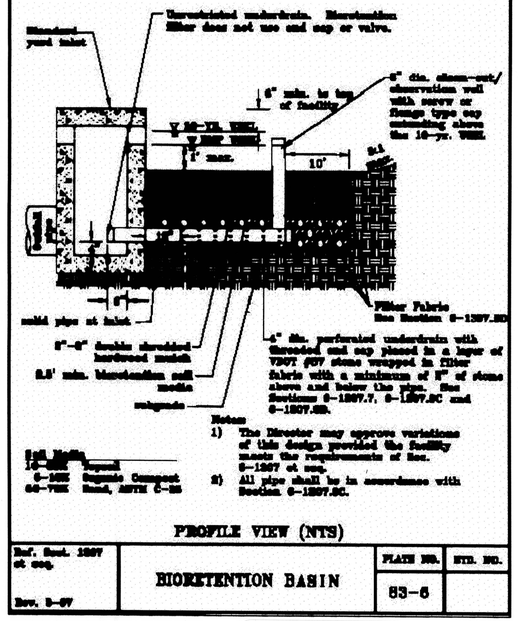
FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



PLAN VIEW (NTS)

Ref. Sec. 6-1307 et seq.	BIORETENTION BASIN	PLATE NO. 86-6	STD. NO.
Rev. 3-07			

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



PROFILE VIEW (NTS)

Ref. Sect. 1307 et seq.	BIORETENTION BASIN	PLATE NO. 83-6	STD. NO.
Rev. 3-07			

County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

June 18, 2009

George B. Sagatov
Carolyn Sagatov
c/o Reid Dudley
Runyon, Dudley, Associates, Inc.
10650 Main Street, Suite 301
Fairfax, VA 22030

RE: Soils Evaluation for a Subsurface Sewage Disposal System for a Proposed Lot Split at 10120 Wendover Drive, Great Falls, Virginia. Map Reference: 0274 01 0014C1

Dear Owners:

Site and soils evaluations on the above referenced lot were satisfactory with a rate of 11 minutes per inch at a depth of 39 inches after grade cuts for the reserve area on proposed Lot 1B1; and with a rate of 25 minutes per inch at a depth of 45 inches after grade cuts for the active area and a rate of 25 minutes per inch at a depth of 54 inches after grade cuts for the reserve area on proposed Lot 1B2. Issuance of a Sewage Disposal System Construction Permit is subject to the following requirements:

1. Sufficient area must be available within the approved footprint for the required individual sewage disposal system. A reserve area equal to 100% of each initial system must be provided.
2. A dimensional site/grading plan showing the house location and all required information must be submitted to the Health Department for review.
3. The Health Department must review and approve the building permit applications.
4. A complete set of Architectural Plans, to include all existing and proposed structures, must be submitted to the Health Department during review of the site/grading plans. If a Fairfax County approved set is not available, the set submitted to the Health Department must have an owner signed and dated notice as part of the Architectural Plans stating that the structures represented will be those built.
5. The available reserve area for proposed Lot 1B1 appears adequate for a four (4) bedroom sewage disposal system (to include 1 kitchen and 1 laundry) utilizing absorption trenches. The area represents 100% reserve for the existing sewage disposal system. The sewage disposal system design selected for use must have general approval through the *Virginia Department of Health*.
6. Health Department records indicate that the water supply system well for the existing house on proposed Lot 1B1 is located in the basement of the house. This well must be properly abandoned and a new well for the house drilled prior to approval of this lot split. A Health Department Well Abandonment Permit is required for the well abandonment.

Fairfax County Health Department
Division of Environmental Health
Technical Review and Information Resources
10777 Main Street, Suite 102, Fairfax, VA 22030
Phone: 703-246-2510 TTY: 711 Fax: 703-278-8157
www.fairfaxcounty.gov/hd

Sagatov, June 18, 2009
Page 2 of 2

7. The available active area for proposed Lot 1B2 appears adequate for a five (5) bedroom sewage disposal system (to include 1 kitchen and 1 laundry) utilizing absorption trenches. The sewage disposal system design selected for use must have general approval through the *Virginia Department of Health*.
8. The available reserve area for proposed Lot 1B2 appears adequate for a five (5) bedroom sewage disposal system (to include 1 kitchen and 1 laundry) utilizing secondary treatment and absorption trenches. The sewage disposal system design selected for use must have general approval through the *Virginia Department of Health* for a loading rate of 2.0 gallons of sewage effluent per square foot of absorption area per day.
9. Please note that some types of secondary treatment systems contain media that must be replaced on a periodic basis. Replacement of the media is the responsibility of the property owner.
10. Due to the variations in soil, in some instances it may be necessary to reappraise a particular lot.
11. Where public water is not available, approval is subject to proper location of a well in accordance with applicable State and County Regulations.

If you require further information concerning this matter, please contact our office at (703) 246-2201 between 8:00 a.m. and 4:30 p.m., Monday through Friday.

Sincerely,

Lynn Jones, M.S., C.E., R.E.H.S.
Senior Environmental Health Specialist

Reviewed by:

Kevin R. Wastler
Environmental Health Supervisor

KRW: lj

ENCL: Copy of Plat

cc: Department of Tax Administration

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 9 of 9

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING - SURVEYING - PLANNING
10650 MAIN STREET - SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

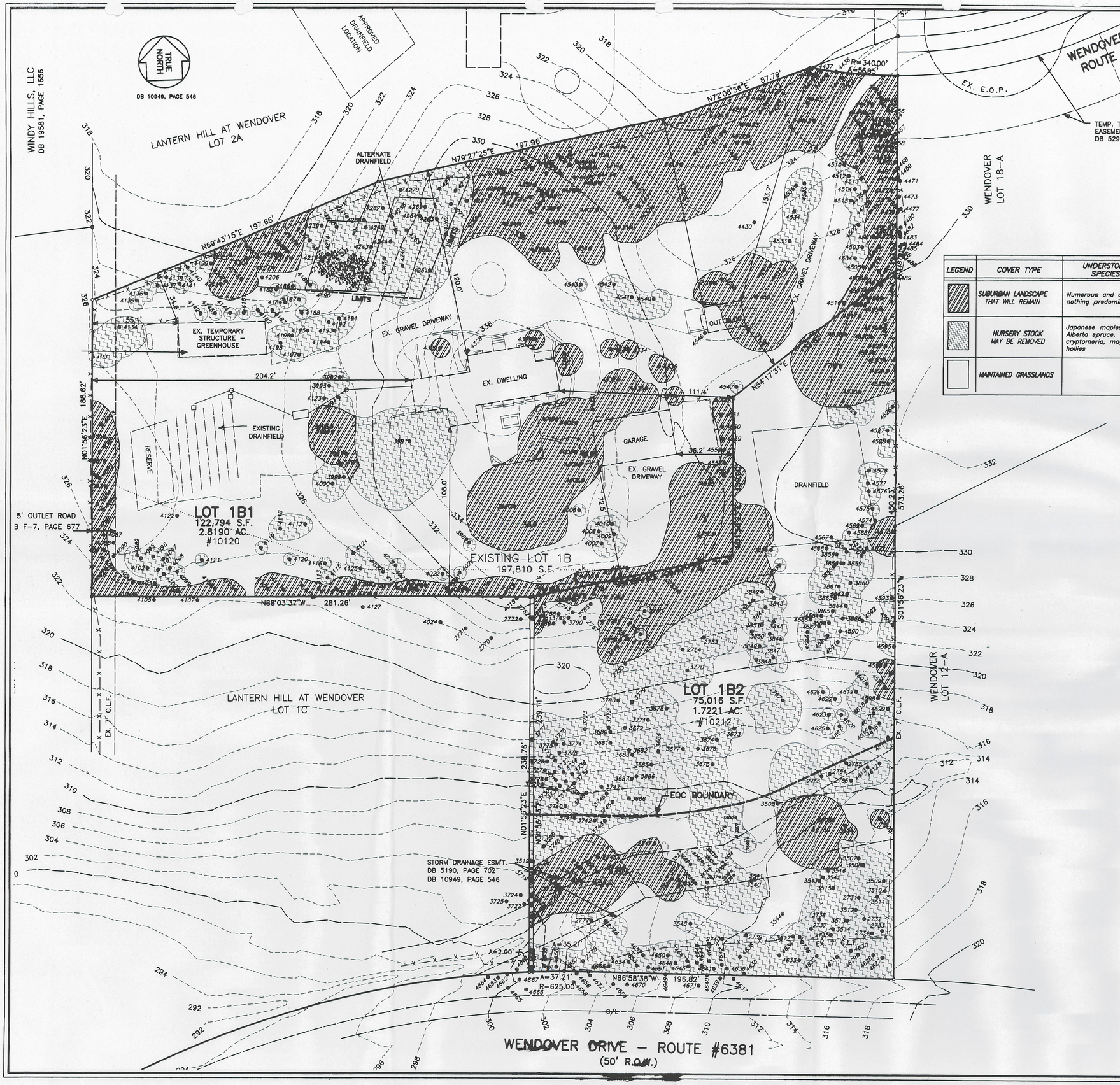
REVISIONS
11-12-09 UPDATED ADEQUATED OUTFALL NARRATIVE, REMOVED PLATE 41A-6, REVISED TITLE ON PLATE 83-6

SPECIAL EXCEPTION PLAT
ADEQUATE OUTFALL NARRATIVE & MAPS
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID M. DUDLEY
Cert No.09648
1/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: AS NOTED
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA 2189-SE-XTRA-REVISED
SHEET 8 OF 8

SE 2008-HM-010



Ed Milhous
Registered Consulting Arborist #350
Certified Arborist #MAC-0004A

TreesPlease
P.O. BOX 1025 Haymarket, Virginia 20168 703-927-2048
http://www.TreesPlease.com e-mail: Ed@TreesPlease.com

VEGETATIVE MAP

LEGEND	COVER TYPE	UNDERSTORY SPECIES	PRIMARY SPECIES	COMMENTS	SUCCESSIONAL STAGE	CONDITION	AREA
	SUBURBAN LANDSCAPE THAT WILL REMAIN	Numerous and diverse... nothing predominant	Turfgrass and groundcover	Suburban lawn and landscape, which other than due to natural mortality, will remain after development.	N/A	Good	54,681 S.F.
	NURSERY STOCK MAY BE REMOVED	Japanese maples, dwarf Alberta spruce, cryptomeria, magnolias, hollies	Turfgrass and groundcovers	Nursery stock; some is for sale, and some will be cleared during development process. Depending on final site plans, some may be preserved.	N/A	Good	54,283 S.F.
	MAINTAINED GRASSLANDS			Ungrassed and landscaped areas, athletic fields or other green areas devoid of natural vegetation.			88,846 S.F.

Application No. SE 2008-HM-010 Staff KGS

APPROVED (SE) (SP) PLAN

SEE DEV CONDS DATED Feb 4- 2010
Date of (BOS) (BZA) approval Apr 6-2010

Sheet 2 of 9

RUNYON, DUDLEY, ASSOCIATES, INC.
ENGINEERING - SURVEYING - PLANNING
10690 MAIN STREET - SUITE 301
FAIRFAX, VIRGINIA 22030
PHONE: 703-591-4606 FAX: 703-591-3982

REVISIONS

SPECIAL EXCEPTION PLAT
VEGETATIVE MAP AND EXISTING CONDITIONS
LOT 1B
LANTERN HILL AT WENDOVER
HUNTER MILL DISTRICT FAIRFAX COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
REID E. DUDLEY
Cert. No. [illegible]
1/19/10
PROFESSIONAL ENGINEER

DATE: 8-20-2009
SCALE: 1" = 30'
DRAFTED BY: RMD/DMC
FILE #: F-2189 SE
CO. #:
DWG NAME: 2189-SE-XTRA
2189-SE-XTRA-REVISED

SHEET 2 OF 8

SE 2008-HM-010