

VICINITY MAP
1" = 2000'

SITE STATISTICS	
TOTAL SITE AREA	1902989.60 S.F. (43.69 AC.)
COMMON AREA PROVIDED	828566.69 S.F. (19.02 AC.)
AREA IN RIGHT-OF-WAY	179893.30 S.F. (4.13 AC.)
AREA IN LOTS	894549.61 S.F. (20.53 AC.)
EXISTING ZONING	R-5C
PROPOSED USE	SINGLE FAMILY DETACHED RESIDENTIAL
PROPOSED LOTS	96
ENGINEER	THE BAY COMPANIES, INC. C/O DAN CASKIE, P.E. 8500 BELL CREEK ROAD MECHANICSVILLE, VA 23116
DEVELOPER	ARCHER SPRINGS INVESTMENT CO., LLC C/O MITCHELL BOOE 3307 CHURCH ROAD SUITE 101 RICHMOND, VA 23235

LOTS	
MINIMUM	6609.15 S.F. (0.15 AC)
MAXIMUM	213650.22 S.F. (0.49 AC)
AVERAGE	9318.22 S.F. (0.21 AC)
SETBACKS	
FRONT:	25'
SIDE:	5'
REAR:	5'
GARAGE SUMMARY	
TOTAL LOTS	96
FRONT LOAD GARAGES	33 (34.4%)
SIDE LOAD GARAGES	45
DETACHED GARAGES (ALLEY)	17
EXISTING HOUSE (NO GARAGE)	1

- A** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 3320 REAR TRAYLOR DR.
RICHMOND, VA 23235
PARCEL ID: C0011254109
ZONED: R-5C
- B** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10502 D DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254107
ZONED: R-5C
- C** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10504 DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254022
ZONED: R-5C
- D** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10502 C DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254029
ZONED: R-5C
- E** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10502 B DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254026
ZONED: R-5C
- F** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10502 DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254024
ZONED: R-5C
- G** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10502 A DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254025
ZONED: R-5C
- H** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10350 A DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254030
ZONED: R-5C
- I** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10504 A DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254027
ZONED: R-5C
- J** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10500 DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254028
ZONED: R-5C
- K** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10506 DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254023
ZONED: R-5C
- L** — OWNER: ARCHER SPRINGS INVESTMENT COMPANY, LLC
ADDRESS: 10508 DUREYA DR.
RICHMOND, VA 23235
PARCEL ID: C0011254021
ZONED: R-5C

TREE REMOVAL CONDITION:
ANY OWNER OF A LOT SHALL PROVIDE THE ASSOCIATION ESTABLISHED BY THE DECLARATION A CERTIFICATION FROM A CERTIFIED ARBORIST REGARDING THE HEALTH AND/OR SAFETY REASON FOR REMOVAL OF ANY TREE IDENTIFIED ON THE TREE PRESERVATION PLAN PRIOR TO REMOVAL OF SUCH TREE.

VILLAS AT ARCHER SPRINGS

TREE PRESERVATION AND GRADING PLAN

SINGLE FAMILY RESIDENTIAL
HUGUENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

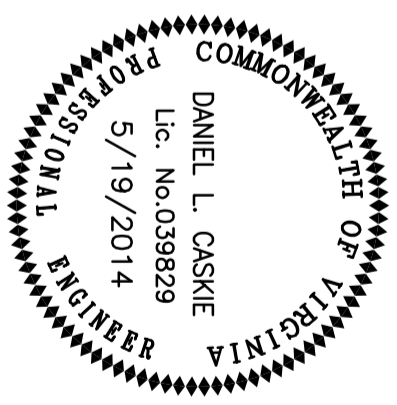
SOURCE OF TITLE: _____

THE PROPERTY EMBRACED WITHIN THE LIMITS OF THIS SUBDIVISION
PARCELS: C0011254021, C0011254023, C0011254024, C0011254025, C0011254027, C0011254026, C0011254029,
C0011254107 & C0011254109
TO: ARCHER SPRINGS INVESTMENT COMPANY, LLC
FROM: BARRINGTON INVESTORS, LTD
BY DEED DATED THE 20TH DAY OF SEPTEMBER, 2006 AND RECORDED AT THE CLERK'S OFFICE IN THE CIRCUIT COURT OF THE CITY OF RICHMOND,
VIRGINIA ON THE 26TH DAY OF SEPTEMBER, 2006 IN INSTRUMENT NUMBER 06-33541
PARCEL: C0011254022
TO: ARCHER SPRINGS INVESTMENT COMPANY, LLC
FROM: BARRINGTON INVESTORS, LTD
BY DEED DATED THE 12TH DAY OF MARCH, 2008 AND RECORDED AT THE CLERK'S OFFICE IN THE CIRCUIT COURT OF THE CITY OF RICHMOND,
VIRGINIA ON THE 31ST DAY OF MARCH, 2008 IN INSTRUMENT NUMBER 08-08449
PARCELS: C0011254028 & C0011254030
TO: ARCHER SPRINGS INVESTMENT COMPANY, LLC
FROM: CYNTHIA A. MONTAGUE & MATTHEW FIELDING ARCHER CO-TRUSTEES OF THE JOHN S. ARCHER, JR. TRUST
BY DEED DATED THE 14TH DAY OF SEPTEMBER, 2006 AND RECORDED AT THE CLERK'S OFFICE IN THE CIRCUIT COURT OF THE CITY OF RICHMOND,
VIRGINIA ON THE 26TH DAY OF SEPTEMBER, 2006 IN INSTRUMENT NUMBER 06-33542

NOTES:
1. ALL ROADS/ALLEYS ARE TO BE PUBLIC
2. ALL CURB GUTTER AND SIDEWALKS SHALL BE INSTALLED PER SECTION 94-213 OF THE SUBDIVISION ORDINANCE



NOTE
HORIZONTAL DATUM = NAD 83
VERTICAL DATUM = NAVD 87



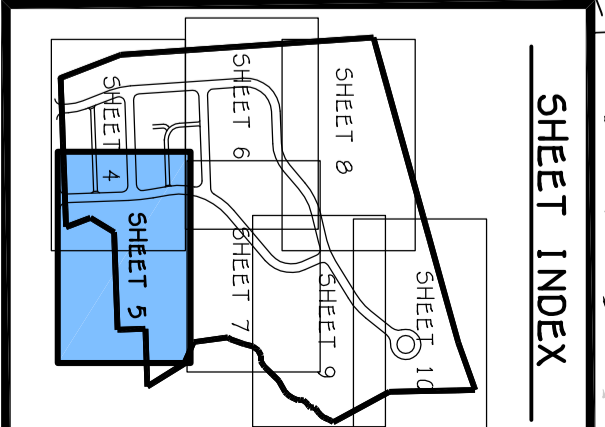
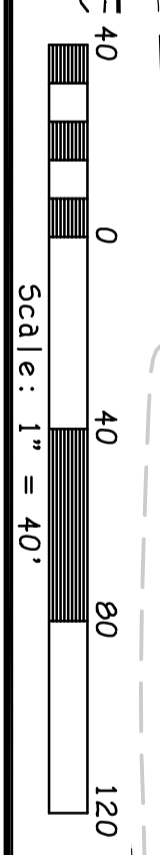
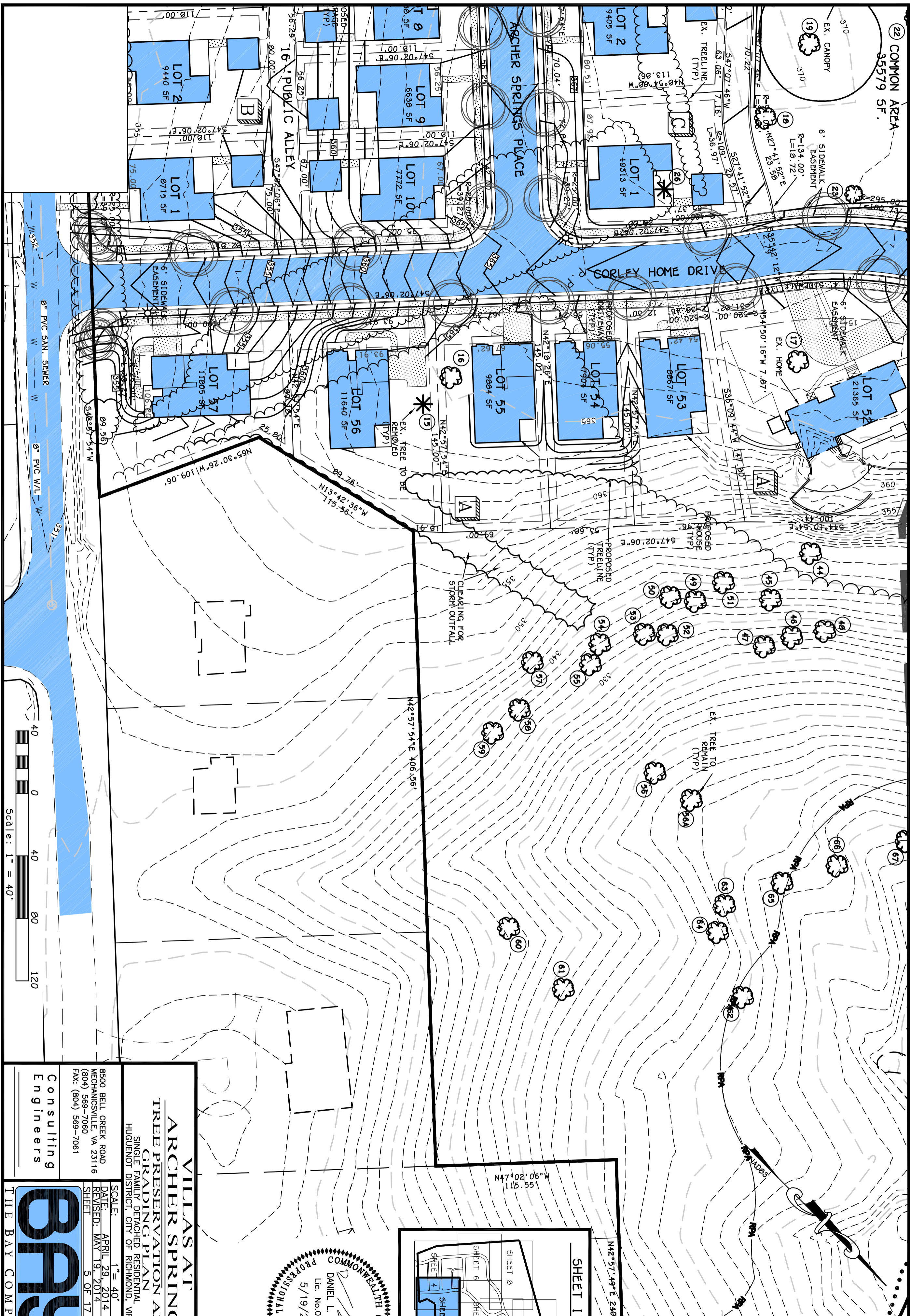
VILLAS AT ARCHER SPRINGS
TREE PRESERVATION AND GRADING PLAN
SINGLE FAMILY DETACHED RESIDENTIAL
HUGUENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

SCALE: N/A
DATE: APRIL 29, 2014
REVISED: MAY 19, 2014
SHEET: 1 OF 17

8500 BELL CREEK ROAD
MECHANICSVILLE, VA 23116
(804) 569-7060
FAX: (804) 569-7061

Consulting Engineers

BRB
THE BAY COMPANIES
RICHMOND



COMMONWEALTH OF VIRGINIA
 PROFESSIONAL ENGINEER
 DANIEL L. CASKIE
 Lic. No. 039829
 5/19/2014

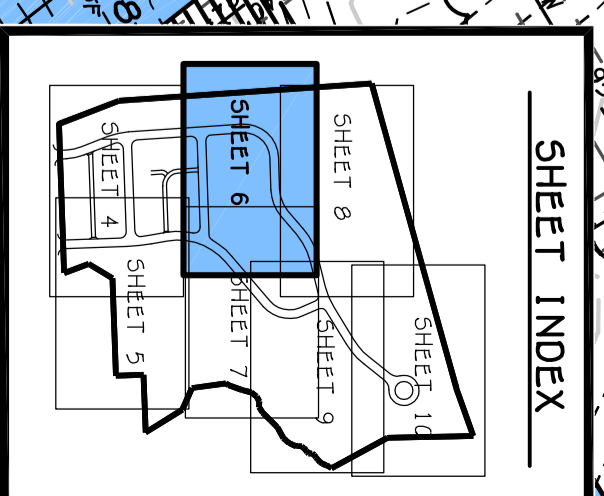
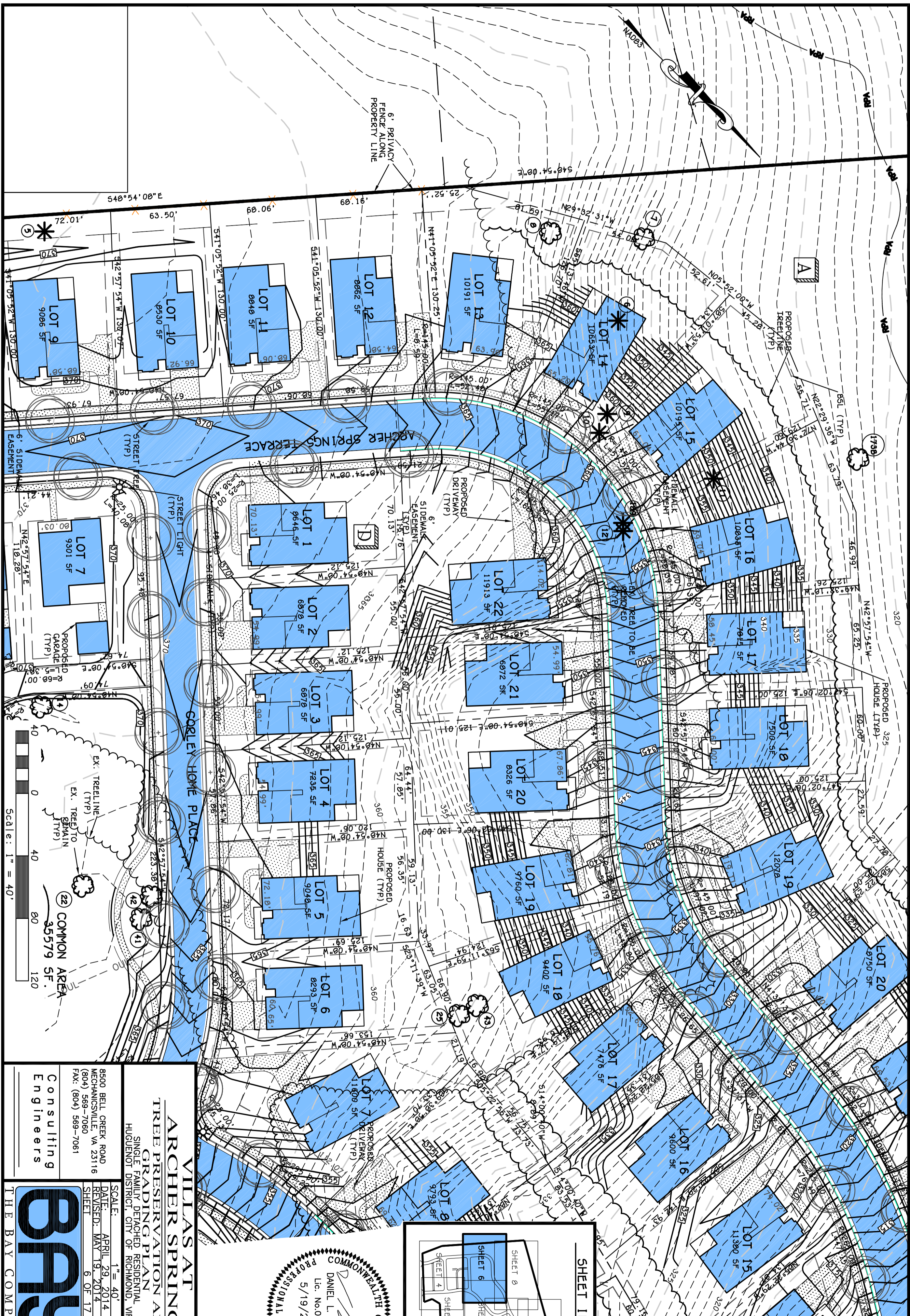
**VILLAS AT
 ARCHER SPRINGS**
 TREE PRESERVATION AND
 GRADING PLAN
 SINGLE FAMILY DETACHED RESIDENTIAL
 HUGENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

SCALE: 1" = 40'
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8500 BELL CREEK ROAD
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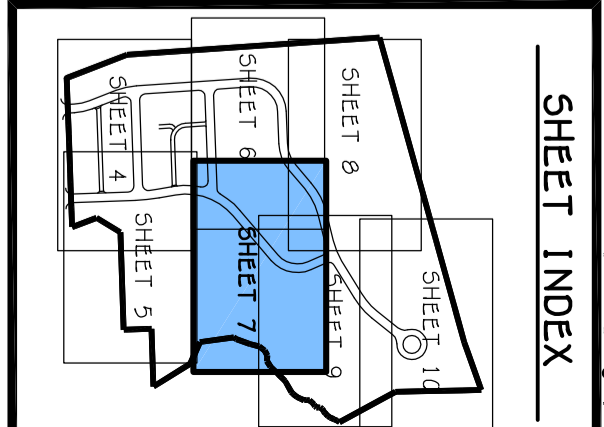
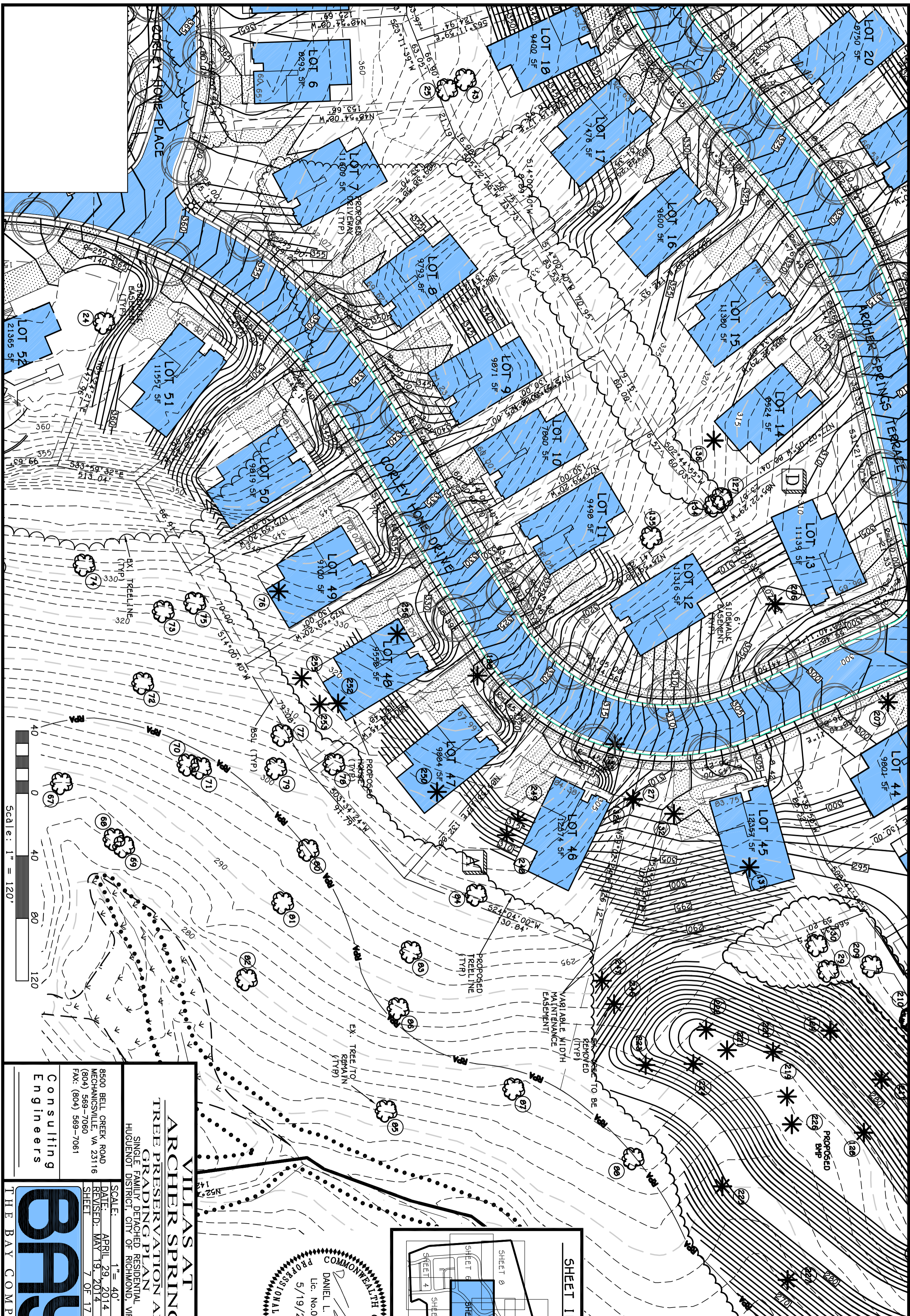
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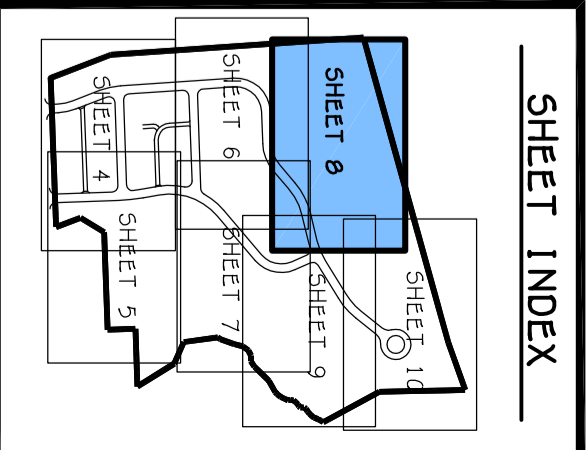
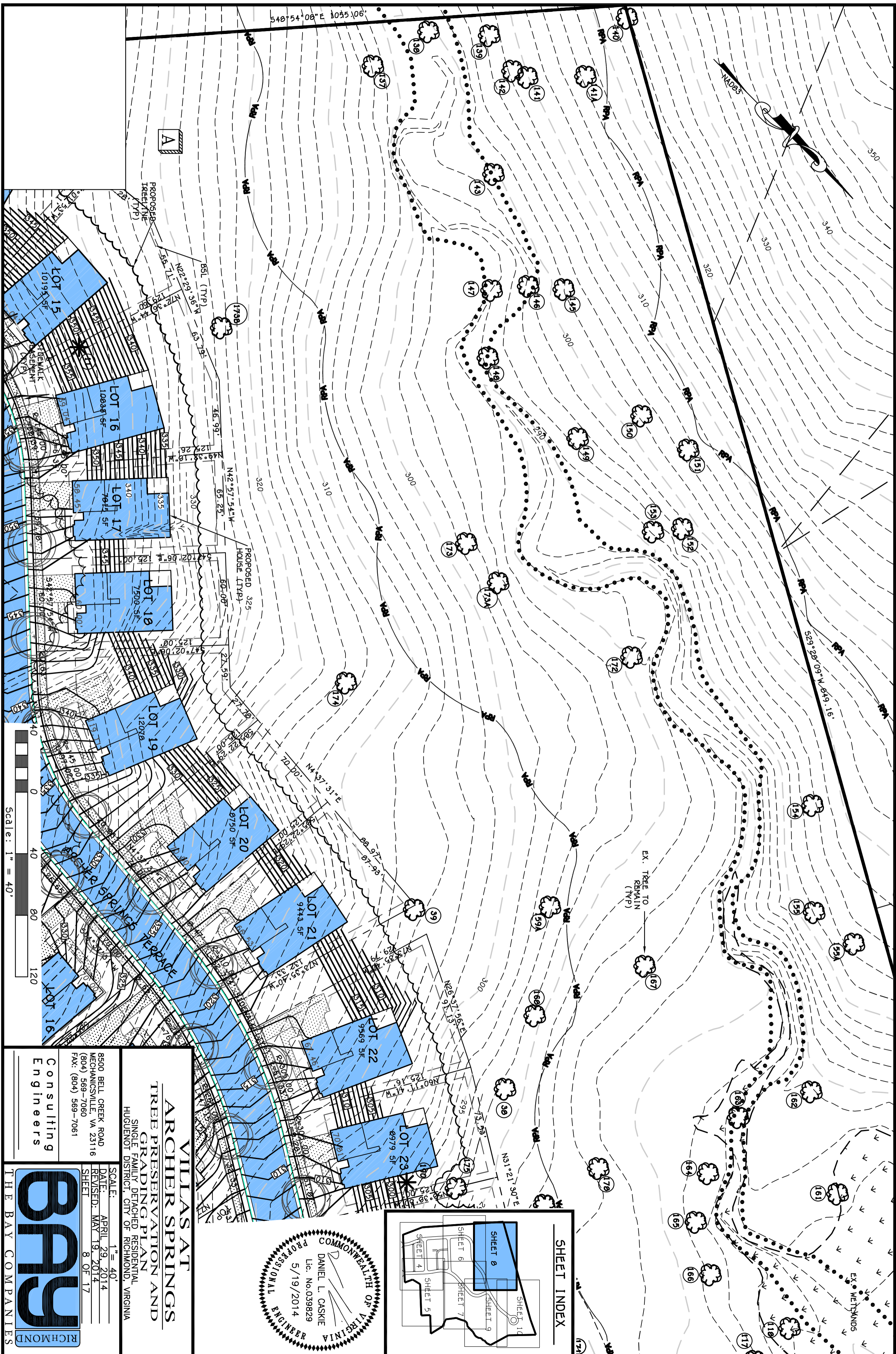
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TREE PRESERVATION AND GRADING PLAN
 SINGLE FAMILY DETACHED RESIDENTIAL
 HUGENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

SCALE: 1" = 40'
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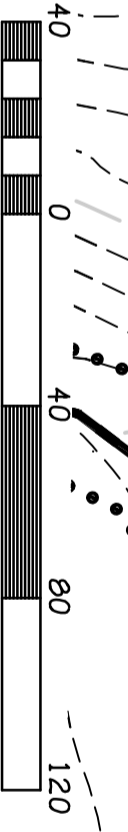
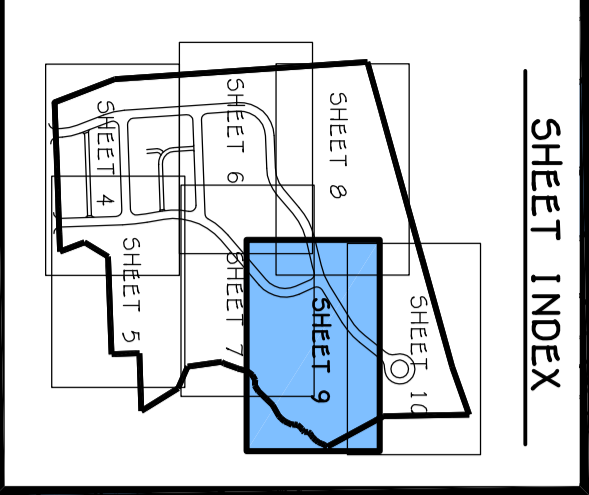
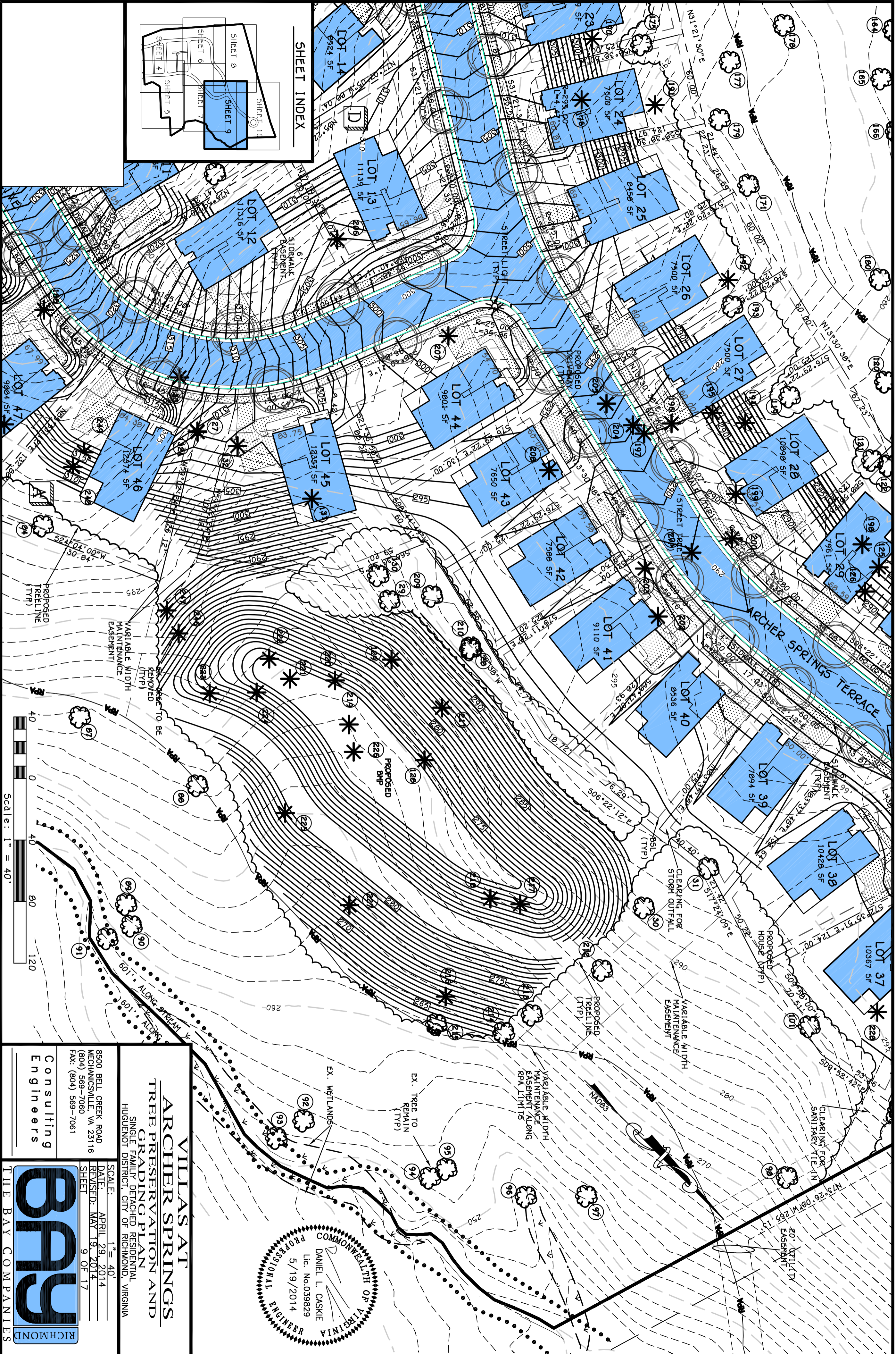
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 THE BAY COMPANIES

SCALE: 1" = 40'
 DATE: APRIL 29, 2014
 REVISED: MAY 19, 2014
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**VILLAS AT
ARCHER SPRINGS**
**TREE PRESERVATION AND
GRADING PLAN**
 SINGLE FAMILY DETACHED RESIDENTIAL
 HUSBERT DISTRICT, CITY OF RICHMOND, VIRGINIA

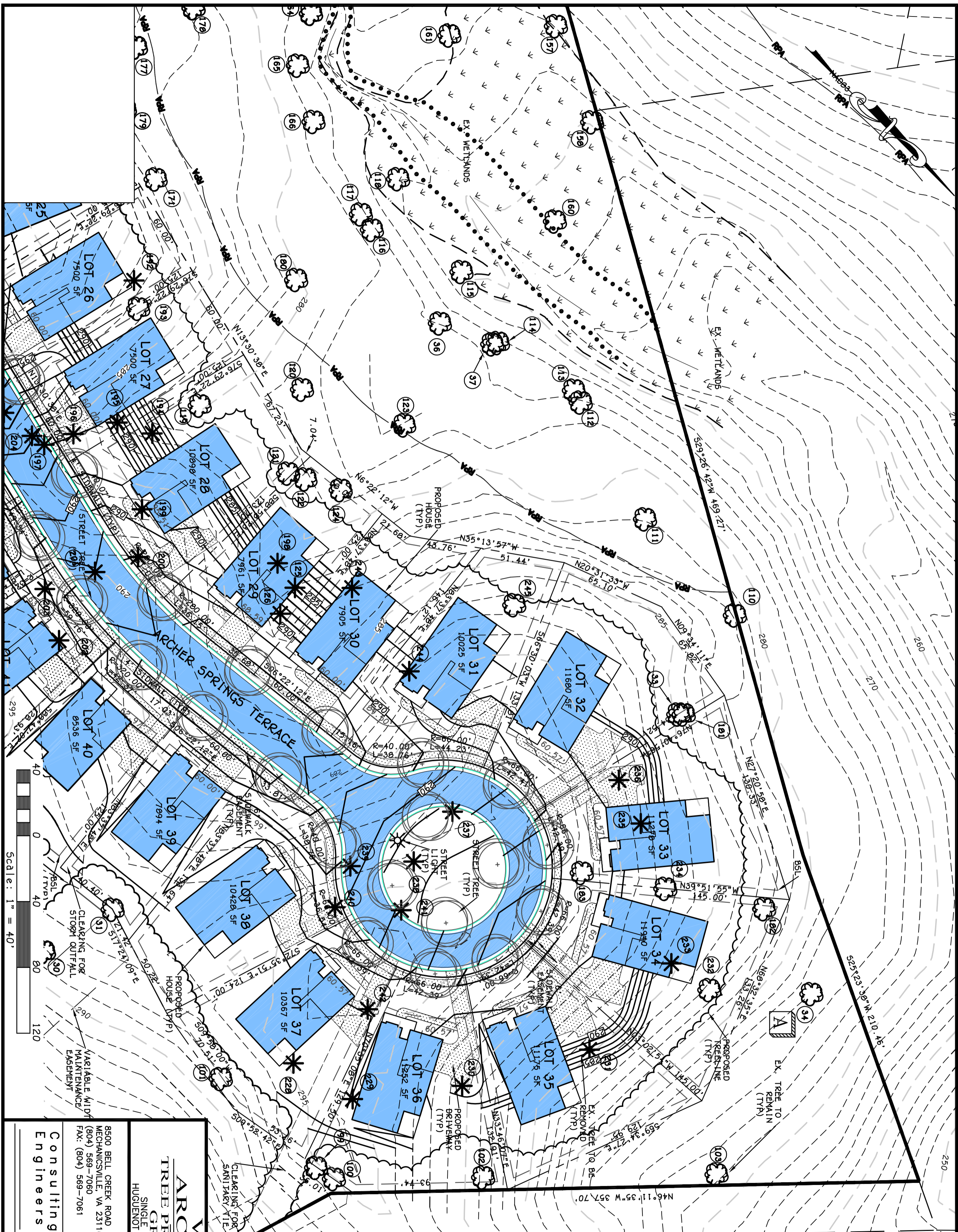
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**Consulting
Engineers**

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 THE BAY COMPANIES

SCALE: 1" = 40'
 DATE: APRIL 29, 2014
 REVISED: MAY 19, 2014
 SHEET: 9 OF 17

COMMONWEALTH OF VIRGINIA
 DANIEL L. CASKIE
 Lic. No. 039829
 5/19/2014
 PROFESSIONAL ENGINEER



VILLAS AT ARCHER SPRINGS
TREE PRESERVATION AND GRADING PLAN
 SINGLE FAMILY DETACHED RESIDENTIAL
 HUGENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

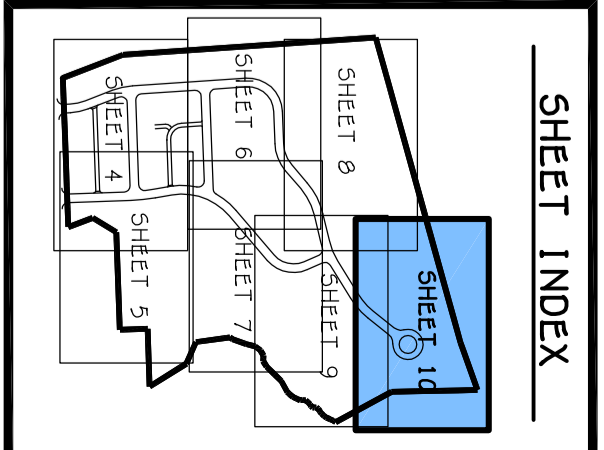
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SCALE: 1" = 40'
 DATE: APRIL 29, 2014
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 SHEET: 10 OF 17

THE BAY COMPANIES

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 PROFESSIONAL ENGINEER



TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
1	36" Maple	Tree to remain. Tree originally to be removed but Lots 3 and 4, Block A adjusted in order to save tree.
2	36" Maple	Tree to remain. Swale behind Lot 2, Block A has been adjusted to tie in before the existing tree.
3	36" Maple	Tree to remain. House and building pad on Lot 3, Block A located in front of tree to allow for tree to be saved.
7	36" Hickory	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home on Lot 14, Block A.
8	36" White Oak	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home on Lot 13, Block A.
13	36" Maple	Tree to remain. Originally planned to be removed, road redesigned to allow for tree to remain. Located on Lot 6, Block C.
14	36" Maple	Tree to remain. Originally planned to be removed, road redesigned to allow for tree to remain. Tree is adjacent to Lots 7, Block C.
16	38" Willow Oak	Tree to remain. Originally planned to be removed, house on Lot 55, Block A adjusted in order to save tree.
17	40" Sycamore	Tree to remain. Located on Lot 52, Block A, where the existing home is to remain.
18	40" Willow Oak	Tree to remain. Originally planned to be removed, road redesigned to allow for tree to remain. Tree is adjacent to Lots 1, Block C.
19	38" Willow Oak	Tree to remain. Minimal grading to be done in Block C common area.
20	36" Maple	Tree to remain. Minimal grading to be done in Block C common area.
21	40" Blue Spruce	Tree to remain. Minimal grading to be done in Block C common area.
22	40" Red Oak	Tree to remain. Minimal grading to be done in Block C common area.
23	40" Elm	Tree to remain. Minimal grading to be done in Block C common area. Road redesigned to tie in before tree.
24	38" Pecan	Tree to remain. Originally planned to be removed but garage adjusted to front-loaded on Lot 51, Block A and grading adjusted in order to save tree.
25	80" Willow Oak	Tree to remain. Minimal grading to be done behind lots 6 and 18, Block D.
28	40" Maple (x3)	Tree to remain. Originally planned to be removed but the basin was relocated so tree could be saved. Adjacent to Lot 42, Block A.
29	38" Oak	Tree to remain. Originally planned to be removed but the basin was relocated so tree could be saved. Adjacent to Lot 45, Block A.
30	38" Oak	Tree to remain. Originally planned to be removed but the basin was relocated so tree could be saved. Adjacent to Lot 39, Block A.

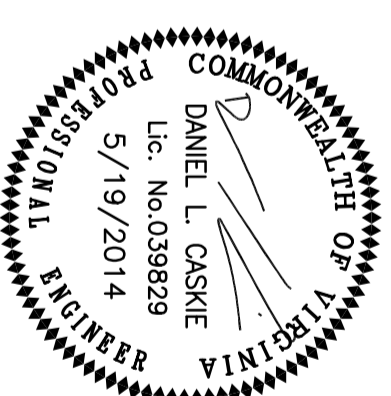
TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
31	40" Oak	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home on Lot 39, Block A.
33	50" Gum	Tree to remain. Originally planned to be removed but the lot grading on Lots 32 and 33, Block A have been adjusted to 3:1 slopes in order to save tree.
34	50" Oak	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home in Lot 34, Block A.
36	40" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
37	36" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
38	42" Beech	Tree to remain. Tree lies within Block A common area, adjacent to Lot 23, Block A.
39	40" Oak	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home on Lot 21, Block A.
41	28" Pine >75'	Tree to remain. Originally planned to be removed but road and sidewalk adjusted in order to save tree. Tree located in the northwest corner of Block C common area.
42	28" Pine >75'	Tree to remain. Originally planned to be removed but road and sidewalk adjusted in order to save tree. Tree located in the northwest corner of Block C common area.
43	30" Kentucky Coffee	Tree to remain. Minimal grading to be done behind lots 6 and 18, Block D.
44	30" Poplar >75'	Tree to remain. Tree lies within Block A common area, adjacent to Lot 52, Block A.
45	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
46	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
47	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
48	30" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
49	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
50	28" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
51	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
52	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
53	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
54	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
55	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
56	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
56A	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.

TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
57	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
58	28" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
59	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
60	36" Oak	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
61	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
62	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
63	27" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
64	27" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
65	38" Oak	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
66	32" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
67	40" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
68	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
69	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
70	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
71	28" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
72	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
73	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
74	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
75	35" Poplar	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 49, Block A.
77	28" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 48, Block A.

NOTE:
DISCREPANCY BETWEEN TREE NUMBERING (256) AND TOTAL TREE COUNT (242) DUE TO NUMBERS 32, 35, 40, 104-109, 144, 156, 159, 169, 170, 184, 185, 186, 187, 251 AND 254 (20 TOTAL TREES) BEING SKIPPED WHEN NUMBERING TREES. THERE ARE 7 ADDITIONAL TREES NUMBERED 56A, 132A, 141A, 155A, 159A, 173A, AND 173B.



**VILLAS AT
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TREE PRESERVATION AND
GRADING PLAN
SINGLE FAMILY DETACHED RESIDENTIAL
HUGENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

8500 BELL CREEK ROAD
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FAX: (804) 569-7061

SCALE: N/A
DATE: APRIL 29, 2014
REVISED: MAY 19, 2014
SHEET 11 OF 17

**Consulting
Engineers**

BRB
RICHMOND
THE BAY COMPANIES

TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
78	36" Oak	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 47, Block A.
79	32" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 48, Block A.
80	30" Oak >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 47, Block A.
81	36" Poplar	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
82	34" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
83	34" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 46, Block A.
84	30" Oak >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 46, Block A.
85	26" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
86	28" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area and no disturbance is proposed in this area.
87	30" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
88	30" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
89	34" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
90	30" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
91	28" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
92	30" Oak >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
93	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
94	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
95	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
96	32" Poplar >75'	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.

NOTE:

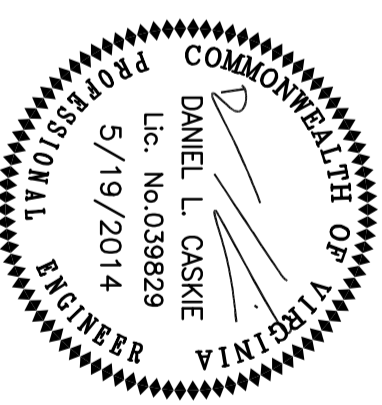
DISCREPANCY BETWEEN TREE NUMBERING (256) AND TOTAL TREE COUNT (242) DUE TO NUMBERS 32, 35, 40, 104-109, 144, 156, 159, 169, 170, 184, 185, 186, 187, 251 AND 254 (20 TOTAL TREES) BEING SKIPPED WHEN NUMBERING TREES. THERE ARE 7 ADDITIONAL TREES NUMBERED 56A, 132A, 141A, 155A, 159A, 173A, AND 173B.

TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
97	36" Oak	Tree to remain. Tree lies within the eastern corner of the Block A common area in the RPA and no disturbance is proposed in this area.
98	34" Oak >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 37, Block A.
99	26" Oak >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 36, Block A.
100	26" Oak >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 36, Block A.
101	34" Poplar >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 37, Block A.
102	34" Poplar >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 36, Block A.
103	34" Oak >75'	Tree to remain. Site designed in order to save tree's in various common area. This tree lies within tree save area behind Lot 35, Block A.
110	34" Oak >75'	Tree to remain. Tree lies within proposed treeline, which has been placed at 20' behind the proposed home on Lot 32, Block A.
111	34" Oak >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 49, Block A.
112	36" Oak	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
113	36" Oak	Tree to remain. Tree lies within the southwestern corner of the Block A common area and no disturbance is proposed in this area.
114	34" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
115	32" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
116	30" Beech >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
117	30" Beech >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
118	38" Oak	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
119	30" Poplar >75'	Tree to remain. Tree originally to be removed but Lots 27 and 28, Block A adjusted in order to save tree.
120	30" Oak >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 28, Block A.
121	32" Oak >75'	Tree to remain. Originally planned to be removed but the lot grading on Lots 28 and 29, Block A has been adjusted to 3:1 slopes in order to save tree
122	30" Poplar >75'	Tree to remain. Originally planned to be removed but the lot grading on Lots 28 and 29, Block A has been adjusted to 3:1 slopes in order to save tree
123	30" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
124	28" Poplar >75'	Tree to remain. Site designed in order to save tree's in various common area. This tree lies within tree save area behind Lot 29, Block A.
127	45" Oak	Tree to remain. Site designed in order to save tree's in various common area. This tree lies within tree save area behind Lot 11, Block D.

TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
130	34" Poplar >75'	Tree to remain. Originally planned to be removed but the basin was relocated so tree could be saved. Adjacent to Lot 45, Block A.
134	40" Oak	Tree to remain. Site designed in order to save tree's in various common area. This tree lies within tree save area behind Lot 11, Block D.
135	32" Maple >75'	Tree to remain. Lot 11, Block D changed from front load to side load garage in order to save tree. Lot 10, Block D changed from side load to front load garage in order to meet driveway specifications
137	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
138	32" Gum	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
139	28" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
140	32" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
141	34" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
141A	38" Oak	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
142	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
143	34" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
145	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
146	32" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
147	28" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
148	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
149	28" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.



VILLAS AT ARCHER SPRINGS
TREE PRESERVATION AND GRADING PLAN
 SINGLE FAMILY DETACHED RESIDENTIAL
 HUGENOT DISTRICT, CITY OF RICHMOND, VIRGINIA

Consulting Engineers

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 FAX: (804) 569-7061

SCALE: N/A
 DATE: APRIL 29, 2014
 REVISED: MAY 19, 2014
 SHEET: 12 OF 17

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TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
150	32" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
151	32" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
152	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
153	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
154	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
155	28" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
155A	36" Oak	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
157	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
158	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
159A	40" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
160	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
161	32" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
162	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
163	28" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
164	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
165	32" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
166	38" Poplar	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
167	38" Beech	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.

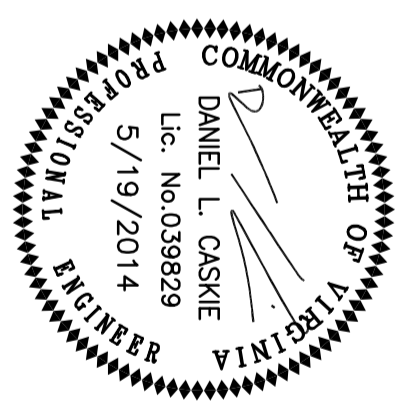
TREE SAVE SUMMARY

Tree Number	Description	Tree Save Measures
168	28" Poplar >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
171	30" Maple	Tree to remain. Tree lies within the western Block A common area behind Lots 25 and 26, Block A. No disturbance is proposed in this area.
172	38" Poplar	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
173	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
173A	30" Oak >75'	Tree to remain. Tree lies within the southwestern corner of the Block A common area and RPA and no disturbance is proposed in this area.
173B	32" Oak (X3) >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 28, Block A.
174	32" Oak >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 20, Block A.
175	34" Poplar >75'	Tree to remain. Tree originally to be removed but Lots 23 and 24, Block A adjusted in order to save tree.
177	32" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 24, Block A.
178	30" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 24, Block A.
179	26" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 25, Block A.
180	26" Poplar >75'	Tree to remain. Tree lies within the Block A common area. Adjacent to Lot 27, Block A.
181	44" Oak	Tree to remain. Originally planned to be removed but the lot grading on Lots 32 and 33, Block A has been adjusted to 3:1 slopes in order to save tree.
182	32" Poplar >75'	Tree to remain. Tree lies within proposed tree line, which has been placed at 20' behind the proposed home in Lot 34, Block A.
183	36" Oak	To remain. Tree is located on a section of Lot 33, Block A where no grading is proposed in order to save tree.
193	18" Pine = 70'	Tree to remain. Tree is located behind grading proposed on Lots 26 and 27, Block A.
209	30" Poplar = 70'	Tree to remain. Tree lies within proposed tree line which is place 20' behind proposed home on Lot 45, Block A.
210	52" White Oak	Tree to remain. Tree lie in eastern Block A common area. Adjacent to Lot 42, Block A.
212	36" White Oak	To remain. Tree lies within proposed tree line north of the proposed BMP.
213	24" Red Oak >75'	To remain. Tree lies within proposed tree line north of the proposed BMP.
214	28" Oak >75'	To remain. Tree lies in the eastern Block A common area. No disturbance proposed in this area.
215	36" Poplar >75'	To remain. Tree lies in the eastern Block A common area. No disturbance proposed in this area.
232	26" oak = 72'	Tree to remain. Tree located behind Lot 34, Block A. Minimally grading proposed in area.
234	28" Oak = 77'	Tree to remain. Tree located between Lots 33 and 34, Block A. Minimally grading proposed in area.
245	18" Poplar = 81'	Tree to remain. Tree located behind proposed house on Lot 31, Block A. No grading proposed in area.
247	28" Oak = 73'	Tree to remain. Tree lies in eastern Block A common area within proposed tree line behind Lot 45, Block A.

TREE REMOVAL SUMMARY

Tree Number	Description	Tree Removal Explanation
4	48" Elm (Dead)	Dead tree to be removed. Located on Lot 6, Block A.
5	36" Hawthorne (Dead)	Dead tree to be removed. Located on Lot 9, Block A.
6	36" Hickory	To be removed. Unavoidable due to house location on Lot 14, Block A. House is located as close to building setback line.
9	38" Hickory	To be removed. Unavoidable due to house and driveway location on Lot 5, Block A. Due to lot size, shape, and location not feasible to relocate driveway for tree. Lot is also in area of 8' of fill.
10	36" Hickory	To be removed. Unavoidable due to house and driveway location on Lot 5, Block A. Due to lot size, shape, and location not feasible to relocate driveway for tree. Lot is also in area of 8' of fill.
11	36" Hickory	To be removed. Lot 16, Block A is in area of fill so tree will be removed with grading of the lot. Not feasible to adjust grading to save tree.
12	52" Red Oak	To be removed. Tree located in path of proposed roadway. Unavoidable due to proffered layout. Tree is adjacent to Lots 15 and 16, Block A.
15	38" Gum (Dead)	Dead tree to be removed. Located on Lot 56, Block A.
26	36" Maple	To be removed. Tree located in building foot print of house on Lot 2, Block C. Unable to move house in a manner to save tree.
27	40" Gum	To be removed. Tree is in unavoidable area of grading on Lot 46, Block A.
76	38" Oak	To be removed. Unavoidable due to house location on Lot 49, Block A and proffered layout. House moved as close to setback line as possible to try to save tree.
125	30" Poplar >75'	To be removed. Unavoidable due to house location on Lot 29, Block A and is in area of 6-7' of fill.
126	28" Poplar >75'	To be removed. Unavoidable due to house location on Lot 29, Block A and is in area of 6-7' of fill.
128	34" Oak >75'	To be removed. Tree lies within proposed BMP.
129	36" Poplar	To be removed. Tree lies within proposed BMP.
131	34" Poplar >75'	To be removed. Unavoidable due to house location on Lot 45, Block A and proffered layout. House moved as close to setback line as possible to try to save tree.
132	32" Oak >75'	To be removed. Tree lies in area of 7' of fill on Lot 45, Block A therefore cannot be saved.
132A	32" Poplar >75'	To be removed. Tree is in unavoidable area of grading on Lot 46, Block A.
133	32" Oak >75'	To be removed. Unavoidable due to proposed roadway location and proffered layout adjacent to Lot 46, Block A.

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Consulting Engineers

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SCALE: N/A
DATE: APRIL 29, 2014
REVISED: MAY 19, 2014
SHEET 13 OF 17

TREE REMOVAL SUMMARY

Tree Number	Description	Tree Removal Explanation
136	28" Pine >75'	To be removed. Unavoidable due to house location on Lot 14, Block D and proffered layout. House moved as close to setback line as possible to try to save tree.
176	44" Poplar	To be removed. Unavoidable due to house location on Lot 24, Block A and proffered layout
188	30" Oak >75'	To be removed. Unavoidable due to house location on Lot 47, Block A and proffered layout
189	40" Oak	To be removed. Tree located in path of proposed roadway. Unavoidable due to proffered layout. Tree is adjacent to Lots 15 and 16, Block A
190	24" Poplar >75'	To be removed. Tree lies within area of fill between Lots 23 and 24. Not feasible to adjust grading in order to save tree.
191	18" Poplar = 70'	To be removed. Unavoidable due to house location on Lot 47, Block A and proffered layout
192	16" Poplar = 73'	To be removed. Unavoidable due to house location on Lot 27, Block A and proffered layout.
194	18" Poplar = 70'	To be removed. Tree located in area of fill between Lots 27 and 28. Block A. Tree will be removed with grading. Not feasible to adjust grading to save tree.
195	24" Poplar >75'	To be removed. Tree located in area of fill between Lots 27 and 28. Block A. Tree will be removed with grading. Not feasible to adjust grading to save tree.
196	24" Poplar >75'	To be removed. Tree located in area of fill in front of Lot 27, Block A. Tree will be removed with grading. Not feasible to adjust grading to save tree.
197	14" Poplar = 70'	To be removed. Tree located in proposed roadway in front of Lot 27, Block A. Unavoidable due to proffered layout.
198	14" Poplar >75'	To be removed. Unavoidable due to house location on Lot 29, Block A and area is a 6-7' fill.
199	18" Pine > 75'	To be removed. Unavoidable due to house location on Lot 28, Block A.
200	18" Pine > 75'	To be removed. Tree located in proposed sidewalk in front of Lot 28, Block A. This is also an area of fill.
201	18" Poplar >75'	To be removed. Tree located in proposed roadway in front of Lot 41, Block A. Unavoidable due to proffered layout.
202	16" Poplar = 72'	To be removed. Tree is located in area of fill in front of Lot 41, Block A. Will be removed with grading. Not feasible to adjust grading in order to save tree.
203	18" Poplar = 70'	To be removed. Tree located in area of fill in front of Lot 41, Block A. Will be removed with grading. Not feasible to adjust grading in order to save tree.
204	14" Poplar = 70'	To be removed. Tree located in proposed roadway in front of Lot 27, Block A. Unavoidable due to proffered layout.
205	14" Pine = 73'	To be removed. Tree located in proposed roadway in front of Lot 27, Block A. Unavoidable due to proffered layout.
206	18" Gum = 75'	To be removed. Tree is located in an area of fill between Lots 12, 13, Block D. No feasible to adjust grading in order to save tree.

TREE REMOVAL SUMMARY

Tree Number	Description	Tree Removal Explanation
207	20" Gum = 73'	To be removed. Tree is located in area of fill within Lot 44, Block A. Will be removed with grading. Not feasible to adjust grading in order to save tree.
208	28" Poplar >75'	To be removed. Unavoidable due to house location of Lot 43, Block A. Also, tree located within an area of fill.
211	26" Oak >75'	To be removed. Tree lies within proposed BMP.
216	20" Oak > 75'	To be removed. Tree lies within proposed BMP.
217	28" Poplar >75'	To be removed. Tree lies within proposed BMP.
218	40" Oak	To be removed. Tree lies within proposed BMP.
219	48" Oak	To be removed. Tree lies within proposed BMP.
220	24" Oak >75'	To be removed. Tree lies within proposed BMP.
221	24" Poplar >75'	To be removed. Tree lies within proposed BMP.
222	26" Poplar >75'	To be removed. Tree lies within proposed BMP.
223	28" Oak >75'	To be removed. Tree lies within proposed BMP.
224	24" Poplar = 78'	To be removed. Tree lies within proposed BMP.
225	30" Poplar = 90'	To be removed. Tree lies within proposed BMP.
226	24" Poplar = 77'	To be removed. Tree lies within proposed BMP.
227	36" Oak = 88'	To be removed. Tree lies within proposed BMP.
228	16" Oak = 81'	To be removed. Unavoidable due to house location on Lot 37, Block A. House location unable to be adjusted in a manner which would save tree.
229	24" Poplar = 78'	To be removed. Tree lies within an area of fill between Lots 36 and 37, Block A. Not feasible to adjust grading in order to save tree.
230	20" Oak = 76'	To be removed. Tree lies within an area of fill between Lots 35 and 36, Block A. Not feasible to adjust grading in order to save tree.
231	20" Oak = 72'	To be removed. Tree lies within an area of fill between on Lot 35, Block A. Not feasible to adjust grading in order to save tree.
233	30" Oak = 72'	To be removed. Unavoidable due to proposed house location on Lot 34, Block A. House location unable to be adjusted in a manner which would save tree.
235	24" Oak = 75'	To be removed. Unavoidable due to proposed house location on Lot 33, Block A. House location unable to be adjusted in a manner which would save tree.
236	26" Oak = 83'	To be removed. Unavoidable due to proposed house location on Lot 32, Block A. House location unable to be adjusted in a manner which would save tree.
237	26" Poplar = 75'	To be removed. Tree lies in area of fill in the middle of the cul-de-sac. Tree will be removed with grading.
238	24" Oak = 73'	To be removed. Tree lies in area of fill in the middle of the cul-de-sac. Tree will be removed with grading.
239	42" Oak old #40	To be removed. Tree located in path of proposed roadway. Unavoidable due to proffered layout. Adjacent to Lot 38, Block A.
240	30" Oak = 83'	To be removed. Tree lies within and area of fill on Lot 38, Block A. Not feasible to adjust grading in order to save tree.
241	42" Oak = 80'	To be removed. Tree lies in area of fill in the middle of the cul-de-sac. Tree will be removed with grading.

TREE REMOVAL SUMMARY

Tree Number	Description	Tree Removal Explanation
242	30" Oak = 78'	To be removed. Tree lies within and area of fill on Lot 37, Block A. Not feasible to adjust grading in order to save tree.
243	18" Poplar = 70'	To be removed. Unavoidable due to proposed house location on Lot 30, Block A. House location unable to be adjusted in a manner which would save tree.
244	18" Pine = 70'	To be removed. Tree lies within and area of fill on Lot 31, Block A. Not feasible to adjust grading in order to save tree.
246	32" Oak = 80'	To be removed. Tree lies within proposed BMP.
248	30" Oak = 87'	To be removed. Tree lies within and area of fill on Lot 46, Block A. Not feasible to adjust grading in order to save tree.
249	28" Oak = 87'	To be removed. Tree lies within and area of fill on Lot 46, Block A. Not feasible to adjust grading in order to save tree.
250	36" Oak = 85'	To be removed. Unavoidable due to house location on Lot 47, Block A. If house location is adjusted tree would still lie with area of fill.
252	24" Poplar = 75'	To be removed. Unavoidable due to proposed house location on Lot 48, Block A. House location unable to be adjusted in a manner which would save tree.
253	16" Poplar = 75'	To be removed. Unavoidable due to proposed house location on Lot 48, Block A. House location unable to be adjusted in a manner which would save tree.
255	24" Poplar = 80'	To be removed. Unavoidable due to proposed house location on Lot 48, Block A. House location unable to be adjusted in a manner which would save tree.
256	24" Poplar = 72'	To be removed. Unavoidable due to proposed house location on Lot 48, Block A. House location unable to be adjusted in a manner which would save tree.

TREE SAVE OVERVIEW

TOTAL TREES GREATER THAN 36" DIAMETER OR 75' IN HEIGHT 243

TREE SAVE AREA: 18.94 AC (43.4% OF SITE)
 TREES NEEDING TO BE REMOVED 1 (00.7%)
 TREES REMAINING 151 (99.3%)

NOTE: TREE 5 IS DEAD AND THEREFORE BEING REMOVED FROM TREE SAVE AREA

DEVELOPED AREA: 24.75 AC (56.6% OF SITE)
 TREES NEEDING TO BE REMOVED 77 (85.6%)
 TREES REMAINING 13 (14.4%)

NOTE:
 SEE SHEET 3 FOR
 TREE SAVE AREA
 DELINEATION

**VILLAS AT
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**TREE PRESERVATION AND
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SCALE: N/A
 DATE: APRIL 29, 2014
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 SHEET 14 OF 17

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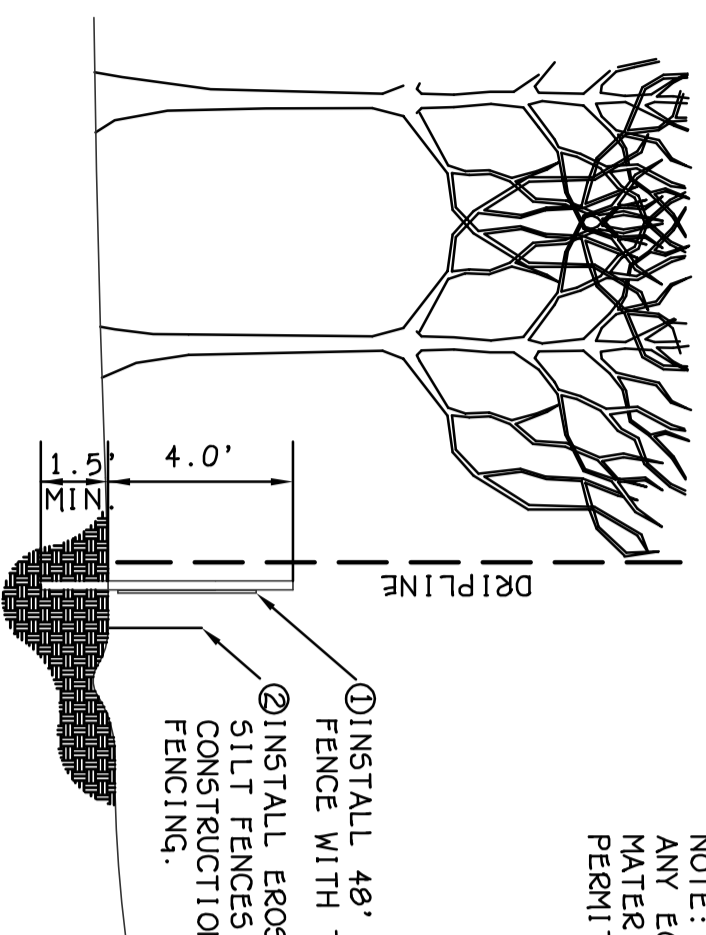
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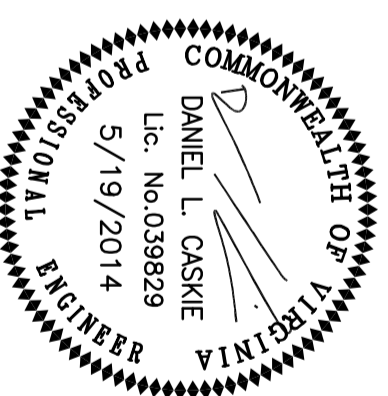
DRIPLINE EXHIBIT

- NOT TO SCALE -

NOTE:
ANY EQUIPMENT, VEHICULAR TRAFFIC, OR MATERIAL STOCKPILING SHALL NOT BE PERMITTED WITHIN DRIPLINE



- ① INSTALL 48" HIGH ORANGE CONSTRUCTION FENCE WITH TREE PROTECTION SIGNS
- ② INSTALL EROSION CONTROL DEVICES SUCH AS SILT FENCES AT REQUIRED LOCATIONS ON THE CONSTRUCTION SIDE OF THE TREE PROTECTION FENCING.



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SHEET 15 OF 17

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TOTAL SITE AREA = 43.69 AC

PERFORMANCE-BASED WATER QUALITY CALCULATIONS APPENDIX 5D

Worksheet 1
Page 1 of 3

STEP 1 Determine the applicable area (A) and the post-developed impervious cover (I_{post}).

Applicable area (A)* = **43.69** acres
 Post-development impervious cover:
 structures = **6.553** acres
 parking lot = **4.111** acres
 roadway = _____ acres
 other = _____ acres
 Total = **10.664** acres

I_{post} = (total post-development impervious cover ÷ A) × 100 = **25** %

* The area subject to the criteria may vary from locality to locality. Therefore, consult the locality for proper determination of this value.

STEP 2 Determine the average land cover condition (I_{existing}) or the existing impervious cover (I_{existing}).

Assign land cover condition (I_{existing})
 If the locality has determined land cover conditions for individual watersheds within its jurisdiction, use the watershed specific value determined by the locality as I_{existing}.
 I_{existing} = **16** %
 Otherwise, use the Chesapeake Bay default value:
 I_{existing} = 16%

PERFORMANCE-BASED WATER QUALITY CALCULATIONS APPENDIX 5D

Worksheet 1
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Existing impervious cover (I_{existing})

Determine the existing impervious cover of the development site if present.
 Existing impervious cover:
 structures = **0.5** acres
 parking lot = **0** acres
 roadway = **0.2** acres
 other = _____ acres
 Total = **0.7** acres

I_{existing} = (total existing impervious cover ÷ A*) × 100 = **2** %

* The area should be the same as used in STEP 1.

STEP 3 Determine the appropriate development situation.

The site information determined in STEP 1 and STEP 2 provide enough information to determine the appropriate development situation under which the performance criteria will apply. Check (✓) the appropriate development situation as follows:
 Situation 1: This consists of land development where the existing percent impervious cover (I_{existing}) is less than or equal to the average land cover condition (I_{average}) and the proposed impervious cover (I_{post}) is less than or equal to the average land cover condition (I_{average}).
 I_{existing} = 2 % ≤ I_{average} = 16 %
 I_{post} = 25 % ≤ I_{average} = 16 %

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X Situation 2: This consists of land development where the existing percent impervious cover (I_{existing}) is less than or equal to the average land cover condition (I_{average}) and the proposed impervious cover (I_{post}) is greater than the average land cover condition (I_{average}).

I_{existing} = **2** % ≤ I_{average} = **16** % and
 I_{post} = **25** % > I_{average} = **16** %

Situation 3: This consists of land development where the existing percent impervious cover (I_{existing}) is greater than the average land cover condition (I_{average}).

Situation 4: This consists of land development where the existing percent impervious cover (I_{existing}) is greater than the average land cover condition (I_{average}) and the proposed impervious cover (I_{post}) is less than or equal to the average land cover condition (I_{average}).

If the proposed development meets the criteria for development Situation 1, then the development is considered to be the BMP and no pollutant removal is required. The calculation procedure for Situation 1 stops here. If the proposed development meets the criteria for development Situations 2, 3, or 4, then proceed to STEP 4 on the appropriate worksheet.

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Summary of Situation 2 criteria: from calculation procedure STEP 1 thru STEP 3, Worksheet 1:

Applicable area (A)* = **43.69** acres
 I_{post} = (total post-development impervious cover ÷ A) × 100 = **25** %
 I_{existing} = **16** % or I_{existing} = 16%
 I_{average} = (total existing impervious cover ÷ A*) × 100 = **0** %
 I_{existing} = **0** % ≤ I_{average} = **16** %; and
 I_{post} = **25** % > I_{average} = **16** %

STEP 4 Determine the relative pre-development pollutant load (I_{pre}).

I_{predevelopment} = [0.05 + (0.009 × I_{existing})] × A × 2.28 (Equation 5-16)
 where: I_{predevelopment} = relative pre-development total phosphorous load (pounds per year)
 I_{existing} = average land cover condition for specific watershed or locality or the Chesapeake Bay default value of 16% (percent expressed in whole numbers)
 A = applicable area (acres)
 I_{predevelopment} = [0.05 + (0.009 × **16**)] × **43.69** × 2.28
 = **19.33** pounds per year

LOTS: 96
 AMOUNT OF IMPERVIOUS AREA IN LOTS:
 HOUSE AVERAGE: 2300 SF
 DRIVEWAY AND SIDEWALKS ON LOTS: 610 SF
 TOTAL AVERAGE IMPERVIOUS ON LOTS: 2910 SF
 2910 SF IMP. PER LOT: 279,360 SF (6.413 AC)
 ROAD AND SIDEWALKS OUT OF LOTS: 179,067 (4.111 AC)
 IMP. AREA IN COMMON AREA: 6100 SF (0.14 AC)
 TOTAL IMPERVIOUS: 10,664 AC

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STEP 5 Determine the relative post-development pollutant load (I_{post}).

I_{post} = [0.05 + (0.009 × I_{post})] × A × 2.28 (Equation 5-21)

where: I_{post} = relative post-development total phosphorous load (pounds per year)

I_{post} = post-development percent impervious cover (percent expressed in whole numbers)

A = applicable area (acres)

I_{post} = [0.05 + (0.009 × **25**)] × **43.69** × 2.28
 = **27.39** pounds per year

STEP 6 Determine the relative pollutant removal requirement (RR).

RR = (I_{post} - I_{predevelopment}) / I_{predevelopment}

RR = (27.39 - 19.33) / 19.33

= **0.06** pounds per year

STEP 7 Identify best management practice (BMP) for the site.

1. Determine the required pollutant removal efficiency for the site:

EFF = (RR + I_{post}) × 100 (Equation 5-22)

where: EFF = required pollutant removal efficiency (percent expressed in whole numbers)

RR = pollutant removal requirement (pounds per year)

I_{post} = relative post-development total phosphorous load (pounds per year)

EFF = (**0.06** + **27.39**) × 100
 = **29** %

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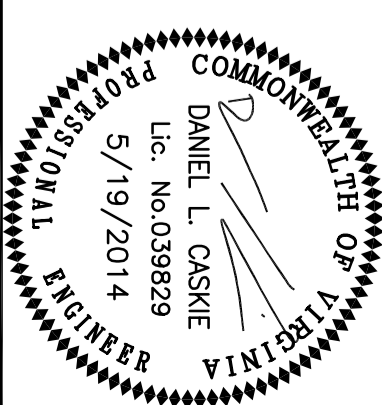
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VILLAS AT
 ARCHER SPRINGS
 TREE PRESERVATION AND
 GRADING PLAN
 SINGLE FAMILY DETACHED RESIDENTIAL
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SCALE: N/A
 DATE: APRIL 29, 2014
 REVISED: MAY 19, 2014
 SHEET: 16 OF 17

