CALLAWAY

CONCEPTUAL/FINAL DEVELOPMENT PLAN

RZ-2011-MA-029

MASON DISTRICT

FAIRFAX COUNTY, VIRGINIA

JULY, 2011

REVISED AUGUST 5, 2011	REVISED FEBRUARY 17, 2012
REVISED NOVEMBER 9, 2011	REVISED MARCH 28, 2012
REVISED DECEMBER 7, 2011	REVISED APRIL 11, 2012
REVISED JANUARY 6, 2012	REVISED APRIL 30, 2012
REVISED JANUARY 30, 2012	REVISED MAY 16, 2012

VICINITY MAP
SCALE: 1" = 2,000'

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 1 of 22

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Department of Planning & Zoning
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Zoning Evaluation Division

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COMMONWEALTH OF VIRGINIA
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05-16-12
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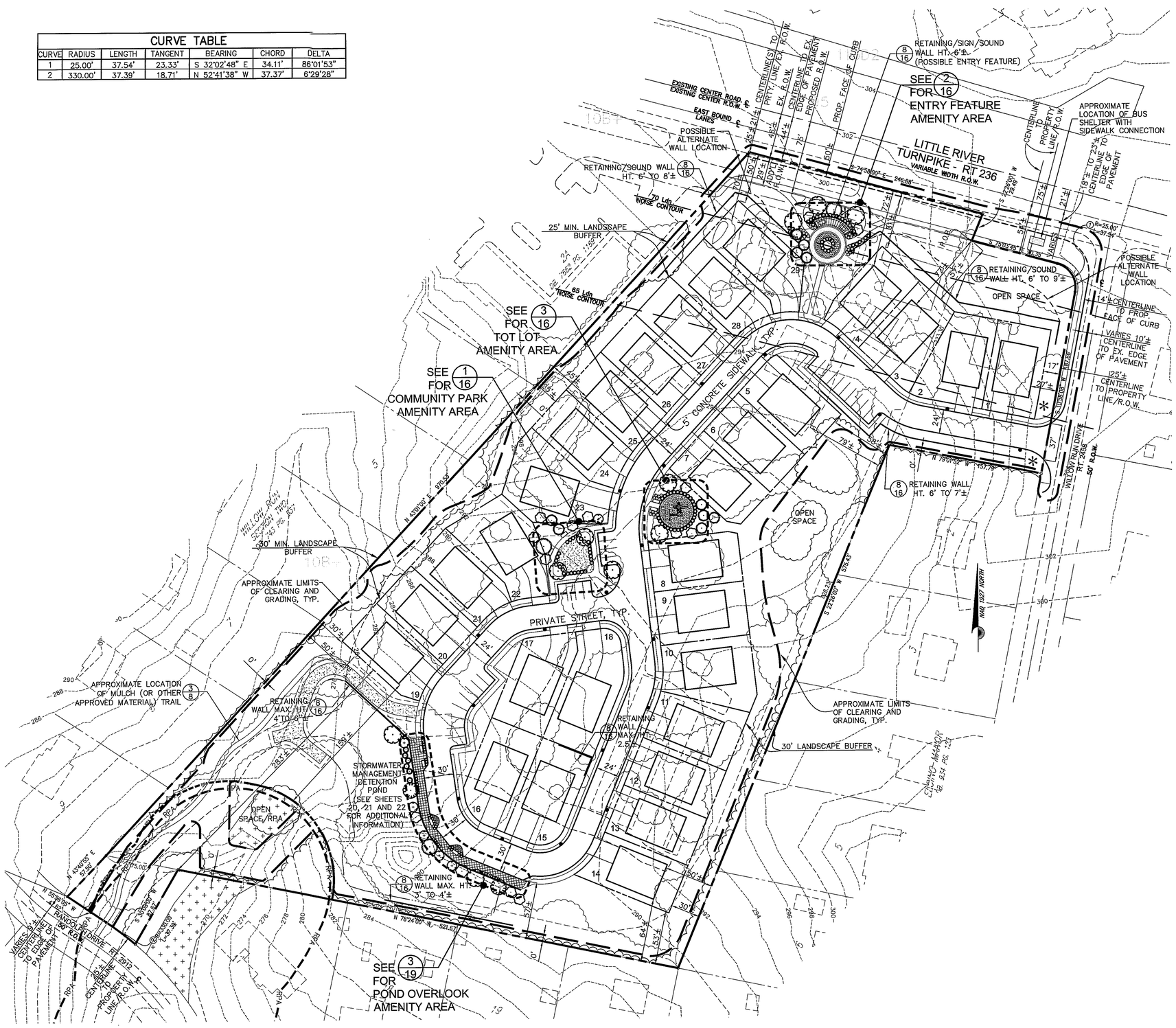
SHEET 1 OF 22
PROJECT # 11524 - 08

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA
1	25.00'	37.54'	23.33'	S 32°02'48" E	34.11'	86°01'53"
2	330.00'	37.39'	18.71'	N 52°41'38" W	37.37'	6°29'28"



LEGEND:

- EXISTING TREELINE
- PROPOSED TREELINE
- FIELD-VERIFIED AND APPROVED RESOURCE PROTECTION AREA (25234-RPA-01-1)
- APPROXIMATE LIMITS OF CLEARING AND GRADING
- APPROXIMATE LOCATION OF (9/16) POSSIBLE ENTRY FEATURE/SIGN
- PROPOSED STREE TLIGHTS. SEE DETAIL (4/16) ON SHEET 16 FOR ADDITIONAL INFORMATION
- ADDITIONAL DISTURBED AREA FOR STREAM RESTORATION ONLY (PERMISSION FROM THE OWNER OF OFF-SITE RESTORATION AREA IS REQUIRED PRIOR TO ANY RESTORATION ACTIVITIES WITHIN THIS AREA)

SITE TABULATIONS:

GROSS SITE AREA (G.S.A.):	383,069 s.f. ± or 8.79405 Ac. ±
EXISTING ZONE:	R-2 HC
PROPOSED ZONE:	PDH-4
PROPOSED NUMBER OF LOTS:	29
PROPOSED DENSITY:	3.30 DU/AC
OPEN SPACE REQUIRED: (20.0% OF G.S.A.)	76,613 s.f. ± OR 1.76 Ac. ±
OPEN SPACE PROVIDED: (40.1% ± OF G.S.A.):	153,610 s.f. ± OR 3.53 Ac. ±
PARKING SPACES REQUIRED:	87 (2)
PARKING SPACES PROVIDED:	149 (3)
BUILDING HEIGHT PROPOSED:	35'

(1) TOTAL AREA TO BE REZONED, 8.79405 ACRES ±, SHOWN HEREON IS BASED ON THE MATHEMATICAL CLOSURE OF DEEDS OF RECORD AND ADJACENT INFORMATION ALL AMONG THE LAND RECORDS OF FAIRFAX COUNTY.

(2) THREE SPACES PER UNIT FOR SINGLE FAMILY DETACHED UNITS WITH FRONTAGE ON A PRIVATE STREET.

(3) TWO SPACES/UNIT IN THE GARAGE PLUS TWO SPACES/UNIT IN THE DRIVEWAY PLUS 33 GUEST SPACES.

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Sheet 2 of 22

50' 25' 0' 50'
SCALE: 1"= 50'

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CONCEPTUAL/FINAL DEVELOPMENT PLAN
CONCEPTUAL-FINAL DEVELOPEMENT PLAN
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
REVISED 08-05-11	REVISED 02-17-12
REVISED 11-09-11	REVISED 03-28-12
REVISED 12-07-11	REVISED 04-11-12
REVISED 01-06-12	REVISED 04-30-12
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APPLICANT:
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11111 SUNSET HILLS ROAD
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RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. 1"= 50' VERT.
SHEET 2 OF 22
CO. NO.
CAD NAME: F11524FDP
LAYOUT: FDP
FILE NO. 11524-08

XREF'S:

GENERAL NOTES:

1. THE PROPERTIES DELINEATED ON THIS CONCEPTUAL/FINAL DEVELOPMENT PLAN (CDP/FDP) ARE IDENTIFIED ON FAIRFAX COUNTY TAX ASSESSMENT MAP NO. 71-2 ((1)), PARCEL 36; 71-2 ((10)), PARCEL 17A AND 71-2 ((13)), PARCEL 1. ALL ARE ZONED R-2 HC.

2. THE BOUNDARY INFORMATION SHOWN HEREON IS BASED UPON INFORMATION AND DEEDS OF RECORD AND SHOULD NOT BE CONSIDERED A BOUNDARY SURVEY.

3. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS INTERPOLATED FROM FAIRFAX COUNTRY GIS AERIAL TOPOGRAPHY AND IS SHOWN AT TWO (2) FEET CONTOUR INTERVALS.

4. THE PROPERTY SHOWN ON THIS CDP/FDP IS IN THE MASON MAGISTERIAL DISTRICT, THE CAMERON SEWER DISTRICT AND THE CAMERON RUN WATERSHED.

5. TO THE BEST OF OUR KNOWLEDGE THIS DEVELOPMENT IS IN CONFORMANCE WITH THE FAIRFAX COUNTY COMPREHENSIVE PLAN AND WILL CONFORM TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS AND CONDITIONS WITH THE EXCEPTION OF THE FOLLOWING:

   * REQUEST A WAIVER OF THE SERVICE DRIVE REQUIREMENT ALONG LITTLE RIVER TURNPIKE.

   * REQUEST A WAIVER OF THE MAXIMUM 600 FEET LENGTH OF A PRIVATE ROAD. THE LOOPED DESIGN OF THE PRIVATE ROAD ALLOWS EMERGENCY VEHICLE ACCESS IN ACCORDANCE WITH DESIGN STANDARDS CURRENTLY ACCEPTED BY THE FAIRFAX COUNTY FIRE MARSHALL'S OFFICE.

6. ACCORDING TO THE FAIRFAX COUNTY-COUNTYWIDE TRAILS PLAN (ADOPTED BY THE BOARD OF SUPERVISORS JUNE 17, 2002), AN ON-ROAD BIKE LANE IS REQUIRED ALONG THE SITE'S FRONTAGE WITH BLAKE LANE.

7. THE FAIRFAX COUNTY WATER AUTHORITY IS THE PUBLIC WATER SUPPLY AGENCY FOR THIS DEVELOPMENT. THE COUNTY OF FAIRFAX IS THE SANITARY SEWER SUPPLY AGENCY FOR THIS DEVELOPMENT.

8. ACCORDING TO TAX RECORDS AND/OR DEEDS AND INFORMATION OF RECORD, THERE ARE NO KNOWN EXISTING UNDERGROUND UTILITIES OR EXISTING UTILITY EASEMENTS OF 25' OR MORE. NO TITLE REPORT HAS BEEN FURNISHED.

9. THIS PLAN DOES NOT SHOW PROPOSED UTILITIES. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE AND WILL BE EXTENDED BY THE DEVELOPER OR UTILITY COMPANY. UTILITY PLANS AND PROFILES WILL BE SUBMITTED IN THE FUTURE FOR CONSTRUCTION PURPOSES.

10. THE PROPOSED LIMITS OF CLEARING AND GRADING ARE SHOWN ON THE PLAN. THESE LIMITS ARE APPROXIMATE AND SUBJECT TO ADJUSTMENT AT THE TIME OF FINAL GRADING, ENGINEERING AND LOCATION OF PROPOSED UTILITIES. WHERE THE LIMITS OF CLEARING AND GRADING ARE SHOWN ADJACENT TO A PROPERTY LINE, IT SHOULD BE ASSUMED THAT THE LIMITS EXTEND TO THE PROPERTY LINE.

ZONING ORDINANCE, ARTICLE 16-502, PARAGRAPH 10 COMMENTS:

A. 1. VICINITY MAP AS SHOWN ON SHEET 1.

2. BEARING AND DISTANCES OF THE PERIMETER PROPERTY LINES AS SHOWN ON THE PLAN.

3. SEE THE SITE TABULATIONS ON SHEET 2 FOR THE TOTAL AREA OF THE PROPERTY.

4. SCALE AND NORTH ARROW AS SHOWN ON THE PLAN.

5. NAMES AND ROUTE NUMBERS OF BOUNDARY STREETS AND THE WIDTH OF EXISTING RIGHT(S)-OF WAY AS SHOWN ON THE PLAN. PROPOSED IIMPROVEMENTS TO THE PUBLIC RIGHT(S) OF WAY AND DELINEATION OF THE EXISTING CENTERLINE WITH ALL REQUIRED DIMENSIONS ARE AS SHOWN ON THE PLAN OR AS SHOWN ON SHEET 19.

6. REFER TO GENERAL NOTE 3 FOR INFORMATION CONCERNING EXISTING TOPOGRAPHY.

7. THE LOCATION AND ARRANGEMENT OF ALL PROPOSED USES ARE AS SHOWN ON THE PLAN.

8. REFER TO THE SITE TABULATIONS ON SHEET 2 FOR THE PROPOSED BUILDING HEIGHT.

9. THE DISTANCES OF ALL STRUCTURES FROM THE DEVELOPMENT BOUNDARIES AND STREETS ARE AS SHOWN ON THE PLAN.

10. ANGLE OF BULK PLANE NOT APPLICABLE.

11. THE TRAFFIC CIRCLUATION SYSTEM, THE PEDESTRIAN CIRCULATION SYSTEM AND ALL REQUIRED DIMENSIONS ARE AS SHOWN ON THE PLAN. REFER TO GENERAL NOTE 6 FOR INFORMATION CONCERNING ALL TRAILS REQUIRED BY THE ADOPTED COMPREHENSIVE PLAN.

12. OFF-STREET PARKING AS SHOWN ON THE PLAN AND AS LISTED IN THE SITE TABULATIONS ON SHEET 2.

13. OPEN SPACE AREAS INCLUDING SPECIFIC TYPES OF DEVELOPED RECREATIONAL FACILITIES ARE AS SHOWN ON THE PLAN.

14. REFER TO SHEETS 5 AND 6 FOR LANDSCAPE INFORMATION INCLUDING THE APPROXIMATE LIMITS OF CLEARING AND GRADING. THE DESIGN OF ALL SCREENING MEASURES AND THE TYPE AND HEIGHT OF SUCH SCREENINGS ARE AS SHOWN ON THE PLAN OR PROVIDED IN THE SECTIONS SHOWN ON SHEET 18. SEE SHEET 4 FOR INFORMATION CONCERNING EXISTING VEGETATION.

15. THERE ARE NO KNOWN GRAVES OR PLACES OF BURIAL ON THE SITE.

16. REFER TO GENERAL NOTE 9 FOR INFORMATION CONCERNING PUBLIC UTILITIES.

17. REFER TO SHEETS 20, 21 AND 22 FOR ALL REQUIRED STORMWATER MANAGEMENT INFORMATION.

18. REFER TO GENERAL NOTE 8 FOR INFORMATION CONCERNING ALL EXISTING UNDERGROUND UTILITIES AND ALL ALL EXISTING UTILITY EASEMENT OF 25' OR MORE.

19. THERE ARE NO FLOODPLAINS DESIGNATED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, UNITED STATES GEOLOGICAL SURVEY OR FAIRFAX COUNTY ON THE SITE. A FIELD-VERIFIED AND APPROVED (25234-RPA-01-1) RPA IS AS SHOWN ON THE PLAN. NO LAND ON THE SITE MEETS THE CRITERIA FOR DESIGNATION AS AN ENVIRONMENTAL QUALITY CORRIDOR (EQC) AS DEFINED IN THE POLICIES OF ENVIRONMENT OBJECTIVE 9 OF THE FAIRFAX COUNTY COMPREHENSIVE PLAN, 2011 EDITION. THE SITE AREA OUTSIDE OF THE RPA IS A RESOURCE MANAGEMENT AREA. DIMENSIONS WHERE REQUIRED ARE AS SHOWN ON THE PLAN.

B. REFER TO THE SITE TABULATIONS ON SHEET 2 FOR INFORMATION CONCERNING THE TOTAL NUMBER AND TYPE OF DWELLING UNITS, DENSITY, TOTAL OPEN SPACE AREA, TOTAL DEVELOPED OPEN SPACE AREA AND NUMBER OF REQUIRED OFF-STREE PARKING SPACES. BONUS DENSITY IS NOT APPLICABLE TO THIS APPLICATION.

C. A MAP IDENTIFYING CLASSIFICATION OF SOIL TYPES WILL BE SUBMITTED UNDER SEPARATE COVER.

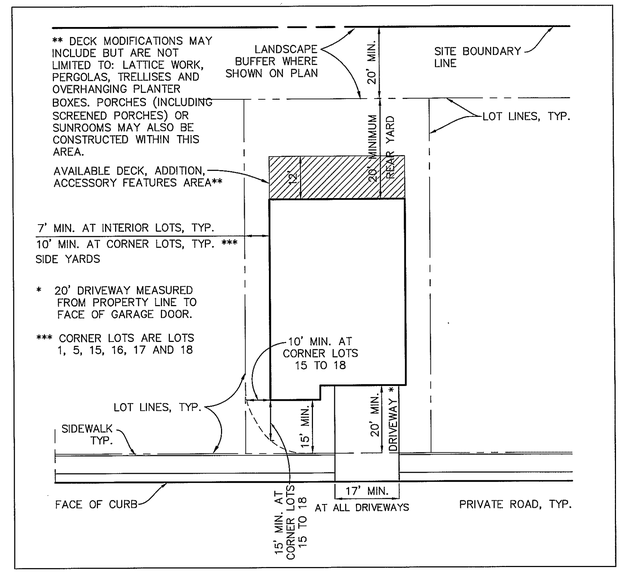
D. ARCHITECTURAL SKETCHES ARE INCLUDED.

E. ON-SITE HAZARDOUS OR TOXIC SUBSTANCES ARE SUBJECT TO FURTHER INVESTIGATION AND POTENTIAL REMEDIATION, IF WARRANTED. FOR ANY SUBSTANCES FOUND, THEIR METHODS OF DISPOSAL SHALL ADHERE TO COUNTY, STATE AND/OR FEDERAL LAW.

F. REFER TO GENERAL NOTE 5 FOR INFORMATION CONCERNING THIS DEVELOPMENT'S CONFORMANCE TO ALL APPLICABLE ORDINANCES AND STANDARDS.

G. AFFIDAVITS TO BE SUBMITTED UNDER SEPARATE COVER.

H. THE SITE IS NOT WITHIN OR IN THE VICINITY OF A HISTORIC OVERLAY DISTRICT.



TYPICAL LOT LAYOUT

SCALE: 1"=20'

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DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. 1"=20' VERT. NA
SHEET 3 OF 22
CO. NO.
CAD NAME: F11524NOT
LAYOUT: NOTES
FILE NO. 11524-08

XREFS:

EXISTING VEGETATION MAP SUMMARY AND NARRATIVE

COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	HEALTH AND CONDITION	AREA (Ac.±)	NARRATIVE
3	EARLY SUCCESSIONAL FOREST	MATURE	FAIR TO GOOD	1.85	AREAS OF EARLY SUCCESSIONAL TREE CANOPY CONSISTING PRIMARLY OF BLACK LOCUST, RED MAPLE AND SILVER MAPLE WITH LESSER QUANTITIES OF OAK. THESE AREAS ARE MAINLY LOCATED AROUND THE OUTSIDE BOUNDARIES OF THE PROPERTY. A FIELD-VERIFIED RESOURCE PROTECTION AREA (RPA) IS LOCATED AT THE SOUTHERN END OF THE SITE. THIS AREA CONTAINS AN ERODED STREAM CHANNEL WITH NON-NATIVE AND INVASIVE PLANT MATERIAL ADJACENT TO THE CHANNEL AND ALONG THE PROPERTY BOUNDARIES. THE RPA HAS PREVIOUSLY BEEN DISTURBED. IT CONTAINS A GRAVEL DRIVEWAY WITH SCATTERED CONSTRUCTION EQUIPMENT AND DEBRIS.
4	AGRICULTURAL LAND	N/A	N/A	1.10	NURSERY BEDS WITH STOCK TREES, SHRUBS AND BEDDING PLANTS SCATTERED THROUGHOUT THE SITE. SEVERAL DECIDUOUS AND EVERGREEN TREES AND SHRUBS HAVE BEEN PLANTED ADJACENT TO THE NURSERY BEDS.
5	DEVELOPED LAND	N/A	N/A	3.42	AREAS OF CONSTRUCTED FEATURES INCLUDING BUILDINGS, ASPHALT DRIVE AISLES AND PARKING LOTS, PAVED AND GRAVEL WALKWAYS AND LARGE GRAVEL ROADBEDS FOR VEHICULAR ACCESS AND CONSTRUCTION STAGING.
6	MAINTAINED GRASSLANDS	N/A	N/A	0.79	GRASSED AND LANDSCAPED AREAS, ATHLETIC FIELDS OR OTHER GREEN AREAS DEVOID OF NATURAL VEGETATION.
9	LANDSCAPE TREE CANOPY	MATURE	GOOD TO EXCELLENT	0.91	LANDSCAPED AREAS ADJACENT TO THE BUILDINGS, IN PARKING ISLANDS, AS SCREENING AND AS SPECIMEN TREES PLANTED IN AND ADJACENT TO THE NURSERY BEDS. THE PRIMARY TREE SPECIES ARE JAPANESE MAPLES, WHITE CEDARS AND BALD CYPRESS.
10	MISCELLANEOUS	N/A	N/A	0.72	MULCH, TOP SOIL, GRAVEL/STONE AND MISCELLANEOUS CONSTRUCTION DEBRIS.

Total: 8.79 Ac.±

EXISTING BUILDING/STRUCTURE INVENTORY

	TYPE	HEIGHT	DATE OF CONSTRUCTION	STATUS
BUILDINGS 1 THRU 4	1 STORY WOOD FRAME BUILDING	10'-20'±	UNKNOWN	TO BE DEMOLISHED
BUILDING 6	2 STORY WOOD FRAME STRUCTURE	30'±	UNKNOWN	TO BE DEMOLISHED
STRUCTURES 1, 2 AND 3	(PLASTIC) COVERED ARBOR	12'±	UNKNOWN	TO BE DEMOLISHED
STRUCTURES 4, 5, 7, 8 AND 9	(PLASTIC) COVERED STORAGE STRUCTURE	12'±	UNKNOWN	TO BE DEMOLISHED
STRUCTURES 6A, 6B AND 6C	(PLASTIC) COVERED GREENHOUSE	12'±	UNKNOWN	TO BE DEMOLISHED

EXISTING VEGETATION MAP LEGEND

- EXISTING PRE-DEVELOPMENT TREE CANOPY (FOR 10-YEAR TREE CANOPY CALCULATIONS. THE COVER TYPES LISTED BELOW ARE DELINEATED WITHIN THIS AREA.)
- COVER TYPE 3 (EARLY SUCCESSIONAL FOREST COMMUNITY)
- COVER TYPE 4 (AGRICULTURAL LAND)
- COVER TYPE 5 (DEVELOPED LAND-BUILDING/SIDEWALK/ ASPHALT/ GRAVEL)
- COVER TYPE 6 (MAINTAINED GRASSLANDS)
- COVER TYPE 9 (LANDSCAPED TREE CANOPY)
- COVER TYPE 10 (MISCELLANEOUS)
- EXISTING PRE-DEVELOPMENT TREE CANOPY LINE FOR ONSITE TREES ONLY
- (15) EXISTING PRE-DEVELOPMENT TREE CANOPY AREA NUMBER

THERE ARE NO ON-SITE UNIQUE OR ENDANGERED FOREST COMMUNITIES AS DEFINED IN THE PUBLIC FACILITIES MANUAL, SECTION 12-0000 TREE CONSERVATION, TABLE 12.2

SEE SHEET 8 FOR THE TREE PRESERVATION TARGET AND STATEMENT (10-YEAR TREE CANOPY CALCULATIONS.)

EXISTING PRE-DEVELOPMENT TREE CANOPY AREAS

AREA #	AREA S.F.
1	795 S.F.
2	1,678 S.F.
3	1,044 S.F.
4	593 S.F.
5	7,889 S.F.
6	448 S.F.
7	97 S.F.
8	19,071 S.F.
9	448 S.F.
10	368 S.F.
11	745 S.F.
12	948 S.F.
13	5,341 S.F.
14	316 S.F.
15	10,777 S.F.
16	2,214 S.F.
17	548 S.F.
18	7,166 S.F.
19	434 S.F.
20	2,768 S.F.
21	2,055 S.F.
22	328 S.F.
23	4,181 S.F.
24	56,106 S.F.
25	558 S.F.
26	2,691 S.F.
27	343 S.F.
28	5,430 S.F.
29	1,424 S.F.
30	352 S.F.
31	165 S.F.
TOTAL	136,116 S.F.

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SHEET 4 OF 22
CO. NO.
CAD NAME: F11524EVM
LAYOUT: EXISTING VEG
FILE NO. 11524-08

XREFS:

LEGEND:

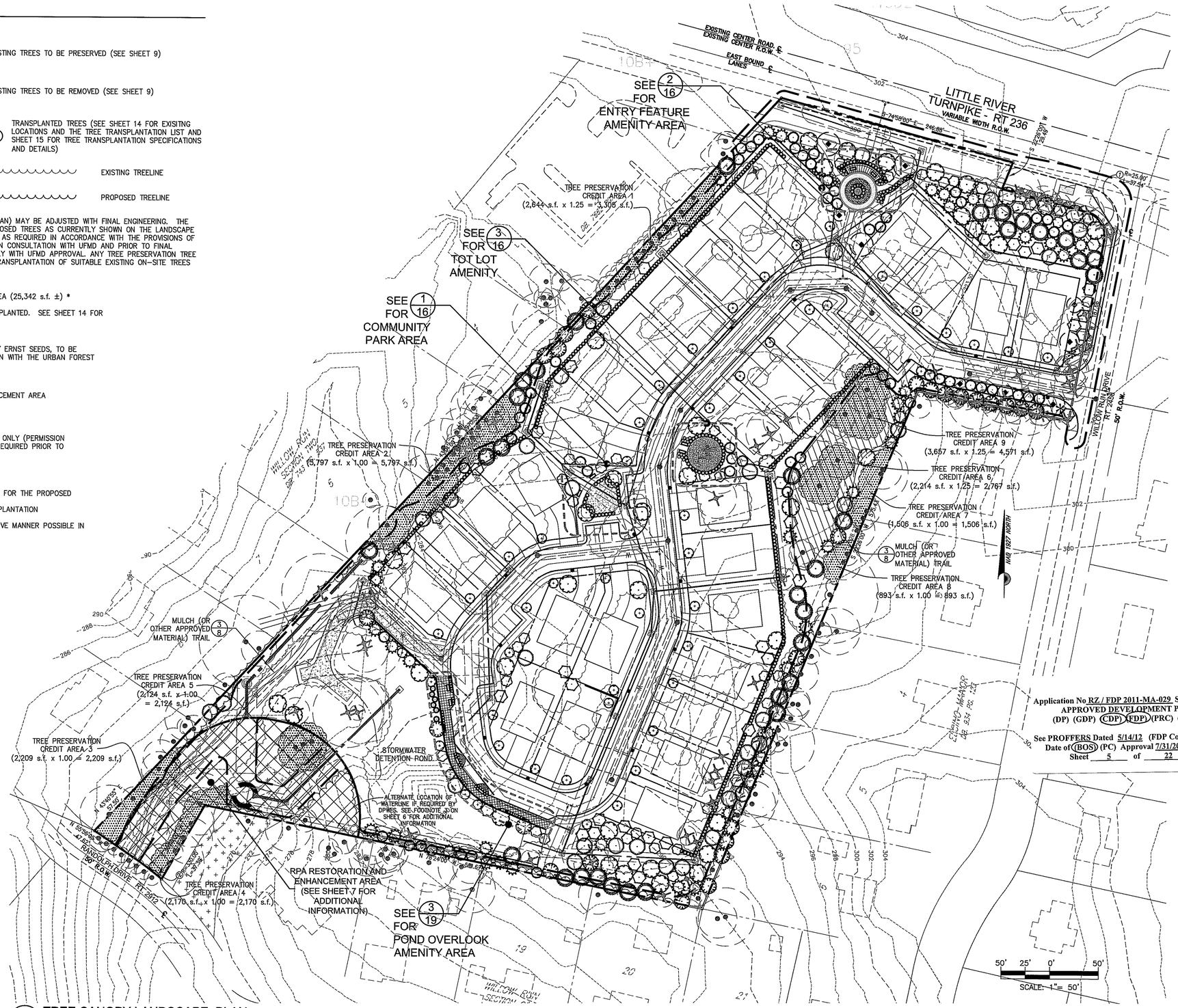
- 2" OR 3" CAL. CATEGORY IV DECIDUOUS TREES
- 2" CAL. CATEGORY II–III DECIDUOUS TREES
- 3" CAL. CATEGORY I DECIDUOUS TREES (COLUMNAR RED MAPLE STREET TREE)
- 10' HEIGHT CATEGORY IV EVERGREEN TREES
- 8' HEIGHT CATEGORY III–IV EVERGREEN TREES
- 8' HEIGHT CATEGORY II EVERGREEN TREES
- DECIDUOUS AND/OR EVERGREEN SHRUBS
- APPROXIMATE LIMITS OF CLEARING AND GRADING (1)
- EXISTING TREES TO BE PRESERVED (SEE SHEET 9)
- EXISTING TREES TO BE REMOVED (SEE SHEET 9)
- TRANSPLANTED TREES (SEE SHEET 14 FOR EXISITNG LOCATIONS AND THE TREE TRANSPLANTATION LIST AND SHEET 15 FOR TREE TRANSPLANTATION SPECIFICATIONS AND DETAILS)
- EXISTING TREELINE
- PROPOSED TREELINE

(1) UTILITY LOCATIONS AND THEIR ASSOCIATED EASEMENTS (WHERE SHOWN ON THE PLAN) MAY BE ADJUSTED WITH FINAL ENGINEERING. THE FINAL LOCATIONS OF THE UTILITIES MAY RESULT IN THE RELOCATION OF THE PROPOSED TREES AS CURRENTLY SHOWN ON THE LANDSCAPE PLAN. EXISTING TREES LISTED FOR PRESERVATION ON SHEET 9 MAY BE REMOVED AS REQUIRED IN ACCORDANCE WITH THE PROVISIONS OF THE ZONING ORDINANCE, ARTICLE 16, SECTION 16–203 PARAGRAPH 8, BUT ONLY IN CONSULTATION WITH UFMD AND PRIOR TO FINAL ENGINEERING. THE LIMITS OF CLEARING AND GRADING WILL BE REVISED ACCORDINGLY WITH UFMD APPROVAL. ANY TREE PRESERVATION TREE CANOPY THAT IS LOST DUE TO REQUIRED UTILITIES WILL BE RECOVERED BY THE TRANSPLANTATION OF SUITABLE EXISTING ON–SITE TREES OR ADDITIONAL NEW TREES IN CONSULTATION WITH THE UFMD.

- POST DEVELOPMENT 10–YEAR TREE CANOPY CREDIT AREA (25,342 s.f. ±) *

  * EXCLUDES CANOPY CREDIT FOR TREES TO BE TRANSPLANTED. SEE SHEET 14 FOR ADDITIONAL INFORMATION.
- WOODLAND SEED MIX (FINAL SEED MIX, AS SUPPLIED BY ERNST SEEDS, TO BE DETERMINED AT THE SUBDIVISION PLAN IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION)
- RESOURCE PROTECTION AREA RESTORATION AND ENHANCEMENT AREA
- ADDITIONAL DISTURBED AREA FOR STREAM RESTORATION ONLY (PERMISSION FROM THE OWNER OF OFF–SITE RESTORATION AREA IS REQUIRED PRIOR TO ANY RESTORATION ACTIVITIES WITHIN THIS AREA)

NOTE:
1: SEE SHEET 6 FOR THE TREE TYPE AND TREE CANOPY CALCULATIONS AND SHEET 8 FOR THE PROPOSED TREE LIST.
2: SEE SHEET 14 FOR TREE TRANSPLANTATION PLAN AND SHEET 15 FOR TREE TRANSPLANTATION SPECIFICATIONS AND DETAILS.
3: PLANTING WITHIN THE UNDISTURBED AREAS SHALL BE DONE IN THE LEAST DISRUPTIVE MANNER POSSIBLE IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION.



1/5 TREE CANOPY LANDSCAPE PLAN

SCALE: 1"=50'

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CF)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 5 of 22

BC Consultants
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COMMONWEALTH OF VIRGINIA
DENIS D. DUNN
Lic. No. 692
05-16-12
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
ILLUSTRATIVE LANDSCAPE PLAN

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
REVISED 08-05-11	REVISED 02-17-12
REVISED 11-09-11	REVISED 03-28-12
REVISED 12-07-11	REVISED 04-11-12
REVISED 01-06-12	REVISED 04-30-12
REVISED 01-30-12	REVISED 05-16-12

AVENHOOD NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. 1"=50' VERT. NA
SHEET 5 OF 22
CO. NO.
CAD NAME: F11524LSC_ILLUSTV
LAYOUT: ILLUSTRATIVE
FILE NO. 11524-08

XREFS:

TREE TYPE AND TREE CANOPY CALCULATIONS

TREE GENUS AND SPECIES IS SHOWN IN THE PROPOSED TREE LIST ON SHEET 8.

					TREE CANOPY CALCUATION	
QTY.	TYPE	SIZE	HEIGHT	USE MULTIPLIER (1)	AREA/TREE (s.f.)	TOTAL CANOPY AREA (s.f.)
18	CATEGORY IV DECIDUOUS TREE	3" CAL.		1.0	250	4,500
23	CATEGORY IV DECIDUOUS TREE	3" CAL.		1.5	250	8,625
14	CATEGORY IV DECIDUOUS TREE	2" CAL.		1.0	200	2,800
16	CATEGORY IV DECIDUOUS TREE	2" CAL.		1.5	200	4,800
20	CATEGORY III DECIDUOUS TREE	2" CAL.		1.0	150	3,000
20	CATEGORY III DECIDUOUS TREE	2" CAL.		1.5	150	4,500
15	CATEGORY II DECIDUOUS TREE	2" CAL.		1.0	100	1,500
16	CATEGORY II DECIDUOUS TREE	2" CAL.		1.5	100	2,400
50	CATEGORY I DECIDUOUS TREE	3" CAL.		1.0	75	3,750
					SUBTOTAL	35,875
12	CATEGORY IV EVERGREEN TREE		10 FT.	1.0	250	3,000
21	CATEGORY IV EVERGREEN TREE		10 FT.	1.5	250	7,875
12	CATEGORY IV EVERGREEN TREE		8 FT.	1.0	200	2,400
13	CATEGORY IV EVERGREEN TREE		8 FT.	1.5	200	3,900
39	CATEGORY III EVERGREEN TREE		8 FT.	1.0	150	5,850
36	CATEGORY II EVERGREEN TREE		8 FT.	1.0	100	3,600
23	CATEGORY II EVERGREEN TREE		8 FT.	1.5	100	3,450
					SUBTOTAL	30,075
					TOTAL	65,950 (2)

LEGEND

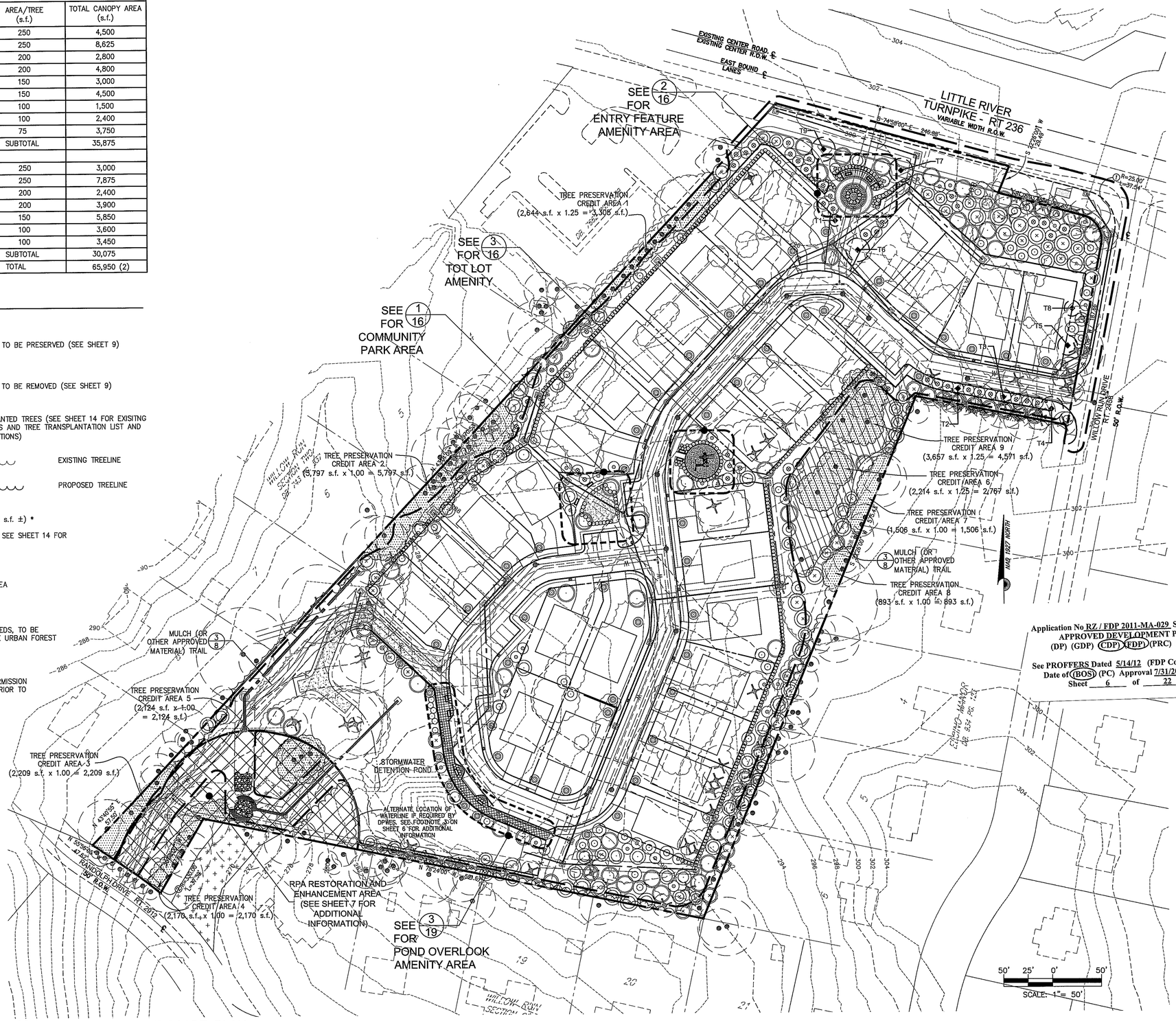
- 2" OR 3" CAL. CATEGORY IV DECIDUOUS TREES
- 2" CAL. CATEGORY II–III DECIDUOUS TREES
- 3" CAL. CATEGORY I DECIDUOUS TREES (COLUMNAR RED MAPLE STREET TREE)
- 10' HEIGHT CATEGORY IV EVERGREEN TREES
- 8' HEIGHT CATEGORY III–IV EVERGREEN TREES
- 8' HEIGHT CATEGORY II EVERGREEN TREES
- DECIDUOUS AND/OR EVERGREEN SHRUBS
- APPROXIMATE LIMITS OF CLEARING AND GRADING (3)
- EXISTING TREES TO BE PRESERVED (SEE SHEET 9)
- EXISTING TREES TO BE REMOVED (SEE SHEET 9)
- TRANSPLANTED TREES (SEE SHEET 14 FOR EXISITNG LOCATIONS AND TREE TRANSPLANTATION LIST AND SPECIFICATIONS)
- EXISTING TREELINE
- PROPOSED TREELINE
- POST DEVELOPMENT 10–YEAR TREE CANOPY CREDIT AREA (25,342 s.f. ±) *
  - * EXCLUDES CANOPY CREDIT FOR TREES TO BE TRANSPLANTED. SEE SHEET 14 FOR ADDITIONAL INFORMATION.
- RESOURCE PROTECTION AREA RESTORATION AND ENHANCEMENT AREA
- WOODLAND SEED MIX (FINAL SEED MIX, AS SUPPLIED BY ERNST SEEDS, TO BE DETERMINED AT THE SUBDIVISION PLAN IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION)
- ADDITIONAL DISTURBED AREA FOR STREAM RESTORATION ONLY (PERMISSION FROM THE OWNER OF OFF–SITE RESTORATION AREA IS REQUIRED PRIOR TO ANY RESTORATION ACTIVITIES WITHIN THIS AREA)

(1) USE MUTIPLIERS MAY BE APPLIED FOR ADDITIONAL 10–YEAR TREE CANOPY CREDIT TO REDUCE THE NUMBER OF 3" CAL. TREES AS APPROVED BY UFMD. USES QUALIFYING FOR ADDITIONAL 10–YEAR TREE CANOPY CREDITS SHALL INCLUDE AIR QUALITY, ENERGY CONSERVATION, WILDLIFE AND WATER QUALITY AS ALLOWED BY THE PROVISIONS OF THE PFM. USE MULTIPLER FOR NATIVE TREES WILL NOT BE USED.

(2) WHEN ADDED TO THE 10–YEAR TREE CANOPY CREDIT RECEIVED FOR TREE PRESERVATION (SEE THE 10–YEAR TREE CANOPY CALCULATIONS SHOWN ON SHEET 8), THE 65,950 s.f. TOTAL REPRESENTS THE MINIMUM 10–YEAR TREE CANOPY CREDIT FOR TREES TO BE PLANTED NECESSARY TO ACHIEVE THE OVERALL 10–YEAR TREE CANOPY REQUIRED FOR THE SITE. NO LESS THAN THE QUANITY OF TREES SHOWN IN THE PLANT SCHEDULE WILL BE PROVIDED UNLESS APPROVED BY UFMD. TREES PLANTED THAT DO NOT MEET THE MINIMUM RESTRICTIVE REQUIREMENTS OF THE PFM WILL NOT RECEIVE CANOPY CREDIT. IF NEEDED, ADDITIONAL TREES WILL BE PROVIDED TO MEET THE MINIMUM 10–YEAR TREE CANOPY FOR THE SITE. AT THEIR DISCRETION, THE APPLICANT RESERVES THE RIGHT TO PROVIDE ADDITIONAL TREES ABOVE AND BEYOND THOSE REQUIRED TO MEET THE MINIMUM 10–YEAR TREE CANOPY REQUIREMENTS.

(3) UTILITY LOCATIONS AND THEIR ASSOCIATED EASEMENTS (WHERE SHOWN ON THE PLAN) MAY BE ADJUSTED WITH FINAL ENGINEERING. THE FINAL LOCATIONS OF THE UTILITIES MAY RESULT IN THE RELOCATION OF THE PROPOSED TREES AS CURRENTLY SHOWN ON THE LANDSCAPE PLAN. EXISTING TREES LISTED FOR PRESERVATION ON SHEET 9 MAY BE REMOVED AS REQUIRED IN ACCORDANCE WITH THE PROVISIONS OF THE ZONING ORDINANCE, ARTICLE 16, SECTION 16–203 PARAGRAPH 8, BUT ONLY IN CONSULTATION WITH UFMD AND PRIOR TO FINAL ENGINEERING. THE LIMITS OF CLEARING AND GRADING WILL BE REVISED ACCORDINGLY WITH UFMD APPROVAL. ANY TREE PRESERVATION TREE CANOPY THAT IS LOST DUE TO REQUIRED UTILITIES WILL BE RECOVERED BY THE TRANSPLANTATION OF SUITABLE EXISTING ON–SITE TREES OR ADDITIONAL NEW TREES IN CONSULTATION WITH THE UFMD. AN ALTERNATE LOCATION OF THE PROPOSED WATERLINE HAS BEEN SHOWN ON THE PLAN. IF THIS ALTERNATE LOCATION IS REQUIRED BY DPWES THEN THE LIMITS OF CLEARING AND GRADING, TREE PRESERVATION CREDIT AREAS AND PROPOSED TREE LOCATIONS WILL BE REVISED ACCORDINGLY IN CONSULTATION WITH UFMD.

NOTE:
1: SEE SHEET 14 FOR TREE TRANSPLANTATION PLAN AND SHEET 15 FOR TREE TRANSPLANTATION SPECIFICATIONS AND DETAILS.
2: PLANTING WITHIN THE UNDISTURBED AREAS SHALL BE DONE IN THE LEAST DISRUPTIVE MANNER POSSIBLE IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION.



Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)
See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 6 of 22

1/6 TREE CANOPY LANDSCAPE PLAN

SCALE: 1"=50'

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CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE CANOPY LANDSCAPE PLAN
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
REVISED 08-05-11	REVISED 02-17-12
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REVISED 01-06-12	REVISED 04-30-12
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APPLICANT:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
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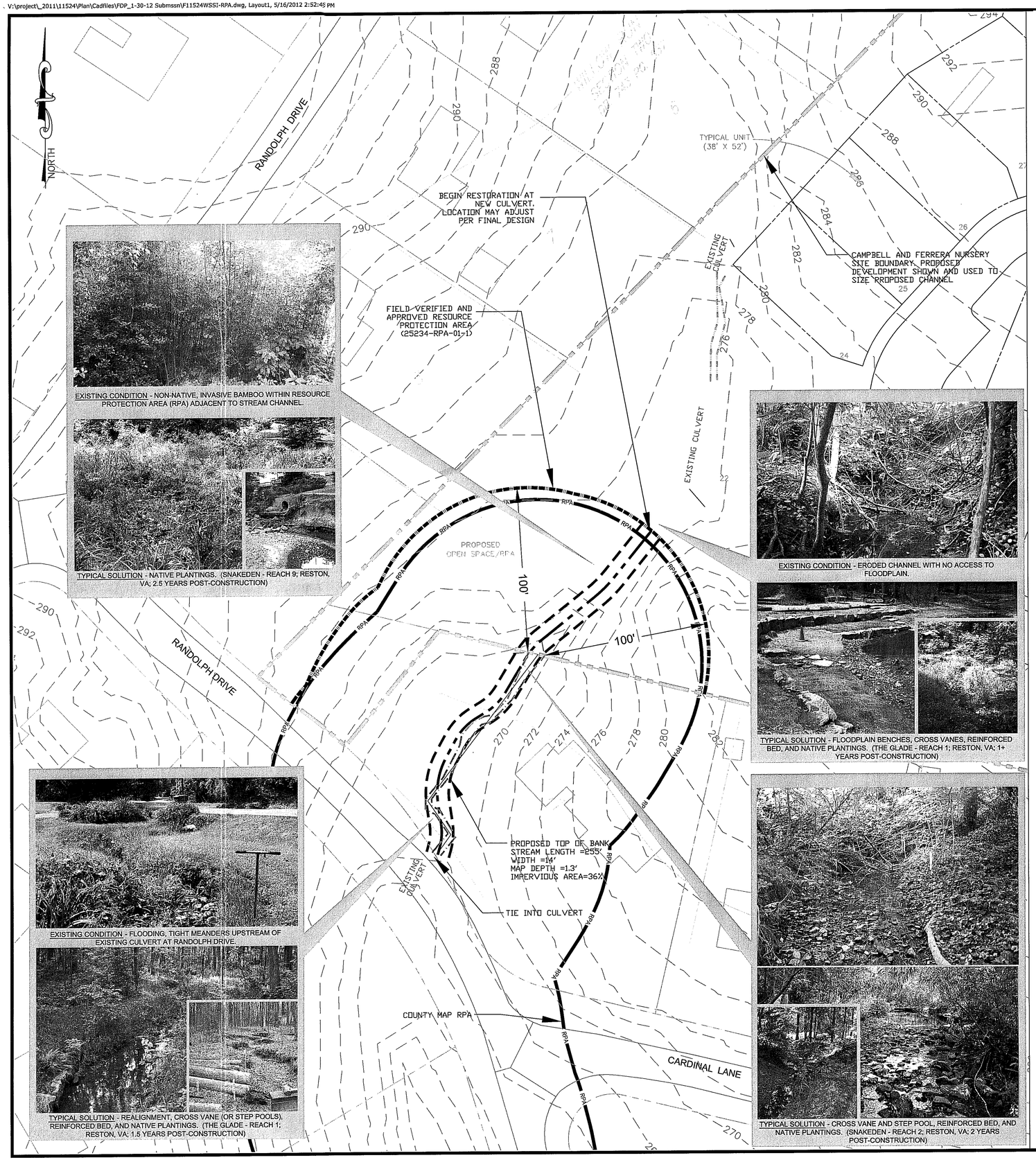
SHEET 6 OF 22
CO. NO.
CAD NAME: F11524LSC_CANOPY
LAYOUT: CANOPY
FILE NO. 11524–08
XREF'S:



PLANTING SCHEDULE

CONTAINER PLANTING ZONE		SPECIES GROUP[1,2]	SPECIES[2]	INDICATOR STATUS	PLANT SPACING[3]	CONTAINER SIZE, RATE, AND QUANTITY[4] PLANTS PER ACRE
RIPARIAN FOREST	TREE LAYER	1	QUERCUS ALBA (WHITE OAK)	FACU-	SEE NOTE #3	300 ONE GAL – or – 600 TUBELINGS – or – MIX AT 1:2 RATIO (SEE NOTE #4)
			QUERCUS PALUSTRIS (PIN OAK)	FACW		
			QUERCUS PHELLOS (WILLOW OAK)	FAC+		
			QUERCUS RUBRA (NORTHERN RED OAK)	FACU-		
		2	ACER NEGUNDO (BOX ELDER)	FAC+		150 ONE-GALLON – or – 300 TUBELINGS – or – MIX AT 1:2 RATIO (SEE NOTE #4)
			ACER RUBRUM (RED MAPLE)	FAC		
			BETULA NIGRA (RIVER BIRCH)	FACW		
			LIQUIDAMBAR STYRACIFULA (SWEET GUM)	FAC		
			PLATANUS OCCIDENTALIS (AMERICAN SYCAMORE)	FACW-		
		3	ILEX OPACA (AMERICAN HOLLY)	FACU+	SEE NOTE #3	100 ONE-GALLON – or – 200 TUBELINGS – or – MIX AT 1:2 RATIO (SEE NOTE #4)
	SHRUB LAYER	4	AMELANCHER CANADENSIS (CANADIAN SERVICEBERRY)	FAC	SEE NOTE #3	150 ONE-GALLON – or – 300 TUBELINGS – or – MIX AT 1:2 RATIO (SEE NOTE #4)
			CERCIS CANADENSIS (EASTERN REDBUD)	FACU-		
			CORNUS FLORIDA (FLOWERING DOGWOOD)	FACU-		
			CORYLUS AMERICANA (AMERICAN HAZELNUT)	FACU-		
			VIBURNUM DENTATUM (SOUTHERN ARROWWOOD)	FAC		
			VIBURNUM PRUNIFOLIUM (BLACK-HAW)	FACU		
STREAM BANK	TREE AND SHRUB LAYER	5	CORNUS AMOMUM (SILKY DOGWOOD)	FACW	SEE NOTE #3 (AVERAGES 3' O.C. FOR ONE-GALLON)	N/A
			ILEX VERTICILLATA (COMMON WINTERBERRY)	FACW+		
			SAMBUCUS CANADENSIS (ELDERBERRY)	FACW-		
			VIBURNUM DENTATUM (SOUTHERN ARROWWOOD)	FAC		
STREAM EDGE	TREE AND SHRUB LAYER	6	CORNUS AMOMUM (SILKY DOGWOOD)	FACW	1' O.C. (SEE NOTES #5, #6)	N/A
			SALIX NIGRA (BLACK WILLOW)	FACW+		
			VIBURNUM DENTATUM (SOUTHERN ARROWWOOD)	FAC		

1. It is expected and preferred that all species in each of the Species Groups are planted. The tolerances listed in this note are intended to incorporate flexibility according to species availability. At a minimum, Contractor to provide at least:
   a) 3 of the 4 species in Group 1,
   b) 4 of the 5 species in Group 2,
   c) all of Group 3,
   d) 4 of the 6 species in Group 4,
   e) 3 of the 4 species in Group 5,
   f) 2 of the 3 species in Group 6 (wim) 4 of 5 in Group 13, Salix nigra a required species),
   g) all of Group 7,
   h) 4 of the 5 species in Group 8,
   i) 3 of the 4 species in Group 9,
   j) 5 of 6 species in Group 10,
   k) 5 of 7 in Group 11,
   l) 6 of 8 in Group 12
   n) 5 of 8 in Group 14, and
   o) 5 of 6 in Group 15.
2. Substitutions for selected species based upon availability shall be requested in writing to engineer documenting the lack of availability if the flexibility inherent in the above schedule is still not sufficient. Engineer is under no obligation to approve substitutions.
3. The planted trees and shrubs shall be randomly spaced and species mixed throughout the planting areas.
4. Container rates and quantities shown for one gallon size. For purposes of substitution, two tubelings are the equivalent of one 1-gallon container plant in this schedule. Contractor may provide a mix of container and tubeling sizes for each species requirement, provided the ratio of tubelings to containers is not less than 2:1. Exception -- Group 6 (Stream Edge) shall be planted in accordance with Note #5.
5. Group 6 (Stream Edge) zone shall be planted with tubelings, or as livestakes (Salix nigra only, and only between February 1 and March 31). No one gallons are required to be used for any of this Group's species.
6. Stream Bank and Stream Edge zones shall be planted such that the combined mix of species is spaced approx. 3' O.C. and 1' O.C, respecti These zones shall not be planted such that each individual species in these zones is planted at these rates, resulting in tighter spacing.
7. All seeding rates are expressed in pounds of pure live seed (PLS).

SEEDING SCHEDULE

SEED PLANTING	SPECIES GROUP[1,2]	SPECIES[2]	INDICATOR STATUS	SEEDING RATE[7] (LBS/AC)
RIPARIAN BUFFER SEED MIX	7	LOLIUM MULTIFLORUM (ANNUAL RYEGRASS)	NI	45.00
		SETARIA ITALICA (FOXTAIL MILLET) (OR ECHINOCHLOA CRUSGALLI VAR. FRUMENTACEA)	UPL	45.00
	8	CAREX SCOPARIA (BLUNT BROOM SEDGE)	FACW	0.20
		CAREX SQUARROSA (SQUARROSE SEDGE)	NI	0.20
		CAREX VULPINODEA (FOX SEDGE)	OBL	0.20
		CYPERUS ESCULENTUS (CHUFA)	FACW	0.20
		JUNCUS EFFUSUS (SOFT RUSH)	FACW+	0.20
		JUNCUS TENUS (PATH RUSH)	FAC-	0.20
	9	ELYMUS RIPARIUS (RIVERBANK WILD RYE)	FACW	10.00
		ELYMUS VIRGINICUS (VIRGINIA WILD RYE)	FACW-	10.00
		PANICUM CLANDESTINUM (DEER TONGUE GRAS	FAC+	10.00
		PANICUM DICHOTOMIFLORUM (SMOOTH PANIC	FACW-	10.00
	10	ANEMONE VIRGINIANA (THIMBLEWEED)	NI	0.10
		ASTER NOVAE-ANGLIAE (NEW ENGLAND ASTER	FACW-	0.10
		ASTER PILOSUS (HEATH ASTER)	UPL	0.10
		ASTER PRENANTHOIDES (ZIG ZAG ASTER)	FAC	0.10
		LILIUM SUPERBUM (TURKSCAP LILY)	FACW+	0.10
		SOLIDAGO JUNCEA (EARLY GOLDENROD)	UPL	0.10
	11	EUPATORIUM FISTULOSUS (JOE PYE WEED)	FACW	0.10
		EUPATORIUM PERFOLIATUM (BONESET)	FACW+	0.10
		EUTHAMIA GRAMINIFOLIA (GRASS LEAVED GOL	FAC	0.10
		SOLIDAGO CANADENSIS (CANADIAN GOLDENR	FACU	0.10
		SOLIDAGO SPECIOSA (SHOWY GOLDENROD)	UPL	0.10
		VERNONIA NOVEBORACENSIS (NEW YORK RON	FACW+	0.10
		ZIZIA AUREA (GOLDEN ALEXANDERS)	FAC	0.10
	12	ASCLEPIAS SYRIACA (COMMON MILKWEED)	UPL	0.20
		BIDENS FRONDOSA (BEGGAR TICKS)	FACW	0.20
		HELENIUM AUTUMNALE (COMMON SNEEZEWEE	FACW+	0.20
		HELIANTHUS ANGUSTIFOLIUS (NARROW-LEAF S	FACW	0.20
		ONOCLEA SENSIBILIS (SENSITIVE FERN)	FACW	0.20
		PENSTEMON DIGITALIS (PENSTEMON)	FAC	0.20
		VERBENA HASTATA (BLUE VERVAIN)	FACW+	0.20
		VERBESINA ALTERNIFOLIA (WINGSTEM)	FAC	0.20
	13	COREOPSIS LANCEOLATA (LANCE LEAVED CO	FACU	0.20
		HELIOPSIS HELIANTHOIDES (OXEYE SUNFLOWE	UPL	0.20
		POLYGONUM PENSYLVANICUM (PA SMARTWEE	FACW	0.20
		RUDBECKIA HIRTA (BLACK EYED SUSAN)	FACU-	0.20
		SENNA HEBECARPA (WILD SENNA)	FAC	0.20
	14	AMELANCHIER CANADENSIS (CANADIAN SERVI	FAC	0.20
		ARONIA MELANOCARPA (BLACK CHOKEBERRY)	UPL	0.20
		HAMAMELIS VIRGINIANA (WITCH HAZEL)	FAC-	0.20
		ILEX VERTICILLATA (WINTERBERRY)	FACW+	0.20
		LINDERA BENZOIN (NORTHERN SPICEBUSH)	FACW-	0.20
		PHYSOCARPUS OPULIFOLIUS (COMMON NINEBA	FACW-	0.20
		VIBURNUM DENTATUM (SOUTHERN ARROW WO	FAC	0.20
		VIBURNUM PRUNIFOLIUM (BLACK-HAW)	FACU	0.20
	15	ACER RUBRUM (RED MAPLE)	FAC	0.20
		CARPINUS CAROLINIANA (MUSCLEWOOD)	FAC	0.20
		CERCIS CANADENSIS (EASTERN REDBUD)	FACU-	0.20
		CORNUS FLORIDA (FLOWERING DOGWOOD)	FACU-	0.20
		NYSSA SYLVATICA (BLACK GUM)	FAC	0.20
		PLATANUS OCCIDENTALIS (AMERICAN SYCAMO	FAC	0.20

COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
Lic. No. 882
05-16-12
LANDSCAPE ARCHITECT

FOR INFORMATIONAL PURPOSES ONLY

BC Consultants
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THIS CONCEPTUAL PLAN IS FOR PLANNING PURPOSES ONLY AND SHALL NOT BE USED FOR CONSTRUCTION. FURTHER STUDY OF THE EXISTING AND PROPOSED CONDITIONS WILL BE REQUIRED TO DEVELOP A DETAILED STREAM RESTORATION SATISFIES PROJECT GOALS AND REGULATORY REQUIREMENTS

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 7 of 22

30 0 15 30 60 120
(IN FEET) 1 inch = 30 feet

CALLAWAY

Fairfax County, Virginia

CONCEPTUAL STREAM RESTORATION PLAN

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Phone 703 679 5600 • Fax 703 679 5601
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REVISIONS

No.	Date	Description	Rev. By	App. By	No.	Date	Description	Rev. By	App. By
1	7/18/11	Added RPA boundaries, rev alignment	KLP	JVH	5	02/17/12	Revised		
	8/5/11				6	03/28/12	Revised		
2	11/09/11	Revised Layout				04/11/12	Revised		
3	12/02/11	Revised Layout				04/30/12	Revised		
4	01/06/12	Revised Layout				05/16/12	Revised		
5	01/30/12	Revised Layout							

DATE: June 16, 2011 | SCALE: 1" = 30' | C.I. = 2.0'

H. D.: VCS NAD 83 V. D.: NGVD 29
Boundary and Topo Source: WSSI and Fairfax Digital Data

Design	Draft	Approved
KLP	KLP	FRG

Sheet #
7 of 22

Computer File Name:
V:\project_2011\11524\Plan\Cadfiles\FDP_1-30-12 Submssn\F11524WSSI-RPA.dwg

URBAN FOREST MANAGEMENT
POLICY ON LANDSCAPE IMPLEMENTATION
November 17, 2010

This compilation of selected portions of the Public Facilities Manual is intended to summarize and clarify regulations pertaining to the implementation of landscape plans on development sites subject to review and inspection by the County. Included are regulations governing the most common areas of noncompliance experienced by staff in the course of conducting landscape inspections, and a brief summary of the policy regarding seasonal landscape deferrals.

Tree Species and Size

1. Trees and shrubs that are planted shall be of the species and size specified on the approved plans. There shall be no deviations from the approved sizes specified except as approved by Fairfax County Urban Forest Management (UFMD). (PFM 12-0705.1A)

2. All trees and shrubs shall meet the standards for sizes and quality specified in the American Association of Nurserymen's American Standard for Nursery Stock, (ANSI Z60.1-1996). See attachment #1. (PFM 12-0705.1B)

Species Substitutions

3. Species substitutions within the tree categories listed in Table 12.17 are generally accepted unless otherwise specified by proffered conditions, development conditions, special exceptions, or special permits. Any tree substitution shall also be in conformance with the following. (PFM 12-0705.1C)
   a. ***Plant Diversity*** - The use of substitutions shall not result in any species making up more than 10 percent, and shall not result in any one genus making up more than 33 percent, of the total number of trees required to be planted on the site. (PFM 12-0515.1L)
   b. ***Authorization*** - A letter signed by the permittee shall be provided to UFMD acknowledging any proposed substitutions to trees and shrubs shown on the approved plans. (PFM 12-0705.1C(2))
   c. ***Substitutions Outside of Tree Category*** - Substitution of a tree shown on the approved plan from one tree category, as listed in PFM Table 12.17, with a tree from a different category shall require a revision to the approved plan. (PFM 12-0705.1C(3))
   d. ***Species Suitability*** - Substituted species must be suited to the post-development conditions of the planting location for which it is intended. (PFM 12-0601.1E)
   e. ***Additional Tree Cover Credit*** - In cases where additional tree cover credit has been given, no tree substitutions shall be made except as approved by the Urban Forest Management. Examples of additional credit include the following:
      Air Quality, PFM 12-0510.4B(1)
      Energy Conservation, PFM 12-0510.4B(2)
      Water Quality, PFM 12-0510.4B(3)
      Wildlife Benefits, PFM 12-0510.4B(4)
      Native Trees, PFM 12-0510.4B(5)

Planting Locations

4. Planting locations of all trees on the site shall be in substantial conformance with the approved plan. UFMD acknowledges that not all trees may be optimally located, as shown on the plan, and encourage input from Permittees and their landscape professionals regarding proposed improvements that might be implemented. Any substantive deviations from the approved plan that are made in the field must be approved by UFMD and shall be in conformance with the following:
   a. ***Planting Area*** - At least the minimum size planting area shall be provided for each tree according to its projected 10-year tree cover area as found in Table 12.7. (PFM 12-0601.1B)
   b. ***Environmental Conditions*** - Light, moisture, and other conditions affecting the health and viability of the tree at the field location shall be suitable for the species. (PFM 12-0601.1E)
   c. ***Compacted Soil*** – If planting in areas that have been previously compacted, the soil shall be properly prepared (tilled and amended as needed based on soil samples) to a depth of 12 inches, prior to installation of landscape material. Soil within individual planting holes shall not be amended. (PFM 12-0705.3B)
   d. ***Restrictive Barriers*** - Trees shall be planted no closer than four feet from any restrictive barrier. (PFM 12-0510.4E(5)
   e. ***Spacing*** - Trees shall be spaced so that the outer limit of their projected 10-year tree cover area, as indicated in Table 12.19, does not significantly overlap; or as determined appropriate by UFMD for site conditions and to promote long-term survival. (PFM 12-0510.4E(6))
   f. ***Easements*** - Trees for tree cover credit shall not be planted within any existing or proposed public utility easement or within five feet of storm drainage easements that contain pipes. In addition, trees shall not be planted in an area that will interfere with existing or proposed utilities or with maintenance of the utility, as determined by the Director of DPWES. (PFM 12-0515.6B)

Staking and Guying

5. Staking and guying should only be implemented where site conditions warrant their use. Planted trees should be assessed individually and staking and guying installed only as required. Conditions where staking and guying may be necessary to ensure stability include: windy locations, steep slopes, or where vandalism may be a concern. All staking and guying material must be removed within one year of plant installation (PFM 12-0705.3C)

Seasonal Landscape Deferrals

6. A Seasonal Landscape Deferral may be granted when seasonal or weather-related conditions, such as excessively wet soil, extended periods of drought, or frozen ground, substantially reduce the survivability of the plant material, as determined by the Urban Forest Management. A request for a landscape deferral will not be granted for landscaping required prior to the issuance of a RUP or Non-RUP when seasonal or weather-related conditions on the site plan do not preclude planting. Lack of species availability may justify the approval of a Seasonal Landscape Deferral when specific plant species are required by proffers or conditions.

7. The party responsible for the placement of the performance bond and conservation deposit for the project shall act as the Applicant for this seasonal deferral. Seasonal Landscape Deferral request forms can be obtained from the Environmental and Facilities Inspections Division or the Urban Forest Management.

8. At the time of final inspection for release of performance bond and conservation deposit, all of the plant material is inspected. Plant material previously inspected, as part of the process to release any deferral deposit that may have existed, is not exempt from this final inspection. All plant material must be healthy and in good condition.

Requirements Prior to Approval of RUP/Non-RUP

9. The landscaping and screening requirements of Article 13 or of any approved proffered condition, special permit, special exception or variance must be completed prior to approval of any Residential or Non-Residential Use Permit; provided, however, that completion of the requirements may be delayed when justification satisfactory to the Director is provided; such justification shall include an agreement and bond with surety satisfactory to the Director for completion in accordance with a firm schedule for timely completion. (ZO 18-704.3) See Seasonal Landscape Deferrals above.

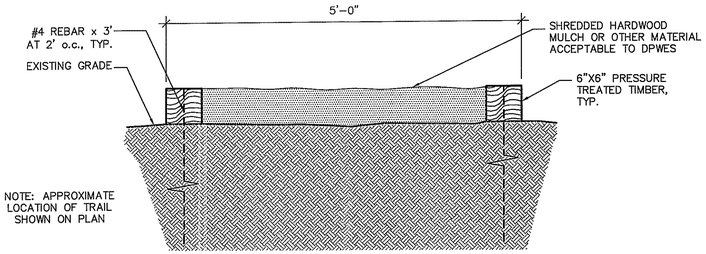
TREE PRESERVATION TARGET AND STATEMENT
(10-YEAR TREE CANOPY CALCULATIONS) *

A.	**TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT**	**Totals (s.f.)**
A1	Pre-development Area of Existing Tree Canopy	136,116
A2	Percentage of Gross Site Area Covered by Existing Tree Canopy (A1/B1)	35.5%
A3	Percentage of 10-year Tree Canopy Required for the Site (PDH-4 Zone)	25%
A4	Percentage of the 10-Year Tree Canopy Requirement That Should be Met Through Tree Preservation	35.5%
A5	Proposed Percentage of Canopy Requirement That Will be Met Through Tree Preservation (C10/B7)	29.9%
A6	Has the Tree Preservation Target Minimum Been Met?	No
A7	If A6 is no, then a request to deviate from the Tree Preservation Target shall be provided on the plan that states one or more of the justifications listed in §12-0508.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target cannot be meet. Provide sheet number where deviation request is located. The narrative shall be prepared in accordance with §12-0507.4.	No (See General Note 1 Below)
B.	**TREE CANOPY REQUIREMENT**	
B1	Identify Gross Area	383,069
B2	Subtract Areas Dedicated to Parks, and Road Frontage	7,426
B3	Subtract Area of Exemption	0
B4	Adjusted Gross Site Area B1- (B2+B3)	375,643
B5	Identify Site's Zoning and/or Use	PDH-4
B6	Percentage of 10-Year Tree Canopy Required	25%
B7	Area of 10 Year Tree Canopy Required (B4xB6)	93,911
B8	Modification of 10-Year Tree Canopy Requirements Requested	No
B9	If B8 is Yes, Then List Plan Sheets Where Modification Request is Located	N/A
C.	**TREE CANOPY PRESERVATION**	
C1	Tree Preservation Target Area (B7 x A4)	33,369
C2	Total Canopy Area Meeting Standards of §12-0200	8,515
C3	C2 x 1.25	10,644
C3.1	Total Canopy Area Meeting Standards of §12-0200 But Does Not Qualify for Bonus Multiplier	8,196
C3.2	C3.1 x 1.00	8,196
C4	Total Canopy Area Provided by Unique or Valuable Forest or Woodland Community	0
C5	C4 x 1.5	0
C6	Total Canopy Area Provided Through Tree Transplantation (See General Note 2 Below)	2,750
C7	C6 x 1.0	2,750
C8	Canopy Area of Trees Within Resource Protection Areas and 100-Year Floodplains	6,503
C9	C8 x 1.0	6,503
C10	Totals of C3, C3.2, C5, C7 and C9	28,093
D.	**TREE PLANTING**	
D1	Area of Canopy to be Met Through Tree Planting (B7-C10)	65,818
D2	Area of Canopy Planted for Air Quality Benefits	0
D3	D2 x 1.5	0
D4	Area of Canopy Planted for Energy Conservation	0
D5	D4 x 1.5	0
D6	Area of Canopy Planted for Water Quality Benefits	0
D7	D6 x 1.25	0
D8	Area of Canopy Planted for Wildlife Benefits	23,700
D9	D8 x 1.5	35,550
D10	Area of Canopy Provided by Native Species	0
D11	D10 x 1.5	0
D12	Area of Canopy Provided by Improved Cultivars and Varieties	0
D13	D12 x 1.25	0
D14	Area of Canopy Provided Through Tree Seedling	0
D14.1	D14 x 1.0	0
D15	Area of Canopy Provided Through Native Shrubs or Wood Seed Mix	0
D15.1	D15 x 1.0	0
D16	Percentage of D14 Represented by D15 (D15/D14) Must not exceed 33% of D14	0
D16.1	Area of Canopy Planted With No Multiplier	30,400
D17	Total Canopy Area Provided Through Tree Planting (Totals of D3, D5, D7, D9, D11, D13, D14.1, D15.1 and D16.1)	65,950
D18	Is an Offsite Planting Relief Requested?	No
D19	Tree Bank or Tree Fund	N/A
D20	Canopy Area Requested to be Provided Through Offsite Banking or Tree Fund	0
D21	Amount to be Deposited into the Tree Preservation and Planting Fund	0
E.	**TOTAL OF 10-YEAR TREE CANOPY PROVIDED**	
E1	Total of Canopy Area Provided Through Tree Preservation (C10)	28,093
E2	Total of Canopy Area Provided Through Tree Planting (D17)	65,950
E3	Total of Canopy Area Provide Through Offsite Mechanism (D20)	0
E4	Total of 10-Year Tree Canopy Provided (Totals of E1, E2 and E3)	94,043

* THE AREAS USED FOR THE 10–YEAR TREE CANOPY CALCULATIONS ARE APPROXIMATE AND MAY CHANGE WITH FINAL ENGINEERING PROVIDED THAT THE MINIMUM 10–YEAR TREE CANOPY HAS BEEN PROVIDED.

TRANSITIONAL SCREENING AND BARRIERS, INTERIOR PARKING LOT LANDSCAPING AND PERIPHERAL PARKING LOT LANDSCAPING

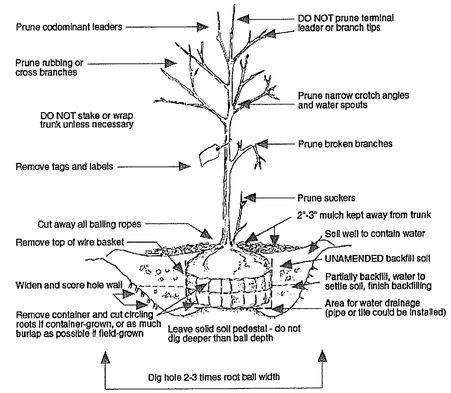
IN ACCORDANCE WITH THE PROVISIONS OF THE FAIRFAX COUNTY ZONING ORDINANCE ARTICLE 13, NO TRANSITIONAL SCREENING, BARRIERS OR INTERIOR PARKING LOT LANDSCAPING AND PERIPHERAL PARKING LOT LANDSCAPING ARE REQUIRED FOR ADJACENT USES TO THE SITE (SINGLE FAMILY DETACHED, MULTI–FAMILY AND RETAIL). HOWEVER, WHERE THE SITE IS ADJACENT TO RETAIL USES OFFSITE (AT THE NORTHWEST CORNER OF THE SITE), A MODIFIED 25' TRANSITIONAL SCREENING WILL BE PROVIDED TO INCLUDE THE EXISITNG VEGETATION TO BE PRESERVED AND PROPOSED TREES AND SHRUBS AS SHOWN ON THE PLAN.



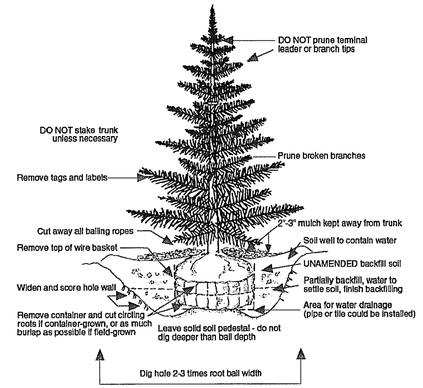
3/8 MULCH (OR OTHER APPROVED MATERIAL) TRAIL
SECTION
SCALE: 1"=1–0"
13–11254Mulch Trail

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011



1/8 TREE PLANTING GUIDELINE
NOT TO SCALE
12A–Tree Planting–VA



2/8 EVERGREEN PLANTING GUIDELINE
NOT TO SCALE
12A–Tree Planting–VA

GENERAL NOTES:

1: IN ACCORDANCE WITH THE PROVISIONS OF SECTION 12–0508.4 OF THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (PFM), A REQUEST TO DEVIATE FROM THE TREE PRESERVATION TARGET WILL BE SUBMITTED WITH THE FIRST SUBMISSION OF THE SUBDIVISION PLAN. THE DEVIATION REQUEST IS BASED ON THE MINIMIM PROPOSED CLEARING AND GRADING NECESSARY TO PROVIDE FOR THE PROPOSED DEVELOPMENT OF THE SITE. THE REQUEST IS IN ACCORDANCE WITH THE PROVISIONS OF PFM SECTION 12–0508.3A(1), WHEREBY 'MEETING THE TREE PRESERVATION TARGET WOULD PRECLUDE THE DEVELOPMENT OF USES OR DENSITIES OTHERWISE ALLOWED BY THE ZONING ORDINANCE'. THE 10–YEAR TREE CANOPY REQUIREMENTS WILL OTHERWISE BE MET BY MEANS OF TREE PLANTING. THE PROPOSED 10–YEAR TREE CANOPY AREAS LISTED ABOVE (FOR PRESERVATION, TRANSPLANTATION AND PLANTING) ARE BASED ON PRELIMINARY ENGINEERING AND MAY CHANGE WITH FINAL ENGINEERING PROVIDED THAT THE OVERALL 10–YEAR TREE CANOPY REQUIREMENTS ARE MEET. HOWEVER, NO CHANGES IN THE AMOUNTS LISTED ABOVE WILL BE ALLOWED WITHOUT PRIOR CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION AND PRIOR TO FINAL ENGINEERING.

2: FOR TREE CANOPY CREDIT FOR TREES TO BE TRANSPLANTED, SEE SHEET 14.

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 8 of 22

PROPOSED TREE LIST AND TREE CANOPY CALCULATIONS

TREE LOCATIONS TO BE ASSIGNED AT THE SUBDIVISION PHASE. SEE SHEETS 5 AND 6 FOR ADDITIONAL INFORMATIONS.

DECIDUOUS TREES	Quantity	Type	Botanical Name	Common Name	Container	Caliper	Height	10 yr. Tree Canopy (s.f.)	Total 10 Yr. Tree Canopy (s.f.)	Bonus Multiplier	Multiplier Code	Final Tree Canopy Subtotal (s.f.)
AR1	4	Category IV Deciduous Tree	Acer rubrum	Red Maple	B & B	3" Cal.		250	1,000	1.0	NA	1,000
AR2	6	Category IV Deciduous Tree	Acer rubrum	Red Maple	B & B	3" Cal.		250	1,500	1.5	WB	2,250
AR3	3	Category IV Deciduous Tree	Acer rubrum	Red Maple	B & B	2" Cal.		200	600	1.0	NA	600
AR4	3	Category IV Deciduous Tree	Acer rubrum	Red Maple	B & B	2" Cal.		200	600	1.5	WB	900
FA1	2	Category IV Deciduous Tree	Fagus americana	American Beech	B & B	2" Cal.		200	400	1.0	NA	400
FA2	4	Category IV Deciduous Tree	Fagus americana	American Beech	B & B	2" Cal.		200	800	1.5	WB	1,200
LT1	4	Category IV Deciduous Tree	Liriodendron tulipifera	Tulip Poplar	B & B	3" Cal.		250	1,000	1.0	NA	1,000
LT2	6	Category IV Deciduous Tree	Liriodendron tulipifera	Tulip Poplar	B & B	3" Cal.		250	1,500	1.5	WB	2,250
LT3	3	Category IV Deciduous Tree	Liriodendron tulipifera	Tulip Poplar	B & B	2" Cal.		200	600	1.0	NA	600
LT4	3	Category IV Deciduous Tree	Liriodendron tulipifera	Tulip Poplar	B & B	2" Cal.		200	600	1.5	WB	900
QP1	5	Category IV Deciduous Tree	Quercus phellos	Willow Oak	B & B	3" Cal.		250	1,250	1.0	NA	1,250
QP2	6	Category IV Deciduous Tree	Quercus phellos	Willow Oak	B & B	3" Cal.		250	1,500	1.5	WB	2,250
QP3	3	Category IV Deciduous Tree	Quercus phellos	Willow Oak	B & B	2" Cal.		200	600	1.0	NA	600
QP4	3	Category IV Deciduous Tree	Quercus phellos	Willow Oak	B & B	2" Cal.		200	600	1.5	WB	900
QR1	5	Category IV Deciduous Tree	Quercus rubra	Red Oak	B & B	3" Cal.		250	1,250	1.0	NA	1,250
QR2	5	Category IV Deciduous Tree	Quercus rubra	Red Oak	B & B	3" Cal.		250	1,250	1.5	WB	1,875
QR3	3	Category IV Deciduous Tree	Quercus rubra	Red Oak	B & B	2" Cal.		200	600	1.0	NA	600
QR4	3	Category IV Deciduous Tree	Quercus rubra	Red Oak	B & B	2" Cal.		200	600	1.5	WB	900
BN1	6	Category III Deciduous Tree	Betula nigra	River Birch	B & B	2" Cal.		150	900	1.0	NA	900
BN2	10	Category III Deciduous Tree	Betula nigra	River Birch	B & B	2" Cal.		150	1,500	1.5	WB	2,250
MG	8	Category III Deciduous Tree	Metasequoia glyptostroboides	Dawn Redwood	B & B	2" Cal.		150	1,200	1.0	NA	1,200
NS1	6	Category III Deciduous Tree	Nyssa sylvatica	Black Gum	B & B	2" Cal.		150	900	1.0	NA	900
NS2	10	Category III Deciduous Tree	Nyssa sylvatica	Black Gum	B & B	2" Cal.		150	1,500	1.5	WB	2,250
AA	8	Category II Deciduous Tree	Amelanchier arborea	Downey Serviceberry	B & B	2" Cal.		100	800	1.5	WB	1,200
AL	8	Category II Deciduous Tree	Amelanchier laevis	Allegheny Serviceberry	B & B	2" Cal.		100	800	1.5	WB	1,200
CC	4	Category II Deciduous Tree	Cercis canadensis	Eastern Redbud	B & B	2" Cal.		100	400	1.0	NA	400
CV	4	Category II Deciduous Tree	Chionanthus virginicus	Fringetree	B & B	2" Cal.		100	400	1.0	NA	400
MV	4	Category II Deciduous Tree	Magnolia virginiana	Sweetbay Magnolia	B & B	2" Cal.		100	400	1.0	NA	400
OA	3	Category II Deciduous Tree	Oxydendrum arboreum	Sourwood	B & B	2" Cal.		100	300	1.0	NA	300
ARC*	50	Category I Deciduous Tree	Acer rubrum 'Columnare'	Columnar Red Maple	B & B	3" Cal.		75	3,750	1.0	NA	3,750
Total	192							Subtotal	29,100			35,875
EVERGREEN TREES												
PR1	4	Category IV Evergreen Tree	Pinus rigida	Pitch Pine	B & B		10'	250	1,000	1.0	NA	1,000
PR2	7	Category IV Evergreen Tree	Pinus rigida	Pitch Pine	B & B		10'	250	1,750	1.5	WB	2,625
PR3	4	Category IV Evergreen Tree	Pinus rigida	Pitch Pine	B & B		8'	200	800	1.0	NA	800
PR4	4	Category IV Evergreen Tree	Pinus rigida	Pitch Pine	B & B		8'	200	800	1.5	WB	1,200
PT1	4	Category IV Evergreen Tree	Pinus taeda	Loblolly Pine	B & B		10'	250	1,000	1.0	W	1,000
PT2	7	Category IV Evergreen Tree	Pinus taeda	Loblolly Pine	B & B		10'	250	1,750	1.5	WB	2,625
PT3	4	Category IV Evergreen Tree	Pinus taeda	Loblolly Pine	B & B		8'	200	800	1.0	W	800
PT4	4	Category IV Evergreen Tree	Pinus taeda	Loblolly Pine	B & B		8'	200	800	1.5	WB	1,200
PV1	4	Category IV Evergreen Tree	Pinus virginiana	Virginia Pine	B & B		10'	250	1,000	1.0	NA	1,000
PV2	7	Category IV Evergreen Tree	Pinus virginiana	Virginia Pine	B & B		10'	250	1,750	1.5	WB	2,625
PV3	4	Category IV Evergreen Tree	Pinus virginiana	Virginia Pine	B & B		8'	200	800	1.0	NA	800
PV4	5	Category IV Evergreen Tree	Pinus virginiana	Virginia Pine	B & B		8'	200	1,000	1.5	WB	1,500
PA	19	Category III Evergreen Tree	Picea abies	Norway Spruce	B & B		8'	150	2,850	1.0	NA	2,850
PE	20	Category III Evergreen Tree	Pinus echinata	Shortleaf Pine	B & B		8'	150	3,000	1.0	NA	3,000
CJ	9	Category II Evergreen Tree	Crytomeria japonica	Japanese Crytomeria	B & B		8'	100	900	1.0	NA	900
IO	23	Category II Evergreen Tree	Ilex opaca	American Holly	B & B		8'	100	2,300	1.5	WB	3,450
JV	9	Category II Evergreen Tree	Juniperus virginiana	Eastern Redcedar	B & B		8'	100	900	1.0	NA	900
PO	9	Category II Evergreen Tree	Picea omorika	Serbian Spruce	B & B		8'	100	900	1.0	NA	900
IO	9	Category II Evergreen Tree	Pinus bungeana	Lacebark Pine	B & B		8'	100	900	1.0	NA	900
Total	156							Subtotal	25,000			30,075
								Total	54,100		Total	65,950

* COLUMNAR RED MAPLES TO BE USED FOR STREET TREES
MULTIPLIER CODE: WB - WILDLIFE BENEFIT; NA - NOT APPLICABLE (NO BONUS MULTIPLIER)

BC Consultants
Planners • Engineers • Surveyors • Landscape Architects
12600 Fair Lakes Circle, Suite 100, Fairfax, VA 22033
(703)449–8100 (703)449–8108 (Fax)
www.bccon.com

COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
Lic. No. 862
05–16–12
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
LANDSCAPE DETAILS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
08–05–11	REVISED 02–17–12
REVISED 11–09–11	REVISED 03–28–12
REVISED 12–07–11	04–11–12
REVISED 01–06–12	04–30–12
REVISED 01–30–12	REVISED 05–16–12

CONTRACT PURCHASER:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. NA
VERT. NA
SHEET 8 OF 22
CO. NO.
CAD NAME: F11524LSCDET
LAYOUT: LSC DETAILS
FILE NO. 11524–08

XREFS:

LEGEND:

- LIMITS OF CRITICAL ROOT ZONE (CRZ)
- (CRZ) EXISTING TREE TO BE PRESERVED
- (CRZ) EXISTING TREE TO BE REMOVED
- MULCH AREA (3/13)
- POST-DEVELOPMENT 10-YEAR TREE CANOPY CREDIT AREA (25,342 s.f.)*

  * EXCLUDES CANOPY CREDIT FOR TREES TO BE TO BE TRANSPLANTED. SEE SHEET 14 FOR ADDITIONAL INFORMATION.
- RP TP — ROOT PRUNE (RP) (2/13) AND/OR TREE PROTECTION FENCE (TP) (1/13)
- APPROXIMATE LIMITS OF CLEARING AND GRADING
- EXISTING TREELINE
- PROPOSED TREELINE
- RPA — FIELD-VERIFIED AND APPROVED RESOURCE PROTECTION AREA (25234-RPA-01-1)

SEE SHEETS 10, 11 AND 12 FOR TREE INVENTORY AND CONDITION ANALYSIS AND SHEET 13 FOR THE TREE PRESERVATION NARRATIVE, DETAILS AND MONITORING SCHEDULE.

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

50' 25' 0' 50'
SCALE: 1"= 50'

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 9 of 22

BC Consultants
Planners • Engineers • Surveyors • Landscape Architects
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(703)449-8100 (703)449-8108 (Fax)
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COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
Lic. No. 862
05-16-12
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN

TREE PRESERVATION PLAN

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
08-05-11	REVISED 02-17-12
REVISED 11-09-11	REVISED 03-28-12
REVISED 12-07-11	REVISED 04-11-12
REVISED 01-06-12	REVISED 04-30-12
REVISED 01-30-12	REVISED 05-16-12

APPLICANT:
NEIGHBORHOODS VI, LLC
SUITE 500 SUNSET HILLS ROAD
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. 1"= 50' VERT. N/A
SHEET 9 OF 22
CO. NO.
CAD NAME: F11524TPP
LAYOUT: TPP
FILE NO. 11524-08

XREF'S:

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND/OR COMMON NAME	SIZE *DBH (in)	**CRZ R (ft)	CONDITION % ***	CANOPY POSITION	CROWN DENSITY %	AVERAGE CROWN SPREAD D (ft)	FINAL STATUS	ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
1	Robinia pseudoacacia/Black Locust	12	12	69	Co-Dominate	75	15	R							Some dead/broken branches	
2	Robinia pseudoacacia/Black Locust	18	18	75	Co-Dominate	75	15	R							Some dead/broken branches	
3	Robinia pseudoacacia/Black Locust	24	24	69	Co-Dominate	80	20	R							Some dead/broken branches	
4	Robinia pseudoacacia/Black Locust	18	18	72	Co-Dominate	70	25	R							Some dead/broken branches	
5	Prunus sp./Cherry	14	14	81	Co-Dominate	80	18	R							Some dead/broken branches	
5A	Robinia pseudoacacua/Black Locust	24-12	26	75	Co-Dominate	80	25	R							Some dead/broken branches	Twin Stem
6	Robinia pseudoacacia/Black Locust	12	12	72	Co-Dominate	70	20	R							Some dead/broken branches	
7	Acer sp./ Maple	24-12	27	84	Co-Dominate	75	30	RWP							Some dead/broken branches	Twin Stem, Co-Owned
8	Robinia pseudoacacia/Black Locust	12	12	72	Co-Dominate	70	15	R							Some dead/broken branches	
9	Ulmus sp./Elm	10	10	84	Co-Dominate	70	15	R							Some dead/broken branches	
10	Robinia pseudoacacia/Black Locust	12	12	72	Co-Dominate	75	18	R							Some dead/broken branches	
11	Prunus sp./Cherry	12	12	84	Co-Dominate	95	35	POS		X					lower pruning scars; minor upper branch damage	Off Site
12	Robinia pseudoacacia/Black Locust	30	30	28	Co-Dominate	35	20	R							One major stem dead/broken off; some rot; other stem broken; upper branch damage	Poor Condition
13	Nyssa sylvatica/Black Gum	20	20	72	Co-Dominate	70	25	P				X			One sided; upper branch damage; slight lean	
14	Acer sp./ Maple	28	28	84	Co-Dominate	85	40	P							upper stems codominate	
15	Acer sp./ Maple	14	14	75	Co-Dominate	65	25	P			X	X			thin at bottom; one sided; some upper branch damage; pruned at bottom	
16	Acer sp./ Maple	12	12	32	Co-Dominate	60	15	P/RWP			x	X			very thin; upper branch damage; borderline dead; branch decay at top	Poor Condition
17	Acer sp./ Maple	18	18	22	Co-Dominate	80	25	P/RWP			X	X			large cavities with rot; dead/decaying upper branches; hole in stem/trunk	Poor Condition
18	Acer sp./ Maple	12	12	28	Co-Dominate	80	20	P/RWP			X	X			Some girdling roots; major cavity in middle; upper dead/decaying branches	Poor Condition
19	Acer sp./ Maple	18	18	78	Co-Dominate	70	50	P			X	X			codominate upper stems; some vines; upper branch damage; some dead branches	
20	Querus alba/White Oak	50	50	28	Dominate	50	50	P	X	X	X	X	X		major branch damage; trunk rot; insects.	Poor Condition
20A	Acer sp./ Maple	12-8	14	31	Co-Dominate	75	30	POS		X					some rot; evidence of termites on small stems; dead/decaying branches on top; possible root girdling	Twin Stem, Off Site Poor Condition
21	Acer sp./ Maple	24	24	72	Co-Dominate	65	30	POS		X					curved trunk; some major branches damaged in middle	Off Site
22	Acer sp./ Maple	10-8	13	38	Co-Dominate	80	25	POS		X					some rot; dead/decaying branches; possible root girdling	Twin Stem, Off Site Poor Condition
23	Dead (Black Locust)	18	18	–	–	–	–	POS							Dead	Dead, Off Site
24	Robinia pseudoacacia/Black Locust	12	12	78	Co-Dominate	85	25	POS		X						Off Site
25	Robinia pseudoacacia/Black Locust	18	18	34	Co-Dominate	60	35	POS	X	X					Broken/dead branches; major decaying upper branches	Off Site Poor Condition
26	Acer rubrum/Red maple	12	12	72	Co-Dominate	80	25	POS		X					24" stump next to tree; some broken branches	Off Site
27	Acer sp./ Maple	30	30	78	Co-Dominate	95	50	POS	X	X					Heavily pruned; exposed roots	Off Site
28	Dead (Black Locust)	24	24	–	–	–	–	POS							Dead	Dead, Off Site
29	Dead (Black Locust)	24	24	–	–	–	–	POS							Dead	Dead, Off Site
30	Ailanthus altissima/Tree of Heaven	12	12	72	Co-Dominate	65	30	R								
31	Stump	18	18	–	–	–	–	R							Stump	
31A	Prunus sp./Cherry	8	8	75	Co-Dominate	90	18	P		X	X	X			Some broken branches; rubbing branches; needs pruning	
32	Robinia pseudoacacia/Black Locust	30	30	75	Co-Dominate	80	20	POS							Broken/dead branches at top	Off Site
33	Acer sp./ Maple	20	20	78	Co-Dominate	90	30	POS							some rot; some branch damage; one sided	Off Site
34	Acer sp./ Maple	20	20	72	Co-Dominate	90	35	POS	X	X					lopsided; one major stem on one side	Off Site
35	Ulmus sp./Elm	18	18	81	Co-Dominate	80	18	R								
36	Metasequoia glyptastroboides/Dawn Redwood	30	30	88	Co-Dominate	85	25	R								
37	Quercus sp./Oak	10	10	81	Co-Dominate	90	20	R							Minor branch damage; exposed roots	
38	Pinus sp./Pine	24	24	78	Co-Dominate	85	35	POS							Thin at bottom	Off Site

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND/OR COMMON NAME	SIZE *DBH (in)	**CRZ R (ft)	CONDITION % ***	CANOPY POSITION	CROWN DENSITY %	AVERAGE CROWN SPREAD D (ft)	FINAL STATUS	ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
39	Robinia pseudoacacia/Black Locust	18	18	31	Co-Dominate	65	20	POS	X	X					Major branch damage; vine cover; almost dead	Off Site, Poor Condition
40	Acer sp./ Maple	8-24	25	72	Co-Dominate	90	35	POS	X	X					Small codominate stems at bottom; intertwined with locust; some branch damage	Twin Stem, Offsite
41	Liriodendron tulipifera/Tulip Poplar	30	30	81	Co-Dominate	80	30	POS	X	X					Lower branches dead	Off Site
42	Robinia pseudoacacia/Black Locust	12	12	72	Co-Dominate	75	30	POS	X	X					Vine cover; upper broken/dead branches; some rot	Off Site
43	Picea abies/Norway Spruce	12	12	78	Co-Dominate	65	50	POS							One sided; vine cover	Off Site
44	Robinia pseudoacacia/Black Locust	24	24	38	Co-Dominate	70	25	POS	X	X					Dead/decaying upper branches; lower broken branches	Off Site Poor Condition
45	Robinia pseudoacacia/Black Locust	24	24	75	Co-Dominate	65	20	POS	X	X						Off Site
46	Acer sp./ Maple	18	18	88	Co-Dominate	90	45	POS							Some vine cover	Off Site
47	Dead (Black Locust)	24	24	–	–	–	–	POS							Dead	Dead, Off Site
48	Acer sp./ Maple	12	12	75	Co-Dominate	80	25	POS							heavy vine cover; curved trunk	Off Site
48A	Acer sp./ Maple	10	10	88	Co-Dominate	80	30	POS							Minor branch damage	Off Site
48B	Tsuga canadensis/Canadian Hemlock	8	8	72	Supressed	60	8	POS							heavy vine cover; top broken	Major Vine Cover, Top Broken, Off Site
49	Acer sp./ Maple	36	36	25	Co-Dominate	70	60	R							at edge of pipe outfall; leaning; exposed roots; major branch damage	Poor Condition
50	Robinia pseudoacacia/Black Locust	12	12	69	Co-Dominate	65	20	P		X	X	X			Edge of bank; leaning; dead/broken branches	
51	Acer sp./ Maple	20	20	72	Co-Dominate	60	45	P		X	X	X		X	Edge of bank; vine cover; broken/dead upper branches	Remove Vines
52	Dead (Cherry)	12	12	–	–	–	–	RWP							Dead	Dead
53	Betula nigra/River Birch	6-4-4	8	75	Co-Dominate	90	15	R							Exposed/girdled roots; slight lean	Multi-Stem
54	Not Used															
55	Not Used															
56	Not Used															
57	Acer sp./ Maple	12	12	88-	Co-Dominate	90	35	POS	X	X					Minor upper branch damage	Off Site
58	Juglans nigra/Black Walnut	48	48	91	Co-Dominate	90	50	POS	X							Off Site
58A	Acer sp./ Maple	18	18	84	Co-Dominate	85	25	POS	X							Off Site
59	Acer sp./ Maple	40	40	63	Co-Dominate	85	65	R							major broken branch at top; some rot	
60	Acer sp./ Maple	4-6-6-4-10	14	81	Co-Dominate	75	20	R								Multi-Stem
61	Acer sp./ Maple	36	36	28	Suppressed	25	65	R							some rot; some vine cover; some broken branches; one sided; leaning; roots at edge of stream bank; upper branch damage	Poor Condition
62	Ulmus sp./Elm	36	36	88	Co-Dominate	95	60	TBD							Minor branch damage	Attempt to save this tree. Engineering review required prior to subdivision plan approval in consultation with UFMD.
63A	Quercus phellos/Willow Oak	20	20	84	Co-Dominate	90	30	P	X	X	X	X			Minor branch damage	
63	Stump	12	12	–	–	–	–	RWP							Stump	
64	Quercus palustris/Pin Oak	30	30	75	Co-Dominate	80	60	P	X	X	X	X			Upper broken branches; vine cover; pruning scars	

TREE INVENTORY AND CONDITION ANALYSIS CONTINUED ON SHEET 11.

SEE SHEET 9 FOR THE TREE PRESERVATION PLAN AND SHEET 13 FOR THE TREE PRESERVATION DETAILS AND NARRATIVES.

NOTE:
1. NO OFF-SITE TREES OR CO-OWNED TREES SHALL BE REMOVED WITHOUT THE PRIOR PERMISSION OF THE OFF-SITE OWNER(S) OR CO-OWNER(S) OF THE TREES.
2. THE ADJACENT PROPERTY OWNER(S) DID NOT GRANT PERMISSION TO ACCESS THEIR PROPERTY. THE LOCATION, DIAMETER AND CONDITION ANALYSIS FOR ALL OFF-SITE TREES HAVE BEEN ESTIMATED.
3. ALL TREES 8 INCHES OR GREATER IN DIAMETER WITHIN 25 FEET OF EITHER SIDE OF THE LIMITS OF CLEARING AND GRADING HAVE BEEN LISTED EXCEPT WHERE DIRECTED OTHERWISE BY THE URBAN FOREST MANAGMENT DIVISION.
4. CONDITION ANALYSIS INFORMATION HAS BEEN PROVIDED FOR ALL TREES LISTED.

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 10 of 22

LEGEND:

- PC :POOR CONDITION. STATUS TO BE DETERMINED IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION (UFMD).
- TBD :POTENTIAL HAZARD OR TREE OF SPECIAL CONCERN. STATUS TO BE DETERMINED IN CONSULTATION WITH THE UFMD.
- P :PRESERVE
- R :REMOVE
- POS :PRESERVE OFF-SITE
- RWP :REMOVE WITH PERMISSION FROM THE UFMD. TREE IS WITHIN UNDISTURBED AREA BUT CONDITIONS WARRANT ITS REMOVAL.
- X :CONDUCT ACTIVITY INDICATED
- * :DBH/DIAMETER BREAST HEIGHT AS MEASURED 4.5 FEET ABOVE GROUND.
- ** :CRZ/CRITICAL ROOT ZONE (ONE FOOT OF RADIUS FOR EVERY INCH OF TREE DIAMETER. CRZ FOR TREES WITH MULTIPLE STEMS ARE CALCULATED BASED ON THE DIAMETER OF A TREE WITH A BASAL AREA EQUIVALENT TO THE SUM OF THE BASAL AREAS FOR ALL STEMS MEASURED.
- *** :CONDITION RATINGS ARE PROVIDED AS PERCENTAGES BASED ON METHODS OUTLINED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

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COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
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05-16-2012
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE INVENTORY AND CONDITION ANALYSIS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
08-05-11
REVISED 03-28-12
04-11-12
REVISED 04-30-12
REVISED 05-16-12
APPLICANT:
NEIGHBORHOODS VI, LLC
1111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. VERT.

CO. NO.
CAD NAME: F11524TPP-INV
LAYOUT: TTP-INVENTORY(1)
FILE NO. 11524-08
XREFS:

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND OR/ COMMON NAME	SIZE	**CRZ	CONDITION	CANOPY POSITION	CROWN DENSITY	AVERAGE CROWN SPREAD	FINAL STATUS	ACTIVITIES						PROBLEMS	COMMENTS
		*DBH (in)	R (ft)	% ***		%	D (ft)		ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER		
65	Acer sp./ Maple	30	30	66–	Co–Dominate	80	50	POS	X	X					One main upper branch dead/decaying; slight lean; major broken branches	Off Site
66	Dead (Sassafras)	12	12	–				RWP								Dead
67	Sassafras albidum/Common Sassafras	14	14	78	Co–Dominate	70	25	P	X	X	X	X			Thin; crooked leader	
68	Dead (Sassafras)	12	12	–				RWP								Dead
69	Sassafras albidum/Common Sassafras	14	14	78	Co–Dominate	65	20	P	X	X	X	X			Slight lean; some dead branches	Co–Owned
70	Acer sp./ Maple	10	10	38	Co–Dominate	65	30	POS							Some broken branches; some decay; one sided	Off Site; Poor Condition
71	Acer sp./ Maple	12–8	20	31	Co–Dominate	70	30	POS		X					One sided; major upper branches broken	Twin Stem, Off Site; Poor Condition
72	Robinia pseudoacacia/Black Locust	20	20	72	Co–Dominate	65	30	P	X	X	X	X			Some upper broken branches	
73	Robinia pseudoacacia/Black Locust	24	24	72	Co–Dominate	60	30	P	X	X	X	X			Dead/broken upper branches	
74	Acer sp./ Maple	24	24	69	Co–Dominate	75	45	POS							One sided; some minor branches decaying	Off Site
75	Acer sp./ Maple	24	24	78	Co–Dominate	85	50	POS							Some broken branches	Off Site
76	Acer sp./ Maple	10–12–12–18	27	31	Co–Dominate	70	50	POS							Major branch damage; two main trunk stems leaning; vine cover; dead/decaying branches	Multi–Stem, Off Site; Poor Condition
77	Acer sp./ Maple	18–24	30	75	Co–Dominate	85	55	POS	X						Upper broken/decaying branches	Multi–Stem, Off Site
78	Morus alba/Common Mulberry	10	10	28	Co–Dominate	60	25	POS							Leaning; one sided; growing into 79; dead/decaying/broken branches	Off Site; Poor Condition
79	Acer sp./ Maple	10	10	72	Co–Dominate	70	50	POS							Growing into 78; some vine cover; broken branches	Off Site
80	Acer sp./ Maple	10	10	78	Co–Dominate	50	20	POS							Leaning; one sided; some vine cover	Off Site
81	Quercus phellos/Willow Oak	24	18	84	Co–Dominate	75	30	POS	X	X					Some broken branches	Off Site
82	Quercus phellos/Willow Oak	24	18	72	Co–Dominate	60	20	POS							Vine cover; one sided; dead/broken branches	Off Site
83	Metasequoia glyptastroboides/Dawn Redwood	30	30	81	Dominate	95	40	P	X	X	X				Previously pruned	
84	Quercus phellos/Willow Oak	24	24	75	Dominate	95	45	R							In traffic island; exposed/constricted roots	
85	Fagus sp./Beech	10–8	13	78	Supressed	75	15	R							Thin; some broken branches	Twin Stem
86	Robinia pseudoacacia/Black Locust	24	24	75	Co–Dominate	70	20	R							Some dead/broken branches	In R.O.W.
87	Robinia pseudoacacia/Black Locust	10	10	72	Co–Dominate	65	10	R							Some dead/broken branches	In R.O.W.
88	Robinia pseudoacacia/Black Locust	10	10	72	Co–Dominate	70	8	R							Some dead/broken branches	In R.O.W.
89	Robinia pseudoacacia/Black Locust	14	14	72	Co–Dominate	75	10	R							Some dead/broken branches	In R.O.W.
90	Robinia pseudoacacia/Black Locust	12	12	72	Co–Dominate	75	10	R							Some dead/broken branches	
91	Robinia pseudoacacia/Black Locust	12	12	72	Co–Dominate	70	10	R							Some dead/broken branches	
92	Robinia pseudoacacia/Black Locust	24	24	75	Co–Dominate	75	18	R							Some dead/broken branches	In R.O.W.
93	Robinia pseudoacacia/Black Locust	10–10–10	17	78	Co–Dominate	70	25	R							Some dead/broken branches	Multi–Stem, In R.O.W.
94	Robinia pseudoacacia/Black Locust	20	20	75	Co–Dominate	65	18	R							Some dead/broken branches	In R.O.W.
95	Robinia pseudoacacia/Black Locust	12	12	72	Co–Dominate	65	10	R							Some dead/broken branches	In R.O.W.
96	Robinia pseudoacacia/Black Locust	18	18	72	Co–Dominate	70	15	R							Some dead/broken branches	
97	Robinia pseudoacacia/Black Locust	28	28	75	Co–Dominate	70	25	R							Some dead/broken branches	
98	Robinia pseudoacacia/Black Locust	12–12	17	75	Co–Dominate	75	20	R							Some dead/broken branches	Twin Stem
99	Robinia pseudoacacia/Black Locust	18	18	72	Co–Dominate	65	15	R							Some dead/broken branches	
100	Robinia pseudoacacia/Black Locust	18	18	72	Co–Dominate	75	12	R							Some dead/broken branches	
101	Robinia pseudoacacia/Black Locust	12	12	72	Co–Dominate	65	12	R							Some dead/broken branches	
102	Dead (Black Locust)	12	12	–	–	–	–	R								
103	Acer sp./Maple	10	10	28	Co–Dominate	70	8	R							Split trunk; some rot; exposed roots	Poor Condition
104	Quercus phellos/Willow Oak	12	12	72	Co–Dominate	85	18	R							Rootball above ground; bottom rooted	
105	Juniperus virginiana/Eastern Redcedar	10	10	69	Supressed	95	12	R							Thin at bottom/middle; some dead branches at bottom; upper stem has broken branch; some rot	
106	Juniperus virginiana/Eastern Redcedar	15	15	75	Co–Dominate	70	20	R								
107	Pinus sp./Pine	15	15	78	Co–Dominate	70	20	R								
108	Pinus sp./Pine	24	24	78	Co–Dominate	75	50	R								

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND OR/ COMMON NAME	SIZE	**CRZ	CONDITION	CANOPY POSITION	CROWN DENSITY	AVERAGE CROWN SPREAD	FINAL STATUS	ACTIVITIES						PROBLEMS	COMMENTS
		*DBH (in)	R (ft)	% ***		%	D (ft)		ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER		
109	Pinus sp./Pine	26	26	78	Co–Dominate	80	55	R								
110	Taxodium distichum/Bald cypress	12	12	81	Co–Dominate	80	15	R								
111	Metasequoia glyptastroboides/Dawn Redwood	14	14	59	Co–Dominate	85	25	P	X	X	X			X	Split trunk in the middle and lower section.	Potential hazard; bolt split trunk, monitor condition
112	Metasequoia glyptastroboides/Dawn Redwood	26	26	81	Co–Dominate	85	25	P		X	X					
113	Metasequoia glyptastroboides/Dawn Redwood	18	18	81	Co–Dominate	85	25	P		X	X					Limbed up
114	Taxodium distichum/Bald cypress	36	36	84	Co–Dominate	85	20	P			X					Limbed up
115	Metasequoia glyptastroboides/Dawn Redwood	24	24	81	Co–Dominate	85	25	P	X	X	X					Limbed up
116	Metasequoia glyptastroboides/Dawn Redwood	30	30	81	Co–Dominate	85	25	R								Limbed up
117	Taxodium distichum/Bald cypress	24	24	84	Co–Dominate	80	20	R								Limbed up
118	Metasequoia glyptastroboides/Dawn Redwood	28	28	81	Co–Dominate	85	25	R								
119	Metasequoia glyptastroboides/Dawn Redwood	27	27	81	Co–Dominate	85	25	R								
120	Metasequoia glyptastroboides/Dawn Redwood	24	24	81	Co–Dominate	85	25	R								
121	Taxodium distichum/Bald cypress	27	27	95	Co–Dominate	80	25	R							Some broken branches	
122	Platanus sp./London Plane Tree	24	24	81	Co–Dominate	90	30	P	X	X	X					
123	Robinia pseudoacacia/Black Locust	24	24	69	Co–Dominate	80	25	R							Some broken branches	
124	Ulmus sp./Elm	28	28	78	Co–Dominate	90	60	R								
125	Prunus sp./Cherry	8	8	91	Specimen	90	12	POS								Well Pruned; off site
126	Lagerstroemia indica/Crape Myrtle	5–5–5	9	94	Specimen	100	20	POS								Multi–Stem; off site
127	Thuja occidentalis/White Cedar	6–6	8	81	Co–Dominate	100	12	P	X	X	X			X	Vine cover	Remove Vines, Twin Stem
128	Thuja occidentalis/White Cedar	6–6	8	81	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Twin Stem
129	Thuja occidentalis/White Cedar	6–6	8	81	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Twin Stem
130	Thuja occidentalis/White Cedar	6–6	8	81	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Twin Stem
131	Thuja occidentalis/White Cedar	8	8	84	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Single Stem
132	Thuja occidentalis/White Cedar	6–6	8	81	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Twin Stem
133	Thuja occidentalis/White Cedar	8	8	78	Co–Dominate	100	12	p	X	X	X			X	Vine cover	Remove Vines, Single With One Small Stem
134	Thuja occidentalis/White Cedar	8–4	9	75	Co–Dominate	100	12	p	X	X	X					Twin Stem
135	Pinus sp./Pine	6–6–4–3	10	72	Co–Dominate	100	12	p	X	X	X	X				Twin Stem
136	Thuja occidentalis/White Cedar	4–4–3–3	7	72	Co–Dominate	90	10	p	X	X	X	X			Leaning; browning; lower/upper branch damage	Multi Stem
137	Pinus strobus/White Pine	8	8	78	Co–Dominate	95	12	p	X	X	X	X			Lower branch damage; broken branches	
138	Pinus sp./Pine	3–3–3–3	6	81	Co–Dominate	100	12	R								Multi Stem
139	Prunus sp./Cherry	10	10	69	Co–Dominate	85	20	POS							Major branch damage; exposed roots; hanging over building	Off Site
140	Prunus sp./Cherry	8	8	75	Co–Dominate	60	20	P				X			Leaning; one sided; lots of dead branches; trunk damage	
141	Quercus phellos/Willow Oak	10	10	31	Co–Dominate	50	20	R							Vine covered; one sided; small cluster of branches growing up from base; dead/decaying branches	Poor Condition
142	Cercis canadensis/Eastern Redbud	10	10	69	Co–Dominate	70	25	P							Several dead branches at the bottom; exposed roots; one sided	
143	Pinus sp./Pine	8	8	72	Co–Dominate	80	15	P		X	X	X			One sided; thin; slighly leaning; vine cover	
144	Picea abies/Norway Spruce	8	8	72	Suppressed	100	65	R							Very thin and crowded; vine cover	

TREE INVENTORY AND CONDITION ANALYSIS CONTINUED ON SHEET 11.

SEE SHEET 9 FOR THE TREE PRESERVATION PLAN AND SHEET 13 FOR THE TREE PRESERVATION DETAILS AND NARRATIVES.

NOTE:
1. NO OFF–SITE TREES OR CO–OWNED TREES SHALL BE REMOVED WITHOUT THE PRIOR PERMISSION OF THE OFF–SITE OWNER(S) OR CO–OWNER(S) OF THE TREES.
2. THE ADJACENT PROPERTY OWNER(S) DID NOT GRANT PERMISSION TO ACCESS THEIR PROPERTY. THE LOCATION, DIAMETER AND CONDITION ANALYSIS FOR ALL OFF–SITE TREES HAVE BEEN ESTIMATED.
3. ALL TREES 8 INCHES OR GREATER IN DIAMETER WITHIN 25 FEET OF EITHER SIDE OF THE LIMITS OF CLEARING AND GRADING HAVE BEEN LISTED EXCEPT WHERE DIRECTED OTHERWISE BY THE URBAN FOREST MANAGMENT DIVISION.
4. CONDITION ANALYSIS INFORMATION HAS BEEN PROVIDED FOR ALL TREES LISTED.

LEGEND:

PC : POOR CONDITION. STATUS TO BE DETERMINED IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION (UFMD).
TBD : POTENTIAL HAZARD OR TREE OF SPECIAL CONCERN. STATUS TO BE DETERMINED IN CONSULTATION WITH THE UFMD.
P : PRESERVE
R : REMOVE
POS : PRESERVE OFF–SITE
RWP : REMOVE WITH PERMISSION FROM THE UFMD. TREE IS WITHIN UNDISTURBED AREA BUT CONDITIONS WARRANT ITS REMOVAL.
X : CONDUCT ACTIVITY INDICATED
* : DBH/DIAMETER BREAST HEIGHT AS MEASURED 4.5 FEET ABOVE GROUND.
** : CRZ/CRITICAL ROOT ZONE (ONE FOOT OF RADIUS FOR EVERY INCH OF TREE DIAMETER. CRZ FOR TREES WITH MULTIPLE STEMS ARE CALCULATED BASED ON THE DIAMETER OF A TREE WITH A BASAL AREA EQUIVALENT TO THE SUM OF THE BASAL AREAS FOR ALL STEMS MEASURED.
*** : CONDITION RATINGS ARE PROVIDED AS PERCENTAGES BASED ON METHODS OUTLINED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 11 of 22

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

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COMMONWEALTH OF VIRGINIA
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05-16-2012
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE INVENTORY AND CONDITION ANALYSIS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
08-05-11
REVISED 03-28-12
04-11-12
REVISED 04-30-12
REVISED 05-16-12
APPLICANT:
MERITAGE HOMES OF VA, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. VERT.
SHEET 11 OF 22
CO. NO.
CAD NAME: F11524TPP–INV
LAYOUT: TTP–INVENTORY(2)
FILE NO. 11524–08
XREFS:

I:\project_2011\11524\Plan\Cadfiles\FDP_1-30-12 Submssn\F11524TPP-INV.DWG, TTP-INVENTORY(3), 5/16/2012 2:33:49 PM

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND OR/ COMMON NAME	SIZE	**CRZ	CONDITION	CANOPY POSITION	CROWN DENSITY	AVERAGE CROWN SPREAD	FINAL STATUS	ACTIVITIES: ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
		*DBH (in)	R (ft)	% ***		%	D (ft)									
145	Pyrus calleryana 'Bradford'/ Bradford Pear	8	8	72	Supressed	80	20	R							slight lean, one sided	
146	Prunus sp./Cherry	8	8	81	Suppressed	75	15	P	X	X	X	X		X	vine cover; upper broken branches	Remove Vines
147	Dead	8	8	-	–	–	–	RWP							Dead	Dead
148	Thuga occidentalis/White Cedar	8	8	31	Suppressed	30	10	P	X	X	X	X			Growing at angle; leaning; one sided; growing in bamboo; some dead/broken branches at bottom; branching on one side is down	Multi stem Poor Condition
149	Pinus sp./Pine	8	8	38	Co–Dominate	85	15	P	X	X	X	X		X	No branches at bottom; browning needles; some broken branches; vine cover	Remove Vines, Poor Condition
150	Thuga occidentalis/White Cedar	8	8	69	Supressed	90	10	P	X	X	X	X			Wood pile around base; slightly leaning; one sided; thin at center; competing with bamboo; one sided crown	
151	Magnolia sp./Magnolia	8	8	81	Co–Dominate	70	15	P	X	X	X				Thin at top	
152	Acer sp./ Maple	24	24	75	Co–Dominate	90	40	R							at edge the bank	
153	Acer sp./ Maple	18–12–10	24	72	Co–Dominate	70	40	R							At edge of bank; one sided; one main stem is leaning; branch damage	Multi stem
154	Acer negundo/Boxelder	8–10	12	69	Co–Dominate	75	25	P	X	X	X	X		X	Vine cover; top pruned; major branch damage; leaning at top	Twin stems; Cut Vines, Remove Vines
155	Acer sp./ Maple	8	8	78	Co–Dominate	65	20	POS	X	X					One sided; branch damage	Off Site
156	Pinus sp./Pine	14	14	78	Co–Dominate	80	25	POS	X	X					No branches at bottom; top leaning slightly; one sided	Off Site
157	Liquidambar styraciflua/Sweetgum	14	14	34	Co–Dominate	75	25	P	X	X	X	X		X	Vine cover; upper broken branches; in decline	Poor Condition, Remove Vines
158	Acer sp./ Maple	8	8	75	Suppressed	65	20	POS		X					One sided; some branch damage; growing into Sweetgum	Off Site
159	Acer sp./ Maple	24	24	72	Co–Dominate	80	35	POS	X	X					Lower branches broken; some upper dead branches; lots of pruning scars	Off Site
160	Acer sp./ Maple	12	12	78	Co–Dominate	80	15	P	X	X	X	X		X	Vine cover; some branch damage	Remove Vines
161	Robinia pseudoacacia/Black Locust	30	30	63	Co–Dominate	100	15	P	X	X	X	X			Heavily pruned; major branch/stem broken off	Co–Owned
162	Juniperus virginiana/Eastern Redcedar	6	6	69	Co–Dominate	40	5	RWP							Vine cover; very thin; some broken branches	In R.O.W.
163	Juniperus virginiana/Eastern Redcedar	6	6	69	Co–Dominate	40	5	RWP							Vine cover; very thin; some broken branches; top broken	In R.O.W.
164	Juniperus virginiana/Eastern Redcedar	6	6	69	Co–Dominate	40	5	RWP							Vine cover; very thin; some broken branches; top broken	In R.O.W.
165	Juniperus virginiana/Eastern Redcedar	8	8	69	Co–Dominate	40	5	RWP							Thin; crowded; some branch damage	In R.O.W.
166	Juniperus virginiana/Eastern Redcedar	8	8	69	Co–Dominate	40	5	RWP							Thin; crowded; some branch damage	In R.O.W.
167	Juniperus virginiana/Eastern Redcedar	8	8	69	Co–Dominate	40	5	RWP							Thin; crowded; some branch damage	In R.O.W.
168	Juniperus virginiana/Eastern Redcedar	8	8	69	Co–Dominate	40	5	RWP							Thin; crowded; some branch damage	In R.O.W.
169	Juniperus virginiana/Eastern Redcedar	8	8	69	Co–Dominate	40	5	RWP							Thin; crowded; some branch damage	In R.O.W.
170	Acer sp./ Maple	36	36	81	Co–Dominate	80	45	P	X	X	X	X			some branch damage	
171	Acer sp./ Maple	8	8	72	Co–Dominate	65	35	P	X	X	X	X			Growing into fence board	
172	Pinus sp./Pine	24	24	69	Co–Dominate	80	45	P	X	X	X	X		X	Vine cover; very few branches at bottom; missing branches throughout	Cut Vines
173	Pinus sp./Pine	24	24	66	Co–Dominate	70	45	P	X	X	X	X		X	Vine cover; lower branch damage; leaning; Maple growing into it	Cut Vines
174	Acer sp./ Maple	32	32	75	Co–Dominate	70	55	P	X	X	X	X			Upper broken and dead branches	
175	Fraxinus sp./Ash	36	36	31	Co–Dominate	80	60	POS	X	X					Slightly leaning; huge branch broken off; cavity in trunk; some broken/dead branches	Off Site Poor Condition

TREE INVENTORY AND CONDITION ANALYSIS

TREE KEY	BOTANICAL NAME AND OR/ COMMON NAME	SIZE	**CRZ	CONDITION	CANOPY POSITION	CROWN DENSITY	AVERAGE CROWN SPREAD	FINAL STATUS	ACTIVITIES: ROOT PRUNE	MULCH	FERTILIZE	PRUNE	TREAT PESTS	OTHER	PROBLEMS	COMMENTS
		*DBH (in)	R (ft)	% ***		%	D (ft)									
176	Fagus sp./Beech	24	24	88	Co–Dominate	90	50	POS	X	X					Vine cover	Off Site
177	Pyrus calleryana 'Bradford'/ Bradford Pear	8	8	78	Co–Dominate	80	20	R							edge of outfall; branch damage	
178	Morus alba/Common Mulberry	10	10	69	Co–Dominate	90	15	R							Slightly leaning; exposed/ girdled roots; lower branch damage; some rot	
179	Magnolia sp./Magnolia	8	8	72	Supressed	95	18	R	X	X	X			X	understory; slightly one sided; twisted; vines	
180	Robinia pseudoacacia/Black Locust			72	Co–Dominate	65	15	R	X	X	X			X	Some vine cover; leaning; minor branch damage	
181	Prunus sp./Cherry	8	8	78	Co–Dominate	75	15	P	X	X	X	X			leaning; needs pruning	
182	Pinus strobus/White Pine	8	8	69	Co–Dominate	80	10	P	X	X	X	X		X	Exposed roots; sitting on top of ground; curved at bottom; some rot/black sap; broken branches	Possible Replant/Transplant
183	Osmanthus heterophyllus/False–holly	4–4–4–3	15	34	Supressed	80	12	R							Trunk damage; some rot at bottom and branches	Poor condition
184	Osmanthus heterophyllus/False–holly	4–3–2	9	34	Supressed	85	10	R							some rot at bottom; lots of pruning scars	Poor Condition
185	Osmanthus heterophyllus/False–holly	4–4–4–3–3	18	63	Supressed	75	10	R							Rot at base; strap girdling stem; new shoots	
186	Prunus sp./Cherry	8	8	28	Co–Dominate	70	10	P	X	X	X				Right on fence line; gall/rot/black sap; pruned at base; crooked main stem	Co–Owned, Poor Condition
187	Prunus sp./Cherry	8	8	66	Co–Dominate	65	20	POS		X					Major dead branches at mid–section	Co–Owned
188	Robinia pseudoacacia/Black Locust	5–6	11	59	Co–Dominate	50	20	POS	X	X					rubbing branches; some minor branch damage, slightly leaning; some dead/decaying branches	Twin stem, Off Site
189	Juniperus virginiana/Eastern Redcedar	8	8	75	Co–Dominate	90	8	POS		X					dead branches at bottom; thin; some major broken branches on top	Offsite

TREE INVENTORY AND CONDITION ANALYSIS CONTINUED ON SHEET 11.

SEE SHEET 9 FOR THE TREE PRESERVATION PLAN AND SHEET 13 FOR THE TREE PRESERVATION DETAILS AND NARRATIVES.

NOTE:
1. NO OFF–SITE TREES OR CO–OWNED TREES SHALL BE REMOVED WITHOUT THE PRIOR PERMISSION OF THE OFF–SITE OWNER(S) OR CO–OWNER(S) OF THE TREES.
2. THE ADJACENT PROPERTY OWNER(S) DID NOT GRANT PERMISSION TO ACCESS THEIR PROPERTY. THE LOCATION, DIAMETER AND CONDITION ANALYSIS FOR ALL OFF–SITE TREES HAVE BEEN ESTIMATED.
3. ALL TREES 8 INCHES OR GREATER IN DIAMETER WITHIN 25 FEET OF EITHER SIDE OF THE LIMITS OF CLEARING AND GRADING HAVE BEEN LISTED EXCEPT WHERE DIRECTED OTHERWISE BY THE URBAN FOREST MANAGMENT DIVISION.
4. CONDITION ANALYSIS INFORMATION HAS BEEN PROVIDED FOR ALL TREES LISTED.

LEGEND:

PC :POOR CONDITION. STATUS TO BE DETERMINED IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION (UFMD).
TBD :POTENTIAL HAZARD. STATUS TO BE DETERMINED IN CONSULTATION WITH THE UFMD.
P :PRESERVE
R :REMOVE
POS :PRESERVE OFF–SITE
RWP :REMOVE WITH PERMISSION FROM THE UFMD. TREE IS WITHIN UNDISTURBED AREA BUT CONDITIONS WARRANT ITS REMOVAL.
X :CONDUCT ACTIVITY INDICATED
* :DBH/DIAMETER BREAST HEIGHT AS MEASURED 4.5 FEET ABOVE GROUND.
** :CRZ/CRITICAL ROOT ZONE (ONE FOOT OF RADIUS FOR EVERY INCH OF TREE DIAMETER. CRZ FOR TREES WITH MULTIPLE STEMS ARE CALCULATED BASED ON THE DIAMETER OF A TREE WITH A BASAL AREA EQUIVALENT TO THE SUM OF THE BASAL AREAS FOR ALL STEMS MEASURED.
*** :CONDITION RATINGS ARE PROVIDED AS PERCENTAGES BASED ON METHODS OUTLINED IN THE LATEST EDITION OF THE GUIDE FOR PLANT APPRAISAL PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 12 of 22

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

BC Consultants
Planners • Engineers • Surveyors • Landscape Architects
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DENNIS D. DIXON
Lic. No. 892
05-16-2012
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE INVENTORY AND CONDITION ANALYSIS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
SHT ADD 1–03–12
REVISED 03–28–12
04–11–12
REVISED 04–30–12
REVISED 05–16–12
APPLICANT:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
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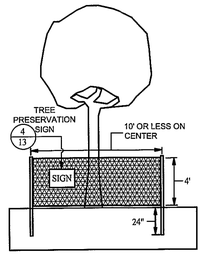
DATE: JULY, 2011
SCALE: HOR. VERT.

CO. NO.
CAD NAME: F11524TPP–INV
LAYOUT: TTP–INVENTORY(3)
FILE NO. 11524–08
XREFS:

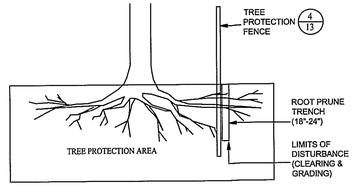
- PRIOR TO ANY CONSTRUCTION ACTIVITY, ALL INDIVIDUAL AND GROUPS OF TREES MARKED FOR PRESERVATION SHALL BE PROTECTED WITH TREE PROTECTION FENCING.
- TREE PROTECTION FENCE SHALL BE POSITIONED DIRECTLY IN THE ROOT PRUNING TRENCH AND BACKFILLED FOR STABILITY OR JUST OUTSIDE THE TRENCH WITHIN THE DISTURBED AREA.
- TREE PROTECTION FENCING SHALL CONSIST OF FOUR FOOT 14-GUAGE WELDED WIRE FENCE ATTACHED TO SIX FOOT TALL T-POSTS DRIVEN 18 INCHES INTO THE GROUND. POSTS SHALL BE NO FURTHER THAN 10 FEET APART.
- WHERE APPROPRIATE, BASED ON EROSION AND SEDIMENT CONTROL PLANS, SUPER SILT FENCE MAY BE USED AS TREE PROTECTION FENCING WITH THE APPROVAL OF FAIRFAX COUNTY.
- TREE PROTECTION FENCING SHALL BE MADE CLEARLY VISIBLE TO ALL CONSTRUCTION PERSONNEL. SIGNS, IN ENGLISH AND SPANISH, WHICH STATES "TREE PRESERVATION AREA - KEEP OUT" SHALL BE INSTALLED ON TREE PROTECTION FENCING EVERY 30 FEET.
- A CERTIFIED ARBORIST SHALL MONITOR THE INSTALLATION OF TREE PROTECTION FENCING.



1/13 TREE PROTECTION FENCE

NOT TO SCALE

12A1-809STree Protect

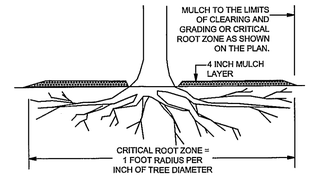


- PRIOR TO ANY CONSTRUCTION ACTIVITY, ALL TREES MARKED FOR PRESERVATION ALONG THE LIMITS OF CLEARING AND GRADING SHALL BE ROOT PRUNED WHERE SHOWN ON THE PLAN.
- ROOT PRUNING SHALL BE CONDUCTED USING A TRENCHER OR VIBRATORY PLOW.
- THE ROOT PRUNING TRENCH SHALL BE A MAXIMUM OF 6 INCHES WIDE AND 18-24 INCHES DEEP. ONCE COMPLETED, THE ROOT PRUNING TRENCH SHALL BE IMMEDIATELY BACK FILLED.
- ROOT PRUNING SHALL BE CONDUCTED UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.

2/13 ROOT PRUNING

NOT TO SCALE

12A1-809S Root Pruning



- SPREAD MULCH BY HAND TO A UNIFORM THICKNESS OF 4 INCHES.
- MULCH SHALL COVER AS MUCH OF THE ENTIRE CRITICAL ROOT ZONE AS POSSIBLE UP TO 10' FROM THE LIMITS OF CLEARING AND GRADING.
- MULCH SHALL CONSIST OF A WOODY MATERIAL THAT HAS BEEN CHIPPED OR SHREDDED OR OTHER APPROVED MATERIAL.
- MULCH SHALL NOT TOUCH THE BASE OF THE TREE.

3/13 PROTECTIVE MULCHING

NOT TO SCALE

12A1-809S Protect Mulch

TREE PRESERVATION AREA

KEEP OUT

NO EQUIPMENT OR MATERIALS ARE TO BE STORED OR DEPOSITED WITHIN THIS AREA. TRAFFIC BY CONSTRUCTION EQUIPMENT AND PERSONNEL IS PROHIBITED.

(CONSTRUCTION COMPANY NAME)
(COMPANY CONTACT PERSON & TELEPHONE NUMBER)

PENALTY FOR VIOLATIONS STRICTLY ENFORCED

SPECIFICATIONS:

DIMENSIONS:	WIDTH:	17 INCHES MINIMUM
	HEIGHT:	11 INCHES MINIMUM
BACKGROUND COLOR:		WHITE
LETTER COLOR:		BLACK

LETTER SIZE:
- LETTER 1: 1.5 INCH MINIMUM (LARGEST)
- LETTER 2: 0.75 INCH MINIMUM
- LETTER 3: 0.5 INCH MINIMUM
- LETTER 4: 0.375 INCH MINIMUM (SMALLEST)

LANGUAGE: ENGLISH AND SPANISH (SEPARATE SIGNS)

NOTE: ALTERNATE SIGNAGE MAY BE SUBMITTED TO FAIRFAX COUNTY FOR APPROVAL.

4/13 TREE PRESERVATION SIGN

NOT TO SCALE

12A1-809STree Preser Sign

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 13 of 22

SITE MONITORING SCHEDULE

LIST OF DUTIES	DATE	DESCRIPTION OF DUTIES
PRE-CONSTRUCTION MEETING IN FIELD TO WALK LIMITS OF CLEARING AND GRADING	SPECIFIED BY UFMD	TREE PRESERVATION WALK-THROUGH. THE APPLICANT SHALL RETAIN THE SERVICES OF A CERTIFIED ARBORIST OR A REGISTERED CONSULTING ARBORIST, AND SHALL HAVE THE LIMITS OF CLEARING AND GRADING MARKED WITH A CONTINUOUS LINE OF FLAGGING PRIOR TO THE WALK-THROUGH MEETING. DURING THE TREE-PRESERVATION WALK-THROUGH MEETING, THE APPLICANT'S CERTIFIED ARBORIST OR LANDSCAPE ARCHITECT SHALL WALK THE LIMITS OF CLEARING AND GRADING WITH AN UFMD, DPWES, REPRESENTATIVE TO DETERIMINE WHERE ADJUSTMENTS TO THE CLEARING LIMITS CAN BE MADE TO INCREASE THE AREA OF TREE PRESERVATION AND/OR INCREASE THE SURVIVABILITY OF TREES AT THE EDGE OF THE LIMITS OF CLEARING AND GRADING, AND SUCH ADJUSTMENTS SHALL BE IMPLEMENTED. TREES THAT ARE IDENTIFIED AS DEAD OR DYING MAY BE REMOVED AS PART OF THE CLEARING OPERATION. ANY TREE THAT IS SO DESIGNATED SHALL BE REMOVED USING A CHAIN SAW AND SUCH REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT AVOIDS DAMAGE TO SURROUNDING TREES AND ASSOCIATED UNDERSTORY VEGETATION. IF A STUMP MUST BE REMOVED, THIS SHALL BE DONE USING A STUMP-GRINDING MACHINE IN A MANNER CAUSING AS LITTLE DISTURBANCE AS POSSIBLE TO ADJACENT TREES AND ASSOCIATED UNDERSTORY VEGETATION AND SOIL CONDITIONS.
INSTALLATION OF TREE PROTECTION FENCE	AFTER UFMD'S APPROVAL OF LOCATION	ALL TREE PROTECTION FENCING SHALL BE INSTALLED AFTER THE TREE PRESERVATION WALK-THROUGH MEETING BUT PRIOR TO ANY CLEARING AND GRADING ACTIVITIES, INCLUDING THE DEMOLITION OF ANY EXISTING STRUCTURES. THE INSTALLATION OF ALL TREE PROTECTION FENCING SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ARBORIST, AND ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION THAT IS TO BE PRESERVED. THREE (3) DAYS PRIOR TO THE COMMENCEMENT OF ANY CLEARING, GRADING, OR DEMOLITION ACTIVITES, BUT SUBSEQUENT TO THE INSTALLATION OF THE TREE PROTECTION DEVICES, THE UFMD, DPWES, SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO INSPECT THE SITE TO ENSURE THAT ALL TREE PROTECTION FENCING DEVICES HAVE BEEN CORRECTLY INSTALLED. IF IT IS DETERMINED THAT THE FENCING HAS NOT BE INSTALLED CORRECTLY, NO GRADING OR CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE FENCING IS INSTALLED CORRECTLY, AS DETERMINED BY THE UFMD, DPWES.
CONSTRUCTION/ SITE ANALYSIS	MONTHLY ANALYSIS OF SITE OR AS SPECIFIED BY UFMD	THE APPLICANT SHALL ACTIVELY MONITOR THE SITE TO ENSURE THAT INAPPROPRIATE ACTIVITIES SUCH AS THE STORAGE OF CONSTRUCTION MATERIALS, DUMPING OF CONSTRUCTION DEBRIS, AND TRAFFIC BY CONSTRUCTION EQUIPMENT AND PERSONNEL DO NOT OCCUR WITHIN THESE AREAS

INVASIVE SPECIES ASSESSMENT AND MANAGEMENT NARRATIVE:

INVASIVE SPECIES ASSESSMENT:

IN COVER TYPE 3, AREAS OF BRIARS, VINES AND MULTIFLORA ROSE ARE PRESENT IN THE FOREST UNDERSTORY OR AS INDIVIDUAL STANDS. IT DOES NOT APPEAR THAT THESE INVASIVE PLANTS HAVE ACHIEVED A LEVEL THAT WOULD ENDANGER THE LONG-TERM HEALTH OF THE FORESTED AREAS TO BE PRESERVED. IN SOME AREAS VINES HAVE CLIMBED THE TRUNKS OF TREES AND ARE BEGINNING TO IMPACT THE CROWNS OF THE TREES.

INVASIVE SPECIES MANAGEMENT:

CLIMBING VINES MAY HAVE A NEGATIVE IMPACT TO EXISTING TREES IF ALLOWED TO GROW INTO THE CANOPY OF PRESERVED TREES. AS PART OF THE INITIAL TREE PRESERVATION WORK, A 4' SECTION OF VINES THAT IMPACTS ROOTS, TRUNKS OR CANOPY SHALL BE REMOVED FROM PRESERVED TREES WITHIN THE ABOVE NOTED COVER TYPE. CARE SHALL BE TAKEN TO NOT DAMAGE TREE TRUNKS, ROOTS OR BARK. VINES IN THE TREE CANOPY THAT ARE NOT EASILY REMOVED SHOULD BE LEFT IN PLACE TO DIE AND FALL OUT NATURALLY. BRIARS, ADDITIONAL VINES, MULTIFLORA ROSE AND OTHER INVASIVE AND NON-NATIVE PLANT SPECIES SHOULD BE REMOVED MANUALLY OR ERADICATED CHEMICALLY. A LONG TERM INVASIVE AND NON-NATIVE PLANT SPECIES MANAGEMENT PLAN SHOULD BE DEVELOPED AND IMPLEMENTED ANNUALLY BY THE COMMUNITY'S HOMEOWNERS ASSOCIATION.

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

TREE PRESERVATION NARRATIVE:

1. ALL WORK PERFORMED IN ASSOCIATION WITH THIS PLAN SHALL MEET OR EXCEED CURRENT INDUSTRY STANDARDS AS PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), OR THE TREE CARE INDUSTRY ASSOCIATION (TCIA). IN THE EVENT TREATMENTS PRESCRIBED ARE NOT COVERED BY AN EXISTING STANDARD, WORK SHALL MEET OR EXCEED STANDARDS APPROVED BY FAIRFAX COUNTY'S URBAN FOREST MANAGEMENT DIVISION (UFMD).

2. THE DEVELOPER SHALL RETAIN A CERTIFIED ARBORIST ("THE ARBORIST") TO ENSURE THE PROPER IMPLEMENTATION OF THE TREE PRESERVATION PLAN ("THIS PLAN"). ALL WORK REQUIRED BY THIS PLAN SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE ARBORIST AS SPECIFIED IN THE SITE MONITORING SCHEDULE AND TO ENSURE THAT ALL ACTIVITIES ARE CONDUCTED IN ACCORDANCE WITH THIS PLAN, ANY APPLICABLE DEVELOPMENT CONDITIONS AND/OR AS APPROVED BY UFMD. MONITORING SHALL OCCUR AT ALL TIMES DURING THE INSTALLATION OF TREE PROTECTION FENCING AND, DURING ANY CLEARING OR GRADING, REMOVAL OF TREES, VEGETATION, OR STRUCTURES OR, THE TRANSPLANTING OF TREES OR VEGETATION OR, ANY OTHER SIMILAR ACTIVITIES ON THE SITE WITHIN 25 FEET OF THE LIMITS OF CLEARING AND GRADING.

3. PRIOR TO ANY CONSTRUCTION ACTIVITY, ALL INDIVIDUAL TREES AND GROUPS OF TREES SHOWN TO BE PRESERVED ON THIS PLAN SHALL BE PROTECTED BY FENCING AS SPECIFIED ON THIS PLAN. THE PROTECTIVE FENCE INSTALLATION SHALL BE MONITORIED AS NOTED IN THE SITE MONITORING SCHEDULE. THE FENCING SHALL BE MADE CLEARLY VISIBLE TO ALL CONSTRUCTION PERSONNEL. THE FENCING SHALL BE INSTALLED PRIOR TO ANY WORK BEING CONDUCTED ON THE SITE, INCLUDING THE DEMOLITION OF ANY EXISTING STRUCTURES OR FENCES. THE ARBORIST MUST VERIFY IN WRITING THAT THE FENCING HAS BEEN INSTALLED PRIOR TO ANY WORK OR DEMOLITION ACTIVITIES AND IN ACCORDANCE WITH THE STANDARDS SET FORTH BY THIS PLAN.

4. THE APPLICANT SHALL RETAIN THE SERVICES OF A CERTIFIED ARBORIST OR A REGISTERED CONSULTING ARBORIST, AND SHALL HAVE THE LIMITS OF CLEARING AND GRADING MARKED WITH A CONTINUOUS LINE OF FLAGGING PRIOR TO THE WALK-THROUGH MEETING. DURING THE TREE-PRESERVATION WALK-THROUGH MEETING, THE APPLICANT'S CERTIFIED ARBORIST OR LANDSCAPE ARCHITECT SHALL WALK THE LIMITS OF CLEARING AND GRADING WITH AN UFMD, DPWES, REPRESENTATIVE TO DETERIMINE WHERE ADJUSTMENTS TO THE CLEARING LIMITS CAN BE MADE TO INCREASE THE AREA OF TREE PRESERVATION AND/OR INCREASE THE SURVIVABILITY OF TREES AT THE EDGE OF THE LIMITS OF CLEARING AND GRADING, AND SUCH ADJUSTMENTS SHALL BE IMPLEMENTED. TREES THAT ARE IDENTIFIED AS DEAD OR DYING MAY BE REMOVED AS PART OF THE CLEARING OPERATION. ANY TREE THAT IS SO DESIGNATED SHALL BE REMOVED USING A CHAIN SAW AND SUCH REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT AVOIDS DAMAGE TO SURROUNDING TREES AND ASSOCIATED UNDERSTORY VEGETATION. IF A STUMP MUST BE REMOVED, THIS SHALL BE DONE USING A STUMP-GRINDING MACHINE IN A MANNER CAUSING AS LITTLE DISTURBANCE AS POSSIBLE TO ADJACENT TREES AND ASSOCIATED UNDERSTORY VEGETATION AND SOIL CONDITIONS.

5. ALL TREE PRESERVATION RELATED WORK OCCURRING IN OR ADJACENT TO TREE PRESERVATION AREAS SHALL BE ACCOMPLISHED IN A MANNER THAT MINIMIZES DAMAGE TO VEGETATION TO BE PRESERVED, INCLUDING ANY WOODY AND/OR HERBACEOUS VEGETATION OCCURRING IN THE UNDERSTORY. TREES DESIGNATED FOR REMOVAL ALONG THE LIMITS OF DISTURBANCE SHALL BE REMOVED USING A CHAINSAW SO AS TO AVOID DAMAGE TO SURROUNDING TREES TO BE PRESERVED AND UNDERSTORY VEGETATION. THE USE OF POWER EQUIPMENT IN THESE AREAS SHALL BE LIMITED TO SMALL HAND-OPERATED EQUIPMENT SUCH AS CHAINSAWS. ANY WORK THAT REQUIRES THE USE OF LARGER MOTORIZED EQUIPMENT SUCH AS, BUT NOT LIMITED TO, TREE TRANSPLANTING SPADES, SKID LOADERS, TRACTORS, OR ANY ACCESSORY OR ATTACHMENT CONNECTED TO SUCH EQUIPMENT SHALL NOT OCCUR UNLESS REVIEWED AND APPROVED IN WRITING BY UFMD.

6. AS PART OF THE IMPLEMENTATION OF THIS PLAN AND THE SITE PLAN, MANAGEMENT PRACTICES SHALL PROVIDE FOR THE PROTECTION OF UNDERSTORY PLANT MATERIALS, LEAF LITTER AND SOIL CONDITIONS FOUND IN AREAS TO BE LEFT UNDISTURBED, SUBJECT TO THE APPROVAL OF UFMD. THE APPLICANT SHALL ACTIVELY MONITOR THE SITE TO ENSURE THAT INAPPROPRIATE ACTIVITIES SUCH AS THE STORAGE OF CONSTRUCTION MATERIALS, DUMPING OF CONSTRUCTION DEBRIS, AND TRAFFIC BY CONSTRUCTION EQUIPMENT AND PERSONNEL DO NOT OCCUR WITHIN THESE AREAS. THE UNDERSTORY PLANT MATERIALS, LEAF LITTER AND SOIL CONDITIONS SHALL BE RESTORED BY THE APPLICANT TO THE SATISFACTION OF UFMD IF THESE ARE FOUND TO BE DAMAGED, REMOVED OR ALTERED IN A MANNER NOT ALLOWED IN WRITING BY UFMD.

7. PRIOR TO THE SITE PRE-CONSTRUCTION MEETING AND SITE WALK WITH AN URBAN FORESTER FROM UFMD AND THE ARBORIST, THE APPLICANT SHALL HAVE THE LIMITS OF CLEARING AND GRADING MARKED WITH A CONTINUOUS LINE OF FLAGGING.

8. ALL TREE PROTECTION FENCING SHALL BE INSTALLED AFTER THE TREE PRESERVATION WALK-THROUGH MEETING BUT PRIOR TO ANY CLEARING AND GRADING ACTIVITIES, INCLUDING THE DEMOLITION OF ANY EXISTING STRUCTURES. THE INSTALLATION OF ALL TREE PROTECTION FENCING SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ARBORIST, AND ACCOMPLISHED IN A MANNER THAT DOES NOT HARM EXISTING VEGETATION THAT IS TO BE PRESERVED. THREE (3) DAYS PRIOR TO THE COMMENCEMENT OF ANY CLEARING, GRADING, OR DEMOLITION ACTIVITES, BUT SUBSEQUENT TO THE INSTALLATION OF THE TREE PROTECTION DEVICES, THE UFMD, DPWES, SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO INSPECT THE SITE TO ENSURE THAT ALL TREE PROTECTION FENCING DEVICES HAVE BEEN CORRECTLY INSTALLED. IF IT IS DETERMINED THAT THE FENCING HAS NOT BE INSTALLED CORRECTLY, NO GRADING OR CONSTRUCTION ACTIVITIES SHALL OCCUR UNTIL THE FENCING IS INSTALLED CORRECTLY, AS DETERMINED BY THE UFMD, DPWES.

9. ROOT PRUNING: ROOT PRUNING SHALL BE PERFORMED WHEREVER GRADES WILL BE ALTERED WITHIN THE CRITICAL ROOT ZONE OF A TREE TO BE PRESERVED AND SHALL BE CONDUCTED WHERE SHOWN ON THE PLAN OR AS MOST PRACTICAL GIVEN SITE CONSTRAINTS. A VIBRATING PLOW, TRENCHER, STUMP CUTTER OR ARBORIST APPROVED EQUAL SHALL BE USED TO A DEPTH OF 18 INCHES. IF A TRENCHER IS USED THE TRENCH SHALL BE BACKFILLED IMMEDIATELY TO PREVENT ROOT DEHYDRATION. IF SILT FENCE IS TO BE INSTALLED AT THE LIMITS, THE ROOT PRUNING TRENCH MAY BE USED FOR THE INSTALLATION OF SILT FENCE. WHEREVER POSSIBLE, ROOT PRUNING TRENCHES SHOULD BE MULCHED WITH WOOD CHIPS OR MULCH FOUR INCHES DEEP.

10. WOOD CHIPS OR MULCH: WOOD CHIPS OR LEAF AND BRANCH MULCH SHALL BE PLACED AROUND THE LIMITS OF CLEARING AND GRADING IN AREAS WHERE TREES ARE WITHIN 20' OF THE LIMITS OF CLEARING AND GRADING AS SHOWN ON THIS PLAN. CHIPS OR MULCH THAT ARE PRODUCED AS A RESULT OF CLEARING OPERATIONS ON-SITE MAY BE USED FOR THIS PURPOSE AND SHALL BE PLACED BY HAND WITHOUT THE USE OF ENGINE-DRIVEN MACHINERY. CHIPS OR MULCH ARE NOT TO BE PLACED MORE THAN TEN FEET BEYOND THE LIMITS OF CLEARING AND GRADING AND SHALL NOT BE PLACED AT A DEPTH OF NO MORE THAN FOUR INCHES WITHIN THE PRESERVATION AREAS. OUTSIDE THE PRESERVATION AREAS, (WITHIN THE DISTURBED AREA), CHIPS OR LEAF AND BRANCH MULCH MAY BE PLACED AT A DEPTH NOT TO EXCEED TEN INCHES.

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COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
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05-16-12
LANDSCAPE ARCHITECT

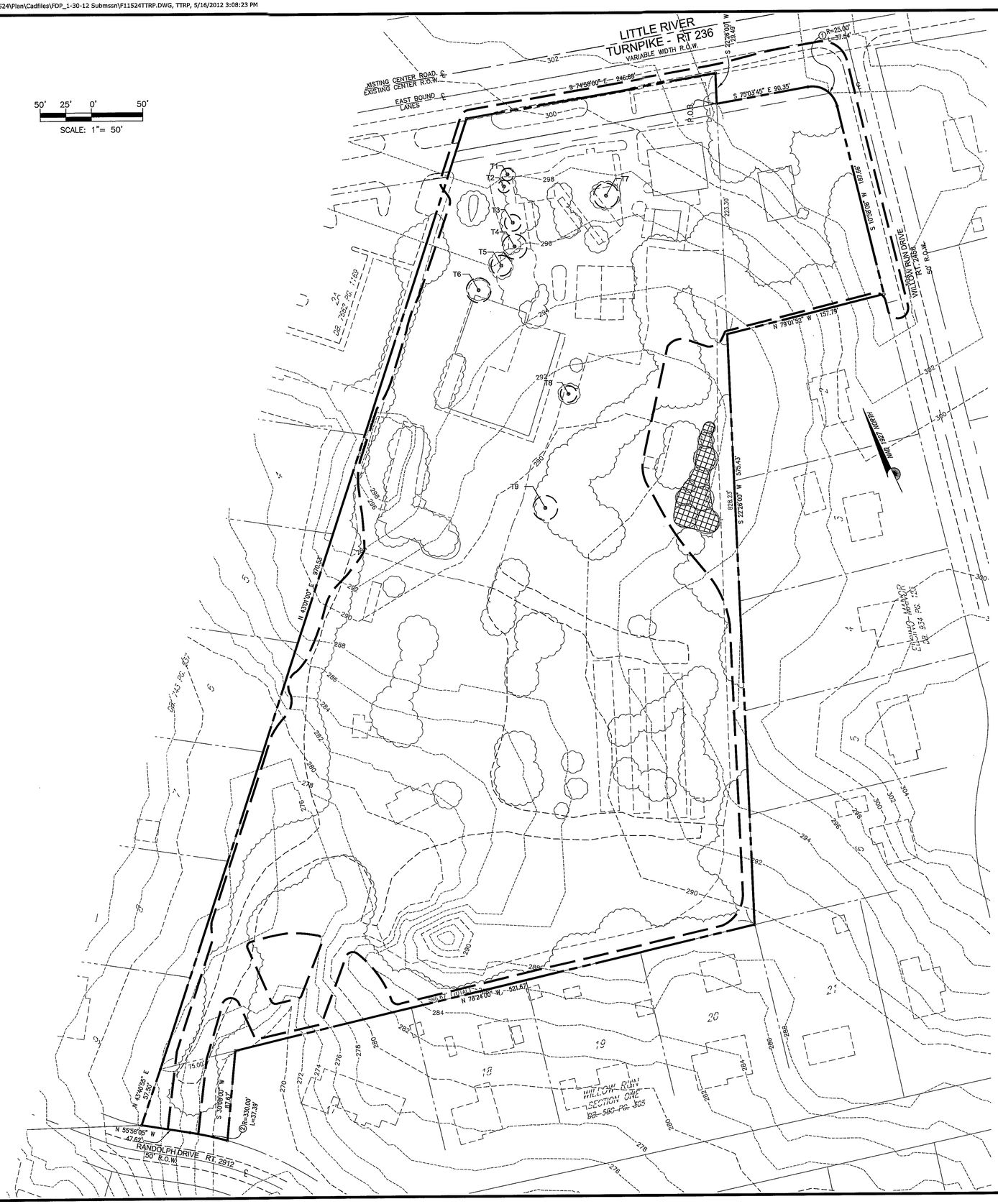
CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE PRESERVATION DETAILS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
08-05-11	REVISED 02-17-12
REVISED 11-09-11	03-28-2012
REVISED 12-07-11	04-11-2012
REVISED 01-06-12	04-30-2012
REVISED 01-30-12	REVISED 05-16-12

APPLICANT:
NEIGHBORHOODS VI, LLC
11911 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. VERT.
SHEET 13 OF 22
CO. NO.
CAD NAME: F11524TPP
LAYOUT: TPP-DETAILS
FILE NO. 11524-08

XREFS:



LEGEND:

APPROXIMATE LIMITS OF CLEARING AND GRADING

TREE STORAGE AREA (SEE SHEET 15 FOR TREE TRANSPLANTATIONSTORAGE SPECIFICATIONS)

EXISTING TREE TO BE TRANSPLANTED

SEE SHEET 15 FOR TREE TRANSPLANTATION SPECIFICATIONS AND DETAILS. SEE SHEET 8 FOR 10-YEAR CANOPY CALCULATIONS. FINAL PLANTING LOCATIONS OF TRANSPLANTED TREES ARE SHOWN ON SHEETS 5 AND 6. AT THE TIME OF SUBDIVISION PLAN, FINAL LOCATIONS OF THESE TREES MAY BE ADJUSTED IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION.

TREE TRANSPLANTATION LIST:

Key	Botanical Name	Common Name	Condition	Transplantation Method	Caliper (inches)*	10 Year Tree Canopy (s.f.)**
T1	Acer palmatum	Japanese Red Maple	Excellent	Tree Spade	6	113
T2	Fagus sylvatica 'Pendula'	Weeping European Beech	Excellent	Tree Spade	6	113
T3	Fagus sylvatica	European Beech	Excellent	Tree Spade	8	201
T4	Acer palmatum	Japanese Red Maple	Excellent	Tree Spade	12	452
T5	Acer palmatum	Japanese Red Maple	Excellent	Tree Spade	10	314
T6	Fagus sylvatica	European Beech	Excellent	Tree Spade	12	452
T7	Acer palmatum	Japanese Red Maple	Excellent	Tree Spade	12	452
T8	Pinus parviflora	Japanese White Pine	Excellent	Tree Spade	8	201
T9	Acer palmatum	Japanese Red Maple	Excellent	Tree Spade	12	452
Total					Total	2,750

* DIAMETER OF TREE MEASURED AT 12 INCHES ABOVE GROUND LINE.

** LOSS OF ANY TREE CANOPY PROVIDED THROUGH TRANSPLANTATION WILL BE RECOVERED BY THE PLANTING OF TREES PROVIDING THE EQUIVALENT TREE CANOPY IN CONSULTATION WITH THE URBAN FOREST MANAGEMENT DIVISION. NO BONUS MULTIPLIERS HAVE BEEN TAKEN FOR THE TREE CANOPY FOR ANY OF THE TRANSPLANTED TREES.

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 14 of 22

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

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CONCEPTUAL/FINAL DEVELOPMENT PLAN

TREE TRANSPLANTATION PLAN

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
SHEET ADDED 12-02-11	
REVISED 01-06-12	REVISED 03-28-12
REVISED 01-30-12	04-11-12
REVISED 02-17-12	04-30-12
	REVISED 05-16-12

APPLICANT:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
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SHEET 14 OF 22
CO. NO.
CAD NAME: F11524TTRP
LAYOUT: TTRP
FILE NO. 11524-08

XREFS:

TREE TRANSPLANTATION SPECIFICATIONS:

1. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE NAME AND BACKGROUND MATERIALS OF A QUALIFIED TRANSPLANT SUBCONTRACTOR WHO IS A LICENSED ARBORIST (INTERNATIONAL SOCIETY OF ARBORICULTURE OR EQUIVALENT) WITH DEMONSTRATED EXPERIENCE IN MOVING LARGE TREES, PARTICULARLY THOSE 6 INCHES IN DIAMETER BREAST HEIGHT (DBH) AND GREATER. THE SAME SUBCONTRATOR SHALL PREPARE A DETAILED TRANSPLANTING PLAN FOR MOVING THE EXISTING TREES AS CALLED FOR IN THIS PLAN. THE CONTRACTOR'S TRANSPLANTATION PLAN SHALL DESCRIBE AND/OR ILLUSTRATE IN DETAIL THE FOLLOWING:

   1.1 THE METHOD OF PREPAPARING THE TREES FOR TRANSPLANT, INCLUDING ROOT PRUNING WHERE CALLED FOR
   1.2 THE METHOD OF EXCAVATING AT THE TIME OF TRANSPLANTING
   1.3 THE METHOD OF CONTAINING ROOT BALLS FOR VARIOUS SIZES OF TREES
   1.4 THE PROPOSED ROOTBALL WIDTH AND DEPTH FOR EACH SIZE CATEGORY OF TREE
   1.5 THE EQUIPMENT PROPOSED TO MOVE THE TREES, AND ITS ROUTING ON THE SITE FOR ALL ASPECTS OF THE OPERATION
   1.6 THE SCHEDULE OF WORK RELATED TO THE TRANSPLANTATION OF TREES
   1.7 ANY OTHER DETAILS SUGGESTIONS WHICH VARY FROM THE METHODS DESCRIBED IN THIS SECTION

   UPON APPROVAL BY THE REGISTERED LANDSCAPE ARCHITECT (RLA), THE CONTRACTOR SHALL ENGAGE THE SERVICES OF THE APPROVED TRANSPLANT SUBCONTRACTOR AND, ARRANGE A FIELD MEETING WITH THE RLA AND ANY APPROPRIATE AGENCY'S REPRESENTATIVES PRIOR TO PROCEEDING FURTHER WITH ANY WORK. ALL SUBSEQUENT WORK UNDER THIS SECTION SHALL BE DONE ONLY BY OR UNDER THE DIRECTION OF THE APPROVED TRANSPLANT SUBCONTRACTOR.

2. SEASON

   2.1 TRANSPLANTING OPERATIONS SHALL OCCUR WHEN THE GROUND IS NOT FROZEN OR OTHERWISE IN AN UNSATISFACTORY CONDITION FOR WORKING, AFTER LEAF FALL AND BEFORE BUD BREAK ON DECIDUOUS TREES. THIS SHALL BE OCTOBER 15TH TO DECEMBER 1ST OR MARCH 1ST TO APRIL 15 UNLESS OTHERWISE DIRECTED BY THE RLA.

3. CONTACT MISS UTILITY TO LOCATE ANY UNDEGROUND LINES IN THE AREA. ALSO NOTE WHETHER THERE ARE ANY OVERHEAD UTILITIES THAT MIGHT INTERFERE WITH THE TREE MOVING EQUIPMENT.

4. MATERIALS:

   4.1. BURLAP AAND TWINE SHALL BE NATURAL FIBERS. NO SYNTHETIC BURLAP OR TWINE SHALL BE PERMITTED.
   4.2. PLANTING MATERIALS: TOPSOIL, WASHED SAND, SHREDDED HARDWOOD MULCH, ANTIDESSICANTS, WIRES, HOSE, TWINE, LANDSCAPE DEVELOPMENT MATERIALS AND WATER.
   4.3. MYCORRHIZAL FUNGI MIXTURE. THIS MIXTURE SHALL BE A DRY GRANULAR PRODUCT SUPPLIED IN PLASTIC PACKETS EACH CONTAINING 3 OUNCE OF PRODUCTS. THIS PACKET SHALL NOT BE STORED FOR MORE THAN EIGHTEEN MONTHS FOLLOWING PACKAGING AND SHALL NOT BE EXPOSED TO MOISTURE, DIRECT SUNLIGHT, OR TEMPERATURES HIGHER THAN 90 DEGREES FAHRENHEIT OR LOWER THAN 0 DEGRESS FAHRENHEIT PRIOR TO INCORPORATION INTO THE SOIL. EACH PACKET SHALL CONTAIN THE FOLLOWING:

      4.3.1. A MINIMUM OF 1,000 LIVE SPORES OF VESICULAR–ARBUSCULAR ENDOMICORRHIZAL FUNGI INCLUDING ENTREPHOSPORA COLUMBIANA, GLOMUS ETUNICATUM, GLOMUS CLARUM AND GLOMUS SP.
      4.3.2. A MINIMUM OF 60 MILLION LIVE SPORES OF ECTOMYCORRHIZAL FUNGUS, PISOLITHUS TINCTORIUS
      4.3.3. ACRYLAMIDE COPOLYMER WATER ABSORBENT GEL
      4.3.4. WATER SOLUBLE DRIED YUCCA SCHIDIGERA EXTRACT
      4.3.5. WATER SOLUBLE ASCROPHYLLUM NOSODUM (SEA KELP) EXTRACT
      4.3.6. WATER SOLUBLE DRIED LEONARDITE HUMATE (HUMIC ACID) EXTRACTS

   4.4. SOIL AMMENDMENT: A SOIL TEST SHALL BE CONDUCTEDAND THE SOIL MAY BE AMMENDED BASED ON SOIL TESTING RESULTS. SOIL AMMENDMENT SHALL BE SPECIFIED ON THE PLAN SUBMISSION.

5. STORAGE

   5..1 IF PLANTS ARE NOT TO BE REPLANTED IMMEDIATELY, SPECIAL STORAGE CONDITION IS REQUIRED. THE PROPERLY BALLED PLANTS SHALL BE STORED IN AN AREA WITH GOOD SURFACE DRAINAGE AND COVERED WITH LOOSE, DAMP MEDIUM TO HELP KEEP THE ROOT BALL MOIST SUCH AS COMPOSTED WOOD OR SAWDUST. DUE TO THE DECOMPOSITION OF THESE MEDIUM, PROVISIONS MUST BE MADE FOR REGULAR WATERING, IF AND WHEN TEMPERATURES IN THE MULCH APPROACH 90 DEGREES FAHRENHEIT.
   5.2. FOR LONG TERM STORAGE, PARTIAL SHADE AND AN APPROVED IRRIGATION SYSTEM IS REQUIRED.

6. GROUND AND PLANT PREPARATION

   6.1. ALL CUSTOMARY GOOD TRADE PRACTICE SHALL BE TAKEN IN PREPARING PLANTS FOR MOVING. WORKMANSHIP THAT FAILS TO MEET THE HIGHEST STANDARD WILL BE REJECTED.
   6.2. PRIOR TO TRANSPLANTATION, EACH TREE SHALL BE MULCHED IN A CIRCLE EXTENDING 4–6 FEET FROM THE TRUNK. 'GATOR BAGS' SHALL BE PLACED AROUND THE TRUNKS OF EACH TREE TO PROVIDE AT LEAST 1 INCH OF WATER PER WEEK. THE ENTIRE HOLDING AREA SHALL BE ENCLOSED WITH A TREE PROTECTION FENCING (SEE DETAIL SHEET 1/13). TREES SHALL NOT BE DISTURBED UNTIL THEY ARE TO BE MOVED TO THEIR FINAL TRANSPLANT LOCATION.
   6.3. MARKING ORIENTATION OF TREES: PRIOR TO PLANTING, THE CONTRACTOR SHALL TIE A FLAG OF CLOTH OR PLASTIC RIBBON TO A BRANCH TO MARK THE NORTH SIDE OF THE PLANT AS A GUIDE FOR POSITIONING THE PLANT IN THE NEW LOCATION.
   6.4. ROOT PRUNING: FOR ALL PLANTS 8 INCHES DBH OR GREATER, AT LEAST 6 MONTHS PRIOR TO TRANSPLANTING, AND ONLY DURING THE APPROVED SEASONS AS DESCRIBED HEREIN, THE CONTRACTOR SHALL DELINEATE, WITH CHALK, STAKE AND TWINE OR OTHER APPROVED METHOD, A CIRCLE AROUND EACH TREE AT THE APPROVED LIMIT OF THE ANTICIPATED ROOT BALL. THE CIRCLE SHALL BE DIVIDED INTO 8 EQUAL LENGTH SECTIONS. THE CONTRACTOR SHALL, IN EVERY OTHER SECTION OF THE PERIMETER (A TOTAL OF FOUR), EXCAVATE A CIRCULAR WEDGE AREA 3 FEET WIDE, EXTENDING FROM 4 INCHES LESS THAN THE ROOT BALL PERIMETER TO 3 FEET BEYOND THE PERIMETER, BY A 1.5 FOOT DEEP, SETTING ASIDE THE TOPSOIL AND SUBSOIL SEPARATELY. IN EACH OF THESE SECTORS, ALL EXPOSED ROOTS SHALL BE CLEANLY SEVERED AT THE INSIDE EDGE OF THE EXCAVATION BY AN APPROVED MEANS WITH CLEAN, SHARP TOOLS, TO PROMOTE CALLUS FORMATION AND WOUND CLOSURE.
   6.5. ROOTBALL SIZE: SEE 7.1
   6.6. STAKE PLANT LAYOUT FOR ADJUSTMENTS AND APPROVAL PRIOR TO TRANSPLANTING OPERATIONS BASED UPON THE OWNER'S ACCEPTED SCHEDULE AND METHODS.
   6.7. CROWN PRUNING: DEAD, INJURED OR DISEASED WOOD SHALL BE REMOVED IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. ADDITIONAL PRUNING MAY BE REQUIRED AS DETERMINED BY THE TRANSPLANTING SUBCONTRACTOR TO PRESERVE AESTHETIC BALANCE. ANY PRUNING SHALL PRESERVE THE NATURAL CHARACTER OF EACH PLANT AND SHALL BE DONE IN A MANNER APPROPRIATE TO ITS PARTICULAR REQUIREMENTS. ANY CROWN PRUNING SHALL BE DONE DURING THE TRANSPLANTING SEASON AND MAY BE PERFORMED EITHER BEFORE OR AFTER TRANSPLANTING, AT THE SUBCONTRACTOR'S DISCRETION. IF DONE BEFORE, ADDITIONAL PRUNING MAY BE REQUIRED TO CORRECT ANY DAMAGE INCURRED DURING THE TRANSPLANTING OPERATION. IN NO CASE SHALL LEADER BRANCHES BE REMOVED OR HARMED.
   6.8. TYING OF BRANCHES: IF NECESSARY, TO FACILITATE POSITIONING OF EQUIPMENT AND HELP AVOID INJURY TO THE TREE, TYING UP THE BRANCHES OF LOW BRANCHED PLANTS USING HEAVY TWINE OR BURLAP STRIPS IS ALLOWABLE, IF APPROVED IN ADVANCE BY THE RLA. EACH POINT OF CONTACT OF TWINE ON TREE TRUNKS OR BRANCHES SHALL BE PROTECTED WITH BURLAP.
   6.9. TRANSPLANT DIAMETER: WHERE A TREE SPADE IS USED, THE EXCAVATED HOLE MAY BE MADE WITH THE SAME SPADE USED TO EXCAVATE AND REMOVE THE TREE, AND SHALL BE THE SAME DIAMETER AND DEPTH AS THE ROOTBALL OF THE TRANSPLANTED TREE.
   6.10. TRANSPLANT LOCATION: THE NEW LOCATION(S) TO RECEIVE TRANSPLANTS SHALL BE STAKEDOUT FOR APPROVAL PRIOR TO DIGGING THE TREES. IN ALL CASES, THESE PITS SHALL BE DUG AND PREPARED PRIOR TO COMPLETION OF FINAL DIGGING OF THE TRANSPLANT TREES. PITS SHALL BE THOROUGHLY WATERED ON THE DAY OF TRANSPLANTING PRIOR TO RECEIVING PLANTS.
   6.11. THE EXCAVATED SUBSOIL AND TOPSOIL SHALL BE SET ASIDE INSEPARATE STOCKPILE FOR REUSE IN BACKFILLING. WHERE, THE OPINION OF THE EIC, THE SUBGRADE MATERIAL IS UNSUITABLE, IT SHALL BE REMOVED AND REPLACED WITH ADEQUATE SUBGRADE MATERIAL AND TOPSOIL.
   6.12. WHERE A TREE SPADE IS NOT USED, THE DIAMETER SHALL BE OF 3 FEET GREATER THE THE DIAMETER OF THE ROOT BALL. DEPTH SHALL BE SUFFICIENT TO ENSURE THAT THE ROOT BALL WILL SIT IN ITS NEW LOCATION ON UNDISTURBED SOIL SUCH THAT THE SURFACE OF THE ROOT BALL WILL BEAR THE EXACT RELATIONSHIP TO ADJACENT NEW FINISH GRADES AS IT DID ITS ORIFGINAL LOCATION.

7. TRANSPLANTING OPERATION

   7.1. ROOT BALL: IN ALL CASES, THE DIAMETER OF THE BALL OF NATIVE SOIL TO BE PRESERVED INTACT SHALL BE AT LEAST 10 TIMES THE DIAMETER OF THE TREE TRUNK AT BREAST HEIGHT (DBH) UNLESS OTHERWISE APPROVED BY THE RLA. THE DEPTH OF THE ROOT BALL SHALL BE SUFFICIENT TO PRESERVE THE MAJORITY OF LARGE ROOTS CHARACTERISTIC OF THE GIVEN TREE GROWING IN THAT PARTICULAR SOIL TYPE AS DETERMINED BY THE APPROVED TRANSPLANTING SUBCONTRACTOR IN CONSULTATION WITH THE RLA. UNLESS OTHERWISE SPECIFIED, THE DEPTH SHALL BE APPROXIMATELY 60% OF THE BALL WIDTH FOR ROOT BALLS UP TO 6 FEET AND A MINUMUM OF 4 FEET FOR ROOT BALLS GREATER THAN 6 FEET IN DIAMETER.

   PRECAUTION: EXPOSED ROOTS SHALL NEVER BE ALLOWED TO DRY OUT. IF FOR ANY REASON THE PLANT WILL SIT WITH ROOTS OR ROOT BALL EXPOSED, ROOTS SHALL BE PROTECTED BY PACKING THEN IN MOIST STRAW, SPHAGNUM, PEAT MOSS, BARK OR OTHER SUITABLE MATERIAL AND THEN WRAP WITH MOIST BURLAP.

   7.2. WHEN A TREE SPADE IS USED:

      7.2.1. USE A TREE SPADE THAT IS IN GOOD CONDITION WITH A MINIMUM TOLERANCE (MAX. 2") BETWEEN CUTTING BLADES. ALL BLADES SHALL BE TRUE TO THEIR DESIGNED SHAPE AND FREE OF BENDS, WHICH COULD INTERFERE WITH THEIR OPERATION. MOUNT TREE SPADE IN A SUITABLE STABLE MACHINE CAPABLE OF SUPPORTING THE WEIGHT OF ALL REMOVED MATERIALS AND HEAVY ENOUGH TO FORCE THE BLADES INTO THE SOIL.
      7.2.2. AT THE TIME OF TRANSPLANTATION, THE LOWER BRANCHES OF EACH TREE SHALL BE CAREFULLY TIED BACK AS REQUIRED TO PROVIDE A 5' VERTICAL CLEARANCE FOR THE TREE SPADE. A TREE SPADE OF NO LESS THAN 92 INCHES SHALL BE USED.
      7.2.3. THE APPROVED DESTINATION HOLE SHALL FIRST BE EXCAVATED (IT IS ASSUMED THAT THIS SHALL BE THE SAME SPADE TO BE USED TO MOVE THE TREE) AND THOROUGHLY WATERED.
      7.2.4. CUT AND REMOVE ALL VINES AND UNDERBRUSH FROM TRUNK AND BRANCHES OF TREE TO FACILITATE ACCESS BY THE TREE SPADE.
      7.2.5. DO NOT EXCAVATE TREE PITS MORE THAN 24 HOURS PRIOR TO PLANTING. ALL TREES MUST BE PRUNED AND THINNED BY REMOVING INTERIOR BRANCHES AND ENTANGLED LIMBS. REMOVE NOT LESS THAN 10 PECENT OF ALL BRANCHING BEFORE DIGGING BUT NO MORE THAN 20 PERCENT. DO NOT INDISCRIMINATELY CUT BRANCH TIPS TO ACHIEVE THE ABOVE PERCENTAGES. EACH TREE SHALL BE PRUNED OF DEAD, DAMAGED, DISEASED OR CROSSED BRANCHES. EACH TREE SHALL BE FURTHER PRUNED AT 2 WEEK INTERVALS TO REMOVED NEW SIGNS OF 'DIE BACK'.
      7.2.6. EACH TREE SHALL BE CAREFULLY MOVED TO A HOLDING AREA ON SITE. THE TREE TRUNK SHALL BE PROTECTED AS NECESSARY WITH BURLAP OR PROTECTIVE PADDING (SEE DETAIL SHEET 2/15) THE 'SPADED' TREES WILL BE PLACED IN THE HOLES WITH THE ROOT BALL EVEN OR 2–3" ABOVE THE EXISTNG GRADE.
      7.2.7. IN A RING 1.5 FOOT WIDE EXTENDING FROM THE EDGE OF THE ROOT BALL, THE TOP 8 INCHES OF SOIL SHALL BE LOOSENED. MYCORRHIZAL FUNGI MIXTURE SHALL BE EVENLY SPREAD IN THIS ZONE AT THE RATE OF ONE PACKET PER 8 SQUARE FEET AND THOROUGHLY INCORPORATED INTO THE LOOSENED LAYER.
      7.2.8. AFTER THE TREE IS PLACED IN THE HOLE, SPACES OR AIR POCKETS BETWEEN THE HOLE AND THE ROOT BALL SHALL BE IMMEDIATELY BE FILLED IN WITH SAND "WASHED" INTO THE SPACES. ALL AIR POCKETS MUST BE FILLED WITH THE SAND. ALL TREES SHALL BE MULCHED AND HAVE A 'GATOR BAG' INSTALLED OR AN APPROVED MEANS OF IRRIGATION.
      7.2.9 PROVIDE PERIODIC WATERING AND MISTING OF MAIN FOLIAGE. CONTINUE WATERING EACH TREE BY HAND OR WITH 'GATOR BAGS' OR AN APPROVED MEANS OF IRRIGATION UNTIL RE–ESTABLISHED. WATER AT A RATE OF AT LEAST 1" PER WEEK.
      7.2.10 SPRAY TRUNKS WITH LINDANE OR DURSBAN FOR CONTROL OF BORERS AND WRAP HARDWOODS TO FIRST BRANCH.

   7.3. WHEN A TREE SPADE IS NOT USED

      7.3.1 THE DESTINATION HOLE SHALL BE PREPARED TO THE APPROVED SIZE AND DEPTH PRIOR TO DIGGING THE TREE TO BE TRANSPLANTED. TOPSOIL AND SUBSOIL SHALL BE SET ASIDE IN SEPARATE PILES. THE SOIL SURFACE IN THE HOLE SHALL BE THOROUGHLY WATERED.
      7.3.2 A CIRCLE SHALL BE INSCRIBED AROUND EACH TREE TO THE APPROVED ANTICIPATED SIZE OF THE ROOT BALL. WHERE TREES HAVE BEEN PREVIOUSLY ROOT PRUNED, THE LIMIT SHALL BE ESTABLISHED AT THE TIME OF THE FIRST ROOT PRUNING, WHICH IS 0.1M FURTHER FROM THE TRUNK THAN THE LINE OF THE ROOT PRUNING.
      7.3.3 THE GROUND SHALL BE CLEAN CUT ALONG THE BALL LIMIT WITH A SAW, SHARP SPADE OR OTHER MEANS TO A MINIMUM DEPTH OF 12 INCHES..
      7.3.4 A TRENCH SHALL BE DUG OUTSIDE AND ADJACENT TO THIS LIMIT TO A MINIMUM WIDTH OF 1.5 FEET AND AS DEEP AS NECESSARY TO SHAPE A ROOT BALL OF THE APPROVED SIZE.
      7.3.5 THE ROOT BALL SHALL BE TRIMMED TO PROPER SIZE AND SHAPE.
      7.3.6 LOOSENING THE SOIL AROUND THE ROOTS SHALL BE AVOIDED BY CUTTING REMAINING WOODY ROOTS CLEANLY WITH SHARP SPADE, SAW, SHEARS OR OTHER APPROVED MEANS. EXTREME CARE SHALL BE EXERCISED TO PRESERVE ANY NEW FIBROUS ROOTS WHICH HAVE DEVELOPED IN ROOT–PRUNED ZONES.
      7.3.7 ROOT BALLS SHALL BE SECURELY CONTAINED BY: WRAPPING IN BURLAP SECURED TIGHTLY WITH "DRUM LACED" TWINE; A WOODEN "SOIL CRATE", OR OTHER MEANS WHICH SHALL ENSURE A SOLID, SECURE ROOT BALL. THE LOWER 3 FEET OF TREE TRUNK SHALL BE WRAPPED IN BURLAP IF IT IS ANTICIPATED THAT ANY TWINE WILL BE IN CONTACT WITH THE TRUNK.
      7.3.8 TREES SHALL BE MOVED BY CRANE, WINCH OR OTHER APPROVED MEANS PER THE SUBCONTRACTOR'S APPROVED PLAN TO THE NEW LOCATION. PLANTS SHALL BE HANDLED SO THAT THE ROOT BALL WILL NOT BE LOOSENED OR BROKEN AND SHALL BE SET WITH THE SAME COMPASS ORIENTATION AND AT THE SAME RELATIVE ELEVATION AS THEIR ORIGINAL LOCATION.
      7.3.9 THE PIT AROUND THE ROOT BALL SHALL BE BACKFILLED, BEGINNING WITH STOCK PILED SUBSOIL. AFTER THE SOIL HAS BEEN THOROUGHLY FIRMED AROUND THE LOWER HALF OF THE BALL, ANY BURLAP SHALL BE CUT AWAY FROM UPPER HALF OF THE BALL AND THE REMAINOING BURLAP ADJUSTED TO PREVENT THE FORMATION OF AIR POCKETS. SOIL SHALL BE FIRMED AT 6 INCH INTERVAL AND THOROUGHLY SETTLED WITH WATER THE SAME DAY OF PLANTING, TO WITHIN 8 INCHES OF THE FINISH GRADE.
      7.3.10 MYCORRHIZAL FUNGI MIXTURE SHALL BE EVENLY SPREAD ON THE SURFACE OF THE EXTRACTED AREA AT THE RATE OF ONE PACKET PER 8 SQUARE FEET. EXCAVATED AREAS SHALL THEN BE BROUGHT TO GRADE WITH STOCKPILED TOPSOIL, AND THE TOP 8 INCHES SHALL BE THOROUGHLY MIXED TO INCORPORATE THE MYCORRHIZAL FUNGI MIXTURE.
      7.3.11 THE PLANTING AREA INCLUDING THE ROOT BALL OF THE TREE SHALL BE WATERED THOROUGHLY.

   7.4. FINISHING SURFACE AFTER BACKFILLING: THE CONTRACTOR SHALL CULTIVATE AND RAKE OVER FINISHED PLANTING AREAS AND SHALL LEAVE THEM IN AN ORDERLY CONDITION.

   7.5. DIGGING FOR BOX TRANSPLANTATION

      7.5.1. TRENCHING: DIG TRENCH OUTSIDE PREVIOUSLY DUG FOR ROOT PRUNING.
      7.5.2. DO NOT DAMAGE NEW ROOTS. DO NOT PERMIT CRACKING OF ROOTBALL OR LOSS OF SOIL. PROTECT ROOTBALL BY COMPLETELY WRAPPING WITH BURLAP PER STANDARD NURSERY PRACTICES.

8. TREATING TRUNK AND CROWN INJURIES

   8.1. REPAIRING DAMAGED BARK AND TRUNK WOUNDS

      8.1.1. IN THE EVENT OF BARK OR TRUNK DAMAGE, REMOVE LOOSE BARK(S) BUT TAKE EXTRA CARE NOT TO CUT NOT TO CUT INTO LIVING TISSUE. ALL DAMAGED BARK OR TRUNK SHALL BE CLEANLY SEVERED OR CUT BY AN APPROVED MEANS WITH CLEAN, SHARP TOOLS TO PROMOTE CALLUS FORMATION AND WOUND CLOSURE.

9. FIELD QUALITY CONTROL.

   9.1. MAKE WRITTEN REQUEST FOR INSPECTION AFTER PLANTING OPERATIONS ARE COMPLETE.
   9.2. SUBMIT REQUESTS FOR INSPECTION TO OWNER AT LEAST TWO (2) DAYS PRIOR TO ANTICIPATED INSPECTION DATE

10. AFTER TRANSPLANT CARE

   10.1. STAKING

      10.1.1. ALL STAKING/MECHANICAL SUPPORT SHALL BE DONE IMMEDIATELY AFTER PLANTING AND ALL STAKES AND WIRE MAINTAINED. PLANTS SHALL STAND PLUMB AFTER STAKING. STAKES SHALL BE PLACED OUTSIDE OF THE ROOT BALL AND SHALL BE DRIVEN A MINIMUM OF 3 FEET INTO THE GROUND. STAKES SHALL BE FASTENED TO THE TREE WITH WIRE PROTECTED BY HOSE AND SHALL BE SET PLUMB UNLESS OTHERWISE DIRECTED BY THE RLA. EACH TREE SHALL HAVE FOUR STAKES.
      10.1.2. TIES SHOULD BE CHECKED AT LEAST ONCE DURING THE GROWING SEASON AND ADJUSTED AS NECESSARY.
      10.1.3. STAKES/MECHANICAL SUPPORT SHALL BE REMOVED AFTER ONE YEAR OR UNTIL THE TREE IS ESTABLISHED.

   10.2. MULCHING

      10.2.1. THE CONTRACTOR SHALL APPLY 3 INCH LAYER OF ORGANIC MULCH (SEE 4.2.) OVER THE ROOT SYSTEM OF THE TRANSPLANTED TREES. THE MULCH SHALL EXTEND AS FAR FROM THE TREE AS PRACTICAL TO THE LANDSCAPE SITE.
      10.2.2. THE MULCH SHALL NOT BE APPLIED DEEPER THAN THEN 4 INCHES AND SHALL NOT BE PILED AGAINST THE TRUNK (SEE DETAIL SHT. 1/15).

   10.3. POST PLANTING FERTILIZATION

      10.3.1. APPLY FERTILIZER 30–45 DAYS AFTER INSTALLATION.
      10.3.2. INJECT SPECIFIED MATERIAL WITH HIGH PRESSURE INJECTOR INTO SOIL AT DEPTH AND DIAMETER SHOWN BELOW:

TREE CALIPER	APPLICATION POINT	DEPTH	RADIUS	APPLICATION RATE PER TREE
UNDER 2"	3	4"–6"	16"–18"	1–½
2"–4"	3	4"–6"	18"–24"	2 GAL.
4"–5"	4	4"–6"	2'–3'	2–½" GAL.
5"–6"	5	4"–6"	3'–4'	3 GAL.
ABOVE 6"	3' O.C.	4"–6"	DRIPLINE	5 GAL./100 SF OF ROOT AREAS

   THE EXISTING SOIL AROUND THE TREES SHALL BE INJECTED WITH A MIXTURE OF DOGGET CORPORATION'S XL 'INJECTO FEED' AT ½ STRENGTH (OR APPROVED EQUAL) AND MYCOR TREE INJECTABLE (OR APPROVED EQUAL), EACH MIXED TO THE MANUFACTURER'S SPECIFICATIONS. THIS MIXTURE SHALL BE INJECTED AT A RATE OF 10–12 GALLONS PER TREE.

   10.4. IRRIGATION AND DRAINAGE

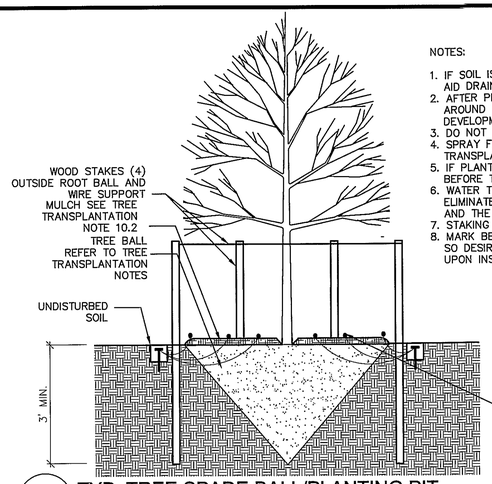
      10.4.1. SOAK OVER THE ENTIRE ROOT ZONE. KEEP THE TOP 12 INCHES MOIST BUT AVOID OVERWATERING. WATER AT A RATE OF 1 INCH PER WEEK. AVOID SHALLOW WATERING.

   10.5. MONITORING DECLINE AND HAZARD

      10.5.1. DESPITE THE BEST EFFORT TO SAVE TREES, SOME TREES MAY NOT RECOVER FROM EXISITNG DAMAGE, INCURRED DAMGE OR STRESS CAUSED BY CONSTRUCTION/LANDSCAPE OPERATIONS. THE CONTRACTOR SHALL OBSERVE AND REPORT TO THE RLA/ARBORIST SYMPTOMS OF DECLINE AND POSSIBLE HAZARD SUCH AS:
      CRACKS IN THE TRUNKS, SPLIT OR BROKEN BRANCHES, DEAD LIMBS, INDICATION OF INTERNAL DECAY SUCH AS CAVITIES, CARPENTER ANTS, SOFT WOOD AND MUSHROOM LIKE STRUCTURES GROWING ON THE TRUNK, ROOT CROWN, OR ALONG MAJOR ROOTS.

   10.6. PLANT MAINTENANCE

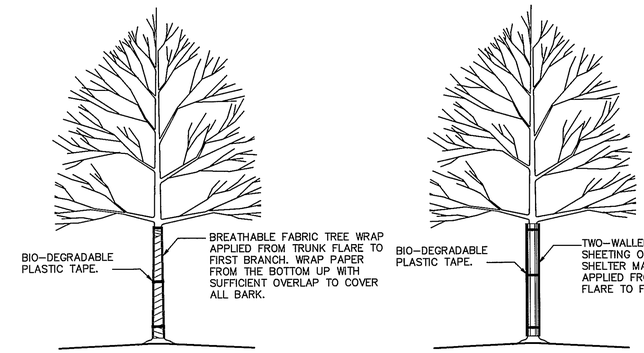
      10.6.1. TREE AND SHRUB MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN ALL TRANSPLANTED AREAS. MAINTAIN PLANTING BY PRUNING, CULTIVATION, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, AND RESETTING TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY OR TREAT AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
      10.6.2. PROTECT EXTERIOR PLANTS FROM DAMAGE DUE TO LANDSCPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.



NOTES:

1. IF SOIL IS WET, HOLD PLANT UP SEVERAL INCHES TO AID DRAINAGE.
2. AFTER PLANT IS INSTALLED, LOOSEN THE SOIL AROUND THE PLANT PLUG TO ENCOURAGE ROOT DEVELOPMENT.
3. DO NOT MOVE PLANTS IN HOT OR WINDY DAYS.
4. SPRAY FOLIAGE WITH ANTITRANSPIRANT PRIOR TO TRANSPLANTING TO REDUCE MOISTURE LOSS.
5. IF PLANT PIT SIDES ARE GLAZED, ROUGHEN THEM BEFORE THE PLANT IS SET IN THE PIT.
6. WATER THE PLANT WELL AFTER PLANTING TO ELIMINATE AIR POCKETS BETWEEN THE PLANT PLUG AND THE SURROUNDING SOIL.
7. STAKING MAY BE REQUIRED FOR LARGE PLANTS.
8. MARK BEST SIDE OF THE PLANT PRIOR TO DIGGING SO DESIRED SIDE IS FACING THE PROPER DIRECTION UPON INSTALLATION.

1/15 SECTION — TYP. TREE SPADE BALL/PLANTING PIT — NOT TO SCALE — 12F8–TREESPADE



APPLY THE PLASTIC SHEETING LOOSELY AROUND THE TRUNK TO LEAVE A 0.5 IN. (12 MM) GAP BETWEEN THE TRUNK AND THE SHEETING.

TREE WRAP SHOULD BE INSTALLED AT TIME OF PLANTING AND BE REMOVED WHEN DIRECTED BY THE LANDSCAPE ARCHITECT, BUT NO LATER THAN 12 MONTHS AFTER PLANTING.

2/15 SECTION — TYP. TREE WRAPPING DETAIL — NOT TO SCALE — 12f8–TREESPADE

Application No RZ / FDP 2011-MA-029 Staff WO'D
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(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 15 of 22

CERTIFIED ARBORIST

International Society of Arboriculture
CERTIFIED ARBORIST
Dennis Dale Dixon
Certificate Number: MA-4913A
Expiration Date: Dec 31, 2011

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COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
Lic. No. 882
05–16–2012
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
TREE TRANSPLANTATION SPECIFICATIONS AND DETAILS
CALLAWAY
MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
SHEET ADDED 12–02–11
REVISED 01–06–12 03–28–2012
REVISED 01–30–12 04–11–12
REVISED 02–17–12 04–30–12
REVISED 05–16–12

APPLICANT:
CALLAWAY-FOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. VERT.
SHEET 15 OF 22
CO. NO.
CAD NAME: F11524TTRP
LAYOUT: TTRP–DETAILS
FILE NO. 11524–08
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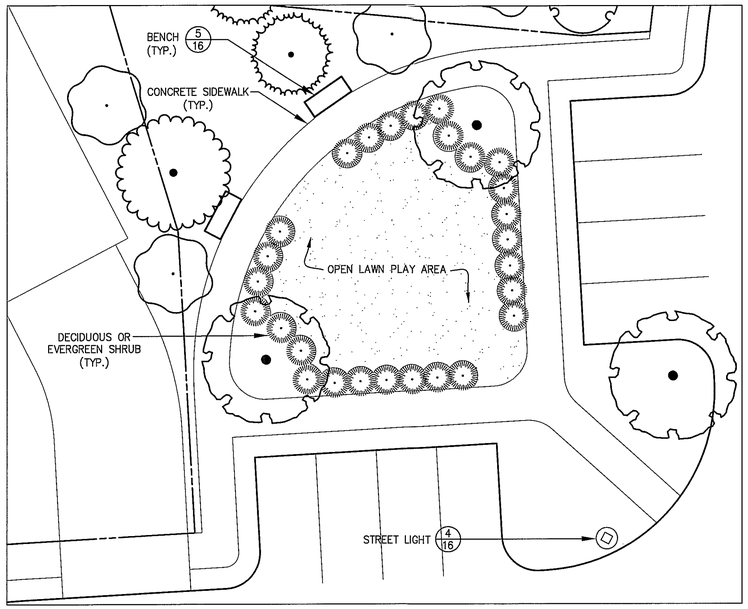
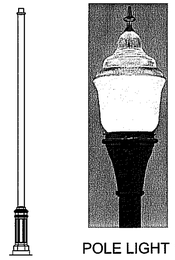


1/16 COMMUNITY PARK AMENITY AREA — SCALE: 1"=10'



POLE LIGHT 1

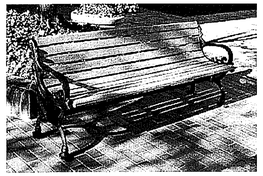
APPROXIMATE LOCATIONS OF THE STREET LIGHTS ARE SHOWN ON THE PLAN. THE FINAL NUMBER AND LOCATIONS OF THE LIGHTS MAY CHANGE WITH FINAL ENGINEERING AND A PHOTOMETRIC ANALYSIS.

MANUFACTURER:	HOLOPHANE
MODEL:	HP19712 WITH CUT-OFF LUMINAIRE OR EQUAL
POLE:	14' HIGH (P14SF/18FB-CA/BK)
COLOR:	BLACK
LAMP:	150 MH
NOTE:	INSTALL PER MANUFACTURER'S SPECIFICATION

OR APPROVED EQUAL

4/16 STREET LIGHT — NOT TO SCALE

PHOTO — 8A-3103_PoleIt-Granvl_1



MANUFACTURER: VICTOR STANLEY, INC.
P.O. Drawer 330,
Dunkirk, Maryland 20754
Toll Free: 1-800-368-2573
Tel: 1-301-855-8300
Fax: 1-410-257-7579
www.victorstanley.com

MODEL: C-10 Bench

NOTE: INSTALL PER MANUFACTURER'S SPECIFICATION

OR APPROVED EQUAL

5/16 BENCH — NOT TO SCALE

PHOTO — 23B-8118bench

THE TRELLIS WILL BE BUILT BY THE APPLICANT. THE TRELLIS'S STYLE AND FEATURES MAY CHANGE TO REFLECT THE ARCHITECTURE OF THE HOUSES. THIS IMAGE IS MEANT TO BE INDICATIVE OF THE GENERAL STYLE OF THE TRELLIS ONLY.

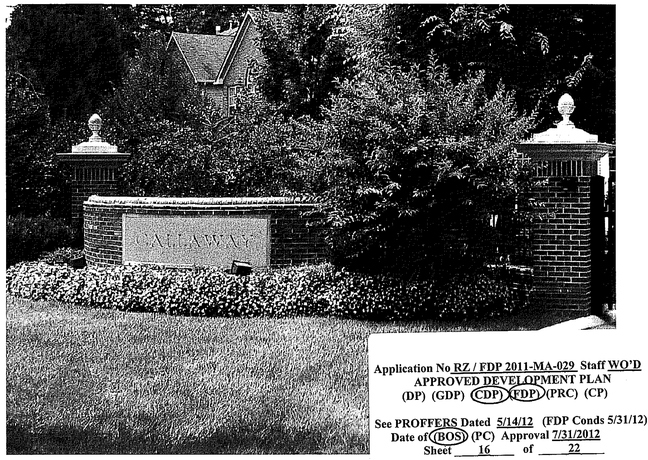
6/16 TRELLIS — NOT TO SCALE

PHOTO

NATURAL STONE WALL (OR APPROVED EQUAL). FINAL STONE TYPE AND COLOR TO BE DETERMINED AT THE SUBDIVISION PLAN PHASE. AS AN OPTION, A BRICK VENEER WALL MAY BE PROVIDED WITH BRICK SIMILAR TO THE BRICK SHOWN IN DETAIL 8 BELOW.

7/16 STONE RETAINING AND/OR SOUND WALL — NOT TO SCALE

PHOTO



Application No RZ / FDP 2011-MA-029, Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CF)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
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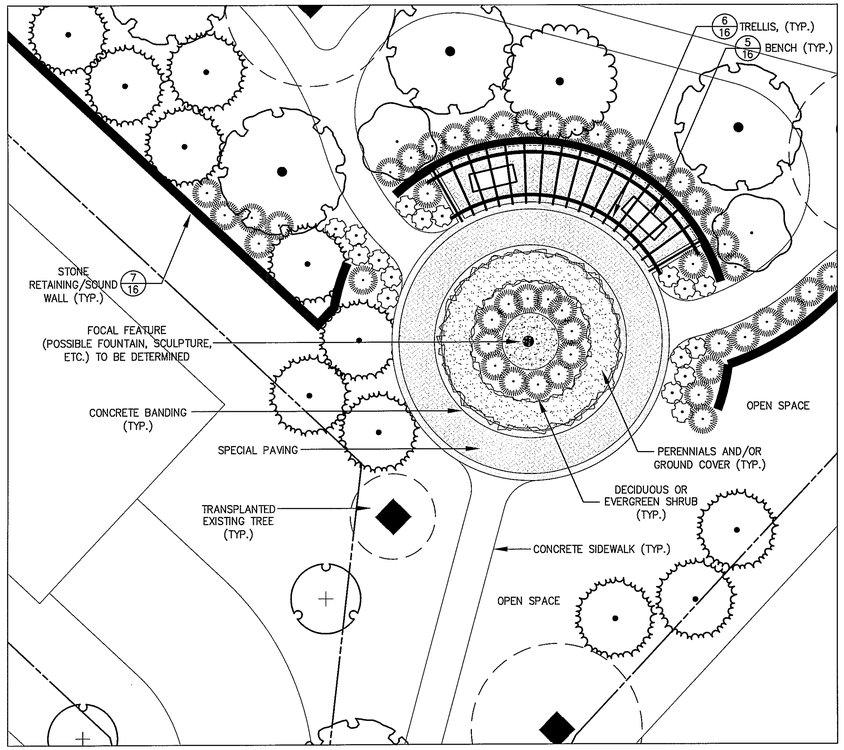
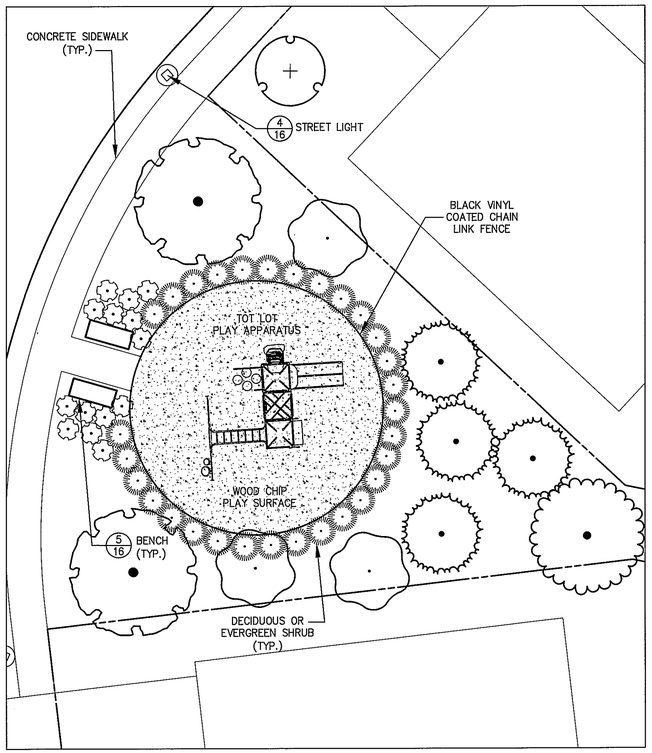
THIS IMAGE IS MEANT TO BE INDICATIVE OF THE GENERAL STYLE OF THE ENTRY FEATURE ONLY. FINAL DESIGN MAY DIFFER FROM REPRESENTATION SHOW. AS AN OPTION, A STONE VENEER ENTRY FEATURE MAY BE PROVIDED WITH STONE SIMILAR TO THE STONE SHOWN IN DETAIL 7 ABOVE.

8/16 POSSIBLE ENTRY SIGN — NO SCALE



2/16 ENTRY FEATURE AMENITY AREA — SCALE: 1"=10'



3/16 TOT LOT AMENITY AREA — SCALE: 1"=10'

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COMMONWEALTH OF VIRGINIA — DENNIS D. DUGAN — Lic. No. 842 — 05-16-12 — LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN

AMENITY PLAN
CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
08-05-11	REVISED 02-17-12
REVISED 11-09-11	REVISED 03-28-12
REVISED 12-07-11	REVISED 04-11-12
REVISED 01-06-12	REVISED 04-30-12
REVISED 01-30-12	REVISED 05-16-12

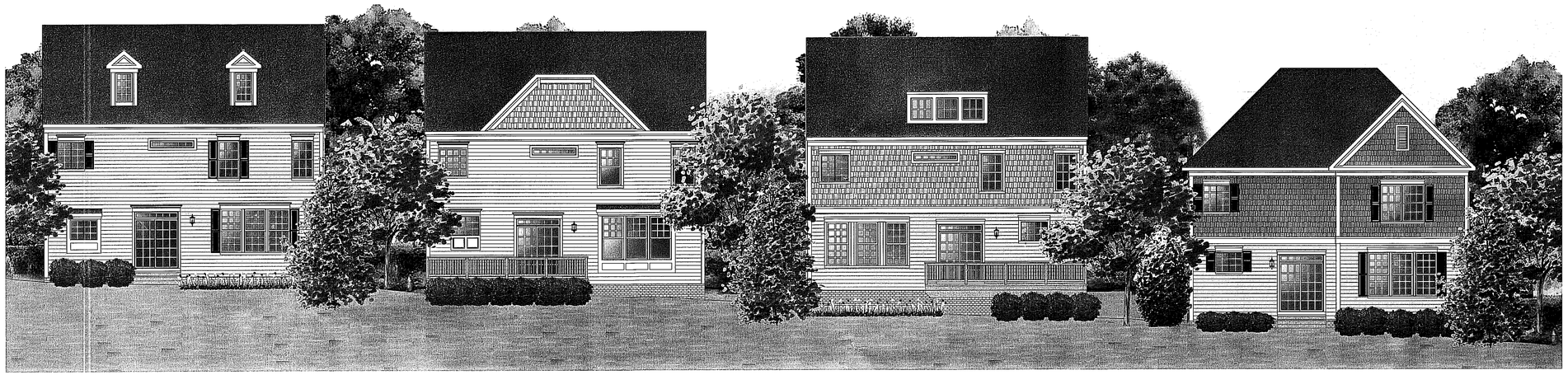
APPLICANT:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. AS SHOWN VERT. NA
SHEET 16 OF 22
CO. NO.
CAD NAME: F11524AMEN
LAYOUT: AMENITY
FILE NO. 11524-08

XREFS:

TYPICAL FRONT ELEVATIONS

NO SCALE



TYPICAL REAR ELEVATIONS FOR LOTS 11-14 AND 19-24

NO SCALE

Application No RZ / FDP 2011-MA-029 Staff WO'D
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(DP) (GDP) (CDP) (FDP) (PRC) (CP)

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TYPICAL REAR ELEVATIONS FOR LOTS 11-14 AND 19-24

NO SCALE

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CONCEPTUAL/FINAL DEVELOPMENT PLAN

ILLUSTRATIVE - ELEVATIONS

CALLAWAY

MASON DISTRICT
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CO. NO.
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LAYOUT: ELEVATIONS
FILE NO. 11524-08

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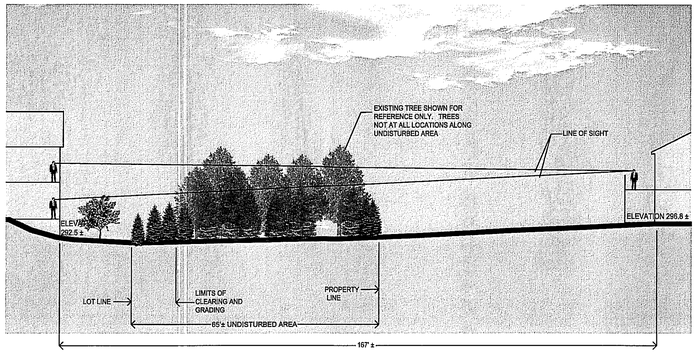

SECTION A

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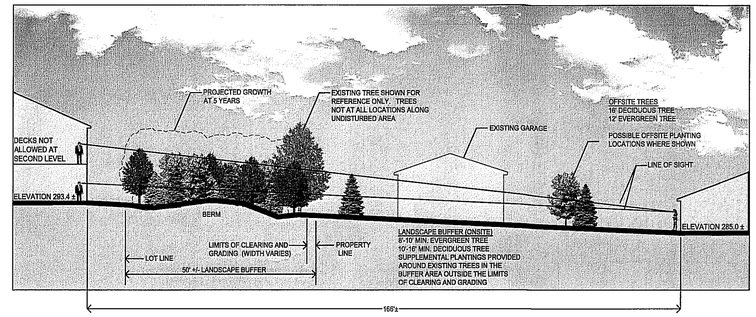

SECTION B

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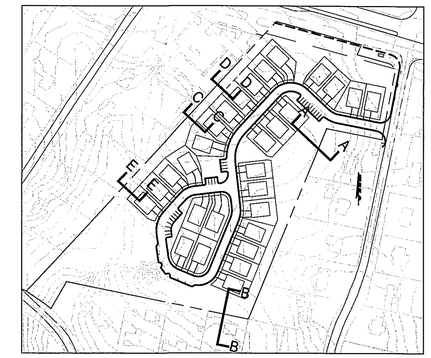

KEY PLAN

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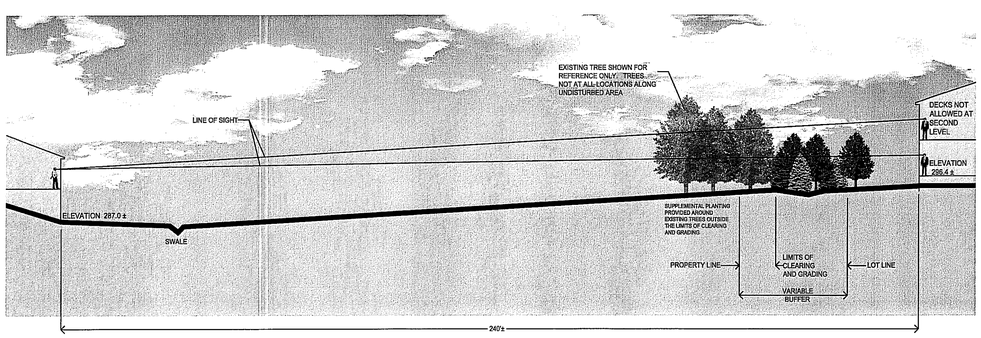

SECTION C

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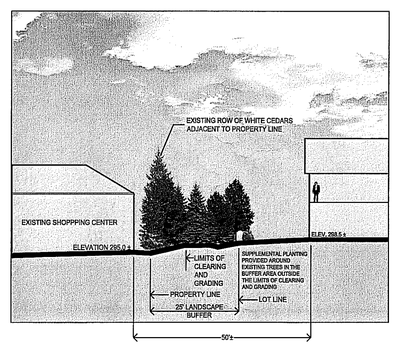

SECTION D

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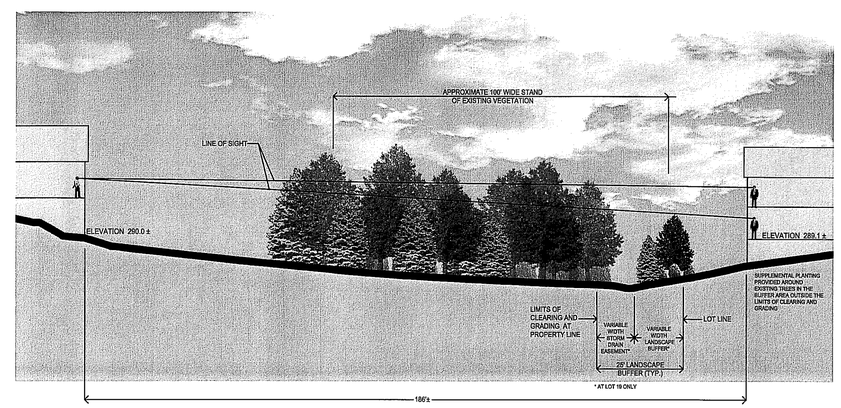

SECTION E

SCALE 1"=20'

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ILLUSTRATIVE SECTIONS

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

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OWNER/APPLICANT
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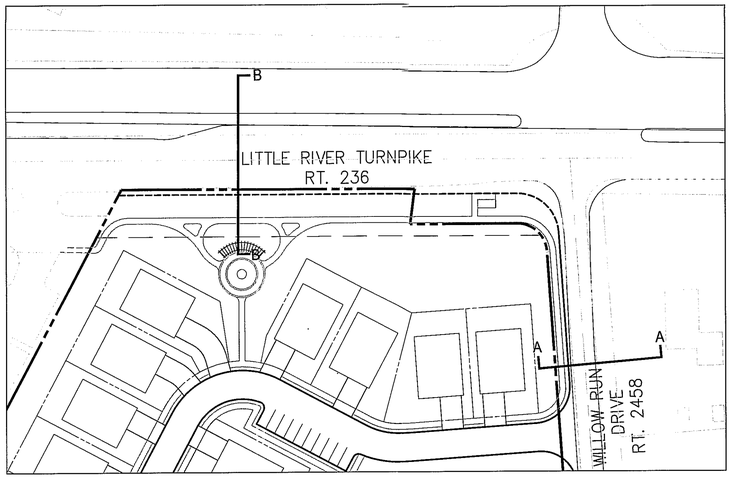
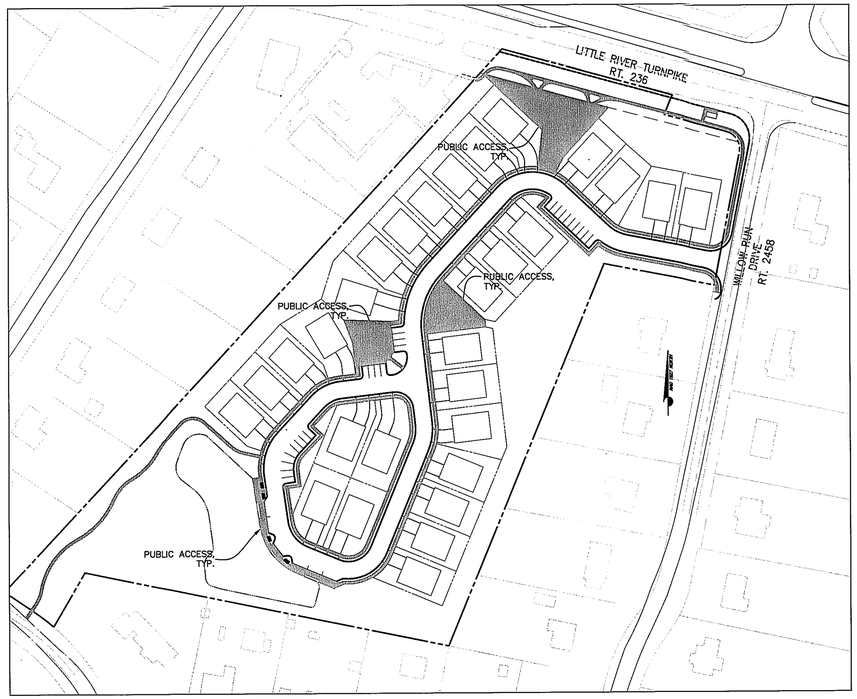


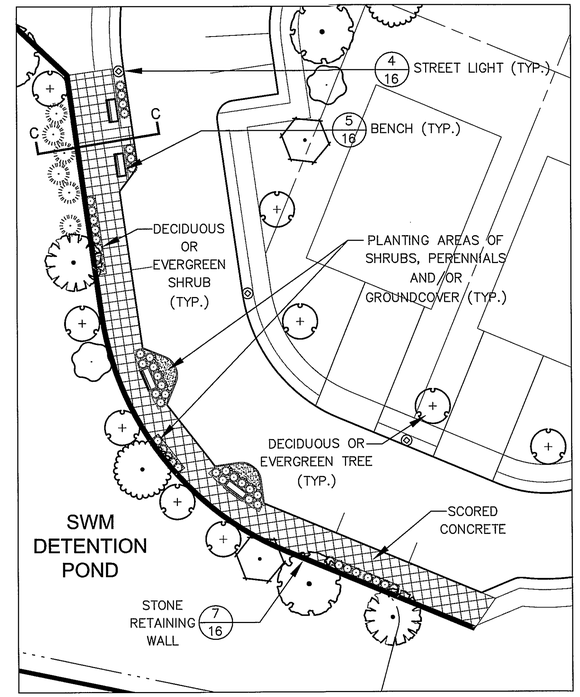
1/19 ROAD FRONTAGE IMPROVEMENTS PLAN

SCALE: 1"=60'



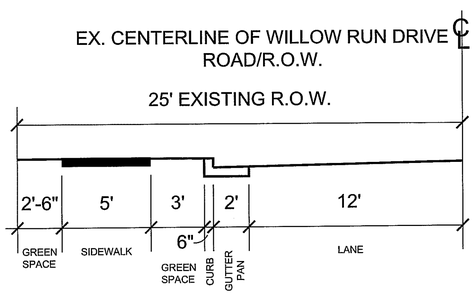
2/19 PUBLIC ACCESS DIAGRAM

SCALE: 1"=100'



3/19 POND OVERLOOK AMENITY AREA

SCALE: 1"=20'

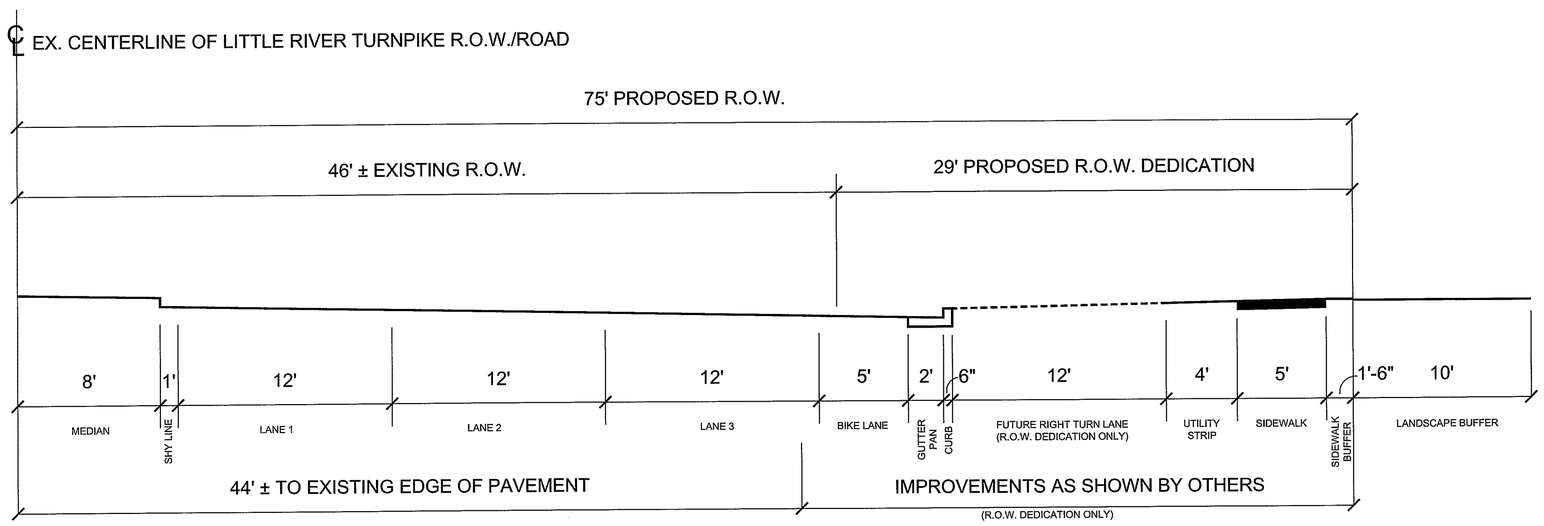


4/19 WILLOW RUN DRIVE SECTION A - A

SCALE: 1/4" = 1'

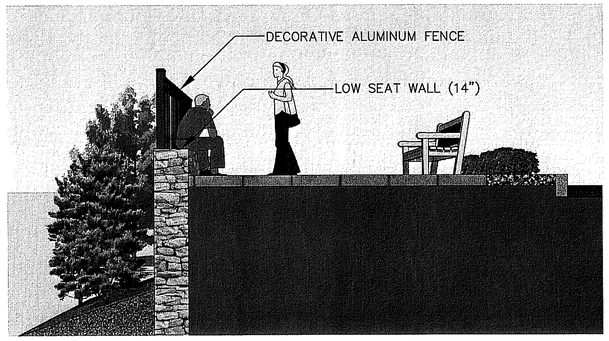
Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 19 of 22



5/19 LITTLE RIVER TURNPIKE SECTION B - B

SCALE: 1/4" = 1'



6/19 POND OVERLOOK AMENITY AREA SECTION C - C

NO SCALE

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COMMONWEALTH OF VIRGINIA
DENIS D. BOWM
Lic. No. 042
05-16-12
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN

STREET SECTIONS AND PLANS

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
ADDED 12-2-11	REVISED 02-17-12
REVISED 11-09-11	REVISED 03-28-12
REVISED 12-07-11	REVISED 04-11-12
REVISED 01-06-12	REVISED 04-30-12
REVISED 01-30-12	REVISED 05-16-12

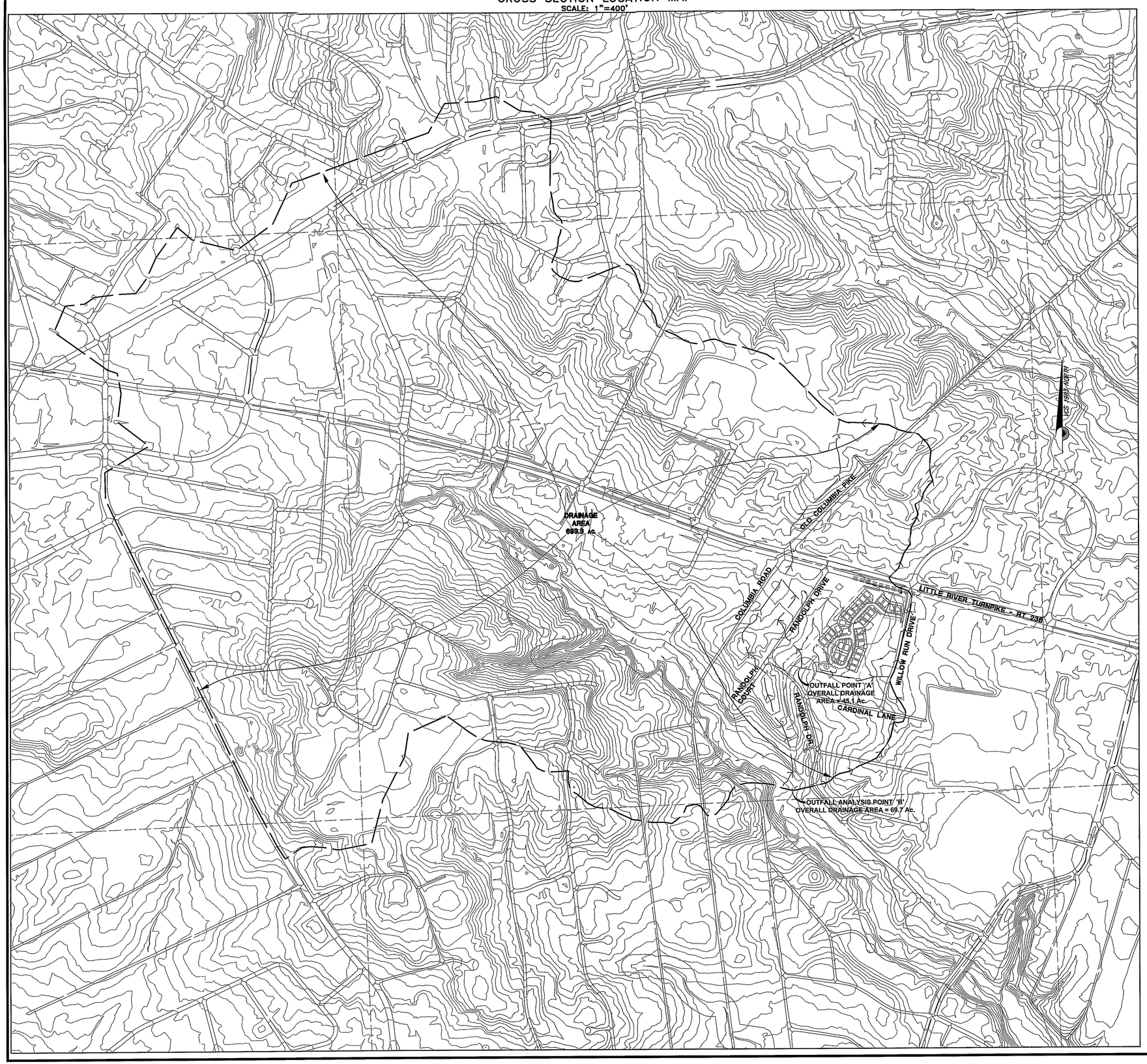
APPLICANT:
NEIGHBORHOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. AS SHOWN
VERT. NA
SHEET 19 OF 22
CO. NO.
CAD NAME: F11524ST SECTIONS
LAYOUT: SECTIONS
FILE NO. 11524-08

XREFS:

CROSS SECTION LOCATION MAP

SCALE: 1"=400'



EXTENT OF REVIEW AND OUTFALL NARRATIVE

A TOTAL OF 8.79 ACRES OF THE SITE FLOWS TO OUTFALL POINT 'A' IN EXISTING CONDITIONS. WITH THE POST-DEVELOPED CONDITION, APPROXIMATELY 7.8 ACRES ONSITE AREA WILL OUTFALL AT POINT 'A' AFTER BEING DETAINED IN THE UNDERGROUND DETENTION FACILITY. THERE IS ABOUT 1.0 ACRE THAT IS UNDETAINED SHEET FLOW AND APPROX. 0.1 ACRES OF THE ONSITE AREA BYPASSES OUTFALL POINT 'A'. THE PEAK RATE OF RUNOFF FOR THIS AREA AFTER DEVELOPMENT DOES NOT EXCEED THE PREDEVELOPMENT PEAK RATE. THEREFORE, PER PFM SECTION 6-0202.6, *THE PROJECT MAY CONTINUE TO DISCHARGE STORMWATER VIA SHEET FLOW INTO THE LOWER LYING PROPERTY*. WE DO NOT ANTICIPATE CHANGES TO DRAINAGE DIVIDES.

THE DETENTION METHOD HAS BEEN UTILIZED IN SIZING THE FACILITY, THUS THE 1-YEAR STORM WILL BE DETAINED IN THE FACILITY FOR 24-HOURS AND PROPORTIONAL IMPROVEMENTS WILL BE APPLIED TO THE 2- AND 10-YEAR STORM EVENTS. EXTENT OF REVIEW WILL BEGIN AT POINT 'A' AND THE TOTAL AREA AT THIS OUTFALL POINT IS 45.1 ACRES. IMMEDIATELY DOWNSTREAM OF POINT 'A' IS AN EXISTING CHANNEL BEGINNING WITH A STORM CULVERT CROSSING UNDER RANDOLPH DRIVE. THE CHANNEL THEN CROSSES THE FRONT YARDS OF SEVERAL LOTS WITH DRIVEWAY CULVERTS. AT POINT 'B' THE RUNOFF OUTFALLS INTO INDIAN RUN. POINT 'B' IS THE CONFLUENCE POINT FOR THE EXTENT OF REVIEW. AT THIS POINT THE OVERALL DRAINAGE AREA IS 69.7 ACRES. THE CONTRIBUTING DRAINAGE AREA TO THIS POINT IS APPROXIMATELY 624 ACRES, WHICH IS AT LEAST 90% OF THE OVERALL DRAINAGE AREA OF 69.7 ACRES. THE EXTENT OF REVIEW WILL END 150' DOWNSTREAM OF POINT 'B', AS DEFINED IN PFM 6-0203.2A.

REVIEW OF OUTFALL CONDITIONS ALSO END AT POINT 'B'. THE DRAINAGE AREA AT THIS POINT REACHES A FLOODPLAIN THAT DRAINS AN AREA OF AT LEAST ONE SQUARE MILE, WHICH MEET REQUIREMENTS OF THE ZONING ORDINANCE (ZO 18-202 PARAGRAPH 10.F(2)(C)).

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 20 of 22

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CONCEPTUAL/FINAL DEVELOPMENT PLAN
EXTENT OF REVIEW AND OUTFALL NARRATIVE

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS	
08-05-11	REVISED 02-17-12
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REVISED 12-07-11	REVISED 04-11-12
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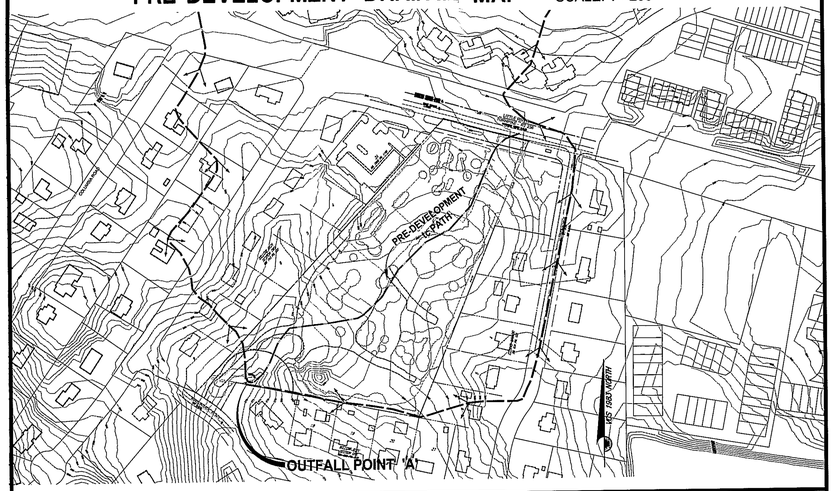
APPLICANT:
WESTGATE WOODS VI, LLC
11111 SUNSET HILLS ROAD
SUITE 200
RESTON, VA 20190

DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. AS NOTED
VERT. AS NOTED
SHEET 20 OF 22
CO. NO.
CAD NAME: F11524-SWM OUTFALL
LAYOUT: FDP-OUTFALL
FILE NO. 11524-08

XREFS:

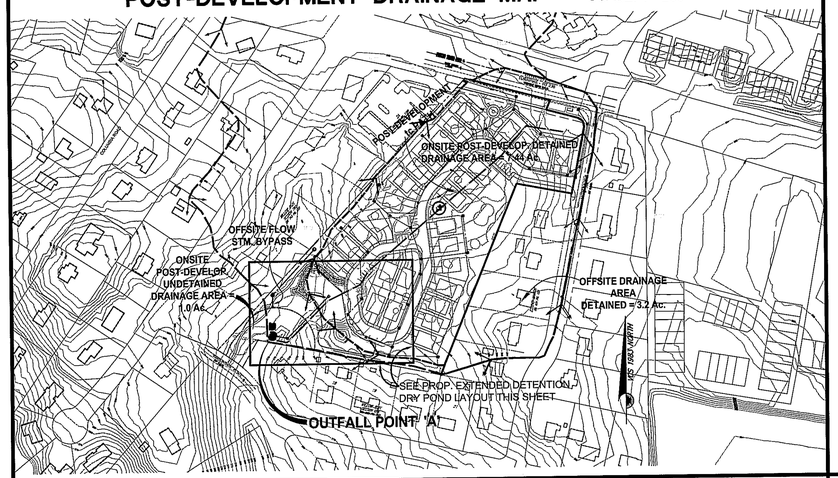
PRE-DEVELOPMENT DRAINGE MAP

SCALE: 1"=200'



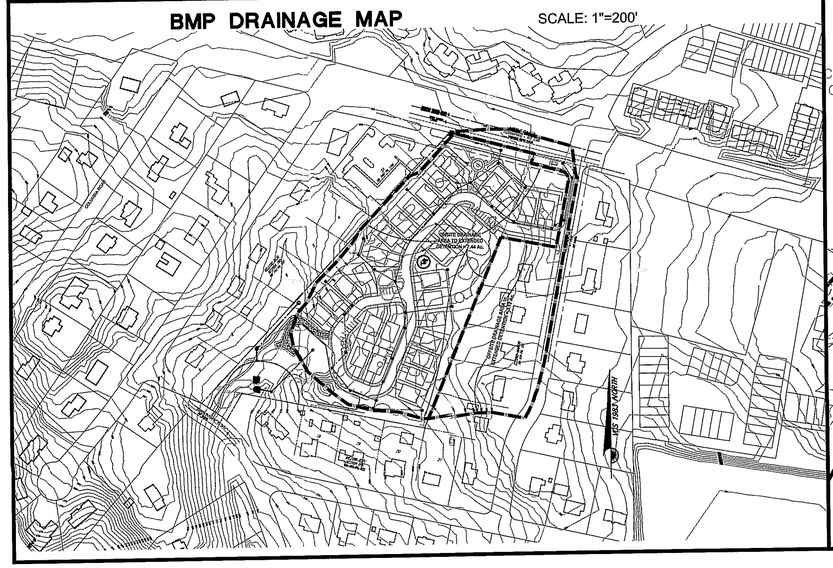
POST-DEVELOPMENT DRAINAGE MAP

SCALE: 1"=200'



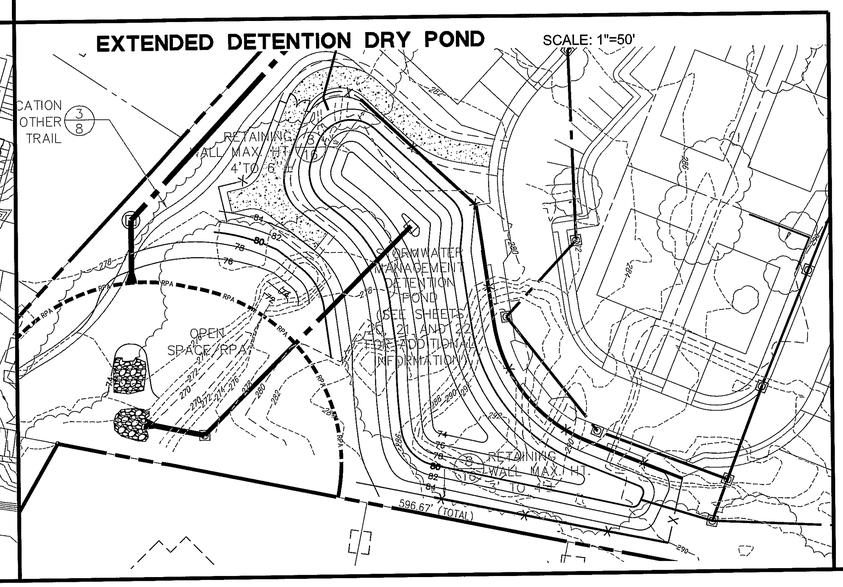
BMP DRAINAGE MAP

SCALE: 1"=200'



EXTENDED DETENTION DRY POND

SCALE: 1"=50'



REZONING STORMWATER MANAGEMENT & BMP NARRATIVE

PRE-DEVELOPMENT CONDITIONS

THIS 8.80 ACRE SITE CURRENTLY CONTAINS AN EXISTING RETAIL LANDSCAPING BUSINESS AND IS ZONED R-2. MOST OF THE ADJACENT PARCELS ARE OLDER RESIDENTIAL LOTS WITH A COMMERCIALLY ZONED SHOPPING CENTER SITE AT THE NORTHWEST CORNER. THE NORTHERN SIDE OF THE SITE IS BOUNDED BY AN EXISTING FOUR LANE DIVIDED MAJOR HIGHWAY - LITTLE RIVER TURNPIKE (STATE ROUTE 236). THE SITE IS LOCATED WITHIN THE CAMERON RUN WATERSHED AND RUNOFF FROM THE SITE DRAINS SOUTHWEST, OVERLAND, INTO A DESIGNATED RESOURCE PROTECTION AREA (RPA) . THERE IS A LARGE AMOUNT OF EXISTING OFFSITE FLOW CROSSING THE SOUTHERN CORNER OF THIS SITE. THE RUNOFF ORIGINATES FROM THE NORTH SIDE OF LITTLE RIVER TURNPIKE AND THEN FLOWS THROUGH THE ADJACENT SHOPPING CENTER AND OUTFALLS ONTO THE WESTERN EXISTING LOTS BEFORE FLOWING OVERLAND ACROSS PORTIONS OF THIS SITE.

POST-DEVELOPMENT CONDITIONS

THE PROPOSED CONDITIONS FOR THE SITE IS FOR 29 SINGLE FAMILY DETACHED UNITS WITH AN OPEN SPACE / PASSIVE RECREATIONAL AREAS. AN EXTENDED DETENTION DRY POND FACILITY THAT COLLECTS WATER FROM THE COMBINATION OF OVERLAND FLOW AND A PROPOSED STORM SEWER SYSTEM. ROUGHLY 7.8 ACRES ONSITE AND 3.2 ACRES OFFSITE ARE DETAINED IN THIS STORMWATER MANAGEMENT FACILITY. THE EXTENDED DETENTION DRY POND DETAINS THE STORMWATER RUNOFF IN ORDER TO MEET THE MAXIMUM ALLOWABLE RELEASE. REFER TO THE ALLOWABLE RELEASE COMPUTATIONS, OUTFLOW COMPUTATIONS, AND VOLUME TABLE ON THIS SHEET. THE FACILITY OUTFALLS INTO THE OUTFALL LOCATED AT THE SOUTHERN PROPERTY LINE . STORMWATER MANAGEMENT REQUIREMENTS HAVE BEEN MET, AS THE POST-DEVELOPMENT PEAK RELEASE RATES FOR THE 2 AND 10-YEAR STORMS ARE LESS THAN PRE-DEVELOPMENT LEVELS.

BEST MANAGEMENT PRACTICE (BMP) NARRATIVE

THE 8.80 ACRE SITE IS IN THE CAMERON RUN WATERSHED AND REQUIRES A MINIMUM 40% PHOSPHOROUS REMOVAL EFFICIENCY SINCE THIS IS A 'NEW DEVELOPMENT' IN FAIRFAX COUNTY AND NOT LOCATED IN THE OCCOQUAN WATERSHED. BMP COMPUTATIONS ARE BASED ON THE OCCOQUAN METHOD AND RESULT IN A PHOSPHOROUS REMOVAL BETWEEN 40% AND 45%. (SEE COMPUTATIONS ON THIS SHEET AND NEXT). THE BMP REQUIREMENTS WILL BE MET BY UTILIZING THE EXTENDED DETENTION DRY POND. THIS SYSTEM REMOVES PHOSPHOROUS "PRIMARILY THROUGH THE PHYSICAL PROCESS OF SEDIMENTATION WITH SOME MINIMAL BIOLOGICAL AND CHEMICAL UPTAKE BY ROOTED PLANTS AND SOIL INTERACTIONS. GENERALLY, CLASS 'D' SOILS ARE FOUND IN THIS AREA. OTHER TYPES OF BMP FACILITIES CAN BE PROVIDED THROUGH A COMBINATION OF RAIN GARDENS, FILTERRAS (TM), BAYFILTERS (TM), STORMFILTERS (TM) AND/OR OTHER SIMILAR MEASURES TO MEET THE BMP REQUIREMENTS. THESE SYSTEMS "REMOVE CONTAMINANTS FROM STORMWATER RUNOFF VIA MEDIA FILTRATION."

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:

Special Permits (8-011 2J & 2L)	Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-615 1G & 1N)	Commercial Revitalization Districts (9-622 2A (12)&(14))
Development Plans PRC District (16-302 2 & 4L)	PRC Plan (16-303 1E & 10)
FDP - P Districts (except PRC) 916-502 1F & 1Q)	Amendments (18-202 10F & 10I)

1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100).
2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading to accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on **Sheet 21.**
3. Provide:

Facility Name/ Type & No.	On-Site area served (acres)	Off-Site area served (acres)	Drainage area (acres)	Footprint area (sf.)	Storage Volume (cf.)	If pond, dam height (ft.)
Dry Pond	7.8	3.2	11	19,800	106,791	14.5'
(e.g., dry pond A, infil. trench, underground vault, etc.)						
Totals	7.8	3.2	11	19,800	106,791	

4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 21
   Pond inlet and outlet pipe systems are shown on **Sheet 21.**
5. Maintenance access (road) to stormwater management facility(ies) are shown on **Sheet 21.**
   Type of maintenance access road surface noted on the plat is Gravel (asphalt, geoblock, gravel, etc.)
6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on **Sheets 5, 6 and 7.**
7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on **Sheet 21.**
8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on **Sheet 20.**
9. A description of how the outfall requirements, including known changes to contributing drainage areas (i.e. drainage diversions), of the Public Facilities Manual will be satisfied is provided on **Sheet 20.**
10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on **Sheets 2 and 3.**
11. A submission waiver is requested for: N/A
12. Stormwater management is not required because: N/A

Revised 2-21-2006

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 21 of 22

BMP FACILITY DESIGN CALCULATIONS

Plan Name: CALLAWAY
Plan Number: *Rezoning Submission*
Site Area (acres) = 8.80

Date: April 2012
Engineer: BC Consultants

II. WATERSHED INFORMATION

PART 1: LIST ALL OF THE SUBAREAS AND "C" FACTORS USED IN THE BMP COMPUTATIONS

SUBAREA DESIGNATION & DESCRIPTION (1)		"C" (2)	AREA (AC.) (3)
B1	RPA	0.30	0.49
B2	Onsite to Extended Detention	0.58	7.44
B3	Onsite Uncontrolled	0.38	0.87
B4	*Offsite to Extended Detention*	*0.45*	*3.12*

PART 2: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR THE SITE

(A) AREA OF THE SITE (a) 8.80 ACRES

(B) SUBAREA DESIGNATION (1)		"C" (2)		AREA (AC.) (3)		PRODUCT (4)
B1	RPA	0.30	X	0.49	=	0.15
B2	Onsite to Extended Detention	0.58	X	7.44	=	4.32
B3	Onsite Uncontrolled	0.38	X	0.87	=	0.33
B4	*Offsite to Extended Detention*	0.45	X	3.12	=	0.00
				(b) TOTAL	=	4.80

(C) WEIGHTED AVERAGE "C" FACTOR (b) / (a) = (c) 0.55

PART 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE

SUBAREA DESIGNATION (1)	BMP TYPE (2)	REMOVAL EFF. (%) (3)		AREA RATIO (4)		"C" FACTOR RATIO (5)		PRODUCT (6)
B1	RPA	70	X	0.06	X	1.00	=	4.20
B2	Onsite to Extended Detentic	40	X	0.85	X	1.05	=	35.70
B3	Onsite Uncontrolled	0	X	0.10	X	0.69	=	0.00
B4	Offsite to Extended Detentic	40	X	0.35	X	0.82	=	2.30
	100% Credit for Offsite Areas					(a) TOTAL	=	**42.20**

PART 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT: (a) 40 %
(FAIRFAX COUNTY CHESAPEAKE BAY PRESERVATION AREA - 40%)
OR (FAIRFAX COUNTY WATER SUPPLY OVERLAY DISTRICT - 50%)

(B) IF LINE 3 (a) **42.20** % > LINE 4(a) 40 %
THEN PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED.

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SCALE: HOR. AS NOTED VERT.
SHEET 21 OF 22
CO. NO.
CAD NAME: F11524-SWM
LAYOUT: FDP-SWM1
FILE NO. 11524-08

XREFS:

OUTFALL 'A' PRE-DEVELOPMENT TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Sheet

Mannings n	.1300	
Hydraulic Length	100.00	ft
2yr, 24hr P	3.2000	in
Slope	.050000	ft/ft
Avg.Velocity	.28	ft/sec

Segment #1 Time: 6.06 min

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	793.00	ft
Slope	.030000	ft/ft
Unpaved		
Avg.Velocity	2.79	ft/sec

Segment #2 Time: 4.73 min

Segment #3: Tc: TR-55 Channel

Flow Area	33.7000	sq.ft
Wetted Perimeter	33.30	ft
Hydraulic Radius	1.01	ft
Slope	.030000	ft/ft
Mannings n	.0500	
Hydraulic Length	192.00	ft
Avg.Velocity	5.20	ft/sec

Segment #3 Time: .62 min

Total Tc: 11.40 min

OUTFALL 'A' ONSITE PRE-DEVELOPMENT FLOW SUMMARY

Return Event	Depth in	Rainfall Type	RNF ID
Pre 2	3.2000	Synthetic Curve	TypeII 24hr
Pre 10	5.2000	Synthetic Curve	TypeII 24hr
Pre 1	2.7000	Synthetic Curve	TypeII 24hr

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
*OUTFLOW	JCT	2	38713		720.00	13.78		
*OUTFLOW	JCT	10	89168		720.00	32.41		
*OUTFLOW	JCT	1	27749		722.50	9.72		
RAINFALL	AREA	2	38713		720.00	13.78		
RAINFALL	AREA	10	89168		720.00	32.41		
RAINFALL	AREA	1	27749		722.50	9.72		

OUTFALL ANALYSIS COMPUTATIONS

OUTFALL A

PART 1: LIST ALL OF THE SUBAREAS WITH CN NUMBERS AND COMPUTE THE AVERAGE CN FOR THE OUTFALL

GOOD FORESTED CONDITION

(A) SUBAREA & DESCRIPTION	CN (pi)	AREA (AC.)			PRODUCT
A1 Woods/Good Condition: Soil D	77	X	8.80	=	677.60
		X		=	0.00
		TOTAL	8.80		677.60

(B) WEIGHTED AVERAGE CN — TOTAL = AREA / PRODUCT = 77

POST DEVELOPMENT

(C) SUBAREA & DESCRIPTION	CN	AREA (AC.)			PRODUCT
A3 Residential, 1/4 ac.: Soil D	87	X	8.80	=	765.60
		X		=	0.00
		TOTAL	8.80		765.60

(D) WEIGHTED AVERAGE CN — TOTAL = AREA / PRODUCT = 87

PART 2: COMPUTE THE DEPTH OF RAINFALL AT OUTFALL

(A) CALCULATE THE RAINFALL AMOUNT (P) FOR THE 1-, 2-, AND 10-YEAR, 24-HOUR STORM. (FROM TABLE 6.23 OF THE PFM)

P_1 = 2.7" P_2 = 3.2" P_{10} = 5.2"

(B) DETERMINE THE RUNOFF DEPTH (d) IN INCHES

$$S = \frac{1000}{CN} - 10$$

$$d = \frac{(P - 0.2S)^2}{P + 0.8S}$$

GOOD FORESTED CONDITION		POST DEVELOPMENT	
S =	2.99	S =	1.49
d_1 =	0.87"	d_1 =	1.48"
d_2 =	1.21"	d_2 =	1.92"
d_{10} =	2.79"	d_{10} =	3.76"

PART 3: CALCULATE THE 1-YEAR POST DEVELOPMENT VOLUME

(A) DETERMINE TOTAL VOLUME OF WATER TO BE DETAINED FOR 1-YEAR STORM

V_1 = DRAINAGE AREA (ACRES) x d (INCHES) / 12 (INCHES/FOOT) — V_1 = 1.0853 ac.-ft. = 47,276 cu.-ft.

(B) SUBTRACT VOLUME DETAINED IN BMP VOLUME (FROM BMP COMPUTATIONS)

$V_{1\text{-}YR} = V_1 - V_{WQ}$ — V_{WQ} = 00 cu.-ft. — $V_{1\text{-}YR}$ = 47,276 cu.-ft.

PART 4: DETERMINE ORIFICE SIZE FOR 1-YEAR STORM

(A) MAXIMUM HEAD (h) AT THE REQUIRED 1-YEAR STORAGE FROM THE ELEVATION STORAGE CURVE FOR THE FACILITY. — h = 8.00 ft

(B) PEAK OUTFLOW RATE (Qp) AT THE MAXIMUM HEAD FOR DRAWDOWN TIME OF 24 HOURS.

$$Q_p = \frac{V_{1-YR}}{0.5x3{,}600x24}$$

Q_p = 1.0944 cfs

(C) REQUIRED ORIFICE AREA

$$A_{1-YR} = \frac{Q_p}{0.6\sqrt{64.4h}}$$

$A_{1\text{-}YR}$ = 0.0804 sq. ft.

(D) MAXIMUM DIAMETER OF CIRCULAR ORIFICE — MAXIMUM DIAMETER = 3.84"

PART 8: DETERMINE ALLOWABLE RELEASE

(A) DETERMINE THE VOLUME OF RUNOFF FOR EACH STORM TO BE ANALYZED

V = DRAINAGE AREA (ACRES) x d (INCHES) / 12 (INCHES/FOOT)

GOOD FORESTED CONDITION		POST DEVELOPMENT	
V_2 =	38,652 cu.-ft.	V_2 =	61,332 cu.-ft.
V_{10} =	89,124 cu.-ft.	V_{10} =	120,109 cu.-ft.

(B) DETERMINE THE PROPORTIONAL IMPROVEMENTS FOR EACH STORM TO BE ANALYZED

$$R_i = \left[1 - \frac{V_f}{V_d}\right]x100$$

R_2 = 36.98%
R_{10} = 25.80%

(C) DETERMINE THE ALLOWABLE PEAK RELEASES

	GOOD FORESTED CONDITION RELEASE	PROPORTIONAL IMPROVEMENT RELEASE	
See Sht 22 (Pre-develop. HYG ---------->	Q_2 = 13.78 cfs	Q_2 = 8.68 cfs	= 2.42 x (1 - R_2)
See Sht 22 (Pre-develop. HYG ---------->	Q_{10} = 32.41 cfs	Q_{10} = 24.05 cfs	= 9.54 x (1 - R_{10})

PART 9: MAXIMUM ALLOWABLE OUTFALL

STORM FREQUENCY	PROPORTIONAL IMPROVEMENT RELEASE (CFS)	-	UNDETAINED TO OUTFALL A (CFS)	+	* OFFSITE DETAINED (CFS)	=	MAX ALLOWABLE OUTFLOW (CFS)
Q_2 =	8.68	-	4.62	+	1.48	=	5.54
Q_{10} =	24.05	-	8.85	+	2.71	=	17.91

OUTFALL 'A' ONSITE UNCONTROLLED FLOW SUMMARY

Return Event	Depth in	Rainfall Type	RNF ID
2	3.2000	Synthetic Curve	TypeII 24hr
10	5.2000	Synthetic Curve	TypeII 24hr
1	2.7000	Synthetic Curve	TypeII 24hr

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
*OUTFLOW	JCT	2	10705		715.50	4.62		
*OUTFLOW	JCT	10	20997		715.50	8.85		
*OUTFLOW	JCT	1	8274		715.50	3.59		
UNDETAINED	AREA	2	10705		715.50	4.62		
UNDETAINED	AREA	10	20997		715.50	8.85		
UNDETAINED	AREA	1	8274		715.50	3.59		

DETENTION VOLUME

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
270.30	-----	0	0	0	0
272.00	-----	52	52	29	29
274.00	-----	2265	2660	1773	1803
276.00	-----	4891	10484	6990	8793
278.00	-----	8060	19230	12820	21612
280.00	-----	11901	29755	19837	41449
282.00	-----	15921	41587	27725	69174
284.00	-----	19787	53457	35638	104812
284.10	-----	19800	59381	1979	106791

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Application No RZ / FDP 2011-MA-029 Staff WO'D
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) (PRC) (CP)

See PROFFERS Dated 5/14/12 (FDP Conds 5/31/12)
Date of (BOS) (PC) Approval 7/31/2012
Sheet 22 of 22

DETENTION FACILITY DISCHARGE SUMMARY

Return Event	Total Depth in	Rainfall Type	RNF ID
1	2.7000	Synthetic Curve	TypeII 24hr
2	3.2000	Synthetic Curve	TypeII 24hr
10	5.2000	Synthetic Curve	TypeII 24hr
100	7.3000	Synthetic Curve	TypeII 24hr
150	10.9500	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
DRY POND	IN POND	1	55778		716.00	22.88		
DRY POND	IN POND	2	72163		716.00	29.56		
DRY POND	IN POND	10	141547		716.00	56.86		
DRY POND	IN POND	100	217432		716.00	85.51		
DRY POND	IN POND	150	352004		716.00	134.70		
DRY POND	OUT POND	1	55778		797.00	1.24	278.67	27448
DRY POND	OUT POND	2	72163		732.00	5.29	279.02	30785
DRY POND	OUT POND	10	141546		727.00	17.32	281.14	56245
DRY POND	OUT POND	100	160316		718.00	80.17	282.07	70275
DRY POND	OUT POND	150	294889		718.00	129.02	282.41	75846
ONSITE	AREA	1	55778		716.00	22.88		
ONSITE	AREA	2	72163		716.00	29.56		
ONSITE	AREA	10	141547		716.00	56.86		
ONSITE	AREA	100	217432		716.00	85.51		
ONSITE	AREA	150	352004		716.00	134.70		

SWM FACILITY RELEASE FLOW RATES

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COMMONWEALTH OF VIRGINIA
DENNIS D. DIXON
Lic. No. 892
05-16-12
LANDSCAPE ARCHITECT

CONCEPTUAL/FINAL DEVELOPMENT PLAN
STORMWATER MANAGEMENT COMPUTATIONS

CALLAWAY

MASON DISTRICT
FAIRFAX COUNTY, VIRGINIA

BC REVISIONS
08-05-11 REVISED 02-17-12
REVISED 11-09-11 REVISED 03-28-12
REVISED 12-07-11 REVISED 04-11-12
REVISED 01-06-12 REVISED 04-30-12
REVISED 01-30-12 REVISED 05-16-12

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DESIGNED BY: PLR
DRAFTED BY: CAD
CHECKED BY: PLR
DATE: JULY, 2011
SCALE: HOR. N/A VERT. N/A
SHEET 22 OF 22
CO. NO.
CAD NAME: F11524-SWM
LAYOUT: FDP-SWM2
FILE NO. 11524-08

XREFS: