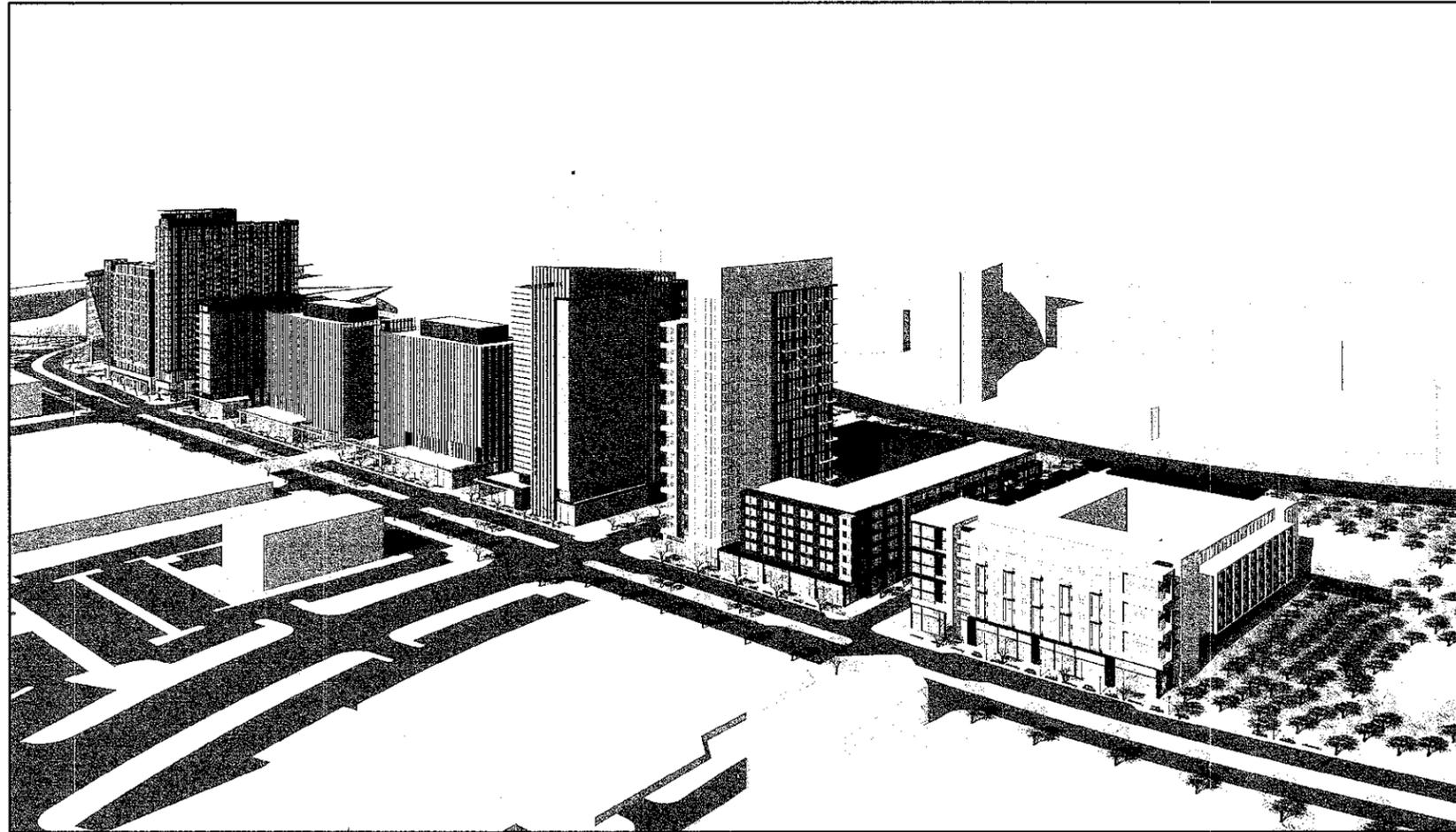


# ARBOR ROW

PROVIDENCE DISTRICT      FAIRFAX COUNTY, VIRGINIA

## CONCEPTUAL DEVELOPMENT PLAN

RZ/CDP 2011-PR-023



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AUGUST 29, 2012
JULY 23, 2012
MAY 25, 2012
APRIL 20, 2012
FEBRUARY 24, 2012
DECEMBER 7, 2011
JULY 22, 2011
APRIL 26, 2011

NOTES:

1. THE SUBJECT PROPERTY OF THIS APPLICATION IS DESCRIBED AS FOLLOWS:

Table with columns: TAX MAP #, OWNER, DEED BOOK / PAGE, APPROXIMATE ACREAGE. Lists property details for various parcels.

AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA. A STATEMENT THAT CONFIRMS THE OWNERSHIP OF THIS SUBJECT PROPERTY AND THE NATURE OF THE DEVELOPER'S INTEREST IN SAME IS PROVIDED IN AN AFFIDAVIT SUBMITTED SEPARATELY.

- 2. THE TOTAL SITE AREA IS APPROXIMATELY +/-19.40 ACRES...
3. THE SUBJECT PROPERTY LIES WITHIN SUBAREA TWO (SOUTH WEST PARK) OF THE NORTH SUBDISTRICT OF THE TYSONS...
4. THE SUBJECT PROPERTY IS CURRENTLY ZONED C-3 (OFFICE) SUBJECT TO PROFFERS...
5. THE TOPOGRAPHY SHOWN ON THE CDP IS AT A CONTOUR INTERVAL OF TWO (2) FEET...
6. THE BOUNDARY INFORMATION SHOWN ON THE CDP IS BASED ON RECORDED PLATS AND DEEDS FROM THE 1970S...
7. THERE ARE EXISTING OFFICE BUILDINGS OF APPROXIMATELY 277,431 S.F. (WITHOUT CELLAR, PER CONCURRENT PCA CHART)...
8. THE COUNTY TRAILS MAP IDENTIFIES AN ON ROAD BIKE TRAIL WITHIN WESTPARK DRIVE...
9. THE PROPERTY IS LOCATED IN THE BLUE PLAINS/SCOTT'S RUN E-1 SANITARY SEWER DISTRICT WATERSHED...
10. THERE IS A PORTION OF FLOODPLAIN AND RESOURCE PROTECTION AREA (RPA) LOCATED ON LOT 10 OF THE SUBJECT PROPERTY...
11. THERE ARE NO KNOWN UTILITY EASEMENTS OF 25 FEET OR GREATER IN WIDTH ON THE SITE...
12. THERE ARE NO AREAS CONTAINING SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION OR PRESERVATION...
13. THERE ARE NO KNOWN GRAVES OR BURIAL SITES ON THE SUBJECT PROPERTY...
14. TO THE BEST OF OUR KNOWLEDGE THERE WILL BE NO ADVERSE IMPACTS ON ADJACENT AND NEIGHBORING PROPERTIES...
15. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE OR WILL BE EXTENDED OR IMPROVED BY THE APPLICANT...
16. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES...
17. STORM WATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) REQUIREMENTS FOR THIS SITE ARE PROPOSED THROUGH THE USE OF BOTH EXISTING OFF SITE SWM SURFACE PONDS AND ON-SITE UNDERGROUND FACILITY...
18. SITE AMENITIES, FEATURES AND FURNISHINGS REPRESENTED HEREIN ARE CONCEPTUAL AND, AS SUCH, ARE INTENDED TO REFLECT THE GENERAL THEME AND CHARACTER OF THE PROPOSED DEVELOPMENT...
19. THE DEVELOPMENT SCHEDULE FOR THIS PROJECT IS DEPENDENT ON MARKET CONDITIONS AND THE SECURING OF ALL REQUIRED APPROVALS AND PERMITS...
20. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE DEVELOPMENT CRITERIA OF THE COMPREHENSIVE PLAN...
21. TO THE BEST OF OUR KNOWLEDGE NONE OF THE USES REPRESENTED ON THIS PLAN WILL GENERATE, UTILIZE, STORE, TREAT AND/OR DISPOSE OF ANY HAZARDOUS OR TOXIC SUBSTANCES...
22. A GRAPHIC DEPICTION OF THE ANGLE OF BULK PLANE FOR THE PROPOSED DEVELOPMENT SITE IS NOT REQUIRED AS THIS DEVELOPMENT IS NOT LOCATED NEAR THE PERIPHERY OF THE TYSONS URBAN CENTER...
23. a. PARKING WILL BE PROVIDED IN A COMBINATION OF ABOVE AND BELOW GRADE PARKING STRUCTURES AND SURFACE SPACES...
b. APPLICANT REQUESTS APPROVAL TO PROVIDE TANDEM/VALET PARKING SPACES IN SOME INSTANCES AS DEMONSTRATED ON THE CDP AND SUBSEQUENT FDP APPLICATIONS...
24. ARCHITECTURAL BUILDING AND LANDSCAPE ARCHITECTURAL FEATURES AND ILLUSTRATIONS PROVIDED HEREIN ARE SUBJECT TO CHANGE WITH FINAL DESIGN...
25. DEDICATION OF A PORTION OF THE APPLICATION AREA IS PROPOSED FOR THE WIDENING OF WEST PARK DRIVE AND WEST BRANCH DRIVE...

NOTES (CONTINUED):

- 26. PROPOSED JONES BRANCH DRIVE EXTENSION SHALL BE DESIGNED TO VDOT STANDARDS AND WILL BE PRIVATELY OWNED AND MAINTAINED UNTIL SUCH TIME AS IT MAY BE EXTENDED BY OTHERS...
27. PROPOSED SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING ORDINANCE OR WITHIN ONE OR MORE COMPREHENSIVE SIGN PLANS...
28. TRANSITIONAL SCREENING IS NOT REQUIRED AS SET FORTH IN ARTICLE 6-510.C OF THE ZONING ORDINANCE...
29. APPLICANT RESERVES THE RIGHT TO UTILIZE EXISTING SURFACE PARKING AS INTERIM PARKING COMMERCIAL COMMUTER PARKING...
30. FINAL GFA ALLOCATION TO INDIVIDUAL BUILDINGS WITHIN BLOCKS A,B,C,D,E, AS WELL AS FINAL PROPOSED BUILDING HEIGHTS AND PARKING GARAGE HEIGHTS...
31. THE SUBJECT PROPERTY MAY BE SUBDIVIDED IN THE FUTURE FOR THE PURPOSE OF SALE...
32. PROPOSED ROADWAY IMPROVEMENTS (ENTRANCES, CURBING, MEDIAN ETC) MAY REQUIRE EXCEPTION/DEVIATION FROM VDOT 'ACCESS MANAGEMENT DESIGN STANDARDS'...
33. PRIVATE ACCESS ROADS SHOWN ON THE CDP SHALL NOT BE CONSIDERED 'STREETS'...
34. PURSUANT TO SECTION 6-502 OF THE ZONING ORDINANCE, IN ADDITION TO RESIDENTIAL, OFFICE, HOTEL, RETAIL, AND OTHER USES IDENTIFIED ON THE SHEET C-2.1...
35. SATISFACTION OF THE MINIMUM PUBLICLY-ACCESSIBLE PARK REQUIREMENTS SHALL BE CALCULATED ON THE ENTIRETY OF 'ARBOR ROW'...
36. CDP APPROVAL IS BEING REQUESTED FOR TWO ALTERNATIVE HOTEL LAYOUTS AND BUILDING HEIGHTS FOR BLOCK 'D'...
37. FINAL LOCATION AND DESIGN OF PROPOSED CROSSWALKS IS SUBJECT TO CHANGE WITH VDOT APPROVAL...
38. ONE ELECTRIC CHARGING STATION SERVING TWO SPACES SHALL BE PROVIDED WITHIN EACH BLOCK...

Stormwater Management Design - PFM Deviation Narrative

In keeping with the Comprehensive Plan's policy and objectives of the 'Environmental Stewardship Guidelines' for stormwater management, and the acknowledgement that such goals will require a 'progressive approach' and 'innovative design techniques'...

- Deviation of PFM Section 6-1304.4J to allow utilization of infiltration rates less than 0.52 in / hr for design of infiltration systems...
• Deviation of PFM Section 6-1306.3 to allow for any detention facility located within a building or garage structure...
• Deviation of PFM Section 6-1307.2C to allow for installation of Bio-retention facilities...
• Deviation of PFM Section 6-1307.2E to set the minimum horizontal setbacks from building foundations...
• Deviation of PFM Section 6-1307.2F to allow installation of bio-retention facilities in the vicinity of loading docks...
• Deviation of PFM Section 6-1307.2G to allow for the maximum drainage areas to bio-retention filters...
• Deviation of PFM Section 6-1309.2C to allow installation of tree box filters...

WAIVER / MODIFICATION REQUESTS:

ZONING ORDINANCE ARTICLE 2 - GENERAL REGULATIONS

- WAIVER/MODIFICATION OF SECTION 2-506-2 TO ALLOW FOR A PARAPET WALL, CORNICE OR SIMILAR PROJECTION TO EXCEED THE HEIGHT LIMIT ESTABLISHED BY MORE THAN THREE (3) FEET.

ZONING ORDINANCE ARTICLE 6 - PLANNED DEVELOPMENT DISTRICT REGULATIONS

- WAIVER OF ZONING ORDINANCE SECTION 6-505.2 REQUIRING THE SUBMISSION OF A FINAL DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH THE PUBLIC ROADWAY AND INFRASTRUCTURE PHASING EXHIBIT SHOWN WITHIN THE CDP.
- WAIVER OF ZONING ORDINANCE SECTION 6-505.7 REQUIRING THE DESIGNATION OF SPECIFIC OUTDOOR DINING AREAS ON THE CDP/FDP...

ZONING ORDINANCE ARTICLE 10 - ACCESSORY USES, ACCESSORY SERVICE USES, AND HOME OCCUPATIONS

- AS ALLOWED WITHIN ZONING ORDINANCE SECTION 10-104.3.E APPLICANT REQUESTS A WAIVER OF THE MAXIMUM FENCE HEIGHT FROM SEVEN FEET TO FOURTEEN FEET AROUND ACCESSORY USES/STRUCTURES LOCATED WITHIN THE REAR YARD FOR THOSE AREAS OF FENCING ASSOCIATED WITH THE PROPOSED SPORTS COURTS AND URBAN PLAZA...

ZONING ORDINANCE ARTICLE 11 - PARKING AND LOADING

- MODIFICATION OF ZONING ORDINANCE SECTION 11-102(12) AND SECTION 6-509(1) TO ALLOW FOR TANDEM SPACES AND VALET SPACES CONTROLLED BY BUILDING MANAGEMENT...
- MODIFICATION OF ZONING ORDINANCE SECTION 11-201 AND SECTION 11-203 FOR THE REQUIRED NUMBER OF LOADING SPACES WITHIN MULTI-FAMILY, OFFICE AND RETAIL/SERVICES USES...
- MODIFICATION OF SECTION 11-202(4) REQUIRING MINIMUM DISTANCE OF FORTY FEET (40') OF A LOADING SPACE...

ZONING ORDINANCE ARTICLE 13 - LANDSCAPING

- MODIFICATION/WAIVER OF INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS (SECTION 13-202-8) FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS...
a. FOR INTERIM SURFACE PARKING LOTS: INTERIOR LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS...
b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: INTERIOR LANDSCAPING MAY INCLUDE INNOVATIVE PLANTING DESIGN...
c. WITHIN BLOCK 'E' - WAIVER OF THE INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS FOR THE EXPOSED PARTIAL UPPER LEVEL...
- MODIFICATION OF PERIPHERAL LANDSCAPE REQUIREMENTS (SECTION 13-203-5) FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS...
a. FOR INTERIM SURFACE PARKING LOTS: PERIPHERAL LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS...
b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: PERIPHERAL LANDSCAPING WILL BE PROVIDED USING TREES WITHIN URBAN STREETSCAPES...

ZONING ORDINANCE ARTICLE 17 - SITE PLAN

- WAIVER OF SECTION 17-201-(3)(B) REQUIRING ADDITIONAL INTER-PARCEL ACCESS TO ADJOINING PARCELS (OTHER THAN THOSE SHOWN ON THE CDP).
- WAIVER OF SECTION 17-201-(7) REQUIRING NO PARKING' SIGNS ALONG TRAVEL WAYS AT 15M INTERVAL...
- MODIFICATION OF SECTION 17-201-(4) TO PROVIDE INTERIM ROAD CONDITIONS ALONG THE WESTPARK DRIVE FRONTAGE OF BLOCK 'F'...

WITH REGARD TO HANOVER PARCEL (I.M. #29-2-(115)-B-2)

- WAIVER OF SECTIONS 17-201-(3)(B), 4.12-14 REQUIRING THE CONSTRUCTION OR INSTALLATION OF THE FOLLOWING, BUT NOT LIMITED TO: INTER-PARCEL ACCESS, ROADWAY FRONTAGE IMPROVEMENTS, UTILITY RELOCATIONS, DRIVEWAYS, STREET LIGHTS OR OTHER IMPROVEMENTS OTHER THAN THOSE IDENTIFIED ON EXHIBIT 'A' OF THE PROFFERS.

PUBLIC FACILITIES MANUAL

- WAIVER OF PFM SECTION 6-0303.B, TO ALLOW STORM WATER MANAGEMENT FACILITIES (SWM AND BMP) TO BE PROVIDED WITHIN UNDERGROUND SYSTEMS...
- WAIVER OF PFM SECTION 7-0403.4 REQUIRING THE MINIMUM WIDTH OF 30 FEET FOR PRIVATE STREET AND COMMERCIAL ENTRANCES...
- MODIFICATION OF PFM SECTION 7-0800 TO ALLOW TANDEM/VALET PARKING SPACES...
- MODIFICATION OF SECTION 7-0802.2 PARKING GEOMETRIC STANDARDS...
- WAIVER OF SECTION 8-0201.3 REQUIRING TRAILS AND BIKE TRAILS SHOWN ON THE COMPREHENSIVE TRAILS PLAN...
- MODIFICATION OF SECTION 12-0508.3A(1) THROUGH SECTION 12-0508.3A(3) AND AS DESCRIBED IN REQUEST LETTER...
- MODIFICATION OF SECTION 12-0510-4E-(5) TO PERMIT REDUCTION OF THE MINIMUM PLANTING AREA...
- MODIFICATION OF SECTION 12-0511 FOR REQUIRED TEN PERCENT TREE CANOPY COVERAGE...
- MODIFICATION OF SECTION 12-0515.6B TO ALLOW FOR TREES LOCATED ABOVE PROPOSED PERCOLATION TRENCH...

P.F.M. SECTION 6-STORMWATER & B.M.P. CODE REQUIREMENTS

- DEVIATIONS/MODIFICATION OF REQUIRED S.W.M. AND B.M.P. CRITERIA BY THE DIRECTOR, DPWES AS OUTLINED IN THE "STORMWATER MANAGEMENT DESIGN PFM DEVIATIONS NARRATIVE" OUTLINED ON THIS SHEET.

MISCELLANEOUS CODE REFERENCES

- MODIFICATION OF DPW&ES DOCUMENT 'TESTING GUIDELINES FOR INFILTRATION TESTING' (DATED JUNE 2010) (AS REFERENCED BY LTI 10-04):
- TO ALLOW PROPOSED PERCOLATION TRENCH WITH GRAVEL AND PIPE STORAGE UNDER PAVEMENT AND PLAZA HARDSCAPE.
- TO ALLOW UTILIZATION OF INFILTRATION RATES LESS THAN 0.52 INCH/HOUR FOR FIELD TESTED RATE OF INFILTRATION SYSTEMS...

Bowman Consulting Group, LLC logo and contact information.

PARKER RODRIGUEZ, INC. logo and contact information.

WDC Architects, PLLC logo and contact information.

Cityline PARTNERS logo and contact information.

Professional seal for C. Matthew Muscher, Landscape Architect.

GENERAL NOTES AND WAIVERS ARBOR ROW CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

Table with columns: PLAN STATUS, DATE, DESCRIPTION. Lists project milestones and dates.

TABLE 1- CDP - SITE TABULATIONS:

Block/ Building	Allowable Building Height (Tier 2)	Proposed Building Height(1)(2)	Maximum Proposed Penthouse Height (1)(2)	Proposed Stories /Floors (1)	Use (3)	Proposed GFA by Use (4)	Proposed Maximum Building GFA (4)(13)	Dwelling Units (5)(12)	Hotel Rooms (5)	Required Parking 1/4 - 1/2 mile (Per Unit or 1000 GFA)		Total Required Parking (6)		Parking Provided (6)	Proposed Parking Ratio Per Use	Block Land Area (SF) (4)	Maximum Proposed GFA (4)	Maximum FAR
										Min	Max	Min	Max					
Block A																		
A1	175'-225'	70'-120'	N/A	6 (11)	Residential	279,405	279,405			1.1	1.7	495 - 763	765 - 1180	902	1.3/ D.U.	238,161 (8)(10)	744,800 (9)	
A2	175'-225'	70'-275'	N/A	22	Residential Retail/Services	457,395 8,000 (12)	465,395	450 - 694		0	6	0	18	40	(7)			
Block B																		
B	175'-225'	175'-225'	30'	13-17	Retail/Services Office	8,500 394,285	392,785			0	6	0	21	50	(7)			
										0	2.2	0	845	690	1.8/1,000 GFA			
Block C																		
C1	175'-225'	105'-180'	30'	8-13	Retail/Services Office	12,500 263,150	275,650			0	6	0	45	45	Office	389,863 (8)	1,114,065	
C2	175'-225'	105'-180'	30'	8-13	Retail/Services Office	12,500 263,150	275,650			0	6	0	45	45	Retail/			
										0	2.2	0	579	149	(7)			
Block D																		
D	175'-225'	108'-200'	22'	9-17	Hotel Retail/Services	162,000 8,000	170,000	250		0	1.05	0	263	184	.74/Room	136,788 (8)	516,800 (9)	
										0	6	0	18	47	(7)			
Block E																		
E	175'-225'	270'-300'	N/A	20 & 27	Residential Retail/Services	509,800 7,000 (12)	516,800	430 - 480		1.1	1.7	473 - 528	731 - 816	710	1.64/ D.U.	844,813 (10)	2,575,685(9)	3.05
										0	6	0	12	12	(7)			
Block F																		
F	175'-225'	135'-175'	30'	10	Office Retail/Services	197,844 2,156	200,000			0	2.2	0	436	435	2.2/1,000 GFA	80,001 (8)	200,000	
TOTAL							2,575,685	880 - 1174	250					4160				

- Individual building heights and number of floors/stories shown are conceptual and may be changed by the Block Owners provided that the building height demonstrated on this CDP (either allowable and/or proposed) for each building is not exceeded. (Refer to Architectural Site Sections for Average Grade Elevations)
- Building Height: Within Residential Blocks the building height includes penthouse and mechanical screens. Within Non-Residential Blocks (Office/Commercial/Hotel) the building height does not include penthouses. Penthouses may be up to 30 feet in height.
- Retail and/or Service use may include a variety of commercial and community type uses (see Note # 34 sheet C2.0) as determined by the Block Owners at time of final site plan.
- The square footage for individual uses, buildings and blocks shown is conceptual. The Block Owners reserve the right to increase, decrease or transfer square footage between and within uses (i.e. office, residential, retail), buildings and blocks provided the total overall FAR is not exceeded. See Proffers.
- Number of dwelling units/bedroom types/hotel rooms will be determined at the time of FDP and final site plan.
- Parking required and provided is estimated. Number of required parking spaces may be changed by the Block Owners based on the final Dwelling Unit count, bedroom mix, final and specific building uses, and final GFA, and will be determined at the time of final site plan. The Block Owners reserve the right to provide more or less parking at the time of final site plan provided the allowable parking rates set forth in Section 6-509 are not exceeded at the build out of the overall development.
- Per Section 6-509.B.(1) - the first 5,000 square feet of ground floor retail has been subtracted prior to retail parking calculation. Retail parking based on 6 Spaces per 1,000 SF (after the first 5,000 SF). Other uses may be provided per Note #34 on sheet C.2.0.
- Includes square footage reserved from proposed Right of Way Dedication of Westpark Drive and West Branch Drive as allowed per Z.O. Section 2-308-4. See Right of Way Density Allocation Tabulation Table 4.
- Density includes 209,126 GFA for Superlative contribution for public facilities from Hanover Parcel (TM # 29-2-(15)-B2) as recommended by the Tysons Urban Center Comprehensive Plan. See Residential Density Tabulation Table 6.
- Includes square footage of future potential right of way vacation/abandonment of Westbranch Drive. See Right of Way Density Allocation Tabulation Table 4.
- Up to six (6) stories including possible mezzanine.
- In Residential Blocks, "Retail/Service" uses may be converted to up to ten (10) "Live-Work Units" provided within each respective Block in accordance with the Proffers. In the event this conversion occurs, a maximum of 704 total dwelling units shall be permitted within Block A.
- Proposed minimum GFA shall be fifty percent (50%) of proposed maximum GFA, in accordance with the proffers.

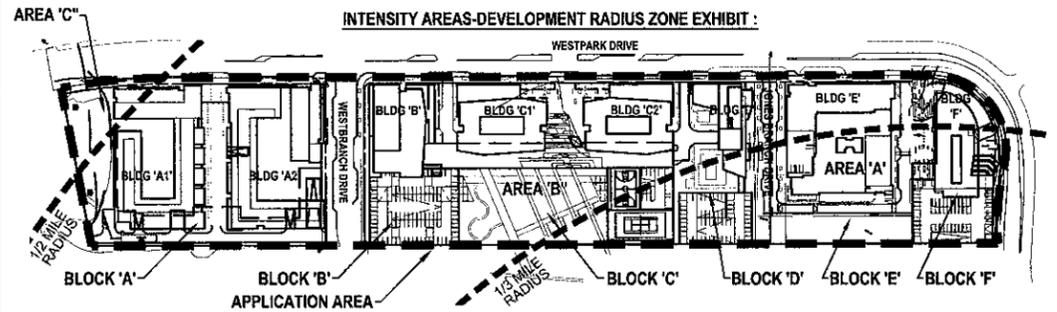
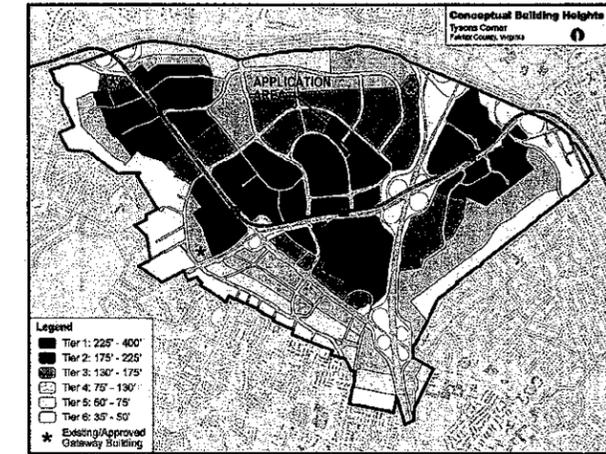
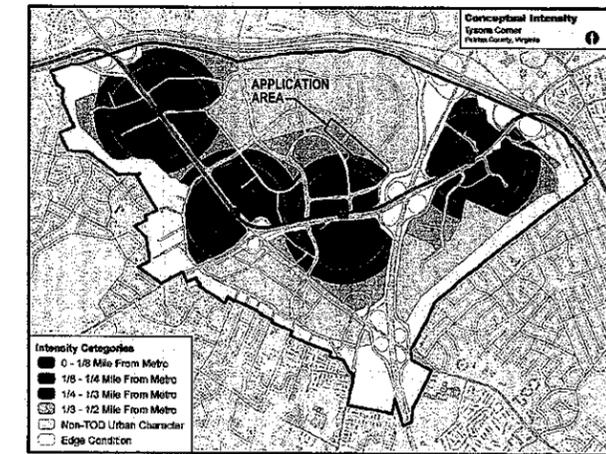


TABLE 3- WESTPARK OFFICE ALLOCATION TABULATION:

Tax Map	New Land Bay	Site	Built Office GFA (1)	Built/Proposed and/or Proposed Office GFA
0294 07 0001A1	A-1	Rappahannock	158,440	158,440
0294 07 0001A2	A-1	Warren	138,694	138,694
0294 07 A4	A-1	Russell	175,940	165,696
0294 07 0006	A-3	Amherst	111,430	111,430
0294 07 0007A1	A-3	Guiseper	74,548	74,548
0294 07 0007B	A-3	Brunswick	72,062	72,062
0294 07 0008	A-3	Dickenson	53,092	53,092
0294 07 0011A	A-3	Gloucester	111,430	111,430
0294 07 C1	A-3	Lancaster	111,430	111,430
0294 07 C2	A-3	Northampton	157,800	157,800
0294 07 0005A	B	AMT	32,000	197,844
0292 15 B1	D-2	WestMac Phase 4	385,263	385,263 (2)
0294 07 0004	F	Shenandoah	204,321	204,321
0294 07 A5	F	Stafford	123,492	123,492
0292 15 B2	G	Hanover	0	0
0294 07 1.2.3.9	G	Essex Block	170,833	910,585
0294 07 0010	G	Frederick	74,548	0
TOTAL			2,165,343	2,986,147

Notes  
 (1) Built office GFA is based on Exhibit E within PCA 88-D-005-7 -Statement of Justification (column titled "GFA Built, Cellar Not Included")  
 (2) WestMac Phase 4: GFA obtained from Site Plan # 9998-SP-002-5 and PCA 88-D-005-7 associated with this application

TABLE 4 - CDP - RIGHT OF WAY DENSITY ALLOCATION TABULATION:

Existing Site Area	841,385 Sq. Ft.	19.32 AC
Proposed ROW -Dedication		
Westpark Drive	+/- 32,558 Sq. Ft.	+/-0.75 AC
West Branch Drive	+/- 872 Sq. Ft.	+/-0.02 AC
Area of ROW Dedication Used for Density Purposes	+/-33,430 Sq Ft	+/-0.77 AC
Proposed ROW -Vacation		
West Branch Drive	+/- 3,428 Sq. Ft.	+/- 0.80 AC
Area of ROW Vacation Used for Density Purposes	+/- 3,428 Sq. Ft.	+/- 0.08 AC
Total Area for Density Purpose:	844,813 Sq. Ft. (1)	19.40 AC (1)

(1) Includes square footage and density credit reserved from proposed ROW "Dedication" and "Vacation/Abandonment" (as allowed per Z.O. Section 2-308-4). Final area of dedication and vacation/abandonment to be determined at time of final site plan.

TABLE 2 - INTENSITY AREAS-DEVELOPMENT RADIUS ZONE TABULATION:

INTENSITY RING AREA	AREA 'A' (<1/3 MILE)	AREA 'B' (1/3 MILE TO 1/2 MILE)	AREA 'C' (>1/2 MILE)	TOTAL
Area Acreage	240,079 SF (5.51 AC)	590,122 SF (13.55 AC) (3)	34,612 SF (.34 AC)	844,813 SF (19.40 AC)
COMPREHENSIVE PLAN DISTRICT RECOMMENDATIONS	2.0 F.A.R. 480,158 GFA	2.0 F.A.R. 1,180,244 GFA	1.5 F.A.R. 21,918 GFA	1,682,320 GFA
Proposed Development (2)				
	Proposed GFA	Proposed GFA	Proposed GFA	
CDP PLAN	Bldg D: 34,000 GFA Bldg E: 143,280 GFA (1) Bldg F: 143,583 GFA	Bldg A1/A2: 696,670 GFA (1) Bldg B: 392,785 GFA Bldg C1/C2: 551,300 GFA Bldg D: 136,000 GFA Bldg E: 373,520 GFA (1) Bldg F: 56,417 GFA	Bldg A1: 48,130 GFA (1)	
TOTAL GFA	320,863 GFA	2,206,692 GFA	48,130 GFA	2,575,685 GFA (1)
AREA F.A.R.				3.05

(1) GFA includes superlative GFA for public facilities contribution allocated from 'Hanover Site' (TM # 29-2-(15)-B-2) as recommended by the Tysons Urban Center Comprehensive Plan -See Residential Density Tabulation Table 6  
 (2) Final building square footage assignments are subject to change by the applicant/block owners at time of FDP and Final Site Plan. See Proffers.  
 (3) Includes square footage of future potential right of way vacation/abandonment of Westbranch Drive.

TABLE 5 - LAND USE RATIO TABULATION:

Use	GFA (1)	Percentage of Total	FAR
Office	1,108,429	43.0%	
Residential	1,246,600	48.4%	
Hotel	162,000	6.3%	
Retail/Services	58,656	2.3%	
Overall Total	2,575,685	100.0%	3.05

(1) GFA for individual uses is conceptual. Applicant reserves the right to transfer GFA between buildings and uses provided the overall proposed FAR is not exceeded. Refer to Proffers.

TABLE 6: RESIDENTIAL DENSITY TABULATION

1,682,320 GFA AVAILABLE 'OVERALL' SITE AREA GFA PER COMP PLAN-(Table 2)

- 1,108,429 GFA (PROPOSED OFFICE BLOCKS B-C, & F)
- 162,000 GFA (PROPOSED HOTEL BLOCK D)
- 58,656 GFA (PROPOSED RETAIL- BLOCKS A-F)

= 353,235 GFA AVAILABLE RESIDENTIAL GSF 'ON-SITE'

+ 518,283 GFA AVAILABLE FROM HANOVER SITE (345,522 SF @ 1.5 F.A.R.)

= 871,518 GFA 'BASE' RESIDENTIAL AVAILABLE (353,235 SF + 518,283 SF)

+ 174,304 GFA WFUD BONUS (871,518 SF x 20%)

= 1,045,822 GFA TOTAL RESIDENTIAL AVAILABLE

+ 200,778 GFA REQUESTED FROM SUPERLATIVE CONTRIBUTION

= 1,246,600 GFA TOTAL RESIDENTIAL PROPOSED (BLOCKS A and E)

**Bowman**  
CONSTRUCTION

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**WDG**

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COMMONWEALTH OF VIRGINIA  
COM. MATTHEW J. TAUSCHER  
Lic. No. 000832  
8/2/12  
LANDSCAPE ARCHITECT

SITE TABULATIONS  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
04/20/12	REVISE PROP TABS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

SCALE: H:  
 JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001  
 SHEET C2.1



County of Fairfax, Virginia

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

October 31, 2011

Mr. Thomas D. Fleury
Executive Vice President
Cityline Partners LLC
1651 Old Meadow Road, Suite 650
Tysons Corner, Virginia 22102

Dear Mr. Fleury:

In response to your letter of September 12, 2011, the Fairfax County Department of Transportation (FCDOT) has determined that participation in a Consolidated Traffic Impact Analysis (CTIA) is not required for the Arbor Row rezoning applications (RZ 2011-PR-23, PCA 88-D-095-07). The decision of CTIA applicability is made on a case-by-case basis. The Arbor Row development will be counted as background traffic in any future TIAs and/or CTIAs.

In the provisions of the aforementioned zoning applications, FCDOT expects that site traffic produced by the Arbor Row redevelopment shall be accurately depicted in the TIAs submitted to VDOT and FCDOT and that site traffic shall be appropriately mitigated through methods including, but not limited to, well executed site design, a robust transportation demand management (TDM) program, a mix of land uses that conforms to the County's Comprehensive plan, and proffer commitments.

If you have any questions, please call Dan Rathbone at (703) 877-5675 or me at (703) 877-5663.

Sincerely,

Handwritten signature of Dan Rathbone
Dan Rathbone
Director

cc: Dan Rathbone, FCDOT
Jeff Hermann, FCDOT
Fred Seldan, DPZ
Jim Zoek, DPZ
Matt Ladd, DPZ
Fairfax County Department of Transportation
4050 Leggett Road, Suite 400
Fairfax, VA 22033-3894
Phone: (703) 877-5600 TTY: 711
Fax: (703) 877-5723
www.fairfaxcounty.gov/fcdot



Bowman CONSULTING

July 23, 2012

Mike Knapp - Director
Fairfax County Urban Forest Management Division
12000 Government Center Parkway
Fairfax, VA 22035

Re: Arbor Row Tree Preservation Target Deviation Request
RZ/CDP-2011-PR-023

Dear Mr. Knapp,

This letter is to request a deviation to the Tree Preservation Target requirements for the above referenced site, Fairfax County tax assessment map numbers 0294-07-0001, 0294-07-0002, 0294-07-0003, 0294-07-0009, 0294-07-0010 & 0294-07-0005A. The subject property lies within Sub-Area Two (South West Park) of the North Sub-District of the Tysons Central 123 District of the Tysons Corner Urban Center Planning District within Area II of the Fairfax County Comprehensive Plan. The subject property is currently zoned C-3 (Office), with portions of HC (Highway Corridor) and SC (Sign Control). Proposed zoning category is PTC.

According to the Existing Vegetation Map, prepared by Bowman Consulting Group, the property (19.32 acres) is currently covered by approximately 7.29 acres or 38% tree/shrub cover. The conceptual development plan proposes to clear approximately 6.74 acres for proposed grading and construction improvements. Per the Comprehensive Plan the 10-year tree canopy goal, 10% (1.93 acres) tree cover is required for the site. This can be satisfied by tree preservation, tree planting or a combination of both. According to these numbers, the site has a tree preservation target of .73 acres (1.93 acres x 38%). Since only .50 acres of preservation credit will be taken for tree save areas to remain, a tree preservation target deviation is hereby requested.

The deviation is based on the following three allowable deviation conditions as outlined in the Fairfax County Public Facilities Manual (PFM). They are as follows:

- (1) Section 12-0508.3A(1): Meeting the Tree Preservation Target would preclude the development of uses or densities otherwise allowed by the Zoning Ordinance.
(2) Section 12-0508.3A(2): Meeting the tree preservation Target would require the preservation of trees that do not meet standards for health and condition and other vegetation and risk management requirements of 12-0400 et seq.
(3) Section 12-0508.3A(3): Construction activities could be reasonably expected to impact existing trees or forested areas used to meet the Tree Preservation Target to the extent these would not likely survive in a healthy and structurally sound manner for a minimum of 10-years in accordance with the post-development standards for trees and forested areas provided in 12-0403 and 12-404.

Significant portions of the existing vegetation on the referenced site had been planted with the previous development of the property while other portions of the existing vegetation on the site are remnant wooded areas that were not cleared during the previous development process. Attempting to save any of these onsite trees would adversely impact development potential as envisioned by the Comprehensive Plan/PTC District and would result in unnecessary and unreasonable hardship to the developer.

Per field observation, the many of the existing trees and shrubs proposed to be removed are in fair/poor condition, displaying unsuitable health and/or structural conditions that may be hazardous to either life or property, including unhealthy crowns, exaggerated leans, broken/dead scaffold branches, girdling, etc. Per Section 12-0403.3-4, trees that do not meet pre-development standards for structural integrity and health shall not be afforded tree canopy cover credits and shall be subject to removal.

In addition, proposed grading and construction improvements (roads, structures, utility infrastructure, etc.) will significantly impact existing trees and shrubs specified to be removed. Proposed construction will cause direct physical damage to root systems and above ground portions of trees that could result in or predispose trees to structural failure and health problems. Per PFM Section 12-0403.5B, trees determined to be dead, declining, hazardous or a maintenance issue due to impacts from construction or environmental changes resulting from construction shall be subject to removal.

The basis for this deviation is warranted as a result of the site engineering necessary within this portion of the Tysons Corner Urban Center redevelopment. The Tree Preservation Target vegetation requirements cannot be fulfilled with this redevelopment. Therefore, it is requested that UFMD deem the tree preservation requirement will be hereby satisfied with the planting of the 10-year tree canopy requirements that shall be planted with the redevelopment. Please refer to the project landscape plans.

Thank you for your assistance and cooperation in this matter. Please contact me at 703-464-1000 if you should have any questions regarding this matter.

Sincerely,

Handwritten signature of Gregg Eberly

Gregg Eberly - Applicant Representative
R.L.A. ISA Certified Arborist, MA-4616A
Bowman Consulting Group

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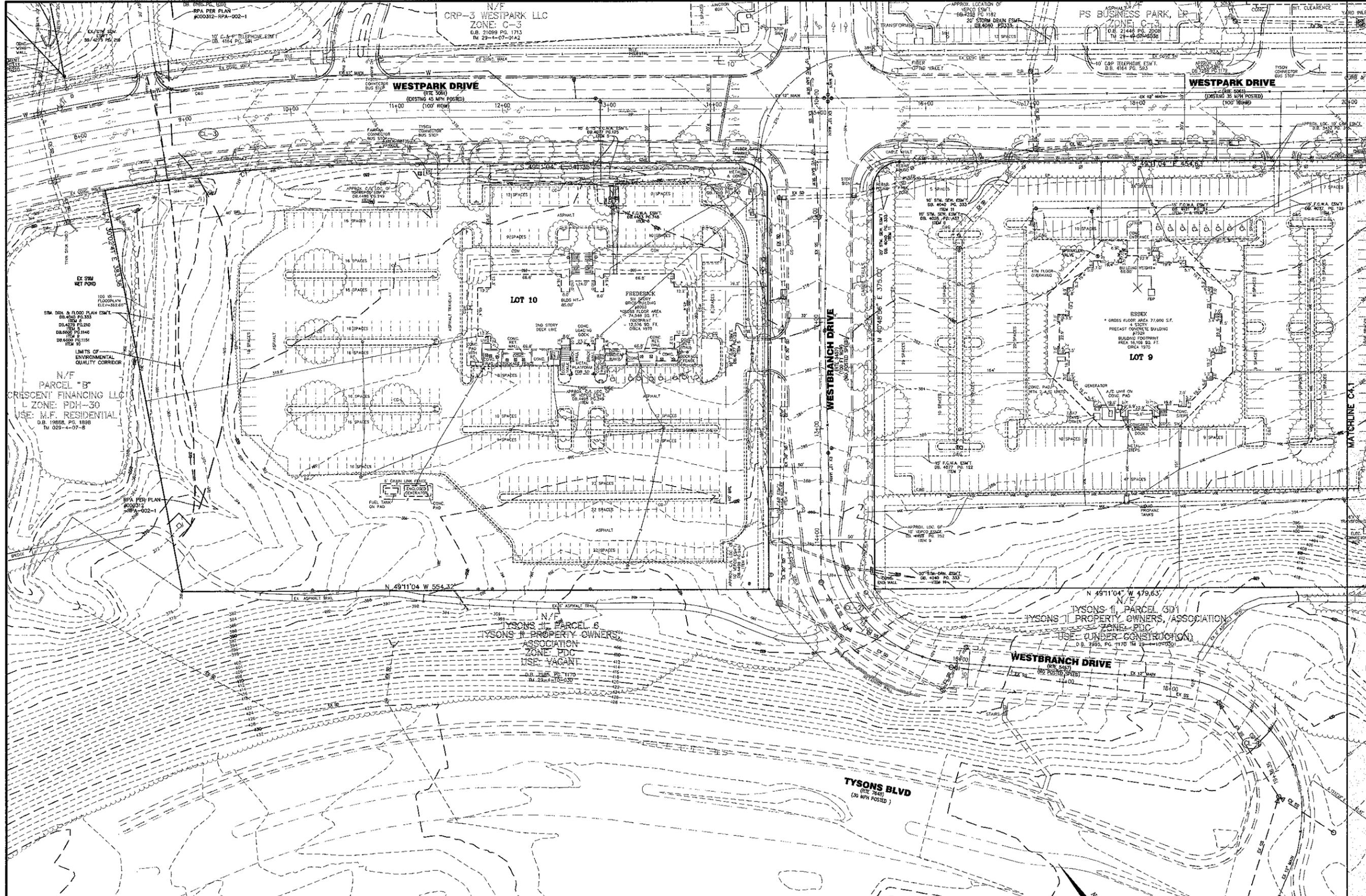
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CORRESPONDENCE
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

Table with columns: PLAN STATUS, DATE, DESCRIPTION. Includes rows for dates 07/22/11, 12/07/11, 02/24/12, 05/25/12, 07/23/12, 08/29/12. Includes fields for SCALE, JOB No., DATE: APRIL 26, 2011, FILE No. 7403-07-001, SHEET C2.2





**NOTE:**  
 1. FIELD MAPPED RPA IDENTIFIED HEREIN PER APPROVED PLAN #000312-RPA-002-1  
 2. PLAN DEPICTS EXISTING CONDITIONS AS OF APRIL 26, 2011.  
 3. EXISTING BUILDINGS WITHIN LOTS 9 AND 10 ARE TO BE DEMOLISHED.

**EXISTING ROADWAY CENTERLINE DATA**

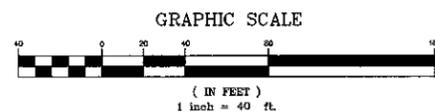
ROADWAY	CL-1	EXISTING CENTERLINE RADIUS
WESTBRANCH DRIVE	CL-1	125'
WESTBRANCH DRIVE	CL-2	125'
WESTPARK DRIVE	CL-3	1500'

**CURVE TABLE: LOT 10**

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1446.21'	261.01'	S 54°21'17" E	260.65'	10°20'26"	130.86'
C2	25.00'	39.27'	S 04°11'03" E	35.36'	90°00'00"	25.00'

**CURVE TABLE: LOT 9**

NAME	RADIUS	LENGTH	BEARING	CHORD	DELTA	TANGENT
C1	25.00'	39.27'	N 85°48'56" E	35.36'	90°00'00"	25.00'

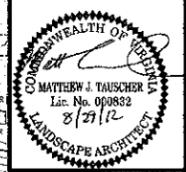


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 Email: wdc@wdcarch.com

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**EXISTING CONDITIONS PLAN (SHEET 1 OF 2)**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

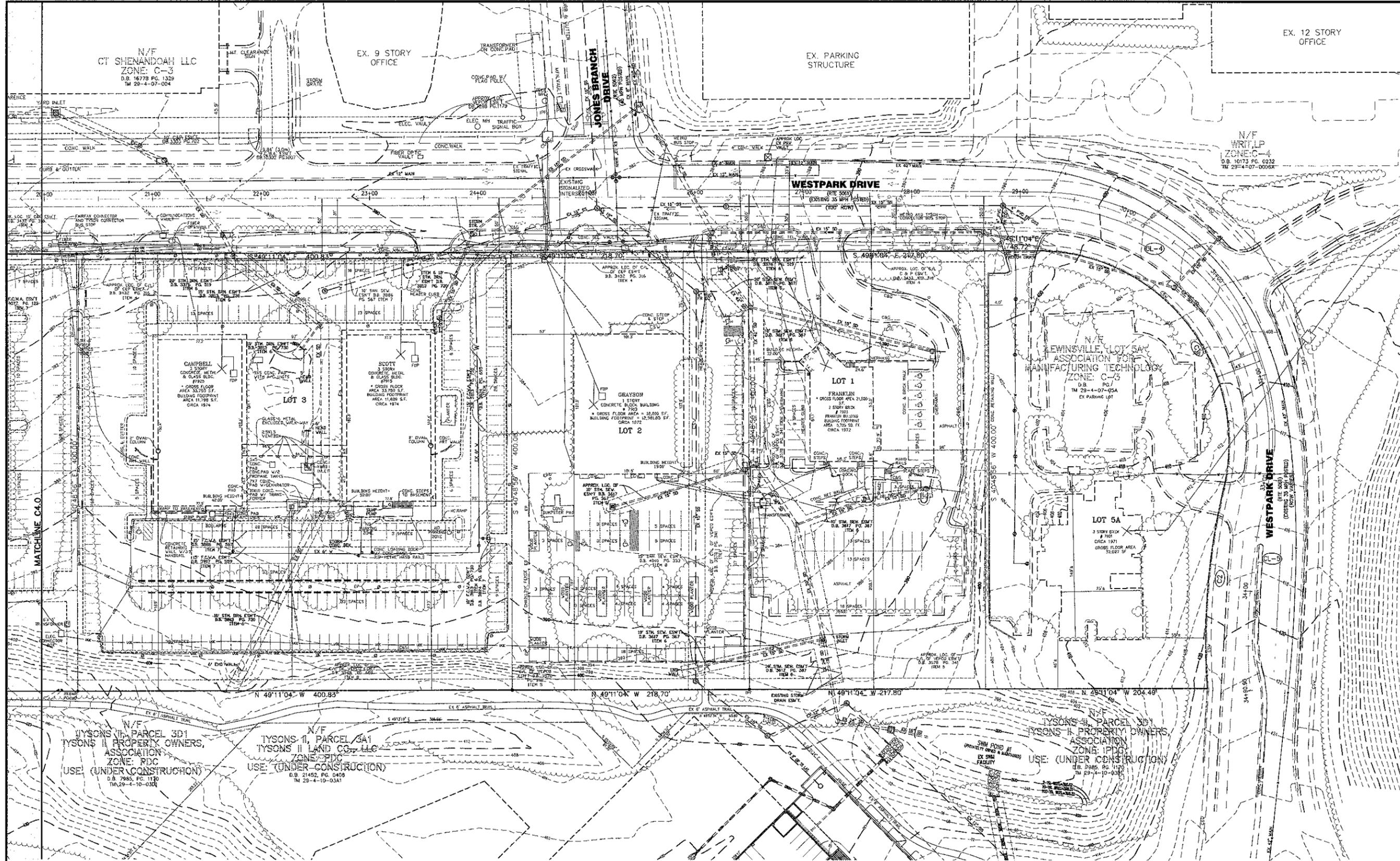
**PLAN STATUS**

07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

**DATE DESCRIPTION**  
 SCALE: H:1" = 40'  
 JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001  
 SHEET **C4.0**

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P:\1400 - West Group Properties\1400-07-001 (PLAN) - Tyson West Park\Planning\Re zoning\Current\01-001 EXC.dwg, 8/24/2012, 4:08:12 PM, R1

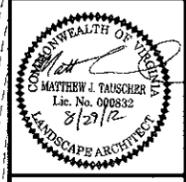


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**EXISTING CONDITIONS PLAN**  
(SHEET 2 OF 2)  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	1/4" = 40'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C4.1

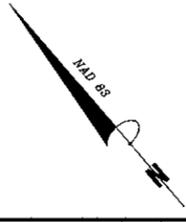
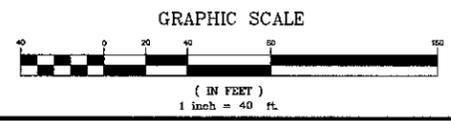
**NOTE:**  
1. PLAN DEPICTS EXISTING CONDITIONS AS OF APRIL 26, 2011.  
2. EXISTING BUILDING WITHIN LOTS 1, 2, 3 AND 5A ARE TO BE DEMOLISHED.

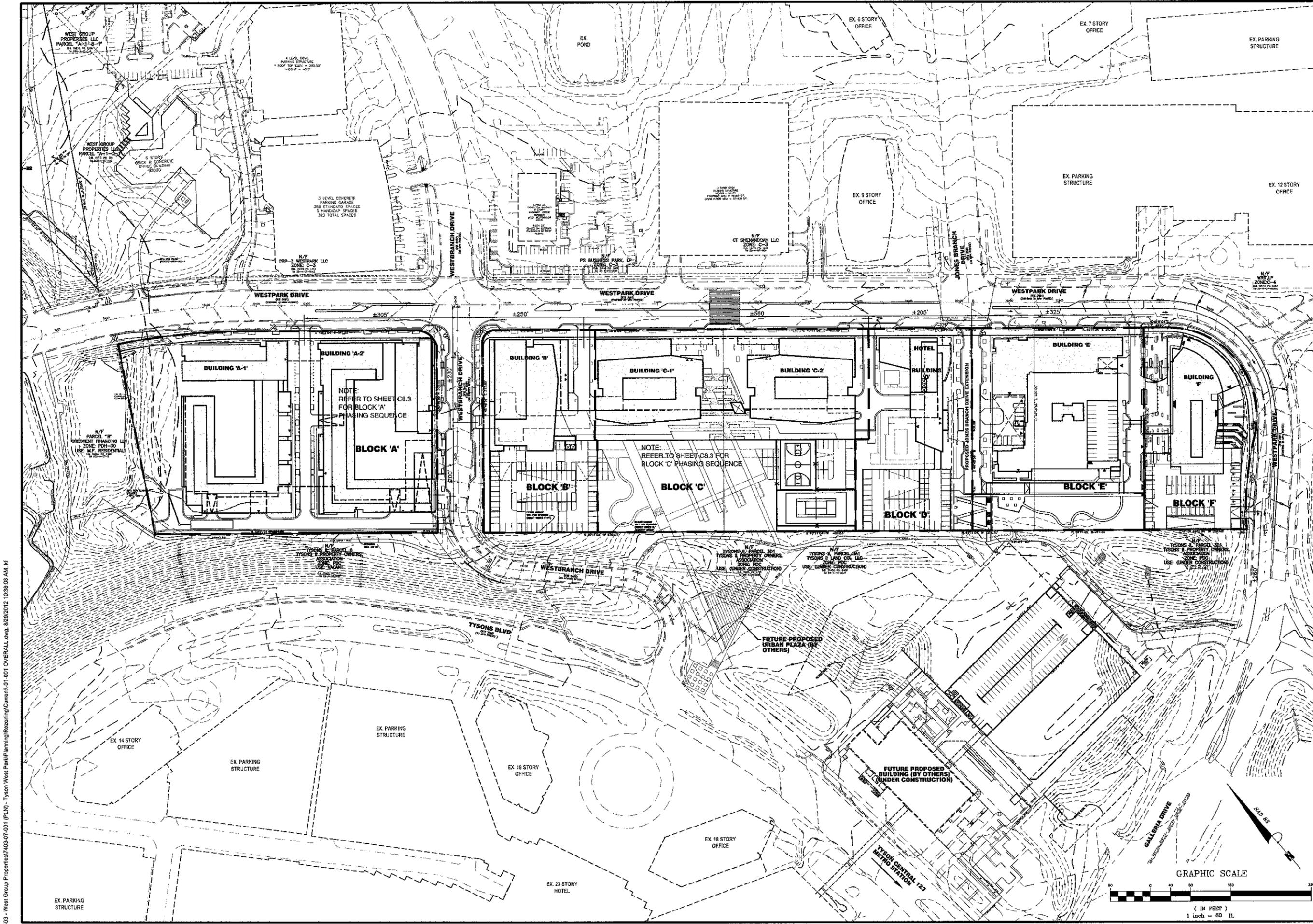
**EXISTING ROADWAY CENTERLINE DATA**

ROADWAY	CL	EXISTING CENTERLINE RADIUS
WESTPARK DRIVE	CL-4	221'
WESTPARK DRIVE	CL-5	550'

**CURVE TABLE: LOT 5A**

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	176.00	318.49	S 02°39'26" W	276.78	103°41'00"	223.99
C2	590.87	183.74	S 45°35'25" W	183.00	17°49'01"	92.62





P-17403 - West Group Properties 7403-07-001 (PLN) - Tyson West Park Planning/Reasoning/Current: 01-001 OVERALL.dwg, 8/29/2012 10:36:08 AM, Rf

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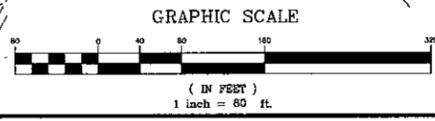
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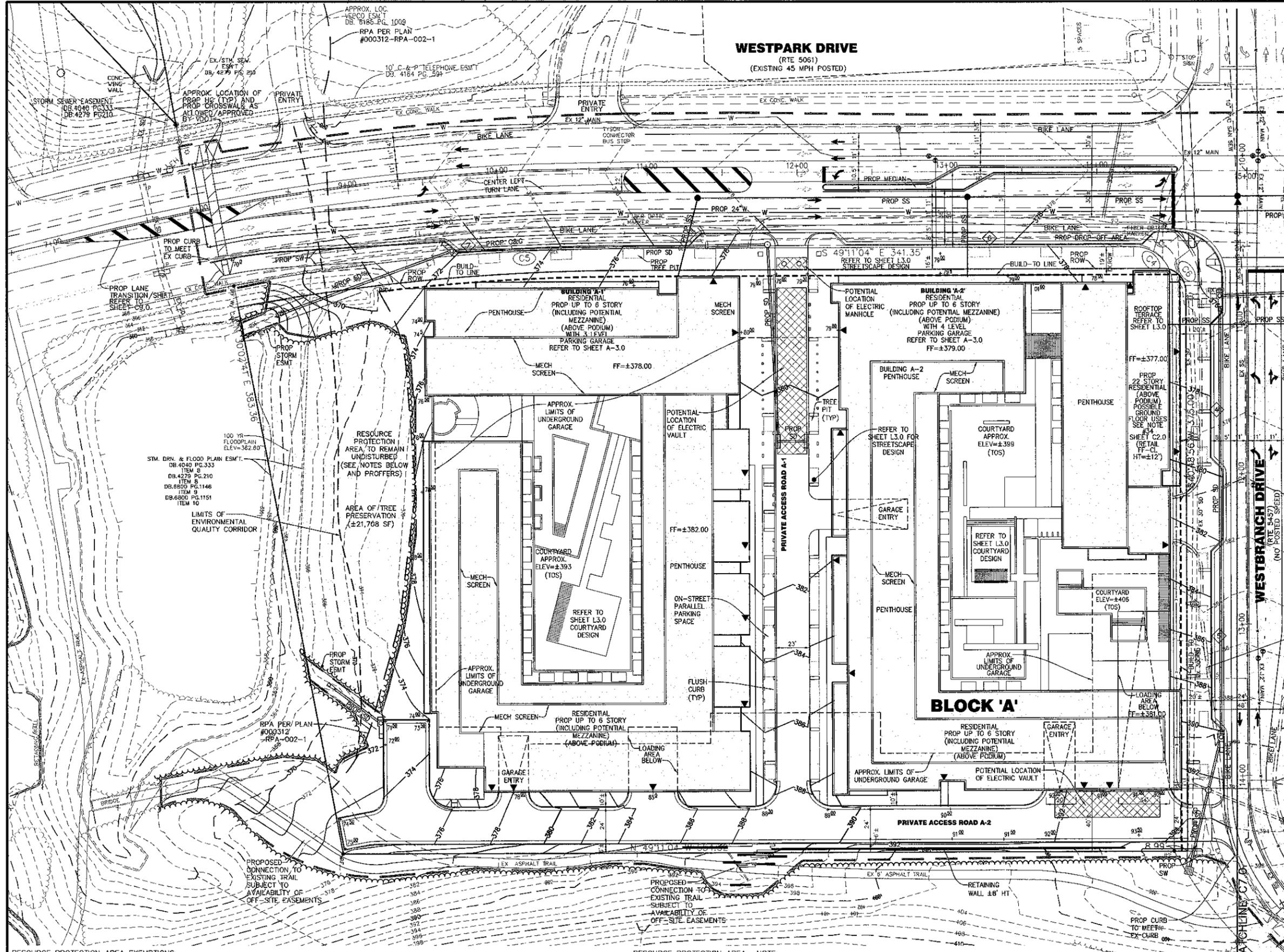


**OVERALL CONCEPTUAL DEVELOPMENT PLAN**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
04/20/12	REVISE APP AREA
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

SCALE: H: 1" = 80'  
 JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001  
 SHEET **C5.0**





**WESTPARK DRIVE**  
(RT# 5061)  
(EXISTING 45 MPH POSTED)

- NOTES:**
- REFER TO SHEET C9.0 AND C9.3 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN
  - PROPOSED CONTOURS, ELEVATION SAND UTILITIES SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FDP AND FINAL ENGINEERING.
  - BUILD-TO LINE BASED ON COMPREHENSIVE PLAN URBAN DESIGN GUIDELINE.
  - CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT.
  - REFER TO SHEET C8.3 FOR BLOCK A PHASING SEQUENCE.

- LEGEND:**
- ◊ PROPOSED ON STREET PARKING QUANTITY. (FOR INFORMATION ONLY) SPACES SHALL NOT BE STRIPED OR METERED.
  - ▶ PROPOSED BUILDING ENTRY
  - PRELIMINARY APPROXIMATE LIMITS OF CLEARING AND GRADING (SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN)

STIM. DRN. & FLOOD PLAN ESMT.  
DB.4040 PG.333  
ITEM 6  
DB.4279 PG.210  
ITEM 8  
DB.6800 PG.1146  
ITEM 9  
DB.6800 PG.1151  
ITEM 10

100 YR FLOODPLAIN  
ELEV=±382.60'

LIMITS OF ENVIRONMENTAL QUALITY CORRIDOR

RESOURCE PROTECTION AREA TO REMAIN UNDISTURBED (SEE NOTES BELOW AND PROFFERS)

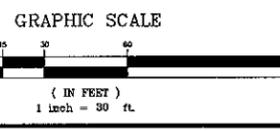
AREA OF TREE PRESERVATION (±21,708 SF)

**RESOURCE PROTECTION AREA EXEMPTIONS:**

THE REDEVELOPMENT ACTIVITIES ON BLOCK 'A' REQUIRE ALLOWABLE EXEMPTIONS FOR MINOR ENCROACHMENTS TO THE RPA (MAPPED ALONG THE OFFSITE POND "D") AS REQUIRED FOR FRONTAGE IMPROVEMENTS ALONG WESTPARK DRIVE, THE RELOCATION OF AN EXISTING ASPHALT TRAIL, AND CONSTRUCTION OF TWO STORM SEWER OUTFALLS. PROPOSED FRONTAGE IMPROVEMENTS ALONG WESTPARK DRIVE, WHICH INCLUDE TURN LANES, STORM DRAIN IMPROVEMENTS AND OTHER STREETScape IMPROVEMENTS ALONG THE PROVISIONS OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE (CBPO) UNDER SECTION 118-5-2(A). THE ASPHALT TRAIL RELOCATION IS ALSO CONSIDERED AN EXEMPTION WITHIN THE RPA UNDER SECTION 118-5-3(A) OF THE CBPO, PROVIDED THAT IT COMPLIES WITH ITEMS (1) THROUGH (6) OF THAT SUBSECTION, INCLUDING APPROVAL OF A WRITTEN REQUEST FOR THE EXEMPTION BY THE DIRECTOR OF DPWS, PROVIDED THAT IT WILL CONVEY STORMWATER FROM WESTPARK DRIVE AND BLOCK 'A' TOWARDS THE OFFSITE POND "D" ARE CONSIDERED "WATER-DEPENDENT DEVELOPMENT", WHICH IS AN ALLOWED USE OR DEVELOPMENT WITHIN THE RPA UNDER SECTION 118-2-1(A) PROVIDED IT COMPLIES WITH THE PERFORMANCE CRITERIA IN ARTICLE 3, INCLUDING SUBMISSION AND APPROVAL OF A WATER QUALITY IMPACT ASSESSMENT (WQIA). AT THE TIME OF SITE PLAN FOR BLOCK 'A', A WQIA WILL BE SUBMITTED IN ACCORDANCE WITH ARTICLE 4 OF THE CBPO FOR THE PROPOSED STORM SEWER OUTFALLS, AND WILL INCLUDE THE COMPONENTS LISTED IN SECTION 118-4-3(A) THROUGH (G) OF THE CBPO, INCLUDING A DESCRIPTION OF THEIR CONFORMANCE WITH APPLICABLE PERFORMANCE CRITERIA LISTED IN ARTICLE 3. THE WQIA WILL ALSO INCORPORATE THE WRITTEN REQUEST FOR APPROVAL OF THE RELOCATED TRAIL WITHIN THE RPA AS AN EXEMPTION UNDER SECTION 118-5-3(A) OF THE CBPO.

**RESOURCE PROTECTION AREA- NOTE:**

THE LIMITS OF CLEARING AND GRADING SHOWN ALONG THE RPA BOUNDARY SHALL BE STRICTLY OBSERVED AND ENFORCED. AT THE TIME OF FINAL ENGINEERING/SITE PLAN, THE PHASE 1 AND 2 EROSION AND SEDIMENT (E&S) CONTROL PLANS AND ASSOCIATED E&S NARRATIVE SHALL REQUIRE THE INSTALLATION OF TREE PROTECTION FENCING WITH SIGNAGE AND SUPER SILT FENCE ALONG THE LIMITS OF CLEARING AND GRADING THAT ADJUT THE RPA BOUNDARY. THE ONLY AUTHORIZED ENCROACHMENTS INTO THE RPA ARE THOSE DEPICTED ON THIS PLAN AND SET FORTH IN THE PROFFERS, SUBJECT TO APPROVAL OF A WATER QUALITY IMPACT ASSESSMENT AND THOSE ALLOWED BY, OR EXEMPT FROM, THE CHESAPEAKE BAY PRESERVATION ORDINANCE (CBPO), AS APPROVED BY DPWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS TO ENSURE THAT THE BUILDING CONSTRUCTION DOES NOT ENCROACH INTO THE RPA. ANY UNAUTHORIZED ENCROACHMENT INTO, OR DISTURBANCE OF, THE RPA IS CONSIDERED A VIOLATION OF THE CHESAPEAKE BAY PRESERVATION ORDINANCE (CBPO) AND IS SUBJECT TO THE PENALTIES OF CBPO ARTICLE 9 (VIOLATIONS AND PENALTIES).



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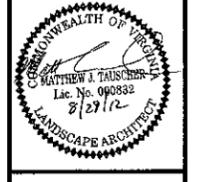
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**CONCEPTUAL DEVELOPMENT PLAN**  
**BLOCK 'A'**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
CONCEPTION DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

PLAN STATUS

SCALE: H: 1"=30'

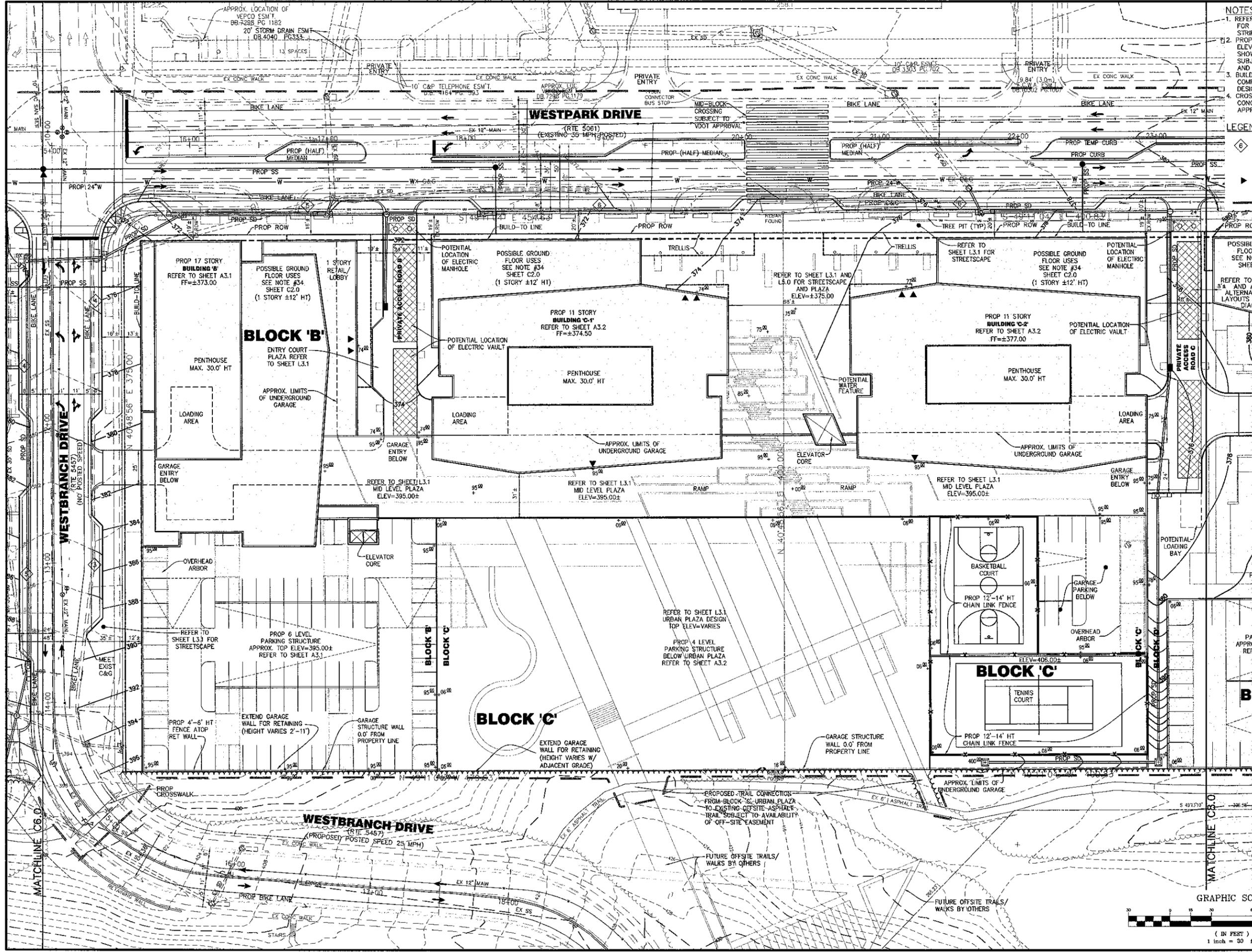
JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

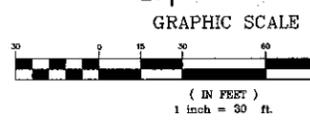
SHEET **C6.0**

P:\17405 - West Group Properties\7403-07-001 (P.L.N.) - Tyson West Park\Planning\Rezoning\Current\01-001 CDP STREET PLAN.dwg, 8/28/2012 10:40:31 AM, kf



- NOTES:**
1. REFER TO SHEET C9.1 AND C9.3 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN.
  2. PROPOSED CONTOURS, ELEVATIONS AND UTILITIES SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FDP AND FINAL ENGINEERING.
  3. BUILD-TO LINE BASED ON COMPREHENSIVE PLAN URBAN DESIGN GUIDELINE.
  4. CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT.

- LEGEND:**
- 6 PROPOSED ON STREET PARKING QUANTITY. (FOR INFORMATION ONLY) SPACES SHALL NOT BE STRIPED OR METEDED.
  - PROPOSED BUILDING ENTRY
  - PRELIMINARY APPROXIMATE LIMITS OF CLEARING AND GRADING (SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN)
  - POSSIBLE FLOOR SEE N SHEET
  - REFER TO 3.1 AND 7 ALTER LAYOUTS DIA

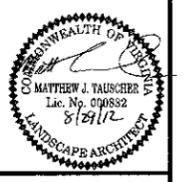


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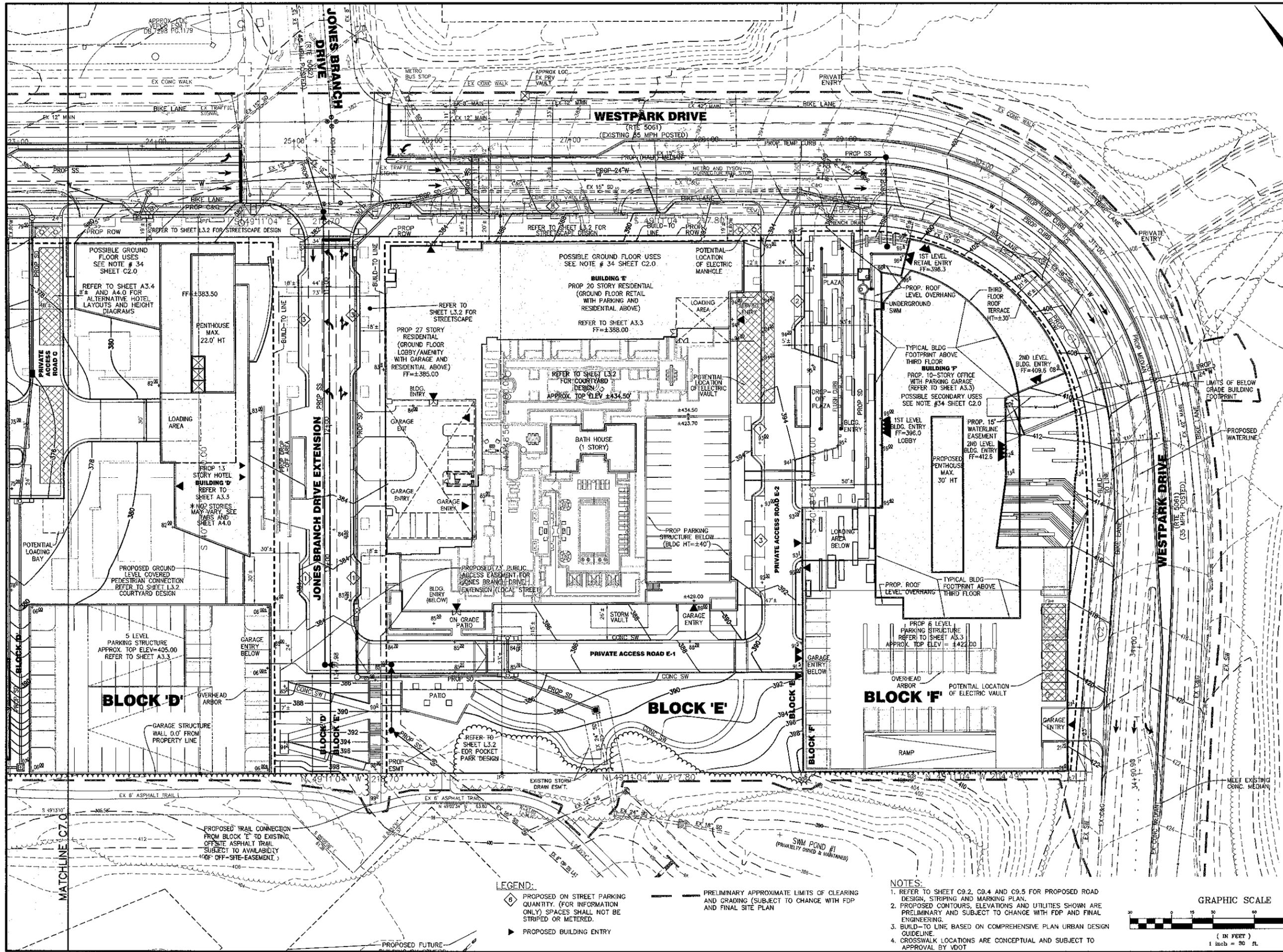
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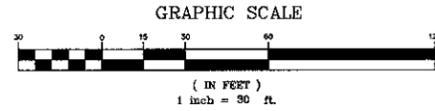
**CONCEPTUAL DEVELOPMENT PLAN  
 BLOCKS 'B' & 'C'  
 ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE DESCRIPTION	
SCALE	H=1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
<b>SHEET C7.0</b>	



- LEGEND:**
- ◻ PROPOSED ON STREET PARKING QUANTITY. (FOR INFORMATION ONLY) SPACES SHALL NOT BE STRIPED OR METEDED.
  - ▶ PROPOSED BUILDING ENTRY
  - PRELIMINARY APPROXIMATE LIMITS OF CLEARING AND GRADING (SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN)

- NOTES:**
1. REFER TO SHEET C9.2, C9.4 AND C9.5 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN.
  2. PROPOSED CONTOURS, ELEVATIONS AND UTILITIES SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FDP AND FINAL ENGINEERING.
  3. BUILD-TO LINE BASED ON COMPREHENSIVE PLAN URBAN DESIGN GUIDELINE.
  4. CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT.

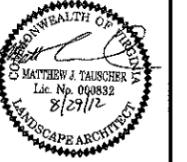


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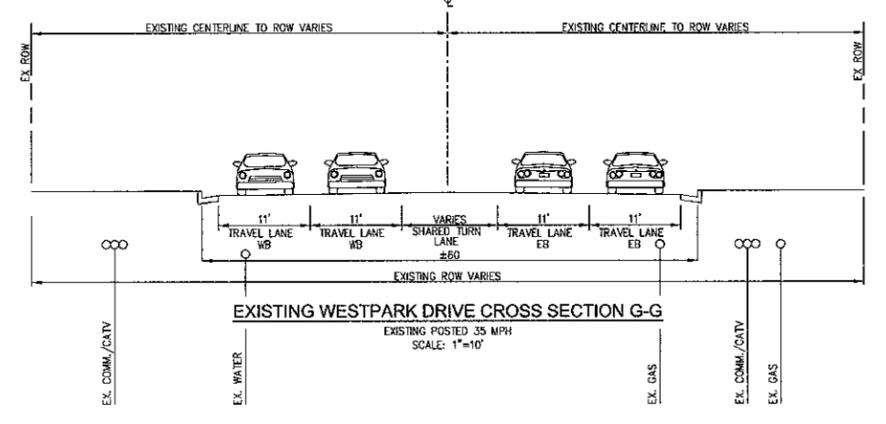
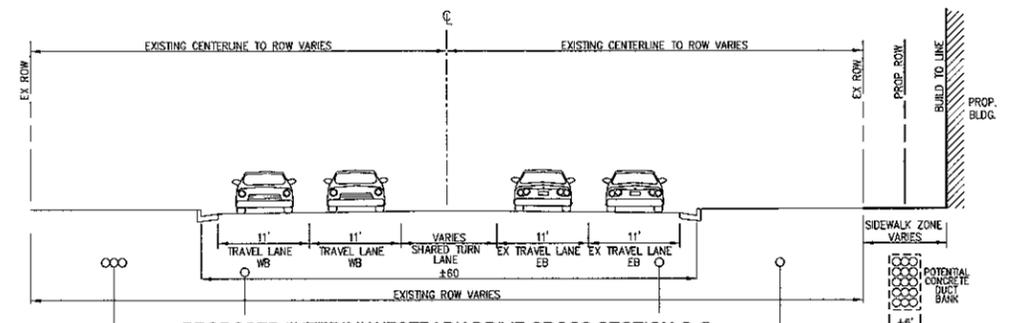
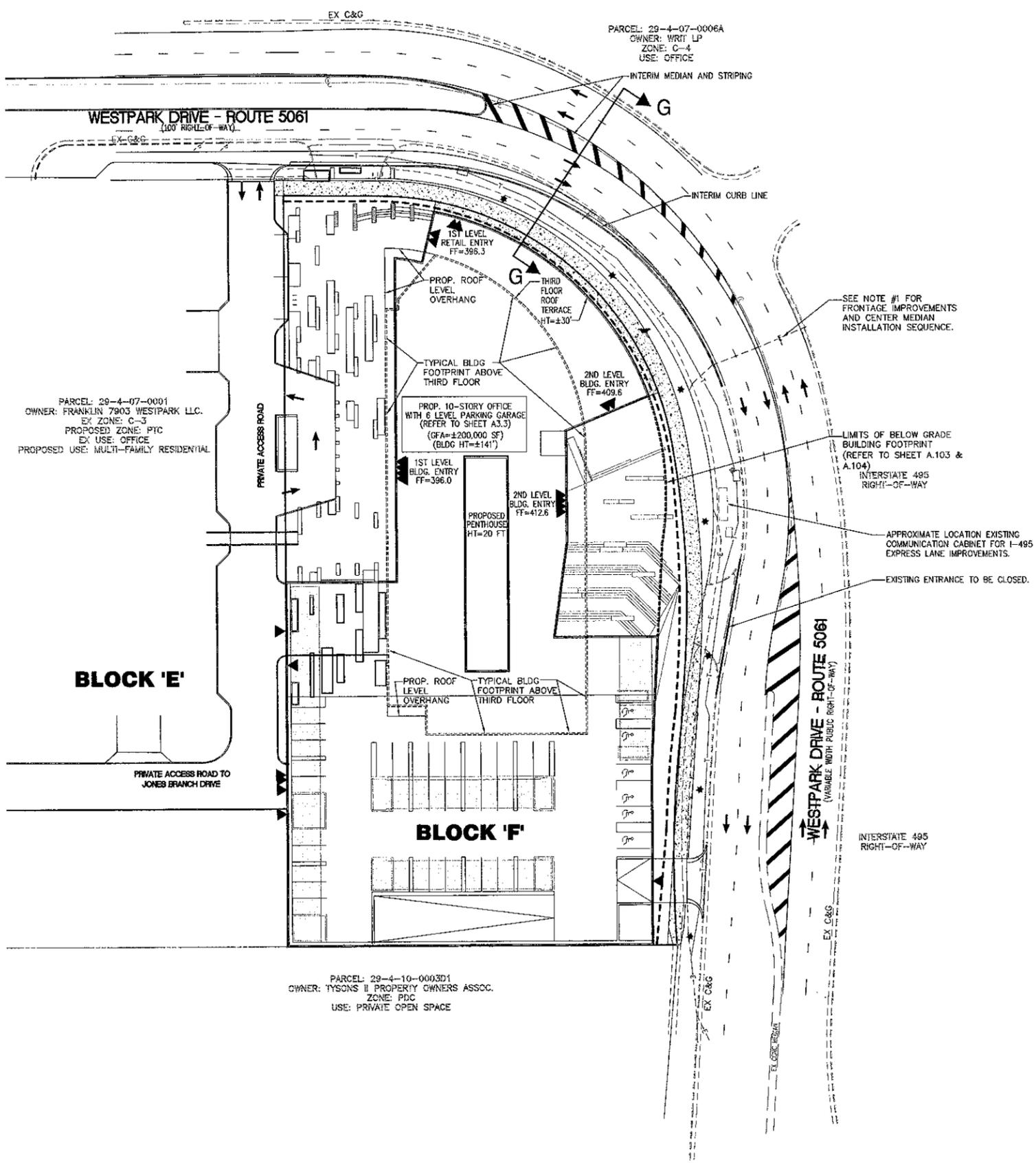
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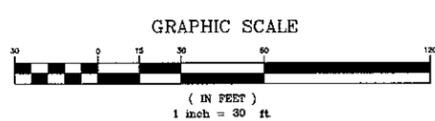
**CONCEPTUAL DEVELOPMENT PLAN  
 BLOCKS 'D', 'E' & 'F'  
 ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 CONVEINCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H:1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	<b>C8.0</b>

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- NOTE:
1. THE INTERIM CONDITIONS SHOWN ARE TO TAKE PLACE IF THE EXISTING COMMUNICATION CABINET FOR INTERSTATE 495 EXPRESS LANE IMPROVEMENTS HAS NOT BEEN RELOCATED AT THE TIME OF CONSTRUCTION OF BLOCK 'F'.
  2. BUILD-TO LINE BASED ON COMPREHENSIVE PLAN URBAN DESIGN GUIDELINE.
  3. CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT



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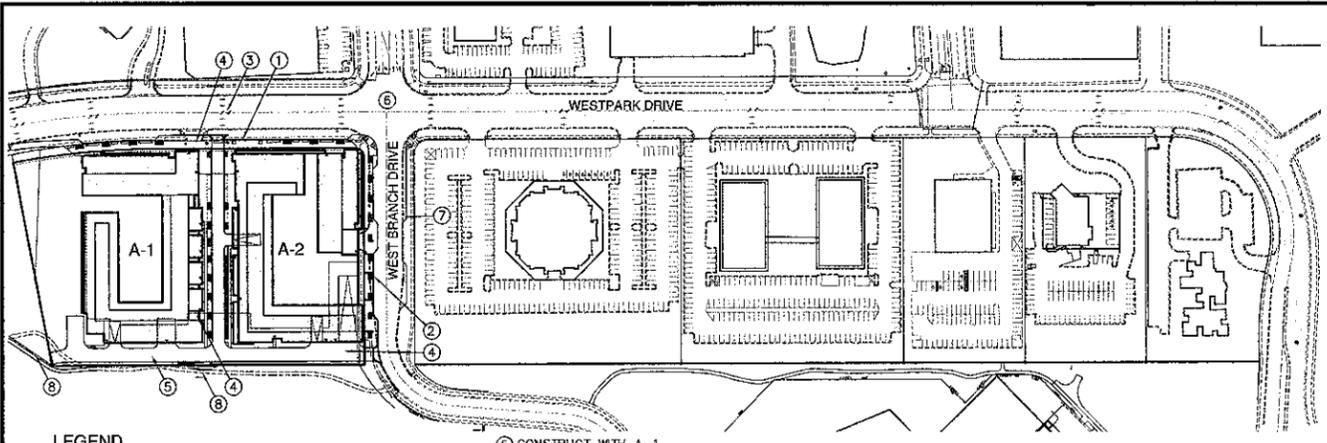
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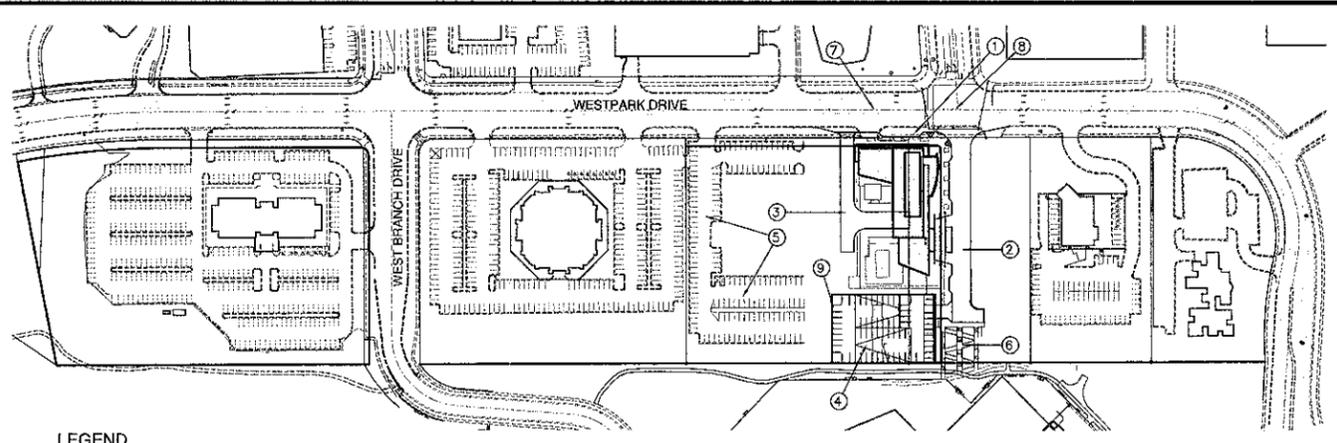
BLOCK 'F' INTERIM FRONTAGE IMPROVEMENTS  
ARBOR ROW  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C8.1



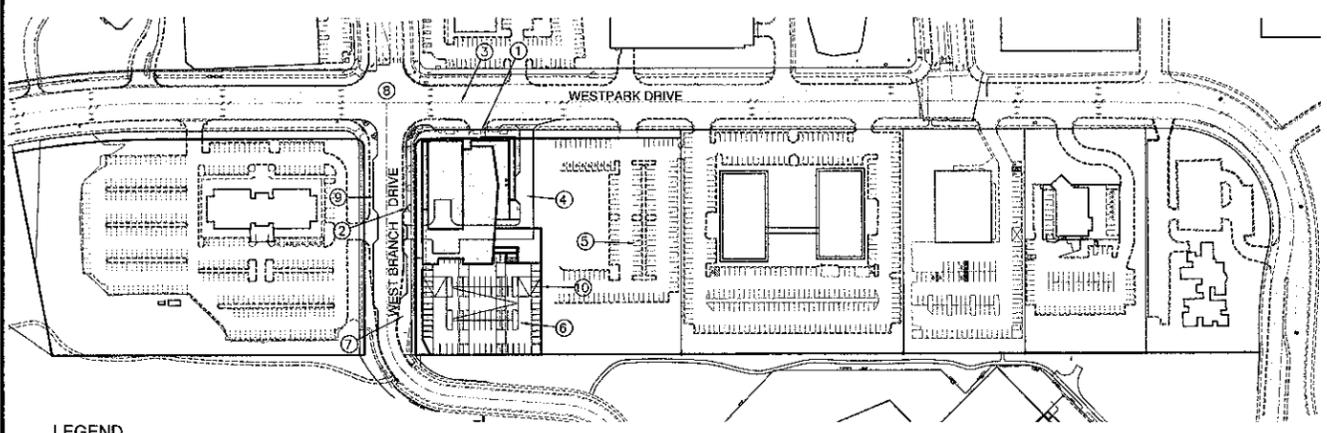
**BLOCK A**

- LEGEND**
- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 2 CONSTRUCT WEST BRANCH DRIVE WESTERN FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 3 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
  - 4 CONSTRUCT WITH A-1 OR A-2.
  - 5 CONSTRUCT WITH A-1.
  - 6 PREPARE TRAFFIC SIGNAL WARRANT STUDY, INSTALL SIGNAL, BASED ON RESULTS OF STUDY, AND AS DESCRIBED IN PROFFERS.
  - 7 CONSTRUCT WESTBRANCH DRIVE EASTERN CURB (DOES NOT INCLUDE STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.
  - 8 CONSTRUCT OFF SITE TRAIL IMPROVEMENTS WITH A-1 AND A-2 (SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS). REFER TO SHEET C8.3 FOR ADDITIONAL INFORMATION.
- NOTES:**
1. A-1 AND A-2 MAY BE BUILT IN ANY ORDER OR AT SAME TIME.
  2. CONSTRUCTION OF BLOCK 'A' MAY BE PHASED PER BUILDING A-1 AND A-2 (REFER TO SHEET C8.3). EXTENT OF FRONTAGE IMPROVEMENTS FOR EACH BUILDING WILL BE DETERMINED WITH FINAL SITE PLAN.
  3. EXISTING PARKING LOT MAY BE UTILIZED IN INTERIM CONDITION BASED ON BUILDING DEVELOPMENT PHASING.



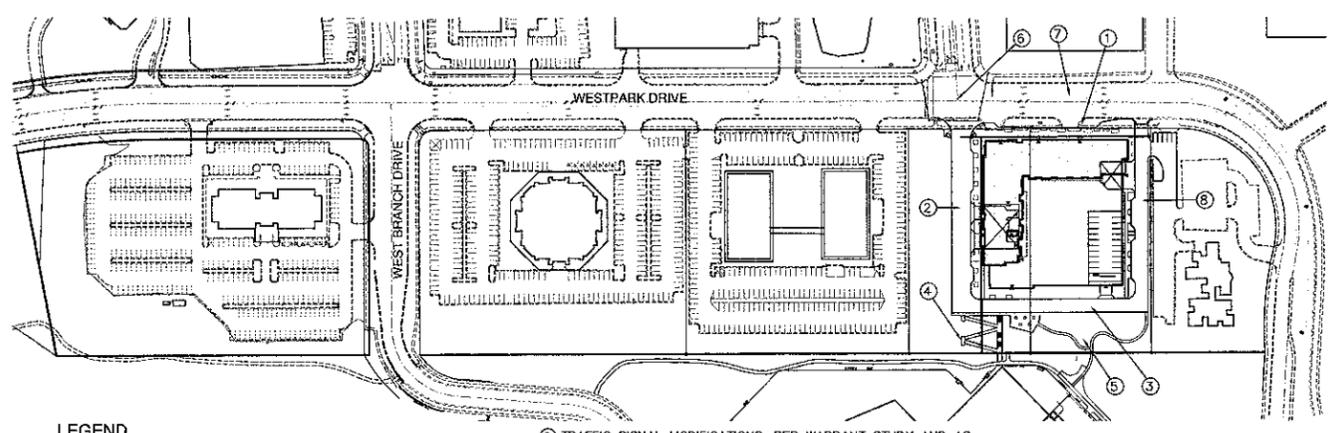
**BLOCK D**

- LEGEND**
- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 2 CONSTRUCT JONES BRANCH EXTENSION (ROADWAY) AND WESTERN STREETSCAPE.
  - 3 CONSTRUCT PRIVATE DRIVE TO SERVICE ACCESS.
  - 4 CONSTRUCT PARKING GARAGE.
  - 5 EXISTING SURFACE PARKING LOT TO REMAIN.
  - 6 CONSTRUCT PEDESTRIAN CONNECTION TO ADJACENT SOUTH PARCEL.
  - 7 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
  - 8 EXISTING TRAFFIC SIGNAL MODIFICATIONS, PER WARRANT STUDY AND AS DESCRIBED IN PROFFERS.
  - 9 INTERIM TREATMENT OF POTENTIAL EXPOSED GARAGE WALL SHALL BE PROVIDED AS DESCRIBED IN PROFFERS.



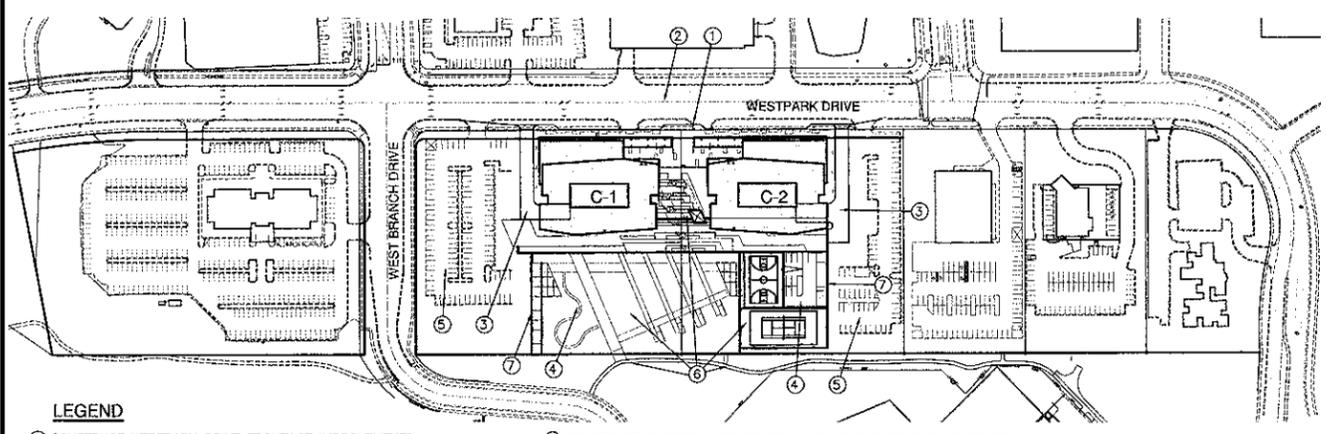
**BLOCK B**

- LEGEND**
- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 2 CONSTRUCT WEST BRANCH DRIVE EASTERN FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 3 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
  - 4 CONSTRUCT PRIVATE DRIVE TO GARAGE ACCESS.
  - 5 EXISTING SURFACE PARKING LOT TO REMAIN.
  - 6 CONSTRUCT PARKING GARAGE.
  - 7 CONSTRUCT OPEN SPACE IMPROVEMENTS.
  - 8 PREPARE TRAFFIC SIGNAL WARRANT STUDY, INSTALL SIGNAL, BASED ON RESULTS OF STUDY, AND AS DESCRIBED IN PROFFERS.
  - 9 CONSTRUCT WESTBRANCH DRIVE WESTERN CURB (DOES NOT INCLUDE STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.
  - 10 INTERIM TREATMENT OF POTENTIAL EXPOSED GARAGE WALL SHALL BE PROVIDED AS DESCRIBED IN PROFFERS.



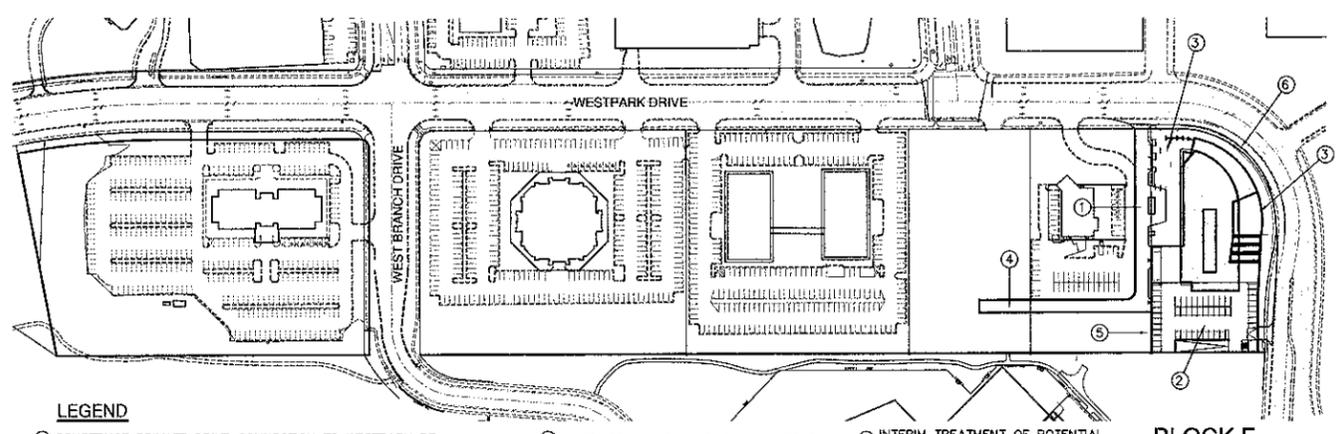
**BLOCK E**

- LEGEND**
- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 2 CONSTRUCT JONES BRANCH EXTENSION (ROADWAY) AND EASTERN STREETSCAPE.
  - 3 CONSTRUCT PRIVATE CONNECTION TO JONES BRANCH DR EXTENSION.
  - 4 CONSTRUCT PEDESTRIAN CONNECTION TO ADJACENT SOUTH PARCEL.
  - 5 CONSTRUCT OPENSOURCE/PARK IMPROVEMENTS.
  - 6 TRAFFIC SIGNAL MODIFICATIONS, PER WARRANT STUDY AND AS DESCRIBED IN PROFFERS.
  - 7 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
  - 8 CONSTRUCT PRIVATE DRIVE FOR ACCESS TO SERVICE/LOADING AREA (NOT INCLUDING EASTERN STREETSCAPE OR DROP-OFF AREAS).
- NOTE:**  
NOT WITHSTANDING THE CONDITION SHOWN HEREON, THE EXISTING ENTRANCE FROM WESTPARK DRIVE TO THE NORTHWEST CORNER OF BLOCK F SHALL BE RETAINED UNTIL CONSTRUCTION OF THE REDEVELOPMENT OF BLOCK F IS COMPLETED, IF VDOT PERMITS THE EXISTING ENTRANCE AND A NEW ENTRANCE FROM WESTPARK DRIVE TO BLOCK E TO BE OPEN AND IN OPERATION SIMULTANEOUSLY.



**BLOCK C**

- LEGEND**
- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
  - 2 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
  - 3 CONSTRUCT PRIVATE DRIVE TO GARAGE.
  - 4 CONSTRUCT PARKING GARAGE (FINAL BUILD OUT OF GARAGE TO BE BASED ON PARKING REQUIRED AND MARKET/TENANT REQUIREMENTS).
  - 5 EXISTING SURFACE PARKING LOT TO REMAIN AND BE UTILIZED IN INTERIM CONDITIONS BASED ON BUILDING DEVELOPMENT PHASING.
  - 6 CENTRAL URBAN PARK, PLAZA, AND CONNECTION TO OFF-SITE TRAIL MAY BE CONSTRUCTED IN PHASES PER BLDG C-1/C-2 DEVELOPMENT. (TRAIL CONNECTION IS SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS). REFER TO SHEET C8.3 AND PROFFERS FOR ADDITIONAL PHASING DESCRIPTION.
  - 7 INTERIM TREATMENT OF POTENTIAL EXPOSED GARAGE WALL SHALL BE PROVIDED AS DESCRIBED IN PROFFERS.
- NOTE:**  
CONSTRUCTION OF BLOCK 'C' MAY BE PHASED PER BUILDING C-1 AND C-2 (REFER TO SHEET C8.3). EXTENT OF WESTPARK DR FRONTAGE IMPROVEMENTS AND URBAN PARK IMPROVEMENTS ASSOCIATED WITH EACH BUILDING WILL BE DETERMINED WITH FINAL SITE PLAN.
- NOTE:**  
1. C-1 AND C-2 MAY BE BUILT IN ANY ORDER OR AT THE SAME TIME.



**BLOCK F**

- LEGEND**
- 1 CONSTRUCT PRIVATE DRIVE CONNECTION TO WESTPARK DR. (NOT INCLUDING WESTERN STREETSCAPE).
  - 2 CONSTRUCT PARKING GARAGE.
  - 3 CONSTRUCT OPENSOURCE IMPROVEMENTS.
  - 4 CONSTRUCT PRIVATE DRIVE CONNECTION TO FUTURE JONES BRANCH DRIVE EXTENSION.
  - 5 INTERIM TREATMENT OF POTENTIAL EXPOSED GARAGE WALL SHALL BE PROVIDED AS DESCRIBED IN PROFFERS.
  - 6 CONSTRUCT WESTPARK FRONTAGE IMPROVEMENTS AS INDICATED ON SHEETS C8.0 AND C8.1 AND AS DESCRIBED IN PROFFERS.
- GENERAL NOTES:**
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
  2. EXTENT OF FRONTAGE IMPROVEMENTS THAT MAY BE CONSTRUCTED WITH INDIVIDUAL BLOCKS WILL BE DETERMINED WITH FINAL ENGINEERING AND VDOT APPROVAL INCLUDING LANE WIDENING, MEDIANS, TRANSITIONS, MARKINGS, STREETSCAPE ETC.
  3. SEE PROFFERS FOR ADDITIONAL PHASING INFORMATION.

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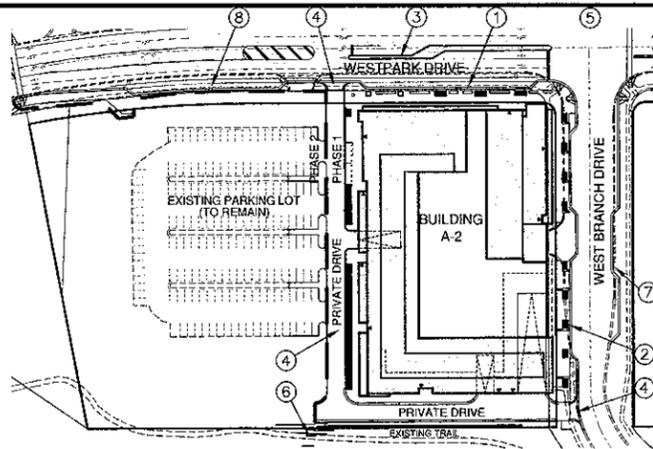
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OVERALL DEVELOPMENT PHASING EXHIBIT  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
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DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C8.2

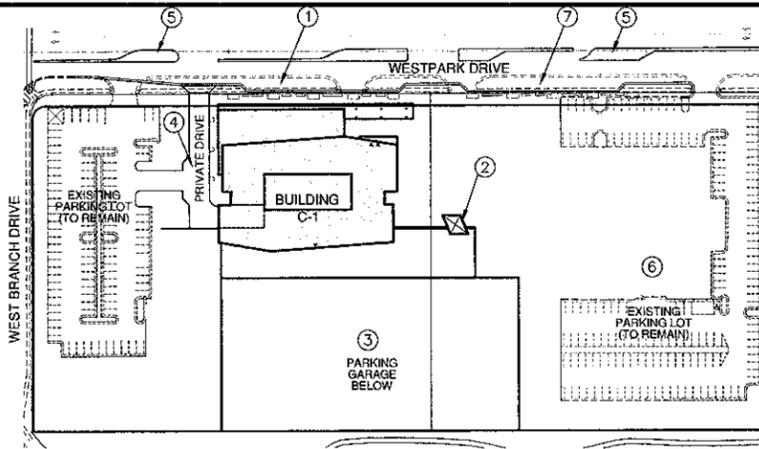


**PHASE 1 - OPTION 'A'**

(CONSTRUCT BUILDING A-2)

**LEGEND**

- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
- 2 CONSTRUCT WESTBRANCH DRIVE WESTERN FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
- 3 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
- 4 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 5 INSTALL TRAFFIC SIGNAL BASED ON RESULTS OF WARRANT STUDY, AND AS DESCRIBED IN PROFFERS.
- 6 CONSTRUCT OFF-SITE TRAIL, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENT.
- 7 CONSTRUCT WESTBRANCH DRIVE EASTERN CURB AND UTILITIES (NOT INCLUDING STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.
- 8 CONSTRUCT WESTPARK DRIVE CURB AND UTILITIES (NOT INCLUDING STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.

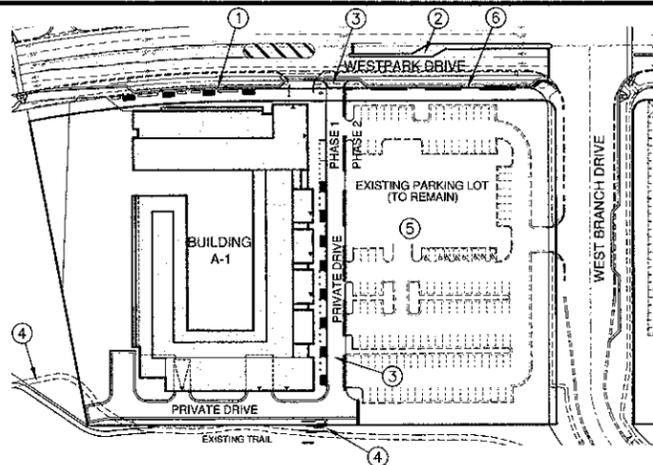


**PHASE 1 - OPTION 'A'**

(CONSTRUCT BUILDING C-1)

**LEGEND**

- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
- 2 CONSTRUCT ELEVATOR CORE.
- 3 CONSTRUCT PARKING GARAGE.
- 4 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 5 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
- 6 PREVIOUS BUILDING PAD AREA TO BE SEEDED SUBJECT TO TIMING OF SECOND BUILDING PHASE DEVELOPMENT.
- 7 CONSTRUCT WESTPARK DRIVE ROADWAY AND UTILITIES (NOT INCLUDING STREETSCAPE).

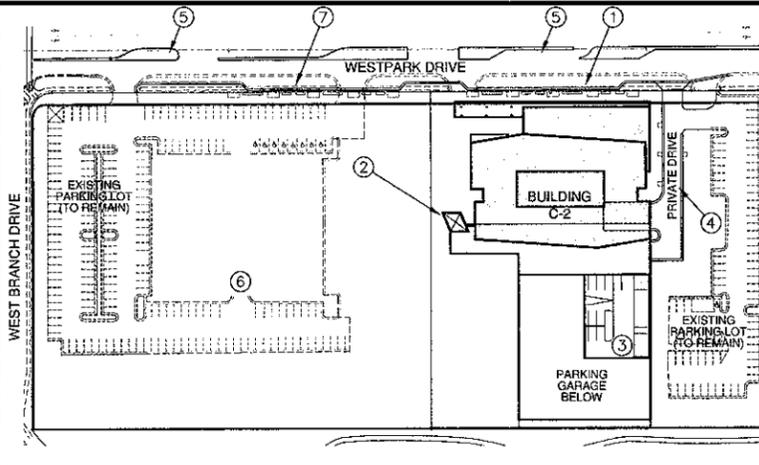


**PHASE 1 - OPTION 'B'**

(CONSTRUCT BUILDING A-1)

**LEGEND**

- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
- 2 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
- 3 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 4 CONSTRUCT OFF-SITE TRAIL, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENT.
- 5 PREVIOUS BUILDING PAD AREA TO BE SEEDED SUBJECT TO TIMING OF SECOND BUILDING PHASE DEVELOPMENT.
- 6 CONSTRUCT WESTPARK DRIVE CURB AND UTILITIES (NOT INCLUDING STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.

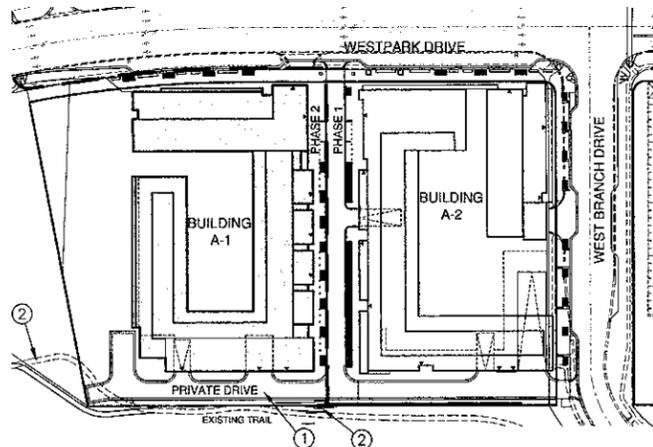


**PHASE 1 - OPTION 'B'**

(CONSTRUCT BUILDING C-2)

**LEGEND**

- 1 CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE).
- 2 CONSTRUCT ELEVATOR CORE.
- 3 CONSTRUCT PARKING GARAGE.
- 4 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 5 CONSTRUCT WESTPARK DRIVE HALF MEDIAN (IF DETERMINED FEASIBLE WITH FINAL ENGINEERING DESIGN AND VDOT APPROVAL).
- 6 PREVIOUS BUILDING PAD AREA TO BE SEEDED SUBJECT TO TIMING OF SECOND BUILDING PHASE DEVELOPMENT.
- 7 CONSTRUCT WESTPARK DRIVE ROADWAY AND UTILITIES (NOT INCLUDING STREETSCAPE).

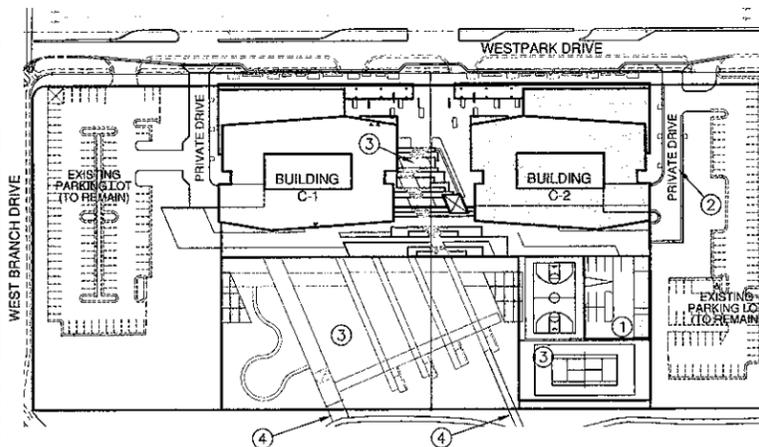


**PHASE 2 - OPTION 'A'**

(BUILDING A-2 COMPLETE  
CONSTRUCT BUILDING A-1)

**LEGEND**

- 1 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 2 CONSTRUCT OFFSITE TRAIL IMPROVEMENTS, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS.

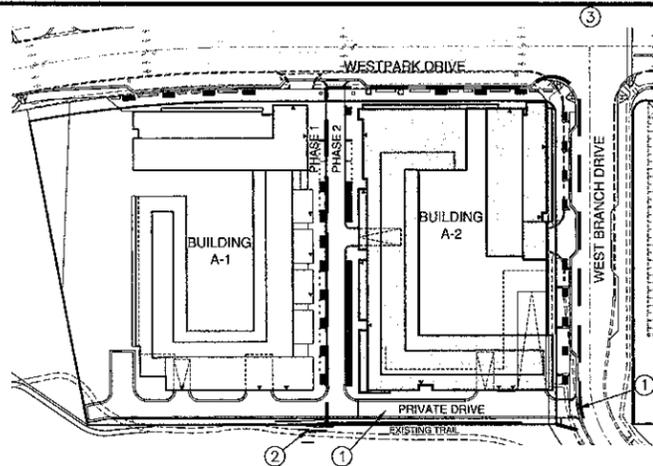


**PHASE 2 - OPTION 'A'**

(BUILDING C-1 COMPLETE  
CONSTRUCT BUILDING C-2)

**LEGEND**

- 1 CONSTRUCT PARKING GARAGE.
- 2 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 3 CONSTRUCT URBAN PLAZA, STAIRS AND SPORTS COURTS, OPEN TO PUBLIC AT THE TIME OF ISSUANCE OF THE 1st NON-RUP FOR THE 2nd BUILDING IN BLOCK 'C'.
- 4 CONSTRUCT OFFSITE TRAIL IMPROVEMENTS, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS.

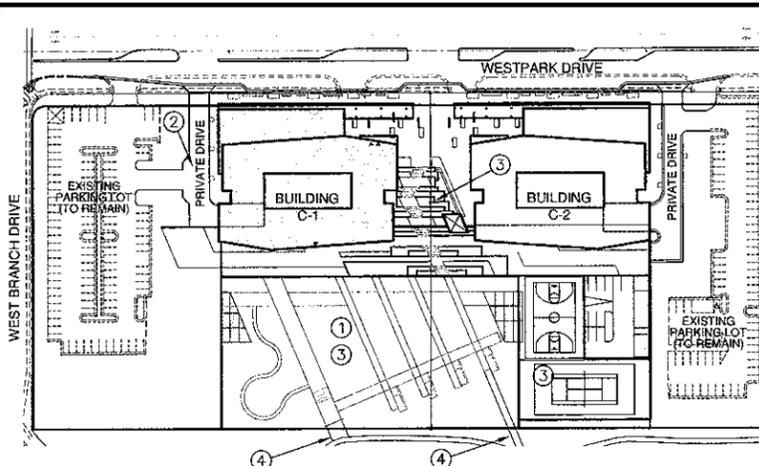


**PHASE 2 - OPTION 'B'**

(BUILDING A-1 COMPLETE  
CONSTRUCT BUILDING A-2)

**LEGEND**

- 1 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 2 CONSTRUCT OFFSITE TRAIL IMPROVEMENTS, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS.
- 3 INSTALL TRAFFIC SIGNAL BASED ON RESULTS OF WARRANT STUDY, AND AS DESCRIBED IN PROFFERS.



**PHASE 2 - OPTION 'B'**

(BUILDING C-2 COMPLETE  
CONSTRUCT BUILDING C-1)

**LEGEND**

- 1 CONSTRUCT PARKING GARAGE.
- 2 CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
- 3 CONSTRUCT URBAN PLAZA, STAIRS AND SPORTS COURTS, OPEN TO PUBLIC AT THE TIME OF ISSUANCE OF THE 1st NON-RUP FOR THE 2nd BUILDING IN BLOCK 'C'.
- 4 CONSTRUCT OFFSITE TRAIL IMPROVEMENTS, SUBJECT TO AVAILABILITY OF OFF-SITE EASEMENTS.

**GENERAL NOTES:**  
 1. DEVELOPMENT PHASING OF BLOCKS "A&C" MAY BE REVERSED BASED ON MARKET CONDITIONS AT THE TIME OF FOP AND FINAL SITE PLAN.  
 2. EXTENT OF FRONTAGE IMPROVEMENTS FOR EACH BUILDING WILL BE DETERMINED WITH FINAL SITE PLAN AND APPROVED BY VDOT.  
 3. EXISTING PARKING LOT MAY BE UTILIZED IN INTERIM CONDITION FOR COMMUTER COMMERCIAL PARKING LOT CONSTRUCTION PHASING AND SIMILAR USES BASED ON BUILDING DEVELOPMENT PHASING.  
 4. EXISTING VEGETATION ALONG PERMETER AND WITHIN THE EXISTING PARKING LOTS SHALL BE UTILIZED IN LIEU OF PARKING LOT LANDSCAPE REQUIREMENTS TO THE EXTENT POSSIBLE.

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 703.548.6010  
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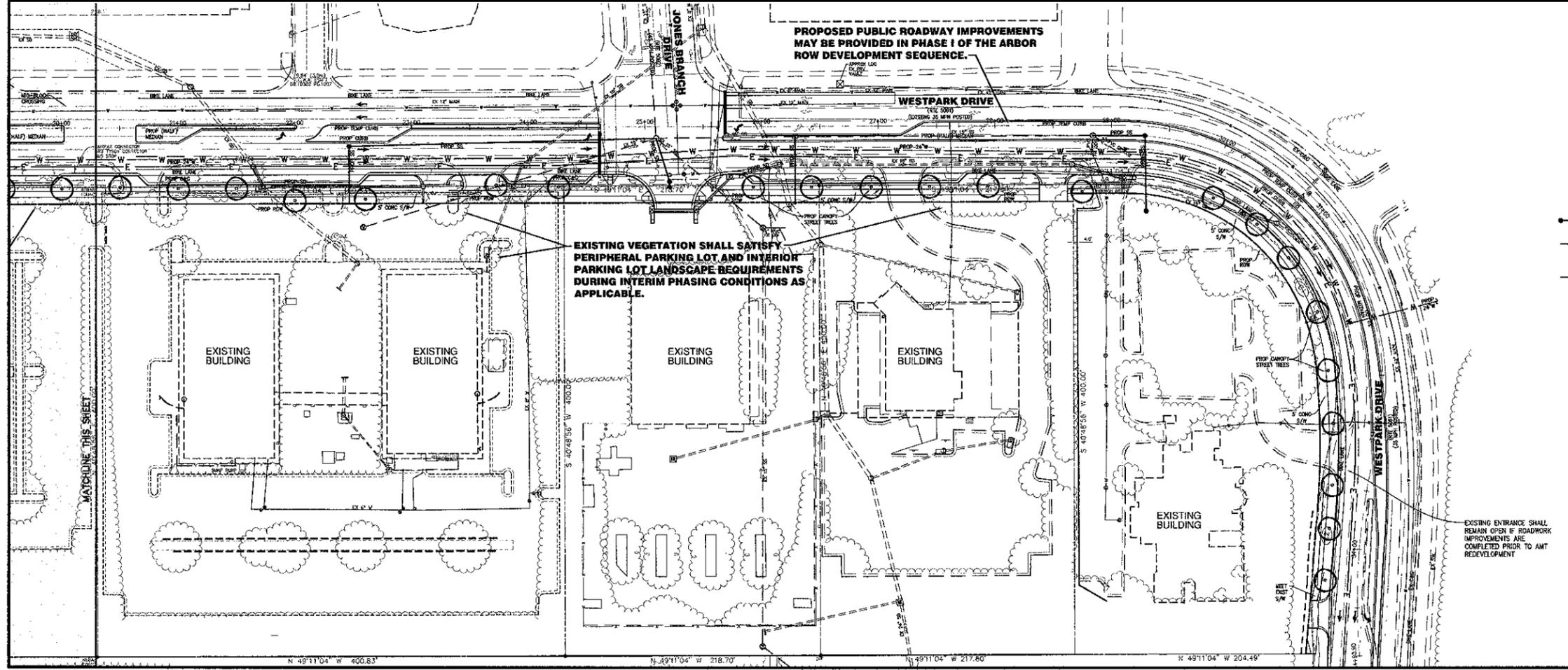
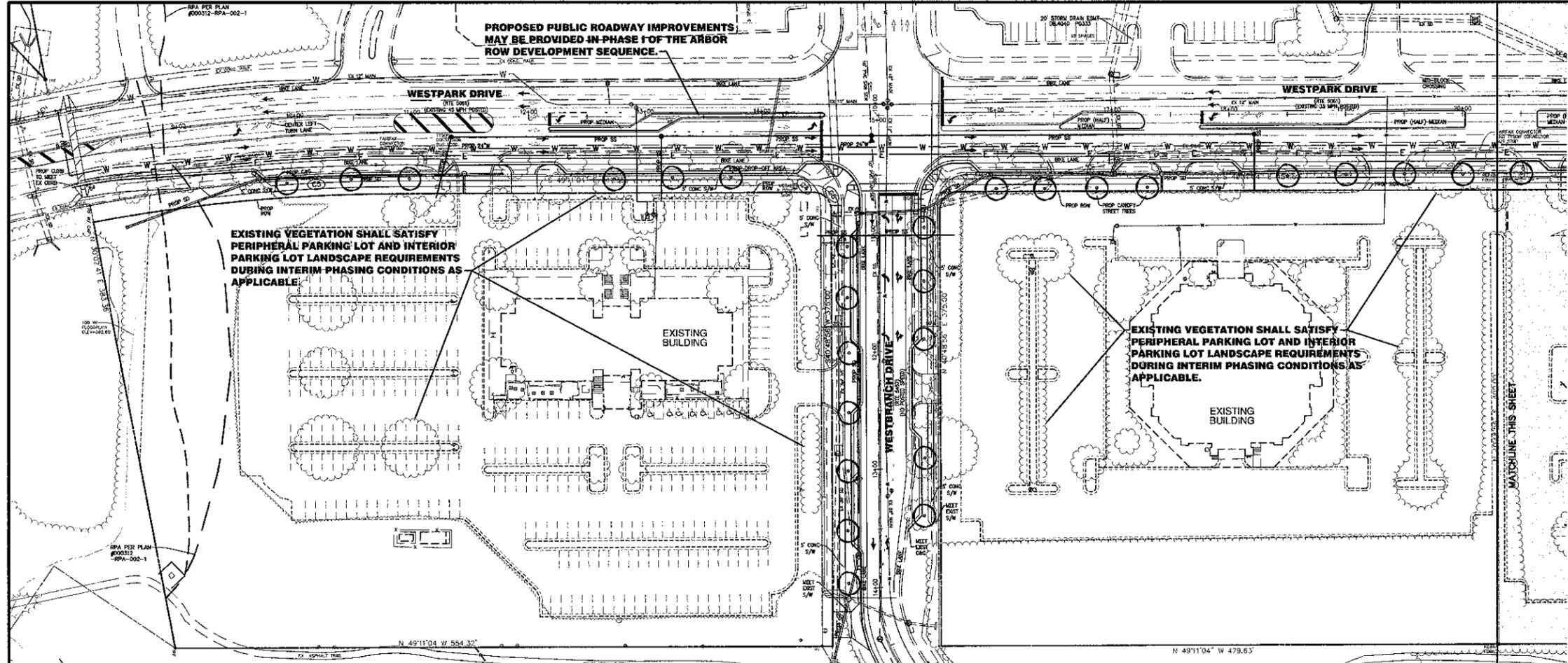
WDO Architecture PLLC  
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 Fax: 202.653.7188  
 E-mail: wdo@wdo.com

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COMMONWEALTH OF VIRGINIA  
 LANDSCAPE ARCHITECT  
 MATTHEW J. TAUSCHER  
 Lic. No. 009832  
 8/29/12

BLOCKS A & C PHASING EXHIBIT  
 ARBOR ROW  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
4/20/12	REV PER COMMENTS
07/23/12	PER COUNTY COMMENTS
06/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H:1"=100'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C8.3



- LEGEND**
- PROPOSED CANOPY STREET TREE (2" CAL - APPROXIMATELY 50 O.C.) WHERE REQUIRED SIGHT DISTANCE, EXISTING AND PROPOSED UTILITY ALLOW AND AS NECESSARY IN ORDER TO SUPPLEMENT EXISTING STREET TREES
  - PROPOSED SANITARY SEWER
  - PROPOSED WATER MAIN
  - PROPOSED DRY UTILITY DUCT BANK (MAY BE LOCATED BEHIND PROPOSED CURB LINE/PARKING LANE)

**NOTE:**  
 1. IMPROVEMENTS SHOWN HEREON INCLUDE THOSE PUBLIC ROADWAY AND ASSOCIATED UTILITY INFRASTRUCTURE THAT MAY BE CONSTRUCTED AS PART OF THE INITIAL PHASE OF ARBOR ROW DEVELOPMENT INCLUDING, BUT NOT LIMITED TO, ROADWORK, STORM DRAIN, SANITARY SEWER, WATERMAIN AND DRY UTILITY IMPROVEMENTS.

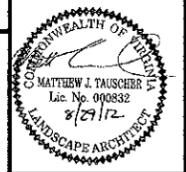
**GRAPHIC SCALE**  
 0 25 50 100 150 200  
 ( IN FEET )  
 1 inch = 50 ft.

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 Bowman Consulting Group, Ltd.  
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 Fax: 202.462.2168  
 www.wdcarch.com  
 WDC ARCHITECTURE

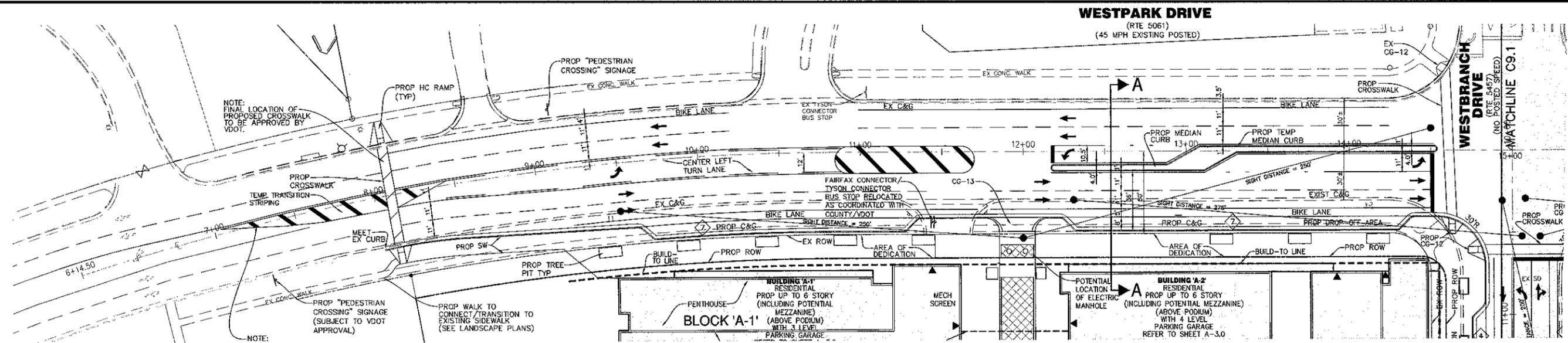
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PUBLIC ROADWAY PHASING EXHIBIT  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE: H: 1"=50'	
JOB No.	
DATE: APRIL 26, 2011	
FILE No. 7403-07-001	
SHEET <b>C8.4</b>	

P:7403 - West Group Properties/7403-07-001 (PLAN) - Tyson West Park/Planning/Reconing/Curren/7403-07-001 Road Exhibit.dwg, 8/29/2012 10:47:01 AM, I:

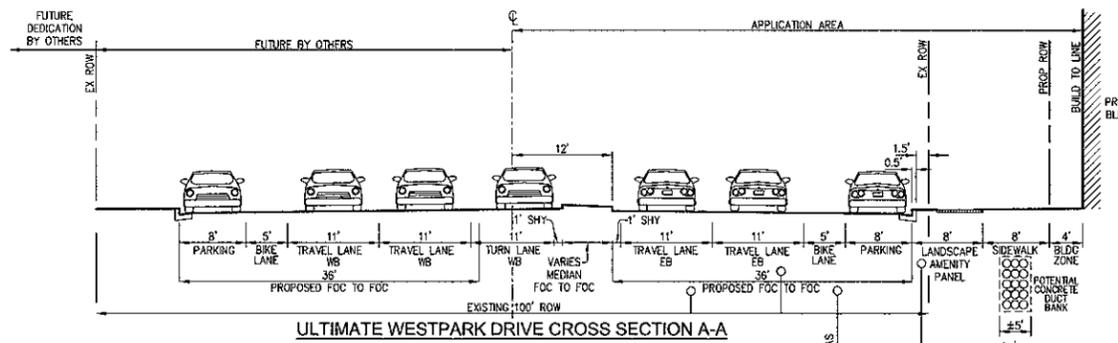


**WESTPARK DRIVE - ROUTE 5061**  
 (AVENUE CLASSIFICATION)  
 100' ROW (EXISTING)  
 EXISTING POSTED SPEED = 45 MPH  
 PROPOSED DESIGN SPEED = 35 MPH

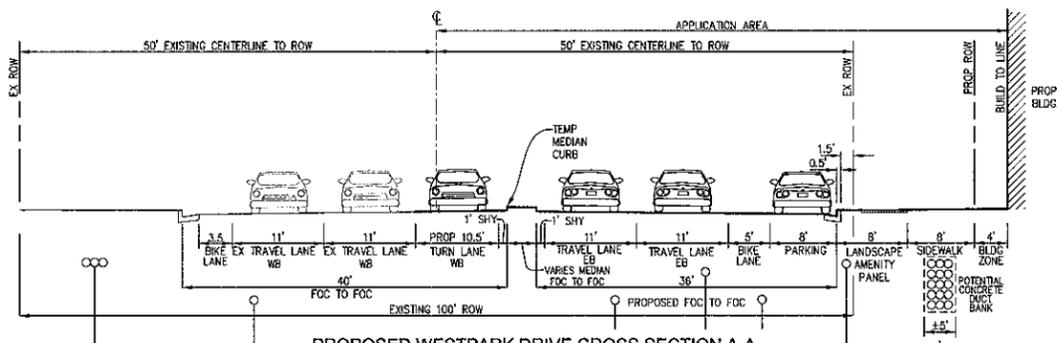
WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:  
 BLOCK 'A' FRONTAGE = ±8,938s.f.

**LEGEND:**  
 ←→ EXISTING LANE DIRECTION  
 → PROPOSED LANE DIRECTION

- NOTES:**
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
  2. REFER TO SHEET L4.0 FOR STREETSCAPE DESIGN ELEMENTS.
  3. AREA OF RIGHT OF WAY DEDICATION/VACATION SHOWN ON THIS CDP ARE APPROXIMATE. FINAL AREAS, LOCATION AND QUANTITIES OF STREET RIGHT OF WAY DEDICATION AND OR VACATION ARE TO BE DETERMINED AT TIME OF FINAL SITE PLAN.
  4. REFER TO SHEET L3.0-L3.2 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
  5. SIGHT DISTANCE DIMENSION IS BASED ON PROPOSED DESIGN SPEED LIMITS AS OUTLINED IN THE VDOT TRANSPORTATION DESIGN STANDARDS FOR TYSON CORNER (TABLE 12). SEE PLAN VIEW FOR PROPOSED POSTED SPEED LIMITS.
  6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN ENGINEERING DESIGN AND COORDINATION WITH UTILITY PROVIDERS.
  7. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED.
  8. BUS STOP RELOCATION TO BE COORDINATED WITH COUNTY/VDOT AT TIME OF SITE PLAN APPLICATION.

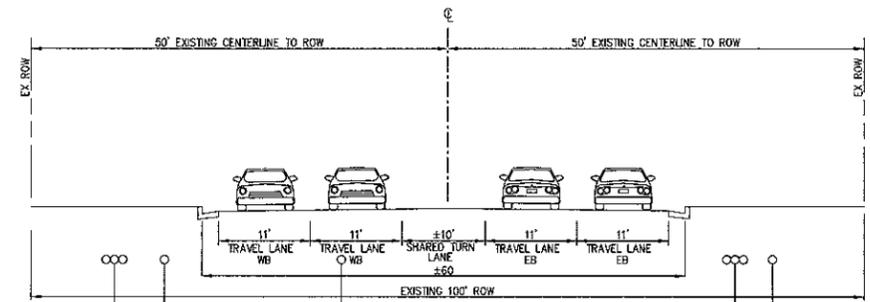


**ULTIMATE WESTPARK DRIVE CROSS SECTION A-A**  
 (AVENUE STREET CLASSIFICATION)  
 (PROPOSED DESIGN SPEED 35 MPH)  
 SCALE: 1"=10'

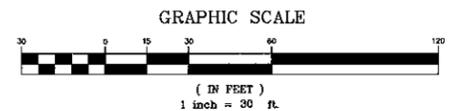


**PROPOSED WESTPARK DRIVE CROSS SECTION A-A**  
 (AVENUE STREET CLASSIFICATION)  
 (PROPOSED DESIGN SPEED 35 MPH)  
 SCALE: 1"=10'

NOTE:  
 'PROPOSED' ROAD SECTION INCLUDES THOSE ITEMS TO BE CONSTRUCTED WITH THIS APPLICATION.



**EXISTING WESTPARK DRIVE CROSS SECTION A-A**  
 EXISTING POSTED 45 MPH  
 SCALE: 1"=10'



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 Landscape Architecture

**WPG ARCHITECTURE PLLC**  
 WPG Architecture PLLC  
 1000 Metropolitan Avenue NW  
 Suite 300  
 Washington DC 20008  
 Phone: 202.463.2338  
 Fax: 202.463.2338  
 Email: wpg@wpgarch.com

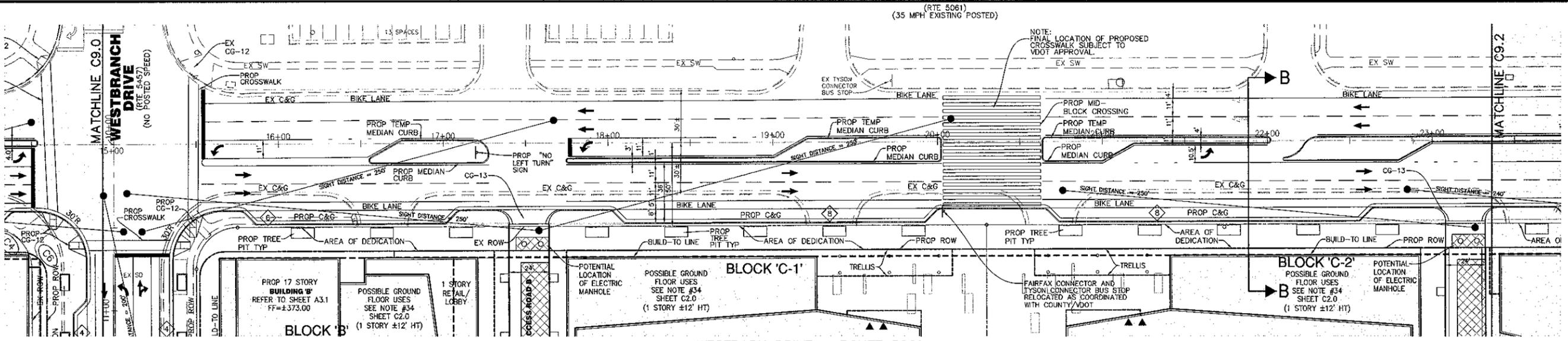
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**ROADWAY STRIPING AND MARKING PLAN**  
 (SHEET 1 OF 6)  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C9.0

P:17403 - West Group Properties/7403-07-001 (P.L.N.) - Tyson West Park Planning/Re zoning/Current/1401 RD STRP.dwg, 02/29/2012, 10:54:14 AM, W

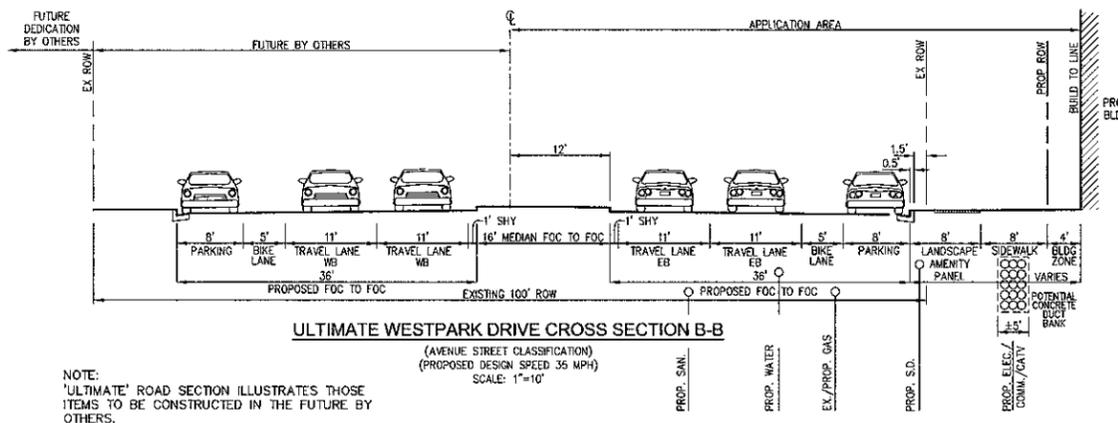


**WESTPARK DRIVE - ROUTE 5061**  
 (AVENUE CLASSIFICATION)  
 100' ROW (EXISTING)  
 EXISTING POSTED SPEED = 35 MPH  
 PROPOSED DESIGN SPEED = 35 MPH

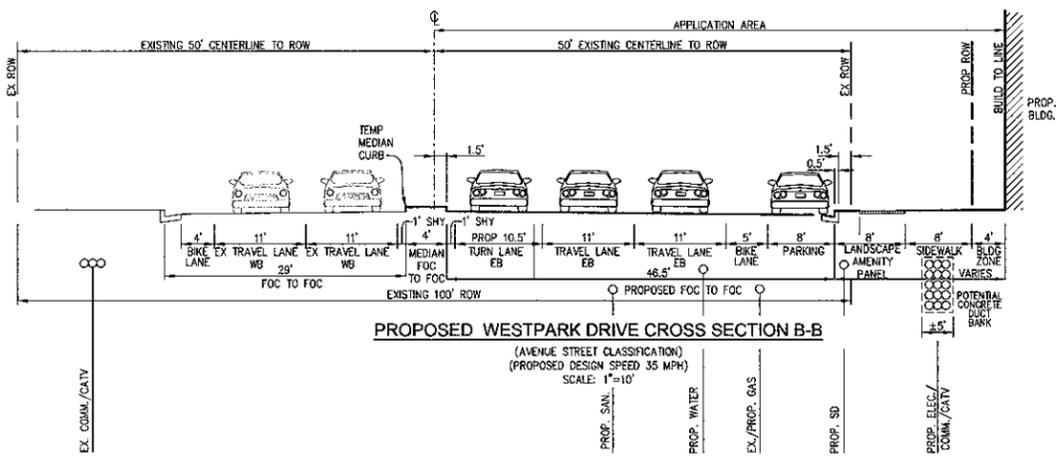
WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:  
 BLOCKS 'B,C,D&E' FRONTAGE = ±18,920s.f.

**LEGEND:**  
 ← EXISTING LANE DIRECTION  
 → PROPOSED LANE DIRECTION

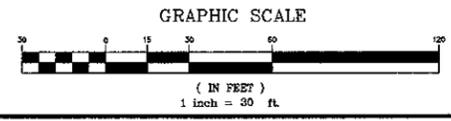
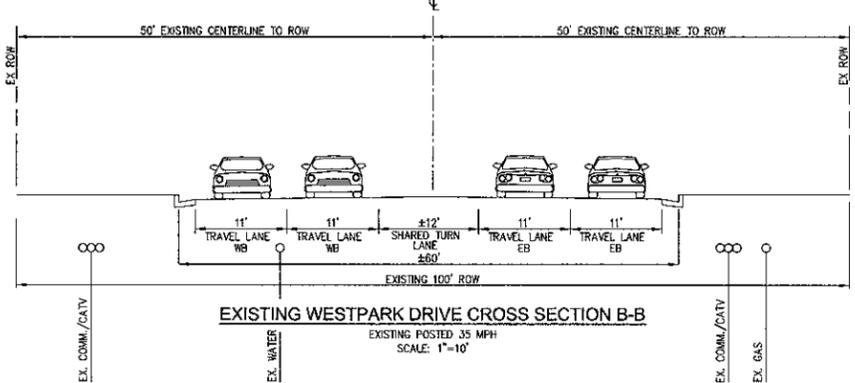
- NOTES:**
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
  2. REFER TO SHEET L4.0 FOR STREETSCAPE DESIGN ELEMENTS.
  3. AREA OF RIGHT OF WAY DEDICATION/VACATION SHOWN ON THIS CDP ARE APPROXIMATE. FINAL AREAS, LOCATION AND QUANTITIES OF STREET RIGHT OF WAY DEDICATION AND OR VACATION ARE TO BE DETERMINED AT TIME OF FINAL SITE PLAN.
  4. REFER TO SHEET L3.0-L3.2 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
  5. SIGHT DISTANCE DIMENSION IS BASED ON PROPOSED DESIGN SPEED LIMITS AS OUTLINED IN THE VDOT TRANSPORTATION DESIGN STANDARDS FOR TYSON CORNER (TABLE 12). SEE PLAN VIEW FOR PROPOSED POSTED SPEED LIMITS.
  6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN ENGINEERING DESIGN AND COORDINATION WITH UTILITY PROVIDERS.
  7. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED.
  8. BUS STOP RELOCATION TO BE COORDINATED WITH COUNTY/VDOT AT TIME OF SITE PLAN APPLICATION.



NOTE:  
 'ULTIMATE' ROAD SECTION ILLUSTRATES THOSE ITEMS TO BE CONSTRUCTED IN THE FUTURE BY OTHERS.



NOTE:  
 'PROPOSED' ROAD SECTION INCLUDES THOSE ITEMS TO BE CONSTRUCTED WITH THIS APPLICATION.

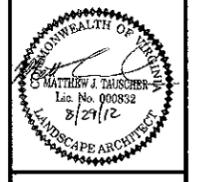


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**ROADWAY STRIPING AND MARKING PLAN**  
 (SHEET 2 OF 6)  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

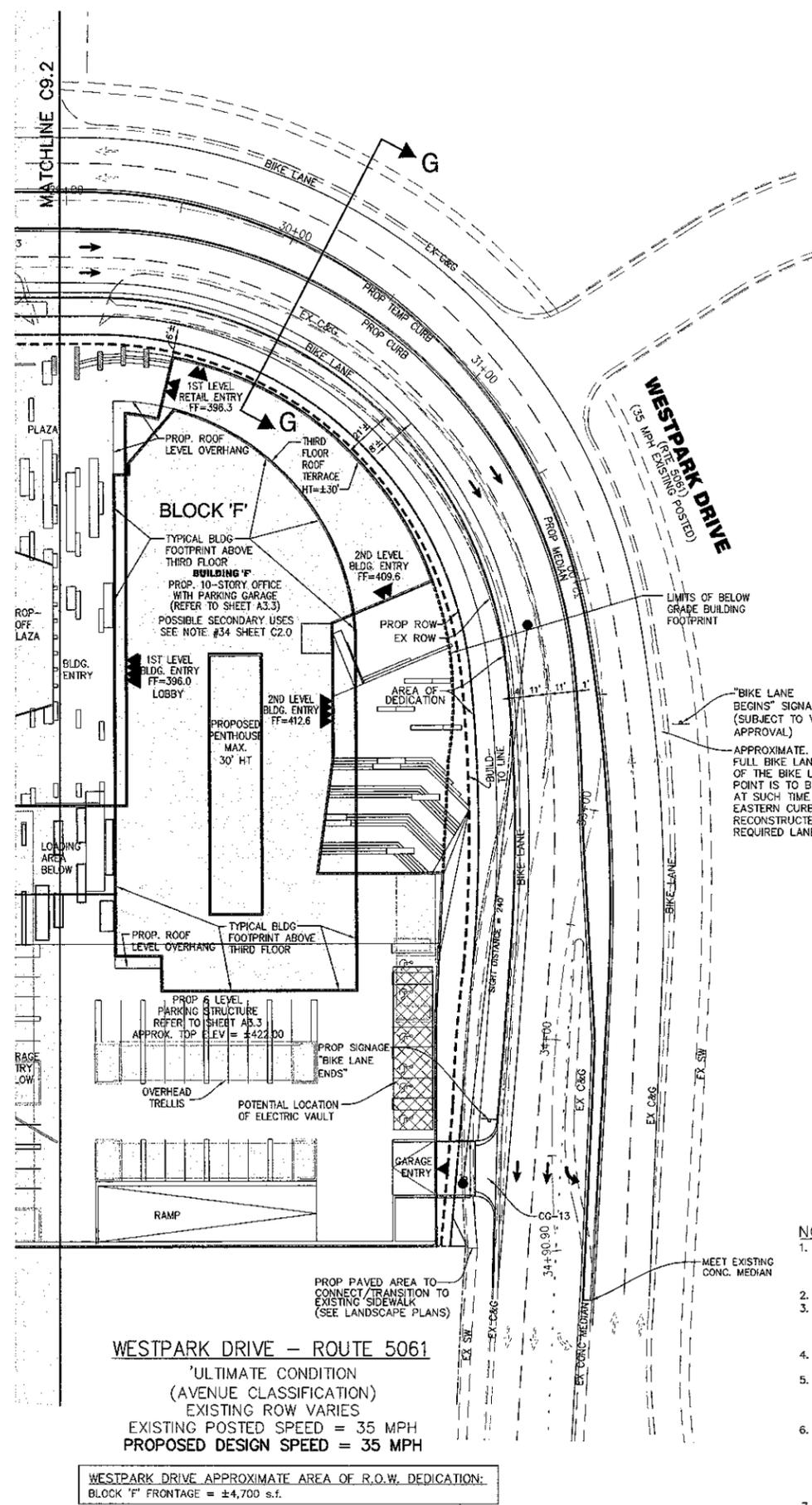
PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C9.1

P:\7403 - West Group Properties\7403-07-001 (P.L.N.) - Tyson West Park\Planning\Rezoning\Current\01-001 RD STRIP.dwg, 6/29/2012 10:54:31 AM, M







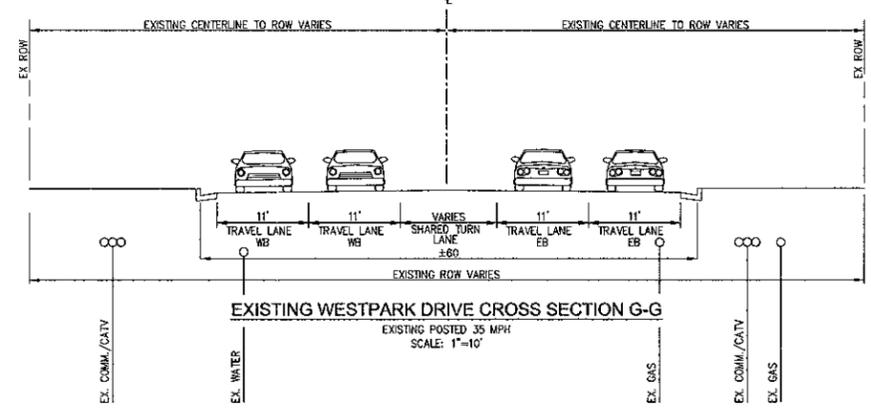
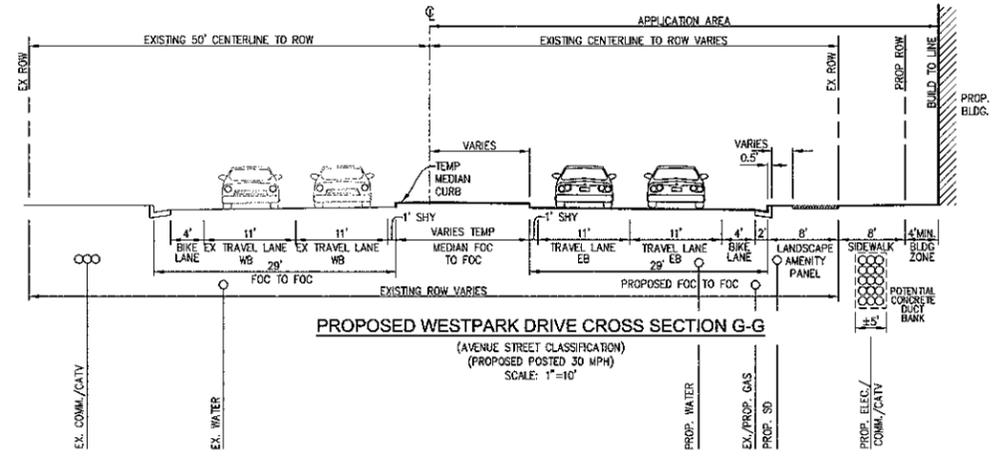


**WESTPARK DRIVE - ROUTE 5061**  
 'ULTIMATE CONDITION'  
 (AVENUE CLASSIFICATION)  
 EXISTING ROW VARIES  
 EXISTING POSTED SPEED = 35 MPH  
 PROPOSED DESIGN SPEED = 35 MPH

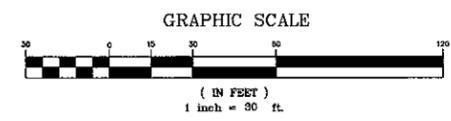
**WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:**  
 BLOCK 'F' FRONTAGE = ±4,700 s.f.

"BIKE LANE BEGINS" SIGNAGE (SUBJECT TO VDOT APPROVAL)  
 APPROXIMATE LOCATION TO BEGIN FULL BIKE LANE WIDTH. EXTENSION OF THE BIKE LANE SOUTH OF THIS POINT IS TO BE PROVIDED BY VDOT AT SUCH TIME AS THE EXISTING EASTERN CURB ALIGNMENT IS RECONSTRUCTED TO ACCOMMODATE REQUIRED LANE GEOMETRY.

- NOTES:**
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
  2. REFER TO SHEET L4.0 - L4.1 FOR STREETSCAPE DESIGN ELEMENTS.
  3. AREA OF RIGHT OF WAY DEDICATION/VACATION SHOWN ON THIS CDP ARE APPROXIMATE. FINAL AREAS, LOCATION AND QUANTITIES OF STREET RIGHT OF WAY DEDICATION AND OR VACATION ARE TO BE DETERMINED AT TIME OF FINAL SITE PLAN.
  4. REFER TO SHEET L3.0-L3.2 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
  5. SIGHT DISTANCE DIMENSION IS BASED ON PROPOSED DESIGN SPEED LIMITS AS OUTLINED IN THE VDOT TRANSPORTATION DESIGN STANDARDS FOR TYSON CORNER (TABLE 12). SEE PLAN VIEW FOR PROPOSED POSTED SPEED LIMITS.
  6. PROPOSED ROADWAY CONDITIONS REPRESENTED HEREON ARE TO TAKE PLACE IF THE EXISTING COMMUNICATION CABINET ASSOCIATED WITH THE INTERSTATE 495 EXPRESS LANE IMPROVEMENTS HAS BEEN RELOCATED PRIOR TO THE CONSTRUCTION OF BLOCK 'F'. SEE SHEET CB.1 FOR INTERIM ROAD CONDITION IN THE EVENT THE REFERRED CABINET HAS NOT BEEN RELOCATED.
  7. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH FDP AND FINAL SITE PLAN ENGINEERING DESIGN AND COORDINATION WITH UTILITY PROVIDERS.
  8. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED.



**LEGEND:**  
 ← EXISTING LANE DIRECTION  
 → PROPOSED LANE DIRECTION

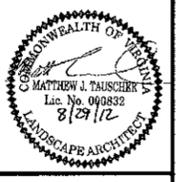


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**ROADWAY STRIPING AND MARKING PLAN**  
 (SHEET 6 OF 6)  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PP-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

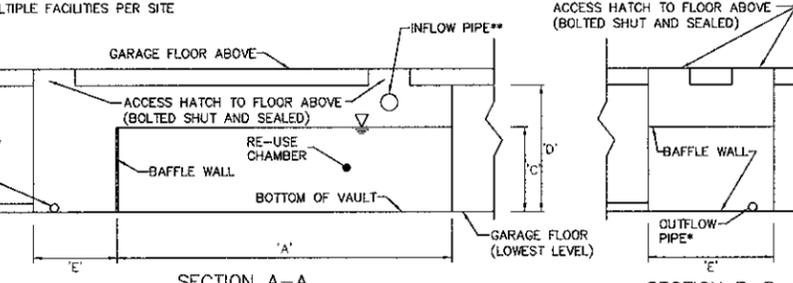
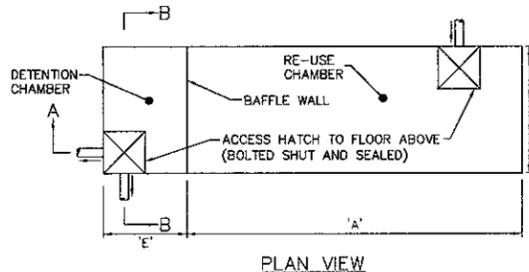
PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/28/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H:1"=30'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	<b>C9.5</b>

\*ONE OUTFLOW PIPE PER VAULT. LOCATION TO BE DETERMINED AT THE TIME OF FINAL ENGINEERING. OUTFALL MAY BE PUMPED.

\*\*FINAL NUMBER AND LOCATION OF INFLOW PIPES PER MEP.

**NOTES:**

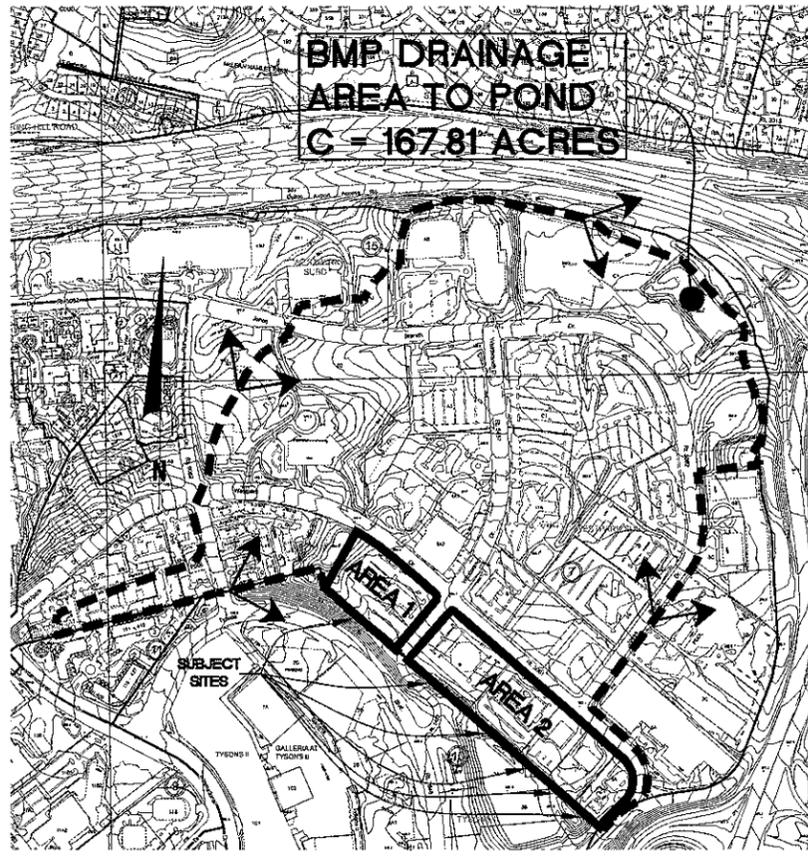
- 1) FINAL NUMBER, SHAPE, SIZE, LOCATION, AND DESIGN OF SWM VAULTS ARE SUBJECT TO CHANGE AT THE TIME OF FINAL ENGINEERING.
- 2) SUPPORT AND REINFORCING FOR VAULTS PER STRUCTURAL ENGINEERING PLANS.
- 3) PUMPS SHALL BE INTEGRATED INTO VAULTS AT THE TIME OF FINAL ENGINEERING ON A CASE BY CASE BASIS.
- 4) APPLICANT RESERVES THE RIGHT, AT FINAL SITE PLAN, TO UTILIZE MULTIPLE FACILITIES PER SITE IF NEEDED.



**SWM SUMMARY**

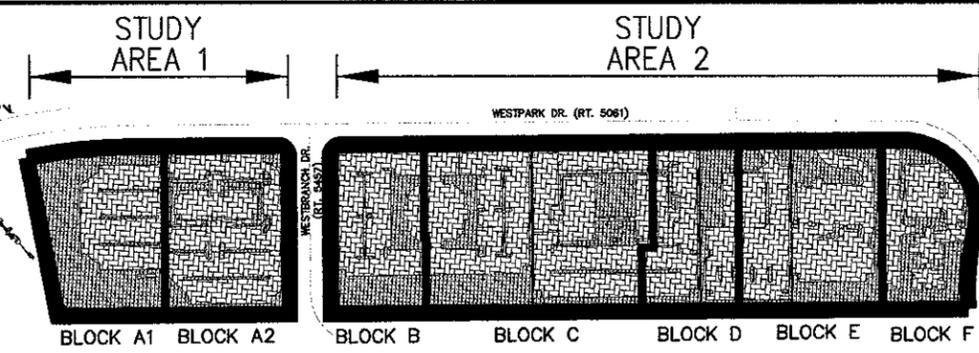
VAULT ID NAME	REQUIRED VOLUME (CF)	LENGTH (FT)	WIDTH (FT)	RE-USE DEPTH (FT)	STORAGE DEPTH (FT)	DET. CHAMBER SIZE (FT)	VOLUME PROVIDED (CF)
BLOCK A1	13,229	56	24	10	12	4	13,440
BLOCK A2	13,577	58	24	10	12	4	13,920
BLOCK B	10,295	62	18	10	12	4	11,160
BLOCK C	24,368	68	36	10	12	4	24,480
BLOCK D	9,847	56	18	10	12	4	10,080
BLOCK E	15,615	41	17	24	26	4	16,728

1 CONCEPTUAL FACILITY DETAIL  
C10.0 NOT TO SCALE

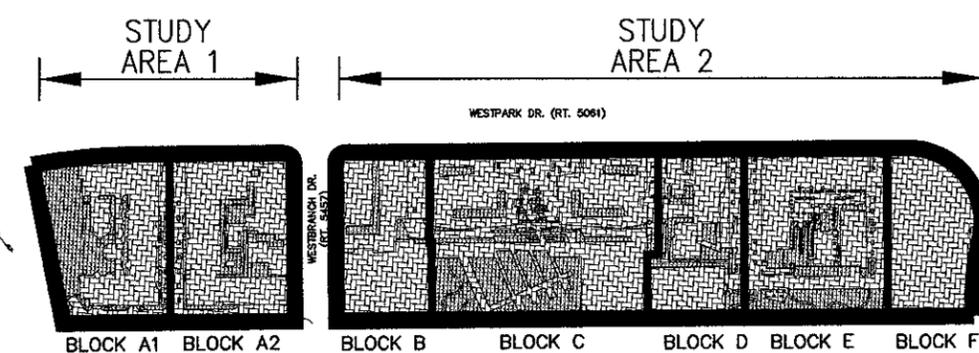


4 BMP MAP  
C10.0 SCALE: 1"=500'

PER PLAN #6377-PI-01, POND C WAS DESIGNED TO TREAT A DRAINAGE AREA OF 167.81 ACRES, WITH A C-FACTOR OF 0.80.



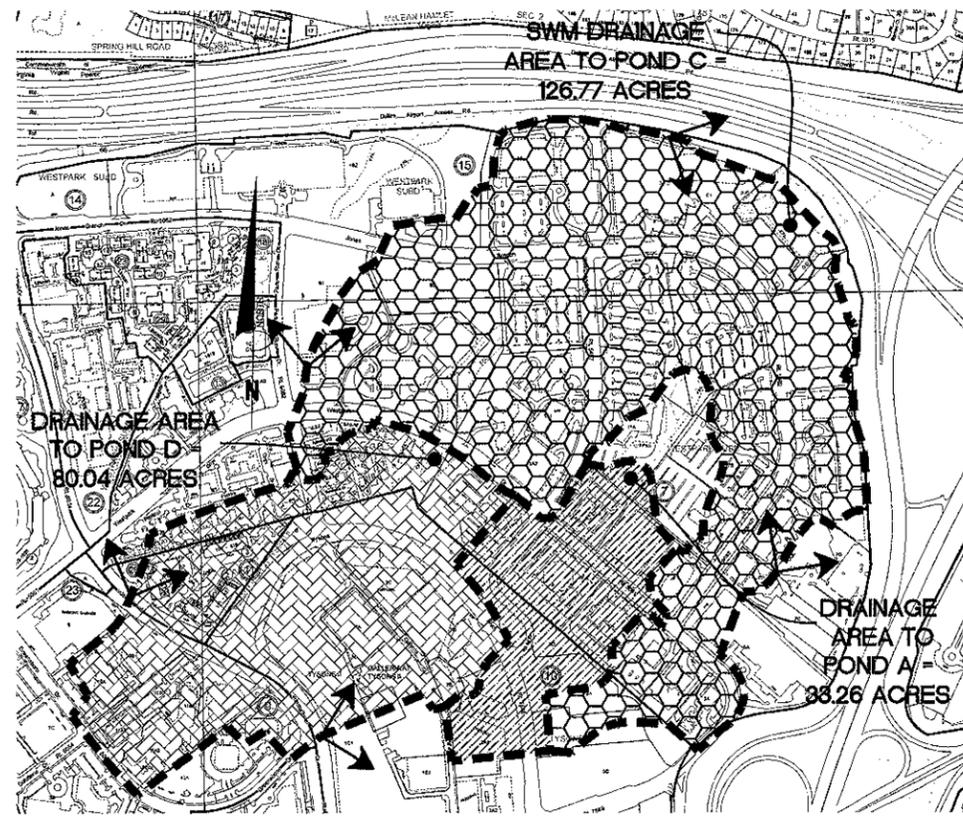
2 EXISTING IMPERVIOUS AREA EXHIBIT  
C10.0 SCALE: 1"=200'



3 PRELIMINARY PROPOSED IMPERVIOUS AREA EXHIBIT  
C10.0 SCALE: 1"=200'

IMPERVIOUS AREA = [Symbol]  
PERVIOUS AREA = [Symbol]

	Area 1	Area 2
Area =	5.398 Ac	19.925 AC
Ex. Impervious %	55%	62%
Ex. C-Factor =	0.63	0.67
Prop. Impervious %	72%	78%
Prop. C-Factor =	0.73	0.77



5 SWM MAP  
C10.0 SCALE: 1"=500'

**SWM NARRATIVE:**

**GENERAL INFO:**

THE SUBJECT SITES OF THIS APPLICATION, THE FREDERICK, ESSEX, CAMPBELL, SCOTT, GRAYSON, FRANKLIN, AND AMT BUILDINGS ARE LOCATED ON FFX. CO. TAX MAP PARCELS #0294(7)-0010, 0294(7)-0009, 0294(7)-0003, 0294(7)-0002, 0294(7)-0001, AND 0294(7)-0005A, RESPECTIVELY. SEE VICINITY MAPS ON SHEET C10.7. THESE SITES CONSTITUTE THIS APPLICATION'S ASSOCIATED WITH THIS APPLICATION'S BLOCKS A1, A2, B, C, D, E, AND F. BLOCKS A1 AND A2 MAKE UP STUDY AREA 1. BLOCKS B-F MAKE UP STUDY AREA 2. SWM DETENTION FOR THESE BLOCKS IS CURRENTLY PROVIDED FOR BY EXISTING PONDS "A", "B", "C", AND "D". PONDS "A", "B", AND "D" ARE USED FOR THE SOLE PURPOSE OF DETENTION AND RETENTION. POND "A" IS COUNTY OWNED AND SITUATED BETWEEN THE DICKENSON, GLOUCESTER, AND BRUNSWICK & CULPEPER BUILDINGS. POND "B" IS COUNTY OWNED AND LOCATED NORTHEAST OF POND "A" BETWEEN THE GLOUCESTER, BRUNSWICK & CULPEPER, LANCASTER, AND NORTHAMPTON BUILDINGS. POND "C" IS OWNED BY AVALON CRESCENT ASSOCIATION AND LOCATED SOUTH OF WESTPARK DR. (RT. 5061) BETWEEN AVALON CRESCENT AND THE FREDERICK BUILDING, WITHIN AVALON CRESCENT'S PROPERTY LINES. POND "D" WAS REDESIGNED IN 1994 AS PART OF REZONING CASE NO. RZ-88-D-005 TO SUPPLY BMP (WATER QUALITY) TREATMENT FOR THE ENTIRE 167.81 ACRE WESTPARK AREA, AS WELL AS DETENTION FOR AREAS WHERE DETENTION IS NOT PROVIDED BY PONDS "A", "B", OR "D". SEE SWM MAP ON THIS SHEET. HOWEVER, ADDITIONAL STORMWATER MANAGEMENT SHALL BE PROVIDED, AS DESCRIBED BELOW.

**LEED COMPLIANCE:**

THE LEED REQUIREMENT THAT IS APPLICABLE TO THE SUBJECT APPLICATION IS CREDIT SS 6.1. ITS REQUIREMENT IS TO REDUCE THE POST-DEVELOPED 1-YR AND 2-YR, 24-HOUR DESIGN STORMS' TOTAL VOLUME OF RUNOFF TO LESS THAN OR EQUAL TO 75% OF THE PRE-DEVELOPED 1-YR AND 2-YR, 24-HOUR DESIGN STORMS. FOR THE LEED CALCULATIONS, THE LEED BOUNDARY IS MOST LIKELY ANTICIPATED TO BE DEFINED AS THE LIMITS OF THE BUILDING AND GARAGE FOOTPRINTS FOR EACH BLOCK. HOWEVER, THE COMPUTATIONS SHOWN ON SHEETS C10.1-C10.6.1 USE THE SITE BOUNDARY AS THE LEED BOUNDARY BECAUSE THE LEED BOUNDARY HAS YET TO BE FORMALLY DEFINED. THE LEED COMPLIANCE COMPUTATIONS AND RESULTING REQUIRED VAULT STORAGE VOLUME NEEDED TO SATISFY THE LEED COMPLIANCE FOR BLOCKS A1, A2, B, C, D, E, AND F ARE SHOWN ON SHEETS C10.1, C10.2, C10.3, C10.4, C10.5, C10.6, AND C10.6.1, RESPECTIVELY.

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT) COMPLIANCE:**

PER THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (PFM), THE GOAL OF SWM IN TYSONS CORNER IS TO CONTROL/CAPTURE THE FIRST INCH OF RAINFALL TO THE MAXIMUM EXTENT PRACTICABLE. DUE TO THE UNIQUENESS OF EACH DEVELOPMENT BLOCK, NARRATIVES EXPLAINING HOW THIS WILL BE ACHIEVED FOR EACH BLOCK HAVE BEEN PROVIDED WITHIN THIS PLAN. SEE NARRATIVES FOR BLOCKS A1, A2, B, C, D, E, AND F ON SHEETS C10.1, C10.2, C10.3, C10.4, C10.5, C10.6, AND C10.6.1, RESPECTIVELY.

**PFM DETENTION COMPLIANCE:**

PER THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (PFM), THE PEAK RELEASE RATES FOR THE POST-DEVELOPED 2-YEAR AND 10-YEAR STORMS SHALL BE REDUCED TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE EXISTING CONDITION PEAK FLOW RATES FOR THOSE SAME STORM EVENTS. THIS REDUCTION IN PEAK FLOW RATE SHALL BE ACCOMPLISHED MAINLY THROUGH THE DETENTION OF THE RE-USE VOLUMES NOTED ABOVE, AND THROUGH ADDITIONAL DETENTION IN THE VAULT DOWNSTREAM OF THE RE-USE PORTION OF THE VAULT. AT THE TIME OF FINAL ENGINEERING, THE STORMWATER VAULT SHALL BE ROUTED TO COMPUTE AND CONFIRM THAT THE POST-DEVELOPED PEAK FLOW RATES ARE LESS THAN THE EXISTING FLOW RATES. HOWEVER, IN ADDITION, THE COMPUTATIONS ON SHEETS C10.1, C10.2, C10.3, C10.4, C10.5, AND C10.6 SHOW THAT THE SIZE OF THE VAULTS OR OTHER SWM FACILITY WILL PROVIDE ENOUGH STORAGE TO HOLD ALL OF THE 2-YR, 2-HR STORM, AND THE MAJORITY OF THE 10-YR, 2-HR STORM SUCH THAT THE RELEASE RATES WILL BE UNDER THE ALLOWABLE. FOR BLOCKS A1, A2, B, C, D, E, AND F, ALLOWABLE RELEASE RATES AND DETENTION COMPUTATIONS, SEE SHEETS C10.1, C10.2, C10.3, C10.4, C10.5, C10.6, AND C10.6.1, RESPECTIVELY. ADDITIONAL COMPUTATIONS FOR DETENTION WILL BE PROVIDED AT FINAL SITE PLAN IF THE EXISTING PONDS ARE USED TO SATISFY THIS REQUIREMENT.

**STORMWATER CONTROLS:**

THE PROPOSED STORMWATER MANAGEMENT DETENTION CONTROLS FOR THE SUBJECT APPLICATION WILL BE ACHIEVED THROUGH A COMBINATION OF TECHNIQUES, INCLUDING THE INSTALLATION OF LOW IMPACT DEVELOPMENT PRACTICES, THE STORING OF STORMWATER IN VAULTS TO BE RE-USED, AND DETAINING STORMWATER IN VAULTS TO SHAVE THE PEAK RELEASE RATE FOR THE GIVEN POST-DEVELOPED STORM EVENT. POTENTIAL STORMWATER RE-USES INCLUDE LANDSCAPE IRRIGATION, GRAY WATER USES, ETC.

AS SHOWN ON THE CONCEPTUAL SWM PLANS (SHEETS C10.1-C10.6.1), THIS APPLICATION ANTICIPATES A UTILIZATION OF VAULTS WITHIN EACH PROPOSED BLOCK, WITH THE EXCEPTION OF BLOCKS E AND F WHERE INFILTRATION IS BEING PROPOSED TO MEET THE RUNOFF REDUCTION VOLUME REQUIREMENTS. THESE VAULTS WILL HOLD A PORTION OF THE POST-DEVELOPED RUNOFF VOLUME FOR RE-USE. POST-DEVELOPED PEAK RELEASE RATE CONTROL WILL BE ACCOMPLISHED PARTIALLY THROUGH THE DETENTION OF THE PREVIOUSLY MENTIONED RE-USE VOLUME, AND THROUGH ADDITIONAL DETENTION IN THE VAULT DOWNSTREAM OF THE RE-USE STORAGE WITH AN ENGINEERED OUTFLOW CONTROL DEVICE, AS NEEDED.

THE VAULTS WILL PROVIDE BOTH RE-USE AND DETENTION IN SEPARATE CHAMBERS. STORMWATER WILL FIRST ENTER THE RE-USE CHAMBER, WHICH WILL HAVE NO OUTLET EXCEPT FOR A PUMP DISCHARGE TO THE PLUMBING/MECHANICAL/IRRIGATION SYSTEMS FOR RE-USE. BY DESIGNING THE HEIGHT OF THE WALL THAT SEPARATES THE TWO CHAMBERS, THE RE-USE VOLUME CAN BE SET AT THE DESIRED VALUE TO ACHIEVE THE PREVIOUSLY MENTIONED REDUCTION IN VOLUME RUNOFF. WHEN THE RE-USE CHAMBER IS FULL DURING A LARGE STORM EVENT, STORMWATER WILL OVERFLOW INTO THE DETENTION CHAMBER. OUTFLOW FROM THE DETENTION CHAMBER WILL BE CONTROLLED BY AN ENGINEERED OUTFLOW STRUCTURE, SUCH AS A WEIR OR ORIFICE. THE OUTFALL FROM THE DETENTION CHAMBER MAY BE PUMPED IN ORDER TO CONNECT TO THE EXISTING STORM SEWER SYSTEM. SEE CONCEPTUAL SWM VAULT DETAIL ON THIS SHEET.

SEE SHEETS C10.1-C10.6.1 FOR THE PRELIMINARY INDIVIDUAL SWM COMPUTATIONS FOR EACH BLOCK. THESE COMPUTATIONS AND STORAGE VOLUMES FOR STORMWATER RE-USE ARE BASED ON PROPOSED IMPERVIOUS PERCENTAGE OF 85%. THE APPLICANT RESERVES THE RIGHT TO REVISE THE SWM DESIGN BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL ENGINEERING. THE APPLICANT ALSO RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE DEPICTED SWM VAULTS AT THE TIME OF FINAL ENGINEERING.

**BMP NARRATIVE:**

EXISTING POND "C" IS LOCATED AT THE SOUTHWEST CORNER OF RTE. #495 & DULLES AIRPORT ACCESS ROAD. IT PROVIDES BMP (WATER QUALITY) FOR 167.81 ACRES OF THE WESTPARK WATERSHED PER PLAN #6377-PI-01. ALL OF THE SITES OF THE SUBJECT APPLICATION ARE INCLUDED WITHIN THIS WATERSHED. SEE BMP MAP ON THIS SHEET. POND "C" WAS DESIGNED FOR A 40% PHOSPHORUS REMOVAL EFFICIENCY ASSUMING THAT ALL SITES INCLUDED WITHIN THE 167.81 ACRE WATERSHED ARE DEVELOPED AND HAVE AN ASSUMED C-FACTOR OF 0.80. THIS IS DEMONSTRATED ON SHEET 6 OF FAIRFAX COUNTY PLAN, "STUDY OF THE EXISTING WESTPARK STORM WATER DETENTION FACILITIES INCLUDING PONDS A, B, D, & C" (PLAN #6377-PI-01). THEREFORE, SINCE THE PROPOSED RE-DEVELOPMENT OF THE SUBJECT SITES RESULTS IN A C-FACTOR LESS THAN OR EQUAL TO 0.80 WITH THE EXCEPTION OF BLOCK F, THE BMP REQUIREMENTS FOR ALL BLOCKS ARE SATISFIED BY POND "C" WITH THE EXCEPTION OF BLOCK F. SEE IMPERVIOUS AREA ANALYSIS ON THIS SHEET WHICH CONFIRMS THAT AREA 1 AND AREA 2 WILL HAVE A C-FACTOR LESS THAN 0.80. PER PFM 6-0401.2C, THE SUBJECT APPLICATION IS CURRENTLY AND ADEQUATELY SERVED BY AN OFFSITE BMP FACILITY AND THE PROJECTED PHOSPHORUS RUNOFF POLLUTION LOAD AFTER REDEVELOPMENT SHALL NOT EXCEED THE EXISTING PHOSPHORUS POLLUTION LOAD. THE PROPOSED LID MEASURES FOR BLOCK F WILL EXCEED THE BMP REQUIRED BY THE COUNTY.

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL DEVELOPMENT PLAN AND FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.

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8/29/12

**SWM & BMP NARRATIVE**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/28/12	PER COUNTY COMMENTS

DATE	DESCRIPTION
SCALE	H:AS SHOWN
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001

SHEET **C10.0**

**BLOCK A1 LEED COMPUTATIONS:**

Existing Block A1.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:  
Subtitle: EXISTING CONDITIONS BLOCK A1

Data: Drainage Area : 2.66 Acres  
Runoff Curve Number : 73  
Time of Concentration: 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	3	4	11

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**

1 YR STORM: 2.66 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 6,566 CU. FT.  
2 YR STORM: 2.66 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 9,463 CU. FT.  
10 YR STORM: 2.66 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 25,878 CU. FT.

Proposed Block A1.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:  
Subtitle: PROPOSED CONDITIONS BLOCK A1

Data: Drainage Area : 2.66 Acres  
Runoff Curve Number : 92  
Time of Concentration: 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Used	0.10	0.10	0.10
Runoff (in)	1.88	2.35	4.58
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	8	10	19

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**

1 YR STORM: 2.66 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 18,153 CU. FT.  
2 YR STORM: 2.66 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 22,692 CU. FT.  
10 YR STORM: 2.66 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 44,224 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
18,153 CU. FT. - 6,566 CU. FT. = 11,587 CU. FT.

2-YEAR STORM  
22,692 CU. FT. - 9,463 CU. FT. = 13,229 CU. FT.

**RUNOFF FLOWRATE COMPUTATIONS:**

Amount of Site Area (Ac) Per Hydrologic Soil Group\*  
Type A: 0, Type B: 2.66, Type C: 0, Type D: 0

\*Per Soils Map approximately 100% type B

Curve Number (CN) For Soil Type Per Land Use  
Type A: 57, Type B: 73, Type C: 82, Type D: 86

Weighted CN for site: 73

S for CN to C Cals.: 3.70

Design Storm 24-hr Rainfall Depth (in): 1-yr: 2.7, 2-yr: 3.2, 10-yr: 5.5

Equivalent C: 1-yr: 0.25, 2-yr: 0.31, 10-yr: 0.49

5 Minute TC Design Storm Rainfall Intensity (I) in/hr: 1-yr: 3.27, 2-yr: 5.45, 10-yr: 7.27

Existing Conditions Peak Flow Rates cfs: 1-yr: 2.17, 2-yr: 4.49, 10-yr: 9.48

Proposed Flow Rates  
\*\*Land Use = Proposed Conditions (85% Imp)

Curve Number (CN) For Soil Type Per Land Use  
Type A: 89, Type B: 92, Type C: 94, Type D: 95

Weighted CN for site: 92

S for CN to C Cals.: 0.87

Design Storm 24-hr Rainfall Depth (in): 1-yr: 2.7, 2-yr: 3.2, 10-yr: 5.5

Equivalent C: 1-yr: 0.70, 2-yr: 0.73, 10-yr: 0.83

5 Minute TC Design Storm Rainfall Intensity (I) in/hr: 1-yr: 3.27, 2-yr: 5.45, 10-yr: 7.27

Proposed Conditions Peak Flow Rates cfs: 1-yr: 6.09, 2-yr: 10.58, 10-yr: 16.05

**ALLOWABLE RELEASE RATE**

PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85%. FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.

**BLOCK A1 SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK A1 HAS A PROPERTY AREA OF 2.66 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER CONFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREETPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND PERMEABLE PAVEMENT.

INFILTRATION FACILITIES WOULD BE THE IDEAL PRACTICE. THE PREFERRED LOCATION FOR THE INFILTRATION FACILITIES WOULD BE IN THE REAR OF THE PROPERTY IN DRIVE AISLE BETWEEN THE BUILDING AND THE SOUTHERN PROPERTY LINE. HOWEVER, THE SUITABILITY OF THE SITE SOILS TO PROVIDE INFILTRATION IS STILL UNDER INVESTIGATION AT THIS TIME.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING.

DISCONNECTED STORMWATER PLANTERS, TREETPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), THE PRIVATE STREET BETWEEN BLOCKS A1 AND A2, AND IN THE PRIVATE STREET BETWEEN THE REAR OF THE BUILDING OF BLOCK A1 AND THE SOUTHERN PROPERTY LINE. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT IS PROPOSED IN THE SIDEWALK ALONG BLOCK A1'S FRONTAGE WITH WESTPARK DRIVE (RT. 5061) AND COULD BE USED IN THE DRIVE AISLE BETWEEN BLOCKS A1 AND A2, AND THE REAR DRIVE AISLE; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION IN THE DRIVE AISLES BUT IS PRACTICAL IN THE PROPOSED SIDEWALK LOCATION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS AND STORMWATER PLANTERS, GREEN ROOFS, AND LID BASIN TYPES 'A', 'B', AND 'C'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

A CONSERVATION AREA IS LOCATED BETWEEN THE EASTERN PROPERTY LINE AND THE PROPOSED BUILDING ON BLOCK A1. THIS AREA IS WITHIN THE RPA SO NO CONSTRUCTION OR GRADING CAN TAKE PLACE WITHIN THIS ZONE.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

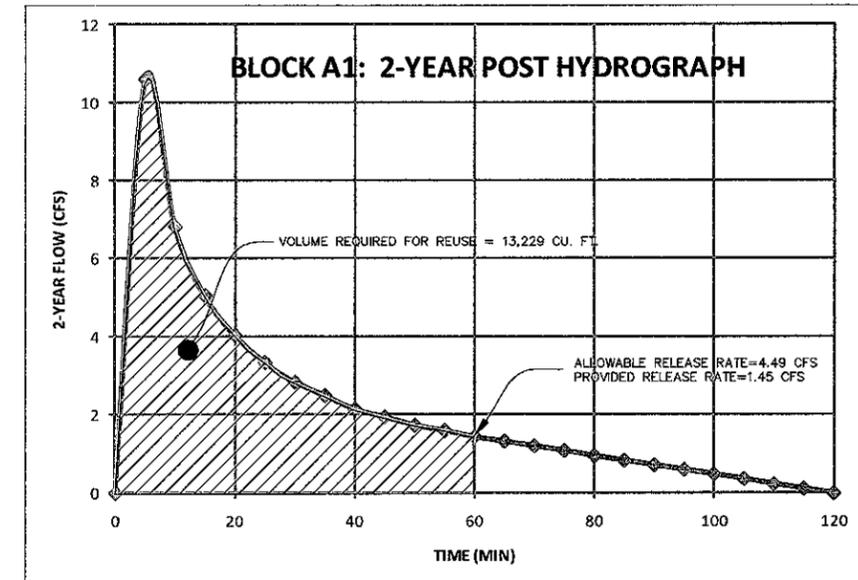
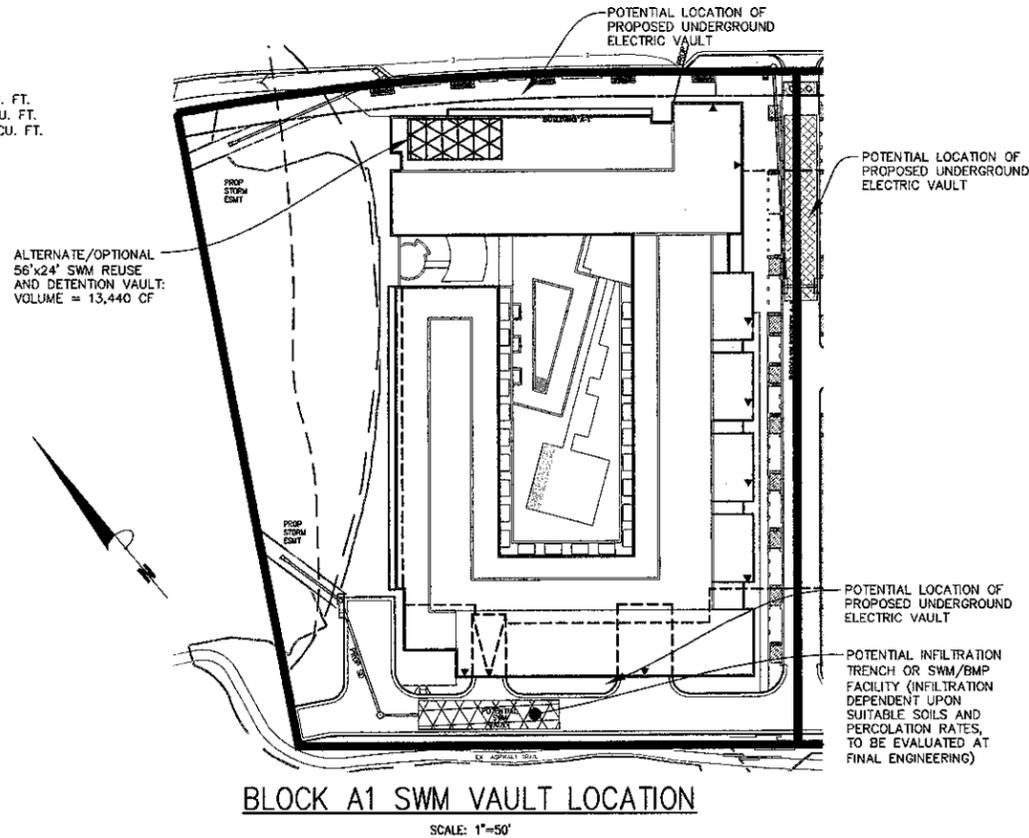
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK A1. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**SWM NOTE:**

BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

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LANDSCAPE ARCHITECT

BLOCK A1 SWM COMPUTATIONS  
ARBOR ROW  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H:AS SHOWN
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C10.1

**BLOCK A2 LEED COMPUTATIONS:**

Existing Block A2.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10  
Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:  
Subtitle: EXISTING CONDITIONS BLOCK A2

Data: Drainage Area : 2.73 Acres  
Runoff Curve Number : 73  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	3	4	11

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**

1 YR STORM: 2.73 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 6,739 CU. FT.  
2 YR STORM: 2.73 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 9,712 CU. FT.  
10 YR STORM: 2.73 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 28,559 CU. FT.

Proposed Block A2.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:  
Subtitle: PROPOSED CONDITIONS BLOCK A2

Data: Drainage Area : 2.73 Acres  
Runoff Curve Number : 92  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Used	0.10	0.10	0.10
Runoff (in)	1.88	2.35	4.58
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	8	10	20

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**

1 YR STORM: 2.73 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 18,631 CU. FT.  
2 YR STORM: 2.73 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 23,289 CU. FT.  
10 YR STORM: 2.73 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 45,388 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
18,631 CU. FT. - 6,739 CU. FT. = 11,892 CU. FT.

2-YEAR STORM  
23,289 CU. FT. - 9,712 CU. FT. = 13,577 CU. FT.

**RUNOFF FLOWRATE COMPUTATIONS:**

Amount of Site Area (Ac) Per Hydrologic Soil Group\* \*Per Soils Map approximately 100% type B

Total Site Area (ac)	Type A	Type B	Type C	Type D
2.73	0	2.73	0	0

Baseline Flow Rates  
Land Use = Ex Conditions (0% Imp)

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	57	73	82	86

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - (S / (P + 0.85)))] / P\}$   
where:  
P = 24-hr rainfall depth for design storm  
S = (1000 / CN) - 10

Weighted CN for site
73

S for CN to C Calc.
3.70

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

Equivalent C	1-yr	2-yr	10-yr
	0.25	0.31	0.49

5 Minute TC Design Storm Rainfall Intensity (i) in/hr	1-yr	2-yr	10-yr
	3.27	5.45	7.27

Existing Conditions Peak Flow Rates cfs	1-yr	2-yr	10-yr
	2.23	4.61	9.73

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - (S / (P + 0.85)))] / P\}$   
where:  
P = 24-hr rainfall depth for design storm  
S = (1000 / CN) - 10

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	89	92	94	95

Proposed Flow Rates  
\*\*Land Use = Proposed Conditions (85% Imp)\*\*

Weighted CN for site
92

S for CN to C Calc.
0.87

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

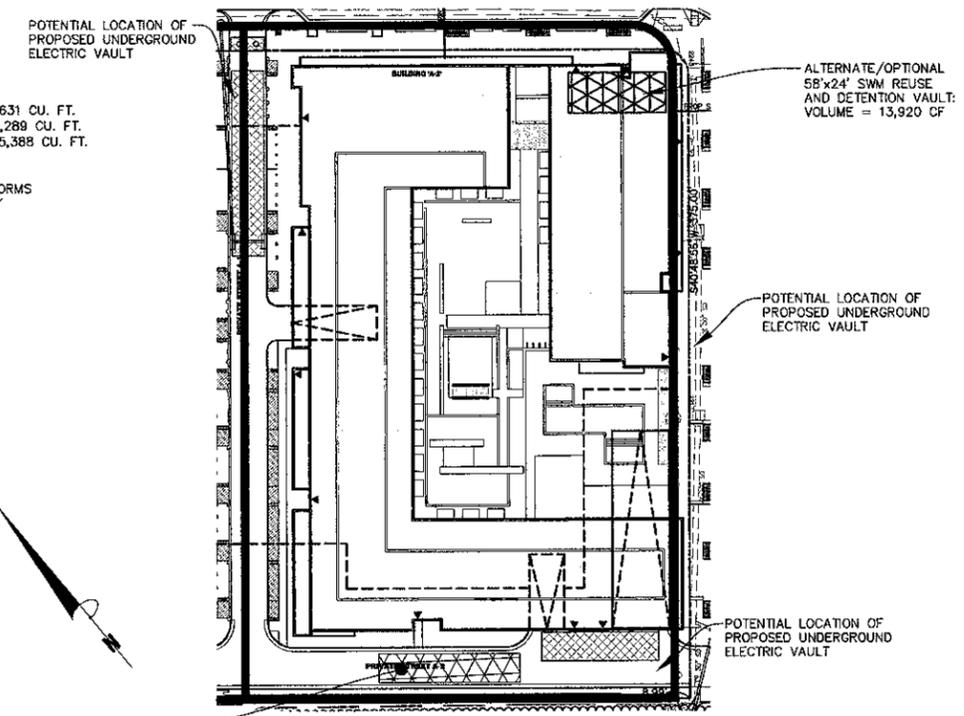
Equivalent C	1-yr	2-yr	10-yr
	0.70	0.73	0.83

5 Minute TC Design Storm Rainfall Intensity (i) in/hr	1-yr	2-yr	10-yr
	3.27	5.45	7.27

Proposed Conditions Peak Flow Rates cfs	1-yr	2-yr	10-yr
	6.25	10.86	16.47

**ALLOWABLE RELEASE RATE**  
PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85%. FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.



**BLOCK A2 SWM VAULT LOCATION**

SCALE: 1"=50'

POTENTIAL INFILTRATION TRENCH OR SWM/BMP FACILITY (INFILTRATION DEPENDENT UPON SUITABLE SOILS AND PERCOLATION RATES, TO BE EVALUATED AT FINAL ENGINEERING)

**BLOCK A2 SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK A2 HAS A PROPERTY AREA OF 2.73 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER CONFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREETITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND PERMEABLE PAVEMENT.

INFILTRATION FACILITIES WOULD BE THE IDEAL PRACTICE. THE PREFERRED LOCATION FOR THE INFILTRATION FACILITIES WOULD BE IN THE REAR OF THE PROPERTY IN DRIVE AISLE BETWEEN THE BUILDING AND THE SOUTHERN PROPERTY LINE. HOWEVER, THE SUITABILITY OF THE SITE SOILS TO PROVIDE INFILTRATION IS STILL UNDER INVESTIGATION AT THIS TIME.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING.

DISCONNECTED STORMWATER PLANTERS, TREETITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061) AND WESTBRANCH DRIVE (RT. 5457), AND IN THE PRIVATE STREET BETWEEN BLOCKS A1 AND A2. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT IS PROPOSED IN THE SIDEWALK ALONG BLOCK A2'S FRONTAGE WITH WESTPARK DRIVE (RT. 5081) AND COULD BE USED IN THE DRIVE AISLE BETWEEN BLOCKS A1 AND A2, AND THE REAR DRIVE AISLE; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION IN THE DRIVE AISLES BUT IS PRACTICAL IN THE PROPOSED SIDEWALK LOCATION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS AND STORMWATER PLANTERS, GREEN ROOFS, AND LID BASIN TYPES 'A', 'B', AND 'C'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

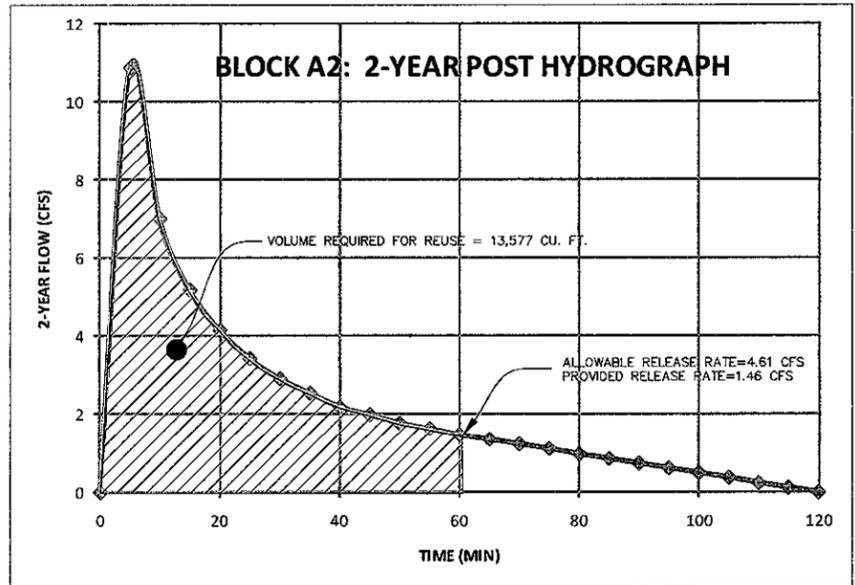
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK A2. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**SWM NOTE:**  
BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

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BLOCK A2 SWM COMPUTATIONS  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

SCALE: AS SHOWN  
JOB No.  
DATE: APRIL 26, 2011  
FILE No. 7403-07-001

SHEET **C10.2**

Project: WESTPARK REDEVELOPMENT State: VA User: RSD Date: 01-31-2011  
 County: FAIRFAX State: VA checked: Date:  
 Subtitle: EXISTING CONDITIONS BLOCK B  
 Data: Drainage Area : 2.07 Acres  
 Runoff Curve Number : 73  
 Time of Concentration : 0.10 Hours  
 Rainfall Type : II  
 Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	2	3	9

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**

1 YR STORM: 2.07 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 5,110 CU. FT.  
 2 YR STORM: 2.07 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 7,364 CU. FT.  
 10 YR STORM: 2.07 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 20,138 CU. FT.

Project: WESTPARK REDEVELOPMENT State: VA User: RSD Date: 01-31-2011  
 County: FAIRFAX State: VA checked: Date:  
 Subtitle: PROPOSED CONDITIONS BLOCK B  
 Data: Drainage Area : 2.07 Acres  
 Runoff Curve Number : 92  
 Time of Concentration : 0.10 Hours  
 Rainfall Type : II  
 Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Runoff (in)	0.10	0.10	0.10
used	0.10	0.10	0.10
Runoff (in)	1.88	2.35	4.58
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	6	8	15

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**

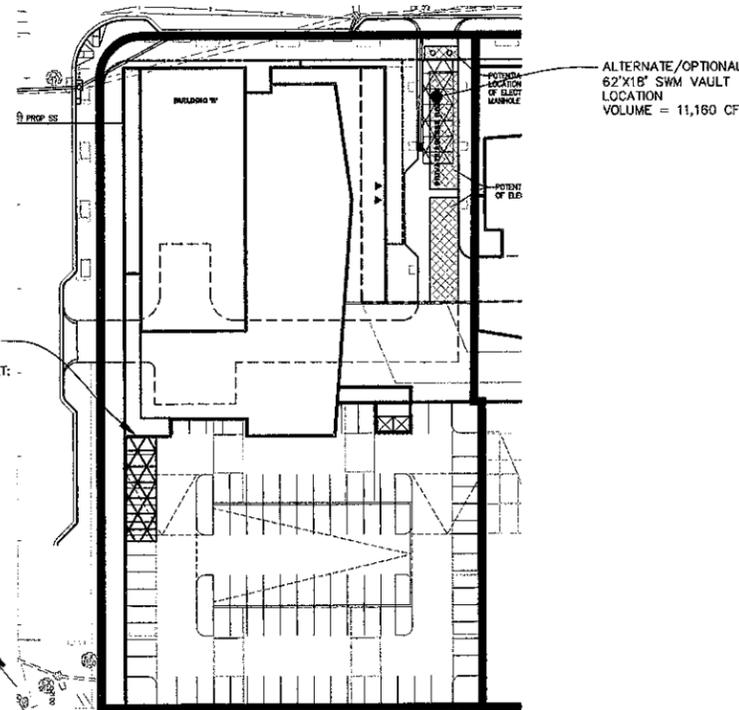
1 YR STORM: 2.07 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 14,127 CU. FT.  
 2 YR STORM: 2.07 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 17,659 CU. FT.  
 10 YR STORM: 2.07 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 34,415 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
 14,127 CU. FT. - 5,110 CU. FT. = 9,017 CU. FT.  
 2-YEAR STORM  
 17,659 CU. FT. - 7,364 CU. FT. = 10,295 CU. FT.

ALTERNATE/OPTIONAL  
 62'x18' SWM REUSE  
 AND DETENTION VAULT:  
 VOLUME = 11,160 CF



**BLOCK B SWM VAULT LOCATION**

SCALE: 1"=50'

**RUNOFF FLOWRATE COMPUTATIONS:**

Amount of Site Area (Ac) Per Hydrologic Soil Group\* \*Per Soils Map approximately 100% type B

Type A	Type B	Type C	Type D
0	2.07	0	0

Total Site Area (ac) 2.07

Baseline Flow Rates  
 Land Use = Ex Conditions (0% Imp)

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	57	73	82	86

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - (S/P + 0.85))] / P\}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

Equivalent C	1-yr	2-yr	10-yr
	0.25	0.31	0.49

5 Minute TC Design Storm Rainfall Intensity (I)	1-yr	2-yr	10-yr
	3.27	5.45	7.27

Existing Conditions Peak Flow Rates	1-yr	2-yr	10-yr
	1.69	3.50	7.37

Weighted CN for site 73  
 S for CN to C Calcs. 3.70

Proposed Flow Rates  
 \*\*Land Use = Proposed Conditions (85% Imp)\*\*

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	89	92	94	95

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - (S/P + 0.85))] / P\}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

Equivalent C	1-yr	2-yr	10-yr
	0.70	0.73	0.83

5 Minute TC Design Storm Rainfall Intensity (I)	1-yr	2-yr	10-yr
	3.27	5.45	7.27

Proposed Conditions Peak Flow Rates	1-yr	2-yr	10-yr
	4.74	8.24	12.49

Weighted CN for site 92  
 S for CN to C Calcs. 0.87

**ALLOWABLE RELEASE RATE**

PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85%. FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.

**BLOCK B SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK B HAS A PROPERTY AREA OF 2.07 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER PERFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREEPITS, CURB EXTENSIONS, AND VEGETATED GREEN ROOF.

INFILTRATION IS NOT A FEASIBLE OPTION ON THIS SITE DUE TO THE URBAN NATURE OF THIS PROJECT. DUE TO THE SIZE OF THE BUILDING AND GARAGE THERE IS NOT ENOUGH GREEN/PERVIOUS SPACE AVAILABLE FOR THE INFILTRATION PRACTICE.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING. DISCONNECTED STORMWATER PLANTERS, TREEPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), AND WESTBRANCH DRIVE (RT. 5457), AND THE PRIVATE STREET BETWEEN BLOCKS B AND C. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT COULD BE USED IN THE DRIVE AISLE BETWEEN BLOCKS B AND C; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND LID BASIN TYPES 'B', AND 'C'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

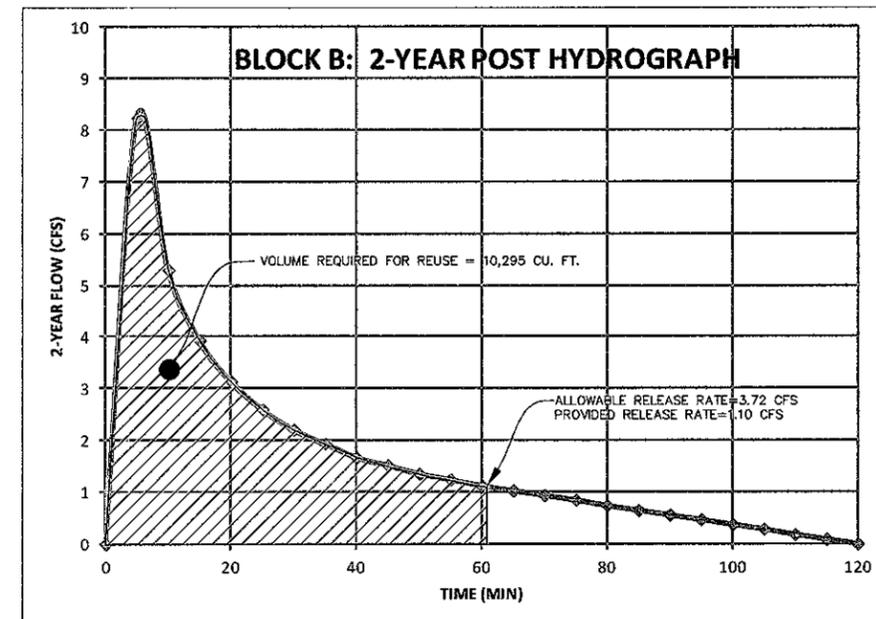
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK B. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**SWM NOTE:**

BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

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**LANDSCAPE ARCHITECT**  
 MATTHEW J. TAUSCHER  
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 8/29/12

**BLOCK B SWM COMPUTATIONS**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

SCALE: H: AS SHOWN  
 JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001  
 SHEET **C10.3**

**BLOCK C LEED COMPUTATIONS:**

Version 2.10

Project : WESTPARK REDEVELOPMENT  
 County : FAIRFAX State: VA  
 Subtitle: EXISTING CONDITIONS BLOCK C  
 User: RSD Date: 01-31-2011  
 Checked: \_\_\_\_\_  
 Data: Drainage Area : 4.9 Acres  
 Runoff Curve Number : 73  
 Time of Concentration : 0.10 Hours  
 Rainfall Type : II  
 Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	5	7	20

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**

1 YR STORM: 4.90 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 12,096 CU. FT.  
 2 YR STORM: 4.90 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 17,432 CU. FT.  
 10 YR STORM: 4.90 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 47,670 CU. FT.

Proposed Block C, PRN  
 GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT  
 County : FAIRFAX State: VA  
 Subtitle: PROPOSED CONDITIONS BLOCK C  
 User: RSD Date: 01-31-2011  
 Checked: \_\_\_\_\_  
 Data: Drainage Area : 4.9 Acres  
 Runoff Curve Number : 92  
 Time of Concentration : 0.10 Hours  
 Rainfall Type : II  
 Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Used	0.10	0.10	0.10
Runoff (in)	1.88	2.35	4.58
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	15	18	35

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**

1 YR STORM: 4.90 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 33,440 CU. FT.  
 2 YR STORM: 4.90 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 41,800 CU. FT.  
 10 YR STORM: 4.90 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 81,465 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
 33,440 CU. FT. - 12,096 CU. FT. = 21,344 CU. FT.

2-YEAR STORM  
 41,800 CU. FT. - 17,432 CU. FT. = 24,368 CU. FT.

**RUNOFF FLOWRATE COMPUTATIONS:**

Amount of Site Area (Ac) Per Hydrologic Soil Group\* \*Per Soils Map approximately 100% type B

Total Site Area (ac)	Type A	Type B	Type C	Type D
4.90	0	4.90	0	0

**Baseline Flow Rates**

Land Use = Ex Conditions (0% Imp)

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	57	73	82	86

Weighted CN for site  
73

S for CN to C Calcs.  
3.70

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

Equivalent C	1-yr	2-yr	10-yr
	0.25	0.31	0.49

**Proposed Flow Rates**

\*\*Land Use = Proposed Conditions (85% Imp)\*\*

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
	89	92	94	95

Weighted CN for site  
92

S for CN to C Calcs.  
0.87

Design Storm 24-hr Rainfall Depth (in)	1-yr	2-yr	10-yr
	2.7	3.2	5.5

Equivalent C	1-yr	2-yr	10-yr
	0.70	0.73	0.83

**ALLOWABLE RELEASE RATE**

PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85%. FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{ [S \times (1.2 - (S/P + 0.85))] / P \}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

5 Minute TC	1-yr	2-yr	10-yr
Design Storm Rainfall Intensity (I)	3.27	5.45	7.27

Existing Conditions Peak Flow Rates	1-yr	2-yr	10-yr
	4.01	8.28	17.46

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{ [S \times (1.2 - (S/P + 0.85))] / P \}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

5 Minute TC	1-yr	2-yr	10-yr
Design Storm Rainfall Intensity (I)	3.27	5.45	7.27

Proposed Conditions Peak Flow Rates	1-yr	2-yr	10-yr
	11.22	19.49	29.57

**BLOCK C SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK C HAS A PROPERTY AREA OF 4.90 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER PERFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREEPITS, CURB EXTENSIONS, AND VEGETATED GREEN ROOF.

INFILTRATION IS NOT A FEASIBLE OPTION ON THIS SITE DUE TO THE URBAN NATURE OF THIS PROJECT AND THE MAJORITY OF PROPOSED GREEN SPACE IS ABOVE THE GARAGE IN THE FORM OF GREEN ROOF WHERE INFILTRATION DOES NOT FUNCTION.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING.

DISCONNECTED STORMWATER PLANTERS, TREEPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), THE PLAZA AREA BETWEEN THE TWO (2) BUILDINGS PROPOSED ON BLOCK C, AND THE PRIVATE STREET BETWEEN BLOCKS C AND D. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT COULD BE USED IN THE DRIVE AISLE BETWEEN BLOCKS C AND D; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND LID BASIN TYPES 'B', AND 'C'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

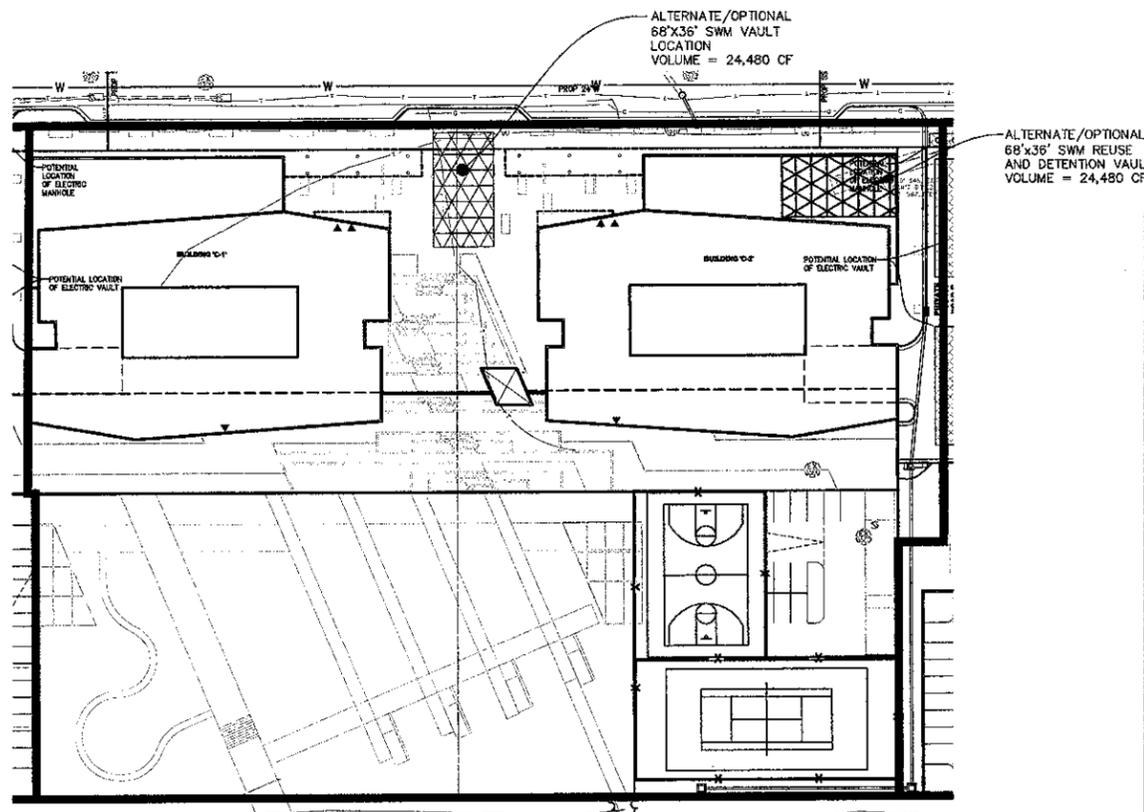
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK C. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

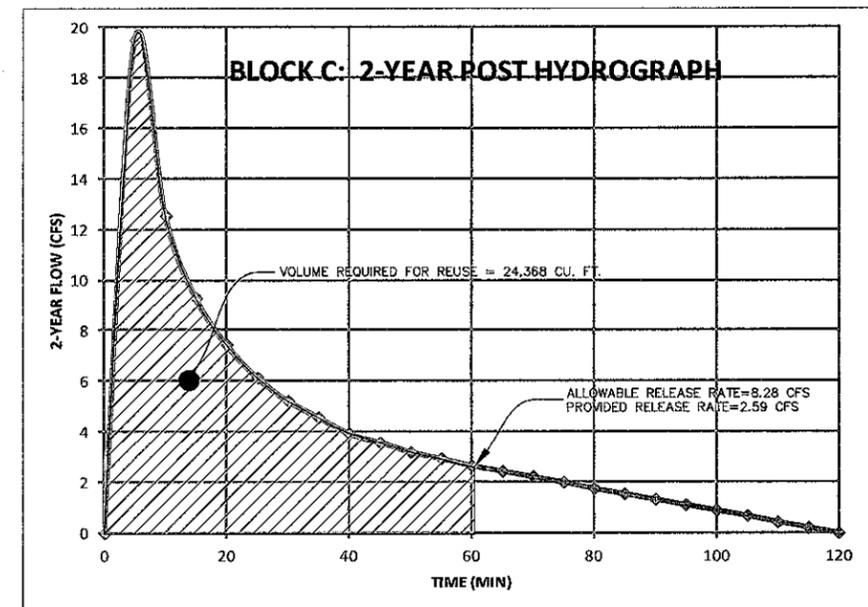
**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**BLOCK C SWM VAULT LOCATION**

SCALE: 1"=50'



**SWM NOTE:**

BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

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**BLOCK C SWM COMPUTATIONS**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/28/12	PER COUNTY COMMENTS

SCALE: H:AS SHOWN  
 JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001

**RUNOFF FLOWRATE COMPUTATIONS:**

Project : WESTPARK REDEVELOPMENT  
County : FAIRFAX State: VA  
User: RSD Date: 01-31-2011  
Checked: Date:  
SubTitle: EXISTING CONDITIONS BLOCK D

Data: Drainage Area : 1.98 Acres  
Runoff Curve Number : 73  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	2	3	8

Amount of Site Area (Ac) Per Hydrologic Soil Group\*

Type A	Type B	Type C	Type D
0	1.98	0	0

\*Per Soils Map approximately 100% type B

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - \{S / (P + 0.85)\})] / P\}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Curve Number (CN) For Soil Type Per Land Use

Type A	Type B	Type C	Type D
57	73	82	86

Weighted CN for site: 73

S for CN to C Calc.: 3.70

Design Storm 24-hr Rainfall Depth (in)

1-yr	2-yr	10-yr
2.7	3.2	5.5

Equivalent C

1-yr	2-yr	10-yr
0.25	0.31	0.49

5 Minute TC Design Storm Rainfall Intensity (I) in/hr

1-yr	2-yr	10-yr
3.27	5.45	7.27

Existing Conditions Peak Flow Rates cfs

1-yr	2-yr	10-yr
1.52	3.35	7.05

**BLOCK D SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK D HAS A PROPERTY AREA OF 1.98 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER CONFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREETPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND PERMEABLE PAVEMENT.

INFILTRATION IS NOT A FEASIBLE OPTION ON THIS SITE DUE TO THE URBAN NATURE OF THIS PROJECT. DUE TO THE SIZE OF THE BUILDING AND GARAGE THERE IS NOT ENOUGH GREEN/PERVIOUS SPACE AVAILABLE FOR THE INFILTRATION PRACTICE.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING.

DISCONNECTED STORMWATER PLANTERS, TREETPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), THE PROPOSED JONES BRANCH DRIVE (RT. 5062) EXTENSION, AND THE PRIVATE STREET BETWEEN BLOCKS C AND D. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT IS PROPOSED IN THE SIDEWALK ALONG BLOCK D'S FRONTAGE WITH WESTPARK DRIVE (RT. 5061) AND COULD BE USED IN THE DRIVE AISLE BETWEEN BLOCKS C AND D; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION IN THE DRIVE AISLES BUT IS PRACTICAL IN THE PROPOSED SIDEWALK LOCATION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND LID BASIN TYPES 'A', 'B', AND 'C'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

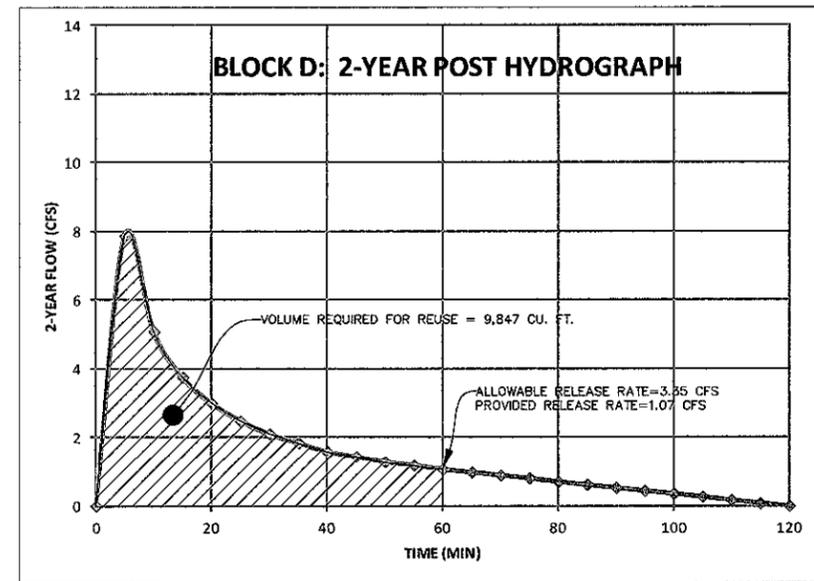
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK D. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**SWM NOTE:**  
BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS):**

1 YR STORM: 1.98 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 4,888 CU. FT.  
 2 YR STORM: 1.98 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 7,044 CU. FT.  
 10 YR STORM: 1.98 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 19,263 CU. FT.

Project : WESTPARK REDEVELOPMENT  
County : FAIRFAX State: VA  
User: RSD Date: 01-31-2011  
Checked: Date:  
SubTitle: PROPOSED CONDITIONS BLOCK D

Data: Drainage Area : 1.98 Acres  
Runoff Curve Number : 92  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Runoff (in)	0.10	0.10	0.10
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	6	7	14

Amount of Site Area (Ac) Per Hydrologic Soil Group\*

Type A	Type B	Type C	Type D
89	92	94	95

\*Per Soils Map approximately 100% type B

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \{[S \times (1.2 - \{S / (P + 0.85)\})] / P\}$   
 where:  
 P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Curve Number (CN) For Soil Type Per Land Use

Weighted CN for site: 92

S for CN to C Calc.: 0.87

Design Storm 24-hr Rainfall Depth (in)

1-yr	2-yr	10-yr
2.7	3.2	5.5

Equivalent C

1-yr	2-yr	10-yr
0.70	0.73	0.83

5 Minute TC Design Storm Rainfall Intensity (I) in/hr

1-yr	2-yr	10-yr
3.27	5.45	7.27

Proposed Conditions Peak Flow Rates cfs

1-yr	2-yr	10-yr
4.53	7.88	11.95

**ALLOWABLE RELEASE RATE**

PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85%. FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS):**

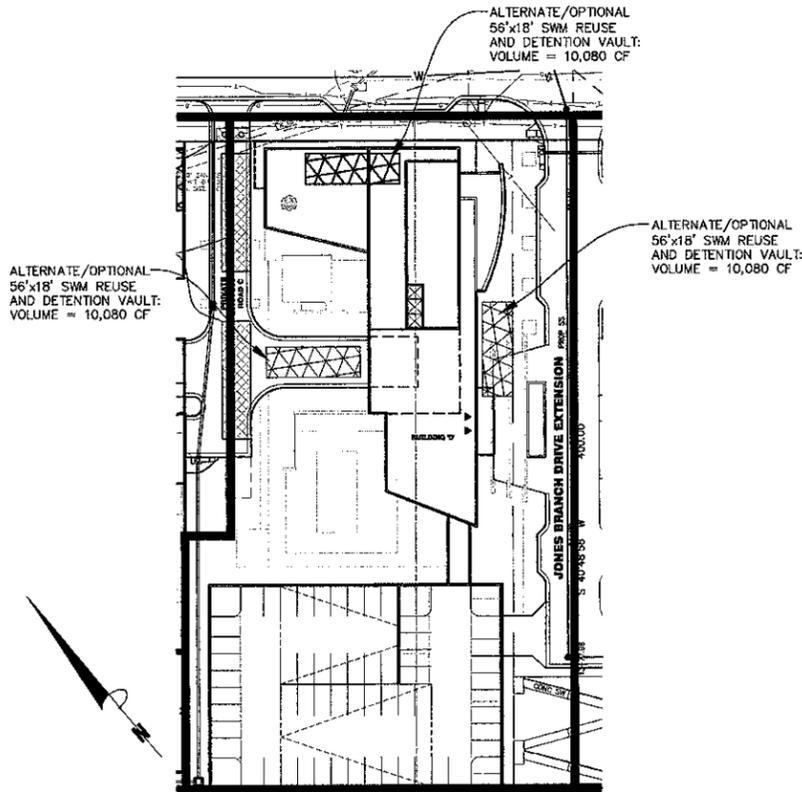
1 YR STORM: 1.98 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 13,513 CU. FT.  
 2 YR STORM: 1.98 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 16,891 CU. FT.  
 10 YR STORM: 1.98 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 32,919 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE):**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
13,513 CU. FT. - 4,888 CU. FT. = 8,625 CU. FT.

2-YEAR STORM  
16,891 CU. FT. - 7,044 CU. FT. = 9,847 CU. FT.



**BLOCK D SWM VAULT LOCATION**

SCALE: 1"=50'

Existing Block E.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:   
Subtitle: EXISTING CONDITIONS BLOCK E

Data: Drainage Area : 3.14 Acres  
Runoff Curve Number : 73  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.27	0.23	0.13
Runoff (in)	0.68	0.98	2.68
Unit Peak Discharge (cfs/acre/in)	1.478	1.502	1.558
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	3	5	13

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**

1 YR STORM: 3.14 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 7,751 CU. FT.  
2 YR STORM: 3.14 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 11,171 CU. FT.  
10 YR STORM: 3.14 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 30,548 CU. FT.

Proposed Block E.PRN  
GRAPHICAL PEAK DISCHARGE METHOD Version 2.10

Project : WESTPARK REDEVELOPMENT User: RSD Date: 01-31-2011  
County : FAIRFAX State: VA Checked: Date:   
Subtitle: PROPOSED CONDITIONS BLOCK E

Data: Drainage Area : 3.14 Acres  
Runoff Curve Number : 92  
Time of Concentration : 0.10 Hours  
Rainfall Type : II  
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
Ia/P Ratio	0.06	0.05	0.03
Used	0.10	0.10	0.10
Runoff (in)	1.88	2.35	4.58
Unit Peak Discharge (cfs/acre/in)	1.578	1.578	1.578
Pond and Swamp Factor	1.00	1.00	1.00
0.0% Ponds Used			
Peak Discharge (cfs)	9	12	23

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**

1 YR STORM: 3.14 AC X 1.88 (IN) X 1FT/12IN X 43560 (SF/AC) = 21,429 CU. FT.  
2 YR STORM: 3.14 AC X 2.35 (IN) X 1FT/12IN X 43560 (SF/AC) = 28,786 CU. FT.  
10 YR STORM: 3.14 AC X 4.58 (IN) X 1FT/12IN X 43560 (SF/AC) = 52,204 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**

PER LEED POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED THE EXISTING CONDITIONS VOLUME. THEREFORE ANY ADDITIONAL STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM  
21,429 CU. FT. - 7,751 CU. FT. = 13,678 CU. FT.  
2-YEAR STORM  
28,786 CU. FT. - 11,171 CU. FT. = 15,615 CU. FT.

**RUNOFF FLOWRATE COMPUTATIONS:**

Amount of Site Area (Ac) Per Hydrologic Soil Group\*  
Type A: 0, Type B: 3.14, Type C: 0, Type D: 0

\*Per Soils Map approximately 100% Type B

Baseline Flow Rates  
Land Use = Ex Conditions (0% Imp)

Curve Number (CN) For Soil Type Per Land Use	Type A	Type B	Type C	Type D
57	73	82	86	

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \frac{[S \times (1.2 - (S / (P + 0.85)))]}{P}$   
where:  
P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Design Storm 24-hr Rainfall Depth (in)

1-yr	2-yr	10-yr
2.7	3.2	5.5

Equivalent C

1-yr	2-yr	10-yr
0.25	0.31	0.49

Proposed Flow Rates  
\*\*Land Use = Proposed Conditions (85% Imp)\*\*

Curve Number (CN) For Soil Type Per Land Use

Type A	Type B	Type C	Type D
89	92	94	95

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:  
 $C = 1 - \frac{[S \times (1.2 - (S / (P + 0.85)))]}{P}$   
where:  
P = 24-hr rainfall depth for design storm  
 $S = (1000 / CN) - 10$

Design Storm 24-hr Rainfall Depth (in)

1-yr	2-yr	10-yr
2.7	3.2	5.5

Equivalent C

1-yr	2-yr	10-yr
0.70	0.73	0.83

Proposed Conditions Peak Flow Rates

1-yr	2-yr	10-yr
7.19	12.49	18.95

**ALLOWABLE RELEASE RATE**

PER LEED POST-DEVELOPED RELEASE RATE FOR THE 1 YEAR AND 2 YEAR STORM MUST NOT EXCEED THE EXISTING CONDITIONS RELEASE RATE. IN ADDITION, THE POST DEVELOPED 10 YEAR PEAK RATE MUST NOT EXCEED THE EXISTING CONDITIONS PEAK RATE.

\*\* NOTE: PROPOSED CONDITIONS, COMPUTATIONS, AND STORAGE VOLUMES FOR RE-USE ARE BASED ON A PROPOSED IMPERVIOUS PERCENTAGE OF 85% FINAL SWM DESIGN, VAULT SIZE, STORAGE CAPACITY, RE-USE QUANTITY, ETC. SHALL BE BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL SITE PLAN.

**BLOCK E SWM NARRATIVE:**

**COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):**

THE PROPOSED BLOCK E HAS A PROPERTY AREA OF 3.14 ACRES, OF WHICH 1" OF RUNOFF IS REQUIRED TO BE RETAINED, TO THE MAXIMUM EXTENT PRACTICABLE, BY MEANS OF INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE TO MEET THE CURRENT GOALS AND STANDARDS OF THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT." THE GOAL IS TO CAPTURE THE FIRST 1" OF RAINWATER RUNOFF. DUE TO THE LIMITED LEVEL OF PROJECT DESIGN DETAIL, SUCH AS BUILDING SYSTEMS, COOLING TOWER AND WATER RE-USE DEMANDS, AND BUILDING TENANT REQUIREMENTS, THAT IS AVAILABLE TO BOWMAN AT THE TIME OF CDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. HOWEVER, MORE DETAILED COMPUTATIONS WILL BE PROVIDED WITH THE FDP SUBMISSION. OF THE MEASURES LISTED IN THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER CONFORMANCE SPREADSHEET" AND THE "TYSONS CORNER COMPREHENSIVE PLAN STORMWATER COMPLIANCE FLOWCHART" THE MOST VIABLE OPTIONS INCLUDE: INFILTRATION (PENDING SOIL ANALYSIS RESULTS), RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREETPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND BIORETENTION.

INFILTRATION FACILITIES WOULD BE THE IDEAL PRACTICE. THE PREFERRED LOCATION FOR THE INFILTRATION FACILITIES WOULD BE IN THE REAR OF THE PROPERTY IN THE GREEN SPACE BETWEEN THE BUILDING AND THE PRIVATE CONNECTOR STREET AND THE GREEN SPACE BETWEEN THE CONNECTOR STREET AND THE PROPOSED WALKING TRAIL. HOWEVER, THE SUITABILITY OF THE SITE SOILS TO PROVIDE INFILTRATION IS STILL UNDER INVESTIGATION AT THIS TIME.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE ANYWHERE FROM 1" TO 1.4" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINT. THIS AREA IS MADE UP OF A COMBINATION OF VEGETATED ROOF AND IMPERVIOUS AREA. WATER THAT FALLS ONTO THE VEGETATED ROOFS WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING.

DISCONNECTED STORMWATER PLANTERS, TREETPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), THE PROPOSED JONES BRANCH DRIVE (RT. 5062) EXTENSION, AND THE PRIVATE STREET SURROUNDING THE BUILDING. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS AND MANAGED TURF COVER OUTSIDE OF THE BUILDING FOOTPRINT.

BIORETENTION COULD BE USED AS A VIABLE OPTION AT THE REAR OF THE SITE IN THE MANAGED TURF AREA. THIS APPEARS TO BE THE IDEAL LOCATION IF INFILTRATION RESULTS DO NOT MEET THE MINIMUM INFILTRATION RATE OF 0.52 INCHES PER HOUR.

PERMEABLE PAVEMENT IS A POTENTIAL PRACTICE THAT COULD BE USED IN THE DRIVE AISLE SURROUNDING THE BUILDING; HOWEVER, THE WEIGHT OF SERVICE VEHICLES THAT WILL BE TRAVELING ON THE DRIVE AISLE AND THE RISK OF POLLUTANTS/CONTAMINANTS DRAINING THROUGH THE PAVEMENT NEAR THE SERVICE ENTRANCES LEAD TO THE CONCLUSION THAT PERMEABLE PAVEMENT IS NOT A PRACTICABLE OPTION.

LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO BE UTILIZED INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND LID BASIN TYPES 'A' AND 'B'. BIORETENTION TREE PITS ARE INCORPORATED INTO THE PROPOSED STREET AND SIDEWALK DESIGN TO TREAT WATER THAT WOULD NORMALLY FLOW INTO INLETS AND GO UNTREATED. WATER WILL ENTER THESE TREE PITS AND BE TREATED BEFORE GOING DOWNSTREAM IN THE UNDERGROUND STORM SEWER SYSTEM. SEE "LOW IMPACT DEVELOPMENT CONCEPT PLAN," SHEET C10.8, FOR FURTHER DETAIL.

DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, AND DRY SWALE.

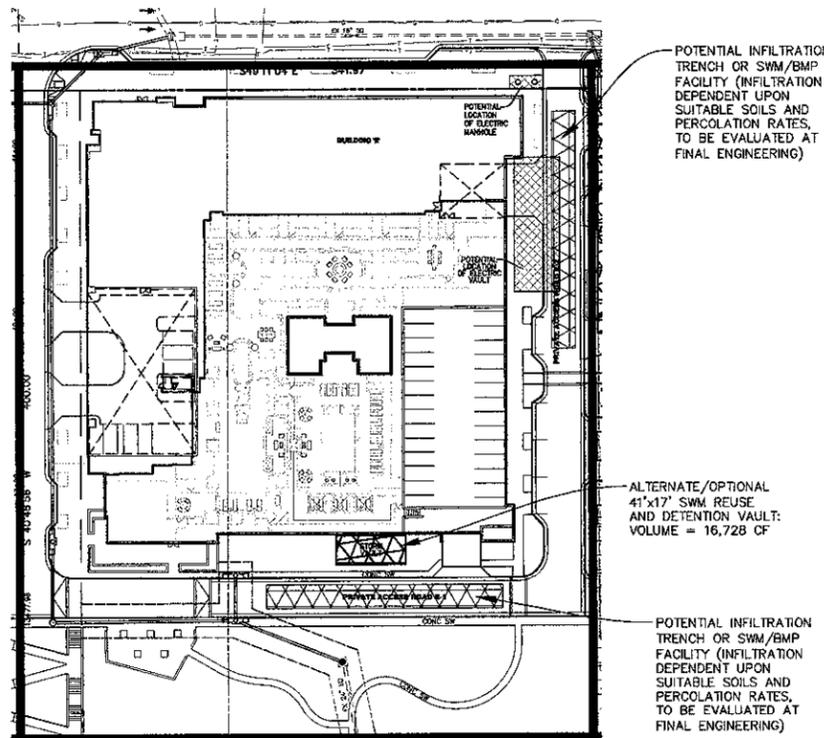
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK E. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER MANAGEMENT CONTROLS SUFFICIENTLY WHICH WILL IMPROVE THE HABITAT AND RECREATIONAL VALUES OF STREAMS IN TYSONS CORNER.

**SUMMARY:**

TO THE MAXIMUM EXTENT POSSIBLE, THE FIRST INCH OF RAINFALL WILL BE RETAINED ON-SITE THROUGH INFILTRATION, EVAPOTRANSPIRATION, AND/OR REUSE. WHERE IT HAS BEEN DEMONSTRATED TO NOT BE FULLY ACHIEVABLE, ALL AVAILABLE MEASURES WILL BE IMPLEMENTED TO THE EXTENT POSSIBLE IN ORDER TO SUPPORT THIS GOAL AND ACHIEVE PARTIAL RETENTION OF THE FIRST INCH OF RAINFALL. AT THE TIME OF FDP, WHEN THE PREVIOUSLY MENTIONED PROJECT DESIGN DETAILS ARE KNOWN, THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

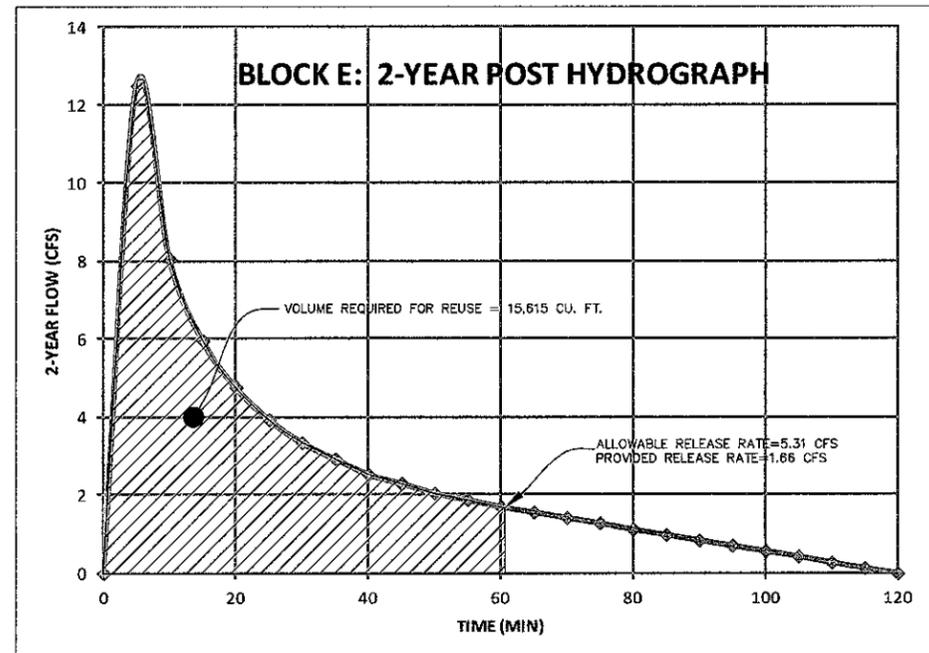
**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



**BLOCK E SWM VAULT LOCATION**

SCALE: 1"=50'



**SWM NOTE:**

BY MEETING THE REQUIRED VOLUME REUSE FOR THE 1 YEAR AND 2 YEAR STORMS THE PEAK ATTENUATION HAS AUTOMATICALLY BEEN MET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.

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LANDSCAPE ARCHITECT  
MATTHEW J. BAUSCHER  
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8/29/12

PLAN STATUS

07/22/11 PER COUNTY COMMENTS  
12/07/11 PER COUNTY COMMENTS  
02/24/12 PER COUNTY COMMENTS  
05/25/12 PER COUNTY COMMENTS  
07/23/12 PER COUNTY COMMENTS  
08/29/12 PER COUNTY COMMENTS

DATE DESCRIPTION  
SCALE H:AS SHOWN  
JOB No.  
DATE: APRIL 26, 2011  
FILE No. 7403-07-001

BLOCK E SWM COMPUTATIONS  
ARBOR ROW  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

SHEET **C10.6**

**GENERAL INFORMATION:**

THE SUBJECT SITE OF THIS APPLICATION IS THE AMT PROPERTY AND IS LOCATED ON TAX MAP PARCEL 029-4-07-0005A. THIS SITE COMPRISES THE PROPOSED BLOCK "F" AS NOTED IN THE RECENTLY FILED CDP APPLICATION FOR ARBOR ROW.

**EXISTING CONDITIONS:**

THE STORMWATER QUANTITY AND QUALITY (BMP) REQUIREMENTS FOR THE EXISTING SITE ARE CURRENTLY PROVIDED BY THE EXISTING REGIONAL POND "C" LOCATED NORTH OF THE SITE AND ADJACENT TO THE SOUTHWEST QUADRANT OF THE RTE. 267/495 INTERCHANGE AS SHOWN IN PLAN NO. 6377-PI-01.

**PROPOSED CONDITIONS:**

ADDITIONAL STORMWATER MANAGEMENT AND BMP MEASURES WILL BE PROVIDED ON SITE TO COMPLY WITH THE PFM REQUIREMENTS AND TYSONS CORNER URBAN CENTER (TCUC) STORMWATER GOALS ASSOCIATED WITH THIS APPLICATION.

GENERALLY, THESE ADDITIONAL MEASURES WILL BE ACHIEVED BY THE USE OF VEGETATED ROOF, VEGETATED SWALES, INFILTRATION, AND DETENTION MEASURES.

**SWM REQUIREMENTS AND GOALS:**

IN ADDITION TO THE STANDARD STORMWATER REQUIREMENTS IN THE COUNTY'S PUBLIC FACILITIES MANUAL (PFM) FOR BOTH WATER QUANTITY AND WATER QUALITY (BMP), THERE ARE TWO STORMWATER MANAGEMENT GOALS INCLUDED IN THE AREA'S COMPREHENSIVE PLAN. GENERALLY, THESE GOALS ARE THE RETENTION ON-SITE OF THE FIRST INCH OF RAINFALL AND ACHIEVING THE LEED CREDITS SS 6.1 AND 6.2 WHICH ARE DESCRIBED IN GREATER DETAIL BELOW.

**DESIGN INTENT:**

THE MEANS OF ACHIEVING THE COUNTY'S STORMWATER PFM REQUIREMENTS AND TYSONS COMPREHENSIVE PLAN GOALS SHOWN IN THIS APPLICATION ARE SUBJECT TO CHANGE WITH THE PROJECT'S SITE PLAN AS APPROVED BY THE COUNTY DPWES. THE DEVELOPMENT PROJECT WILL ACHIEVE THE COUNTY'S STORMWATER REQUIREMENTS AND GOALS TO THE MINIMUM EXTENT DEPICTED IN THIS APPLICATION THROUGH A COMBINATION OF LID MEASURES, HOWEVER, THE COMPUTATIONS AND DETAILS ARE SUBJECT TO CHANGE DUE TO POTENTIAL CHANGES TO THE LIMITS, LOCATIONS AND TYPES OF LID FACILITIES. THIS APPLICATION DEPICTS THE USE OF VEGETATED SWALES IN THE WESTPARK DRIVE STREETScape. THESE VEGETATED SWALES MAY BE ENTIRELY OR PARTLY REPLACED WITH URBAN BIORETENTION IF IT IS DETERMINED TO BE MORE APPROPRIATE DURING THE PREPARATION OF THE PROJECT SITE PLAN. THE TERM VEGETATED SWALES IS USED IN THE COUNTY'S PFM, HOWEVER, THEY ARE ESSENTIALLY THE SAME THING AS DRY SWALES AS SPECIFIED BY THE VIRGINIA DCR. THE SWALES WILL BE CONSTRUCTED USING THE MATERIAL SPECIFICATIONS FROM THE COUNTY PFM AND/OR DCR, HOWEVER, OTHER DESIGN AND CONSTRUCTION DETAILS SUCH AS FREEBOARD MAY VARY FROM THESE STANDARDS AS APPROVED BY THE COUNTY DPWES DUE TO THE CONSTRAINTS IMPOSED BY THE STREETScape APPLICATION WITHOUT THE NEED FOR A WAIVER FROM THE COUNTY. URBAN BIORETENTION, IF USED, WILL COMPLY WITH THE DCR DESIGN AND CONSTRUCTION SPECIFICATIONS.

**STANDARD PFM SWM NARRATIVE:**

**REQUIREMENT:**

IN ACCORDANCE WITH THE STANDARD COUNTY REQUIREMENTS, THE POST DEVELOPMENT PEAK RATES OF RUNOFF FROM THE 2 AND 10-YEAR STORM EVENTS SHALL NOT EXCEED THE SITE'S PRE-DEVELOPMENT PEAK RELEASE RATES.

**COMPLIANCE:**

AS PREVIOUSLY MENTIONED, THE STORMWATER QUANTITY CONTROL FOR THE EXISTING SITE IS CURRENTLY PROVIDED BY THE EXISTING REGIONAL POND "C" LOCATED NORTH OF THE SITE AND ADJACENT TO THE SOUTHWEST QUADRANT OF THE RTE. 267/495 INTERCHANGE.

THE PROPOSED CONDITIONS WILL RESULT IN A NOMINAL INCREASE IN THE PEAK RATE OF RUNOFF AS COMPARED TO THE EXISTING CONDITION AND THEREFORE ADDITIONAL DETENTION WILL BE PROVIDED IN THE INFILTRATION FACILITY BY STORING STORMWATER IN THE GRAVEL PERCOLATION TRENCH (ABOVE THE DESIGN INFILTRATION VOLUME) AND RELEASED THROUGH A CONTROL STRUCTURE. PLEASE REFER TO THE SCHEMATIC DETAIL OF THE COMBINED INFILTRATION/DETENTION FACILITY ON SHEET P-0503.

**STANDARD BMP NARRATIVE:**

**REQUIREMENT:**

THE EXISTING DEVELOPMENT'S WATER QUALITY REQUIREMENTS ARE CURRENTLY PROVIDED BY THE EXISTING REGIONAL POND "C" DISCUSSED IN THE GENERAL INFORMATION SUMMARY ABOVE. THIS POND IS DESIGNED TO PROVIDE 40% PHOSPHOROUS REMOVAL FOR ITS DRAINAGE AREA WHICH INCLUDES OUR SITE, PARCEL F. THIS IS DOCUMENTED IN FAIRFAX COUNTY PLAN "STUDY OF THE EXISTING WESTPARK STORM WATER DETENTION FACILITIES INCLUDING PONDS A, B, D, & C" (PLAN NO. 6377-PI-01).

**COMPLIANCE:**

THE REGIONAL POND IS DESIGNED ASSUMING THAT THE POST DEVELOPMENT "C" FACTOR FOR ALL PROPERTIES WITHIN ITS DRAINAGE AREA WOULD BE 0.80 AT ULTIMATE DEVELOPMENT. THE DEVELOPMENT BEING PROPOSED WITH THIS APPLICATION HAS AN APPROXIMATE PROPOSED DEVELOPED "C" FACTOR OF 0.82 (DISREGARDING THE EFFECT OF THE INFILTRATION). THEREFORE, ADDITIONAL BMP IS REQUIRED.

BY PROVIDING A PARTIAL GREEN ROOF, VEGETATED SWALES AND AN INFILTRATION FACILITY WITH THE PROPOSED DEVELOPMENT WE WILL BE PROVIDING ADDITIONAL BMP MEASURES BEYOND WHAT IS REQUIRED.

**COMPREHENSIVE PLAN NARRATIVE:**

**A. QUANTITY (VOLUME) REDUCTION GOAL:**

THERE ARE TWO RECOMMENDED STORMWATER PARAMETERS IN THE TYSONS CORNER URBAN CENTER COMPREHENSIVE PLAN THAT PERTAIN TO CONTROLLING THE VOLUME OF STORMWATER RUNOFF RELEASED FROM THE SITE AS FOLLOWS:

1. THE COMPREHENSIVE PLAN RECOMMENDS COMPLYING WITH LEED CREDIT SS 6.1 WHICH REQUIRES THAT THE POST DEVELOPMENT VOLUME OF RUNOFF BE AT LEAST 25% LESS THAN THE EXISTING RUNOFF VOLUME FOR A 2-YEAR 24 HOUR STORM.
2. THE COMPREHENSIVE PLAN RECOMMENDS RETAINING ON SITE THE FIRST INCH OF RAINFALL TO THE MAXIMUM EXTENT PRACTICABLE.

**COMPLIANCE:**

THIS PROJECT PROPOSES TO REDUCE RUNOFF VOLUME THROUGH THE USE OF VEGETATED ROOF ON THE OFFICE BUILDING, VEGETATED SWALES IN THE WESTPARK DRIVE STREETScape AND INFILTRATION AS DESCRIBED BELOW:

1. **VEGETATED (GREEN) ROOF** - A PORTION OF THE OFFICE BUILDING ROOF IS BEING PROPOSED AS A GREEN ROOF WHICH WILL REDUCE THE OVERALL RUNOFF VOLUME FROM THE SITE.
2. **VEGETATED SWALES** - VEGETATED SWALES (AKA DRY SWALES) ARE PROPOSED FOR THE WESTPARK DRIVE STREETScape AMENITY PANEL AND WILL CONSIST OF A SYSTEM OF SHALLOW SWALES DESIGNED TO TREAT STORMWATER RUNOFF. THE VEGETATED SWALES WILL BE INTERSPERSED WITH STREET TREES. THE VEGETATED SWALES WILL COLLECT WATER FROM MUCH OF THE NARROW STRIP OF LAND THAT LIES BETWEEN THE PROPOSED BUILDING/PARKING GARAGE WALL AND THE STREET AS WELL AS THE RUNOFF FROM THE EAST ENTRANCE PLAZA. ACCORDING TO THE RECENT FAIRFAX COUNTY GUIDANCE FOR DESIGNING STORMWATER FACILITIES TO COMPLY WITH THE TYSONS STORMWATER GOALS, DRY SWALES CAN REDUCE THE VOLUME OF STORMWATER RUNOFF BY UP TO 100%.
3. **RAINWATER HARVESTING** - RAINWATER FROM THE OFFICE BUILDING ROOF WILL BE DIRECTED TO A CISTERN. SOME OF THIS COLLECTED RAINWATER RUNOFF WILL BE USED FOR ON-SITE IRRIGATION. THE UNUSED BALANCE OF THE RAINWATER IN THE CISTERN WILL BE DIRECTED TO THE INFILTRATION FACILITY DISCUSSED BELOW.
4. **INFILTRATION** - MOST OF THE SITE'S RUNOFF WILL BE DIRECTED TOWARDS THE INFILTRATION FACILITY (SEE PLAN ON SHEET P.502). THESE AREAS INCLUDE THE RUNOFF FROM THE ROOFS AND MUCH OF THE WESTERN PLAZA. THE VOLUME OF RUNOFF REDUCTION FOR A 2-YEAR STORM REQUIRED BY LEED AS WELL AS THE RUNOFF FROM A 1" RAIN EVENT FROM THE INFILTRATION AREA'S DRAINAGE AREA WILL BE RETAINED ON SITE AND INFILTRATED THROUGH A PERCOLATION TRENCH. THE RESULTS ARE SUMMARIZED BELOW.

**COMPLIANCE SUMMARY**

REQUIRED VOLUME REDUCTION FOR THE 2-YEAR STORM ROUTED TO INFILTRATION TO SATISFY LEED CREDIT 6.1	9,032 CF
NET RUNOFF VOLUME FROM A 1" RAIN EVENT (AFTER RUNOFF REDUCTION) ROUTED TO INFILTRATION TO SATISFY 1" RETENTION	5,364 CF
RUNOFF INFILTRATION VOLUME TO COMPLY WITH COMPREHENSIVE PLAN GOALS	9,032 CF
ESTIMATED RUNOFF INFILTRATION VOLUME (TO BE INFILTRATED WITHIN 3 DAYS PER NOVA BMP HANDBOOK, DESIGN RATE OF 0.52"/HR)	9,032 CF

THE INFILTRATION VOLUME PROVIDED IS APPROXIMATELY 9,036 CF WHICH EXCEEDS THE REQUIRED VOLUME TO MEET THE COMPREHENSIVE PLAN GOALS. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1" RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4" OF RAIN THAT FALLS ON THE BUILDING ROOF IF THE RUNOFF REDUCTION MEASURES AND COMPUTATIONS SHOWN HEREIN ARE APPROVED BY THE COUNTY. IF THE RUNOFF REDUCTION MEASURES AND/OR COMPUTATIONS SHOWN HEREIN ARE NOT APPROVED BY DPWES, THE APPLICANT WILL WORK WITH THE COUNTY TO RETAIN THE FIRST 1" OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

**B. PEAK REDUCTION GOAL:**

TO COMPLY WITH THE LEED CREDIT SS 6.1, AS RECOMMENDED BY THE COMPREHENSIVE PLAN, THE POST DEVELOPMENT PEAK RATE OF RUNOFF FROM A 2-YEAR STORM EVENT MUST BE AT LEAST 25% LESS THAN THE EXISTING PEAK RATE.

**COMPLIANCE:**

FOR THIS PROJECT, THIS GOAL WILL BE ACHIEVED BY DETAINING RUNOFF IN A COMBINED UNDERGROUND PERCOLATION TRENCH AND DETENTION FACILITY BY STORING STORMWATER IN THE GRAVEL PERCOLATION TRENCH (ABOVE THE DESIGN INFILTRATION VOLUME) AND RELEASED THROUGH A CONTROL STRUCTURE. PLEASE REFER TO THE SCHEMATIC DETAIL OF THE

COMBINED INFILTRATION/DETENTION FACILITY ON SHEET P-0503 AND ASSOCIATED COMPUTATIONS ON THIS SHEET.

**AMT DRAINAGE AREA SUMMARY**

	ENTIRE SITE		LEED BOUNDARY	
<b>Pre-Development:</b>				
Area (Acres)	1.84		1.73	
Existing Condition Imperviousness (%)	59		62	
Hydrologic Soil Group *	B		B	
Runoff Curve Number (CN)	83		84	
<b>Post-Development:</b>				
Area Of Vegetated Roof (Some of Third Floor Terrace)	0.06	3.3	0.06	3.3
Area of Landscaped Areas	0.10	5.4	0.07	4.0
Remaining Areas	1.68	91.3	1.60	92.5
<b>Total</b>	1.84	100.0	1.73	100.0
<b>CN Factors</b>				
Green Roof (Extensive)	70		70	
Landscaped Areas	61		61	
Remaining Surfaces	98		98	
<b>Weighted Average</b>	95		96	
On-site Drainage Area That is Treated By Off-site Vegetated Swale **	0.22	12	0	0

\* HSG B soil is based on 1990 Fairfax County soil map. The 2011 County soil map lists the soil as number 95 - Urban Land which lacks a specific HSG. Use of the HSG B is conservative for these SWM computations.

\*\* The vegetated swales will consist of a depressed streetscape area located in the Westpark Drive landscape amenity panel modified to treat stormwater runoff. Vegetated swales provide runoff reduction according to the recent County guidance on designing stormwater management for development in the Tysons Corner Urban Center area. The runoff reduction provided by the vegetated swales in the streetscape is accounted for in the runoff volume computations for the

**PEAK RUNOFF RATE COMPUTATIONS**

	ENTIRE SITE (To comply with PFM)		LEED BOUNDARY (To comply with Comp. Plan)	
<b>Pre-Development:</b>				
Site Area (Ac)	1.84		1.73	
Avg. Site Runoff CN	83		84	
Time of Concentration	6 Min.		6 Min.	
Q <sub>p</sub> (cfs)	4.59		4.90	
Q <sub>10</sub> (cfs)	10.20		N/A	
<b>Post-Development:</b>				
Avg. Site Runoff CN	95		96	
Time of Concentration	6 Min.		6 Min.	
Site Area (Ac)	1.84		1.73	
Q <sub>p</sub> (cfs) Before infiltration and detention	7.54		7.24	
Q <sub>p</sub> (cfs) Allowable	4.99		3.68	
Q <sub>10</sub> (cfs) Before infiltration and detention	12.71		N/A	
Q <sub>10</sub> (cfs) Allowable	10.20		N/A	

The peak flow Q values computed using Hydratflow software and the NRCS TR-55 method and a 24-Hr Storm

An underground detention facility combined with the percolation trench will be used to reduce post-development runoff below the allowable runoff peak rates.

**NOTES**

1. LOCATIONS AND LIMITS OF STORMWATER MANAGEMENT FACILITIES SUBJECT TO CHANGE WITH FINAL DESIGN.
2. STORMWATER BMP'S TO BE PRIVATELY MAINTAINED.

**LEGEND**

LEED BOUNDARY	■ ■ ■ ■ ■ ■ ■ ■
VEGETATED SWALE	■ ■ ■ ■ ■ ■ ■ ■
AREA CONTROLLED BY PERCOLATION TRENCH	■ ■ ■ ■ ■ ■ ■ ■
AREA CONTROLLED BY VEGETATED SWALE	■ ■ ■ ■ ■ ■ ■ ■

**OVERLAND RELIEF NARRATIVE**

THE WEST PLAZA WILL DRAIN TO THE PRIVATE INTERIOR STREET AND FROM THERE TO WESTPARK DRIVE. THE EAST PLAZA AND NARROW STRIP BETWEEN THE PARKING GARAGE AND BUILDING AND THE SIDEWALK WILL DRAIN TOWARDS WESTPARK DRIVE. THE BUILDING WILL NOT FLOOD IN A 100-YEAR STORM AND OVERLAND RELIEF IS PROVIDED.

**LEED STORMWATER QUANTITY CREDIT COMPUTATION:**

Note: See SWM Limits map for 1.73 Ac. LEED boundary.

**Using Graphical Peak Discharge Method**

NOTE: ANOTHER METHOD OF COMPUTING RUNOFF VOLUMES MAY BE USED DURING FINAL DESIGN AS APPROVED BY FAIRFAX COUNTY.

Project:	AMT	WHP	2/27/2012																
<b>Existing Conditions</b>																			
Data:	Drainage Area:	84	Acres																
	Runoff Curve Number:	84																	
	S=1000/CN - 10 +	1.90																	
	Time of Concentration:	0.1	Hours																
	Rainfall Type:	II																	
	Pond and Swamp Area:	None																	
<table border="1"> <tr> <th>Storm Number</th> <th>1</th> <th>2</th> <th>3</th> </tr> <tr> <td>Frequency (Yrs)</td> <td>1</td> <td>2</td> <td>10</td> </tr> <tr> <td>24-Hr Rainfall (in.)</td> <td>2.7</td> <td>3.2</td> <td>5.2</td> </tr> <tr> <td>Runoff (in.)</td> <td>1.27</td> <td>1.68</td> <td>3.45</td> </tr> </table>				Storm Number	1	2	3	Frequency (Yrs)	1	2	10	24-Hr Rainfall (in.)	2.7	3.2	5.2	Runoff (in.)	1.27	1.68	3.45
Storm Number	1	2	3																
Frequency (Yrs)	1	2	10																
24-Hr Rainfall (in.)	2.7	3.2	5.2																
Runoff (in.)	1.27	1.68	3.45																

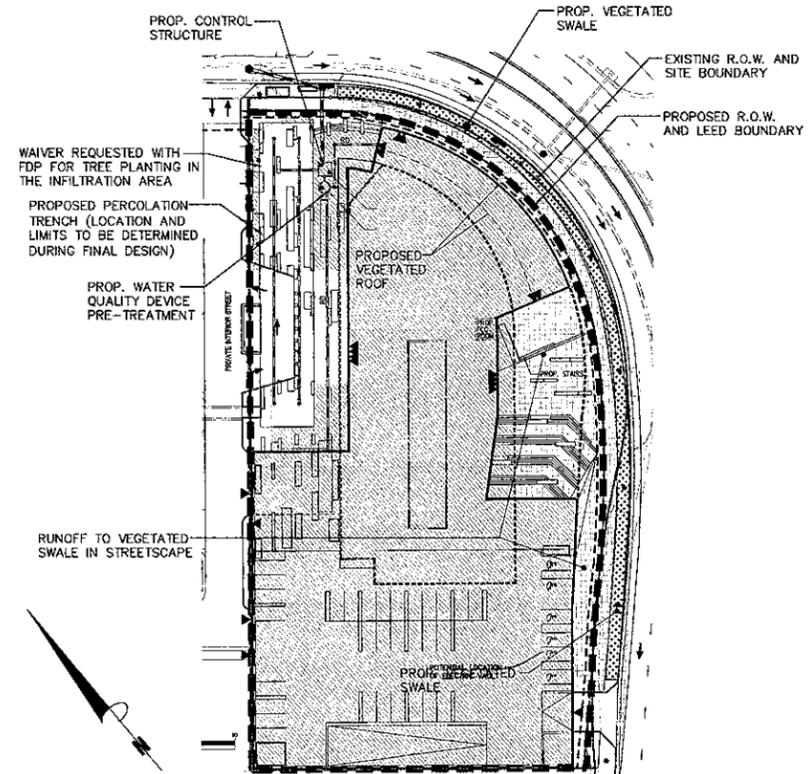
**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**  
 1 YR STORM: 1.73 AC X 1.27 IN X 1.171/12 IN X 43560 = 7,596 CF  
 2 YR STORM: 1.73 AC X 1.68 IN X 1.171/12 IN X 43560 = 10,565 CF

Project:	AMT	WHP	2/27/2012																
<b>Proposed Conditions</b>																			
Data:	Drainage Area:	96	Acres																
	Runoff Curve Number:	96																	
	S=1000/CN - 10 +	0.47																	
	Time of Concentration:	0.1	Hours																
	Rainfall Type:	II																	
	Pond and Swamp Area:	None																	
<table border="1"> <tr> <th>Storm Number</th> <th>1</th> <th>2</th> <th>3</th> </tr> <tr> <td>Frequency (Yrs)</td> <td>1</td> <td>2</td> <td>10</td> </tr> <tr> <td>24-Hr Rainfall (in.)</td> <td>2.7</td> <td>3.2</td> <td>5.2</td> </tr> <tr> <td>Runoff (in.)</td> <td>2.21</td> <td>2.70</td> <td>4.88</td> </tr> </table>				Storm Number	1	2	3	Frequency (Yrs)	1	2	10	24-Hr Rainfall (in.)	2.7	3.2	5.2	Runoff (in.)	2.21	2.70	4.88
Storm Number	1	2	3																
Frequency (Yrs)	1	2	10																
24-Hr Rainfall (in.)	2.7	3.2	5.2																
Runoff (in.)	2.21	2.70	4.88																

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**  
 1 YR STORM: 1.73 AC X 2.21 IN X 1.171/12 IN X 43560 = 13,878 CF  
 2 YR STORM: 1.73 AC X 2.70 IN X 1.171/12 IN X 43560 = 16,955 CF

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**  
 PER LEED, FOR SITES THAT HAVE GREATER THAN 50% IMPERVIOUS COVER IN THE EXISTING CONDITION, THE POST-DEVELOPED STORMWATER RUNOFF VOLUME FOR THE 2 YEAR STORM CANNOT EXCEED THE EXISTING CONDITIONS VOLUME LESS 25%.

**3-YEAR STORM REQUIRED VOLUME REDUCTION:**  
 16,955 CF LESS 75% OF 10,565 CF = 9,032 CF



**BLOCK F SWM VAULT LOCATION**

SCALE: 1"=50'

**Bowman CONSULTING GROUP, INC.**  
 Bowman Consulting Group, Inc.  
 14020 Timberloch Plaza Suite 300  
 Fairfax, VA 22033  
 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.bowmanconsulting.com  
 © Bowman Consulting Group, Inc.

**PARKER RODRIGUEZ, INC.**  
 Parker Rodriguez, Inc.  
 101 North Union St., #620  
 Alexandria, VA 22314  
 Phone: (703) 464-1000  
 Fax: (703) 461-9720  
 www.parkerrodriguez.com  
 Landscape Architecture

**WDC ARCHITECTURE, PLLC**  
 WDC Architecture, PLLC  
 1025 Connecticut Avenue NW  
 Washington, DC 20036  
 Tel: 202.637.8900  
 Fax: 202.637.8916  
 www.wdcarch.com  
 www.wdcarch.com

**Cityline PARTNERS**  
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 A SUBSIDIARY OF  
 DLJ Real Estate Capital Partners

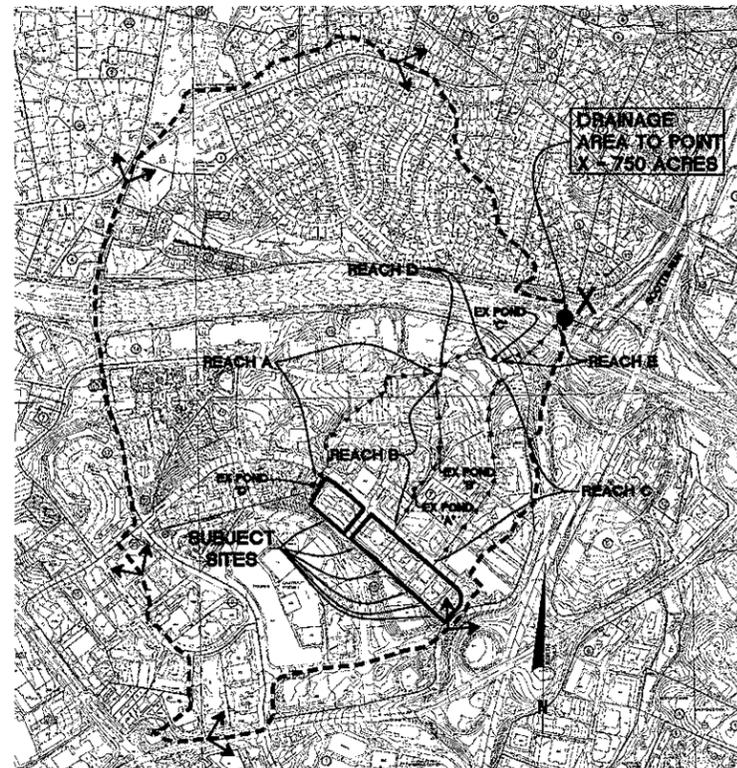
COMMONWEALTH OF VIRGINIA  
 MATEW J. TAUSCHER  
 Lic. No. 090892  
 8/27/12  
 LANDSCAPE ARCHITECT

**BLOCK F SWM COMPUTATIONS**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

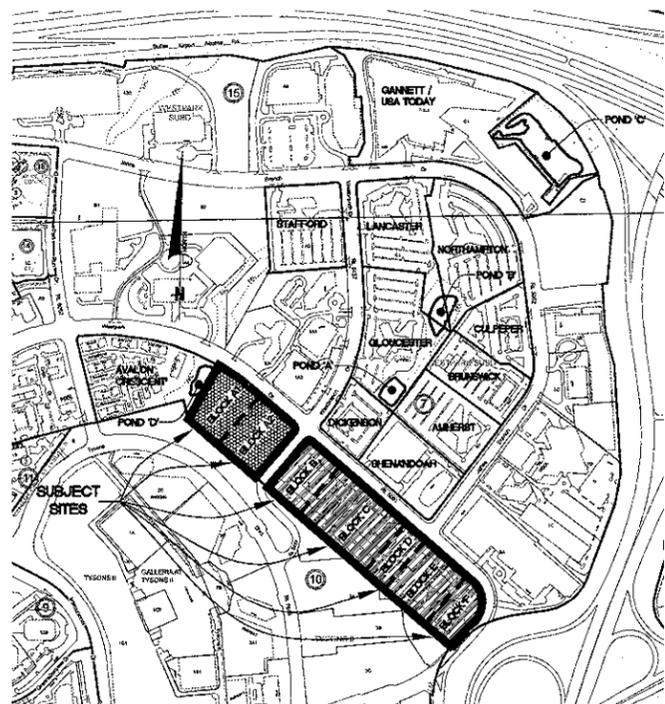
PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
03/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: AS SHOWN
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C10.6.1



1 EX VICINITY MAP  
C10.7 SCALE: 1"=500'

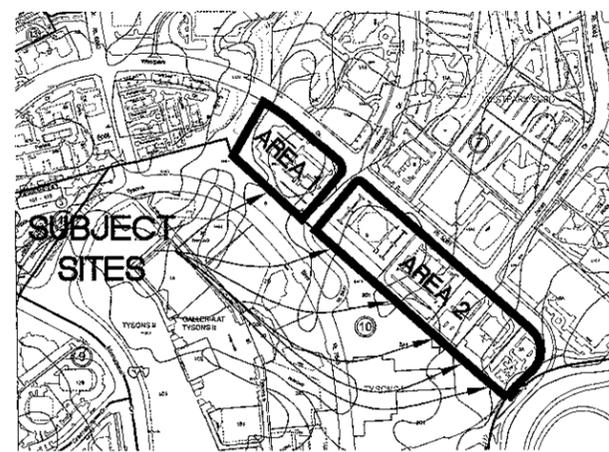


3 OUTFALL MAP  
C10.7 SCALE: 1"=1,000'



2 PROP VICINITY MAP  
C10.7 SCALE: 1"=500'

- AREA 1
- AREA 2



4 SOILS MAP  
C10.7 SCALE: 1"=500'

\*ALL SOILS OF SUBJECT SITES ARE OF HYDROLOGIC GROUP B

**OUTFALL NARRATIVE**

**SITE DESCRIPTION:**

THE SUBJECT SITES ARE LOCATED IN TYSONS CORNER, SOUTH OF THE DULLES TOLL ROAD (RT. 267), WEST OF THE CAPITAL BELTWAY (I-495), AND NORTH OF CHAIN BRIDGE RD. (RT. 123). THE SUBJECT SITES INCLUDE THE FREDERICK, ESSEX, CAMPBELL, SCOTT, GRAYSON, FRANKLIN, AND AMT BUILDINGS WHICH ARE LOCATED ON FFX CO. TAX MAP PARCELS #0294(77)-0010, 0294(77)-0009, 0294(77)-0003, 0294(77)-0002, 0294(77)-0001, 0294(77)-005A, RESPECTIVELY. SEE VICINITY MAPS ON THIS SHEET. ALL SUBJECT SITES HAVE EXISTING OFFICE BUILDINGS WITH SURFACE PARKING AND LANDSCAPE ISLANDS. ALL SITES ARE FRONTED BY WESTPARK DR. (RT. 5061) TO THE NORTH AND ALL SITES ARE WOODED ALONG THEIR SOUTHERN PROPERTY LINE. THE TOTAL SITE AREA OF THESE PARCELS IS APPROXIMATELY 19.32 ACRES. THE EXISTING SITES PROPOSES NEW PROPERTY LINES TO CREATE BLOCKS A1, A2, B, C, D, E, AND F. SEE VICINITY MAP ON THIS SHEET.

**OUTFALL DESCRIPTION:**

PER THE "MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT, AND DEVELOPMENT PLAN APPLICATIONS" CHECKLIST, THE SITE'S STORM OUTFALL MUST BE DESCRIBED DOWNSTREAM TO A POINT WHICH HAS A DRAINAGE AREA OF AT LEAST ONE SQUARE MILE (640 ACRES). SEE BELOW FOR A DETAILED DESCRIPTION OF THE STORM OUTFALLS FROM THE SUBJECT SITES TO POINT X. SEE OUTFALL MAP ON THIS SHEET FOR REACH LOCATIONS. AREA 1 IS MADE UP OF BLOCKS A1 AND A2. AREA 2 IS MADE UP OF BLOCKS B, C, D, E, AND F.

**BLOCK A1** (WESTERN HALF OF FREDERICK SITE) -- REACH A TO REACH D TO REACH E TO POINT 'X'.

**BLOCK A2** (EASTERN HALF OF FREDERICK SITE) -- APPROXIMATELY 40% (WESTERN PORTION) OF THE SITE'S STORM WATER IS PART OF THE REACH A FLOW PATH AND APPROXIMATELY 60% (EASTERN PORTION) OF THE SITE'S STORM WATER IS PART OF REACH A. THE WESTERN PORTION OF THE SITE TRAVELS TO REACH A TO REACH D TO REACH E TO POINT 'X'. THE EASTERN PORTION OF THE SITE TRAVELS TO REACH B TO REACH D TO REACH E TO POINT 'X'.

**BLOCK B** (WESTERN HALF OF ESSEX SITE) -- REACH B TO REACH D TO REACH E TO POINT 'X'.

**BLOCK C** (EASTERN HALF OF ESSEX SITE, CAMPBELL SITE, AND WESTERN HALF OF SCOTT SITE) -- REACH B TO REACH D TO REACH E TO POINT 'X'.

**BLOCK D** (EASTERN HALF OF SCOTT SITE AND GRAYSON SITE) -- REACH C TO REACH E TO POINT 'X'.

**BLOCK E** (FRANKLIN SITE) -- REACH C TO REACH E TO POINT 'X'.

**BLOCK F** (AMT SITE) -- REACH C TO REACH E TO POINT 'X'.

**REACH DESCRIPTIONS:**

**REACH A**— THE STORM WATER FLOW PATH OF REACH A TRAVELS FROM POND "D" TO REACH D. WATER LEAVES POND "D" THROUGH A 48" DIAMETER PIPE AND FLOWS NORTHEAST TO A WOODED AND HEAVILY VEGETATED NATURAL OPEN CHANNEL WHERE WATER CONTINUES NORTHEAST AND ENTERS INTO AN UNDERGROUND 54" PIPE. WATER THEN FLOWS NORTHEAST WITHIN THE UNDERGROUND STORM SEWER SYSTEM FOR APPROXIMATELY 500 FEET AND DAYLIGHTS SOUTHWEST OF THE INTERSECTION OF WESTBRANCH DR. (RT. 5457) AND JONES BRANCH DR. (RT. 5062) ON THE STAFFORD SITE. WATER THEN ENTERS THE JONES BRANCH DR. (RT. 5062) UNDERGROUND STORM SEWER SYSTEM WHICH RUNS EAST, PARALLEL TO JONES BRANCH DR. (RT. 5062) WHERE IT THEN INTERSECTS WITH REACH B AND TOGETHER FORM REACH D.

**REACH B**— THE STORM WATER FLOW PATH OF REACH B TRAVELS FROM THE SUBJECT SITES TO POND "A". STORM WATER EXITS POND "A" AND FLOWS NORTHEAST TO POND "B" VIA AN OPEN CHANNEL. FROM POND "B" WATER ENTERS AN UNDERGROUND STORM SEWER SYSTEM AND FLOWS NORTH INTO A STORM SEWER SYSTEM UNDER JONES BRANCH DR. (RT. 5062) WHERE IT THEN INTERSECTS WITH REACH A AND TOGETHER FORM REACH D. STORM WATER FROM THE SITES ENTER UNDERGROUND STORM SEWER SYSTEMS UNDER WESTBRANCH DR. (RT. 5457), WESTPARK DR. (RT. 5061), AND AN UNDERGROUND STORM SEWER SYSTEM FOUND ON THE CAMPBELL SITE. STORM WATER THAT ENTERS THE UNDERGROUND STORM SEWER SYSTEMS OF WESTBRANCH DR. (RT. 5457) AND WESTPARK DR. (RT. 5061) CONVERGE TOGETHER ON THE ESSEX SITE AT A LOCATION SOUTHEAST OF THE INTERSECTION OF WESTBRANCH DR. (RT. 5457) AND WESTPARK DR. (RT. 5061). FROM THIS POINT, WATER FLOWS IN A SUBSURFACE 42" PIPE NORTHEAST UNDER WESTPARK DR. (RT. 5061) AND CONTINUES UNDER THE DICKENSON SITE UNTIL IT OUTFALLS INTO POND "A". ADDITIONALLY, STORM WATER LEAVES THE CAMPBELL SITE IN AN UNDERGROUND STORM SEWER SYSTEM LOCATED WITHIN THE CAMPBELL SITE. WATER IN THIS SYSTEM FLOWS NORTHWEST, CROSSES UNDER WESTPARK DR. (RT. 5061), AND CONTINUES NORTHWEST UNDER THE SHENANDOAH SITE UNTIL IT OUTFALLS INTO POND "A". PRELIMINARY ANALYSIS OF THE EXISTING DOWNSTREAM PIPE SYSTEM INTO POND "A" HAS BEEN COMPUTED AND IS INCLUDED AS SHEET C10.7.2. THE COMPUTATIONS SHOW THAT THE Q<sub>exp</sub> IS GREATER THAN THE Q<sub>inflow</sub> IN ALL EXISTING PIPES DOWNSTREAM OF OUR IMPROVEMENTS. WE WILL DO A FULL ANALYSIS OF THE DOWNSTREAM PIPE SYSTEM AT SITE PLAN AND IF DEFICIENCIES ARE FOUND AT THAT TIME, THE APPLICANT WILL TAKE STEPS TO ENSURE THE OUTFALL IS ADEQUATE.

**REACH C**— THE STORM WATER FLOW PATH OF REACH C TRAVELS FROM THE SUBJECT SITES TO POND "C" AND REACH E. STORM WATER FROM THE SITES ENTER TWO (2) UNDERGROUND STORM SEWER SYSTEMS LOCATED ON THE SCOTT, GRAYSON, FRANKLIN, AND AMT SITES. STORM WATER THAT ENTERS THE UNDERGROUND STORM SEWER SYSTEM LOCATED ON THE SCOTT SITE FLOWS EAST, UNDER WESTPARK DR. (RT. 5061), AND INTERSECTS WITH THE JONES BRANCH DR. (RT. 5062) UNDERGROUND STORM SEWER SYSTEM. STORM WATER THAT ENTERS THE UNDERGROUND STORM SEWER SYSTEM LOCATED ON THE GRAYSON, FRANKLIN, AND AMT SITES FLOWS NORTHEAST ALONG THE APPROXIMATE PROPERTY BORDER OF THE RESPECTIVE SITES. ONCE THE SYSTEM REACHES WESTPARK DR. (RT. 5061) IT THEN TRAVELS NORTH WHERE IT INTERSECTS WITH THE UNDERGROUND STORM SEWER SYSTEM OF JONES BRANCH DR. (RT. 5062). AT THIS POINT, THE TWO (2) UNDERGROUND STORM SEWER SYSTEMS LEAVING THE SUBJECT SITES CONVERGE AND FLOW INTO THE UNDERGROUND STORM SEWER SYSTEM OF JONES BRANCH DR. (RT. 5062). ONCE IN THE JONES BRANCH DR. (RT. 5062) UNDERGROUND STORM SEWER SYSTEM, WATER FLOWS NORTHEAST FOR APPROXIMATELY 1100 FEET UNTIL THE PIPE SYSTEM TURNS NORTH TO FOLLOW THE BEND IN THE ROAD. FROM THIS POINT, STORM WATER WITHIN THE SYSTEM FLOWS NORTH UNTIL IT OUTFALLS INTO POND "C". FROM POND "C" WATER OUTFALLS INTO REACH E. SEE ATTACHED STORM DRAINAGE COMPUTATIONS INCLUDED AS SHEET C10.7.1 FROM FFX COUNTY PLAN #6028-SP-018-2 WHICH SHOW THAT THE DOWNSTREAM DRAINAGE PIPE SYSTEM IS MORE THAN ADEQUATE TO ACCOMMODATE THE WATER LEAVING THE PROPOSED SITES. THE SYSTEM WAS ORIGINALLY DESIGNED TO ACCOMMODATE THE BUILD OUT OF THE WATER SHED AND OUR IMPROVEMENTS DO NOT INCREASE THE C-FACTOR OF THIS WATER SHED BEYOND THAT OF THE BUILD OUT C-FACTOR USED FOR THESE COMPUTATIONS. THE COMPUTATIONS SHOW THAT THE Q<sub>exp</sub> IS APPROXIMATELY 60% GREATER THAN THE Q<sub>inflow</sub>. WE WILL DO A FULL ANALYSIS OF THE DOWNSTREAM PIPE SYSTEM AT SITE PLAN AND IF DEFICIENCIES ARE FOUND AT THAT TIME, THE APPLICANT WILL TAKE STEPS TO ENSURE THE OUTFALL IS ADEQUATE.

**REACH D**— THE STORM WATER FLOW PATH OF REACH D BEGINS WHERE REACHES A AND B CONVERGE AND ENDS WHEN WATER TRAVELS TO POND "C" AND THEN ENTERS REACH E. REACHES A AND B COMBINE AT THE NORTHERN MOST END OF THE NORTHAMPTON SITE PROPERTY LINE, JUST SOUTH OF JONES BRANCH DR. (RT. 5062). FROM THIS POINT, WATER FLOWS NORTH UNDER JONES BRANCH DR. (RT. 5062) IN AN UNDERGROUND STORM SEWER SYSTEM. ONCE NORTH OF JONES BRANCH DR. (RT. 5062) THE STORM SEWER SYSTEM TURNS NORTHEAST DIRECTLY TOWARDS POND "C" WHERE IT OUTFALLS. IN POND "C" REACHES C AND D COMBINE TO FORM REACH E.

**REACH E**— THE STORM WATER FLOW PATH OF REACH E TRAVELS FROM POND "C" TO POINT X. WATER EXITS POND "C" VIA TWO (2) 72" RCP PIPES LOCATED AT THE EASTERN PORTION OF THE POND AND DAYLIGHTS INTO AN OPEN CHANNEL JUST PAST THE DAM EMBANKMENT. FROM THERE WATER CONTINUES NORTHEAST AND ENTERS A CULVERT WHICH TRAVELS UNDER THE DULLES TOLL ROAD (RT. 267) EASTBOUND ACCESS RAMP TO CAPITAL BELTWAY I-495. ONCE PAST THE ACCESS RAMP WATER AGAIN DAYLIGHTS AND CONTINUES NORTHEAST UNTIL IT ENTERS A SECOND CULVERT AND CROSSES UNDER THE DULLES TOLL ROAD (RT. 267) EAST AND WEST BOUND LANES. WATER THEN DAYLIGHTS BEYOND THE WESTBOUND LANE OF DULLES TOLL ROAD (RT. 267) INTO AN OPEN CHANNEL WHERE IT CONTINUES NORTHEAST TO POINT X.

**POINT X**— THE DRAINAGE AREA TO POINT X IS APPROXIMATELY 750 ACRES, AND ENCOMPASSES THE SUBJECT SITES. FROM POINT X, WATER TRAVELS EAST UNTIL IT ENTERS INTO SCOTT'S RUN WHICH FLOWS NORTHEAST, PARALLEL TO CAPITAL BELTWAY I-495. STORMWATER LEAVES THE SUBJECT SITES VIA EXISTING CLOSED CONDUIT SYSTEMS, TRAVELS TO VARIOUS PONDS, THEN OUTFALLS INTO SCOTT'S RUN STREAM AT POINT 'X'. AS SHOWN ON THE OUTFALL MAP, THE DRAINAGE AREA AT POINT 'X' IS 750 ACRES (> 640 ACRES). THEREFORE, THE ABOVE OUTFALL DESCRIPTION SATISFIES THE REQUIREMENTS OF THE SWM CHECKLIST.

**PFM REQUIREMENTS:**

THE ADEQUATE OUTFALL REQUIREMENTS OF THE PFM SHALL BE FORMALLY ADDRESSED AT THE TIME OF FINAL ENGINEERING. AT THE TIME OF FINAL ENGINEERING AN ADEQUATE OUTFALL ANALYSIS WILL BE CONDUCTED FOR EACH SUBJECT SITE TO BE INCLUDED IN EACH SITE'S INDIVIDUAL SITE PLAN, WHICH WILL DETERMINE THE ADEQUACY OF EACH SITE'S OUTFALL. THE DOWNSTREAM EXTENT OF ANALYSIS SHALL MOST LIKELY BE DETERMINED BY PFM SECTION 6-0203.2A, WHICH DEFINES THE EXTENT TO BE TO A POINT THAT IS AT LEAST 150 FEET DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE OR CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90% OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. STORM SEWER COMPUTATIONS SHALL BE PROVIDED FOR THE EXISTING CLOSED CONDUIT SYSTEM WHERE THE 150' POINT OF CONFLUENCE IS WITHIN THE SYSTEM, OR FIELD MEASURED CROSS-SECTIONS SHALL BE ANALYZED 150' DOWNSTREAM FROM THE POINT OF CONFLUENCE, PER PFM SECTION 6-0203.3B(1).

**SUMMARY:**

IT IS THE OPINION OF BOWMAN CONSULTING GROUP THAT THE STORM SEWER OUTFALLS HAVE BEEN SUFFICIENTLY DESCRIBED PER THE REZONING CHECKLIST. ADDITIONALLY, AT THE TIME OF FINAL SITE PLAN, IT SHALL BE DEMONSTRATED THAT THE OUTFALL IS ADEQUATE PER THE REQUIREMENTS AND CRITERIA SET FORTH IN THE PFM.

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COMMONWEALTH OF VIRGINIA  
MATTHEW J. TAUSCHER  
Lic. No. 040852  
8/29/12  
LANDSCAPE ARCHITECT

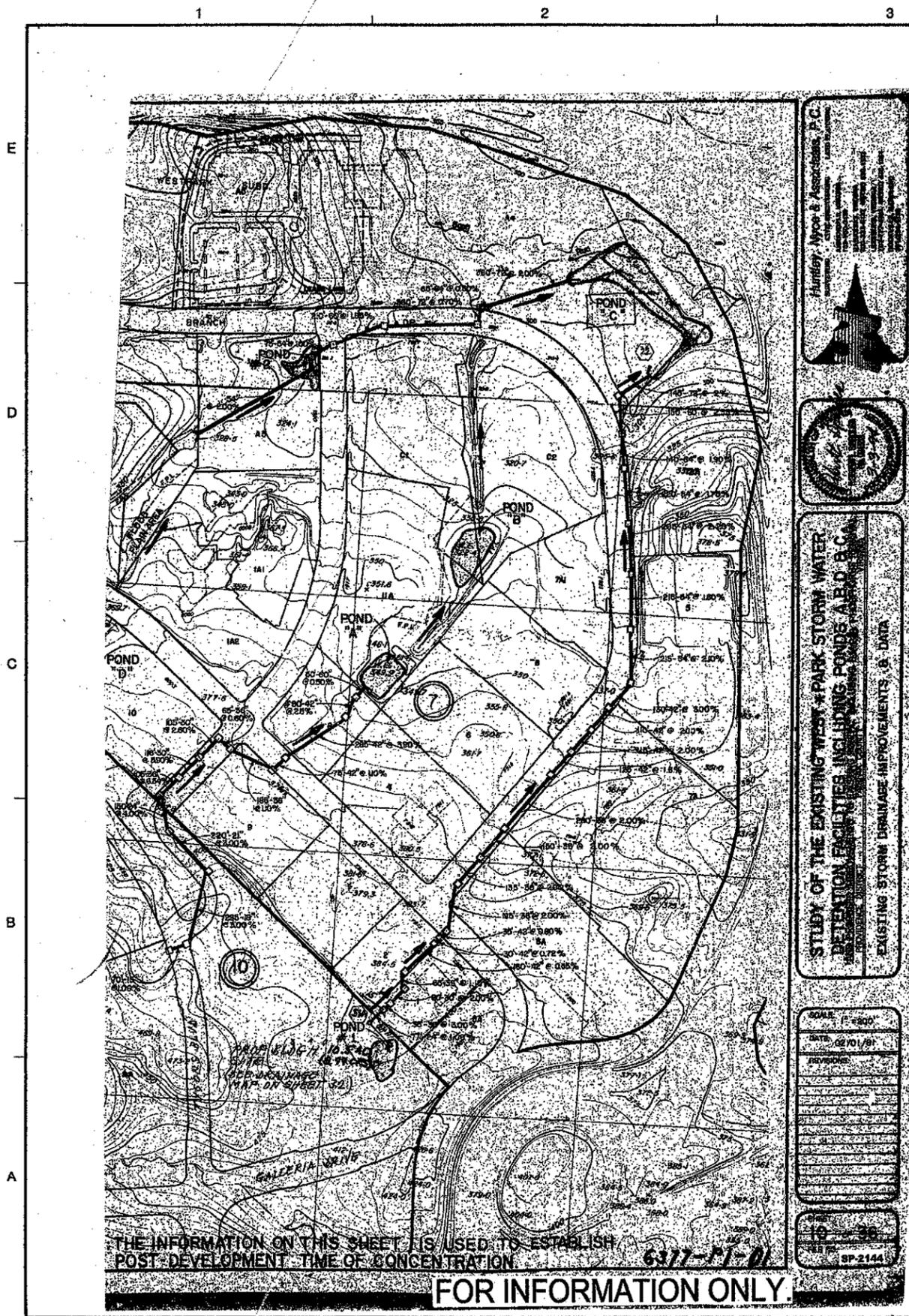
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

ADEQUATE OUTFALL  
ARBOR ROW

PLAN STATUS

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

SCALE	H:AS SHOWN
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C10.7



Hurley Noye & Associates, P.C.  
 10000 W. ...  
 ...



STUDY OF THE EXISTING WEST PARK STORM WATER  
 RETENTION FACILITIES INCLUDING PONDS A, B, C,  
 D, E AND EXISTING STORM DRAINAGE IMPROVEMENTS & DATA

SCALE: 1" = 50'  
 DATE: 02/10/11  
 REVISIONS:

6317-P1-01  
 SP-2144

THE INFORMATION ON THIS SHEET IS USED TO ESTABLISH  
 POST-DEVELOPMENT TIME OF CONCENTRATION  
**FOR INFORMATION ONLY.**

STORM DRAINAGE COMPUTATIONS																
FROM STR #	TO STR #	AREA ac	TOTAL ac	RUNOFF C	CA	ACCUM CA	Tc TO MN	I IN/HR	INC. CFS	TOTAL CFS	DIA IN	SLOPE %	LENGTH FT	n	Q CAP CFS	VELOCITY ACTU FPS
Pond #1.51B																
51A	51	10.50	10.50		0.00		5	7.27	8.99	8.99	18					
51a2	51	0.54	0.54	0.83	0.45	0.45	5	7.27	3.26	3.26						
60	51	0.87	0.87	0.80	0.54	0.54	5	7.27	3.90	3.90						
51	C	0.00	11.71	0.00	0.00	0.88	5	7.27	0.00	16.15	30	2.00%		0.013	57.88	10.31
C	D	0.30	12.01	0.85	0.26	1.24	5	7.27	1.85	16.00	36	1.70%		0.013	86.93	8.65
D	E	0.51	12.52	0.85	0.43	1.67	5	7.27	3.15	21.15	42	0.55%		0.013	74.59	6.77
E	F	0.51	13.03	0.85	0.43	2.11	5	7.27	3.15	24.30	42	0.90%		0.013	95.41	8.34
F	G	0.00	13.03	0.00	0.00	2.11	5	7.27	0.00	24.30	48	1.90%		0.013	143.59	8.49
G	8	3.80	16.83	0.83	3.15	5.26	5	7.27	22.83	47.23	42	0.89%		0.013	100.07	10.31
8	7	1.35	18.18	0.85	1.15	6.41	5	7.27	8.34	55.57	36	2.74%		0.013	110.37	15.74
7	8	0.13	18.31	0.85	0.11	6.52	5	7.27	0.80	58.38	36	3.20%		0.013	119.27	16.72
8	8A	0.33	18.64	0.85	0.28	6.80	5	7.27	2.04	58.42	36	3.73%		0.013	128.77	17.87
8A	9	1.58	20.23	0.89	1.42	8.21	5	7.27	10.28	68.70	36	3.73%		0.013	128.77	18.49
9	10	0.89	21.22	0.84	0.53	8.75	5	7.27	3.89	72.59	36	3.78%		0.013	129.63	18.87
10	11	0.72	21.94	0.80	0.58	9.32	5	7.27	4.19	76.78	36	3.40%		0.013	122.94	18.38
11	12	0.73	22.67	0.55	0.40	9.73	5	7.27	2.92	79.70	36	4.17%		0.013	138.15	19.86
12	20	1.88	24.55	0.72	1.43	11.15	5	7.27	10.36	90.06	42	2.62%		0.013	162.79	17.41
20	ex13(8)	1.17	25.82	0.76	0.89	12.04	5	7.27	6.46	96.53	42	2.62%		0.013	162.79	17.85
ex13(8)	15	1.13	26.95	0.80	0.90	12.94	5	7.27	6.57	103.10	42	3.01%		0.013	174.49	18.91
15	15A	2.53	29.48	0.72	1.82	14.77	5	7.27	13.24	116.34	42	4.02%		0.013	201.65	21.71
15A	14	0.45	29.93	0.72	0.32	15.09	5	7.27	2.36	118.70	42	3.00%		0.013	174.20	19.48
14	13	0.00	29.93	0.00	0.00	15.09	5	7.27	0.00	118.70	54	2.09%		0.013	284.19	17.17
13	16, (ex22)	3.59	33.52	0.67	2.41	17.50	5	7.27	17.49	138.18	54	2.09%		0.013	284.19	17.70
16, (ex22)	17	1.80	35.12	0.73	1.17	18.69	5	7.27	8.49	144.67	54	2.02%		0.013	279.39	17.83
17	18	1.80	37.02	0.81	1.54	20.20	5	7.27	11.19	155.86	54	2.05%		0.013	281.46	18.21
18	19	1.18	38.21	0.80	0.95	21.15	5	7.27	6.92	162.78	54	1.84%		0.013	286.65	17.60
19	20	3.15	41.36	0.82	2.58	23.74	5	7.27	18.78	181.56	54	2.02%		0.013	279.39	18.69
20	21	2.05	43.41	0.83	1.70	25.44	5	7.27	12.37	193.93	60	2.46%		0.013	408.35	20.81
21	22	2.00	45.41	0.84	1.88	27.12	5	7.27	12.21	208.15	72	1.53%		0.013	523.67	17.50

Information of the existing storm outfall storm pipe is obtained from available site plan as built information and Fairfax County Storm Sewer Inventory. The system was originally designed to accommodate the total build out of the shed. These computations show the system to be more than adequate.

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**TYSONS II BUILDING "H" ROUGH GRADING PLAN**  
 PROVIDENCE DISTRICT  
 FAIRFAX COUNTY, VIRGINIA



KEY PLAN  
 SCALE  
 AS NOTED

No.	DATE	BY	Description

DRAWN BY: VC  
 APPROVED BY: TCC  
 CHECKED BY: DOM  
 DATE: JULY, 2008

**OUTFALL ANALYSIS**

PROJECT NO. 6028-RGP-008  
 (6028-SP-018)

32A of 83  
 SHEET NO. 15B of 33  
 SP-2152

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ADEQUATE OUTFALL  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

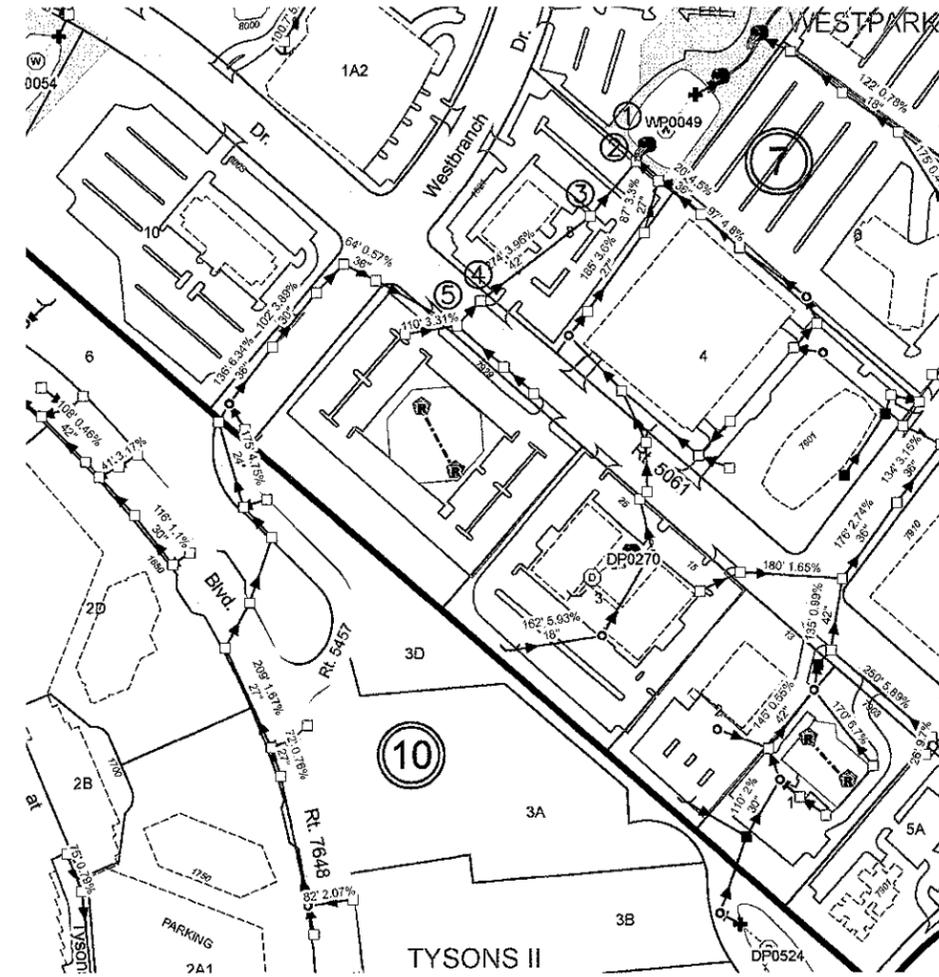
DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
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07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

JOB No.  
 DATE: APRIL 26, 2011  
 FILE No. 7403-07-001  
 SHEET C10.7.1

PROVIDED FOR INFORMATION ONLY! FROM FFX PLAN #6028-SP-018-2

### REACH B EXISTING PIPE COMPUTATIONS

FROM POINT (1)	TO POINT (2)	AREA DRAIN "A" (ACRES)		RUN-OFF COEF. (4)	CA		INLET TIME MINUTES (7)	RAIN FALL IN / HR. (8)	RUN-OFF Q C.F.S. (9)	INVERT ELEVATIONS		LENGTH FT. (12)	ACTUAL SLOPE % (13)	MIN. SLOPE % (14)	DIA. IN. (15)	CAPACITY C.F.S. (16)	FULL FLOW VEL. F.P.S. (17)	ACTUAL VEL. F.P.S. (18)
		INCREMENT (3)	ACCUMULATED (5)		INCREMENT (6)	ACCUMULATED (8)				LOWER END (10)	UPPER END (11)							
5	4	20.92	20.92	0.89	14.43	14.43	5.00	7.27	104.94	-	-	73	0.013	1.10	42	106.52	10.97	12.60
4	3	0.31	21.23	0.85	0.26	14.70	5.10	7.27	106.86	-	-	274	0.013	3.96	42	200.21	20.81	21.20
3	2	1.05	22.28	0.75	0.79	15.49	5.31	7.27	112.58	-	-	110	0.013	3.52	42	188.76	19.62	20.40
2	1	1.35	29.33	0.52	4.12	19.61	5.40	7.27	142.55	-	-	27	0.013	0.65	60	193.15	9.84	10.70
-	2	5.70	5.70	0.80	3.42	3.42	5.00	7.27	24.86	-	-	110	0.013	1.00	36	69.70	9.44	8.80



1 REACH B OUTFALL MAP  
C10.7B NOT TO SCALE

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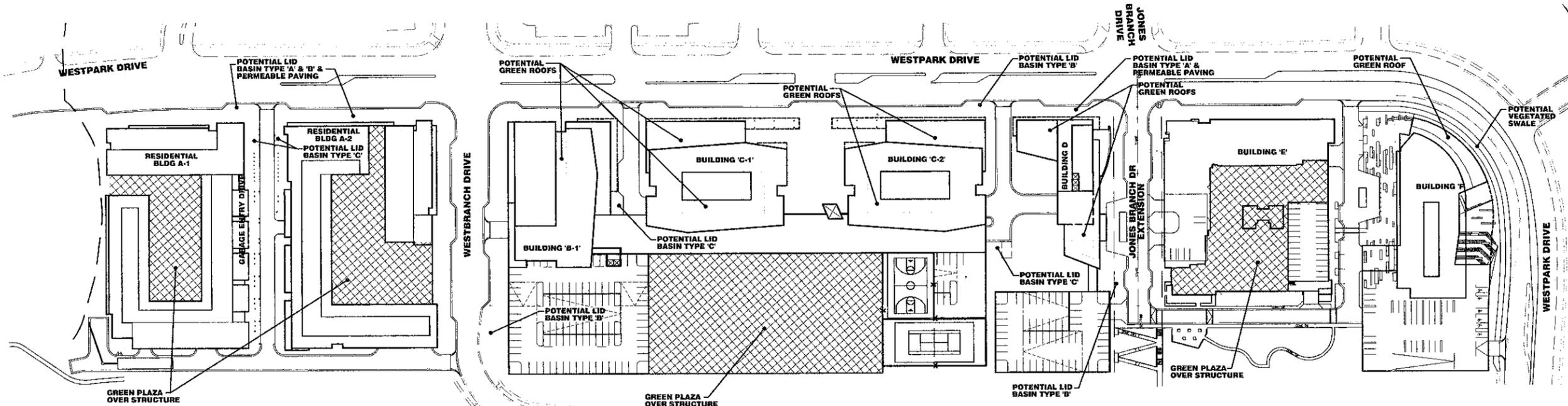
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ADEQUATE OUTFALL  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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DATE	DESCRIPTION
SCALE	H:AS SHOWN
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	C10.7.2



1 LOW IMPACT DEVELOPMENT TECHNIQUES - CONCEPT PLAN

NTS

**4-6" EXTENSIVE GREEN ROOF**

- accommodates variety of plants, sedum, perennials, and succulents
- lightweight
- water storage in drainage layer (5 in. used to sustain drought, tolerant plants), greater than the volume of a one-year storm event
- low maintenance

**POTENTIAL GREEN PLAZA**

- accommodates variety of plants, sedum, perennials, and succulents
- requires supplemental irrigation
- water storage in drainage layer
- requires regular maintenance

**BIORETENTION PLANTER**

- 16-24" planter walls
- amended soil
- handles some overflow drainage from green roof
- overflow directed to the system

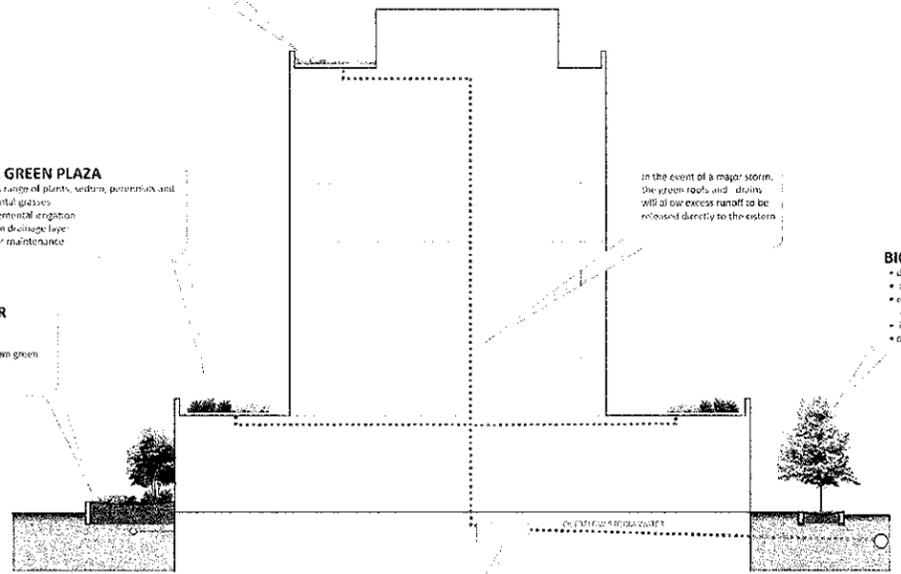
in the event of a major storm, the green roofs and basins will allow excess runoff to be released directly to the system

**BIORETENTION TREE PIT**

- depressed tree pit with curb inlet
- amended soil
- reduces street runoff volume and peak discharge rate
- improves water quality
- overflow directed to the storm sewer

**CISTERN**

- captures overflow from green roofs
- storage for irrigation supply
- overflow directed to the storm sewer



CONCEPTUAL BUILDING DIAGRAM FOR L.I.D TECHNIQUES



BASIN TYPE 'B'



BASIN TYPE 'A' & PERMEABLE PAVERS



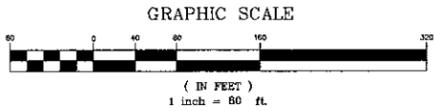
BASIN TYPE 'C'

**NOTE:**

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED FDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.

**NOTE:**

1. THIS PLAN IS INTENDED FOR INFORMATION ONLY TO DEMONSTRATE POTENTIAL L.I.D. METHODS OF RAINWATER REUSE IN ACKNOWLEDGEMENT OF THE TYSON URBAN CENTER COMPREHENSIVE PLAN GUIDELINES FOR STORM WATER MANAGEMENT. FINAL METHODS, MEANS, LOCATIONS, SIZES AND SPECIFIC L.I.D FACILITIES WILL VARY WITH FINAL ENGINEERING DESIGN.
2. REFER TO SHEET L5.2 FOR ADDITIONAL SUSTAINABILITY DESIGN INFORMATION.



P:\7403 - West Group Properties\7403-07-001 (PLN) - Tyson West Park\Planning\Rezoning\Current\01-001 LID.dwg, 6/28/2012 4:23:46 PM, M

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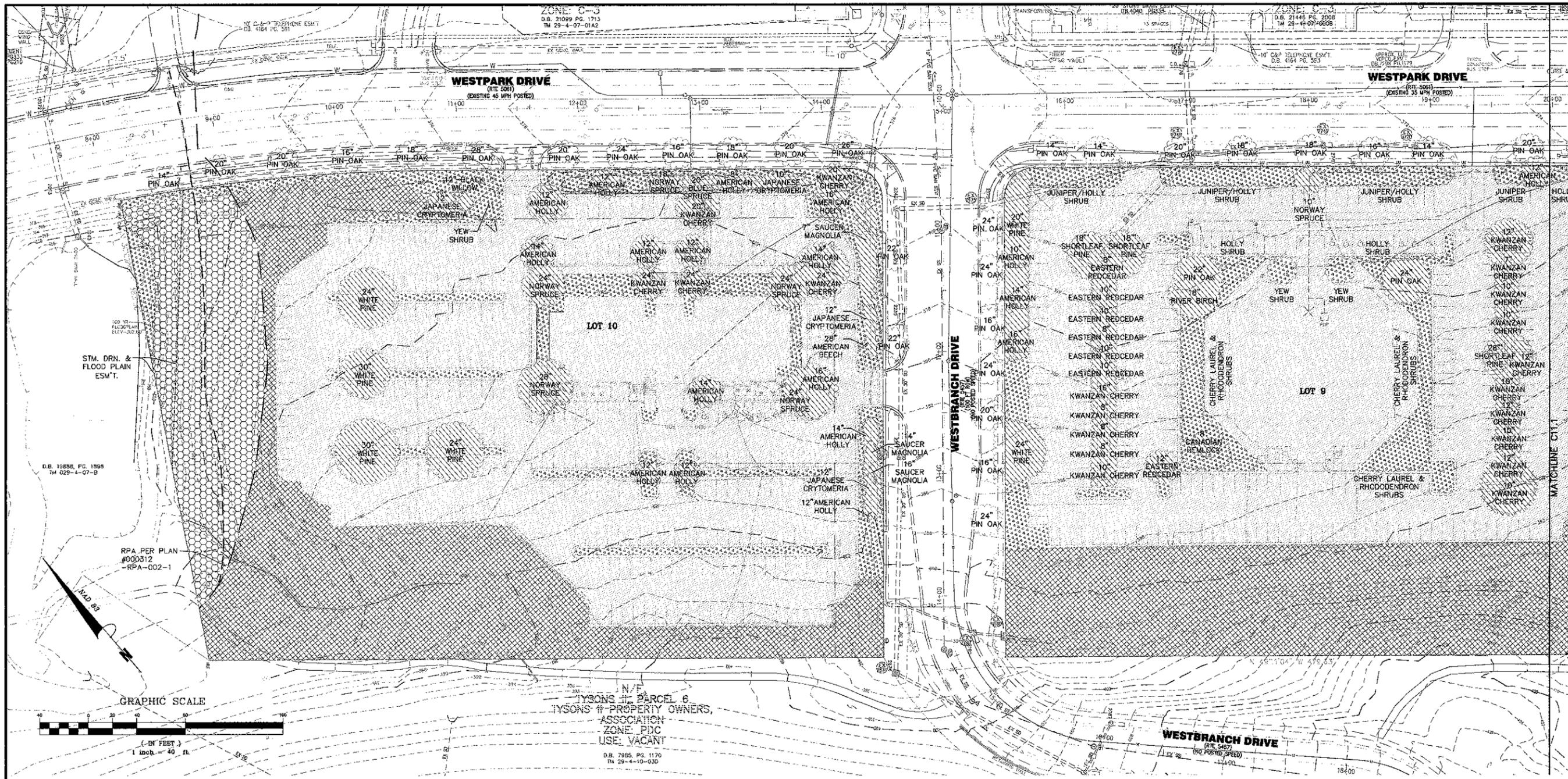
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LOW IMPACT DEVELOPMENT  
CONCEPT PLAN  
ARBOR ROW  
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PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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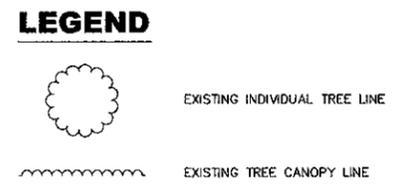
SCALE: H:1" = 80'  
JOB No.  
DATE: APRIL 26, 2011  
FILE No. 7403-07-001  
SHEET C10.8



**Table 12.3 Tree Preservation Target Calculations and Statement**

A	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	7.29 AC.
B	Percentage of gross site area covered by existing tree canopy =	38%
C	Percentage of 10-year canopy required for site (see Table 12.4) = (Per Comprehensive Plan Goal = 10%)	10% (1.93 AC.)
D	Percentage of the 10-year tree canopy requirement that should be met through tree preservation =	38% (.73 AC.)
E	Proposed percentage of canopy requirement that will be met through tree preservation =	28% (.55 AC.)
F	Has the Tree Preservation Target minimum been met?	NO
G	If No for line F, 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 12-0507.3 along with a narrative that provides a site-specific explanation of why the Tree Preservation Target cannot be met. Provide sheet number where deviation request is located.	OK
H	If step G requires a narrative, it shall be prepared in accordance with 12-0508.4	OK
I	Place this information prior to the 10-year Tree Canopy Calculations as per instructions in Table 12.10	N/A

NOTE: A DEVIATION FROM THE TREE PRESERVATION TARGET HAS BEEN REQUESTED AS SHOWN ON ATTACHED REQUEST LETTER, SHEET C2.0.



\* DOMINANT TREE SPECIES  
TOTAL SITE AREA = 5.3887 AC.  
EXISTING TREE CANOPY = 95,791 S.F. OR 2.20 AC.  
(.52 AC. OR 22,610 S.F. LANDSCAPE TREE CANOPY + 1.13 AC. OR 49,414 S.F. EARLY SUCCESSIONAL FOREST + .55 AC. OR 23,767 S.F. BOTTOMLAND FOREST)

**LOT 10 COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*TULIP POPLAR, BLACK LOCUST, BLACK CHERRY, WHITE PINE, RED OAK, RED MAPLE, BLACK WALNUT	EARLY	FAIR	1.1344 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	2.7343 AC.
[Pattern]	BOTTOM-LAND FOREST	*TULIP POPLAR, BLACK CHERRY, AMERICAN ELM, BLACK LOCUST, WHITE PINE, RED MAPLE, AILANTHUS, CATALPA	EARLY	FAIR	.55 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.52 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.45 AC.

**LOT 9 COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*TULIP POPLAR, BLACK LOCUST, BLACK CHERRY, WHITE PINE, BLACK WALNUT, RED MAPLE	EARLY	FAIR	1.0706 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	2.4606 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.46 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.41 AC.

\* DOMINANT TREE SPECIES  
TOTAL SITE AREA = 4.4012 AC.  
EXISTING TREE CANOPY = 66,502 S.F. OR 1.53 AC.  
(.46 AC. OR 19,945 S.F. LANDSCAPE TREE CANOPY + 1.07 AC. OR 46,557 S.F. FOREST)

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LANDSCAPE ARCHITECT

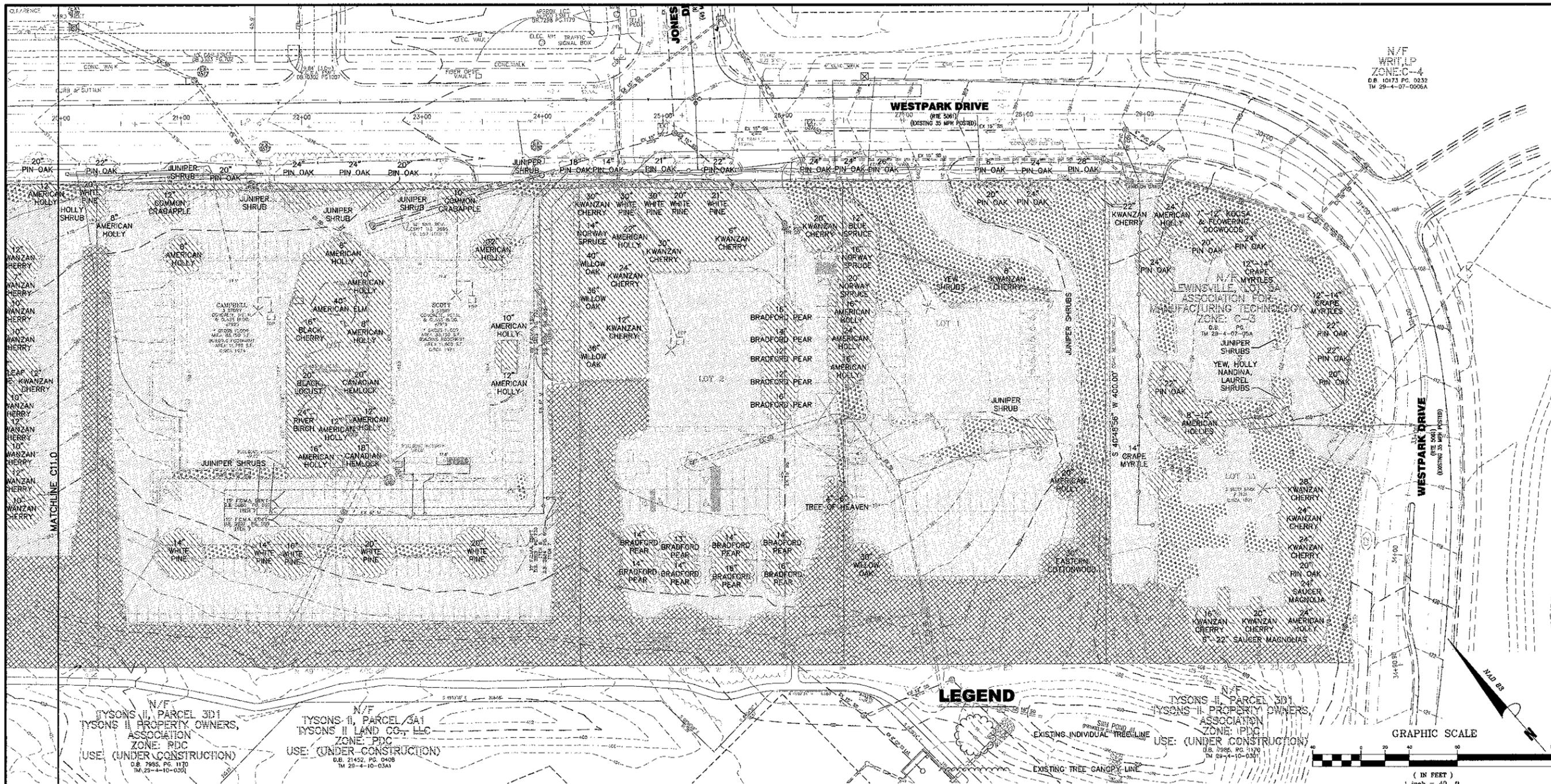
EXISTING VEGETATION MAP  
(SHEET 1 OF 2)  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
06/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
8/19/12	PER COUNTY COMMENTS

DATE	DESCRIPTION
SCALE	H: 1" = 40'
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001

SHEET **C11.0**



N/F WRITLP  
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 TM 29-4-07-0006A

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 MATTHEW J. TAUSCHER  
 Lic. No. 000832  
 8/29/12

**EXISTING VEGETATION MAP**  
 (SHEET 2 OF 2)  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
07/22/11	PER COUNTY COMMENTS
11/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
8/29/12	PER COUNTY COMMENTS

PLAN STATUS

SCALE: H:1" = 40'

JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

SHEET **C11.1**

**LOT 3 COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*TULIP POPLAR, BLACK CHERRY, SASSAFRAS, OSAGE, ORANGE, WHITE OAK, WHITE PINE, BLACK LOCUST, RED MAPLE	EARLY	FAIR	.52 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	2.3703 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.7304 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.06 AC.

**LOT 2 COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*OSAGE, ORANGE, BLACK LOCUST, BLACK CHERRY, RED MAPLE, WHITE PINE, TULIP POPLAR	EARLY	FAIR TO POOR	.4342 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	.9541 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.5967 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.0233 AC.

**LOT 1 COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*OSAGE, ORANGE, BLACK LOCUST, BLACK CHERRY, NORWAY SPRUCE, PIN OAK, WHITE PINE, TULIP POPLAR	EARLY	FAIR TO POOR	.45 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	1.00 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.14 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.41 AC.

**LOT 5A COVER TYPE**

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	*BLACK LOCUST, RED MAPLE, BLACK CHERRY, TULIP POPLAR, SHORTLEAF PINE	EARLY	FAIR TO POOR	.14 AC.
[Pattern]	DEVELOPED LAND	N/A	N/A	N/A	.74 AC.
[Pattern]	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.55 AC.
[Pattern]	MISC. SHRUB AND GROUND COVER	N/A	N/A	FAIR TO GOOD	.40 AC.

**\*OVERALL COVER TYPE**

\*OVERALL COVER INCLUDES LOTS 1, 2, 3, 5A, 9, & 10

KEY	COVER TYPE	TOTAL AREA
[Pattern]	EARLY SUCCESSION FOREST COMMUNITY	3.75 AC.
[Pattern]	DEVELOPED LAND	10.26 AC.
[Pattern]	BOTTOMLAND FOREST	0.55 AC.
[Pattern]	LANDSCAPE TREE CANOPY	2.99 AC.
[Pattern]	MISCELLANEOUS (SHRUB AND GROUND COVER)	1.77 AC.

\* DOMINANT TREE SPECIES

TOTAL SITE AREA = 3.6807 AC.

EXISTING TREE CANOPY = 54,635 S.F. OR 1.25 AC.  
 (.73 AC. OR 31,889 S.F. LANDSCAPE TREE CANOPY +  
 .52 AC. OR 22,746 S.F. FOREST)

\* DOMINANT TREE SPECIES

TOTAL SITE AREA = 2.0083 AC.

EXISTING TREE CANOPY = 44,922 S.F. OR 1.03 AC.  
 (.59 AC. OR 25,996 S.F. LANDSCAPE TREE CANOPY +  
 .43 AC. OR 18,926 S.F. FOREST)

\* DOMINANT TREE SPECIES

TOTAL SITE AREA = 2.00 AC.

EXISTING TREE CANOPY = 25,620 S.F. OR .59 AC.  
 (.14 AC. OR 5,973 S.F. LANDSCAPE TREE CANOPY +  
 .45 AC. OR 19,647 S.F. FOREST)

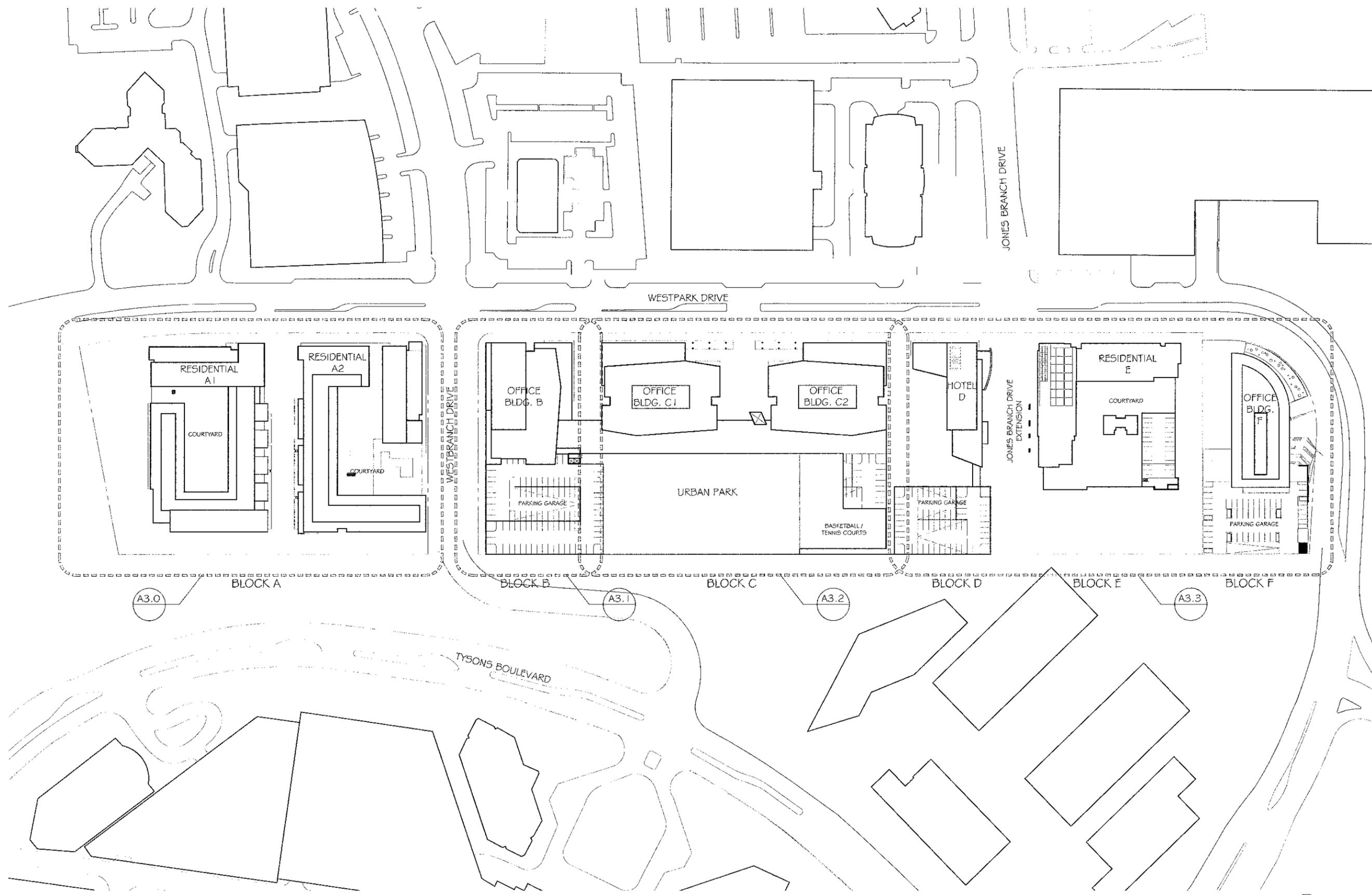
\* DOMINANT TREE SPECIES

TOTAL SITE AREA = 1.83 AC.

EXISTING TREE CANOPY = 30,121 S.F. OR .69 AC.  
 (.55 AC. OR 23,973 S.F. LANDSCAPE TREE CANOPY +  
 .14 AC. OR 6,148 S.F. FOREST)

TOTAL SITE AREA = ±19.32 AC.

EXISTING TREE CANOPY = 317,591 S.F. OR 7.29 AC.  
 (2.99 AC. OR 130,386 S.F. LANDSCAPE TREE CANOPY +  
 3.75 AC. OR 163,438 S.F. EARLY SUCCESSIONAL FOREST +  
 .55 AC. OR 23,767 S.F. BOTTOMLAND FOREST)



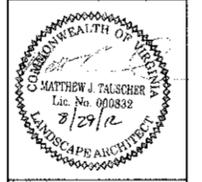
**01** OVERALL ROOF PLAN - BLOCKS A THROUGH F  
 SCALE: 1" = 80'-0"

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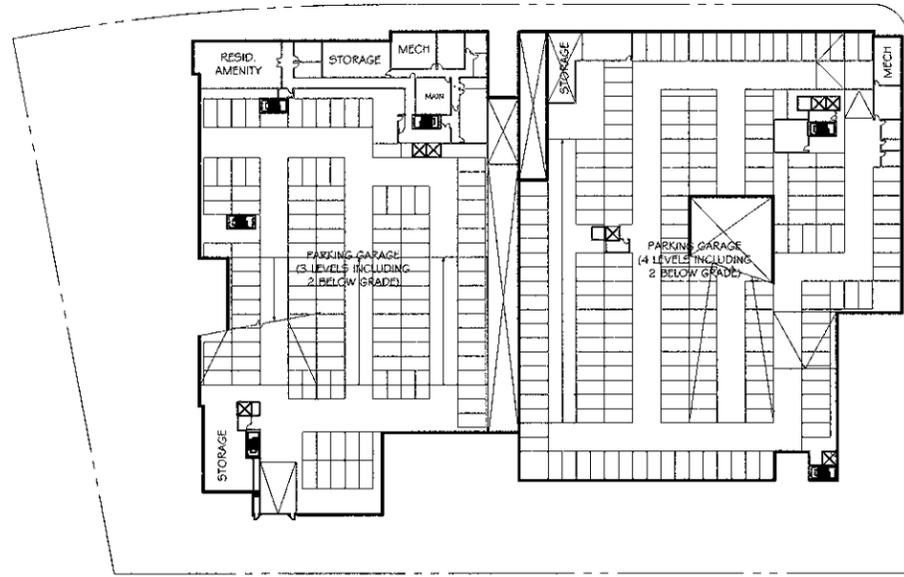
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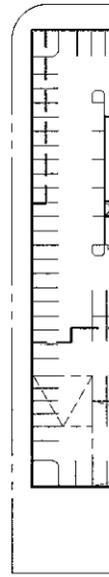
**KEY PLAN (BLOCKS A - F)**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
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08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A1.0

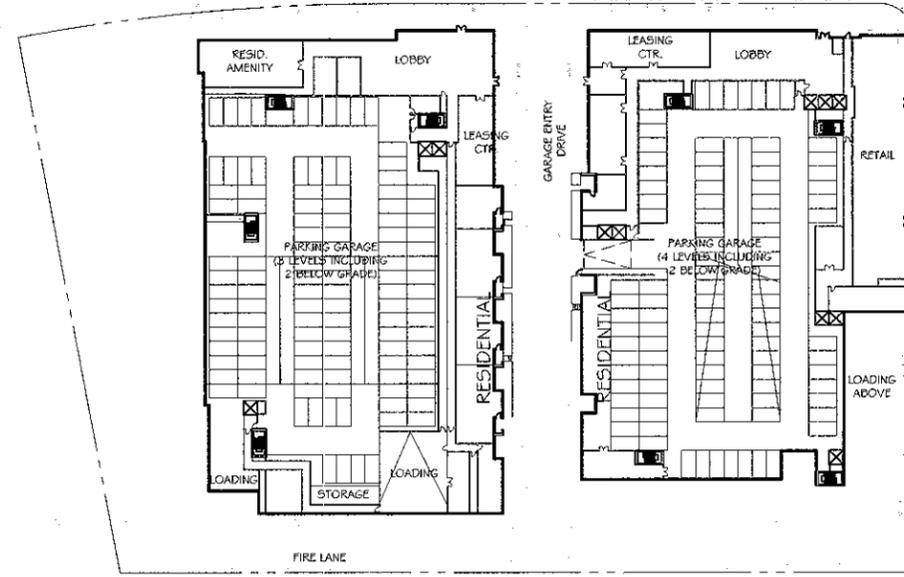
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 \* See Civil Landscape drawings for proposed site information



MATCHLINE  
- SHEET A3.1



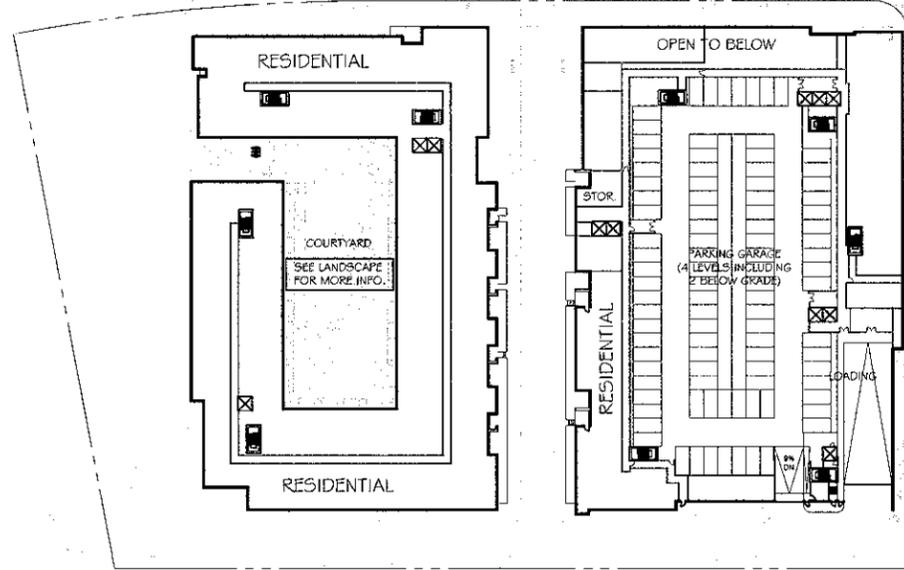
**01** LEVEL B1 PLAN  
SCALE: 1" = 60'-0"



MATCHLINE  
- SHEET A3.1



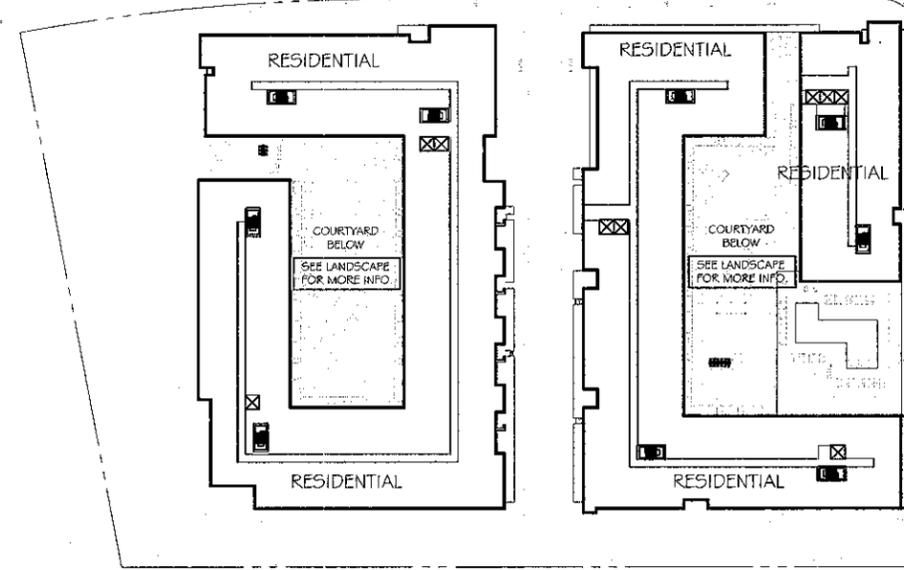
**02** GROUND LEVEL PLAN  
SCALE: 1" = 60'-0"



MATCHLINE  
- SHEET A3.1



**03** SECOND LEVEL PLAN  
SCALE: 1" = 60'-0"



MATCHLINE  
- SHEET A3.1



**04** TYPICAL LEVEL PLAN  
SCALE: 1" = 60'-0"

\*Additional full or partial below grade parking level may be possible per final parking count. See FDP for more information. Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications. See Civil/Landscape drawings for proposed site information.

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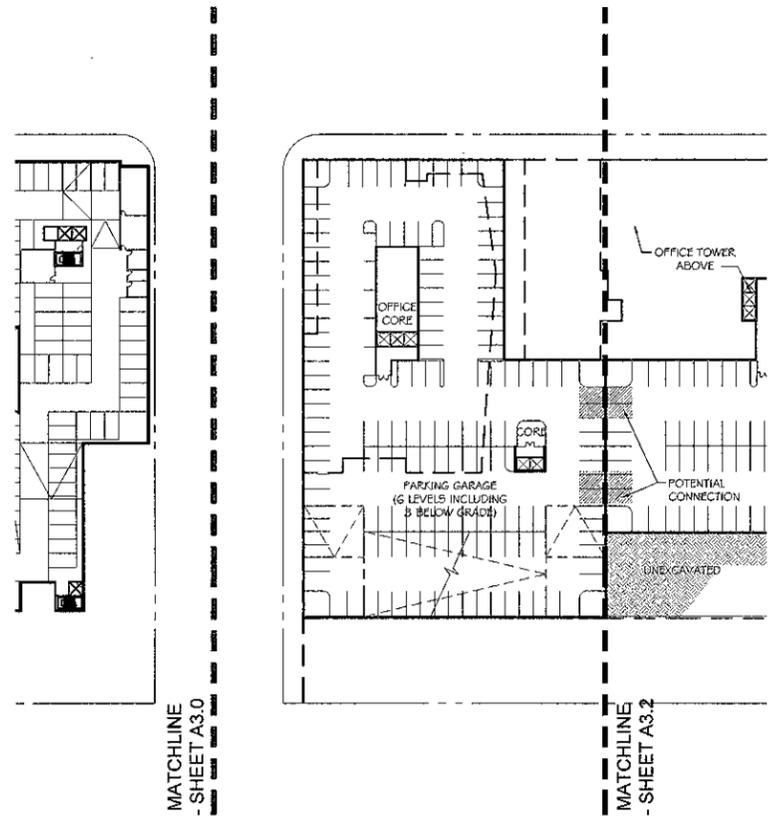
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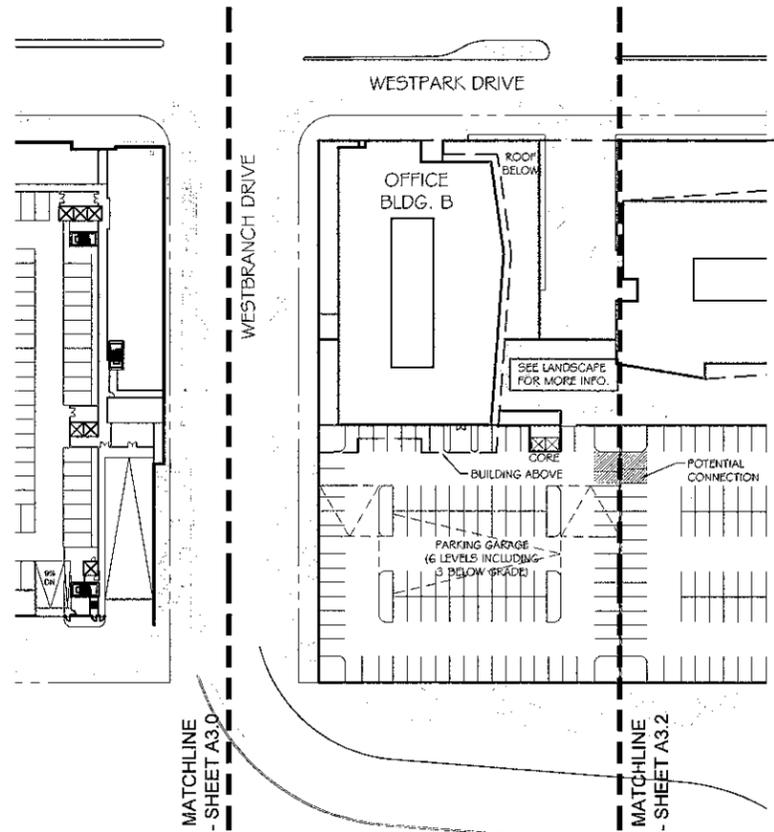


**BLOCK A PLANS**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

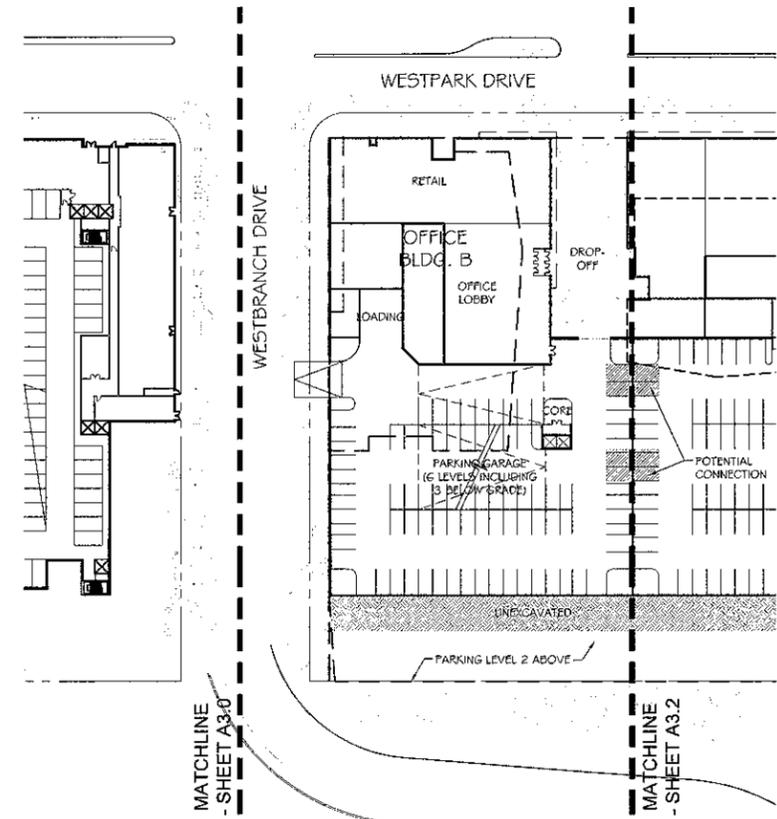
PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE:	H:
JOB No.	
DATE:	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A3.0



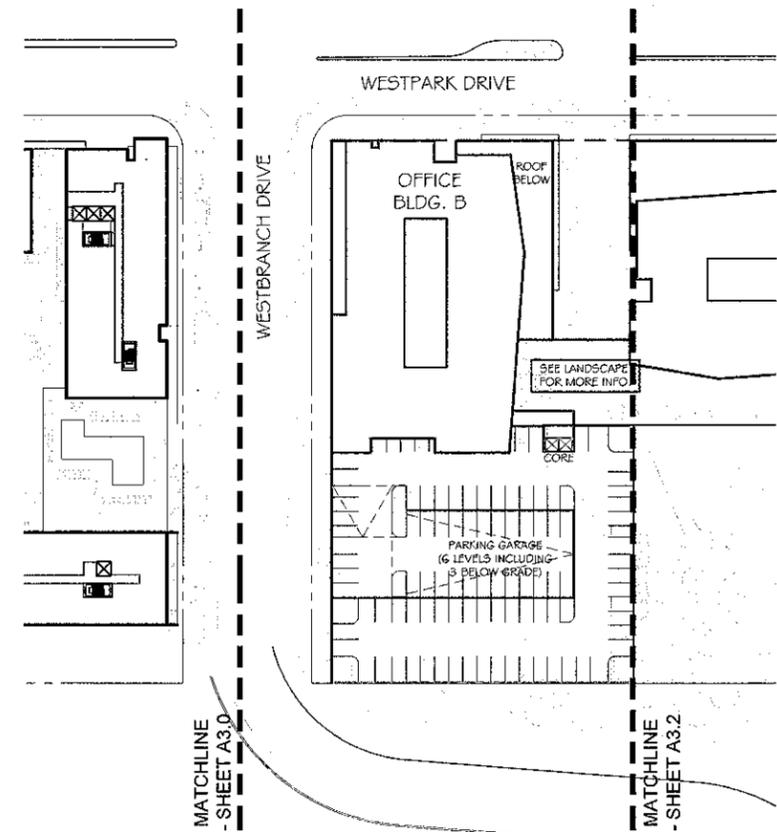
01 LEVEL B1 PLAN (LEVEL B2/B3 SIMILAR)  
SCALE: 1" = 60'-0"



03 SECOND LEVEL PLAN (GARAGE LEVEL 3)  
SCALE: 1" = 60'-0"



02 GROUND LEVEL PLAN  
SCALE: 1" = 60'-0"



04 TYPICAL LEVEL PLAN  
SCALE: 1" = 60'-0"

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\* See Civil/Landscape drawings for proposed site information

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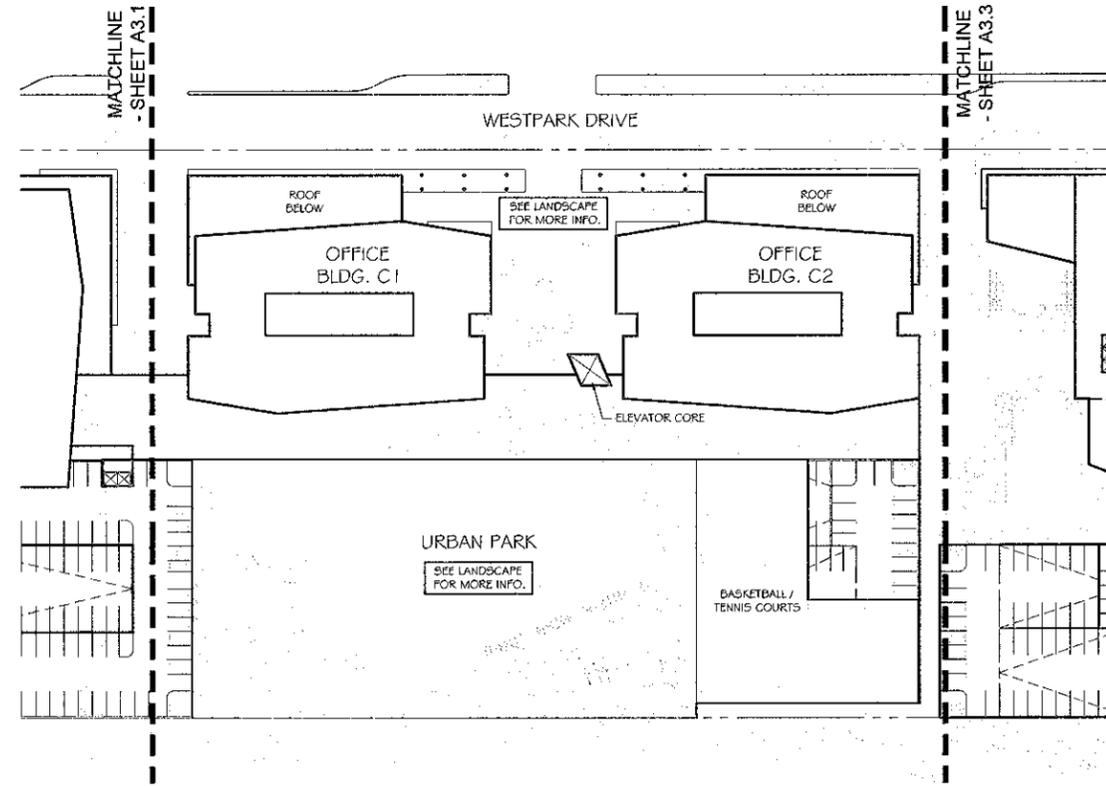
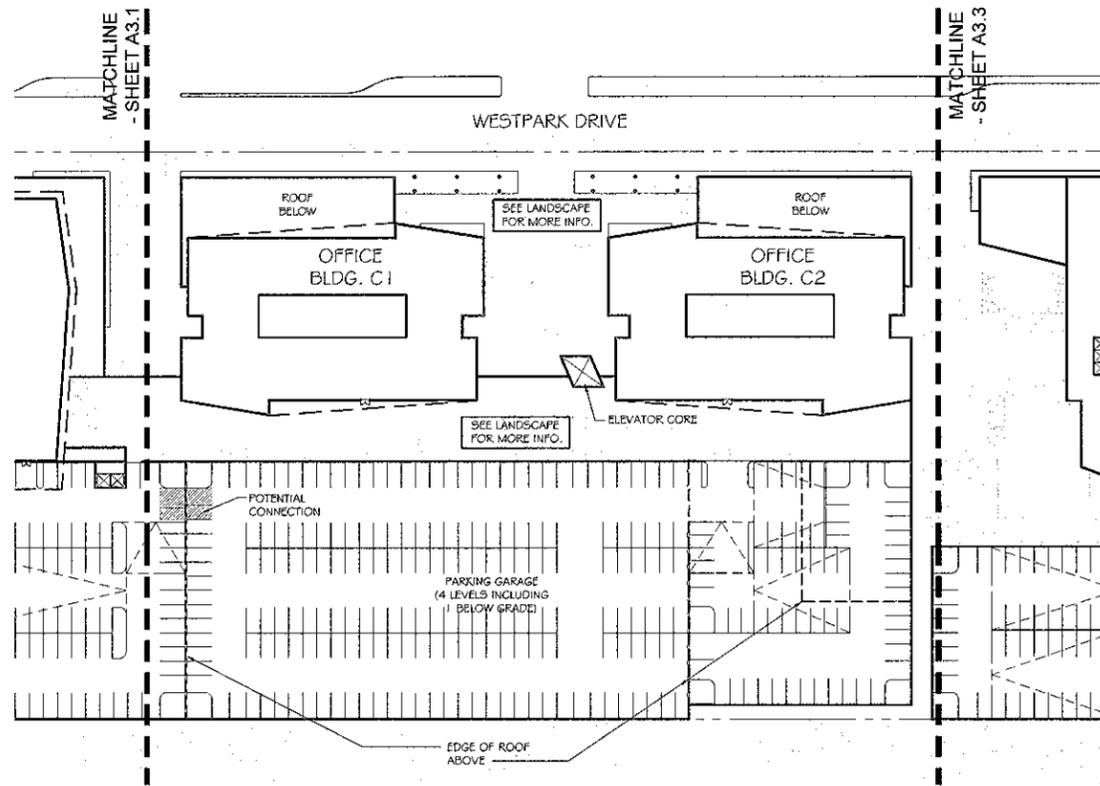
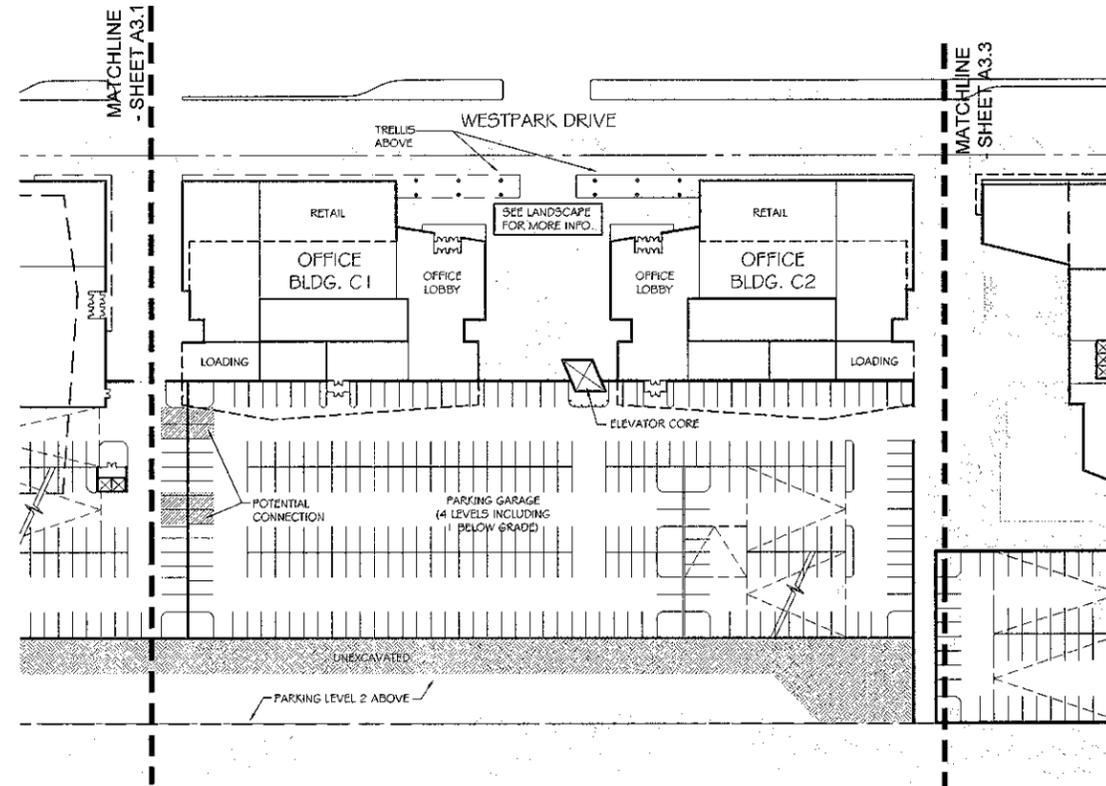
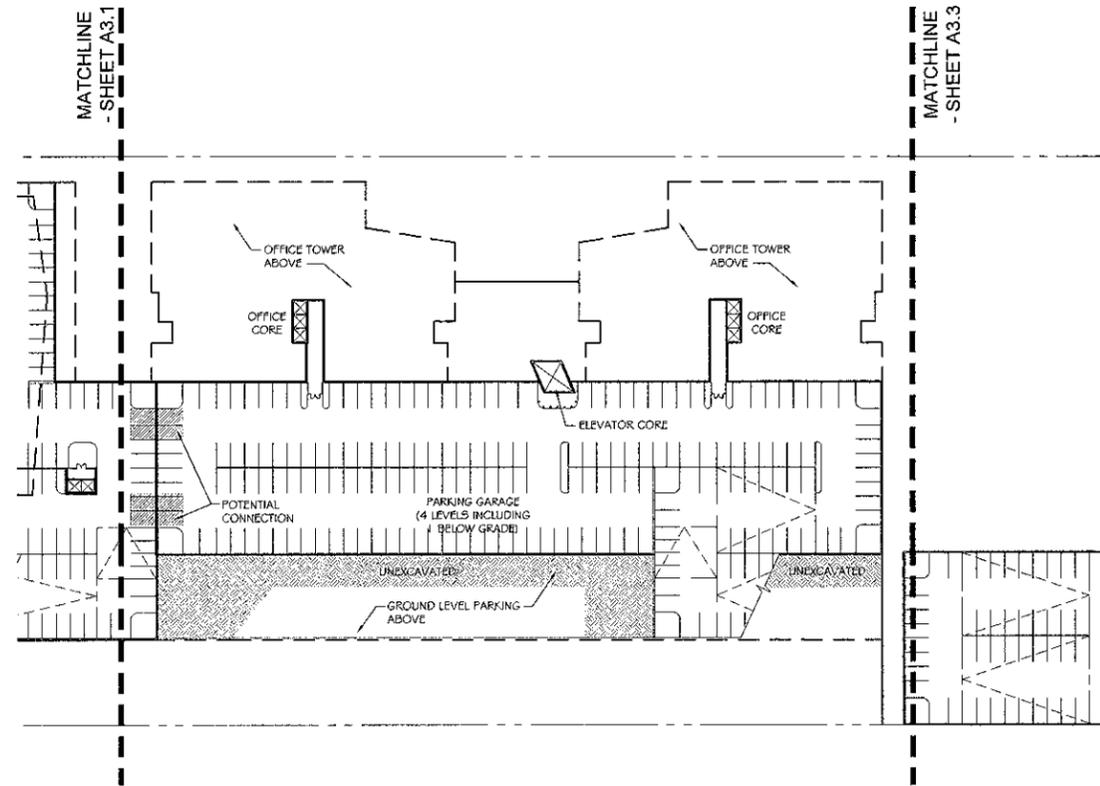
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**BLOCK B PLANS**  
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PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
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07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
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DATE: APRIL 26, 2011	
FILE No. 7403-07-001	
SHEET	A3.1

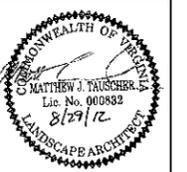


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**BLOCK C PLANS**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

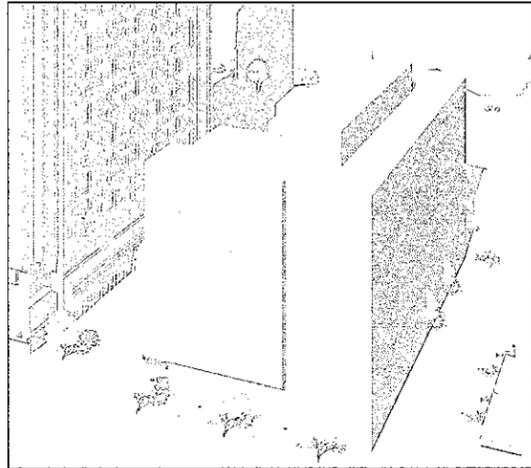
PLAN STATUS	
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02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE:	H:
JOB No.	
DATE:	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A3.2

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\* See Civil/Landscape drawings for proposed site information



TWO ALTERNATIVE HOTEL LAY-OUTS AND ALTERNATIVE HEIGHTS PROPOSED AS SHOWN ON SHEETS A3.4 AND A4.0.

BUILDING HEIGHT : 119'-0"  
NUMBER OF FLOORS: 10

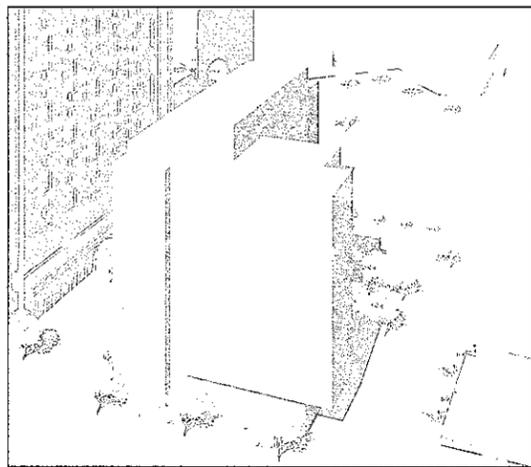


ALTERNATE 1 - MASSING STUDY

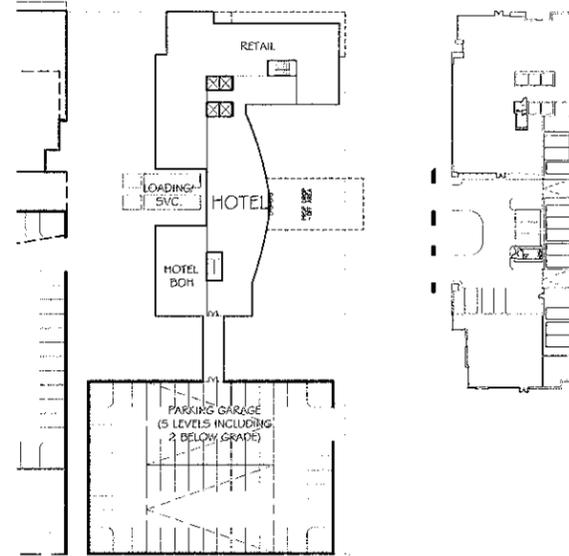
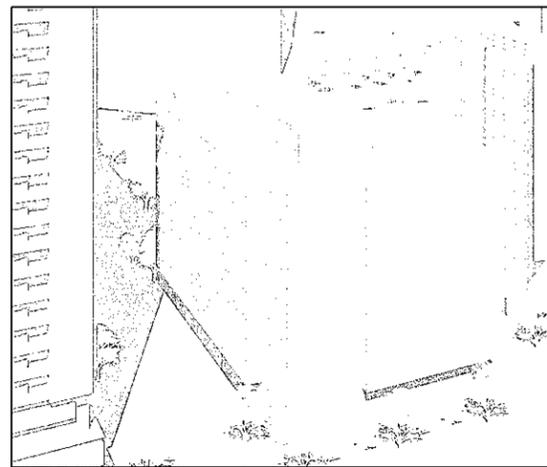


ALTERNATE 2 - MASSING STUDY

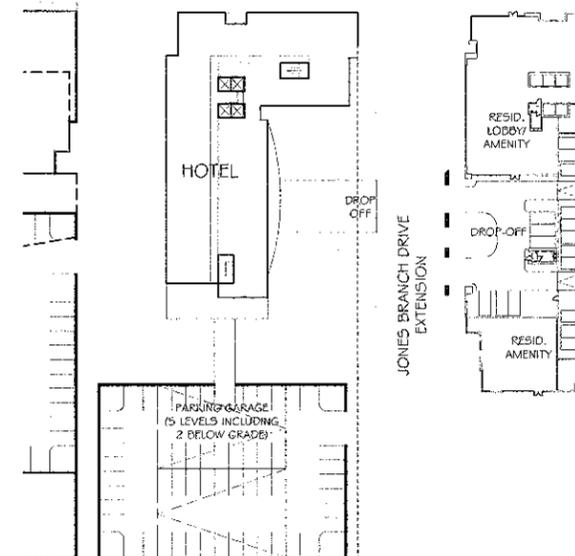
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NUMBER OF FLOORS: 10



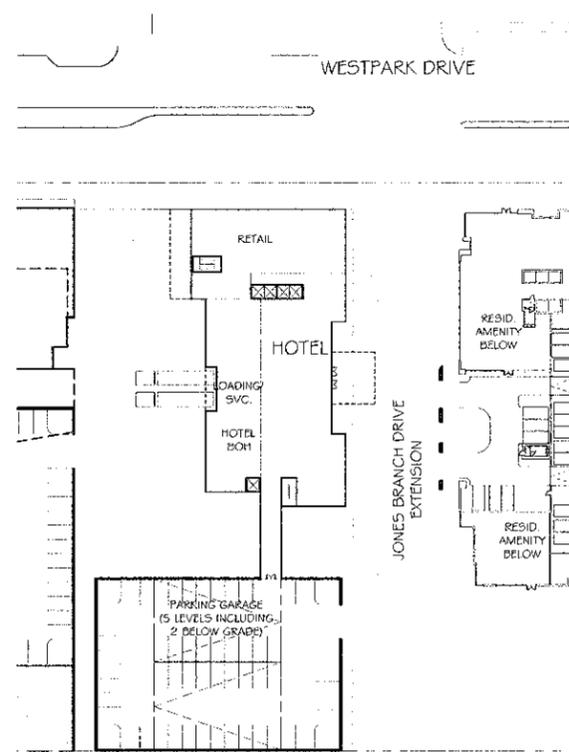
ALTERNATE 2 - MASSING STUDY



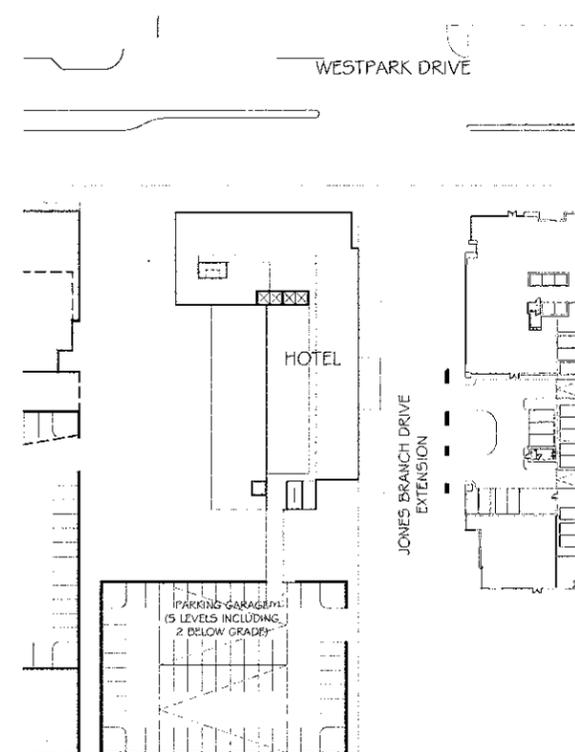
01 ALTERNATE 1 - GROUND LEVEL PLAN  
SCALE: 1" = 60'-0"



02 ALTERNATE 1 - TYPICAL LEVEL PLAN  
SCALE: 1" = 60'-0"



03 ALTERNATE 2 - GROUND LEVEL PLAN  
SCALE: 1" = 60'-0"



04 ALTERNATE 2 - TYPICAL LEVEL PLAN  
SCALE: 1" = 60'-0"

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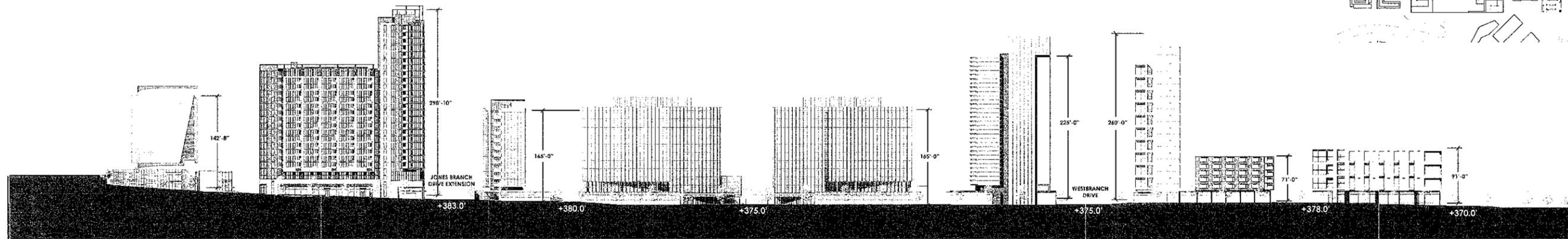
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MATTHEW J. TAUSCHER  
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LANDSCAPE ARCHITECT

**BLOCK D ALTERNATE PLANS**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

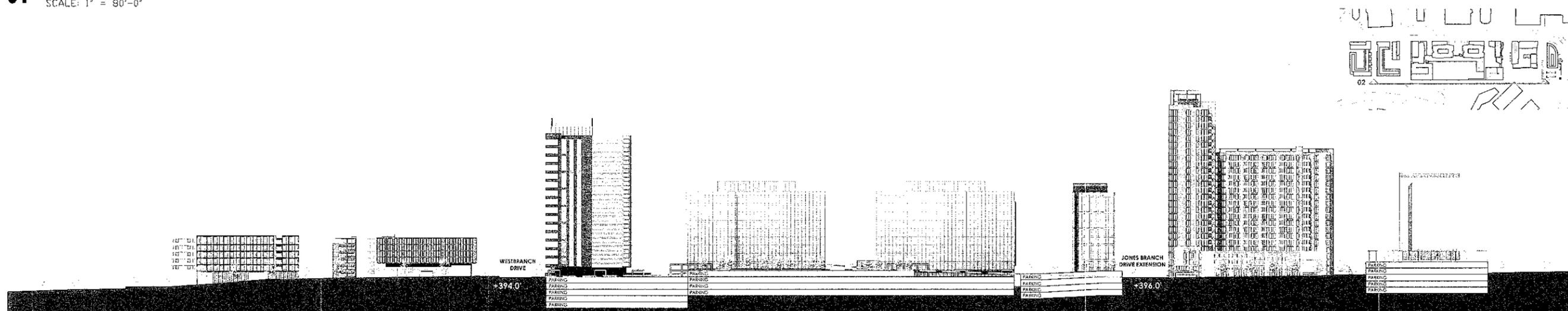
PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
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DATE : APRIL 26, 2011	
FILE No. 7403-07-001	

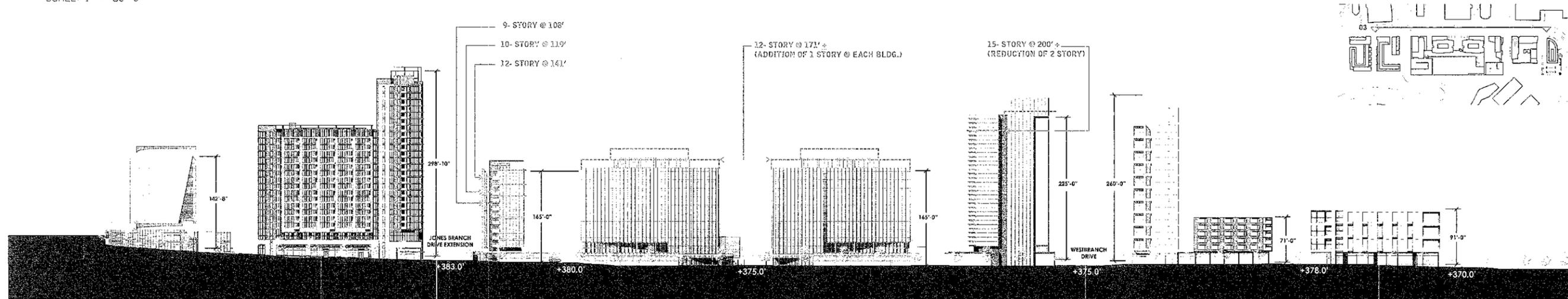
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**01** SITE SECTION - NORTH ALONG WESTPARK DRIVE  
SCALE: 1" = 80'-0"



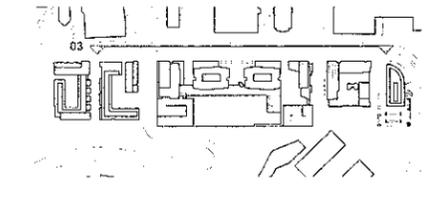
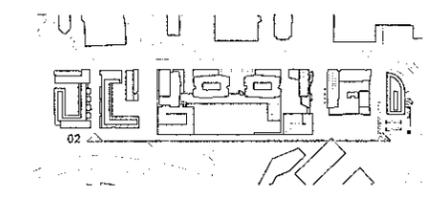
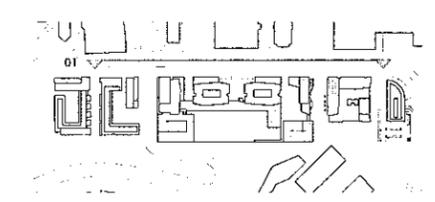
**02** SITE SECTION - SOUTH  
SCALE: 1" = 80'-0"



**03** SITE SECTION - ALTERNATE/NORTH ALONG WESTPARK DRIVE  
SCALE: 1" = 80'-0"

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See FDP for Block A, E, and F for additional details.  
Proposed building height is shown on CDP sheets A4.0/4.1/4.2. Refer to C2.1/Table 1 for allowable building height ranges.  
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wdc@wdcarch.com

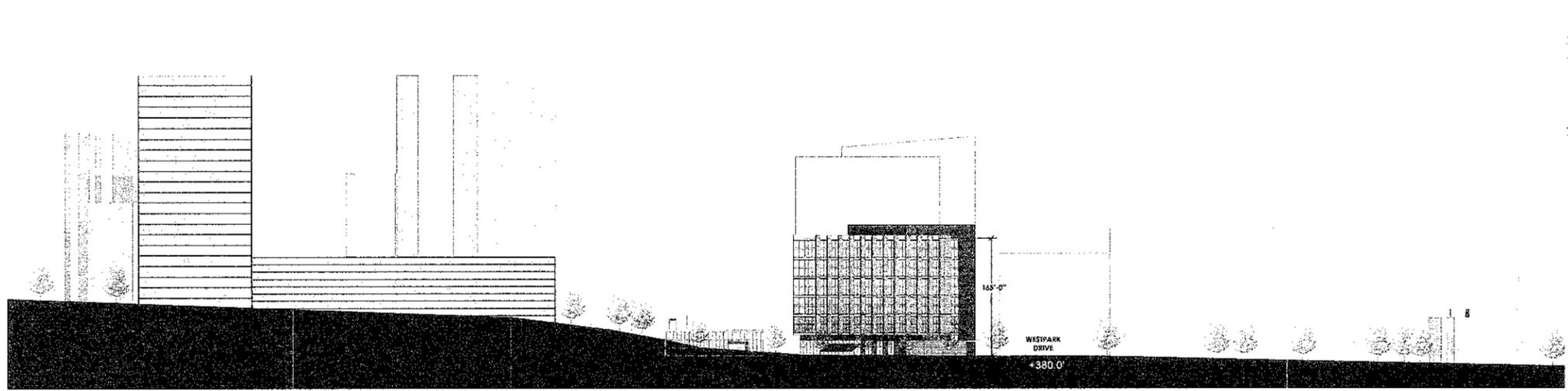
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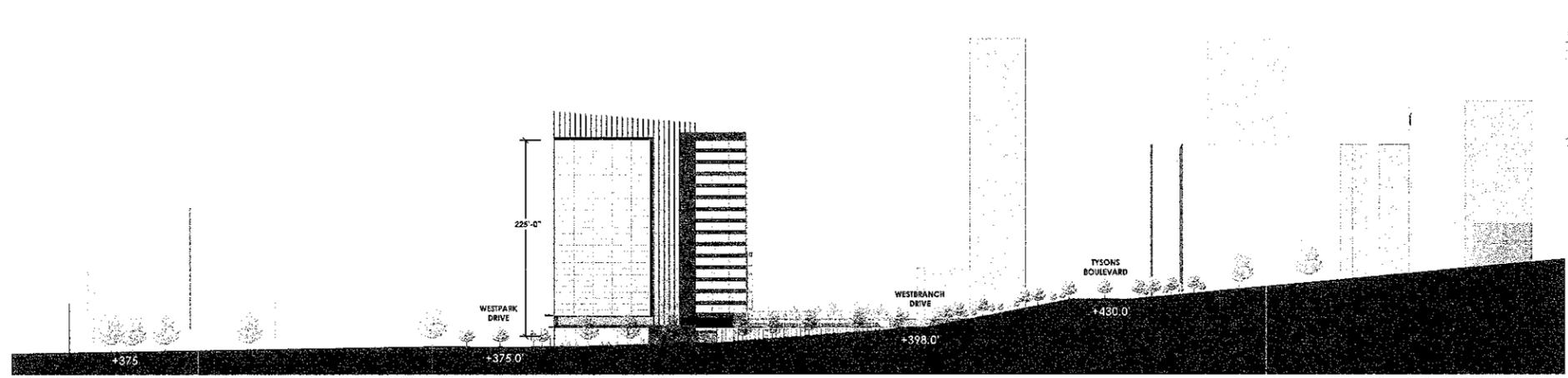
**SITE SECTIONS**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PP-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

APRIL 26, 2011  
7403-07-001  
A4.0

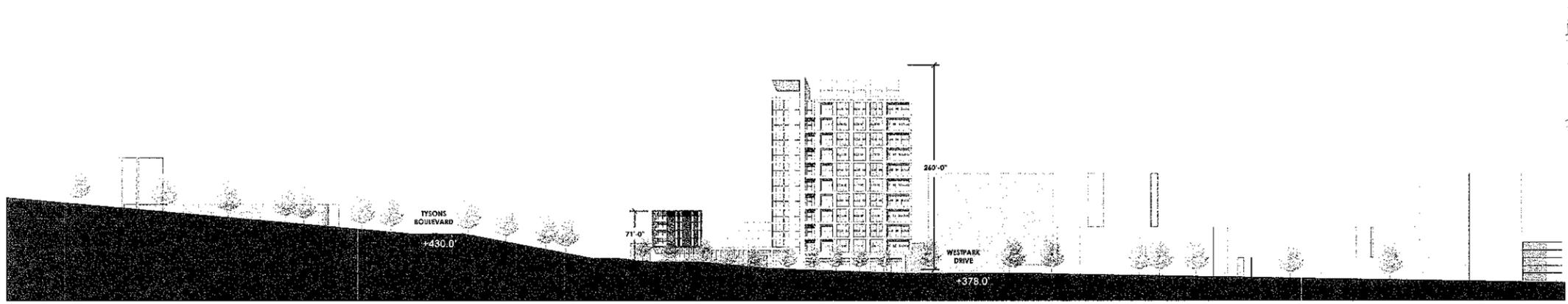
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08/22/11	PRELIMINARY DEVELOPMENT PLAN
DATE	DESCRIPTION
SCALE	
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A4.1



**01** SITE SECTION - EAST ALONG JONES BRANCH DRIVE EXTENSION  
 SCALE: 1" = 80'-0"



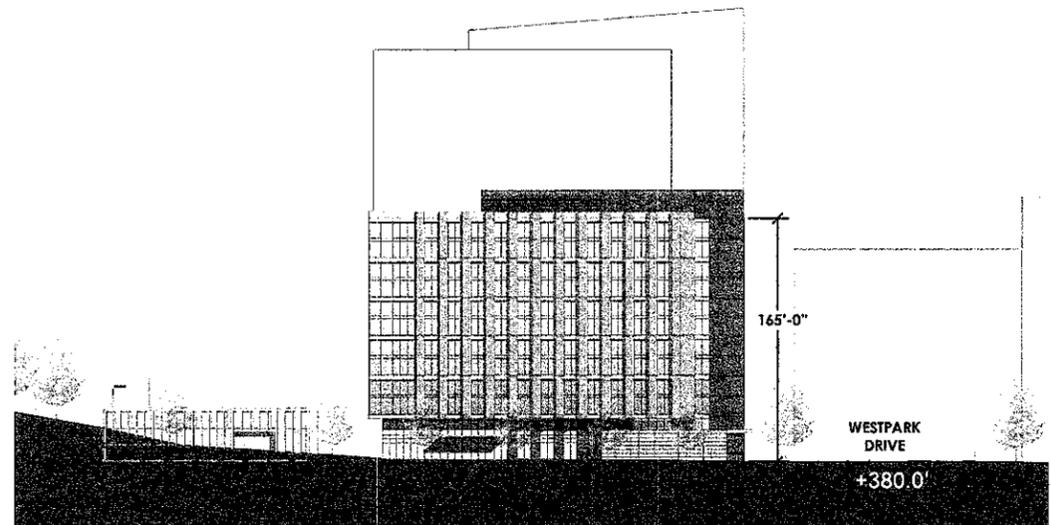
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 SCALE: 1" = 80'-0"



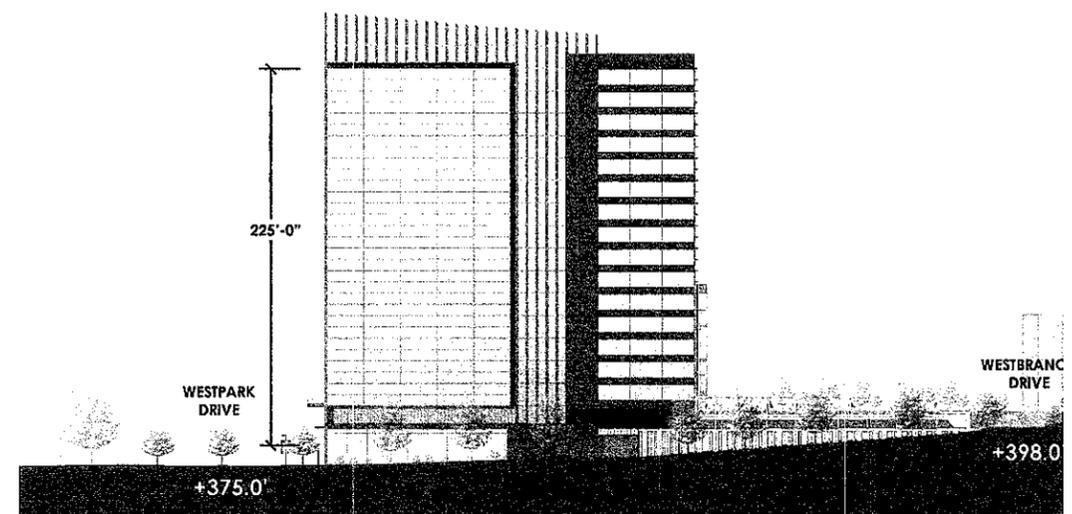
**03** SITE SECTION - EAST ALONG WESTBRANCH DRIVE  
 SCALE: 1" = 80'-0"

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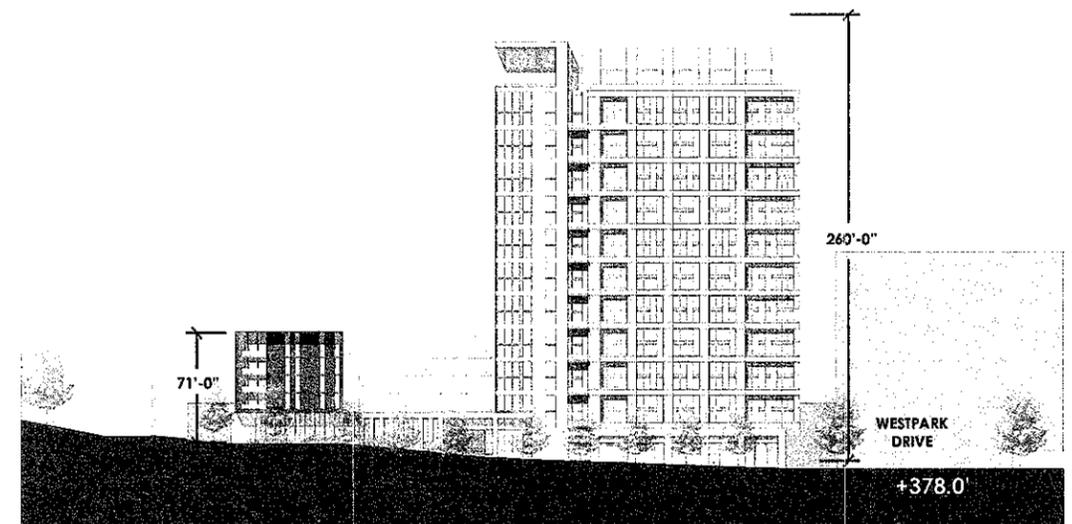
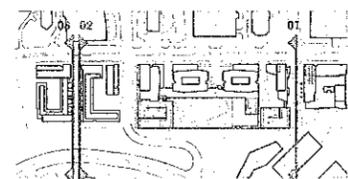
-See FDP for Block A, E, and F for additional details.  
 Proposed building height is shown on CDP sheets A4.0/4.1/4.2.  
 Refer to C2.1/Table 1 for allowable building height ranges.  
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**01** SITE SECTION - EAST ALONG JONES BRANCH DRIVE EXTENSION  
SCALE: 1" = 50'-0"



**02** SITE SECTION - WEST ALONG WESTBRANCH DRIVE  
SCALE: 1" = 50'-0"



**03** SITE SECTION - EAST ALONG WESTBRANCH DRIVE  
SCALE: 1" = 50'-0"

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-See FDP for Block A, E, and F for additional details.  
Proposed building height is shown on CDP sheets A4.04.1/4.2.  
Refer to C2.1/Table 1 for allowable building height ranges.  
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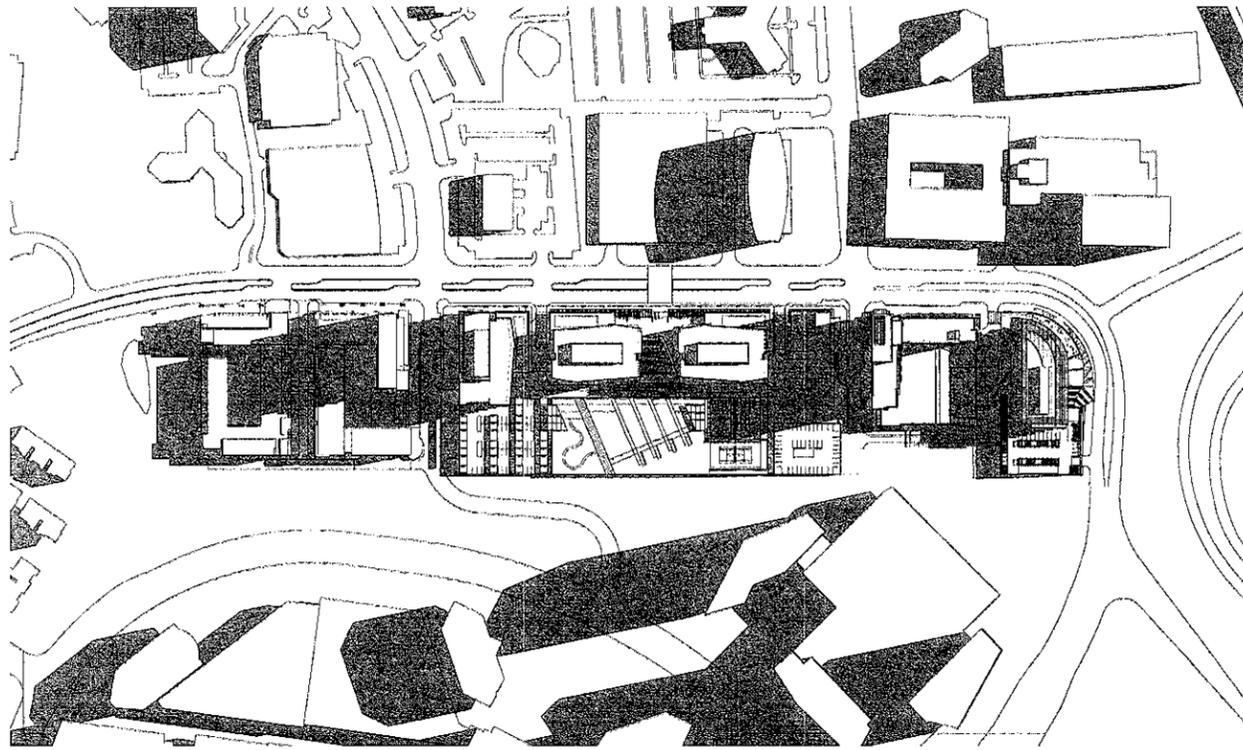
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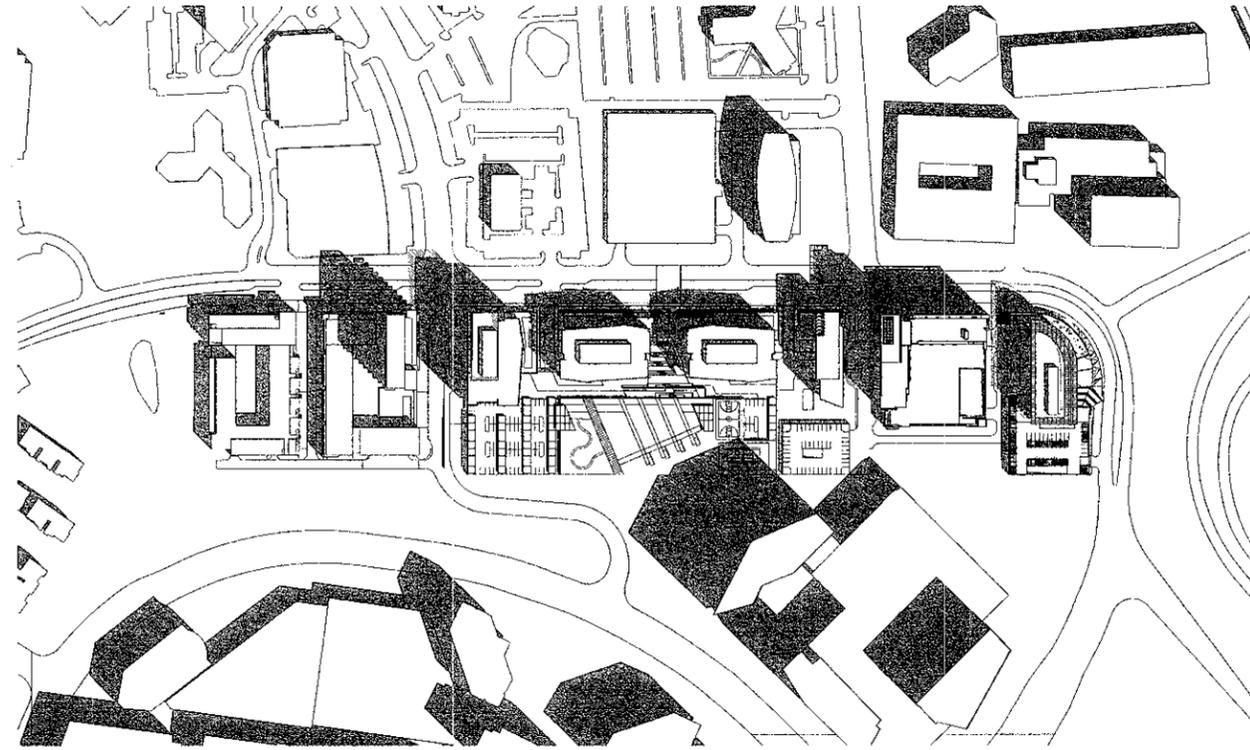
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ENLARGED SITE SECTIONS  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

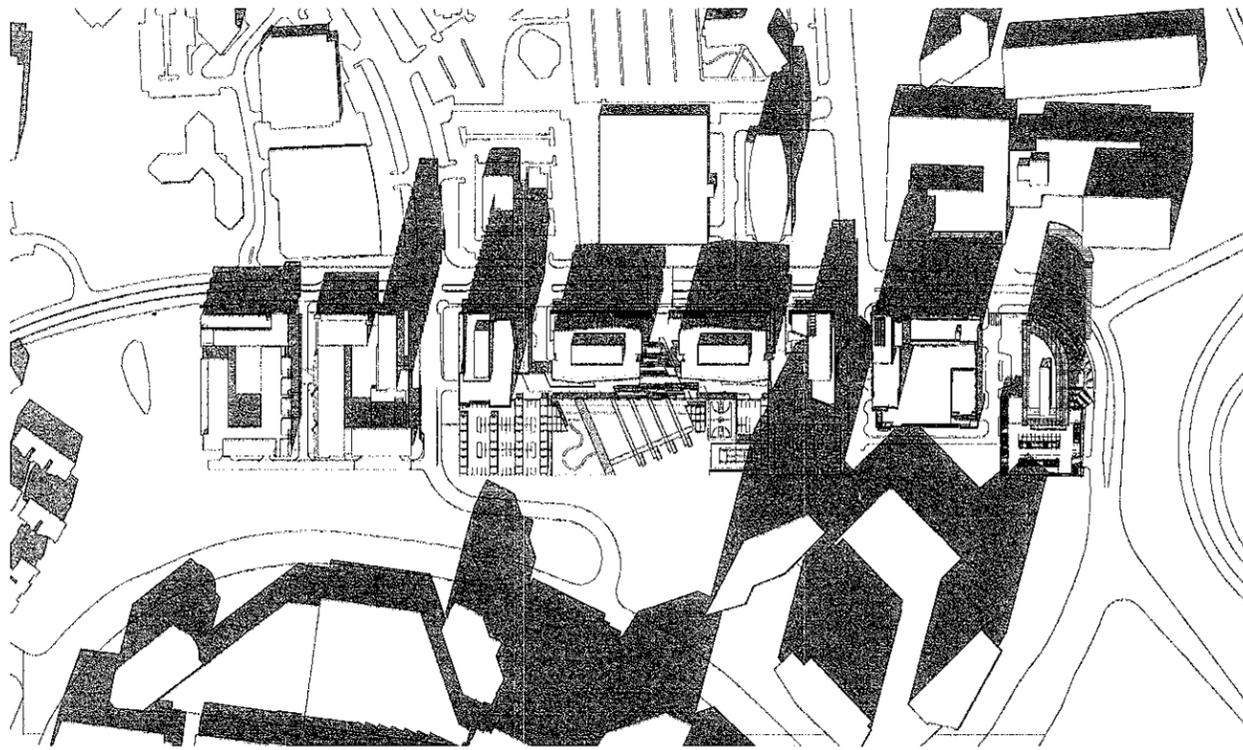
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04/13/11	PR-023	CONCEPTUAL DEVELOPMENT PLAN
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BA	2011-PR-023	ENLARGED SITE SECTIONS
SCA		
DCR		
DATE	APRIL 26, 2011	
FIG. No.	7403-07-001	
SHEET	A4.2	



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NTS



**02** 12:00 PM  
NTS



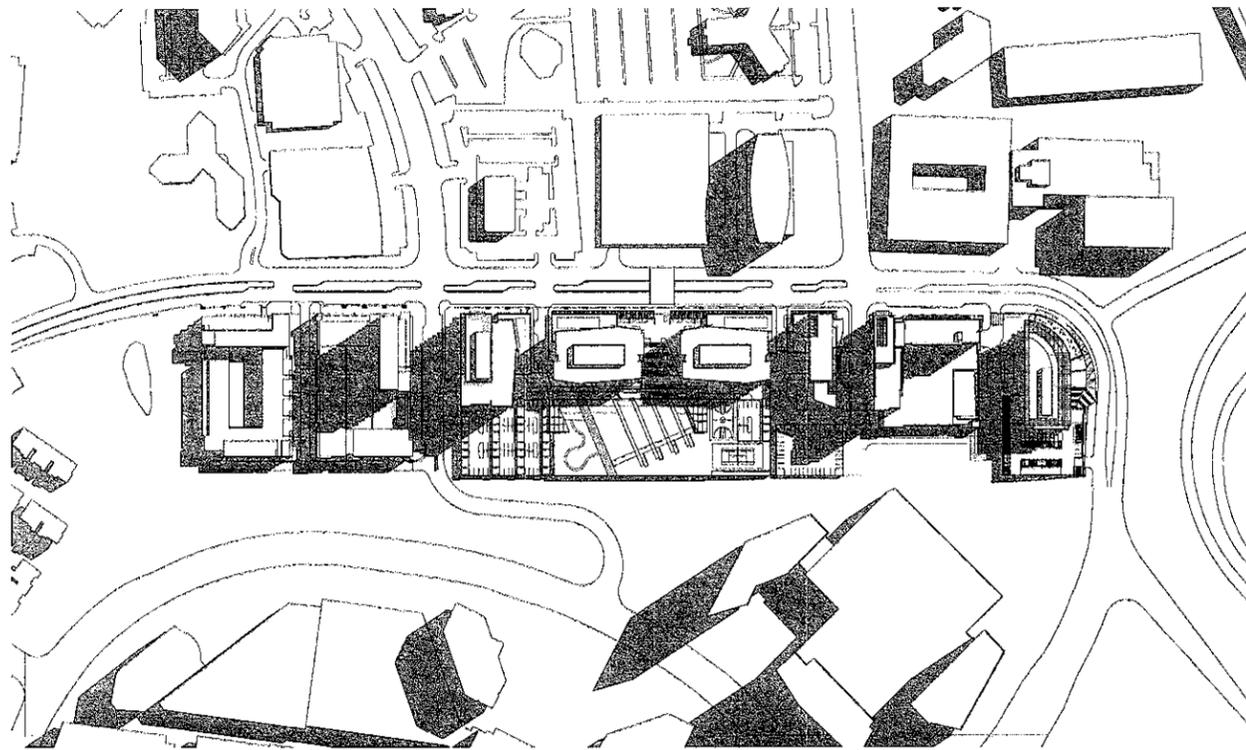
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**MARCH / SEPTEMBER 21ST  
SHADOW ANALYSIS**

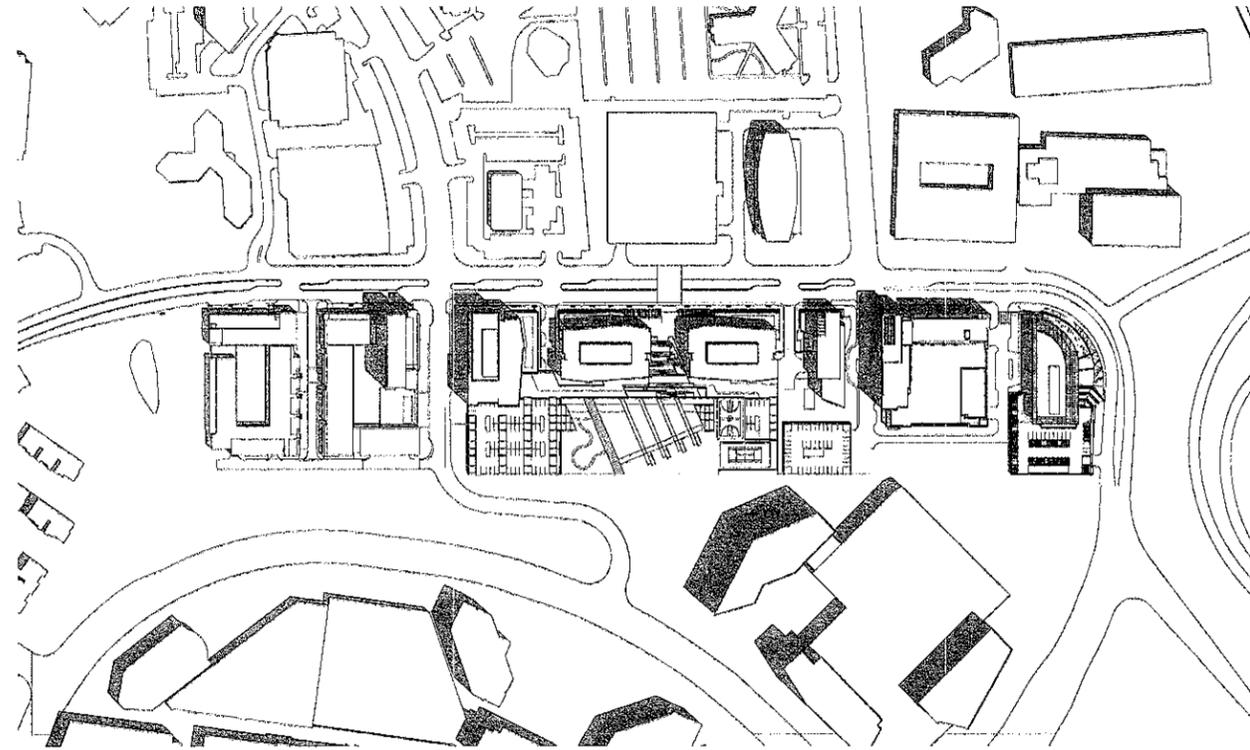
-See FDP for Block A, E, and F for additional details.

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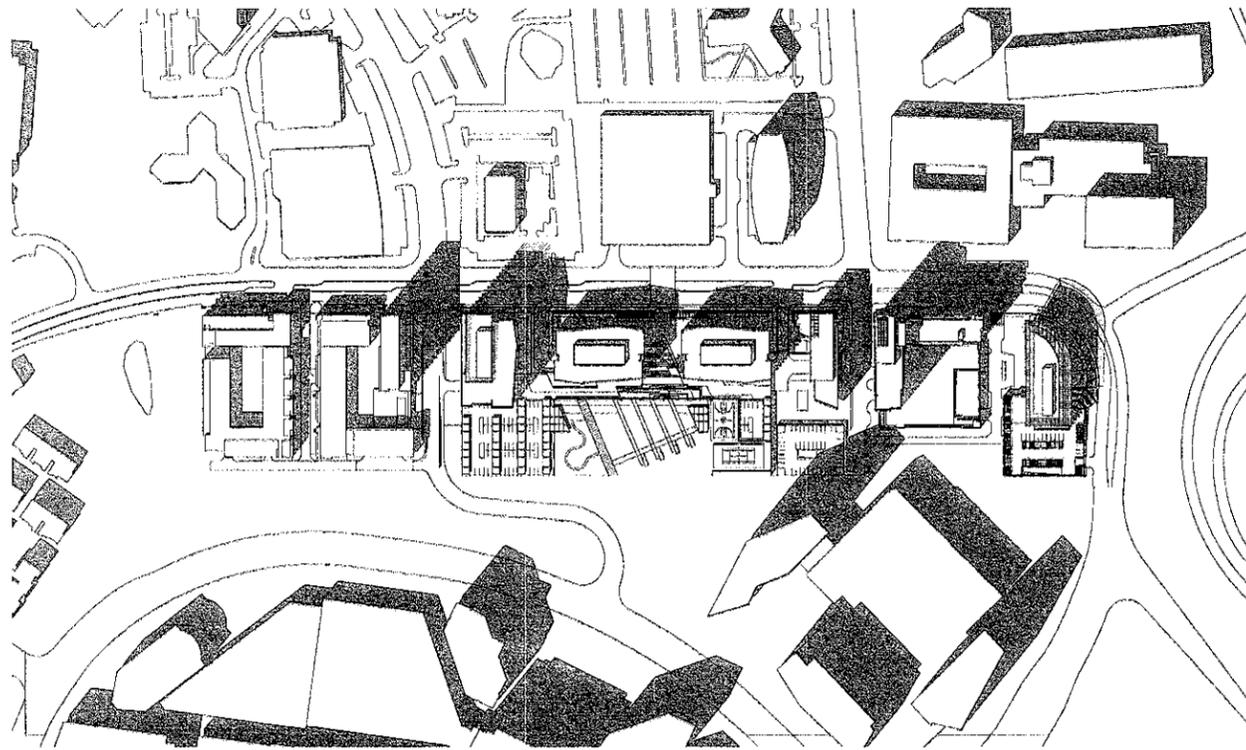
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07/23/12	PRELIMINARY COMMENTS
08/29/12	PRELIMINARY COMMENTS
DATE	DESCRIPTION
SCALE	H.
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A5.0



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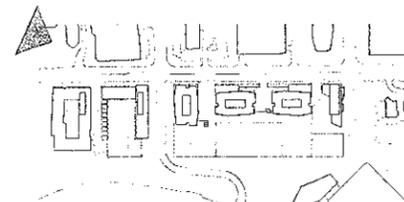
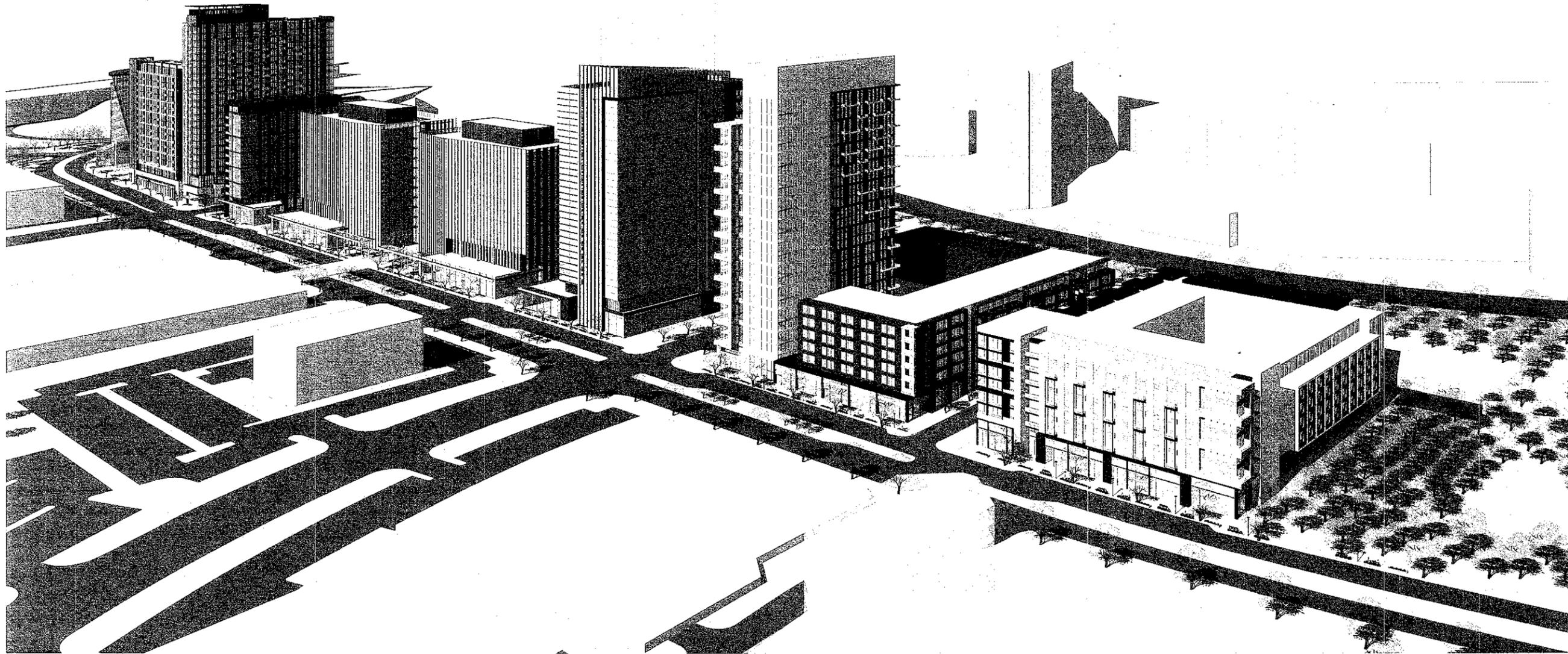
**JUNE 21ST  
SHADOW ANALYSIS**

-See FDP for Block A, E, and F for additional details.

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DATE	DESCRIPTION
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02/07/11	PER CIVIL ENGINEERS
02/24/12	PER CIVIL ENGINEERS
05/25/12	PER CIVIL ENGINEERS
07/25/12	PER CIVIL ENGINEERS
08/29/12	PER CIVIL ENGINEERS
DATE	DESCRIPTION
SCALE	" = 1"
DATE	DESCRIPTION
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	A5.1





-See FDP for Block A, E, and F for additional details.

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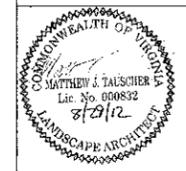
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w@wdgarch.com

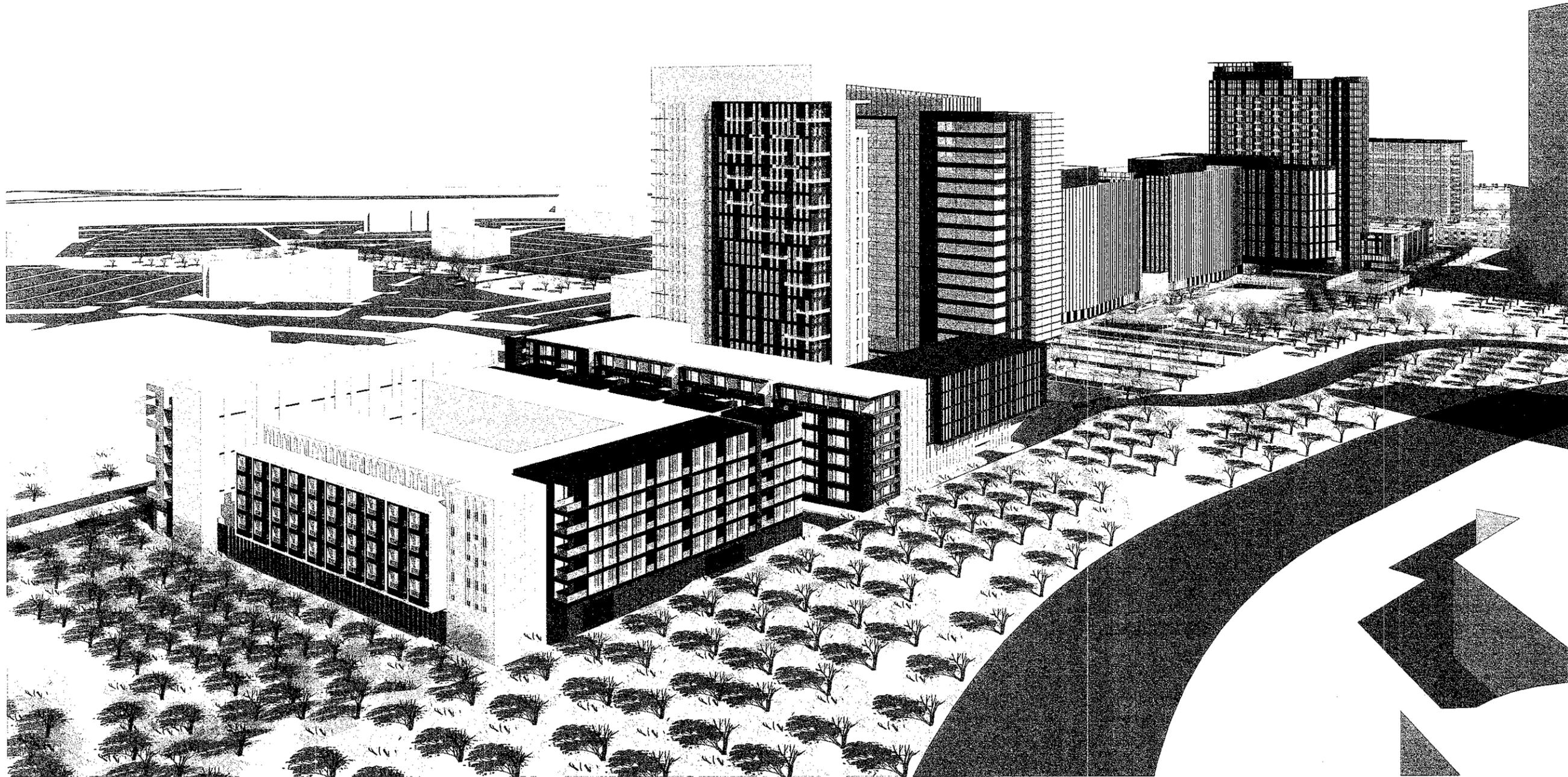
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**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

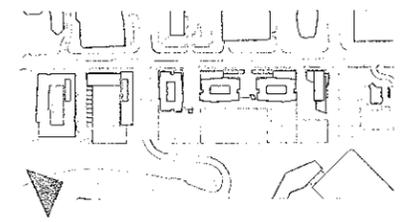
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07/29/11	PER. DESIGN COMMENTS
08/28/11	PER. DESIGN COMMENTS

SCALE: \_\_\_\_\_  
JOB No. \_\_\_\_\_  
DATE: **APRIL 26, 2011**  
FILE No. 7403-07-001  
SHEET **A6.0**



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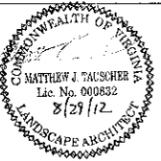
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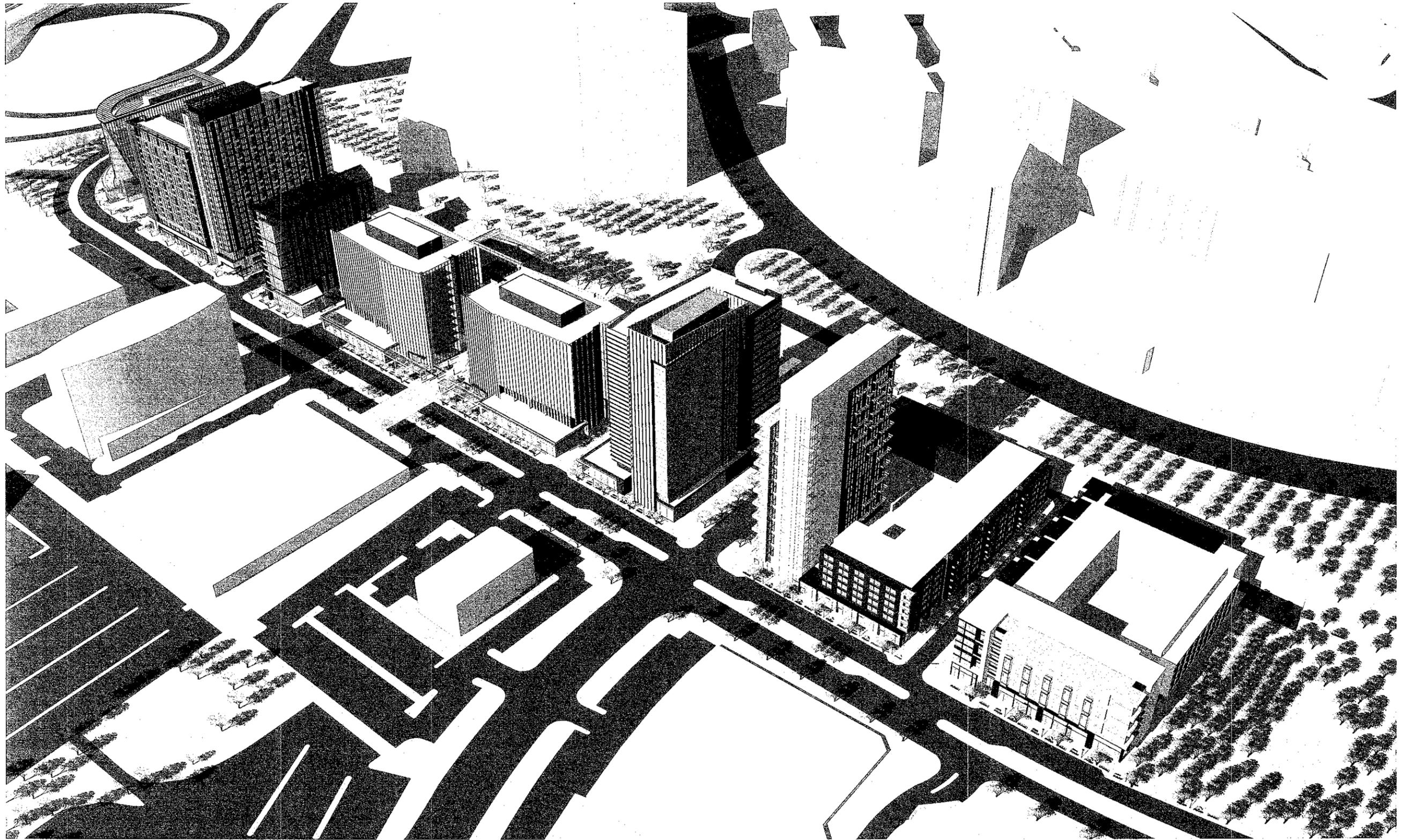
**PERSPECTIVES**

**ARBOR ROW**

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

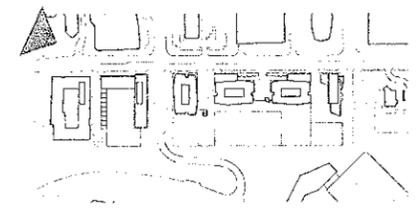
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08/26/12	PER COUNTY COMMENTS

DATE	APRIL 26, 2011
FILE No.	7403-07-001



-See FDP for Block A, E, and F for additional details.

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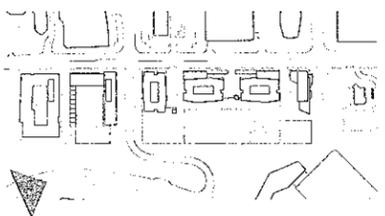
**PERSPECTIVES**

**ARBOR ROW**

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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DATE	DESCRIPTION
APRIL 26, 2011	
PROJECT No.	7403-07-001

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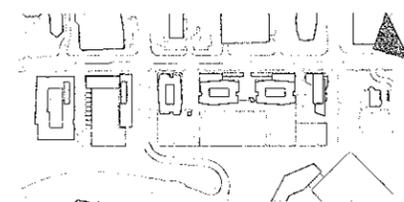
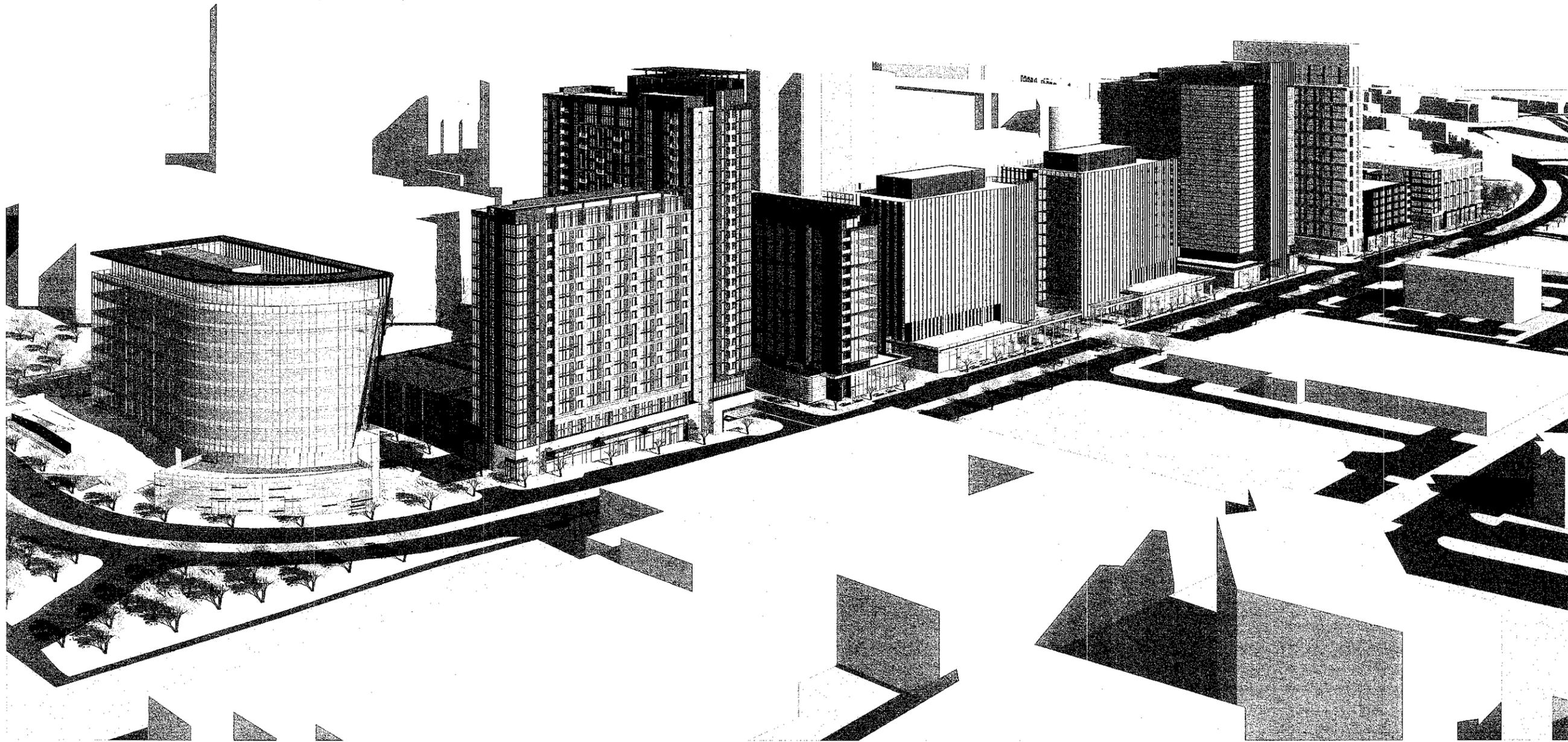
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**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
01/22/11	PR. PLAN COMMENTS
02/07/11	PR. PLAN COMMENTS
02/24/11	PR. PLAN COMMENTS
03/25/11	PR. PLAN COMMENTS
04/21/11	PR. PLAN COMMENTS
08/29/11	PR. PLAN COMMENTS
DATE	DESCRIPTION
SCALE	
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001



-See FDP for Block A, E, and F for additional details.

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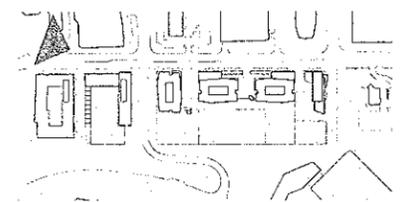
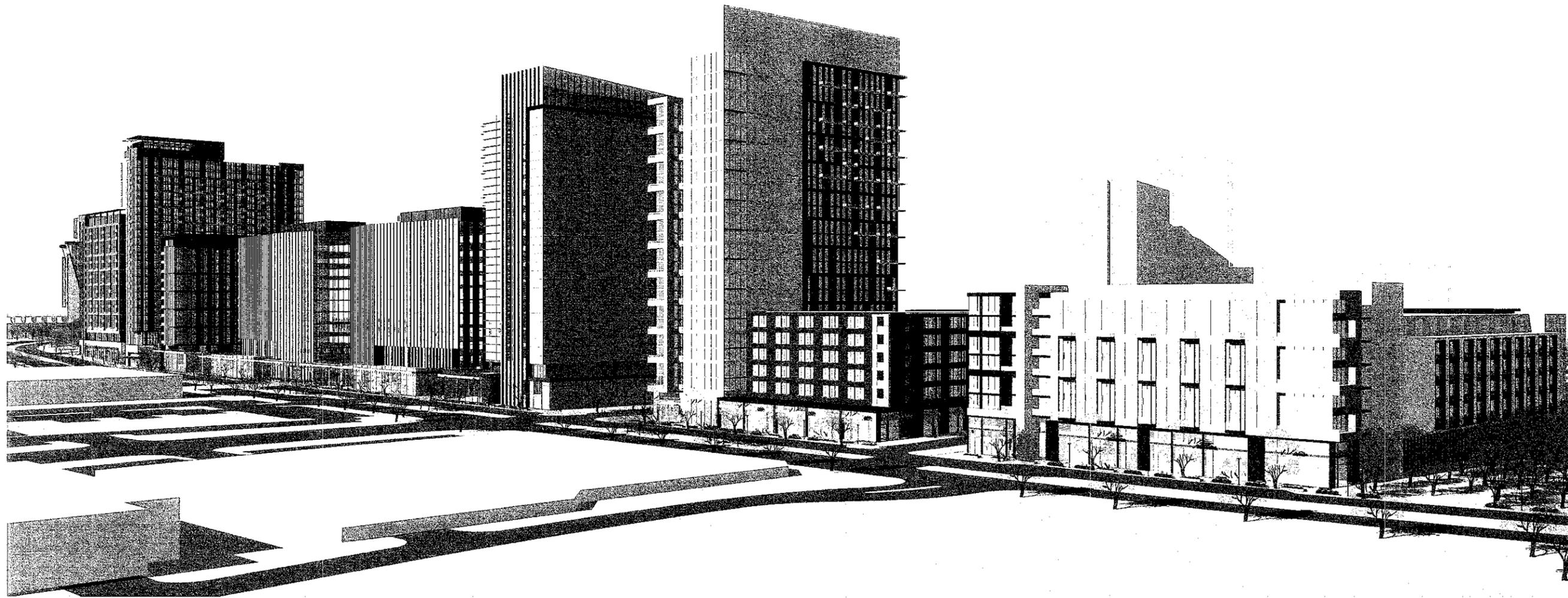


**PERSPECTIVES**

**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
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07/27/11	PER COUNTY COMMENTS
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08/28/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001

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-See FDP for Block A, E, and F for additional details.

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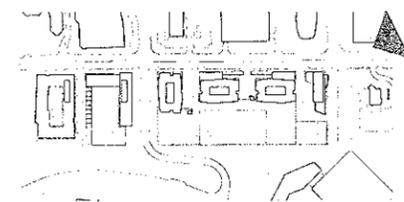
**PERSPECTIVES**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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12/01/11	FAIRFAX COUNTY COMMENTS
02/24/12	FAIRFAX COUNTY COMMENTS
02/25/12	FAIRFAX COUNTY COMMENTS
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08/29/12	FAIRFAX COUNTY COMMENTS
DATE	DESCRIPTION
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JOB No.	
DATE	APRIL 26, 2011
PLC No.	7403-07-001
SHEET	<b>A6.5</b>



-See FDP for Block A, E, and F for additional details.

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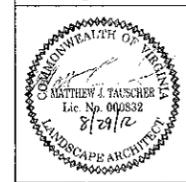


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**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

DATE	DESCRIPTION
01/22/11	PER COUNTY COUNCIL'S
02/01/11	PER COUNTY COUNCIL'S
02/24/12	PER COUNTY COUNCIL'S
05/25/12	PER COUNTY COUNCIL'S
07/23/12	PER COUNTY COUNCIL'S
08/29/12	PER COUNTY COUNCIL'S

DATE: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
JOB No. \_\_\_\_\_  
DATE: **APRIL 26, 2011**  
F.L.C. No. **7403-07-001**

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COMMONWEALTH OF VIRGINIA  
 MATTHEW J. TALSCHER  
 Lic. No. 000882  
 8/29/12  
 LANDSCAPE ARCHITECT

ILLUSTRATIVE LANDSCAPE PLAN  
**ARBOR ROW**  
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 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS		
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08/28/12	PER COUNTY COMMENTS	
DATE	DESCRIPTION	SCALE
	H. 1" = 150'-0"	
JOB No.		
DATE : APRIL 26, 2011		
FILE No. 7403-07-001		
SHEET	L1.0	

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JONES BRANCH DR

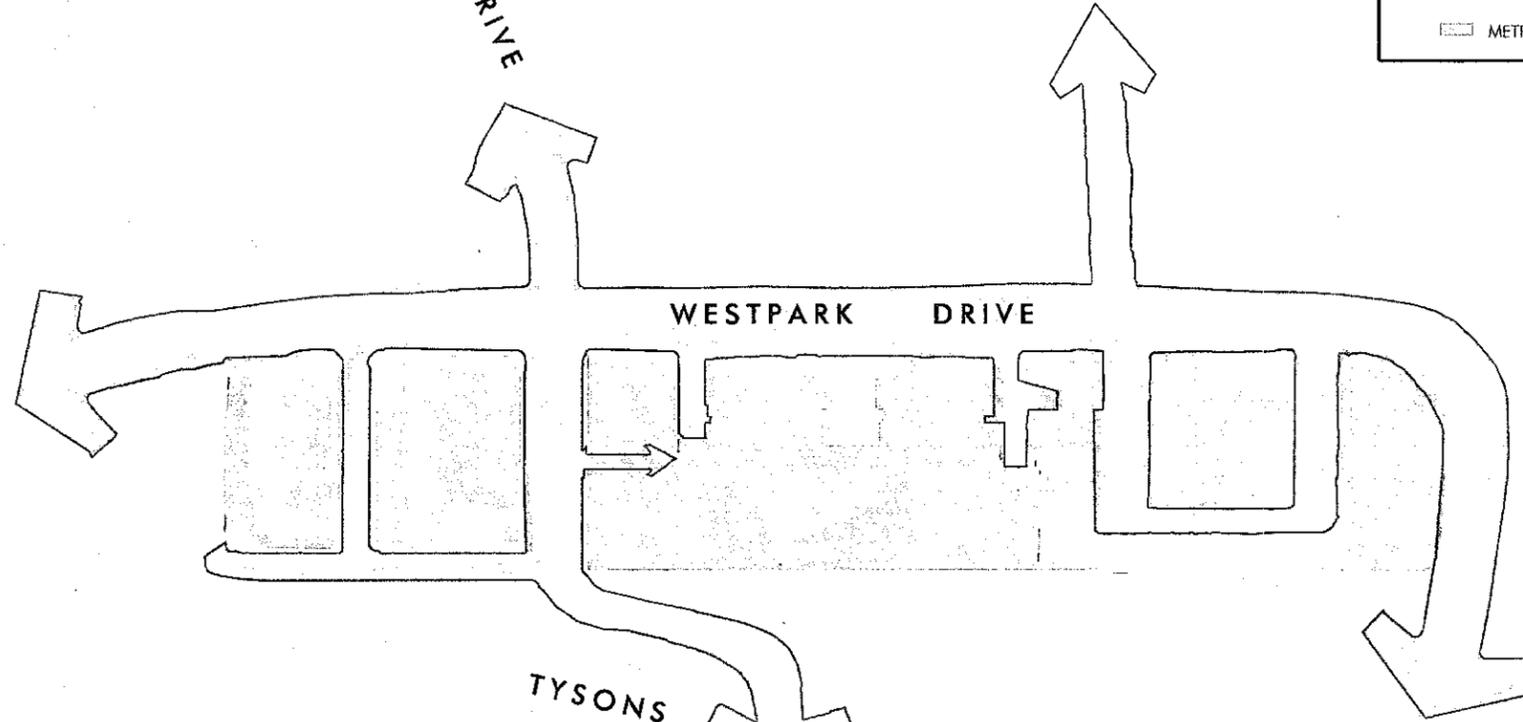
WESTBRANCH DRIVE

WESTPARK DRIVE

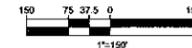
TYSONS BOULEVARD

**LEGEND**

-  STREET FABRIC
-  BLOCKS
-  METRO LINE



METRO



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URBAN FABRIC & BLOCKS DIAGRAM  
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SHEET	L2.0

JONES BRANCH DR

WESTBRANCH DRIVE

WESTPARK DRIVE

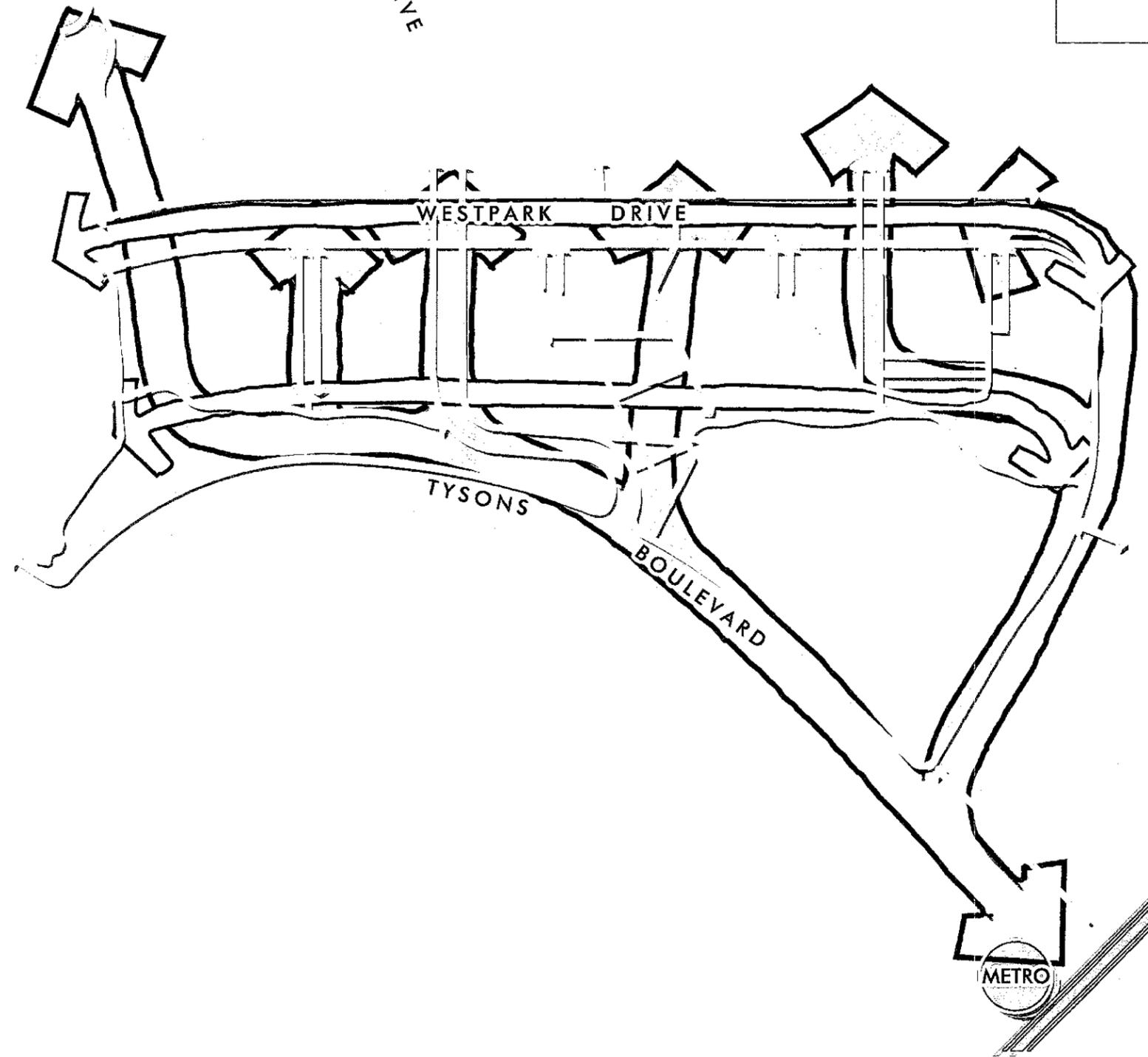
TYSONS

BOULEVARD

METRO

**LEGEND**

-  PEDESTRIAN MOVEMENT THROUGH SITE
-  PEDESTRIAN MOVEMENT ALONG SITE
-  METRO LINE
-  PATHWAY LOCATIONS



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**LANDSCAPE ARCHITECTURE**  
 MATTHEW J. TAUSCHER  
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**PEDESTRIAN FLOW DIAGRAM**  
**ARBOR ROW**  
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SHEET **L2.1**

JONES BRANCH DR

WESTBRANCH DRIVE

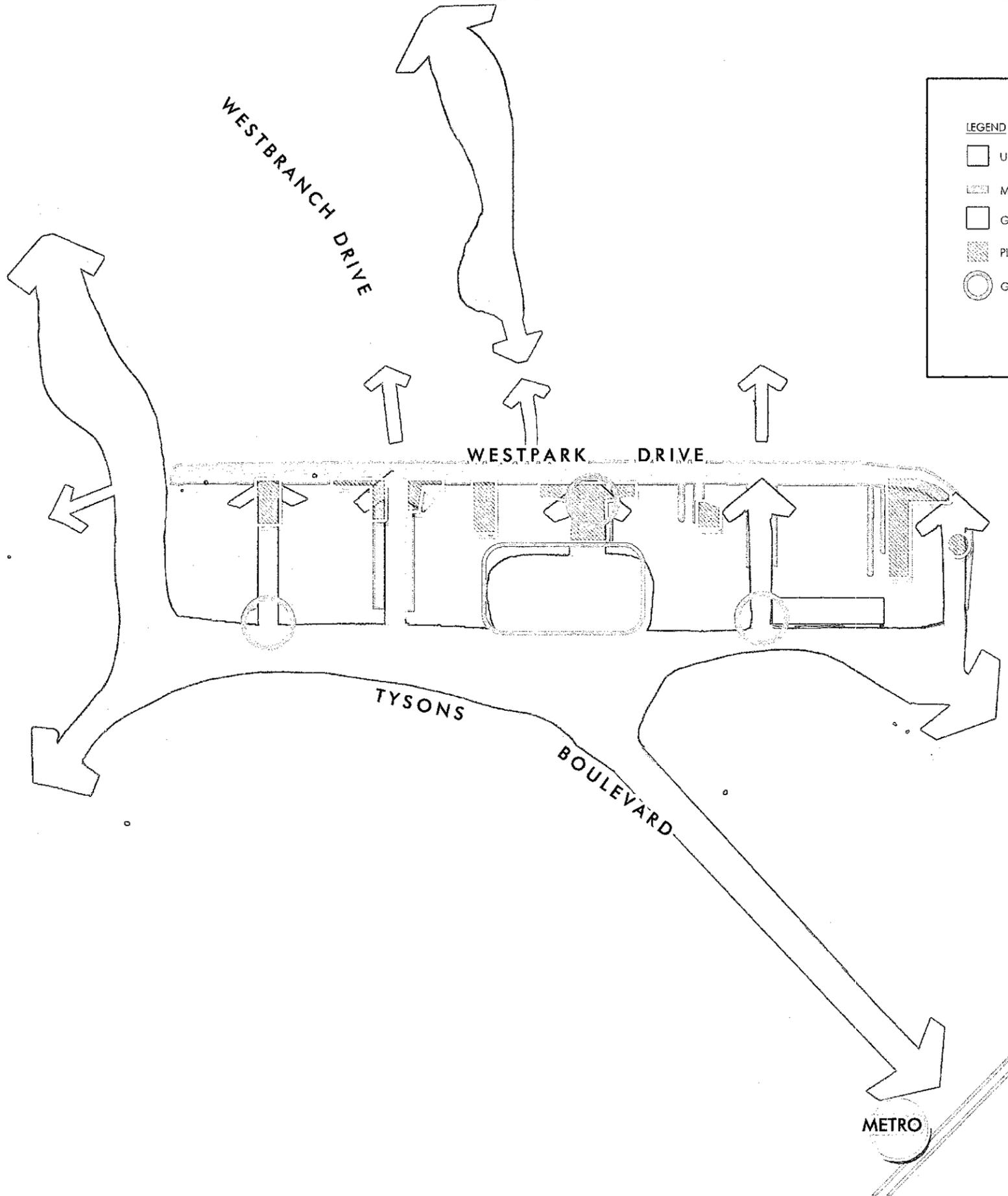
WESTPARK DRIVE

TYSONS BOULEVARD

METRO

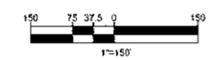
**LEGEND**

-  URBAN STREET EDGE
-  METRO LINE
-  GREEN LINKS
-  PLAZAS AND POCKET PARKS
-  GREEN CONNECTIONS



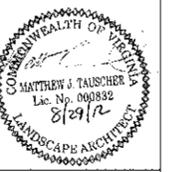
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OPEN SPACE CONNECTIONS DIAGRAM  
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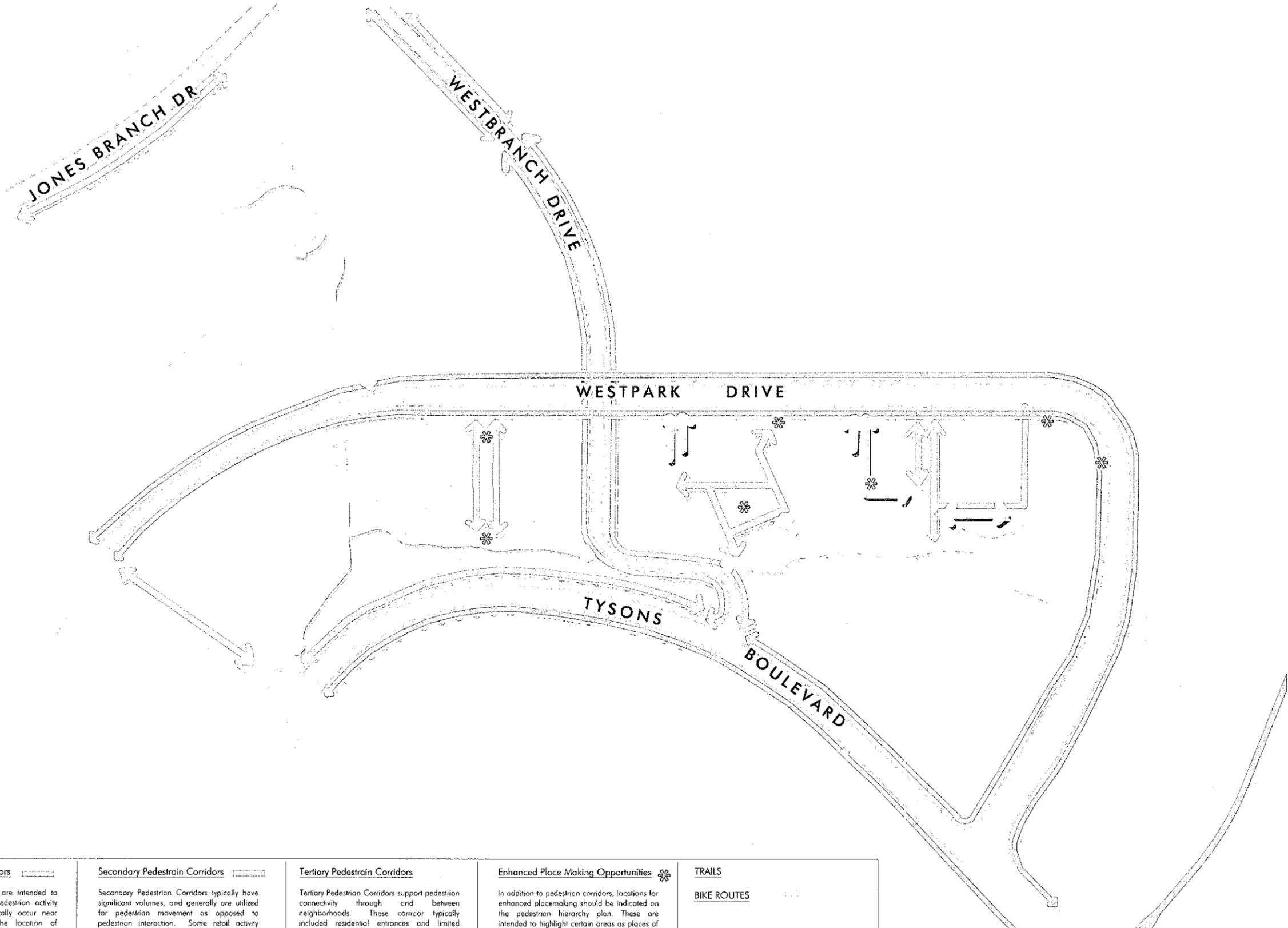


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**Primary Pedestrian Corridors**

Primary Pedestrian Corridors are intended to have the highest levels of pedestrian activity and interaction. They typically occur near transit stations and are the location of significant retail, major building entries, and social gathering spaces. Primary Pedestrian Corridors support pedestrian circulation, but should also include spaces for outdoor gathering, sidewalk cafes and browsing areas. As a result, these areas typically have the widest streetscape and most animated building facades. These corridors may be identified as a neighborhood destination in and of themselves.

**Secondary Pedestrian Corridors**

Secondary Pedestrian Corridors typically have significant volumes, and generally are utilized for pedestrian movement as opposed to pedestrian interaction. Some retail activity occurs within these corridors, and is generally more neighborhood or district-serving. Residential and civic uses should have their entrances facing Secondary Pedestrian Corridors. These corridors typically have wider streetscapes to facilitate pedestrian movement, and a significant level of building facade animation to create an interesting and comfortable walking environment.

**Tertiary Pedestrian Corridors**

Tertiary Pedestrian Corridors support pedestrian connectivity through and between neighborhoods. These corridors typically include residential entrances and limited access to parking. Any retail which occurs will typically be found at intersections with other more significant streets. Residential yards and stoops typically can be found along this streetscape type. Building facades provide some variation and level of detail to create an interesting and walking environment.

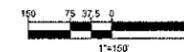
**Enhanced Place Making Opportunities**

In addition to pedestrian corridors, locations for enhanced placemaking should be indicated on the pedestrian hierarchy plan. These are intended to highlight certain areas as places of importance, or opportunities to emphasize the character or identity of a district, corridor, or neighborhood. These can be locations of retail, civic facilities, urban open spaces, public art, special architecture and/or other elements which create an identifiable destination

**TRAILS**

**BIKE ROUTES**

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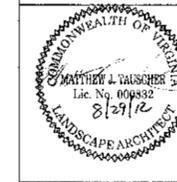
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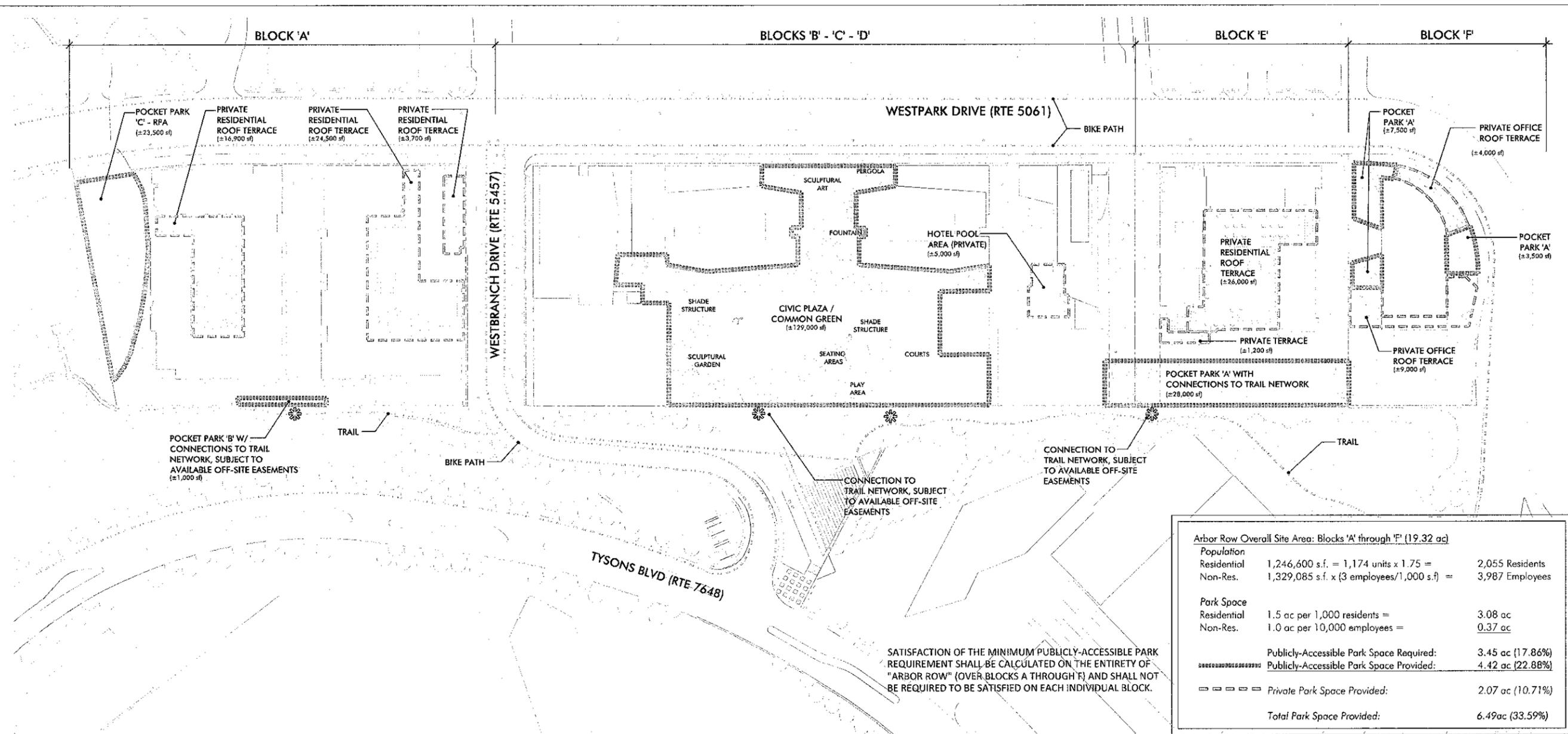
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**PEDESTRIAN HIERARCHY PLAN**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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SHEET	L2.3



**Arbor Row Overall Site Area: Blocks 'A' through 'F' (19.32 ac)**

<b>Population</b>		
Residential	1,246,600 s.f. = 1,174 units x 1.75 =	2,055 Residents
Non-Res.	1,329,085 s.f. x (3 employees/1,000 s.f.) =	3,987 Employees
<b>Park Space</b>		
Residential	1.5 ac per 1,000 residents =	3.08 ac
Non-Res.	1.0 ac per 10,000 employees =	0.37 ac
<b>Publicly-Accessible Park Space Required:</b>		3.45 ac (17.86%)
<b>Publicly-Accessible Park Space Provided:</b>		4.42 ac (22.88%)
<b>Private Park Space Provided:</b>		2.07 ac (10.71%)
<b>Total Park Space Provided:</b>		6.49 ac (33.59%)

SATISFACTION OF THE MINIMUM PUBLICLY-ACCESSIBLE PARK REQUIREMENT SHALL BE CALCULATED ON THE ENTIRETY OF "ARBOR ROW" (OVER BLOCKS A THROUGH F) AND SHALL NOT BE REQUIRED TO BE SATISFIED ON EACH INDIVIDUAL BLOCK.

**COMMON GREEN / CIVIC PLAZA** - a flexible open space with open lawn areas, serving as the recreation and social focus of a neighborhood or larger area, centrally located civic gathering plaza including public art and large enough to support casual unprogrammed use as well as community events. Serves as a focal point and unique placemaking plazas for civic purposes and commercial supporting activities.

**Potential Activities:**

- Interactive Sculpture Garden
- Performance and Special Event Space
- Outdoor Movie Lawn
- Picnicking and Gathering Area
- Frisbee and Kite Flying Green
- Outdoor Exercise Classes
- Concerts / Festivals
- Outdoor Basketball & Tennis Court
- Off-Leash Dog Areas
- Sunbathing and Lounging
- Seasonal Decorations Programs
- Boque of Trees
- Board Games
- Fountain Feature
- Special Events
- Outdoor Dining
- Ambient Sound System
- Food and Beverage Cart Vendors

**POCKET PARKS** - small scale open spaces designed for casual use by people working and living in the immediate area.

**Pocket Park 'A' Potential Activities:**

- Picnicking and Gathering Area
- Seating Area
- Landscaping Areas

**Pocket Park 'B' Potential Activities:**

- Rain Garden
- Interpretive Signage
- Picnicking and Gathering Area
- Seating Area

**Pocket Park 'C' - Resource Protection Area:**

- Undisturbed open space with no park improvements
- See Proffers

**PRIVATE AMENITY ROOF TERRACES** - provides outdoor amenity space for residents and workers of residential building and office complexes.

**Residential Amenity Roof Terrace Potential Activities:**

- Pool - Recreational Swimming
- Sunbathing and Lounging
- Outdoor Kitchen and Dining
- Picnicking and Gathering Area
- Firepit Area
- Fountain Features
- Bocce Courts
- Outdoor Ping Pong Tables
- Outdoor Billiard
- Community Gardens
- Interactive Sculpture

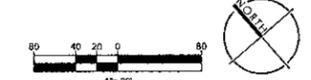
**Office Amenity Roof Terrace Potential Activities:**

- Sunbathing and Lounging
- Lunch Hour Picnic Tables and Gathering Area
- Fountain Features
- Interactive Sculpture

**INDIVIDUAL BLOCK TABULATIONS**

<b>Block 'A'</b>	Publicly-Accessible Park Space: ±24,500 sf (0.61 ac)
	Private Open Space Provided*: ±45,100 sf (1.04 ac)
<b>Blocks 'B' - 'C' - 'D'</b>	Publicly-Accessible Park Space: ±129,000 sf (2.96 ac)
	Private Open Space Provided*: ±5,000 sf (0.11 ac)
<b>Block 'E'</b>	Publicly-Accessible Park Space: ±28,000 sf (0.64 ac)
	Private Open Space Provided*: ±27,200 sf (0.62 ac)
<b>Block 'F'</b>	Publicly-Accessible Park Space: ±11,000 sf (0.25 ac)
	Private Open Space Provided*: ±13,000 sf (0.30 ac)
<b>Total Open Space Provided*:</b>	±282,800 sf (6.49 ac) (33.59%)

\*For reference only.



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**URBAN PARKS PLAN**  
**ARBOR ROW**  
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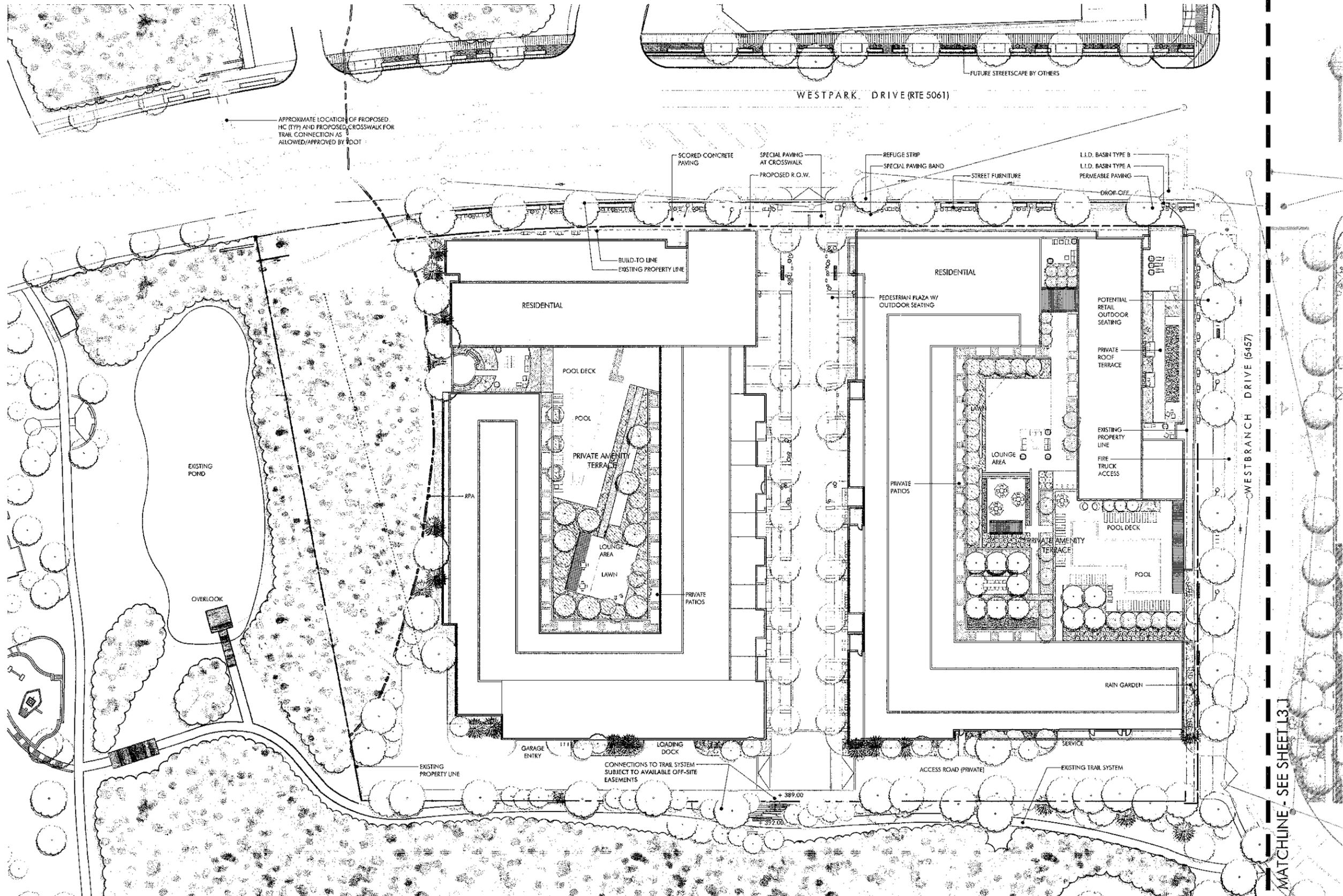
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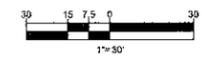
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SHEET **L2.4**



MATCHLINE - SEE SHEET L3.1

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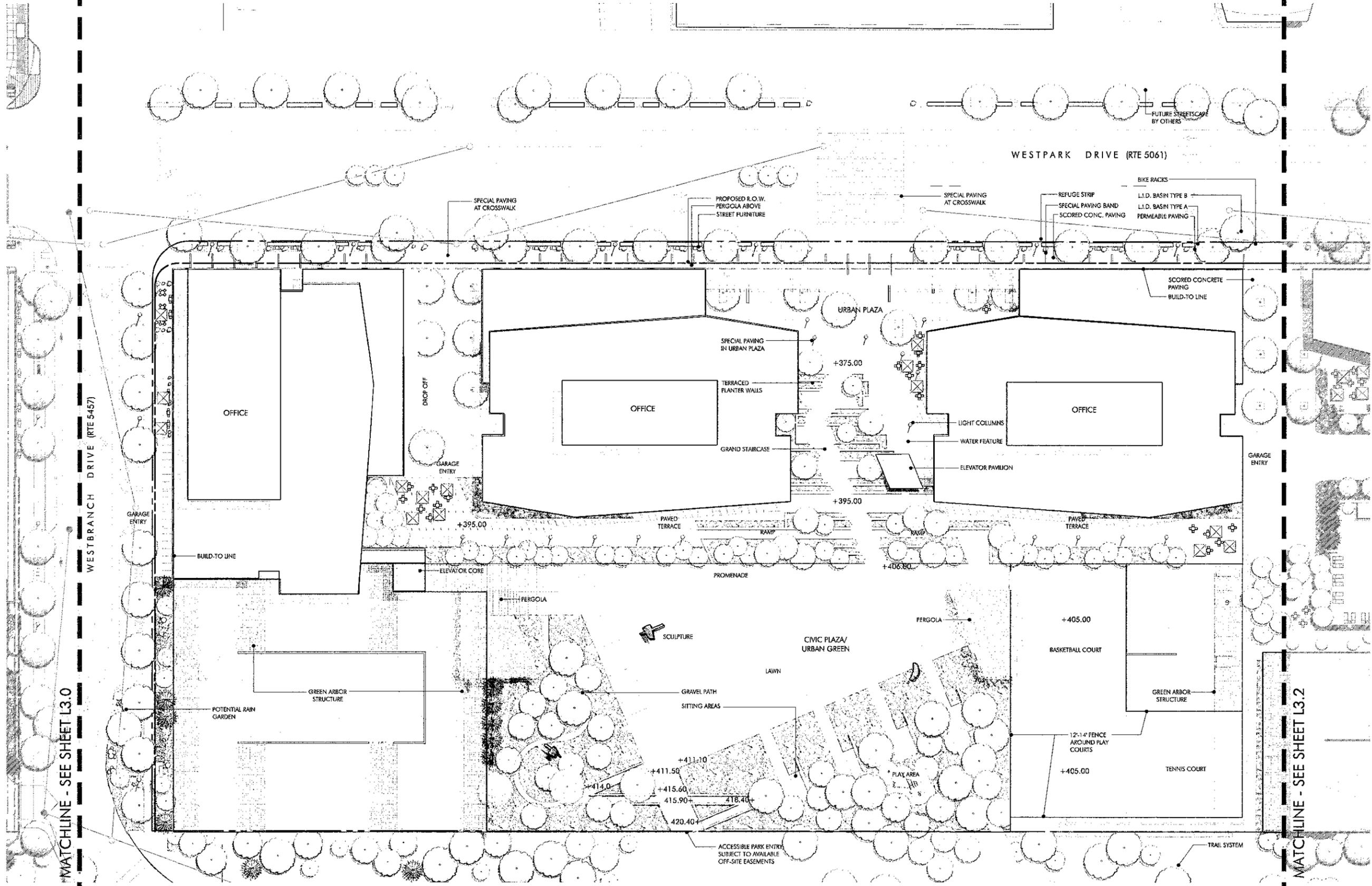


**BLOCK 'A' ILLUSTRATIVE PLAN**  
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 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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SHEET **L3.0**



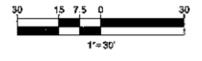
MATCHLINE - SEE SHEET L3.0

WESTBRANCH DRIVE (RTE 5457)

WESTPARK DRIVE (RTE 5061)

MATCHLINE - SEE SHEET L3.2

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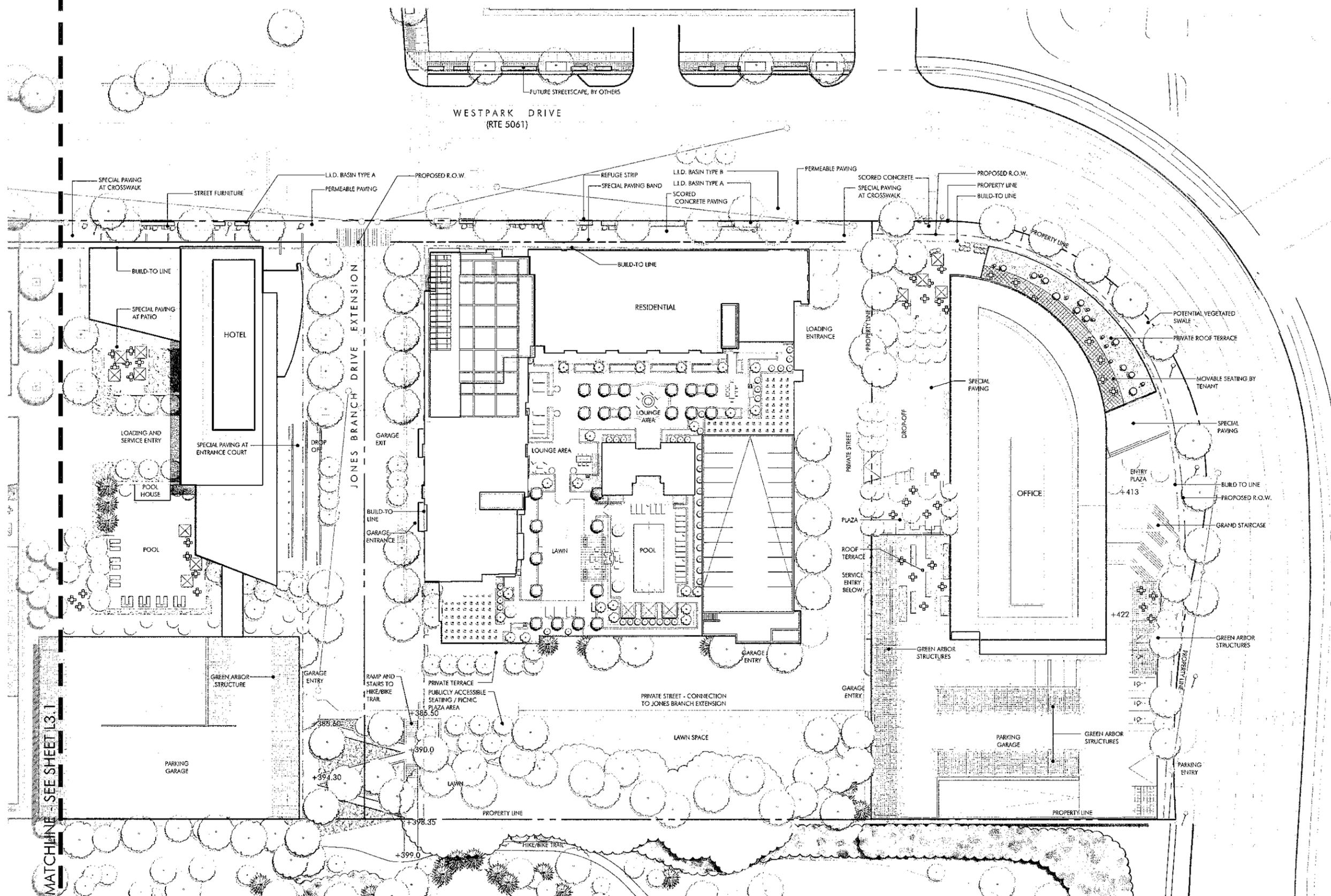


**BLOCK 'B' & 'C' ILLUSTRATIVE PLAN**  
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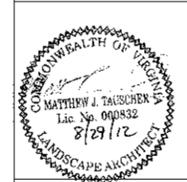


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**BLOCK 'D', 'E' & 'F' ILLUSTRATIVE PLAN**  
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12/07/11	PER COUNTY COMMENTS
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05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

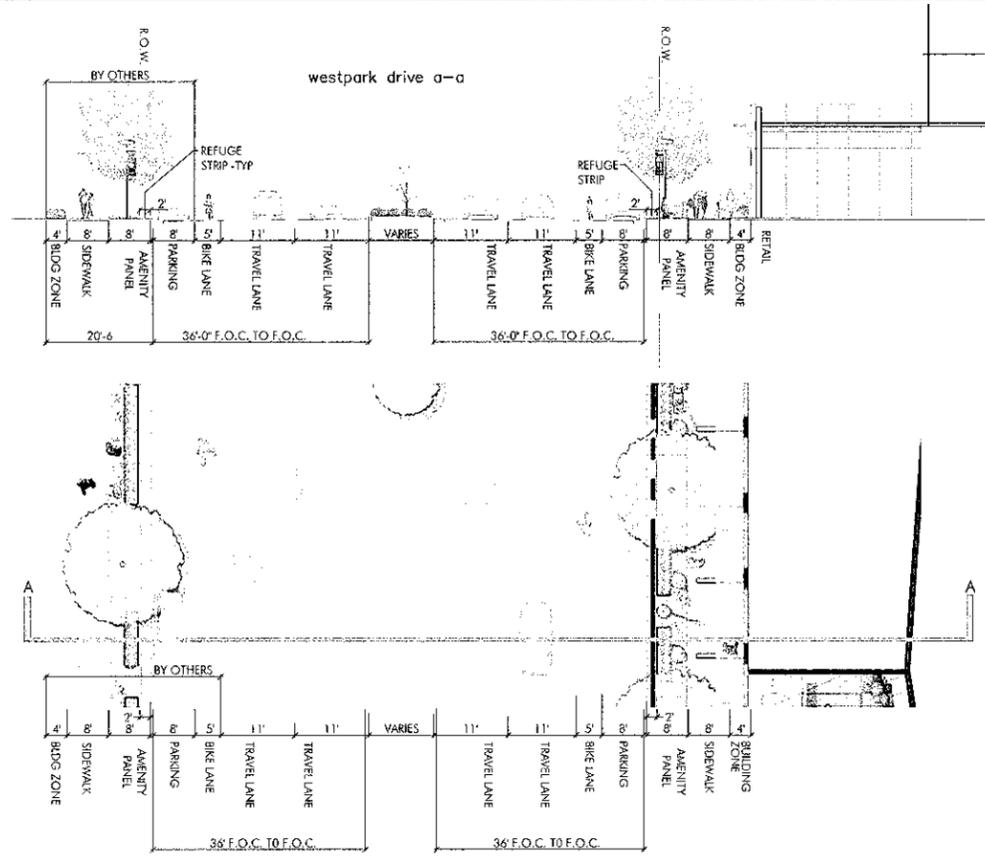
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SCALE	H: 1" = 30'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001

SHEET **L3.2**

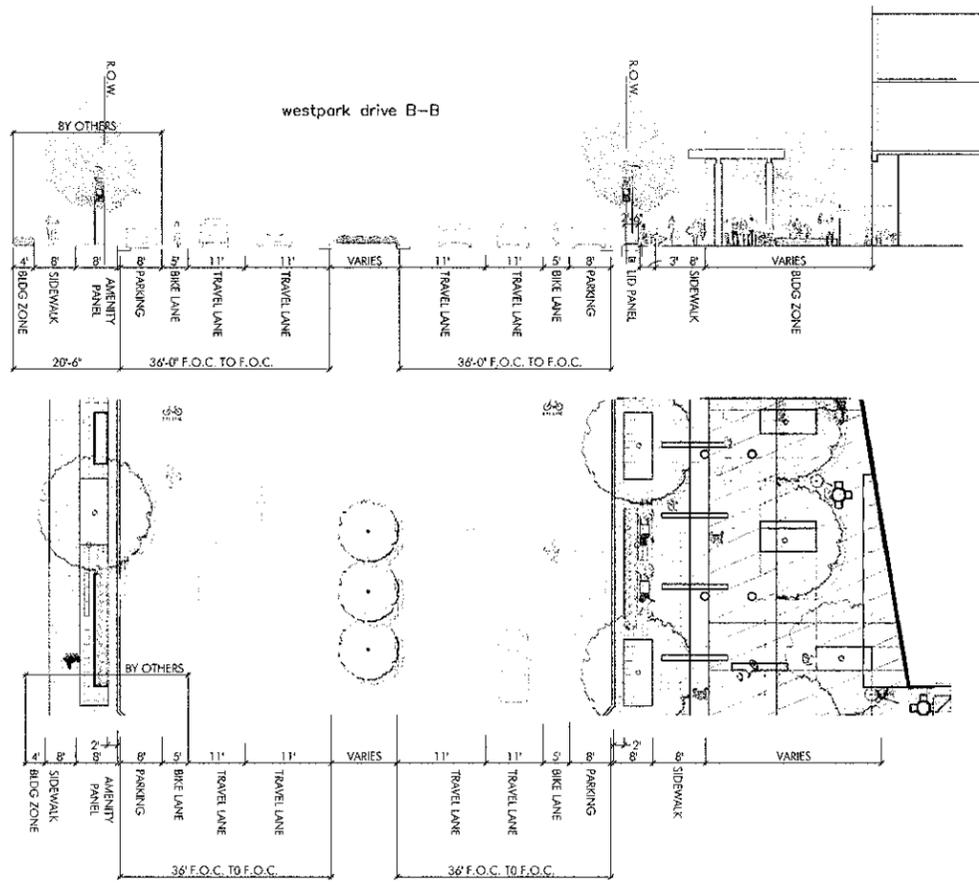
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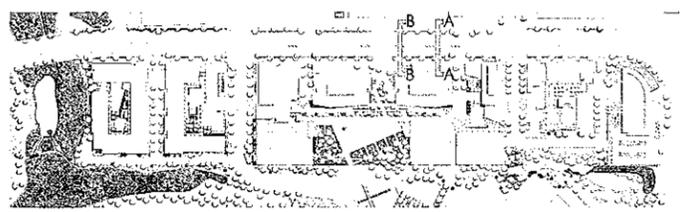
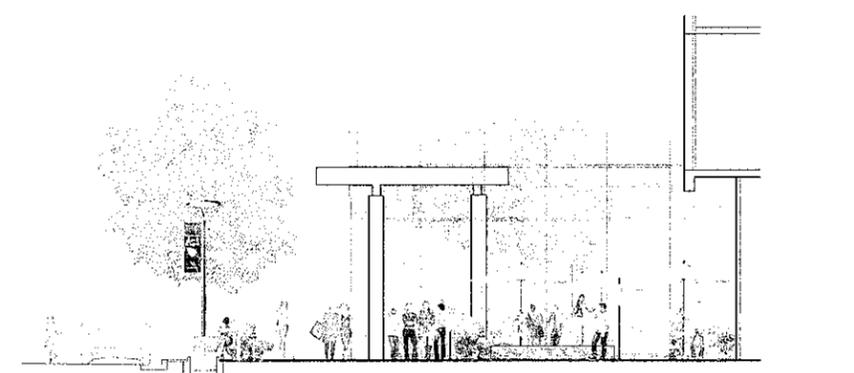
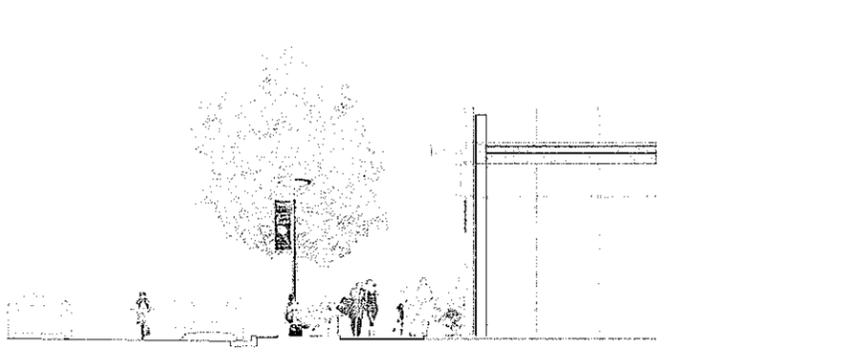
MATCHLINE - SEE SHEET L3.1



**01 WESTPARK DRIVE (RTE 5061) - STREET SECTION A (AVENUE) - ULTIMATE**  
SCALE: 1/16" = 1'-0"



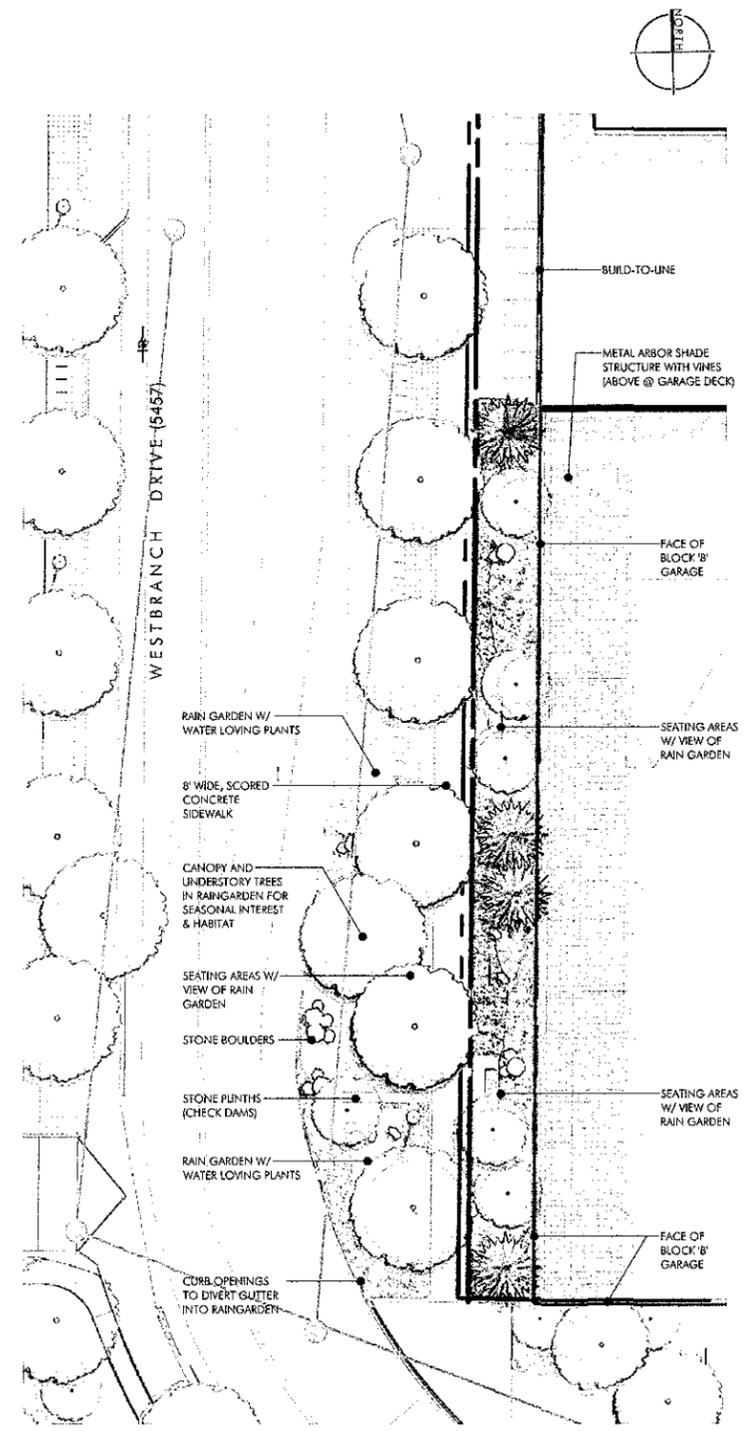
**02 WESTPARK DRIVE (RTE 5061) - STREET SECTION B (AVENUE) - ULTIMATE**  
SCALE: 1/16" = 1'-0"



REFERENCE PLAN

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**03 BLOCK 'B' RAIN GARDEN PARK - PLAN ENLARGEMENT**  
SCALE: 1/16" = 1'-0"

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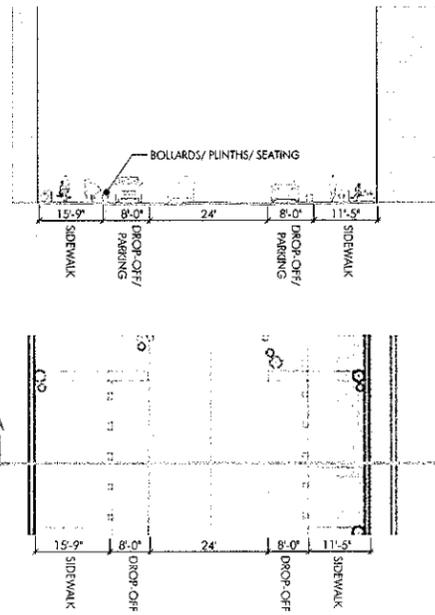
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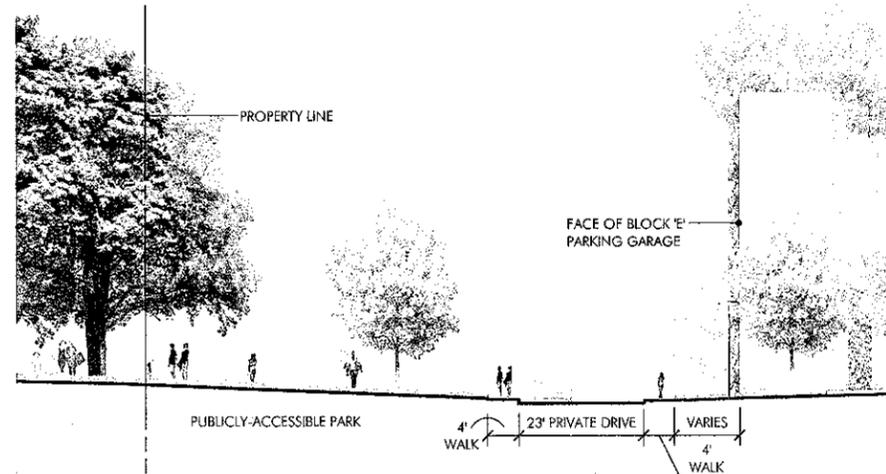
COMMONWEALTH OF VIRGINIA  
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Lic. No. 009832  
8/29/12  
LANDSCAPE ARCHITECT

TYPICAL STREET SECTIONS  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
03/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: AS NOTED
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L4.0



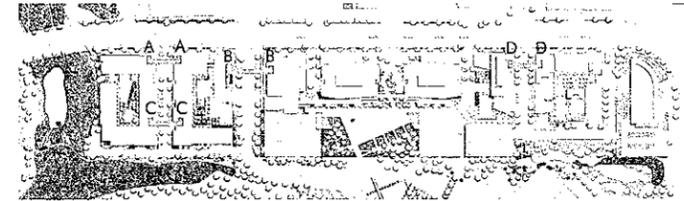
**04** BLOCK 'A' - PRIVATE STREET  
SCALE: 1/16" = 1'-0"  
SECTION A-A



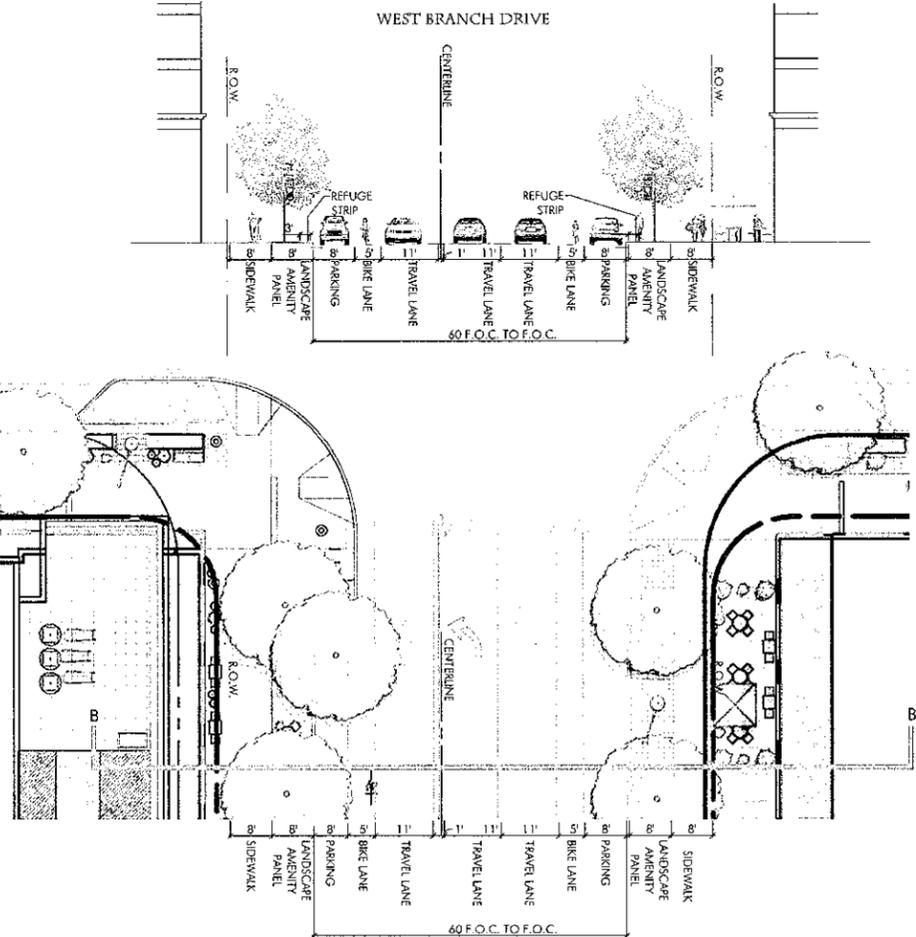
**05** BLOCK 'E' - PRIVATE STREET (CONNECTOR TO JONES BRANCH)  
SCALE: 1/16" = 1'-0"

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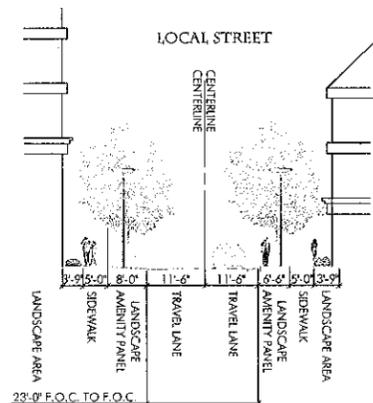
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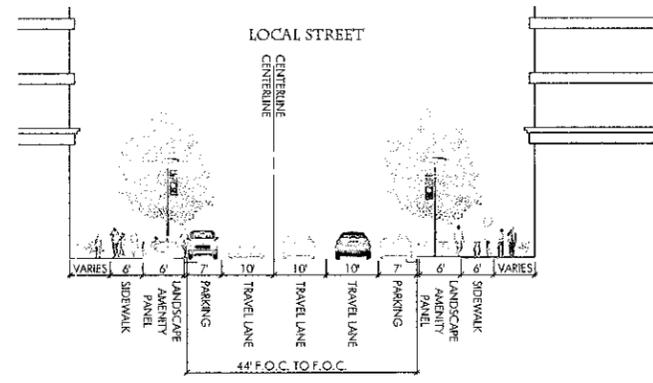
REFERENCE PLAN



**01** WEST BRANCH DRIVE (RTE 5457) - STREET SECTION (COLLECTOR)  
SCALE: 1/16" = 1'-0"  
SECTION B-B



**02** SERVICE STREET SECTION - TYPE 'A'  
SCALE: 1/16" = 1'-0"  
SECTION C-C



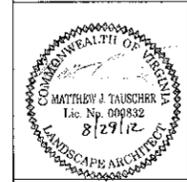
**03** LOCAL STREET SECTION - JONES BRANCH EXT.  
SCALE: 1/16" = 1'-0"  
SECTION D-D

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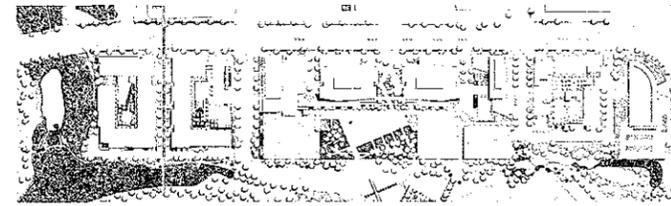


TYPICAL STREET SECTIONS  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

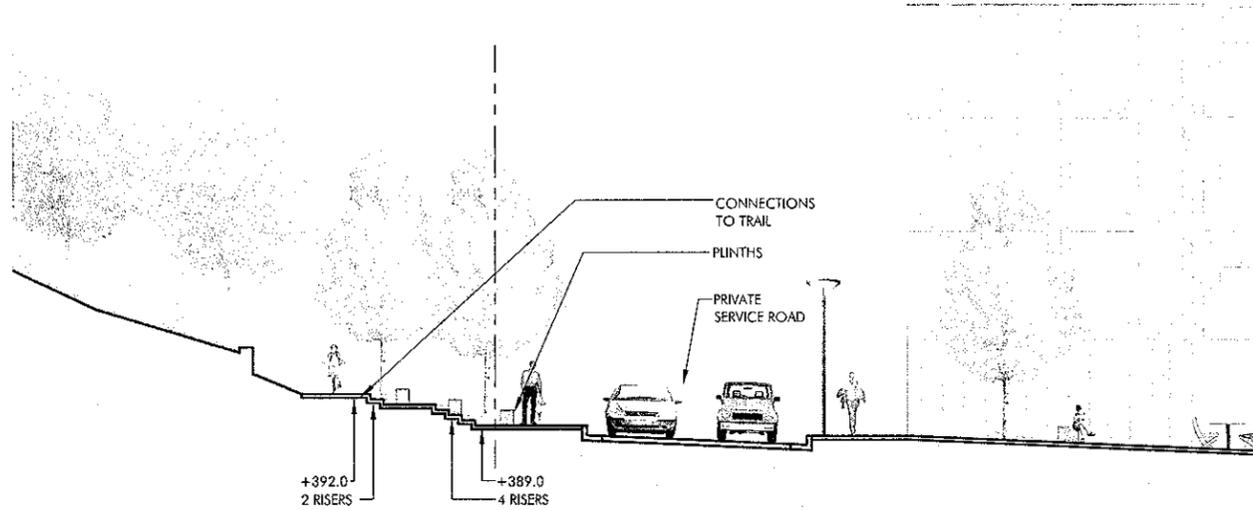
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12/07/11	PER COUNTY COMMENTS
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08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: AS NOTED
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L4.1

THE PLAN AND IMAGERY SHOWN MAY BE MODIFIED WITH FINAL ENGINEERING AND DESIGN, PROVIDED THAT THE GENERAL DESIGN QUALITY AND CHARACTERISTICS ARE IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.

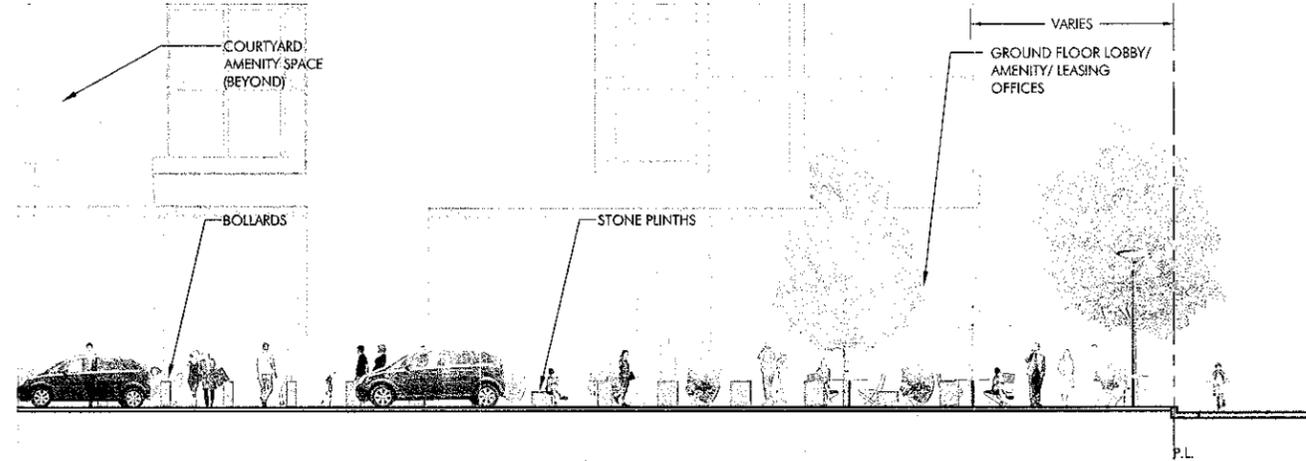
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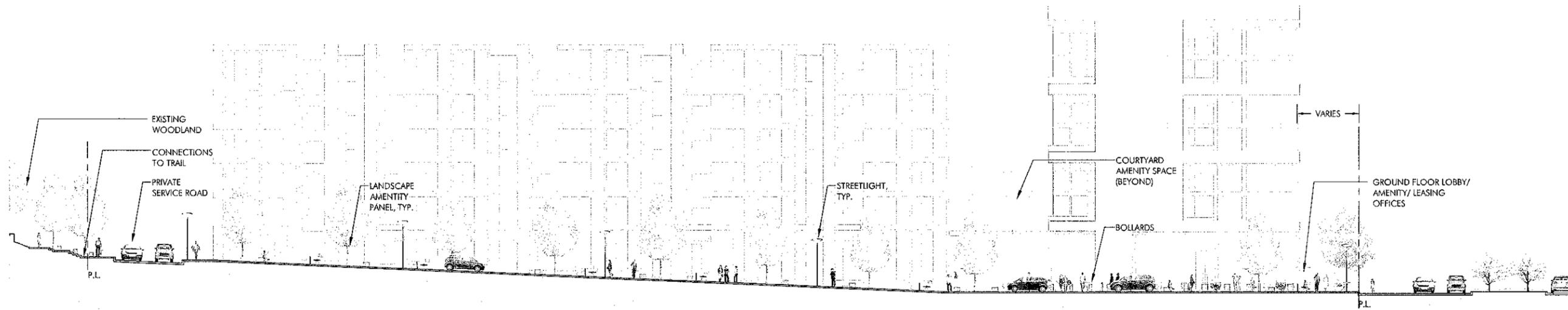
REFERENCE PLAN



**02** BLOCK A - CONNECTION TO TRAIL  
SCALE: 1/16" = 1'-0"



**03** BLOCK A - FLUSH PAVED LOBBY, AMENITY, AND LEASING OFFICE AREA  
SCALE: 1/16" = 1'-0"



**01** BLOCK A - RESIDENTIAL BUILDING SECTION ELEVATION  
SCALE: 1/16" = 1'-0"

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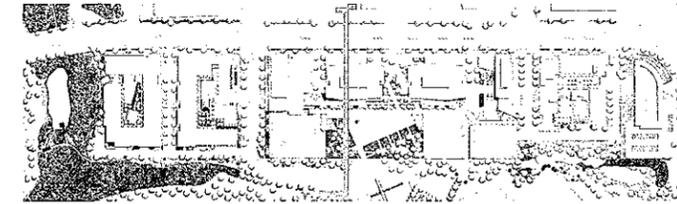


SITE SECTION - BLOCK 'A'  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

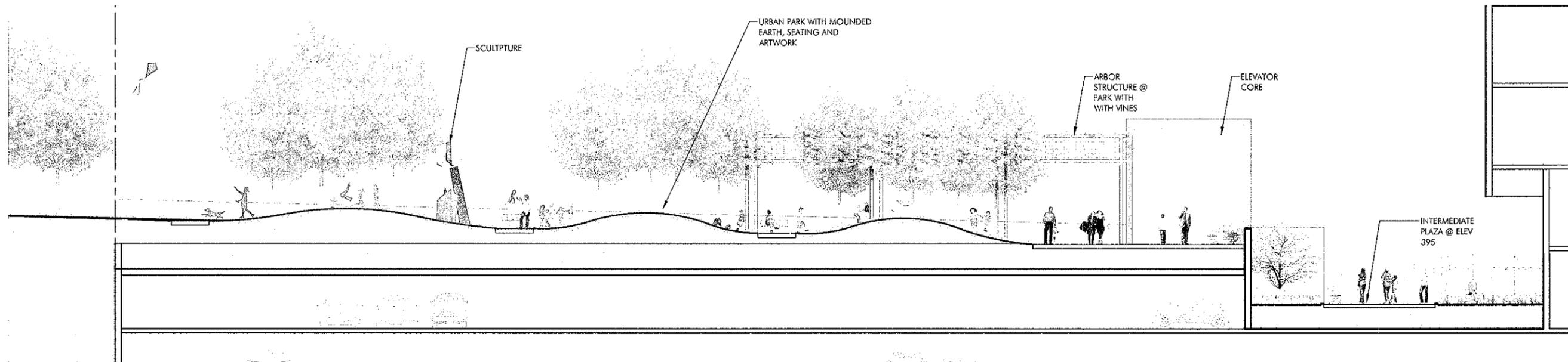
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08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1/16" = 1'-0"
JOB No.	
DATE :	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L4.2

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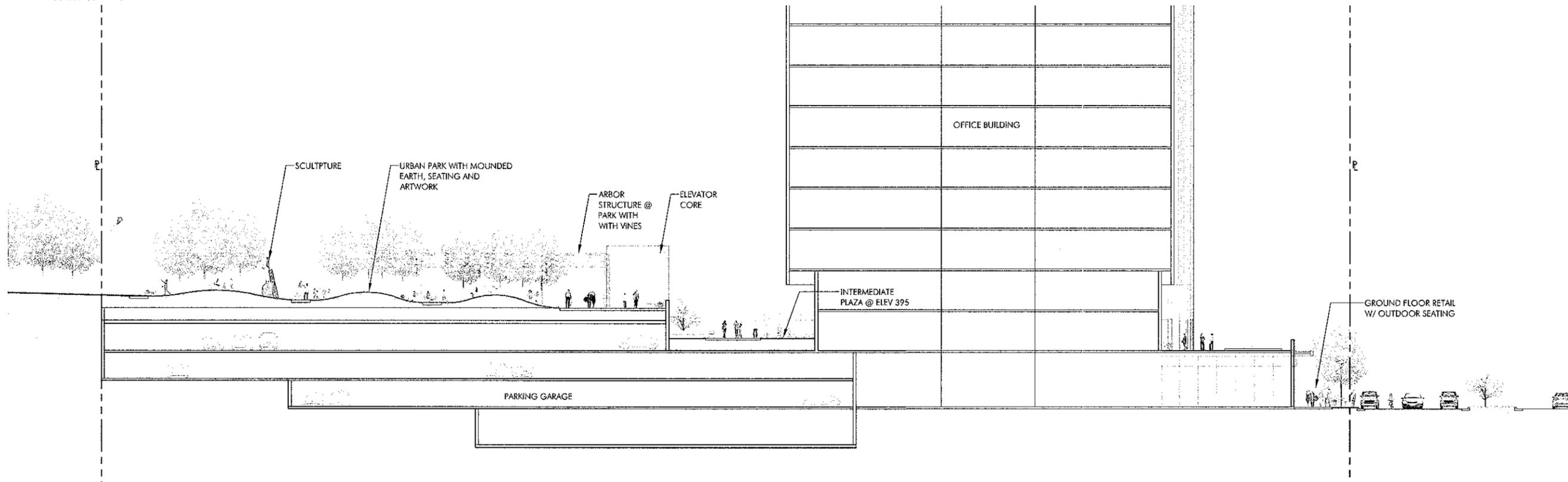
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REFERENCE PLAN



**02** BLOCK C - OFFICE SECTION ELEVATION (ENLARGEMENT)  
SCALE: 1/8" = 1'-0"



**01** BLOCK C - OFFICE SECTION ELEVATION  
SCALE: 1/16" = 1'-0"

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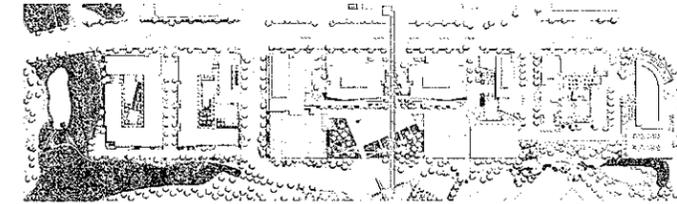


SITE SECTION - BLOCK 'C'  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

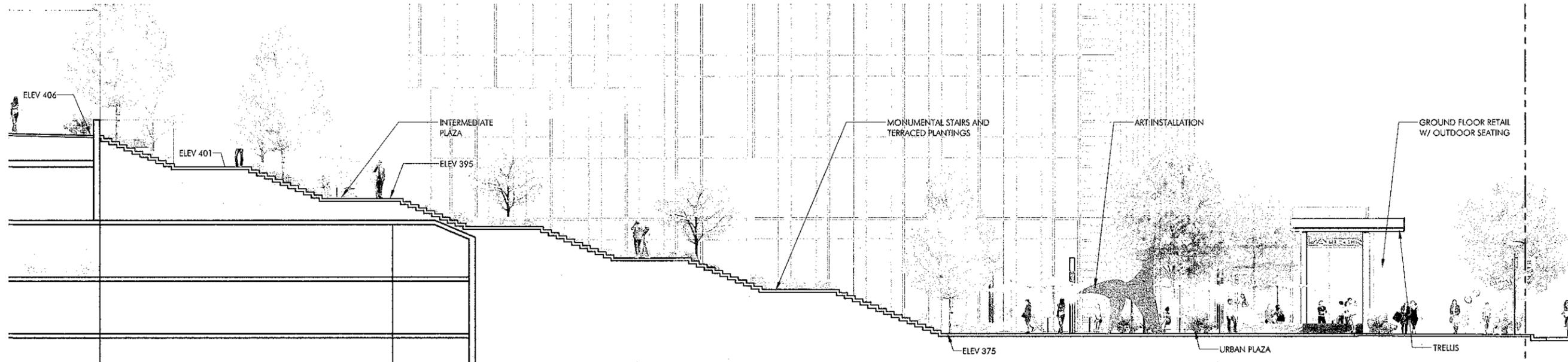
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08/28/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1/16" = 1'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	<b>L4.3</b>

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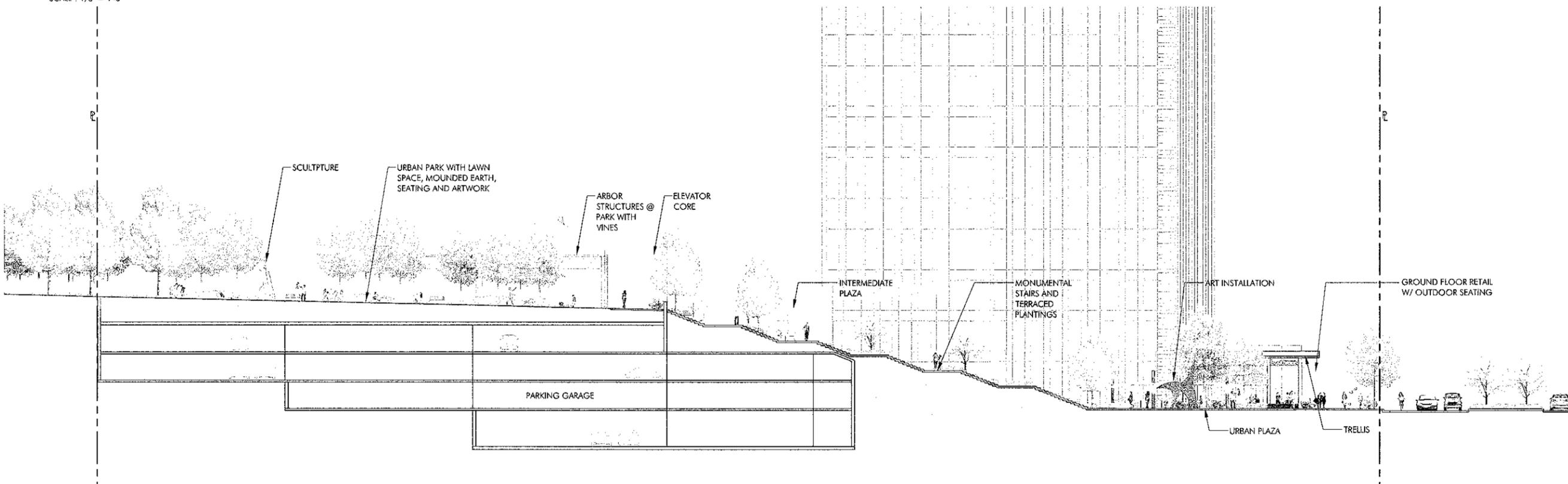


REFERENCE PLAN



**02** BLOCK C - GRAND STAIRCASE SECTION ELEVATION (ENLARGEMENT)

SCALE: 1/8" = 1'-0"



**01** BLOCK C - GRAND STAIRCASE SECTION ELEVATION

SCALE: 1/16" = 1'-0"

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SITE SECTION - BLOCK 'C'  
**ARBOR ROW**  
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PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
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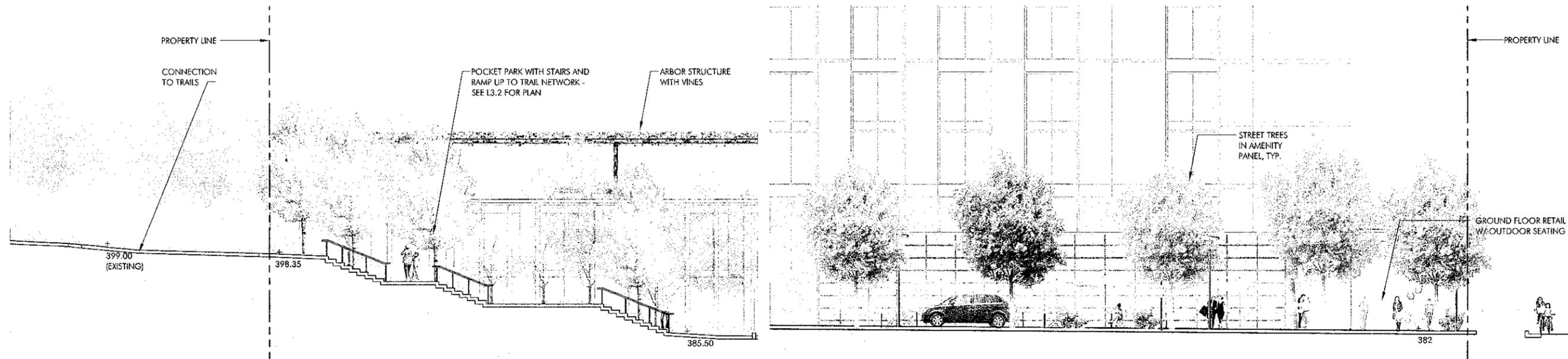
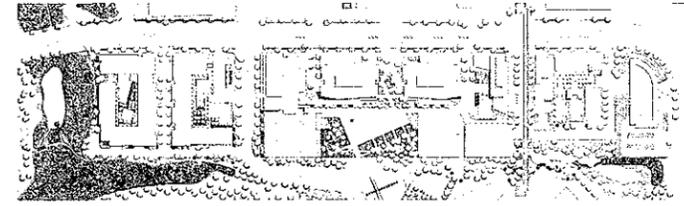
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JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001

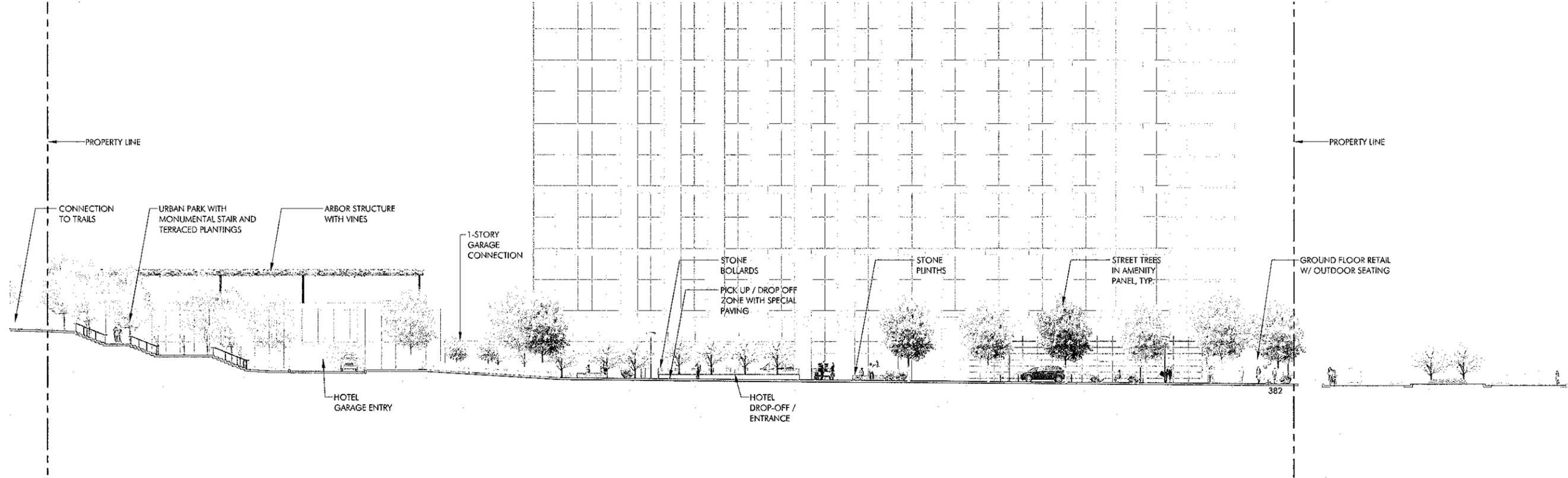
SHEET **L4.4**

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**02** BLOCK D - HOTEL SECTION ELEVATION (ENLARGEMENTS)  
SCALE: 1/8" = 1'-0"



**01** BLOCK D - HOTEL SECTION ELEVATION  
SCALE: 1/16" = 1'-0"

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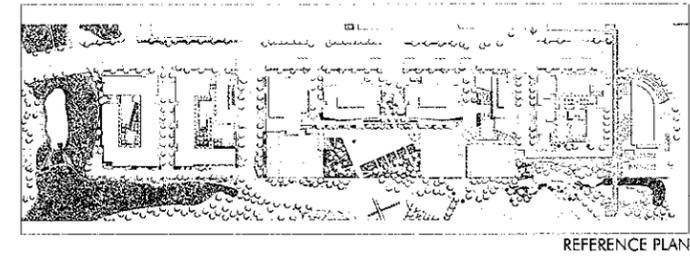
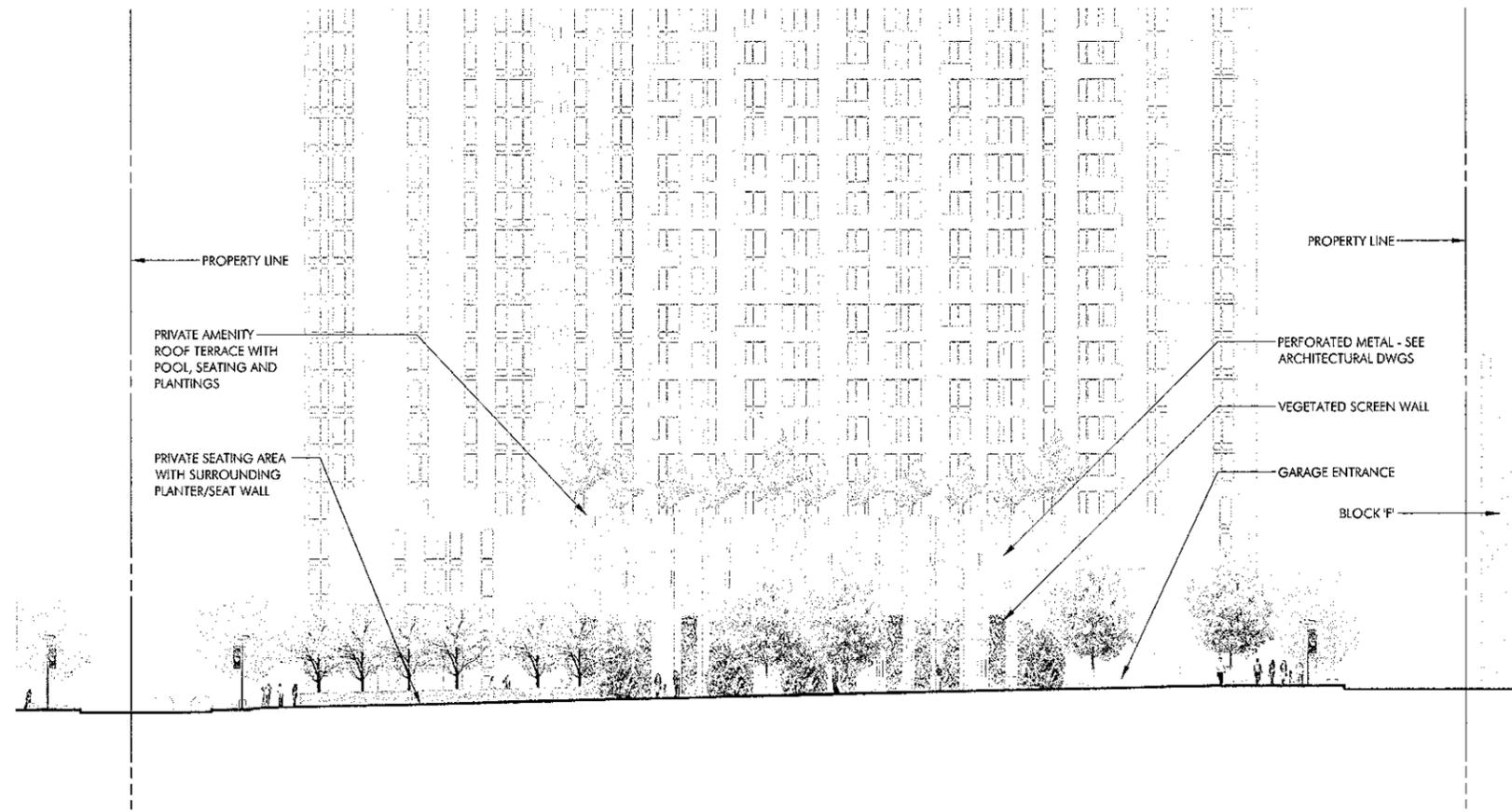
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SITE SECTION - BLOCK 'D'  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

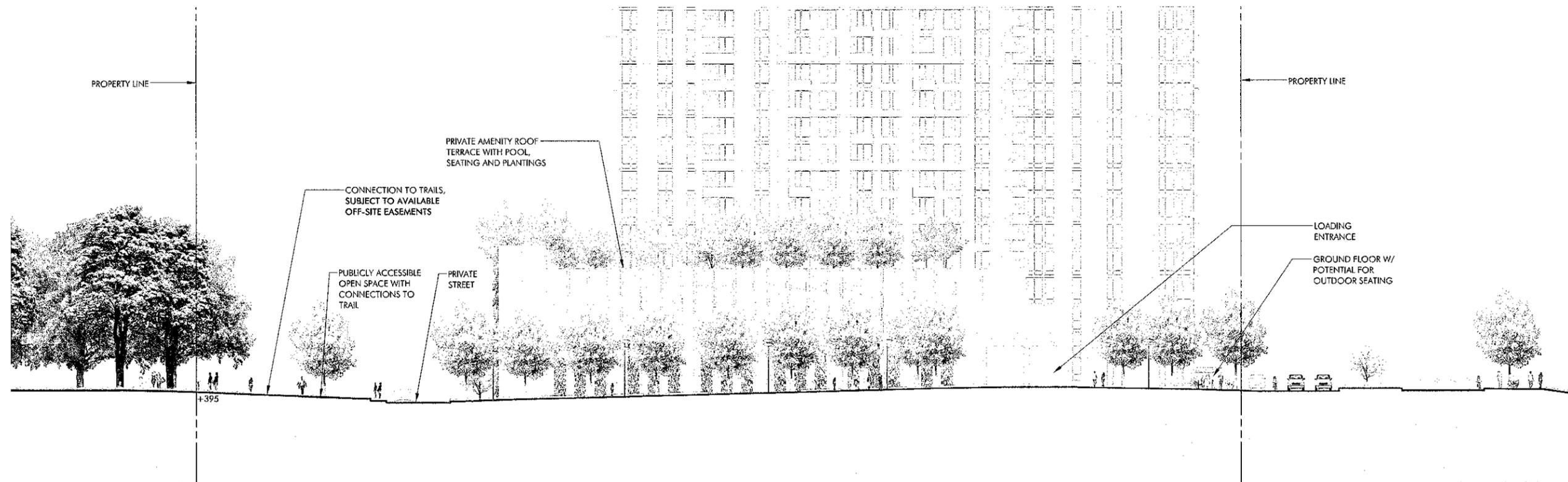
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DATE	DESCRIPTION
SCALE	H: 1/16" = 1'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L4.5



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**02** BLOCK E - SOUTH ELEVATION  
SCALE: 1/8" = 1'-0"



**01** BLOCK E - EAST ELEVATION  
SCALE: 1/16" = 1'-0"

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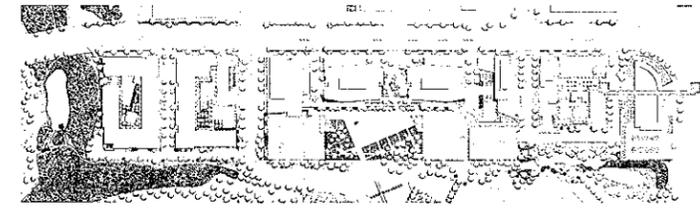


SITE SECTION - BLOCK 'E'  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

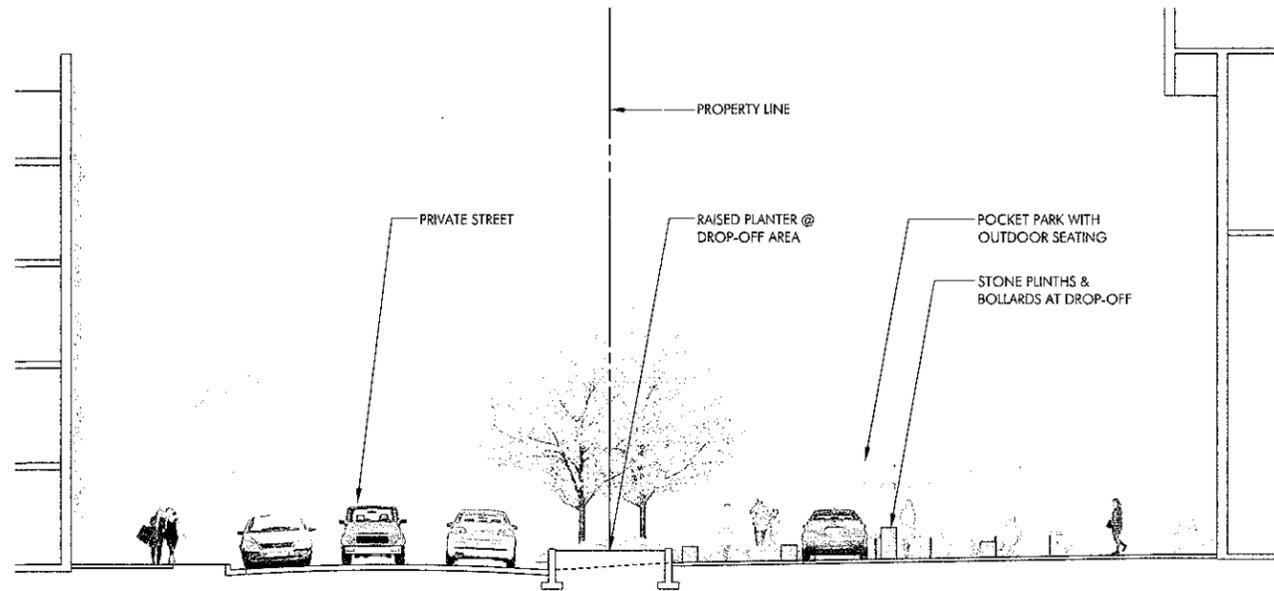
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SCALE	H: 1/16" = 1'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L4.6

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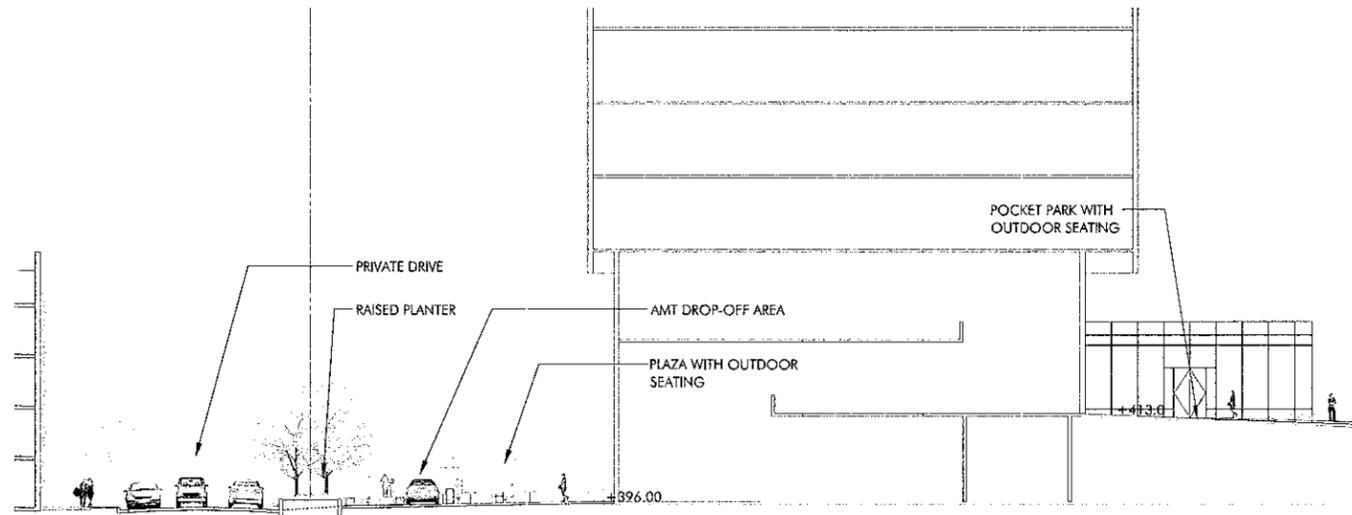
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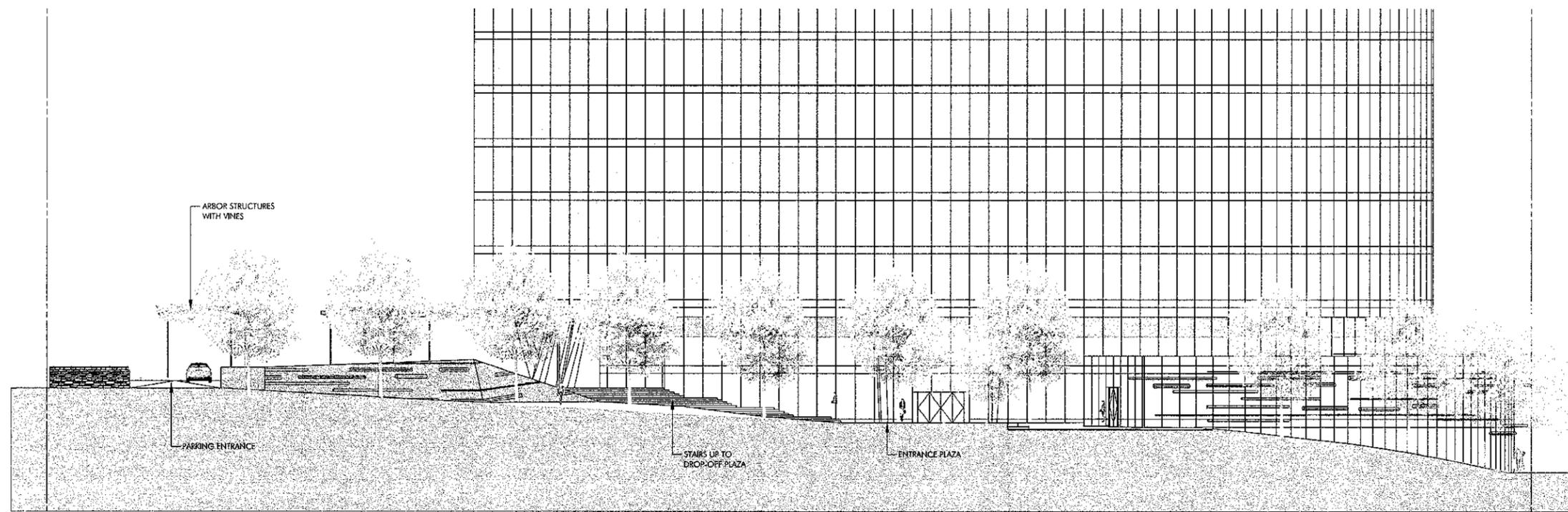
REFERENCE PLAN



**02** BLOCK E & F - PRIVATE STREET SECTION  
SCALE: 1/8" = 1'-0"



**03** BLOCK F - AMT BUILDING SECTION ELEVATION  
SCALE: 1/16" = 1'-0"



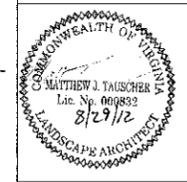
**01** BLOCK F - EAST ELEVATION  
SCALE: 1/16" = 1'-0"

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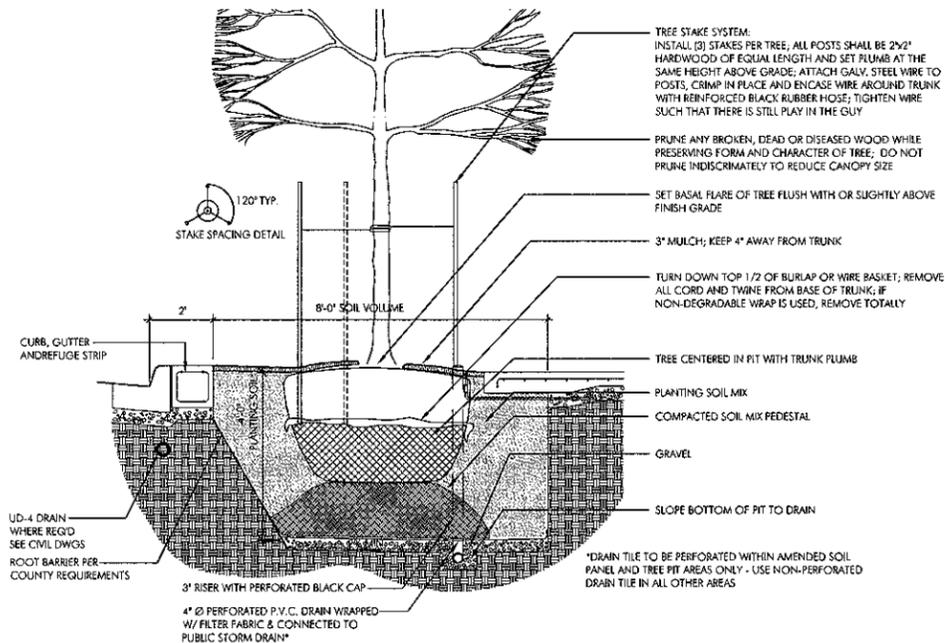
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1025 Connecticut Avenue, NW  
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SITE SECTION - BLOCK 'F'  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1/16" = 1'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	<b>L4.7</b>



**01** TREE PLANTING DETAIL - TYPICAL STREET TREE

SCALE : 1/2" = 1'-0"

ARBOR ROW OVERALL CDP - PRELIMINARY PLANTING LIST & CANOPY COVERAGE

KEY	BOTANICAL NAME	COMMON NAME	QTY.	STOCK SIZE	STOCK TYPE	10-YR TREE CANOPY FT <sup>2</sup>	TREE CANOPY SUB-TOTAL FT <sup>2</sup>	REMARKS
<b>Category I Deciduous Trees</b>								
CF	<i>Carpinus betulus 'Fastigiata'</i>	Columnar Hornbeam	8	3" cal.	B&B	75	600	single leader
<b>Category II Deciduous Trees</b>								
AG	<i>Acer ginnala</i>	Amur Maple	40	3" cal.	B&B	125	5,000	multistem - 3 stems minimum; full branching
AL	<i>Amelanchier laevis</i>	Allegheny Serviceberry	57	2" cal.	B&B	100	5,700	multistem - 3 stems minimum; full branching
CB	<i>Carpinus betulus</i>	Hornbeam	20	3" cal.	B&B	125	2,500	single leader
MS	<i>Magnolia stellata</i>	Star Magnolia	43	2" cal.	B&B	100	4,300	multistem - 3 stems minimum; full branching
<b>Category III Deciduous Trees</b>								
BN	<i>Betula nigra</i>	River Birch	20	3" cal.	B&B	175	3,500	multistem - 3 stems minimum; full branching
GT	<i>Gleditsia inaequalis inermis</i>	Honeylocust, thornless	20	3" cal.	B&B	175	3,500	single leader; full branching
NS	<i>Nyssa sylvatica</i>	Black Gum, Tupelo	9	3" cal.	B&B	175	1,575	single leader; full branching; symmetrical
<b>Category IV Deciduous Trees</b>								
AR	<i>Acer rubrum</i>	Red Maple	38	3" cal.	B&B	250	9,500	single leader; full branching; symmetrical
PA	<i>Platanus x acerifolia 'Bloodgood'</i>	Bloodgood London Planetree	46	3" cal.	B&B	250	11,500	single leader; full branching; symmetrical
QN	<i>Quercus nutallii</i>	Nuttall Oak	29	3" cal.	B&B	250	7,250	single leader; full branching; symmetrical
QP	<i>Quercus prinus</i>	Pin Oak	73	3" cal.	B&B	250	18,250	single leader; full branching; symmetrical
QR	<i>Quercus rubra</i>	Red Oak	42	3" cal.	B&B	250	10,500	single leader; full branching; symmetrical
<b>Category I Evergreen Trees</b>								
IN	<i>Ilex x Nellore Stevens</i>	Nellore Stevens Holly	27	8-10H	B&B	50	1,350	multistem - 3 stems minimum; full branching

TOTAL 10-YEAR TREE CANOPY PROVIDED BY PLANTING : 83,675 sf

EXISTING SITE AREA : 841,385 sf  
 TOTAL AREA OF R.O.W. DEDICATION : 33,430 sf  
 ADJUSTED GROSS SITE AREA : 807,955 sf  
 10% COVERAGE REQUIREMENT = 80,796 sf

**04** PRELIMINARY TREE PLANTING LIST AND CANOPY COVERAGE

SCALE : NTS

LANDSCAPE NOTES :

1. THE PROPOSED LANDSCAPE WILL BE USED TO MEET THE MINIMUM TREE COVER REQUIREMENTS. LOCATIONS, SPECIES AND QUANTITIES MAY BE ADJUSTED WITH FINAL DESIGN.
2. UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AT SITE PLAN.
3. ALL STREET LEVEL TREES ARE PLANTED ON GRADE UNLESS OTHERWISE NOTED.

THE PLAN AND IMAGERY SHOWN MAY BE MODIFIED WITH FINAL ENGINEERING AND DESIGN, PROVIDED THAT THE GENERAL DESIGN QUALITY AND CHARACTERISTICS ARE IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.

Arbor Row - Parking Garage Preliminary Landscape Calculation

Block	Garage Parking Area (SF)	Required 5% Coverage (1)	Arbor Coverage Provided (1)	% Coverage Provided (2)
A	0	0	0	0
B	35,800	1,790	9,500	27%
C	7,900	395	1,700	22%
D	21,300	1,065	5,000	23%
E	6,800	*Waiver - see CDP C2.0	0	0
F	23,500	1,175	5,000	21%

Notes:  
 (1) Landscape coverage required and provided is subject to change based on final layout of surface area of parking garages, but in no case shall provided coverage be less than the required 5%. Final required and provided coverage calculation shall be determined with final site and landscape plan submission.

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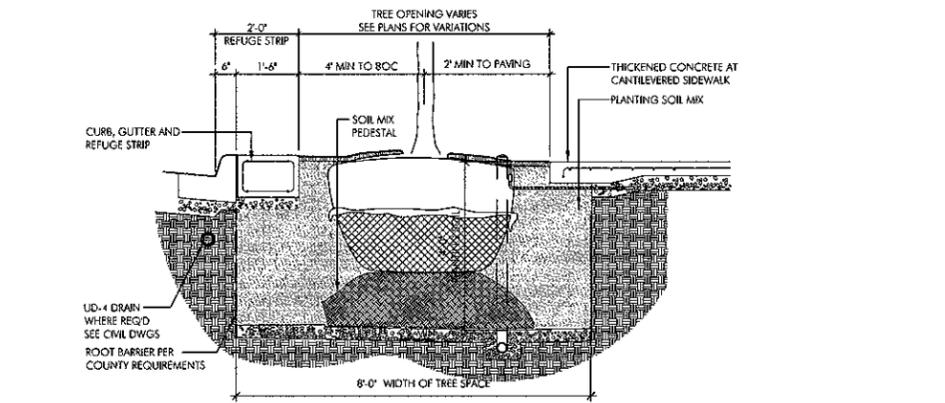
COMMONWEALTH OF VIRGINIA  
**MATTHEW J. TAUSCHER**  
 Lic. No. 000832  
 8/29/12  
 LANDSCAPE ARCHITECT

TYPICAL DETAILS  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

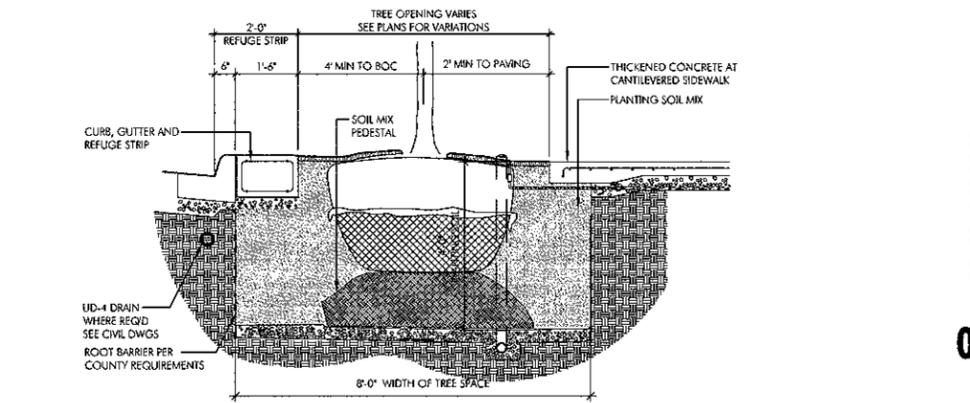
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12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
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DATE	DESCRIPTION
SCALE	H: VARIES
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SHEET	L4.8



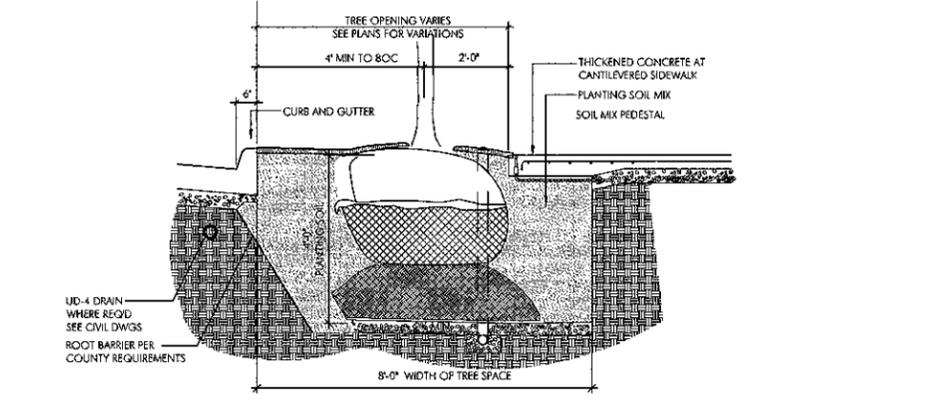
**02** WESTPARK DRIVE - TYP. TREE PLT DETAIL @ REFUGE STRIP - TREE SOIL SPACE

SCALE : 1/2" = 1'-0"



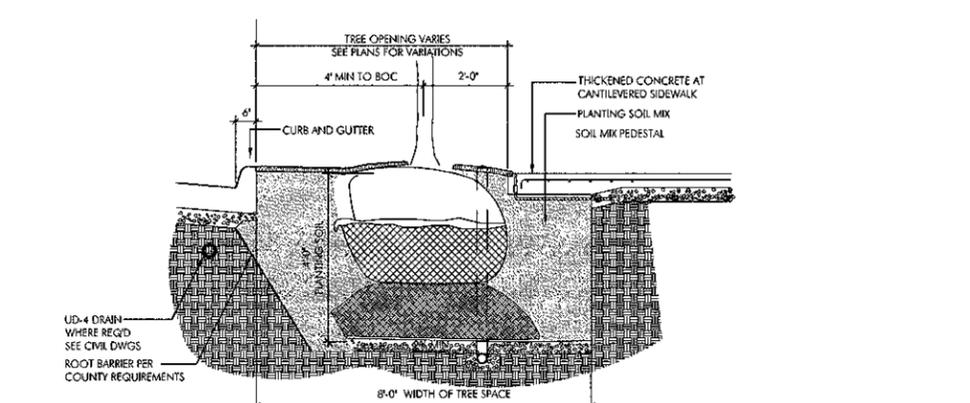
**05** WESTPARK BRANCH - TYP. TREE PLT DETAIL @ REFUGE STRIP - TREE SOIL SPACE

SCALE : 1/2" = 1'-0"



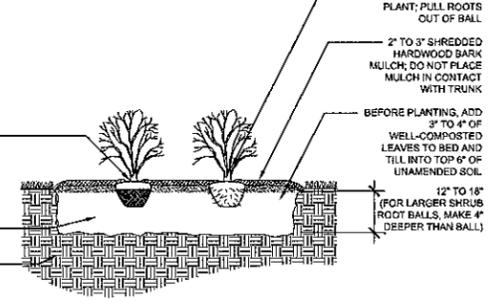
**03** JONES BRANCH DRIVE - TYP. TREE PLT DETAIL @ CURB - TREE SOIL SPACE

SCALE : 1/2" = 1'-0"



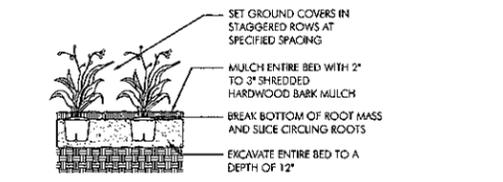
**06** PRIVATE STREET - TYP. TREE PLT DETAIL @ CURB - TREE SOIL SPACE

SCALE : 1/2" = 1'-0"



**07** SHRUB PLANTING DETAIL

SCALE : 1/2" = 1'-0"



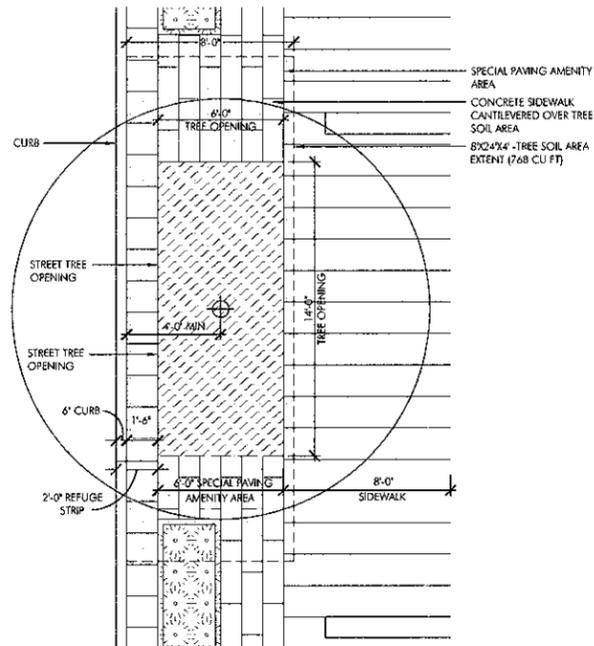
NOTE: GROUND COVERS AND PERENNIALS TO BE INSTALLED WITH TRIANGULAR SPACING

PLANT SPACING	ROW "A"
6" O.C.	5' O.C.
8" O.C.	7' O.C.
10" O.C.	9' O.C.
12" O.C.	10' O.C.
14" O.C.	12' O.C.
15" O.C.	13' O.C.
16" O.C.	14' O.C.
18" O.C.	16' O.C.
24" O.C.	21' O.C.
30" O.C.	28' O.C.
36" O.C.	30' O.C.

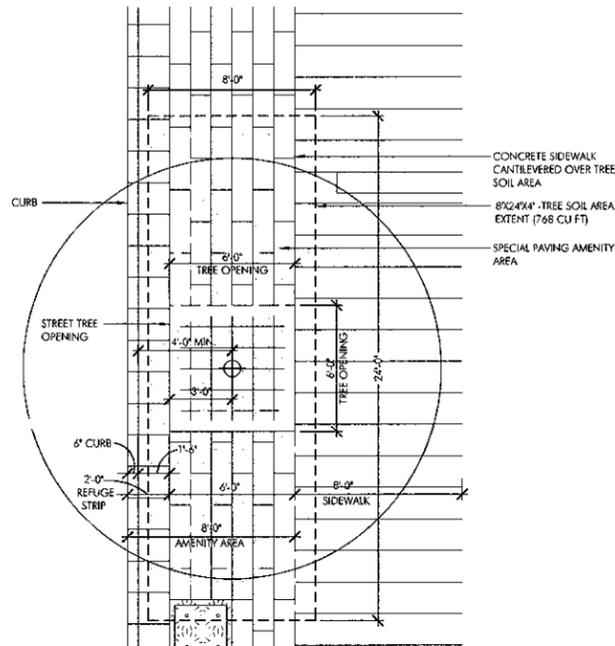
**08** GROUND COVER / PERENNIAL PLT DETAIL

SCALE : 1/2" = 1'-0"

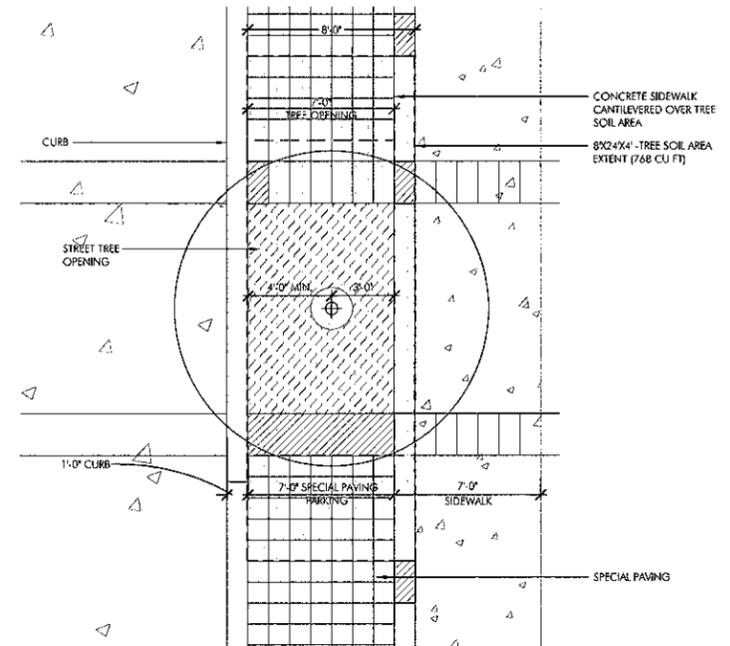
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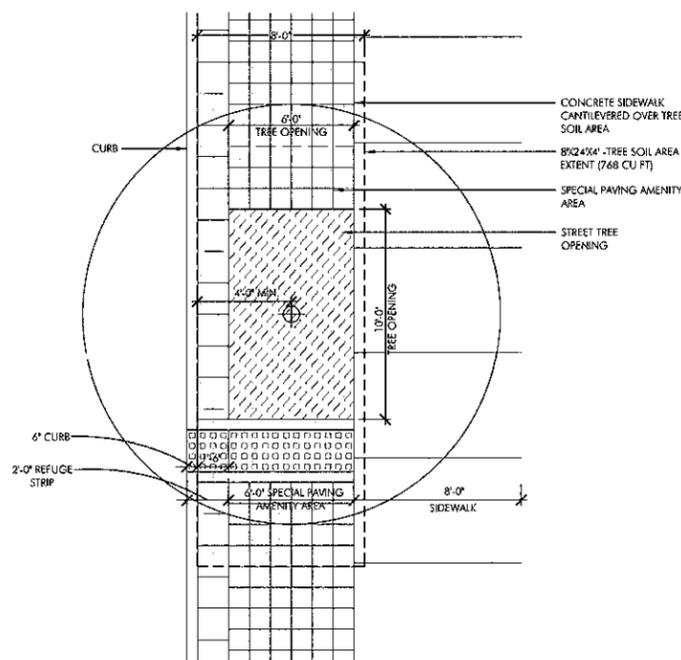
**01** WESTPARK DR - TYP PL PLAN DETAIL @ REFUGE STRIP  
SCALE: 1/2"=1'-0"



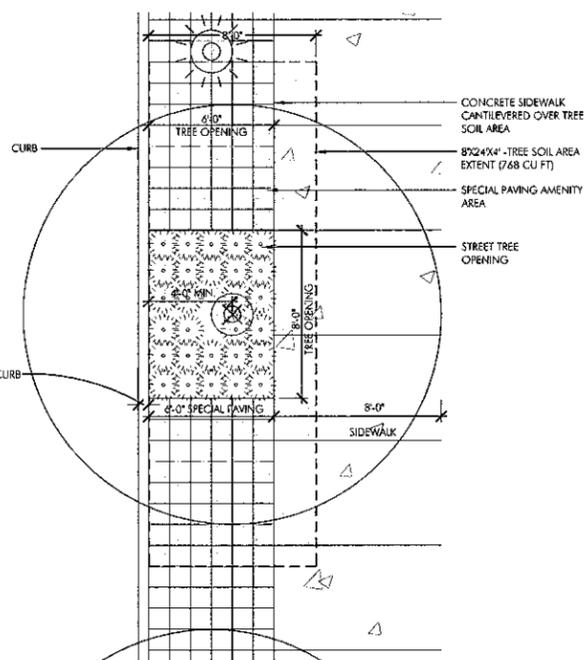
**02** WESTPARK DR - TYP PL PLAN DTL @ REFUGE STRIP W/ GRATE  
SCALE: 1/2"=1'-0"



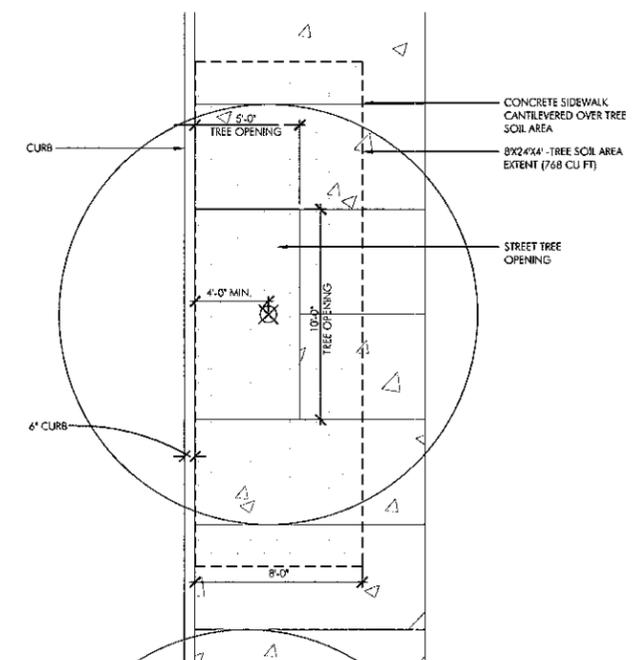
**03** PRIVATE STREET - TYP PL PLAN DETAIL @ CURB  
SCALE: 1/2"=1'-0"



**04** WESTBRANCH DR - TYP PL PLAN DETAIL @ CURB  
SCALE: 1/2"=1'-0"



**05** JONES BRANCH DR - TYP PL PLAN DETAIL @ CURB  
SCALE: 1/2"=1'-0"



**06** PRIVATE STREET - TYP PL PLAN DETAIL @ CURB  
SCALE: 1/2"=1'-0"

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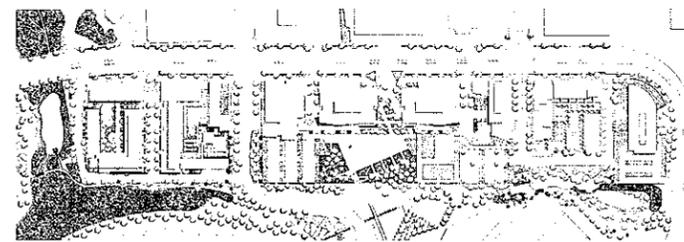
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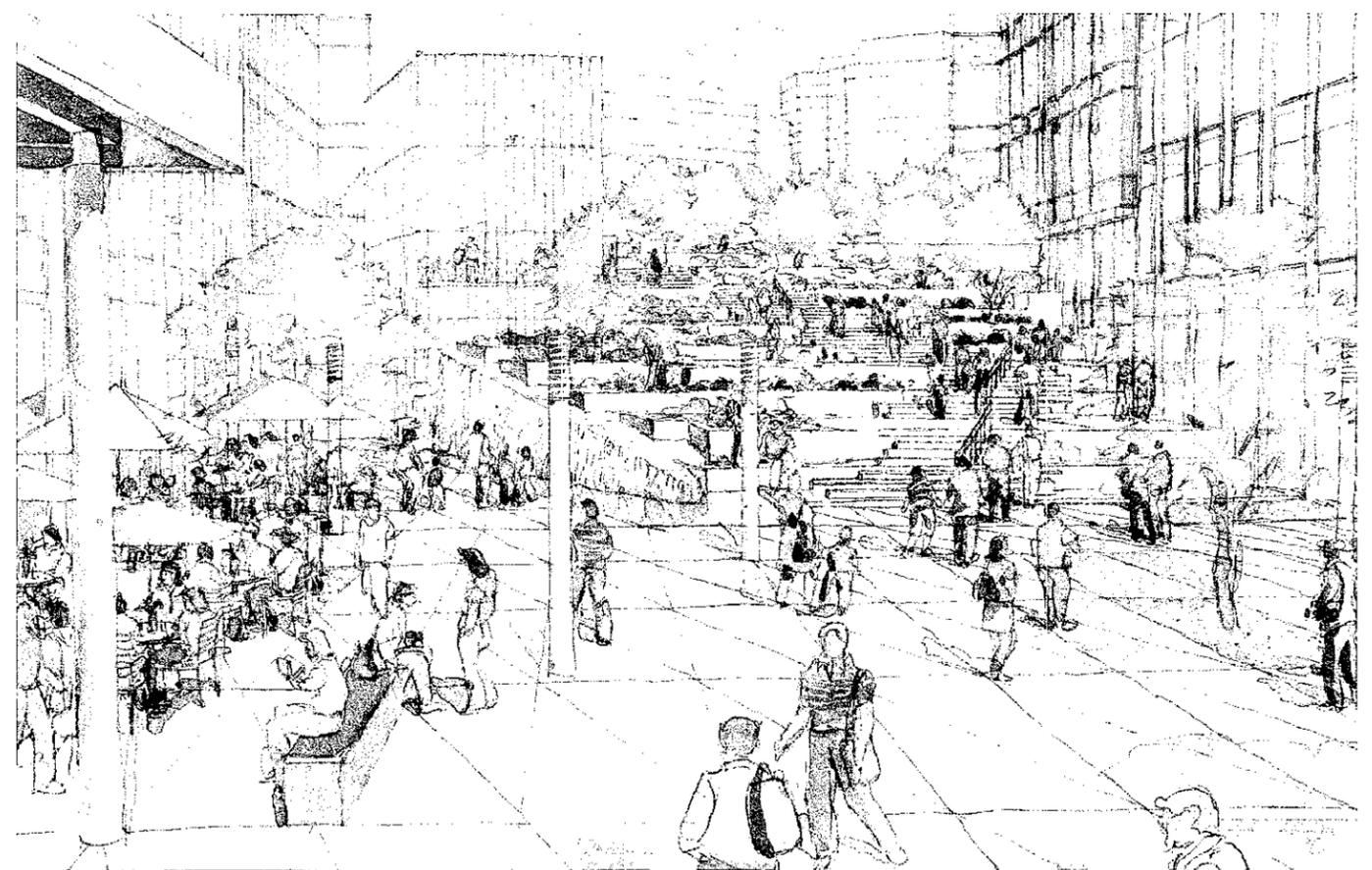
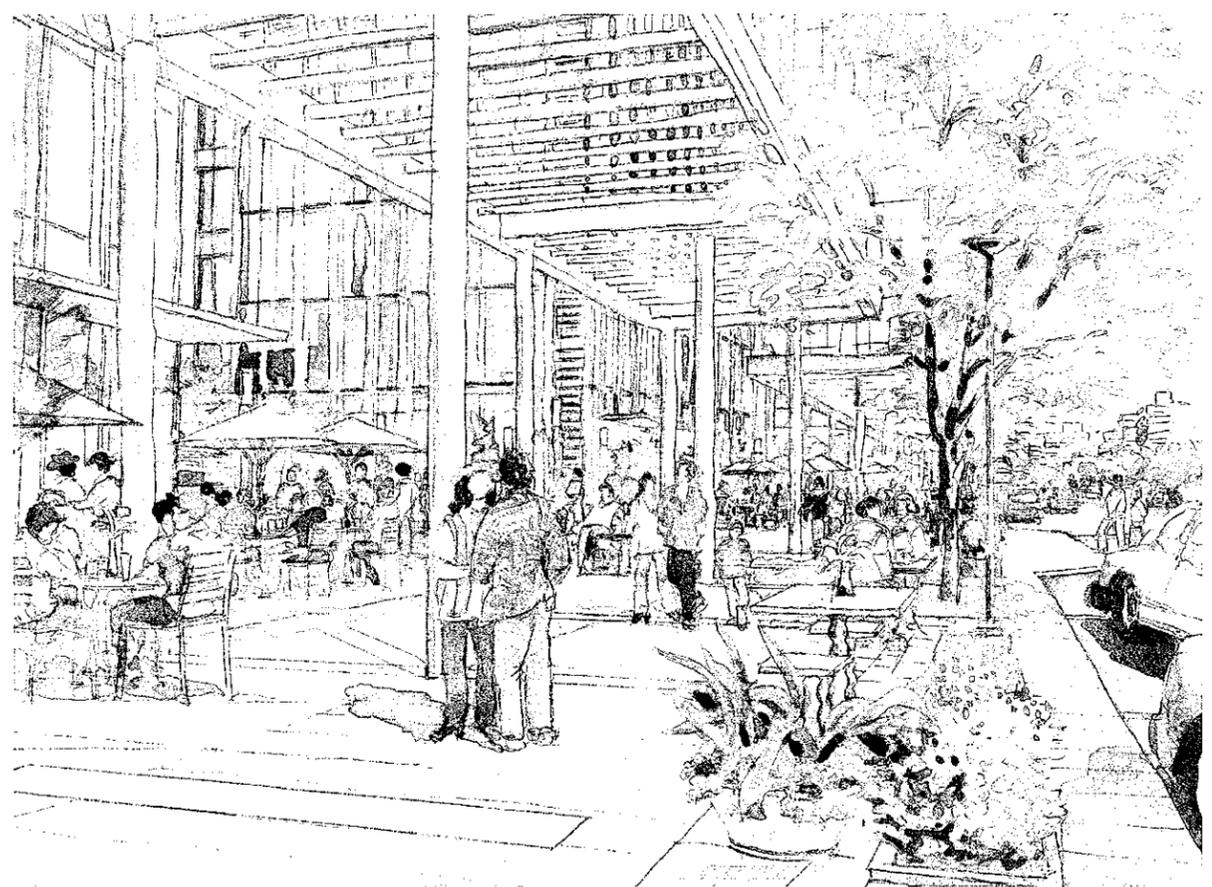
MEMBER OF THE NATIONAL ASSOCIATION OF LANDSCAPE ARCHITECTS  
MATTHEW J. TAUSCHER  
Lic. No. 009832  
2/16/12

PLANTING DETAILS AND SCHEDULE  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
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07/23/12	PER COUNTY COMMENTS
09/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: VARIES
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DATE: APRIL 26, 2011	
FILE No. 7403-07-001	
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**STREETSCAPE PERSPECTIVES**  
**ARBOR ROW**  
 CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
 PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

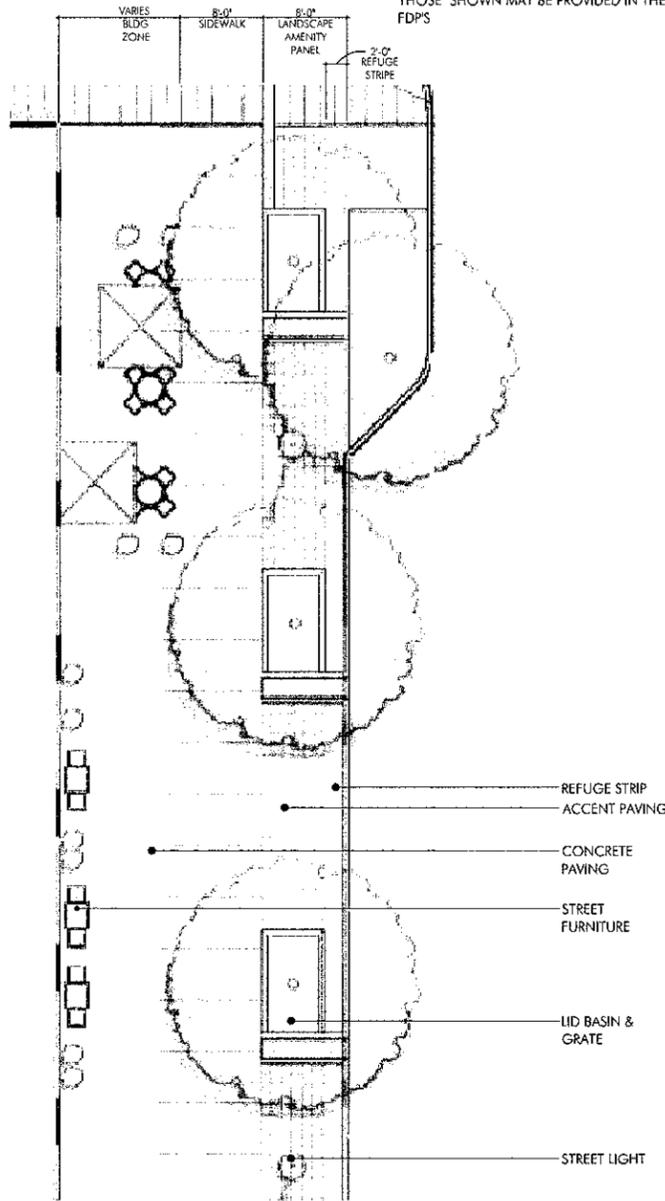
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DATE	DESCRIPTION
SCALE	H: NTS
JOB No.	
DATE :	APRIL 26, 2011
FILE No.	7403-07-001
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FOR INFORMATION ONLY

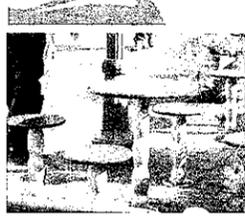
**NOTE:**  
STREETSCAPE ELEMENTS SHOWN INDICATE THE GENERAL QUALITY AND CHARACTER OF MATERIALS EXPECTED, BUT ALTERNATIVES THAT ARE GENERALLY CONSISTENT WITH THOSE SHOWN MAY BE PROVIDED IN THE FDP'S



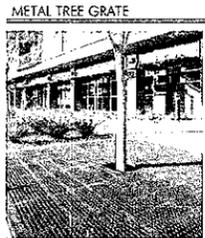
**01 WEST BRANCH DRIVE - ENLARGED PLAN**  
SCALE: 1/8" = 1'-0"

**FURNITURE - TABLES AND CHAIRS**

OPT 1  
MAKE: THOMAS-STEELE  
MODEL: U-POD  
SIZE: D-30" H-30"



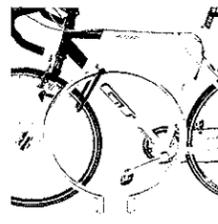
OPT 2  
MAKE: FORMS+SURFACES  
MODEL: WAVE TABLE  
SIZE: D-36" H-28"



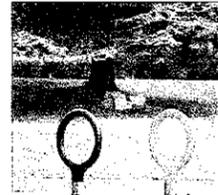
OPT 2  
MAKE: HUB  
MODEL: S304 TREE  
GRATE  
SIZE: 1050mm x 1050mm x 35mm



**BIKE RACKS**

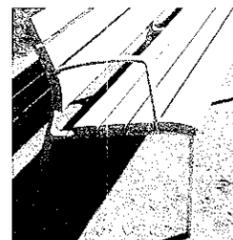


OPT 1  
MAKE: LANDSCAPE FORMS  
MODEL: RING  
SIZE: 1.5" x 25" x 27"

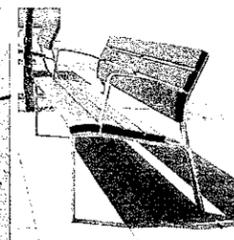


OPT 2  
MAKE: LANDSCAPE FORMS  
MODEL: KEY  
SIZE: 3" x 23" x 32"

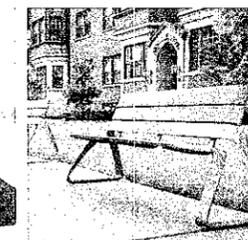
**BENCHES**



OPT 1  
MAKE: LANDSCAPE FORMS  
MODEL: NEOCOMBO  
ALUMINUM  
SIZE: 27" x 31" x 59"  
\*SINGLE SEAT TO MATCH BENCH

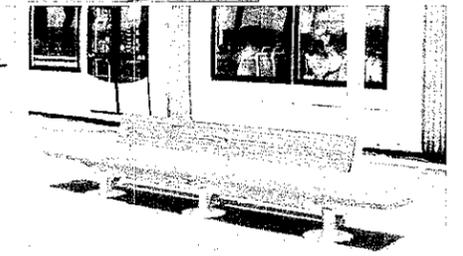


OPT 2  
MAKE: LANDSCAPE FORMS  
MODEL: NEOLIVIANO  
ALUMINUM AND HARDWOOD  
SIZE: 27" x 31" x 69"  
\*SINGLE SEAT TO MATCH BENCH

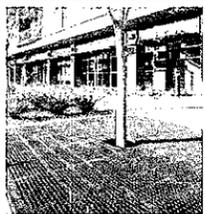


OPT 3  
MAKE: LANDSCAPE FORMS  
MODEL: REST  
SIZE: 26 1/2" x 33 1/2" x 80"

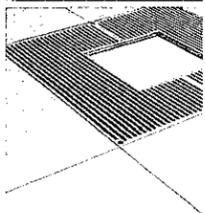
OPT 4  
MAKE: LANDSCAPE FORMS  
MODEL: NU  
STEEL & HARDWOOD  
SIZE: 8'-6" Length



**METAL TREE GRATE**



OPT 1  
MAKE: IRONSMITH  
MODEL: MARKET STREET  
SIZE: 60"



OPT 2  
MAKE: HUB  
MODEL: S304 TREE  
GRATE  
SIZE: 1050mm x 1050mm x 35mm

**STREET LIGHTS - PER TYSON'S URBAN DESIGN GUIDELINES**

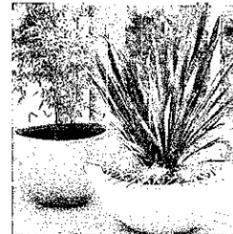


OPT 1  
MAKE: SELUX  
MODEL: ARC / ARC MINI  
HID OR LED  
AT 106 POLE WITH AT635 BASE COVER  
\*DUAL ARMS MOUNTED AT PEDESTRIAN & VEHICULAR HEIGHTS



OPT 2  
MAKE: ARCHITECTURAL AREA LIGHTING  
MODEL: FLEX  
HID MODEL: FH3-400PSMH-11A-1750-B  
LED MODEL: FH-T3-99LED-BW-11A-1834  
\*DUAL ARMS MOUNTED AT PEDESTRIAN & VEHICULAR HEIGHTS

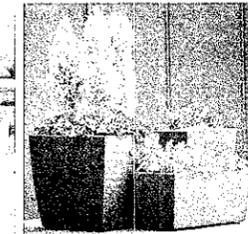
**PLANTERS**



TBD BY TENANT



TBD BY TENANT

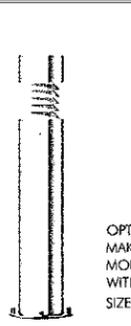


TBD BY TENANT

**VEHICULAR BOLLARDS**

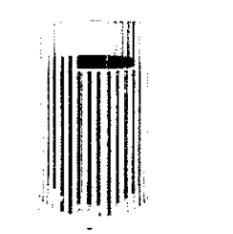


OPT 1  
MAKE: FORMS AND SURFACES  
MODEL: LIGHT COLUMN BOLLARD  
LBLCO-604  
SCREEN: KENTE OR SCAPE  
SIZE: 48"

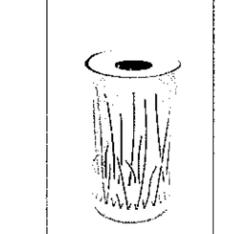


OPT 2  
MAKE: BEGA  
MODEL: STAINLESS BOLLARD  
WITH LOUVER  
SIZE: 41 1/2"

**TRASH RECEPTACLES**



OPT 1  
MAKE: VICTOR STANLEY, INC  
MODEL: SDG-24 Steelsites  
SIZE: 24-gallon



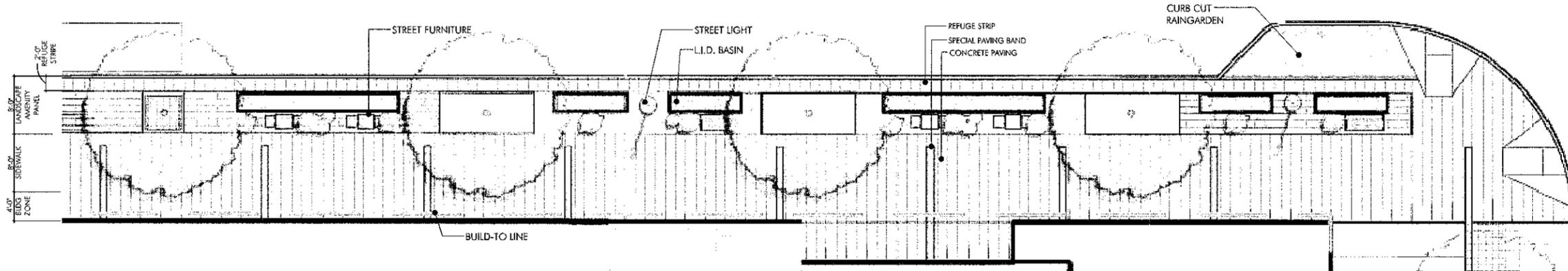
OPT 2  
MAKE: LANDSCAPE FORMS  
MODEL: LAKESIDE - GRASS  
SIZE: 24-gallon

**L.I.D. BASINS**



**03 SITE FURNISHING EXHIBITS**  
SCALE: NTS

**02 WESTPARK DRIVE - ENLARGED PLAN**  
SCALE: 1/8" = 1'-0"



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**WDG ARCHITECTURE, PLLC**  
1025 Connecticut Avenue NW  
Washington, DC 20006  
Tel: 202.877.8300  
Fax: 202.877.8300  
www.wdgarch.com

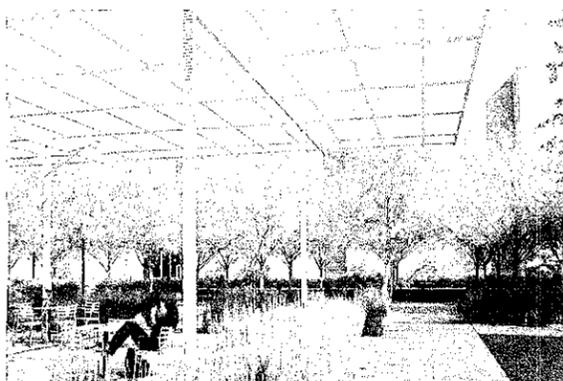
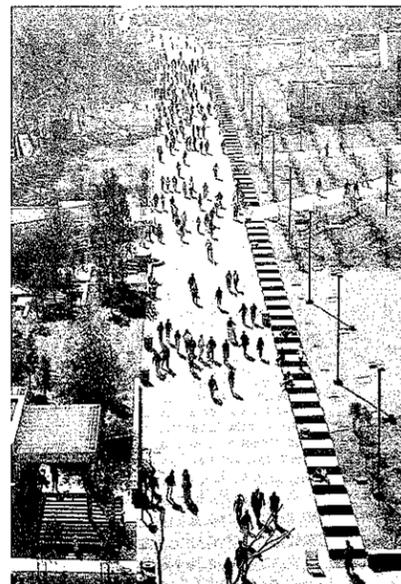
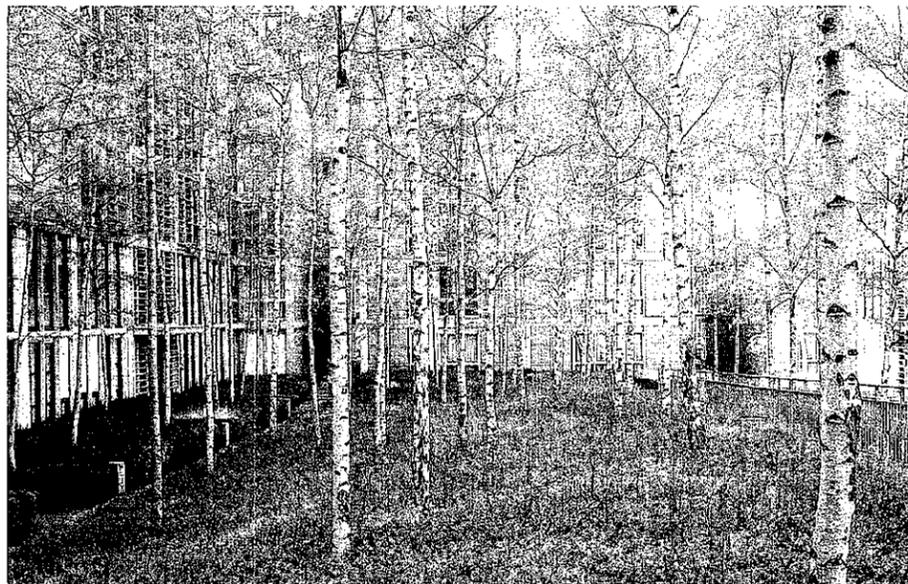
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COMMONWEALTH OF VIRGINIA  
MATTHEW J. TAUSCHER  
Lic. No. 000832  
8/27/12  
LANDSCAPE ARCHITECT

**STREETSCAPE ELEMENTS**  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
07/22/11	PER COUNTY COMMENTS
12/07/11	PER COUNTY COMMENTS
02/24/12	PER COUNTY COMMENTS
05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: 1/8" = 1'-0"
JOB No.	
DATE	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L5.1

FOR INFORMATION ONLY



THE PLAN AND IMAGERY SHOWN MAY BE MODIFIED WITH FINAL ENGINEERING AND DESIGN, PROVIDED THAT THE GENERAL DESIGN QUALITY AND CHARACTERISTICS ARE IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.

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**Bowman**  
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Bowman Consulting Group, Ltd.  
1420 Thunderbolt Place Suite 300  
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Phone: (703) 864-1000  
Fax: (703) 864-9720  
www.bowmanconsulting.com  
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**PARKER RODRIGUEZ, INC.**

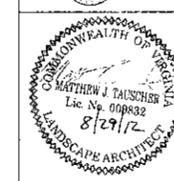
101 North Union St., #520  
Alexandria, VA 22314  
703.546.8016  
Planning Urban Design  
Landscape Architecture

**WDC**  
ARCHITECTS

WDC Architecture, PLLC  
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Tel: 202.697.8300  
Tel: 202.697.9796  
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**Cityline**  
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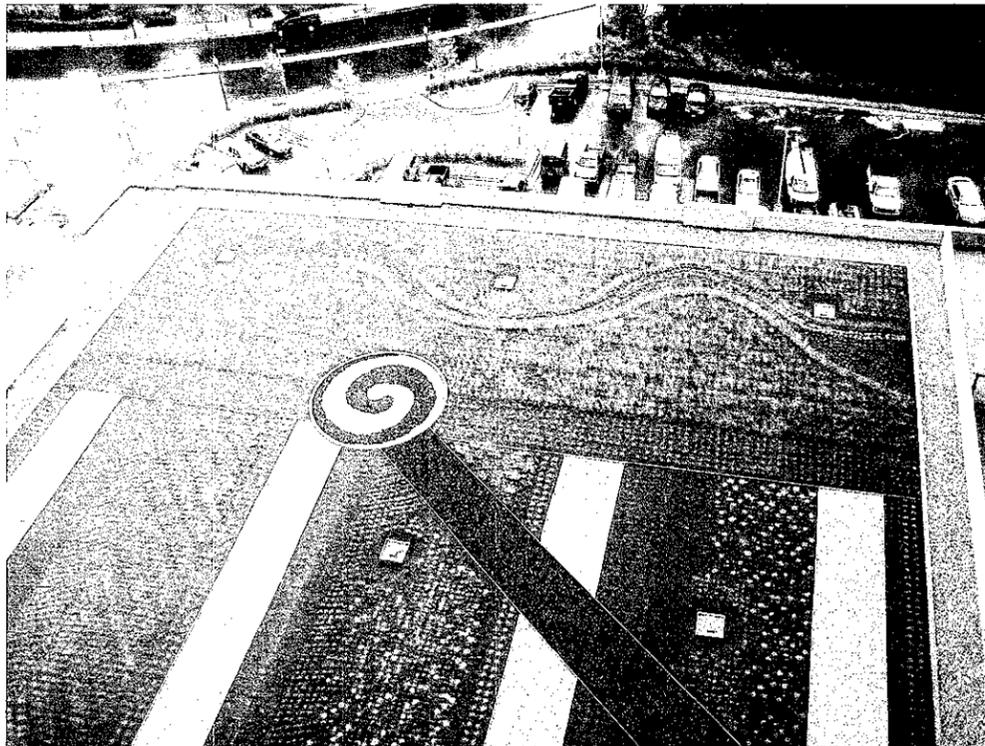
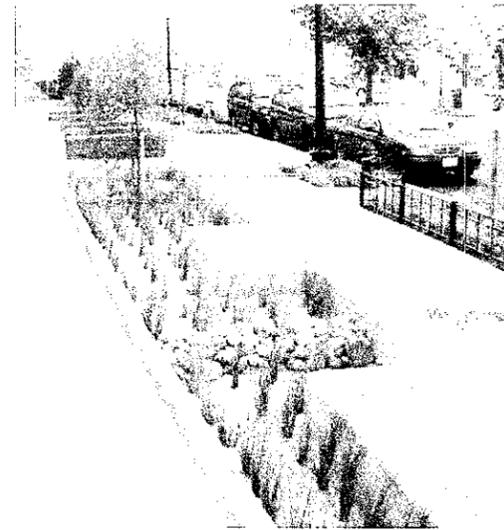
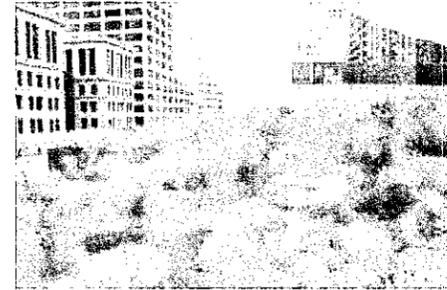
CONCEPT IMAGERY  
**ARBOR ROW**  
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023  
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS	
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07/23/12	PER COUNTY COMMENTS
09/29/12	PER COUNTY COMMENTS
DATE	DESCRIPTION
SCALE	H: NTS
JOB No.	
DATE :	APRIL 26, 2011
FILE No.	7403-07-001
SHEET	L5.2



**SUSTAINABILITY STRATEGIES:**

- GREEN ROOFS
- L.I.D BASINS
- PERMEABLE PAVING
- OVERHEAD SHADE SCREENS
- URBAN PARK OVER STRUCTURE
- PEDESTRIAN ACCESS TO PUBLIC TRANSPORTATION
- GREEN PLAZAS OVER STRUCTURE



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12/07/11	PER COUNTY COMMENTS
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05/25/12	PER COUNTY COMMENTS
07/23/12	PER COUNTY COMMENTS
08/29/12	PER COUNTY COMMENTS

DATE	DESCRIPTION
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